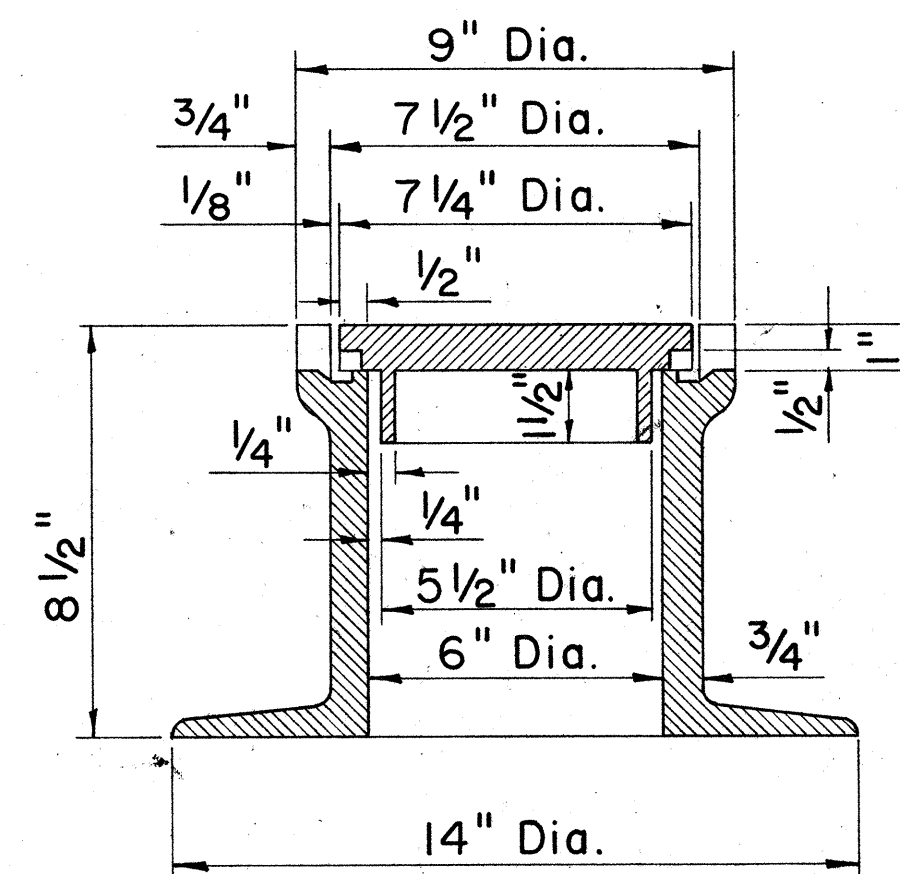
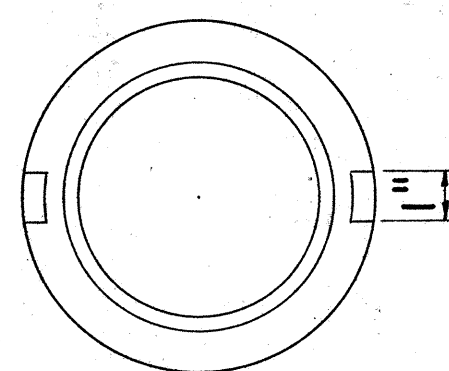
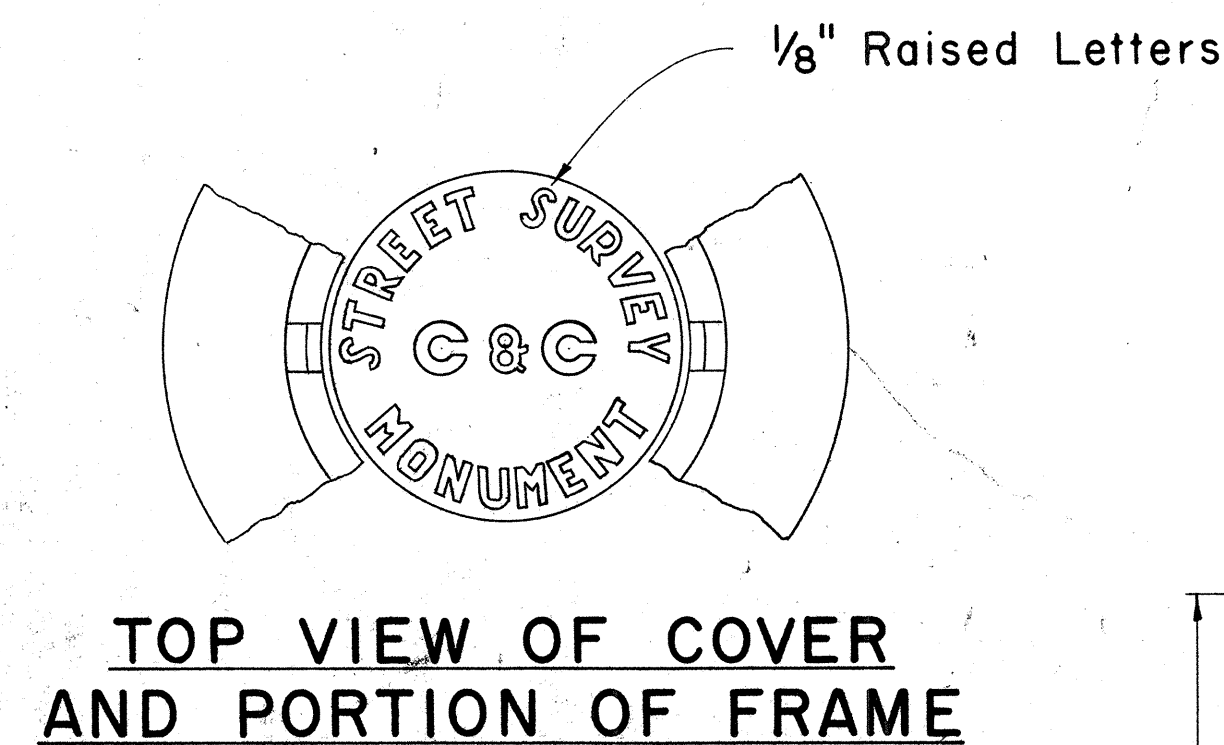
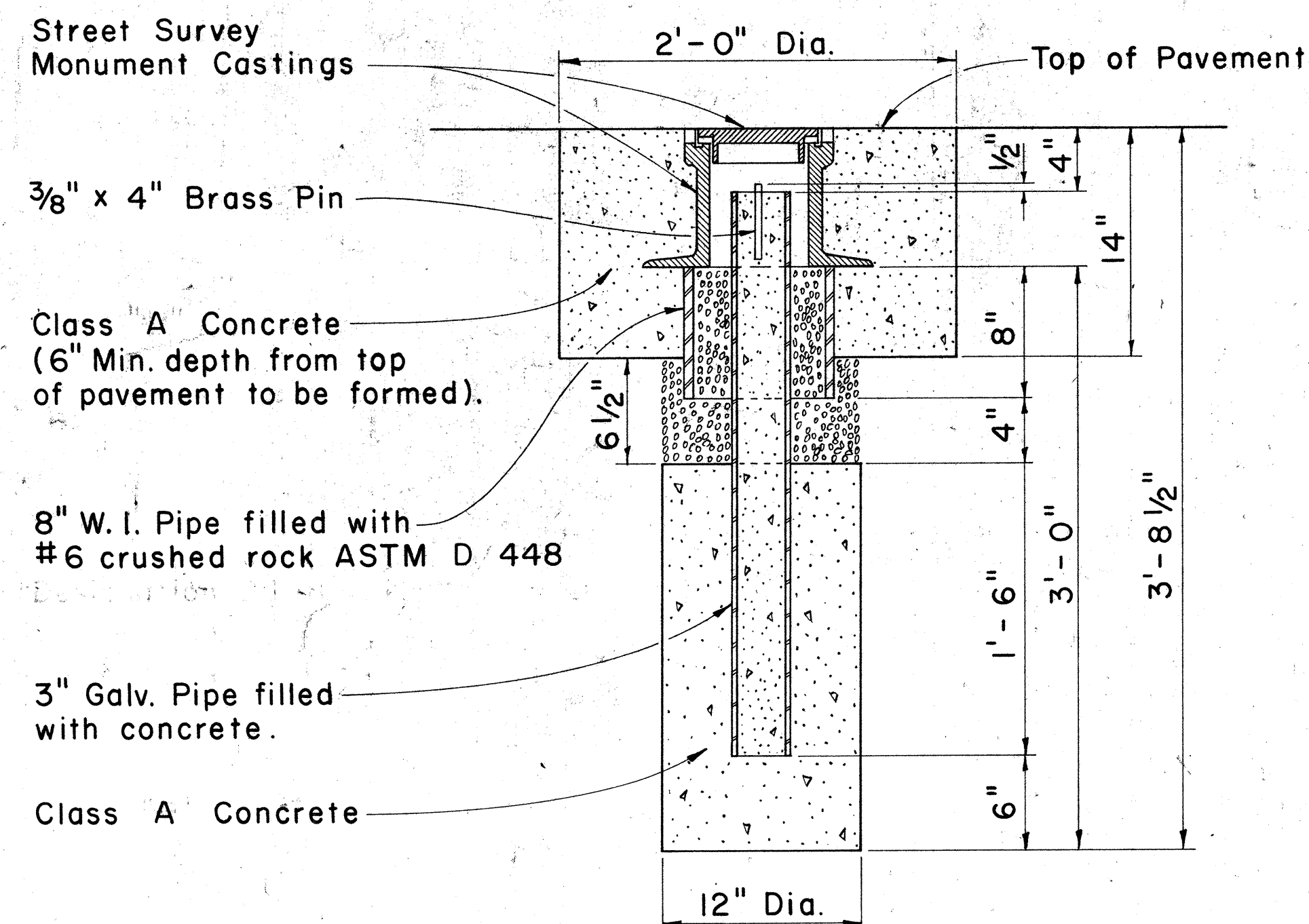


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER 9(3)	1970	66	89



STREET SURVEY MONUMENT CASTINGS

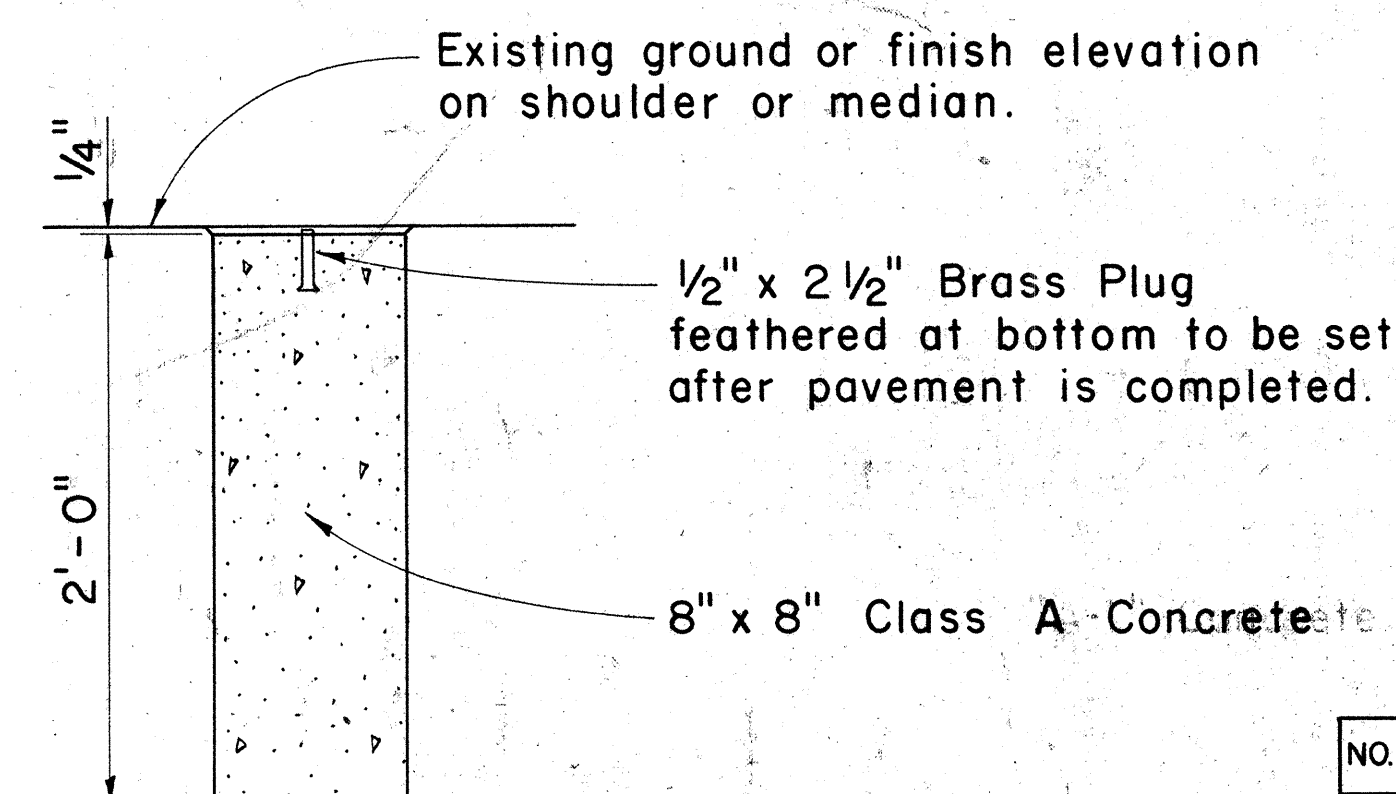
Scale: 3" = 1'-0"



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 CENTERLINE AND REFERENCE SURVEY MONUMENT

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

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

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

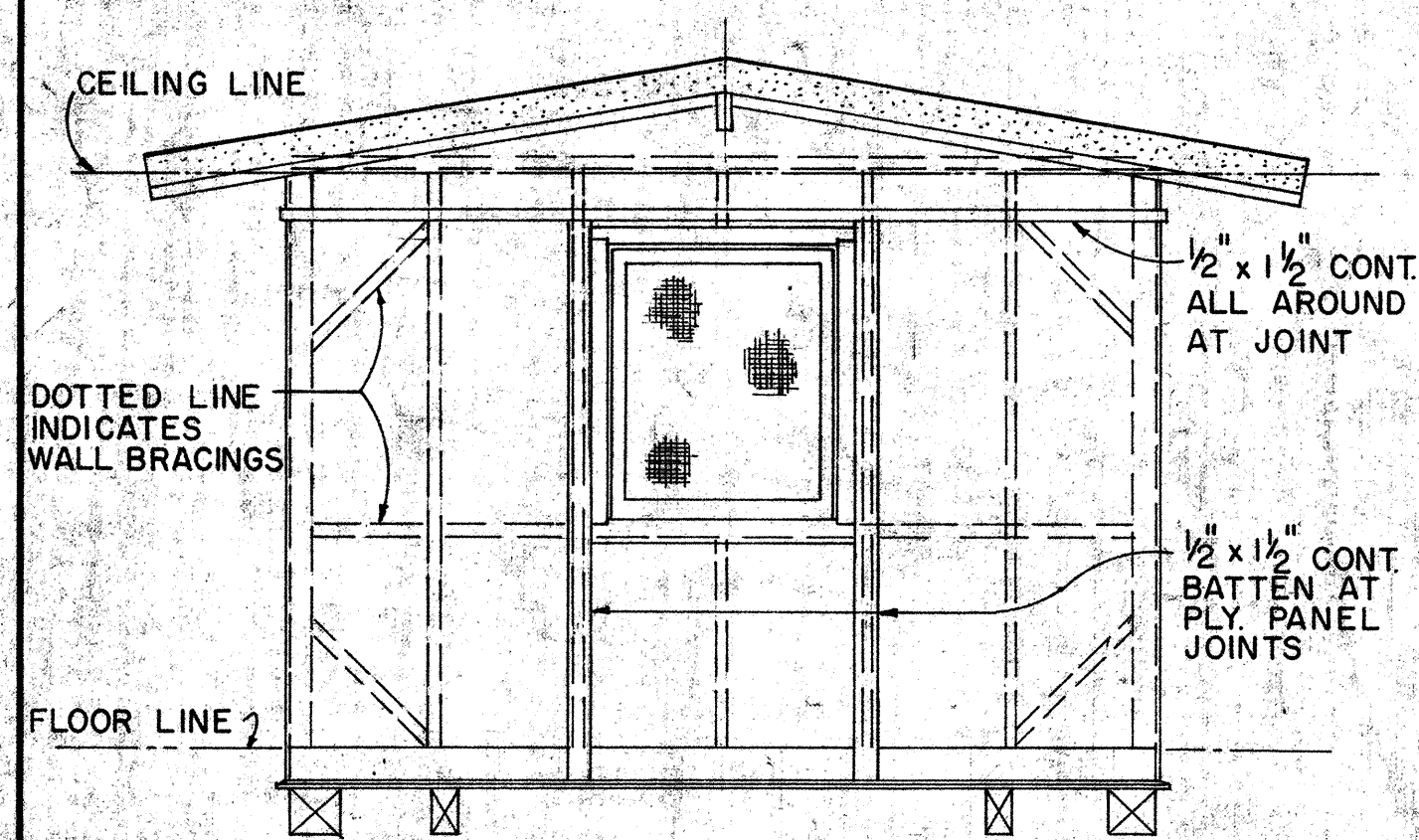
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
CENTERLINE, REFERENCE SURVEY
AND C & C STREET SURVEY
MONUMENTS

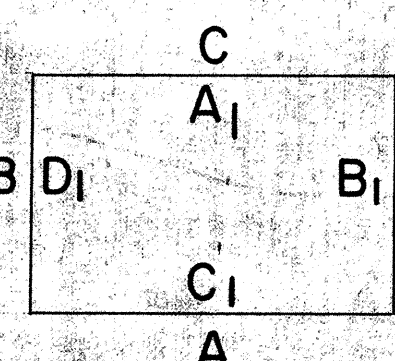
Scale: As Shown

SHEET No. 1 OF 24 SHEETS DD 613.1

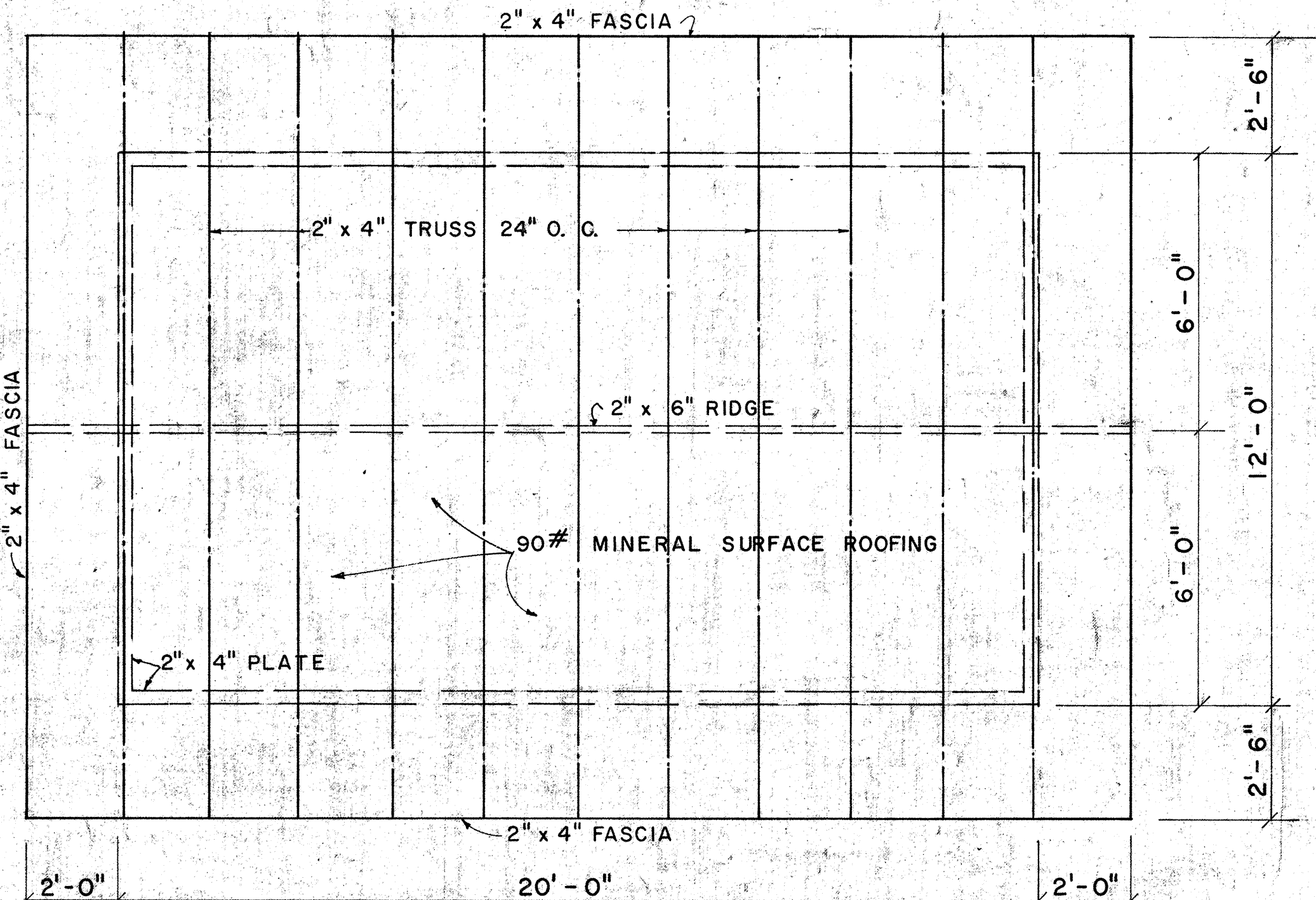
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	ER 7(3)	1979	67	89



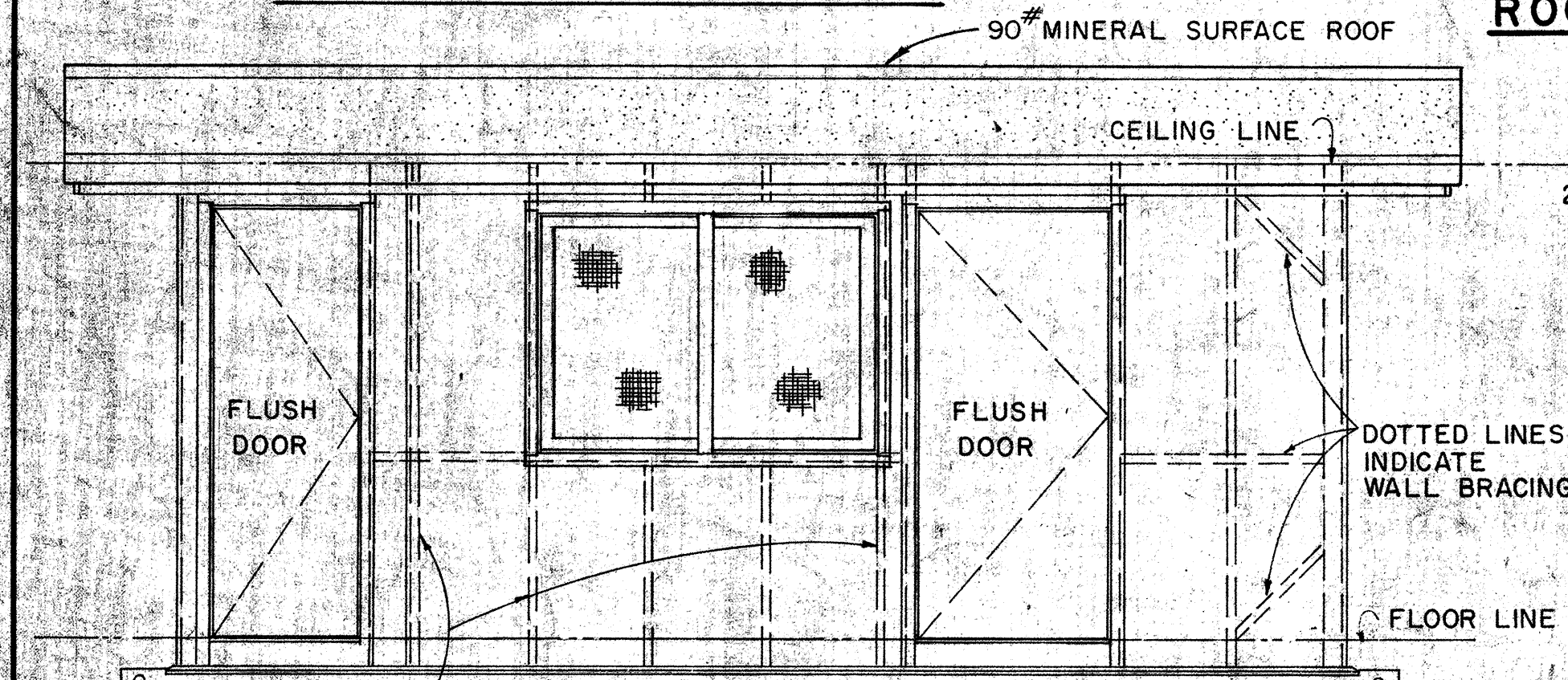
ELEVATION B
ELEVATION D SIMILAR
SCALE: $\frac{3}{8}" = 1'-0"$



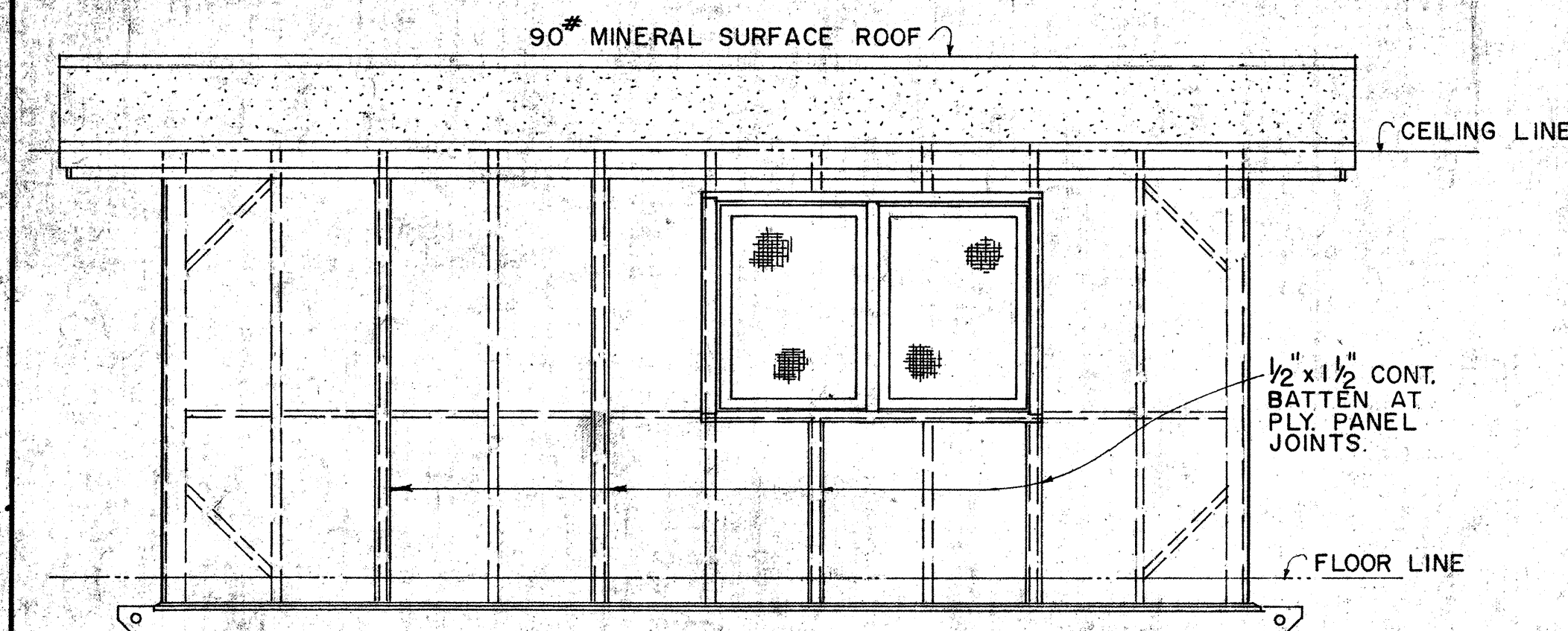
EXTERIOR & INTERIOR KEY



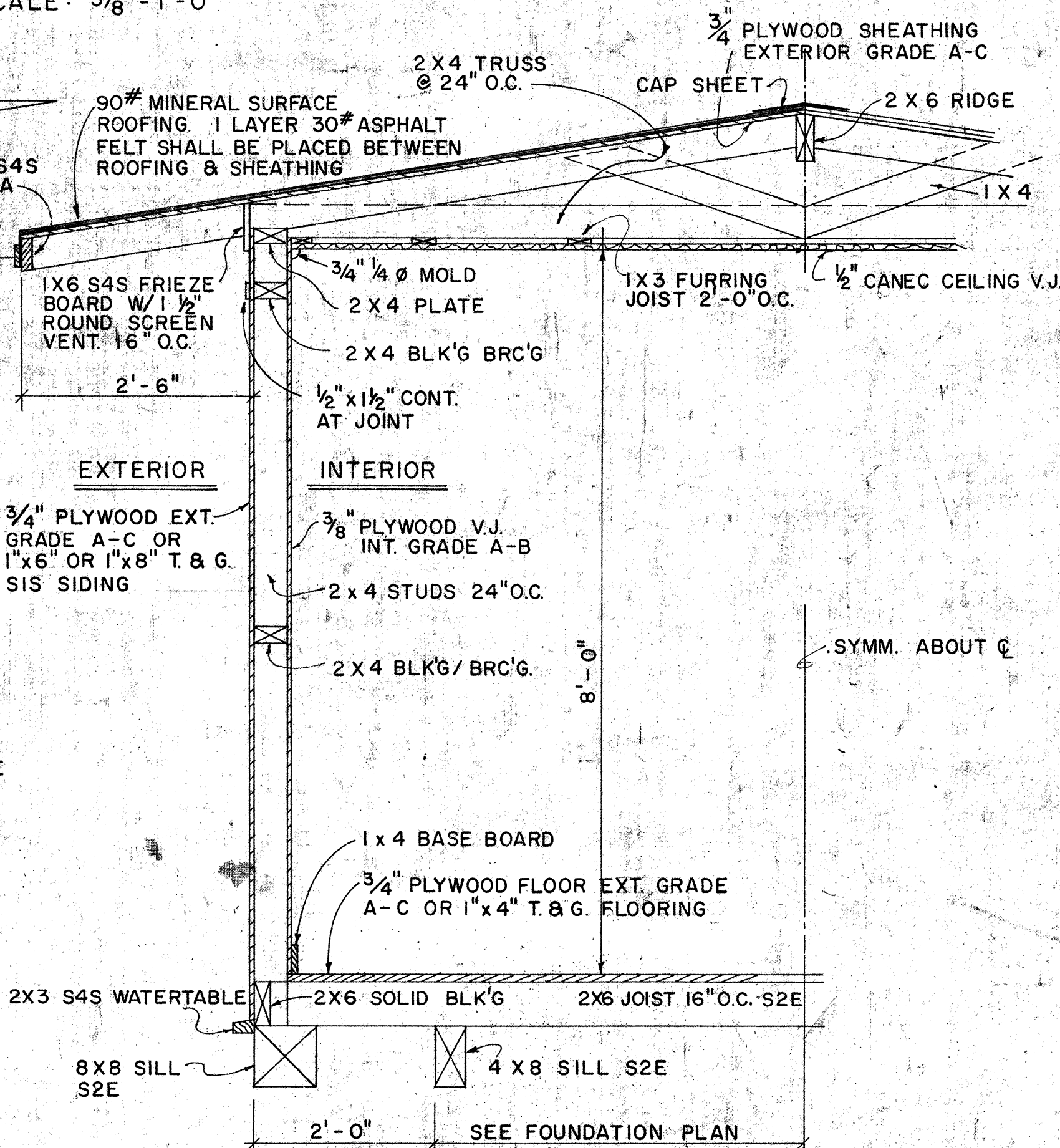
ROOF FRAMING PLAN
SCALE: $\frac{3}{8}" = 1'-0"$



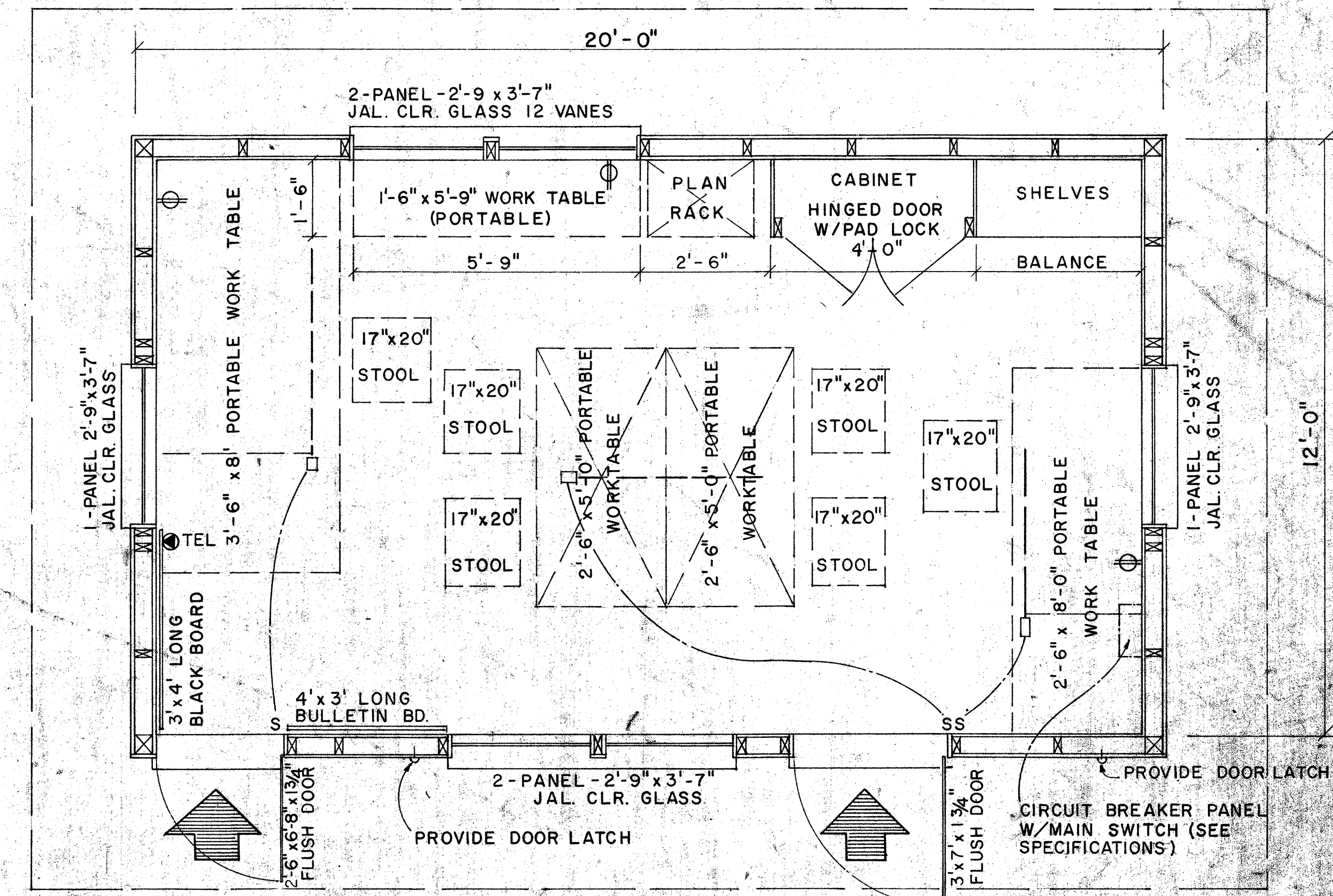
ELEVATION A
SCALE: $\frac{3}{8}" = 1'-0"$



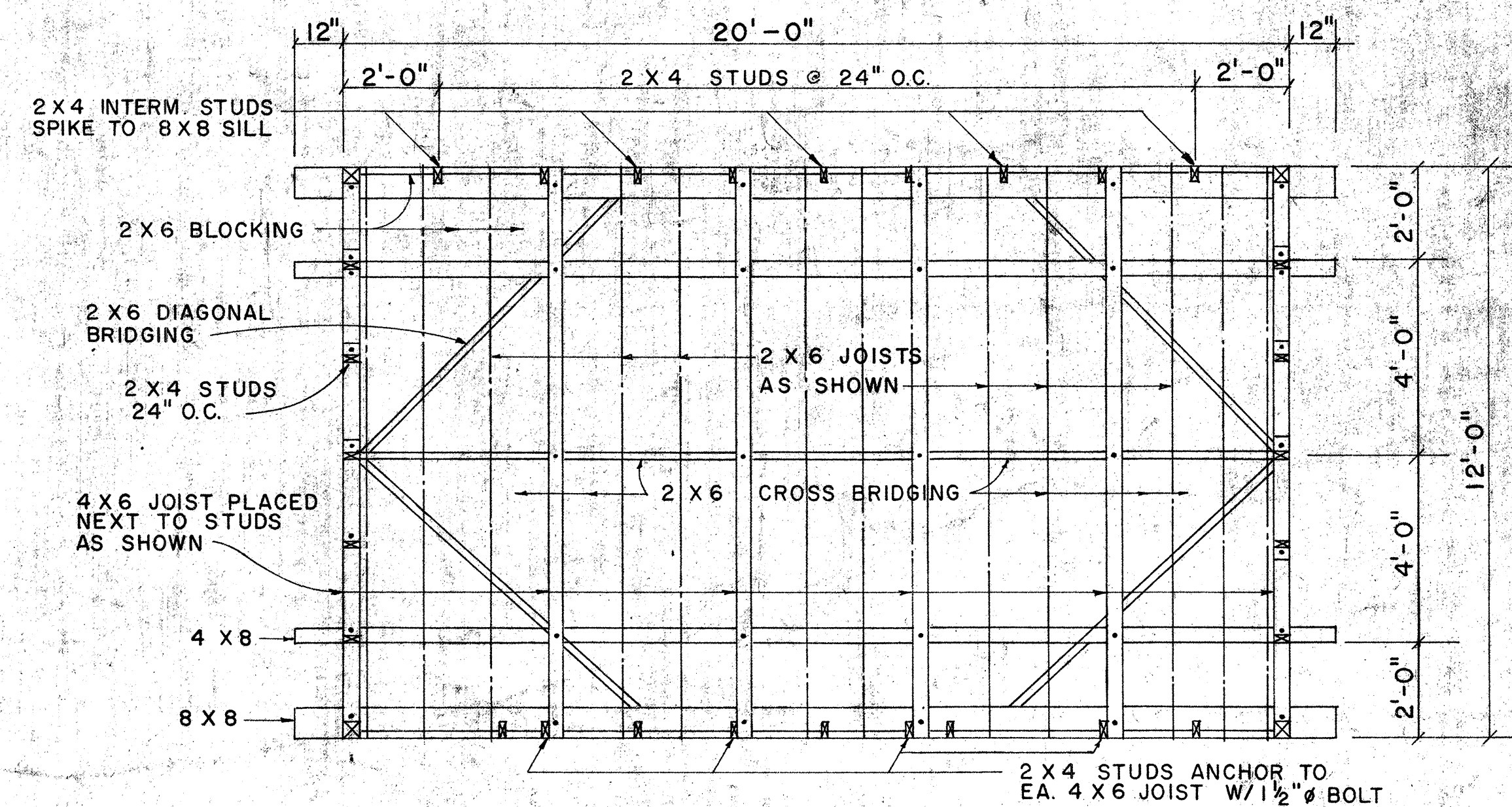
ELEVATION C
SCALE: $\frac{3}{8}" = 1'-0"$



TYPICAL WALL SECTION
SCALE: $\frac{3}{4}" = 1'-0"$



FLOOR PLAN
SCALE: $\frac{1}{2}" = 1'-0"$



FOUNDATION FRAMING PLAN
SCALE: $\frac{3}{8}" = 1'-0"$

APPROVAL RECOMMENDED:

HIGHWAY DESIGN ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-4-69
DATE

12-10-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

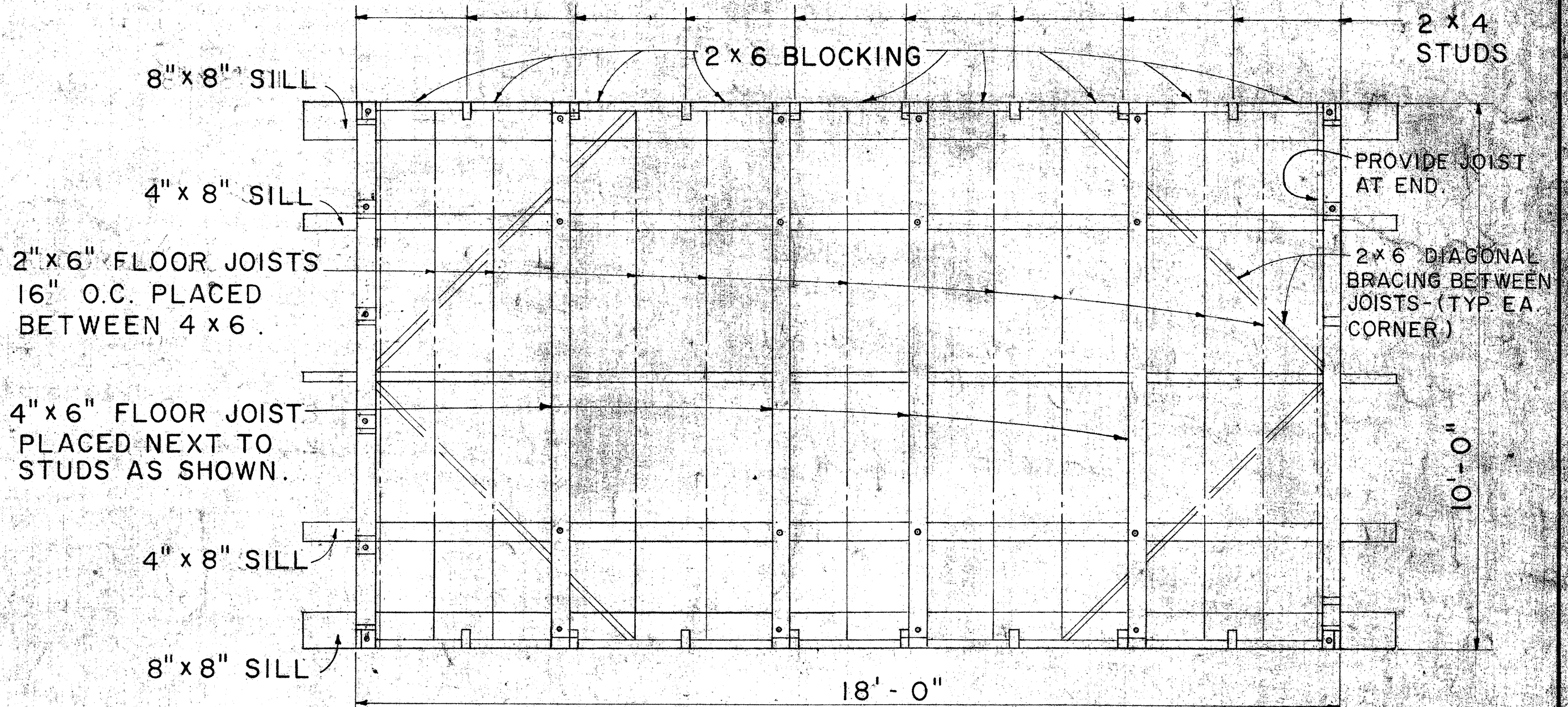
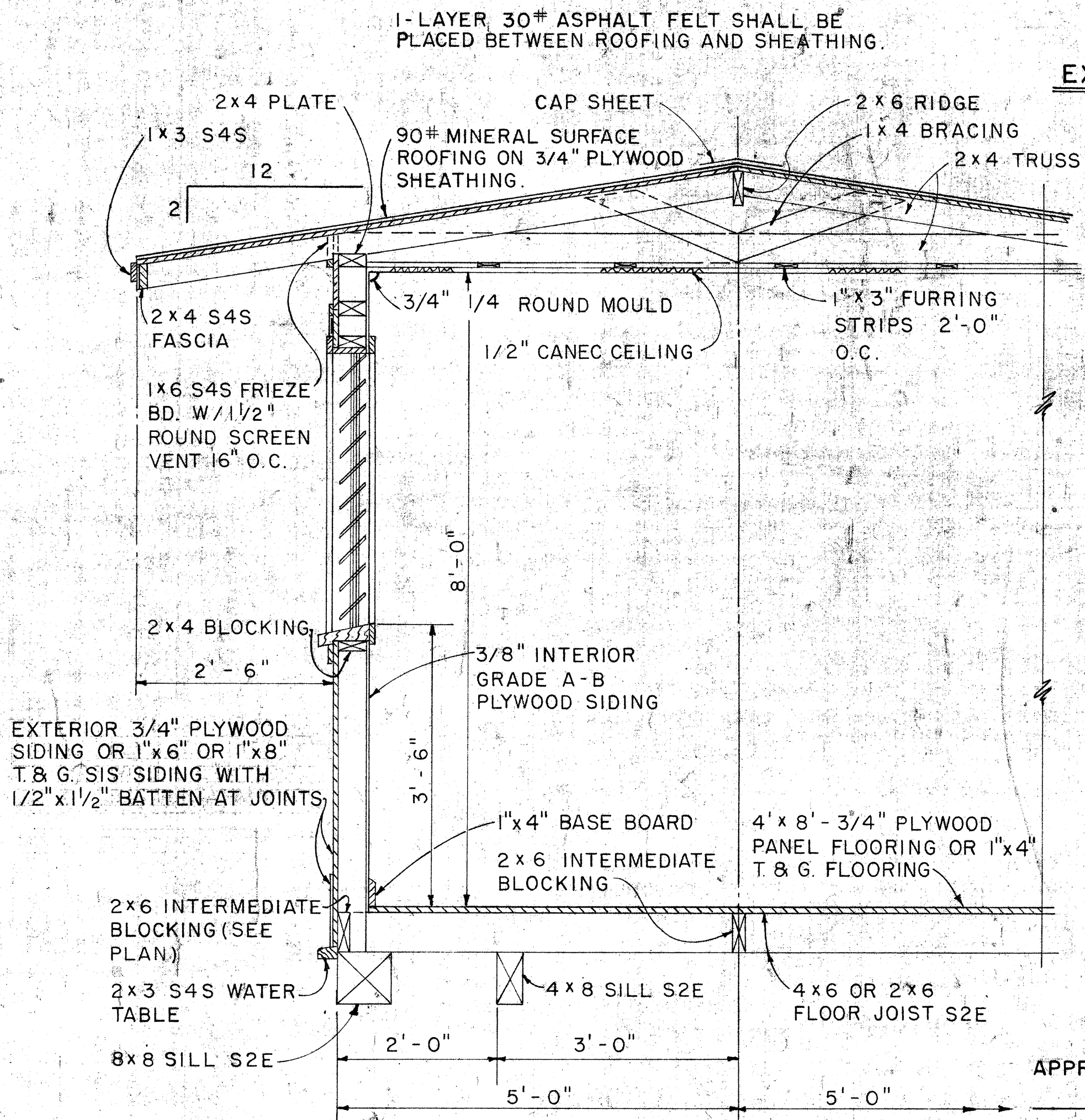
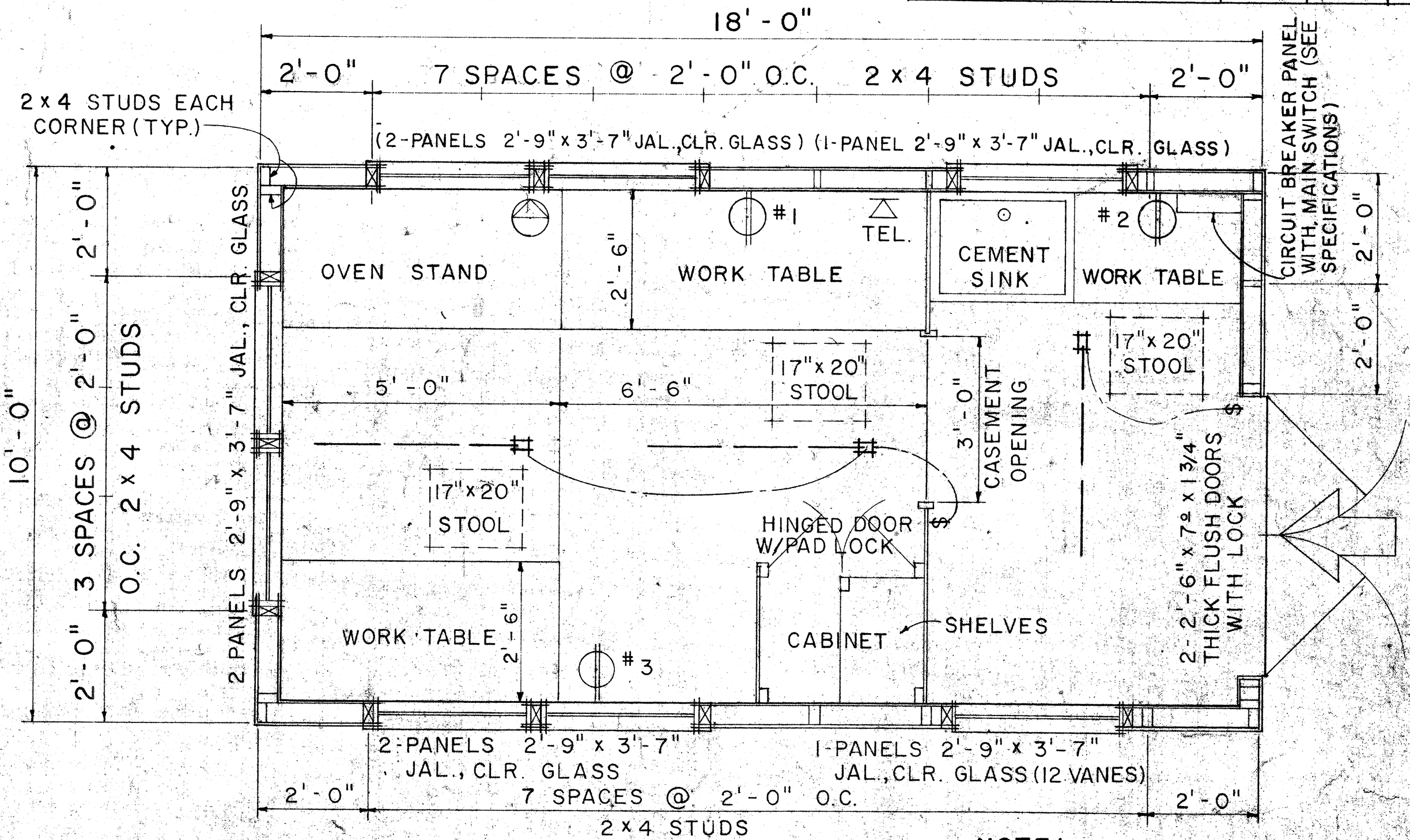
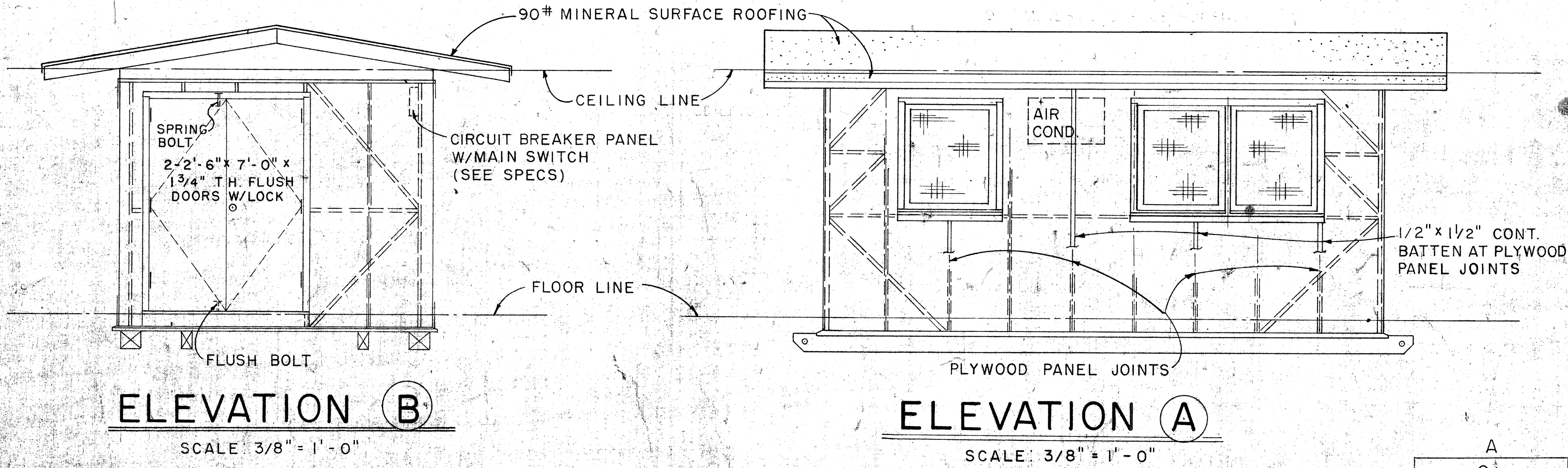
FIELD OFFICE

Scale: As Noted

SHEET NO. 2 OF 24 SHEETS DD 6361

DESIGNED BY	
CHECKED BY	
DATE	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER7(3)	1977	67	80



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

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

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

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

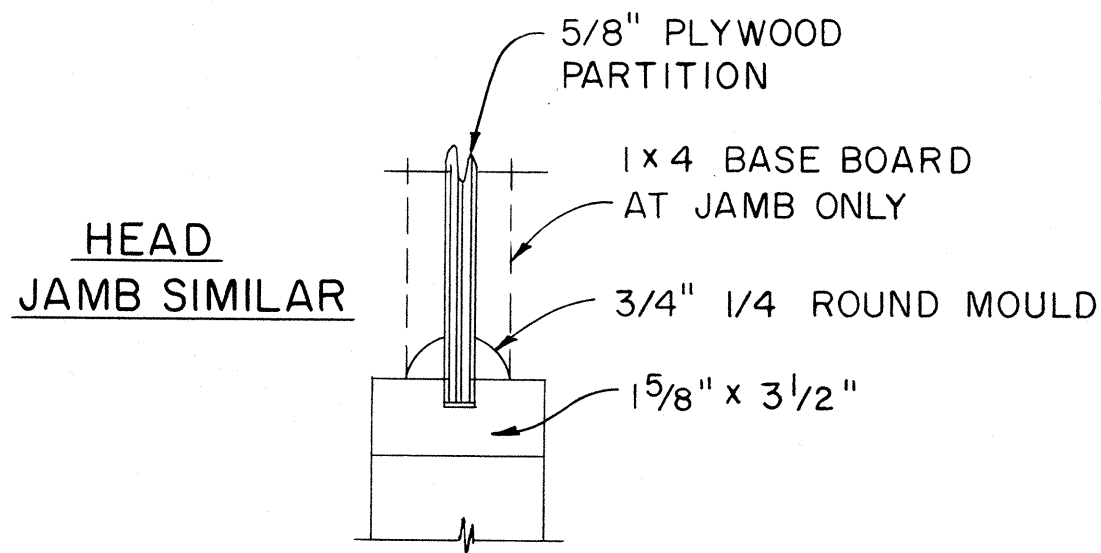
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

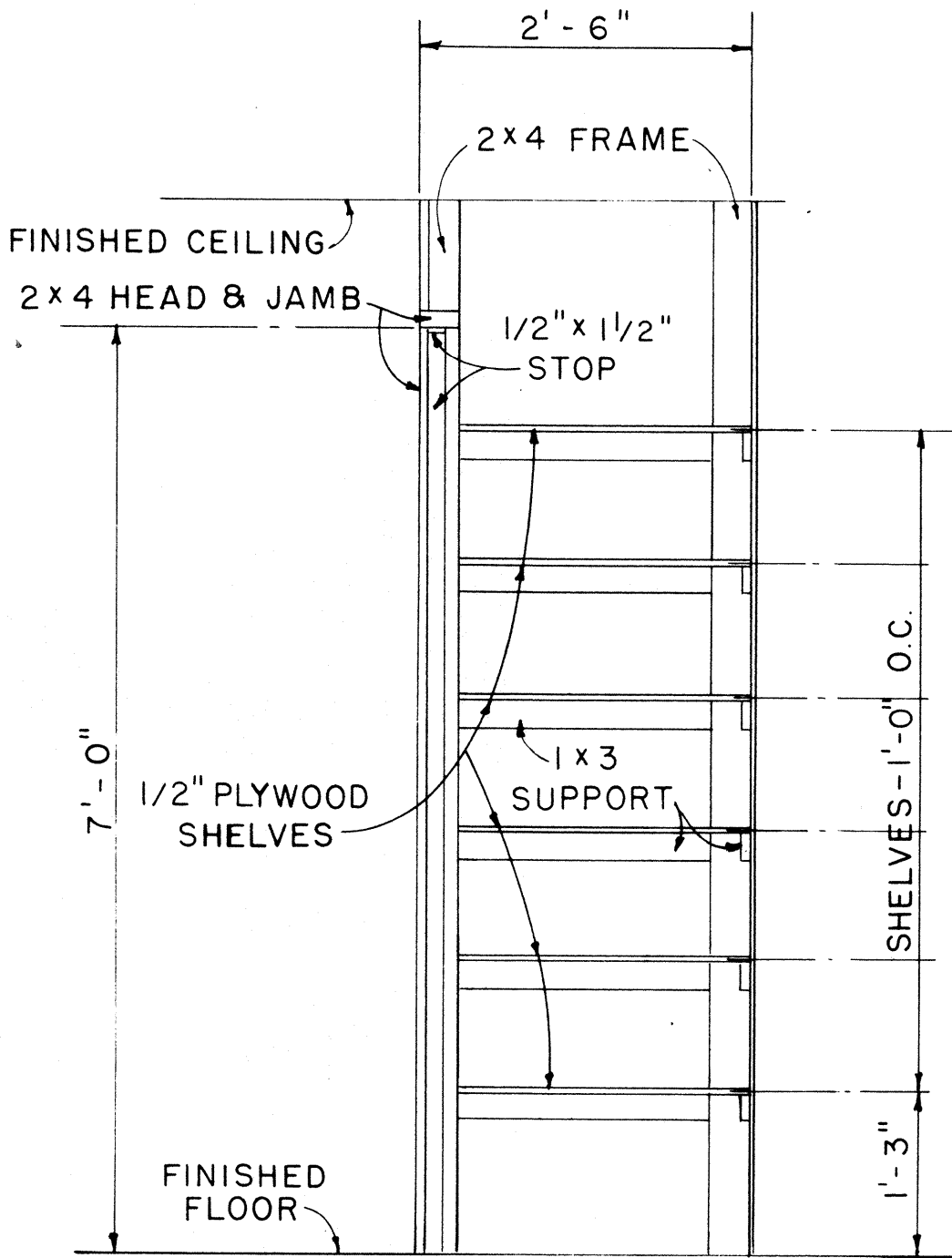
PROJECT SITE LABORATORY

Scale: As Noted

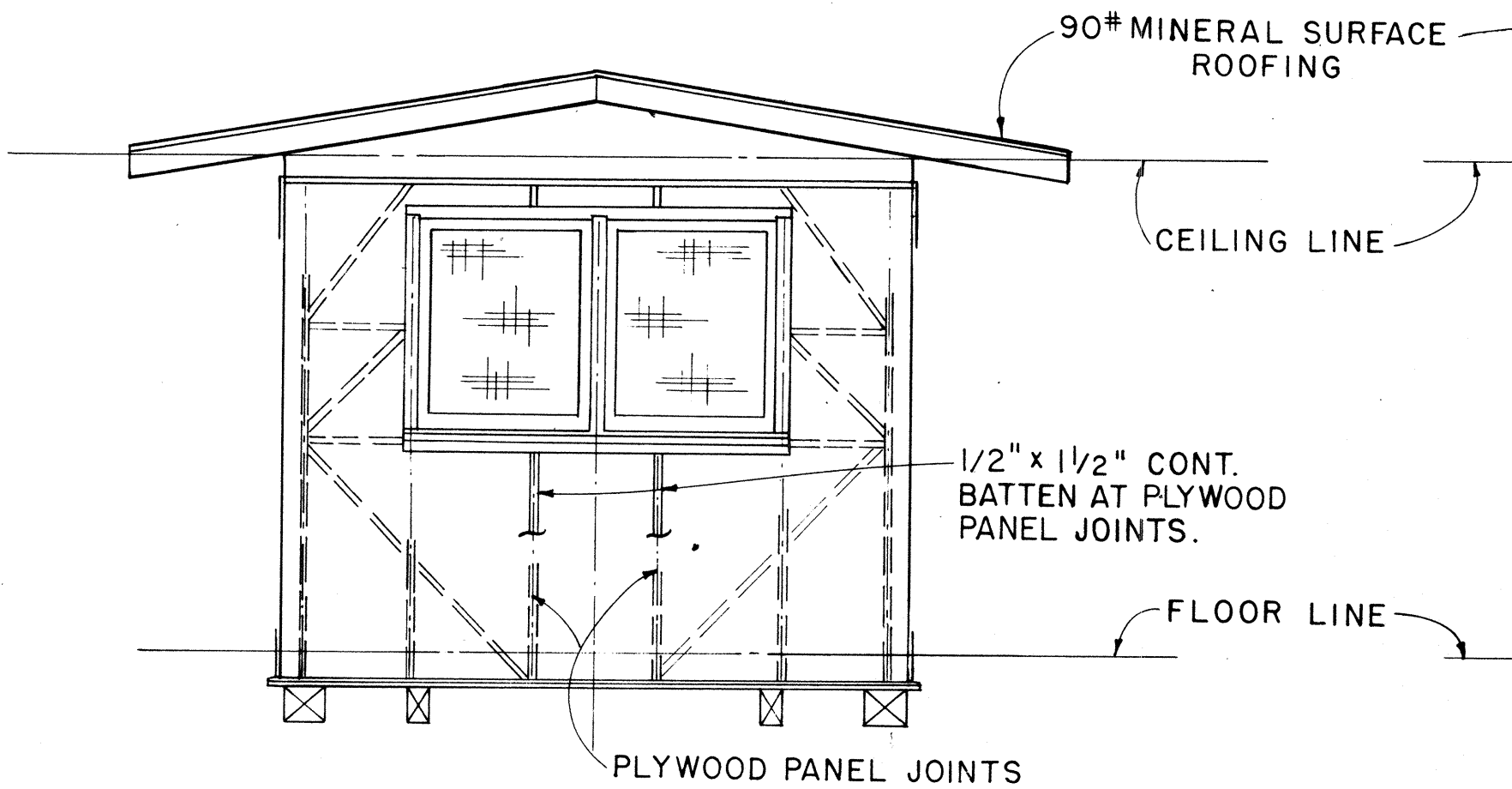
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ERD(3)	1979	70	80



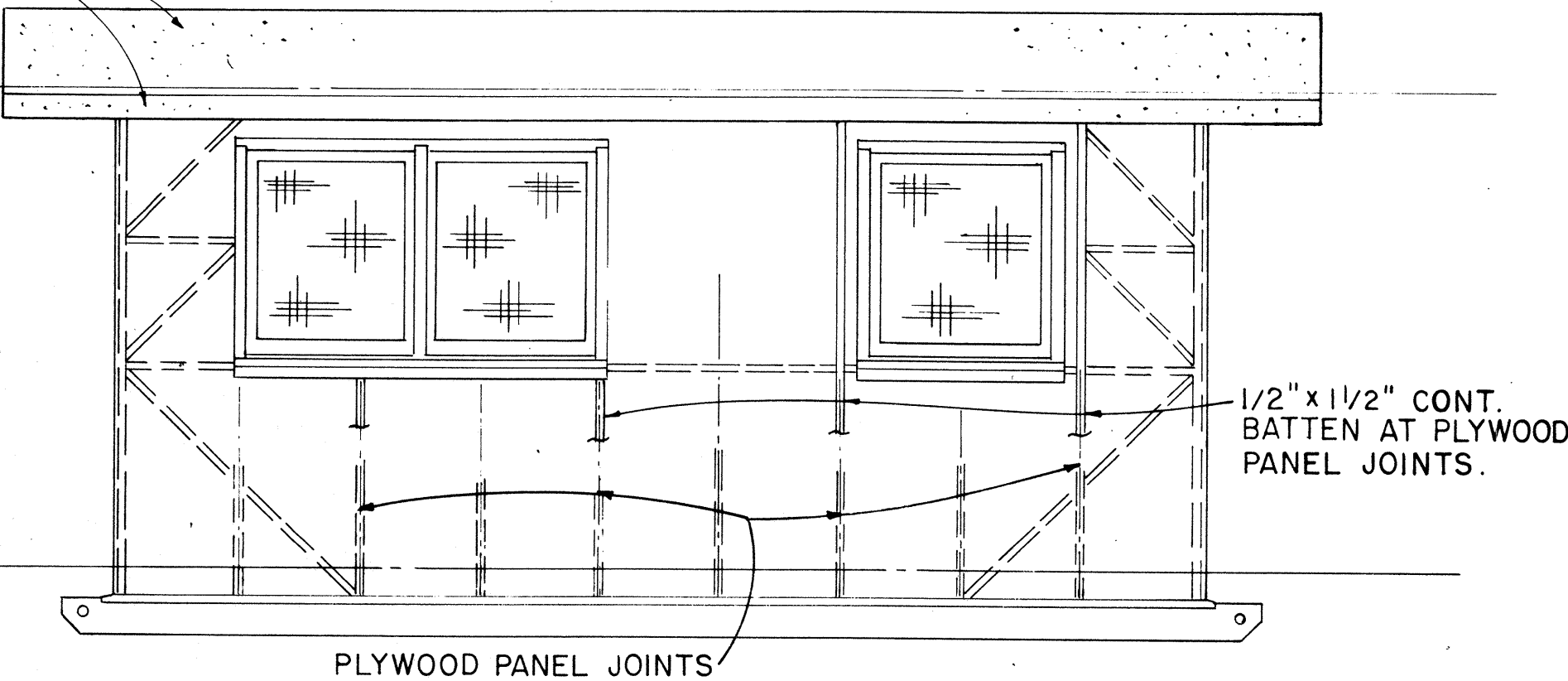
CASEMENT DETAIL
SCALE: 3" = 1'-0"



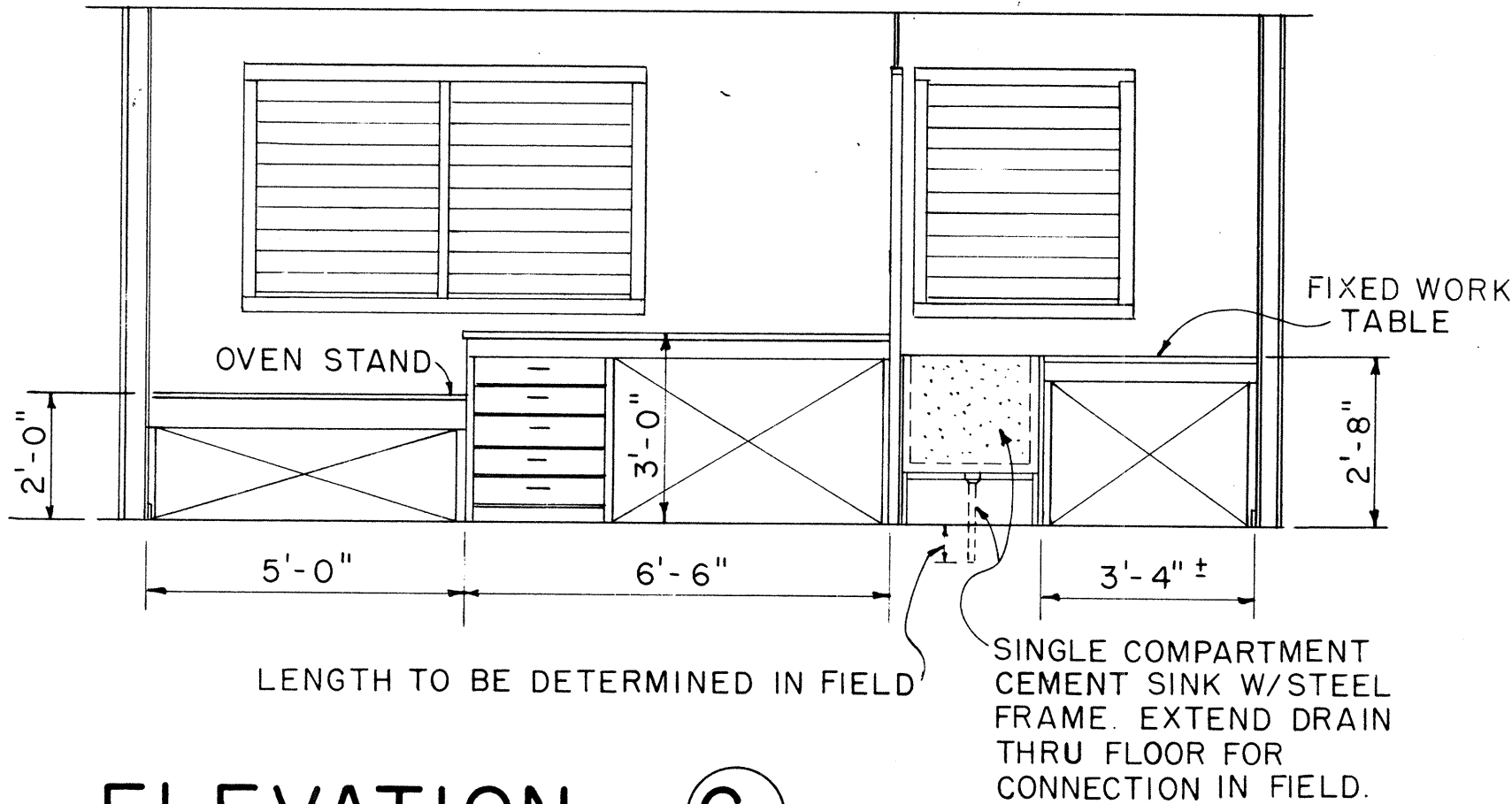
CABINET DETAIL
SCALE: 3/4" = 1'-0"



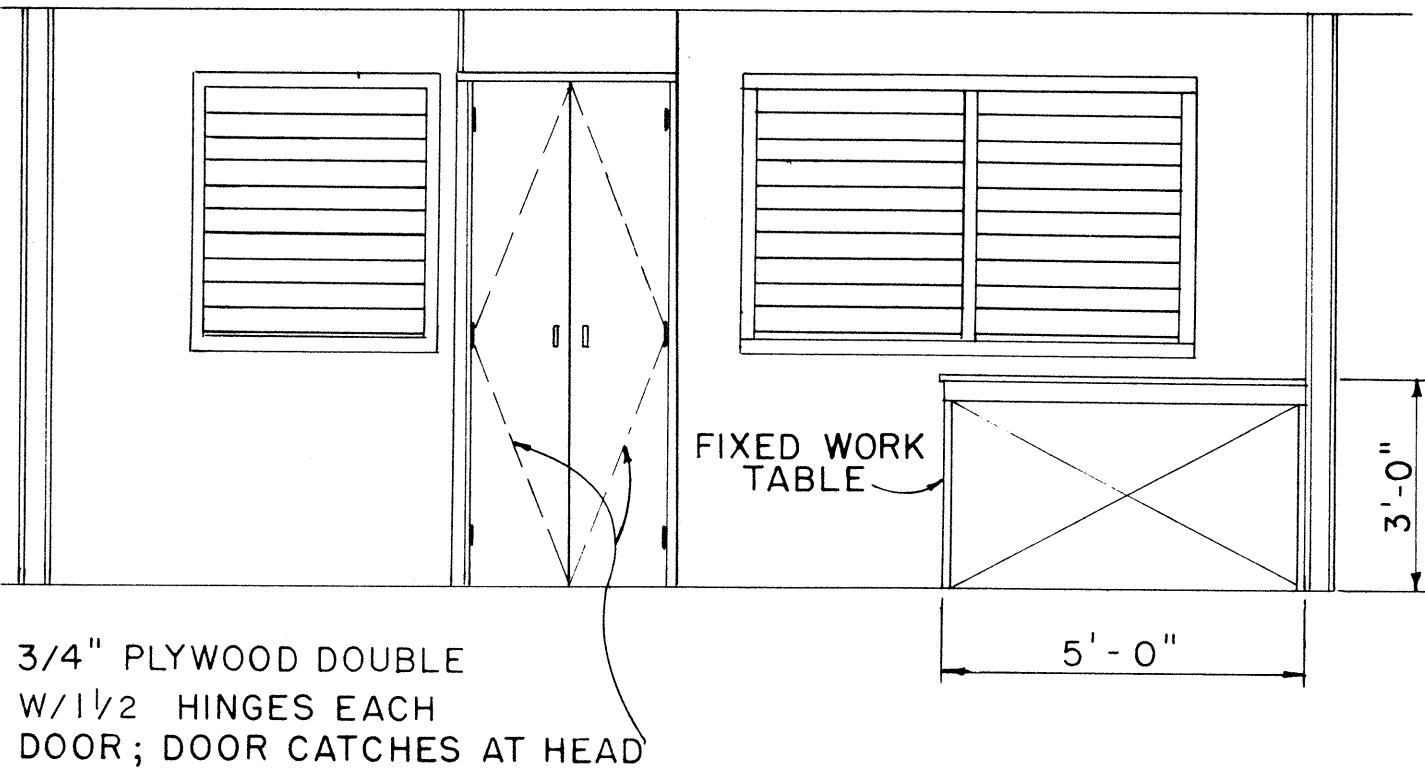
ELEVATION D
SCALE: 3/8" = 1'-0"



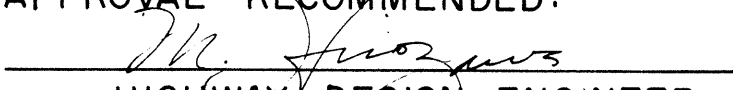
ELEVATION C
SCALE: 3/8" = 1'-0"

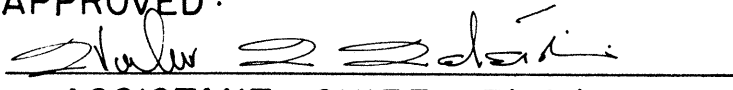


ELEVATION C1
SCALE: 3/8" = 1'-0"



ELEVATION A1
SCALE: 3/8" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

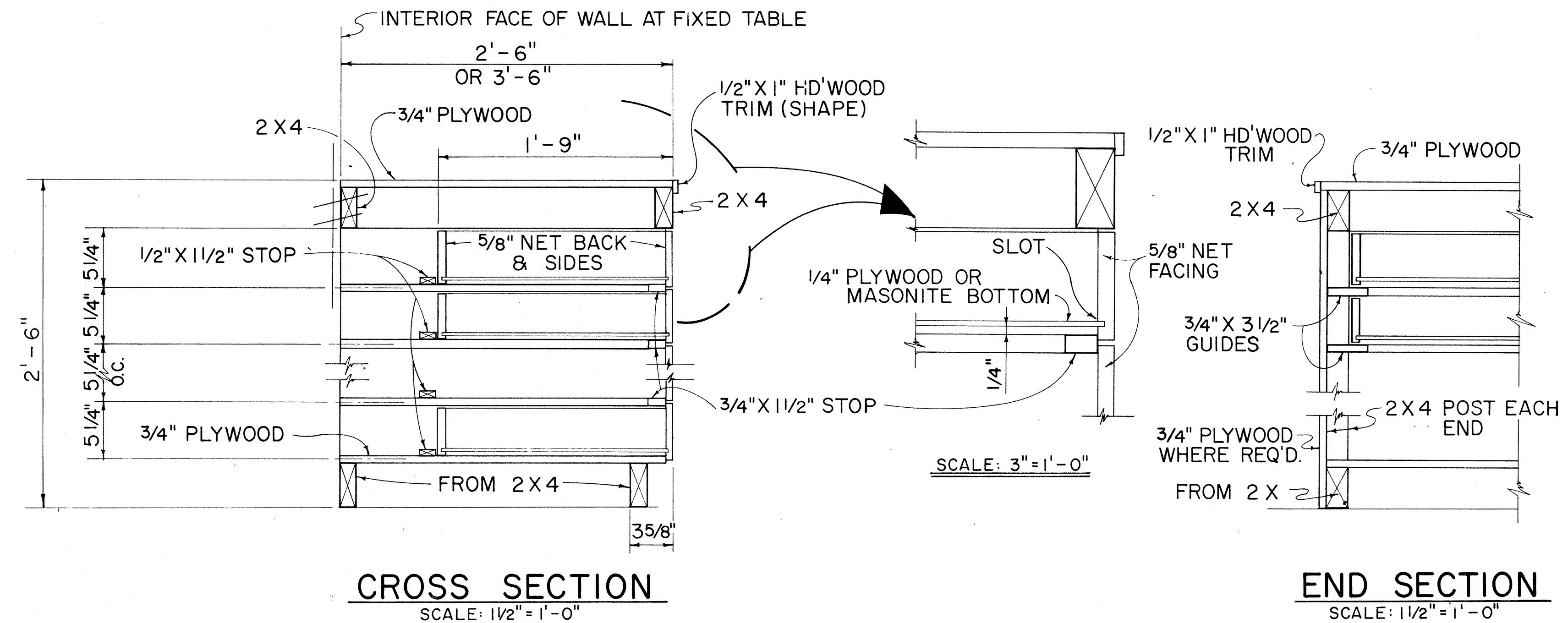
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

PROJECT SITE LABORATORY

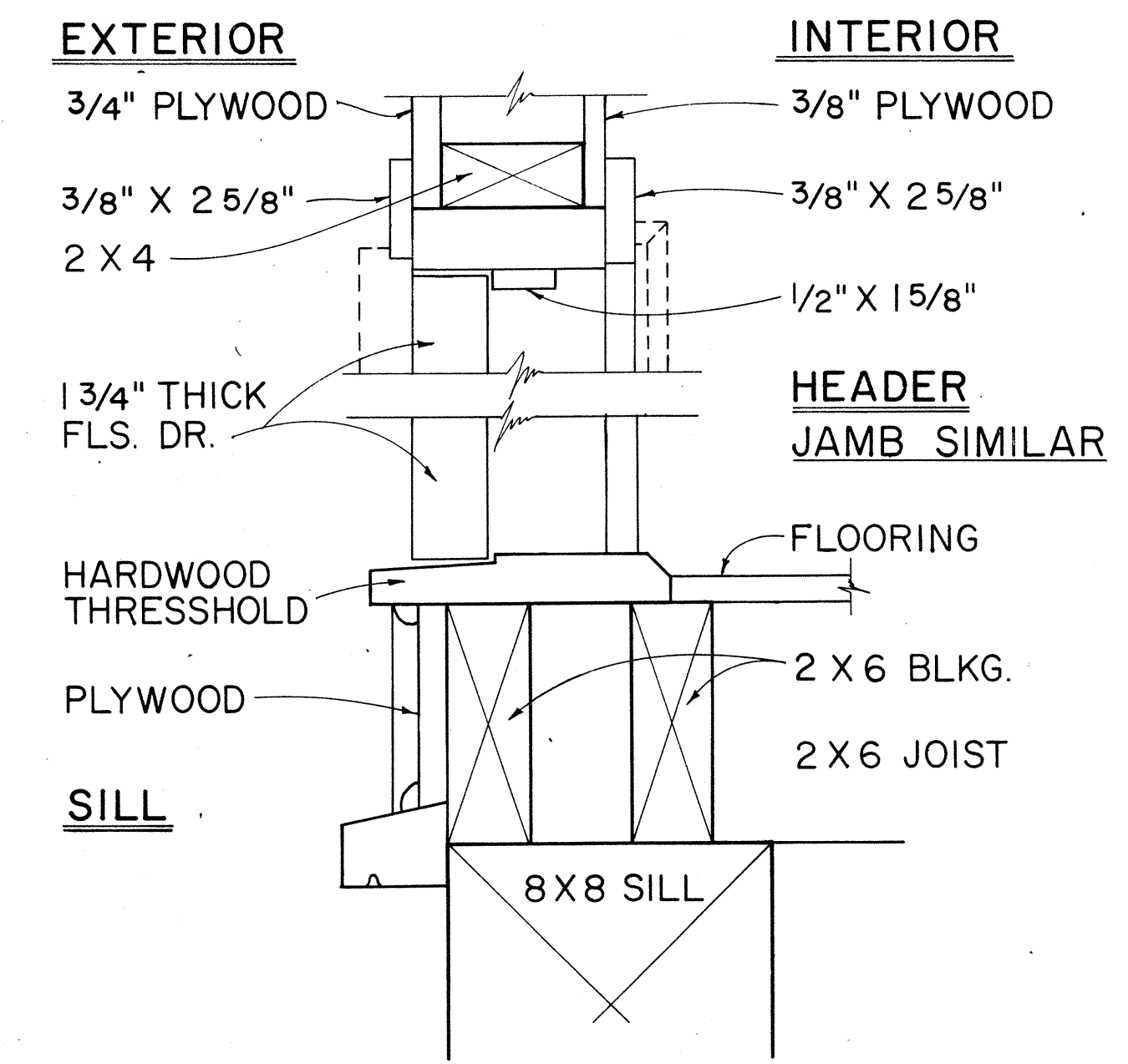
Scale: As Noted
SHEET No. 5 OF 24 SHEETS DD 636.4

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	ERD(3)	1977	71	80

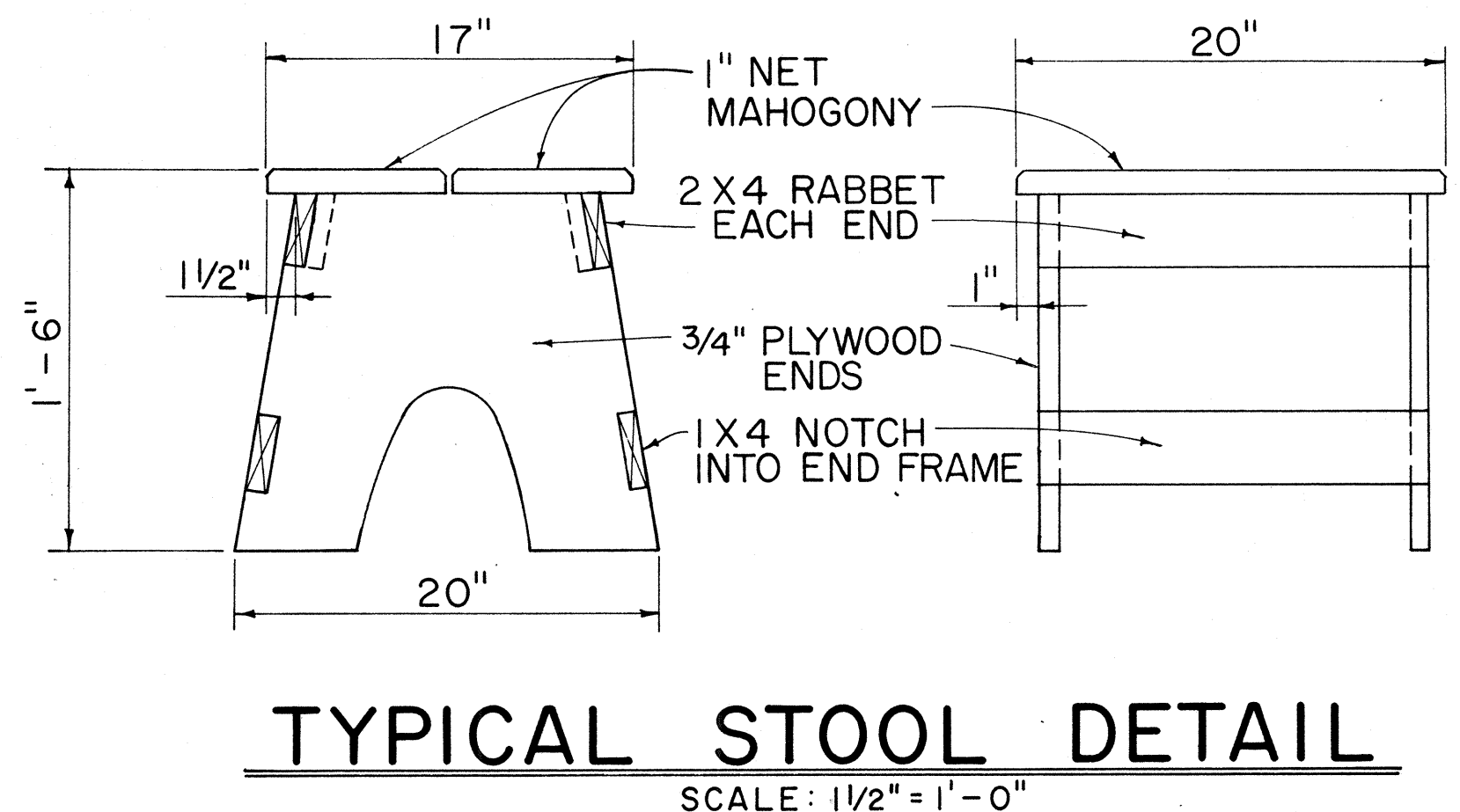


TYPICAL WORK TABLE DRAWER DETAIL



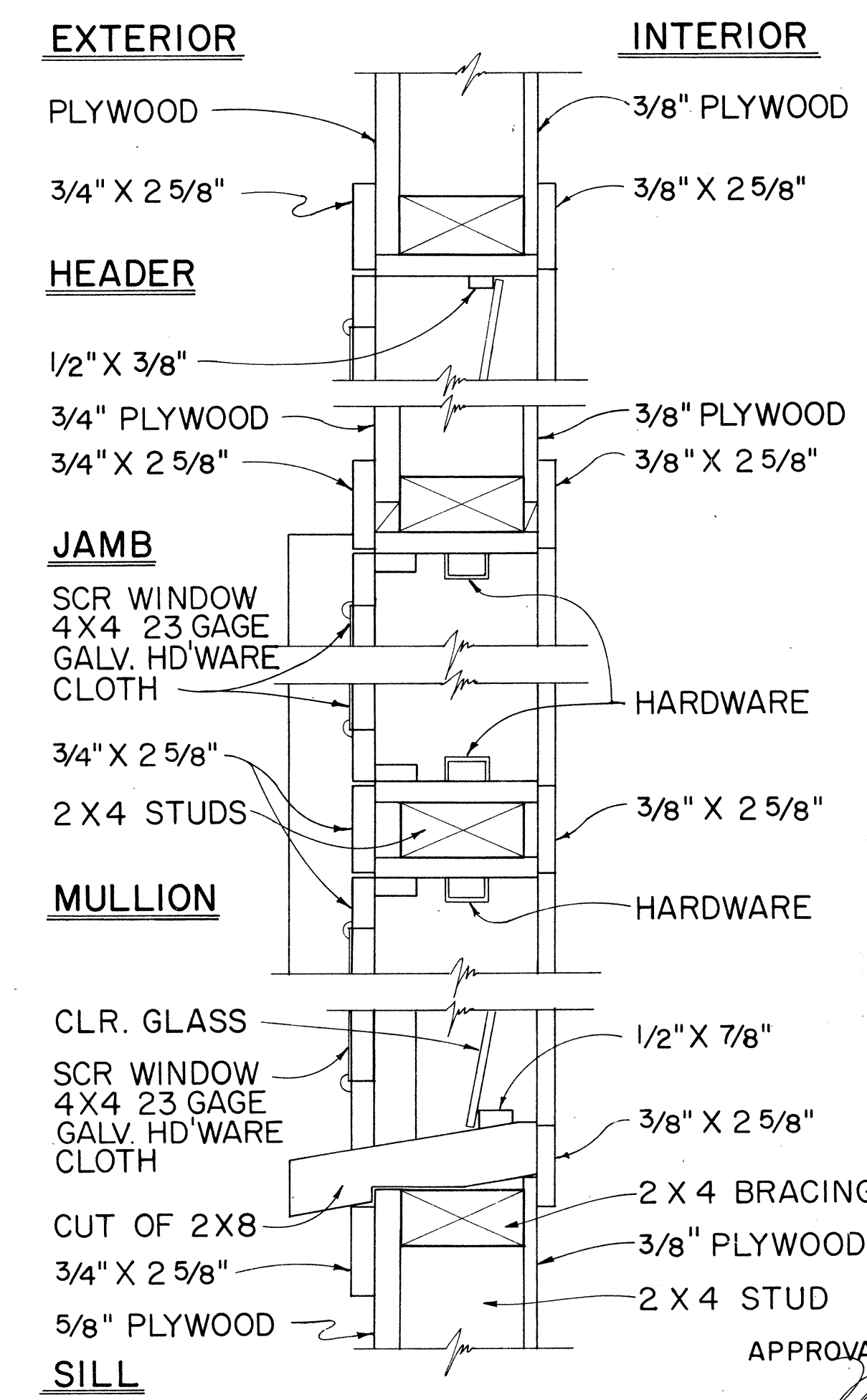
TYP. SWING OUT DOOR

TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL

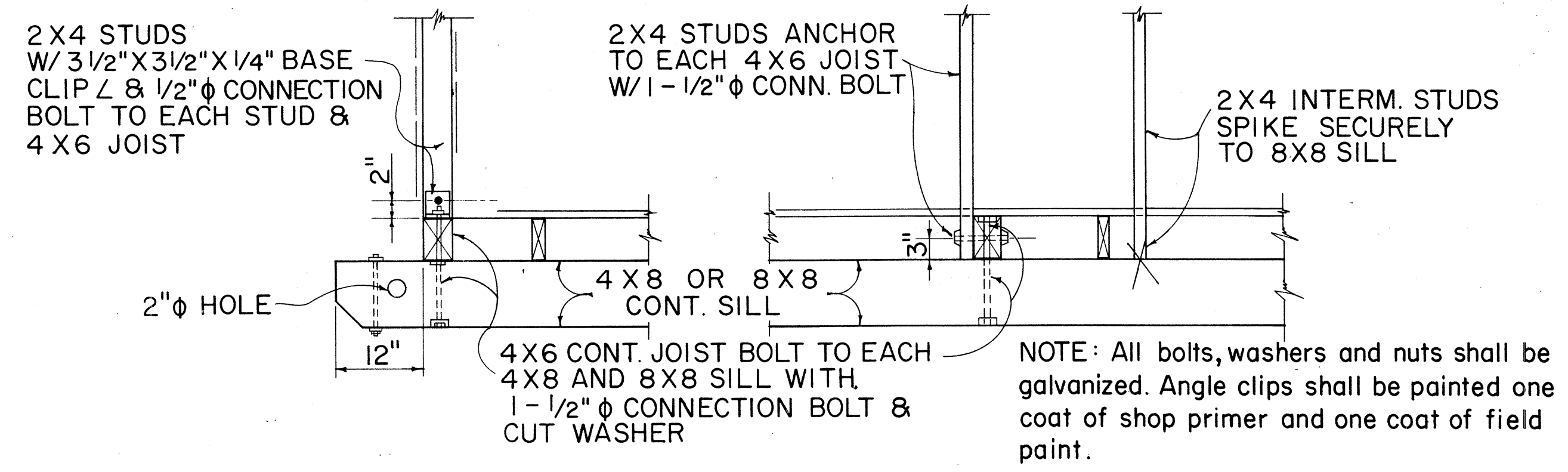


TYPICAL STOOL DETAIL

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



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

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

APPROVED:
A. S. S. S. S.
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. 6 OF 24 SHEETS DD 636.5

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER 7(3)	1979	72	80

GENERAL NOTES

- Grates and Frames shall be hot dip galvanized after fabrication, see specifications.
- All welds $\frac{3}{8}$ " unless otherwise noted.
- Refer to "Spacing Table" for Types 61614 & 61616 Drop Intake and Frame & Grates dimensions.
- The Frame & Grate materials shall conform to the specifications of ASTM Designation Structural Steel A283, Grade D and the Standard Specifications.
- Culvert shall leave Drop Intake from any position and any direction indicated by plans or ordered by the Engineer. Culverts may both enter and leave Drop Intake so that Drop Intake will act as manhole.
- Manhole Rungs (12" o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (16 inches from the bottom) is required if "H" is 4 feet 6 inches or less. Manhole Rungs may be placed at any location as ordered by the Engineer.

