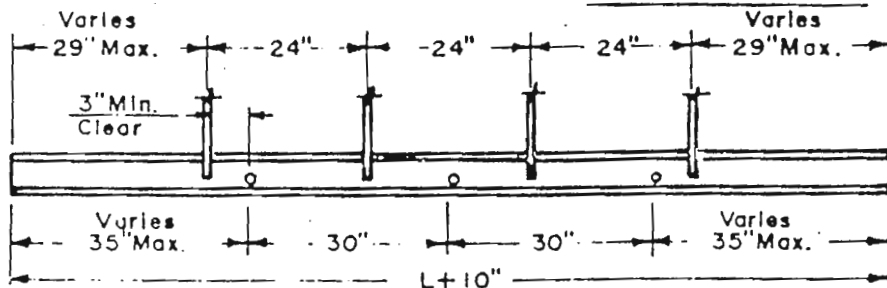
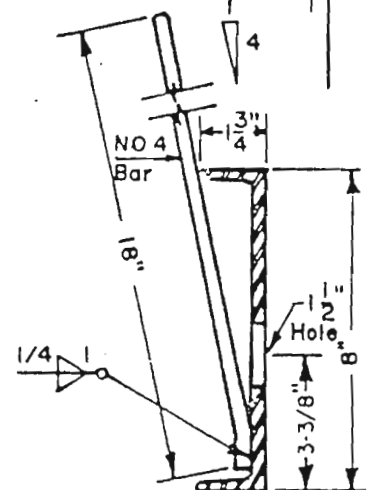


NOT TO SCALE



CHANNEL LAYOUT DETAILS



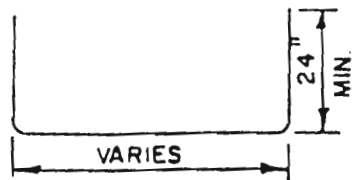
TYPICAL SECTION AT HOLE

**GENERAL NOTES**

1. All work shall be done in accordance with acceptable construction practices
2. All concrete shall be class I. - Type II
3. Concrete walls shall be formed on both sides and shall be 8" thick.
4. Curb face assembly shall be galvanized after welding in accordance with A.A.S.H.T.O. M III.
5. Exposed concrete corners shall be beveled to a 1-1/2" face. Curb & Gutter corners shall be finished to match the existing curb & gutter beyond the transitional gutter.
6. Reinforcing bars shall be deformed and shall be new billet steel, grade 40 and conform to A.A.S.H.T.O. M 30.
7. No splices permitted in top slab, 12" (No. 4 Rebar) & 14" (No. 5 Rebar) lap splices in accordance with A.C.I. 318 are permitted in all other sections.
8. All bars shall be a minimum of 2" Clear
9. Since pipe entries into the inlet are variable, the dimensions shown are typical. Actual dimensions and quantities for concrete and reinforcement shall be as required in the work.
10. Contractor shall be responsible for bar list.
11. All work shall be done in accordance with ACI 318.
12. Dimensions and weights of Typical Manhole Ring & Cover are nominal.

