

FED. ROAD DIV. NO.	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO. U1 002-2(17)	1	

UNIT No. 2
FIRST CONTRACT

2102170201

INDEX OF SHEETS

- SHEET NO. 1 SKETCH MAP AND TITLE PAGE.
2 SUMMARY OF APPROXIMATE QUANTITIES, TABULATION OF LENGTH AND GENERAL NOTES.
3-8 DETAIL OF LARIMER ST. PIERS.
9-15 DETAIL OF COLFAX AVE. PIERS.
16 STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS.

M-2-DS

COLORADO STATE HIGHWAY DEPARTMENT PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. U1 002-2(17)

UNIT NO. 2
FIRST CONTRACT
STATE HIGHWAY NO. 185
CITY AND COUNTY OF DENVER

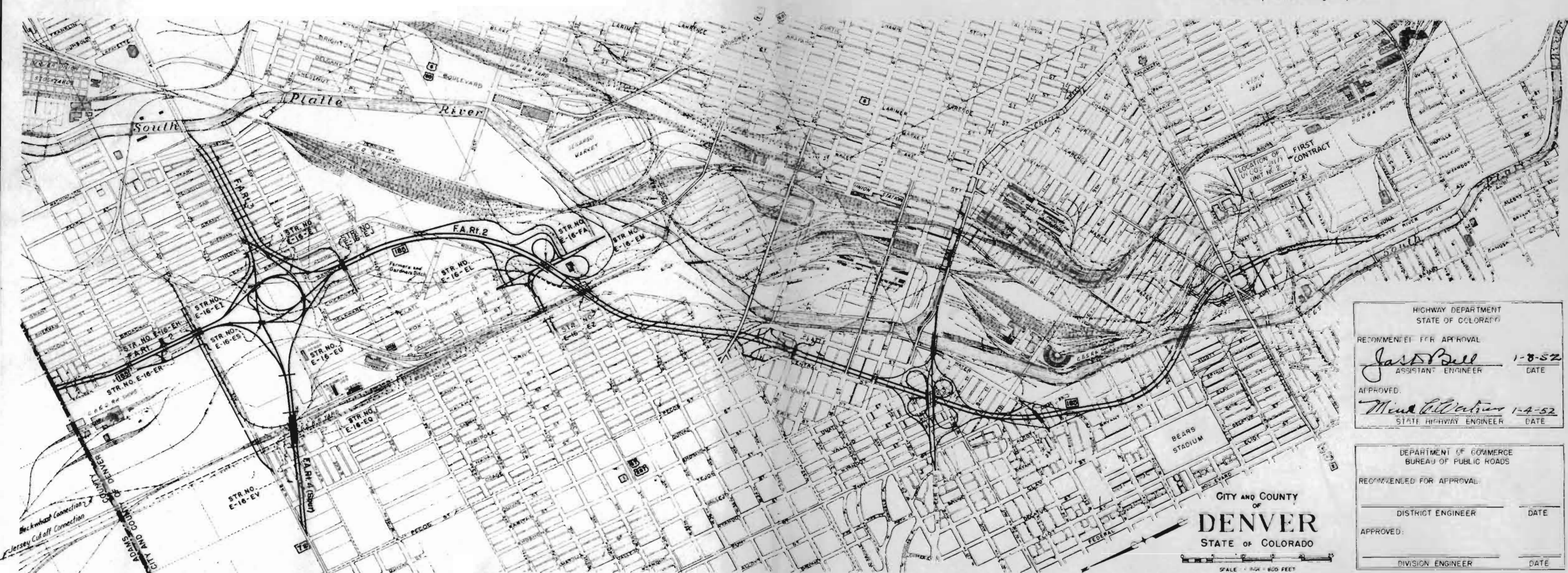
TOTAL LENGTH OF PROJECT 3440.31' = 0.652 MILES
(NO LENGTH INVOLVED IN UNIT 2)

CONVENTIONAL SIGNS

CENTER LINE OF SURVEY
RIGHT OF WAY LINE
SECTION LINE
ONE-QUARTER SECTION LINE
ONE-SIXTEENTH SECTION LINE
PROPERTY LINES & TRACTS
CITY LIMITS LINE
RAILROAD TRACKS (t)

NOTE TO BIDDERS:

It is recommended that bidders on this project go over the plan details with one of the following field representatives of this Department:
D. W. Crmsbee, Urban Engineer, Denver
F. K. Merten, Construction Engineer, Denver
W. B. White, Resident Engineer, Denver



HIGHWAY DEPARTMENT STATE OF COLORADO	
RECOMMENDED FOR APPROVAL	DATE
<i>James Bull</i> ASSISTANT ENGINEER	1-8-52
APPROVED:	DATE
<i>Miner C. Williams</i> STATE HIGHWAY ENGINEER	1-4-52

DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS	
RECOMMENDED FOR APPROVAL:	DATE
DISTRICT ENGINEER	DATE
APPROVED:	DATE
DIVISION ENGINEER	DATE

CITY AND COUNTY
OF
DENVER
STATE OF COLORADO

SCALE 1" = 800 FEET

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO	SHEET NO.	TOTAL SHEETS
9	COLORADO	U1 002-2(17) Unit 2	2	

FIRST CONTRACT

SUMMARY OF APPROXIMATE QUANTITIES

ITEM NO.	ITEM	UNIT	LARIMER ST. VIADUCT	COLFAX AVE. VIADUCT	PROJECT TOTALS
14a	Dry Rock Excavation (Str.)	Cu. Yd.	10	10	20
14b	Dry Common Excavation (Str.)	Cu. Yd.	320	290	610
14c	Wet Rock Excavation (Str.)	Cu. Yd.	10	10	20
14d	Wet Common Excavation (Str.)	Cu. Yd.	10	10	20
16a	Structure Backfill (Class 1)	Cu. Yd.	220		220
16d	Mechanical Tamping	Hour	45	65	110
46a	Class "A" Concrete	Cu. Yd.	216	293	509
47x	Reinforcing Steel - Transport and Place	Lb.	29,300	32,400	61,700
89a	Drain Pipe (Concrete Floor)	Each	4	4	8
STATE FURNISHED MATERIAL					
47	Reinforcing Steel (Non-Federal Aid)	Lb.	29,300	32,400	61,700

TABULATION OF LENGTH

STATION	ROADWAY	STRUCTURES	
	LIN. FT.	LIN. FT.	LOADING
213+25 BEGIN U1 002-2(17)			
213+42.71 STRUCT. END	17.71		
215+52.55 STRUCT. END		209.84	H-20
223+22.08 BK. = EQUATION	769.53		
223+15.97 AH.			
230+17.03 STRUCT. END	701.06		
231+95.11 STRUCT. END		178.08	H-20
247+59.2 END U1 002 2(17)	1,564.09		
TOTALS	3,052.39	387.92	
SUMMARY	LIN. FT.	MILES	
TOTAL U1 002-2(17)			
ROADWAY	3,052.39	0.578	
STRUCTURES	387.92	0.074	
TOTALS	3,440.31	0.652	

GENERAL NOTES

This project is to be constructed in conformity with the Standard Specifications of the Colorado State Highway Department adopted January 1, 1948.

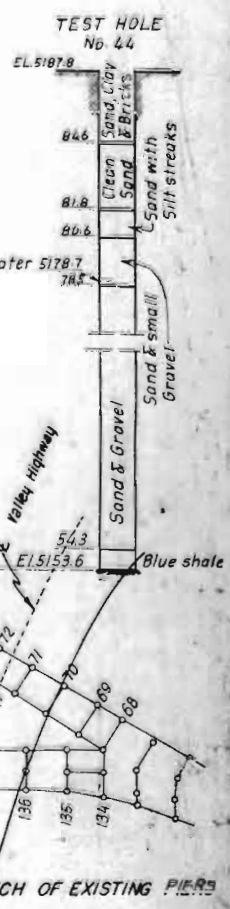
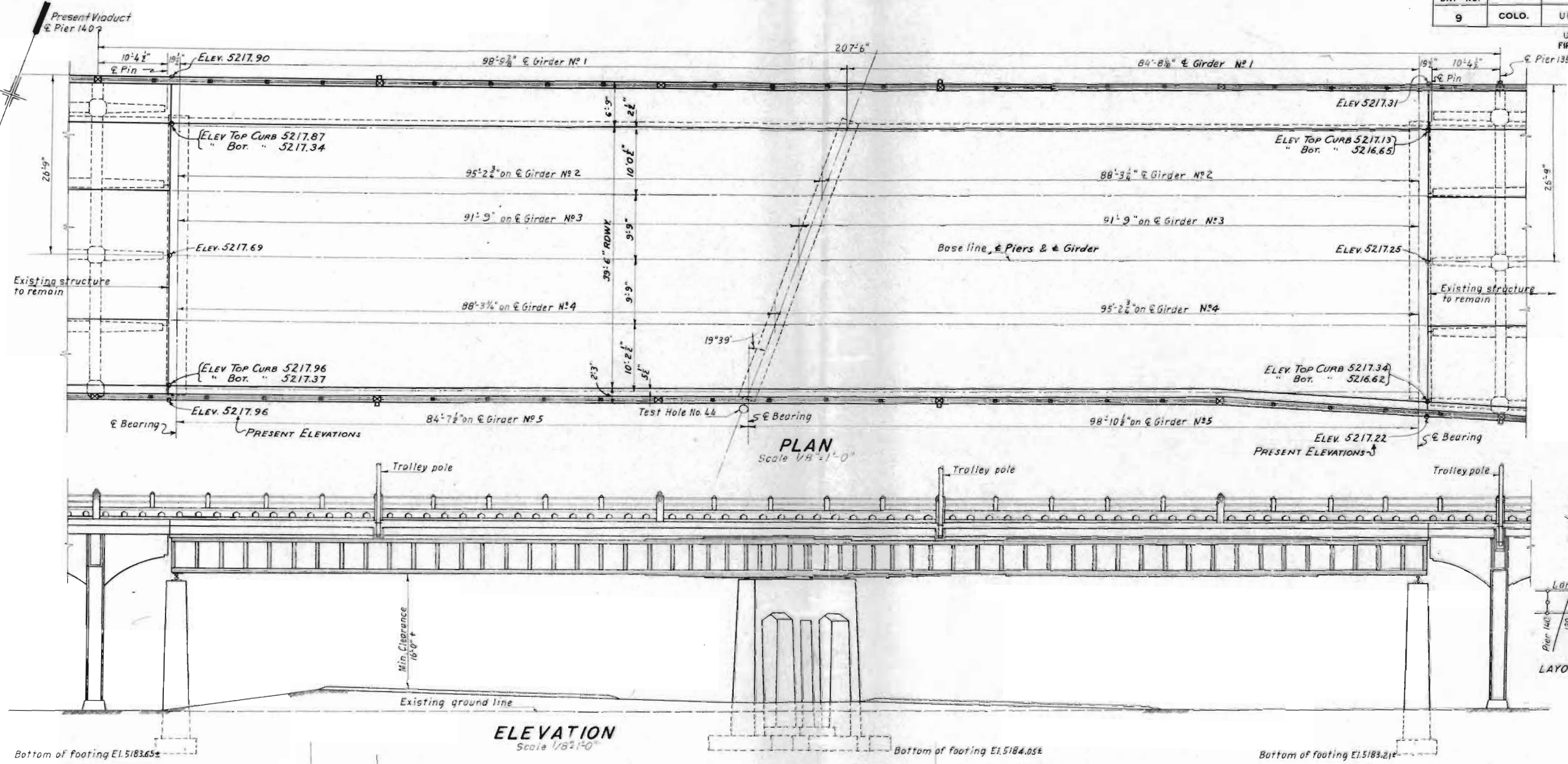
All quantities on preliminary plans are to be considered approximate only.

All concrete used on this project shall be "Air Entrained Concrete"

REV. 10-11-51 REINFORCING STEEL - SUMMARY - 3.12.73

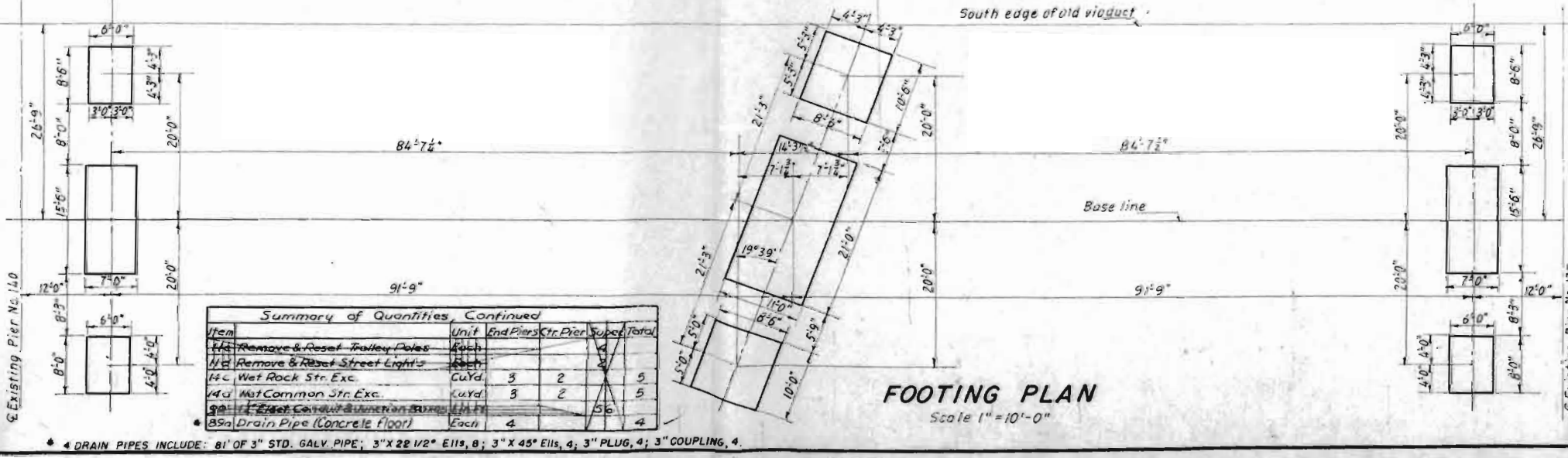
FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	U1 002-2(17)	3	

UNIT NO. 2
FIRST CONTRACT



Note:-
Check elevations shown for new structure against elevations on existing structure and correct former if and as necessary.
Vary height of curb and sidewalk and thickness of asphalt surface at ends if and as necessary to match existing structure.

Summary of Quantities					
Item	Unit	End Pier	Center Pier	Superstructure Totals	
14a Dry rock excavation	Cu. yds.	3	3		6
14b Dry common excavation	Cu. yds.	180	140		320
16d Mechanical tamping	Hours	26	18		44
16a Structure Backfill	Cu. yds.	130	90		220
46a Class A concrete	Cu. yds.	127	89	215	216
47 Reinforcing Steel	Lbs.	15720	13550	29270	29270
48a Drain Pipe (Concrete floor)	Each			56	56
48b Drain Pipe (Concrete floor)	Each			4	4



Design Specifications: 1949 AASHO H20-44
f_s (Reinf.) = 20,000 p.s.i., f_c = 1000 p.s.i., f_s = 18,000 p.s.i.
Maximum allowable soil pressure, 3 tons per sq. ft.
25 lbs. per sq. ft. wearing surface included in dead load.

