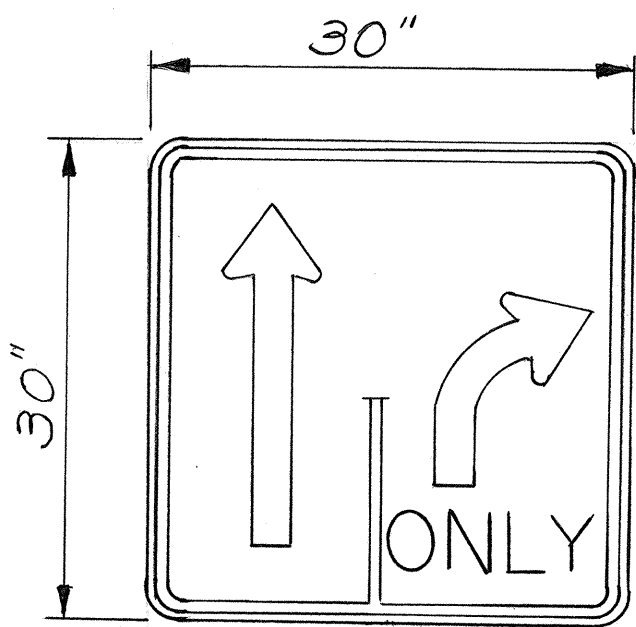
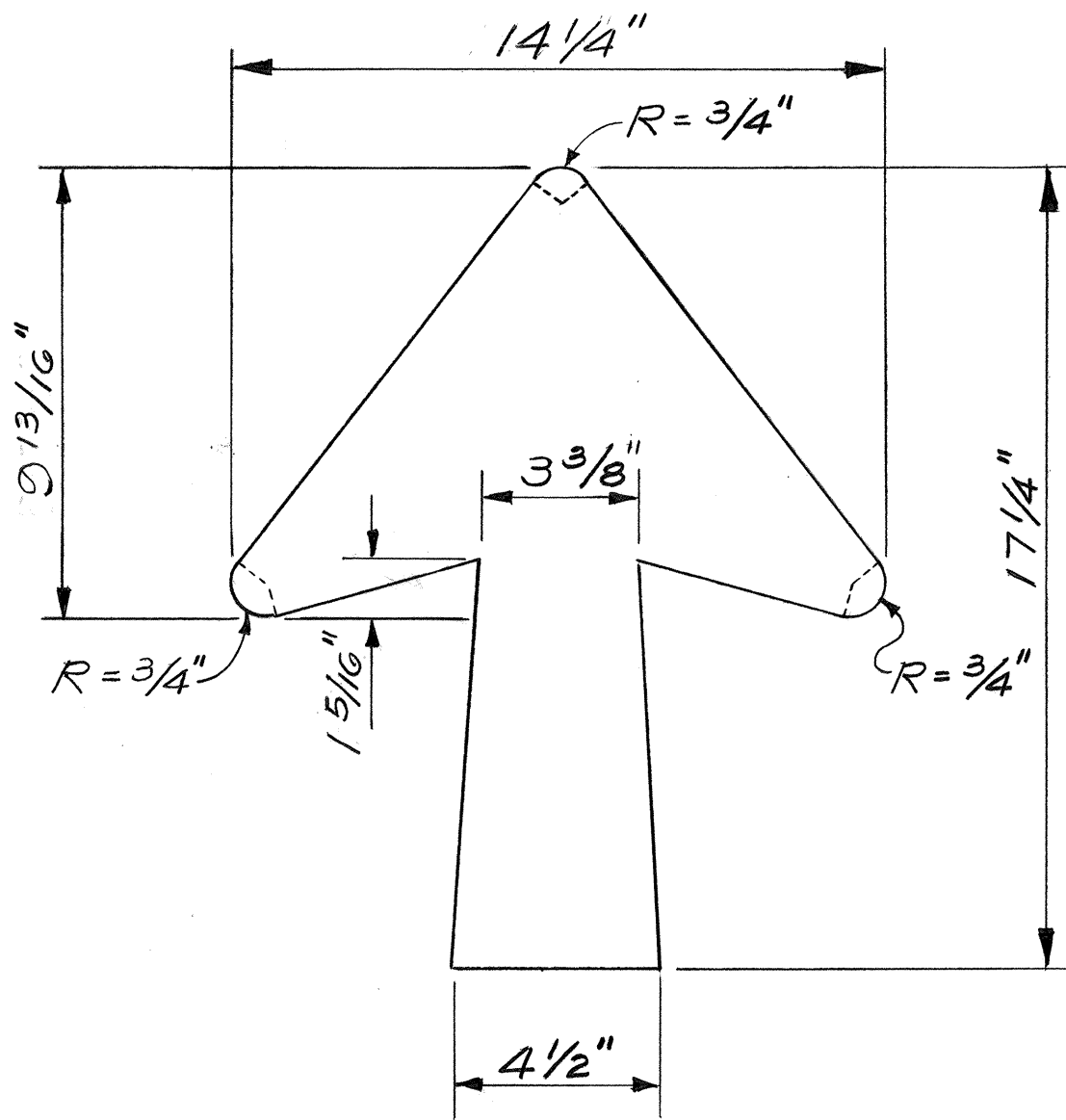
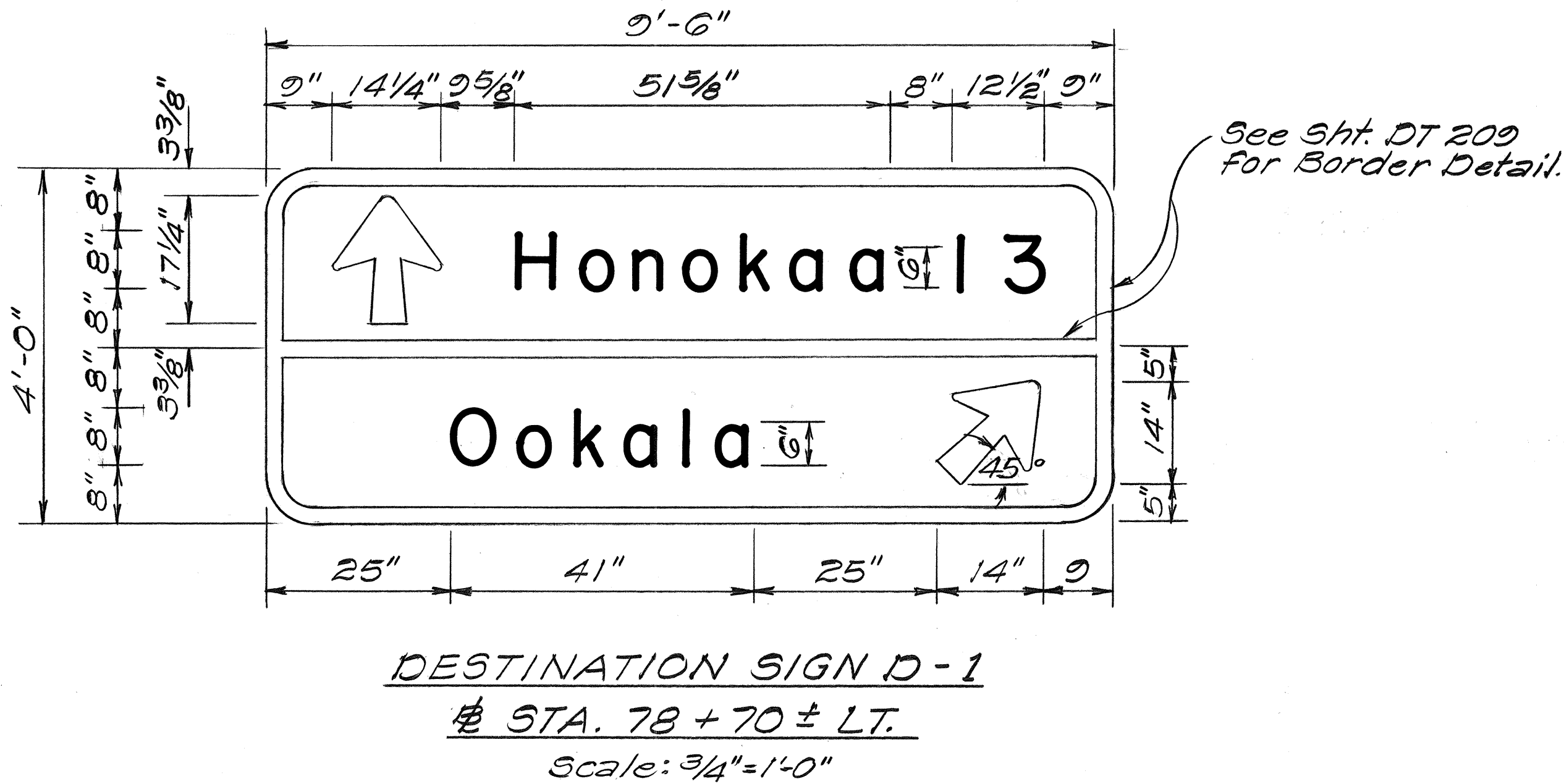


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 Unit II	1979	12	38

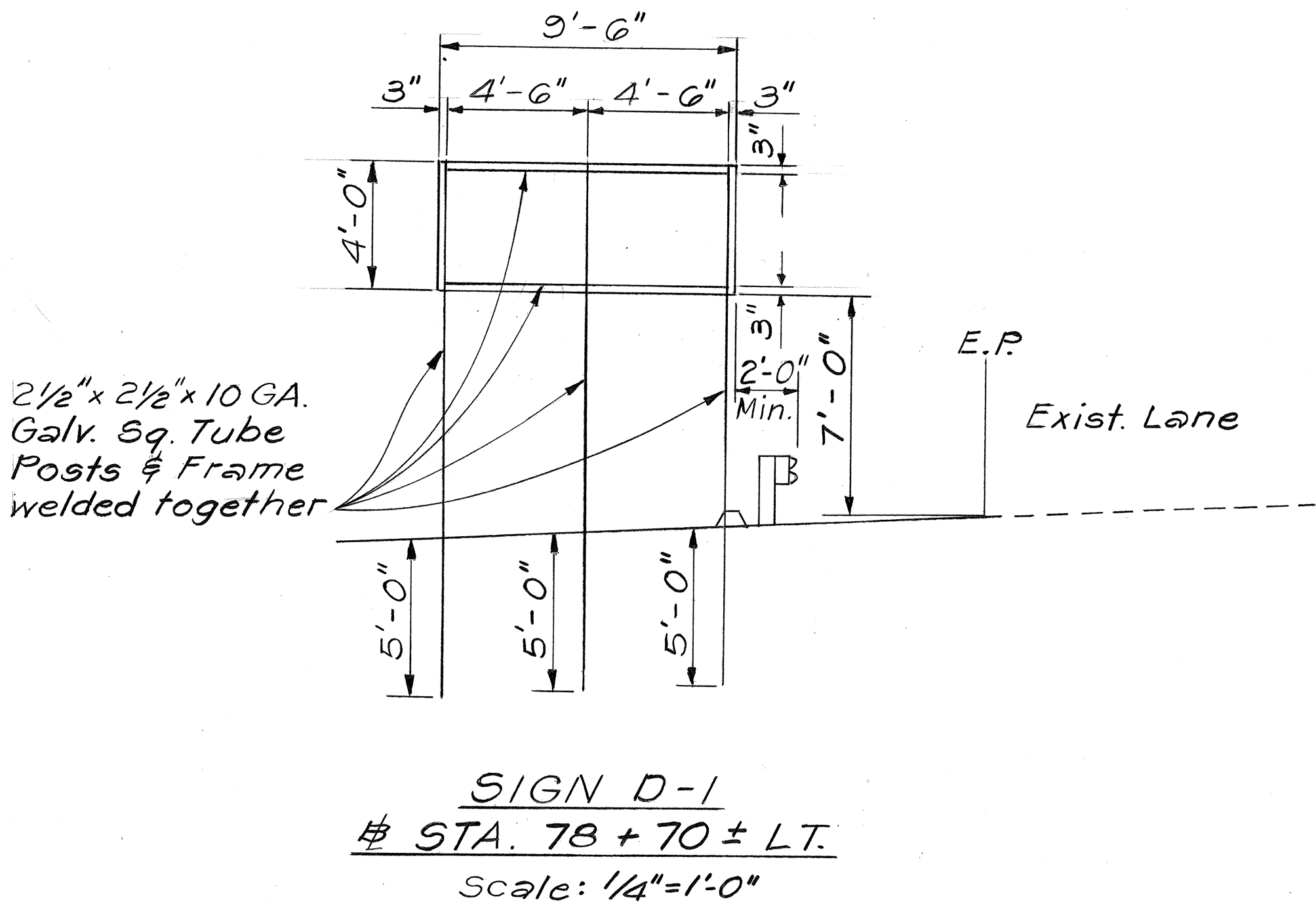


SIGN R3-30(R)
Scale: 1"=1'-0"

NOTE:

1. Sign R3-30(R) shall conform to Specifications for Regulatory & Warning Signs.
2. Sign R3-30(R) is a variation of Sign R3-8. Plate & Arrow Details shall conform to Sign R3-8.

- GENERAL NOTES:**
1. Sign Details shall conform to the latest FHWA Publications & Amendments of the following:
 - a.) "Manual on Uniform Traffic Control Devices for Streets & Highways," 1971.
 - b.) "Standard Alphabets for Highway Signs," 1966. (Use Series "E" Letters & Numerals)
 2. Sign Panel shall be 0.100" Thick Sheet Aluminum.
 3. If Splicing of Sign Panel is necessary, Contractor shall submit Splice Details to Engineer for Approval.
 4. Color:
Legend Border - White Reflective Sheeting on Demountable Aluminum Cut-outs
Background - Green Reflective Sheeting



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

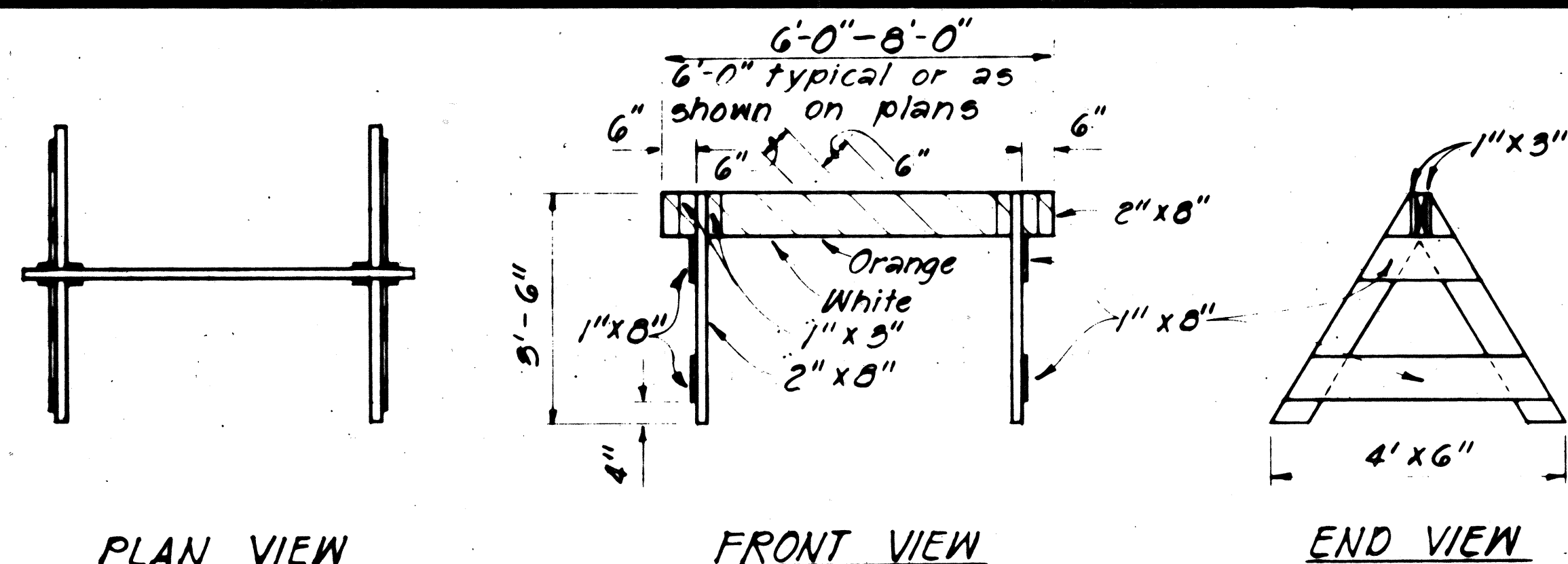
**DESTINATION AND TRAFFIC
SIGN DETAILS**

HAWAII BELT ROAD
Ookala Truck Climbing Lane
Proj. No. 196H-02-71, Unit II
Scale: As Shown Date: July 1978

SHEET NO. 1 OF 21 SHEETS

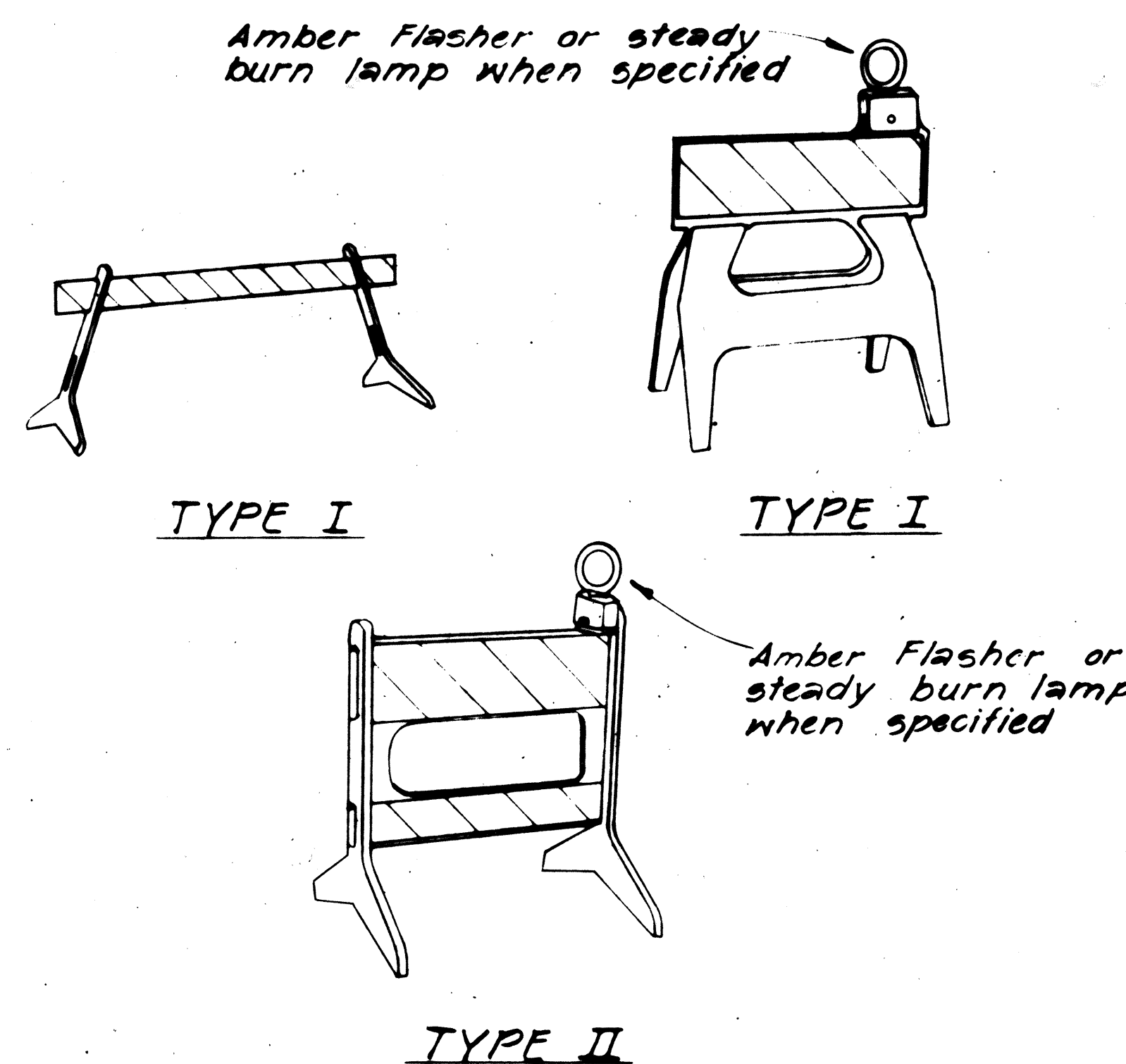
ORIGINAL	DATE
PLANNED BY	
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1964-0271 Unit II	1979	13	38



TYPE I BARRICADE

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

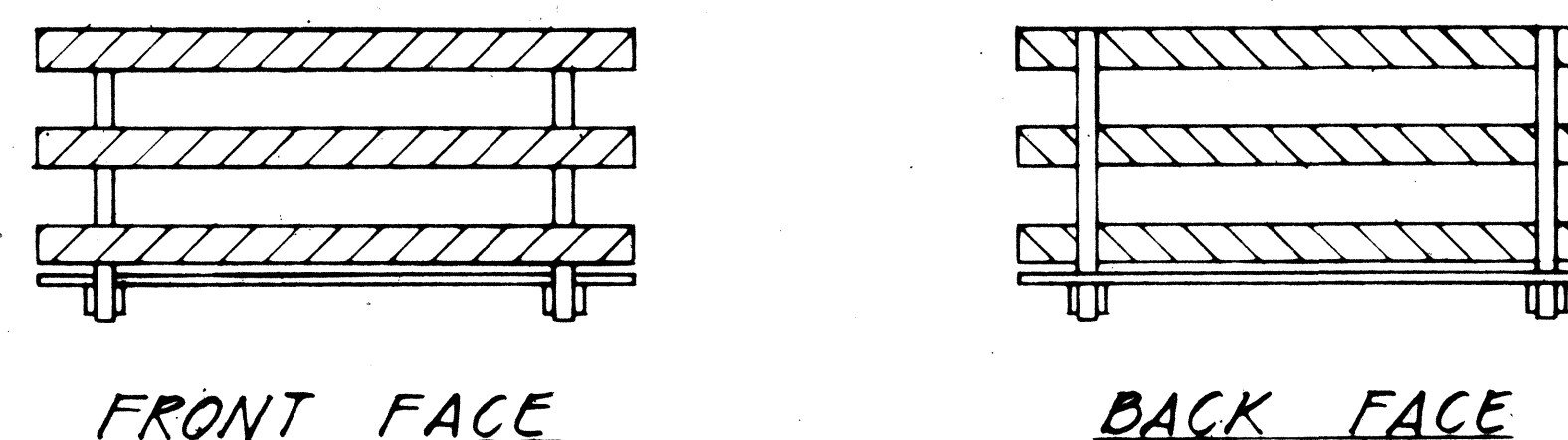


TYPE II

PLASTIC MOLDED BARRICADE OPTIONS *

Not to Scale

* Shop Drawings must be submitted for approval.

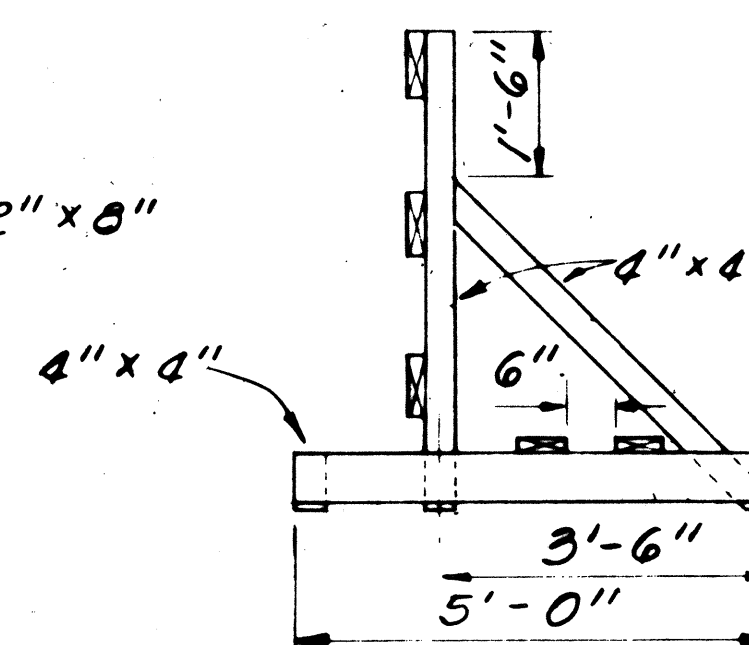


FRONT FACE

BACK FACE

BARRICADE STRIPING DETAILS

Not to Scale



END VIEW

TYPE III BARRICADE

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

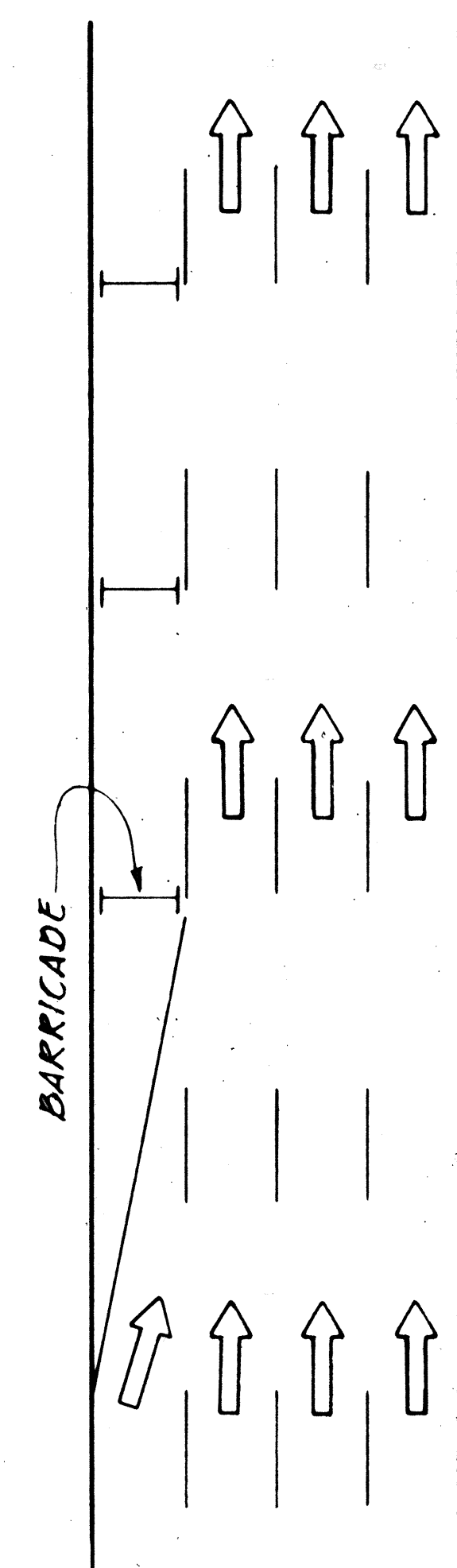
- ### GENERAL NOTES
1. The Contractor shall construct, install and maintain the barricades at the locations shown on the Plans.
 2. The barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property, unless otherwise specified.
 3. The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized with reflective sheeting.
 4. Both faces of the barricade rails shall be striped. See Striping Detail Arrangement.
 5. Contractor may submit alternate designs for approval.
 6. Barricade details shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, by the Federal Highway Administration and as amended.
 7. If wooden rails are used, 26 ga. galv. steel sheet shall be first tacked on to the rails and then overlayed with reflective sheeting.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
TYPICAL DETAILS
BARRICADES
SCALE: As Shown
SHEET NO. 2 OF 21 SHEETS

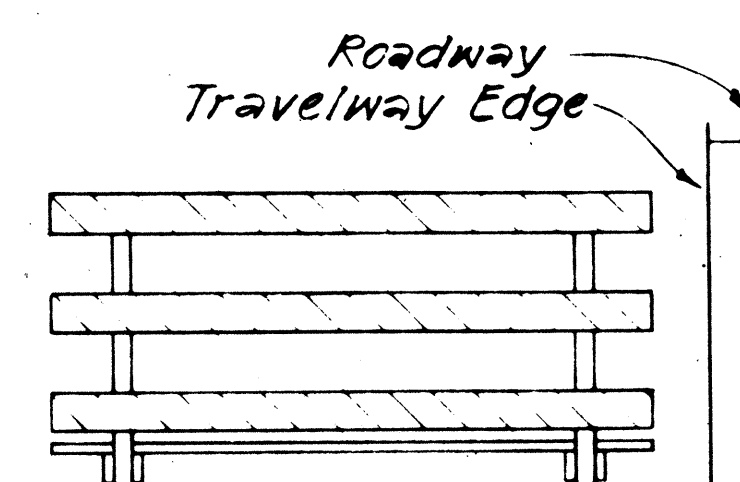
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1964-02-71 UNIT II	1970	14	38

GENERAL NOTES

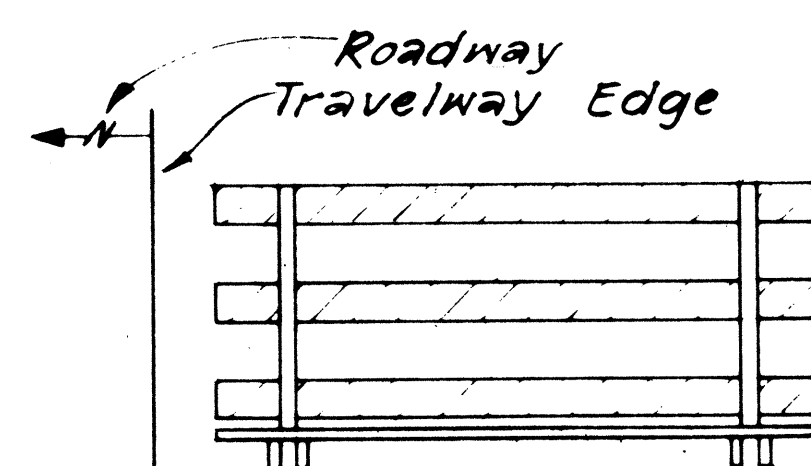
1. Barricade Type, Placement, and Arrangement shall be as shown on the Construction Plans.



