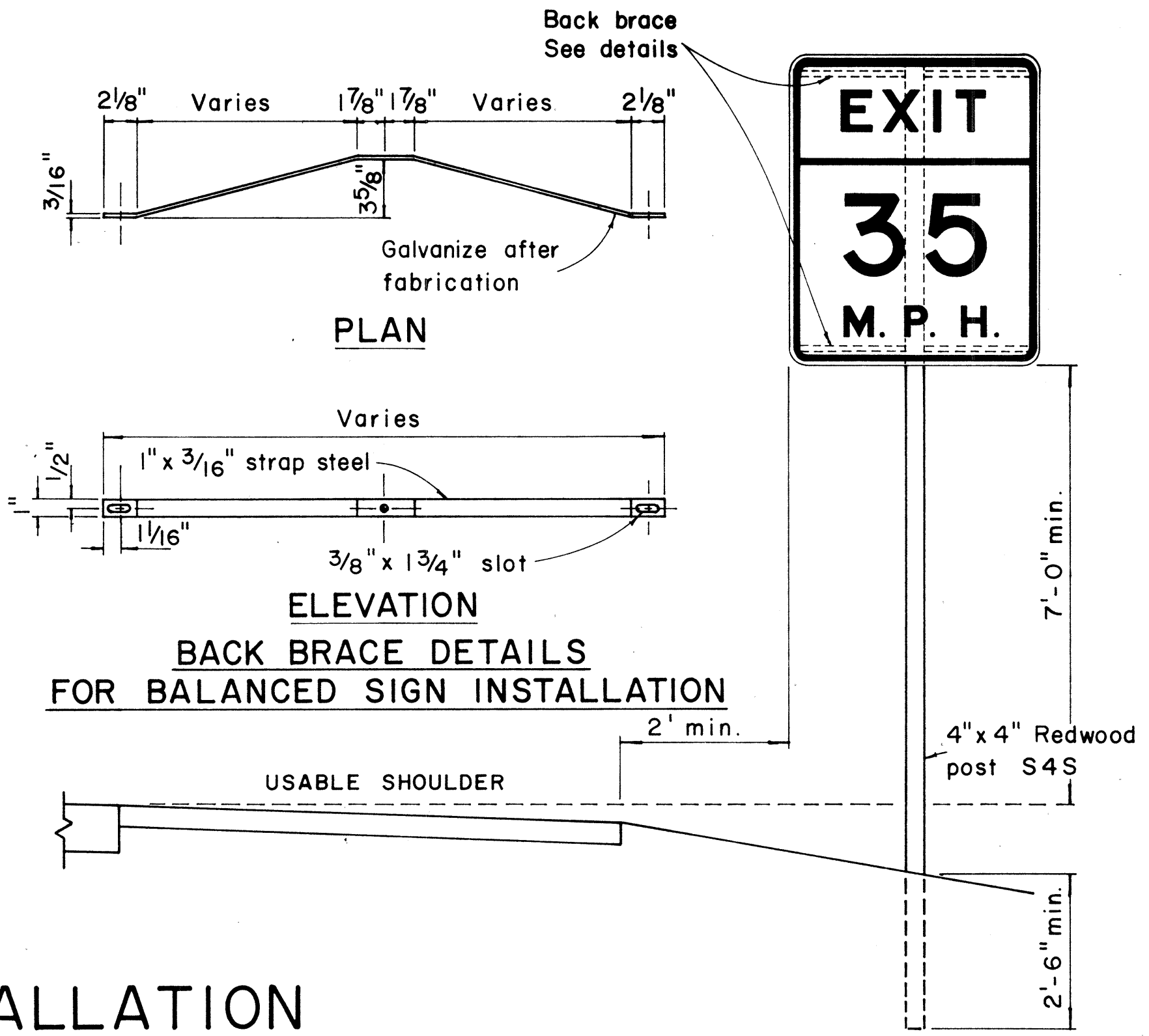
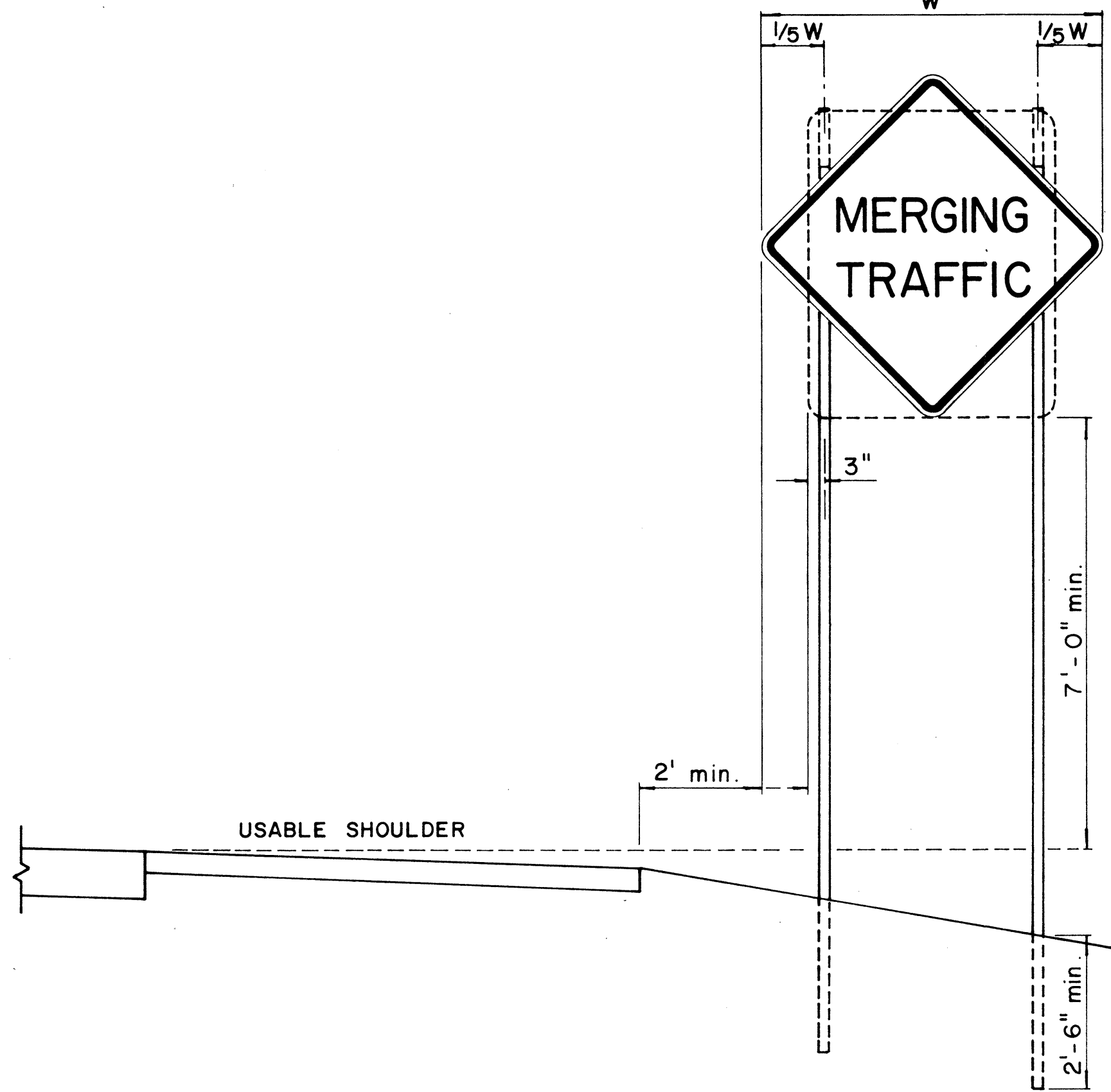
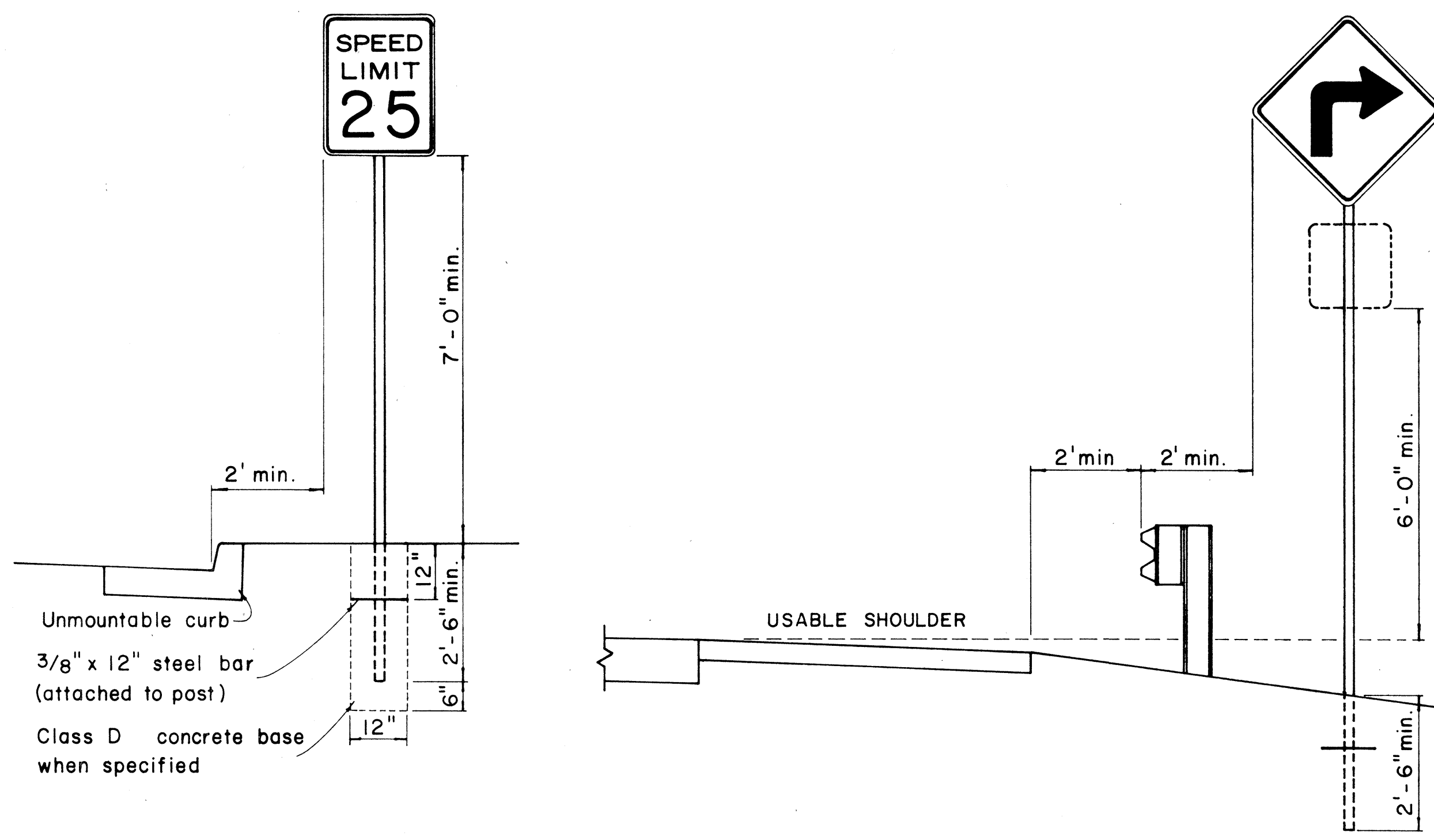
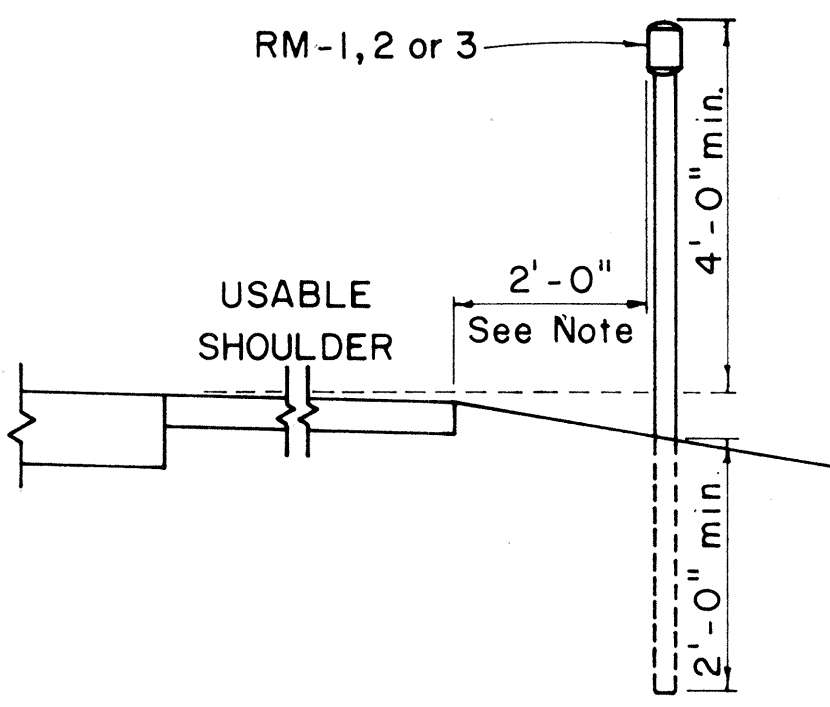


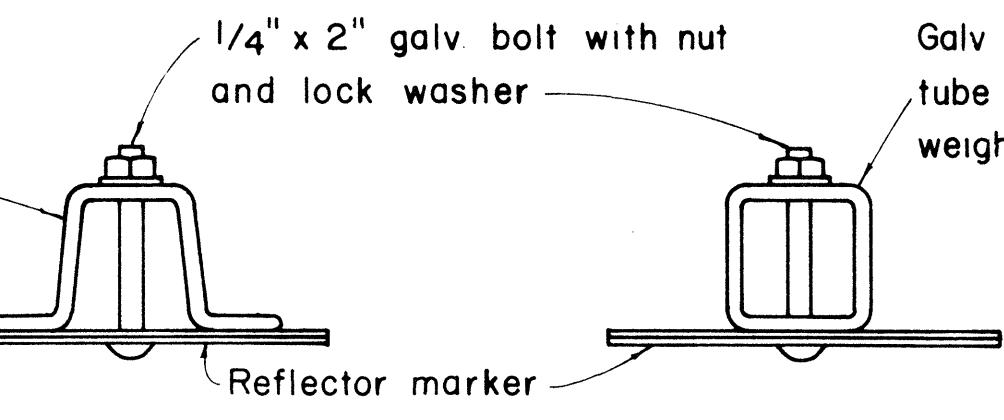
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-03806	1970	25	44



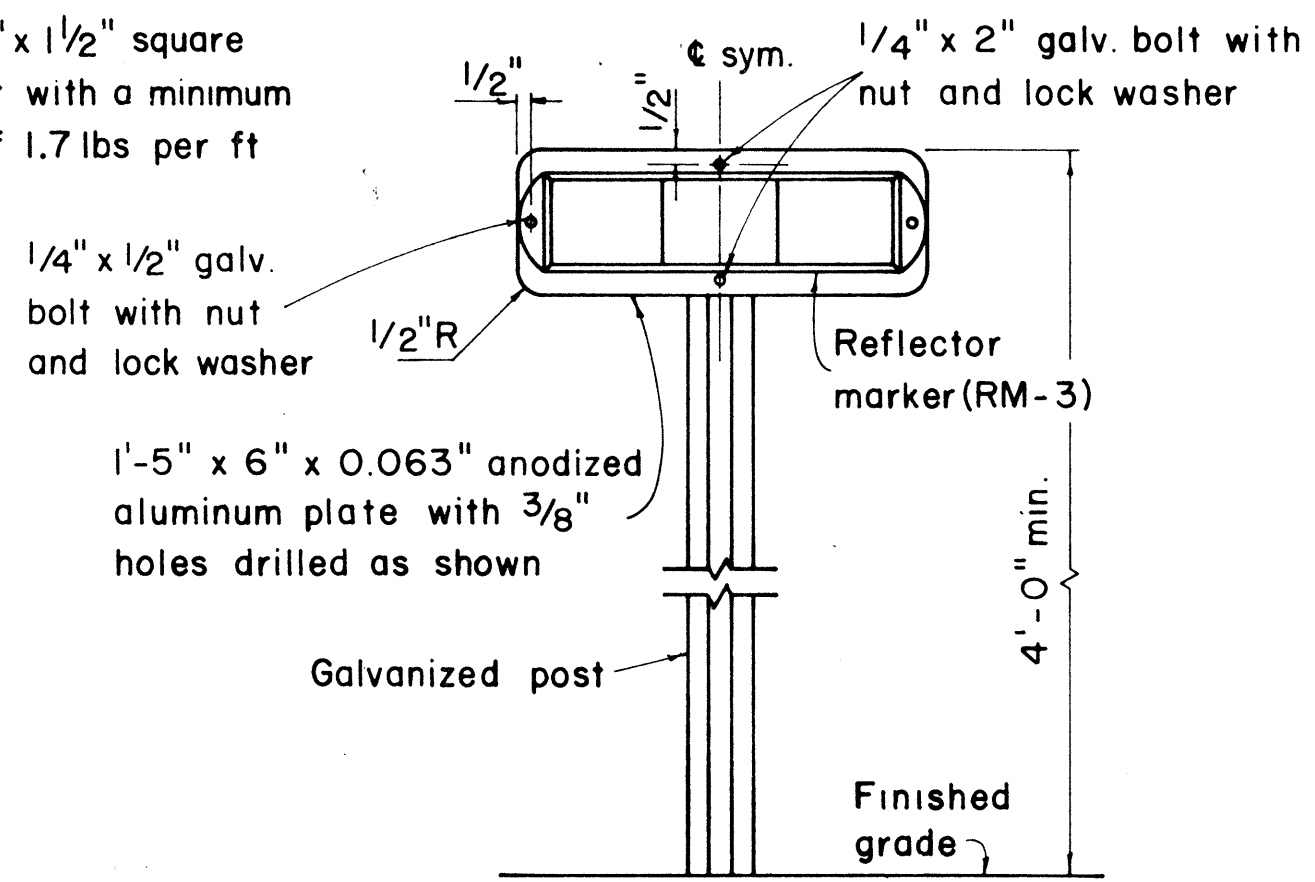
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



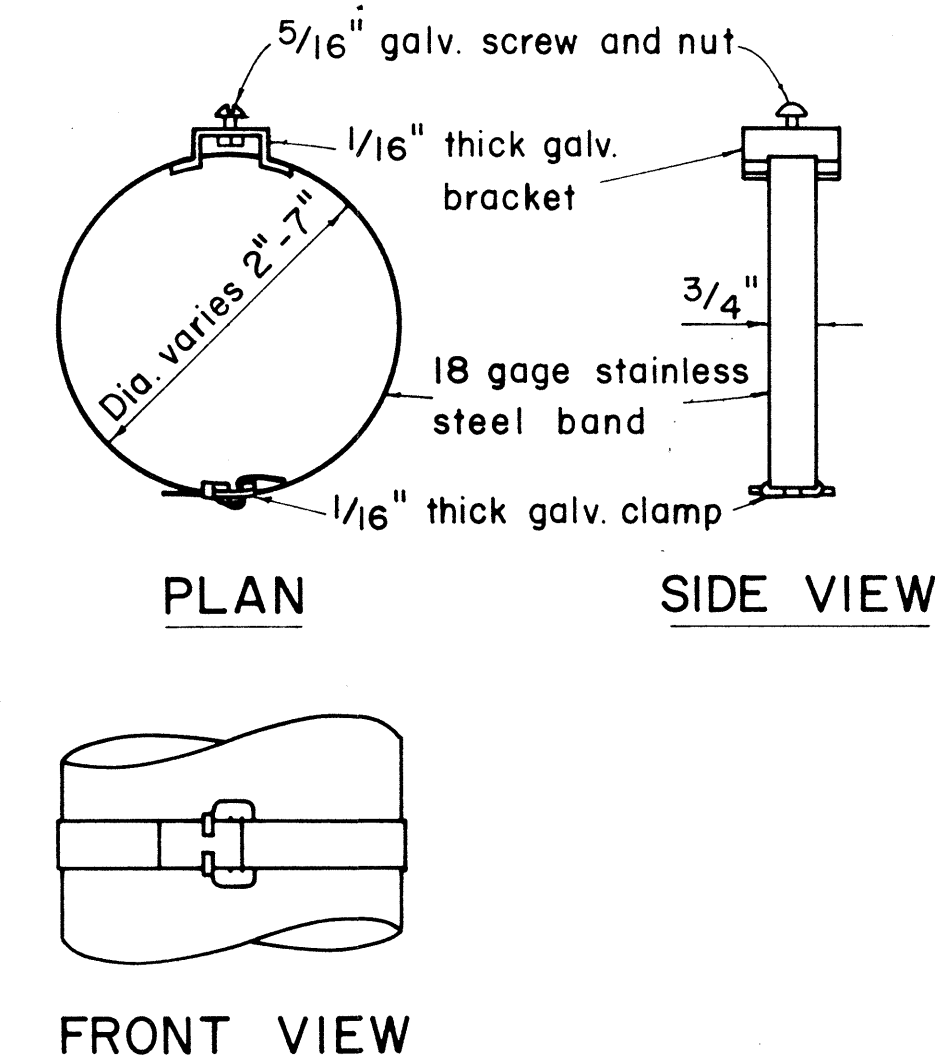
Galv. flanged channel
1/8" x 3/16" rolled section
post with a minimum
weight of 2 lbs. per ft.
Upper 2 ft shall have
a single row of 3/8" holes
centered in the web at
1" o.c.



TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL
HORIZONTAL REFLECTOR MARKER
RM-3H



TYPICAL BAND BRACKET FOR
MOUNTING TRAFFIC SIGNS

GENERAL NOTES:

- Sign posts shall be 2" galv. standard pipe or 2" x 2" galv. sq. tube post.
- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two 2" galv. standard pipe or two 2" x 2" galv. sq. tube post or 4" x 4" redwood post S4S.
- Signs shall be attached to post with 5/16" galv. bolts with nuts and 7/8" x 0.06 stainless steel washers with neoprene rubber gasket.
- Sign posts shall extend 3 1/2" above sign where required for City and County street name signs.
- Reflector markers RM-1, 2, 3 shall be glass sphere reflector markers with 4" x 5" reflector units (as shown) or plastic prismatic reflector markers with 3" diameter reflector units.
- Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
- (R) or (L) indicates right or left and shall be as shown on the plans.

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

APPROVED:
[Signature] 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO	REVISION	APPROVED BY	DATE

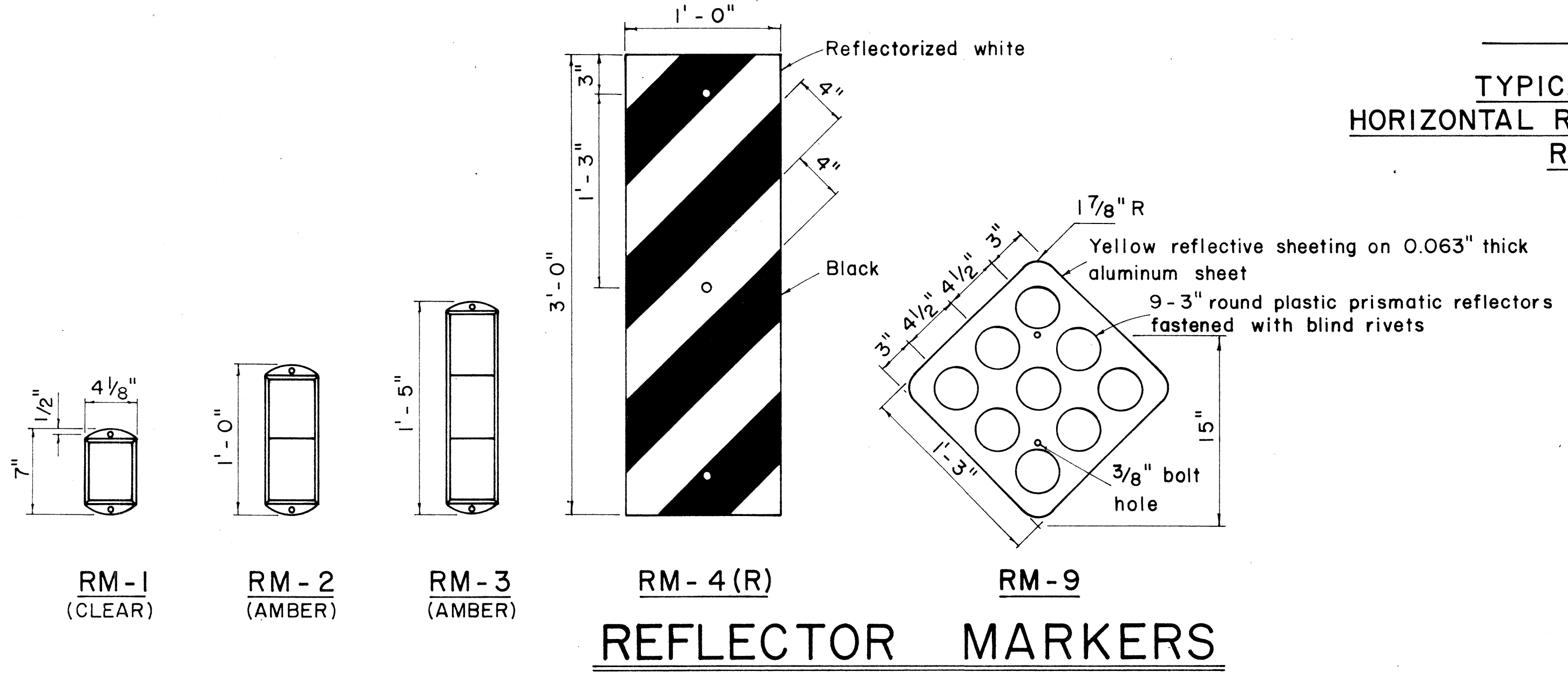
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

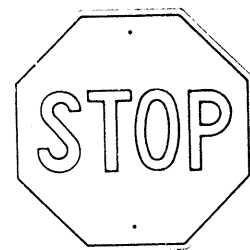
SHEET No. 1 OF 21 SHEETS DT 100

DATE	
DESIGNED BY	
TRACED BY	
NOTED BY	
CHECKED BY	
ORIGINAL	
PLAN	
NOTE BOOK	
NO.	

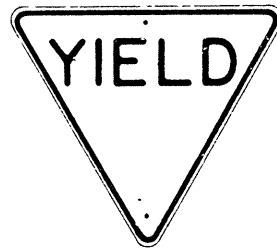


REFLECTOR MARKERS

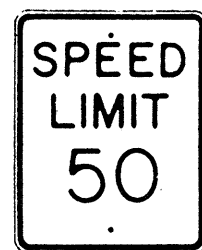
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	26	44



R1-1 30"x 30"



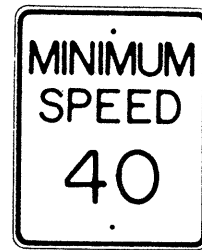
R1-2 36"x 36"x 36"
R1-2-E 48"x 48"x 48"
R1-2-I 60"x 60"x 60"



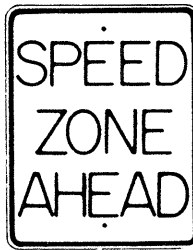
R2-1(50) 24"x 30"
R2-1(50)-E 36"x 48"
R2-1(50)-I 48"x 60"



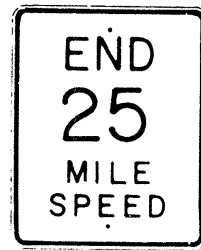
R2-2(40) 24"x 24"
R2-2(40)-E 36"x 36"
R2-2(40)-I 48"x 48"



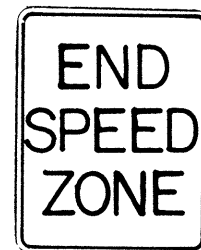
R2-4(40) 24"x 30"
R2-4(40)-E 36"x 48"
R2-4(40)-I 48"x 60"



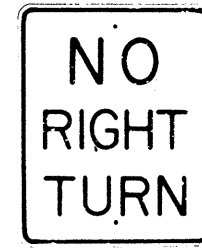
R2-5 24"x 30"
R2-5-E 36"x 48"
R2-5-I 48"x 60"



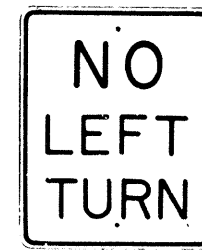
R2-6(25) 24"x 30"
R2-6(25)-E 36"x 48"
R2-6(25)-I 48"x 60"



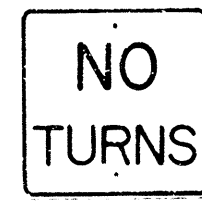
R2-7 24"x 30"
R2-7-E 36"x 48"
R2-7-I 48"x 60"



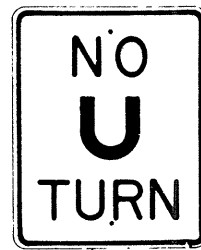
R3-1 24"x 30"
R3-1-E 36"x 48"



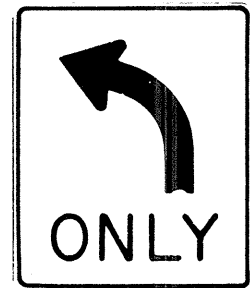
R3-2 24"x 30"
R3-2-E 36"x 48"



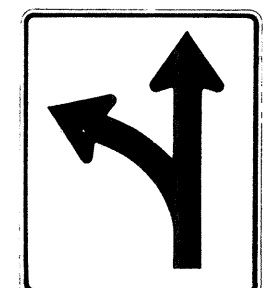
R3-3 24"x 24"



R3-4 24"x 30"
R3-4-E 36"x 48"
R3-4-I 48"x 60"



R3-5(L) 30"x 36"



R3-6(L) 30"x 36"



R3-7(R) 30"x 30"



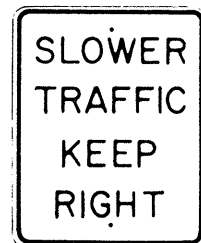
R3-8(L) 30"x 30"



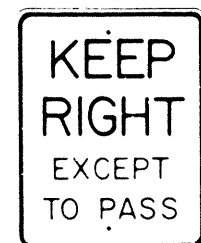
R4-1 24"x 30"



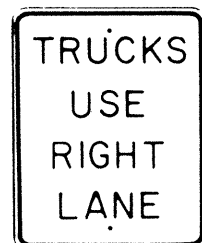
R4-2 24"x 30"



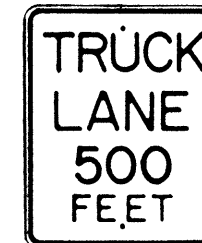
R4-3 24"x 30"
R4-3-E 36"x 48"
R4-3-I 48"x 60"



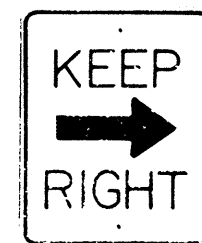
R4-4 24"x 30"
R4-4-E 36"x 48"
R4-4-I 48"x 60"



R4-5 24"x 30"
R4-5-E 36"x 48"



R4-6 24"x 30"
R4-6-E 36"x 48"



R4-7(R) 24"x 30"
R4-7(R)-E 36"x 48"



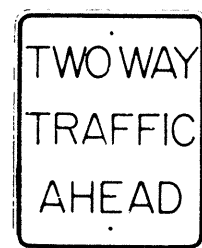
R5-1 24"x 24"



R6-1(R) 36"x 12"



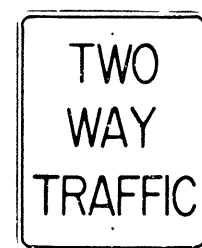
R6-2(R) 18"x 24"



R6-3 24"x 30"



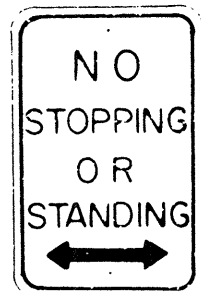
R6-4 24"x 30"



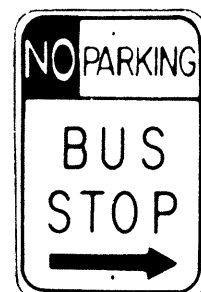
R6-5 24"x 30"



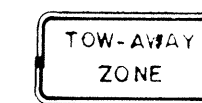
R7-1 12"x 18"



R7-4 12"x 18"
R7-4-E 24"x 30"



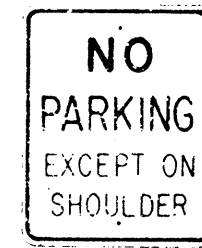
R7-107(R) 12"x 18"



R7-201 12"x 6"



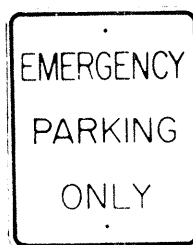
R8-1 24"x 30"
R8-1-E 36"x 48"
R8-1-I 48"x 60"



R8-2 24"x 30"
R8-2-E 36"x 48"



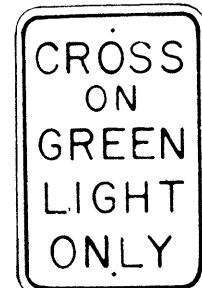
R8-3 24"x 30"
R8-3-E 36"x 48"



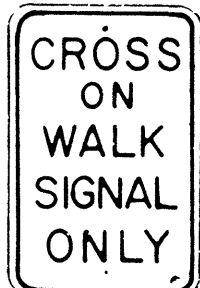
R8-4 24"x 30"
R8-4-E 36"x 48"
R8-4-I 48"x 36"



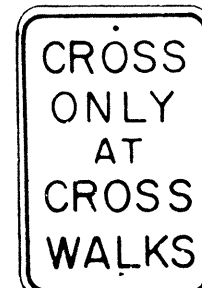
R9-1 18"x 24"



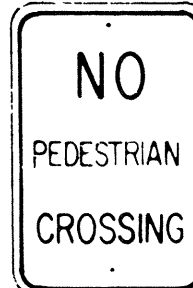
R9-2 12"x 18"



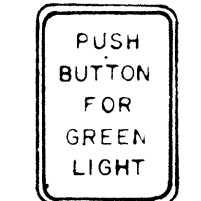
R9-3 12"x 18"



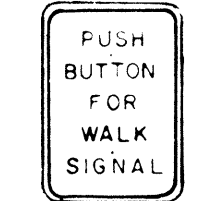
R9-4 12"x 18"



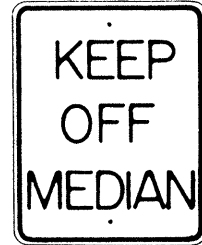
R9-5 12"x 18"



R9-6 9"x 12"



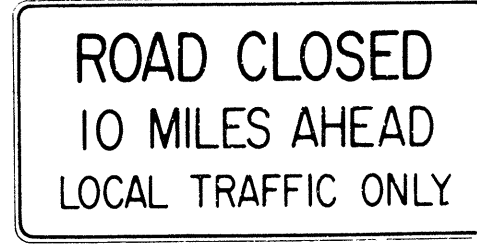
R9-7 9"x 12"



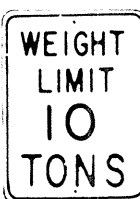
R10-1 24"x 30"
R10-1-E 36"x 48"
R10-1-I 48"x 60"



R10-2 48"x 30"



R10-3(10) 60"x 30"



R10-4(10) 18"x 24"

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 regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise noted.
- The suffix "E" denotes Expressway signs and "I" denotes Interstate signs.
- For R2 signs, number in () indicates speed and shall be as shown on the plans.
- (R) or (L) indicates right or left and shall be as shown on the plans.
- For R10-4 sign, number in () indicates weight and shall be as shown on the plan.

APPROVAL RECOMMENDED:
Eugene Tanaka 12/23/69
TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE

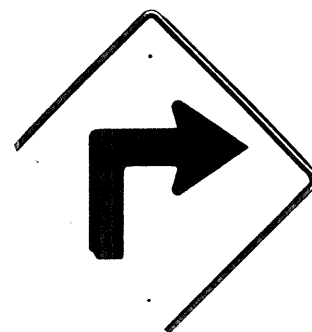
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS
REGULATORY SIGNS
NOT TO SCALE

SHEET No. 2 OF 21 SHEETS DT 101

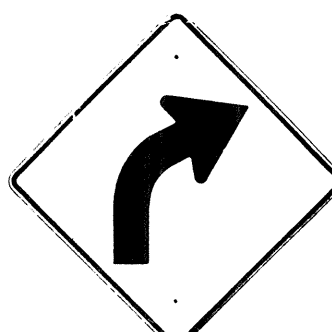
26

DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	

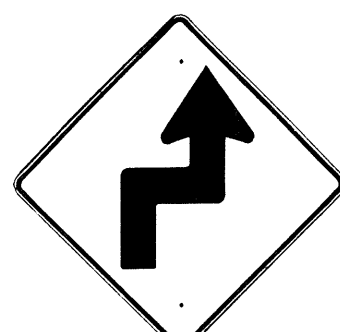
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	27	44



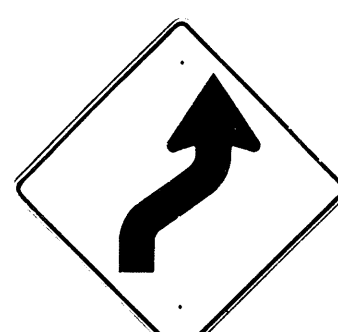
W1-1(R) 30" x 30"



W1-2(R) 30" x 30"



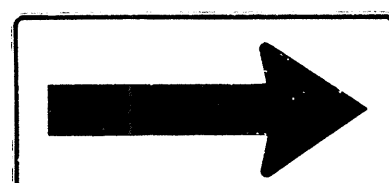
W1-3(R) 30" x 30"



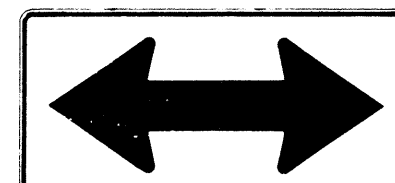
W1-4(R) 30" x 30"



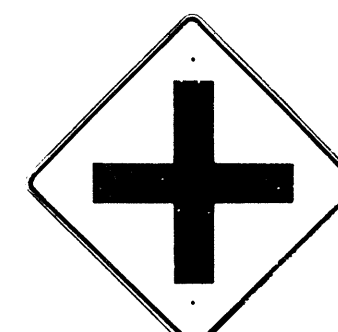
W1-5(R) 30" x 30"



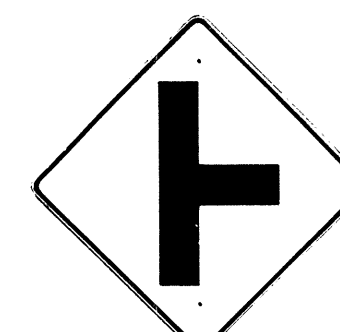
W1-6 48" x 24"



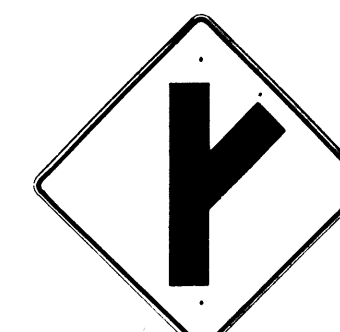
W1-7 48" x 24"



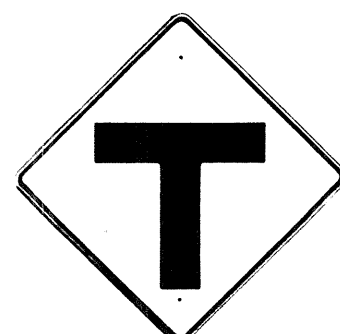
W2-1 30" x 30"



W2-2 30" x 30"



W2-3(R) 30" x 30"



W2-4 30" x 30"



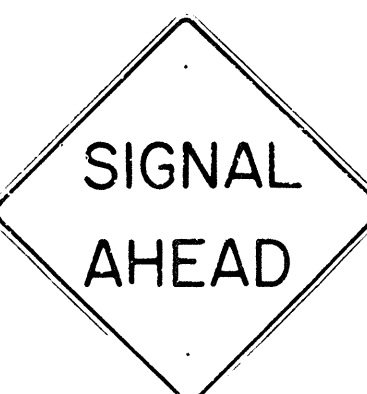
W2-5 30" x 30"



W3-1 30" x 30"



W3-2 30" x 30"



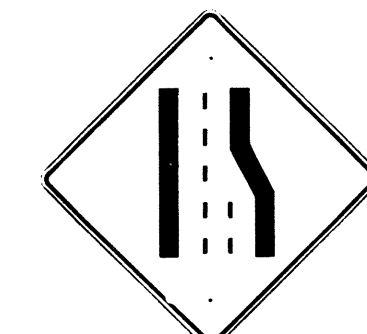
W3-3 36" x 36"



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"



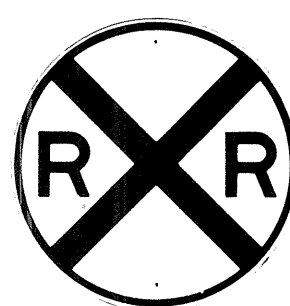
W8-5 30" x 30"



W9-1 30" x 30"



W9-2 30" x 30"



W10-1 36" DIAMETER



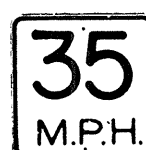
W11-1 30" x 30"



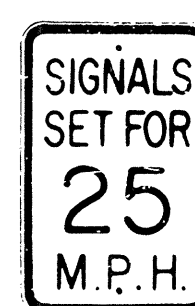
W11-5 30" x 30"



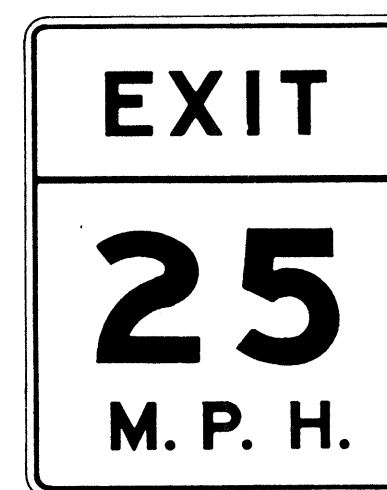
W12-2 36" x 36"



W13-1(35) 18" x 18"
W13-1(35)-E 24" x 24"



W13-2(25) 12" x 18"



W13-3(25) 48" x 60"

NOTE:

1. 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.
2. All warning signs shall be reflectorized unless otherwise specified.
3. All warning signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise noted.
4. (R) or (L) indicates right or left and shall be as shown on the plan.
5. The suffix "E" denotes Expressway signs and "I" denotes Interstate signs.
6. For W13 sign, number in () indicates speed and shall be as shown on the plans.