COLORADO STATE HIGHWAY DEPT.
THE VALLEY HIGHWAY.....DENVER, COLORADO

LARIMER STREET VIADUCT MODIFICATION
GENERAL PLAN & ELEVATION

FOOTING PLAN

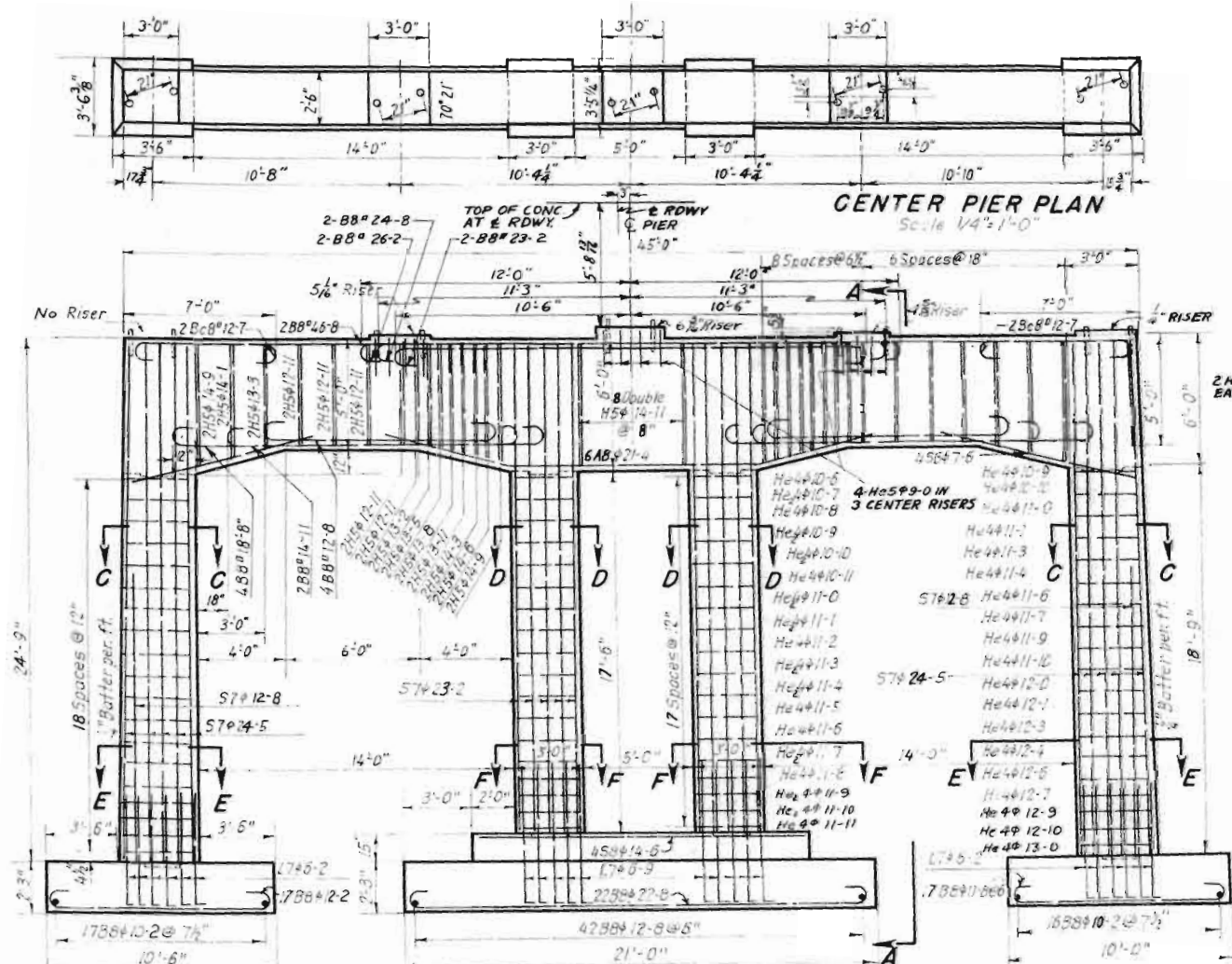
STRUCTURE NO. F-19-DN

CROCKER AND RYAN
CONSULTING ENGINEERS
DENVER, COLORADO

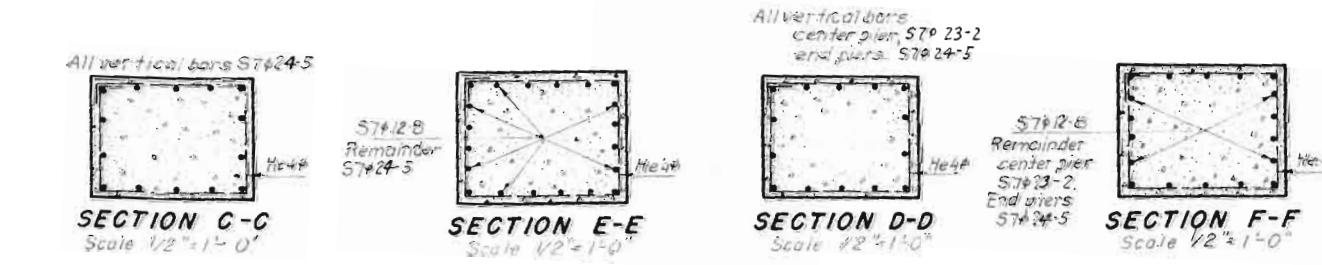
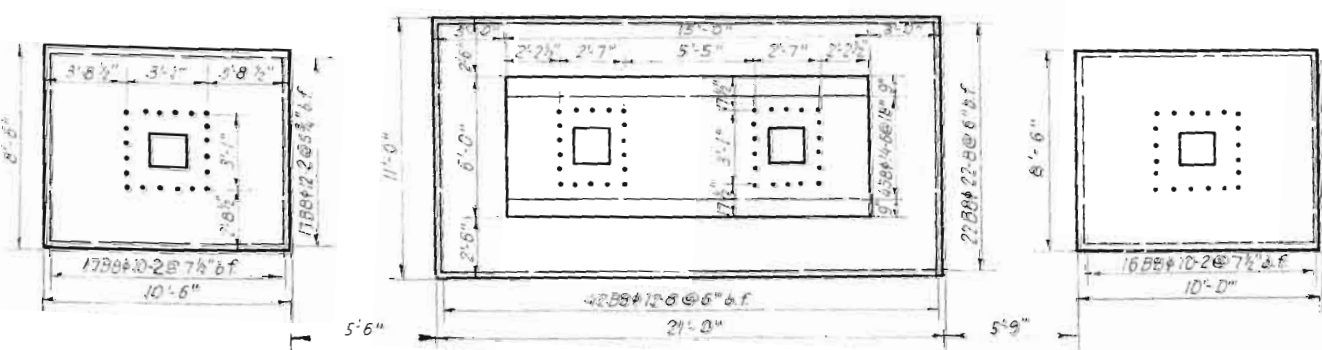
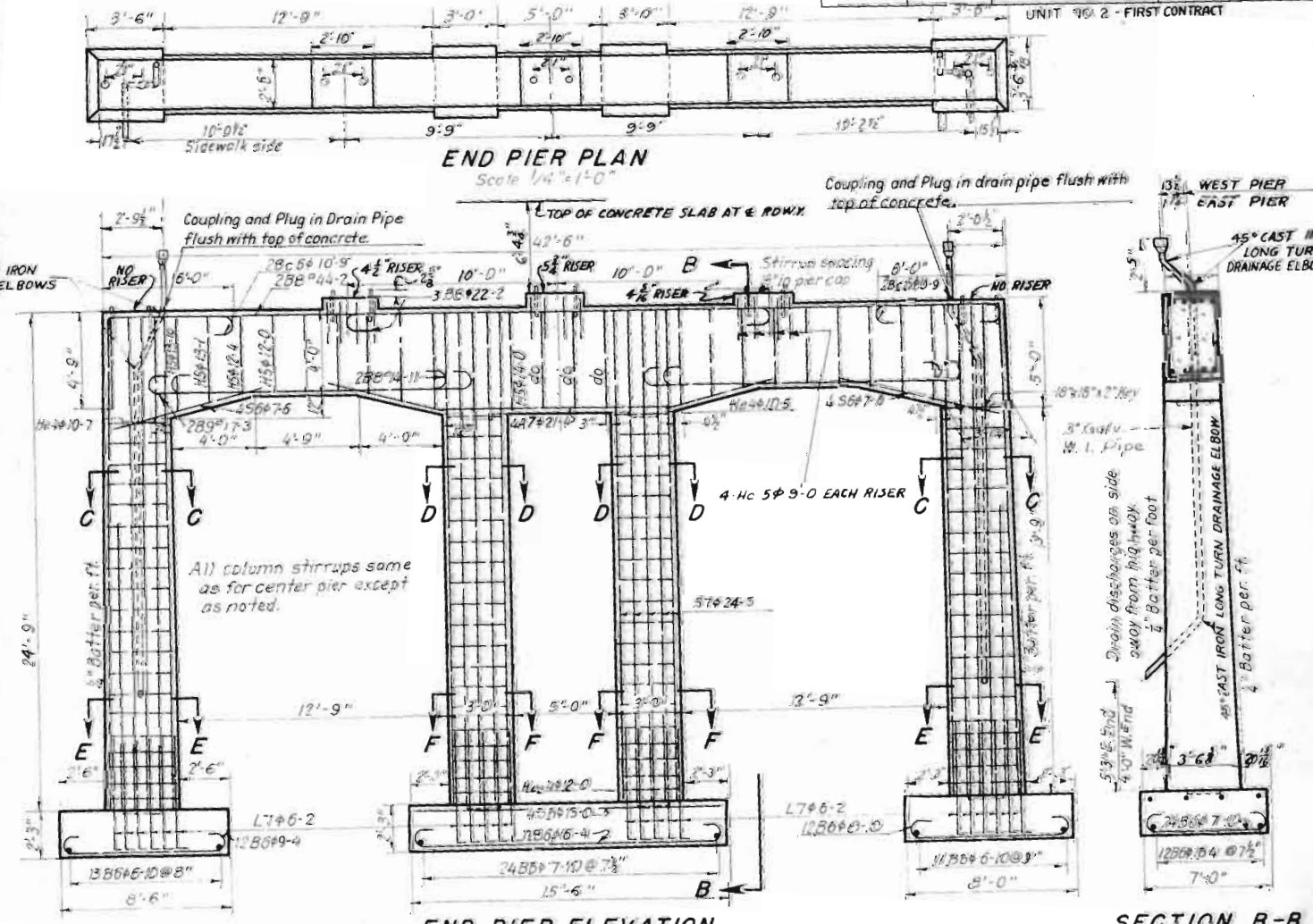
DATE SHEET 1 OF 8

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	U1 C02-2(17)	4	

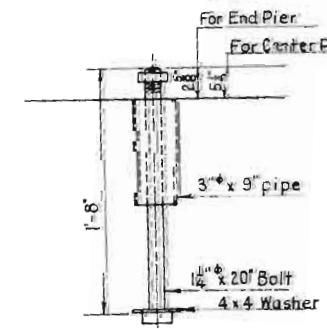
UNIT 10.2 - FIRST CONTRACT



All anchor bolts 1/2" x 20"



Note:
Clear distance from face of concrete to steel - Footings - 3"; All others 2" except as noted.
Reinforced concrete cutters 3/4"
Actual soil pressure 4.7 W.



COLORADO STATE HIGHWAY DEPT.
THE VALLEY HIGHWAY..... DENVER, COLORADO

LARIMER STREET VIADUCT MODIFICATION

PIERS & PIER FOOTING

STRUCTURE NO. F-16-DN

CROCKER AND RYAN
CONSULTING ENGINEERS
DENVER, COLORADO

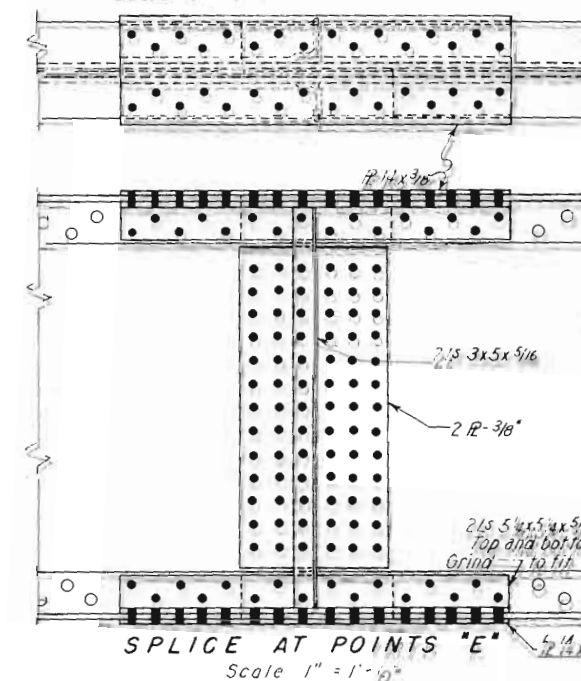
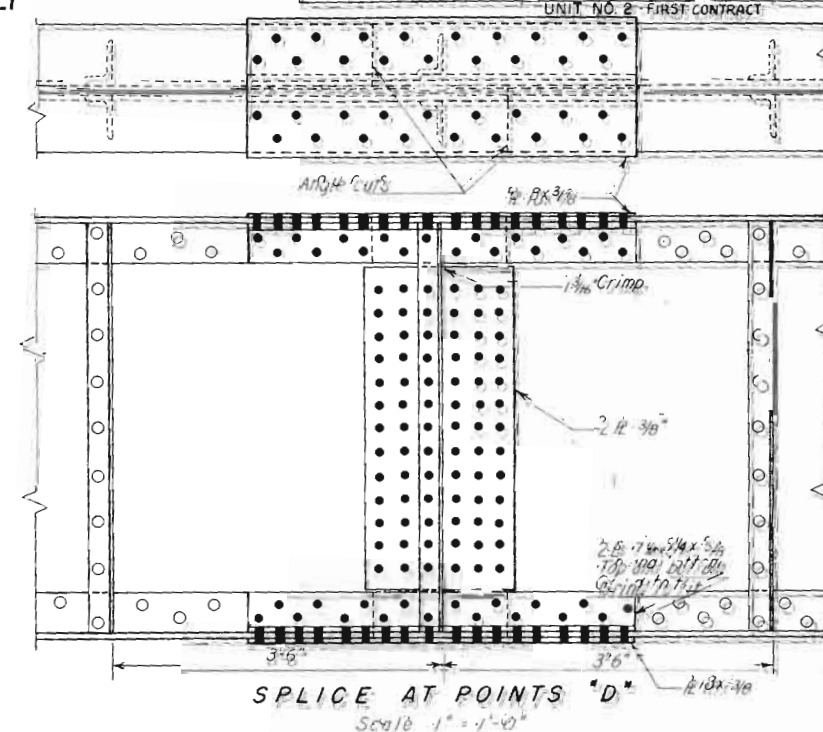
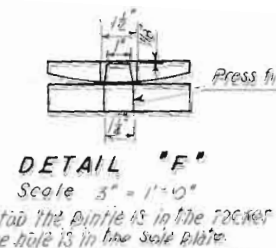
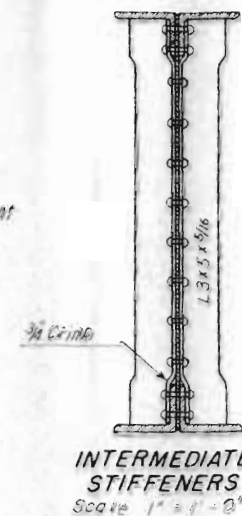
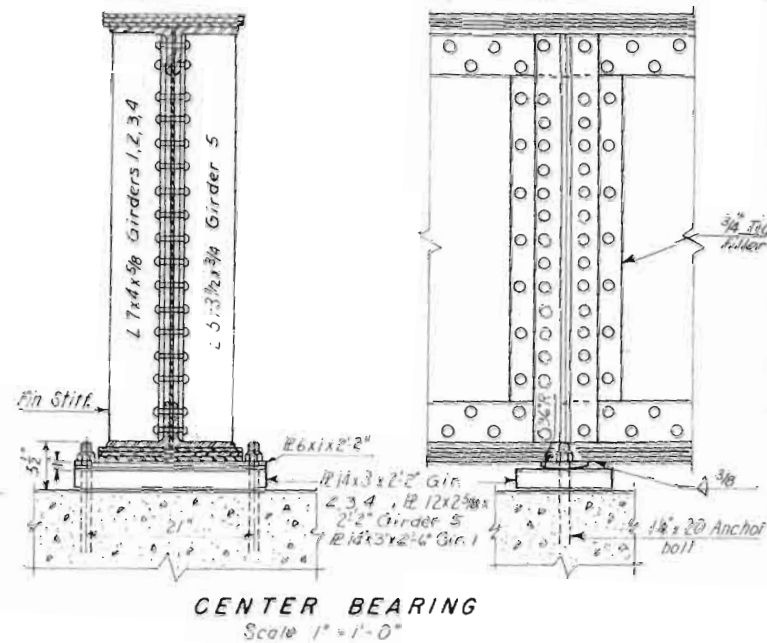
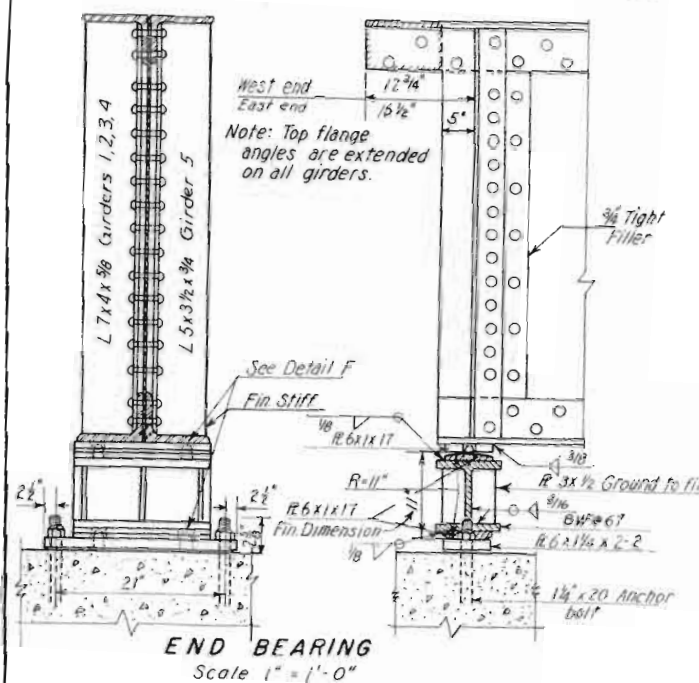
REVISIONS