SPACING TABLE

TYPE	NO. BARS	A	B	C	D
61614	11	2'-0"	1'-11 1/2"	1/4"	1'-6"
61616	17	3'-0"	2'-11 3/4"	1/8"	2'-0"

NO.	REVISION	APPROVED BY	DATE
1	Curb for Top of Fill Gutters	H.T.	12-17-69
2	Spacing on manhole rungs to conform to OSHA.	H.T.	12-17-69

APPROVAL RECOMMENDED:

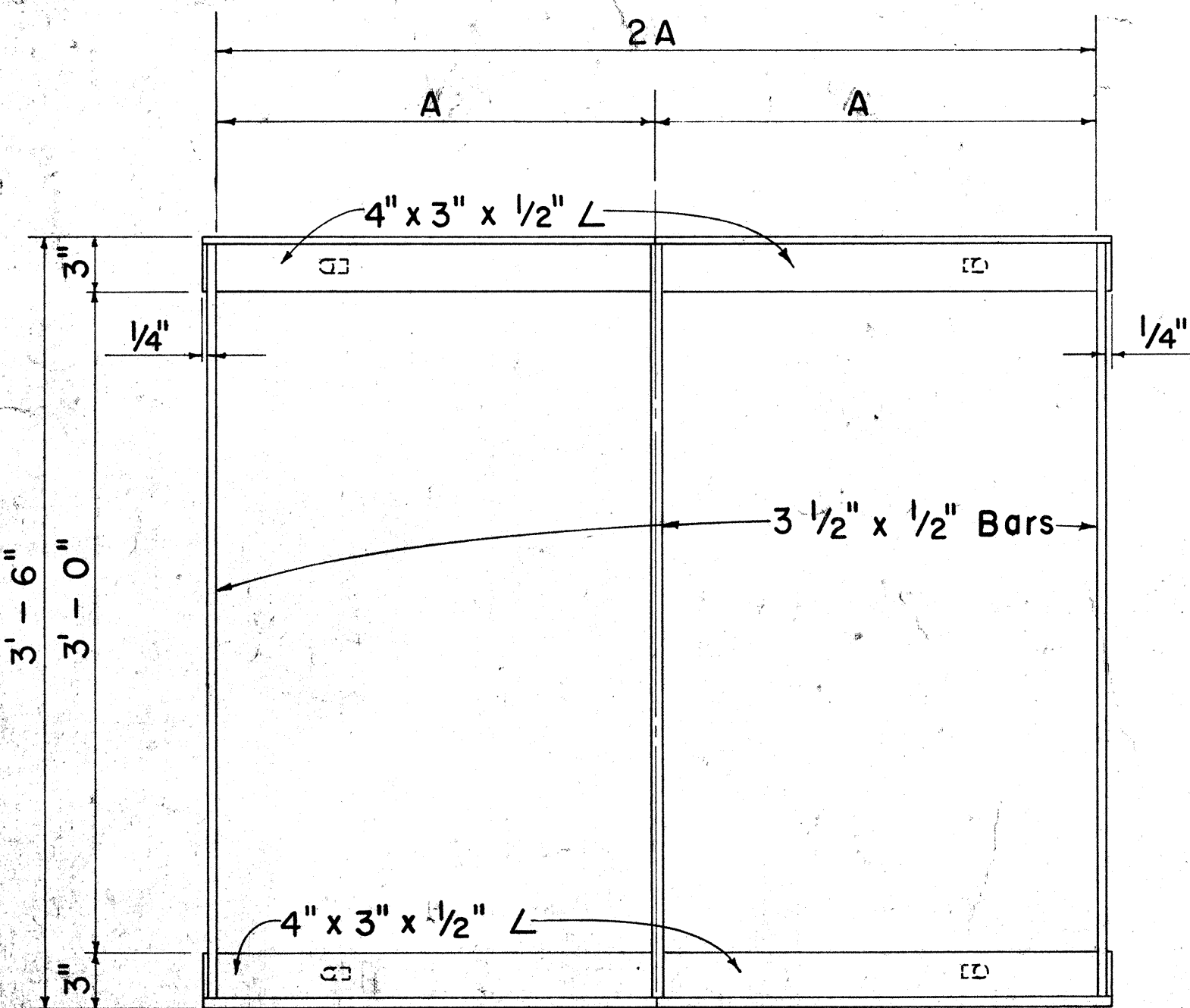
HYDRAULIC DESIGN ENGINEER *J. Valano* 12-17-69 DATE

APPROVED: *John J. Valano* 12-17-69 DATE
ASSISTANT CHIEF, ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
TYPE 61614 & 61616
GRADED DROP INTAKES

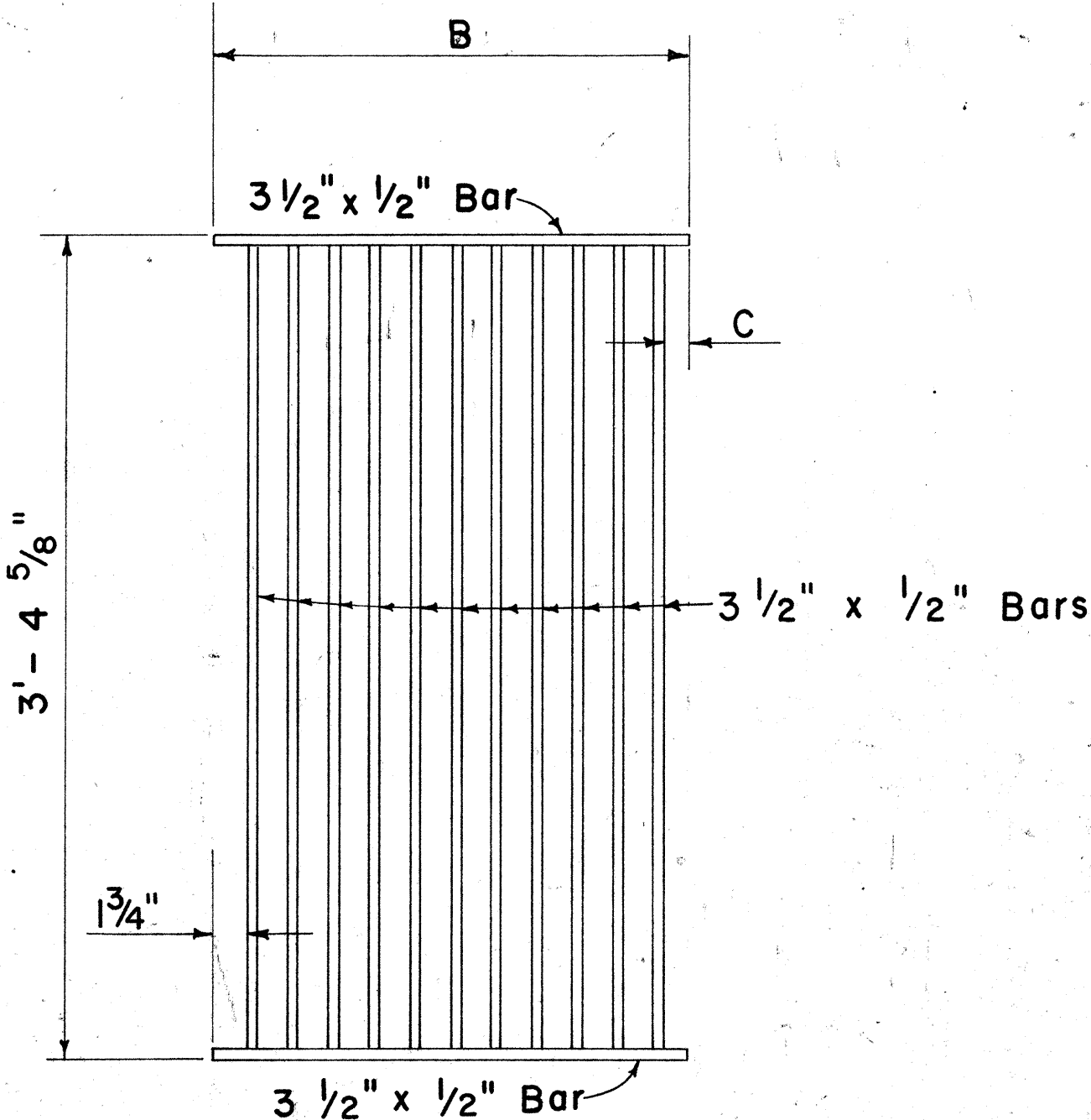
Scales: As Noted Date: Feb. 1969

SHEET No. 7 OF 24 SHEETS DH 8



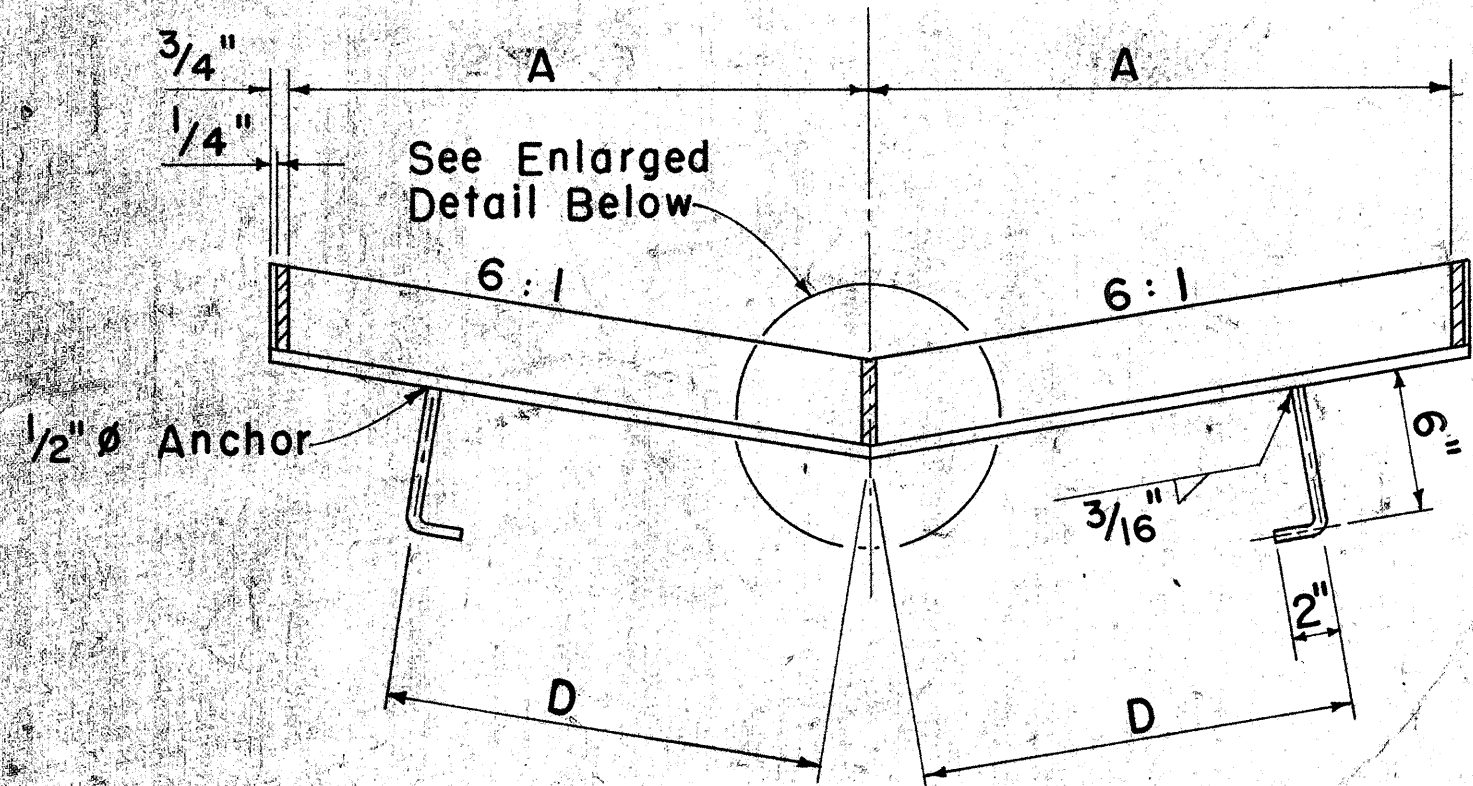
PLAN

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



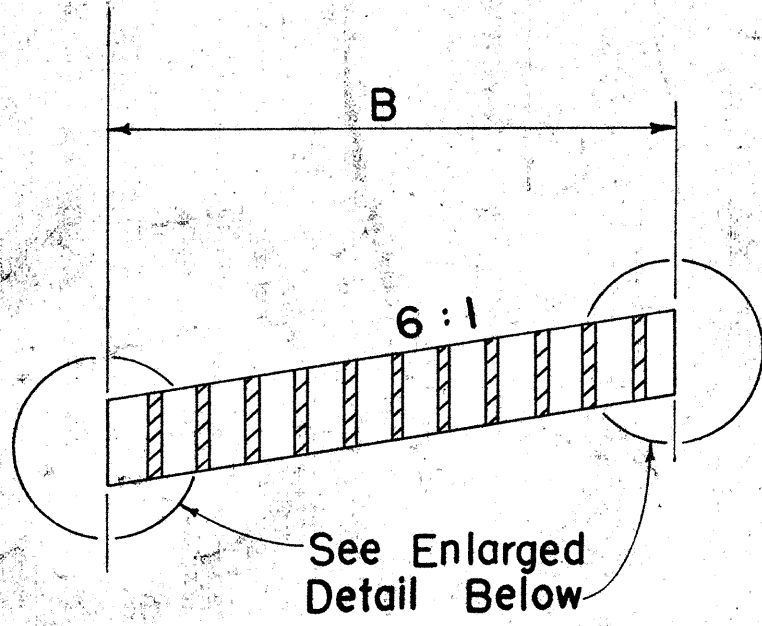
PLAN

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



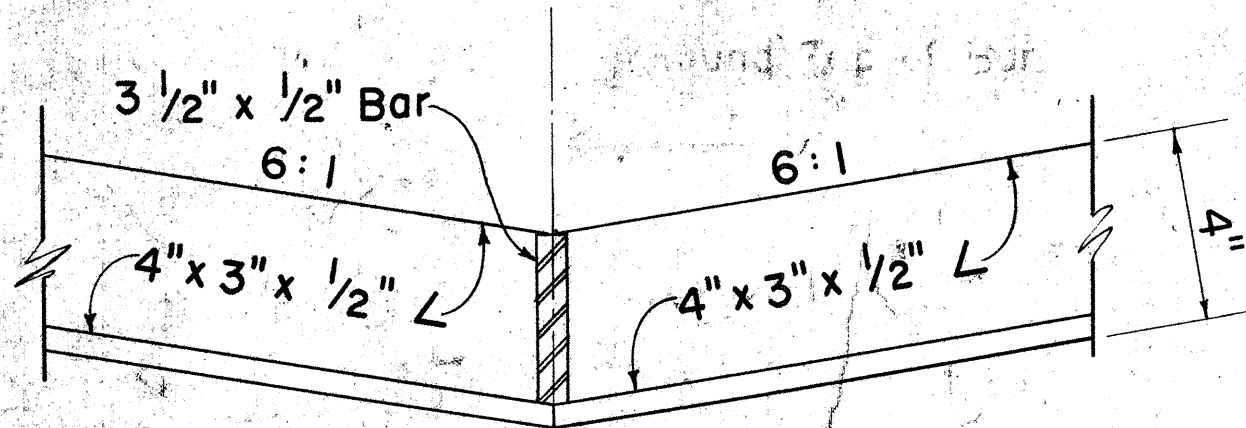
SECTION

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



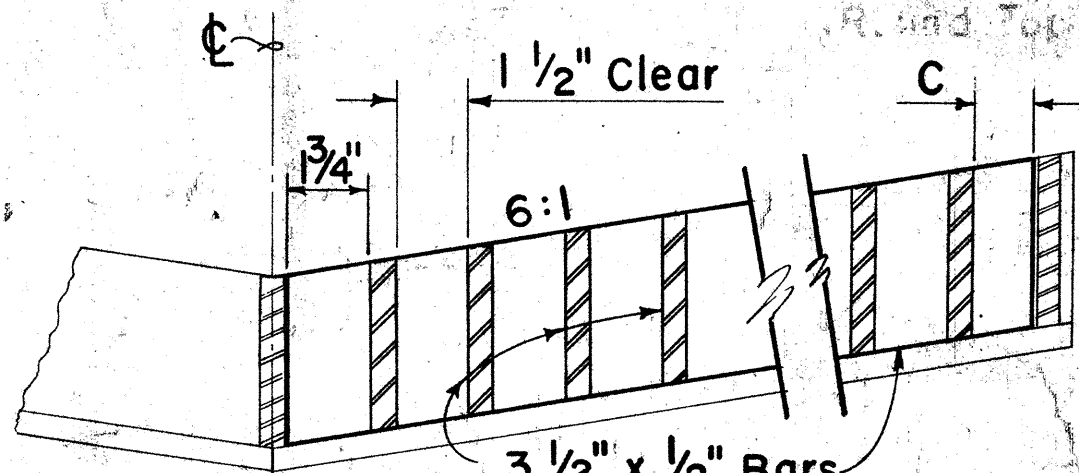
SECTION

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



FRAME

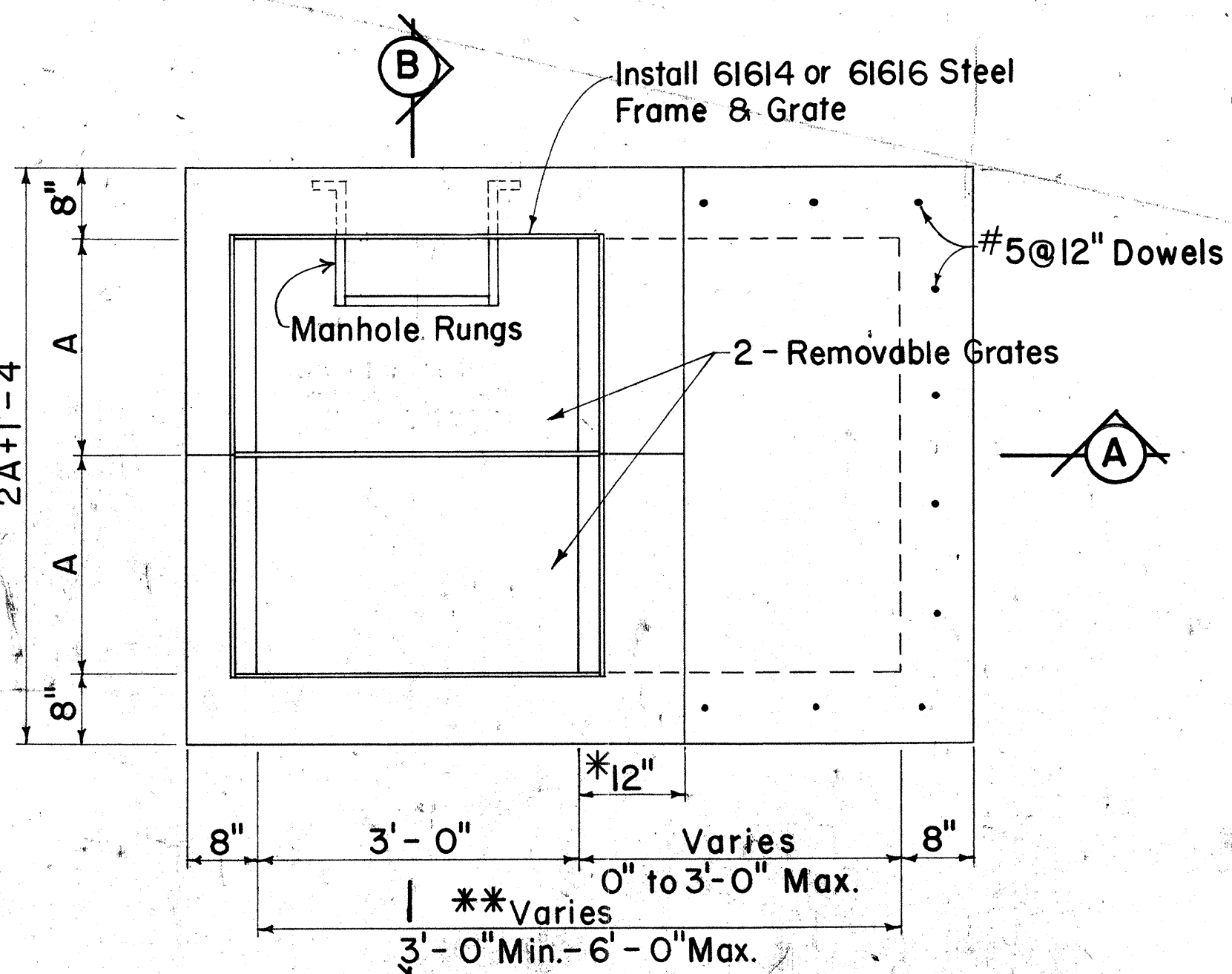
Scale: 3" = 1'-0"



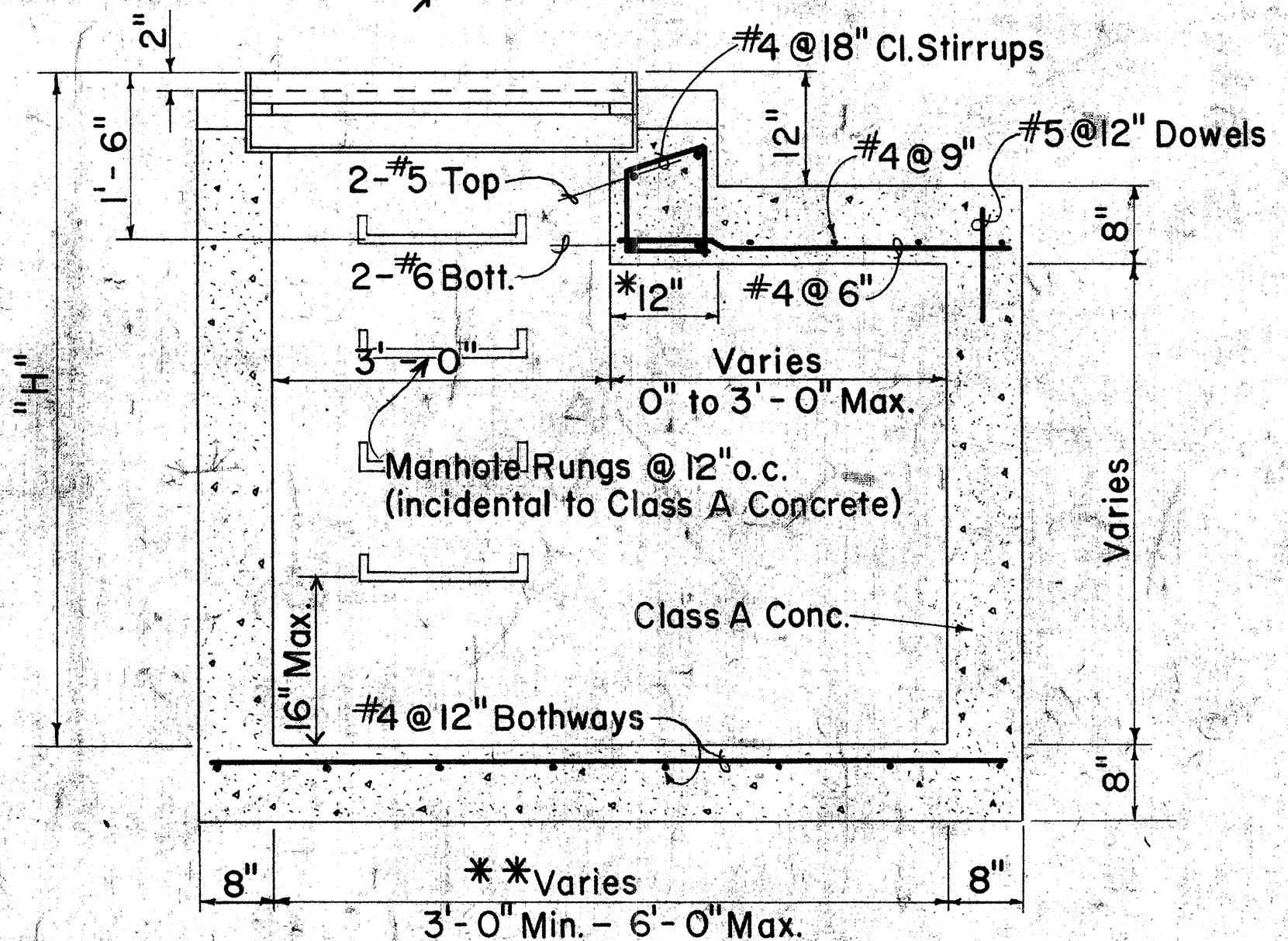
GRATE

Scale: 3" = 1'-0"

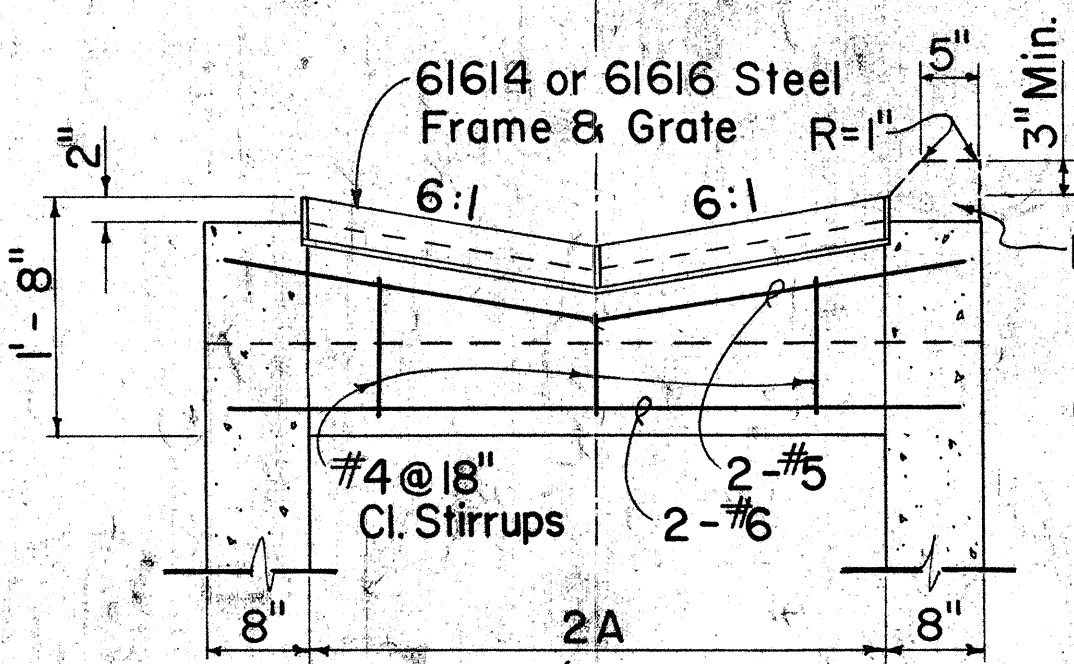
DETAILS OF TYPE 61614 OR 61616 STEEL FRAME AND GRATE



PLAN



SECTION A - A



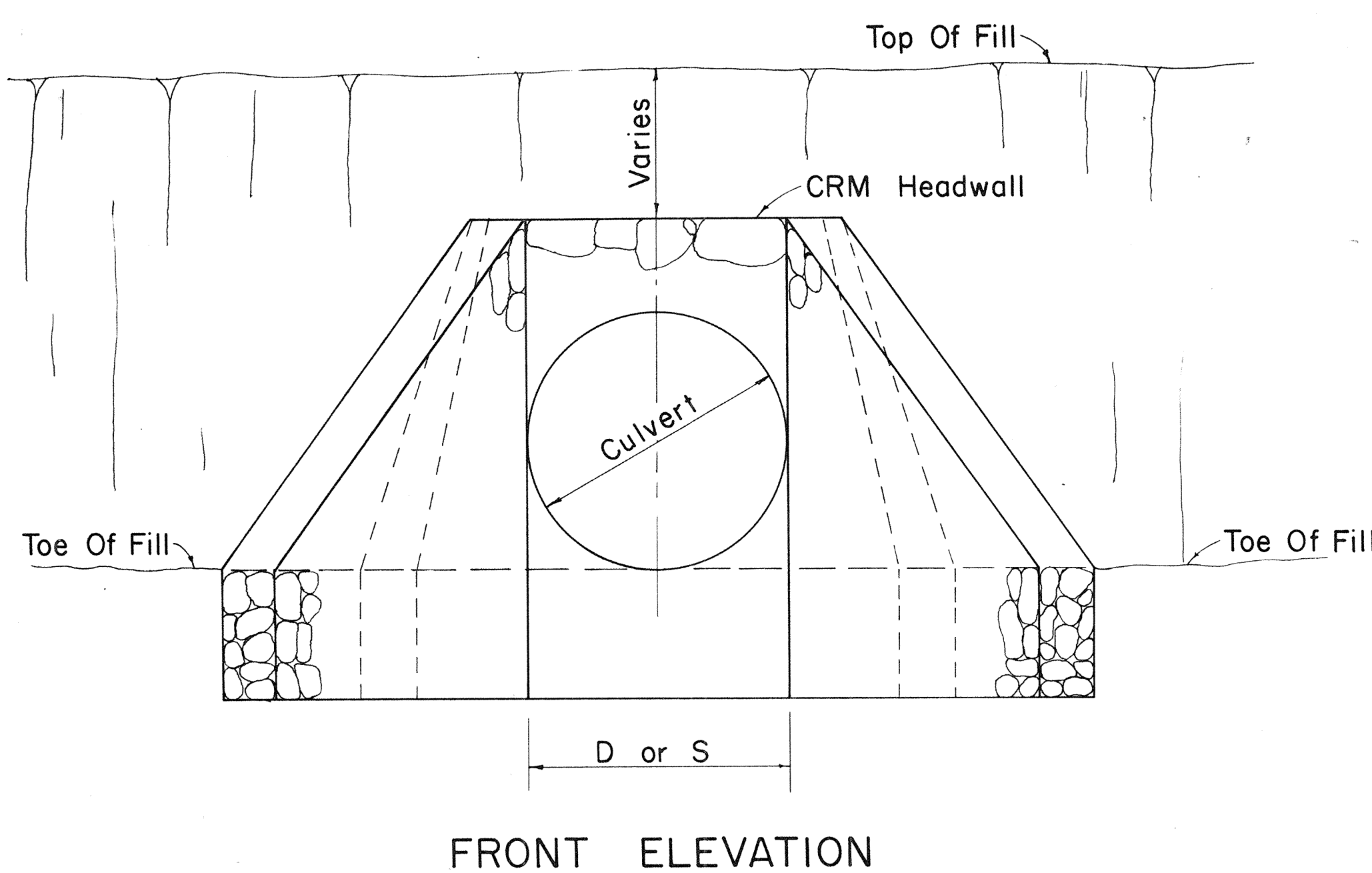
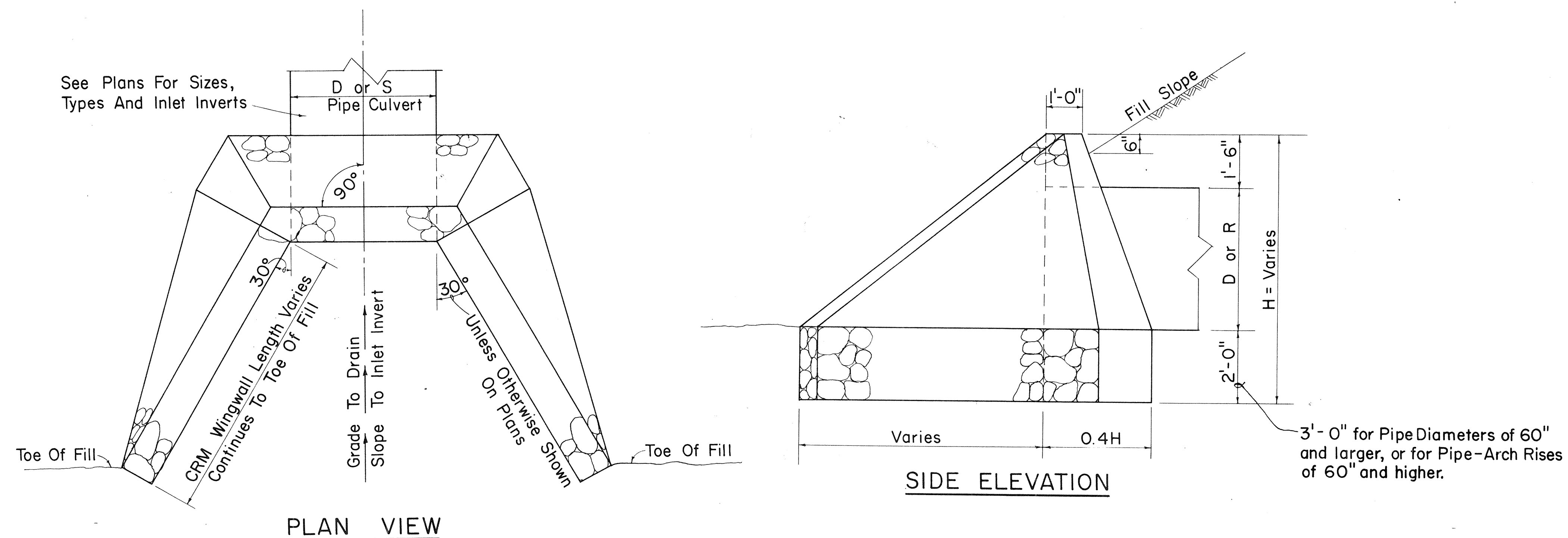
SECTION B - B

DETAILS OF 61614 OR 61616 DROP INTAKE

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

- *For Minimum size box of 3'-0", use 8" and eliminate reinforcing steel shown in the top portion.
- **For Culverts larger than 30", the minimum dimension shall be D.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER 7 (3)	1979	73	89



NOTE:

D = Diameter of Pipe Culvert

R = Rise of Pipe-Arch Culvert

S = Span of Pipe-Arch Culvert

DETAILS OF CRM INLET STRUCTURE

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

APPROVAL RECOMMENDED:

HYDRAULIC DESIGN ENGINEER

12-17-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-17-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CRM INLET STRUCTURE

Scale: As Noted

Date: July, 1969

SHEET No. 8 OF 24 SHEETS DH 16

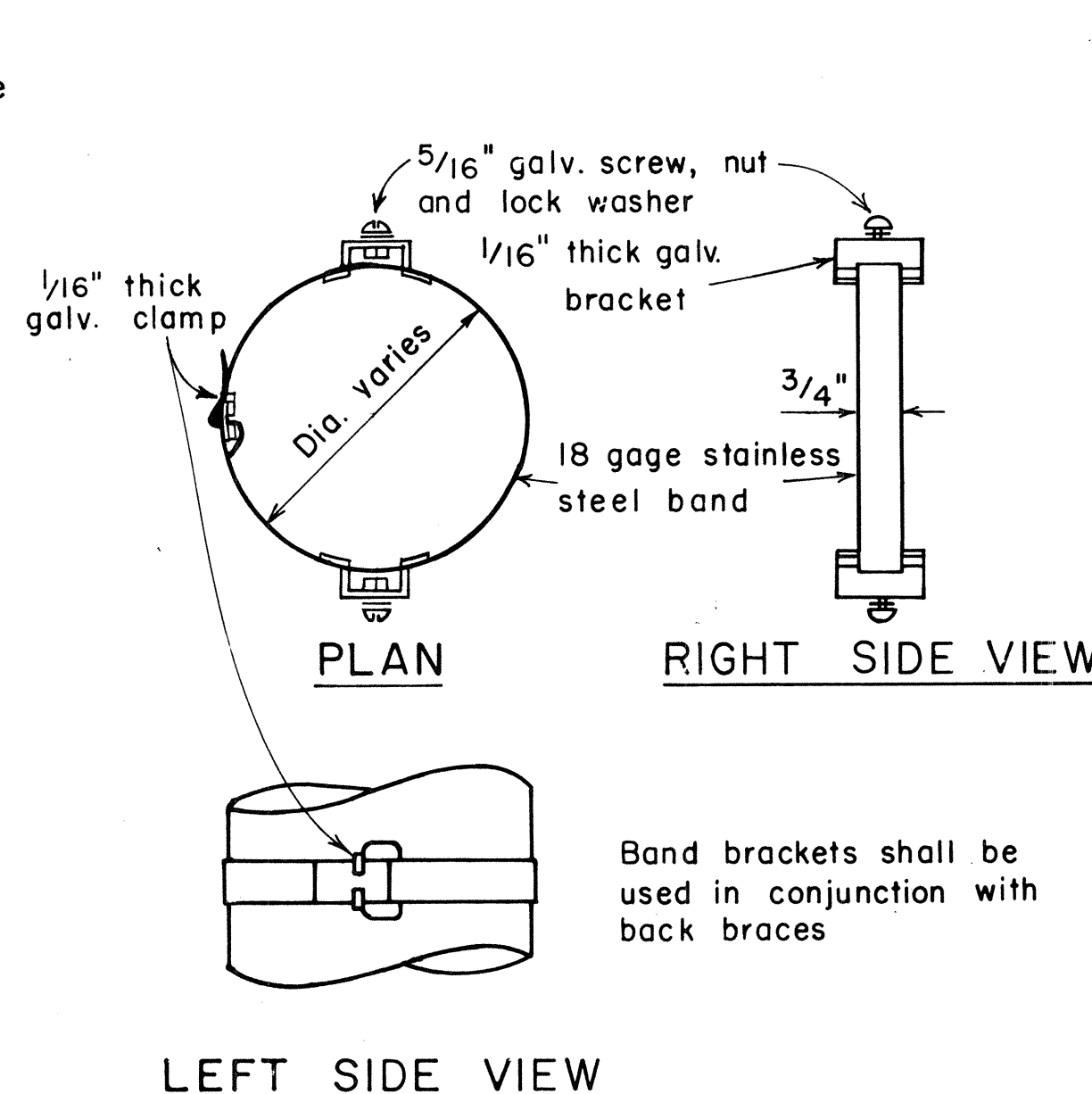
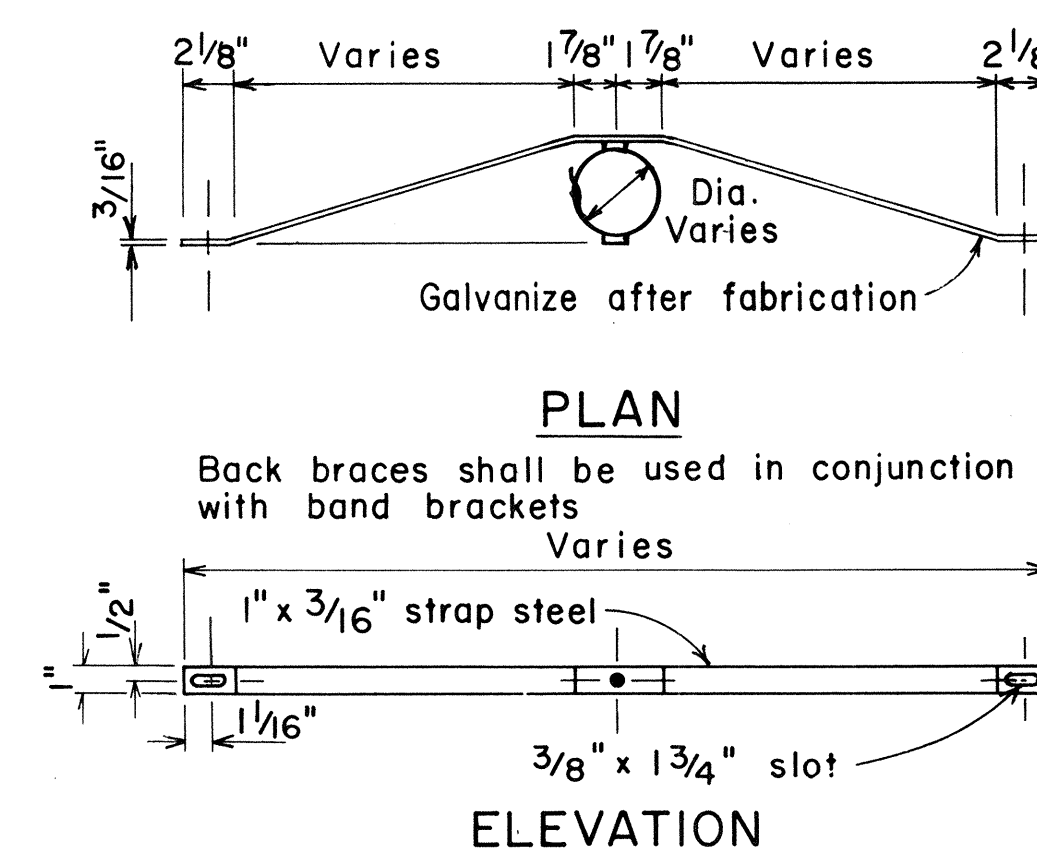
ORIGINAL	SURVEY PLOTTED BY	DATE
PLAN	DRAWN BY	" "
NOTE BOOK	TRACED BY	" "
No.	CHECKED BY	" "

