

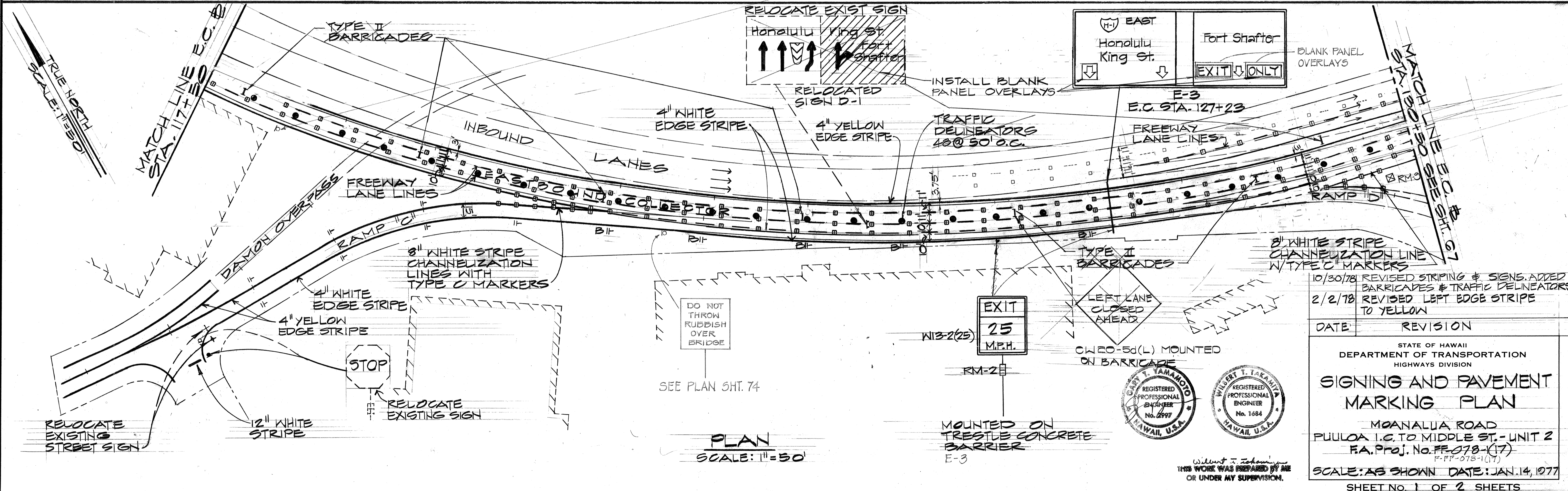
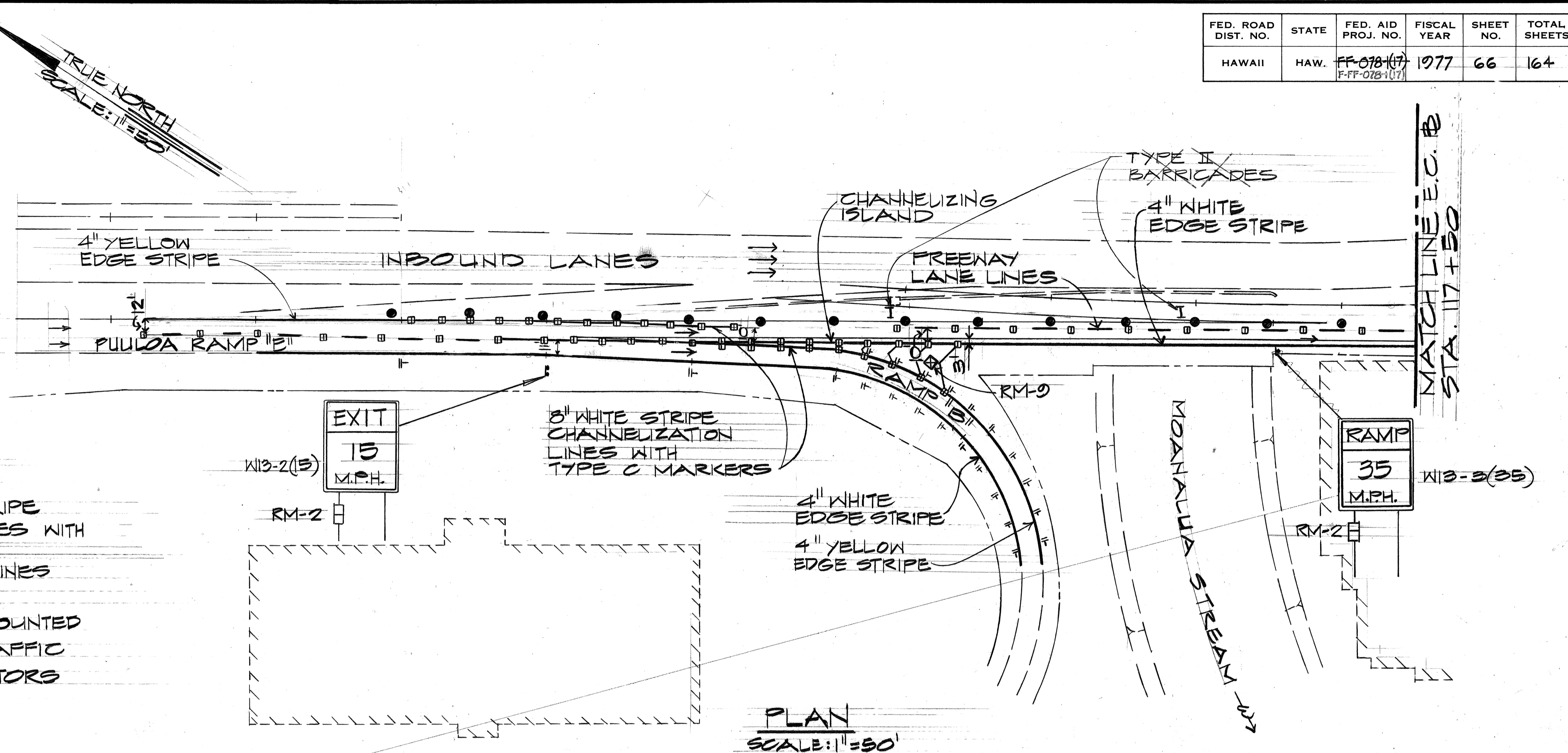
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) F-FF-078-1(17)	1977	66	164

GENERAL NOTES:

- UNLESS OTHERWISE DIRECTED, UPON COMPLETION OF CONSTRUCTION, SIGNS, BARRICADES, ETC., SHALL BECOME THE PROPERTY OF THE STATE AND SHALL BE DELIVERED TO THE FIELD OFFICE.
- EXISTING CONSTRUCTION SIGNS, PAVEMENT MARKERS, STRIPING AND SIGNS NOT COMPATIBLE WITH THE TRAFFIC PATTERN SHALL BE REMOVED. PAYMENT FOR THIS WORK SHALL BE INCIDENTAL TO CONTRACT ITEM PAVEMENT STRIPING.
- ALL SIGNING AND PAVEMENT MARKINGS TO BE IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

LEGEND:

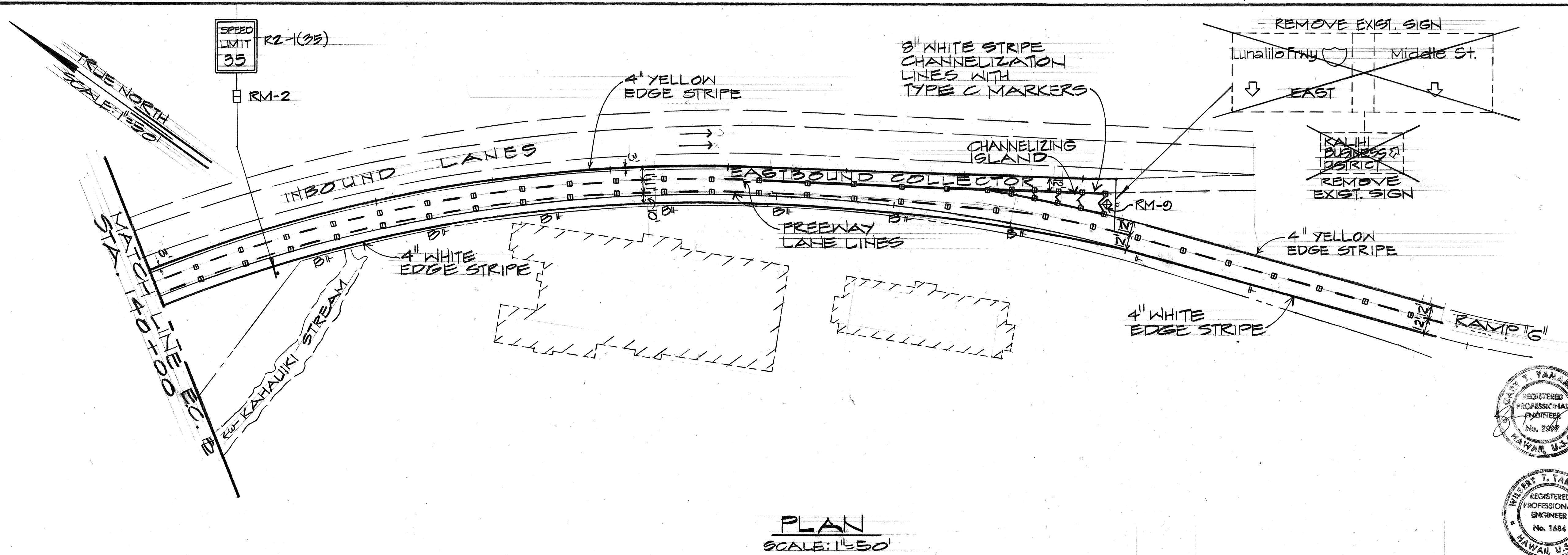
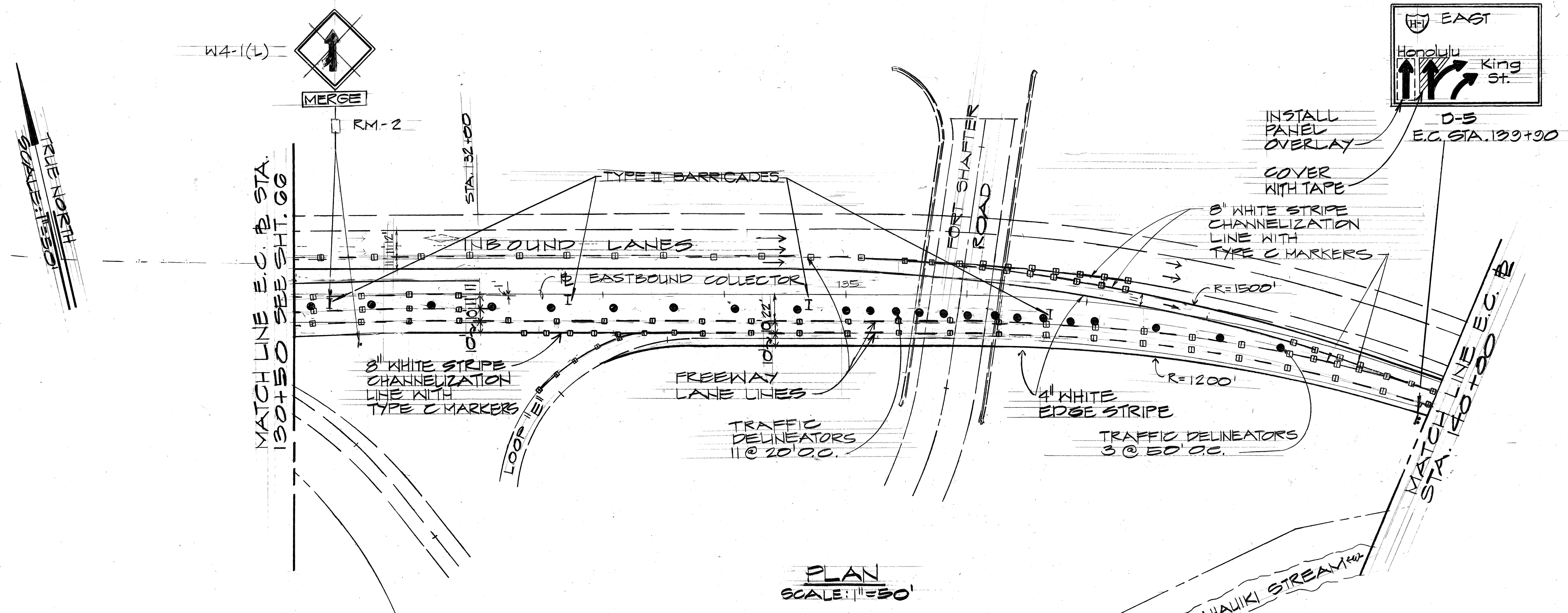
- 4" WHITE EDGE STRIPE
- CHANNELIZATION LINES WITH TYPE C MARKERS
- FREEWAY LANE LINES
- RM-2
- RM-2 BARRIER MOUNTED
- DIRECTION OF TRAFFIC
- TRAFFIC DELINEATORS
- - - 4" GUIDE LINE
- ◇ RM-9



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

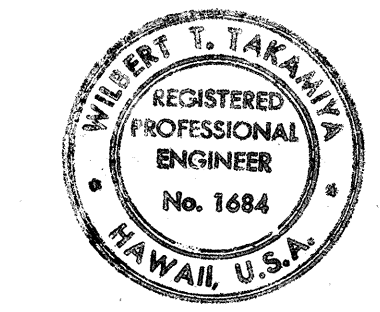
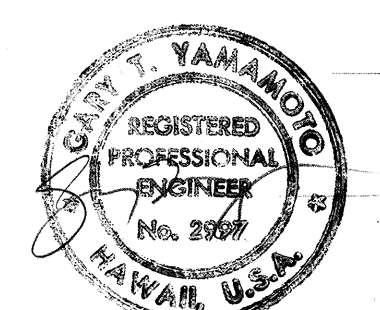
C.O. ADD 66

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17)	1977	67	164



DATE	DESIGNED BY
DESIGNED BY	CHECKED BY
QUANTITIES BY	
NO.	

2/2/78	REVISED LEFT EDGE STRIPE TO YELLOW
DATE	REVISION



10/30/78	REVISED STRIPING AND SIGNS ADDED BARRICADES & TRAFFIC DELINEATORS
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGNING AND PAVEMENT MARKING PLAN

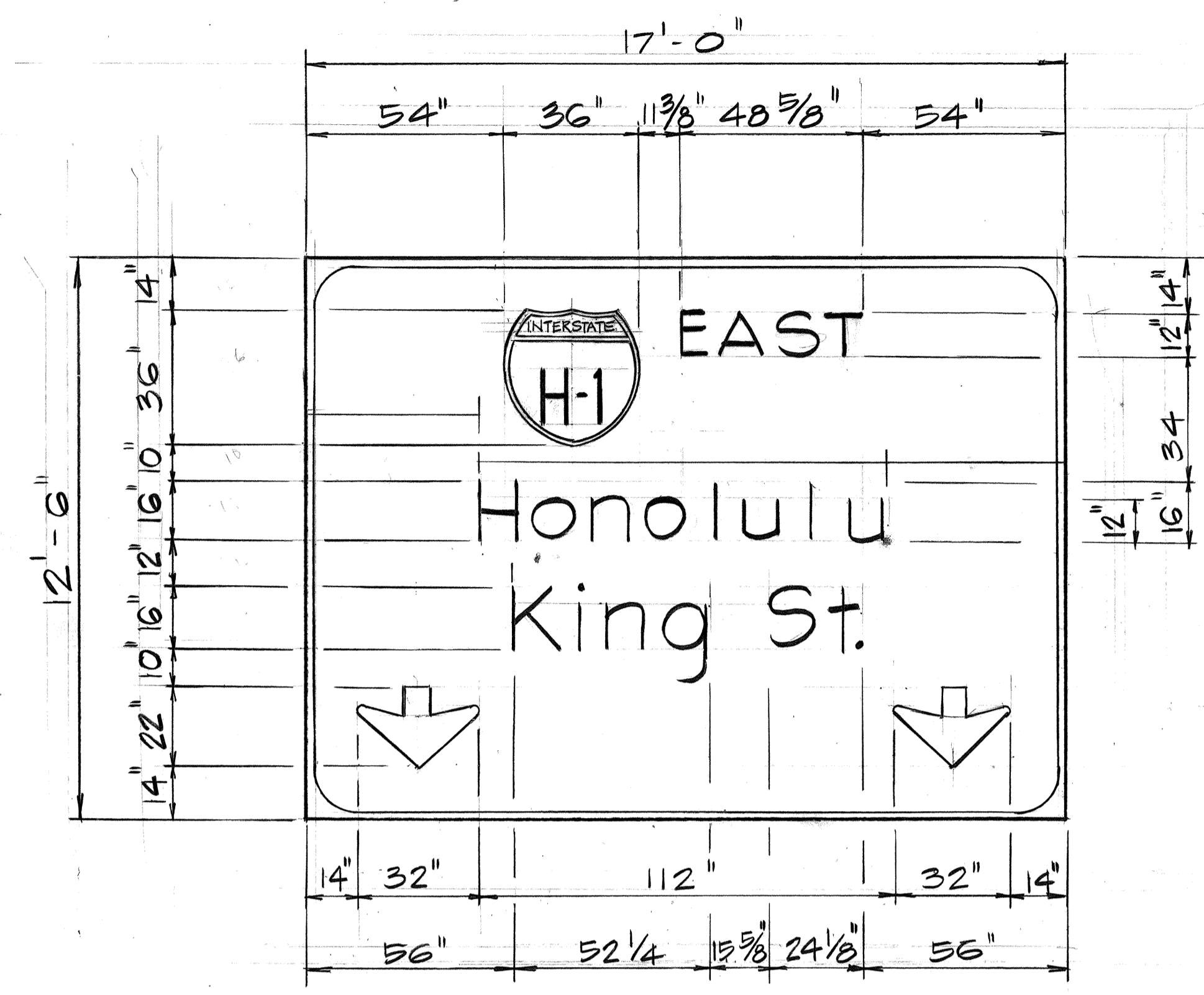
MOANALUA ROAD
PULUO A.I.C. TO MIDDLE ST. - UNIT 2
F.A. PROJ. NO. FF-078-1(17)
F-FF-078-1(17)

SCALE: AS SHOWN DATE: JAN. 14, 1977

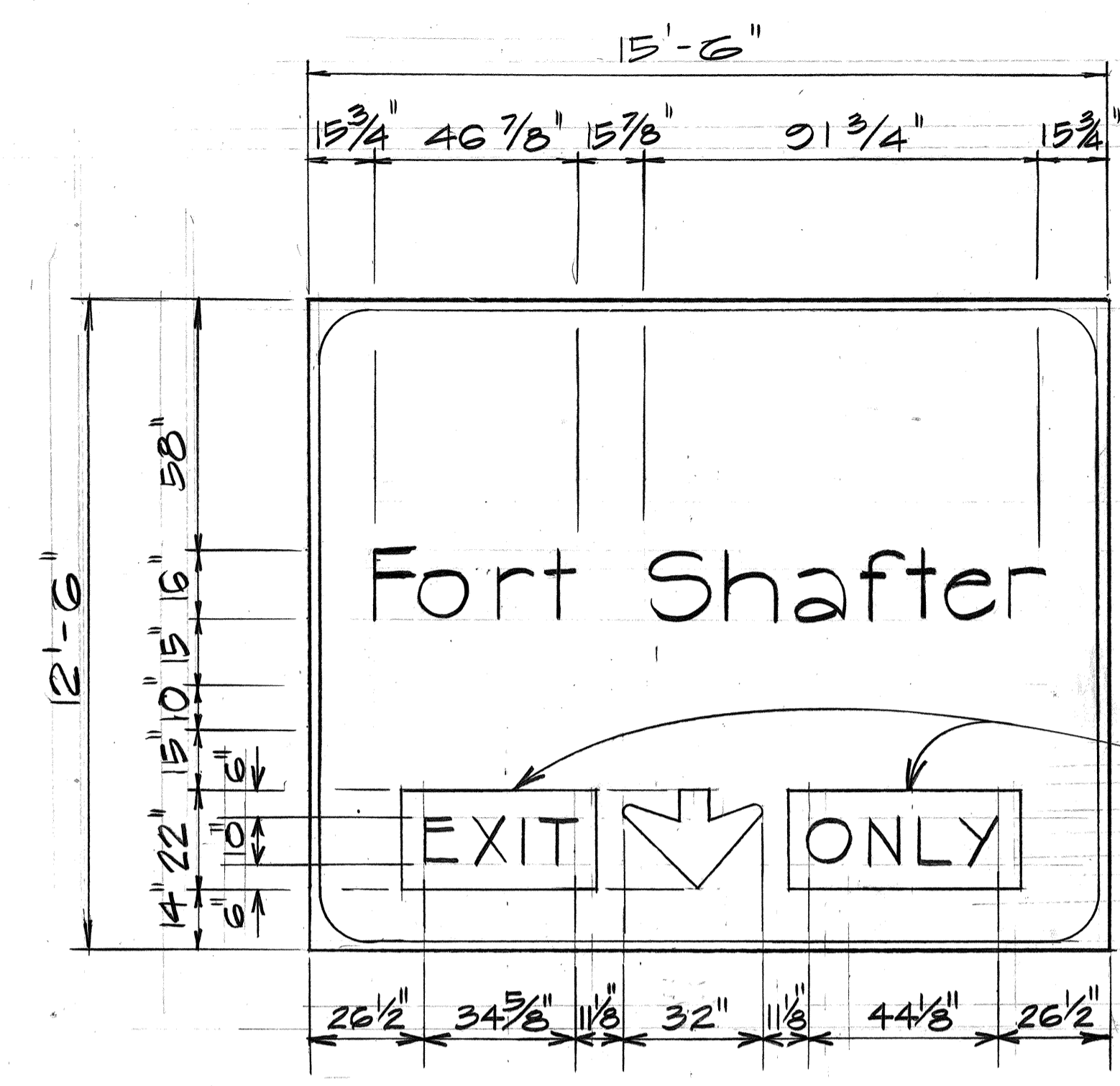
SHEET NO. 2 OF 2 SHEETS

C.O. ADD67

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17)	1977	68	164



(LEFT)



(RIGHT)

BLACK LETTERS ON YELLOW REFLECTORIZED BACKGROUND

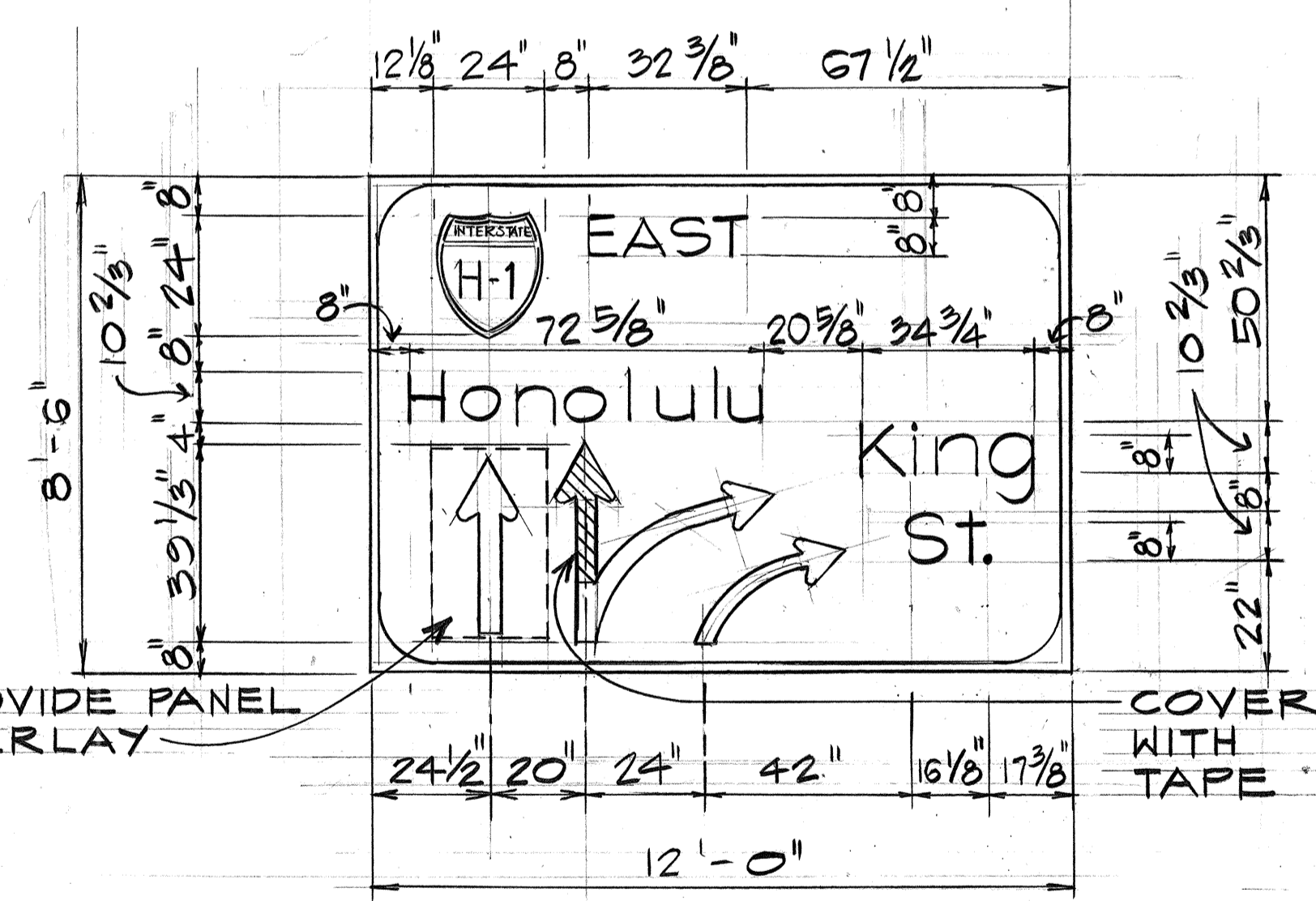
SIGN E-3
E.C. STA. 127+23

PERMANENT SIGNING SUMMARY				
TYPE	DESCRIPTION	QUANTITY		
		W/P	WO/P	
R2-1(35)	35 MPH	1		
W4-1(R)	↑	1		
W13-2(15)	15 MPH	1		
W13-2(25)	25 MPH	1		
W13-3(35)	35 MPH	1		
TOTAL		5		