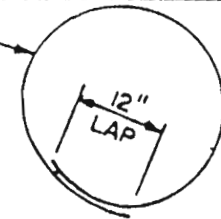
FIGURE 2-2a

COLORADO DEPT OF HWYS  
 — TYPE "R" INLET

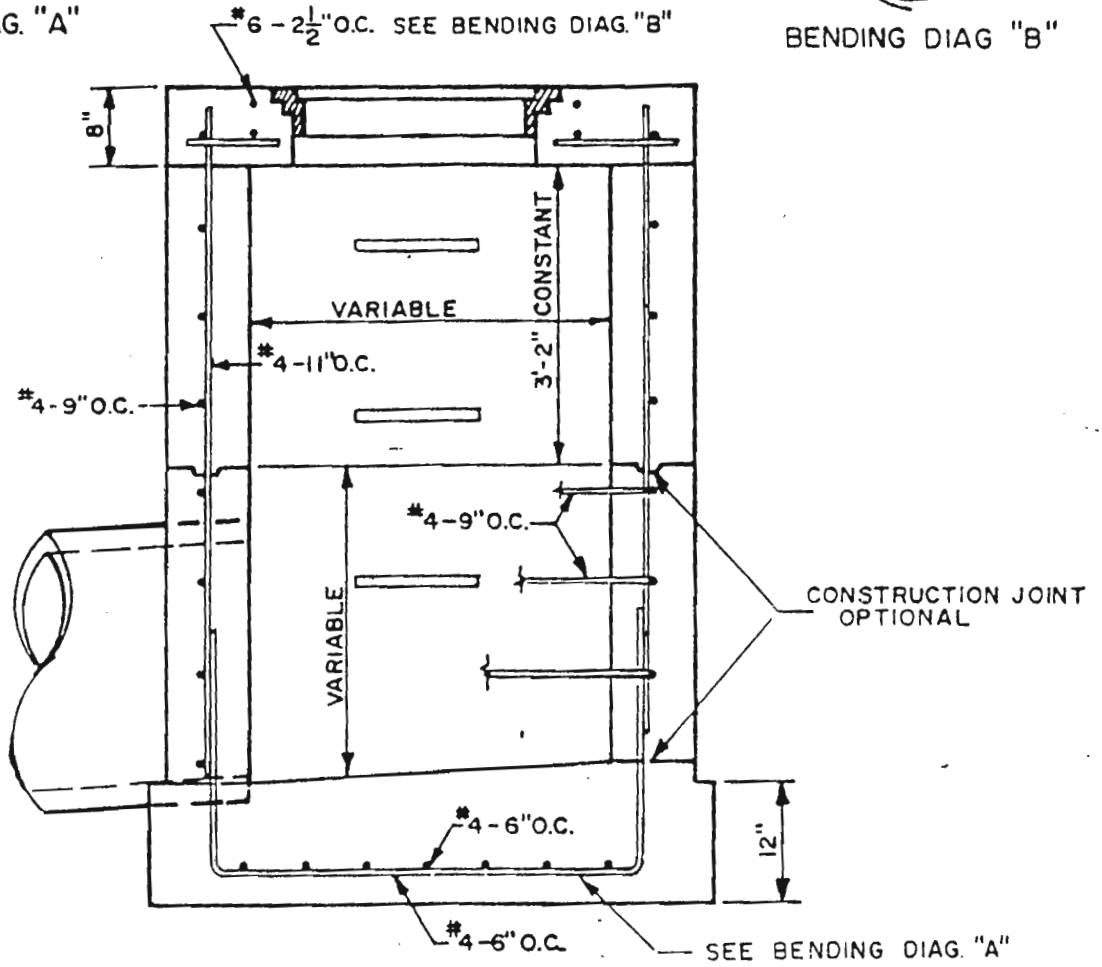


BENDING DIAG. "A"

#6 REBAR



BENDING DIAG. "B"



SECTION A-A  
REGULAR INLET  
NOT TO SCALE

NOTE:  
ALL CONSTRUCTION JOINTS  
SHALL HAVE A 2"X4" KEYWAY.

