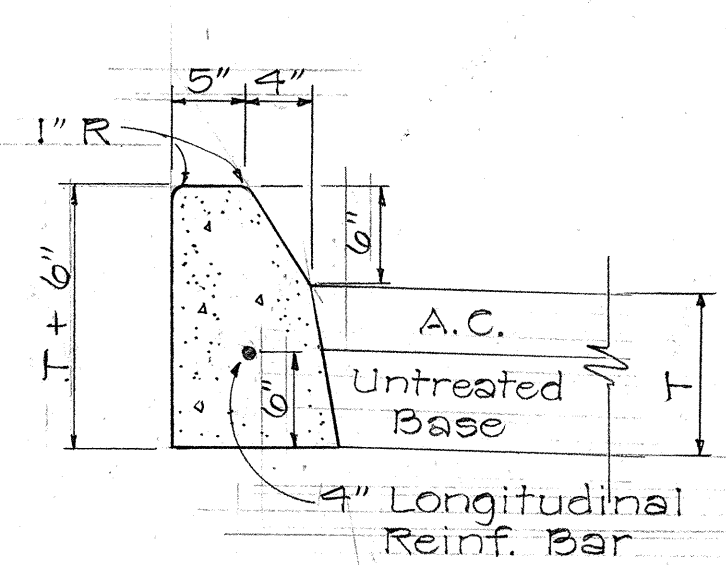
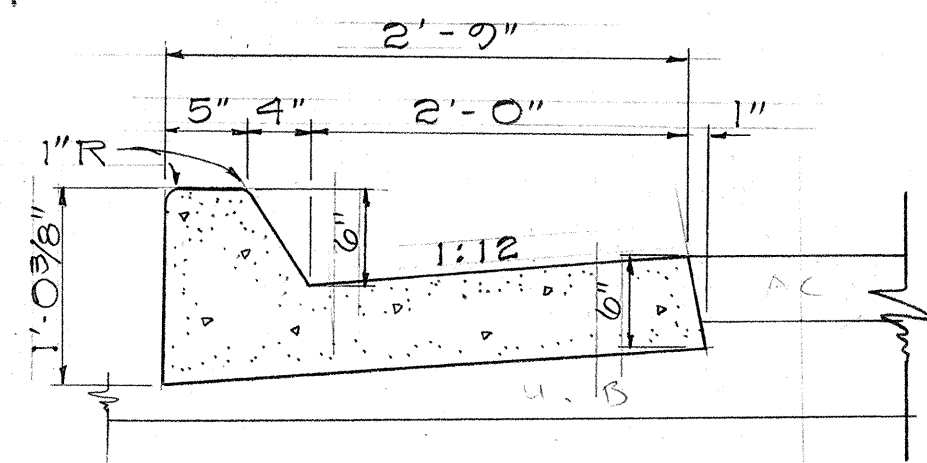


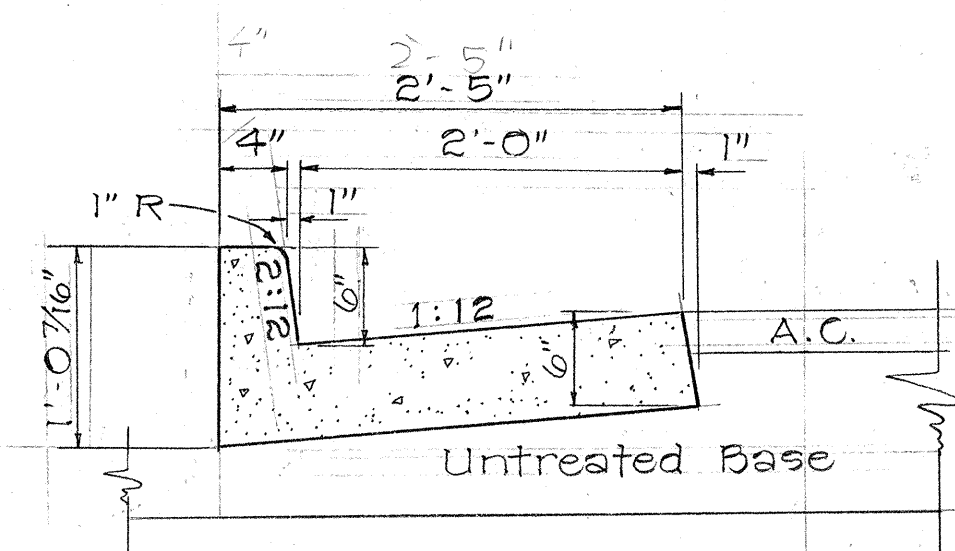
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32)5 Unit 4	1967	23	101



TYPE "A" CURB



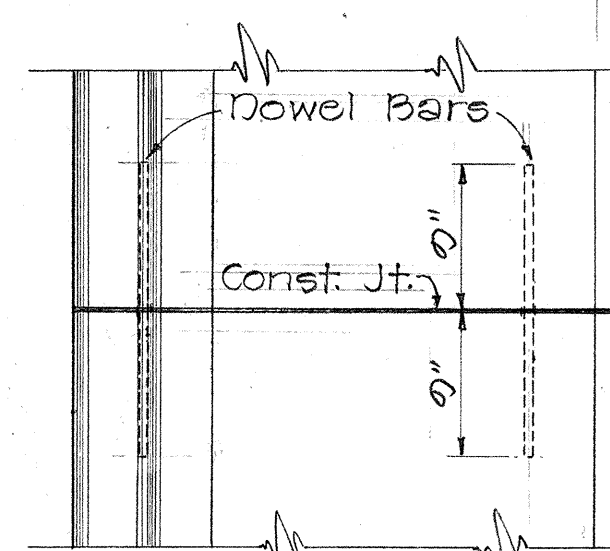
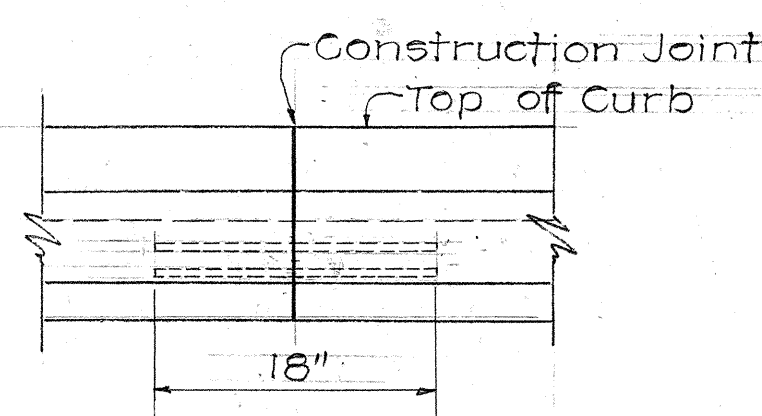
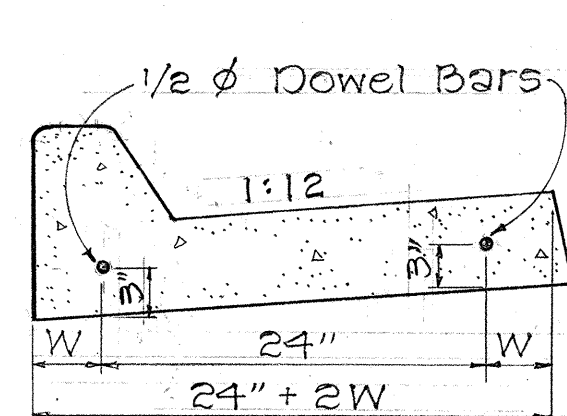
TYPE "AG" CURB & GUTTER



TYPE "MDG" CURB & GUTTER

DETAIL OF CAST-IN-PLACE CURBS, GUTTERS AND CURBS & GUTTERS

Scale: 1" = 1'-0"

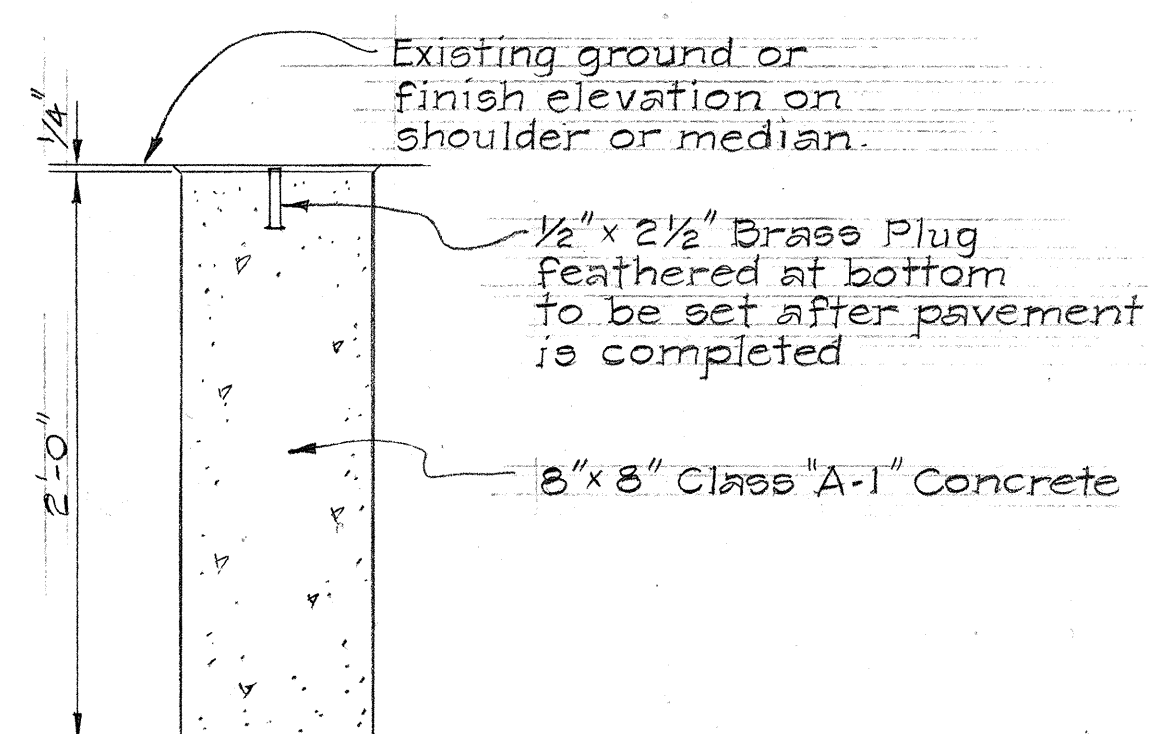


TYPICAL CONSTRUCTION JOINT
DETAIL FOR CAST-IN-PLACE
CONCRETE CURB & GUTTER

Scale: 1" = 1'-0"

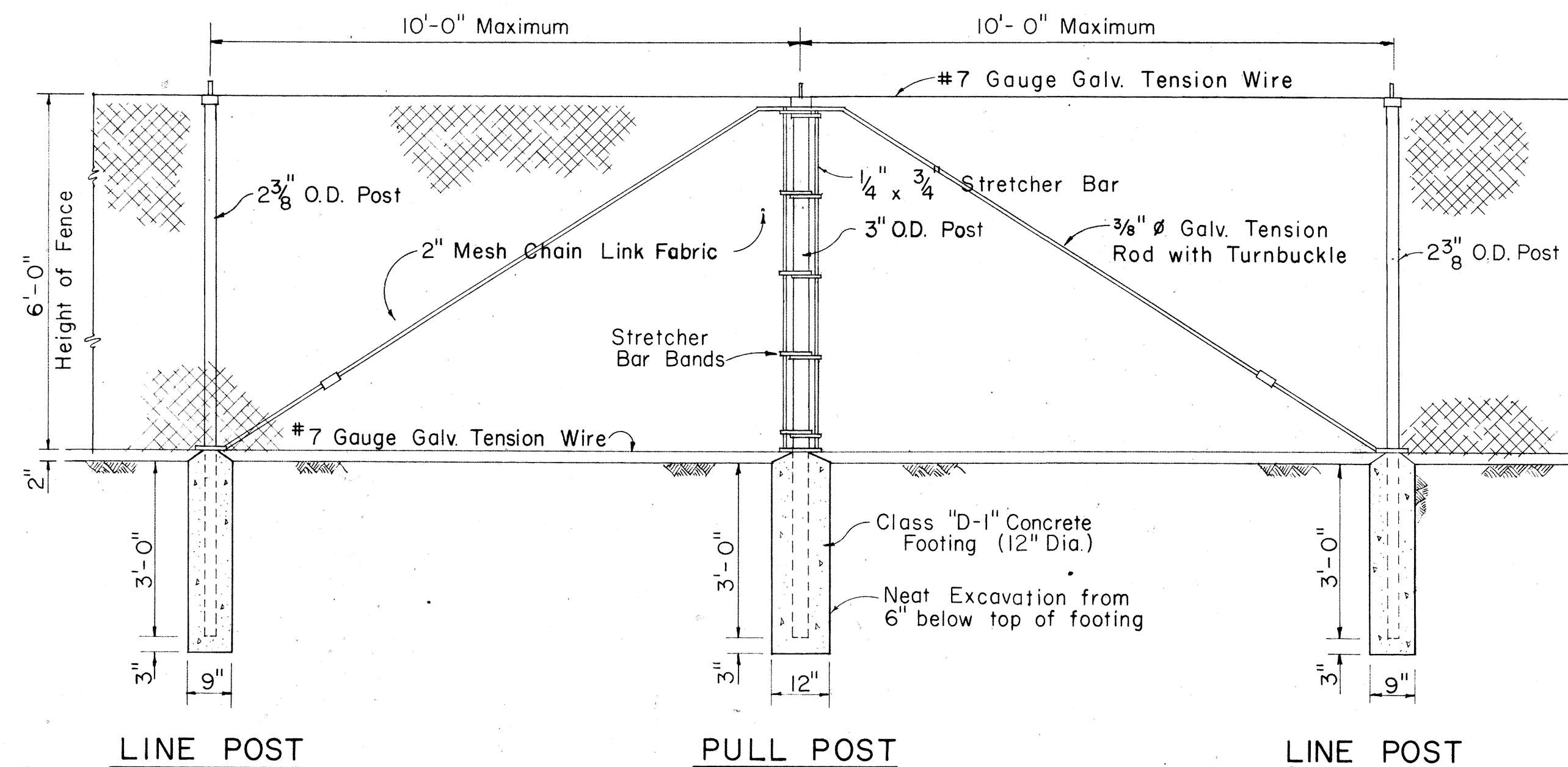
NOTE:

All dowel bars shall be painted and oiled to prevent bond with concrete.



DETAIL FOR 4" AND REFERENCE
SURVEY MONUMENT

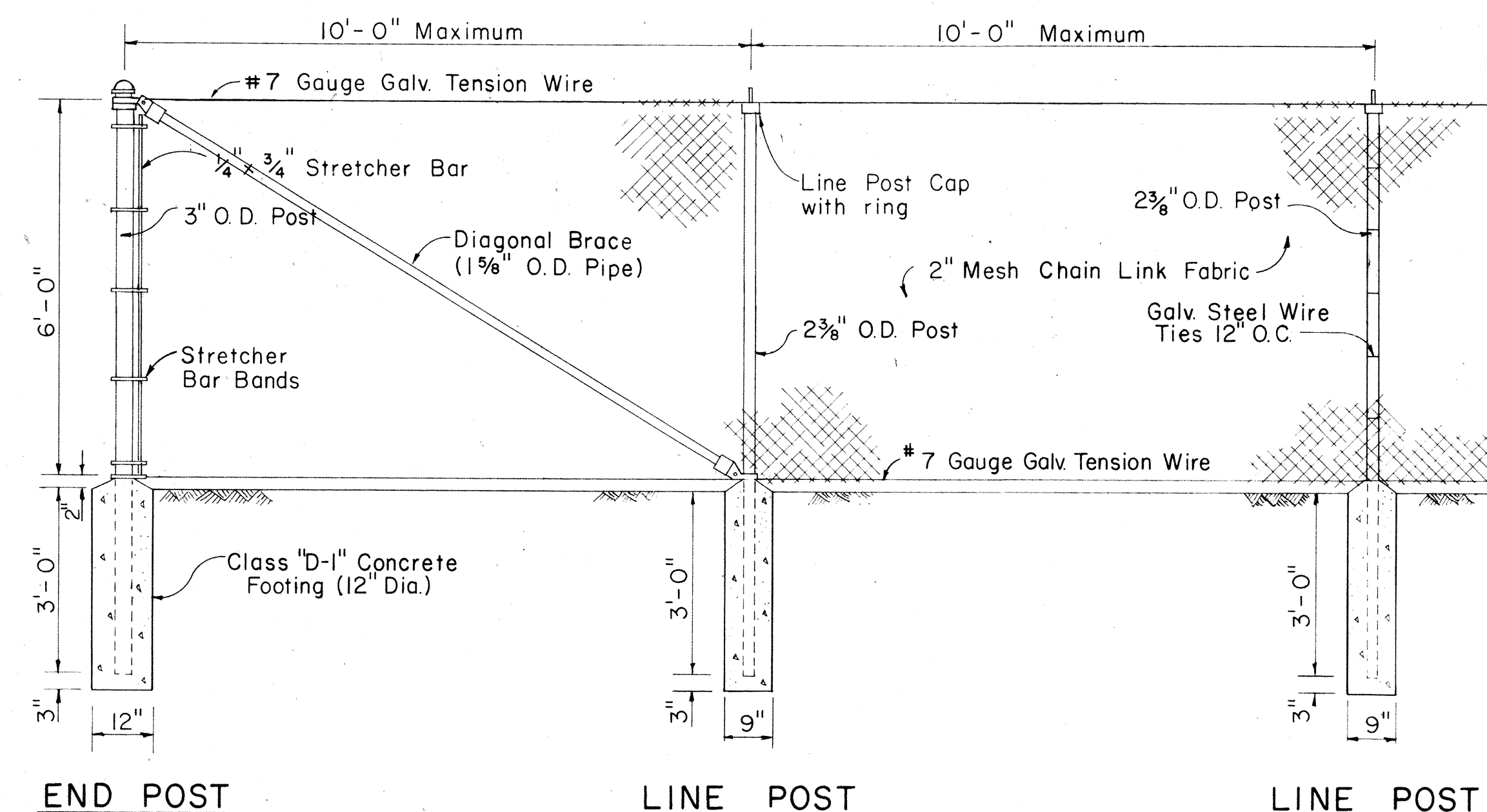
Scale: 1/2" = 1'-0"



LINE POST

PULL POST

LINE POST



END POST

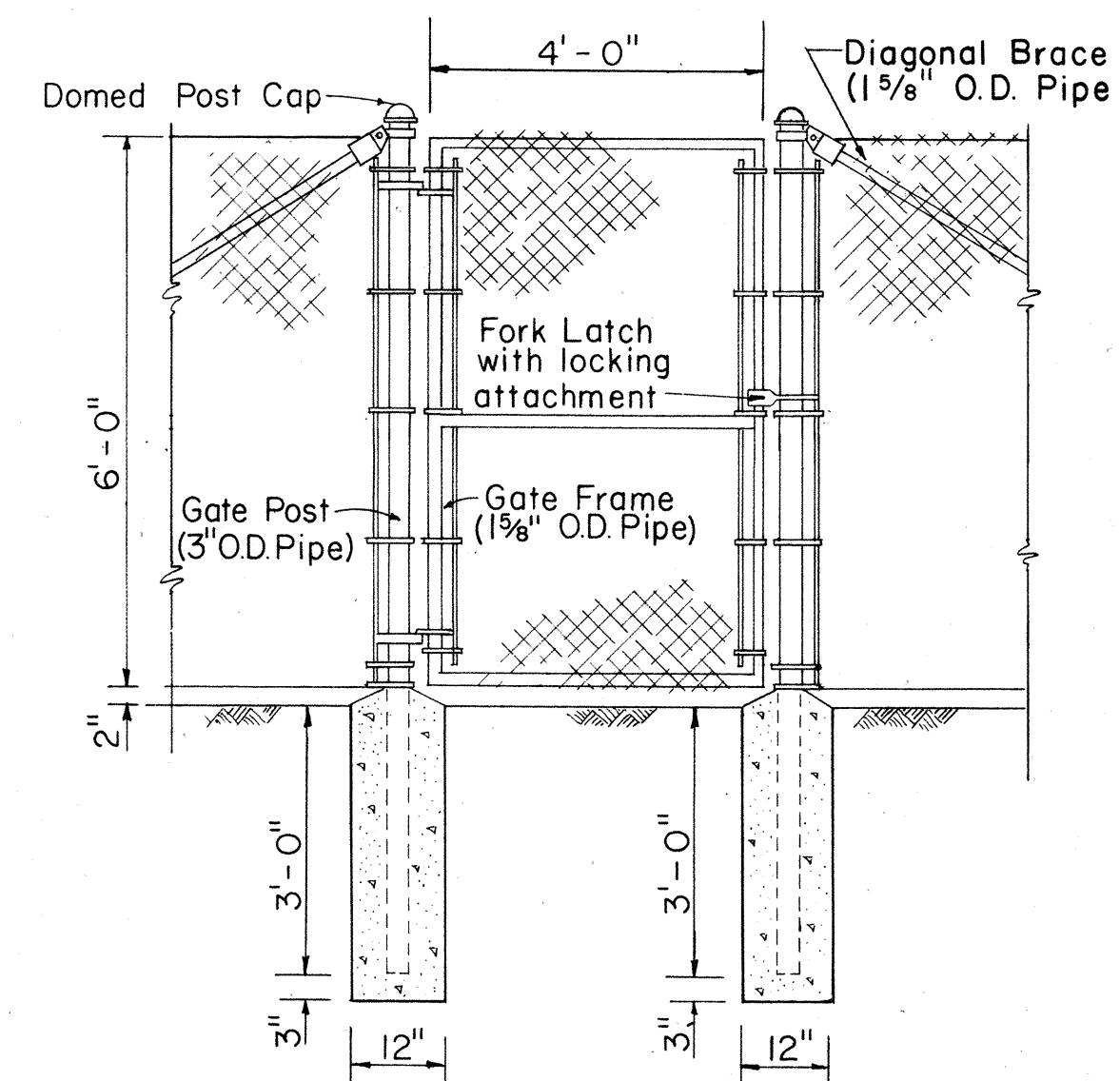
LINE POST

LINE POST

CHAIN LINK FENCE DETAILS

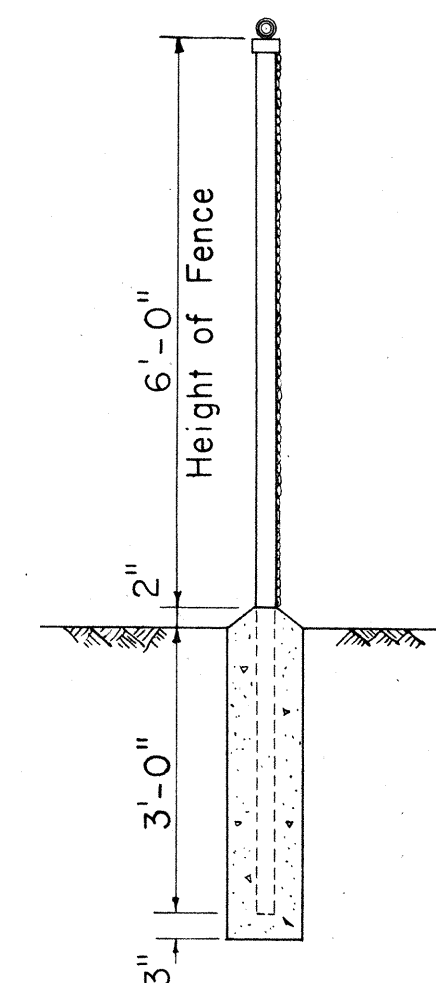
Scale: 1/2" = 1'-0"

NOTE: O.D. refers to outside diameter.



