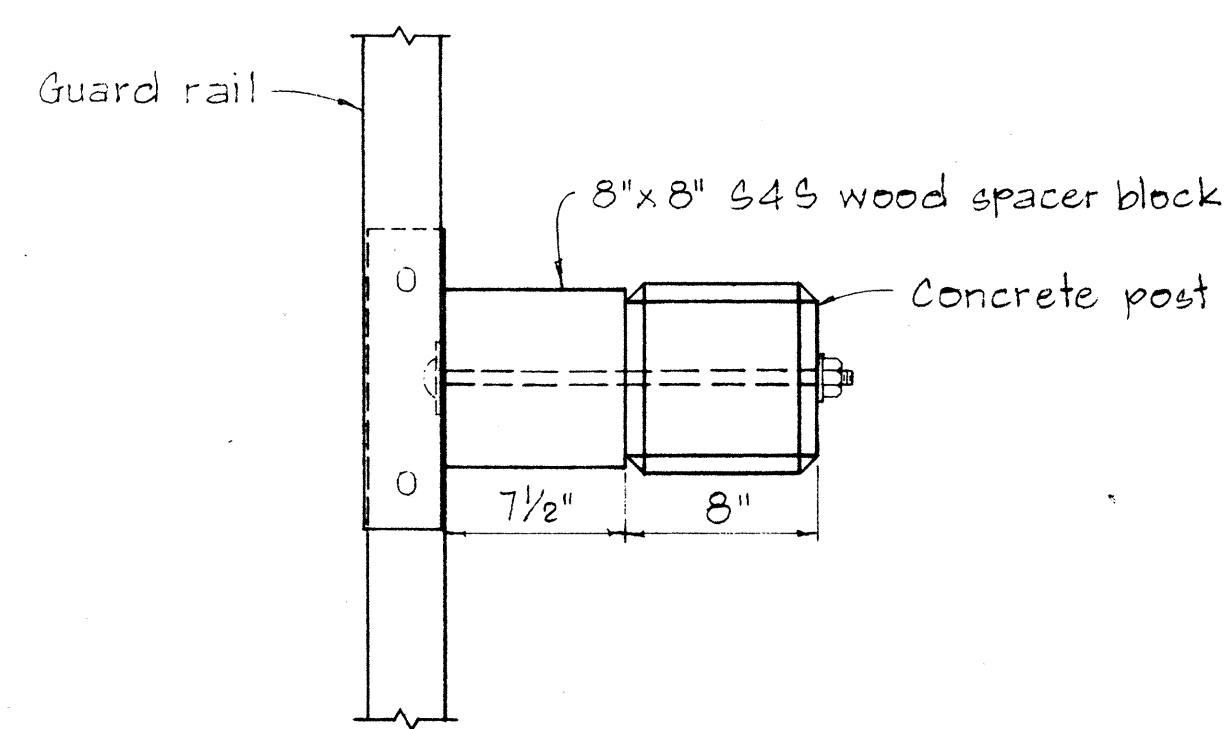
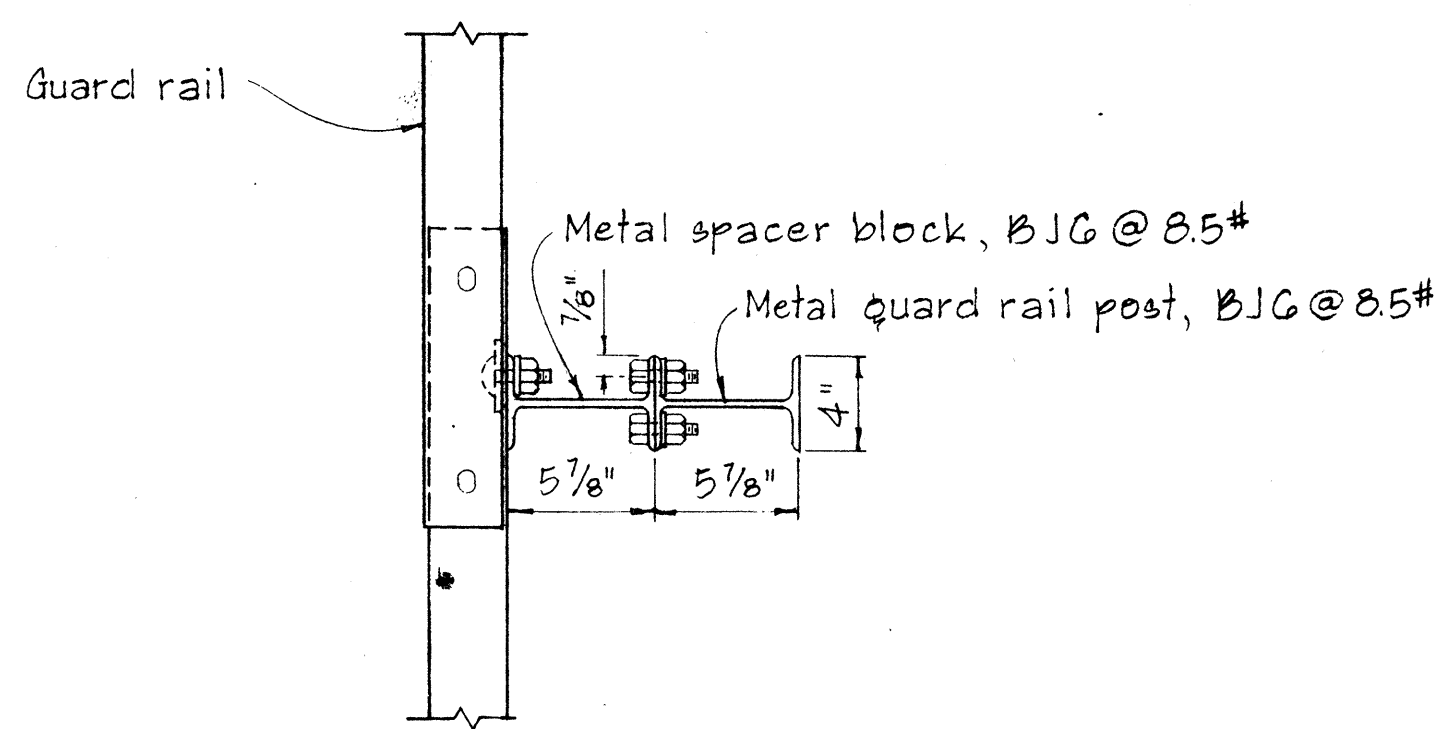