ROADWAY DELINEATION
TO THE RIGHT
NOT TO SCALE

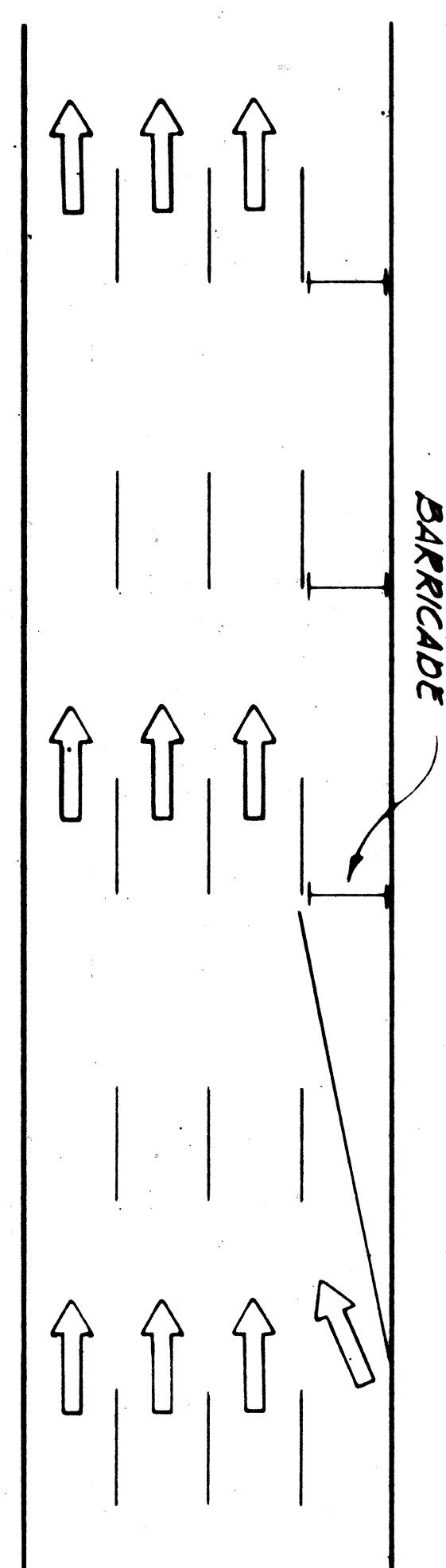


FRONT VIEW

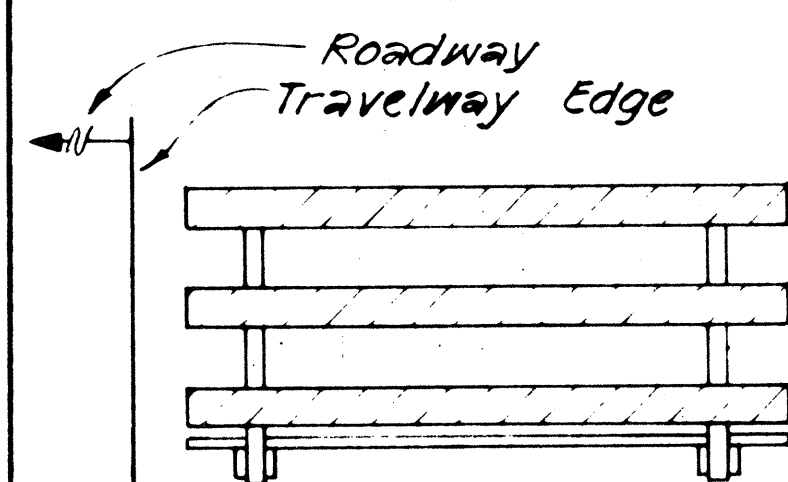


BACK VIEW

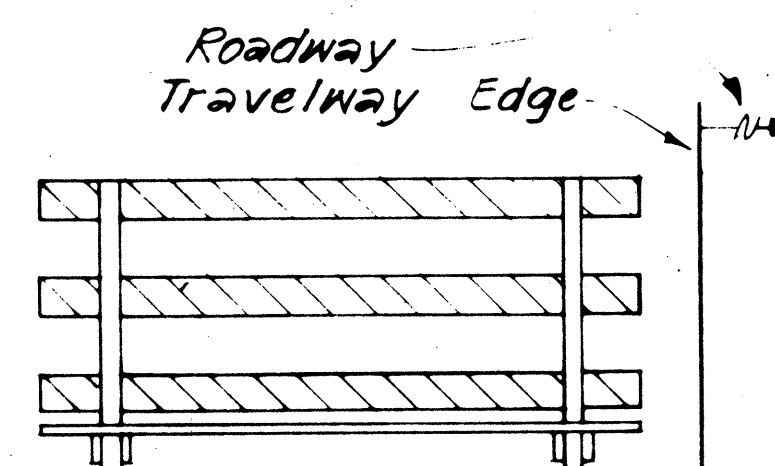
BARRICADE STRIPING
ARRANGEMENT
NOT TO SCALE



ROADWAY DELINEATION
TO THE LEFT
NOT TO SCALE

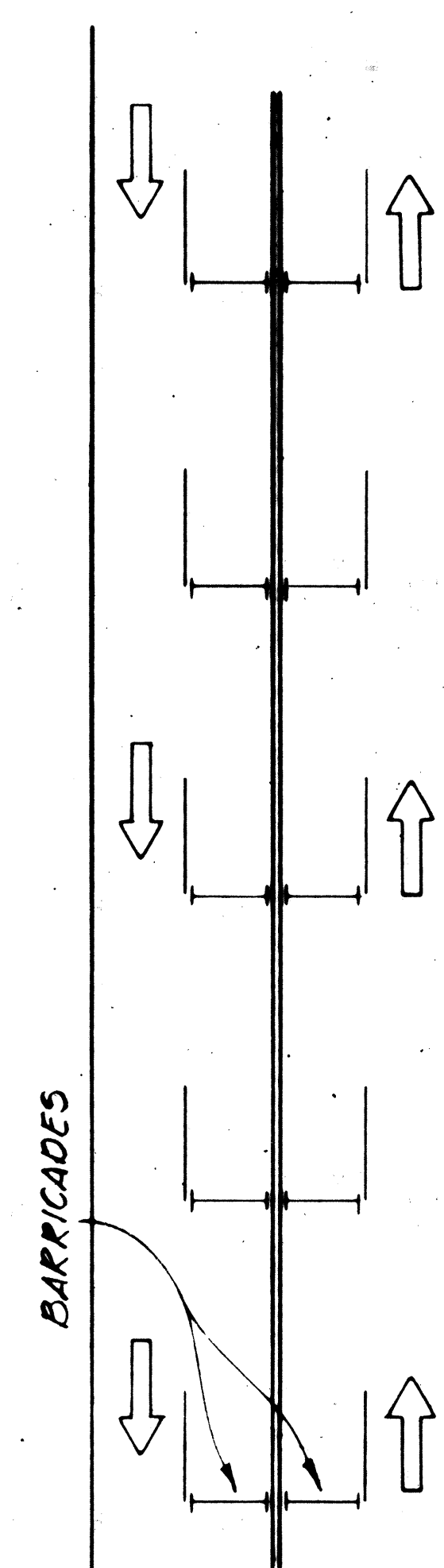


FRONT VIEW

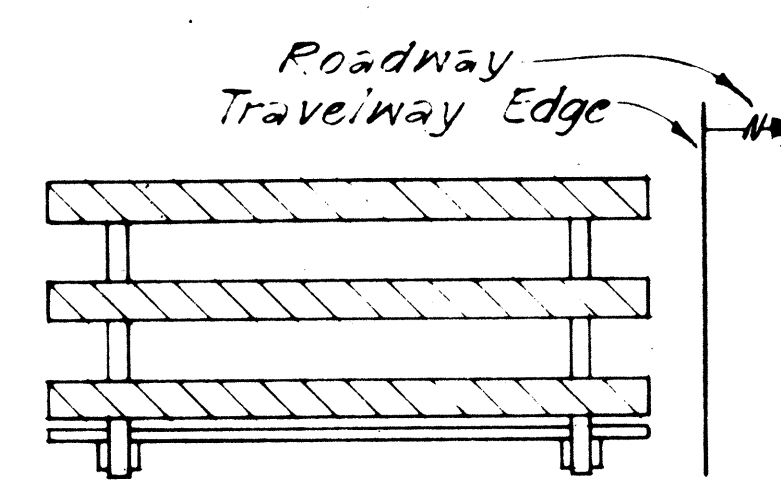


BACK VIEW

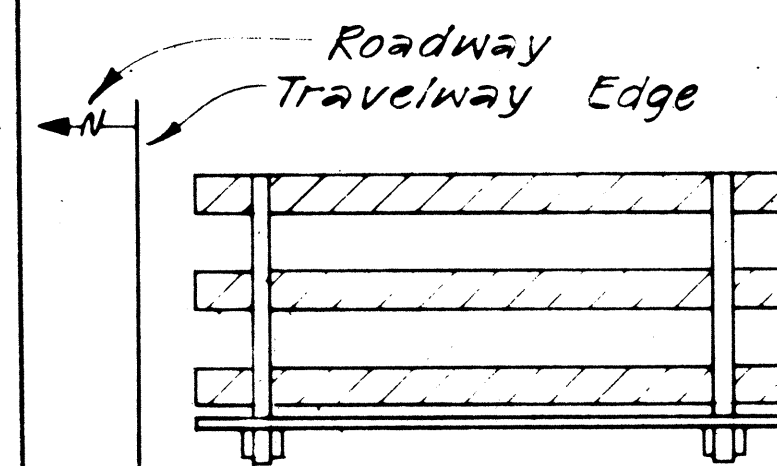
BARRICADE STRIPING
ARRANGEMENT
NOT TO SCALE



ROADWAY DELINEATION
FOR 2-WAY TRAFFIC
NOT TO SCALE

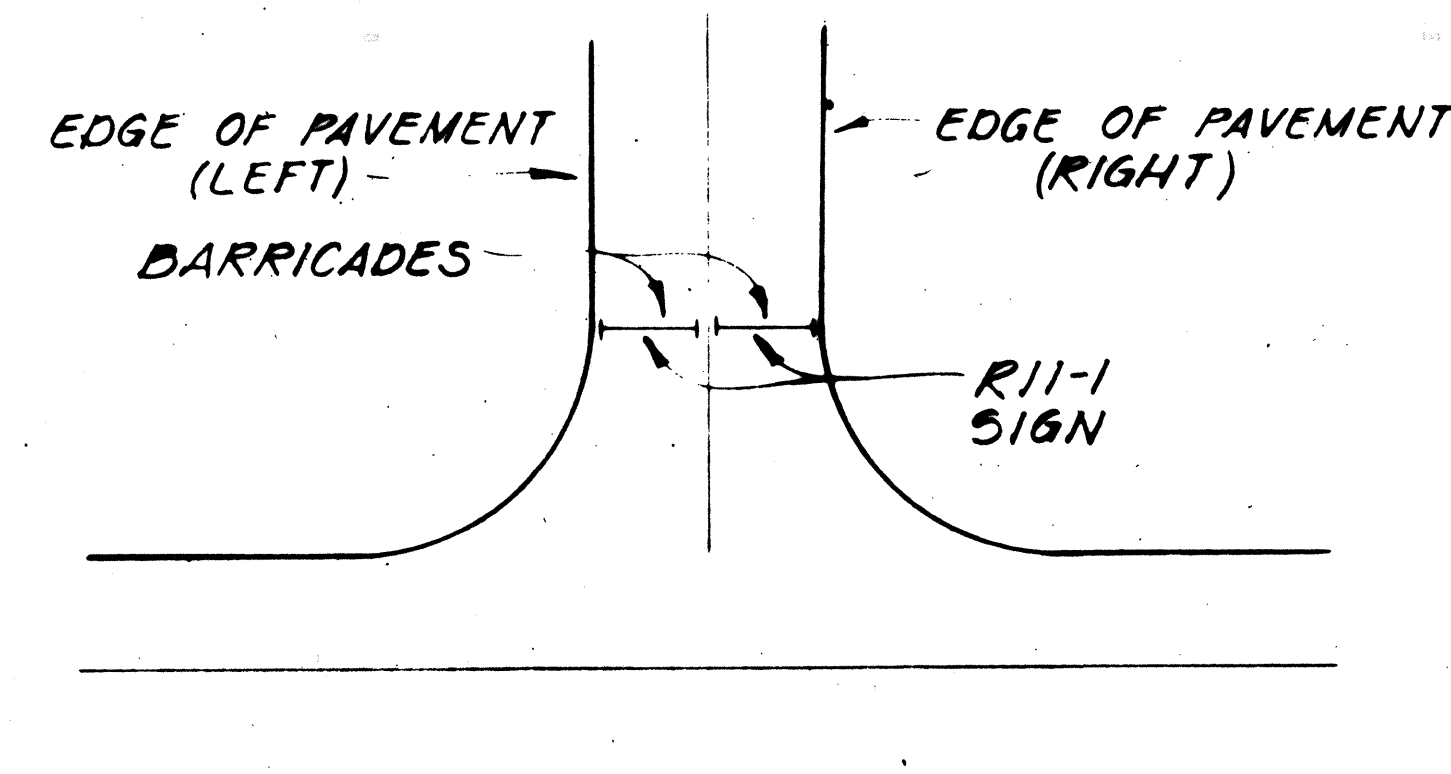


FRONT VIEW

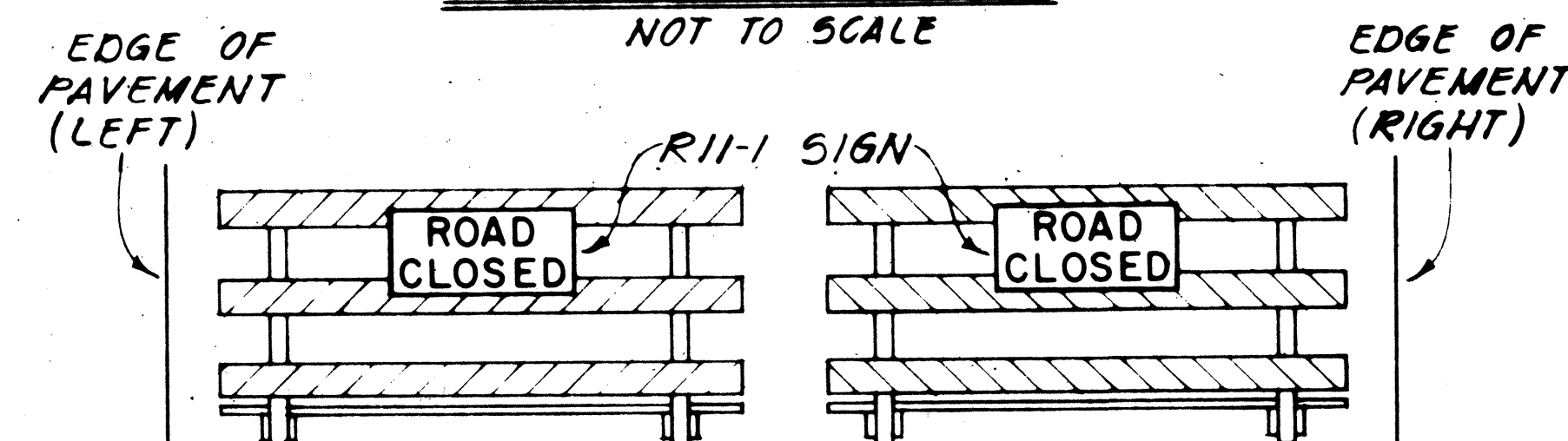


BACK VIEW

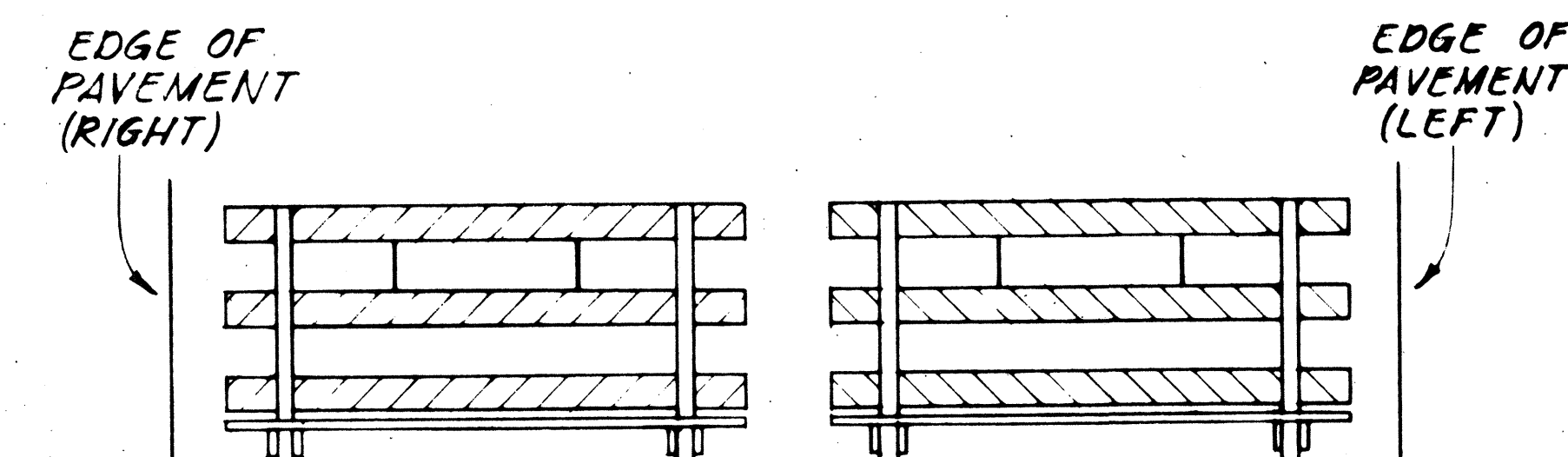
BARRICADE STRIPING
ARRANGEMENT
NOT TO SCALE



ROADWAY CLOSED
NOT TO SCALE



FRONT VIEW



BACK VIEW

BARRICADE STRIPING
ARRANGEMENT
NOT TO SCALE

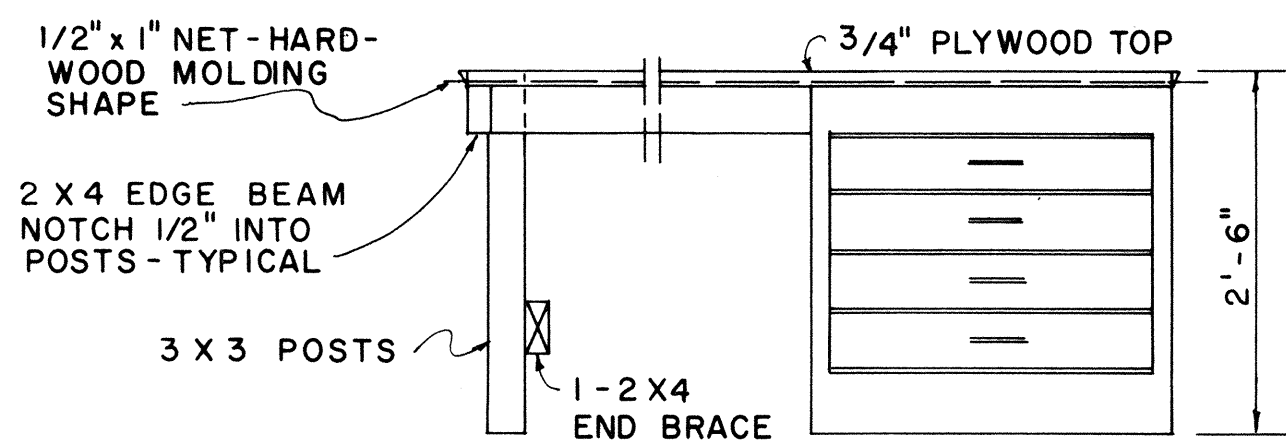
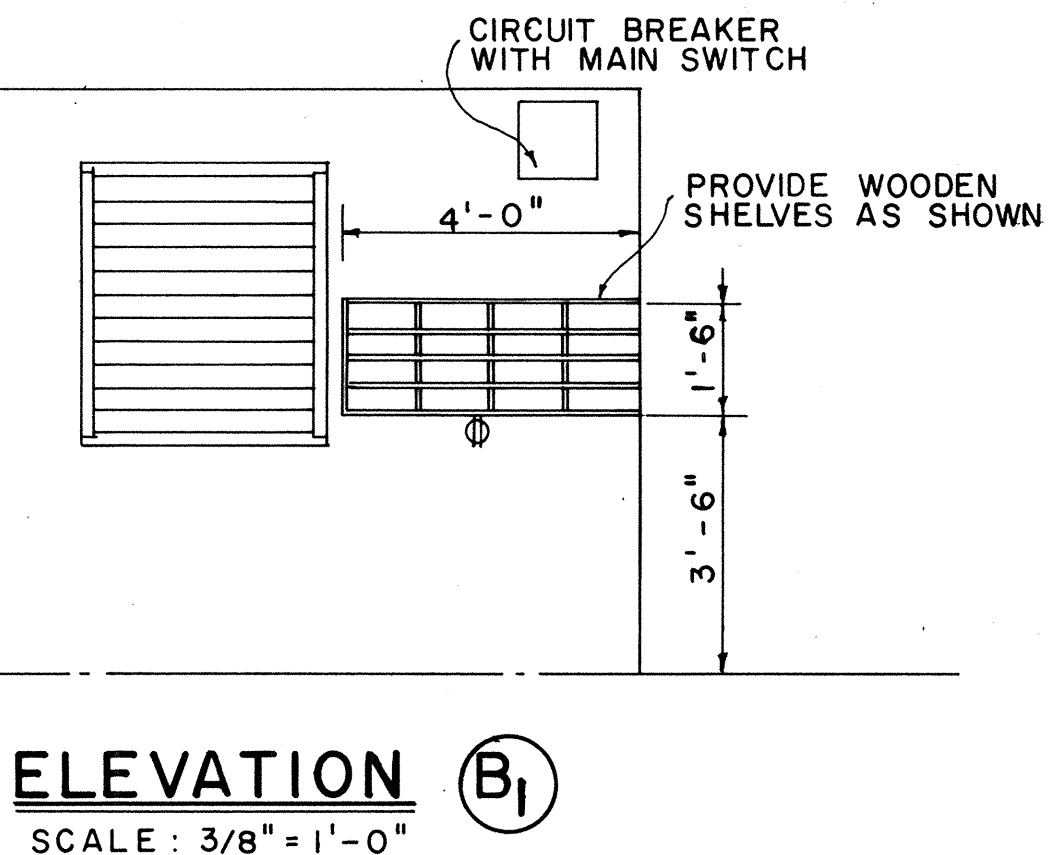
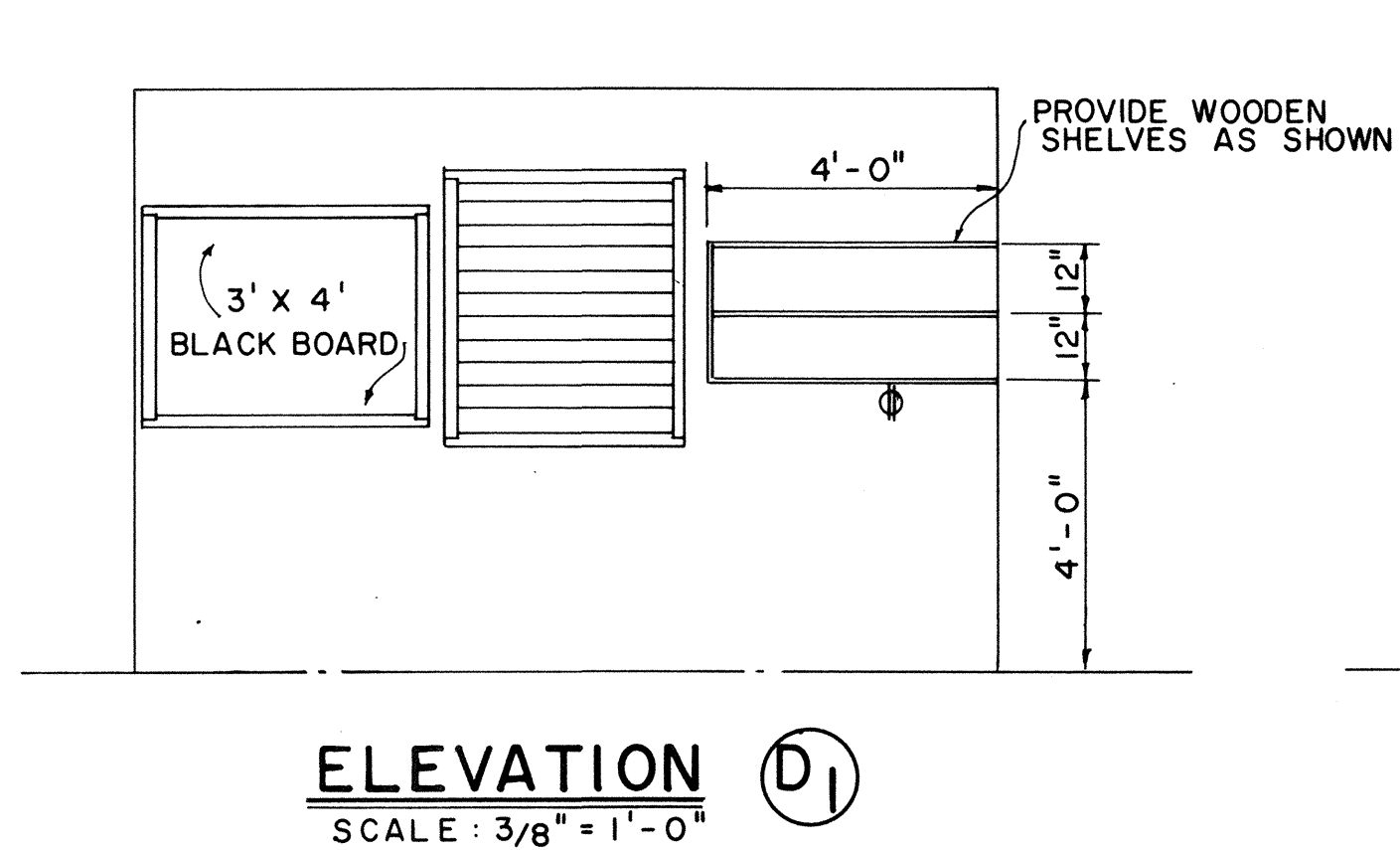
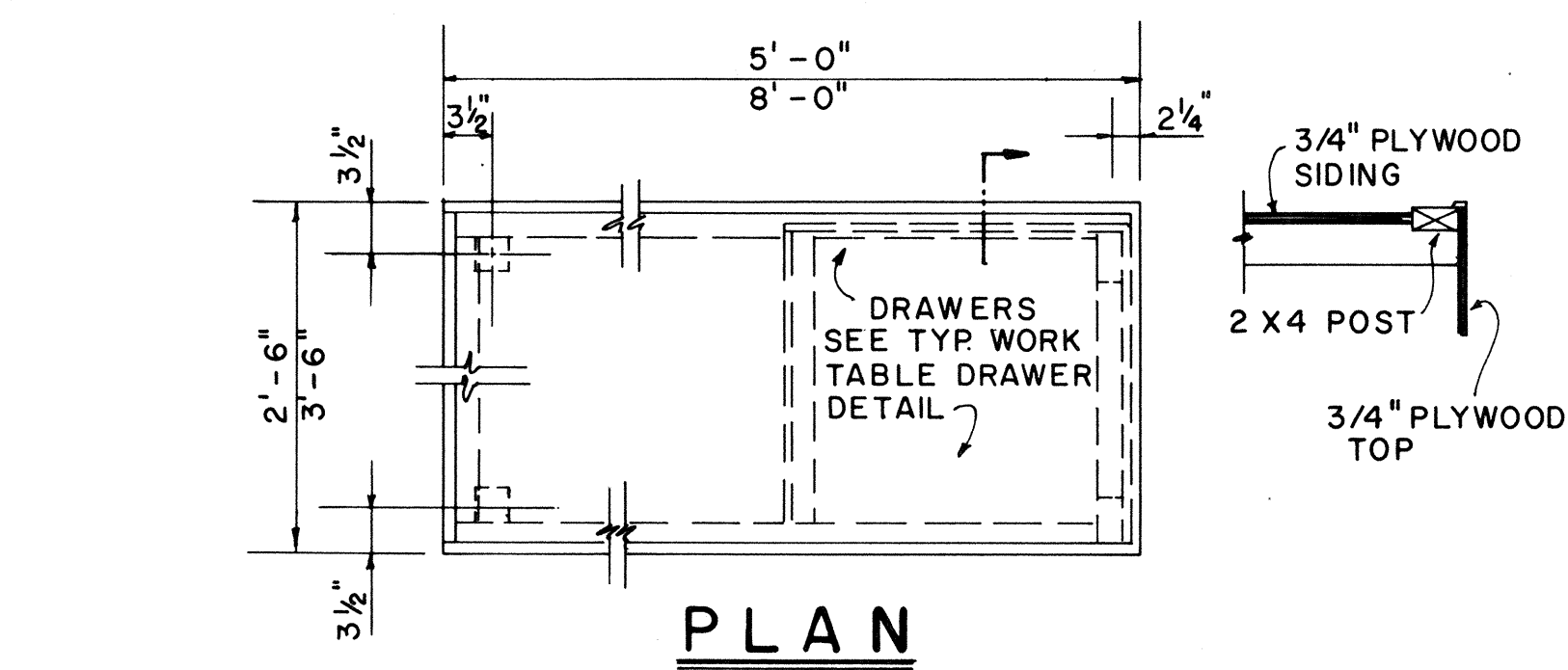
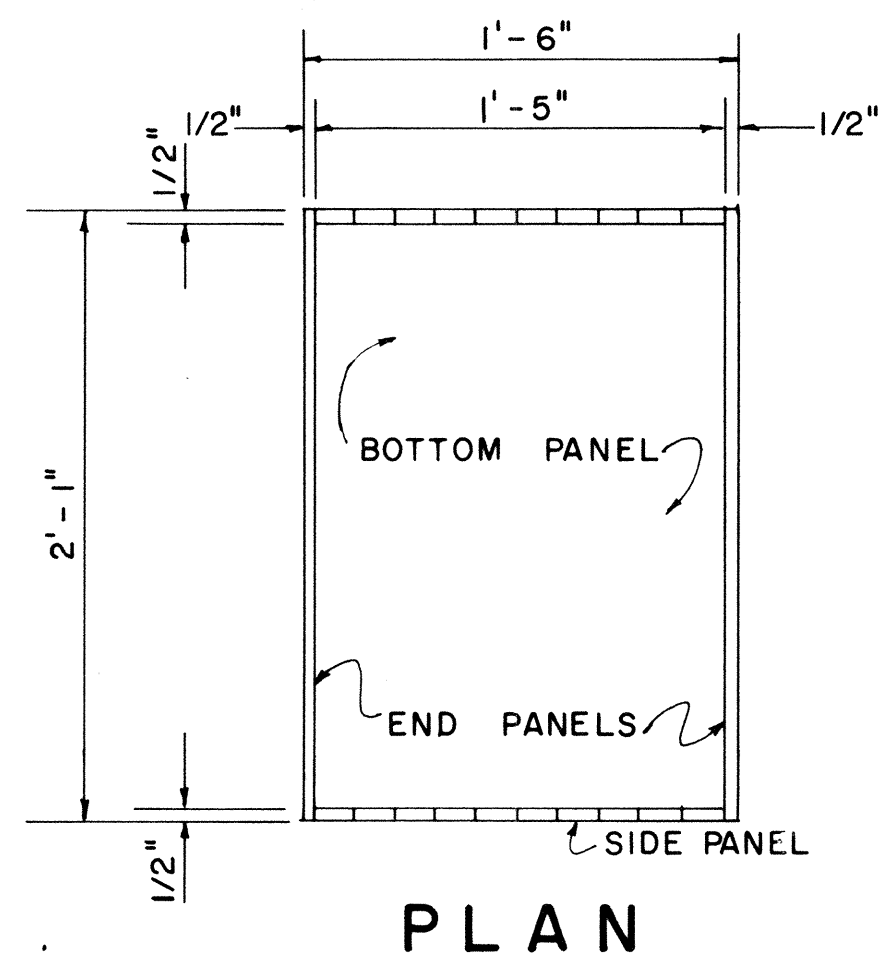
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION					
<u>TYPICAL DETAILS</u>					
<u>BARRICADE STRIPING DETAILS</u>					
SHEET NO. 3 OF 21 SHEETS					

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

Scale : As Noted

SHEET NO 4 OF 21 SHEETS DD 6361

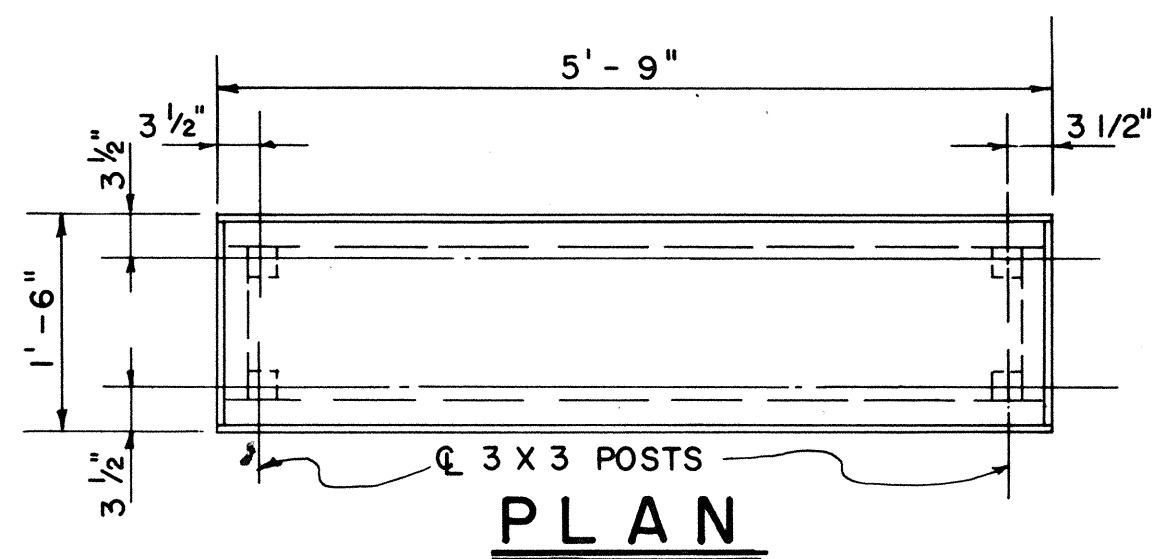
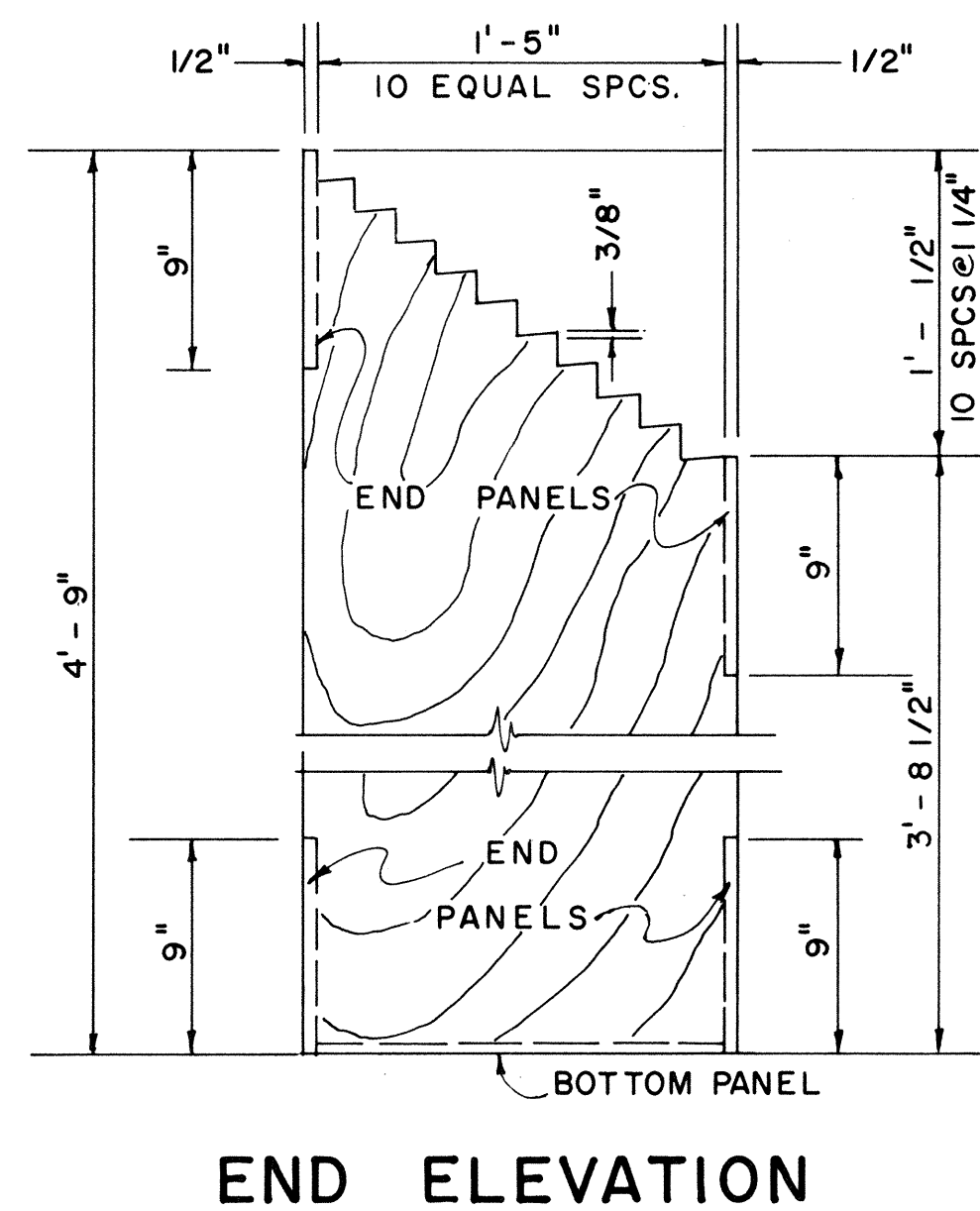
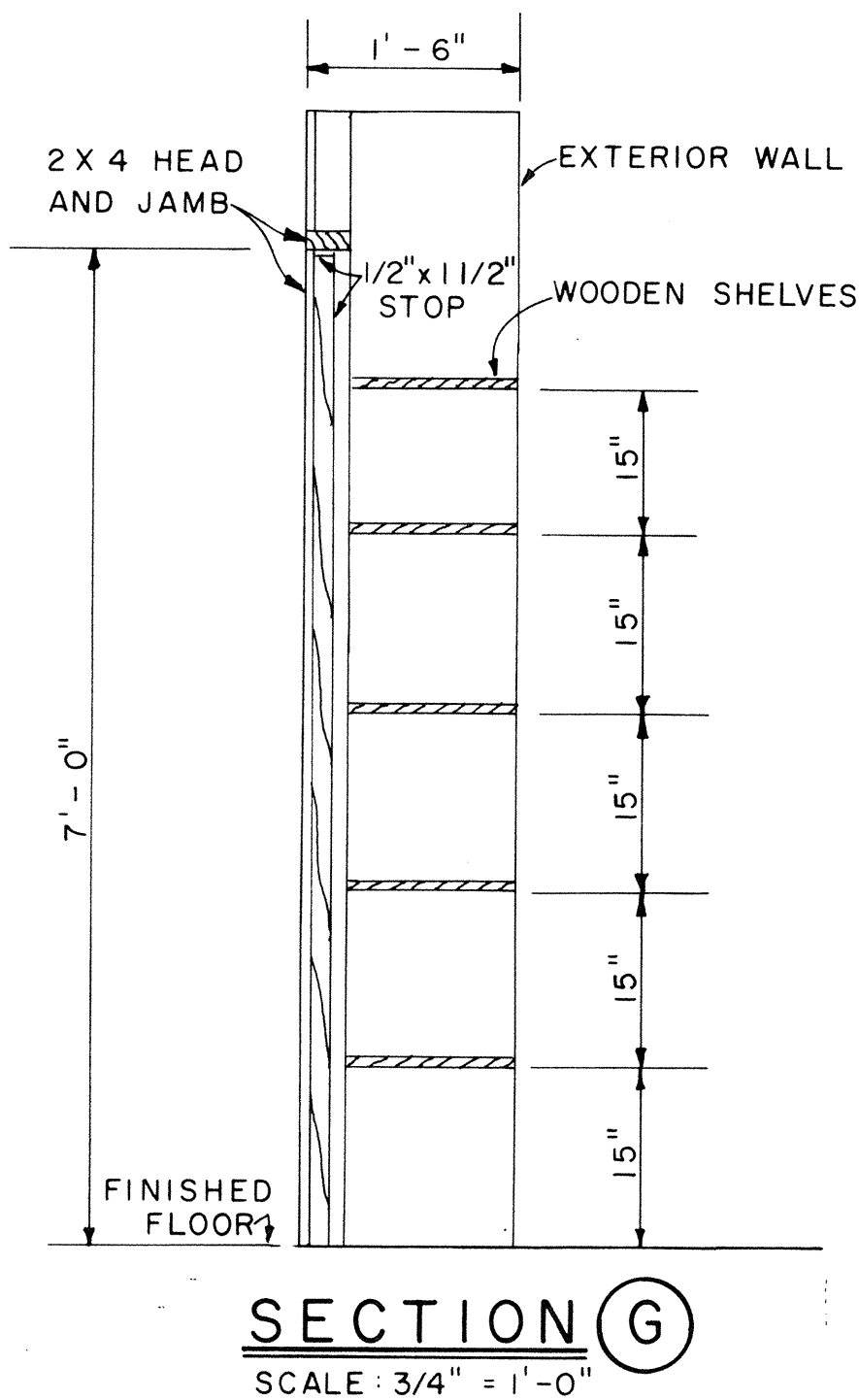
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	199H0271, UNIT II	1979	16	38



2'-6" x 5'-0" 2 REQ'D.
3'-6" x 8'-0" 1 REQ'D.
2'-6" x 8'-0" 1 REQ'D.

PORTABLE WORK TABLE DETAIL

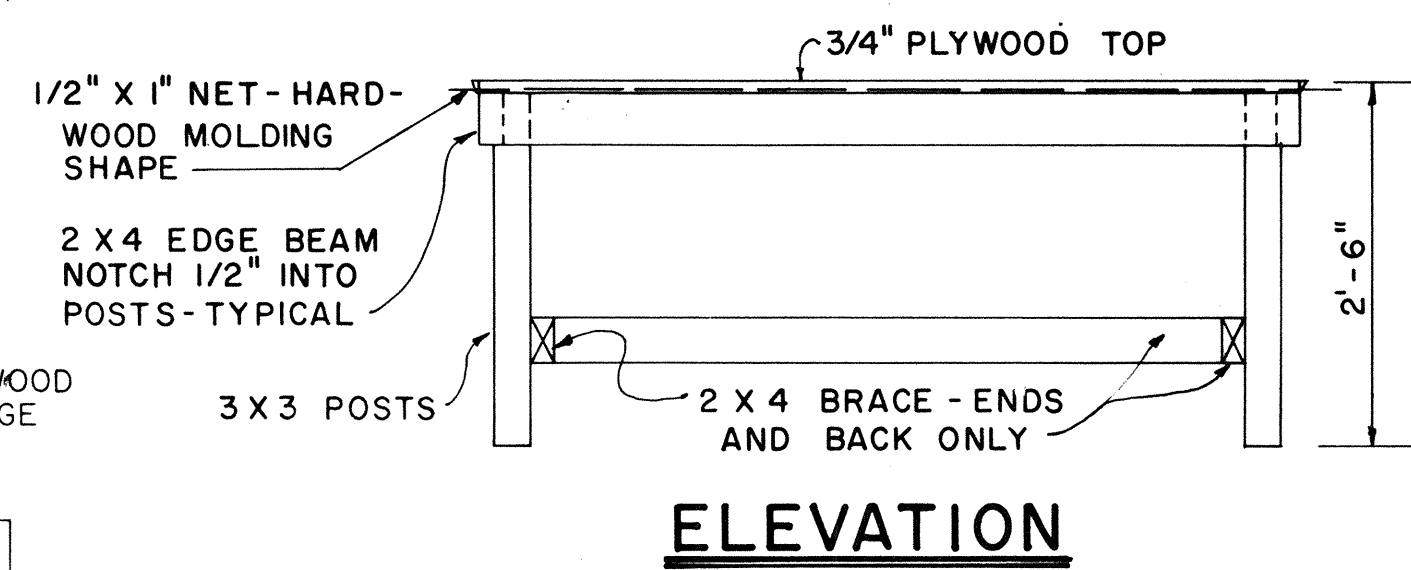
SCALE: 3/4" = 1'-0"



PLAN RACK DETAIL

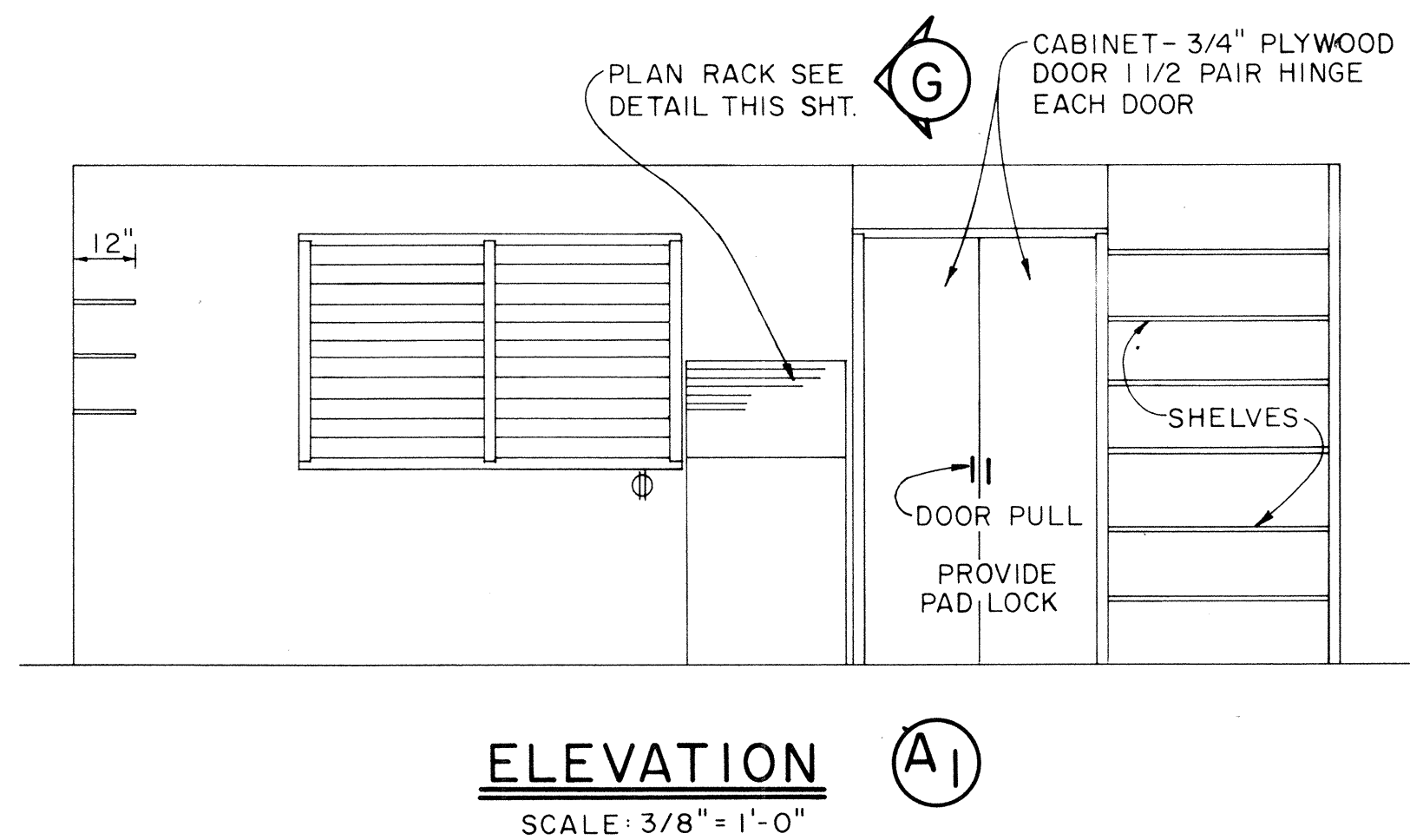
SCALE: 1 1/2" = 1'-0"

(ONE REQUIRED)



1'-6" x 5'-9" PORTABLE WORK TABLE DETAIL

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



APPROVAL RECOMMENDED:

[Signature] 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:

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

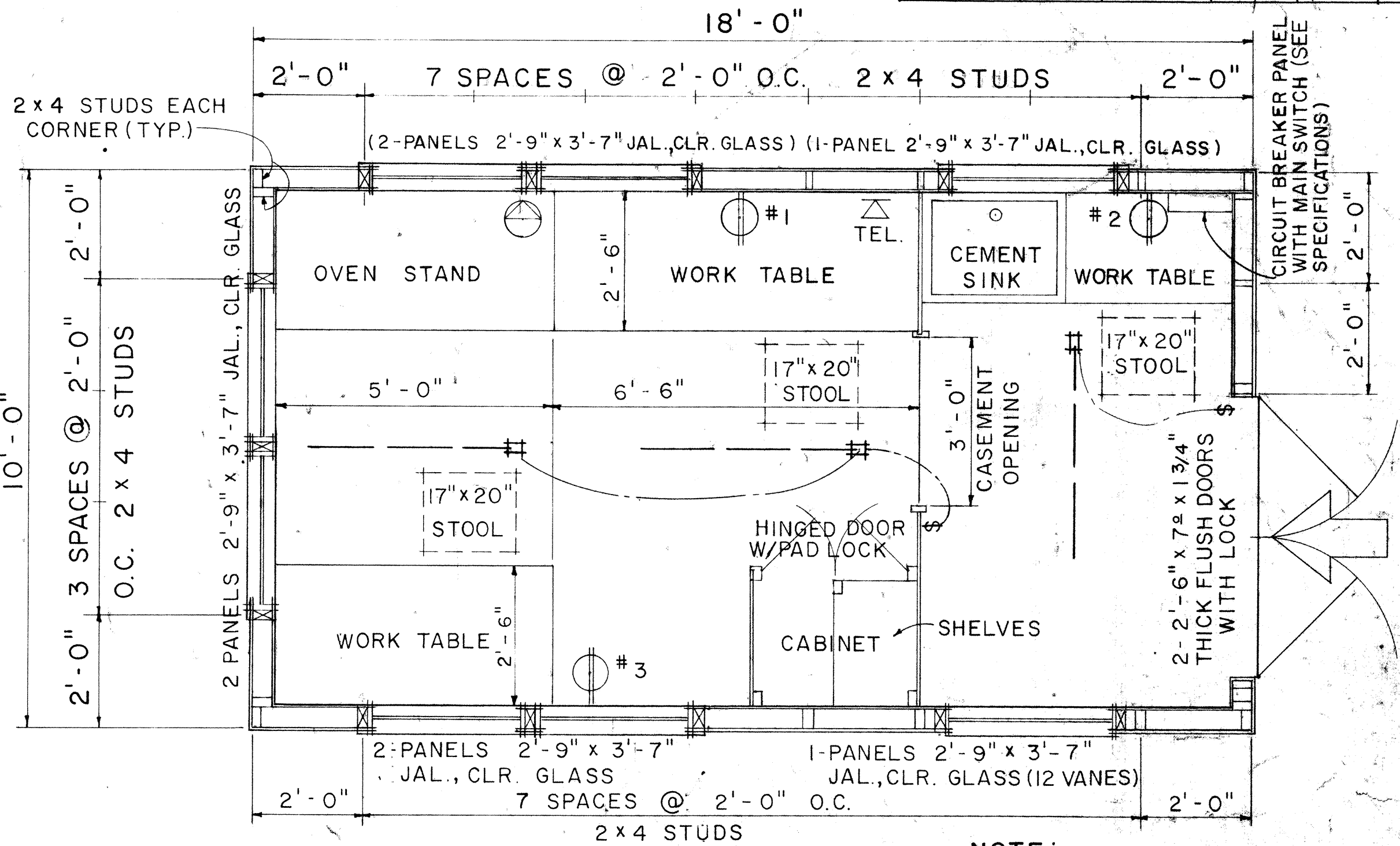
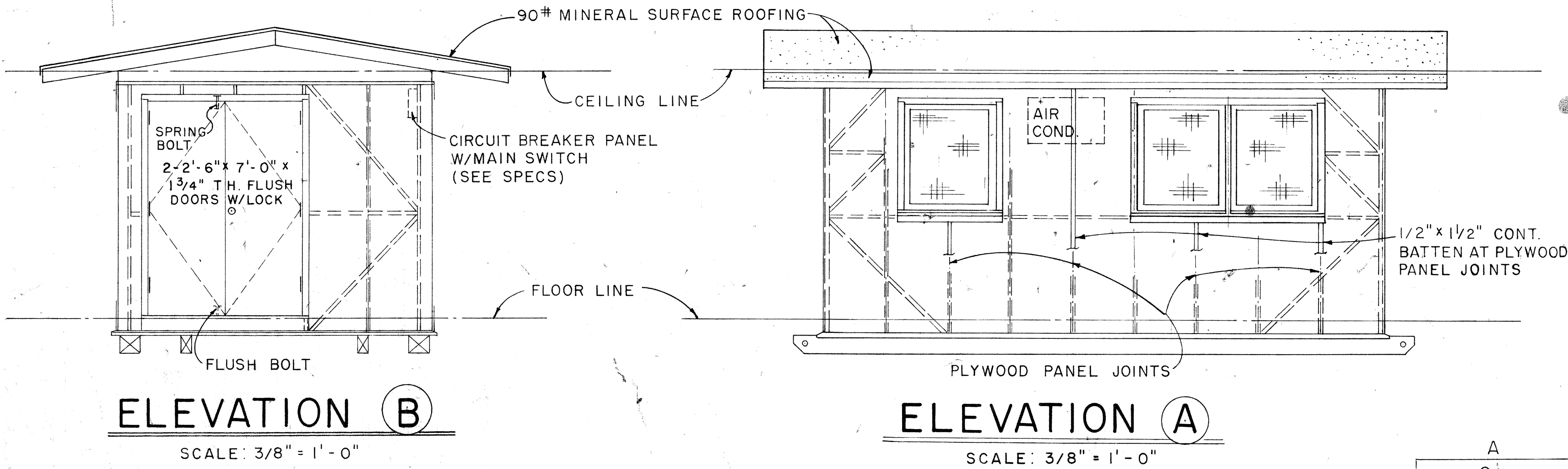
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION DIVISION

