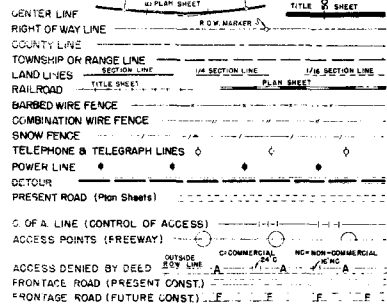


7-0208

CONVENTIONAL SIGNS



COLORADO DEPARTMENT OF HIGHWAYS PLAN AND PROFILE OF PROPOSED FEDERAL AID PROJECT NO. F012-2(8) STATE HIGHWAY NO. 182 JEFFERSON COUNTY

R.O.W. Purchased under CS 11-0182-13

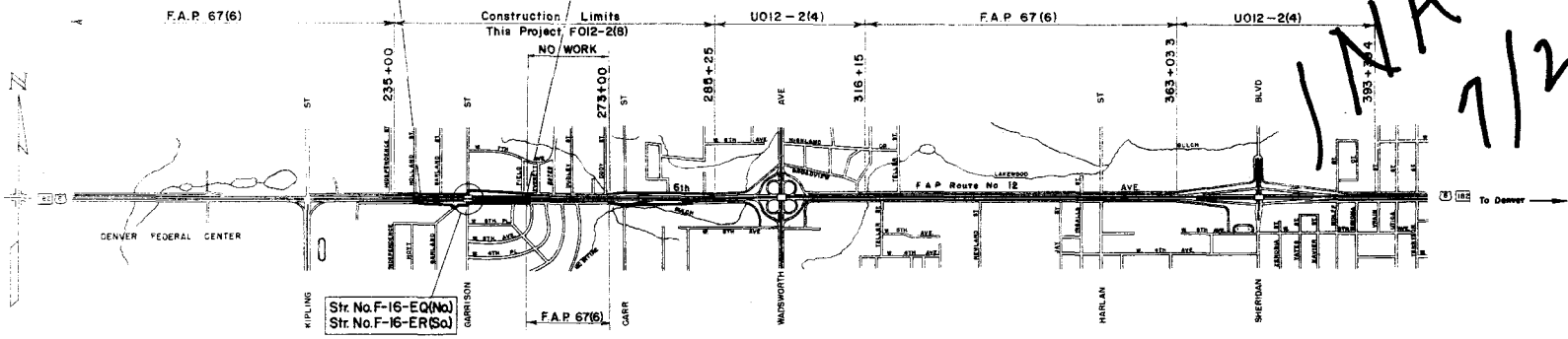
Table with columns: FEDERAL ROAD DIVISION NO., DISTRICT, PROJ. NO., SHEET NO., TOTAL SHEETS. Values: 5, COLORADO, F012-2(8), 1, 8.

INDEX OF SHEETS

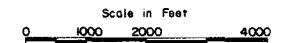
- INDEX OF SHEETS list including: SKETCH MAP & TITLE PAGE, TYPICAL SECTIONS, GENERAL NOTES, SUMMARY OF APPROXIMATE QUANTITIES, LIST OF STRUCTURES, TABULATION OF SURFACING, TABULATION OF CURBS & GUTTERS, TABULATION OF STORM SEWERS & MANHOLES & INLET ADJUSTMENTS, DETAILS OF STR. NO'S. F-16-EQ & F-16-ER & RETAINING WALLS, CONCRETE INLET NO. 3, MANHOLE DETAILS, CURBS & GUTTERS, LETTERS AND FIGURES FOR STRUCTURE NUMBERS, CONSTRUCTION TRAFFIC SIGNS, IDENTIFICATION SIGNS, DITCH TYPES, BACKFILL AROUND STRUCTURES, CONCRETE PAVEMENT JOINTS, CONCRETE PAVEMENT BRIDGE APPROACH SLAB, CONCRETE MEDIAN INLETS, REINFORCED CONCRETE PIPE, METAL PLATE GUARD FENCE, BARRIER FENCE, MARKER POSTS AND BENCH MARKS, DELETED, TIMBER BARRICADES, CONCRETE END AND ANGLE SECTIONS, DELINEATORS, DETAILS OF LIGHTING, FENCING & TABULATION OF DELINEATORS, ROADWAY DRAINAGE, LIGHTING & FENCING PLANS, ALIGNMENT PLANS & PROFILE, SEQUENCE OF CONSTRUCTION STAGES (TRAFFIC MAP) AND TABULATION OF TIMBER BARRICADES, CROSS-SECTIONS, TABULATION OF GROUND SIGNS, TYPICAL POST & RAIL SPACING & MOUNTING DETAILS, DETAILS FOR SIGN PLACEMENT & SIGN STANDS.

SCALES OF ORIGINAL DRAWINGS: ON PLAN, 1 IN. = 50 FT. ON PROFILE, 1 IN. = 50 FT. HORIZONTAL, 1 IN. = 10 FT. VERTICAL. GROSS LENGTH OF PROJECT: 1764.93 Feet = 0.324 Miles. NET LENGTH OF PROJECT: 1764.93 Feet = 0.324 Miles.

Sta. 240+61.95 (Beg. Proj. No. F012-2(8) & Sta. 240+61.95 on F.A.P. 67(6))
Sta. 258+26.88 (End Proj. No. F012-2(8) & Sta. 258+25.73 on F.A.P. 67(6))



MANUAL 7/29/63



See Special Provisions for Notice to Bidders

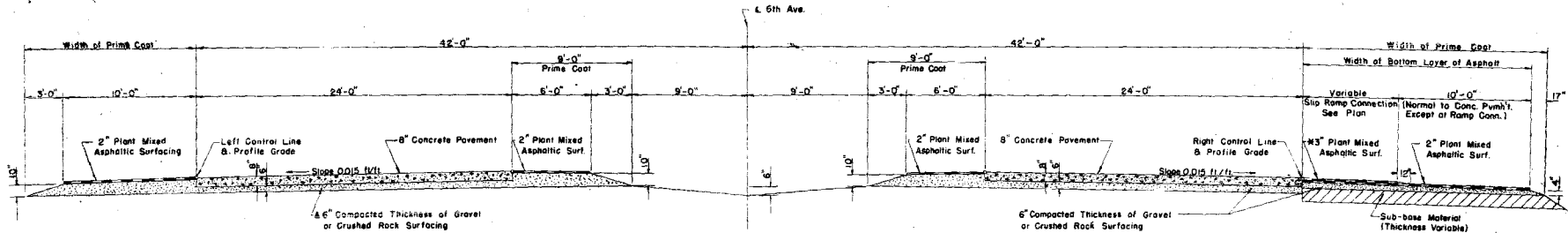
COLORADO DEPARTMENT OF HIGHWAYS APPROVED: [Signature] 1-3-63 DATE CHIEF ENGINEER

DEPARTMENT OF COMMERCE BUREAU OF PUBLIC ROADS APPROVED: _____ DATE DISTRICT ENGINEER

FEDERAL ROAD DISTRICT NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	FO12-2(8)	2	

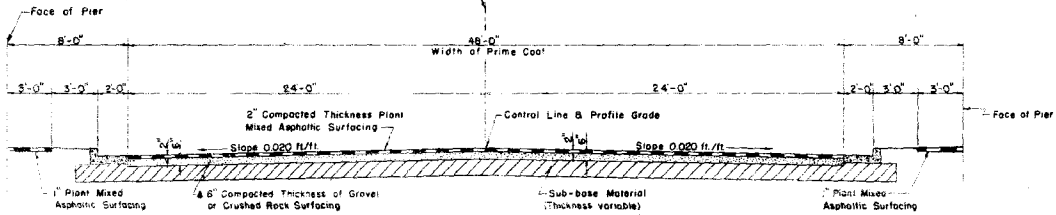
TYPICAL SECTION 1

W. 6th AVE.

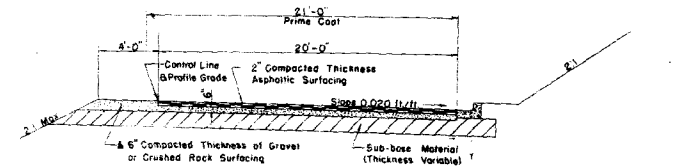


Note: Existing Pavement to be removed to accommodate above section.
 Westbound Lane - Asphalt
 Eastbound Lane - Concrete
 Warp New Concrete Pavement to fit existing Concrete Pavement at project limits Eastbound Lane only.

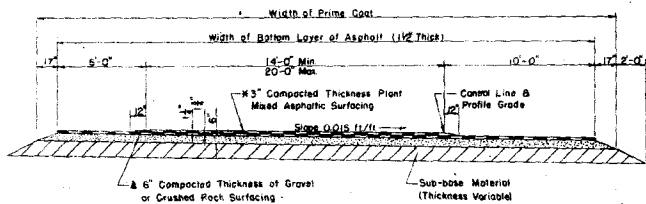
TYPICAL SECTION 4 GARRISON



TYPICAL SECTION 5 N.E. FRONTAGE ROAD



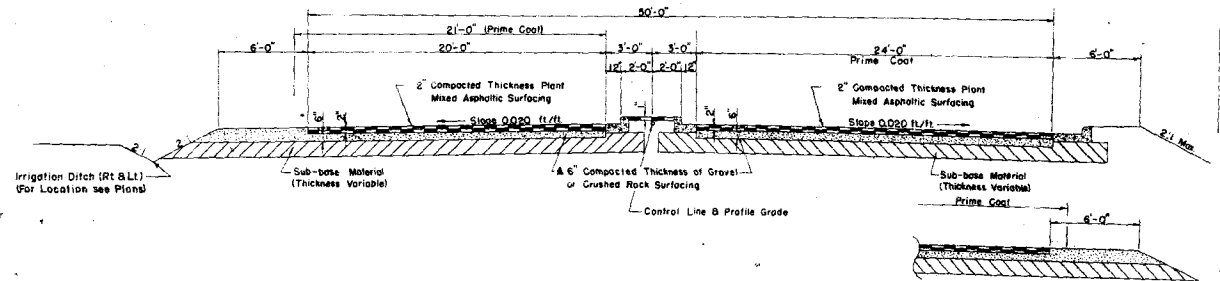
TYPICAL SECTION 6 S.W. RAMP



- * 3" Compacted Thickness Plant Mixed Asphaltic Surfacing to be Placed in Two Courses as shown.
- ▲ 6" Compacted Thickness Gravel or Crushed Rock Surfacing to be Placed in Two (2) 3" Courses.

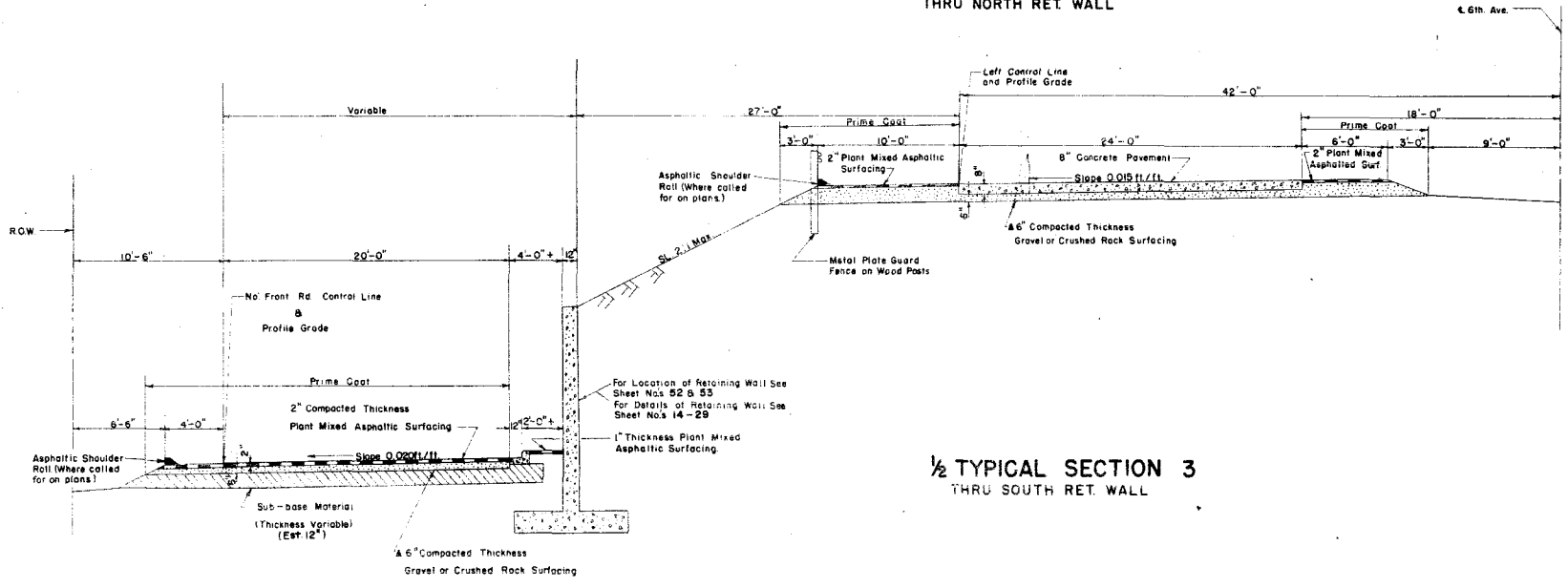
NOTE: Bottom Layer of Bituminous Surfacing shall be Completed for full width before Top Layer of Bituminous Surfacing is placed. Paving Joints in Top Layer will Overlap min. 1 ft. over Joints in Bottom Layer.

TYPICAL SECTION 7 S.W. FRONTAGE ROAD

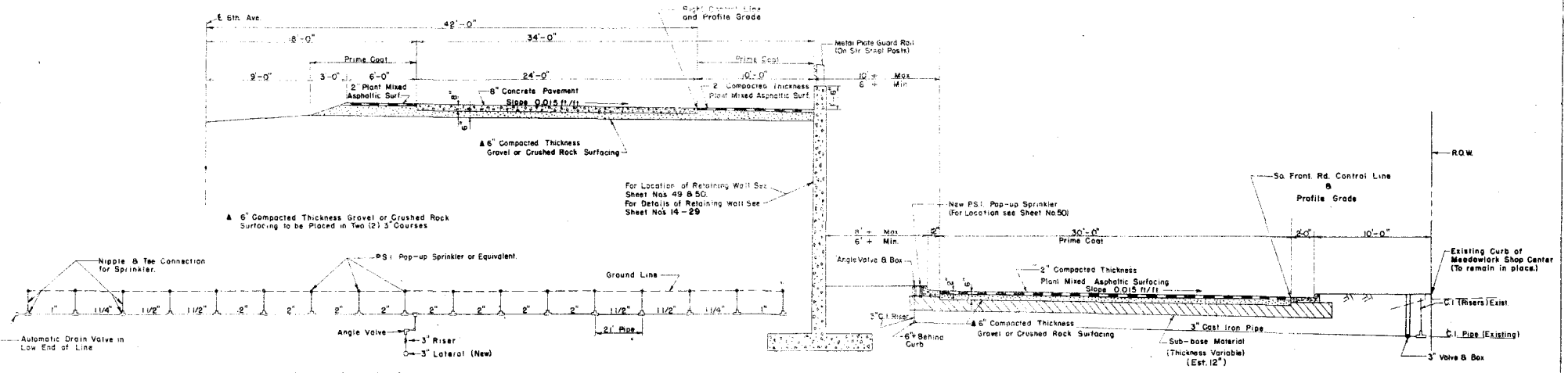


FEDERAL ROAD DISTRICT NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	FO12-2(B)	3	

**1/2 TYPICAL SECTION 2
 THRU NORTH RET. WALL**



**1/2 TYPICAL SECTION 3
 THRU SOUTH RET. WALL**

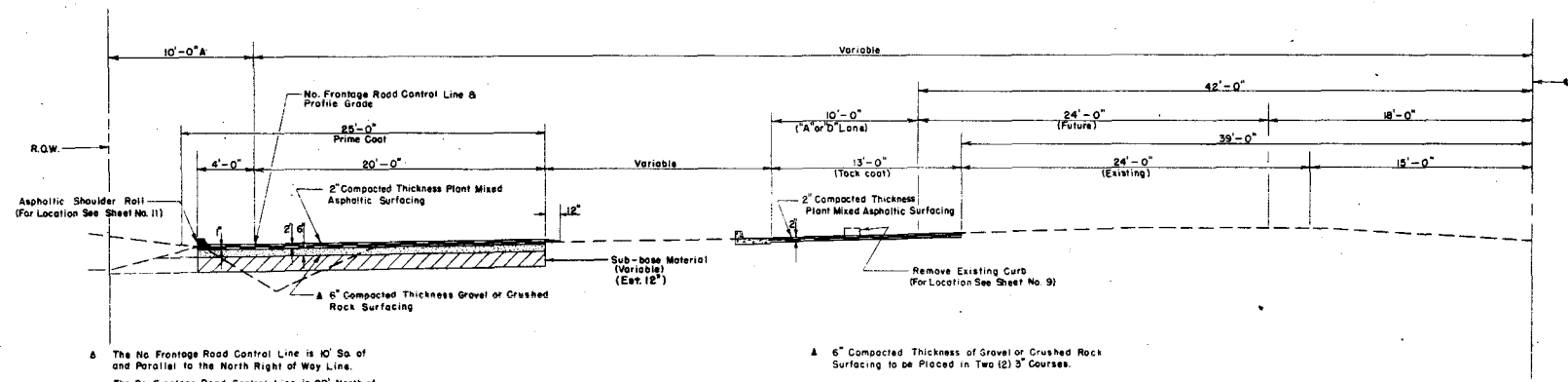


TYPICAL SPRINKLER BANK

FEDERAL ROAD DISTRICT NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	FD12-2(8)	4	

1/2 TYPICAL SECTION 8

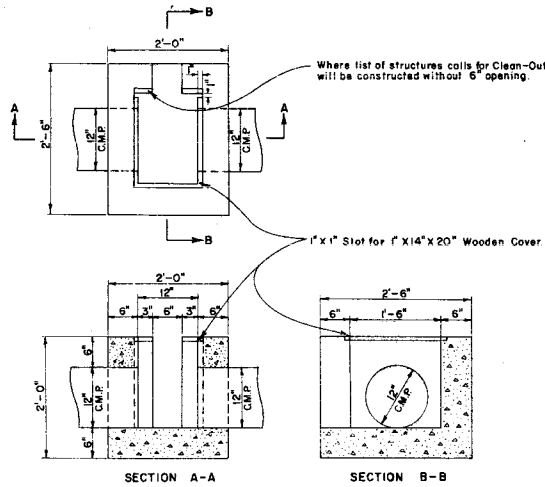
AT POINT OF RAMP ADDITION
 TO EXISTING W. 6th.



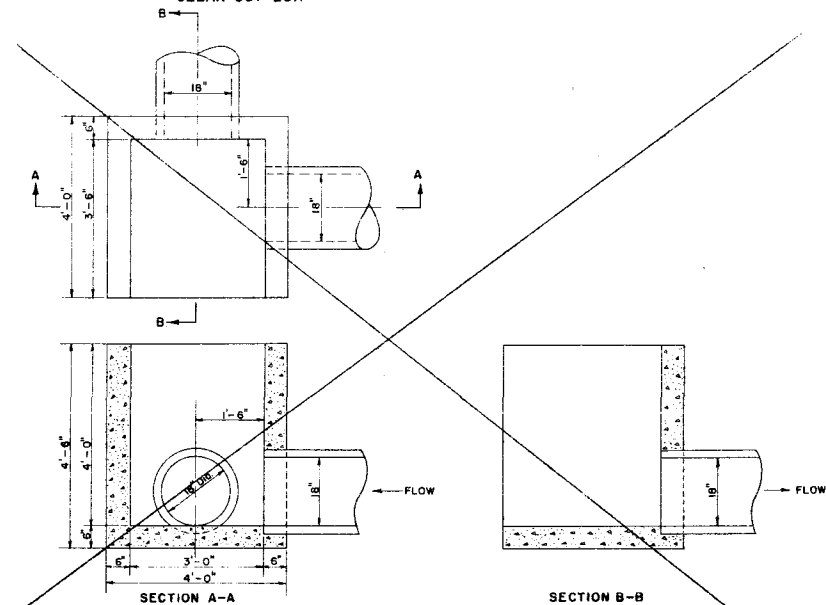
▲ The No. Frontage Road Control Line is 10' So. of and Parallel to the North Right of Way Line.
 The So. Frontage Road Control Line is 20' North of and Parallel to the South Right of Way Line.
 For Exceptions See Plan and Profile Sheet No. 80

▲ 6" Compacted Thickness of Gravel or Crushed Rock Surfacing to be Placed in Two (2) 3" Courses.

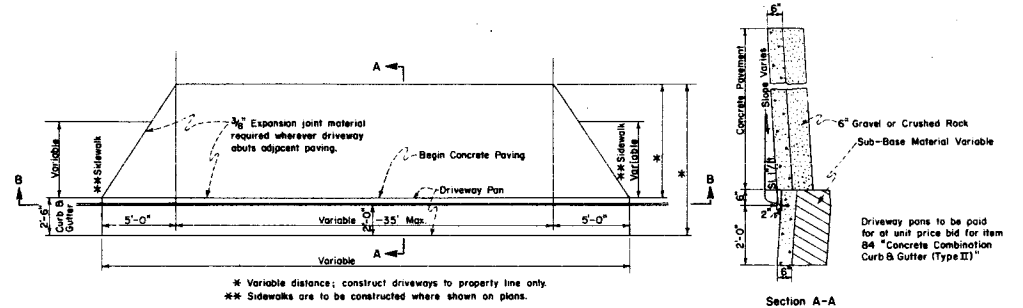
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	F O 12 - 2 (8)	6	



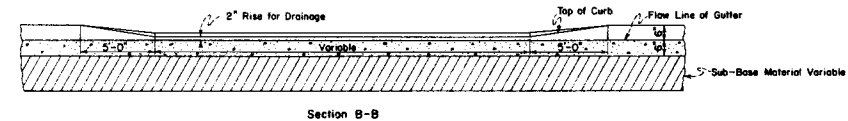
TYPICAL DIVERSION BOX
or
CLEAN-OUT BOX



INLET 237-B



TYPICAL DRIVEWAY PLAN (CONCRETE)
No Scale



TYPICAL DRIVEWAY PLAN (ASPHALT)
No Scale

Driveway pans to be paid for at unit price bid for item 84 "Concrete Combination C&G (Type II)"

FEDERAL ROAD DIVISION NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	COLORADO	F 012-2(8)	6	

TABULATION OF LENGTH & DESIGN DATA

STATION	DESCRIPTION	ROADWAY	MAJOR STRUCTURES
		LIN. FT.	LIN. FT.
240+61.95	BEGIN F 012-2(8) = STA. 240+61.95 ON F&P 67(6)	735.57	131.66
247+97.52	BEGIN BRIDGES STR. NOS. F-16-EQ & F-16-ER GARRISON ST.		
249+29.18	END BRIDGES	897.70	
258+26.88	END F 012-2(8) = STA. 258+26.88 ON F&P 67(6)		
TOTALS		1,633.27	131.66
SUMMARY			
		LIN. FT.	MILES
ROADWAY		1,633.27	0.309
MAJOR STRUCTURES		131.66	0.025
TOTAL NET & GROSS LENGTH		1,764.93	0.334
DESIGN DATA			
MAXIMUM DEGREE OF CURVE		—	
MAXIMUM GRADE		4.00%	
MINIMUM S.S.D. (HORIZONTAL)		—	
MINIMUM S.S.D. (VERTICAL)		380'	
MAXIMUM DESIGN SPEED		55 M.P.H.	

GENERAL NOTES

This project is to be constructed in conformity with the Standard Specifications of the Colorado Department of Highways adopted JANUARY 1, 1958.
All quantities on preliminary plans are to be considered approximate only.
Class "A" Concrete aggregate may be substituted for pavement aggregate.

For preliminary plan quantities of asphaltic road materials, plant mixed oil processed surfacing, asphalt

Prime Coat (over concrete) R.C.	at	10 gal per sq. yd.
Prime Coat (over other areas) M.C.	at	40 gal per sq. yd.
Plant Mixed Asphaltic Surfacing	at	110 lbs. per sq. yd. per 1" thickness.

Rate of application and grade of oil shall be as determined by the engineer at the time of application.

Wetting	(Embankment)	40 gal per cu. yd.
Wetting	(Subgrade & Surfacing)	15 gal per ton

Application Methods for liquid asphaltic road material, which result in the discoloration of concrete pavement, curbs or gutters, will not be permitted.

When ordered by the Engineer, R.C. Tack Coat (Item 30) is to be applied between asphaltic pavement courses to improve bond. Tack Coat, if required, will be applied at the approximate rate of 0.05 gal per sq. yd.

During Construction of this Project, Traffic will use present traveled Roadway except where detours are shown on Plans.

SUMMARY OF EARTHWORK QUANTITIES

<u>EXCAVATION</u>		
FROM CROSS SECTIONS	40,481 CU. YDS.	
* BORROW	41,910 CU. YDS.	
EST FOR SUBSIDENCE	8,239 CU. YDS.	
LIST OF STRUCTURES AS EXCAVATION	50 CU. YDS.	
TOTALS	* 90,680 CU. YDS.	
<u>EXCAVATION</u>		
FROM CROSS SECTIONS	40,481 CU. YDS.	
BORROW	41,910 CU. YDS.	
TOTALS	82,391 CU. YDS.	
<u>EMBANKMENT</u>		
FROM CROSS SECTIONS	65,913 CU. YDS.	
EMBANKMENT X FACTOR	82,391 CU. YDS.	
* 41,910 CU. YDS FROM WEST 6TH & PERRY OR UNDESIGNATED SOURCE		
<u>UNCLASSIFIED DITCH EXCAVATION</u>		
FROM LIST OF STRUCTURES	2 CU. YDS.	
TOTAL	2 CU. YDS.	
COMPACTION (STANDARD)		
TOTAL UNCLASSIFIED EXCAVATION	90,680 CU. YDS.	
BASE OF CUTS & FILLS	6,700 CU. YDS.	
TOTALS	97,380 CU. YDS.	

TABULATION OF SECTIONS

TYPICAL SECTION NO.	LOCATION	STATIONS
1	6th Ave.	240+62.00 to 244+50.00
2	6th Ave. & N.W. Frontage Road	244+50.00 to 247+97.52
Bridges	6th Ave. (Str. No. F-16-EQ) (Str. No. F-16-ER)	247+97.52 to 249+29.18
		249+29.18 to 256+10.00
3	6th Ave. & S.E. Frontage Road	256+10.00 to 257+33.23
4	Garrison St.	3+00 to 6+82
5	N.E. Frontage Road (Garrison St.)	0+24 to 10+40
5	N.W. Frontage Road (Garrison St.)	235+50.00 to 244+50.00
7	S.W. Frontage Road (Garrison St.)	0+00 to 3+10
6	N.W. Ramp	0+00 to 3+51
6	S.W. Ramp	0+00 to 7+74.4
8	(North & South Frontage Roads) (North & South Ramps) (Cov. St.)	272+36.00 to 285+25.00

SUMMARY OF APPROXIMATE QUANTITIES

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	F012-2(E)	7

SPECIFICATION ITEM NO.	ITEM	UNIT	R/WAY	ROADWAY RETAINING WALL	ROADWAY TOTAL	STR. NO. F-16-ER F-16-ER	PROJECT TOTAL F012-2(B)	PROJECT TOTAL F012-2(C)	COMBINED PROJECT TOTAL
10	CLEARING & GRUBBING ENT. PROJECT L.S.								
11	REMOVING OF OBSTRUCTIONS	L.S.							
11	RESET EXISTING 3' RISER	L.S.							
11	RESET TIMBER BARRICADES	EACH						34	34
11	ADJUST MANHOLE RING & COVER OR INLET	EACH	9		9		9	2	11
11	RESET CONC PLACED END SECTIONS	EACH							
12	REMOVING GUARD FENCE	LIN. FT.						1,900	1,900
12	REMOVING FENCE	LIN. FT.						1,600	1,600
12	REMOVING & REBUILDING FENCE	LIN. FT.						1,000	1,000
13	UNCLASSIFIED EXCAVATION	CU. YD.	49,000		49,000		49,000	69,000	118,000
13	UNCLASSIFIED LITCH EXCAVATION	CU. YD.	100		100		100	100	100
14	UNCL. STR. EXCAV. MISCELLANEOUS	CU. YD.	60	1,290	1,290		1,290	2,450	5,240
14	UNCL. STR. EXCAV. BRIDGES	CU. YD.				110	1,210	1,180	5,250
16	STRUCTURE BACKFILL (CLASS)	CU. YD.		560	620	60	680	890	9,580
17	CONCRETE (STANDARD)	CU. YD.	98,000		98,000		98,000	17,000	115,000
17	NETTING	M. GAL.	4,470		4,470		4,470	660	5,130
23	SUB-BASE MATERIAL (CLASS 1)	TON	20,200		20,200		20,200	8,800	29,000
26	SHOULDER CRUSHED ROCK	TON	17,600		17,600		17,600	15,900	33,500
26	SURFACING (GRADEING C)	TON							
30	ASPH. ROAD MATERIAL (M. FEAS)	TON	15,100		15,100		15,100	16,000	31,100
30	ASPH. ROAD MATERIAL (C. JACK)	TON	400		400		400	400	800
32	PLANT MIXED ASPH. SURFACING	TON	9,190		9,190		9,190	4,760	8,950
32	PLANT MIXED ASPH. SHOULDER ROLL	TON	50		50		50	50	50
37	CONCRETE PAVEMENT (8" THICK)	CU. YD.	8,560		8,560		8,560	9,600	18,160
37	CONCRETE PAVEMENT (10" THICK)	CU. YD.	270		270		270	30	270
38	3/4" x 3/4" x 16" TIMBER	CU. YD.	101		101		101	30	131
38	CLASS 1 CONCRETE	CU. YD.		1,223	1,224	386	1,610	4,468	6,078
38	CONCRETE (CLASS 1) (TYPE I)	EACH						6	6
40	REINFORCING STEEL	LB.	12,450	99,600	112,050	80,450	192,500	432,900	625,400
40	STRUCTURAL STEEL (CAL. W/10)	LB.		8,200	8,200	181,200	192,500	17,100	226,800
40	STRUCTURAL STEEL (CAL. W/10)	LB.				21,300	22,500	44,000	73,500
48	SLAB EXCAVATION (20' BEAM)	LIN. FT.						68	68
51	RELAYING 12" PIPE (C.M.P.)	LIN. FT.	221		221		221	221	221
51	RELAYING 18" PIPE (CONCRETE)	LIN. FT.						1,807	1,807
51	RELAYING 18" PIPE (C.M.P.)	LIN. FT.	46		46		46	300	300
51	RELAYING 24" PIPE (CONCRETE)	LIN. FT.						580	580
51	RELAYING 24" PIPE (CONCRETE)	LIN. FT.	524		524		524	950	1,474
59	TREATED METAL CULVERT PIPE	LIN. FT.	198		198		198		198
60	TREATED TIMBER PILING	LIN. FT.				1,920	1,920		1,920
61	STEEL PILING (10' x 42)	LIN. FT.				928	928		928
65	CONC. SLOPE & LITCH PAVERS	CU. YD.				110	110		110
67	RIPRAP	CU. YD.	10		10		10		10
71	8" REINFORCED C.M.P. UNDER DRAIN	LIN. FT.						1,600	1,600
71	8" REINFORCED C.M.P. UNDER DRAIN	LIN. FT.						1,600	1,600
75	METAL PLATE GUARD FENCE (BEAM TYPE)	LIN. FT.	675		675		675	1,937.5	2,612.5
75	NET PLATE, PAL (BEAM TYPE)	LIN. FT.		680	680		680	2,648	3,328
76	BANKED FENCE WITH METAL POSTS	LIN. FT.	400		400		400		400
76	END POSTS	EACH	2		2		2		2
81	SHEET COPPER	LB.				30	30		30
81	CONCRETE CURB (TYPE II)	LIN. FT.	350		350		350	400	750
84	CONCRETE BUTTER (4' FOOT)	LIN. FT.	90		90		90	65	155
84	CONC. CONC. CURB AND BUTTER	LIN. FT.						6,588	10,848
84	CONC. CONC. CURB AND BUTTER (TYPE I)	LIN. FT.	9,260		9,260		9,260		9,260
84	CONC. CONC. CURB AND BUTTER (TYPE II)	LIN. FT.	3,138		3,138		3,138	6,953	10,091
84	CONC. CONC. CURB BUTTER & SIDEWALK (TYPE ICM)	LIN. FT.						9,340	9,340
90	1 1/2" ELECTRICAL CONDUIT WITH JUNCTION BOXES	LIN. FT.				340	340	245	585
98	LIGHT SIGNALS (M.A.M.) (V. 1515)	EACH	6		6		6	3	9

CONTINUED ON SHEET NO. 8

SUMMARY OF APPROXIMATE QUANTITIES

FEDERAL ROAD REGION NO. 9	DIVISION COLORADO	PROJECT NO. FO12-2(B)	SHEET NO. 8
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SPECIFICATION ITEM NO.	ITEM	UNIT	ROADWAY	ROADWAY	ROADWAY	STR. NO. F-16-EG F-18-ER	PROJECT TOTAL FO12-2(B)	PROJECT TOTAL FO12-2(?)	COMBINED PROJECT TOTAL
110	SOIL DROPPERS AND GUTTERS	LIN. FT.						100	100
113	3" CAST IRON WATER PIPE	LIN. FT.	370				370	20	390
123	INSTALL SPRINKLER SYSTEM	LIN. FT.	672				672		672
130	DROP INLETS (TYPE A) (3-FOOT) EACH							1	1
130	DROP INLETS (TYPE A) (5-FOOT) EACH		2				2		2
130	DROP INLETS (TYPE E) (3-FOOT) EACH		6				6		6
130	DROP INLETS (TYPE E) (4-FOOT) EACH		1				1		1
130	DROP INLETS (TYPE E) (5-FOOT) EACH		2				2		2
130	DROP INLETS (TYPE E) (7-FOOT) EACH		1				1		1
130	DROP INLETS (TYPE 3) (3-FOOT) EACH		2				2	20	22
130	DROP INLETS (TYPE 3) (4-FOOT) EACH		1				1	7	8
130	DROP INLETS (TYPE 3) (5-FOOT) EACH		1				1	9	10
130	DROP INLETS (TYPE 3) (6-FOOT) EACH							1	1
132	8" CONC. PIPE SEWER (STG. STRENGTH) LIN. FT.							1,716	1,716
132	15" REINF. CONC. PIPE SEWER (CLASS II) LIN. FT.		716				716	162	878
132	18" REINF. CONC. PIPE SEWER (CLASS I) LIN. FT.		1,612				1,612	2,062	3,674
132	21" REINF. CONC. PIPE SEWER (CLASS II) LIN. FT.							346	346
132	24" REINF. CONC. PIPE SEWER (CLASS III) LIN. FT.		510				510	342	852
132	24" REINF. CONC. PIPE SEWER (CLASS III) LIN. FT.							319	319
132	24" REINF. CONC. PIPE SEWER (CLASS II) LIN. FT.							1,148	1,148
132	MANHOLES (TYPE 1-A) (5-FOOT) EACH		1				1	3	4
132	MANHOLES (TYPE 1-A) (6-FOOT) EACH							2	2
132	MANHOLES (TYPE 1-A) (8-FOOT) EACH							1	1
132	MANHOLES (TYPE 1-A) (9-FOOT) EACH							5	5
132	MANHOLES (TYPE 1-A) (10-FOOT) EACH							6	6
132	MANHOLES (TYPE 1-A) (12-FOOT) EACH							1	1
132	MANHOLES (TYPE 1-A) (15-FOOT) EACH							1	1
132	MANHOLES (TYPE 1-A) (18-FOOT) EACH							1	1
132	TIMBER BARRICADES (CLASS I) (TYPE A) EACH		9				9	13	22
132	TIMBER BARRICADES (CLASS I) (TYPE B) EACH		1				1	6	7
142	TIMBER BARRICADES (CLASS I) (TYPE C) EACH							6	6
139	INSTALL GROUND SIGN PANELS 52 FT.		89				89	157	246
150	RESET SIGN BRIDGE STRUCTURE EACH							1	1
152	15" FLARED END SECTIONS FOR R.C.C.P. EACH		3				3		3
152	20" FLARED END SECTIONS FOR R.C.C.P. EACH		6				6		6
192	DELINEATORS (TYPE I) EACH		23				23	3	26
192	DELINEATORS (TYPE II) EACH		39				39	28	67
192	DELINEATORS (TYPE III) EACH		7				7	5	12
FORCE ACCOUNT									
	FURNISH & INSTALL 6-20,000 LUMEN MERCURY VAPOR LUMINAIRES WITH CONDUIT, BALLAST, BASES, ETC. AND 2-3/4" 2" LUMEN MERCURY								
	VAPOR LUMINAIRES (IN COR. GARAGES IN ST. REIDIES) (WORK BY PUBLIC SERVICE CO. & C.C.O.)	L.S.	•					•	
NON-FEDERAL AID									
	STRIPING ENTIRE PROJECT (WORK BY STATE FORCES)	L.S.	•					•	
	PANELS AND GROUND SIGNS (STATE FURNISHED MATERIAL)	L.S.	•					•	

FEDERAL ROAD PROGRAM NO.	DISTRICT	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	FO12-2(8)	9	

REMOVAL ITEMS

(TO BE PAID FOR UNDER "REMOVAL OF OBSTRUCTIONS")

NOTE: This List of Removals is not a complete List of Items to be included in "Removal of Obstructions" and is included only for information.

NOTE NO.	LOCATION	DESCRIPTION
1	Sta 235+00 - Sta 238+62	Remove 362' Conc. Curb
2	Deleted	
3	Sta. 23 + (Lt. L.C.L.)	Remove 39'-12"X24" W.B.C.
4	Sta. 237+00 (Lt. L.C.L.)	Remove 24" Headwall
5	Sta 239+71 (Lt. L.C.L.)	Remove 39'-24" C.M.P.
6	Sta. 241+00 (Lt. L.C.L.)	Remove 29'-24" C.M.P.
7	Sta. 241+00 (Lt. L.C.L.)	Remove 22'-12"X24" W.B.C.
8	Sta. 240+62 - Sta. 243+02 (So. Lane) Sta. 248+00 - Sta. 249+50 Sta. 255+81 - Sta. 258+21	Remove 2,150 Sq. Yds. Conc. Pavement
9	Sta. 239+75 - Sta. 245+00 (So. Lane)	Remove 525' Conc. Curb
10	Sta 240+62 - Sta. 247+63 (No. Lane)	Remove 736' Conc. Curb
11	Sta. 243+17 (Lt. L.C.L.)	Remove 24" Headwall
13A	Sta. 4+80 SW Slip Ramp	Remove 27'-18" C.M.P.
13	Sta. 243+17 (Rt. R.C.L.)	Remove 18" Headwall
14	Sta. 244+09 (Lt. R.C.L.)	Remove 60'-18" C.M.P.
15	Sta. 243+19 - Sta. 245+00	Remove 362' Conc. Curb
16A	Sta. 246+35 - Sta. 247+82	Remove 147'-18" C.M.P.
17	Sta. 247+85 (Rt. R.C.L.)	Remove 24" Headwall
18	Sta. 247+90 (Lt. L.C.L.)	Remove Drop Inlet
19	Sta. 247+95 (Lt. L.C.L.)	Remove Drop Inlet
20	Sta. 248+08 (E. M.L.)	Remove Drop Inlet
21	Sta. 247+95 (Rt. R.C.L.)	Remove Drop Inlet
22	Sta. 247+80 (Rt. R.C.L.)	Remove 95'-8" C.M.P.
23	Sta. 247+80 (Rt. P.C.L.)	Remove Drop Inlet
24	Sta. 248+11 - Sta. 249+18 (E. M.L.)	Remove 212' Conc. Island Curb
25	Sta. 6+39 - Sta. 8+00 (Rt. E. Curb)	Remove 232' Conc. Curb
26	Sta. 6+39 - Sta. 7+52 (Rt. E. Curb)	Remove 106 Sq. Yds. Conc. Drive
27	Sta. 6+75 (Lt. E. Garrison)	Remove 16' Conc. Curb
28	Sta. 6+00 (Lt. E. Garrison)	Remove 108' Conc. Curb
29	Sta. 249+00 - Sta. 258+20 (So. Lane)	Remove 1059' Conc. Curb
30	Sta. 249+60 (Lt. E. M.L.)	Remove 85'-24" C.M.P.
31	Sta. 249+60 (Lt. E. L.C.L.)	Remove 24" Headwall
32	Sta. 249+60 (E. M.L.)	Remove Drop Inlet
33	Deleted	
34	Sta. 249+30 - Sta. 258+30 (Lt. L.C.L.)	Remove 905' Conc. Curb
35	Sta. 5+85 (Lt. E. Garrison)	Remove 54' Conc. Curb
36	Sta. 250+44 (S.E. - Front Rd.)	Remove 75' Conc. Curb
38	Sta. 252+35 (S.E. - Front Rd.)	Remove 75' Conc. Curb
40	Sta. 253+50 (E. M.L.)	Remove 174'-24" Conc. Siphon
41	Sta. 254+34 (S.E. - Front Rd.)	Remove 75' Conc. Curb
43	Sta. 256+00 (Rt. R.C.L.)	Remove 24" Headwall
44	Sta. 256+00 (Rt. R.C.L.)	Remove Drop Inlet
45	Sta. 256+00 (Lt. L.C.L.)	Remove Drop Inlet
46	Sta. 256+00 (Lt. L.C.L.)	Remove 24" Headwall

NOTE NO.	LOCATION	DESCRIPTION
47	Sta. 256+75 (S.E. - Front Rd.)	Remove 64'-18" C.M.P.
49	Sta. 276+15 (Lt. E. M.L.)	Remove 23'-14" C.M.P.
50	Sta. 279+10 (Lt. E. M.L.)	Remove 12'-12"X6" W.B.C.
51	Sta. 279+80 (Lt. E. M.L.)	Remove 16'-12"X6" W.B.C.
52	Sta. 277+80 - Sta. 286+08 (Lt. E. M.L.)	Remove 828' Conc. Curb
53	Sta. 277+10 - Sta. 284+05 (Rt. E. M.L.)	Remove 695' Conc. Curb
54	Sta. 280+90 (Rt. E. M.L.)	Remove Drop Inlet
55	Deleted	
56	Sta. 280+90 (Rt. E. M.L.)	Remove 24" Headwall
57	Sta. 280+90 (Lt. E. M.L.)	Remove Drop Inlet
58	Deleted	
59	Sta. 280+90 (Lt. E. M.L.)	Remove 24" Headwall
60	Sta. 281+95 (Lt. E. M.L.)	Remove 16'-12"X6" W.B.C.
61	Sta. 283+13 (Lt. E. M.L.)	Remove 35'-12"X6" W.B.C.
	Entire Project	Remove 10 Timber Barricades

LIST OF STRUCTURES

FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	F 012-218	10	

LOCATION	DESCRIPTION	NOTE NUMBER	EXCAVATION		UNCLASSIFIED DITCH	UNCL. STRUCT EXCAVATION	STRUCTURE SCOOP/CL	RELAY CORRUGATED METAL CULVERT PIPE		CORRUGATED METAL CULVERT PIPE		CONCRETE CLASS 'A'	RELAY REINFORCED CONCRETE PIPE SEWER (CLASS 'B')		FLARED END SECTIONS FOR REINFORCED CONCRETE PIPE CULVERT		REMARKS	
			UNCL. EXCAVATION	MISCELLANEOUS	CLASS I	LINEAR FEET		LINEAR FEET		LINEAR FEET			EACH					
			CU. YD.	CUBIC YARDS	CUBIC YARDS	12"	18"	12"	18"	24"	15"	24"						
Sta. 236+37	Relay 19'-12" C.M.P. (Lt. L.C.L.)	2						19										
Sta. 243+17	Relay 11'-24" R.C.P. Storm Sewer (Rt. R.C.L.)	12											11					
Sta. 248+10	Relay 44'-24" R.C.P. Storm Sewer (Rt. & Lt. L.)	16											441					
Sta. 250+44	Relay 50'-12" C.M.P. Storm Sewer (Lt. S.E. Fr. Rd.)	37						50										
Sta. 252+35	Relay 50'-12" C.M.P. Storm Sewer (Lt. S.E. Fr. Rd.)	39						50										
Sta. 254+34	Relay 54'-12" C.M.P. Storm Sewer (Lt. S.E. Fr. Rd.)	42						54										
Sta. 256+00	Relay 32'-24" R.C.P. Storm Sewer (Rt. R.C.L.)	44A											32					
Sta. 256+00	Relay 32'-24" R.C.P. Storm Sewer (Lt. L.C.L.)	45A											32					
Sta. 9+05	Relay 46'-18" C.M.P. (1/2" Lt. N.E. Fr. Rd. Control Line)	47A						46										
Sta. 275+00	Relay 48'-12" C.M.P. (Control Line N. Fr. Rd.)	48						48										
Sta. 274+76 - Sta. 278+94	Required 418' - 12" C.M.P. (8' Lt. N. Fr. Rd.)	49A				56.1	53.1			418								
Sta. 277+01	Required 1 Concrete Diversion Box (8' Lt. N. Fr. Rd.)	50A				1.0	0.7				0.22							
Sta. 280+90	Relay 4'-24" R.C.P. (Rt. L. Main Line)	55											4					
Sta. 280+90	Relay 4'-24" R.C.P. (Lt. L. Main Line)	58											4					
Sta. 284+80	Reset 24" R.C.P. Flared End Section at 280+ (C)	62				* 2												
Sta. 246+	Remove Detour		50															
Sta. 249+ - Sta. 255+ From Sheet No. 13	Required 672 Lin. Ft. of Sprinkler System (Rt. L. Main Line) & 370 Lin. Ft. of 3" Cast Iron Water Pipe.															3	7	
TOTAL			50		2	57.1	53.8	221	46	418	0.22		524			3	7	
								* Less Relaying Total	221	197								

* Two (2) Cu. Yds. was estimated for regrading irrigation ditch. Also two (2) Cu. Yds. of Riprap (Item 67) was estimated for check-dams of same irrigation ditch. For location see sheet No. 49

NOTE: Above pipe quantities are approximate. All pipe, considered by the Engineer to be suitable for re-use, shall be relayed as shown on plans; and is included in Item 51, "Relaying Pipe" of the various sizes shown.