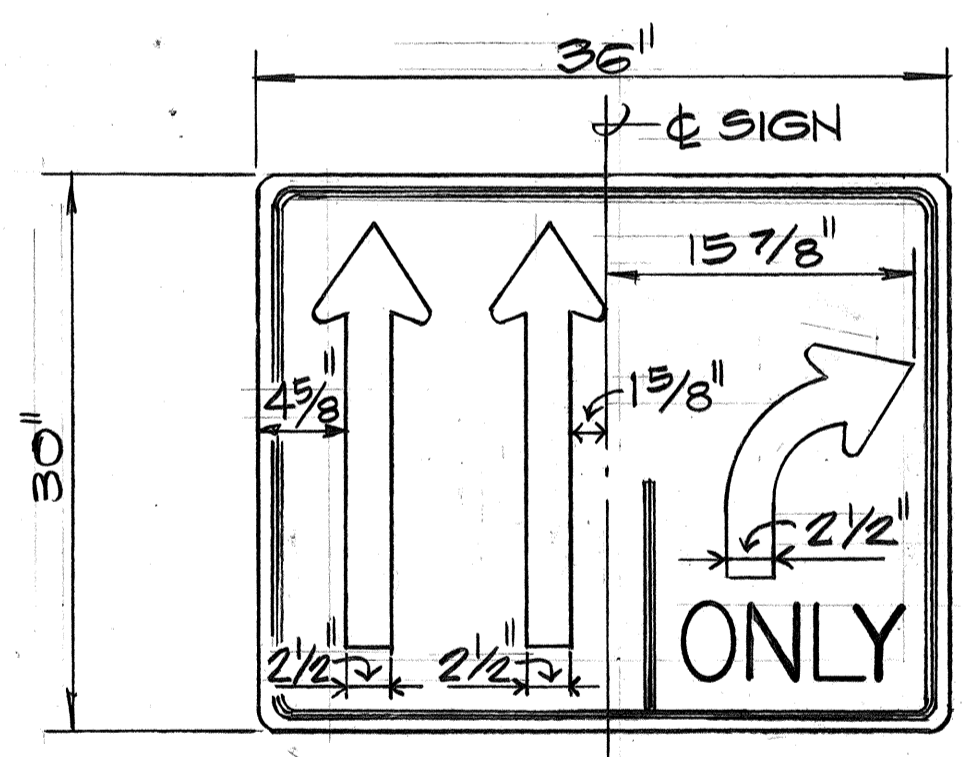
REFLECTOR MARKERS SUMMARY	
DESCRIPTION	QUANTITY
RM-2	6 EACH
RM-2 ON POST	31 EACH
RM-2 BARRIER MOUNTED	12 EACH
RM-9 ON POST	3 EACH

PAVEMENT MARKERS SUMMARY		
TYPE	DESCRIPTION	QUANTITY
A	PAVEMENT MARKERS	802
C	PAVEMENT MARKERS	283

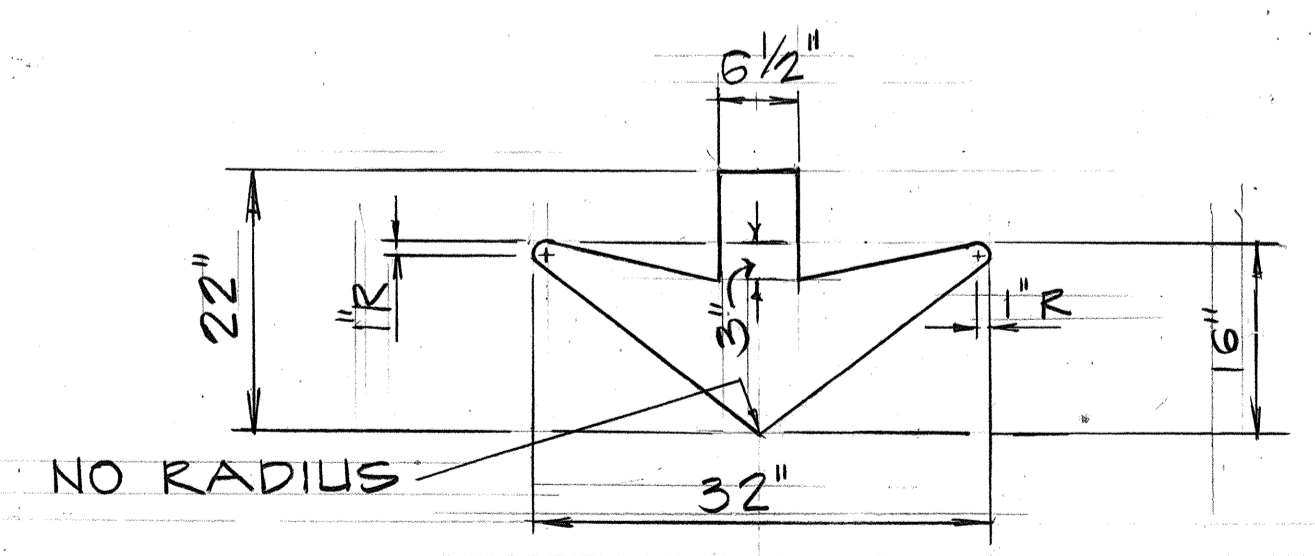
- GENERAL NOTES:**
- LETTERS SHALL CONFORM TO THE MODIFIED SERIES "E" LETTERS SHOWN IN THE STANDARD ALPHABETS FOR HIGHWAY SIGNS, BUREAU OF PUBLIC ROAD, 1966.
 - DESTINATION SIGNS (D) SHALL HAVE WHITE REFLECTIVE SHEETING ON ALUMINUM CUT-OUTS ON GREEN REFLECTIVE SHEETING BACKGROUND.



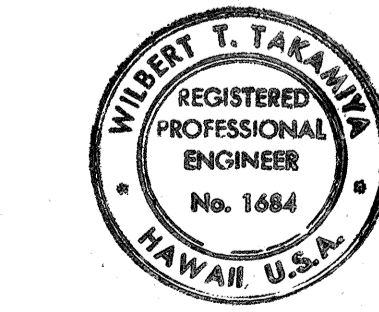
SIGN D-5
E.C. STA. 139+90



NOTE:
SIGN R3-8A(R) IS A VARIATION OF SIGN R3-8. PLATE AND ARROW DETAILS SHALL CONFORM TO SIGN R3-8.



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



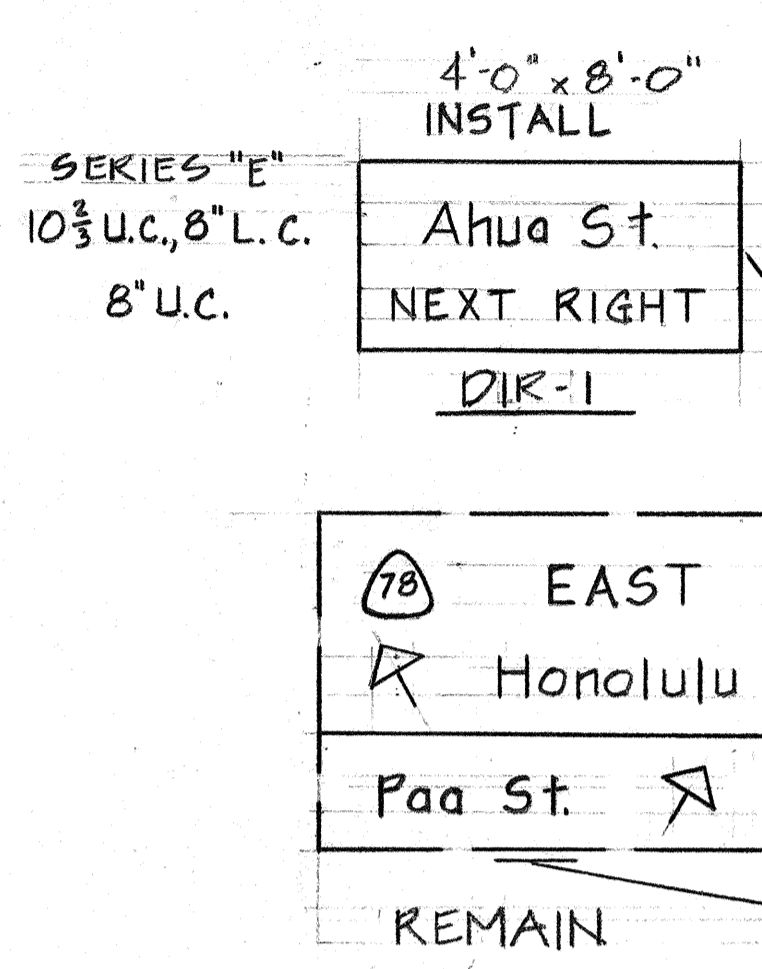
2/2/78	REVISED QUANTITIES TYPE A & C MARKERS
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
PANEL LAYOUT	
MOANALUA ROAD PUULOLO I.C. TO MIDDLE ST. - UNIT 2 P.A. Proj. NO. FF-078-1(17) Scale: AS SHOWN Date: JAN. 14, 1977	
SHEET NO. 1 OF 1 SHEETS	

WILBERT T. TAKAMINE
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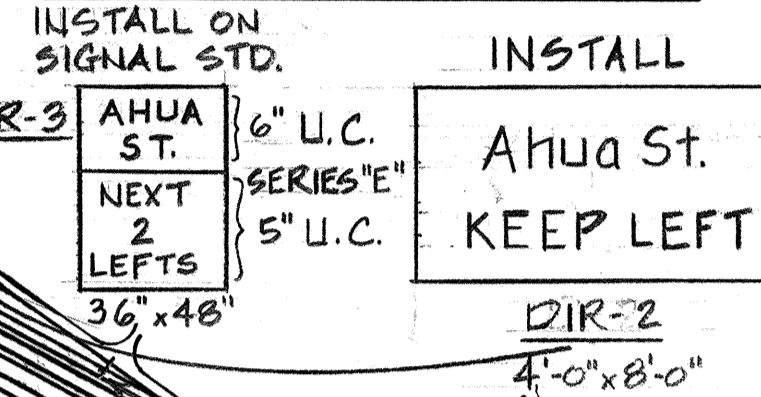
SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 TRACED BY: _____
 QUANTITIES BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN NO. _____
 NOTE BOOK NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-076-1(17)	1979	685-1	164

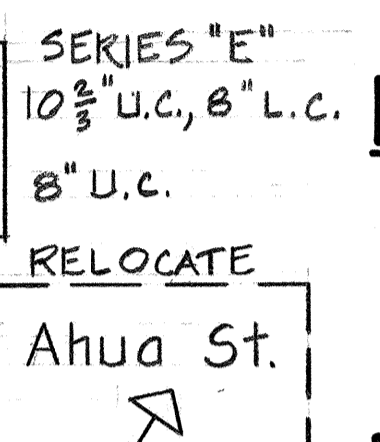
F-FF-078-1(17)



PUULOA INTERCHANGE



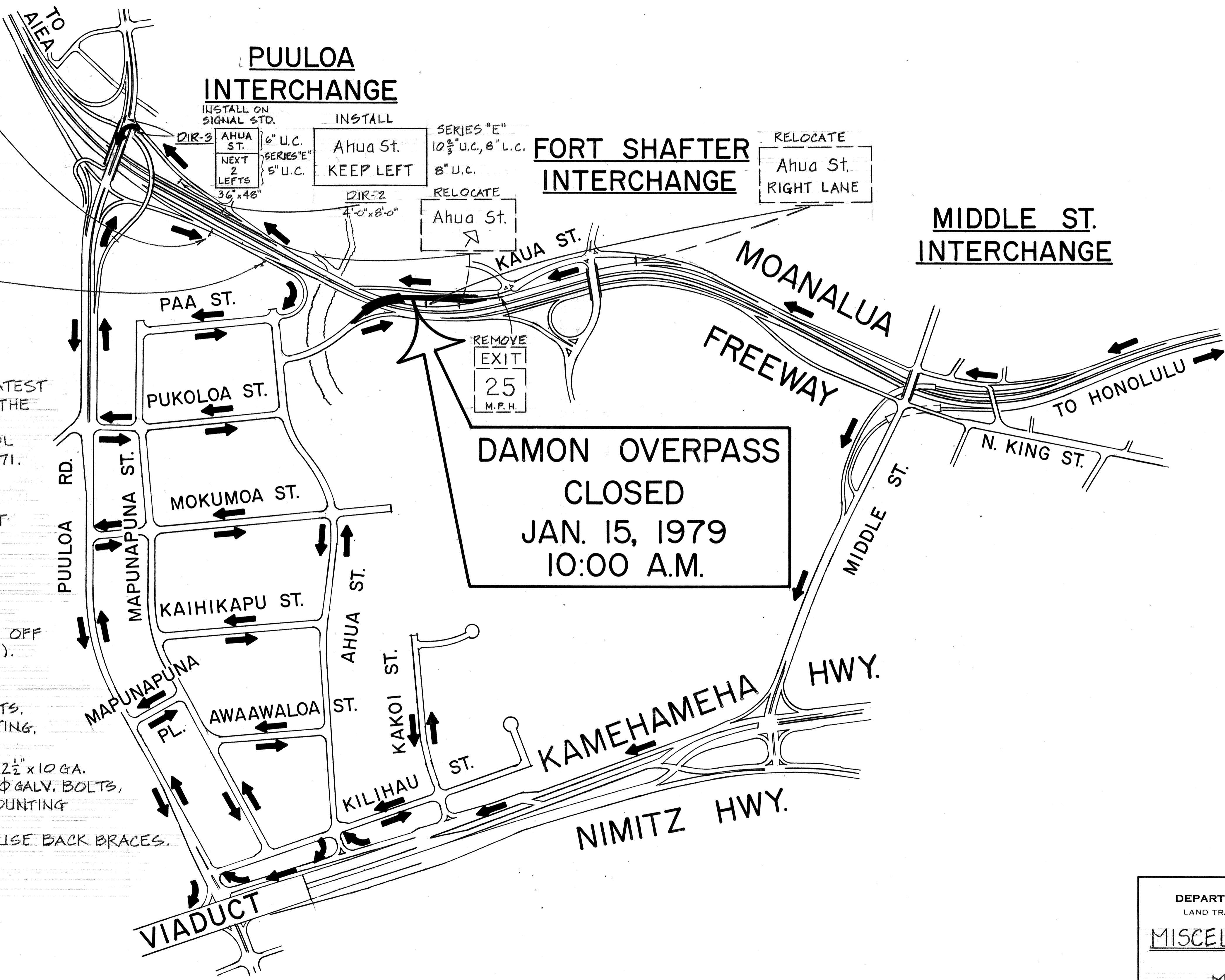
FORT SHAFTER INTERCHANGE



MIDDLE ST. INTERCHANGE

GENERAL NOTES "DIR" SIGNS:

- SIGN DETAILS SHALL CONFORM TO THE LATEST FHWA PUBLICATIONS, & AMENDMENTS TO THE FOLLOWING:
 - "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS", 1971.
 - "STANDARD ALPHABETS FOR HIGHWAY SIGNS", 1966.
- SIGN PANELS SHALL BE 0.100" THICK SHEET ALUMINUM.
- BORDERS
 - DIR-1 } 2"
 - DIR-2 } 2"
 - DIR-3 } 1"
 ALL SIGNS SHALL HAVE CORNER RADII, TRIM OFF AREA OUTSIDE CORNER RADIUS (DIR-3 ONLY).
- COLOR
 - LEGEND } WHITE REFLECTIVE SHEETING ON BORDER
 - } DEMOUNTABLE ALUMINUM CUTOUTS.
 - } BACKGROUND } GREEN REFLECTIVE SHEETING.
- MOUNTING DETAILS
 - DIR-1 } MOUNT ON 3 (EA. PER SIGN) 2 1/2" x 2 1/2" x 10 GA.
 - DIR-2 } GALV. SQUARE TUBE POSTS W/ 5/16" Φ GALV. BOLTS, NUTS & NEOPRENE WASHERS. MOUNTING HEIGHT SHALL BE 7'-0".
 - DIR-3 } MOUNT ON SIGNAL STANDARDS. USE BACK BRACES. (SEE SHT DT100).



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

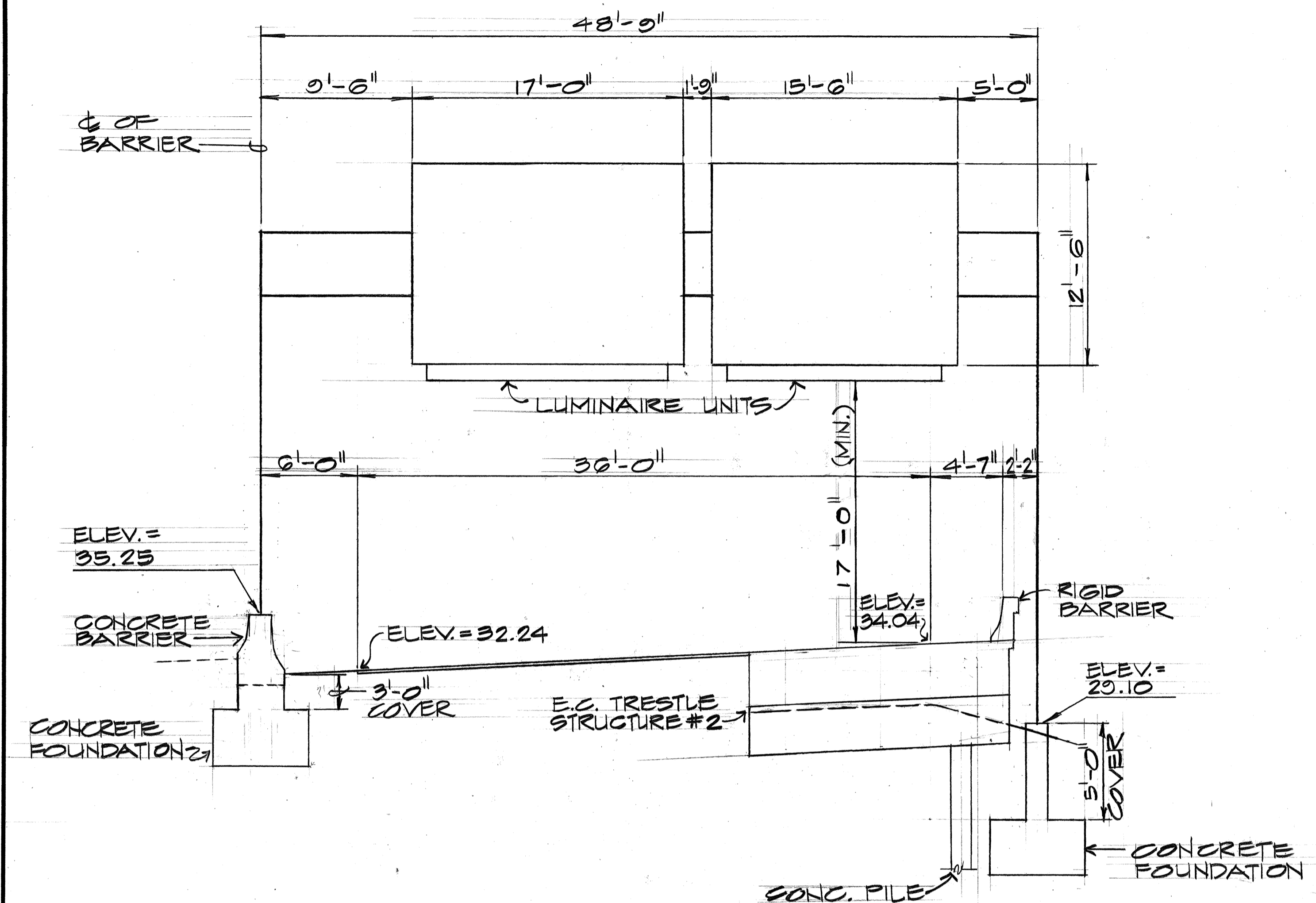
MISCELLANEOUS SIGNS

MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 2
F.A. PROJECT NO. FF-076-1(17)
SCALE: 1"=200' JAN 1979

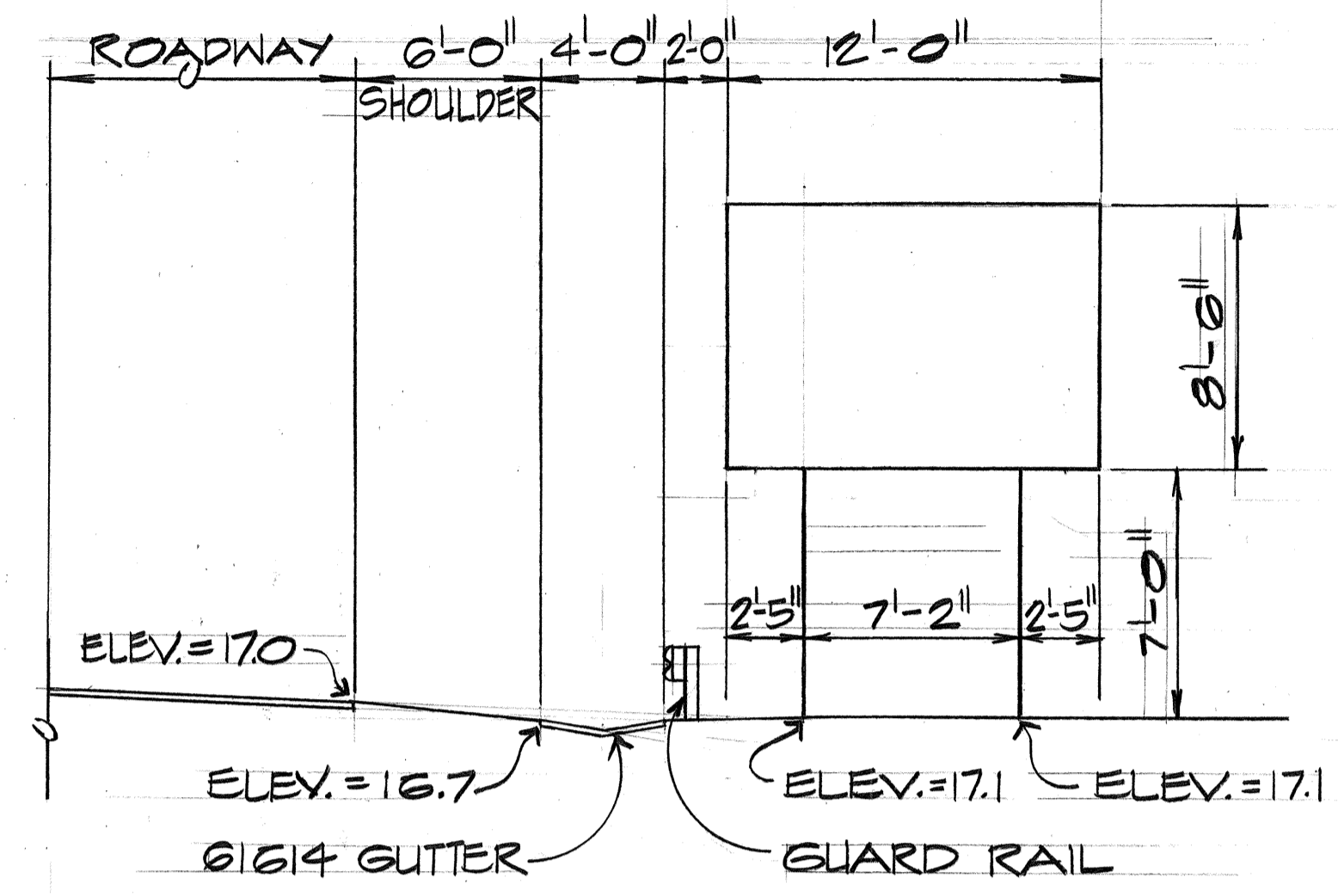
SHEET NO. 1 OF 1 SHEETS

C.O. 68 S-1

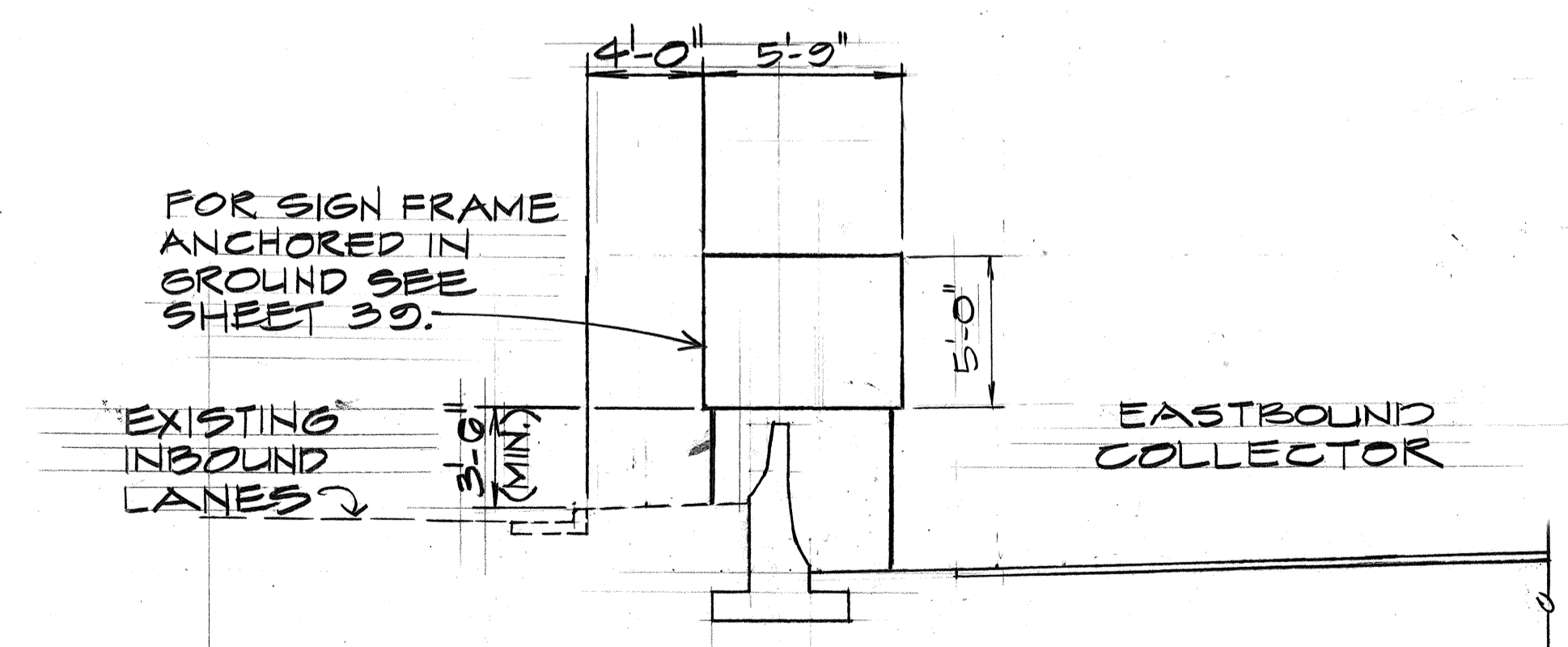
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-(17) F-F-078-1(1)	1977	69	164



SIGN E-3
E.C. & STA. 127+23

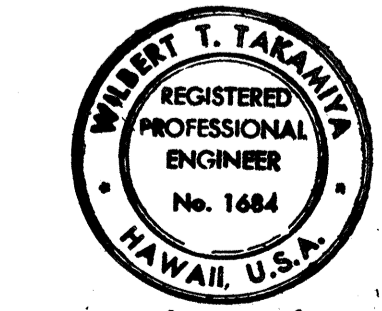
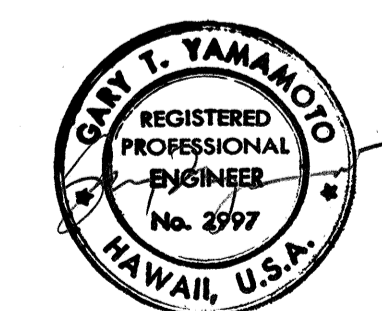