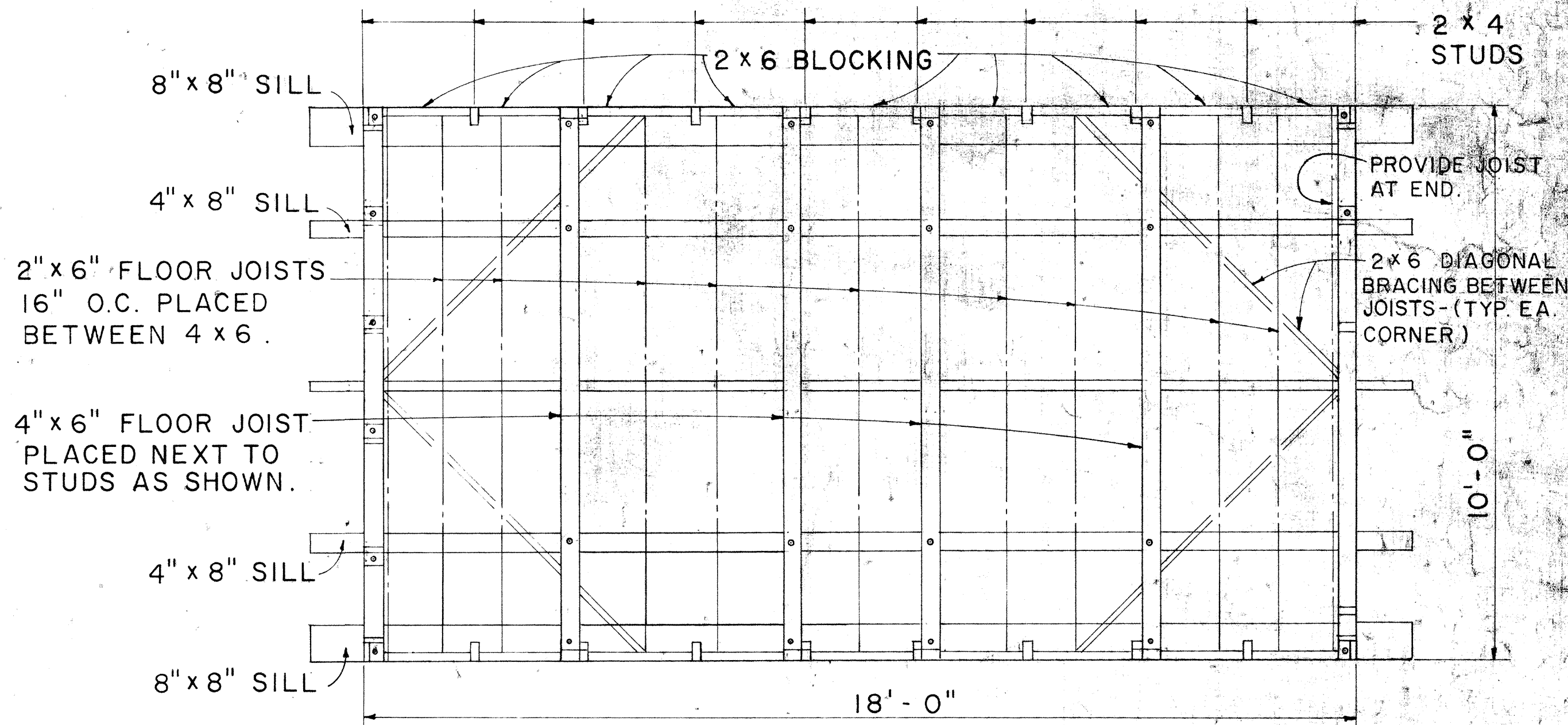
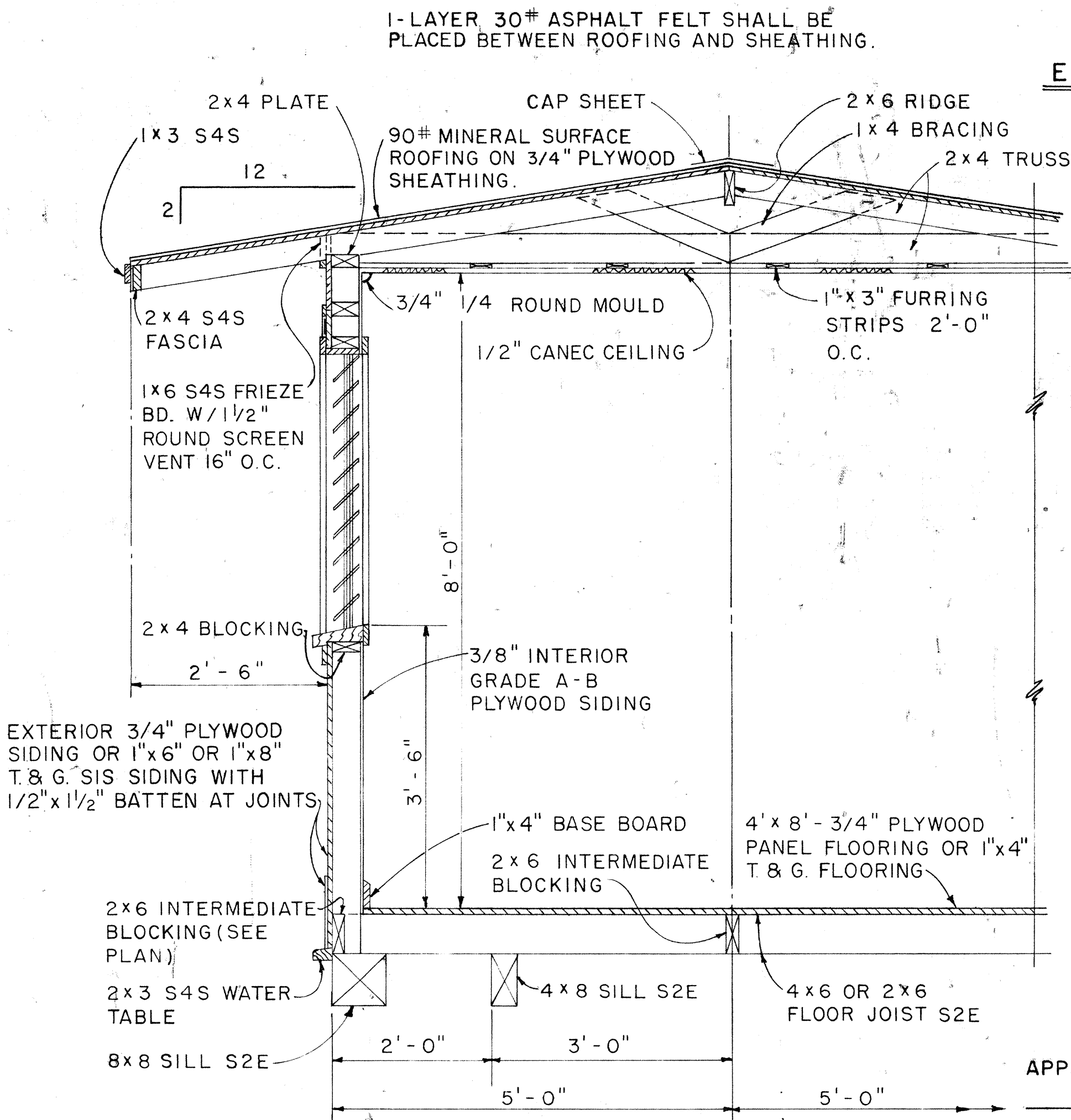
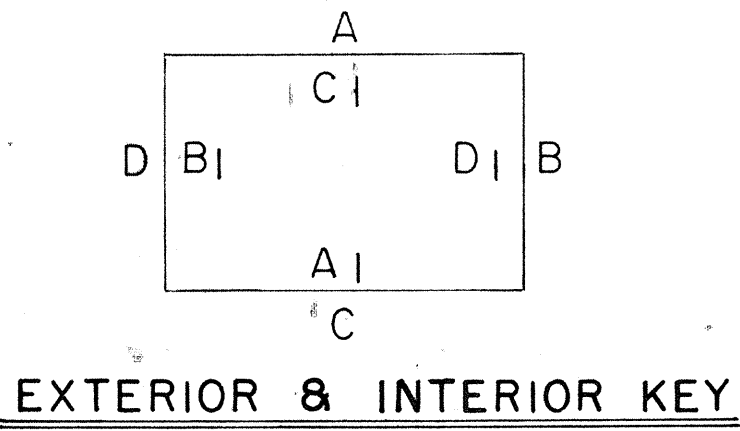
FIELD OFFICE

Scale : As Noted

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	17	38



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



APPROVAL RECOMMENDED:

 HIGHWAY DESIGN ENGINEER
 DATE 12-4-69

APPROVED:

 ASSISTANT CHIEF, ENGINEERING
 DATE 12-10-69

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

PROJECT SITE LABORATORY

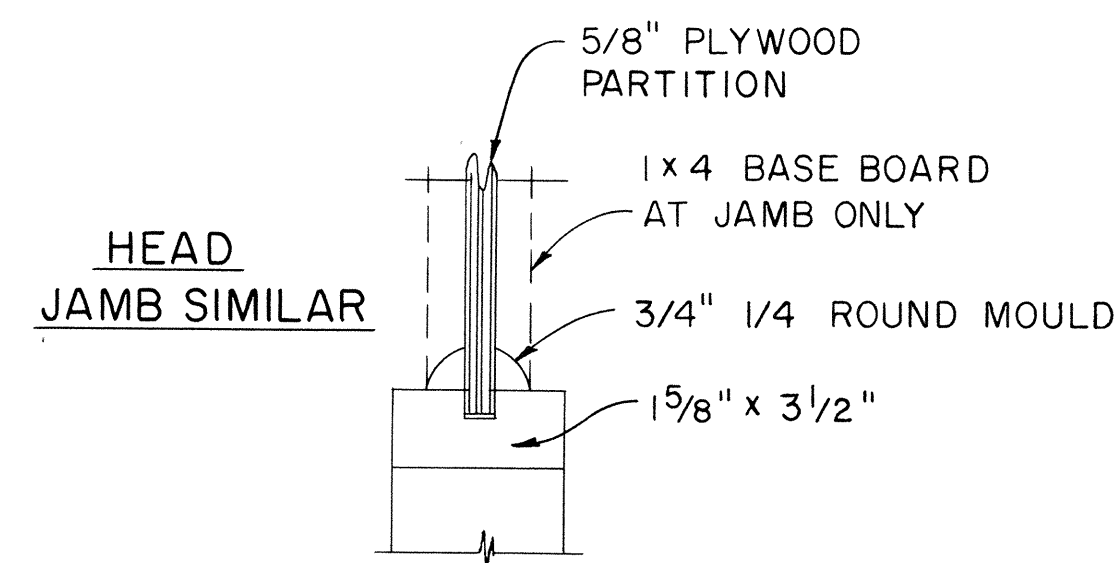
Scale As Noted

SHEET No. 6 OF 2/ SHEETS DD 636.3

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

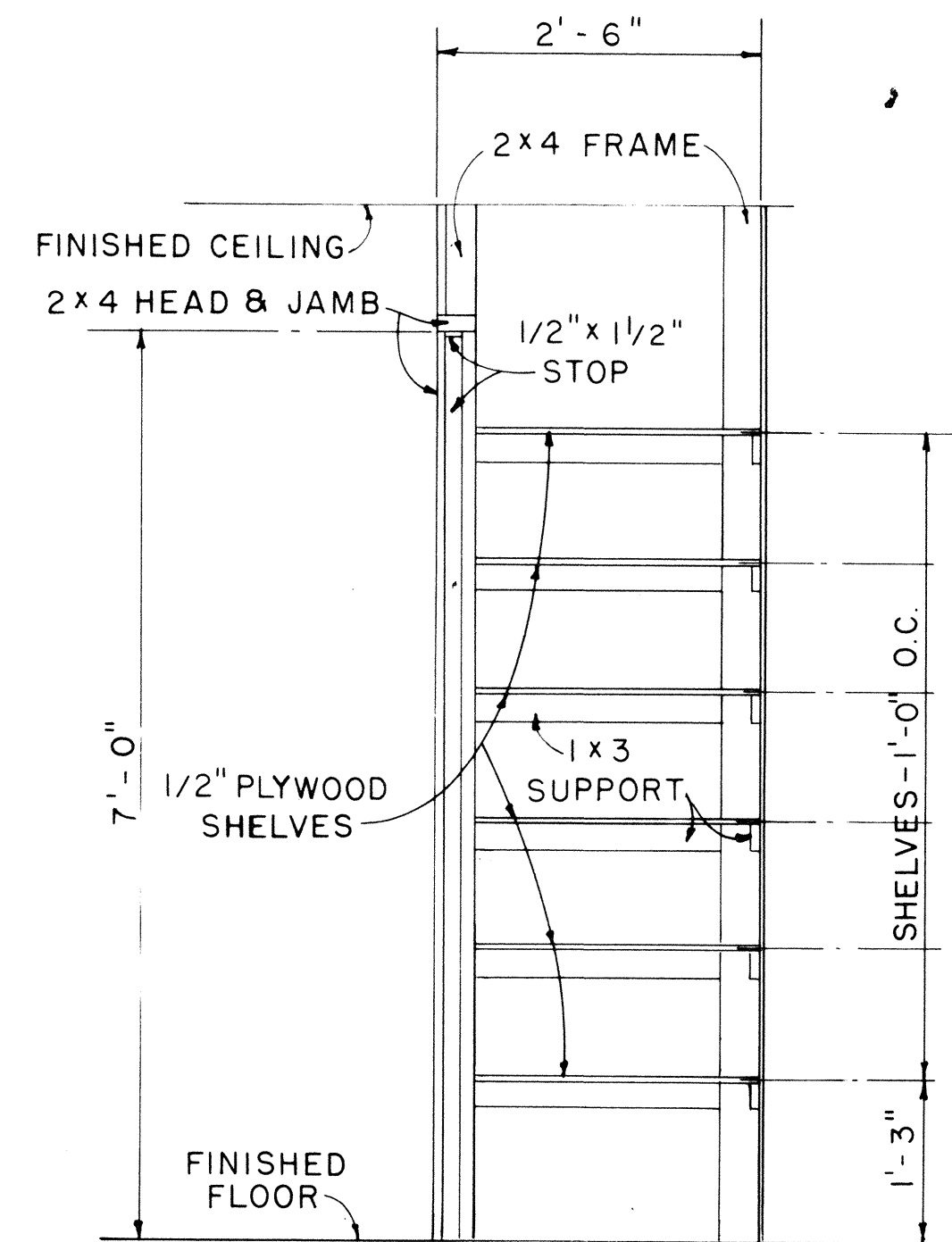
DATE	
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1964-02-71 UNIT II	1970	18	38



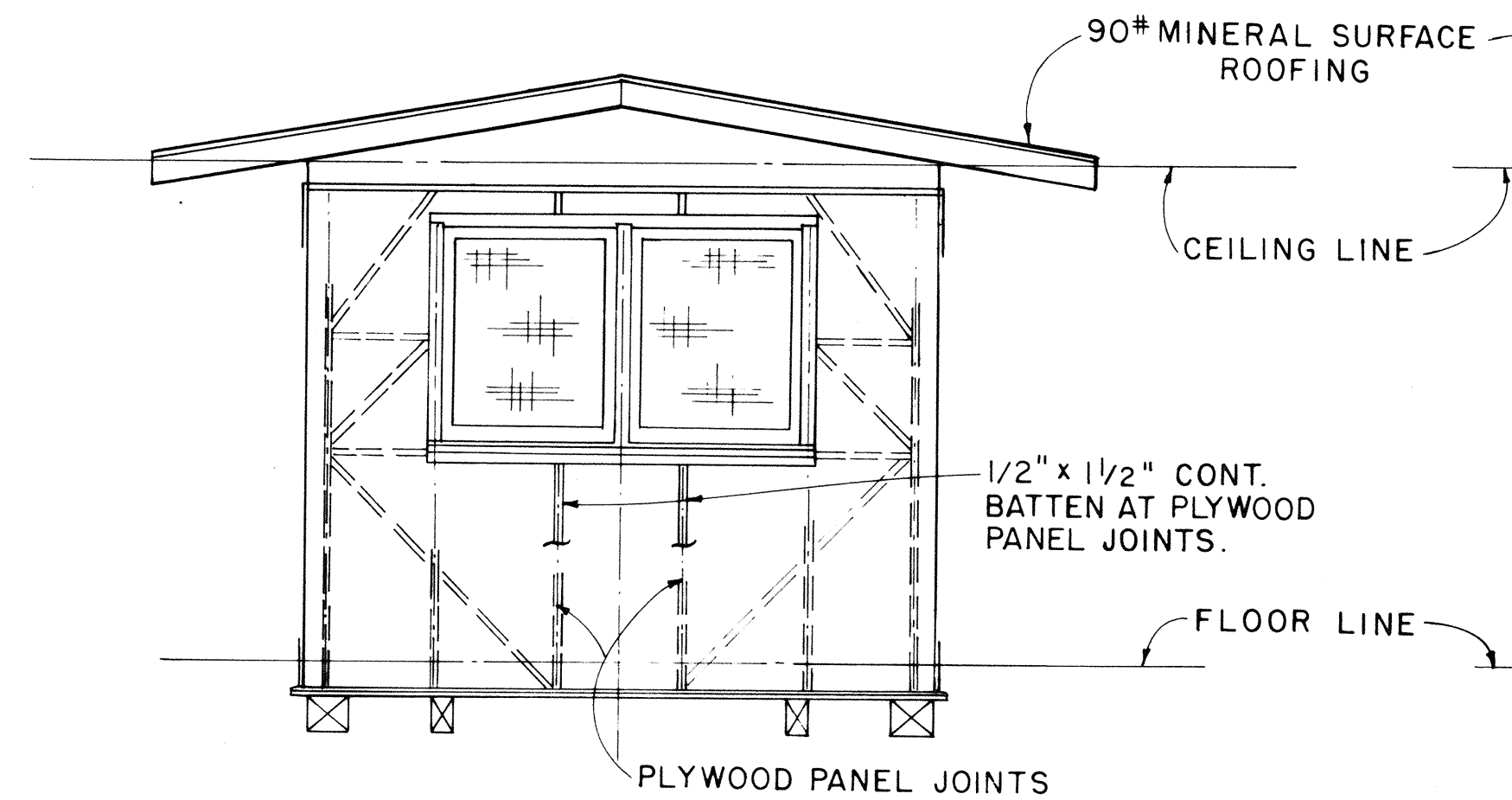
CASEMENT DETAIL

SCALE: 3" = 1'-0"



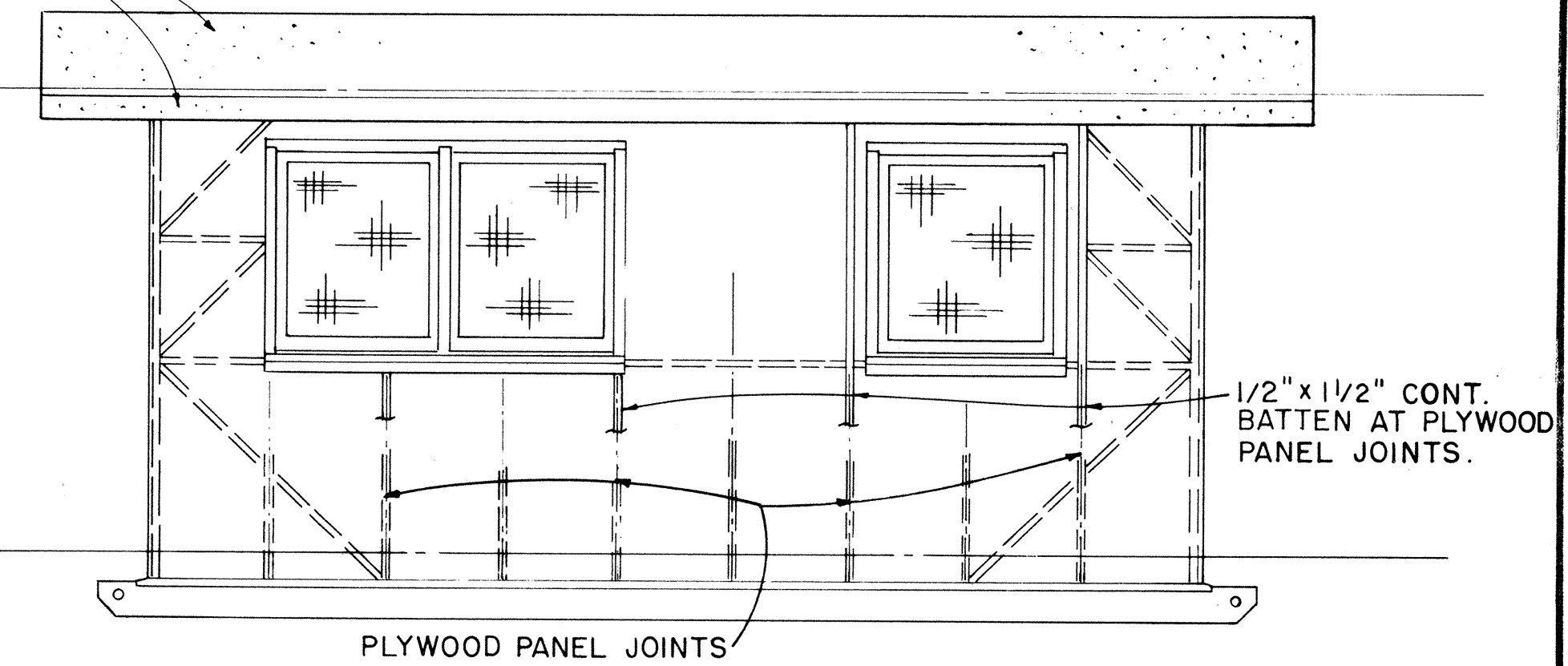
CABINET DETAIL

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



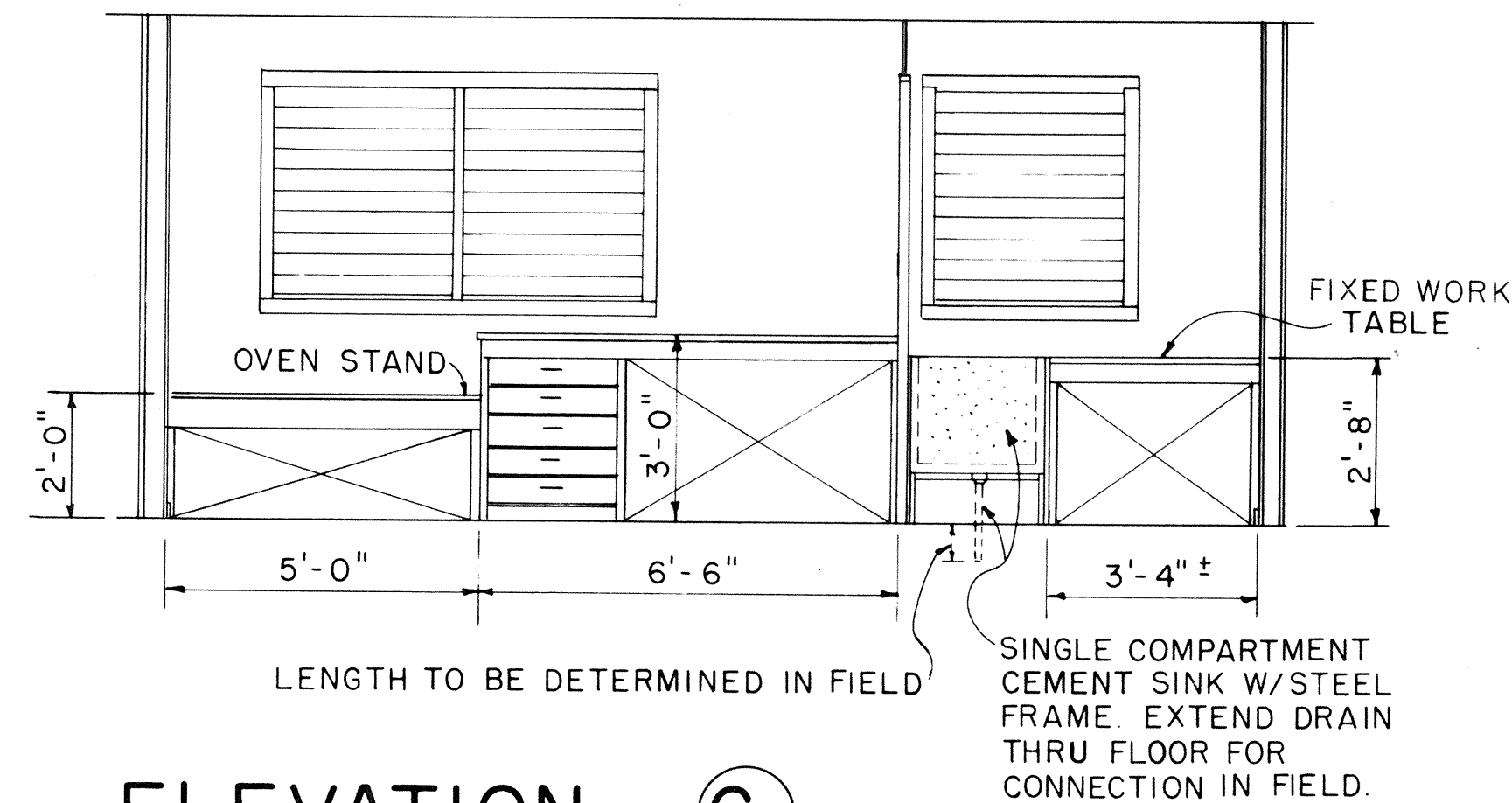
ELEVATION D

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



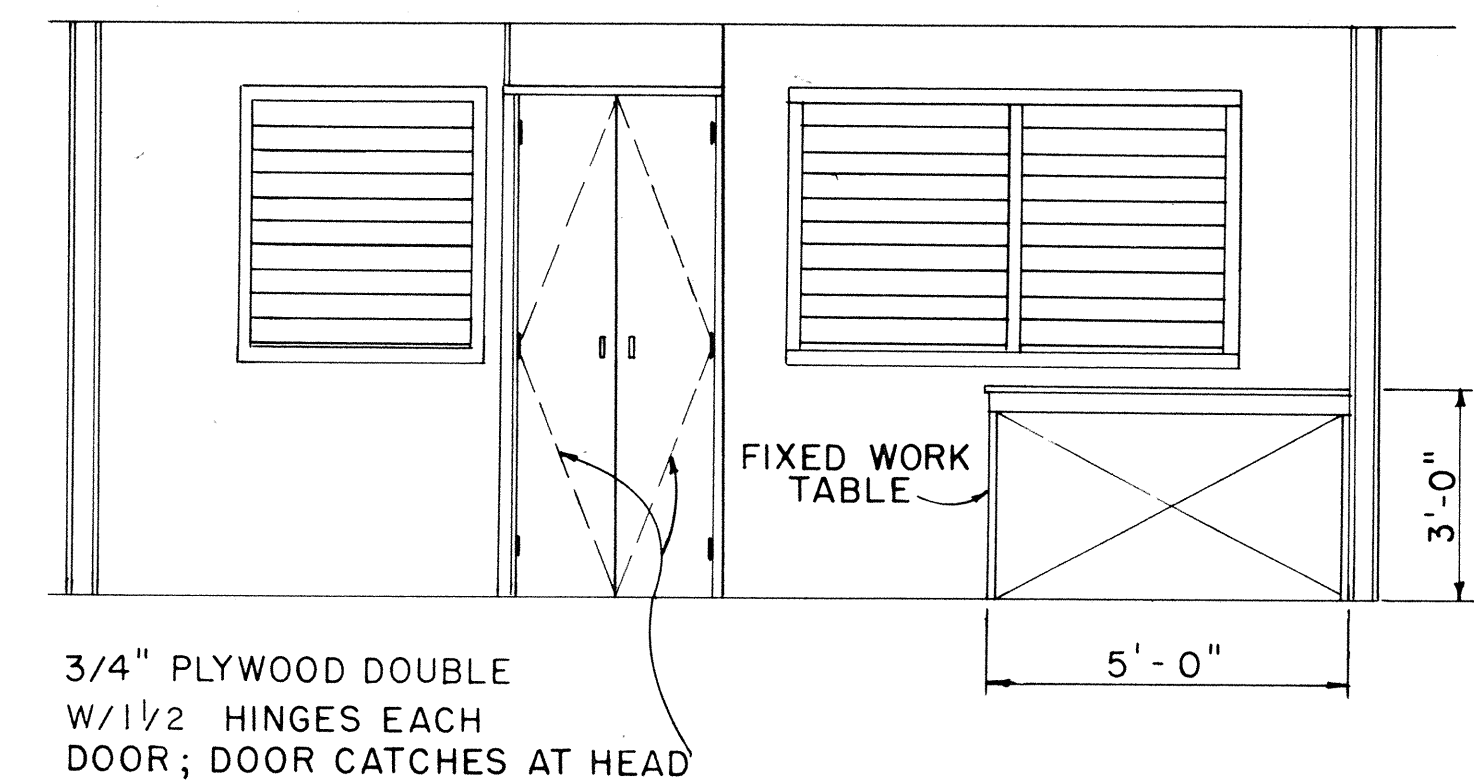
ELEVATION C

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



ELEVATION C1

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

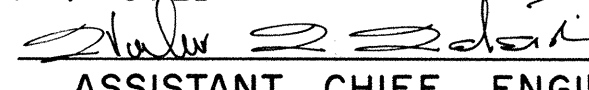


ELEVATION A1

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

APPROVAL RECOMMENDED:

HIGHWAY DESIGN ENGINEER
12-4-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING
12-10-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII

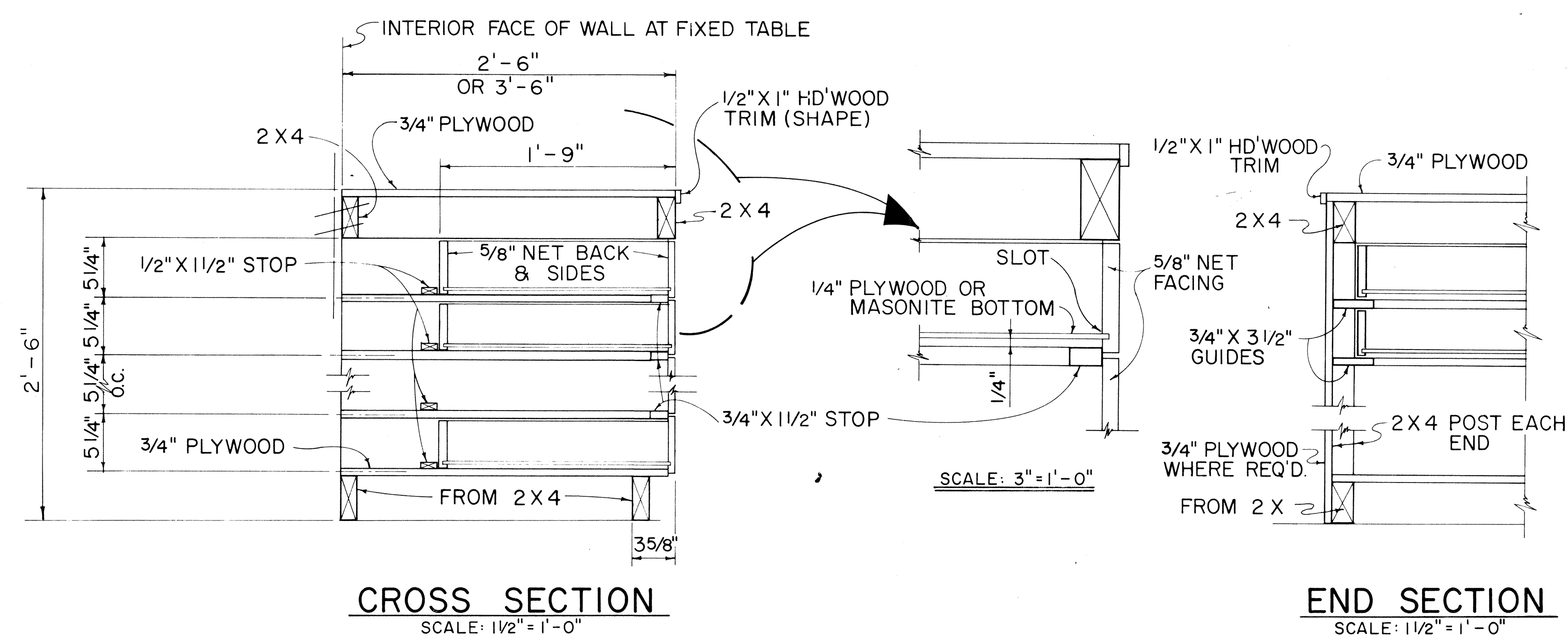
DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

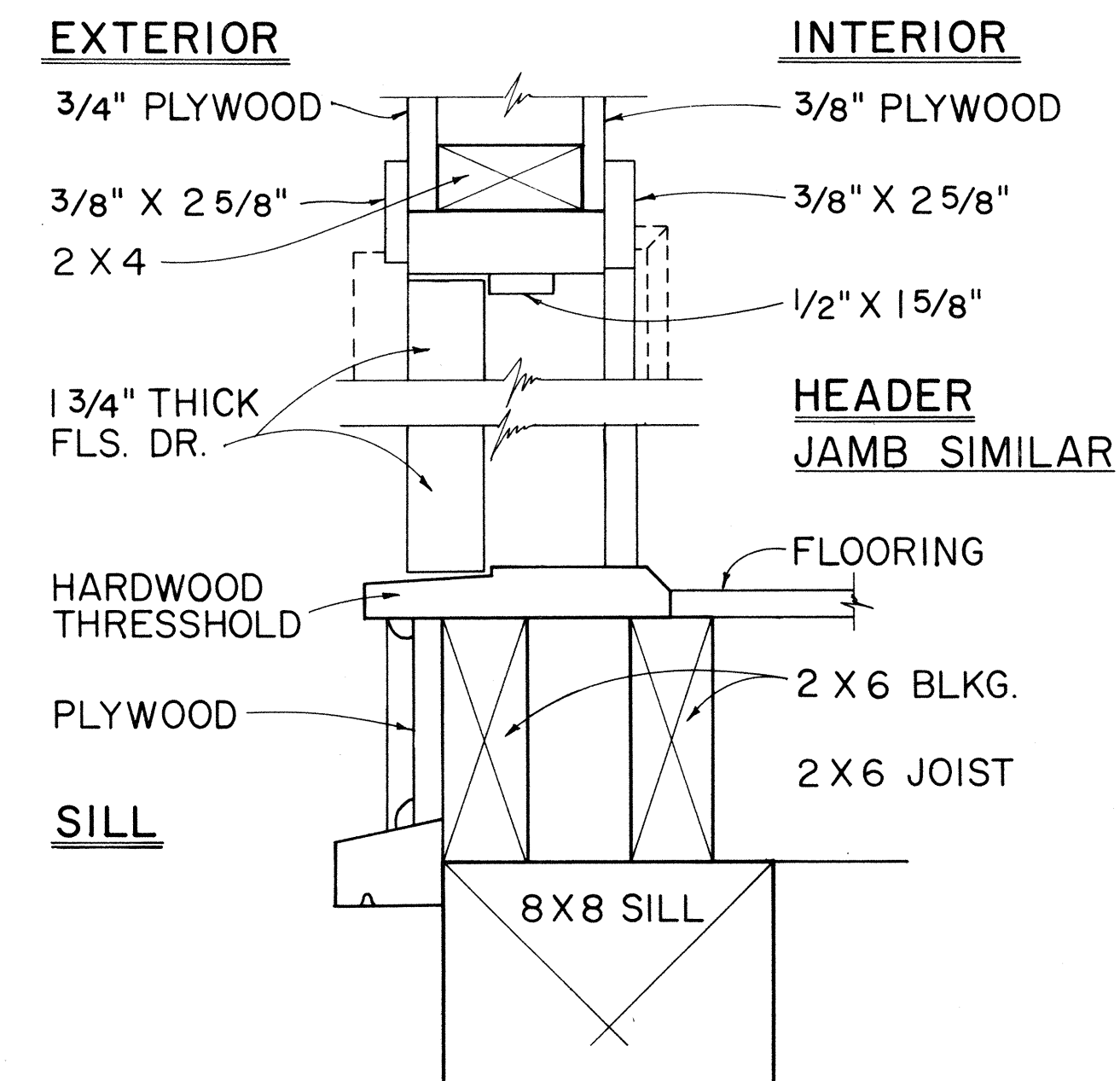
PROJECT SITE LABORATORY

Scale: As Noted

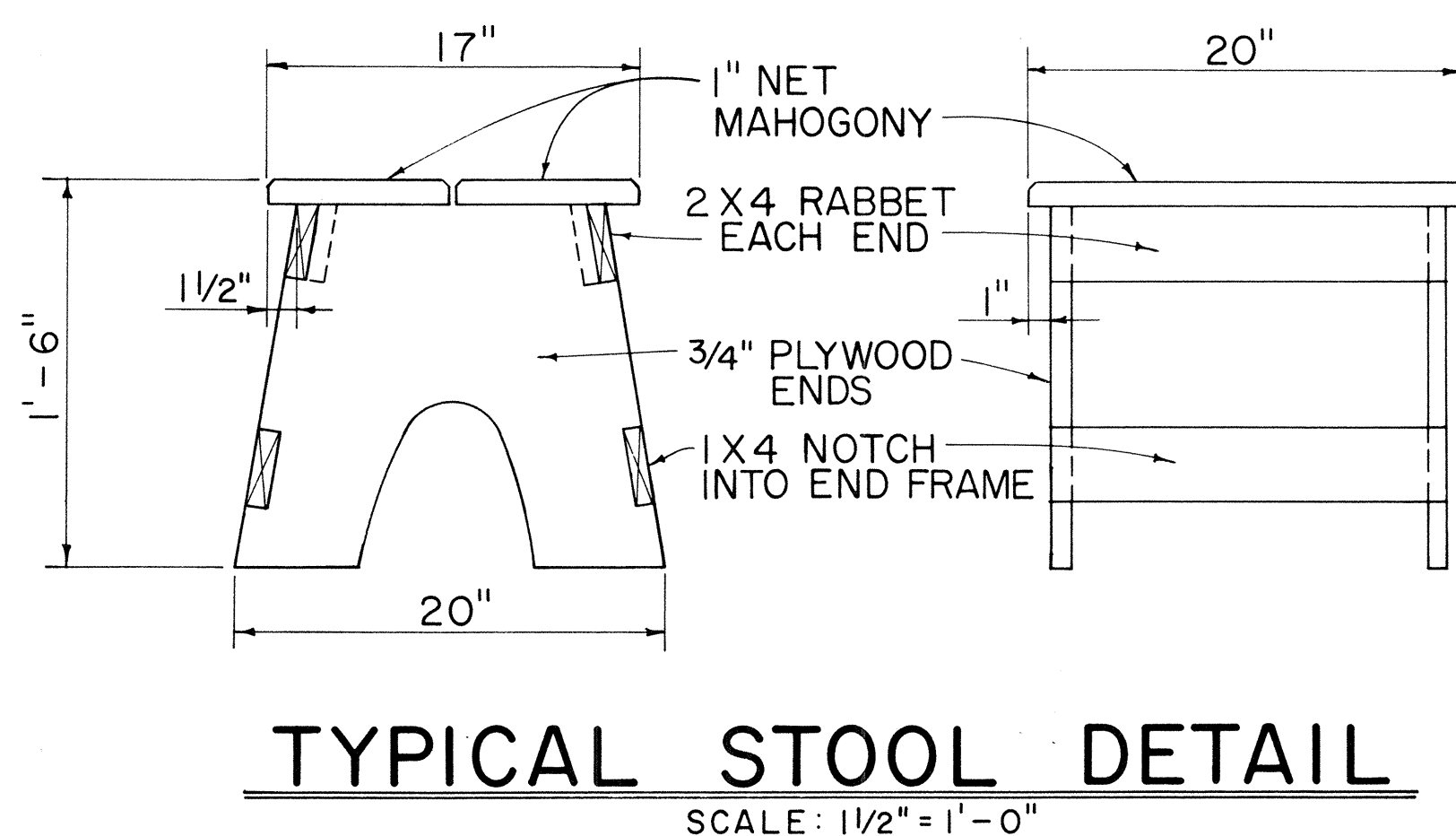
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	198H0271, UNIT II	1979	19	38



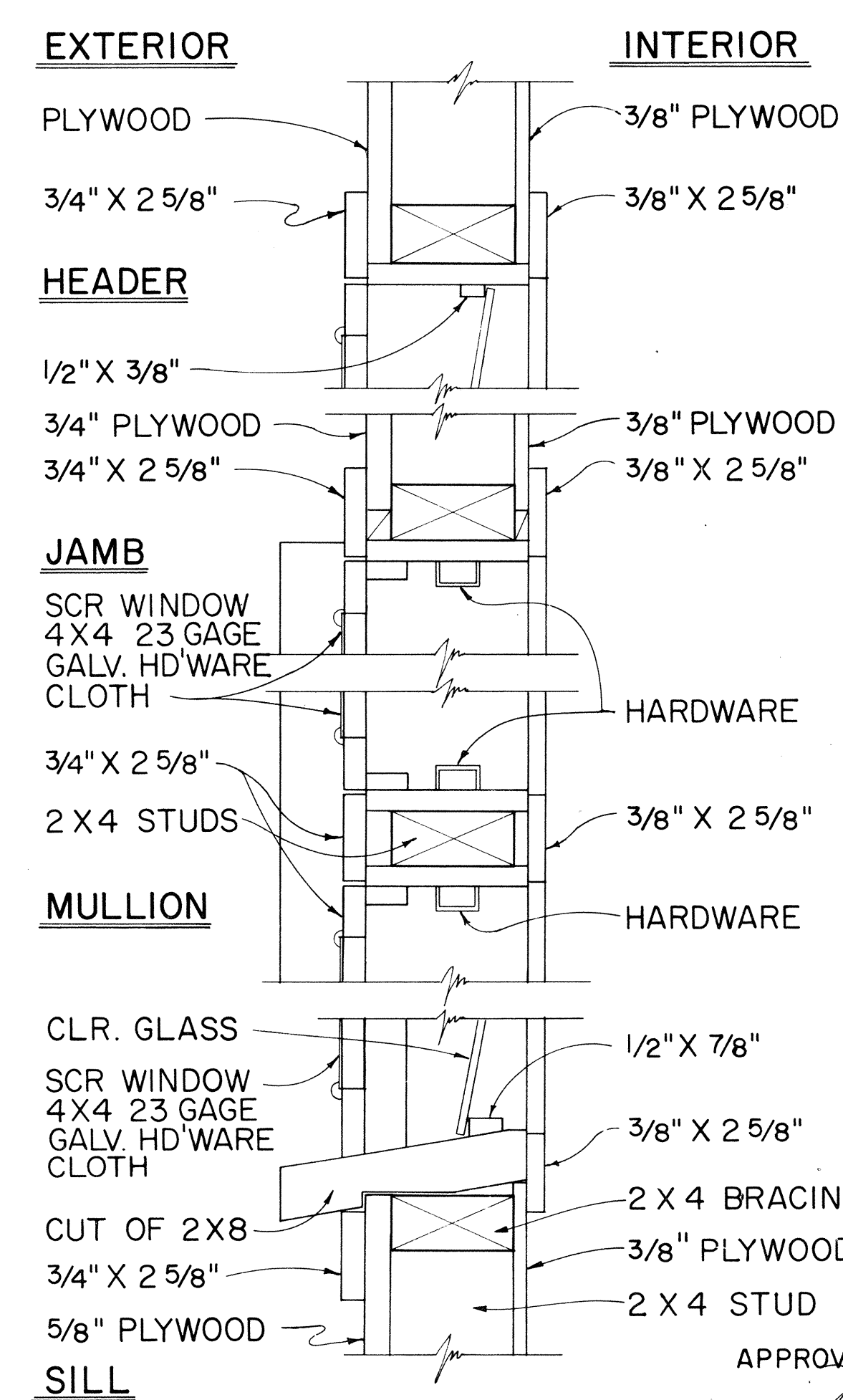
TYPICAL WORK TABLE DRAWER DETAIL



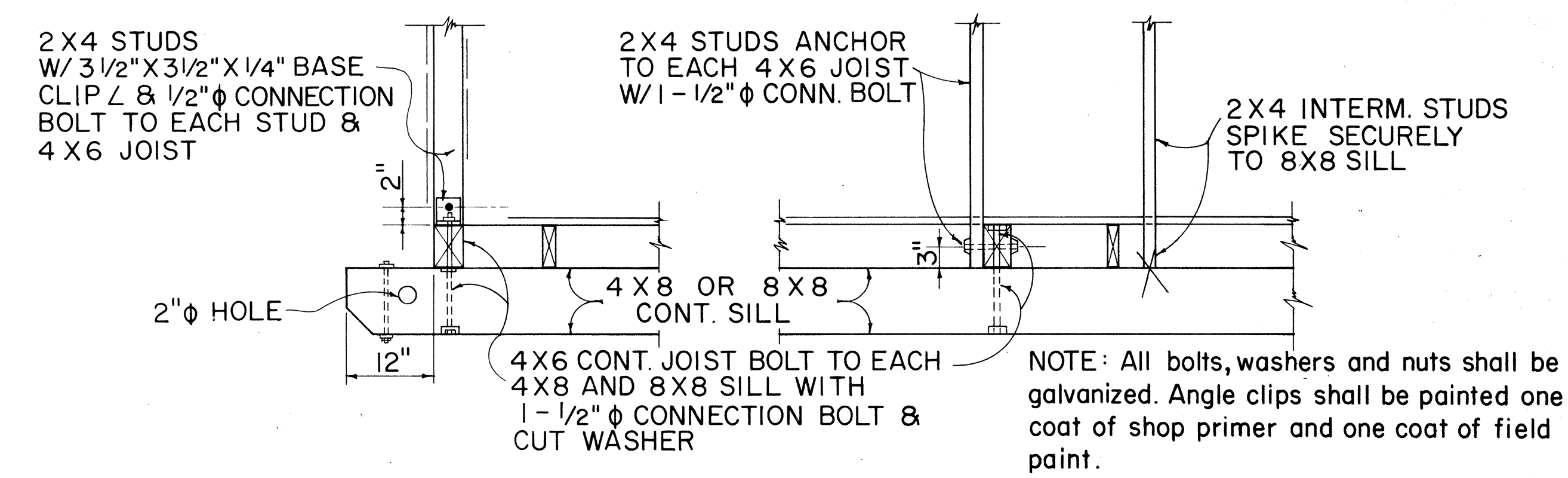
**TYP. SWING OUT DOOR
TYPICAL SINGLE OR DOUBLE
EXTERIOR DOOR DETAIL**



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.



