FED. ROAD REGION NO	DIVISION	PROJ. NO.	SHEET NO	TO SHEET
9	COLORADO	I-25-1(16)99	1	

REV. CONV. SIGNS 5-6-60 D.J.R.

INDEX OF SHEETS

1 SKETCH MAP, TITLE PAGE & TABULATION OF LENGTH & DESIGN
2 VARIOUS STRUCTURES FOR CLASS I SURFACE FINISH
3 SUMMARY OF APPROXIMATE QUANTITIES
4-41 DETAILS FOR VIADUCT NO. 2, STRUCTURE No's. K-18-CK, No. Bound & K-18-CL, So. Bound M-10-D
42 STANDARD LETTERS & FIGURES FOR YEAR NUMBERS & STRUCTURE NUMBERS
43-44 ALINGMENT PLAN & PROFILE NORTH & SOUTH BOUND FREEWAY M-7-D
42a STANDARD MARKER POSTS AND BENCH MARKS

COLORADO
DEPARTMENT OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED
FEDERAL AID PROJECT NO. I-25-1(16)99
STATE HIGHWAY NO. # 25
PUEBLO COUNTY

SCALES OF ORIGINAL TRACINGS
ON PLAN, 1 IN. = 50 FT.
ON PROFILE, 1 IN. = 50 FT. HORIZ.
ON PROFILE, 1 IN. = 10 FT. VERT.

GRADE LINE ON PROFILE IS SHOWN AS GRADE OF FINISHED ROAD

GROSS LENGTH OF PROJECT } 1,075.0 Ft. = 0.204 Mi.
NET LENGTH OF PROJECT }

CONVENTIONAL SIGNS

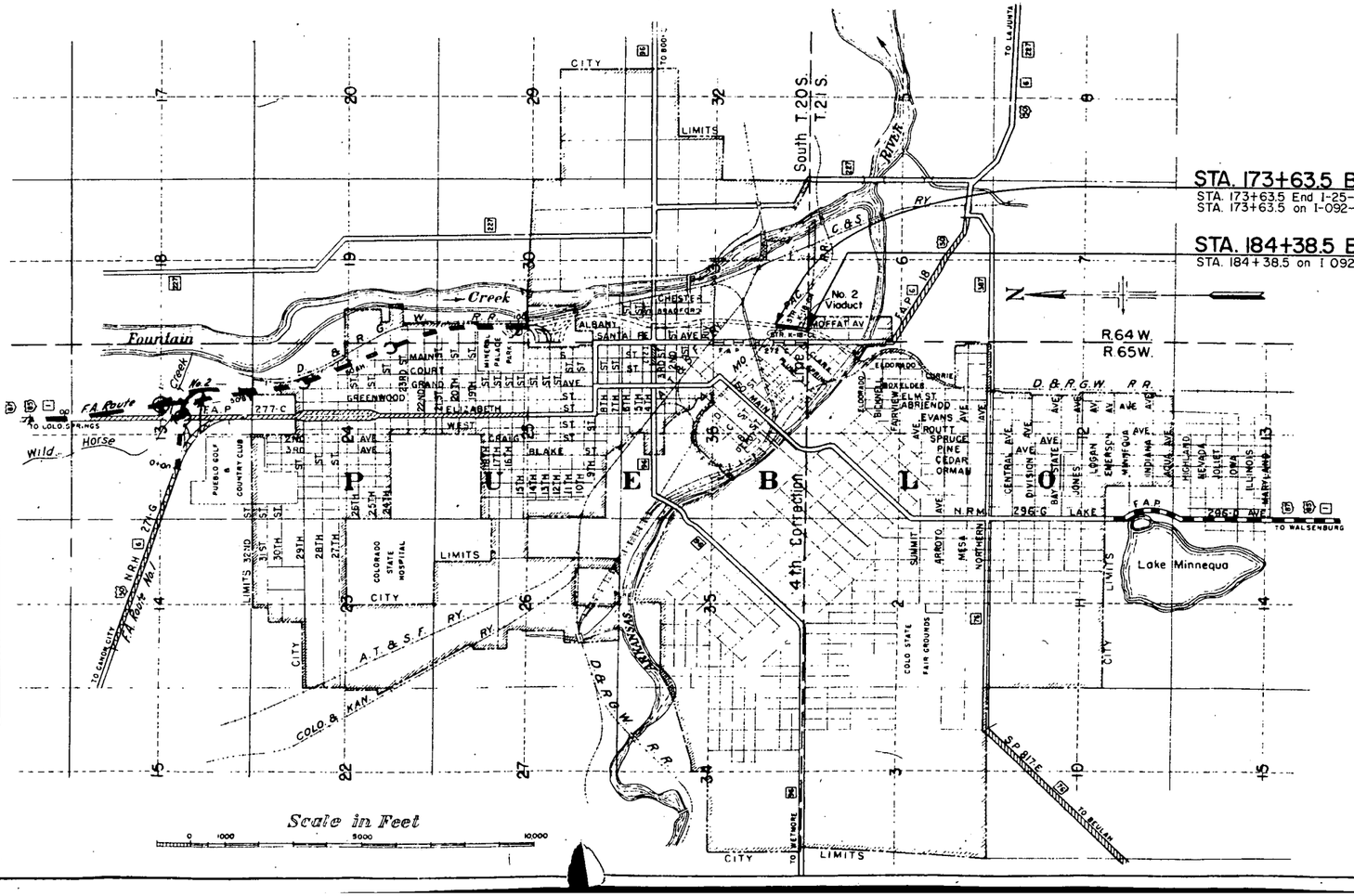
CENTER LINE OF SURVEY
RIGHT OF WAY LINES
SECTION LINES
ONE QUARTER SECTION LINES
TOWNSHIP LINES
CITY LIMITS LINE
RAILROADS
BARBED WIRE FENCE
COMBINATION WIRE FENCE
WOODEN FENCE
POLE LINES
ACCESS DENIED BY DEED (Outside R.O.W. Line)
CONTROL OF ACCESS
PROTECTED BY FREEWAY LAW (VIRGIN LOCATION)

TABULATION OF LENGTH AND DESIGN

STATION	VIADUCT NO. 2 LIN. FT.	LOADING
STA. 173+63.5 BEGIN I-25-1(16)99= STA. 173+63.5 End I-25-1(17)99= STA. 173+63.5 on I-092-3(4)		H20-S16-44
STA. 173+63.5 No. 2 Viaduct End		INTERSTATE ALTERNATE LOADING
STR No. K-18-CK No. Bound STR. No. K-18-CL So. Bound	1,075.0	
STA. 184+38.5 No. 2 Viaduct End		
STA. 184+38.5 END I-25-1(16)99= STA. 184+38.5 on I-092-3(4)		
TOTAL	1,075.0	
SUMMARY	LIN. FT.	MILES
TOTAL LENGTH No. 2 VIADUCT	1,075.0	0.204
TOTAL NET & GROSS LENGTH	1,075.0	0.204

DESIGN DATA

MAXIMUM GRADE	2.96%
MAXIMUM DEGREE OF CURVE	6°00'
MINIMUM N.P.S.D.-Horizontal	>1300'
MINIMUM N.P.S.D.-Vertical	530'
MAXIMUM DESIGN SPEED	50 M.P.H.



SEE SPECIAL PROVISIONS FOR NOTICE TO BIDDERS

COLORADO
DEPARTMENT OF HIGHWAYS

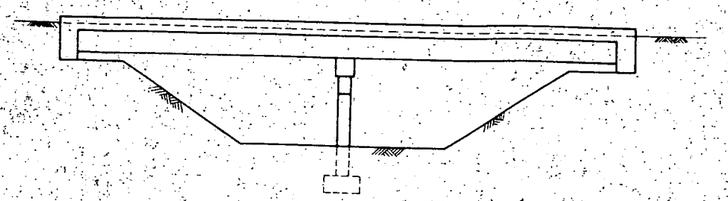
APPROVED: Mark A. Wechter 8-21-58
CHIEF ENGINEER DATE

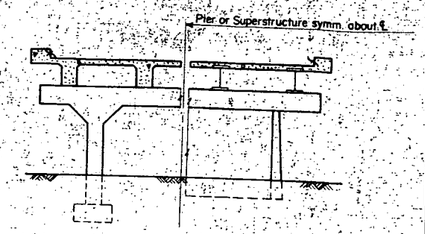
DEPARTMENT OF COMMERCE
BUREAU OF PUBLIC ROADS

APPROVED: DATE

DIVISION ENGINEER

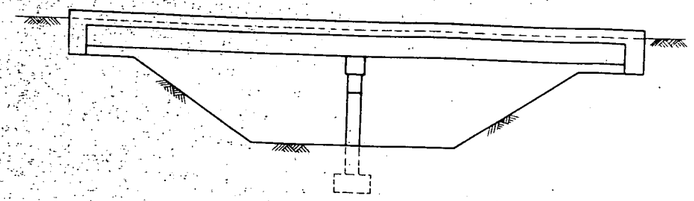
FED. ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.	I-25-1(16)99	2

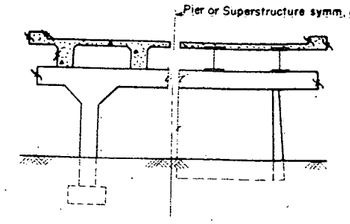




PIER AND SUPERSTRUCTURE

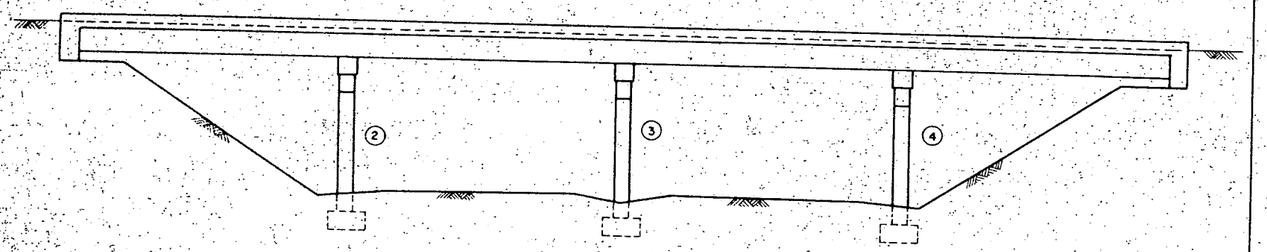
RURAL STREAM CROSSING

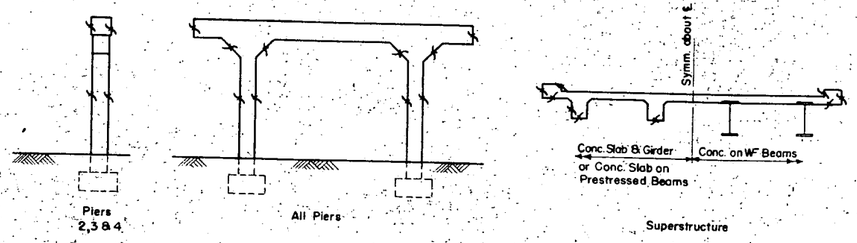




PIER AND SUPERSTRUCTURE

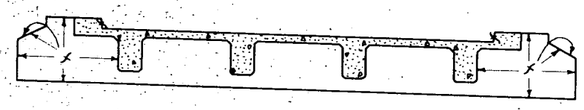
URBAN STREAM CROSSING OR NEAR URBAN AREA



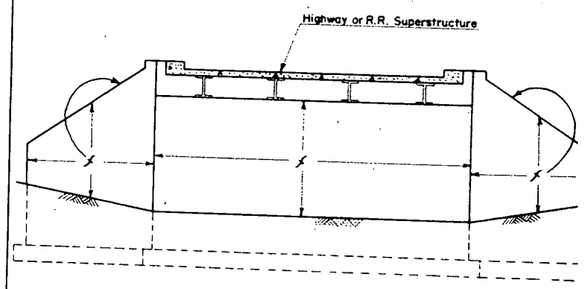


In case of round columns or caissons the whole column shall receive Class "I" finish on all Piers.

UNDERPASS



STUB ABUTMENTS
(Underpass Only)



CANTILEVER ABUTMENTS
(Underpass Only)

INITIAL	DATE

COLORADO
DEPARTMENT OF HIGHWAYS

DETAILS SHOWING PORTIONS OF STRUCTURE TO RECEIVE CLASS "I" SURFACE FINISH.

Across Various Locations

oduct No.

Revised. 9-3-58: Quantities, T. G. B.
Rev. 9-15-58 w/ Item 160 w/ J.C.R.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	3

SUMMARY OF BRIDGE QUANTITIES

STRUCTURE No. NB: K-18-CK, SB: K-18-CL

Item No.	ITEM	UNIT	Super-Structure	Abut. No. 1.	Abut. No. 15	Girders	PIERS 2E & 2W	3E & 3W	4E & 4W	5E & 5W	6E & 6W	7E & 7W	8E & 8W	9E & 9W	10E & 10W	11E & 11W	12E & 12W	13W	14E & 14W	Structure No. 2 Totals
14	Unclassified Structural Excavation - Bridges	Cu. Yd.		105	61															166
16	Structure Back Fill (Class 1)	Cu. Yd.		48	20															68
42	Treated Bridge Timber	M. ft. bm.	1.014																	1.014
46	Class "A" Concrete	Cu. Yd.	1962	79	71		67	71	80	79	74	70	74	74	72	73	71	27	54	2998
47	Reinforcing Steel (Incl. 1% for Overrun)	Lb.	330,775	5821	5071		11189	11751	12584	13979	13979	13979	14827	15736	17098	17378	17971	5100	9701	516,939
48	Structural Steel (Incl. 1/2% for paint)	Lb.	312,219																	312,219
(3) 60	Drilling holes to Facilitate Pile Driving	L.F.		700	240															940
(1)(4) 61	Steel Pipe Piling (12 3/4" O.D. x 0.179 Thick)	L.F.		1360	1032															2392
65	Concrete Slope and Ditch Paving	Cu. Yd.		267	111															378
80	Sheet Copper	Lb.	20																	20
89	Drain Pipe (4" Dia x 2'-3") (Conc. Floor)	Ea.	50																	50
90	(1 1/2" Dia) Electrical Conduit with Junction Boxes	L.F.	4380																	4380
(5) 160	Drilling Holes (For Caissons)	L.F.					282	270	252	222	222	222	207	204	204	207	207	102	216	2817
(2)	1/4" Expansion Joint Material (Type III)	Sq. Ft.	447																	447
46	Prestressed Concrete Girders 40'-0" to 44'-11"	Each				2														2
46	Prestressed Concrete Girders 45'-0" to 49'-11"	"				2														2
46	Prestressed Concrete Girders 50'-0" to 54'-11"	"				2														2
46	Prestressed Concrete Girders 55'-0" to 59'-11"	"				2														2
46	Prestressed Concrete Girders 60'-0" to 64'-11	"				2														2
46	Prestressed Concrete Girders 65'-0" to 69'-11"	"				57														57
46	Prestressed Concrete Girders 70'-0" to 74'-11"	"				6														6
46	Prestressed Concrete Girders 75'-0" to 79'-11"	"				72														72
46	Prestressed Concrete Girders 80'-0" to 84'-11"	"				7														7
46	Prestressed Concrete Girders 85'-0" to 89'-11"	"				49														49
46	Prestressed Concrete Girders 90'-0" to 94'-11"	"				10														10
	FORCE ACCOUNT Alterations of R. R. Facilities (Work by Mo. Pac. R.R. Co. Forces)	L.S.																		
	Alterations of Western Union Facilities (Work by Mo. Pac. R.R. Co. Forces)	L.S.																		

1. Includes 40 cu. yds. Abut. No. 1 & 30 cu. yds. Abut. No. 15 to fill pipe piles.
2. Expansion Joint Material shall be in accordance to AASHO specification M-153-54 and of the Type shown and shall be included in the Bid Price for Item 46
3. Holes for piles shall not be drilled until definitely determined by the Engineer that the piles cannot be driven.
4. 12" BP @ 53# may be used as an alternate.

5. Incl. Steel & Conc. Required for caissons below existing groundline

DETAILS BY | CHECKED BY | TRACING MADE BY R.R.W. | CHECKED BY

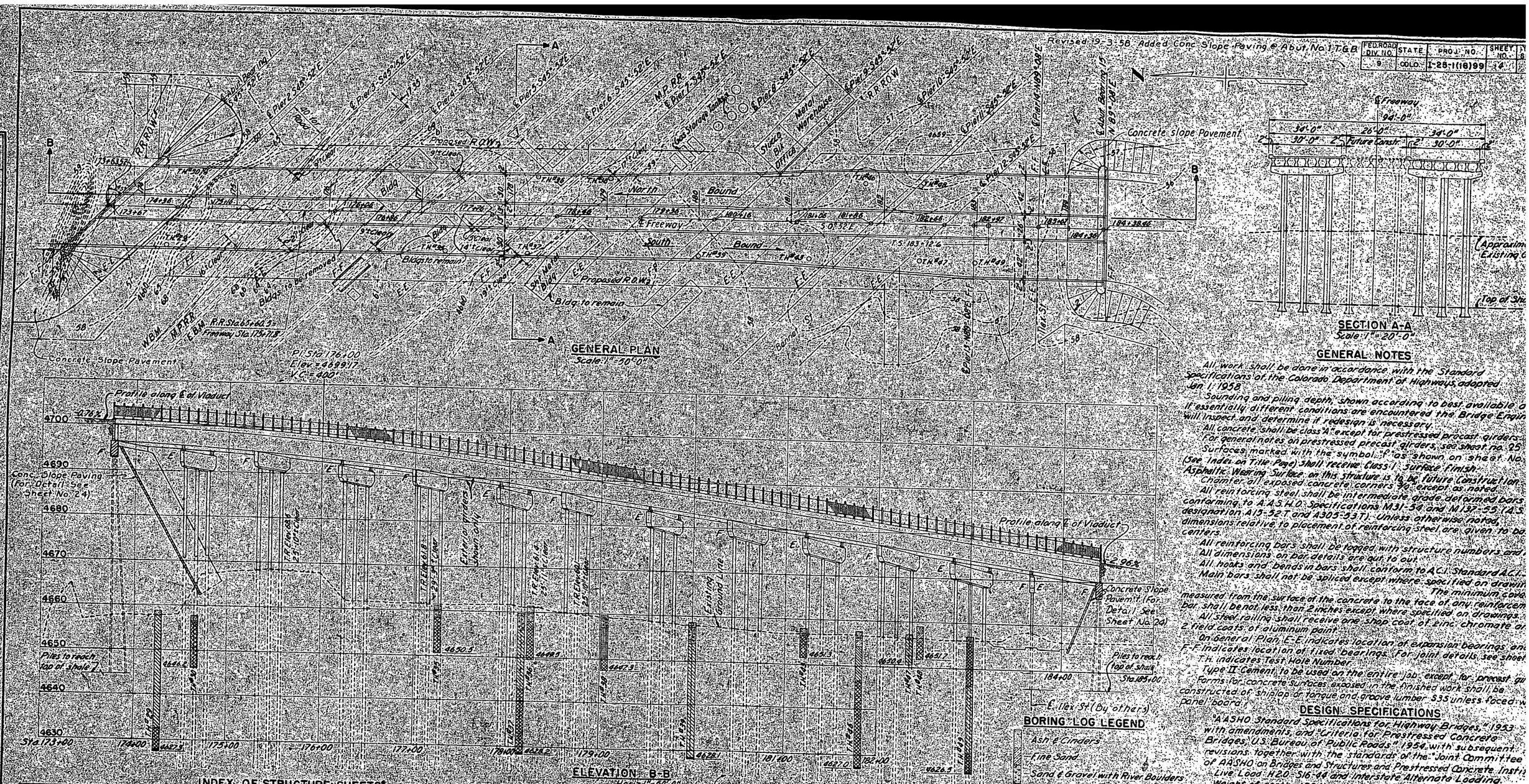
COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+
STRUCTURE NO. NB:-K-18-CK SB:-K-18-CL

SUMMARY OF QUANTITIES

A. J. RYAN AND ASSOCIATES

Revised 19-3-58 Added Conc. Slope Paving @ Abut. No. 1 T.G.B.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	2.4



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways, adopted Jan. 1, 1958.

Sounding and piling depth, shown according to best available d
If essentially different conditions are encountered the Bridge Engin
will inspect and determine if redesign is necessary.

All concrete shall be class "A" except for prestressed precast girders.

For general notes on prestressed precast girders, see sheet no. 25

Surfaces marked with the symbol "F" as shown on sheet No.
(See Index on Title Page) shall receive Class "1" surface finish.

Asphaltic Wearing Surface on this structure is to be future construction.

Chamfer all exposed concrete corners 3/4" except as noted.

All reinforcing steel shall be intermediate grade, deformed bars conforming to A.A.S.H.O. Specifications M31-54 and M32-55, (A.S. designation A15-52T and A305-53T). Unless otherwise noted, dimensions relative to placement of reinforcing steel are given to be centers.

All reinforcing bars shall be tagged with structure numbers and

All dimensions on bar details are out to out.

All hooks and bends in bars shall conform to A.C.I. Standard A.C.I.

Main bars shall not be spliced except where specified on drawin

The minimum cove measured from the surface of the concrete to the face of any reinforcing bar shall be not less than 2 inches except where specified on drawings.

All steel railing shall receive one shop coat of zinc chromate a 2 field coats of aluminum paint.

On General Plan, E-E indicates location of expansion bearings an F-F indicates location of fixed bearings. For joint details see sheet

T.H. indicates Test Hole Number.

Type II Cement to be used on the entire job except for precast gi

Forms for concrete surfaces exposed in the finished work shall be constructed of shiplap or tongue and groove lumber S3S unless faced w panel board.

DESIGN SPECIFICATIONS

"AASHO Standard Specifications for Highway Bridges," 1953 with amendments, and "Criteria for Prestressed Concrete Bridges, U.S. Bureau of Public Roads," 1954, with subsequent revisions together with the standards of the "Joint Committee of AASHO on Bridges and Structures and Prestressed Concrete Insti

Live Load: H20-S16-44 and Interstate Alternate Loading.

Weight of earth: 120 lbs. per cu. ft.

Equivalent fluid pressure: 30 lbs. per cu. ft.

Max. basic load per pile (concrete in 12 3/4" O.D. pipe): 46 Tons.

Revised Nov. 3-28-58

INDEX OF STRUCTURE SHEETS*

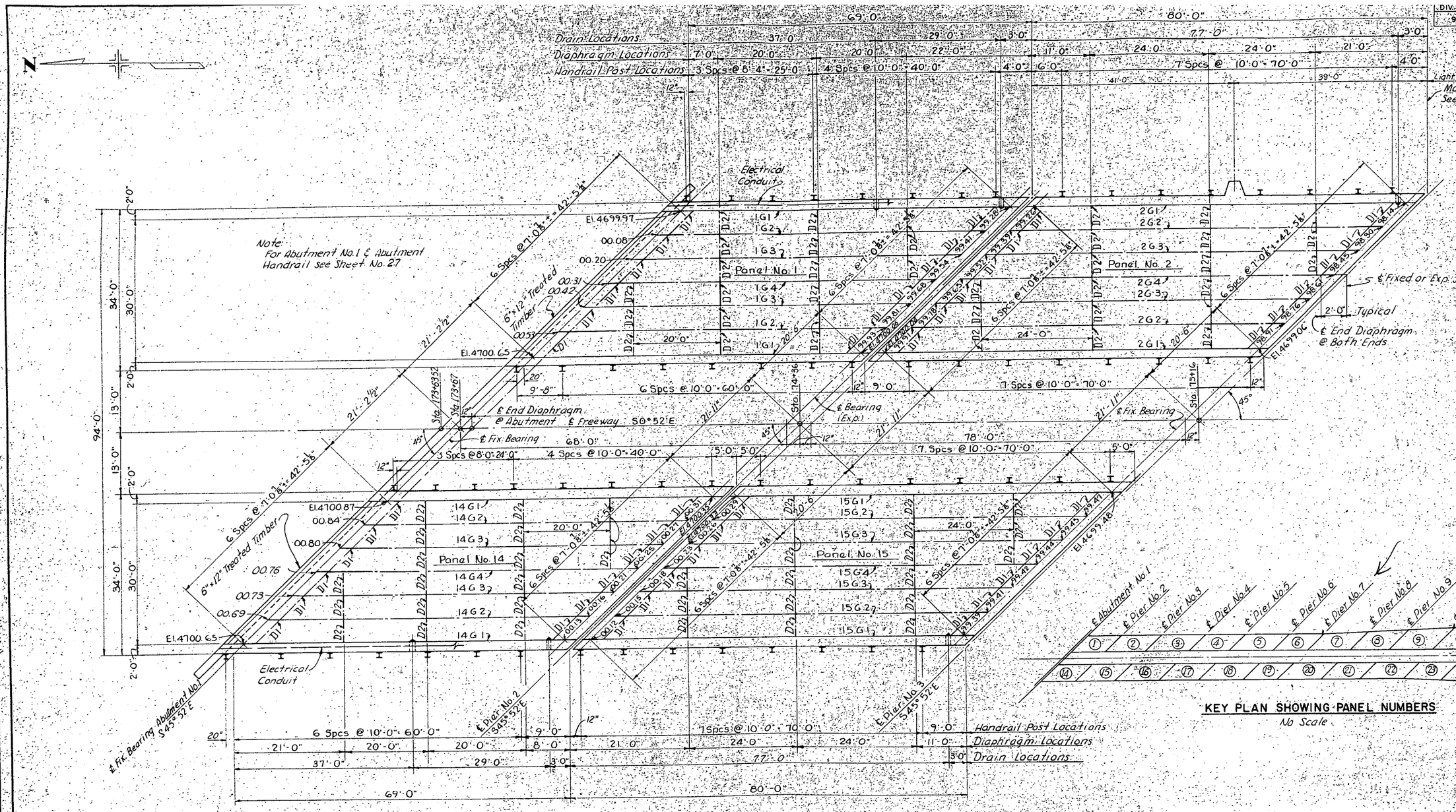
Structure Sheet No.	PLAN TITLE	Sheet No.	PLAN TITLE	Sheet No.	PLAN TITLE
1	General Plan	13	Deck Reinf. Panel No. 7	23b	Bent Bars Panels No. 23 & No. 24
1a	Summary of Quantities	14	Deck Reinf. Panel No. 8	23d	Bent Bars Panels No. 9 & No. 25
2	Framing Plan & Deck Layout from Abutment No. 1 to Pier No. 5	15	Deck Reinf. Panel No. 9	23e	Bent Bars Panels No. 8 & No. 22 and Precast Girders
3	Framing Plan & Deck Layout from Pier No. 5 to No. 9	16	Deck Reinf. Panel No. 23	24	Miscellaneous Details
4	Framing Plan & Deck Layout from Pier No. 9 to No. 13	17	Deck Reinf. Panel No. 24	25	Girder Details
5	Framing Plan & Deck Layout from Pier No. 13 to No. 17	18	Deck Reinf. Panel No. 25	26	Interior & Exterior Diaphragm Details
6	Framing Plan & Deck Layout from Pier No. 17 to Abutment No. 15	19	Deck Reinf. Panel No. 12	27	Abutment No. 1
7	Deck Reinforcement Panels 1, 14 & 19	20	Deck Reinf. Panel No. 6	28	Abutment No. 15
8	Deck Reinf. Panels 2, 4, 15, 17 & 21	21	Deck Reinf. Panel No. 22	29	Piers No. 2E to 7E & 2W to 10W
9	Deck Reinf. Panels 3, 5, 16, 18 & 20	22a	Straight Bars	30	Piers 8E & 11W
10	Deck Reinf. Panels 13, 26 & 27	22b	Straight Bars	31	Piers 9E & 12W
11	Deck Reinf. Panels 10 & 11	23a	Bent Bars Panels 1 thru 5	32	Piers 10E, 1E, & 12E
12		23b	Bent Bars Panels No. 7 & No. 8	33	Piers 2 & 3

*All references to sheet numbers on the structure drawings are to structure sheet numbers shown on the index of structure sheets.

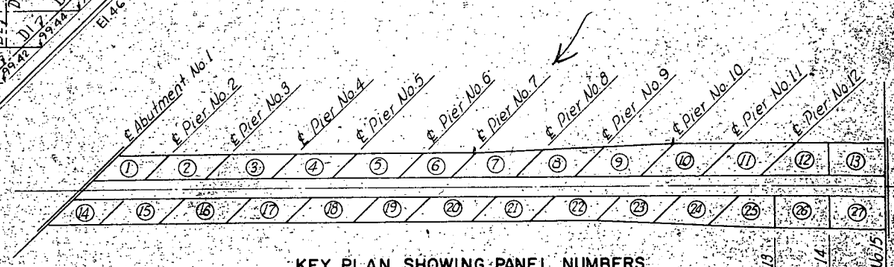
COLORADO DEPARTMENT OF HIGHWAYS	
PUEBLO FREEWAY	PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52, TO STA. 184+	
STRUCTURE NO. - N.B. K-18-C.K. / S.B. K-18-C.L. Viaduct	
GENERAL PLAN	
A. J. RYAN AND ASSOCIATES ENGINEERS	

DRAWN	J.T.A.	CHECKED BY	W.H.W.
DETAILED BY		CHECKED BY	E.F.
TRACING		CHECKED BY	H.T.H.

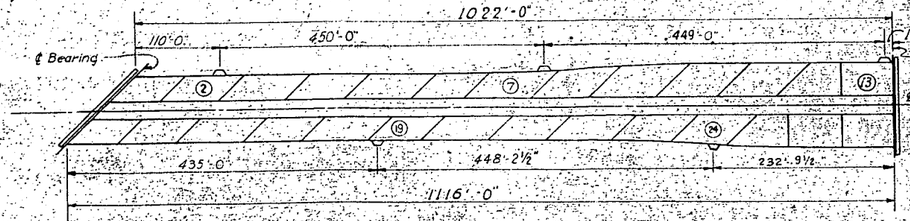
DIV. NO.			NO.	SHE
9	COLO.	I-25-1(16)99	5	



FRAMING PLAN & DECK LAYOUT
FROM ABUTMENT NO. 1 TO PIER NO. 3
Scale: 1" = 10'-0"



KEY PLAN SHOWING PANEL NUMBERS
No Scale



KEY PLAN SHOWING LOCATION OF LIGHT STANDARDS
SEE SHEET NO. 11 FOR LIGHTING DETAILS
No Scale

DESIGN	CHECKED BY	R.S.	
	MADE BY	E.W.D.	
DETAILS	CHECKED BY	W.H.W.	
	MADE BY	L.W.D.-A.C.P.	
TRACING	CHECKED BY	H.F.H.	

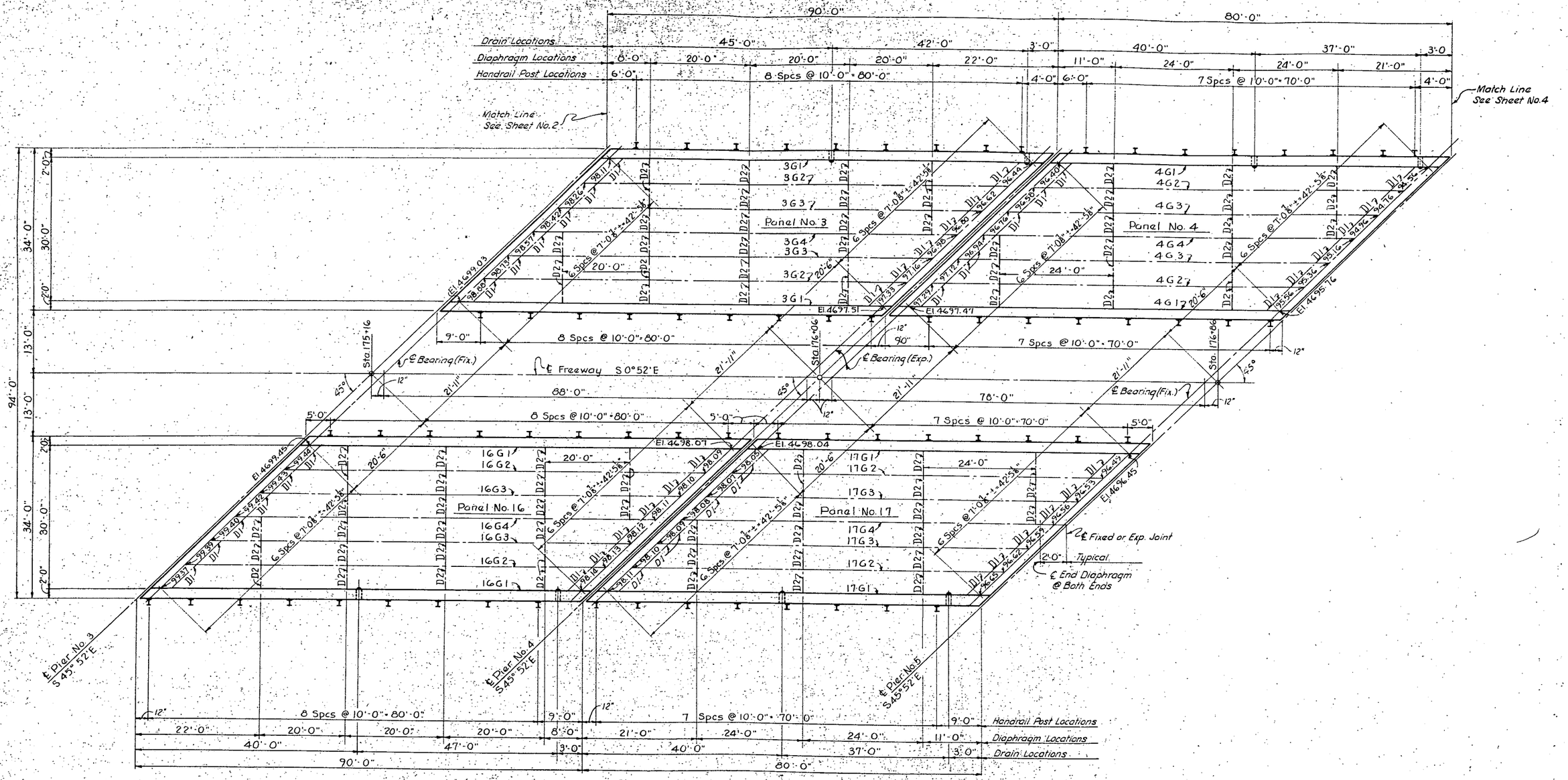
COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+
STRUCTURE NO. — 1 N.B. K-18-C.K.
S.B. K-18-C.L.

FRAMING PLAN & DECK LAYOUT
FROM ABUTMENT NO. 1 TO PIER NO.

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DATE | SHEET 2 OF | DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	6



FRAMING PLAN & DECK LAYOUT
PIER NO. 3 TO PIER NO. 5
Scale 1" = 10'-0"

CHECKED BY	R.B.T.
MADE BY	L.N.D.
CHECKED BY	W.H.H.
MADE BY	R.C.P.
CHECKED BY	H.F.H.

DETAILS

TRACING

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 – STA. 173+63.52 TO STA. 184+
STRUCTURE NO. – N.B.: K-18-CK
S.B.: K-18-CL

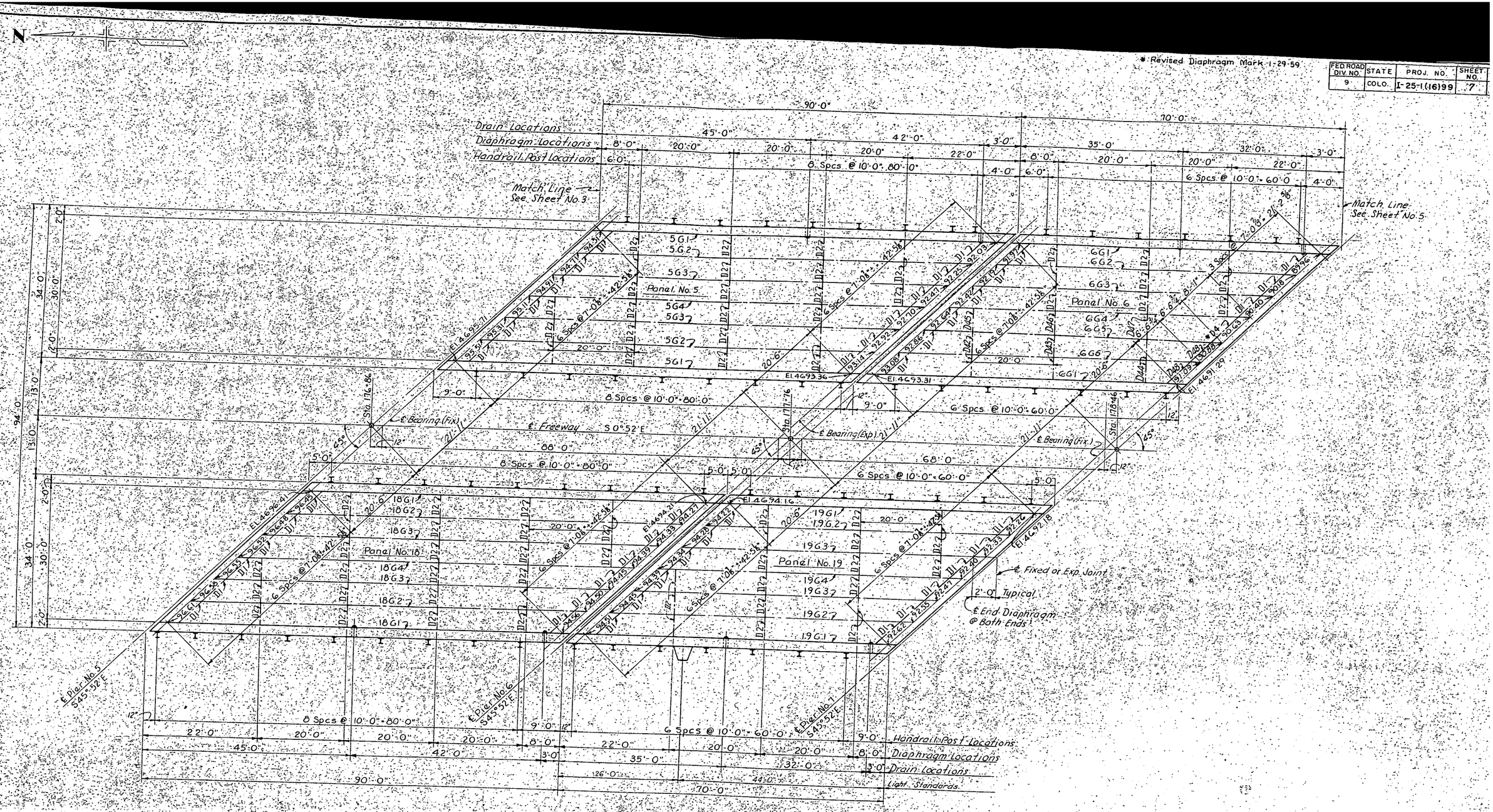
FRAMING PLAN & DECK LAYOUT
FROM PIER NO. 3 TO NO. 5

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	7

* Revised Diaphragm Mark 1-29-59



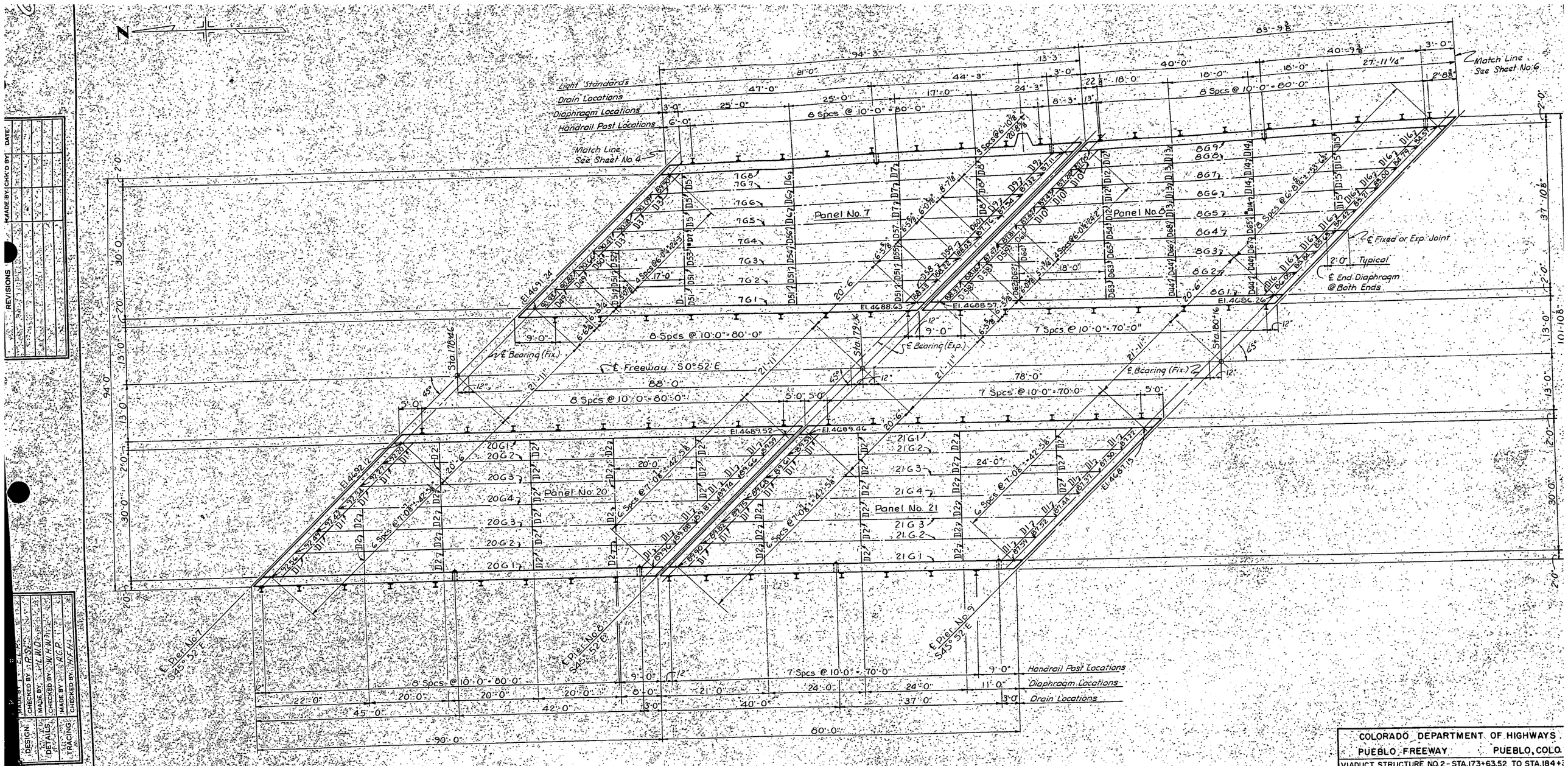
FRAMING PLAN & DECK LAYOUT
PIER NO. 5 TO PIER NO. 7
Scale: 1" = 10'-0"

REVISIONS	MADE BY	CHK'D BY	DATE

DESIGN	MADE BY	E.L.P.
	CHECKED BY	R.S.
DETAILS	MADE BY	L.W.D.
	CHECKED BY	W.H.W.
TRACING	MADE BY	A.C.P.
	CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.
STRUCTURE NO.— N.B.: K-18-CK; S.B.: K-18-CL

FRAMING PLAN & DECK LAYOUT FROM PIER NO. 5 TO NO. 7



FRAMING PLAN & DECK LAYOUT
PIER NO. 7 TO PIER NO. 9
Scale: 1" = 10'-0"

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+3
STRUCTURE NO. — N B: K-18-CK
S B: K-18-CL

FRAMING PLAN & DECK LAYOUT
FROM PIER NO. 7 TO NO. 9

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

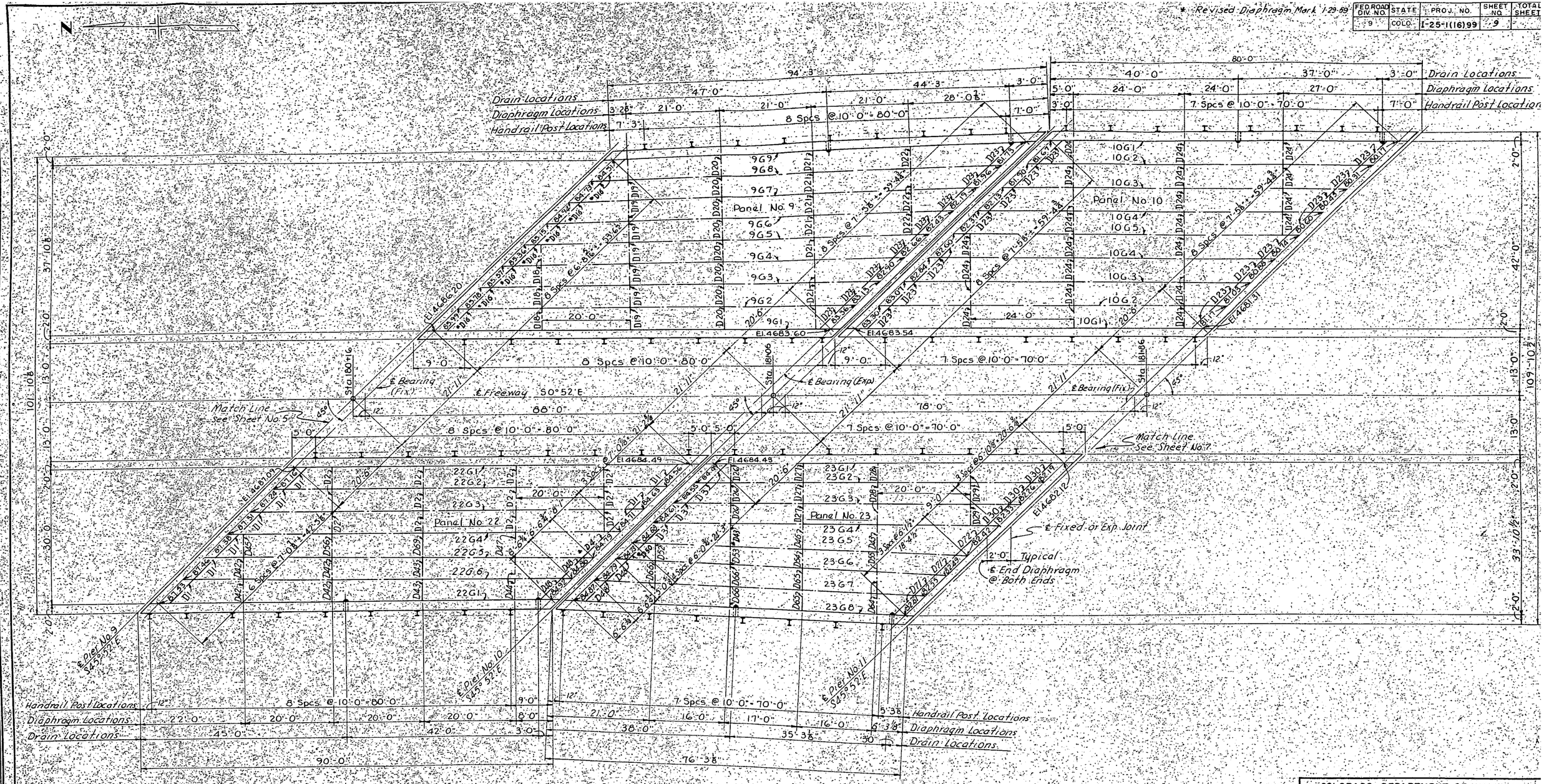
DATE SHEET 5 OF DWG. NO.