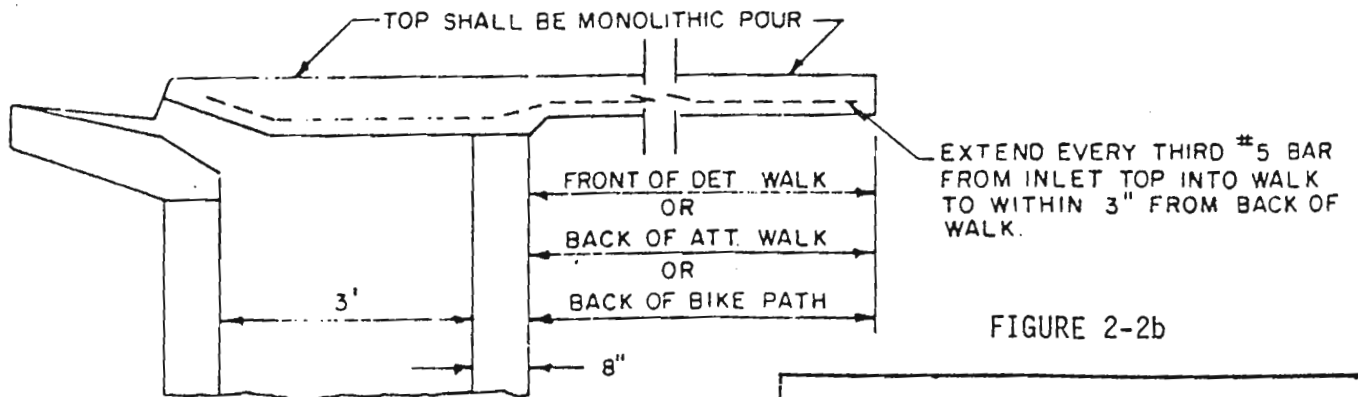
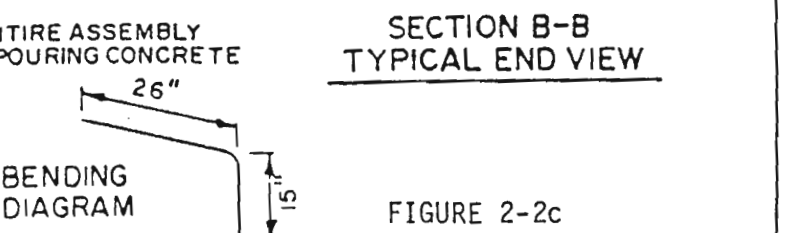
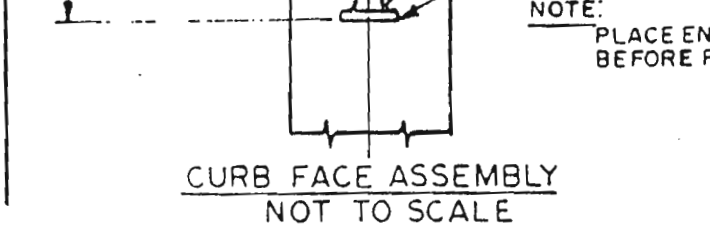