GATE POST GATE POST

DETAIL OF 4 FT. CH. LK. GATE



TYPICAL SECTION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MISCELLANEOUS ROADWAY
DETAILS

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32)5, Unit 4

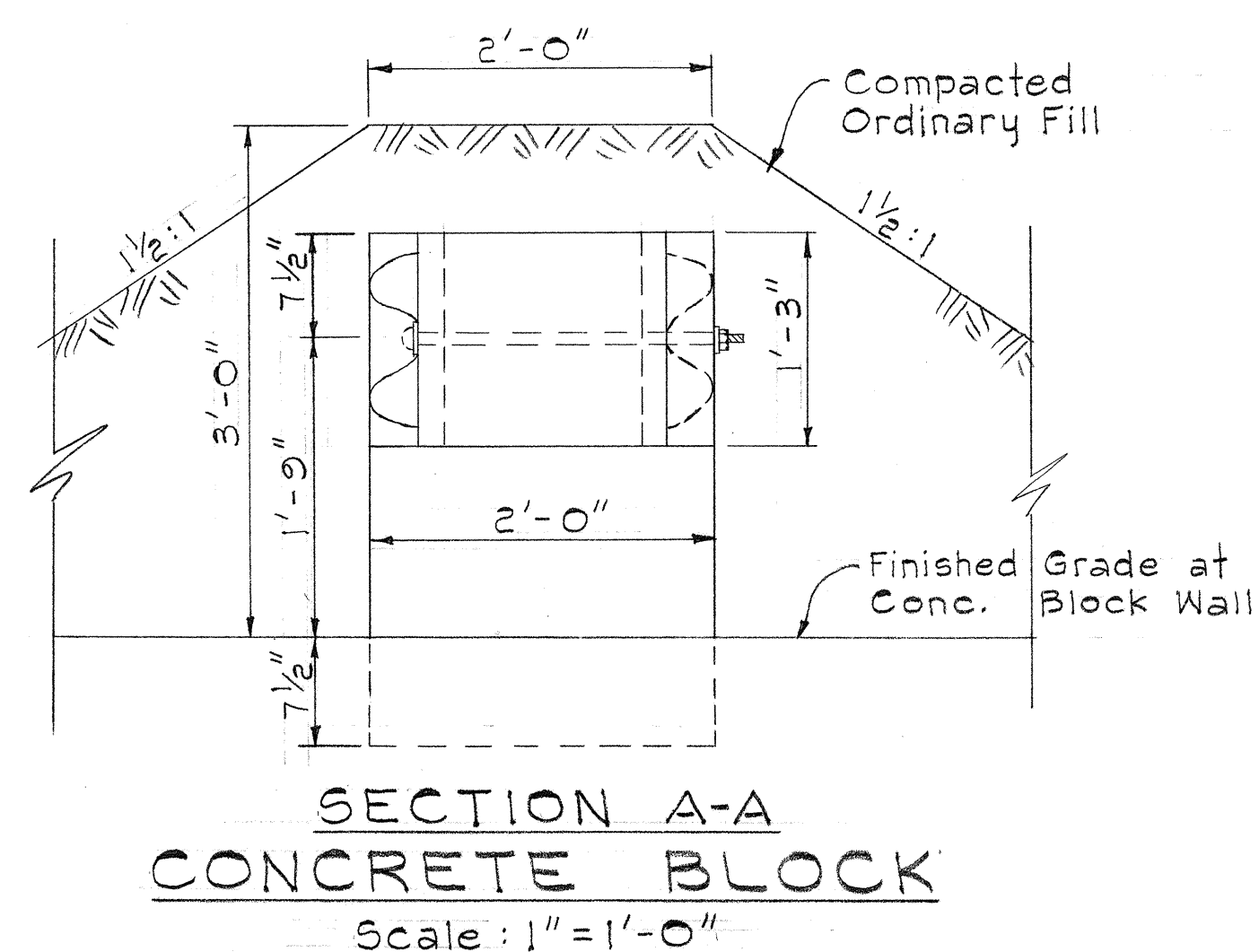
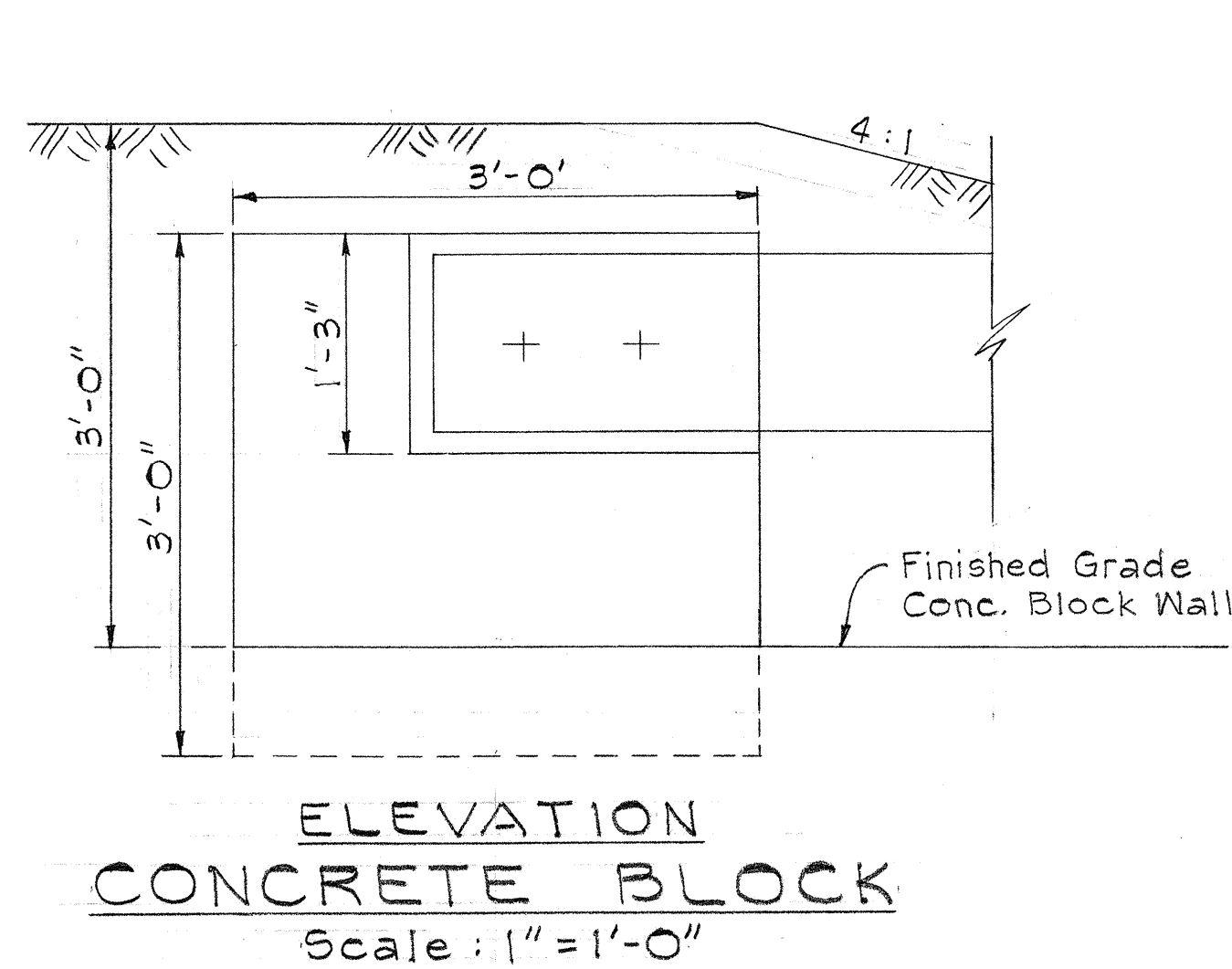
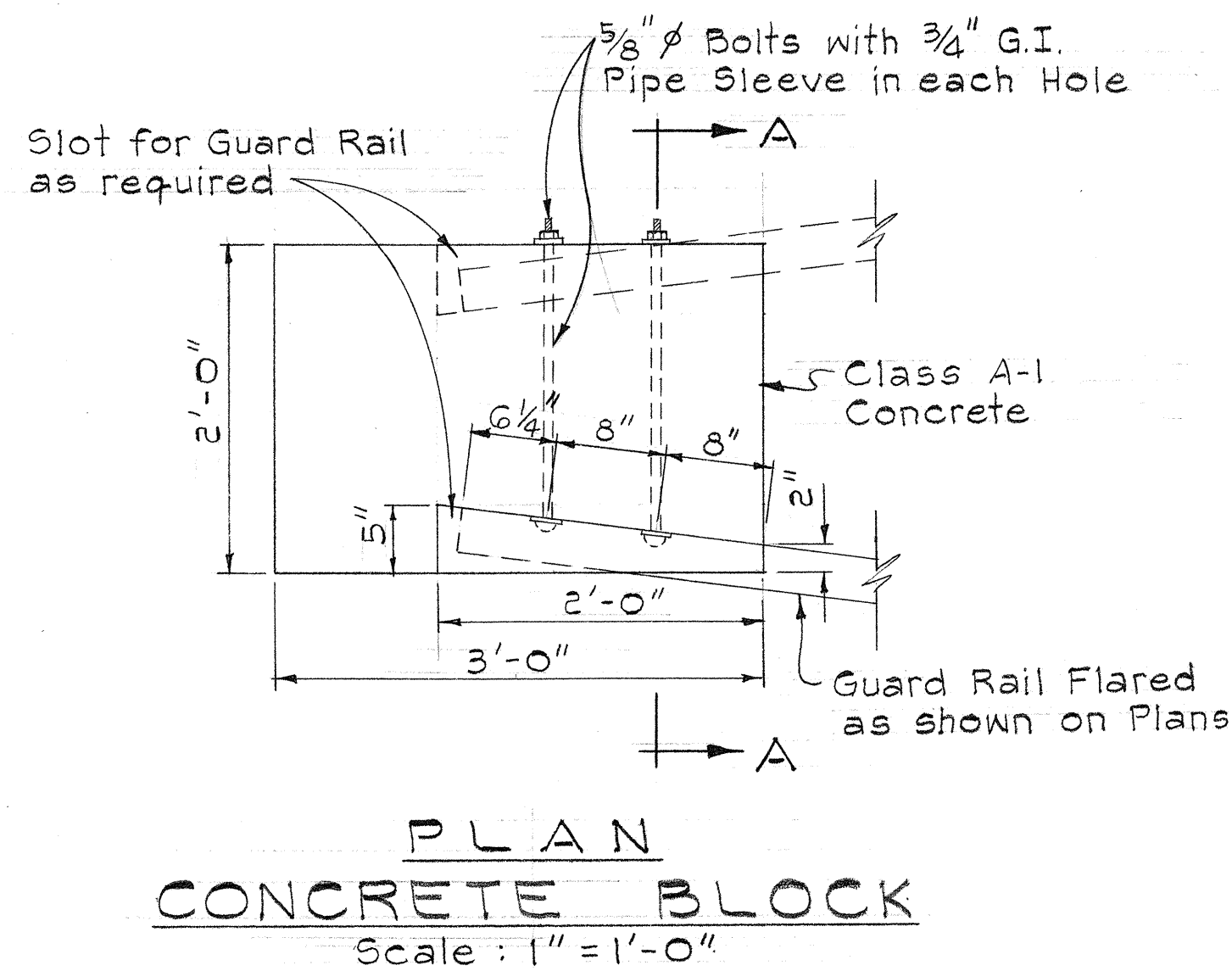
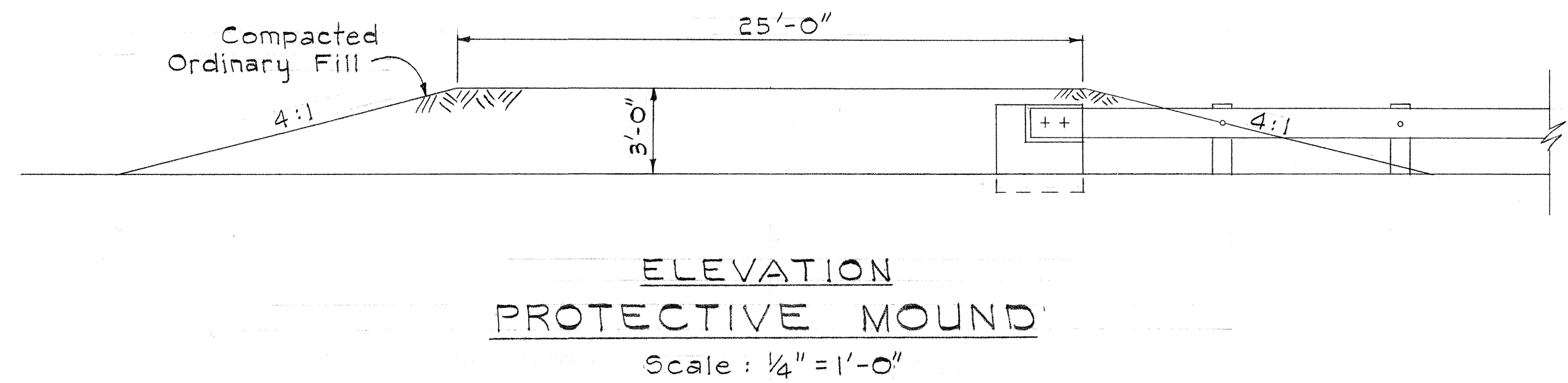
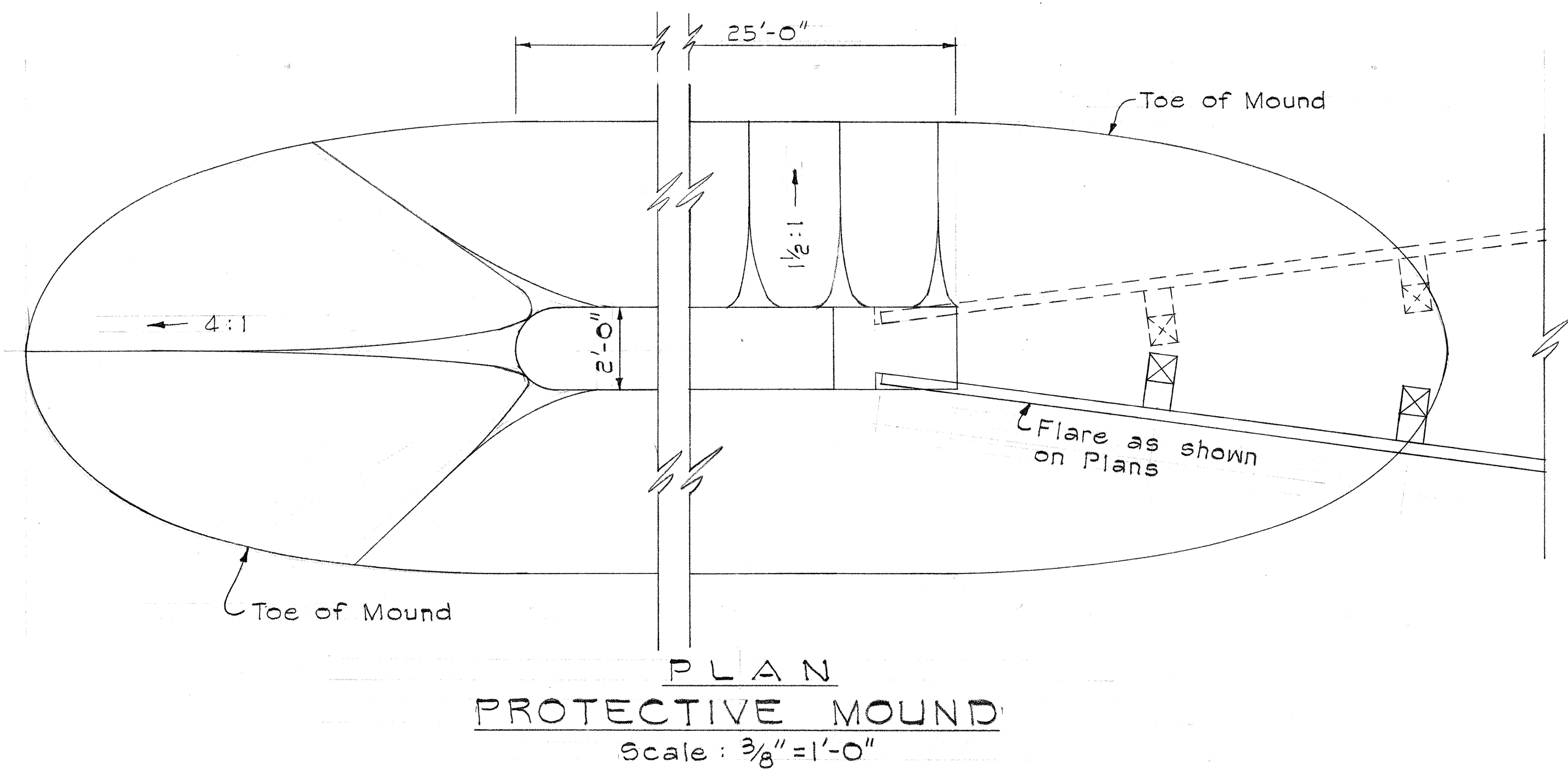
Scales: As Noted Date: Nov., 1967

SHEET No. 1 OF 7 SHEETS

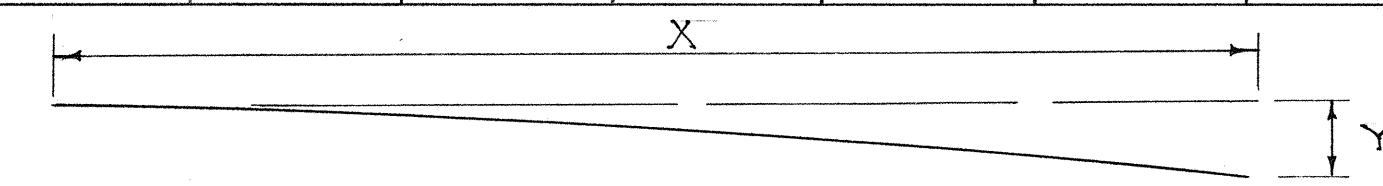
23

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	25	101



SCHEDULE OF PARABOLIC FLARES						
X DISTANCE	Y (OFFSET)					
	10:150	8:125	5:75	3:50	15:150	12:150
6.25	0.02	0.02	0.03	0.05	0.03	0.02
12.50	0.07	0.08	0.14	0.19	0.10	0.08
18.75	0.16	0.18	0.31	0.42	0.23	0.19
25.00	0.28	0.32	0.56	0.75	0.42	0.33
31.25	0.43	0.50	0.87	1.17	0.65	0.52
37.50	0.62	0.72	1.25	1.69	0.94	0.75
43.75	0.85	0.98	1.70	2.30	1.28	1.02
50.00	1.11	1.28	2.22	3.00	1.67	1.33
56.25	1.41	1.62	2.81		2.11	1.69
62.50	1.74	2.00	3.47		2.60	2.08
68.75	2.10	2.42	4.20		3.15	2.52
75.00	2.50	2.88	5.00		3.75	3.00
81.25	2.93	3.38			4.40	3.52
87.50	3.40	3.92			5.10	4.08
93.75	3.91	4.50			5.86	4.69
100.00	4.44	5.12			6.67	5.33
106.25	5.02	5.78			7.53	6.02
112.50	5.62	6.48			8.44	6.75
118.75	6.27	7.22			9.40	7.52
125.00	6.94	8.00			10.42	8.33
131.25	7.66				11.48	9.19
137.50	8.40				12.60	10.08
143.25	9.18				13.78	11.02
150.00	10.00				15.00	12.00