Revised & redrawn 12-20-40 C.S.H.D. to conform with 1940s-1949

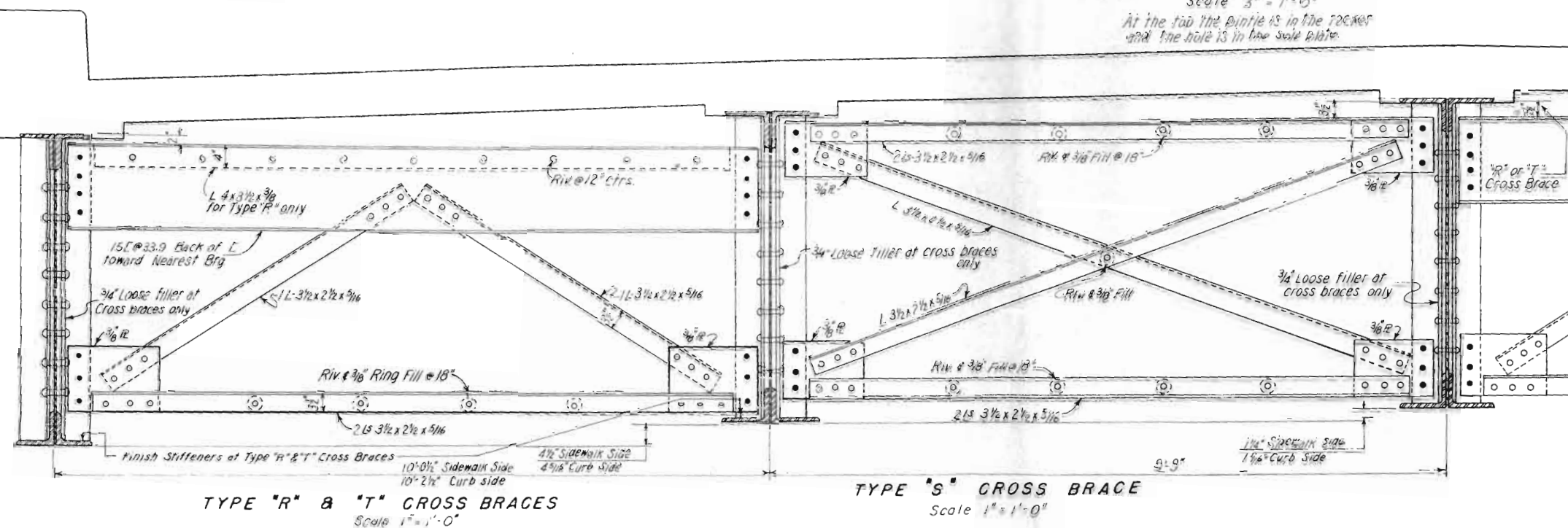
FOR REFERENCE ONLY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	U-1 (2-247)	5	

UNIT NO. 2 - FIRST CONTRACT

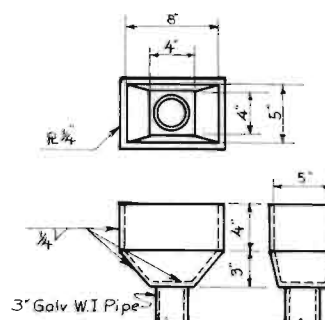
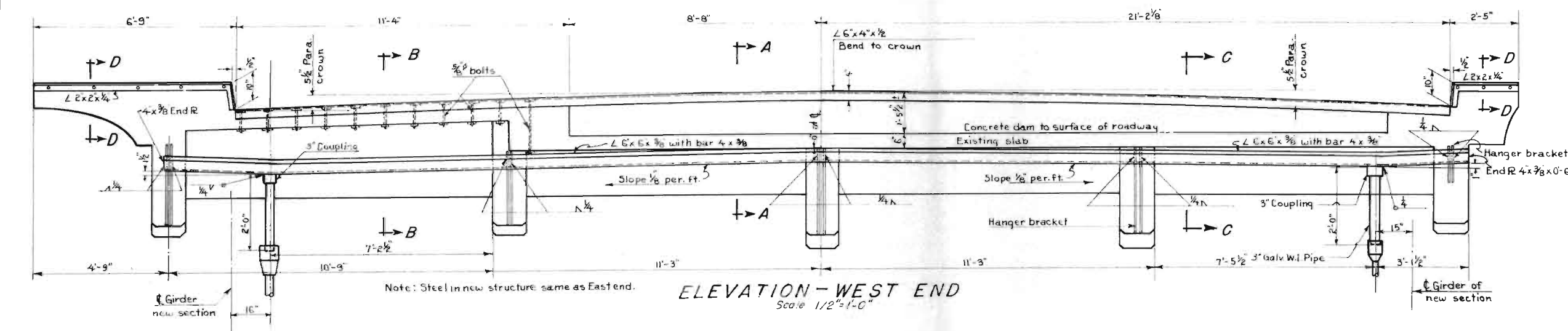
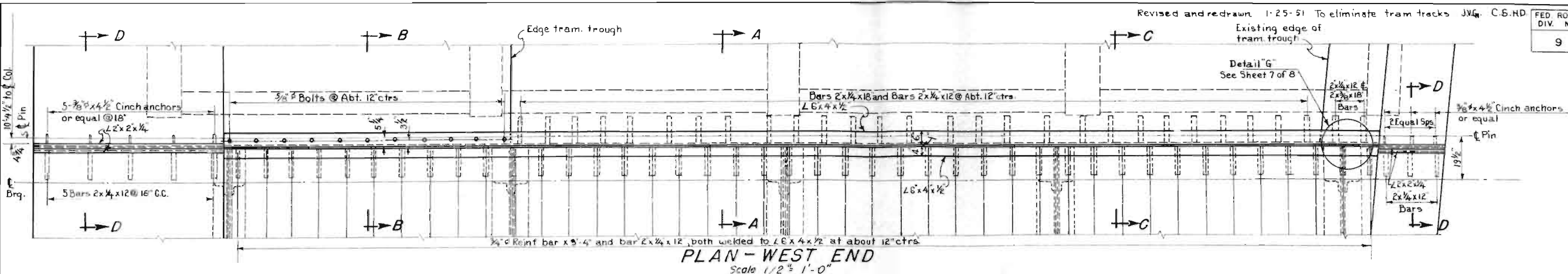


Note: Flange splices may be both field splices, one field and one shop splice or both shop splices at contractor's option.
All rivets 5/8\"

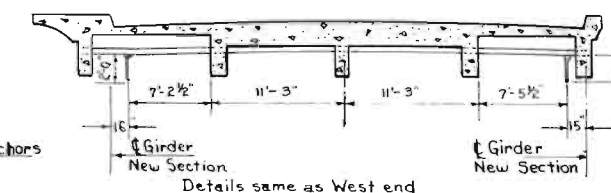
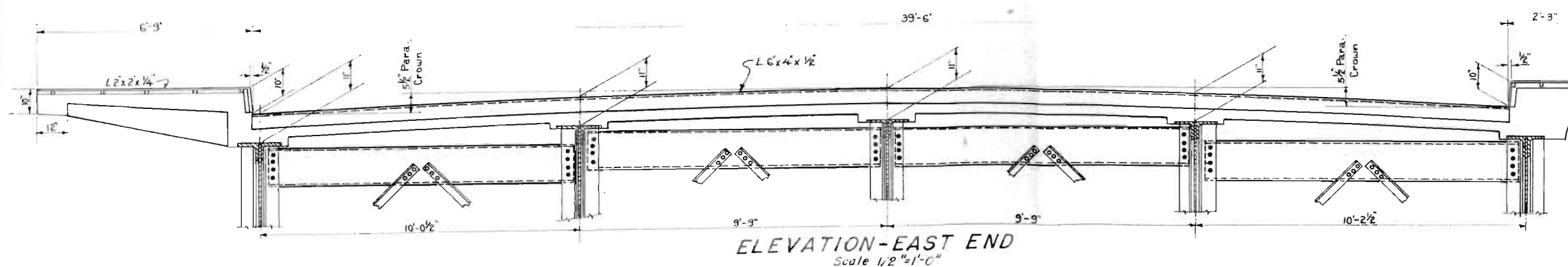
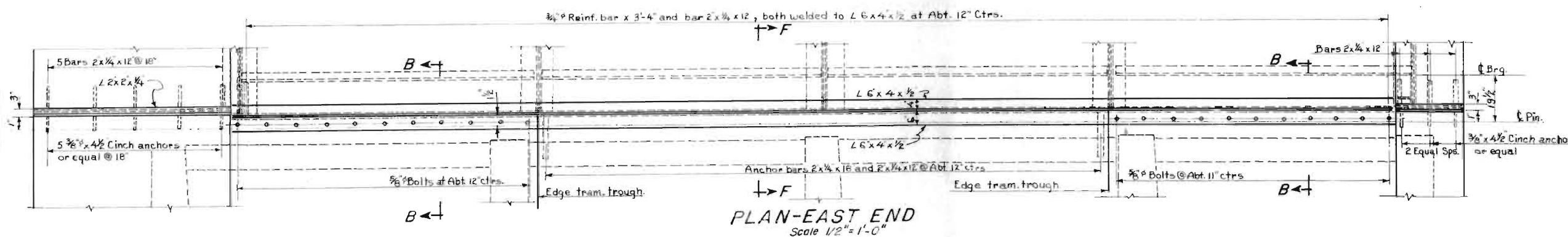


FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	UI 002-2(17)	7	

UNIT NO. 2
FIRST CONTRACT
FOR REFERENCE ONLY



DETAIL - DOWNSPOUT FITTING
Scale 1/2" = 1'-0"



DRAIN TROUGH & PIPE - EAST END
Scale 1/8" = 1'-0"

COLORADO STATE HIGHWAY DEPT. THE VALLEY HIGHWAY DENVER, COLORADO		
LARIMER STREET VIADUCT MODIFICATION		
EXPANSION JOINT PLANS & ELEVATIONS		
STRUCTURE NO. F-16-DN		
CROCKER AND RYAN CONSULTING ENGINEERS DENVER, COLORADO		
DATE	SHEET 6 OF 8	DWG. NO.

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	UI 602-2(17)	8	

UNIT NO. 2
FIRST CONTRACT

BAR LIST FOR CENTER PIER.										
MARK	SIZE	Nº REQ.	LENGTH	TYPE	DIMENSIONS					
					O	A	B	C	D	E
S8r	14-6	1	4	14'6"	STR.					
S7r	24-5	2	28	24'5"	STR.					
S7r	23-2	2	28	23'2"	STR.					
S7r	12-8	2	20	12'8"	STR.					
S6r	7-6	2	8	7'6"	STR.					
B8s	46-8	1	2	46'8"	VIII	44'6"				
B8s	26-2	1	2	26'2"	VIII	24'0"				
B8s	24-8	1	2	24'8"	VIII	22'6"				
B8s	18-6	1	8	18'6"	VIII	16'6"				
B8s	23-2	1	2	23'2"	VIII	21'0"				
B8s	14-11	1	4	14'11"	VIII	12'9"				
B8s	12-8	1	8	12'8"	VIII	10'6"				
B8r	22-8	1	22	22'8"	VIII	20'6"				
B8r	12-8	1	42	12'8"	VIII	10'6"				
B8r	11-8	1	17	11'8"	VIII	9'6"				
B8r	10-2	1	34	10'2"	VIII	8'0"				
B8r	12-2	1	17	12'2"	VIII	10'0"				
Bc8s	12-7	1	4	12'7"	IX	6'9"	5'0"			
L7r	6-9	2	36	6'9"	X	6'5"	5"			
L7r	6-2	2	40	6'2"	X	5'2"	1'2"			
H5r	14-11	2	16	14'11"	I	1'2"	5'8"	1'7½"		
H5r	14-9	2	8	14'9"	I	1'2"	5'7"	1'7½"		
H5r	14-6	2	4	14'6"	I	1'2"	5'5½"	1'7½"		
H5r	14-3	2	4	14'3"	I	1'2"	5'4"	1'7½"		
H5r	14-1	2	4	14'1"	I	1'2"	5'2½"	1'7½"		
H5r	13-11	2	4	13'11"	I	1'2"	5'2"	1'7½"		
H5r	13-8	2	4	13'8"	I	1'2"	5'0½"	1'7½"		
H5r	13-5	2	4	13'5"	I	1'2"	4'11"	1'7½"		
H5r	13-3	2	4	13'3"	I	1'2"	4'10"	1'7½"		
H5r	13-2	2	4	13'2"	I	1'2"	4'9½"	1'7½"		
H5r	12-11	2	20	12'11"	I	1'2"	4'8"	1'7½"		
He4r	13-0	2	2	13'0"	II	4"	3'2"	3'2"	4"	
He4r	11-11	2	2	11'11"	II	4"	2'8"	3'½"	4"	
He4r	12-10	2	2	12'10"	II	4"	3'1½"	3'½"	4"	
He4r	12-9	2	2	12'9"	II	4"	3'1½"	3'1"	4"	
He4r	12-7	2	2	12'7"	II	4"	3'1½"	3'0½"	4"	
He4r	12-6	2	2	12'6"	II	4"	3'1"	3'0"	4"	
He4r	12-4	2	2	12'4"	II	4"	3'0½"	2'11½"	4"	
He4r	12-3	2	2	12'3"	II	4"	3'0½"	2'11"	4"	
He4r	12-1	2	2	12'1"	II	4"	3'0½"	2'10½"	4"	
He4r	12-0	2	2	12'0"	II	4"	3'0"	2'10"	4"	
He4r	11-10	2	2	11'10"	II	4"	2'11½"	2'9½"	4"	
He4r	11-9	2	2	11'9"	II	4"	2'11½"	2'9"	4"	
He4r	11-8	2	2	11'8"	II	4"	2'8"	3'0"	4"	
He4r	11-7	2	2	11'7"	II	4"	2'11½"	2'8½"	4"	
He4r	11-6	2	2	11'6"	II	4"	2'11½"	2'8"	4"	
He4r	11-5	2	2	11'5"	II	4"	2'8"	3'0½"	4"	
He4r	11-4	2	2	11'4"	II	4"	2'8"	3'0"	4"	
He4r	11-3	2	2	11'3"	II	4"	2'11½"	2'8½"	4"	
He4r	11-2	2	2	11'2"	II	4"	2'8"	3'0½"	4"	
He4r	11-1	2	2	11'1"	II	4"	2'11½"	2'8"	4"	
He4r	11-0	2	2	11'0"	II	4"	2'8"	2'8"	4"	
He4r	10-11	2	2	10'11"	II	4"	2'8"	2'7½"	4"	
He4r	10-10	2	2	10'10"	II	4"	2'8"	2'7"	4"	
He4r	10-9	2	2	10'9"	II	4"	2'8"	2'6½"	4"	
He4r	10-8	2	2	10'8"	II	4"	2'8"	2'6"	4"	
He4r	10-7	2	2	10'7"	II	4"	2'8"	2'5½"	4"	
He4r	10-6	2	2	10'6"	II	4"	2'8"	2'5"	4"	
He4r	10-5	2	2	10'5"	II	4"	2'8"	2'4½"	4"	
He4r	10-4	2	2	10'4"	II	4"	2'8"	2'4"	4"	
He4r	10-3	2	2	10'3"	II	4"	2'8"	2'3½"	4"	
He4r	10-2	2	2	10'2"	II	4"	2'8"	2'3"	4"	
He4r	10-1	2	2	10'1"	II	4"	2'8"	2'2½"	4"	
He4r	10-0	2	2	10'0"	II	4"	2'8"	2'2"	4"	
He4r	9-11	2	2	9'11"	II	4"	2'8"	2'1½"	4"	
He4r	9-10	2	2	9'10"	II	4"	2'8"	2'1"	4"	
He4r	9-9	2	2	9'9"	II	4"	2'8"	2'0½"	4"	
He4r	9-8	2	2	9'8"	II	4"	2'8"	2'0"	4"	
He4r	9-7	2	2	9'7"	II	4"	2'8"	1'11½"	4"	
He4r	9-6	2	2	9'6"	II	4"	2'8"	1'11"	4"	
He4r	9-5	2	2	9'5"	II	4"	2'8"	1'10½"	4"	
He4r	9-4	2	2	9'4"	II	4"	2'8"	1'10"	4"	
He4r	9-3	2	2	9'3"	II	4"	2'8"	1'9½"	4"	
He4r	9-2	2	2	9'2"	II	4"	2'8"	1'9"	4"	
He4r	9-1	2	2	9'1"	II	4"	2'8"	1'8½"	4"	
He4r	9-0	2	2	9'0"	II	4"	2'8"	1'8"	4"	
A8r	21-4	1	6	21'4"	XI	5'2"	1'3"	5'0"	11'0"	5'0"

