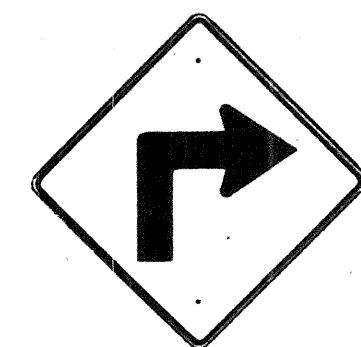
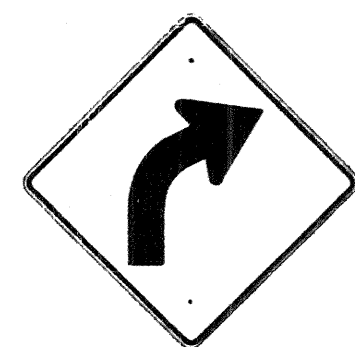




WI-1(R) 30" x 30"



WI-2(R) 30" x 30"



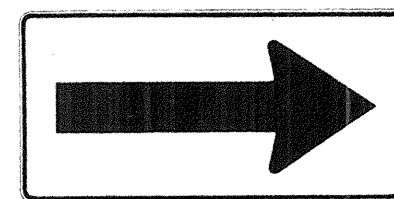
WI-3(R) 30" x 30"



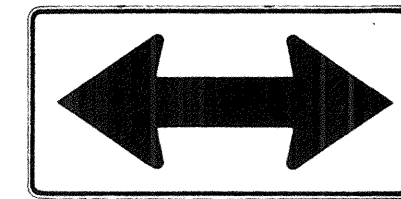
WI-4(R) 30" x 30"



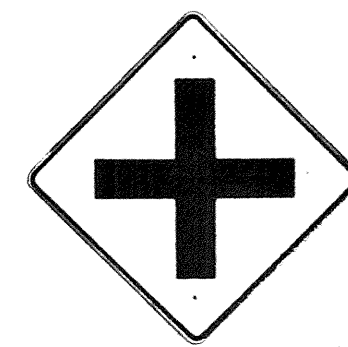
WI-5(R) 30" x 30"



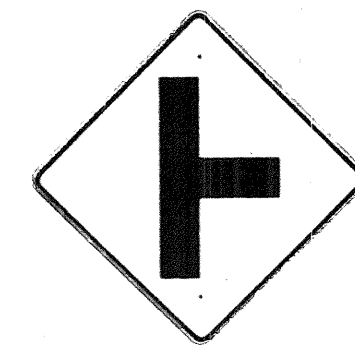
WI-6 48" x 24"



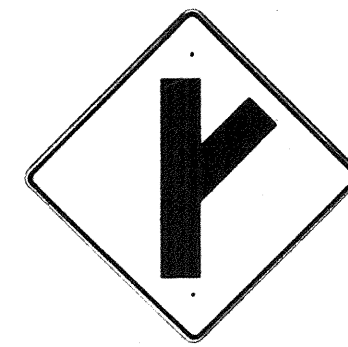
WI-7 48" x 24"



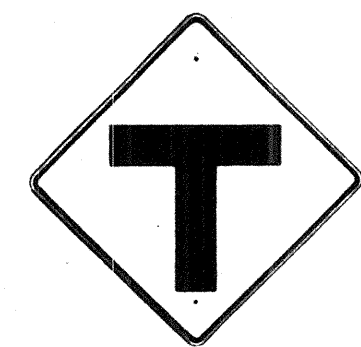
W2-1 30" x 30"



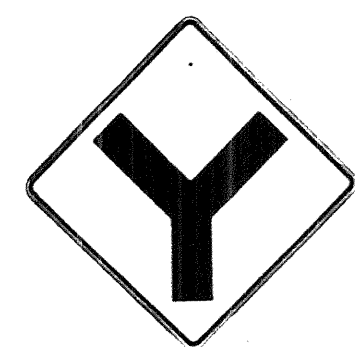
W2-2 30" x 30"



W2-3(R) 30" x 30"



W2-4 30" x 30"



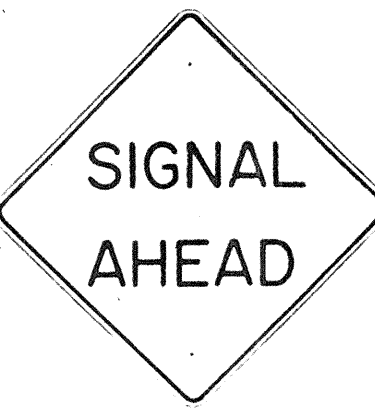
W2-5 30" x 30"



W3-1 30" x 30"



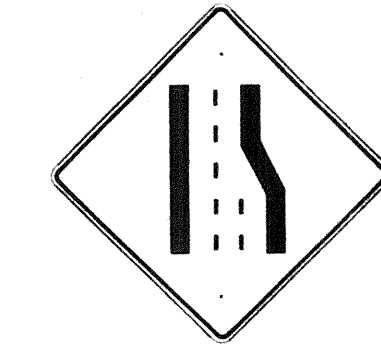
W3-2 30" x 30"



W3-3 36" x 36"



W4-1 30" x 30"
W4-1-E 36" x 36"
W4-1-I 48" x 48"



W4-2 30" x 30"
W4-2-E 36" x 36"



W5-1 30" x 30"
W5-1-E 36" x 36"



W5-2 30" x 30"



W5-3 30" x 30"



W6-1 36" x 36"



W6-2 36" x 36"



W7-1 30" x 30"



W8-1 30" x 30"



W8-2 30" x 30"



W8-3 30" x 30"



W8-4 30" x 30"



W8-5 30" x 30"



W9-1 30" x 30"



W9-2 30" x 30"



W10-1 36" DIAMETER



W11-1 30" x 30"



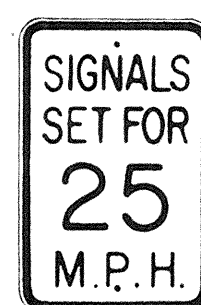
W11-5 30" x 30"



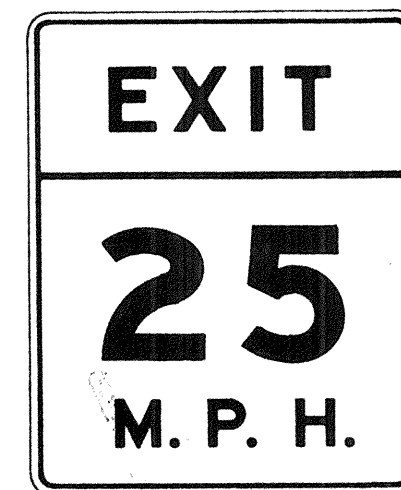
W12-2 36" x 36"



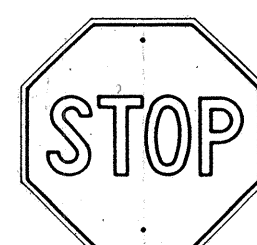
W13-1(35) 18" x 18"



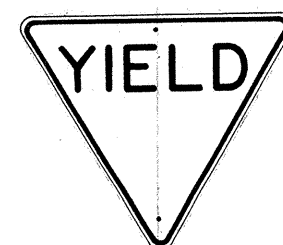
W13-2(25) 12" x 18"



W13-3(25) 48" x 60"



RI-1 30" x 30"



RI-2 36" x 36" x 36"

NOTE:

- The shape, color, dimensions, symbols, wording, lettering and reflectorization of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June 1961 and the BPR manual "Standard Highway Signs," dated September 1961 unless otherwise specified.
- All signs shall be reflectorized unless otherwise specified.
- All signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise noted.
- (R) or (L) indicates right or left and shall be as shown on the plan.
- The suffix "E" denotes Expressway signs and "I" denotes Interstate signs.
- For W13 sign, number in () indicates speed and shall be as shown on the plans.

SUMMARY OF REGULATORY & WARNING SIGNS

APPROX. LOCATION	R-1	R-2	W-12R	W-2-2	W-3-1	W-5-1	W-9-1(3)
Intersection 1+00 R.H.	2	1					
4+00 L.H.			1				
500' from Kaimaliu Conn. on Exit Rd.					*		
7+00 L.H.						1	1
12+00 L.H.	1						
25+30 R.H. & L.H.	2						
40+20 L.H.	1						
53+20 L.H.	1						
57+30 R.H.				1			
Conn. at 65+00	2			*2			
72+50 L.H.				1			
78+40 L.H.	1						
Conn. at 101+00 R.H.	2						
103+30 L.H.	1						
TOTAL	13	1	1	4	1	1	1

NOTE: The exact location of signs shall be determined in the field by the Engineer.

* On existing road

SUMMARY OF DELINEATORS AND MARKERS

APPROX. LOCATION	RM-1 with Post	RM-3 with Post	RM-3 only
Intersection 1+00		1	2
On Barricade 10+25 R			2
On Barricade 13+50 R			2
Front Rd. 29+50 L	2		
Front Rd. 42+75 L	2		
Front Rd. 62+25 L	1		
On Barricade 78+25 R			2
TOTAL	5	1	8

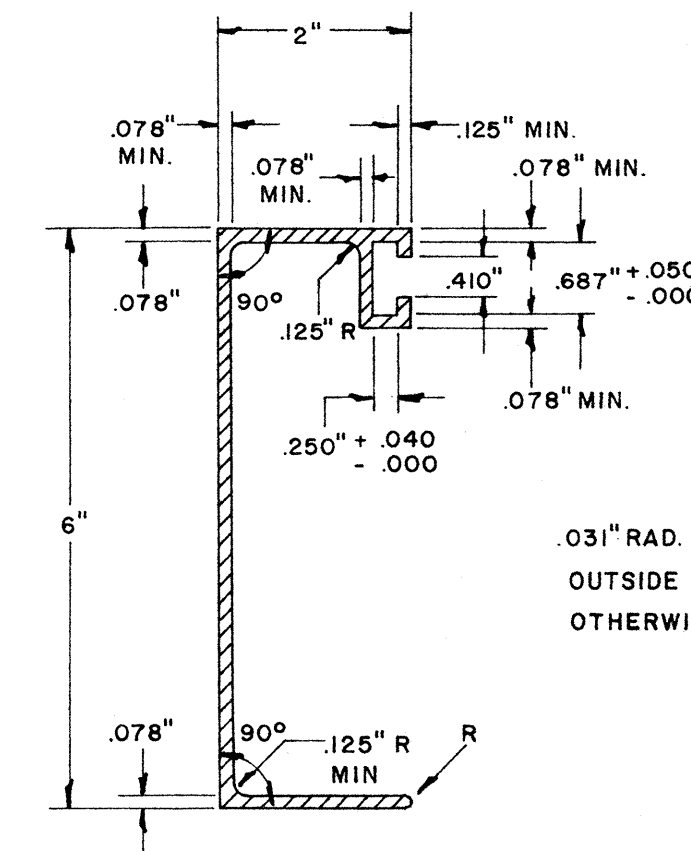
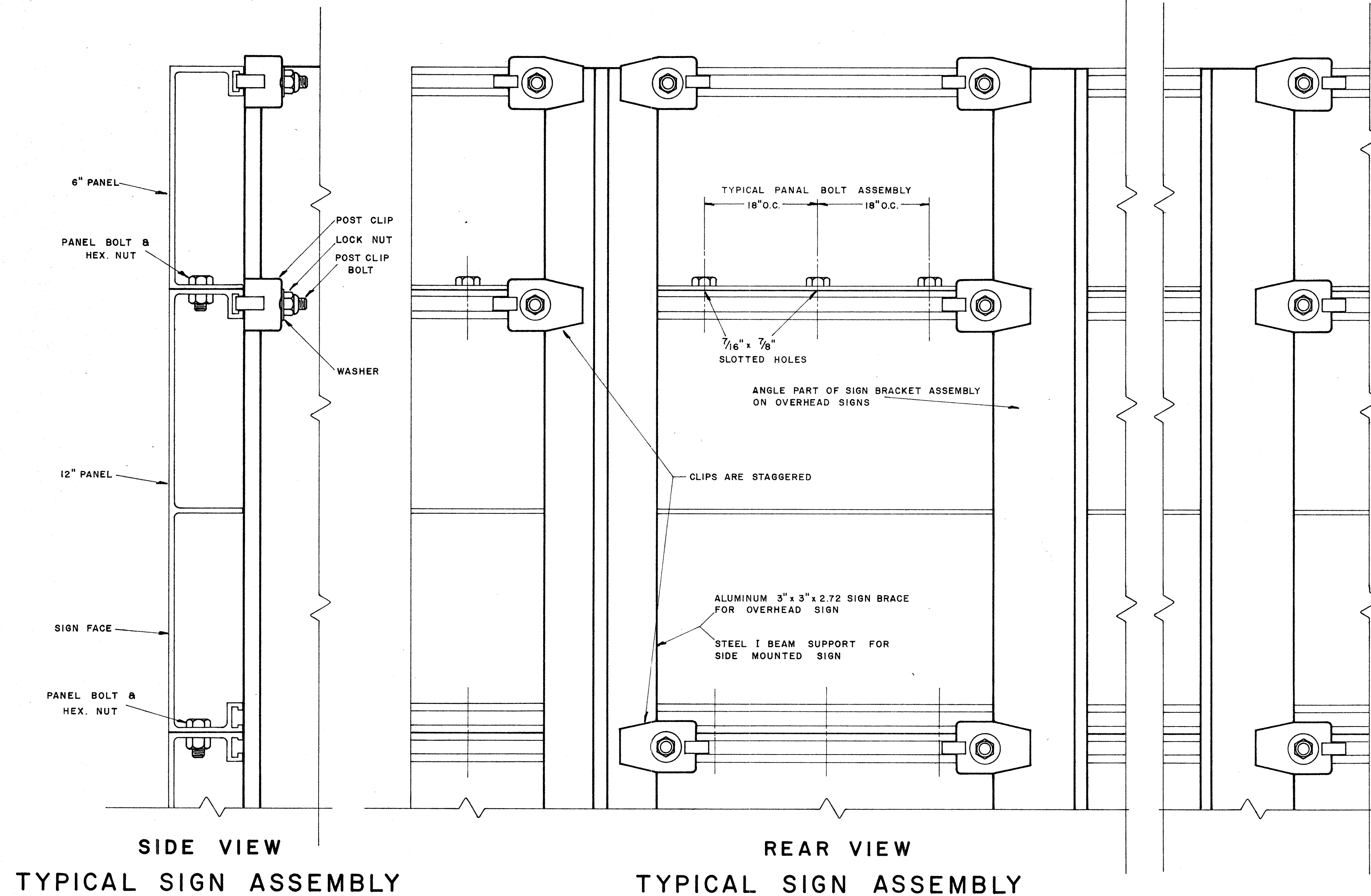
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
REGULATORY & WARNING SIGNS