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

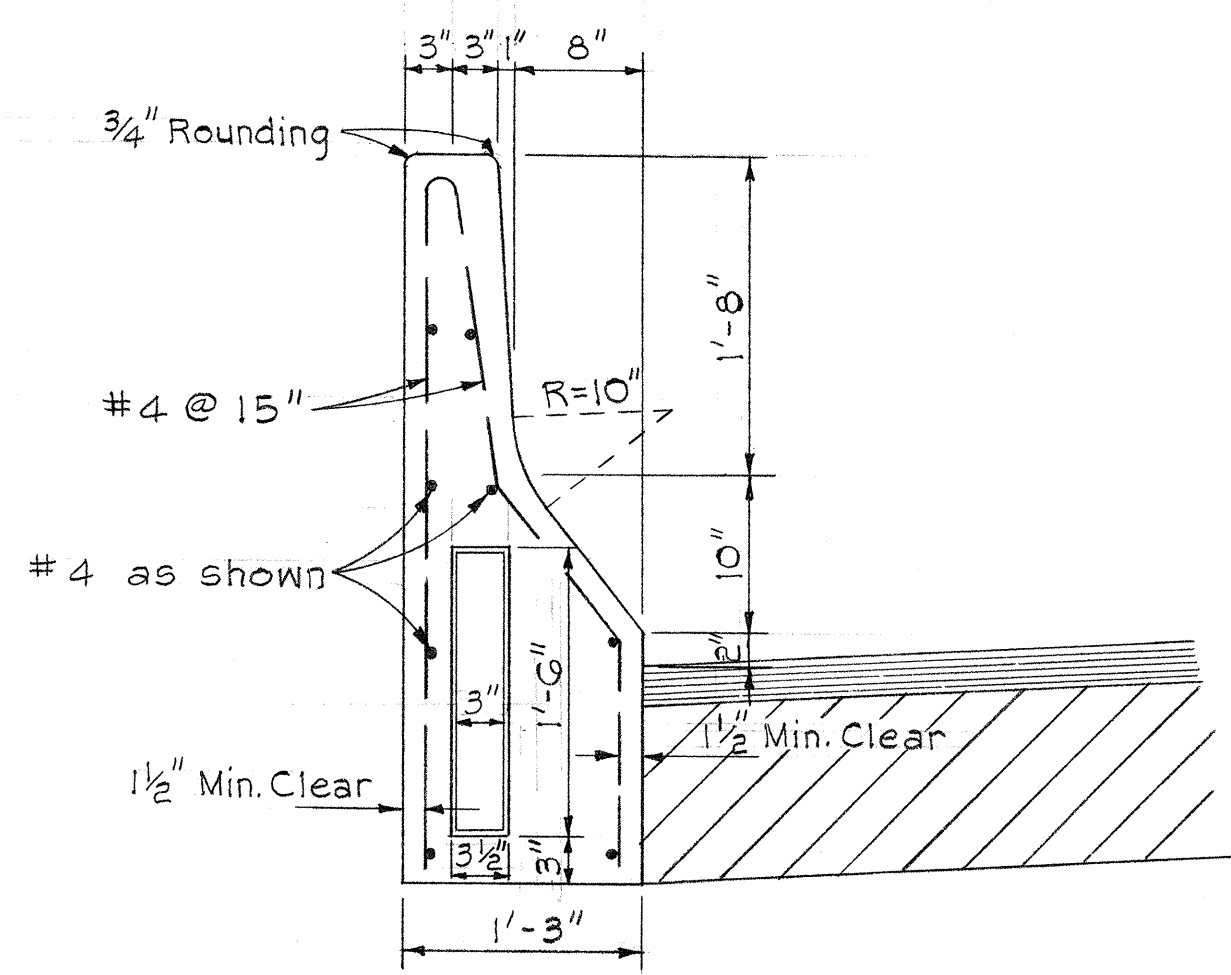
MISCELLANEOUS ROADWAY
DETAILS

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32):5, Unit 4

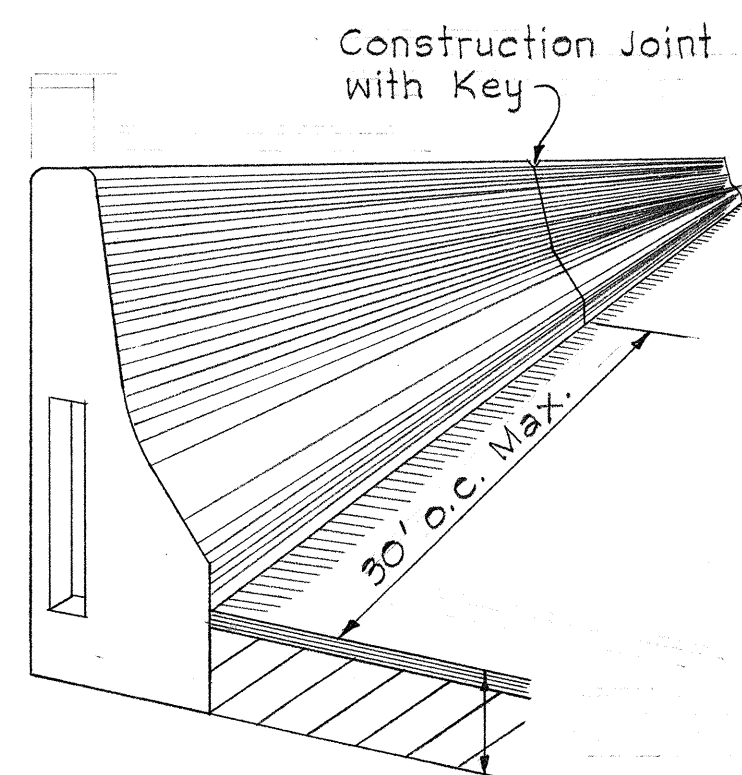
Scales : As Noted Date : Nov., 1967

SHEET No. 3 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	255(1)	101



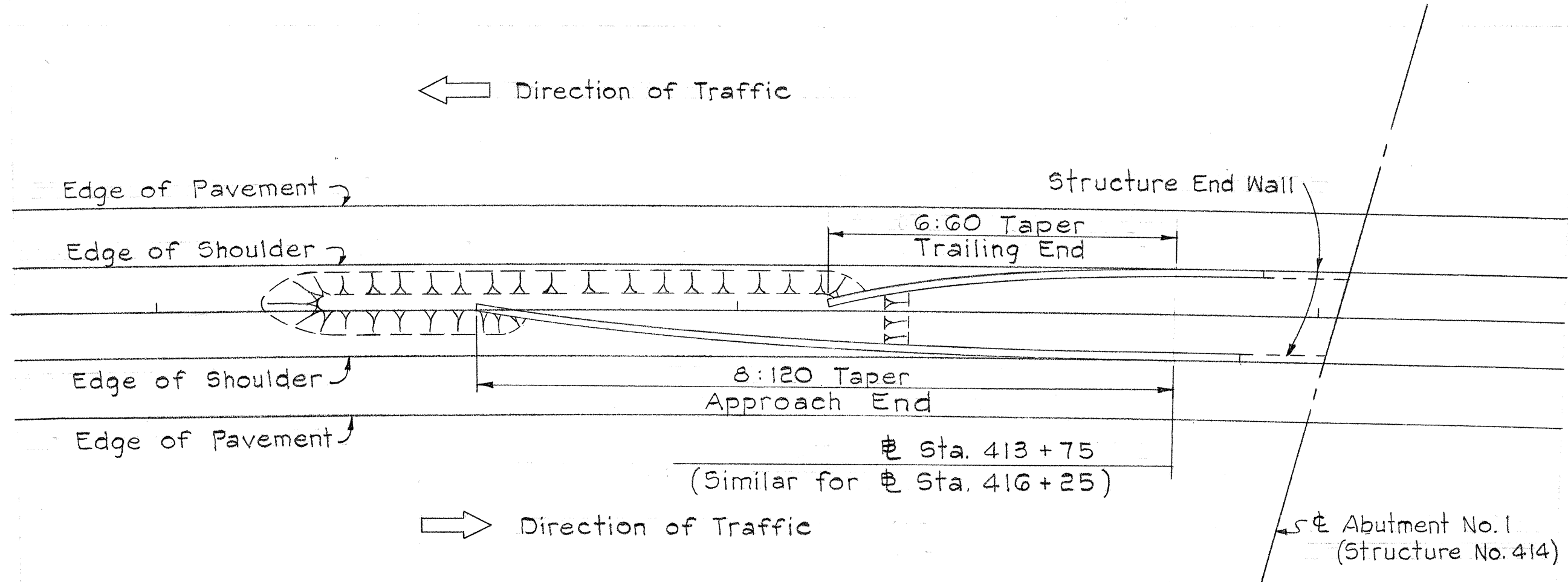
TYPICAL SECTION
TYPE "C" CONCRETE BARRIER
Scale: 1" = 1'-0"



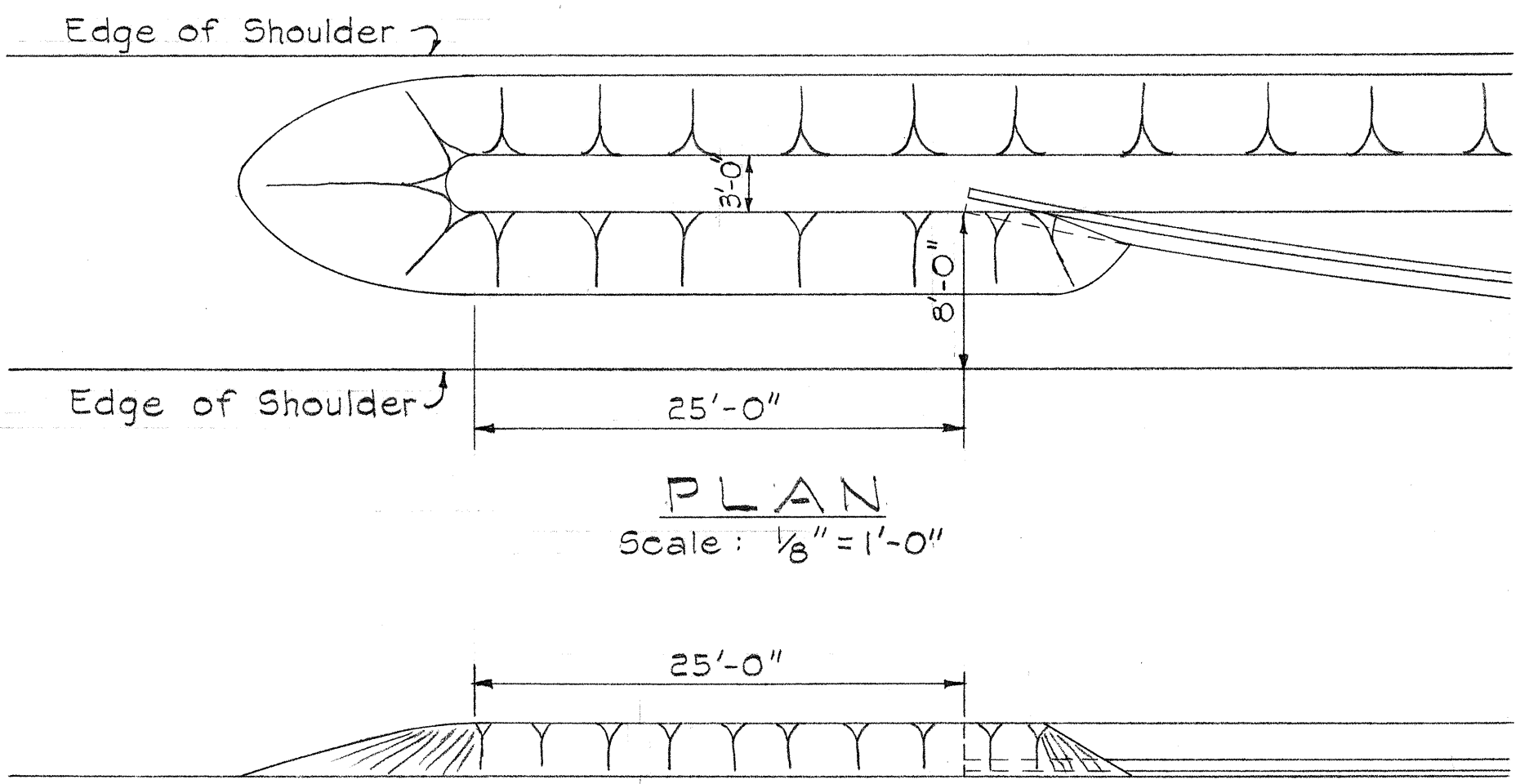
TYPE "C" CONCRETE BARRIER
(AT TANGENT SECTIONS)
Not to Scale

GENERAL NOTES

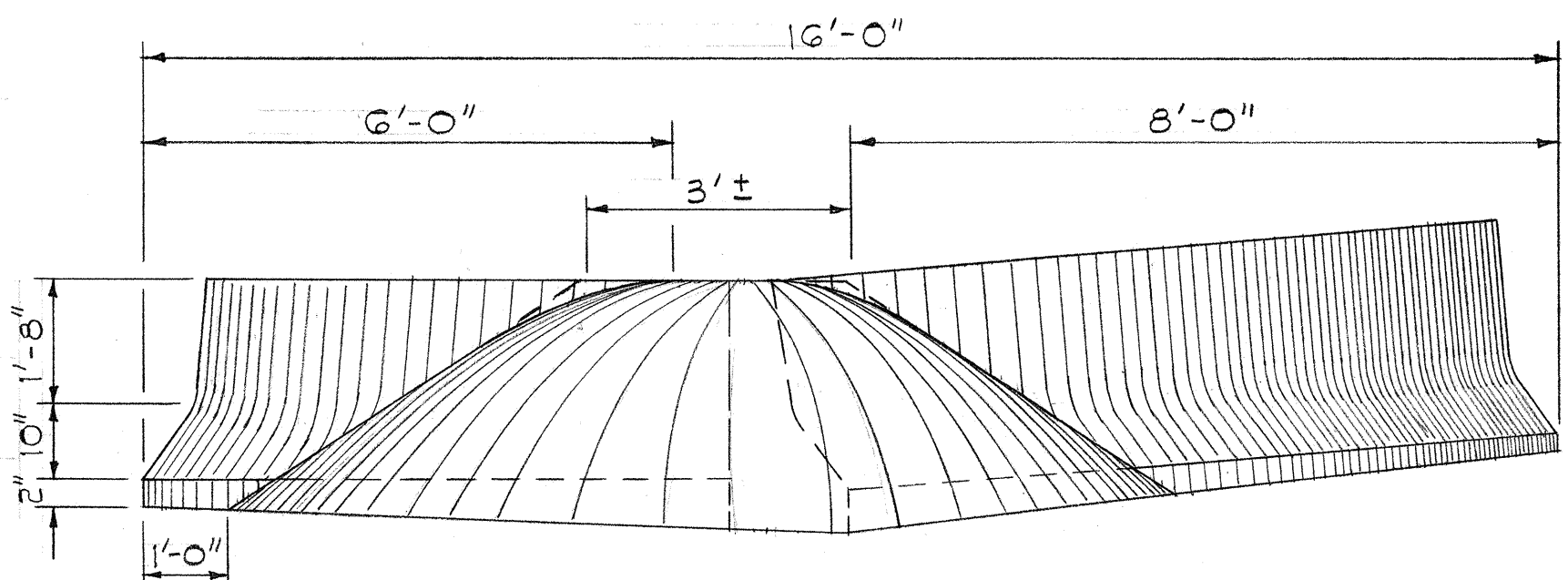
- Concrete for Concrete Barriers shall be Class "A-1".
- Construction joints with keys shall be provided and spaced at 30' o.c. Max. for all Conc. Barriers.
- Expansion joint shall be constructed at ninety (90 ft.) intervals or at existing expansion joints of structures. (Use 1/2" pre-molded joint filler, incidental to concrete barrier)
- Concrete Barrier shall conform to Structure End Wall at connection.



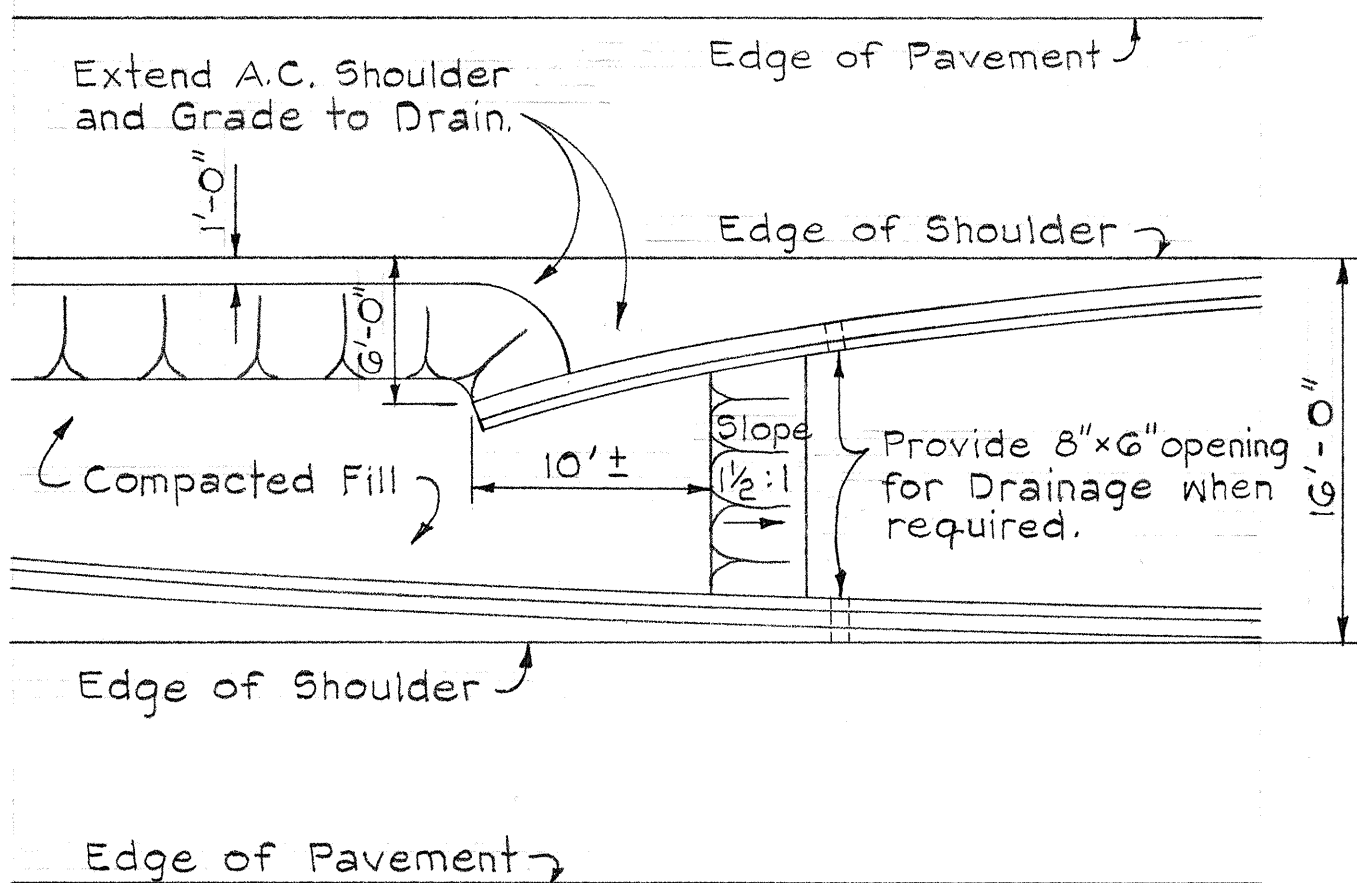
TYPICAL PLAN FOR TYPE "C"
CONCRETE BARRIER INSTALLATION
Scale: 1" = 20'



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



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



THIS SHEET IS A SUPPLEMENT
TO THE CONTRACT PLANS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS ROADWAY
DETAILS

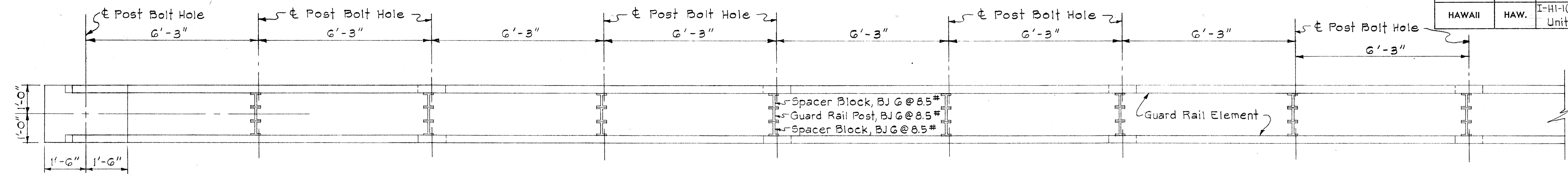
INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32):5, Unit 4
Scale: As Noted Date: March, 1968

SHEET No. 35(1) OF 7 SHEETS

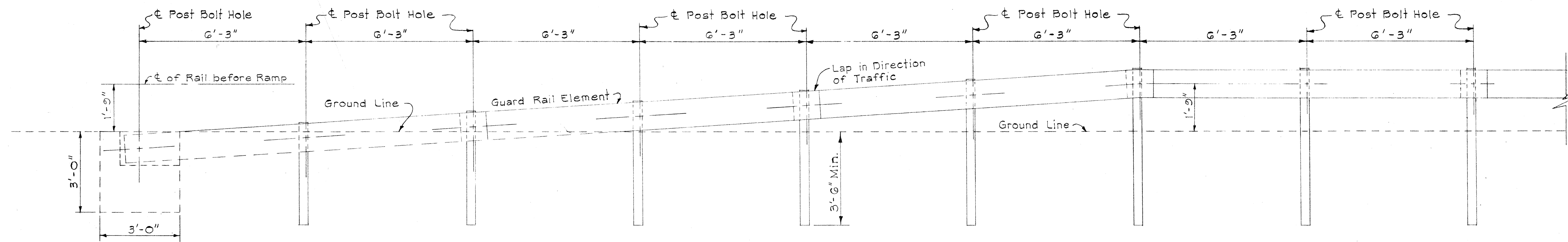
C 0 2 5 S (1)

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTE BOOK	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	255(2)	101



PLAN

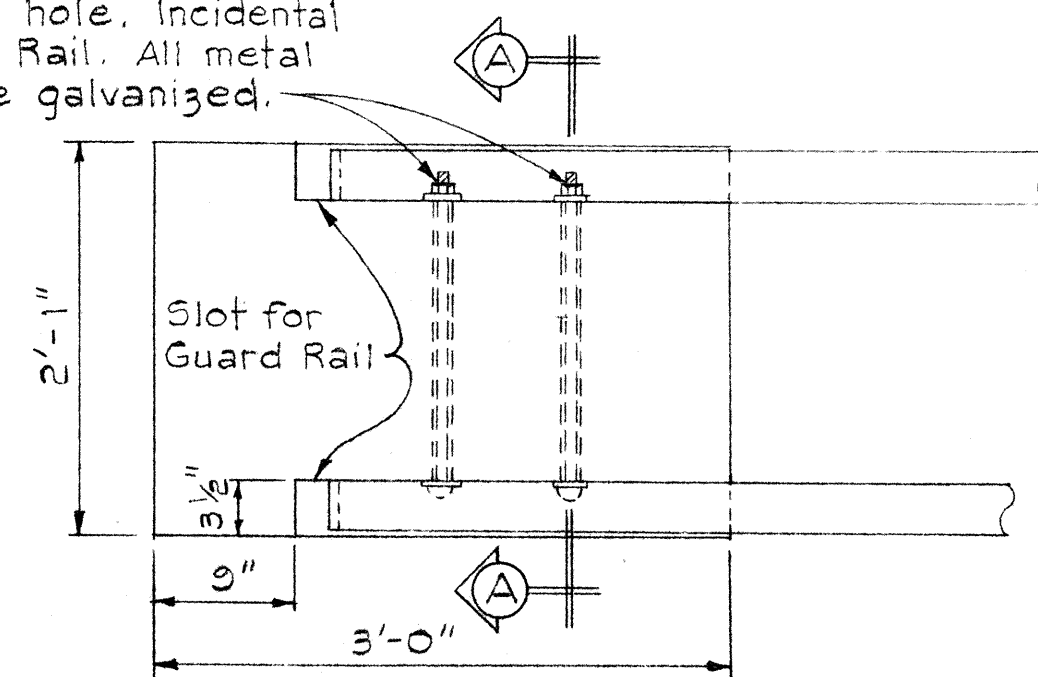


ELEVATION

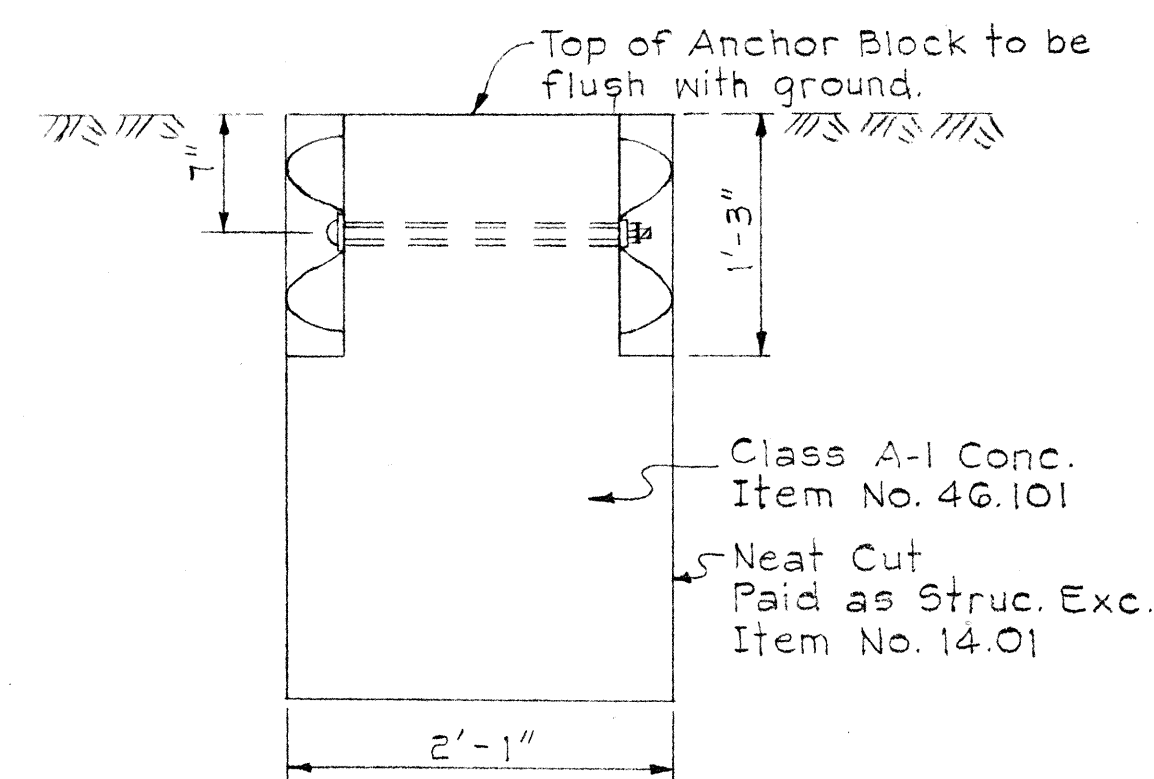
STRAIGHT APPROACH - RAMP END ANCHORAGE (MEDIAN)