SIGN D-5
E.C. & STA. 130+00



RELOCATED SIGN D-1
E.C. & STA. 119+30

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



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FRAME LAYOUT

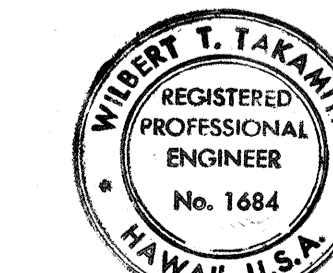
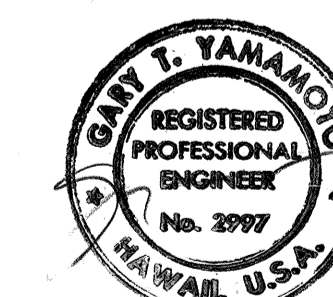
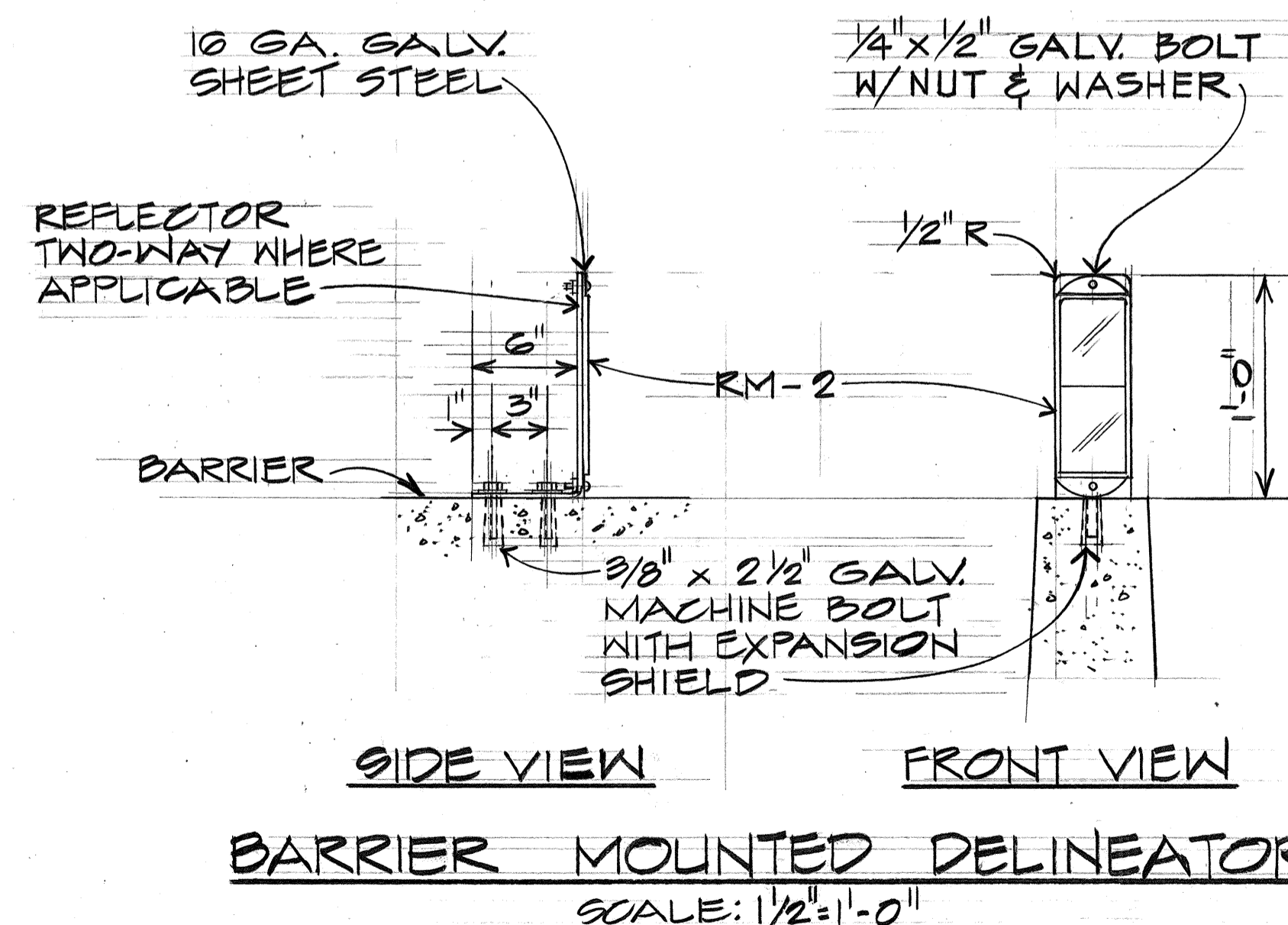
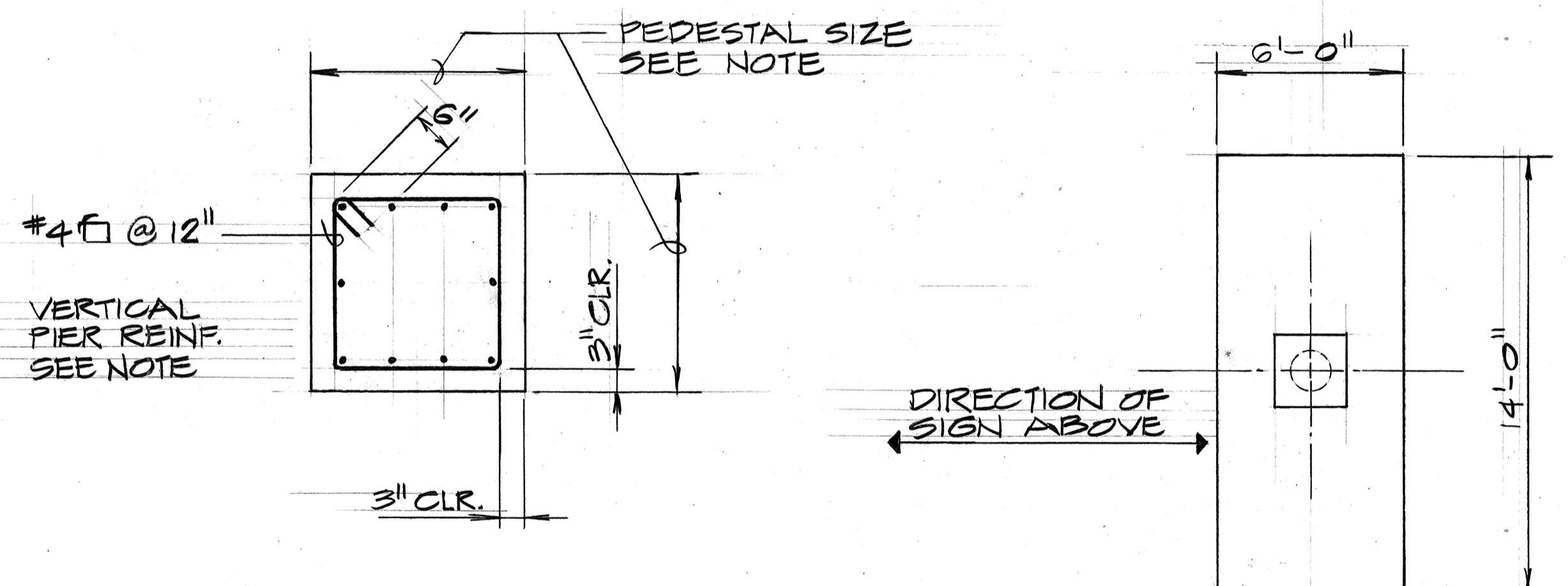
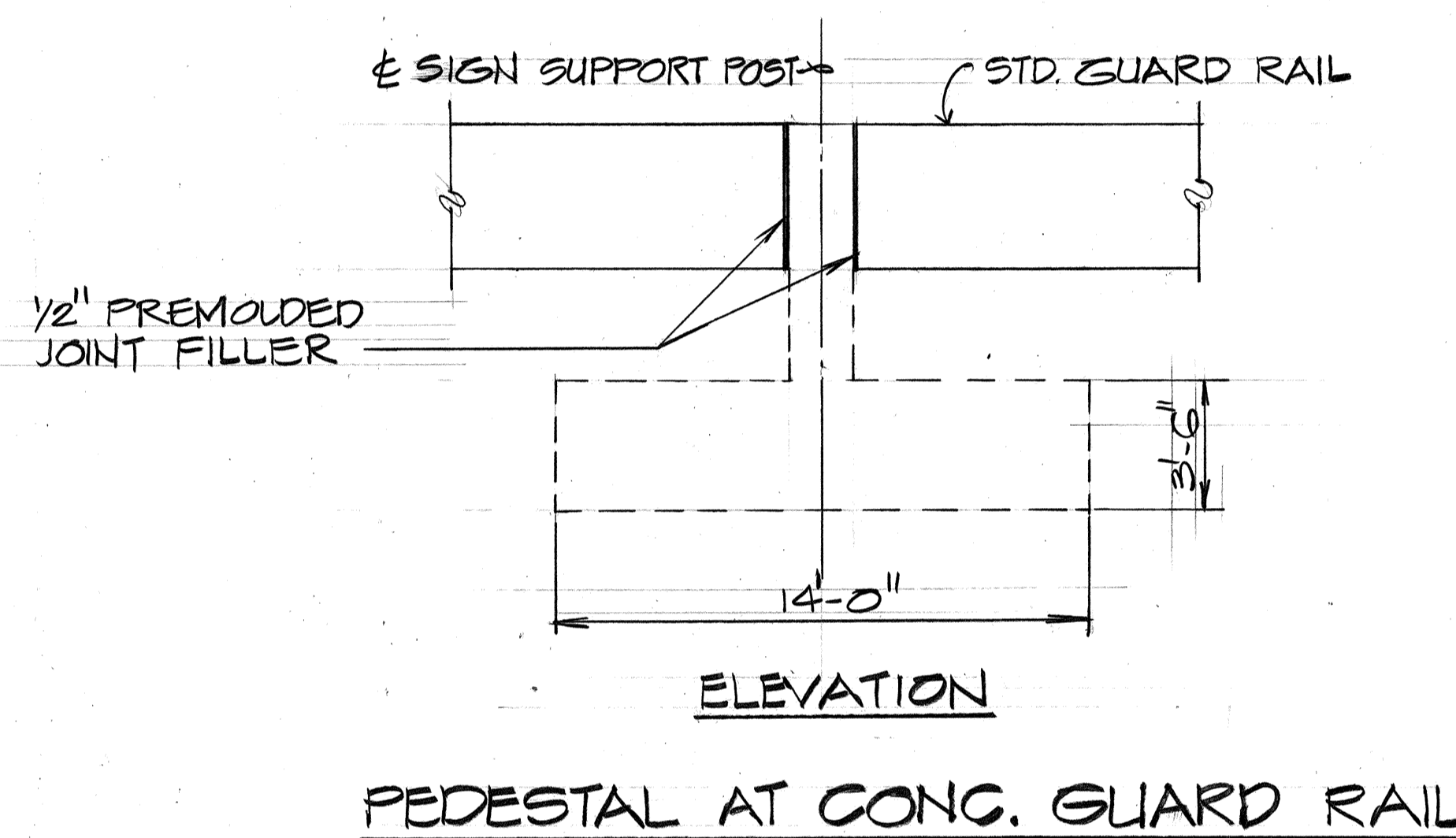
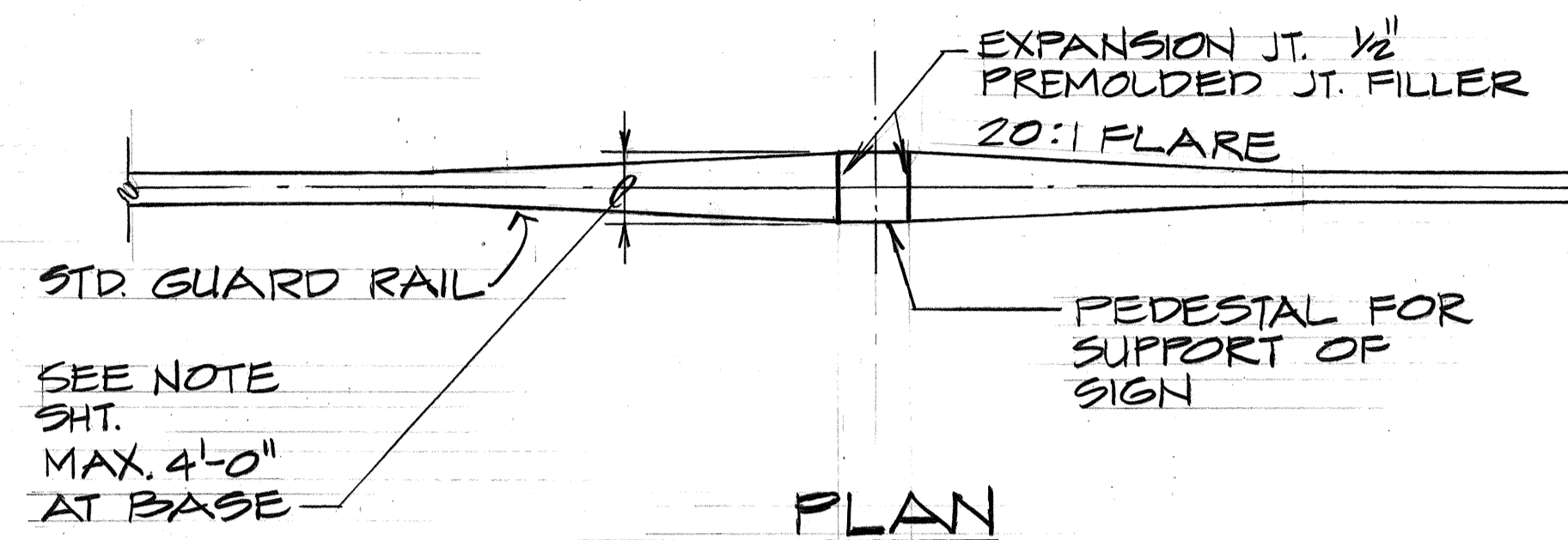
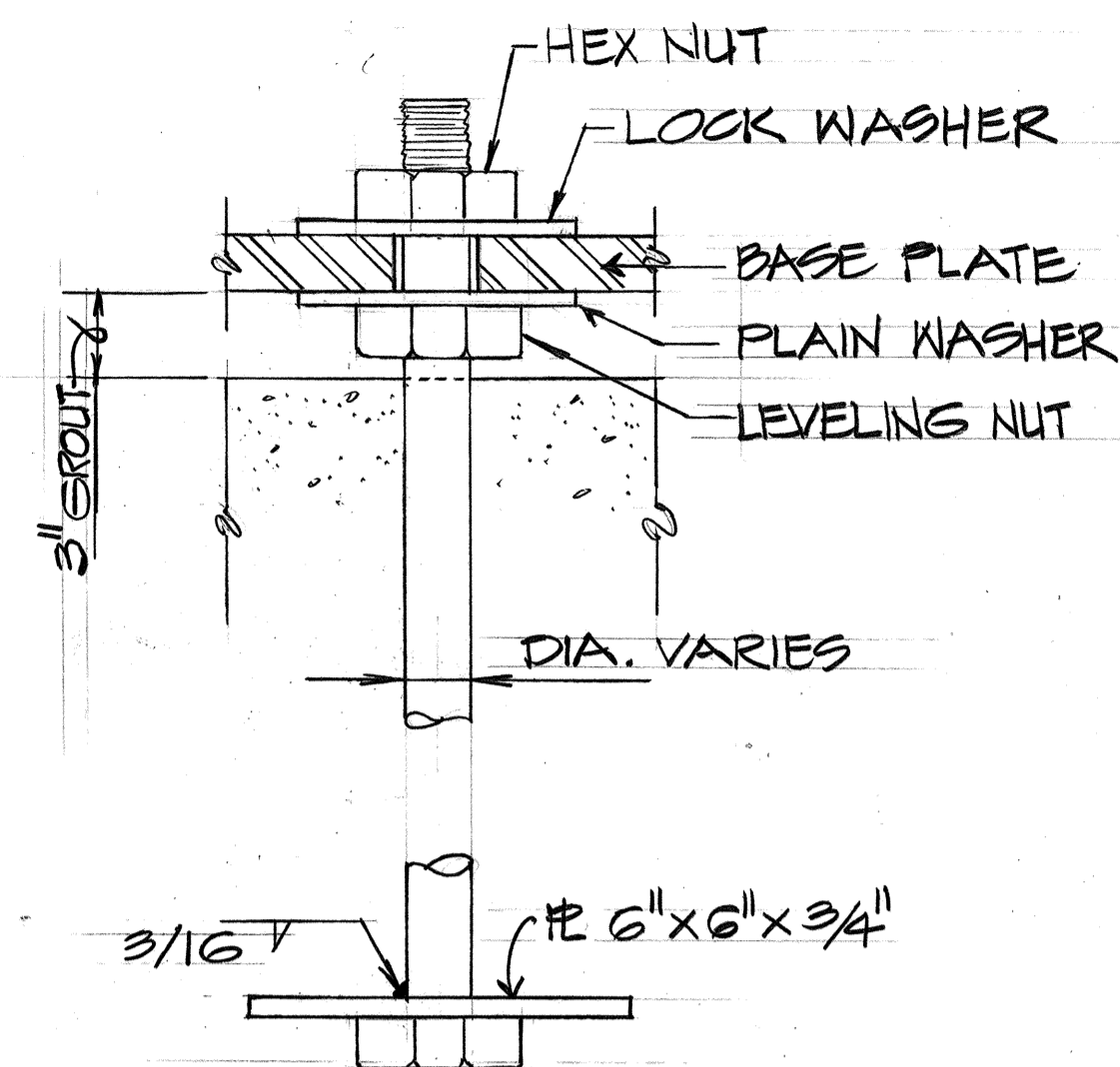
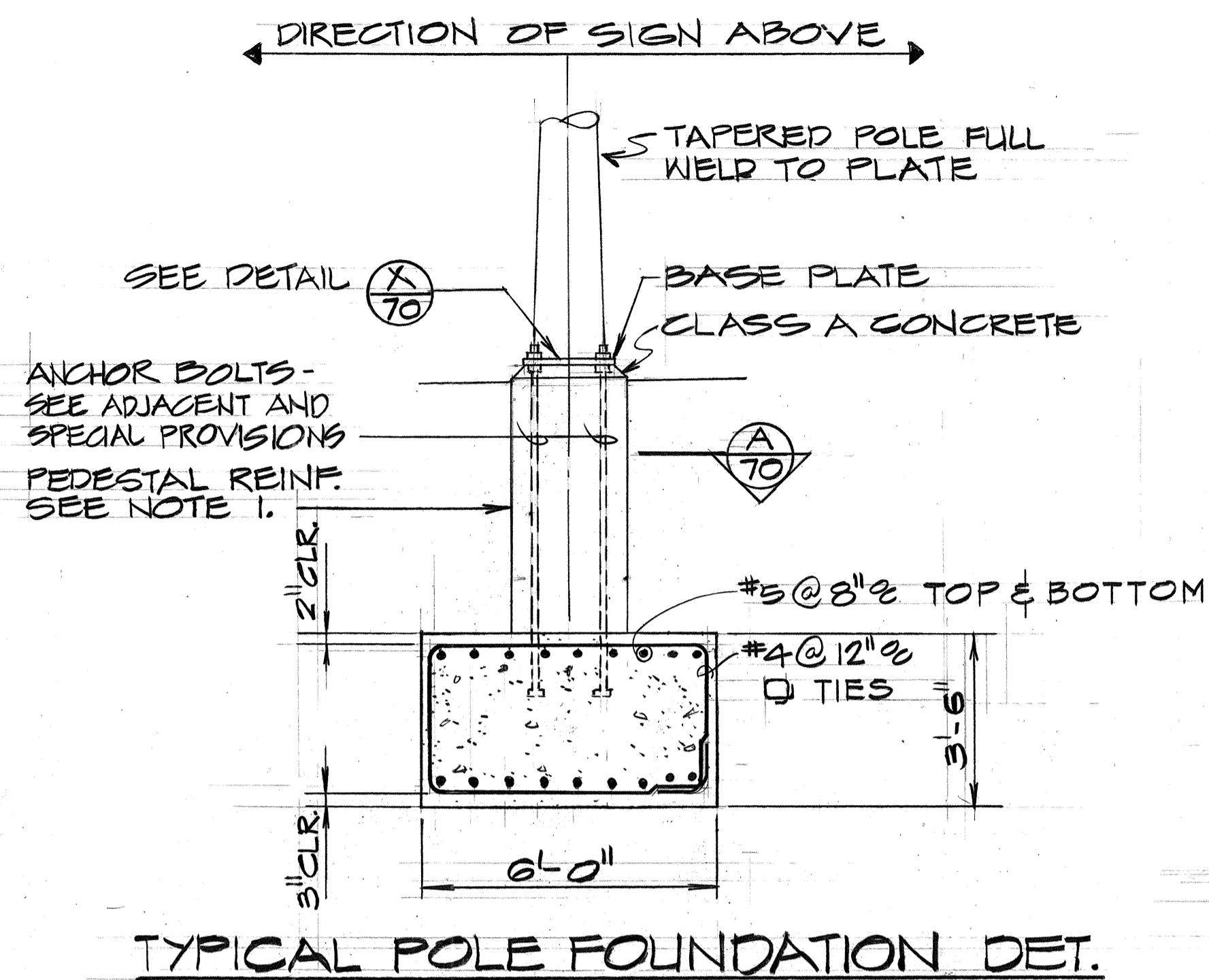
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST.-UNIT 2
F.A. Proj. No. FF-078-(17)
SCALE: AS SHOWN DATE: JAN. 14, 1977

SHEET No. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) F-PF-078-1(17)	1977	70	164

NOTES:

- EXCEPT SPECIFIED OTHERWISE, CONTRACTOR SHALL DETERMINE THE DETAIL REQUIREMENTS OF THE PEDESTAL, BASE PLATE & ANCHOR BOLTS IN ACCORD WITH TYPE OF SIGN POST SELECTED.
- TOTAL NUMBER OF CONDUITS INTO POLE FOUNDATION AS INDICATED ON LIGHTING PLANS. CONDUITS SHALL SLOPE AWAY FROM POLE FOUNDATION. CONDUIT SHALL STUB OUT 5'-0" MIN. FOR DIRECT BURIAL ENTRY.
- GROUNDING CONDUCTOR SHALL BE BONDED TO SIGN SUPPORT.



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD SIGN SUPPORT FOUNDATION DETAILS

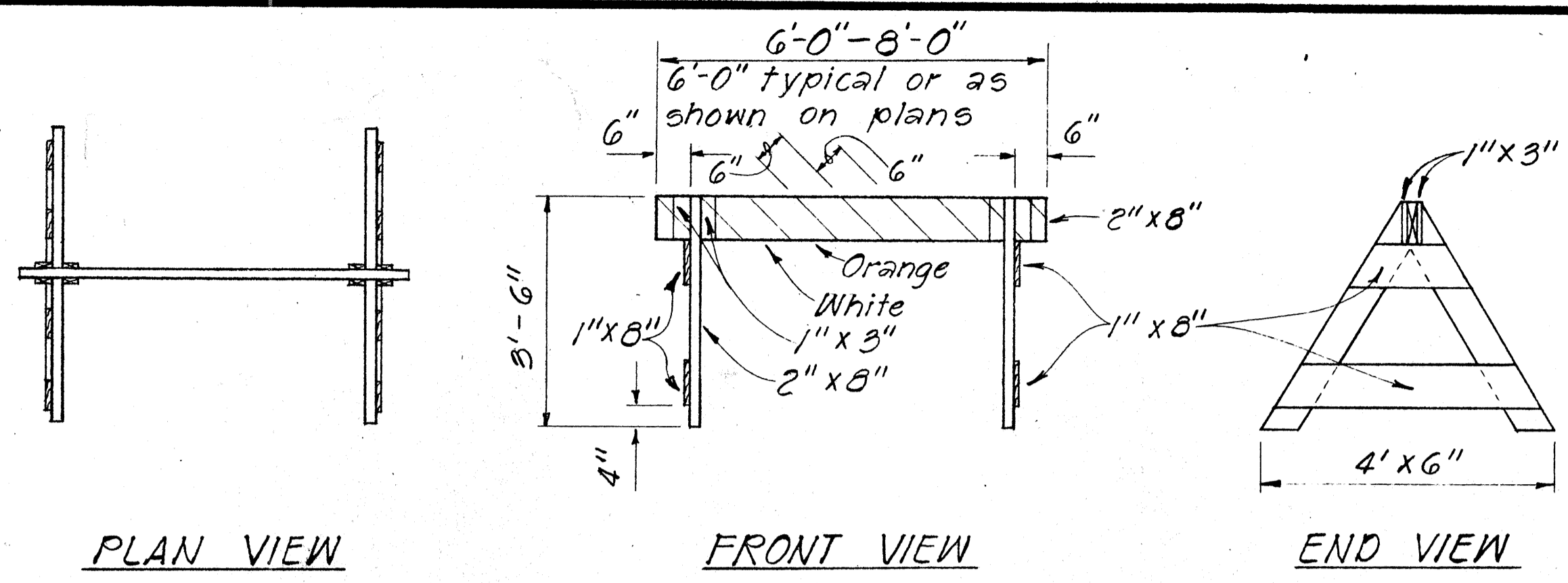
MOANALUA ROAD
PUULOA I.C. TO MIDDLE ST. - UNIT 2
F.A. PROJ. NO. FF-078-1(17) F-PF-078-1(17)

SCALE: AS SHOWN DATE: JAN. 14, 1977

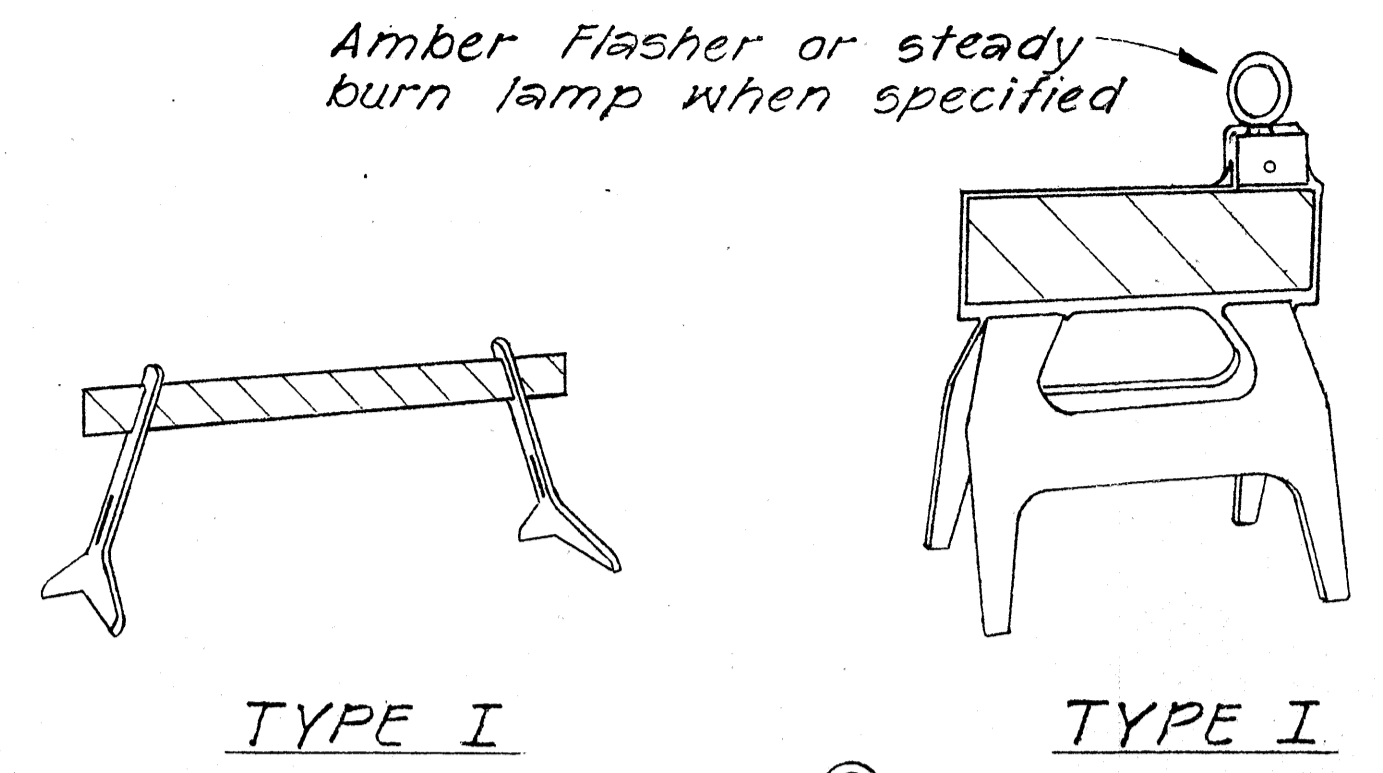
SHEET NO. 1 OF 19 SHEETS

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

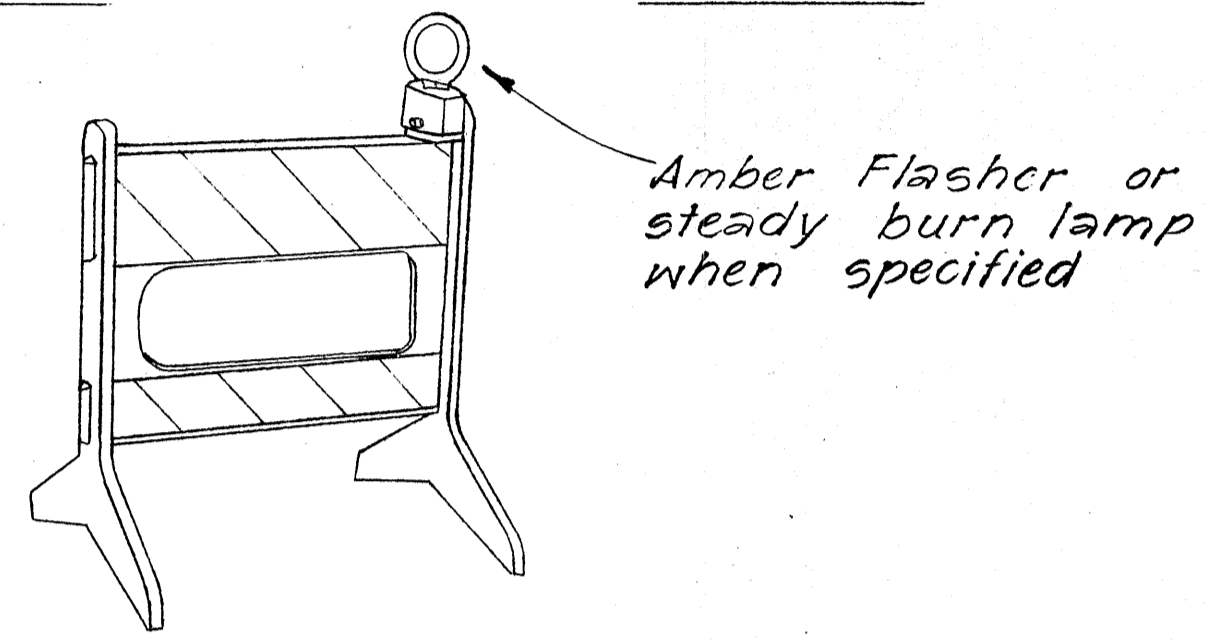
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) P-FF-078-1(17)	1977	71	164