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

APPROVED:
[Signature] 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

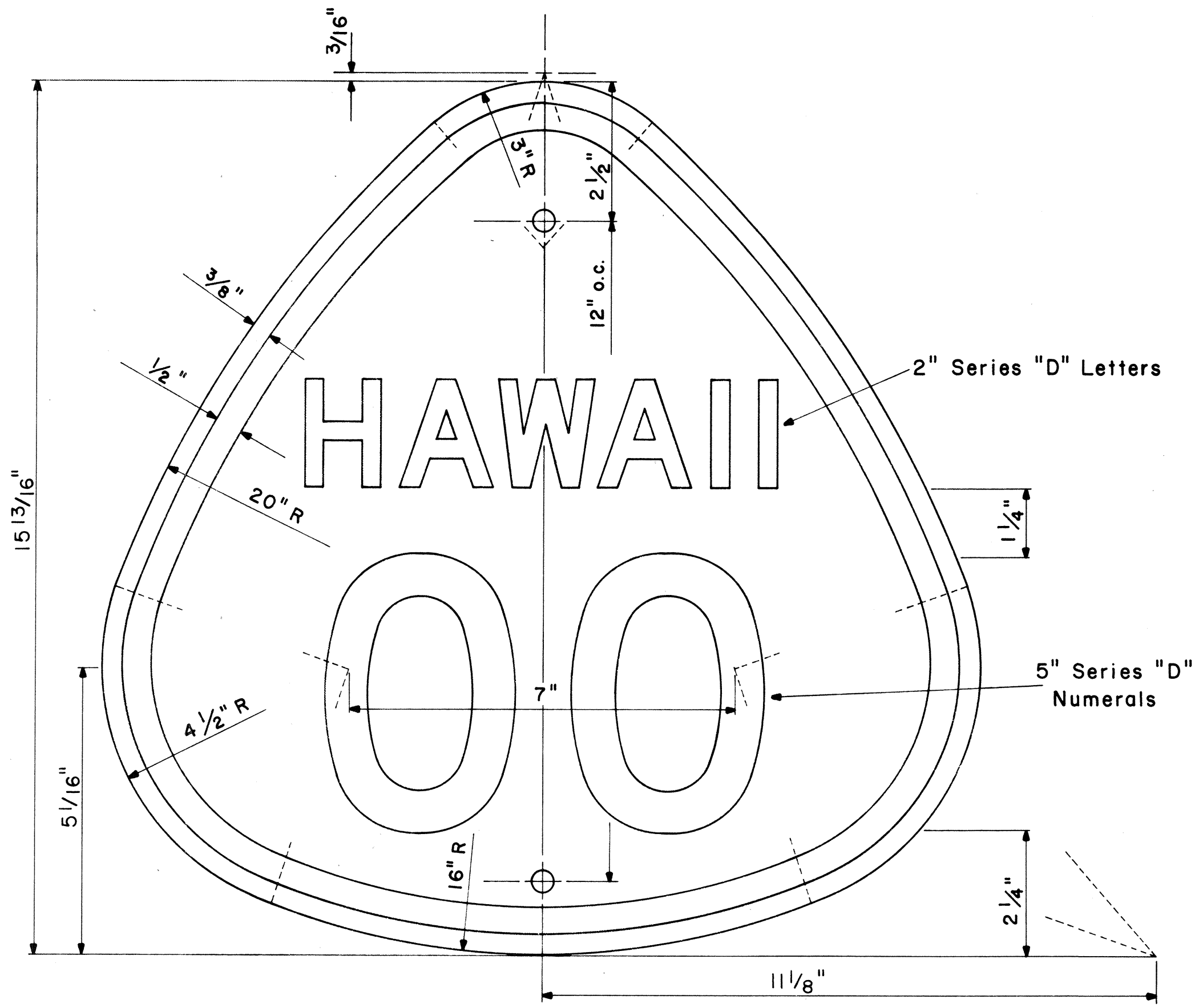
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

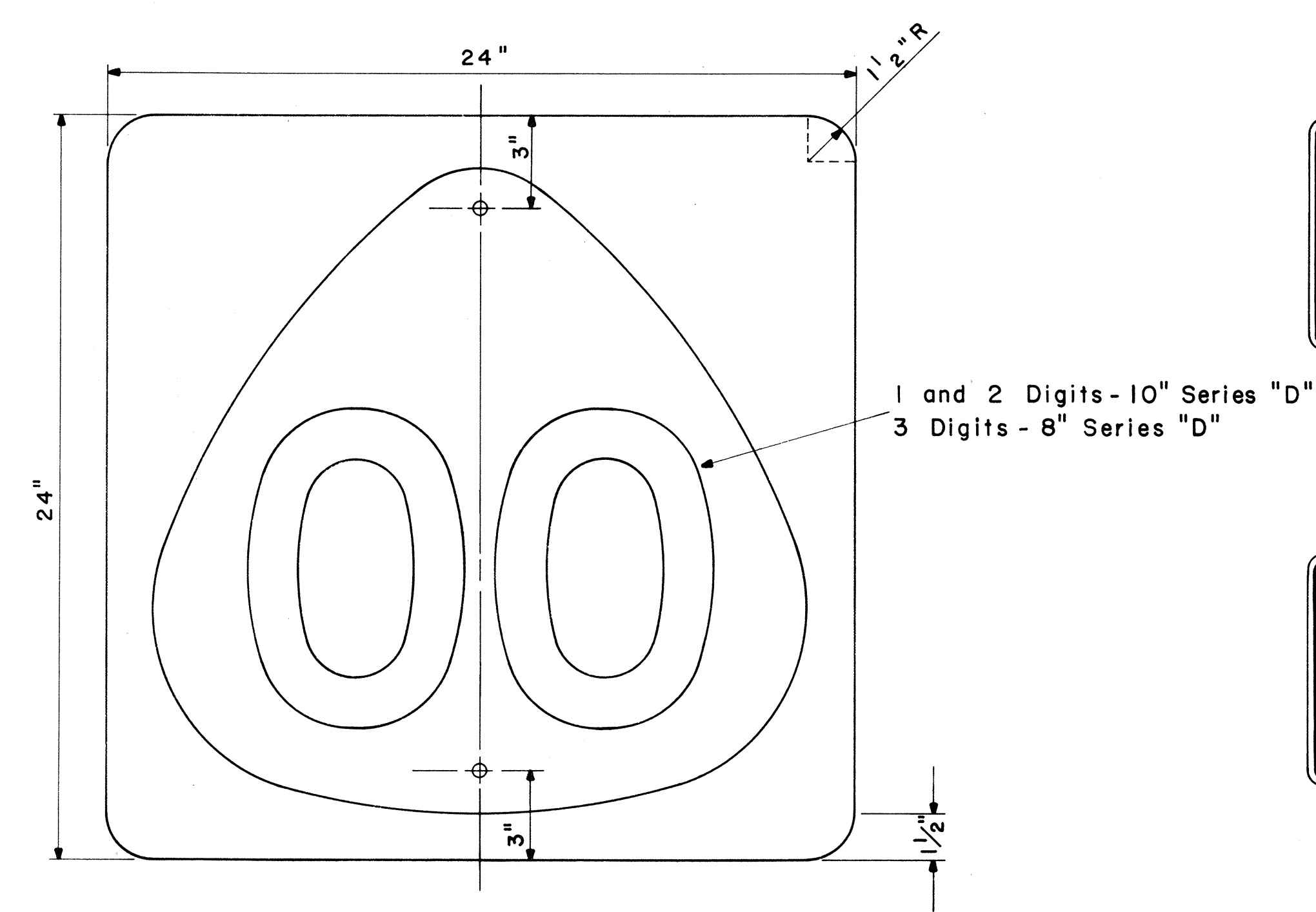
STANDARD DETAILS

WARNING SIGNS

NOT TO SCALE

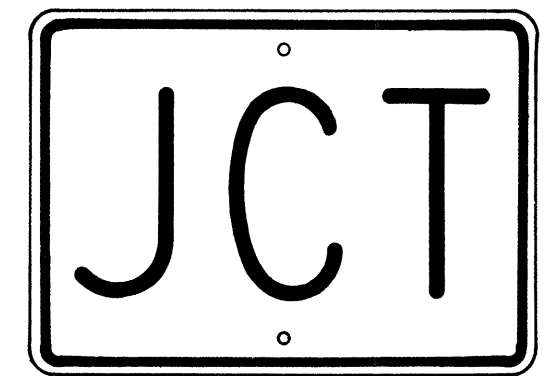


STATE ROUTE MARKER
MI-3(OO)
Scale: 1/2" = 1"

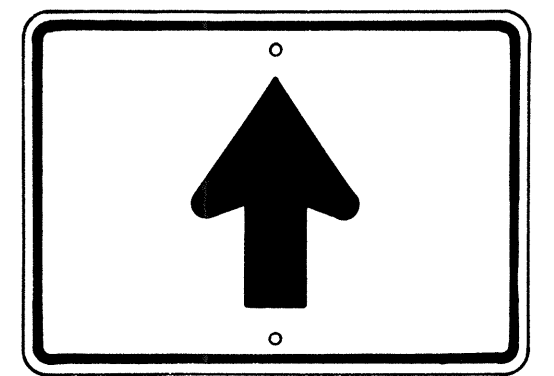


STATE ROUTE MARKER
MI-4(OO)
Scale: 1/4" = 1"

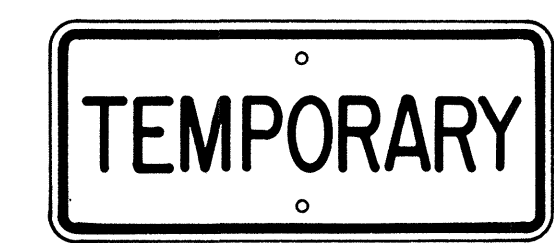
NOTE:
Multiply all dimensions of State Route Marker MI-3 by 1.3 for the dimensions of the shield for MI-4.



M2-1
21" x 15"



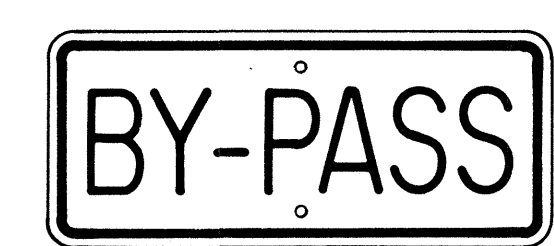
M4-3
21" x 15"



M5-1
21" x 9"



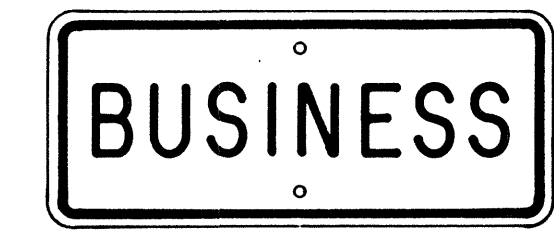
M5-2
21" x 9"



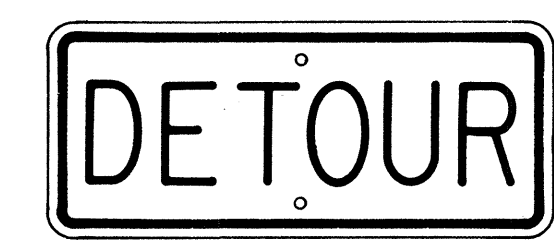
M5-3
21" x 9"



M5-4
21" x 9"



M5-5
21" x 9"



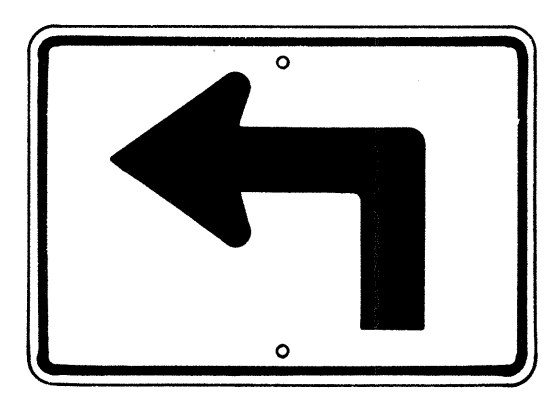
M5-6
21" x 9"



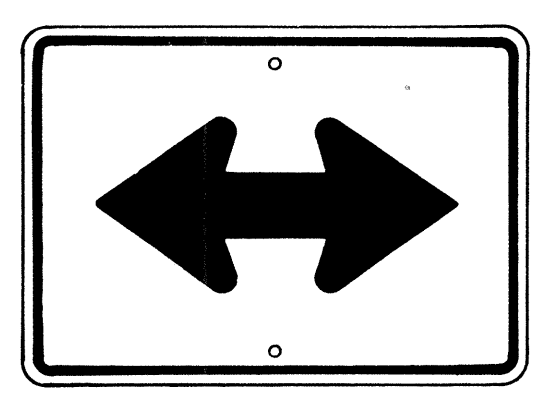
M6-1-N
21" x 9"
(See Note 6)



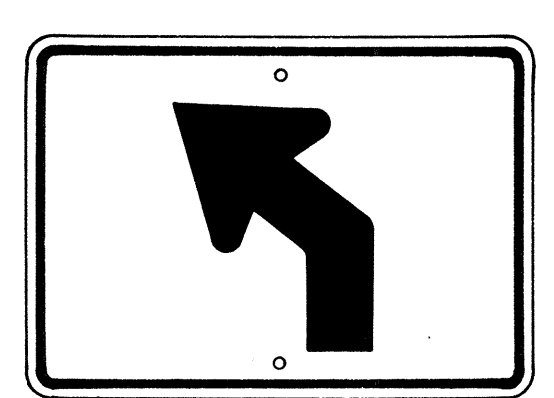
M7-1
18" x 12"



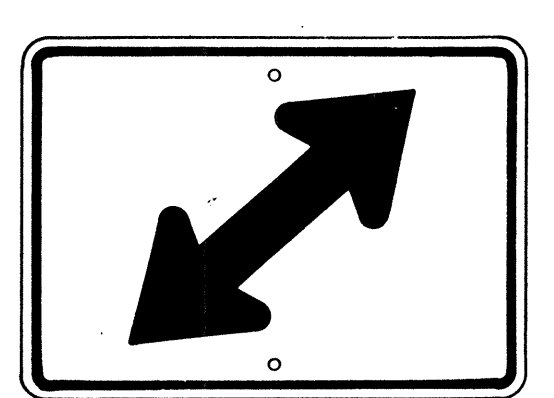
M3-1-L
* M3-1-R
21" x 15"



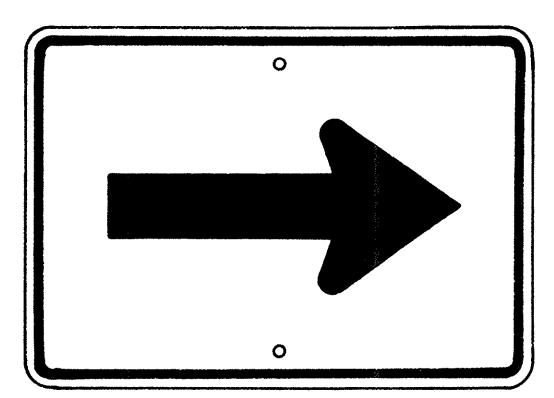
M4-4
21" x 15"



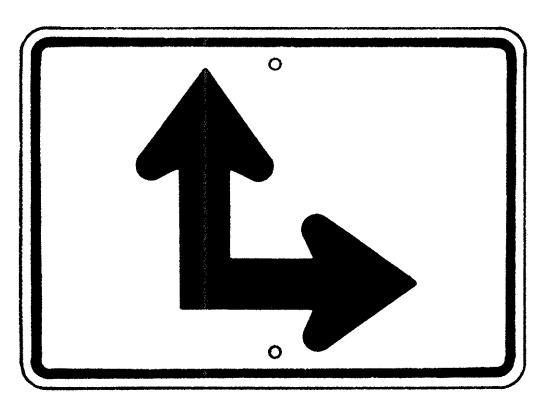
M3-2-L
* M3-2-R
21" x 15"



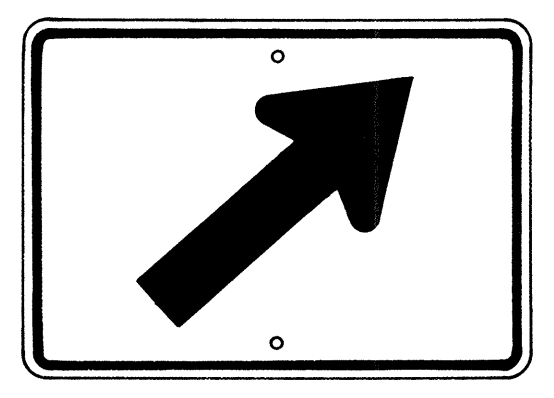
M4-5-R
* M4-5-L
21" x 15"



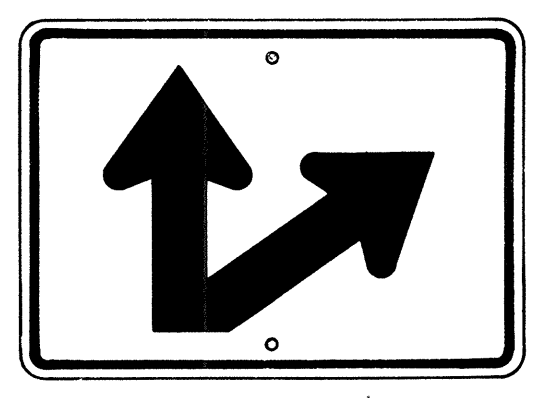
M4-1
21" x 15"



M4-6-R
* M4-6-L
21" x 15"



M4-2-R
* M4-2-L
21" x 15"



M4-7-R
* M4-7-L
21" x 15"

AUXILIARY MARKERS

Scale: 1/8" = 1"

* NOTE:
Signs shall be similar but opposite in direction.

GENERAL NOTES

- The shape, color, dimensions, symbols, wording, lettering and reflectorizing 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 letters and figures shall conform to the manual "Standard Alphabets for Highway Signs," Dept. of Commerce, Bureau of Public Roads, 1966
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.
- All markers shall have a black legend on a white background unless otherwise specified.
- Sign message of Cardinal Direction Marker (M6-1) shall be denoted by the following suffixes:
M6-1-N : NORTH
M6-1-E : EAST
M6-1-S : SOUTH
M6-1-W : WEST
- Auxiliary markers denoted with the suffix "I": (M4-1-I) shall have a white legend on a blue background.
- Cardinal Direction Marker (M6-1) with suffix I (3) shall have a white legend on a blue background and shall be 30" x 15" in size.
- For MI-3 and MI-4 signs, number in () indicates route number and shall be as shown on the plan.

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

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

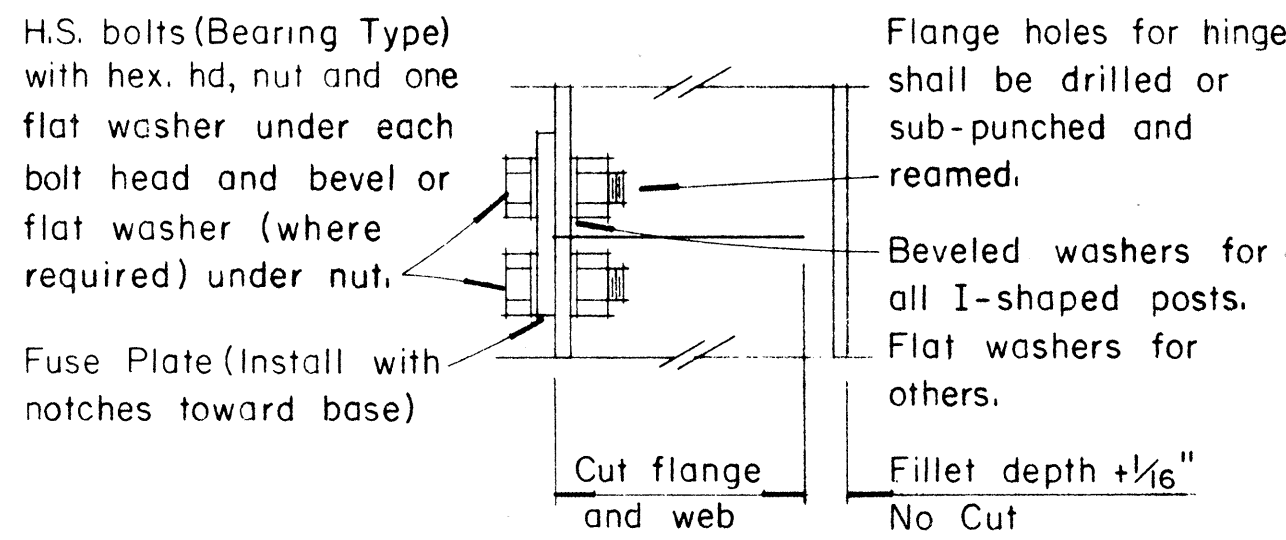
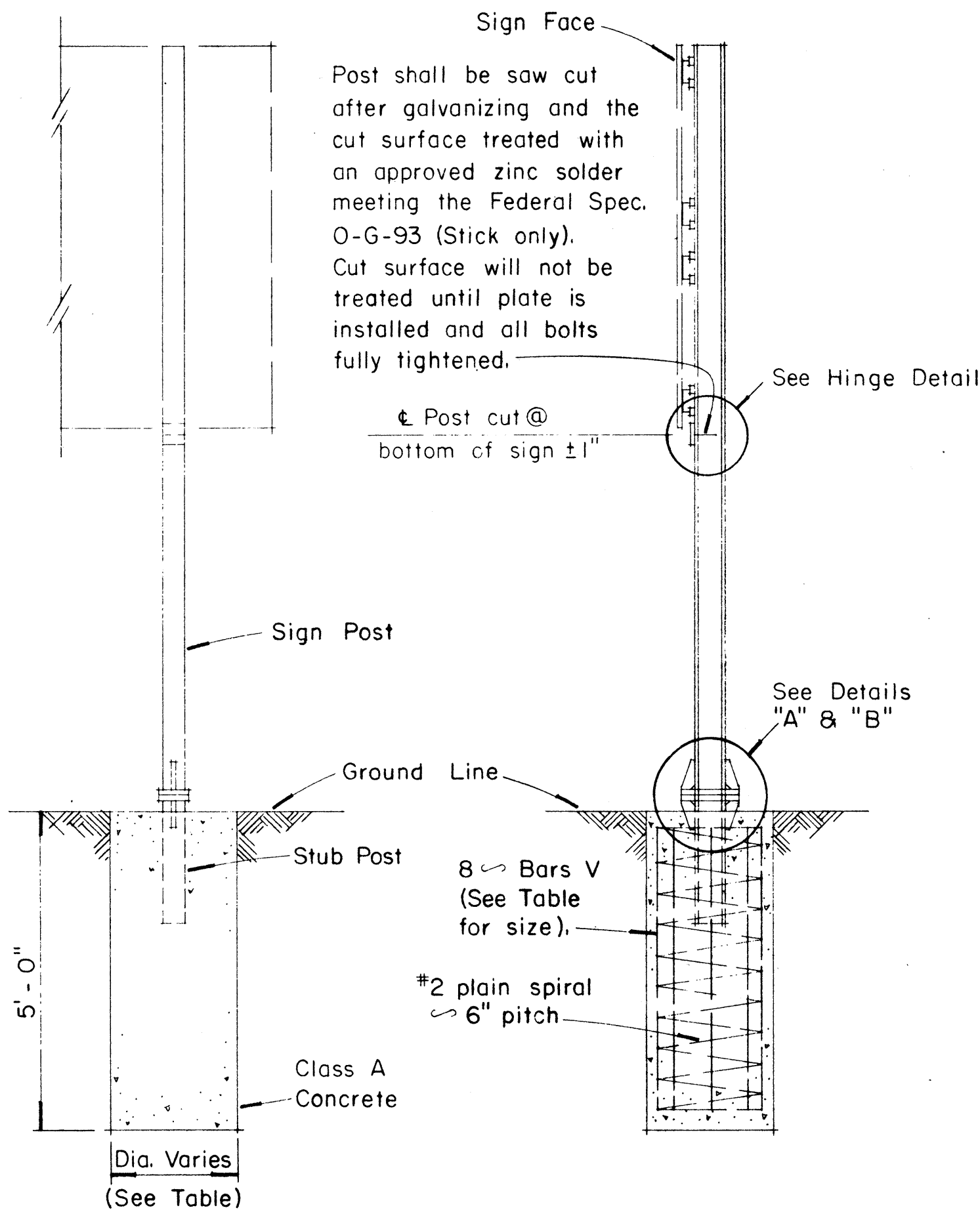
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
STATE ROUTE MARKERS
AND
AUXILIARY MARKERS
Scale: As Noted
SHEET NO. 4 OF 21 SHEETS DT 105

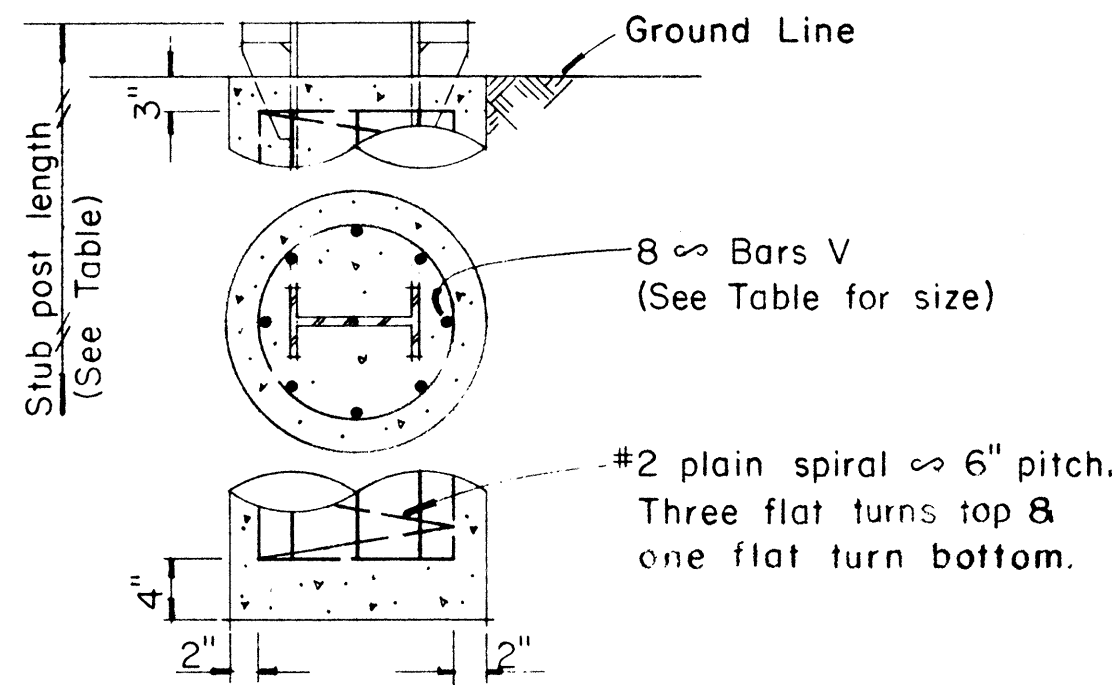
ORIGINAL PLAN
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE
NO.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	30	44

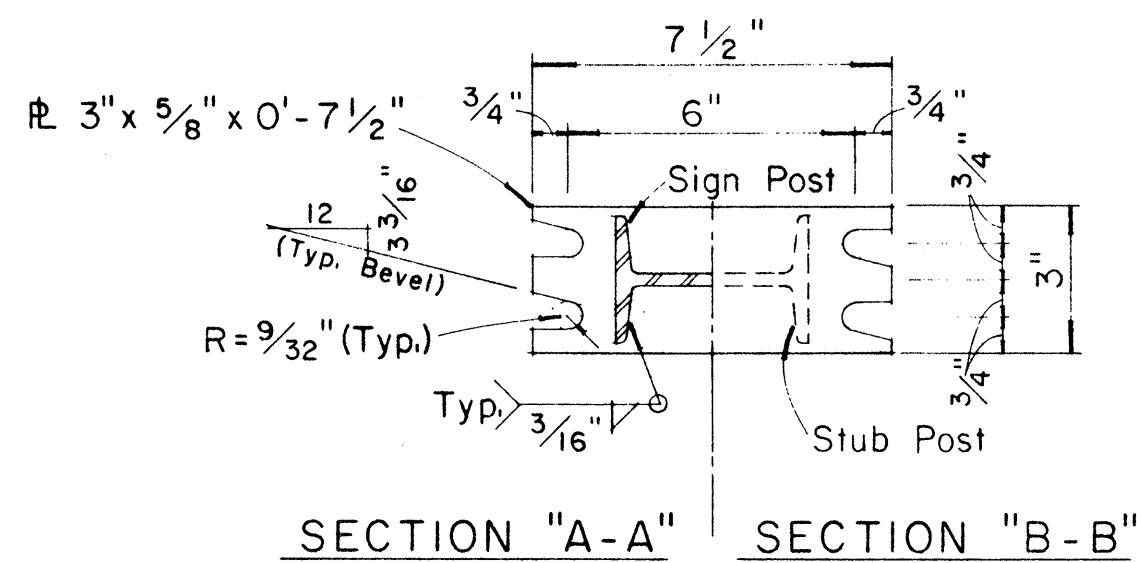
	BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE										FOUNDATION DATA				
Post Size	Bolt Size & Torque	A	B	C	D	E	t ₁	t ₂	W	R	F	G	H	J	K	L	N	d ₁	t ₃	Bolt Dia.	Wt. of each Fuse Pl.	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5	5/8" ϕ x 2 3/4" Torque = 450"*	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2" ϕ	1.09*	2'-0"	3"	2'-0"	#5
6 B 12											3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1 1/16"	3/8"	5/8" ϕ	1.60*	2'-0"	3"	2'-0"	#5
6 B 15.5											4 1/2"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	1 3/16"	1/2"	3/4" ϕ	3.75*	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 3/16"	1/2"	3/4" ϕ	3.27*	2'-6"	3"	2'-0"	#7
8 WF 20	3/4" ϕ x 3 1/2" Torque = 750"*	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	1 3/32"	4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	1 5/16"	9/16"	7/8" ϕ	3.93*	3'-0"	2 1/2"	2'-0"	#8
10 WF 21											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	1 5/16"	9/16"	7/8" ϕ	4.75*	3'-0"	2 1/2"	2'-0"	#9
10 WF 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	1 5/16"	9/16"	7/8" ϕ	4.79*	3'-0"	2 1/2"	2'-0"	#10
12 WF 27											5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	1 5/16"	9/16"	7/8" ϕ	5.42*	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200"*	SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2" ϕ	0.64*	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7											3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2" ϕ	0.64*	1'-6"	3 1/2"	1'-6"	#5



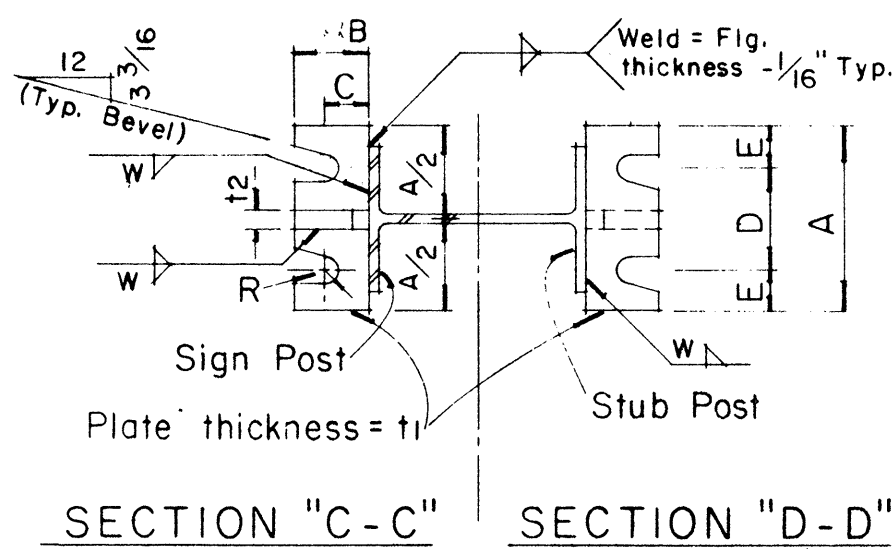
HINGE DETAIL



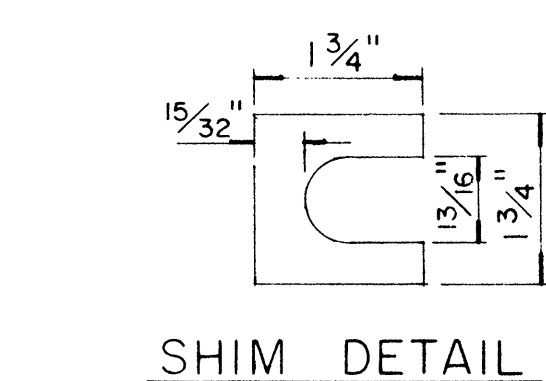
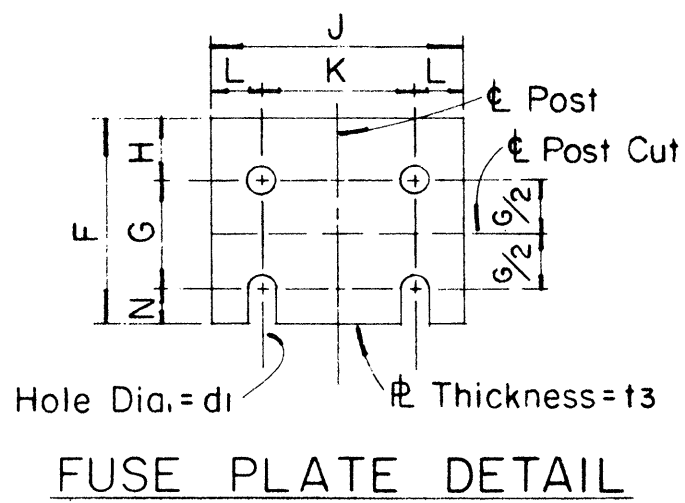
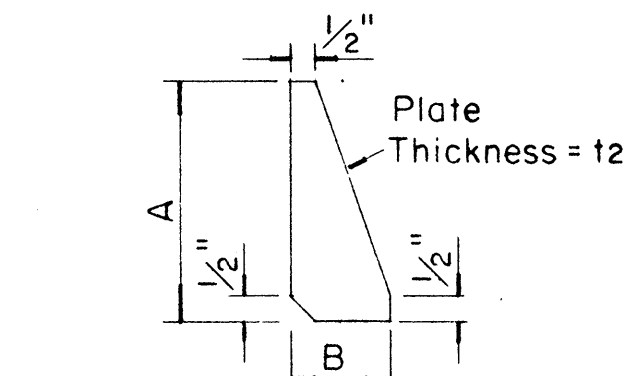
FOUNDATION DETAIL



NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



STIFFENER PLATE DETAIL



Furnish 2 $\times$.012" $\pm$ thick and 2 $\times$.032" $\pm$ thick shims per post. Shims shall be fabricated from brass shim stock or strip conforming to A.S.T.M. - B 36.

GENERAL NOTES

- Design conforms with AASHTO Specifications for the design and Construction of Structural Supports for Highway Signs.
- Materials and Fabrication shall conform to the requirements of the Standard Specifications and Special Provisions.
- All holes shall be drilled. All plate cuts shall preferably be saw cuts, however; flame cutting will be permitted provided all edges are ground. Metal projecting beyond the plane of the plate face will not be tolerated.
- Tighten the high strength bolts in the base connection only to the torque shown, do not overtighten. All bolts other than high strength bolts shall conform to ASTM A 307, Class A.
- All structural steel, bolts, nuts and washers shall be galvanized as per the Standard Specifications and Special Provisions. Structural steel to be galvanized after fabrication except as noted.
- Structural steel shall conform with with the requirements of ASTM A 441
- Galvanizing of all posts shall be projection above concrete plus 6" minimum.
- All friction fuse bolts shall be tightened in the shop following a method approved by the Engineer. Tightening shall be to such a degree as to obtain the following minimum residual tension in each bolt:

Bolt Size	Min. Tension	Bolt Size	Min. Tension
1/2" ϕ	12050 Lbs.	3/4" ϕ	28400 Lbs.
5/8" ϕ	19200 Lbs.	7/8" ϕ	36050 Lbs.

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

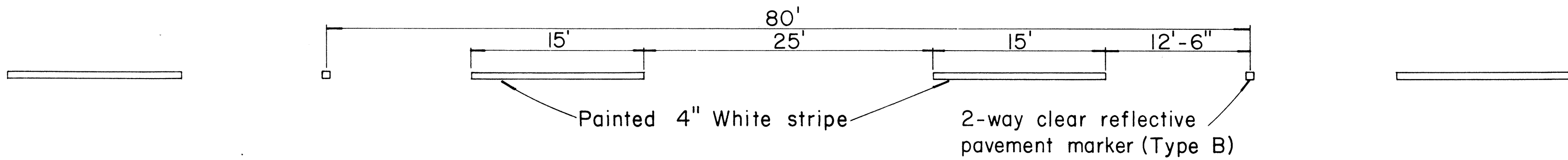
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS

Not to Scale

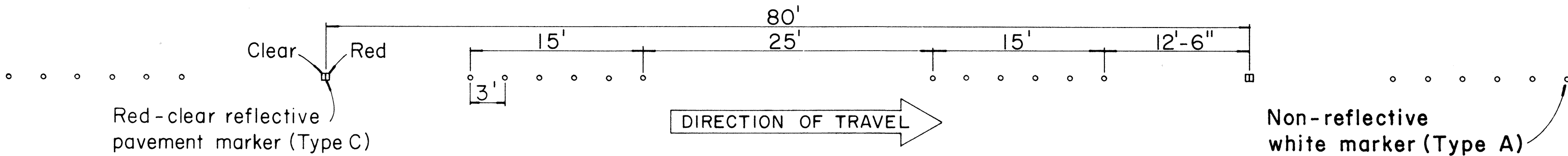
SHEET No. 6 OF 21 SHEETS DT204

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	31	44

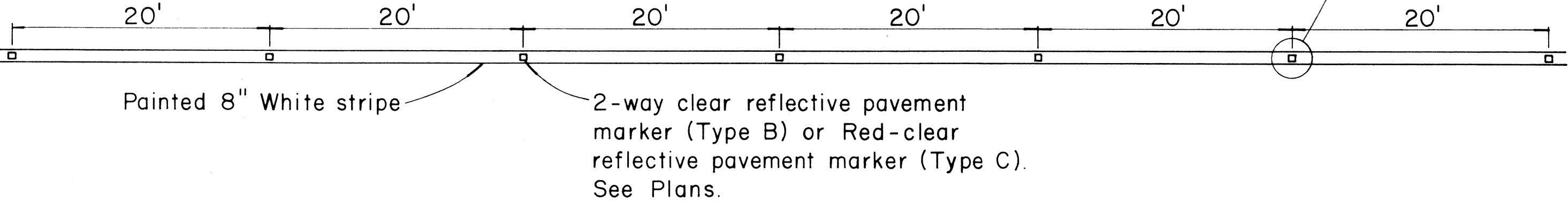
1 CENTER LINES ON TWO - LANE RURAL ROADS AND CITY STREETS



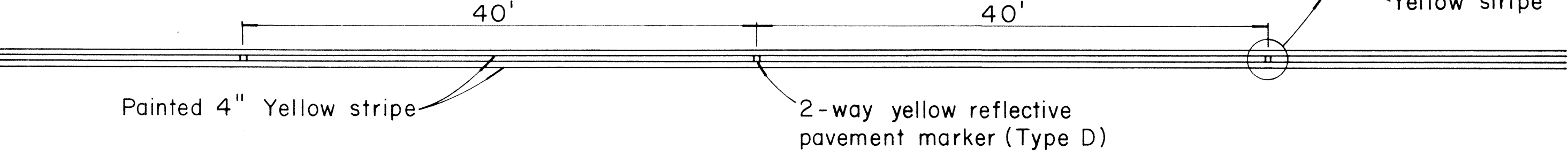
2 LANE LINES



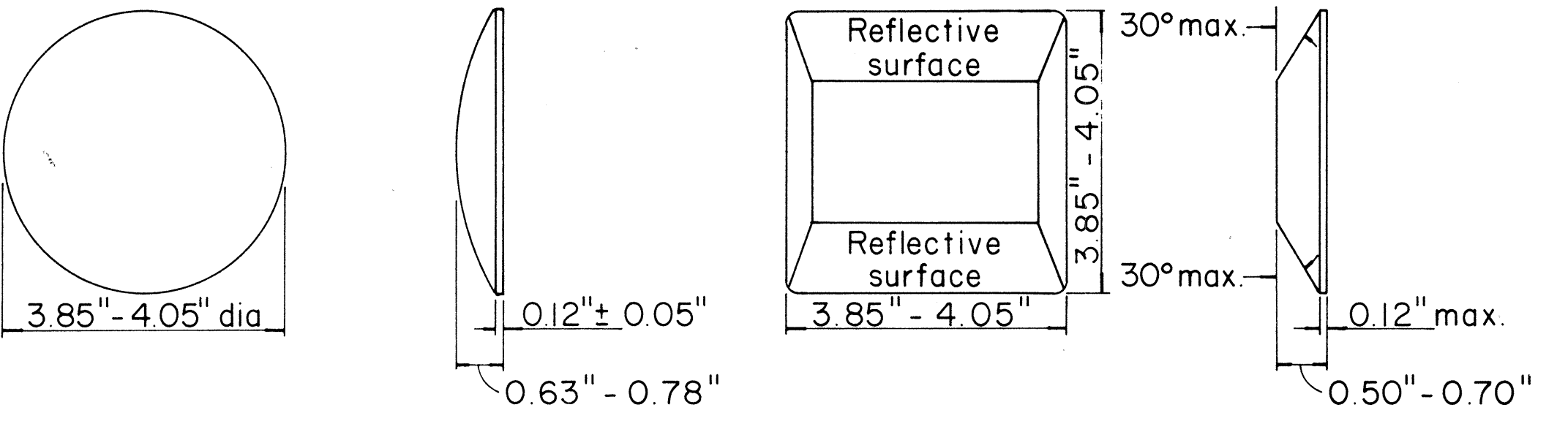
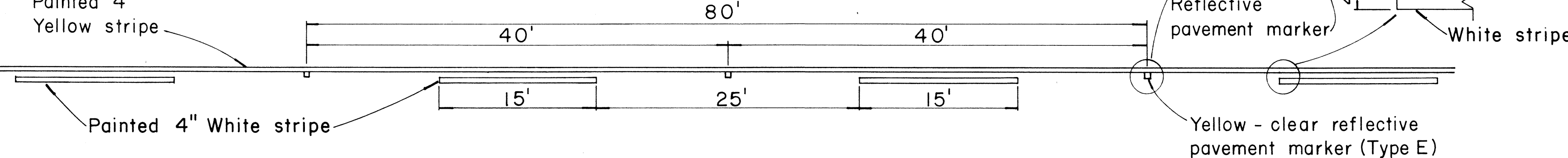
3 CHANNELIZING LINES



4 YELLOW DOUBLE CENTER LINES



5 NO PASSING - PASSING ZONES ON TWO-LANE ROADS

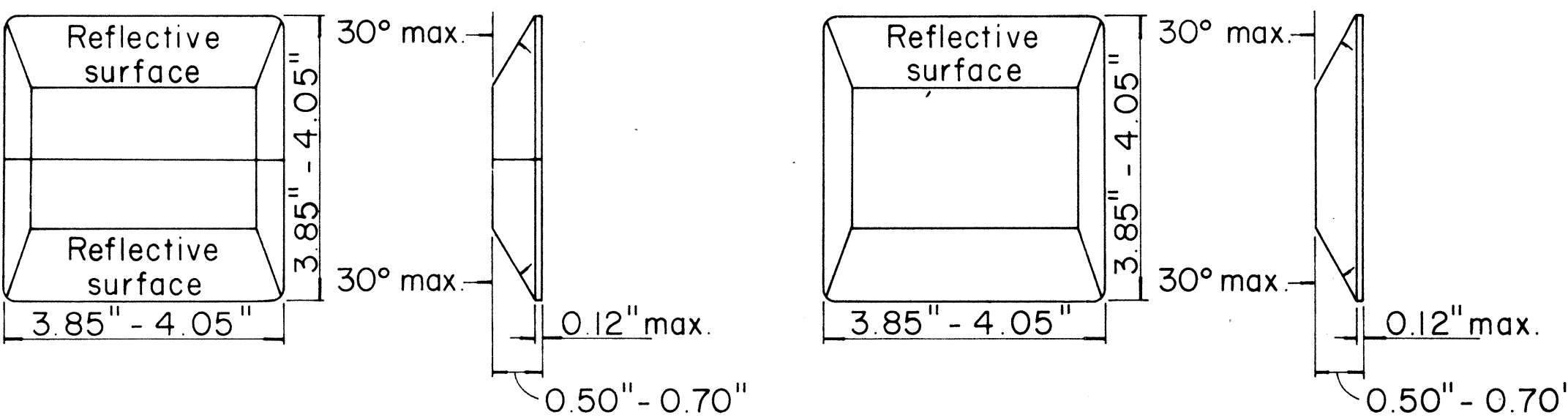


TYPE A
Non-reflective white marker

TYPE B
2-way clear reflective surface

TYPE J
Non-reflective yellow marker

TYPE D
2-way yellow reflective surface



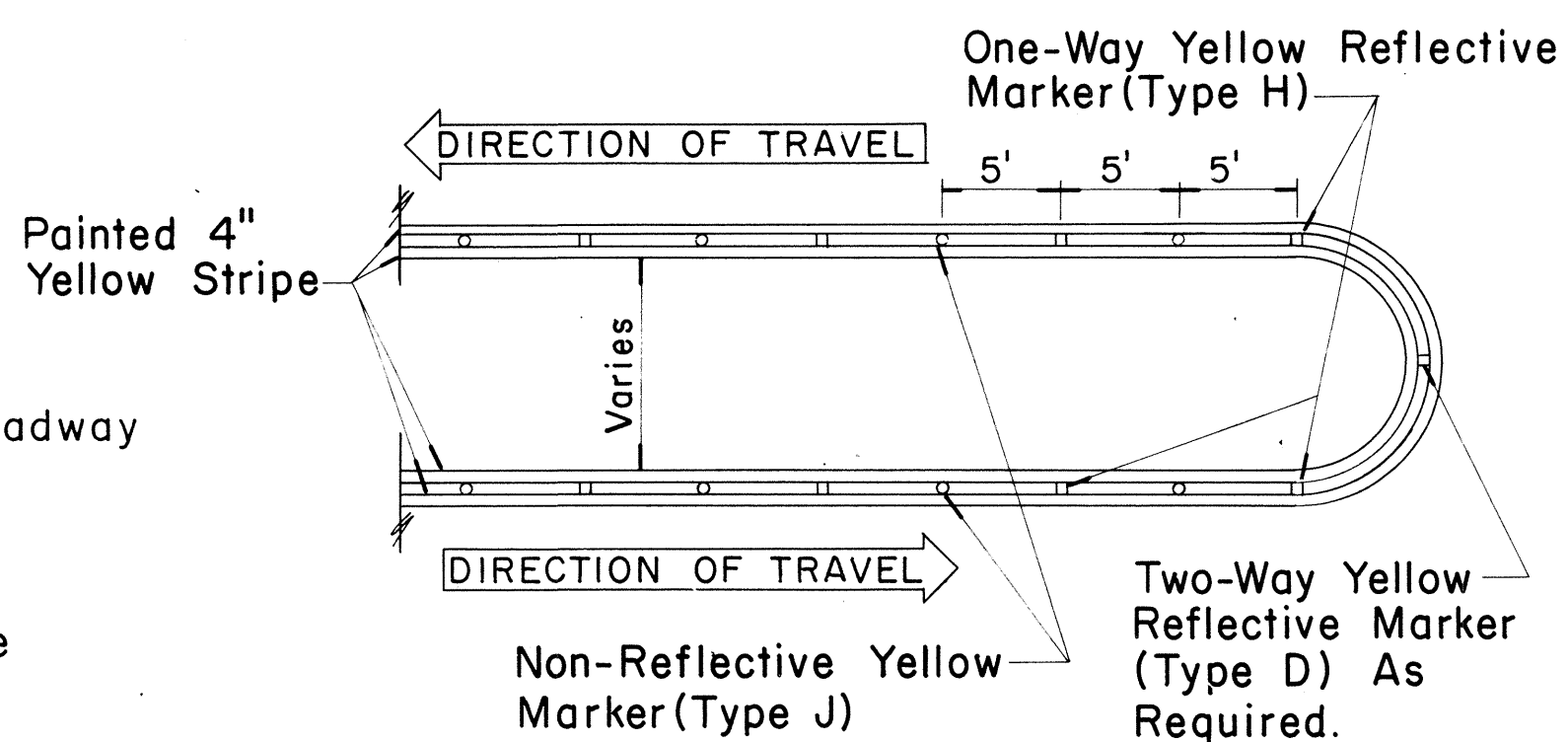
TYPE C
Red-clear reflective surface

TYPE E
Yellow-clear reflective surface

TYPE H
One-way yellow reflective surface

TYPE G
One-way clear reflective surface

6 MEDIAN NOSE DELINEATION



NOTE
Painted stripes to be done by State forces.