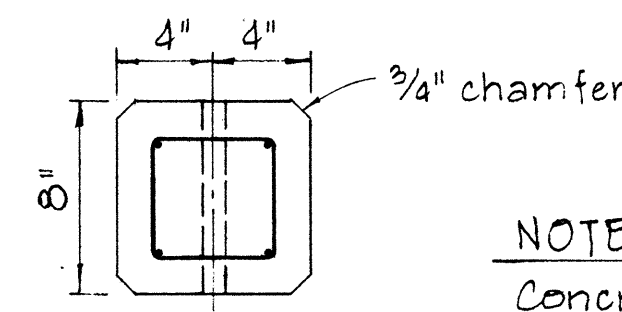
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	37C0171	1971	6	8



PLAN

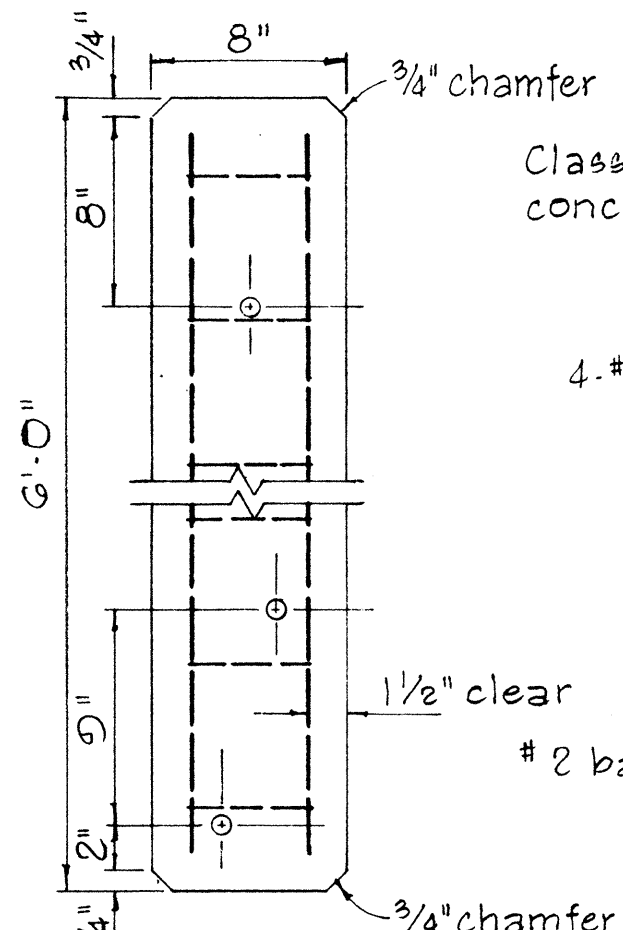


PLAN

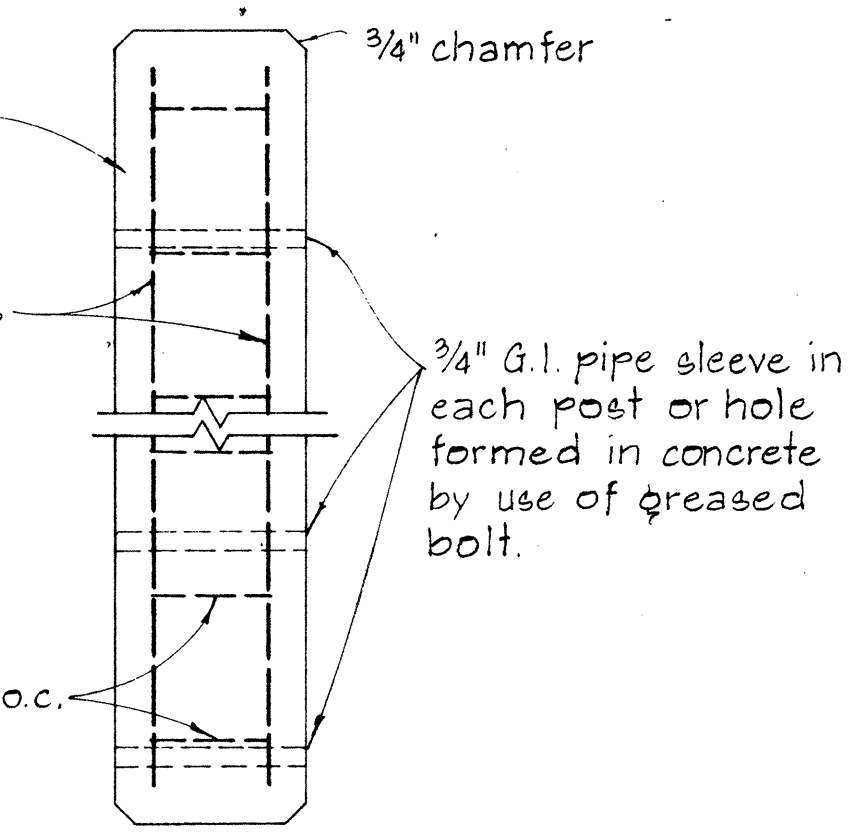


TOP VIEW

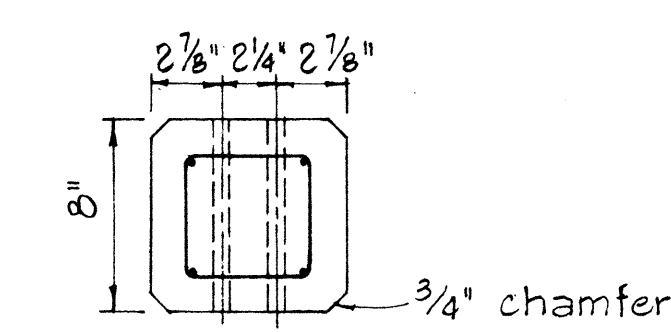
NOTE:
Concrete post shall be precast



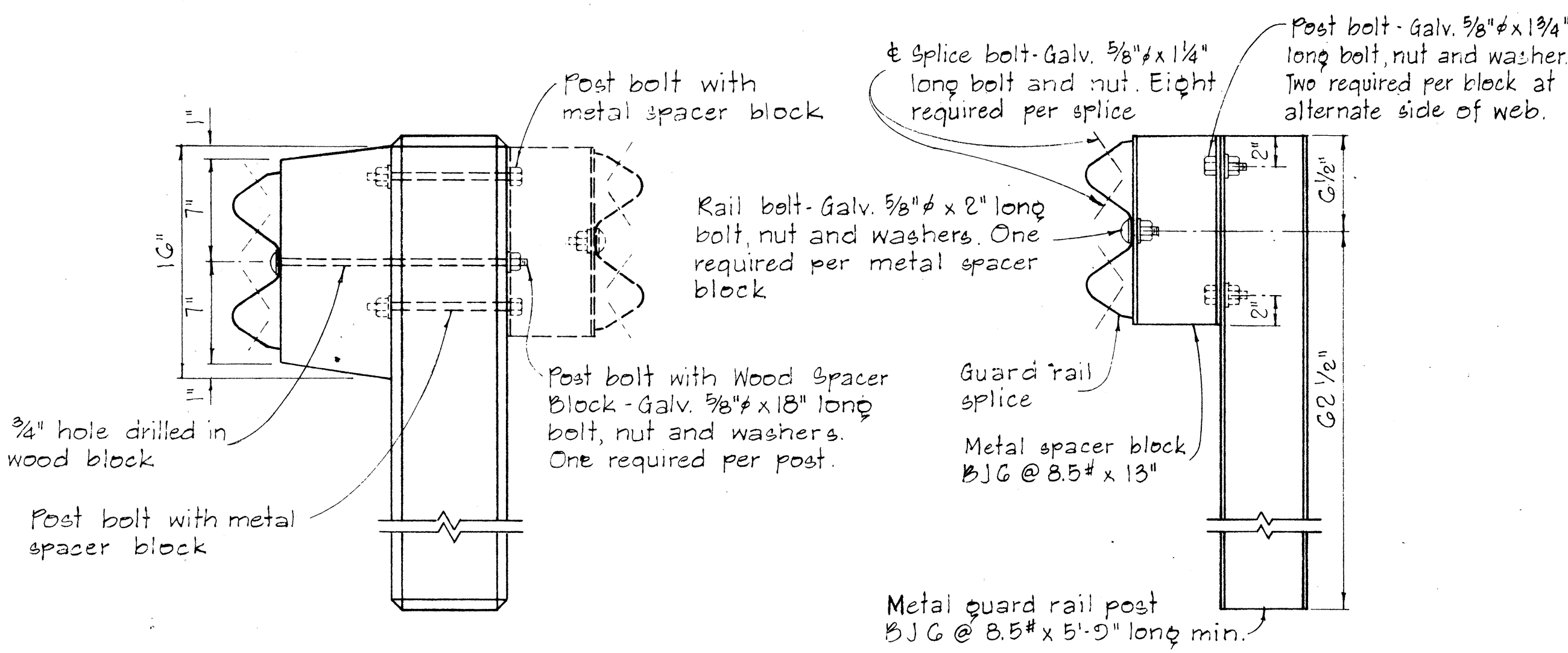