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

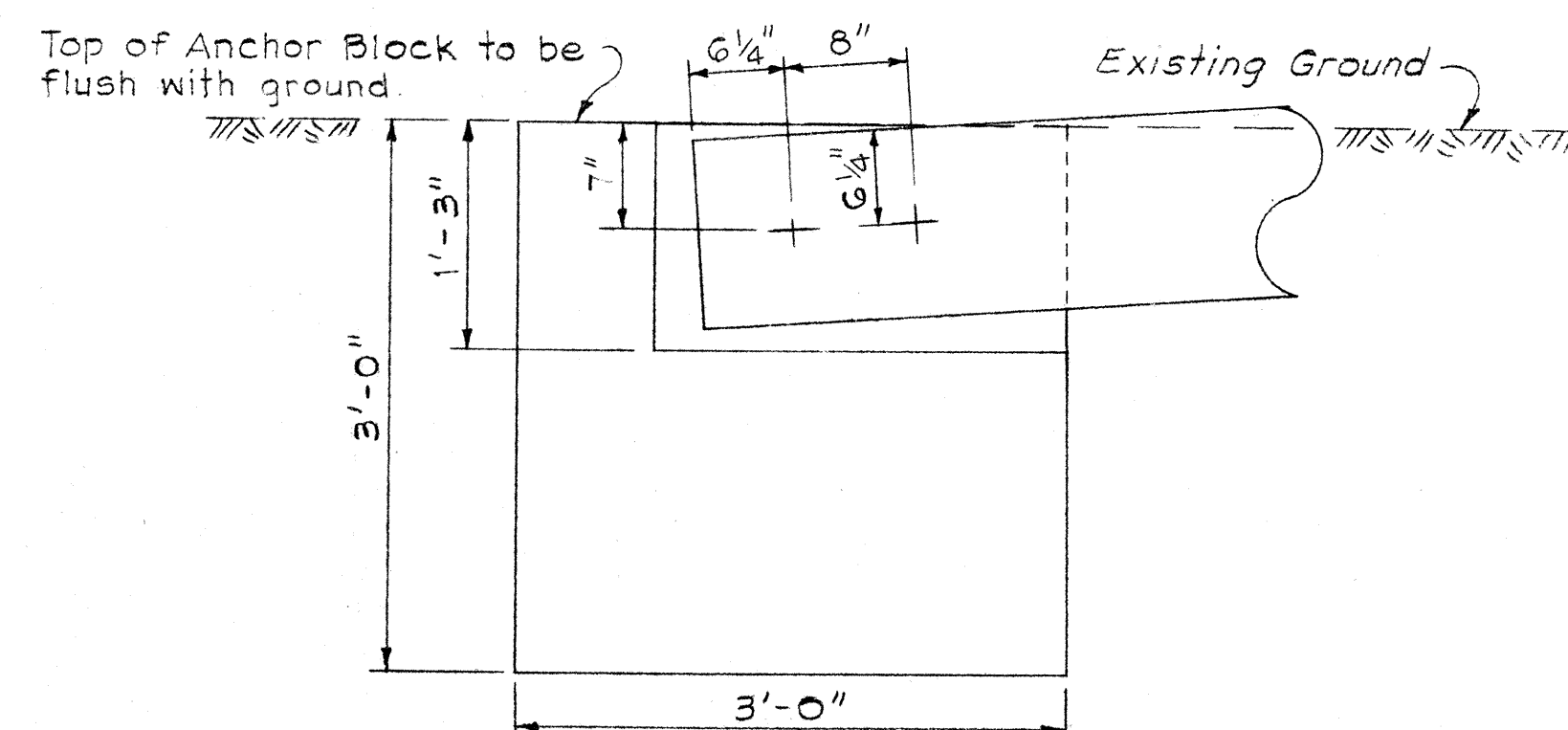
5/8" ϕ Bolts with 3/4" G.I. Pipe Sleeve in each hole. Incidental to Metal Guard Rail. All metal pieces shall be galvanized.



PLAN



SECTION A-A



ELEVATION

CONCRETE ANCHOR BLOCK FOR RAMP END

Scale : 1" = 1'-0"

THIS SHEET IS A SUPPLEMENT TO THE CONTRACT PLANS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS ROADWAY
DETAILS

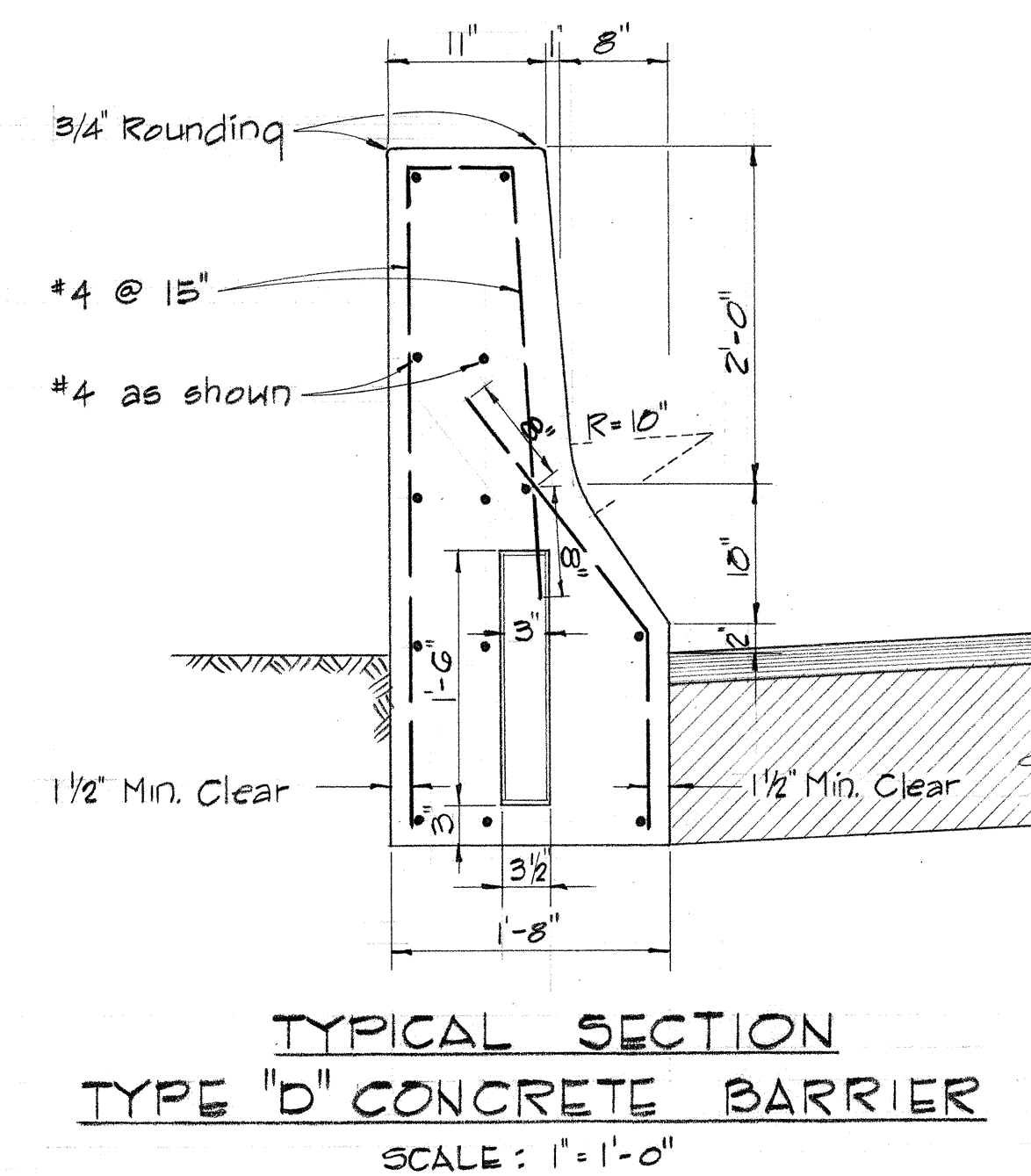
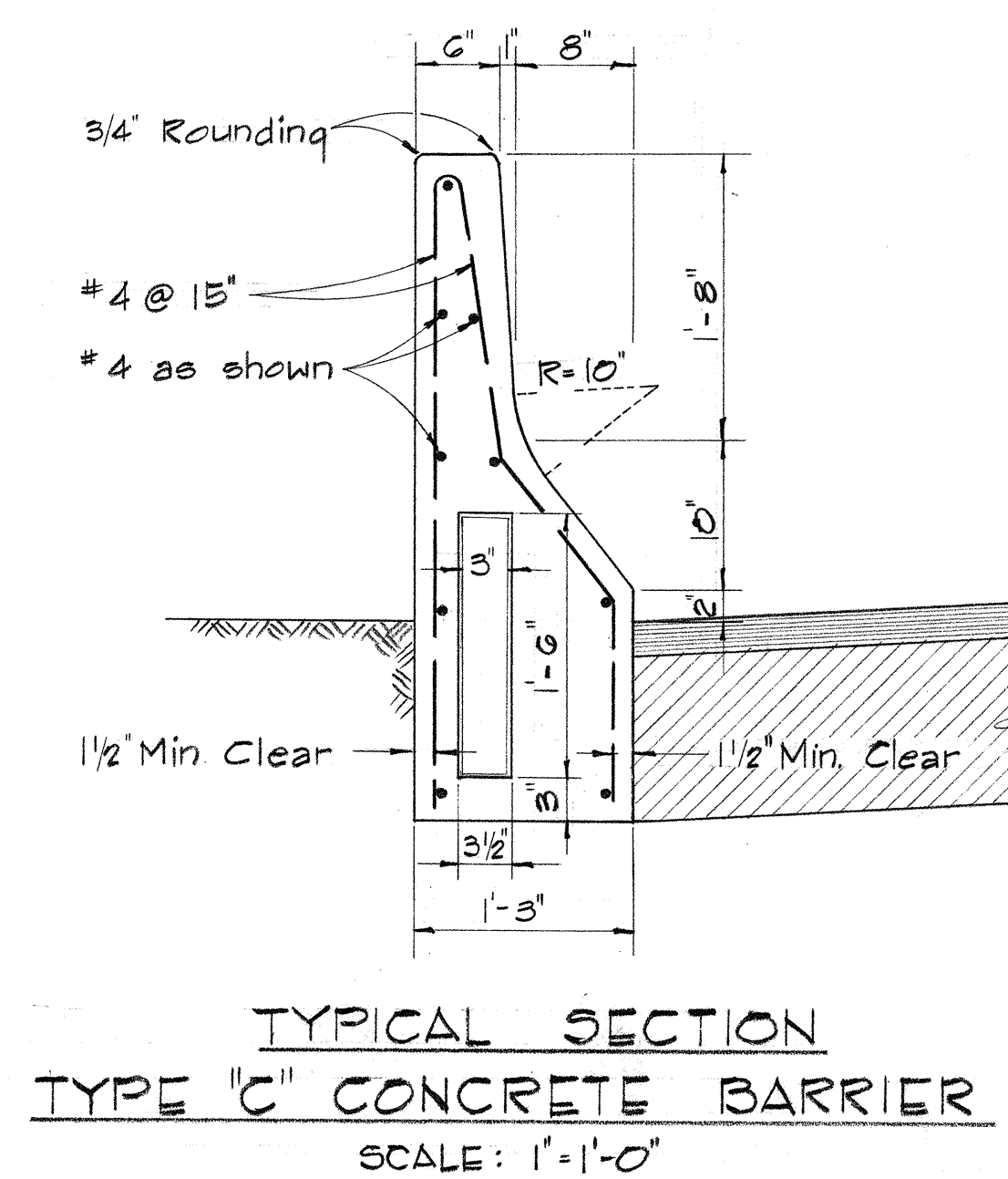
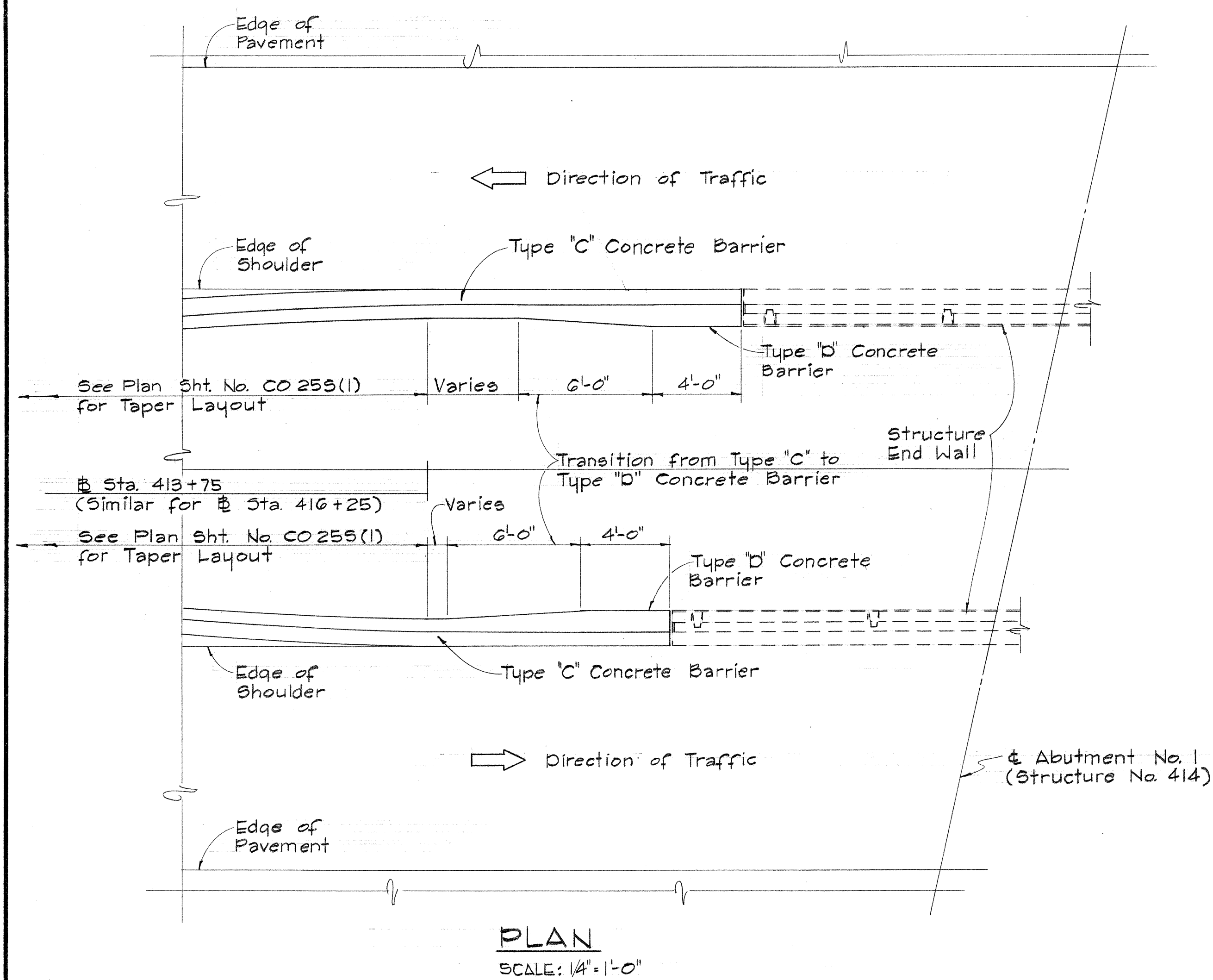
INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32):5, Unit 4

Scale : As Noted Date : March, 1968

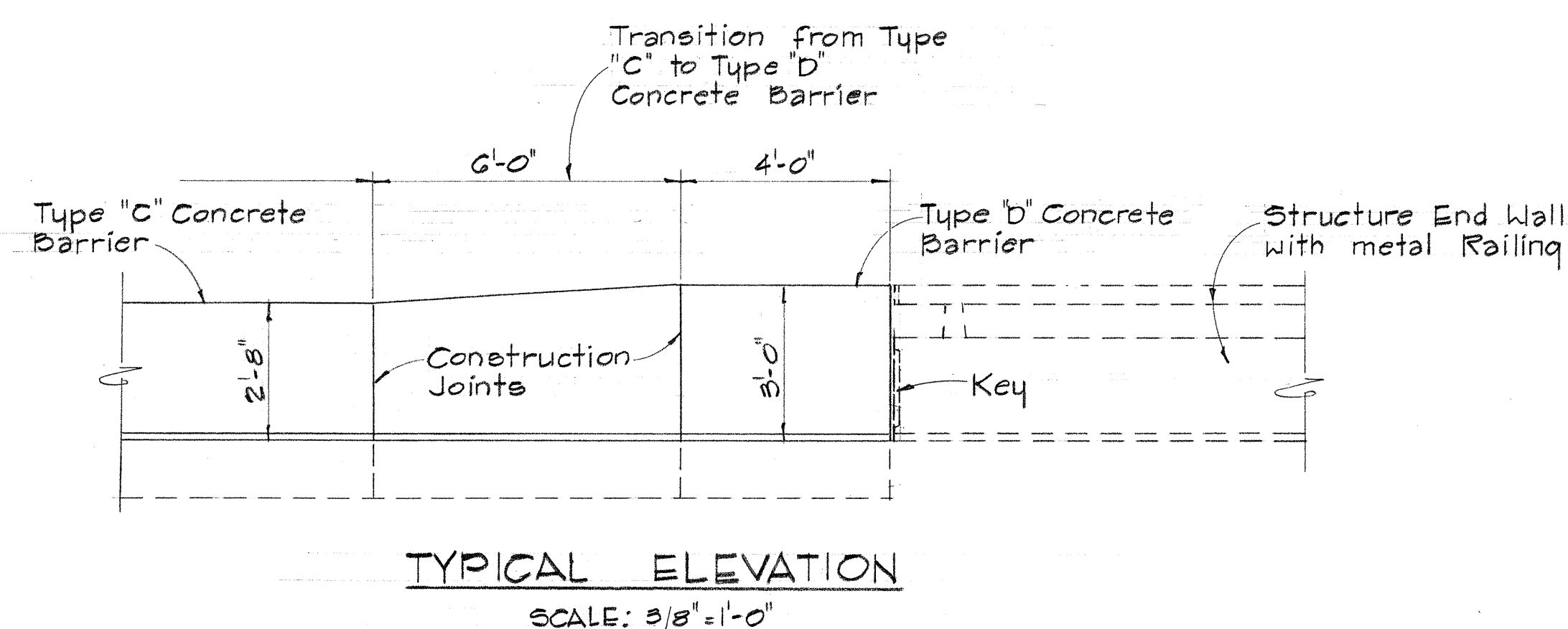
SHEET No. 35(2) OF 7 SHEETS

C 0 2 5 S (2)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32) Unit 4	1967	CO 253(3)	101



- NOTE:**
- Concrete Barrier installation details at structure endwalls shown on Plan Sheet No. CO 253(1) shall be modified and supplemented in accordance with the details shown herein.
 - Keys for Concrete Barrier shall be 3" deep.



THIS SHEET IS A SUPPLEMENT
TO THE CONTRACT PLANS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS ROADWAY
DETAILS

INTERSTATE ROUTE H-1
F.A.I. Proj No I-HI-1(32):5 Unit 4
Scale: As Noted Date: April 16, 1968

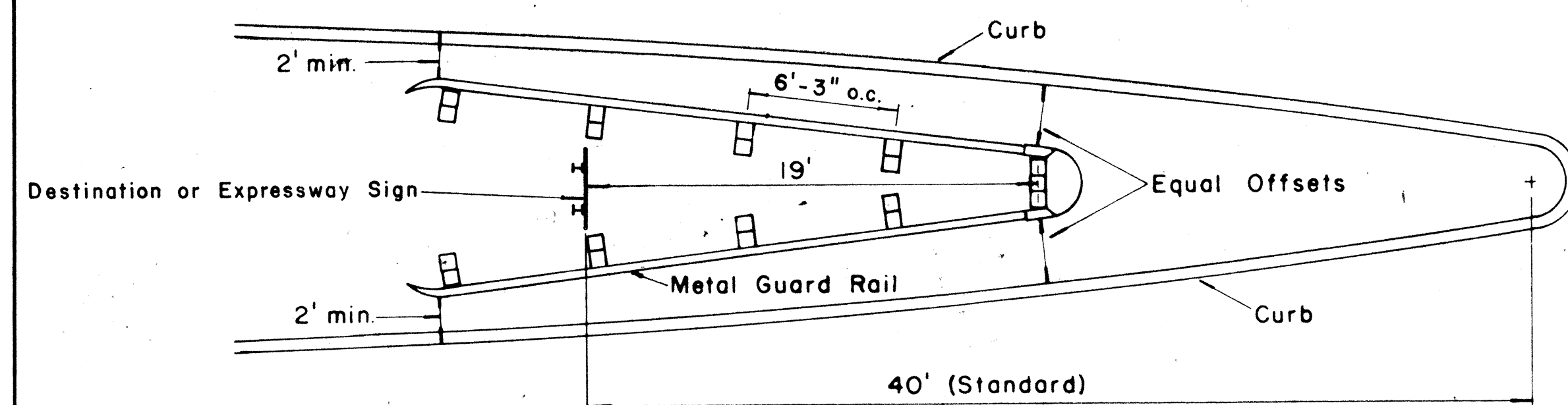
SHEET No. 35(3) OF 7 SHEETS

CO 253(3)