REVISIONS MADE BY CHK'D BY DATE

DESIGN MADE BY E.L.P. CHECKED BY R.S.
DETAILS MADE BY L.W.D. CHECKED BY W.H.W.
TRACING MADE BY A.C.P. CHECKED BY H.F.H.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	9	

* Revised Diaphragm Mark 1-29-59



FRAMING PLAN & DECK LAYOUT
PIER NO. 9 TO PIER NO. 11
Scale 1" = 10'-0"

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.
STRUCTURE NO. - N.B. K-18-CK
S.B. K-18-CL
FRAMING PLAN & DECK LAYOUT
FROM PIER NO. 9 TO NO. 11

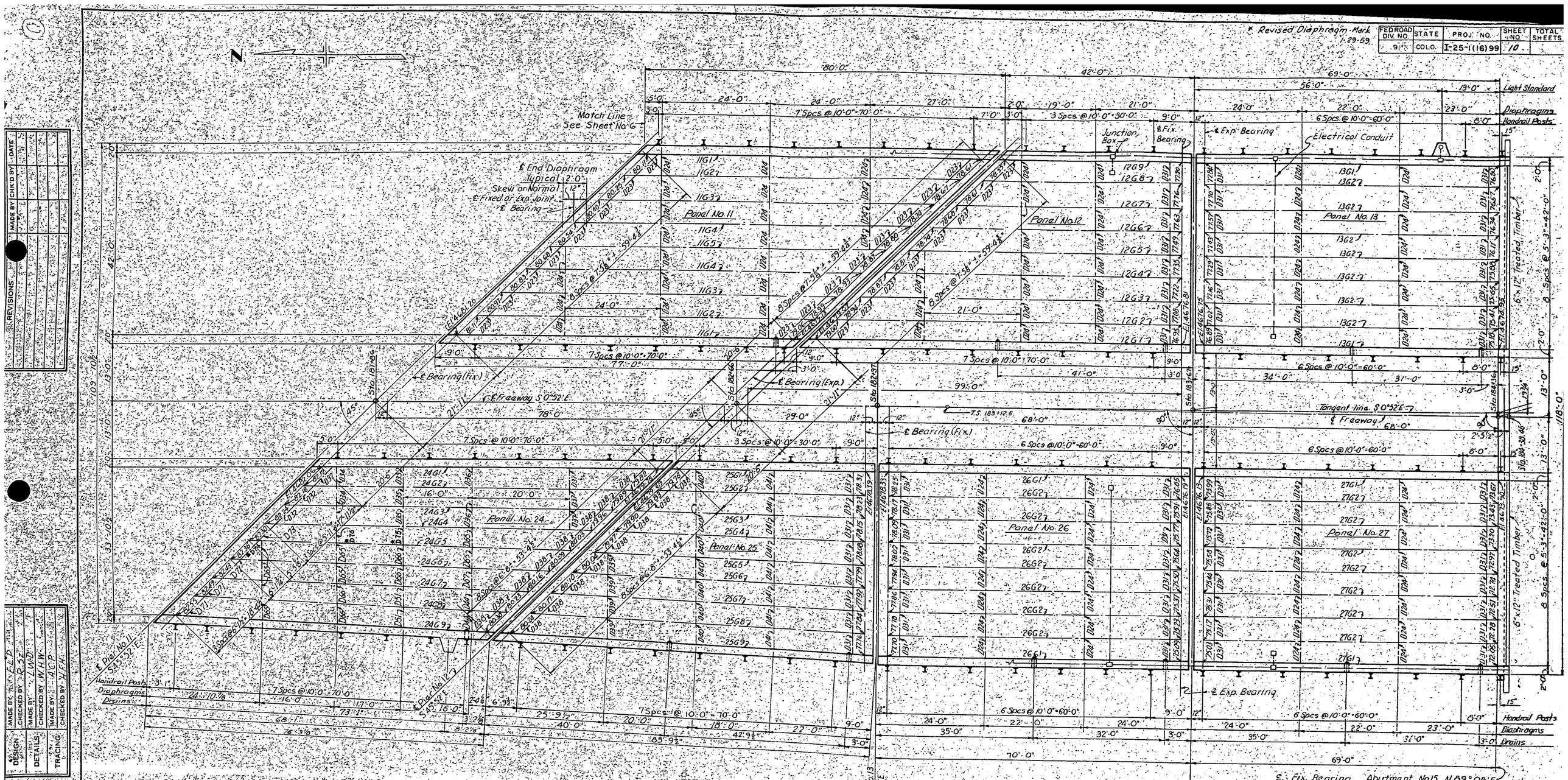
ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DATE SHEET 6 OF DWG. NO.

DESIGN	CHECKED BY	R.S.
DETAILS	MADE BY	L.W.D.
	CHECKED BY	W.H.W.
TRACING	MADE BY	A.C.P.
	CHECKED BY	H.F.H.

FEDROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
91	COLO.	I-25-1(16)99	10	

* Revised Diaphragm Mark 7-29-59



Note:
For Abutment No. 15 & Abutment Handrail, see Sheet No. 28.

FRAMING PLAN & DECK LAYOUT
PIER NO. 11 TO ABUTMENT NO. 15
Scale: 1" = 10'-0"

REVISIONS	MADE BY	CHK'D BY	DATE

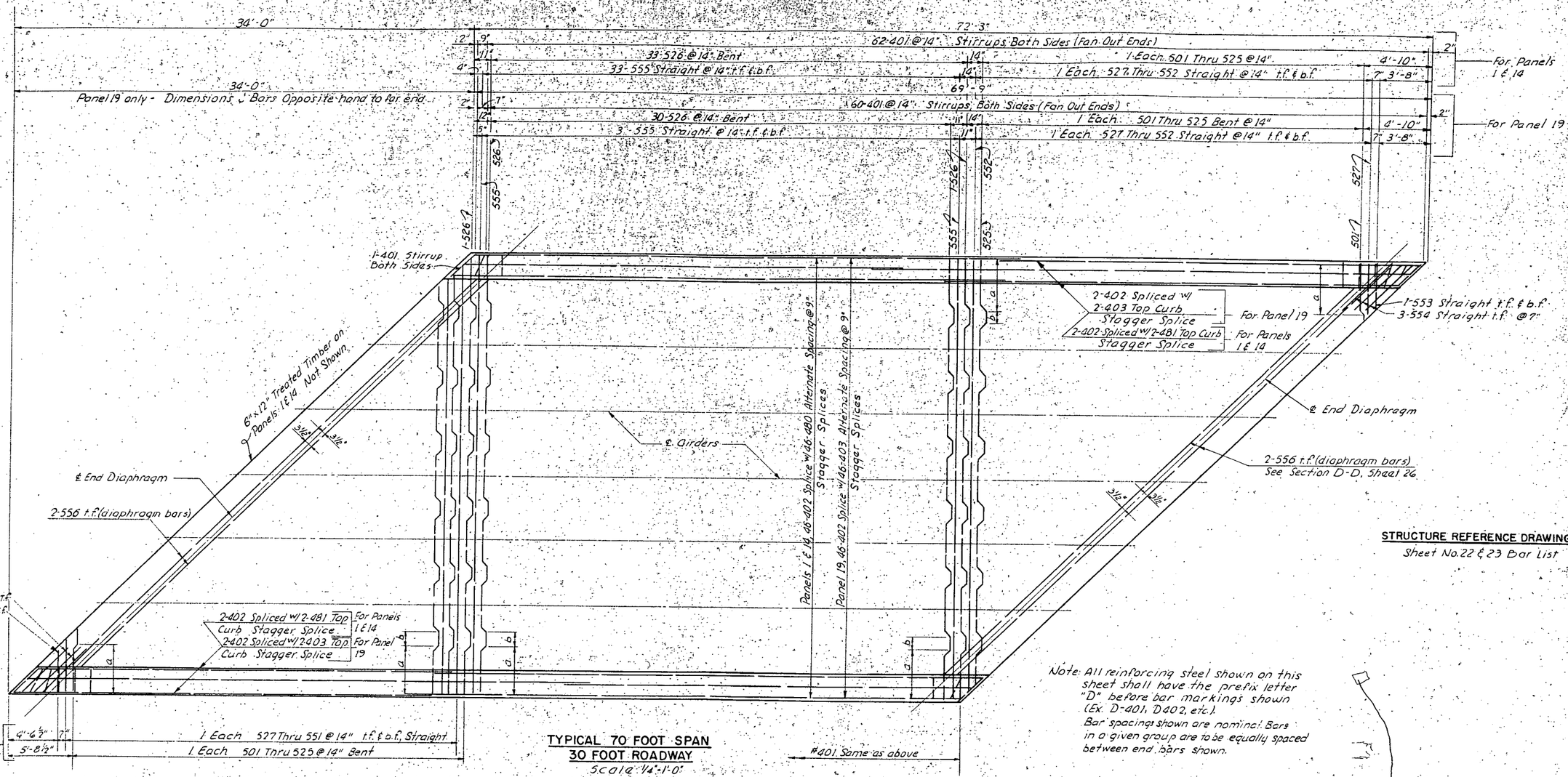
DESIGN	MADE BY: R.L.P.	CHECKED BY: R.S.Z.
DETAILS	MADE BY: L.W.D.	CHECKED BY: W.H.W.
TRACING	MADE BY: A.C.P.	CHECKED BY: W.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.46
STRUCTURE NO. — N.B.: - K-18-CK
S.B.: - K-18-CL

FRAMING PLAN & DECK LAYOUT
FROM PIER NO. 11 TO ABUTMENT NO. 15

ALFRED J. RYAN
CONSULTING ENGINEER

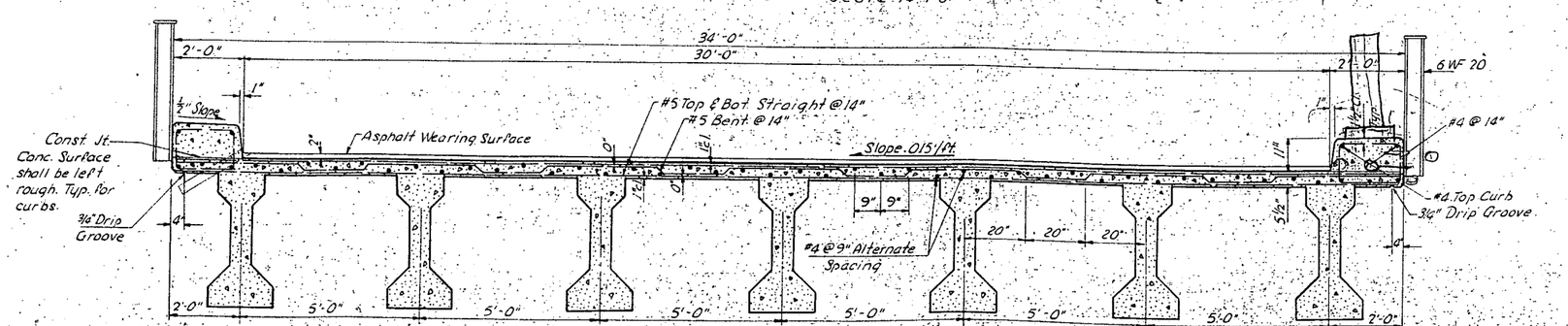
FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOT SHE
9	COLO.	I-25-1(16)99	11	



TYPICAL 70 FOOT SPAN
30 FOOT ROADWAY
Scale 1/4"=1'-0"

STRUCTURE REFERENCE DRAWINGS
Sheet No. 22 & 23 Bar List

Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown (Ex. D-401, D402, etc.).
Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.



TYPICAL SECTION - 30 FOOT ROADWAY
Scale 1/2"=1'-0"

DETAILS	MADE BY L.N.D.	CHECKED BY H.C.S.
TRACING	MADE BY A.C.P.	CHECKED BY H.F.H.

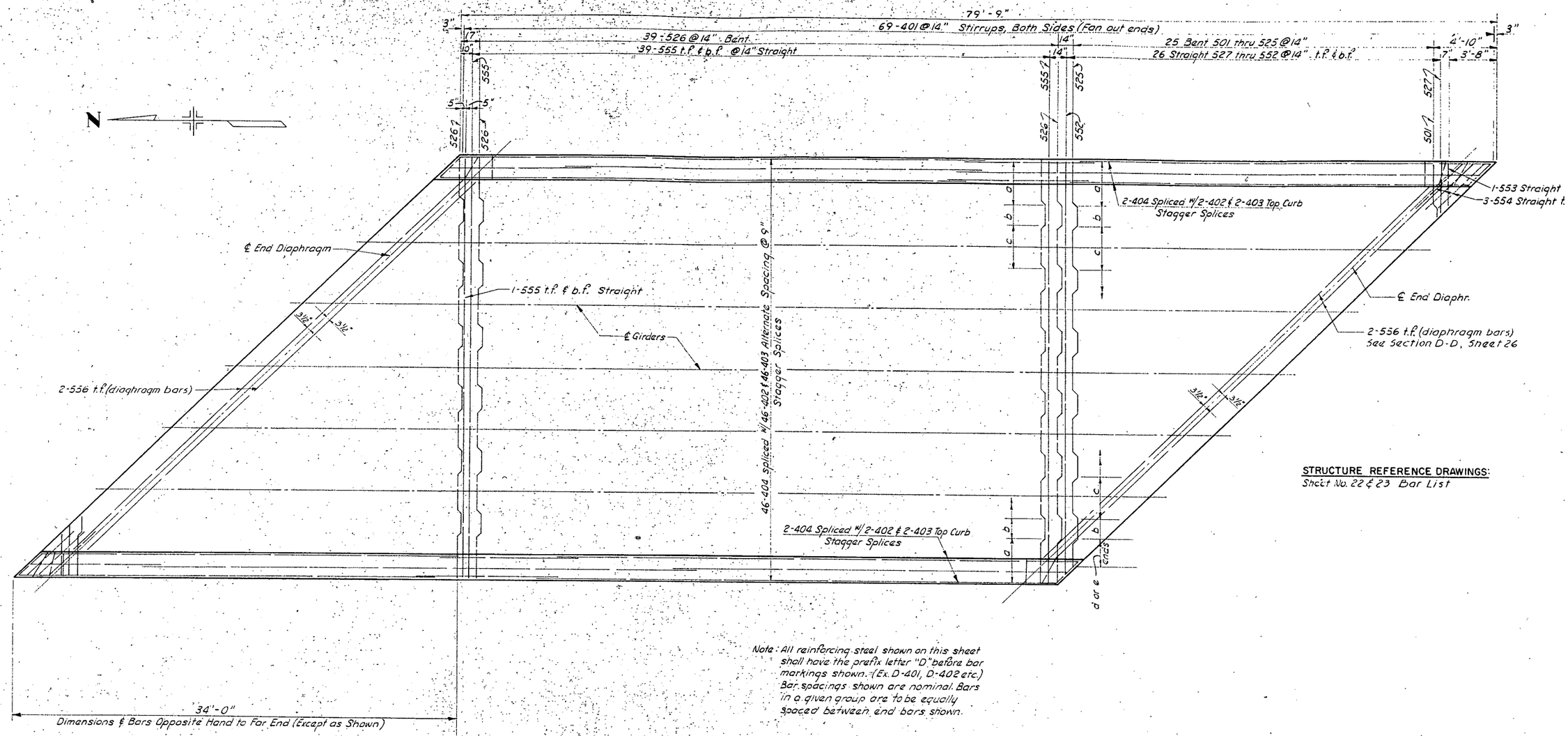
COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38
STRUCTURE NO. - N B: K-18-CK
S B: K-18-CL

DECK REINFORCEMENT
PANELS 1, 14 & 19

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	12



Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown. (Ex. D-401, D-402 etc.) Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

STRUCTURE REFERENCE DRAWINGS:
Sheet No. 22 & 23 Bar List

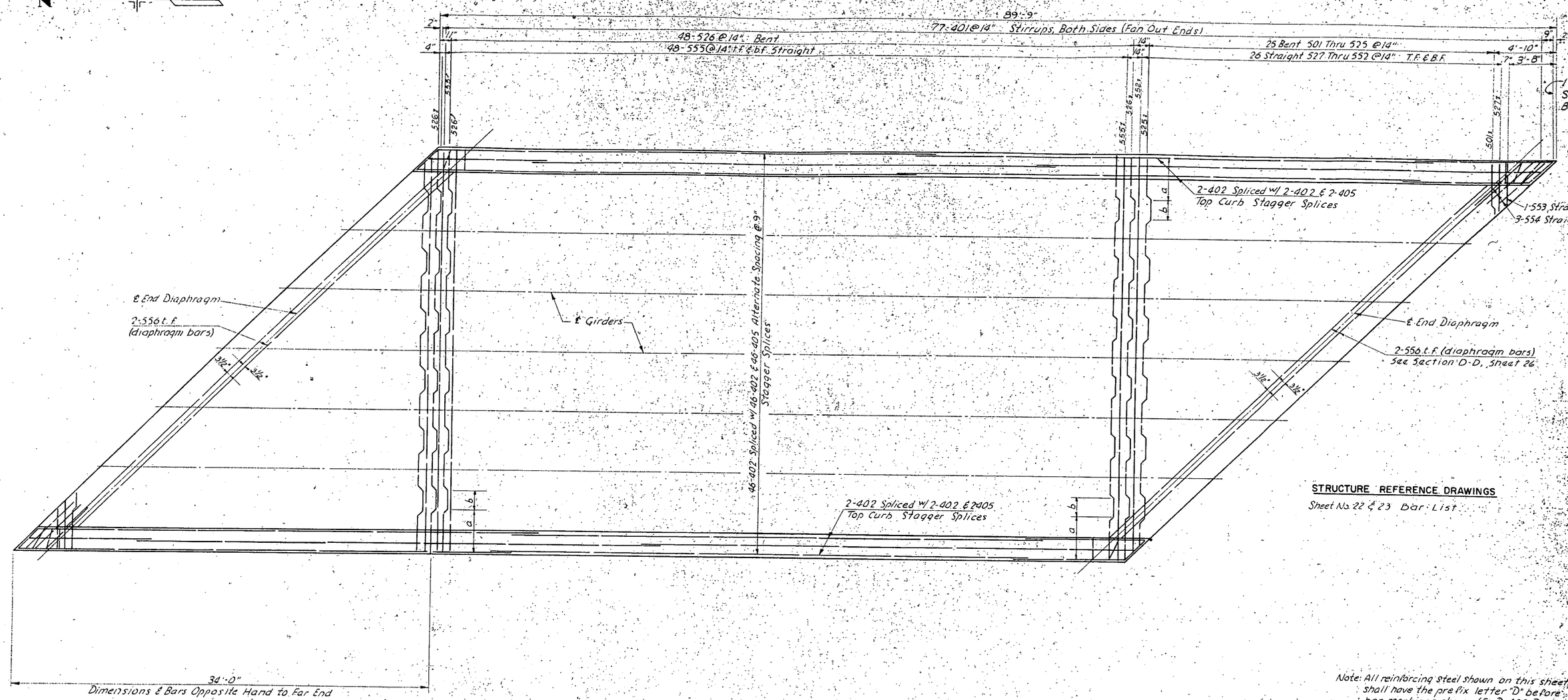
TYPICAL 80 FOOT SPAN
30 FOOT ROADWAY
Scale: 1/4" = 1'-0"
For Typical Cross Section See Sh. No. 8

DESIGN	CHECKED BY	R.S.
	MADE BY	L.W.D.
DETAILS	CHECKED BY	H.C.S.
	MADE BY	B.W.B.
TRACING	CHECKED BY	H.E.H.

COLORADO DEPARTMENT OF HIGHW
PUEBLO FREEWAY PUEBLO, CO
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA
STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL
DECK REINFORCEMENT PANEL
2, 4, 15, 17 & 21

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOT SHE
9	COLO.	I-25-1(16)99	19	



STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List

Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown. (Ex. D-402, D-405 etc.) Bar spacings shown are nominal. Bars in a given group to be equally spaced between end bars shown.

TYPICAL 90 FOOT SPAN

30 FOOT ROADWAY

Scale: 1/4" = 1'-0"

CHECKED BY	R.S.
MADE BY	E.K.D.
DETAILS CHECKED BY	H.C.S.
MADE BY	B.H. & A.C.R.
TRACING CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY PUEBLO, COLO.

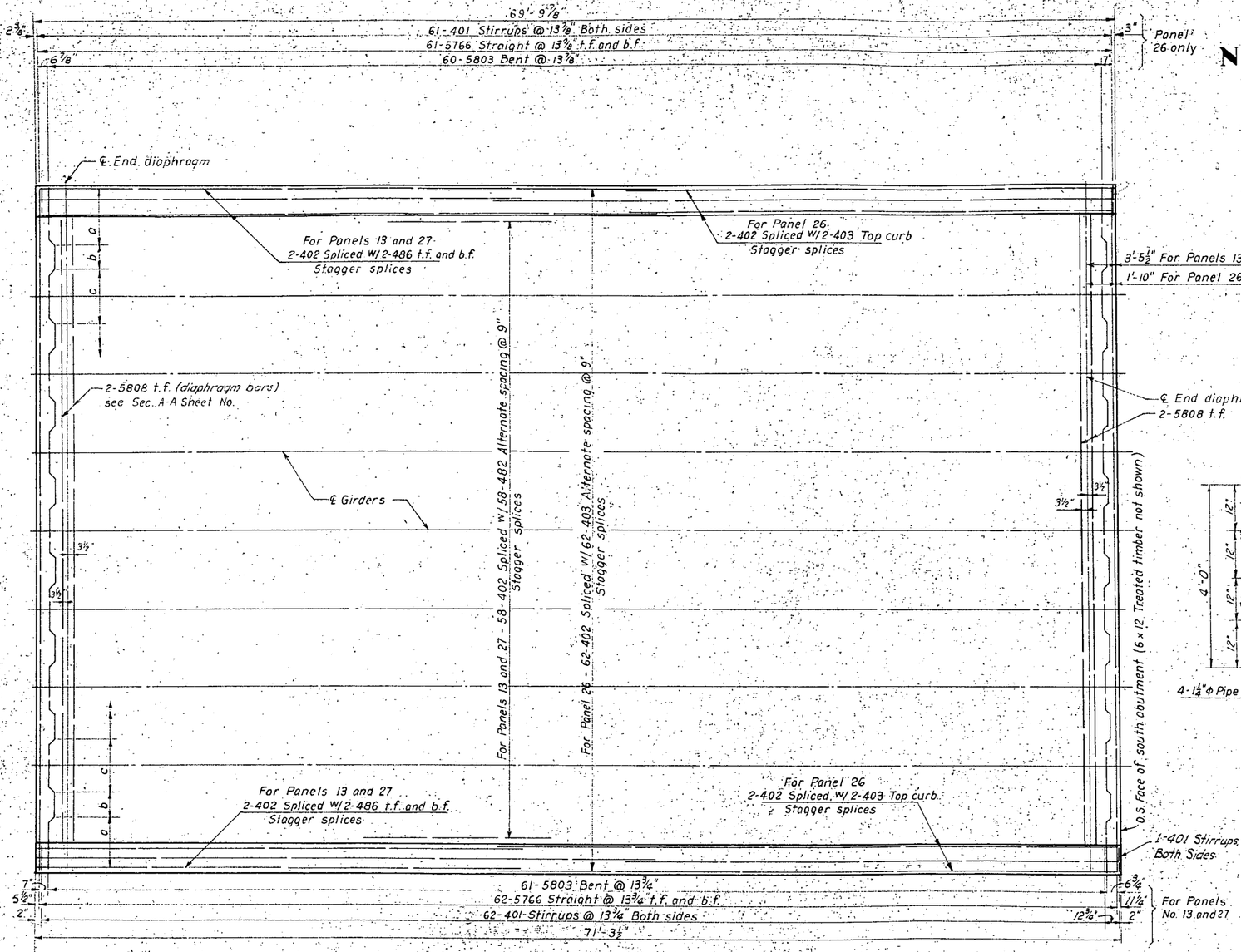
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38

STRUCTURE NO. - N.B. K-18-CK
S.B. K-18-CL

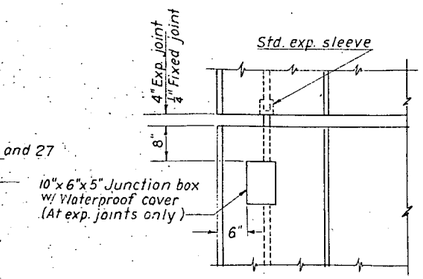
DECK REINFORCEMENT PANELS 3, 5, 16, 18, 20

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

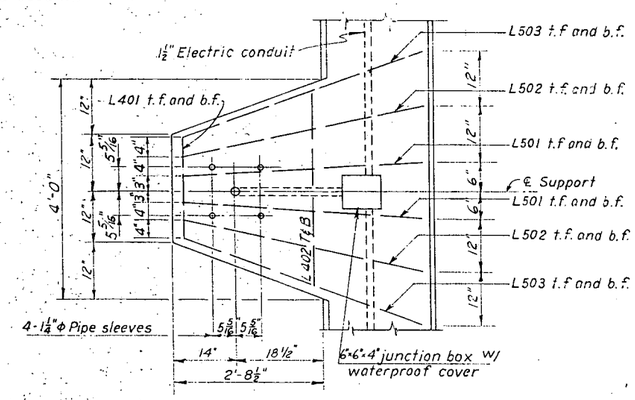
FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	14



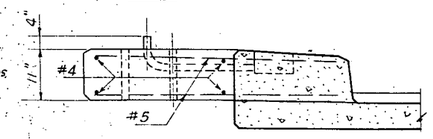
TYPICAL 70 FOOT SPAN
42 FOOT ROADWAY
Scale: 1/4" = 1'-0"



JUNCTION BOX AND EXP. SLEEVES



PLAN



SECTIONAL ELEVATION
LIGHTING STANDARD SUPPORT
AND EXPANSION DETAIL FOR CONDUIT

SUMMARY FOR ONE LIGHT STANDARD				
REINFORCING STEEL				
BAR	NO. REQ'D.	CUTTING LENGTH	TOTAL LENGTH	WT.
L401	2	1'-10"	3'-8"	2.45
L402	2	3'-6"	7'-0"	4.67
L501	4	4'-5"	17'-8"	18.43
L502	4	4'-6"	18'-0"	18.77
L503	4	4'-8"	18'-8"	19.47
Total reinforcing steel				64 lbs.
CONCRETE				
Total concrete for one support				.279 Cu.Yds.
5 Req'd Thus				

STRUCTURE REFERENCE DRAWINGS
Sheet No. 22 & 23 Bar List

Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown. (Ex. D-401, D-402, DL 503) Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

DESIGN	CHECKED BY R.S.
DETAILS	MADE BY L.N.D.
	CHECKED BY H.C.S.
TRACING	MADE BY B.W.B.-L.W.M.
	CHECKED BY H.F.H.

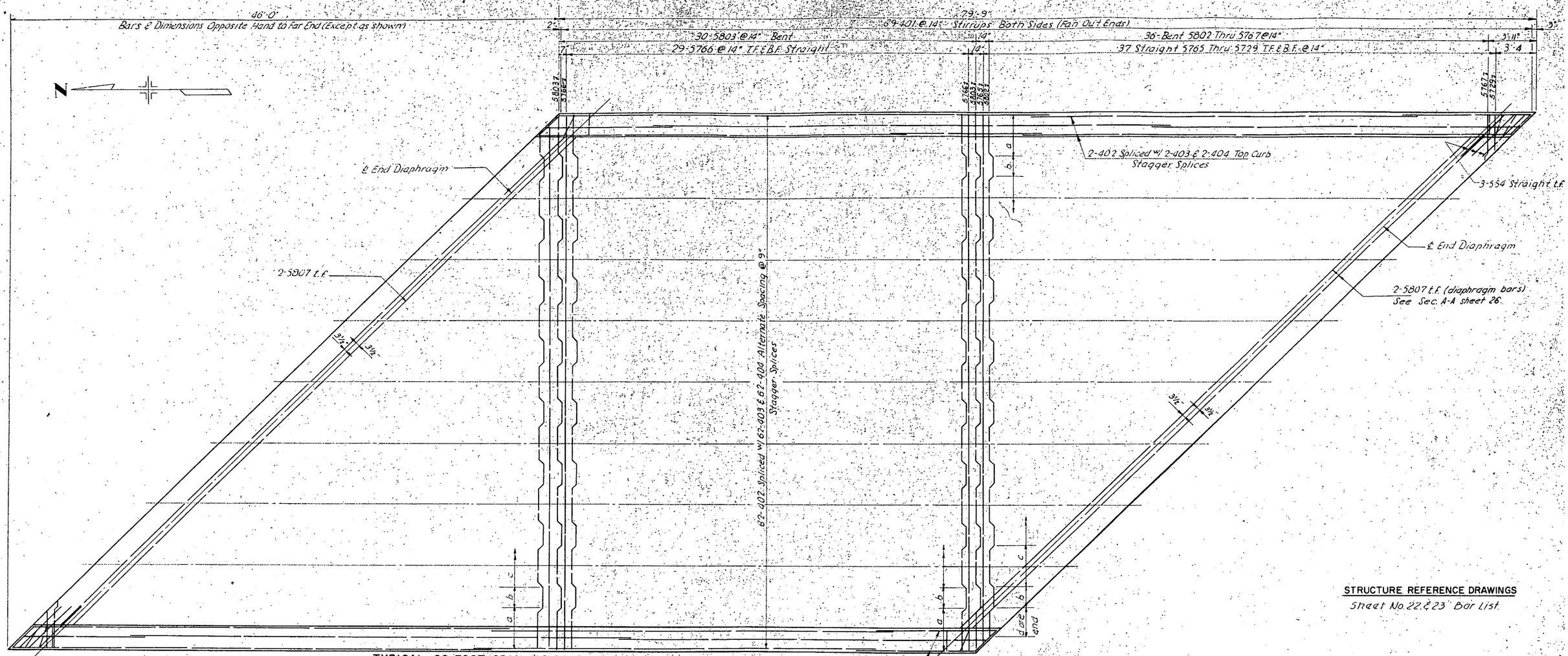
COLORADO DEPARTMENT OF HIGHWAY
PUEBLO FREEWAY PUEBLO, COL
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 18
STRUCTURE NO. — N B: K-18-CK
S B: K-18-CL

DECK REINFORCEMENT PANELS 13,26

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

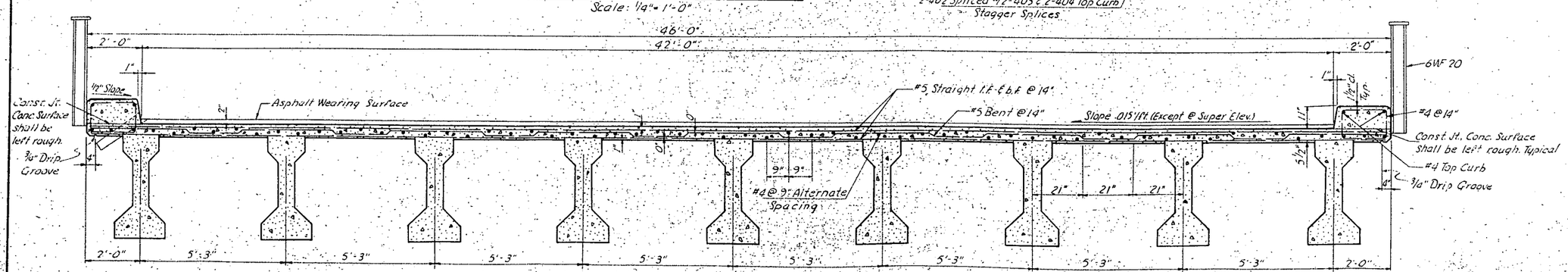
DATE SHEET 11 OF DWG.

FED ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	15	



TYPICAL 80 FOOT SPAN-42 FOOT ROADWAY

Scale: 1/4" = 1'-0"



TYPICAL SECTION-42 FOOT ROADWAY

Scale: 1/2" = 1'-0"

STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List

Note: Bar spacings shown are nominal. Bars in a given group to be equally spaced between end bars shown. All reinforcing shown on this sheet shall have the prefix letter "D" before bar mark (shown (Ex. D401, D-5802 etc.)

DETAILS:	MADE BY LWD	CHECKED BY A.C.S.
TRACING	MADE BY BW & A.C.P.	CHECKED BY J.F.H.

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.

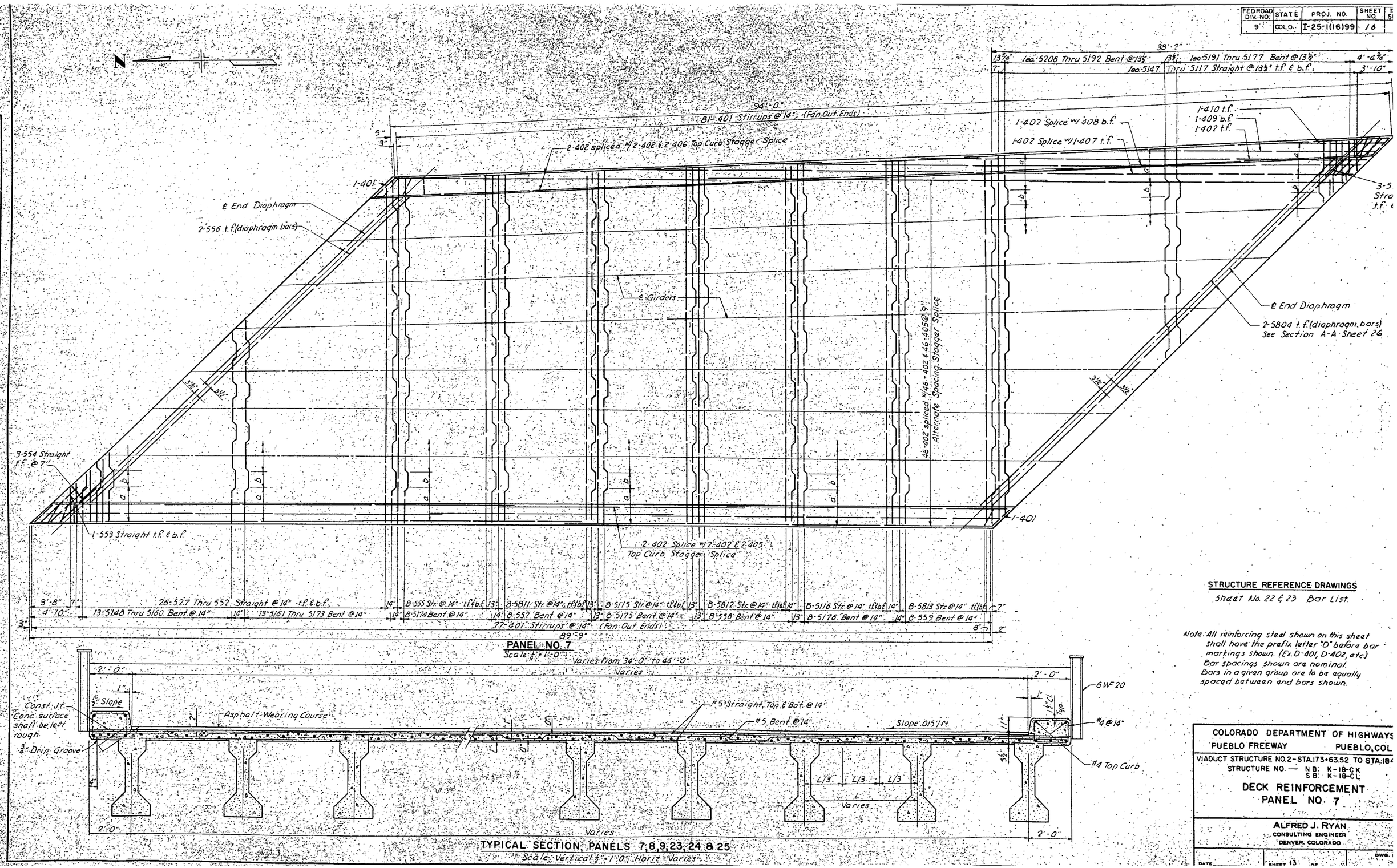
STRUCTURE NO.— N.B. K-18-CK S.B. K-18-CL

DECK REINFORCEMENT PANELS 10 & 11

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DATE | SHEET 12 OF | DWG. NO.

FED.ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	S
9	COLO.	I-25-1(16)99	16	



STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List.

Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown. (Ex. D-401, D-402, etc.) Bar spacings shown are nominal. Bars in a given group are to be equally spaced between and bars shown.

MADE BY: L.W.D.	
CHECKED BY: W.R.W.	
DETAILS	
MADE BY: A.C.D.	
CHECKED BY: H.F.H.	
TRACING	

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY PUEBLO, COL.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184

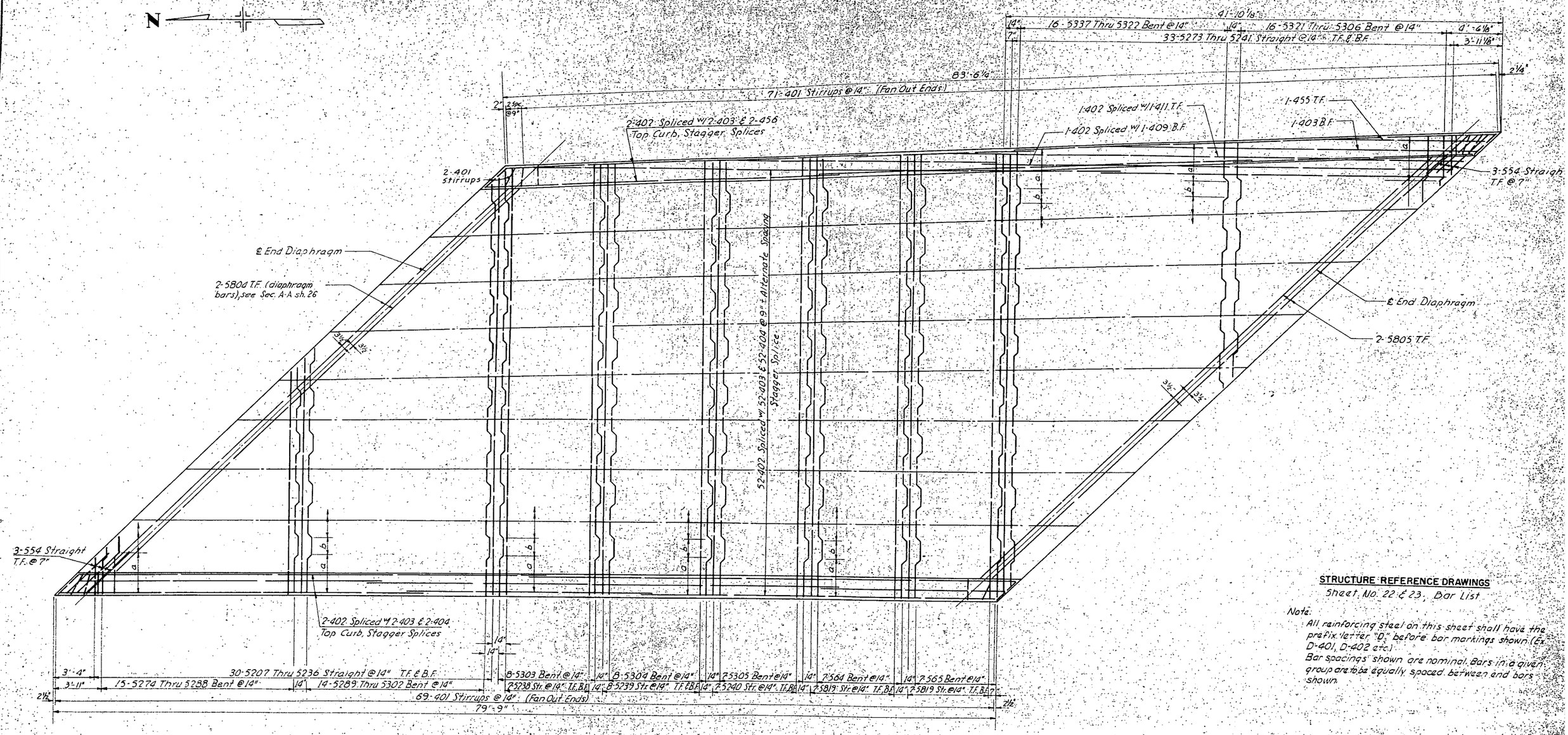
STRUCTURE NO. — N.B.: K-18-CK S.B.: K-18-CL

DECK REINFORCEMENT PANEL NO. 7

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DATE | SHEET 13 OF | DWG.

FED.ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	17	



DECK REINFORCEMENT
PANEL NO. 8
Scale 1/4" = 1'-0"

STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23, Bar List

Note:

All reinforcing steel on this sheet shall have the prefix letter "D" before bar markings shown (Ex. D-401, D-402 etc.)

Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

DETAILS	
CHECKED BY	W.H.W.
MADE BY	A.C.P.
TRACING	
CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.