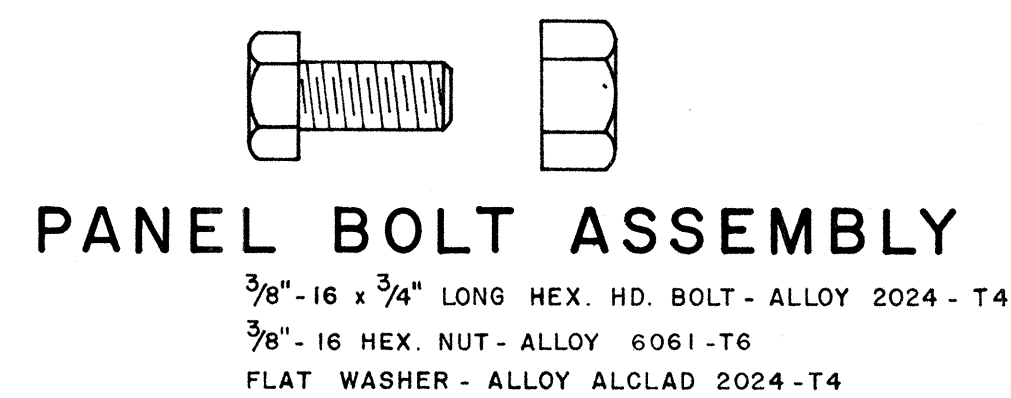
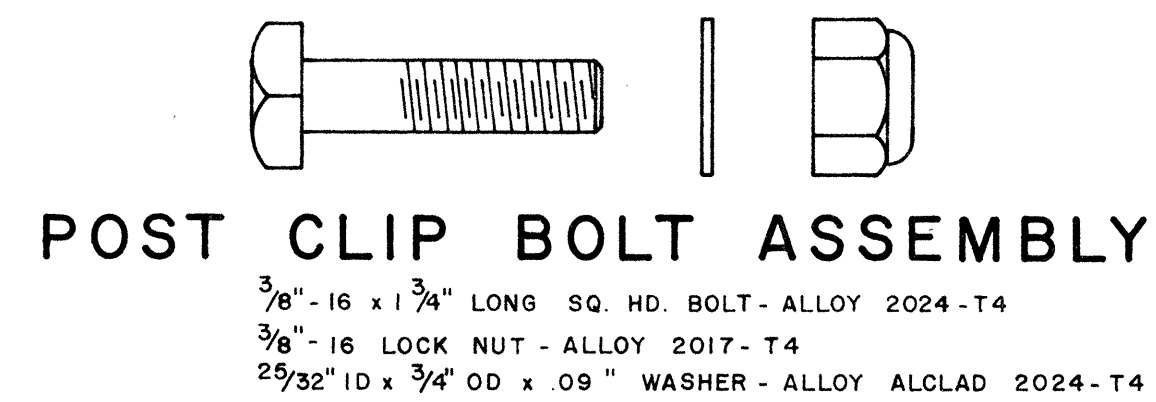
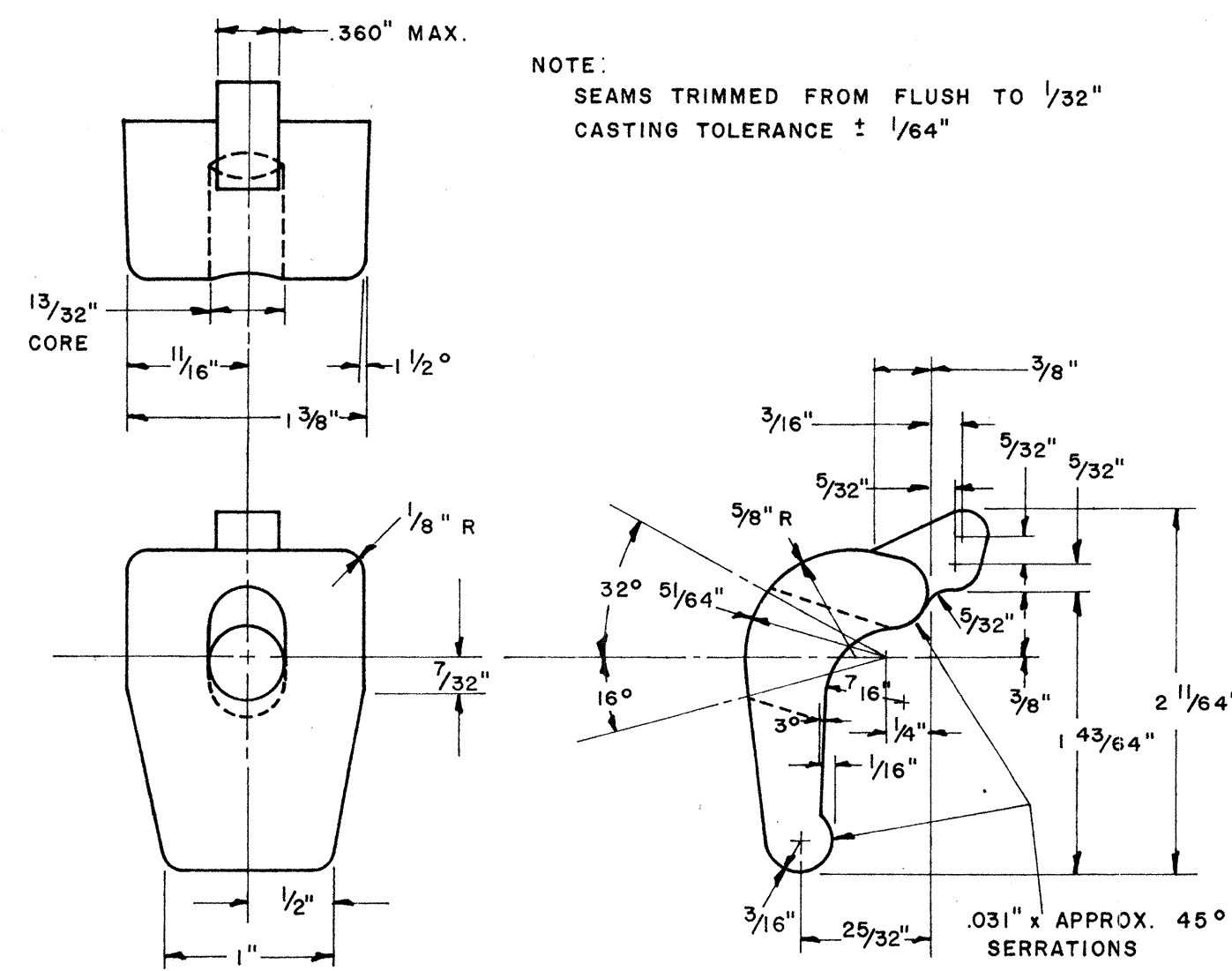
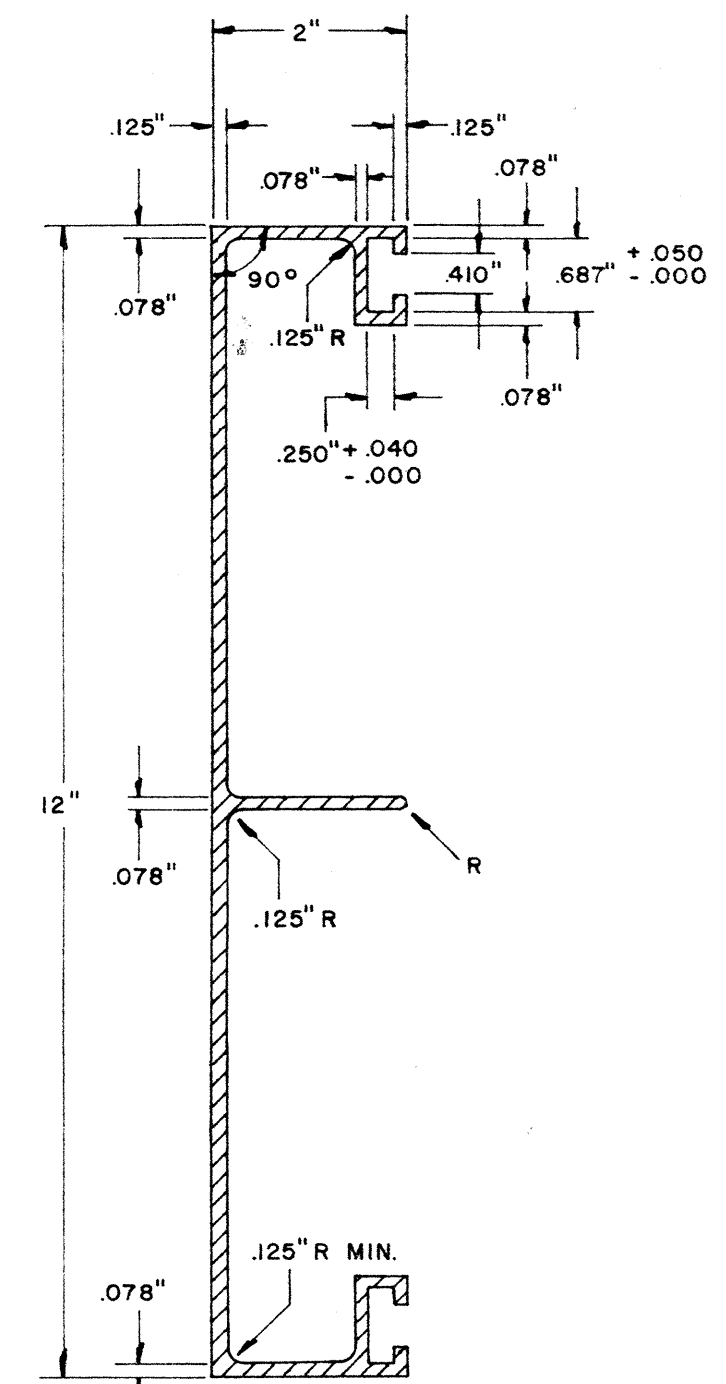
NOT TO SCALE

SHEET No. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-011-1(4)	1969	36	40



SOLID EXTRUDED SIGN PANEL DETAILS



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
SOLID ALUMINUM
EXTRUDED SIGN PANEL
AND
ACCESSORY DETAILS

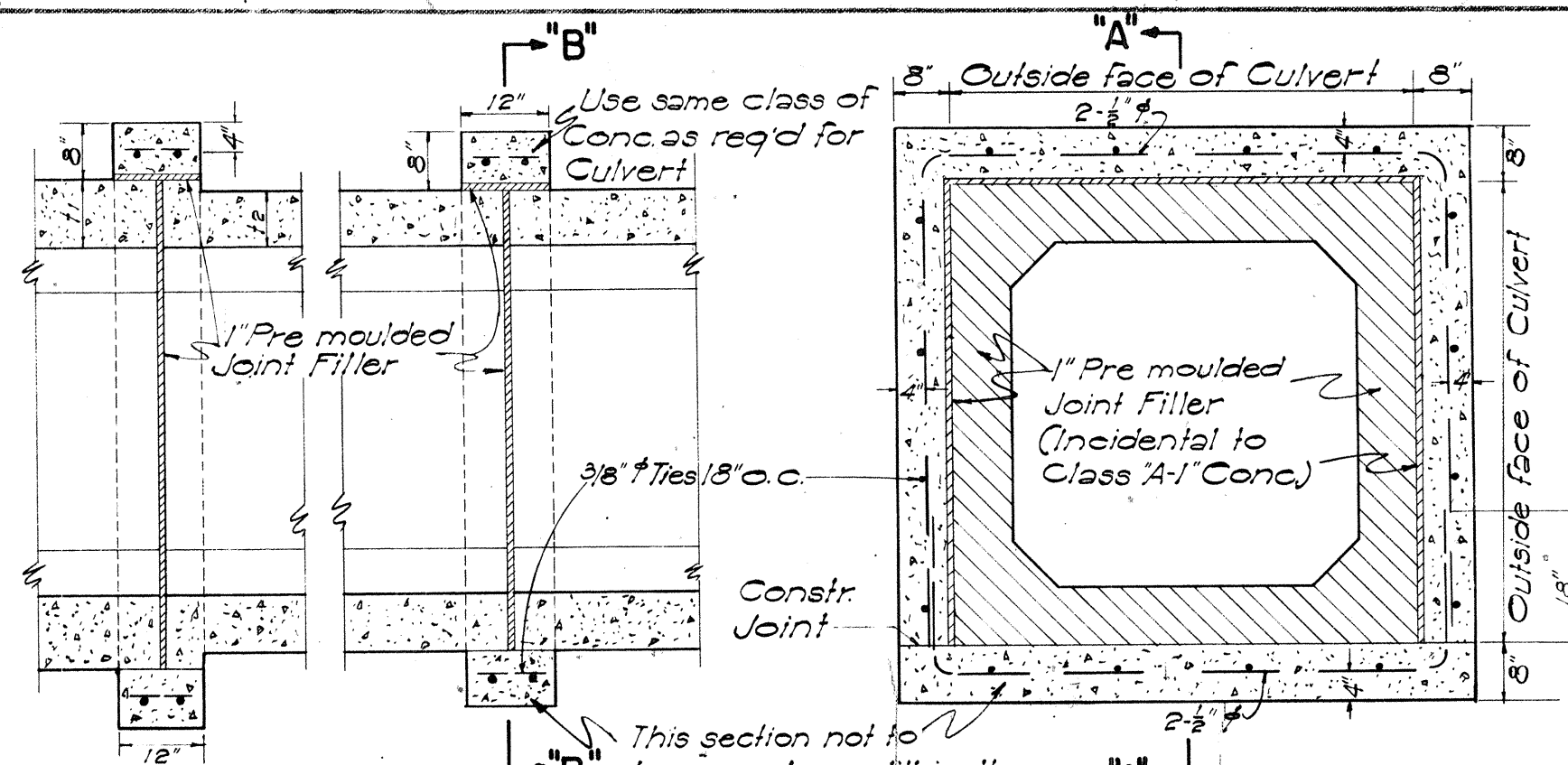
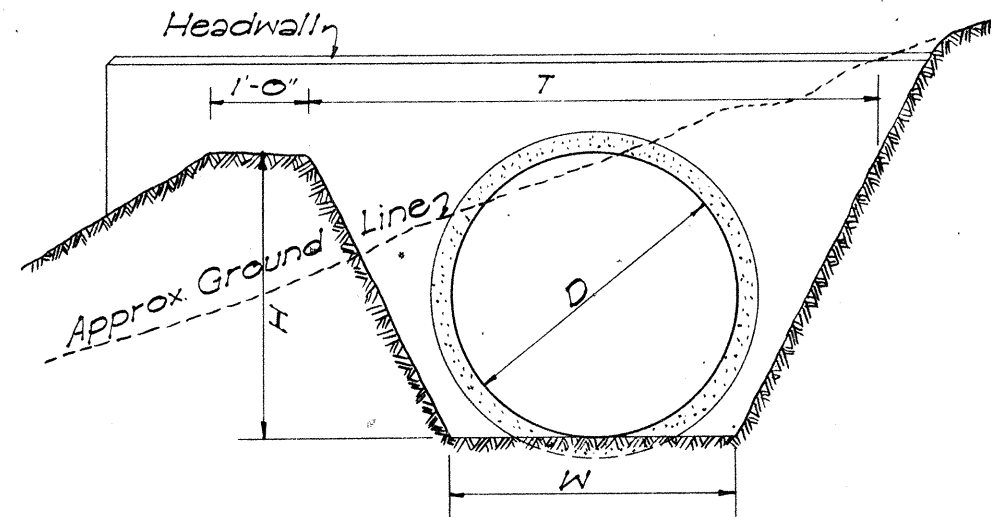
SCALE:

August, 1957

D	W	H	T=H+H
18"	24"	2'-0"	4'-0"
24"	30"	2'-0"	4'-6"
30"	30"	2'-6"	5'-0"
36"	36"	3'-0"	6'-0"

DETAIL OF OUTLET DITCH

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

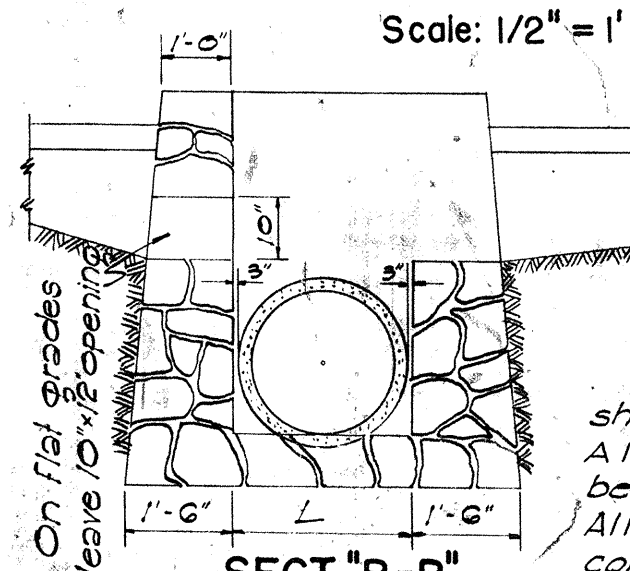
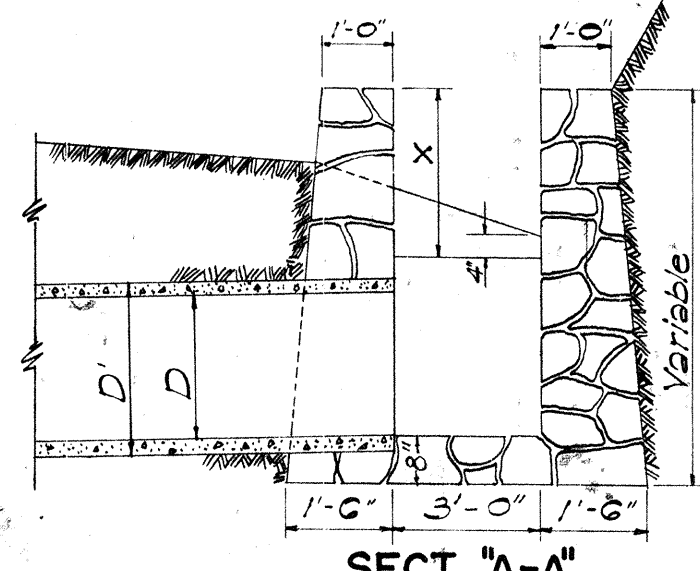
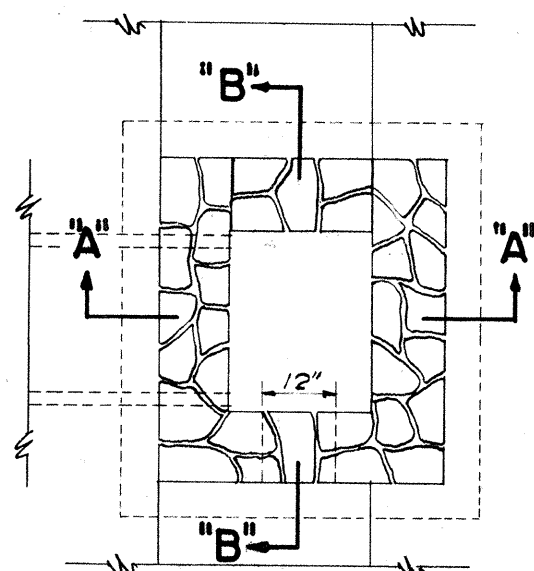
SECTION "A-A"
CONC. COLLAR FOR CONC. BOX CULVERT

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

D	D	L=D+6"	Cu. Yds.	Where Variables Equal
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

NOTE:

Dimension "X" is assumed as 2'-4" in figuring the above quantities.

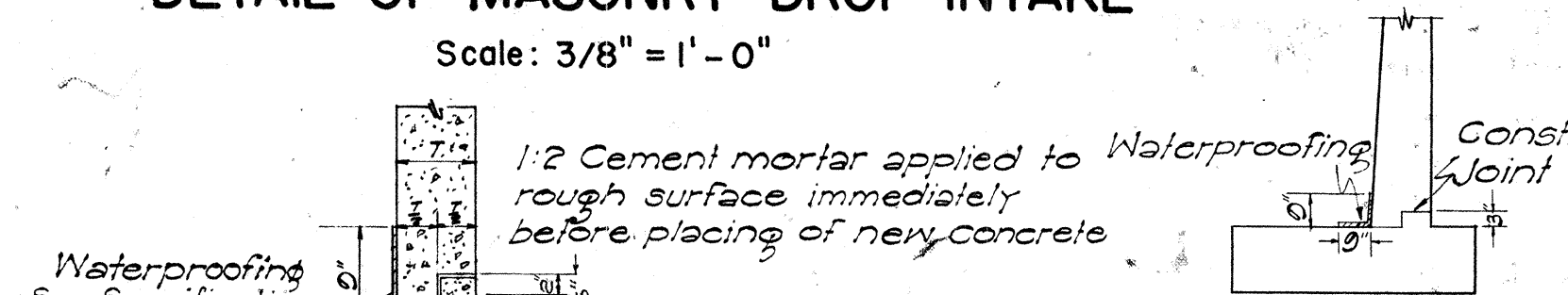


REINFORCING BARS

All reinforcing bars for concrete shall be Billet Steel bars, ASTM A15, intermediate grade. Steel shall be made by the open-hearth process. All bars shall be deformed type conforming to ASTM A-305.

DETAIL OF MASONRY DROP INTAKE

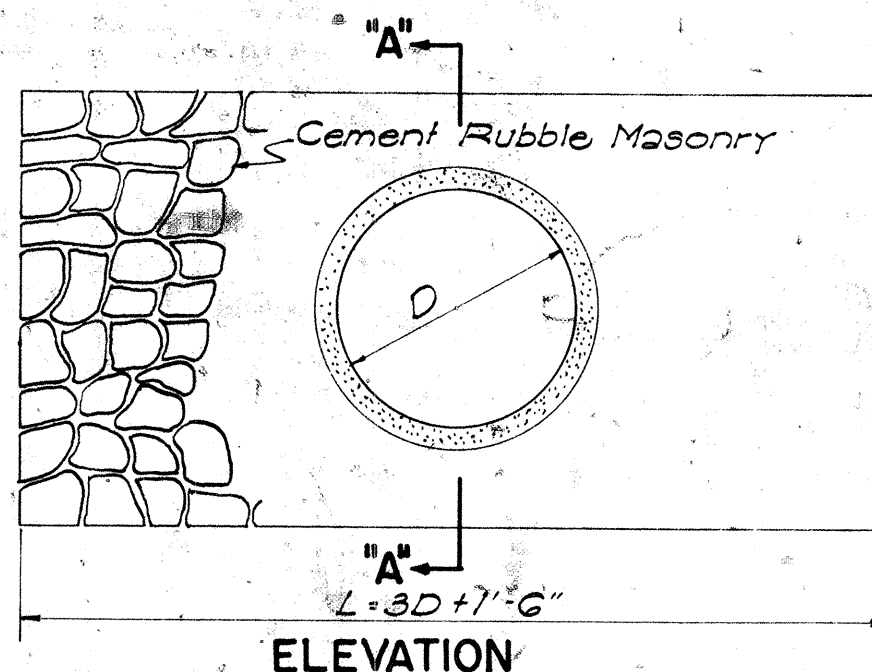
Scale: 3/8" = 1'-0"



CONSTR. JOINT DETAILS

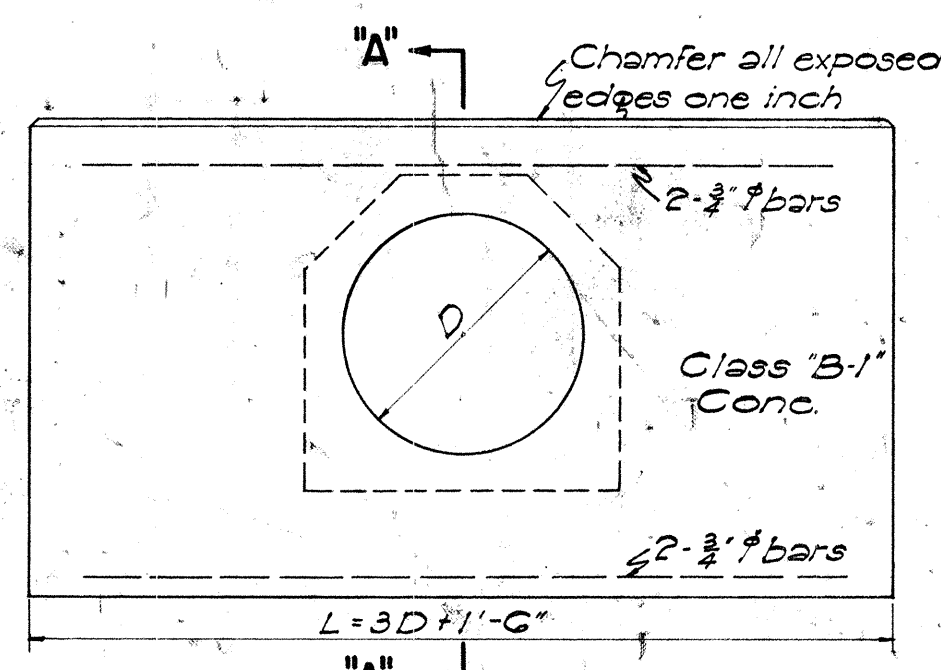
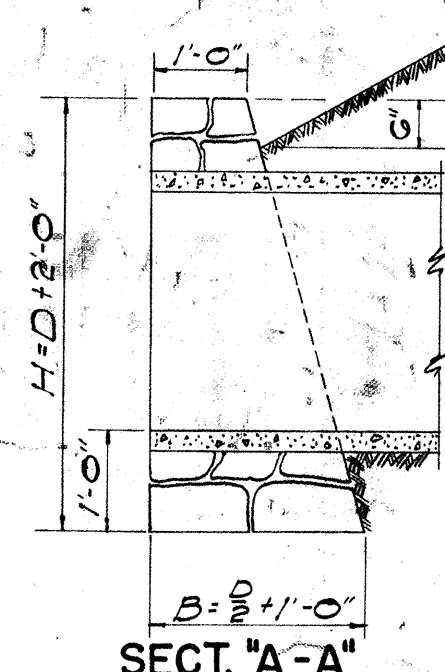
NOTE: Construction joints may only be used where indicated by the plans or permitted in writing by the Engineer.

D	H	B	L	Cast-in-Place Conc. Culvert Cu. Yds.	Conc. Pipe Culvert Cu. Yds.	Corrugated Pipe Culvert Cu. Yds.
18"	3'-6"	1'-0"	6'-0"	0.85	0.05	0.03
24"	4'-0"	2'-0"	7'-6"	1.28	1.45	1.41
30"	4'-6"	2'-6"	9'-0"	1.83	2.06	2.00
36"	5'-0"	2'-6"	10'-6"	2.40	2.84	2.72

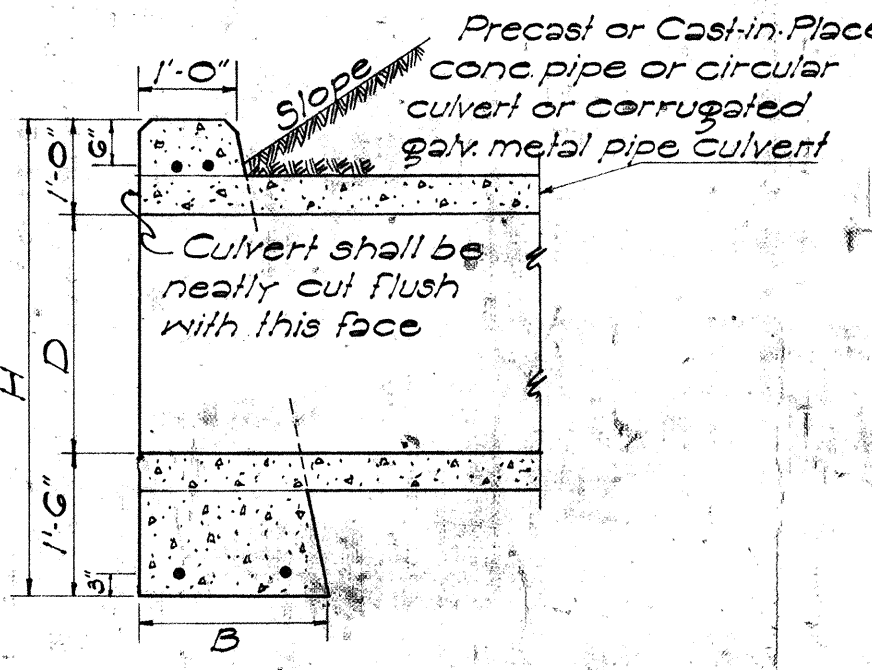


DETAIL OF MASONRY HEADWALL

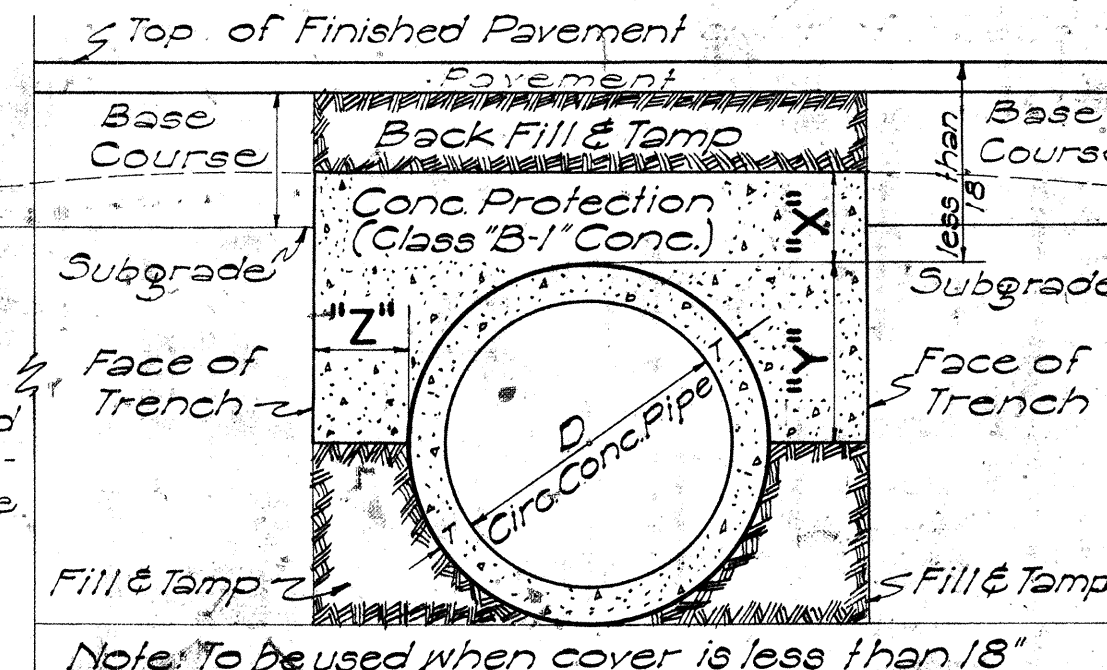
Scale: 1/2" = 1'-0"