BAR LIST FOR TWO END PIERS.										
MARK	SIZE	Nº REQ.	LENGTH	TYPE	DIMENSIONS					
					O	A	B	C	D	E
S7r	24-5	2	28	24'5"	STR.					
S7r	12-8	2	40	12'8"	STR.					
S6r	15-0	2	8	15'0"	STR.					
S6r	7-6	2	16	7'6"	STR.					
B8s	17-3	1	8	17'3"	VIII	14'9"				
B8s	44-2	1	4	44'2"	VIII	42'0"				
B8s	14-11	1	8	14'11"	VIII	12'9"				
B8r	22-2	1	6	22'2"	VIII	20'0"				
B6r	16-4	2	24	16'4"	VIII	15'0"				
B6r	9-4	2	24	9'4"	VIII	8'0"				
B6r	8-10	2	24	8'10"	VIII	7'6"				
B6r	7-10	2	48	7'10"	VIII	6'6"				
B6r	6-10	2	48	6'10"	VIII	5'6"				
Bc6r	10-9	2	8	10'9"	IX	5'9"	4'6"			
L7r	6-2	2	142	6'2"	X	5'2"	1'2"			
H5r	14-0	2	8	14'0"	I	1'5"	4'8"	2'2"		
H5r	13-10	2	8	13'10"	I	1'5"	4'7"	2'2"		
H5r	13-1	2	8	13'1"	I	1'5"	4'2½"	2'2"		
H5r	12-4	2	8	12'4"	I	1'5"	3'10"	2'2"		
H5r	12-0	2	12	12'0"	I	1'5"	3'8"	2'2"		
He4r	13-0	2	4	13'0"	II	4"	3'2"	3'2"	4"	
He4r	12-10	2	4	12'10"	II	4"	3'1½"	3'1½"	4"	
He4r	12-9	2	4	12'9"	II	4"	3'1½"	3'1"	4"	
He4r	12-7	2	4	12'7"	II	4"	3'1½"	3'0½"	4"	
He4r	12-6	2	4	12'6"	II	4"	3'1"	3'0"	4"	
He4r	12-4	2	4	12'4"	II	4"	3'0½"	2'11½"	4"	
He4r	12-3	2	4	12'3"	II	4"	3'0½"	2'11"	4"	
He4r	12-1	2	4	12'1"	II	4"	3'0½"	2'10½"	4"	
He4r	12-0	2	4	12'0"	II	4"	3'0"	2'10"	4"	
He4r	11-10	2	4	11'10"	II	4"	2'11½"	2'9½"	4"	
He4r	11-9	2	4	11'9"	II	4"	2'11½"	2'9"	4"	
He4r	11-8	2	4	11'8"	II	4"	2'8"	3'0"	4"	
He4r	11-7	2	4	11'7"	II	4"	2'11½"	2'8½"	4"	
He4r	11-6	2	4	11'6"	II	4"	2'11½"	2'8"	4"	
He4r	11-5	2	4	11'5"	II	4"	2'8"	3'0½"	4"	
He4r	11-4	2	4	11'4"	II	4"	2'8"	3'0"	4"	
He4r	11-3	2	4	11'3"	II	4"	2'11½"	2'8½"	4"	
He4r	11-2	2	4	11'2"	II	4"	2'8"	3'0½"	4"	
He4r	11-1	2	4	11'1"	II	4"	2'11½"	2'8"	4"	
He4r	11-0	2	4	11'0"	II	4"	2'8"	2'8"	4"	
He4r	10-11	2	4	10'11"	II	4"	2'8"	2'7½"	4"	
He4r	10-10	2	4	10'10"	II	4"	2'8"	2'7"	4"	
He4r	10-9	2	4	10'9"	II	4"	2'8"	2'6½"	4"	
He4r	10-8	2	4	10'8"	II	4"	2'8"	2'6"	4"	
He4r	10-7	2	4	10'7"	II	4"	2'8"	2'5½"	4"	
He4r	10-6	2	4	10'6"	II	4"	2'8"	2'5"	4"	
He4r	10-5	2	4	10'5"	II	4"	2'8"	2'4½"	4"	
He4r	10-4	2	4	10'4"	II	4"	2'8"	2'4"	4"	
He4r	10-3	2	4	10'3"	II	4"	2'8"	2'3½"	4"	
He4r	10-2	2	4	10'2"	II	4"	2'8"	2'3"	4"	
He4r	10-1	2	4	10'1"	II	4"	2'8"	2'2½"	4"	
He4r	10-0	2	4	10'0"	II	4"	2'8"	2'2"	4"	
He4r	9-11	2	4	9'11"	II	4"	2'8"	2'1½"	4"	
He4r	9-10	2	4	9'10"	II	4"	2'8"	2'1"	4"	
He4r	9-9	2	4	9'9"	II	4"	2'8"	2'0½"	4"	
He4r	9-8	2	4	9'8"	II	4"	2'8"	2'0"	4"	
He4r	9-7	2	4	9'7"	II	4"	2'8"	1'11½"	4"	
He4r	9-6	2	4	9'6"	II	4"	2'8"	1'11"	4"	
He4r	9-5	2	4	9'5"	II	4"	2'8"	1'10½"	4"	
He4r	9-4	2	4	9'4"	II	4"	2'8"	1'10"	4"	
He4r	9-3	2	4	9'3"	II	4"	2'8"	1'9½"	4"	
He4r	9-2	2	4	9'2"	II	4"	2'8"	1'9"	4"	
He4r	9-1	2	4	9'1"	II	4"	2'8"	1'8½"	4"	
He4r	9-0	2	4	9'0"	II	4"	2'8"	1'8"	4"	
A7r	21-4	2	8	21'4"	XI	5'2"	1'3"	5'0"	11'0"	5'0"

BAR LIST FOR SUPERSTRUCTURE.											TOTAL 3200
MARK	SIZE	WREQD	LENGTH	TYPE	DIMENSIONS						
					O	A	B	C	D	E	
S4r	41-0	1/2" φ	30	41'0"	STR.						
S4r	30-3	1/2" φ	24	30'3"	STR.						
S4r	2-5	1/2" φ	544	2'5"	STR.						
S4r	4-0	1/2" φ	32	4'0"	STR.						
S6r	40-6	3/8" φ	16	40'6"	STR.						
S4r	6-5	1/2" φ	187	6'5"	STR.						
S4r	38-1	1/2" φ	214	38'1"	STR.						
S4r	36-3	1/2" φ	107	36'3"	STR.						
S4r	37-11	1/2" φ	214	37'11"	STR.						
S4r	30-0	1/2" φ	2	30'0"	STR.						
S5r	7-7	3/8" φ	6	7'7"	STR.						
S6r	36-3	3/8" φ	4	36'3"	STR.						
H4r	10-2	1/2" φ	16	10'9"	I	2'7"	8'	4'6"			
H3r	3'9	3/8" φ	32	3'9"	I	9'	10'	10'			
Hc4r	5-7	1/2" φ	10	5'7"	II	4'	1-1/2"	1'6"	4'		
Ba5r	17-2	1/2" φ	185	17'2"	III	16'7"					
Ba5r	26-6	3/8" φ	155	26'6"	III	25'11"					
Ba5r	26'7		156	26'7"		26'6"					
Ba5r	by 3/8" φ	1/2" φ	(30)	by 3/8" φ	III	by 3/8" φ					
Ba5r	28'4		Bars	28'4"		27'9"					
Hp5r	35-2	3/8" φ	153	35'2"	IV						
Hp5r	35'3		154	35'3"							
Hp5r	by 3/8" φ	3/8" φ	(30)	by 3/8" φ	IV	by 3/8" φ					
Hp5r	37'0		Bars	37'0"		32'4"					
Aa6r	7-2	3/4" φ	6	7'2"	V	1'6"	1'1"	1'1"	2'2"	3'6"	
Td4r	2-6	1/2" φ	544	2'6"	V	6"	3 1/2"	5"	5"	1'3"	
Td5r	27-0	1/2" φ	187	27'0"	VII	26'5"	3'0"	4'6"	4'5"	4'4"	3'2"
Td5r	18-4	3/8" φ	156	18'4"	VII	17'3"	3'6"	4'7"	3'2"		
Td5r	18'4		154	18'4"		17'3 1/2"	3'6"				
Td5r	by 3/8" φ	3/8" φ	(31)	by 3/8" φ	VII	by 3/8" φ	by 3/8" φ	4'7"	3'2"		
Td5r	20-3		Bars	20'3"		19'2"	5'5"				
Aa5r	11-9	3/8" φ	107	11'9"	VI						
Aa5r	19'8	3/8" φ	185	19'8"	VI						

BAR SUMMARY FOR SUPERSTRUCTURE.											TOTAL 3200
120 LIN. FR. 3/8" φ @ 0.376 LB./LIN. FR. =	45 LB.										
26635 LIN. FR. 1/2" φ @ 0.668 LB./LIN. FR. =	17792 LB.										
23188 LIN. FR. 3/8" φ @ 1.043 LB./LIN. FR. =	30443 LB.										
836 LIN. FR. 3/4" φ @ 1.502 LB./LIN. FR. =	1256 LB.										
OVERRUN ± 1% =	494 LB.										
Δ TOTAL =	50030 LB.										
Δ INCLUDES 18,150 LB. OF STRAIGHT BARS.											

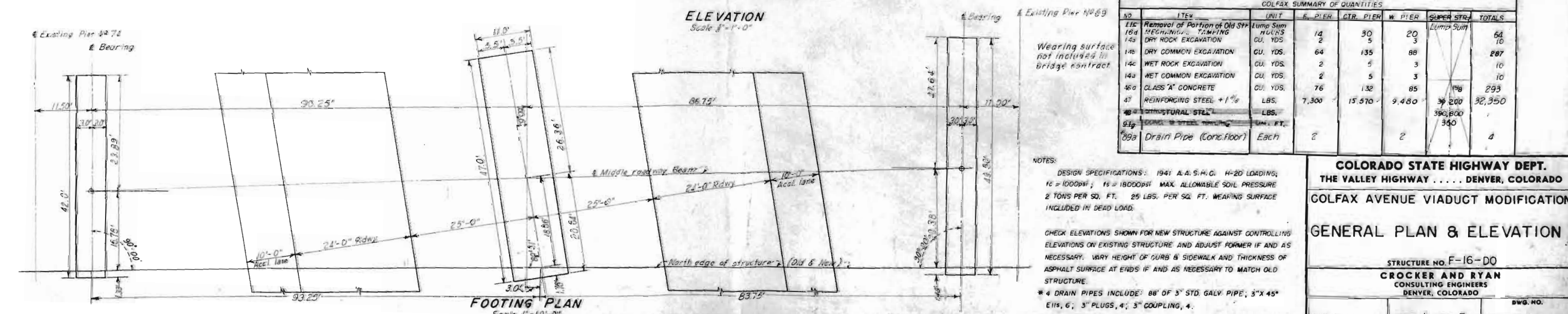
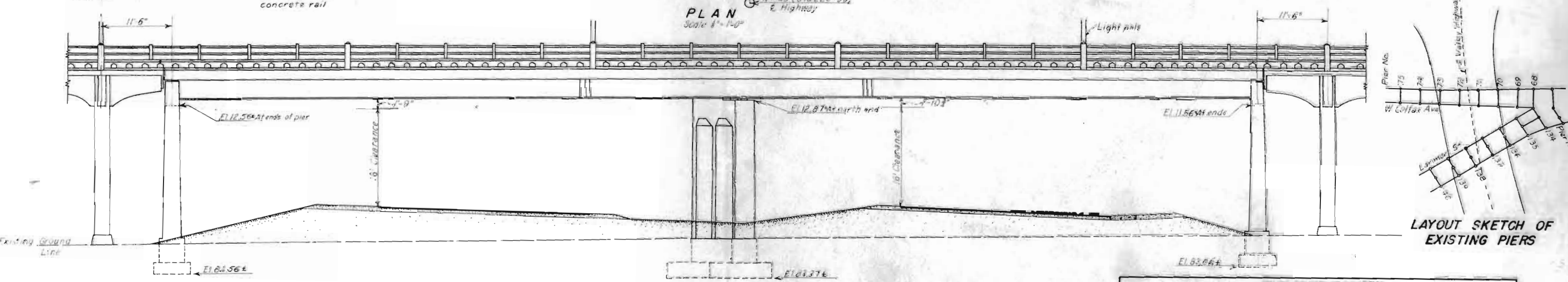
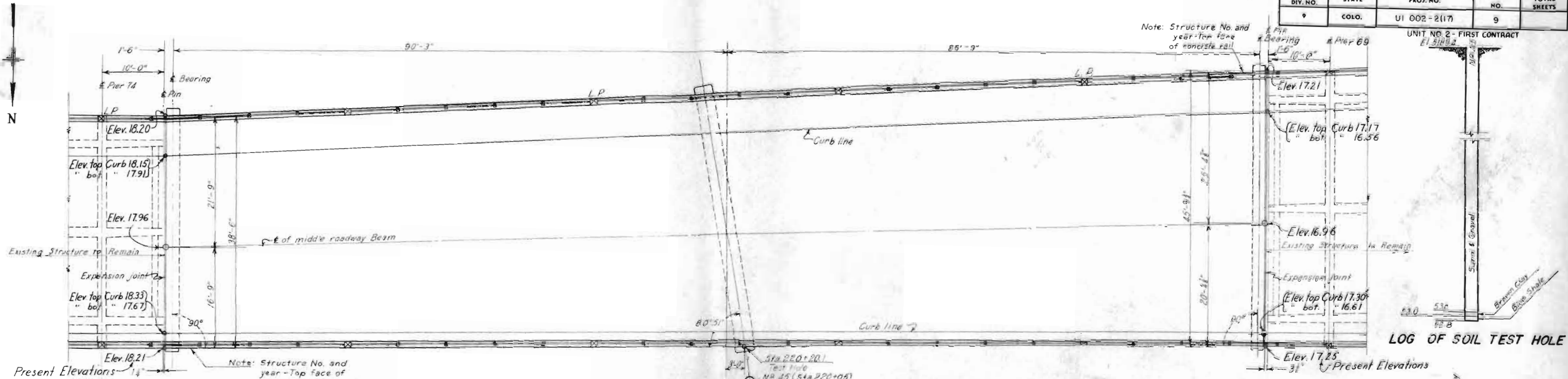
BAR SUMMARY FOR TWO END PIERS.											TOTAL 3200
1340 LIN. FR. 1/2" φ @ 0.668 LB./LIN. FR. =	1229 LB.										
786 LIN. FR. 3/8" φ @ 1.043 LB./LIN. FR. =	820 LB.										
1858 LIN. FR. 3/8" φ @ 1.502 LB./LIN. FR. =	2791 LB.										
4288 LIN. FR. 7/8" φ @ 2.044 LB./LIN. FR. =	8765 LB.										
133 LIN. FR. 1" φ @ 2.670 LB./LIN. FR. =	355 LB.										
236 LIN. FR. 1" φ @ 3.400 LB./LIN. FR. =	1006 LB.										
138 LIN. FR. 1 1/8" φ @ 4.303 LB./LIN. FR. =	594 LB.										
OVERRUN ± 1% =	160 LB.										
Δ TOTAL =	15720 LB.										
Δ INCLUDES 7060 LB. OF STRAIGHT BARS.											

BAR SUMMARY FOR CENTER PIER.											TOTAL 3200
854 LIN. FR. 1/2" φ @ 0.668 LB./LIN. FR. =	570 LB.										
1164 LIN. FR. 3/8" φ @ 1.043 LB./LIN. FR. =	1214 LB.										
60 LIN. FR. 3/8" φ @ 1.502 LB./LIN. FR. =	90 LB.										
2075 LIN. FR. 3/8" φ @ 2.044 LB./LIN. FR. =	4241 LB.										
1967 LIN. FR. 1" φ @ 2.670 LB./LIN. FR. =	5252 LB.										
602 LIN. FR. 1" φ @ 3.400 LB./LIN. FR. =	2047 LB.										
OVERRUN ± 1% =	136 LB.										
Δ TOTAL =	13550 LB.										
Δ INCLUDES 7060 LB. OF STRAIGHT BARS.											

REV. 11-22-51 REINFORCING STEEL SUMMARY J.W.B.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	UI 002-2(117)	9	

UNIT NO. 2 - FIRST CONTRACT



COLFAX SUMMARY OF QUANTITIES						
NO.	ITEM	UNIT	E. PIER	CTR. PIER	W. PIER	TOTALS
11c	Removal of Portion of Old Str.	Lump Sum				
16d	MECHANICAL TAMPING	HOURS	14	30	20	64
143	DRY ROCK EXCAVATION	CU. YDS.	2	5	3	10
145	DRY COMMON EXCAVATION	CU. YDS.	64	135	88	287
14c	WET ROCK EXCAVATION	CU. YDS.	2	5	3	10
143	WET COMMON EXCAVATION	CU. YDS.	2	5	3	10
460	CLASS "A" CONCRETE	CU. YDS.	76	132	85	293
47	REINFORCING STEEL + 1"	LBS.	7,300	15,570	9,480	32,350
48	STRUCTURAL STEEL	LBS.				
81	CONC. & STEEL TYPING	UN. FT.				
89a	Drain Pipe (conc. floor)	Each	2		2	4

NOTES:

DESIGN SPECIFICATIONS: 1941 A.A.S.H.O. H-20 LOADING;
1c = 1000psi; 1s = 18000psi MAX. ALLOWABLE SOIL PRESSURE
2 TONS PER SQ. FT. 25 LBS. PER SQ. FT. WEARING SURFACE
INCLUDED IN DEAD LOAD.