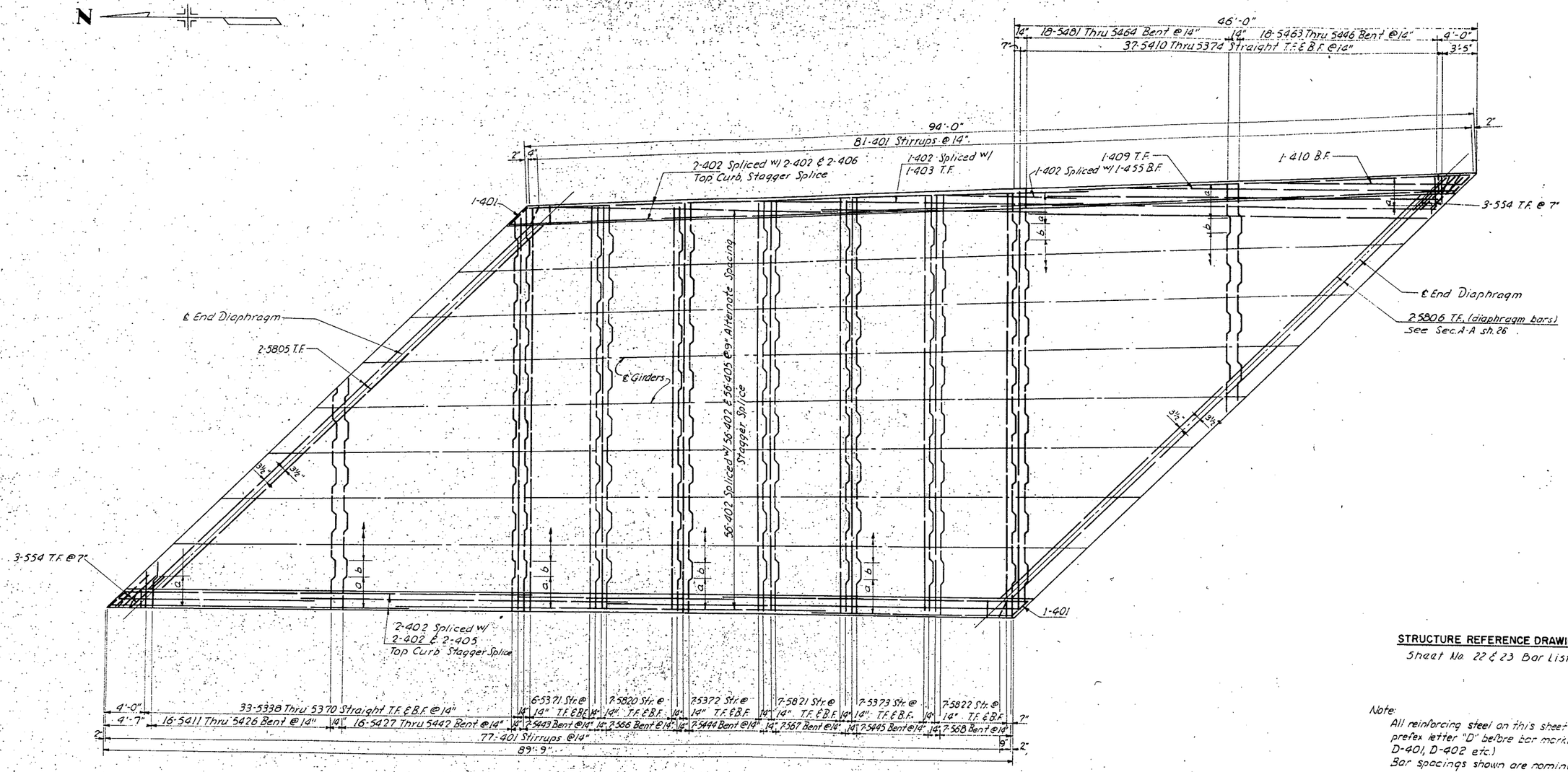
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.46
STRUCTURE NO. — N.B. K-18-CK
S.B. K-18-CL

DECK REINFORCEMENT
PANEL NO. 8

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOT SHE
9	COLO.	I-25-1(16)99	18	



DECK REINFORCEMENT
PANEL NO. 9
Scale: 3/16" = 1'-0"

STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List

Note:
All reinforcing steel on this sheet shall have the prefix letter "D" before bar markings shown. (Ex. D-401, D-402 etc.)
Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

CHECKED BY	R.S.
MADE BY	L.W.D.
CHECKED BY	W.H.W.
MADE BY	A.C.P.
CHECKED BY	A.F.R.
DETAILS	
TRACING	

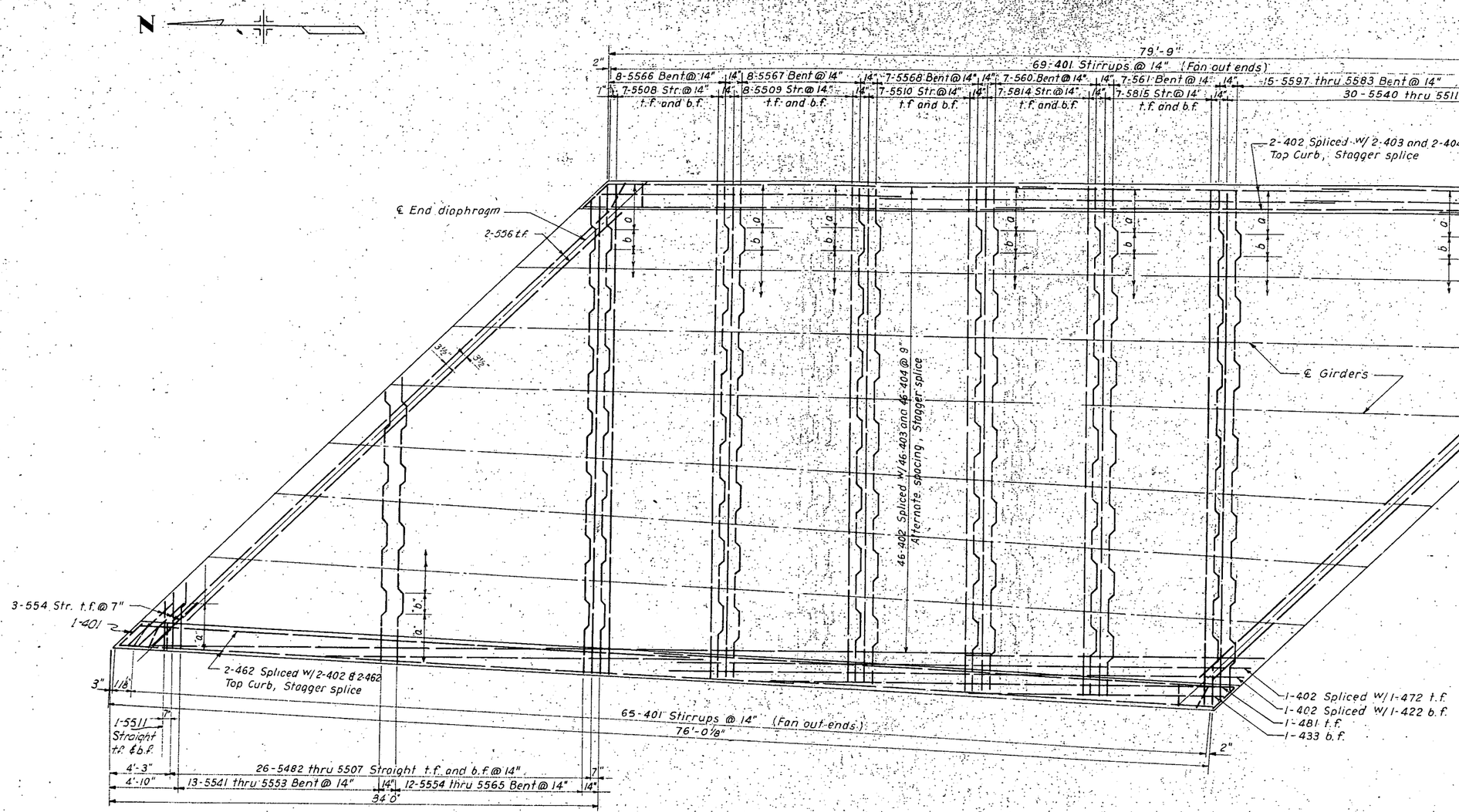
COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2-STA. 173+63.52 TO STA. 184+38.
STRUCTURE NO. — N.B. K-18-CK, S.B. K-18-CL

DECK REINFORCEMENT
PANEL NO. 9

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TO SHE
9	COLO.	I-25-1(16)99	19	



STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List.

Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown (Ex. D-401, D-5508 etc.) Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

DECK REINFORCEMENT
PANEL NO. 23
Scale: 1/4" = 1'-0"

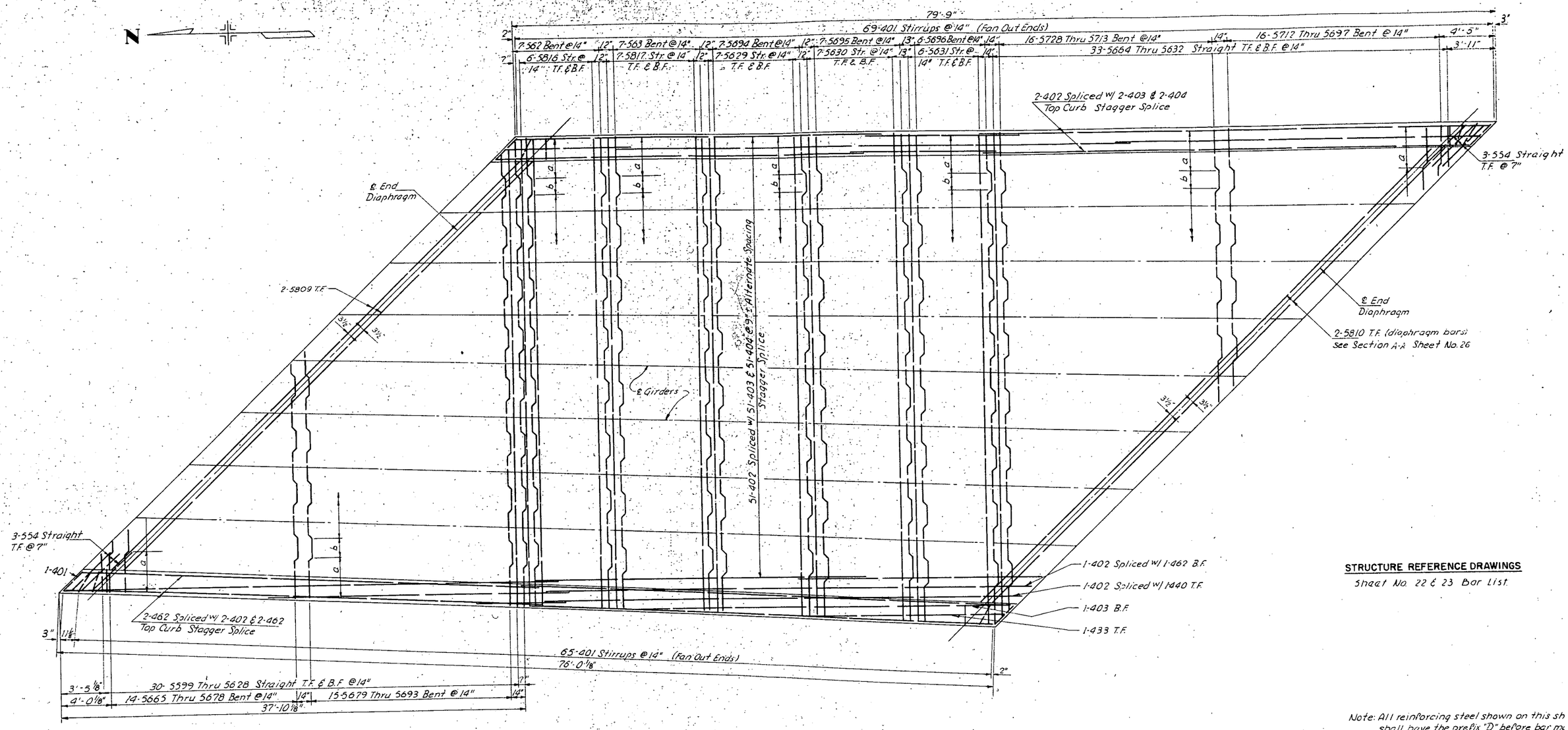
DETAILS	MADE BY	L.W.D.
	CHECKED BY	W.H.W.
TRACING	MADE BY	L.W.M.
	CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.
STRUCTURE NO. - N.B. K-18-CK
S.B. K-18-CL

DECK REINFORCEMENT
PANEL NO. 23

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO



STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List.

Note: All reinforcing steel shown on this sh
shall have the prefix "D" before bar ma
shown. (Ex. D-401, D-5809 etc.)
Bar spacings shown are nominal. Bars i
given group are to be equally spaced be
end bars shown.

DECK REINFORCEMENT
PANEL NO. 24

Scale: 1/4" = 1'-0"

DESIGN	MADE BY	E.L.P.
	CHECKED BY	R.S.Z.
DETAILS	MADE BY	L.W.D.
	CHECKED BY	W.H.W.
TRACING	MADE BY	A.C.P.
	CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWA
PUEBLO FREEWAY PUEBLO, CO

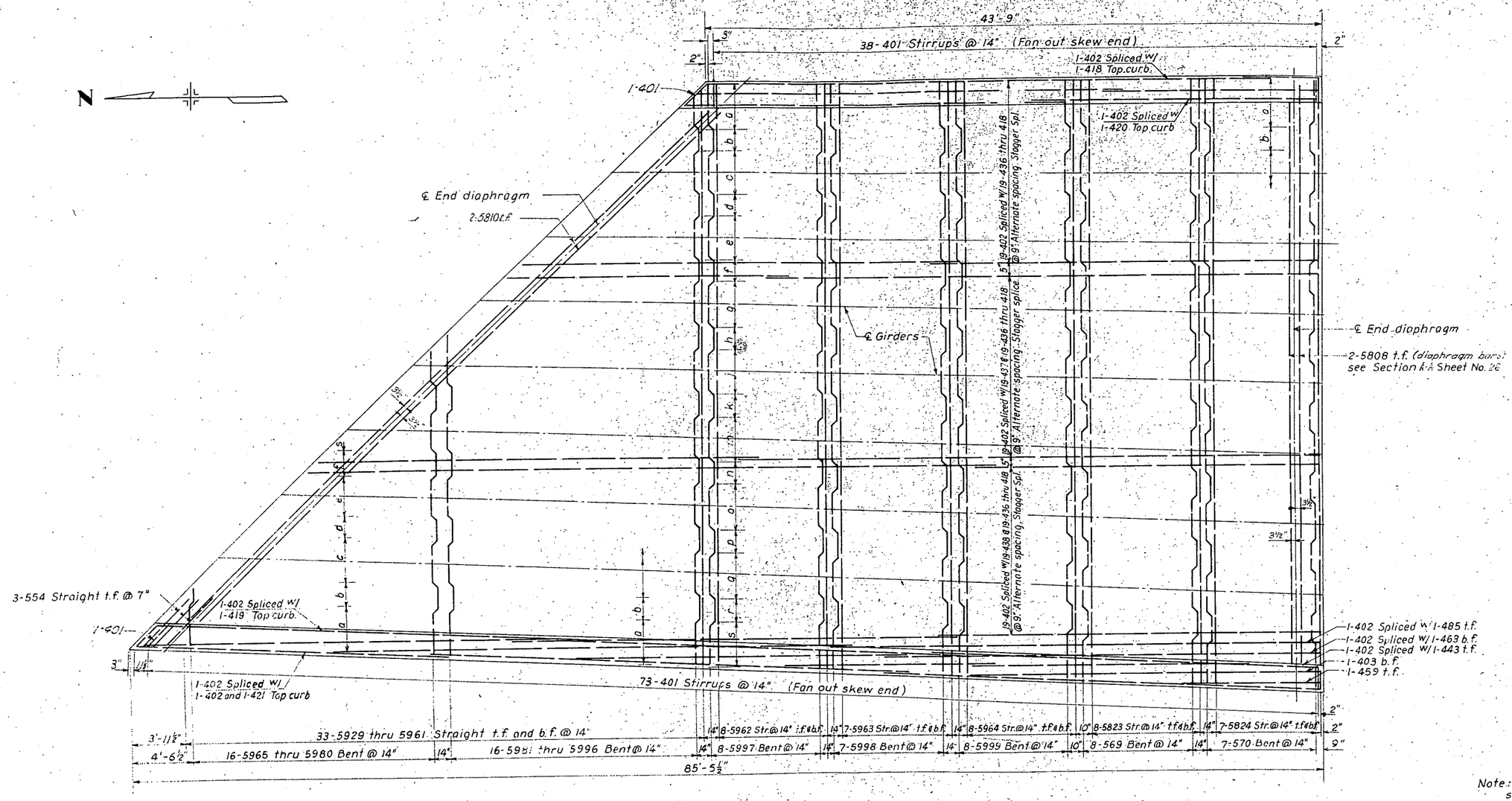
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 18
STRUCTURE NO. — N B: K-18-CK
S B: K-18-CL

DECK REINFORCEMENT
PANEL NO. 24

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DATE | SHEET 17 OF | DWG

DIV. NO.	STATE	ROUT. NO.	NO.	SHEET
9	COLO.	I-25-1(16)99	21	



DECK REINFORCEMENT

PANEL NO. 25

Scale ¼"=1'-0"

STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List

Note: All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown (Ex. D-402, D-5810 etc.). Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

DETAILS	MADE BY R.P.N.	CHECKED BY W.H.W.
TRACING	MADE BY L.W.H.	CHECKED BY J.K.H.

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38

STRUCTURE NO. — N B: K-18-CK
S B: K-18-CL

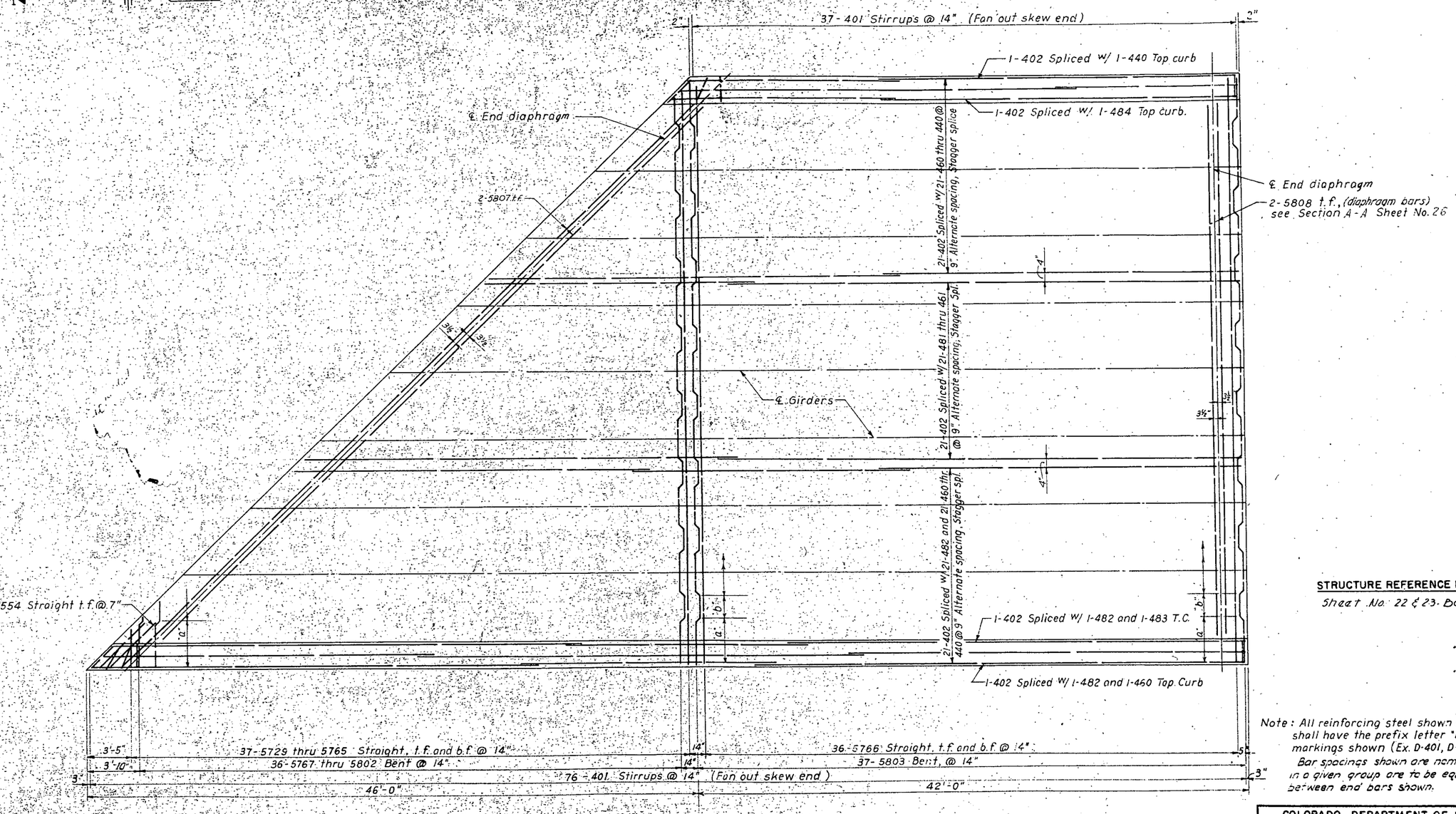
DECK REINFORCEMENT

PANEL NO. 25

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 18 | DWG. NO.

DIV. NO.	STATE	PROJ. NO.	NO.	SHEET
9	COLO.	I-25-1(16)99	22	



DECK REINFORCEMENT

PANEL NO. 12

Scale ¼" = 1'-0"

STRUCTURE REFERENCE DRAWINGS

Sheet No. 22 & 23 Bar List

Note: All reinforcing steel shown on this she shall have the prefix letter "D" before b markings shown (Ex. D-401, D-5807 etc.) Bar spacings shown are nominal. Bars in a given group are to be equally space between end bars shown.

DESIGN	CHECKED BY R.S.
DETAILS	MADE BY L.N.G.
	CHECKED BY W.H.W.
TRACING	MADE BY L.W.M.
	CHECKED BY H.F.I.

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2-STA. 173+63.52 TO STA. 184+

STRUCTURE NO. — N B: K-18-CK
S B: K-18-CL

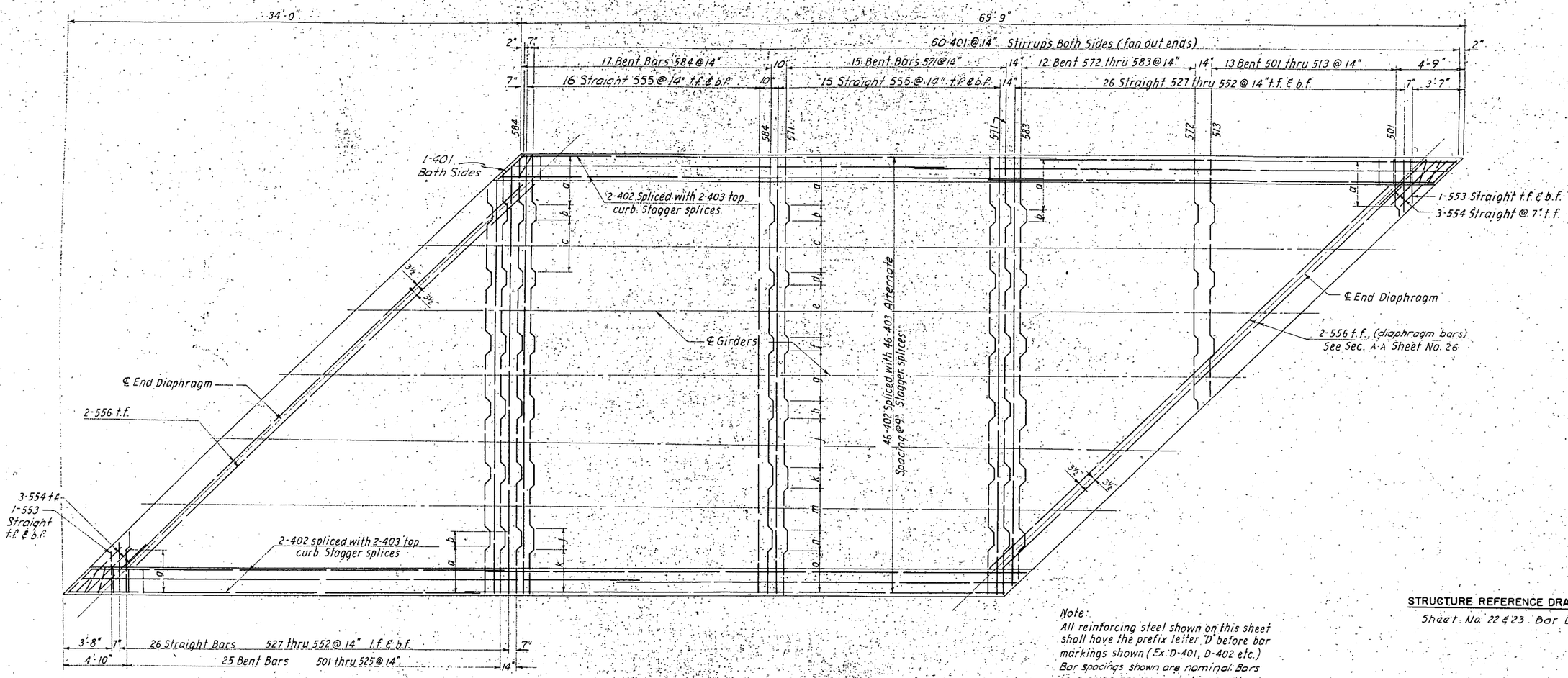
DECK REINFORCEMENT

PANEL NO. 12

ALFRED J. RYAN
CONSULTING ENGINEER
DENVER, COLORADO

DATE _____ SHEET 19 OF _____ DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	23	



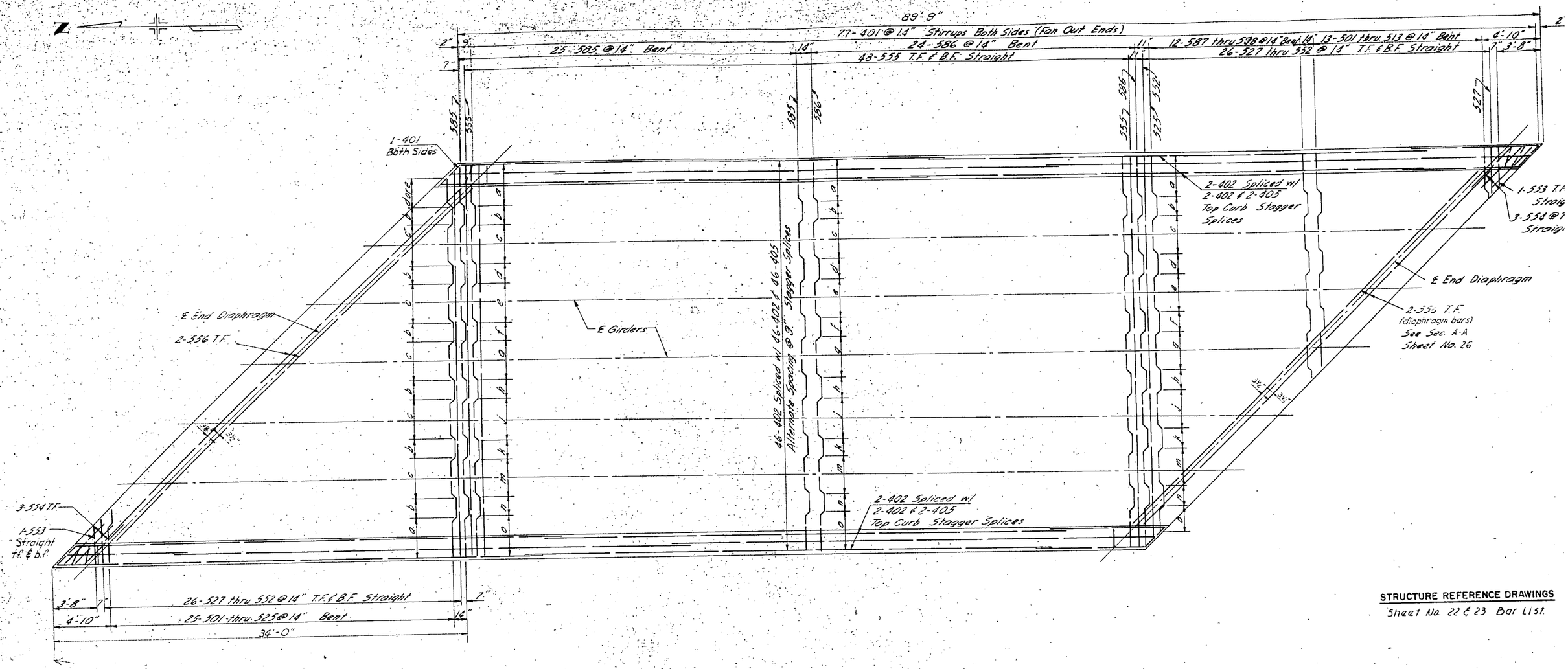
DECK REINFORCEMENT
PANEL 6
Scale $\frac{1}{4}$"=1'-0"

Note:
All reinforcing steel shown on this sheet shall have the prefix letter 'D' before bar markings shown (Ex. D-401, D-402 etc.)
Bar spacings shown are nominal. Bars in a given group are to be equally spaced between end bars shown.

STRUCTURE REFERENCE DRAWINGS
Sheet No. 22 & 23 Bar List

CHECKED BY	R.S.
DETAILS	MADE BY R.R.V.
	CHECKED BY R.C.S.
TRACING	MADE BY L.W.H.
	CHECKED BY R.C.S.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38
STRUCTURE NO. — N.B. K-18-C.K.
S.B. K-18-C.L.
DECK REINFORCEMENT PANEL 6
A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO
DWG. NO.



DECK REINFORCEMENT
PANEL NO. 22
Scale: 1/4" = 1'-0"

STRUCTURE REFERENCE DRAWINGS
Sheet No. 22 & 23 Bar List

Note:
Bar spacings shown are nominal. Bars in a gi
are to be equally spaced between end ba

All reinforcing steel shown on this she
have the prefix letter "D" before ba
markings shown. (Ex. D-402, D-40

DETAILS	CHECKED BY	H.S.Z.
	MADE BY	R.R.W.
	CHECKED BY	H.C.S.
TRACING	MADE BY	R.W.T.
	CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWA
PUEBLO FREEWAY PUEBLO, CO

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA
STRUCTURE NO. - N B: K-18-CK
S B: K-18-CL

DECK REINFORCEMENT PANEL

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE SHEET 21

SHEET NO. 8 — Panel Nos. 1, 14 & 19

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	150	40'-0"	6000'-0"
403	50	30'-6"	1525'-0"
480	92	32'-3"	2967'-0"
D-481	8	33'-0"	264'-0"
D-527	12	3'-11"	47'-0"
28		5'-1"	61'-0"
29		6'-3"	75'-0"
530		7'-5"	89'-0"
31		8'-7"	103'-0"
32		9'-9"	117'-0"
33		10'-11"	131'-0"
34		12'-1"	145'-0"
35		13'-3"	159'-0"
36		14'-5"	173'-0"
37		15'-7"	187'-0"
38		16'-9"	201'-0"
39		17'-11"	215'-0"
540		19'-1"	229'-0"
41		20'-3"	243'-0"
42		21'-5"	257'-0"
43		22'-7"	271'-0"
44		23'-9"	285'-0"
45		24'-11"	299'-0"
46		26'-1"	313'-0"
47		27'-3"	327'-0"
48		28'-5"	341'-0"
49		29'-7"	355'-0"
550		30'-9"	369'-0"
51	12	31'-11"	383'-0"
52	8	33'-1"	264'-8"
53	6	3'-4"	20'-0"
54	18	5'-0"	90'-0"
55	194	33'-8"	6531'-4"
D-556	12	42'-6"	510'-0"

SHEET NO. 9 — Panel Nos. 2, 4, 15, 17 & 21

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	250	40'-0"	10000'-0"
D-403	250	30'-6"	7625'-0"
D-404	250	11'-0"	2750'-0"
D-527	20	3'-11"	78'-4"
28		5'-1"	101'-8"
29		6'-3"	125'-0"
530		7'-5"	148'-4"
31		8'-7"	171'-8"
32		9'-9"	195'-0"
33		10'-11"	218'-4"
34		12'-1"	241'-8"
35		13'-3"	265'-0"
36		14'-5"	288'-4"
37		15'-7"	311'-8"
38		16'-9"	335'-0"
39		17'-11"	358'-4"
540		19'-1"	381'-8"
41		20'-3"	405'-0"
42		21'-5"	428'-4"
43		22'-7"	451'-8"
44		23'-9"	475'-0"
45		24'-11"	498'-4"
46		26'-1"	521'-8"
47		27'-3"	545'-0"
48		28'-5"	568'-4"
49		29'-7"	591'-8"
550		30'-9"	615'-0"
51		31'-11"	638'-4"
52		33'-1"	661'-8"
53	20	3'-4"	66'-8"
54	30	5'-0"	150'-0"
55	400	33'-8"	13,466'-8"
D-556	20	42'-6"	850'-0"

SHEET NO. 10 — Panel Nos. 3, 5, 16, 18 & 20

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	500	40'-0"	20,000'-0"
D-405	250	11'-6"	2875'-0"
D-527	20	3'-11"	78'-4"
28		5'-1"	101'-8"
29		6'-3"	125'-0"
530		7'-5"	148'-4"
31		8'-7"	171'-8"
32		9'-9"	195'-0"
33		10'-11"	218'-4"
34		12'-1"	241'-8"
35		13'-3"	265'-0"
36		14'-5"	288'-4"
37		15'-7"	311'-8"
38		16'-9"	335'-0"
39		17'-11"	358'-4"
540		19'-1"	381'-8"
41		20'-3"	405'-0"
42		21'-5"	428'-4"
43		22'-7"	451'-8"
44		23'-9"	475'-0"
45		24'-11"	498'-4"
46		26'-1"	521'-8"
47		27'-3"	545'-0"
48		28'-5"	568'-4"
49		29'-7"	591'-8"
550		30'-9"	615'-0"
51		31'-11"	638'-4"
52		33'-1"	661'-8"
53	20	3'-4"	66'-8"
54	30	5'-0"	150'-0"
55	480	33'-8"	16,160'-0"
D-556	20	42'-6"	850'-0"

SHEET NO. 11 — Panel Nos. 13, 26, & 27

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	198	40'-0"	7920'-0"
403	66	30'-6"	2013'-0"
482	116	31'-6"	3654'-0"
D-486	16	32'-0"	512'-0"
D-5766	370	45'-8"	16,896'-8"
D-5808	12	42'-0"	504'-0"

Note: Reinforcing bars for Light Standard Supports Shown in "Reinforcing Steel for Light Standard Supports" (Sheet No. 22b)

SHEET NO. 12 — Panel Nos. 10 & 11

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	132	40'-0"	5280'-0"
D-403	132	30'-6"	4026'-0"
D-404	132	11'-0"	1452'-0"
D-5729	8	3'-1"	24'-8"
5730		4'-3"	34'-0"
31		5'-5"	43'-4"
32		6'-7"	52'-8"
33		7'-9"	62'-0"
34		8'-11"	71'-4"
35		10'-1"	80'-8"
36		11'-3"	90'-0"
37		12'-5"	99'-4"
38		13'-7"	108'-8"
39		14'-9"	118'-0"
5740		15'-11"	127'-4"
41		17'-1"	136'-8"
42		18'-3"	146'-0"
43		19'-5"	155'-4"
44		20'-7"	164'-8"
D-5745	8	21'-9"	174'-0"

Bar List continued in next column.

SHEET NO. 12 (Continued)

Bar Mark	No. Req'd	Cutting Length	Total Length
D-5746	8	22'-11"	183'-4"
47		24'-1"	192'-8"
48		25'-3"	202'-0"
49		26'-5"	211'-4"
5750		27'-7"	220'-8"
51		28'-9	230'-0"
52		29'-11"	239'-4"
53		31'-1"	248'-8"
54		32'-3"	258'-0"
55		33'-5"	267'-4"
56		34'-7"	276'-8"
57		35'-9"	286'-0"
58		36'-11"	295'-4"
59		38'-1"	304'-8"
5760		39'-3"	314'-0"
61		40'-5"	323'-4"
62		41'-7"	332'-8"
63		42'-9"	342'-0"
64		43'-11"	351'-4"
65	8	45'-1"	360'-8"
D-5766	116	45'-8"	5297'-4"
D-5807	8	60'-0"	480'-0"
D-554	12	5'-0"	60'-0"

SHEET NO. 13 — Panel No. 7

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	103	40'-0"	4120'-0"
404	1	11'-0"	11'-0"
405	48	11'-6"	552'-0"
406	2	15'-5"	30'-10"
407	1	29'-0"	29'-0"
408	1	15'-8"	15'-8"
D-409	1	25'-0"	25'-0"
D-527	2	3'-11"	7'-10"
28		5'-1"	10'-2"
29		6'-3"	12'-6"
530		7'-5"	14'-10"
31		8'-7"	17'-2"
32		9'-9"	19'-6"
33		10'-11"	21'-10"
34		12'-1"	24'-2"
35		13'-3"	26'-6"
36		14'-5"	28'-10"
37		15'-7"	31'-2"
38		16'-9"	33'-6"
39		17'-11"	35'-10"
540		19'-1"	38'-2"
41		20'-3"	40'-6"
42		21'-5"	42'-10"
43		22'-7"	45'-2"
44		23'-9"	47'-6"
45		24'-11"	49'-10"
46		26'-1"	52'-2"
47		27'-3"	54'-6"
48		28'-5"	56'-10"
49		29'-7"	59'-2"
550		30'-9"	61'-6"
51		31'-11"	63'-10"
52		33'-1"	66'-2"
53	2	3'-4"	6'-8"
54	6	5'-0"	30'-0"
55	16	33'-8"	538'-8"
D-556	2	42'-6"	85'-0"
D-5115	16	34'-6"	552'-0"
16	16	35'-4"	565'-4"
17	2	3'-0"	6'-0"
18		4'-1"	8'-2"
19		5'-2"	10'-4"
5120		6'-3"	12'-6"
D-5121	2	7'-4"	14'-8"

Bar List continued in next column.

SHEET NO. 13 (Continued)

Bar Mark	No. Req'd	Cutting Length	Total Length
D-5122	2	8'-5"	16'-10"
23		9'-6"	19'-0"
24		10'-7"	21'-2"
25		11'-8"	23'-4"
26		12'-9"	25'-6"
27		13'-10"	27'-8"
28		14'-11"	29'-10"
29		16'-0"	32'-0"
5130		17'-1"	34'-2"
31		18'-2"	36'-4"
32		19'-3"	38'-6"
33		20'-4"	40'-8"
34		21'-5"	42'-10"
35		22'-6"	45'-0"
36		23'-7"	47'-2"
37		24'-8"	49'-4"
38		25'-9"	51'-6"
39		26'-10"	53'-8"
5140		27'-11"	55'-10"
41		29'-0"	58'-0"
42		30'-1"	60'-2"
43		31'-2"	62'-4"
44		32'-3"	64'-6"
45		33'-4"	66'-8"
46		34'-5"	68'-10"
D-5147	2	35'-6"	71'-0"
D-5804	2	48'-4"	96'-8"
D-5811	16	34'-1"	545'-4"
D-5812	16	34'-11"	558'-8"
D-5813	16	35'-9"	572'-0"

SHEET NO. 14 — Panel No. 8

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	58	40'-0"	2320'-0"
403	57	30'-6"	1738'-6"
404	54	11'-0"	594'-0"
409	1	25'-0"	25'-0"
411	1	10'-0"	10'-0"
455	1	13'-11"	13'-11"
D-456	2	14'-8"	29'-4"
D-5207	2	3'-3"	6'-6"
08		4'-5"	8'-10"
09		5'-7"	11'-2"
5210		6'-9"	13'-6"
11		7'-11"	15'-10"
12		9'-1"	18'-2"
13		10'-3"	20'-6"
14		11'-5"	22'-10"
15		12'-8"	25'-4"
16		13'-10"	27'-8"
17		15'-0"	30'-0"
18		16'-2"	32'-4"
19		17'-4"	34'-8"
5220		18'-6"	37'-0"
21		19'-8"	39'-4"
22		20'-10"	41'-8"
23		22'-0"	44'-0"
24		23'-2"	46'-4"
25		24'-4"	48'-8"
26		25'-6"	51'-0"
27		26'-8"	53'-4"
28		27'-10"	55'-8"
29		29'-1"	58'-2"
5230		30'-3"	60'-6"
31		31'-5"	62'-10"
32		32'-7"	65'-2"
33		33'-9"	67'-6"
34		34'-11"	69'-10"
35		36'-1"	72'-2"
36	2	37'-3"	74'-6"
D-5238	14	37'-10"	529'-8"

Bar List continued in next column.

SHEET NO. 14 (Continued)

Bar Mark	No. Req'd	Cutting Length	Total Length
D-5239	16	38'-2"	610'-8"
5240	14	38'-7"	540'-2"
41	2	3'-8"	7'-4"
42		4'-9"	9'-6"
43		5'-10"	11'-8"
44		7'-0"	14'-0"
45		8'-1"	16'-2"
46		9'-2"	18'-4"
47		10'-4"	20'-8"
48		11'-5"	22'-10"
49		12'-6"	25'-0"
5250		13'-7"	27'-2"
51		14'-9"	29'-6"
52		15'-10"	31'-8"
53		16'-11"	33'-10"
54		18'-0"	36'-0"
55		19'-2"	38'-4"
56		20'-3"	40'-6"
57		21'-4"	42'-8"
58		22'-6"	45'-0"
59		23'-7"	47'-2"
5260		24'-8"	49'-4"
61		25'-10	51'-8"
62		26'-11"	53'-10"
63		28'-0"	56'-0"
64		29'-1"	58'-2"
65		30'-3"	60'-6"
66		31'-4"	62'-8"
67		32'-5"	64'-10"
68		33'-7"	67'-2"
69		34'-8"	69'-4"
5270		35'-9"	71'-6"
71		36'-10"	73'-8"
72		38'-0"	76'-0"
D-5273	2	39'-1"	78'-2"
D-5804	2	48'-4"	96'-8"
5805	2	53'-6"	107'-0"
5818	14	39'-0"	546'-0"
5819	14	39'-4"	550'-8"
D-554	6	5'-0"	30'-0"

SHEET NO. 15 — Panel No. 9

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	122	40'-0"	4880'-0"
403	1	30'-6"	30'-6"
405	58	11'-6"	667'-0"
406	2	15'-5"	30'-10"
410	1	18'-0"	18'-0"
412	1	34'-0"	34'-0"
D-455	1	13'-11"	13'-11"
D-5338	2	3'-9"	7'-6"
5339		4'-11"	9'-10"
5340		6'-1"	12'-2"
41		7'-3"	14'-6"
42		8'-5"	16'-10"
43		9'-7"	19'-2"
44		10'-9"	21'-6"
45		11'-11"	23'-10"
46		13'-0"	26'-0"
47		14'-2"	28'-4"
48		15'-4"	30'-8"
49		16'-6"	33'-0"
5350		17'-8"	35'-4"
51		18'-10"	37'-8"
52		20'-0"	40'-0"
53		21'-2"	42'-4"
54		22'-4"	44'-8"
55		23'-6"	47'-0"
56		24'-8"	49'-4"
D-5357	2	25'-10"	51'-8"

Bar List continued in next column.

SHEET NO. 15 (Continued)

Bar Mark	No. Req'd	Cutting Length	Total Length
D-5358	2	27'-0"	54'-0"
5359		28'-2"	56'-4"
5360		29'-4"	58'-8"
61		30'-5"	60'-10"
62		31'-7"	63'-2"
63		32'-9"	65'-6"
64		33'-11"	67'-10"
65		35'-1"	70'-2"
66		36'-3"	72'-6"
67		37'-5"	74'-10"
68		38'-7"	77'-2"
69		39'-9"	79'-6"
5370	2	40'-11"	81'-10"
71	12	41'-6"	512'-6"
72	14	42'-3"	591'-6"
73	14	42'-10"	599'-8"
74	2	2'-11"	5'-10"
75		4'-0"	8'-0"
76		5'-2"	10'-4"
77		6'-3"	12'-6"
78		7'-5"	14'-10"
79		8'-6"	17'-0"
5380		9'-7"	19'-2"
81		10'-9"	21'-6"
82		11'-10"	23'-8"
83		12'-11"	25'-10"
84		14'-1"	28'-2"
85		15'-2"	30'-4"
86		16'-4"	32'-8"
87		17'-5"	34'-10"
88		18'-6"	37'-0"
89		19'-8"	39'-4"
5390		20'-9"	41'-6"
91		21'-11"	43'-10"
92		23'-0"	46'-0"
93		24'-1"	48'-2"
94		25'-3"	50'-6"
95		26'-4"	52'-8"
96		27'-5"	54'-10"
97		28'-7"	57'-2"
98		29'-8"	59'-4"
5399		30'-10"	61'-8"
5400		31'-11"	63'-10"
01		33'-0"	66'-0"
02		34'-2"	68'-4"
03		35'-3"	70'-6"
04		36'-4"	72'-8"
05		37'-6"	75'-0"
06		38'-7"	77'-2"
07		39'-9"	79'-6"
08		40'-10"	81'-8"
09		41'-11"	83'-10"
D-5410	2	43'-1"	86'-2"
D-5805	2	53'-6"	107'-0"
D-5806	2	59'-5"	118'-10"
D-544	6	5'-0"	30'-0"
D-5820	14	41'-11"	586'-10"
D-5821	14	42'-7"	596'-2"
D-5822	14	43'-2"	604'-4"

SHEET NO. 16 — Panel No. 23

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	52	40'-0"	2080'-0"
403	48	30'-6"	1464'-0"
404	48	11'-0"	528'-0"
422	1	7'-8"	7'-8"
433	1	15'-11"	15'-11"
462	4	18'-9"	75'-0"
472	1	26'-3"	26'-3"
D-481	1	33'-0"	33'-0"

Bar List continued in next column.