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

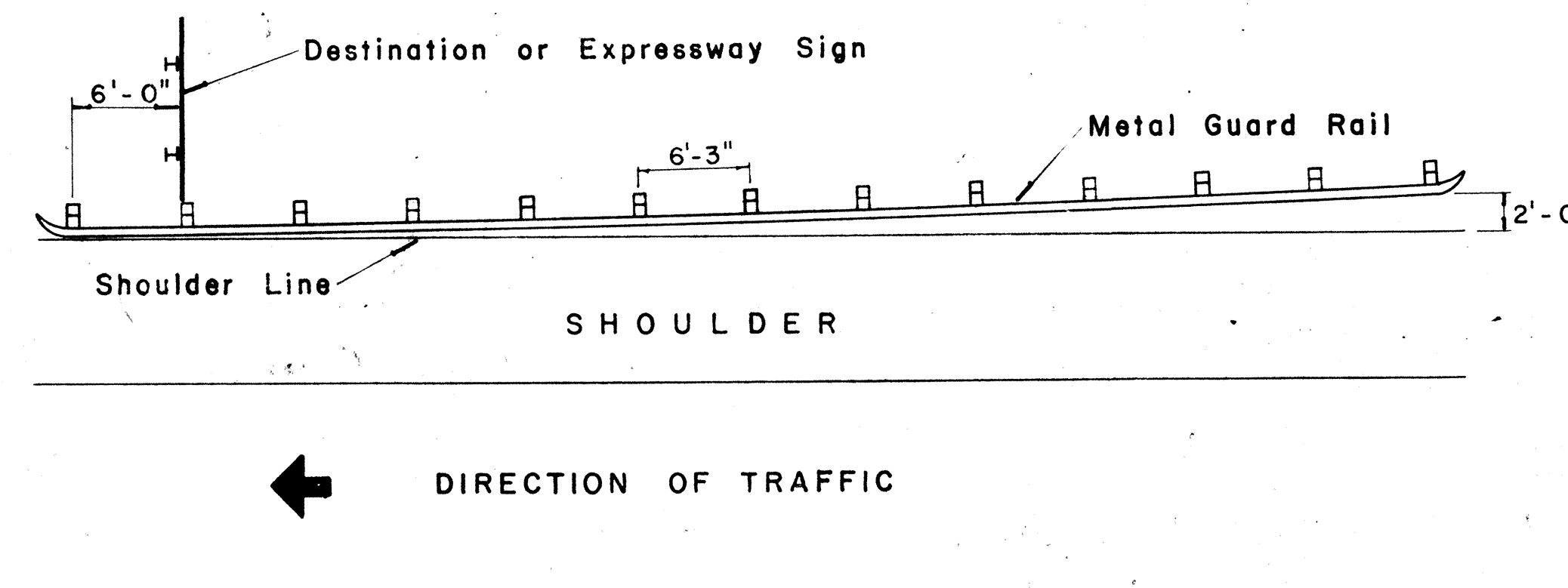
Revised: Feb. 1968

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-41100	1961	26	101



GORE MOUNTED SIGN

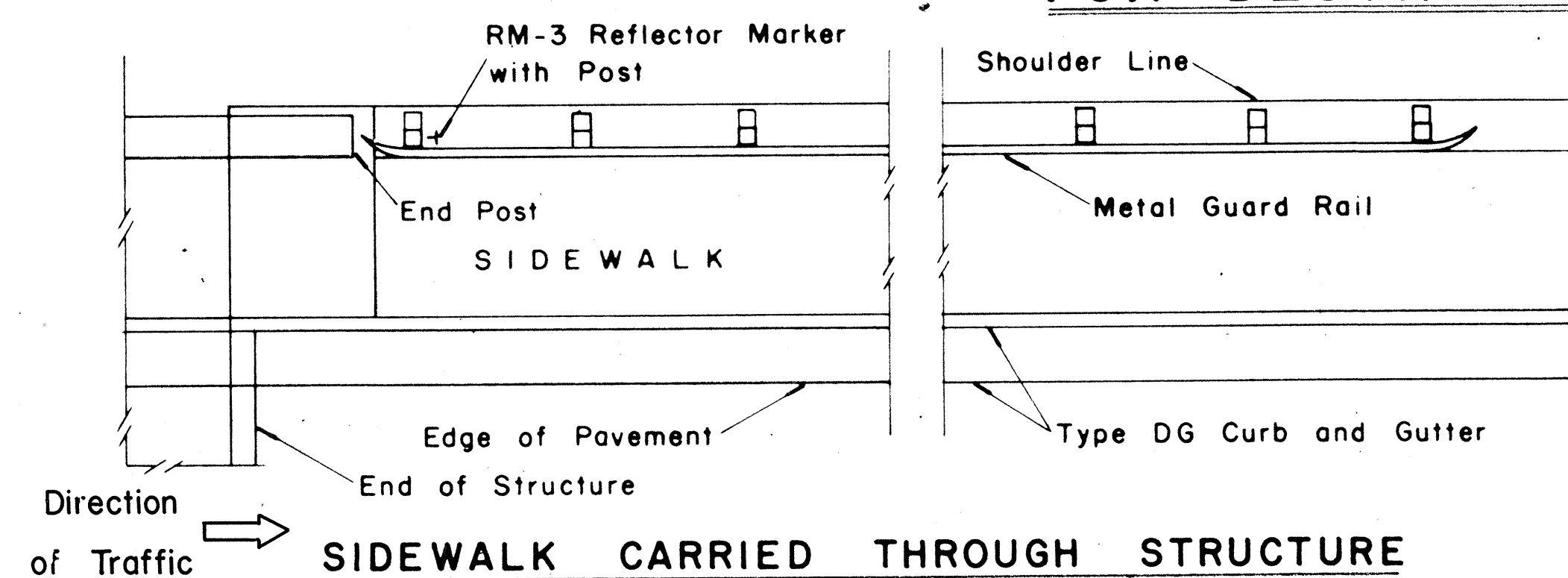
Scale: $\frac{3}{16}" = 1' - 0"$



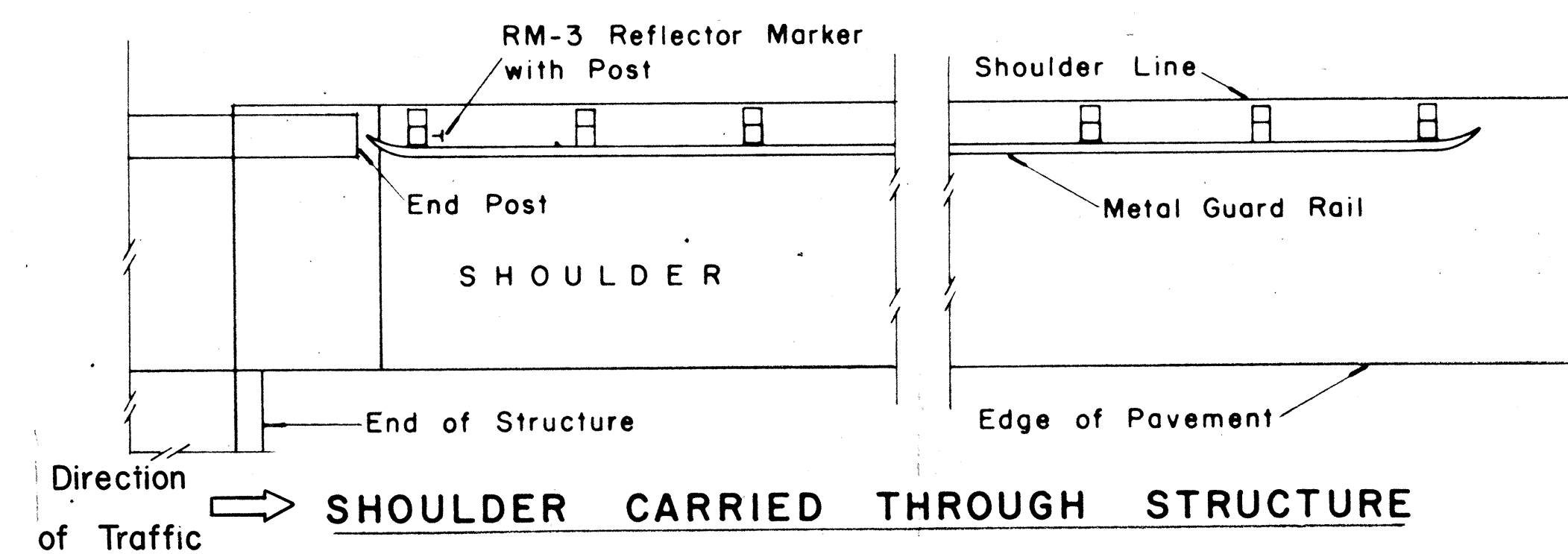
SHOULDER MOUNTED SIGN

Scale: $\frac{1}{8}" = 1' - 0"$

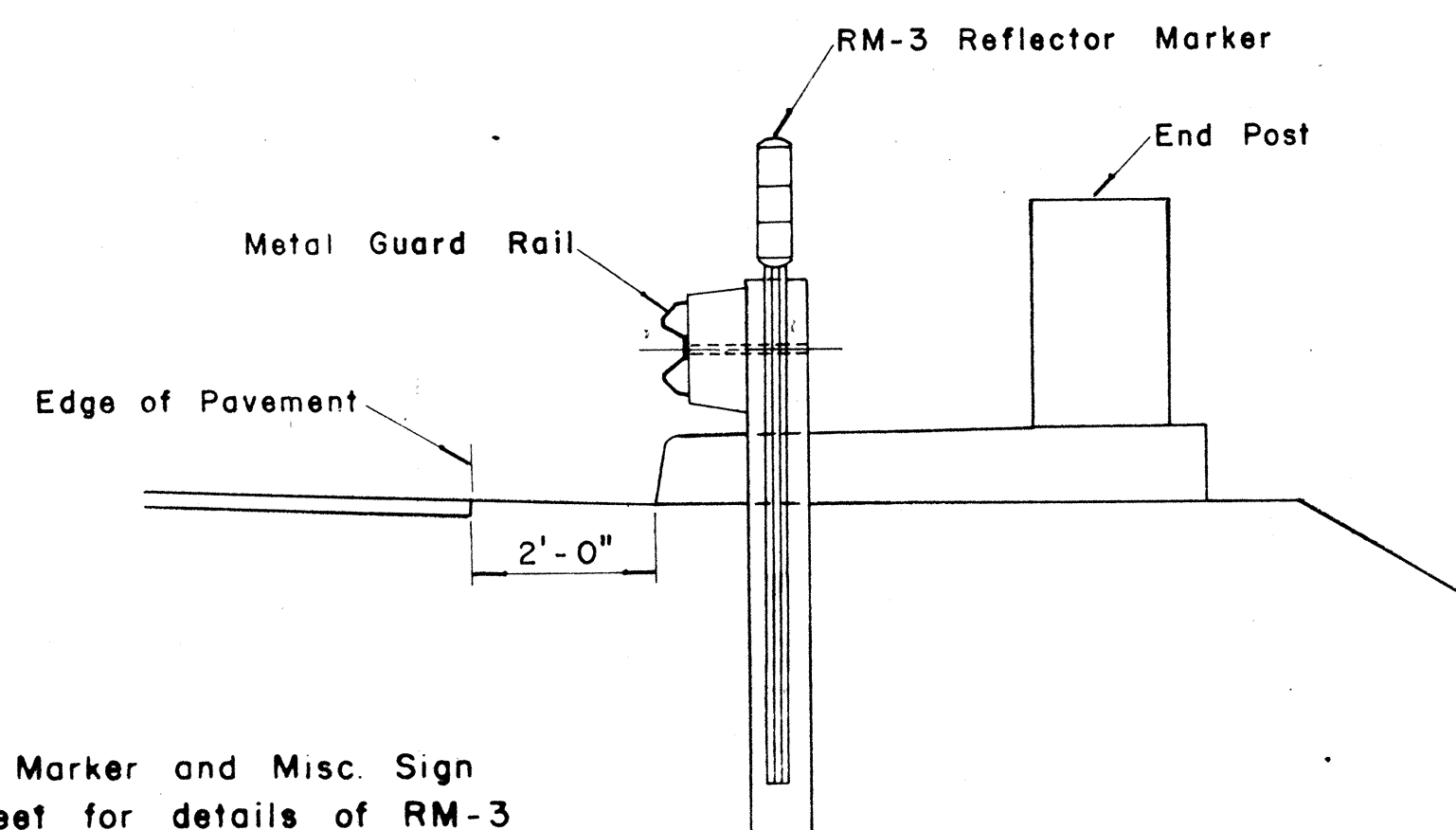
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE



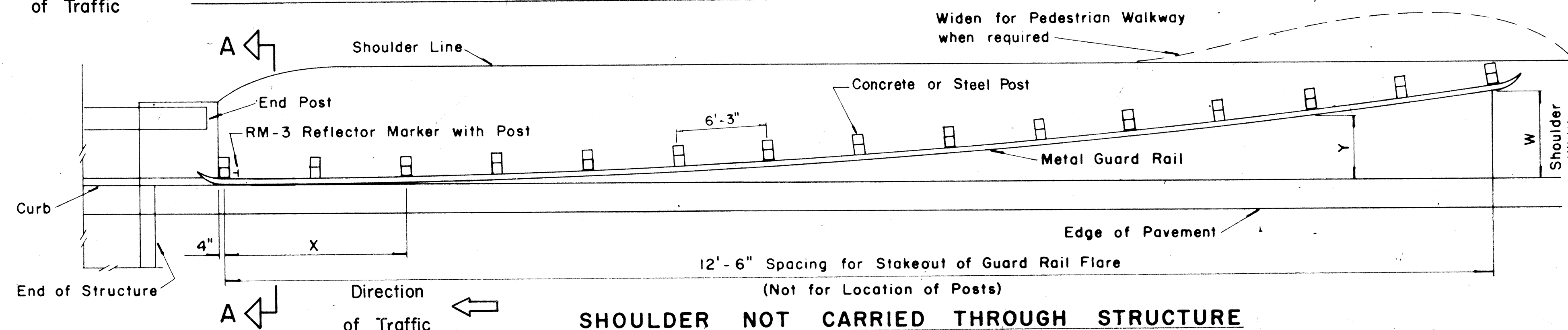
SHOULDER CARRIED THROUGH STRUCTURE



SECTION "A-A"

Scale: $\frac{1}{2}" = 1' - 0"$

NOTE:
See F.A. Marker and Misc. Sign
Detail sheet for details of RM-3
Reflector Marker with Post.



**SHOULDER NOT CARRIED THROUGH STRUCTURE
INSTALLATION OF METAL GUARD RAIL FLARE AT STRUCTURES**

Scale: $\frac{3}{16}" = 1' - 0"$

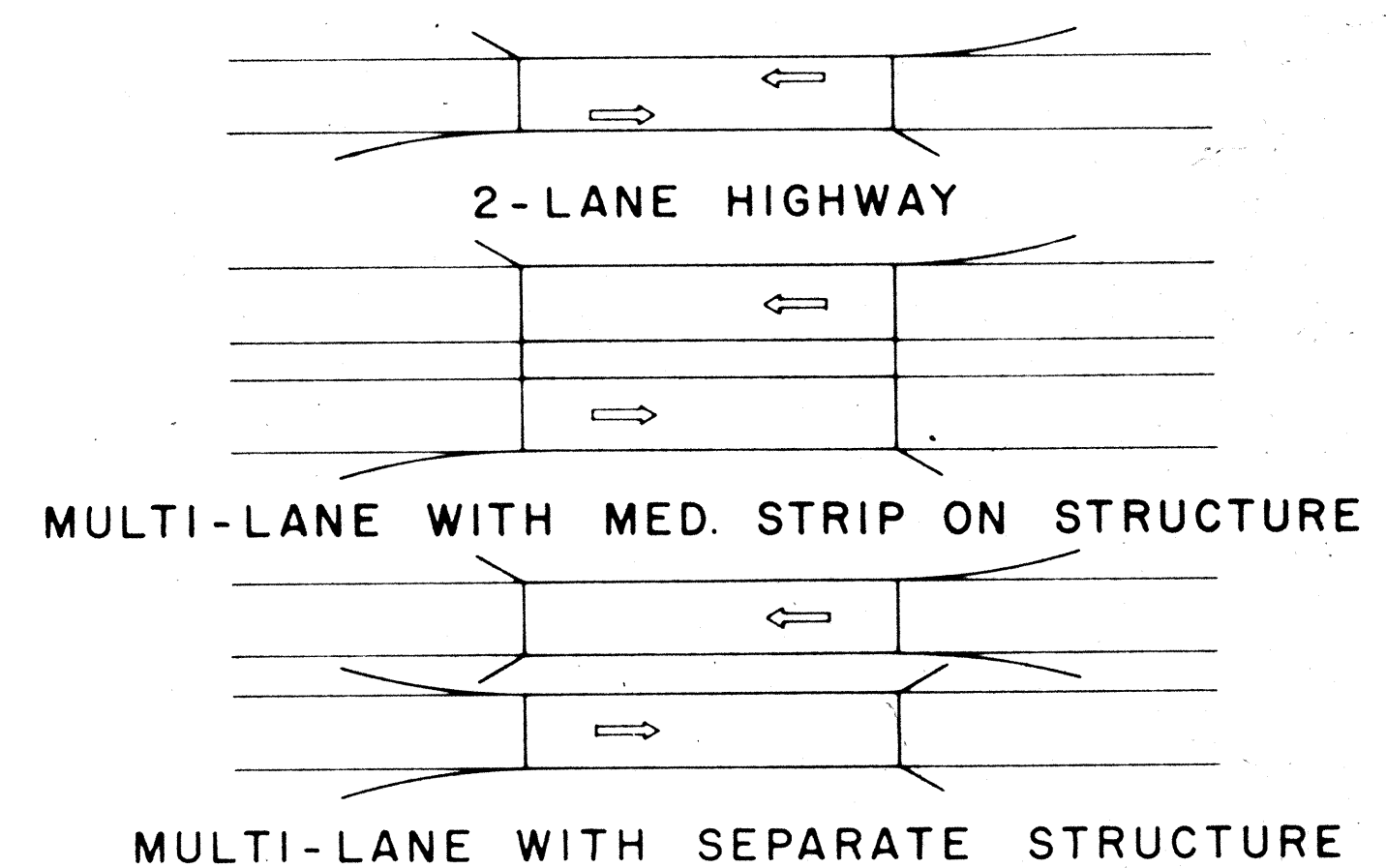
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48
125.0						8.00

W = GUARD RAIL FLARE

X = DISTANCE FROM POST AT
BRIDGE TO OFFSET POINTS

Y = GUARD RAIL FLARE OFFSET

GUARD RAIL OFFSET



TYPICAL GUARD RAIL FLARES AT STRUCTURE APPROACHES

THIS SHEET SUPERSEDES
SHEET NO. 26

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
METAL GUARD RAILS
AT
STRUCTURES & GUIDE SIGNS

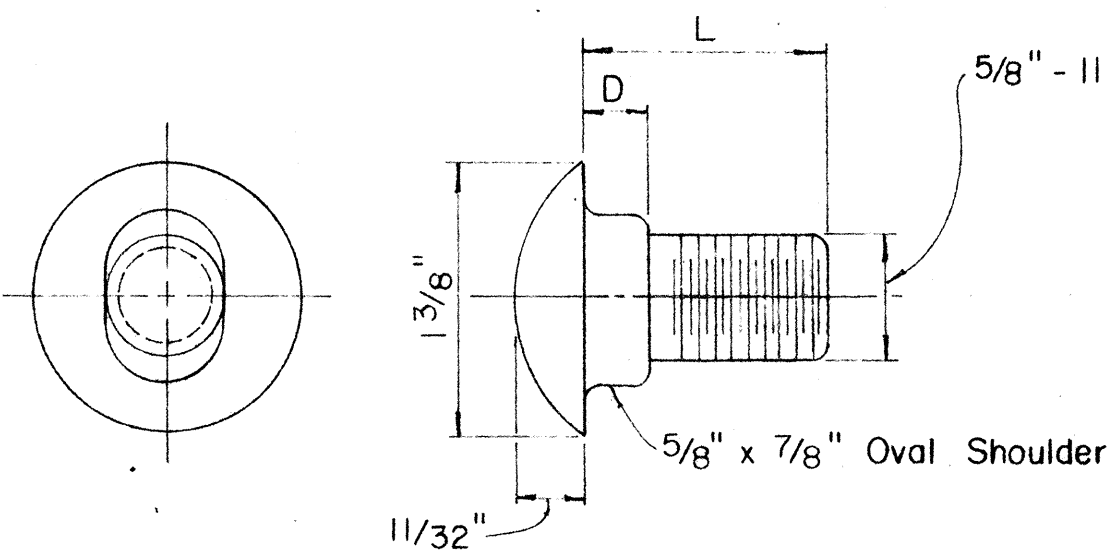
Scale: As Noted

SHEET No. 4 OF 7 SHEETS

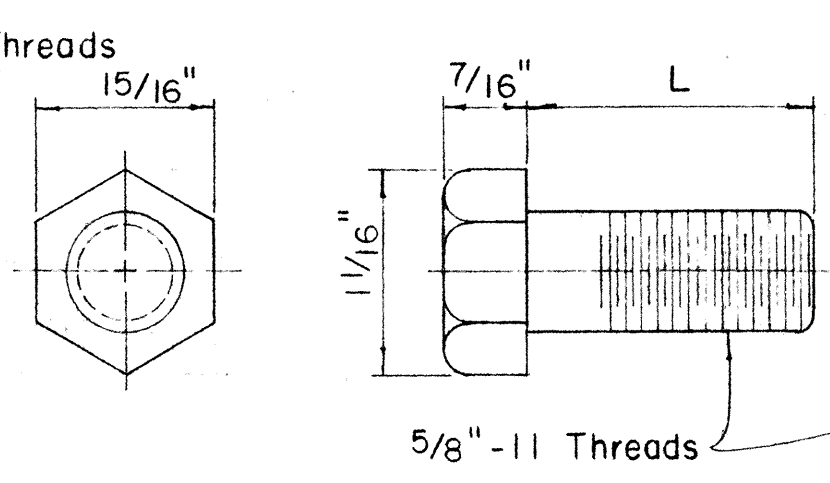
C026

BOLT DIMENSIONS		
TYPE A BOLT		
Splice Bolt	D 5/16"	L 1 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	24"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	18"
Rail Bolt for Metal Block	3/32"	2"

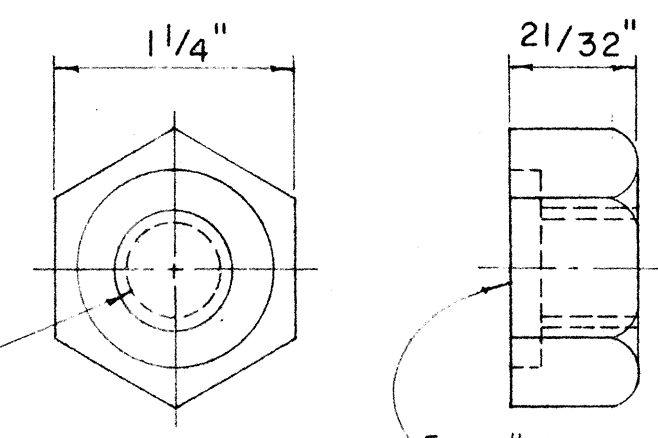
BOLT DIMENSIONS	
TYPE B BOLT	
Post Bolt for Conc. Post w/ Metal Blocks	L 9 1/2"
Post Bolt for Metal Post w/ Metal Block	L 3 3/4"



TYPE A BOLT



TYPE B BOLT



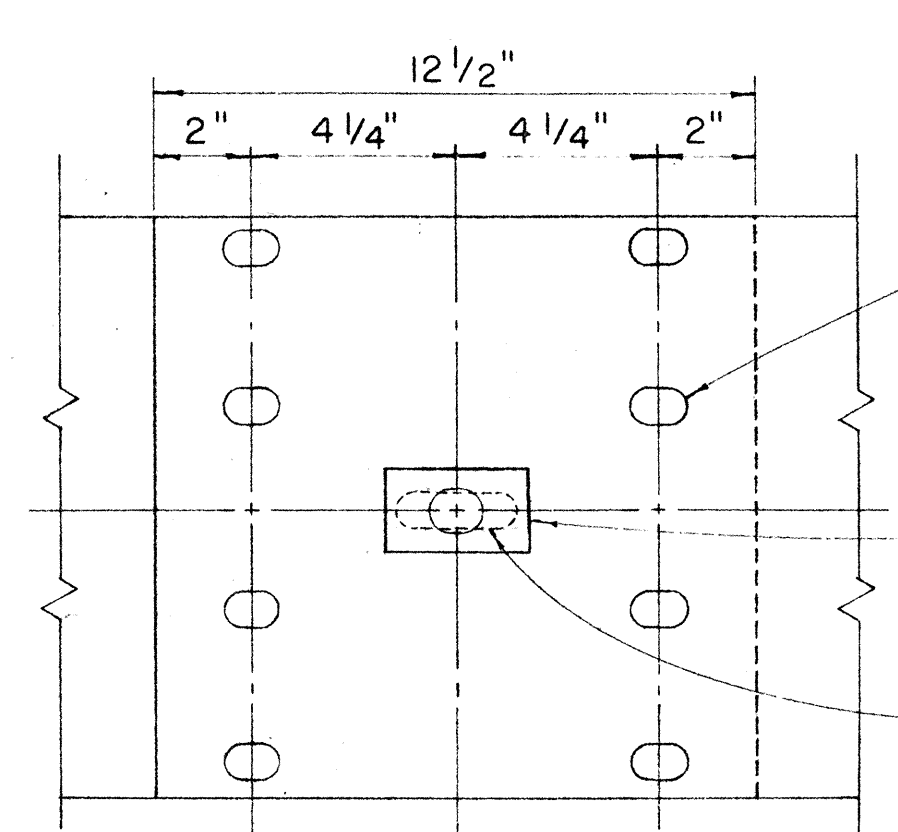
HEXAGON NUT

5/32" Deep x 15/16" Dia.
C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.

