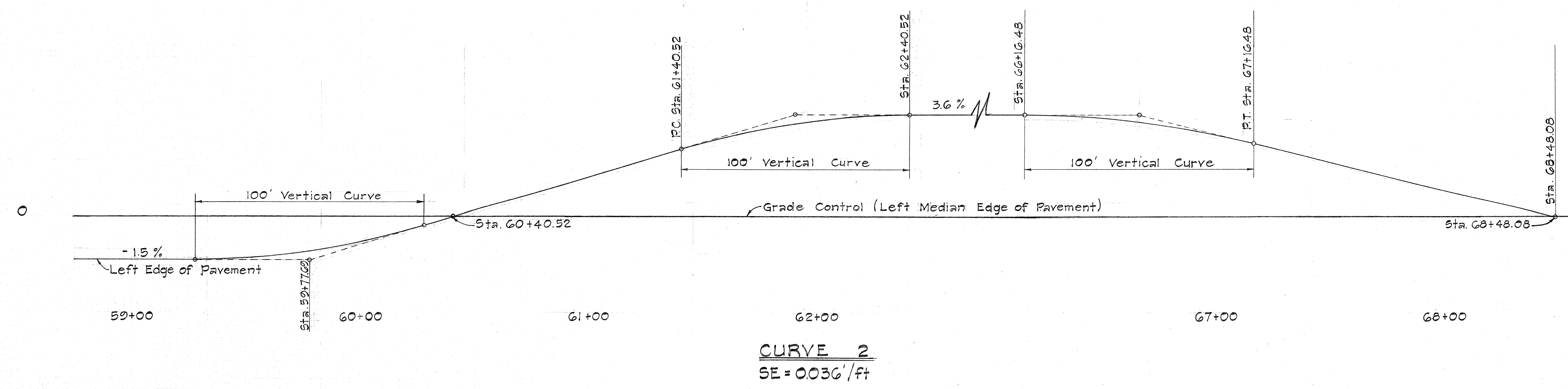
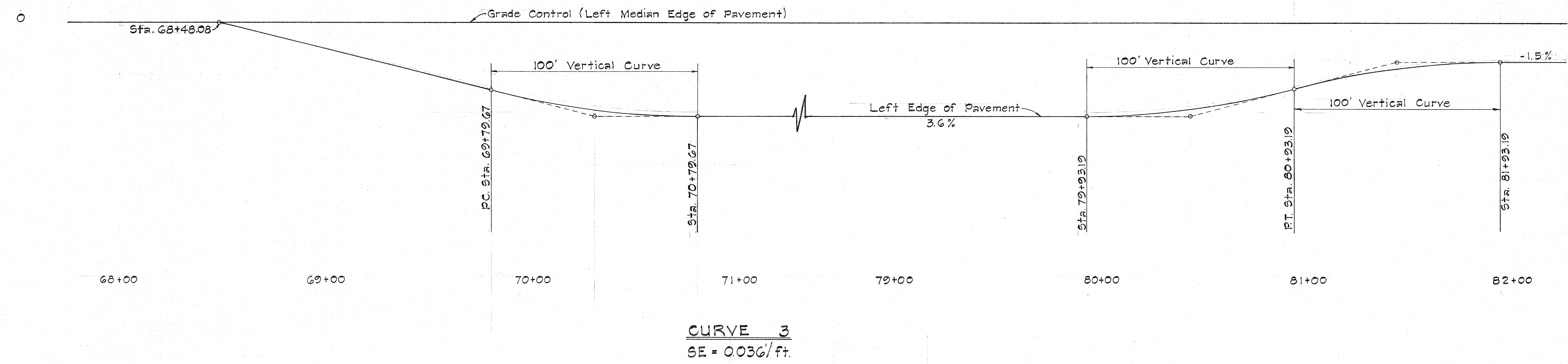
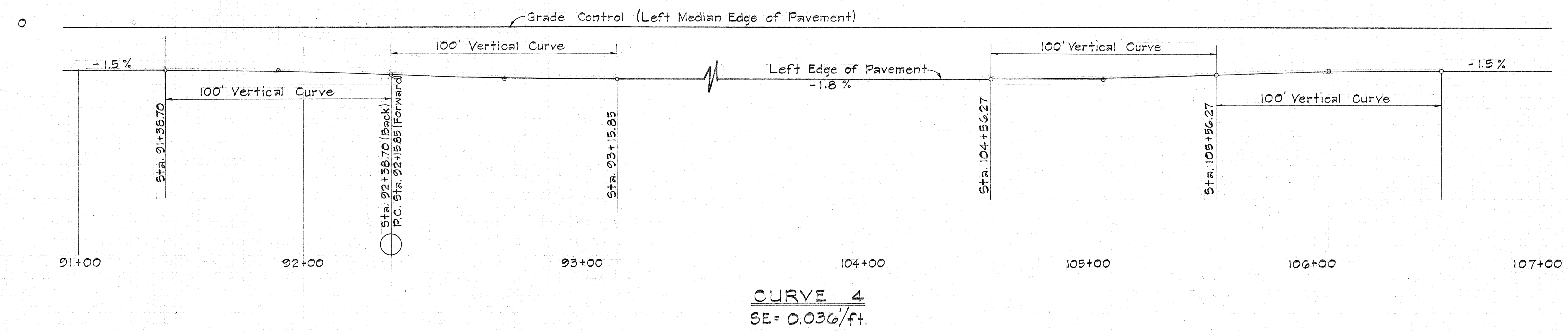


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-083-1(2), Unit I	1966	10	83



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SUPERELEVATION DIAGRAM

KAMEHAMEHA HIGHWAY
F.A. Proj. No. F-083-1(2), Unit I

Scale: Vert. 1" = 2'
HORIZ. 1" = 25'

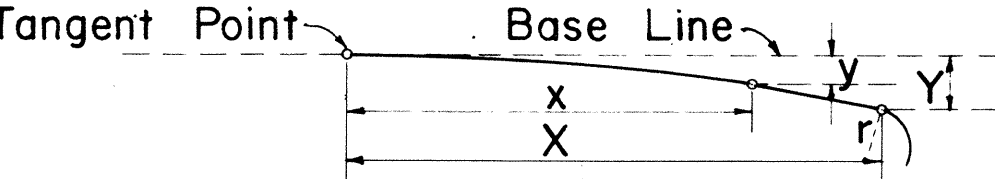
Date: Oct. 1966

SHEET No. 1 OF 3 SHEETS

These Curves are based up the following formula:

$$Y = \frac{Yx^2}{X^2}$$

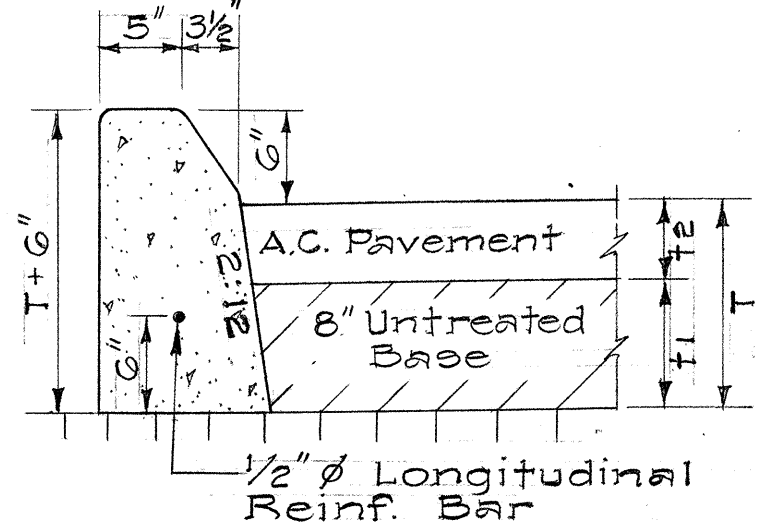
Where: y = any offset, x = its tangent distance
X = maximum tangent distance
Y = maximum offset



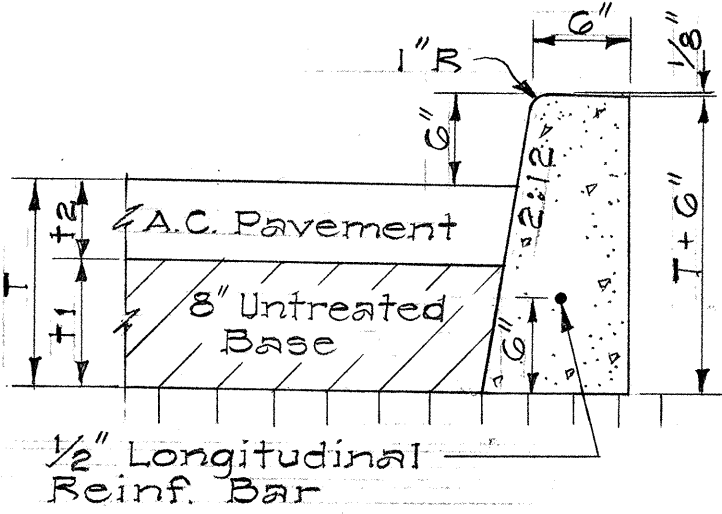
PLAN

SCHEDULE						
RATIO CURVE DATA						
Dist in ft.(x)	Offset in Feet (y)					
	2:30	3:45	5:50	7:70	9:90	10:100
10	0.22	0.15	0.20	0.14	0.11	0.10
20	0.89	0.59	0.80	0.57	0.44	0.40
30	2.00	1.33	1.80	1.29	1.00	0.90
40		2.37	3.20	2.29	1.78	1.60
50			5.00	3.57	2.78	2.50
60				5.14	4.00	3.60
70				7.00	5.44	4.90
80					7.11	6.40
90					9.00	8.10
100						10.00

Note: Any ratio curve in the tabulation is designated by the maximum offset and its tangent distance.

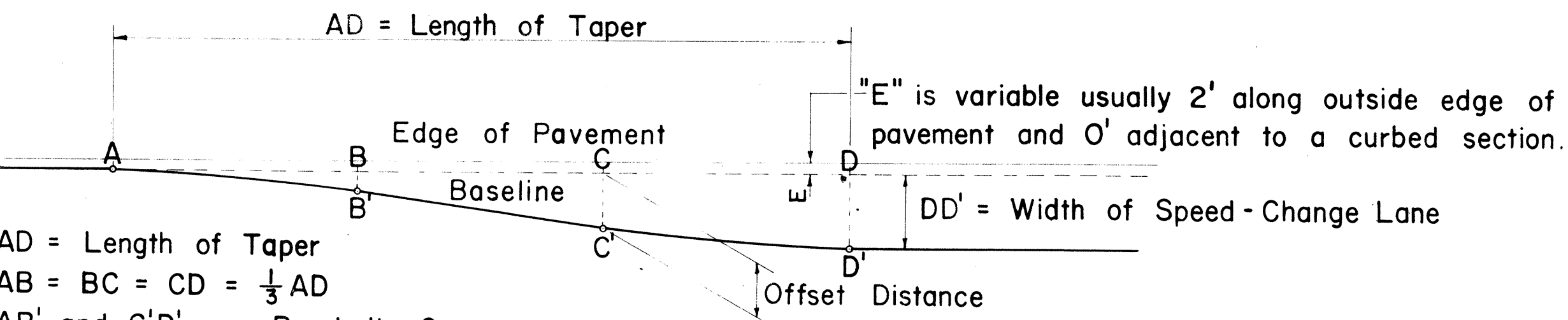


TYPE "A" & "B" CURB
Scale: 1"=1'-0"



TYPE "D" CURB
Scale: 1"=1'-0"

PARABOLIC CURVE OFFSETS



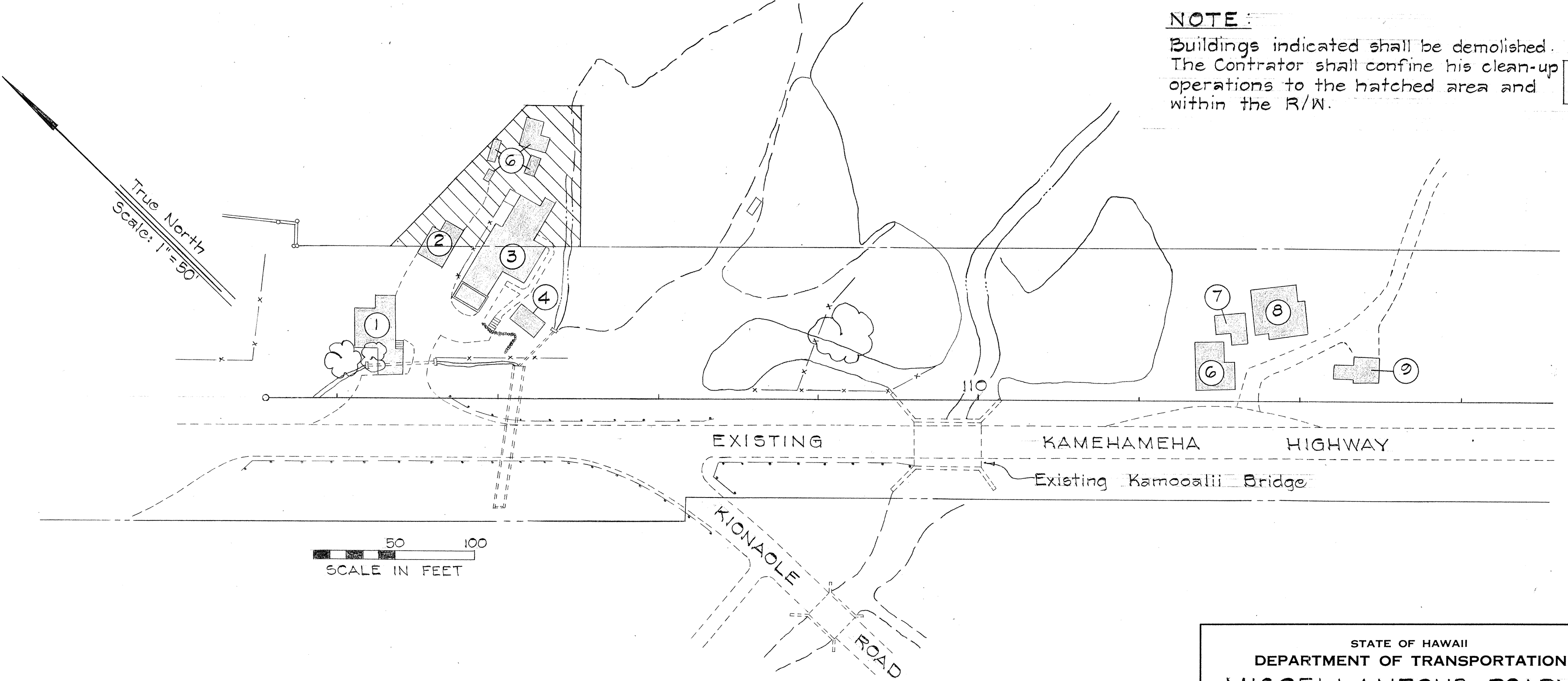
AD = Length of Taper
AB = BC = CD = 1/3 AD
AB' and C'D' are Parabolic Curves

PLAN
Scale: 1" = 20'

SCHEDULE											
FOLLOWING TABLE GIVES OFFSETS FROM BASELINE PARALLEL TO EDGE OF PAVEMENT AT INTERVALS MEASURED FROM POINT "A" ADD "E" FOR MEASUREMENT FROM EDGE OF PAV'T.											
OFFSET FROM BASELINE (FEET)				LENGTH OF TAPER (FEET) = AD							
				90	120	150	180	210	240	270	300
DD=10' DD=11' DD=12' DD=14'				DISTANCE FROM POINT "A" (FEET)							
0	0	0	0	0	0	0	0	0	0	0	0
0.16	0.17	0.19	0.22	7.5	10	12.5	15	17.5	20	22.5	25
0.62	0.69	0.75	0.88	15	20	25	30	35	40	45	50
1.41	1.55	1.69	1.97	22.5	30	37.5	45	52.5	60	67.5	75
*2.50	*2.75	*3.00	*3.50	30	40	50	60	70	80	90	100
*5.00	*5.50	*6.00	*7.00	45	60	75	90	105	120	135	150
*7.50	*8.25	*9.00	*10.50	60	80	100	120	140	160	180	200
8.59	9.45	10.31	12.03	67.5	90	112.5	135	157.5	180	202.5	225
9.38	10.31	11.25	13.13	75	100	125	150	175	200	225	250
9.84	10.83	11.81	13.78	82.5	110	137.5	165	192.5	220	247.5	275
10.00	11.00	12.00	14.00	90	120	150	180	210	240	270	300

* Where edge of pavement is a curve, neither Baseline nor Taper between B' and C' will be a tangent. Use proportional offset from B' to C'

TAPER FOR SPEED - CHANGE LANES

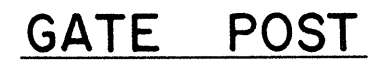
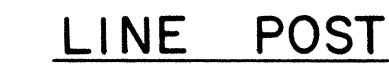
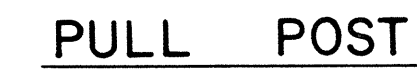
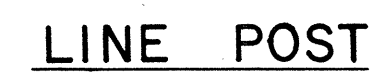
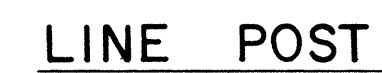
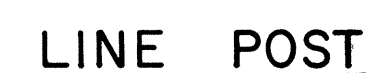


NOTE: Buildings indicated shall be demolished. The Contrator shall confine his clean-up operations to the hatched area and within the R/W.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
MISCELLANEOUS ROADWAY DETAILS
KAMEHAMEHA HIGHWAY
F.A. Proj. No. F-083-1(2), Unit 1
Scale: As Noted Date: Oct. 1966
SHEET NO 2 OF 8 SHEETS

ORIGINAL PLAN
DATE
DESIGNED BY
CHECKED BY
NOTE BOOK
QUANTITIES BY
No.