FRONT VIEW



SIDE VIEW

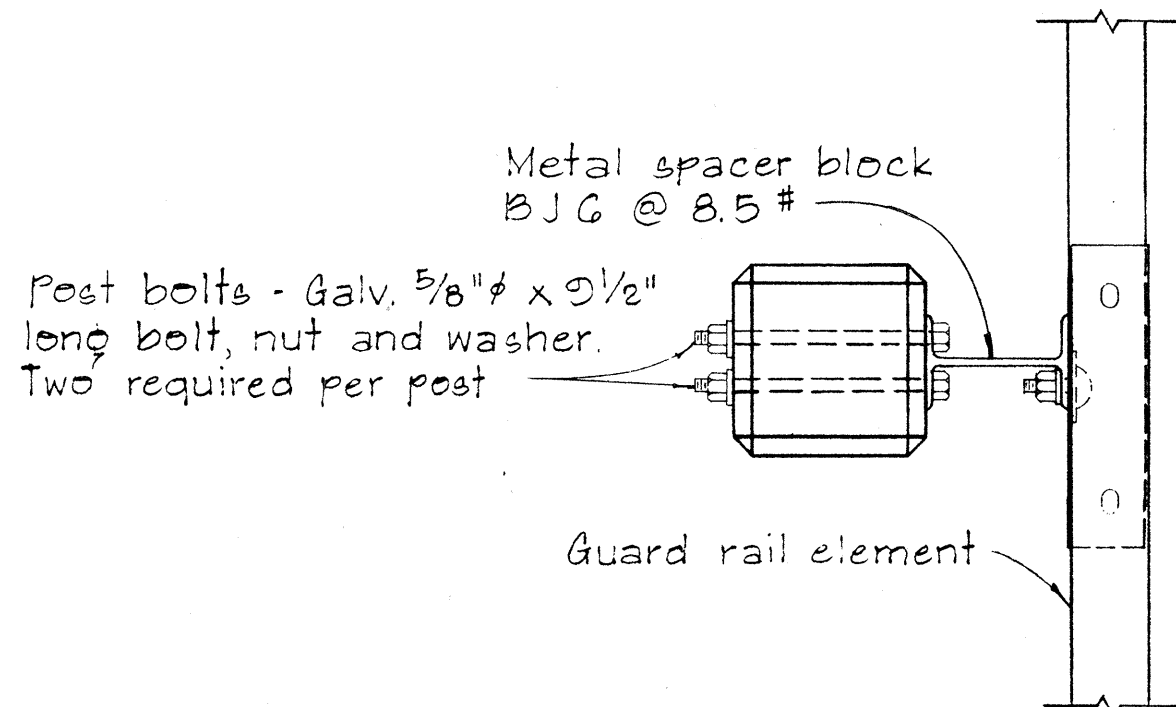


BOTTOM VIEW



SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

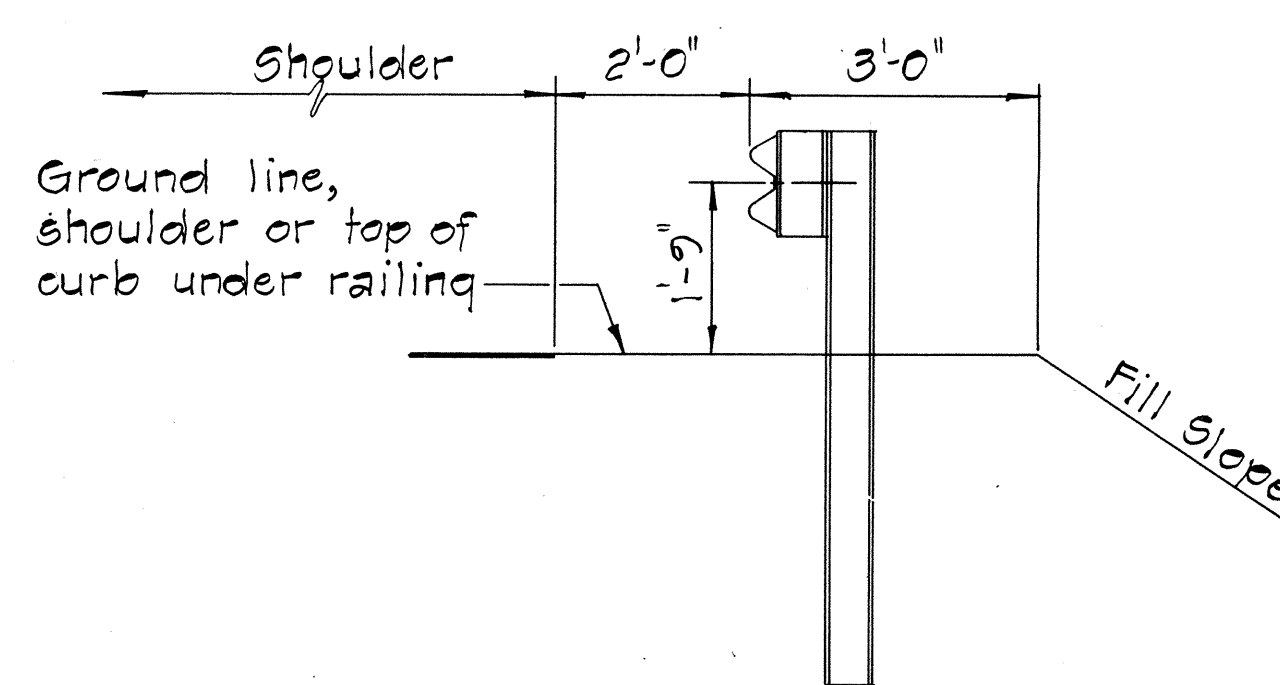
SCALE: 1 1/2" = 1'-0"



PLAN

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

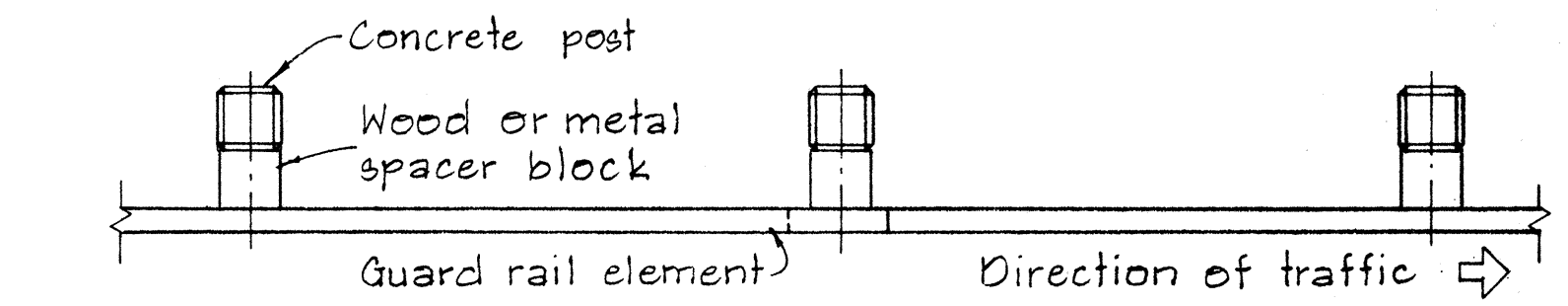
SCALE: 1 1/2" = 1'-0"