SHEET NO. 16 (Continued)

Bar Mark	No. Req'd	Cutting Length	Total Length
D-554	6	5'-0"	30'-0"
D-556	2	42'-6"	85'-0"
D-5482	2	4'-2"	8'-4"
83		5'-5"	10'-10"
84		6'-7"	13'-2"
85		7'-10"	15'-8"
86		9'-0"	18'-0"
87		10'-3"	20'-6"
88		11'-6"	23'-0"
89		12'-8"	25'-4"
5490		13'-11"	27'-10"
91		15'-2"	30'-4"
92		16'-4"	32'-8"
93		17'-7"	35'-2"
94		18'-10"	37'-8"
95		20'-0"	40'-0"
96		21'-3"	42'-6"
97		22'-6"	45'-0"
98		23'-8"	47'-4"
5499		24'-11"	49'-10"
5500		26'-2"	52'-4"
01		27'-4"	54'-8"
02		28'-7"	57'-2"
03		29'-10"	59'-8"
04		31'-1"	62'-2"
05		32'-4"	64'-8"
06		33'-6"	67'-0"
07	2	34'-9"	69'-6"
08	14	35'-5"	495'-10"
09	16	35'-10"	573'-4"
5510	14	36'-3"	507'-6"
11	4	3'-1"	12'-4"
12	2	4'-3"	8'-6"
13		5'-5"	10'-10"
14		6'-7"	13'-2"
15		7'-9"	15'-6"
16		8'-11"	17'-10"
17		10'-1"	20'-2"
18		11'-3"	22'-6"
19		12'-5"	24'-10"
5520		13'-7"	27'-2"
21		14'-9"	29'-6"
22		15'-11"	31'-10"
23		17'-1"	34'-2"
24		18'-3"	36'-6"
25		19'-5"	38'-10"
26		20'-7"	41'-2"
27		21'-9"	43'-6"
28		22'-11"	45'-10"
29		24'-1"	48'-2"
5530		25'-3"	50'-6"
31		26'-5"	52'-10"
32		27'-7"	55'-2"
33		28'-9"	57'-6"
34		29'-11"	59'-10"
35		31'-1"	62'-2"
36		32'-3"	64'-6"
37		33'-5"	66'-10"
38		34'-7"	69'-2"
39		35'-9"	71'-6"
5540		36'-11"	73'-10"
5809	2	47'-10"	95'-8"
5814	14	36'-8"	513'-4"
D-5815	14	37'-1"	519'-2"

SHEET NO. 17 — No. 24

Bar Mark	No. Req'd	Cutting Length	Total Length
D-402	57	40'-0"	2280'-0"
403	54	30'-6"	1647'-0"
404	53	11'-0"	583'-0"
433	1	15'-11"	15'-11"
440	1	2'-8"	2'-8"
D-462	5	18'-9"	93'-9"
D-554	6	5'-0"	30'-0"
D-5599	2	3'-1"	6'-2"
5600		4'-4"	8'-8"
01		5'-6"	11'-0"
02		6'-9"	13'-6"
03		8'-0"	16'-0"
04		9'-3"	18'-6"
05		10'-5"	20'-10"
06		11'-8"	23'-4"
07		12'-11"	25'-10"
08		14'-2"	28'-4"
09		15'-4"	30'-8"
5610		16'-7"	33'-2"
11		17'-10"	35'-8"
12		19'-1"	38'-2"
13		20'-4"	40'-8"
14		21'-6"	43'-0"
15		22'-9"	45'-6"
16		24'-0"	48'-0"
17		25'-3"	50'-6"
18		26'-5"	52'-10"
19		27'-8"	55'-4"
5620		28'-11"	57'-10"
21		30'-2"	60'-4"
22		31'-4"	62'-8"
23		32'-7"	65'-2"
24		33'-10"	67'-8"
25		35'-1"	70'-2"
26		36'-3"	72'-6"
27		37'-6"	75'-0"
28	2	38'-9"	77'-6"
29	14	40'-3"	563'-6"
5630	14	40'-9"	570'-6"
31	12	41'-3"	495'-0"
32	2	3'-7"	7'-2"
33		4'-9"	9'-6"
34		5'-11"	11'-10"
35		7'-1"	14'-2"
36		8'-3"	16'-6"
37		9'-5"	18'-10"
38		10'-7"	21'-2"
39		11'-9"	23'-6"
5640		12'-11"	25'-10"
41		14'-1"	28'-2"
42		15'-3"	30'-6"
43		16'-5"	32'-10"
44		17'-7"	35'-2"
45		18'-9"	37'-6"
46		19'-11"	39'-10"
47		21'-0"	42'-0"
48		22'-2"	44'-4"
49		23'-4"	46'-8"
5650		24'-6"	49'-0"
51		25'-8"	51'-4"
52		26'-10"	53'-8"
53		28'-0"	56'-0"
54		29'-2"	58'-4"
55		30'-4"	60'-8"
56		31'-6"	63'-0"
57		32'-8"	65'-4"
58		33'-10"	67'-8"
59		35'-0"	70'-0"
5660		36'-2"	72'-4"
61		37'-4"	74'-8"
62		38'-6"	77'-0"
63		39'-8"	79'-4"
5664		40'-10"	81'-8"
5809		47'-10"	95'-8"
5810	2	53'-3"	106'-6"
5816	12	39'-5"	473'-0"
D-5817	14	39'-9"	556'-6"

Notes:
1. For general notes see general plan, Sheet
2. Individual column headings indicate sheet numbers where bars are found.
3. The bar marks shown (for example D-402) in... in order that the bar is a "Deck" bar, size ... and item no. 02.
4. See sheet no. 22b for continuation of bar li...

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+3...
STRUCTURE NO. — N.B.: K-18-CK
S.B.: K-18-CL

STRAIGHT BARS

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE ___ SHEET 22 a DWG. NO.

DETAILS	MADE BY	H.C.S.
	CHECKED BY	W.W.H. H.C.S.
TRACING	MADE BY	R.W.T.
	CHECKED BY	B.N.B.

SHEET NO. 18 — Panel No. 25

Bar Mark	No. Req'd.	Cutting Length	Total Length
D-402	66	40'-0"	2640'-0"
403	1	30'-6"	30'-6"
418	4	4'-8"	18'-8"
419	↓	5'-5"	21'-8"
420	↑	6'-2"	24'-8"
21	4	6'-11"	27'-8"
22	3	7'-8"	23'-0"
23	↓	8'-5"	25'-3"
24		9'-2"	27'-6"
25		9'-11"	29'-9"
26		10'-8"	32'-0"
27	↑	11'-5"	34'-3"
28	3	12'-2"	36'-6"
29	3	12'-11"	38'-9"
430	3	13'-8"	41'-0"
31	↓	14'-5"	43'-3"
32		15'-2"	45'-6"
33		15'-11"	47'-9"
34		16'-8"	50'-0"
35	↑	17'-5"	52'-3"
36	3	18'-2"	54'-6"
37	19	13'-10"	262'-10"
438	19	27'-10"	528'-10"
443	1	4'-11"	4'-11"
459	1	16'-11"	16'-11"
463	1	19'-6"	19'-6"
D-485	1	33'-7"	33'-7"
D-554	3	5'-0"	15'-0"
D-5808	2	42'-0"	84'-0"
D-5810	2	53'-3"	106'-6"
D-5929	2	3'-9"	7'-6"
5930	↓	5'-0"	10'-0"
31		6'-2"	12'-4"
32		7'-5"	14'-10"
33		8'-7"	17'-2"
34		9'-10"	19'-8"
35		11'-1"	22'-2"
36		12'-4"	24'-8"
37		13'-6"	27'-0"
38		14'-9"	29'-6"
39		15'-11"	31'-10"
5940		17'-2"	34'-4"
41		18'-5"	36'-10"
42		19'-7"	39'-2"
43		20'-10"	41'-8"
44		22'-1"	44'-2"
45		23'-3"	46'-6"
46		24'-6"	49'-0"
47		25'-9"	51'-6"
48		26'-11"	53'-10"
49		28'-2"	56'-4"
5950		29'-5"	58'-10"
51		30'-7"	61'-2"
52		31'-10"	63'-8"
53		33'-1"	66'-2"
54		34'-3"	68'-6"
55		35'-6"	71'-0"
56		36'-9"	73'-6"
57		37'-11"	75'-10"
58		39'-2"	78'-4"
59		40'-5"	80'-10"
5960	↑	41'-7"	83'-2"
61	2	42'-10"	85'-8"
62	16	43'-5"	694'-8"
63	14	44'-3"	619'-6"
D-5964	16	45'-0"	720'-0"
D-5823	16	44'-11"	718'-8"
D-5824	14	45'-5"	635'-10"

SHEET NO. 19 — Panel No. 12

Bar Mark	No. Req'd.	Cutting Length	Total Length
D-402	67	40'-0"	2680'-0"
440	3	2'-8"	8'-0"
41	2	3'-5"	7'-10"
42	↓	4'-2"	8'-4"
43		4'-11"	9'-10"
44		5'-8"	11'-4"
45		6'-5"	12'-10"
46		7'-2"	14'-4"
47		7'-11"	15'-10"
48		8'-8"	17'-4"
49		9'-5"	18'-10"
450		10'-2"	20'-4"
51		10'-11"	21'-10"
52		11'-8"	23'-4"
53		12'-5"	24'-10"
54		13'-2"	26'-4"
55		13'-11"	27'-10"
56		14'-8"	29'-4"
57		15'-5"	30'-10"
58	↑	16'-2"	32'-4"
59	2	16'-11"	33'-10"
460	3	17'-8"	53'-0"
61	1	18'-0"	18'-0"
62	↓	18'-9"	18'-9"
63		19'-6"	19'-6"
64		20'-3"	20'-3"
65		21'-0"	21'-0"
66		21'-9"	21'-9"
67		22'-6"	22'-6"
68		23'-3"	23'-3"
69		24'-0"	24'-0"
470		24'-9"	24'-9"
71		25'-6"	25'-6"
72		26'-3"	26'-3"
73		27'-0"	27'-0"
74		27'-9"	27'-9"
75		28'-6"	28'-6"
76		29'-3"	29'-3"
77		30'-0"	30'-0"
78		30'-9"	30'-9"
79		31'-6"	31'-6"
480	↑	32'-3"	32'-3"
81	1	33'-0"	33'-0"
82	23	31'-6"	724'-6"
83	1	16'-0"	16'-0"
D-484	1	4'-4"	4'-4"
D-554	3	5'-0"	15'-0"
D-5729	2	3'-1"	6'-2"
5730	↓	4'-3"	8'-6"
31		5'-5"	10'-10"
32		6'-7"	13'-2"
33		7'-9"	15'-6"
34		8'-11"	17'-10"
35		10'-1"	20'-2"
36		11'-3"	22'-6"
37		12'-5"	24'-10"
38		13'-7"	27'-2"
39		14'-9"	29'-6"
5740		15'-11"	31'-10"
41		17'-1"	34'-2"
42		18'-3"	36'-6"
43		19'-5"	38'-10"
44		20'-7"	41'-2"
45		21'-9"	43'-6"
46		22'-11"	45'-10"
47		24'-1"	48'-2"
48		25'-3"	50'-6"
49		26'-5"	52'-10"
5750		27'-7"	55'-2"
51		28'-9"	57'-6"
52		29'-11"	59'-10"
53		31'-1"	62'-2"
54	↑	32'-3"	64'-6"
D-5755	2	33'-5"	66'-10"

SHEET NO. 19 (Continued)

Bar Mark	No. Req'd.	Cutting Length	Total Length
D-5756	2	34'-7"	69'-2"
57	↓	35'-9"	71'-6"
58		36'-11"	73'-10"
59		38'-1"	76'-2"
5760		39'-3"	78'-6"
61		40'-5"	80'-10"
62		41'-7"	83'-2"
63		42'-9"	85'-6"
64	↑	43'-11"	87'-10"
65	2	45'-1"	90'-2"
5766	72	45'-8"	3288'-0"
D-5807	2	60'-0"	120'-0"
5808	2	42'-0"	84'-0"

SHEET NO. 20 — Panel No. 6

Bar Mark	No. Req'd.	Cutting Length	Total Length
D-402	50	40'-0"	2000'-0"
D-403	50	30'-6"	1525'-0"
D-527	4	3'-11"	15'-8"
28	↓	5'-1"	20'-4"
29		6'-3"	25'-0"
530		7'-5"	29'-8"
31		8'-7"	34'-4"
32		9'-9"	39'-0"
33		10'-11"	43'-8"
34		12'-1"	48'-4"
35		13'-3"	53'-0"
36		14'-5"	57'-8"
37		15'-7"	62'-4"
38		16'-9"	67'-0"
39		17'-11"	71'-8"
540		19'-1"	76'-4"
41		20'-3"	81'-0"
42		21'-5"	85'-8"
43		22'-7"	90'-4"
44		23'-9"	95'-0"
45		24'-11"	99'-8"
46		26'-1"	104'-4"
47		27'-3"	109'-0"
48		28'-5"	113'-8"
49		29'-7"	118'-4"
550		30'-9"	123'-0"
51	↑	31'-11"	127'-8"
52	4	33'-1"	132'-4"
53	4	3'-4"	13'-4"
54	6	5'-0"	30'-0"
55	62	33'-8"	2087'-4"
D-556	4	42'-6"	170'-0"

SHEET NO. 21 — Panel No. 22

Bar Mark	No. Req'd.	Cutting Length	Total Length
D-402	100	40-0	4000'-0"
D-405	50	11-6	575'-0"
D-527	4	3'-11"	15'-8"
28	↓	5'-1"	20'-4"
29		6'-3"	25'-0"
530		7'-5"	29'-8"
31		8'-7"	34'-4"
32		9'-9"	39'-0"
33		10'-11"	43'-8"
34		12'-1"	48'-4"
35		13'-3"	53'-0"
36		14'-5"	57'-8"
37		15'-7"	62'-4"
38		16'-9"	67'-0"
39		17'-11"	71'-8"
540		19'-1"	76'-4"
41		20'-3"	81'-0"
42		21'-5"	85'-8"
43		22'-7"	90'-4"
44		23'-9"	95'-0"
45		24'-11"	99'-8"
46		26'-1"	104'-4"
47		27'-3"	109'-0"
48		28'-5"	113'-8"
49		29'-7"	118'-4"
550		30'-9"	123'-0"
51	↑	31'-11"	127'-8"
52	4	33'-1"	132'-4"
53	4	3'-4"	13'-4"
54	6	5'-0"	30'-0"
55	96	33'-8"	3232'-0"
D-556	4	42'-6"	170'-0

SHEET NO. 25 PRECAST GIRDERS

Bar Mark	No. Req'd.	Cutting Length	Total Length	Bar Mark	No. Req'd.	Cutting Length	Total Length
502	406	60'-0"	24,360'-0"	801	1336	60'-0"	70,160'-0"
03	106	9'-6"	1,007'-0"	02	318	10'-1"	3,206'-6"
04	112	19'-6"	2,184'-0"	03	336	20'-1"	6,748'-0"
05	84	29'-6"	2,478'-0"	04	336	30'-1"	10,108'-0"
06	2	8'-10"	17'-8"	05	6	9'-5"	56'-6"
07	↓	9'-2"	18'-4"	06	6	9'-9"	58'-6"
08		29'-5"	58'-10"	07	8	30'-0"	240'-0"
09		29'-4"	58'-8	08	↓	29'-11"	239'-4"
510		31'-11"	63'-10"	09		32'-6"	260'-0"
11		32'-6"	65'-0"	810		33'-1"	264'-8"
12		33'-1"	66'-2"	11	↑	33'-8"	269'-4"
13		33'-9"	67'-6"	12	8	34'-4"	274'-8"
14		19'-8"	39'-4"	13	6	20'-3"	121'-6"
15		19'-10"	39'-8	14	↓	20'-5"	122'-6"
16		20'-3"	40'-6"	15		20'-10"	125'-0"
17		21'-5"	42'-10"	16		22'-0"	132'-0"
18		21'-10"	43'-8"	17		22'-5"	134'-6"
19		22'-4"	44'-8"	18		22'-11"	137'-6"
520	↑	22'-10"	45'-8"	19	↑	23'-5"	140'-6"
21	2	23'-3"	46'-6"	820	6	23'-10"	143'-0"
22	4	30'-0	120'-0"	21	16	30'-7"	489'-4"
23	2	30'-7"	61'-2"	22	8	31'-2"	249'-4"
24	↓	31'-1"	62'-2"	23	↓	31'-8"	253'-4"
25		31'-7"	63'-2"	24		32'-2"	257'-4"
26		32'-2"	64'-4"	25		32'-9"	262'-0"
27		32'-8"	65'-4"	26		33'-3"	266'-0"
28		33'-3"	66'-6"	27	↑	33'-10"	270'-8"
29		33'-9"	67'-6"	28	8	34'-4"	274'-8"
530		25'-6"	51'-0"	29	6	26'-1"	156'-6"
31		20'-4"	40'-8"	830	↓	20'-11"	125'-6"
32		15'-0"	30'-0"	31		15'-7"	93'-6"
33		9'-9"	19'-6"	32		10'-4"	62'-0"
34		4'-6"	9'-0"	33		5'-1"	30'-6"
35		57'-8"	115'-4"	34		57'-8"	346'-0"
36		52'-5"	104'-10"	35		52'-5"	314'-6"
37		47'-2"	94'-4"	36	↑	47'-2"	283'-0"
38		41'-11"	83'-10"	37	6	41'-11"	251'-6"
39		28'-10"	57'-8"	38	8	29'-5"	235'-4"
540		29'-2"	58'-4"	39	8	29'-9"	238'-0
41		18'-11"	37'-10"	840	6	19'-6"	117'-0"
42		18'-5"	36'-10"	41	↓	19'-0"	114'-0"
43		17'-11"	35'-10"	42		18'-6"	111'-0"
44		15'-11"	31'-10"	43		16'-6"	99'-0"
45	↑	15'-2"	30'-4"	44	↑	15'-9"	94'-6"
46	2	15'-5"	30'-10"	45	6	16'-0"	96'-0"
47	4	15'-9"	63'-0"	46	12	16'-4"	196'-0"
48	2	19'-0"	38'-0"	47	6	19'-7"	117'-6"
49	↓	18'-6"	37'-0"	48	↓	19'-1"	114'-6"
550		18'-1"	36'-2"	49		18'-8"	112'-0"
51		17'-2"	34'-4"	850		17'-9"	106'-6"
52		16'-10"	33'-8"	51		17'-5"	104'-6"
53		16'-6"	33'-0"	52		17'-1"	102'-6"
54		16'-1"	32'-2"	53		16'-8"	100'-0"
55		43'-11"	87'-10"	54		43'-11"	263'-6"
56		48'-8"	97'-4"	55		48'-8"	292'-0"
57		53'-4"	106'-8"	56		53'-4"	320'-0"
58		58'-1"	116'-2"	57		58'-1"	348'-6"
59		4'-5"	8'-10"	58		5'-0"	30'-0"
560		9'-1"	18'-2"	59		9'-8"	58'-0"
61		13'-11"	27'-10"	860		14'-6"	87'-0"
62	↑	18'-7"	37'-2"	61	↑	19'-2"	115'-0"
563	2	23'-4"	46'-8"	862	6	23'-11"	143'-6"
601	660	1'-9"	1,155'-0"				
(See Detail Sheet No. 26)							
602	958	3'-3"	3,113'-6"				
603	112	4'-0"	448'-0"				
604	516	4'-10"	2,494'-0"				

SHEET NO. 26 (Diaphragms)

Bar Mark	No. Req'd.	Cutting Length	Total Length
D-601	348	4'-0"	1392'-0"
02	131	4'-3"	556'-9"
03	91	3'-9"	341'-3"
04	192	4'-6"	864'-0"
05	2	5'-6"	11-0"
06	49	4'-9"	232'-9"
07	14	3'-3"	45'-6"
08	4	3'-0"	12'-0"
09	69	2'-9"	189'-9"
610	53	3'-6"	185'-6"
11	1	6'-0"	6'-0"
12	3	2'-6"	7'-6"
613	1	6'-6"	6'-6"

SHEET NO. 11 (Light Standards)

L-401	10	1'-10"	18'-4"
L-402	10	3'-6"	35'-0"
L-501	20	4'-5"	88'-4"
L-502	20	4'-6"	90'-0"
L-503	20	4'-8"	93'-4"

THREADED DOWELS
MK'D. D-601

DETAILS	MADE BY H.C.S.	CHECKED BY W.H.W.
TRACING	MADE BY R.R.W.	CHECKED BY H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2-STA. 173+63.52 TO STA. 18
STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL

STRAIGHT BARS

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DWG. 22 b

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	27

SHEET NO. 8 — PANELS 1, 14 & 19

Bar Mark	Bar Type	No. Req'd.	Out to Out "O"	a	b	c	d	e	Cutting Length	Total Length
D-501	T-1	6	4'-6"	3-6				1-0	4'-7"	27'-6"
02			5'-8"		1@1-8		0-6		5'-11"	35'-6"
03			6'-10"				1-8		7'-1"	42'-6"
04			8'-0"				2-10		8'-3"	49'-6"
05			9'-2"			1@3-4		0-8	9'-6"	57'-0"
06			10'-4"		1@1-8			1-10	10'-8"	64'-0"
07			11'-6"		2@1-8			1-4	12'-0"	72'-0"
08			12'-8"					2-6	13'-2"	79'-0"
09			13'-10"			1@3-4		3-8	14'-4"	86'-0"
510			15'-0"		2@1-8	2@3-4	1-6		15'-7"	93'-6"
11			16'-2"		3@1-8			1-0	16'-11"	101'-6"
12			17'-4"					2-2	18'-1"	108'-6"
13			18'-6"			2@3-4		3-4	19'-3"	115'-6"
14			19'-8"		3@1-8	3@3-4	1-2		20'-6"	123'-0"
15			20'-10"		4@1-8			0-8	21'-10"	131'-0"
16			22'-0"					1-10	23'-0"	138'-0"
17			23'-2"			3@3-4		3-0	24'-2"	145'-0"
18			24'-4"			4@3-4	0-10		25'-5"	152'-6"
19			25'-6"		4@1-8		2-0		26'-7"	159'-6"
520			26'-8"		5@1-8			1-6	27'-11"	167'-6"
21			27'-10"			4@3-4		2-8	29'-1"	174'-6"
22			29'-0"			5@3-4	0-6		30'-4"	182'-0"
23			30'-2"		5@1-8		1-8		31'-6"	189'-0"
24			31'-4"		6@1-8			1-2	32'-10"	197'-0"
25		6	32'-6"		6@1-8			2-4	34'-0"	204'-0"
D-526	T-1	100	33'-8"	3-6	6@1-8	5@3-4		3-6	35'-2"	3,516'-8"
D-401	Hd	374		1-9	1-1½				6-6	2,431'-0"

SHEET NO. 9 — PANELS 2, 4, 15, 17, & 21

Bar Mark	Bar Type	No. Req'd.	Out to Out "O"	a	b	c	d	e	Cutting Length	Total Length
D-501	T-1	10	4'-6"	3-6				1-0	4'-7"	45'-10"
02			5'-8"		1@1-8		0-6		5'-11"	59'-2"
03			6'-10"				1-8		7'-1"	70'-10"
04			8'-0"				2-10		8'-3"	82'-6"
05			9'-2"			1@3-4		0-8	9'-6"	95'-0"
06			10'-4"		1@1-8			1-10	10'-8"	106'-8"
07			11'-6"		2@1-8			1-4	12'-0"	120'-0"
08			12'-8"					2-6	13'-2"	131'-8"
09			13'-10"			1@3-4		3-8	14'-4"	143'-4"
510			15'-0"		2@1-8	2@3-4	1-6		15'-7"	155'-10"
11			16'-2"		3@1-8			1-0	16'-11"	169'-2"
12			17'-4"					2-2	18'-1"	180'-10"
13			18'-6"			2@3-4		3-4	19'-3"	192'-6"
14			19'-8"		3@1-8	3@3-4	1-2		20'-6"	205'-0
15			20'-10"		4@1-8			0-8	21'-10"	218'-4"
16			22'-0"					1-10	23'-0"	230'-0"
17			23'-2"			3@3-4		3-0	24'-2"	241'-8"
18			24'-4"			4@3-4	0-10		25'-5"	254'-2"
19			25'-6"		4@1-8		2-0		26'-7"	265'-10"
520			26'-8"		5@1-8			1-6	27'-11"	279'-2"
21			27'-10"			4@3-4		2-8	29'-1"	290'-10"
22			29'-0"			5@3-4	0-6		30'-4"	303'-4"
23			30'-2"		5@1-8		1-8		31'-6"	315'-0"
24			31'-4"		6@1-8			1-2	32'-10"	328'-4"
25		10	32'-6"		6@1-8			2-4	34'-0"	340'-0"
D-526	T-1	200	33'-8"	3-6	6@1-8	5@3-4		3-6	35'-2"	7,033'-4"
D-401	Hd	690		1-9	1-1½				6'-6"	4,485'-0"

DETAILS	MADE BY	H.C.S.
	CHECKED BY	W.H.W.
TRACING	MADE BY	A.C.D.
	CHECKED BY	H.F.H.

SHEET NO. 10 — PANELS 3, 5, 16, 18 & 20

Bar Mark	Bar Type	No Req'd	Out to Out "O"	a	b	c	d	e	Cutting Length	Total Length
D-501	T-1	10	4'-6"	3-6				1-0	4'-7"	45'-10"
02			5'-8"		1@1-8		0-6		5'-11"	59'-2"
03			6'-10"				1-8		7'-1"	70'-10"
04			8'-0"				2-10		8'-3"	82'-6"
05			9'-2"			1@3-4		0-8	9'-6"	95'-0"
06			10'-4"		1@1-8			1-10	10'-8"	106'-8"
07			11'-6"		2@1-8			1-4	12'-0"	120'-0"
08			12'-8"					2-6	13'-2"	131'-8"
09			13'-10"			1@3-4		3-8	14'-4"	143'-4"
510			15'-0"		2@1-8	2@3-4	1-6		15'-7"	155'-10"
11			16'-2"		3@1-8			1-0	16'-11"	169'-2"
12			17'-4"					2-2	18'-1"	180'-10"
13			18'-6"			2@3-4		3-4	19'-3"	192'-6"
14			19'-8"		3@1-8	3@3-4	1-2		20'-6"	205'-0"
15			20'-10"		4@1-8			0-8	21'-10"	218'-4"
16			22'-0"					1-10	23'-0"	230'-0"
17			23'-2"			3@3-4		3-0	24'-2"	241'-8"
18			24'-4"			4@3-4	0-10		25'-5"	254'-2"
19			25'-6"		4@1-8		2-0		26'-7"	265'-10"
520			26'-8"		5@1-8			16	27'-11"	279'-2"
21			27'-10"			4@3-4		2-8	29'-1"	290'-10"
22			29'-0"			5@3-4	0-6		30'-4"	303'-4"
23			30'-2"		5@1-8		1-8		31'-6"	315'-0"
24			31'-4"		6@1-8			1-2	32'-10"	328'-4"
25		10	32'-6"		6@1-8			2-4	34'-0"	340'-0"
D-526	T-1	245	33'-8"	3-6	6@1-8	5@3-4		3-6	35'-2"	8,615'-10"
D-401	Hd	780		1-9	1-1½				6'-6"	5,070'-0"

SHEET NO. 11 — PANELS 13, 26 & 27

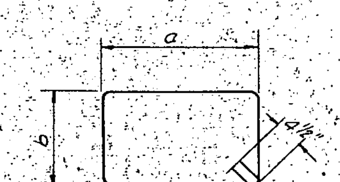
Bar Mark	Bar Type	No Req'd	Out to Out "O"	a	b	c	d	e	Cutting Length	Total Length
D-5803	T-1	182	45'-8"	3-7	8@1-9	7@3-6		3-7	47'-8"	8,675'-4"
D-401	Hd	374		1-9	1-1½				6'-6"	2,431'-0"

SHEET NO. 12 — PANELS 10 & 11

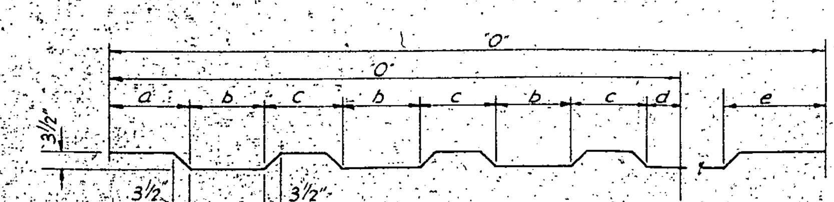
Bar Mark	Bar Type	No Req'd	Out to Out "O"	a	b	c	d	e	Cutting Length	Total Length
D-5767	T-1	4	3'-8"	3-7			0-1		3'-9"	15'-0"
68			4'-10"				1-3		4'-11"	19'-8"
69			6'-0"		1@1-9			0-8	6'-3"	25'-0"
5770			7'-2"					1-10	7'-5"	29'-8"
71			8'-4"					3-0	8'-7"	34'-4"
72			9'-6"			1@3-6	0-8		9'-10"	39'-4"
73			10'-8"		1@1-9		1-10		11'-0"	44'-0"
74			11'-10"		2@1-9			1-3	12'-4"	49'-4"
75			13'-0"					2-5	13'-6"	54'-0"
76			14'-2"			1@3-6		3-7	14'-8"	58'-8"
77			15'-4"		2@1-9	2@3-6	1-3		15'-11"	63'-8"
78			16'-6"		3@1-9			0-8	17'-3"	69'-0"
79			17'-8"					1-10	18'-5"	73'-8"
5780			18'-10"			2@3-6		3-0	19'-7"	78'-4"
81			20'-0"			3@3-6	0-8		20'-10"	83'-4"
82			21'-2"		3@1-9		1-10		22'-0"	88'-0"
83			22'-4"		4@1-9			1-3	23'-4"	93'-4"
84			23'-6"					2-5	24'-6"	98'-0"
85			24'-8"			3@3-6		3-7	25'-8"	102'-8"
86			25'-10"		4@1-9	4@3-6	1-3		26'-11"	107'-8"
87			27'-0"		5@1-9			0-8	28'-3"	113'-0"
88			28'-2"					1-10	29'-5"	117'-8"
89			29'-4"			4@3-6		3-0	30'-7"	122'-4"
5790			30'-6"			5@3-6	0-8		31'-10"	127'-4"
91			31'-8"		5@1-9		1-10		33'-0"	132'-0"
92			32'-10"		6@1-9			1-3	34'-4"	137'-4"
93			34'-0"					2-5	35'-6"	142'-0"
94			35'-2"			5@3-6		3-7	36'-8"	146'-8"
95			36'-4"		6@1-9	6@3-6	1-3		37'-11"	151'-8"
96			37'-6"		7@1-9			0-8	39'-1"	156'-4"
97			38'-8"					1-10	40'-5"	161'-8"
98			39'-10"			6@3-6		3-0	41'-7"	166'-4"
99			41'-0"			7@3-6	0-8		42'-10"	171'-4"
5800			42'-2"		7@1-9		1-10		44'-0"	176'-0"
01			43'-4"		8@1-9			1-3	45'-4"	181'-4"
02		4	44'-6"		8@1-9			2-5	46'-6"	186'-0"
D-5803	T-1	60	45'-8"	3-7	8@1-9	7@3-6		3-7	47'-8"	2,860'-0"
D-401	Hd	276		1-9	1-1½				6'-6"	1,794'-0"

SHEET NO. 19 — PANEL NO. 12

Bar Mark	Bar Type	No Req'd	Out to Out "O"	a	b	c	d	e	Cutting Length	Total Length
D-5767	T-1	1	3'-8"	3-7			0-1		3'-9"	3'-9"
68			4'-10"				1-3		4'-11"	4'-11"
69			6'-0"		1@1-9			0-8	6'-3"	6'-3"
5770			7'-2"					1-10	7'-5"	7'-5"
71			8'-4"					3-0	8'-7"	8'-7"
72			9'-6"			1@3-6	0-8		9'-10"	9'-10"
73			10'-8"		1@1-9		1-10		11'-0"	11'-0"
74			11'-10"		2@1-9			1-3	12'-4"	12'-4"
75			13'-0"					2-5	13'-6"	13'-6"
76			14'-2"			1@3-6		3-7	14'-8"	14'-8"
77			15'-4"		2@1-9	2@3-6	1-3		15'-11"	15'-11"
78			16'-6"		3@1-9			0-8	17'-3"	17'-3"
79			17'-8"					1-10	18'-5"	18'-5"
5780			18'-10"			2@3-6		3-0	19'-7"	19'-7"
81			20'-0"			3@3-6	0-8		20'-10"	20'-10"
82			21'-2"		3@1-9		1-10		22'-0"	22'-0"
83			22'-4"		4@1-9			1-3	23'-4"	23'-4"
84			23'-6"					2-5	24'-6"	24'-6"
85			24'-8"			3@3-6		3-7	25'-8"	25'-8"
86			25'-10"		4@1-9	4@3-6	1-3		26'-11"	26'-11"
87			27'-0"		5@1-9			0-8	28'-3"	28'-3"
88			28'-2"					1-10	29'-5"	29'-5"
89			29'-4"			4@3-6		3-0	30'-7"	30'-7"
5790			30'-6"			5@3-6	0-8		31'-10"	31'-10"
91			31'-8"		5@1-9		1-10		33'-0"	33'-0"
92			32'-10"		6@1-9			1-3	34'-4"	34'-4"
93			34'-0"					2-5	35'-6"	35'-6"
94			35'-2"			5@3-6		3-7	36'-8"	36'-8"
95			36'-4"		6@1-9	6@3-6	1-3		37'-11"	37'-11"
96			37'-6"		7@1-9			0-8	39'-1"	39'-1"
97			38'-8"					1-10	40'-5"	40'-5"
98			39'-10"			6@3-6		3-0	41'-7"	41'-7"
99			41'-0"			7@3-6	0-8		42'-10"	42'-10"
5800			42'-2"		7@1-9		1-10		44'-0"	44'-0"
01			43'-4"		8@1-9			1-3	45'-4"	45'-4"
02		1	44'-6"		8@1-9			2-5	46'-6"	46'-6"
D-5803	T-1	37	45'-8"	3-7	8@1-9	7@3-6		3-7	47'-8"	1,763'-8"
D-401	Hd	113		1-9	1-1½				6'-6"	734'-6"



TYPE Hd BAR



TYPE T-1 BAR

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 – STA. 173+63.52 TO STA. 184+
STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL

BENT BARS – PANELS 1 THRU 5
10 THRU 21, 26 & 27

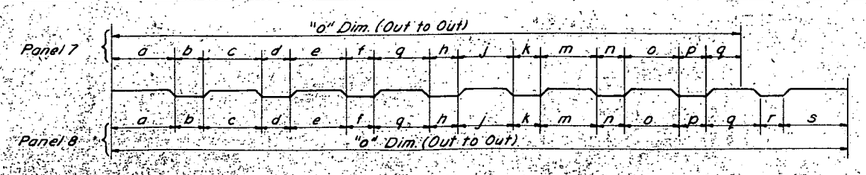
A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE ______ SHEET 23a DWG. NO.

FED.ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	S
9	COLO.	I-25-1(16)99	28	

SHEET NO. 13 — PANEL NO. 7

Bar Mark	Bar Type	No. Req'd	Out to Out "O"	a	b	c	d	e	f	g	h	j	k	m	n	o	p	q	Cutting Length	Total Length
D-5148	T-2	1	4'-6"	3'-5"														1'-1"	4'-7"	4'-7"
49			5'-8"		1'-6"													0'-9"	5'-11"	5'-11"
5150			6'-10"															1'-11"	7'-1"	7'-1"
51			8'-0"															3'-1"	8'-4"	8'-4"
52			9'-2"			3'-1"												1'-2"	9'-6"	9'-6"
53			10'-4"				1'-6"											0'-10"	10'-10"	10'-10"
54			11'-6"															2'-0"	12'-0"	12'-0"
55			12'-8"					2'-9"										0'-5"	13'-3"	13'-3"
56			13'-10"						1'-3"									0'-4"	14'-7"	14'-7"
57			15'-0"															1'-6"	15'-9"	15'-9"
58			16'-2"															2'-8"	16'-11"	16'-11"
59			17'-4"							2'-8"								1'-2"	18'-2"	18'-2"
5160			18'-6"								1'-5"							0'-11"	19'-6"	19'-6"
61			19'-8"															2'-1"	20'-8"	20'-8"
62			20'-10"									2'-11"						0'-4"	21'-10"	21'-10"
63			22'-0"							2'-8"	1'-5"							1'-6"	23'-1"	23'-1"
64			23'-2"							2'-9"	1'-6"		1'-5"					1'-1"	24'-5"	24'-5"
65			24'-4"															2'-3"	25'-7"	25'-7"
66			25'-6"											2'-10"				0'-7"	26'-10"	26'-10"
67			26'-8"												1'-5"			0'-4"	28'-2"	28'-2"
68			27'-10"															1'-6"	29'-4"	29'-4"
69			29'-0"											2'-10"				2'-8"	30'-6"	30'-6"
5170			30'-2"					2'-9"		2'-9"		2'-11"	1'-5"	2'-11"		2'-11"		0'-10"	31'-9"	31'-9"
71			31'-4"					2'-10"		2'-10"		3'-0"	1'-6"					1'-8"	33'-1"	33'-1"
72			32'-6"					2'-11"		2'-10"		3'-0"	1'-6"				1'-6"	1'-3"	34'-3"	34'-3"
73		1	33'-7"	3'-5"	1'-6"	3'-1"	1'-6"	2'-11"	1'-3"	2'-10"		3'-0"	1'-6"		1'-5"	2'-11"		2'-5"	35'-4"	35'-4"
5174		8	33'-8"	3'-2"	1'-4"	2'-10"	1'-4"	2'-10"	1'-5"	2'-11"	1'-6"	2'-10"	1'-3"		1'-6"	3'-1"		3'-3"	35'-5"	283'-4"
557			34'-0"		1'-4"		1'-4"	2'-10"	1'-5"	3'-1"	1'-7"	2'-11"	1'-3"						35'-9"	286'-0"
5175			34'-5"		1'-5"		1'-5"	2'-11"	1'-5"	3'-1"	1'-8"	3'-0"	1'-3"						36'-3"	290'-0"
558			34'-10"			2'-10"		3'-0"	1'-6"	3'-2"	1'-8"	3'-1"	1'-4"						36'-7"	292'-8"
5176			35'-3"			3'-0"		3'-0"	1'-6"	3'-3"	1'-9"	3'-2"	1'-4"						37'-1"	296'-8"
559		8	35'-8"	3'-2"	1'-5"	3'-0"	1'-5"	3'-1"	1'-6"	3'-3"	1'-11"	3'-3"	1'-5"	2'-11"	1'-6"	3'-1"	1'-6"	3'-3"	37'-5"	299'-4"
5177		1	3'-7"	3'-4"														0'-3"	3'-8"	3'-8"
78			4'-8"															1'-4"	4'-9"	4'-9"
79			5'-9"		1'-6"													0'-11"	6'-0"	6'-0"
5180			6'-10"															2'-0"	7'-1"	7'-1"
81			7'-11"															3'-1"	8'-3"	8'-3"
82			9'-0"			3'-1"												1'-1"	9'-4"	9'-4"
83			10'-1"				1'-6"											0'-8"	10'-7"	10'-7"
84			11'-2"															1'-9"	11'-8"	11'-8"
85			12'-3"															2'-10"	12'-9"	12'-9"
86			13'-4"					3'-3"										0'-8"	13'-11"	13'-11"
87			14'-5"															1'-9"	15'-2"	15'-2"
88			15'-6"						1'-6"									1'-4"	16'-3"	16'-3"
89			16'-7"															2'-5"	17'-4"	17'-4"
5190			17'-8"					3'-3"										3'-6"	18'-6"	18'-6"
91			18'-9"					3'-2"		3'-6"								1'-2"	19'-7"	19'-7"
92			19'-10"															2'-3"	20'-10"	20'-10"
93			20'-11"								2'-0"							1'-4"	21'-11"	21'-11"
94			22'-0"															2'-5"	23'-1"	23'-1"
95			23'-1"															3'-6"	24'-2"	24'-2"
96			24'-2"							3'-6"	2'-0"	3'-6"						1'-1"	25'-5"	25'-5"
97			25'-3"							3'-5"	1'-11"		1'-5"					0'-11"	26'-6"	26'-6"
98			26'-4"															2'-0"	27'-8"	27'-8"
99			27'-5"									3'-6"						3'-1"	28'-9"	28'-9"
5200			28'-6"									3'-5"		3'-0"				1'-3"	30'-0"	30'-0"
01			29'-7"					3'-2"							1'-7"			0'-9"	31'-1"	31'-1"
02			30'-8"					3'-1"		3'-5"								1'-11"	32'-2"	32'-2"
03			31'-9"							3'-4"								3'-1"	33'-4"	33'-4"
04			32'-10"													3'-1"		1'-1"	34'-5"	34'-5"
05			33'-11"													3'-1"	1'-6"	0'-8"	35'-8"	35'-8"
5206	T-2	1	35'-0"	3'-4"	1'-6"	3'-1"	1'-6"	3'-1"	1'-6"	3'-4"	1'-11"	3'-5"	1'-5"	3'-0"	1'-7"	3'-1"	1'-6"	1'-9"	36'-9"	36'-9"
D-401	Hd	160		1'-9"	1'-1½"														6'-6"	1040'-0"



TRUSS BAR - TYPE T-2

No Scale

SHEET NO. 14 — PANEL NO. 8

Bar Mark	Bar Type	No. Req'd	Out to Out "O"	a	b	c	d	e	f	g	h	j	k	m	n	o	p	q	r	s	Cutting Length	Total Length
D-5274	T-2	1	3'-8"	3'-4"																	0'-4"	3'-9"
75			4'-10"																		1'-6"	4'-11"
76			6'-0"		1'-6"																1'-2"	6'-3"
77			7'-2"																		2'-4"	7'-5"
78			8'-4"			3'-0"															0'-6"	8'-8"
79			9'-6"																		1'-8"	9'-10"
5280			10'-8"				1'-6"														1'-4"	11'-2"
81			11'-11"																		2'-7"	12'-5"
82			13'-1"					2'-11"													0'-10"	13'-8"
83			14'-3"						1'-5"												0'-7"	14'-10"
84			15'-5"																		1'-9"	16'-2"
85			16'-7"																		2'-11"	17'-4"
86			17'-9"			3'-0"				2'-8"											1'-5"	18'-7"
87			18'-11"			3'-1"					1'-3"										1'-3"	19'-11"
88			20'-2"	3'-4"																	2'-6"	21'-2"
89			21'-4"	3'-5"									2'-7"								1'-0"	22'-5"
5290			22'-6"											1'-5"							0'-9"	23'-9"
91			23'-8"		1'-6"																1'-11"	24'-11"
92			24'-10"		1'-7"																3'-0"	26'-1"
93			26'-0"											2'-9"							1'-5"	27'-4"
94			27'-2"										2'-7"		1'-5"						1'-2"	28'-8"
95			28'-4"										2'-8"								2'-3"	29'-10"
96			29'-6"					2'-11"						2'-9"		2'-8"					0'-9"	31'-1"
97			30'-8"					3'-3"						2'-10"			1'-5"				0'-5"	32'-6"
98			31'-11"																		1'-7"	33'-8"
99			33'-1"																		2'-9"	34'-10"
5300			34'-3"															2'-9"			1'-2"	36'-1"
01			35'-5"															2'-9"	1'-5"		0'-11"	37'-5"
02		1	36'-8"	3'-5"	1'-7"	3'-1"	1'-6"	3'-0"		2'-8"	1'-3"		1'-5"	2'-10"		2'-8"	1'-5"	2'-9"	1'-5"		2'-2"	38'-9"
03		8	37'-8"	3'-1"	1'-5"	2'-10"	1'-5"	2'-9"		2'-10"	1'-5"	2'-8"	1'-4"	2'-8"		3'-0"	1'-6"	3'-1"	1'-7"		3'-3"	39'-8"
04		8	38'-0"					2'-10"	1'-5"	2'-11"		2'-9"	1'-4"	2'-9	1'-5"	3'-0"	1'-6"	3'-1"				40'-0"
D-5305		7	38'-5"						1'-6"			2'-10"	1'-5"	2'-10"	1'-6"	3'-0"	1'-6"	3'-1"				40'-5"
D-564		7	38'-10"	3'-1"	1'-5"				1'-6"		1'-5"	2'-11"	1'-5"	2'-11"	1'-6"	3'-1"	1'-7"	3'-2"			3'-3"	40'-10"
D-565		7	39'-2"	3'-2"	1'-6"	2'-10"	1'-5"	2'-10"	1'-6	2'-11"	1'-6"	2'-11"	1'-6"	2'-11"	1'-6"	3'-1"	1'-7"	3'-2"	1'-7"		3'-2"	41'-2"
D-5306		1	4'-1"	3'-5"																	0'-8"	4'-2"
07			5'-2"																		1'-9"	5'-5"
08			6'-4"		1'-7																1'-4"	6'-7"
09			7'-5"																		2'-5"	7'-8"
5310			8'-6"			3'-0"															0'-6"	8'-10"
11			9'-8"																		1'-8"	10'-2"
12			10'-9"				1'-7"														1'-2"	11'-3"
13			11'-10"				1'-6"														2'-4"	12'-4"
14			13'-0"					3'-0"													0'-6"	13'-7"
15			14'-1"																		1'-7"	14'-10"
16			15'-2"						1'-7"												1'-1"	15'-11"
17			16'-4"			3'-0"															2'-3"	17'-2"
18			17'-5"			2'-11"		3'-0"		3'-1"											0'-4"	18'-3"
19			18'-7"					2'-11"		3'-1"											1'-7"	19'-7"
5320			19'-8"							3'-1"	1'-7"										1'-1"	20'-8"
21			20'-9"							3'-0"											2'-3"	21'-10"
22			21'-11"																		3'-5"	23'-0"
23			23'-0"								1'-7"	3'-2"									1'-4"	24'-3"
24			24'-1"	3'-5"	1'-7"		1'-6"				1'-6"		1'-7"								0'-11"	25'-4"
25			25'-3"	3'-4"	1'-6"		1'-5"														2'-4"	26'-6"
26			26'-4"											3'-1"							0'-4"	27'-8"
27			27'-5"									3'-2"									1'-5"	28'-11"
28			28'-7"									3'-1"	1'-7"		1'-7"						1'-1"	30'-1"
29			29'-8"										1'-6"	3'-1"	1'-7"						2'-3"	31'-2"
5330			30'-10"											3'-0"	1'-6"	3'-1"					0'-6"	32'-5"
31			31'-11"																		1'-7"	33'-8"
32			33'-0"			2'-11"			1'-7"			3'-1"					1'-7"				1'-1"	34'-9"
33			34'-2"			2'-10"		2'-11"	1'-6"			3'-0"									2'-6"	35'-11"
34			35'-3"					2'-10"										3'-2"			0'-6"	37'-1"
35			36'-4"																		1'-7"	38'-2"
36			37'-6"																	1'-7"	1'-2"	39'-6"
D-5337	T-2	1	38'-7"	3'-4"	1'-6"	2'-10"	1'-5"	2'-10"	1'-6"	3'-0"	1'-6"	3'-0	1'-6"	3'-0"	1'-6"	3'-1"	1'-7"	3'-2"	1'-7"		2'-3"	40'-7"
D-401	Hd	142		1'-9"	1'-1½"																6'-6"	923'-0"

TYPE "Hd" BAR

No Scale

COLORADO DEPARTMENT OF HIGHWA

PUEBLO FREEWAY PUEBLO, COL

VIADUCT STRUCTURE NO.2 - STA.173+63.52 TO STA.18

STRUCTURE NO. — N B: K-18-C K
S B: K-18-C L

BENT BARS PANELS NO.7 & NO

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 23b | DWG.