TYPE I BARRICADE
Scale: 1/2" = 1'-0"



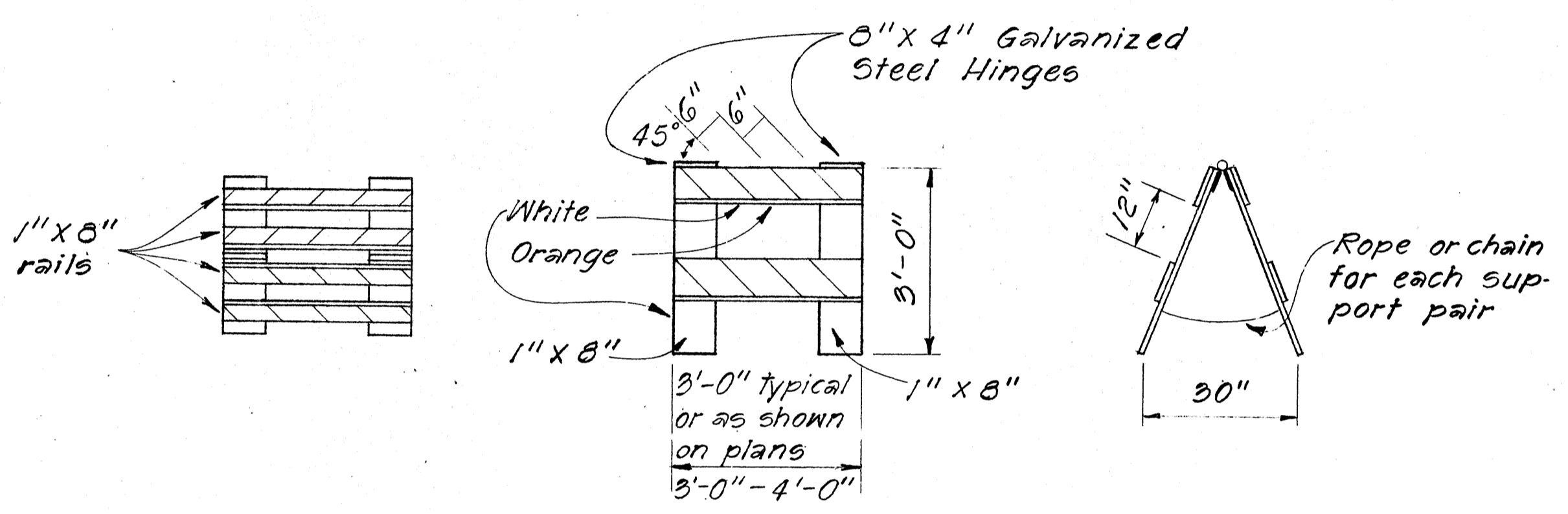
TYPE I



TYPE II

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 overlaid with reflective sheeting.



TYPE II BARRICADE
Scale: 1/2" = 1'-0"

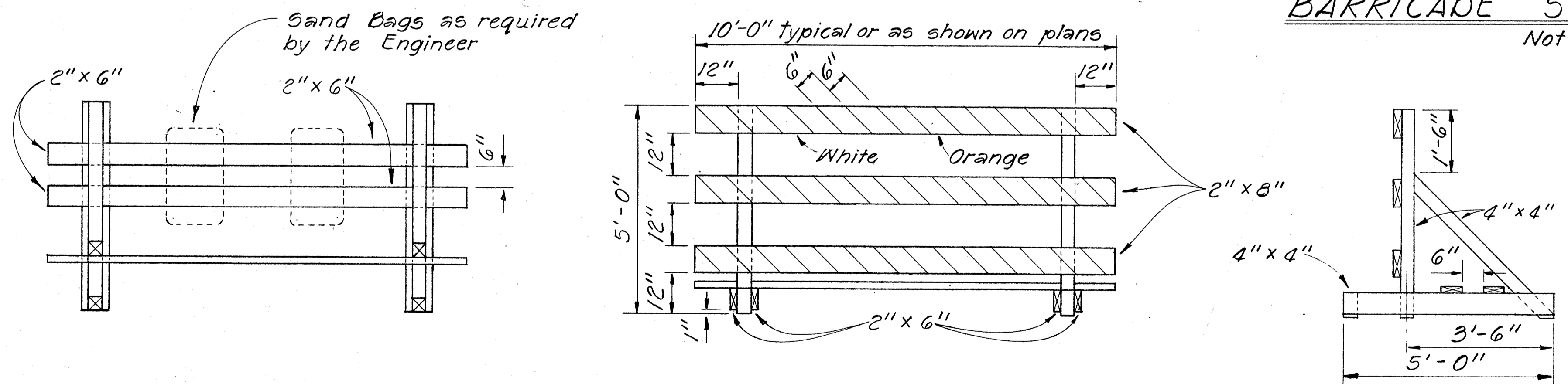
PLASTIC MOLDED BARRICADE OPTIONS*
Not to Scale

* Shop Drawings must be submitted for approval.

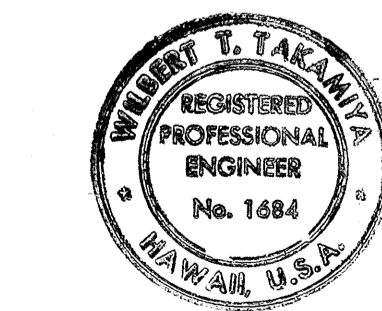
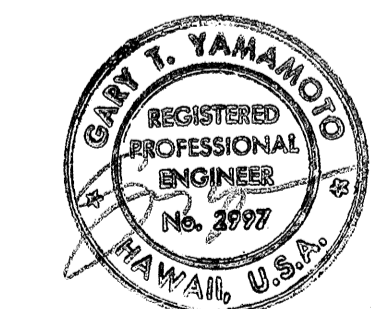


FRONT FACE BACK FACE

BARRICADE STRIPING DETAILS
Not to Scale



TYPE III BARRICADE
Scale: 1/2" = 1'-0"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

BARRICADES

SCALE: As Shown

SHEET NO. 2 OF 10 SHEETS

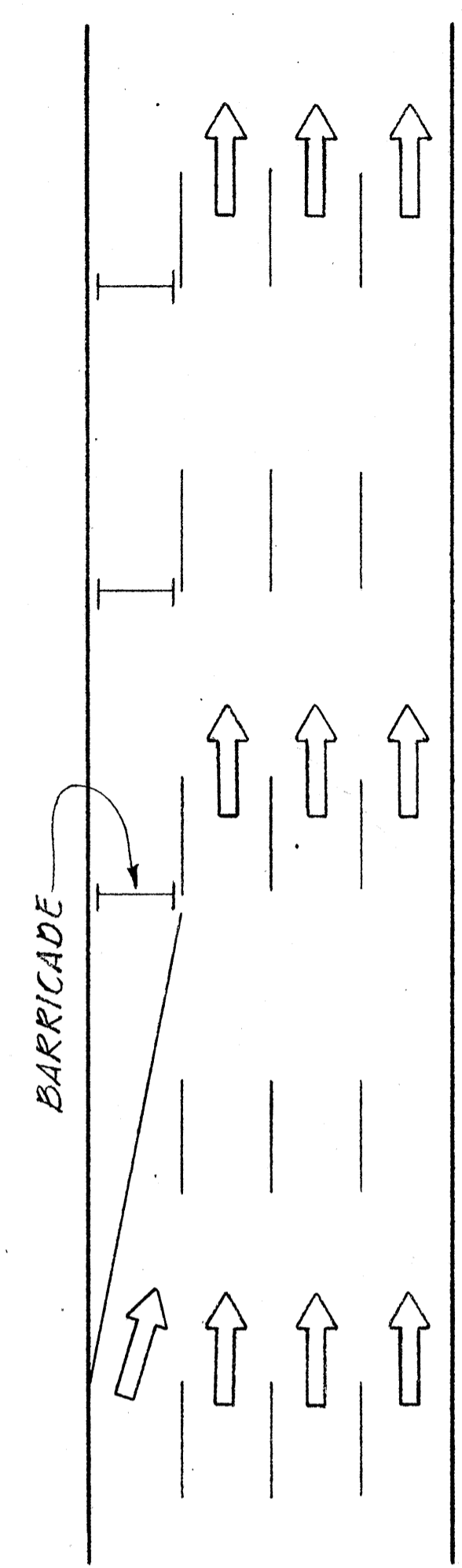
DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
QUANTITIES BY	_____
DRAWN BY	_____
PLANNED BY	_____
ORIGINAL PLAN	_____
NO. _____	_____

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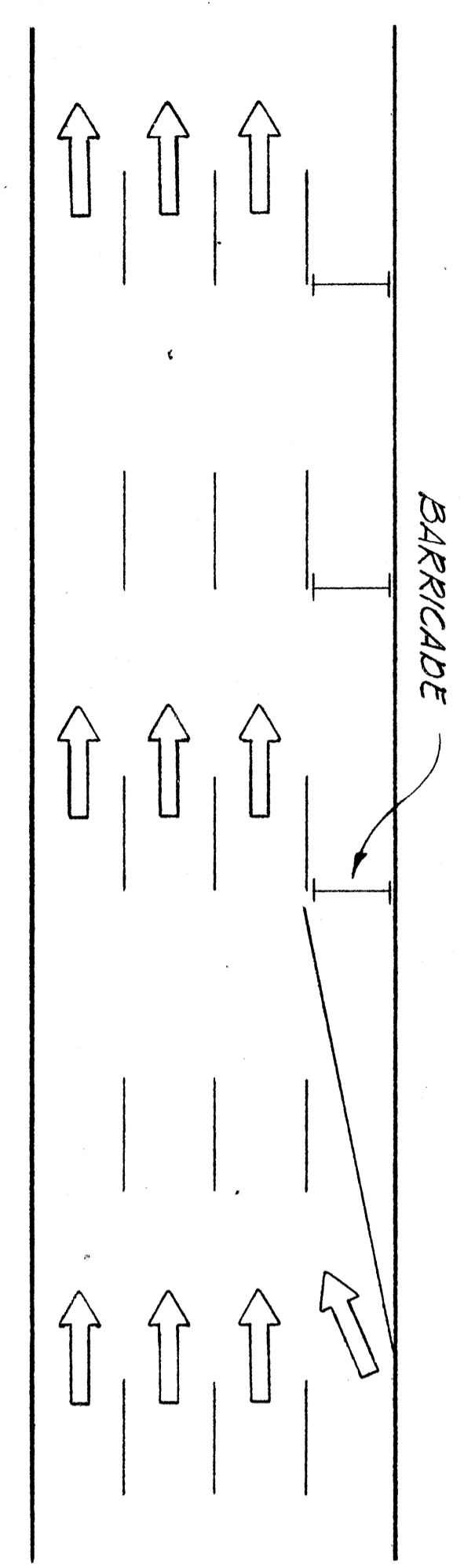
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) FF-078-1(1)	1977	72	164

GENERAL NOTES

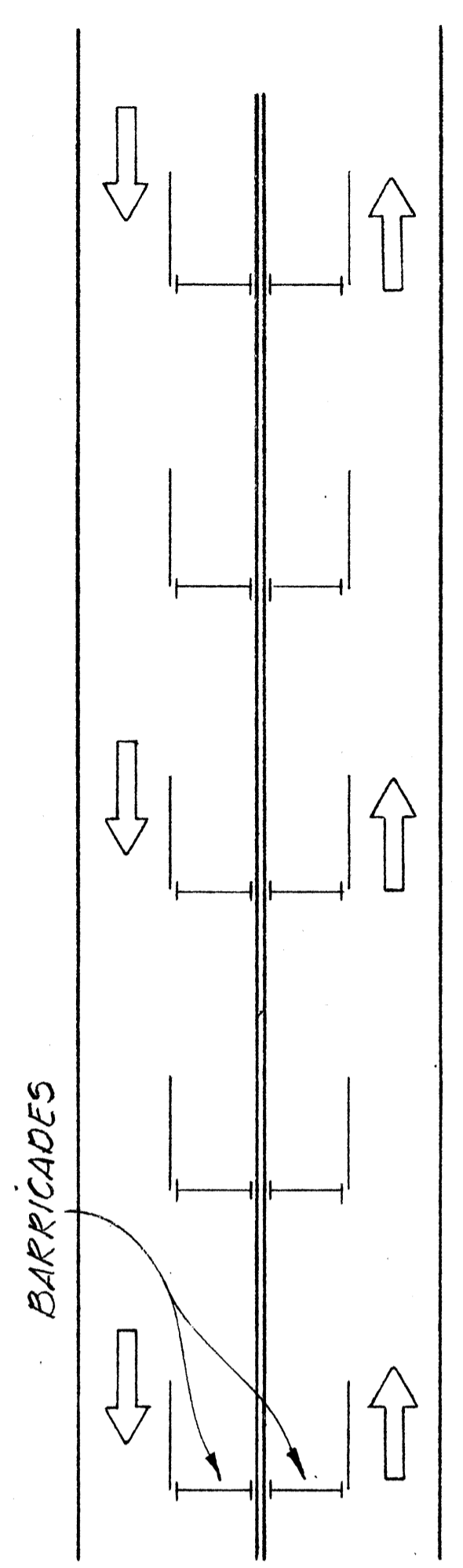
1. Barricade Type, Placement, and Arrangement shall be as shown on the Construction Plans.



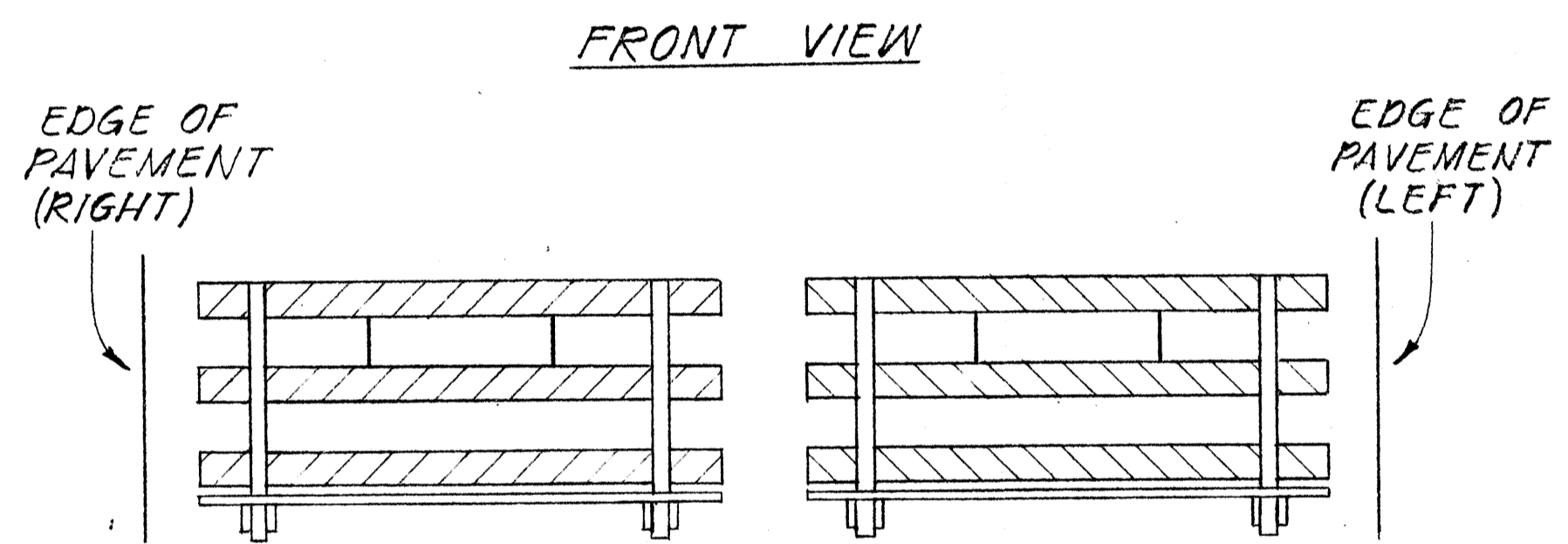
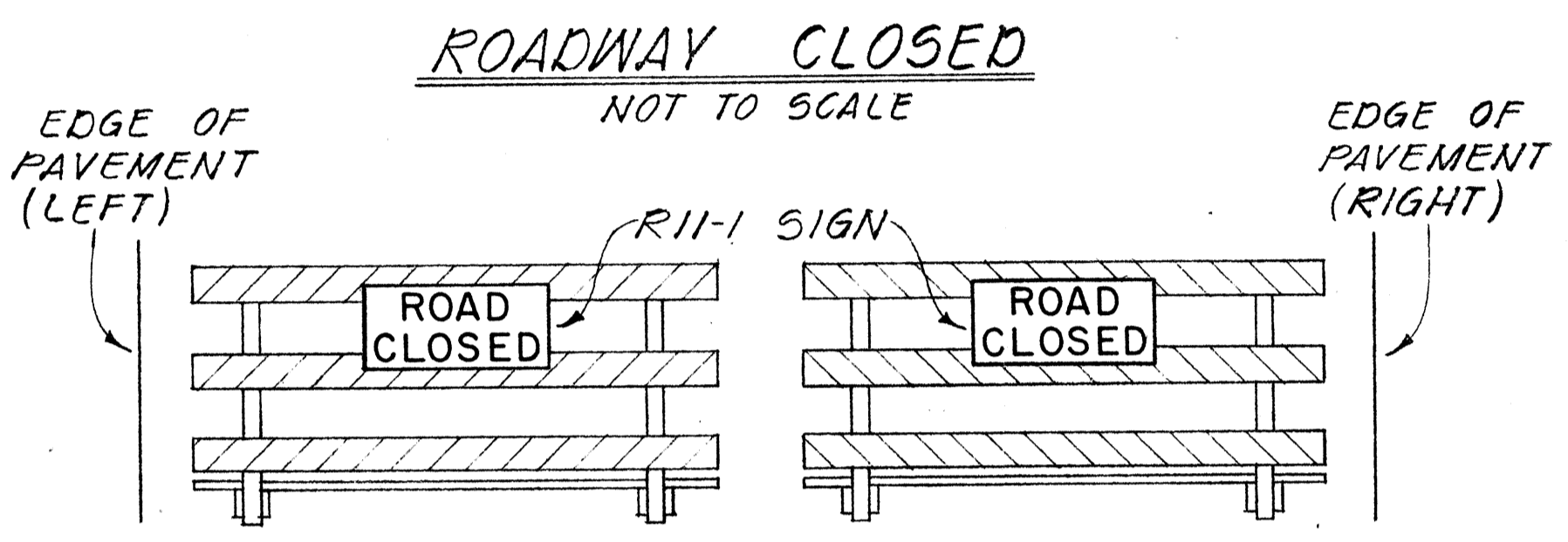
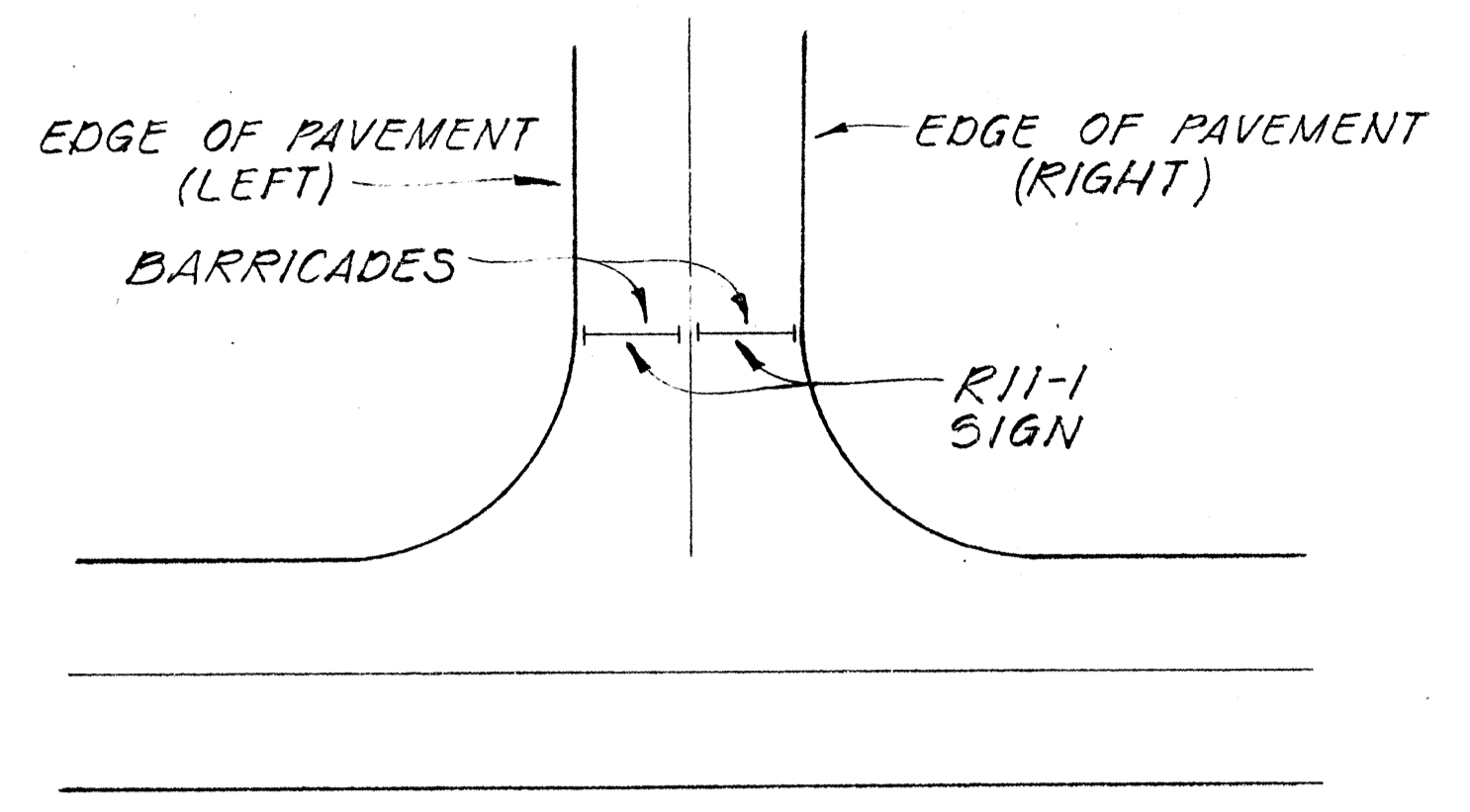
ROADWAY DELINEATION TO THE RIGHT
NOT TO SCALE