TABULATION OF SURFACING

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FD12 - 2181	11	11

LOCATION	STATION	STATION	LENGTH	SUB-BASE MATERIAL (CLASS I)		BASE COURSE GRAVEL SURF (Grading C)		6" CONCRETE PAVEMENT		3" PLANT MIXED ASPHALTIC SURF.		2" PLANT MIXED ASPHALTIC SURF.		2" PLANT MIXED ASPHALTIC SURF. (SHLDR)		1" PLANT MIXED ASPHALTIC SURF.		PRIME COAT M.C.		TACK COAT R.C.		ASPHALTIC SHOULDER ROLL		10" CONC. PAVEMENT	REINF. STEEL	REMARKS	
				CU. FT.	TONS	CU. FT.	TONS	SQ. FT.	SQ. YDS.	SQ. YDS.	TONS	SQ. YDS.	TONS	SQ. YDS.	TONS	SQ. YDS.	TONS	SQ. YDS.	GALS.	SQ. YDS.	GALS.	LENGTH	TONS	SQ. YDS.	LBS.		
6th AVE. @ GARRISON WESTBOUND	240 + 61.55	247 + 77.52	715.57			21,727	1,575	17,174	1,909					1,308	144			1,799	719			478	8.1	67	3,104		
WESTBOUND	247 + 77.52	247 + 97.52	20.00																								
BRIDGE (STR. NO. F-16-EQ)	247 + 97.52	249 + 29.18	131.66																								
WESTBOUND	249 + 29.18	249 + 49.18	20.00																								
WESTBOUND	249 + 49.18	258 + 33.24	884.05			26,716	1,937	21,219	2,358					1,609	177			2,212	885			669	11.3	67	3,104		
WESTBOUND TOTALS							3,512		4,267					321				1,604					19.4	139	6,208		
6th AVE. @ GARRISON EASTBOUND	240 + 61.95	247 + 77.52	715.57			18,045	1,308	17,174	1,909					924	101			1,299	519					67	3,104		
EASTBOUND	247 + 77.52	247 + 97.52	20.00																								
BRIDGE (STR. NO. F-16-ER)	247 + 97.52	249 + 29.18	131.66																								
EASTBOUND	249 + 29.18	249 + 49.18	20.00																								
EASTBOUND	249 + 49.18	258 + 20.52	891.34			26,182	1,998	21,393	2,377					1,586	175			1,954	782					67	3,104		
EASTBOUND TOTALS							3,206		4,286					276				1,301						134	6,208		
MAINLINE TOTALS							6,718		8,553					597				2,905					19.4				
N.E. FRONTAGE ROAD	0 + 24.00	10 + 40.00	1,016.00	29,739	2,156	13,627	988			2,411	265					17	1	2,545	1,018								
S.E. FRONTAGE ROAD	248 + 87.00	260 + 12.00	1,125.00	43,564	3,158	18,471	1,339			3,957	435					50	3	3,980	1,592								
N.W. FRONTAGE ROAD	235 + 00.00	248 + 42.00	1,342.00	42,623	3,090	19,235	1,394			4,038	444					86	5	4,284	1,714			954	16.2				
S.W. FRONTAGE ROAD	0 + 00.00	2 + 87.00	287.00	22,599	1,638	10,419	756			1,775	195					94	5	1,920	768								
FRONTAGE ROAD TOTALS						10,042	4,477				1,339					14		5,092					16.2				
N.W.-1 RAMP	0 + 00.00	3 + 51.02	351.02	6,487	469	2,293	166			509	84							43	2	556	222	207	21				
S.W.-1 RAMP	0 + 00.00	7 + 74.35	774.35	36,619	2,669	17,098	1,240			2,232	368			1,462	161			3,919	1,568	1,462	146						
RAMP TOTALS						3,138	1,406				452				161			1,790		167							
GARRISON ST	1 + 85.00	8 + 06.00	621.00	28,657	2,078	13,380	970			2,803	308					111	6	2,950	1,180								
6th AVE @ GARRISON TOTALS						15,258	1,357		8,553		452		1,647		758		22	10,967		167			35.6				
6th AVE @ CARR ST. NO. FRONTAGE ROAD	272 + 35.34	285 + 25.12	1,289.78	32,288	2,341	16,796	1,218			3,141	345							3,250	1,300			265	4.8				
SO. FRONTAGE ROAD	272 + 99.36	284 + 70.51	1,171.15	28,411	2,059	14,840	1,076			2,608	287							2,736	1,094								
FRONTAGE ROAD TOTALS						4,400	2,294				632							2,394					4.8				
N.E.-1 RAMP	0 + 00.00	3 + 15.00	315.00	3,885	282	1,802	131			1,515	166							412	165	1,103	110						
S.E.-1 RAMP	0 + 00.00	3 + 02.35	302.35	2,801	203	1,108	80			1,109	122							247	99	862	86						
RAMP TOTALS						485	211				288							264		196							
6th AVE @ CARR TOTALS						4,885	2,505				920							2,658		196			4.6				
ESTIMATE FOR DETOURS											390							1,400									
PROJECT TOTALS						20,143	17,546		8,553		452		2,957		758		22	15,025		363			402	268	12,416		

Surfacing quantities where new roadway meets existing pavements were computed on the basis of using oil suitable existing roadway surfacing feathering to be done by placing new oil not on existing pavement, not exceeding 2 inches in thickness.
 Sub-base material estimated at 12" thickness under asphalt, Sub-base and Gravel quantities estimated at 145 lbs. per cu. ft. Quantities for street intersections included in tabulation.

TABULATION OF CURBS AND GUTTERS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLD.	F 012-E(B)	12	

LOCATION	STA.	STA.	TYPE I CURB & GUTTER		TYPE I CURB RETURN		TYPE II CURB & GUTTER		TYPE II CURB RETURN		TYPE II CONCRETE CURB (Barrier)		4' CONCRETE GUTTER (Valley)		REMARKS
			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.		
North West Ramp	235+00	239+50	191	16	280	9	100								
North West Frontage Road	235+00	248+40	1054		134	20	100								
South West Frontage Road - Garrison St.	246+17	248+40	480	18	313	20									
North East Frontage Road	248+90	259+00	1025		25	20									
South East Frontage Road	248+90	260+00	1110		776	204							90		
Garrison St.	2+65	5+60			340	32									
North Ramp - Carr St.	277+18	281+95	60	16	266						150				
South Ramp - Carr St.	276+25	284+05	185		695	5									
South Frontage Road - Carr St.	278+12	279+17	105			16									
SUB-TOTALS			4210	50	2808	330	350						90		
CURB RETURN TOTALS			50		330										
PROJECT TOTALS			4260		3138		350						90		

STORM SEWERS

INLET OR MANHOLE				STORM SEWER PIPE										REMARKS
NO	LOCATION	TYPE	H	ELEVATION		PIPE SIZE	LENGTH	FLOW LINE ELEVATIONS		FITTINGS	LINE FROM TO	% GRADE		
				RIM	INVERT			IN	OUT				FLARE END	
237B	237+00 57' Lt. L.C.L.	B	3.80	19.71	15.91	15" 18"	24'	15.91	15.91	1-15"	* Ditch	1.16	* Existing 18" CMP	
239B	239+45 57' Lt. L.C.L.	B	3.27	13.03	09.76	24"	15'	09.76	15.91	237B	239B	2.51		
241B	241+00 57' Lt. L.C.L.	B	2.63	08.50	05.87	15"	13'	05.87	09.76	239B	241B	2.51	(Near drain back area)	
243D	243+19 6' Lt. N.W. Fr. Rd. Cont. Line	B	4.87	05.25	00.38	21"	12'	00.48	05.87	243B	243B	2.07		
A	4+38 S.W. Ramp (X-Drain)	R.C.P.	-	-	04.90	52"	52'	00.48	00.48	237B	4A	1.99	X-Drain	
4A	4+00 24' Rt. E. Garrison St.	3	5.00	95.02	90.02	18"	88'	90.02	90.02	2-24"	243D	1.23		
MH-6	5+94 24' Rt. E. Garrison St.	MH-1A	5.00	97.98	92.98	18"	96'	92.98	92.98	1-24"	Ditch	0.87	* 24" R.C.P. Flared End	
6A	2+75 25' Rt. E. S.W. Front. Rd.	3	3.50	98.01	94.51	62"	62'	94.51	94.51	1-24"	6C	1.51	* Open Ditch	
6C	1+75 32' Rt. E. S.W. Front. Rd.	B	2.90	99.25	96.75	94"	94'	96.75	96.75	* 6A	* 6A	2.38	X-Drain	
B	7+68 S.W. Ramp	R.C.P.	-	-	99.20	50"	50'	99.20	98.40	2-15"		1.80		
255A	255+05 6' Rt. S.E. Fr. Rd. Cont. Line	○ A	4.97	92.97	88.00	36"	36'	88.00	88.00	1-24"	* 256A	0.83	○ Double Box Type A Drop Inlet * 24" R.C.P. Flared End (Inv. 88.00)	
256B	256+00 6' Rt. R.C.L.	B	5.40	95.70	90.30	46"	46'	90.30	90.30	1-24"	256A	1.00	* 24" R.C.P. Flared End (Inv. 88.10)	
256C	256+00 10' Lt. L.C.L.	B	6.56	95.70	89.14	66"	66'	89.14	89.14	1-24"	256A	1.33		
276B	276+00 4' Lt. No. Fr. Rd. Cont. Line	B	3.00	61.62	58.62	196"	196'	58.62	58.62	276B	276B	2.00		
278B	278+00 4' Lt. No. Fr. Rd. Cont. Line	B	2.50	57.50	54.70	290"	290'	54.70	54.70	278B	281D	1.92		
281A	280+90 62' Rt. E. Main Line	3	3.00	53.18	50.18	16"	16'	49.56	49.56	1-24"	* 281D	2.23	* Exist. 24" R.C.P.	
281B	280+90 15' Rt. So. Fr. Rd. Cont. Line	R.C.P.	-	-	49.66	49.68	49.68	49.68	49.68	* 281D	281B	2.23	Exist. R.C.P. Extended	
281B	280+90 92' Lt. E. Main Line	3	3.00	52.68	49.68	396"	396'	49.14	49.14	* 281D	278B	1.44	* Exist. 24" R.C.P. Pipe Out	
281D	280+90 4' Lt. No. Fr. Rd. Cont. Line	B	3.12	52.26	49.14	719	719'	49.14	49.14	3-15" 7-24"		1.44	* Exist. 24" R.C.P. (Inv. 43.60)	
TOTALS														

MANHOLE & INLET ADJUSTMENTS

NO.	LOCATION	ITEM	QUANTITY	EXISTING ELEVATION	NEW ELEVATION	RAISE F.T.	LOWER F.T.	CAP MANHOLE	REMARKS
243B	243+19 7' Lt. L.C.L.	Inlet	1	06.60	09.86	3.36			
243C	243+19 6' Rt. R.C.L.	Inlet	1	-	-	-			* Exist. Drop Inlet to be capped
256A	256+00 E. Main Line	Inlet	1	93.10	93.60	0.50			
256+73	7' Lt. S.E. Fr. Rd. Cont. Line	Manhole	1	90.68	91.22	0.54			
274+89	10' Rt. So. Fr. Rd. Cont. Line	Manhole	1	62.40	62.50	0.10			
275+87	20' Rt. No. Fr. Rd. Cont. Line	Manhole	1	61.93	62.35	0.42			
283+10	15' Rt. No. Fr. Rd. Cont. Line	Manhole	1	48.47	48.57	0.10			
264+48	16' Rt. No. Fr. Rd. Cont. Line	Manhole	1	46.65	46.32		0.33		
TOTALS		Inlet Manholes	4						

STORM SEWER PIPE

TOTAL	15"	18"	24"
LESS RELAYING	715'	1612'	1034'
NEW PIPE REQD.	715'	1612'	510'

▲ See List of Structures

Manhole Type 1A

5' Ht. - 1

Drop Inlets Type 3

3' - 2

6' - 1

5' - 1

* Drop Inlet Type B

3' - 6

4' - 1

5' - 2

7' - 1

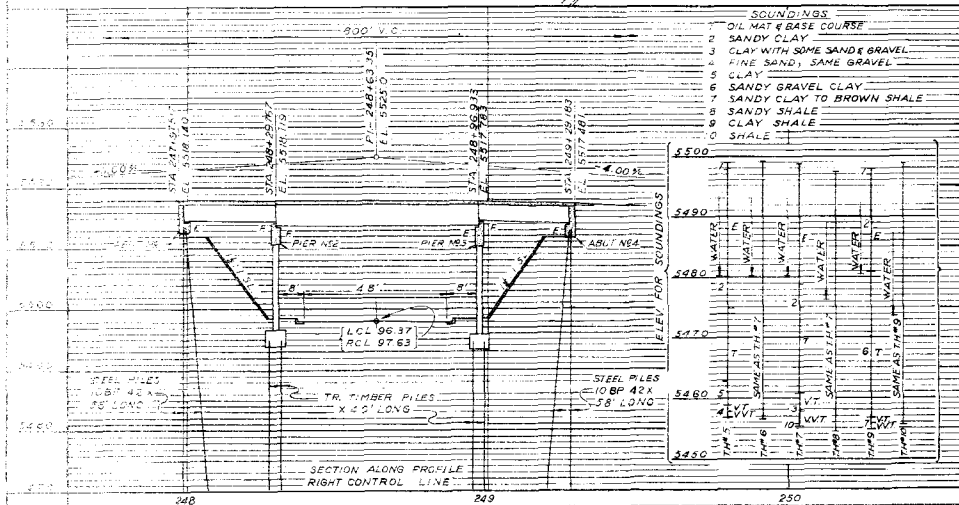
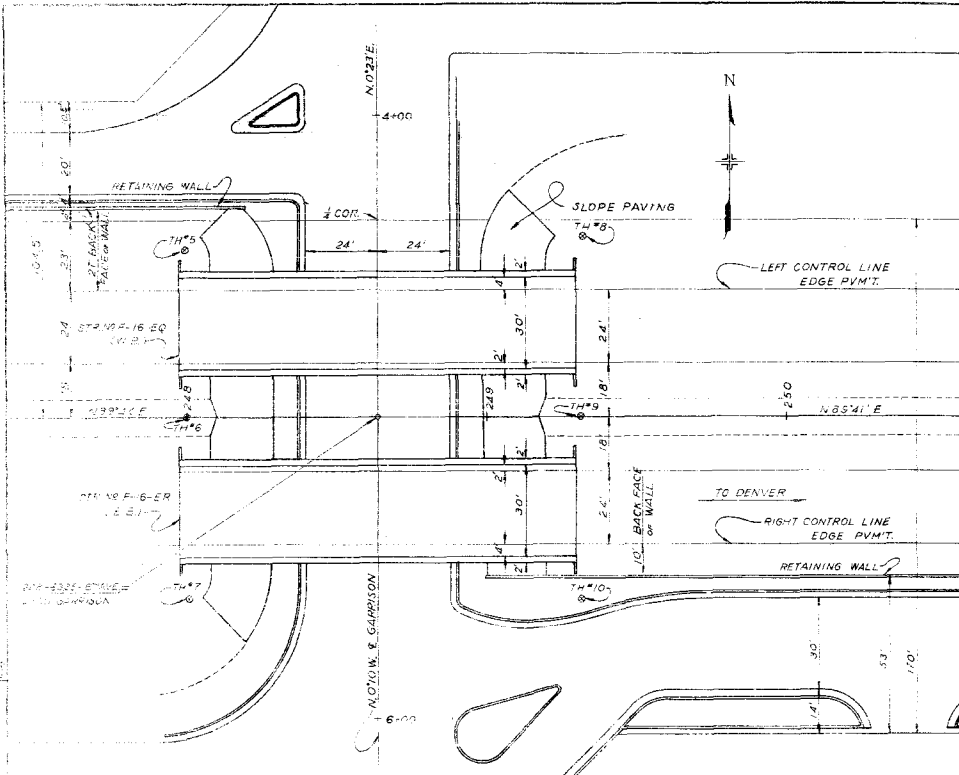
* Drop Inlet Type A

5' - 2

* Type A & Type B Concrete Inlets to be paid for on EACH basis. See Standard M-46-B for Details.

CO.	ROAD DIST.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9		COLO.	FO12-218)	13	

FED. ROAD REE. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F012-2(B)	14	



ITEM	DESCRIPTION	UNIT	SUPERSTRUCT								TOTALS	TOTALS		
			E-16-EQ	E-16-ER	ABUT 1	PIER 2	PIER 3	ABUT 4	E-16-EQ	E-16-ER				
1 4	UNCLASS. STRUCT. EXCAV-BRIDGE	CU. YD.			4	4	23	23	24	25	4	3	55	55
1 6	STRUCTURE BACKFILL (CLASS 1)	CU. YD.					14	14	16	16			30	30
4 6	CLASS 'A' CONCRETE	CU. YD.	1260	1260	117	117	218	218	218	218	117	117	193	193
4 7	REINFORCING STEEL (INCL. 1/2 FOR OVERRUN)	LBS	27,220	27,220	1,265	1,265	5,300	5,160	5,300	5,160	1,265	1,265	40,350	40,070
4 8	STRUCTURAL STEEL (INCL. 1/2 FOR PAINT)	LBS	73,300	73,300	345	345	795	795	785	785	345	345	7,570	7,570
4 8	STRUCTURAL STEEL (HANDRAIL & POSTS)	LBS	9570	9570	520	520					520	520	10,610	10,610
6 0	TREATED TIMBER PILING	LIN. FT.					480	480	480	480			960	960
6 1	STEEL PILING (10" BP @ 42")	LIN. FT.			232	232					232	232	464	464
6 5	CONC. SLOPE & DITCH PAVING (W/WIRE MESH)	CU. YD.			28	27					27	23	55	50
8 0	SHEET COPPER (32 OZ.)	LBS	15	15									15	15
9 0	1/2" ELECTRIC CONDUIT WITH JUNCT. BOXES	LIN. FT.	170	170									170	170
①	16 GA. GALV. SHEET METAL	SQ. FT.	115	115									115	115
②	1/2" EXP'N JOINT MAT'L (TYPE III)	SQ. FT.			5	5	35	35			5	5	45	45
③	1/2" EXP'N JOINT MAT'L (TYPE I)	SQ. FT.			35	35			35	35	35	35	105	105

NOTE: ① TO BE INCLUDED IN THE BID PRICE FOR ITEM 46
 ② TO BE IN ACCORDANCE WITH AASHTO SPEC M 153-54 AND INCLUDED IN THE BID PRICE FOR ITEM 46
 ③ TO BE GALV. IN ACCORDANCE WITH SPECIAL PROVISIONS

SOUNDING LEGEND
 E = EASY
 T = TIGHT
 VT = VERY TIGHT
 VVT = VERY VERY TIGHT

GENERAL NOTES
 ALL WORK SHALL BE DONE ACCORDING TO THE STANDARD SPECIFICATIONS OF THE COLORADO DEPARTMENT OF HIGHWAYS APPLICABLE TO THE PROJECT.
 ALL CONCRETE SHALL BE CLASS 'A'.
 ALL REINFORCING STEEL SHALL BE INTERMEDIATE GRADE STEEL OF A BIRMINGHAM TYPE. EACH BAR SHALL BE TAGGED WITH THE BAR IDENTIFICATION AND STATION NUMBER OF THE PROJECT.
 IF BY REMOVAL OF THE REINFORCING PRIMARY BARS ARE SHOWN, THEY SHALL LAY A MINIMUM OF 3" BE SPACED FOR BARS NEAR TOP OF BEAMS HAVING MORE THAN 12" THICKNESS OF CONCRETE UNDER THE BARS AND 1" SPACED FOR BARS NEAR BOTTOM OF MEMBERS. SECONDARY BARS WHEN ORDERED SHALL LAY 1" SPACED FOR THE BARS.
 DIMENSIONS FOR REINFORCING STEEL NOT SHOWN AS CLEAR SHALL BE TO THE CENTERLINE OF THE BARS.
 SOUNDINGS AND DEPTH OF FOOTINGS ARE IN ACCORDANCE WITH THE BEST AVAILABLE DATA AND WHEN DIFFERENT CONDITIONS ARE ENCOUNTERED THE BRIDGE ENGINEER WILL IMPROVE AND DETERMINE, IF NECESSARY, IS NECESSARY.
 FOOTINGS IN ROCK SHALL BE PILED OUT TO ROCK AND NOT REMOVED.
 WHEN DETERMINING FOR FOOTINGS THE FINAL ONE FOOT IN DEPTH SHALL BE DONE BY HAND-LAYER METHOD.
 FOR DETAILS OF STRUCTURAL LIGATION AND STRUCTURE BACKFILL SEE STANDARD M.S.A. ALL CONCRETE SURFACES EXPOSED TO THE WEATHER SHALL BE FINISHED TO A SMOOTH FINISH. ALL STRUCTURAL STEEL SHALL BE PAINTED WITH A 3" COAT OF ZINC CARBONATE AND TWO FIELD COATS OF ALUMINUM PAINT UNLESS OTHERWISE NOTED.
 HIGH TENSILE BOLTS MAY BE SUBSTITUTED FOR FIELD BOLTS AT THE CONTRACTOR'S OPTION. BOLTS SHALL BE PROVIDED IN THE AMOUNT OF FIVE PERCENT IN EXCESS OF THE NOMINAL NUMBER REQUIRED FOR EACH SIZE AND LENGTH.
 WELDING SHALL CONFORM TO THE LATEST EDITION OF THE A.S.T.M. STANDARD SPECIFICATIONS FOR WELDING HIGHWAY BRIDGES.
 FOR WELDED GUSSET ALL SHOP BOLTS, WELDS IN FLANGES AND WELDS SHALL BE MADE BEFORE WELDING INTO GUSSET.
 WHEN CALLED FOR IN THE SPECIAL PROVISIONS, SHOP WELDS SHALL BE INSPECTED RADIOGRAPHICALLY AND BY THE INTERMETAL DYE METHOD.
 WHEN TREATED TIMBER PILING IS SHOWN ON THE PLANS, THE PRESERVATIVE FOR TREATMENT SHALL BE CROSCOTE OIL.
 ALL STRUCTURAL STEEL, NOT OTHERWISE NOTED SHALL BE ASTM A-36-62T EXCEPT BRG PLATES (TUBULAR RAIL POSTS).

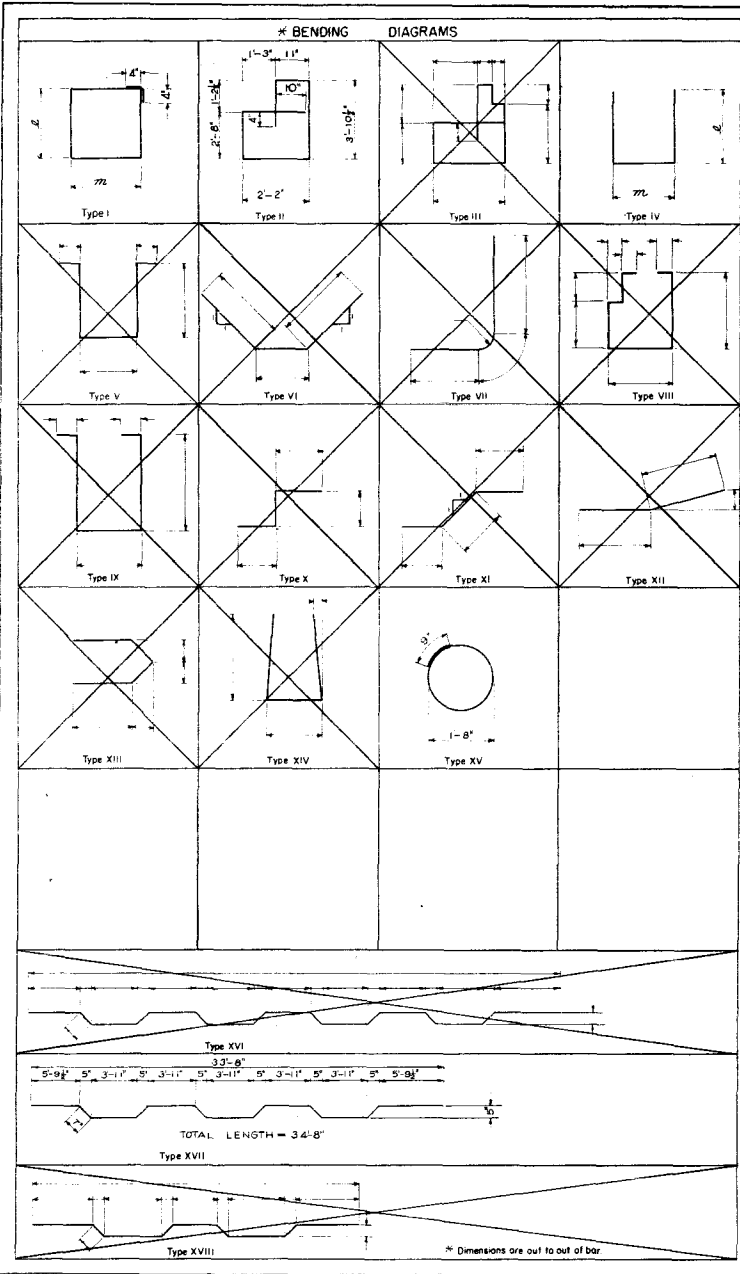
LOADING DATA
 LIVE LOAD: A. A. S. H. D. 1400-SIG (C&G)
 DEAD LOAD: 150 LBS PER SQ. FT. ADDITIONAL WEARING SURFACE WHICH INCLUDES THE 1/2" INCH CONCRETE MONOLITHIC WEARING SURFACE SHOWN.

DESIGNING DATA
 1. A. A. S. H. D. 1400 UNIT STRESSING
 2. 1200 LBS PER SQ. FT. (INCLUDING STEEL)
 3. 30' SPANS CONCRETE SLAB ON I-BEAM
 4. 10
 5. 2000 LBS PER SQ. FT. (STRUCTURAL STEEL) A-36
 6. 1000 LBS PER SQ. FT. (STEEL) A-36

COLORADO DEPARTMENT OF HIGHWAYS
 3-SPAN BRIDGE (30'-66'-30')
 30' SPANS CONCRETE SLAB ON I-BEAM
 66' SPAN CONCRETE SLAB WELDED GUSSET
 30' ROADWAY CURBS 30' SPANS
 GENERAL LAYOUT SUMMARY OF QUANTITIES & GENERAL NOTES
 Across GARRISON @ 6TH AVE.
 Sta. 247+82.17 TO 249+28.17
 Near DENVER - S. 1/2 TO 1/4 S. 66 S. 65 W.
 Designed by W. Z. Approved by [Signature]
 Made by A. J. T. Bridge Engineer
 Checked by [Signature] Date: Dec. 7, 1962

STRUCTURE NO. F-16-EQ (W. BOUND) F-16-ER (E. BOUND)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FO12-2CB	16	



BAR LIST SUPERSTRUCTURE

MARK	SIZE	NO. REQD.	LENGTH	TYPE	DIMENSIONS	
					#	π
A01	1/2"	262	4'-3"	IV	1'-4"	11-8"
A02	1/2"	92	5'-0"	I	1'-3"	0'-11"
S01	1/2"	312	33'-8"	STR		
S02	1/2"	156	34'-8"	XVII		
S03	1/2"	28	3'-11"	STR		
S04	1/2"	108	31'-7"	STR		
S05	1/2"	136	33'-0"	STR		

BAR SUMMARY

1595 LIN.FT. @ 0.666*/LIN.FT. = 1065
 24818 LIN.FT. @ 1.043*/LIN.FT. = 25885
 PLUS 1% FOR OVERRUN = 270
TOTAL = 27220 LB.

BAR LIST ABUT. NO. 1 ABUT. NO. 4 SIMILAR

MARK	SIZE	NO. REQD.	LENGTH	TYPE	DIMENSIONS	
					#	π
A06	1/2"	8	3'-7"	STR		
A07	1/2"	20	6'-0"	STR		
A08	1/2"	14	2'-3"	STR		
A09	1/2"	1	33'-8"	STR		
A10	1/2"	32	7'-0"	II	3'-2"	0'-8"
A11	1/2"	43	8'-6"	I	1'-7"	2'-4"
A12	1/2"	4	4'-10"	STR		
B01	1/2"	30	1'-6"	STR		
701	1/2"	2	41'-8"	STR		
702	1/2"	4	13'-8"	STR		

BAR SUMMARY

103 LIN.FT. @ 0.666*/LIN.FT. = 737
 45 LIN.FT. @ 1.043*/LIN.FT. = 688
 218 LIN.FT. @ 1.043*/LIN.FT. = 446
 PLUS 1% FOR OVERRUN = 14
TOTAL = 1265 LB.

BAR LIST PIER 20A3 STR. F-16-EQ STR. F-16-ER

MARK	SIZE	NO. REQD. ONE PIER	NO. REQD. ONE PIER	LENGTH	TYPE	DIMENSIONS	
						F-16-ER	F-16-EQ
A15	1/2"	51	51	13'-3"	II		
A16	1/2"	4	4	6'-2"	STR		
A17	1/2"	38	42	6'-0"	IX		
T05	1/2"	2	2	28'-2"	STR		
T06	1/2"	24	24	5'-6"	STR		
T07	1/2"	18	18	7'-6"	STR		
1101	1/2"	4	4	28'-2"	STR		
1102	1/2"	9	9	11'-0"			
1103	1/2"	1	1	19'-4"			
1104	1/2"	22	22	17'-0"			
1105	1/2"	2	2	18'-0"			
1106	1/2"	22	22	4'-9"	STR		

BAR SUMMARY EA. PIER STR. F-16-ER

614 LIN.FT. @ 0.666*/LIN.FT. = 670
 328 LIN.FT. @ 1.043*/LIN.FT. = 640
 700 LIN.FT. @ 1.043*/LIN.FT. = 707
 PLUS 1% FOR OVERRUN = 36
TOTAL = 5160 LB.

BAR SUMMARY EA. PIER STR. F-16-EQ

1040 LIN.FT. @ 0.666*/LIN.FT. = 695
 323 LIN.FT. @ 1.043*/LIN.FT. = 660
 702 LIN.FT. @ 1.043*/LIN.FT. = 3885
 PLUS 1% FOR OVERRUN = 36
TOTAL = 4300 LB.

NOTE: BAR LIST & SUMMARIES SHOWN FOR STR. F-16-EQ EXCEPT PIERS
 BAR LIST & SUMMARIES FOR STR. F-16-ER SIMILAR EXCEPT PIERS

COLORADO
 DEPARTMENT OF HIGHWAYS

BENDING DIAGRAMS & BAR LIST

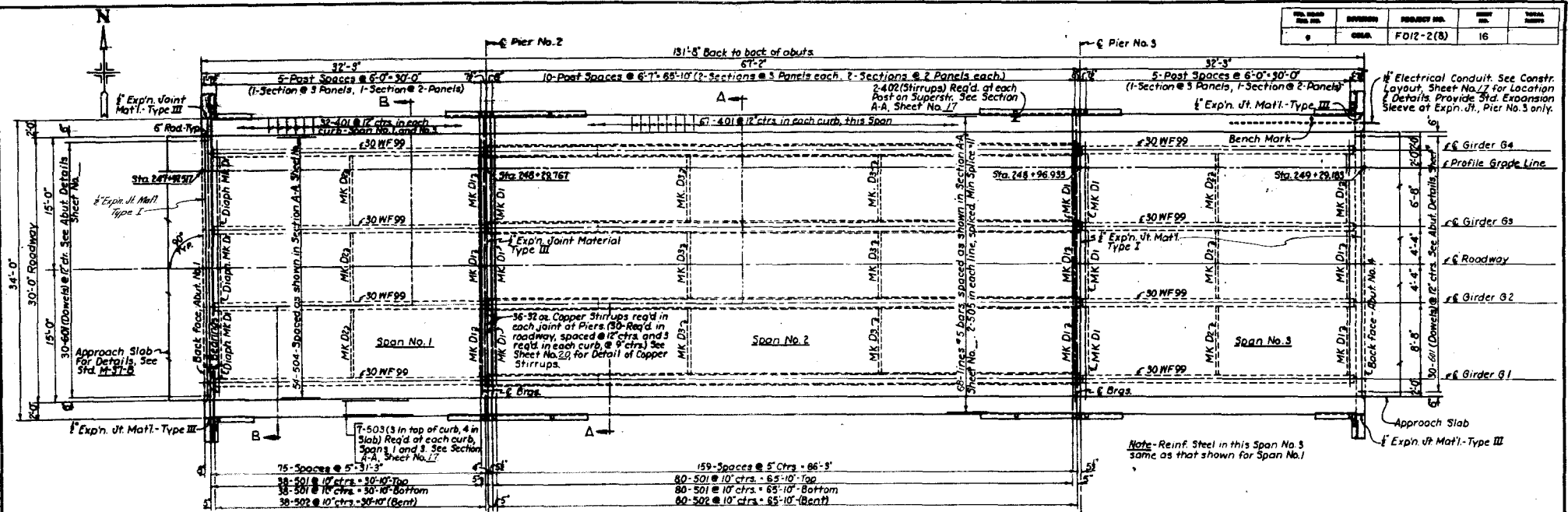
Across GARRISON ST @ 6TH AVENUE
 Sta. 247+91.2 TO 249+28.183
 Near DENVER - Sec. 2/10 T. 24 S. R. 60 W.

Designed by _____
 Made by J.B.
 Checked by _____

Approved by _____
 Bridge Engineer
 Date DEC. 7, 1962

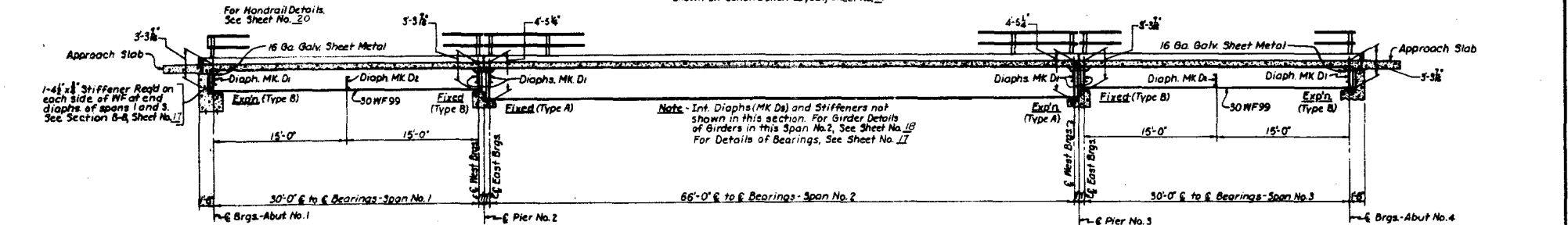
STRUCTURE NO. F-16-ER (East Bound)

NO.	DATE	REVISION	BY	DATE
1				

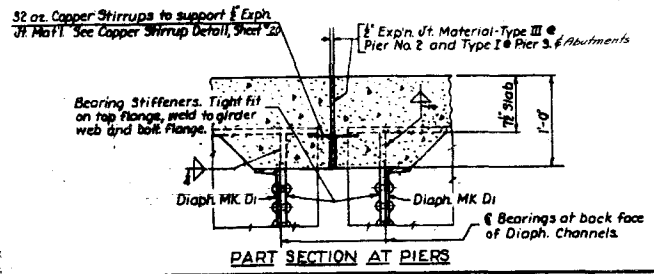


SUPERSTRUCTURE PLAN

Note - The above superstr. plan is shown for 377-16-EQ (West Bound). Superstr. plan for 377-16-ER (East Bound) same except as shown on Construction Layout, Sheet No. 17



SECTION ALONG ROADWAY

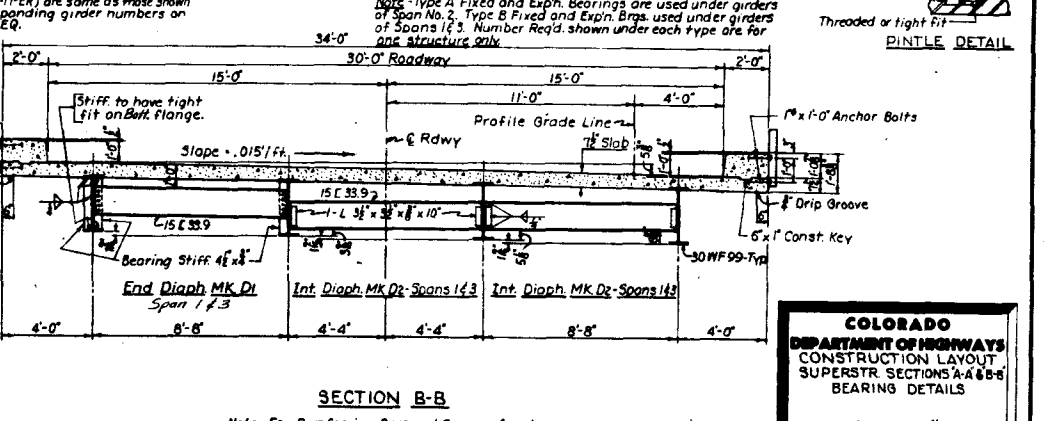
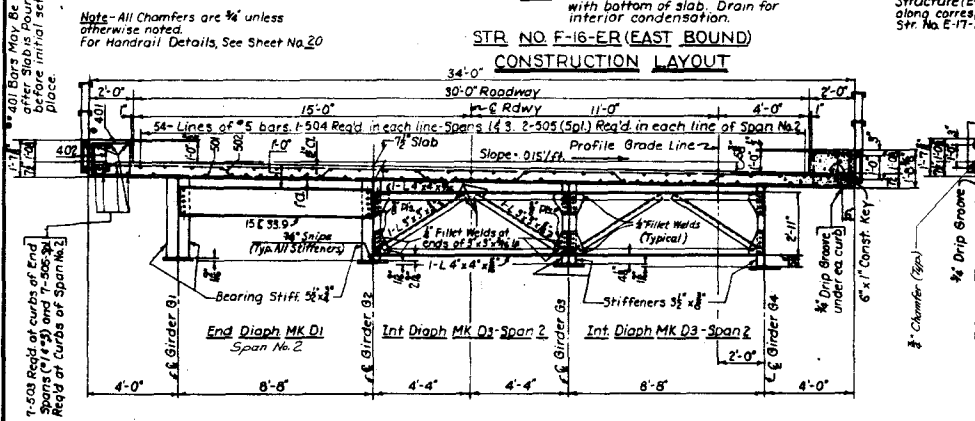
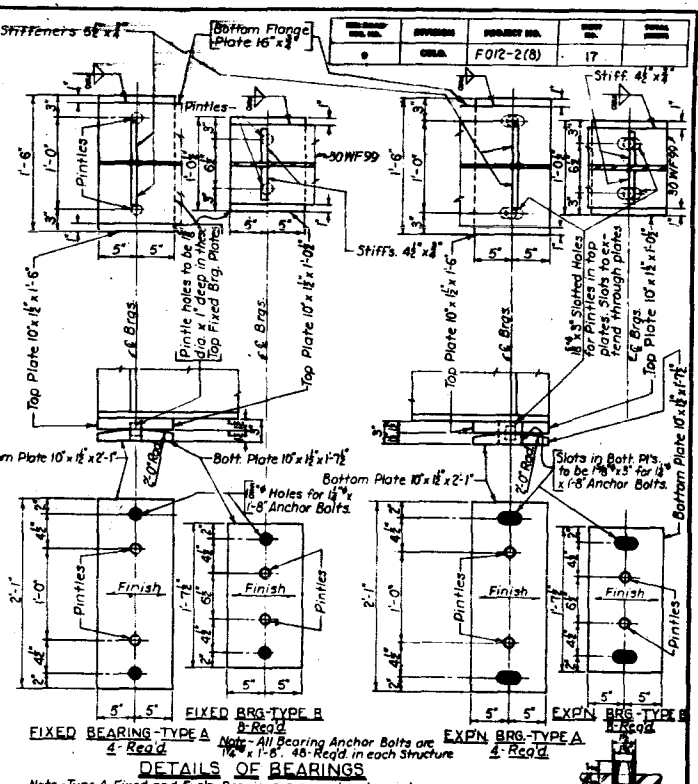
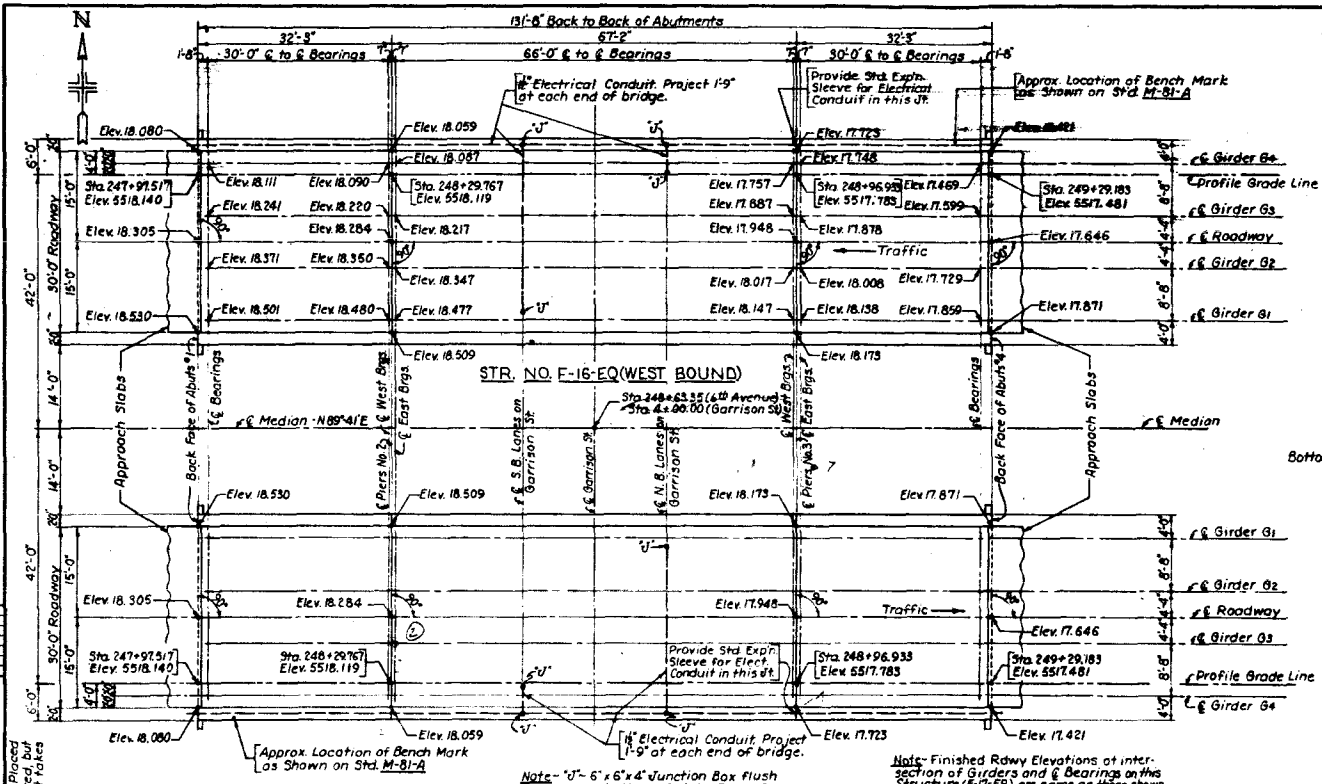


PART SECTION AT PIERS

COLORADO
DEPARTMENT OF HIGHWAYS
SUPERSTR. PLAN & SECTION

Address: Garrison St @ 6th Avenue
 Denver, CO 80202
 Made by: B. D. E.
 Checked by: [Signature]
 Date: Dec. 7, 1962

F-16-EQ (West Bound)
 STRUCTURE NO. F-16-ER (East Bound)



SECTION A-A

Note - All Chamfers are 1/4" unless otherwise noted.
For Handrail Details, See Sheet No. 20

Note - "J" - 6" x 6" x 4" Junction Box flush with bottom of slab. Drain for interior condensation.