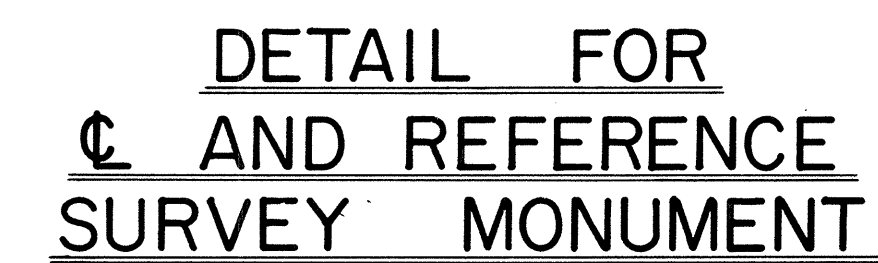
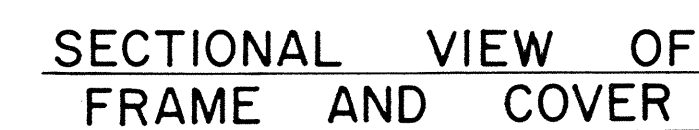
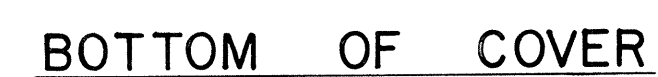
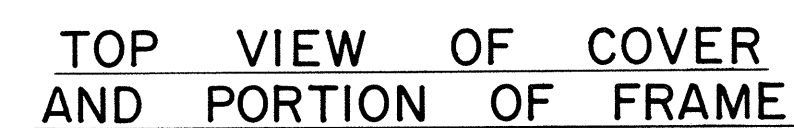
Unit 1



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



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

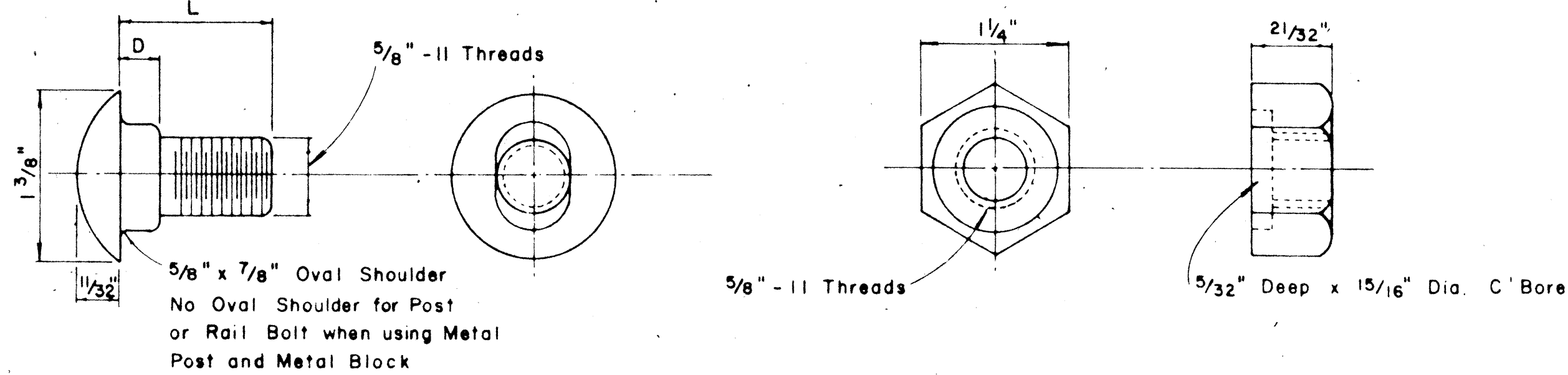


Scale: $\frac{1}{2}'' = 1' - 0''$

Scale: As Noted Date: Oct. 1966

SHEET NO 3 OF 8 SHEETS

BOLT DIMENSIONS		
TYPE BOLT	D	L
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/Double Wood Blocks	3/32"	25"
Rail Bolt for Metal Block	3/32"	2"
Post Bolt for Metal Post w/Metal Block	0"	1 3/4"
Post Bolt for Conc. Post w/Single Wood Block	3/32"	18"

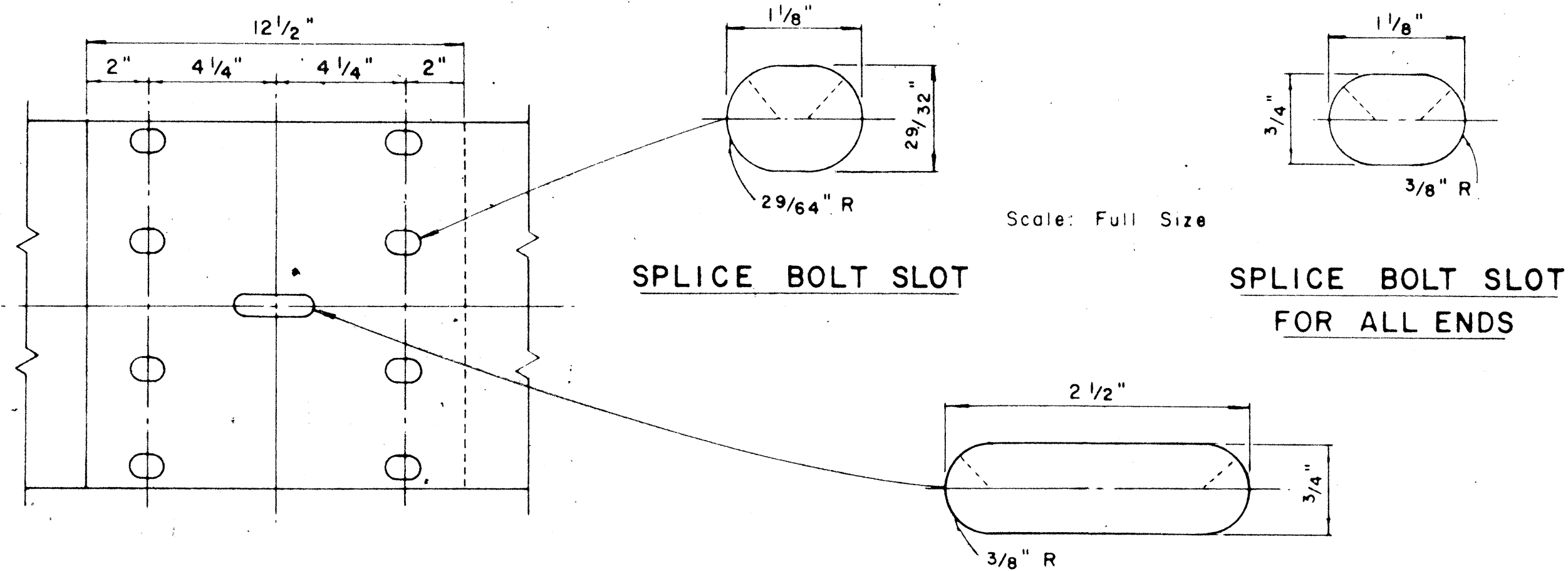


SPLICE RAIL AND POST BOLTS

Scale: Full Size

HEXAGON NUT

Scale: Full Size



SPLICE BOLT SLOT

SPLICE BOLT SLOT FOR ALL ENDS

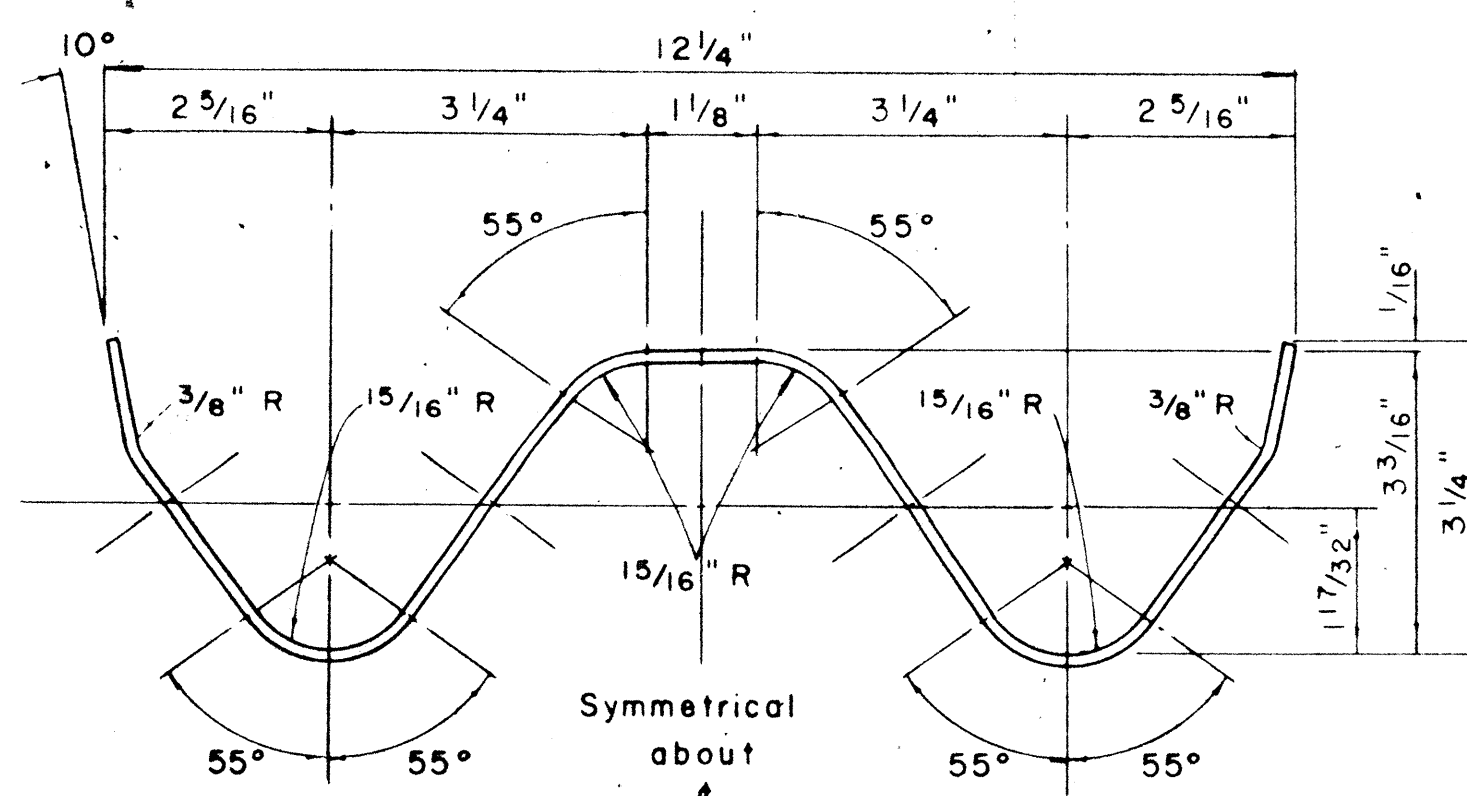
Scale: Full Size

RAIL SPLICE

Scale: 3" = 1' - 0"