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

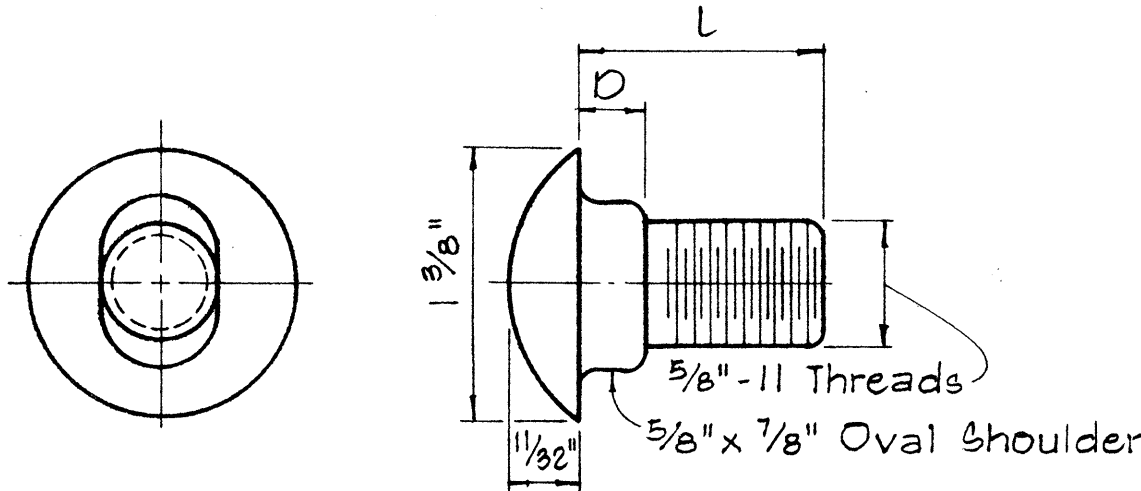
STANDARD DETAILS
RAISED PAVEMENT MARKERS

Not to Scale
Sept., 1967

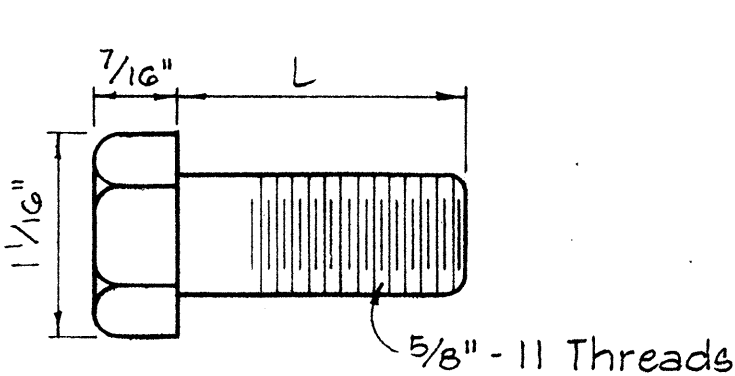
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	33	44

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"

BOLT DIMENSIONS		
TYPE B BOLT		L
Post Bolt for Conc. Post w/ Metal Blocks		5 1/2"
Post Bolt for Metal Post w/ Metal Block		1 3/4"



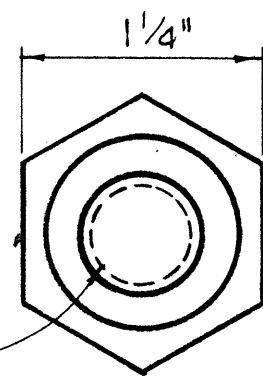
TYPE A BOLT



TYPE B BOLT

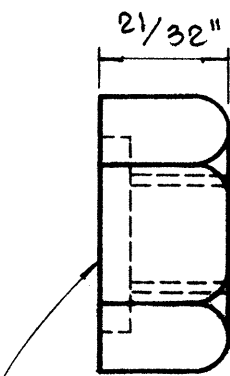
SPUCE RAIL AND POST BOLTS

Scale: Full Size

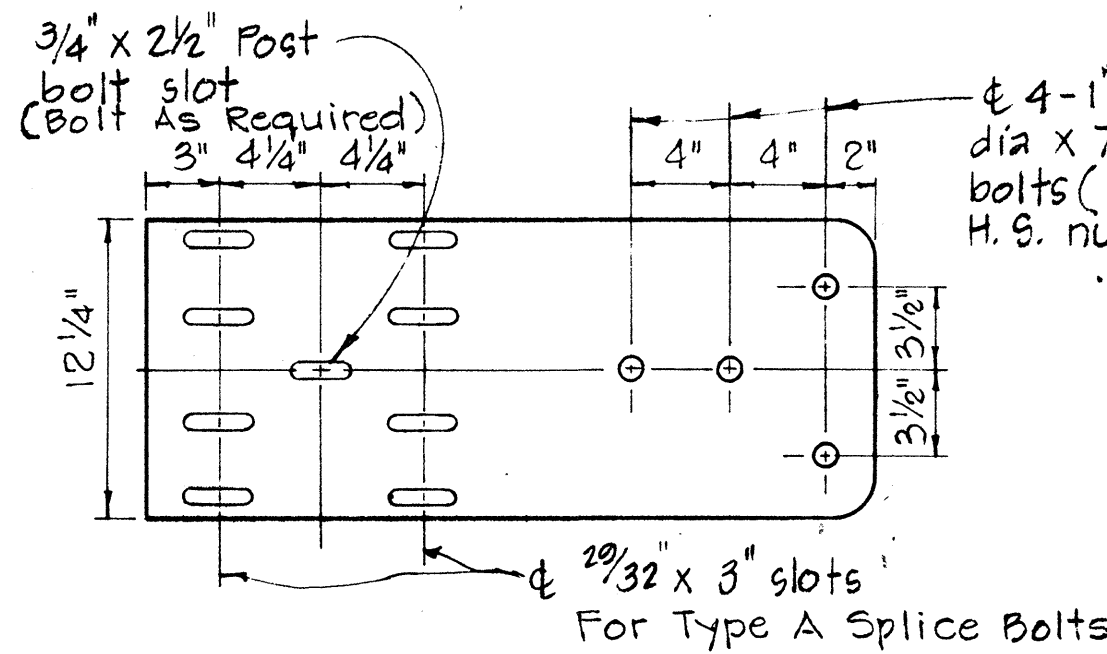
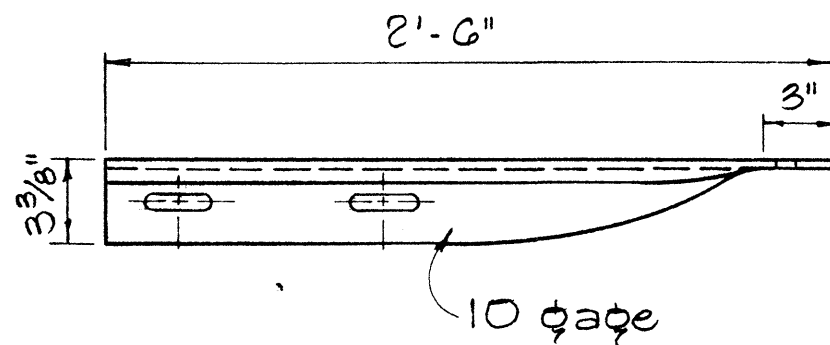


HEXAGON NUT

Scale: Full Size

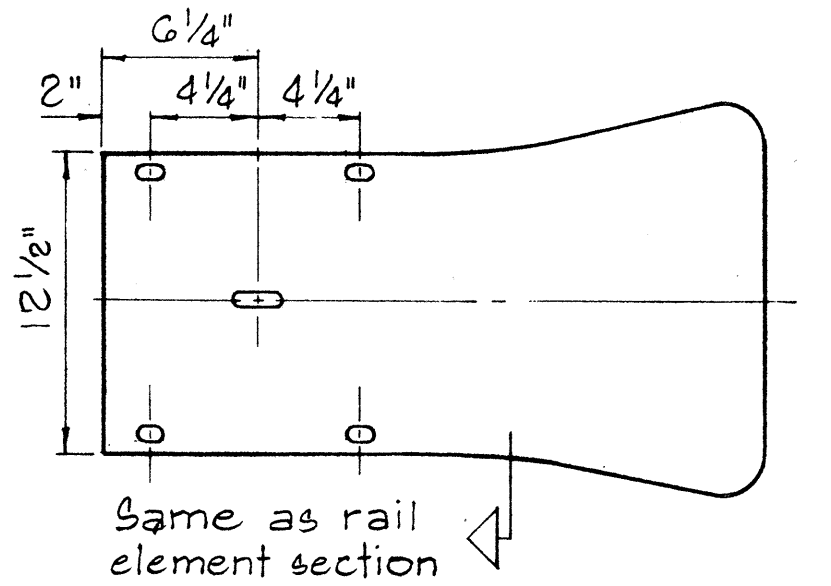
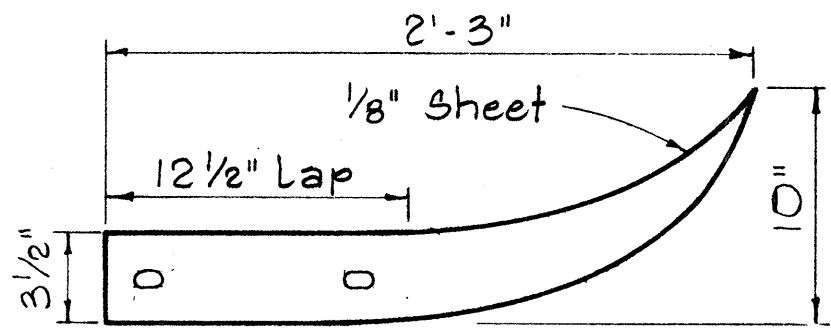


5/32" Deep x 15/16" Dia. C' Bore for Type A Bolt only. Plain nut for Type B Bolt.



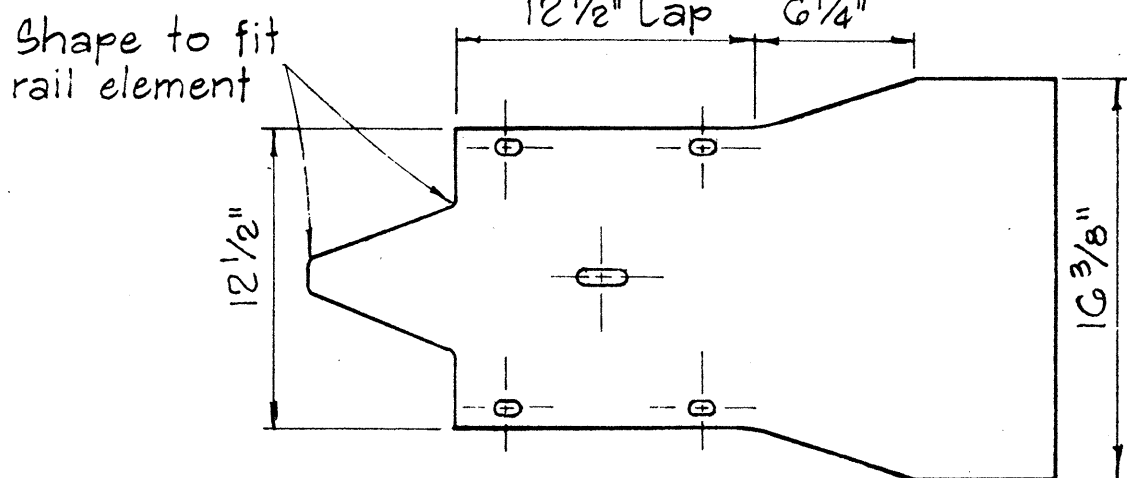
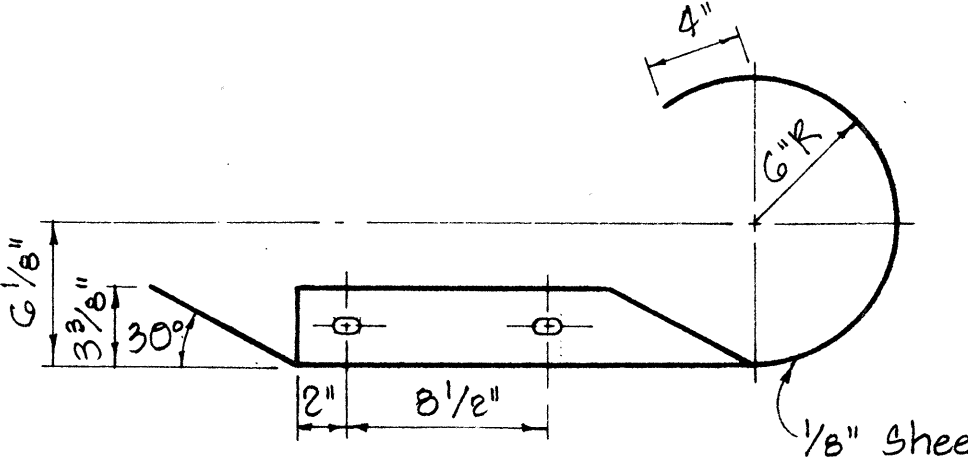
SPECIAL END SHOE

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



FLARED END

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



CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12/23/69

DATE

12-20-69

DATE

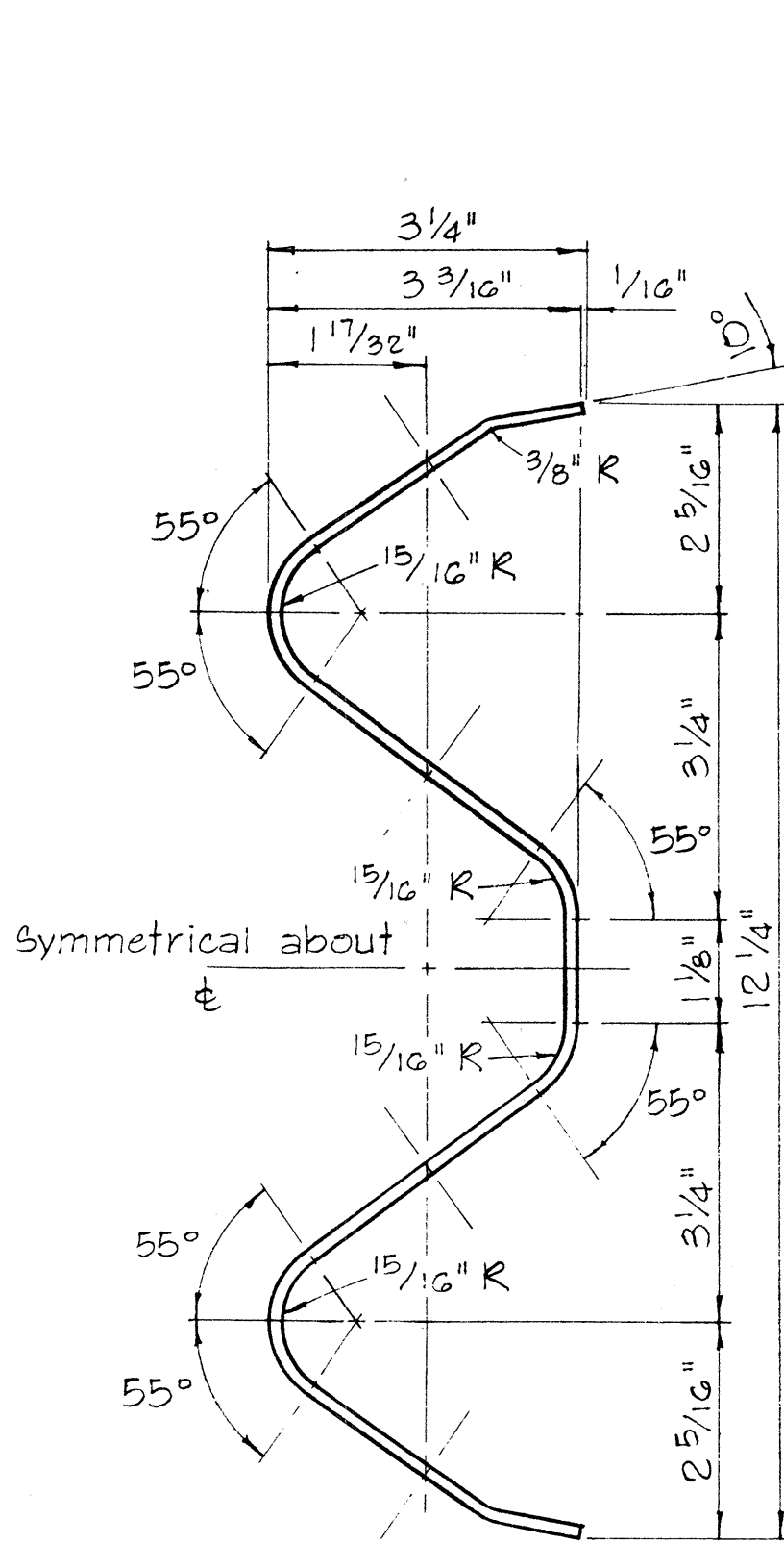
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

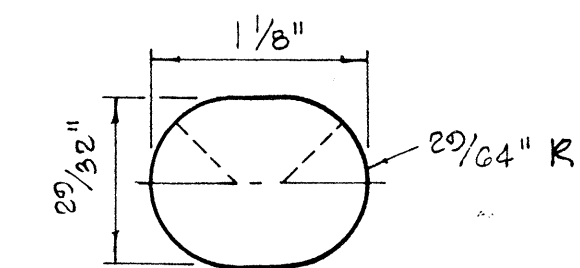
August, 1968

SHEET No. 7 OF 21 SHEETS DT 501

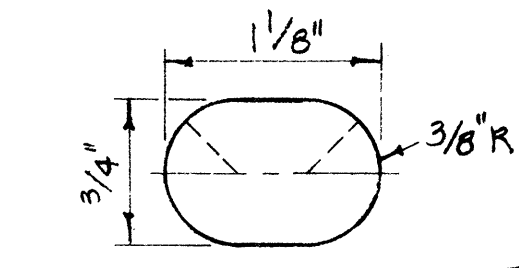


RAIL ELEMENT SECTION

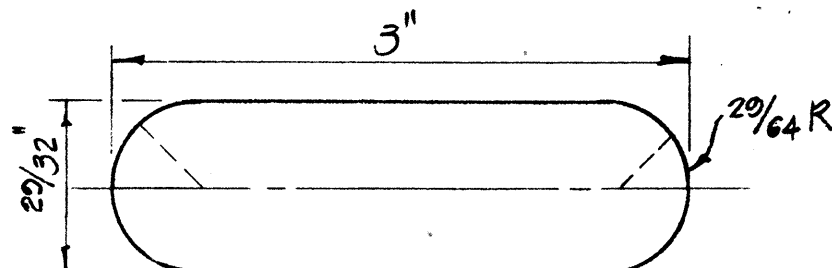
Scale: 6" = 1'-0"



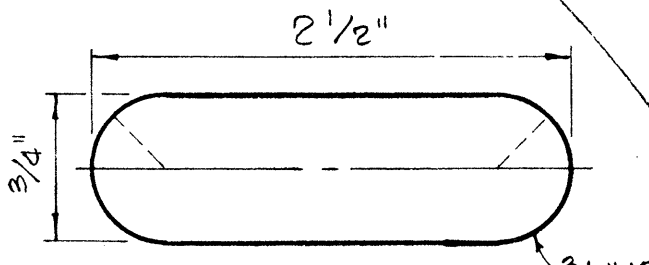
SPUCE BOLT SLOT



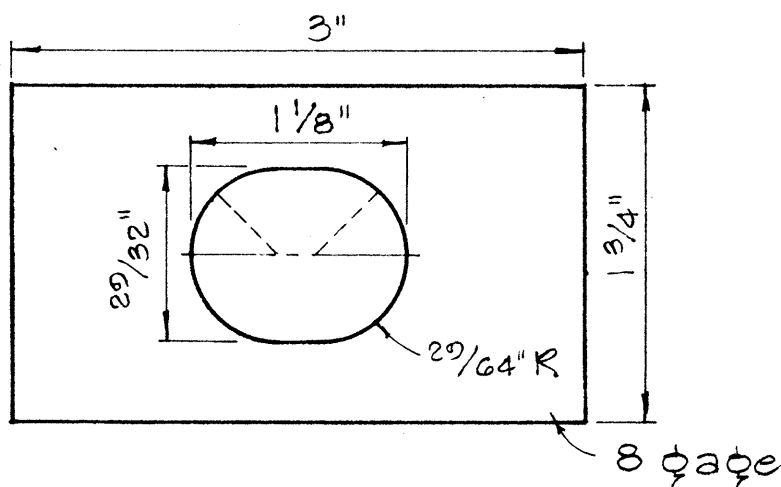
SPUCE BOLT SLOT FOR ALL ENDS



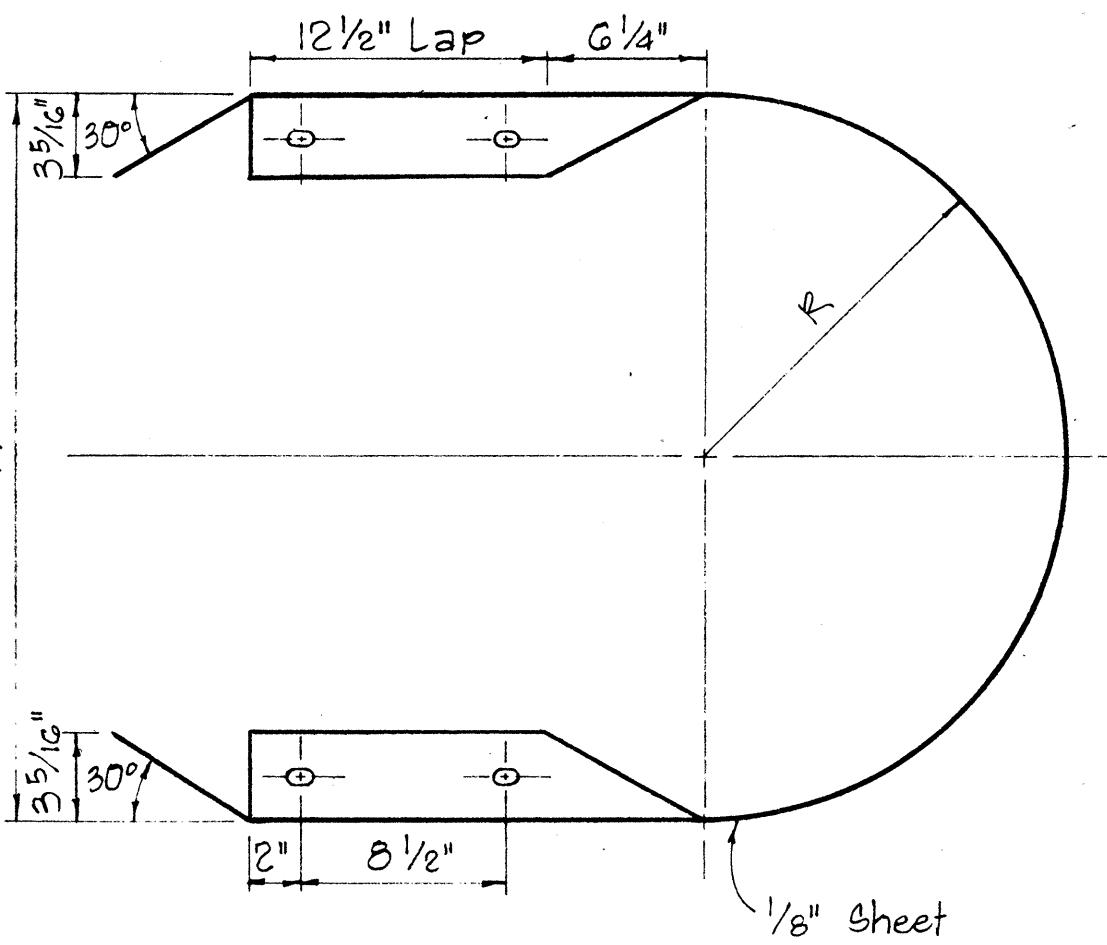
SPUCE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



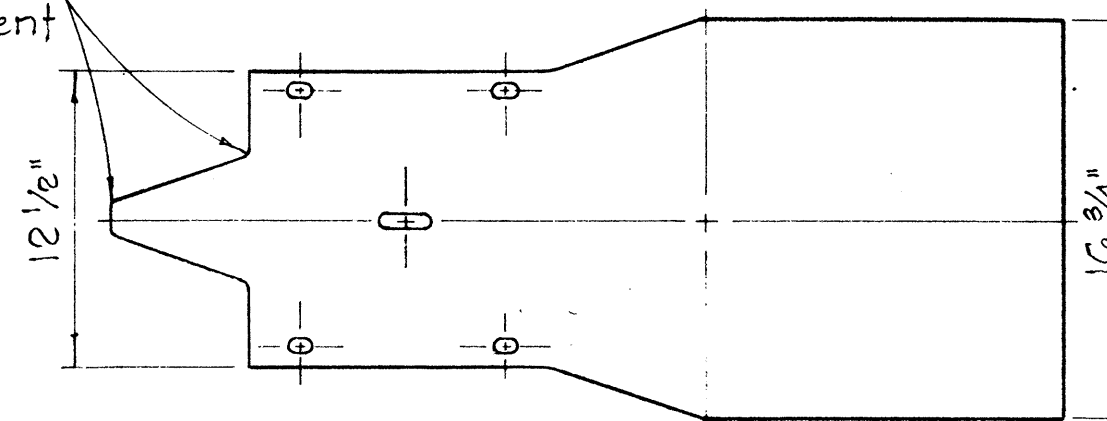
RAIL WASHER



MEDIAN END

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

Shape to fit rail element



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.

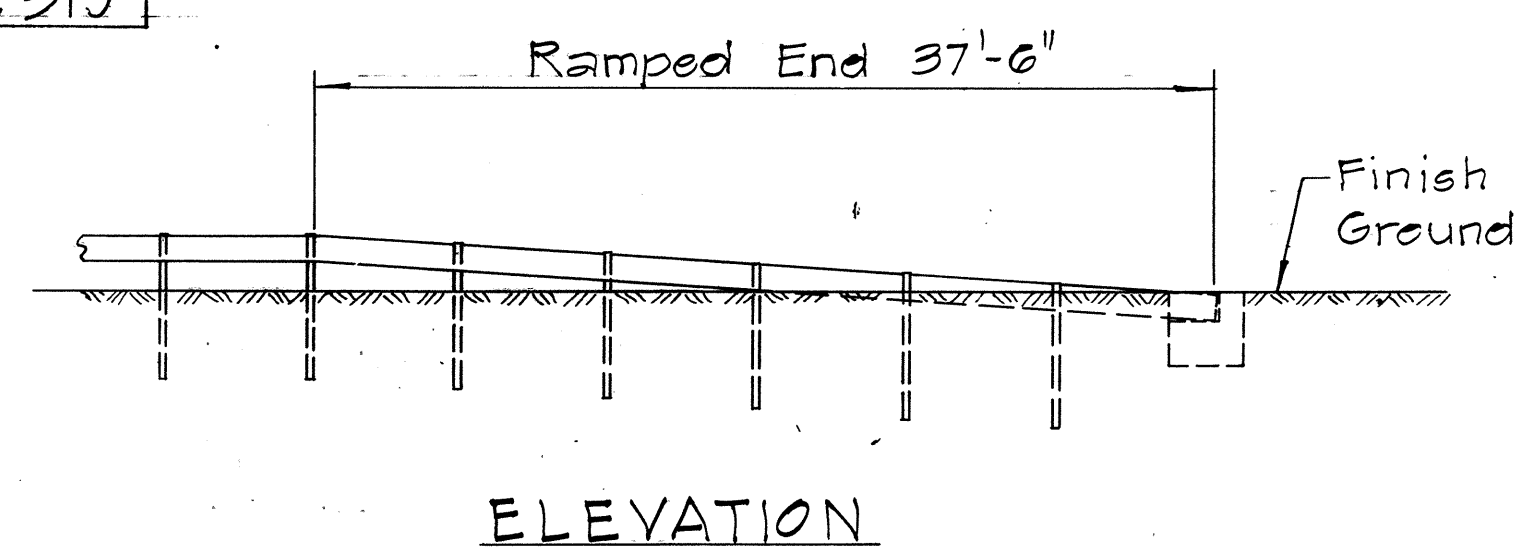
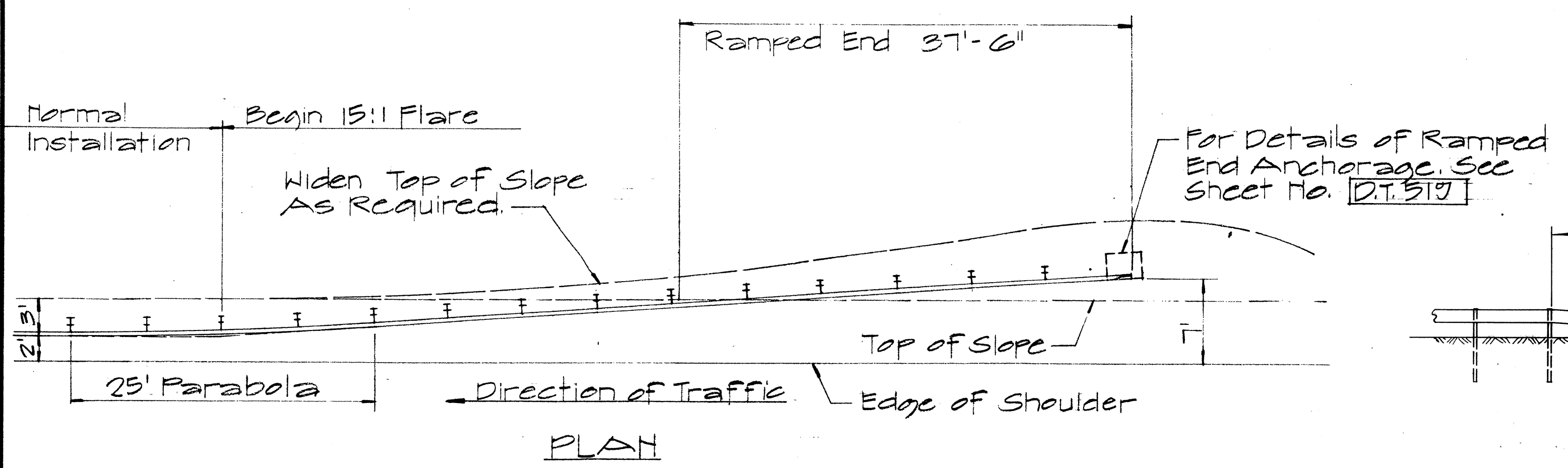
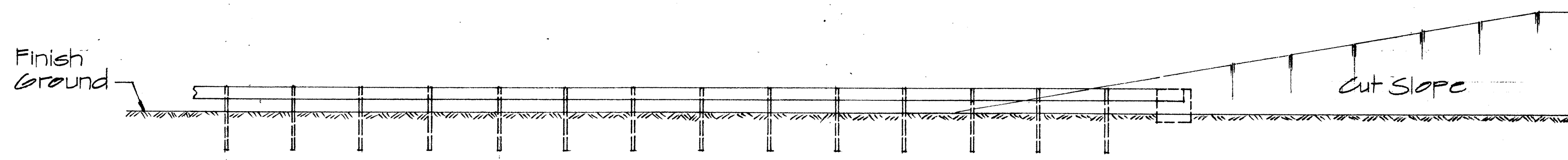
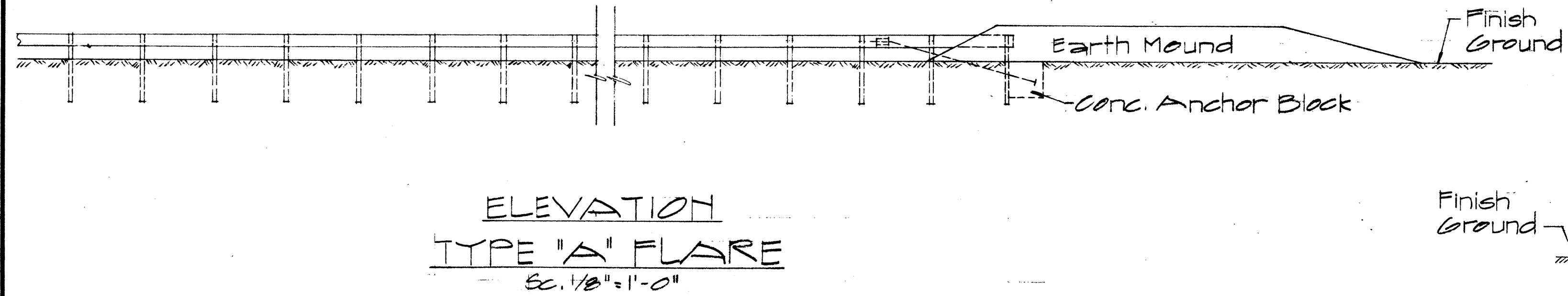
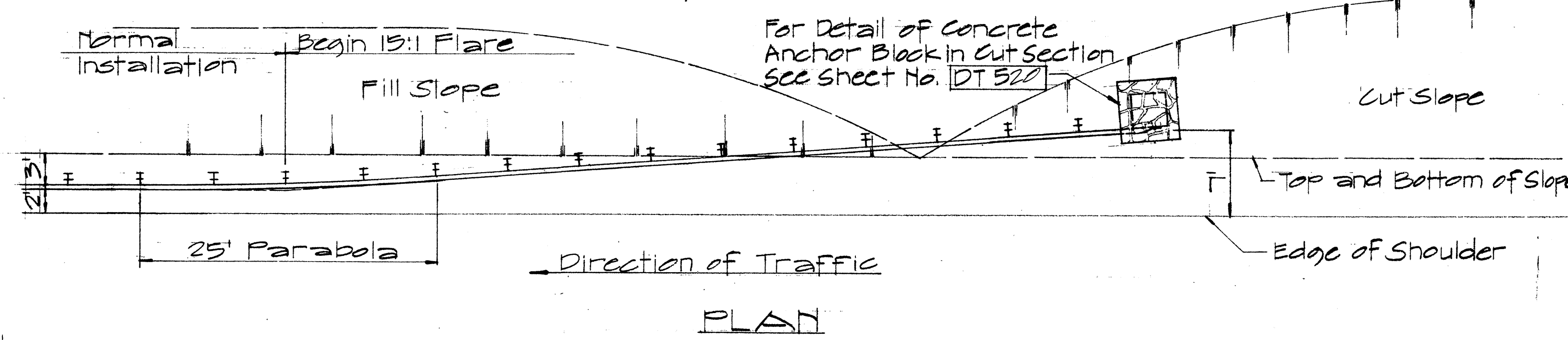
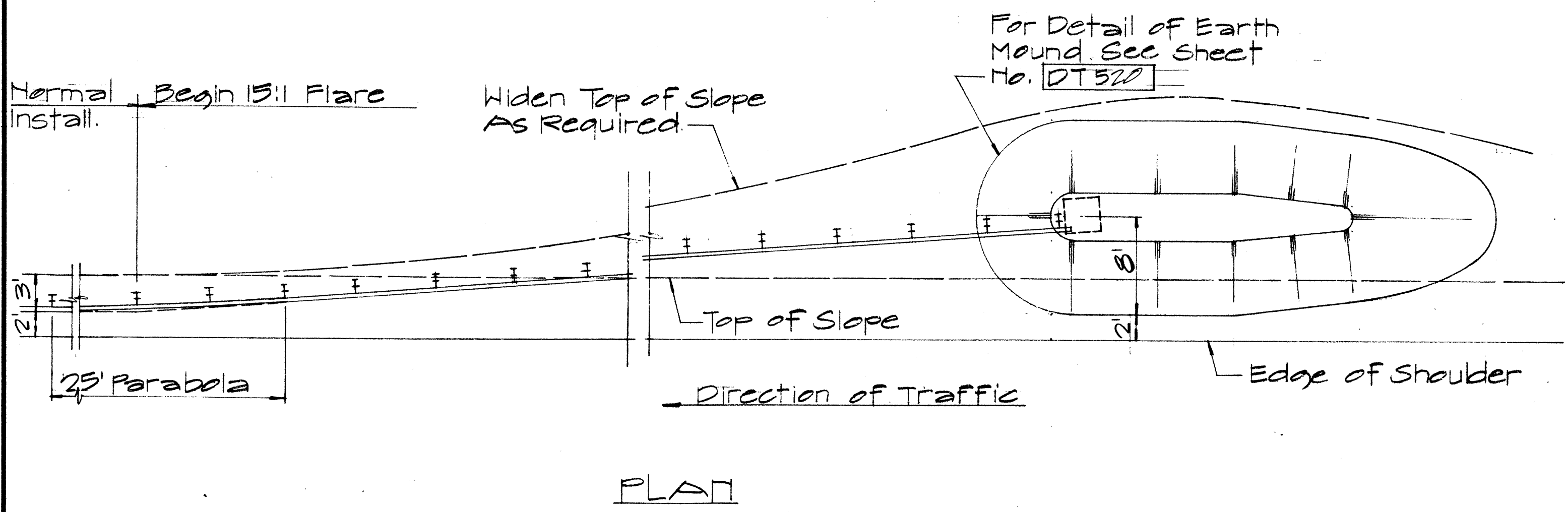
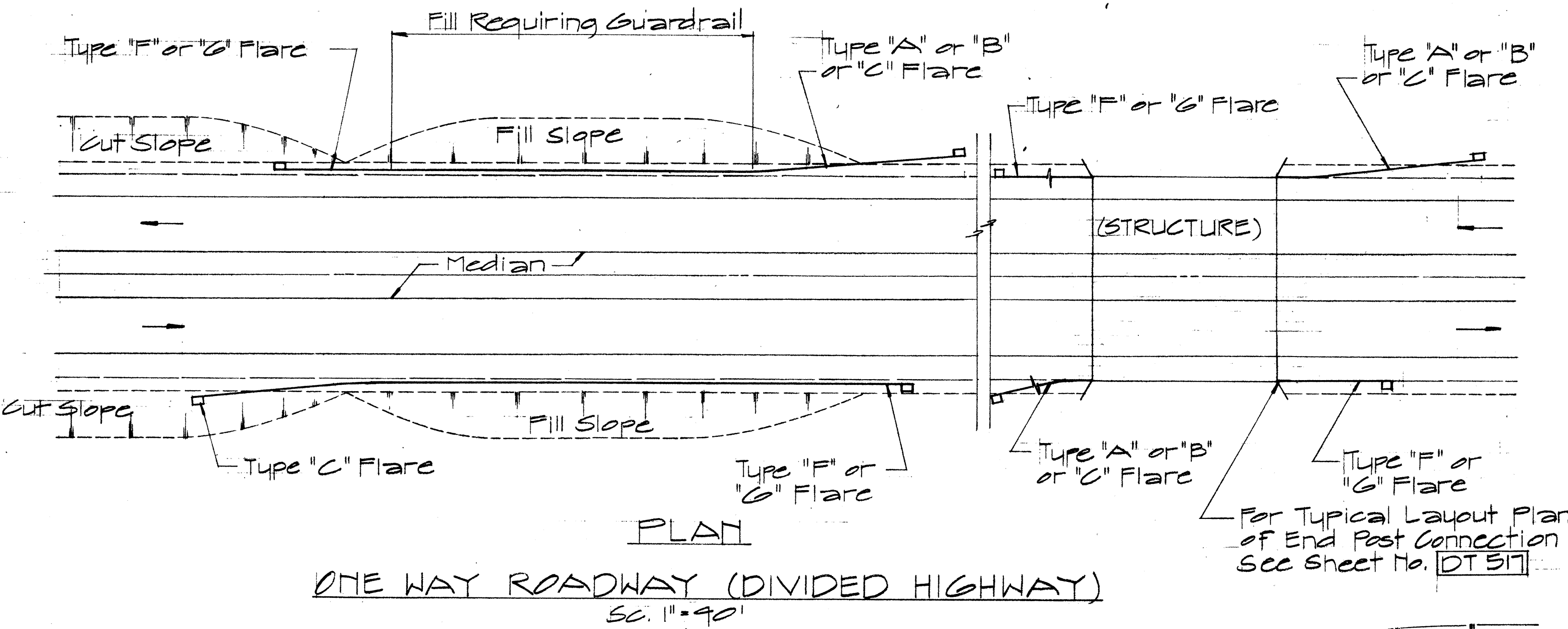
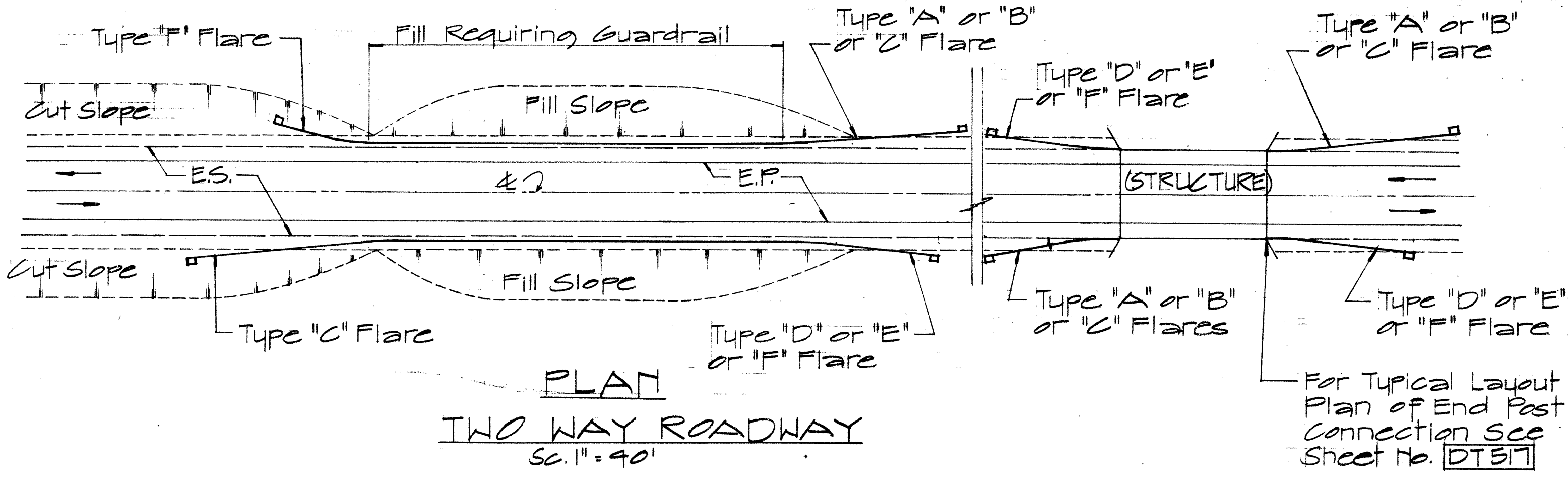
MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"

NO.	REVISION	APPROVED BY	DATE

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	34	44

NOTE:
Metal guard rail connection to structures requires End Post Connection. See structure plans.