Note - Finished Rdwy Elevations at intersection of Girders and G Bearings on this Structure (E-17-ER) are same as those shown along corresponding girder numbers on Str. No. E-17-EQ.

SECTION B-B

Note - For Reinforcing Bars and Spacing for above Section, refer to Section A-A, this sheet.

SECTION B-B

Note - Type A Fixed and Exph. Bearings are used under girders of Span No. 2. Type B Fixed and Exph. Brgs. used under girders of Spans 1 & 3. Number Reqd. shown under each type are for one structure only.

DETAILS OF BEARINGS

Note - All Bearing Anchor Bolts are 1/2" x 1'-6" 48-Reqd in each structure

Threaded or tight fit

PINLE DETAIL

COLORADO
DEPARTMENT OF HIGHWAYS
CONSTRUCTION LAYOUT
SUPERSTR. SECTIONS A-A & B-B
BEARING DETAILS

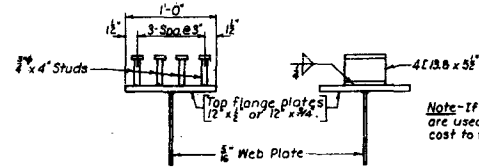
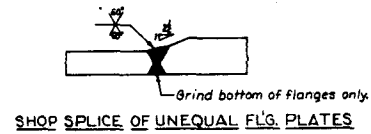
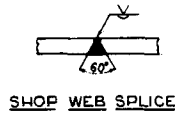
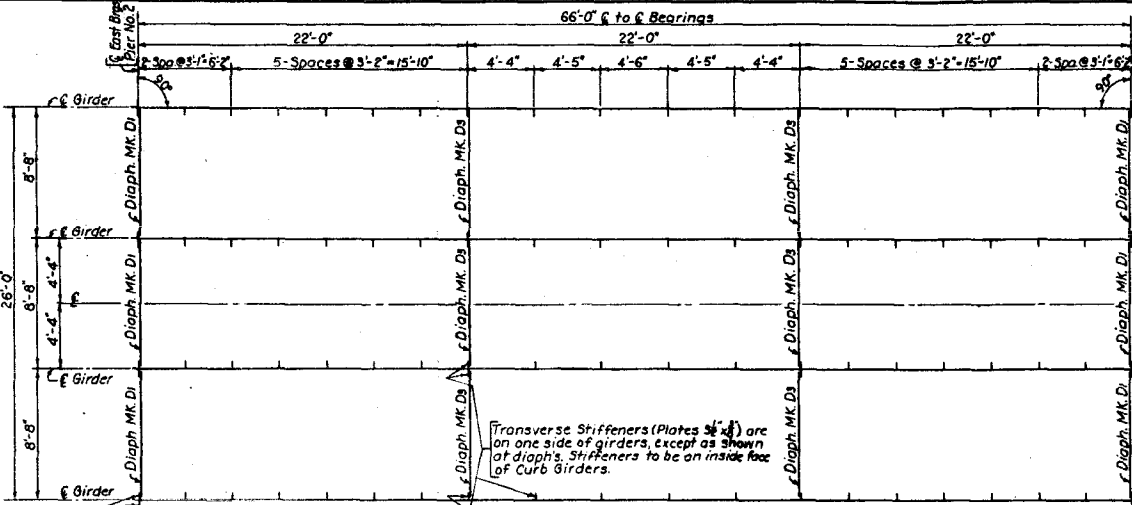
Approved by P. Z. [Signature]
Made by B.D.E. [Signature]
Checked by [Signature]

Approved by [Signature]
Checked by [Signature]

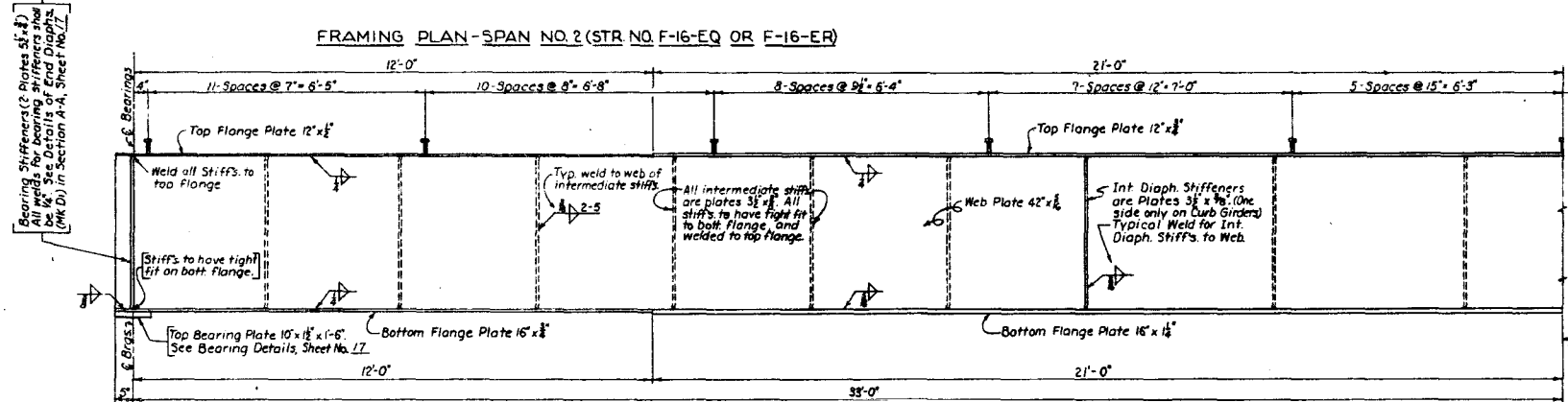
Date: Dec. 7, 1962

F-16-EQ (West Bound)
STRUCTURE NO. F-16-ER (East Bound)

REV. NO.	DESCRIPTION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
0	CONS.	FO12-2(8)	18	



DETAILS OF SHEAR CONNECTORS & SHOP WEB, FLANGE PLATE WELDS

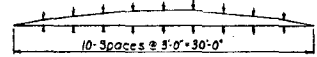


Shear Connector Spacing - Typ. See Shear Connector Details, on this sheet.

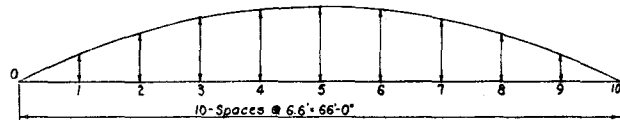
Note - See Framing Plan on this sheet for stiffener spacing.

Symm. about this $\frac{1}{2}$ of Span.

- 0 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 0 Dead Load Deflection
- 0 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 0 Vertical Curve Correction
- 0 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 1/8" 0 Slab Thickening



SLAB THICKENING DIAGRAM
Note: The above Slab Thickening Diagram is typical for Spans 1 and 3.



GIRDER CAMBER DIAGRAM
Note: Girder Camber Diagram above is typical for all girders in Span No. 2. Cut girder web to camber, as shown on bott. line of table below. Slab remains constant 1 1/2" thick.

	Point	1	2	3	4	5	6	7	8	9	10
Dead Load Deflection	%	3/8	7/8	1 1/8	1 1/4	1 1/2	1 3/4	1 7/8	1 7/8	1 3/4	3/8
Vertical Curve Correction	%	3/8	7/8	1 1/8	1 1/4	1 1/2	1 3/4	1 7/8	1 7/8	1 3/4	3/8
Girder Web Camber	%	7	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	7

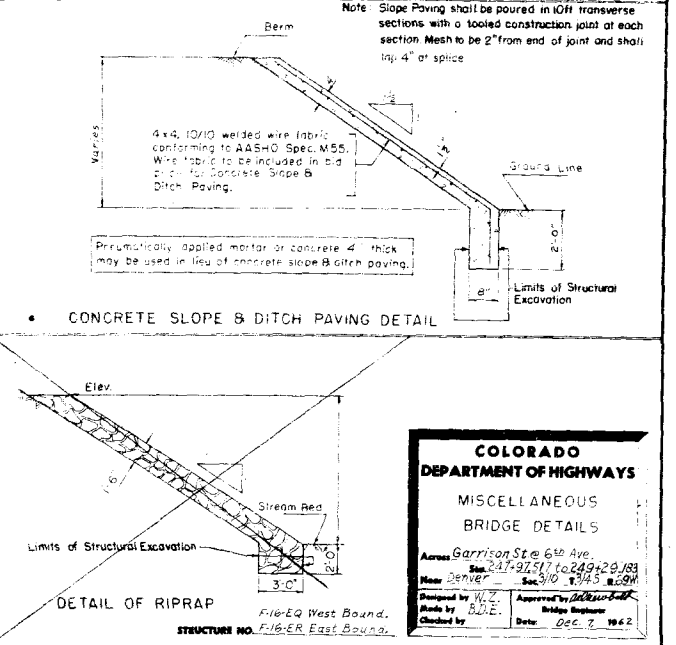
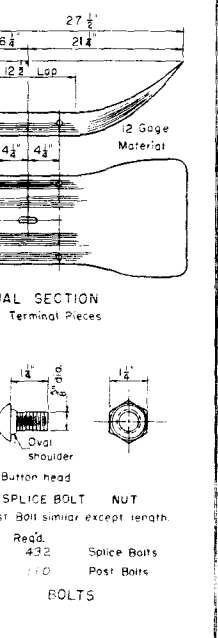
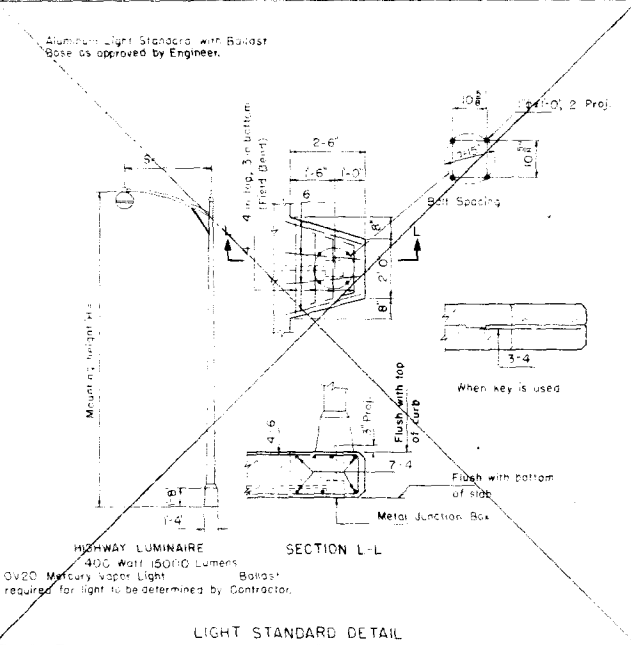
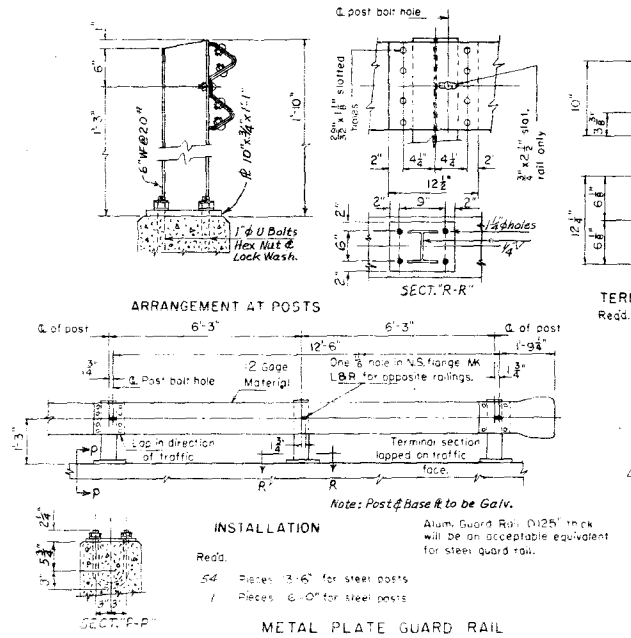
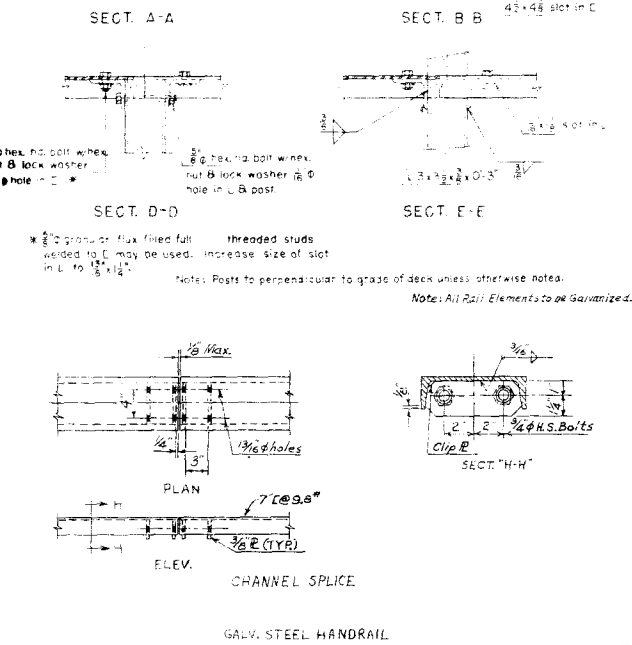
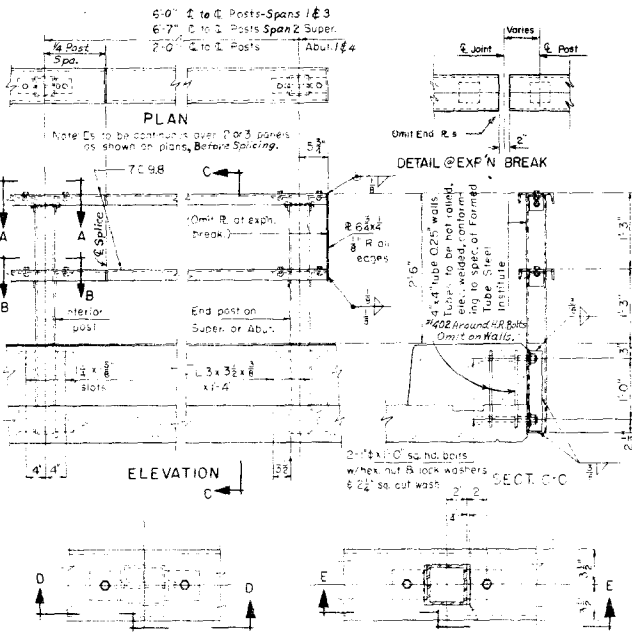
COLORADO
DEPARTMENT OF HIGHWAYS
GIRDER DETAILS - SPAN 2,
CAMBER & SLAB THICKENING
DIAGRAMS.

Approved by: *Garrison St. @ 6th Avenue*
Date: *12-7-15 to 24-15-15*
Checked by: *Denver* Date: *3/10/15/25/15*

Designed by: *B. E.* Approved by: *B. E.*
Checked by: *B. E.* Date: *Dec. 7, 1962*

REV. NO.	DESCRIPTION	DATE	BY	CHECKED
1	As Shown			

Rev. Rail Splice Detail (Delete Butt Welds) 2-14-63 D.S.M.



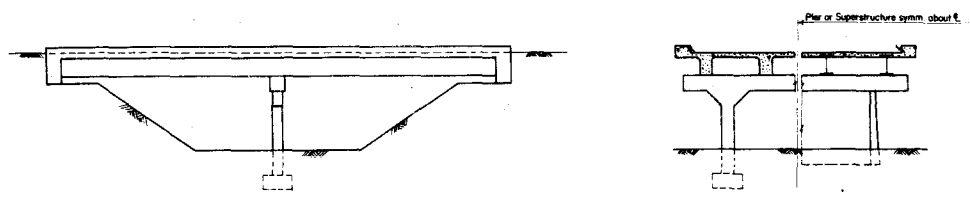
COLORADO DEPARTMENT OF HIGHWAYS

MISCELLANEOUS BRIDGE DETAILS

Approved by: *[Signature]*
 Date: Dec. 7, 1962

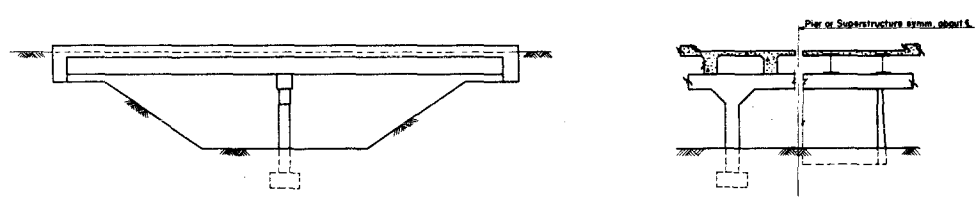
Designed by: W.J.Z.
 Made by: B.J.E.
 Checked by: *[Signature]*

FED. ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FOI2-2(B)	21	



PIER AND SUPERSTRUCTURE

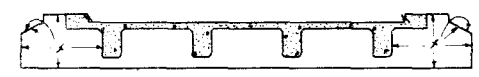
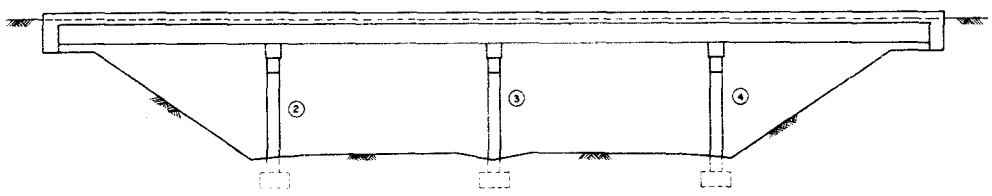
RURAL STREAM CROSSING



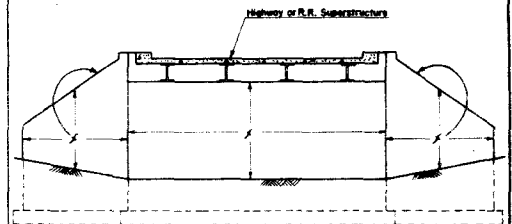
PIER AND SUPERSTRUCTURE

STREAM CROSSING IN OR NEAR URBAN AREA

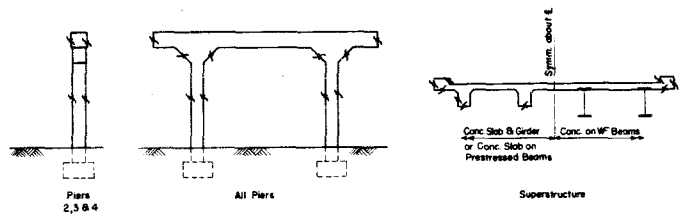
INITIAL	DATE



STUB ABUTMENTS
(Underpass Only)

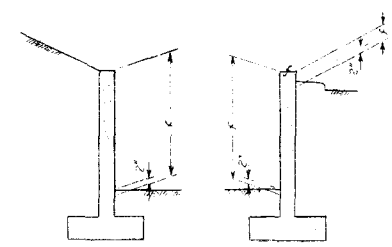


CANTILEVER ABUTMENTS
(Underpass Only)



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

UNDERPASS



RETAINING WALLS

COLORADO
DEPARTMENT OF HIGHWAYS

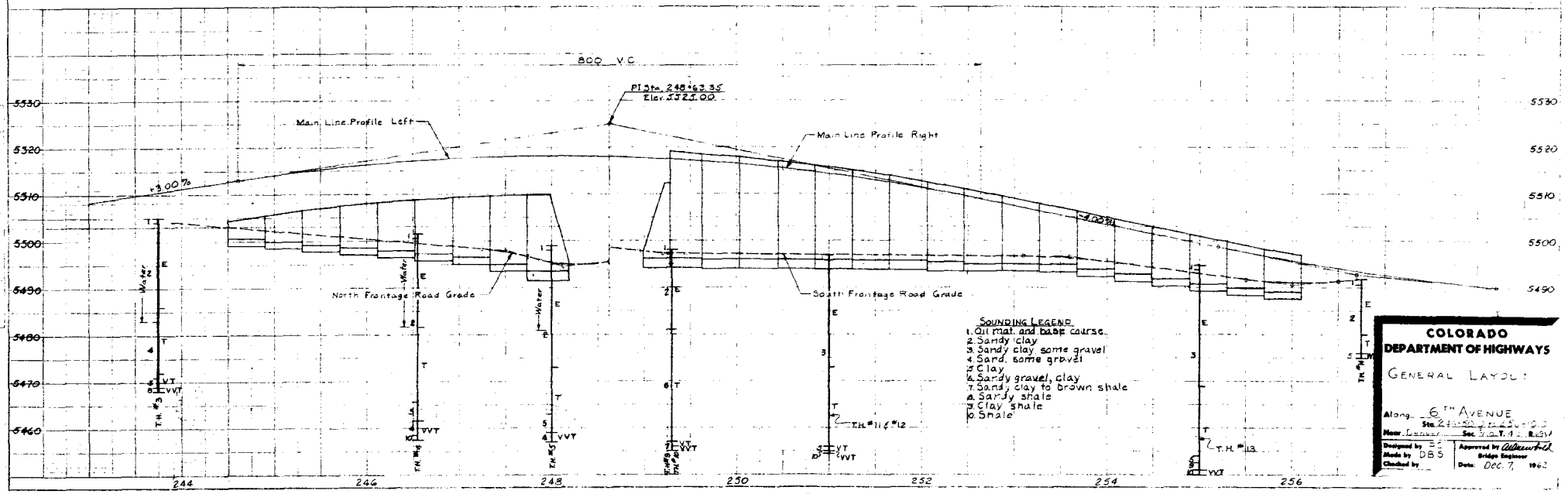
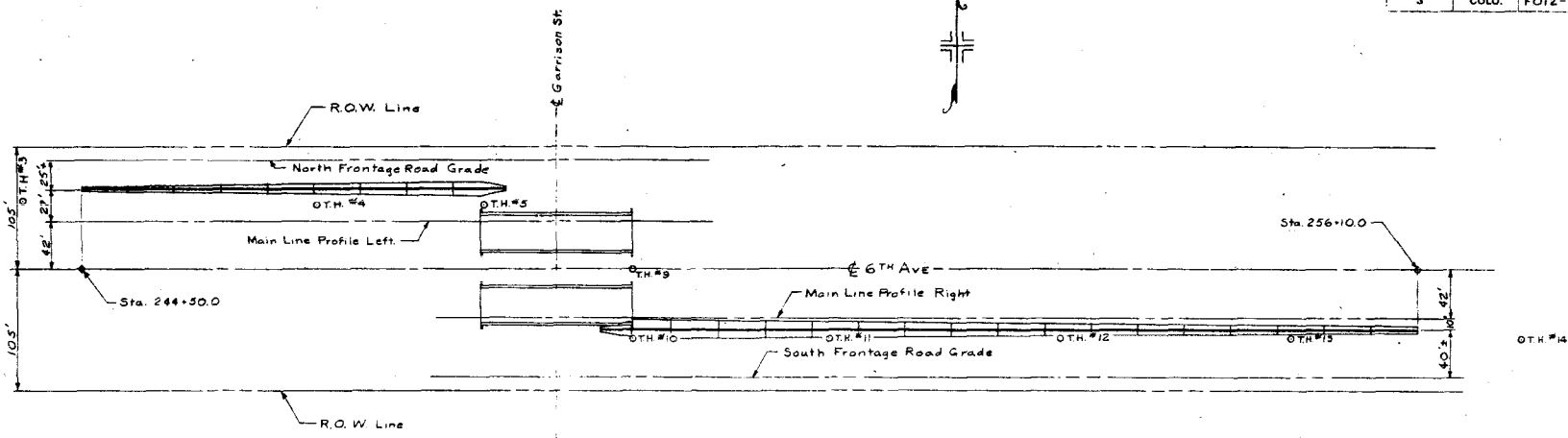
DETAILS SHOWING PORTIONS OF STRUCTURE TO RECEIVE CLASS "I" SURFACE FINISH.

Across *Garrison St*
Sta. *247+37.5 to 249+24.12*
Near *Center* — Sta. *310+36.5 to 650*

Designed by *D.N.* Approved by *[Signature]*
Made by *R.R.A.-J.R.* Bridge Engineer
Checked by *[Signature]* Date: *Dec. 7, 1962*

F-16-EO (W.B.)
STRUCTURE NO. F-16-ER (E.B.)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
3	COLO.	F012-2(8)	22	



COLORADO DEPARTMENT OF HIGHWAYS

GENERAL LAYOUT

Along **6TH AVENUE**
 Sta. 244+50.0 to 256+10.0
 Main, Levee Sec. 3 & T. 1 - R. 251

Designed by **DBS**
 Made by **DBS**
 Checked by

Approved by **Albert W. H.**
 Bridge Engineer
 Date **Dec. 7, 1962**

PER. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	C.B.O.	7012-200	23	

ITEM NO.	DESCRIPTION	UNIT	1-2	2-2	3-2	4-2	5-2	6-2	7-2	8-2	9-2	10-2	11-2	12-2	13-2	14-2	15-2	16-2	17-2	18-2	TOTALS	
1 4	URCASES, STRUCT. EXPOS. - MISC.	CU YD	20	23	22	23	23	28	29	29	28	29	28	28	28	27	28	27	28	27	28	288
1 5	STRUCTURE BECKET III (CLASS I)	CU YD	12	15	20	10	11	7	10	13	23	20	21	22	23	27	20	22	20	18		328
4 5	CLASS "A" CONCRETE	CU YD	200	250	315	225	220	255	220	225	200	225	200	220	220	210	220	220	220	220	220	260
4 7	REINFORCING STEEL (INCL 1% FOR OVER RUN)	L.B.	2010	2700	3270	2740	2650	2920	2720	2720	2420	2420	2470	2420	2420	2320	2420	2420	2420	2420	2420	28,310
7 5	STEEL WIRE MESH	SQ. FT.																				660
8	1/2" EPT. JOINT MAT (AASHTO M33-54 TYPE III)	SQ. FT.																				368

ITEM NO.	DESCRIPTION	UNIT	1-N	2-N	3-N	4-N	5-N	6-N	7-N	8-N	9-N	TOTALS
1 4	URCASES, STRUCT. EXPOS. - MISC.	CU YD	22	22	27	31	40	47	57	60	72	388
1 5	STRUCTURE BECKET III (CLASS I)	CU YD	12	15	15	17	23	26	30	42	38	320
4 5	CLASS "A" CONCRETE	CU YD	127	171	212	228	207	262	242	427	522	222
4 7	REINFORCING STEEL (INCL 1% FOR OVER RUN)	L.B.	210	282	3010	4222	4620	5772	5990	6022	7020	49,240
7 5	STEEL WIRE MESH	SQ. FT.										66

- ① TO BE BALD. IN ACCORDANCE WITH THE SPECIAL PROVISIONS.
- ② TO BE INCLUDED IN THE BID PRICE FOR ITEM 45.

COLORADO
DEPARTMENT OF HIGHWAYS

SUMMARY OF QUANTITIES
SOUTH RETAINING WALLS

DATE: 11/15/54
BY: T. A. BROWN
CHECKED BY: [Signature]
DATE: 11/15/54

FED. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
8	000	EQ18-268	25	1

BAR LIST - WALL 13 S.						
MARK	SIZE	N.O.	LENGTH	TYPE	DIMENSIONS	
					L	W
401	#	25	40'-0"	STR.		
480	#	41	7'-1"	STR.		
490	#	27	4'-6"	STR.		
532	#	41	4'-1"	STR.		
607	#	21	10'-4"	J	6'-3"	2'-6"
608	#	20	9'-1"	J	6'-3"	1'-3"

BAR LIST - WALL 14 S.						
MARK	SIZE	N.O.	LENGTH	TYPE	DIMENSIONS	
					L	W
401	#	24	40'-0"	STR.		
491	#	41	7'-1"	STR.		
492	#	41	3'-0"	STR.		
493	#	27	4'-4"	STR.		
808	#	21	9'-5"	J	5'-7"	2'-3"
810	#	20	8'-4"	J	5'-7"	1'-2"

BAR LIST - WALL 15 S.						
MARK	SIZE	N.O.	LENGTH	TYPE	DIMENSIONS	
					L	W
401	#	23	40'-0"	STR.		
494	#	41	7'-2"	STR.		
495	#	41	3'-0"	STR.		
496	#	27	4'-1"	STR.		
711	#	21	8'-6"	J	4'-1"	2'-0"
712	#	20	7'-6"	J	4'-1"	1'-0"

BAR LIST - WALL 16 S.						
MARK	SIZE	N.O.	LENGTH	TYPE	DIMENSIONS	
					L	W
401	#	21	40'-0"	STR.		
494	#	41	7'-2"	STR.		
497	#	27	3'-0"	STR.		
498	#	27	3'-10"	STR.		
713	#	21	7'-0"	J	4'-3"	1'-11"
714	#	20	6'-11"	J	4'-3"	1'-7"

BAR LIST - WALL 17 S.						
MARK	SIZE	N.O.	LENGTH	TYPE	DIMENSIONS	
					L	W
401	#	19	40'-0"	STR.		
499	#	27	3'-0"	STR.		
4100	#	27	3'-7"	STR.		
626	#	7	11'-0"	J	8'-7"	0'-10"
627	#	7	11'-11"	J	8'-8"	1'-8"
628	#	7	11'-7"	J	8'-7"	0'-11"
629	#	6	12'-7"	J	8'-2"	1'-10"
630	#	7	12'-3"	J	8'-8"	1'-0"
637	#	7	13'-2"	J	8'-7"	2'-0"

BAR LIST - WALL 18 S.						
MARK	SIZE	N.O.	LENGTH	TYPE	DIMENSIONS	
					L	W
401	#	19	40'-0"	STR.		
4101	#	27	2'-6"	STR.		
4102	#	27	3'-4"	STR.		
533	#	7	10'-11"	J	7'-11"	1'-5"
534	#	7	10'-4"	J	8'-0"	0'-9"
535	#	7	11'-8"	J	8'-5"	1'-6"
536	#	6	10'-11"	J	8'-6"	0'-10"
537	#	7	11'-5"	J	8'-11"	0'-11"
538	#	7	12'-0"	J	8'-10"	1'-7"

BAR SUMMARY - WALL 1 N.	
761 LIN. FT. #4 @ 0.668 %/LIN. FT. = 508	
PLUS 1% FOR OVERRUN = 12	
TOTAL = 510 LBS	

BAR SUMMARY - WALL 2 N.	
993 LIN. FT. #4 @ 0.668 %/LIN. FT. = 663	
PLUS 1% FOR OVERRUN = 2	
TOTAL = 665 LBS	

BAR SUMMARY - WALL 3 N.	
846 LIN. FT. #4 @ 0.668 %/LIN. FT. = 565	
419 LIN. FT. #4 @ 1.043 %/LIN. FT. = 437	
PLUS 1% FOR OVERRUN = 8	
TOTAL = 1010 LBS	

BAR SUMMARY - WALL 4 N.	
998 LIN. FT. #4 @ 0.668 %/LIN. FT. = 667	
497 LIN. FT. #4 @ 1.502 %/LIN. FT. = 746	
PLUS 1% FOR OVERRUN = 12	
TOTAL = 1425 LBS	

BAR SUMMARY - WALL 5 N.	
1434 LIN. FT. #4 @ 0.668 %/LIN. FT. = 958	
325 LIN. FT. #4 @ 2.044 %/LIN. FT. = 664	
PLUS 1% FOR OVERRUN = 18	
TOTAL = 1640 LBS	

BAR SUMMARY - WALL 6 N.	
1371 LIN. FT. #4 @ 0.668 %/LIN. FT. = 916	
174 LIN. FT. #4 @ 1.043 %/LIN. FT. = 181	
395 LIN. FT. #4 @ 2.670 %/LIN. FT. = 1055	
PLUS 1% FOR OVERRUN = 23	
TOTAL = 2175 LBS	

BAR SUMMARY - WALL 7 N.	
1495 LIN. FT. #4 @ 0.668 %/LIN. FT. = 999	
191 LIN. FT. #4 @ 1.043 %/LIN. FT. = 199	
455 LIN. FT. #4 @ 3.400 %/LIN. FT. = 1547	
PLUS 1% FOR OVERRUN = 25	
TOTAL = 2770 LBS	

BAR SUMMARY - WALL 8 N.	
1503 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1004	
155 LIN. FT. #4 @ 1.043 %/LIN. FT. = 162	
229 LIN. FT. #4 @ 1.502 %/LIN. FT. = 344	
568 LIN. FT. #4 @ 4.303 %/LIN. FT. = 2444	
PLUS 1% FOR OVERRUN = 36	
TOTAL = 3990 LBS	

BAR SUMMARY - WALL 9 N.	
1767 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1180	
370 LIN. FT. #4 @ 1.043 %/LIN. FT. = 386	
71 LIN. FT. #4 @ 1.502 %/LIN. FT. = 107	
49 LIN. FT. #4 @ 3.400 %/LIN. FT. = 167	
596 LIN. FT. #4 @ 5.313 %/LIN. FT. = 3167	
PLUS 1% FOR OVERRUN = 48	
TOTAL = 5055 LBS	

BAR SUMMARY - WALL 1 S.	
872 LIN. FT. #4 @ 0.668 %/LIN. FT. = 582	
66 LIN. FT. #4 @ 1.043 %/LIN. FT. = 69	
117 LIN. FT. #4 @ 1.502 %/LIN. FT. = 176	
57 LIN. FT. #4 @ 3.400 %/LIN. FT. = 194	
183 LIN. FT. #4 @ 5.313 %/LIN. FT. = 972	
PLUS 1% FOR OVERRUN = 22	
TOTAL = 2015 LBS	

BAR SUMMARY - WALL 2 S.	
1633 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1091	
345 LIN. FT. #4 @ 1.043 %/LIN. FT. = 360	
375 LIN. FT. #4 @ 2.670 %/LIN. FT. = 1001	
1211 LIN. FT. #4 @ 4.303 %/LIN. FT. = 5211	
PLUS 1% FOR OVERRUN = 77	
TOTAL = 7740 LBS	

BAR SUMMARY - WALL 3 S.	
2149 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1435	
220 LIN. FT. #4 @ 1.043 %/LIN. FT. = 229	
498 LIN. FT. #4 @ 2.044 %/LIN. FT. = 1018	
256 LIN. FT. #4 @ 3.400 %/LIN. FT. = 870	
1022 LIN. FT. #4 @ 5.313 %/LIN. FT. = 5430	
PLUS 1% FOR OVERRUN = 88	
TOTAL = 9070 LBS	

BAR SUMMARY - WALL 4 S.	
2066 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1380	
218 LIN. FT. #4 @ 1.043 %/LIN. FT. = 227	
488 LIN. FT. #4 @ 2.044 %/LIN. FT. = 997	
256 LIN. FT. #4 @ 3.400 %/LIN. FT. = 870	
976 LIN. FT. #4 @ 5.313 %/LIN. FT. = 5185	
PLUS 1% FOR OVERRUN = 86	
TOTAL = 8745 LBS	

BAR SUMMARY - WALL 5 S.	
1924 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1285	
209 LIN. FT. #4 @ 1.043 %/LIN. FT. = 218	
410 LIN. FT. #4 @ 2.044 %/LIN. FT. = 838	
156 LIN. FT. #4 @ 2.670 %/LIN. FT. = 443	
871 LIN. FT. #4 @ 5.313 %/LIN. FT. = 4620	
PLUS 1% FOR OVERRUN = 73	
TOTAL = 7485 LBS	

BAR SUMMARY - WALL 6 S.	
1791 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1196	
198 LIN. FT. #4 @ 1.043 %/LIN. FT. = 207	
387 LIN. FT. #4 @ 1.502 %/LIN. FT. = 581	
166 LIN. FT. #4 @ 2.670 %/LIN. FT. = 443	
835 LIN. FT. #4 @ 5.313 %/LIN. FT. = 4436	
PLUS 1% FOR OVERRUN = 67	
TOTAL = 6930 LBS	

BAR SUMMARY - WALL 7 S.	
1600 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1069	
191 LIN. FT. #4 @ 1.043 %/LIN. FT. = 199	
680 LIN. FT. #4 @ 1.502 %/LIN. FT. = 1021	
972 LIN. FT. #4 @ 4.303 %/LIN. FT. = 4183	
PLUS 1% FOR OVERRUN = 63	
TOTAL = 6535 LBS	

BAR SUMMARY - WALL 8 S.	
1520 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1015	
786 LIN. FT. #4 @ 1.043 %/LIN. FT. = 820	
891 LIN. FT. #4 @ 4.303 %/LIN. FT. = 3834	
PLUS 1% FOR OVERRUN = 56	
TOTAL = 5725 LBS	

BAR SUMMARY - WALL 9 S.	
1580 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1068	
683 LIN. FT. #4 @ 1.043 %/LIN. FT. = 723	
871 LIN. FT. #4 @ 4.303 %/LIN. FT. = 3747	
PLUS 1% FOR OVERRUN = 51	
TOTAL = 5490 LBS	

BAR SUMMARY - WALL 10 S.	
1534 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1018	
155 LIN. FT. #4 @ 1.043 %/LIN. FT. = 162	
226 LIN. FT. #4 @ 1.502 %/LIN. FT. = 339	
287 LIN. FT. #4 @ 3.400 %/LIN. FT. = 976	
368 LIN. FT. #4 @ 5.313 %/LIN. FT. = 1955	
PLUS 1% FOR OVERRUN = 25	
TOTAL = 4495 LBS	

BAR SUMMARY - WALL 11 S.	
1579 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1055	
205 LIN. FT. #4 @ 1.502 %/LIN. FT. = 308	
515 LIN. FT. #4 @ 4.303 %/LIN. FT. = 2216	
PLUS 1% FOR OVERRUN = 39	
TOTAL = 3815 LBS	

BAR SUMMARY - WALL 12 S.	
1412 LIN. FT. #4 @ 0.668 %/LIN. FT. = 943	
176 LIN. FT. #4 @ 1.043 %/LIN. FT. = 186	
436 LIN. FT. #4 @ 3.400 %/LIN. FT. = 1489	
PLUS 1% FOR OVERRUN = 27	
TOTAL = 2645 LBS	

BAR SUMMARY - WALL 13 S.	
1412 LIN. FT. #4 @ 0.668 %/LIN. FT. = 943	
167 LIN. FT. #4 @ 1.048 %/LIN. FT. = 174	
399 LIN. FT. #4 @ 2.670 %/LIN. FT. = 1065	
PLUS 1% FOR OVERRUN = 23	
TOTAL = 2205 LBS	

BAR SUMMARY - WALL 14 S.	
1521 LIN. FT. #4 @ 0.668 %/LIN. FT. = 1016	
364 LIN. FT. #4 @ 2.670 %/LIN. FT. = 972	
PLUS 1% FOR OVERRUN = 17	
TOTAL = 2005 LBS	

BAR SUMMARY - WALL 15 S.	
1468 LIN. FT. #4 @ 0.668 %/LIN. FT. = 981	
328 LIN. FT. #4 @ 2.044 %/LIN. FT. = 670	
PLUS 1% FOR OVERRUN = 14	
TOTAL = 1665 LBS	

BAR SUMMARY - WALL 16 S.	
1327 LIN. FT. #4 @ 0.668 %/LIN. FT. = 888	
301 LIN. FT. #4 @ 2.044 %/LIN. FT. = 615	
PLUS 1% FOR OVERRUN = 14	
TOTAL = 1515 LBS	

BAR SUMMARY - WALL 17 S.	
938 LIN. FT. #4 @ 0.668 %/LIN. FT. = 627	
495 LIN. FT. #4 @ 1.502 %/LIN. FT. = 743	
PLUS 1% FOR OVERRUN = 15	
TOTAL = 1385 LBS	

BAR SUMMARY - WALL 18 S.	
922 LIN. FT. #4 @ 0.668 %/LIN. FT. = 618	
459 LIN. FT. #4 @ 1.043 %/LIN. FT. = 479	
PLUS 1% FOR OVERRUN = 10	
TOTAL = 1105 LBS	

COLORADO
DEPARTMENT OF HIGHWAYS

BAR LIST & BAR SUMMARIES
FOR RETAINING WALLS

LIST - 135 THRU 185.
SUMMARIES - 1 N. THRU 18 N.

Across 5TH & GARDISON

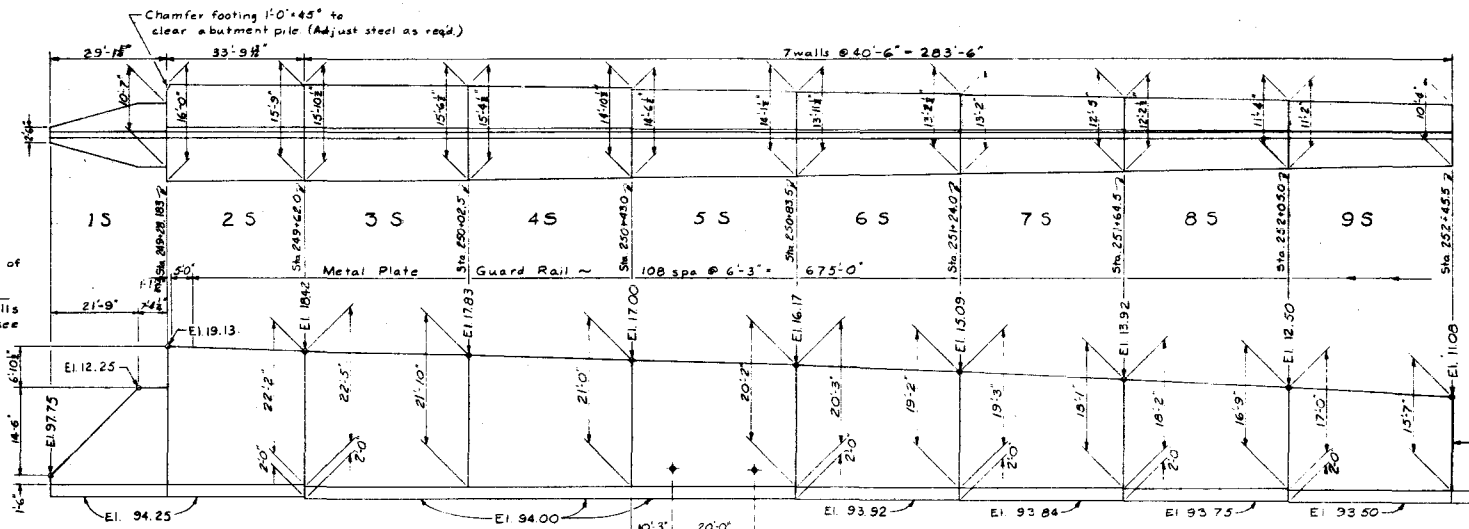
Sta. _____
Near DENVER Sec. _____ T. _____ R. _____

Designed by _____
Checked by _____

Approved by _____
Bridge Engineer
Date: Dec. 7 1962

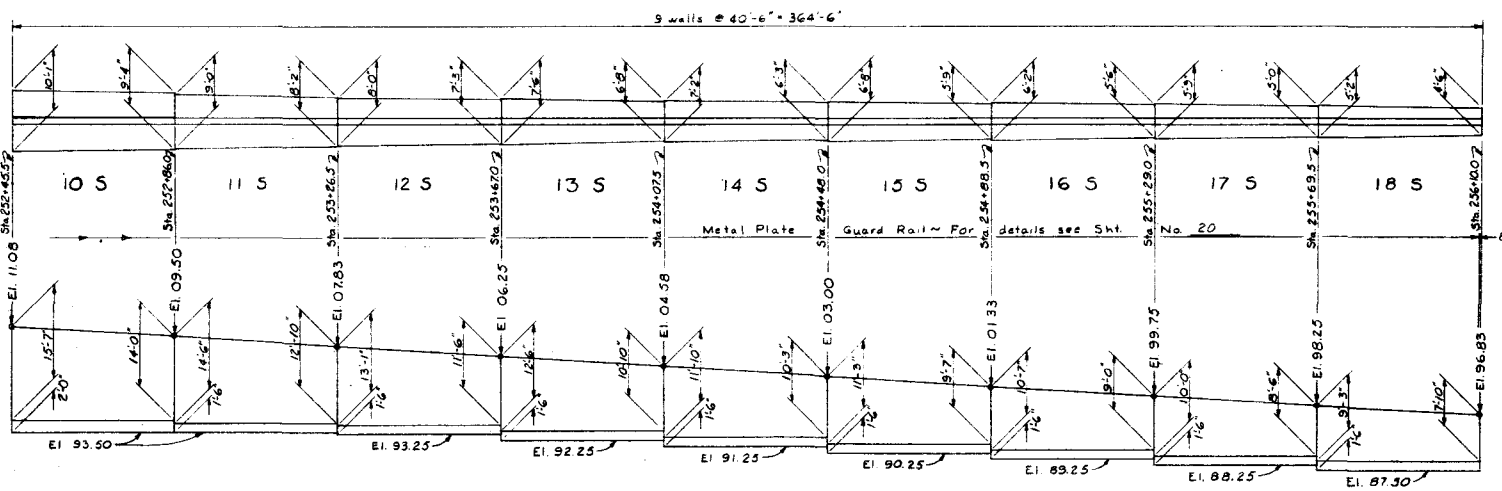
DIST. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	COLA.	FO12-2(8)	26	

Note: For details of wall 1-5 see sheet no. 29
 For details of walls 2-5 thru 18-5, see sheet no. 27



ELEVATION

Expn. Jt. Mat'l. (Type III)
 Typ. between walls only.