**TYPICAL DETAIL
JALOUSIES WINDOWS**



AT ENDS OF BLDG. ALONG SIDES OF BLDG.

**TYPICAL 2 X 4 STUD & 4 X 6 FLOOR
JOIST BASE CONNECTION DETAILS**

DATE	12-4-69
DESIGNED BY	12-10-69
CHECKED BY	
QUANTITIES BY	
NOTE BOOK	
PLAN	
ORIGINAL	
SURVEY PLOTTED BY	

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

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

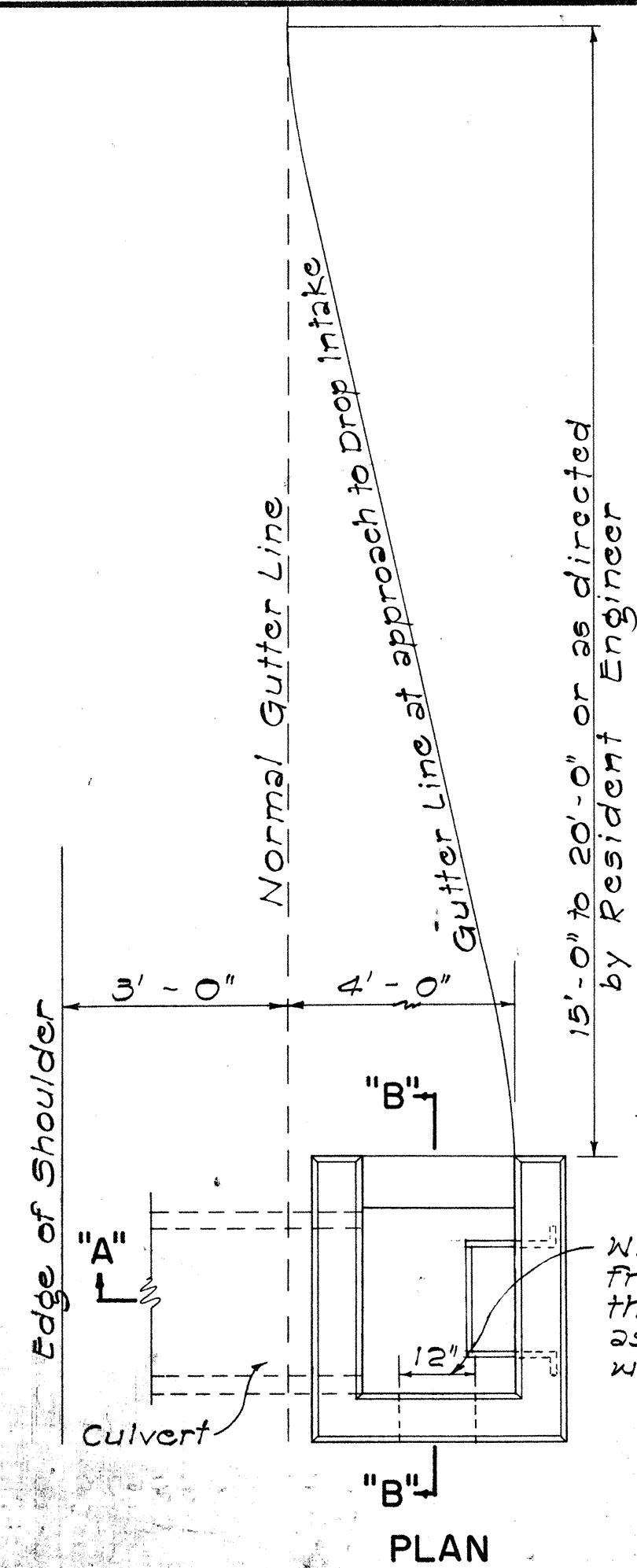
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

FIELD OFFICE
&
PROJECT SITE LABORATORY

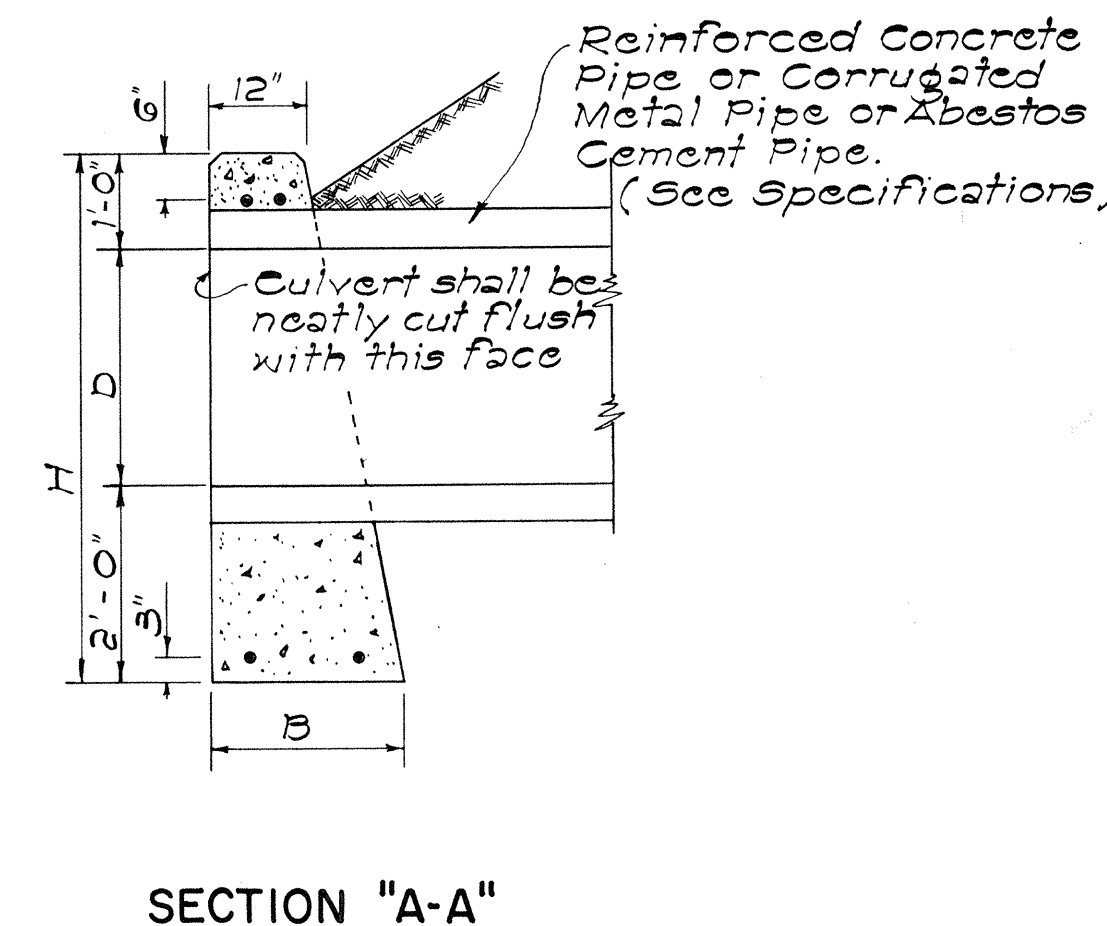
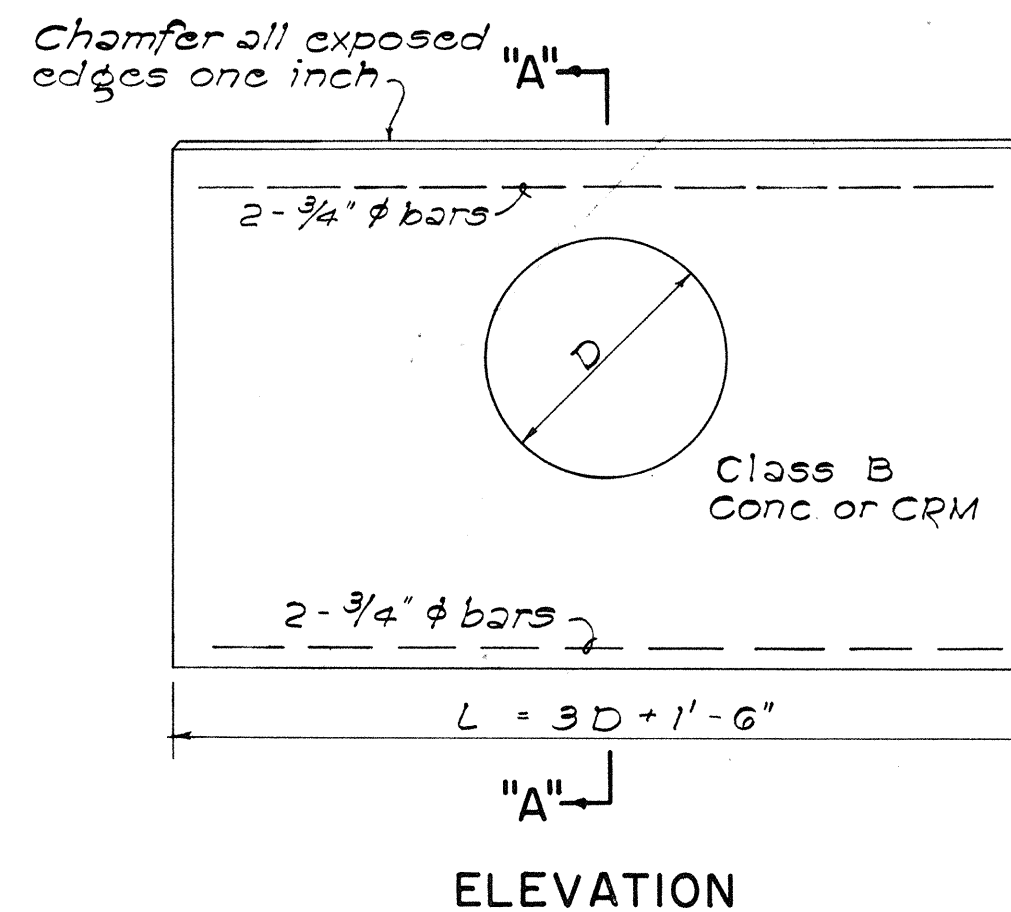
Scale: As Noted
SHEET No. 8 OF 27 SHEETS DD 636.5

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H0271 UNIT II	1979	20	38



DATA - CONC. DROP INTAKE						Where Variable Equals
D'	D	L-D'+6"	S	Cu. Yds.		
23"	18"	2'-5"	8"	1.41	4'-0"	
30"	24"	3'-0"	8"	1.72	5'-0"	
37"	30"	3'-7"	9"	2.32	5'-6"	
44"	36"	4'-2"	9"	2.73	6'-0"	
51"	42"	4'-9"	10"	3.54	6'-6"	
58"	48"	5'-4"	10"	4.01	7'-0"	

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

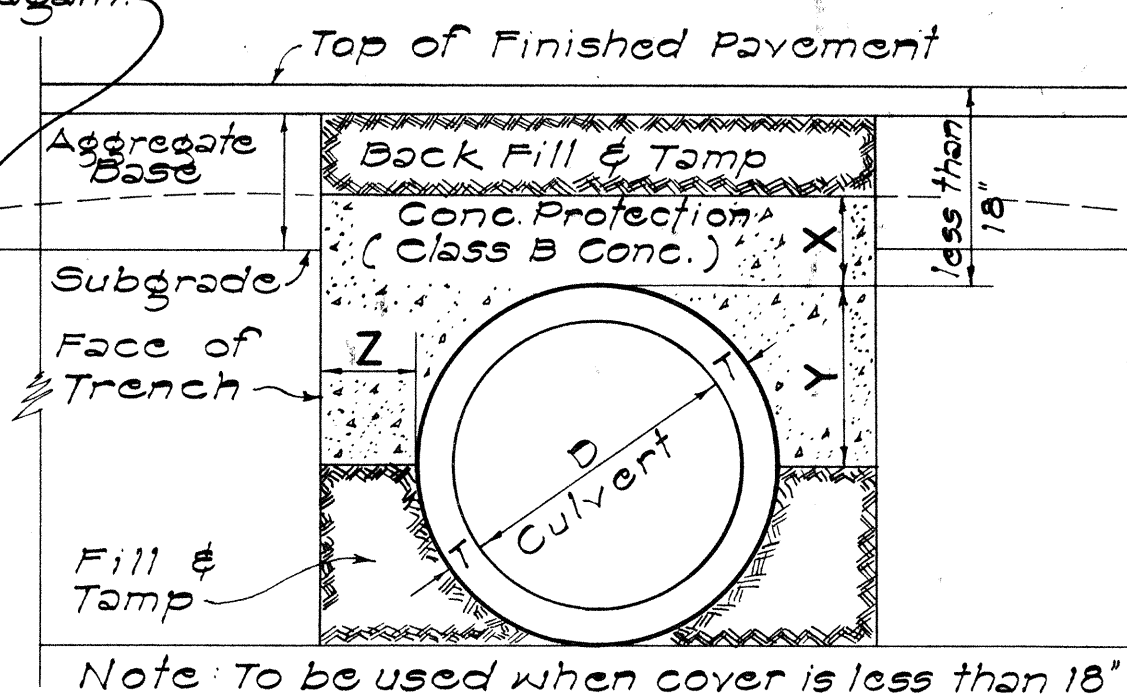


DATA FOR CONC. HEADWALL				Cl. B CONC. FOR R.C.P.	Cl. B CONC. FOR C.M.P.	Steel For One Headwall		
D	B	L	H	Cu. Yd.	Cu. Yd.	No. of Bars	Size	Length
18"	1'-6"	6'-0"	4'-6"	1.12	1.17	4	3/4"	5'-6"
24"	1'-6"	7'-6"	5'-0"	1.52	1.60	4	3/4"	7'-0"
30"	2'-0"	9'-0"	5'-6"	2.36	2.49	4	3/4"	8'-6"
36"	2'-0"	10'-6"	6'-0"	2.94	3.13	4	3/4"	10'-0"
42"	2'-6"	12'-0"	6'-6"	4.19	4.47	4	3/4"	11'-6"
48"	2'-6"	13'-6"	7'-0"	5.01	5.36	4	3/4"	13'-0"

DATA - MASONRY HEADWALL				CRM FOR R.C.P.	CRM FOR C.M.P.
D	B	L	H	Cu. Yd.	Cu. Yd.
18"	1'-9"	6'-0"	4'-6"	1.24	1.29
24"	2'-0"	7'-6"	5'-0"	1.83	1.92
30"	2'-3"	9'-0"	5'-6"	2.56	2.70
36"	2'-6"	10'-6"	6'-0"	3.43	3.66

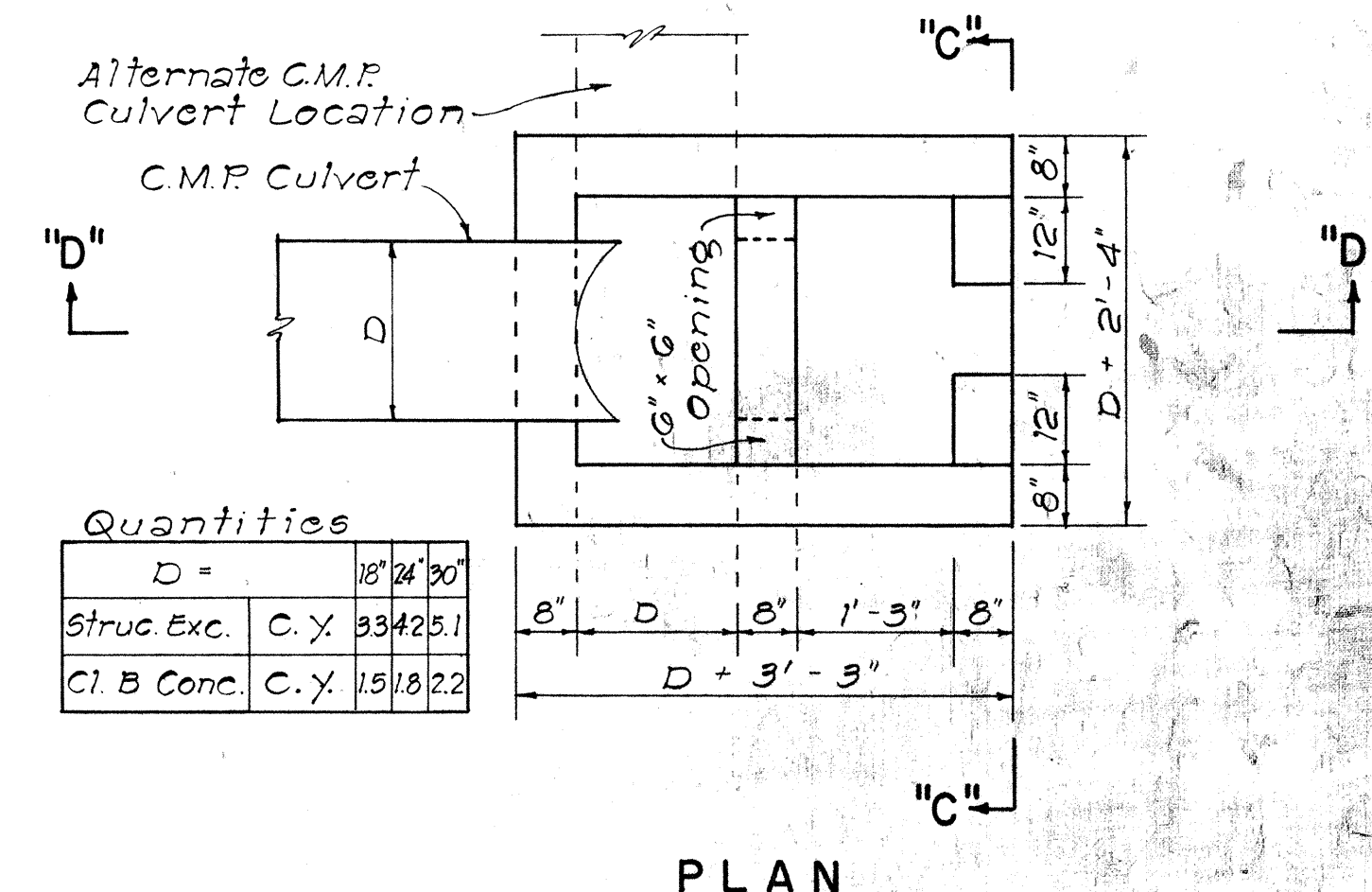
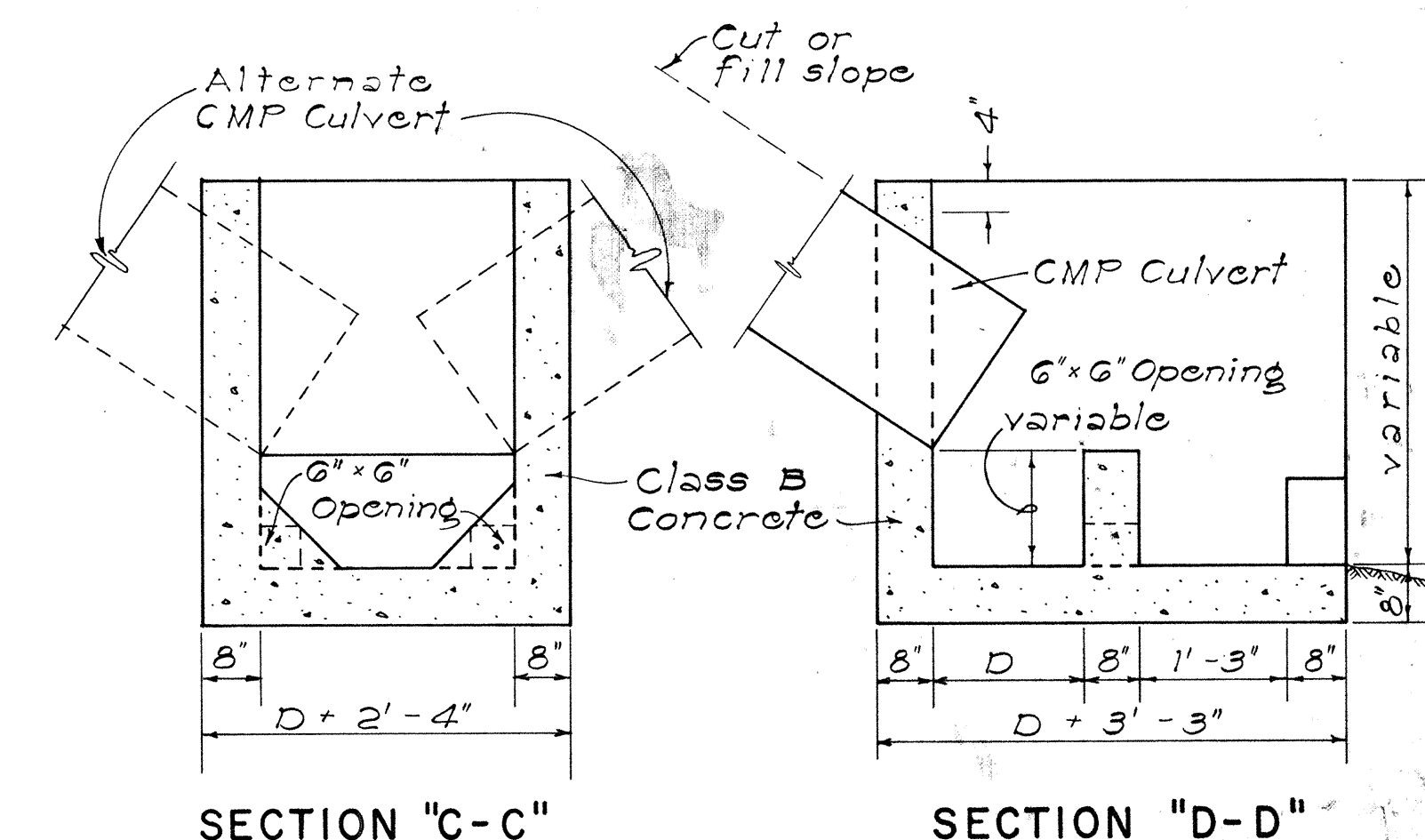
DETAIL OF HEADWALL
Scale: 1/2" = 1'-0"

Note: When subgrade is below top of jacket, it shall be fully compacted to this line and then re-excavated (struc. exc.) to proper subgrade. This surface shall be rolled again.



DATA FOR CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18" D.	$\frac{D}{2} + T$	Z must be from pipe to face of trench
7" for 24" D.		
8" for 30" D.		
9" for 36" D.		Minimum = X
10" for 42" D.		Maximum pay quantity will be Z = 12"
11" for 48" D.		
12" for 54" D.		

SECT. OF CULVERT WITH CONC. PROTECTION
Scale: 1" = 1'-0"



DETAILS OF CONC. DROP BOX AT
OUTLET OF CULVERT PIPE
NOT TO SCALE

APPROVAL RECOMMENDED:
[Signature]
HYDRAULIC DESIGN ENGINEER 12-17-69
DATE

APPROVED:
[Signature]
ASSISTANT CHIEF, ENGINEERING 12-17-69
DATE

NO.	REVISION	APPROVED BY	DATE
1	Spacing on Manhole Rungs to conform to OSHA.	H.T.	1-21-75

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
DROP INTAKE, HEADWALL &
CONCRETE PROTECTION

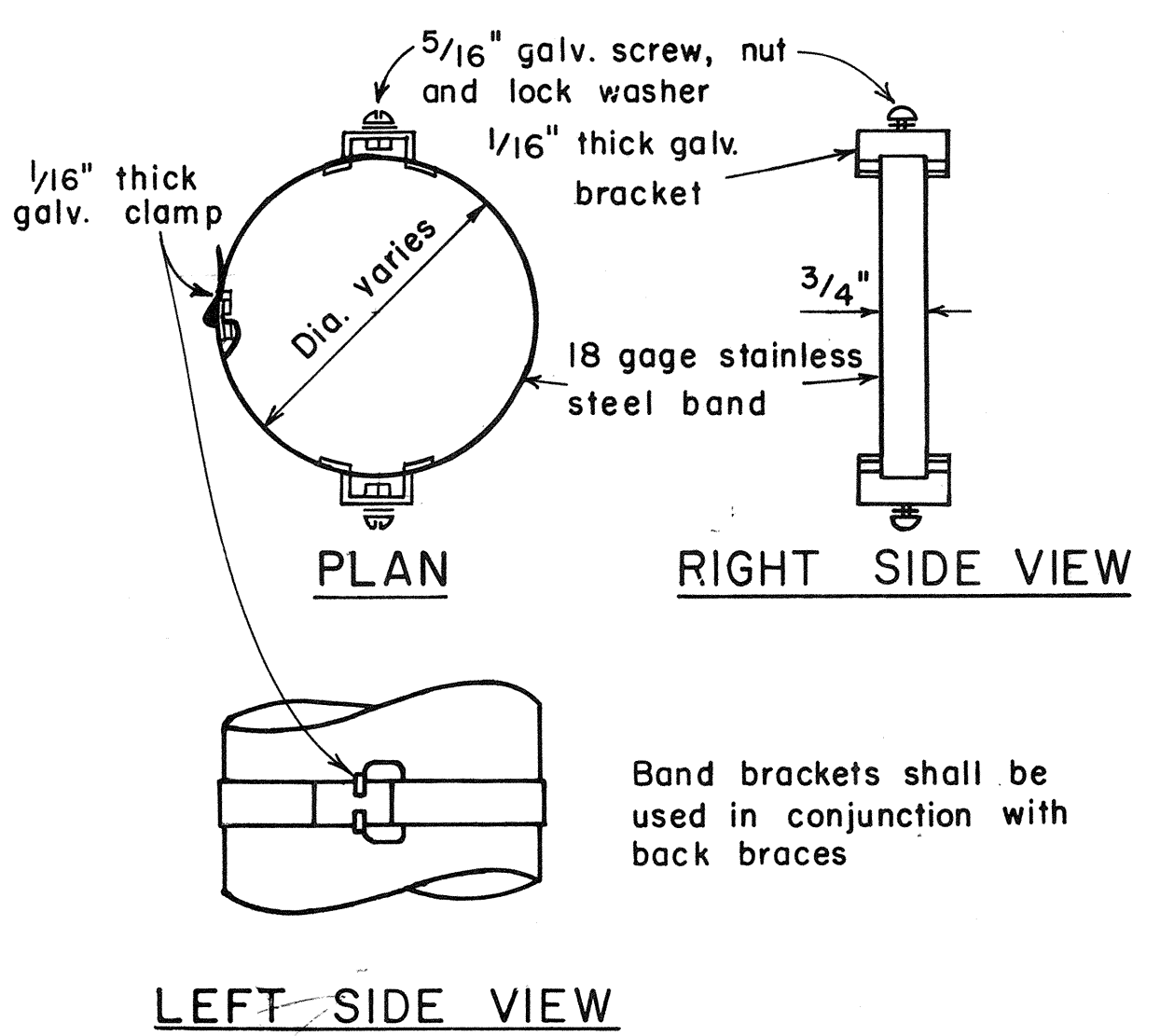
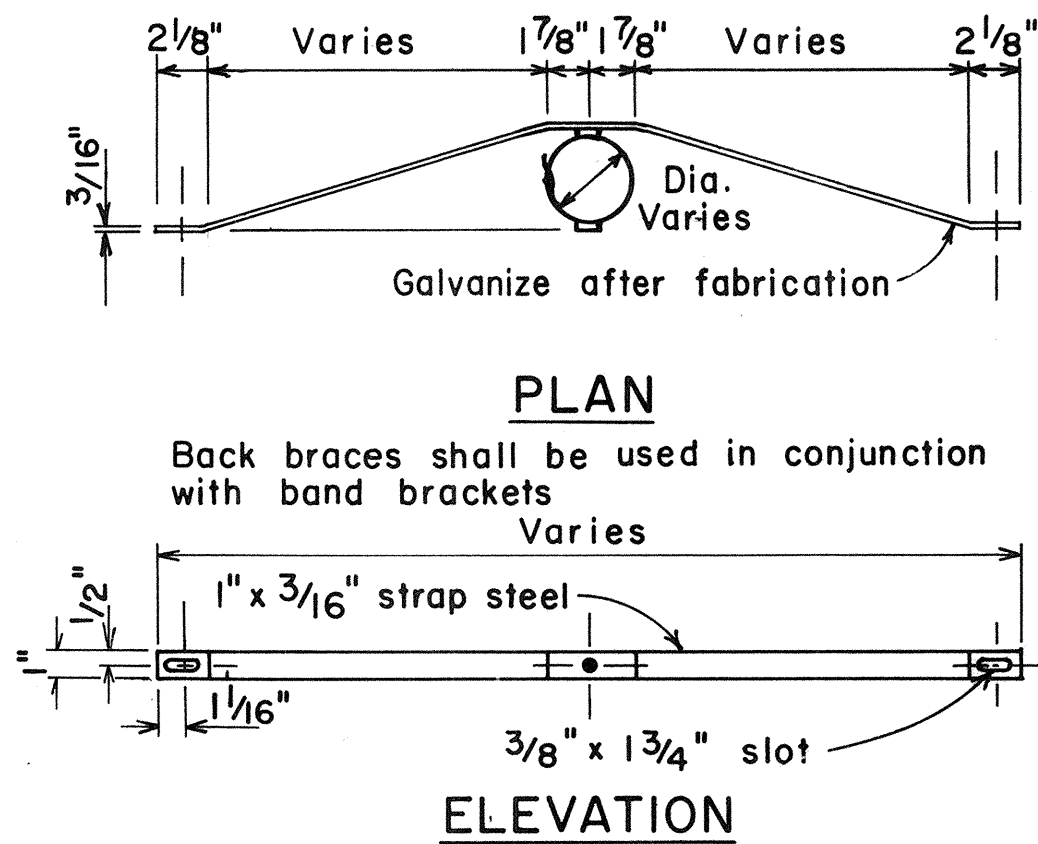
Scale: As Noted Date: Aug. 1967
SHEET No. 9 OF 21 SHEETS DH 10

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	21	38

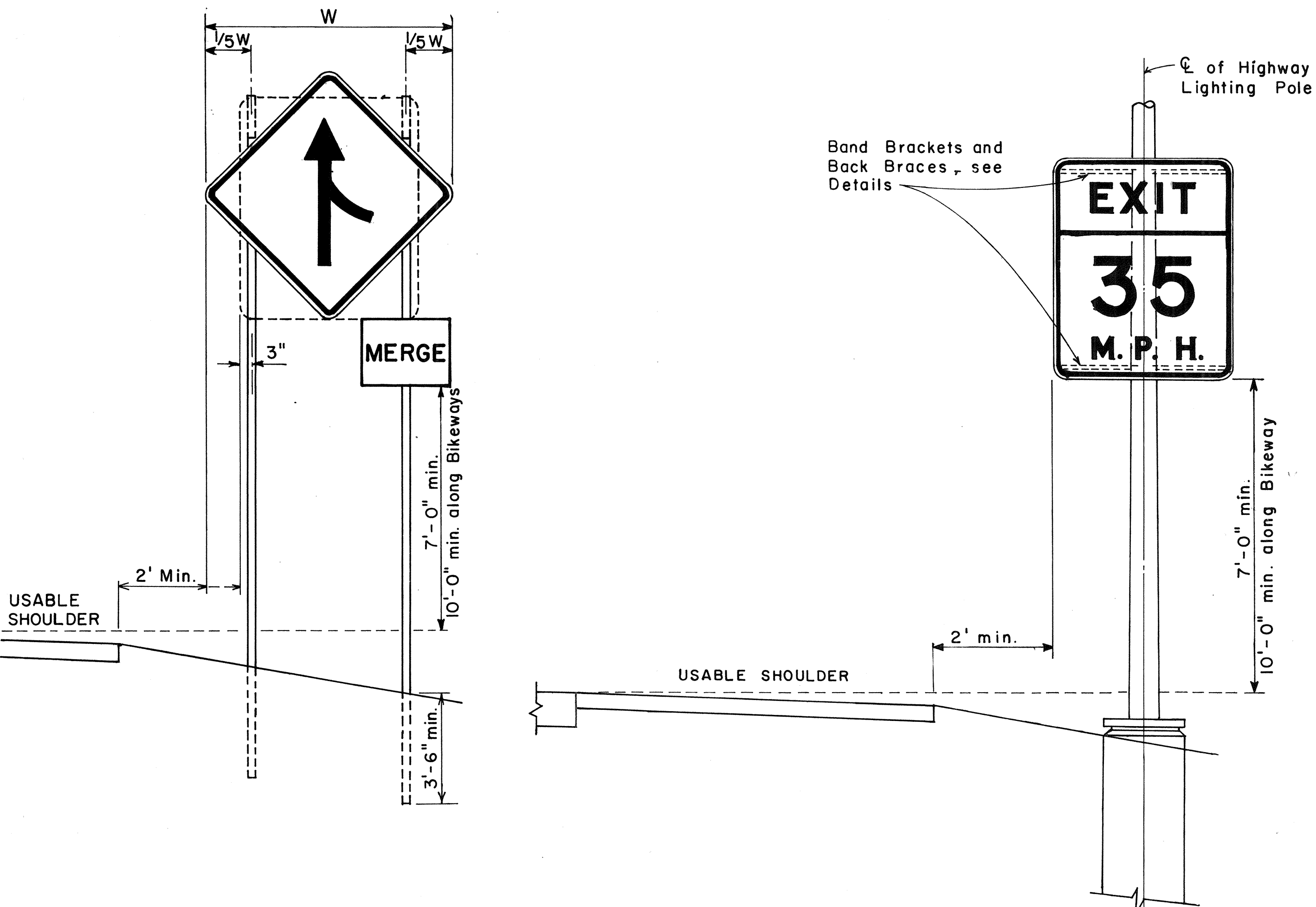
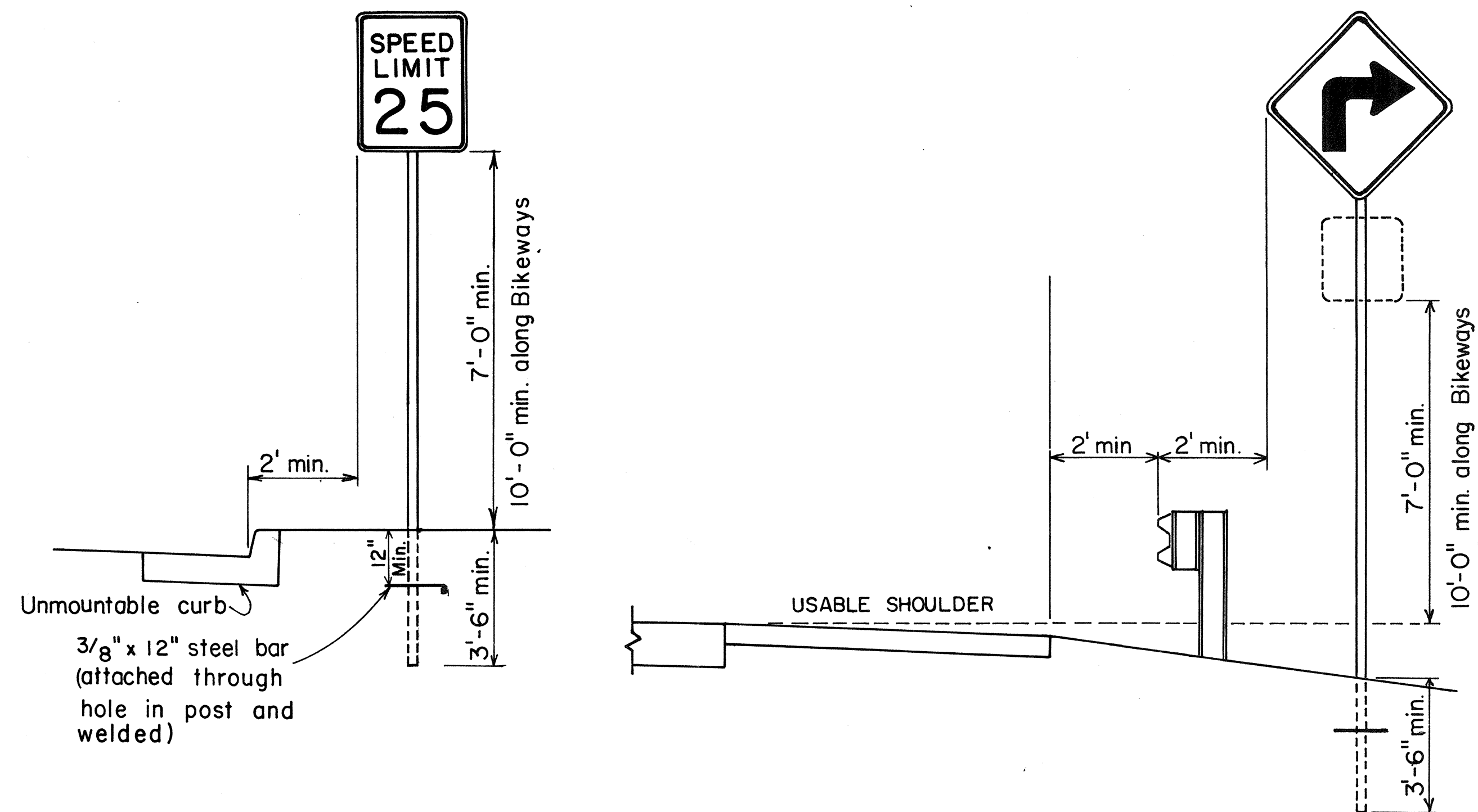
GENERAL NOTES

- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two sign posts.
- All signs larger than 10 sq. ft. in area or 48" inches and wider, and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least two sets of band brackets and back braces.
- All signs 28 sq. ft. in area or larger and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least three sets of band brackets and back braces.
- 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.
- (R) or (L) indicates right or left and shall be as shown on the plans.

BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS



HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION

APPROVAL RECOMMENDED:
Erich Tanaka 11/10/77
TRAFFIC ENGINEER DATE

APPROVED:
Herbert A. Sakai 11/15/77
ASSISTANT CHIEF, ENGINEERING DATE

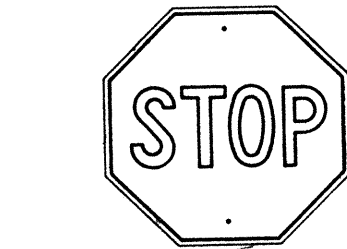
NO.	REVISION	APPROVED BY	DATE
1	Supercedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

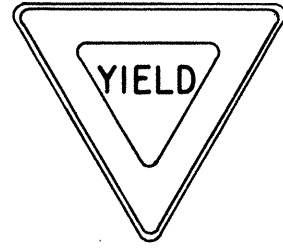
STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale June, 1977

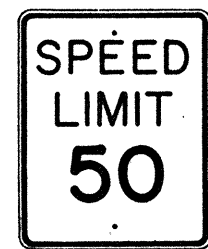
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	22	38



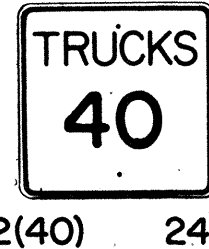
R1-1 30"x 30"
R1-1-A 36"x 36"
4-WAY
R1-3 12"x 6"
R1-3-A 18"x 9"



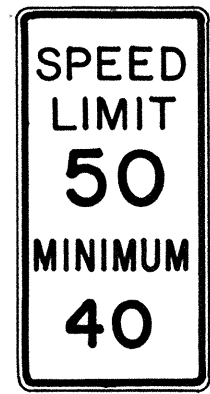
R1-2 36"x 36"x 36"
R1-2-A 48"x 48"x 48"



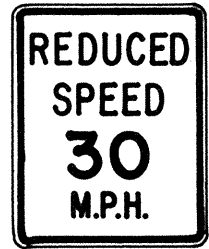
R2-1(50) 24"x 30"
R2-1(50)-A 48"x 60"



R2-2(40) 24"x 24"
R2-2(40)-A 48"x 48"



R2-4a(50/40) 24"x 48"
R2-4a(50/40)-A 48"x 96"



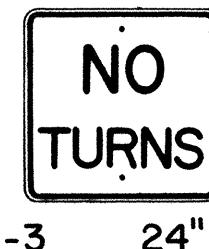
R2-5b(30) 24"x 30"
R2-5b(30)-A 48"x 60"



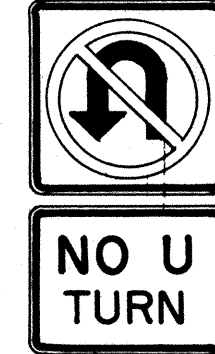
R3-1 24"x 24"
24"x 18"
R3-1-A 48"x 48"
48"x 36"



R3-2 24"x 24"
24"x 18"
R3-2-A 48"x 48"
48"x 36"



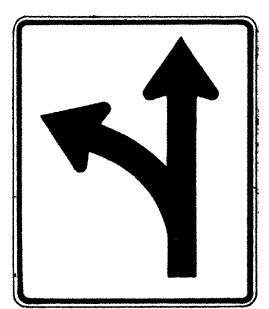
R3-3 24"x 24"
R3-3-A 48"x 48"



R3-4 24"x 24"
24"x 18"
R3-4-A 48"x 48"
48"x 36"



R3-5(L) 30"x 36"
R3-5(L)-A 48"x 60"



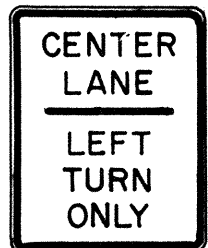
R3-6(L) 30"x 36"
R3-6(L)-A 48"x 60"



R3-7(R) 30"x 30"
R3-7(R)-A 48"x 48"



R3-8(L) 30"x 30"
R3-8(L)-A 36"x 36"
R3-8(L)-B 48"x 48"



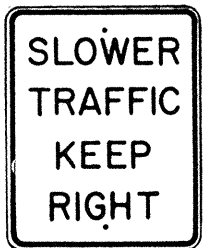
R3-9 24"x 30"



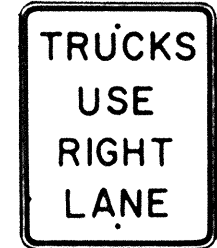
R4-1 24"x 30"



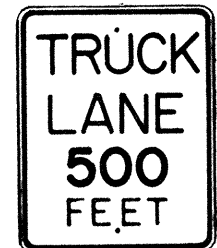
R4-2 24"x 30"



R4-3 24"x 30"
R4-3-A 48"x 60"



R4-5 24"x 30"



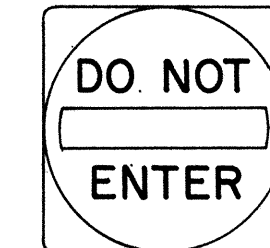
R4-6(500) 24"x 30"



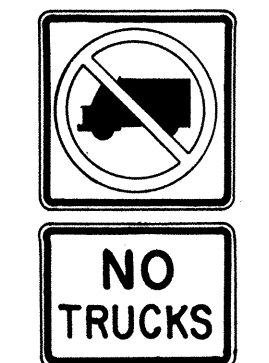
R4-7 24"x 30"
24"x 18"



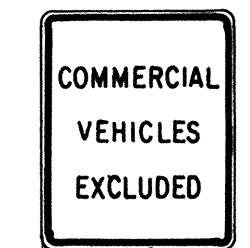
R4-8 24"x 30"
24"x 18"



R5-1 30"x 30"
R5-1-A 48"x 48"



R5-2 24"x 24"
24"x 18"



R5-4 24"x 30"



R5-6 24"x 24"
24"x 18"



R5-9 36"x 24"



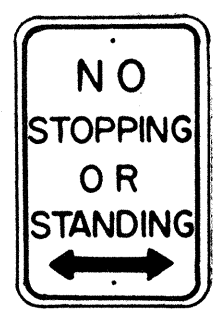
R6-1 (R) 36"x 12"



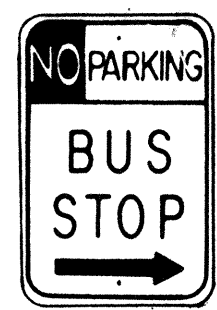
R6-2(R) 18"x 24"



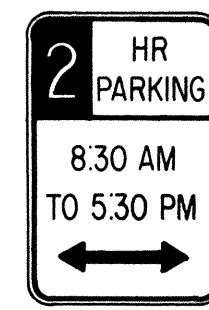
R7-1 12"x 18"
R7-1-A 24"x 30"



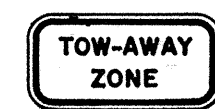
R7-4 12"x 18"
R7-4-A 24"x 30"



R7-107(R) 12"x 18"



R7-108 12"x 18"



R7-201 12"x 6"
R7-201-A 24"x 12"



R8-1 24"x 30"



R8-2 24"x 30"



R8-3 24"x 30"



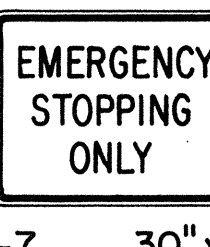
R8-4 30"x 24"
R8-4-A 48"x 36"



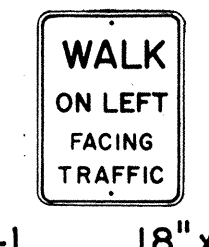
R8-5 24"x 30"



R8-6 24"x 30"



R8-7 30"x 24"
R8-7-A 48"x 36"



R9-1 18"x 24"



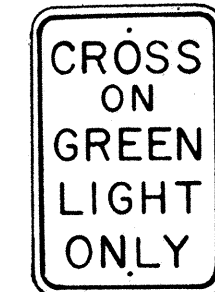
R9-2 12"x 18"



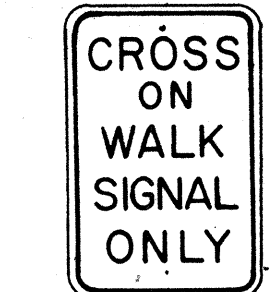
R9-3 12"x 18"



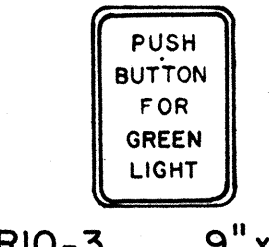
R9-4 18"x 24"



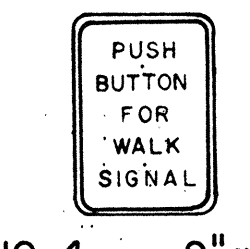
R10-1 12"x 18"



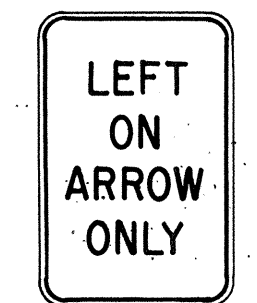
R10-2 12"x 18"



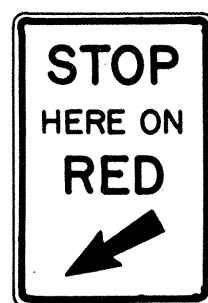
R10-3 9"x 12"



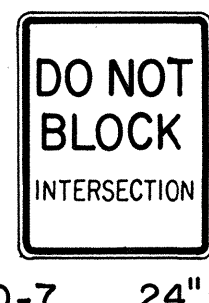
R10-4 9"x 12"



R10-5 24"x 30"



R10-6 24"x 36"



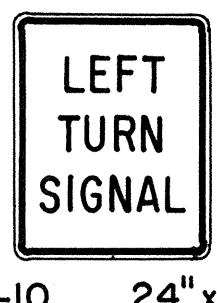
R10-7 24"x 30"



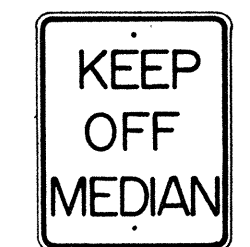
R10-8 24"x 30"



R10-9 24"x 30"



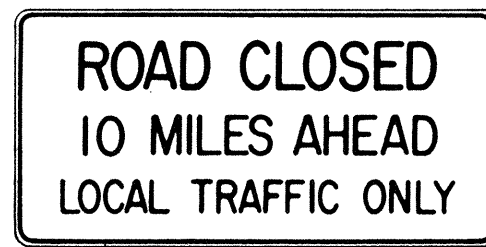
R10-10 24"x 30"



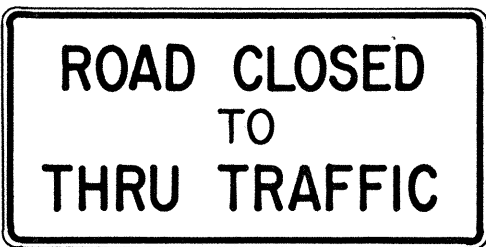
R11-1 24"x 30"



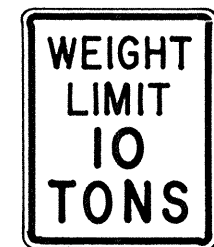
R11-2 48"x 30"



R11-3(10) 60"x 30"



R11-4 60"x 30"



R12-1(10) 24"x 30"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER Euschi Tanaka 3/11/72
DATE

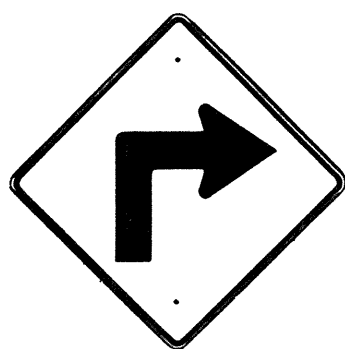
APPROVED:
ASSISTANT CHIEF, ENGINEERING Robert Zelen 2-20-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.C.	3/20/72
2	Revised General Note 1.	H.C.	10/14/74

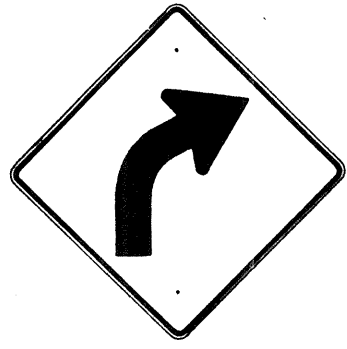
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION STANDARD DETAILS REGULATORY SIGNS NOT TO SCALE SHEET No. <u>22</u> OF <u>21</u> SHEETS DT 101
--

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
ORIGINAL	
PLAN	
SECTION	
DETAIL	
NO.	

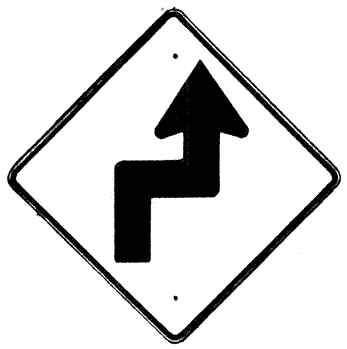
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	196H-02-11 UNIT II	1979	23	38



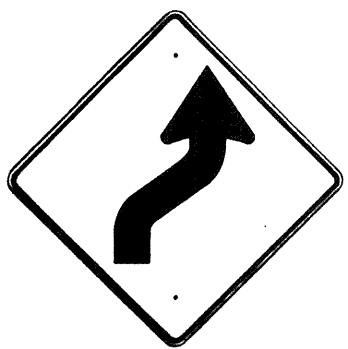
W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



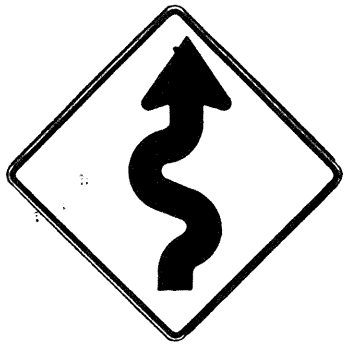
W1-2(R) 30"x30"
W1-2(R)-A 48"x48"



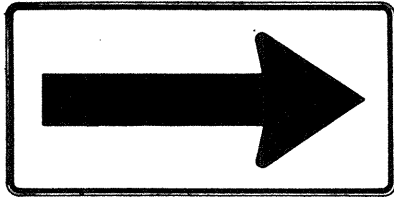
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



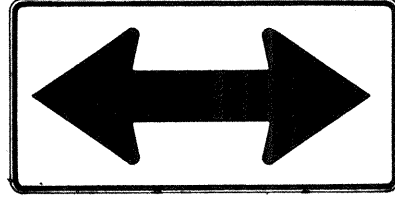
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



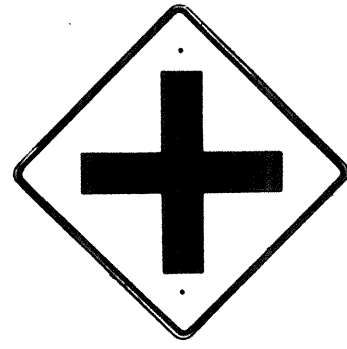
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



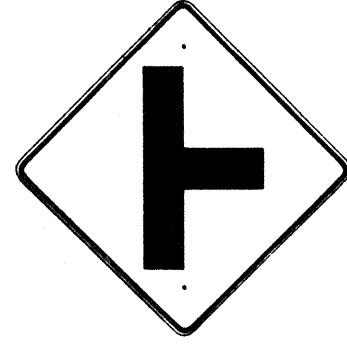
W1-6 48"x24"



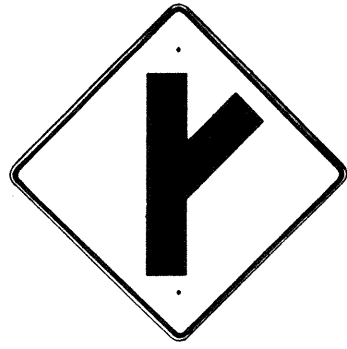
W1-7 48"x24"



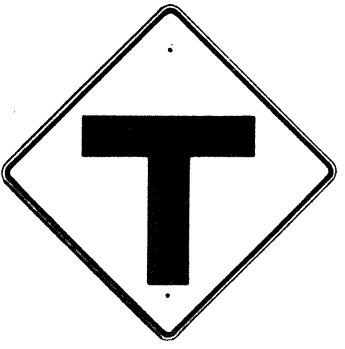
W2-1 30"x30"
W2-1-A 48"x48"



W2-2 30"x30"
W2-2-A 48"x48"



W2-3(R) 30"x30"
W2-3(R)-A 48"x48"



W2-4 30"x30"
W2-4-A 48"x48"



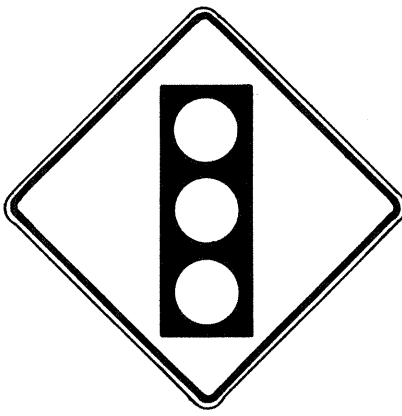
W2-5 30"x30"
W2-5-A 48"x48"



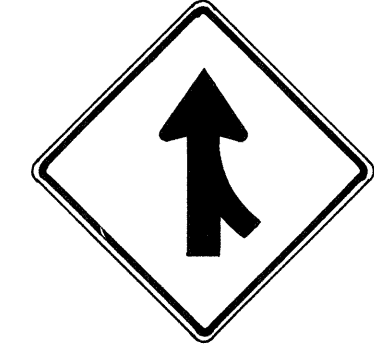
W3-1 30"x30"
W3-1-A 36"x36"



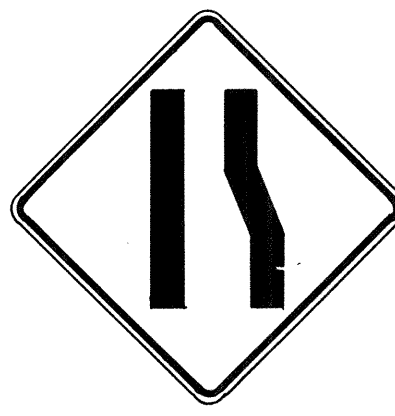
W3-2 30"x30"
W3-2-A 36"x36"



SIGNAL AHEAD
W3-3 36"x36"
24"x18"



MERGE
W4-1(R) 30"x30"
24"x18"
W4-1(R)-A 48"x48"
24"x18"



W4-2(R) 36"x36"
W4-2(R)-A 48"x48"



W5-1 36"x36"



W5-2 30"x30"
W5-2-A 36"x36"



W5-3 36"x36"



DIVIDED HIGHWAY
W6-1 36"x36"
24"x18"



DIVIDED HIGHWAY ENDS
W6-2 36"x36"
24"x18"



TWO WAY TRAFFIC
W6-3 30"x30"
24"x18"

W6-3-A 36"x36"
24"x18"

W6-3-B 48"x48"
24"x18"



HILL
W7-1 30"x30"
24"x18"

W7-1-A 36"x36"
24"x18"



USE LOW GEAR
W7-2 24"x18"



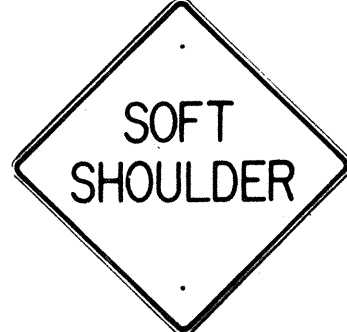
BUMP
W8-1 30"x30"
W8-1-A 36"x36"



W8-2 30"x30"
W8-2-A 36"x36"



W8-3 30"x30"
W8-3-A 36"x36"



W8-4 30"x30"
W8-4-A 36"x36"



SLIPPERY WHEN WET
W8-5 30"x30"
24"x18"
W8-5-A 36"x36"
24"x18"



RIGHT LANE ENDS
W9-1(R) 30"x30"
W9-1(R)-A 36"x36"
W9-1(R)-B 48"x48"



LANE ENDS MERGE LEFT
W9-2(L) 36"x36"
W9-2(L)-A 48"x48"



W10-1 36" Diameter



BIKE XING
W11-1 30"x30"
24"x18"

W11-1-A 36"x36"
24"x18"



PED XING
W11-2 30"x30"
24"x18"

W11-2-A 36"x36"
24"x18"



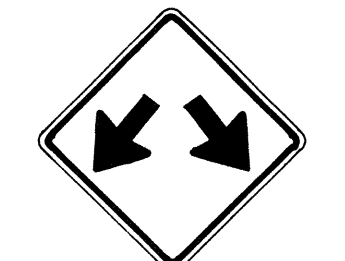
CATTLE XING
W11-4 30"x30"
24"x18"

W11-4-A 36"x36"
24"x18"



FARM MACHINERY
W11-5 30"x30"
24"x18"

W11-5-A 36"x36"
24"x18"



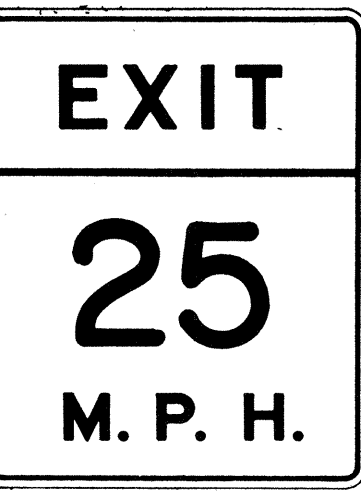
W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"



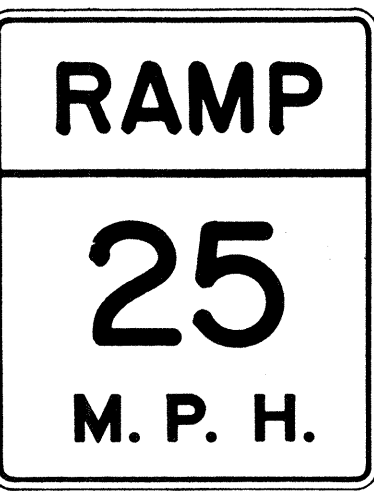
LOW CLEARANCE
W12-2(12'-6") 36"x36"
24"x18"



25 M.P.H.
W13-1(25) 18"x18"
W13-1(25)-A 24"x24"



W13-2(25) 48"x60"



W13-3(25) 48"x60"



W14-1 30"x30"



W14-3 36"x48" x 48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All warning signs shall be reflectorized unless otherwise specified.
- All warning signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- Signs prefixed with "CW" on the plans shall indicate orange and black construction signs, and shall be reflectorized.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER

3/17/72
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING

3-20-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.C.	3/20/72
2	Revised General Note 1	H.C.	10/16/74
3	Revised General Note 5	M.H.	9-16-75
4	Revised General Note 5	H.C.	9-14-76

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION	
STANDARD DETAILS WARNING SIGNS	
NOT TO SCALE	
SHEET No. 12 OF 21 SHEETS DT 102	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	24	38



CW20-1a 48" x 48"



CW20-2d 48" x 48"



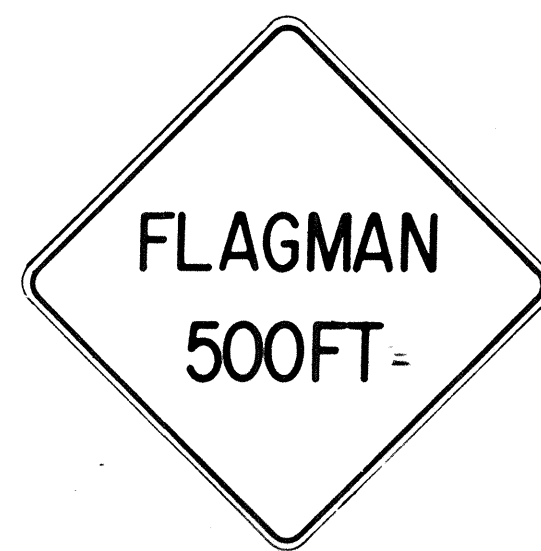
CW20-3b 48" x 48"



CW20-4d 48" x 48"



CW20-5d(L) 48" x 48"



CW20-7c 48" x 48"



CW21-1 30" x 30"



CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



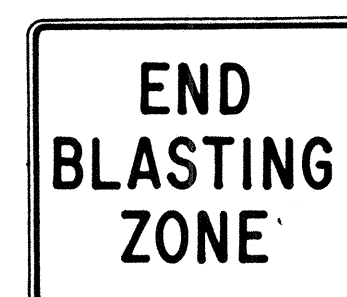
CW21-6 30" x 30"



CW22-1b 48" x 48"



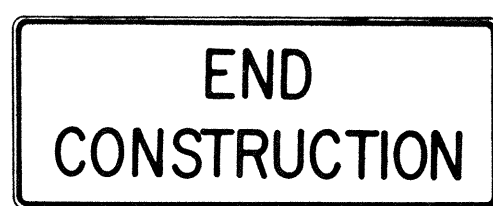
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



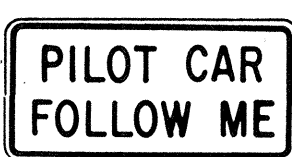
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



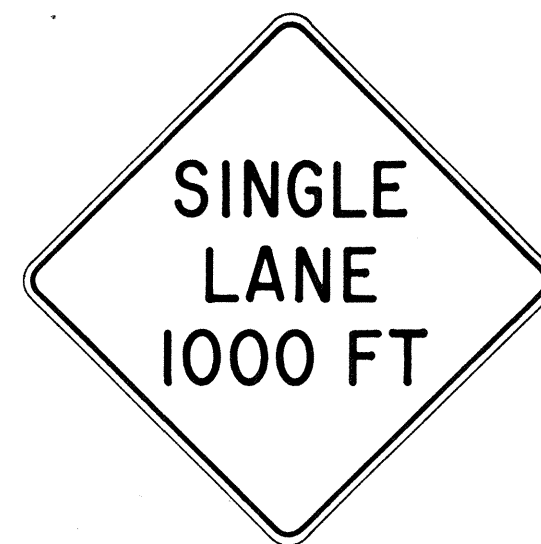
CM4-10(R) 48" x 18"



CG20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All construction signs shall be reflectorized.
- All construction signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- For "CW" series signs, suffixes a,b,c and d are as follows:
a-1500 FT, b-1000 FT,
c-500 FT and d-AHEAD.

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	H.T.	3/23/72
2	Revised General Note 1	H.T.	10/16/74
3	Revised General Note 2	MH	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	H.T.	9-14-76

APPROVAL RECOMMENDED:
Erich Tanaka 3/21/72
TRAFFIC ENGINEER DATE

APPROVED:
Walter S. S. S. 2/23/72
ASSISTANT CHIEF, ENGINEERING DATE

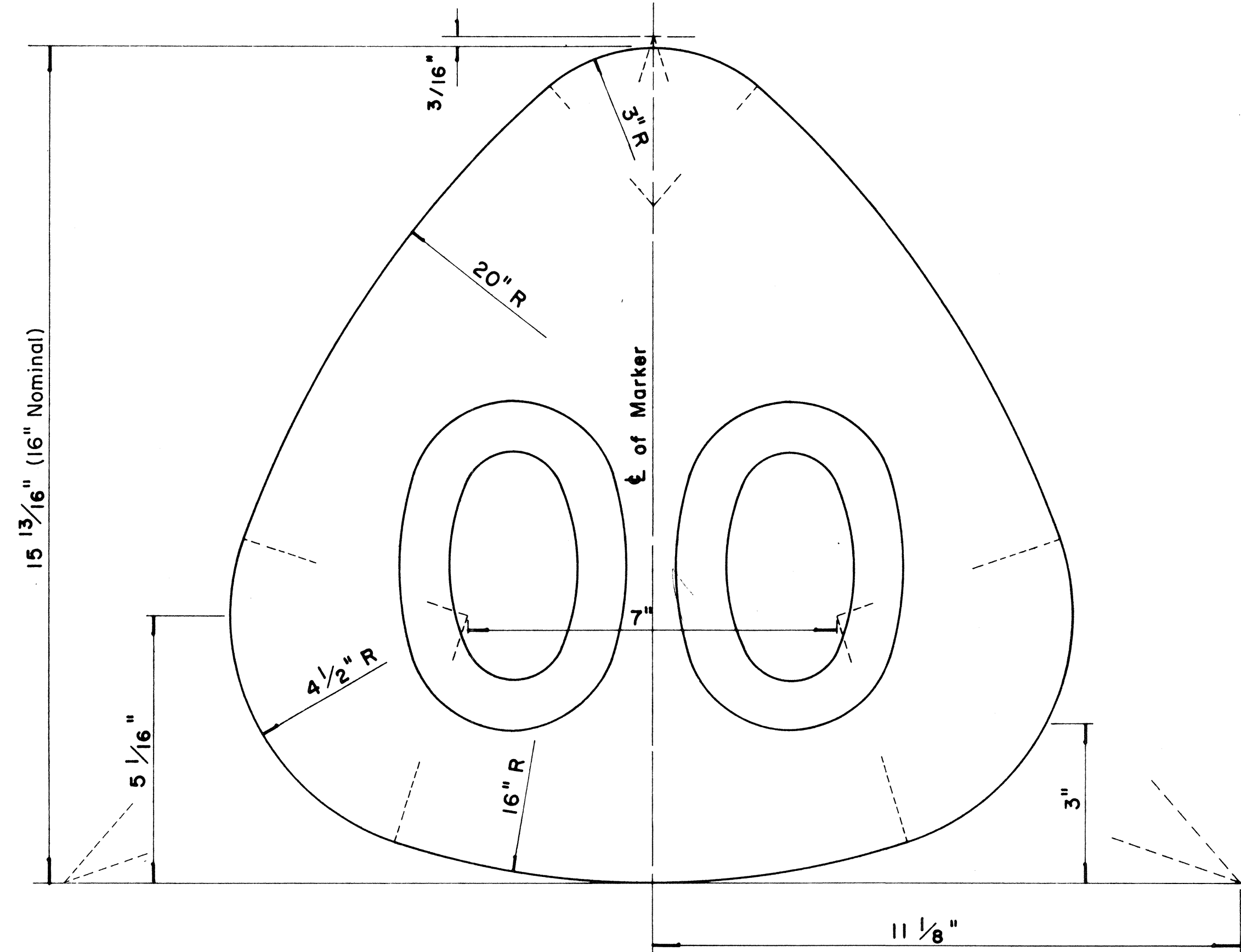
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 13 OF 21 SHEETS DT 104

MARKER SIZE	MULTIPLY DIMENSIONS BY	NUMERAL SIZE
		2 Digit - Series D 3 Digit - Series C
21"	1.3	8"
32"	2.0	12"
42"	2.63	16"



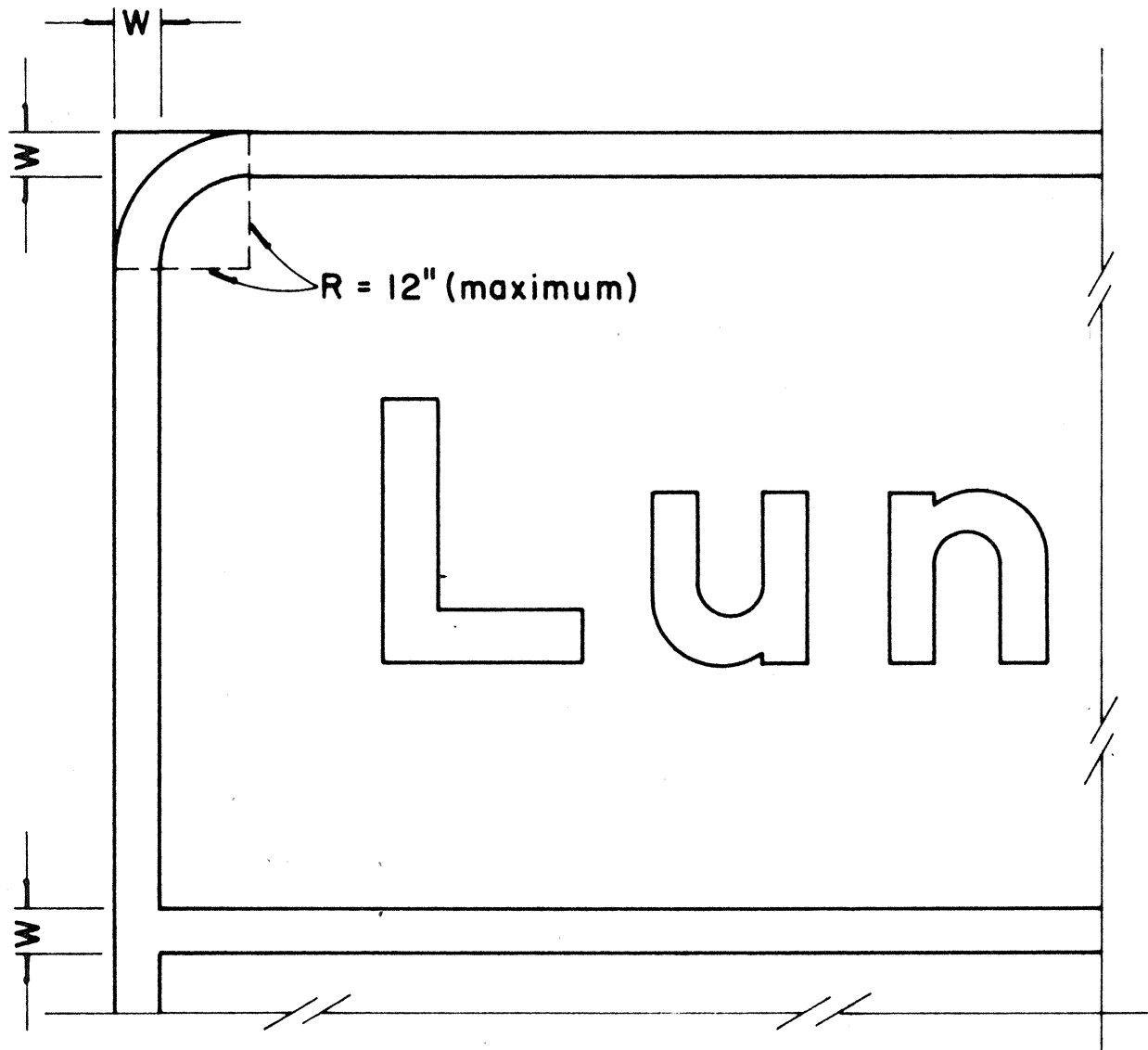
STATE ROUTE MARKER
FOR GUIDE SIGNS

Scale: Half Size

NOTE:

- State Route Markers on Guide signs shall have black numerals on a white reflectorized background mounted on a flat aluminum cut-out.
- Numerals shall conform to the FHWA publication "Standard Alphabets for Highway Signs," 1966.
- Cut-outs shall be fastened on sign panel with aluminum blind rivets. See Standard Specifications.

RADII FOR SIGNS		
Least Dimension of Sign	W	R
2' - 0" to 4' - 6"	2"	3"
4' - 9" to 5' - 6"	2"	6"
5' - 9" to 7' - 6"	2"	9"
7' - 9" and greater	2"	12"



BORDER DETAIL
FOR GUIDE SIGNS

Not to Scale

NOTE:

- Area outside corner radius need not be trimmed.
- All borders shall be white reflectorized cut-outs.
- All Guide signs shall have borders.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-11 UNIT II	1979	25	38

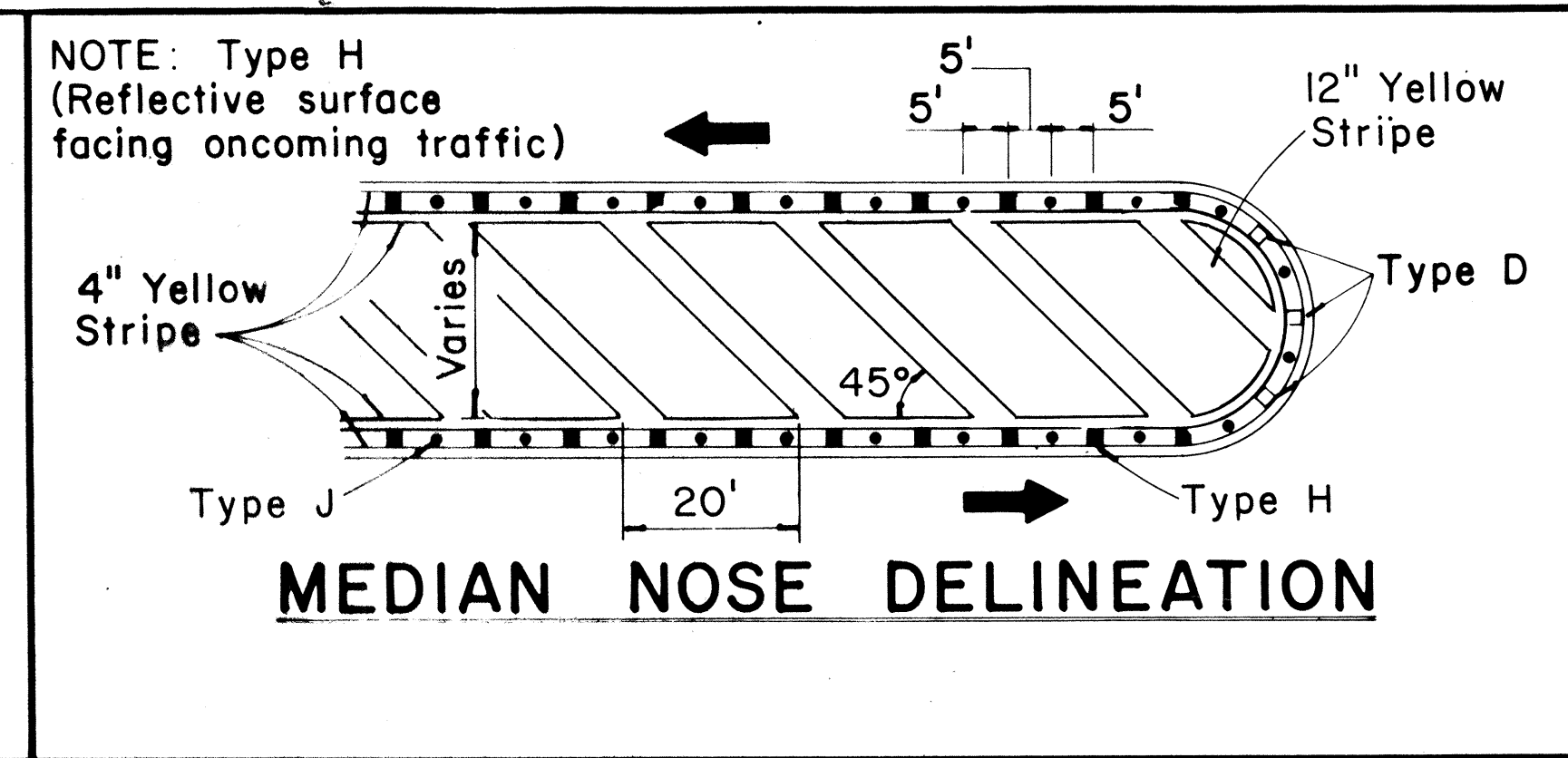
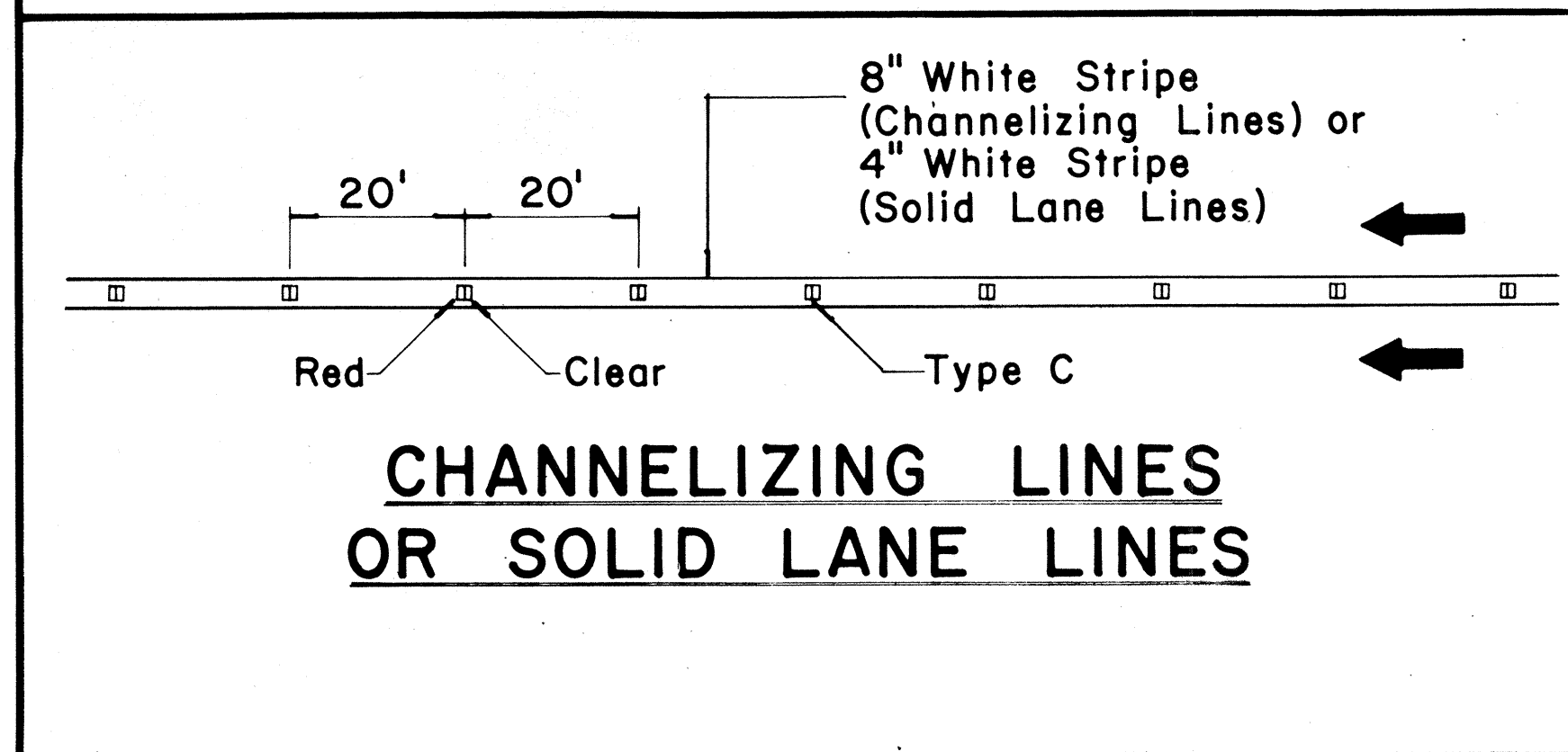
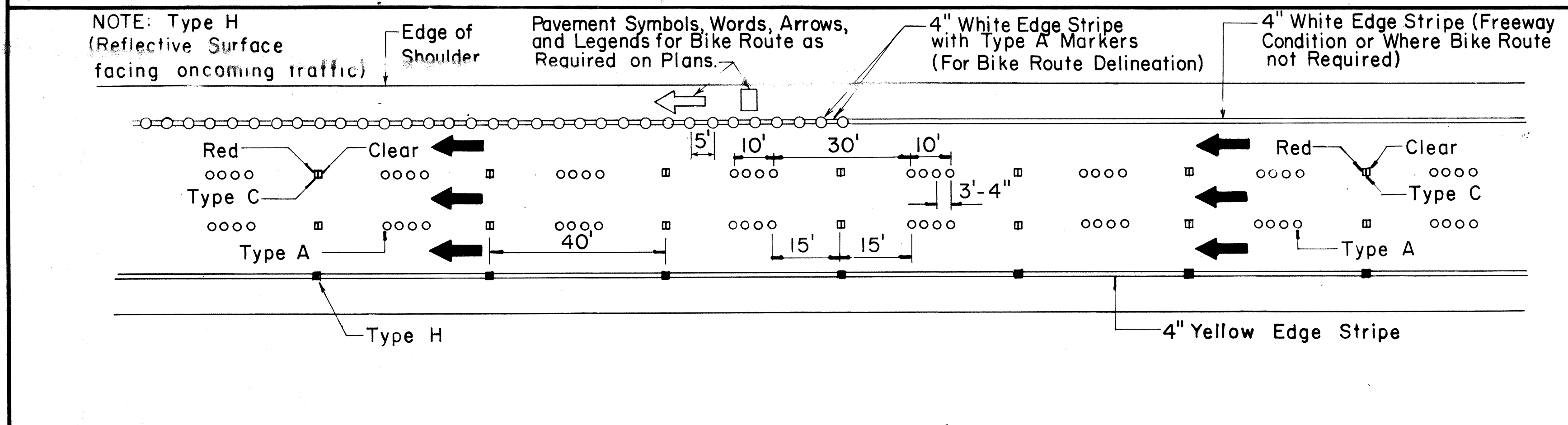
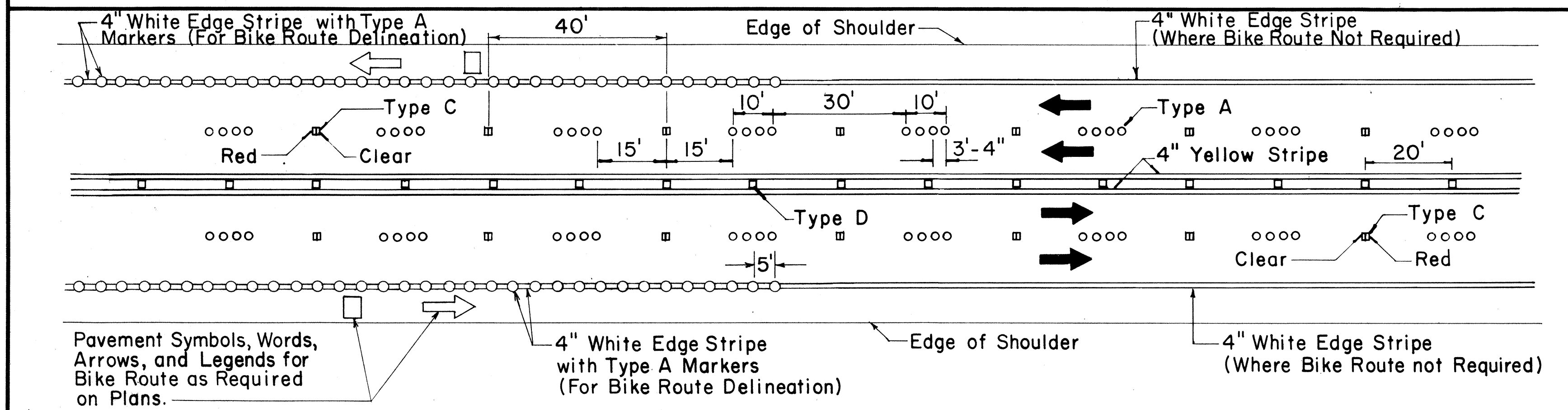
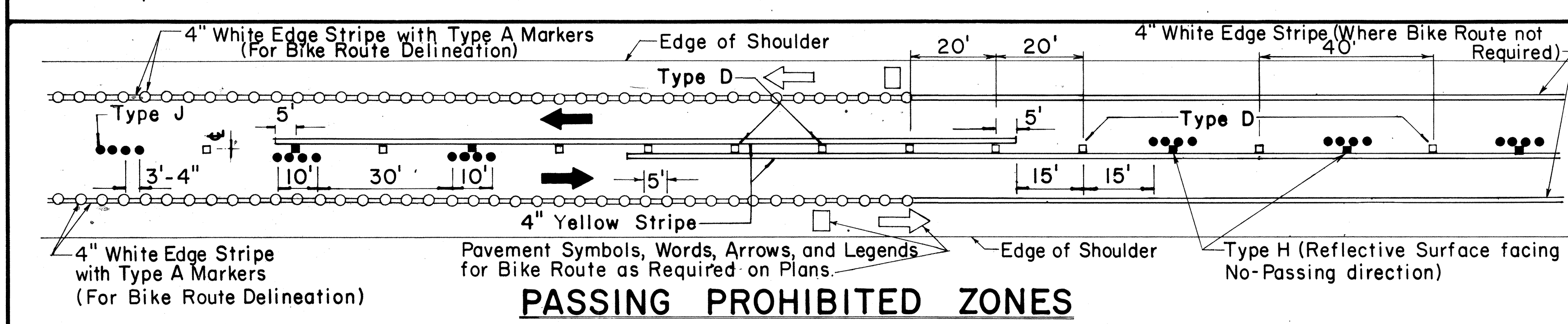
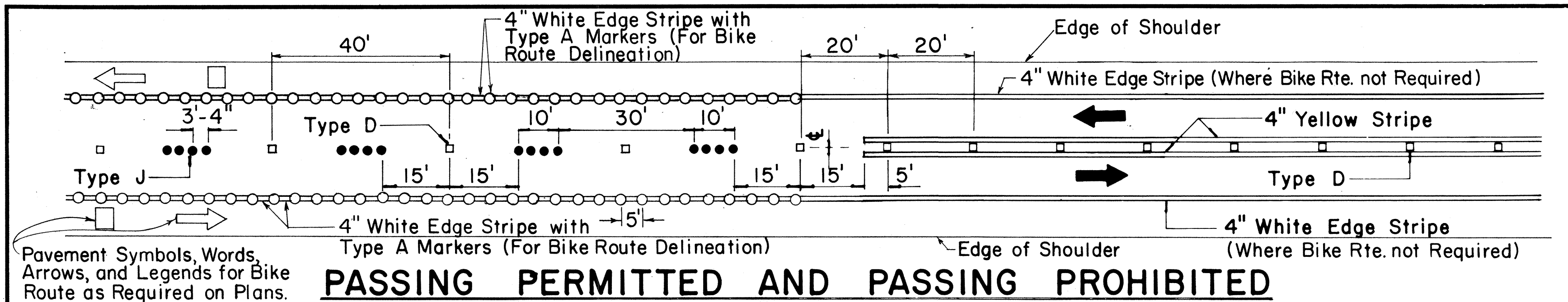
APPROVAL RECOMMENDED:		
<i>Erich Tanaka</i>	TRAFFIC ENGINEER	4/11/72 DATE
APPROVED:		
<i>Walter Z. Zalsinski</i>	ASSISTANT CHIEF, ENGINEERING	4/12/72 DATE