ELEVATION
TYPE "C" FLARE
SC. 1/8" = 1'-0"

NO.	REVISION	APPROVED BY	DATE

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

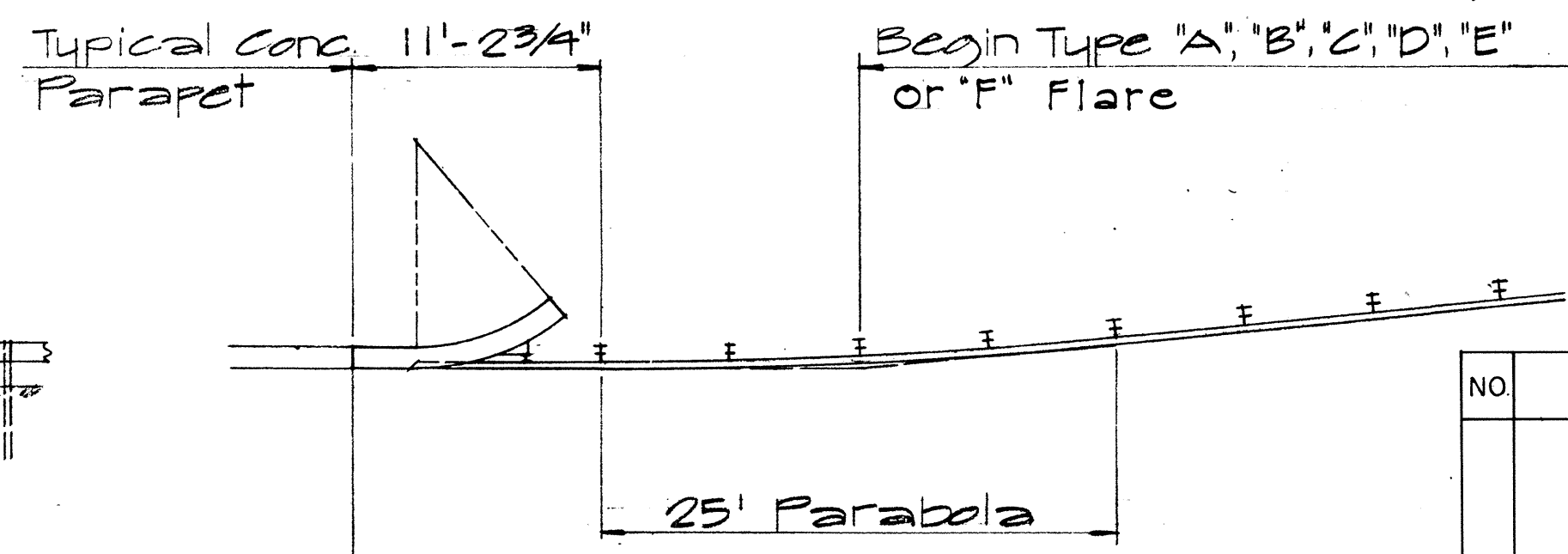
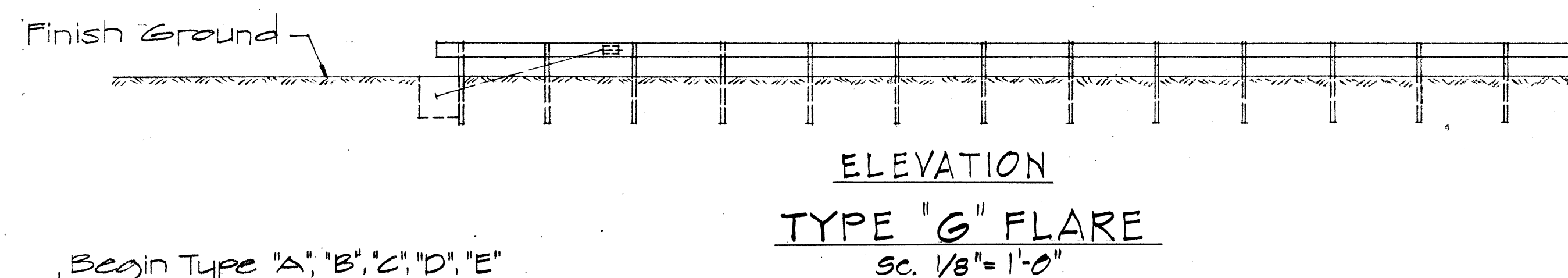
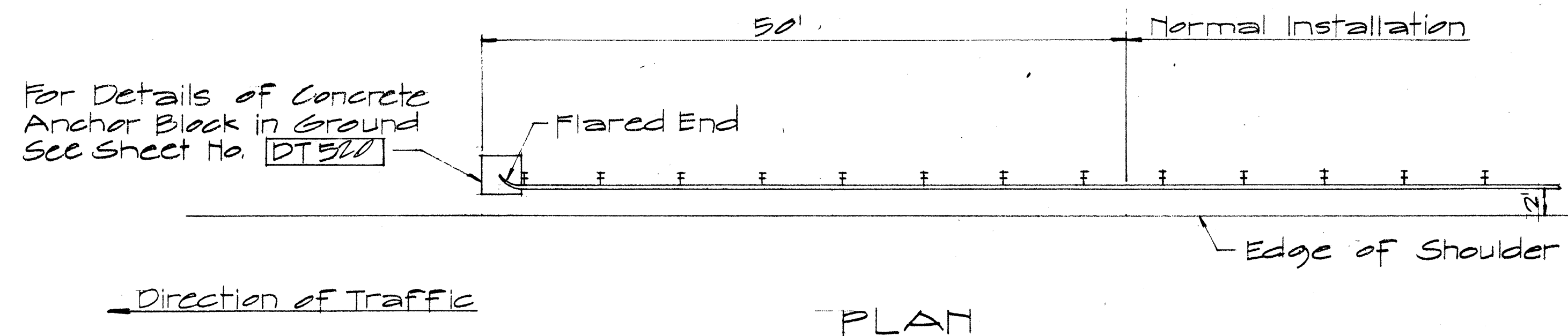
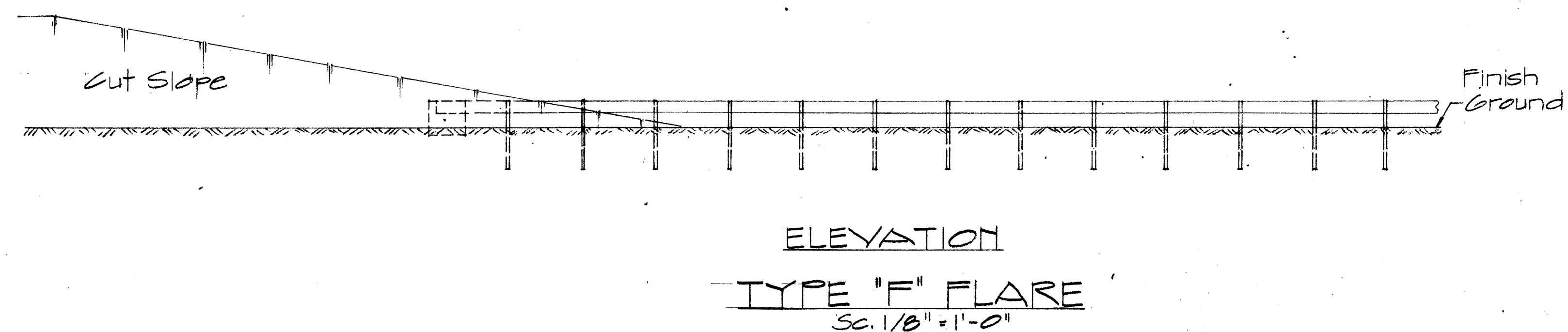
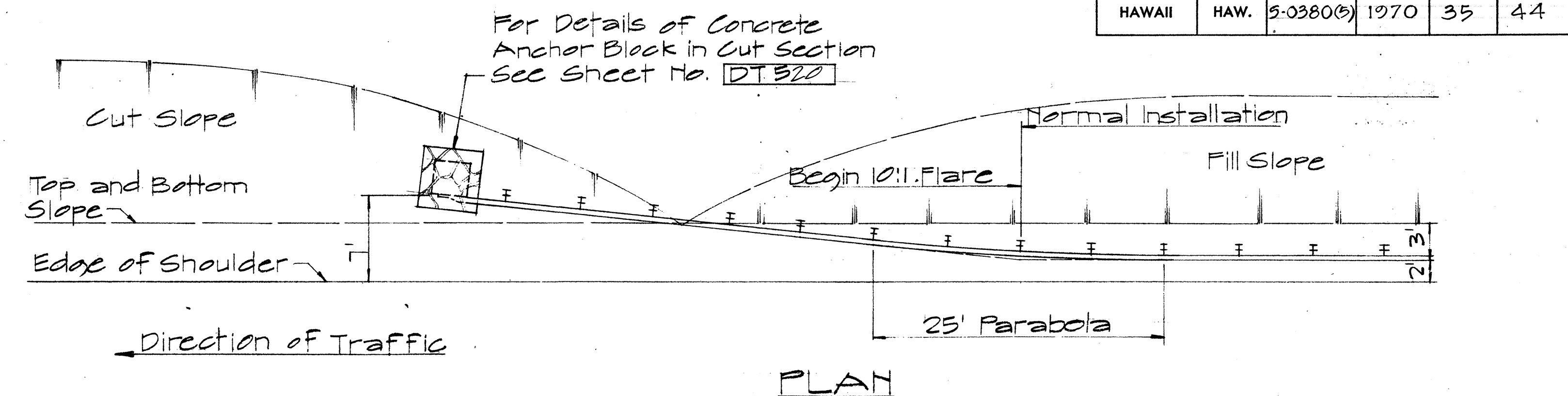
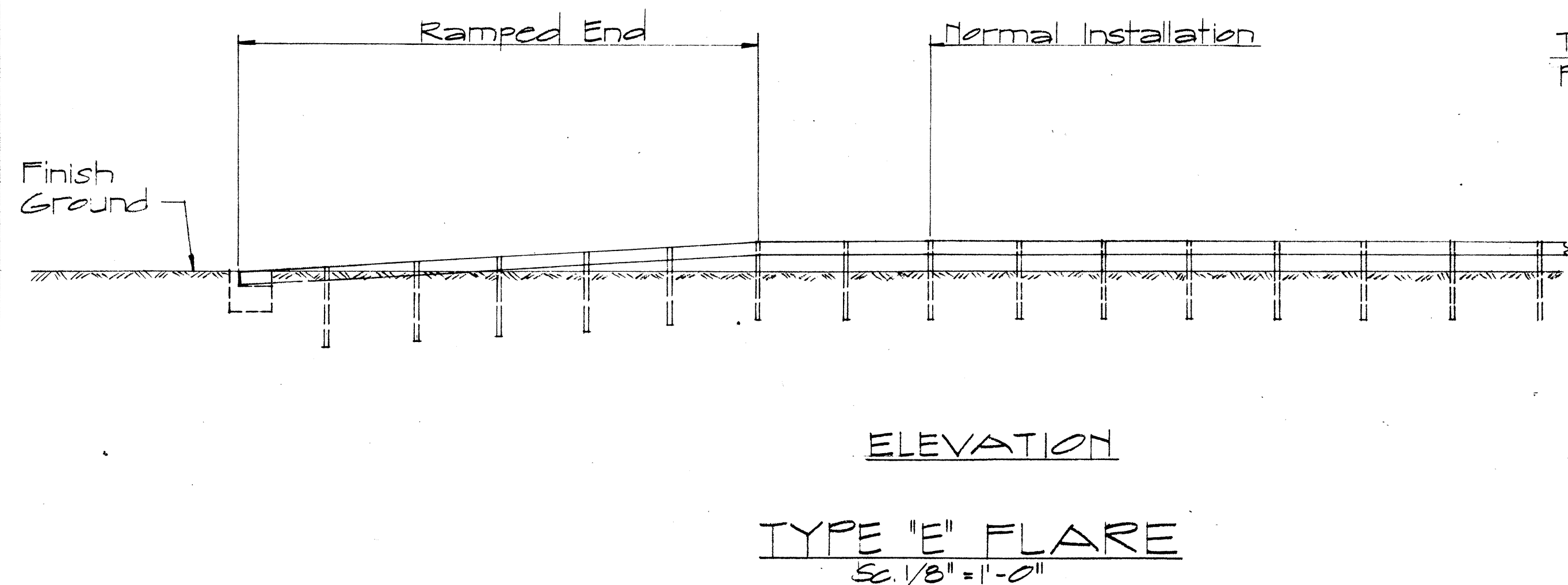
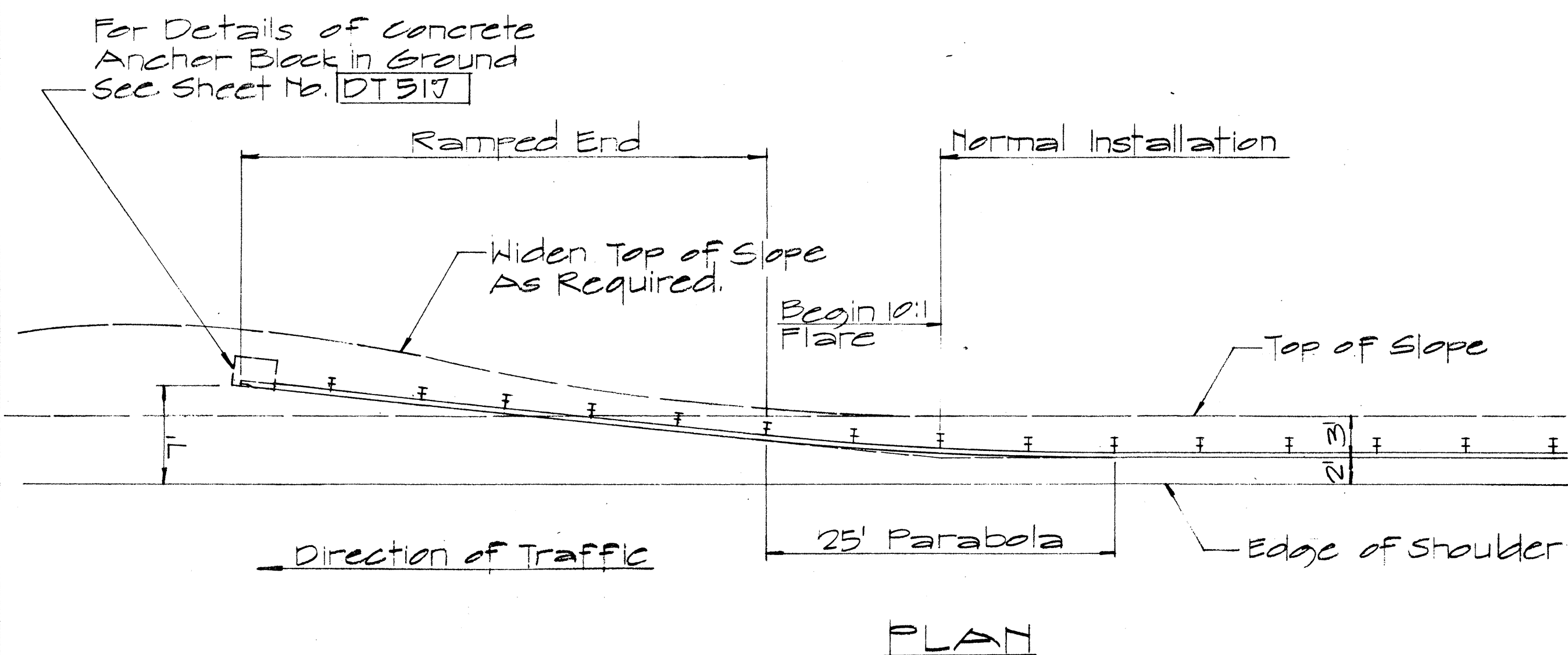
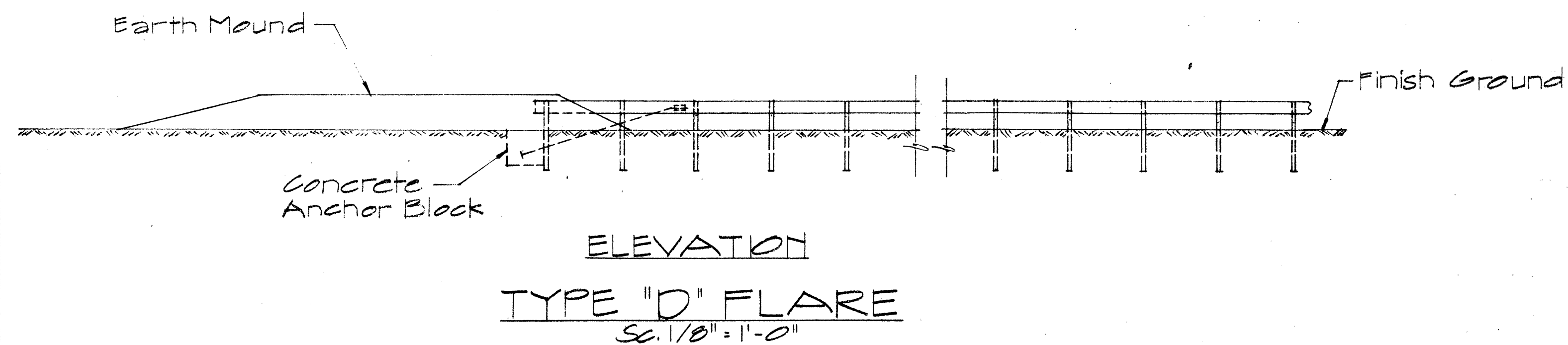
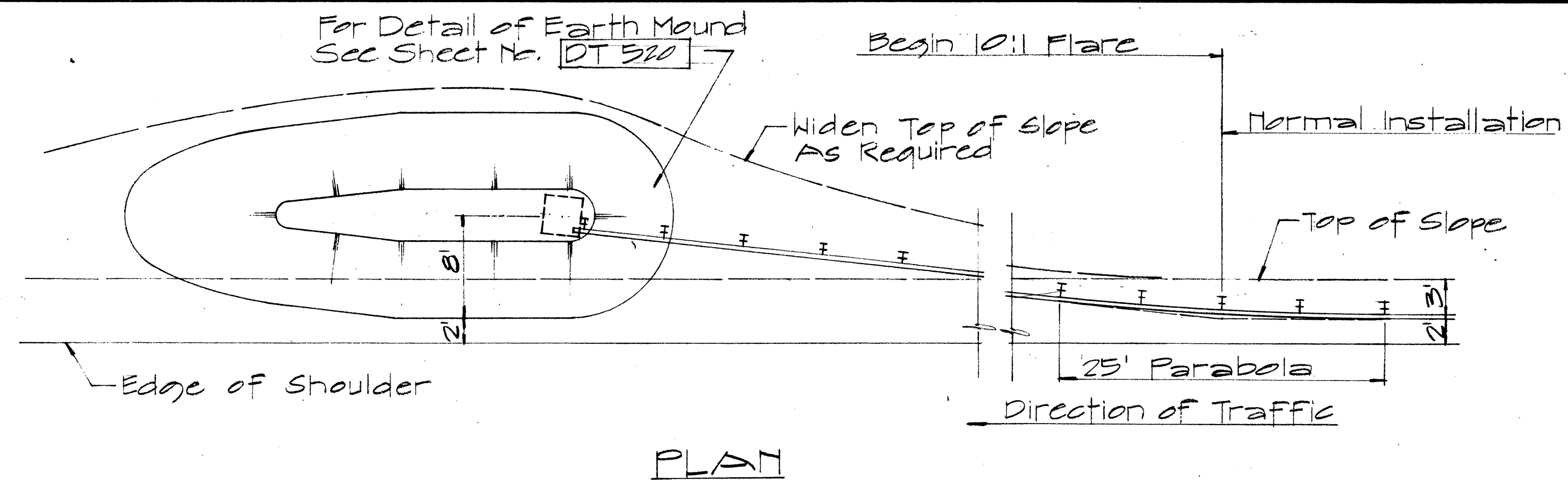
APPROVED:
W. S. S. S. 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

SC. As Noted APRIL 1969
SHEET No. 10 OF 21 SHEETS DT 516

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	35	44



TYPICAL LAYOUT PLAN OF END POST CONNECTION

Sc. 1/8" = 1'-0"

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

APPROVED:
[Signature] 12-30-69
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

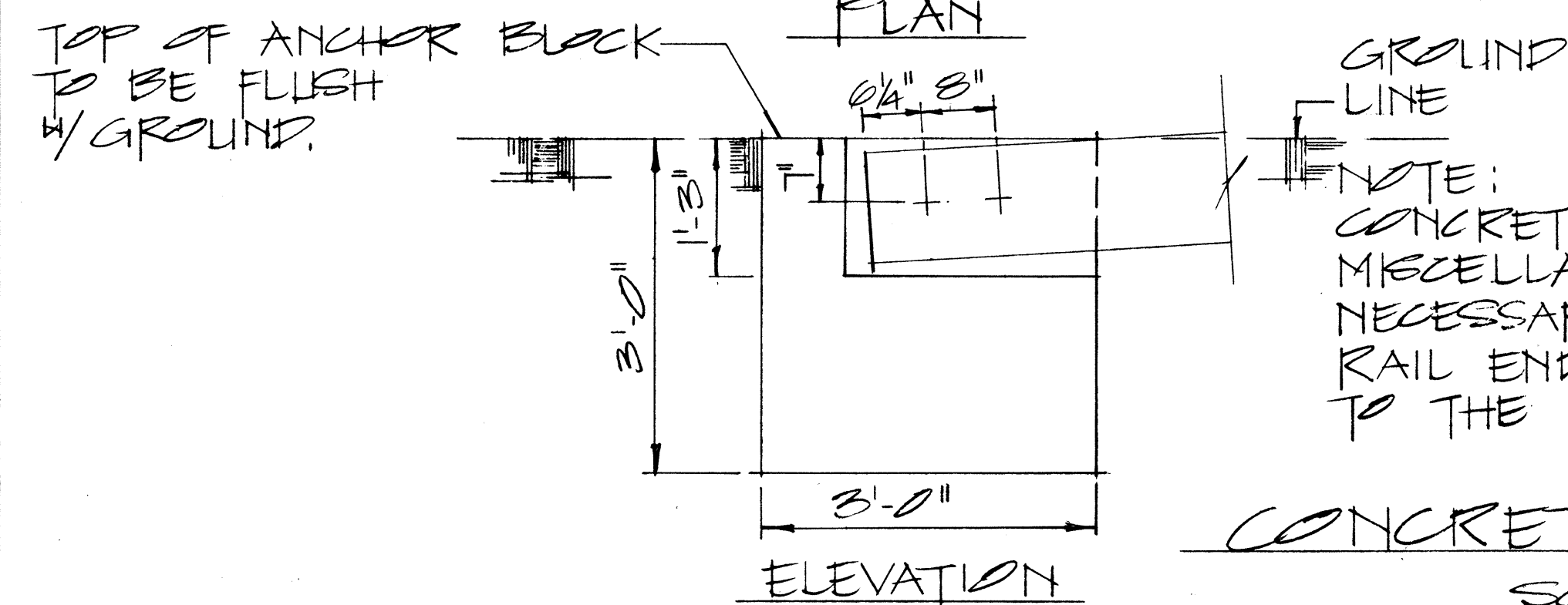
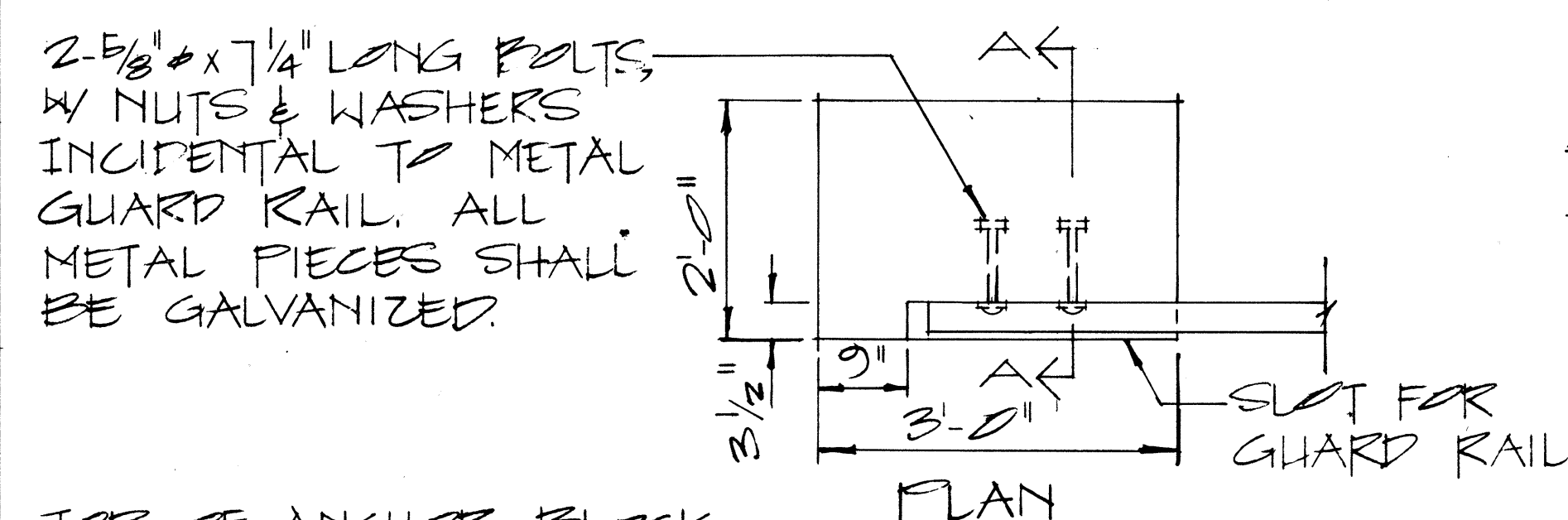
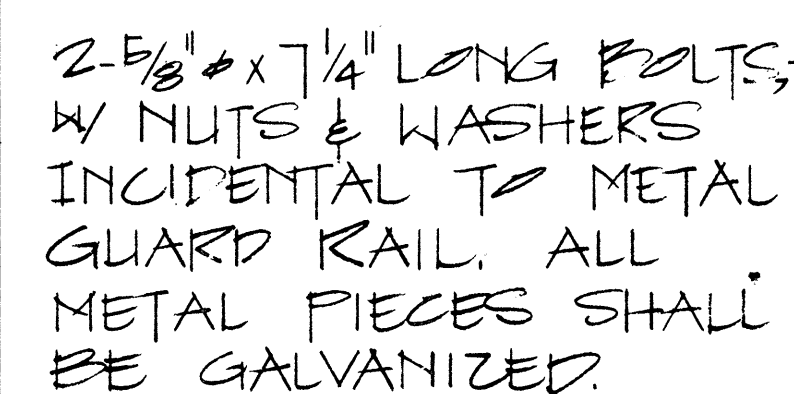
STANDARD DETAILS
 OF TRAILING END
 FLARE - ONE & TWO
 WAY ROADWAY

Sc. As Noted April 1969

SHEET No. 11 OF 21 SHEETS DT 517

A hand-drawn plan view of a guard rail element. The diagram shows a long, narrow rectangular element with a series of vertical posts or bolts along its length. The following dimensions and labels are present:

- Top Labels:** Four instances of "POST BOLT HOLE" with arrows pointing to specific locations along the top edge.
- Top Spacing:** Seven segments along the top edge, each labeled "0'-3\"".
- Left Edge:** A vertical dimension of "1'-0\"".
- Bottom Left:** Two horizontal segments, each labeled "1'-0\"".
- Bottom Labels:**
 - "GUARD RAIL POST" with an arrow pointing to the first vertical post.
 - "SPACER BLOCK" with an arrow pointing to the first vertical post.
 - "GUARD RAIL ELEMENT" with an arrow pointing to the main body of the rail.
- Bottom Right:** The word "PLAN" is written below the main element.



NOTE:
CONCRETE, EXCAVATION AND
MISCELLANEOUS APPURTENANCES
NECESSARY TO ANCHOR THE GUARD
RAIL ENDS, SHALL BE INCIDENTAL
TO THE METAL GUARD RAIL.

CONCRETE ANCHOR BLOCK
SCALE: $\frac{3}{4}'' = 1'-0''$

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

APPROVED: 24th 22d Sil 12-30-60
ASSISTANT CHIEF, ENGINEERING DATE

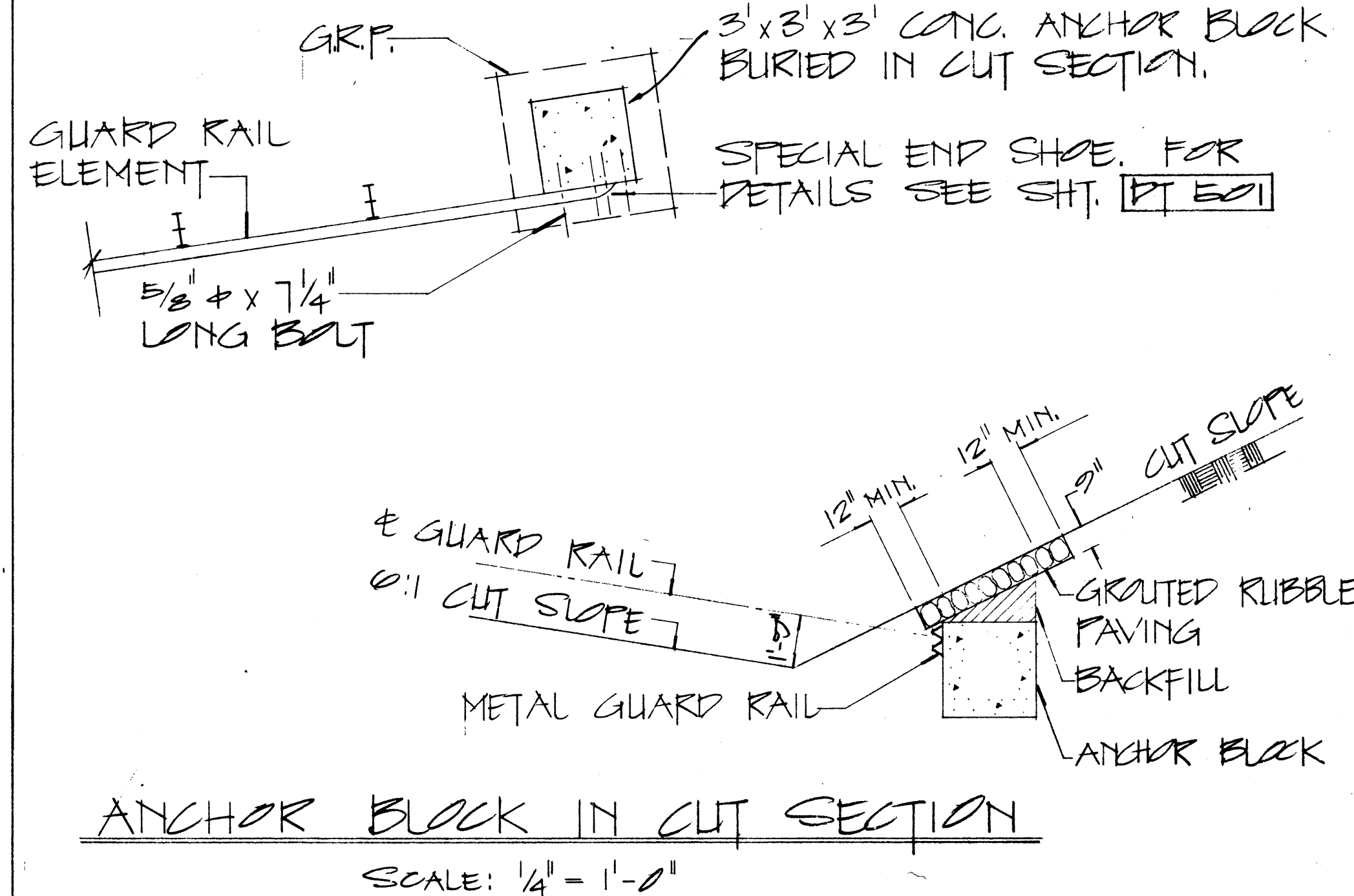
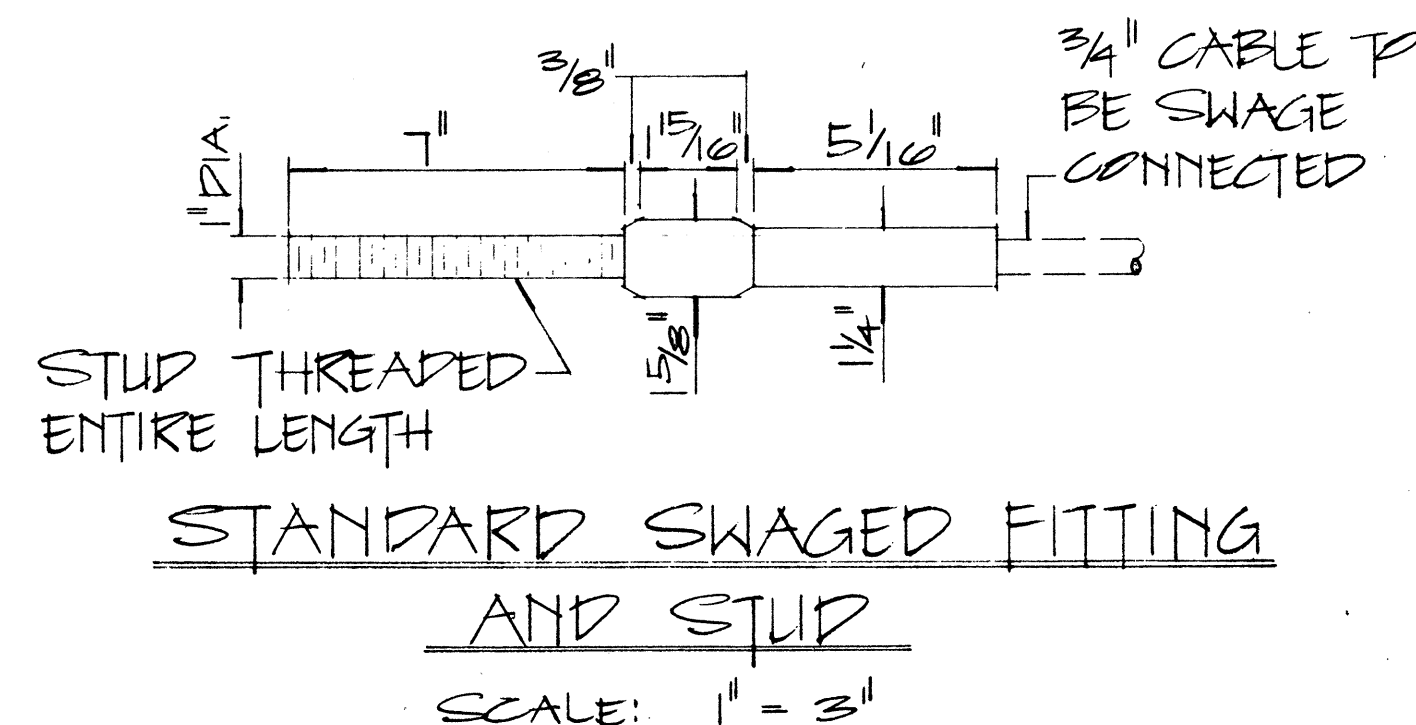
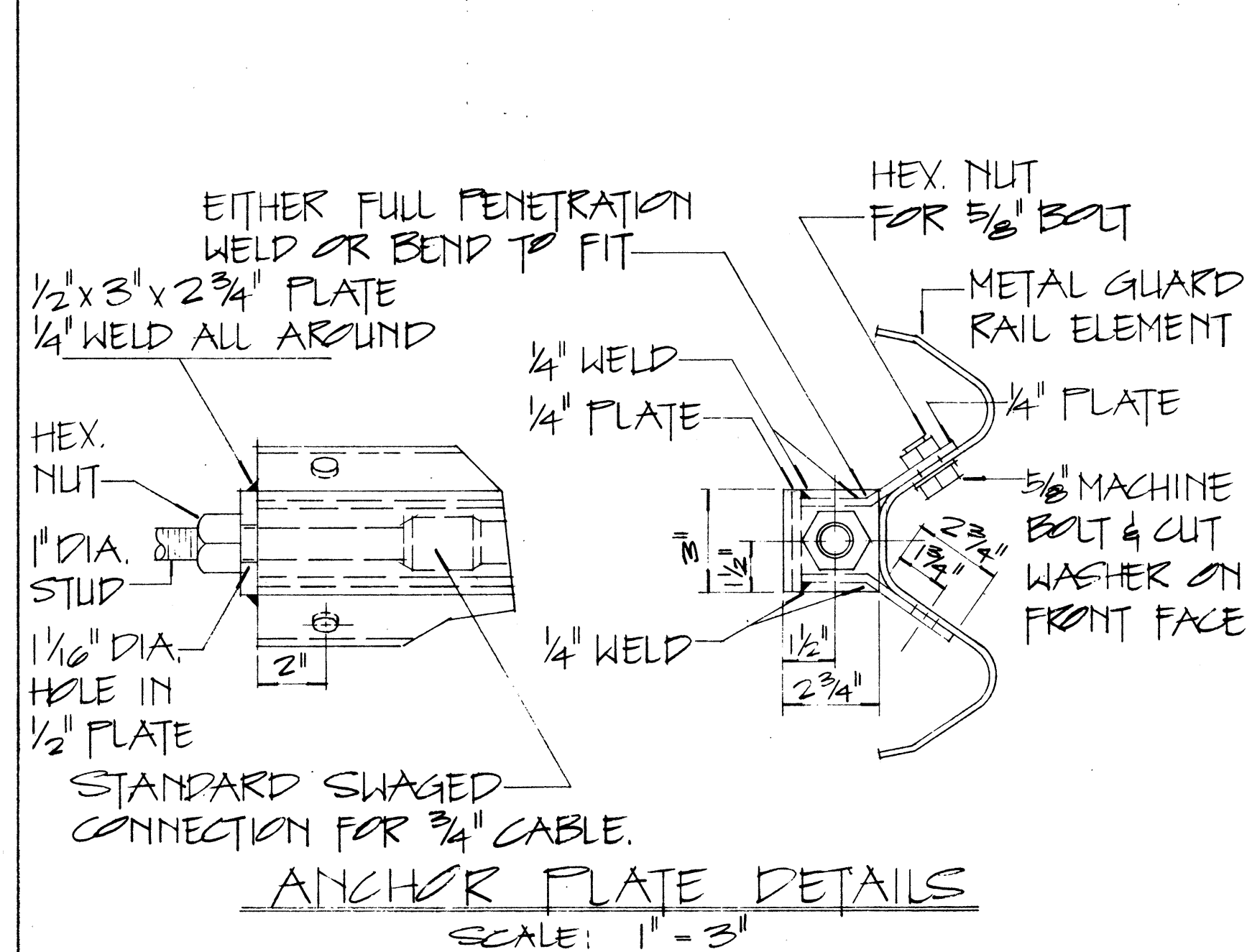
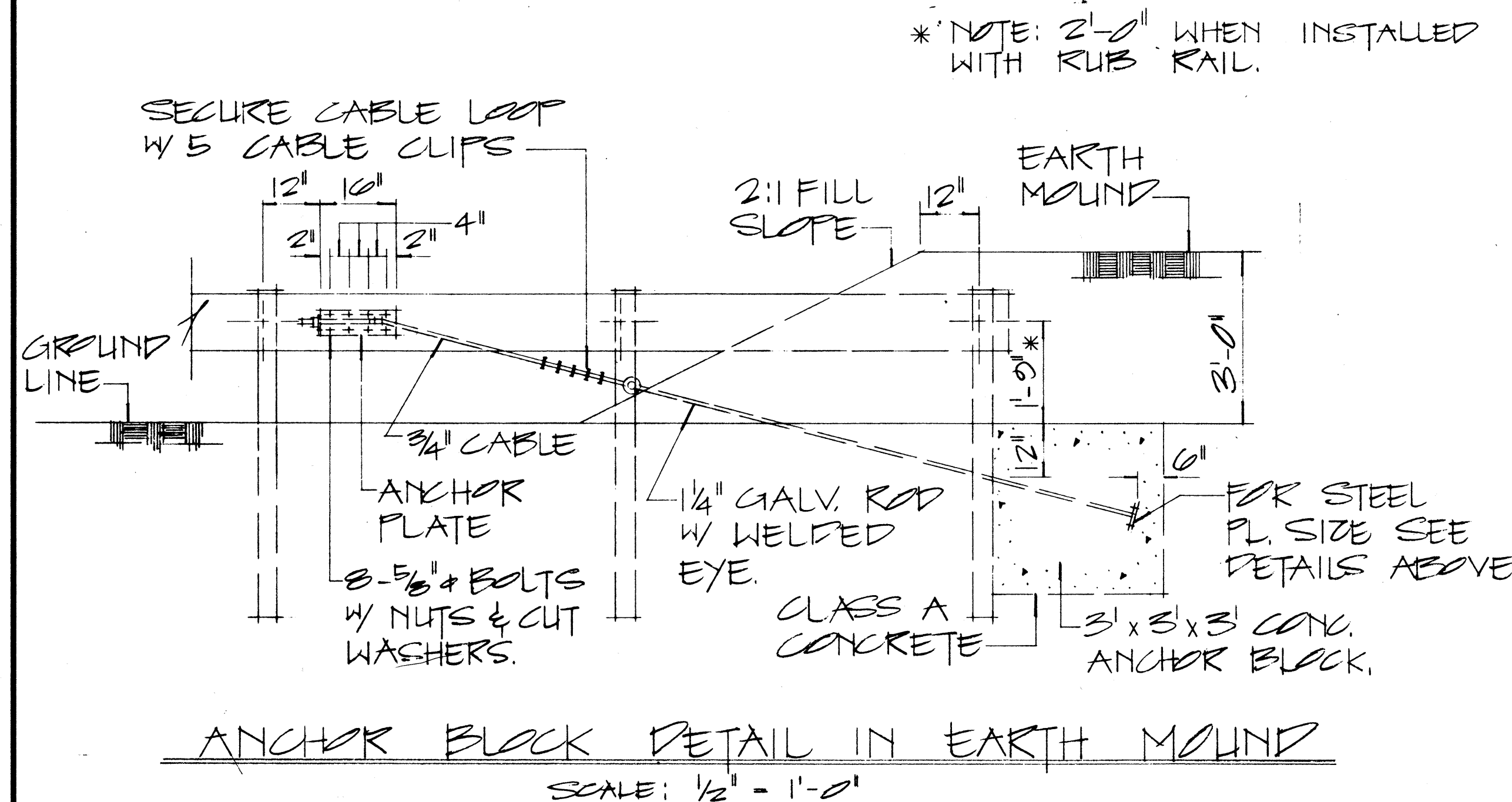
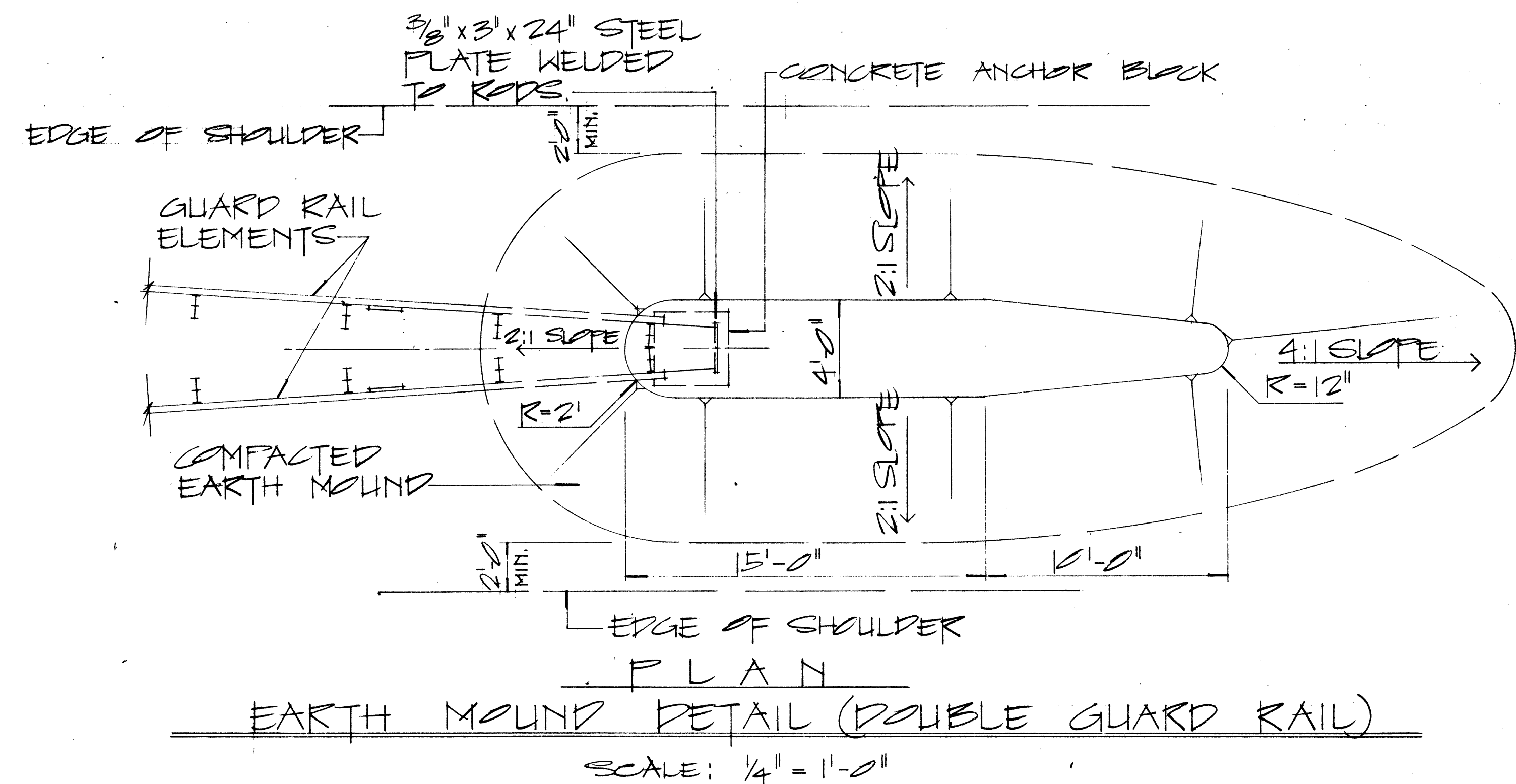
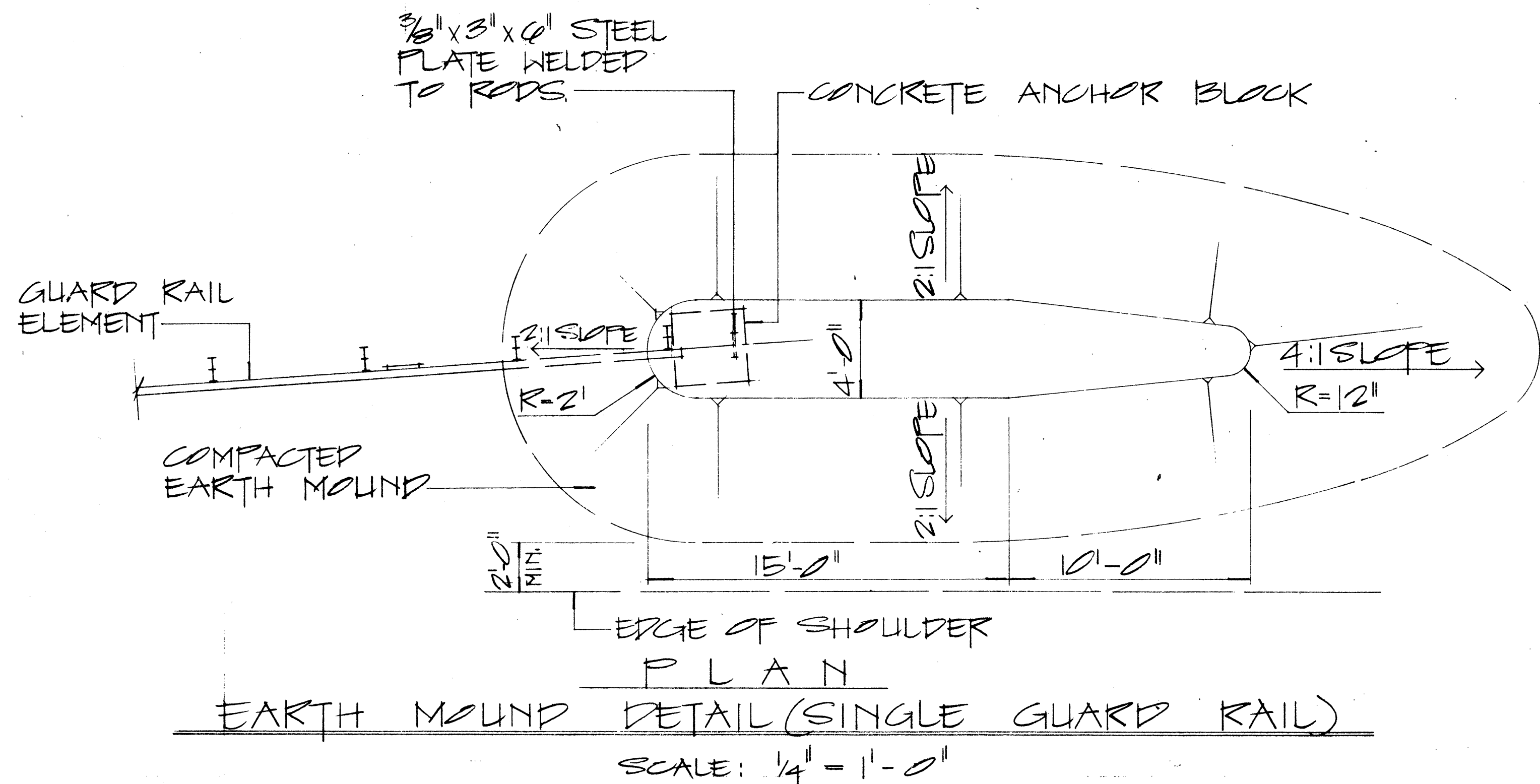
**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