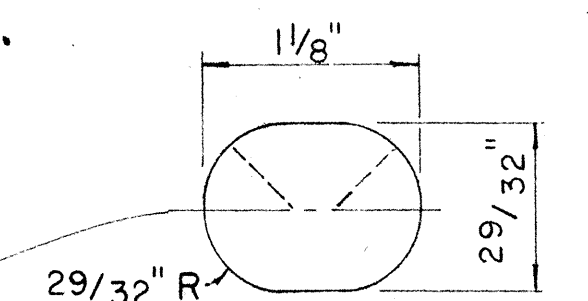
Scale: Full Size

SPLICE RAIL AND POST BOLTS

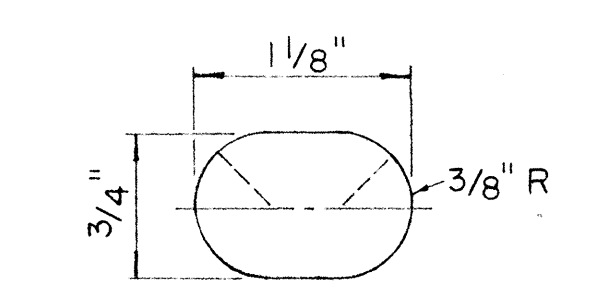
Scale: Full Size



RAIL SPLICE
Scale: 3" = 1'-0"

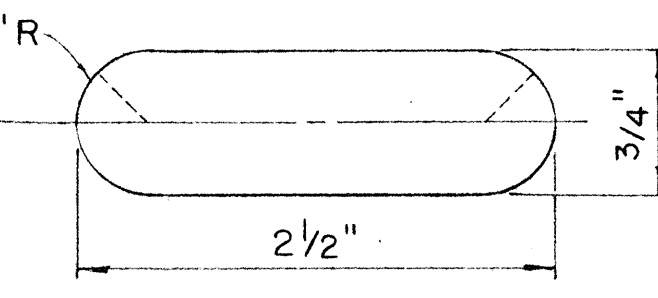


SPLICE BOLT SLOT

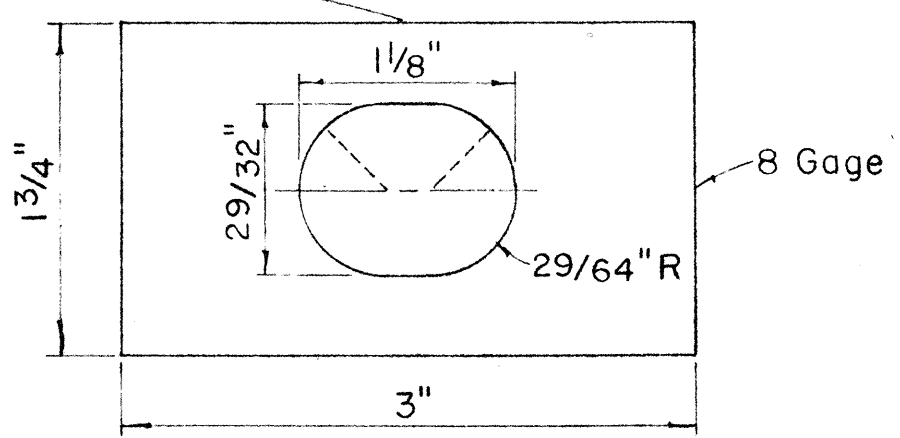


SPLICE BOLT SLOT FOR ALL ENDS

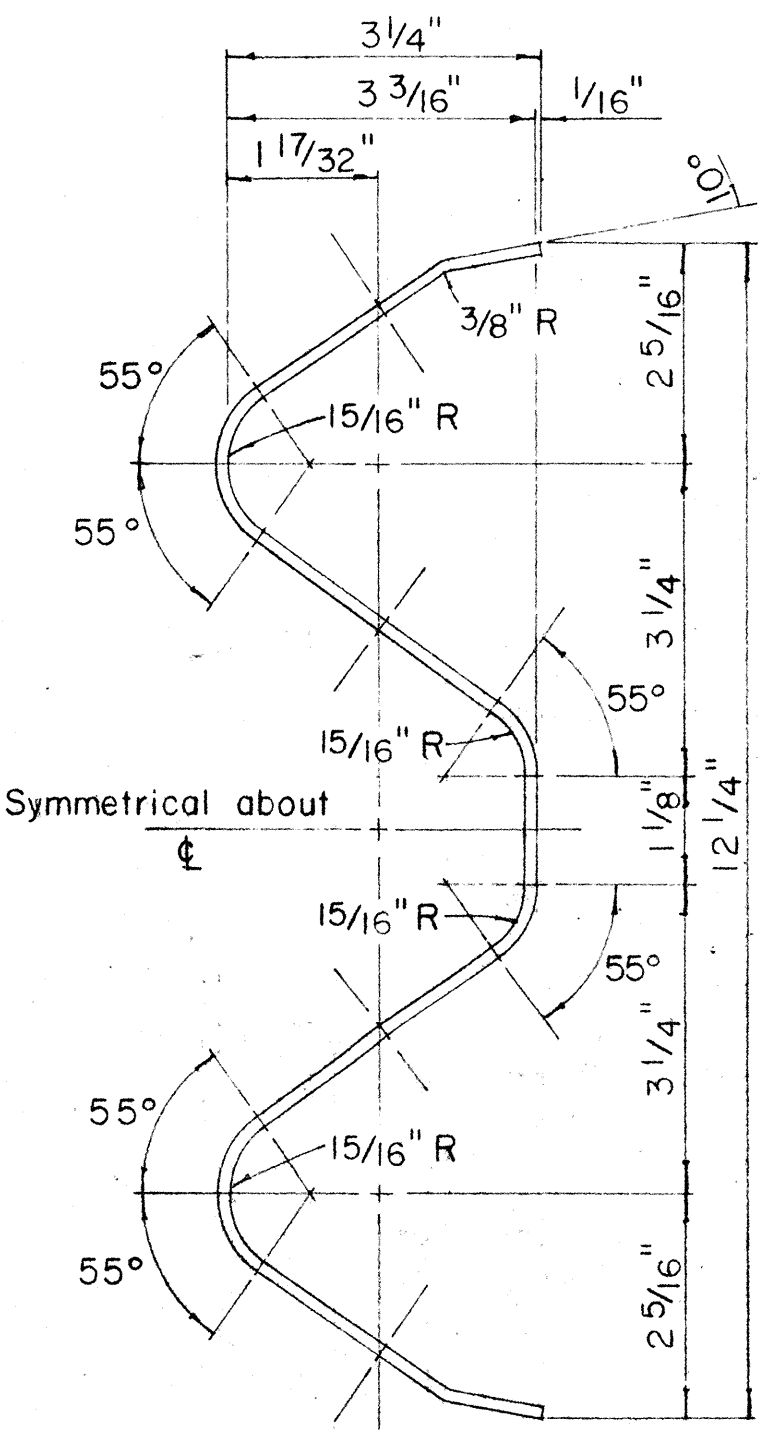
Scale: Full Size



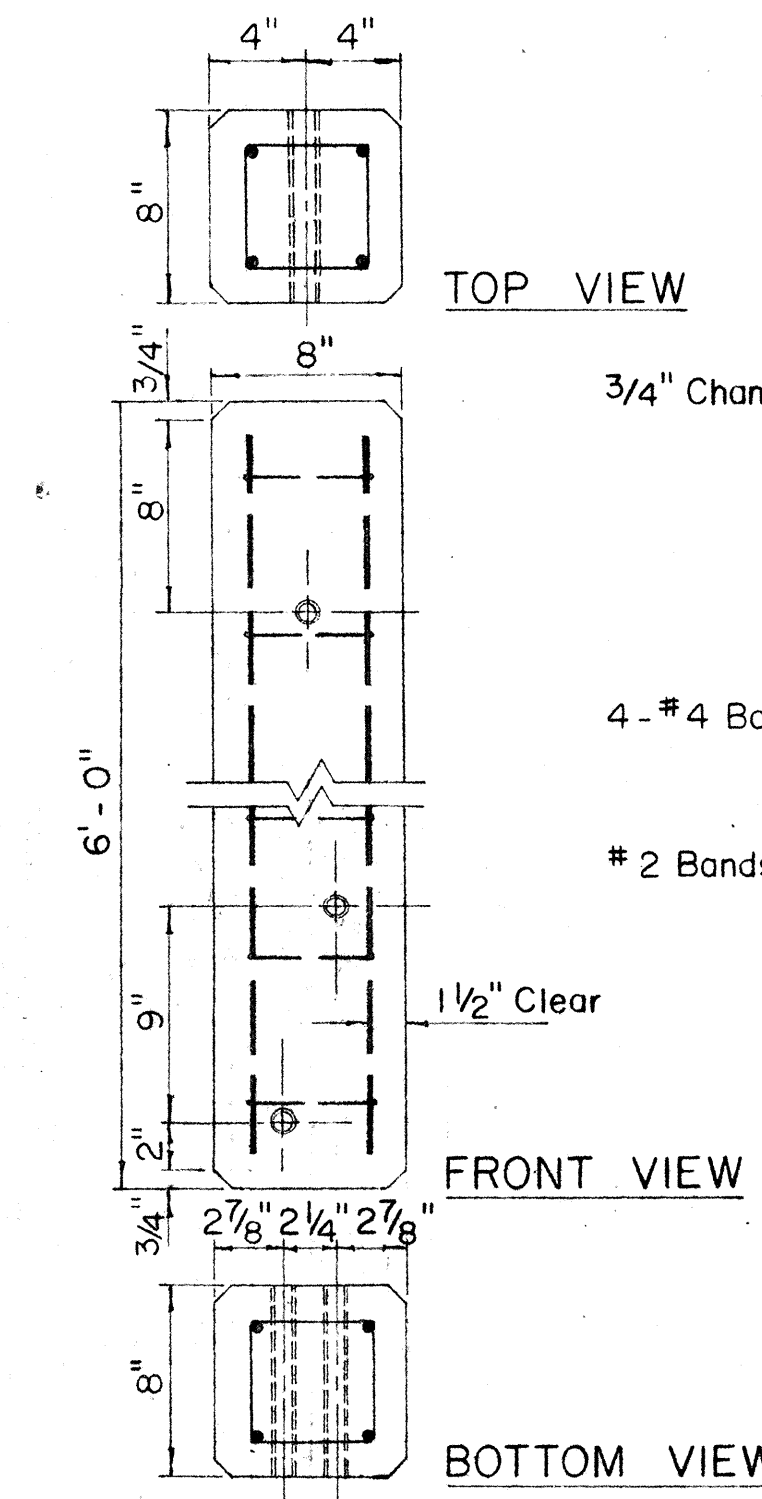
POST BOLT SLOT



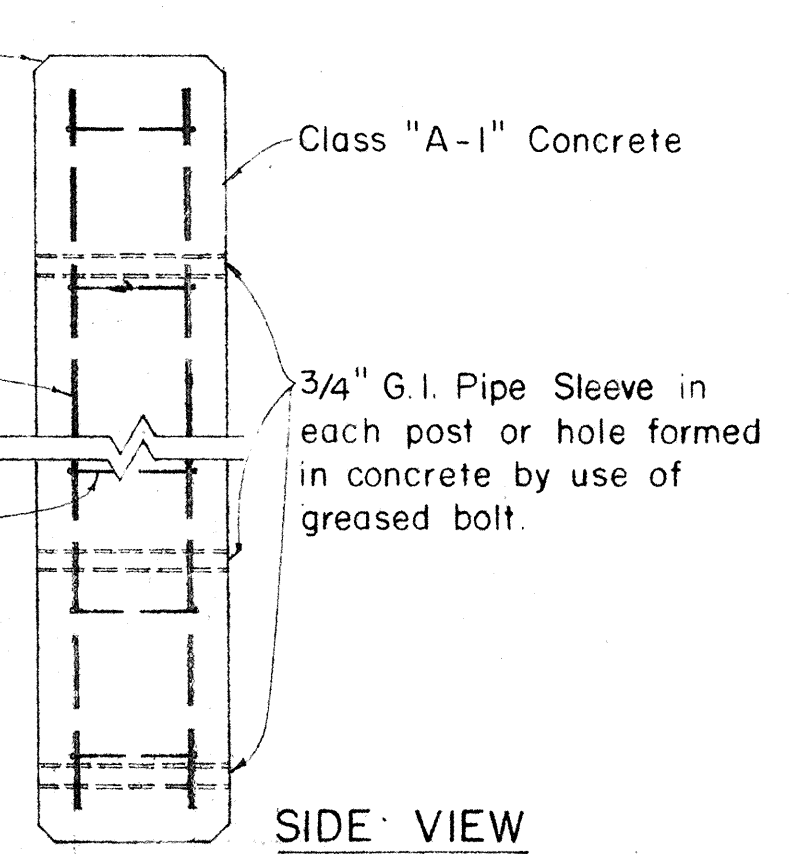
RAIL WASHER



RAIL ELEMENT SECTION
Scale: 6" = 1'-0"

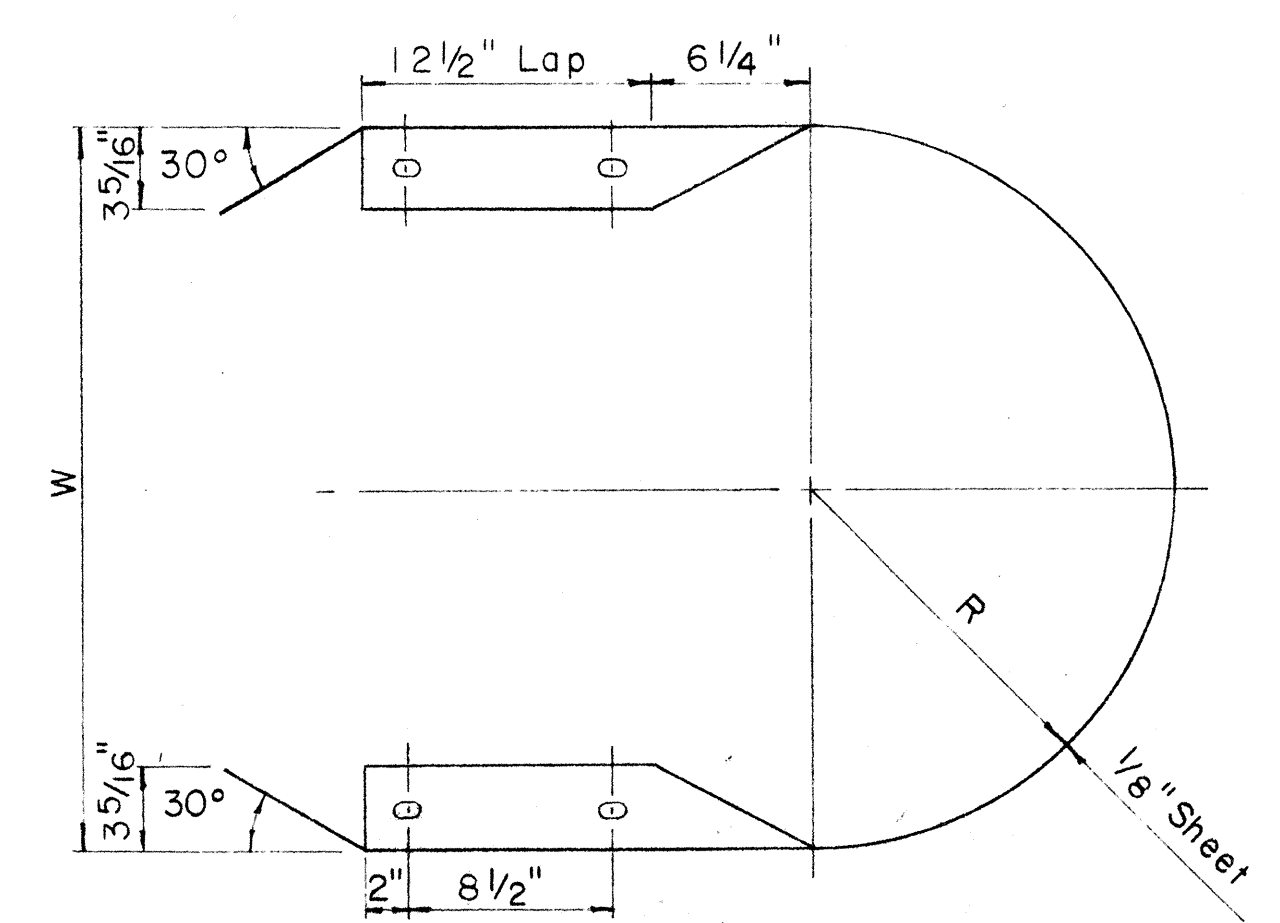


NOTE:
Concrete post shall be precast



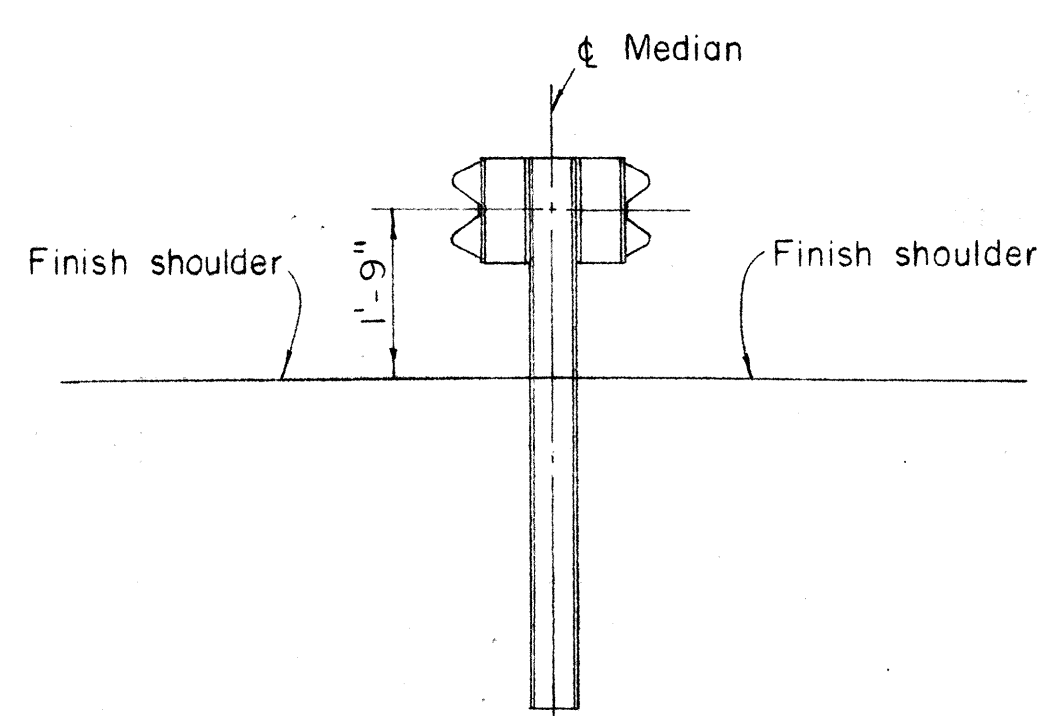
DETAIL OF CONCRETE POST

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

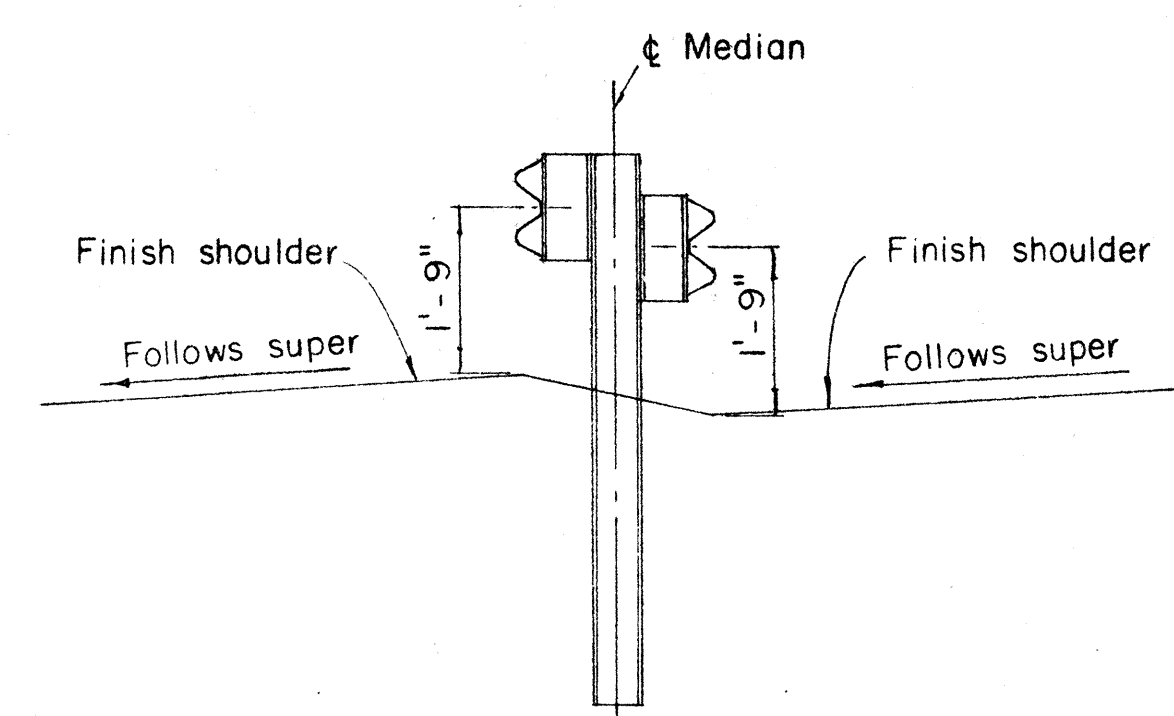


MEDIAN END
Scale: 1 1/2" = 1'-0"

MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJ 6)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJ 6)	24 3/8"	12 3/16"