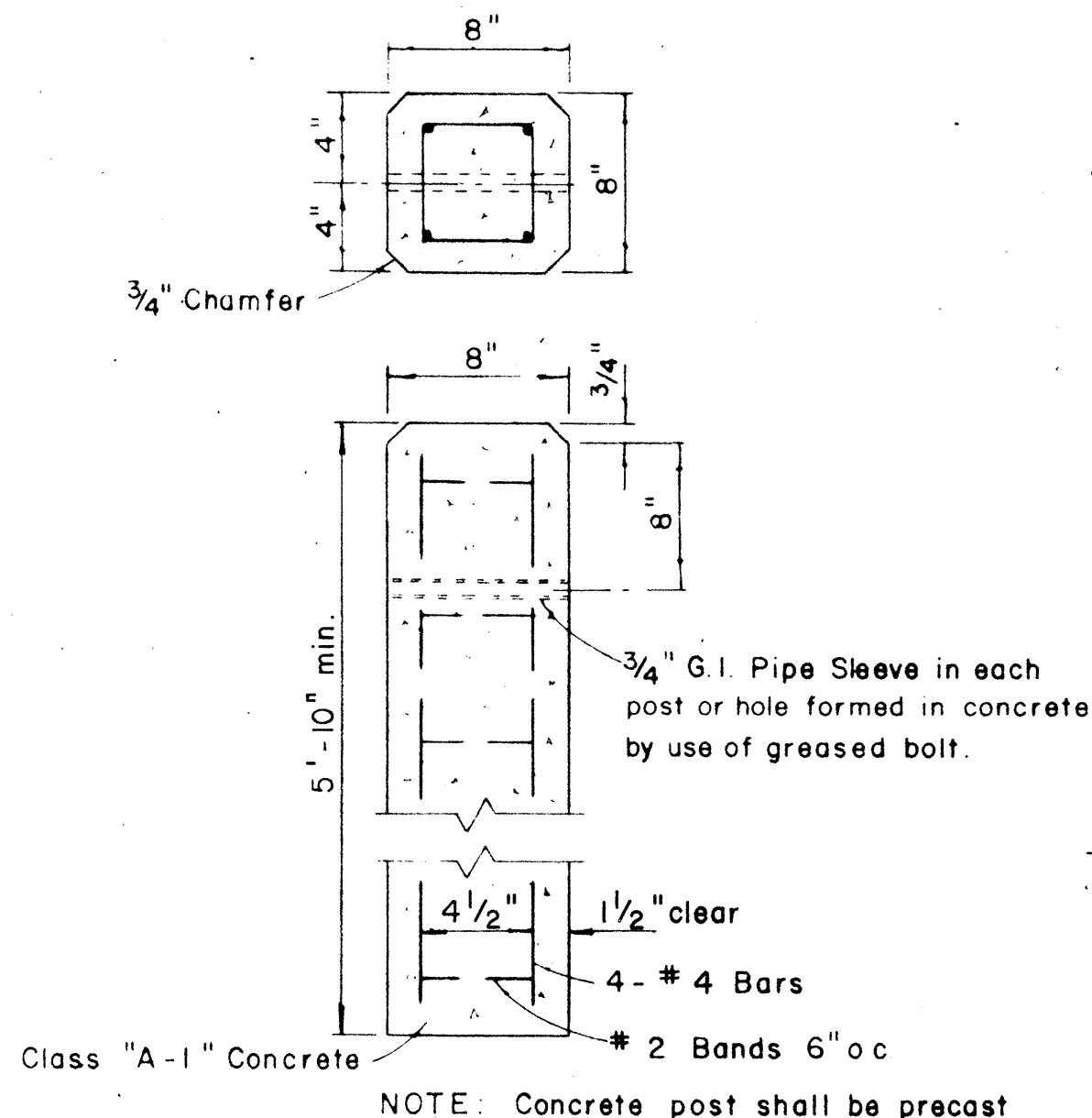
POST BOLT SLOT

Scale: Full Size



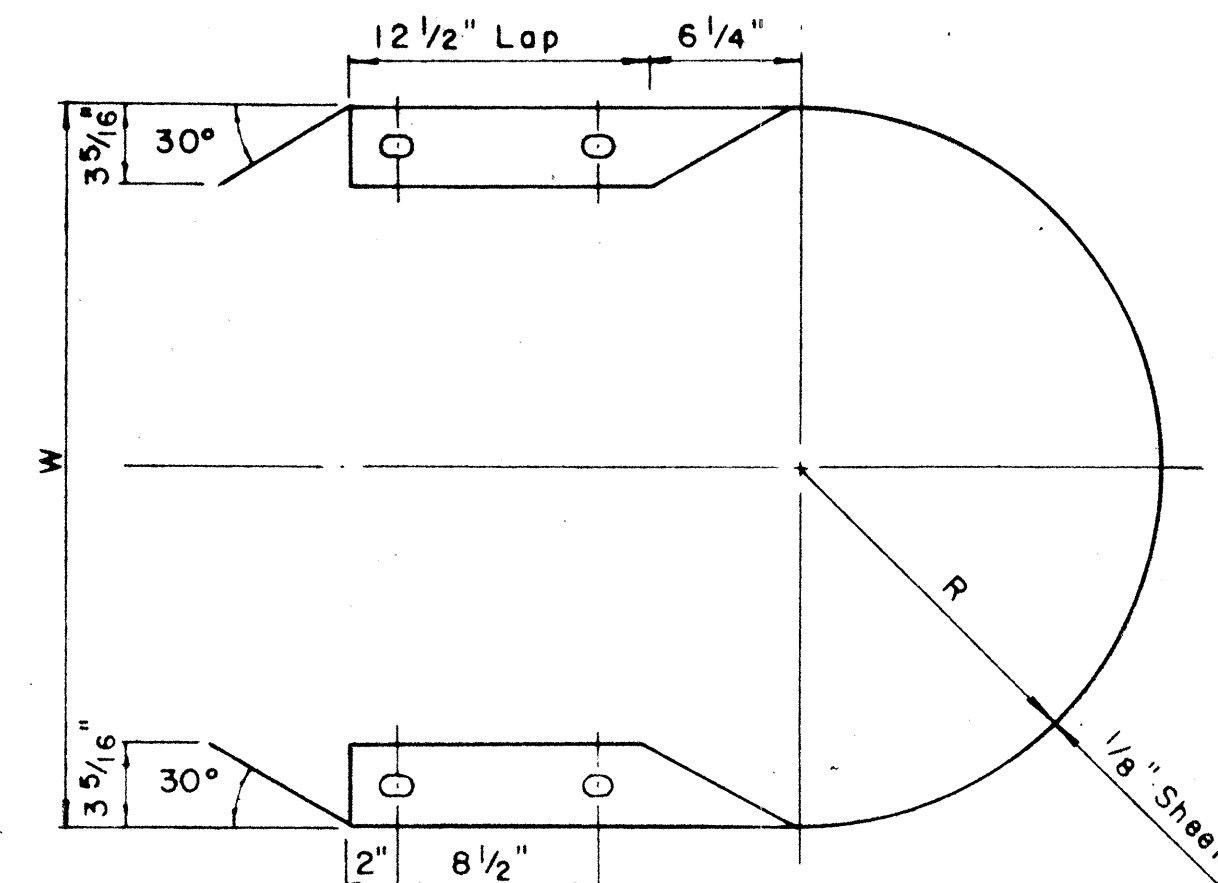
RAIL ELEMENT SECTION

Scale: 6" = 1' - 0"



DETAIL OF CONCRETE POST

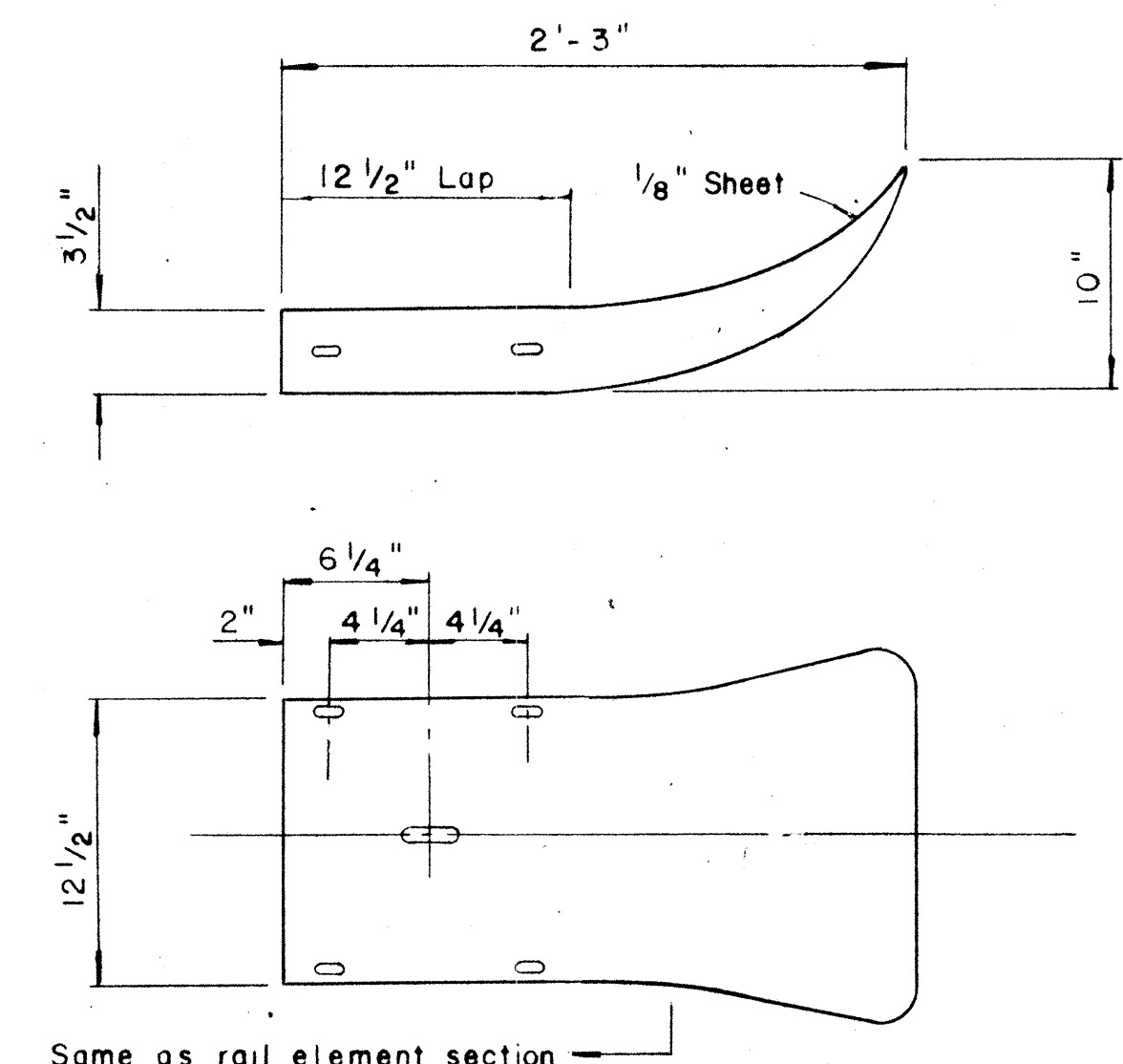
Scale: 1 1/2" = 1' - 0"



MEDIAN END

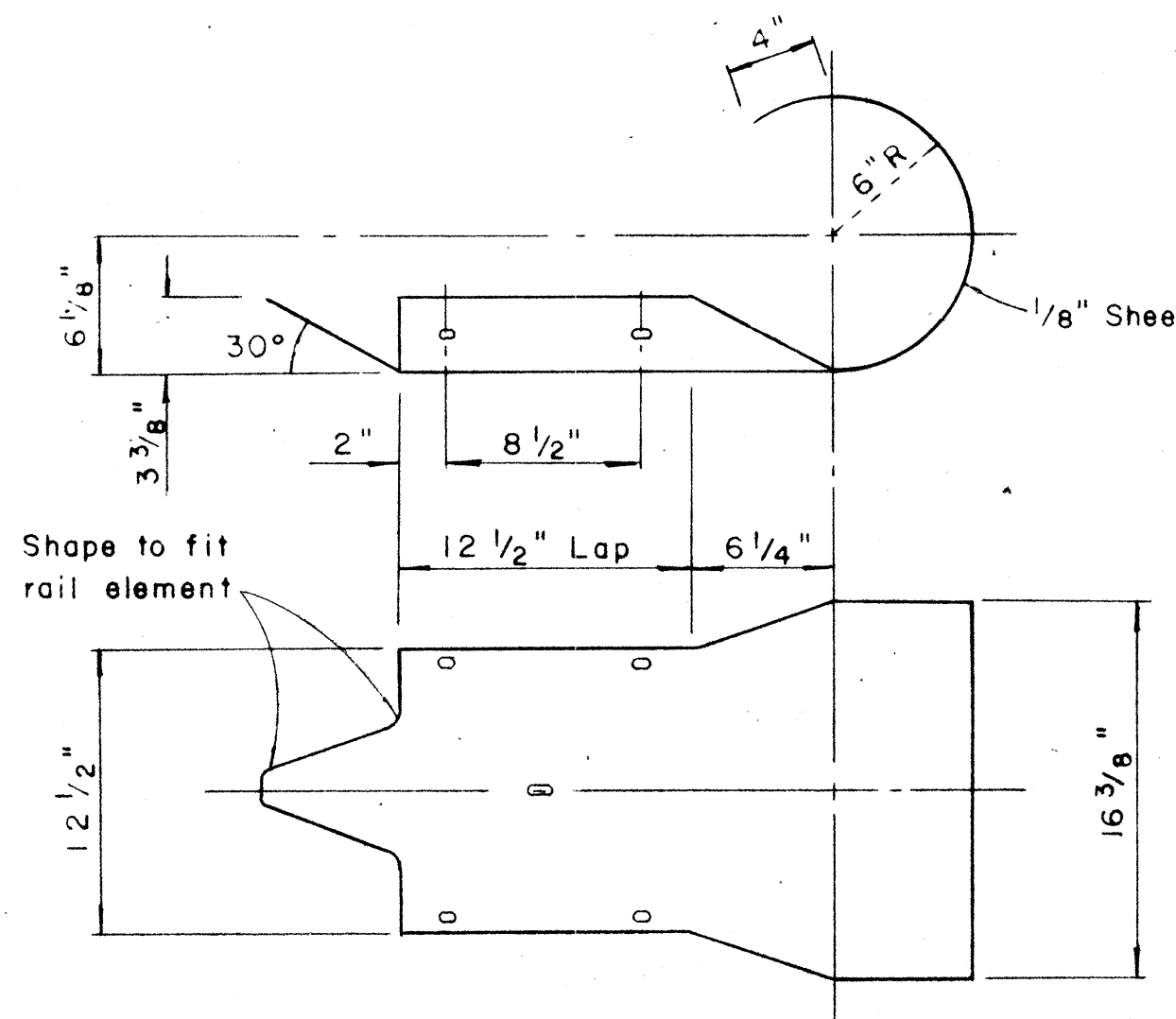
Scale: 1 1/2" = 1' - 0"

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 Metal Post with Metal Blocks (B J 6)	24 3/4"	12 3/8"