STANDARD DETAILS
GUARD RAIL, TYPE 3
RAMP END ANCHORAGE

SCALE: AS SHOWN

SHEET No. 12 OF 21 SHEETS DT 51

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	37	44



APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

STANDARD DETAILS

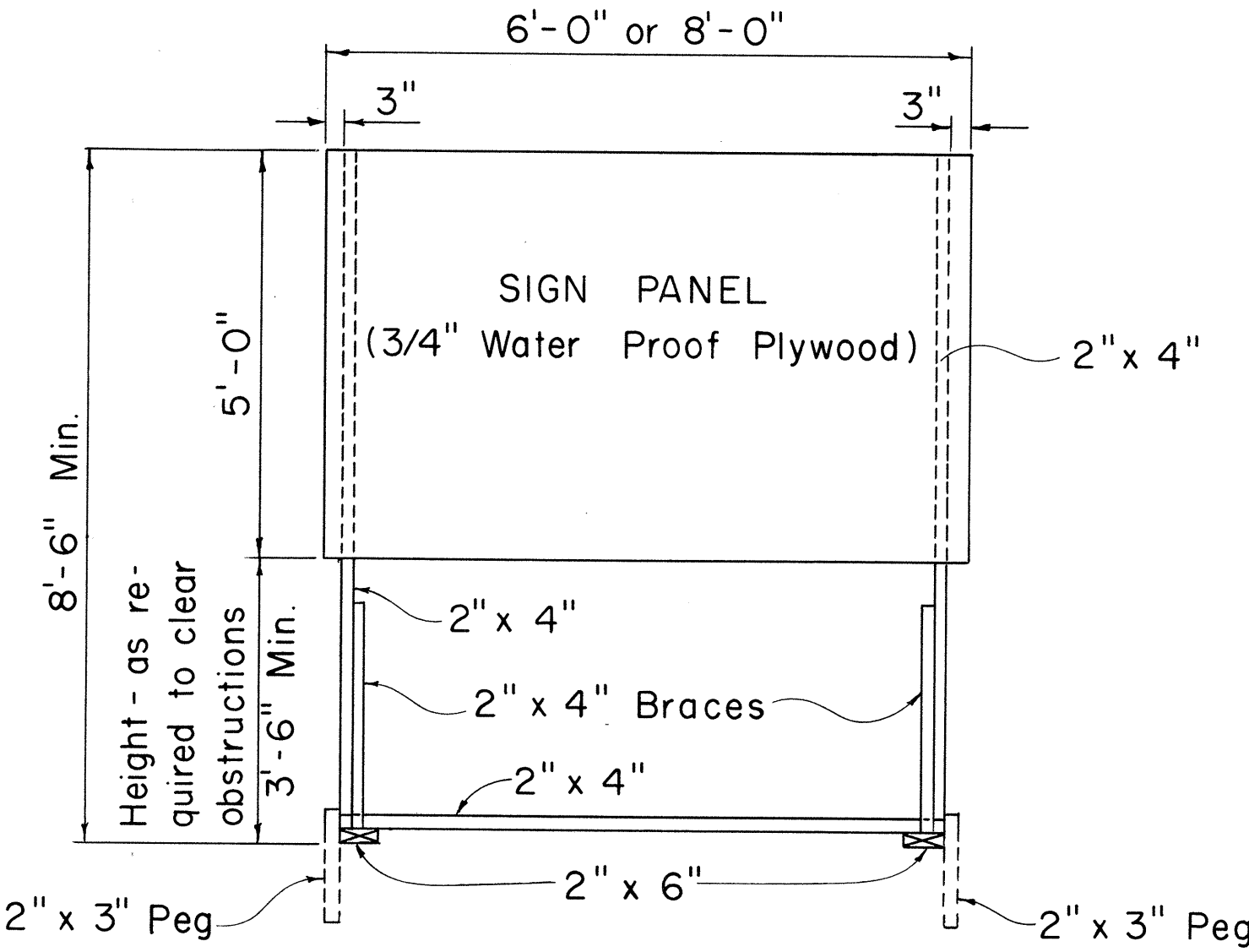
EARTH MOUND AND ANCHOR BLOCK DETAILS

SCALE: AS SHOWN

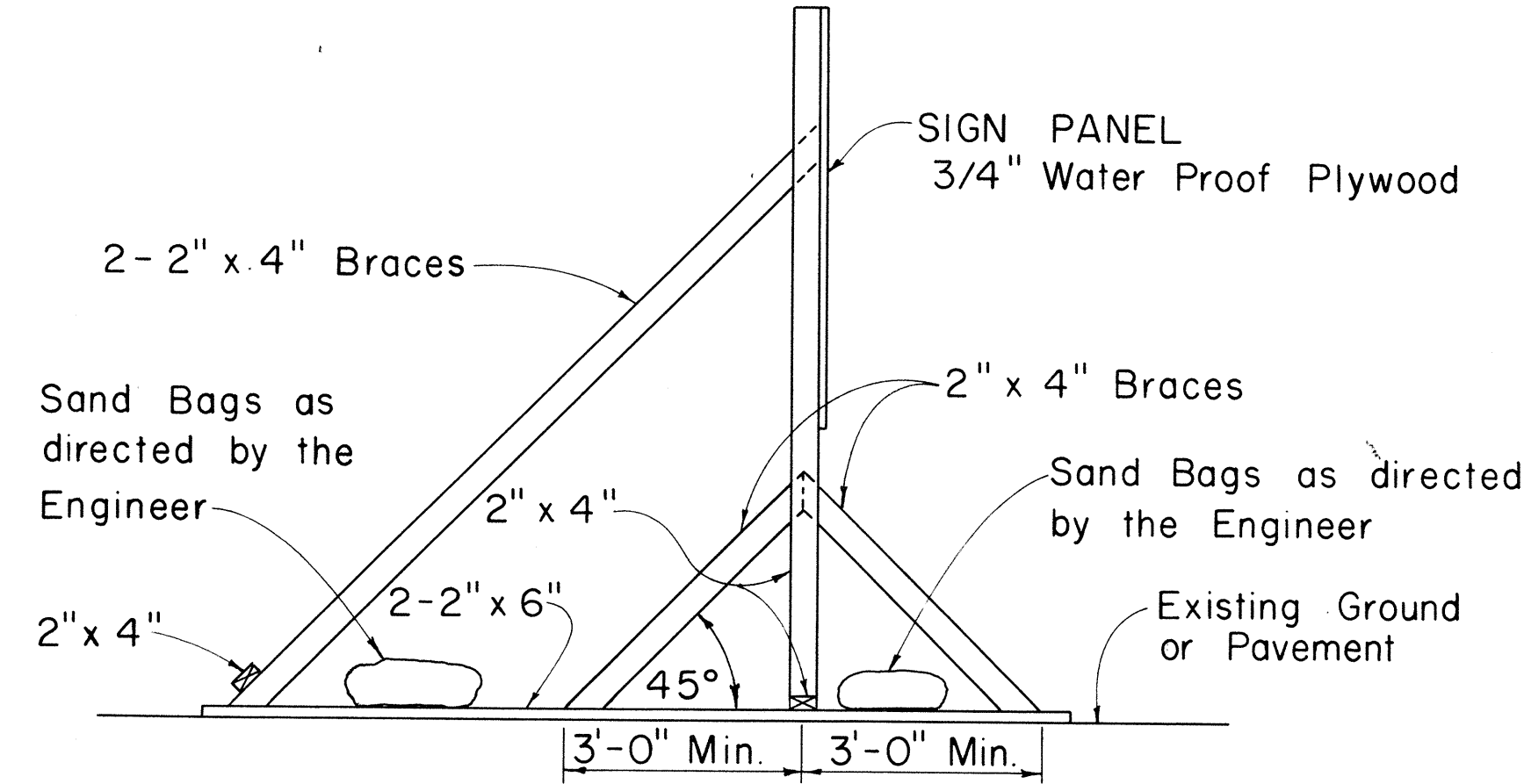
OCT 1969

SHEET No. 13 OF 21 SHEETS

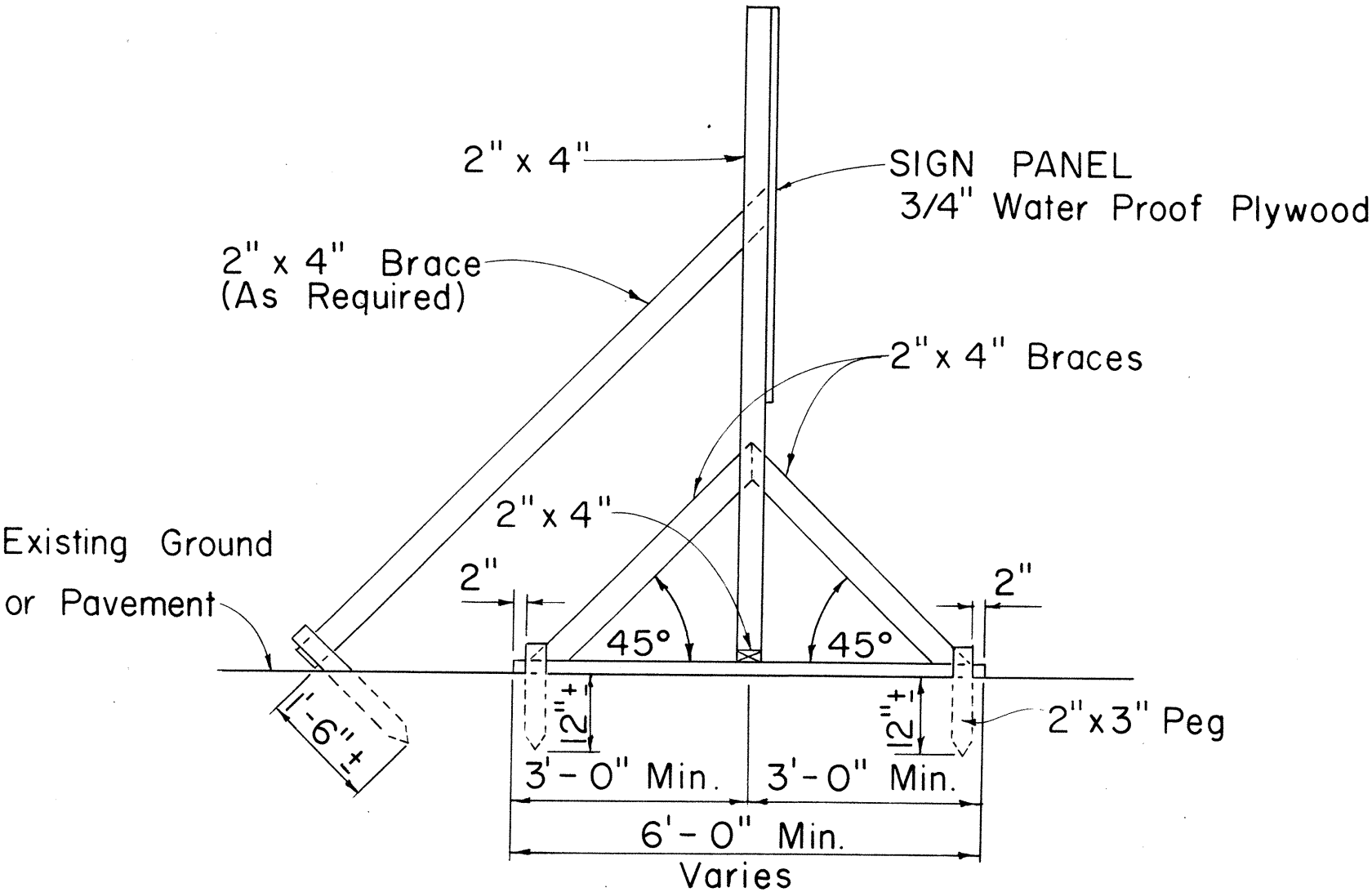
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	38	44



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

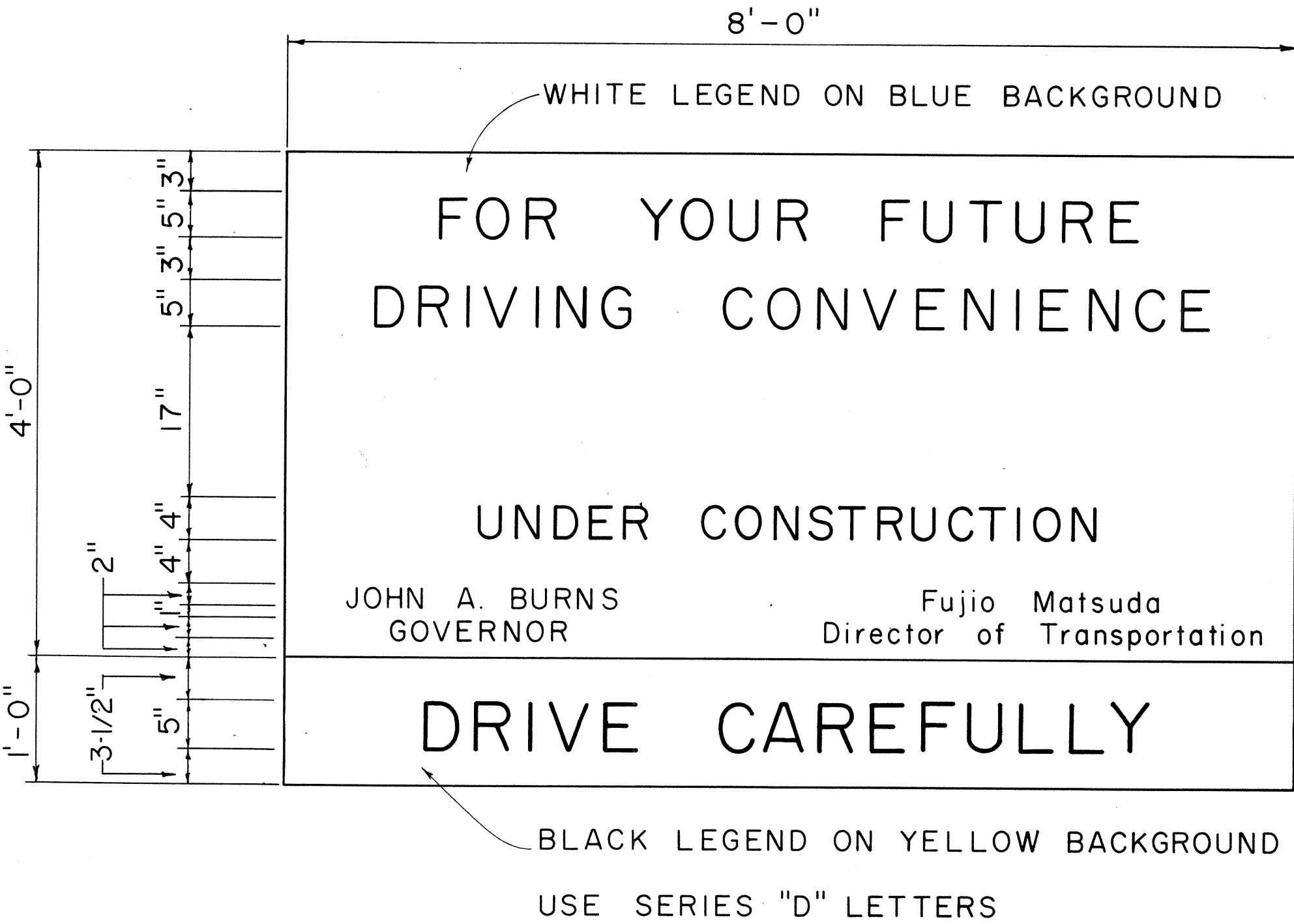


SIDE VIEW
(SIGN SUPPORT AND FRAME WEIGHTED DOWN)
Scale: 1/2" = 1'-0"



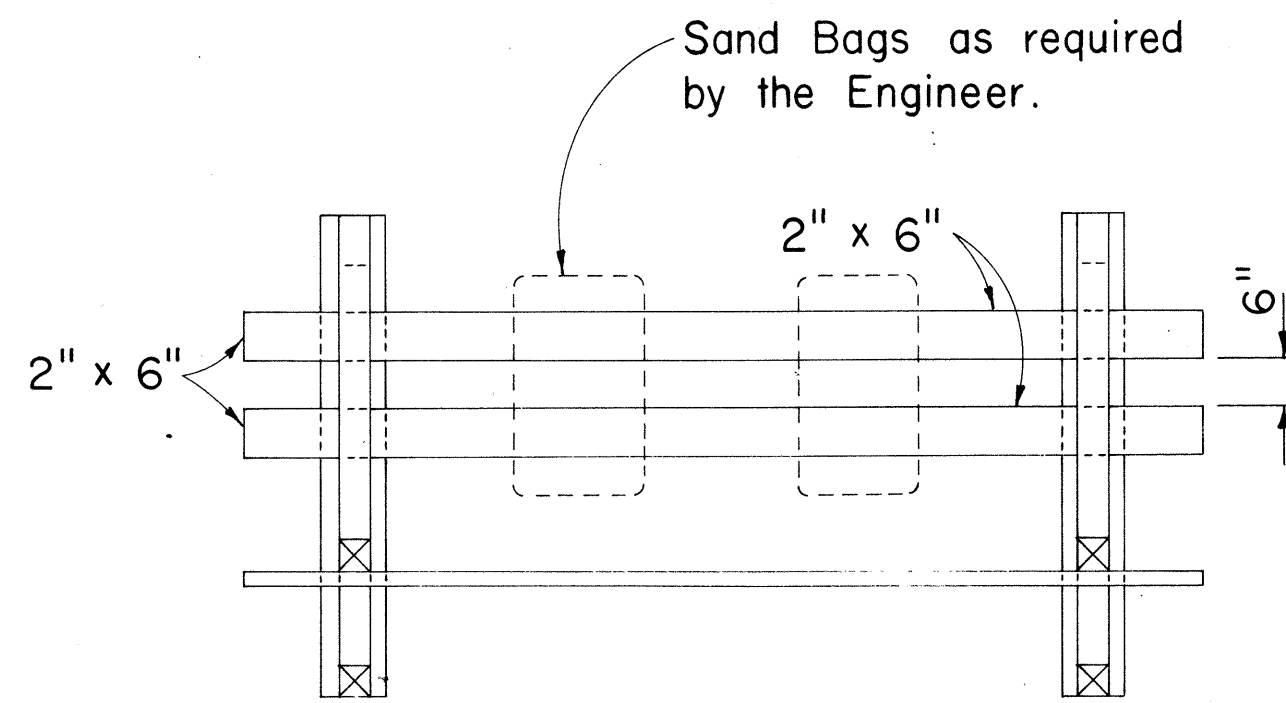
SIDE VIEW
(SIGN SUPPORT AND FRAME ANCHORED IN GROUND)
Scale: 1/2" = 1'-0"

SIGN SUPPORT AND FRAME
Scale: As Shown

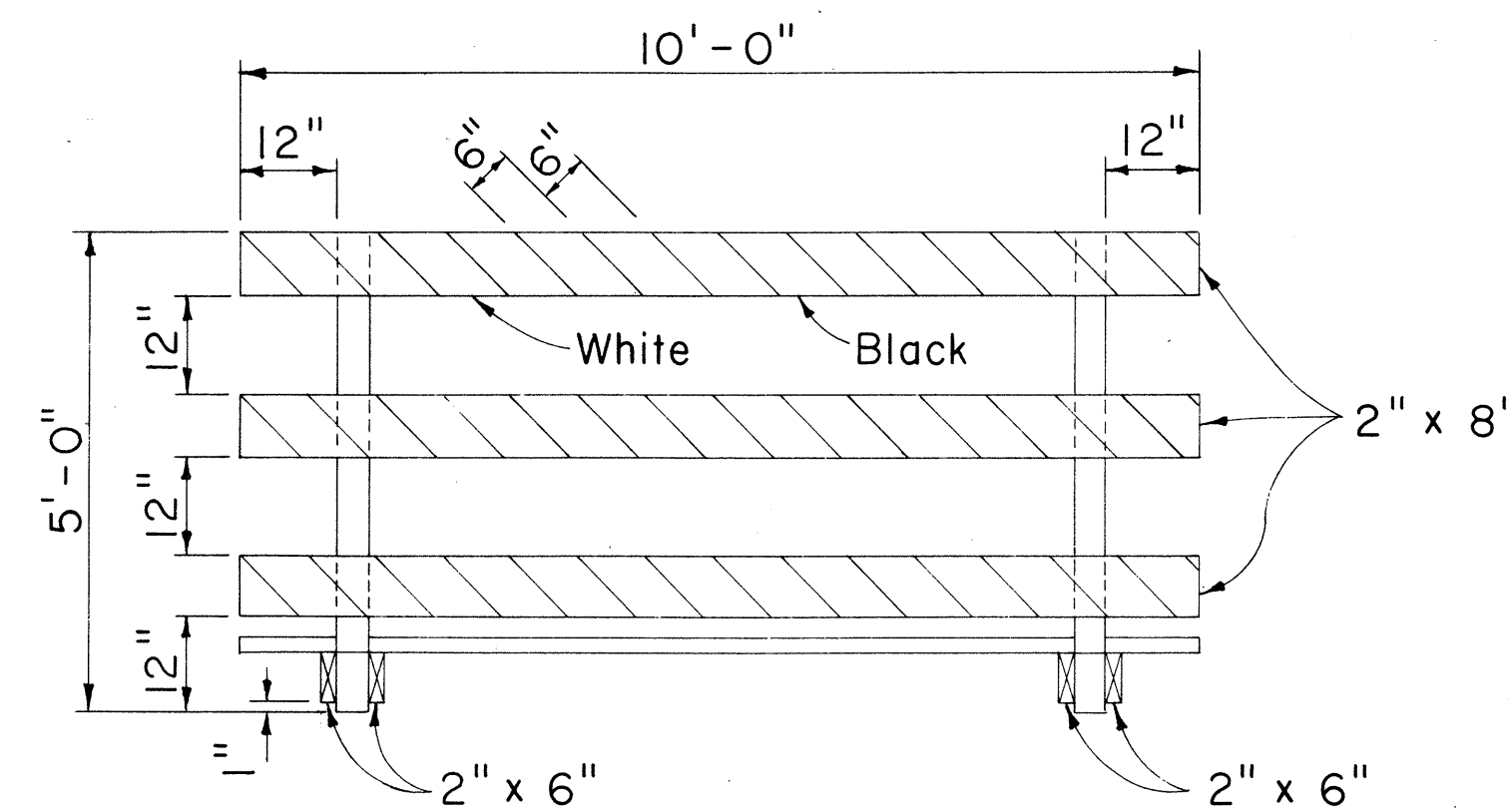


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS
PROJECT INFORMATION SIGN
Scale: As Shown
SHEET No. 14 OF 21 SHEETS

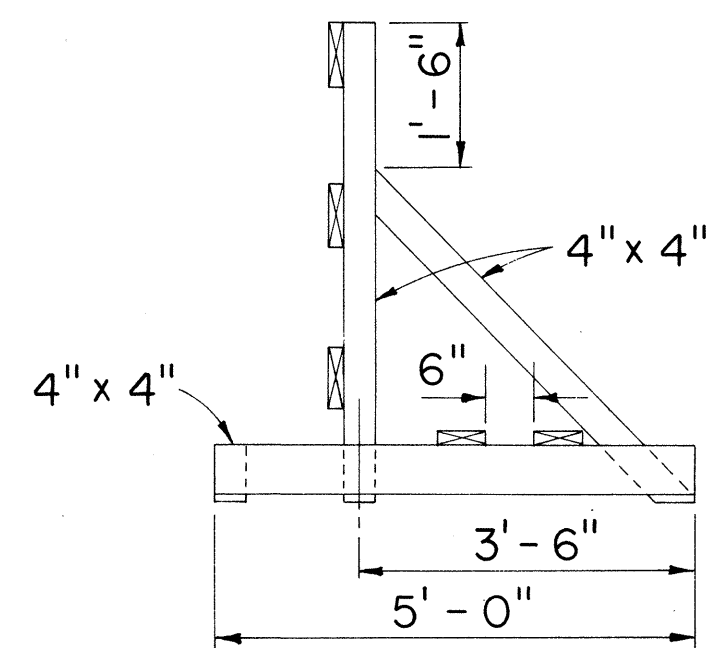
33



PLAN VIEW



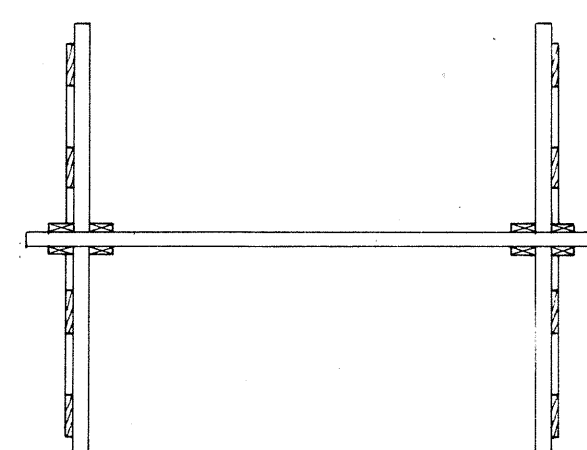
FRONT VIEW



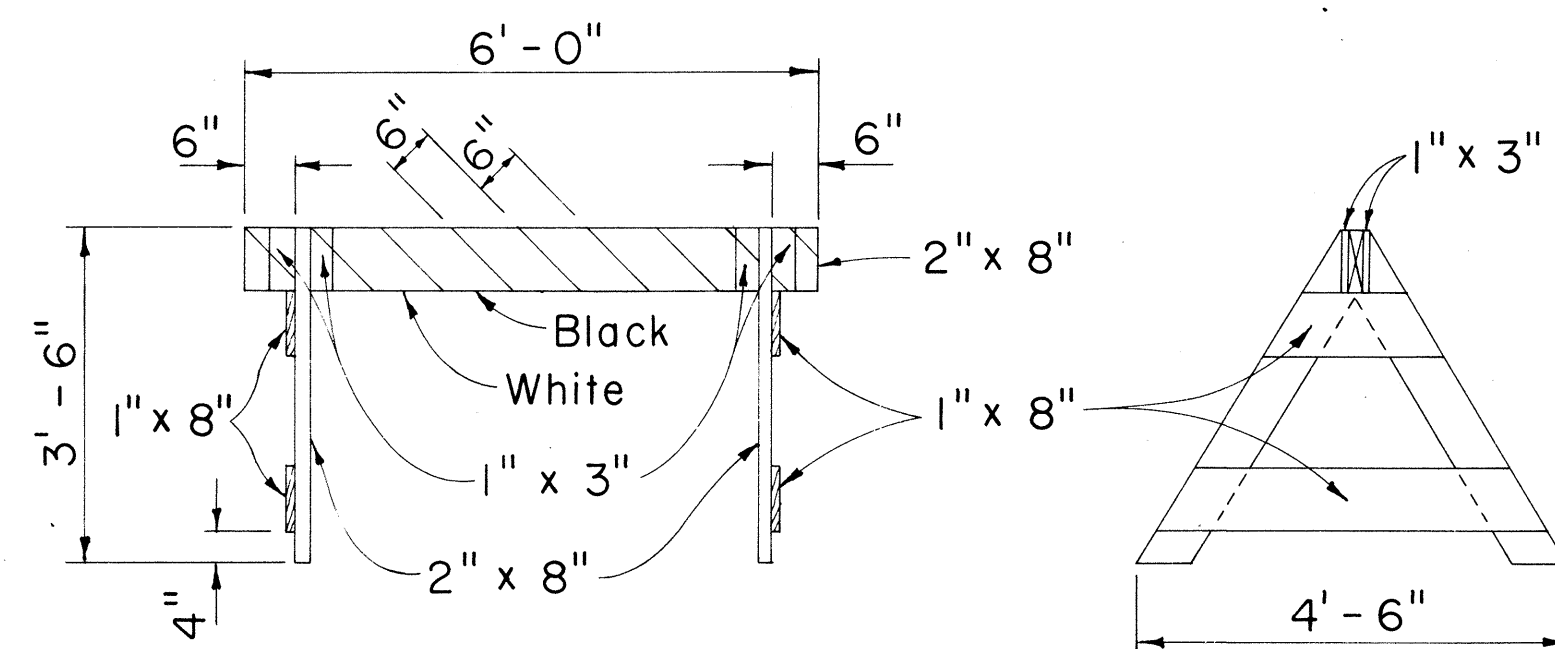
END VIEW

CLASS I BARRICADE

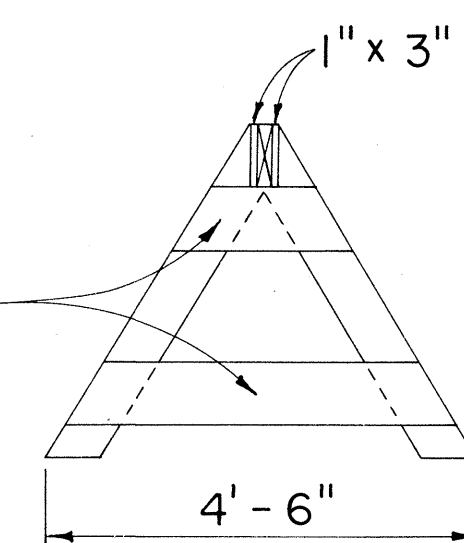
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW



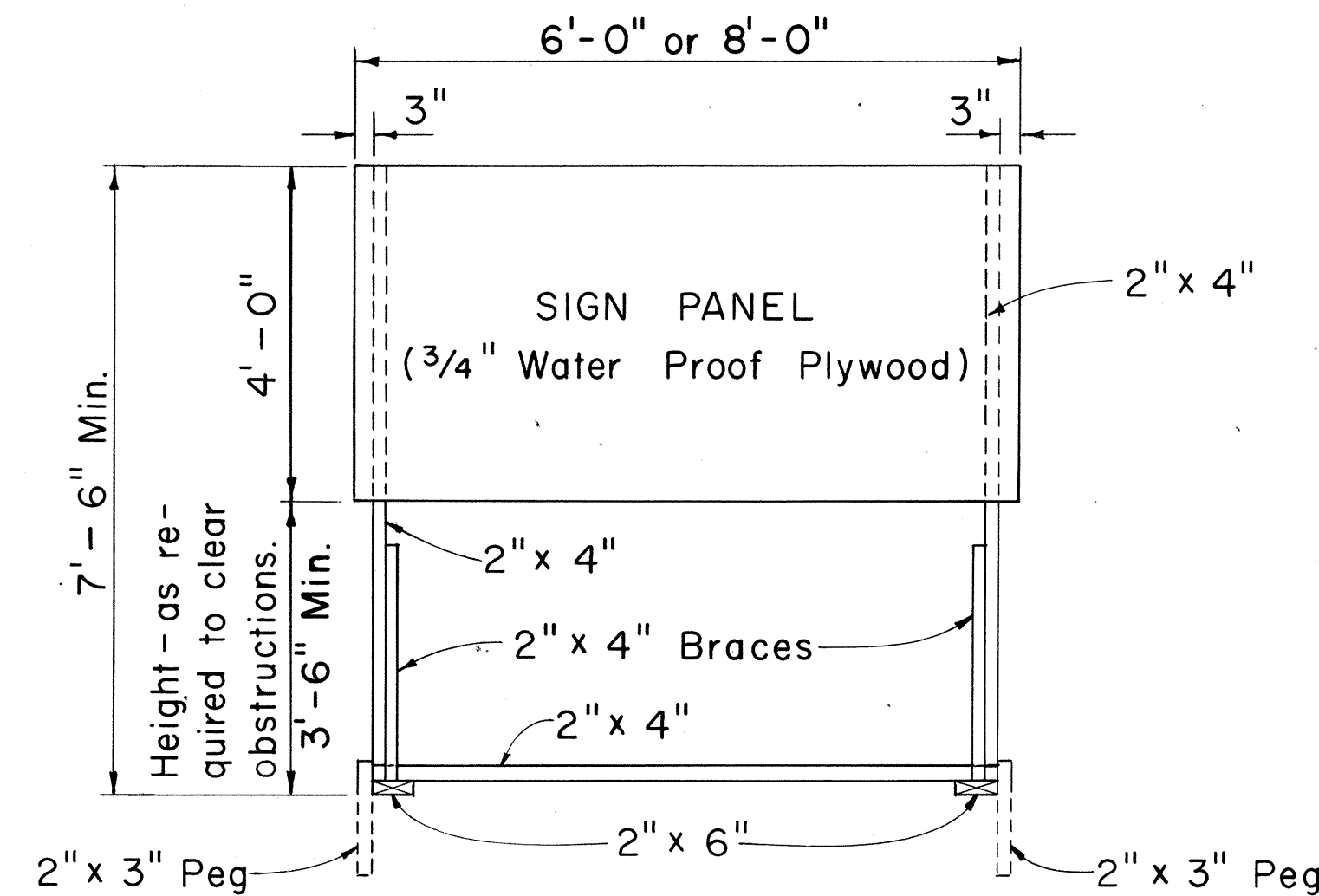
END VIEW

CLASS II BARRICADE

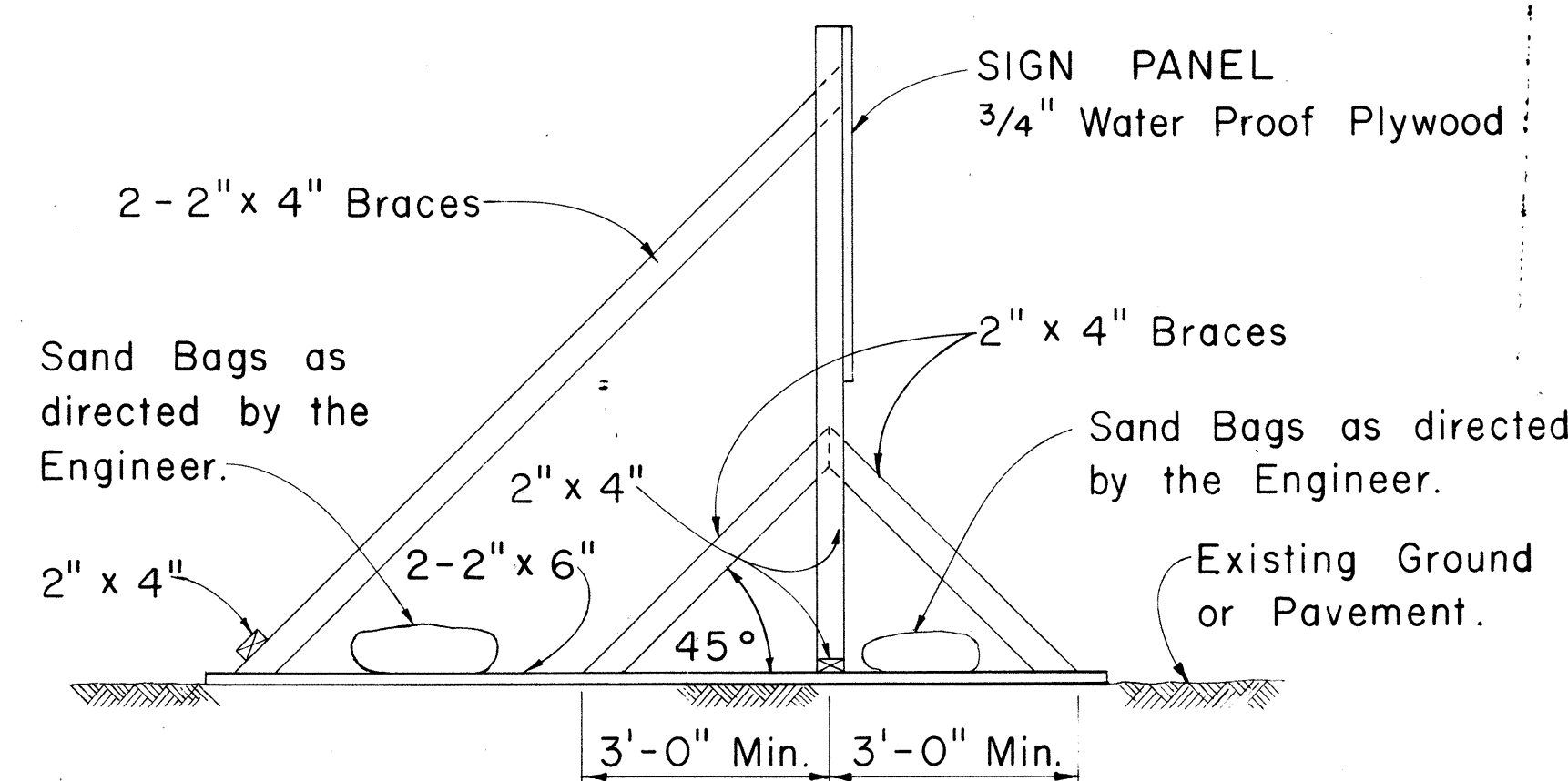
Scale: 1/2" = 1'-0"

GENERAL NOTES

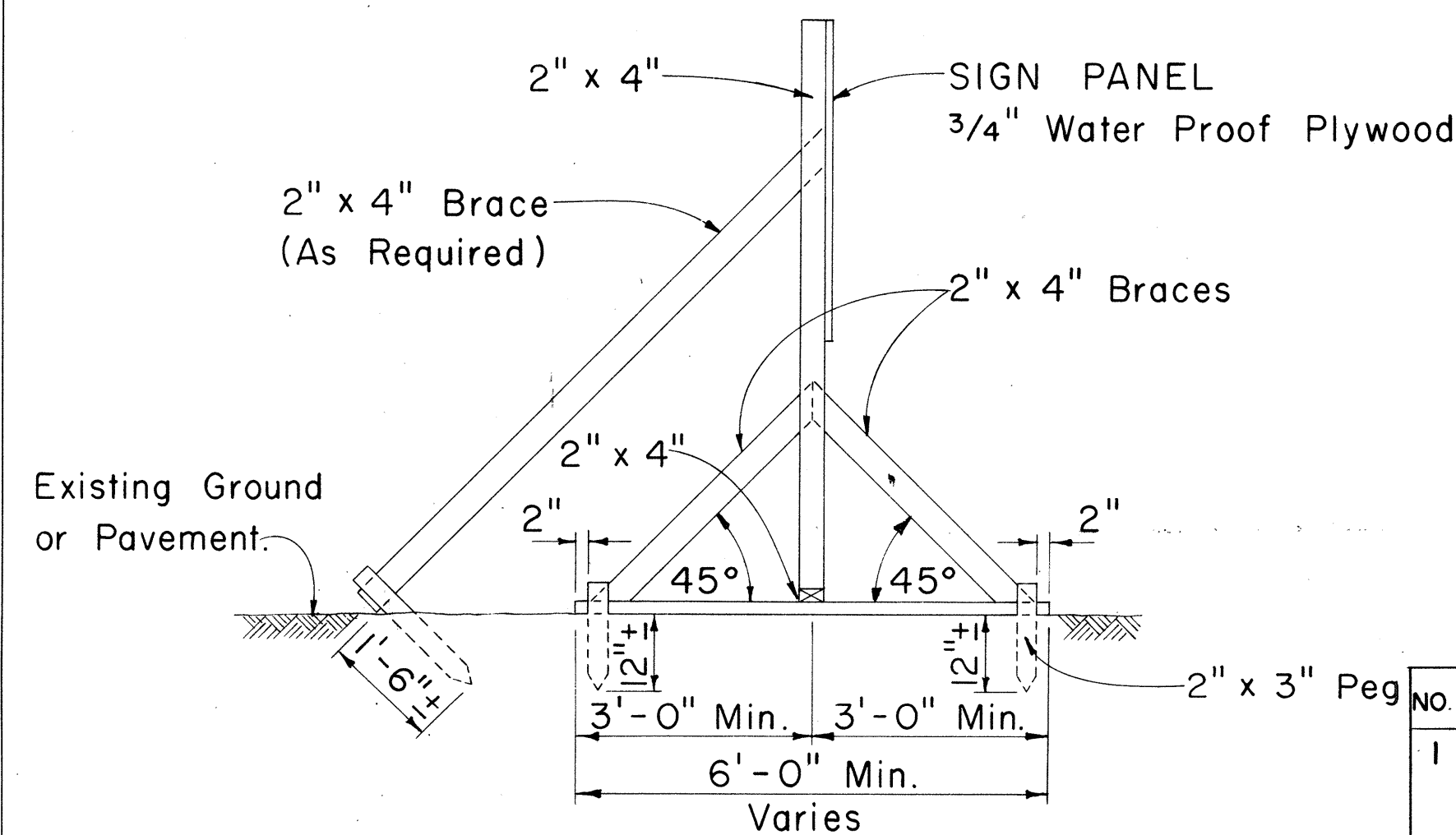
1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
2. The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.



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



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

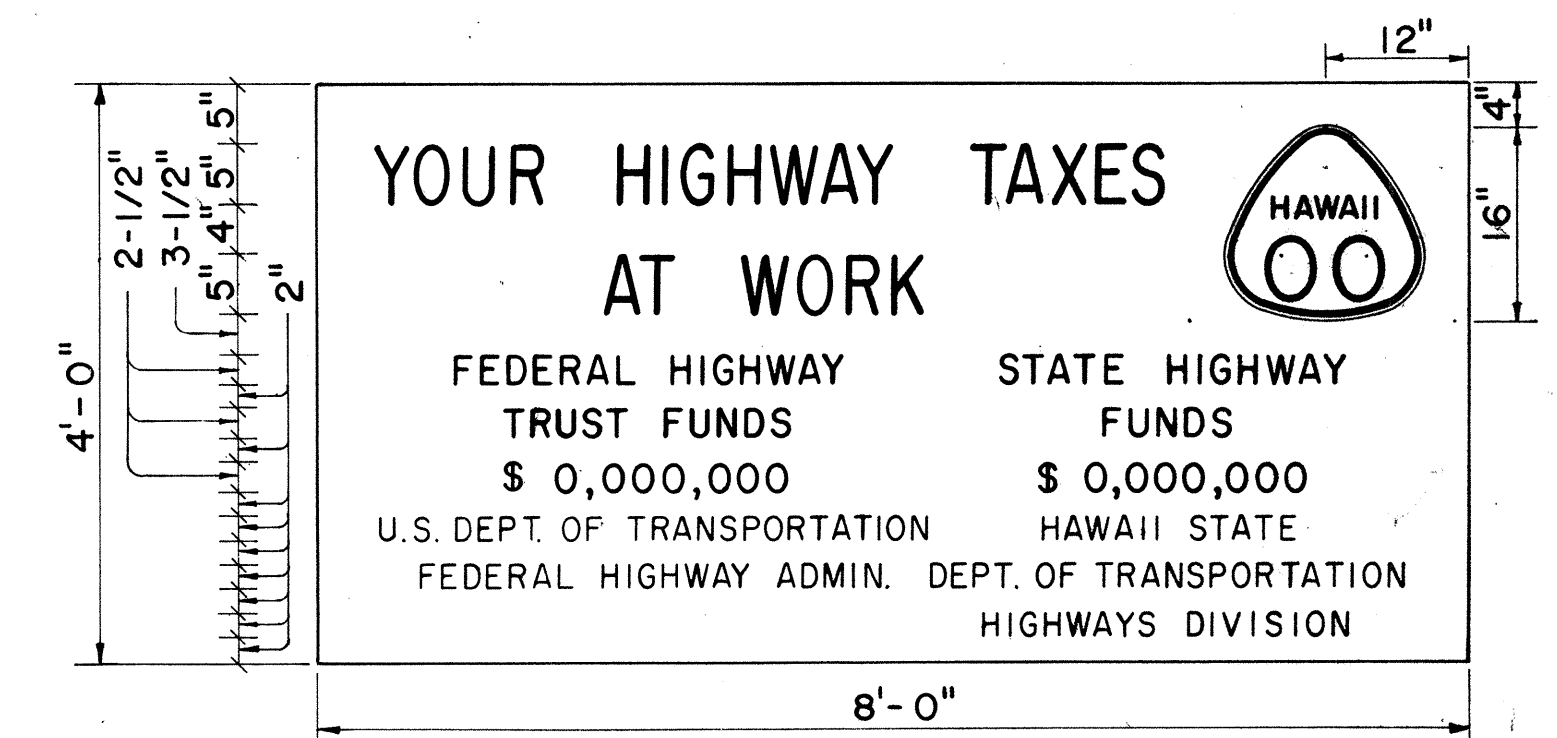


SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)
Scale: 1/2" = 1'-0"

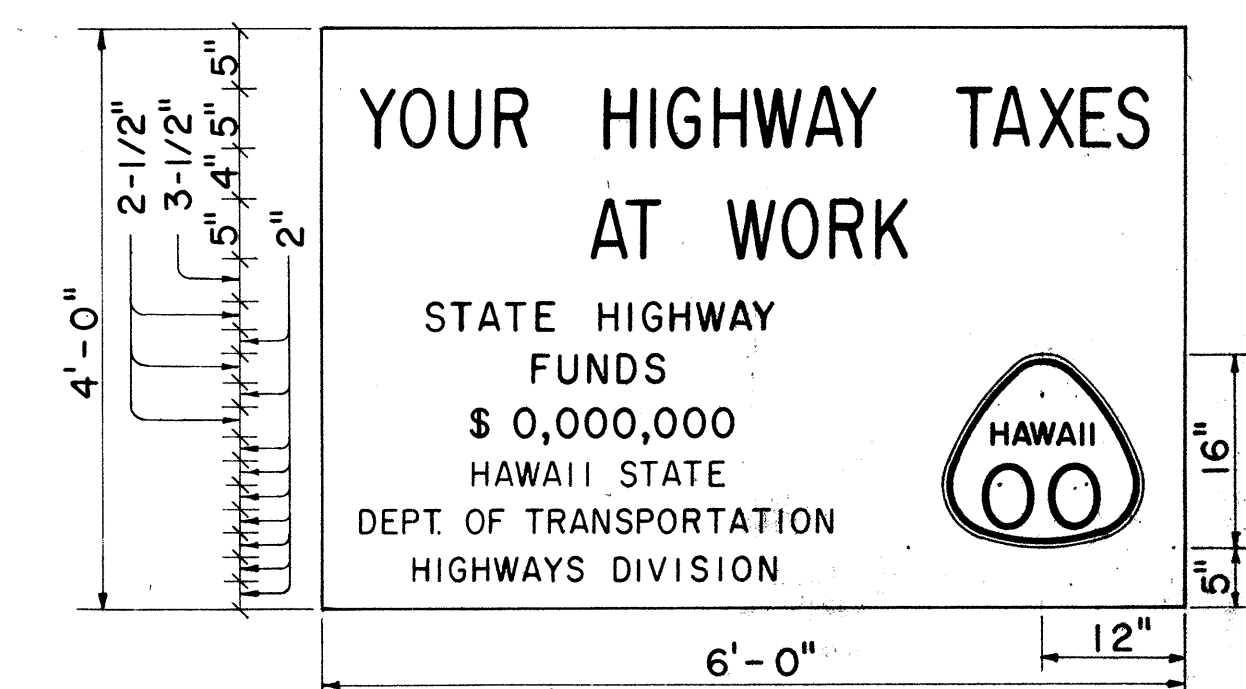
CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	37	44



SIGN PANEL
PRIMARY AND SECONDARY SYSTEMS
Scale: 3/4" = 1'-0"



SIGN PANEL
NON-FEDERAL AID PROJECT
Scale: 3/4" = 1'-0"

GENERAL NOTES

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. 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, 1966
4. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.