CHECK ELEVATIONS SHOWN FOR NEW STRUCTURE AGAINST CONTROLLING
ELEVATIONS ON EXISTING STRUCTURE AND ADJUST FORMER IF AND AS
NECESSARY. VARY HEIGHT OF CURB & SIDEWALK AND THICKNESS OF
ASPHALT SURFACE AT ENDS IF AND AS NECESSARY TO MATCH OLD
STRUCTURE.

* 4 DRAIN PIPES INCLUDE: 88' OF 3" STD. GALV. PIPE; 3" X 45"
E115, 6; 3" PLUGS, 4; 3" COUPLING, 4.

COLORADO STATE HIGHWAY DEPT.
THE VALLEY HIGHWAY DENVER, COLORADO

GOLFAX AVENUE VIADUCT MODIFICATION

GENERAL PLAN & ELEVATION

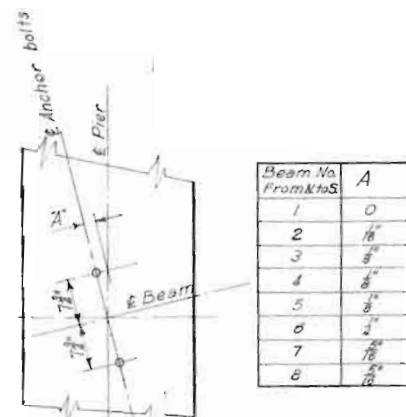
STRUCTURE NO. F-16-D0

CROCKER AND RYAN
CONSULTING ENGINEERS
DENVER, COLORADO

DATE: SHEET 1 OF 7 DWG. NO.

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	UI 002-2(17)	10	

UNIT NO. 2 - FIRST CONTRACT

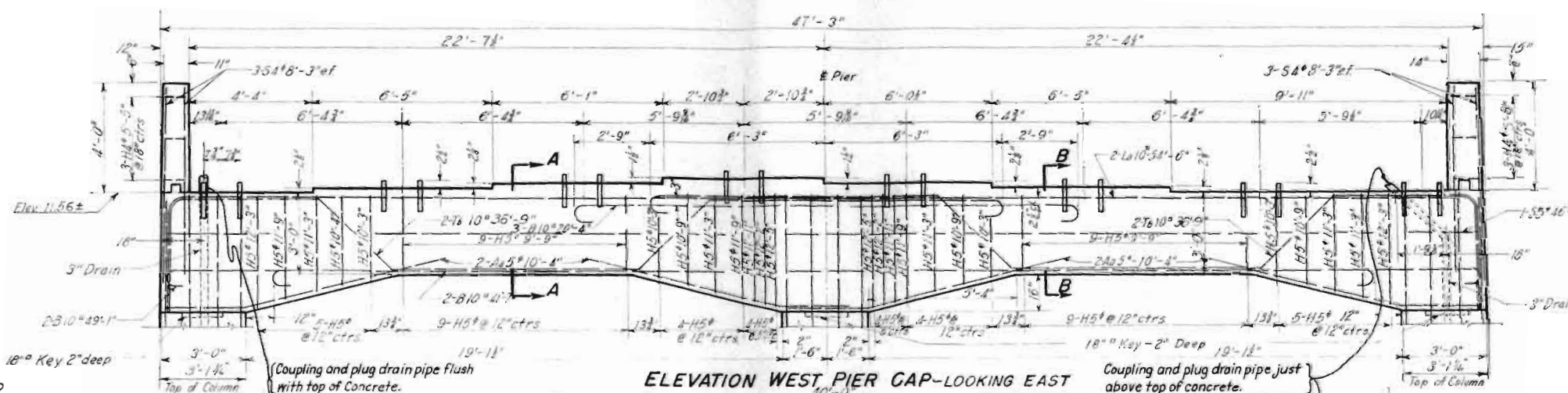
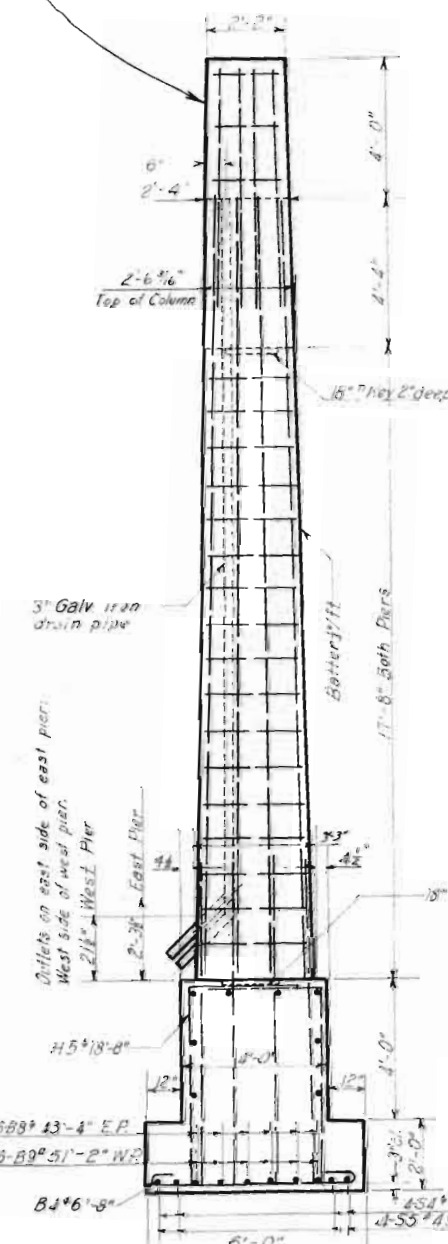


Beam No. From Abut.	A
1	0
2	16
3	8
4	8
5	8
6	2
7	16
8	16

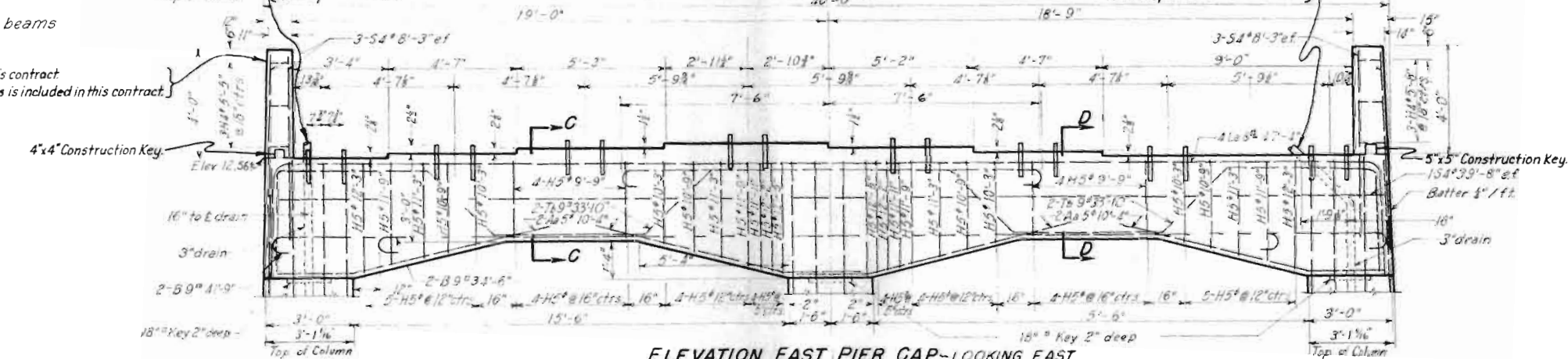
PARTIAL PLAN OF PIER TOP

Note: Dimension 'A' same at each end of beams

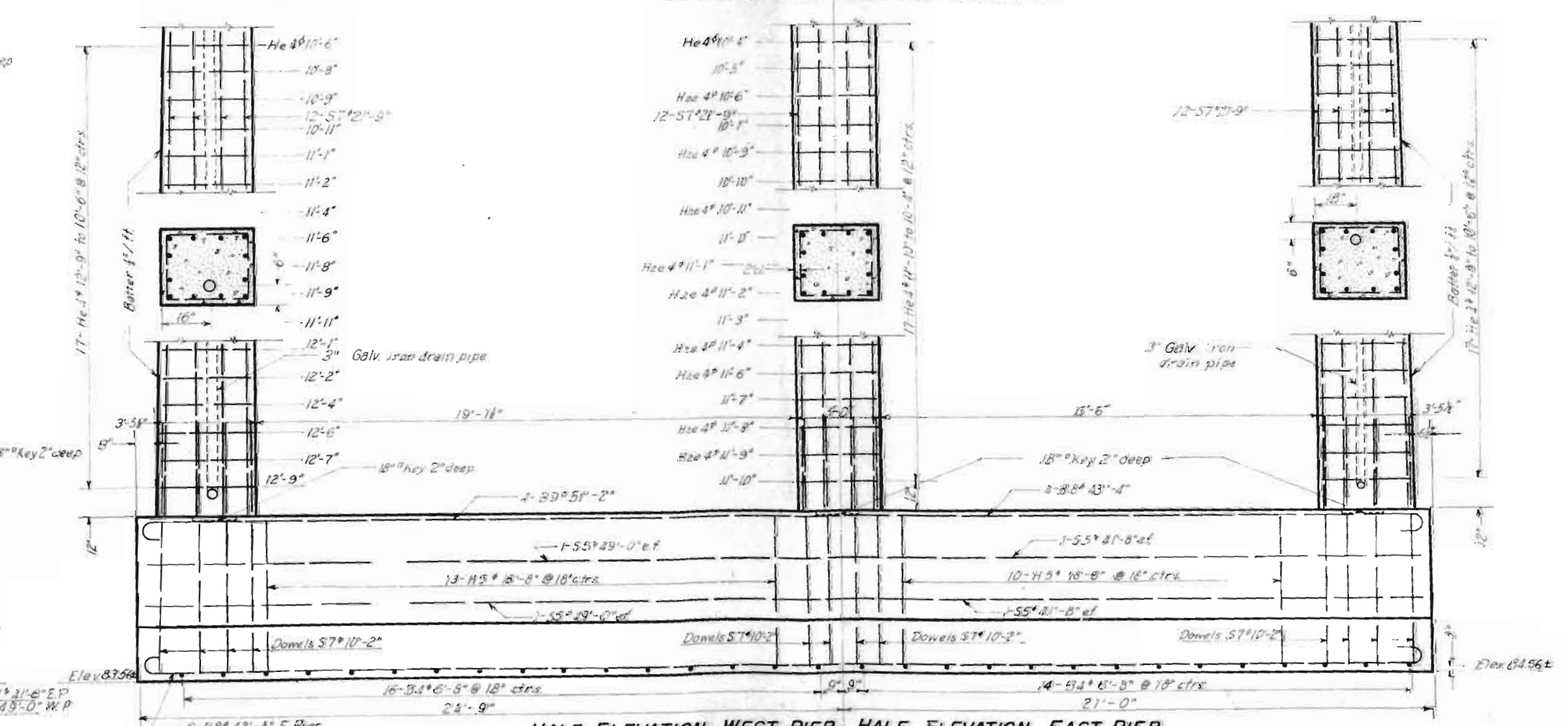
(The concrete in these pylons is not included in this contract
(The placing of the reinforcing steel in these pylons is included in this contract)



ELEVATION WEST PIER CAP-LOOKING EAST

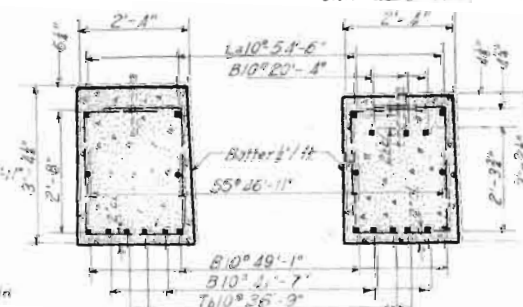


ELEVATION EAST PIER CAP-LOOKING EAST

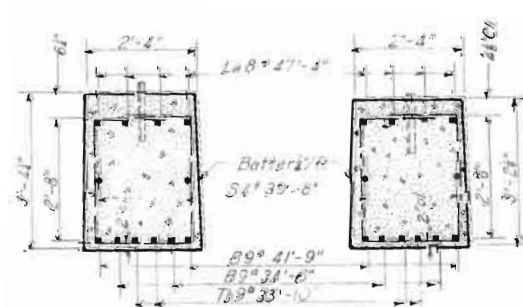


HALF ELEVATION WEST PIER HALF ELEVATION EAST PIER

Piers Symmetrical about E except as shown



SECTION A-A SECTION B-B

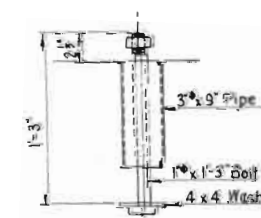


SECTION C-C SECTION D-D

GENERAL NOTES

All anchor bolts to be 1" x 15"
All exposed corners to be beveled 1"
All reinforcing steel min 2" clear of conc. surface except steel at bottom of footing to be 3" clear

Soil pressure = 3200 lbs per sq ft



* Detail of Anchor Bolt Setting
32 Req'd - Complete
Total Wt. = 329 lbs.

* To be Included for Payment in Price Bid for Class "A" Concrete

Scale 1" = 1'-0" Unless otherwise noted.