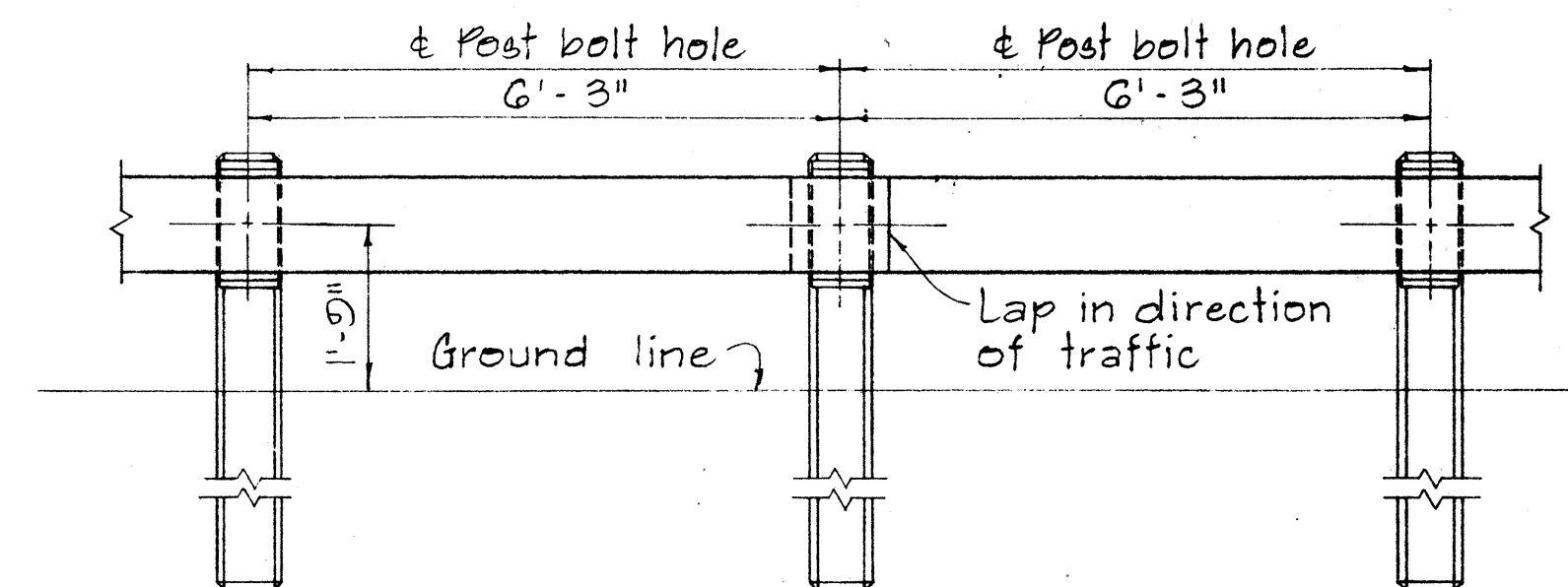
AT SHOULDER SECTION

TYPICAL METAL GUARD RAIL DETAIL

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



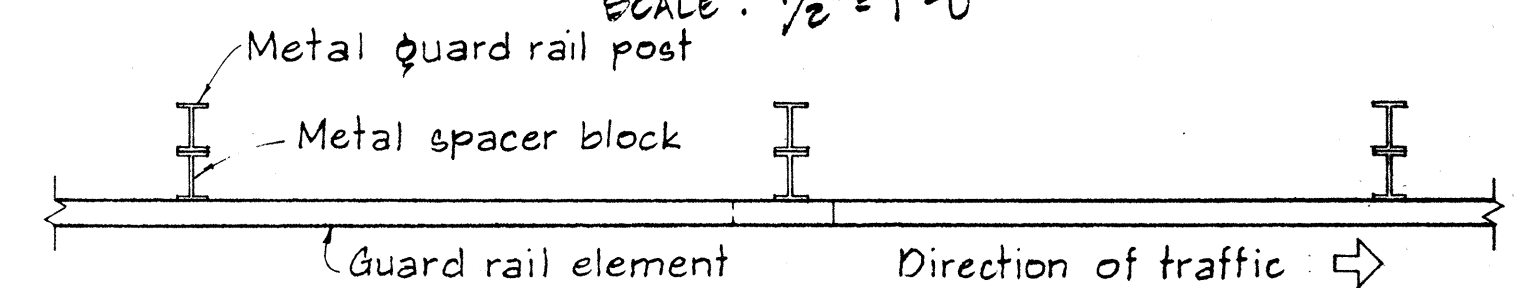
PLAN



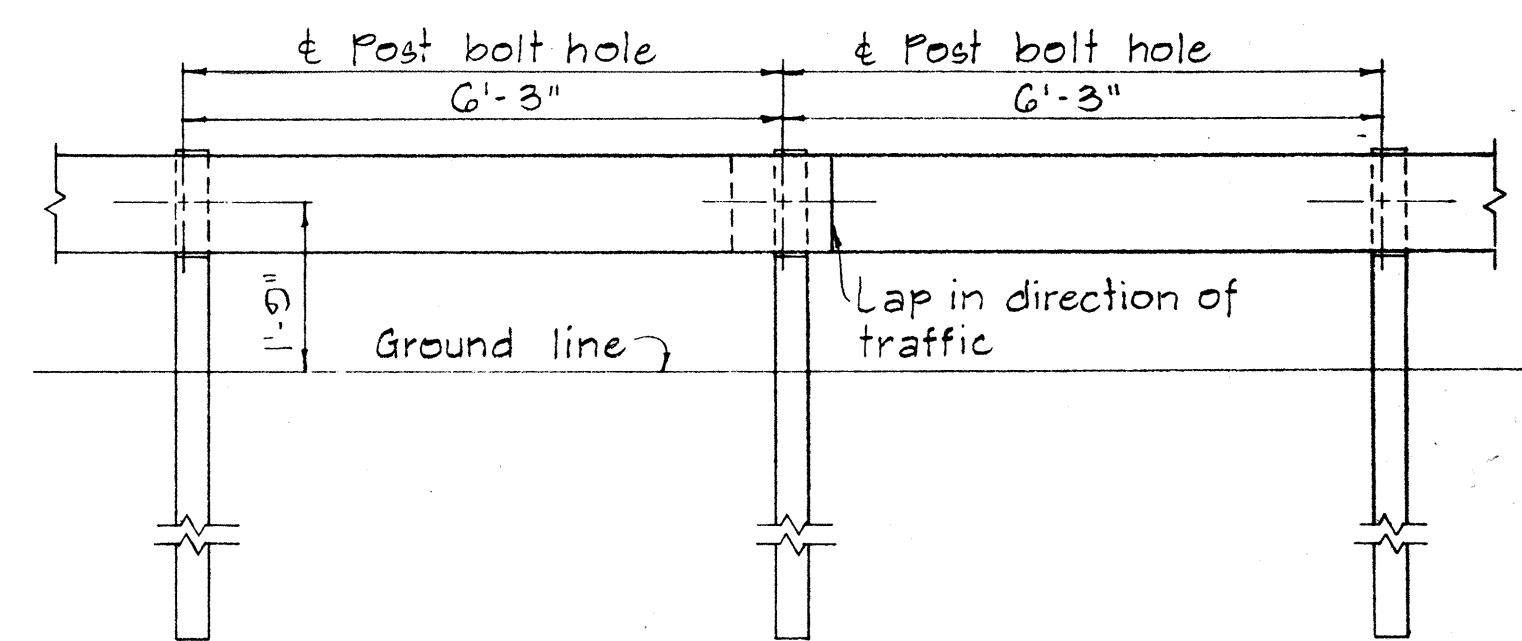
ELEVATION

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

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



PLAN



ELEVATION

METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN

NOV. 1968

BOLT DIMENSIONS		
TYPE A BOLT	D	L
Splice Bolt	5/16"	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"

Technical drawing of a bolt and nut assembly. The drawing includes a top view of the nut on the left and a side view of the bolt on the right. The bolt has a head with a diameter of $\frac{3}{8}$ inch and a shoulder with a diameter of $\frac{11}{32}$ inch. The threaded section has a length of $\frac{1}{2}$ inch and is labeled "5/8-11 Threads". The total length of the bolt is labeled "L". The nut has an outer diameter of $\frac{5}{8}$ inch and an inner diameter of $\frac{11}{32}$ inch.

Technical drawing of a hexagonal nut. The width across flats is dimensioned as $1\frac{1}{4}$ inches. The drawing shows the hexagonal shape with concentric circles representing the top and bottom surfaces.

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

A hand-drawn diagram of a horizontal pipe. The total length is labeled as 2'-0" at the top. The height of the pipe is labeled as 3 1/8" on the left side. On the right end, there is a 3" section. Inside the pipe, there are two oval shapes representing valves or fittings, each labeled "10\"/>

$\frac{3}{4} \times 2\frac{1}{2}$ " Post
 bolt slot
 (Bolt As Required)
 3" $4\frac{1}{4}$ " $4\frac{1}{4}$ "

$12\frac{1}{4}$ "

$29\frac{3}{32} \times 3$ " slots
 For Type A Splice Bolts

4" 4" 2"

$\phi 4-1"$ dia holes for $\frac{7}{8}$ "
 dia x $7\frac{1}{4}$ " long H.S. Anchor
 bolts (length under head)
 H.S. nut and washer.