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-7(3)	1979	74	89

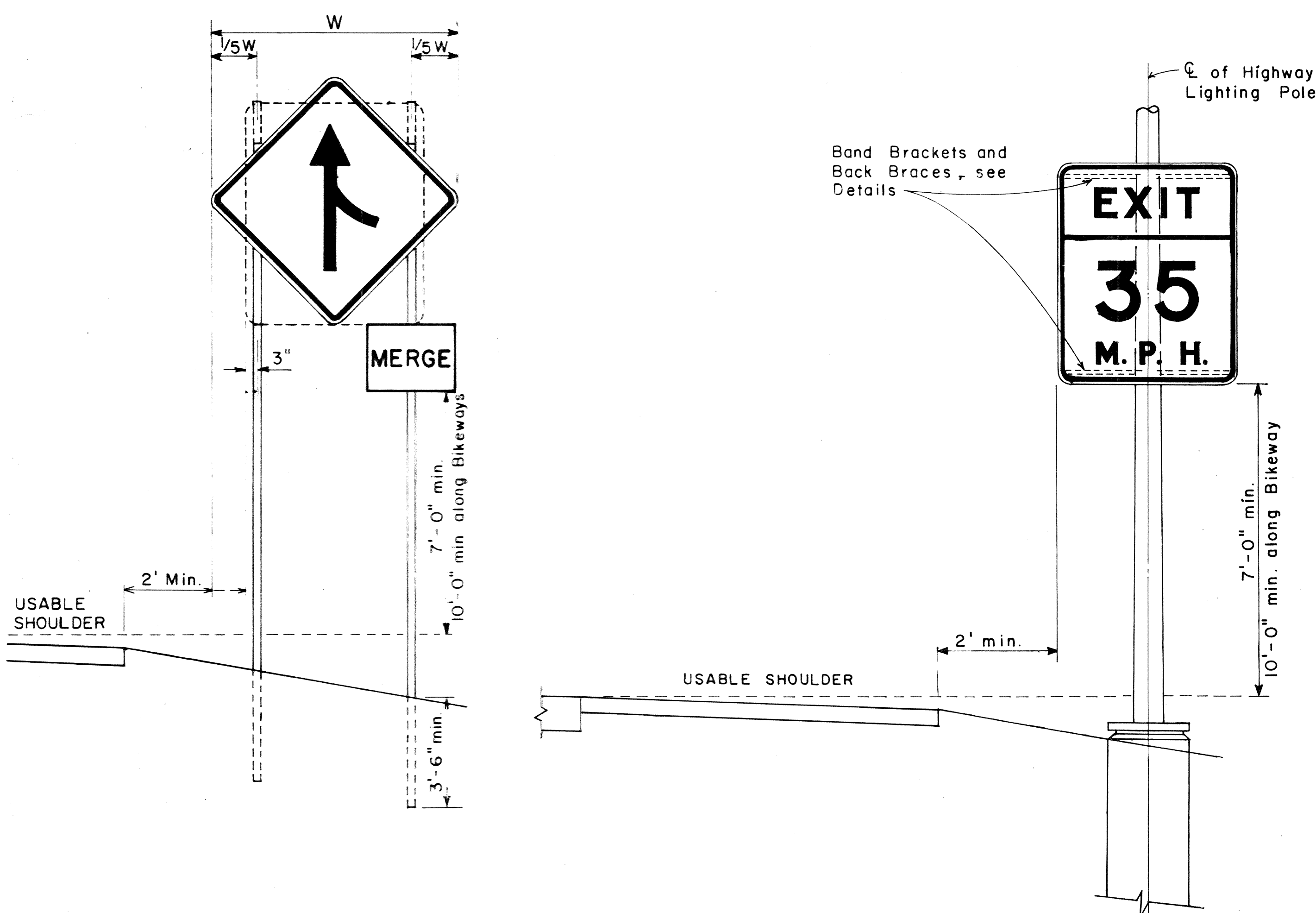
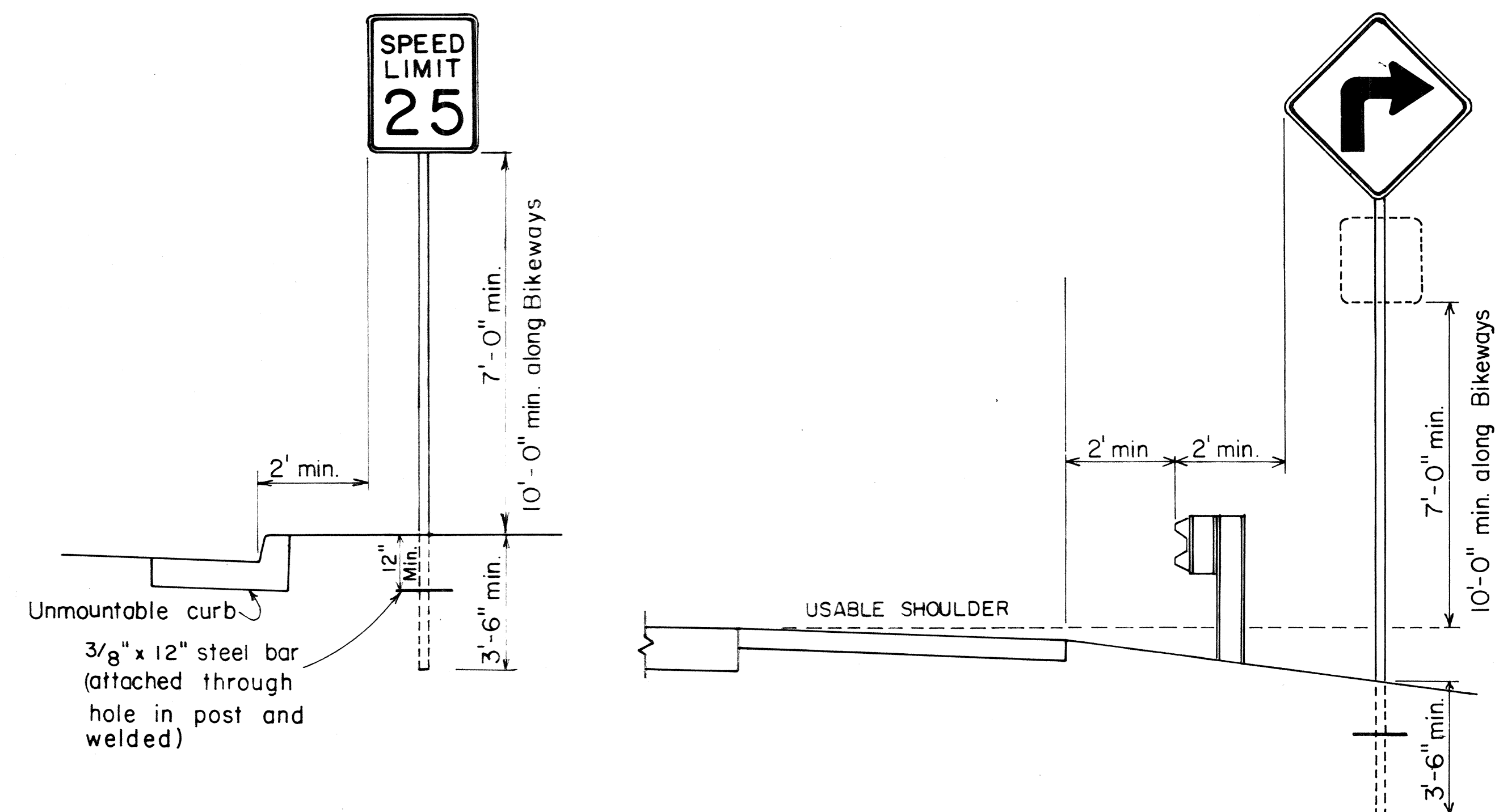
GENERAL NOTES

- 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 $\frac{5}{16}$ " galv. bolts with nuts and $\frac{7}{8}$ " x 0.06" stainless steel washers with neoprene rubber gasket.
- Sign posts shall extend $3\frac{1}{2}$ " 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:
Harbert S. Sakai 11/15/77
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes 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

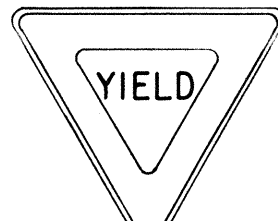
SHEET NO. 7 OF 24 SHEETS DT 100

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9(B)	1979	75	89



R1-1 30"x30"
R1-1-A 36"x36"
4-WAY
R1-3 12"x6"
R1-3-A 18"x9"



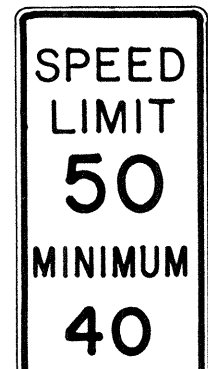
R1-2 36"x36"x36"
R1-2-A 48"x48"x48"



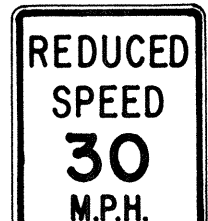
R2-1(50) 24"x30"
R2-1(50)-A 48"x60"



R2-2(40) 24"x24"
R2-2(40)-A 48"x48"



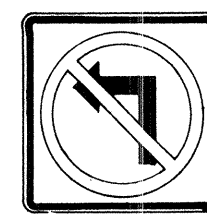
R2-4a(50/40) 24"x48"
R2-4a(50/40)-A 48"x96"



R2-5b(30) 24"x30"
R2-5b(30)-A 48"x60"



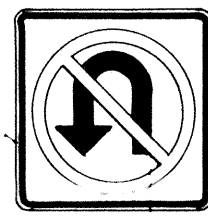
R3-1 24"x24"
24"x18"
R3-1-A 48"x48"
48"x36"



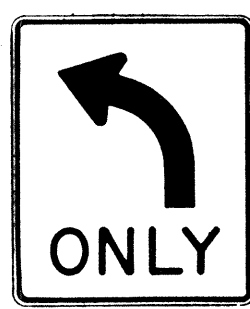
R3-2 24"x24"
24"x18"
R3-2-A 48"x48"
48"x36"



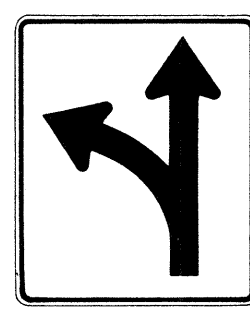
R3-3 24"x24"
R3-3-A 48"x48"



R3-4 24"x24"
24"x18"
R3-4-A 48"x48"
48"x36"



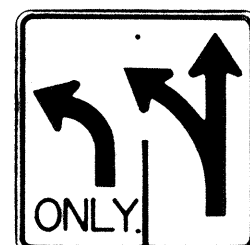
R3-5(L) 30"x36"
R3-5(L)-A 48"x60"



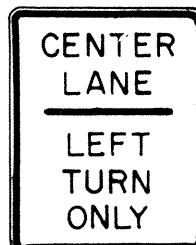
R3-6(L) 30"x36"
R3-6(L)-A 48"x60"



R3-7(R) 30"x30"
R3-7(R)-A 48"x48"



R3-8(L) 30"x30"
R3-8(L)-A 36"x36"
R3-8(L)-B 48"x48"



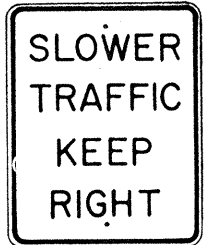
R3-9 24"x30"



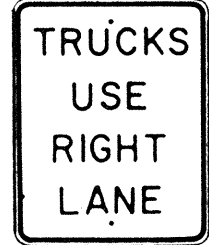
R4-1 24"x30"



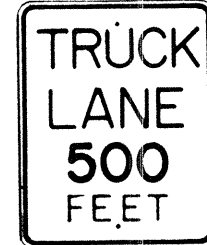
R4-2 24"x30"



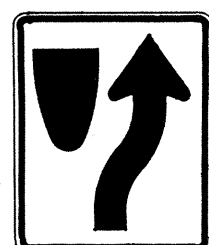
R4-3 24"x30"
R4-3-A 48"x60"



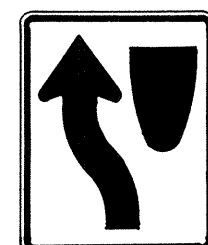
R4-5 24"x30"



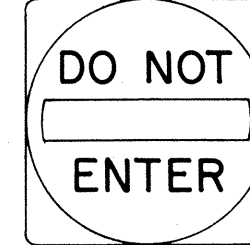
R4-6(500) 24"x30"



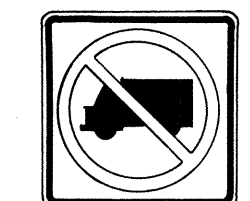
R4-7 24"x30"
24"x18"



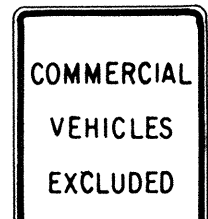
R4-8 24"x30"
24"x18"



R5-1 30"x30"
R5-1-A 48"x48"



R5-2 24"x24"
24"x18"



R5-4 24"x30"



R5-6 24"x24"
24"x18"



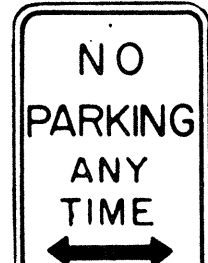
R5-9 36"x24"



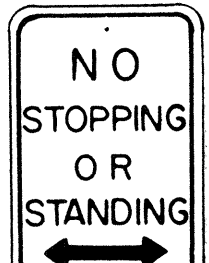
R6-1(R) 36"x12"



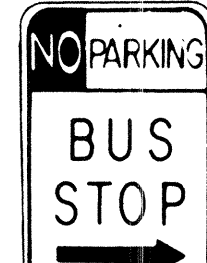
R6-2(R) 18"x24"



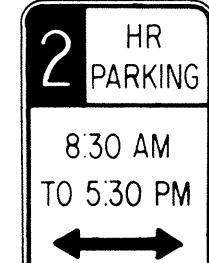
R7-1 12"x18"
R7-1-A 24"x30"



R7-4 12"x18"
R7-4-A 24"x30"



R7-1-7(R) 12"x18"



R7-108 12"x18"



R7-201 12"x6"
R7-201-A 24"x12"



R8-1 24"x30"



R8-2 24"x30"



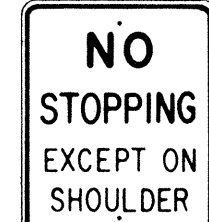
R8-3 24"x30"



R8-4 30"x24"
R8-4-A 48"x36"



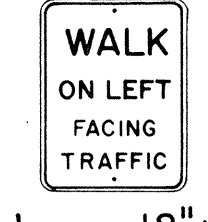
R8-5 24"x30"



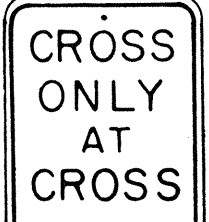
R8-6 24"x30"



R8-7 30"x24"
R8-7-A 48"x36"



R9-1 18"x24"



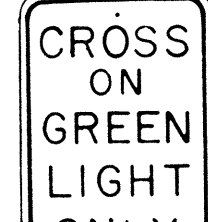
R9-2 12"x18"



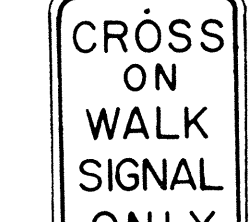
R9-3 12"x18"



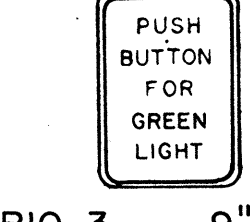
R9-4 18"x24"



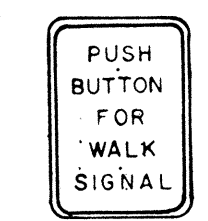
R10-1 12"x18"



R10-2 12"x18"



R10-3 9"x12"



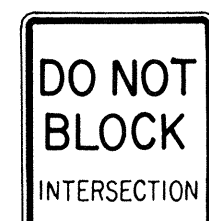
R10-4 9"x12"



R10-5 24"x30"



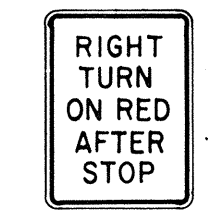
R10-6 24"x36"



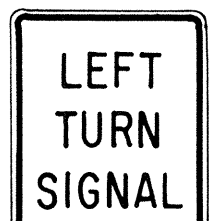
R10-7 24"x30"



R10-8 24"x30"



R10-9 24"x30"



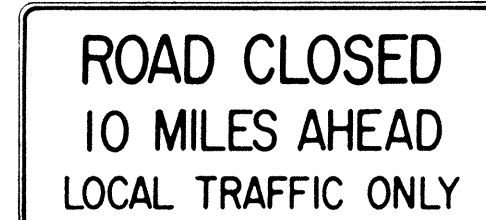
R10-10 24"x30"



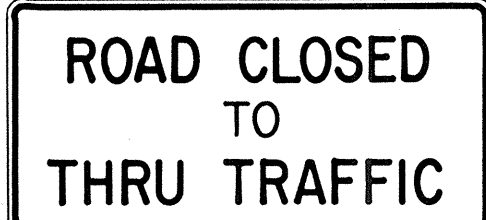
R11-1 24"x30"



R11-2 48"x30"



R11-3(10) 60"x30"



R11-4 60"x30"



R12-1(10) 24"x30"

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:
Eishi Tanaka 3/17/78
TRAFFIC ENGINEER DATE

APPROVED:
Robert J. Zolner 3-20-78
ASSISTANT CHIEF, ENGINEERING DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

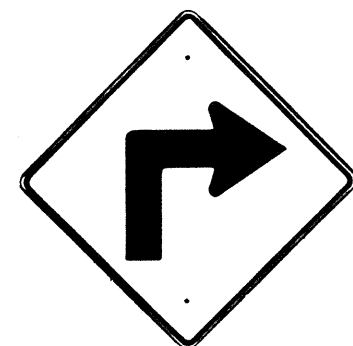
STANDARD DETAILS REGULATORY SIGNS

NOT TO SCALE

SHEET No. 10 OF 24 SHEETS DT 101

ORIGINAL PLAN	DATE
SURVEY PROVIDED BY	*****
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	

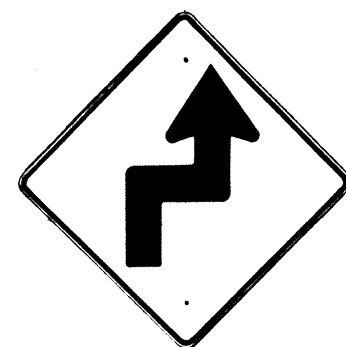
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	ER-9(3)	1979	76	89



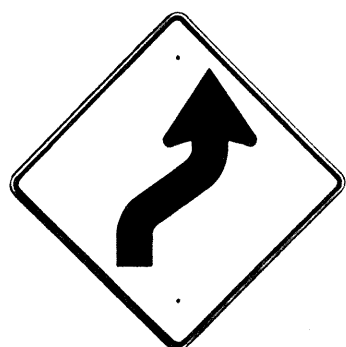
W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



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



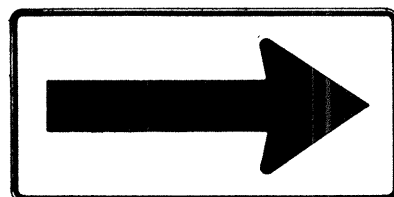
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



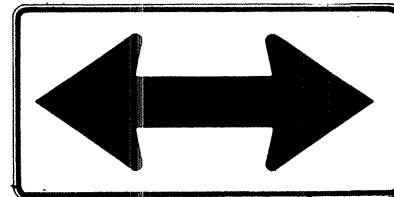
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



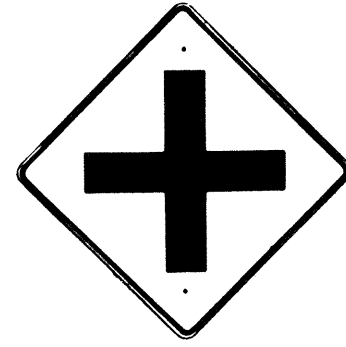
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



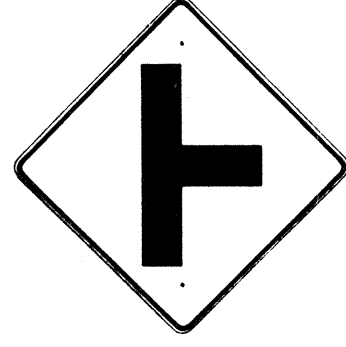
W1-6 48"x24"



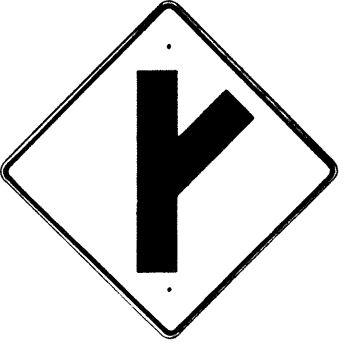
W1-7 48"x24"



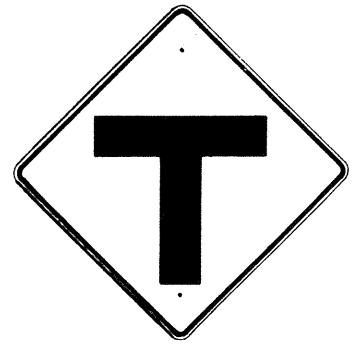
W2-1 30"x30"
W2-1-A 48"x48"



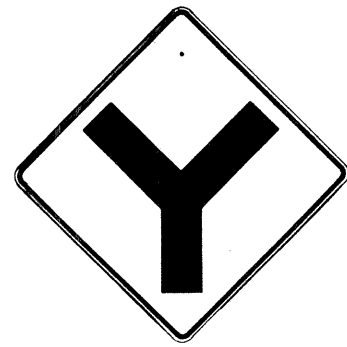
W2-2 30"x30"
W2-2-A 48"x48"



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



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



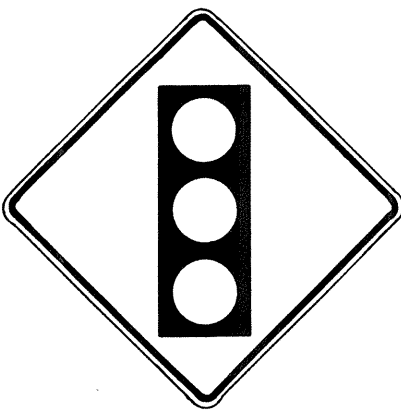
W2-5 30"x30"
W2-5-A 48"x48"



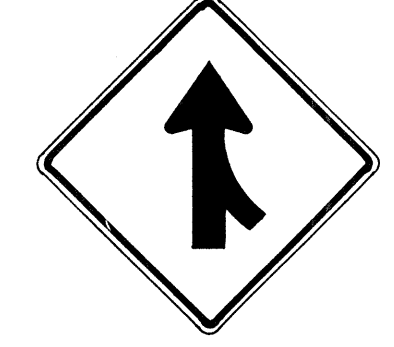
W3-1 30"x30"
W3-1-A 36"x36"



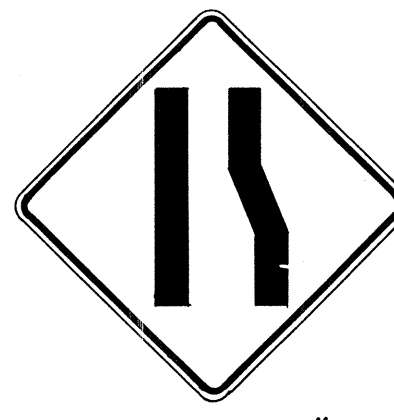
W3-2 30"x30"
W3-2-A 36"x36"



W3-3 36"x36"
24"x18"



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"



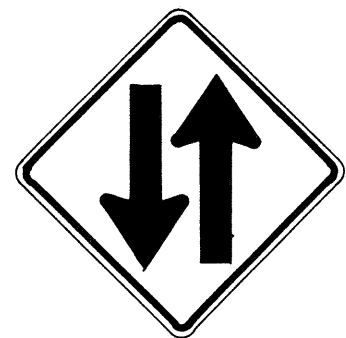
W5-3 36"x36"



W6-1 36"x36"
24"x18"



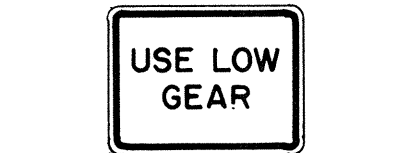
W6-2 36"x36"
24"x18"



W6-3 30"x30"
24"x18"
W6-3-A 36"x36"
24"x18"
W6-3-B 48"x48"
24"x18"



W7-1 30"x30"
24"x18"
W7-1-A 36"x36"
24"x18"



W7-2 24"x18"



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"



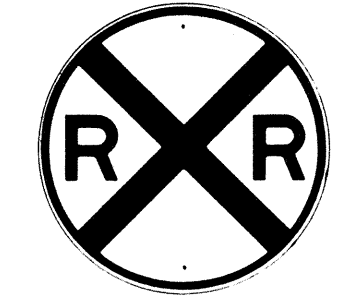
W8-5 30"x30"
24"x18"
W8-5-A 36"x36"
24"x18"



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



W9-2(L) 36"x36"
W9-2(L)-A 48"x48"



W10-1 36" Diameter



W11-1 30"x30"
24"x18"
W11-1-A 36"x36"
24"x18"



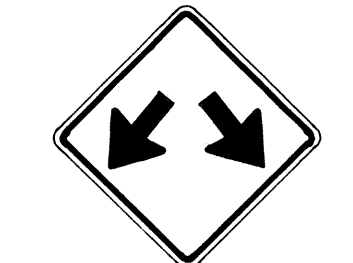
W11-2 30"x30"
24"x18"
W11-2-A 36"x36"
24"x18"



W11-4 30"x30"
24"x18"
W11-4-A 36"x36"
24"x18"



W11-5 30"x30"
24"x18"
W11-5-A 36"x36"
24"x18"



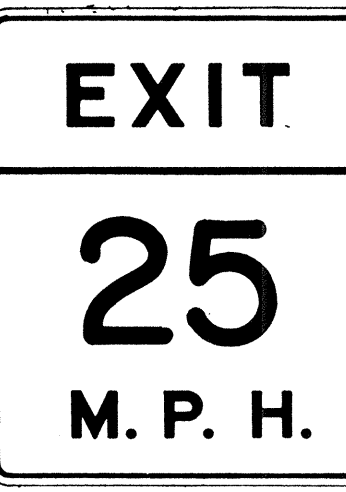
W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"



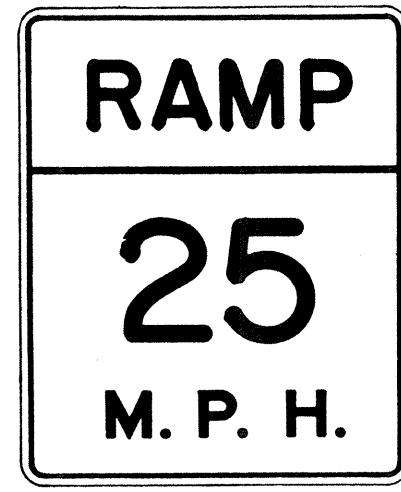
W12-2 (12'-6") 36"x36"
24"x18"



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:
Evelyn Tanaka
TRAFFIC ENGINEER

3/17/12
DATE

APPROVED:
Walter Belskis
ASSISTANT CHIEF, ENGINEERING

3-20-12
DATE

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

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION	
STANDARD DETAILS	
WARNING SIGNS	
NOT TO SCALE	
SHEET No. 11 OF 24 SHEETS DT 102	

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-7(3)	1979	77	89

General Notes

- Sign details shall conform to the latest editions of the following FHWA publications:
 - "Standard Alphabets for Highway Signs," and as amended.
 - "Standard Highway Signs," and as amended.
 - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- All signs shall be reflectorized with reflective sheeting, unless otherwise specified.
- All signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations.
- Numerals in () indicate 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 with reflective sheeting.

ALL WAY
R1-4 18"x 6"

REDUCED SPEED
35
AHEAD
R2-5d(35) 24"x 30"
R2-5d(35)-A 48"x 60"

SPEED LIMIT ENFORCED BY VASCAR
4" Series D
- 4" Series C
- 3" Series D
- 5" Series C
R2-10 24"x 30"

CENTER LANE ONLY
R3-9b 24"x 36"

BUS STOP
R7-107(R) 12"x 24"

RESERVED PARKING
R7-8 12"x 18"
R7-8-A 24"x 30"

ANY TIME
R8-3a 24"x 24"
24"x 18"
R8-3a-A 48"x 48"

NO PED XING
R9-3a 18"x 18"
18"x 12"
R9-3a-A 24"x 24"
24"x 18"

USE CROSSWALK
R9-3b(R) 18"x 12"

USE CROSSWALK
R9-3b(L) 18"x 12"

NO TURN ON RED
RIO-11a 24"x 30"

TURN RIGHT ANY TIME WITH CAUTION
4" Series C
R16-1 24"x 30"

NO LEFT TURN ON RED
- 4" Series D -
- 3" Series D -
- 2" Series D -
- 3" Series D -
R16-3 18"x 24"

NO RIGHT TURN ON RED
R16-4 18"x 24"

UNLICENSED VEHICLES BICYCLES, CYCLES UNDER 5 H P, PEDESTRIANS KEEP OUT FREEWAY
3" Series C
4" Series E
R16-5 36"x 42"

TURN AHEAD
- 8" Series F
- 5" Series D
R16-6 24"x 30"

U TURN OK
- 8" Series F
- 5" Series D
R16-7 24"x 30"

MOTOR-DRIVEN CYCLES PROHIBITED
4" Series B
R5-8 30"x 24"

W17-1(L) 60"x 60"

STOP AHEAD
W3-1a 36"x 36"
24"x 18"
W3-1a-A 48"x 48"
24"x 18"

YIELD AHEAD
W3-2a 36"x 36"
24"x 18"
W3-2a-A 48"x 48"
24"x 18"

STOP AHEAD WHEN FLASHING
6" Series C
W3-4 48"x 48"

TRUCK CROSSING
W8-6 30"x 30"
W8-6-A 36"x 36"

THRU TRAFFIC MERGE LEFT
6" Series E
W9-3(L) 48"x 48"

EQUESTRIAN XING
W11-7 36"x 36"
24"x 18"
W11-7-A 48"x 48"
24"x 18"

FIRE STATION
W11-8 36"x 36"
24"x 18"
W11-8-A 48"x 48"
24"x 18"

W11-9 36"x 36"
W11-9-A 48"x 48"

LIMITED SIGHT DISTANCE
W14-4 36"x 36"
W14-4-A 48"x 48"

DELAYED GREEN
- 4" Series C -
W15-1 24"x 24"

ADVANCE GREEN
W15-2 24"x 24"

END FREEWAY 1/2 MI
8" Series E
CW16-1($\frac{1}{2}$) 60"x 60"

RIGHT LANE EXIT ONLY
8" Series E
W18-1 48"x 60"

SI-1 36"x 36"

S2-1 36"x 36"

SCHOOL BUS STOP AHEAD
S3-1 30"x 30"

8:00 AM TO 3:30 PM
S4-1 24"x 10"

WHEN CHILDREN ARE PRESENT

S4-2 24"x 10"

SCHOOL
S4-3 24"x 8"

WHEN FLASHING

S4-4 24"x 10"

SIDEWALK CLOSED
7" Series D
CW23-4 48"x 48"

USE SIDEWALK
4" Series C
R18-1 24"x 18"

NO.	REVISION	APPROVED BY	DATE
	Supersedes Sht. DT 103 approved 3/20/72	H.T.	5/3/78

APPROVAL RECOMMENDED:
Euschi Tanaka
TRAFFIC ENGINEER
5/2/78
DATE

APPROVED:
Harbor 2. Dakeishi
ASSISTANT CHIEF, ENGINEERING
5/3/78
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
MISCELLANEOUS SIGNS

NOT TO SCALE
DATE: MAY, 1978
SHEET No. 12 OF 24 SHEETS DT 103

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-7(3)	1979	78	89



CW20-1a 48" x 48"



CW20-2d 48" x 48"



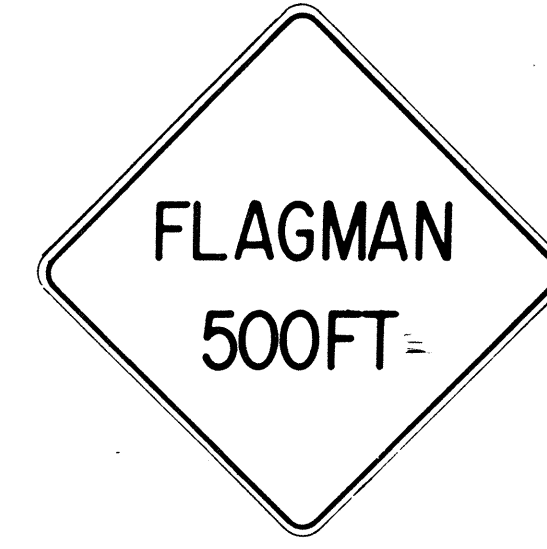
CW20-3b 48" x 48"



CW20-4d 48" x 48"



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



CW20-7c 48" x 48"



CW21-1 30" x 30"



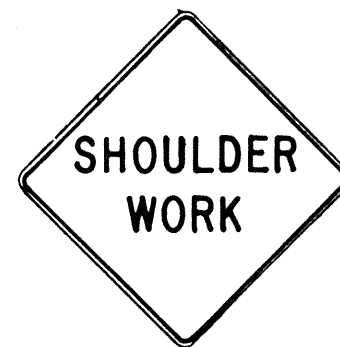
CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



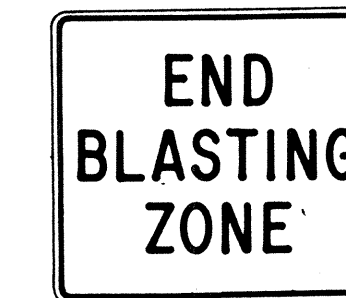
CW21-6 30" x 30"



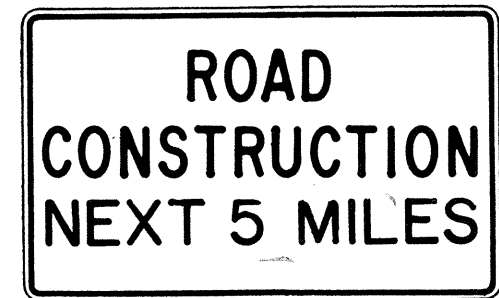
CW22-1b 48" x 48"



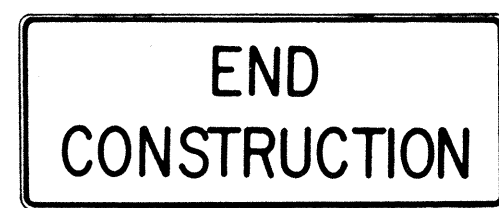
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



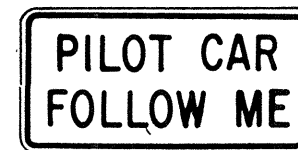
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



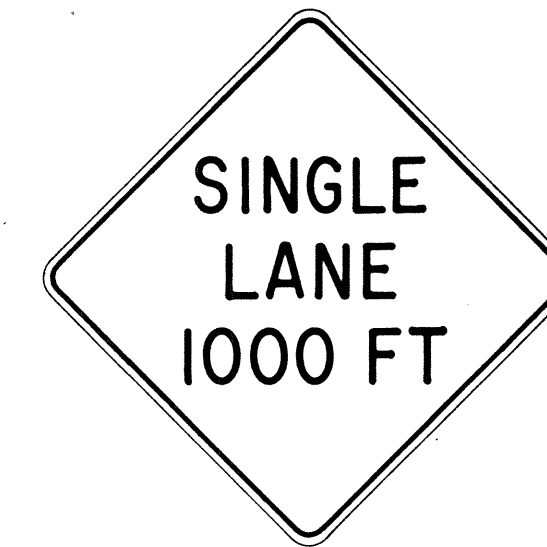
CM4-10(R) 48" x 18"



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 $\frac{3}{8}$ " 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.C.	3/23/72
2	Revised General Note 1	H.C.	10/10/74
3	Revised General Note 2	M.H.	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	H.C.	9-14-76

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER 3/21/72
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING 3/23/72
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 13 OF 24 SHEETS DT 104

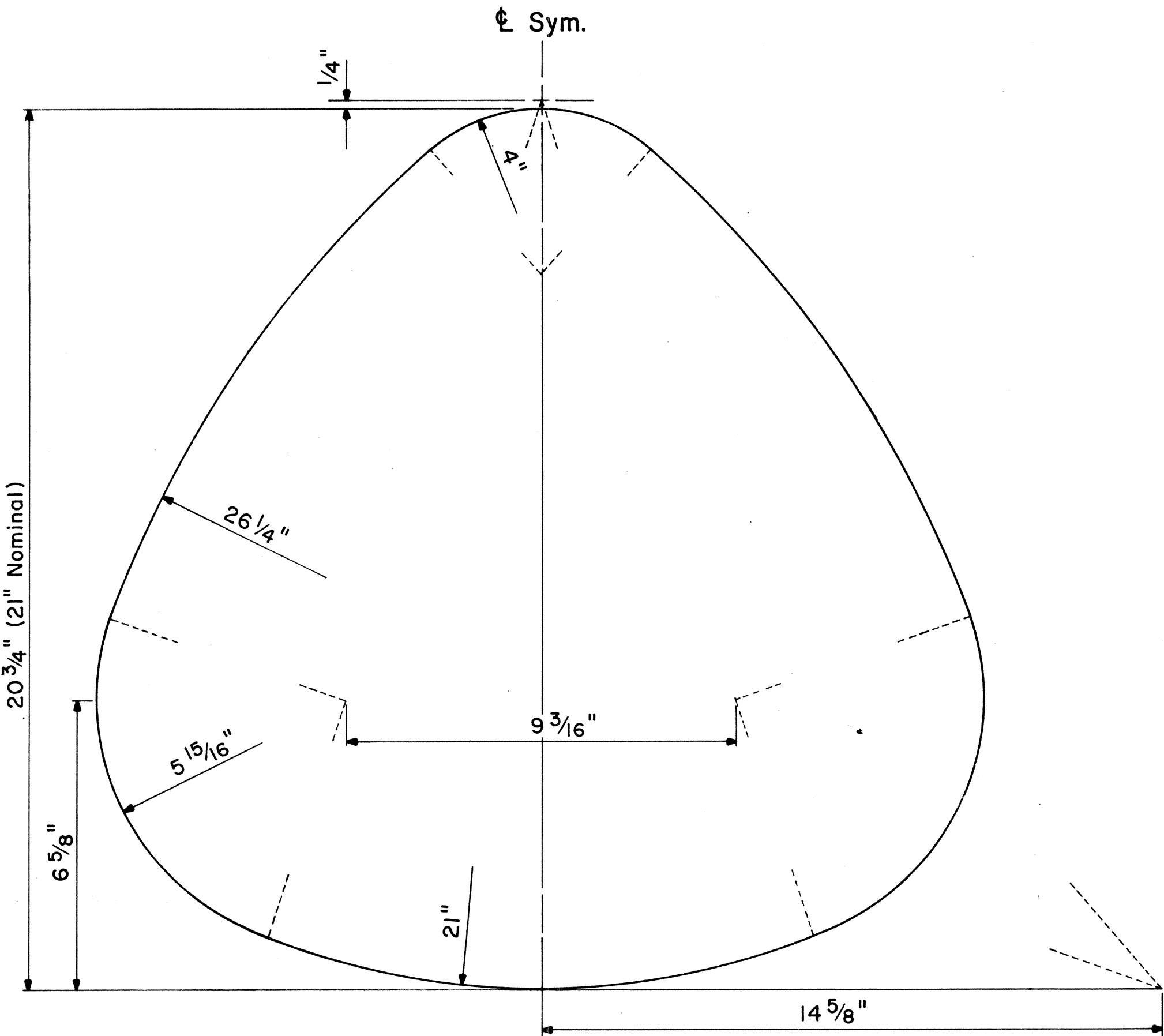
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	DESIGNED BY	
	CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9 (3)	1979	70	89

GENERAL NOTES

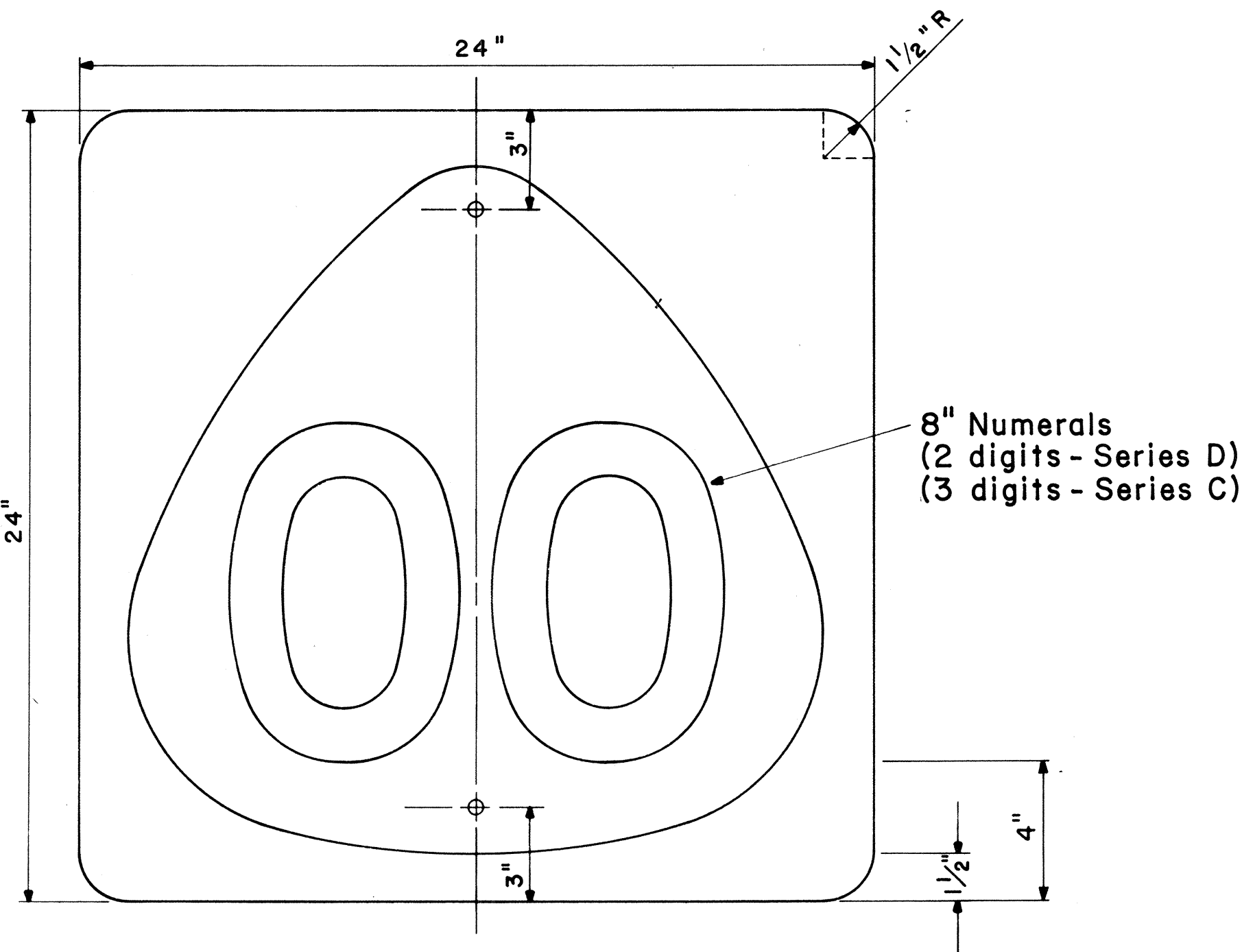
- Marker details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, "Standard Alphabets for Highway Signs," 1966, and "Standard Highway Signs," 1972, and as amended.
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for marker message. (R) or (L) indicates right or left.
- Sign message of Cardinal Direction Marker (M3 series) shall be denoted by the following:

M3-1 : NORTH
M3-2 : EAST
M3-3 : SOUTH
M3-4 : WEST
- Markers prefixed with "IM" on the plans shall have a white legend on a blue background.