ELEVATION



SECTION "A-A"



X	Y	Z
6" for 18" D		Z must be from pipe to face of trench
7" " 24" D		
8" " 30" D		
9" " 36" D		
10" " 42" D		
11" " 48" D		
12" " 54" D		

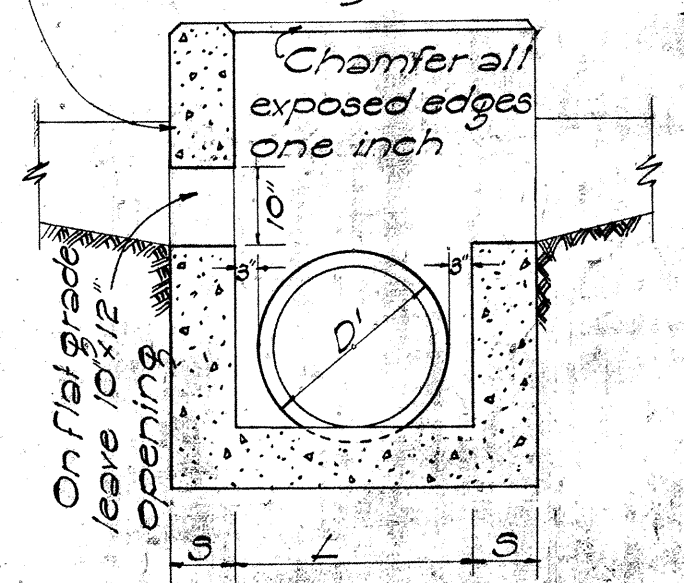
SECT. OF CULVERT WITH CONC. PROTECTION

Scale: 1" = 1'-0"

D	D	L=D+6"	Cu. Yds.	Where Variables Equal
23"	18"	2'-5"	3.02	4'-6"
30"	24"	3'-0"	3.61	5'-0"
37"	30"	3'-7"	4.21	5'-6"
44"	36"	4'-2"	4.85	6'-0"

NOTE: Dimension "X" is assumed as 2'-4" in figuring the above quantities.

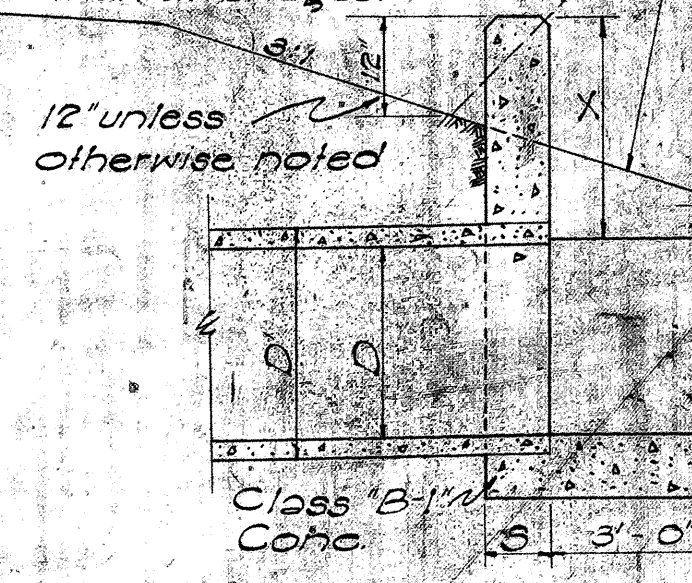
Note: This type of structure shall also be used for the Drop Intakes of Siphons connected with Irrigation Ditches or Flumes with appropriate changes to dimensions. In this case all joints must be made water tight.



SECTION "B-B"

Where drainage comes from both sides lower this wall to same elevation as shown for opposite wall.

Excavate recess in roadway excavation slope for inlet to dimensions and form designated by Engineer. This is Unclassified Excavation.



SECTION "A-A"

DETAIL OF CONCRETE DROP INTAKE

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

D	d	W	Cu. Yds. per Ft.
18"	4"	2'-2"	0.11
24"	4 1/2"	2'-9"	0.14
30"	5"	3'-4"	0.19
36"	5 1/2"	3'-11"	0.26

CAST-IN-PLACE CONC. CULVERT

D	B	L	H	Cast-in-Place Conc. Culvert Cu. Yds.	Conc. Pipe Culvert Cu. Yds.	Steel For One Headwall No. of Bars Size Length Lbs.
18"	1'-6"	6'-0"	4'-0"	0.02	1.00	4 3/4" 5'-6" 33
24"	1'-6"	7'-6"	4'-6"	1.25	1.38	4 3/4" 7'-0" 42
30"	2'-0"	9'-0"	5'-0"	1.05	2.17	4 3/4" 8'-6" 51
36"	2'-0"	10'-6"	5'-6"	2.45	2.74	4 3/4" 10'-0" 60
42"	2'-6"	12'-0"	6'-0"		3.87	4 3/4" 11'-6" 60
48"	2'-6"	13'-6"	6'-6"		4.66	4 3/4" 13'-0" 78

DETAIL OF CONCRETE HEADWALL

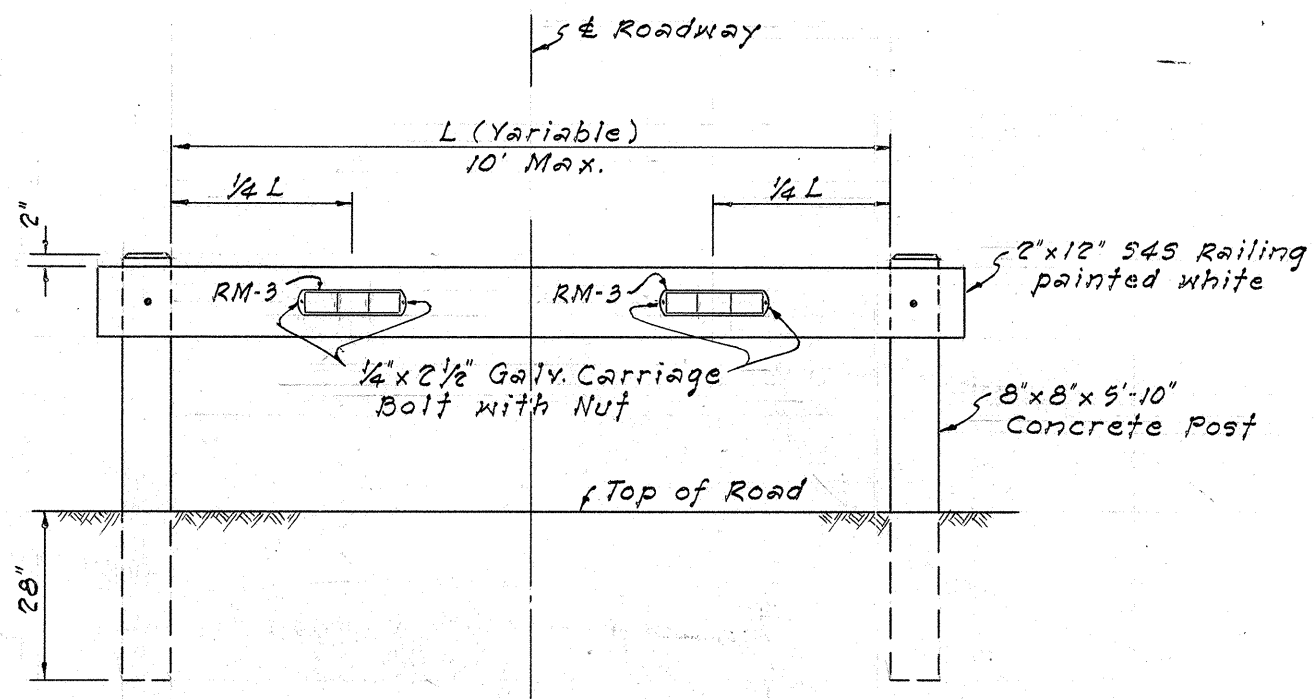
Scale: 1/2" = 1'-0"

APPROVED: DATE: Aug. 25, 1957
STATE HIGHWAY ENGINEER

DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
STATE OF HAWAII
STANDARD DETAILS
DROP INTAKES, RETAINING WALLS,
HEADWALLS, CONSTRUCTION JOINTS
SCALES AS NOTED

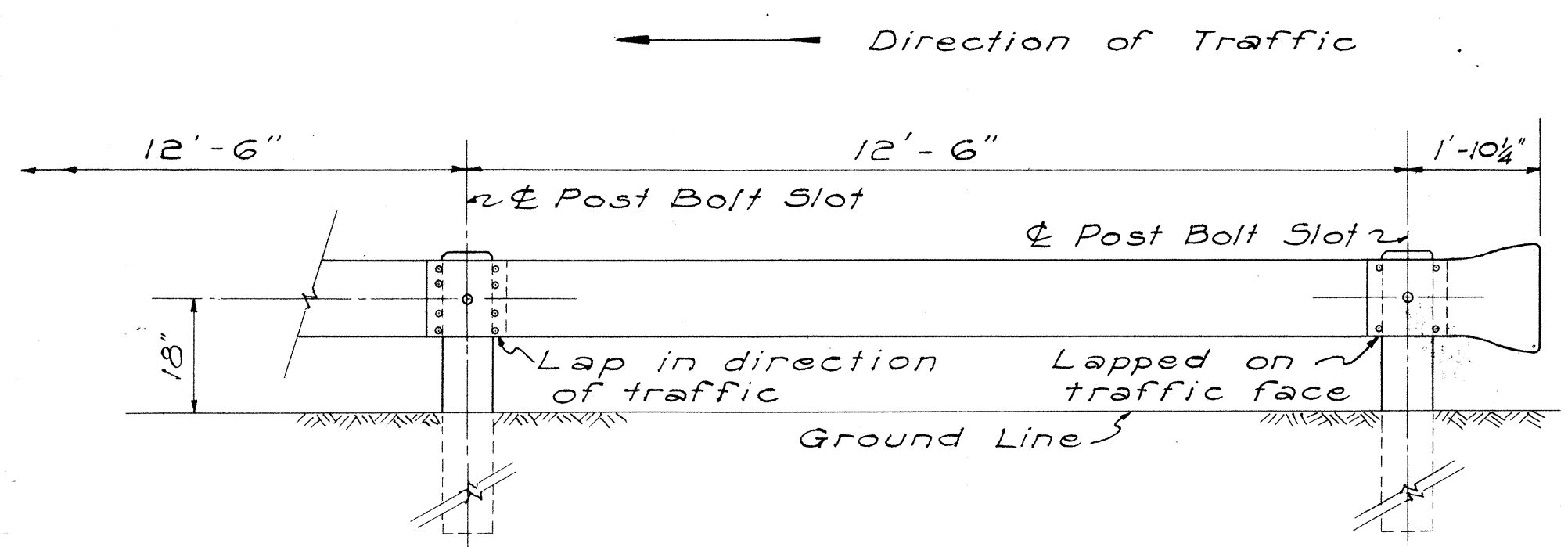
SHEET NO. OF SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-011-1(4)	1963	39	40