$3\frac{1}{2}$ " $3\frac{1}{2}"$

Diagram illustrating the dimensions for a 1/8" sheet metal bend. The total length is 2'-3". The lap is 12 1/2". The thickness is 3/16". The bend radius is 10".

Technical drawing of a 1/8 inch sheet metal part. The drawing shows a cross-section of the part with dimensions and a 30-degree angle. The dimensions are: 3 1/4" (height), 12 1/2" Lap (length), 6 1/4" (width), 30° (angle), 2" (width), 8 1/2" (length), and 1/8" Sheet (thickness). The drawing includes a center line and a 30-degree angle.

Technical drawing of a mechanical part. The part has a total height of $6\frac{1}{8}"$. The top section is a semi-circular arc with a radius of $6" R$ and a thickness of $4"$. The main body is a rectangle with a width of $8\frac{1}{2}"$ and a height of $3\frac{3}{8}"$. The bottom-left corner is chamfered with a 30° angle. The bottom edge has a section labeled $2"$ and another labeled $8\frac{1}{2}"$. A note at the bottom right indicates $\frac{1}{8}"$ sheet.

Shape to fit rail element

12 1/2" Lap

G 1/4"

12 1/2"

16 3/8"

The drawing shows a cross-section of a rail element with a central rectangular section and two tapered ends. The central section has a width of 12 1/2" and a height of 16 3/8". The tapered ends have a height of 12 1/2". The total width of the central section is 12 1/2" Lap. The total width of the tapered ends is G 1/4".

APPROVAL RECOMMENDED:
Eric Tanaka 12/29/69
 TRAFFIC ENGINEER DATE

APPROVED:
John J. J. J. 12-30-69
 ASSISTANT CHIEF, ENGINEERING DATE

[illegible]

Technical drawing of a rounded rectangle with the following dimensions:

- Width: $1\frac{1}{8}"$
- Height: $\frac{3}{4}"$
- Corner Radius: $\frac{3}{8}" R$

A technical drawing of a rounded rectangle. The overall width is dimensioned as 3". The overall height is dimensioned as 2 1/32". The corners are rounded with a radius dimensioned as 20/64 R. The drawing includes a centerline and construction lines for the rounded corners.

3"

1 3/4"

1 1/2"

29/32"

29/64 R

8 pages

NOTES:

1. H.S. Bolts shall conform to the requirements of ASTM A 325.
2. Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHTO 180.