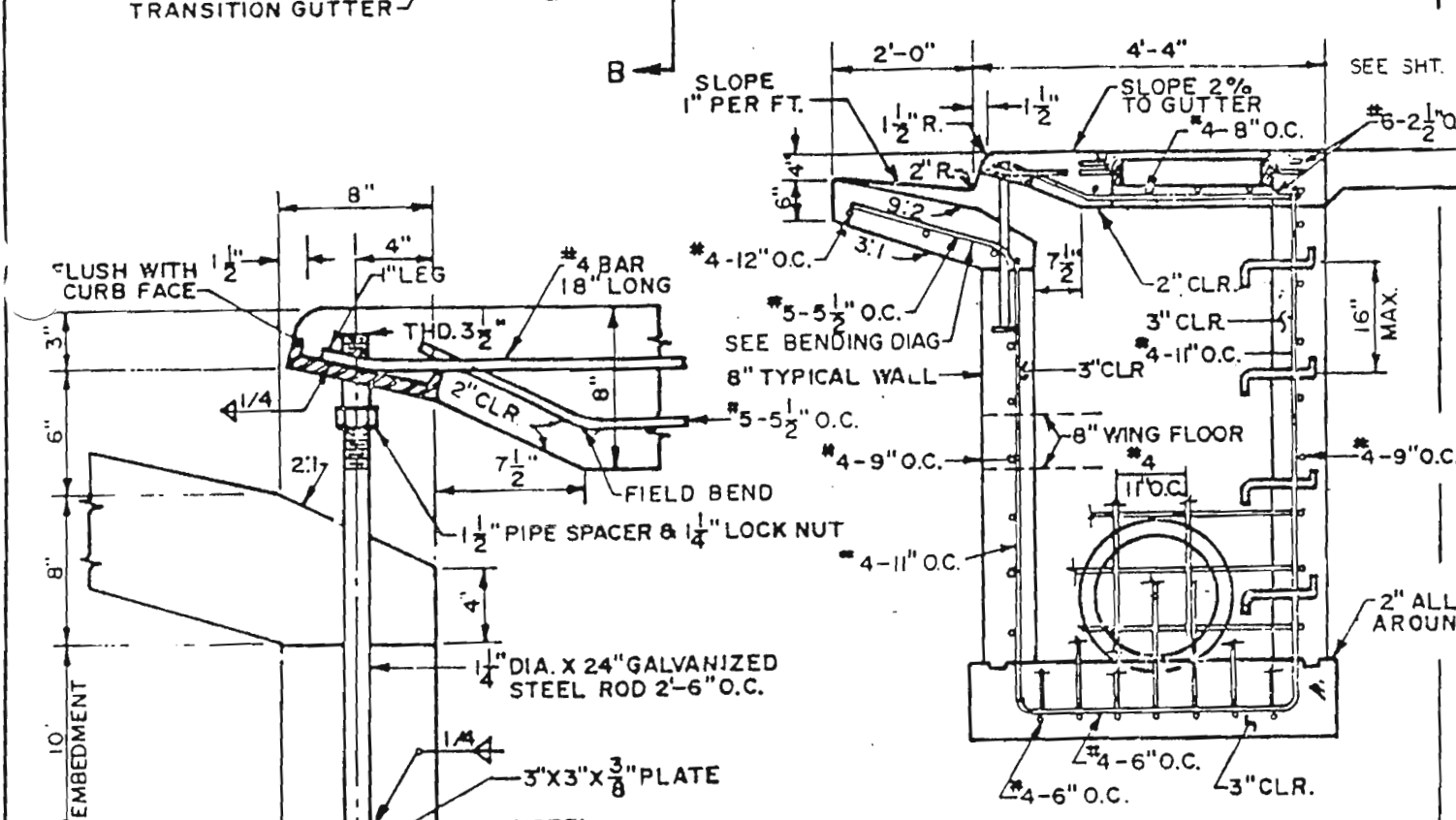
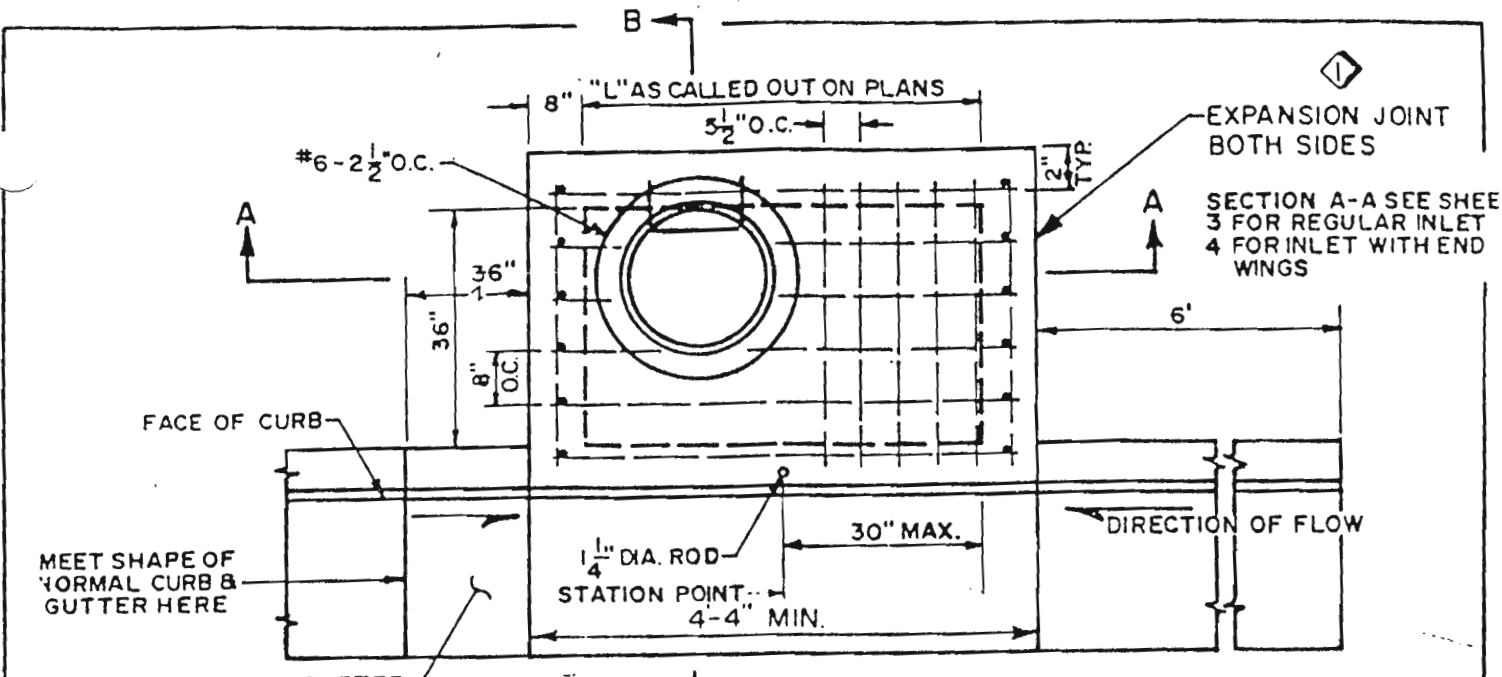