CHECKED BY: H.C.S.
MADE BY: W.H.W.
CHECKED BY: E.T.
MADE BY: H.E.H.
DETAILS
TRACING

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	29	

SHEET No. 16 PANEL No. 23

Bar Mark	Bar Type	No. Req'd.	Out to Out "O"	a	b	c	d	e	f	g	h	j	k	m	n	o	p	q	Cutting Length	Total Length
D-5541	T-2	1	4-7	3-6														1-1	4-8	4-8
42			5-10		1-8													0-8	6-1	6-1
43			7-1															1-11	7-4	7-4
44			8-5															3-3	8-9	8-9
45			9-8			3-3												1-3	10-0	10-0
46			10-10				1-7											0-10	11-4	11-4
47			12-1															2-1	12-7	12-7
48			13-4					2-10										0-6	13-11	13-11
49			14-7					2-10	1-3									0-6	15-4	15-4
5550			15-9					2-10										1-8	16-6	16-6
51			17-0					2-11										2-10	17-9	17-9
52			18-3							2-8								1-5	19-1	19-1
53			19-5			3-3				2-9	1-6							1-0	20-5	20-5
54			20-8			3-2					1-6							2-4	21-8	21-8
55			21-11								1-6	3-1						0-6	23-0	23-0
56			23-1								1-7							1-7	24-2	24-2
57			24-4										1-6					1-3	25-7	25-7
58			25-7							2-9								2-6	26-10	26-10
59			26-10							2-10		3-1		2-11				0-10	28-2	28-2
5560			28-0									3-2			1-6			0-5	29-4	29-4
61			29-3						1-3									1-8	30-9	30-9
62			30-6						1-4									2-10	32-0	32-0
63			31-8													2-11		1-1	33-3	33-3
64			32-11													2-11	1-6	0-10	34-8	34-8
65		1	34-2	3-6	1-8	3-2	1-7	2-11	1-4	2-10	1-7	3-2	1-6	2-11	1-6	2-11	1-6	2-1	35-11	35-11
66		8	35-5	3-2	1-6	2-11	1-6	2-11	1-6	3-4	1-7	3-0	1-5		1-7	3-2	1-8	3-3	37-2	297-4
67		8	35-9			2-11	1-6	3-0	1-7	3-4	1-9	3-1	1-5			3-2	1-7	3-3	37-6	300-0
D-5568		7	36-1			3-0	1-7	3-1	1-7	3-4	1-10	3-2	1-5			3-2	1-7	3-2	37-10	264-10
D-560		7	36-7	3-2		3-1	1-7	3-1	1-8	3-6	1-11	3-3	1-6	2-11	1-7	3-1	1-7	3-2	38-4	268-4
D-561		7	37-0	3-3	1-6	3-1	1-7	3-1	1-8	3-7	1-11	3-6	1-6	3-0	1-6	3-1	1-7	3-2	38-9	271-3
D-5569		1	3-8	3-5														0-3	3-9	3-9
70			4-10															1-5	4-11	4-11
71			6-0		1-7													1-0	6-3	6-3
72			7-2															2-2	7-5	7-5
73			8-4															3-4	8-8	8-8
74			9-6			3-3												1-3	9-10	9-10
75			10-6															2-5	11-2	11-2
76			11-10				1-8											1-11	12-4	12-4
77			13-0															3-1	13-7	13-7
78			14-2					3-3										1-0	14-9	14-9
79			15-4															2-2	16-1	16-1
5580			16-6						1-8									1-8	17-3	17-3
81			17-8															2-10	18-6	18-6
82			18-10															4-0	19-8	19-8
83			20-0							3-10								1-4	21-0	21-0
84			21-2			3-3					2-2							0-4	22-2	22-2
85			22-4			3-2		3-3										1-7	23-4	23-4
86			23-6					3-2										2-10	24-7	24-7
87			24-8									3-8						0-4	25-11	25-11
88			25-10								2-2							1-6	27-1	27-1
89			27-0							3-10	2-1		1-6					1-3	28-4	28-4
5590			28-2				1-8			3-9		3.8						2-6	29-6	29-6
91			29-4				1-7			3-9		3-7		3-0				0-10	30-10	30-10
92			30-6							3-9								2-0	32-0	32-0
93			31-8							3-8	2-1				1-6			1-9	33-2	33-2
94			32-10								2-0	3-7						3-0	34-5	34-5
95			34-0			3-2					2-0	3-6				3-1		1-2	35-7	35-7
96			35-2		1-7	3-1		3-2		3-8	2-0	3-6				3-1	1-7	0-10	36-11	36-11
D-5597	T-2	1	36-4	3-5	1-6	3-1	1-7	3-1	1-8	3-7	1-11	3-6	1-6	3-0	1-6	3-1	1-7	2-4	38-1	38-1
D-401	Hd.	135		1-9	1-1½														6-6	877-6

SHEET No. 17 PANEL No. 24

Bar Mark	Bar Type	No. Req'd.	Out to Out "O"	a	b	c	d	e	f	g	h	j	k	m	n	o	p	q	r	s	Cutting Length	Total Length
D-5665	T-2	1	3-10	3-4																0'-6"	3'-11"	3'-11"
66			5-0																	1'-8"	5'-1"	5'-1"
67			6-3		1-6															1'-5"	6'-6"	6'-6"
68			7-6																	2-8	7-9	7-9
69			8-9			3-1														0-10	9-1	9-1
5670			9-11		1-6															2-0	10-3	10-3
71			11-2		1-7		1-6													1-8	11-8	11-8
72			12-5																	2-11	12-11	12-11
73			13-7					3-1												1-0	14-2	14-2
74			14-10						1-6											0-9	15-7	15-7
75			16-1																	2-0	16-10	16-10
76			17-4																	3-3	18-2	18-2
77			18-6							3-0										1-5	19-4	19-4
78			19-9								1-6									1-2	20-9	20-9
79			21-0																	2-5	22-0	22-0
5680			22-3									2-9								0-11	23-4	23-4
81			23-5									2-9	1-3							0-10	24-6	24-6
82			24-8									2-9								2-1	25-11	25-11
83			25-11									2-10		2-10						0-5	27-2	27-2
84			27-2																	1-8	28-6	28-6
85			28-4										1-3		1-5					1-5	29-10	29-10
86			29-7										1-4							2-7	31-1	31-1
87			30-10	3-4												2-10				1-0	32-5	32-5
88			32-0	3-5						3-0					1-5		1-5			0-8	33-7	33-7
89			33-3					3-1	1-6	3-1		2-10			1-6					1-9	35-0	35-0
5690			34-6					3-2	1-7			2-11								2-9	36-3	36-3
91			35-8										1-4			2-10		2-11		1-0	37-6	37-6
92			36-11										1-5			2-11		2-11	1-5	0-8	38-11	38-11
D-5693		1	38-2	3-5	1-7	3-1	1-6	3-2	1-7	3-1	1-6		1-5	2-10	1-6	2-11	1-5	2-11	1-5	1-10	40-2	40-2
D-562		7	39-3	3-1	1-5	2-11	1-5	2-11	1-6	2-10	1-5	2-11	1-6	3-1	1-7	3-2	1-6	3-2	1-7	3-3	41-3	288-9
D-563		7	39-9	3-1	1-5		1-6	2-11	1-6	2-11	1-5	3-0	1-7	3-1		3-2	1-6		1-8	3-4	41-9	292-3
D-5694		7	40-3	3-2	1-6			3-0	1-6	3-0	1-5	3-0		3-1		3-3	1-7		1-8	3-4	42-3	295-9
95		7	40-8	3-2	1-6	2-11		3-0	1-7	3-1	1-6	3-1		3-2		3-3	1-7	3-2	1-8	3-4	42-8	298-8
96		6	41-1	3-2	1-6	3-0	1-6	3-0	1-7	3-1	1-6	3-1	1-7	3-2	1-7	3-4	1-7	3-3	1-9	3-5	43-1	258-6
97		1	4-2	3-5																0-9	4-3	4-3
98			5-4																	1-11	5-7	5-7
99			6-6		1-7															1-6	6-9	6-9
5700			7-8																	2-8	7-11	7-11
01			8-10			3-2														0-8	9-2	9-2
02			10-0																	1-10	10-6	10-6
03			11-2				1-7													1-5	11-8	11-8
04			12-3																	2-6	12-9	12-9
05			13-5					3-2												0-6	14-0	14-0
06			14-7																	1-8	15-4	15-4
07			15-9			3-2			1-8											1-2	16-6	16-6
08			16-11			3-1														2-5	17-8	17-8
09			18-1							3-2										0-5	18-11	18-11
5710			19-3																	1-7	20-1	20-1
11			20-5								1-8									1-1	21-5	21-5
12			21-7								1-8									2-3	22-7	22-7
13			22-9								1-8									3-5	23-10	23-10
14			23-11								1-7	3-3								1-5	25-0	25-0
15			25-1				1-7						1-7							1-0	26-4	26-4
16			26-3				1-6													2-3	27-6	27-6
17			27-5		1-7	3-1														3-5	28-9	28-9
18			28-7		1-6	3-0			1-8					3-3						1-6	29-11	29-11
19			29-8						1-7			3-3		3-3	1-8					1-0	31-2	31-2
5720			30-10							3-2		3-2		3-3						2-3	32-4	32-4
21			32-0					3-2		3-1				3-2						3-7	33-7	33-7
22			33-2					3-1												1-6	34-9	34-9
23			34-4													3-4				1-1	36-1	36-1
24			35-6														1-7			2-3	37-3	37-3
25			36-8								1-7									3-5	38-5	38-5
26			37-10								1-6							3-3		1-5	39-8	39-8
27			39-0								1-6							3-3	1-9	0-10	41-0	41-0
D-5728	T-2	1	40-2	3-5	1-6	3-0	1-6	3-1	1-7	3-1	1-6	3-2	1-7	3-2	1-8	3-4	1-7	3-3	1-9	2-0	42-2	42-2
D-401	Hd	135		1'-9"	1'-1½"																6-6	877-6

DETAILS	MADE BY	H.C.S.
	CHECKED BY	W.H.W.
TRACING	MADE BY	L.W.M.
	CHECKED BY	H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38
STRUCTURE NO. – NB: K-18-CK
SB: K-18-CL

BENT BARS - PANELS 23 & 24

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE ______ SHEET 23c DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1((16)99	30

SHEET NO. 15 PANEL NO. 9

Bar Mark	Bar Type	No. Reqd	Out to Out 0"	a	b	c	d	e	f	g	h	j	k	m	n	o	p	q	r	s	Cutting Length	Total Length
D-5411	T-2	1	4'-4"	3'-5"																0'-11"	4'-5"	4'-5"
12			5'-6"		1'-7"															0'-6"	5'-9"	5'-9"
13			6'-8"																	1'-8"	6'-11"	6'-11"
14			7'-10"																	2'-10"	8'-1"	8'-1"
15			9'-0"			3'-2"														0'-10"	9'-4"	9'-4"
16			10'-2"				1'-7"													0'-5"	10'-8"	10'-8"
17			11'-4"																	1'-7"	11'-10"	11'-10"
18			12'-5"																	2'-8"	12'-11"	12'-11"
19			13'-7"					3'-2"												0'-8"	14'-2"	14'-2"
5420			14'-9"																	1'-10"	15'-4"	15'-4"
21			15'-11"	3'-5"					1'-7"											1'-5"	16'-8"	16'-8"
22			17'-2"	3'-6"																2'-7"	17'-11"	17'-11"
23			18'-3"							3'-1"										0'-7"	19'-1"	19'-1"
24			19'-5"			3'-2"														1'-9"	20'-3"	20'-3"
25			20'-7"			3'-3"		3'-2"			1'-6"									1'-4"	21'-7"	21'-7"
26			21'-9"					3'-3"												2'-5"	22'-9"	22'-9"
27			22'-11"									3'-1"								0'-6"	24'-0"	24'-0"
28			24'-1"																	1'-8"	25'-2"	25'-2"
29			25'-3"										1'-7"							1'-3"	26'-6"	26'-6"
5430			26'-5"																	2'-5"	27'-8"	27'-8"
31			27'-7"		1'-7"									3'-1"						0'-6"	28'-11"	28'-11"
32			28'-9"		1'-8"						1'-6"									1'-7"	30'-1"	30'-1"
33			29'-11"								1'-7"				1'-6"					1'-2"	31'-5"	31'-5"
34			31'-0"																	2'-3"	32'-6"	32'-6"
35			32'-2"													3'-1"				0'-4"	33'-9"	33'-9"
36			33'-4"																	1'-6"	34'-11"	34'-11"
37			34'-6"				1'-7"			3'-1"							1'-7"			1'-1"	36'-3"	36'-3"
38			35'-8"				1'-8"			3'-2"										2'-1"	37'-5"	37'-5"
39			36'-10"																	3'-3"	38'-8"	38'-8"
5440			38'-0"															3'-0"		1'-5"	39'-10"	39'-10"
41			39'-2"																1'-7"	1'-0"	41'-2"	41'-2"
42		1	40'-4"	3'-6"								3'-1"								2'-2"	42'-4"	42'-4"
D-5443		7	41'-4"	3'-4"								3'-2"	1'-7"		1'-6"					3'-3"	43'-4"	303'-4"
D-566			41'-6"	3'-4"	1'-8"						1'-7"	3'-2"	1'-8"	3'-1"	1'-7"			3'-0"			43'-6"	304'-6"
D-5444			41'-11"	3'-5"	1'-9"	3'-3"					1'-8"	3'-2"		3'-2"	1'-7"	3'-1"		3'-1"			43'-11"	307'-5"
D-567			42'-3"			3'-4"		3'-3"	1'-7"		1'-8"	3'-3"		3'-2"	1'-8"	3'-2"		3'-1"			44'-3"	309'-9"
D-5445			42'-7"			3'-4"		3'-4"	1'-8"	3'-2"	1'-8"	3'-3"		3'-3"	1'-8"	3'-2"	1'-7"	3'-2"	1'-7"		44'-7"	312'-1"
D-568		7	43'-0"		1'-9"	3'-5"	1'-8"	3'-4"	1'-8"	3'-3"	1'-9"	3'-3"	1'-8"	3'-3"	1'-8"	3'-2"	1'-8"	3'-2"	1'-8"	3'-3"	45'-0"	315'-0"
D-5446		1	3'-6"																	0'-1"	3'-7"	3'-7"
47			4'-7"																	1'-2"	4'-8"	4'-8"
48			5'-9"		1'-9"															0'-7"	6'-0"	6'-0"
49			6'-10"																	1'-8"	7'-1"	7'-1"
5450			7'-11"																	2'-9"	8'-3"	8'-3"
51			9'-1"			3'-4"														0'-7"	9'-3"	9'-3"
52			10'-2"																	1'-8"	10'-8"	10'-8"
53			11'-4"				1'-9"													1'-1"	11'-10"	11'-10"
54			12'-5"																	2'-2"	12'-11"	12'-11"
55			13'-6"																	3'-3"	14'-1"	14'-1"
56			14'-7"					3'-3"												1'-1"	15'-2"	15'-2"
57			15'-9"		1'-9"				1'-9"											0'-6"	16'-6"	16'-6"
58			16'-10"		1'-8"															1'-8"	17'-7"	17'-7"
59			18'-0"																	2'-10"	18'-9"	18'-9"
5460			19'-1"							3'-4"										0'-7"	19'-11"	19'-11"
61			20'-2"																	1'-8"	21'-2"	21'-2"
62			21'-4"			3'-4"	1'-9"				1'-9"									1'-1"	22'-4"	22'-4"
63			22'-5"			3'-3"	1'-8"													2'-4"	23'-5"	23'-5"
64			23'-7"					3'-3"												3'-6"	24'-8"	24'-8"
65			24'-9"					3'-2"				3'-5"								1'-4"	25'-10"	25'-10"
66			25'-10"						1'-9"				1'-9"							0'-8"	27'-1"	27'-1"
67			26'-11"						1'-8"											1'-10"	28'-2"	28'-2"
68			28'-0"								1'-9"									2'-11"	29'-4"	29'-4"
69			29'-1"								1'-8"			3'-4"						0'-9"	30'-5"	30'-5"
5470			30'-3"									3'-5"								1'-11"	31'-9"	31'-9"
71			31'-4"			3'-3"						3'-4"			1'-9"					1'-4"	32'-10"	32'-10"
72			32'-6"			3'-2"														2'-7"	34'-0"	34'-0"
73			33'-7"																	3'-8"	35'-2"	35'-2"
74			34'-8"												3'-5"					1'-4"	36'-3"	36'-3"
75			35'-10"							3'-4"					3'-3"	1'-9"				0'-9"	37'-7"	37'-7"
76			36'-11"							3'-3"					3'-5"					1'-11"	38'-8"	38'-8"
77			38'-0"									3'-4"		3'-4"	3'-4"					3'-1"	39'-10"	39'-10"
78			39'-2"									3'-3"		3'-3"				3'-5"		1'-0"	41'-0"	41'-0"
79			40'-3"																	2'-1"	42'-3"	42'-3"
5480			41'-4"																			
D-5481	T-2	1	42'-6"	3'-5"	1'-8"	3'-2"	1'-8"	3'-2"	1'-8"	3'-3"	1'-8"	3'-5"	1'-9"	3'-3"	1'-9"	3'-4"	1'-9"	3'-5"	1'-10"	1'-4"	43'-4"	43'-4"
D-401	Hd	160		1'-9"	1'-1½"															2'-6"	44'-6"	44'-6"
																					6'-6"	1040'-0"

SHEET NO. 18 PANEL NO. 25

Bar Mark	Bar Type	No. Reqd	Out to Out 0"	a	b	c	d	e	f	g	h	j	k	m	n	o	p	q	r	s	Cutting Length	Total Length
D-5965	T-2	1	4'-3"	3'-6"																0'-9"	4'-4"	4'-4"
66			5'-6"		1'-7"															0'-5"	5'-7"	5'-7"
67			6'-10"																	1'-9"	7'-1"	7'-1"
68			8'-1"																	3'-0"	8'-4"	8'-4"
69			9'-4"			3'-4"														0'-11"	9'-8"	9'-8"
5970			10'-6"				1'-7"													0'-6"	10'-10"	10'-10"
71			11'-9"																	1'-9"	12'-3"	12'-3"
72			12'-11"																	2'-11"	13'-5"	13'-5"
73			14'-2"					3'-4"												0'-10"	14'-9"	14'-9"
74			15'-5"						1'-7"											0'-6"	16'-0"	16'-0"
75			16'-7"																	1'-8"	17'-4"	17'-4"
76			17'-10"																	2'-11"	18'-7"	18'-7"
77			19'-1"							3'-3"										0'-11"	19'-11"	19'-11"
78			20'-3"		1'-7"						1'-7"									0'-6"	21'-1"	21'-1"
79			21'-6"		1'-8"															1'-8"	22'-6"	22'-6"
5980			22'-9"			3'-4"	1'-7"		1'-7"											2'-11"	23'-9"	23'-9"
81			23'-11"			3'-5"	1'-8"		1'-8"			3'-3"								0'-7"	24'-11"	24'-11"
82			25'-2"																	1'-10"	26'-3"	26'-3"
83			26'-4"										1'-7"							1'-5"	27'-7"	27'-7"
84			27'-7"																	2'-8"	28'-10"	28'-10"
85			28'-10"											3'-3"						0'-8"	30'-1"	30'-1"
86			30'-0"								1'-7"									1'-10"	31'-4"	31'-4"
87			31'-3"								1'-8"									1'-5"	32'-9"	32'-9"
88			32'-6"												1'-7"					2'-8"	34'-0"	34'-0"
89			33'-8"									3'-3"								0'-6"	35'-2"	35'-2"
5990			34'-11"									3'-4"					3'-3"			1'-9"	36'-6"	36'-6"
91			36'-2"											3'-3"						1'-4"	37'-11"	37'-11"
92			37'-4"											3'-4"				1'-7"		2'-6"	39'-1"	39'-1"
93			38'-7"																	0'-9"	40'-4"	40'-4"
94			39'-10"										1'-7"						3'-2"	1'-5"	41'-8"	41'-8"
95			41'-0"										1'-8"							1'-4"	43'-0"	43'-0"
96		1	42'-3"	3'-6"	1'-8"	3'-5"														1'-4"	44'-3"	44'-3"
97		8	43'-3"	3'-4"	1'-7"	3'-3"				3'-3"					1'-7"	3'-3"	1'-7"	3'-2"	1'-7"	2'-7"	46'-7"	372'-8"
										3'-4"		3'-4"			1'-8"	3'-4"	1'-8"	3'-5"	1'-8"	3'-4"	47'-1"	329'-7"
D-5998		7	43'-9"		1'-8"	3'-4"		3'-4"		3'-5"	1'-8"	3'-5"	1'-8"		1'-8"	3'-5"	1'-9"	3'-5"	1'-8"			
		8	44'-2"		1'-8"	3'-5"		3'-5"		3'-5"	1'-9"	3'-5"	1'-9"	3'-4"	1'-8"	3'-5"	1'-9"	3'-5"	1'-8"			
D-569		8	44'-7"		1'-8"	3'-5"	1'-8"	3'-5"	1'-8"	3'-6"	1'-9"	3'-6"	1'-9"	3'-5"	1'-9"	3'-5"	1'-9"	3'-6"	1'-8"			
D-570	T-2	7	45'-1"	3'-4"	1'-9"	3'-5"	1'-9"	3'-6"	1'-9"	3'-6"	1'-9"	3'-6"	1'-9"	3'-6"	1'-9"	3'-6"	1'-9"	3'-6"	1'-9"	3'-4"	47'-1"	329'-7"
D-401	Hd	113		1'-9"	1'-1½"																6'-6"	734'-6"

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+
STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL

BENT BARS — PANELS NO. 9 & NO. 2

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DETAILS	CHECKED BY	H.C.S.	
	MADE BY	W.A.S.	
TRACING	CHECKED BY	P.W.T.	
	MADE BY	B.W.B.	

SHEET NO. 20 — PANEL NO. 6

Bar Mark	Bar Type	No. Req'd	Out to Out "O"	a	b	c	d	e	f	g	h	j	k	m	n	o	Cutting Length	Total Length
D-501	T-1	2	4'-6"	3'-6"				1'-0									4'-7"	9'-2"
02			5'-8"		1@1-8		0-6										5'-11"	11'-10"
03			6'-10"				1-8										7'-1"	14'-2"
04			8'-0"				2-10										8'-3"	16'-6"
05			9'-2"			1@3-4		0-8									9'-6"	19'-0"
06			10'-4"		1@1-8			1'-10									10'-8"	21'-4"
07			11'-6"		2@1-8			1-4									12'-0"	24'-0"
08			12'-8"					2-6									13'-2"	26'-4"
09			13'-10"			1@3-4		3-8									14'-4"	28'-8"
510			15'-0"		2@1-8	2@3-4	1'-6										15'-7"	31'-2"
11			16'-2"		3@1-8			1-0									16'-11"	33'-10"
12			17'-4"					2-2									18'-1"	36'-2"
13		2	18'-6"			2@3-4		3-4									19'-3"	38'-6"
14		1	19'-8"		3@1-8	3@3-4	1'-2										20'-6"	20'-6"
15			20'-10"		4@1-8			0-8									21'-10"	21'-10"
16			22'-0"					1-10									23'-0"	23'-0"
17			23'-2"			3@3-4		3'-0"									24'-2"	24'-2"
18			24'-4"			4@3-4	0-10										25'-5"	25'-5"
19			25'-6"		4@1-8		2-0										26'-7"	26'-7"
520			26'-8"		5@1-8			1-6									27'-11"	27'-11"
21			27'-10"			4@3-4		2-8									29'-1"	29'-1"
22			29'-0"			5@3-4	0-6										30'-4"	30'-4"
23			30'-2"		5@1-8		1-8										31'-6"	31'-6"
24			31'-4"		6@1-8			1-2									32'-10"	32'-10"
525	T-1	1	32'-6"	3'-6"	6@1-8	5@3-4		2-4									34'-0"	34'-0"
571	T-2	1.5	33'-4"	3-5	1-8	3-4	1-8	3-3	1-8	3-6	1-10	3-5	1'-7	3-0	1-8	3-4	34'-10"	522'-6"
72		1	19'-8"							3-8						1-0	20'-6"	20'-6"
73			20'-10"							3-8						2-2	21'-8"	21'-8"
74			22'-0"							3'-7	1'-11					1-6	23'-0"	23'-0"
75			23'-2"													2-8	24'-2"	24'-2"
76			24'-4"									3-5				0-5	25'-4"	25'-4"
77			25'-6"													1-7	26'-7"	26'-7"
78			26'-8"								1-11		1'-7			1-2	27'-11"	27'-11"
79			27'-10"								1-10					2-5	29'-1"	29'-1"
580			29'-0"											2-11		0-8	30'-4"	30'-4"
81			30'-2"													1-10	31'-6"	31'-6"
82			31'-4"												1'-7	1-5	32'-10"	32'-10"
83		1	32'-6"					3-3		3'-7	1-10	3-5	1'-7	2-11	1'-7	2-7	34'-0"	34'-0"
D-584	T-2	17	33'-4"	3-5	1-8	3-4	1-8	3-4	1-8	3-5	1-9	3-4	1-8	3-1	1-8	3-4	34'-10"	592'-2"
D-401	Hd	122		1-9	1-1½												6'-6"	793'-0"

SHEET NO. 21 — PANEL NO. 22

Bar Mark	Bar Type	No. Req'd	Out to Out "O"	a	b	c	d	e	f	g	h	j	k	m	n	o	Cutting Length	Total Length
D-501	T-1	2	4'-6"	3'-6"				1'-0									4'-7"	9'-2"
02			5'-8"		1@1-8		0-6										5'-11"	11'-10"
03			6'-10"				1-8										7'-1"	14'-2"
04			8'-0"				2-10										8'-3"	16'-6"
05			9'-2"			1@3-4		0-8									9'-6"	19'-0"
06			10'-4"		1@1-8			1-10									10'-8"	21'-4"
07			11'-6"		2@1-8			1-4									12'-0"	24'-0"
08			12'-8"					2-6									13'-2"	26'-4"
09			13'-10"			1@3-4		3-8									14'-4"	28'-8"
510			15'-0"		2@1-8	2@3-4	1'-6										15'-7"	31'-2"
11			16'-2"		3@1-8			1-0									16'-11"	33'-10"
12			17'-4"					2-2									18'-1"	36'-2"
13		2	18'-6"			2@3-4		3-4									19'-3"	38'-6"
14		1	19'-8"		3@1-8	3@3-4	1'-2										20'-6"	20'-6"
15			20'-10"		4@1-8			0-8									21'-10"	21'-10"
16			22'-0"					1-10									23'-0"	23'-0"
17			23'-2"			3@3-4		3-0									24'-2"	24'-2"
18			24'-4"			4@3-4	0-10										25'-5"	25'-5"
19			25'-6"		4@1-8		2-0										26'-7"	26'-7"
520			26'-8"		5@1-8			1-6									27'-11"	27'-11"
21			27'-10"			4@3-4		2-8									29'-1"	29'-1"
22			29'-0"			5@3-4	0-6										30'-4"	30'-4"
23			30'-2"		5@1-8		1-8										31'-6"	31'-6"
24			31'-4"		6@1-8			1-2									32'-10"	32'-10"
525	T-1	1	32'-6"	3-6	6@1-8	5@3-4		2-4									34'-0"	34'-0"
585	T-2	25	33'-4"	3-4	1-8	3-4	1-8	3-4	1-8	3-5	1-9	3-4	1-8	3-3	1-8	3-3	34'-10"	870'-10"
86		24	33'-4"	3-4						3-6	1-10	3-5	1-8	3-1	1-7	3-3	34'-10"	836'-0"
87		1	19'-8"	3-6						3-7						0-11	20'-6"	20'-6"
88			20'-10"													2-1	21'-8"	21'-8"
89			22'-0"									1-11				1-4	23'-0"	23'-0"
590			23'-2"													2-6	24'-2"	24'-2"
91			24'-4"							3-7						3-8	25'-4"	25'-4"
92			25'-6"							3-6		3-5				1-6	26'-7"	26'-7"
93			26'-8"										1-7			1-1	27'-11"	27'-11"
94			27'-10"													2-3	29'-1"	29'-1"
95			29'-0"											3-1		0-4	30'-4"	30'-4"
96			30'-2"													1-6	31'-6"	31'-6"
97			31'-4"												1'-7	1-1	32'-10"	32'-10"
D-598	T-2	1	32'-6"	3-6	1-8	3-4	1-8	3-4	1-8	3-6	1-11	3-5	1-7	3-1	1-7	2-3	34'-0"	34'-0"
D-401	Hd	156		1-9	1-1½												6'-6"	1014'-0"

SHEET NO. 25 — PRECAST GIRDERS

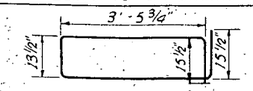
Bar Mark	No. Req'd	Cutting Length	Total Length	Bar Bending
401	2954	10-8	31509'-4"	See Detail
402	19698	5-2	101773'-8"	" "
403	4220	5-11	24968'-5"	" "
501	16327	4-5	72111'-5"	" "

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	31	

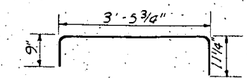
SHEET NO. 26 — DIAPHRAGMS

Bar Mark	No. Req'd	Cutting Length	Total Length	Bar Bending
D-490	1803	6'-8	12020'-0"	See Detail
D-491	2900	6'-0	17400'-0"	" "

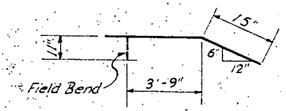
BENDING DIAGRAMS



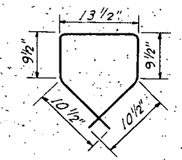
BAR MK'D. 401



BAR MK'D. 402

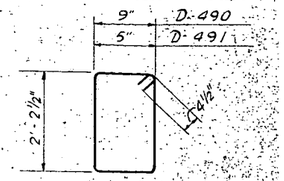


BAR MK'D. 403



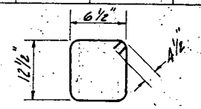
BAR MK'D. 501

BENDING DIAGRAMS



SHEET NO. 24 — STIRRUPS FOR HANDRAILING

Bar Mark	No. Req'd	Cutting Length	Total Length	Bar Bending
D-492	902	3-11	3532-10	See Detail



STIRRUP MK'D. D-492

Note: For general notes and reference drawings see General Plan Sheet No. 1.
Bending diagram for truss bars marked "T-1" & "T-2" shown on sheets No. 23a & 23b.

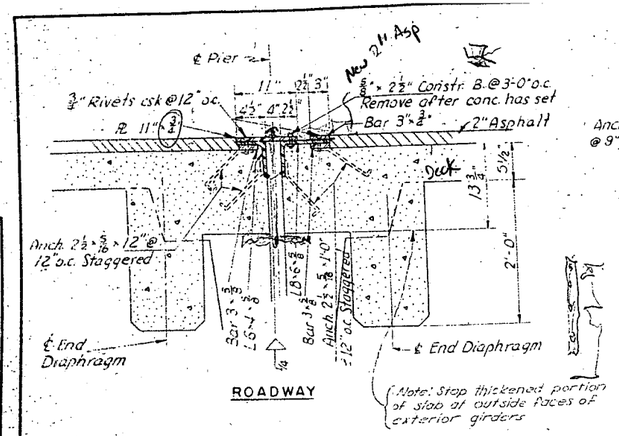
COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38.46
STRUCTURE NO. — N.B. K-18-CK, S.B. K-18-CL

BENT BARS - PANELS 6 & 22 AND PRECAST GIRDERS

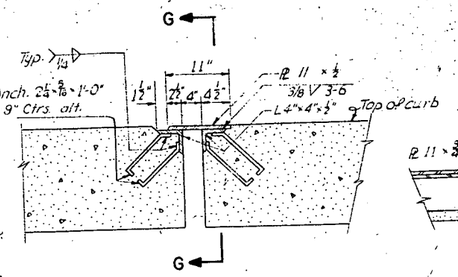
A. J. RYAN AND ASSOCIATES, ENGINEERS, DENVER, COLORADO

DETAILS: CHECKED BY: W.H.W. MADE BY: A.C.P.
TRACING: CHECKED BY: H.F.H.

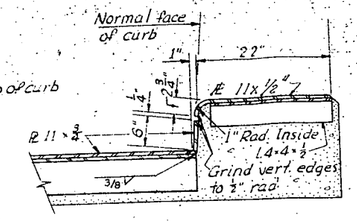
DATE | SHEET 23e | DWG. NO.



ROADWAY



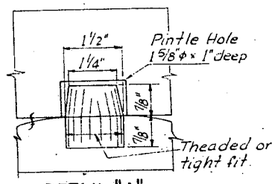
CURB



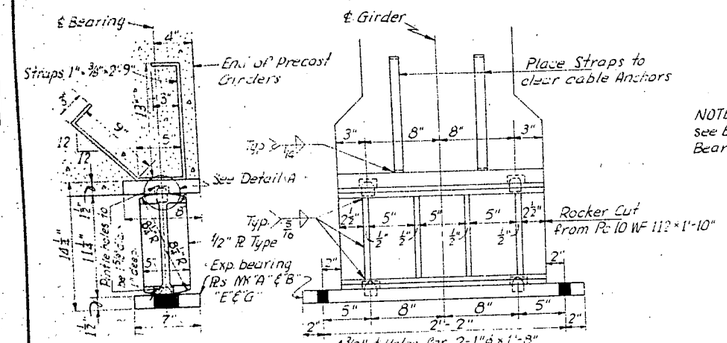
SECTION G-G

EXPANSION DEVICES

No Scale
Piers 2,4,6,8,10,12 & 14

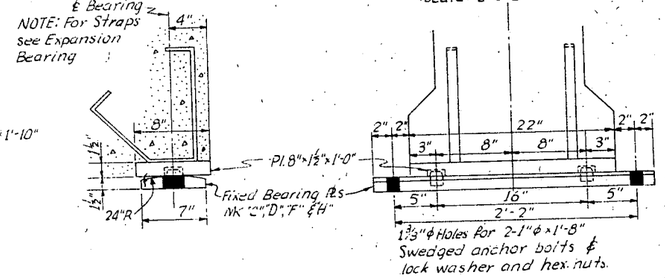


DETAIL "A"
Scale: 6"=1'-0"

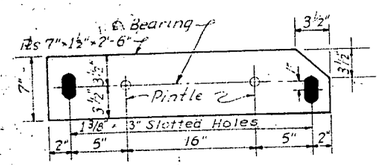


Rocker may be built from plates equal in thickness to WF section or may be made from cast steel.

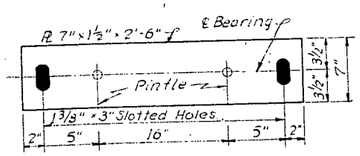
EXPANSION BEARING



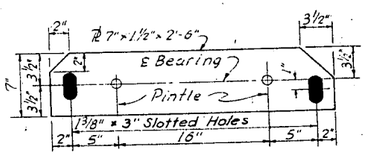
FIXED BEARING



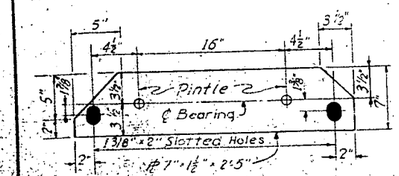
BEARING PLATE — MK "A" & "C"



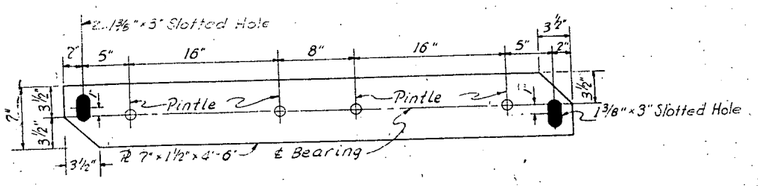
BEARING PLATE — MK "B" & "D"



BEARING PLATE MK "E"



BEARING PLATE - MK "H" & "G"

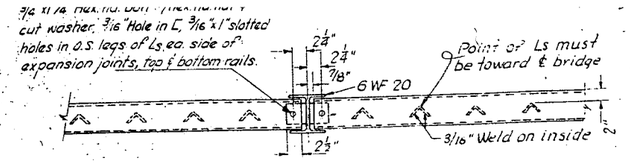


BEARING PLATE — MK "F"

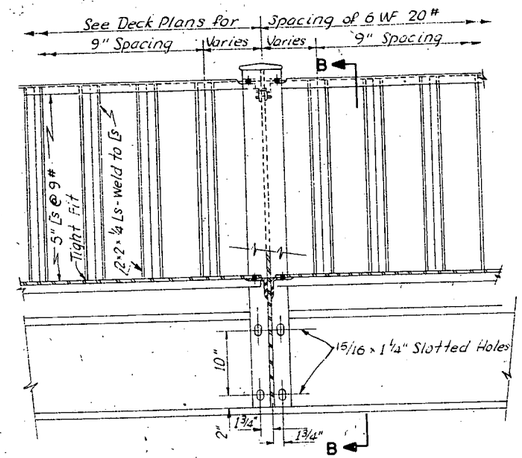
TYPICAL BEARING DETAILS

Scale: 1 1/2"=1'-0"

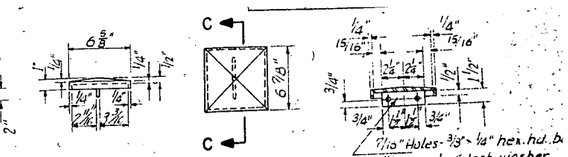
Note:
Structural Steel bearings shall conform to ASTM A7 55T.



PLAN WITHOUT CAP



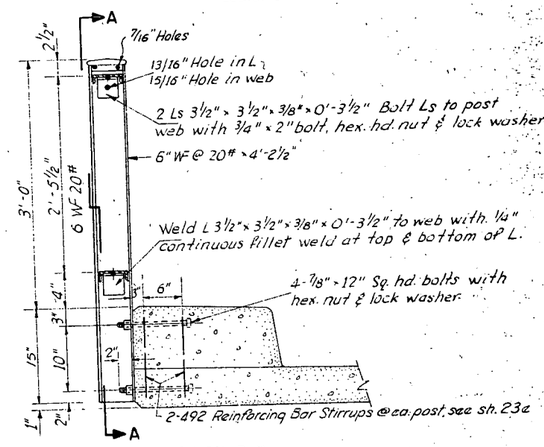
SECTION A-A



SECTION C-C

CAST IRON CAP FOR POST

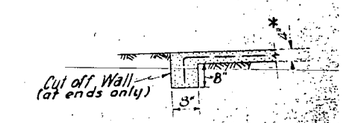
Scale: 1 1/2"=1'-0"



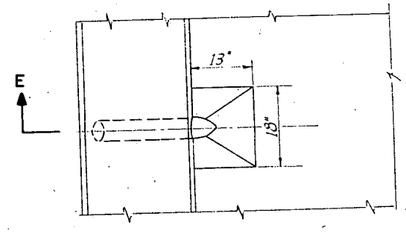
SECTION B-B

STEEL HANDRAIL DETAILS

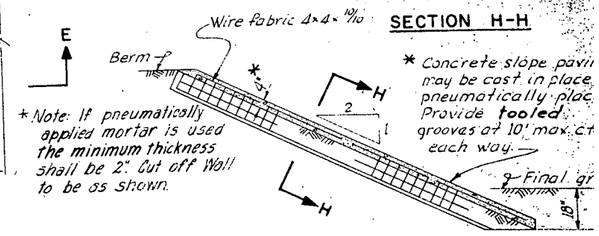
Scale: 1"=1'-0"



SECTION H-H



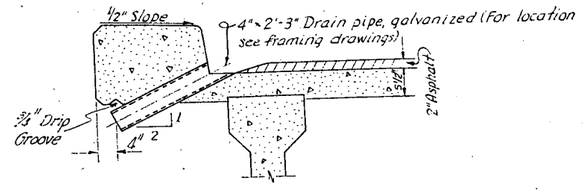
PLAN



* Note: If pneumatically applied mortar is used the minimum thickness shall be 2". Cut off Wall to be as shown.

* Concrete slope pavin may be cast in place pneumatically plac Provide tooled grooves at 10' max. ct each way.

CONCRETE SLOPE PAVING DETAILS
No Scale



SECTION E-E

DRAINAGE DETAILS

Scale: 3/16"=1'-0"

Note:
All reinforcing steel shown on this sheet shall have the prefix letter "D" before bar markings shown. (Ex. D-#92, etc.)

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184
STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL

MISCELLANEOUS DETAILS

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 24 | DWG.

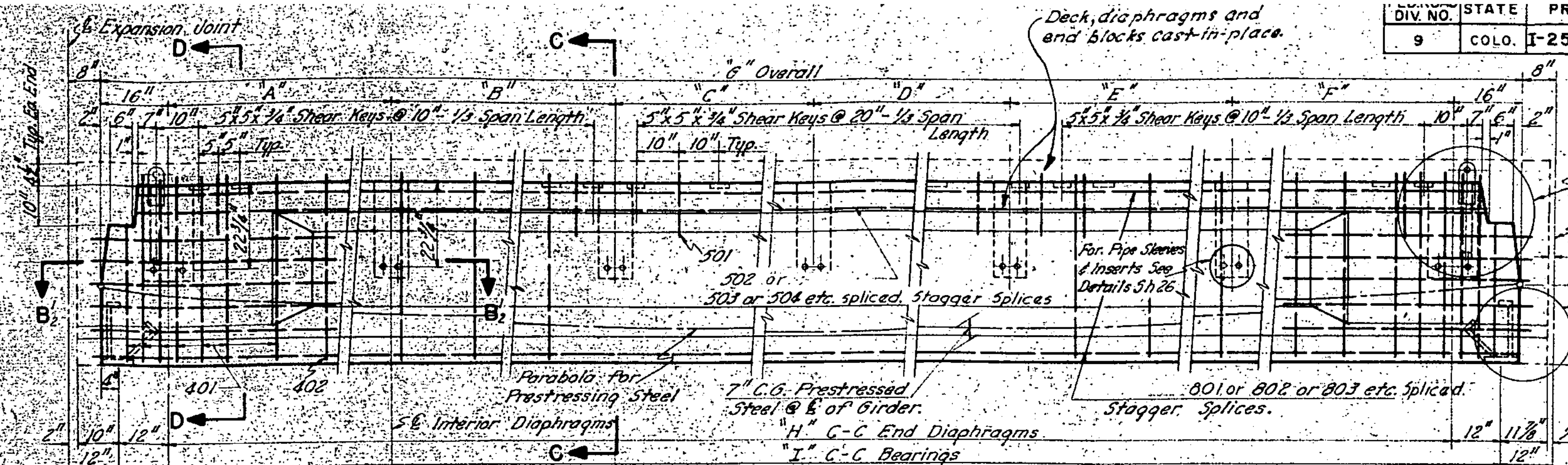
DETAILS CHECKED BY | TRACING MADE BY A.C.D. | CHECKED BY H.F.H.

DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	33	

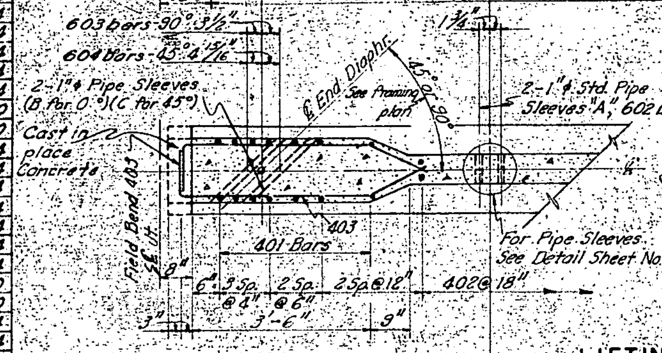
GIRDER SCHEDULE — HORIZONTAL DIMENSIONS @ ℄ OF GIRDER — MATERIAL REQUIRED PER GIRDER

GIRDER MARK	No Each	G	H	I	A	B	C	D	E	F	FINAL PRESTRESS FORCE IN KIP	No 401	No 402	No 403	No 501	No 502	No 801	#5 Mark	#5 Cut Length	No Reqd.	#8 Mark	#8 Cut Length	No Reqd.	No Pipe A	No Pipe B	No Pipe C	No Inserts	No 601	No 602	No 603	No 604
161, 1461, & 1961	2	68'-8"	66'-0"	68'-0"	8'-0"	20'-0"	0	0	20'-0"	18'-0"	466	14	82	20	68	2	6	503	9'-6"	2	802	10'-1"	6	0	0	0	10	10	0	0	0
162, 1462 & 1962	2	↓	↓	↓	13'-0"	↓	0	↓	↓	13'-0"	520	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	6	↓	4	0	0	6	↓	4
163, 1463 & 1963	2				18'-0"		0			8'-0"	520													6		4	0	0	6		4
164, 1464 & 1964	1	68'-8"	66'-0"	68'-0"	3'-0"	20'-0"	20'-0"		20'-0"	3'-0"	520		82		68			503	9'-6"		802	10'-1"		4		4	4	4	4		4
261 461 1561 1761 & 2161	2	78'-8"	76'-0"	78'-0"	11'-0"	24'-0"	0		24'-0"	17'-0"	605		94		78			504	19'-6"		803	20'-1"		0		0	10	10	0		0
262 462 1562 1762 & 2162	2	↓	↓	↓	16'-0"	↓	0		↓	12'-0"	656		↓		↓			↓	↓		↓	↓		6		4	0	0	6		4
263 463 1563 1763 & 2163	2				21'-0"		0			7'-0"	656													6		4	0	0	6		4
264 464 1564 1764 & 2164	1	78'-8"	76'-0"	78'-0"	2'-0"	24'-0"	24'-0"		24'-0"	2'-0"	656		94		78		6	504	19'-6"		803	20'-1"	6	4		4	4	4	4		4
361 561 1661 1861 & 2061	2	88'-8"	86'-0"	88'-0"	8'-0"	20'-0"	20'-0"		20'-0"	18'-0"	740		108		88		8	505	29'-6"		804	30'-1"	8	0		0	12	12	0		0
362 562 1662 1862 & 2062	2	↓	↓	↓	13'-0"	↓	↓		↓	13'-0"	803		↓		↓		8	↓	↓		↓	↓	8	8		4	0	0	8		4
363 563 1663 1863 & 2063	2				18'-0"			0		8'-0"	803						8						8	8		4	0	0	8		4
364 564 1664 1864 & 2064	1	88'-8"	86'-0"	88'-0"	3'-0"		20'-0"	20'-0"		3'-0"	803		108		88		8	505	29'-6"		804	30'-1"	8	6		4	4	4	6		4
661	2	68'-8"	66'-0"	68'-0"	8'-0"		0	0		18'-0"	466		82		68		6	503	9'-6"		802	10'-1"	6	0		0	10	10	0		0
662	1	↓	↓	↓	13'-0"		0	↓		13'-0"	520		↓		↓		↓	↓	↓		↓	↓	↓	6		4	0	0	6		4
663	↓				18'-0"		0			8'-0"	520													6		4	0	0	6		4
664		68'-8"	66'-0"	68'-0"	3'-0"		20'-0"			3'-0"	520				68			503	9'-6"		802	10'-1"		4		4	4	4	4		4
665		67'-11½"	65'-3½"	67'-3½"	8'-0"		0			17'-3½"	520				67			506	8'-10"		805	9'-5"		6		4	0	0	6		4
666		68'-3¾"	65'-7¼"	67'-7¾"	13'-0"	20'-0"	0		20'-0"	12'-7¾"	520		82		68		6	507	9'-2"		806	9'-9"	6	6		4	0	0	6		4
761		88'-8"	86'-0"	88'-0"	16'-0"	17'-0"	25'-0"		25'-0"	3'-0"	716		108		88		8	505	29'-6"		804	30'-1"	8	0		0	12	12	0		0
762		88'-7⅛"	85'-11⅛"	87'-11⅛"	11'-4½"					7'-6⅞"	783		108		88		8	508	29'-5"		807	30'-0"	8	8		4	0	0	8		4
763		88'-6⅝"	85'-10⅝"	87'-10⅝"	6'-8⅝"					12'-1¾"	796		108		88		8	509	29'-4"		808	29'-11"	8	8		4	0	0	8		4
764		89'-2⅞"	86'-6⅞"	88'-6⅞"	3'-1⅝"	17'-0"			25'-0"	16'-5¼"	804		110		89		8	522	30'-0"		821	30'-7"	8	6		4	2	2	6		4
765		91'-0⅝"	88'-4⅝"	90'-4⅝"	15'-10⅝"	25'-0"			17'-0"	5'-6¼"	815		112		91		8	510	31'-11"		809	32'-6"	8	6		4	2	2	6		4
766		91'-8"	89'-0"	91'-0"	11'-7⅛"					10'-4⅞"	826		112		91		8	511	32'-6"		810	33'-1"	8	8		4	0	0	8		4
767		92'-3⅜"	89'-7⅜"	91'-7⅜"	7'-3⅜"					15'-3⅜"	834		114		92		8	512	33'-1"		811	33'-8"	8	8		4	0	0	8		4
768		92'-11"	90'-3"	92'-3"	3'-0"	25'-0"	25'-0"		17'-0"	20'-3"	772		114		92		8	513	33'-9"		812	34'-4"	8	0		0	12	12	0		0
861		78'-8"	76'-0"	78'-0"	18'-0"	18'-0	18'-0"		18'-0"	4'-0"	636		94		78		6	504	19'-6"		803	20'-1"	6	0		0	12	12	0		0
862		78'-9¾"	76'-1⅛"	78'-1¼"	13'-5⅛"	↓	↓		↓	8'-8⅜"	643		94		78		↓	514	19'-8"		813	20'-3"	↓	8		4	0	0	8		4
863		78'-11⅛"	76'-3¾"	78'-3¾"	8'-10¼"					13'-5⅝"	648		96		78			515	19'-10"		814	20'-5"		8		4	0	0	8		4
864		79'-5¼"	76'-9¼"	78'-9¼"	4'-6⅞"					18'-2⅜"	656		96		79			516	20'-3"		815	20'-10"		6		4	2	2	6		4
865		80'-6⅝"	77'-10⅝"	79'-10⅝"	18'-11¼"					4'-11¼"	662		98		80			517	21'-5"		816	22'-0"		6		4	2	2	6		4
866		81'-0½"	78'-4½"	80'-4½"	14'-8⅛"					9'-8⅛"	668		98		81			518	21'-10"		817	22'-5"		8		4	0	0	8		4
867		81'-6"	78'-10"	80'-10"	10'-4⅞"					14'-5⅛"	675		98		81			519	22'-4"		818	22'-11"		8		4	0	0	8		4
868		81'-11¾"	79'-3¾"	81'-3¾"	6'-1⅝"					19'-2⅛"	682		100		81			520	22'-10"		819	23'-5"		8		4	0	0	8		4
869		82'-5⅝"	79'-9⅜"	81'-9⅜"	1'-10⅛"	18'-0"	18'-0"		18'-0"	23'-11⅛"	636		100		82		6	521	23'-3"		820	23'-10"	6	0		0	12	12	0		0
961		88'-8"	86'-0"	88'-0"	21'-0"	20'-0"	21'-0"		21'-0"	3'-0"	716		108		88		8	505	29'-6"		804	30'-1"	8	0		0	12	12	0		0
962		89'-2¼"	86'-6½"	88'-6½"	16'-3⅛"					8'-3"	783		110		89		8	522	30'-0"		821	30'-7"	8	8		4	0	0	8		4
963		89'-8½"	87'-0½"	89'-0½"	11'-6½"					13'-6"	796		110		89		8	523	30'-7"		822	31'-2"	8	8		4	0	0	8		4
964		90'-2¾"	87'-6¾"	89'-6¾"	6'-9¾"			0		18'-9"	804		110		90		8	524	31'-1"		823	31'-8"	8	8		4	0	0	8		4
965		90'-9¼"	88'-1¼"	90'-1¼"	2'-1"	20'-0"		21'-0"		3'-0¼"	815		112		90		8	525	31'-7"		824	32'-2"	8	6		4	4	4	6		4
966		91'-3½"	88'-7½"	90'-7½"	17'-4¼"	21'-0"		0		8'-3¼"	826		112		91		8	526	32'-2"		825	32'-9"	8	8		4	0	0	8		4
967		91'-10"	89'-2"	91'-2"	12'-7⅝"					13'-6⅜"	834		112		91		8	527	32'-8"		826	33'-3"	8	8		4	0	0	8		4
968	↓	92'-4½"	89'-8½"	91'-8½"	7'-10⅞"					18'-9⅝"	834		114		92		8	528	33'-3"		827	33'-10"	8	8		4	0	0	8		4
969	1	92'-11"	90'-3"	92'-3"	3'-2⅛"	21'-0"	21'-0"		21'-0"	24'-0⅞"	772		114		92		8	529	33'-9"		828	34'-4"	8	0		0	12	12	0		0
1061 & 1161	2	78'-8"	76'-0"	78'-0"	5'-0"	24'-0"	0		24'-0	23'-0"	605		94		78		6	504	19'-6"		803	20'-1"	6	0		0	10	10	0		0
1062 & 1162	↓	↓	↓	↓	10'-3"	↓	↓		↓	17'-9"	656		↓		↓		↓	↓	↓		↓	↓	↓	6		4	0	0	6		4
1063 & 1163	↓				15'-6"					12'-6"	656													6		4	0	0	6		4
1064 & 1164	2				20'-9"		0			7'-3"	656													6		4	0	0	6		4
1065 & 1165	1	78'-8"	76'-0"	78'-0	2'-0"	24'-0"	24'-0"		24'-0"	2'-0"	656		94		78			504	19'-6"		803	20'-1"		4	↓	4	4	4	4	↓	4
1261	↓	84'-8"	82'-0"	84'-0"	23'-0"	21'-0"	0		19'-0"	19'-0"	692		102		84			530	25'-6"		829	26'-1"		0	0	0	10	10	0	0	0
1262		79'-5"	76'-9"	78'-9"	17'-9"	↓	↓		↓	↓	698		96		79			531	20'-4"		830	20'-11"		6	2	2	0	0	6	2	2
1263		74'-2"	71'-6"	73'-6"	12'-6"						616		88		74			532	15'-0"		831	15'-7"		6	2	2	0	0	6	2	2
1264		68'-11"	66'-3"	68'-3"	7'-3"						542		82		68	↓	↓	533	9'-9"		832	10'-4"		6	2	2	0	0	6	2	2
1265		63'-8"	61'-0"	63'-0"	2'-0"	21'-0"					473		74		63	2	6	534	4'-6"		833	5'-1"		4	2	2	2	2	4	2	2
1266		58'-5"	55'-9"	57'-9"	17'-9"	0					414		68		58	0	0	535	57'-8"		834	57'-8"		4	2	2	0	0	4	2	2
1267		53'-2"	50'-6"	52'-6"	12'-6	↓					346		60		53	↓	↓	536	52'-5"		835	52'-5"		4	2	2	0	0	4	2	2
1268	↓	47'-11"	45'-3"	47'-3"	7'-3"						295		54		47			537	47'-2"		836	47'-2"		4	2	2	0	0	4	2	2
1269	1	42'-8"	40'-0"	42'-0"	2'-0"	0			19'-0"	19'-0"	200		46		42	0	0	538	41'-11"		837	41'-11"		0	0	0	8	8	0	0	0
1361, 2661 & 2761	2	68'-8"	66'-0"	68'-0"	22'-0"	22'-0"	↓		0	22'-0"	466		82		68	2	6	503	9'-6"		802	10'-1"	↓	0	0	0	8	8	0	0	0
1362, 2662 & 2762	7	68'-8"	66'-0"	68'-0"	22'-0"	22'-0"	0		0	22'-0"	540		82		68	↓	6	503	9'-6"		802	10'-1"	6	4	4	0	0	0	4	4	0
2261	2	88'-8"	86'-0"	88'-0"	8'-0"	20'-0"	20'-0"		20'-0"	18'-0"	740		108		88		8	505	29'-6"		804	30'-1"	8	0	0	0	12	12	0	0	0
2262	1	↓	↓	↓	13'-0"	↓	↓		↓	13'-0"	803		↓		↓		8	↓	↓		↓	↓	8	8	↓	4	0	0	8	↓	4
2263	↓				18'-0"			0		8'-0"	803						8						8	8		4	0	0	8		4
2264		88'-8"	86'-0"	88'-0"	3'-0"			20'-0"		3'-0"	803						8	505	29'-6"		804	30'-1"	8	6		4	4	4	6		4
2265		87'-11⅛"	85'-3½"	87'-3½	8'-0"			0		17'-3½"	803		↓		↓		8	539	28'-10"		838	29'-5"	8	8		4	0	0	8		4
2266		88'-3⅜"	85'-7¾"	87'-7¾"	13'-0"	20'-0"	20'-0"			12'-7¾"	803		108		88		8	540	29'-2"		839	29'-9"	8	8		4	0	0	8		4
2361		78'-8"	76'-0"	78'-0	3'-0"	17'-0"	16'-0"			20'-0"	605		94		78		6	504	19'-6"		803	20'-1"	6	0		0	12	12	0		0
2362		78'-1½"	75'-5½"	77'-5½"	7'-3½"	↓	↓			15'-2"	656		94		78		↓	541	18'-11"		840	19'-6"	↓	8		4	0	0	8		4
2363		77'-6⅞"	74'-10⅞"	76'-10⅞	11'-6⅞"					10'-4"	620		94		77			542	18'-5"		841	19'-0"		8		4	0	0	8		4
2364		77'-0½"	74'-4½"	76'-4½"	15'-10⅛"	17'-0"	16'-0"		20'-0"	5'-6⅛"	612		92		77			543	17'-11"		842	18'-6"		6		4	2	2	6		4
2365		75'-0½"	72'-4½"	74'-4½"	4'-1⅞"	16'-0	17'-0"		16'-0"	19'-2⅞"	606		90		75			544	15'-11"		843	16'-6"		6		4	2	2	6		4
2366		74'-3⅞"	71'-7⅞"	73'-7⅞"	7'-8⅞"	↓	↓		↓	14'-11"	606		↓		74			545	15'-2"		844	15'-9"		8		4	0	0	8		4
2367		74'-7⅛"	71'-11⅛"	73'-11⅛"	12'-4½"					10'-6⅜"	592				74			546	15'-5"		845	16'-0"		8		4	0	0	8		4
2368		74'-10⅞"	72'-2⅞"	74'-2⅞"	17'-0"	16'-0"	17'-0"		16'-0"	6'-2⅞"	540		90		74			547	15'-9"		846	16'-4"		0		0	12	12	0		0
2461		78'-8"	76'-0"	78'-0"	3'-0"	17'-0"	16'-0"		20'-0"	20'-0"	605		94		78			504	19'-6"		803	20'-1"		0		0	12	12	0		0
2462		78'-2⅛"	75'-6⅛"	77'-6⅛"	7'-2⅞"	↓	↓		↓	15'-3⅜"	656		94		78			548	19'-0"		847	19'-7"		8		4	0	0	8		4
2463		77'-8⅜"	75'-0⅜"	77'-0⅜"	11'-5⅞"					10'-6⅜"	620		94		77			549	18'-6"		848	19'-1"		8		4	0	0	8		4
2464		77'-2⅜"	74'-6⅜"	76'-6⅜"	15'-8½"	17'-0"	16'-0"		20'-0"	5'-10¼"	612		92		77			550	18'-1"		849	18'-8"		6		4	2	2	6		4
2465		76'-4⅜"	73'-8⅜"	75'-8⅜"	3'-6½"	16'-0"	17'-0"		16'-0"	21'-1⅞"	612		92		76			551	17'-2"		850	17'-9"		6		4	2	2	6		4
2466		76'-0⅛"	73'-4⅛"	75'-4⅛"	7'-10⅝"	↓	↓		↓	16'-5½"	612		92		76			552	16'-10"		851	17'-5"		8		4	0	0	8		4
2467		75'-7⅝"	72'-11⅝"	74'-11⅝"	12'-2⅜"					11'-8⅞"	612		90		75			553	16'-6"		852	17'-1"		8		4	0	0	8		4
2468		75'-3⅜"	72'-7⅜"	74'-7⅜"	16'-6¾"					7'-0⅜"	606		90		75	↓	↓	554	16'-1"		853	16'-8"		8		4	0	0	8		4
2469		74'-10⅜"	72'-2¾"	73'-2¾"	20'-10⅞"	16'-0"	17'-0"		16'-0"	2'-3⅞"	540		90		74	2	6	547	15'-9"		846	16'-4"		0	↓	0	12	12	0	↓	0
2561		44'-8"	42'-0"	44'-0"	20'-0"	18'-0"	0		0	4'-0"	210		50		44	0	0	555	43'-11"		854	43'-11"		0	0	0	8	8	0	0	0
2562		49'-4⅝"	46'-8⅝"	48'-8⅝"	↓	↓	↓		↓	8'-8⅝"	295		56		49	↓	↓	556	48'-8"		855	48'-8"		4	2	2	0	0	4	2	2
2563		54'-1⅛"	51'-5⅜"	53'-5⅜"						13'-5⅜"	346		62		54			557	53'-4"		856	53'-4		4	2	2	0	0	4	2	2
2564		58'-10⅛"	56'-2⅛"	58'-2⅛					0	18'-2⅛	414		68		58	0	0	558	58'-1"		857	58'-1"		4	2	2	0	0	4	2	2
2565		63'-6⅞"	60'-10⅞	62'-10⅞					20'-0"	2'-10⅞	473		74		63	2	6	559	4'-5"		858	5'-0"		4	2	2	2	2	4	2	2
2566		68'-3⅝"	65'-7⅝"	67'-7⅝"					↓	7'-7⅝"	542		82		68	↓	↓	560	9'-1"		859	9'-8"		6	2	2	0	0	6	2	2
2567		73'-0½"	70'-4½"	72'-4½"						12'-4½"	616		88		73			561	13'-11"		860	14'-6"		6	2	2	0	0	6	2	2
2568	↓	77'-9⅛"	75'-1¼"	77'-1¼"						17'-1⅛"	680	↓	94	↓	77	↓	↓	562	18'-7"		861	19'-2"	↓	6	2	2	0	0	6	2	2
2569	1	82'-6⅛"	79'-10⅛"	81'-10⅛"	20'-0"	18'-0"	0	0	20'-0"	21'-10⅛"	685	14	100	20	82	2	6	563	23'-4"	2	862	23'-11	6	0	0	0	10	10	0	0	0

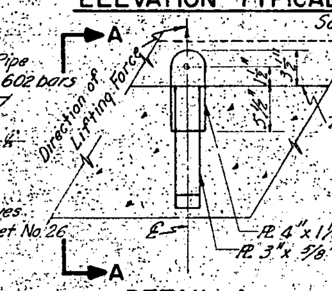
Final Prestress Force	f'c at time of Prestressing	f'c Min @ 28 Days
575K or less	3500	5000
576K-716K	4000	5000
717K-787K	4500	6000
788K-834K	5000	6000



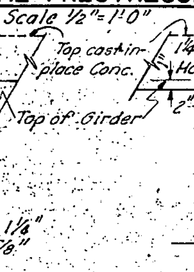
ELEVATION-TYPICAL PRESTRESSED CONCRETE GIRDER
Scale ½"=1'-0"



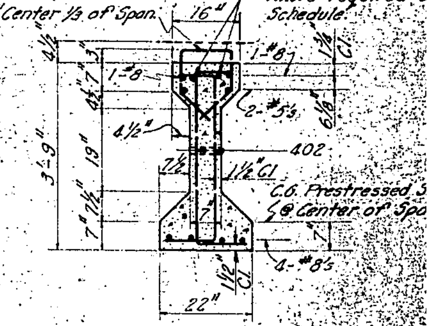
SECTION B'-B'
For Girders w/Diaphragm on both sides.



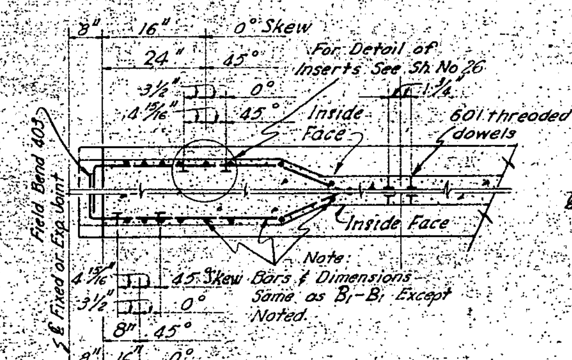
DETAIL A
LIFTING DEVICE 2 REQ'D EA. GIRDER
Scale: 1"=1'-0"



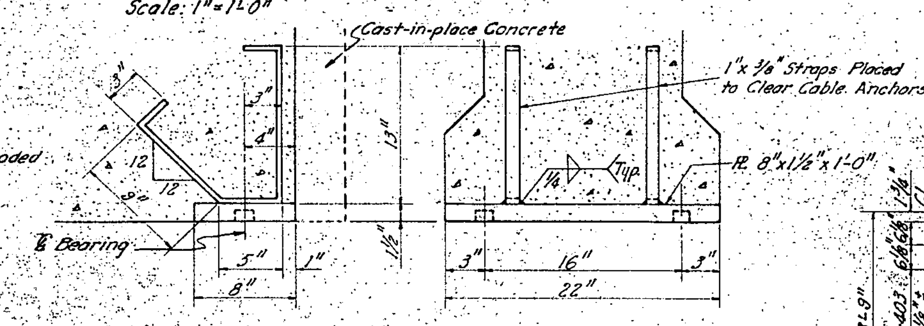
SECTION A-A
Scale 1"=1'-0"



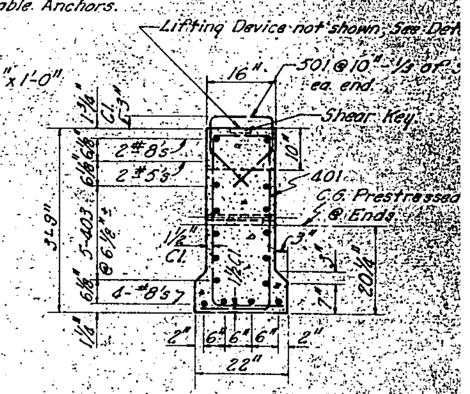
SECTION C-C
Scale: ½"=1'-0"



SECTION B2-B2
Scale: ½"=1'-0"
For Girders w/Diaphragm Inside Face Only



DETAIL B
GIRDER BEARING PLATE 2 REQ'D EA. GIRDER
Note: For field attachment of girder bearing plates to bearing device (Fixed or Exp.) See Details Sh. No. 24
Scale: 1½"=1'-0"



SECTION D-D
Scale: ½"=1'-0"

GENERAL NOTES FOR PRESTRESSED CONCRETE GIRDERS

Precast Prestressed Concrete: All prestressed concrete shall have the fine aggregate, coarse aggregate and cement ratios properly proportioned so as to attain the minimum compressive strengths shown in table. Prestressing shall be in accordance with design spec. listed on Sh. 1.
Post-Tensioning Steel: Materials for prestressing reinforcement may be only of the materials specified in the "Criteria for Prestressed Conc. Bridges, U.S. Bureau of Public Roads, 1954 (w/subseq. rev.) All necessay additional details, including those for end anchorage methods to be employed and procedure to be followed, shall be approved by the Engineer. The final prestressing (Post-Tensioned) forces which are required for various girders are given in the schedule. A portion of the post-tensioned steel shall be placed in parabolically draped conduits. After the securing of end anchorages all tendons shall be pressure grouted in conduits in accordance with "Criteria for Prestressed Concrete Bridges." Alternate design based on pretensioning may be submitted to the Engineer by the contractor for approval. For mild steel reinforcement, see General Notes Sh. No. 1 and Bar Schedule this Sheet.
Handling Prestressed Concrete Girders: When the prestressed concrete girders are handled they shall be lifted only by the devices provided in the top flanges at the ends of the beams and must be maintained in an upright position. The direction of the lifting force is indicated on the detail. Disregard of this requirement may result in collapse of the member.
Camber, Chamfers and Corners: No Camber required. All exposed corners shall be chamfered ¾" or rounded to ¾" radius. Angles of intersection between webs and flanges shall be rounded to not less than ¾" radius.
Finish of Tops: Tops of all girders shall be left rough. At approximately the time of inital set, all latiance shall be removed with a coarse wire brush.
The design of the prestressed girder was based on the following steel stresses, Ultimate Stress = 235,000#/□" min. Initial Tensile Stress = 0.7 x Ult. Stress, Max. working Stress = 0.6 f's or 0.8 fsy (whichever is less.)
Other type of prestressing reinforcement might be used which conforms to the above mentioned specifications.
For reference drawing, see General Plan-Sheet No. 1.
Reinforcement list and bending diagrams shown on Sheets No. 22 & 23.

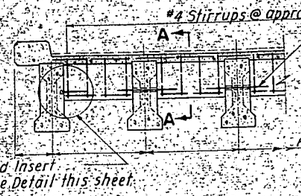
DETAILS	MADE BY L.W.D.	CHECKED BY W.H.W.
TRACING	MADE BY B.L.P.	CHECKED BY H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2-STA. 173+63.52 TO STA. 184+3
STRUCTURE NO. - N.B. K-18-CK
S.B. K-18-CL

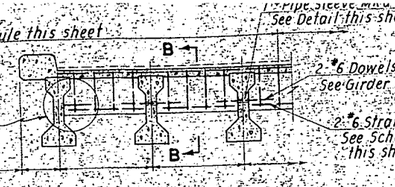
GIRDER DETAILS

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

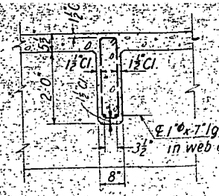
DATE | SHEET 25 | DWG. NO.



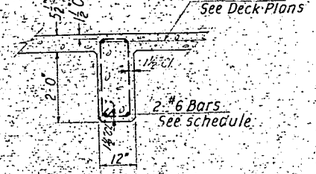
END DIAPHRAGM
Scale ¼"=1'-0"



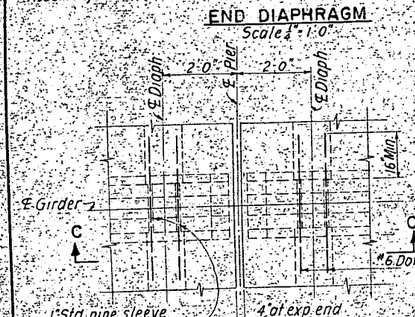
INTERIOR DIAPHRAGM
Scale ¼"=1'-0"



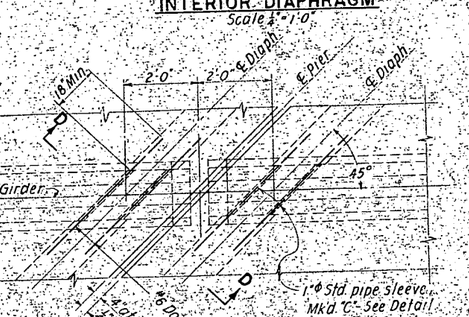
TYPICAL SECTION B-B
Scale ½"=1'-0"



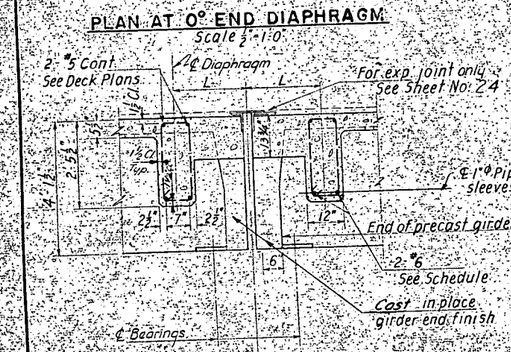
TYPICAL SECTION A-A
Scale ½"=1'-0"



PLAN AT 0° END DIAPHRAGM
Scale ½"=1'-0"

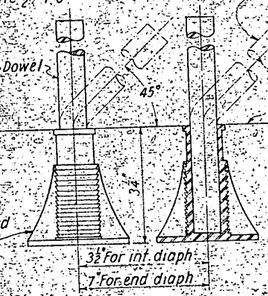


PLAN AT 45° END DIAPHRAGM
Scale ½"=1'-0"



SECTION C-C
L = 2'-0"

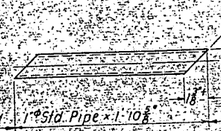
SECTION D-D
L = 17"



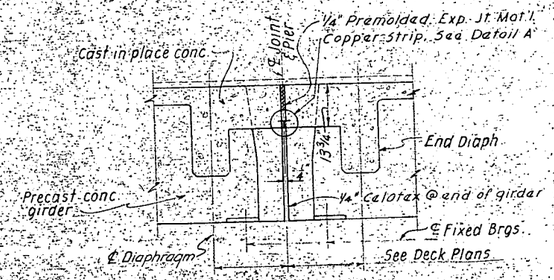
INSERT ASSEMBLY FOR INTERIOR AND END DIAPHRAGMS
No scale

NOTES
Inserts to be placed in girder at end of each line of diaphragms.
All diaphragms poured monolithic with deck slabs.
Requirements for inserts, threaded dowels, pipe sleeves and dowels shown on Sheet No. 25
Rod assemblies and pipe sleeves in girder webs furnished with girders.

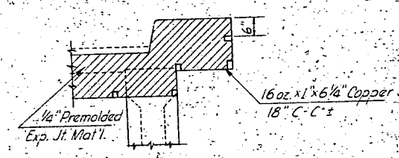
958 Req'd	1" Φ Std. Pipe × 0'-7"	Mk'd "A" (0° Interior Diaphragms)
112 Req'd	1" Φ Std. Pipe × 1'-4"	Mk'd "B" (0° End Diaphragms)
516 Req'd	1" Φ Std. Pipe × 1'-10⅜"	Mk'd "C" (45° End Diaphragms)



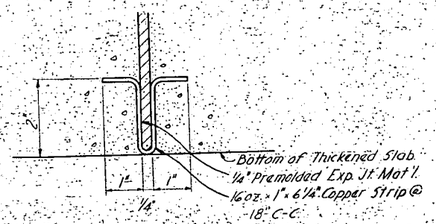
PIPE SLEEVE DETAILS
No scale



FIXED JOINT (TYPICAL)
Scale ½"=1'-0"



SECTION E-E
No Scale



DETAIL A

END DIAPHRAGM SCHEDULE						
DIAPHRAGMS			BARS FOR ONE DIAPHRAGM			
MARK	NO. REQ'D.	C.C. GIRDERS	NO. REQ'D.	MARK	NO. REQ'D.	MARK
D-1	174	7'-0⅞"	2	D-604	5	D-490
3	8	6'-0¾"		610	4	
4	2	8'-1"		605	6	
9	3	6'-10¾"		602	5	
10	4	6'-0¾"		610	4	
16	16	6'-8 9/16"		604	5	
23	48	7'-5⅜"		606	6	
30	3	6'-10⅜"		602	5	
31	64	5'-3"		609	4	
32	3	5'-11⅞"		610	4	
38	16	6'-8"		601	5	
48	6	6'-6¾"		601	5	
49	2	6'-6⅞"		601	5	
50	2	5'-0⅞"		612	4	
58	4	6'-5⅝"		601	5	
59	2	6'-0⅞"		610	4	
60	1	8'-7⅛"		611	7	
61	1	5'-1⅞"		612	4	
71	6	6'-1⅞"		610	4	
72	1	9'-0"		613	8	
73	1	5'-5⅜"		609	4	
D-74	1	6'-1⅞"	2	D-610	4	D-490

Note
Center to center Girder dimensions shown are approximate only. Exact length of all Diaphragms to be determined in field.

INTERIOR DIAPHRAGM SCHEDULE						
DIAPHRAGMS			BARS FOR ONE DIAPHRAGM			
MARK	NO. REQ'D.	C.C. GIRDERS	NO. REQ'D.	MARK	NO. REQ'D.	MARK
D-2	285	5'-0"	2	D-601	5	D-491
5	3	4'-4"		607	4	
6	3	4'-5¾"		610	4	
7	* 4	4'-7 13/16"		603	5	
8	3	4'-9⅛"		603	5	
12	4	4'-10⅜"		603	5	
13	4	4'-10⅞"		603	5	
14	4	4'-9¾"		603	5	
15	4	4'-9¼"		603	5	
18	4	4'-10⅞"		603	5	
19	8	4'-10⅜"		603	5	
20	8	5'-0"		601	5	
21	8	5'-1⅞"		601	5	
22	4	5'-2"		602	5	
24	116	5'-3"		602	5	
26	3	5'-0"		601	5	
27	3	4'-11⅛"		601	5	
28	3	4'-11 15/16"		601	5	
29	3	4'-10 15/16"		603	5	
34	3	4'-3¼"		607	4	
35	3	4'-9 15/16"		603	5	
36	3	4'-5⅝"		610	4	
37	3	4'-7⅛"		610	4	
39	4	4'-10 15/16"		603	5	
40	8	4'-10 15/16"		603	5	
41	8	5'-0¾"		601	5	
42	6	4'-10 13/16"		603	5	
43	6	4'-9⅞"		603	5	
44	10	4'-8¾"		603	5	
45	2	5'-1"		601	5	
46	2	5'-3¼"		602	5	
47	2	5'-6⅝"		604	5	
51	10	4'-7⅞"		603	5	
52	2	3'-7 15/16"		609	4	
53	2	3'-9¼"		609	4	
54	3	3'-11⅜"		608	4	
55	2	4'-1¾"		607	4	
56	2	5'-2⅛"		602	5	
57	1	5'-8"		606	6	
62	2	4'-7 15/16"		603	5	
63	2	4'-7 13/16"		603	5	
64	3	4'-4 3/16"		607	4	
65	* 12	4'-5¼"		610	4	
66	9	4'-7 1/16"		610	4	
67	3	4'-7¾"		603	5	
68	* 1	4'-2⅞"		607	4	
69	1	5'-4 15/16"		602	5	
75	1	4'-3"		607	4	
D-76	1	4'-0⅞"	2	D-608	4	D-491

Bar summary and bending diagrams shown on Sheets No. 22b and 23e.

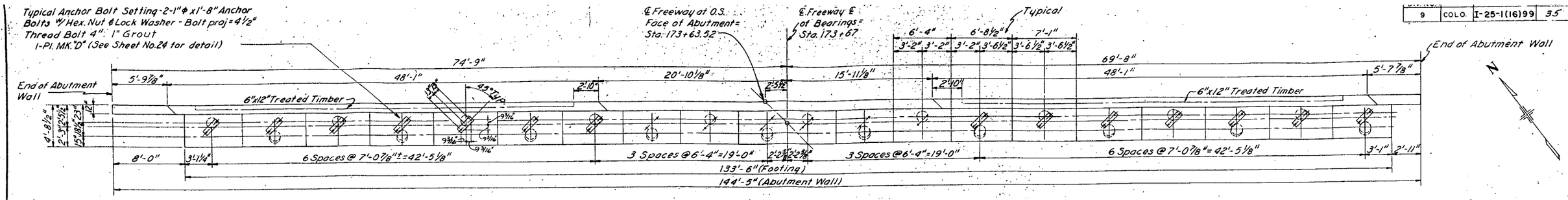
DETAILS: CHECKED BY R.S.Z. MADE BY E.W.O.
TRACING: CHECKED BY H.C.S. MADE BY E.W.O. CHECKED BY H.C.S. H.F.H.

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184
STRUCTURE NO. - NB: K-18-CK SB: K-18-CL

INTERIOR AND EXTERIOR DIAPHRAGM DETAILS

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

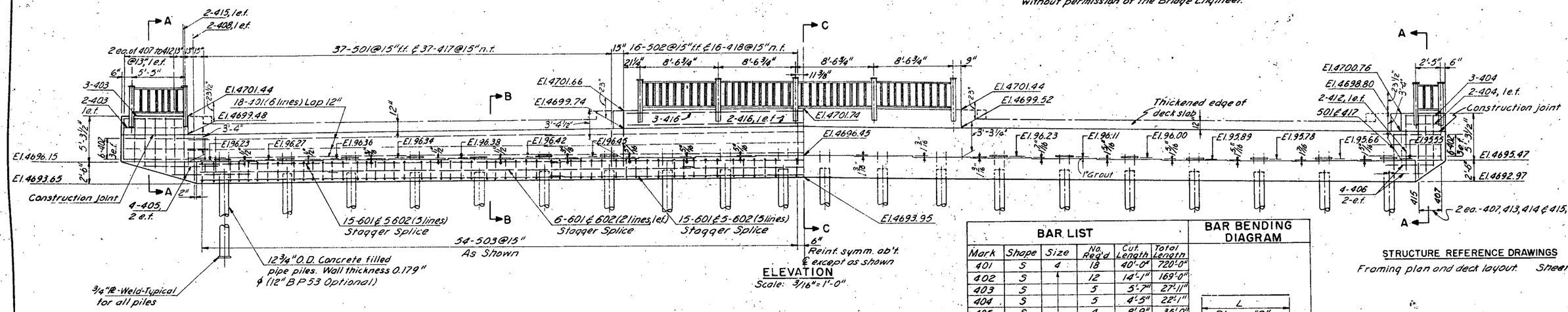
DATE | SHEET 26 | DWG.



PLAN- NORTH ABUTMENT

Scale 3/16"=1'-0"

Note:
No holes other than starting holes shall be drilled to facilitate driving without permission of the Bridge Engineer.



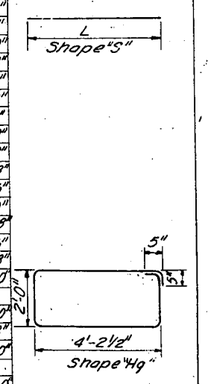
ELEVATION

Scale: 3/16"=1'-0"

STRUCTURE REFERENCE DRAWINGS

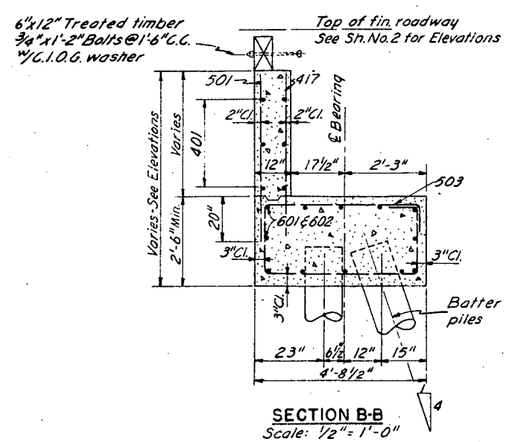
Framing plan and deck layout. Sheet No. 2

BAR LIST						BAR BENDING DIAGRAM
Mark	Shape	Size	No. Req'd	Cut Length	Total Length	
401	S	4	18	40'-0"	720'-0"	
402	S		12	14'-1"	169'-0"	
403	S		5	5'-7"	27'-11"	
404	S		5	4'-5"	22'-1"	
405	S		4	8'-9"	35'-0"	
406	S		4	5'-10"	23'-4"	
407	S		4	5'-0"	20'-0"	
408	S		4	5'-4"	21'-4"	
409	S		2	5'-8"	11'-4"	
410	S		2	6'-0"	12'-0"	
411	S		2	6'-4"	12'-8"	
412	S		4	6'-8"	26'-8"	
413	S		2	5'-9"	11'-6"	
414	S		2	6'-6"	13'-0"	
415	S		4	7'-5"	29'-8"	
416	S		5	36'-6"	182'-6"	
417	S		74	4'-4"	320'-8"	
418	S	4	32	6'-3"	200'-0"	
501	S	5	74	4'-11"	363'-10"	
502	S	5	32	6'-10"	218'-8"	
503	Hg	5	108	13'-3"	1431'-0"	
601	S	6	36	40'-0"	1440'-0"	
602	S	6	12	14'-11"	179'-0"	



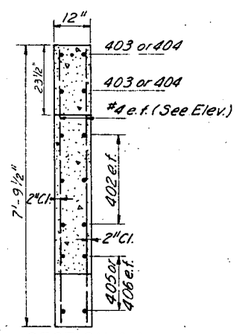
Note: All reinforcing steel shown on this sheet shall have the prefix Letter "A" before bar markings shown. (Ex.-A-401, A-402 etc..)

BILL OF MATERIALS	BAR SUMMARY
R. Mk."D" 14	#4 Bars 1859 L.F. 1242 Lbs.
Anchor Bolts for Girders 40	#5 Bars 2014 L.F. 2101 Lbs.
Anchor Bolts for Timber 58	#6 Bars 1619 L.F. 2432 Lbs.
6"x12" Treated Timber 85 L.F.	
Concrete 79 C.Y.	
20-12¾" O.D. x 68'-0" ϕ Pipe Piles = 1360 L.F.	
Concrete in Piles 39.6 C.Y.	



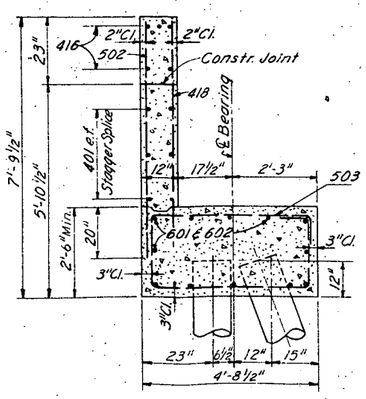
SECTION B-B

Scale: ½"=1'-0"



SECTION A-A

Scale: ½"=1'-0"



SECTION C-C

Scale: ½"=1'-0"

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO.2- STA.173+63.52 TO STA.184+38

STRUCTURE NO. – NB: K-18-CK
SB: K-18-CL

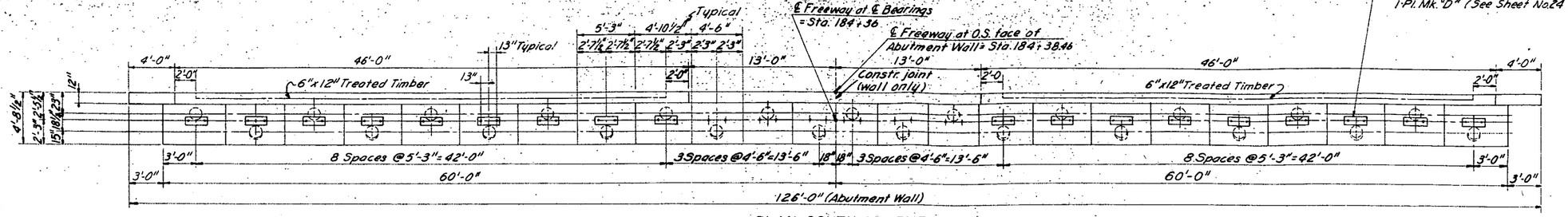
ABUTMENT NO. 1

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 27 | DWG. NO.

DETAILS: MADE BY E.W.O. CHECKED BY H.G.S.
TRACING: MADE BY E.T. CHECKED BY F.B.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	S
9	COLO.	I-25-1(16)99	36	

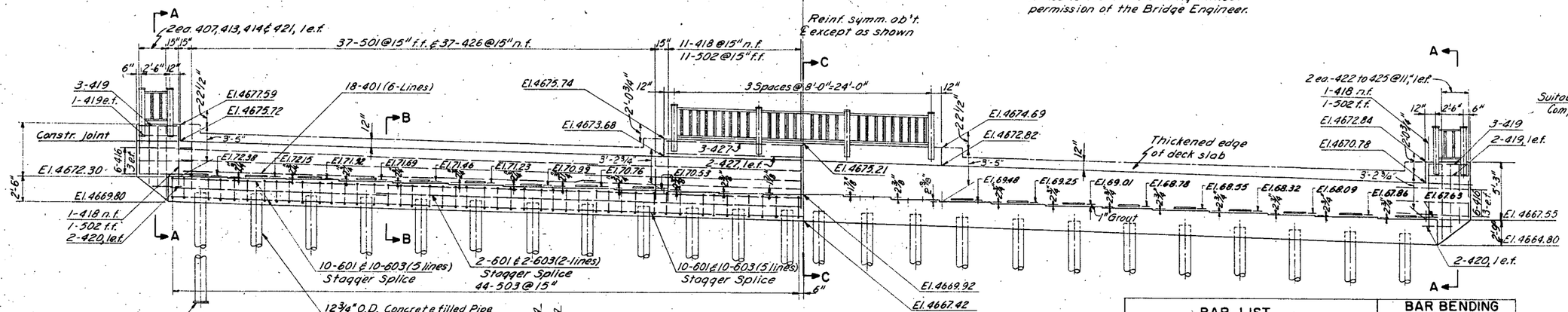


PLAN-SOUTH ABUTMENT

Scale: 3/16"=1'-0"

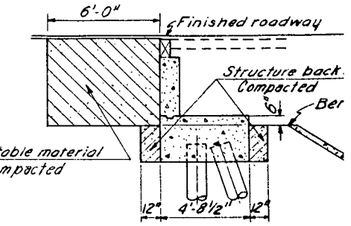
N

Note: No holes other than starting holes shall drilled to facilitate driving without permission of the Bridge Engineer.