NO	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 209 Approved 12-30-69	H.T.	4/12/72
2	Revised Notes and Schedules	H.T.	9-14-70

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION STANDARD DETAILS STATE ROUTE MARKER AND BORDER DETAIL FOR GUIDE SIGNS Scale: As Shown SHEET No. 14 OF 21 SHEETS DT 209

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1964-0271 UNIT II	1979	26	38

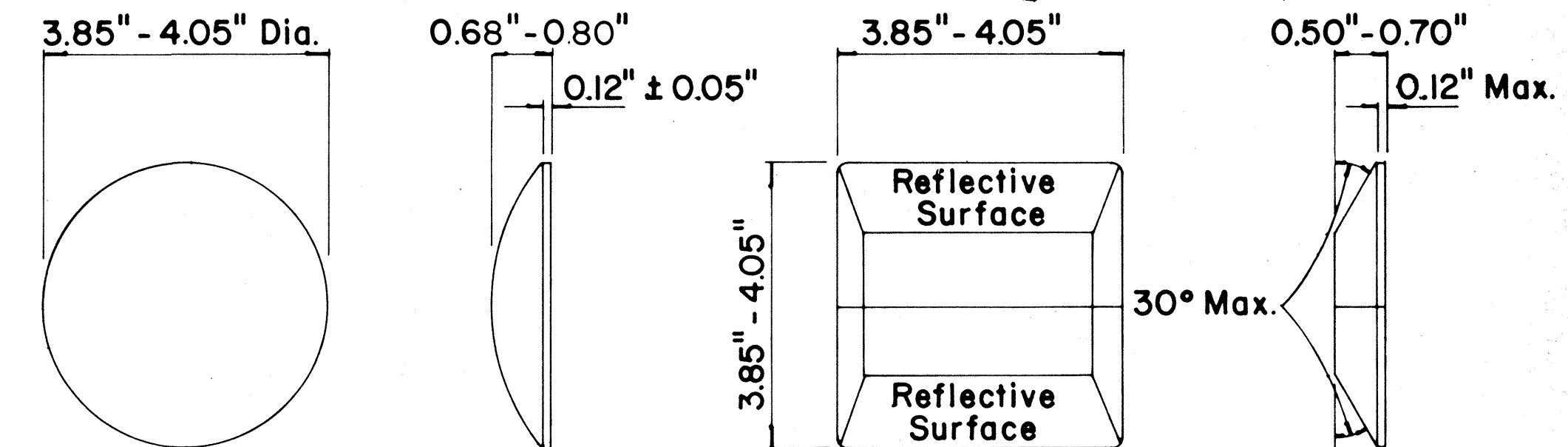


TWO - LANE

MULTI - LANE

DIVIDED HIGHWAY AND FREEWAY

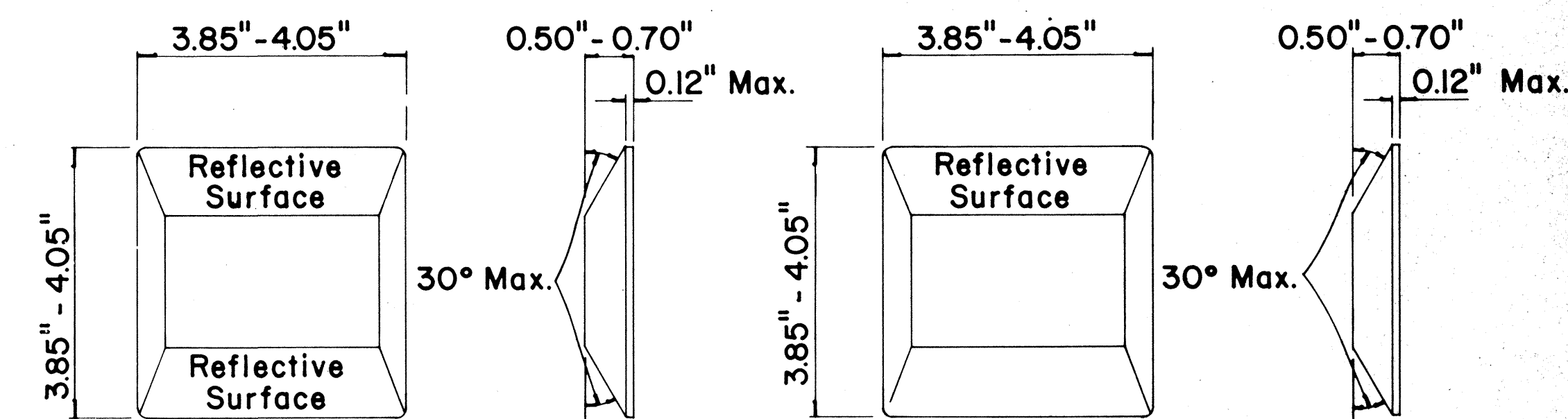
MISCELLANEOUS



TYPE A
NON-REFLECTIVE WHITE MARKER

TYPE J
NON-REFLECTIVE YELLOW MARKER

TYPE C
RED-CLEAR REFLECTIVE MARKER



TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER

TYPE H
ONE-WAY YELLOW REFLECTIVE MARKER

GENERAL NOTES

- Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Layout and installation of pavement marking and striping shall be done by the Contractor. The Contractor shall check the layouts with the Engineer prior to performing work.

LEGEND

- Type A
- Type C
- Type D
- Type H
- Type J

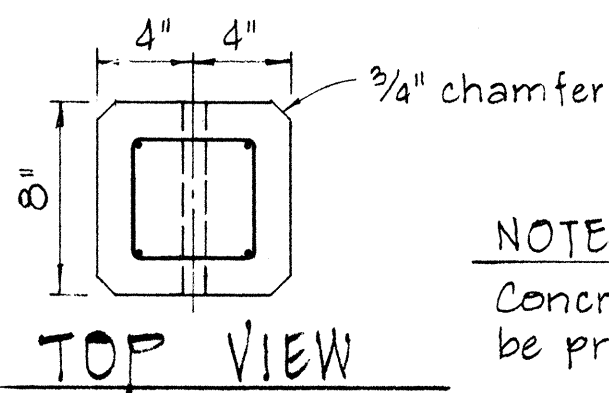
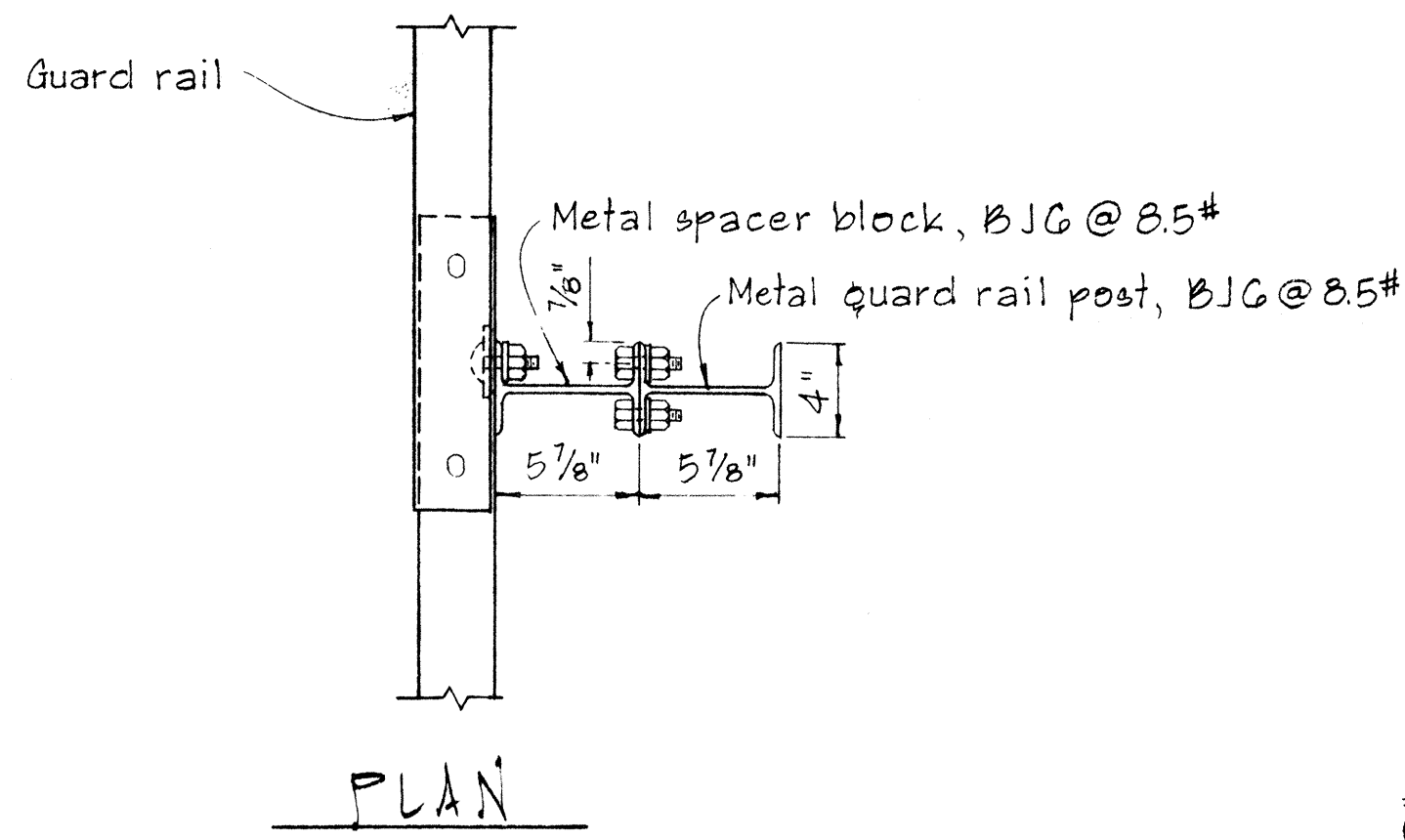
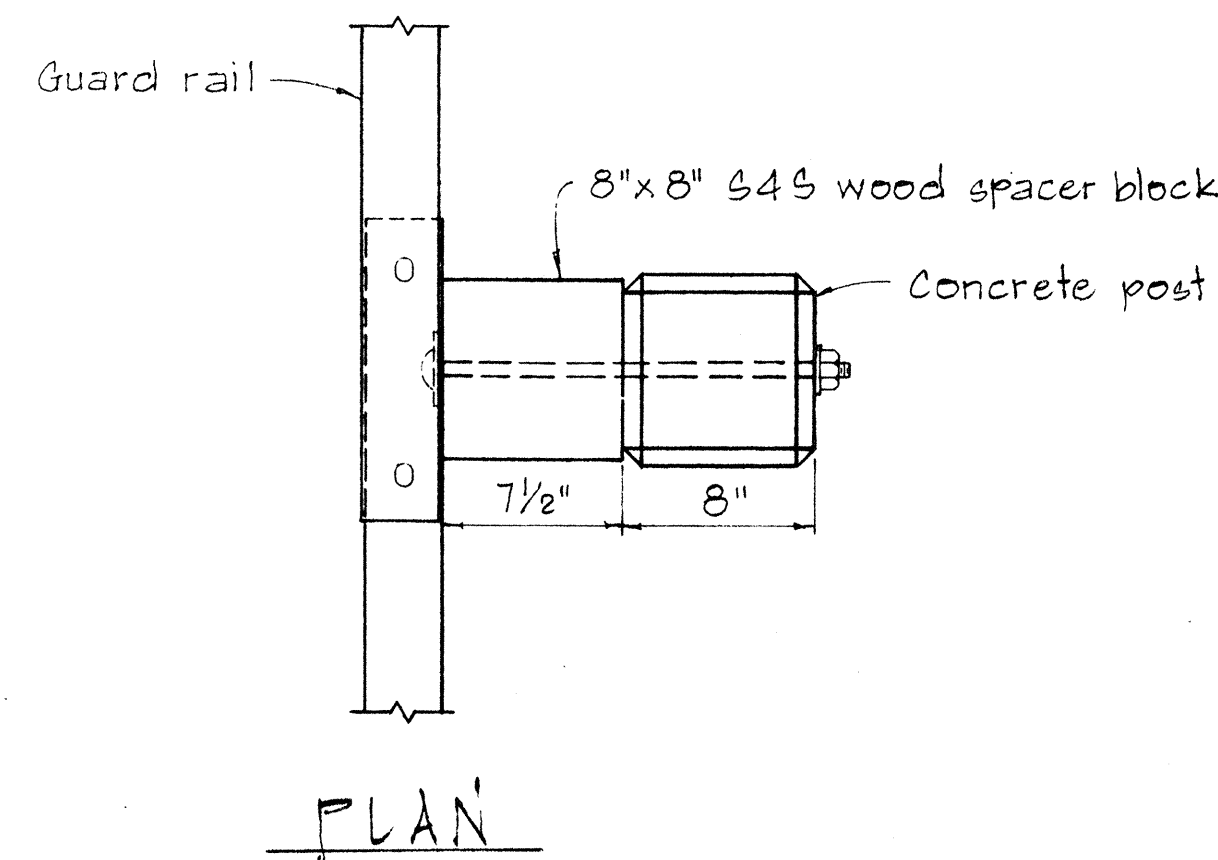
APPROVAL RECOMMENDED:
Erich Tanaka
TRAFFIC ENGINEER
7/21/78
DATE

APPROVED:
Harold J. Delia
ASSISTANT CHIEF, ENGINEERING
1/24/78
DATE

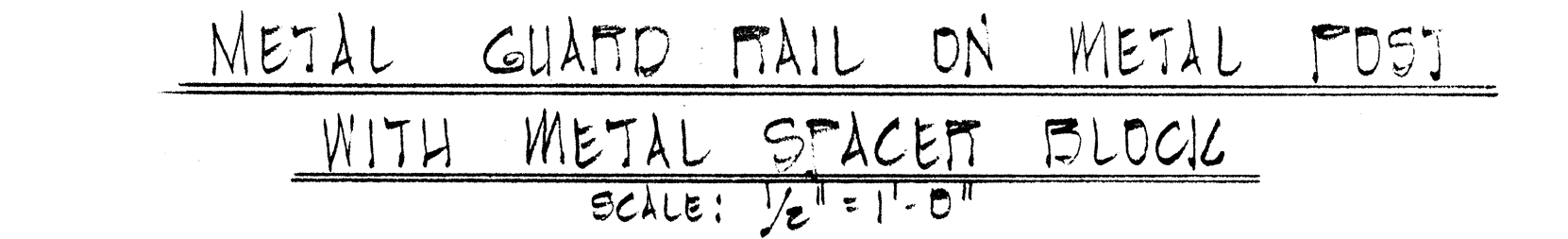
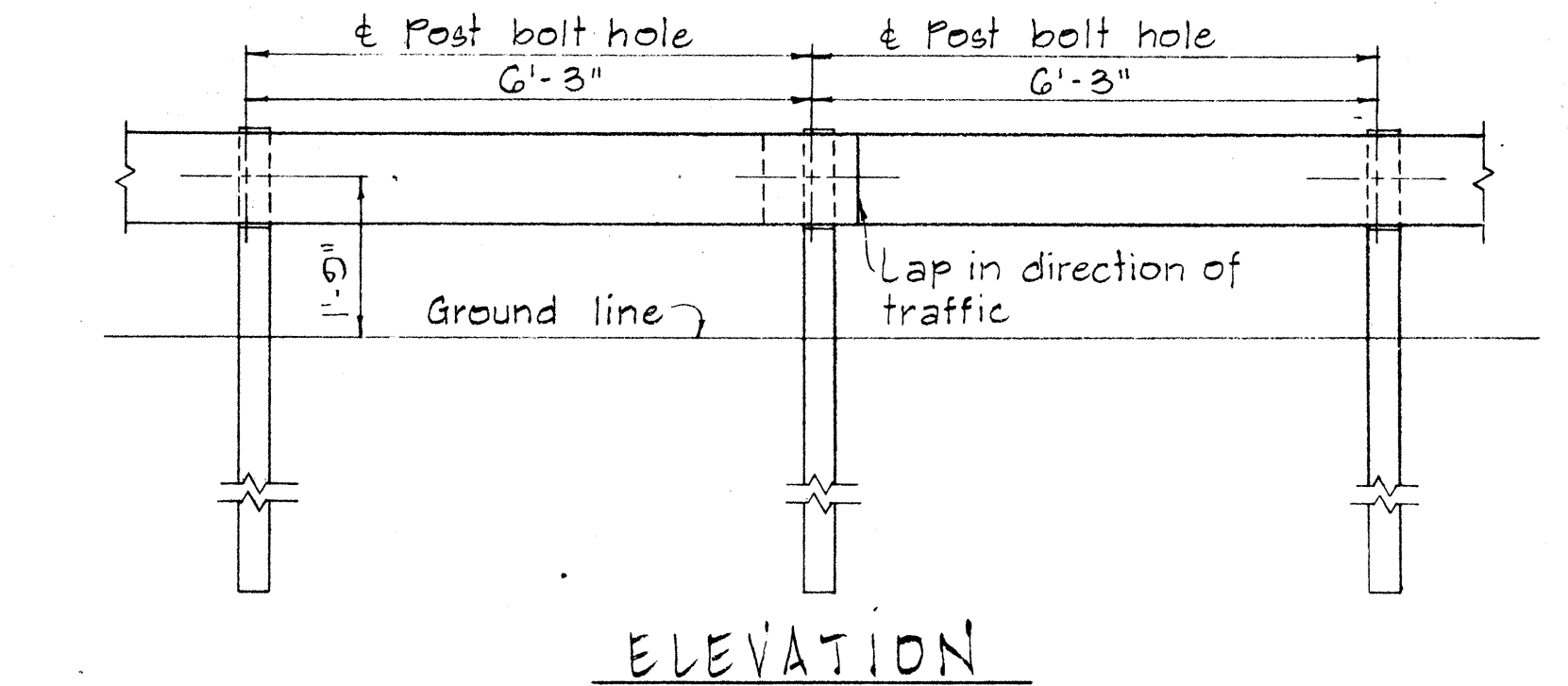
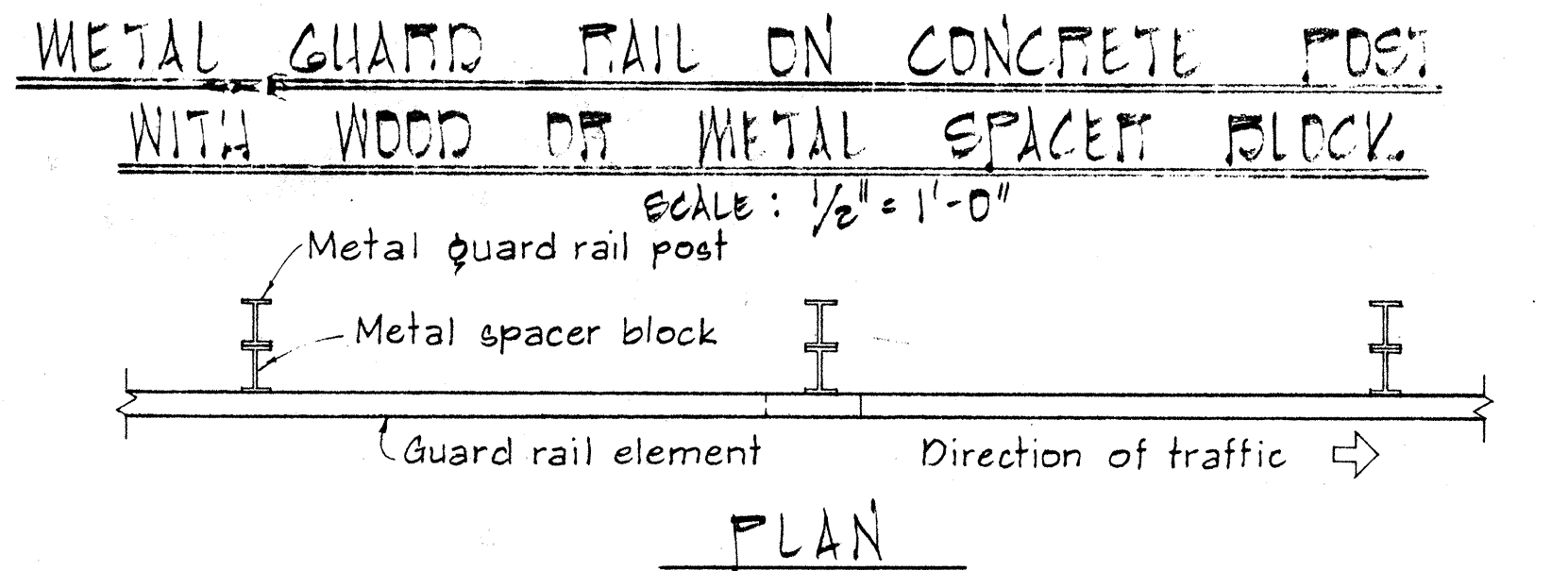
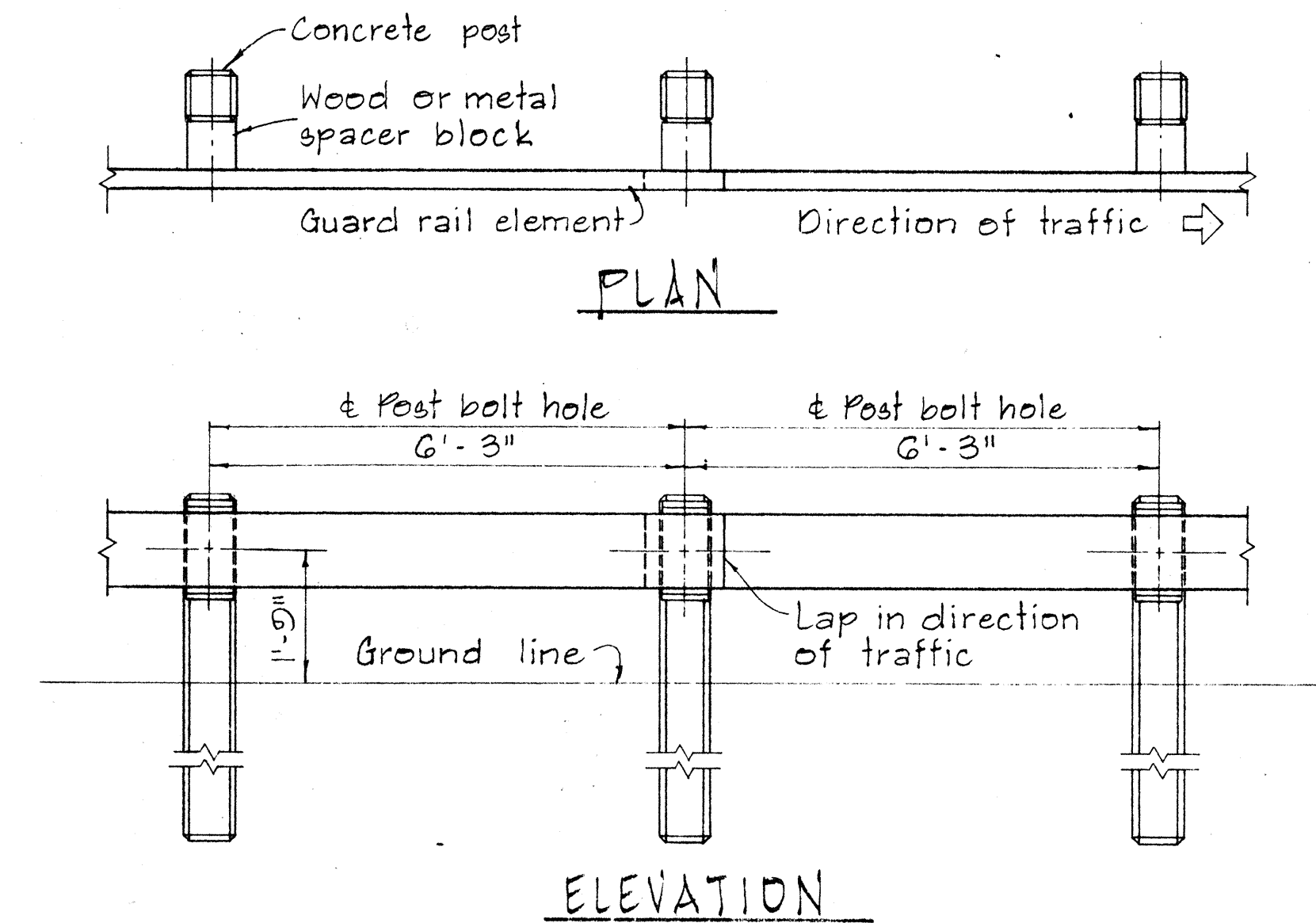
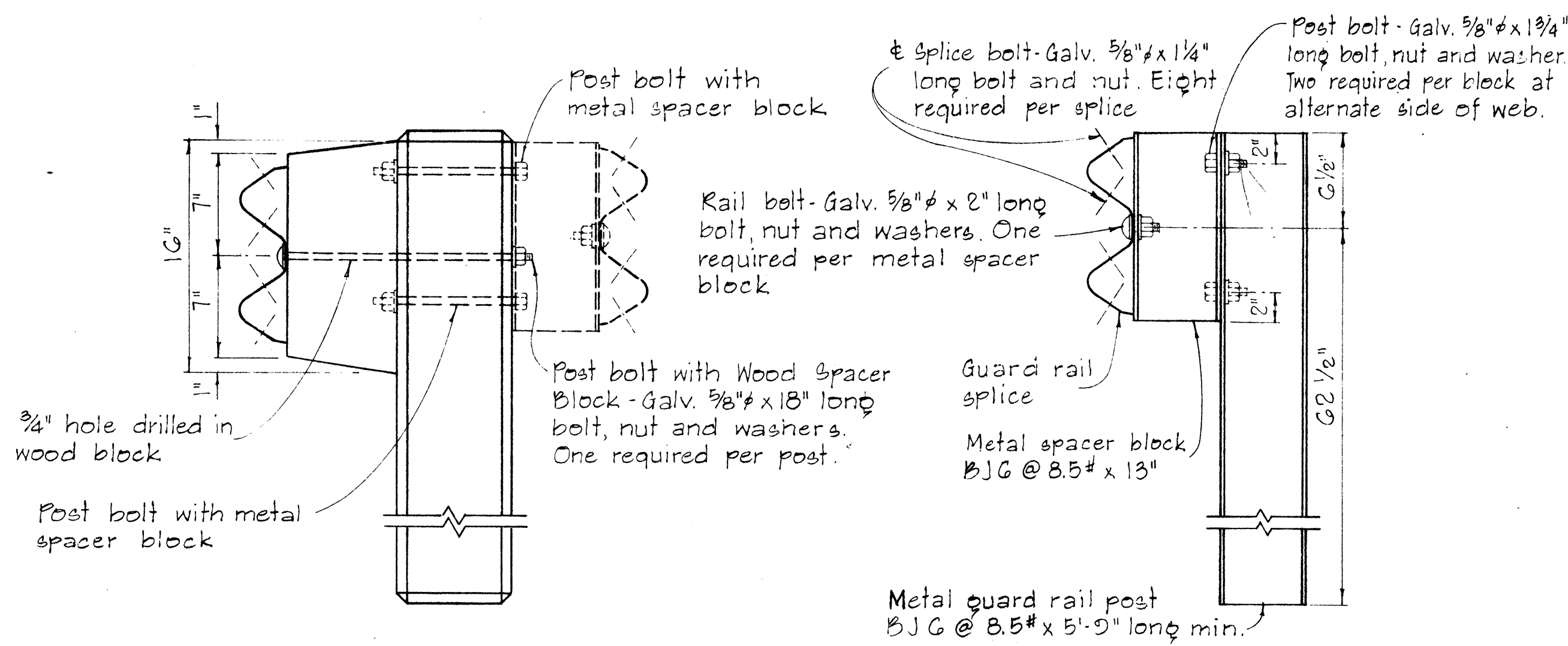
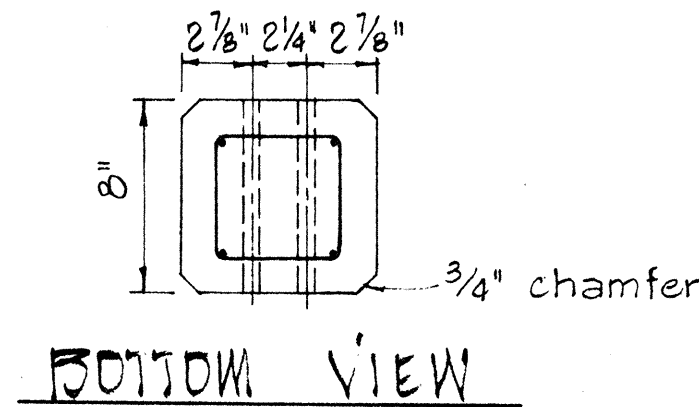
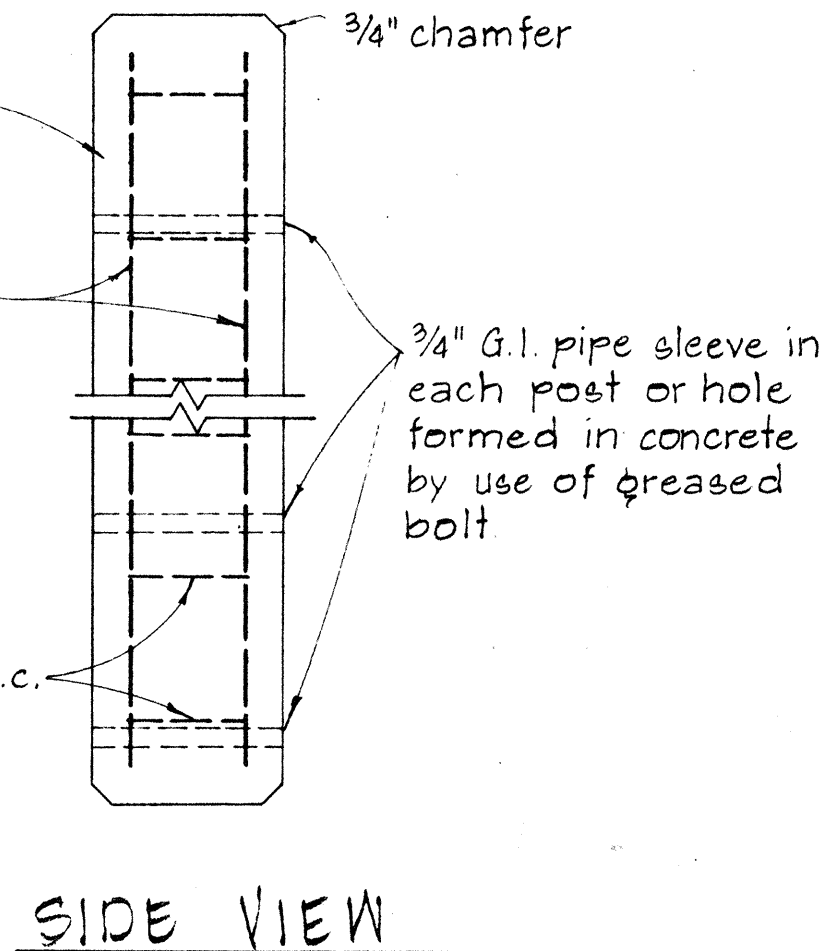
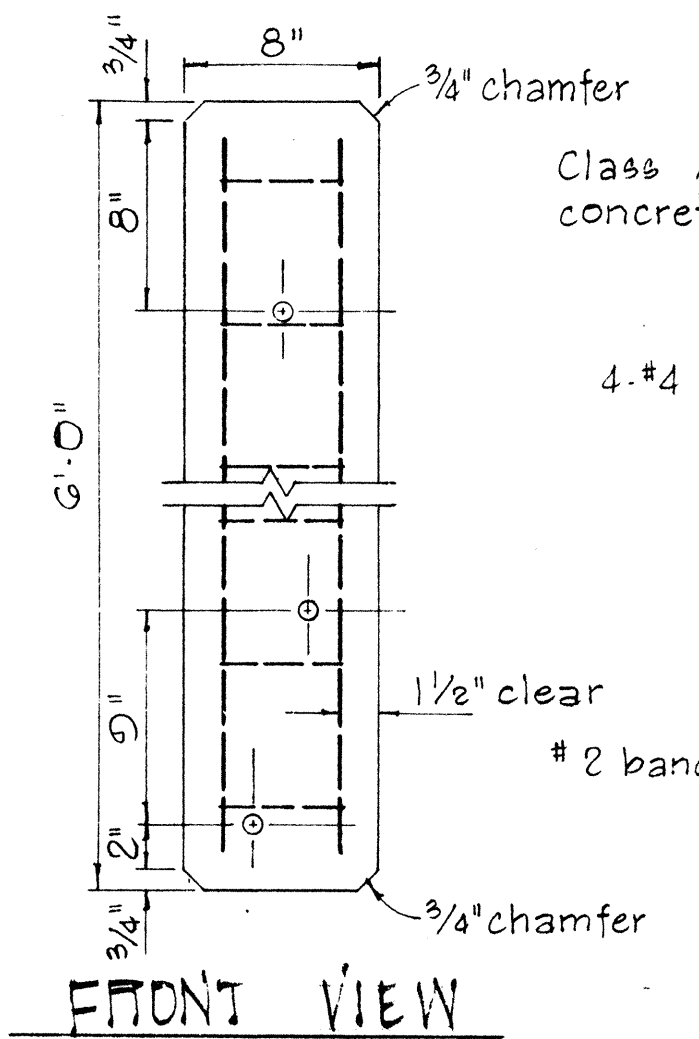
No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.T.	1/24/78

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION	
STANDARD DETAILS RAISED PAVEMENT MARKERS AND STRIPING	
Not to Scale	July 1978
SHEET No. 15 OF 21 SHEETS DT 300	

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	27	38

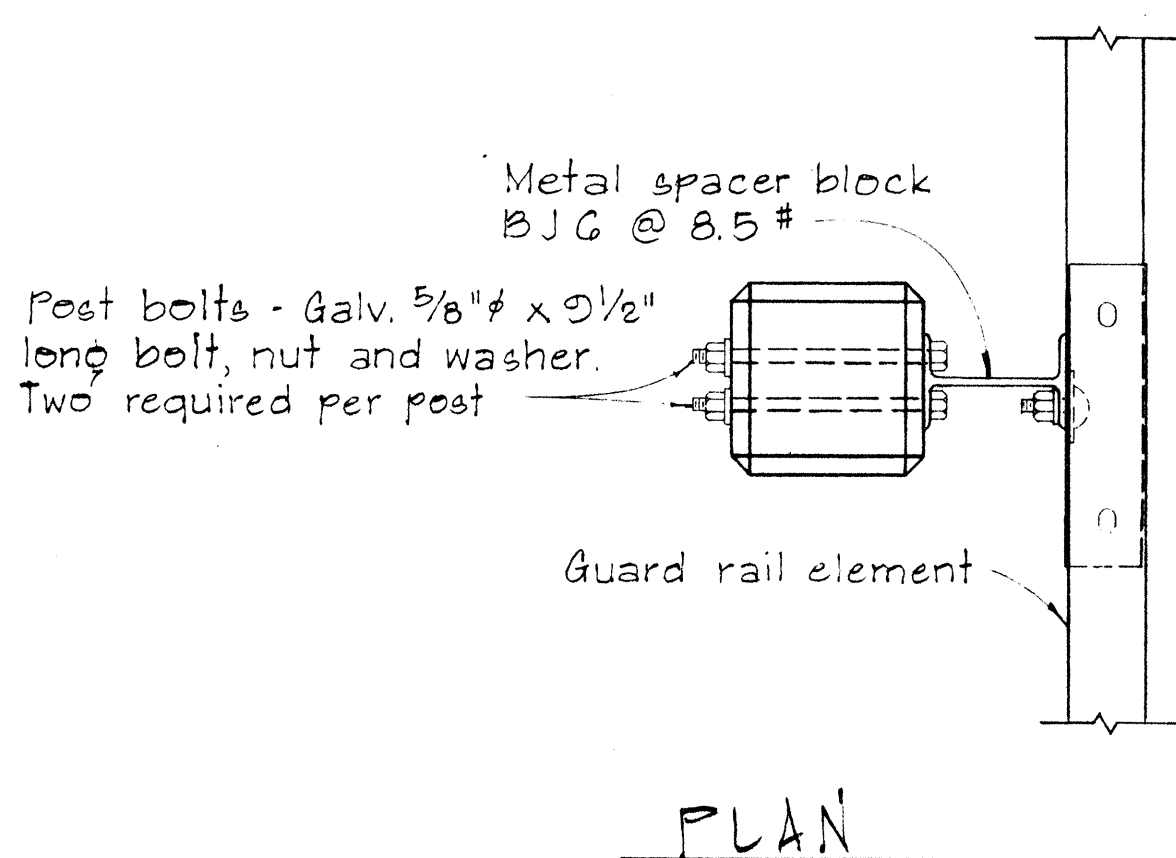


NOTE:
Concrete post shall be precast

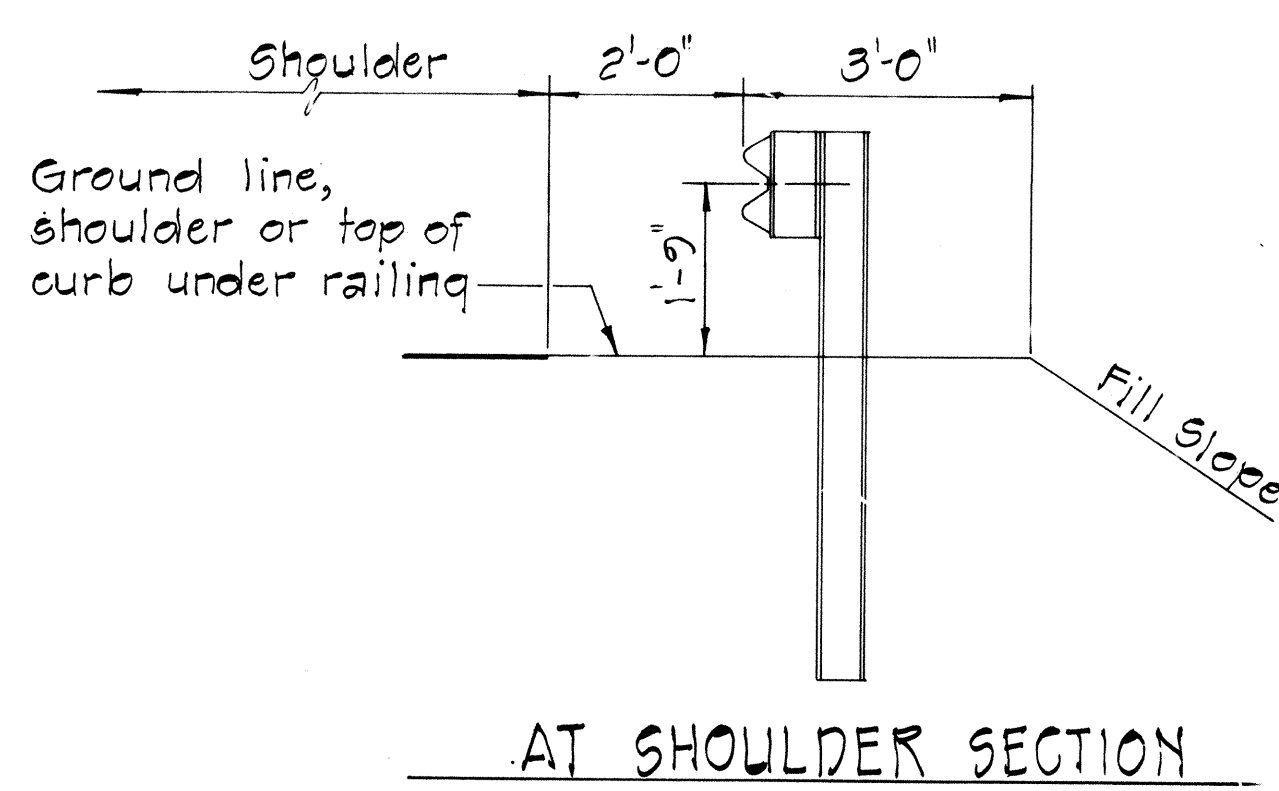


SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

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



SINGLE METAL GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



TYPICAL METAL GUARD
RAIL DETAIL
SCALE: 1/2" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