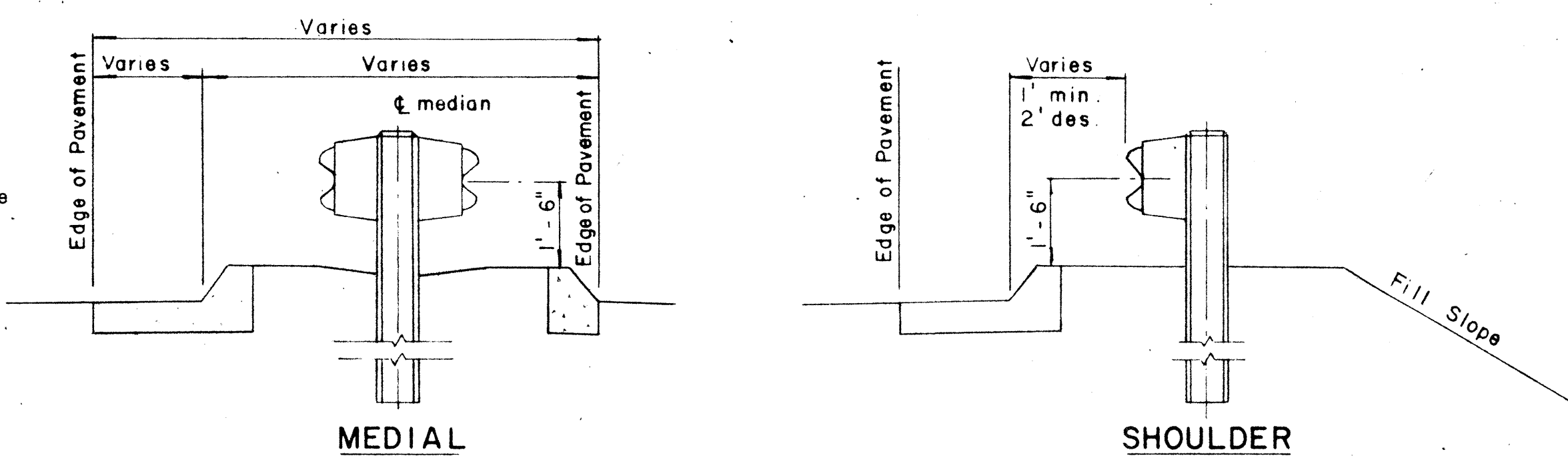
FLARED END

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



CURVED END

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



TYPICAL GUARD RAIL DETAIL

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

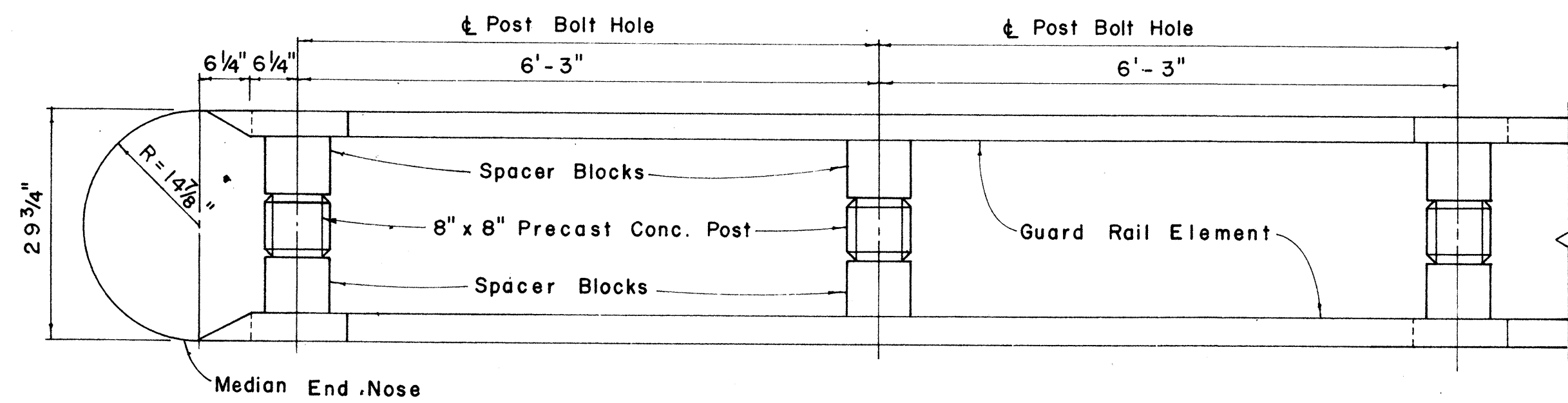
STANDARD DETAILS
METAL GUARD RAIL

Scale As Noted Date Oct. 1966

SHEET No. 4 OF 8 SHEETS

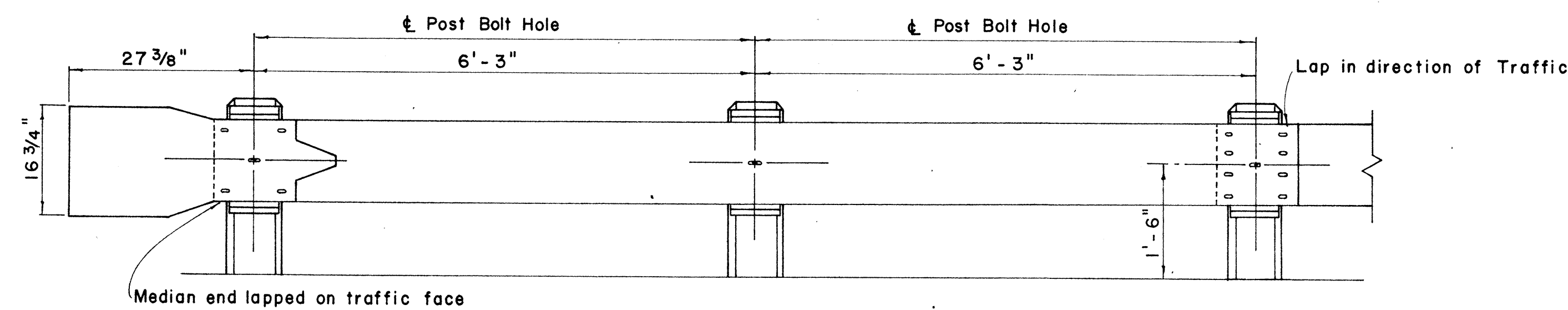
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	0083-1(2)	1966	14	83

Unit 1



PLAN

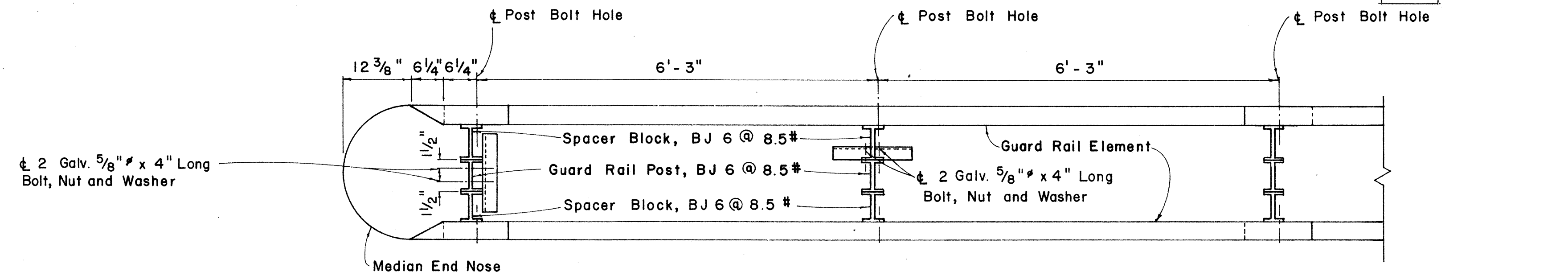
Scale: $\frac{3}{4}$ " = 1' - 0"



ELEVATION

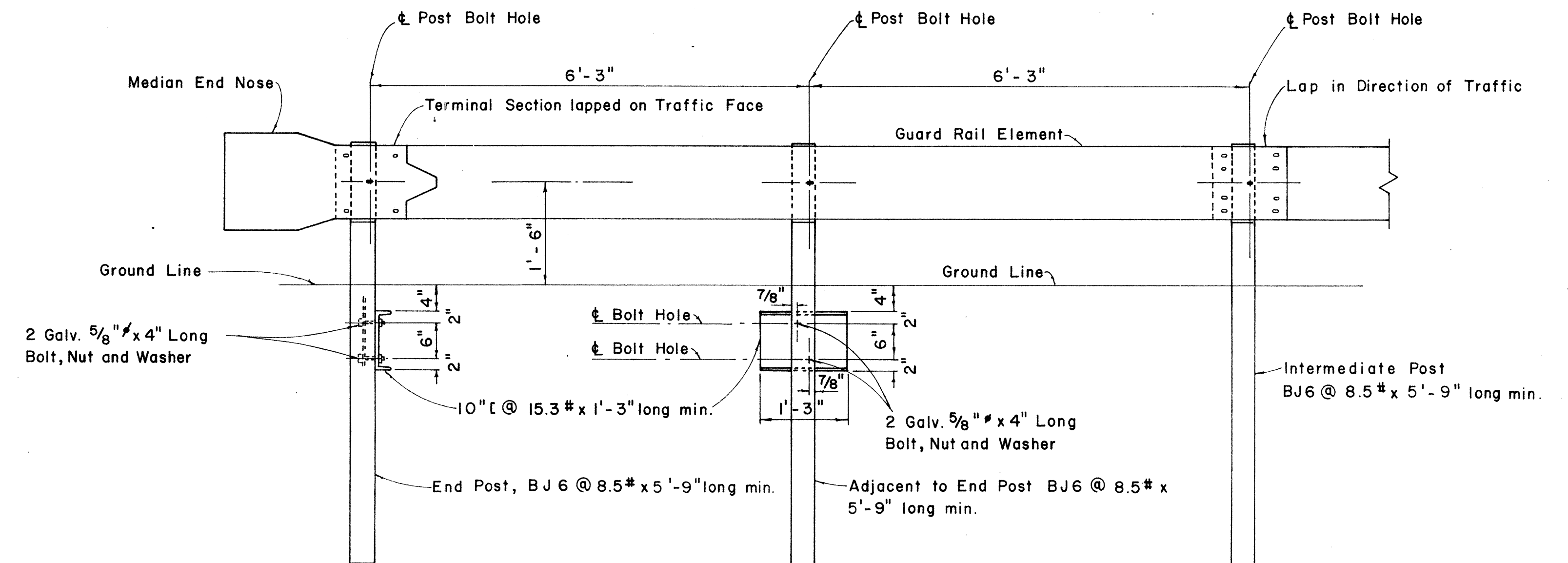
Scale: $\frac{3}{4}$ " = 1' - 0"