COLORADO STATE HIGHWAY DEPT.
THE VALLEY HIGHWAY DENVER, COLORADO
COLFAX AVENUE VIADUCT MODIFICATION

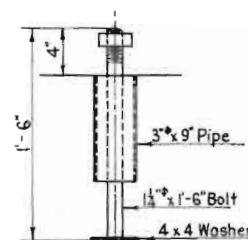
EAST & WEST PIERS

STRUCTURE NO. F-16-D0

CROCKER AND RYAN
CONSULTING ENGINEERS
DENVER, COLORADO

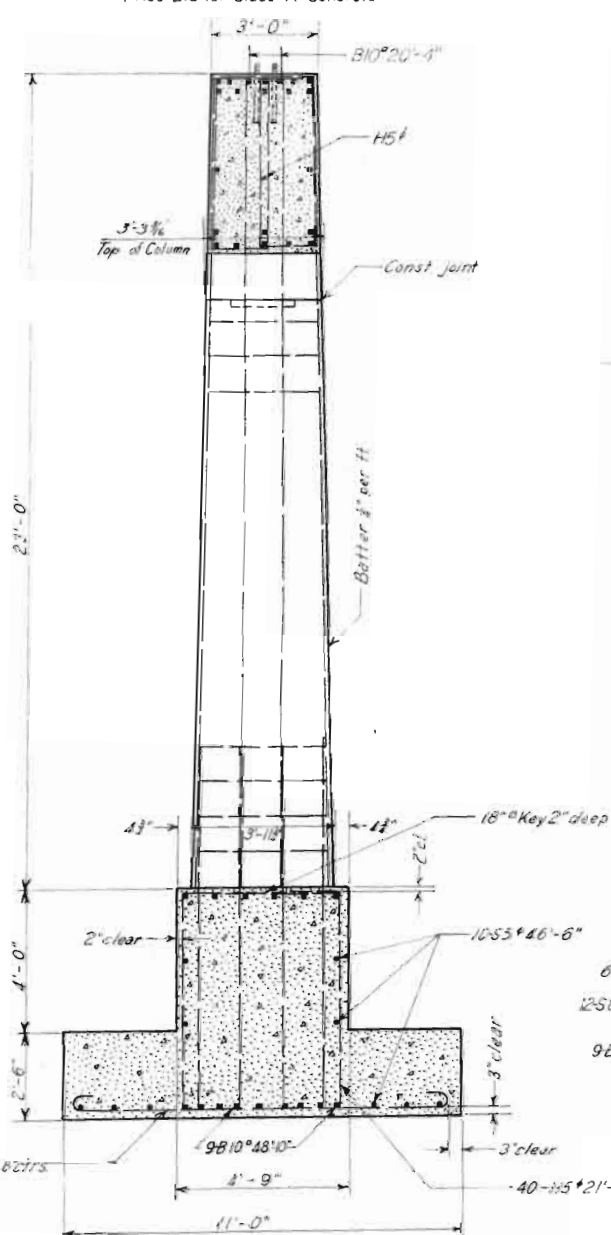
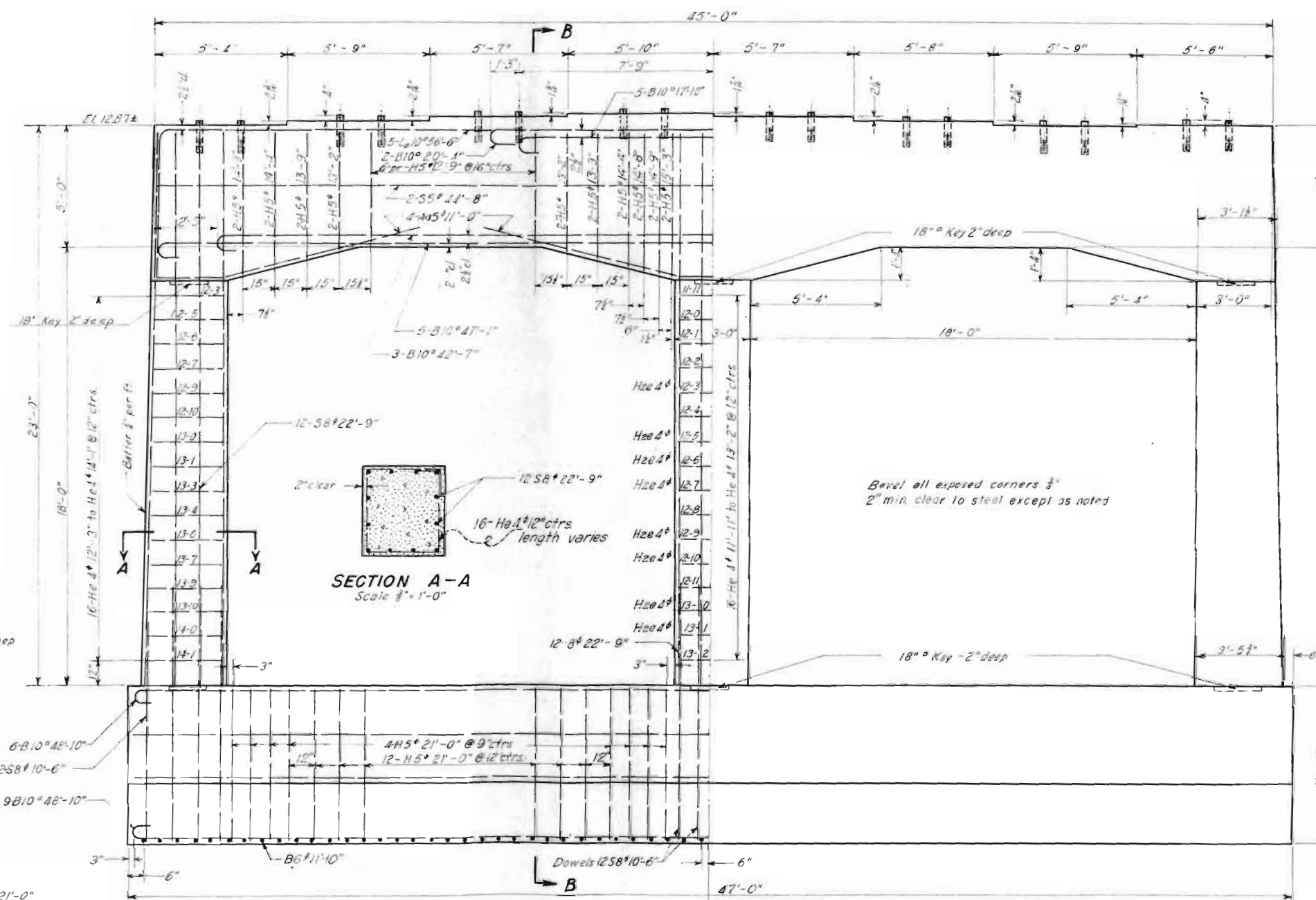
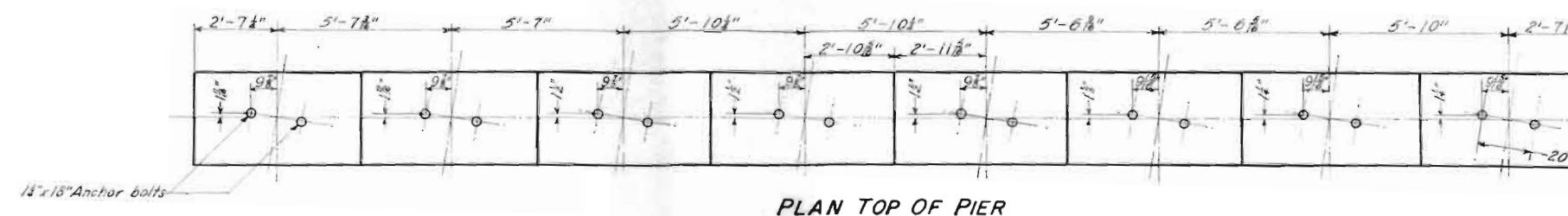
FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	U1 002-2(17)	11	

UNIT NO. 2
FIRST CONTRACT



* Detail of Anchor Bolt Setting
16-Req'd-Complete
Total Wt. = 222*

* To be Included for Payment in
Price Bid for Class "A" Concrete



Bevel all exposed corners 3/8"
2" min. clear to steel except as noted

Symmetrical about E
except as noted

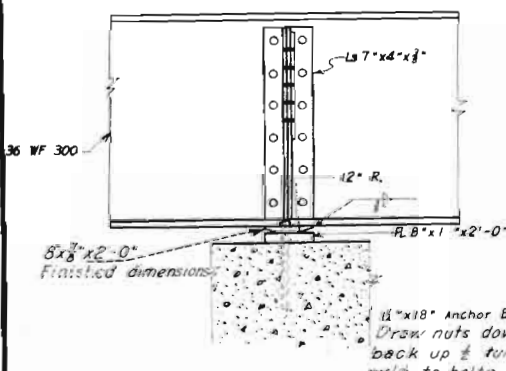
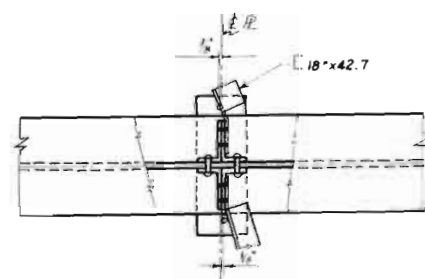
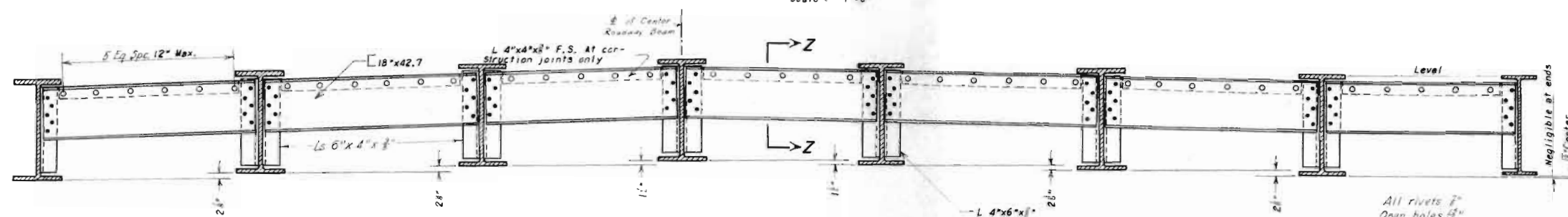
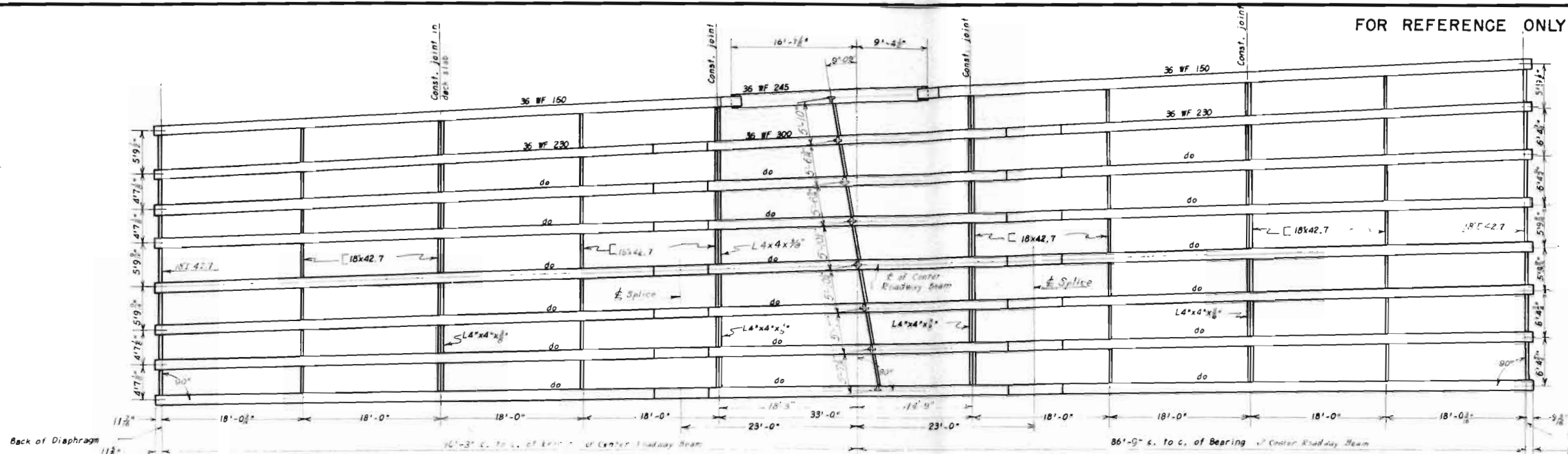
Note:
Soil pressure - 4700 lbs per sq. ft.
Including pressure due to wind etc.
Clear distance from face of concrete
to steel: slab 1", all others 2" except
as noted.

COLORADO STATE HIGHWAY DEPT. THE VALLEY HIGHWAY DENVER, COLORADO	
COLFAX AVENUE VIADUCT MODIFICATION	
CENTER PIER	
STRUCTURE NO. F-16-D0	
CROCKER AND RYAN CONSULTING ENGINEERS DENVER, COLORADO	
DATE	SHEET 3 of 7
DWG. NO.	

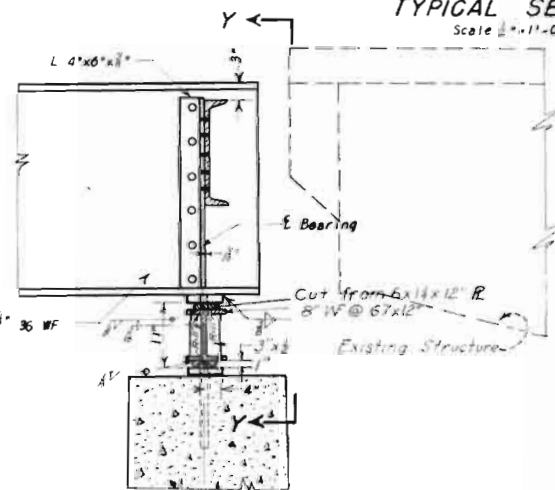
FOR REFERENCE ONLY

FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	U1 002-2(17)	12	

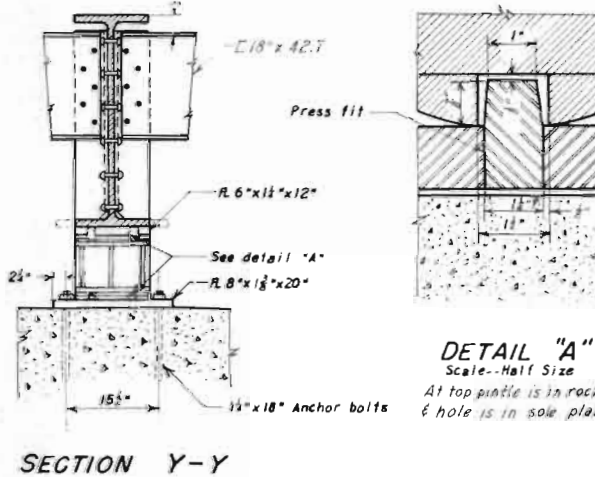
UNIT NO. 2
FIRST CONTRACT



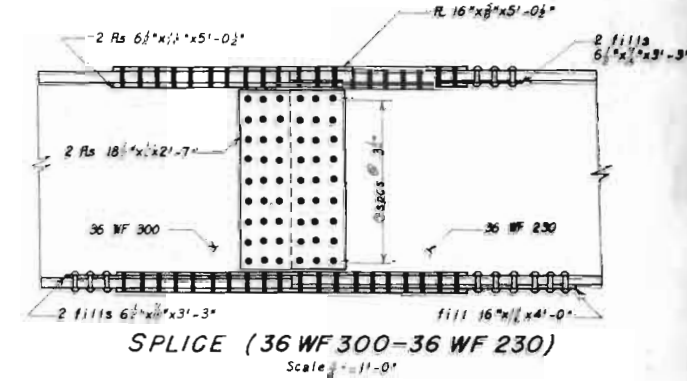
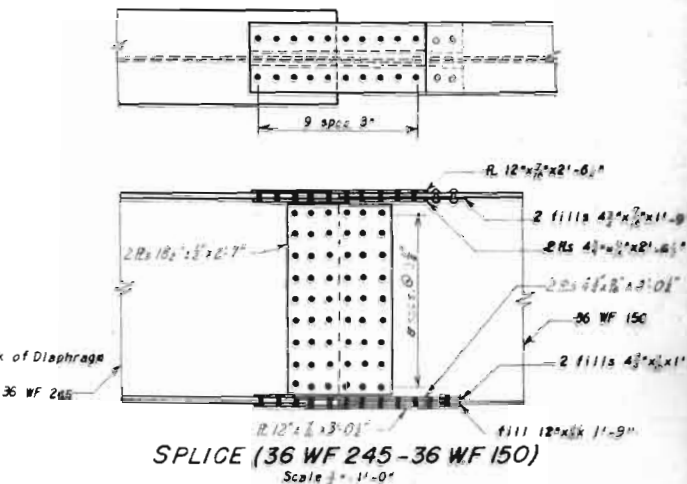
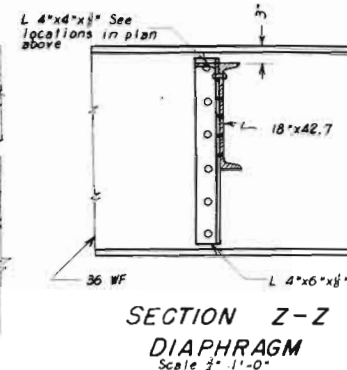
CENTER BEARING
Scale 1" = 11'-0"



END BEARING
Scale 1" = 11'-0"



DETAIL "A"
Scale - Half Size
At top profile is in rocker & hole is in sole plate.



COLORADO STATE HIGHWAY DEPT. THE VALLEY HIGHWAY DENVER, COLORADO	
GOLFAX AVENUE VIADUCT MODIFICATION	
STEEL BEAM SPANS	
STRUCTURE NO. F-16-D0	
CROCKER AND RYAN CONSULTING ENGINEERS DENVER, COLORADO	
DATE	DWG. NO.
SHEET 4 OF 7	

South side West end as shown
South side East end opp hand

End of old slab W end
End of old slab E end
End of new slab W end
End of new slab E end
3" End pl
3" coupling & Bearing
3" Black pipe fittings & Flans
Union
WF Beam
Top of pier

North side West end as shown
North side East end opp. band

Scale: 3" = 1'-0"

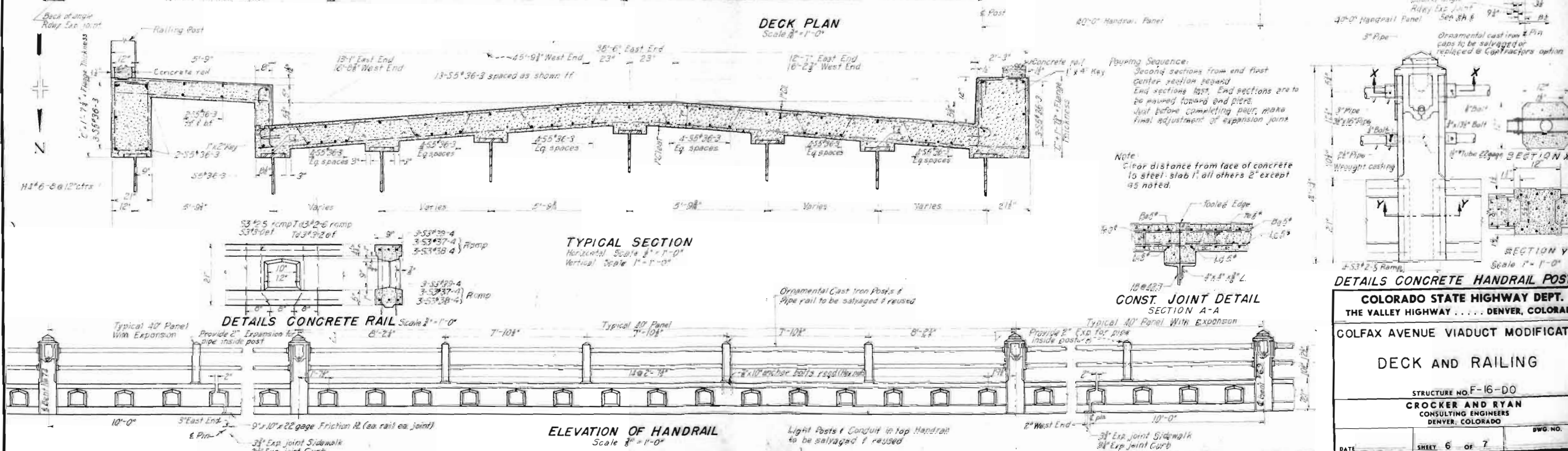
NOTES

The 1" clear opening in the roadway joint and the dimensions back to back of 4 in the curb and sidewalk joints are for a temperature of 60°F. When the joints are placed, deduct $\frac{1}{8}$ " for each 10°F above 60°F and add $\frac{1}{8}$ " for each 10°F below 60°F.