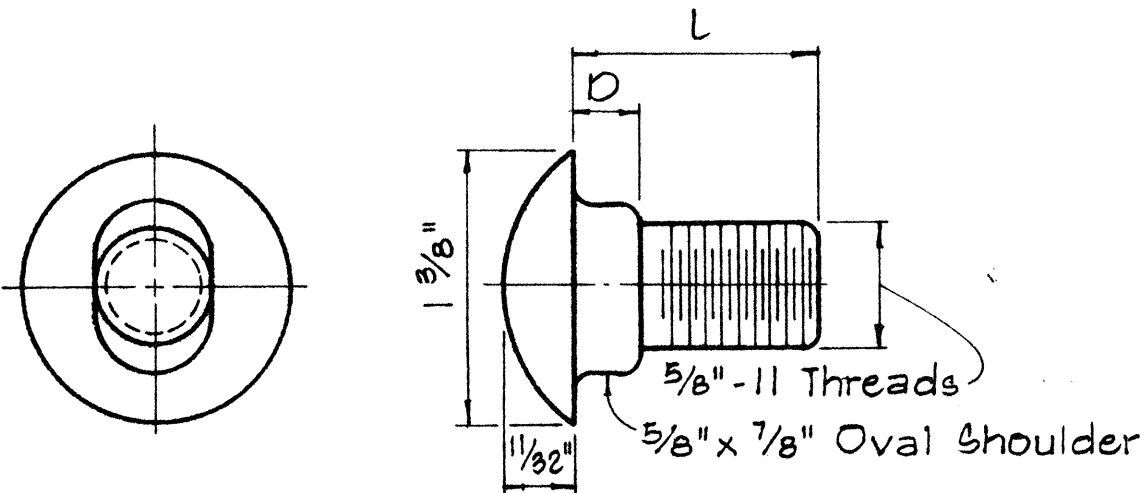
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN
NOV. 1968

SHEET No. 16 OF 21 SHEETS
DT 500

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"

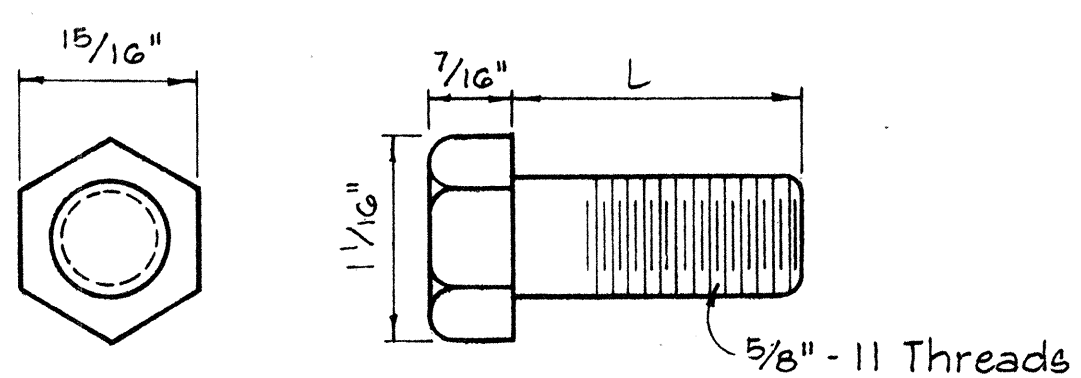


TYPE A BOLT

SPICE RAIL AND POST BOLTS

Scale: Full Size

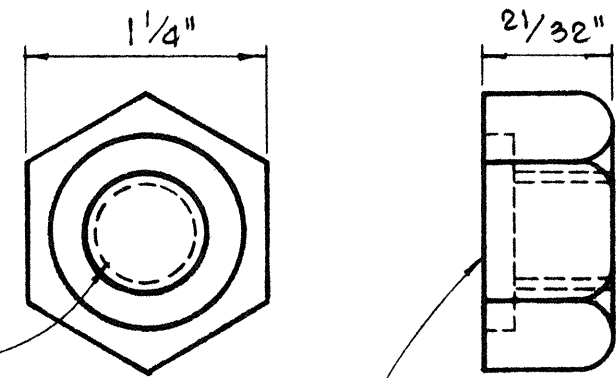
BOLT DIMENSIONS		
TYPE B BOLT		
		L
Post Bolt for Conc. Post w/ Metal Blocks		5 1/2"
Post Bolt for Metal Post w/ Metal Block		1 3/4"



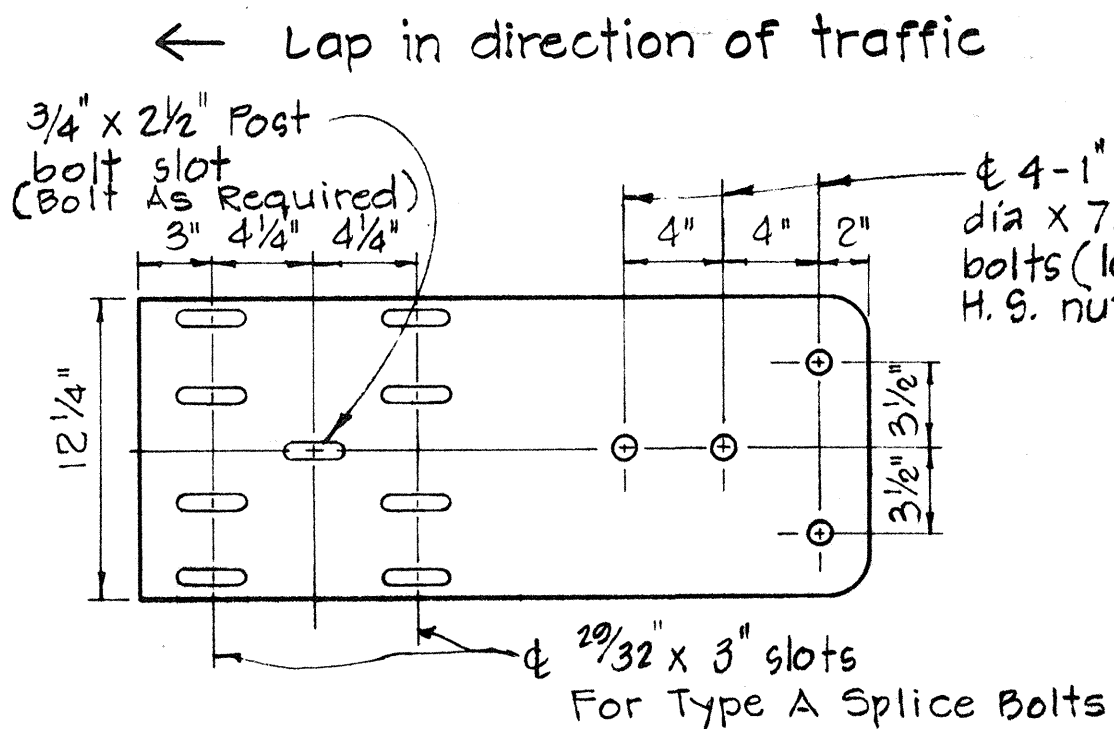
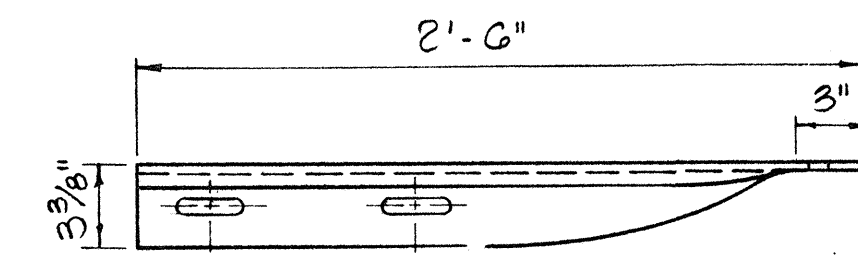
TYPE B BOLT

HEXAGON NUT

Scale: Full Size

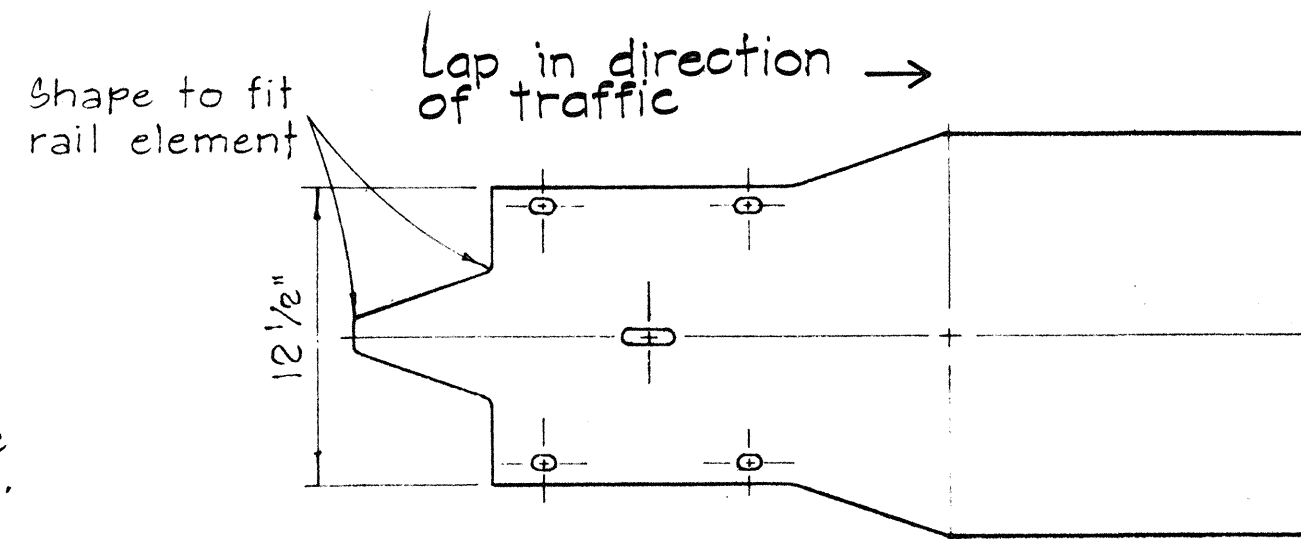
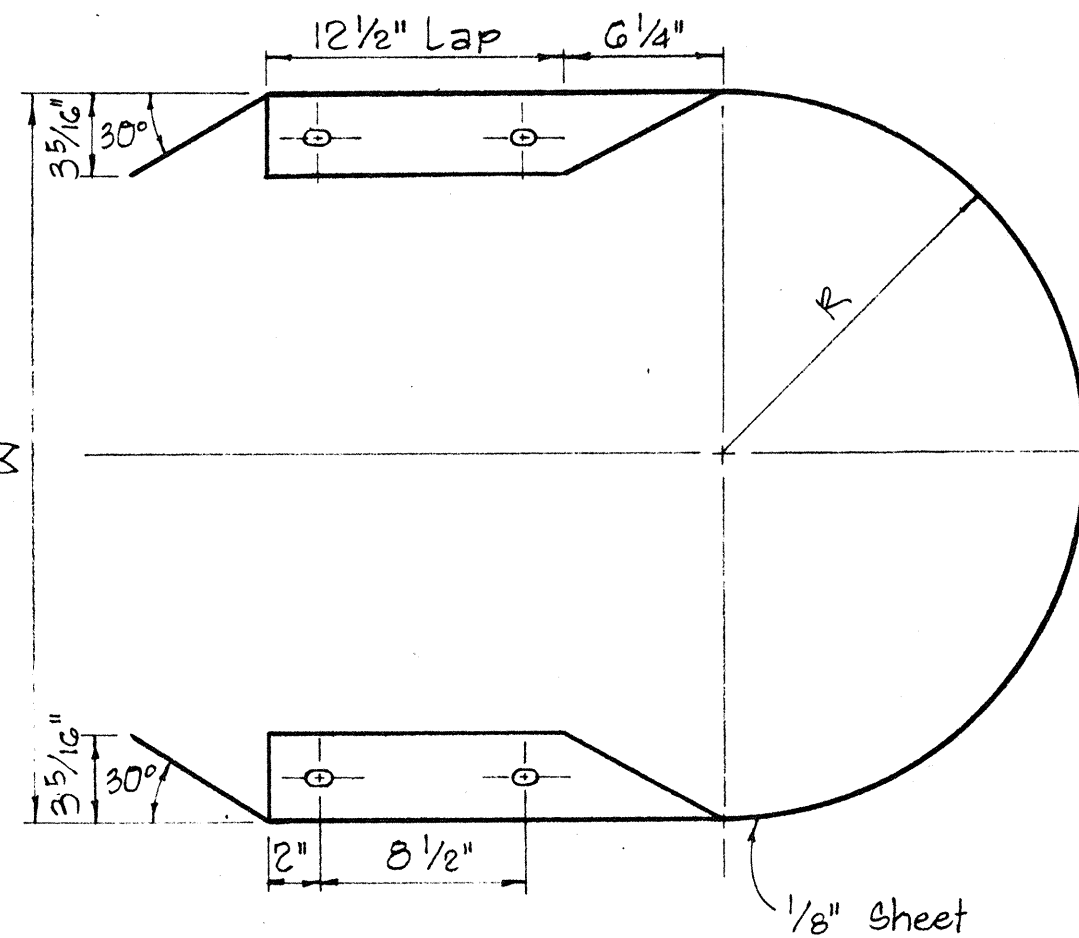


5/32" Deep x 15/16" Dia. C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.



SPECIAL END SHOE

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



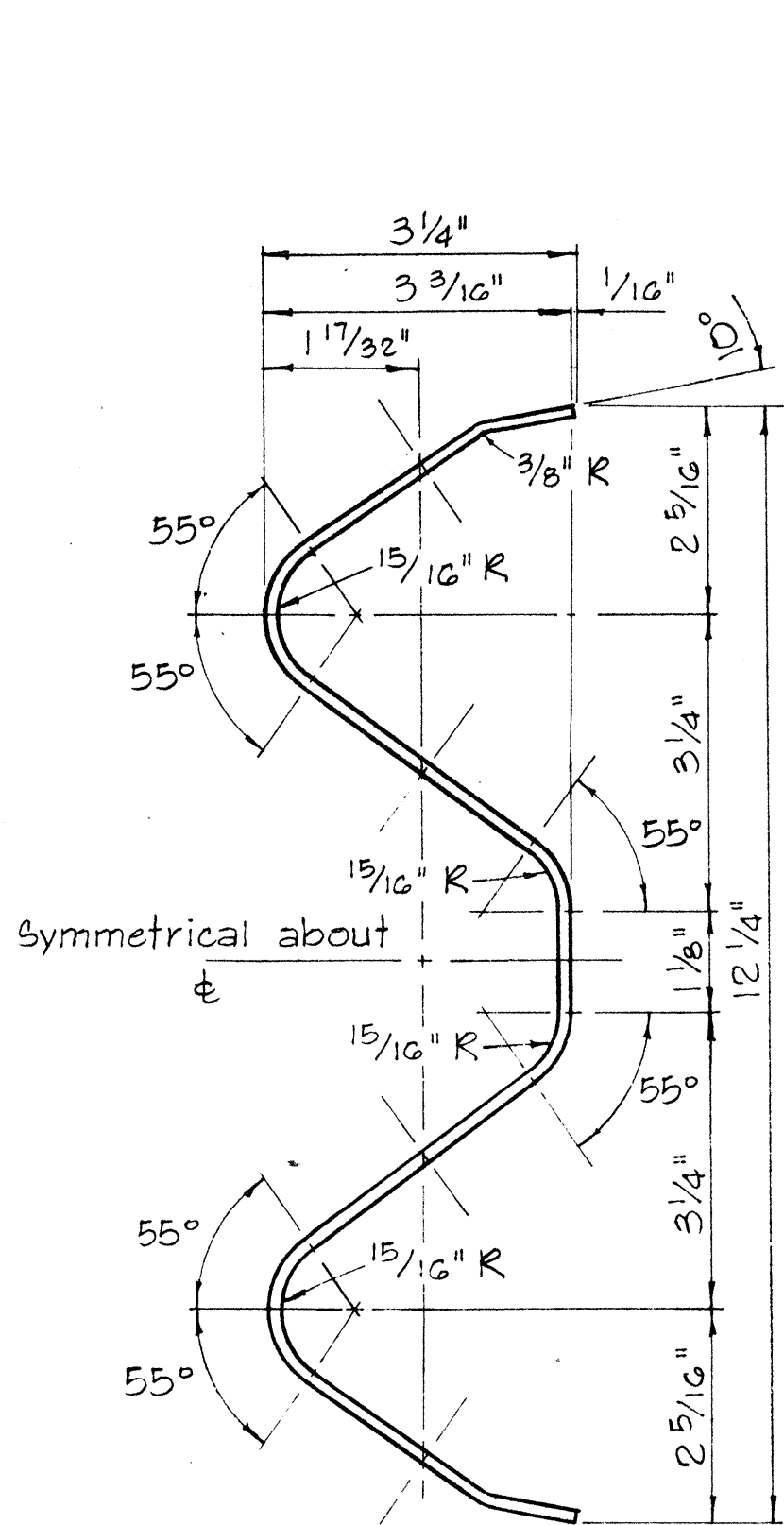
MEDIAN END

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

NOTES:

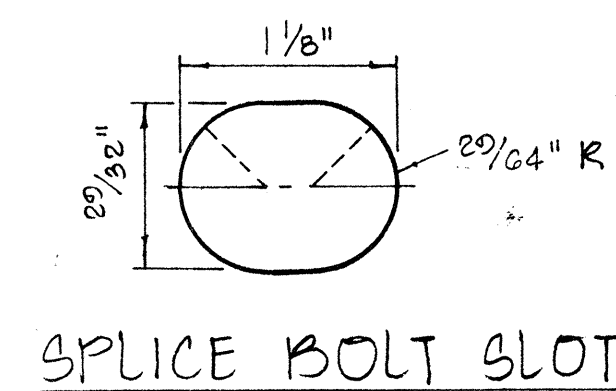
- H.S. Bolts shall conform to the requirements of ASTM A 325.
- Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHTO 180.

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"



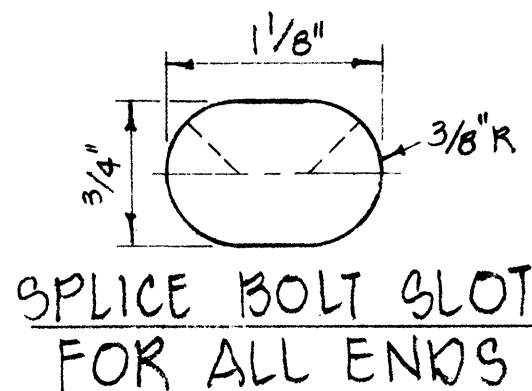
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

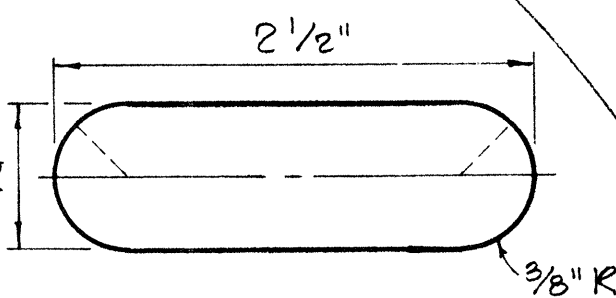


SPICE BOLT SLOT

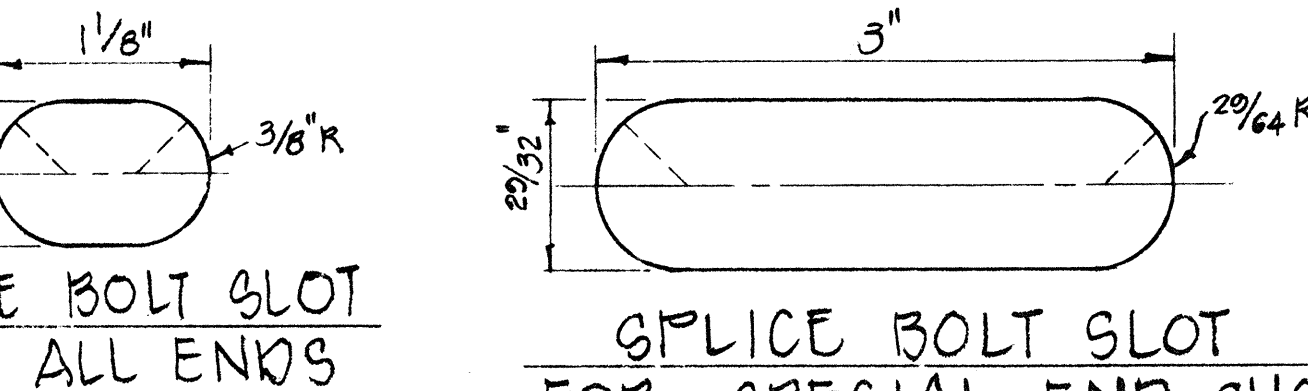
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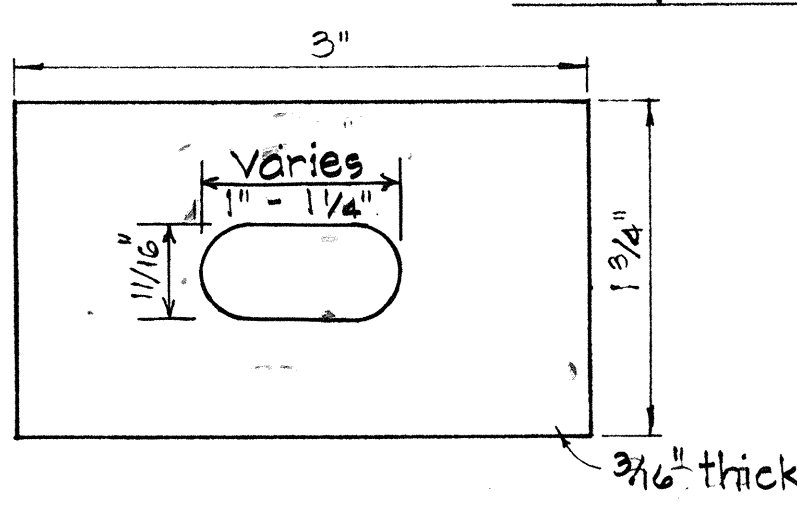
SPICE BOLT SLOT FOR ALL ENDS



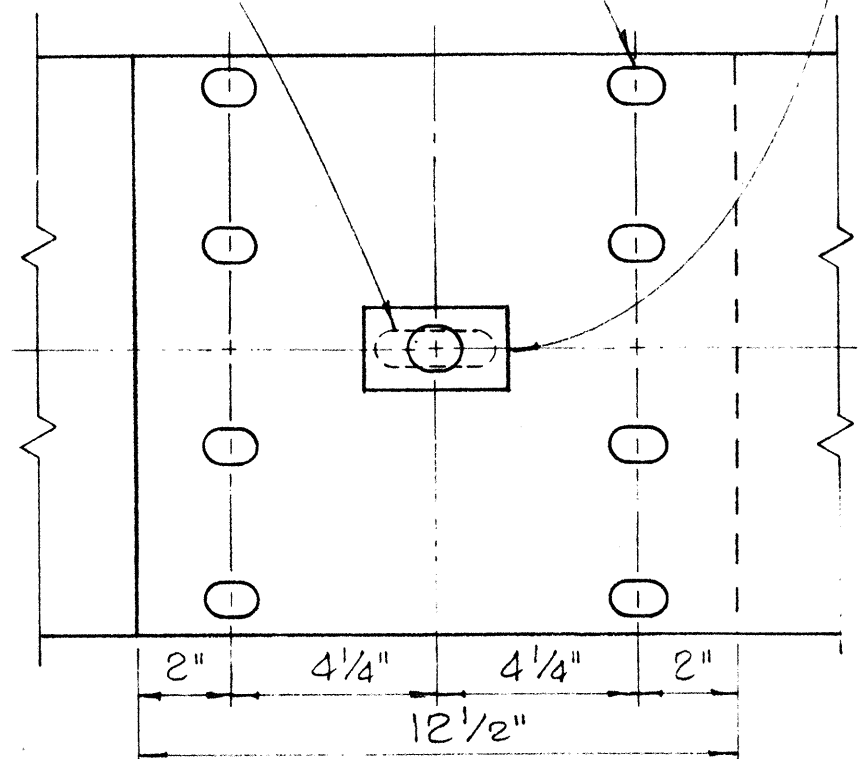
POST BOLT SLOT



SPICE BOLT SLOT FOR SPECIAL END SHOE



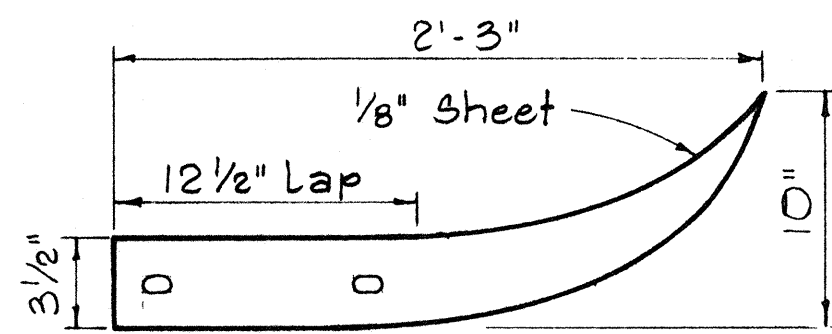
RAIL WASHER



RAIL SPICE

Scale: 3" = 1'-0"

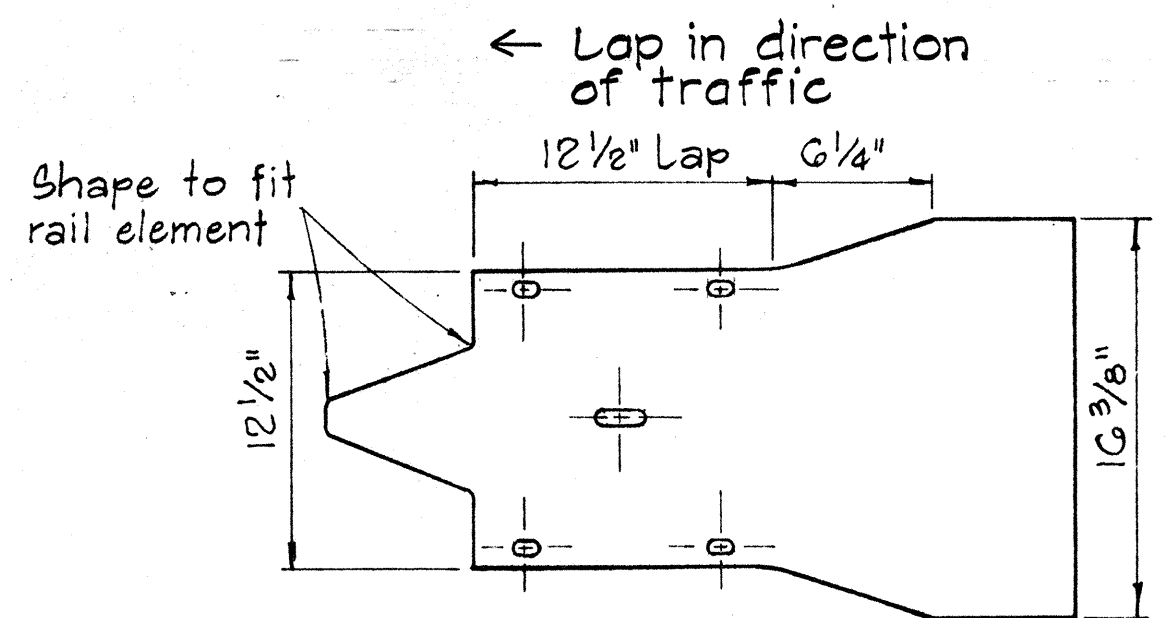
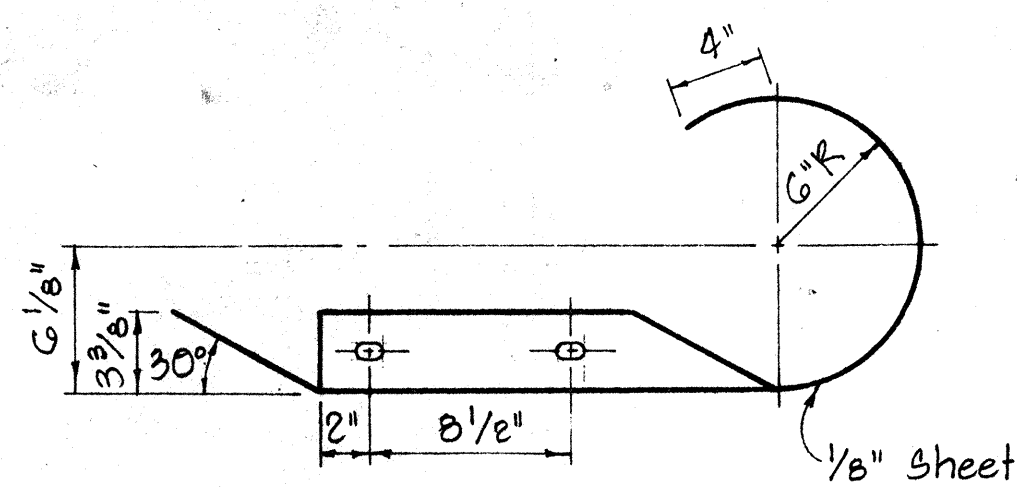
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1964-02-71 UNIT II	1972	28	38



FLARED END

FLARED END

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



CURVED END

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

APPROVAL RECOMMENDED:
Erich Tanaka 12/29/69
TRAFFIC ENGINEER DATE
APPROVED:
John J. J. J. 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

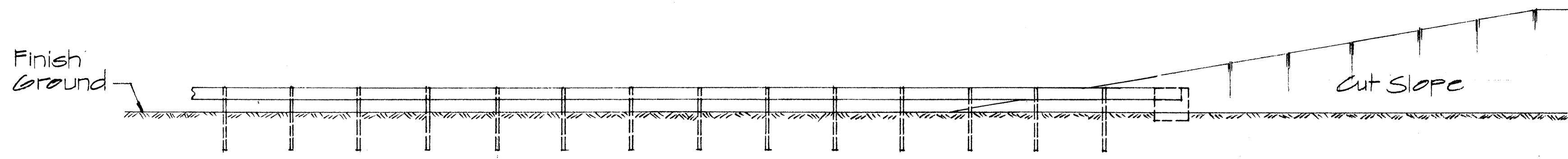
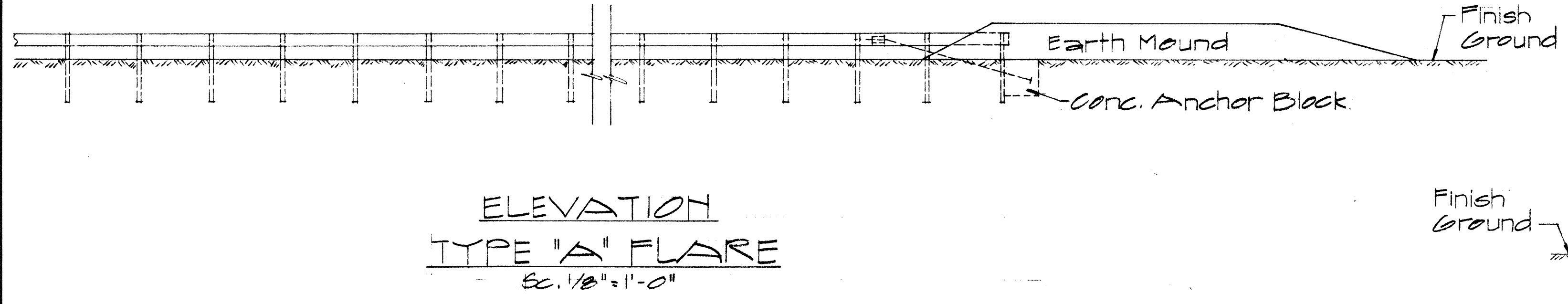
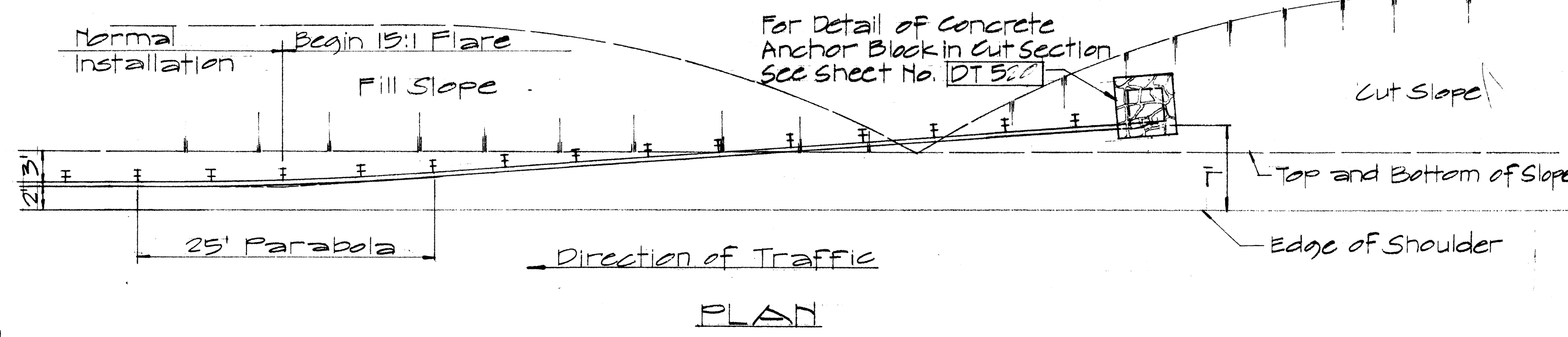
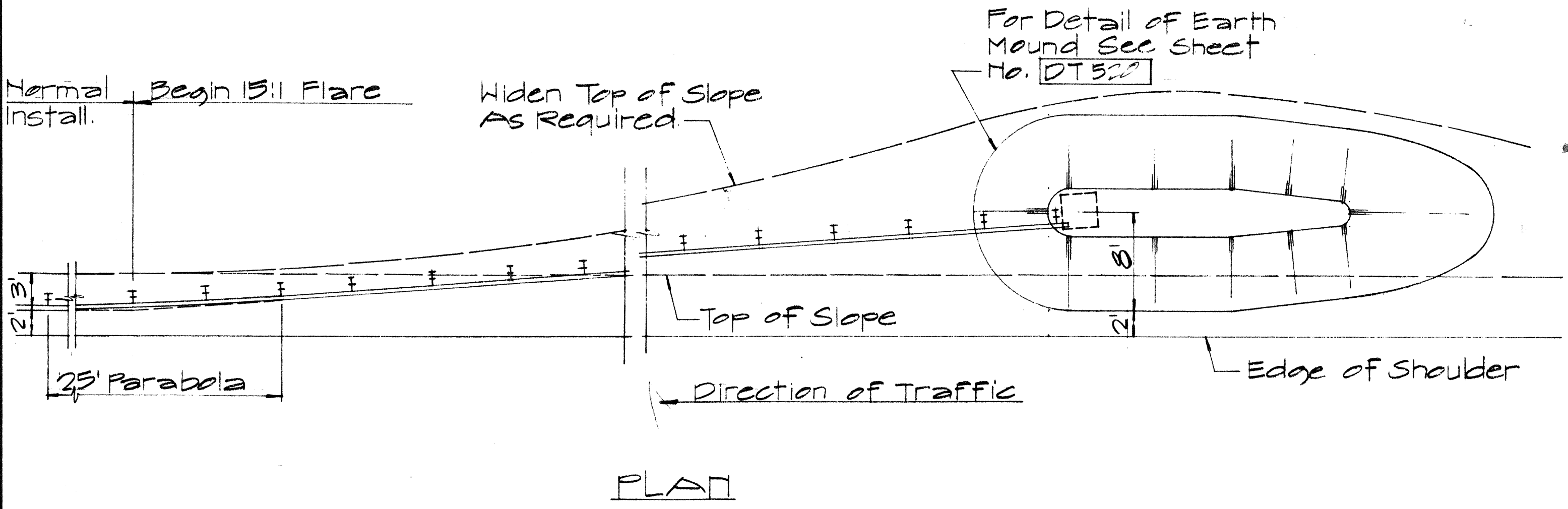
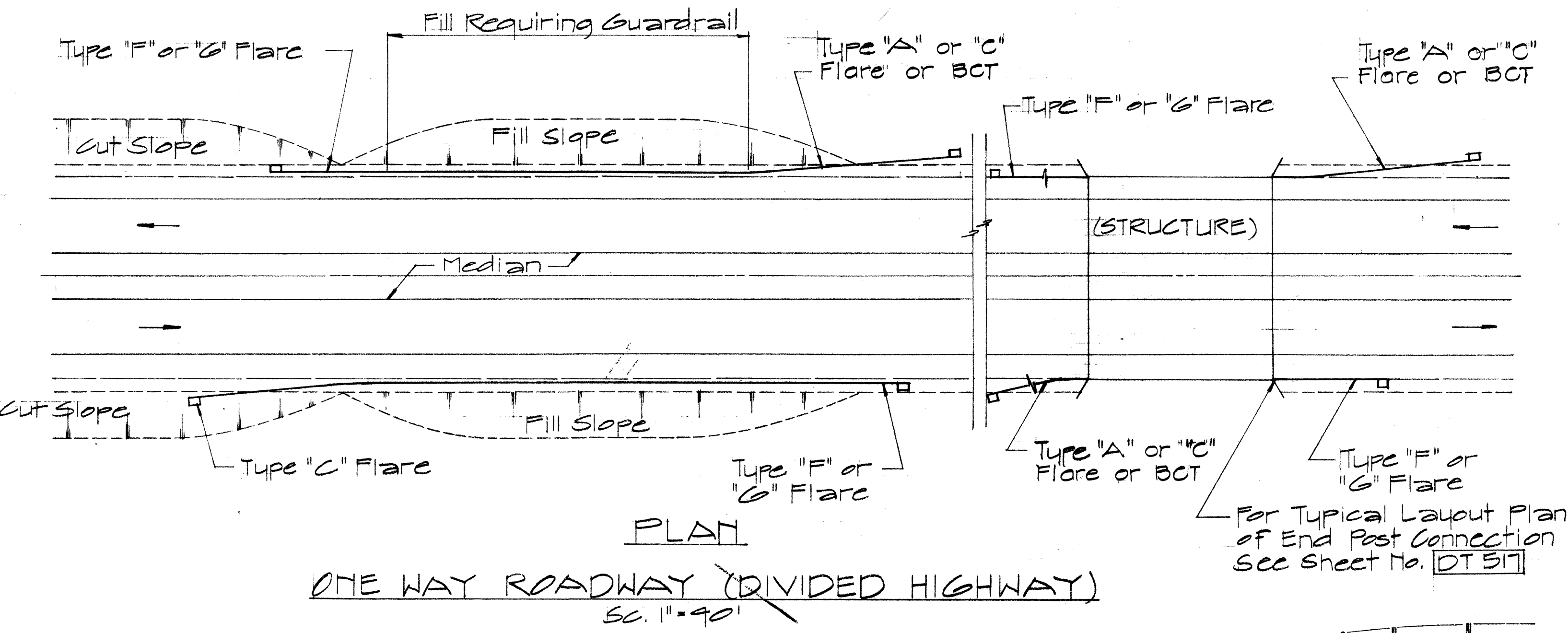
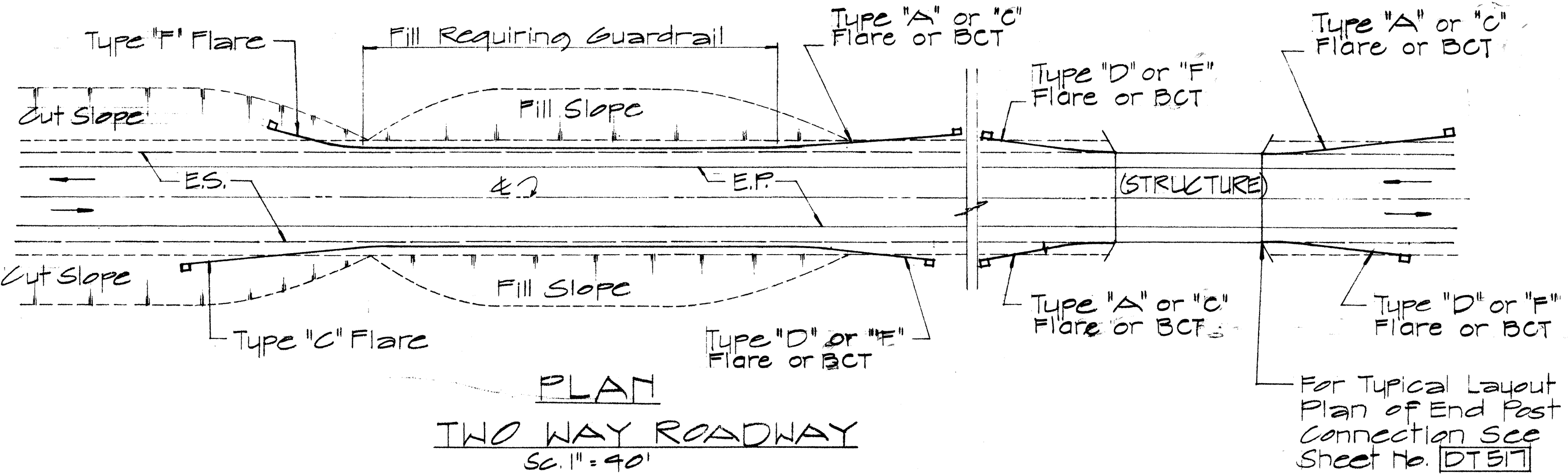
STANDARD DETAILS METAL GUARD RAIL

Scale: As Noted August, 1968

SHEET No. 17 OF 21 SHEETS DT 501

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	29	38

NOTE:
 1. Metal guard rail connection to structures requires End Post Connection. See structure plans.
 2. For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519