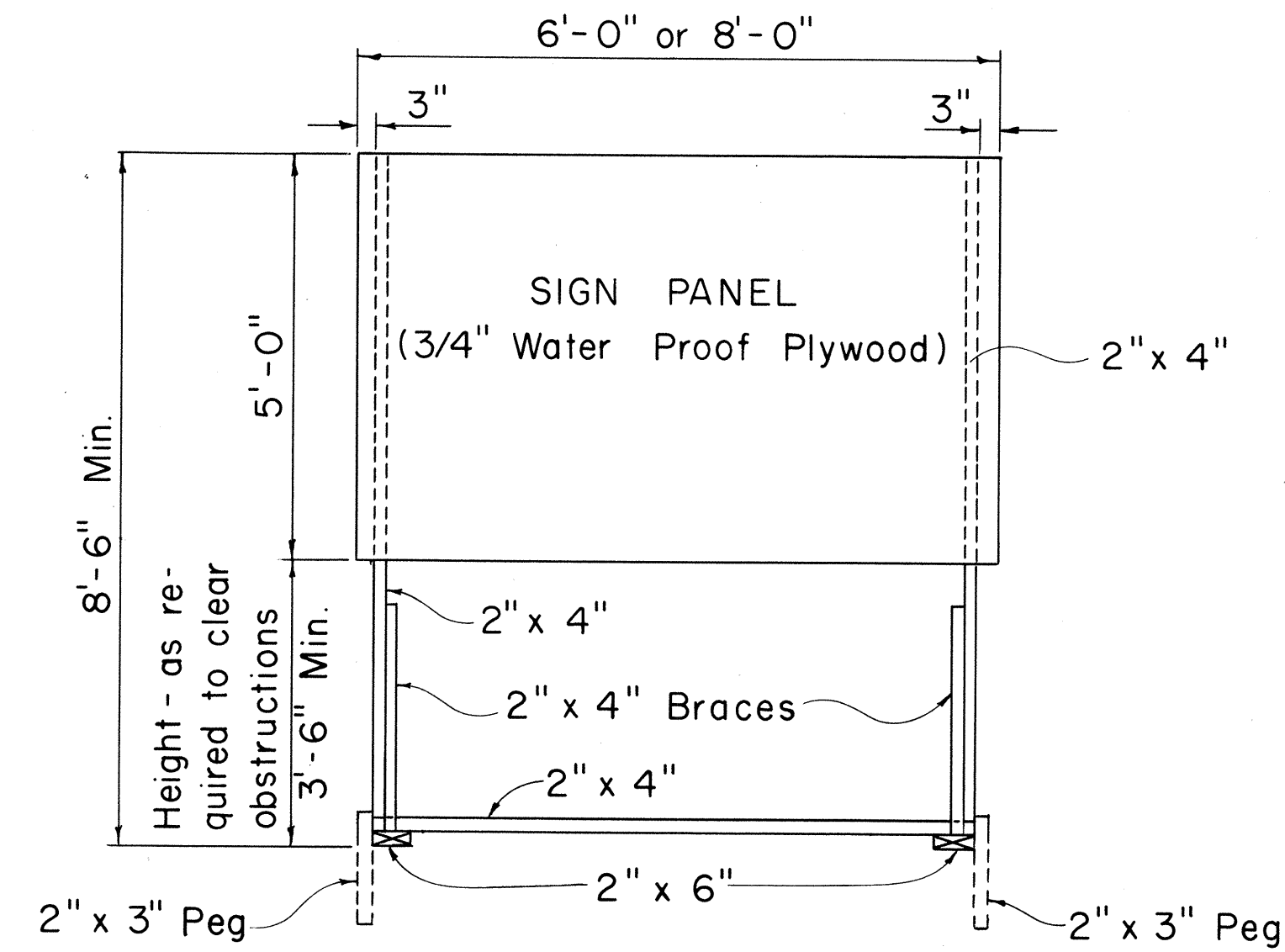
NO	REVISION	APPROVED BY	DATE

STANDARD DETAILS

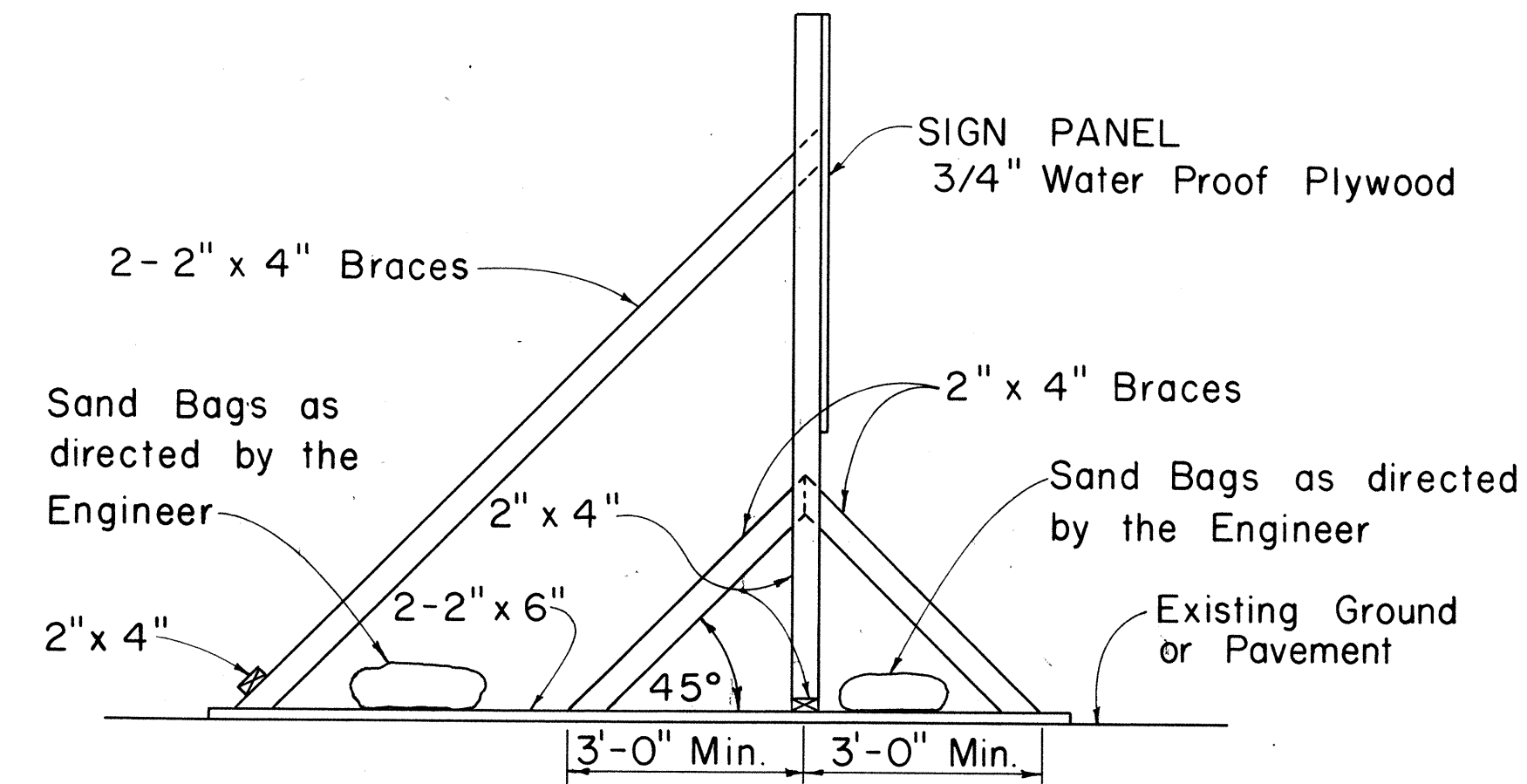
METAL GUARD RAIL

Scale: As Noted	August, 1968.