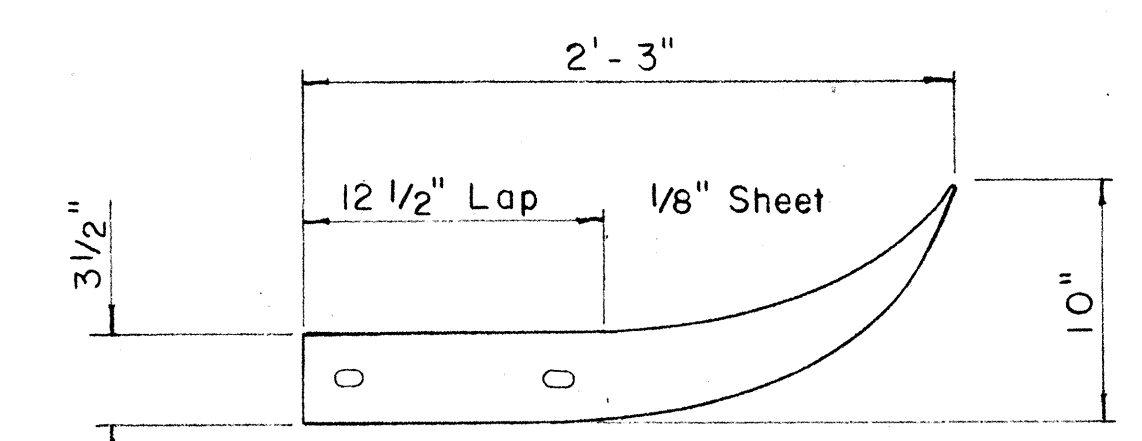
AT TANGENT SECTION



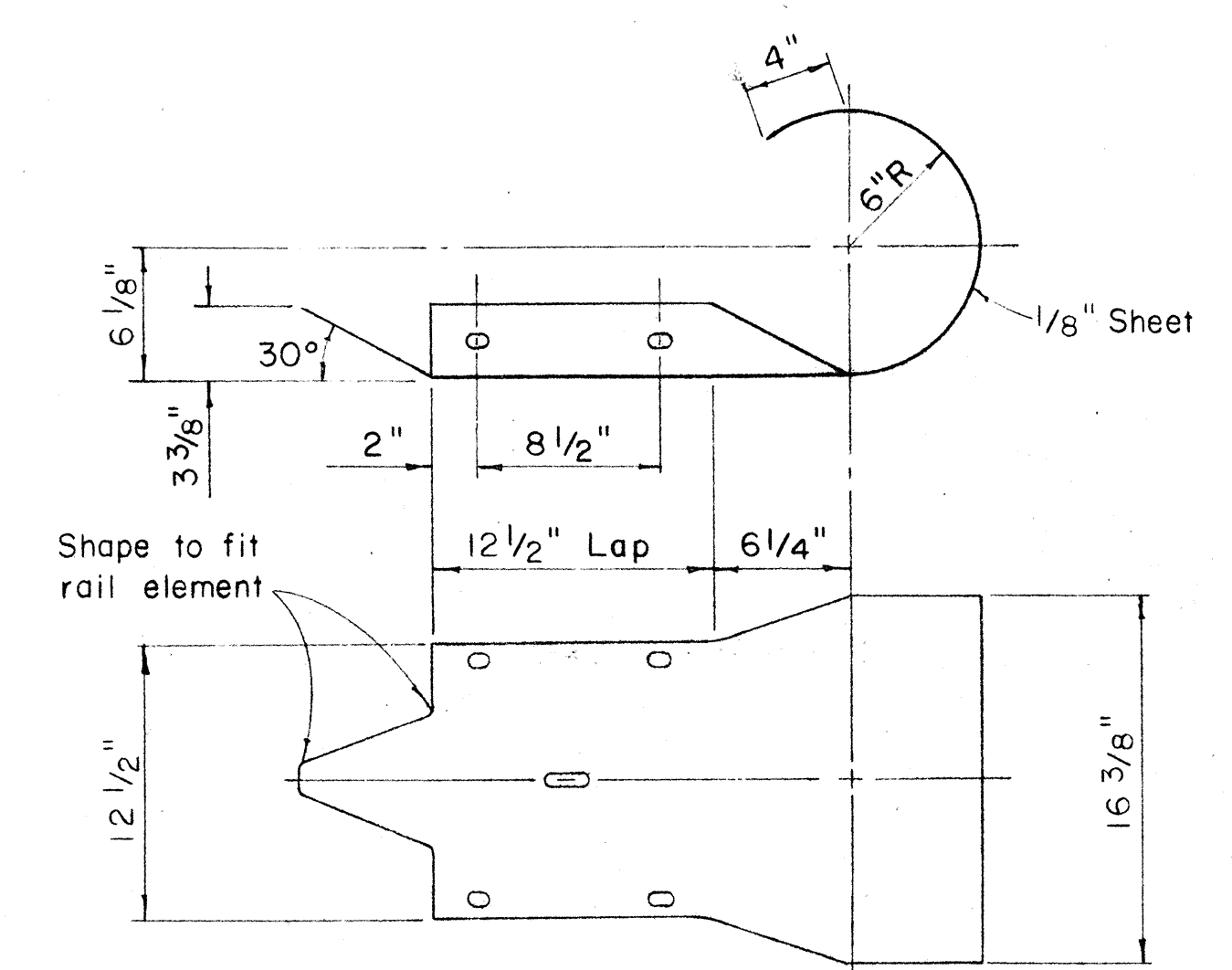
AT SUPER SECTION

TYPICAL MEDIAN GUARD RAIL DETAIL

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



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



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

REVISED: Oct. 27, 1967
REVISED: Sept. 1, 1967
REVISED: June 2, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

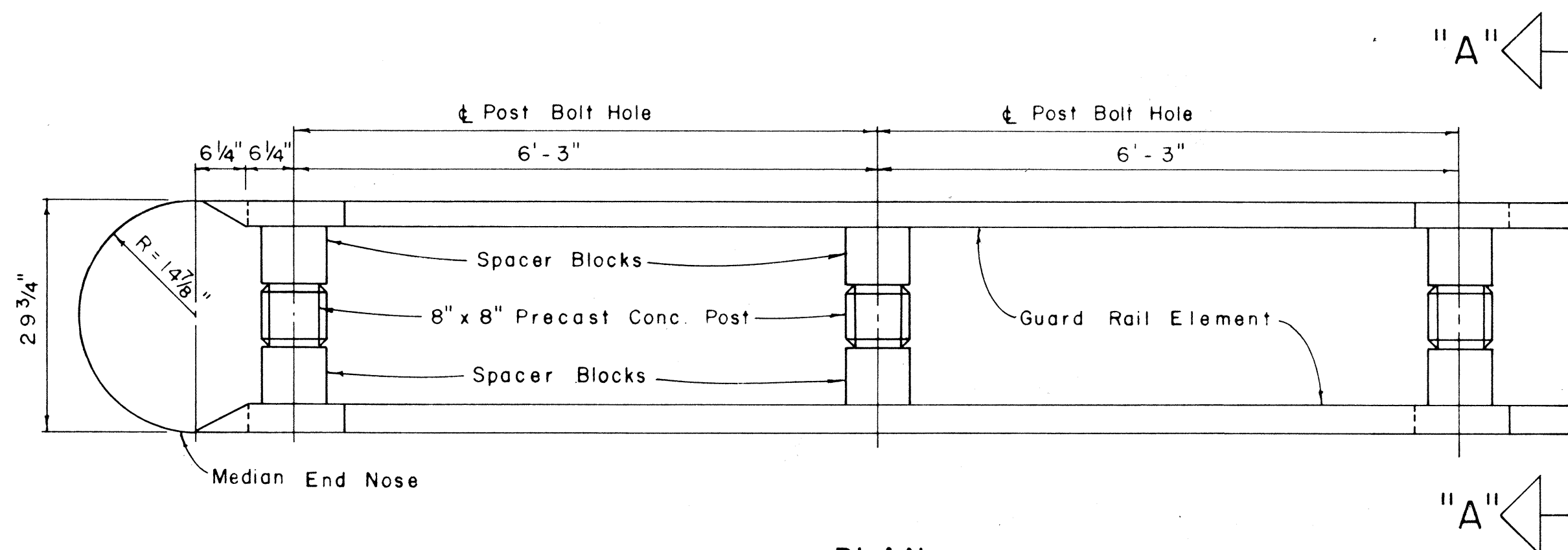
METAL GUARD RAIL

Scale: as noted

SHEET No. 5 OF 7 SHEETS

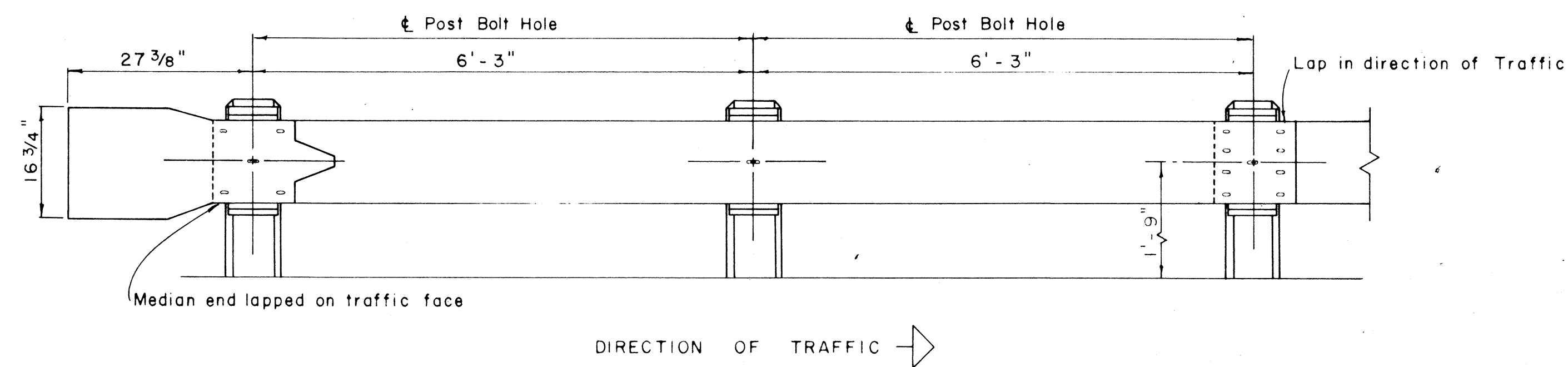
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-111-1(20)	1967	28	101

5 UNIT 4



PLAN

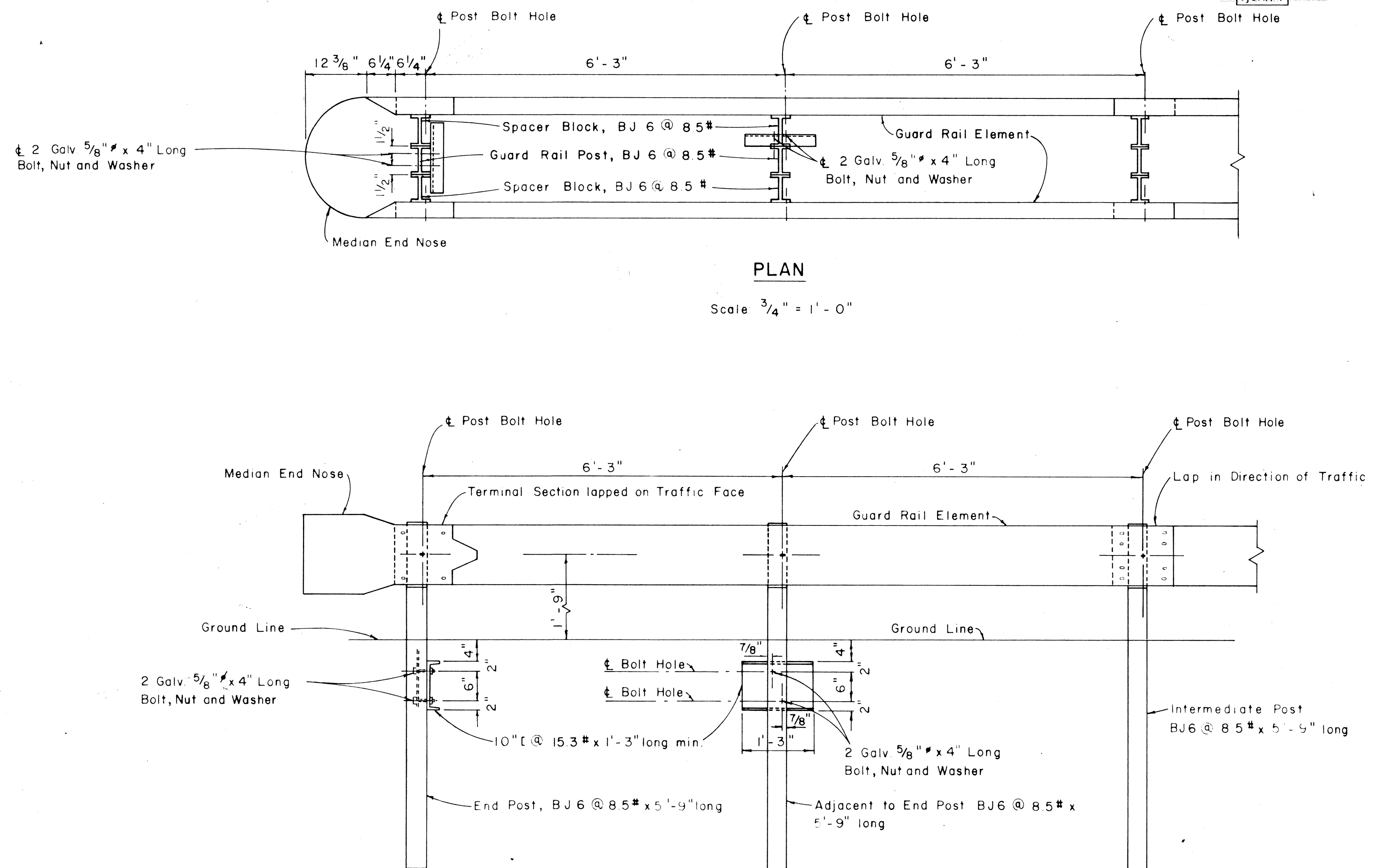
Scale $\frac{3}{4}$ " = 1' - 0"



ELEVATION

METAL GUARD RAIL ON CONCRETE POSTS AND WOOD SPACER BLOCKS

Scale $\frac{3}{4}$ " = 1' - 0"



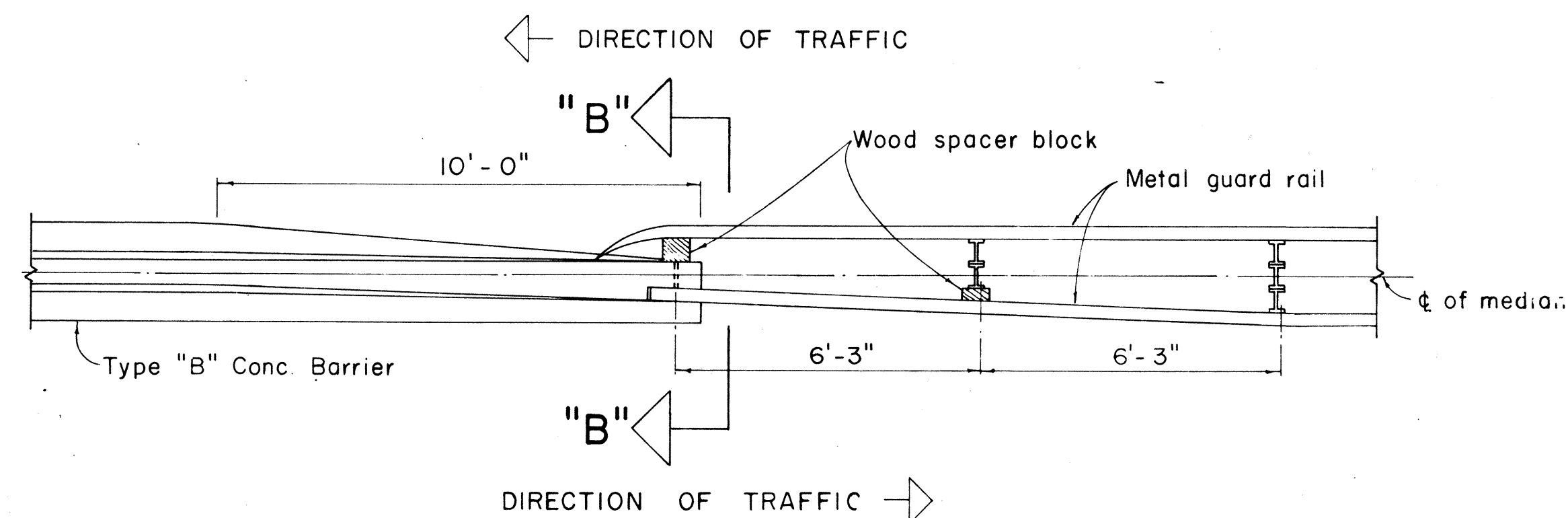
PLAN

Scale $\frac{3}{4}$ " = 1' - 0"

ELEVATION

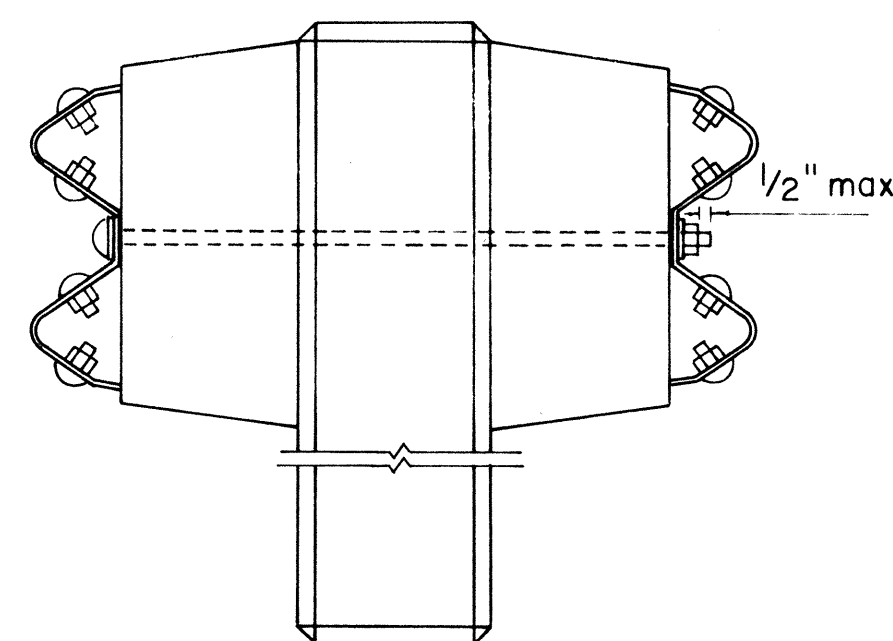
METAL GUARD RAIL ON METAL POSTS AND METAL SPACER BLOCKS

Scale $\frac{3}{4}$ " = 1' - 0"



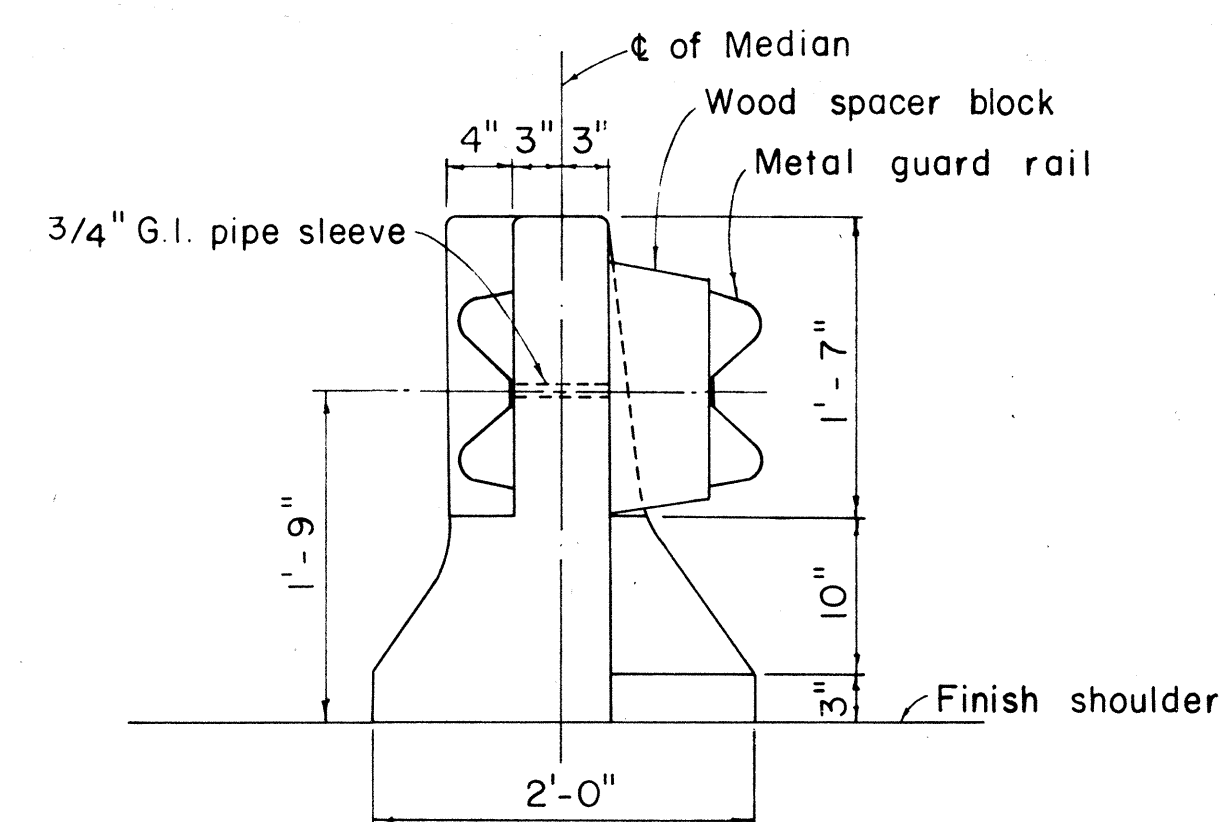
TYPE "B" CONCRETE BARRIER TO METAL GUARD RAIL

Scale $\frac{3}{8}$ " = 1' - 0"



SECTION "A-A"

Scale: $1\frac{1}{2}$ " = 1' - 0"



SECTION "B-B"

Scale: 1" = 1' - 0"