ELEVATION

COLORADO
DEPARTMENT OF HIGHWAYS
 SOUTH
 RETAINING WALLS

Along **6TH AVENUE**
 Sta. 244+50.0 to 256+10.0
 Near Denver, Colo. T. 45. N. 16W

Designed by **PC**
 Drawn by **DBS**
 Checked by

Approved by *[Signature]*
 Bridge Engineer
 Date **Dec. 7, 1962**

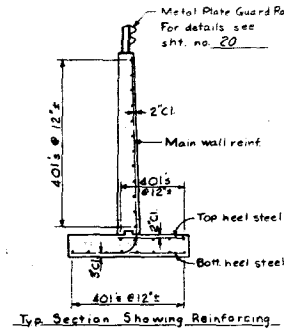
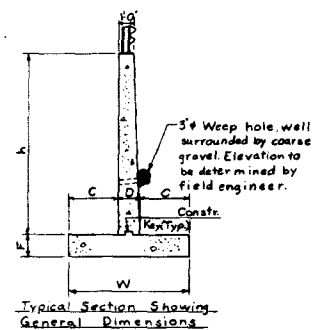
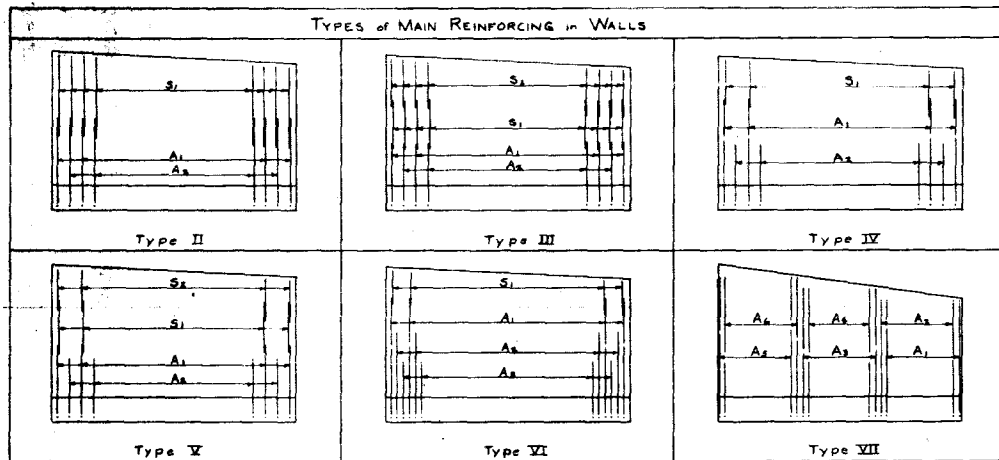
STRUCTURE NO.

REVISIONS

DRAWING NO.	DESIGN	PROJECT NO.	SHEET NO.	TOTAL SHEETS
9	GRG.	FO12-2(B)	27	

WALL NO.	WEST END ELEV.	EAST END ELEV.	F.	WEST END			EAST END			REINF. TYPE	WALL STEEL						TOP HEEL REINF.	BOTT. HEEL REINF.	No. 401 IN FTG.	No. 401 IN WALL	CONSTR. KEY		
				W	C	D	W	C	D		A ₁	A ₂	A ₃	A ₄	A ₅	A ₆						S ₁	S ₂
2 S	22-10	22-1	20	4'0"	7'11"	1'5"	13'9"	7'08"	1'8"	VI	23-1008#1-6	22-1006#1-6	22-1007#1-6				23-521#1-6	45-805#8"	25-520#1-6	26	23	7'-3"	
3 S	22-5	21-10	20	8'40"	7'1	1'8"	15'4"	6'118"	1'8"	V	31-1110#1-4	30-1118#1-4	30-1118#1-4				31-910#1-4	31-475#1-4	21-705#8"	27-522#1-6	26	23	7'-3"
4 S	22-0	21-0	20	15'4"	6'04"	1'78"	11'03"	6'78"	1'72"	V	31-1112#1-4	30-1113#1-4					31-910#1-4	31-476#1-4	21-706#8"	27-523#1-6	25	22	6'-3"
5 S	21-0	20-2	20	14'4"	5'6"	1'64"	14'11"	5'33"	1'72"	V	27-1114#1-4	27-1115#1-4					27-806#1-6	27-478#1-6	54-707#8"	27-524#1-6	23	21	6'-3"
6 S	20-3	19-2	20	13'11"	6'5"	1'58"	13'21"	5'03"	1'51"	V	27-1114#1-4	27-1115#1-4					27-806#1-6	27-478#1-6	54-618#8"	27-525#1-6	21	20	6'-3"
7 S	19-3	18-1	20	13'2"	5'10"	1'5	12'5"	5'6"	1'44"	IV	31-1010#1-4	30-1011#1-4					31-620#1-4	61-619#8"	27-526#1-6	20	20	5'-3"	
8 S	18-2	16-9	20	12'2"	5'5"	1'53"	11'4"	5'0"	1'53"	IV	31-1012#1-4	30-1013#1-4					31-527#1-4	61-528#8"	27-529#1-6	19	19	5'-3"	
9 S	17-0	15-7	20	11'2"	5'0"	1'4	10'4"	4'78"	1'41"	IV	31-1014#1-4	30-1015#1-4					31-540#1-4	61-541#8"	27-542#1-6	17	17	5'-3"	
10 S	15-7	14-0	20	10'1"	4'6"	1'4	9'4"	4'78"	1'30"	III	21-1125#2-0	20-1126#2-0					41-915#1-0	41-484#1-0	41-624#1-0	27-530#1-6	15	16	4'-3"
11 S	14-6	13-10	1-6	9'0"	4'0"	1'0	8'2"	3'7"	1'0	II	21-1008#2-0	20-1009#2-0					41-485#1-0	41-625#1-0	27-486#1-6	14	15	4'-3"	
12 S	13-7	11-6	1-6	8'0"	3'6"	1'0	7'3"	3'12"	1'0	II	21-916#2-0	20-917#2-0					41-487#1-0	41-521#1-0	27-488#1-6	12	13	4'-3"	
13 S	12-6	10-10	1-6	7'4"	3'3"	1'0	6'8"	2'10"	1'0	II	21-807#2-0	20-808#2-0					41-489#1-0	41-332#1-0	27-490#1-6	12	13	4'-3"	
14 S	11-4	9-3	1-6	7'2"	3'1"	1'0	6'3"	2'78"	1'0	II	21-809#2-0	20-810#2-0					41-491#1-0	41-492#1-0	27-493#1-6	12	12	4'-3"	
15 S	11-3	9-7	1-6	6'8"	2'10"	1'0	5'9"	2'44"	1'0	II	21-711#2-0	20-712#2-0					41-495#1-0	41-495#1-0	27-496#1-6	11	12	4'-3"	
16 S	10-7	8-0	1-6	6'2"	2'7"	1'0	5'6"	2'3"	1'0	II	21-713#2-0	20-714#2-0					41-494#1-0	41-494#1-0	27-497#1-6	10	11	4'-3"	
17 S	10-0	8'6"	1-6	5'9"	2'44"	1'0	5'0"	2'0"	1'0	VIII	7-626#2-0	7-627#2-0	7-628#2-0	6-629#2-0	7-630#2-0	7-631#2-0	27-499#1-6	27-499#1-6	27-4100#1-6	9	10	4'-3"	
18 S	9'3"	7'10"	1-6	5'2"	2'1"	1'0	4'6"	1'9"	1'0	VII	7-533#2-0	7-534#2-0	7-535#2-0	6-536#2-0	7-537#2-0	7-538#2-0	27-4101#1-6	27-4102#1-6		9	10	4'-3"	

* Bar no 4160 this wall only.



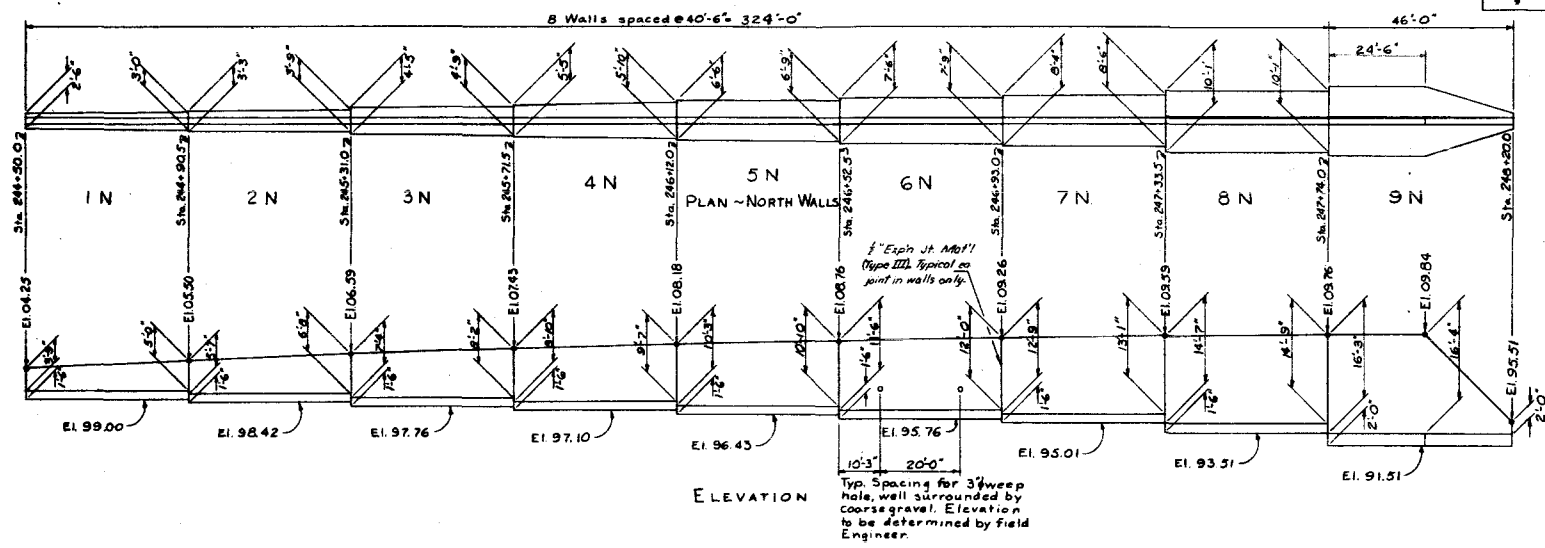
Max. Toe pressure = 1 Ton/ft²
(includes earth on front face)

COLORADO
DEPARTMENT OF HIGHWAYS
SOUTH
RETAINING WALLS

Along 6TH AVENUE
Sta. 244,500 to 256,100
Near DENVER Sta. 3107.45 R.579

Designed by PC Approved by [Signature]
Checked by DBS Checked by [Signature]
Date: Dec. 7, 1962

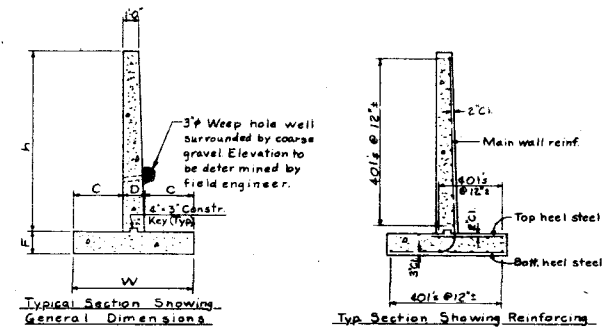
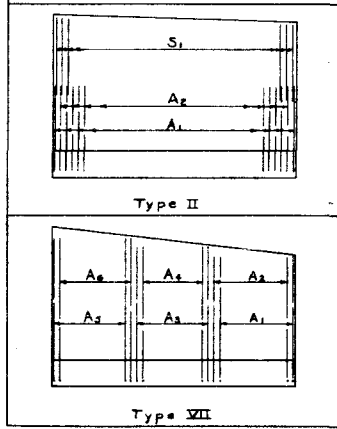
REV. NO.	DESCRIPTION	PROJECT NO.	DATE	TOTAL SHEETS
1	CONS.	FO12-2(B)	28	



Note: For details of wall 9N, see sht. no. 29

WALL	West End h	East End h	F	D	West End W	West End C	East End W	East End C	Type	A ₁	A ₂	A ₃	A ₄	A ₅	A ₆	S ₁	Top Heel Reinf	Bot. Heel Reinf	# 401 in Fly	# 401 in Wall
1N	3'-9"	3'-0"	1'-6"	1'-0"	2'-6"	9"	3'-0"	1'-0"	VII	7-403 @ 2'-0"	7-403 @ 2'-0"	7-404 @ 2'-0"	6-404 @ 2'-0"	7-403 @ 2'-0"	7-403 @ 2'-0"		27-402 @ 18"	27-402 @ 18"	5	3
2N	3'-7"	6'-8"	1'-6"	1'-0"	3'-3"	1'-4"	3'-9"	1'-4"	VII	7-407 @ 2'-0"	7-407 @ 2'-0"	7-408 @ 2'-0"	6-408 @ 2'-0"	7-409 @ 2'-0"	7-409 @ 2'-0"		27-406 @ 18"	27-406 @ 18"	6	7
3N	7'-4"	8'-2"	1'-6"	1'-0"	4'-3"	1'-8"	4'-9"	1'-10"	VII	7-501 @ 2'-0"	7-501 @ 2'-0"	7-503 @ 2'-0"	6-504 @ 2'-0"	7-505 @ 2'-0"	7-506 @ 2'-0"		27-410 @ 18"	27-410 @ 18"	8	9
4N	8'-10"	9'-7"	1'-6"	1'-0"	5'-5"	2'-2"	5'-10"	2'-5"	VII	7-601 @ 2'-0"	7-601 @ 2'-0"	7-602 @ 2'-0"	6-604 @ 2'-0"	7-605 @ 2'-0"	7-606 @ 2'-0"		27-411 @ 18"	27-411 @ 18"	10	10
5N	10'-3"	10'-0"	1'-6"	1'-0"	6'-6"	2'-9"	6'-9"	2'-10"	II	21-701 @ 2'-0"	20-702 @ 2'-0"					41-414 @ 1'-0"	41-412 @ 12"	27-413 @ 18"	11	11
6N	11'-4"	12'-0"	1'-6"	1'-0"	7'-4"	3'-3"	7'-9"	3'-4"	II	21-801 @ 2'-0"	20-802 @ 2'-0"					41-416 @ 1'-0"	41-507 @ 12"	27-415 @ 18"	12	12
7N	12'-5"	13'-7"	1'-6"	1'-0"	8'-4"	3'-8"	8'-6"	3'-9"	II	21-901 @ 2'-0"	20-902 @ 2'-0"					41-418 @ 1'-0"	41-508 @ 12"	27-417 @ 18"	14	13
8N	14'-7"	14'-9"	1'-6"	1'-0"	10'-7"	4'-6"	10'-7"	4'-6"	II	21-1001 @ 2'-0"	20-1002 @ 2'-0"					41-419 @ 1'-0"	41-607 @ 12"	27-509 @ 18"	16	15

TYPES of MAIN REINFORCING in WALLS



Max. Toe pressure = 1 Ton/ft² (includes earth on front face)

COLORADO DEPARTMENT OF HIGHWAYS
 NORTH RETAINING WALLS

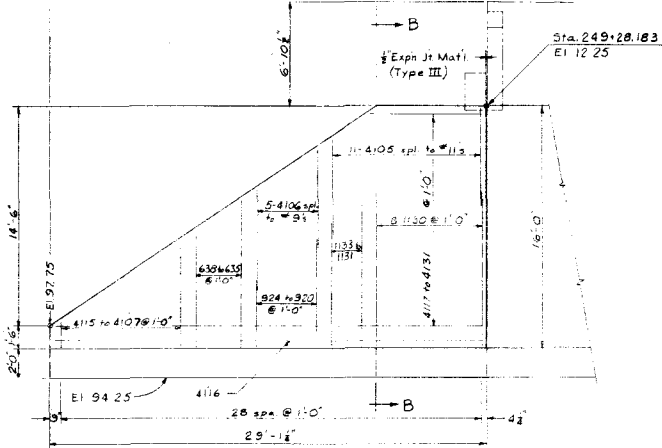
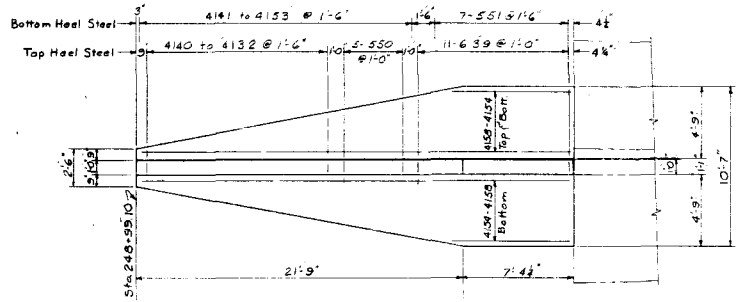
Along 6th AVENUE
 Sta. 244+30.0 to 256+10.0
 City of Denver Sta. 500 V.G.S. 8-1941

Designed by PC
 Made by DBS
 Checked by

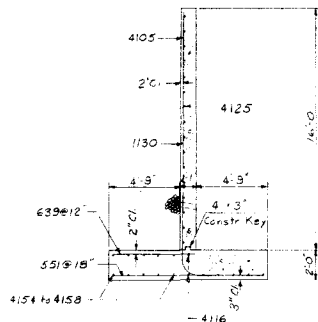
Approved by
 State Engineer
 Date: Dec 3, 1962

REVISIONS

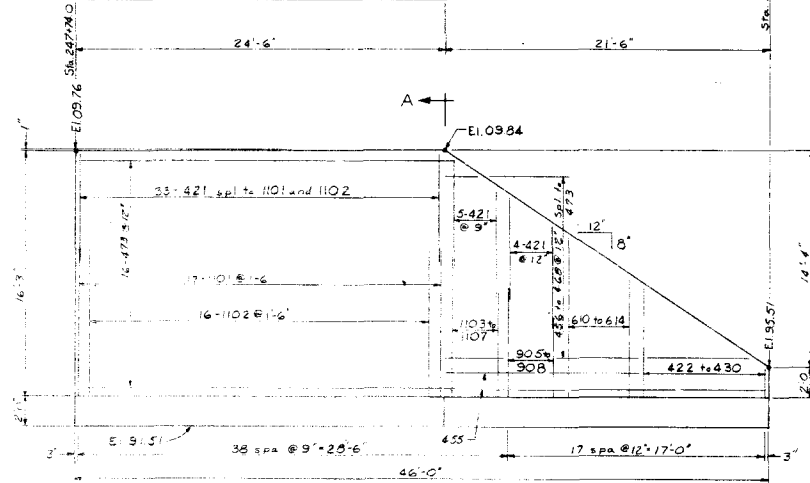
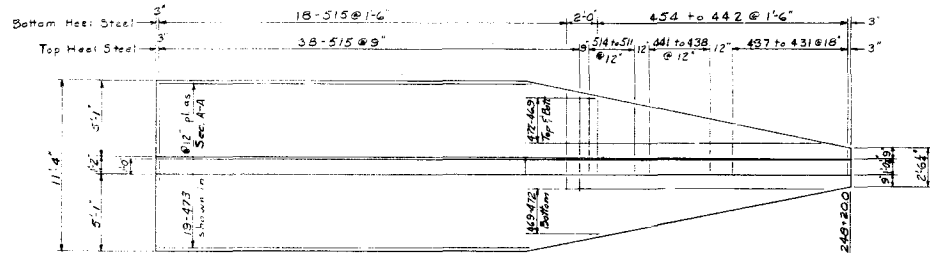
REV. NO.	DIVISION	PROJECT NO.	REV. NO.	TOTAL SHEETS
9	COLO.	FOI2-2(B)	29	



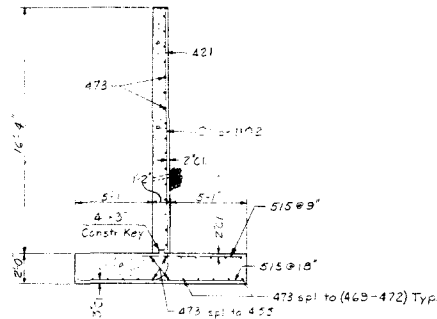
WALL 1S



SECTION B-B



WALL 9N



SECTION A-A

COLORADO DEPARTMENT OF HIGHWAYS

RETAINING WALLS
1 SOUTH AND 9 NORTH

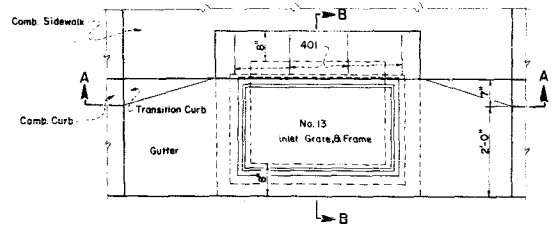
Along 6TH AVENUE
Sta. 249+30.0 to 258+10.0
Near Denver - See 310.7.15. R.09H

Designed by: D.C.
Checked by: DBS
Date: Dec. 7, 1962

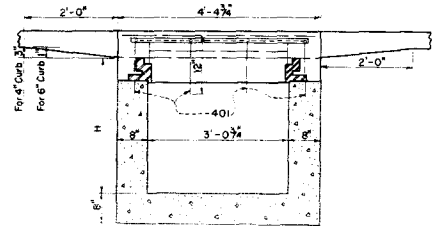
Approved by: [Signature]
Bridge Engineer

STRUCTURE NO.

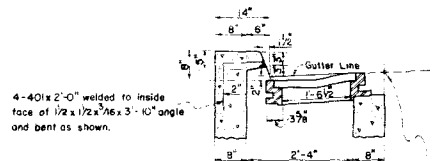
FEDERAL ROAD REGION NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLORADO	FD12-2(8)	30	



PLAN - (For Comb Curb, Gutter & Sidewalk or Type 2 Curb & Gutter)

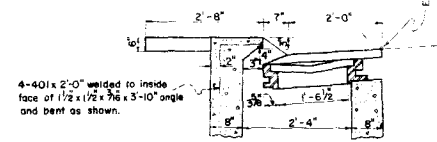


SECTION A-A (For Comb Curb, Gutter & Sidewalk or Type 2 Curb & Gutter)



4-401x2'-0" welded to inside face of 1/2x1/2x7/8x3'-10" angle and bent as shown.

SECTION B-B Use with Type 2 Curb & Gutter

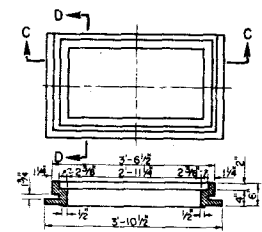
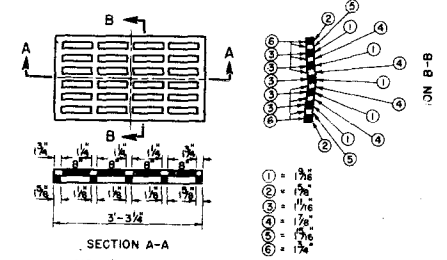


4-401x2'-0" welded to inside face of 1/2x1/2x7/8x3'-10" angle and bent as shown.

SECTION B-B Use with Comb Curb, Gutter & Sidewalk

INLET TYPE 3

No. 13 Grate and Frame to be used with Type 3 Inlet.



NOTE: NO. 13 GRATE AND FRAME TO BE USED WITH TYPE 3 INLET.

NOTE: Use steps for all inlets with H: 3'-6" or more. Start 2'-0" below gutter line and space equally at Minimum of 18"

* Volumes of concrete occupied by inlet or outlet pipes to be deducted from pay quantities of Concrete.

H	QUANTITIES-TYPE 3 INLET	
	CLASS A CONCRETE * CU YDS	REINFORCING STEEL LBS
3'-0"	1.37	5.4
3'-6"	1.54	5.4
4'-0"	1.71	5.4
4'-6"	1.88	5.4
5'-0"	2.05	5.4
5'-6"	2.22	5.4
6'-0"	2.39	5.4
6'-6"	2.56	5.4
7'-0"	2.73	5.4
7'-6"	2.90	5.4
8'-0"	3.07	5.4

GENERAL NOTES

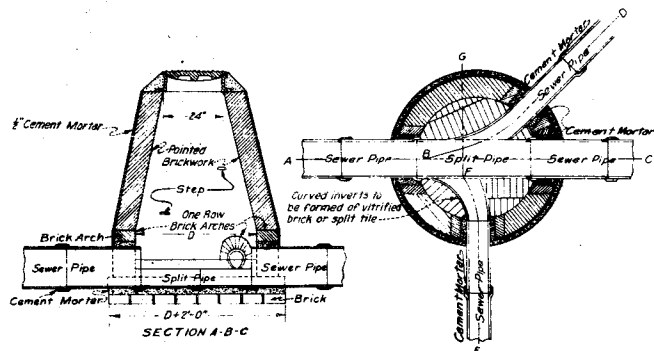
- All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to the project.
- All concrete shall be class "A" and air entrained as specified.
- All concrete walls shall be formed on both sides.
- All exposed concrete corners shall be beveled to a 1" face.
- All reinforcing bars shall be deformed, of intermediate grade, and conform to A.S.T.M. Spec A-305-507 or latest revision.
- All castings shall be painted with two coats of asphalt or coal tar and oil.

COLORADO
DEPARTMENT OF HIGHWAYS

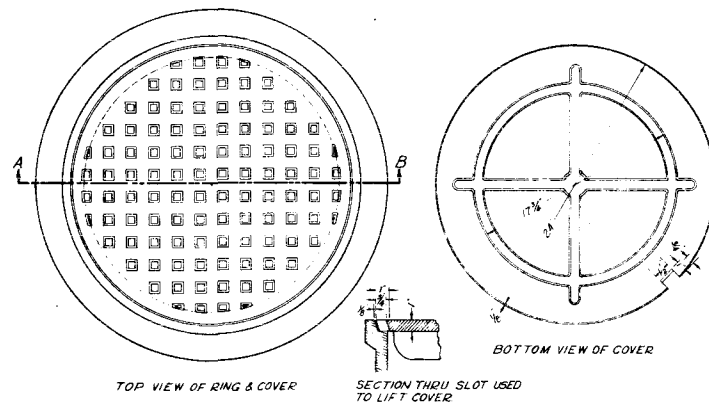
**CONCRETE INLET No. 3
GRATE & FRAME NO. 13**

Designed by	Approved by
Made by	Date:
Checked by	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLOR.	FO12-2(6)	31	

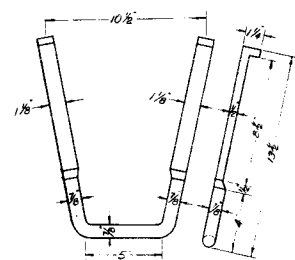


Diameter of Manhole to be 4' for Pipe Sewers 18" & under, 5' for Pipe Sewers 21" to 36" incl., and 6' for Pipe Sewers 42" to 48" incl.



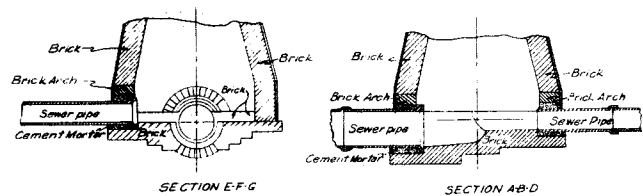
TOP VIEW OF RING & COVER

SECTION THRU SLOT USED TO LIFT COVER



WROUGHT IRON OR MILD STEEL STEPS

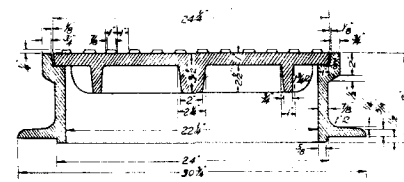
Scale 3" = 1'-0"
This Step to be Used for All Types Manholes.



SECTION E-F-G

SECTION A-B-D

TYPE I MANHOLE (STORM & SANITARY)
Scale 1/2" = 1'-0"

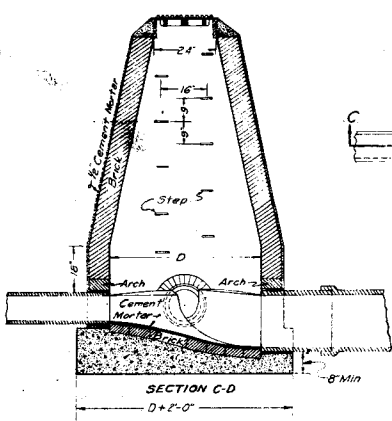


DETAILS OF MANHOLE RING & COVER
Scale 1/2" = 1'-0"

Weight Frame Approx 224 lbs
Cover Approx 170 lbs
40C
Dipped or Painted with Asphalt or Coal Tar & Oil

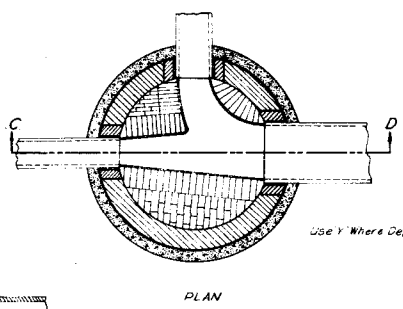
GENERAL NOTES

All brick in manholes to conform to requirements of grade MA of AASHTO Designation M-B-4E. Manhole bottoms may be either brick or concrete. Manhole benches shall be of brick as specified.
Alternate design for Manholes using Precast Concrete Blocks, Cast in place Concrete, or Precast Concrete Manholes will be permitted after approval of Details by the Department.



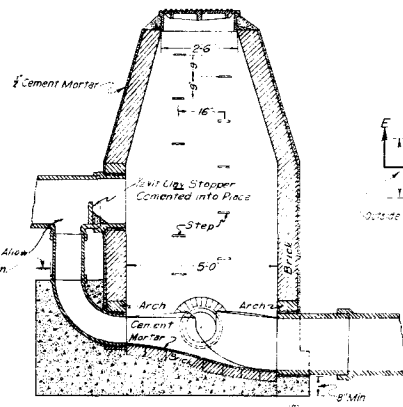
SECTION C-D
D+2'-0"

TYPE 1-A MANHOLE
Scale 1/2" = 1'-0"
SANITARY & STORM SEWERS

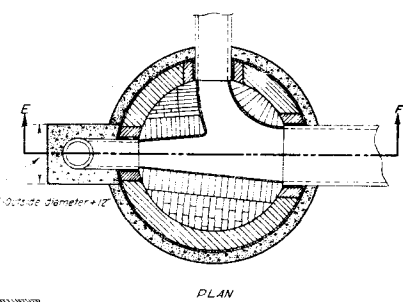


PLAN

Diameter of Manhole to be 5' for Pipe Sewers 36" and Under, and 6' For Pipe Sewers 42" to 48"



SECTION E-F

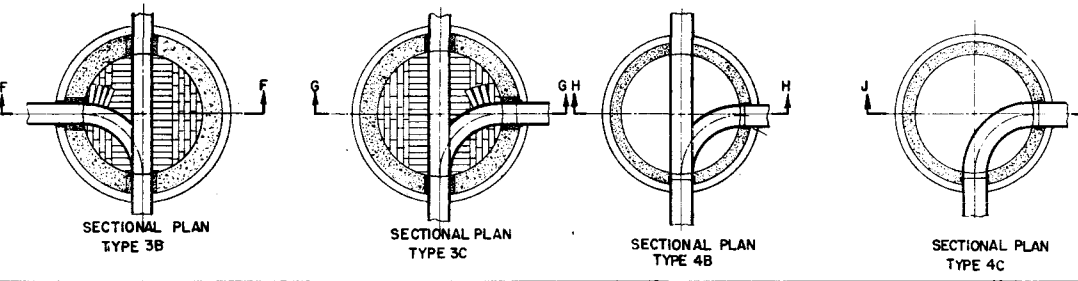
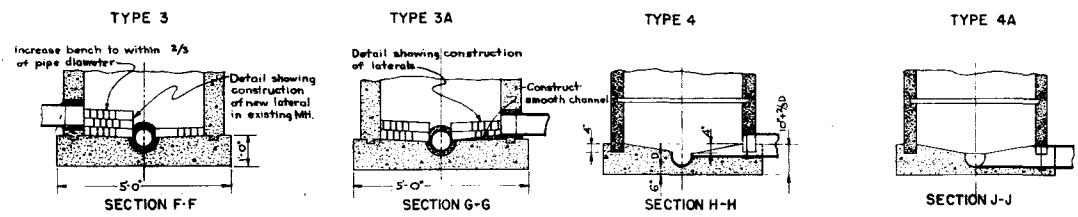
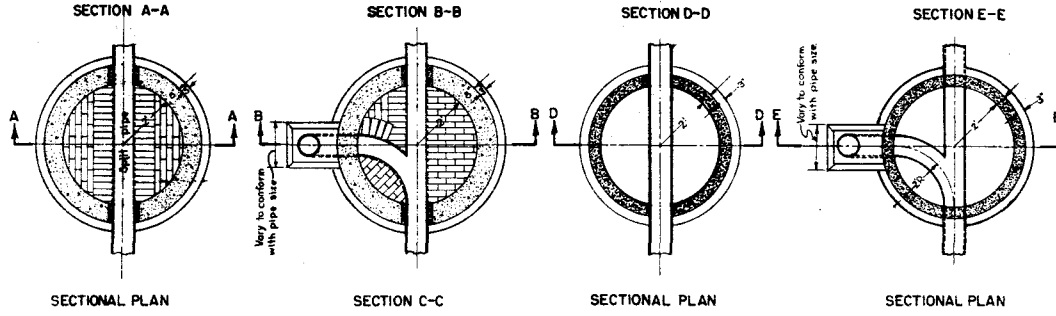
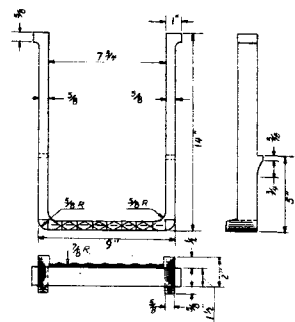
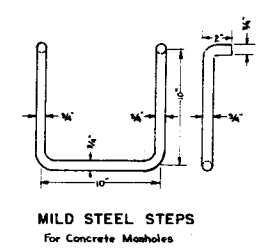
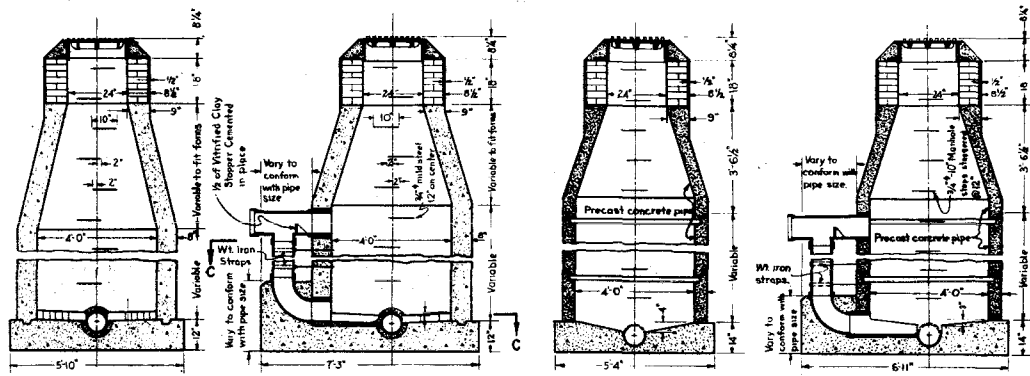


PLAN

TYPE 2 MANHOLE (SANITARY ONLY)
Scale 1/2" = 1'-0"

COLORADO DEPARTMENT OF HIGHWAYS	
MANHOLE DETAILS TYPE 1, 1A AND 2	
Designed by:	Approved by:
Made by:	Checked by:
Checked by:	Date:

FED ROAD DIST. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEET
9	COLORADO	FO12 - 2(8)	32	



COLORADO
DEPARTMENT OF HIGHWAYS

MANHOLE DETAILS

TYPE 3,3A,3B,3C,4,4A,4B,4C

Designed by:	Approved by:
Made by:	Date:
Checked by:	

STANDARD CURBS AND GUTTERS

STANDARD M-84-A

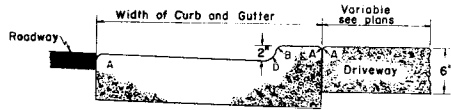
(MAY 1, 1962)

REVISED FOR THIS PROJECT

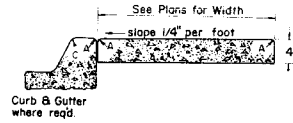
FED. ROAD DIST. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLC.	FOI2-2181	33

REVISIONS	
Exp. Jt. Mat. & Slope	J. A. P.

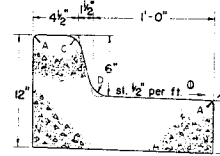
CONCRETE PAVEMENT (DRIVEWAYS)



CONCRETE SIDEWALKS

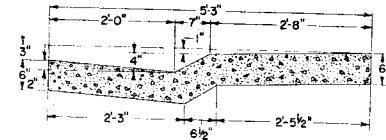


CONCRETE COMBINATION CURB AND GUTTER (6" Barrier-1' Gutter) (Type I)

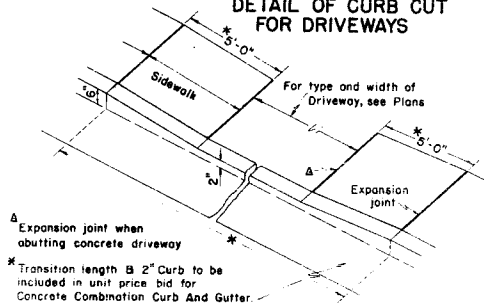


LEGEND FOR RADII	
A	1/8"
B	1"
C	1 1/2"
D	1/2" to 2"

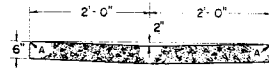
CONCRETE COMBINATION CURB, GUTTER AND SIDEWALK (TYPE II-M)



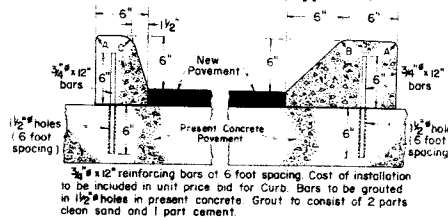
DETAIL OF CURB CUT FOR DRIVEWAYS



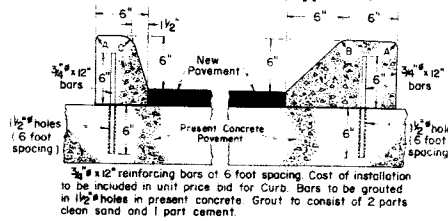
CONCRETE GUTTER



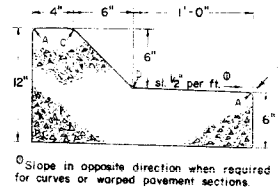
CONCRETE CURB (6" Barrier-Doweled) (Type I)



CONCRETE CURB (6" Mountable-Doweled) (Type I-M)

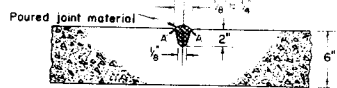


CONCRETE COMBINATION CURB AND GUTTER (6" Mountable-1' Gutter) (Type I-M)



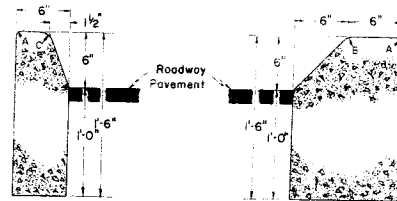
3/8" Expansion jt material to be used between all curb & gutter and concrete pavement.

TRANSVERSE WEAKENED PLANE JOINT FOR CONCRETE PAVEMENT (DRIVEWAYS)

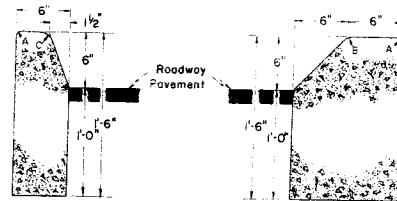


This joint required where length of slab exceeds 15 feet.

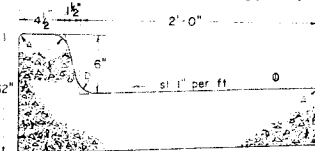
CONCRETE CURB (6" Barrier) (Type II)



CONCRETE CURB (6" Mountable) (Type II-M)



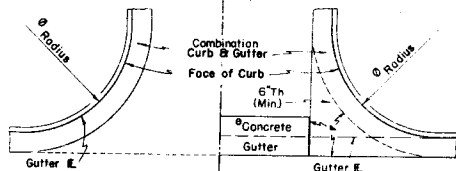
CONCRETE COMBINATION CURB AND GUTTER (6" Barrier-2' Gutter) (Type II)



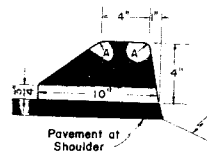
GENERAL NOTES
All work shall be done in accordance with the Specifications of the Colorado Department of Highways.

On Curves 3 degrees and sharper, Curbs and/or Gutters are to be placed on the Arc of the Curve unless otherwise noted on plans. A maximum chord length of 10 feet may be used when the degree of curve is less than 3 degrees.

CONSTRUCTION OF CONCRETE GUTTERS AT INTERSECTIONS



ASPHALTIC SHOULDER ROLL



NOTE:
0.647 x Specific Gravity of Asphalt = Tons per Station.

COLORADO DEPARTMENT OF HIGHWAYS

CURBS AND GUTTERS

Designed by [Signature] Approved by [Signature]
Made by [Signature] Checked by [Signature]
Date: 04-19-62

STANDARD M-5-A

(MAY 1, 1962)

FED. ROAD DIST. NO.	DIVISION	PROJECT NO.	NO.
9	E.O.D.		

1 2 3 4 5 6 7 8 9 0.

A B C D E F G H I J K L

M N O P Q R S T U V W

Scale in inches

a f g l J 14 K 11 9 5 0

abcdefghijklmnopqrstuvwxy

SAMPLE BRIDGE NUMBER

SAMPLE YEAR NUMBER

GENERAL NOTES

1. ALL LETTERS AND FIGURES SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS OF HIGHWAYS APPLICABLE TO THE PROJECT. THE TYPE, SHAPE AND SIZE OF THE LETTERS AND FIGURES SHALL BE IN ACCORDANCE WITH THE FULL SIZE SHOWN ON THIS SHEET. ADDITIONAL COPIES OF THIS FULL SIZE SHEET SHALL BE KEPT ON FILE AT THE OFFICE OF THE DISTRICT ENGINEER.

2. THE YEAR NUMBER SHALL BE MINIMUM 20 INCHES HIGH AND SHALL BE PLACED ON THE RIGHT HAND SIDE OF EACH BRIDGE END AND INTO THE FACE OF THE CONCRETE OR METAL OR STEEL STRUCTURE. THE YEAR NUMBER SHALL BE PLACED ON THE RIGHT HAND SIDE OF EACH BRIDGE END AND INTO THE FACE OF THE CONCRETE OR METAL OR STEEL STRUCTURE. THE YEAR NUMBER SHALL BE PLACED ON THE RIGHT HAND SIDE OF EACH BRIDGE END AND INTO THE FACE OF THE CONCRETE OR METAL OR STEEL STRUCTURE.

3. THE CENTER NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

4. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

5. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

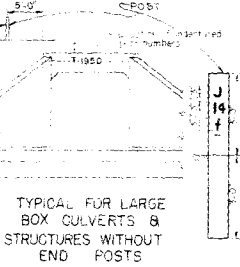
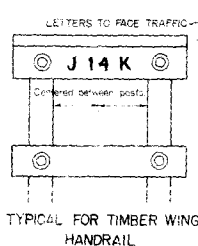
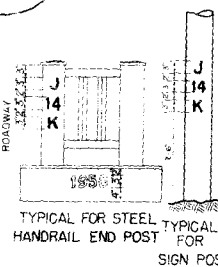
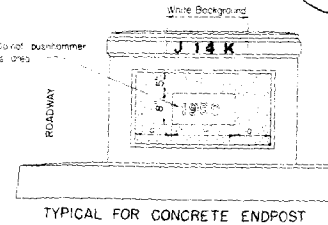
6. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

7. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

8. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

9. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.