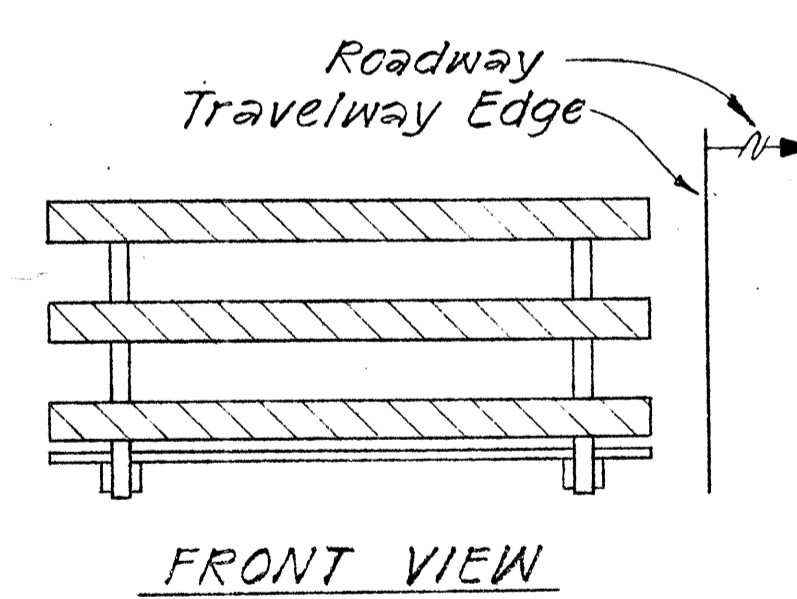
ROADWAY DELINEATION TO THE LEFT
NOT TO SCALE



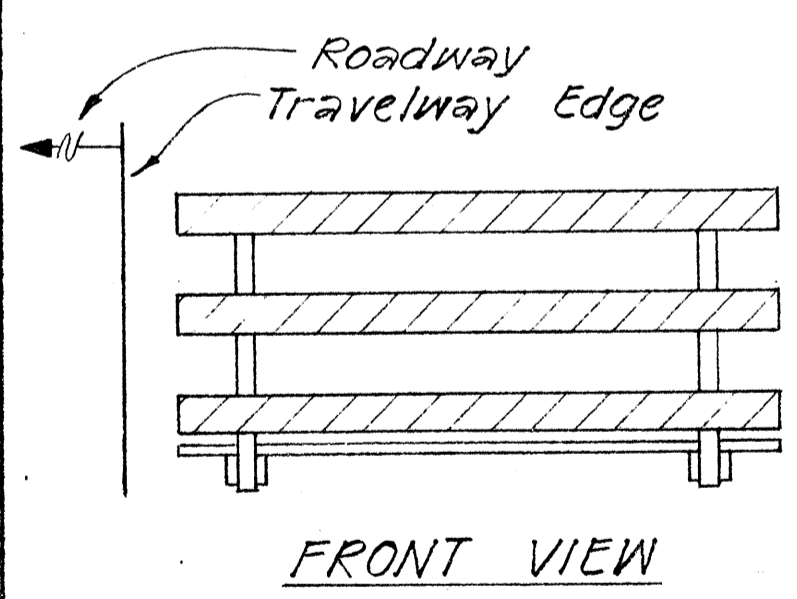
ROADWAY DELINEATION FOR 2-WAY TRAFFIC
NOT TO SCALE



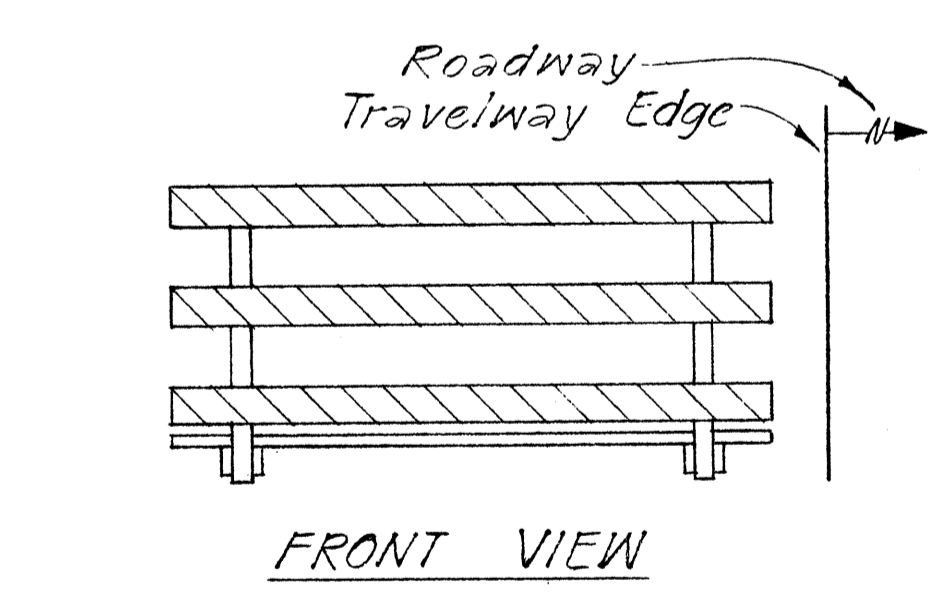
BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE



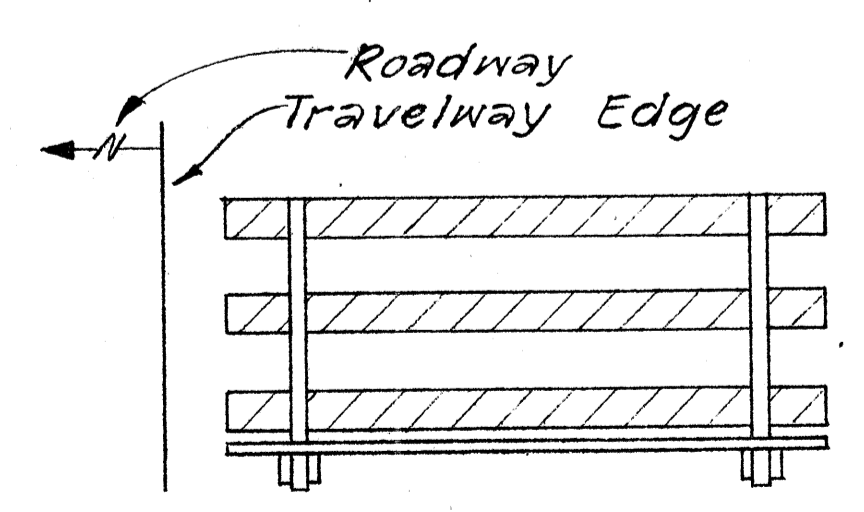
FRONT VIEW



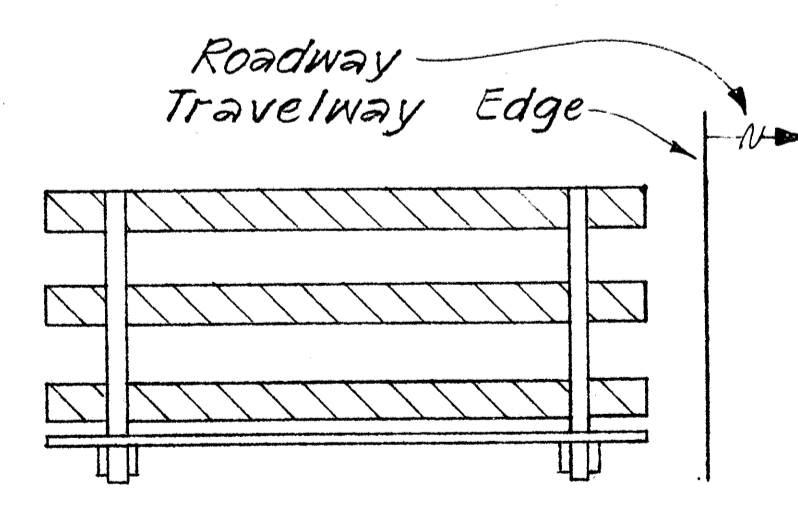
FRONT VIEW



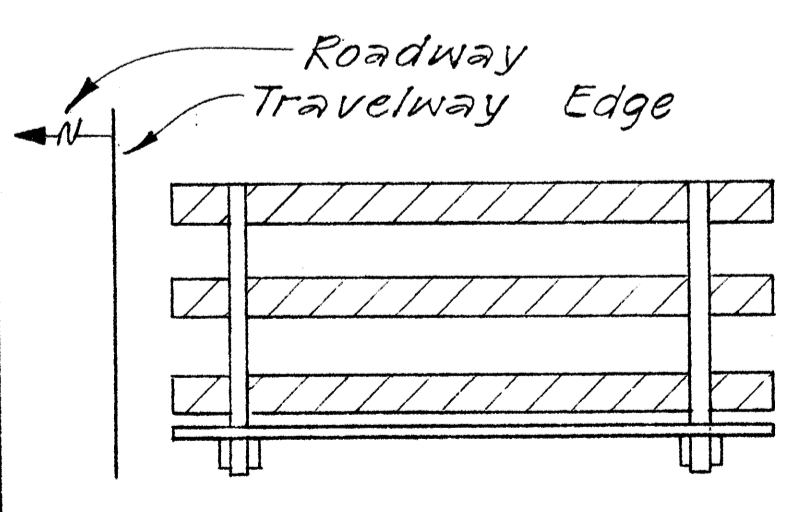
FRONT VIEW



BACK VIEW



BACK VIEW



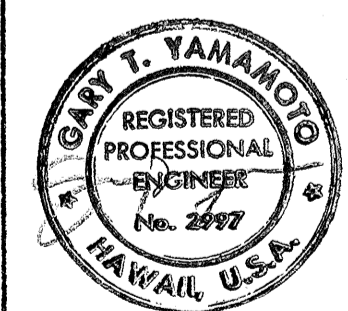
BACK VIEW

BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE

BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE

BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE

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



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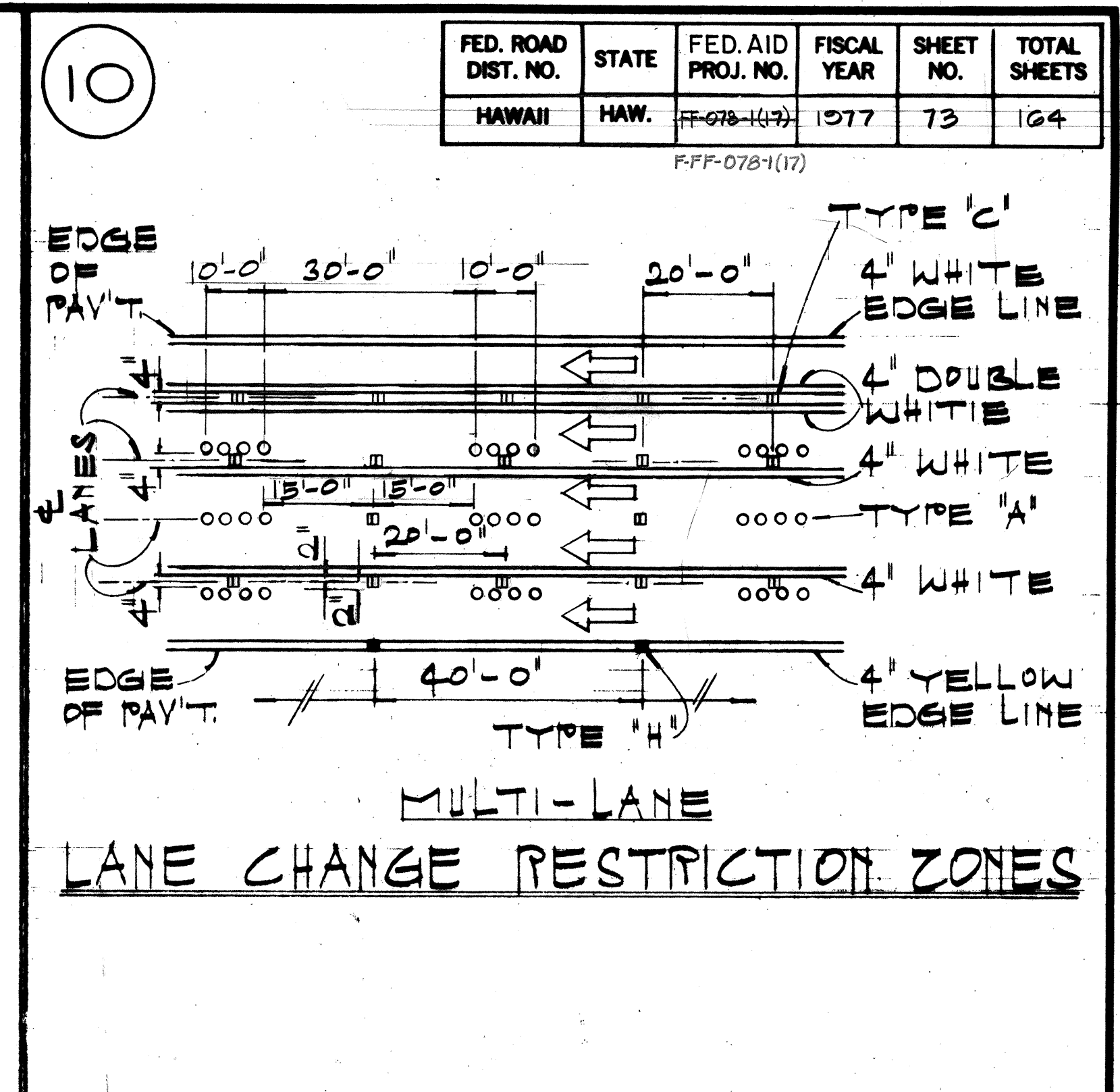
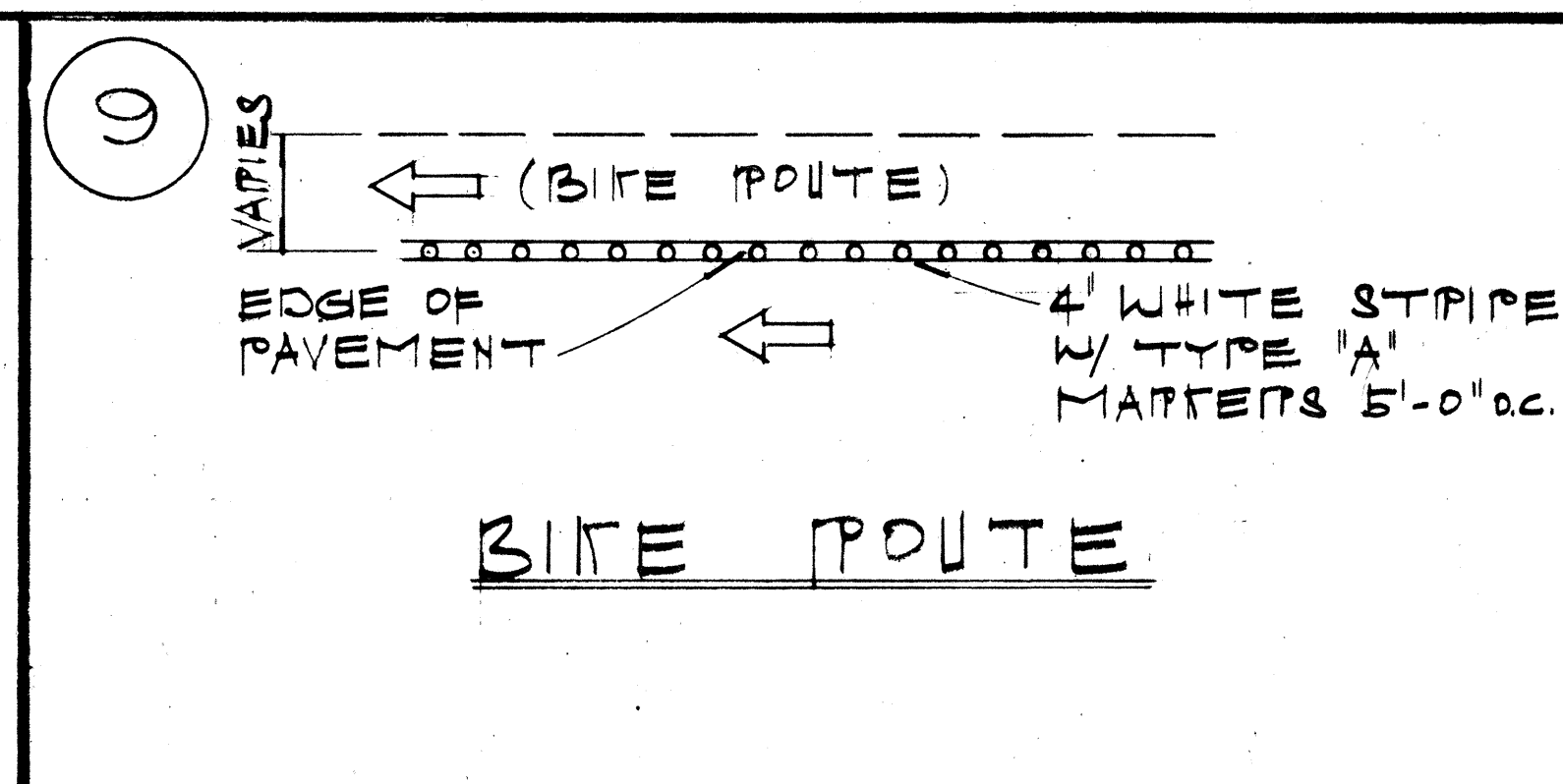
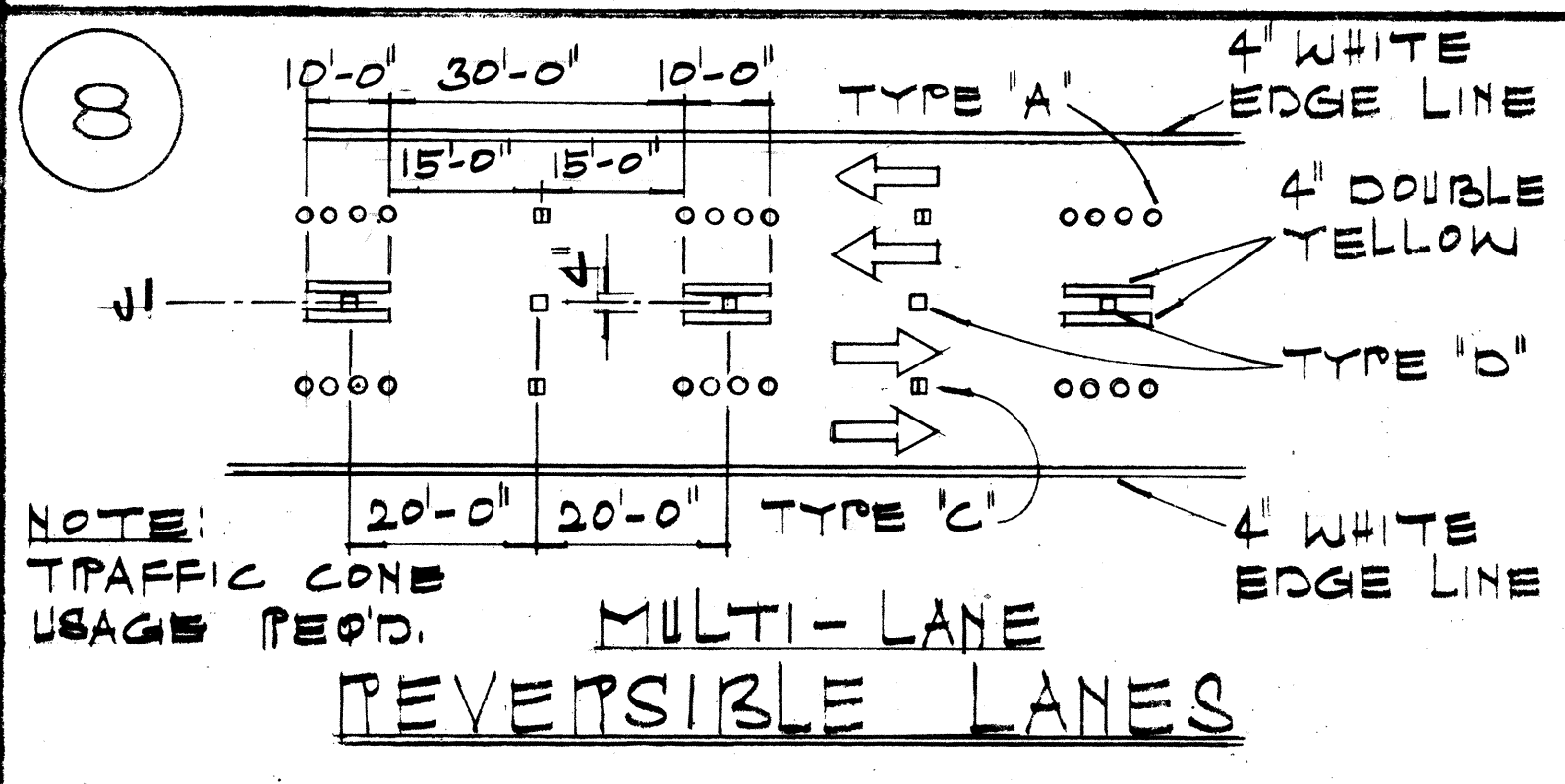
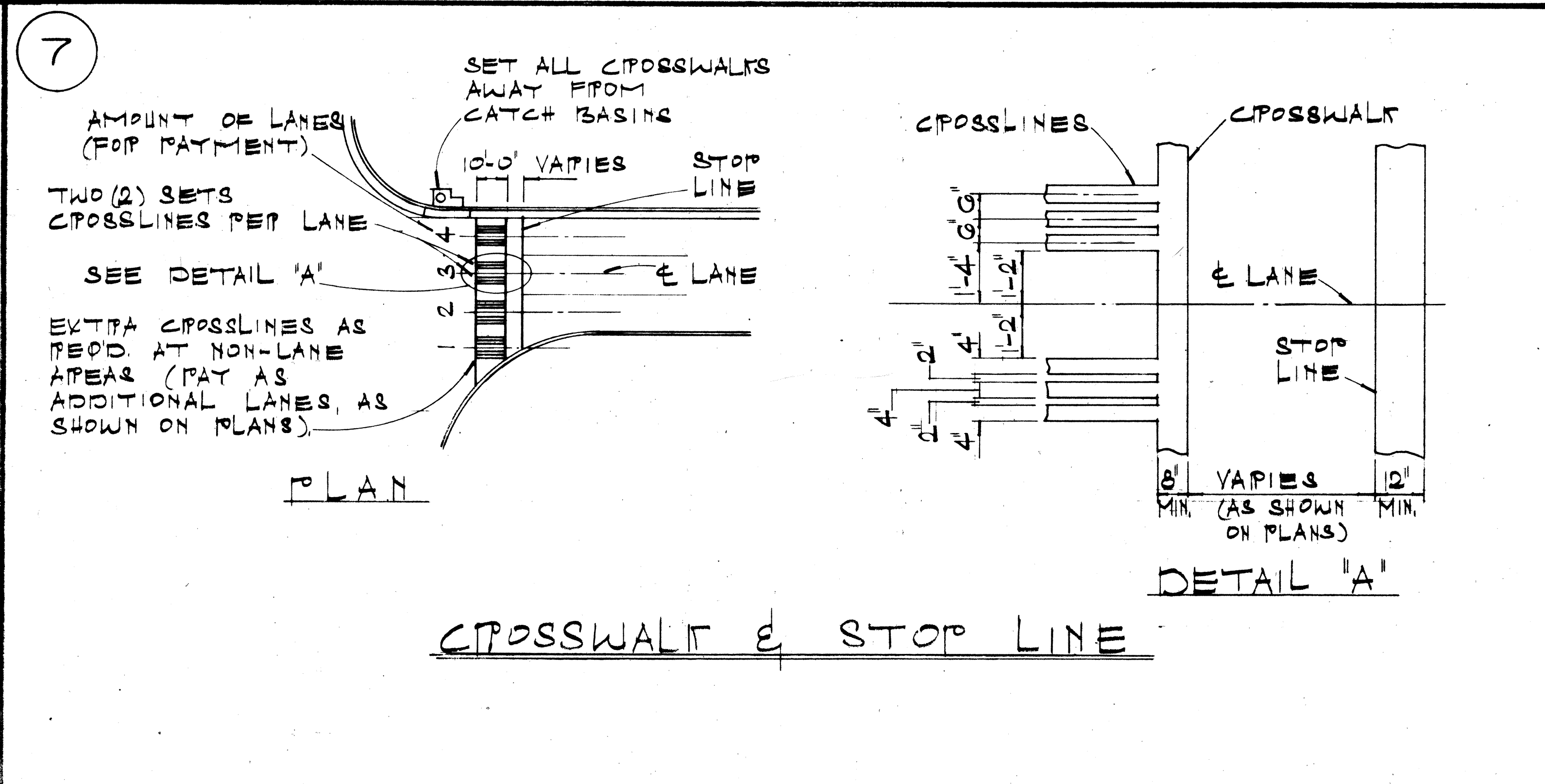
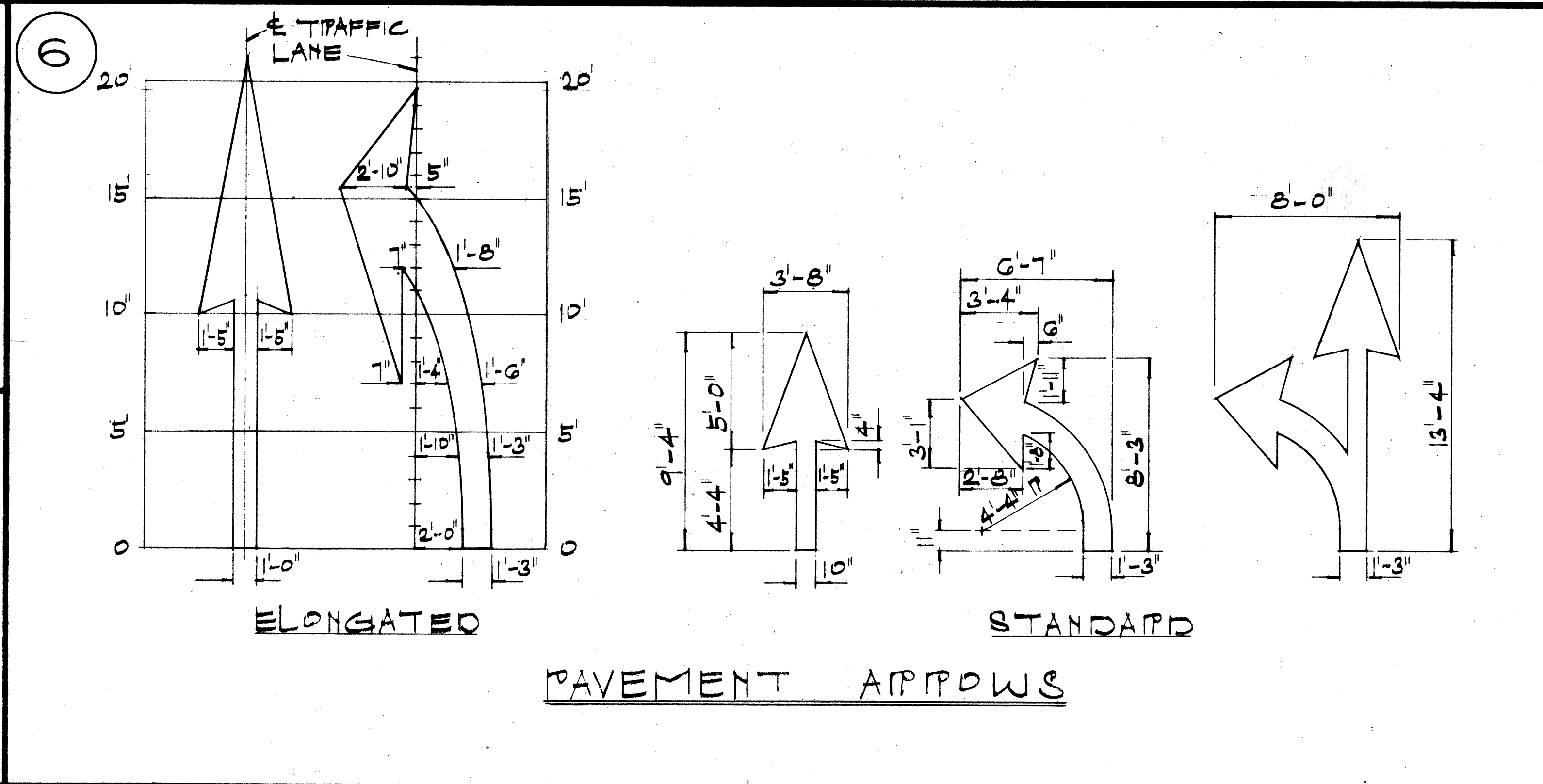
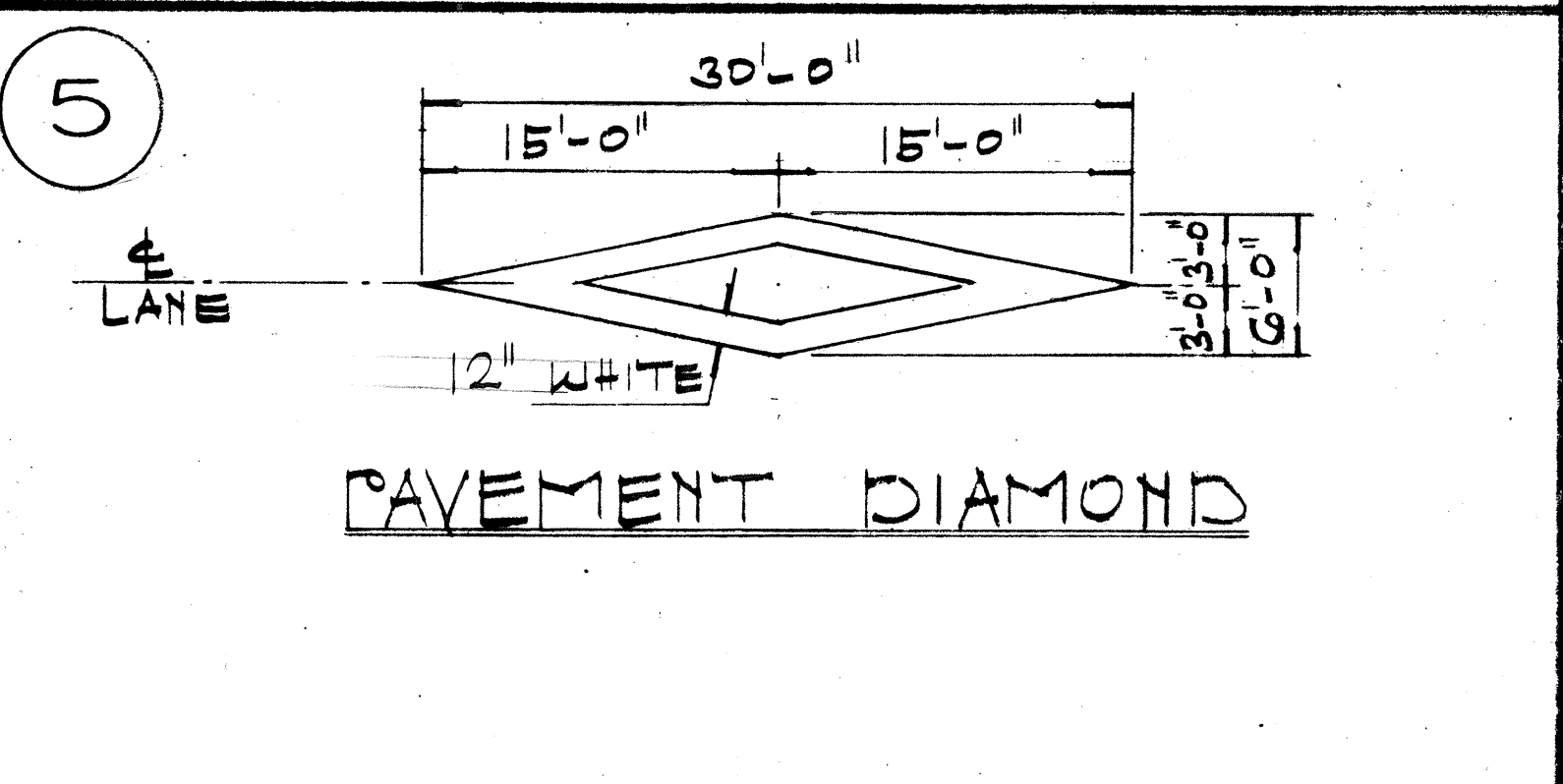
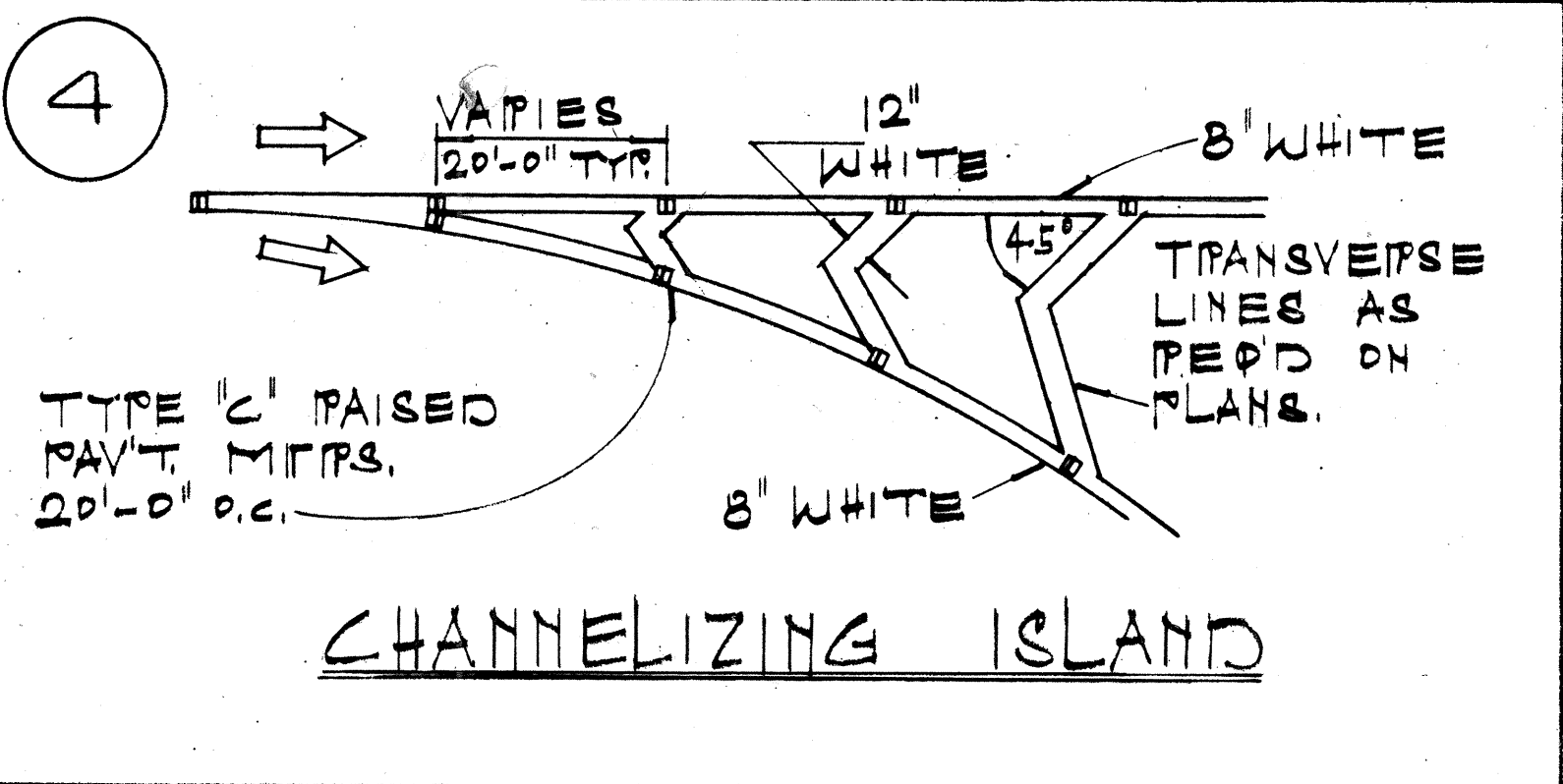
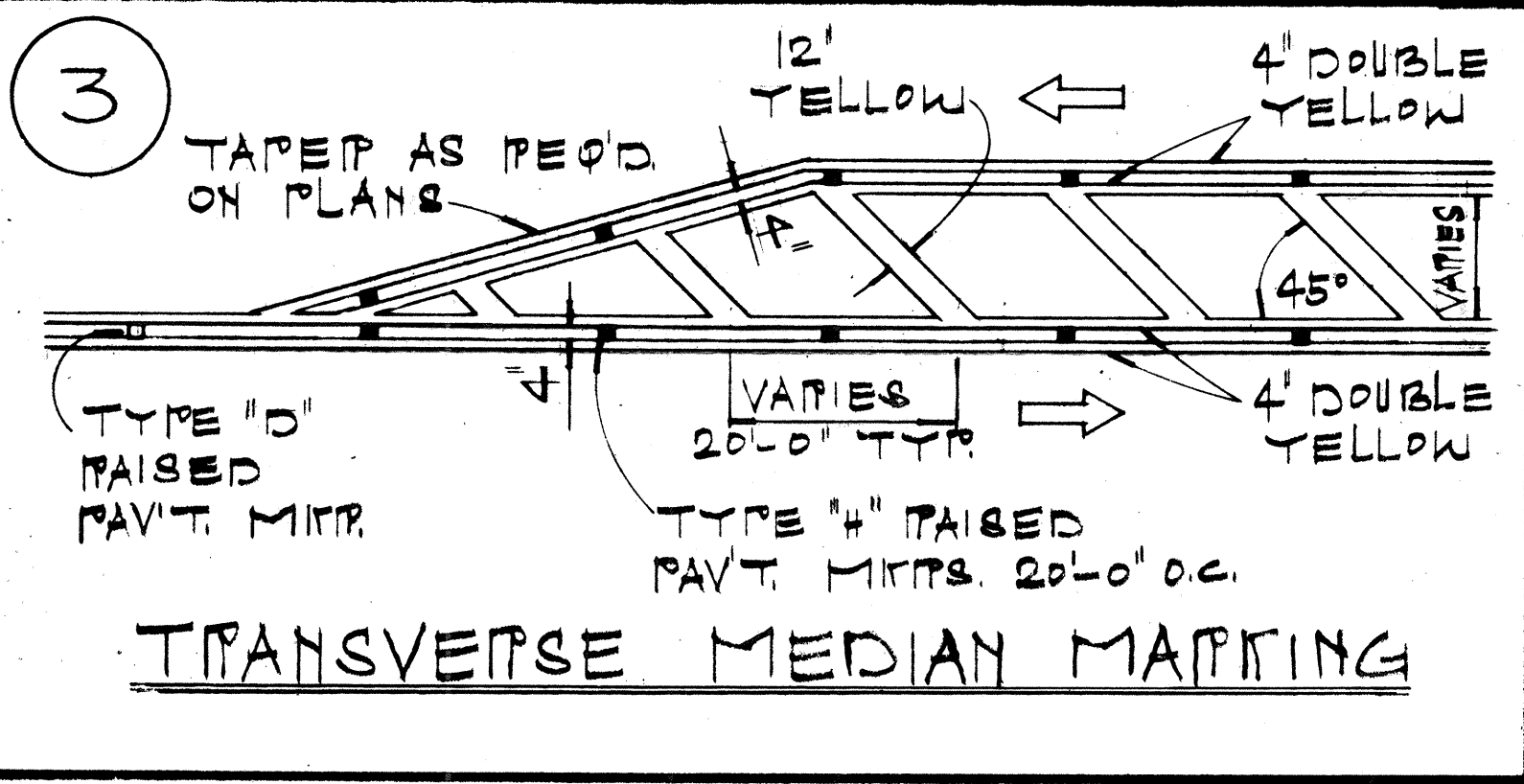
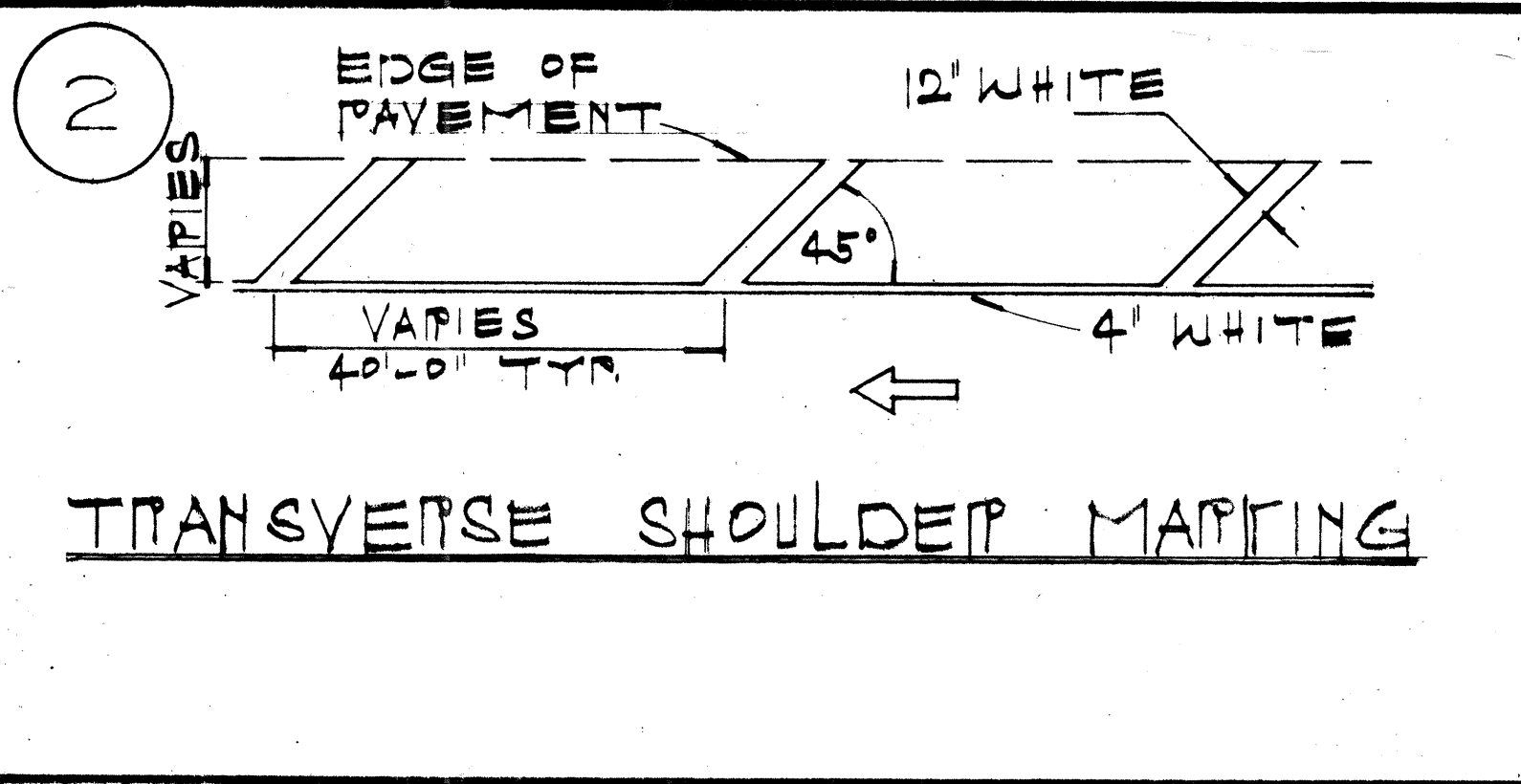
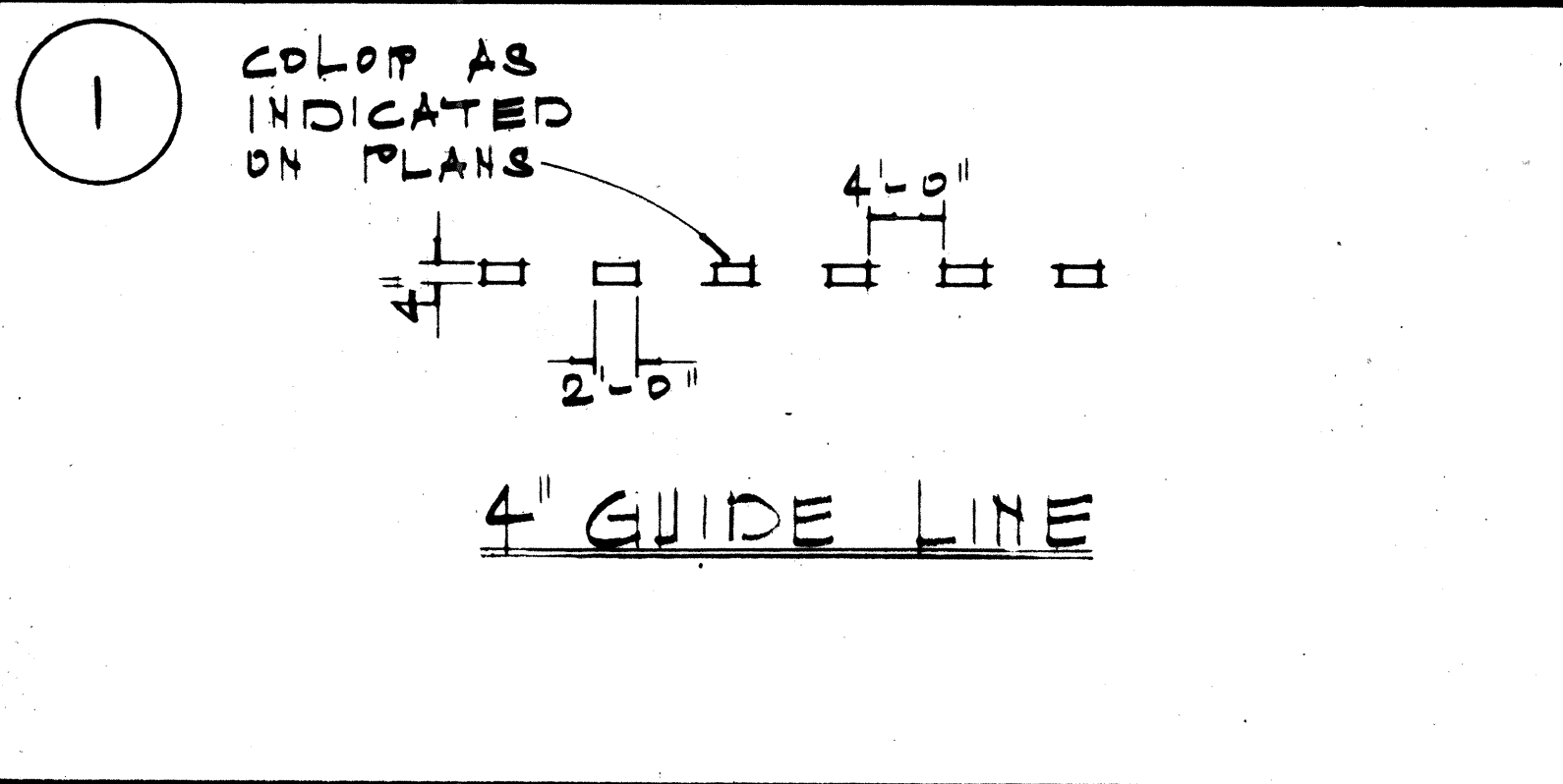
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