SHEET No. 2 OF 3 SHEETS	DT 501

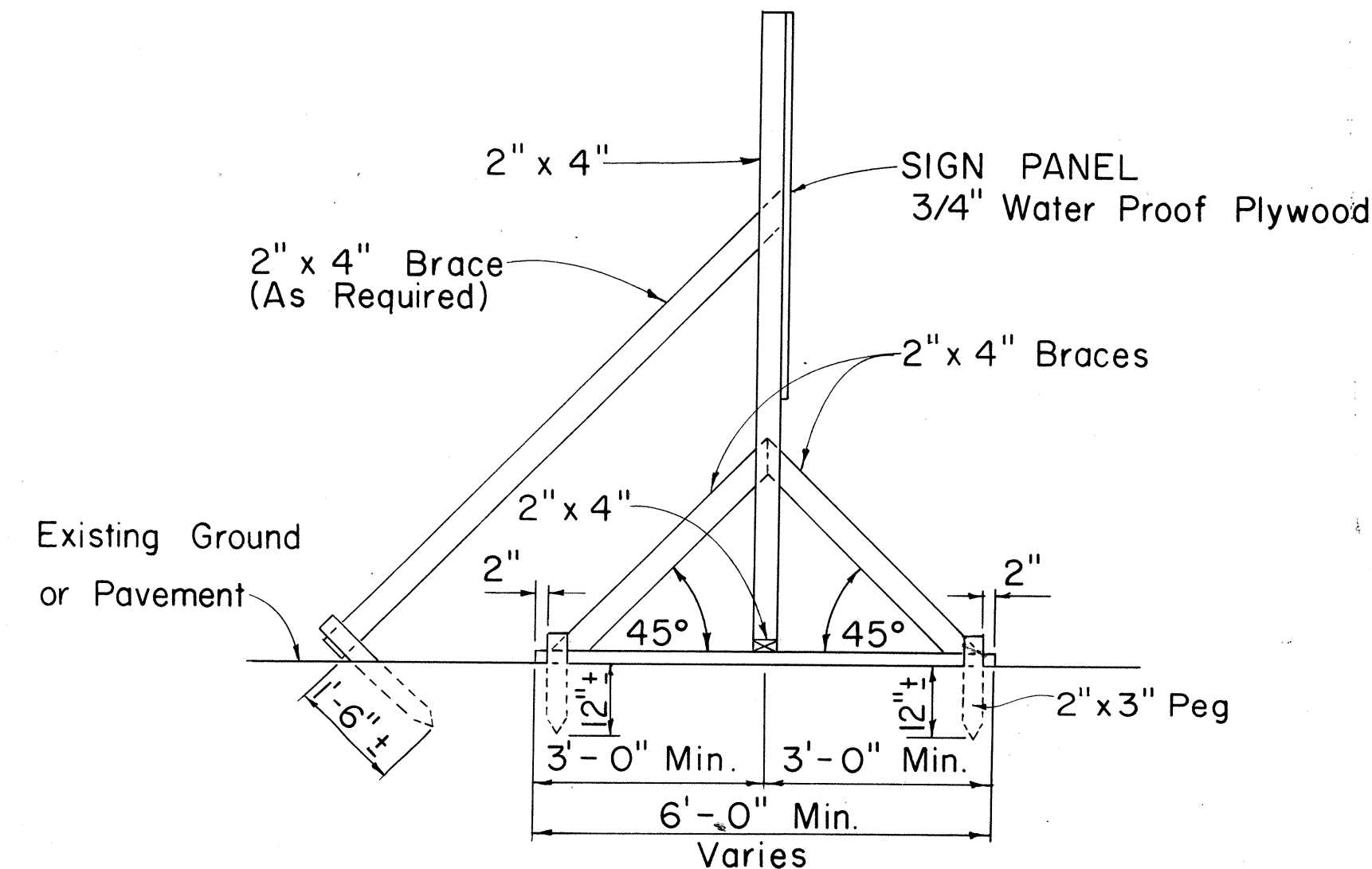
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	37C-01-71	1971	8	8