10. THE NUMBER FOR EACH BRIDGE OR SIGN SHALL BE SHOWN ON THE PLANS.



COLORADO
DEPARTMENT OF HIGHWAYS

LETTERS AND FIGURES FOR STRUCTURE NUMBERS

Designed by _____
Made by _____
Checked by _____

Approved by _____
Bridge Engineer
Date: _____

STRUCTURE NO. _____

STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS

STANDARD M-6-B

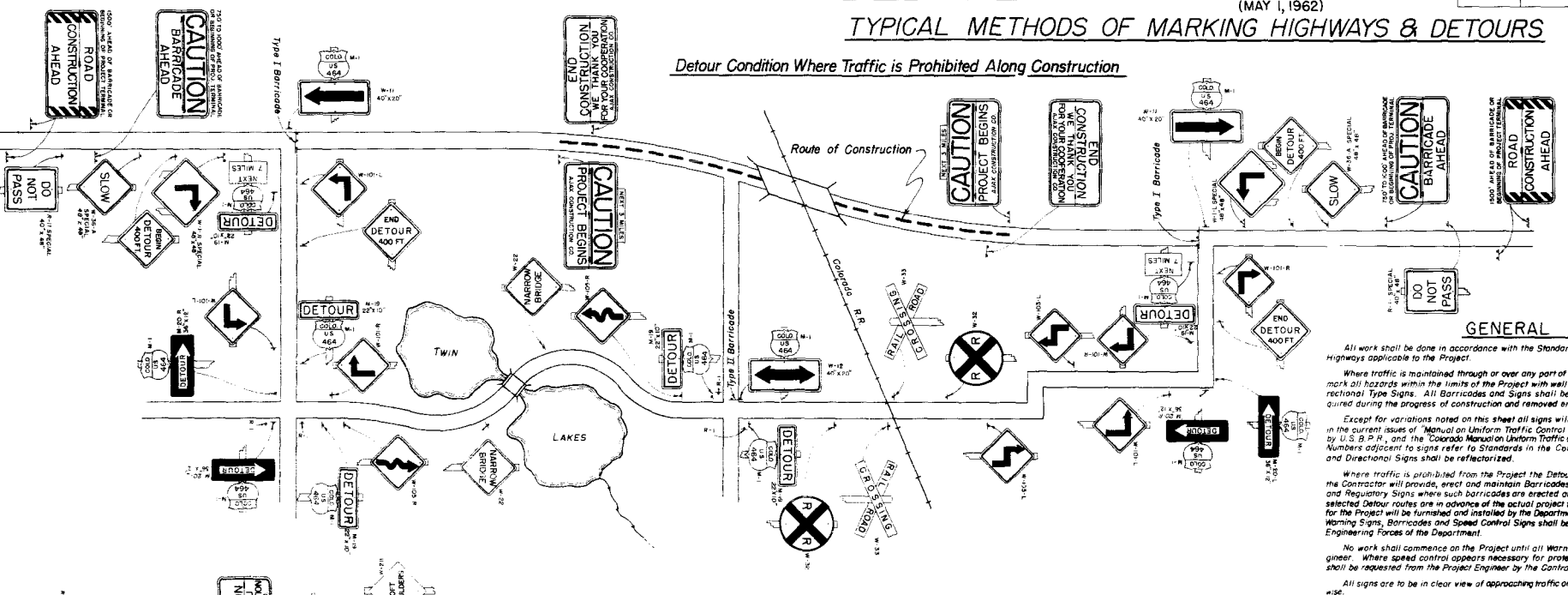
(SHEET 1 OF 2 SHEETS)

(MAY 1, 1962)

REG. ROAD REC. NO.	DIVISION	PROJECT NO.	SHEET NO.
5	COLO.		30

TYPICAL METHODS OF MARKING HIGHWAYS & DETOURS

Detour Condition Where Traffic is Prohibited Along Construction



GENERAL NOTES

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways 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 well maintained Barricades, Warning Signs and Directional Type Signs. All Barricades and Signs shall be moved, added to, changed or removed as required during the progress of construction and removed entirely when project is completed.

Except for variations noted on this sheet all signs will be in conformity with the specification outlined in the current issues of "Manual on Uniform Traffic Control Devices for Streets & Highways", issued by U.S.B.P.H., and the "Colorado Manual Uniform Traffic Control Devices for Streets & Highways". Numbers adjacent to signs refer to Standards in the Colorado manual. Standard Warning, Regulatory and Directional Signs shall be reflectorized.

Where traffic is prohibited from the Project the Detour will be marked by the Department except that the Contractor will provide, erect and maintain Barricades complete with approved Directional Arrows and Regulatory Signs where such barricades are erected and maintained at the ends of the Project or where selected Detour routes are in advance of the actual project terminal. U.S. or State Route Markers required for the Project will be furnished and installed by the Department. The location and positioning of Advance Warning Signs, Barricades and Speed Control Signs shall be as recommended by the appropriate District Engineering Forces of the Department.

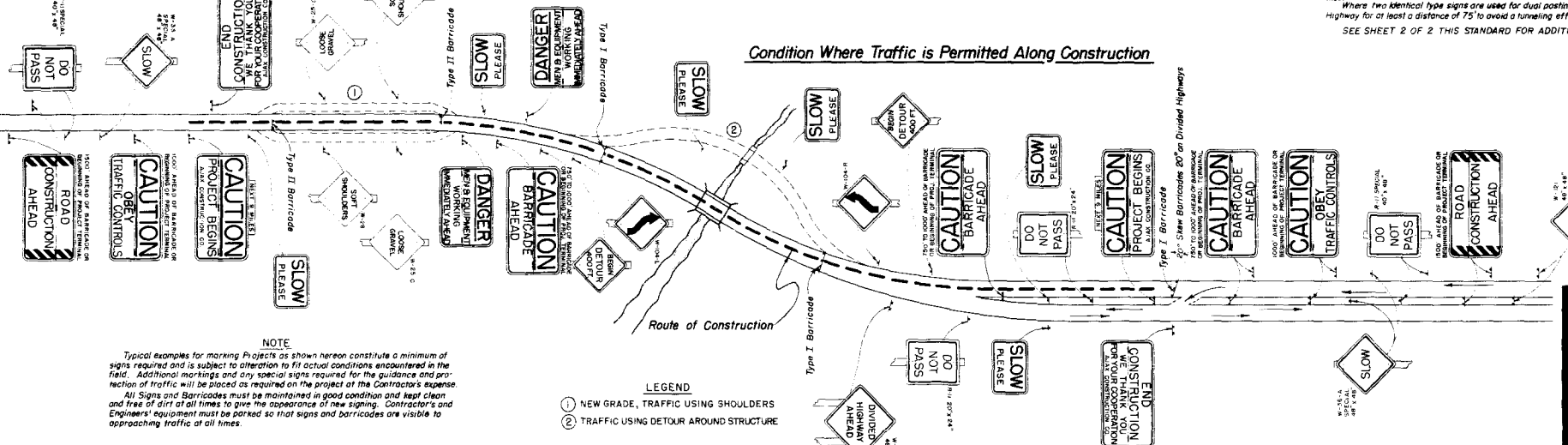
No work shall commence on the Project until all Warning Signs are in place and approved by the Engineer. Where speed control appears necessary for protection of the travelling public, such speed control shall be requested from the Project Engineer by the Contractor.

All signs are to be in clear view of approaching traffic and are not to be obstructed by equipment, weeds or other.

Where two identical type signs are used for dual posting they are to be staggered on the two sides of the highway for at least a distance of 75' to avoid a tunneling effect.

SEE SHEET 2 OF 2 THIS STANDARD FOR ADDITIONAL NOTES AND DETAILS.

Condition Where Traffic is Permitted Along Construction



NOTE
Typical examples for marking Projects as shown hereon constitute a minimum of signs required and is subject to alteration to fit actual conditions encountered in the field. Additional markings and any special signs required for the guidance and protection of traffic will be placed as required on the project at the Contractor's expense.
All Signs and Barricades must be maintained in good condition and kept clean and free of dirt at all times to give the appearance of new signing. Contractor's and Engineer's equipment must be parked so that signs and barricades are visible to approaching traffic at all times.

LEGEND

- ⊙ NEW GRADE, TRAFFIC USING SHOULDERS
- ⊕ TRAFFIC USING DETOUR AROUND STRUCTURE

COLORADO
DEPARTMENT OF HIGHWAYS

Construction Traffic Signs

Designed by J.C.R. | Approved by J.C.R. |
Made by J.C.R. | Engineer, Surveys & Plans |
Checked by | Date: July 22, 1955

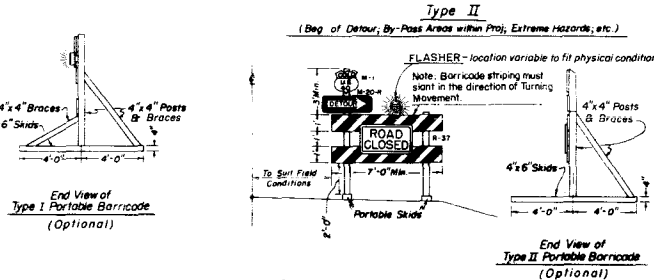
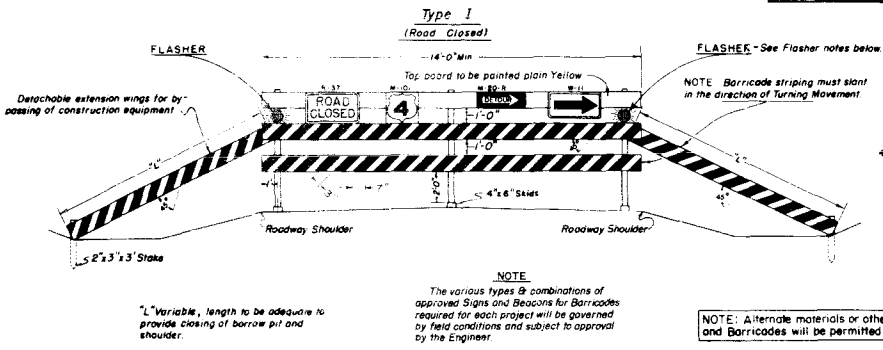
STANDARD ROADWAY CONSTRUCTION TRAFFIC SIGNS

STANDARD M-6-B

(SHEET 2 OF 2 SHEETS)

(MAY 1, 1962)

DETAILS OF BARRICADES



SPECIFICATIONS

PAINT - All paint and methods of painting shall be in conformity with Item 38 of the Standard Specifications.

STRIPING - Planking and Wings on all Barricades shall be painted with Maintenance Flat Black on both sides before adding Reflective Stripes. Reflective Stripes shall be "Cutout Smooth Surface Yellow," of a type approved by the Department, 3" wide and spaced 7" apart as shown in the detail.

Diversion of traffic will be accomplished as follows:

- 1-Stripes for Barricades diverting traffic to the left shall start on the right hand side of the lower plank and progress up to the left with the stripes making an angle of 45 degrees with the horizontal axis of the board as shown in the detail. Traffic diversion to the right will be just the opposite.
- 2-Stripes on Barricades diverting traffic in both directions shall begin at the center of the lower plank and progress up in both directions.

TIMBER - All Timber used shall conform to the Standard Specifications for Miscellaneous Unfinished Timber.

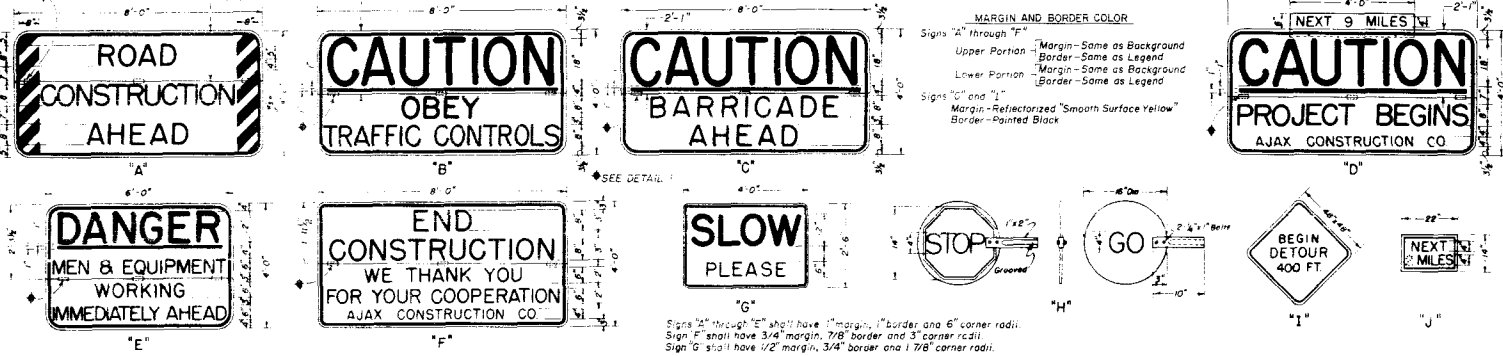
Planking	1" x 12" or 2" x 12"	S 4 S
Posts (Barricades)	4" x 4"	S 4 S
Posts (Signs)	4" x 4"	S 4 S

Barricades may be either portable as shown or fixed with posts set into the ground.

All skids, braces and posts to be painted yellow and nailed together with No. 20 d nails

Bases to be weighted where necessary to provide stability.

DETAILS OF CONSTRUCTION SIGNS



NOTES

- 1 Signs "A" through "F" shall be of the hinge and fold type to facilitate the closing down of the sign when the need is not prevalent. These signs shall be hinged with 3-4" Burt Hinges (right pin) mortised into the face surface of the sign.
- 2 The reflective sheeting used on the sign background shall be placed over the leaves of the hinges.
- 3 Hinges shall be fastened to the sign with flat head stove bolts having a flat washer under the nut on back of sign.
- 4 All hinges, bolts, nuts and washers to be rust resistant.
- 5 Sign panels to be held in the open position with hooks and eyes or other approved fastening devices.

DETAIL I

FACE ELEV

Sign Edge

Face of Panel

Reflective Sheeting over Leaves of Hinge

Flat Head Stove Bolts

SECTION A-A

DETAILS OF SIGN AND BEACON FABRICATION AND USAGE

Construction Signs "A" through "D" shall be made of 5/8" Min Plywood or other material approved by the Department and as per details above.

Signs having reflectORIZED Red surfaces shall be fabricated from "Flexible Reflective Sheeting of the Non-Skipped Lens" type approved by the Department. Signs having reflectORIZED White surfaces shall be fabricated from "Flexible Reflective Sheeting of the Standard Lens" type approved by the Department.

Construction Sign "A" - ReflectORIZED White background with pointed Black lettering and stripes as shown above.

Construction Signs "B" through "D" - Top background to be reflectORIZED "Smooth Surface Red" with the legend and "Underline" to be a White process point. Balance of lettering to be painted Black over a reflectORIZED White background.

Construction Sign "E" - The word "DANGER" and the "Underline" only are to be a White process point over a reflectORIZED "Smooth Surface Red" background. Balance of lettering to be painted Black over a reflectORIZED White background.

Construction Sign "F" - The words "END CONSTRUCTION" and "Contractors Name" shall be painted Black over a reflectORIZED White background. Balance of lettering to be applied with a White process point over a reflectORIZED "Smooth Surface Red" background.

Construction Sign "G" - The legend to be painted Black over a reflectORIZED "Smooth Surface Yellow" background.

Flagman Warning Sign "H" - This sign shall be made of Plastic or other lightweight material, approved by the Department, having a white Red background with white lettering on the "Stop" side and a painted Green background with white lettering on the "Go" side. Panels to be grooved on one side to indicate reading of sign to flagman. This sign will be used whenever flagman are necessary. Sign to be reflectORIZED if used to stop traffic at night.

Detour Warning Sign "I" - This sign shall be made of 3/8" (Min) Plywood or other material suitable to the Department. Legend to be painted Black on a reflectORIZED "Smooth Surface Yellow" background.

Construction Sign "J" - 3/4" x 19" metal slabs to be placed between "NEXT 9 MILES" spaced so as to accommodate appropriate sized numerals. Required numerals to be furnished by the Department and installed by the Contractor. Numerals calculated to the nearest Mile.

Signs "A" through "F" shall be given 2 coats of white paint on the back side.

Construction Sign "D" - To be provided with a detachable Panel of 3/4" Plywood bolted to the sign as shown. This Panel shall be painted White with Black lettering (Indicate to nearest Mile).

Construction Signs shall be placed as follows:

Sign "A" - This is the first advance warning sign and shall be placed 1500 feet ahead of barricade or beginning of project terminal and on both sides of the traveled way in all cases.

Sign "B" - This is the second advance warning sign and shall be placed 1000 feet ahead of barricade or beginning of project terminal and on both sides of the traveled way on divided highways and singly on two-lane highways.

Sign "C" - This is the third advance warning sign in cases where barricades are used and shall be placed 750 to 1000 feet ahead of barricade or beginning of project terminal and on both sides of the traveled way on divided highways and singly on two-lane highways.

Sign "D" - This sign shall be placed to mark the beginning of the Project. It shall be placed singly and may be placed opposite barricade if desirable.

Sign "E" - This sign shall be placed 500 feet ahead of the situation being advised of.

Sign "F" - This sign shall be placed to mark the end of the Project. It shall be placed singly and may be placed opposite barricade if desirable.

Sign "G" - This sign shall be used frequently within the limits of the Project.

All material shall be sound and durable. Barricades, signs, symbols and lettering shown herein will be of good workmanship and well maintained. Unseen lettering will not be accepted.

Flares and Torches shall be either of the oil burning or electrical type approved by the Department and shall be placed 3 feet to 5 feet ahead of the object to be illuminated. Particular care shall be taken to protect all signs and barricades from smoke and smudge arising from the use thereof.

Flashers used on Type I or II Barricade shall be of the Battery or Electrical Type and shall have no less than 12,566 sq. inches of light area (4 dia. lens). The illuminating element in a flashing amber beacon or signal shall be flashed continuously at a rate between 50 or 60

flashes per minute which will be clearly distinguishable to traffic. The duration in which Flashers will be left in operation will be governed by field conditions and subject to approval by the Engineer.

Alternate methods of processing signs or the substitution of symbols or other reflecting elements for painted symbols will be permitted only after approval of such methods or materials by the Department.

The Department shall furnish and install the following as required **OUTSIDE THE LIMITS OF THE PROJECT:**

1. ROAD CONSTRUCTION AHEAD	Minimum 4
2. CAUTION OBEY TRAFFIC CONTROLS	As Required
3. CAUTION BARRICADE AHEAD	As Required
4. Standard Warning & Directional Signs	As Required

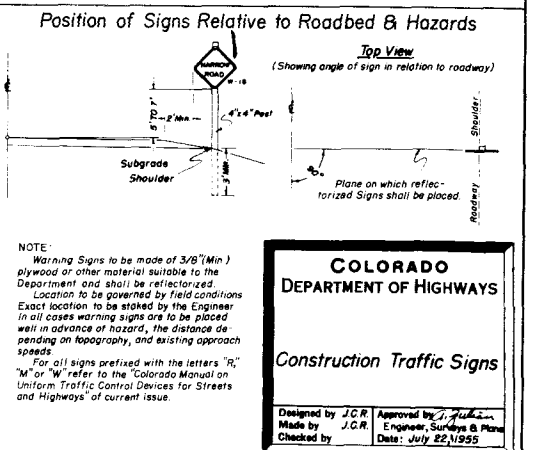
The Contractor shall furnish and install the following as required **WITHIN THE LIMITS OF THE PROJECT:**

1. All Barricades	As Required
2. "CAUTION PROJECT BEGINS"	Minimum 2
3. "DANGER MEN & EQUIPMENT WORKING IMMEDIATELY AHEAD"	As Required
4. "END CONSTRUCTION WE THANK YOU FOR YOUR COOPERATION"	Minimum 2
5. "SLOW PLEASE"	As Required
6. Standard Warning & Directional Signs	As Required
7. Approved Directional Arrows & Regulatory Signs for Barricades	As Required
8. Torches and Flares as follows:	Minimum 3
Type I Barricade	Minimum 1
Type II Barricade	2 Required

Flashes - Type I Barricade
Type II Barricade

including Type I Barricade located immediately inside of Project terminal points.

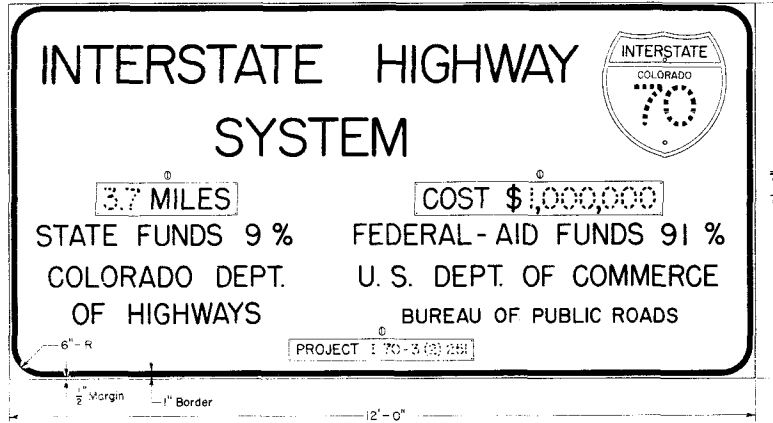
Layout of signs will be furnished the Contractor by the Traffic Operations Section indicating the details as to letter size, symbols, spacing, etc. which are required for these signs.



TYPICAL SIGNS STANDARD M-6-C

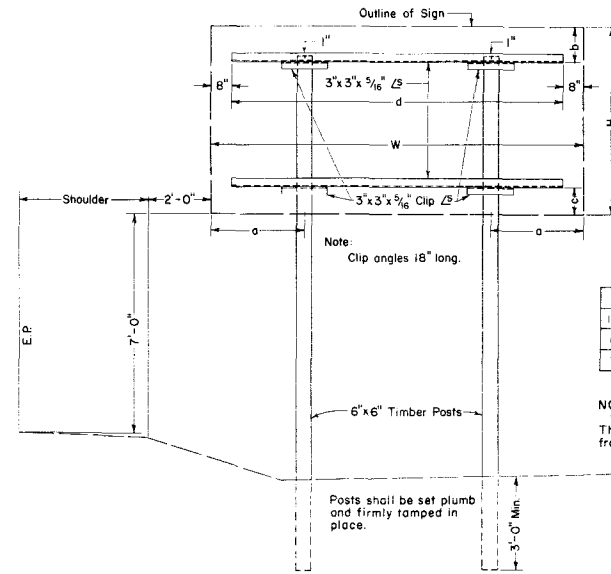
(MAY 1, 1962)

INTERSTATE SYSTEM



Ⓢ Plaque length variable, as determined by message.
 24" Standard Interstate Shield, for dimensions see "Interstate Signing Manual." Background, letters and numerals plain (nonreflective - Red, White and Blue). (Removable Plaque)

INSTALLATION DETAIL



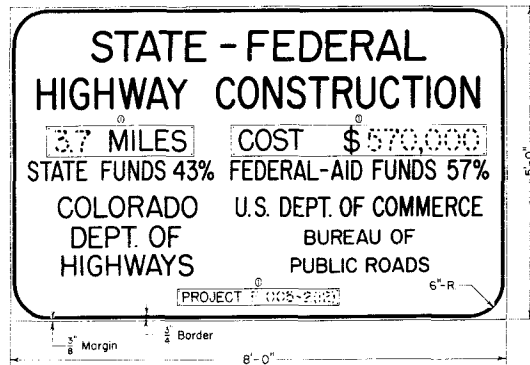
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.		

REVISIONS	

W	H	a	b	c	d
12'-0"	6'-0"	3'-0"	1'-1 1/2"	0'-10 1/2"	10'-8"
8'-0"	5'-0"	2'-0"	1'-1 1/2"	0'-10 1/2"	6'-8"
7'-0"	4'-0"	1'-9"	1'-1 1/2"	0'-10 1/2"	5'-8"

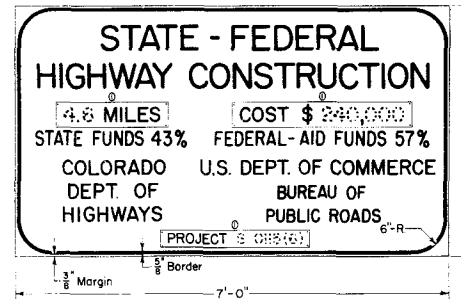
NOTE:
 Signs are to be placed facing traffic approaching the work. These signs should be located so as not to obscure or detract from the effectiveness of other official signs.

PRIMARY SYSTEM



Ⓢ Plaque length variable, as determined by message.

SECONDARY SYSTEM



Ⓢ Plaque length variable, as determined by message.

GENERAL NOTES

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

Signs shall be made of 3/4" Plywood or other material approved by the Department.
 Background to be painted plain white with stencil black letters, numerals and border.

Posts shall be 6"x6" S4S timber or other material approved by the Department and shall be painted white.

Layout of signs will be furnished the Contractor by the Traffic Operations Section indicating the details as to letter size, symbols, spacing, etc. which are required for these signs.

Figure for cost of project to be furnished contractor by Department.

If signs are for a single structure or interchange, name will be used in lieu of mileage. Such as: COLORADO RIVER BRIDGE or ARAPAHOE INTERCHANGE.

COLORADO
DEPARTMENT OF HIGHWAYS

IDENTIFICATION
SIGNS

Designed by V.H. Approved by C. J. ...
 Made by D.M.E. Engr. Surveys & Plans
 Checked by E.E.O. Date: Nov. 15 1965

STANDARD TYPES *of* DITCHES *and* CONSTRUCTION METHODS

STANDARD M-13-A

(MAY 1, 1962)

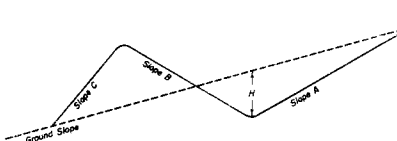
FED. ROAD RES. NO.	DIVISION	PROJECT NO.	SHEET NO.
9.	COLO.		

DETAILS *for* CONTOUR INTERCEPTING DITCHES

PURPOSE & USE OF THE TABLE

The primary purpose of the information for Contour and Intercepting Ditches shown on this sheet is to serve as a guide in construction and to readily arrive at yardages of excavation involved. Foremost consideration in constructing these ditches is given first to the natural ground line slope confronted in construction, thence to the other values shown on the Typical Section. By properly arriving at the combination of values shown on the Typical Section and in the Table for a specified condition, the number of cubic yards of excavation per 100 lin. ft. of ditch may be read under the appropriate column for this item.

Typical Section for Contour Intercepting Ditches



Typical Construction Layouts

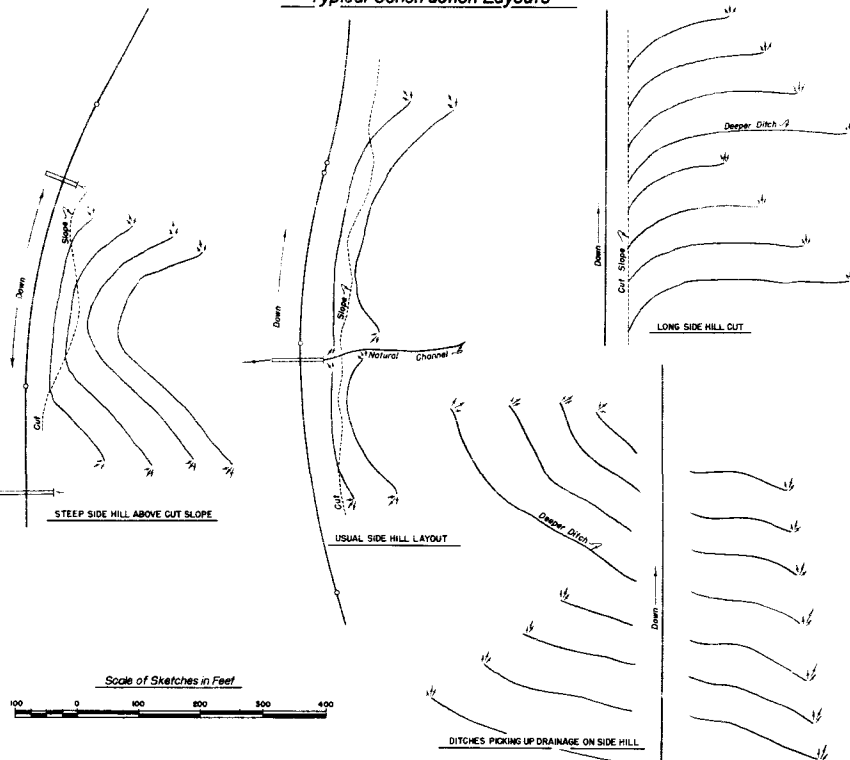
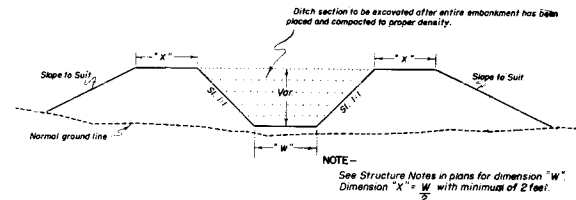


Table of Slopes and Yardages

Ground Or Flatter	▲ SLOPES			H	Cubic Yards per 100 lin. ft. of Ditch
	A	B	C		
5:1	2:1	4:1	2:1	15"	16
				18"	23
				21"	32
				15"	15
				18"	22
				21"	30
				15"	14
				18"	20
				21"	27
				15"	13
				18"	19
				21"	25
4:1	2:1	4:1	2:1	15"	10
				18"	14
				21"	19
				15"	17
				18"	23
				21"	30
				15"	10
				18"	15
				21"	20
				15"	10
				18"	14
				21"	19
3:1	2:1	4:1	2:1	15"	17
				18"	25
				21"	34
				15"	17
				18"	24
				21"	32
				15"	15
				18"	22
				21"	30
				15"	15
				18"	21
				21"	29
2:1	1-1/2:1	4:1	1-1/2:1	15"	13
				18"	18
				21"	25
				15"	12
				18"	17
				21"	23
				15"	11
				18"	16
				21"	21
				15"	10
				18"	14
				21"	20
1-1/2:1	3:1	1-1/2:1	1-1/2:1	15"	22
				18"	31
				21"	43
				15"	21
				18"	30
				21"	41
				15"	20
				18"	29
				21"	40
				15"	13
				18"	19
				21"	26
1:1	2:1	1:1	1:1	15"	12
				18"	17
				21"	24
				15"	12
				18"	17
				21"	23
				15"	20
				18"	29
				21"	40
				15"	8
				18"	12
				21"	16
1-1/2:1	1:1	1-1/2:1	1:1	15"	11
				18"	16
				21"	21
				15"	9

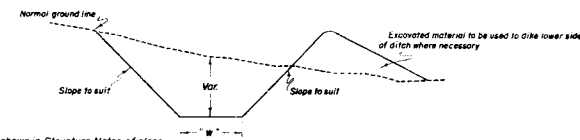
▲ Slopes are approximate and may be varied to suit conditions encountered during construction.

TYPICAL SECTIONS *for* DRAINAGE, IRRIGATION DITCHES *and* CHANNEL CHANGES



For Embankment Sections

(Generally for use in Irrigation Ditches & Channel Changes)



NOTE - Unless otherwise shown in Structure Notes of plans, dimension W = 1 foot.

For Cut Sections

GENERAL NOTES

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

All ditches are to be constructed to lines and grades as staked by the Engineer using the ditch section shown on plans or as ordered by the Engineer.

CONTOUR INTERCEPTING DITCHES - Ditches are to be laid out along the ground contour on a grade of not over 1% (Type of soil shall govern the grade).

Ends of ditches are to be lined up so that concentration of flow from a higher contour ditch into one of lower contour is, as far as possible avoided. The use of a deeper ditch is recommended where this condition is encountered.

The following horizontal spacing of ditches is recommended:

- 4% to 6% Approximately 70' Centers
- 8% to 10% Approximately 60' Centers
- 20% to 4:1 Slope Approximately 55' Centers
- 30% to 1-1/2:1 Slope Approximately 50' Centers

Where ditch checks are required the intervening ditch between one set of ditch checks shall not exceed a grade of 1.0%. Details of checks will be shown on plans when required.

REVISIONS

COLORADO DEPARTMENT OF HIGHWAYS

DITCH TYPES

Designed by C.G.M.	Approved by <i>[Signature]</i>
Made by C.G.M.	Engineer, Survey & Plans
Checked by	Date: <i>Apr. 17, 1962</i>

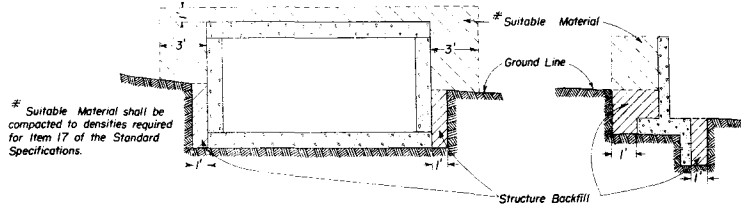
STANDARD M-16-A

(MAY 1, 1962)

FED. ROAD DISTRICT NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.		

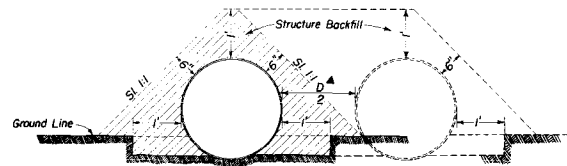
REVISION	

CONCRETE BOX CULVERTS & WINGWALLS



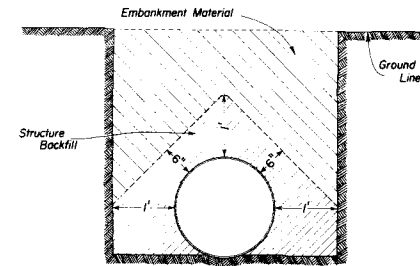
* Suitable Material shall be compacted to densities required for Item 17 of the Standard Specifications.

CIRCULAR CONDUIT



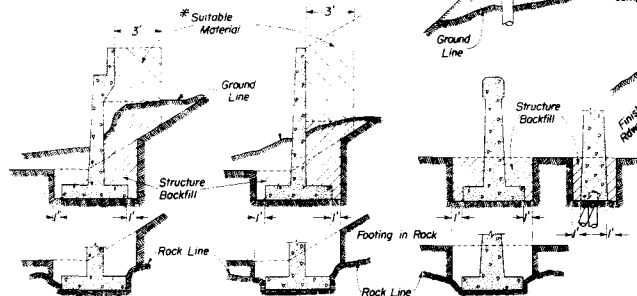
When two or more conduits are laid side by side, the distance between conduits shall be 1/2 the conduit diameter but not less than 1'-0".

SIPHONS OR CONDUIT IN TRENCH

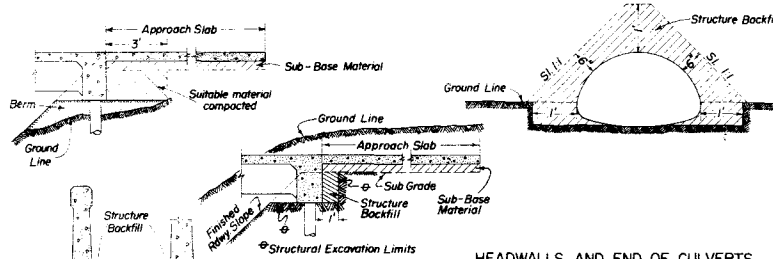


PIERS, ABUTMENTS, RETAINING WALLS ETC.

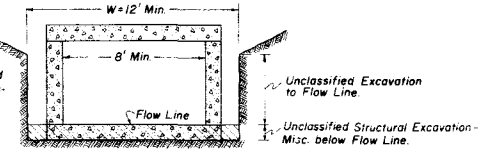
All material that is to be compacted shall be placed in horizontal layers not more than 6" inches in depth and compacted before the next layer is placed. For Arches, Rigid Frames and Box Culverts the fill shall be brought up uniformly on both sides of the center of structure to avoid stresses in the structure caused by unsymmetrical loading.



ELLIPTICAL OR ARCH CONDUIT



On all structures of 8' span or over, including extensions of old structures, excavation for structures shall be classified and paid for as "Unclassified Excavation" to Flow Line and "Unclassified Structural Excavation - Misc." below the Flow Line of box.



GENERAL NOTES

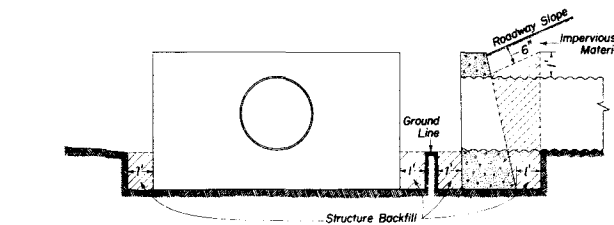
All work shall be done according to the Standard Specifications of the Colorado Department of Highways applicable to the Project.

If, in the opinion of the Engineer, the material beneath the Structure is of such character as to cause unequal settlement along the length of the Structure, the material shall be removed to such a depth ordered, and backfilled with gravel or other suitable material and compacted in accordance with Item 16 of the Standard Specifications.

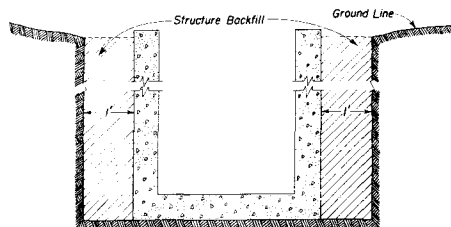
Suitable Material shall be any "Unclassified Excavation" material developed on the project except large rock, boulders or other materials considered by the Engineer to be undesirable for backfill around culverts, bases etc.

For concrete box culverts located where roadway cross section is in Fill, embankment shall be built up and compacted to a point one (1) ft above flow line of box. The trench shall then be excavated as shown to accommodate construction of the box.

HEADWALLS AND END OF CULVERTS



DROP INLETS, DIVISION BOXES, INTERCEPTING HEADWALLS ETC.



COLORADO DEPARTMENT OF HIGHWAYS

BACKFILL AROUND STRUCTURES

Designed by H.E.P. | Approved by G.W. Neustadt
 Made by D.M.E. | Bridge Engineer
 Checked by L.E.O. | Date: May 2, 1958

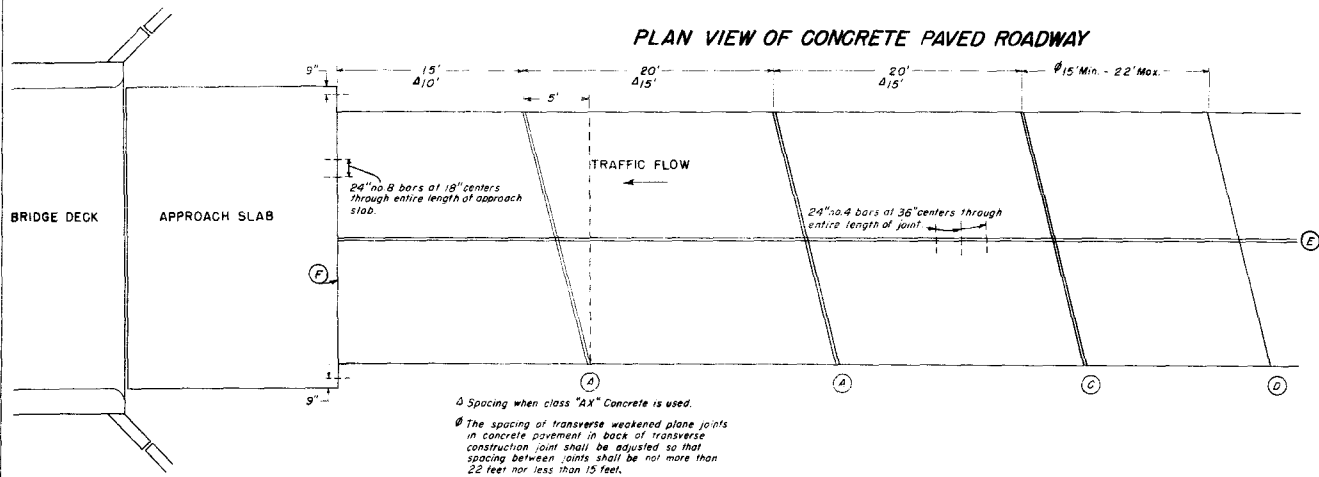
STANDARD CONCRETE PAVEMENT JOINT DETAILS

STANDARD M-37-A

(MAY 1, 1962)

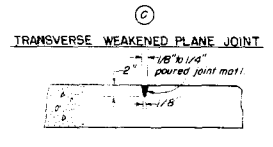
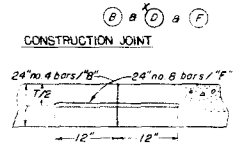
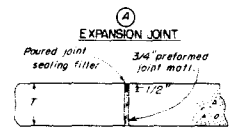
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO		

REVISIONS	



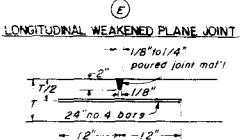
Δ Spacing when class "AX" Concrete is used.

∅ The spacing of transverse weakened plane joints in concrete pavement in back of transverse construction joint shall be adjusted so that spacing between joints shall be not more than 22 feet nor less than 15 feet.



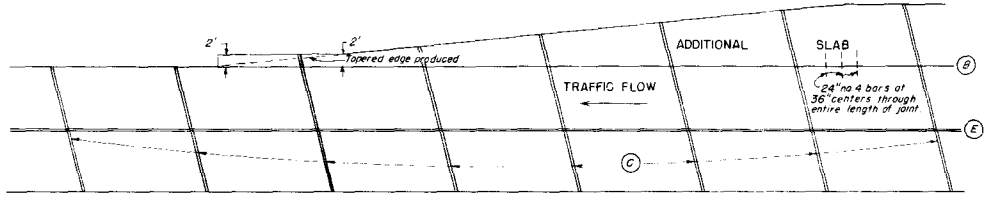
X Required when pour has been interrupted more than 30 minutes

Normal spacing for Transverse Weakened Plane Joints shall be 20 feet.

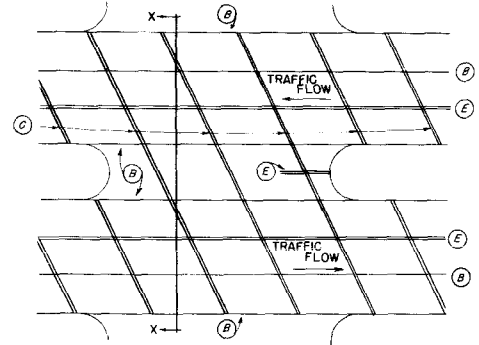


To be used for the following:
 1. To divide lanes as shown in plan view above.
 2. Along centerline of four lane project between medians at intersections where median is over 15'

DETAILS FOR CONSTRUCTION OF CONCRETE ACCELERATION & DECELERATION LANES



TYPICAL STREET INTERSECTION



GENERAL NOTES

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

Bars designated by number is "no. 4 bars" are deformed reinforcing bars, intermediate grade.

The cost of all form and joint material shown on this sheet is to be included in the bid price for Concrete Pavement.

See plans for dimension "T"

COLORADO DEPARTMENT OF HIGHWAYS

CONCRETE PAVEMENT JOINTS

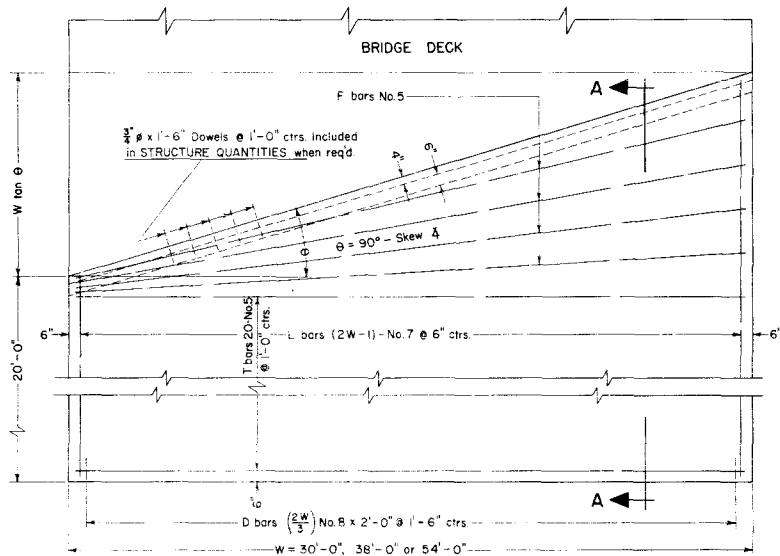
Designed by T.C.R. Approved by [Signature]
 Made by H.M. Engineer, Surveys & Plans
 Checked by [Signature] Date March 7, 1962

STANDARD M-37-B

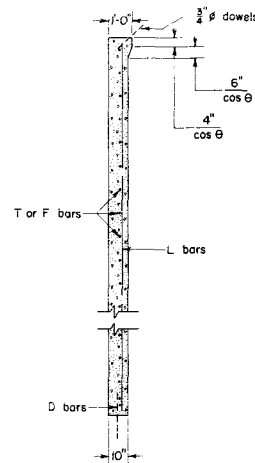
(MAY 1, 1962)

FED. DIST. REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO		

REVISIONS	



APPROACH SLAB - PLAN



SECTION A - A

Bars Required For 1 Approach Slab / 30'-0" Roadway

T = No. 5, Str.		F = No. 5, Str.		L = No. 7, Str.		D = No. 8, Str.	
No.	Length	No.	Length	No.	Length	No.	Length
20	29'-6"	15 tan θ	29'-6"	59	19'-6" by (6 tan θ) inches to 19'-6" + (29 tan θ) ft.	20	2'-0"

Quantities For 1 Approach Slab

Reinforcing Steel:		=	Lb.
F bars	466 tan θ	=	Lb.
L bars	2375 + 1766 tan θ	=	729 Lb.
T + D bars		=	729 Lb.
TOTAL (includes 1% ± Overrun)		=	Lb.