FIGURE 2-2b

COLORADO DEPT OF HWYS  
TYPE "R" INLET

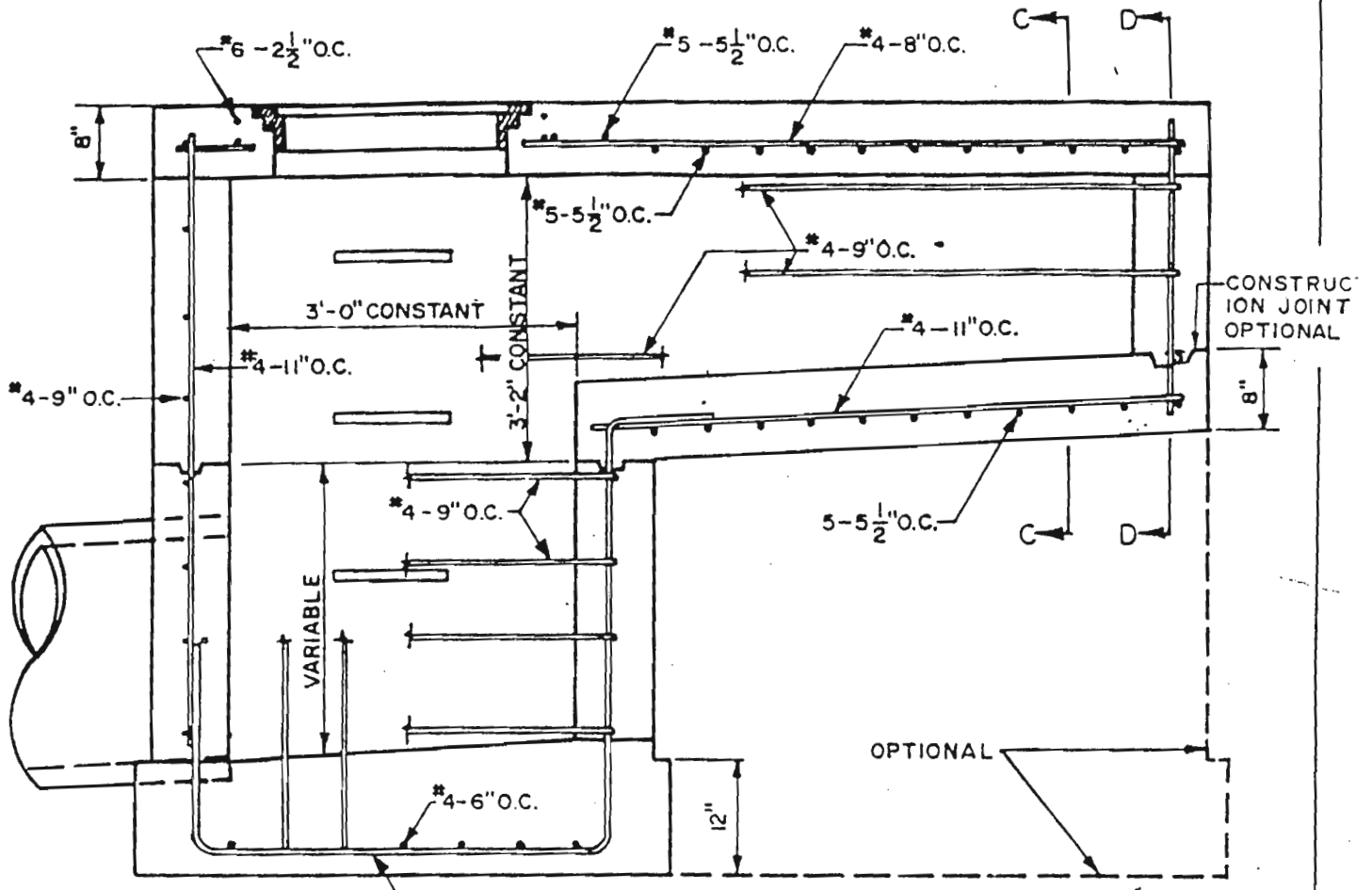


CURB FACE ASSEMBLY  
NOT TO SCALE

SECTION B-B  
TYPICAL END VIEW

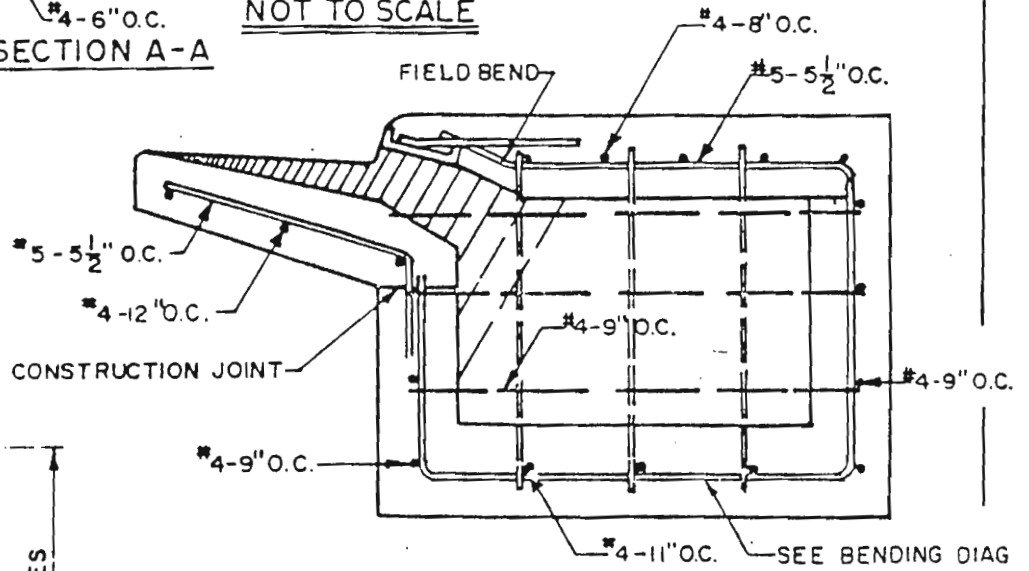
FIGURE 2-2c

COLORADO DEPT. OF HWYS  
TYPE "R" INLET



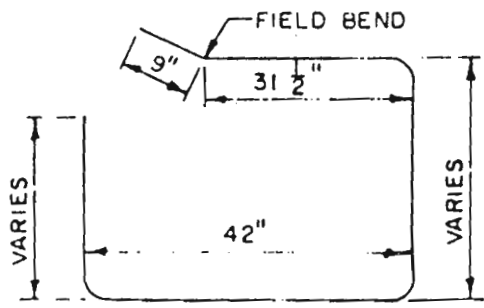
SECTION A-A

NOT TO SCALE



SECTION C-C & D-D  
(Dotted Bars are in Section D-D.)