METAL GUARD RAIL ON CONCRETE POSTS AND WOOD SPACER BLOCKS



PLAN

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



ELEVATION

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

METAL GUARD RAIL ON METAL POSTS AND METAL SPACER BLOCKS

DETAIL FOR DOUBLE METAL GUARD RAIL IN MEDIAN

Scale: As Shown

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

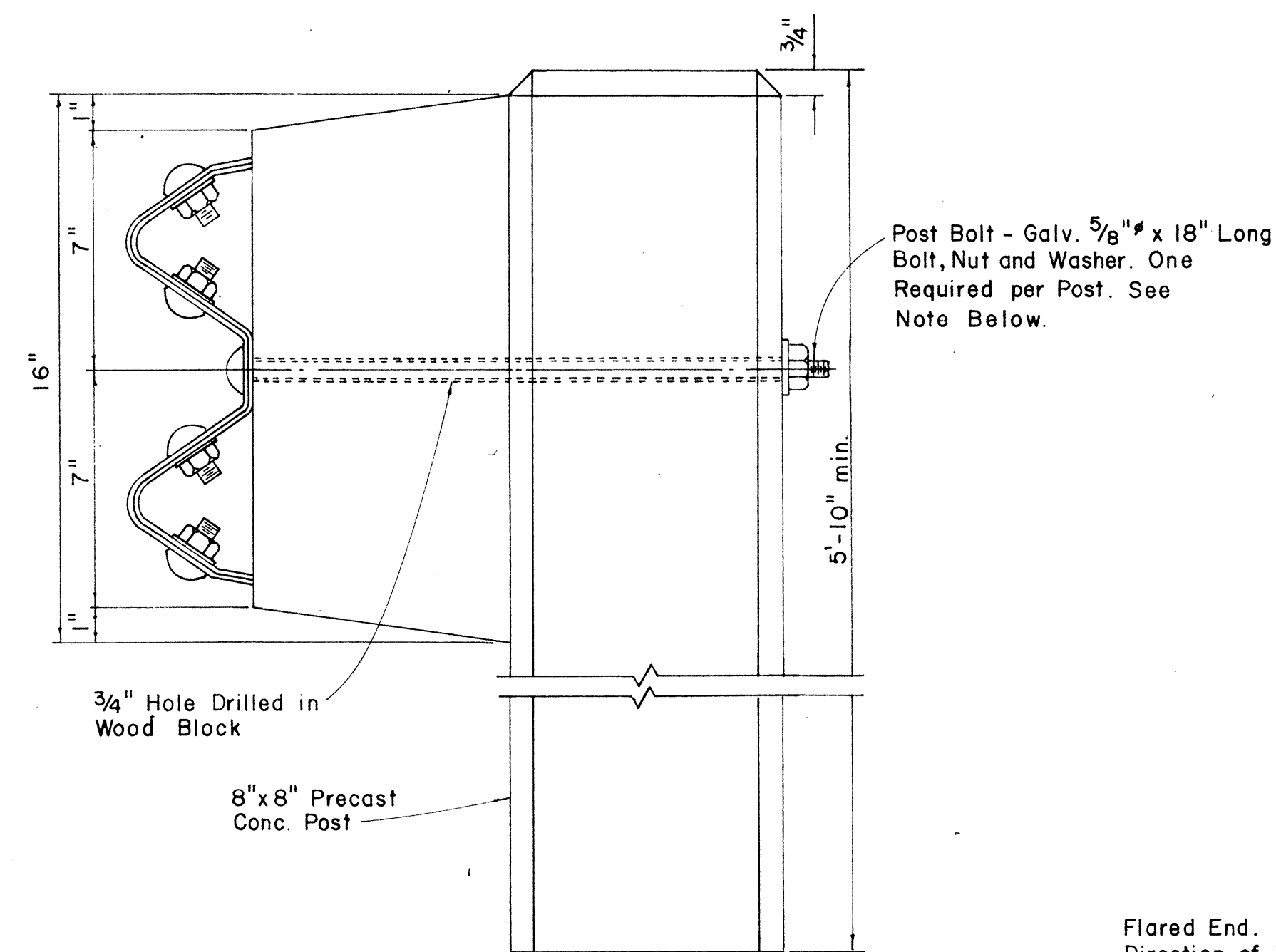
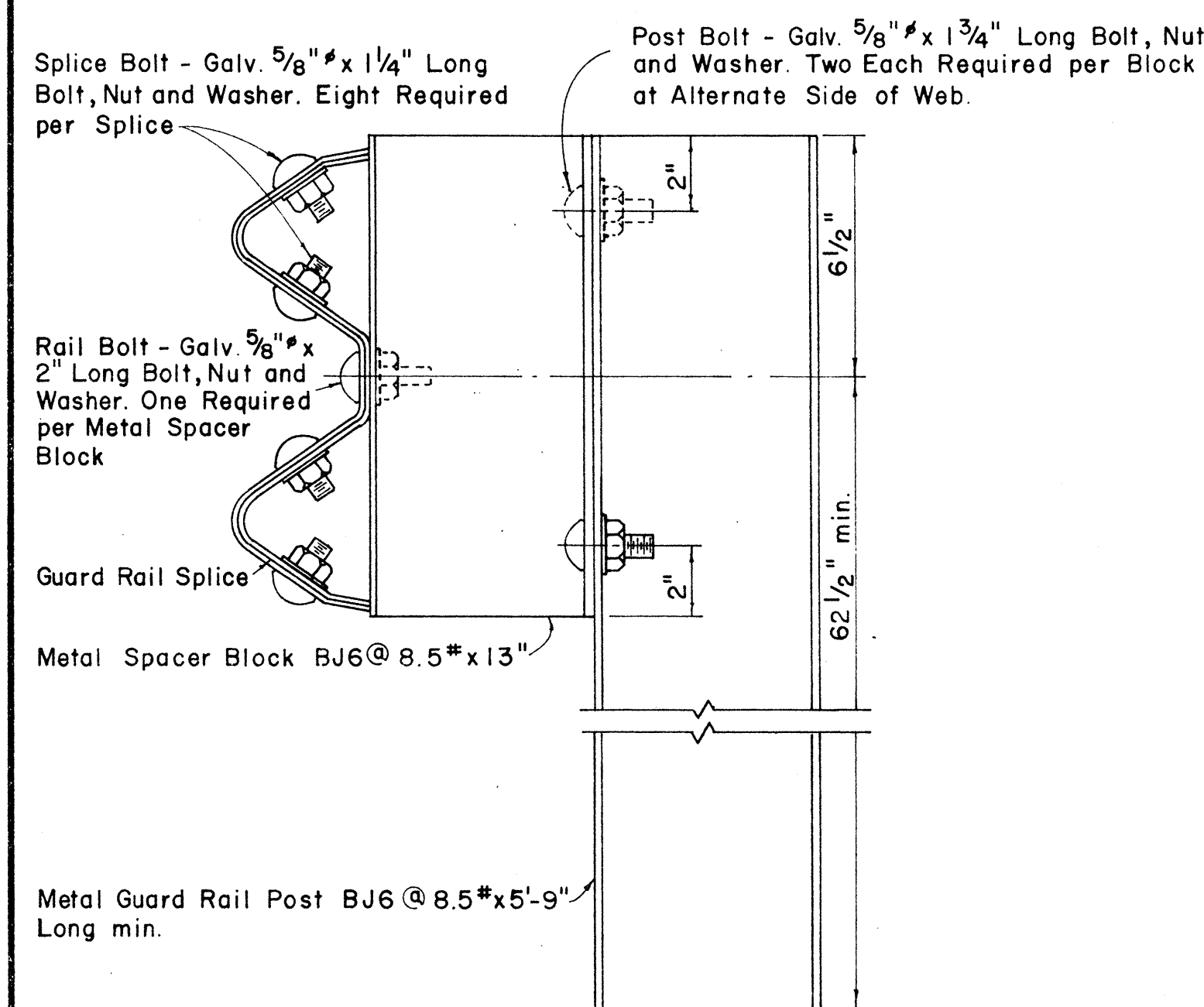
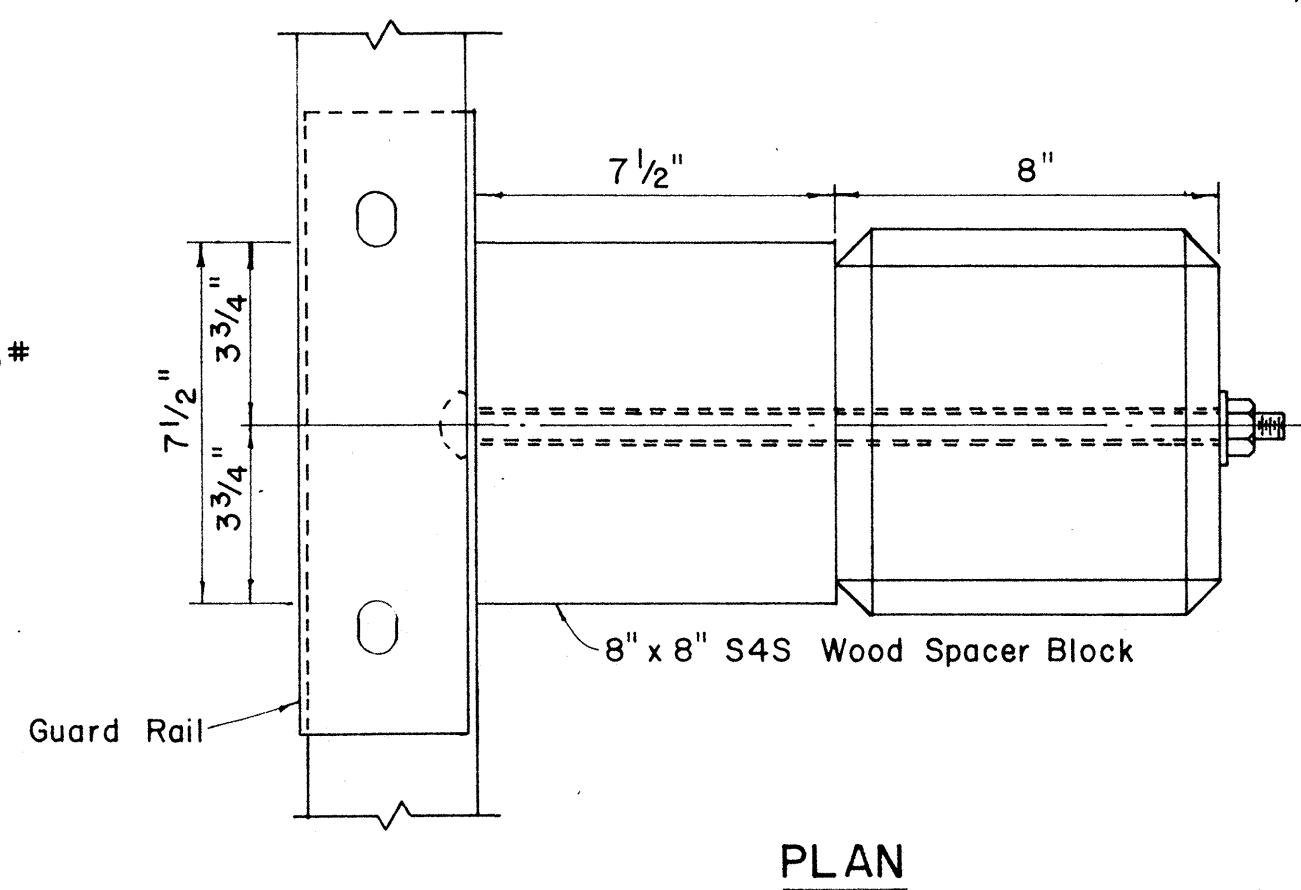
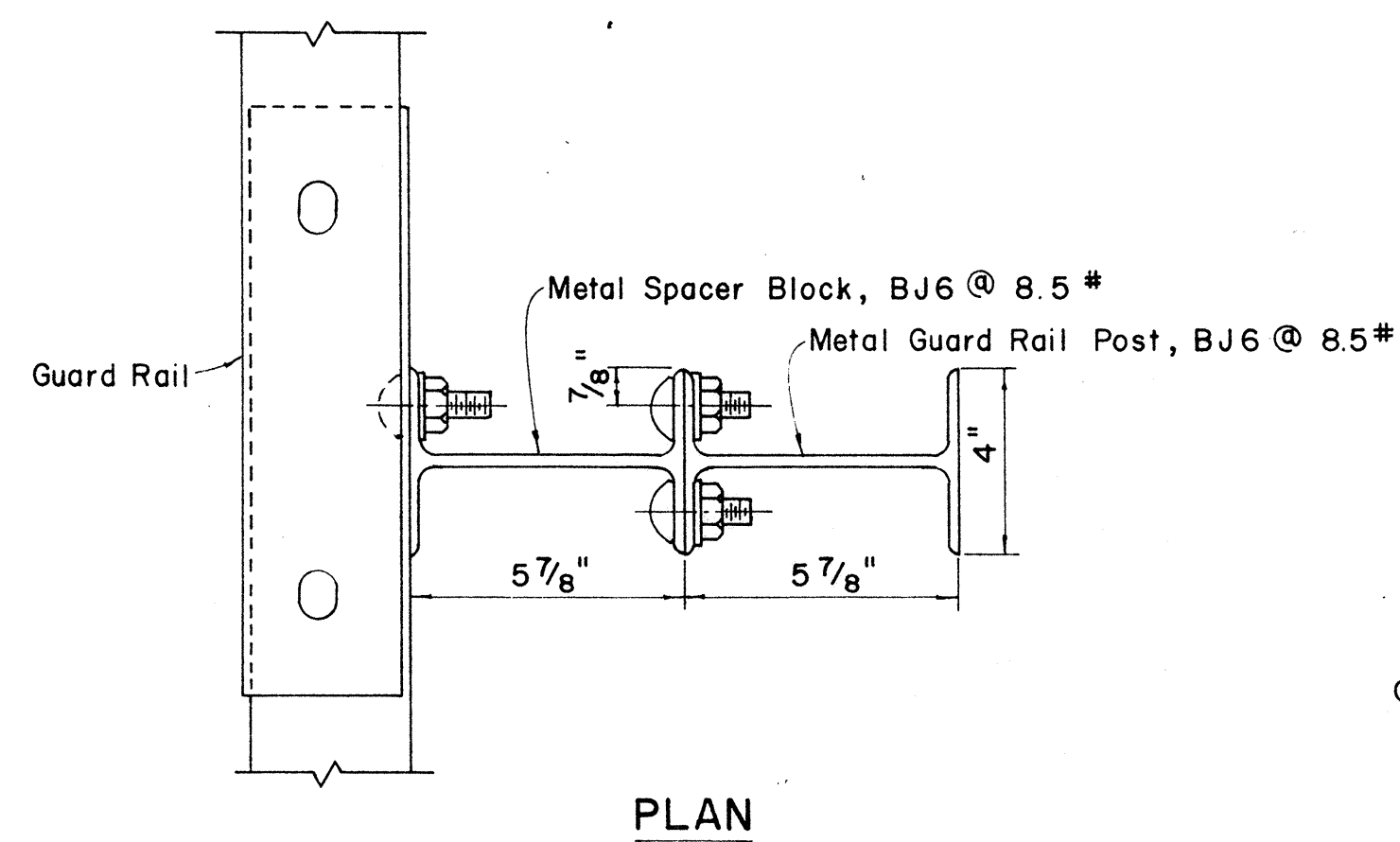
METAL GUARD RAIL

Scale: As Noted Date: Oct. 1966

SHEET No. 5 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5083-1(2)	1966	15	83

Unit 1



Wood Blocks shall be Douglas Fir, "Construction Grade - Posts and Timbers," 1200c, Pressure Treated with Preservative as called for in the Special Provisions.

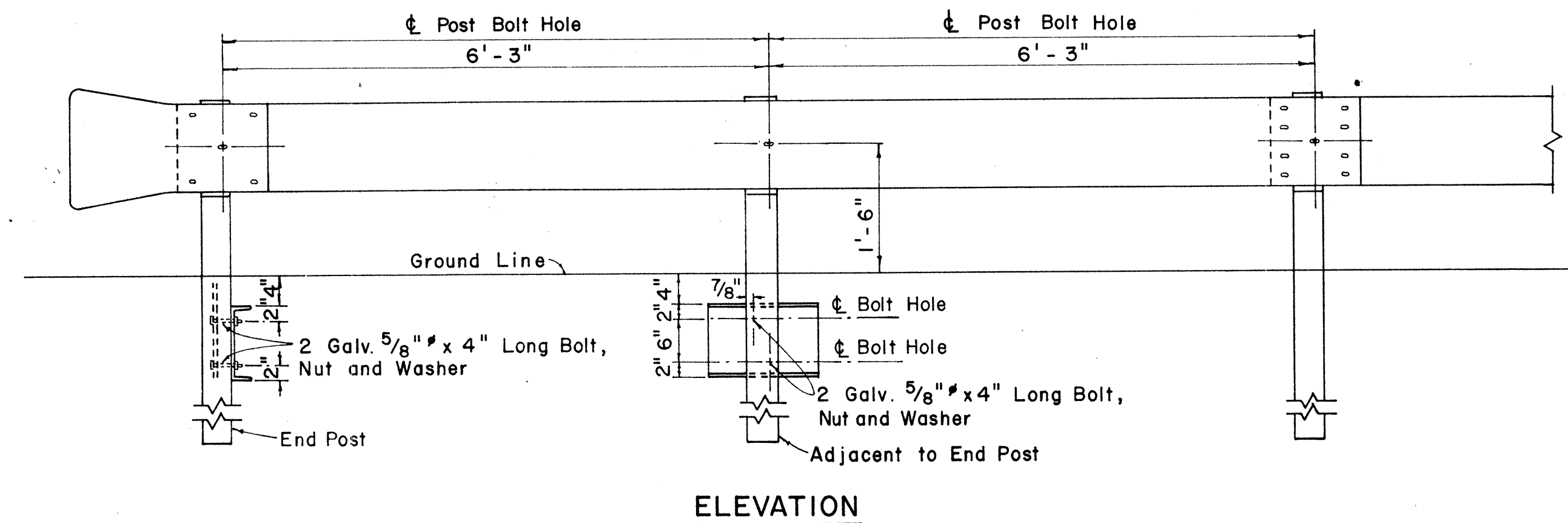
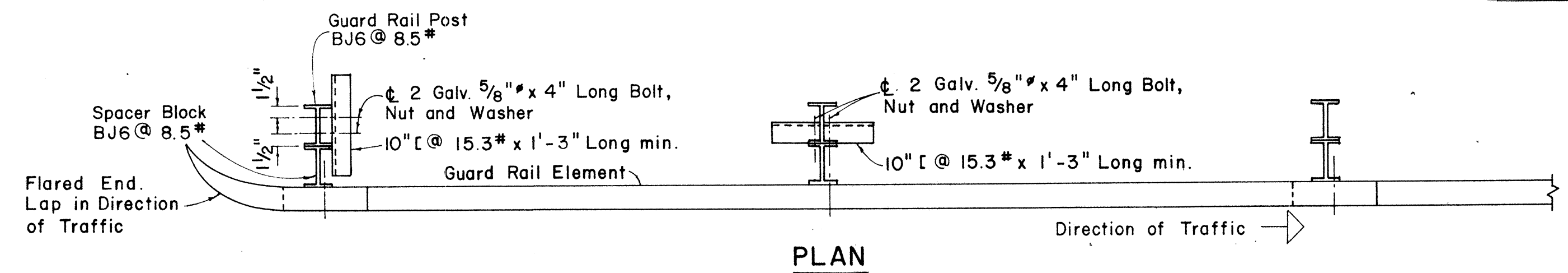
**SINGLE GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK**
Scale: 3" = 1' - 0"

**SINGLE GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD SPACER BLOCK**
Scale: 3" = 1' - 0"

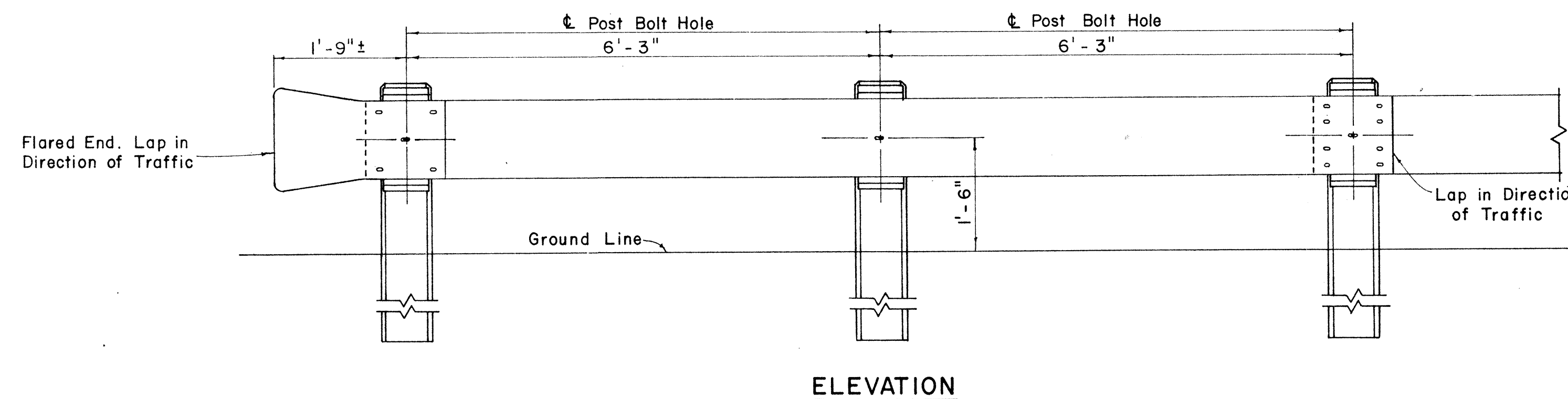
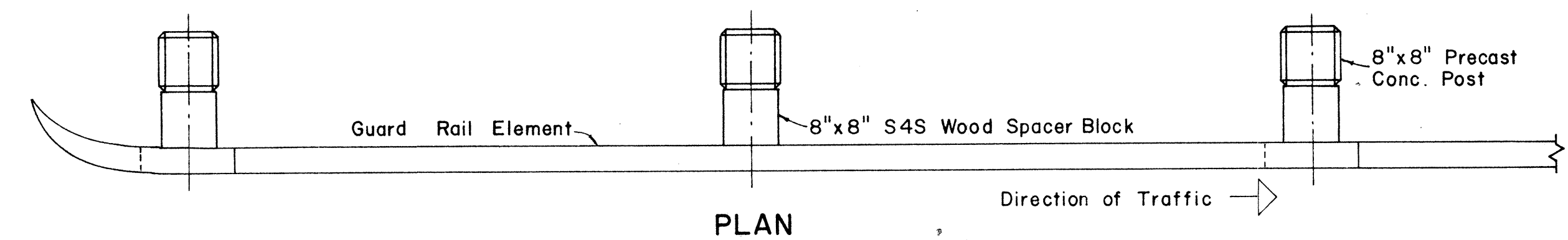
NOTE:
Single Guard Rails Shown. For Double Guard Rails Additional Spacer Blocks and Rail Elements Required on Opposite Side of Posts. See Bolt Schedule for Required Bolt Lengths.