Bars Required For 1 Approach Slab / 54'-0" Roadway

T = No. 5, Str.		F = No. 5, Str.		L = No. 7, Str.		D = No. 8, Str.	
No.	Length	No.	Length	No.	Length	No.	Length
20	53'-6"	27 tan θ	53'-6"	107	19'-6" by (6 tan θ) inches to 19'-6" + (53 tan θ) ft.	36	2'-0"

Quantities For 1 Approach Slab

Reinforcing Steel:		=	Lb.
F bars	1522 tan θ	=	Lb.
L bars	4307 + 5854 tan θ	=	1321 Lb.
T + D bars		=	1321 Lb.
TOTAL (includes 1% ± Overrun)		=	Lb.

Quantity of Concrete Pavement for 1 Approach Slab

$$\frac{W}{18} (40 + W \tan \theta) = \text{Sq Yds}$$

Bars Required For 1 Approach Slab / 36'-0" Roadway

T = No. 5, Str.		F = No. 5, Str.		L = No. 7, Str.		D = No. 8, Str.	
No.	Length	No.	Length	No.	Length	No.	Length
20	37'-6"	19 tan θ	37'-6"	75	19'-6" by (6 tan θ) inches to 19'-6" + (37 tan θ) ft.	25	2'-0"

Quantities For 1 Approach Slab

Reinforcing Steel:		=	Lb.
F bars	750 tan θ	=	Lb.
L bars	3019 + 2864 tan θ	=	925 Lb.
T + D bars		=	925 Lb.
TOTAL (includes 1% ± Overrun)		=	Lb.

NOTES

Class of Concrete shall be "Pavement".
 Concrete shall be paid for under Item 37 by the Sq. Yd. as "Concrete Pavement" of the specified thickness.
 Reinforcing Steel required in Approach Slab will be paid for under Item 47.

COLORADO
DEPARTMENT OF HIGHWAYS

**CONCRETE PAVEMENT
BRIDGE APPROACH
SLAB**

Designed by J.G.G. Checked by J.F. Approved by J. Date: March 7, 1962

STANDARD M-46-B

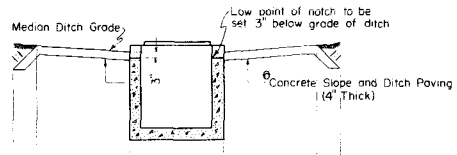
(MAY 1, 1962)

FED ROAD REG NO	DIVISION	PROJECT NO	SHEET NO
9	COLORADO		

REVISIONS	

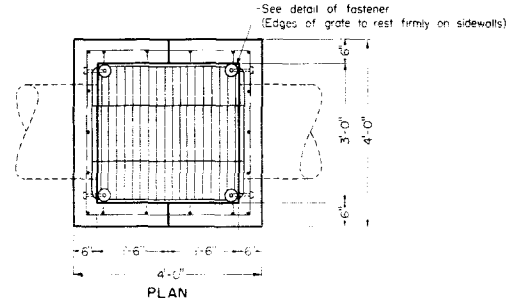
TYPE A

FOR USE AT BOTTOM OF VERTICAL CURVE

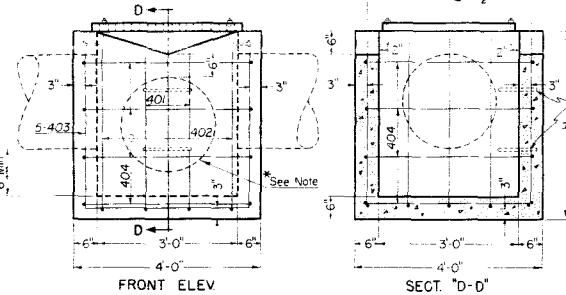


SECT. "A-A"

Materials used in the construction of Inlet Gratings shall meet the requirements of Item 48, Structural Steel, in the Standard Specifications.

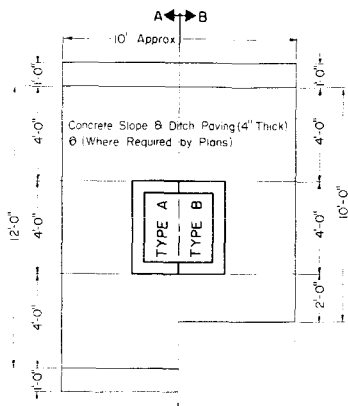


PLAN

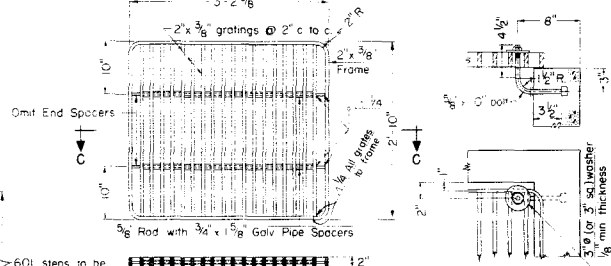


FRONT ELEV

SECT. "D-D"



LAYOUT OF INLET IN MEDIAN DITCH



SECT. "C-C"

DETAIL OF GRATING

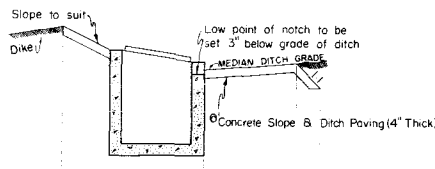
MATERIAL LIST FOR GRATING AND FASTENERS

Strap Iron Frame	1 pc	2" x 3/8" x 11'-9 5/8"	@ 2.55 lb per ft = 30.0 lb
Strap Iron Gratings	18 pcs	2' x 3/8" x 2'-9 1/4"	@ 2.55 lb per ft = 127.2 lb
Galv Iron Pipe Spacers	34 pcs	3/8" x 1 1/8"	@ 1.13 lb per ft = 5.2 lb
Tie Rods	2 pcs	5/8" x 3' 1 1/8"	@ 1.04 lb per ft = 6.5 lb
Bolts	4 pcs	5/8" x 10"	@ 1.03 lb ea. = 4.1 lb
Washers	4 pcs	@ 0.23 lb ea. = 0.9 lb	

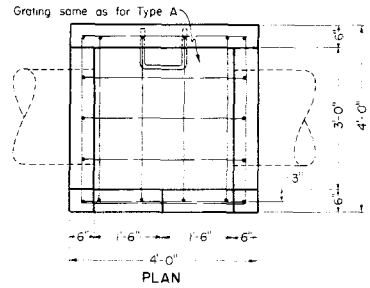
† NOTE: Acceptable equivalent Gratings may be substituted after approval by the Engineer.

TYPE B

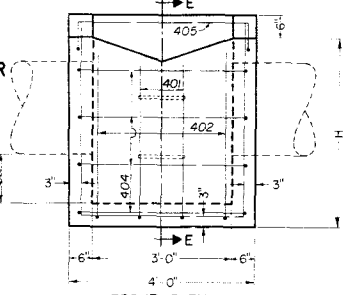
FLOW FROM ONE DIRECTION



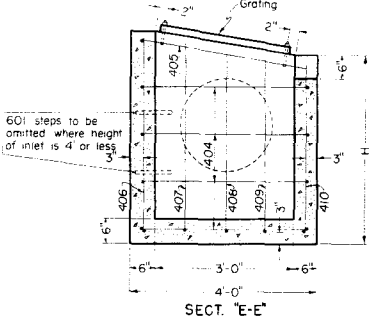
SECT. "B-B"



PLAN



FRONT ELEV.



SECT. "E-E"

QUANTITIES FOR ONE INLET

H	CLASS "A" CONCRETE		REINFORCING STEEL	
	CU YDS		LBS	
	TYPE A	TYPE B	TYPE A	TYPE B
3'-0"	0.91	1.00	83	93
3'-6"	1.04	1.13	89	100
4'-0"	1.17	1.26	105	116
4'-6"	1.30	1.39	115	126
5'-0"	1.43	1.52	136	146
5'-6"	1.56	1.65	142	153
6'-0"	1.69	1.78	158	169
6'-6"	1.82	1.91	168	179
7'-0"	1.95	2.04	185	195
7'-6"	2.08	2.17	191	202
8'-0"	2.21	2.30	211	222
8'-6"	2.34	2.43	217	228
9'-0"	2.47	2.56	234	244
9'-6"	2.60	2.69	244	255
10'-0"	2.73	2.82	260	271
10'-6"	2.86	2.95	266	277
11'-0"	2.99	3.08	287	297
11'-6"	3.12	3.21	293	304
12'-0"	3.25	3.34	309	320

0 Includes 1% for overrun
Volume occupied by pipes not to be deducted from quantities.

* Note for Longitudinal Pipe 6" minimum between bottom of inlet opening and top of Longitudinal Pipe.

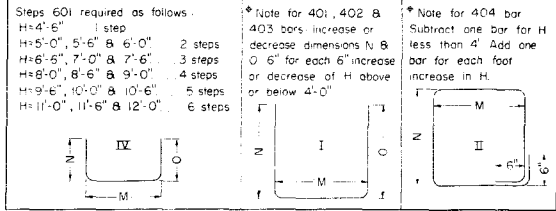
BAR LIST FOR H=4'-0"

MARK	NO REQ'D	KIND	TYPE A DIMENSIONS				TYPE B DIMENSIONS			
			M	N	O	U	M	N	O	LENGTH
401	2	I	3'-6"	3'-3"	3'-3"	10'-0"	3'-6"	3'-3"	4'-1"	10'-10"
402	2	I	3'-6"	3'-6"	3'-6"	10'-6"	3'-6"	3'-6"	4'-1"	11'-1"
403	5	I	3'-6"	3'-7"	3'-7"	10'-8"	3'-6"	3'-6"	4'-1"	11'-1"
404	4	II	3'-7"	3'-7"	3'-7"	15'-4"	3'-7"	3'-7"	3'-7"	5'-4"
405	1	I	3'-7"	3'-7"	3'-7"	10'-9"	3'-7"	3'-7"	3'-7"	10'-9"
406	1	I	3'-6"	4'-1"	4'-1"	11'-8"	3'-6"	4'-1"	4'-1"	11'-8"
407	1	I	3'-6"	4'-0"	4'-0"	11'-6"	3'-6"	4'-0"	4'-0"	11'-6"
408	1	I	3'-6"	3'-10"	3'-10"	11'-2"	3'-6"	3'-10"	3'-10"	11'-2"
409	1	I	3'-6"	3'-8"	3'-8"	10'-10"	3'-6"	3'-8"	3'-8"	10'-10"
410	1	J	3'-6"	3'-7"	3'-7"	10'-8"	3'-6"	3'-7"	3'-7"	10'-8"
601	1	IV	1'-0"	0'-10"	0'-10"	2'-8"	1'-0"	0'-10"	0'-10"	2'-8"

All reinforcing bars to be 1/2"

BENDING DIAGRAMS (SAME FOR TYPES A & B)

All dimensions out to out of bars



▲ NOTE: Cut or bend bars to fit around pipes as required

GENERAL NOTES

- All work shall be done according to the Standard Specifications of the Colorado Department of Highways applicable to the project.
- All concrete shall be Class "A".
- All walls shall have forms on both sides. Bevel all exposed corners to a 1" face.
- All reinforcing bars shall be deformed, of intermediate grade, and shall be tagged with the station number and bar designation.

All edge distances not marked clear are to the center of the bar.
Inlet grating to be painted as per specifications for structural steel. One shop coat of Zinc Chromate primer and two field coats of Aluminum.

COLORADO
DEPARTMENT OF HIGHWAYS

CONCRETE MEDIAN INLETS

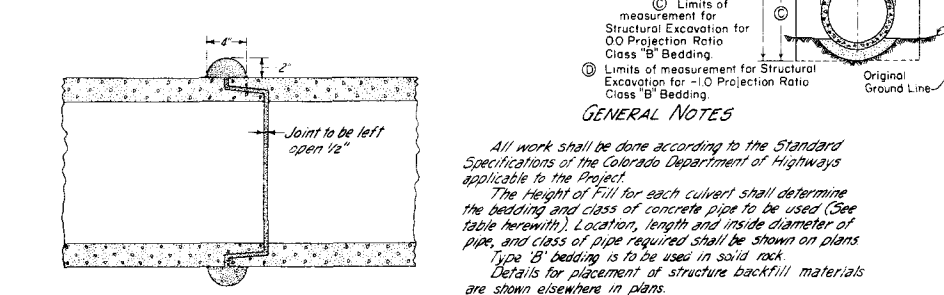
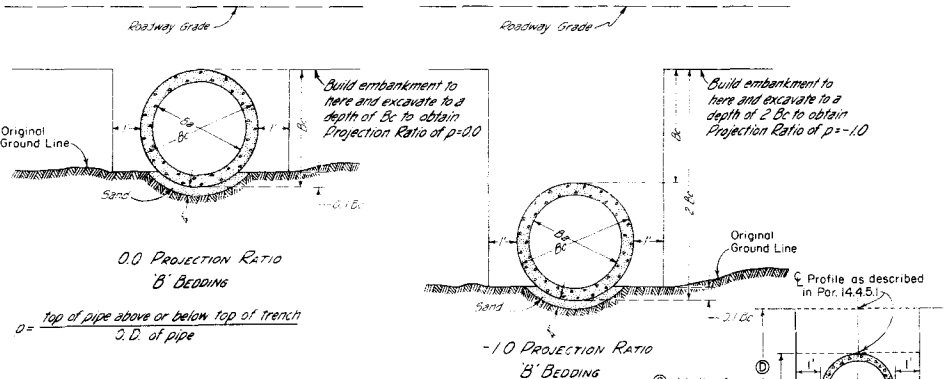
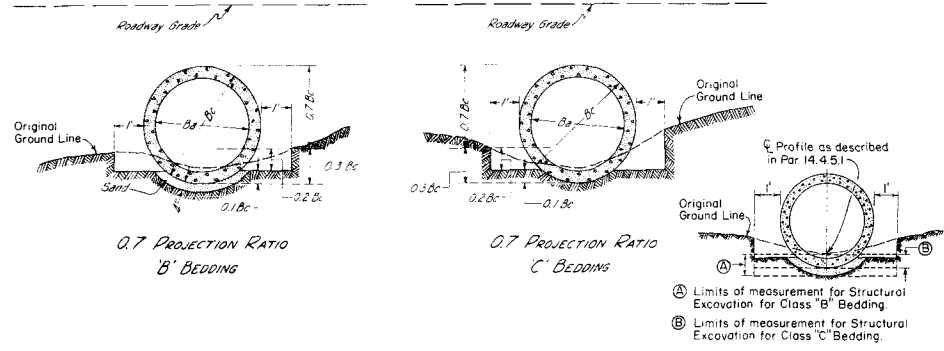
Designed by: *ABH*
Checked by: *DLV*

Approved by: *Richard L. ...*
Date: *May 1, 1962*

STANDARD M-52-A

(MAY 1, 1962)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.		



CONCRETE OR MORTAR PIPE JOINT

Where the flow line grade of the pipe is 10% or greater, all pipe shall be the Bell and Spigot type or shall be Tongue and Groove pipe with concrete collars as detailed above or a type approved in writing by the Engineer

GENERAL NOTES

All work shall be done according to the Standard Specifications of the Colorado Department of Highways applicable to the Project.

The Height of Fill for each culvert shall determine the bedding and class of concrete pipe to be used (See table herewith). Location, length and inside diameter of pipe, and class of pipe required shall be shown on plans. Type 'B' bedding is to be used in solid rock.

Details for placement of structure backfill materials are shown elsewhere in plans.

When projection ratios of 0.0 or -1.0 are used, backfilling above structure backfill material shall be made with materials excavated in order to produce the projection ratio. Cost of this backfilling is to be included in the contract unit price for Item 52. If material does not stand with a vertical face when attempting to produce 0.0 or -1.0 projection ratios, this standard is not applicable.

APPROVED COMBINATIONS OF HEIGHT OF FILL - PROJECTION RATIO - BEDDING - CLASS

B ₂	HEIGHT OF FILL	PROJECTION RATIO	BEDDING	CLASS
12"	#-10'	0.7	C	II
	7'-10"	0.7	C	III
	10'-15'	0.7	C	IV
	15'-19'	0.7	B	IV
	19'-29'	0.0	B	IV
15"	#-8'	0.7	C	II
	8'-11'	0.7	C	III
	11'-16'	0.7	C	IV
	16'-20'	0.7	B	IV
	20'-30'	0.0	B	IV
18"	#-8'	0.7	C	II
	8'-11'	0.7	C	III
	11'-16'	0.7	C	IV
	16'-20'	0.7	B	IV
	20'-30'	0.0	B	IV
21"	#-8'	0.7	C	II
	8'-11'	0.7	C	III
	11'-17'	0.7	C	IV
	17'-21'	0.7	B	IV
	21'-31'	0.0	B	IV
24"	#-9'	0.7	C	II
	9'-12'	0.7	C	III
	12'-19'	0.7	C	IV
	19'-22'	0.7	B	IV
	22'-31'	0.0	B	IV
27"	#-9'	0.7	C	II
	9'-13'	0.7	C	III
	13'-18'	0.7	C	IV
	18'-22'	0.7	B	IV
	22'-32'	0.0	B	IV
30"	#-10'	0.7	C	II
	10'-12'	0.7	C	III
	12'-18'	0.7	C	IV
	18'-22'	0.7	B	IV
	22'-32'	0.0	B	IV
33"	#-9'	0.7	C	II
	9'-13'	0.7	C	III
	13'-19'	0.7	C	IV
	19'-23'	0.7	B	IV
	23'-33'	0.0	B	IV
36"	#-10'	0.7	C	II
	10'-13'	0.7	C	III
	13'-19'	0.7	C	IV
	19'-23'	0.7	B	IV
	23'-34'	0.0	B	IV
42"	#-10'	0.7	C	II
	10'-13'	0.7	C	III
	13'-18'	0.7	C	IV
	18'-22'	0.7	B	IV
	22'-34'	0.0	B	IV
48"	#-11'	0.7	C	II
	11'-14'	0.7	C	III
	14'-19'	0.7	C	IV
	19'-24'	0.7	B	IV
	24'-34'	0.0	B	IV

B ₃	HEIGHT OF FILL	PROJECTION RATIO	BEDDING	CLASS
54"	#-10'	0.7	C	II
	10'-14'	0.7	C	III
	14'-19'	0.7	C	IV
	19'-23'	0.7	B	IV
	23'-34'	0.0	B	IV
60"	#-11'	0.7	C	II
	11'-14'	0.7	C	III
	14'-20'	0.7	C	IV
	20'-24'	0.7	B	IV
	24'-35'	0.0	B	IV
66"	#-11'	0.7	C	II
	11'-14'	0.7	C	III
	14'-20'	0.7	C	IV
	20'-24'	0.7	B	IV
	24'-34'	0.0	B	IV
72"	#-12'	0.7	C	II
	12'-15'	0.7	C	III
	15'-20'	0.7	C	IV
	20'-25'	0.7	B	IV
	25'-35'	0.0	B	IV
78"	#-11'	0.7	C	II
	11'-15'	0.7	C	III
	15'-20'	0.7	C	IV
	20'-25'	0.7	B	IV
	25'-34'	0.0	B	IV
84"	#-11'	0.7	C	II
	11'-15'	0.7	C	III
	15'-21'	0.7	C	IV
	21'-26'	0.7	B	IV
	26'-35'	0.0	B	IV
90"	#-12'	0.7	C	II
	12'-15'	0.7	C	III
	15'-20'	0.7	C	IV
	20'-22'	0.0	B	IV
	22'-25'	-1.0	B	IV
96"	#-12'	0.7	C	II
	12'-15'	0.7	C	III
	15'-19'	0.7	C	IV
	19'-23'	0.0	B	IV
	23'-25'	-1.0	B	IV
102"	#-12'	0.7	C	II
	12'-15'	0.7	C	III
	15'-18'	0.7	B	IV
	18'-23'	0.0	B	IV
	23'-25'	-1.0	B	IV
108"	#-13'	0.7	C	II
	13'-16'	0.7	C	III
	16'-19'	0.7	B	IV
	19'-23'	0.0	B	IV
	23'-25'	-1.0	B	IV

REVISIONS

COLORADO
DEPARTMENT OF HIGHWAYS

REINFORCED CONCRETE PIPE

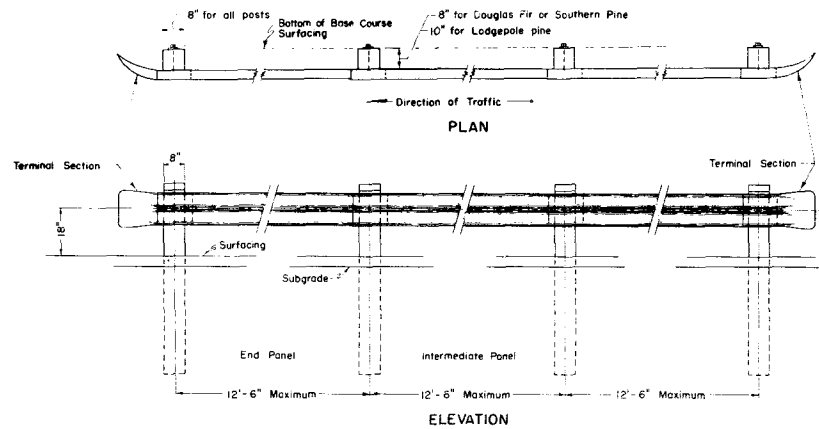
Approved by: [Signature] Date: May 16, 1960
Checked by: LEO

STANDARD M-75-A

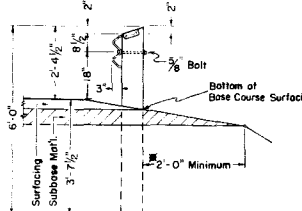
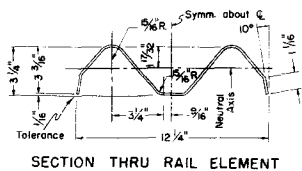
(MAY 1, 1962)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.		

REVISIONS

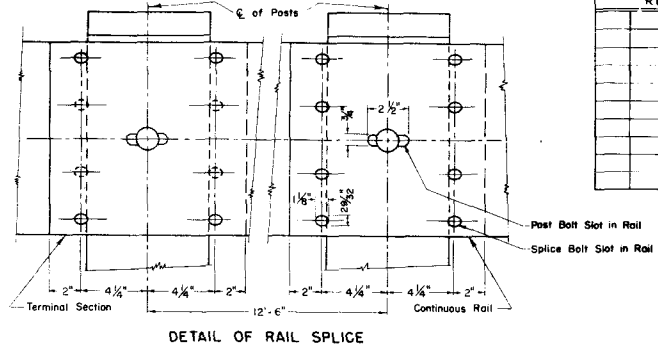


TYPICAL METAL PLATE GUARD RAIL

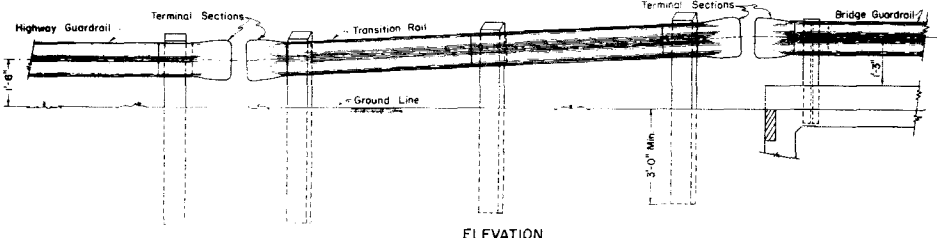


Where Subbase width does not give the two feet, subgrade shall be widened for lateral support.

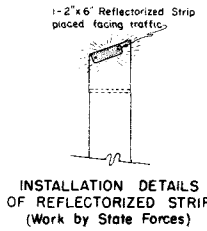
DETAIL SHOWING TYPICAL LOCATION OF GUARD FENCE



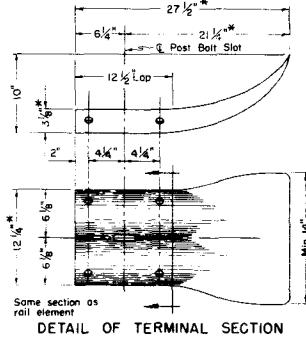
DETAIL OF RAIL SPLICE



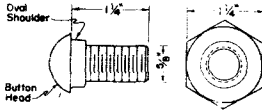
ELEVATION



INSTALLATION DETAILS OF REFLECTORIZED STRIP (Work by State Forces)



DETAIL OF TERMINAL SECTION



SPlice Bolt
8 Req'd per splice
4 Req'd per terminal

GENERAL NOTES

All work shall be done according to the Standard Specifications of the Colorado Department of Highways, applicable to the project.
 All wood posts shall be close grained Douglas Fir of the Coast Region, Dense Longleaf or Shortleaf Southern Pine or Lodgepole Pine.
 All wood posts shall be square edged, full sawn, with tops beveled as shown. All bolt holes are to be drilled 1/8 inch larger than diameter of bolt before treatment is applied. All wood posts shall be pressure treated for the full length of the posts as provided for in the specifications.
 Timber posts fabricated from Douglas Fir or Southern Pine shall be 8" x 8" square. Timber posts fabricated from Lodgepole Pine shall be 8" x 10" and shall be installed with the 8" face parallel to the center line of the roadway.
 All wood posts shall be set and tamped in plumb and firm to the lines and grades as directed by the Engineer.
 Where sidewalks are constructed adjacent to the lane for traffic, guard fence shall be placed in such a manner that the fence lies on the line between the sidewalk area and the normal roadway shoulder.
 Where guard fences are constructed on the approaches to bridges with sidewalks, the fence at bridge shall be placed in line with the face of the curbing on the bridge.

METAL PLATE GUARD FENCE (STEEL) SPECIFICATIONS

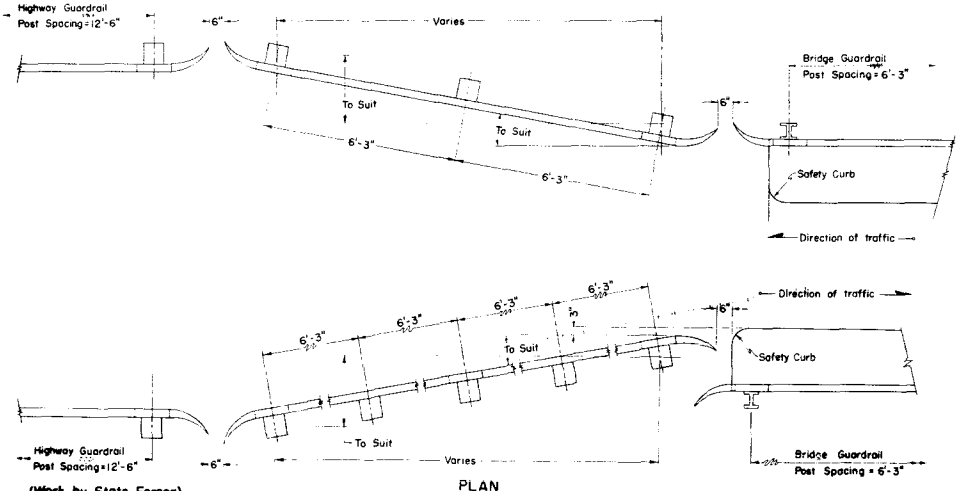
Metal plate guard rail shall be painted in accordance with standard specifications.
 Metal plate guard rail galvanized in accordance with Table 1 of ASTM A-93 may be furnished in lieu of painting requirements.
 Metal plates shall not be lighter than No 12 U.S. standard gauge.
 Standard galvanized wrought steel washers shall be used under all bolt heads and nuts coming in contact with wood posts.

METAL PLATE GUARD FENCE (ALUMINUM) SPECIFICATIONS

Aluminum plates shall have a nominal thickness of not less than 0.125 inches.
 No painting of the aluminum guard rail elements, end sections or fasteners will be required.
MATERIAL SPECIFICATIONS: The following members shall be of the alloy and temper specified, and shall conform to the ASTM specification listed below.

Member	Alloy	ASTM Specification
Rail elements	2024-T3	B 209
Terminal Sections	2024-T42	B 209
Bolts	2024-T4	B 211
Nuts	6061-T6	B 211
Washers	2024-T4	B 211

Dimensions marked by (*) may vary by no more than 1/8 inch.
 All rail elements, terminal sections and appurtenances shall be treated to prevent oxidation.



TRANSITION RAIL AT BRIDGES ONLY

Reflective delineators shall be furnished and installed by State Forces after the Contractor has finished his operations.

COLORADO DEPARTMENT OF HIGHWAYS

METAL PLATE GUARD FENCE

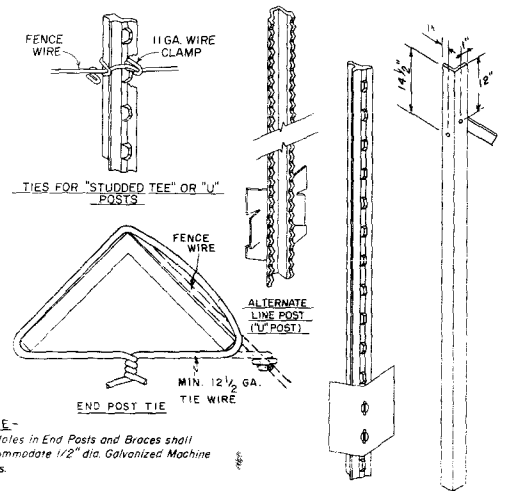
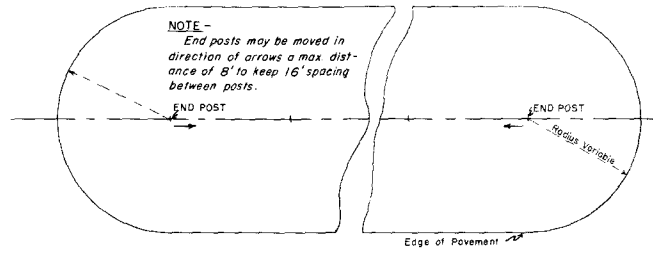
Designed by _____
 Made by A.E.W.
 Checked by _____

Approved by _____
 Bridge Engineer
 Date: 5/1/62

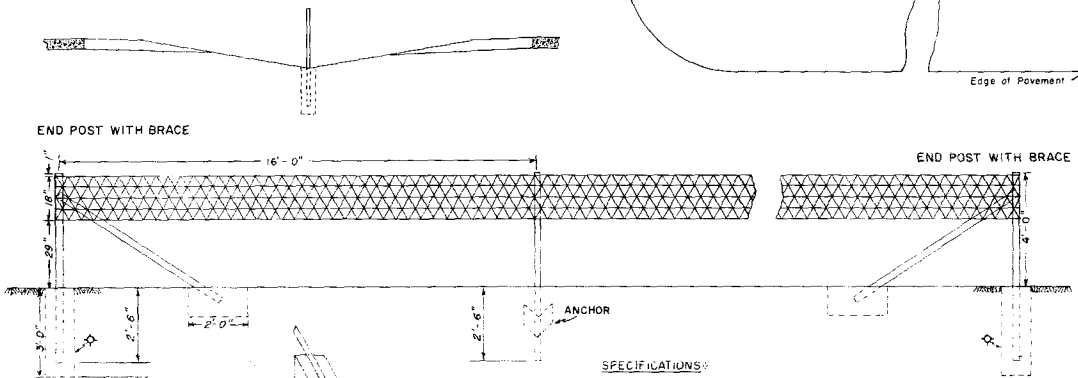
STANDARD M-76-B

(MAY 1, 1962)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.		



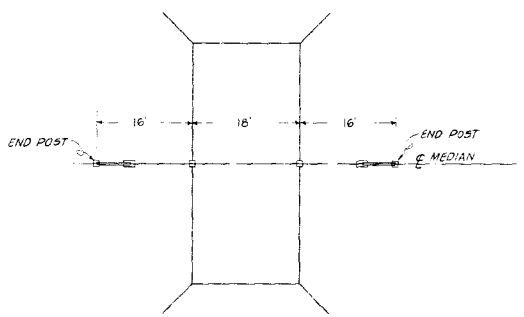
NOTE - Holes in End Posts and Braces shall accommodate 1/2" dia. Galvanized Machine Bolts.



NOTE - All footings for end posts shall be of Class "A" Concrete and shall have crowned tops. The cost involved shall be included in the bid price for end posts.

⊕ Diameter Circular Holes may be used in lieu of Square Holes.

LOCATION OF BARRIER FENCE AT BOX CULVERTS WITH NO FILL



SPECIFICATIONS:

- END POSTS -**
 TYPE - 2-1/2" x 2-1/2" x 1/4" Structural Steel Angles
 WGT - 3.81 lbs. per lin. ft. min.
 LENGTH - 6'-6" Min.
 NO. OF BRACES - 1
- LINE POSTS -**
 TYPE - "Studded Tee" or "U" Post
 WGT - 1.28 lbs. per lin. ft., Min., without Anchor.
 LENGTH - 6'-6" Min.
 ANCHOR - Securely fastened, with bearing surface sufficient to resist movement of post. Wgt 0.57 lbs. Min.
- BRACES -**
 TYPE - 2" x 2" x 1/4" Structural Steel Angles
 WGT - 3.08 lbs. per lin. ft. min.
 LENGTH - Same as end post used
- 4" x 4" WIRE MESH FENCE -**
 WIDTH - 18 inches
 WGT - 0.41 lbs. per lin. ft. minimum
 HORIZONTAL WIRES - 2 strands No. 12-1/2 Ga.
 CROSS WIRES - 1 strand No. 14 Ga.
 CONSTRUCTION - Cross wires to be woven with horizontal wires making a one piece fabric.
- TIES**
 END POSTS - Each horizontal wire of mesh to be wrapped around post and fastened in addition to two (2) tie wires.
 LINE POSTS - Min three (3) ties per post for mesh

General Notes

All work shall be done in accordance with the Standard Specifications of the Colorado Department of Highways applicable to the project.
 All posts and braces shall be of the types and weights as shown on this sheet or acceptable equivalents. Holes to be provided in end posts as detailed hereon.
 Wire mesh used as shown shall be galvanized.
 On curves, fence wire shall be placed on side of post which would prevent tension on fence ties.
 Posts shall meet U.S. Dept. of Commerce Commercial Standard 184-51.
 Additional End Posts shall be supplied for pull brace posts when required by the Engineer.

REVISIONS	
12-14-62	Add End Posts L.E.O.

COLORADO
DEPARTMENT OF HIGHWAYS

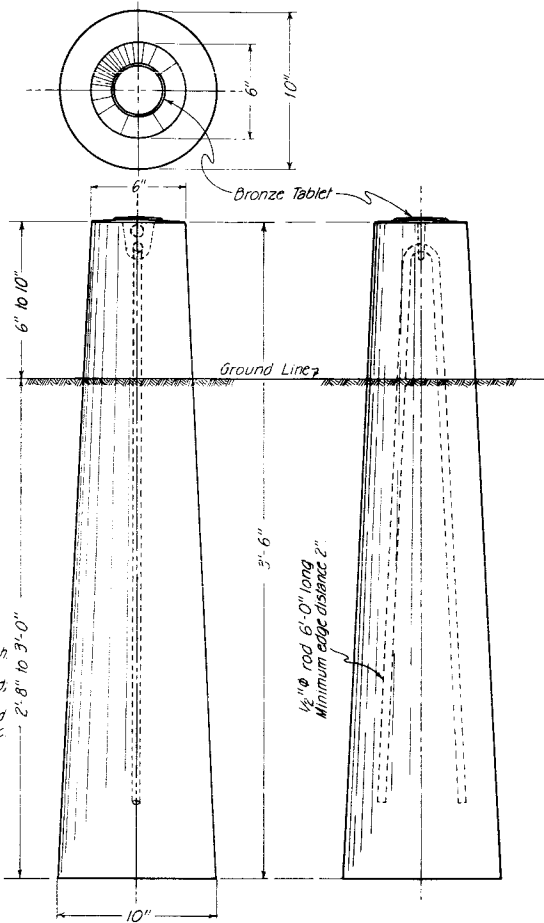
BARRIER - FENCE

Designed by E.E.O. Approved by *E.E.O.*
 Made by E.E.O. Engineer, Survey & Plans
 Checked by *E.E.O.* Date 3/29/62

RIGHT OF WAY MARKER POST STANDARD M-81-A

(MAY 1, 1962)

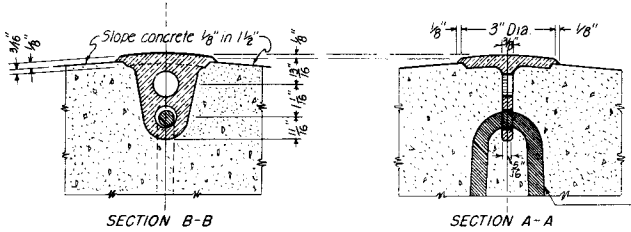
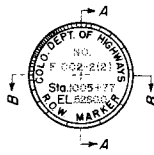
FEDERAL ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO		
REVISIONS			



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.)



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

Omit and use 12" x 1/2" rod for Bench Mark Tablet.

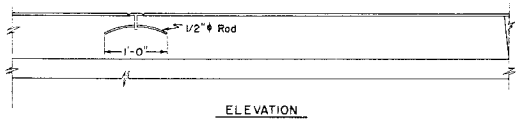
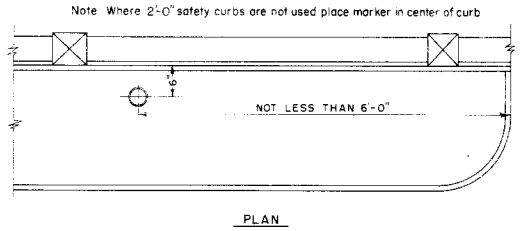
BENCH MARK

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.



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

COLORADO DEPARTMENT OF HIGHWAYS

MARKER POSTS AND BENCH MARKS

Designed by R.E.L. Approved by *A. Julian*
 Made by E.E.O. *A. Julian*
 Checked by R.E.L. Date: Nov. 13, 1962

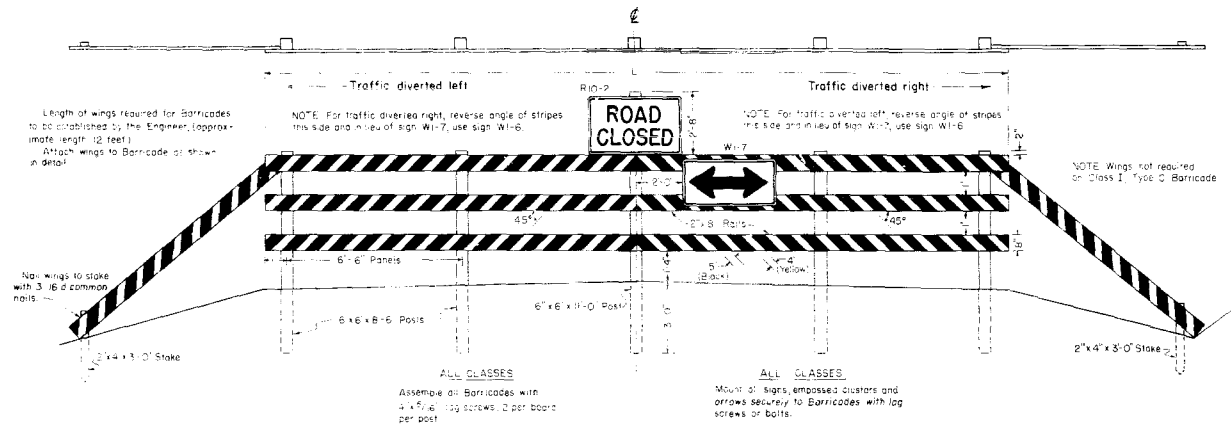
STANDARD TIMBER BARRICADES

STANDARD M-142-A

(MAY 1, 1962)

FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO		

CLASS I



NOTE: Alternate materials or other reflective elements on Traffic Signs or Barricades will be permitted only after approval of such material by the Department.

REVISIONS	

GENERAL NOTES

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

All signs shall conform to the standards set forth in the Manual on Uniform Traffic Control Devices for Streets and Highways published by U. S. Department of Commerce, Bureau of Public Roads, June, 1961, (or latest revision).

All sign materials shall conform to the Colorado Manual on Uniform Traffic Control Devices for Streets and Highways, 1952 (or latest revision).

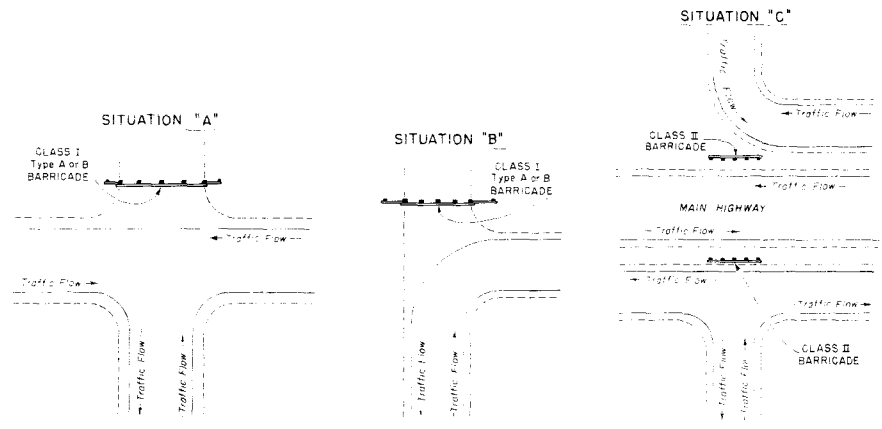
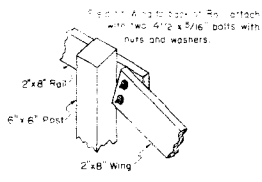
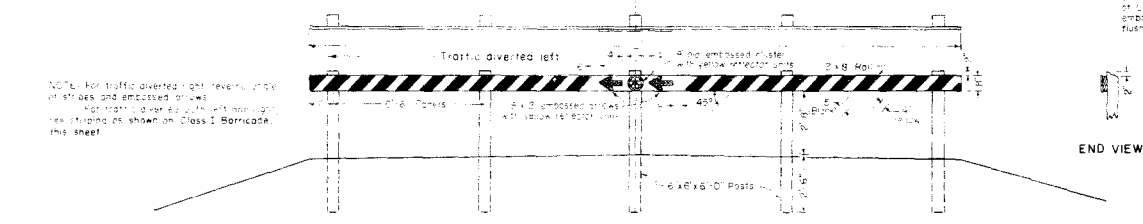
All paint and methods of painting shall be in conformity with item 3B of the Standard Specifications. Planking and wings on all barricades shall be painted with 2 coats of "Exterior Black Paint" on all sides before adding reflective strips. Reflective strips shall be "Cutout smooth surface yellow" of a type approved by the Department.

Each barricade rail, including wings, shall be striped with reflective yellow strips slanting downward toward the side to which traffic is to turn, as shown in detail on this sheet.

The middle rail and wings on Class I barricades shall be striped on both sides. All other rails to be striped on the face side only.

All lumber shall be S 4 S and conform to the Standard Specifications for "Miscellaneous Untreated Timber".