FIGURE 2-2d



BENDING DIAGRAM

COLORADO DEPT OF HWYS  
TYPE "R" INLET

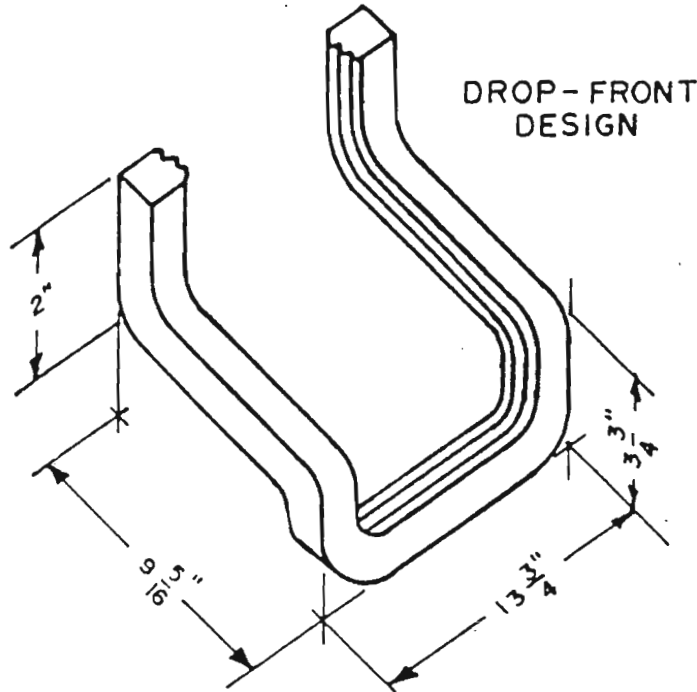
## APPROVED SPECIFICATIONS

Manhole steps and ladder rungs shall be Alcoa Aluminum Manhole Step part number 12653B or equivalent and shall incorporate two nonskid grooves not to exceed 1/8" deep and 1/8" wide. They shall be made of aluminum alloy conforming to Federal Specification QQ-A-200/8, having a minimum tensile strength of 38,000 p.s.i. and a minimum yield strength of 35,000 p.s.i. They must have an elongation of not less than 10 percent in 2 in., and must carry a load in the center of the cross bar of 1,000 lb. when projected 6 in. from the wall and 1,500 lb. when projected 4 in. from the wall without permanent deformation.

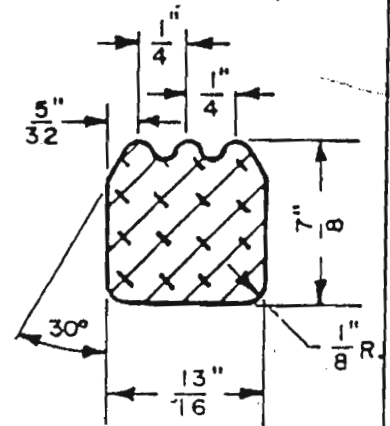
**WEIGHT:** 2.23 pounds

**NOTE:** Manhole steps to be set at 16 in. maximum rung distance.  
Manhole steps shall be poured in place.

\*ALCOA ALUMINUM SPECIFICATIONS



TYP. CROSS SECTION ON ALL STEPS



NOT TO SCALE

## PHYSICAL AND MECHANICAL PROPERTIES

### CAPACITY:

1000 lb. with step extended 6 in. from wall.  
1500 lb. with step extended 4 in. from wall.  
Load applied at center of step  
Load based on no permanent deformation

### ALLOY:

Alcoa aluminum - magnesium - silicide - type alloy conforming to Federal Specification QQ-A-200/8

### MECHANICAL PROPERTIES:

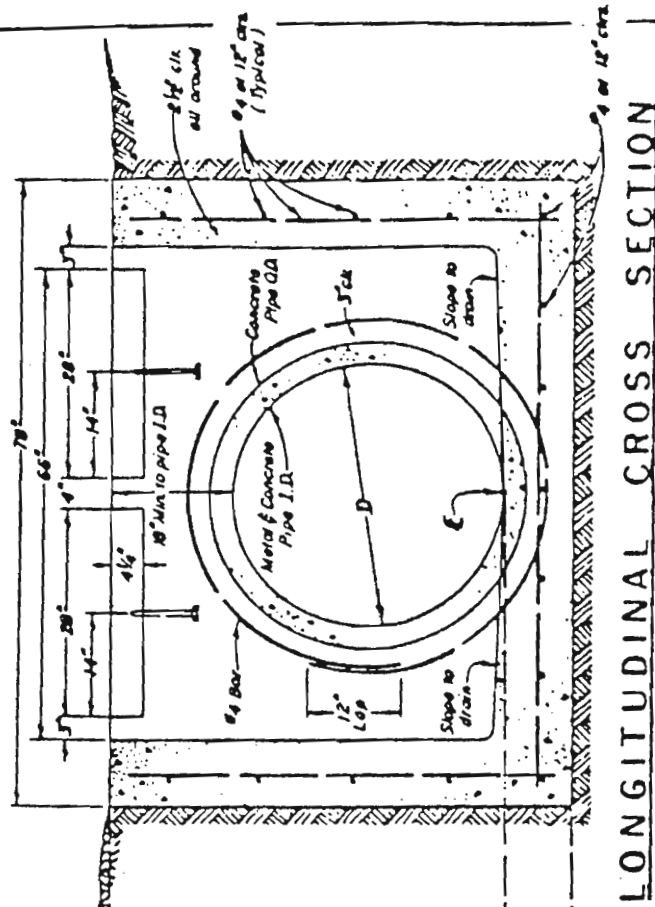
Tensile strength - 38,000 p.s.i. (min.); Yield strength - 35,000 p.s.i. (min.); Elongation - 10% in 2 in. (min.).