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

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

NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/88

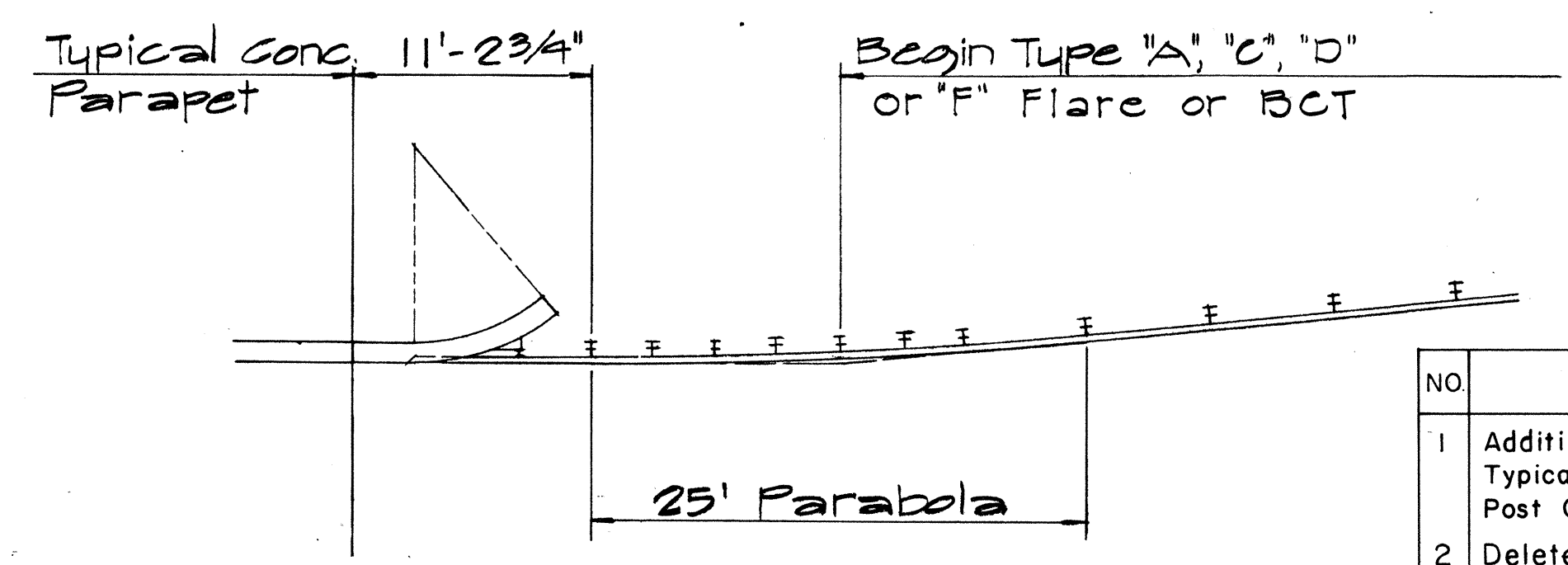
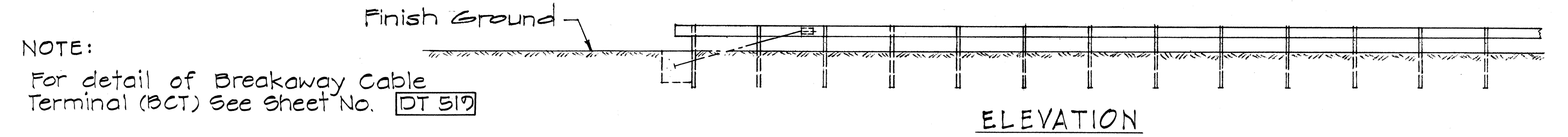
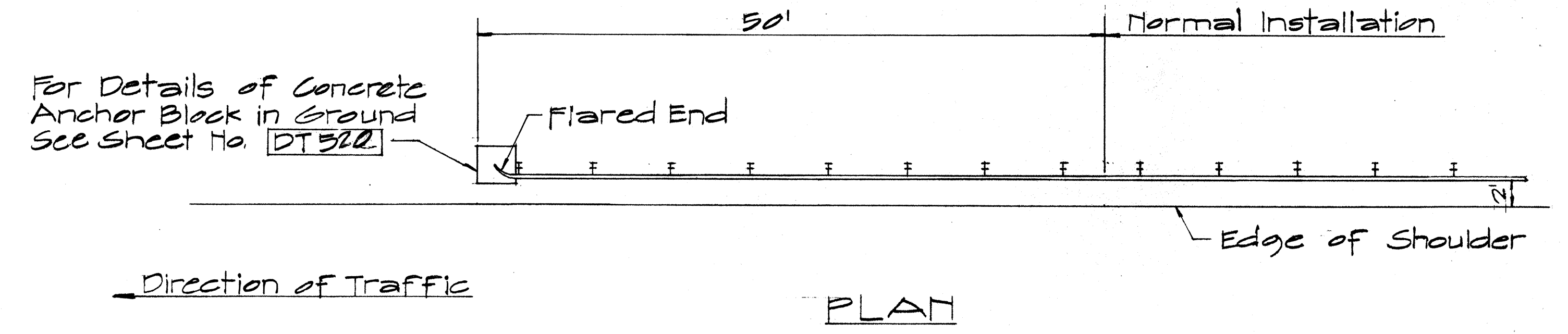
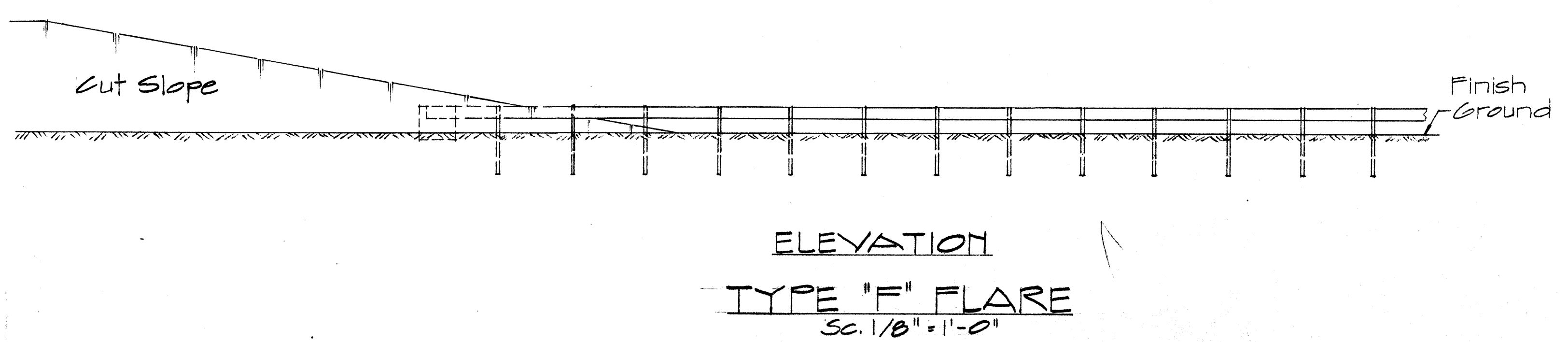
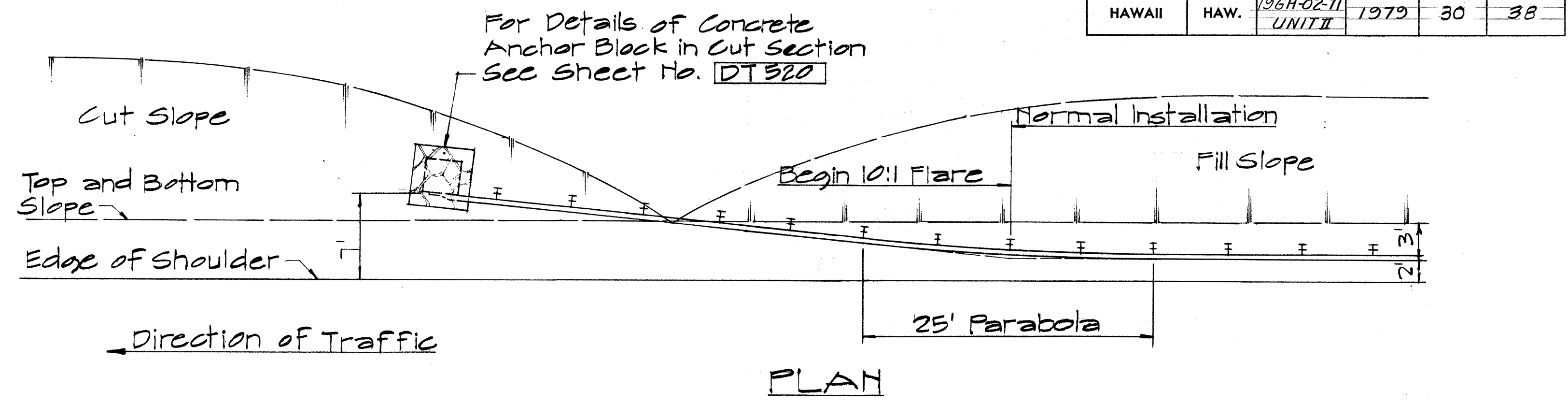
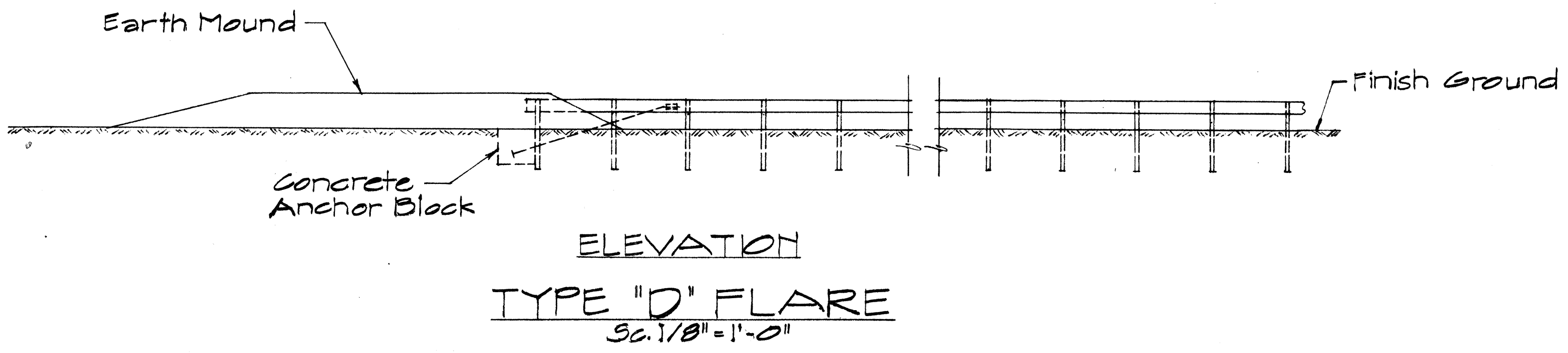
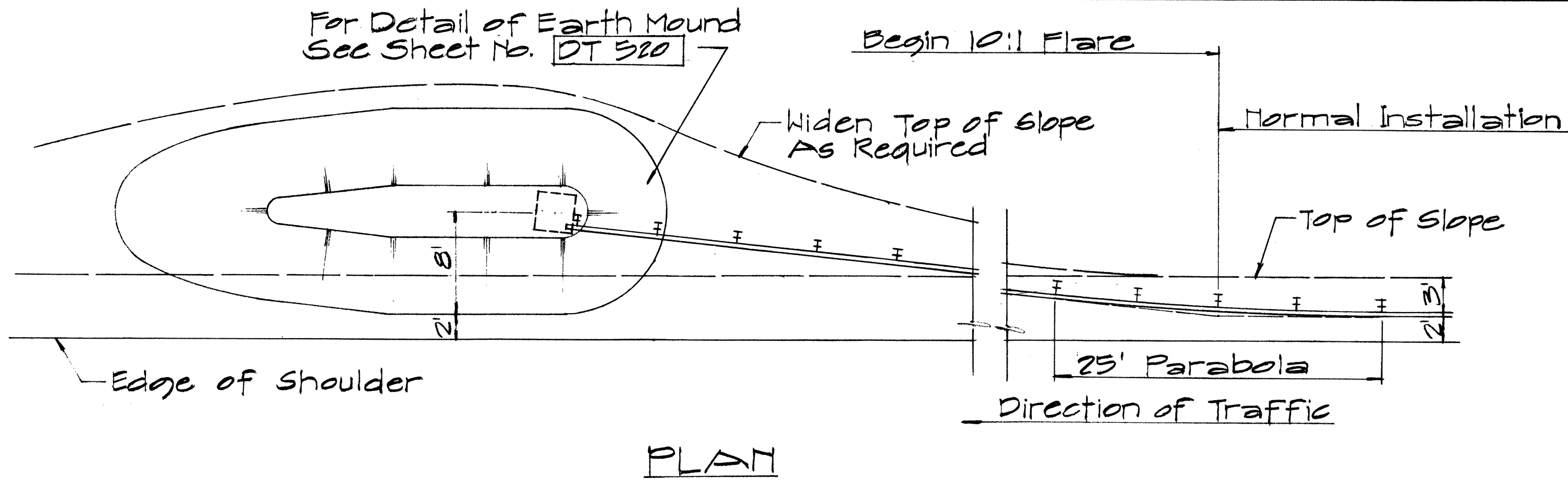
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

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

Sc. As Noted April 1969
 SHEET No. 18 OF 21 SHEETS DT 516

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	30	38



TYPICAL LAYOUT PLAN OF END POST CONNECTION

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

NO.	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-73

APPROVAL RECOMMENDED:

E. Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:

W. J. J. J. 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

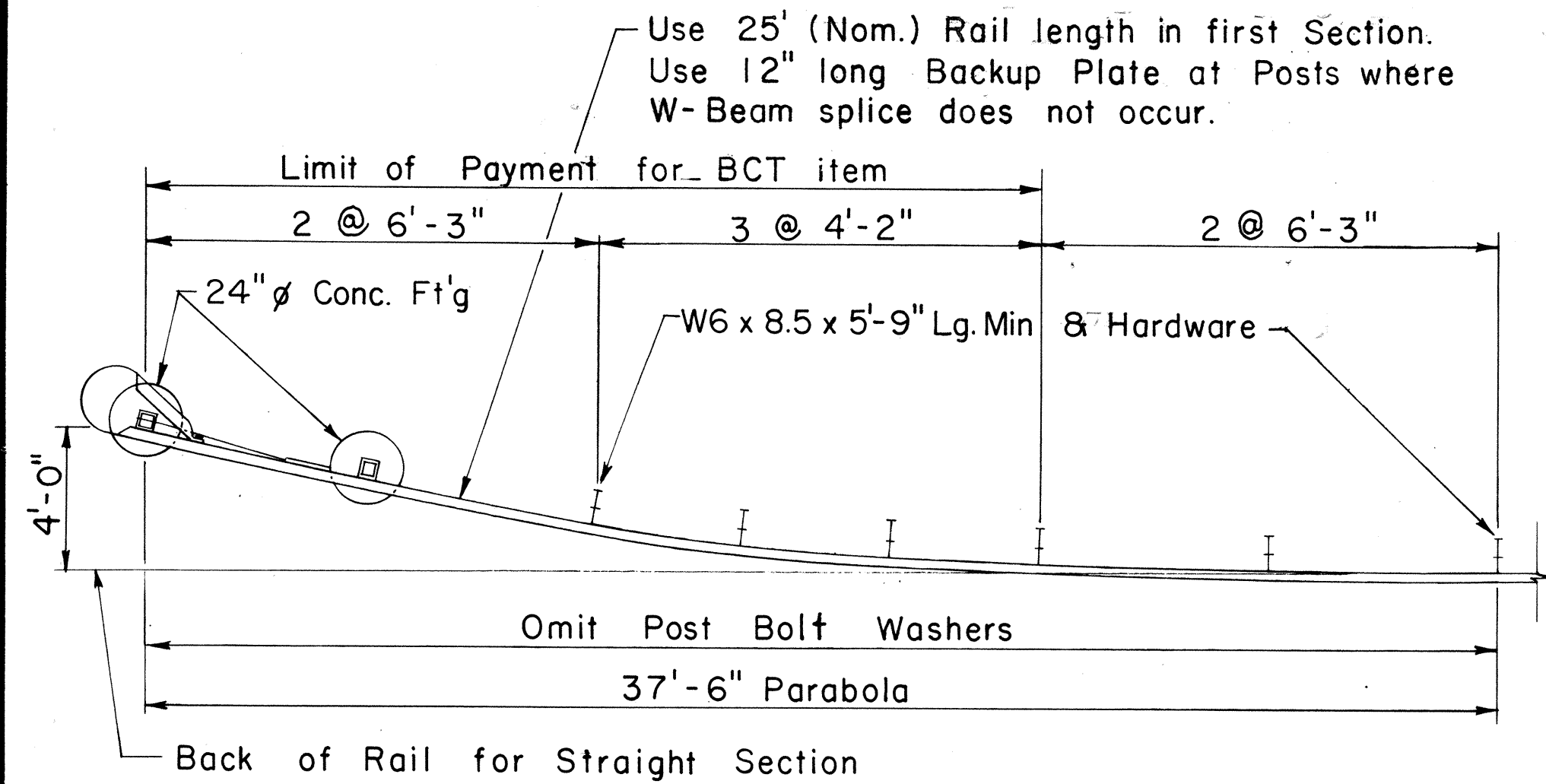
SHEET NO. 19 OF 21 SHEETS DT 517

DATE	
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	196H-02-71 UNIT II	1979	31	38

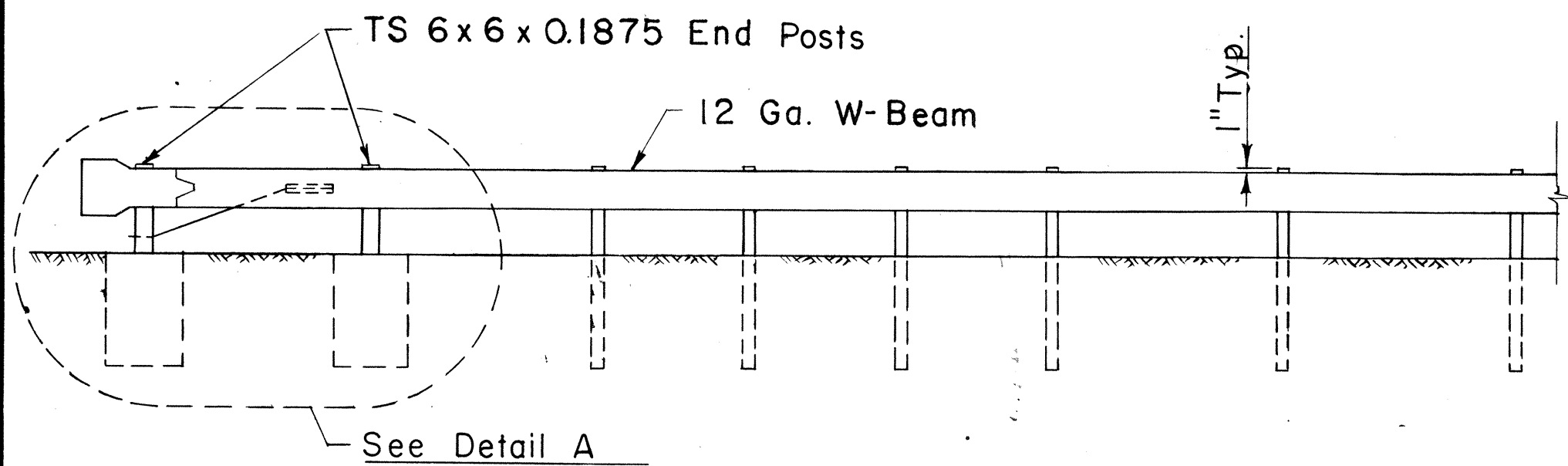
NOTES:

- Anchor Plate and Anchor Cable Assembly (Standard Swaged Fitting and Stud). See Standard Detail Sheet No. DT 520.
- Other Anchor Cable Assemblies may be used. Minimum breaking strength of assembly should be 40,000 lbs.
- Second Terminal Post does not require holes to accomodate Anchor Cable.
- Slip Base Load shall be controlled with a Calibrated Torque Wrench - Torque 155 - 170 ft. lbs.
- Concrete shall be Class A.



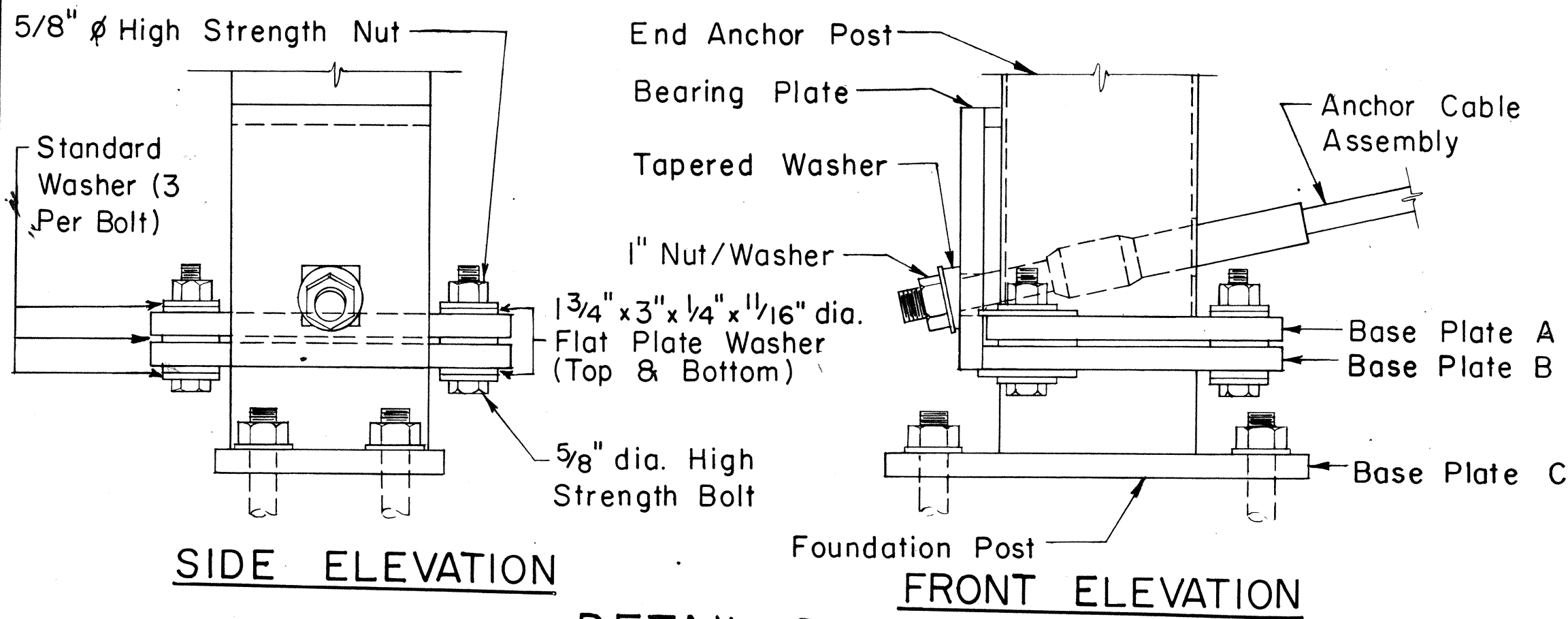
PLAN

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



ELEVATION

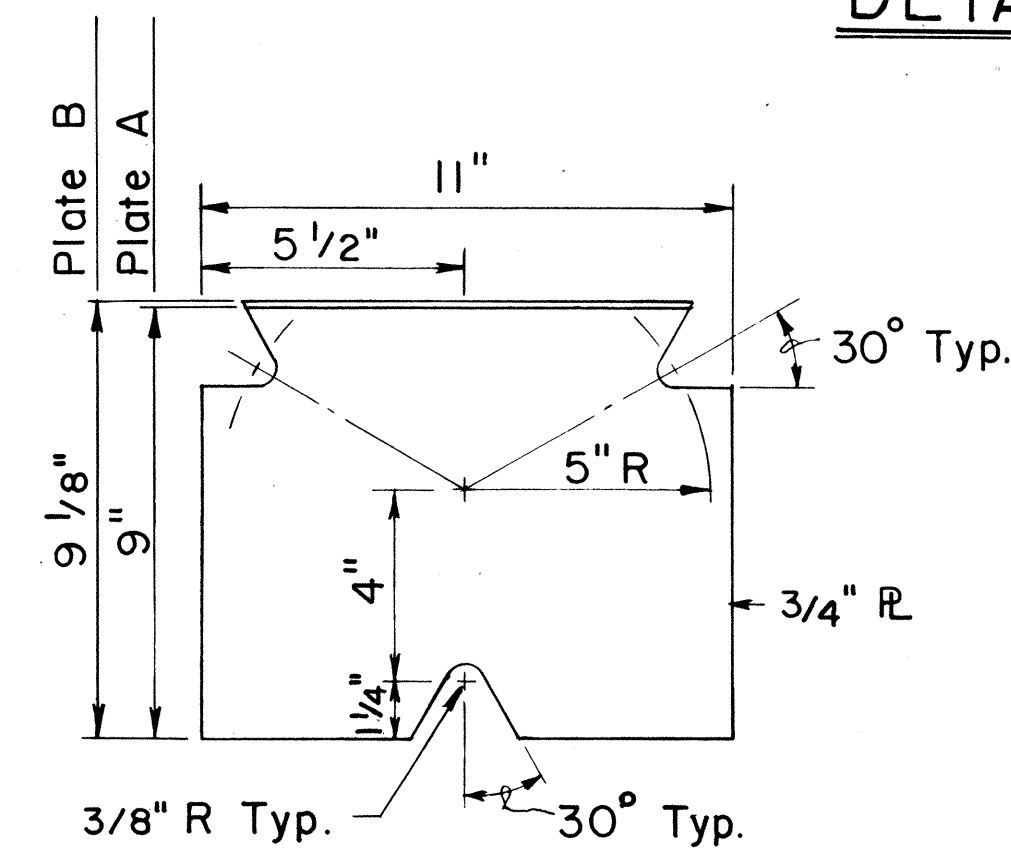
Scale: 1/4" = 1'-0"



SIDE ELEVATION

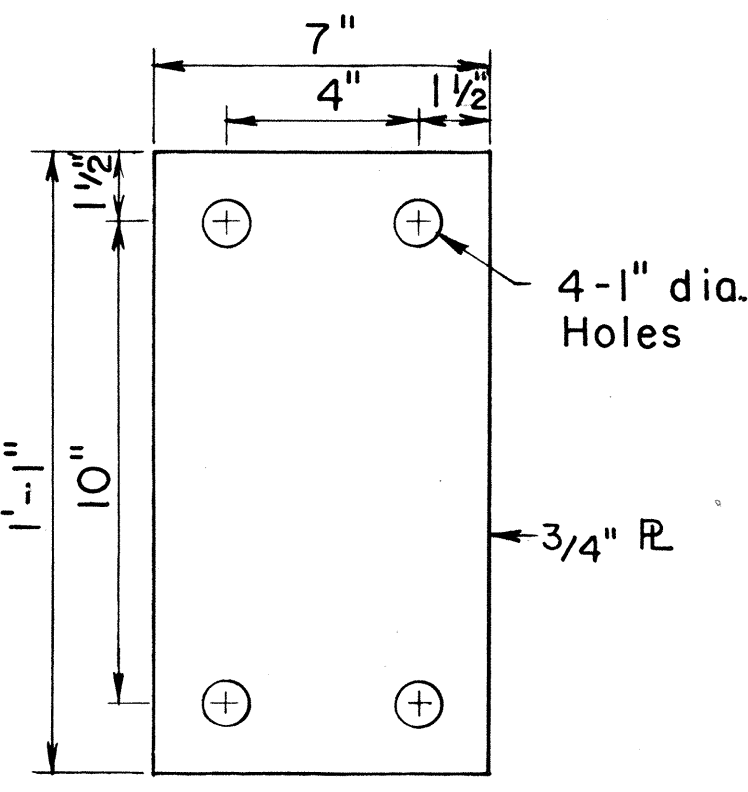
DETAIL B

FRONT ELEVATION



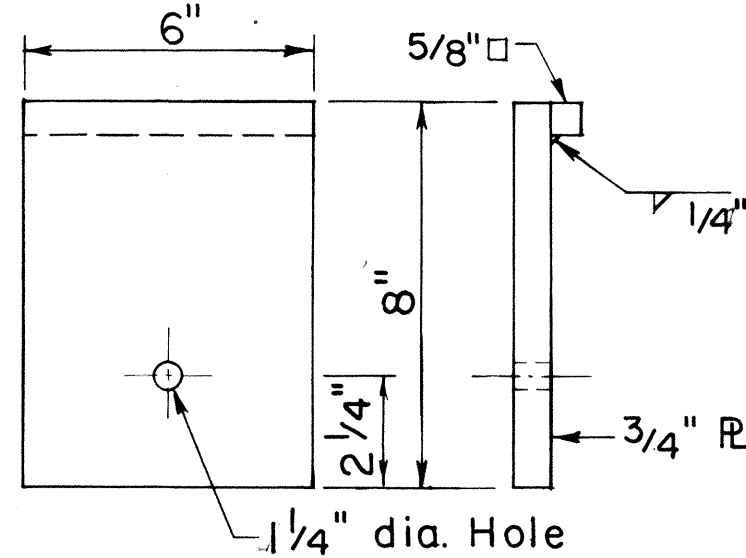
BASE PLATES A & B

Scale: 3" = 1'-0"



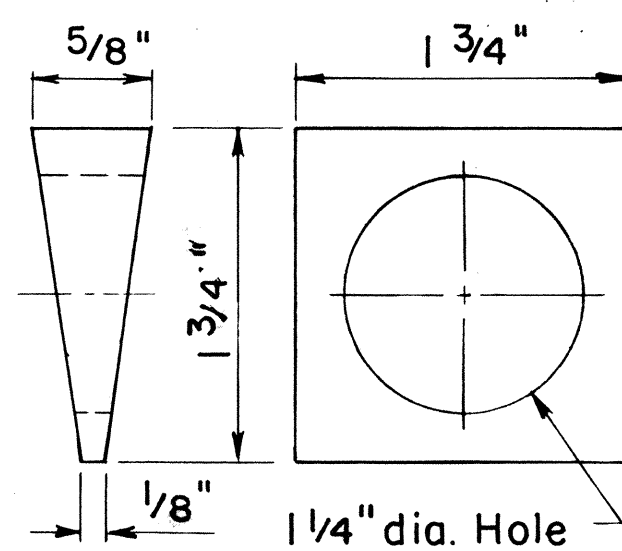
BASE PLATE C

Scale: 3" = 1'-0"



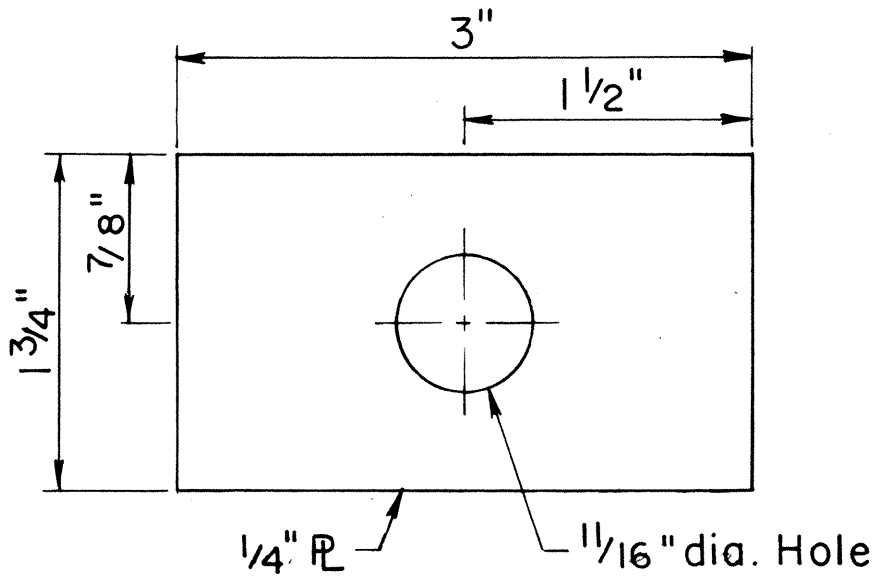
BEARING PLATE

Scale: 3" = 1'-0"



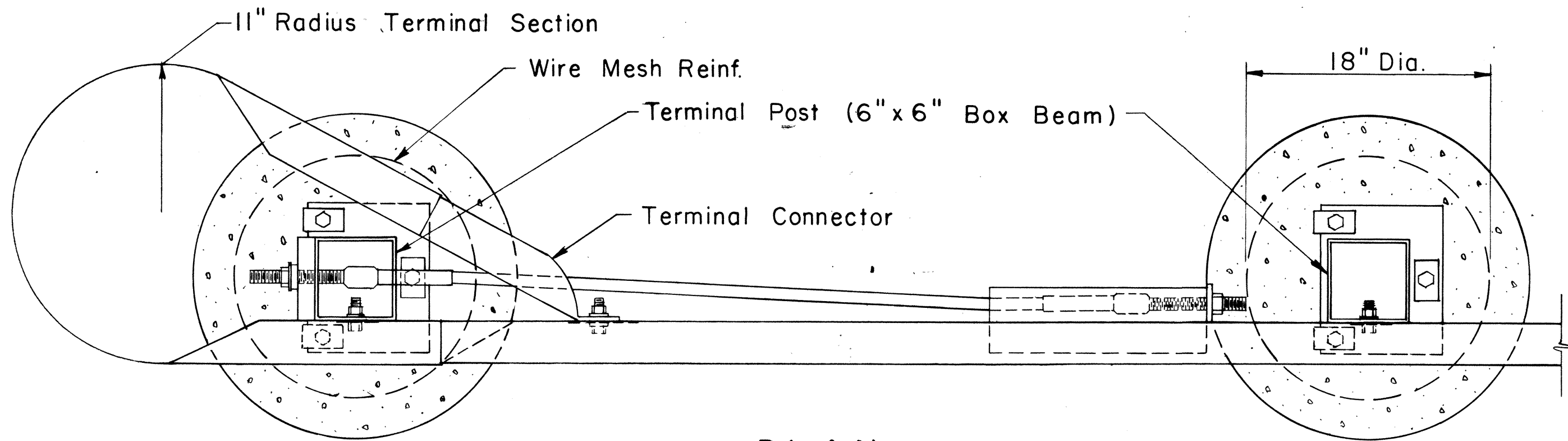
TAPERED WASHER

Scale: Full Size

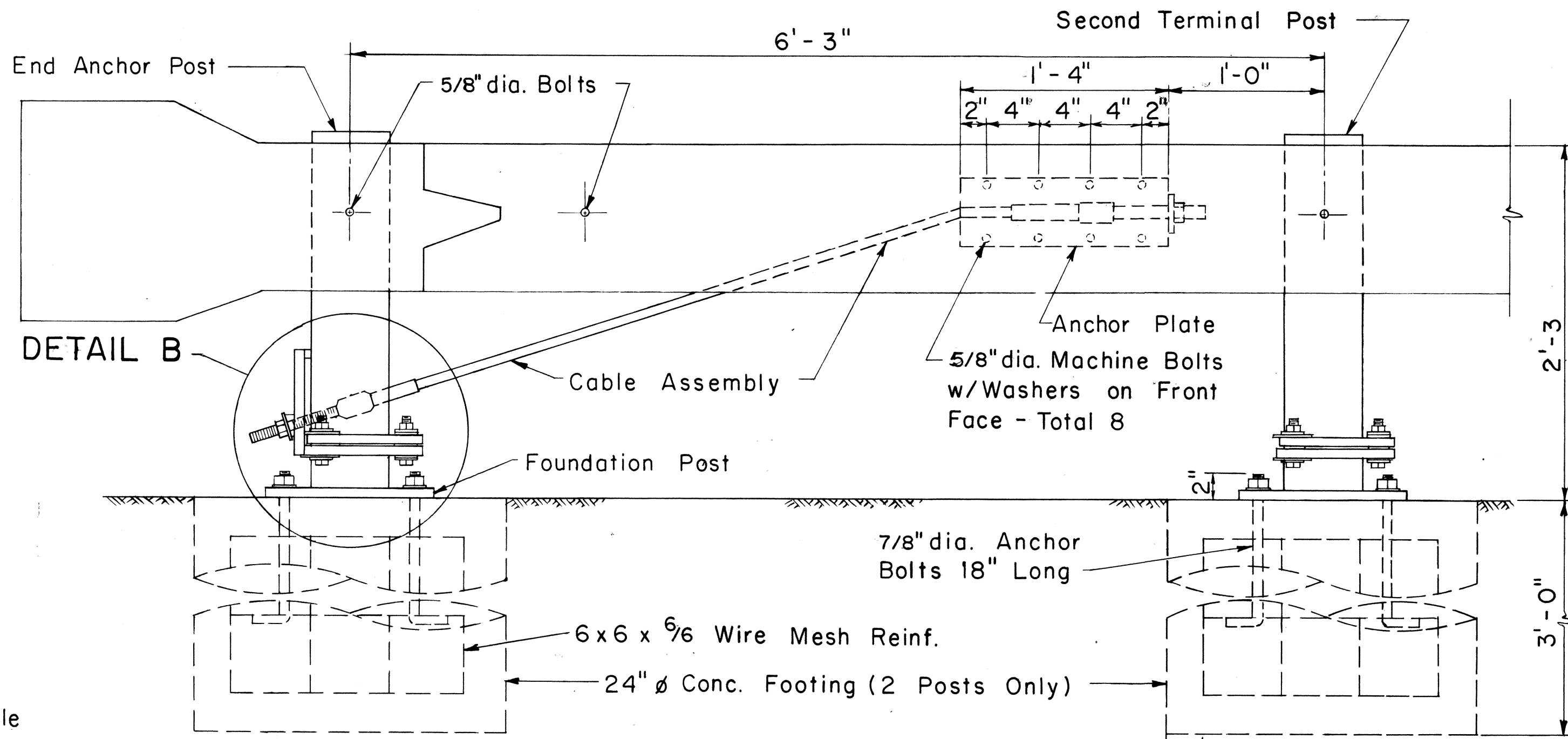


FLAT PLATE WASHER

Scale: Full Size



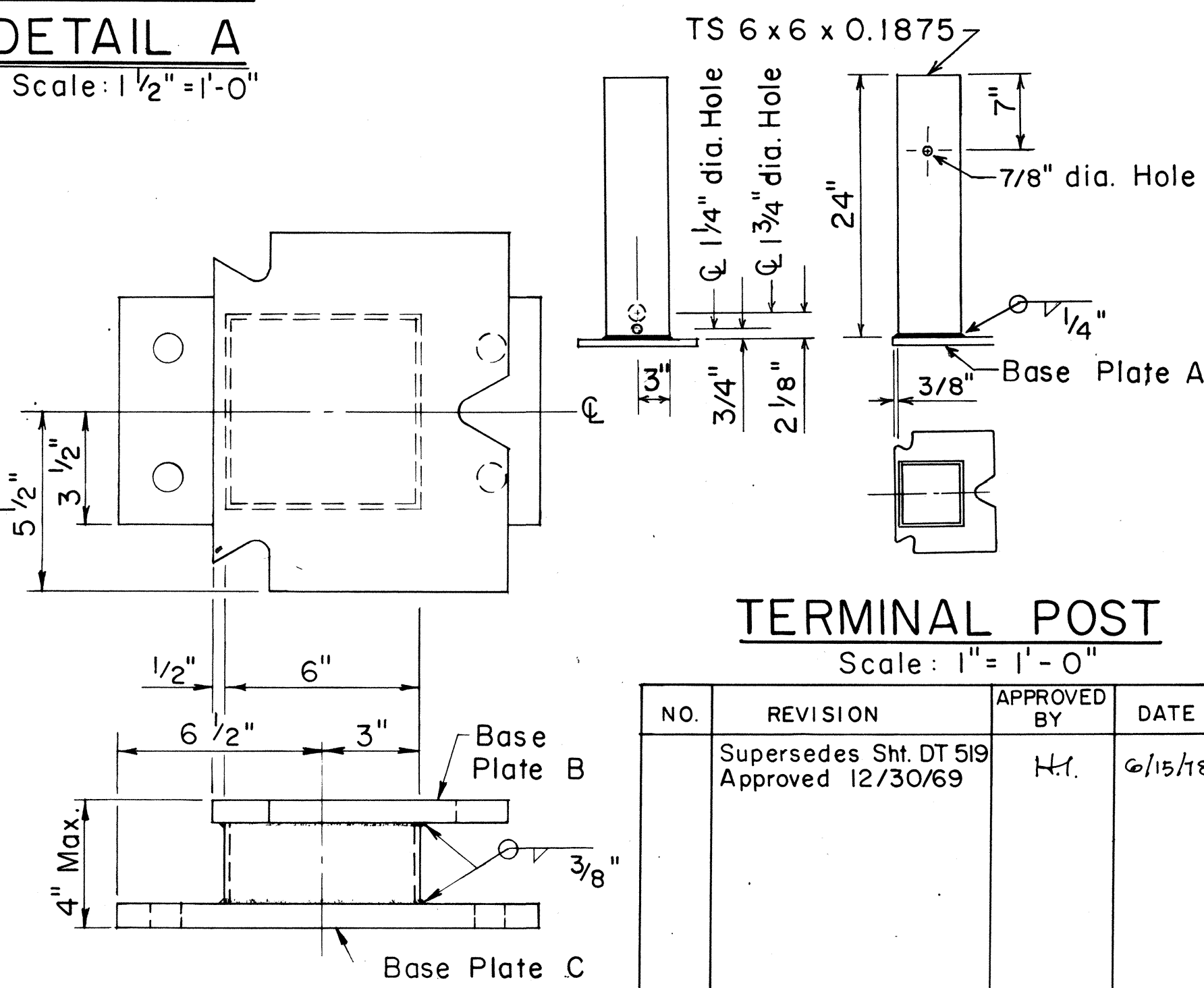
PLAN



ELEVATION

DETAIL A

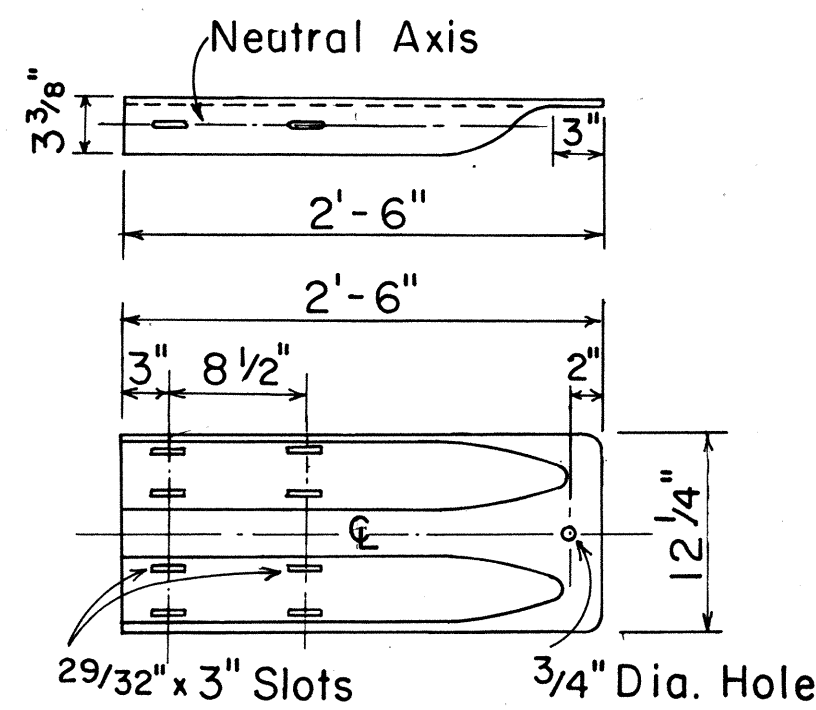
Scale: 1 1/2" = 1'-0"



TERMINAL POST

Scale: 1" = 1'-0"

NO.	REVISION	APPROVED BY	DATE
	Supersedes Sht. DT 519 Approved 12/30/69	H.I.	6/15/78



TERMINAL CONNECTOR

Scale: 1" = 1'-0"

APPROVAL RECOMMENDED:

Eiichi Tanaka 6/14/78
TRAFFIC ENGINEER DATE

APPROVED:

Harbor Sakaiishi 6/15/78
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAIL

BREAKAWAY CABLE TERMINAL (BCT)

Scale: As Shown Date: June 1978

SHEET No. 20 OF 21 SHEETS DT 519