CLASS II



CLASS	TYPE	BARRICADE		DESIGNATIONS	DESCRIPTION
		ROADWAY WIDTH	"L"		
I	A	26' - 34'	28'	Barricade complete with R10-2 sign and W1-6 or W1-7 sign	
I	B	35' - 44'	41'	Barricade complete with R10-2 sign and W1-6 or W1-7 sign	
I	C	---	28'	Barricade same as type A, except no wings required, complete with R10-2 sign and W1-6 or W1-7 sign	
D	---	---	28'	Barricade complete with cluster and arrows	

COLORADO DEPARTMENT OF HIGHWAYS

TIMBER BARRICADES

Checked by: WRB
 Drawn by: WRB
 Date: 1962

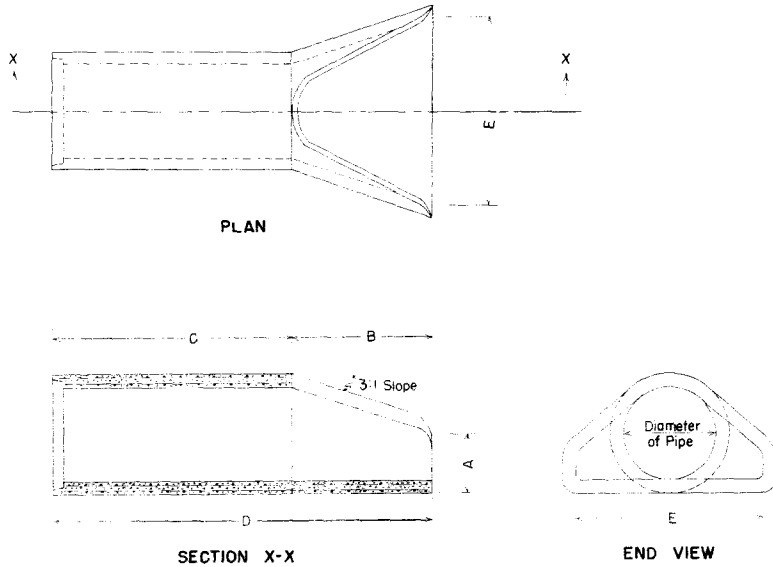
STANDARD M-152-A

(MAY 1, 1962)

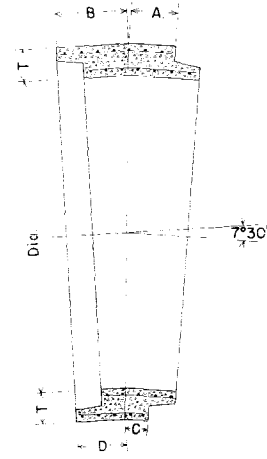
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLO.		

REVISIONS	

FLARED END SECTION FOR CONCRETE PIPE



7°30' ANGLE SECTION FOR CONCRETE PIPE



DIMENSIONS FOR FLARED END SECTIONS

DIAMETER	A	B	C	D	E
12"	4"	2'-0"	4'-0 ⁷ / ₈ "	6'-0 ⁷ / ₈ "	2'-0"
15"	6"	2'-3"	3'-0"	6'-1"	2'-6"
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"
24"	9 ¹ / ₂ "	3'-7 ¹ / ₂ "	4'-6"	8'-1 ¹ / ₂ "	4'-0"
30"	1'-0"	4'-6"	3'-7 ³ / ₄ "	8'-1 ³ / ₄ "	5'-0"
36"	1'-3"	5'-3"	2'-10 ³ / ₄ "	8'-1 ³ / ₄ "	6'-0"
42"	1'-9"	5'-3"	2'-11"	8'-2"	6'-6"
48"	2'-0"	6'-0"	2'-2"	8'-2"	7'-0"
54"	2'-6"	6'-0"	2'-3"	8'-3"	7'-6"
60"	2'-6"	5'-0"	3'-3"	8'-3"	8'-0"

*60" end section is based on a slope of 2:1

NOTE:

Alternate equivalent designs for flared end sections may be submitted to the Department for approval. Payment for "Flared End Sections" will be based on the lengths as shown in Column D. Any additional culvert pipe required to provide the lengths as shown in Column D will be included in the unit price bid for "Flared End Sections" of the several sizes.

DIMENSIONS FOR 7°30' ANGLE SECTIONS

DIAMETER OF PIPE	LENGTH ON OUTSIDE OF PIPE				AVERAGE LAYING LENGTH ON E.
	A	B	C	D	
12"	4 ¹ / ₂ "	4 ¹ / ₂ "	3 ¹ / ₂ "	3 ¹ / ₂ "	8"
15"	5 ¹ / ₂ "	5 ¹ / ₈ "	4 ¹ / ₄ "	3 ⁷ / ₈ "	9 ³ / ₈ "
18"	3 ¹ / ₂ "	6 ¹ / ₂ "	2"	5"	8 ¹ / ₂ "
24"	4"	6 ¹ / ₂ "	2"	4 ⁹ / ₁₆ "	8 ¹ / ₂ "
30"	4 ¹ / ₂ "	7"	2"	4 ¹ / ₂ "	9"
36"	4 ⁷ / ₈ "	8 ⁷ / ₁₆ "	2"	5 ⁵ / ₁₆ "	10 ⁷ / ₁₆ "
42"	6"	9 ¹ / ₂ "	2 ⁵ / ₈ "	6 ¹ / ₈ "	12 ¹ / ₈ "
48"	7"	11"	3 ³ / ₁₆ "	7 ³ / ₁₆ "	14 ³ / ₁₆ "
54"	8 ⁷ / ₈ "	12 ⁷ / ₈ "	4"	8"	16 ¹ / ₈ "
60"	9 ¹ / ₈ "	14"	4 ³ / ₈ "	9 ¹ / ₄ "	18 ³ / ₈ "

A, B, C and D apply to Tongue and Groove type of Joint only and can be varied for other types of Joints.

GENERAL NOTES

Joints other than Tongue and Groove may be used for Flared End Sections, 7°30' Angle but all joints for any one pipe structure must be uniform.

Concrete, wall thickness and reinforcing steel in Flared End Sections and 7°30' Angle Sections must conform with the requirements of the pipe with which they are used.

Flared end sections are to be furnished with tongue or groove, and/or bell or spigot as required, in order that joints may be laid with the bell or groove end upstream.

**COLORADO
DEPARTMENT OF HIGHWAYS**

**CONCRETE END
AND ANGLE
SECTIONS**

Designed by R. S. M. | Approved by _____
 Made by J. M. K. | _____
 Checked by R. S. M. | Date: January 14, 1949

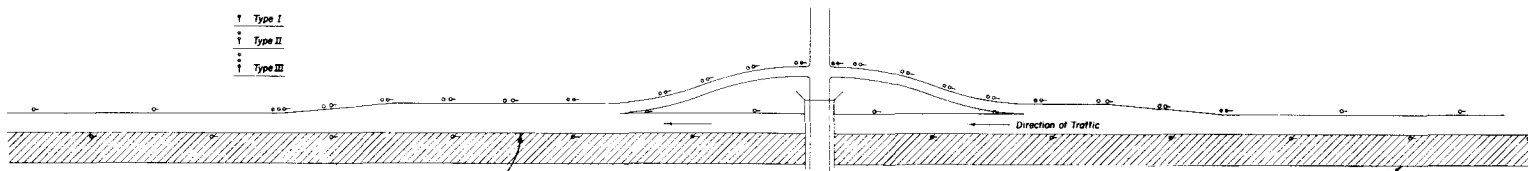
STANDARD M-192-A

(NOV. 1, 1962)

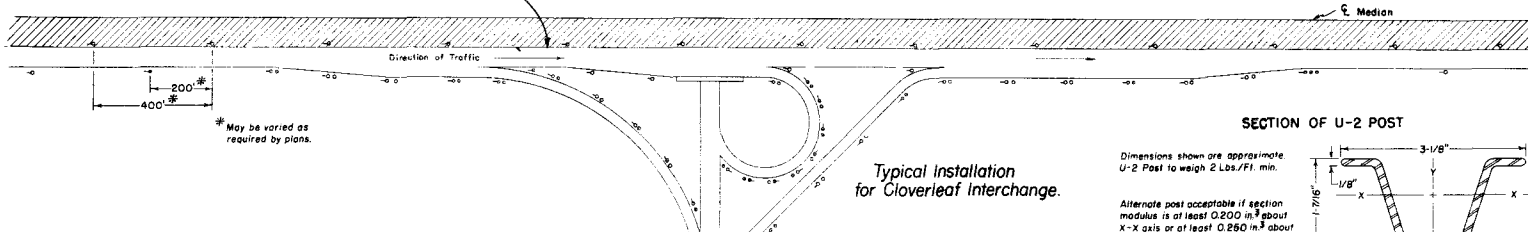
FED. ROAD REG. NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO		

REVISIONS		
No.	Rev. Location	L.E.O.
11-15-62		

- † Type I
- † Type II
- † Type III



Typical Installation for Diamond Interchange.



Typical Installation for Cloverleaf Interchange.

* May be varied as required by plans.

GENERAL NOTES

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

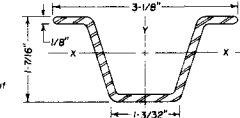
See tabulation in plans for delineator post requirements.

Spacing between Posts on acceleration and deceleration lanes and on relatively straight portions of interchange ramps shall be 100'. Spacing between Posts on the outside of interchange ramp curves shall be as indicated in table for the appropriate degree of curve with a 24' min. spacing. Post spacing in advance and beyond curve shall not apply to ramp curves.

SECTION OF U-2 POST

Dimensions shown are approximate. U-2 Post to weigh 2 Lbs./Ft. min.

Alternate post acceptable if section modulus is at least 0.200 in.³ about X-X axis or at least 0.250 in.³ about Y-Y axis.



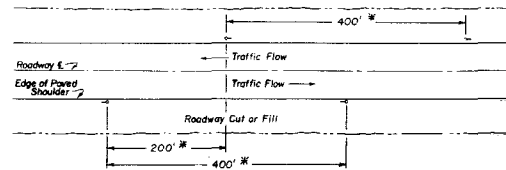
SPACING FOR DELINEATOR POSTS ON HORIZONTAL CURVES

DEGREE OF CURVE	RADIUS	SPACING IN ADVANCE OF AND BEYOND CURVE				DEGREE OF CURVE	RADIUS	SPACING IN ADVANCE OF AND BEYOND CURVE			
		FIRST SPACE		SECOND SPACE				FIRST SPACE		SECOND SPACE	
		FEET	FEET	FEET	FEET			FEET	FEET	FEET	FEET
0°30'	11460.0'	200	200	200	200	8°00'	716.3'	52	94	156	200
1°00'	5730.0'	151	200	200	200	8°30'	674.1'	50	90	150	200
1°30'	3820.0'	123	200	200	200	9°00'	636.7'	48	86	144	200
2°00'	2865.0'	106	191	200	200	9°30'	603.2'	47	85	141	200
2°30'	2292.0'	95	171	200	200	10°00'	573.0'	46	83	138	200
3°00'	1910.0'	86	155	200	200	10°30'	545.7'	45	81	135	200
3°30'	1637.1'	80	144	200	200	11°00'	520.9'	43	77	129	200
4°00'	1432.5'	74	133	200	200	11°30'	498.3'	42	76	126	200
4°30'	1273.3'	70	126	200	200	12°00'	477.5'	41	74	123	200
5°00'	1146.0'	66	119	198	200	15°00'	382.0'	36	65	108	200
5°30'	1041.8'	63	113	189	200	18°00'	318.3'	33	59	99	198
6°00'	955.0'	60	108	180	200	21°00'	272.9'	30	54	90	180
6°30'	881.5'	58	104	174	200	25°00'	229.2'	27	49	81	162
7°00'	818.5'	55	99	165	200	30°00'	191.0'	24	43	72	144
7°30'	764.0'	53	95	159	200						

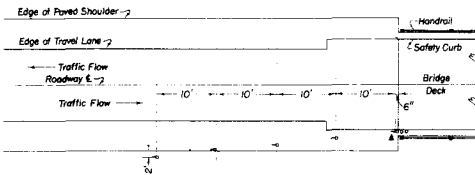
S = 2√R-50 1-ST. SPACE = 185 2-ND. SPACE = 35 3-RD. SPACE = 65
NO SPACES TO EXCEED 200 FT.

Spacing for Delineator Posts on Tangents

(Two Lane - Two Way Traffic)

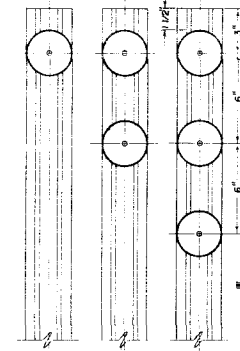


Typical Installation at Bridge Approaches

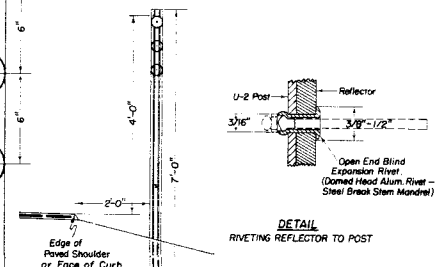


* Where curb to curb width of bridge is equal to or greater than roadway width plus usable shoulder width, use this delineator only and omit all others.
Note: Where guard rail is present place delineators outside of guard rail.

3/16" diam Blind Rivet (Hole 13/64" diam.)



- TYPE I
1-3" diam. Crystal Reflector on U-2 Post
- TYPE II
2-3" diam. Yellow Reflectors on U-2 Post
- TYPE III
3-3" diam. Yellow Reflectors on U-2 Post



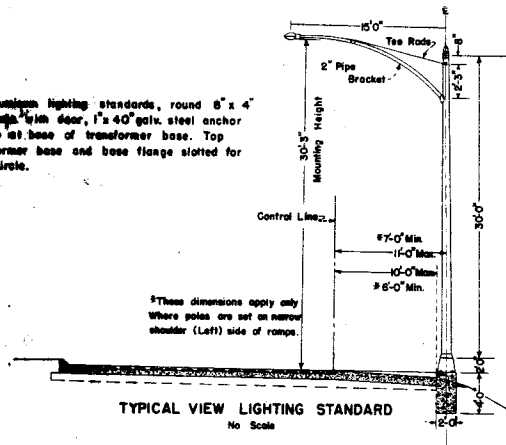
COLORADO
DEPARTMENT OF HIGHWAYS

DELINEATORS

Designed by GKM Approved by [Signature]
Made by WNC Engineer, Surveys & Plans
Checked by LEO Date: October 19/1962

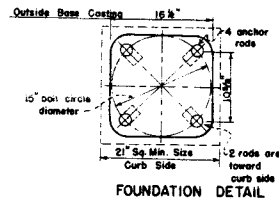
FED. ROAD DIV. NO.	STATE	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLA.	F 012 - 2 (8)	51	

Note: All extruded aluminum lighting standards, round 6" x 4" taper, transformer base 1/2" dia., 1" x 4" galv. steel anchor bolts, 1/2" bolt circle at base of transformer base. Top bolt circle of transformer base and base flange slotted for 1 1/8" diameter bolt circle.



LEGEND ON PLAN SHEETS			
⊙	20,000 L	Merc. Vapor	
⊙	20,000 L	Merc. Vapor (Amber)	
⊙	4,000 L	Merc. Vapor	

SUMMARY OF LIGHTING REQUIREMENTS PROJECT			
SHEET NUMBER	20,000 L MERC. VAP.	4,000 L MERC. VAP.	30' POLES
52	3		3
54		4	
55	3		3
TOTAL	6	4	6



FENCING REQUIREMENTS PROJECT

LEGEND

Combination Wire Fence (Barrier)

Metal Plate Guard Fence

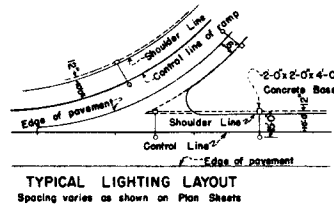
TABULATION OF DELINEATORS

STATION	SIDE	SPACING	DELINEATORS		
			EACH TYPE		
			I	II	III
234+00 - 238+39.7	RT	8' Curve	2		
0+00 - 3+20 S.W. RAMP	RT.	8' Curve		8	
3+50 S.W. RAMP	LT.	—	1		
4+77 - 7+50 S.W. RAMP	LT.	100' - R		10	
237+60 N.W. RAMP	RT.	—			1
237+70 N.W. RAMP	LT.	—			1
239+00 - 241+00 N.W. FR. RD.	LT.	100'		3	
272+75 - 276+75 N.E. RAMP	LT.	100'		5	
277+80 N.E. RAMP	LT.	—	1		
279+00 - 281+00 N.E. FR. RD.	LT.	100'		3	
283+00 - 285+00 N.E. FR. RD.	LT.	200'	2		
274+25 - 276+25 S.E. RAMP	LT.	100'		3	
278+05 S.E. RAMP	LT.	—	1		
278+10 S.E. RAMP	RT.	—		1	
279+00 - 284+00 S.E. FR. RD.	LT.	200'		6	
285+80 West 6th Ave.	RT.	—			1
247+57 - 247+87 West 6th Ave.	LT. & RT.	Bridge	8		
247+97 West 6th Ave.	LT. & RT.	Bridge			2
249+30 West 6th Ave.	LT. & RT.	Bridge			2
249+40 - 249+70 West 6th Ave.	LT. & RT.	Bridge	8		
TOTAL			23	39	7

SUMMARY OF FENCING PROJECT

SHEET NO.	CHAIN LINK WIRE FENCE	COMBINATION WIRE FENCE (BARRIER)	COMBINATION WIRE FENCE	METAL PLATE GUARD FENCE
52 & 53				675
55		400		
TOTAL		400		675

TIMBER GUARD POSTS
An estimated ~~twenty six~~ (26) timber guards posts will be required on this project. Locations will be staked by the engineer at time of construction.



COLORADO
DEPARTMENT OF HIGHWAYS

DETAILS OF
LIGHTING & FENCING

Designed by: _____ Approved by: _____
 Made by: _____ Checked by: _____
 Date: _____

LEGEND

SANITARY SEWERS

- Existing sanitary sewer
- Existing sewers to be abandoned
- Existing sewer to be plugged
- Existing manhole requiring new work
- New sewers and manholes

STORM SEWERS

- Existing lines, manholes and inlets
- Existing lines to be used
- Existing lines to be plugged and/or inlets to be abandoned
- New lines, manholes and inlets
- Drop inlet Adjustment

UTILITY LINES

- Power lines (underground)
- Tel. & Tel. lines (underground)
- Gas lines
- Water lines

CURBS

- Concrete Combination Curb & Gutter (Type I)
- Concrete Combination Curb & Gutter (Type II)
- Asphaltic Shoulder Roff
- Concrete Gutter
- Combination Curb & Gutter Sidewalk
- Concrete Barrier Curb

NOTE: All Curbs Returns at Street Intersections shall be Built on a 15' Radius to the Inside of curb unless Shown on Plans, or as Directed by the Engineer. Concrete Gutter to be Built only Where Shown on Plans.

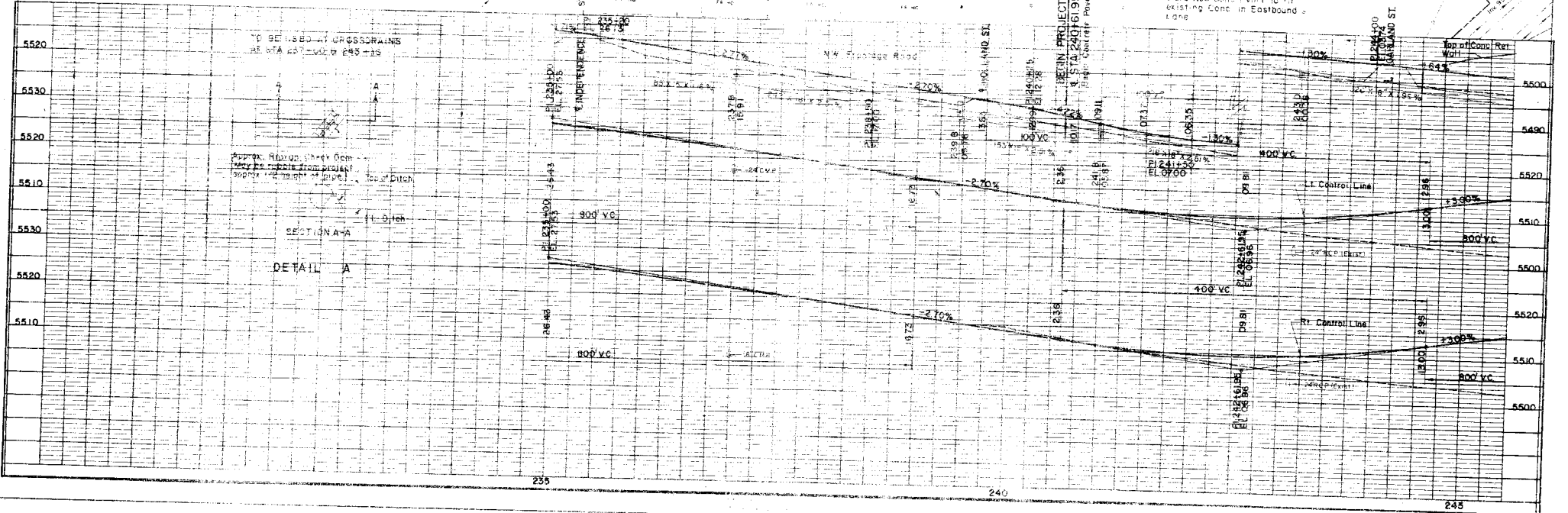
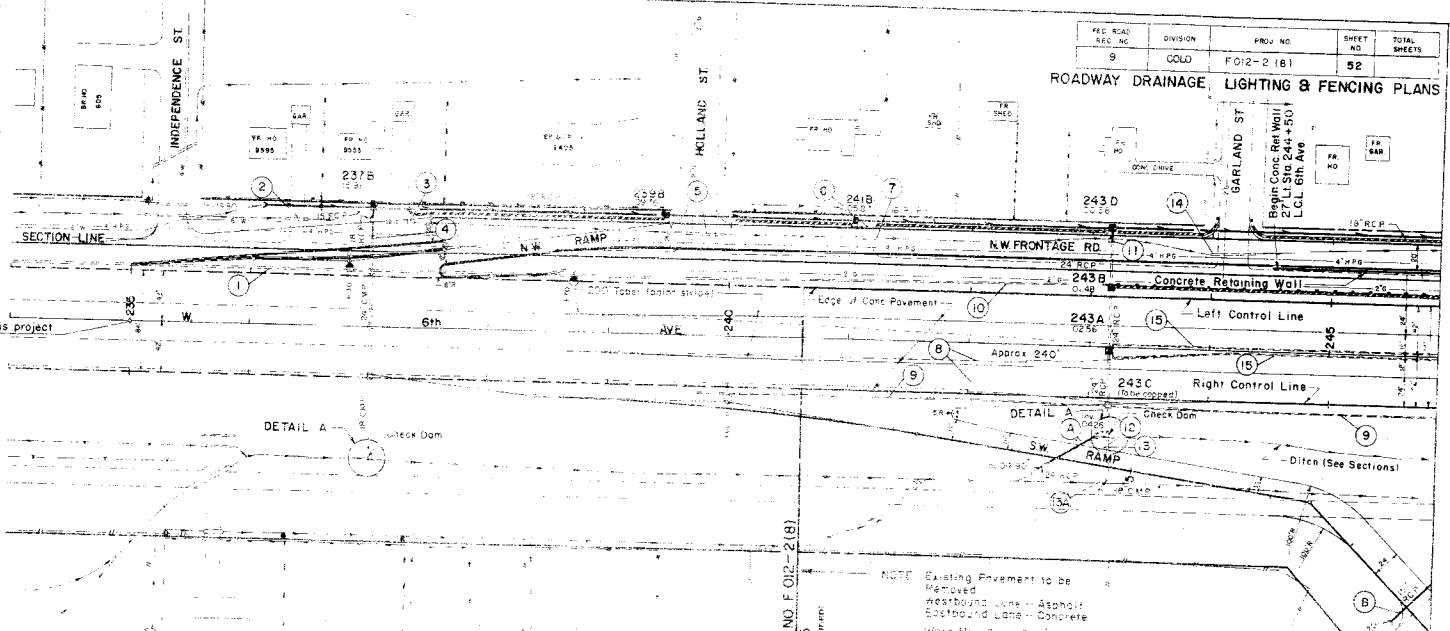
NOTE: See Sheet No. 6 for List of Removals and Demolitions.

NOTE: For Lighting and Fencing Legend see Sheet No. 6.

Construction Limits this project Sta. 235+00

FED. ROAD REC. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLD	F 012-2 (B)	52	

ROADWAY DRAINAGE, LIGHTING & FENCING PLANS



TOP OF CONCRETE RETAINING WALL

APPROX. RETAINING WALL CHECK DAM

SECTION A-A

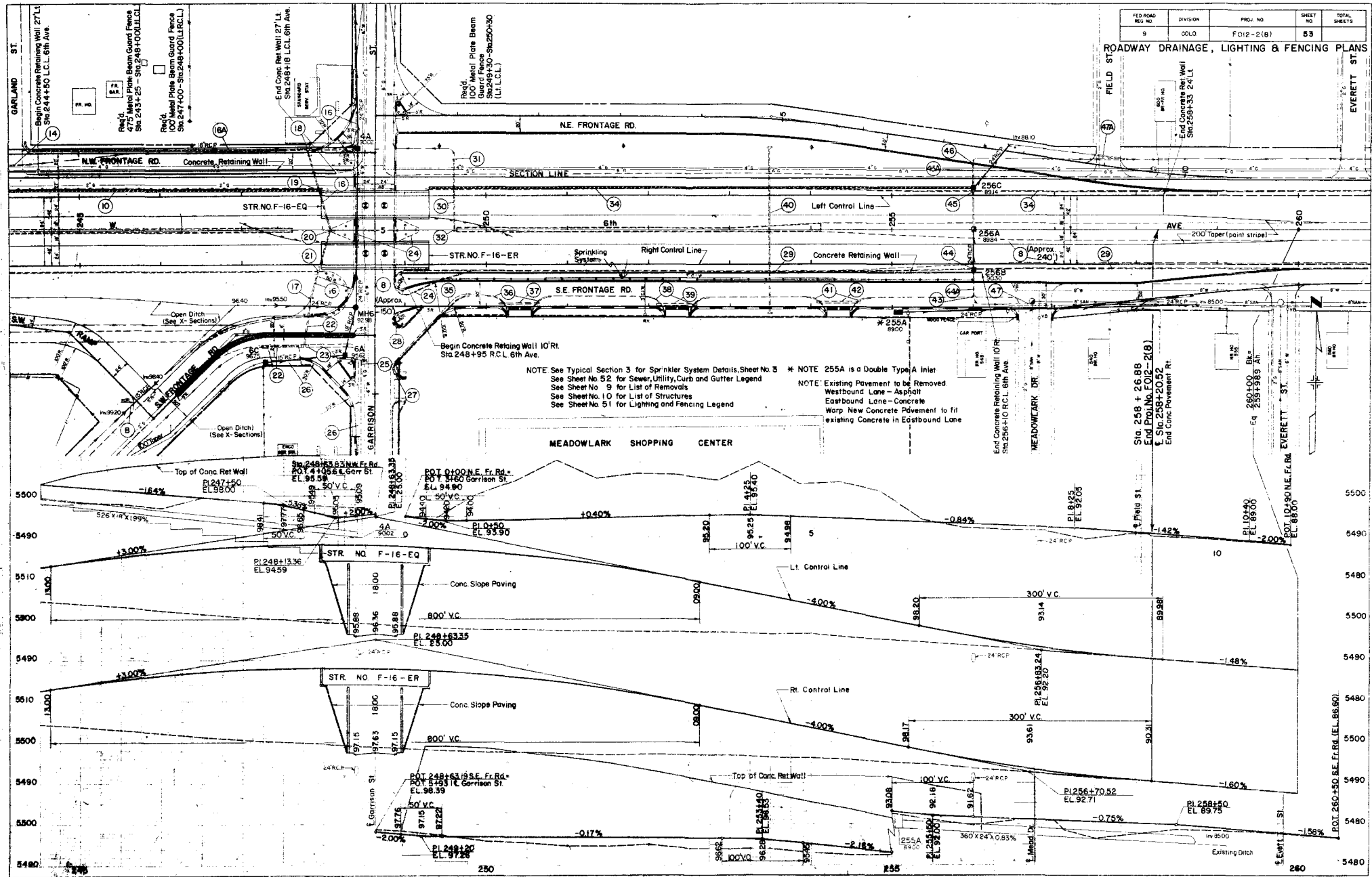
DETAIL A

BEHIN PROJECT NO. F 012-2 (B) STA. 240+61.95

NOTE: Existing Pavement to be Removed westbound Lane - Asphalt Eastbound Lane - Concrete Work New Conc. Paved to fit existing Conc. in Eastbound Lane

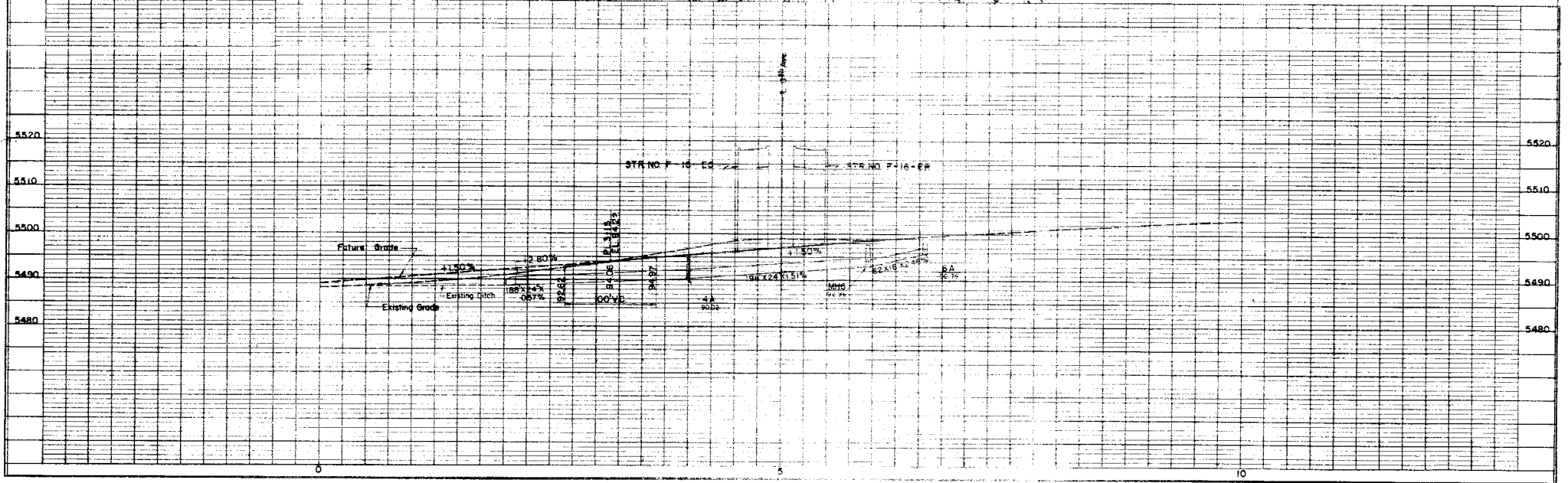
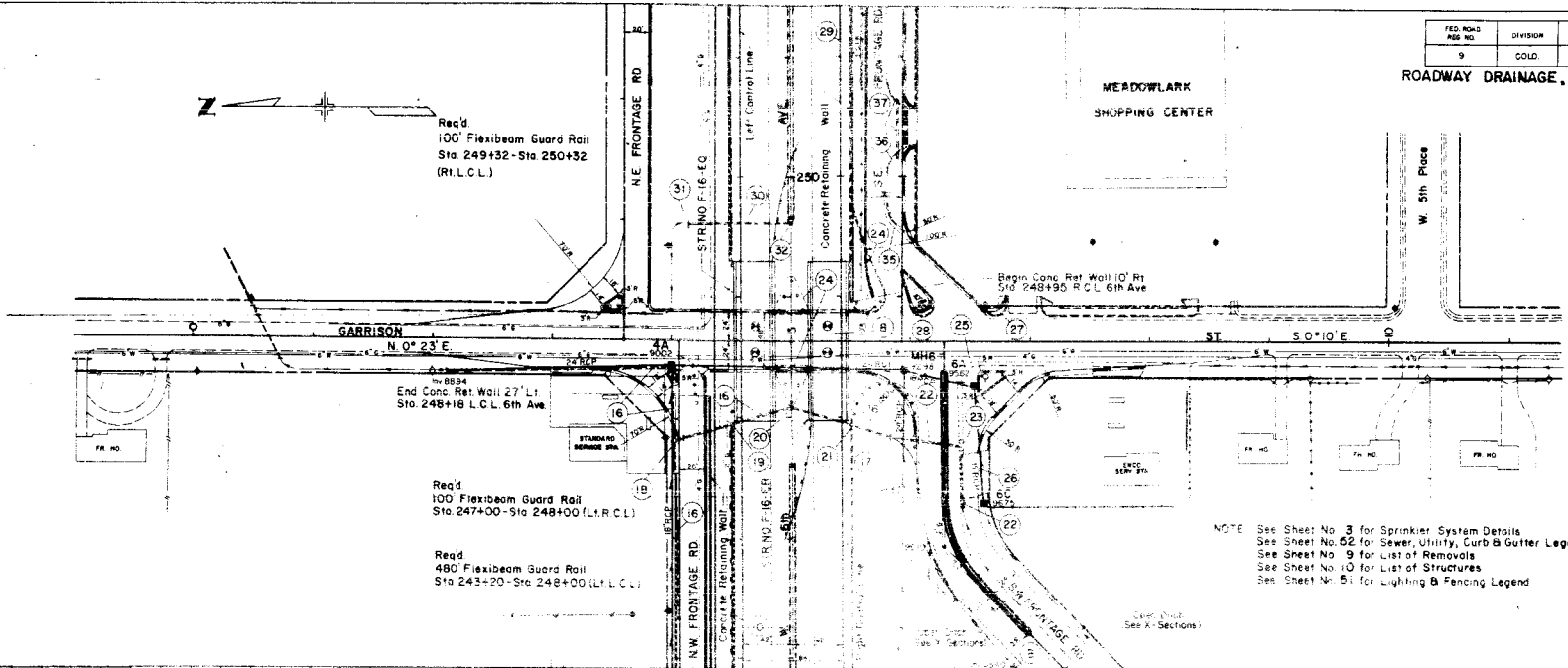
FED ROAD DIST NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	0000	F012-2(B)	53	

ROADWAY DRAINAGE, LIGHTING & FENCING PLANS



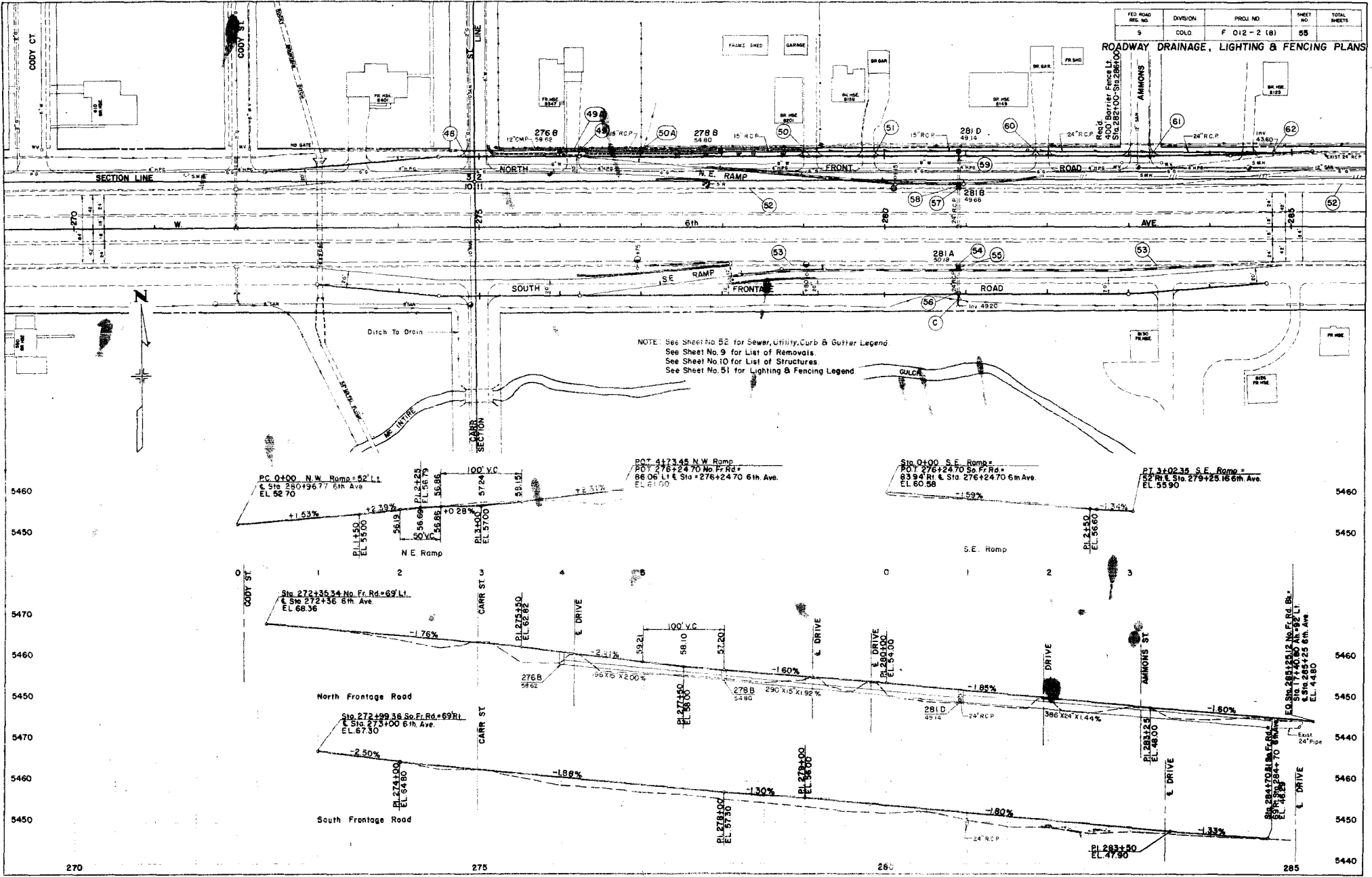
FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLD.	FOI2-2(B)	54	

ROADWAY DRAINAGE, LIGHTING & FENCING PLANS



FED ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
S	COLO.	F 012-2 (8)	55	

ROADWAY DRAINAGE, LIGHTING & FENCING PLANS



PLEASE DO NOT TRIM

Note: Soil Data shown on this plan is obtained from the best available testing information. This information was obtained for the convenience of the Contractor and the Department, does not guarantee the accuracy of these tests. If materials not conforming to the data on the plans are encountered during construction, the grading plan shown on the plans will be modified where necessary to secure dense stable embankment. Alignment and grades shown are subject to modification during construction after approval by the Denver Office.