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

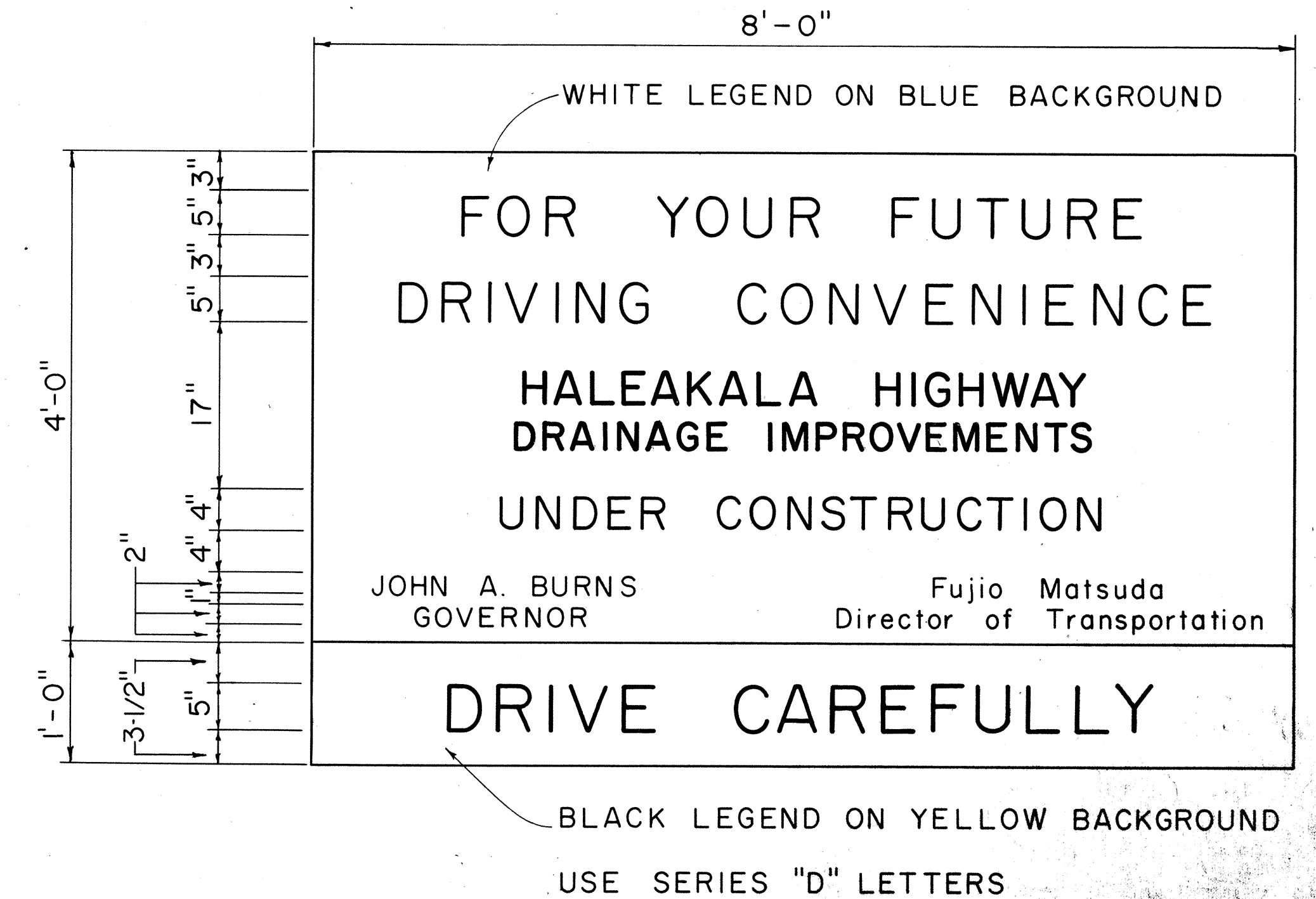


SIDE VIEW
(SIGN SUPPORT AND FRAME WEIGHTED DOWN)
Scale: 1/2" = 1'-0"



SIDE VIEW
(SIGN SUPPORT AND FRAME ANCHORED IN GROUND)
Scale: 1/2" = 1'-0"

SIGN SUPPORT AND FRAME
Scale: As Shown



GENERAL NOTES

1. The sign panels will be constructed by the State and will be available for pick up by the Contractor from the State Highway Maintenance Yard.
2. The Contractor shall construct the sign supports and frames and install the sign panels at the locations shown on the plans and as ordered by the Engineer.
3. At the end of construction the Contractor shall remove the sign panels and return it to the State Highway Maintenance Yard. Sign supports and frames shall be removed and cleared from the project site.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS
PROJECT INFORMATION SIGN
Scale: As Shown
SHEET No. 3 OF 3 SHEETS

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