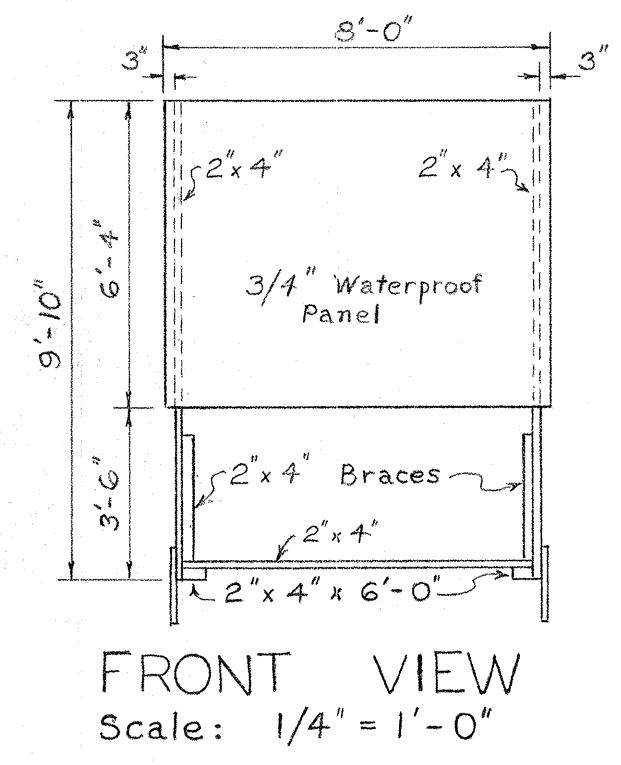
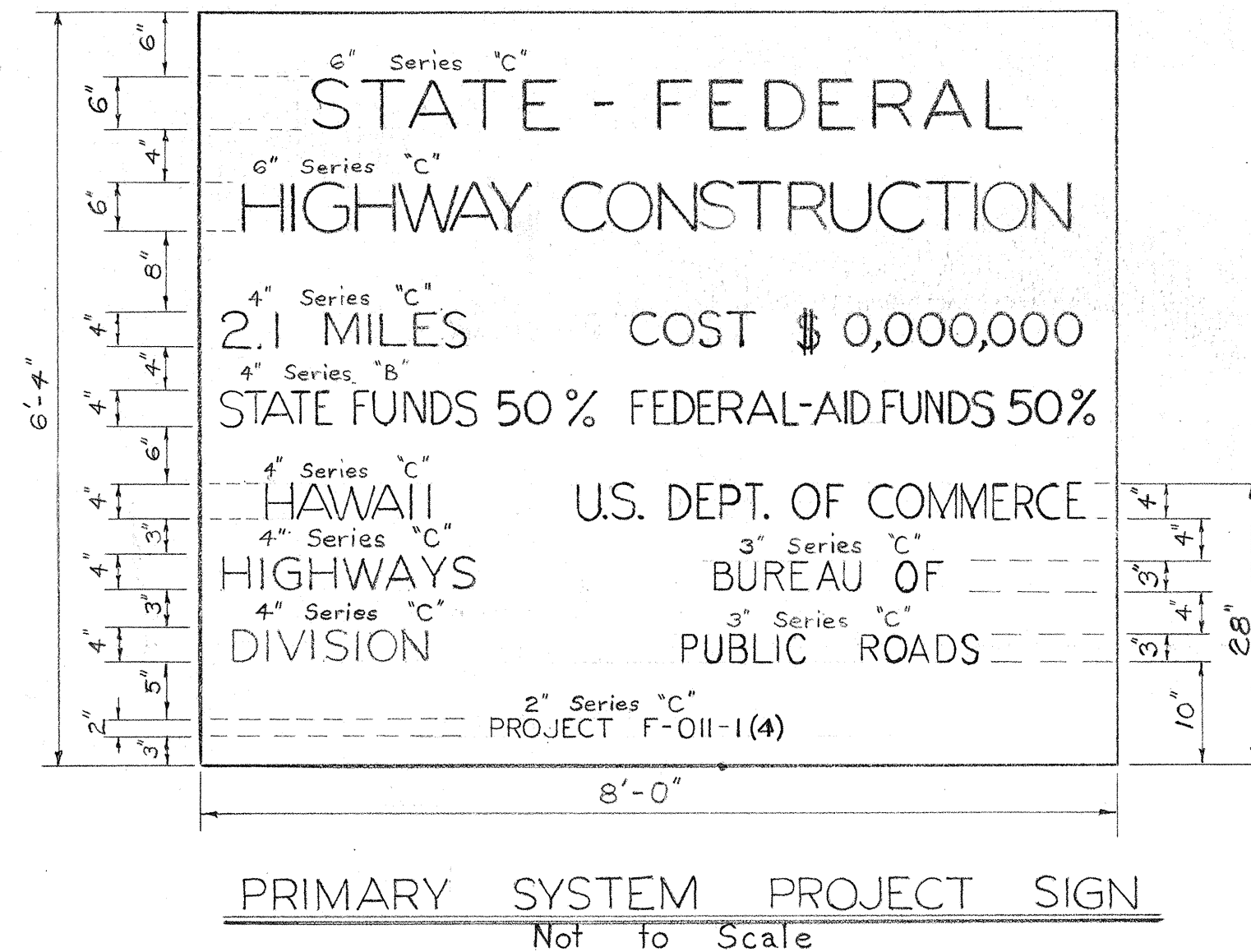
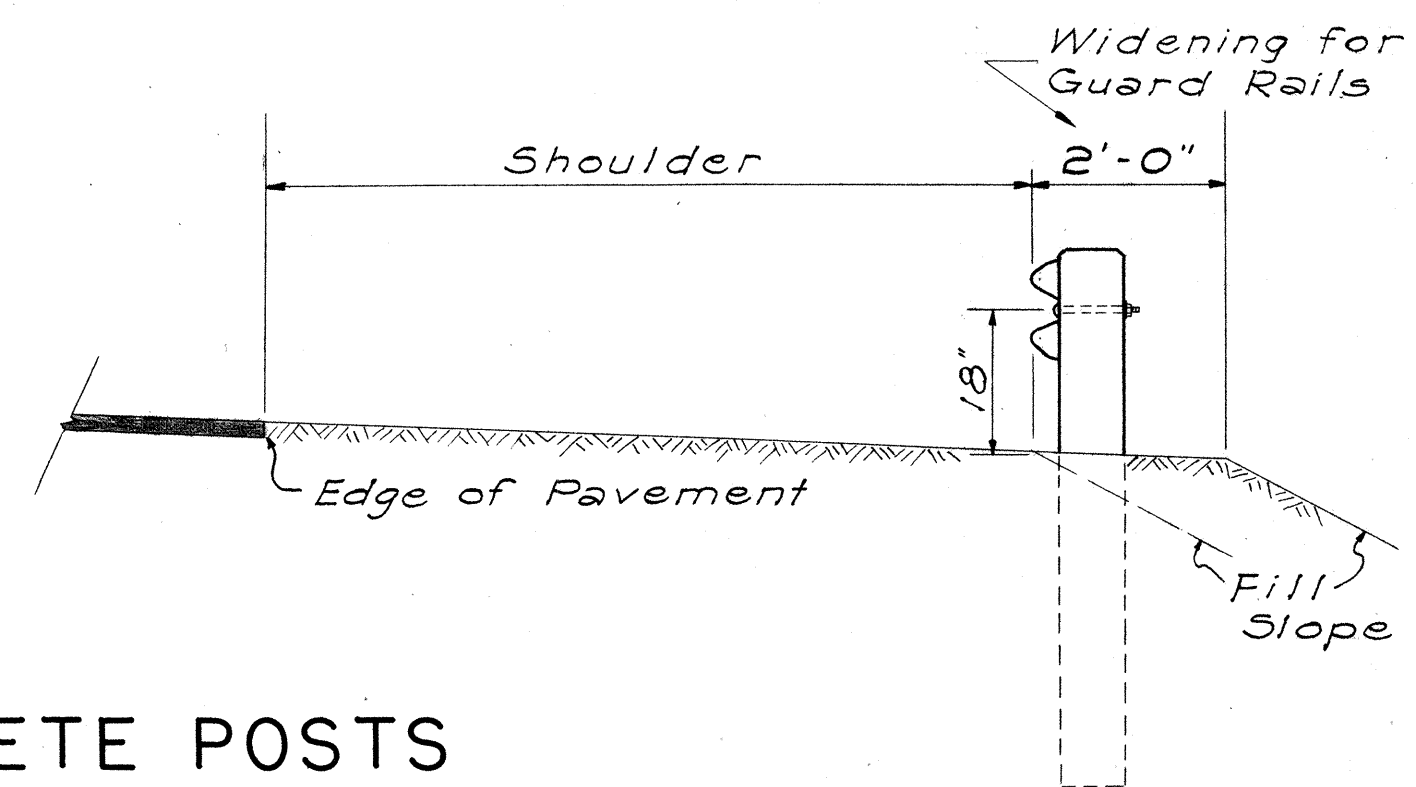


DETAIL OF BARRICADE WITH CONCRETE POSTS
Scale: 3/8" = 1'-0"

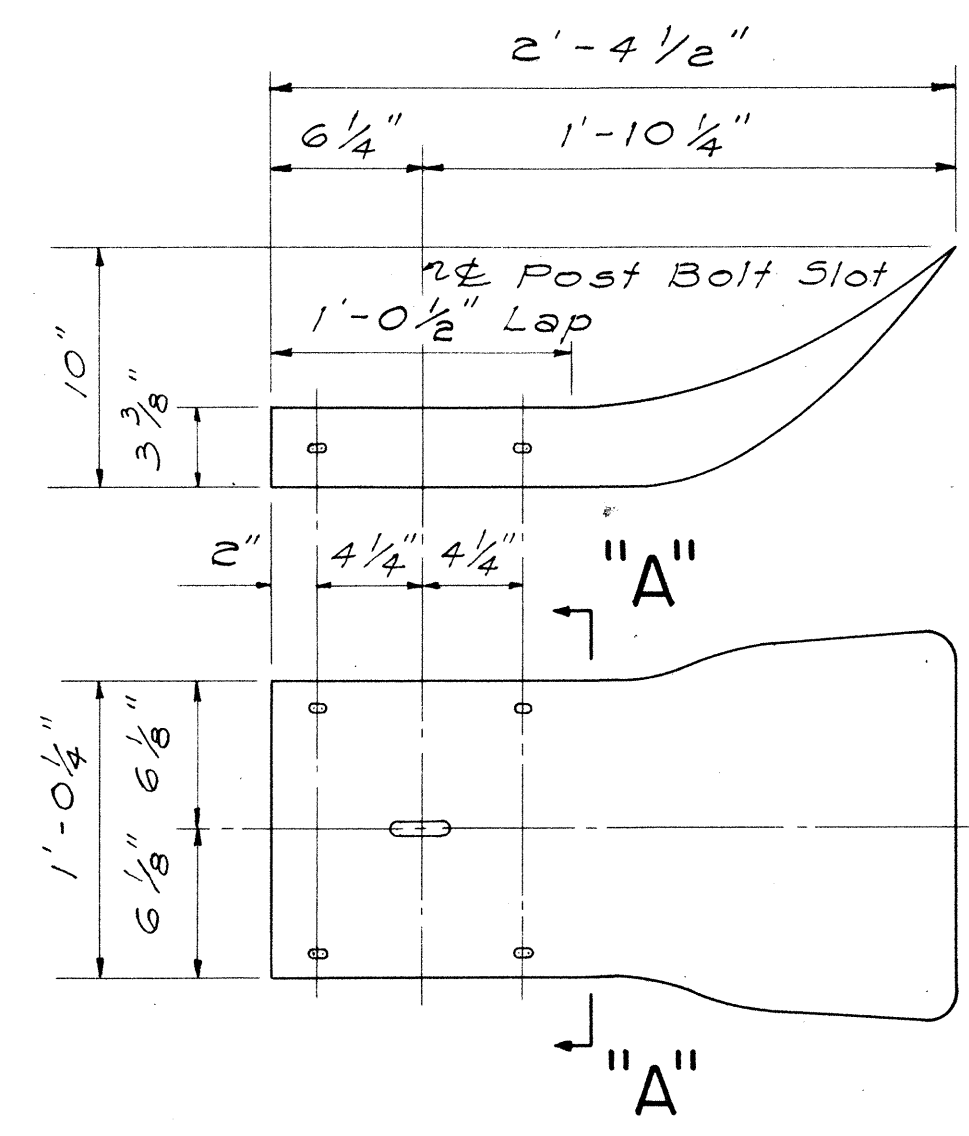
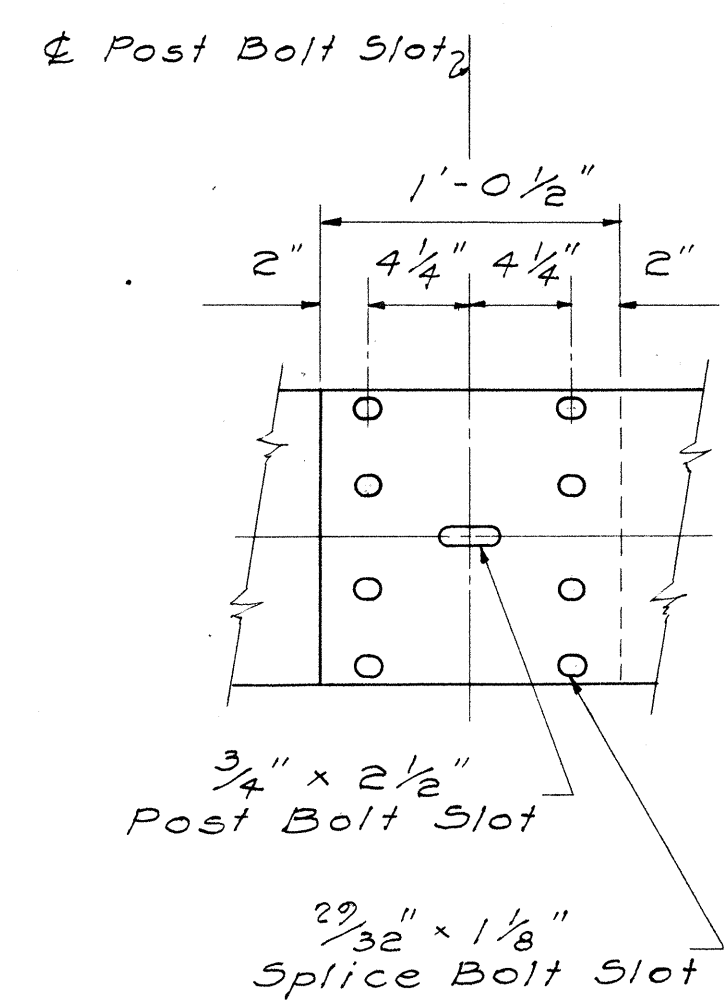
NOTE: 1. Materials and construction method for the barricade shall conform to Section 79 of the Standard Specifications.
2. Payment for RM-3, including bolt and nut, will be made under item 107(2b)



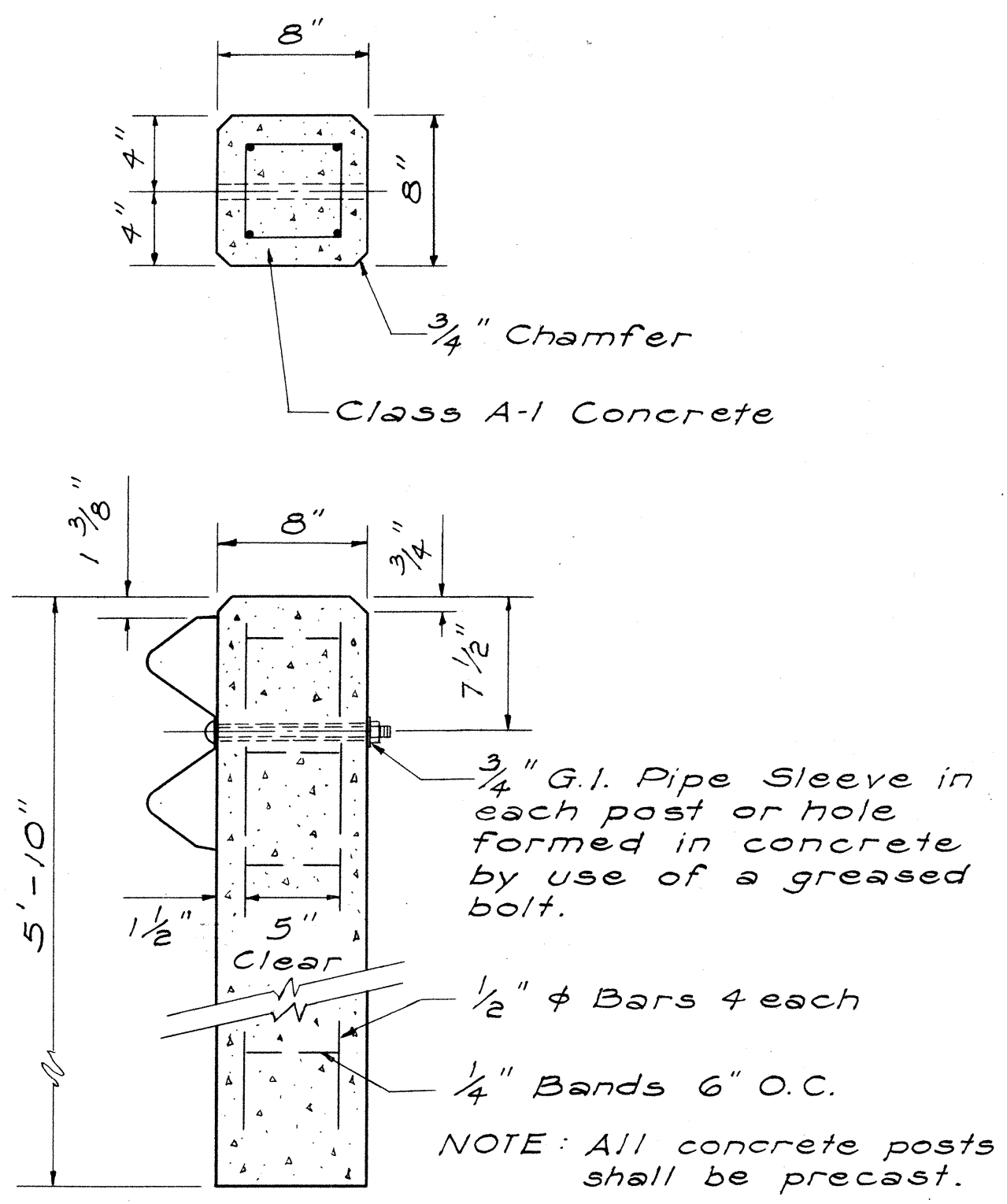
METAL GUARD RAIL WITH CONCRETE POSTS
SCALE: 1/2" = 1'-0"