DETAILS FOR SINGLE GUARD RAIL

Scale: As Shown



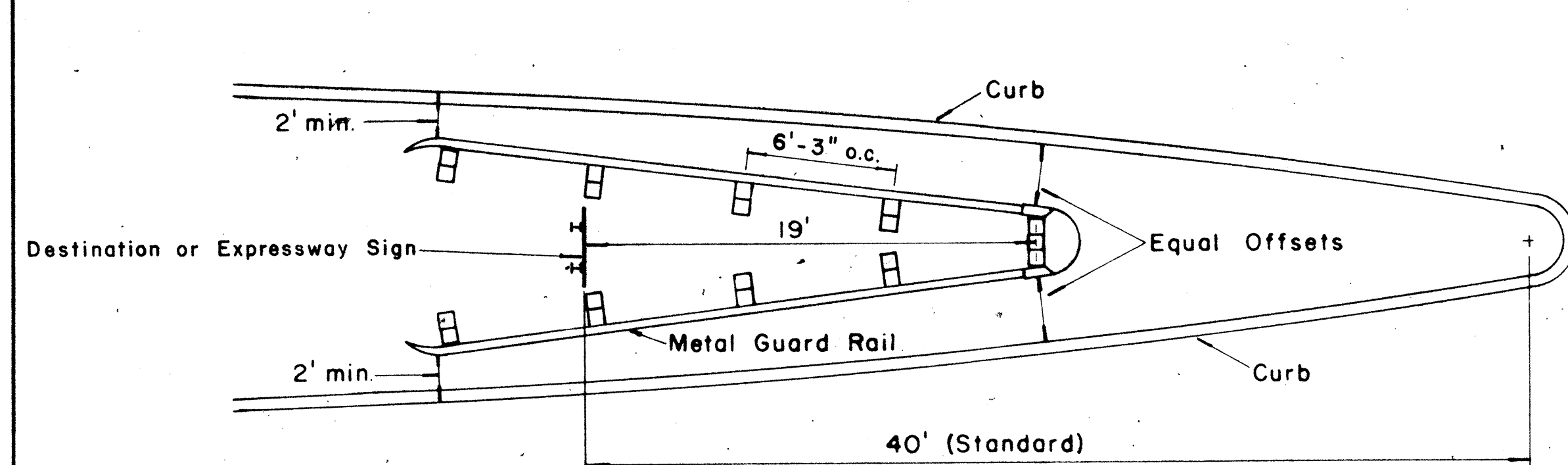
METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK
Scale: 3/4" = 1' - 0"



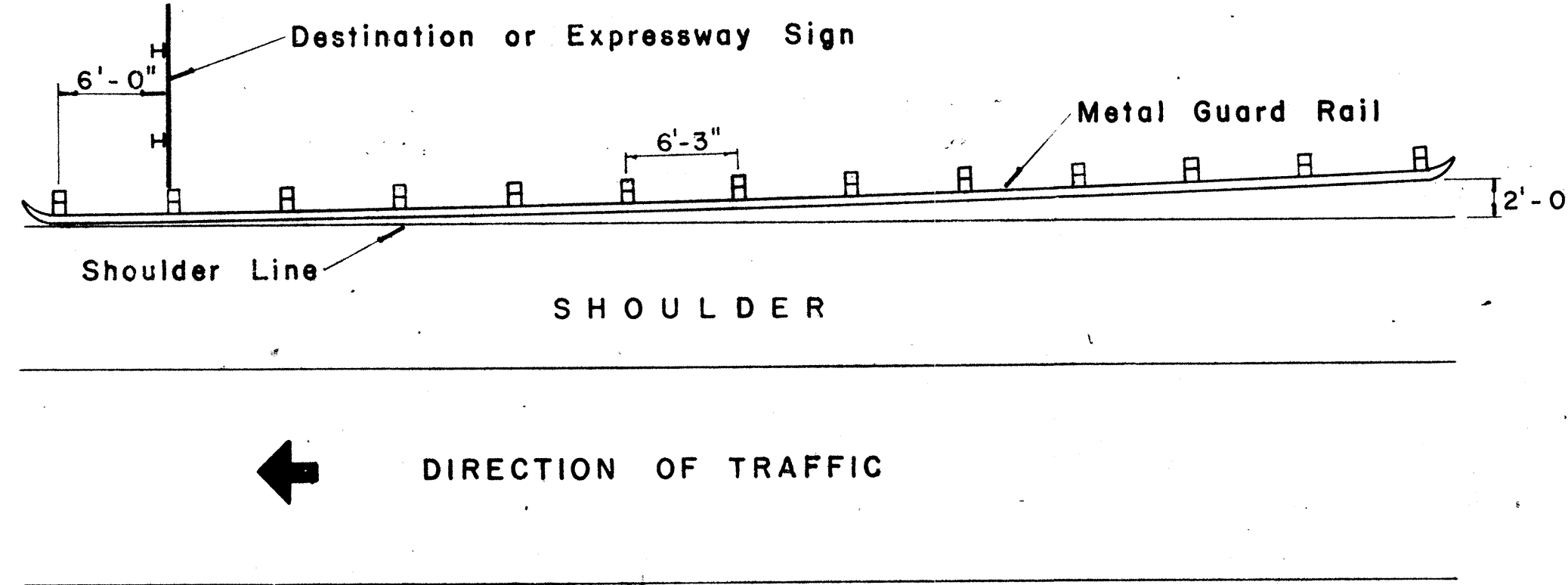
METAL GUARD RAIL ON CONCRETE POST WITH WOOD SPACER BLOCK
Scale: 3/4" = 1' - 0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
METAL GUARD RAIL

Scale as Noted Date: Oct. 1966
SHEET No. 6 OF 8 SHEETS

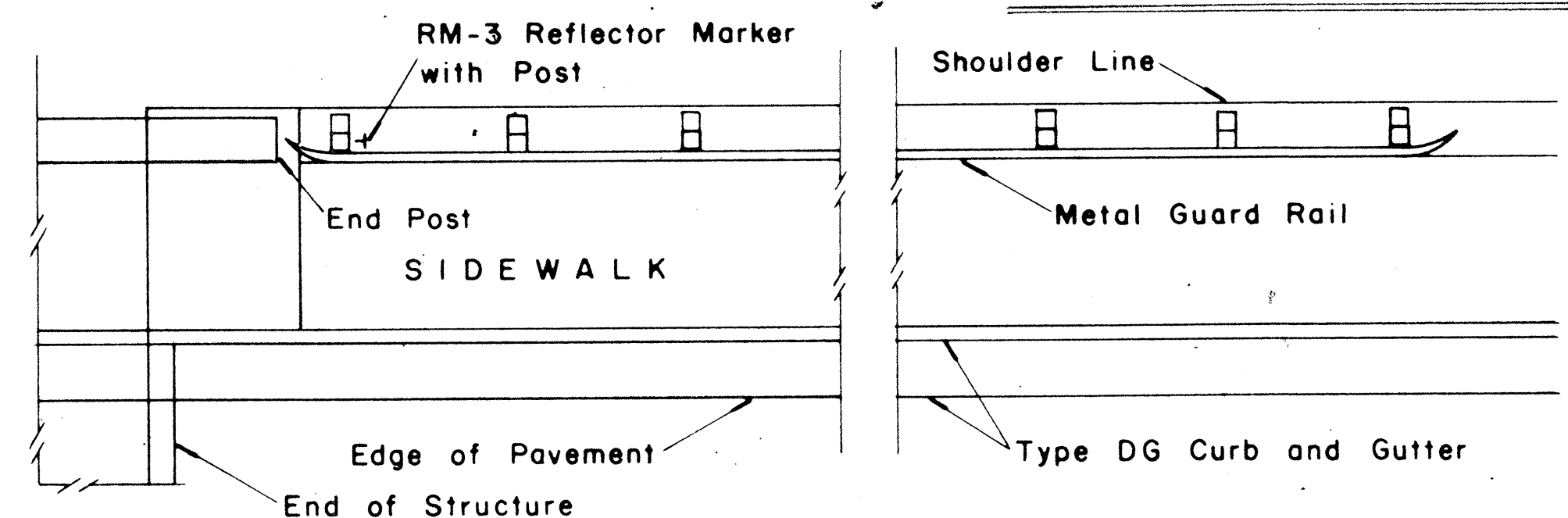


GORE MOUNTED SIGN
Scale: $\frac{3}{16}'' = 1' - 0''$

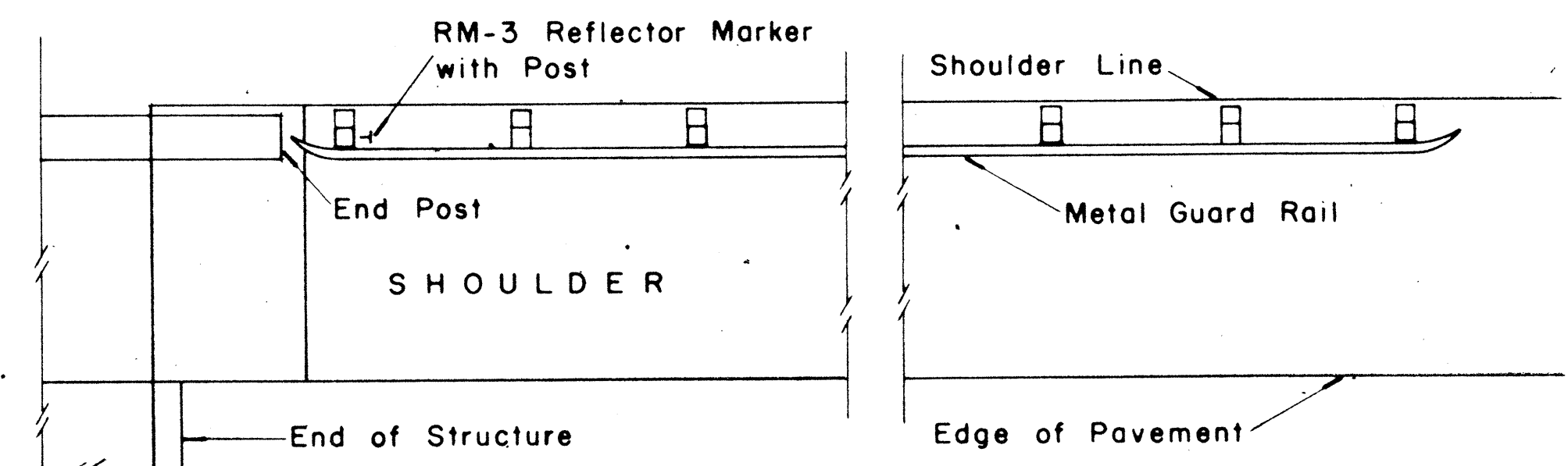


SHOULDER MOUNTED SIGN
Scale: $\frac{1}{8}'' = 1' - 0''$

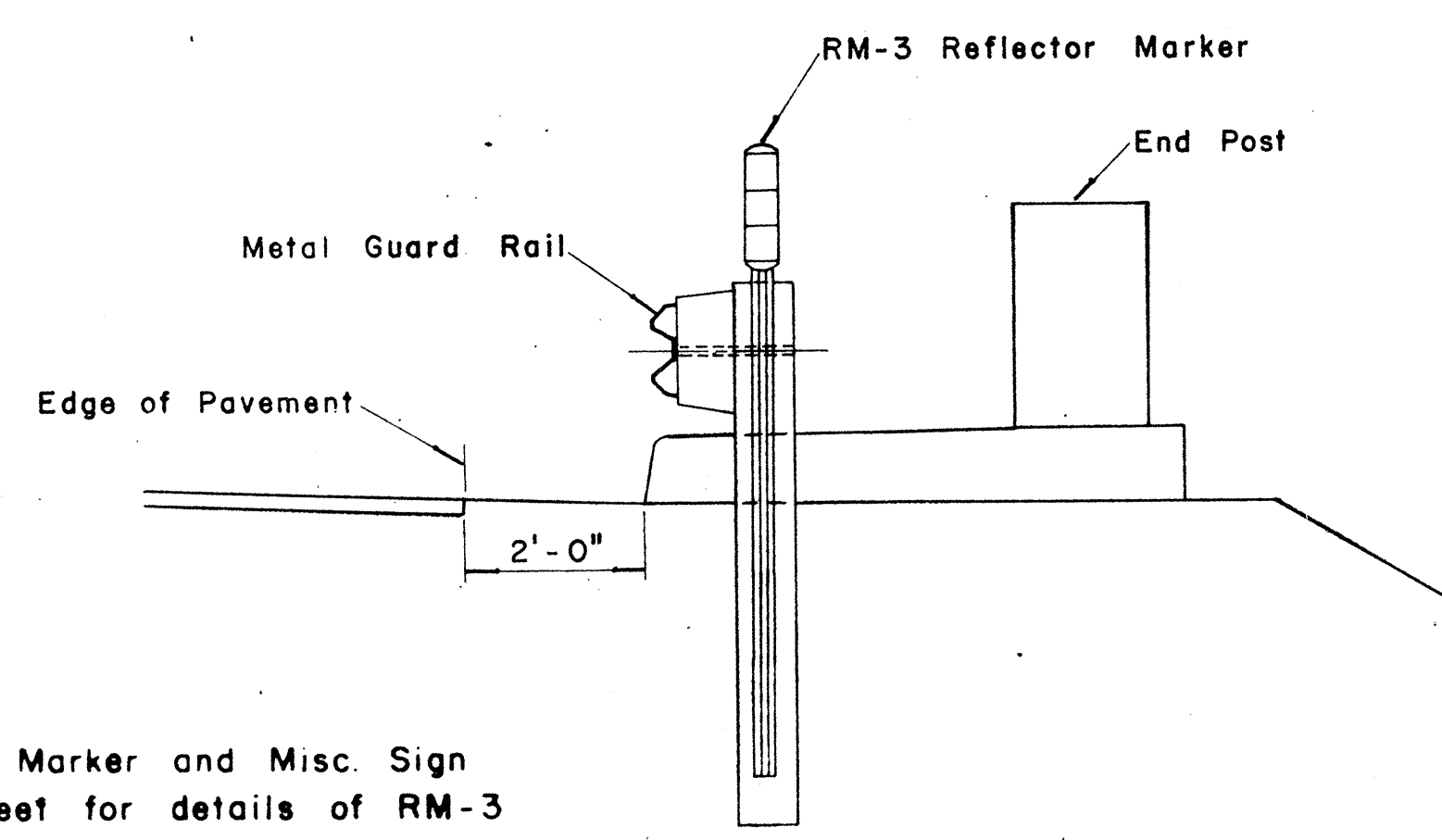
INSTALLATION OF METAL GUARD RAIL FOR DESTINATION AND EXPRESSWAY SIGNS



SIDEWALK CARRIED THROUGH STRUCTURE

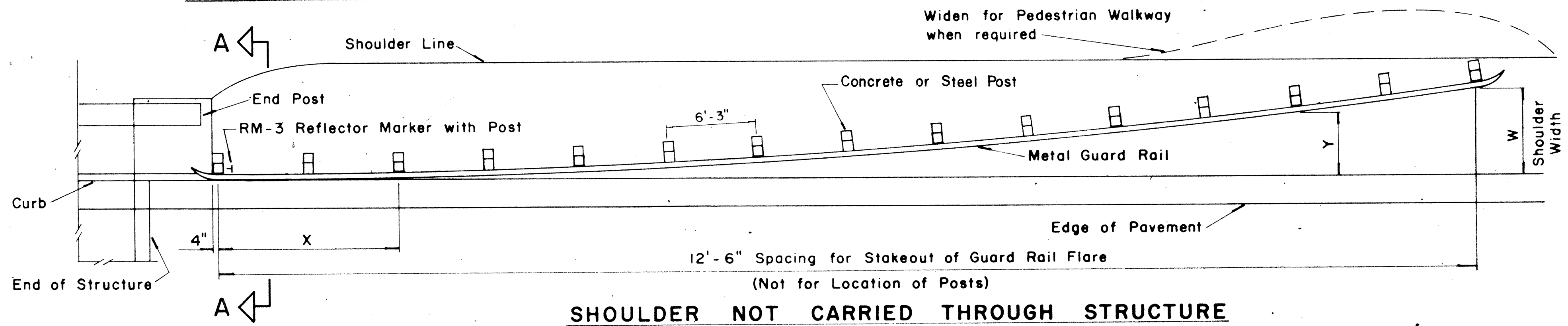


SHOULDER CARRIED THROUGH STRUCTURE



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

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



SHOULDER NOT CARRIED THROUGH STRUCTURE
INSTALLATION OF METAL GUARD RAIL FLARE AT STRUCTURES
Scale: $\frac{3}{16}'' = 1' - 0''$