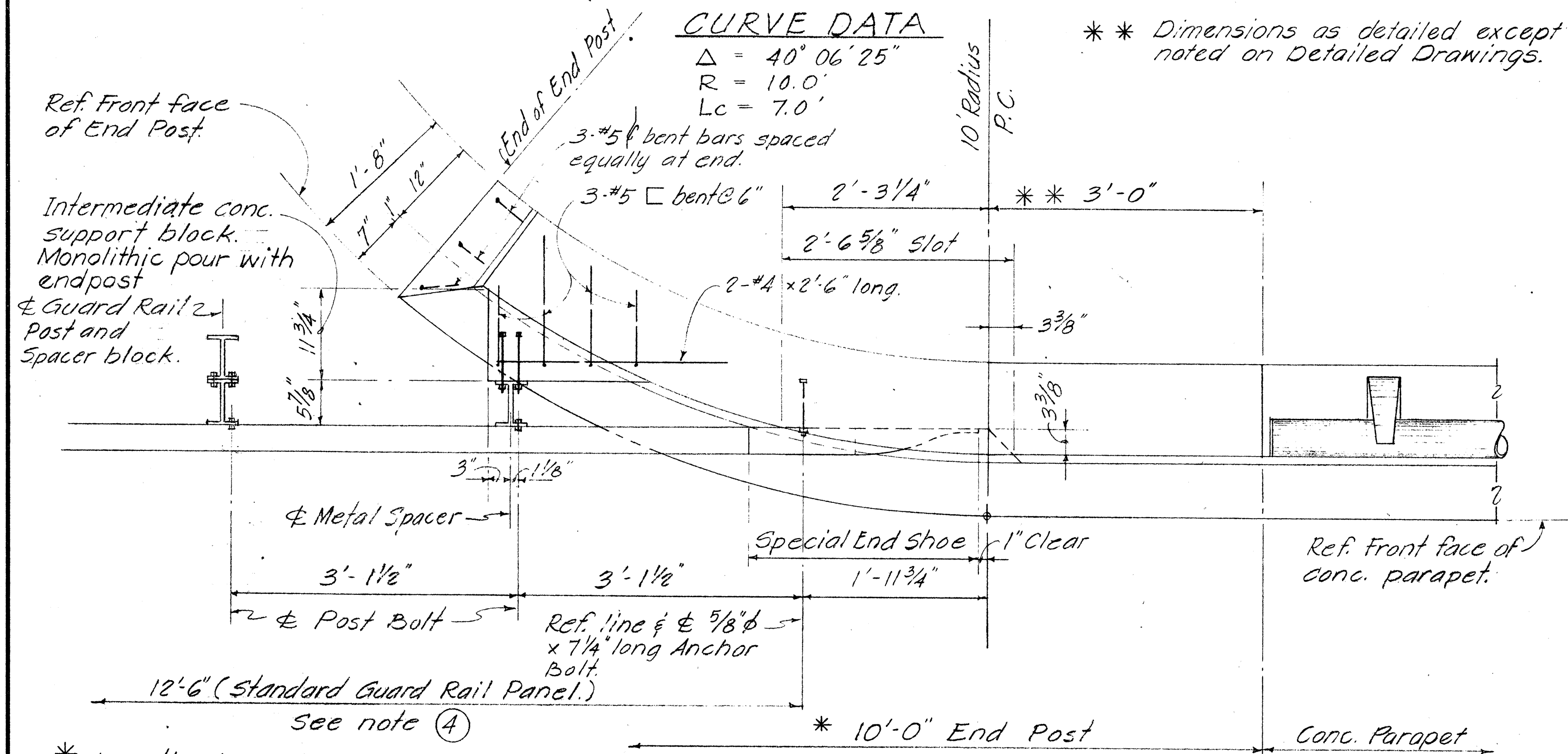
APPROVAL RECOMMENDED:
Eishi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE
1	Delete "Bureau of Public Roads"	ft.	9-29-70

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TYPICAL DETAILS CONSTRUCTION IDENTIFICATION SIGN AND WOOD BARRICADES Scale: As Shown Date: SHEET No. 15 OF 21 SHEETS DT 801
--

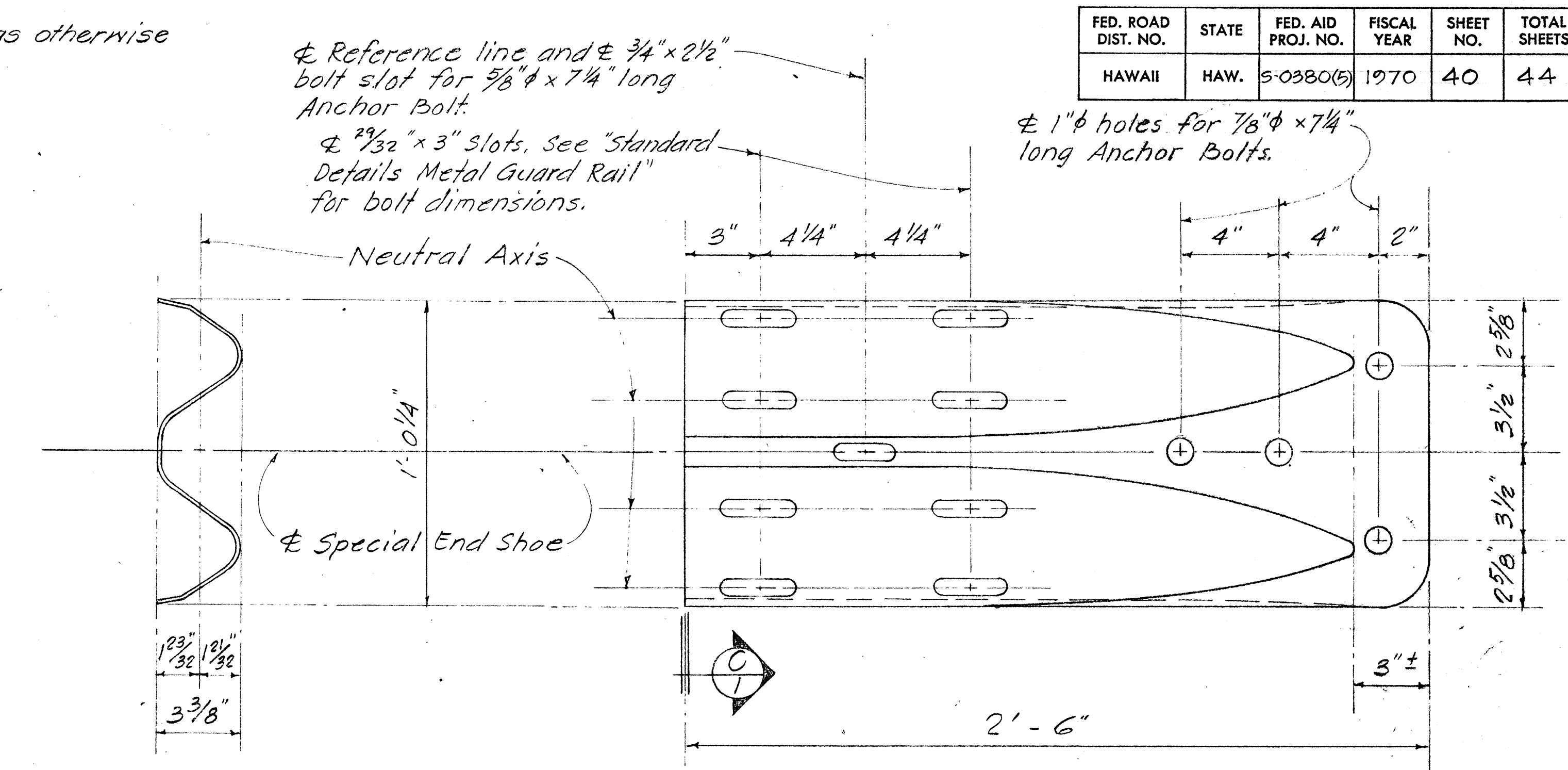
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	40	44



CURVE DATA

$\Delta = 40^\circ 06' 25''$
 $R = 10.0'$
 $Lc = 7.0'$

** Dimensions as detailed except as otherwise noted on Detailed Drawings.

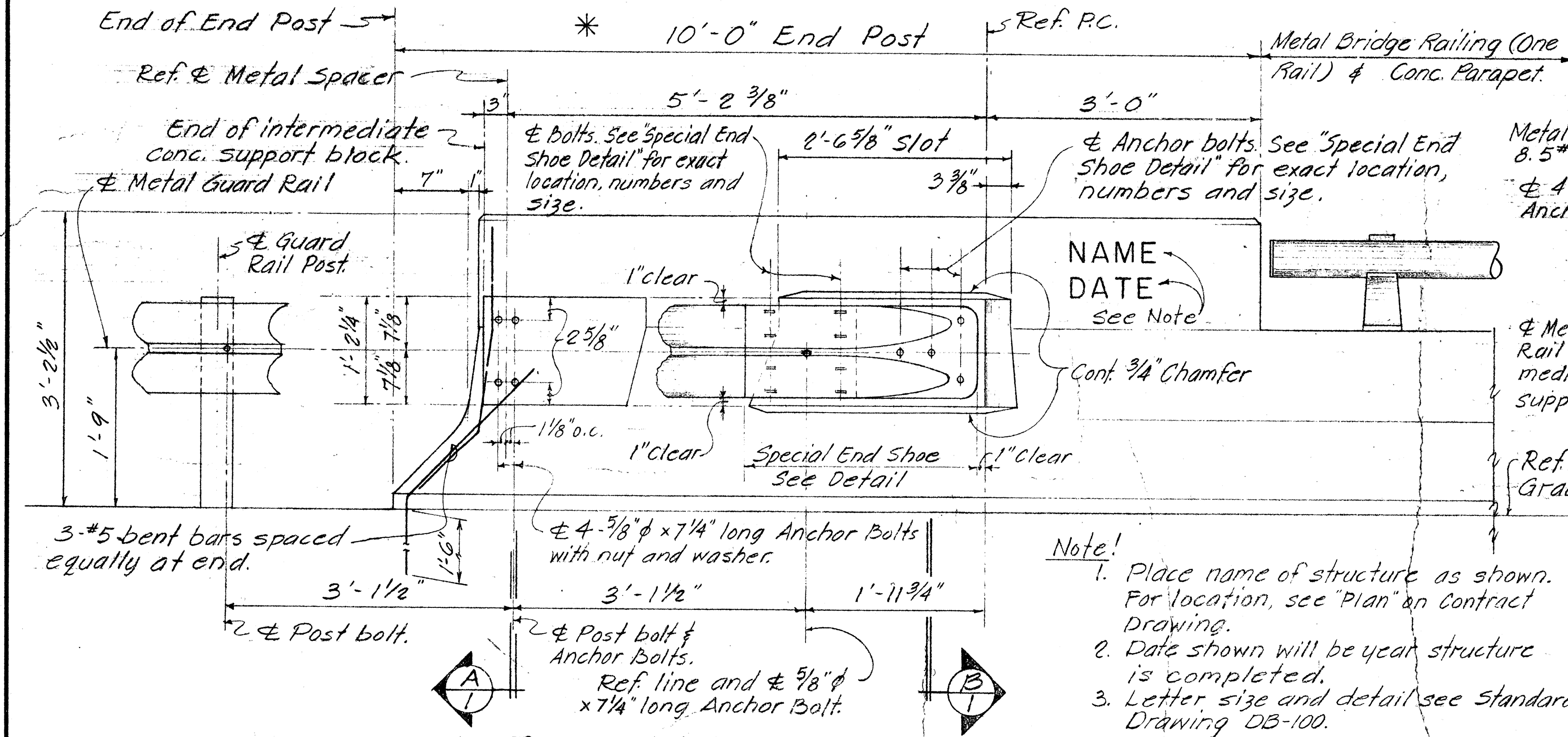


SECTION ①

ELEVATION

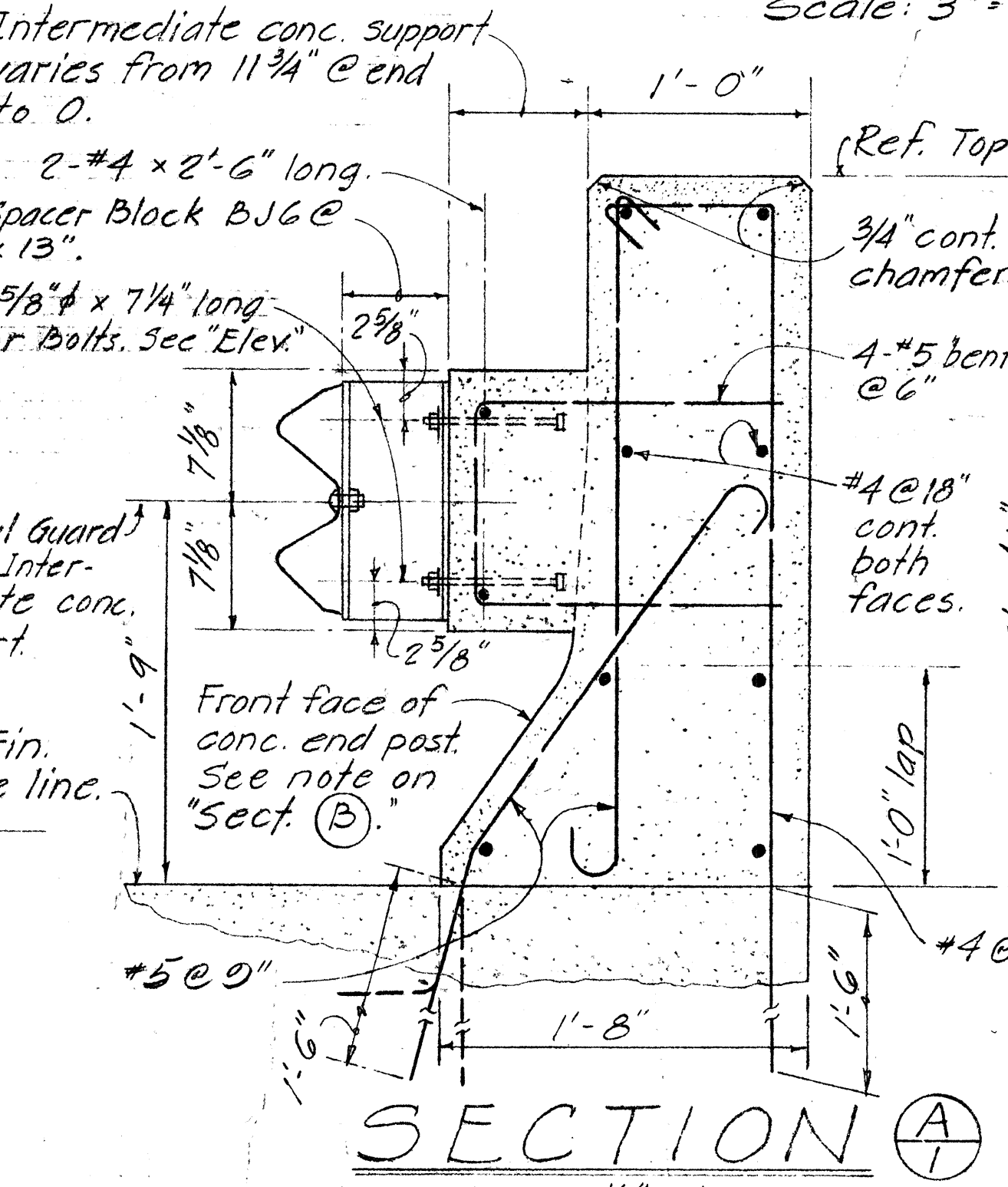
SPECIAL END SHOE DETAILS

Scale: 3" = 1'-0"



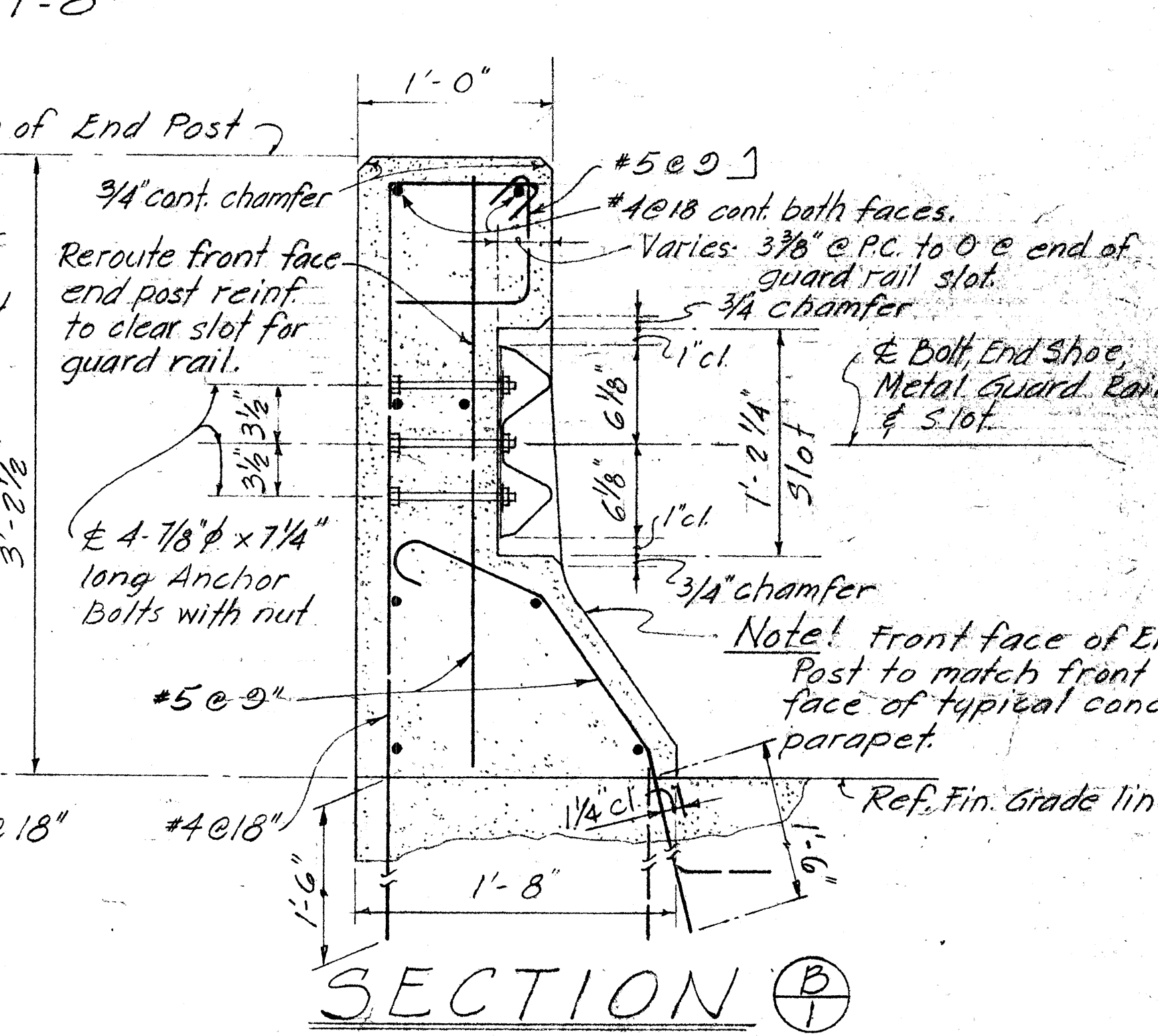
ELEVATION

Scale: 1" = 1'-0"



SECTION A

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



SECTION B

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

NOTES:

- All Anchor Bolts shall be High Strength bolts conforming to the requirements of ASTM A325.
- All Shoe assembly, including anchor bolts, nuts and washers, shall be galvanized.
- Special End Shoe shall be fabricated from 10 gage steel conforming to the requirements of AASHTO 180.
- First Guard Rail Panel adjoining "Special End Shoe" shall be of galvanized steel. See Specifications for requirements.
- Anchor Bolt length given from under bolt head.

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Paul T. Yamashita
 BRIDGE DESIGN ENGINEER

1-23-70
 DATE

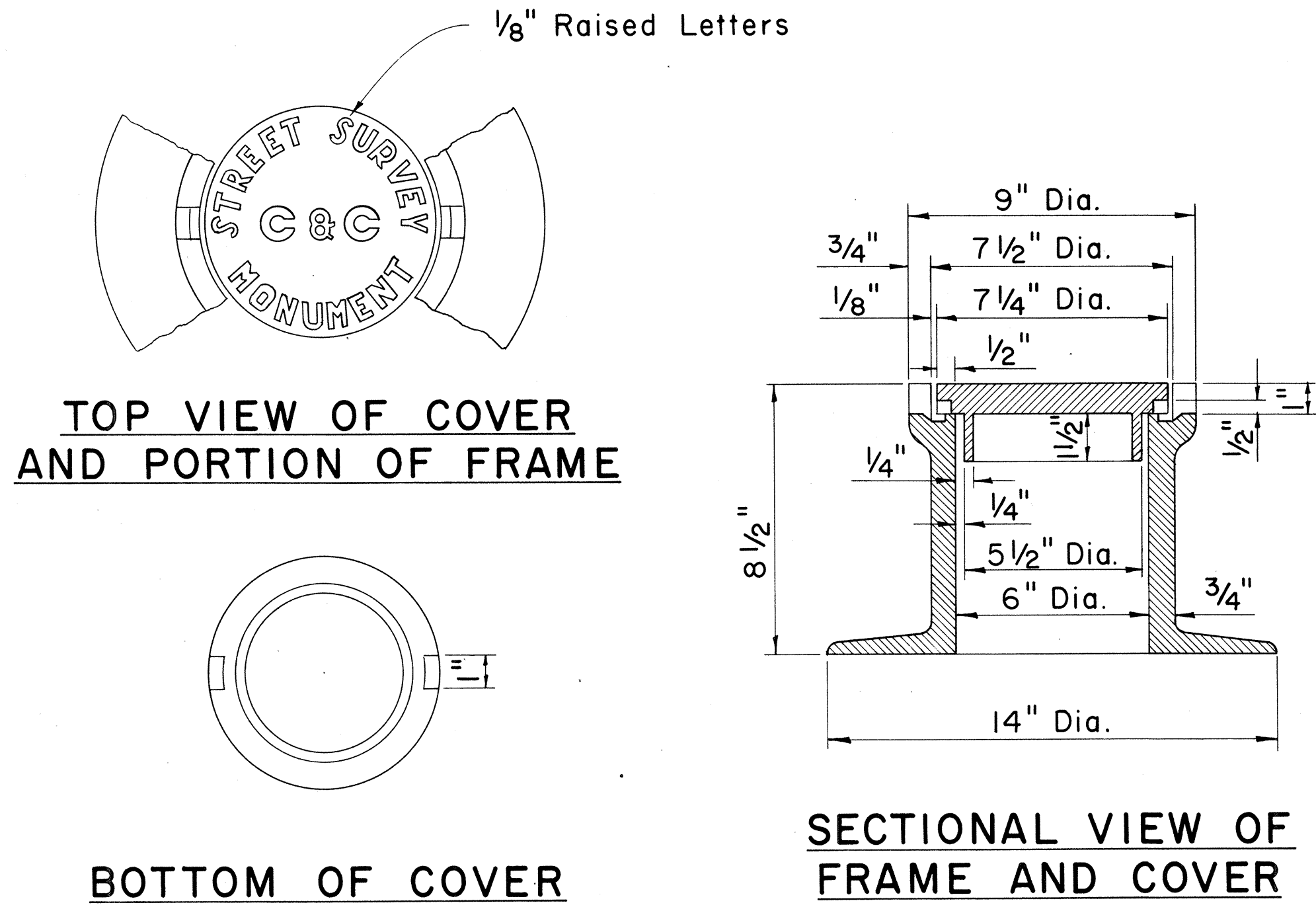
APPROVED:
Paul T. Yamashita
 ASSISTANT CHIEF, ENGINEERING

1-24-70
 DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAILS	
METAL GUARD RAIL CONNECTION	
ONE RAIL COMBINATION TYPE END POST	
Date	

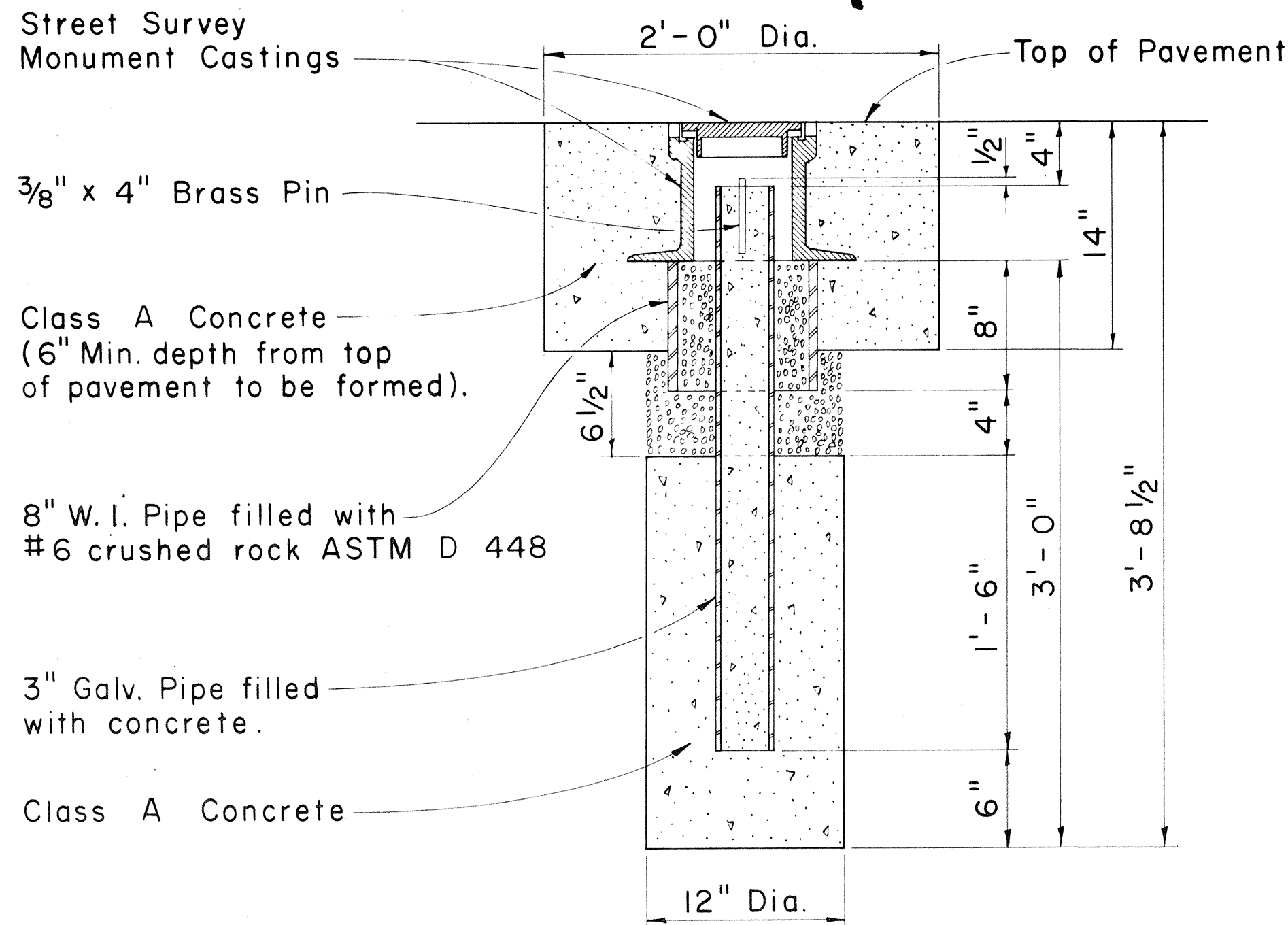
SHEET No. 16 OF 21 SHEETS DB-205

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	40A	44



STREET SURVEY MONUMENT CASTINGS

Scale: 3" = 1'-0"



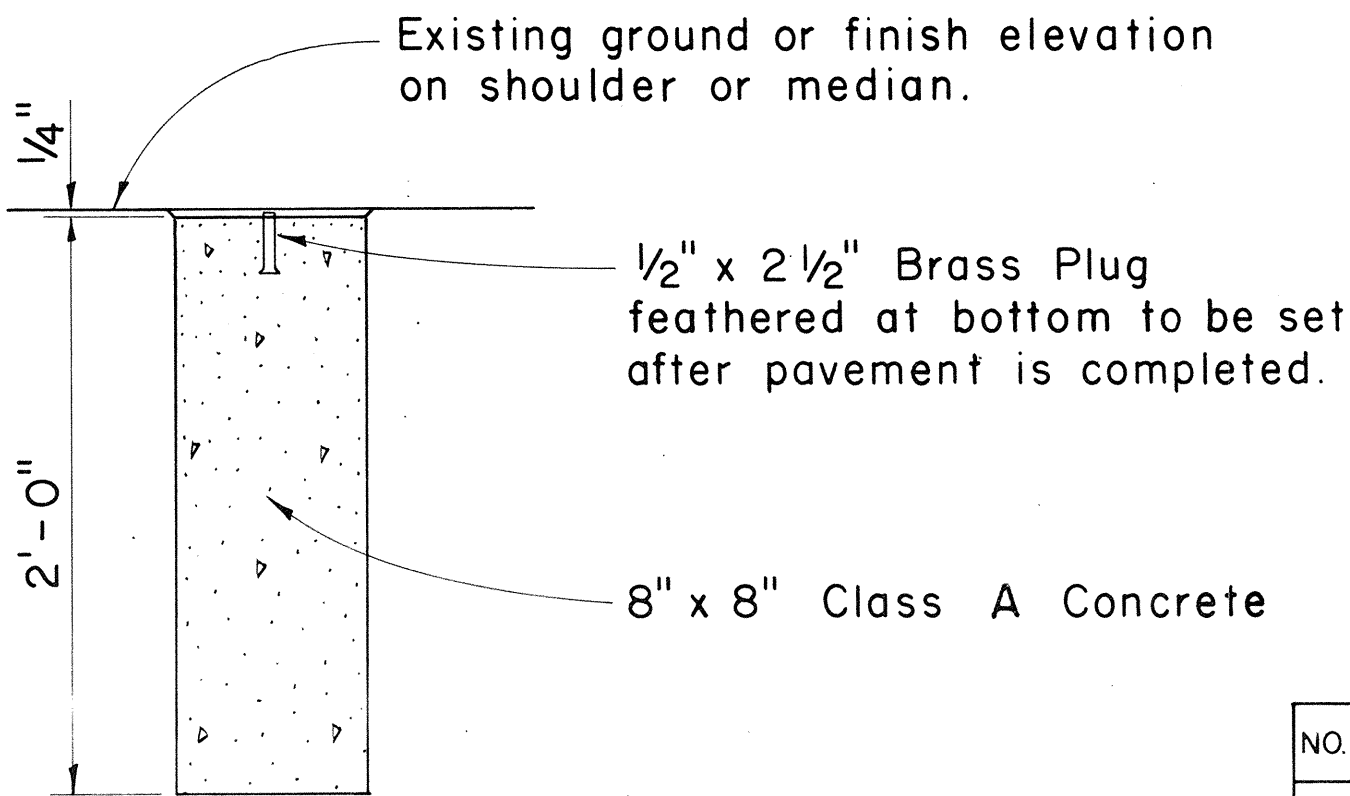
NOTE:
Where the excavation extends into solid rock the depth may be decreased if approved by the Engineer.

STREET SURVEY MONUMENT

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

DETAIL FOR C AND REFERENCE SURVEY MONUMENT

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



APPROVAL RECOMMENDED:
M. H. H. H. 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:
M. H. H. H. 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

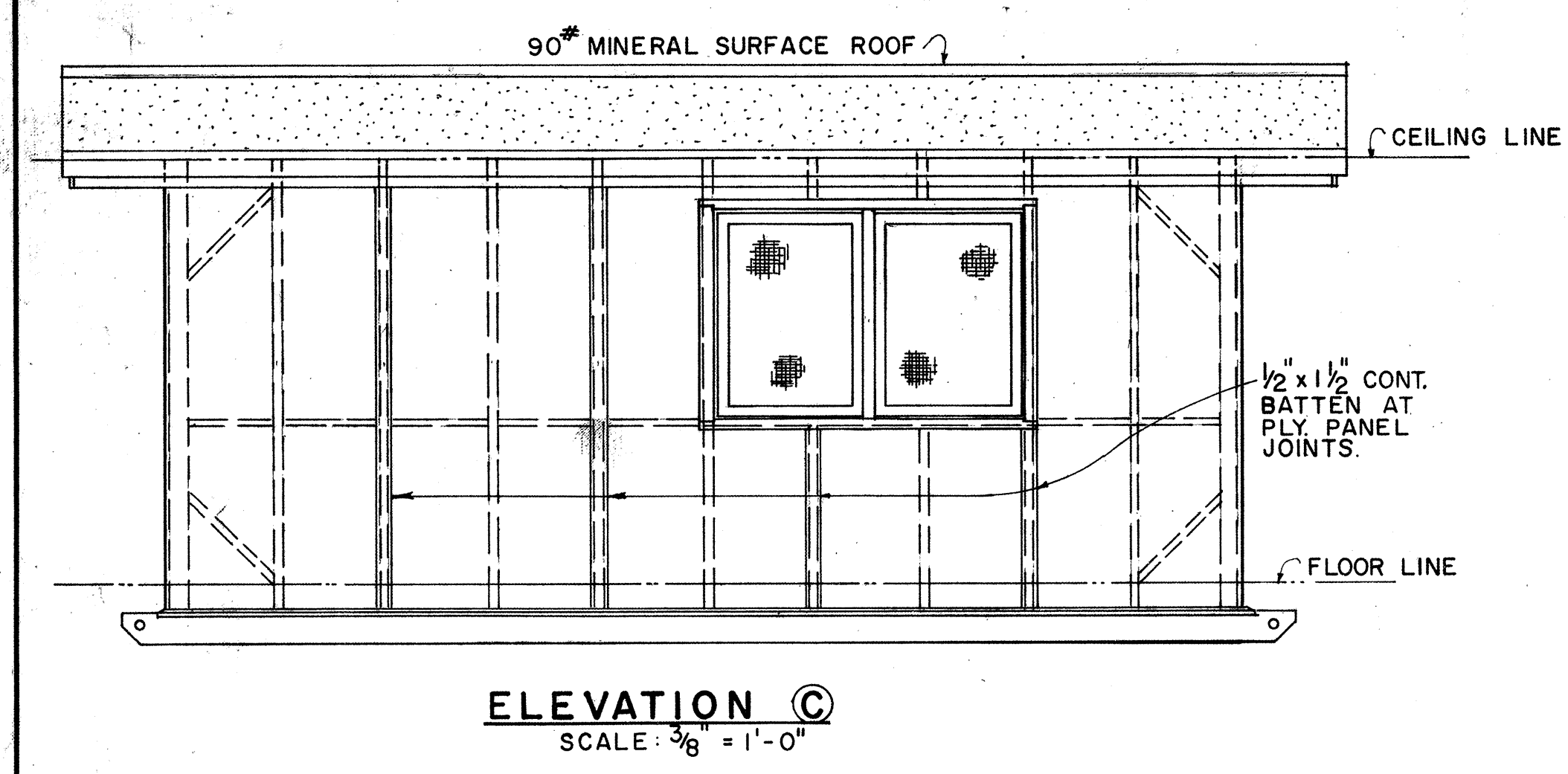
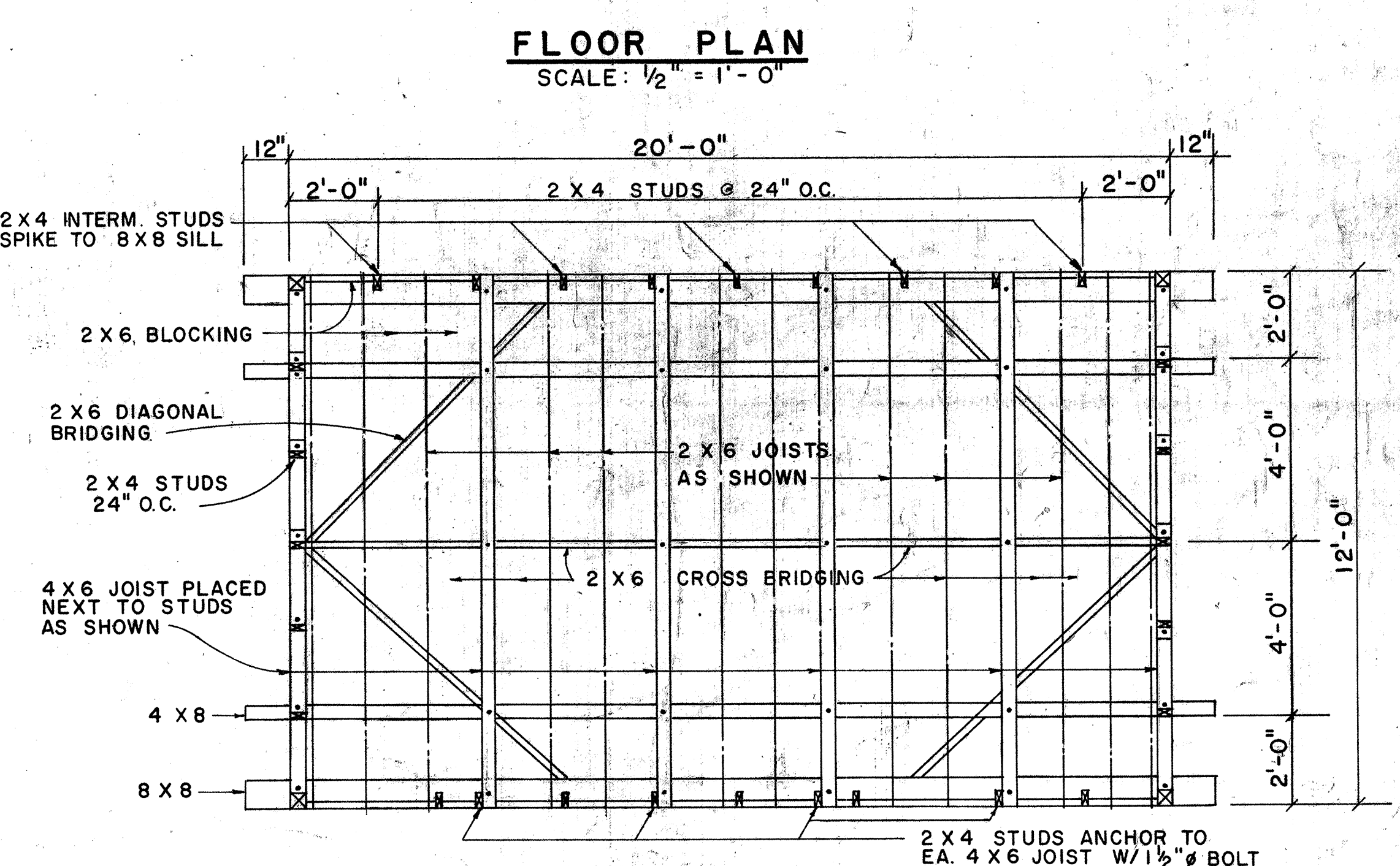
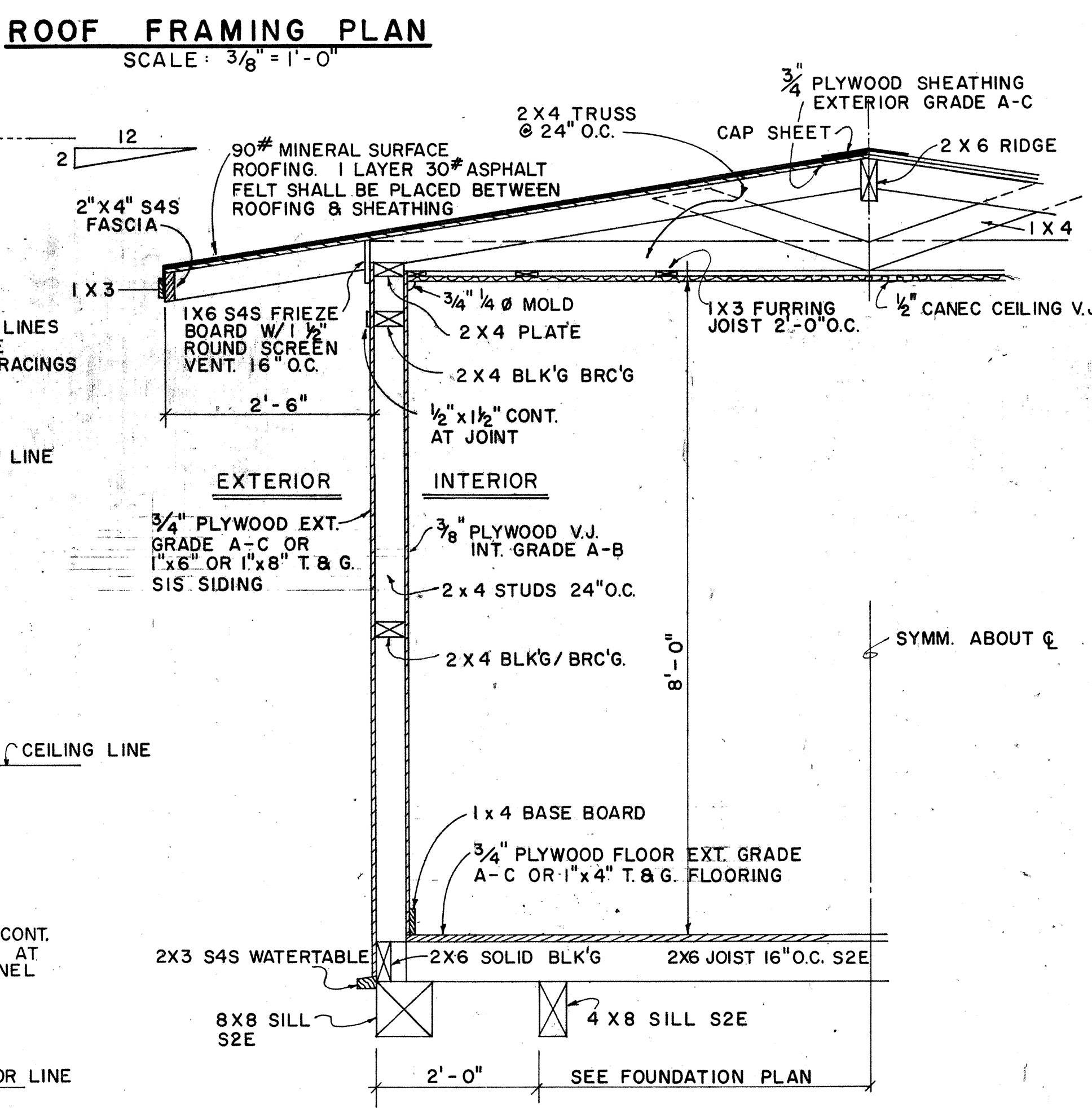
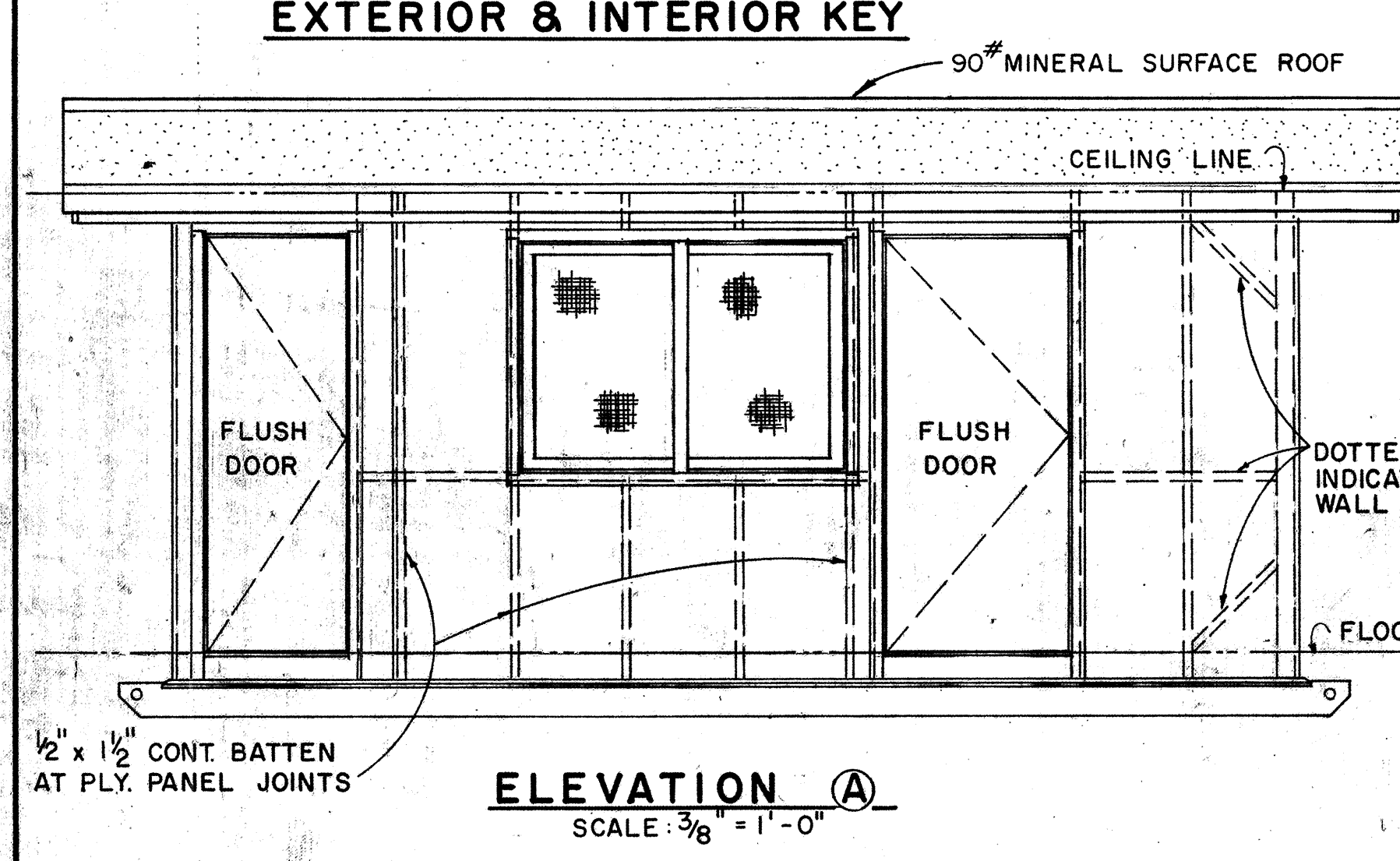
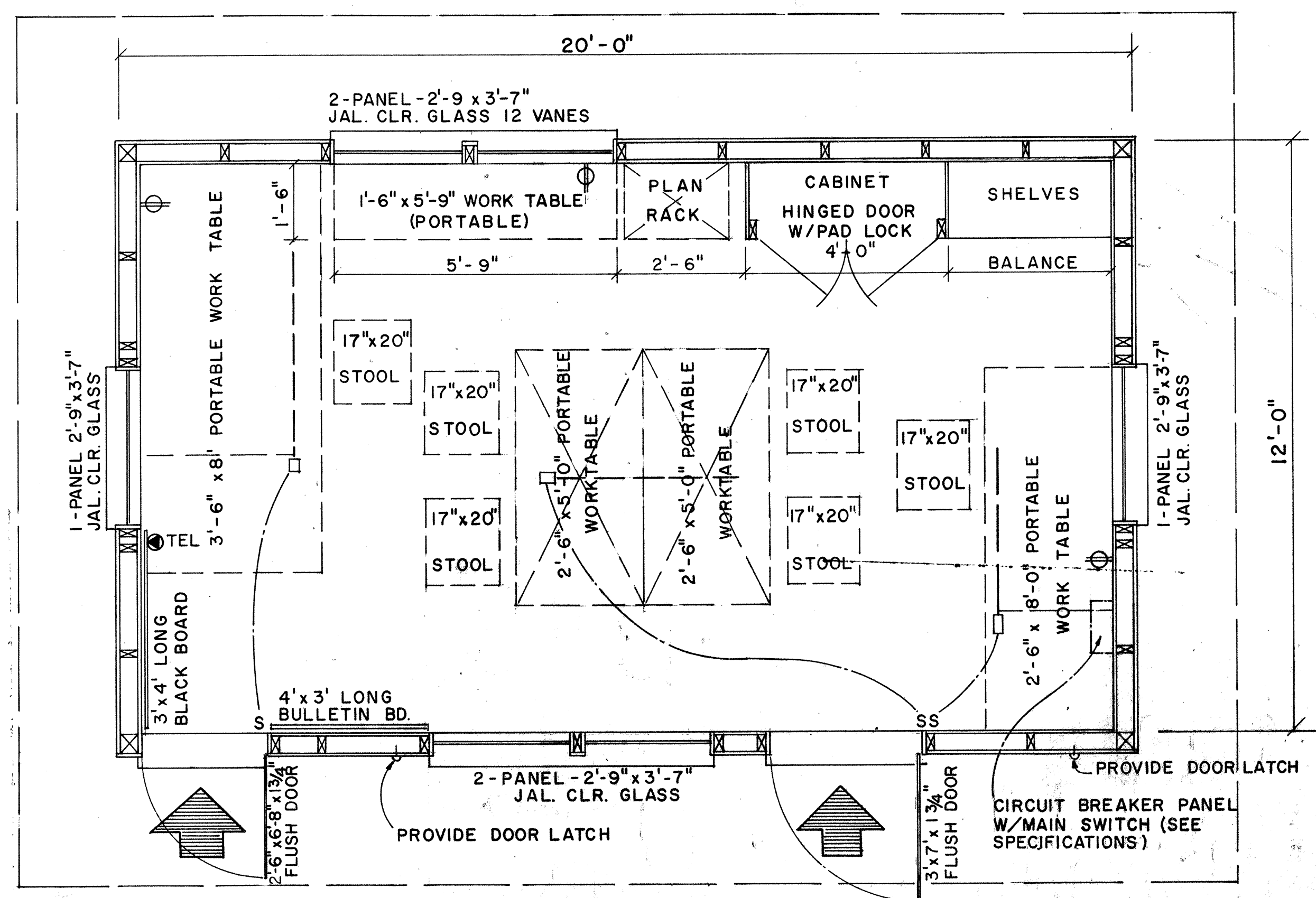
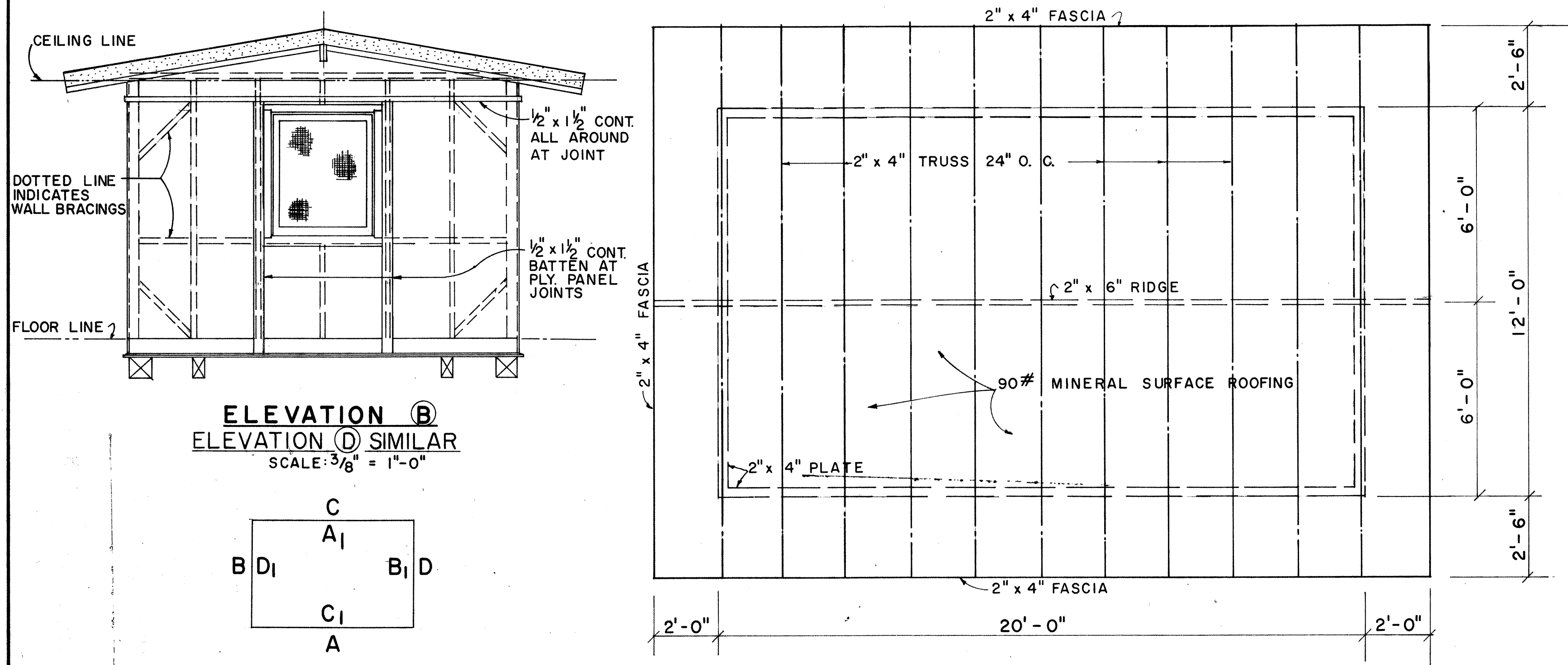
STANDARD DETAILS
CENTERLINE, REFERENCE SURVEY
AND C & C STREET SURVEY
MONUMENTS