BARRICADE STRIPING DETAILS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17)	1977	73	104

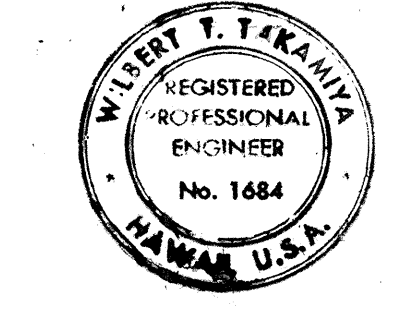
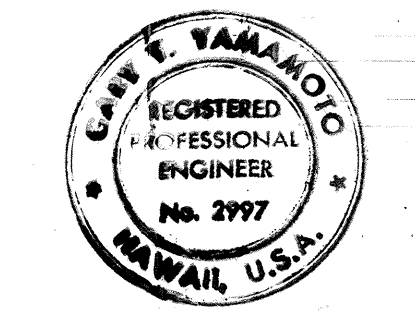
FF-078-1(17)



GENERAL NOTES:

- PAVEMENT MARKINGS SHALL CONFORM TO THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS' 1971, (MUTCD), SUBSEQUENT REVISIONS TO THE MUTCD & AS SHOWN ON THE PLANS.
- LAYOUT OF PAVEMENT MARKINGS & STRIPING SHALL BE DONE BY THE CONTRACTOR. THE CONTRACTOR SHALL CHECK LAYOUT OF MARKERS & STRIPING WITH THE ENGINEER PRIOR TO PERFORMING WORK.
- FOR ADDITIONAL PAVEMENT MARKING DETAILS SEE SHT. DT-300.

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

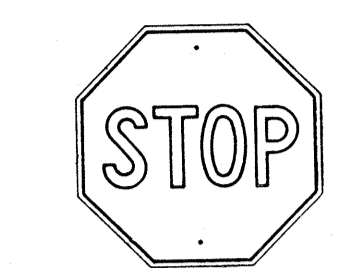


2/2/78	REVISED DETAILS
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TYPICAL DETAILS MISCELLANEOUS PAVEMENT MARKINGS	
NOT TO SCALE	
SHEET NO. 4 OF 10 SHEETS	

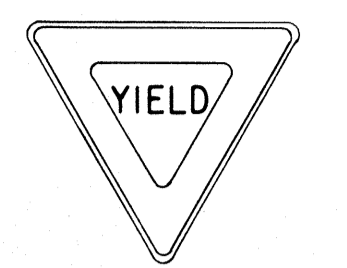
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

ADD73

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) FF-078-1(17)	1977	74	164



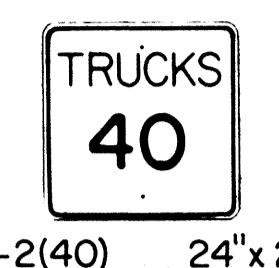
R1-1 30" x 30"
R1-1-A 36" x 36"
4-WAY
R1-3 12" x 6"
R1-3-A 18" x 9"



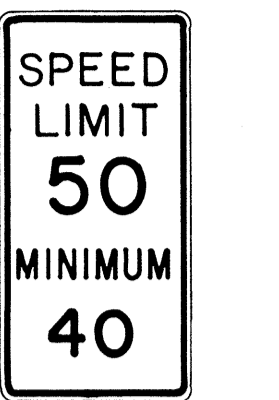
R1-2 36" x 36" x 36"
R1-2-A 48" x 48" x 48"



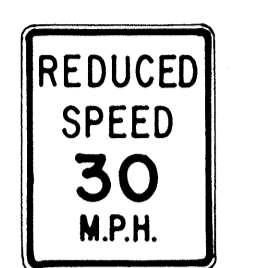
R2-1(50) 24" x 30"
R2-1(50)-A 48" x 60"



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"



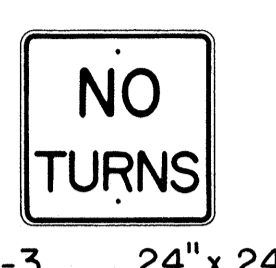
R2-5b(30) 24" x 30"
R2-5b(30)-A 48" x 60"



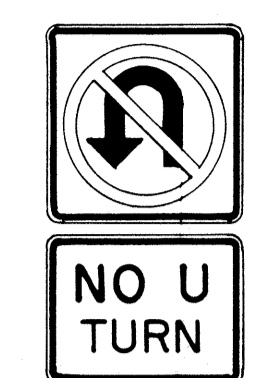
R3-1 24" x 24"
R3-1-A 48" x 48"
48" x 36"



R3-2 24" x 24"
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"
R3-4-A 48" x 48"
48" x 36"



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



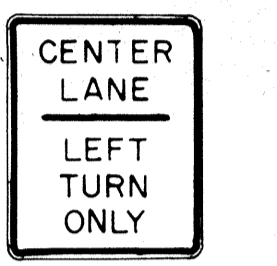
R3-6(L) 30" x 36"
R3-6(L)-A 48" x 60"



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"



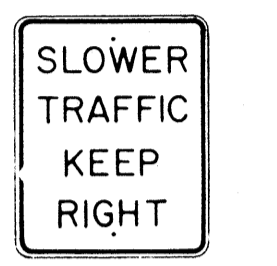
R3-9 24" x 30"



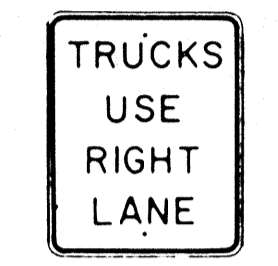
R4-1 24" x 30"



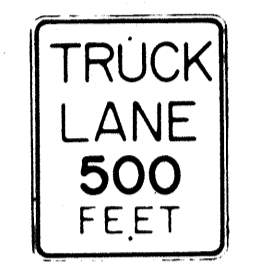
R4-2 24" x 30"



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



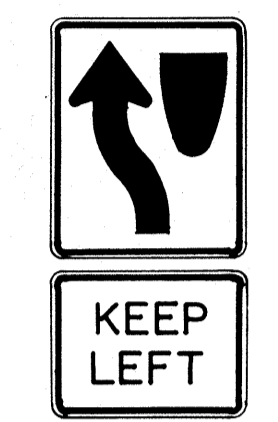
R4-5 24" x 30"



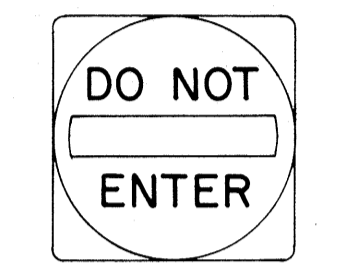
R4-6(500) 24" x 30"



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



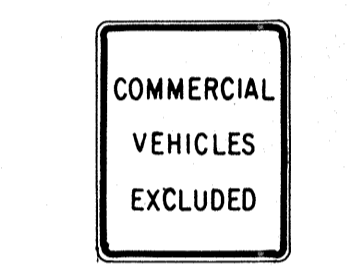
R4-8 24" x 30"
24" x 18"



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



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



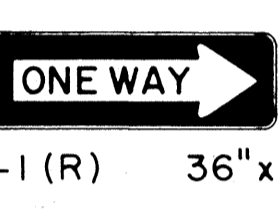
R5-4 24" x 30"



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



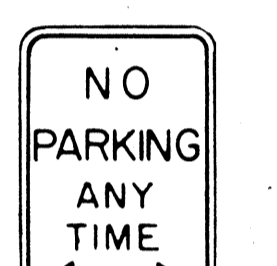
R5-9 36" x 24"



R6-1(R) 36" x 12"



R6-2(R) 18" x 24"



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



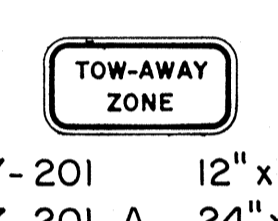
R7-4 12" x 18"
R7-4-A 24" x 30"



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"



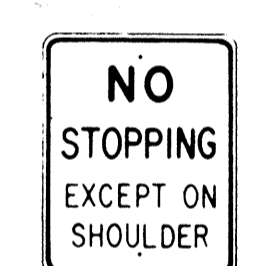
R8-3 24" x 30"



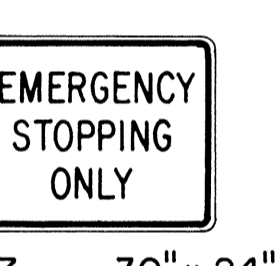
R8-4 30" x 24"
R8-4-A 48" x 36"



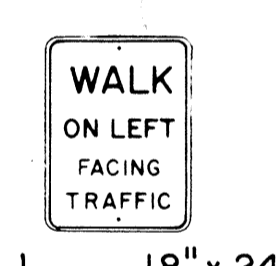
R8-5 24" x 30"



R8-6 24" x 30"



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



R9-1 18" x 24"



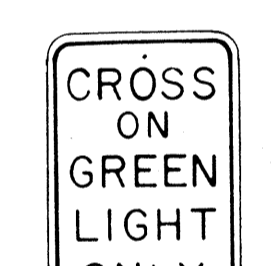
R9-2 12" x 18"



R9-3 12" x 18"



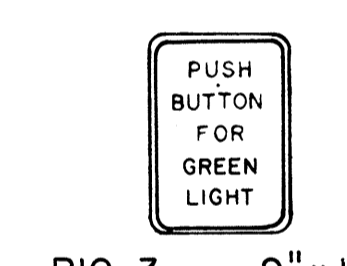
R9-4 18" x 24"



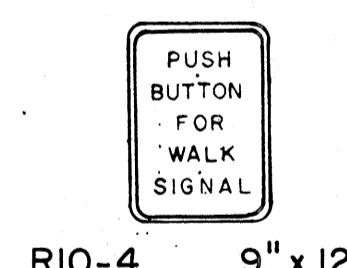
R10-1 12" x 18"



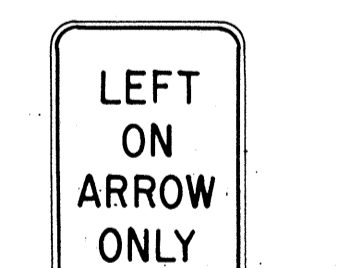
R10-2 12" x 18"



R10-3 9" x 12"