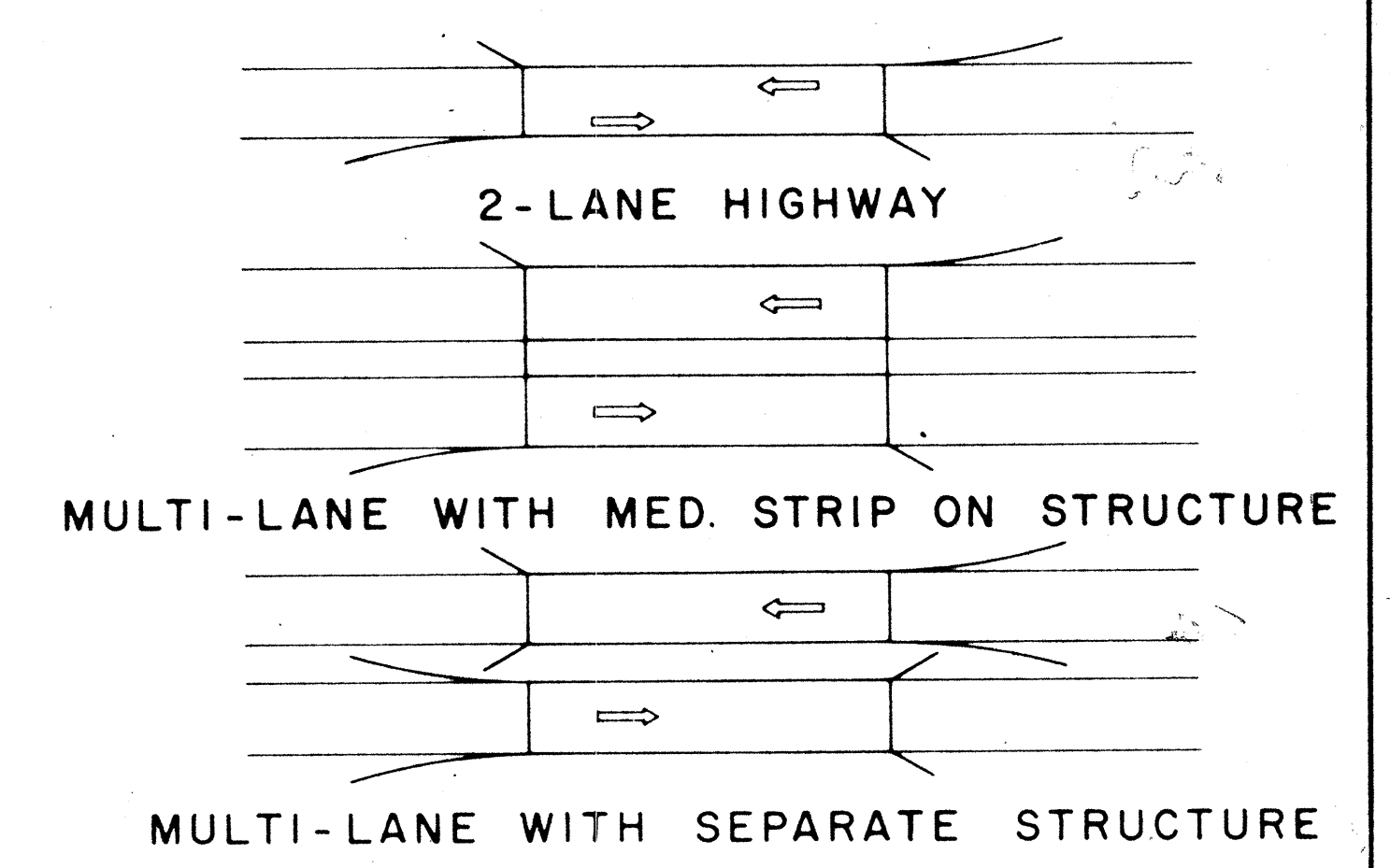
X	Y					
	W=3'	W=4'	W=5'	W=6'	W=7'	W=8'
12.5	0.19	0.16	0.14	0.12	0.09	0.08
25.0	0.75	0.64	0.55	0.49	0.35	0.32
37.5	1.69	1.44	1.25	1.10	0.78	0.72
50.0	3.00	2.56	2.22	1.96	1.38	1.28
62.5		4.00	3.47	3.06	2.16	2.00
75.0			5.00	4.41	3.11	2.85
87.5				6.00	4.23	3.92
100.0					5.53	5.12
112.5					7.00	6.48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

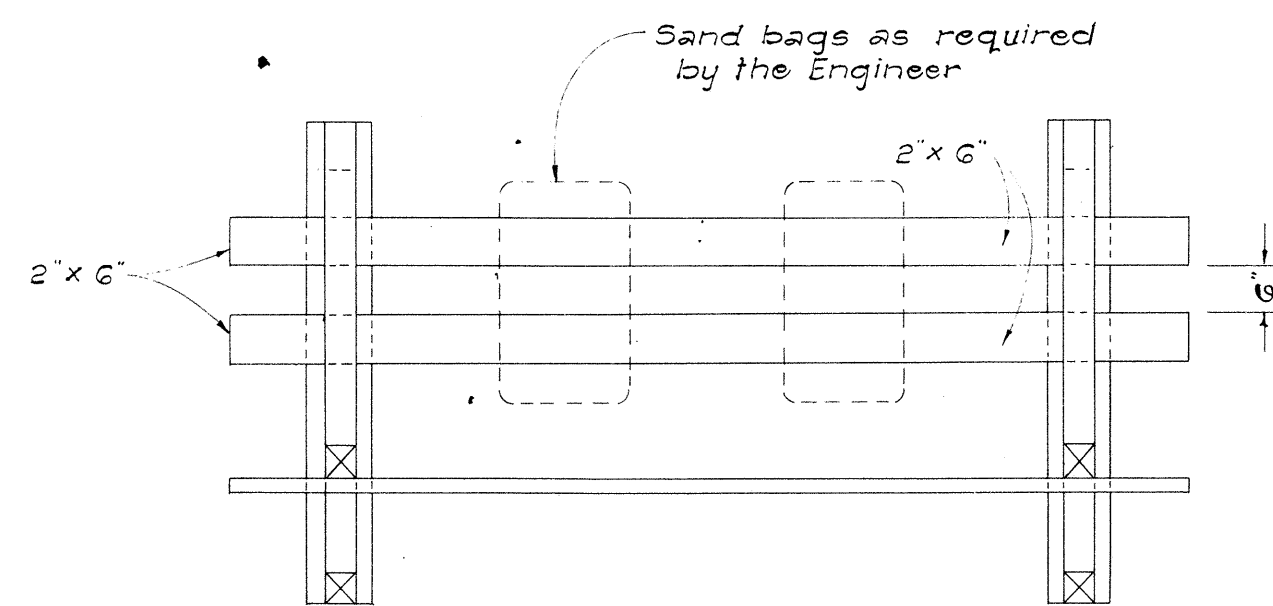
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAILS
AT
STRUCTURES & GUIDE SIGNS

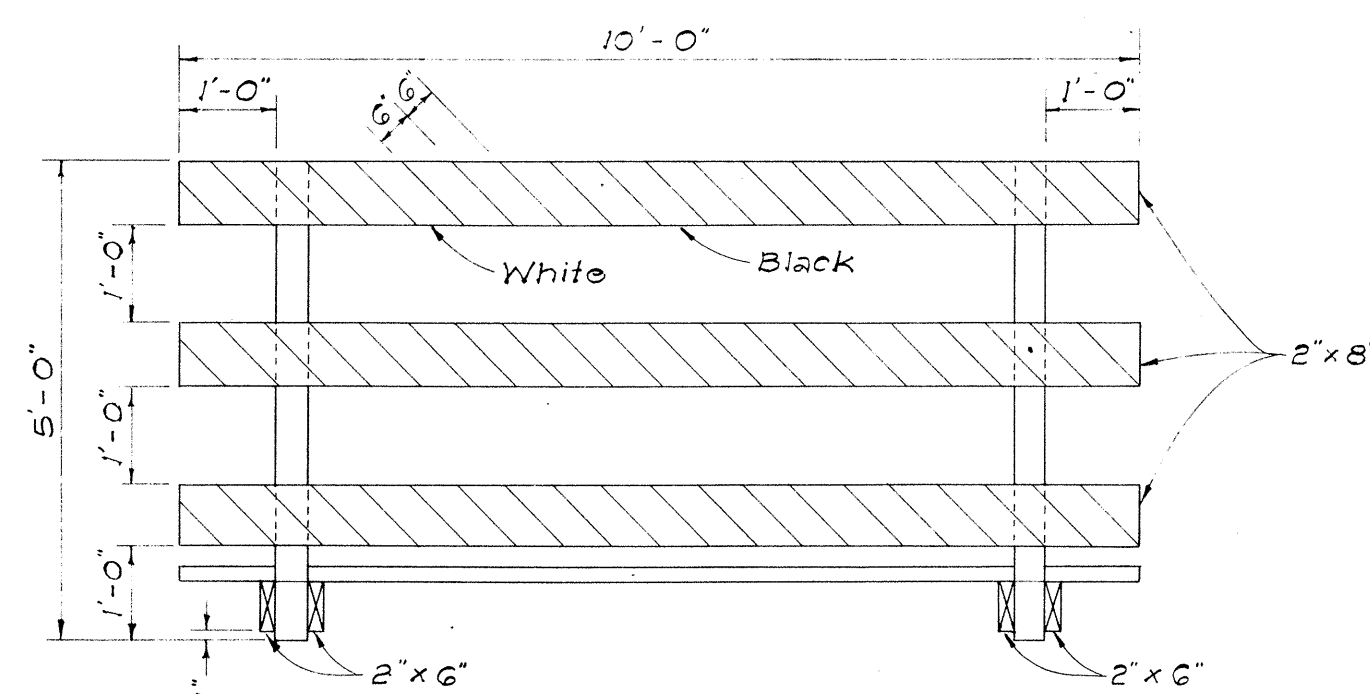
Scale: As Noted Date: Oct. 1966

SHEET No. 7 OF 8 SHEETS

SURVEY PLOTTED BY: DATE: _____
 DESIGNED BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 QUANTITIES BY: _____
 CHECKED BY: _____