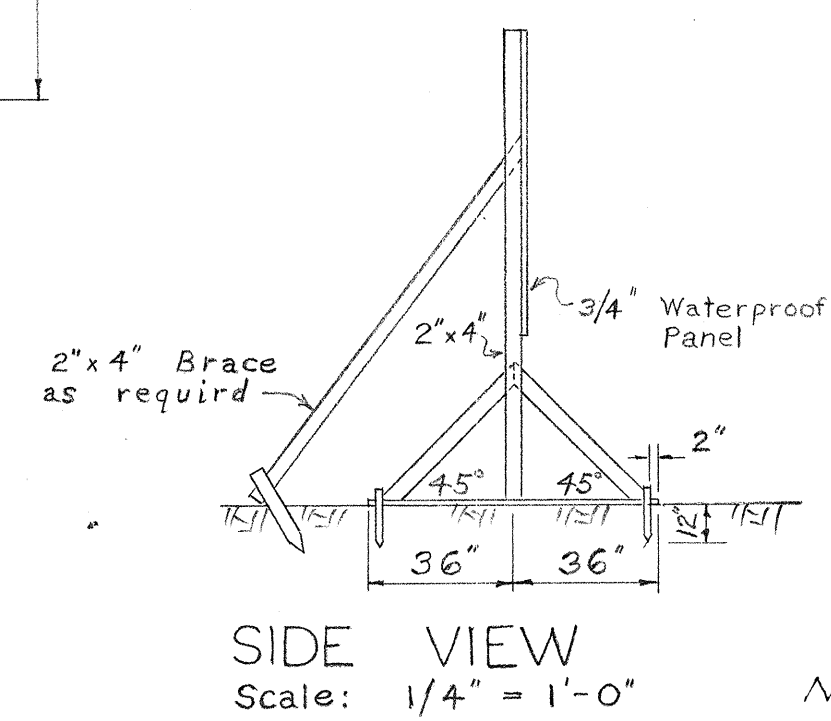
RAIL SPLICE
SCALE: 1 1/2" = 1'-0"



TERMINAL SECTION
SCALE: 1 1/2" = 1'-0"



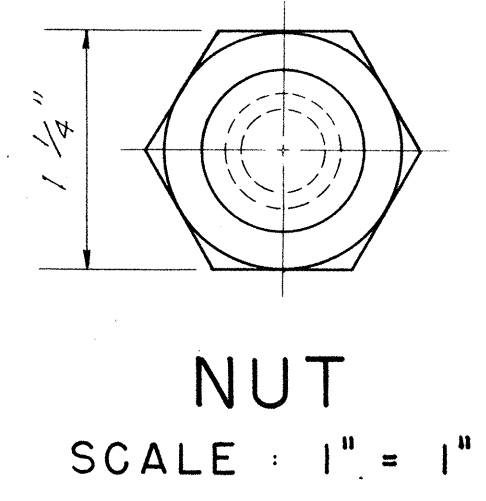
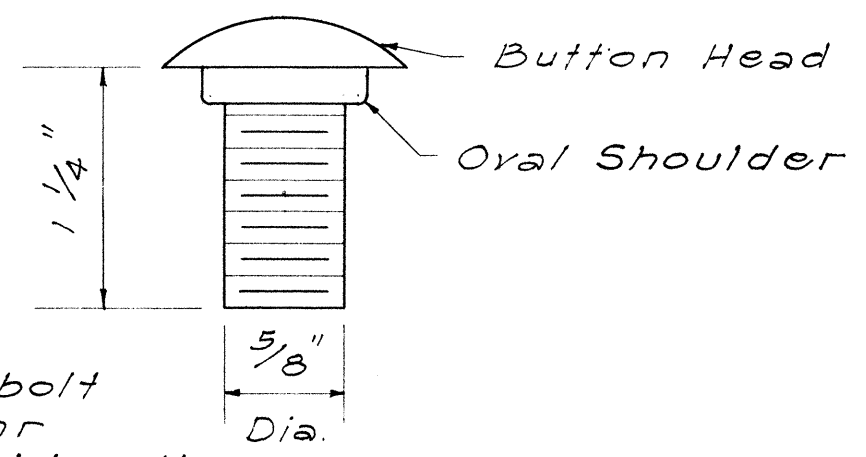
DETAIL OF CONCRETE POST
SCALE: 1 1/2" = 1'-0"



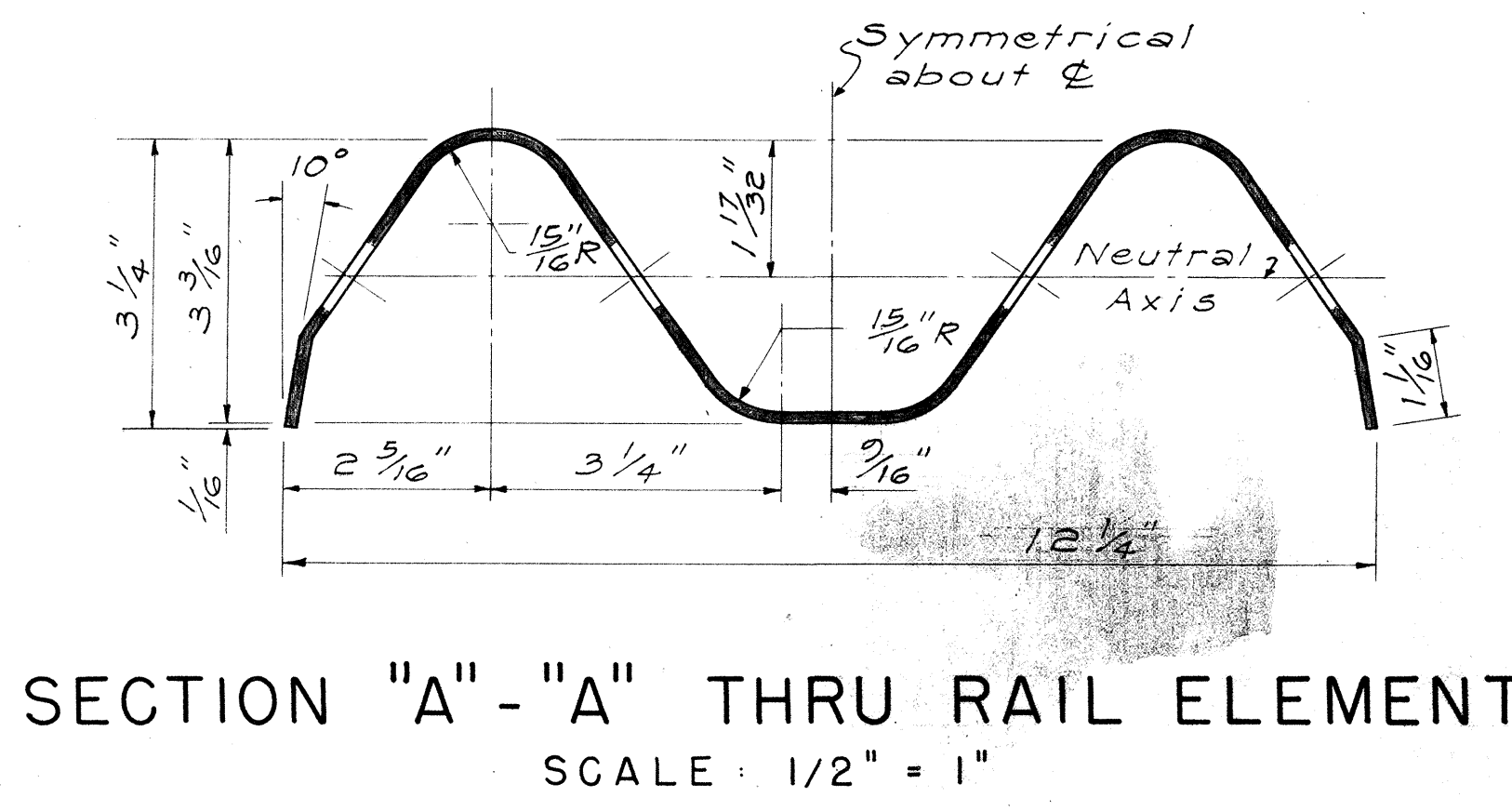
SIDE VIEW
Scale: 1/4" = 1'-0"

NOTE: Post bolt similar except length.

SPLICE BOLT
SCALE: 1" = 1"



NUT
SCALE: 1" = 1"



SECTION "A"-"A" THRU RAIL ELEMENT
SCALE: 1/2" = 1"