DATE	SHEET 5 of 7	DWG. NO.
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FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	U1 002-2(17)	14	

UNIT NO 2 - FIRST CONTRAC



J. W. B.
C. L. S

MARK	SIZE	N ^o ROD	LENGTH	TYPE	DIMENSIONS									
					O	A	B	C	D	E	F	G		
57r	21-9	$\frac{3}{8}$ " ϕ	36	21'-9"	57r									
57r	10-2	$\frac{3}{8}$ " ϕ	36	10'-2"	57r									
55r	41-8	$\frac{3}{8}$ " ϕ	8	41'-8"	57r									
54r	39-8	$\frac{1}{2}$ " ϕ	2	39'-8"	57r									
54r	8-3	$\frac{1}{2}$ " ϕ	12	8'-3"	57r									
B9s	41-9	$\frac{1}{8}$ " ϕ	2	41'-9"	VIII	39'-7"								
B9s	34-6	$\frac{1}{8}$ " ϕ	2	34'-6"	VIII	32'-4"								
B8r	43-4	1" ϕ	10	43'-4"	VIII	41'-6"								
B4r	6-8	$\frac{1}{2}$ " ϕ	28	6'-8"	VIII	5'-8"								
La8s	47-4	1" ϕ	4	47'-4"	IX	39'-8"	4'-1"		4'-1"					
A65r	10-4	$\frac{3}{8}$ " ϕ	8	10'-4"	X		7'-6"	1'-7"	7'-4"	2'-10"				
H5r	18-8	$\frac{3}{8}$ " ϕ	20	18'-8"	VII		2'-3"	5'-6"	3'-6"					
H5r	12-5	$\frac{3}{8}$ " ϕ	2	12'-5"	VII		1'-5"	3'-11 $\frac{1}{2}$ "	2'-0"					
H5r	12-3	$\frac{3}{8}$ " ϕ	2	12'-3"	VII		1'-4 $\frac{1}{2}$ "	3'-11"	2'-0"					
H5r	12-2	$\frac{3}{8}$ " ϕ	2	12'-2"	VII		1'-5"	3'-10"	2'-0"					
H5r	11-11	$\frac{3}{8}$ " ϕ	2	11'-11"	VII		1'-4 $\frac{1}{2}$ "	3'-9"	2'-0"					
H5r	11-9	$\frac{3}{8}$ " ϕ	4	11'-9"	VII		1'-4 $\frac{1}{2}$ "	3'-8"	2'-0"					
H5r	11-3	$\frac{3}{8}$ " ϕ	4	11'-3"	VII		1'-4 $\frac{1}{2}$ "	3'-5"	2'-0"					
H5r	10-9	$\frac{3}{8}$ " ϕ	4	10'-9"	VII		1'-4 $\frac{1}{2}$ "	3'-2"	2'-0"					
H5r	10-3	$\frac{3}{8}$ " ϕ	4	10'-3"	VII		1'-4 $\frac{1}{2}$ "	2'-11"	2'-0"					
H5r	9-9	$\frac{3}{8}$ " ϕ	8	9'-9"	VII		1'-4 $\frac{1}{2}$ "	2'-8"	2'-0"					
H4r	5-8	$\frac{1}{2}$ " ϕ	3	5'-8"	VII		9"	1'-10"	10"					
H4r	5-5	$\frac{1}{2}$ " ϕ	3	5'-5"	VII		1'-4 $\frac{1}{2}$ "	7"	1'-10"					
He4r	12-9	$\frac{1}{2}$ " ϕ	2	12'-9"	XI		7"	3'-1 $\frac{1}{2}$ "	2'-10 $\frac{1}{2}$ "	7"				
He4r	12-7	$\frac{1}{2}$ " ϕ	2	12'-7"	XI		6 $\frac{1}{2}$ "	3'-1"	2'-10"	6 $\frac{1}{2}$ "				
He4r	12-6	$\frac{1}{2}$ " ϕ	2	12'-6"	XI		7"	3'-0 $\frac{1}{2}$ "	2'-9 $\frac{1}{2}$ "	7"				
He4r	12-4	$\frac{1}{2}$ " ϕ	2	12'-4"	XI		6 $\frac{1}{2}$ "	3'-0 $\frac{1}{2}$ "	2'-9"	6 $\frac{1}{2}$ "				
He4r	12-2	$\frac{1}{2}$ " ϕ	2	12'-2"	XI		6 $\frac{1}{2}$ "	3'-0"	2'-8 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "				
He4r	12-1	$\frac{1}{2}$ " ϕ	2	12'-1"	XI		6 $\frac{1}{2}$ "	3'-0"	2'-8"	6 $\frac{1}{2}$ "				
He4r	11-11	$\frac{1}{2}$ " ϕ	2	11'-11"	XI		6"	2'-11 $\frac{1}{2}$ "	2'-7 $\frac{1}{2}$ "	6"				
He4r	11-10	$\frac{1}{2}$ " ϕ	1	11'-10"	XI		6 $\frac{1}{2}$ "	2'-8"	2'-10 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "				
He4r	11-9	$\frac{1}{2}$ " ϕ	2	11'-9"	XI		6"	2'-11 $\frac{1}{2}$ "	2'-7"	6"				
He4r	11-9	$\frac{1}{2}$ " ϕ	1	11'-9"	XI		6 $\frac{1}{2}$ "	2'-8"	2'-10"	6 $\frac{1}{2}$ "				
He4r	11-8	$\frac{1}{2}$ " ϕ	2	11'-8"	XI		6"	2'-11 $\frac{1}{2}$ "	2'-6 $\frac{1}{2}$ "	6"				
He4r	11-8	$\frac{1}{2}$ " ϕ	1	11'-8"	XI		6 $\frac{1}{2}$ "	2'-8"	2'-9 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "				
He4r	11-7	$\frac{1}{2}$ " ϕ	1	11'-7"	XI		6 $\frac{1}{2}$ "	2'-8"	2'-9"	6 $\frac{1}{2}$ "				
He4r	11-6	$\frac{1}{2}$ " ϕ	2	11'-6"	XI		6"	2'-11"	2'-6"	6"				
He4r	11-6	$\frac{1}{2}$ " ϕ	1	11'-6"	XI		6 $\frac{1}{2}$ "	2'-8"	2'-8 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "				
He4r	11-4	$\frac{1}{2}$ " ϕ	2	11'-4"	XI		6"	2'-10 $\frac{1}{2}$ "	2'-5 $\frac{1}{2}$ "	6"				
He4r	11-4	$\frac{1}{2}$ " ϕ	1	11'-4"	XI		6"	2'-8"	2'-8"	6"				
He4r	11-3	$\frac{1}{2}$ " ϕ	1	11'-3"	XI		6"	2'-8"	2'-7 $\frac{1}{2}$ "	6"				
He4r	11-2	$\frac{1}{2}$ " ϕ	2	11'-2"	XI		6"	2'-10 $\frac{1}{2}$ "	2'-5"	6"				
He4r	11-2	$\frac{1}{2}$ " ϕ	1	11'-2"	XI		6"	2'-8"	2'-7"	6"				
He4r	11-1	$\frac{1}{2}$ " ϕ	2	11'-1"	XI		6"	2'-10 $\frac{1}{2}$ "	2'-4 $\frac{1}{2}$ "	6"				
He4r	11-1	$\frac{1}{2}$ " ϕ	1	11'-1"	XI		6"	2'-8"	2'-6 $\frac{1}{2}$ "	6"				
He4r	11-0	$\frac{1}{2}$ " ϕ	1	11'-0"	XI		6"	2'-9"	2'-6"	6"				
He4r	10-11	$\frac{1}{2}$ " ϕ	2	10'-11"	XI		5 $\frac{1}{2}$ "	2'-10"	2'-4"	5 $\frac{1}{2}$ "				
He4r	10-11	$\frac{1}{2}$ " ϕ	1	10'-11"	XI		6"	2'-8"	2'-5 $\frac{1}{2}$ "	6"				
He4r	10-10	$\frac{1}{2}$ " ϕ	1	10'-10"	XI		6"	2'-8"	2'-5"	6"				
He4r	10-9	$\frac{1}{2}$ " ϕ	2	10'-9"	XI		6"	2'-9 $\frac{1}{2}$ "	2'-3 $\frac{1}{2}$ "	6"				
He4r	10-9	$\frac{1}{2}$ " ϕ	1	10'-9"	XI		6"	2'-8"	2'-4 $\frac{1}{2}$ "	6"				
He4r	10-8	$\frac{1}{2}$ " ϕ	2	10'-8"	XI		5 $\frac{1}{2}$ "	2'-9 $\frac{1}{2}$ "	2'-3"	5 $\frac{1}{2}$ "				
He4r	10-7	$\frac{1}{2}$ " ϕ	1	10'-7"	XI		5"	2'-8"	2'-4"	5"				
He4r	10-6	$\frac{1}{2}$ " ϕ	2	10'-6"	XI		5"	2'-9 $\frac{1}{2}$ "	2'-2 $\frac{1}{2}$ "	5"				
He4r	10-6	$\frac{1}{2}$ " ϕ	1	10'-6"	XI		5 $\frac{1}{2}$ "	2'-8"	2'-3 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "				
He4r	10-5	$\frac{1}{2}$ " ϕ	1	10'-5"	XI		5"	2'-8"	2'-3"	5"				
He4r	10-4	$\frac{1}{2}$ " ϕ	1	10'-4"	XI		5 $\frac{1}{2}$ "	2'-8"	2'-2 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "				
Tb9s	33-10	$\frac{1}{8}$ " ϕ	4	33'-10"	XII	27'-1"	3'-9"	5'-5"	2'-5"	5'-0"	3'-5"	11'-10"	2'-5"	

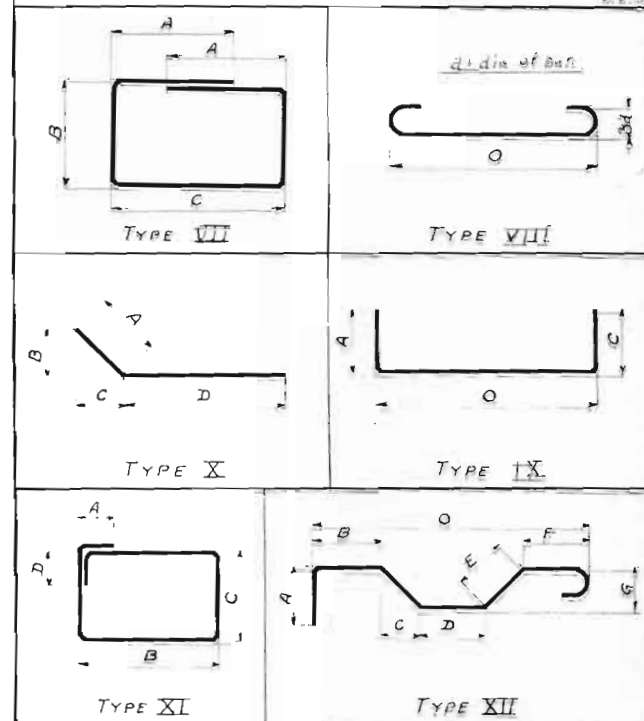
Tiv. A.
C. L. S.

MARK	SIZE	N ^o REQD	LENGTH	TYPE	DIMENSIONS					
					O	A	B	C	D	
S8r	22-9	1" φ	36	22-9	Sfr.					
S8r	10-6	1" φ	36	10-6	Sfr.					
S5r	46-6	5/8" φ	10	46-6	Sfr.					
S5r	44-8	5/8" φ	2	44-8	Sfr.					
B10s	48-10	1 1/2" □	15	48-10	VIII	46-6				
B10s	47-1	1 1/2" □	5	47-1	VIII	44-8 1/2				
B10s	42-7	1 1/2" □	3	42-7	VIII	40-2 1/2				
B10s	20-4	1 1/2" □	2	20-4	VIII	18-0				
B10s	17-10	1 1/2" □	5	17-10	VIII	15-6				
B6r	11-10	3/4" φ	70	11-10	VIII	10-6				
La10s	50-6	1 1/2" □	5	50-6	IX	44-8	6-2		6-2	
Aa5r	11-0	5/8" φ	16	11-0	X		8-2	1-8	8-0	2-10
H5r	21-0	5/8" φ	40	21-0	VII		2-3 1/2	6-0	4-5	
H5r	15-3	5/8" φ	4	15-3	VII		12	6-1	1-4 1/2	
H5r	14-9	5/8" φ	8	14-9	VII		12	5-10	1-4 1/2	
H5r	14-8	5/8" φ	4	14-8	VII		12	5-9 1/2	1-4 1/2	
H5r	14-4	5/8" φ	8	14-4	VII		12	5-7 1/2	1-4 1/2	
H5r	13-9	5/8" φ	8	13-9	VII		12	5-4	1-4 1/2	
H5r	13-2	5/8" φ	8	13-2	VII		12	5-0 1/2	1-4 1/2	
H5r	12-9	5/8" φ	24	12-9	VII		12	4-10	1-4 1/2	
He4r	14-1	1/2" φ	2	14-1	XI		6	3-7	3-1 1/2	6"
He4r	14-0	1/2" φ	2	14-0	XI		6	3-6 1/2	3-1 1/2	6"
He4r	13-10	1/2" φ	2	13-10	XI		6	3-6	3-1	6"
He4r	13-9	1/2" φ	2	13-9	XI		6	3-5 1/2	3-0 1/2	6"
He4r	13-7	1/2" φ	2	13-7	XI		6	3-5	3-0 1/2	6"
He4r	13-6	1/2" φ	2	13-6	XI		6	3-4 1/2	3-0 1/2	6"
He4r	13-4	1/2" φ	2	13-4	XI		6	3-4	3-0	6"
He4r	13-3	1/2" φ	2	13-3	XI		6	3-3 1/2	2-11 1/2	6"
He4r	13-2	1/2" φ	1	13-2	XI		6	3-7	2-8	6"
He4r	13-1	1/2" φ	2	13-1	XI		6	3-3	2-11 1/2	6"
He4r	13-1	1/2" φ	1	13-1	XI		6	3-6 1/2	2-8	6"
He4r	13-0	1/2" φ	2	13-0	XI		6	3-6 1/2	2-11 1/2	6"
He4r	13-0	1/2" φ	1	13-0	XI		6	3-6	2-8	6"
He4r	12-11	1/2" φ	1	12-11	XI		6	3-5 1/2	2-8	6"
He4r	12-10	1/2" φ	2	12-10	XI		6	3-2	2-11	6"
He4r	12-10	1/2" φ	1	12-10	XI		6	3-5	2-8	6"
He4r	12-9	1/2" φ	2	12-9	XI		6	3-1 1/2	2-11	6"
He4r	12-9	1/2" φ	1	12-9	XI		6	3-4 1/2	2-8	6"
He4r	12-8	1/2" φ	1	12-8	XI		6	3-4	2-8	6"
He4r	12-7	1/2" φ	2	12-7	XI		6	3-1	2-10 1/2	6"
He4r	12-7	1/2" φ	1	12-7	XI		6	3-3 1/2	2-8	6"
He4r	12-6	1/2" φ	2	12-6	XI		6	3-0	2-10 1/2	6"
He4r	12-6	1/2" φ	1	12-6	XI		6	3-3	2-8	6"
He4r	12-5	1/2" φ	2	12-5	XI		6 1/2	3-0	2-10	6 1/2
He4r	12-5	1/2" φ	1	12-5	XI		6	3-0 1/2	2-8	6"
He4r	12-4	1/2" φ	1	12-4	XI		6	3-2	2-8	6"
He4r	12-3	1/2" φ	2	12-3	XI		6	2-11 1/2	2-10	6"
He4r	12-3	1/2" φ	1	12-3	XI		6	3-1 1/2	2-8	6"
He4r	12-2	1/2" φ	1	12-2	XI		6	3-1	2-8	6"
He4r	12-1	1/2" φ	1	12-1	XI		6	3-0 1/2	2-8	6"
He4r	12-0	1/2" φ	1	12-0	XI		6	3-0	2-8	6"
He4r	11-11	1/2" φ	1	11-11	XI		6	2-11 1/2	2-8	6"