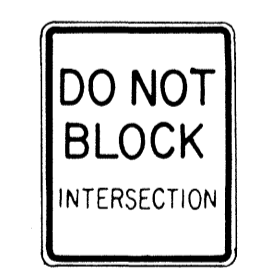
R10-4 9" x 12"



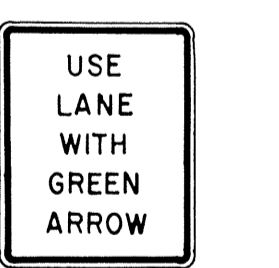
R10-5 24" x 30"



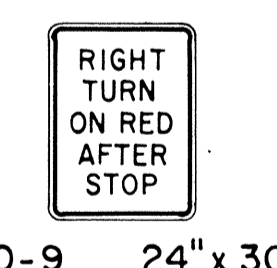
R10-6 24" x 36"



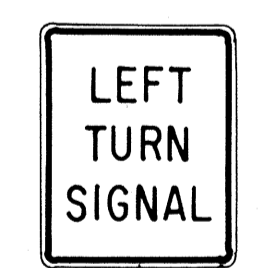
R10-7 24" x 30"



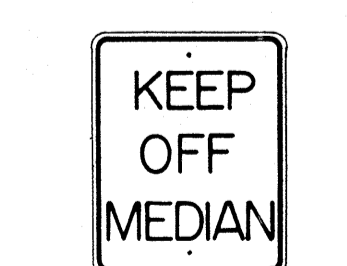
R10-8 24" x 30"



R10-9 24" x 30"



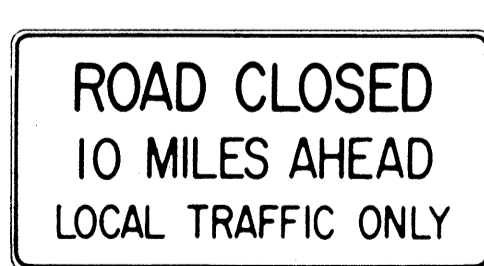
R10-10 24" x 30"



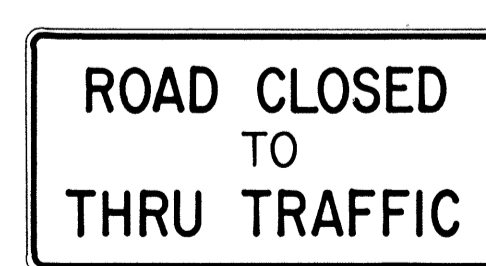
R11-1 24" x 30"



R11-2 48" x 30"



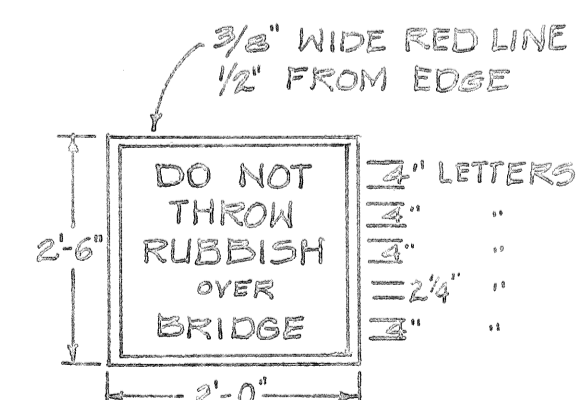
R11-3(10) 60" x 30"



R11-4 60" x 30"



R12-1(10) 24" x 30"



GENERAL NOTES

1. 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.
2. All regulatory signs shall be reflectorized unless otherwise specified.
3. All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.
4. Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

APPROVAL RECOMMENDED:
Etsuki Tanaka 3/17/72
TRAFFIC ENGINEER DATE

APPROVED:
Robert J. Roberts 3-20-72
ASSISTANT CHIEF, ENGINEERING 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.	10/16/74

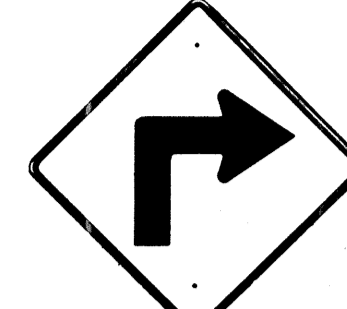
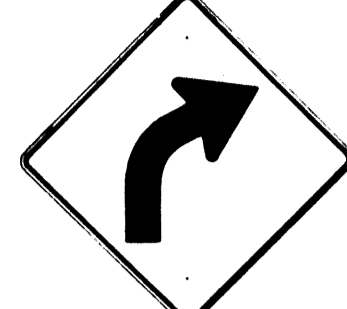
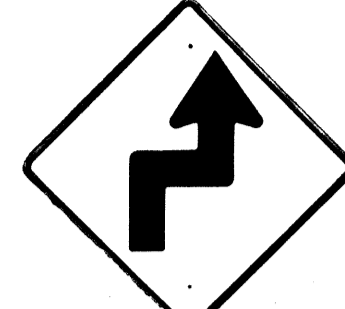


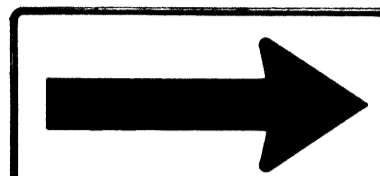
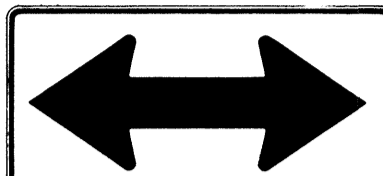
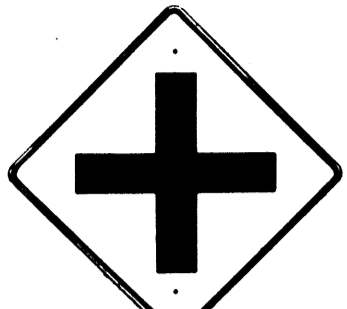
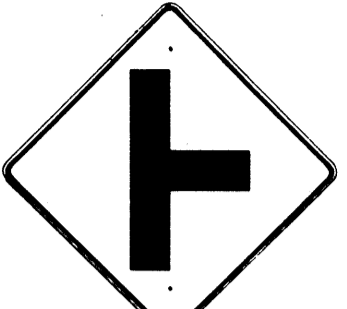
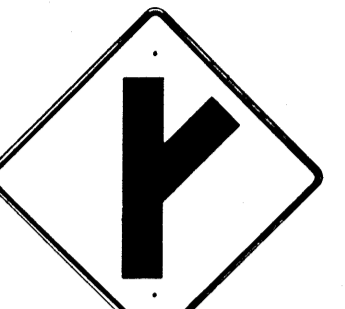
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

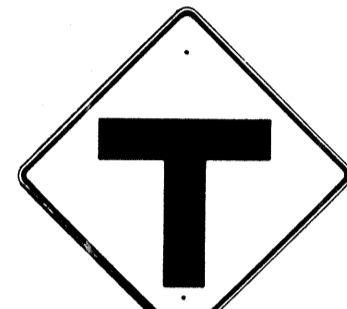
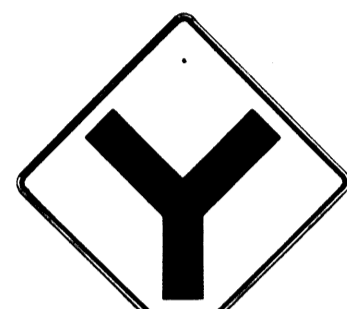


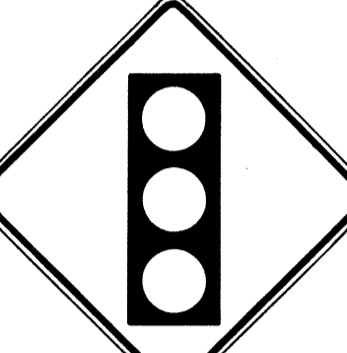

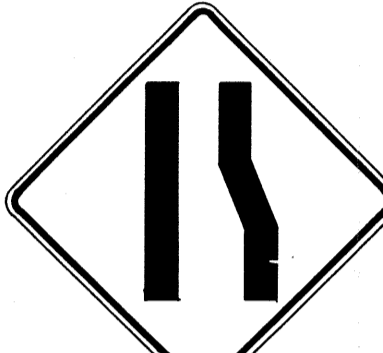



**STANDARD DETAILS
REGULATORY SIGNS**











NOT TO SCALE
SHEET No. 5 OF 10 SHEETS DT 101








ORIGINAL PLAN
DESIGNED BY
CHECKED BY
DATE

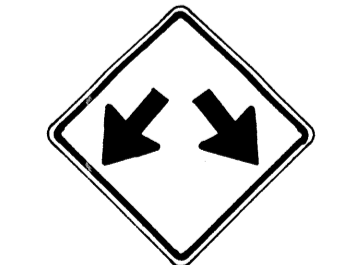



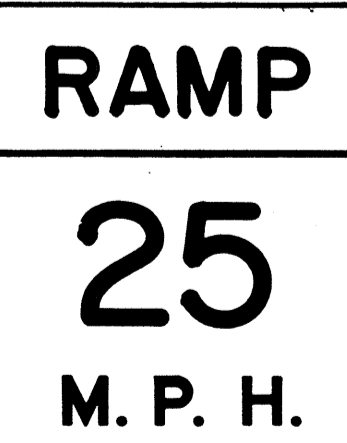


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII*	HAW.	FF-078-1(17) F-FF-078-1(17)	1977	75	164

 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"
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 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"
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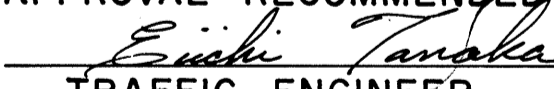
 W6-1 36"x36" 24"x18"	 W6-2 36"x36" 24"x18"	 W6-3 30"x30" 24"x18" W6-3-A 36"x36" 24"x18" W6-3-B 48"x48" 24"x18"	 W7-1 30"x30" 24"x18" W7-1-A 36"x36" 24"x18"	 W7-2 24"x18"	 W8-1 30"x30" W8-1-A 36"x36"	 W8-2 30"x30" W8-2-A 36"x36"	 W8-3 30"x30" W8-3-A 36"x36"	 W8-4 30"x30" W8-4-A 36"x36"	 W8-5 30"x30" 24"x18" W8-5-A 36"x36" 24"x18"
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 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"
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 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"x48"
--	---	--	--	--	--	--

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.T.	3/20/72
2	Revised General Note 1	H.T.	10/16/74
3	Revised General Note 5	M	9-16-75
4	Revised General Note 5	H.T.	9-14-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

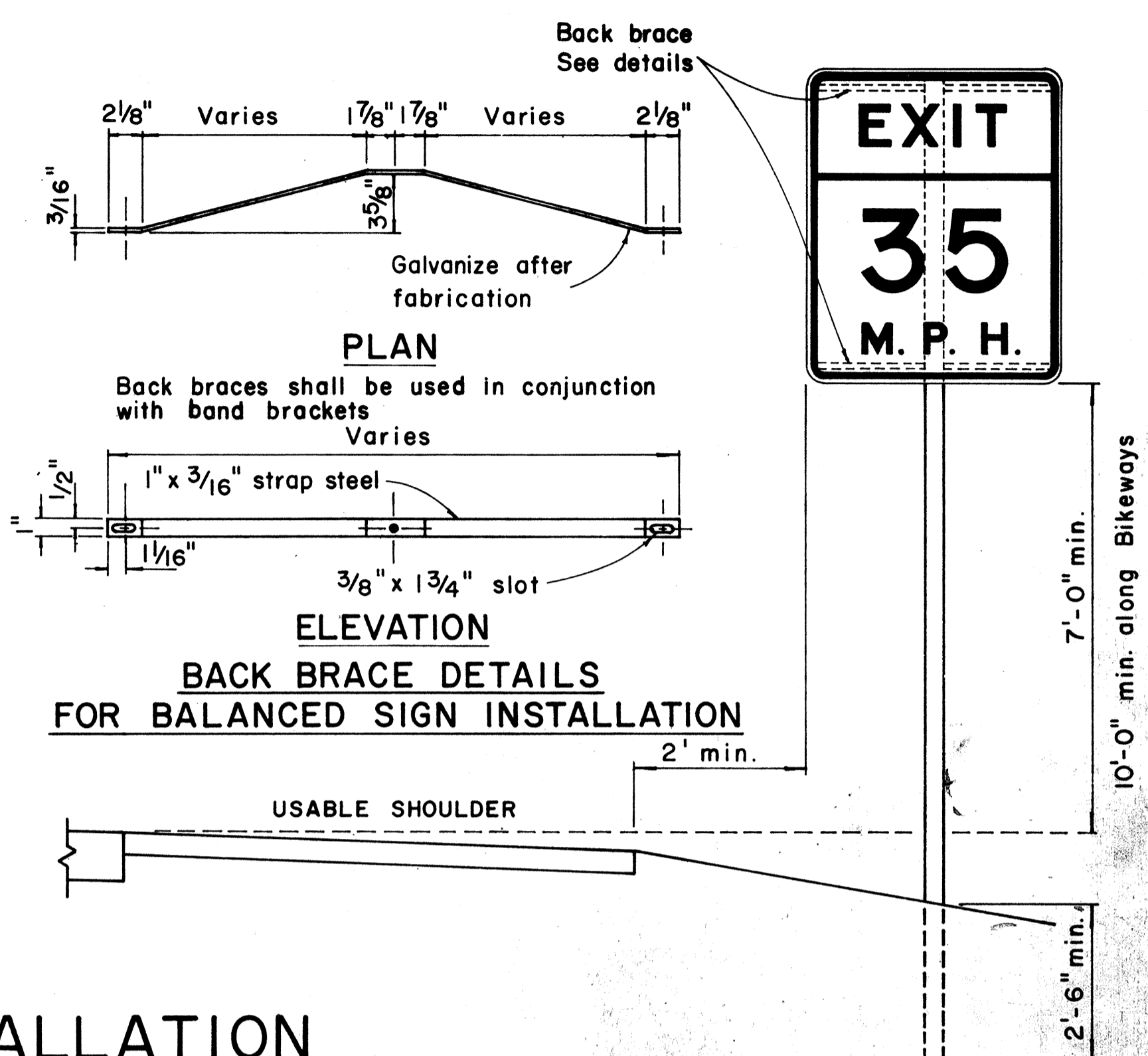
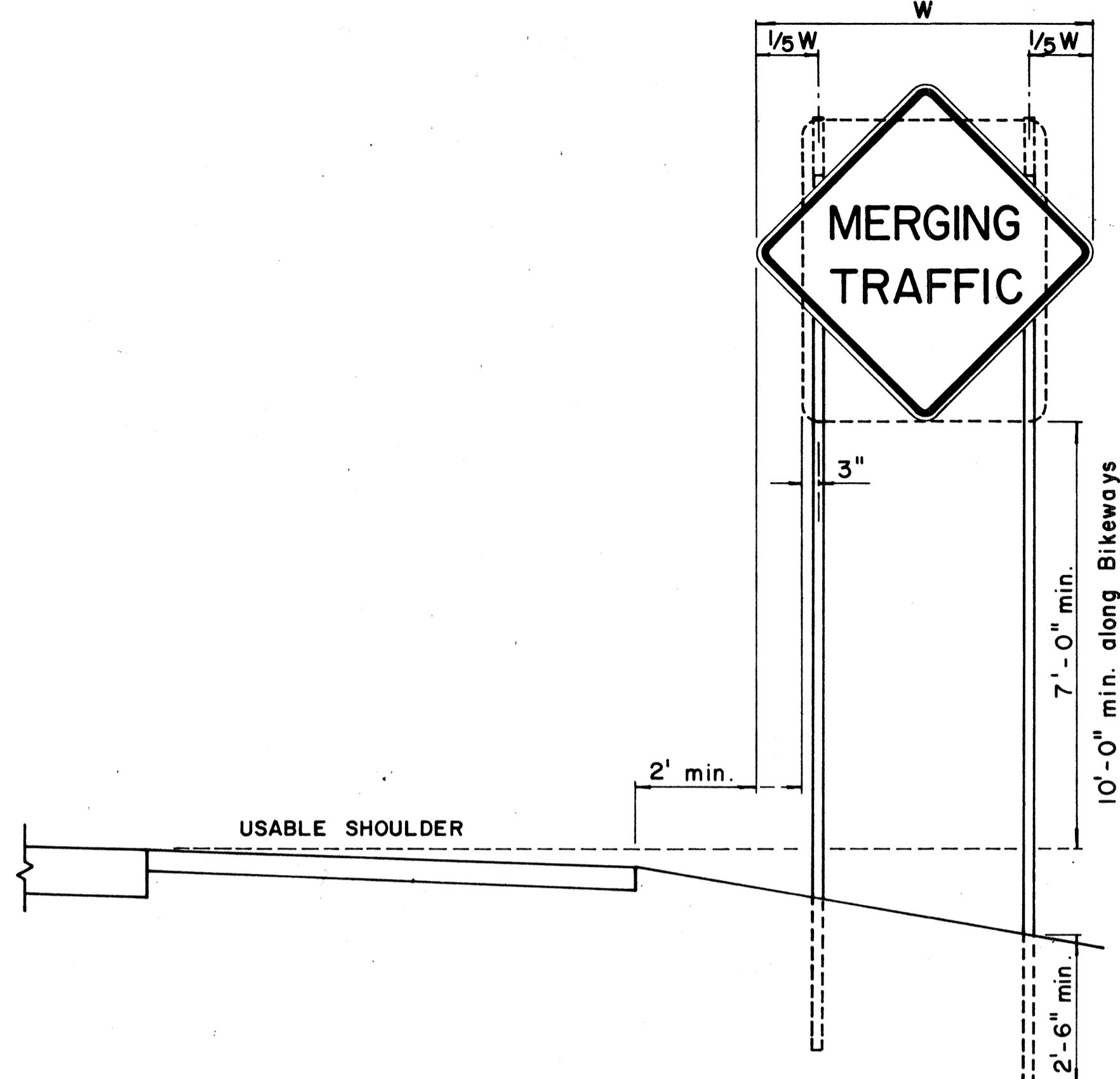
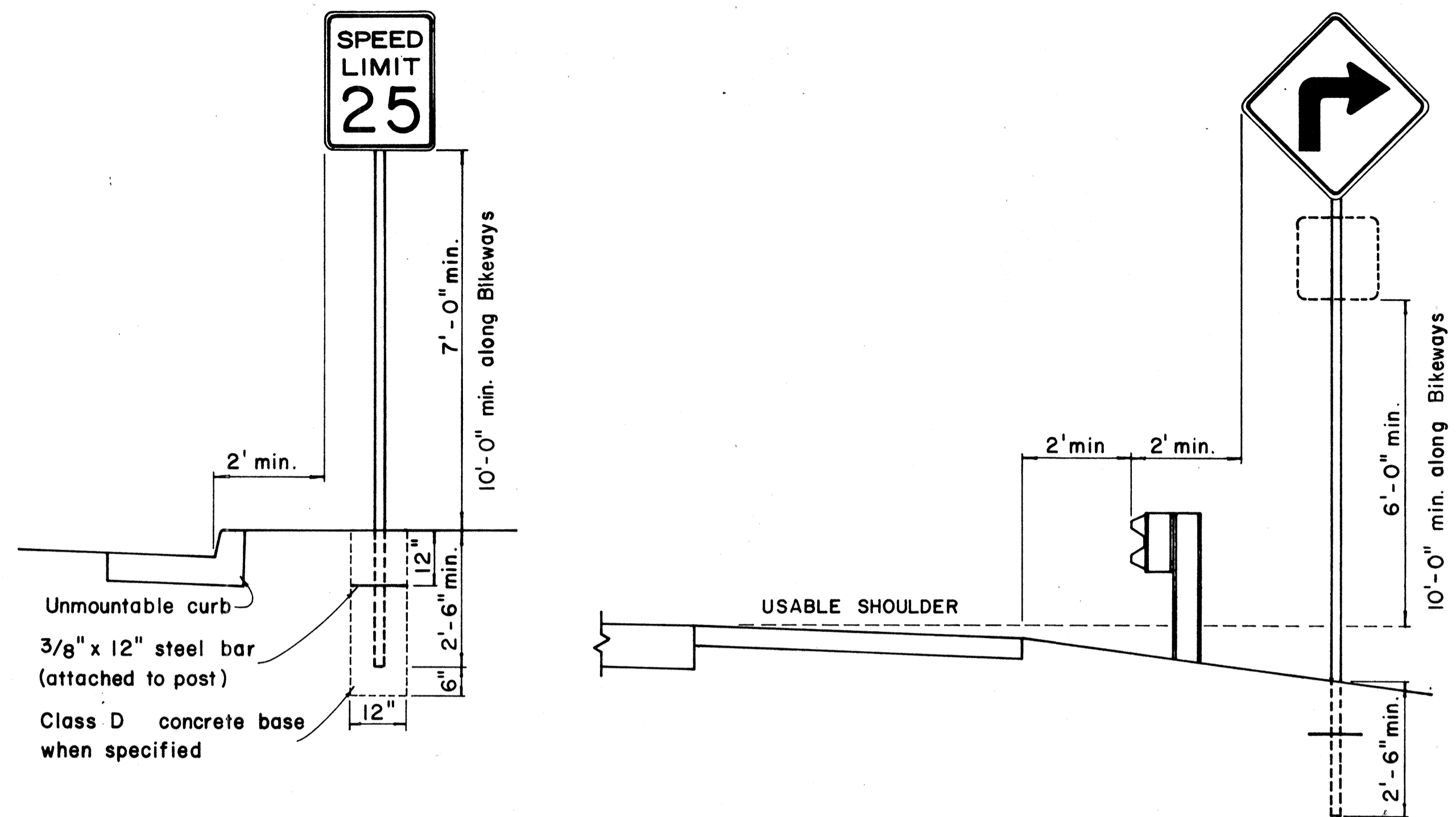
STANDARD DETAILS
WARNING SIGNS

NOT TO SCALE

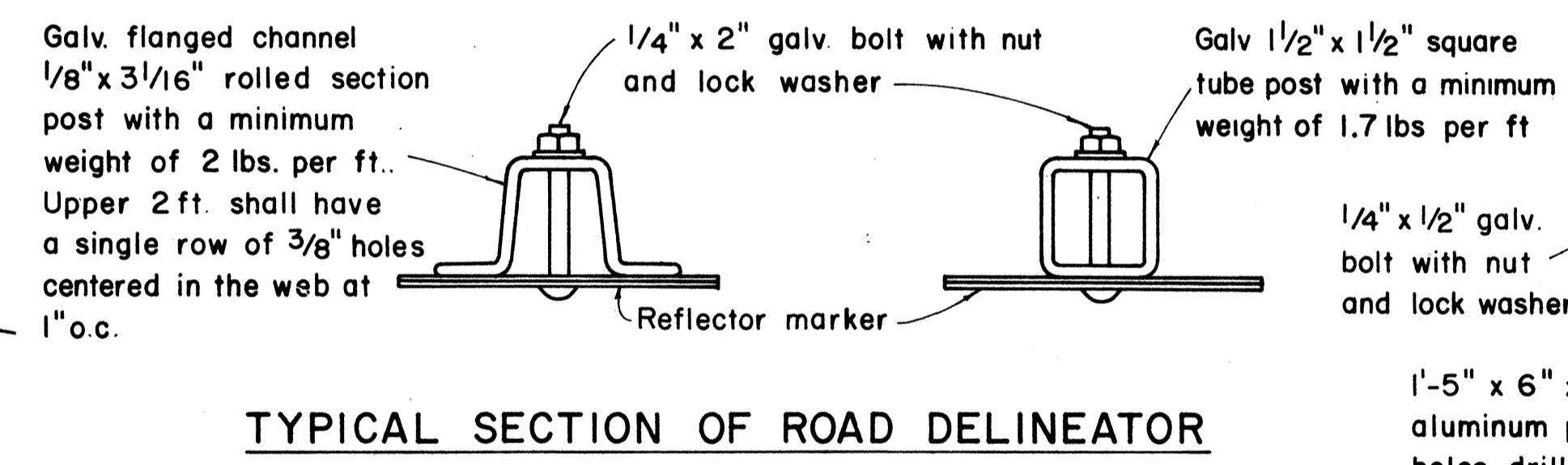
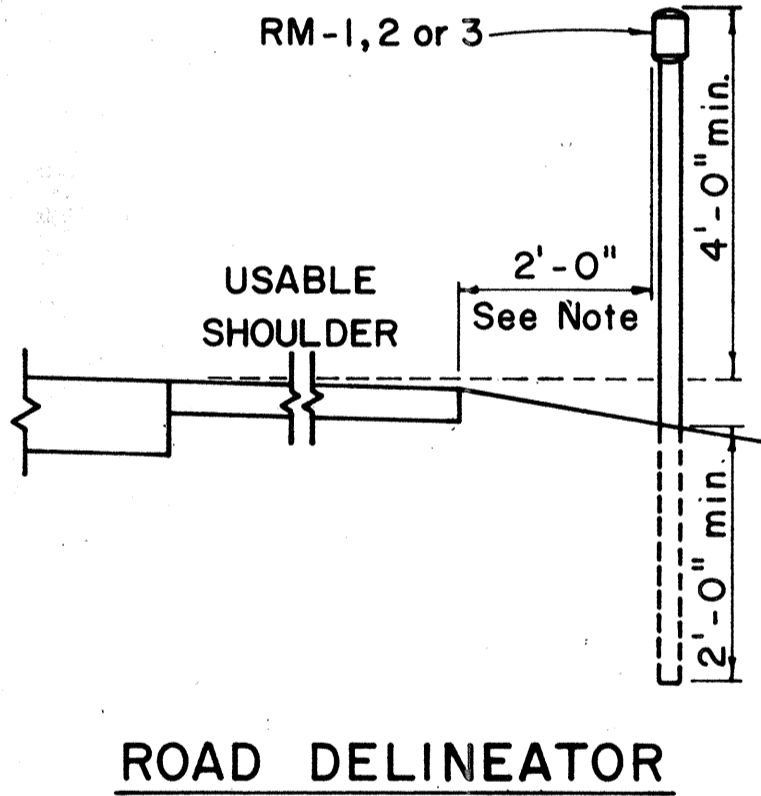
SHEET No. 6 OF 10 SHEETS DT 102

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

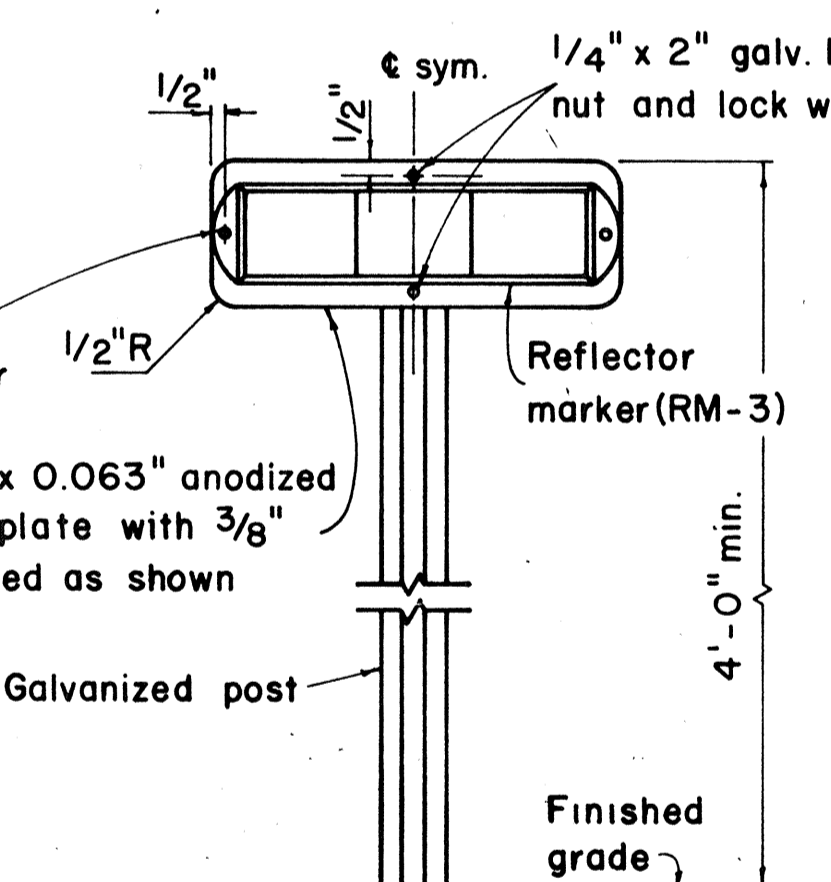
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) FF-078-1(18)	1977	76	164