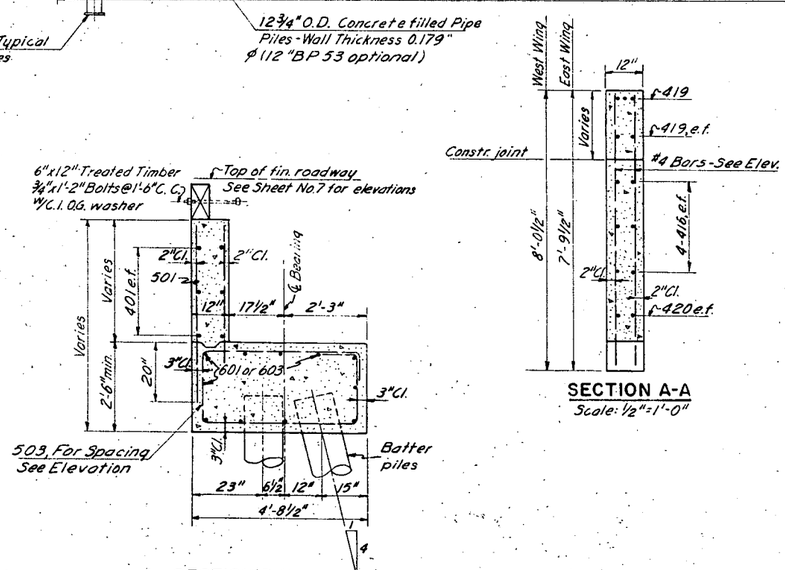
ELEVATION

Scale: 3/16"=1'-0"



ABUTMENT TAMPING DIAGRAM

No Scale

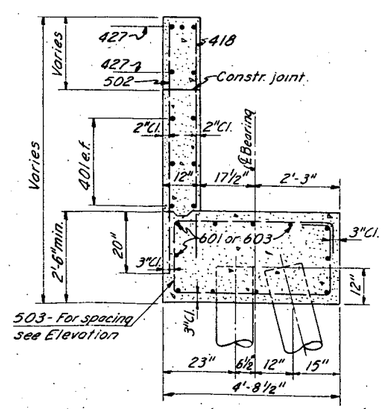


SECTION A-A

Scale: ½"=1'-0"

SECTION B-B

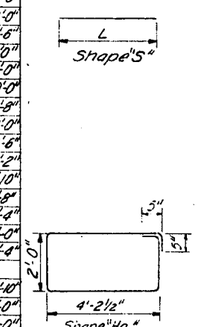
Scale: ½"=1'-0"



SECTION C-C

Scale: ½"=1'-0"

BAR LIST						BAR BENDING DIAGRAM
Mark	Shape	Size	No. Req'd	Cut Length	Total Length	
401	S	#4	18	40'-0"	720'-0"	
407	S		2	5'-0"	10'-0"	
413	S		2	5'-9"	11'-6"	
414	S		2	6'-6"	13'-0"	
416	S		12	4'-10"	58'-0"	
418	S		24	6'-3"	150'-0"	
419	S		10	3'-8"	36'-8"	
420	S		4	3'-0"	12'-0"	
421	S		2	7'-3"	14'-6"	
422	S		2	5'-1"	10'-2"	
423	S		2	5'-11"	11'-10"	
424	S		2	6'-10"	13'-8"	
425	S		2	7'-8"	15'-4"	
426	S		74	4'-6"	333'-0"	
427	S	#4	5	25'-8"	128'-4"	
501	S	#5	74	4'-11"	363'-10"	
502	S	#5	24	6'-10"	164'-0"	
503	Hq	#5	88	13'-3"	1166'-0"	
601	S	#6	24	40'-0"	960'-0"	
603	S	#6	24	21'-9"	522'-0"	



Note: All reinforcing steel shown on this sheet shall have the prefix letter "A" before bar markings shown. (Ex. A-401, A-407 etc.)

STRUCTURE REFERENCE DRAWINGS

Framing plan & deck layout Sheet No. 7

BILL OF MATERIAL	BAR SUMMARY
Pl. Mk. "D" 18	#4 Bars 1538 L.F. 1027 lb.
Anchor Bolts for Girder 48	#5 Bars 1694 L.F. 1767 lb.
Anchor Bolts for Timber 58	#6 Bars 1482 L.F. 2226 lb.
6"x12" Treated Timber 84 L.F.	
Concrete 71 C.Y.	
24-12¾" O.D. x 43'-0"	
φ Pipe Piles = 1032 L.F.	
Concrete in Piles 30.04 C.Y.	

COLORADO DEPARTMENT OF HIGHWAY

PUEBLO FREEWAY PUEBLO, COL

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 18

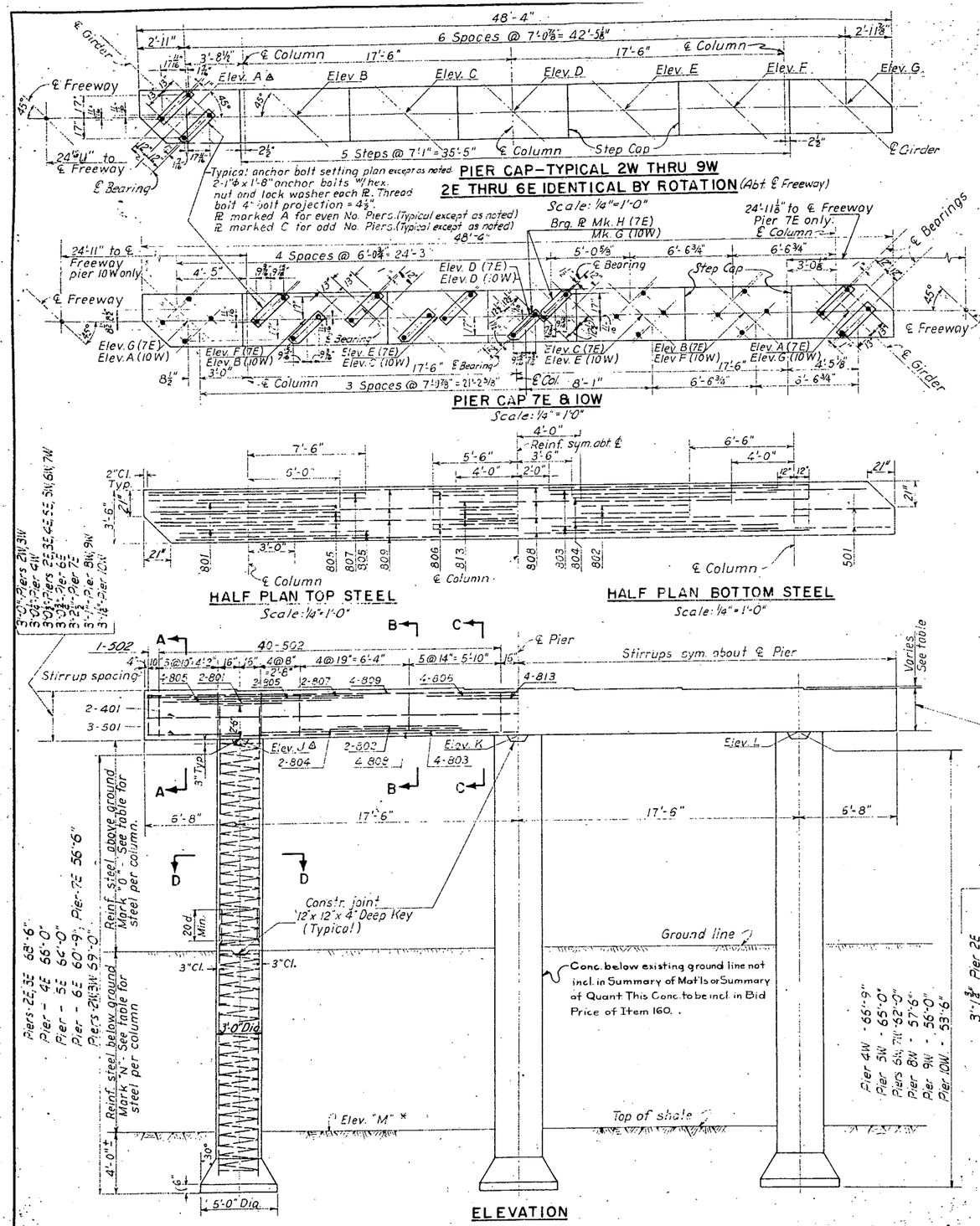
STRUCTURE NO. - N.B.: K-18-CK S.B.: K-18-CL

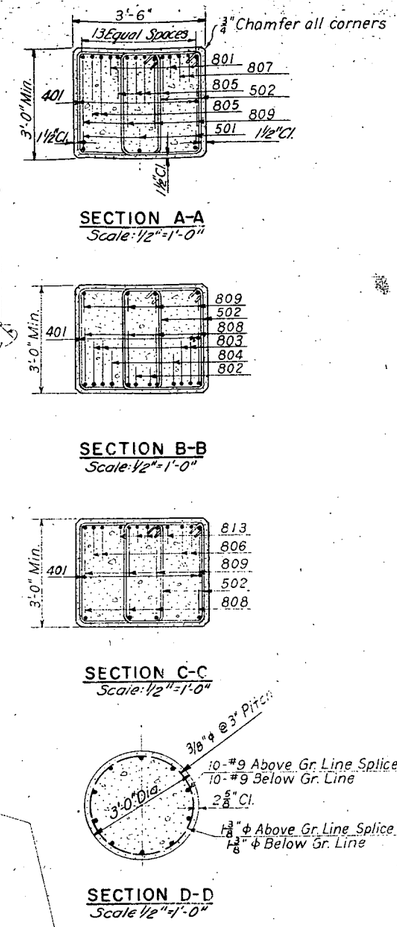
ABUTMENT NO. 15

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE SHEET 28 DWG.

DETAILS MADE BY E.W.O. CHECKED BY H.C.S.
TRACING MADE BY E.T. CHECKED BY F.B.





DIV. NO.	STATE	PROJ. NO.	NO.	SHEETS
0	COLO.	I-25-1(16)99	37	

Not incl. in Sumary of Mat'ls or Summary of Quant These bars to be incl. in Bid Price of Item 160.

PIER LOCATION	ELEVATION											CONC. CUBIC YARDS	REINFORCING STEEL					
	CONCRETE TOP OF CAP							TOP OF COLUMNS			SHALE		# N			O		
	A△	B	C	D	E	F	G	J△	K	L	M*		No.	Mk.	Spiral	No.	Mk	Spiral
2E	4694.60	94.47	94.34	94.21	94.08	93.95	93.82	91.47	91.21	90.82	4627	34.2	10	917	317	10	902	302
3E	4694.53	94.38	94.23	94.07	93.92	93.76	93.61	91.38	91.07	90.61	27	36.1	10	916	316	10	905	305
4E	4692.03	91.85	91.68	91.50	91.32	91.14	90.96	88.85	88.50	87.96	27	39.6	10	914	314	10	908	308
5E	4691.21	91.01	90.81	90.61	90.41	90.21	90.01	88.01	87.61	87.01	4628	39.0	10	913	313	10	909	309
6E	4687.87	87.64	87.42	87.20	86.98	86.75	86.53	84.64	84.20	83.53	28	36.2	10	913	313	10	905	305
7E	4686.74	86.43	86.32	86.16	85.97	85.59	85.40	83.43	83.16	82.40	27	32.5	10	913	313	10	905	305
2W	4694.87	94.85	94.82	94.79	94.74	94.71	94.68	91.85	91.79	91.68	4627	34.7	10	917	317	10	903	303
3W	4694.95	94.94	94.93	94.92	94.90	94.89	94.87	91.94	91.92	91.87	27	36.8	10	916	316	10	906	306
4W	4692.60	92.61	92.63	92.64	92.65	92.66	92.67	89.60	89.64	89.66	27	40.5	10	915	315	10	905	305
5W	4691.91	91.95	91.98	92.02	92.05	92.08	92.11	88.91	89.02	89.08	4628	40.1	10	913	313	10	910	310
6W	4688.72	88.78	88.84	88.90	88.95	89.01	89.07	85.72	85.90	86.01	28	37.6	10	913	313	10	907	307
7W	4687.62	87.70	87.77	87.84	87.92	87.99	88.06	84.62	84.84	84.99	27	38.0	10	913	313	10	907	307
8W	4684.02	84.09	84.17	84.24	84.31	84.38	84.46	81.02	81.24	81.38	4628	36.3	10	912	312	10	904	304
9W	4682.59	82.66	82.74	82.81	82.88	82.96	83.03	79.59	79.81	79.96	28	36.0	10	911	311	10	903	303
10W	4678.99	79.05	79.17	79.24	79.29	79.35	79.43	75.99	76.24	76.35	27	33.5	10	911	311	10	901	301

*Elevations from best available soil borings and are approximate, actual elevations to be established during construction.

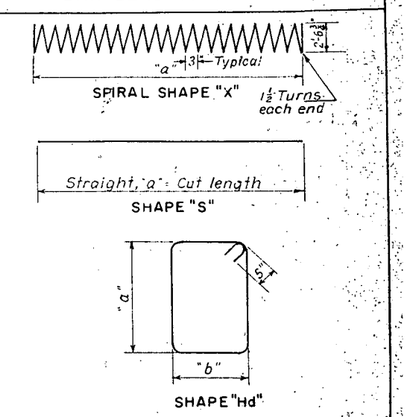
△ Elevation is adjacent to ℄ of freeway for all piers

See sheet No. 24 for bearing details.

BAR LIST - PIERS 2E TO 7E & 2W TO 10W

Mk.	Shape	Size	No. Req'd.	"a"	"b"	Cut length	Total length
901	S	#9	30	21'-9"		21'-9"	652'-6"
902			30	23'-7"		23'-7"	707'-6"
903			60	24'-5"		24'-5"	1465'-0"
904			30	24'-10"		24'-10"	745'-0"
905			120	25'-4"		25'-4"	3040'-0"
906			30	26'-10"		26'-10"	805'-0"
907			60	27'-6"		27'-6"	1650'-0"
908			30	27'-9"		27'-9"	832'-6"
909			30	28'-9"		28'-9"	862'-6"
910			30	30'-9"		30'-9"	922'-6"
911			60	38'-0"		38'-0"	2280'-0"
912			30	39'-0"		39'-0"	1170'-0"
913			180	41'-0"		41'-0"	7380'-0"
914			30	44'-0"		44'-0"	1320'-0"
915			30	48'-0"		48'-0"	1440'-0"
916			60	49'-0"		49'-0"	2940'-0"
917	S	#9	60	51'-0"		51'-0"	3060'-0"
301	X	3/8 φ	3	19'-0"		618'-0"	1854'-0"
302			3	20'-10"		676'-0"	2030'-0"
303			6	21'-6"		694'-0"	4164'-0"
304			3	22'-1"		712'-0"	2135'-0"
305			12	22'-7"		721'-0"	8652'-0"
306			3	24'-1"		775'-0"	2325'-0"
307			6	24'-9"		796'-0"	4776'-0"
308			3	25'-0"		804'-0"	2412'-0"
309			3	26'-0"		836'-0"	2508'-0"
310			3	28'-0"		900'-0"	2700'-0"
311			6	35'-3"		1130'-0"	6780'-0"
312			3	36'-3"		1161'-0"	3483'-0"
313			18	37'-0"		1185'-0"	21,330'-0"
314			3	40'-0"		1281'-0"	3843'-0"
315			3	44'-0"		1410'-0"	4230'-0"
316			6	45'-0"		1440'-0"	8640'-0"
317	X	3/8 φ	6	47'-0"		1505'-0"	9030'-0"
501	S	#5	90	6'-6"		6'-6"	585'-0"
502	Hd	#5	1230	2'-9"	2'-2"	10'-8"	13,120'-0"
801	S	#8	60	6'-0"		6'-0"	360'-0"
802			60	7'-0"		7'-0"	420'-0"
803			120	14'-6"		14'-6"	1740'-0"
804			60	10'-0"		10'-0"	600'-0"
805			120	12'-0"		12'-0"	1440'-0"
806			60	11'-0"		11'-0"	660'-0"
807			60	14'-0"		14'-0"	840'-0"
808			60	37'-0"		37'-0"	2220'-0"
809	S	#8	60	46'-5"		46'-5"	2785'-0"
813	S	#8	60	8'-0"		8'-0	480'-0"
401	S	#4	60	24'-0"		24'-0	1440'-0"

BAR BENDING DIAGRAM



BAR SUMMARY

3/8" φ	33,556± L.F.	12,617 lbs.
#5	13,705± L.F.	14,300 lbs.
#8	11,345± L.F.	30,820 lbs.
#9	11,683 ± L.F.	39,722 lbs
#4	1440 ± L.F.	960 lbs

BILL OF MATERIALS

1 1/8"x1'-8" Anch. bolts	424 Req'd.
℞ Mk. A	111 Req'd.
℞ Mk. C	97 Req'd.
℞ Mk. G	2 Req'd.
℞ Mk. H	2 Req'd.
Rockers	113 Req'd.

COLORADO DEPARTMENT OF HIGHWAYS.
PUEBLO FREEWAY PUEBLO, COLO.

VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38

STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL

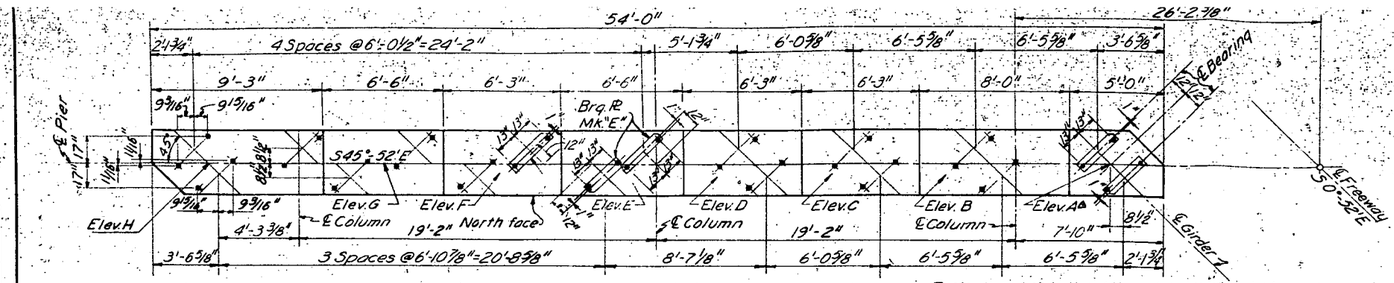
PIERS NO. 2E TO 7E & 2W TO 10W

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DETAILS CHECKED BY E.L.P. MADE BY J.F.A. TRACING CHECKED BY H.F.H.

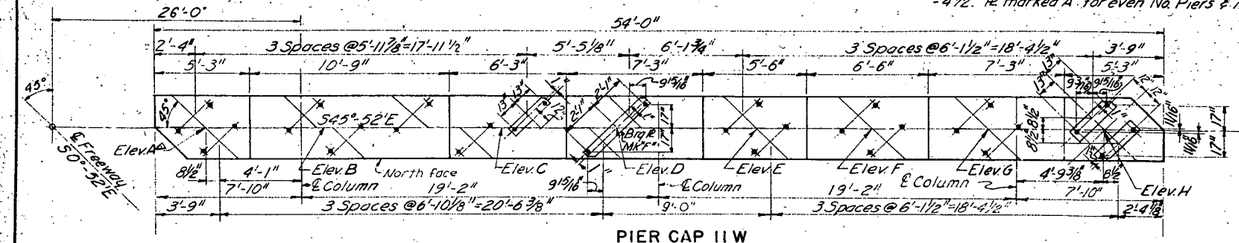
DATE | SHEET 29 | DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.
9	COLO.	I-25-1(16)99	38

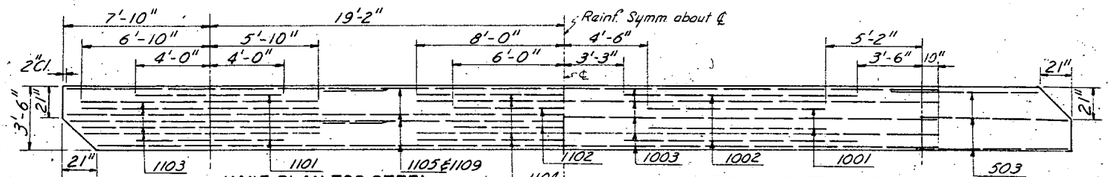


PIER CAP 8E
Scale: 1/4" = 1'-0"

Typical anchor bolt setting plan. 2-1" ϕ x 1'-8" anchor bolts w/hex. nut and lock washer. Thread bolt 4" bolt projection = 4 1/2". Pl. marked "A" for even No. Piers & marked "C" for odd No. Piers.

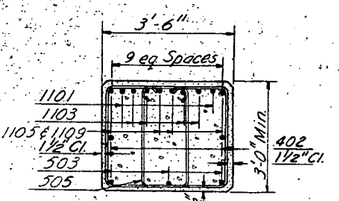


PIER CAP 11W
Scale: 1/4" = 1'-0"

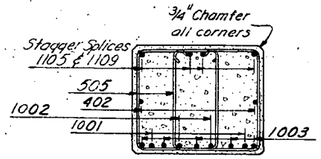


HALF PLAN TOP STEEL
Scale: 1/4" = 1'-0"

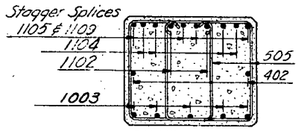
HALF PLAN BOTTOM STEEL
Scale: 1/4" = 1'-0"



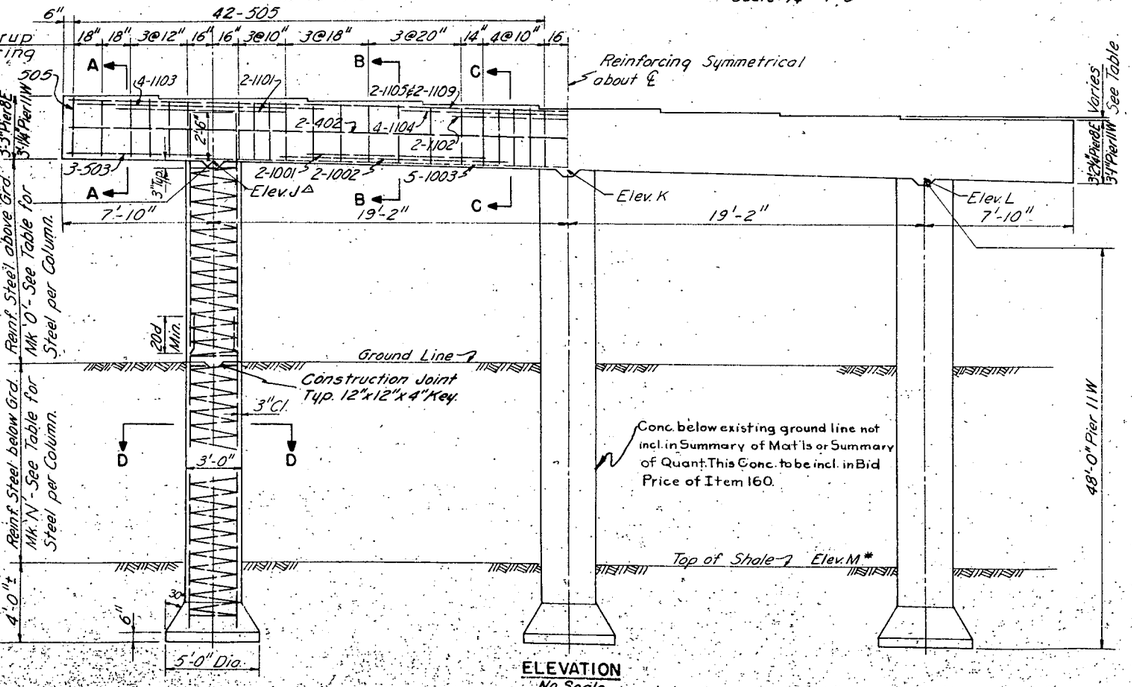
SECTION A-A
Scale: 1/2" = 1'-0"



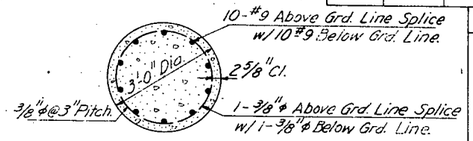
SECTION B-B
Scale: 1/2" = 1'-0"



SECTION C-C
Scale: 1/2" = 1'-0"



ELEVATION
No Scale



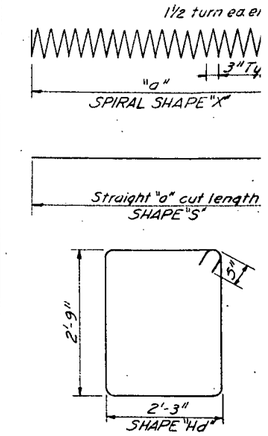
SECTION D-D
Scale: 1/2" = 1'-0"

PIER LOCATION	ELEVATIONS: Concrete Top of Cap A△	B	C	D	E	F	G	H	Top of Columns J△	K	L	Shale M*	CONC. CU. YD.	REINFORCING # "N" No.	Mk.	Spiral	No.
8E	468.33	82.93	82.72	82.53	82.32	82.10	81.88	81.61	79.72	79.32	78.88	28.0	36.9	10	911	329	10
11W	467.56	77.62	77.74	77.80	77.86	77.93	77.99	78.05	74.56	74.80	74.93	27.0	33.9	10	928	328	10

BAR LIST — PIERS 8E & 11W

Mark	Shape	No. Req'd	Size	"a"	Cut Length	Total Length
911	S	30	#9	38'-0"	38'-0"	1140'-0"
925	S	30	#9	20'-9"	20'-9"	622'-6"
927	S	30	#9	23'-9"	23'-9"	712'-6"
928	S	30	#9	37'-0"	37'-0"	1110'-0"
325	X	3	3/8" ϕ	18'-0"	573'-6"	1720'-6"
327	X	3	3/8" ϕ	21'-0"	666'-6"	1999'-6"
328	X	3	3/8" ϕ	31'-6"	976'-0"	2928'-0"
329	X	3	3/8" ϕ	32'-6"	1040'-0"	3120'-0"
402	S	8	#4	27'-0"	27'-0"	216'-0"
503	S	12	#5	7'-10"	7'-10"	94'-0"
505	Hd	164	#5	10'-10"	10'-10"	1776'-8"
1001	S	8	#10	9'-6"	9'-6"	76'-0"
1002	S	8	#10	12'-6"	12'-6"	100'-0"
1003	S	10	#10	40'-0"	40'-0"	400'-0"
1101	S	8	#11	8'-0"	8'-0"	64'-0"
1102	S	4	#11	12'-0"	12'-0"	48'-0"
1103	S	16	#11	12'-8"	12'-8"	202'-8
1104	S	8	#11	16'-0"	16'-0"	128'-0"
1105	S	8	#11	17'-0"	17'-0"	136'-0"
1109	S	8	#11	38'-8"	38'-8"	309'-4"

BAR BENDING DIAGRAM



BILL OF MATERIALS

1" ϕ Anchor Bolts	66 Req'd
Pl. Mk. A	15 Req'd
Pl. Mk.	15 Req'd
Pl. Mk. E	2 Req'd
Pl. Mk. F	1 Req'd
Rockers	17 Req'd

BAR SUMMARY

3/8" ϕ	3720 L.F.	13
#4	216 L.F.	
#5	1871 L.F.	15
#9	1335 L.F.	45
#10	576 L.F.	2
#11	888 L.F.	41

NOTES:

* Elevations from best available Soil Borings, a approximate, actual elev. to be established a construction.

△ Elevation is adjacent to ℄ of Freeway for a See Sheet 24 for bearing details.

\# Not incl. in Summary of Mat'ls or Summary of Quan bars to be incl. in Bid Price of Item 160.

CHECKED BY	E.L.P.
MADE BY	E.L.P.
DETAILS CHECKED BY	E.L.P. & E.F.B.
MADE BY	E.F.
TRACING CHECKED BY	H.F.H. E.G.H.K.

COLORADO DEPARTMENT OF HIGHWA

PUEBLO FREEWAY — PUEBLO, C

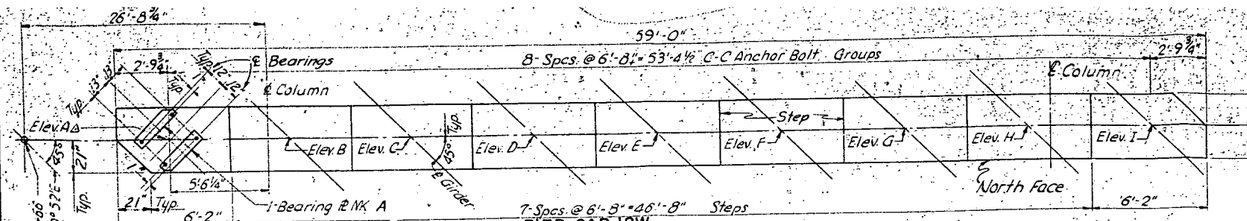
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 18

STRUCTURE NO. - NB: K-18-CK
SB: K-18-CL

PIERS 8E AND 11W

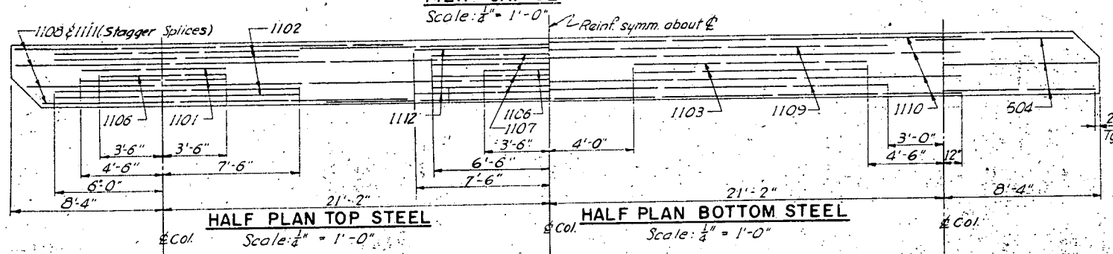
A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DWG.



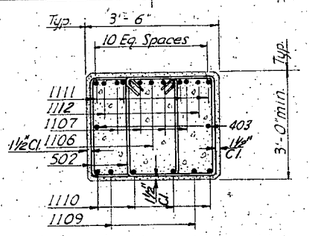
PIER CAP 12W
Scale: 1/4" = 1'-0"

PIER CAP 9E

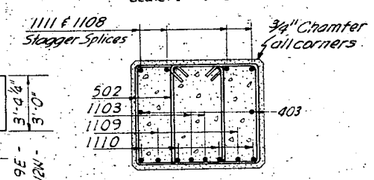


HALF PLAN TOP STEEL
Scale: 1/4" = 1'-0"

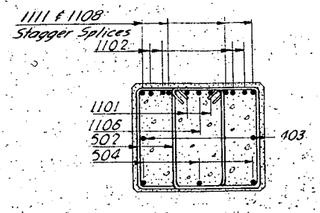
HALF PLAN BOTTOM STEEL
Scale: 1/4" = 1'-0"



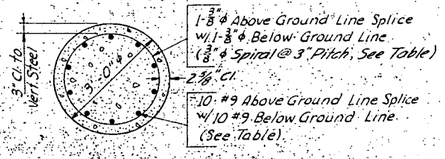
SECTION A-A
Scale: 1/2" = 1'-0"



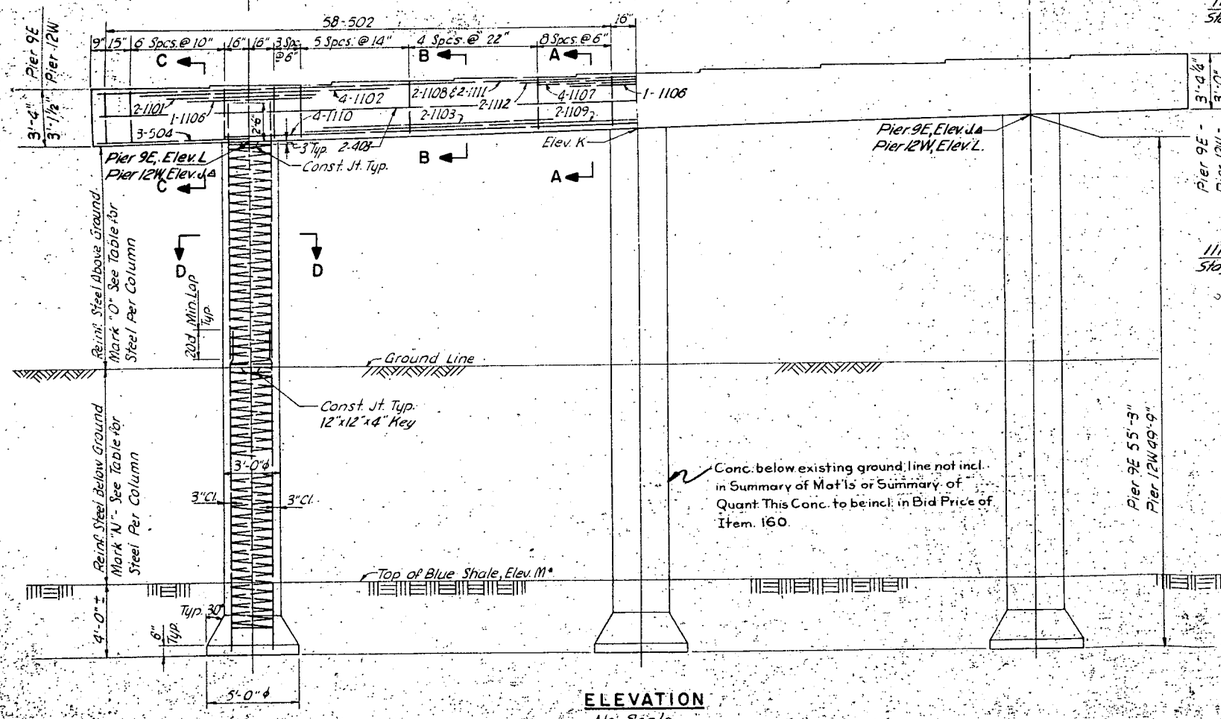
SECTION B-B
Scale: 1/2" = 1'-0"



SECTION C-C
Scale: 1/2" = 1'-0"



SECTION D-D
Scale: 1/2" = 1'-0"



Conc. below existing ground line not incl. in Summary of Mat'ls or Summary of Quant. This Conc. to be incl. in Bid Price of Item. 160.

ELEVATION
No Scale

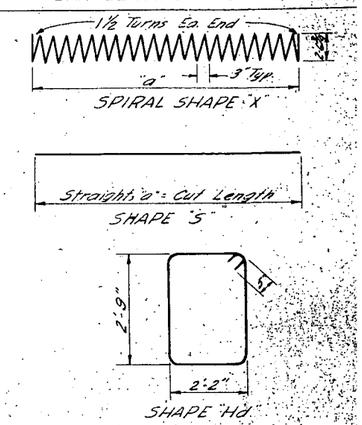
℞ Not incl. in Summary of Mat'ls or Summary of Quant. These bars to be incl. in Bid Price of Item 160.

PIER LOC.	CONC CU.YD.	ELEVATIONS: Concrete Top of Cap AΔ	B	C	D	E	F	G	H	I	Top of Columns JΔ	K	L	Shale M*	REINF. STEEL N ϕ No.	NK	Spiral	O ϕ No.	NK
9E	37.9	463.70	81.43	81.28	81.07	80.86	80.65	80.44	80.23	80.01	78.28	77.86	77.01	27.0	10	929	329	10	926
12W	34.1	[illegible]	74.32	74.39	74.46	74.53	74.60	74.66	74.73	74.80	71.25	71.53	71.73	26.0	10	929	329	10	922

BAR LIST — PIERS 9E & 12W

MARK	SHAPE	No. Req'd	SIZE	"a"	CUT LENGTH	TOTAL LENGTH
922	S	30	#3	17'-9"	17'-9"	532'-6"
926	S	30	#9	23'-0"	23'-0"	690'-0"
929	S	60	#9	37'-9"	37'-9"	2265'-0"
322	X	3	⅜" ϕ	15'-0"	480'-6"	1441'-6"
326	X	3	⅜" ϕ	20'-3"	643'-3"	1929'-9"
329	X	6	⅜" ϕ	32'-6"	1023'-0"	6138'-0"
403	S	4	#4	29'-4"	29'-4"	117'-4"
502	Hd	228	#5		10'-8"	2432'-0"
504	S	12	#5	8'-2"	8'-2"	98'-0"
1101		8	#11	8'-0"	8'-0"	64'-0"
1102		16		13'-6"	13'-6"	216'-0"
1103		8		12'-8"	12'-8"	101'-4"
1106		6		7'-0"	7'-0"	42'-0"
1107		8		13'-0"	13'-0"	104'-0"
1108		8		20'-8"	20'-8"	165'-4"
1109		4		36'-4"	36'-4"	145'-4"
1110		16		23'-2"	23'-2"	370'-8"
1111		8		40'-0"	40'-0"	320'-0"
1112	S	4	#11	15'-0"	15'-0"	60'-0"

BAR BENDING DIAGRAM



BILL OF MATERIALS

1"ϕ x 1'-8" Anchor Bolts	72 Req'd.
℞ MK A	18 Req'd
℞ MK C	18 Req'd
Rockers	18 Req'd

BAR SUMMARY

#11 Bars	1589	LF =	8441 lbs.
#9 Bars	1222	LF =	4155 lbs.
#5 Bars	2530	LF =	2639 lbs.
#4 Bars	117	LF =	78 lbs.
⅜" ϕ Bar	3371	LF =	1267 lbs.

Notes:
* Elevations from best available Soil Borings, and are approximate; actual elevation to be established during construction.
Δ Elevation is adjacent to ℄ of Freeway for all Piers.

See Sheet 24 for Bearing Details

DETAILS	MADE BY	LWD
	CHECKED BY	EFB&E.LP
TRACING	MADE BY	A.C.P.
	CHECKED BY	C.H.K.

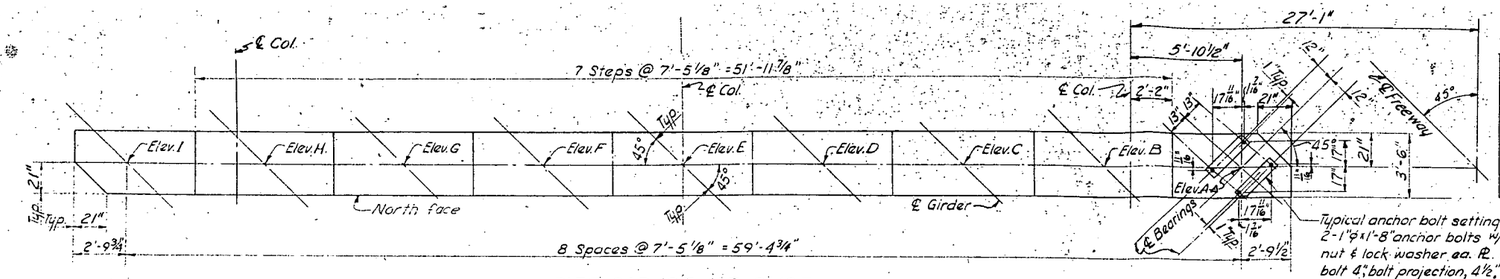
COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+38
STRUCTURE NO. — NB: K-18-CK
SB: K-18-CL

PIERS 9E AND 12W

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 31 | DWG. NO.

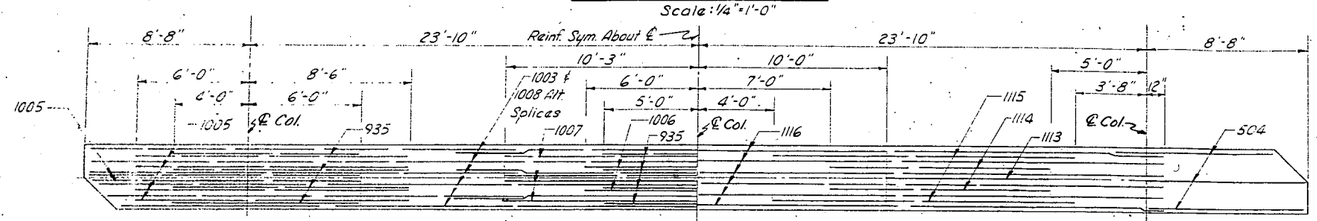
FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TO SHE
9	COLO.	I-25-1(16)99	40	



Typical anchor bolt setting plan. 2-1"φ x 1'-8" anchor bolts w/ hex nut & lock washer ea. R. Thread bolt 4" bolt projection, 4 1/2" R Marked A for even No. Piers & Marked C for odd No. Piers.