STATE ROUTE MARKER DETAIL

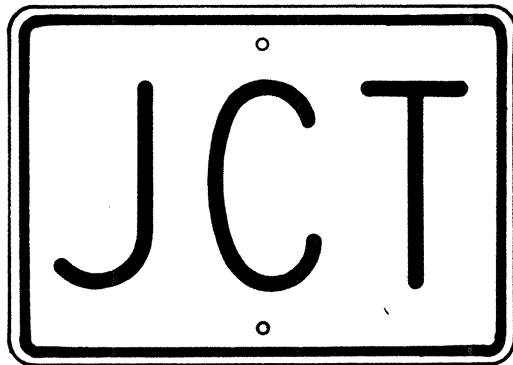
Not to Scale



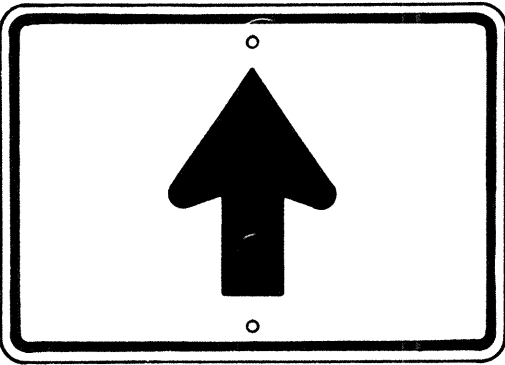
STATE ROUTE MARKER

M1-6 (00) 24" x 24"

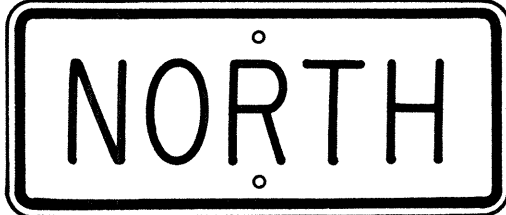
Scale: 1/4" = 1"



M2-1 21" x 15"



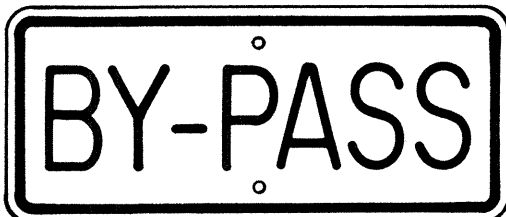
M6-3 21" x 15"



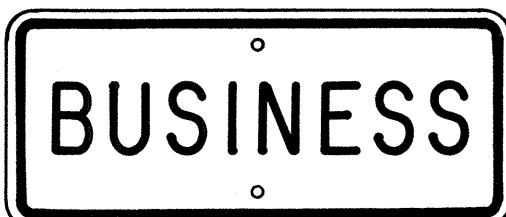
M3-1 24" x 12"
M3-1-A 36" x 18"



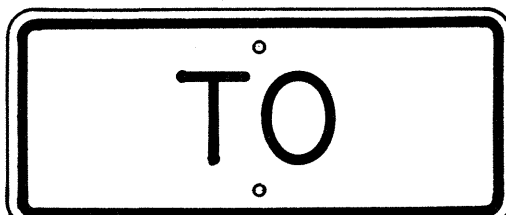
M4-1 24" x 12"



M4-2 24" x 12"



M4-3 24" x 12"



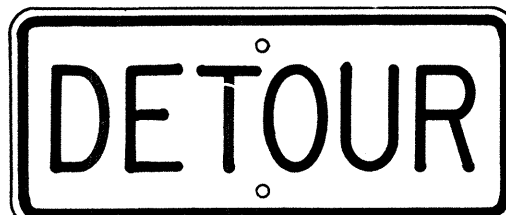
M4-5 24" x 12"



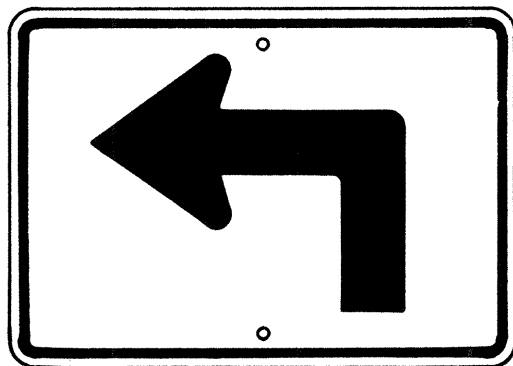
M4-6 24" x 12"



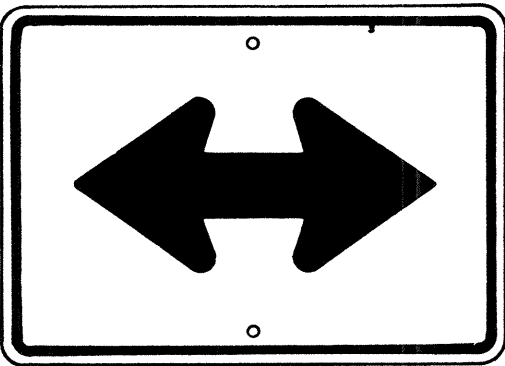
M4-7 24" x 12"



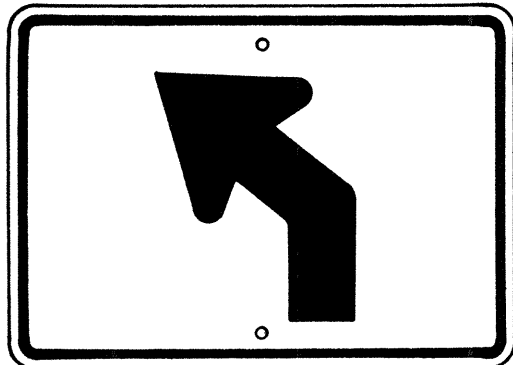
M4-8 24" x 12"



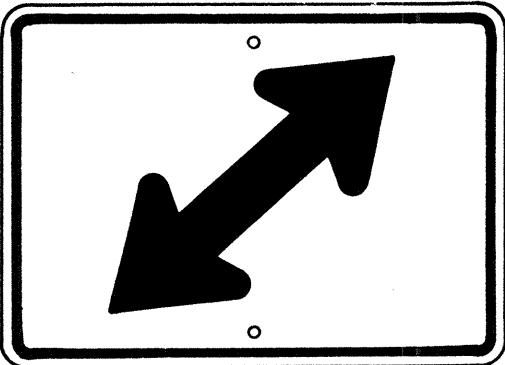
M5-1(L) 21" x 15"



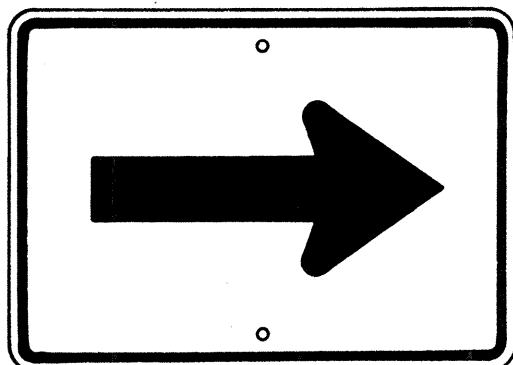
M6-4 21" x 15"



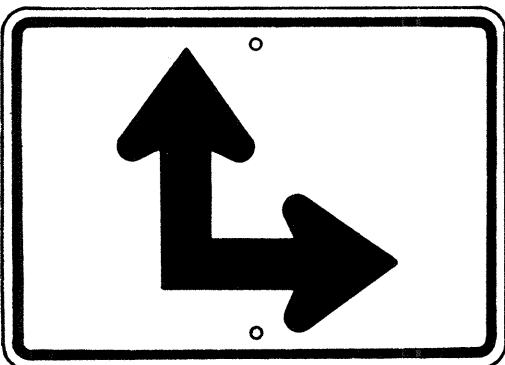
M5-2(L) 21" x 15"



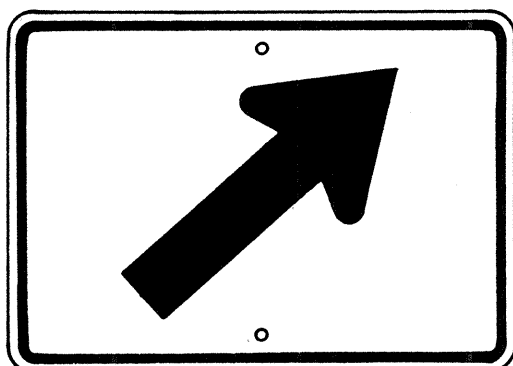
M6-5(R) 21" x 15"



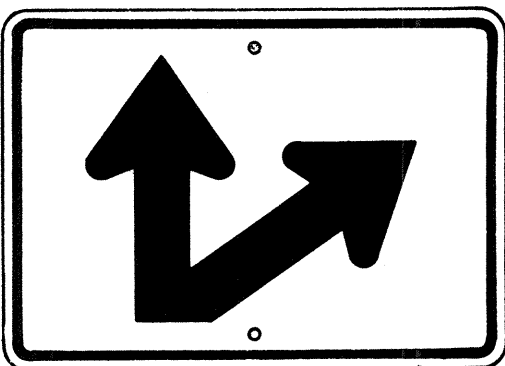
M6-1 21" x 15"



M6-6(R) 21" x 15"



M6-2(R) 21" x 15"



M6-7(R) 21" x 15"

AUXILIARY MARKERS

Not to Scale

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 105 Approved 12-30-69	H.C.	6/1/72
2	Revised General Note 1	H.C.	10/16/74

APPROVAL RECOMMENDED:

Erich Tanaka 6/6/72
TRAFFIC ENGINEER DATE

APPROVED:

Robert S. S. S. 6-1-72
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

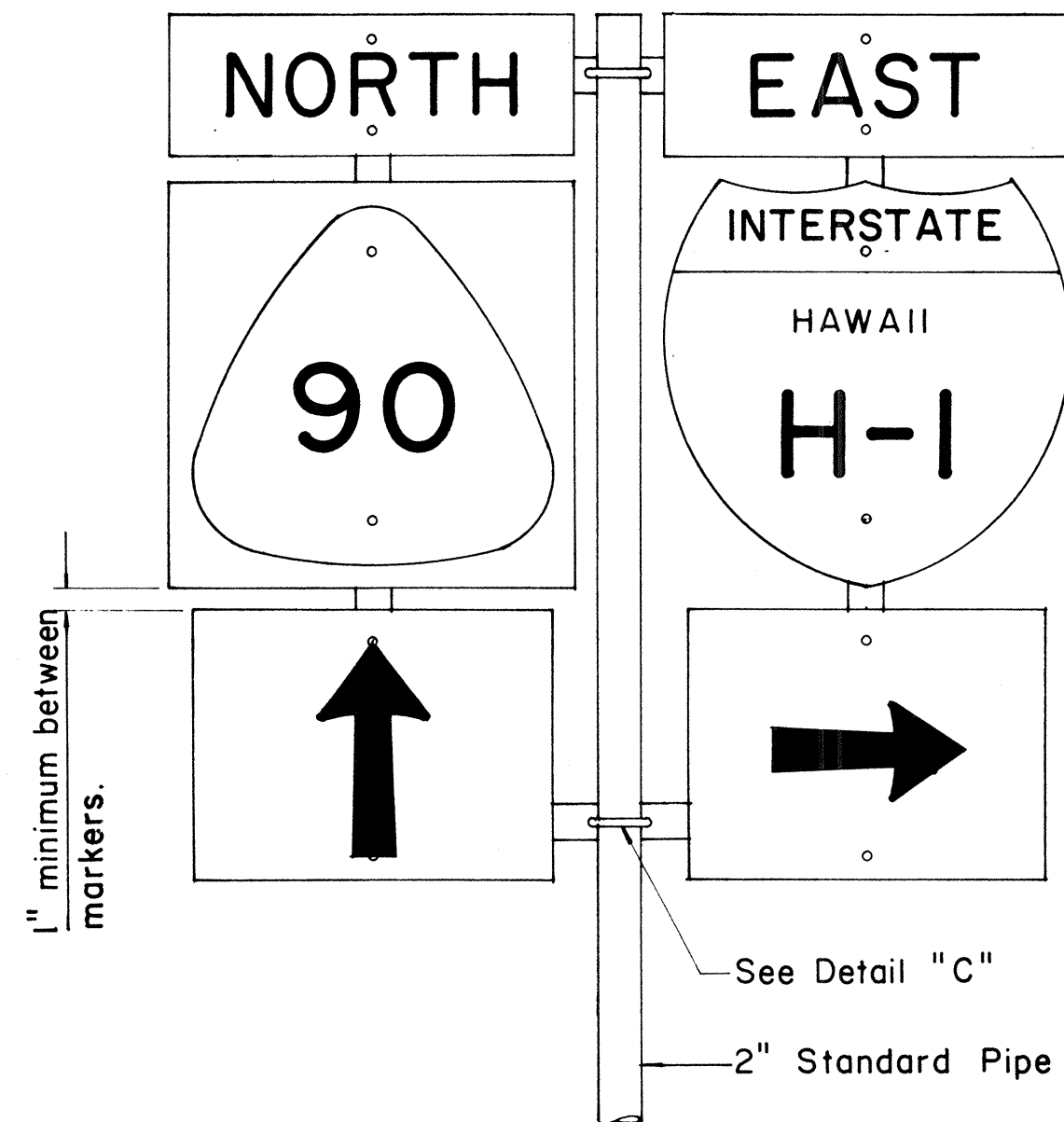
STANDARD DETAILS
STATE ROUTE MARKER
AND AUXILIARY MARKERS

Scale: As Shown

SHEET NO 14 OF 24 SHEETS DT 105

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

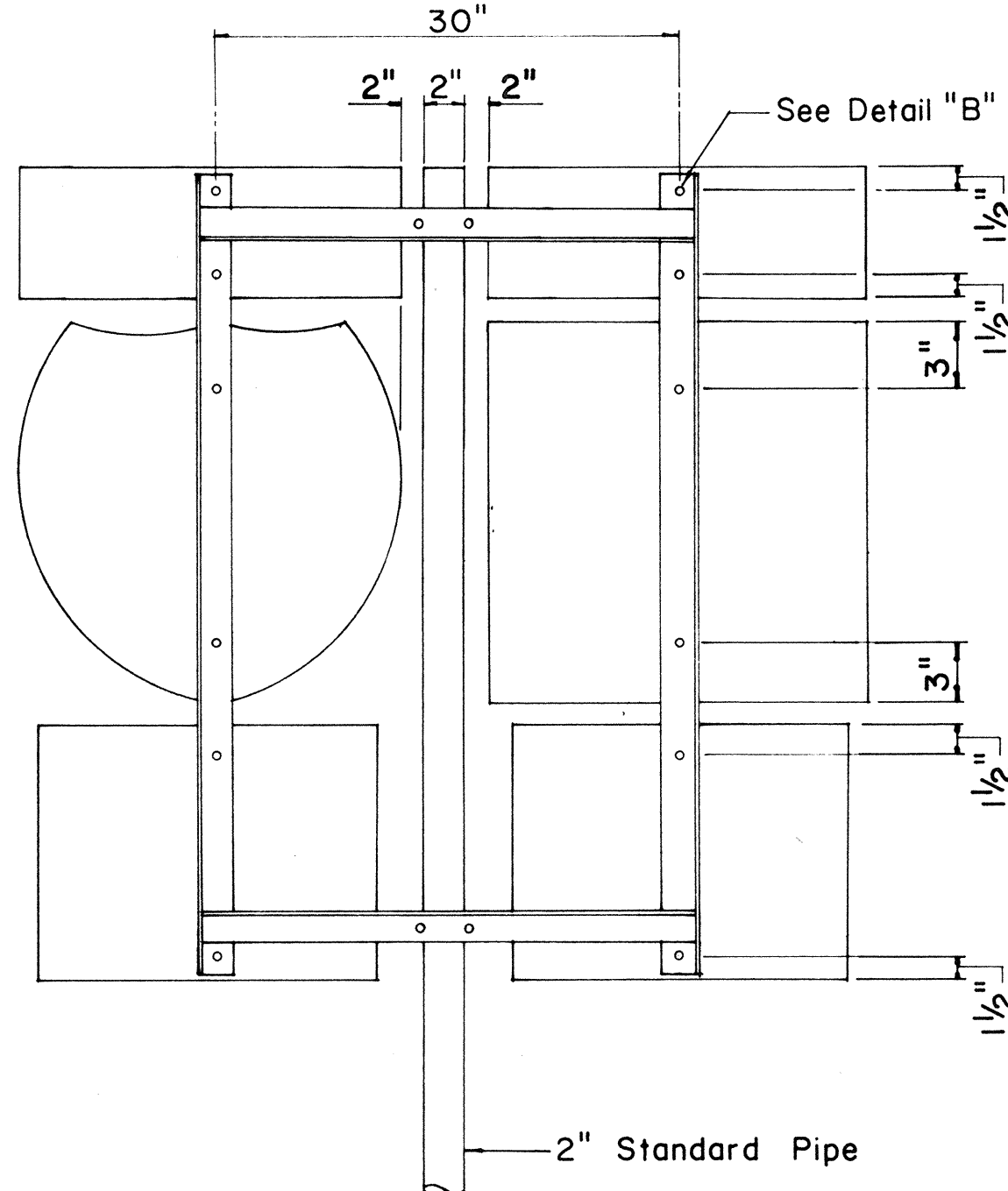
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9(3)	1979	80	89



FRONT ELEVATION

TYPE "B" ASSEMBLY

Not to Scale

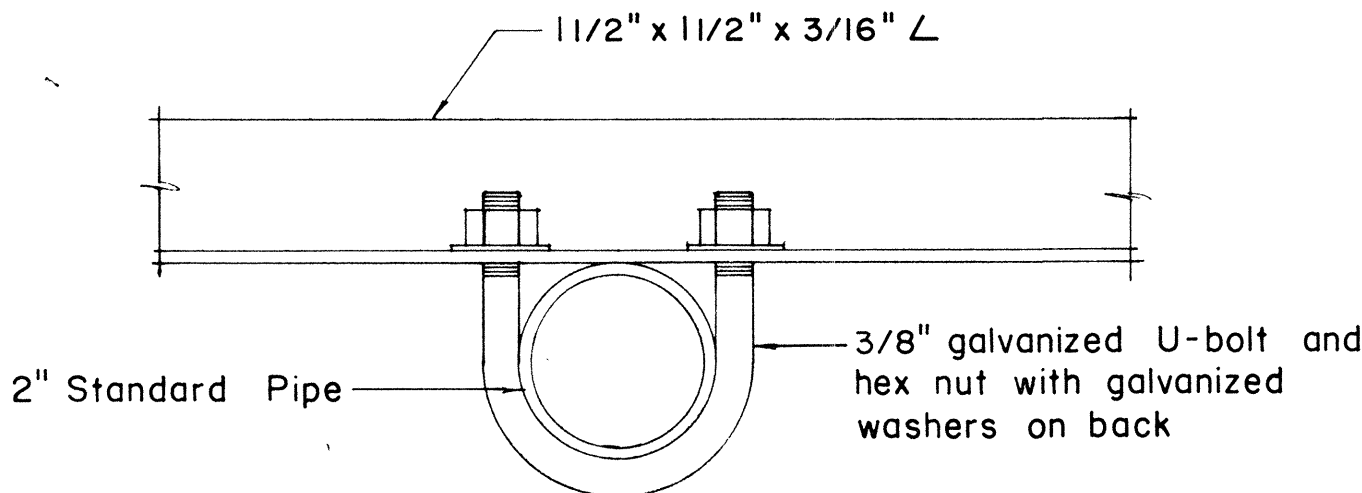


REAR ELEVATION

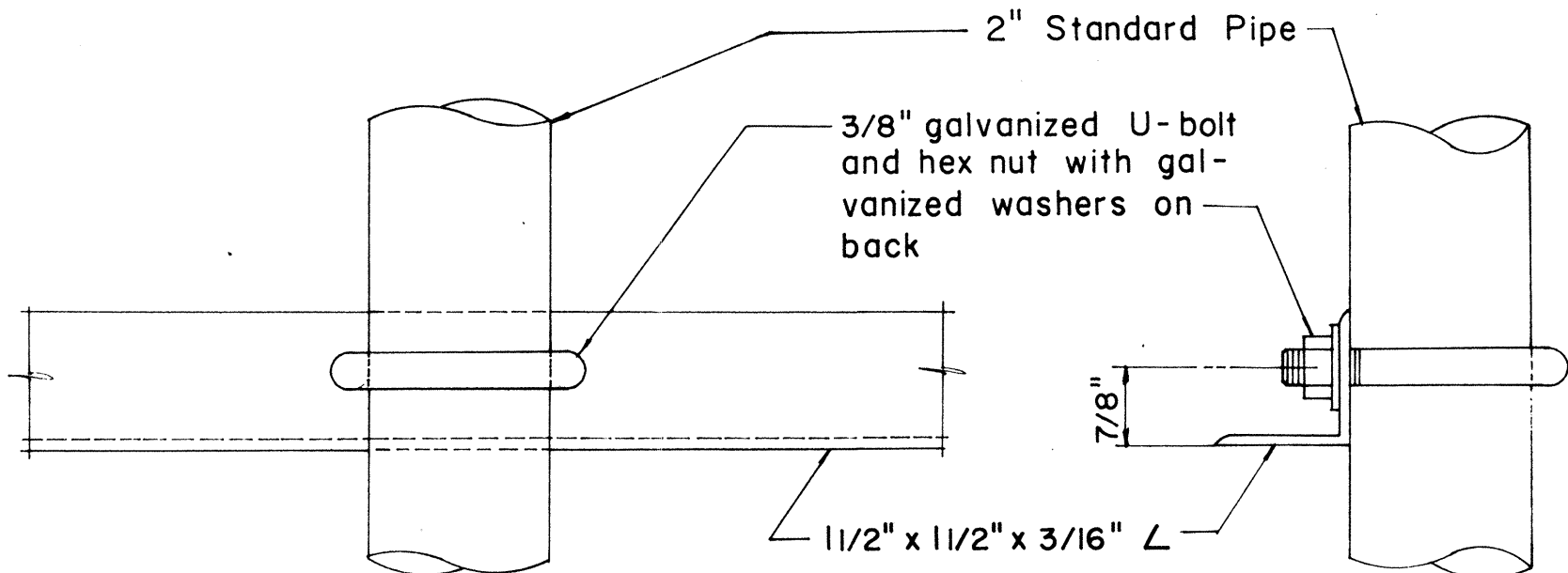
NOTE:

1. Minimum clearance between markers shall be one inch. (Larger clearances shall be in multiples of one inch.)

2. Pipe post for Type "A" & Type "B" Assembly shall be 2" Standard Pipe.



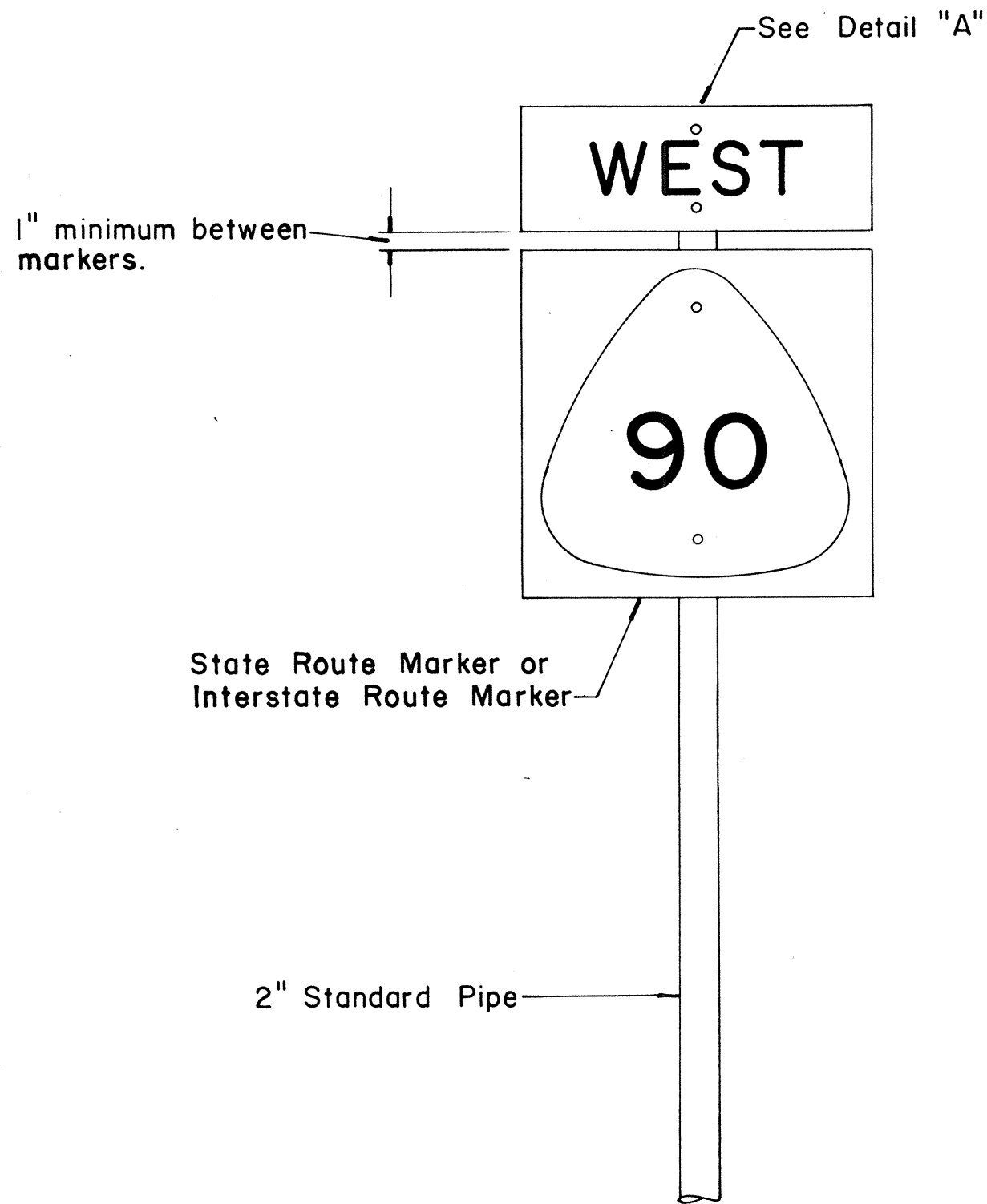
PLAN



FRONT ELEVATION

DETAIL "C"

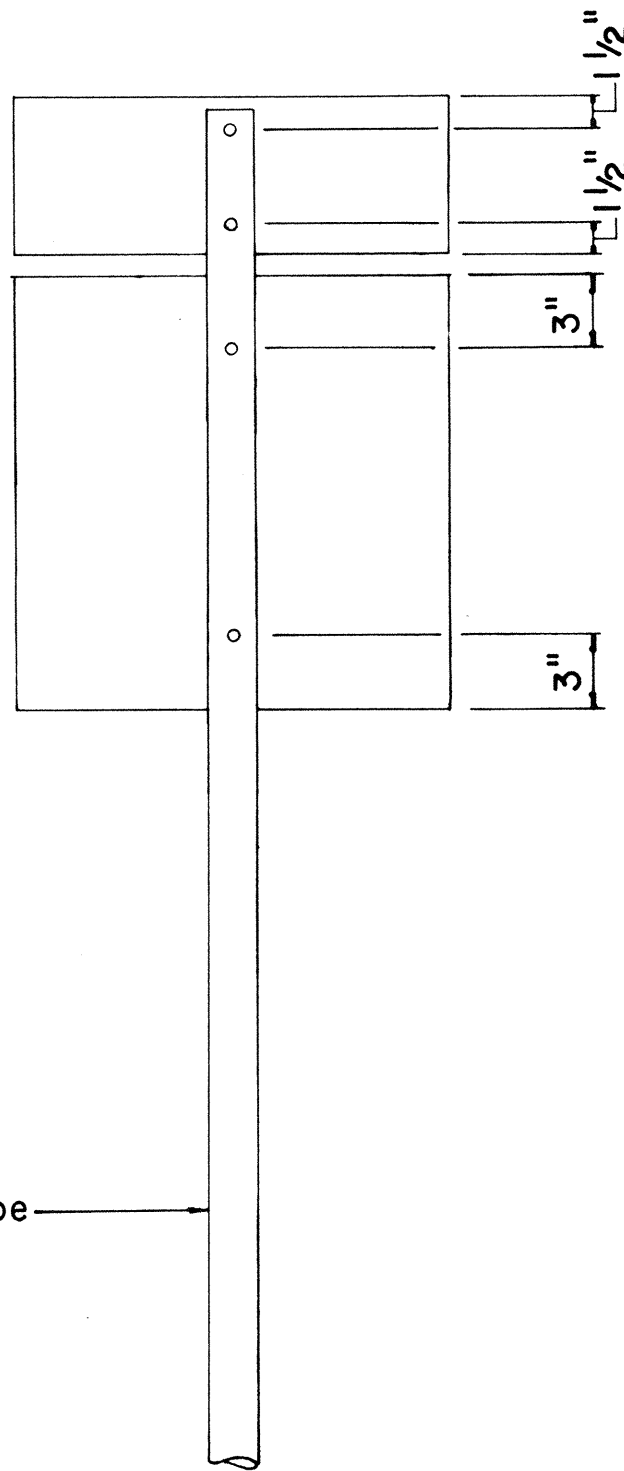
SIDE ELEVATION



FRONT ELEVATION

TYPE "A" ASSEMBLY

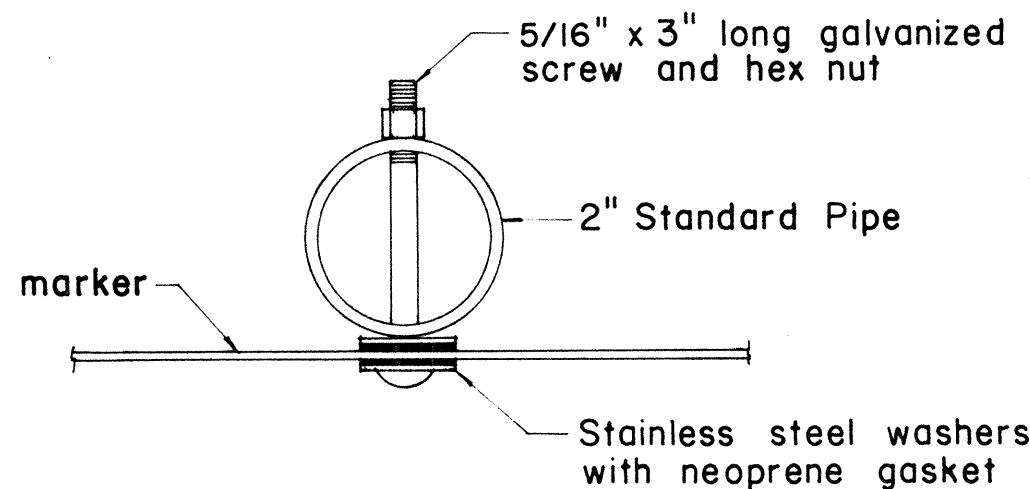
Not to Scale



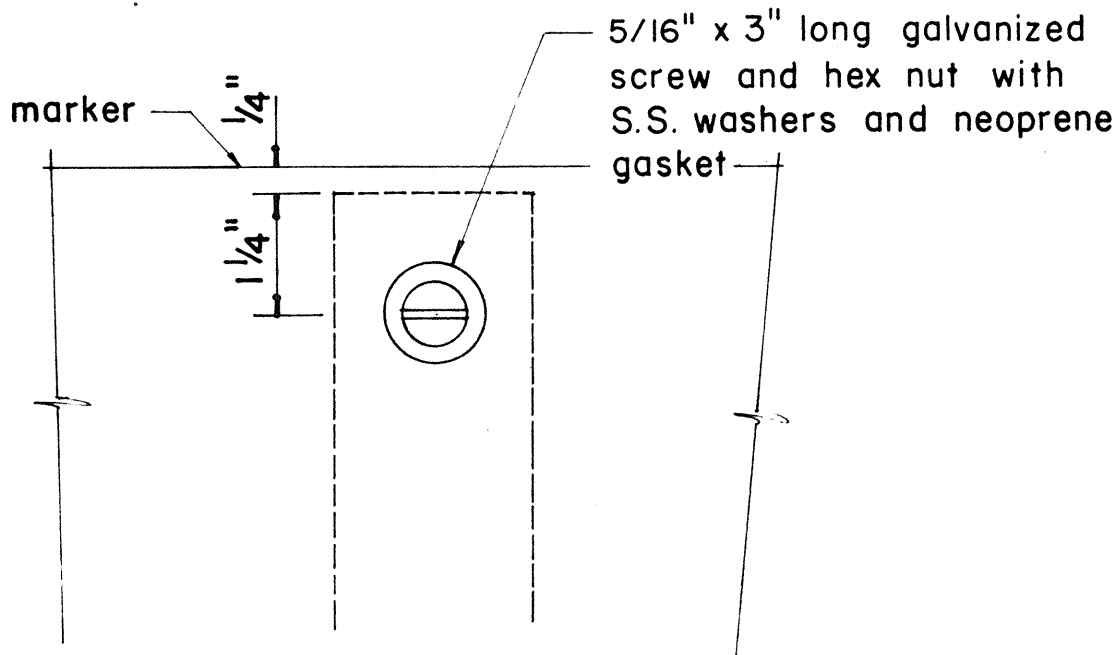
REAR ELEVATION

NOTE:

For height and lateral location of Route Marker Assembly, see plan sheet DT 100.

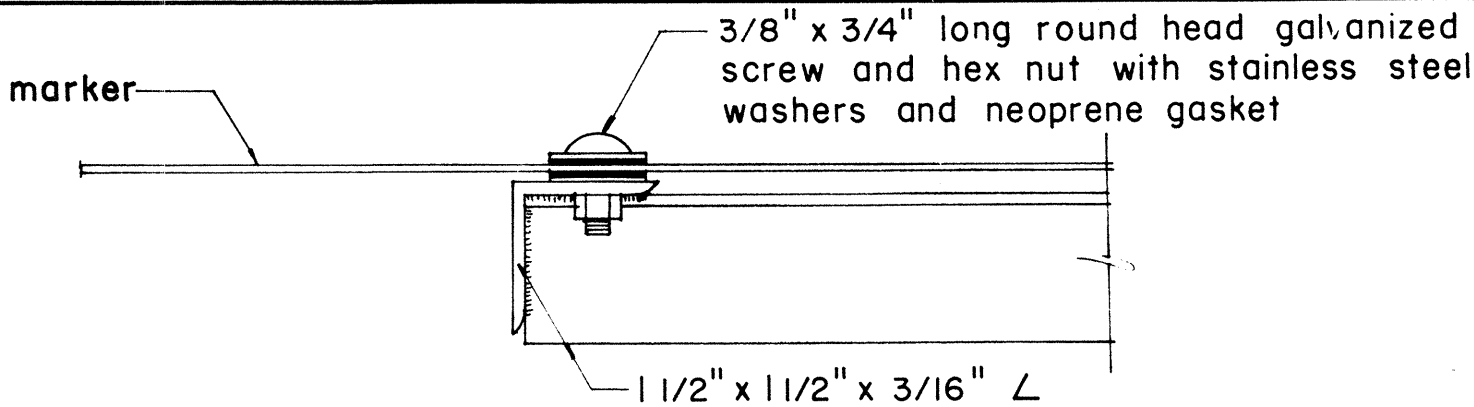


PLAN

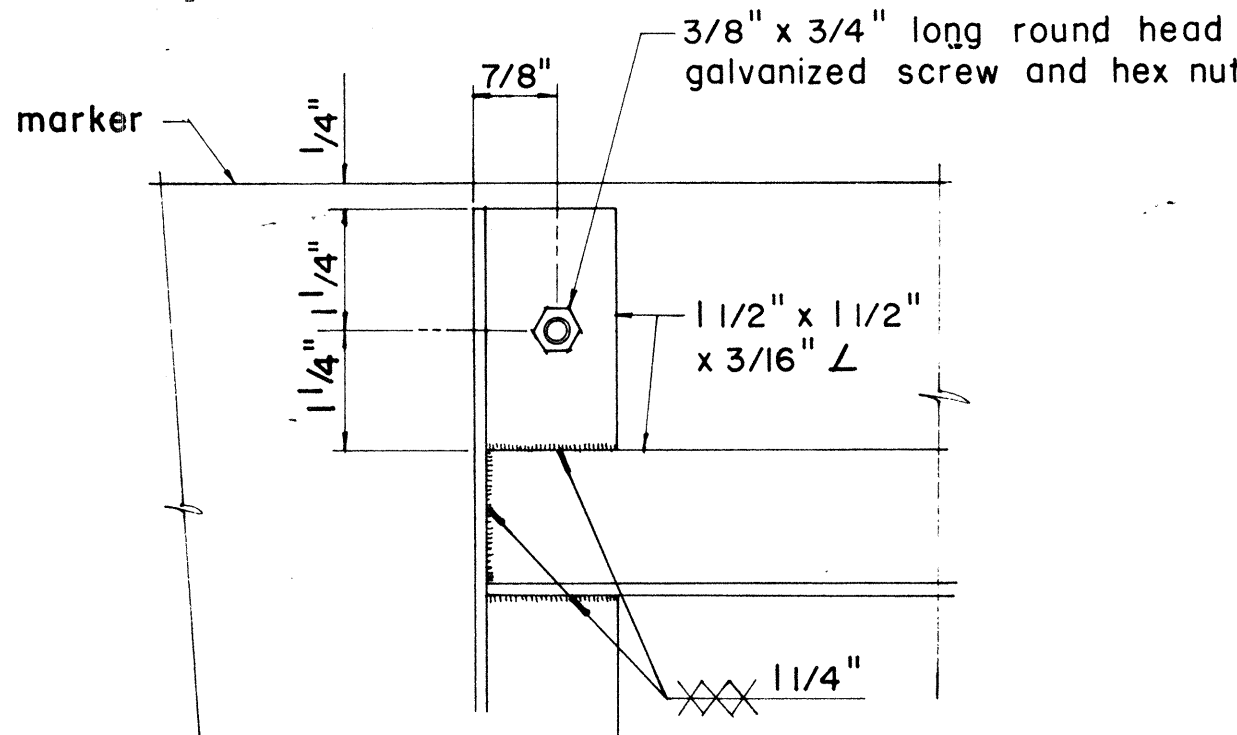


FRONT ELEVATION

DETAIL "A"

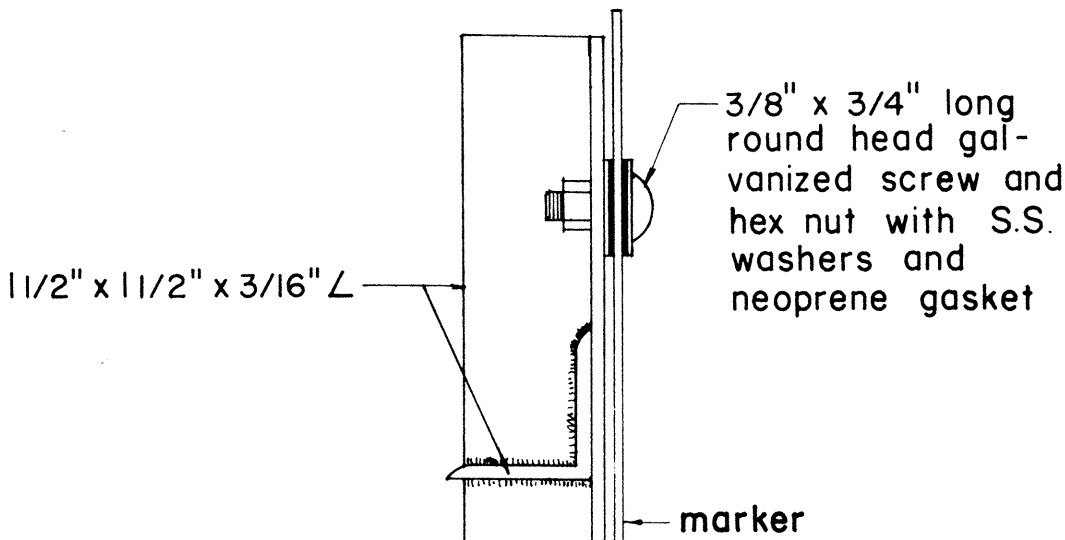


PLAN



ELEVATION

DETAIL "B"



SECTION

APPROVAL RECOMMENDED:

Enoch Tanaka 12/23/69

TRAFFIC ENGINEER DATE

APPROVED:

John J. Patsch 12-30-69

ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revisions to Route Marker Assemblies.	H.T.	6/1/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

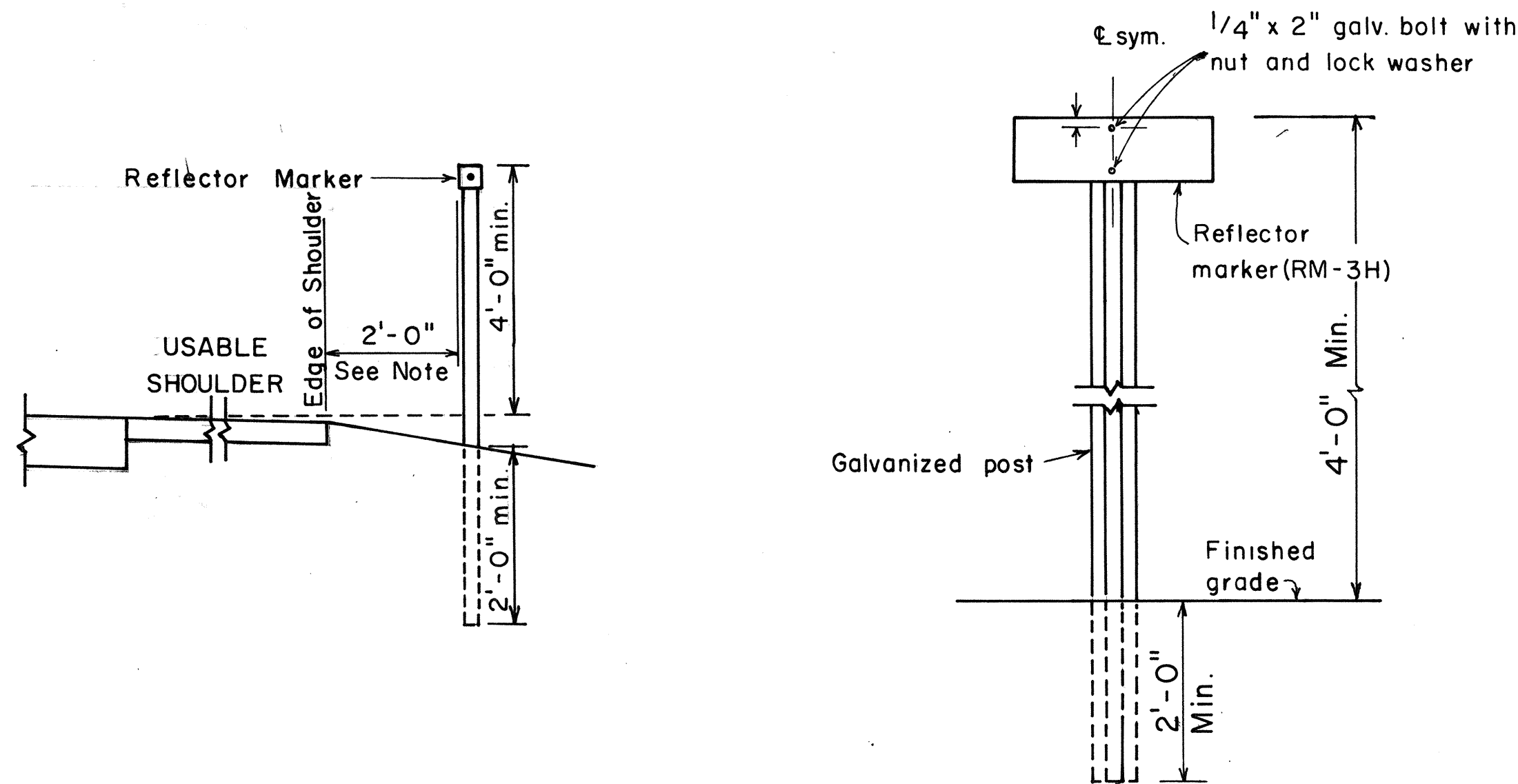
STANDARD DETAILS
ROUTE MARKER ASSEMBLIES

Scale: As Shown

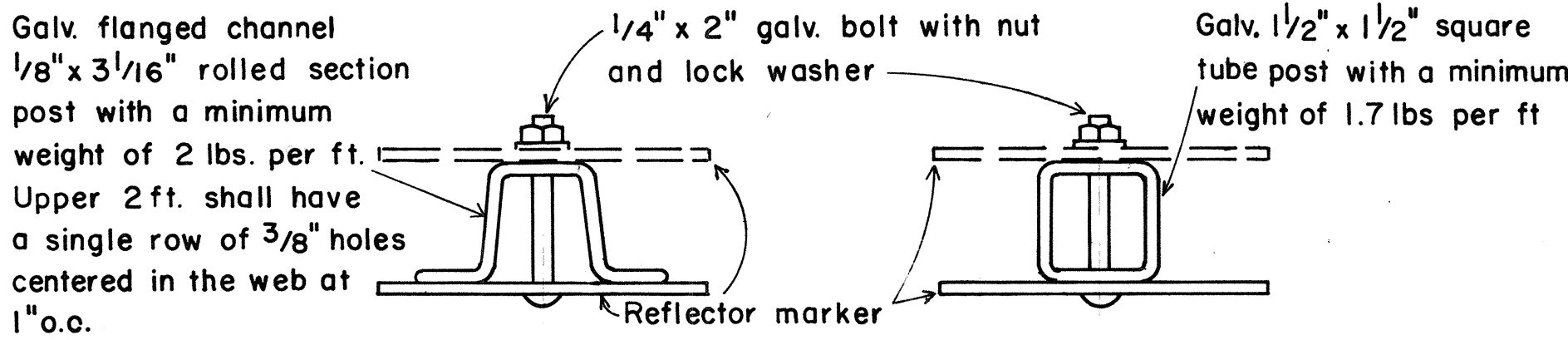
SHEET No. 15 OF 24 SHEETS DT 107

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

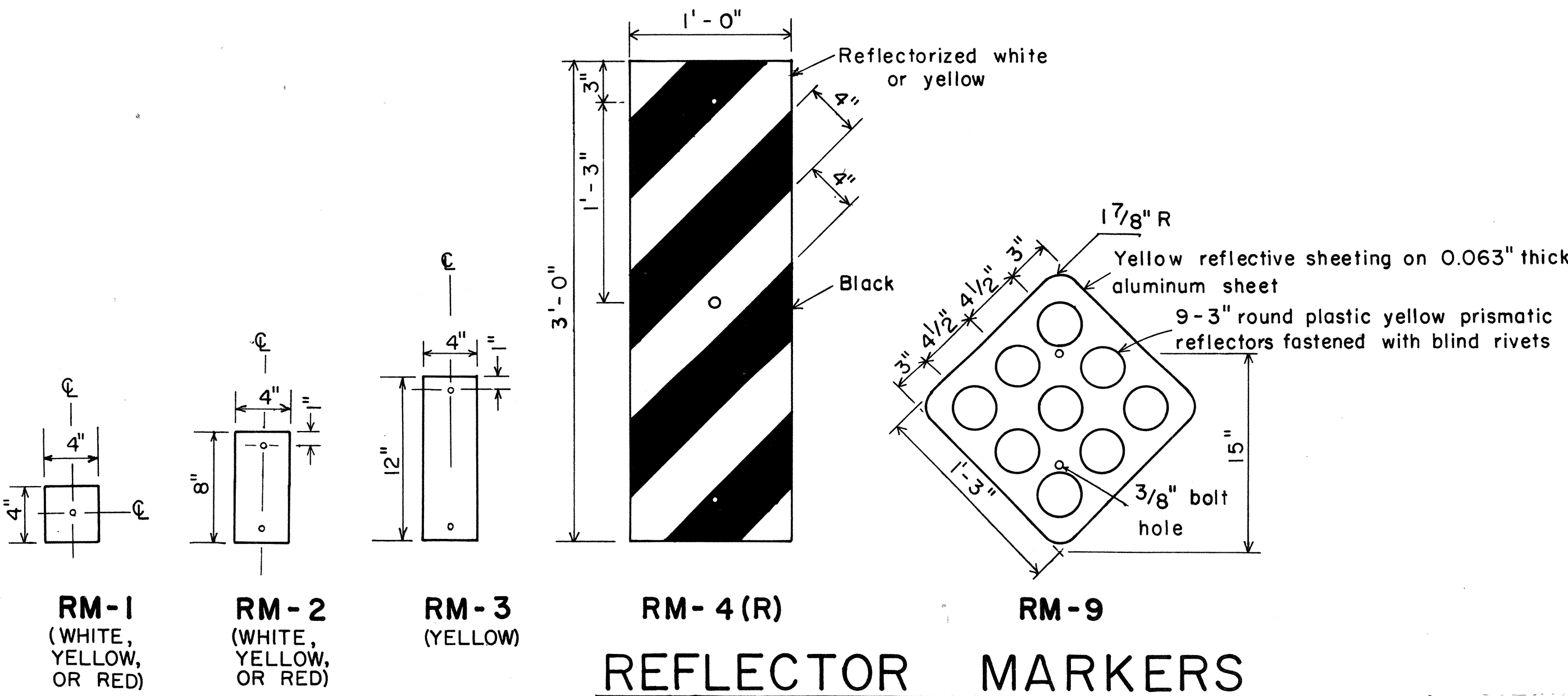
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9(3)	1979	81	89



REFLECTOR MARKER MOUNTING DETAIL



TYPICAL SECTION OF ROAD DELINEATOR



GENERAL NOTES:

1. Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
2. (R) or (L) indicates right or left and shall be as shown on the plans.
3. Reflector markers RM-1 and RM-2 shall be:
 - a) Yellow if placed along the left edge of divided roadways, one-way roadways, and ramps in the direction of travel.
 - b) White if placed along the right edge of divided roadways, one-way roadways, and ramps in the direction of travel.
4. For reflector marker RM-9, reflective sheeting material may be used as an alternate.
5. For RM-4, the stripes shall slope downward at an angle of 45° in the direction of traffic.

APPROVAL RECOMMENDED:
Eusebio Tanaka 11/1/77
 TRAFFIC ENGINEER DATE
 APPROVED:
Hubert A. Sakai 11/15/77
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
MISCELLANEOUS REFLECTOR MARKERS
Not to scale June, 1977

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9(3)	1979	82	89

GENERAL NOTES:

- Milepost marker and highway route number plates shall conform to the latest editions of the following FHWA publications:
 - "Standard Alphabets for Highway Signs," and as amended.
 - "Standard Highway Signs," and as amended.
 - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Milepost markers and highway route numbers shall be completely reflectorized with reflective sheeting as follows:
 - Milepost markers shall have white legends and border on a green background.
 - Highway route numbers shall have black numerals on a white background.
- The plate backings for milepost markers and highway route numbers shall conform to the requirements for standard highway signs. The plates shall have 3/8" bolt holes drilled at appropriate locations.
- Highway route number plates shall be used in conjunction with milepost marker plates on all roadways, except Interstate freeways. Fabrication and installation costs of highway route number plates shall be considered incidental to the milepost marker assembly.
- Milepost markers shall be installed on all roadways as follows:
 - One milepost on each side of multi-lane roadways.
 - Back-to-back mileposts on one side of 2-lane roadways. (Right side of roadway in direction of increasing mileage.)

APPROVAL RECOMMENDED:

Eishi Tanaka

TRAFFIC ENGINEER

1/17/78

DATE

APPROVED:

Robert B. Zaki

ASSISTANT CHIEF, ENGINEERING

1/18/78

DATE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

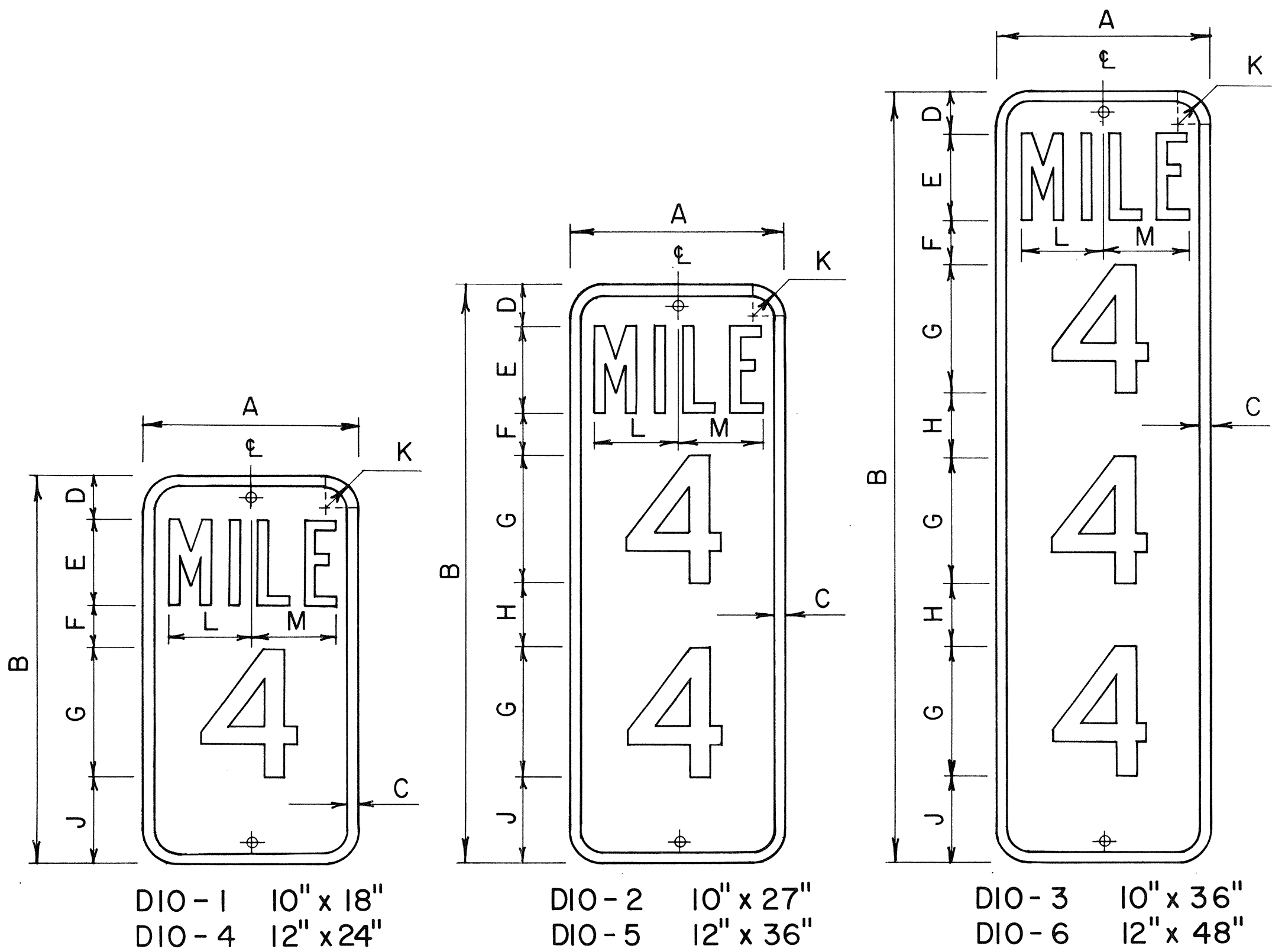
STANDARD DETAILS

MILEPOSTS

SCALE: As Shown

DATE: December, 1977

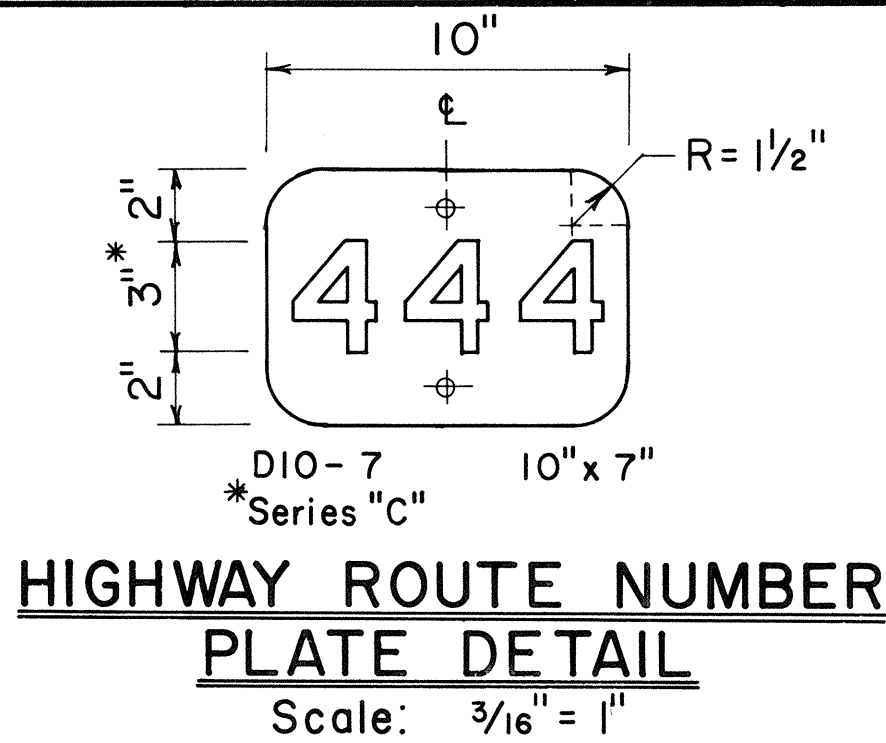
SHEET NO. 17 OF 24 SHEETS DT 116



MILEPOST MARKER PLATE DETAILS

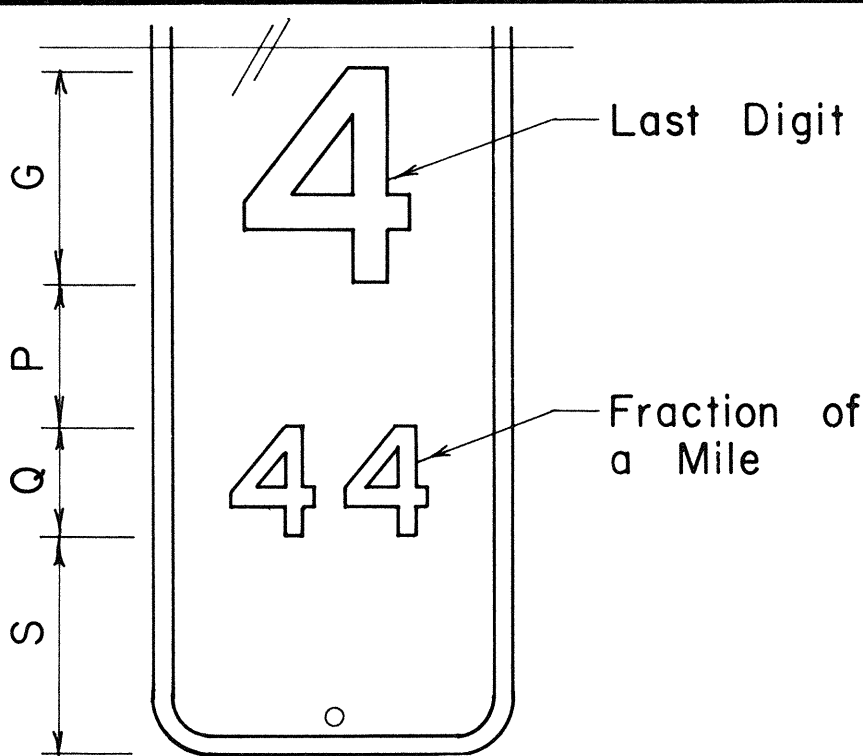
Scale: 3/16" = 1"

MILEPOST PLATE SCHEDULE (INCHES)																
NAME	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	LETTER SERIES	NUMERAL SERIES	
DIO - 1 DIO - 4	10 x 18 12 x 24	10 12	18 24	1/2 1/2	2 3	4 4	2 3	6 10	 4	4 4	1 1/2 1 1/2	3 5/8 4 3/8	3 7/8 4 7/8	B C	C C	
DIO - 2 DIO - 5	10 x 27 12 x 36	10 12	27 36	1/2 1/2	2 3	4 4	2 3	6 10	3 3	4 3	1 1/2 1 1/2	3 5/8 4 3/8	3 7/8 4 7/8	B C	C C	
DIO - 3 DIO - 6	10 x 36 12 x 48	10 12	36 48	1/2 1/2	2 3	4 4	2 3	6 10	3 2 1/2	4 3	1 1/2 1 1/2	3 5/8 4 3/8	3 7/8 4 7/8	B C	C C	



HIGHWAY ROUTE NUMBER PLATE DETAIL

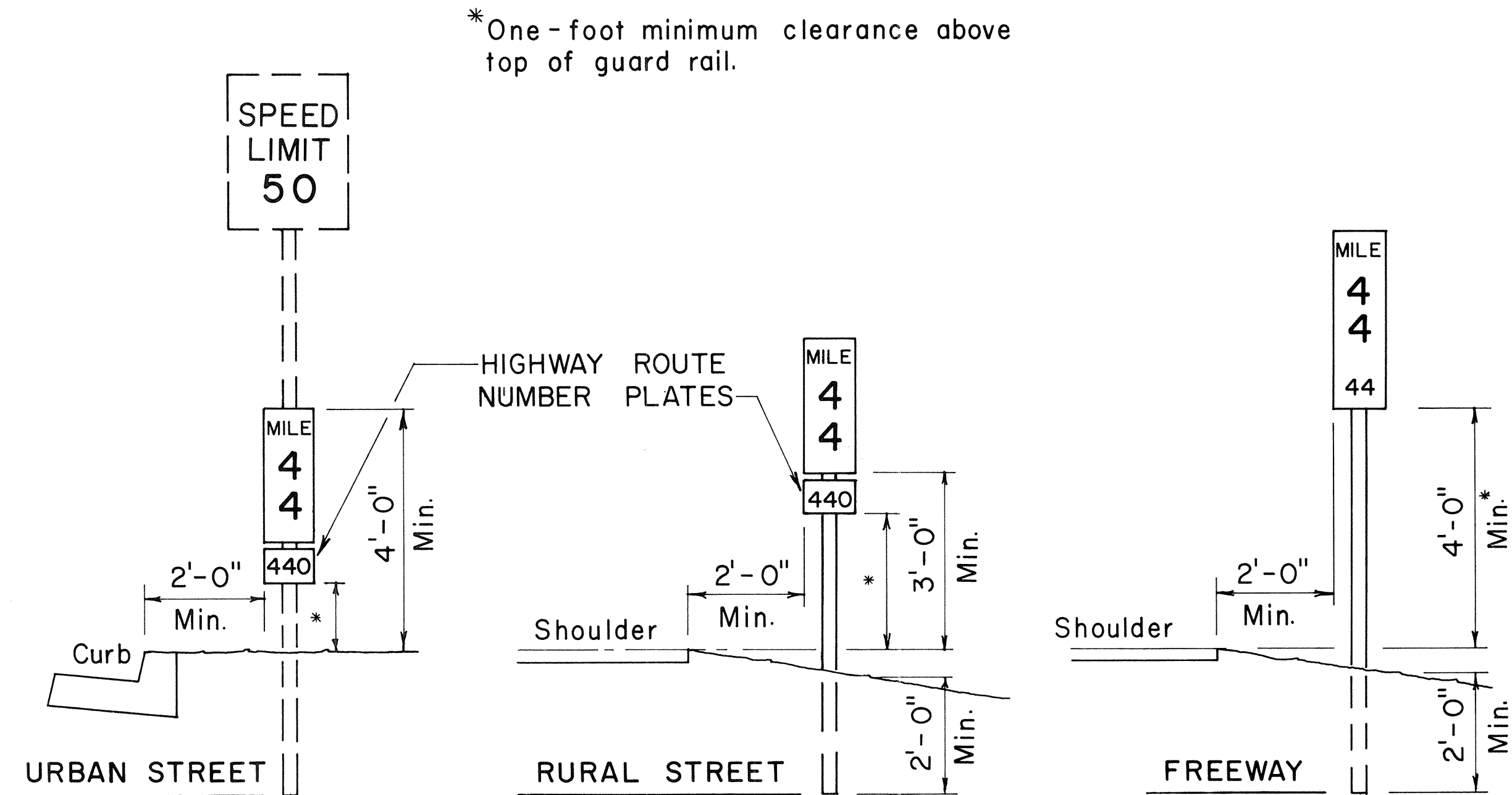
Scale: 3/16" = 1"



MILEPOST MARKER FRACTION DETAIL

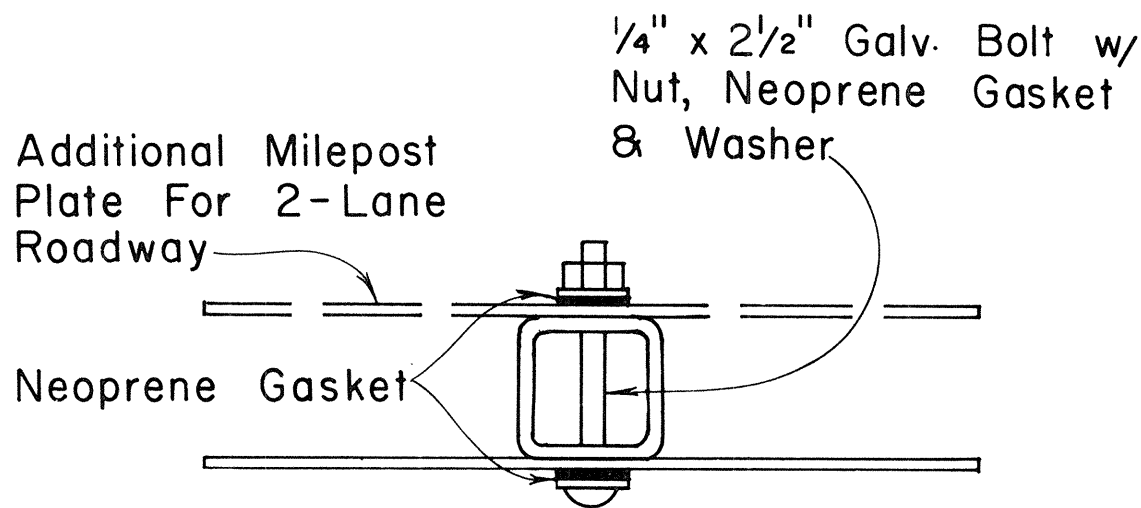
Scale: 3/16" = 1"

MILEPOST PLATE SCHEDULE WITH FRACTION OF A MILE						
NAME	SIZE	G	P	Q	S	NUMERAL SERIES
DIO - 1a	10" x 27"	6"	4"	3"	6"	C
DIO - 4a	12" x 36"	10"	4"	5"	7"	C
DIO - 2a	10" x 36"	6"	4"	3"	6"	C
DIO - 5a	12" x 48"	10"	4"	5"	6"	C
DIO - 3a	10" x 45"	6"	4"	3"	6"	C
DIO - 6a	12" x 60"	10"	4"	5"	6"	C

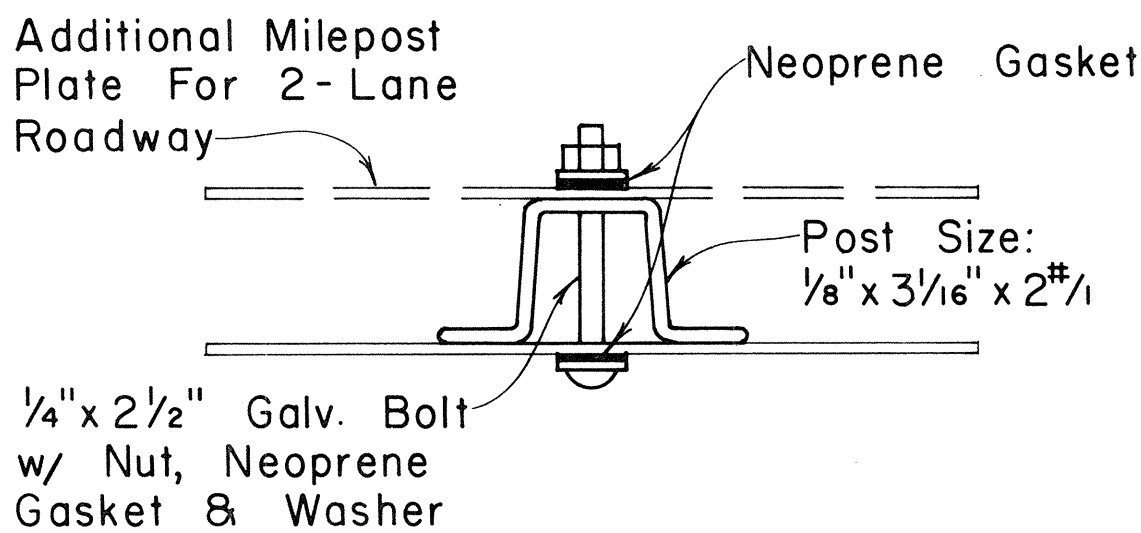


TYPICAL ROADSIDE INSTALLATION

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



GALVANIZED SQUARE TUBE POST



GALVANIZED FLANGED CHANNEL POST

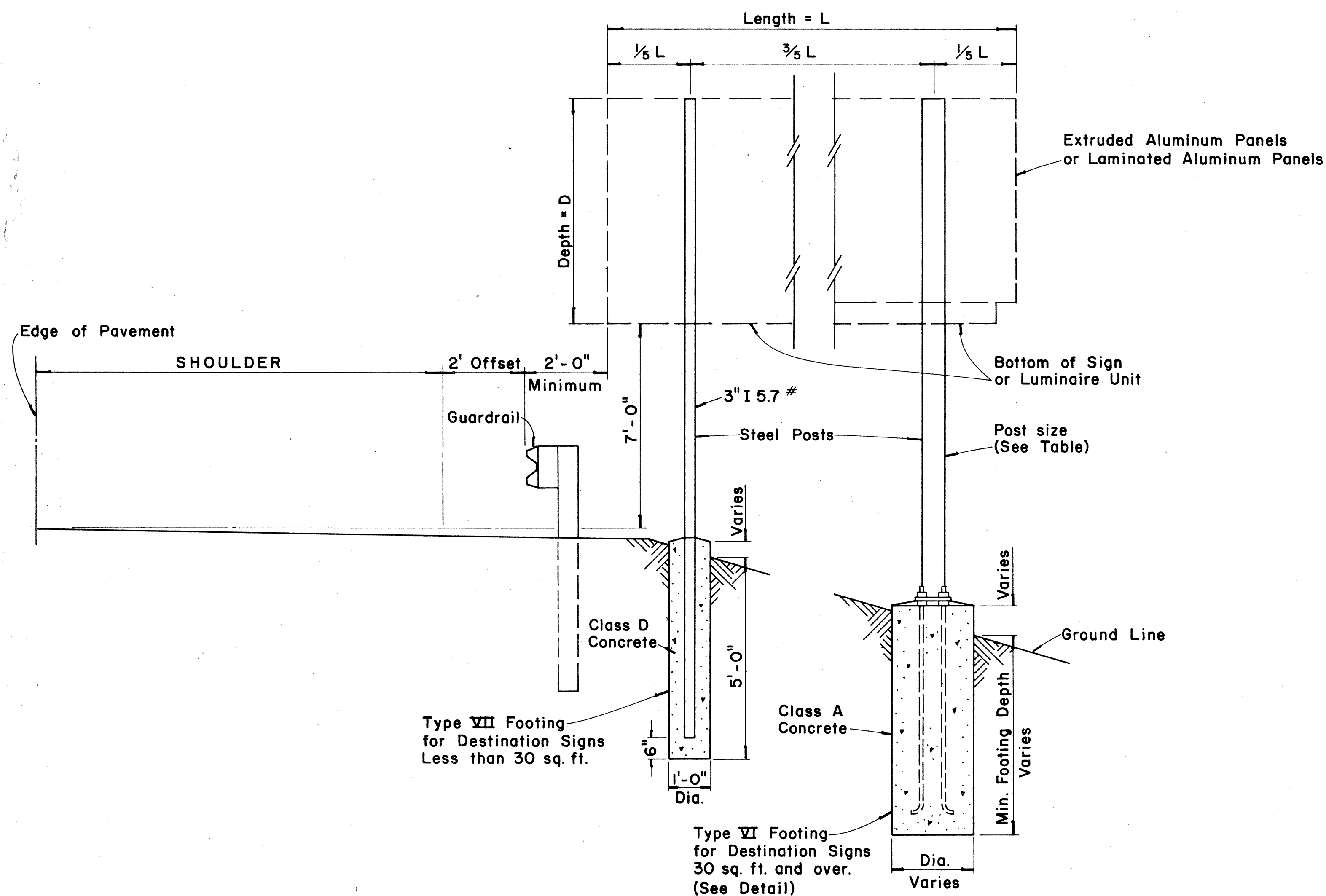
TYPICAL MOUNTING DETAILS

Scale: 1/2" = 1"

NO.	REVISION	APPROVED BY	DATE

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER 7(3)	1979	83	89

[illegible]

Not to Scale

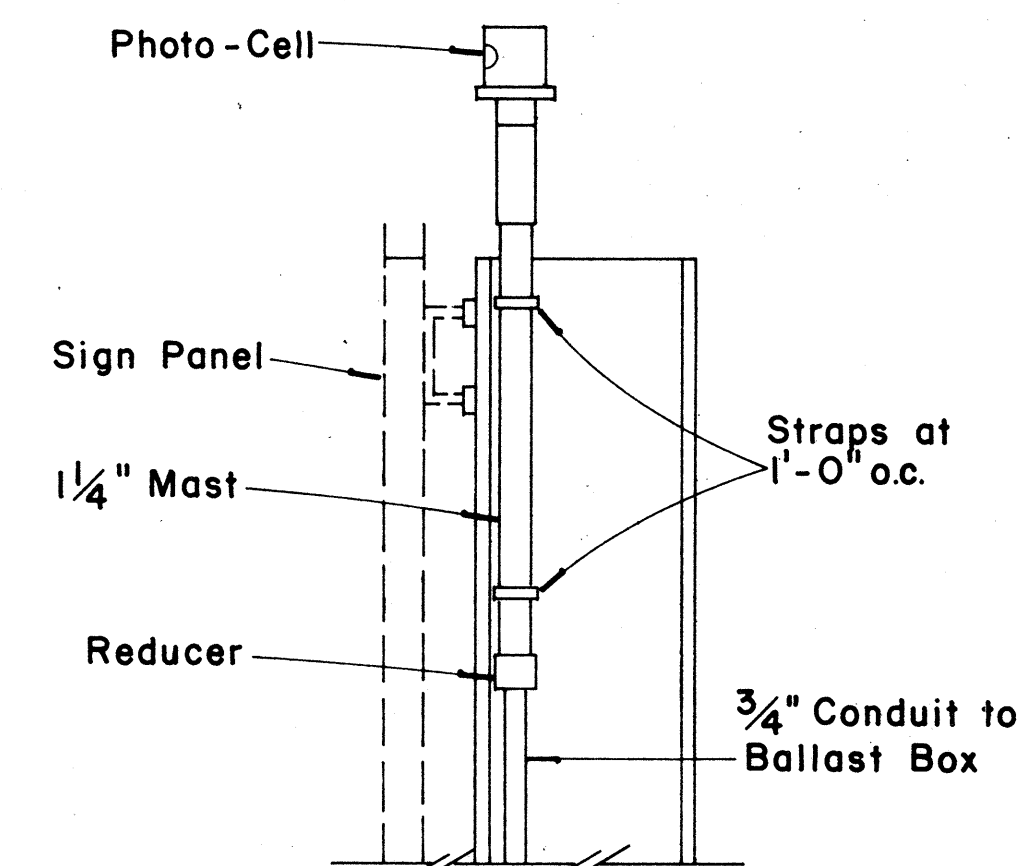
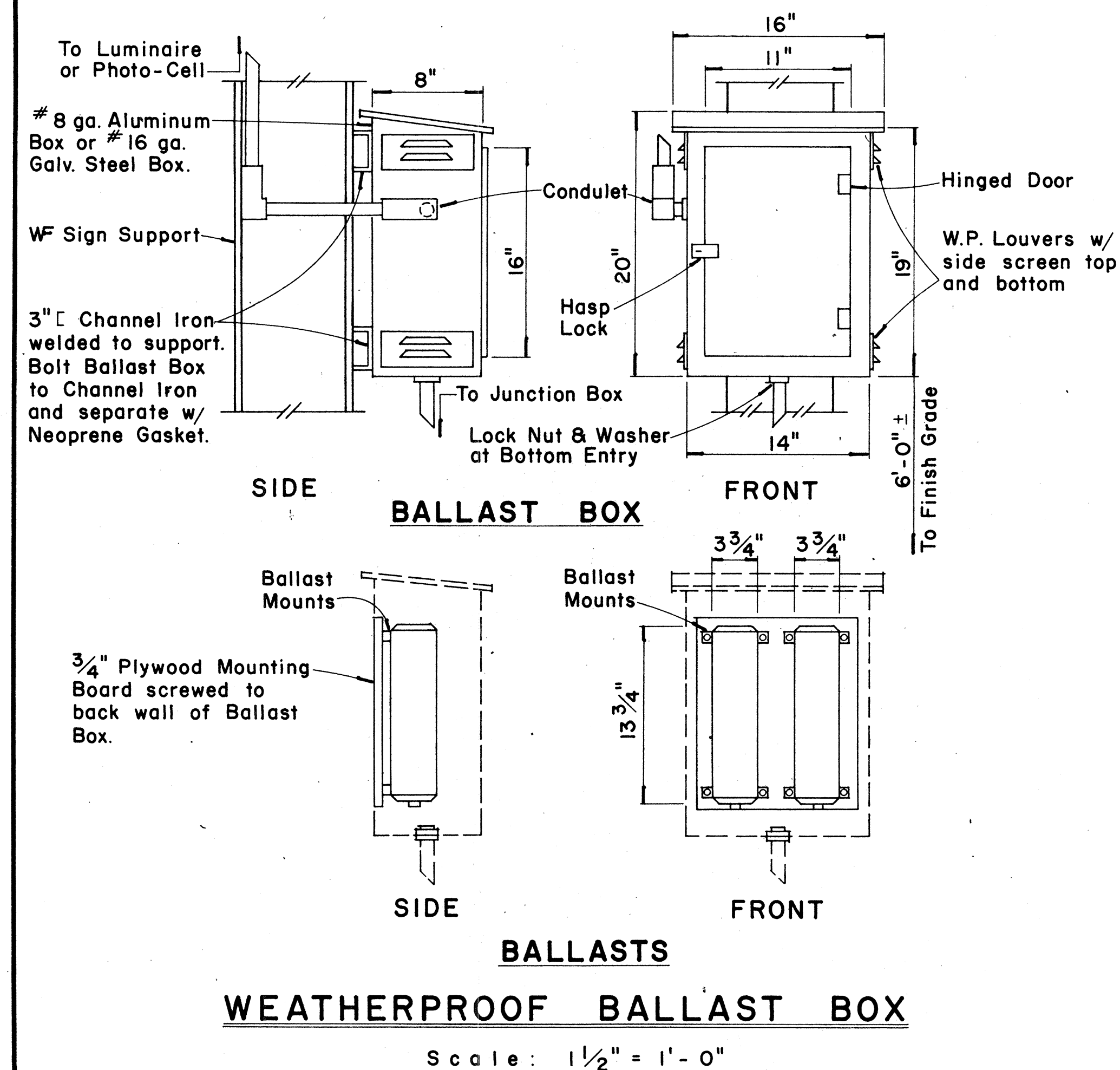
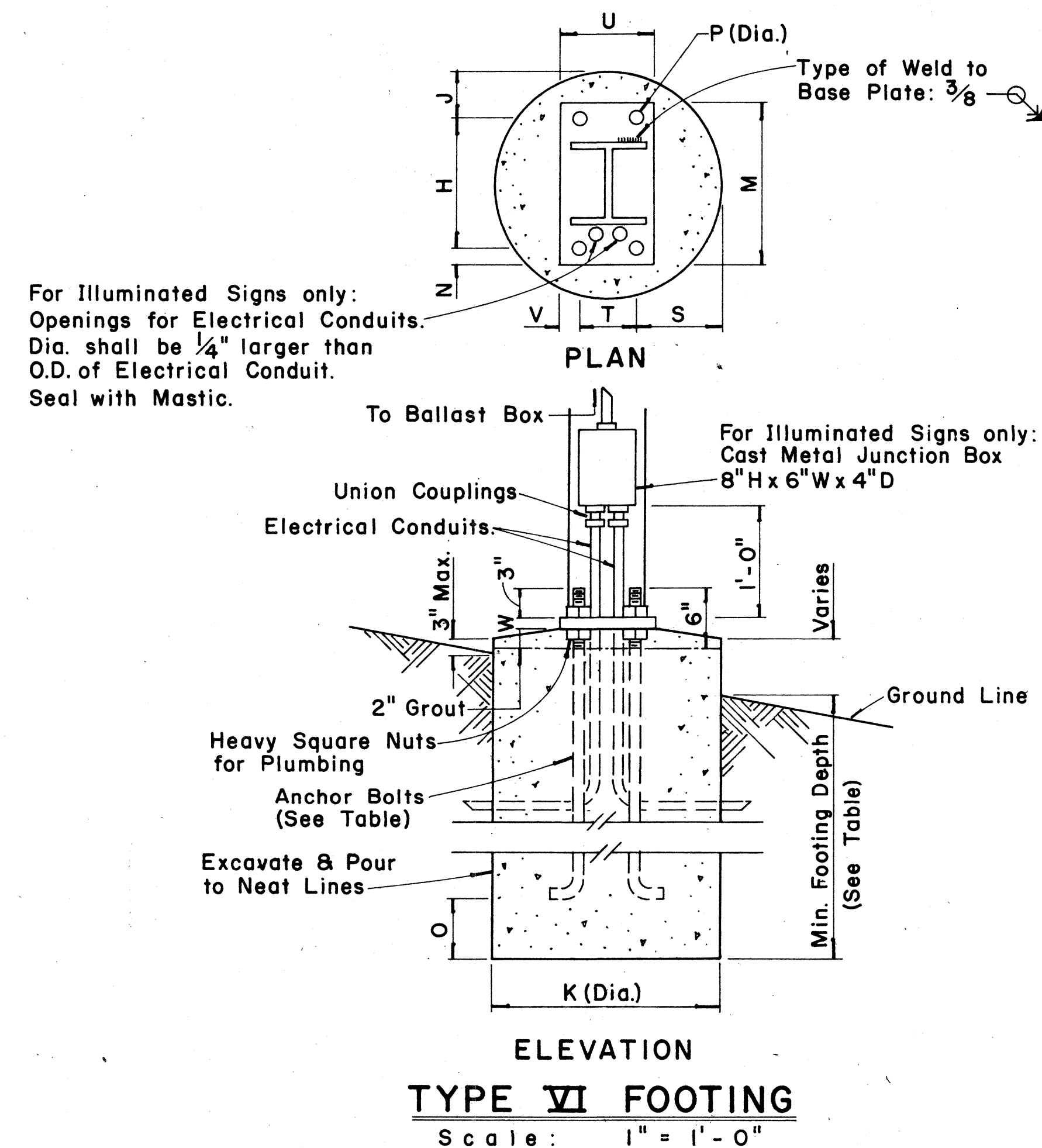


PHOTO-CELL DETAIL

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



APPROVAL RECOMMENDED:

Euchi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:  12-20-69
ASSISTANT CHIEF, ENGINEERING DATE