TEST HOLE LEGEND

- 1 Oil Mat and Base Course
- 2 Sandy Clay
- 3 Sandy Clay and some Gravel
- 4 Dirty Sand and some Gravel
- 5 Tight Fine Sand
- 6 Clay
- 7 Sand and some Gravel
- 8 Clay Shale
- 9 Sandy Shale
- 10 Shale



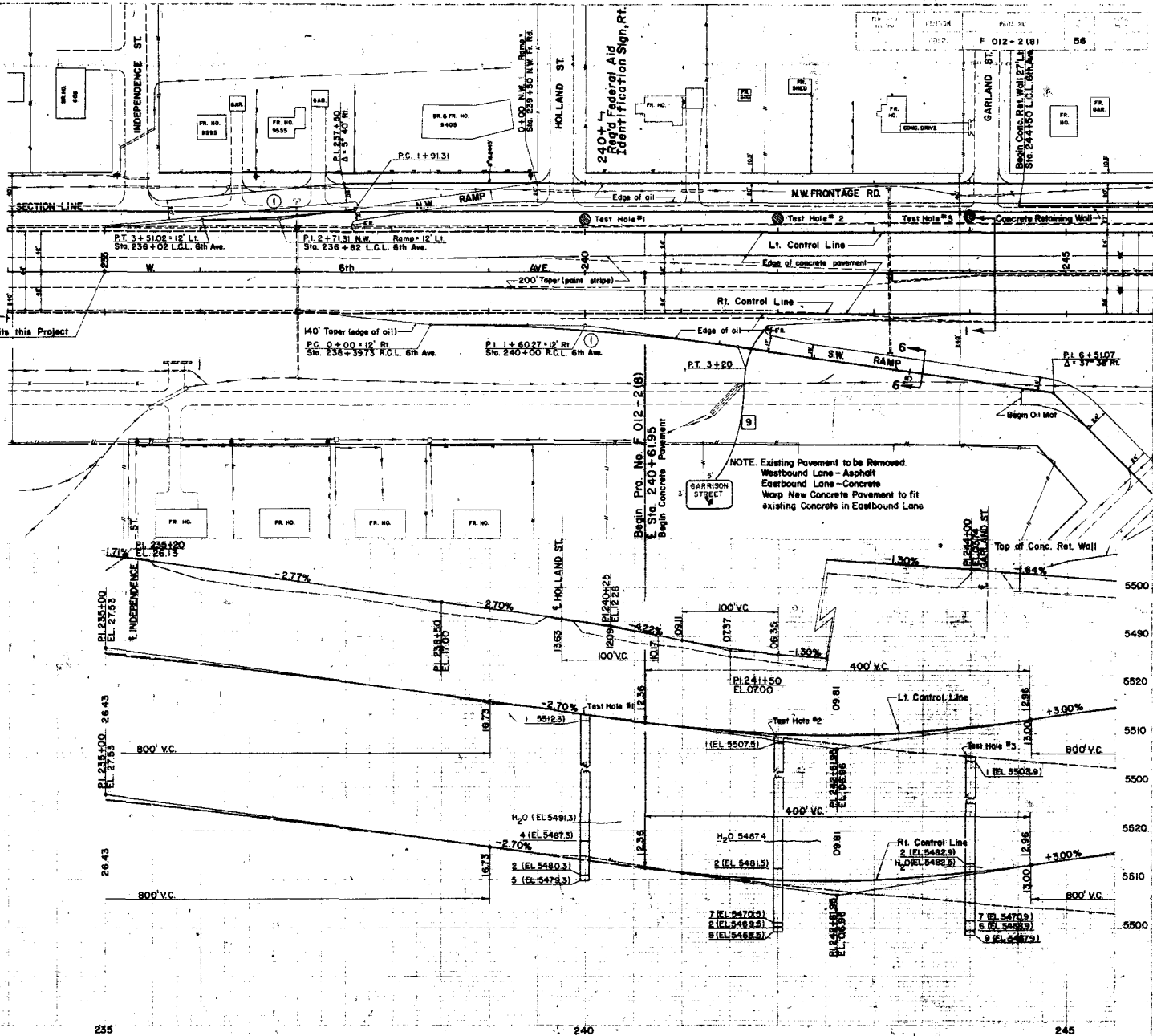
N.W. SLIP RAMP

(P.I. 2+71.31)
 $\Delta = 8^{\circ} 20' 24.45''$ Rt.
 $D = 5,220.6'$
 $T = 180.00'$
 $L = 159.71'$
 $R = 1097.80'$

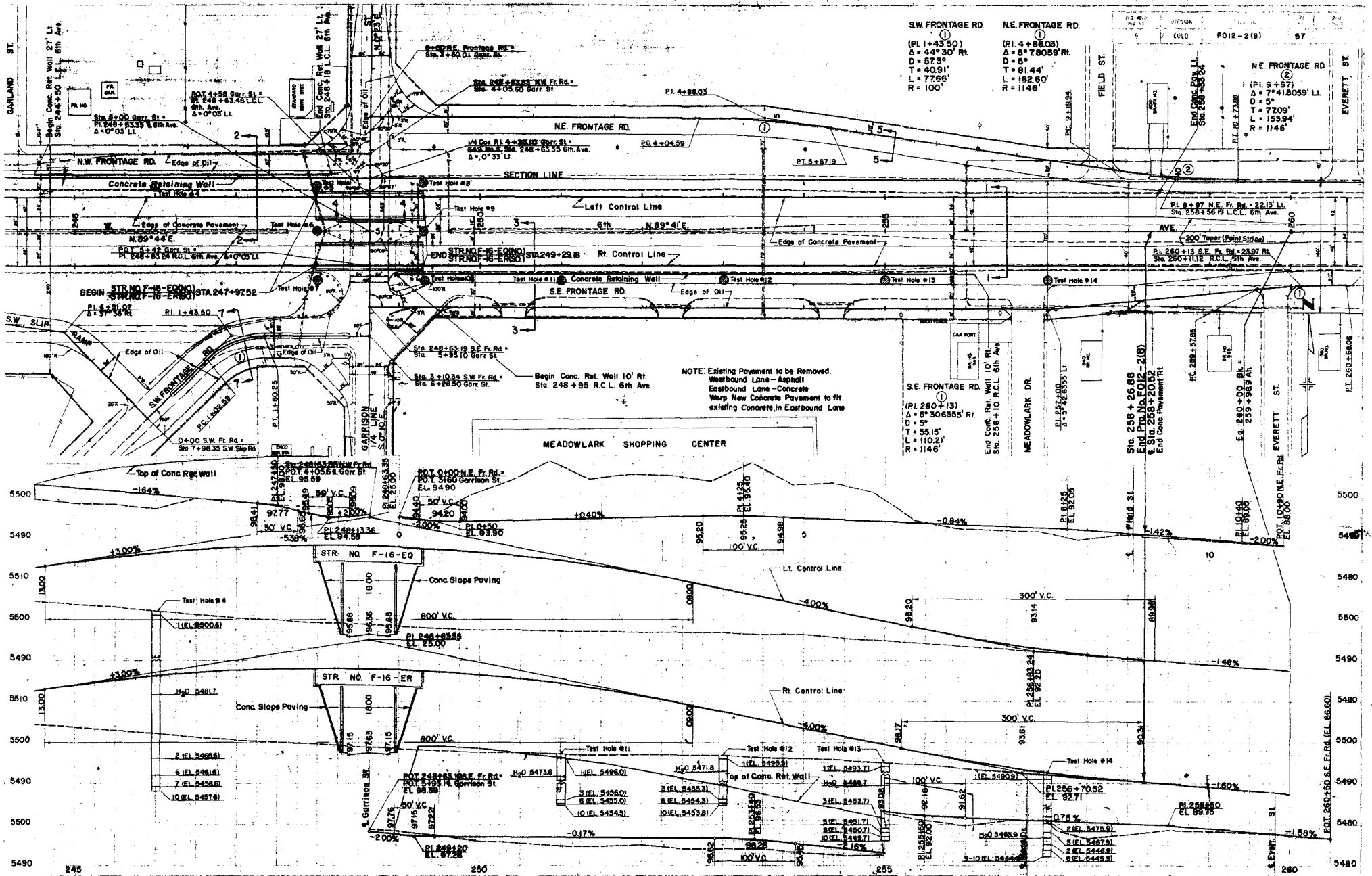
S.W. SLIP RAMP

(P.I. 1+60.27)
 $\Delta = 8^{\circ} 00' 00''$ Rt.
 $D = 2,300'$
 $T = 180.27'$
 $L = 320.00'$
 $R = 2292'$

5520
5530
5520
5510
5530
5520
5510



NOTE: Existing Pavement to be Removed:
 Westbound Lane - Asphalt
 Eastbound Lane - Concrete
 Warp New Concrete Pavement to fit existing Concrete in Eastbound Lane



SW FRONTAGE RD. (1)
 (PI 1+43.50)
 Δ = 44°30' Rt
 D = 57'3"
 T = 40.91'
 L = 776'
 R = 100'

NE FRONTAGE RD. (1)
 (PI 4+86.03)
 Δ = 8°7'05.9" Rt
 D = 5'
 T = 91.44'
 L = 162.60'
 R = 1146'

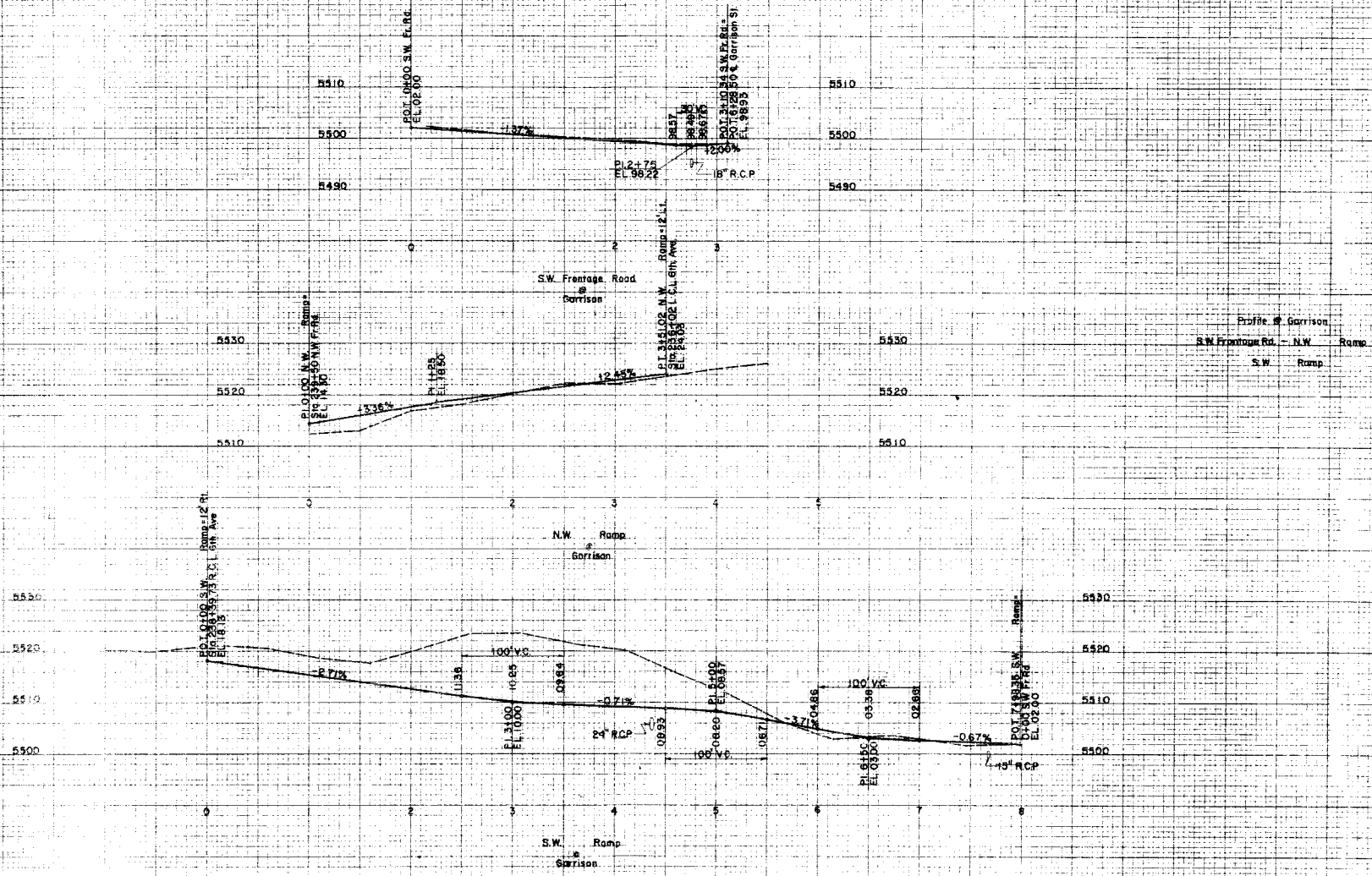
NE FRONTAGE RD. (2)
 (PI 9+97)
 Δ = 7°16'05.9" Lt
 D = 5'
 T = 77.09'
 L = 153.94'
 R = 1146'

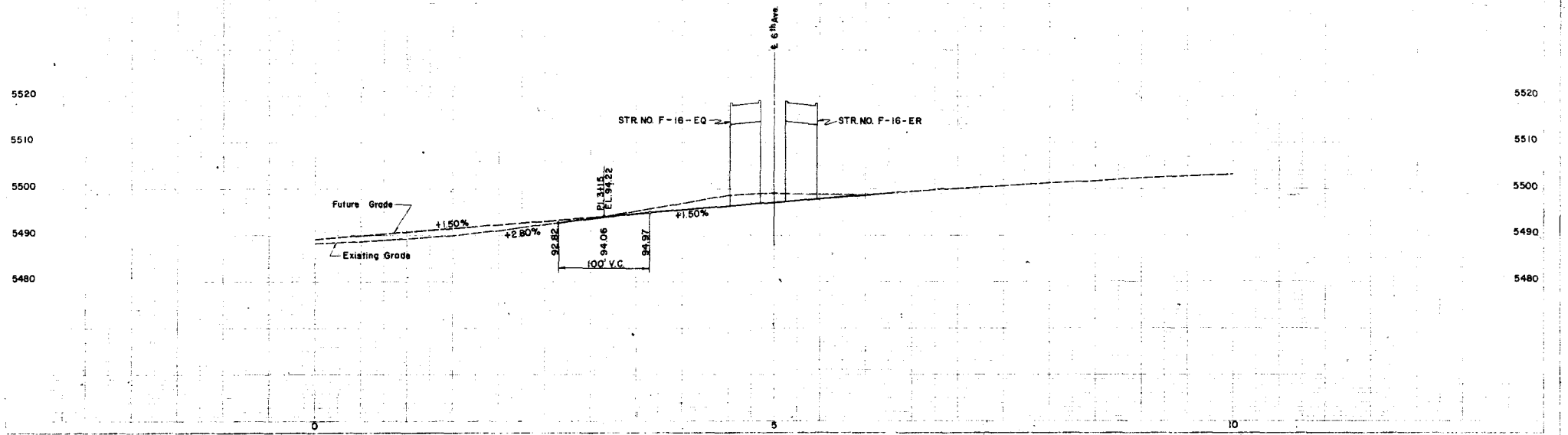
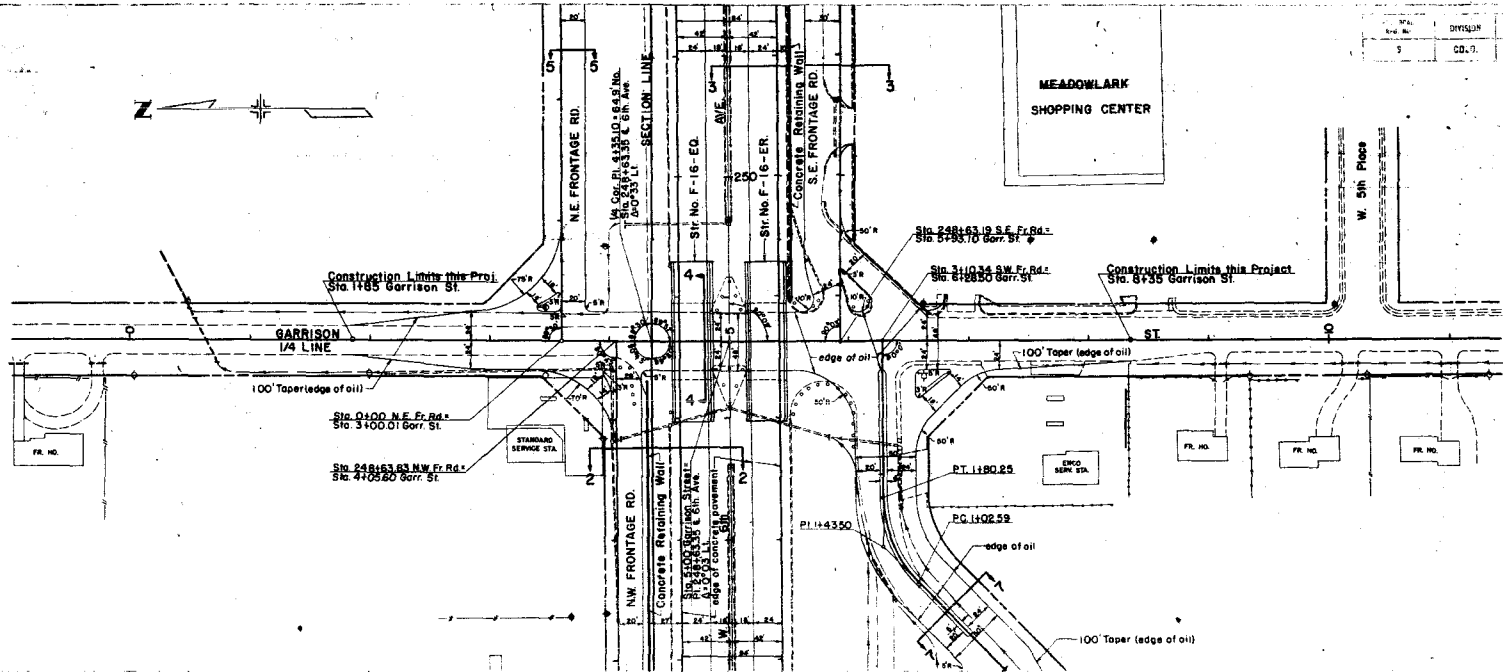
NOTE: Existing Pavement to be Removed.
 Westbound Lane - Asphalt
 Eastbound Lane - Concrete
 Warp New Concrete Pavement to fit
 existing Concrete in Eastbound Lane

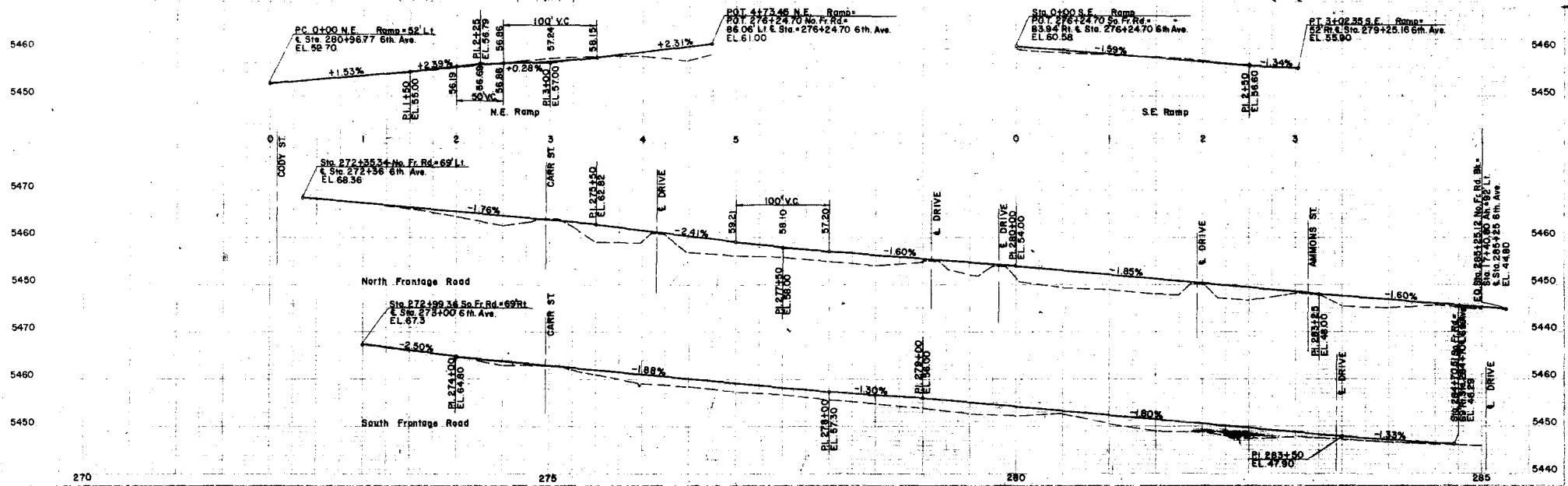
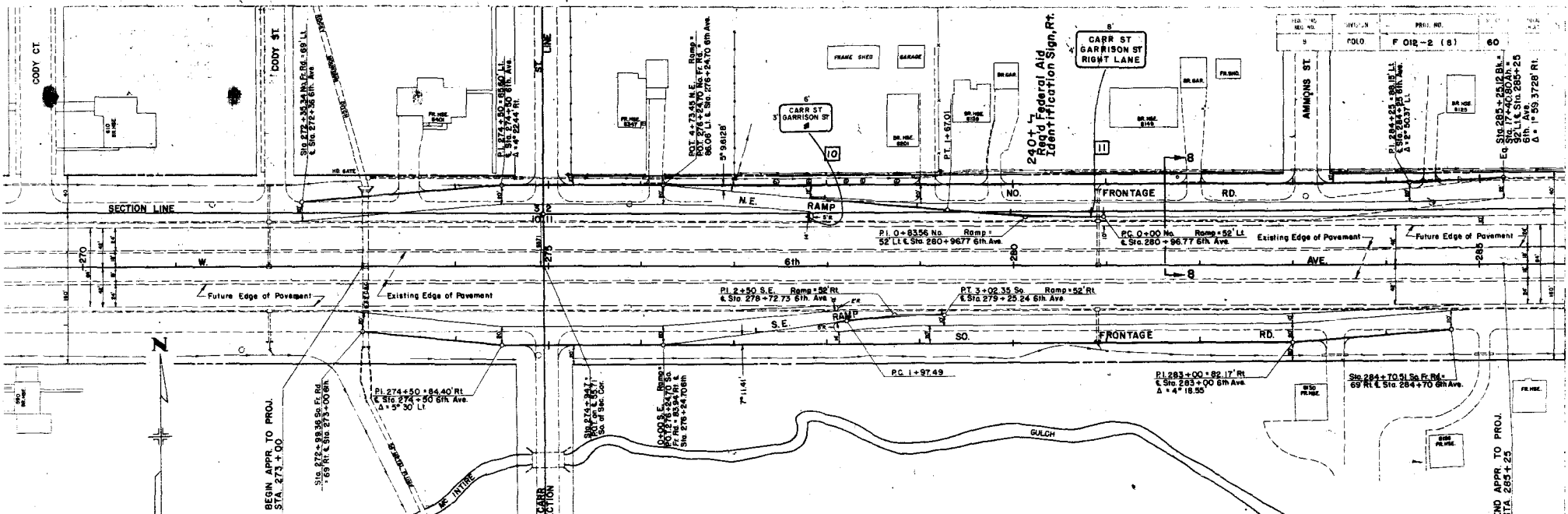
S.E. FRONTAGE RD. (1)
 (PI 260+13)
 Δ = 5°30'63.95" Rt
 D = 5'
 T = 55.15'
 L = 110.21'
 R = 1146'

Sta 266+26.88
 End Proj. Sta. FOI2-2(8)
 Sta. 268+20.92
 End Conc. Pavement Pt.

FED. ROAD REGION	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	F 012-2181	58	







270

275

280

285

NO.	REV.	DATE	BY	CHKD.
1				
2				

FOLO F 012-2 (6) 60

Sta. 285+25 to 285+25
 Sta. 285+25 to 285+25
 Sta. 285+25 to 285+25
 Sta. 285+25 to 285+25
 Sta. 285+25 to 285+25

BEGIN APPR TO PROJ.
 STA. 273+00

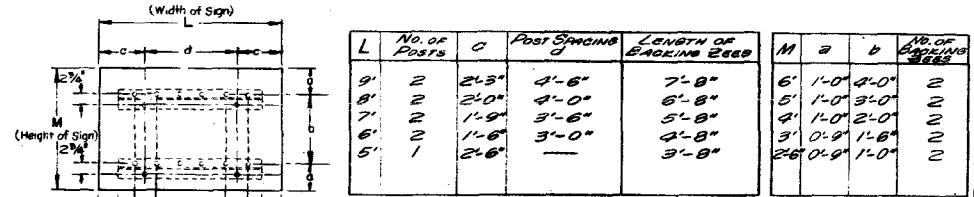
END APPR TO PROJ.
 STA. 285+25

TABULATION OF GROUND SIGNS

SIGN NO.	SIGN CODE	STATION	SIGN PANEL SIZE	LEGEND BOARD BOARDER	BACK-GROUND	NO. POSTS	LENGTH POSTS	SIGN ISLAND WIDTH	POST TYPE	CONCRETE FOOTING
8	SPECIAL	234+00	6' x 3'	CO. WHITE	PLAIN GREEN	2	14'	11'-0"	28	24.00
9	SPECIAL	241+90	5' x 3'	WHITE	GREEN	1	15'		15	15.00
10	SPECIAL	277+80	6' x 3'	CO. WHITE	PLAIN GREEN	2	14'	9'-6"	28	18.00
11	SPECIAL	280+90	6' x 4'	WHITE	PLAIN GREEN	2	15'	11'-0"	30	32.00
TOTALS										89.00

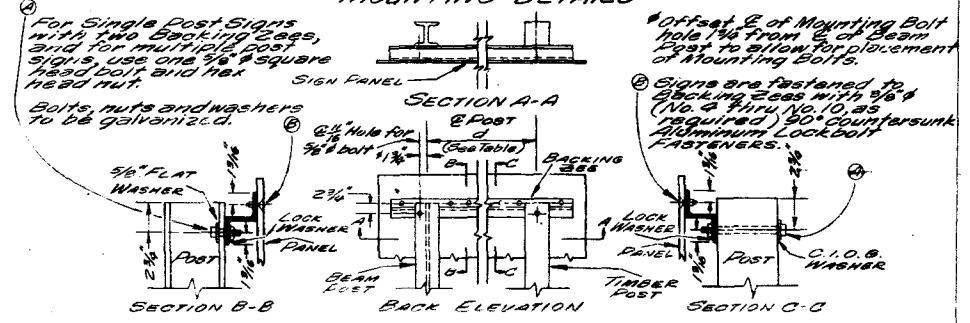
CO = CUTOUT ALUMINUM

TYPICAL POST & BACKING ZEE SPACING

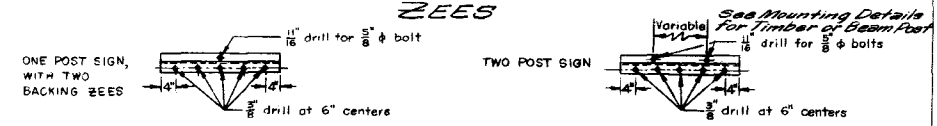


FOR POST TYPE SEE "TABULATION OF GROUND SIGNS" INCLUDED IN PLANS.

MOUNTING DETAILS



TYPICAL BACKING ZEES



NOTES

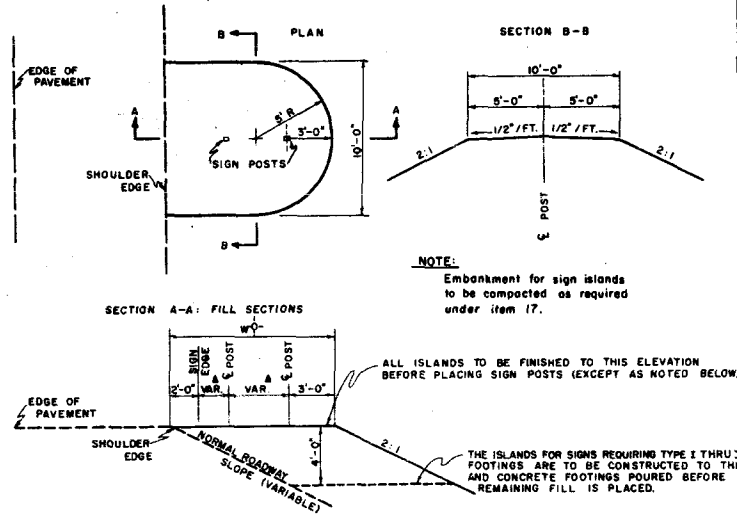
1. Mounting height is 2' minimum from pavement edge elevation to the bottom of the sign panel.
2. Lateral clearance is 2' minimum to shoulder edge or to the face of an unmountable curb.
3. Timber Posts are 6" x 6" as noted, S4S untreated Douglas Fir. Dip or paint portion of post to be below ground level with hot creosote oil.
4. Beam Posts are 6WF 20 Beam Posts as noted in "Tabulation of Ground Signs".
5. Timber Posts shall be set in drilled or excavated holes a minimum depth of 5' for 6" x 6" posts; placed plumb and firmly tamped in place.
6. Backing Zees are 3" x 2 3/4" x 1/4" @ 6.7 Lbs. per ft. for steel or 2.33 Lbs. per ft. for aluminum (alloy 6061).
7. The exposed bolt heads on the face of the Sign shall be dipped or painted to match the surrounding color.
8. Sign Panels and Backing Zees furnished by State.
9. Posts and Ground Sign Installations by Contractor.

STANDARD S-523-BA

REVISED FOR THIS PROJECT
12-14-62 G.S.

FEDERAL ROAD REGION NO.	DIVISION	PROJECT NO.	SHEET NO.
9	COLORADO	F 012-2(B)	60b

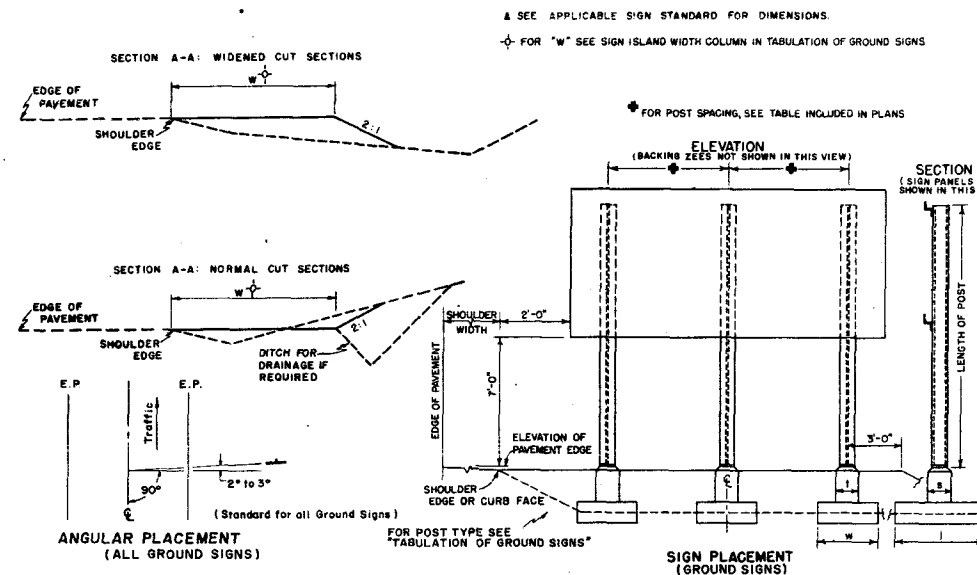
DETAILS OF SIGN ISLAND



SECTION	ALTERNATE
6" W @ 20"	8" I @ 18.4"
8" W @ 20"	8" I @ 25.5"
10" W @ 25"	10" I @ 30.0"
10" W @ 31"	10" I @ 35.0"
12" W @ 40"	12" I @ 35.0"
12" W @ 50"	12" I @ 50"
12" W @ 58"	12" I @ 60.8"

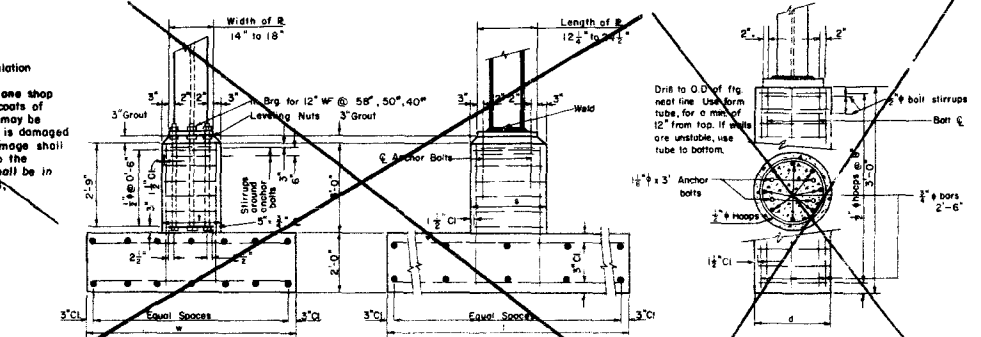
NOTE: If deeper beams of equivalent or greater Section Modulus are used, Base Plates, Anchor Bolts and Pedestals must be changed to fit of Contractor's expense.

GENERAL NOTES
All structural steel to conform to ASTM Specifications A-7 and item 48, Standard Specifications.
All concrete to be Class "A".
For additional information, refer to "Tabulation of Ground Signs."
All exposed structural steel shall be given one shop coat of zinc chromate primer and two field coats of aluminum paint except that the field coats may be shop applied. In the event that the finish is damaged in handling, shipment or erection, such damage shall be repaired without additional expense to the Department. Materials and application shall be in conformity with the provisions of item 38, Standard Specifications.



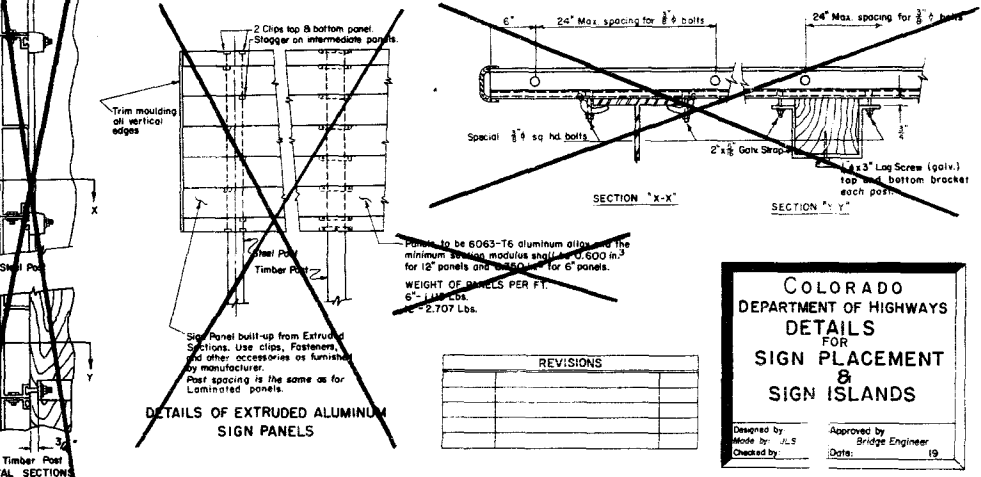
Post	Allowable Moment	Weld Base	Base Size	Anchor Bolt	Pedestal	Vertical Bars in Pedestal	Footings		Longitudinal Footing Bars		Transverse Footing Bars		Stirrups Around Anchor Bolts
							Type	Length	Top	Bottom	Top	Bottom	
12" W @ 58"	112.3'	Fillet	18" x 24" x 2-0"	4-18 #3 3'-5"	2-7"	6-#4 x 4'-0"	III	8'-0"	12'-9"	2-#4	2-#4	12-#4 x 7'-6"	2-#4
12" W @ 50"	91.0'	Fillet	16" x 22" x 1-11"	6-#18 #3 3'-5"	6-0"	6-#4 x 4'-0"	III	7'-0"	12'-6"	2-#4	2-#4	9-#4 x 6'-6"	2-#4
10" W @ 40"	73.0'	Fillet	16" x 22" x 1-9"	6-#18 #3 3'-5"	2-4"	6-#4 x 4'-0"	III	6'-3"	12'-3"	2-#4	2-#4	7-#4 x 5'-6"	2-#4
12" W @ 31"	53.4'	Fillet	14" x 18" x 1-7"	4-#18 #3 3'-5"	2-2"	6-#4 x 4'-0"	III	5'-6"	12'-0"	2-#4	2-#4	7-#4 x 5'-6"	2-#4
10" W @ 25"	34.8'	Fillet	14" x 18" x 1-4"	4-#18 #3 3'-5"	1-11"	6-#4 x 4'-0"	III	5'-0"	10'-3"	2-#4	2-#4	5-#4 x 4'-0"	2-#4
8" W @ 20"	21.8'	Fillet	14" x 18" x 1-1"	4-#18 #3 3'-5"	1-8"	6-#4 x 4'-0"	III	4'-0"	8'-6"	2-#4	2-#4	5-#4 x 3'-6"	2-#4
6" W @ 20"	17.8'	Fillet	14" x 18" x 1-0"	4-#18 #3 3'-5"	1-7"	6-#4 x 4'-0"	I	3'-6"	8'-5"	2-#4	2-#4	5-#4 x 3'-0"	2-#4
6" W @ 20"	12.5'	Fillet	14" x 18" x 1-0"	4-#18 #3 3'-0"	-	-	-	2'-0"	-	-	-	2-#4	-

Note: When footings overlap use one footing of the length shown, and of width equal to the distance between post plus the width of one footing shown.
Notes pertaining to Timber Posts are included in plans.
Anchor bolts to project above pedestal 4" plus base plate thickness plus bolt diameter.
Thread upper portion - projection plus 2". Galvanize upper portion - projection plus 4".



DETAILS OF FOOTINGS AND PEDESTALS

No Scale



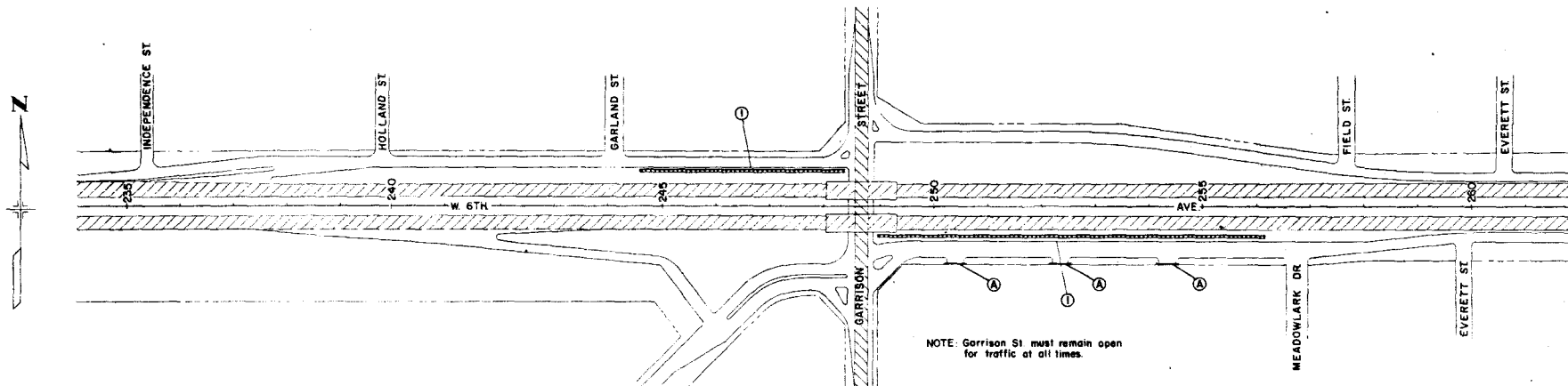
COLORADO
DEPARTMENT OF HIGHWAYS
DETAILS
FOR
SIGN PLACEMENT
&
SIGN ISLANDS

Designed by: J.S.
Checked by: J.S.

Approved by: Bridge Engineer
Date: 19

FED. ROAD RES. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	COLO.	FO12-2(8)	61	

TRAFFIC MAP



NOTE: Garrison St must remain open for traffic at all times.

COLORADO DEPARTMENT OF HIGHWAYS

PROJECT FO12-2(8)

TRAFFIC MAP

STAGE I

BUILD RETAINING WALLS. (TRAFFIC TO REMAIN ON EXISTING 6th AVE.)



EXISTING STREET TO BE USED



AREA UNDER CONSTRUCTION



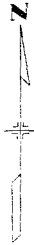
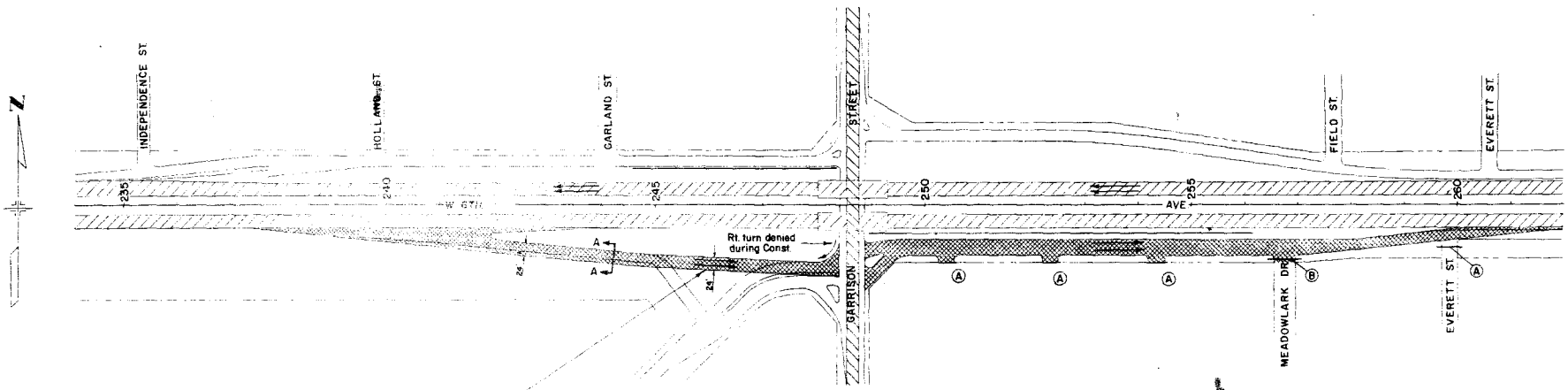
TIMBER BARRICADE (CLASS I)(TYPE A)



TIMBER BARRICADE (CLASS I)(TYPE B)






FED. ROAD DIST. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
1	COLO.	FO12-2(8)	62	

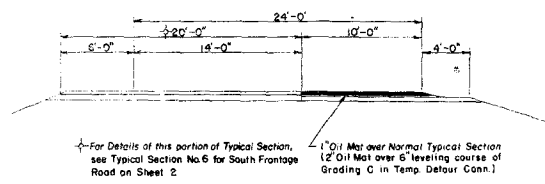
TRAFFIC MAP



NOTE Quantities included for Temp. Conn. (To be removed after detour is no longer required)

COLORADO DEPARTMENT OF HIGHWAYS
 PROJECT FO12-2(8)
 TRAFFIC MAP
 STAGE II
 BUILD SOUTH FRONTAGE ROAD
 MOVE EASTBOUND TRAFFIC TO SOUTH FRONT RD.

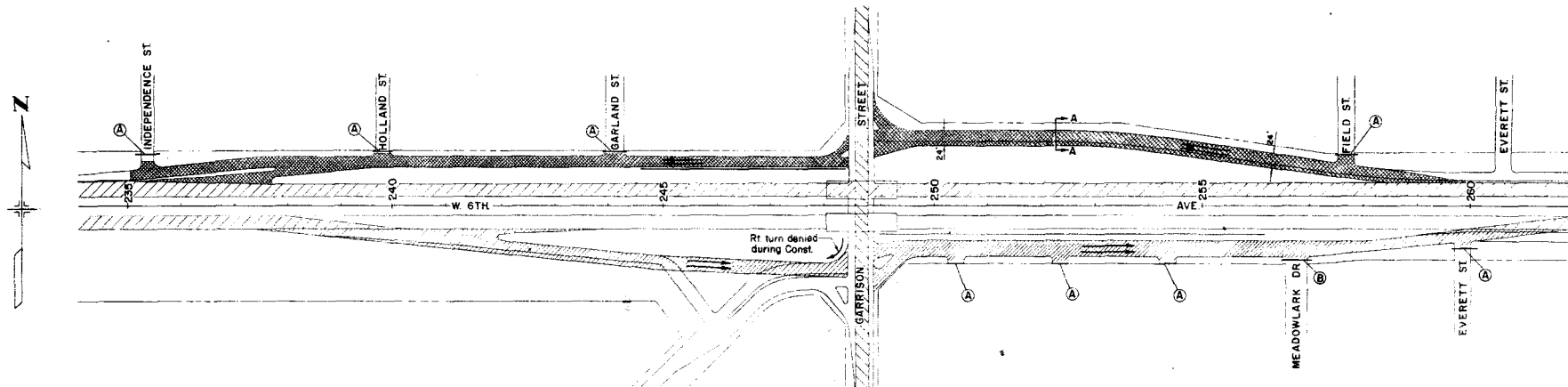
-  EXISTING STREET TO BE USED
-  AREA UNDER CONSTRUCTION
-  AREA COMPLETED
-  TIMBER BARRICADE (CLASS I) (TYPE A)
-  TIMBER BARRICADE (CLASS I) (TYPE B)



DETOUR
SECTION A-A

FED. ROAD REG. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	F 012 - 2 (B)	63	

TRAFFIC MAP



COLORADO DEPARTMENT OF HIGHWAYS

PROJECT F 012-2(B)

TRAFFIC MAP

STAGE III

BUILD NORTH FRONTAGE ROAD.
MOVE WESTBOUND TRAFFIC TO NO. FRONT. ROAD



EXISTING STREET TO BE USED



AREA UNDER CONSTRUCTION



AREA COMPLETED



TIMBER BARRICADE (CLASS I) (TYPE A)



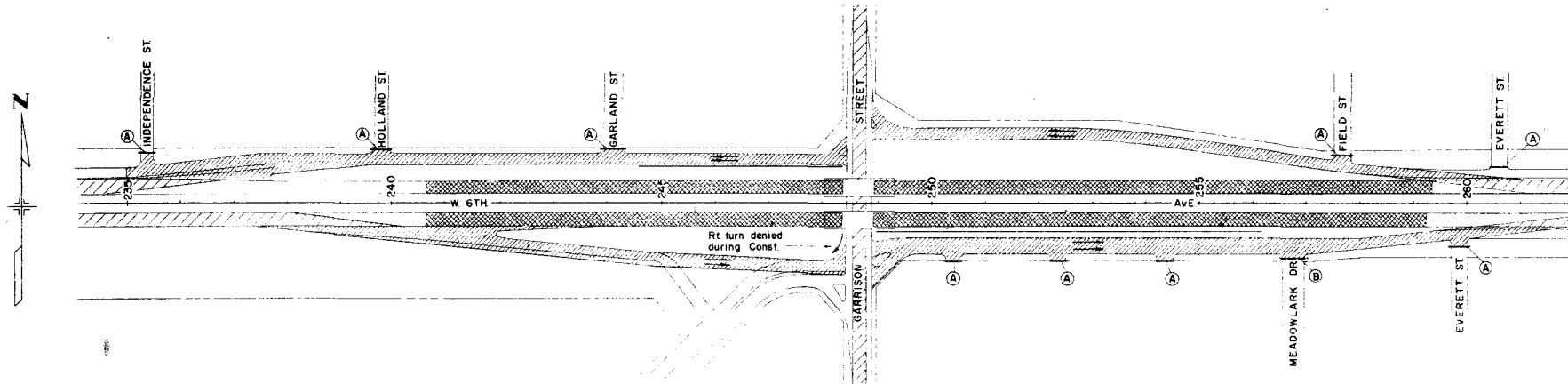
TIMBER BARRICADE (CLASS I) (TYPE B)

TABULATION OF TIMBER BARRICADES (FOR DETOUR)

UNIT	STAGE			TOTAL
	I	II	III	
Timber Barricades (Class I) (Type A)	Each	9		9
Timber Barricades (Class I) (Type B)	Each	1		1

FED. ROAD RES. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
8	COLO.	FO12-2(B)	64	

TRAFFIC MAP




COLORADO DEPARTMENT OF HIGHWAYS


PROJECT FO12-2(B)

TRAFFIC MAP

STAGE IV

Build Fill, Pavement, Abutments and Piers.

 EXISTING STREET TO BE USED

 AREA UNDER CONSTRUCTION

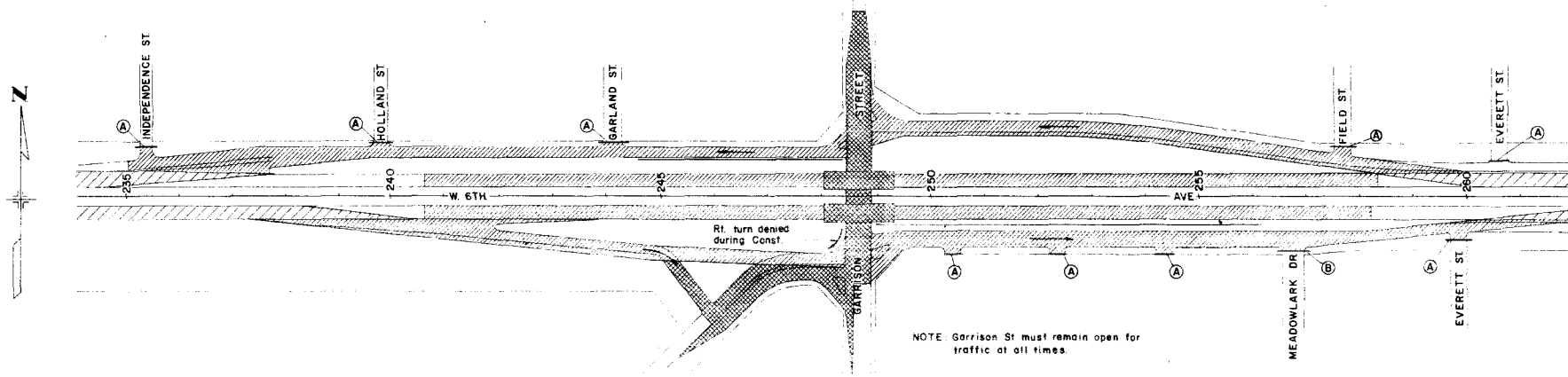
 AREA COMPLETED

 TIMBER BARRICADE (CLASS I)(TYPE A)

 TIMBER BARRICADE (CLASS I)(TYPE B)

FED ROAD REG. NO.	DIVISION	PROJ. NO.	SHEET NO.	TOTAL SHEETS
9	GOLO	FO12-2(B)	65	

TRAFFIC MAP








COLORADO DEPARTMENT OF HIGHWAYS

PROJECT FO12-2(B)

TRAFFIC MAP

STAGE V

BUILD DECKS, GARRISON ST, S/W FRONTAGE ROAD AND CL 4N-UP.

-  EXISTING STREET TO BE USED.
-  AREA UNDER CONSTRUCTION
-  AREA COMPLETED
-  TIMBER BARRICADE (CLASS IXTYPE A)
-  TIMBER BARRICADE (CLASS IXTYPE B)