### NOMINAL CHEMICAL COMPOSITION:

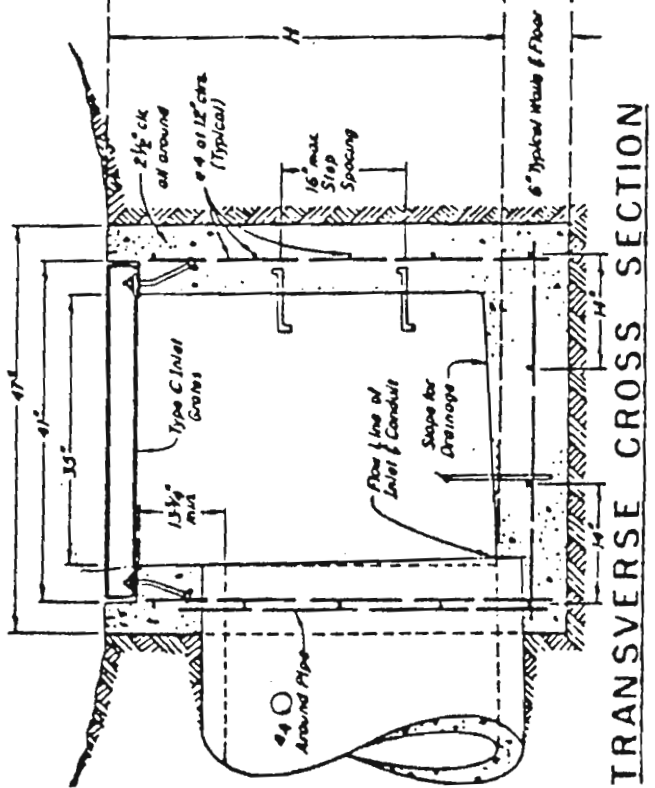
Magnesium - 1.00%; Silicon - 0.60%, Copper - 0.25%  
Aluminum and normal impurities constitute remainder.

FIGURE 2-2e

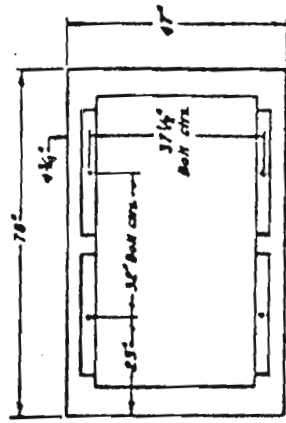
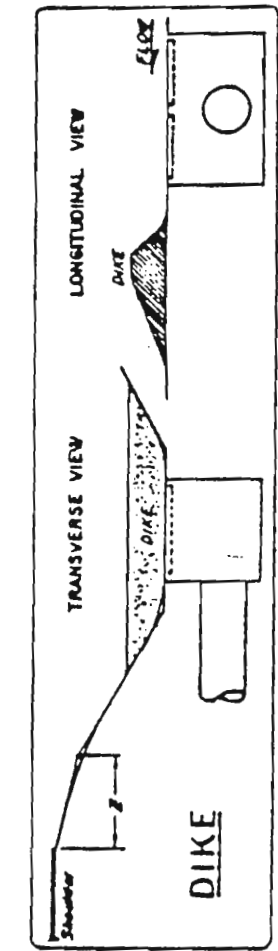
COLORADO DEPT OF HWYS  
TYPE "R" INLET