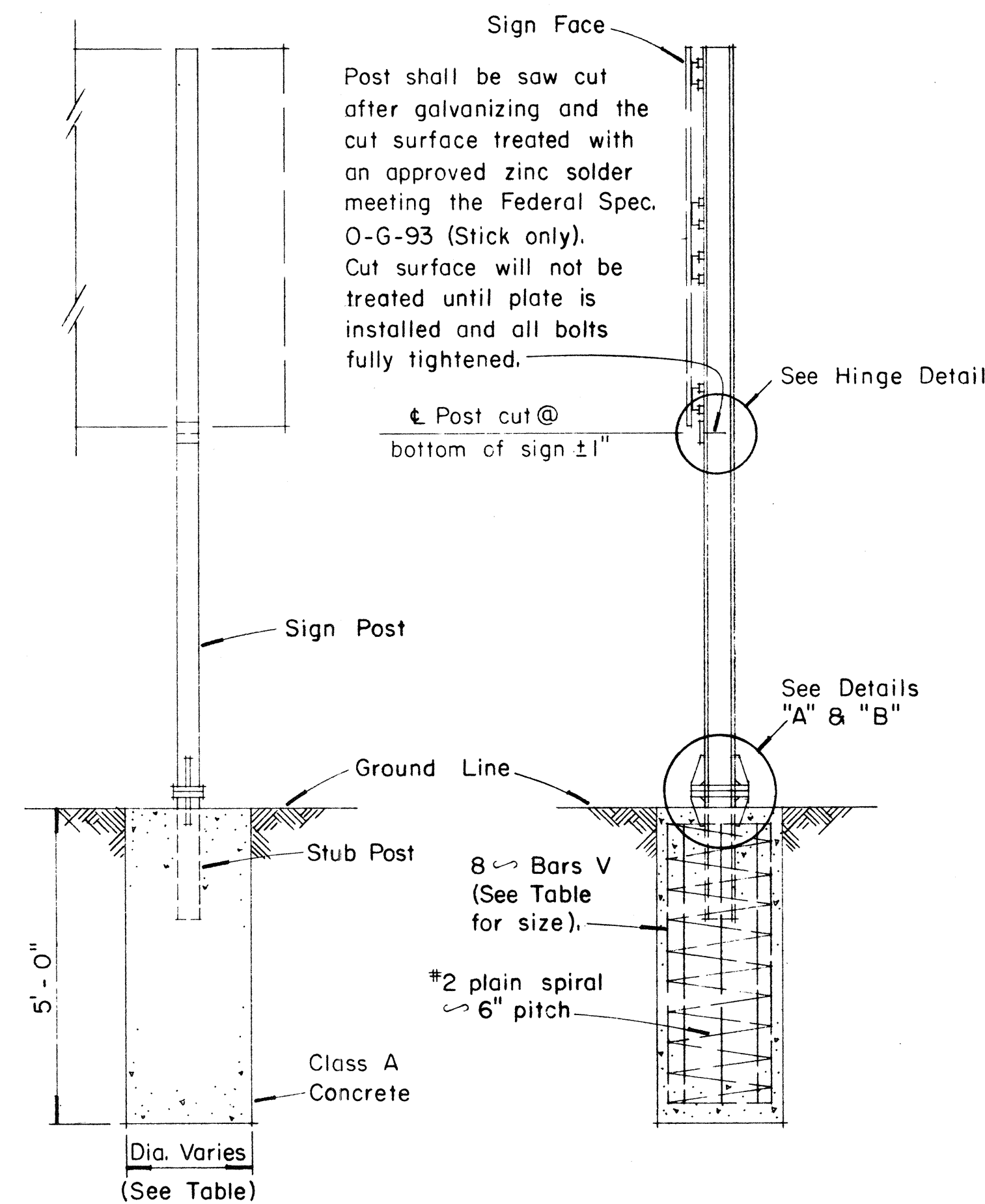
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
DESTINATION & GROUND MOUNTED
EXPRESSWAY SIGNS

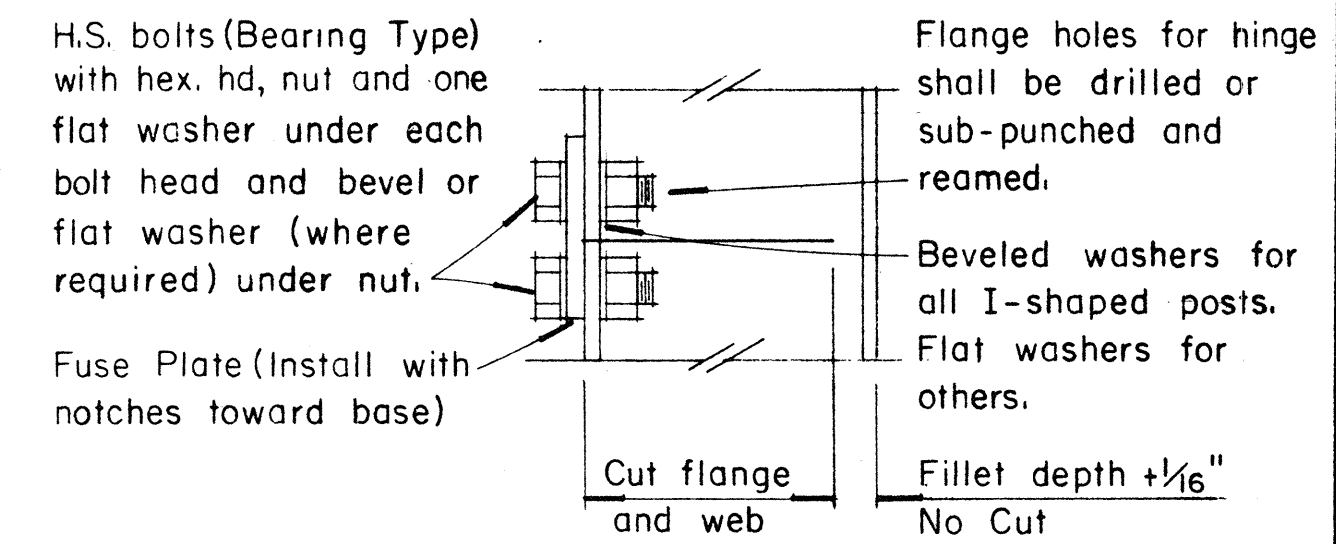
Scale: As Shown

SHEET No. 18 OF 24 SHEETS DT 203

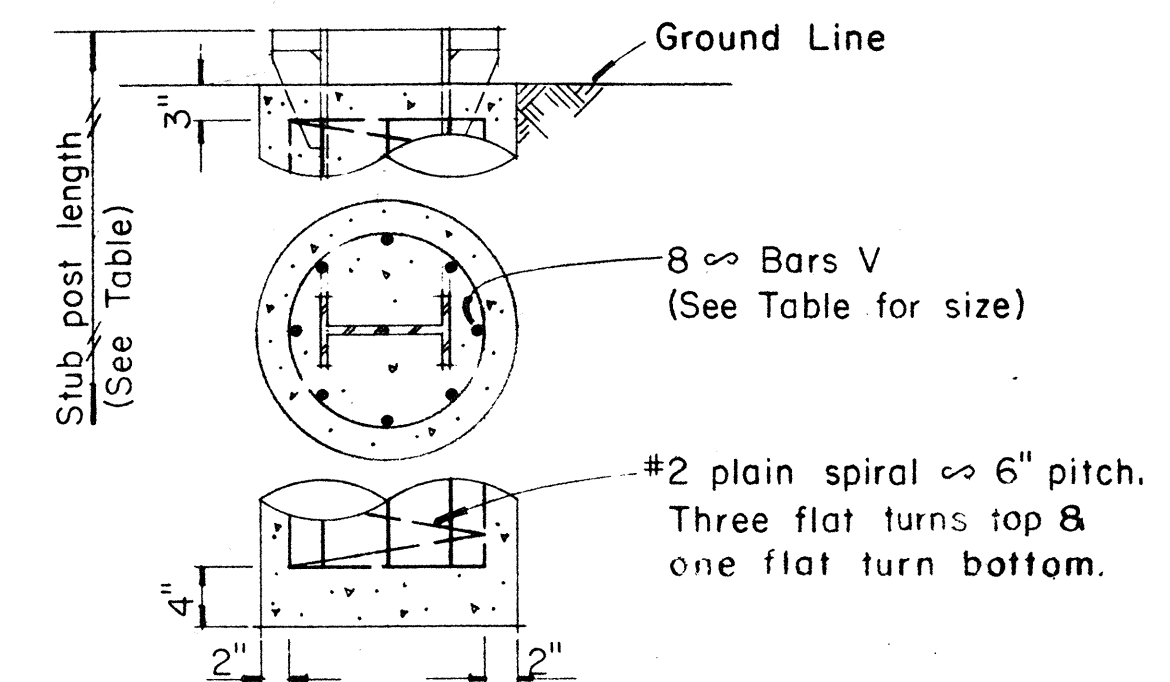
	BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE										FOUNDATION DATA				
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse Pl.	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5	5/8" ϕ x 2 3/4" Torque = 450"*	5"	2"	1 1/4"	2 3/4"	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 W 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 W 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 W 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 W 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 W 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"	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	Torque = 200"*										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



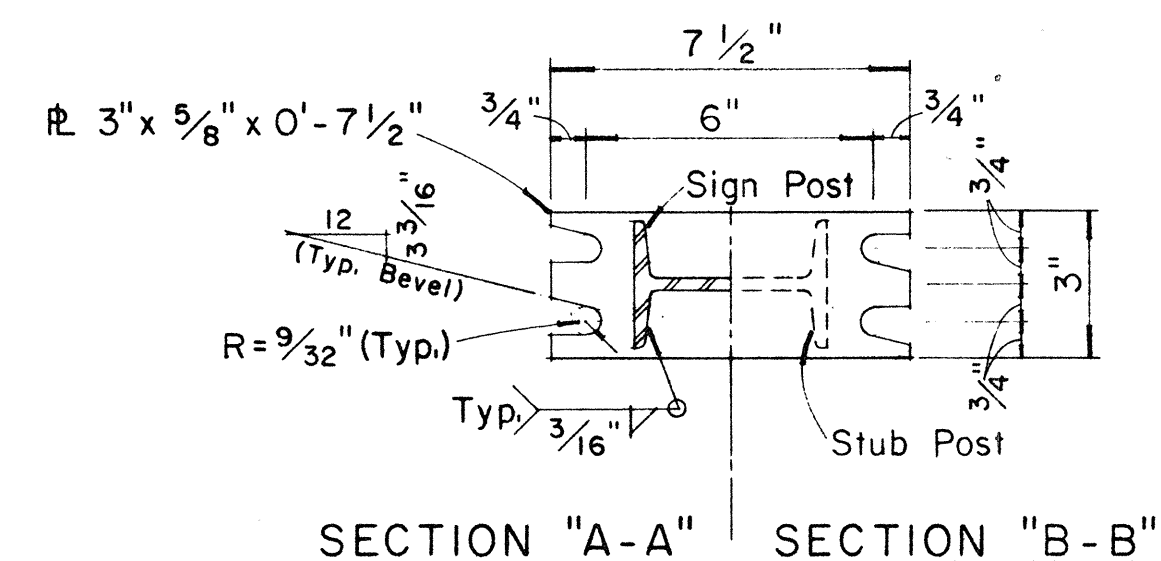
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9(3)	1979	84	89



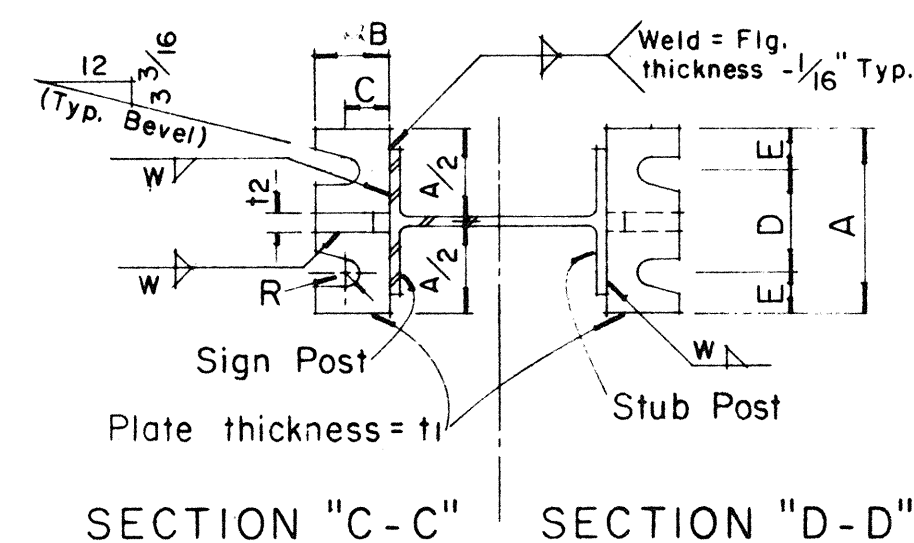
HINGE DETAIL



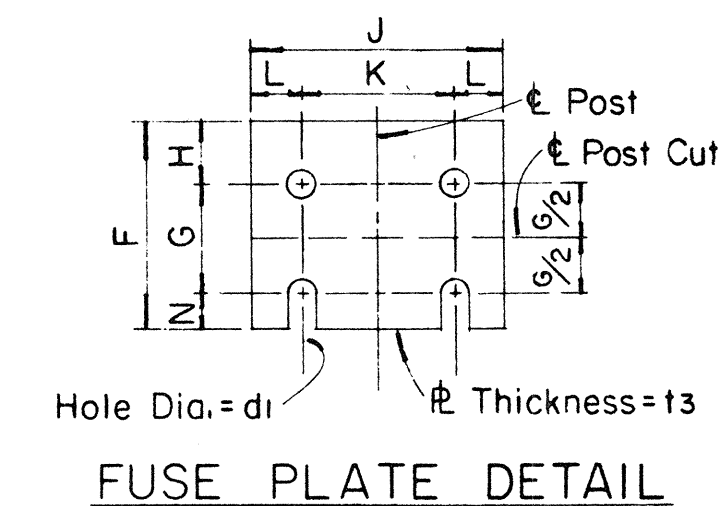
FOUNDATION DETAIL



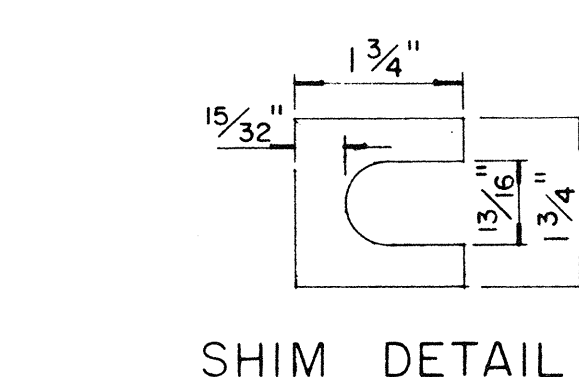
NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



STIFFENER PLATE DETAIL



FUSE PLATE DETAIL



SHIM DETAIL

Furnish 2 ϕ .012" $\pm$ thick and 2 ϕ .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 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:

Erichi Tanaka
TRAFFIC ENGINEER
12/22/69
DATE

APPROVED:

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS

Not to Scale

SHEET No. 17 OF 24 SHEETS DT204

S 41

1/2" ϕ x 2 1/2" H.S. bolt with hex. hd., nut & 3 washers with each bolt. Torque = 200"*. See bolting procedure.

Remove all galvanizing runs or beads in washer area.

Stub Projection (See Table)

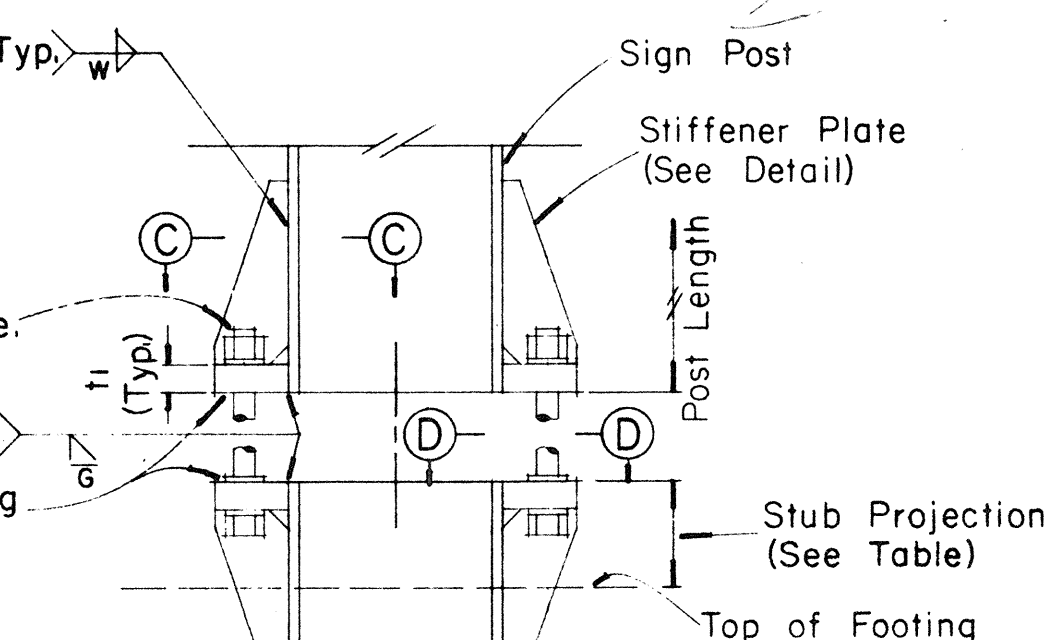
DETAIL "A"
SIGN POST & STUB POST
(For 4 I 7.7 and 3 I 5.7 Shapes)

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:

- Assemble post to stub with bolts and with one flat washer on each bolt between plates.
- Shim as required to plumb post.
- Tighten all bolts the max. possible with 12" to 15" wrench to bed washers & shims and to clean bolt threads then loosen each bolt in turn & retighten bolts in systematic order to prescribed torque. (See Table)
- Burr threads at junction with nut using a center punch to prevent nut loosening.

5/8" ϕ x 2 3/4" H.S. bolt with hex. hd., nut & 3 washers with each bolt. Torque = 450"*. See bolting procedure.

Remove all galvanizing runs or beads in washer area.



DETAIL "B"
SIGN POST & STUB POST
(For W and B Shapes)

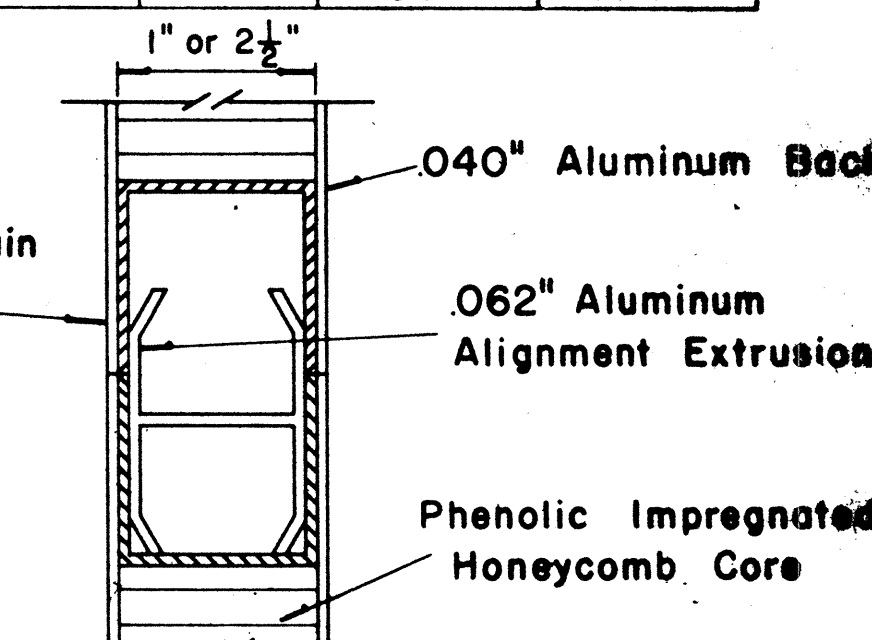
DATE	DESIGNED BY	CHECKED BY

ORIGINAL PLAN	NOTE BOOK	NO.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER7(3)	1979	85	89

(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

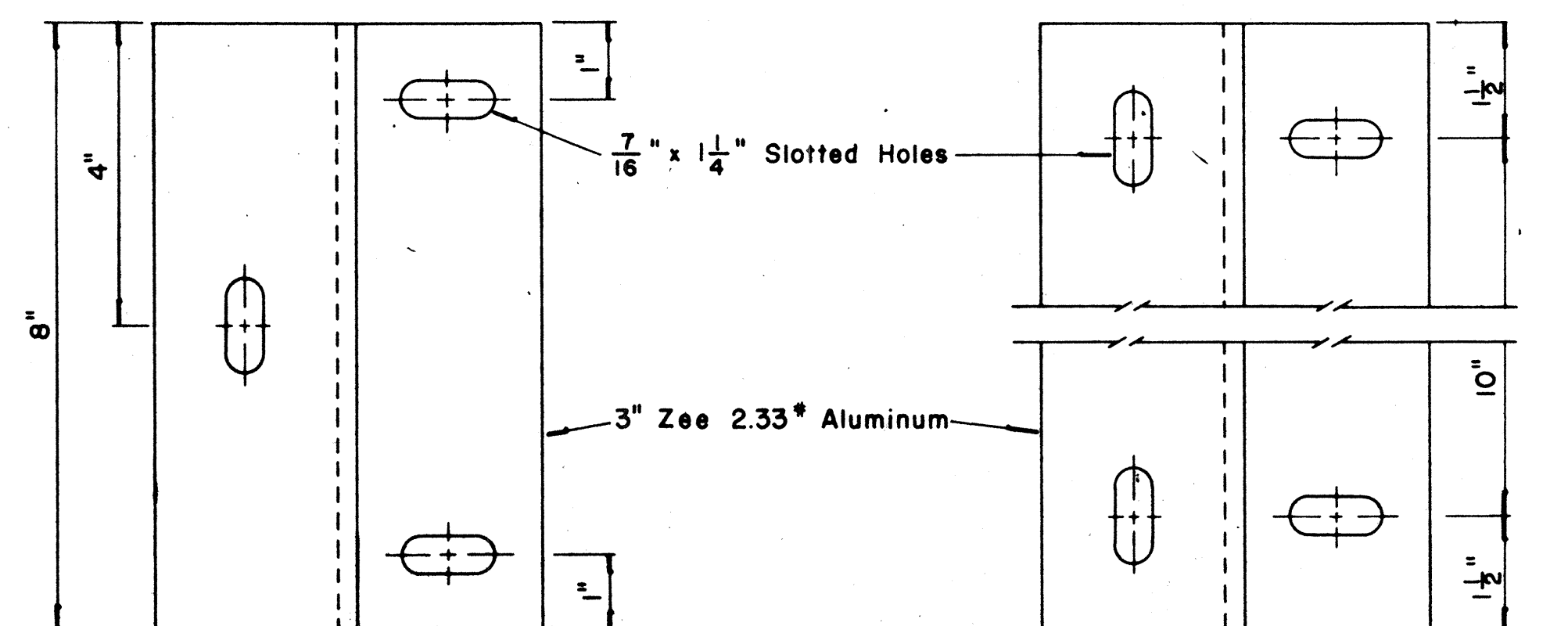
PANEL THICK.	LENGTH OF SIGN	NO. OF SUPPORTS	OVERHANG	SUPPORT SPACING
	A		B	C
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"	84"
1"	11'-6"	2	27"	84"
1"	12'-0"	2	30"	84"
1"	12'-6"	2	30"	90"
1"	13'-0"	2	30"	96"
1"	13'-6"	2	30"	102"
1"	14'-0"	2	30"	108"
1"	14'-6"	2	36"	102"
1"	15'-0"	2	36"	108"
2.5"	15'-6"	2	36"	114"
2.5"	16'-0"	2	39"	114"
2.5"	16'-6"	2	39"	120"
2.5"	17'-0"	2	39"	126"
2.5"	17'-6"	2	42"	126"
2.5"	18'-0"	2	42"	132"
2.5"	18'-6"	2	45"	132"
2.5"	19'-0"	2	45"	138"
2.5"	19'-6"	2	45"	144"
2.5"	20'-0"	2	48"	144"
2.5"	20'-6"	2	48"	150"
2.5"	21'-0"	2	51"	150"
2.5"	21'-6"	2	51"	156"
2.5"	22'-0"	2	51"	162"
2.5"	22'-6"	2	54"	162"
2.5"	23'-0"	2	54"	168"
2.5"	23'-6"	2	54"	174"
2.5"	24'-0"	2	57"	174"



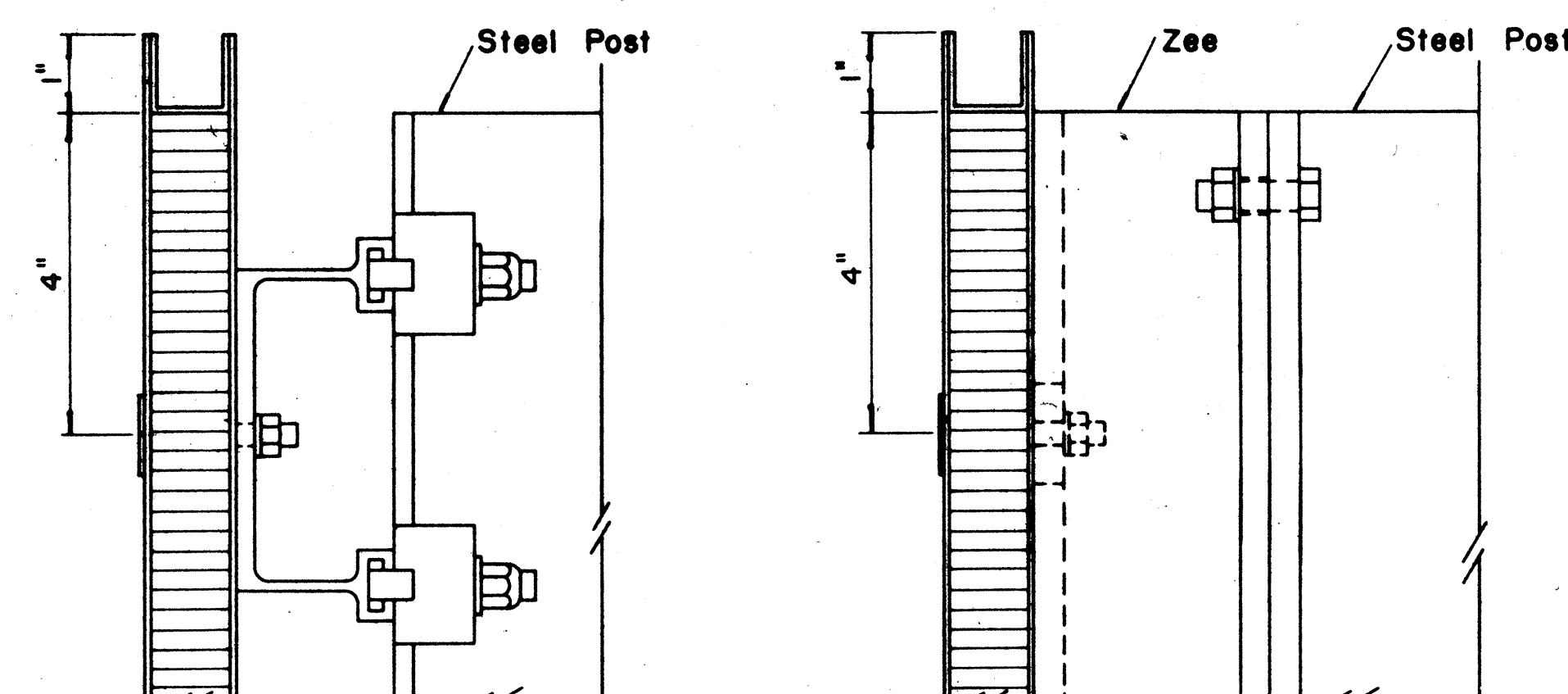
CLOSURE DETAIL
SECTION "C-C"
FULL SCALE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(GROUND MOUNTED)
Scale: As Shown

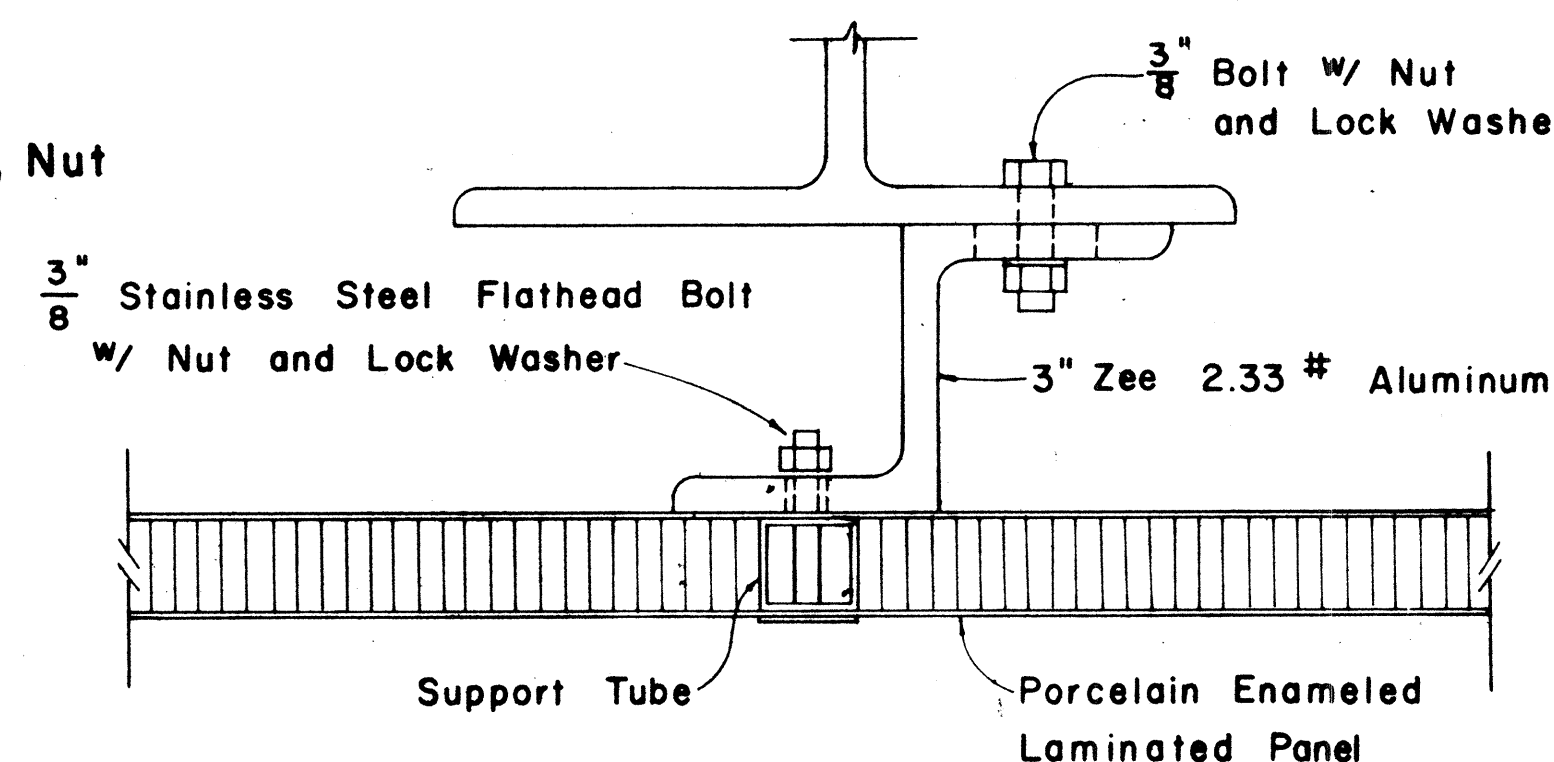
SHEET No. 20 OF 24 SHEETS DT 206



END MOUNTING INTERMEDIATE MOUNTING
ZEE MOUNTING DETAILS
Scale: $\frac{1}{2}$ " = 1"



SECTION "B-B" SECTION "B-B" (Alternate)
Scale: $\frac{1}{2}$ " = 1" Scale: $\frac{1}{2}$ " = 1"

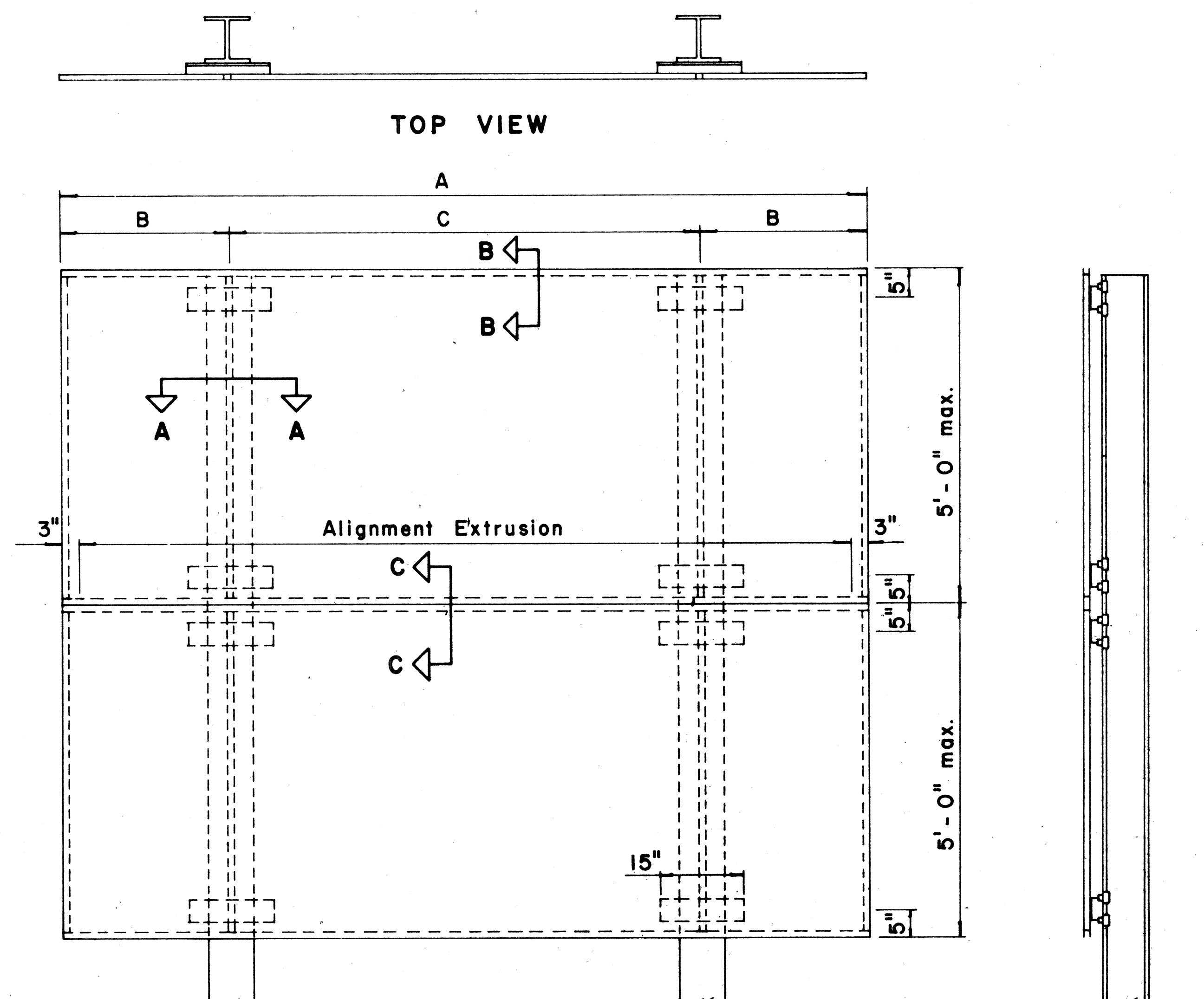


SECTION "A-A" (Alternate)
Scale: $\frac{1}{2}$ " = 1"

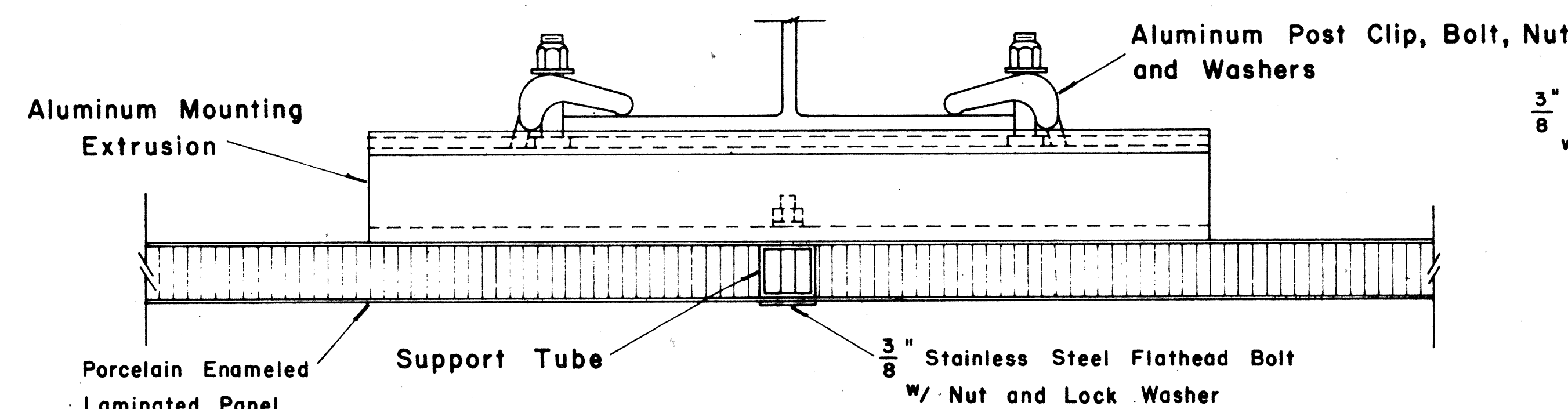
APPROVAL RECOMMENDED:
Erich Tanaka
TRAFFIC ENGINEER
DATE 12/29/69

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

NO.	REVISION	APPROVED BY	DATE



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

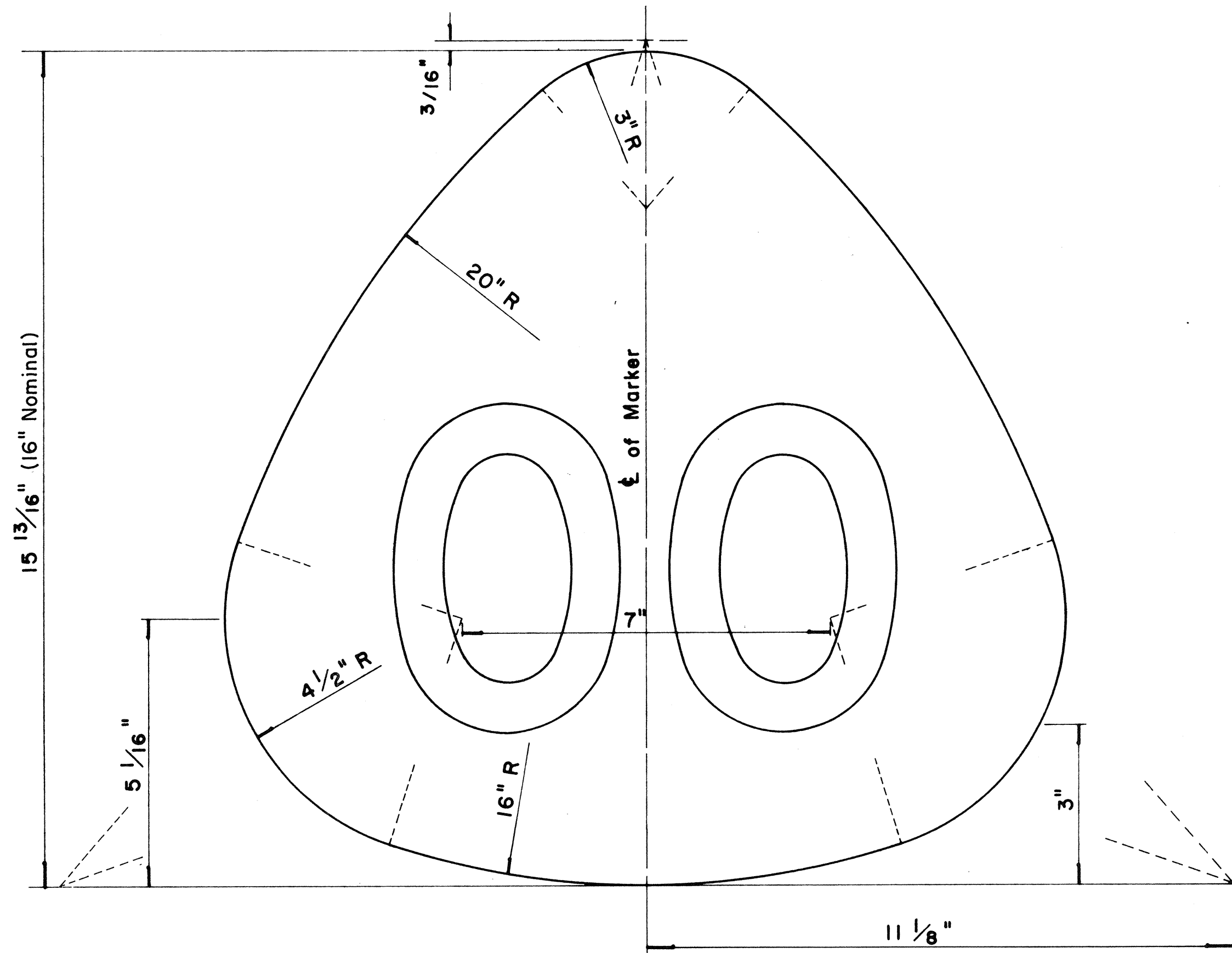


SECTION "A-A"
Scale: $\frac{1}{2}$ " = 1"

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
.....	DESIGNED BY	
.....	QUANTITIES BY	
.....	CHECKED BY	

MARKER SIZE	MULTIPLY DIMENSIONS BY	NUMERAL SIZE
21"	1.3	8"
32"	2.0	12"
42"	2.63	16"