Scale: As Shown

SHEET No. OF SHEETS DD 613.1

A 1111 . 4 0 A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	5-0280(5)	1970	41	44



APPROVAL RECOMMENDED:
HIGHWAY DESIGN ENGINEER
12-4-69
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING
12-10-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
FIELD OFFICE

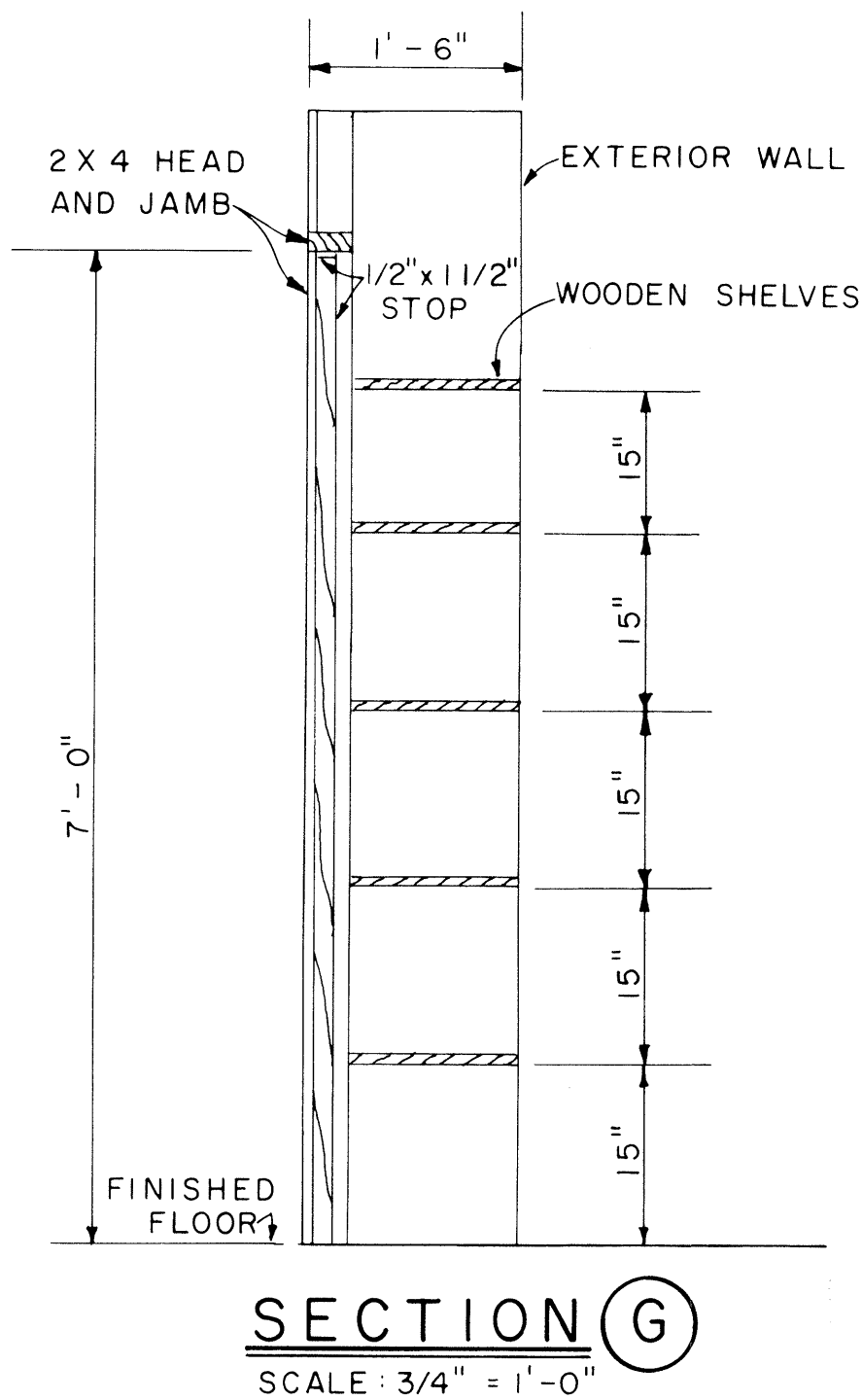
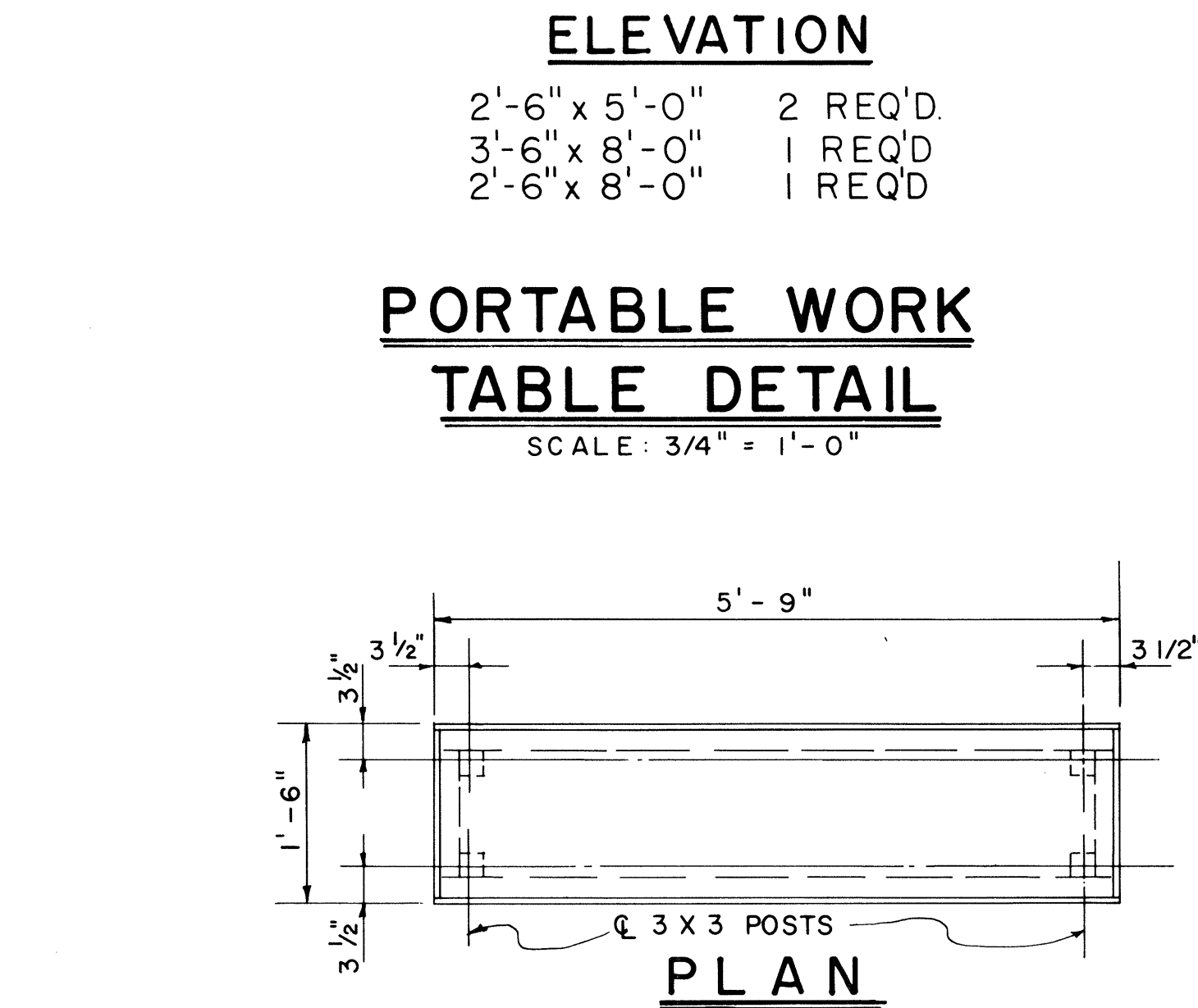
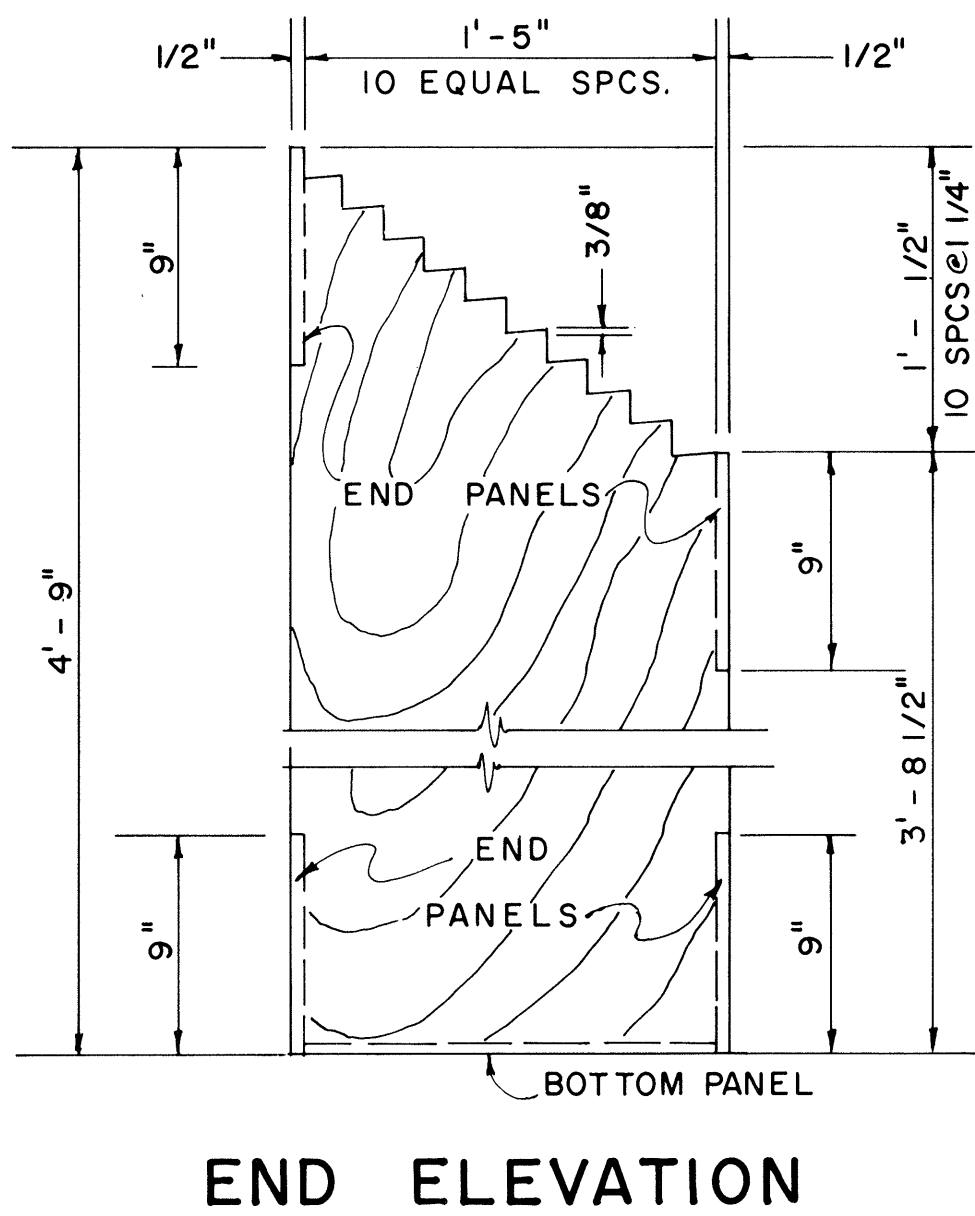
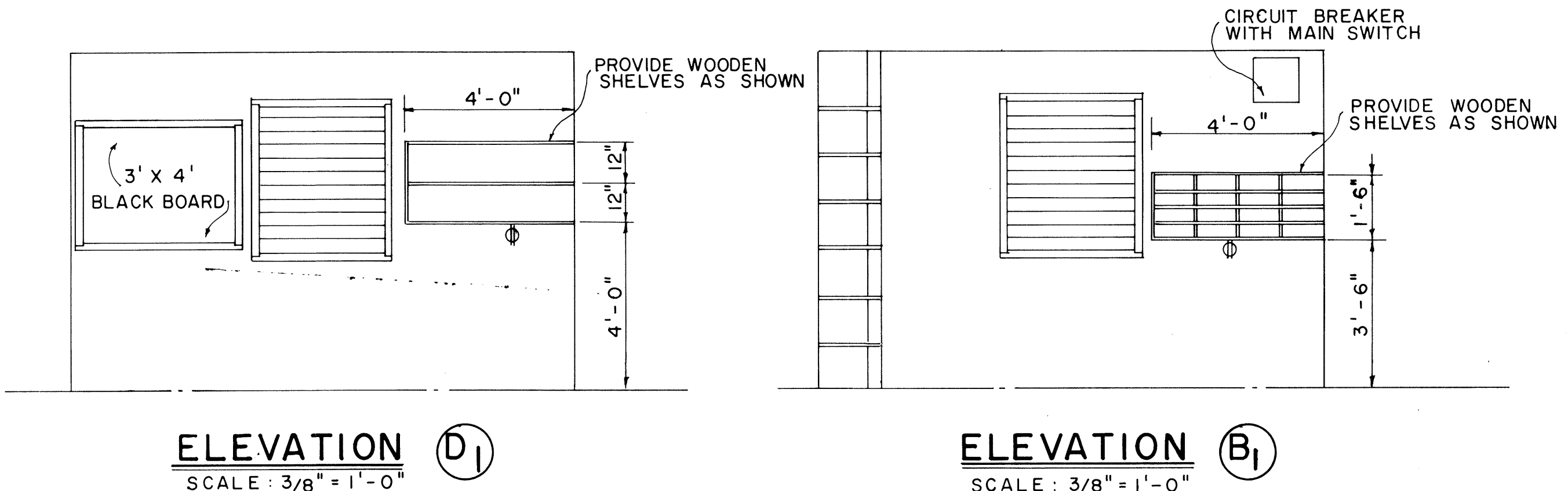
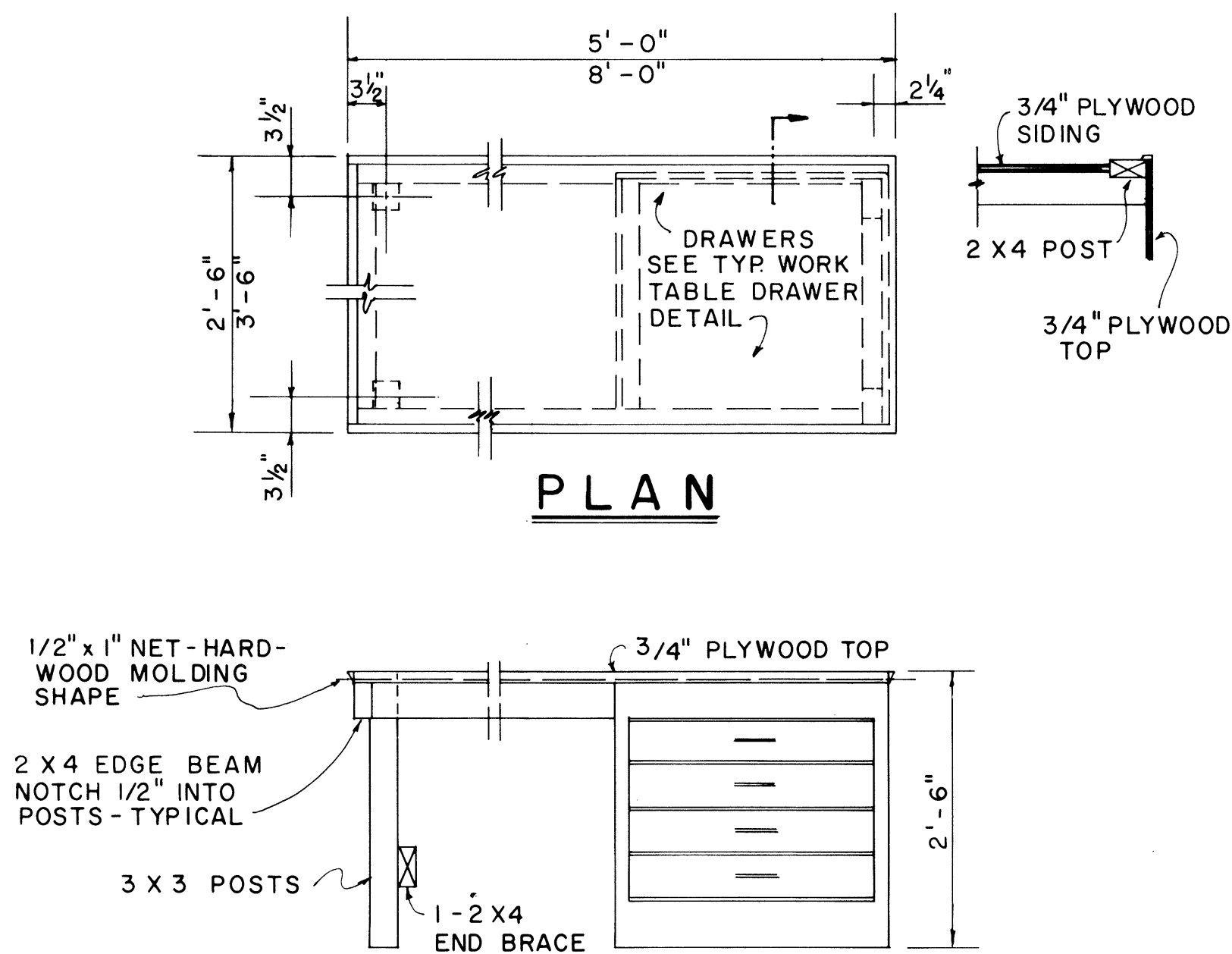
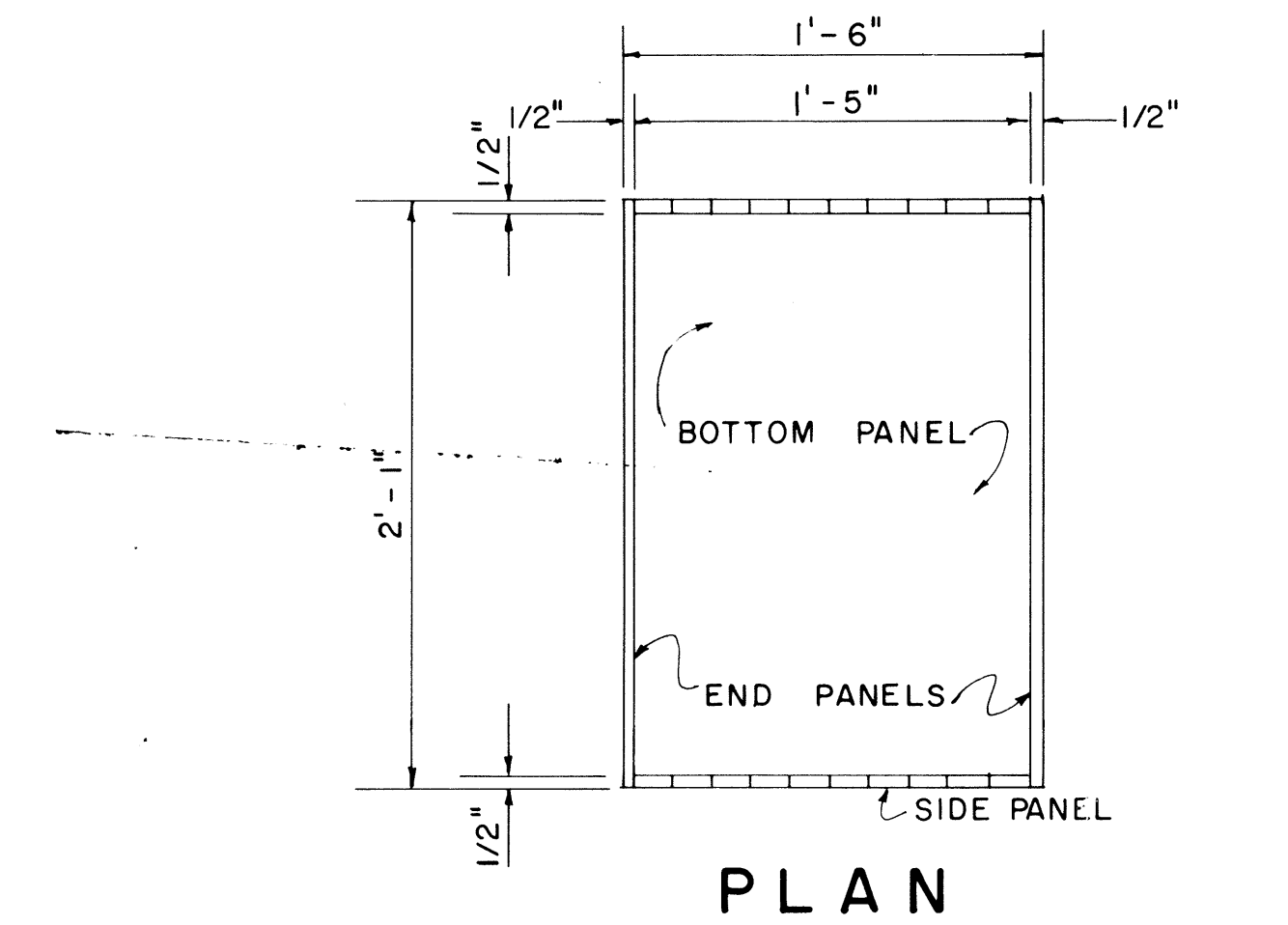
Scale: As Noted

SHEET NO 17 OF 21 SHEETS DD 636.1

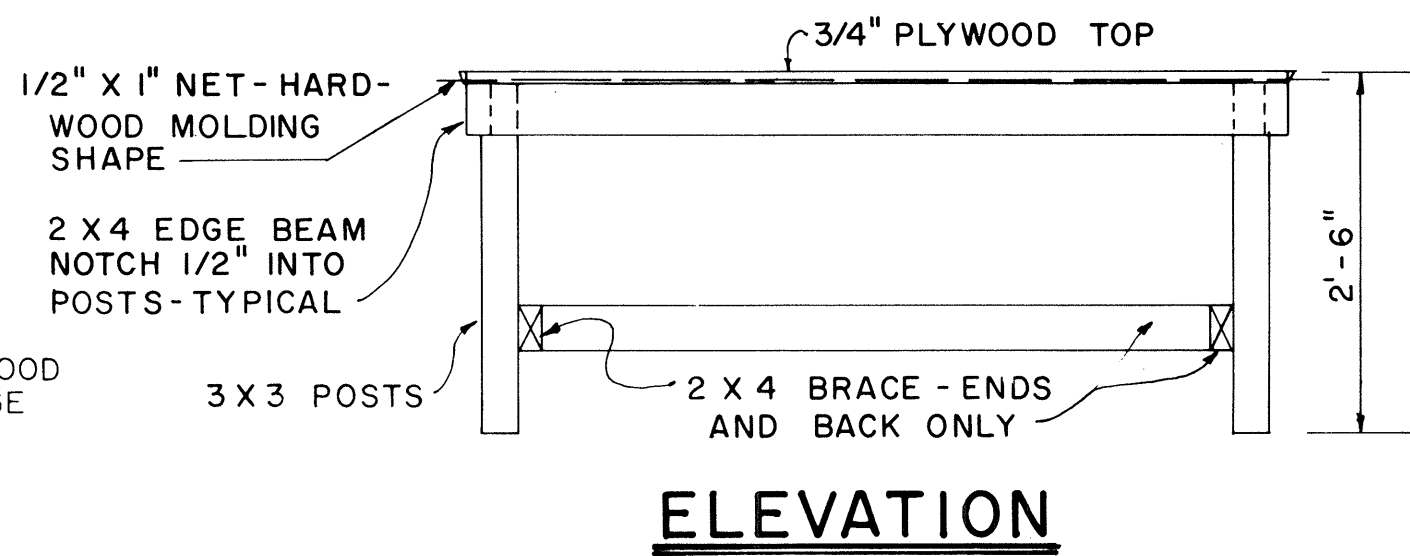
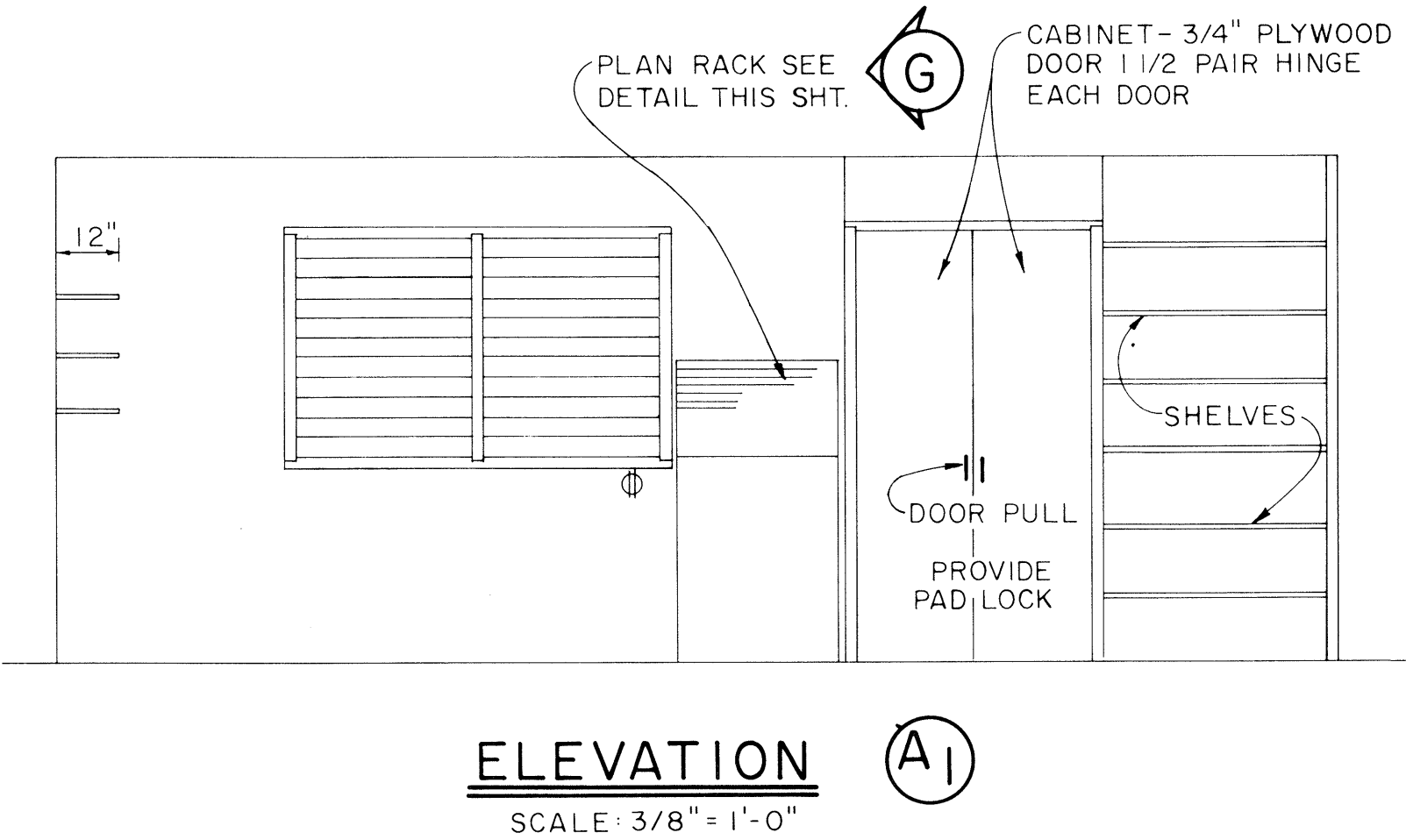
SURVEY PLOTTED BY: _____
DATE: _____

ORIGINAL PLAN
DRAWN BY: _____
DESIGNED BY: _____
NOTE BOOK
QUANTITIES BY: _____
CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	5-0980(5)	1970	42	44



PLAN RACK DETAIL
SCALE: 1 1/2" = 1'-0"
(ONE REQUIRED)



1'-6" x 5'-9" PORTABLE WORK TABLE DETAIL
SCALE: 3/4" = 1'-0"

APPROVAL RECOMMENDED:
 HIGHWAY DESIGN ENGINEER 12-4-69 DATE
 APPROVED:
 ASSISTANT CHIEF, ENGINEERING 12-10-69 DATE

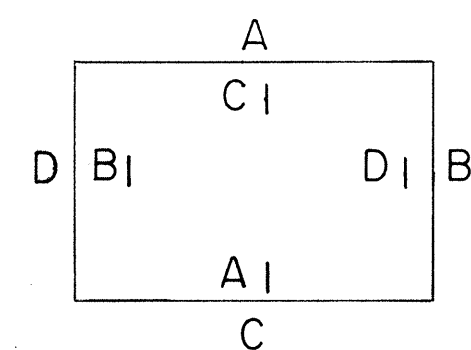
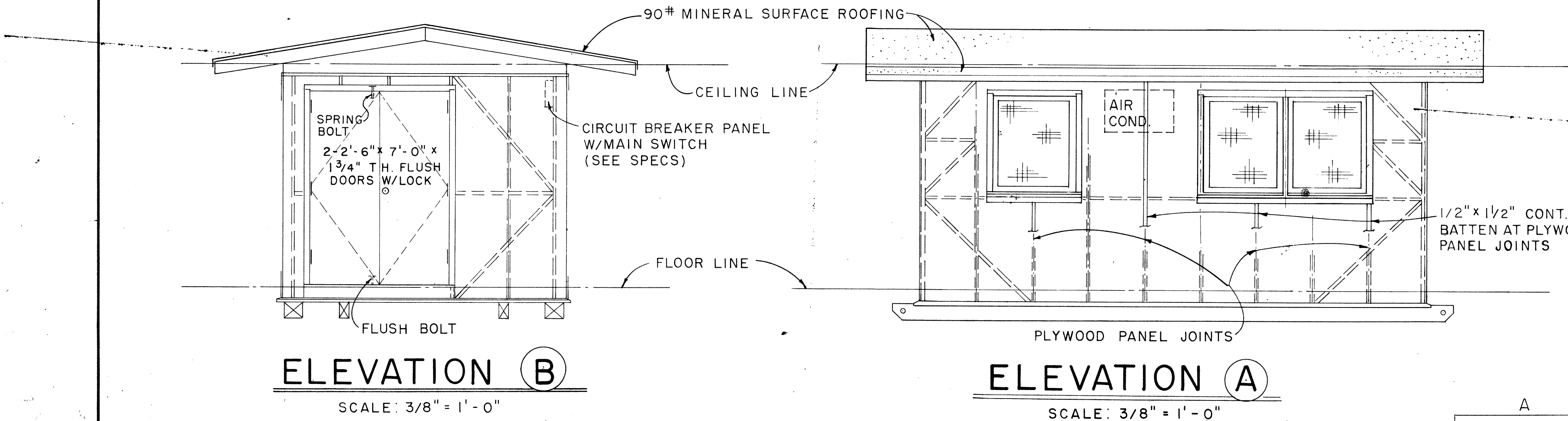
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