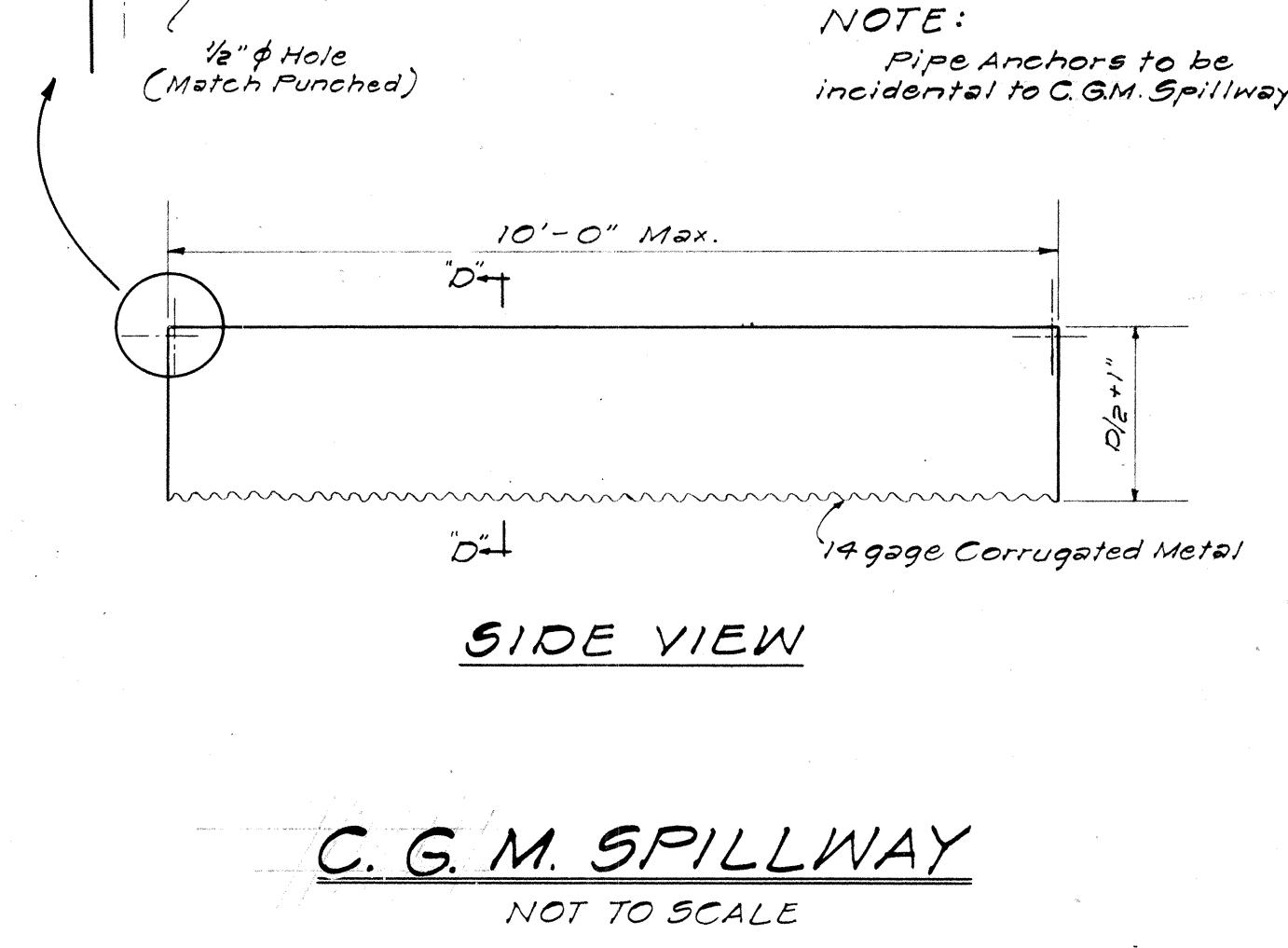
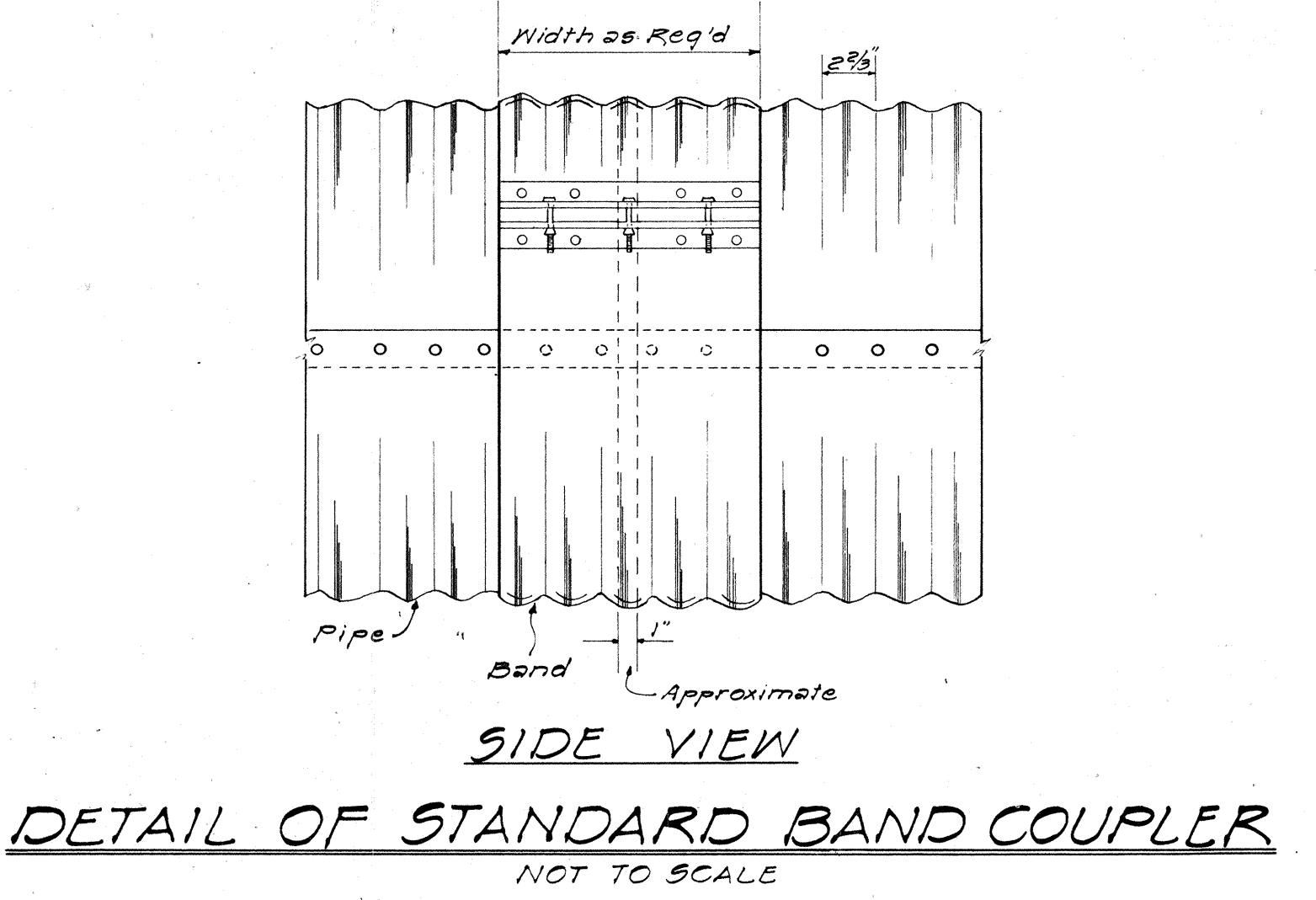
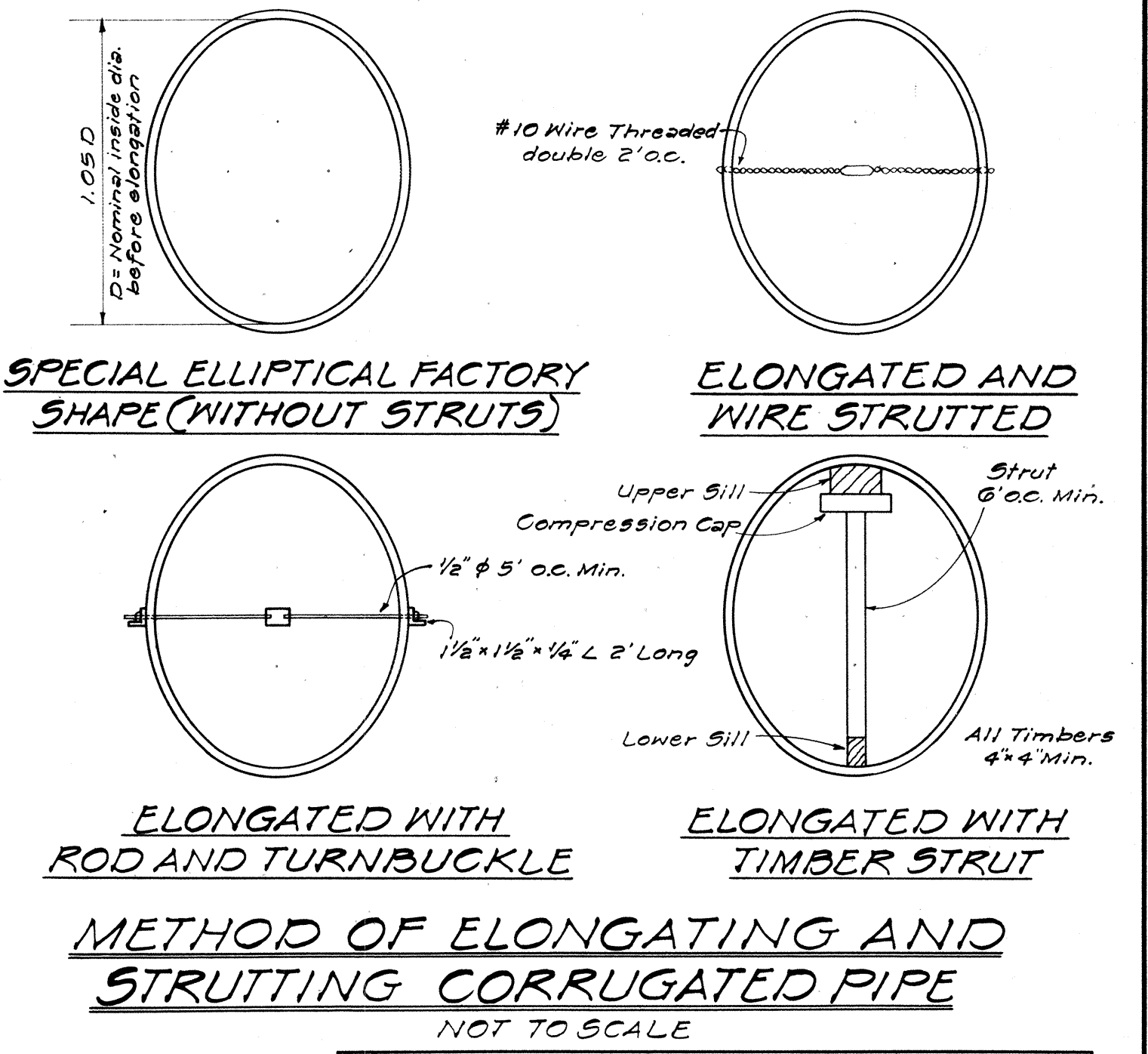
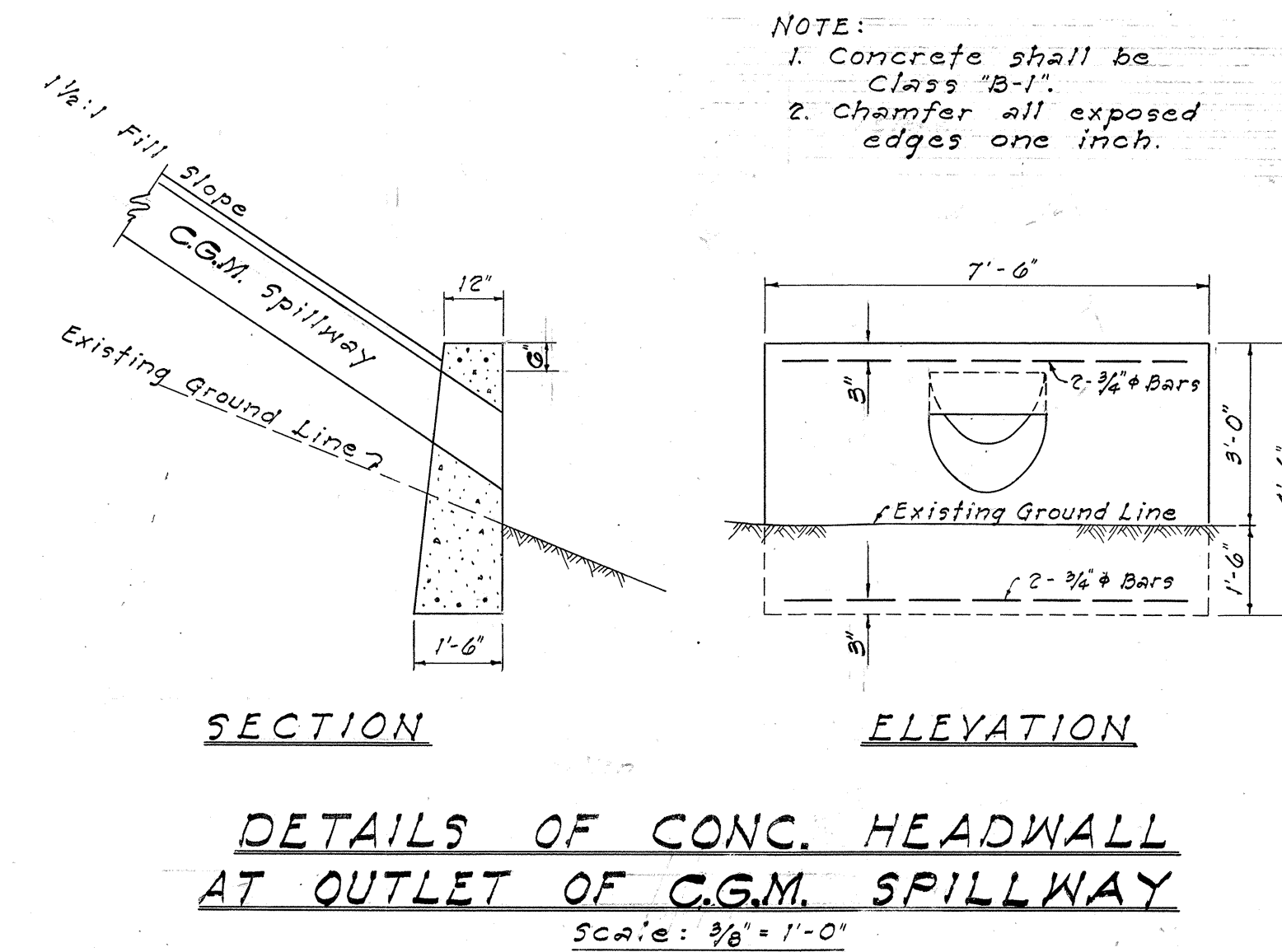
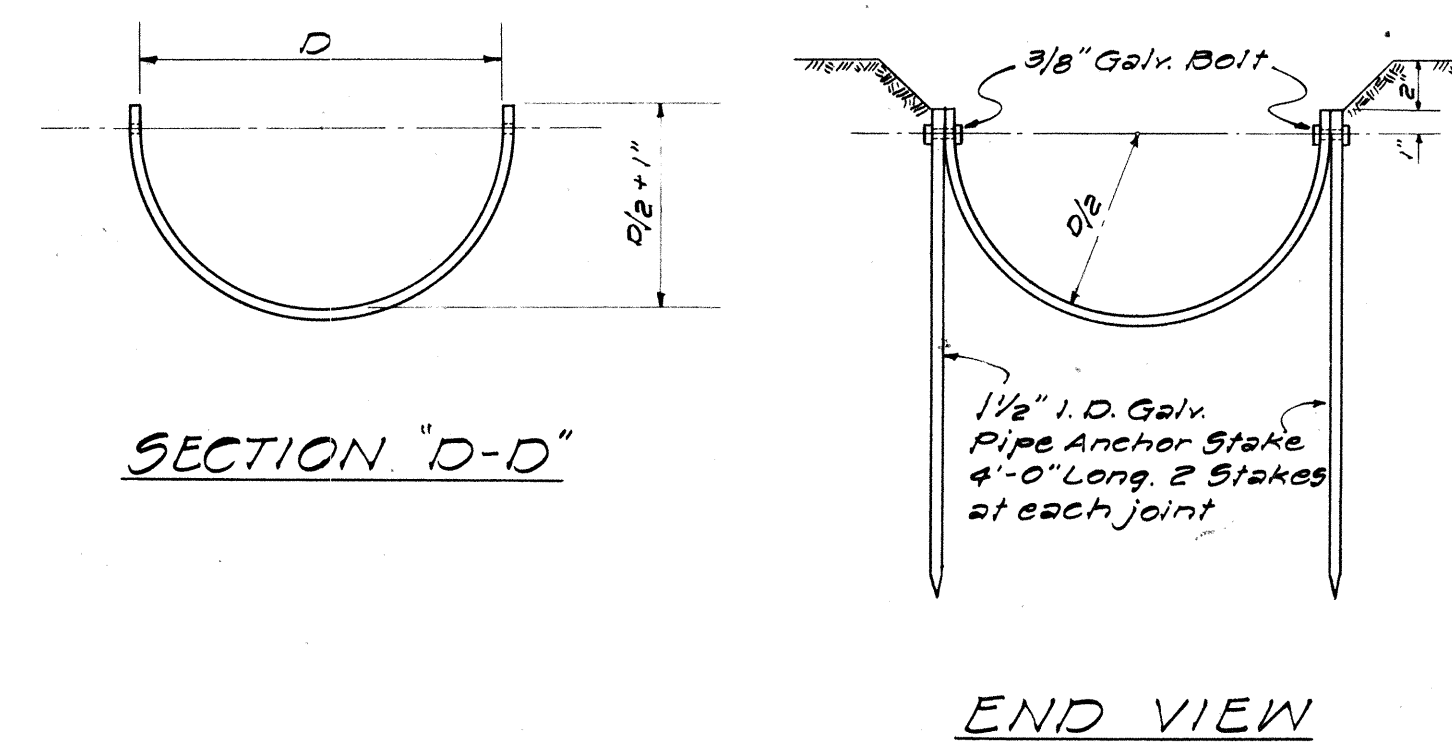
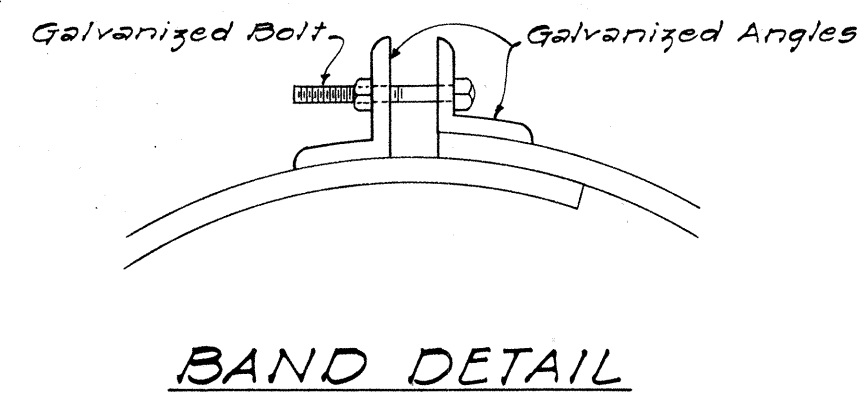
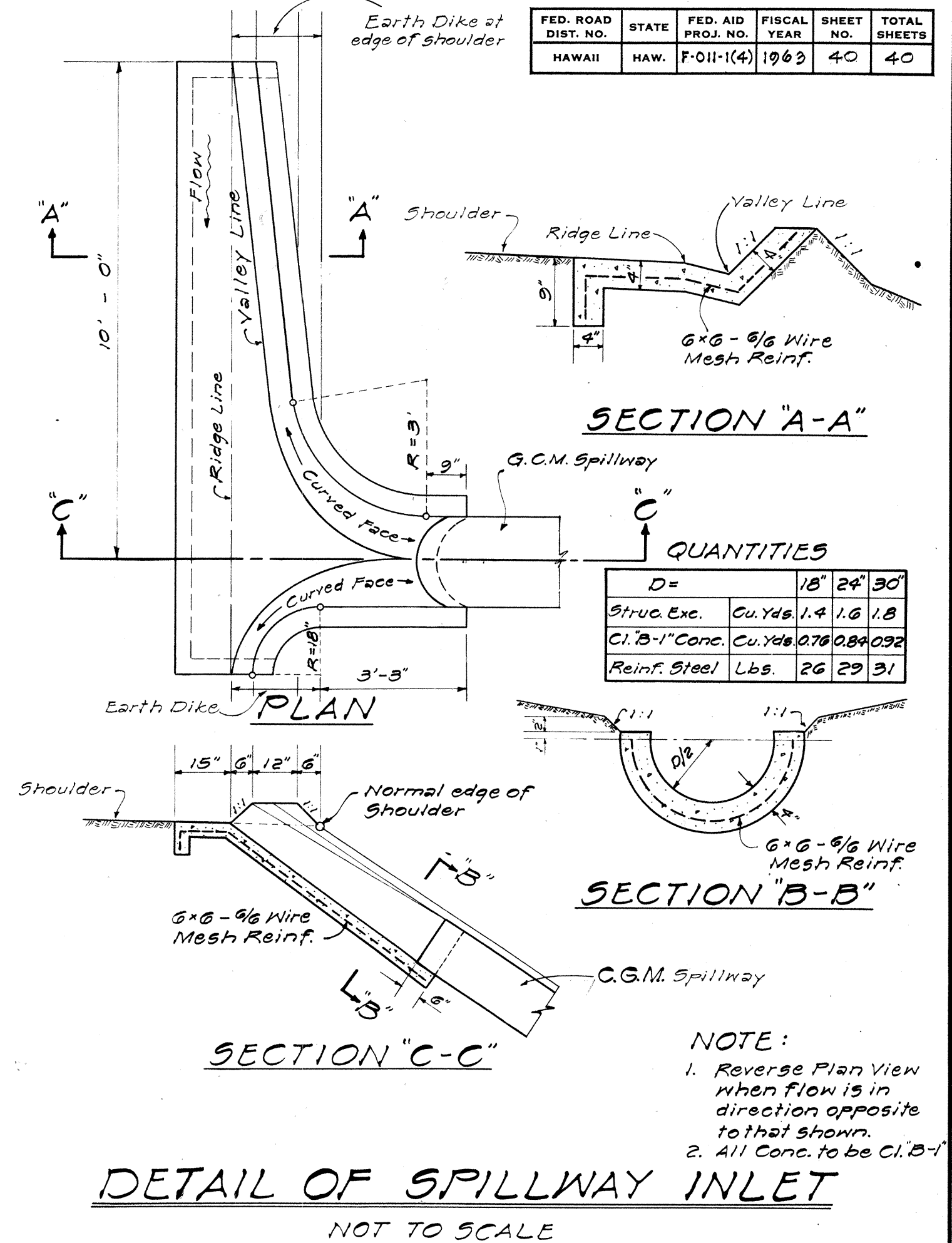
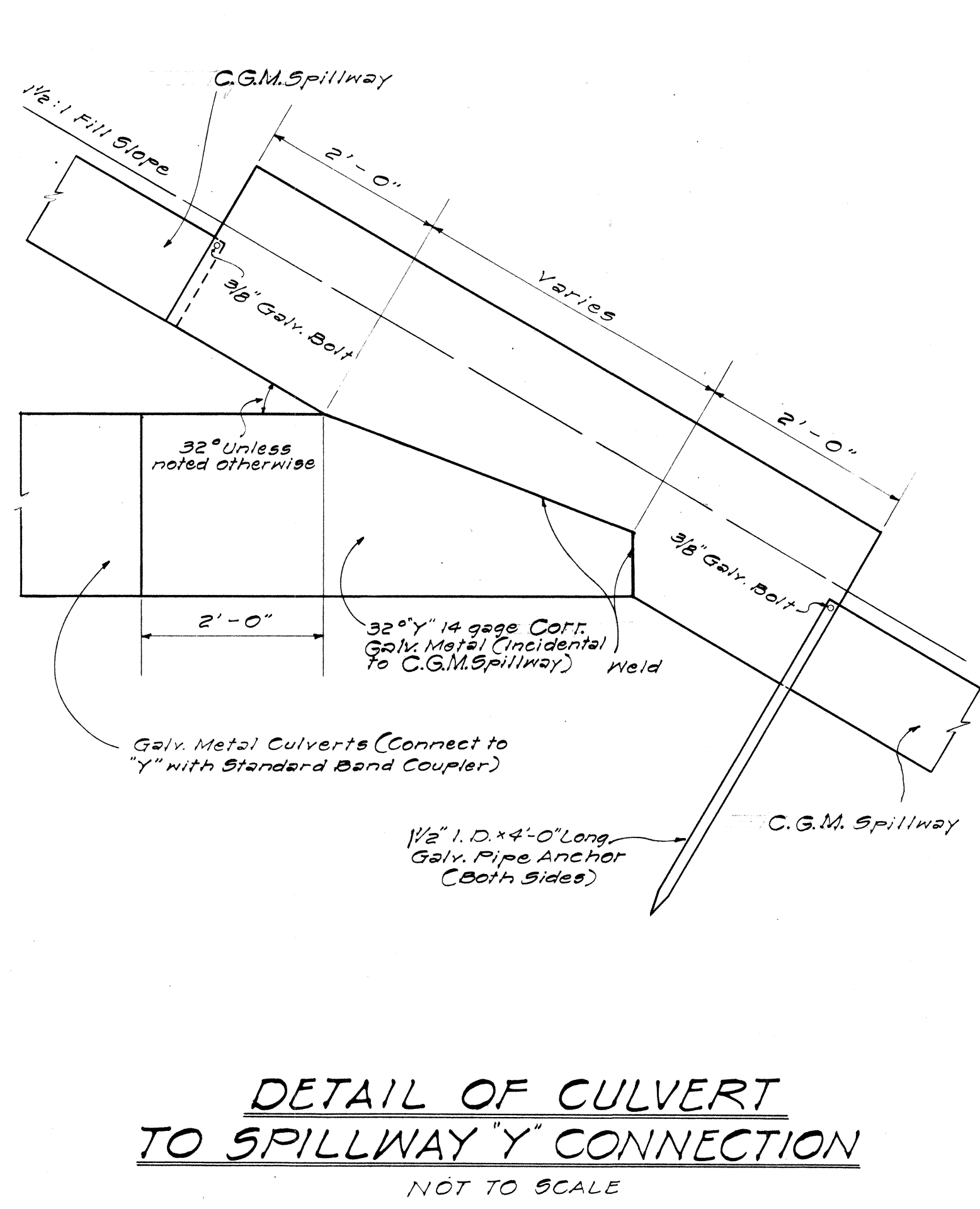
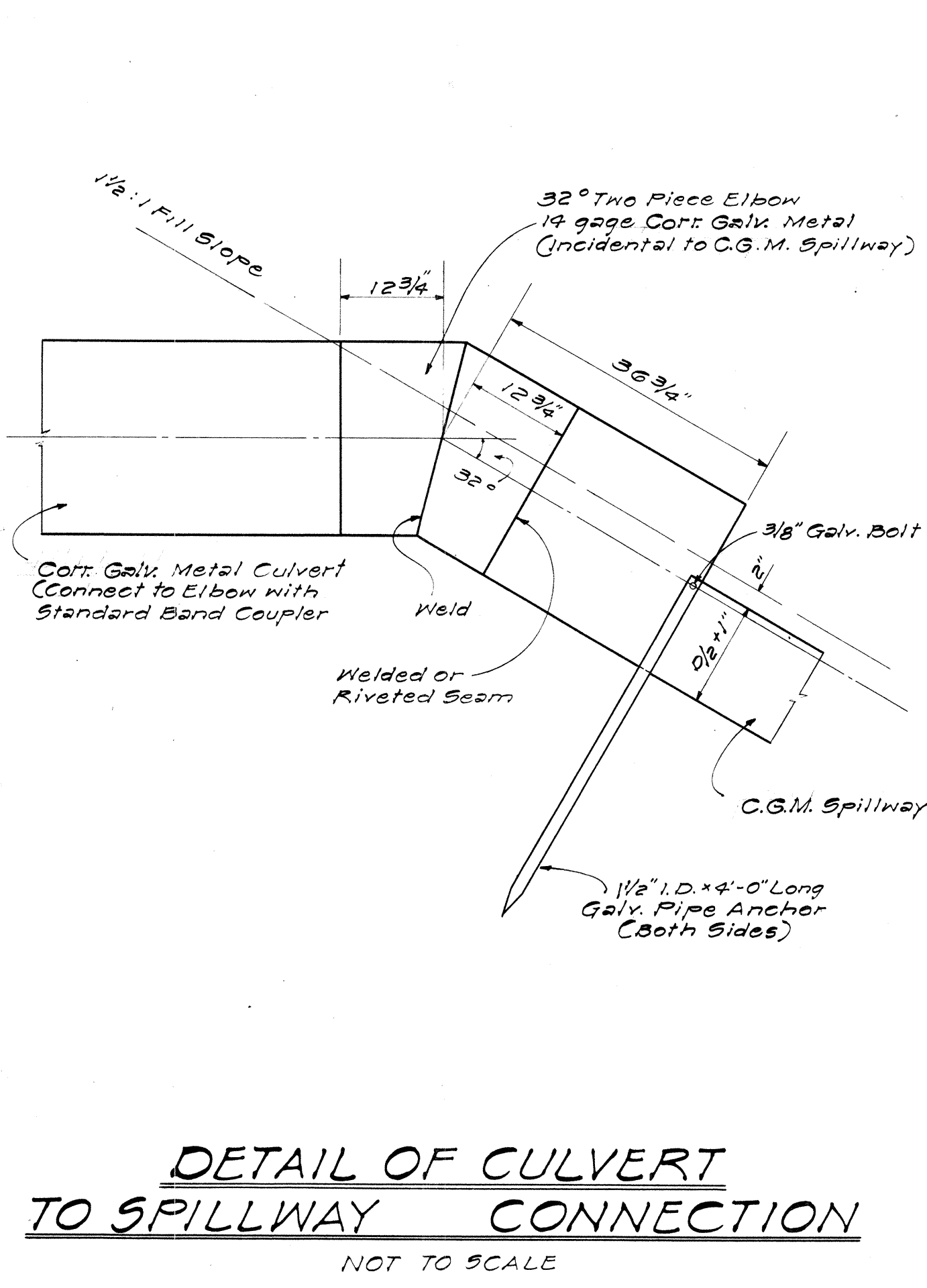
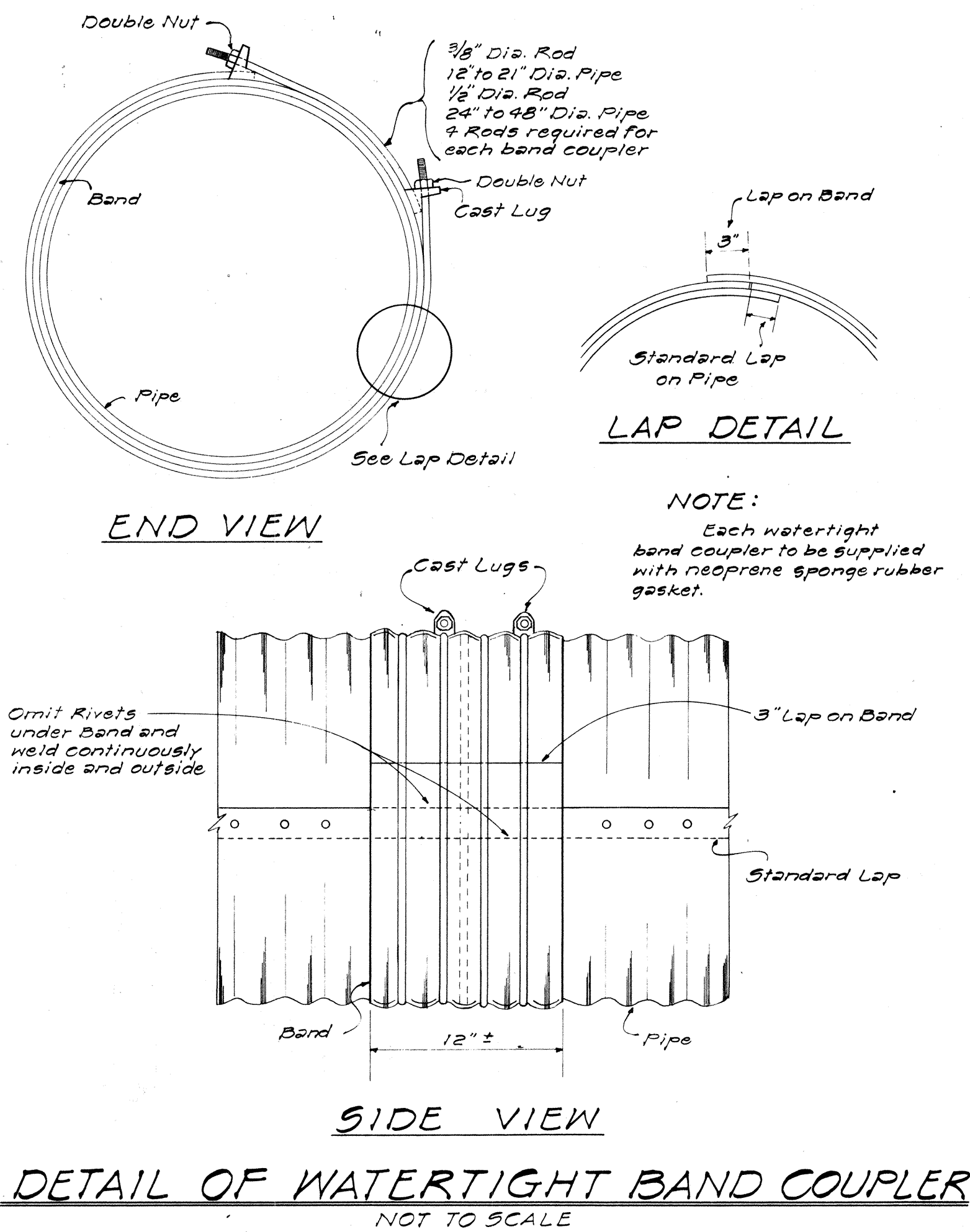
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAIL OF
METAL GUARD RAIL
BARRICADE WITH CONC. POSTS
and
PRIMARY SYSTEM PROJECT SIGN
HAWAII BELT ROAD PROJ. NO. F-011-1(4)

SHEET NO. OF SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

ORIGINAL PLAN	DATE
NOTED BY	5-24-61
DESIGNED BY	5-24-61
QUANTITIES BY	5-24-61
CHECKED BY	
No.	



APPROVED: *[Signature]* DATE: 5-14-61
DIRECTOR OF TRANSPORTATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CORRUGATED GALVANIZED METAL
CULVERTS, SPILLWAYS, AND
SPECIAL DETAILS
SCALES AS NOTED
SHEET NO OF SHEETS