34
C.L

MARK	SIZE	No REQ	LENGTH	TYPE	DIMENSIONS								
					O	A	B	C	D	E	F	G	
S7r	21-3	3/8" φ	36	21'9"	S1r								
S7r	10-2	3/8" φ	36	10'2"	S1r								
S5r	49-0	3/8" φ	8	49'0"	S1r								
S5r	46-11	3/8" φ	2	46'11"	S1r								
S4r	8-3	3/8" φ	12	8'3"	S1r								
B10s	49-1	1 1/2" φ	2	49'1"	VIII	46'9"							
B10s	41-7	1 1/2" φ	2	41'7"	VIII	39'3"							
B10s	20-4	1 1/2" φ	3	20'4"	VIII	18'0"							
B9s	51-2	1 1/2" φ	10	51'2"	VIII	49'0"							
B4r	6-8	1/2" φ	32	6'8"	VIII	5'8"							
Lq10s	54-6	1 1/2" φ	2	54'6"	IX	46'11"	4'0 1/2"		4'0 1/2"				
Aa5r	10-4	3/8" φ	8	10'4"	X		7'0"	1'7"	7'4"	2'10"			
H5r	18-8	3/8" φ	26	18'8"	VII		2'5"	5'6"	3'6"				
H5r	12-5	3/8" φ	2	12'5"	VII		1'5"	3'11"	2'0"				
H5r	12-3	3/8" φ	2	12'3"	VII		1'4 1/2"	3'11"	2'0"				
H5r	12-2	3/8" φ	2	12'2"	VII		1'5"	3'10"	2'0"				
H5r	11-11	3/8" φ	2	11'11"	VII		1'4 1/2"	3'9"	2'0"				
H5r	11-9	3/8" φ	4	11'9"	VII		1'4 1/2"	3'8"	2'0"				
H5r	11-3	3/8" φ	4	11'3"	VII		1'4 1/2"	3'5"	2'0"				
H5r	10-9	3/8" φ	4	10'9"	VII		1'4 1/2"	3'2"	2'0"				
H5r	10-3	3/8" φ	4	10'3"	VII		1'4 1/2"	2'11"	2'0"				
H5r	9-9	3/8" φ	18	9'9"	VII		1'4 1/2"	2'8"	2'0"				
H4r	5-8	1/2" φ	3	5'8"	VII		9"	1'10"	1'0"				
H4r	5-5	1/2" φ	3	5'5"	VII		1'4 1/2"	7"	1'10"				
He4r	12-9	1/2" φ	2	12'9"	XI		7"	3'1 1/2"	2'10 1/2"	7"			
He4r	12-7	1/2" φ	2	12'7"	XI		6 1/2"	3'1"	2'10"	6 1/2"			
He4r	12-6	1/2" φ	2	12'6"	XI		7"	3'0 1/2"	2'9 1/2"	7"			
He4r	12-4	1/2" φ	2	12'4"	XI		6 1/2"	3'0 1/2"	2'9"	6 1/2"			
He4r	12-2	1/2" φ	2	12'2"	XI		6 1/2"	3'0 1/2"	2'8 1/2"	6 1/2"			
He4r	12-1	1/2" φ	2	12'1"	XI		6 1/2"	3'0"	2'8"	6 1/2"			
He4r	11-11	1/2" φ	2	11'11"	XI		6"	2'11 1/2"	2'7 1/2"	6"			
He4r	11-10	1/2" φ	1	11'10"	XI		6 1/2"	2'8"	2'4 1/2"	6 1/2"			
He4r	11-9	1/2" φ	2	11'9"	XI		6"	2'11 1/2"	2'7"	6"			
He4r	11-8	1/2" φ	1	11'8"	XI		6 1/2"	2'8"	2'10"	6 1/2"			
He4r	11-8	1/2" φ	2	11'8"	XI		6"	2'11 1/2"	2'6 1/2"	6"			
He4r	11-8	1/2" φ	1	11'8"	XI		6 1/2"	2'8"	2'9 1/2"	6 1/2"			
He4r	11-7	1/2" φ	1	11'7"	XI		6 1/2"	2'8"	2'9"	6 1/2"			
He4r	11-6	1/2" φ	2	11'6"	XI		6"	2'11"	2'6"	6"			
He4r	11-6	1/2" φ	1	11'6"	XI		6 1/2"	2'8"	2'9 1/2"	6 1/2"			
He4r	11-4	1/2" φ	2	11'4"	XI		6"	2'10 1/2"	2'5 1/2"	6"			
He4r	11-4	1/2" φ	1	11'4"	XI		6"	2'8"	2'9"	6"			
He4r	11-3	1/2" φ	1	11'3"	XI		6"	2'8"	2'7 1/2"	6"			
He4r	11-2	1/2" φ	2	11'2"	XI		6"	2'10 1/2"	2'5"	6"			
He4r	11-2	1/2" φ	1	11'2"	XI		6"	2'8"	e7"	6"			
He4r	11-1	1/2" φ	2	11'1"	XI		6"	2'10 1/2"	2'4 1/2"	6"			
He4r	11-1	1/2" φ	1	11'1"	XI		6"	2'8"	2'6 1/2"	6"			
He4r	11-0	1/2" φ	1	11'0"	XI		6"	2'8"	2'6"	6"			
He4r	10-11	1/2" φ	2	10'11"	XI		5 1/2"	2'10"	2'4"	5 1/2"			
He4r	10-11	1/2" φ	1	10'11"	XI		6"	2'8"	2'5 1/2"	6"			
He4r	10-10	1/2" φ	1	10'10"	XI		6"	2'8"	2'5"	6"			
He4r	10-9	1/2" φ	2	10'9"	XI		6"	2'9 1/2"	2'3 1/2"	6"			
He4r	10-9	1/2" φ	1	10'9"	XI		6"	2'8"	2'4 1/2"	6"			
He4r	10-8	1/2" φ	2	10'8"	XI		5 1/2"	2'9 1/2"	2'3"	5 1/2"			
He4r	10-7	1/2" φ	1	10'7"	XI		5"	2'8"	2'4"	6"			
He4r	10-6	1/2" φ	2	10'6"	XI		5"	2'9 1/2"	2'3 1/2"	5"			
He4r	10-6	1/2" φ	1	10'6"	XI		5 1/2"	2'8"	2'3 1/2"	5 1/2"			
He4r	10-5	1/2" φ	1	10'5"	XI		5"	2'8"	2'3"	5"			
He4r	10-4	1/2" φ	1	10'4"	XI		5 1/2"	2'8"	2'3 1/2"	5"			
Tn10s	36-9	1 1/2" φ	4	36'9"	XII	29'8"	4'0"	5'4"	2'8"	8'9"	3'9"	10'3"	2'8"

545



STANDARD HOOKS AND BENDS AS PER A.C.I. PROPOSED MANUAL 1946.
EXCEPT TYPE VIII.

J. W. B.
C. L. S.

982	LIN. FT.	$\frac{1}{2}$ @	0.568 LB. PER LIN. FT.	=	656	lbs
1141	LIN. FT.	$\frac{3}{8}$ @	1.043 LB. PER LIN. FT.	=	1190	lbs
1149	LIN. FT.	$\frac{5}{8}$ @	2.044 LB. PER LIN. FT.	=	2349	lbs
433	LIN. FT.	1 @	2.610 LB. PER LIN. FT.	=	1156	lbs
189	LIN. FT.	1 @	3.400 LB. PER LIN. FT.	=	643	lbs
288	LIN. FT.	$\frac{1}{8}$ @	4.303 LB. PER LIN. FT.	=	1239	lbs
				OVERRUN	± 1% =	67 lbs
				★	TOTAL =	7300 lbs

J. W. B.
C. L. S.

622 Lin.Ft. $\frac{1}{4}$ " ϕ @ 0.668 LB. PER LIN.FT. =	415 LBS
2444 Lin.Ft. $\frac{3}{8}$ " ϕ @ 1.043 LB. PER LIN.FT. =	2549 LBS
828 Lin.Ft. $\frac{1}{2}$ " ϕ @ 1.502 LB. PER LIN.FT. =	1244 LBS
1197 Lin.Ft. 1" ϕ @ 2.670 LB. PER LIN.FT. =	3196 LBS
1503 Lin.Ft. 1 $\frac{1}{4}$ " ϕ @ 3.313 LB. PER LIN.FT. =	8012 LBS
	OVERRUN $\pm 1\%$ = 154 LBS
Δ TOTAL =	15570 LBS

J. W.
C L
6211

930 LIN.FT. $\frac{1}{8}$ ϕ @ 0.668 LB PER LIN.FT.	=	621 LB
1503 LIN.FT. $\frac{1}{8}$ ϕ @ 1.043 LB PER LIN.FT.	=	1568 LB
1149 LIN.FT. $\frac{1}{8}$ ϕ @ 2.044 LB PER LIN.FT.	=	2348 LB
512 LIN.FT. $\frac{1}{16}$ ϕ @ 4.303 LB PER LIN.FT.	=	2203 LB
498 LIN.FT. $\frac{1}{16}$ ϕ @ 5.313 LB PER LIN.FT.	=	2646 LB
OVERHEAD $\pm 1\%$		931 LB
Φ TOTAL =		9480 LB

◆ INCLUDES 2950 LBS STRAIGHT BARS.

Across VALLEY HIGHWAY
Sta. _____
Near _____ Sec. _____ T. _____ R. _____
Designed by C&R Approved by _____
Made by J.N.B. Bridge Engineer
Checked by _____ Date: 1951

STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS

STANDARD M-2-DS

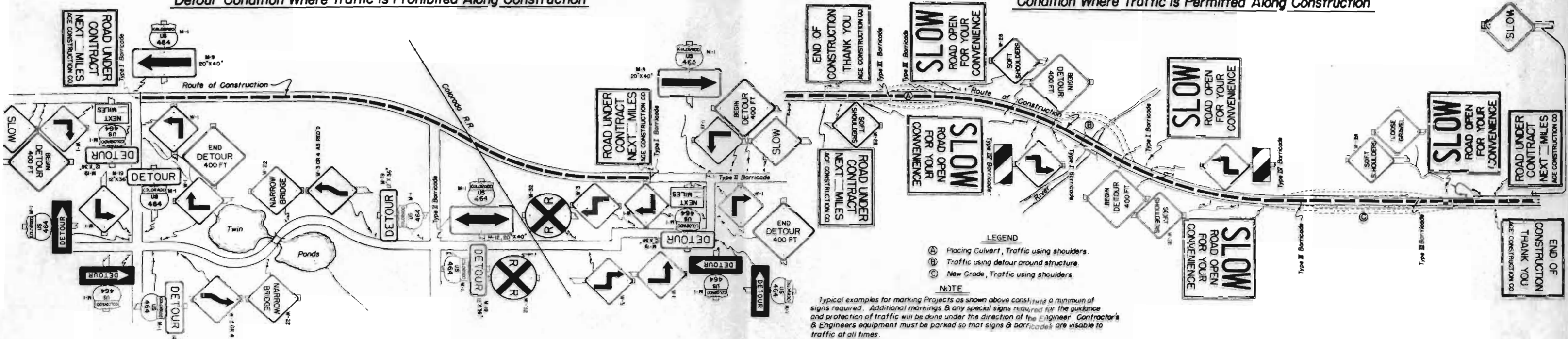
FED. ROAD DIVISION NO.	DISTRICT	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	1002-2	16	

REV. - 8/16/49 - E.E.O.
REV. - 2/3/50 - E.A.R.

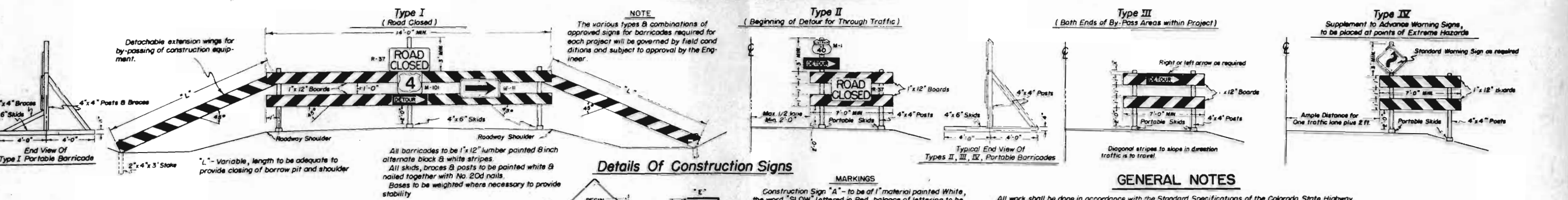
Typical Methods Of Marking Highways & Detours

Detour Condition Where Traffic Is Prohibited Along Construction

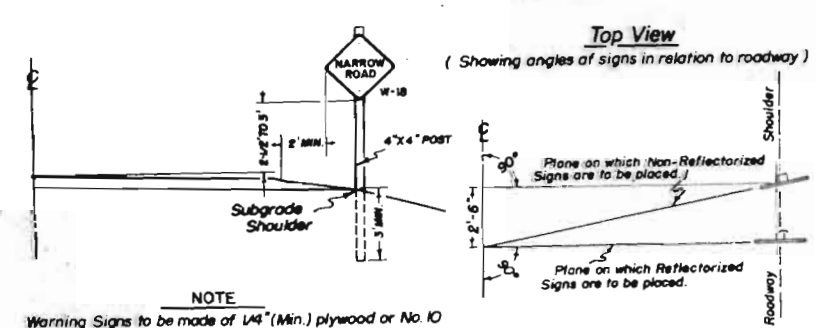
Condition Where Traffic Is Permitted Along Construction



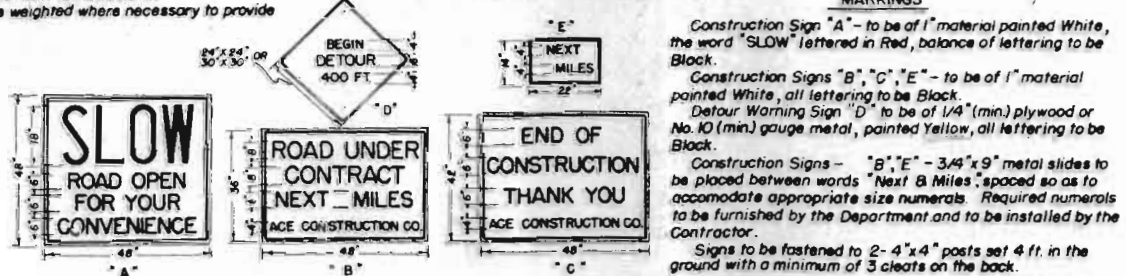
Details Of Barricades



Position Of Signs Relative To Roadbed & Hazards



Details Of Construction Signs



Details Of Reflectorized Arrows



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado State Highway Department applicable to the Project.

Where traffic is maintained through or over any part of the Project, the Contractor will be required to mark all hazards within the limits of the Project with white painted, well mounted Barricades, Warning Signs and Directional Type Signs. All Barricades & Signs shall be moved, added to, changed or removed as required during the progress of construction.

All Warning & Directional Type Signs will be "Reflectorized" with "Scotchite" Reflective Sheeting or a suitable equivalent. Except for variations noted on this sheet all signs will be in conformity with the specifications outlined in "Manual on Uniform Traffic Control Devices for Streets & Highways" issue of August 1948 by the U.S. Public Roads Administration. U.S. or State Road Markers required for the Project will be furnished by the Department and installed by the Contractor. Numbers adjacent to signs refer to Standards in the Manual.

The Contractor shall furnish & install the following as required within the limits of the Project:

1. All Barricades	As Required
2. "SLOW, ROAD OPEN FOR YOUR CONVENIENCE" Signs	Minimum 2
3. Standard Warning & Directional Signs	As Required
4. "ROAD UNDER CONTRACT, NEXT MILES, CONTRACTORS NAME" Signs	Minimum 2
5. Approved Directional Arrows for Barricades	As Required
6. "END OF CONSTRUCTION, THANK YOU, CONTRACTORS NAME" Signs	Minimum 2
7. Torches and Flares as follows:	Minimum 3

Where traffic is prohibited from the Project, the Detour will be marked by the Department except for Barricades complete with approved Warning Signs & Arrows which will be provided, erected & maintained by the Contractor at ends of Project and intersecting roads.

All symbols used shall be of sound durable material. Barricades, Signs, Symbols & Lettering conforming to styles noted herein will be well painted & maintained. Uneven or smeared lettering will not be accepted.

Flares and Torches shall be of the Oil Burning Type approved by the Department and shall be placed 3 ft to 5 ft ahead of the object to be illuminated. Particular care shall be taken to protect all signs and barricades from smoke and smudge arising from torches and flares.

COLORADO
STATE HIGHWAY DEPARTMENT

Standard Roadway
Construction Traffic Signs

Designed by
Made by CGM
Checked by

Approved
Date: 7-25-1949