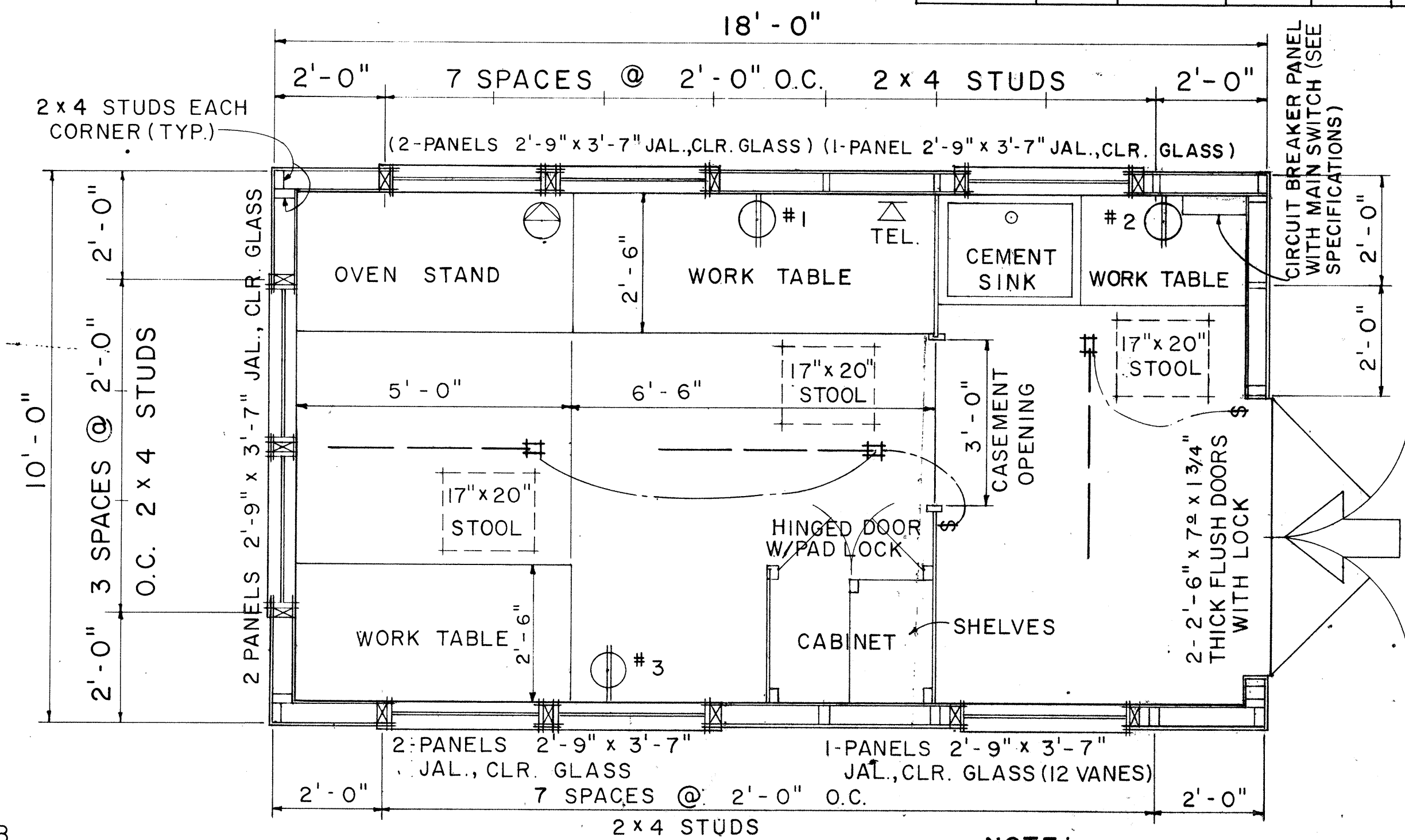
FIELD OFFICE

Scale: As Noted

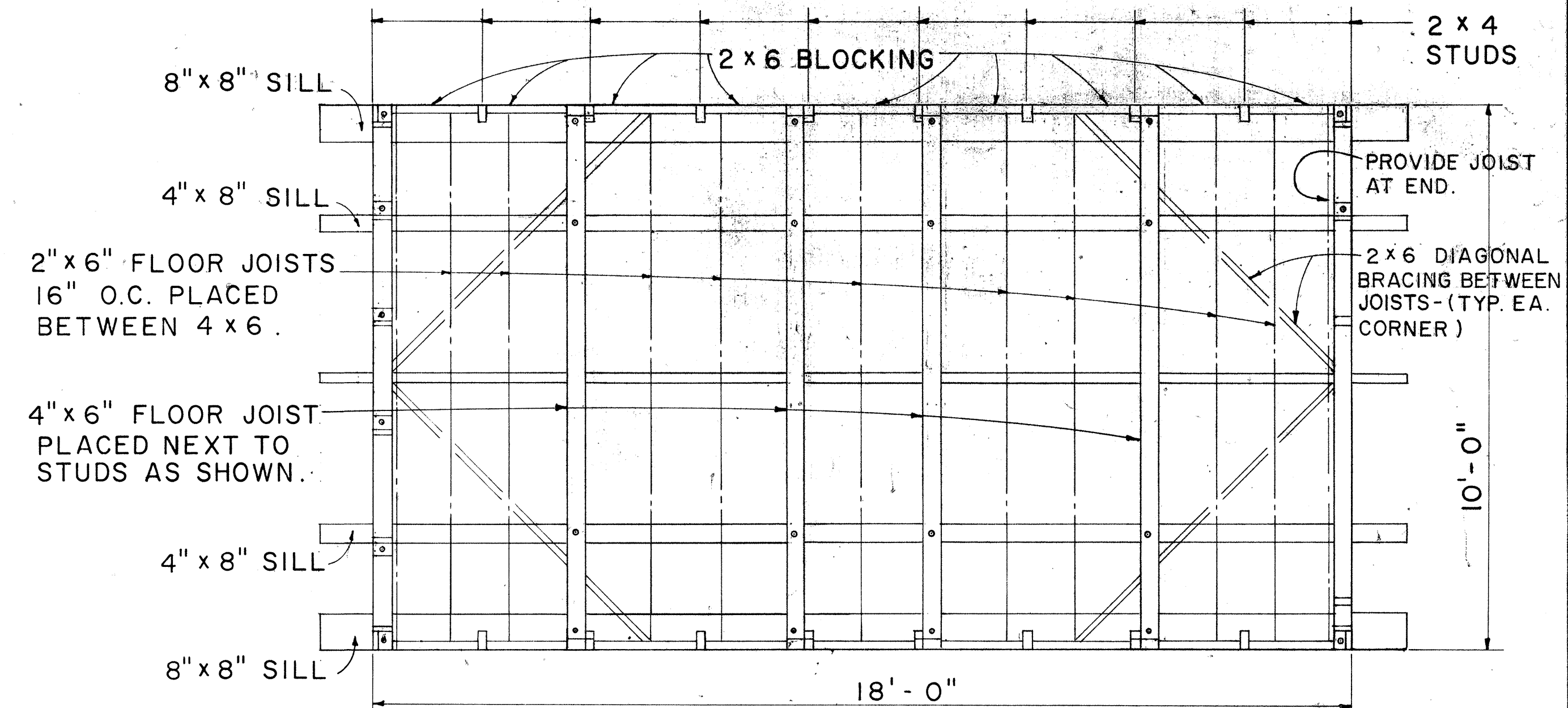
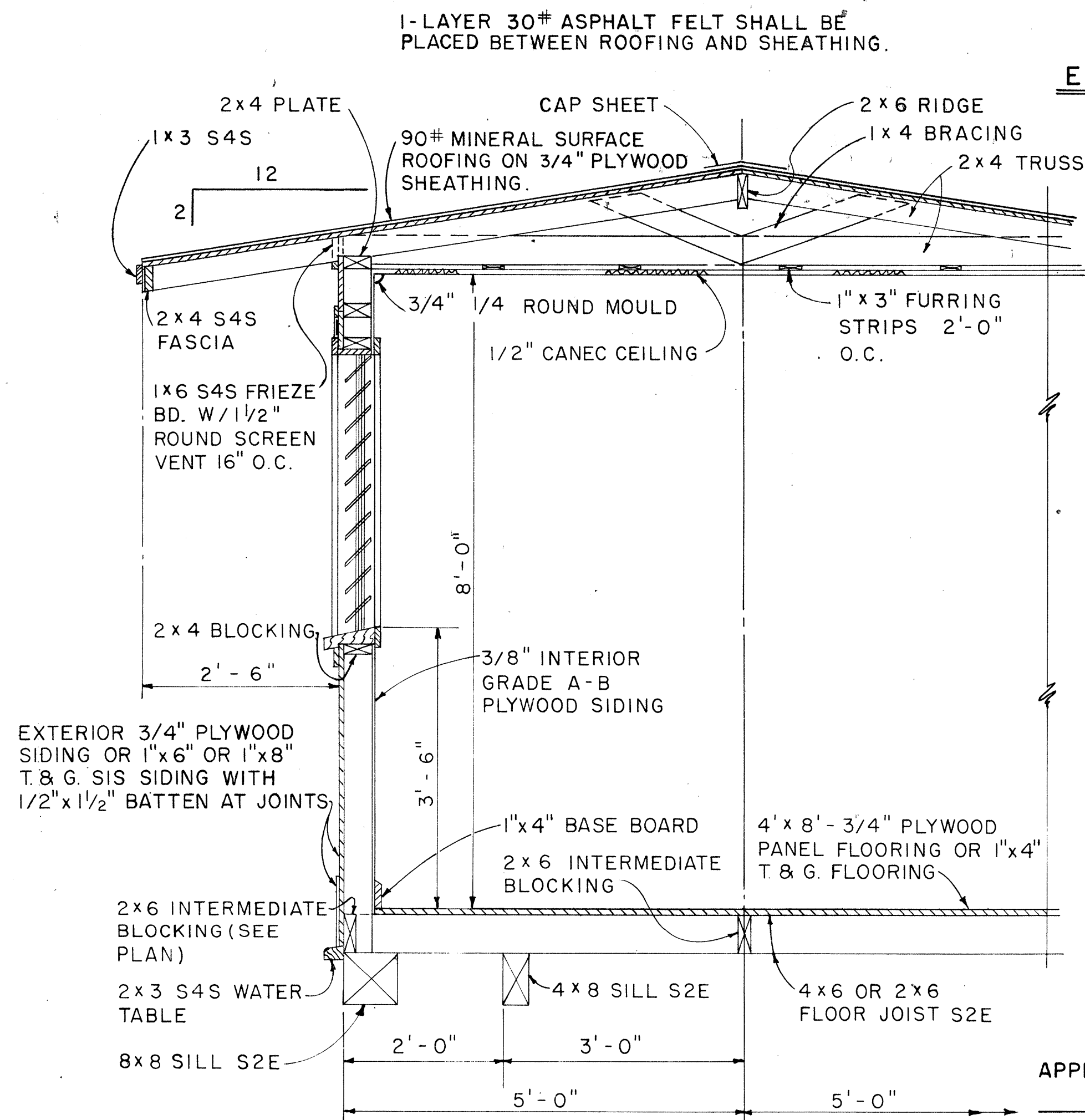
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	43	44



EXTERIOR & INTERIOR KEY



- NOTE:
1. FLUORESCENT FIXTURE SHALL BE 48", 2 LAMP, 40 WATT, RAPID START.
 2. TELEPHONE AND WALL OUTLET 4'-0" ABOVE FLOOR.



NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROJECT SITE LABORATORY

Scale: As Noted

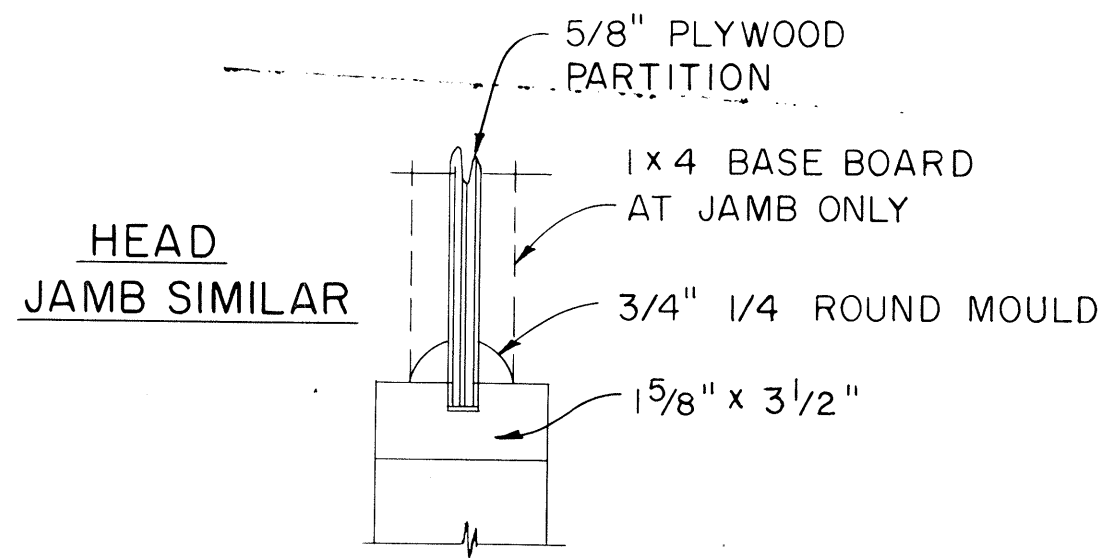
DATE	
DESIGNED BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	

NOTE:
ALL 3/4" PLYWOOD SHALL BE EXTERIOR GRADE A-C OR BETTER.

APPROVAL RECOMMENDED:
[Signature] 12-4-69
HIGHWAY DESIGN ENGINEER DATE

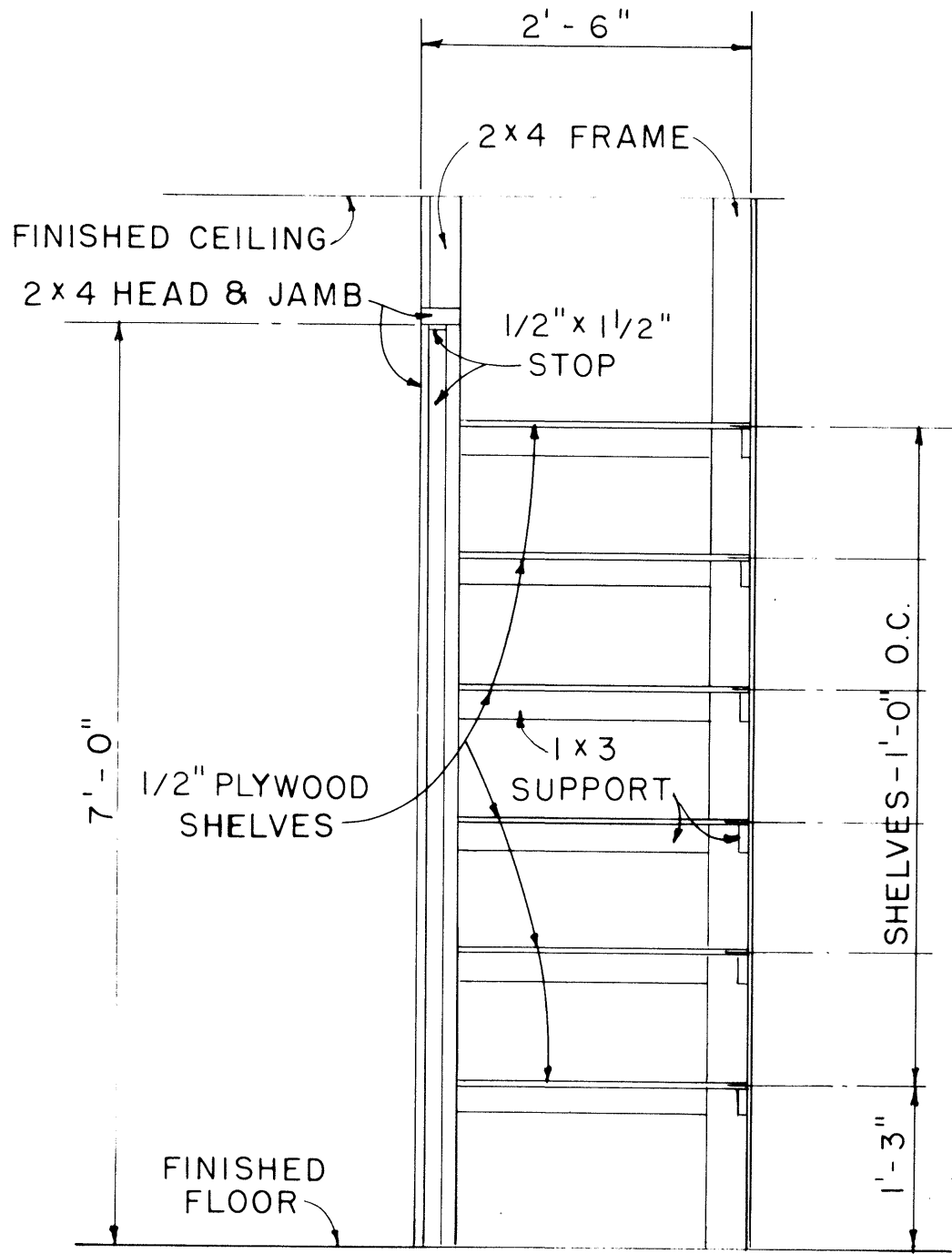
APPROVED:
[Signature] 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-0380(5)	1970	44	44



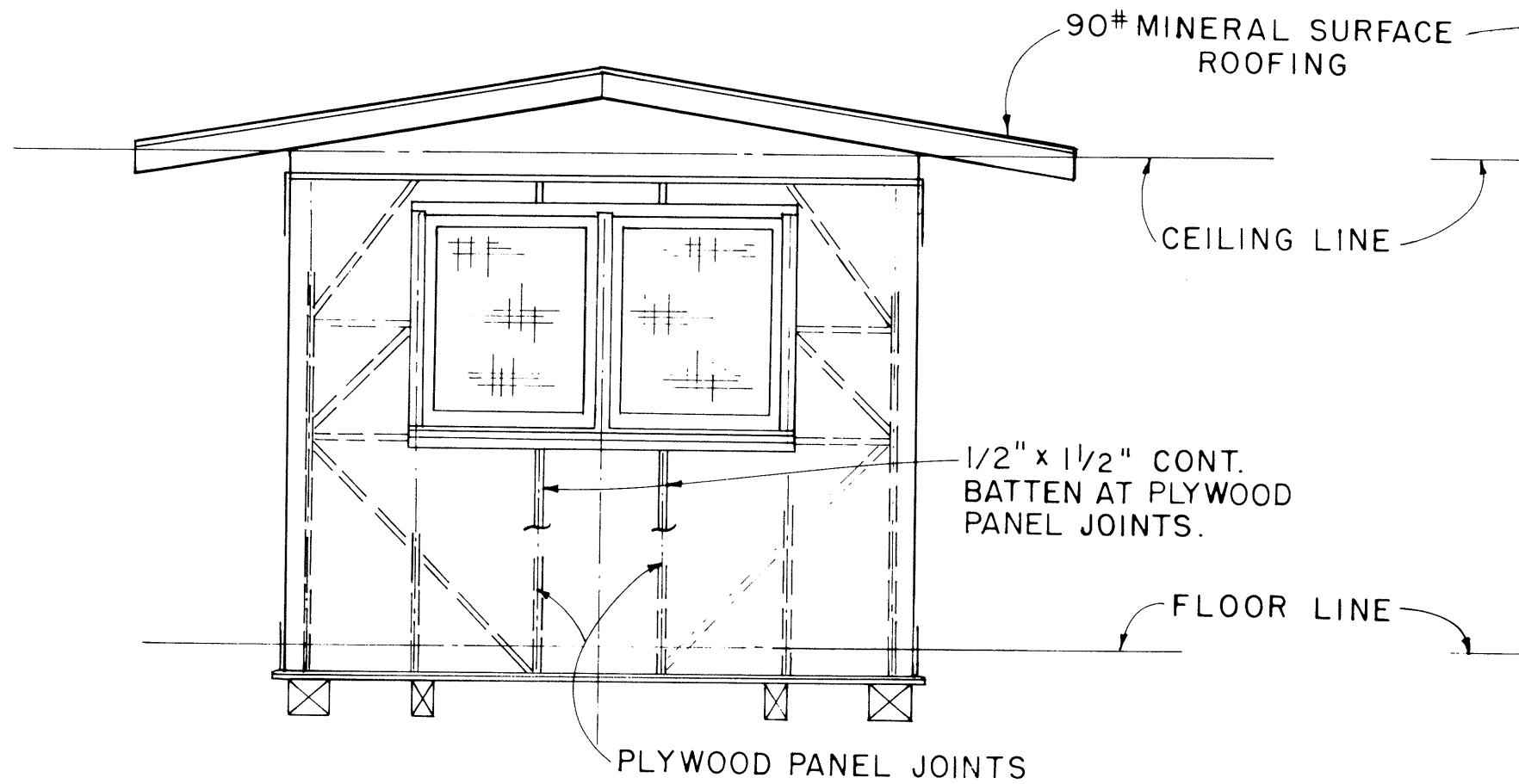
CASEMENT DETAIL

SCALE: 3" = 1'-0"



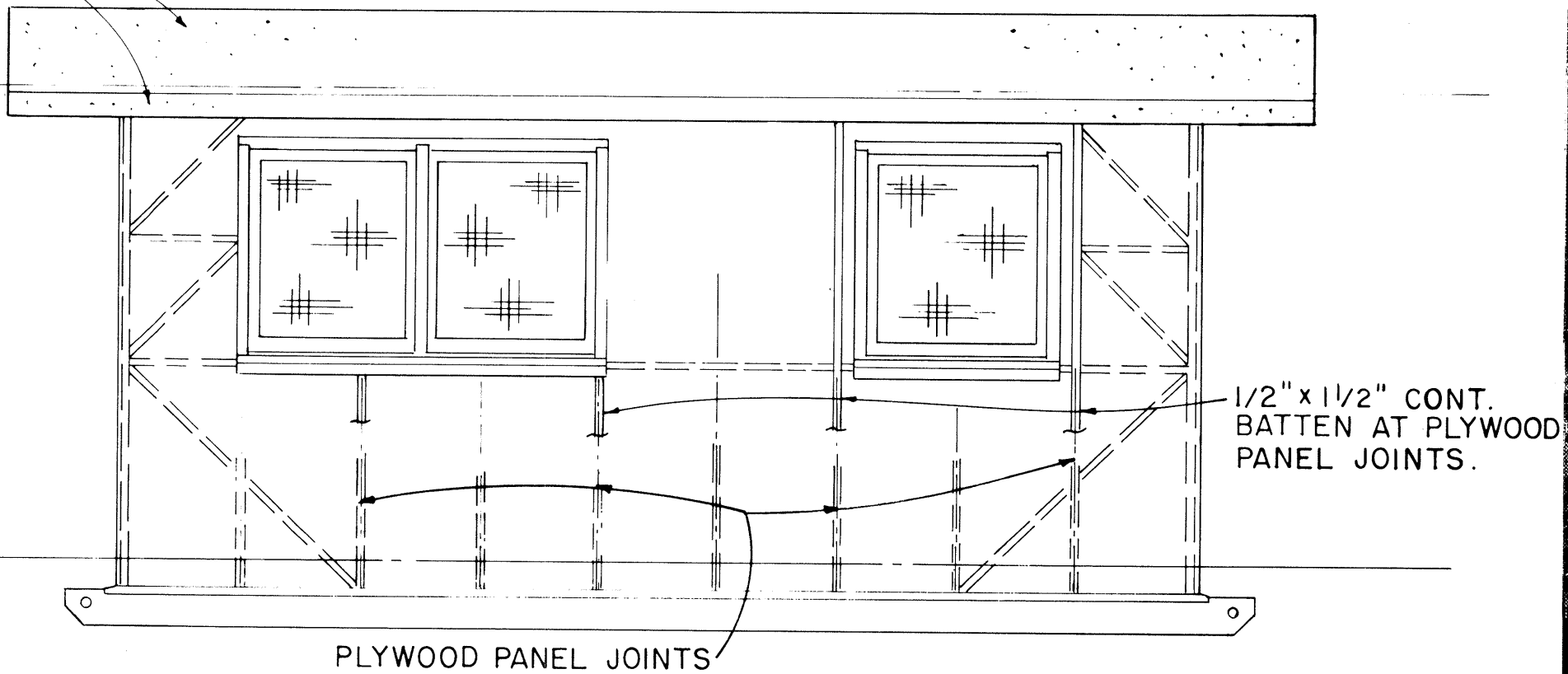
CABINET DETAIL

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



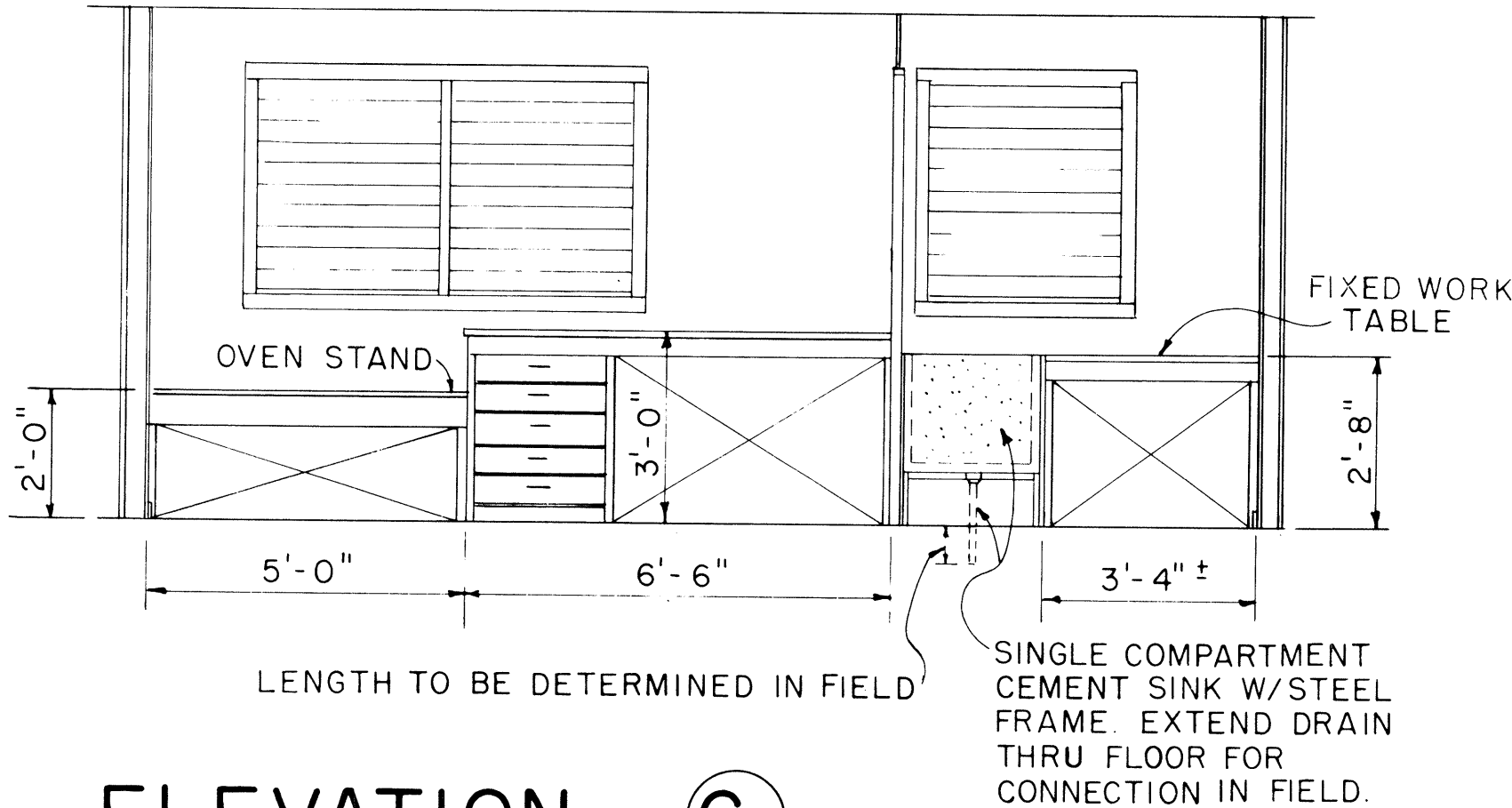
ELEVATION D

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



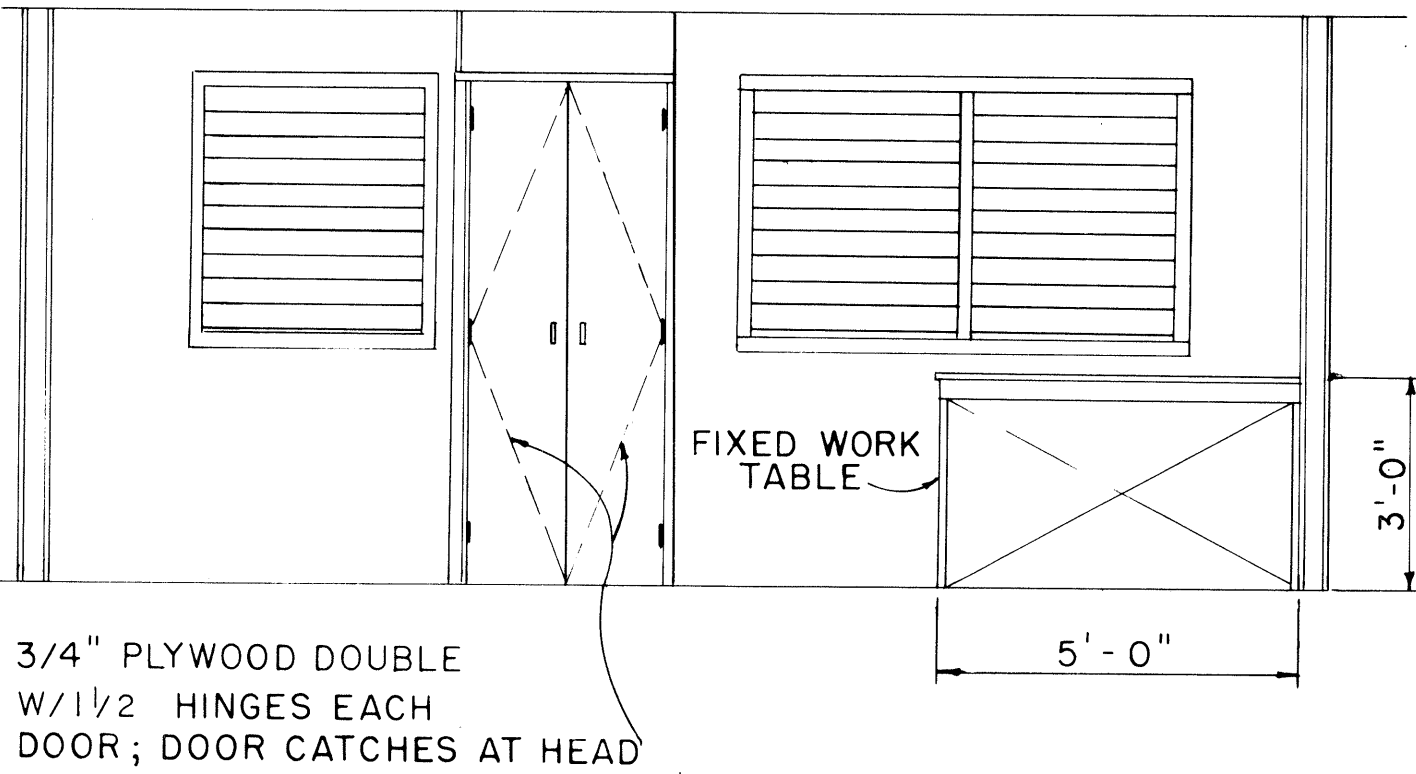
ELEVATION C

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



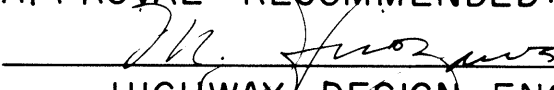
ELEVATION C1

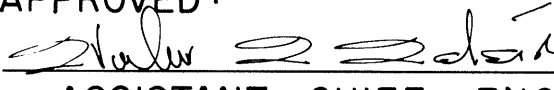
SCALE: 3/8" = 1'-0"



ELEVATION A1

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

APPROVAL RECOMMENDED:

HIGHWAY DESIGN ENGINEER 12-4-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING 12-10-59
DATE

NO.	REVISION	APPROVED BY	DATE

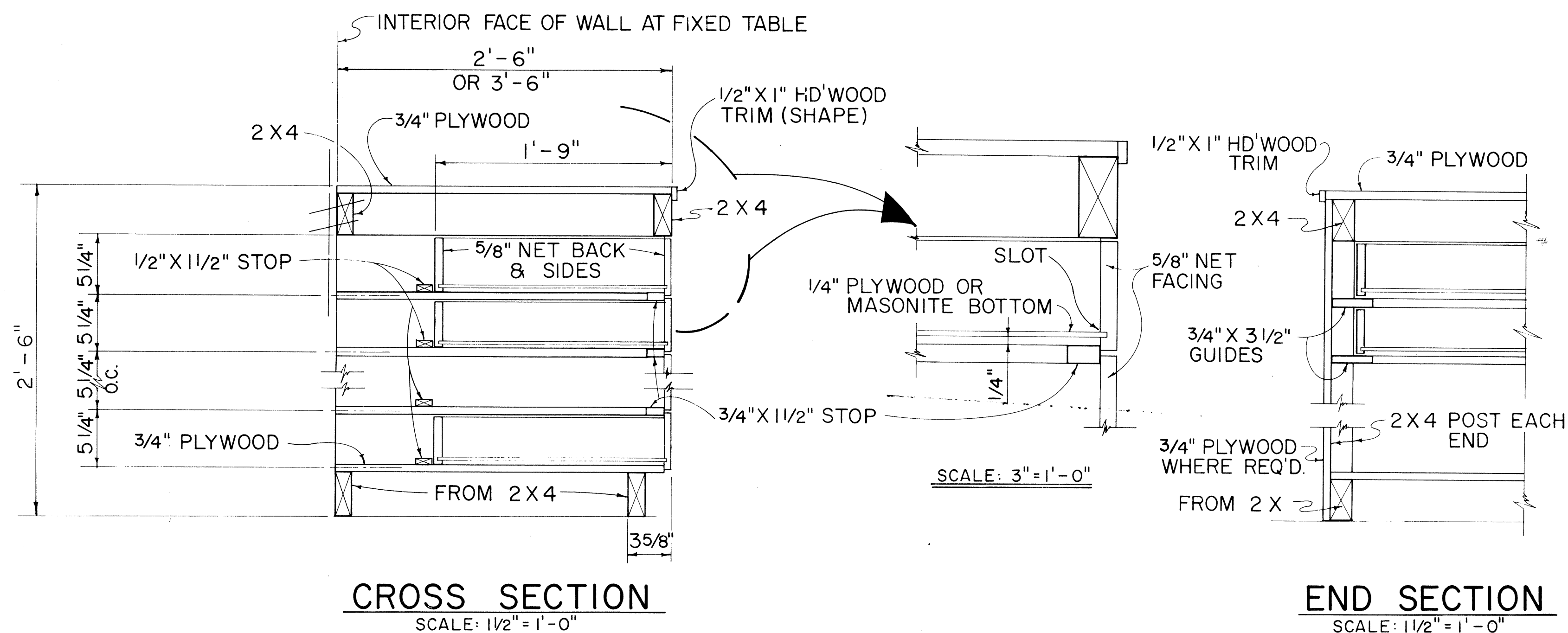
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROJECT SITE LABORATORY

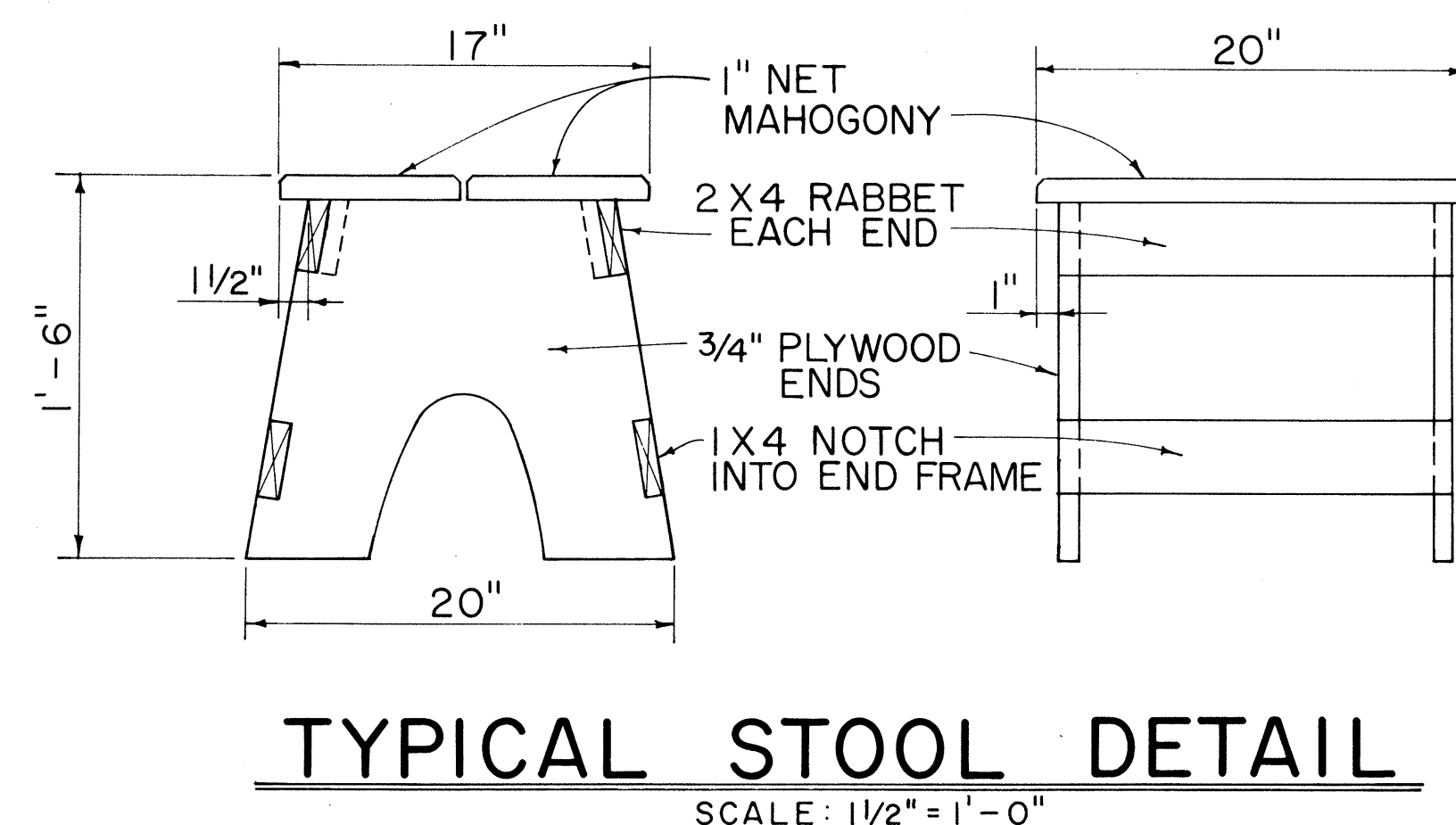
Scale: As Noted

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
APPROVED BY	

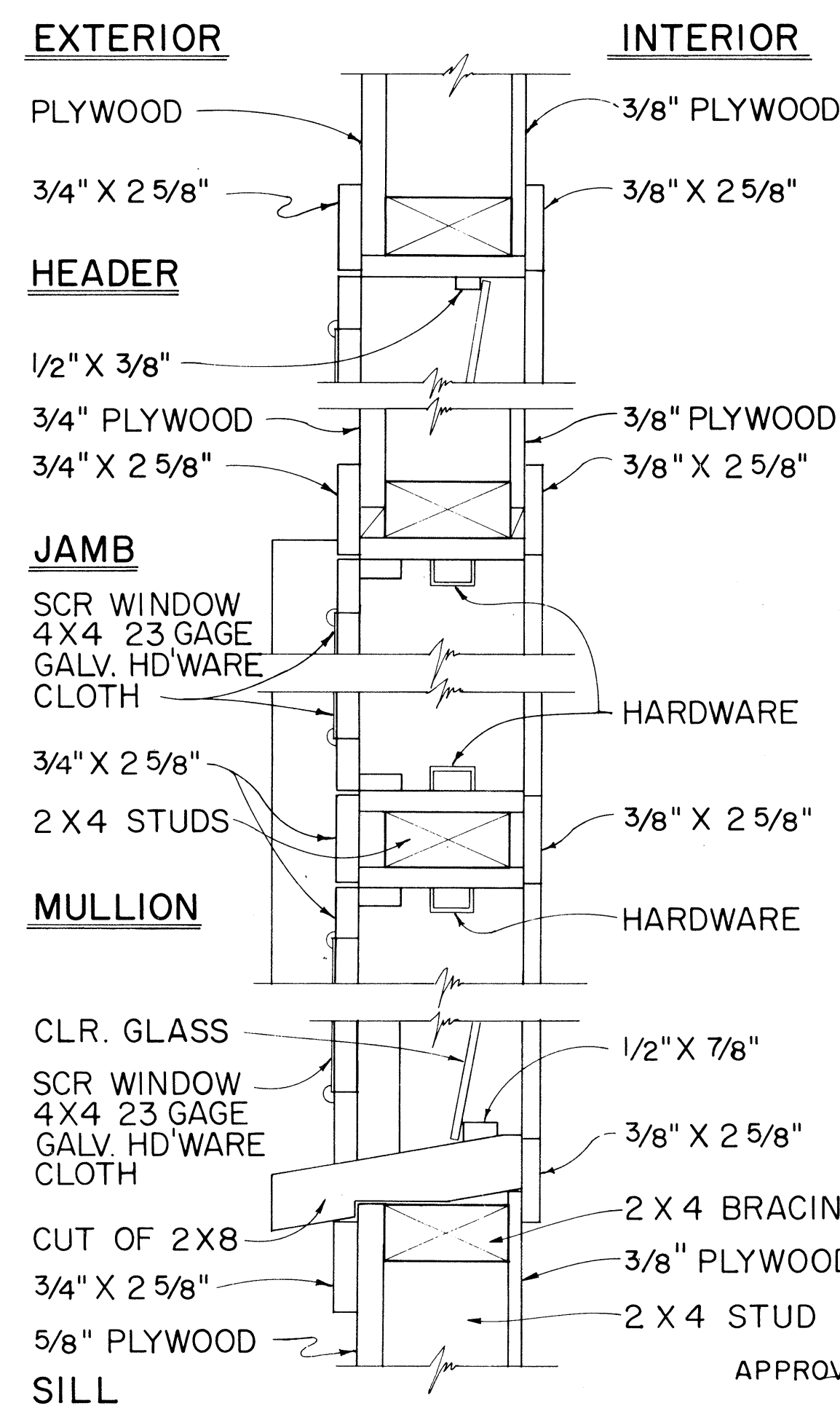
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	5-0380(5)	1970	45	44



TYPICAL WORK TABLE DRAWER DETAIL

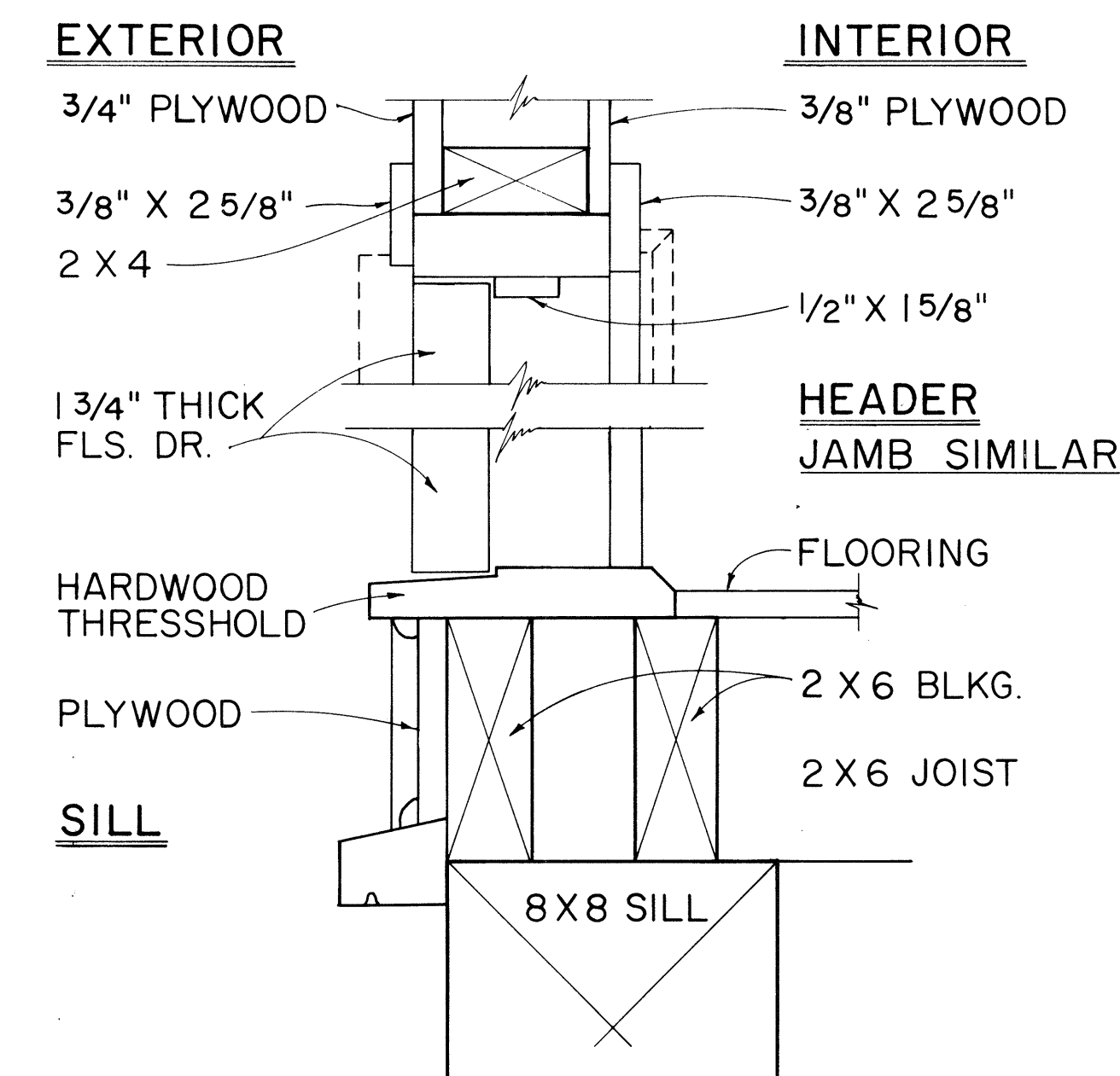


NOTE: CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH THE FIELD OFFICE OR PROJECT SITE LABORATORY WITH STOOLS OTHER THAN THE TYPE SHOWN IN THE DETAIL.

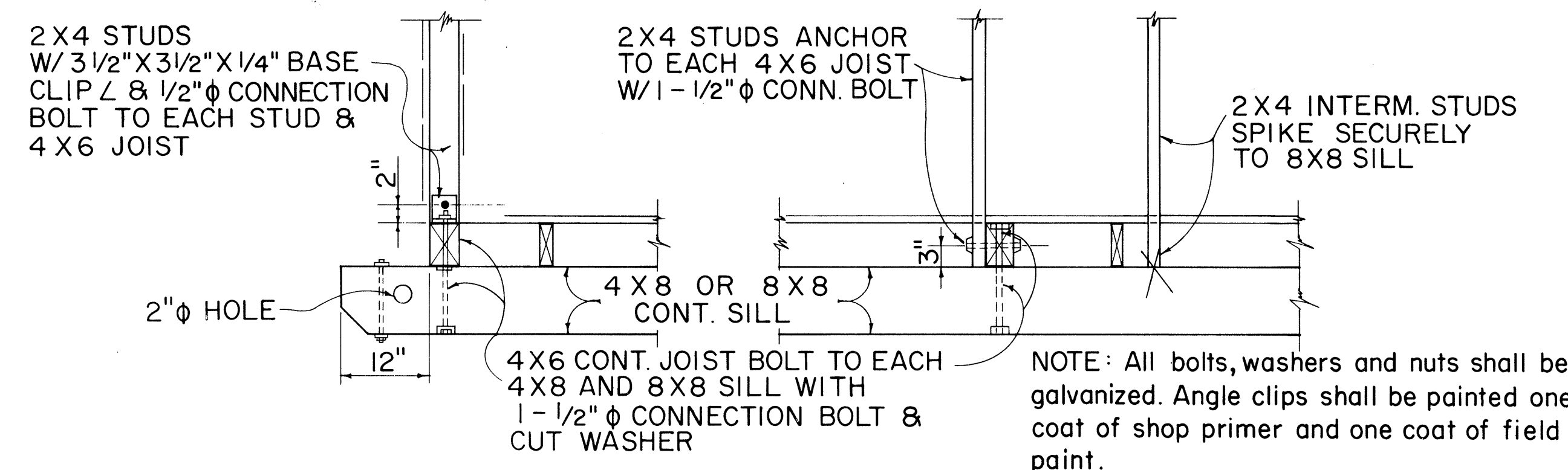


APPROVAL RECOMMENDED:
M. H. H. H.
HIGHWAY DESIGN ENGINEER
DATE: 12-4-69

APPROVED:
A. S. S. S.
ASSISTANT CHIEF, ENGINEERING
DATE: 12-10-69



TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL



AT ENDS OF BLDG. ALONG SIDES OF BLDG.

TYPICAL 2X4 STUD & 4X6 FLOOR JOIST BASE CONNECTION DETAILS

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
FIELD OFFICE & PROJECT SITE LABORATORY
Scale: As Noted

SHEET No. 21 OF 21 SHEETS DD 636.5