REVISED: October 25, 1967
REVISED: August 10, 1967

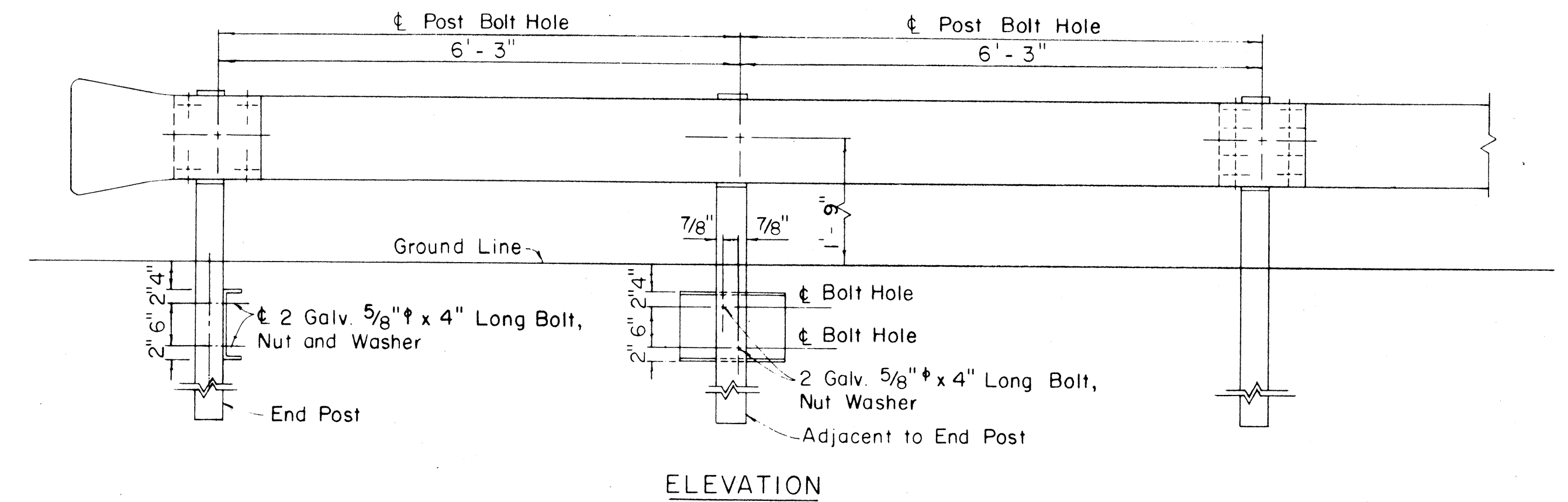
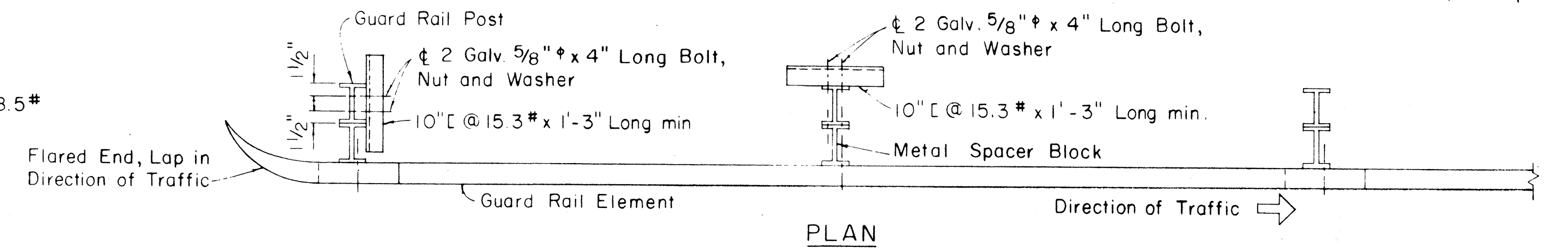
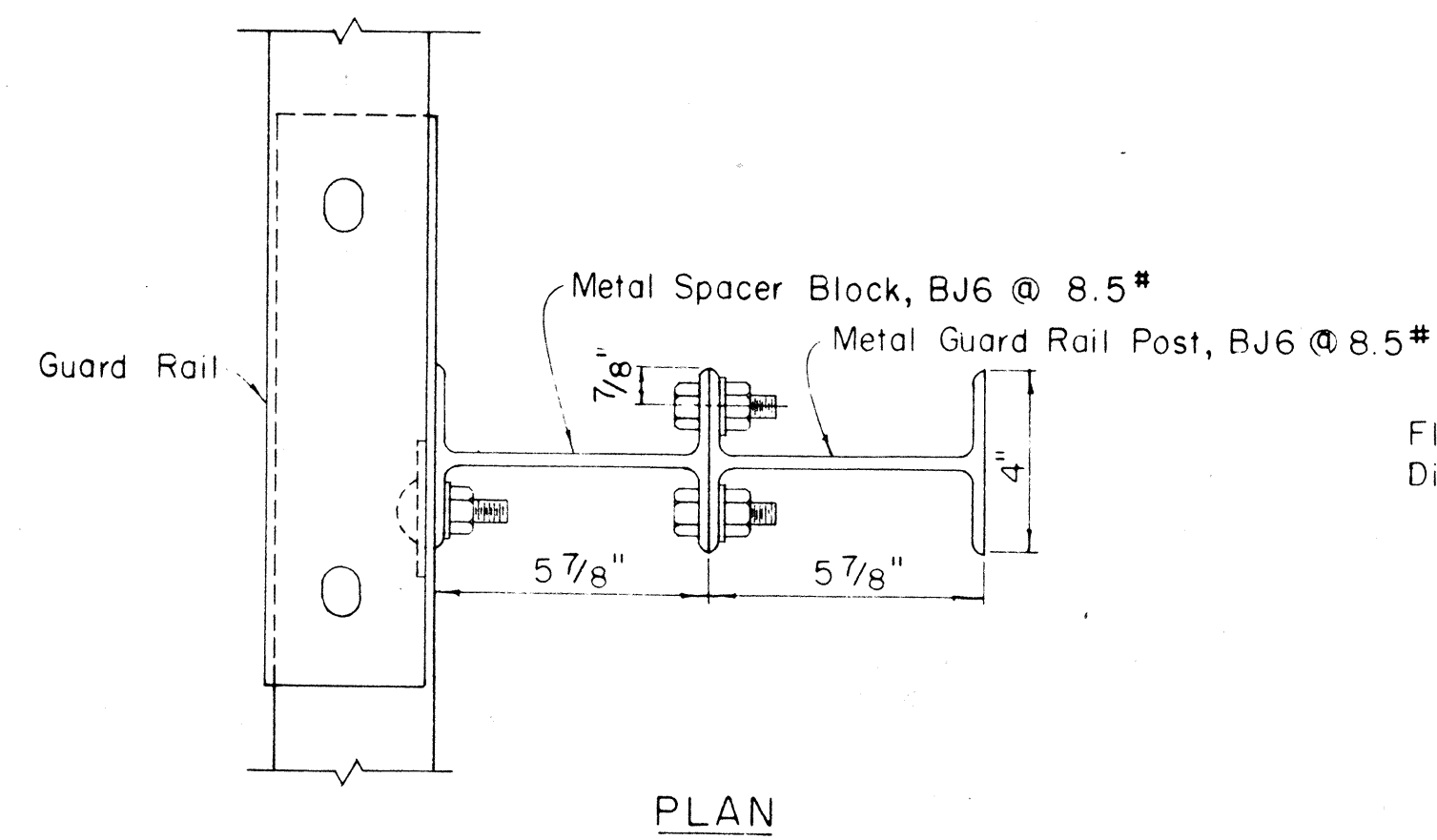
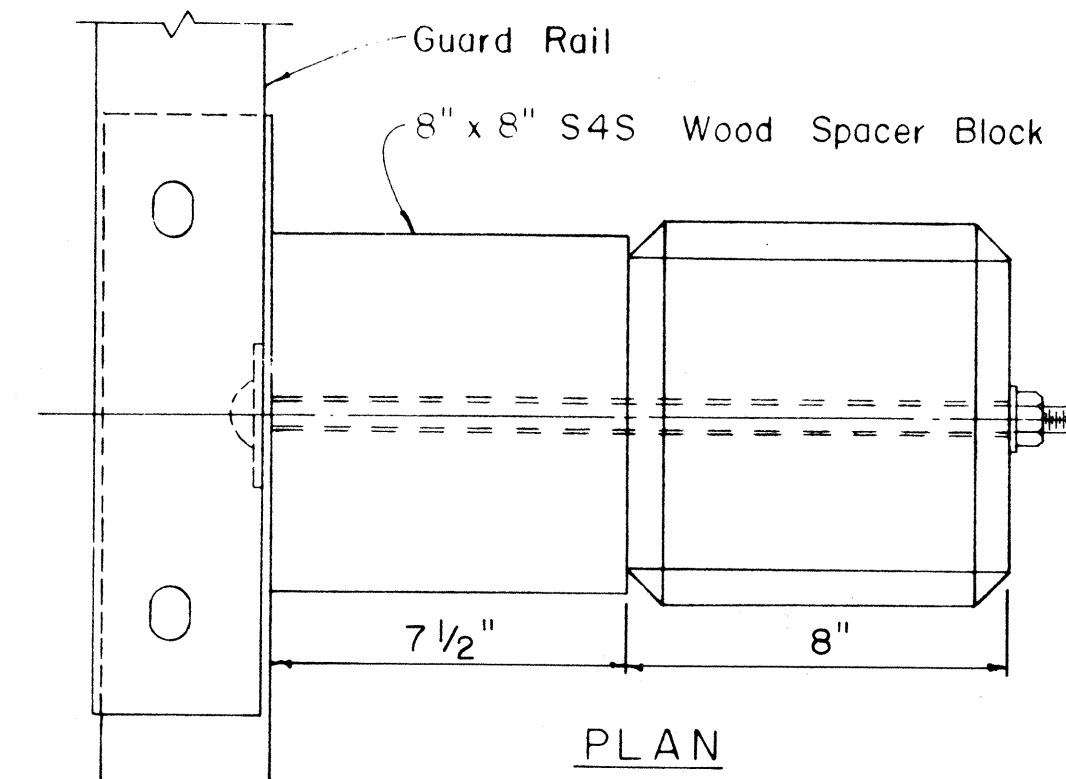
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SHEET No. 6 OF 7 SHEETS

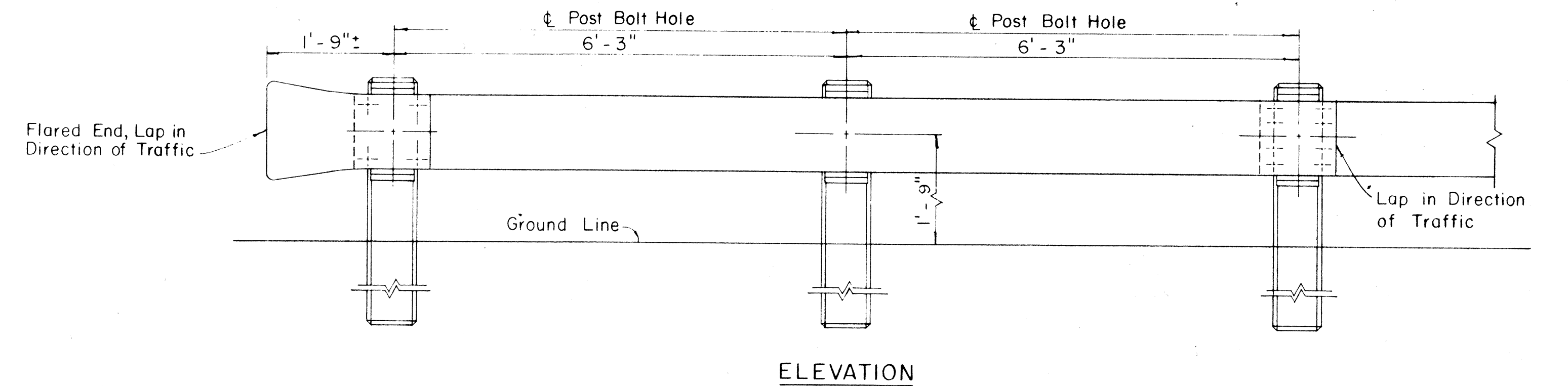
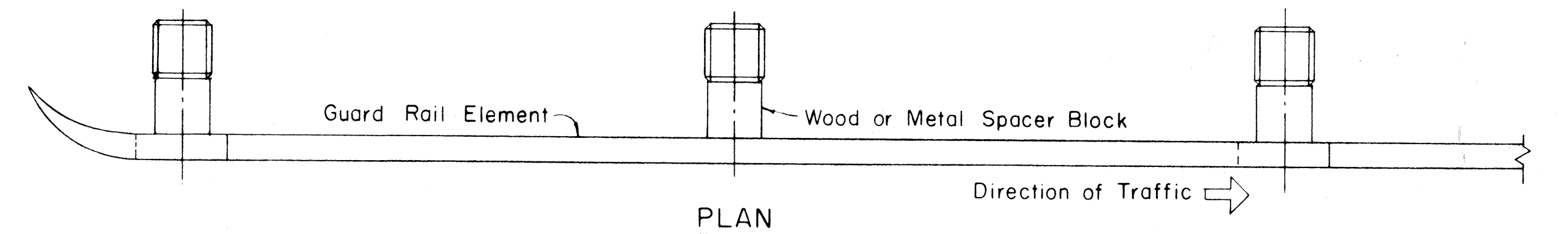
28

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	HAWAII	HA-11(80)	1967	29	101
5, UNIT 4					



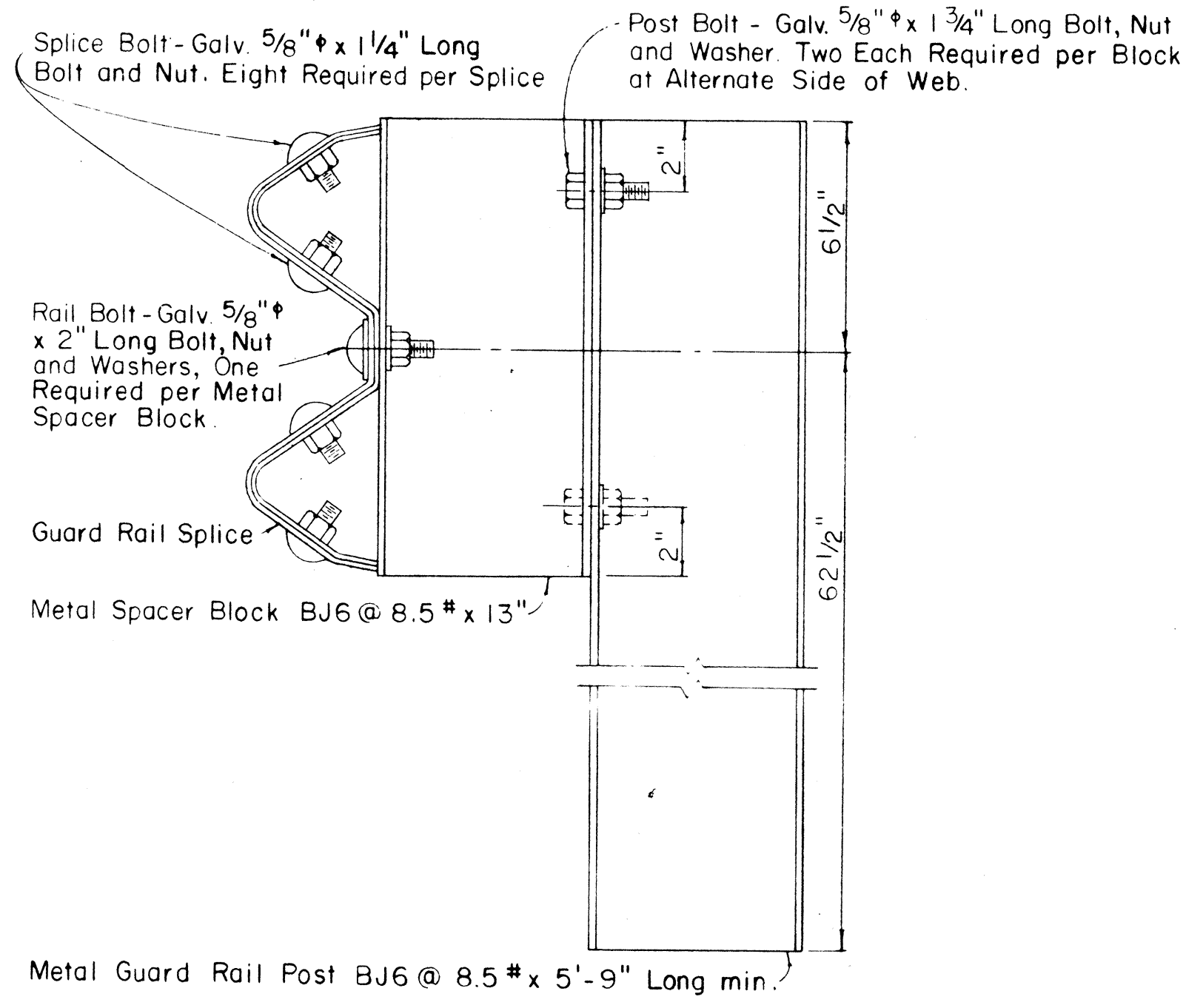
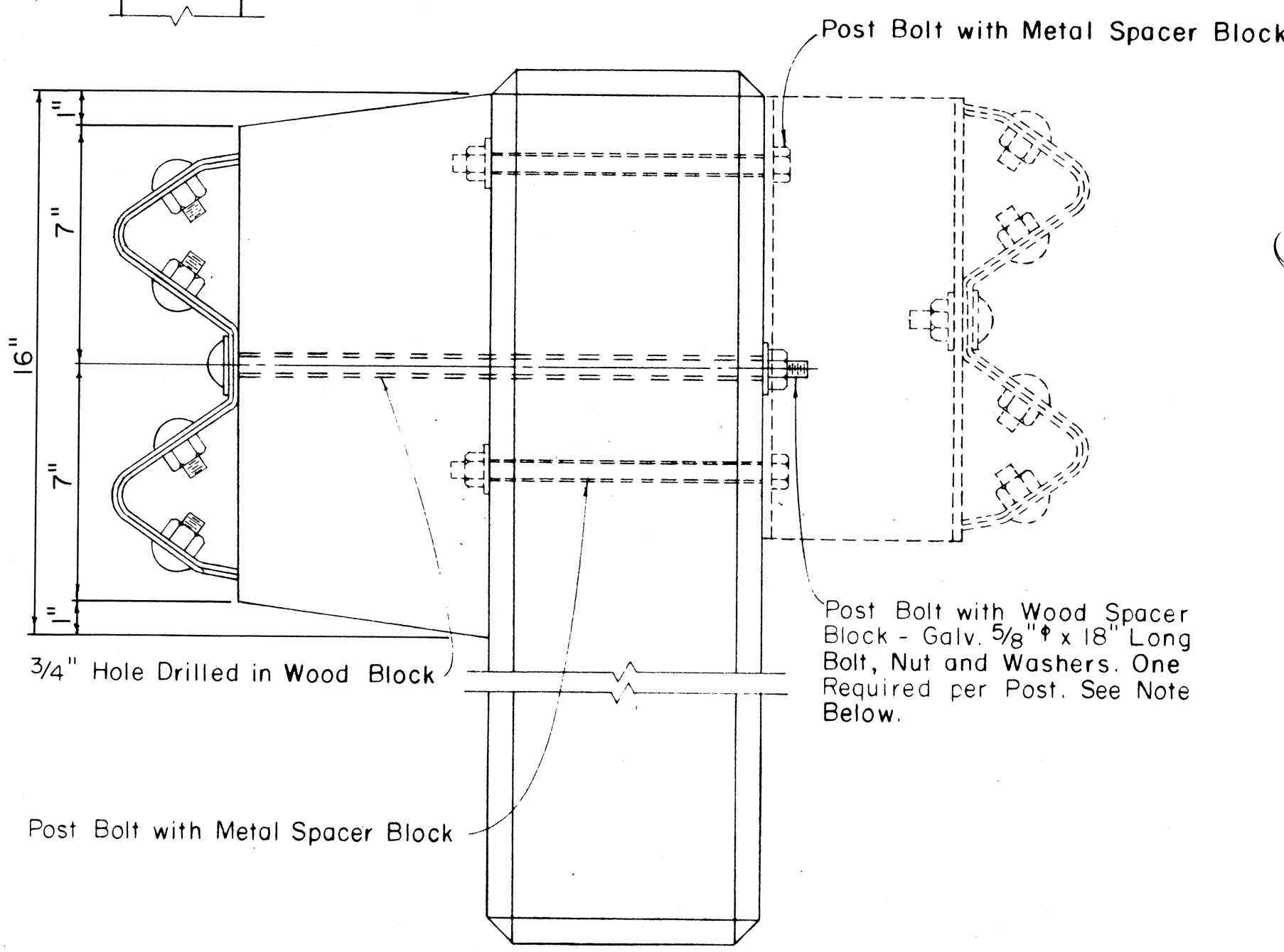
METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

Scale: 3/4" = 1' - 0"



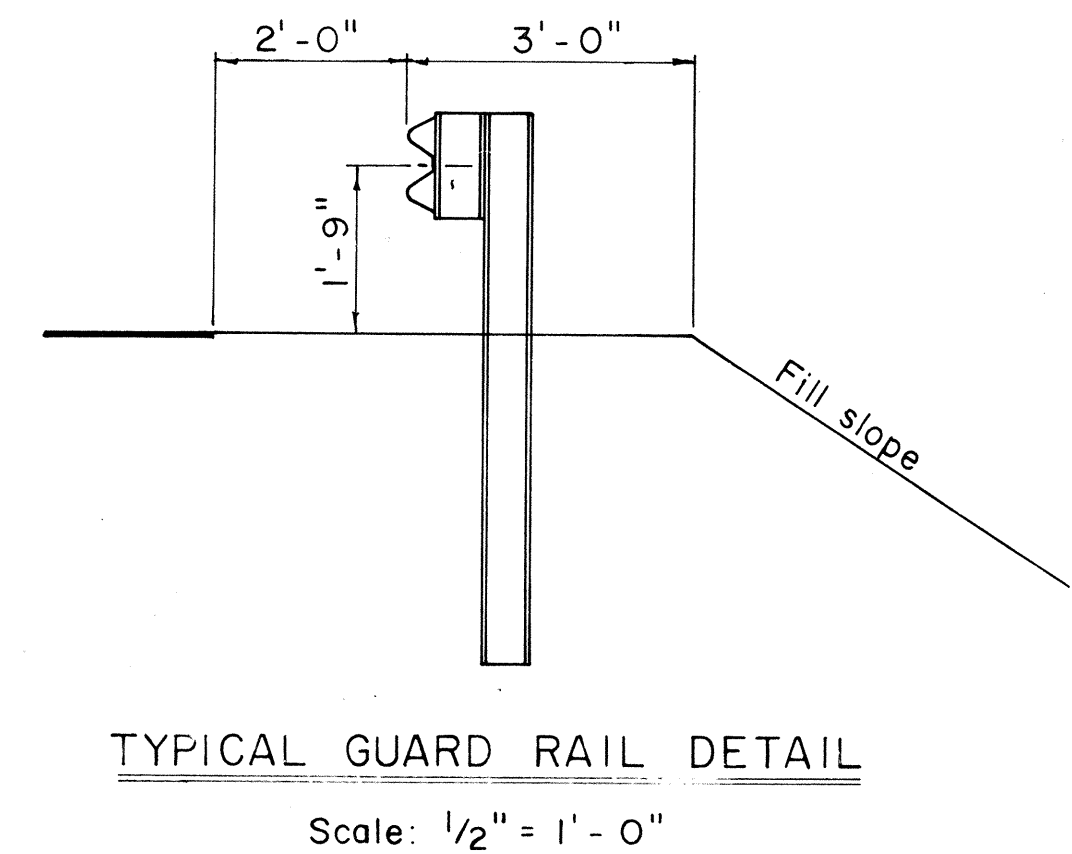
METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

Scale: 3/4" = 1' - 0"



SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

Scale: 3" = 1' - 0"



SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

Scale: 3" = 1' - 0"

NOTE: Single Guard Rails Shown. For Double Guard Rails Additional Spacer Blocks and Rail Elements Required on Opposite Side of Posts. See Bolt Schedule for Required Bolt Lengths.

REVISED: October 27, 1967
REVISED: August 10, 1967

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL

Scale: as noted

SHEET No. 7 OF 7 SHEETS