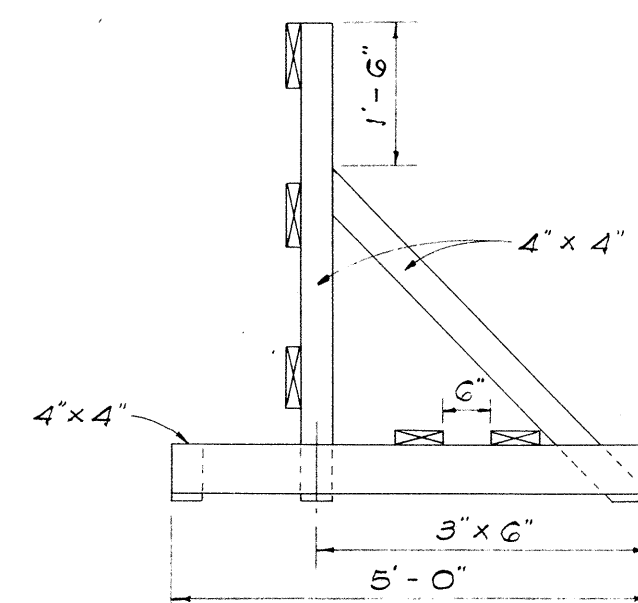


PLAN VIEW

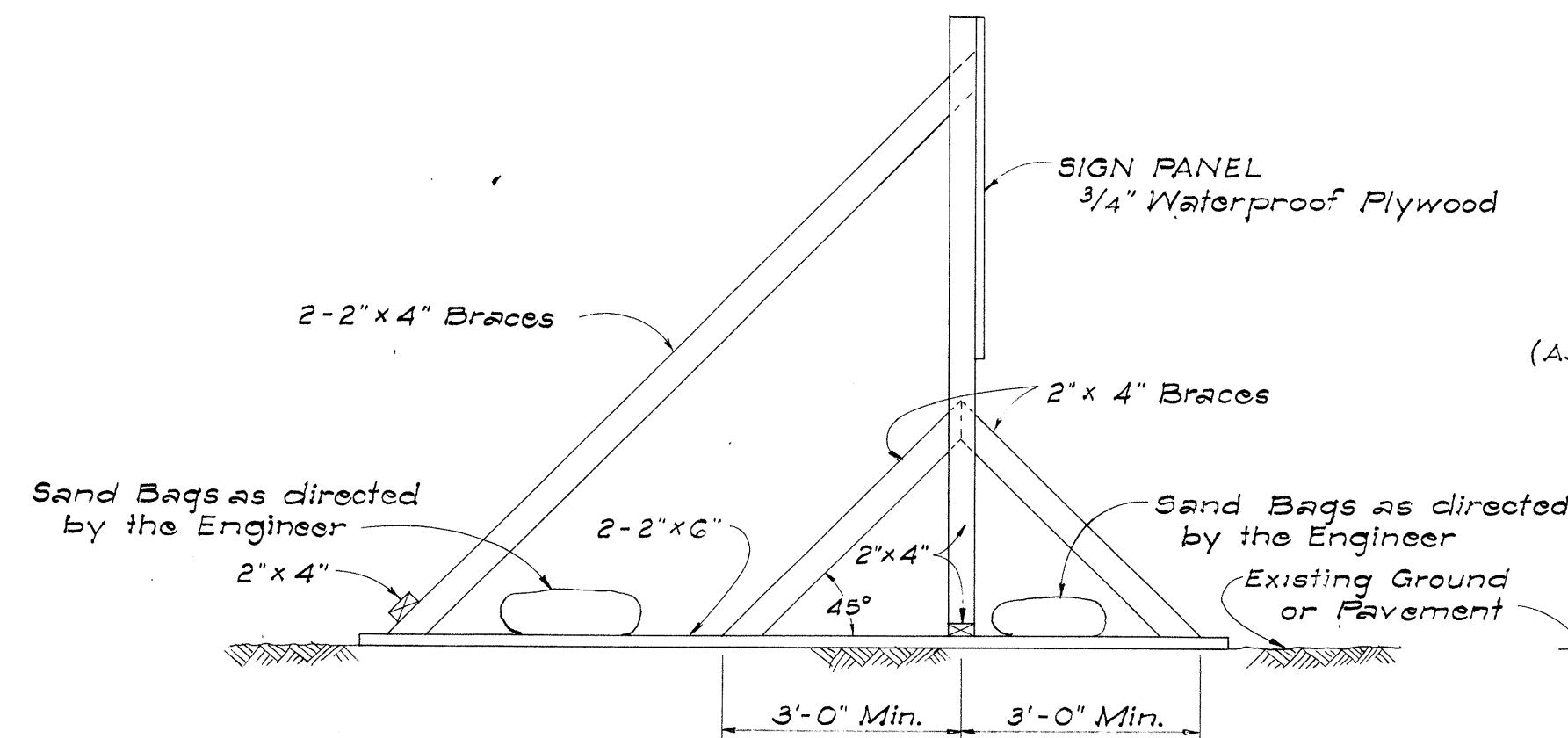


FRONT VIEW

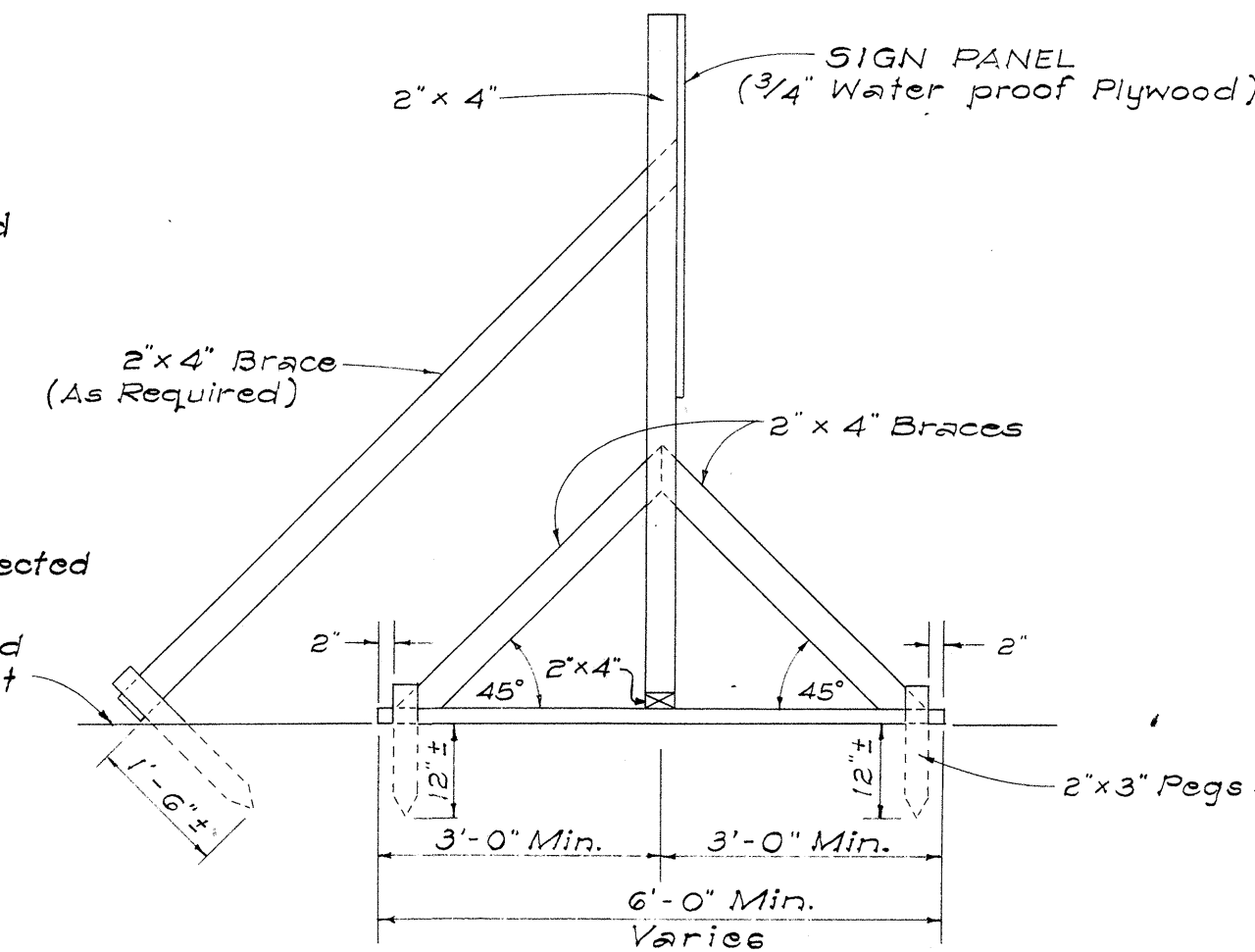
CLASS I BARRICADE



END VIEW



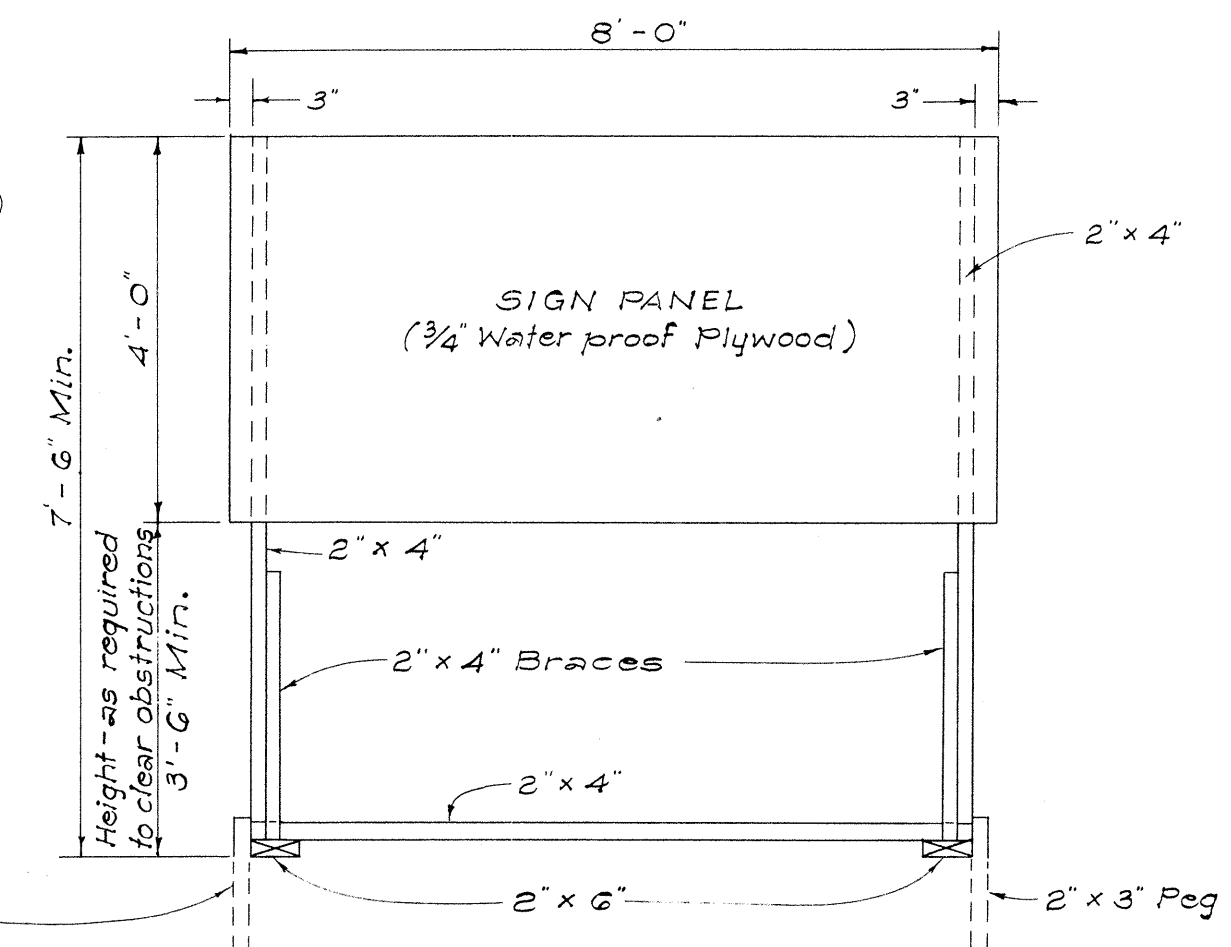
SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)



SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)

ELEVATIONS

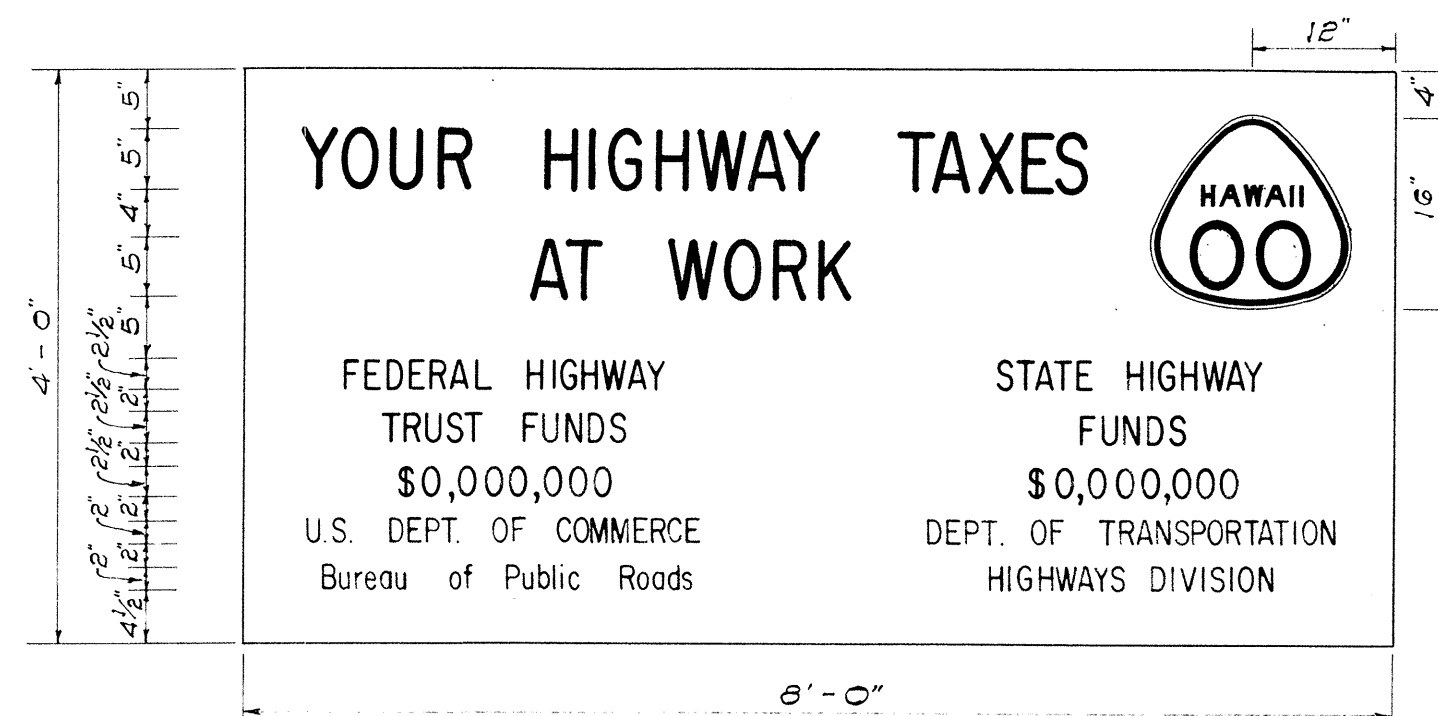
Scale: 1/2" = 1'-0"



FRONT VIEW

NOTES:

- A. CONSTRUCTION IDENTIFICATION SIGNS
1. The sign legend shall be black on white background.
 2. The Contractor shall construct, install and maintain the project signs at the locations shown on the plans and as ordered by the Engineer.
 3. The signs shall be removed and stock-piled upon completion of the project as ordered by the Engineer and are to become State property.
 4. Letters shall be Series 'C' of the sizes shown on the plan and shall conform with the 'Standard Alphabet for Highway Signs', Bureau of Public Roads, 1952.
 5. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.
- B. WOOD BARRICADES
1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the plans.
 2. The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.

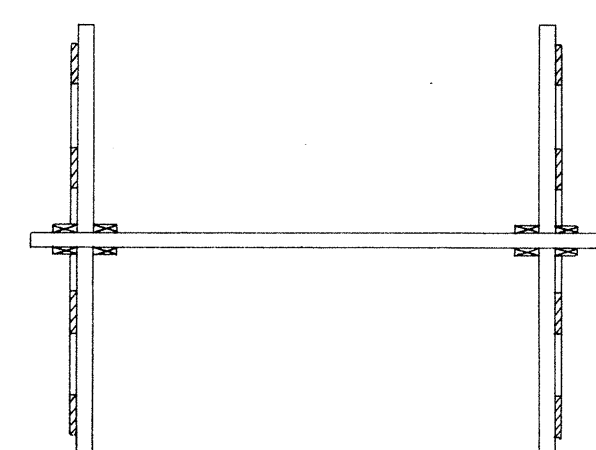


SIGN PANEL

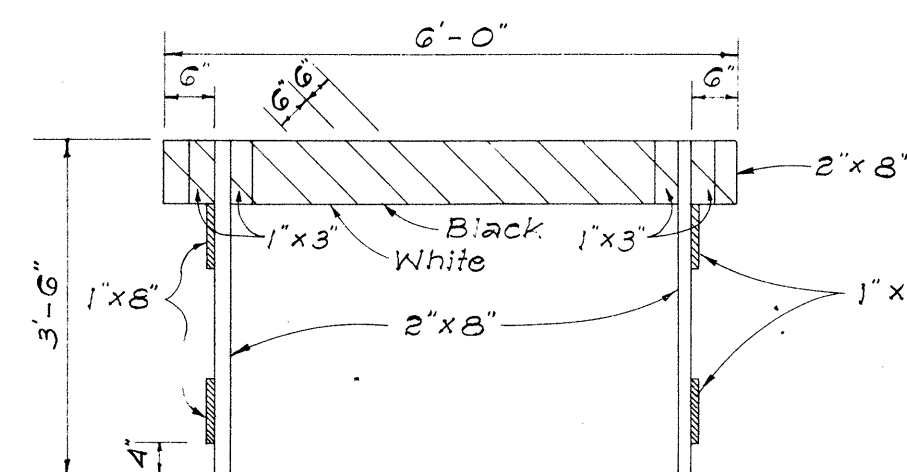
Scale: 3/4" = 1'-0"

PRIMARY AND SECONDARY SYSTEMS
CONSTRUCTION IDENTIFICATION SIGN

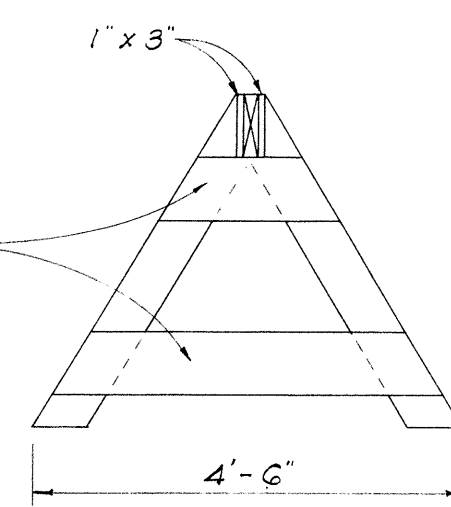
Scale: As Shown



PLAN VIEW



FRONT VIEW



END VIEW

CLASS II BARRICADE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

SCALE: As Shown

DATE: Oct. 1966

SHEET No. 8 OF 8 SHEETS