STATE ROUTE MARKER FOR GUIDE SIGNS

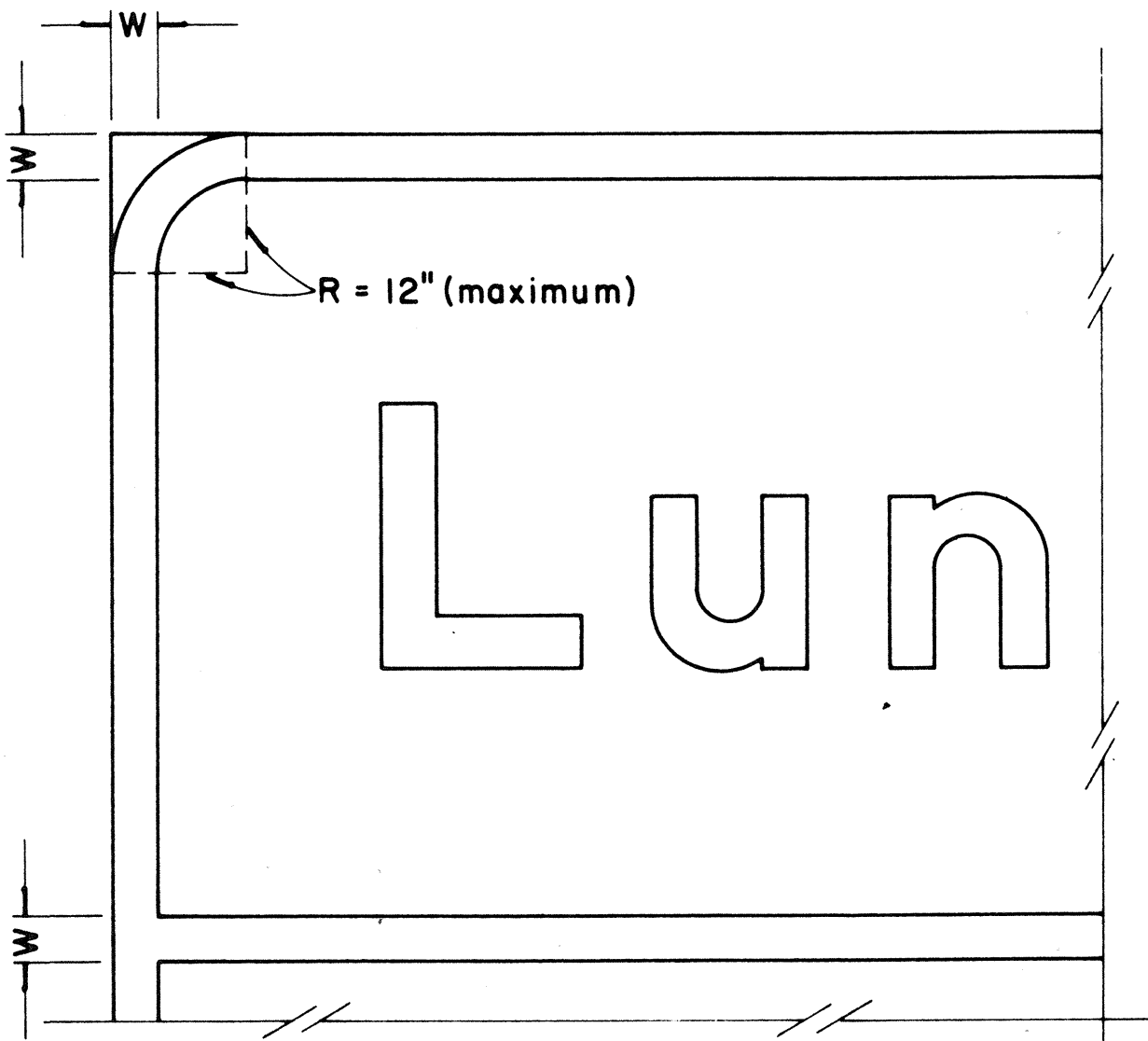
Scale: Half Size

NOTE:

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-9(2)	1979	86	89

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:

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

APPROVAL RECOMMENDED:

Erich Tanaka
TRAFFIC ENGINEER

4/11/72
DATE

APPROVED:

Walter Z. Zalski
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

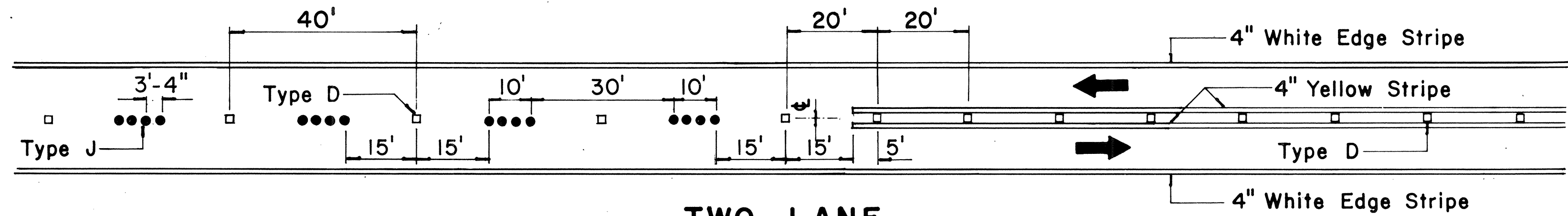
STANDARD DETAILS

STATE ROUTE MARKER AND BORDER DETAIL FOR GUIDE SIGNS

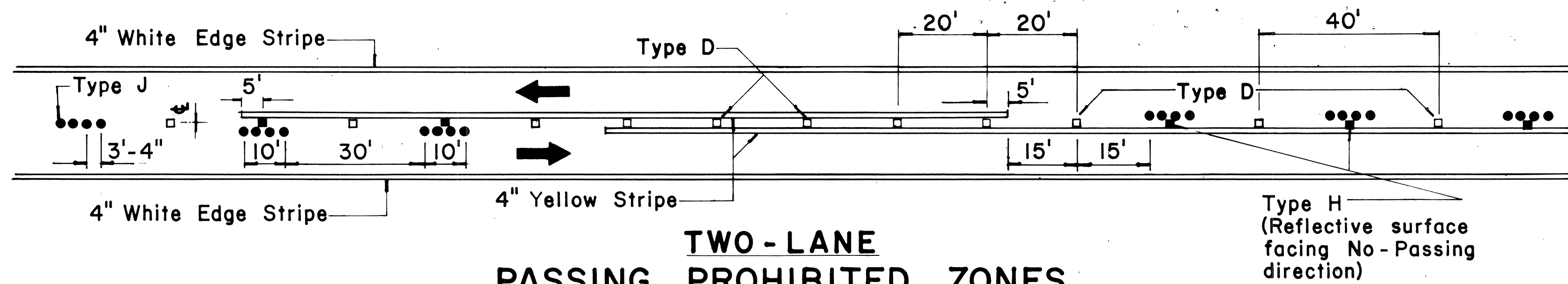
Scale: As Shown

SHEET No. 21 OF 24 SHEETS DT 209

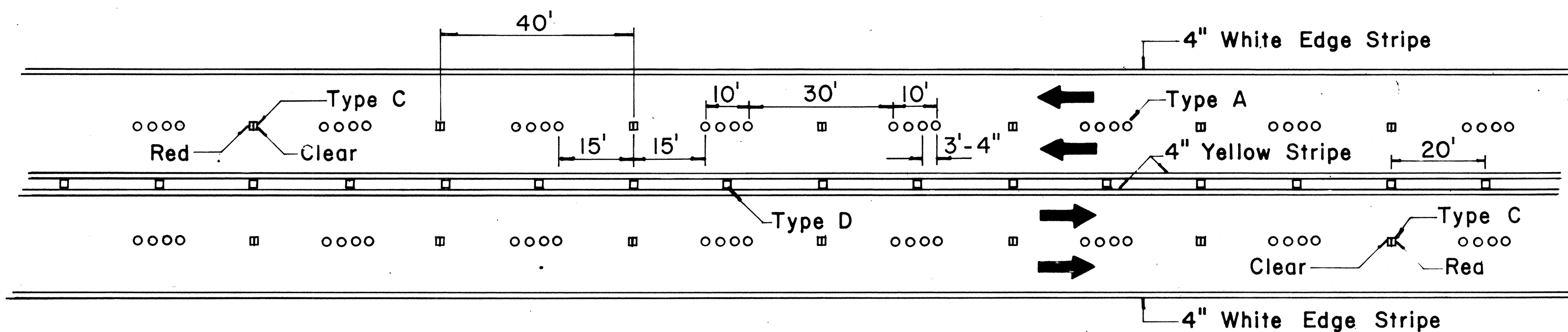
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-7(2)	1979	87	89



**TWO - LANE
PASSING PERMITTED AND PASSING PROHIBITED**

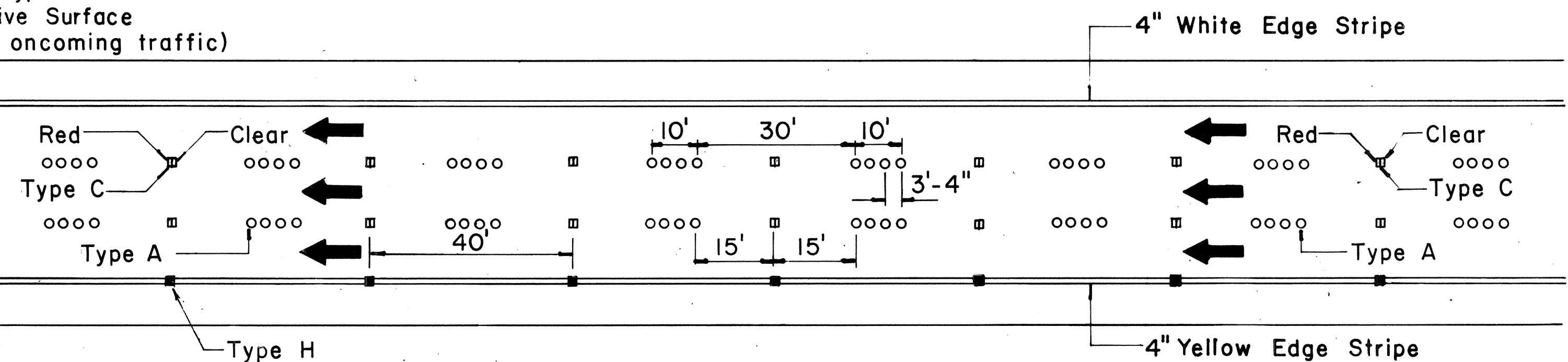


**TWO - LANE
PASSING PROHIBITED ZONES**

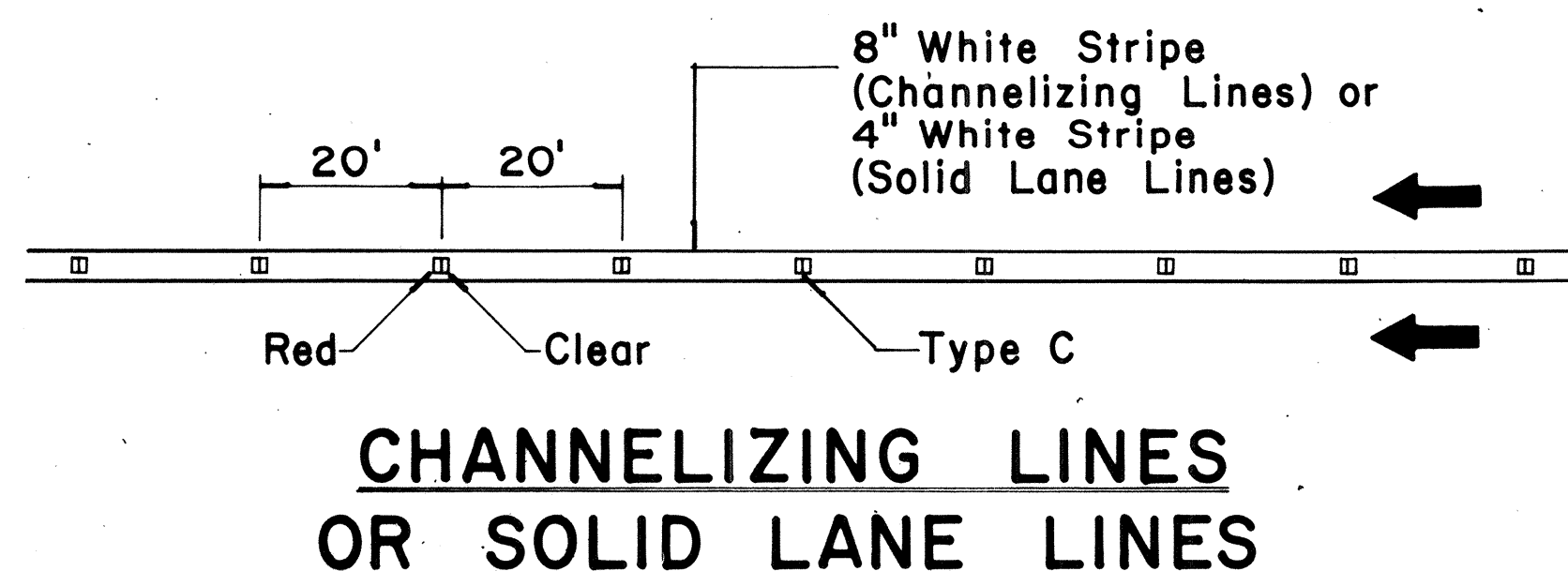


**MULTI - LANE
LANE LINES AND CENTER LINE**

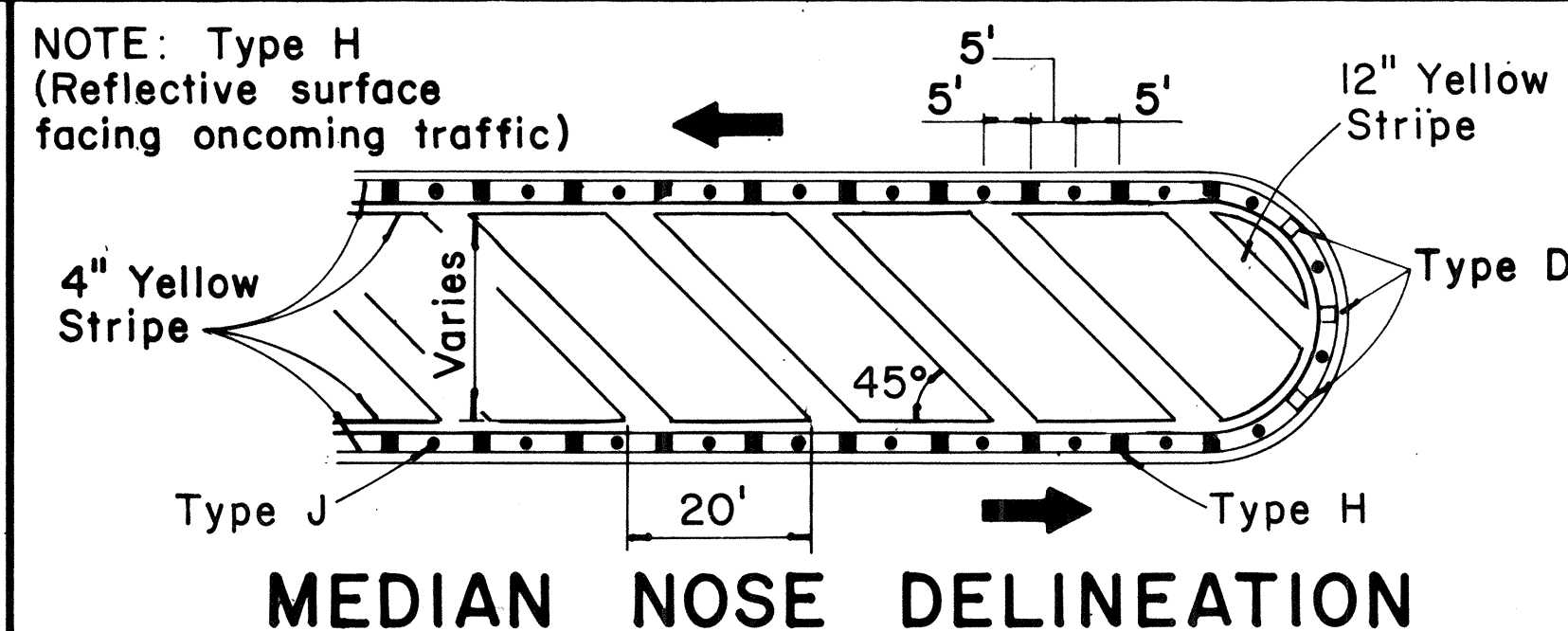
NOTE: Type H
(Reflective Surface
facing oncoming traffic)



**DIVIDED HIGHWAY
AND
FREEWAY**



**CHANNELIZING LINES
OR SOLID LANE LINES**

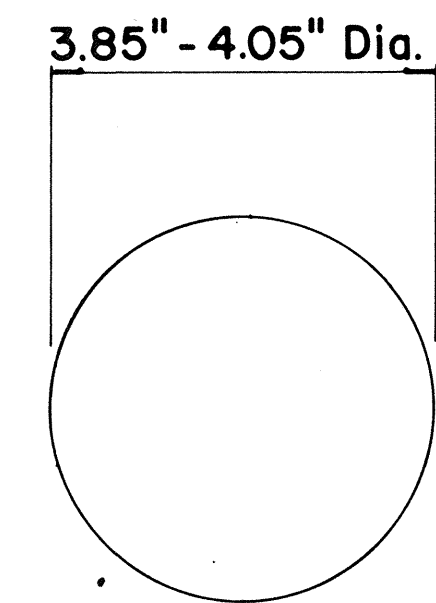


MEDIAN NOSE DELINEATION

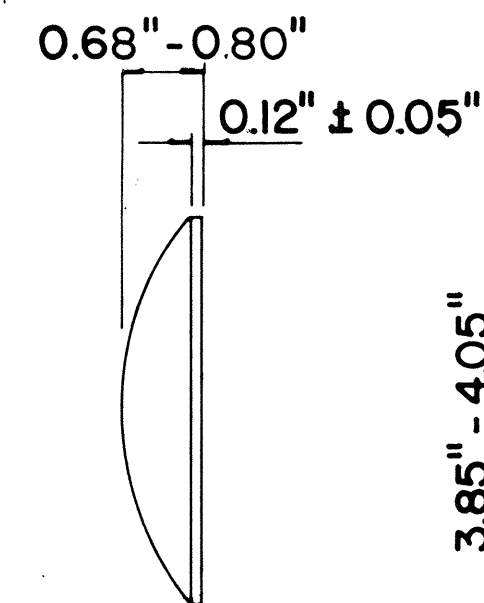
MISCELLANEOUS

TWO - LANE

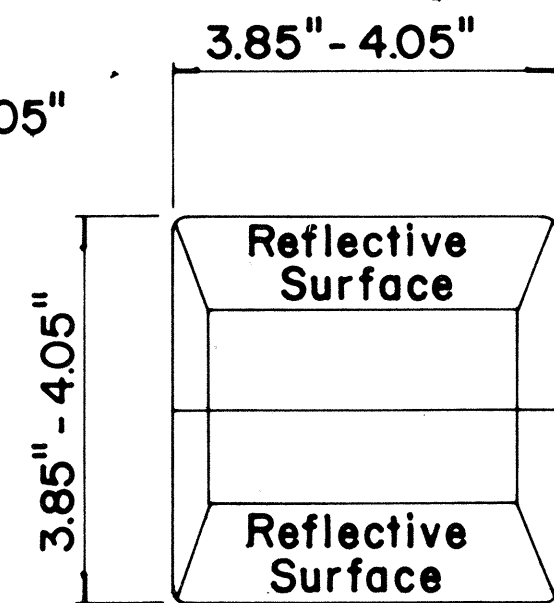
MULTI - LANE



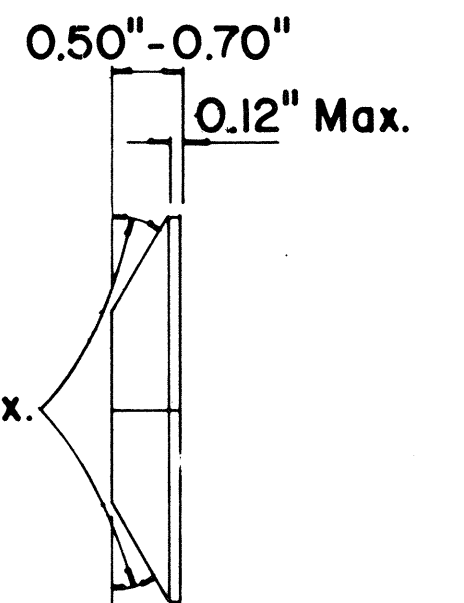
**TYPE A
NON - REFLECTIVE WHITE MARKER**



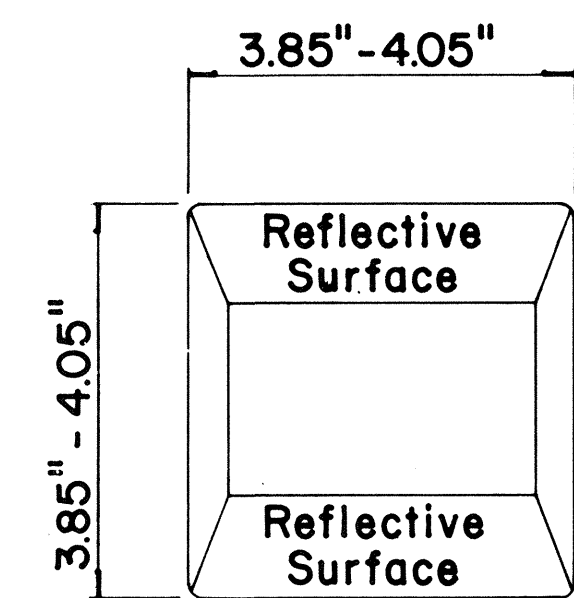
**TYPE J
NON - REFLECTIVE YELLOW MARKER**



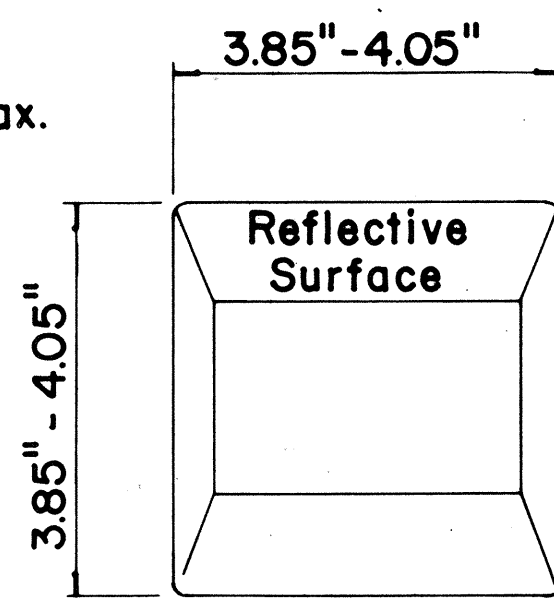
**TYPE C
RED - CLEAR REFLECTIVE MARKER**



**TYPE H
ONE - WAY YELLOW REFLECTIVE MARKER**



**TYPE D
TWO - 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:
E. T. Tanaka 11/10/71
TRAFFIC ENGINEER DATE

APPROVED:
Shirley S. Sato 11/18/71
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.C.	10-21-72
2	Revised General Notes.	H.T.	10-21-72
3	Change 4" white edge stripe to 4" solid yellow edge stripe to left edge of a travel path and Add Type H Reflector Marker.	H.C.	5-22-74
4	Revised details, General Notes & Title Box.	H.T.	1-13-77
5	Revised dimensions on Type A & J Markers	H.T.	4-18-78

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS RAISED PAVEMENT MARKERS AND STRIPING

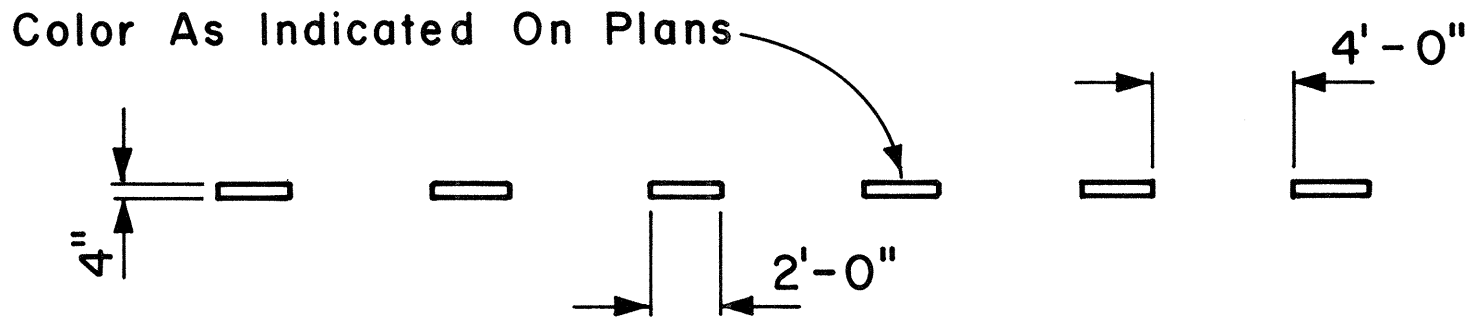
Not to Scale October 1971
SHEET No. 22 OF 24 SHEETS DT 300

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NO.	

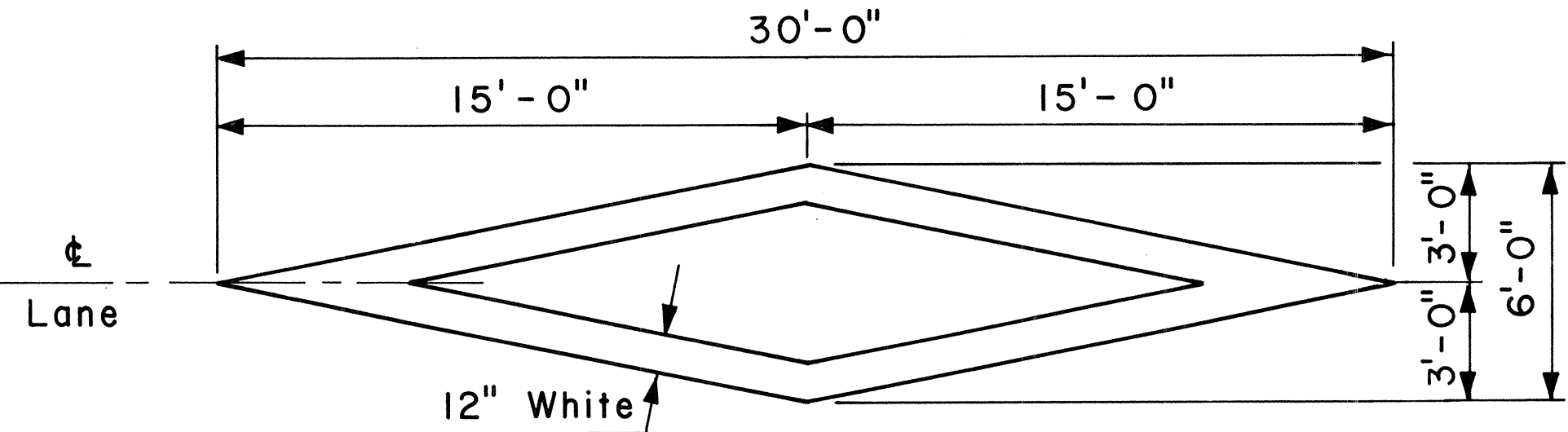
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-7(3)	1977	88	89

GENERAL NOTES:

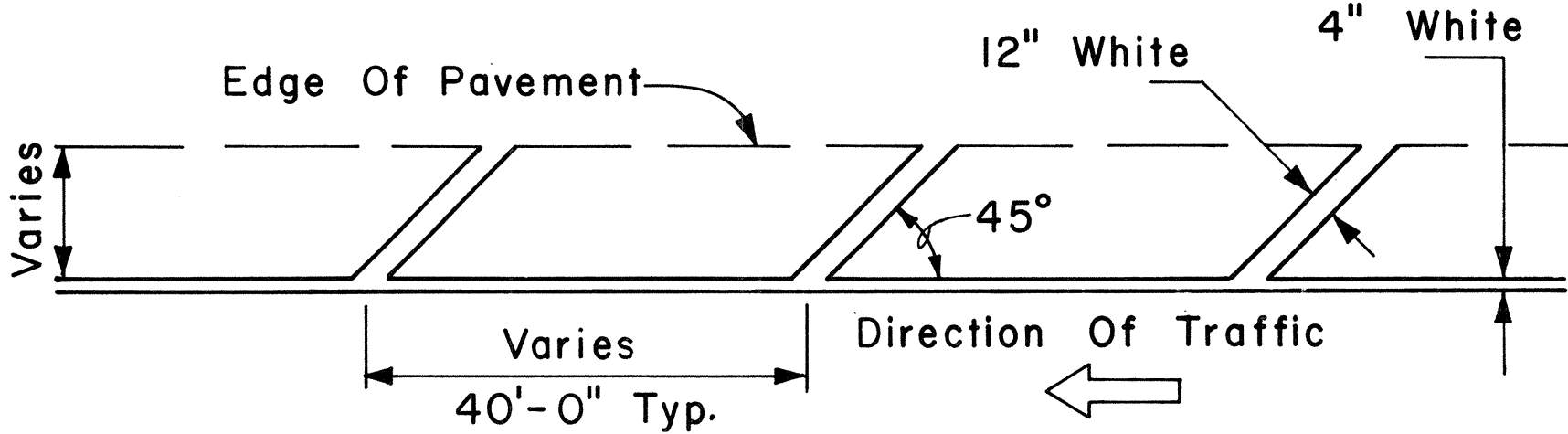
1. Pavement marking and striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," by the FHWA, and as amended.
2. Layout of pavement markings and striping shall be done by the Contractor. The Contractor shall check layout of markings and striping with the Engineer prior to performing work.
3. For additional pavement marking details, see sheet DT 300.



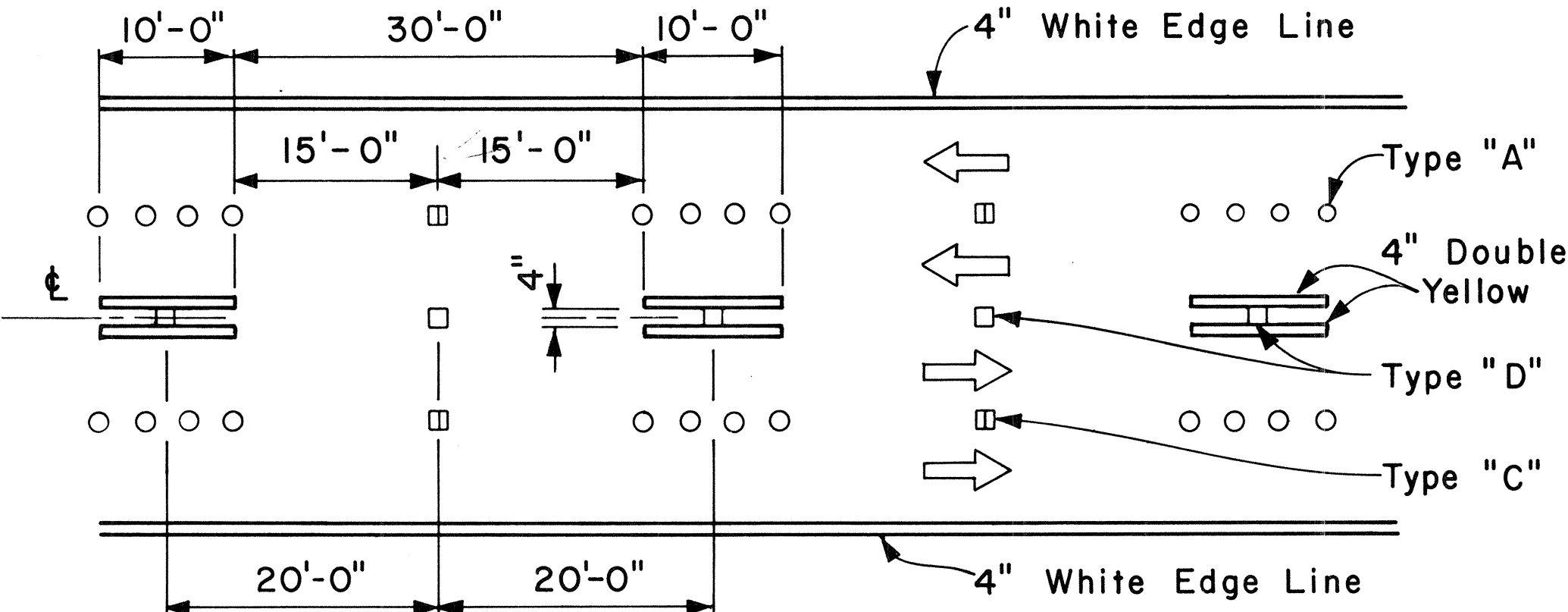
4" GUIDE LINE



PAVEMENT DIAMOND

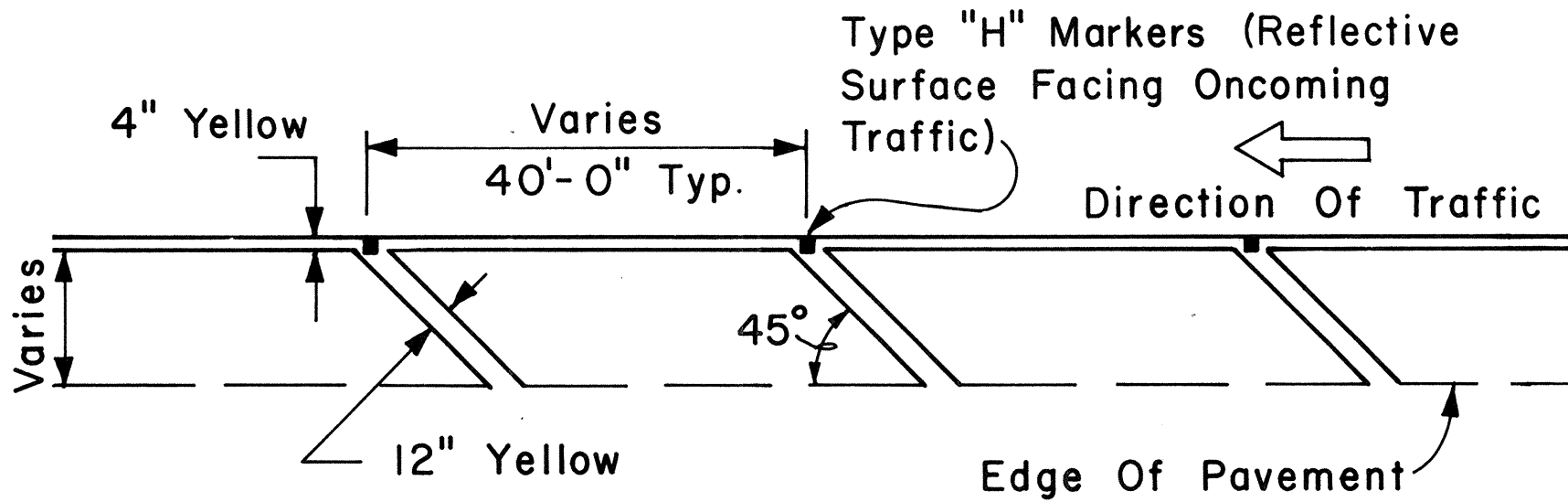


TRANSVERSE RIGHT SHOULDER MARKING

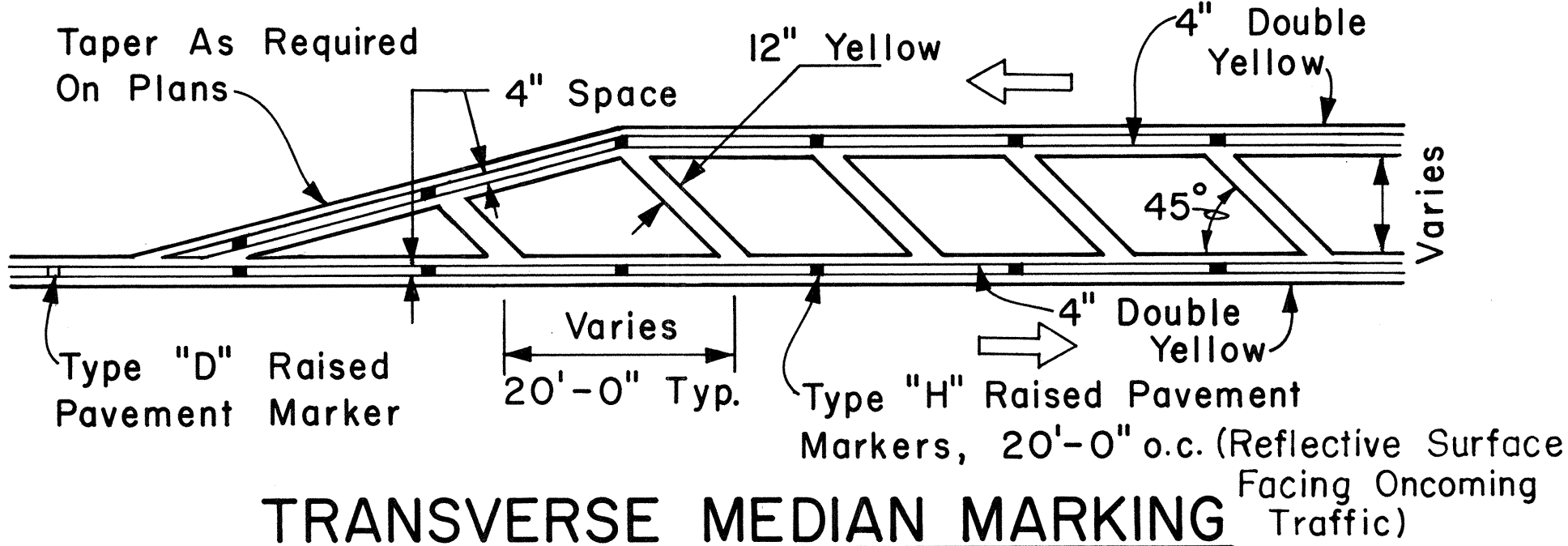


NOTE: Traffic Cone Usage Required.

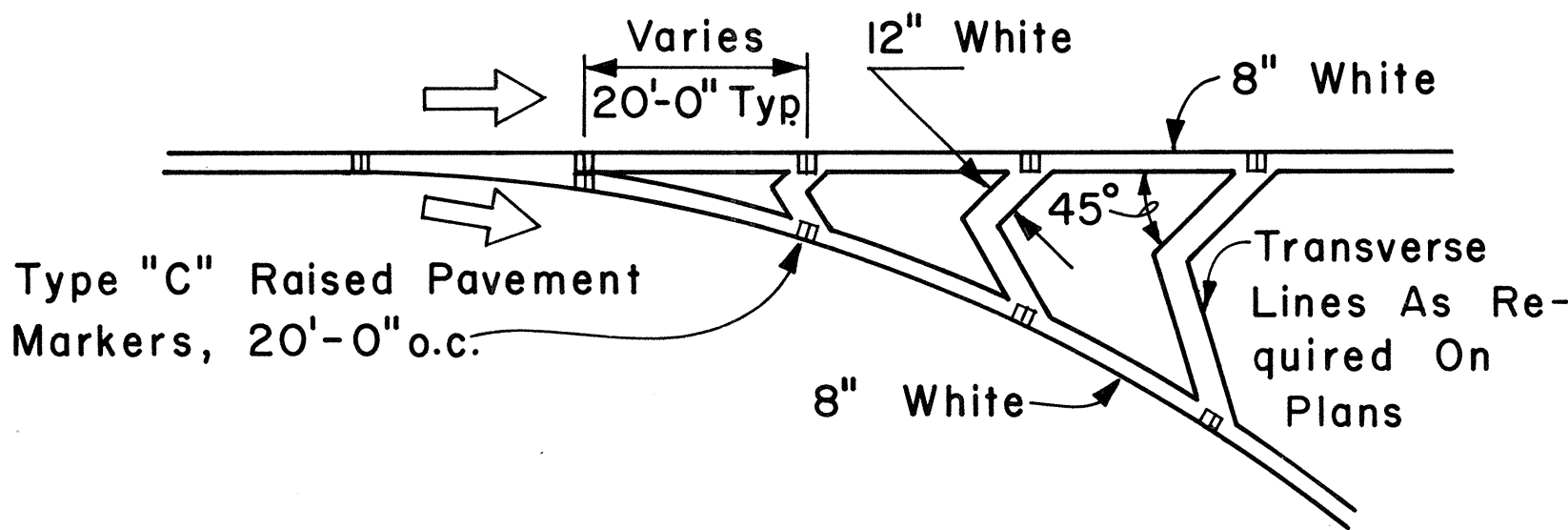
MULTI-LANE REVERSIBLE LANES



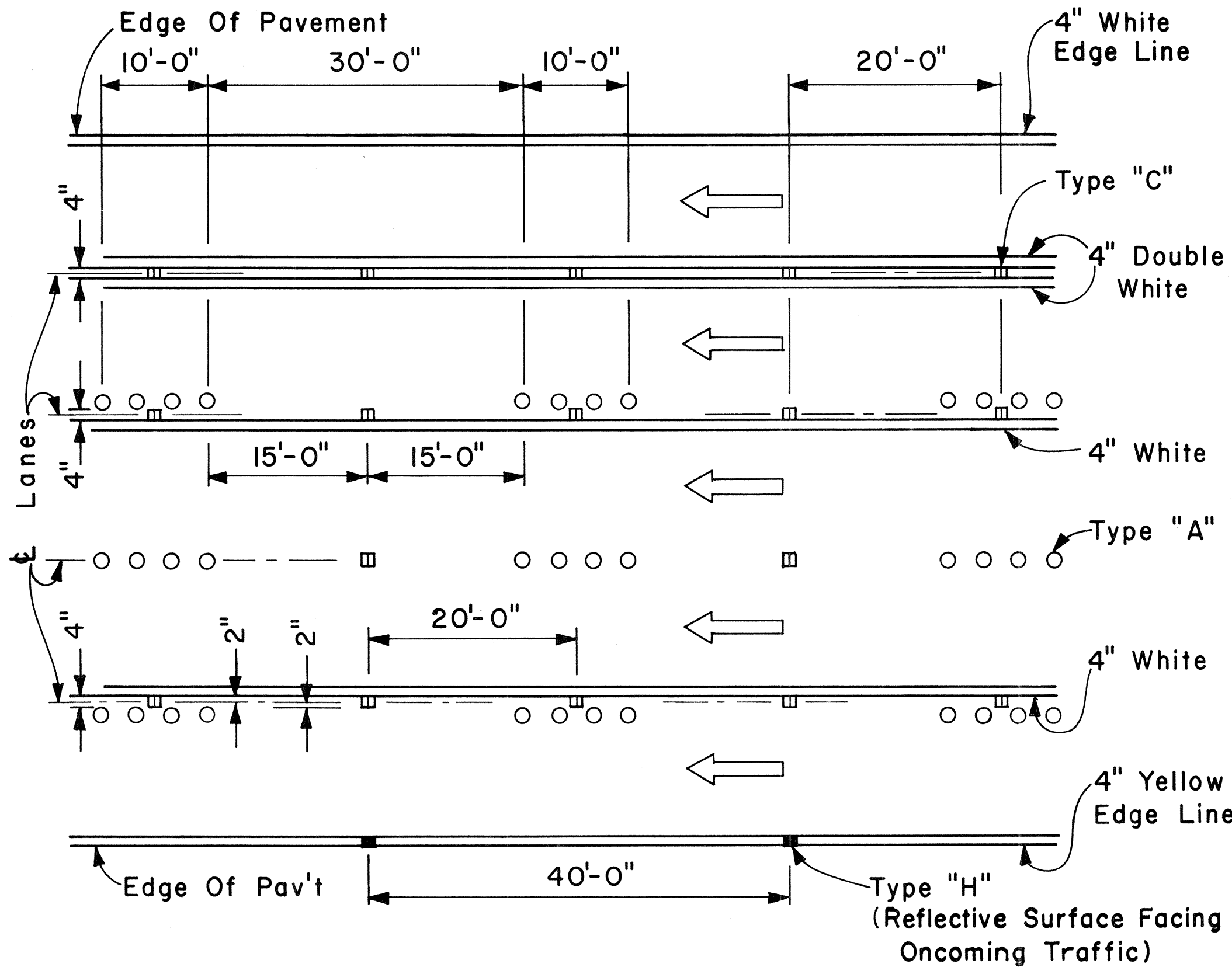
TRANSVERSE LEFT SHOULDER MARKING



TRANSVERSE MEDIAN MARKING



CHANNELIZING ISLAND



MULTI-LANE LANE CHANGE RESTRICTION ZONES

APPROVAL RECOMMENDED:
Eishi Tanaka
TRAFFIC ENGINEER
5/2/78
DATE

APPROVED:
Robert S. Zaleski
ASSISTANT CHIEF, ENGINEERING
5/3/78
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS

MISCELLANEOUS
PAVEMENT MARKINGS

Scale: Not to Scale Date: April, 1978

SHEET NO. 23 OF 24 SHEETS DT 302

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