PIER CAP 10E, 11E & 12E

Scale: 1/4" = 1'-0"

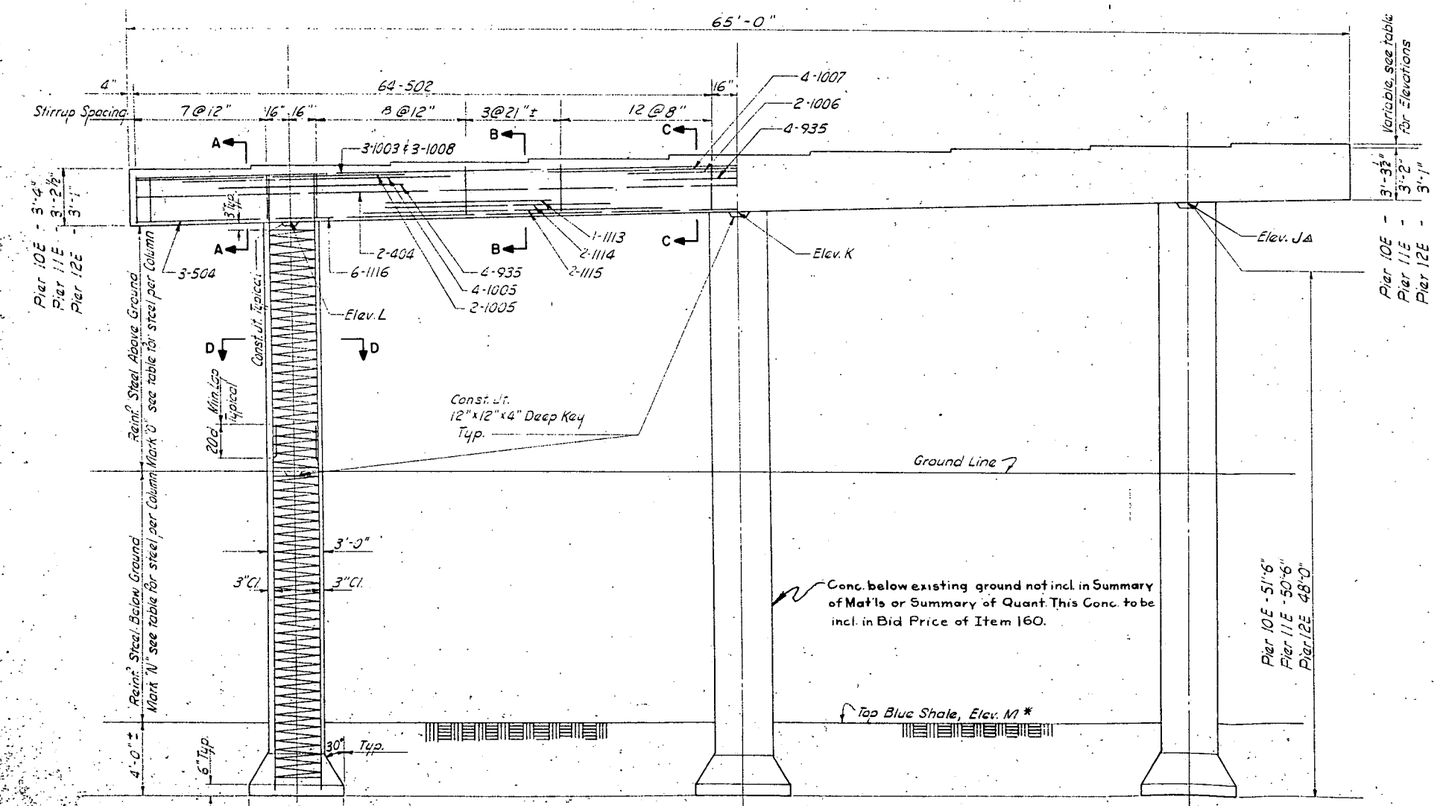


HALF PLAN TOP STEEL

Scale: 1/4" = 1'-0"

HALF PLAN BOTTOM STEEL

Scale: 1/4" = 1'-0"



ELEVATION

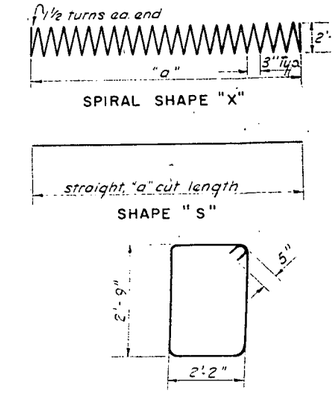
No Scale

PIER LOC.	CONC. CU. YD.	ELEVATIONS: CONC. TOP OF CAP A℄	B	C	D	E	F	G	H	I	TOP OF COLUMN J℄	K	L	SHALE M*	REINF. STEEL N# No.	Mk.	Sa'l	O No.	Mk
10E	38.3	4679.10	77.86	77.63	77.40	77.16	76.93	76.69	76.46	76.23	74.63	74.16	73.23	27.0	10	911	329	10	92
11E	38.2	4676.76	76.61	76.47	76.33	76.18	76.04	75.90	75.75	75.61	73.67	73.18	72.61	27.0	10	912	330	10	92
12E	36.2	4673.63	73.56	73.50	73.43	73.37	73.30	73.24	73.17	73.11	70.50	70.37	70.11	26.5	10	912	330	10	92

BAR LIST — PIERS 10E, 11E & 12E

MARK	SHAPE	NO. REQD	SIZE	"a"	CUT LENGTH	TOTAL LENGTH
911	S	30	#9	38'-0"	38'-0"	1140'-0"
912		60		39'-0"	39'-0"	2340'-0"
920		30		15'-9"	15'-9"	472'-6"
923		30		16'-6"	16'-6"	495'-0"
924		30		19'-2"	19'-2"	575'-0"
935	S	36	#9	10'-0"	10'-0"	360'-0"
320	X	3	3/8"φ	13'-0"	418'-6"	1255'-6"
323		3		14'-0"	448'-0"	1344'-0"
324		3		17'-0"	542'-6"	1627'-6"
329		3		32'-6"	1041'-0"	3123'-0"
330	X	6	3/8"φ	33'-6"	1072'-0"	6432'-0"
1003	S	18	#10	40'-0"	40'-0"	720'-0"
1005		36		14'-6"	14'-6"	582'-0"
1006		6		12'-0"	12'-0"	72'-0"
1007		12		20'-6"	20'-6"	246'-0"
1008		18	#10	26'-4"	26'-4"	474'-0"
1113		6	#11	8'-10"	8'-10"	53'-0"
1114		12	#11	11'-10"	11'-10"	142'-0"
1115		12	#11	15'-2"	15'-2"	182'-0"
1116		36	#11	25'-10"	25'-10"	930'-0"
404	S	12	#4	33'-6"	33'-6"	402'-0"
502	Hd	378	#5		10'-8"	4033'-0"
504	S	18	#5	8'-6"	8'-6"	153'-0"

BAR BENDING DIAGRAM

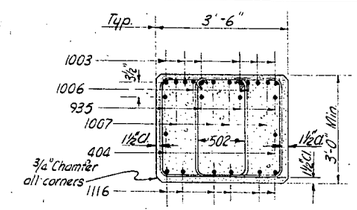


BAR SUMMARY

#11 Bars	1307 L.F.	6941 lbs.	
#10 "	2094 L.F.	9011 lbs.	
#9 "	1902 L.F.	6467 lbs.	
#5 "	4186 L.F.	4366 lbs.	
#4 "	402 L.F.	269 lbs.	
#3 "	4227 L.F.	1589 lbs.	

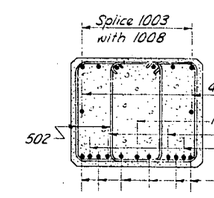
BILL OF MATERI

1"φ x 1'-8" Anch. Bolts	108
℞ Mk. A	36
℞ Mk. C	18
Rockers	36



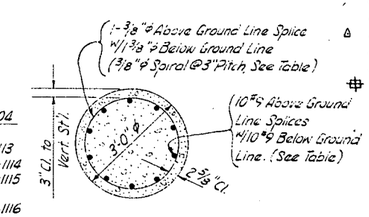
SECTION C-C

Scale: 1/2" = 1'-0"



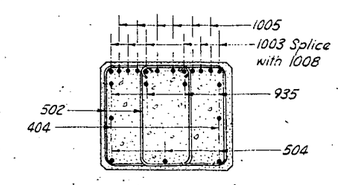
SECTION B-B

Scale: 1/2" = 1'-0"



SECTION D-D

Scale 1/2" = 1'-0"



SECTION A-A

Scale: 1/2" = 1'-0"

NOTE:

* Elevations are from best available Soil Boring and are approximate, actual elevation to be established during construction.

Δ Elevation is adjacent to ℄ of Freeway for Piers.

See Sheet 24 for bearing details.

Not incl. in Summary of Mat'ls or Summary of Quant. These bars to be incl. in Bid Price of Item 160.

DETAILS	MADE BY: R.R.W.	CHECKED BY: E.L.D. & E.F.B.
TRACING	MADE BY: B.W.B.	CHECKED BY: C.H.K.

COLORADO DEPARTMENT OF HIGHWAYS

PUEBLO FREEWAY — PUEBLO, COLO.

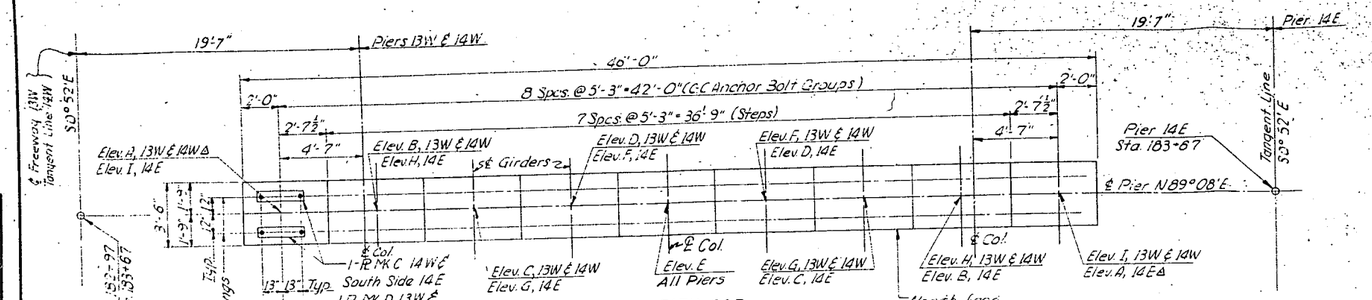
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+

STRUCTURE NO. - N B: K-18-CK
S B: K-18-CL

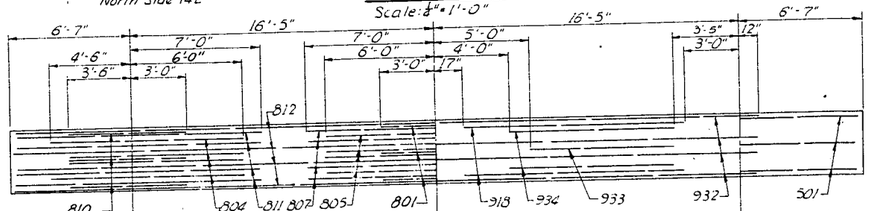
PIERS 10E, 11E AND 12E

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 32 | DWG. NO.

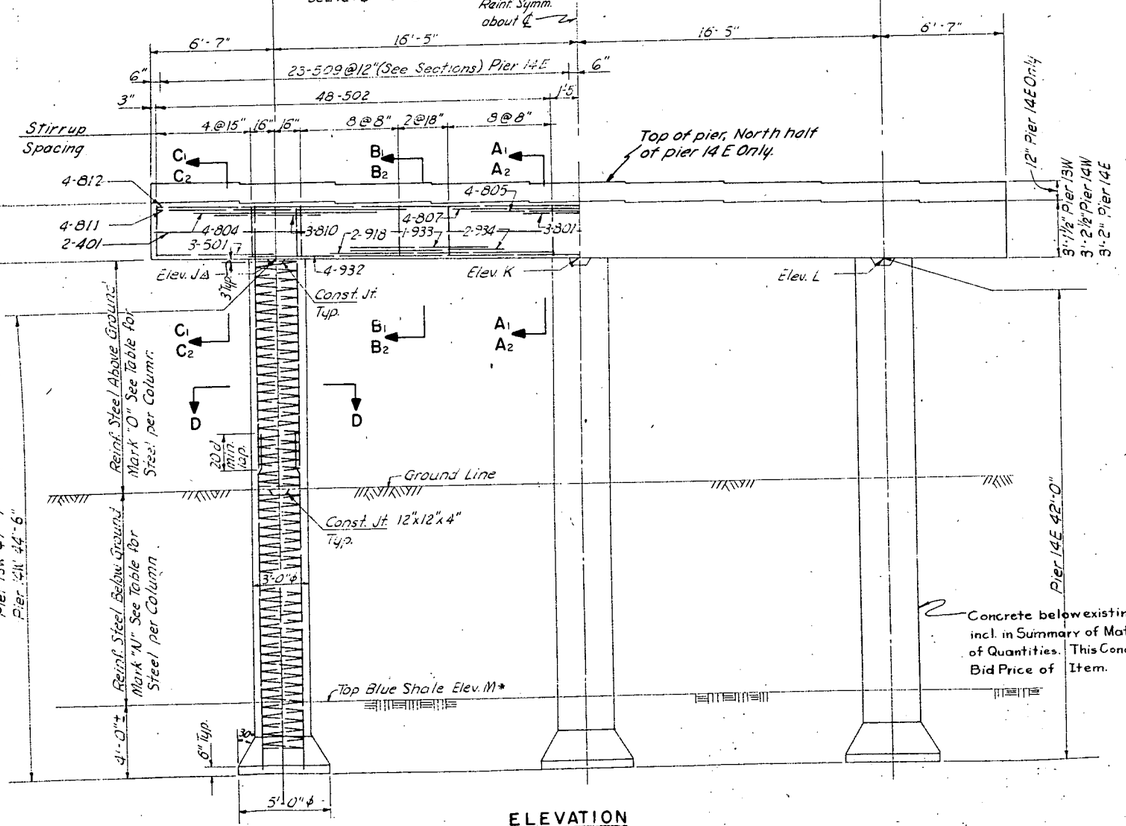


PLAN PIER CAP
Scale: ¼" = 1'-0"

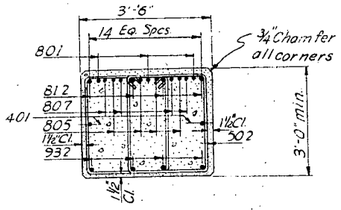


HALF PLAN TOP STEEL
Scale: ¼" = 1'-0"

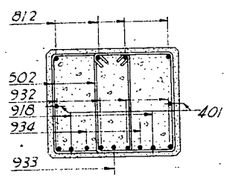
HALF PLAN BOTTOM STEEL
Scale: ¼" = 1'-0"



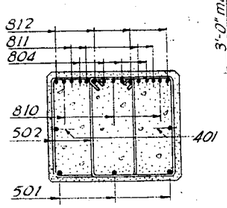
ELEVATION
No Scale



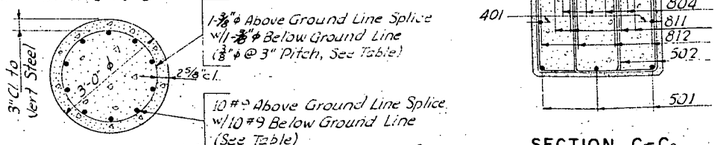
SECTION A-A
PIERS 13W & 14W
Scale: ½" = 1'-0"



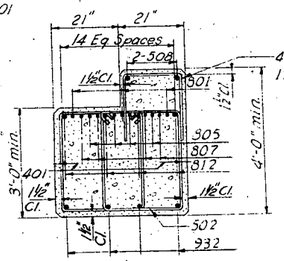
SECTION B-B
PIERS 13W & 14W
Scale: ½" = 1'-0"



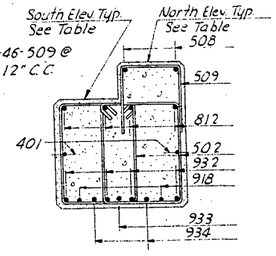
SECTION C-C
PIERS 13W & 14W
Scale: ½" = 1'-0"



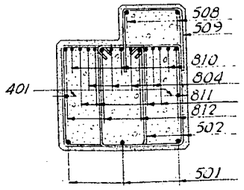
SECTION D-D
Scale: ½" = 1'-0"



SECTION A2-A2
PIER 14E
Scale: ½" = 1'-0"



SECTION B2-B2
PIER 14E
Scale: ½" = 1'-0"



SECTION C2-C2
PIER 14E
Scale: ½" = 1'-0"

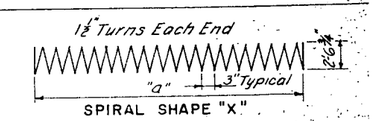
Not incl. in Summary of Materials or Summary of Quantities. These bars to be incl. in Bid Price of Item 160.

PIER LOC.	CONC. CU. YD.	ELEVATIONS: CONC. TOP OF CAP △	B	C	D	E	F	G	H	I	TOP OF COLUMN J△	K	L	SHALE M*	REINF. STEEL: N # No.	MK	Sp'l	O No.	MK	Sp'l
13W	27.4	4673.83	73.75	73.67	73.59	73.52	73.44	73.36	73.28	73.20	70.67	70.52	70.20	25.0	10	929	329	10	921	3
14W	25.1	4670.69	70.55	70.41	70.28	70.14	70.00	69.87	69.73	69.59	67.41	67.14	66.59	27.0	10	930	331	10	918	3
14E SOUTH	29.4	4671.31	71.45	71.58	71.72	71.85	71.99	72.13	72.26	72.40	68.31	68.85	69.13	27.0	10	931	332	10	919	3
14E NORTH		4672.31	72.45	72.58	72.72	72.85	72.99	73.13	73.26	73.40										

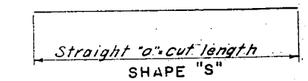
BAR LIST - PIERS 13W, 14W, & 14E

MARK	SHAPE	No. Reqd.	SIZE	"a"	CUT LENGTH	TOTAL LENGTH
918	S	42	#9	12'-0"	12'-0"	504'-0"
919	↑	30	↑	13'-6"	13'-6"	405'-0"
921		30		17'-0"	17'-0"	510'-0"
929		30		37'-9"	37'-9"	1132'-6"
930		30		39'-6"	39'-6"	1185'-0"
931		30		39'-9"	39'-9"	1192'-6"
932		12		35'-0"	35'-0	420'-0"
933	↑	6	↓	8'-0"	8'-0"	48'-0"
934	S	12	#9	9'-0"	9'-0"	108'-0"
318	X	3	⅜"ϕ	9'-3"	296'-0"	888'-0"
319	↑	3	↑	10'-9"	348'-9"	1046'-3"
321		3		14'-3"	457'-3"	1371'-9"
329		3		32'-6"	1033'-0"	3117'-0"
331		3		34'-0"	1086'-0"	3258'-0"
332	X	3	⅜"ϕ	34'-3"	1091'-0"	3273'-0"
501	S	18	#5	6'-5"	6'-5"	115'-8"
502	Hd	144	↑		10'-8"	1536'-0"
508	S	2	↓	45'-8	45'-8"	91'-4"
509	U	46	#5		6'-10"	314'-4"
801	S	9	#8	6'-0"	6'-0"	54'-0"
804	↑	24	↑	10'-6"	10'-6"	252'-0"
805		12		12'-0"	12'-0"	144'-0"
807		12		14'-0"	14'-0"	168'-0"
810		18		6'-6"	6'-6"	117'-0"
811		24	↓	13'-6"	13'-6"	324'-0"
812	S	12	#8	45'-8"	45'-8"	548'-0"
401	S	12	#4	24'-0"	24'-0"	288'-0"

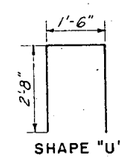
BAR BENDING DIAGRAMS



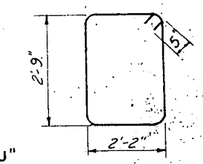
SPIRAL SHAPE "X"



SHAPE "S"



SHAPE "U"



SHAPE "Hd"

BILL OF MATERIALS

1" ϕ x 1'-8" Anch. Bolts	108 Req.
Plates Marked C	27 Req.
Plates Marked D	27 Req.
Rockers	27 Req.

BAR SUMMARY

#3	3306 L.F.	1243	1
#4	288 L.F.	192	1
#5	2057 L.F.	2146	1
#8	1607 L.F.	4291	1
#9	1995 L.F.	6783	1

Note:

* Elevations from best available Soil Borings, an are approximate, actual elevation to be es- tablished during construction.

△ Elevation is adjacent to ℄ of Freeway for all P

See Sheet 24 for bearing details.

Typical Anchor Bolt Setting plan 2-1" ϕ x 1'-8". Anc Bolts w/ hex. nut & lock washer (each ℄). Threa Bolts 4"; Projection = 4½".

COLORADO DEPARTMENT OF HIGHWAYS
PUEBLO FREEWAY — PUEBLO, COLO.
VIADUCT STRUCTURE NO. 2 - STA. 173+63.52 TO STA. 184+3
STRUCTURE NO. — N B: K-18-CK
S B: K-18-CL

PIERS 13W, 14W AND 14E

A. J. RYAN AND ASSOCIATES
ENGINEERS
DENVER, COLORADO

DATE | SHEET 33 | DWG. NO.

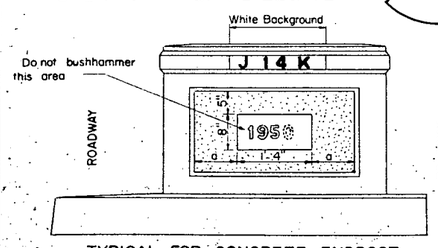
DETAILS — MADE BY L.W.D. — CHECKED BY E.F.B.&E.L.P. — TRACING MADE BY A.C.P. — CHECKED BY C.H.K.

STANDARD M-10-D

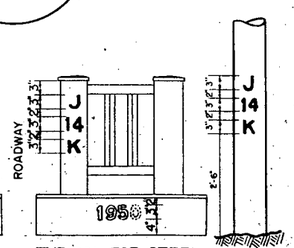
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TO SH
8	COLO.	I-25-1(16)99	42	

SAMPLE BRIDGE NUMBER

SAMPLE YEAR NUMBER

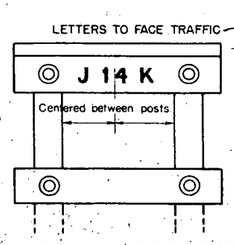


TYPICAL FOR CONCRETE ENDPOST

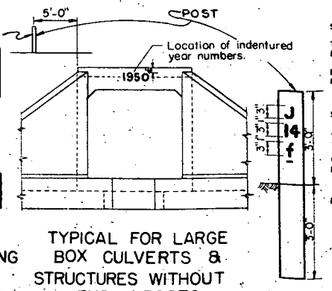


TYPICAL FOR STEEL HANDRAIL END POST

TYPICAL FOR SIGN POSTS



TYPICAL FOR TIMBER WING HANDRAIL



TYPICAL FOR LARGE BOX CULVERTS & STRUCTURES WITHOUT END POSTS

GENERAL NOTES

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

THE SIZE SHAPE AND SPACING OF THE LETTERS AND FIGURES SHALL BE IN ACCORDANCE WITH THE FULL SIZE SHOWN ON THIS SHEET. ADDITIONAL COPIES OF THIS FULL SIZE SHEET CAN BE OBTAINED FROM THE DEPARTMENT WITHOUT CHARGE.

THE YEAR NUMBERS ARE RECESSED IN CONCRETE 3/8" MINIMUM AS SHOWN INTO THE PANEL OF THE ENDPOST ON THE RIGHT HAND SIDE OF EACH BRIDGE END AND INTO THE FACE OF THE DOWNSTREAM HEADWALL OF CULVERTS AS SHOWN ON PLAN DETAILS. NUMBERS TO BE MADE OF WOOD, METAL OR OTHER SUITABLE MATERIAL AND ATTACHED TO THE FORMS BEFORE CONCRETE IS POURED. THE YEAR NUMBER OF EACH STRUCTURE SHALL CORRESPOND WITH THE YEAR IN WHICH THE CONCRETE IS POURED.

THE STRUCTURE NUMBER SHALL BE STENCILED ON THE RIGHT HAND SIDE OF EACH BRIDGE END AS SHOWN ON THIS STANDARD AND AS SPECIFIED. WHERE THE STRUCTURE HAS NO END POSTS THE NUMBER SHALL BE PLACED ON A POST ON THE RIGHT HAND SIDE OF THE ROAD AS SHOWN. FOR SIGNS THE NUMBER SHALL BE PLACED ON SIGN POSTS ON THE RIGHT HAND SIDE OF THE ROADWAY.

THE CORRECT NUMBER FOR EACH BRIDGE OR SIGN IS SHOWN ON THE PLANS.

THE NUMBERS FOR MAJOR STRUCTURES OF OVER 20 FEET CLEAR SPAN SHALL BE UPPER CASE LETTERS. THE NUMBERS FOR MINOR STRUCTURES OF 12 TO 20 FEET CLEAR SPAN SHALL BE LOWER CASE LETTERS. SIGN BRIDGES SHALL BE CONSIDERED AS MAJOR STRUCTURES.

A PROPER WHITE BACKGROUND RECTANGLULAR IN SHAPE AND EXTENDING THREE INCHES BEYOND THE LIMITS OF THE NUMBER SHALL BE PAINTED WITH TWO COATS OF ACCEPTABLE WHITE PAINT UNLESS AN APPROVED WHITE CONCRETE PAINT IS USED. BEFORE PAINTING THE SURFACE MUST BE THOROLY DRIED, CLEANED AND PROPERLY SIZED. ON TIMBER HANDRAILS THE WHITE PAINT USED ON THE BRIDGE WILL BE SATISFACTORY.

AFTER THE WHITE BACKGROUND HAS DRIED SUFFICIENTLY, THE CORRECT STRUCTURE NUMBER SHALL BE CAREFULLY STENCILED ON IT, WITH TWO COATS OF "SECOND FIELD COATS-DARK" OR "EXTERIOR BLACK PAINT (MAINT)" AS SPECIFIED UNDER ITEM 38 "PAINTS AND PAINTING". THE BRACES OF THE STENCILED LETTERS AND FIGURES SHALL BE CAREFULLY FILLED IN BY HAND TO MAKE SOLID FIGURES.

SUFFICIENT TIME BETWEEN SUCCESSIVE COATS SHALL BE ALLOWED TO PERMIT THORO DRYING.

THE COST OF PAINTING OF STRUCTURE NUMBERS AND FURNISHING AND PLACING POSTS FOR STRUCTURE NUMBERS SHALL BE CONSIDERED SUBSIDIARY WORK AND SHALL BE INCLUDED IN THE ORIGINAL CONTRACT ITEMS AND WILL NOT PAID FOR AS A SEPERATE ITEM.

SEC

COLORADO
DEPARTMENT OF HIGHW

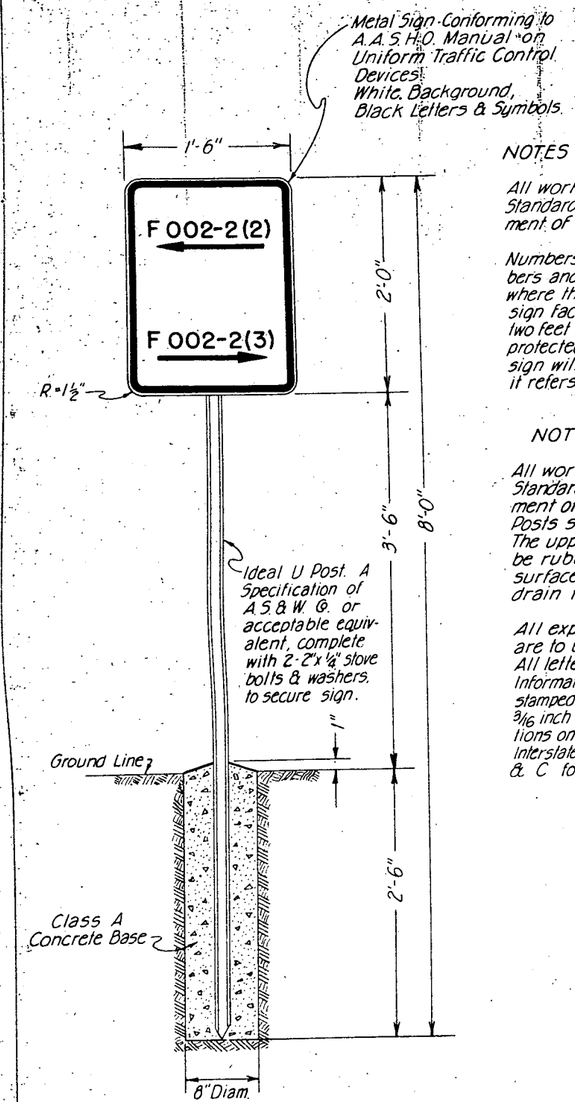
STANDARD
LETTERS AND FIGUR
FOR
YEAR NUMBERS AN
STRUCTURE NUMBER

Designed by	Approved by
Made by	Bridge Engin
Checked by	Date: Feb. 17

STRUCTURE NO.

STANDARD M-7-D

PROJECT MARKER POST



NOTES FOR PROJECT MARKER POSTS

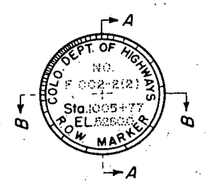
All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to this project.

Numbers and arrows shall show the proper numbers and directions of the projects each way from where the post is placed. Post is to be set with sign facing the road at the end of the project, two feet inside the R.O.W. line or at a point amply protected from traffic in such a position that the sign will indicate properly the projects to which it refers.

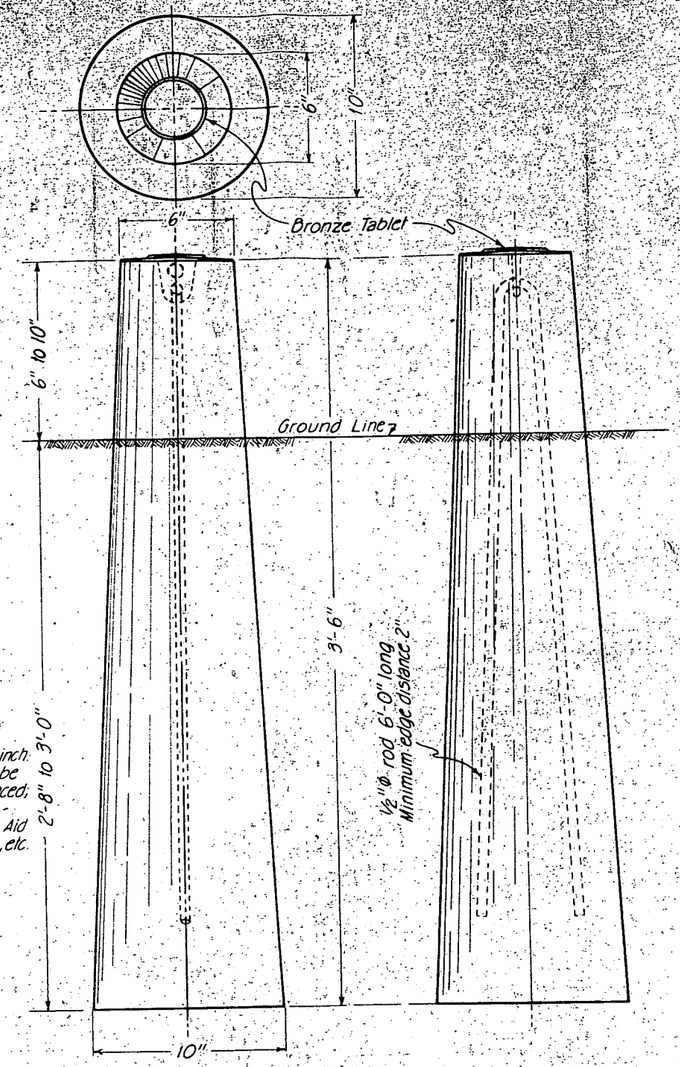
NOTES FOR R.O.W. MARKER POSTS

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to the project. Posts shall be made of Class 'A' Concrete. The upper 12 inches of marker posts shall be rubbed free of form marks, and the top surface of the post must be constructed to drain thoroughly.

All exposed surfaces of the bronze tablet are to be ground to a smooth surface. All letters are to be depressed a minimum of 1/16 inch. Information on the bronze tablet indicated by pin lines is to be stamped in field by the engineering party after post is placed; 3/16 inch letters and figures to be used. Project designations on tablets shall be properly shown (i.e., I for Fed. Aid Interstate; F for Fed. Aid Primary; S for Fed. Aid Secondary, etc. & C for State Projects, see detail below.)



RIGHT OF WAY MARKER POST



BENCH MARK

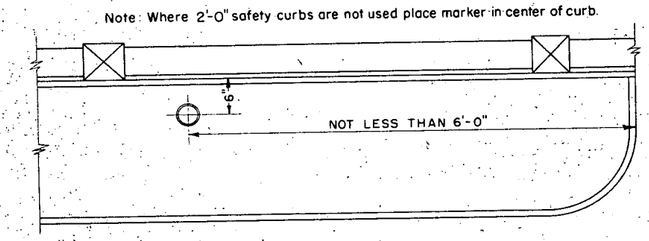
All work shall be done in accordance with Standard Specifications of the Colorado Department of Highways applicable to the project.

All exposed surfaces of the bronze tablet are to be ground to a smooth surface. All letters are to be depressed a minimum of 1/16 inch. Information on the bronze tablet indicated by pin lines is to be stamped in field by the engineering party after marker is placed. 3/16 inch letters and figures to be used. Project designation on tablets shall be properly shown (i.e., I for Fed. Aid Interstate, F for Fed. Aid Primary, S for Fed. Aid Secondary, etc. & C for State Projects. See details below).

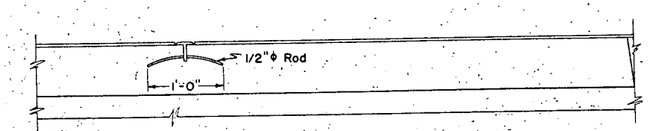
Bronze Bench Mark Tablets will be furnished by the Department at no expense to the Contractor.

Installation of Bronze Bench Mark Tablets will not be paid for directly, but shall be included in the price bid for Concrete

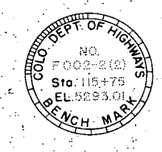
Note: Where 2'-0" safety curbs are not used place marker in center of curb.



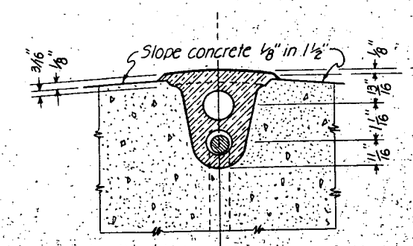
PLAN



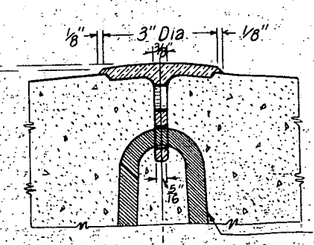
ELEVATION



One marker to be placed on Bridges as shown. The station shown on marker shall be the centerline stationing directly opposite the marker.



SECTION B-B



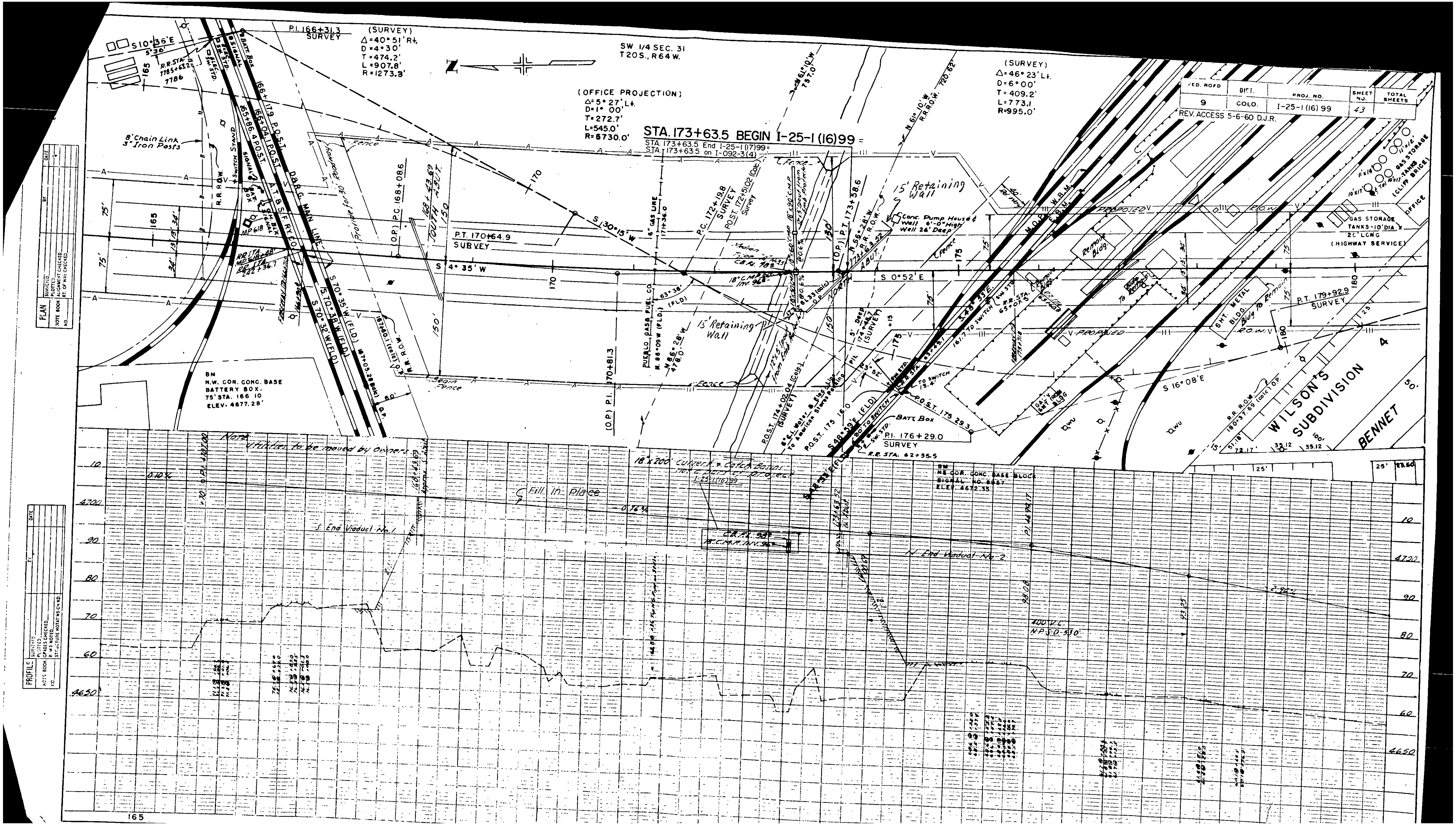
SECTION A-A

Omit and use 12" x 1/2" φ bar for Bench Mark Tablet

DETAIL OF BRONZE TABLET
FOR RIGHT OF WAY MARKER POST AND BENCH MARK

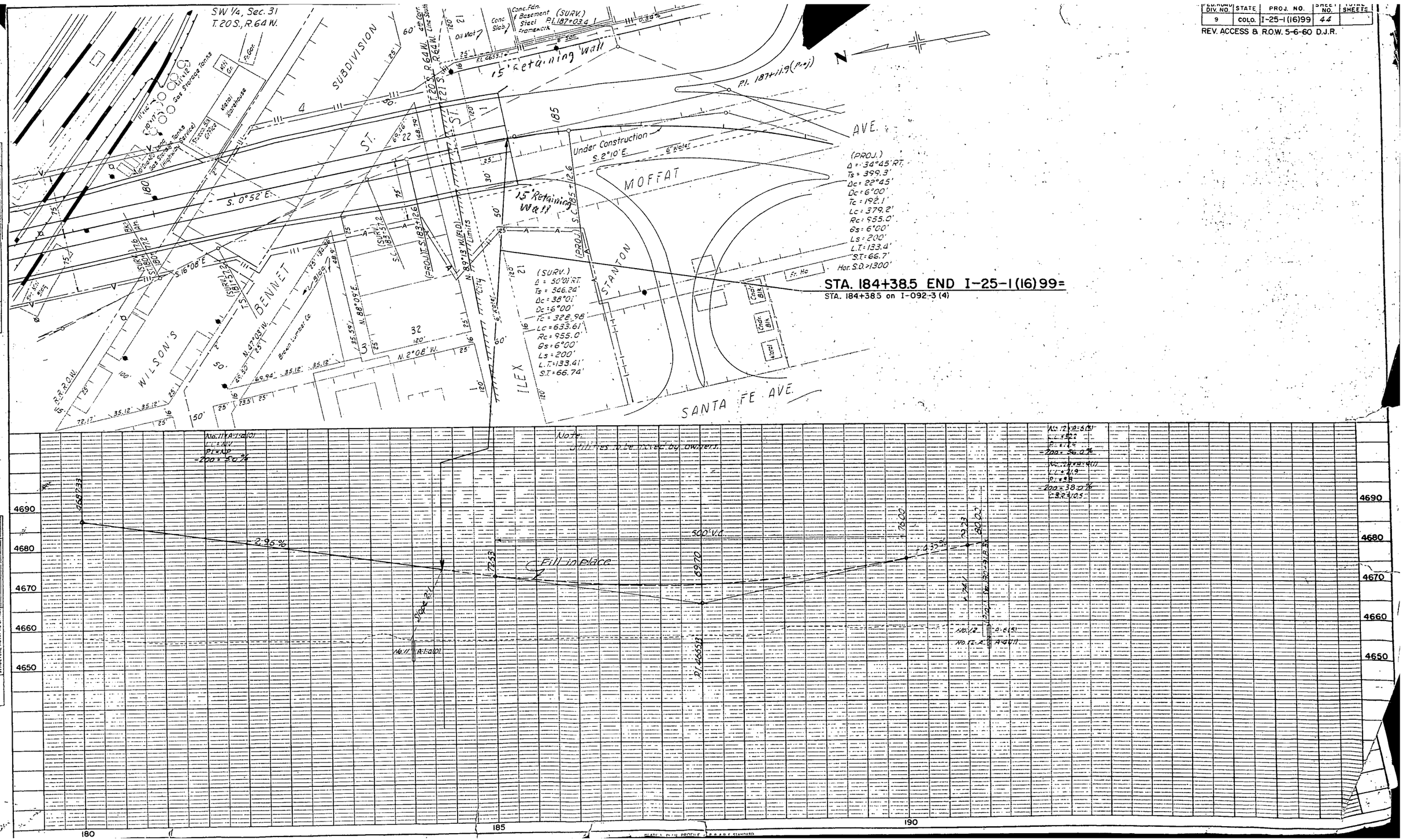
COLORADO
DEPARTMENT OF HIGHWA
STANDARD
MARKER POSTS
AND
BENCH MARKS

Designed by R.E.L.	Approved by
Made by E.E.O.	
Checked by R.E.L.	Date: Nov. 12, 1


FED. ROAD 9
DIST. COLO.
PROJ. NO. I-25-1 (16) 99
SHEET NO. 43
TOTAL SHEETS
REV. ACCESS 5-6-60 D.J.R.
STA. 173+63.5 BEGIN I-25-1 (16)99 =
STA. 173+63.5 End I-25-1 (17)99 =
STA. 173+63.5 on I-092-3(4)
SW 1/4 SEC. 31
T20S., R64W.
P.I. 166+31.3
SURVEY
(SURVEY)
Δ=40° 51' Rt.
D=4°30'
T=474.2'
L=907.8'
R=1273.8'
(OFFICE PROJECTION)
Δ=5° 27' Lt.
D=1° 00'
T=272.7'
L=545.0'
R=5730.0'
(SURVEY)
Δ=46° 23' Lt.
D=6°00'
T=409.2'
L=773.1
R=995.0'
S10°36'E
5°36'
R.R. STA. 7785+63.2
7786
165
8' Chain Link
3" Iron Posts
R.R. R.O.W.
SWITCH STAND
SIGNAL
BATT. BOX
SIGNAL
BATT. Box
166+17.9 P.O.S.T.
166+04.1 P.O.S.T.
165+86.4 P.O.S.T.
D&R.G. MAIN LINE
A.T. & S.F. RY. CO.
MP 618
R.R. STA. MP 618+48'
R.R. STA. 242+36.7
FREEWAY
S 70° 35' W (FLD.)
S 70° 38' W (FLD.)
S 70° 32' W (FLD.)
167+05.28 (Calc)
167+60.1 (calc)
Provide for 30' Roadway
Fence
(O.P.) P.C. 168+08.6
168+43.69 SOUTH ABUT.
150'
P.T. 170+64.9
SURVEY
S 4° 35' W
170
S 30° 15' W
6" GAS LINE
171+36.0
P.C. 172+19.8
SURVEY
P.O.S.T. 172+51.02 (Calc.)
Survey
PUEBLO GAS & FUEL CO.
N. 86°09 W (FLD.)
N 66° 28' W
478.0'
63° 36'
(FLD)
15' Retaining Wall
18" x 90' C.M.P.
18" x 60' C.M.P.
@ 0.6%
Median Type "A" C.B. Fl. 98
18" C.M.P. Inv. 96
12'x5' Spout from Emb. Protection
(O.P.) P.T. 173+58.6
N 66° 28' W R.R. R.O.W.
173+63.52 ABUT.
NORTH
S 0°52' E
N 61° 10' W 757.0'
N 61° 10' W R.R. R.O.W. 720.62'
15' Retaining Wall
Conc. Pump House & Well 6'-0" High Well 26' Deep
175
(O.P.) P.I. 170+81.3
Begin Fence
BM
N.W. COR. CONC. BASE
BATTERY BOX.
75' STA. 166 10
ELEV. 4677.28'
60'
O.P.
P.O.S.T. 174+02.04 (Calc.) (SURVEY)
6" C.I. Water & Elec. Line To American Sierra Parking
P.O.S.T. 175 16.0
S 48° 59' E (FLD)
80' To SWITCH
SW. STD.
R.R. STA. 63+49.1
To SWITCH 13.4'
P.O.S.T. 175 29.3
BATT. Box
P.I. 176+29.0
SURVEY
R.R. STA. 62+55.5
174+48.7 (SURVEY)
5' DEEP
S 48° 33' E.
161.7 TO SWITCH
SW STD
R.R. STA. 65+07.5
M.O.P.
W.B.M.
E.B.M.
PROPOSED
R.O.W.
Remove Bldg.
Bldg. To Remain
SHT. METAL BLDG.
GAL'V SHT IRON BLDG
GAS STORAGE TANKS-10' DIA x 20' LONG
(HIGHWAY SERVICE)
GAS STORAGE TANKS (CLIFF BRICE)
OFFICE
P.T. 179+92.9
SURVEY
180
S 16° 08' E
R.R. R.O.W. 180+37.69 (calc) O.P.
WILSON'S SUBDIVISION
BENNET
4
50'
100'
25'
Note
Utilities to be moved by Owners
0.10%
P.I. 4707.00
+70
168+43.69
Approx. S. Abut.
S. End Viaduct No. 1
Fill in Place
-0.76%
18" x 200' Culvert & Catch Basins not a part of project I-25-1(16)99
C.B. Fl. 98
18" C.M.P. Inv. 96
173+63.52
N. Abut.
N. End Viaduct No. 2
BM
NE COR. CONC. BASE BLOCK
SIGNAL NO. 8057
ELEV. 4672.35
P.I. 4699.17
98.08
93.25
400' V.C.
N.P.S.D.-530'
-2.96%
10
4700
90
80
70
60
4650
165
PLAN
NOTE BOOK
NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE
PROFILE
NOTE BOOK
NO.
SURVEYED
PLOTTED
GRADES CHECKED
B. M.'S NOTED
STRUCTURE NOTATIONS CHKD.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	I-25-1(16)99	44	

REV. ACCESS & R.O.W. 5-6-60 D.J.R.



PLAN
NOTE BOOK NO.
SURVEYED
PLOTTED
ALIGNMENT CHECKED
RT. OF WAY CHECKED
BY
DATE

PROFILE
NOTE BOOK NO.
SURVEYED
PLOTTED
GRADES CHECKED
B. MS. NOTED
STRUCTURE NOTATIONS CHKD.
BY
DATE