LONGITUDINAL CROSS SECTION



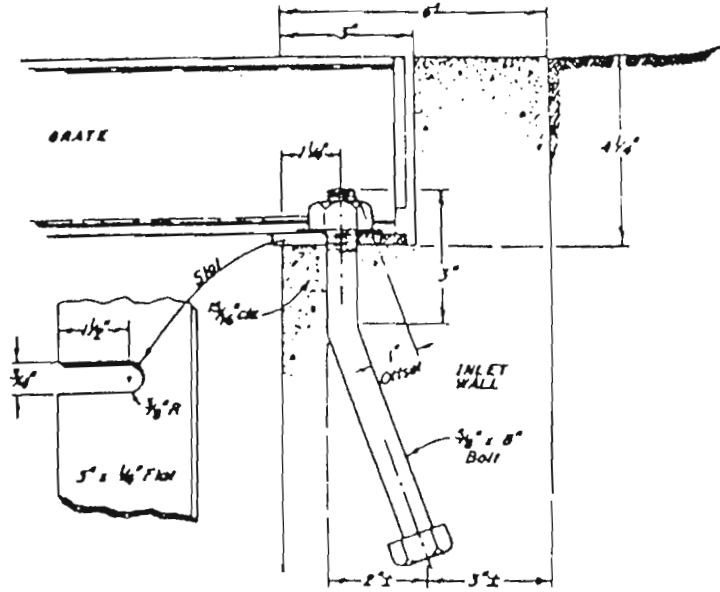
TRANSVERSE CROSS SECTION



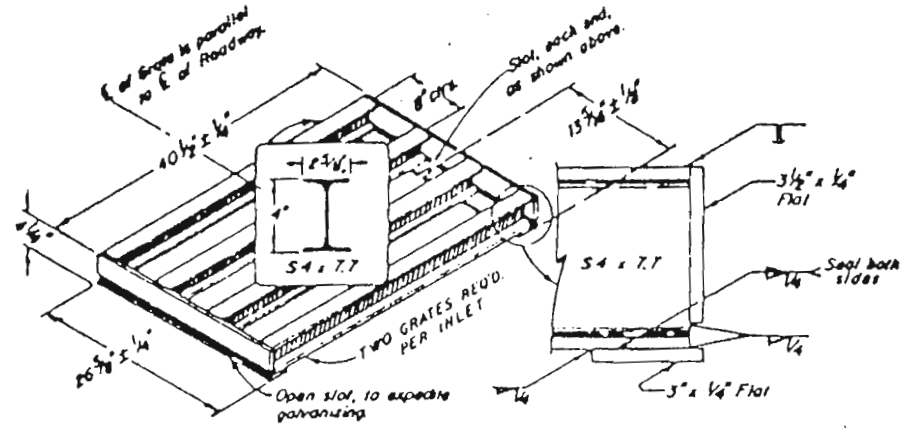
PLAN VIEW  
SHOWING ANCHOR BOLT LAYOUT

COLORADO DEPT OF HWYS  
TYPE "D" INLET

FIGURE 2-3a



GRATE INSTALLATION DETAIL



TYPE "C" INLET GRATE

QUANTITIES FOR ONE INLET

H ft.	CONCRETE cu yd	STEEL lb	PIPE RANGE, D IN		STEEL RING		NO. STEPS REQD.
			CSP	RCP	CSP ID.	RCP ID.	
3.0	1.5	109	18	18	5	6	0
3.5	1.7	115	18-24	18-24	6	7	0
4.0	1.9	124	18-30	18-30	7	9	1
4.5	2.0	140	18-36	18-36	9	10	1
5.0	2.2	159	18-42	18-42	10	11	2
5.5	2.4	165	18-48	18-48	11	12	2
6.0	2.6	184	18-54	18-48	12	12	2
6.5	2.7	190	18-60	18-48	13	12	3
7.0	2.9	209	18-66	18-48	14	12	3
7.5	3.1	215	18-66	18-48	14	12	4
8.0	3.3	234	18-66	18-48	14	12	4
8.5	3.4	240	18-66	18-48	14	12	4
9.0	3.6	259	18-66	18-48	14	12	5
9.5	3.8	265	18-66	18-48	14	12	5
10.0	4.0	284	18-66	18-48	14	12	5

† Concrete and Steel quantities are for ONE entire Inlet before deduction for volume occupied by pipe.  
 \* Steel Ring weights are for the maximum pipe D shown.

QUANTITIES; 2 STEEL GRATES - ONE INLET

NO. PIECES	DESCRIPTION	LENGTH	Lb per Ft	WEIGHT (lbs.)
1	5' x 7.7' Beam	40"	7.70	206
4	3 1/2" x 1/4" Flot	26 7/8"	2.98	26
4	3" x 1/4" Flot	26 7/8"	2.35	24

TOTAL 256 lbs.

GENERAL NOTES

- All work shall be done in accordance with the Standard Specifications applicable to the project.
- Concrete shall be Class A, B, or D.
- See plans for size and location of Conduit.
- Inlet Grating shall be galvanized as described for Frames, Grates, Covers & Steps in Section 712.
- All exposed concrete surfaces shall receive Class I Finish.
- Footings in rock shall be poured out to rock and not formed.
- Inlet may be Cast-In-Place or Precast.
- Steps will be required when Inlet "H" exceeds 3'-6".
- For detail of Inlet Step, see Standard M-604-D.
- Steps shall be included in the cost for "Inlet, Type D".
- Grating shall conform to Section 604.

FIGURE 2-3b

COLORADO DEPT OF HWYS  
 TYPE "D" INLET