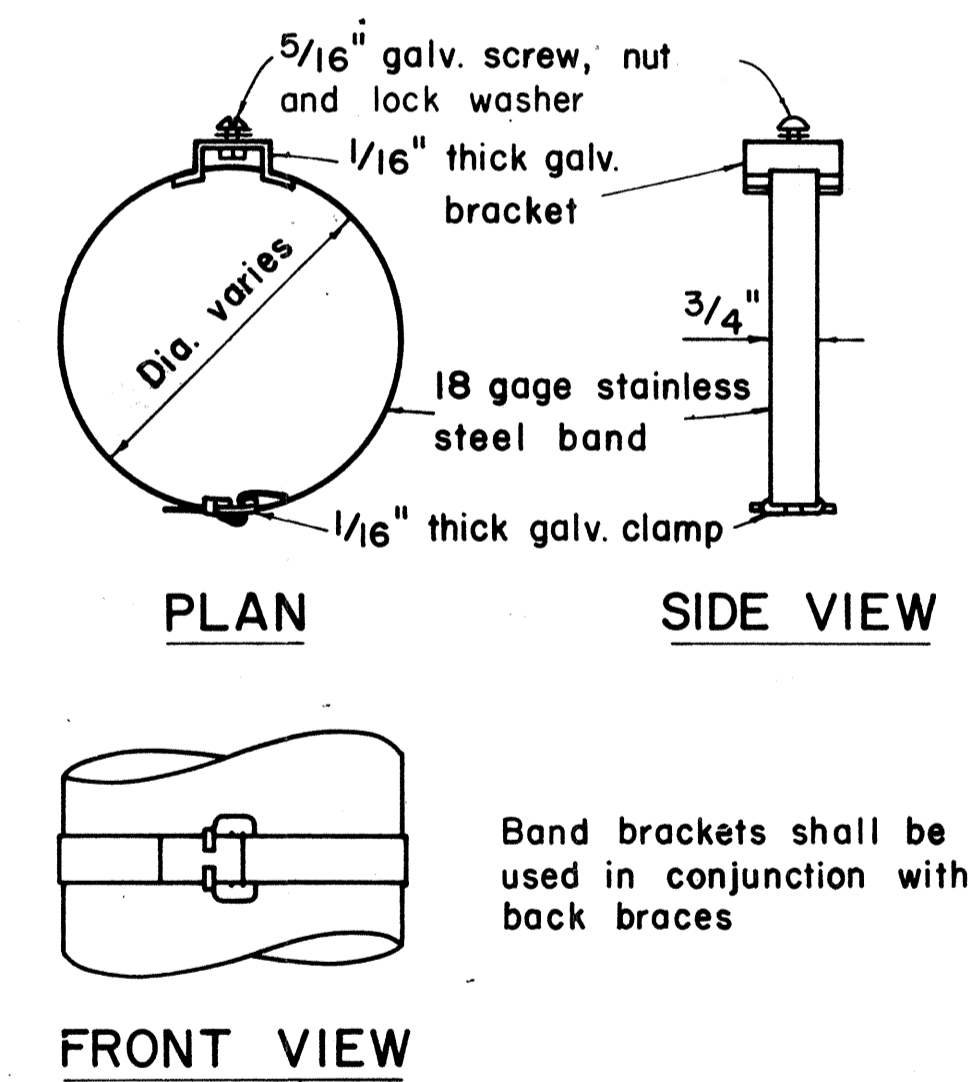
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL HORIZONTAL REFLECTOR MARKER RM-3H



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

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

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

APPROVED:
[Signature] 12-29-69
 ASSISTANT CHIEF, ENGINEERING DATE

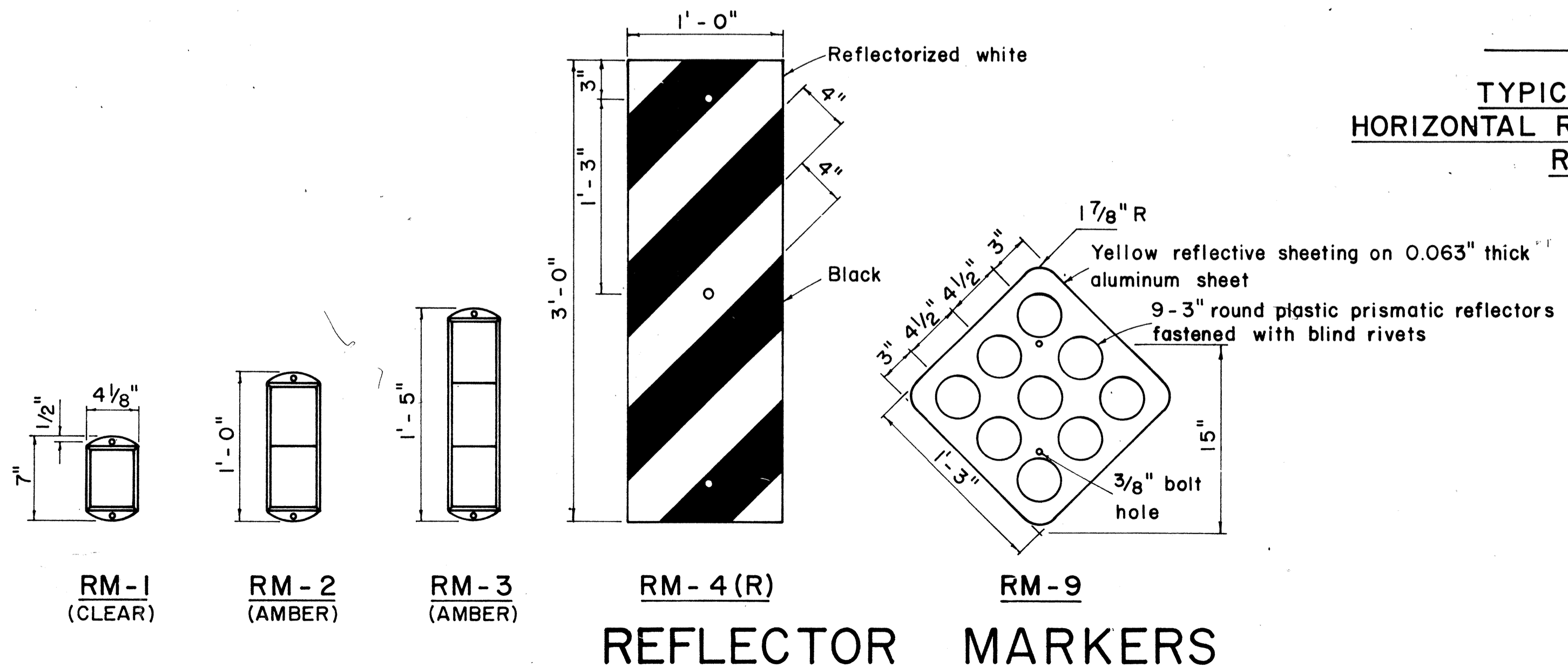
NO.	REVISION	APPROVED BY	DATE
1.	Revised Details.	H.L.	9-14-76

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

SHEET No. 7 OF 19 SHEETS DT 100



REFLECTOR MARKERS

DATE	
DESIGNED 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.	FF-078-1(17) F.F.F-078-1(17)	1977	77	164



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"



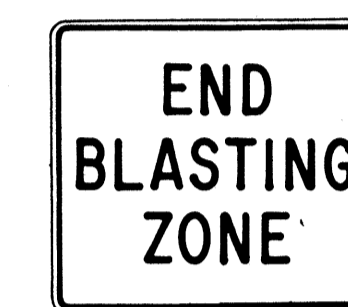
CW21-6 30" x 30"



CW22-1b 48" x 48"



CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



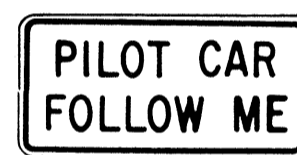
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



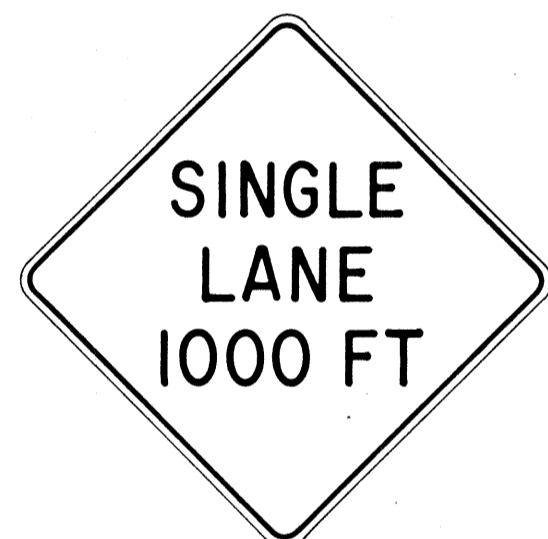
CM4-10(R) 48" x 18"



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.

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

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

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	M.H.	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	H.T.	9-14-76

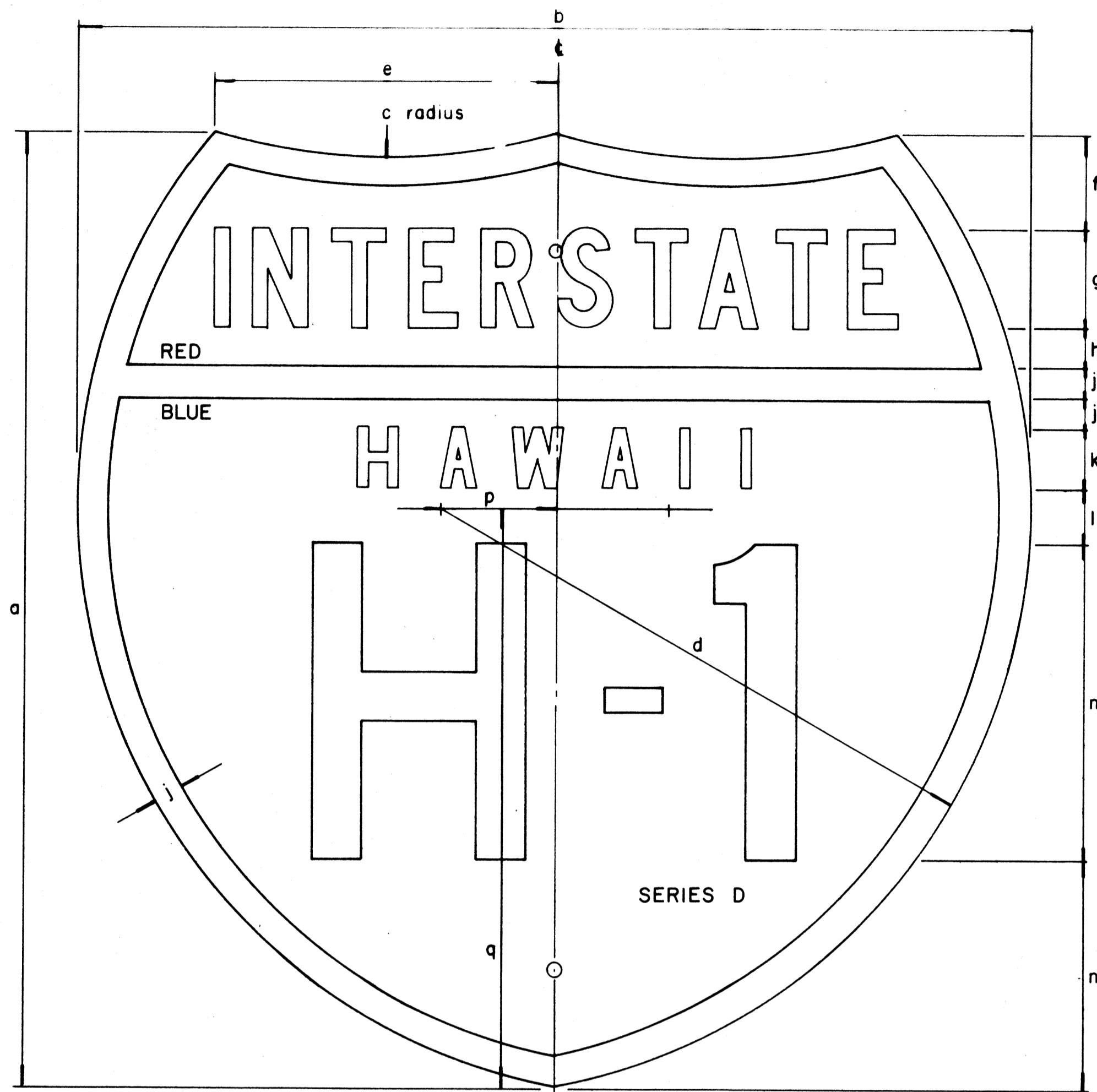
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

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

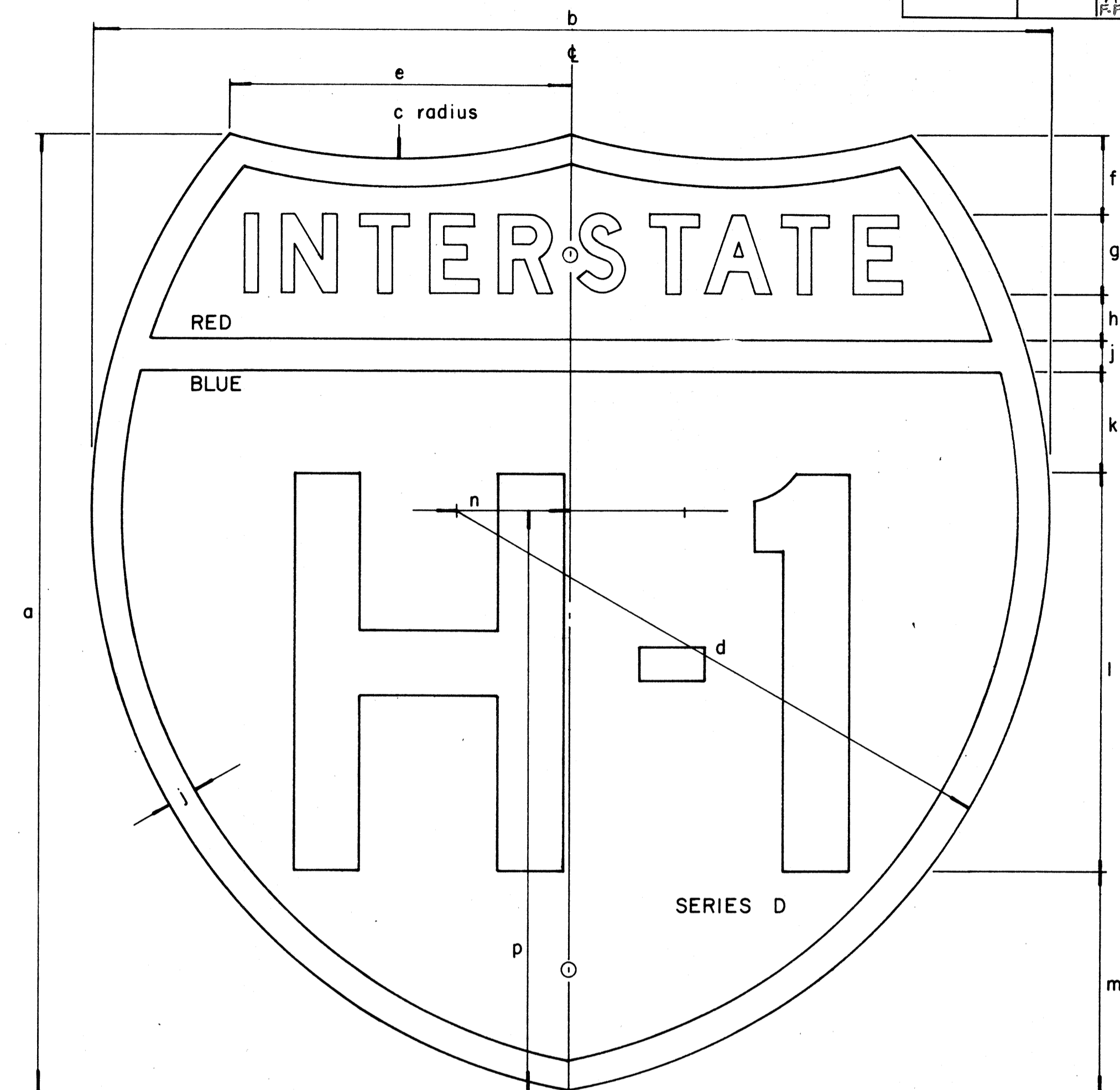
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-117 RFF-078-117	1977	78	164



INTERSTATE ROUTE MARKER
IM-1()

INTERSTATE SHIELDS - INDEPENDENT USE

()	a	b	c	d	e	f	g	h	j	k	l	m	n	p	q
1	18	21	13 1/8	12 9/16	9 3/16	12 5/32	1 7/8 C	3/4	9/16	1 1/8 D	1 1/32	6	4 5/16	2 1/16	12 7/16
2	24	24	15	14 7/8	8 5/8	2 3/8	2 1/2 C	1	3/4	1 1/2 D	1 3/8	8	5 3/4	2 7/8	14 5/8
3	36	36	22 1/2	22 5/16	12 15/16	3 9/16	3 3/4 C	1 1/2	1 1/8	2 1/4 D	2 1/16	12	8 5/8	4 5/16	21 15/16



INTERSTATE ROUTE MARKER
IM-2()

INTERSTATE SHIELDS ON GUIDE SIGNS

()	a	b	c	d	e	f	g	h	j	k	l	m	n	p
2	24	24	15	14 7/8	8 5/8	2	2 D	1 3/16	3/4	2 9/16	10	5 1/2	2 7/8	14 5/8
3	36	36	22 1/2	22 5/16	12 15/16	3 7/16	3 C	1 5/16	1 1/8	3 1/8	15	9	4 5/16	21 15/16
4	48	48	30	29 3/4	17 1/4	4 3/4	5 C	2	1 1/2	4	18	12 3/4	5 3/4	29 1/4

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

GENERAL NOTES

1. 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.
2. All markers shall be reflectorized unless otherwise specified.
3. All markers shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.
4. The interstate Route Marker shall be cut-out shield, in a red, white and blue design as shown on the plans.

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

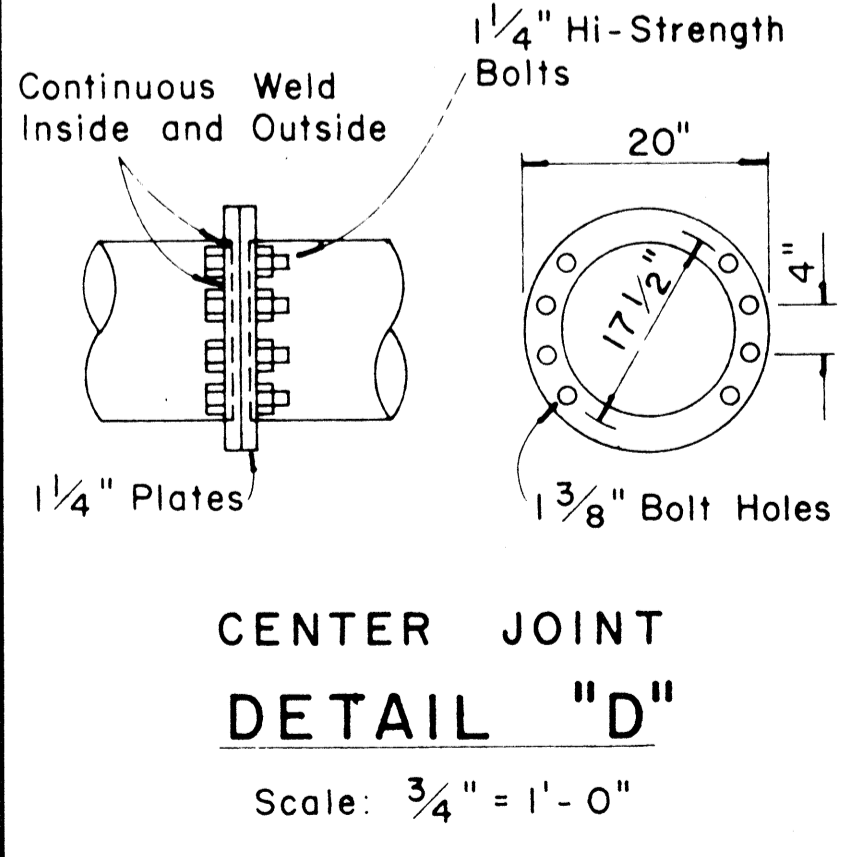
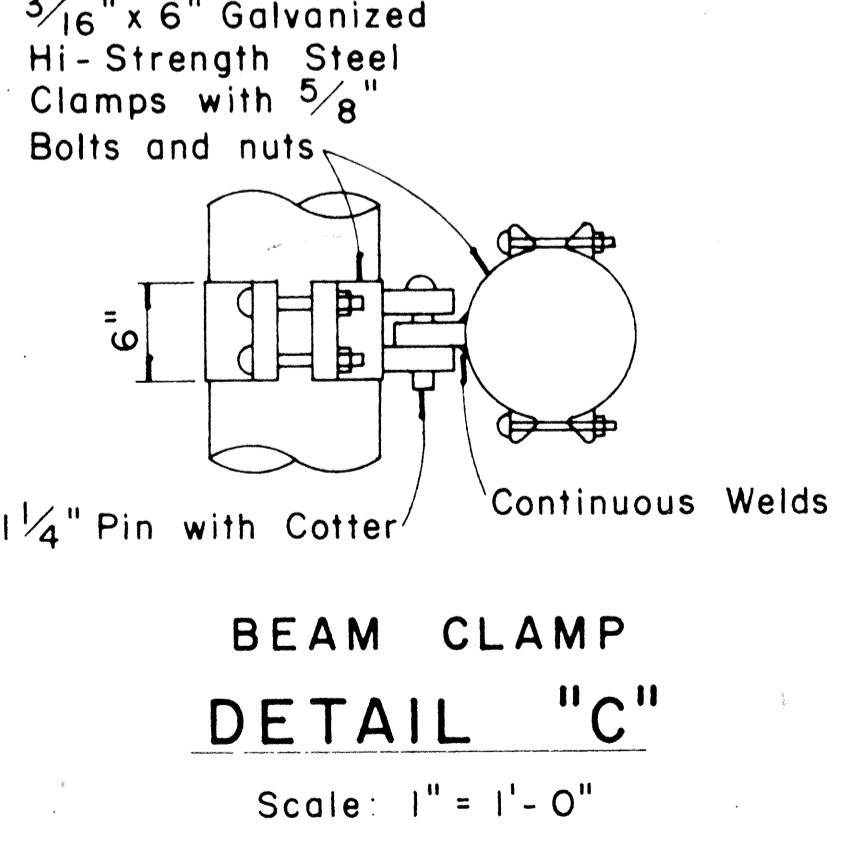
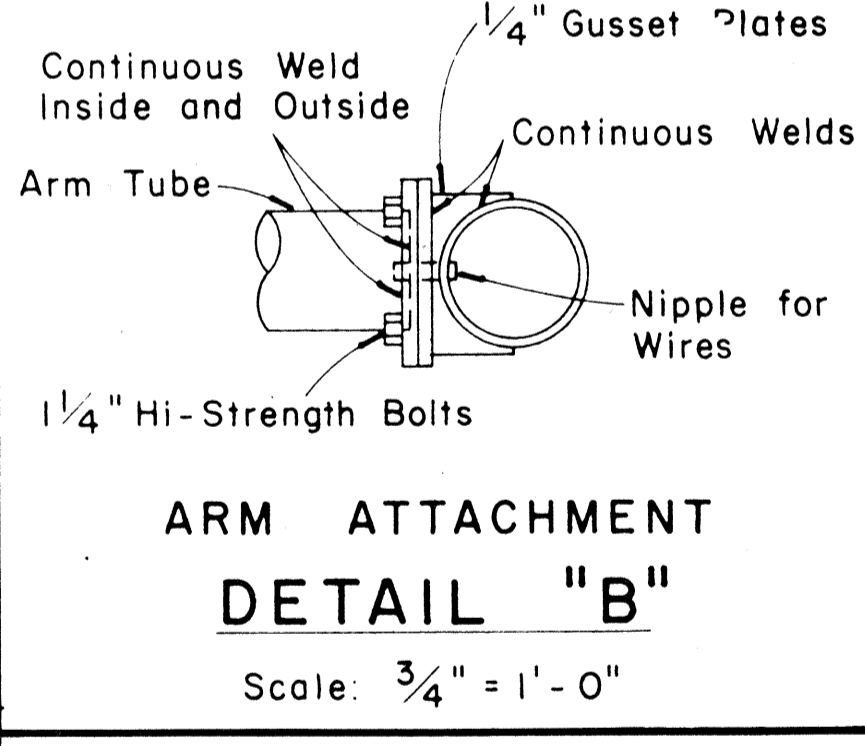
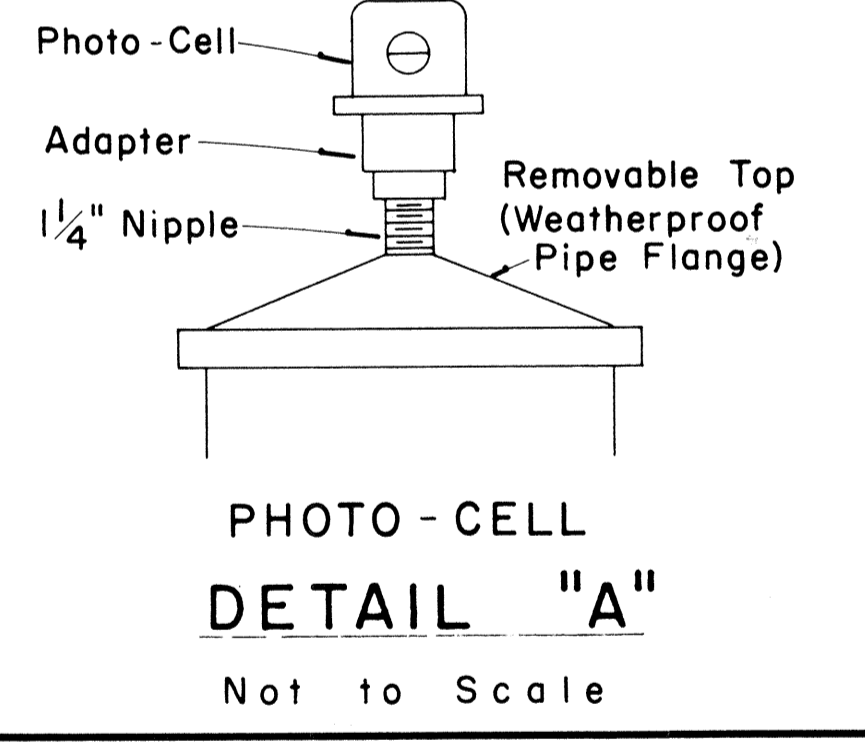
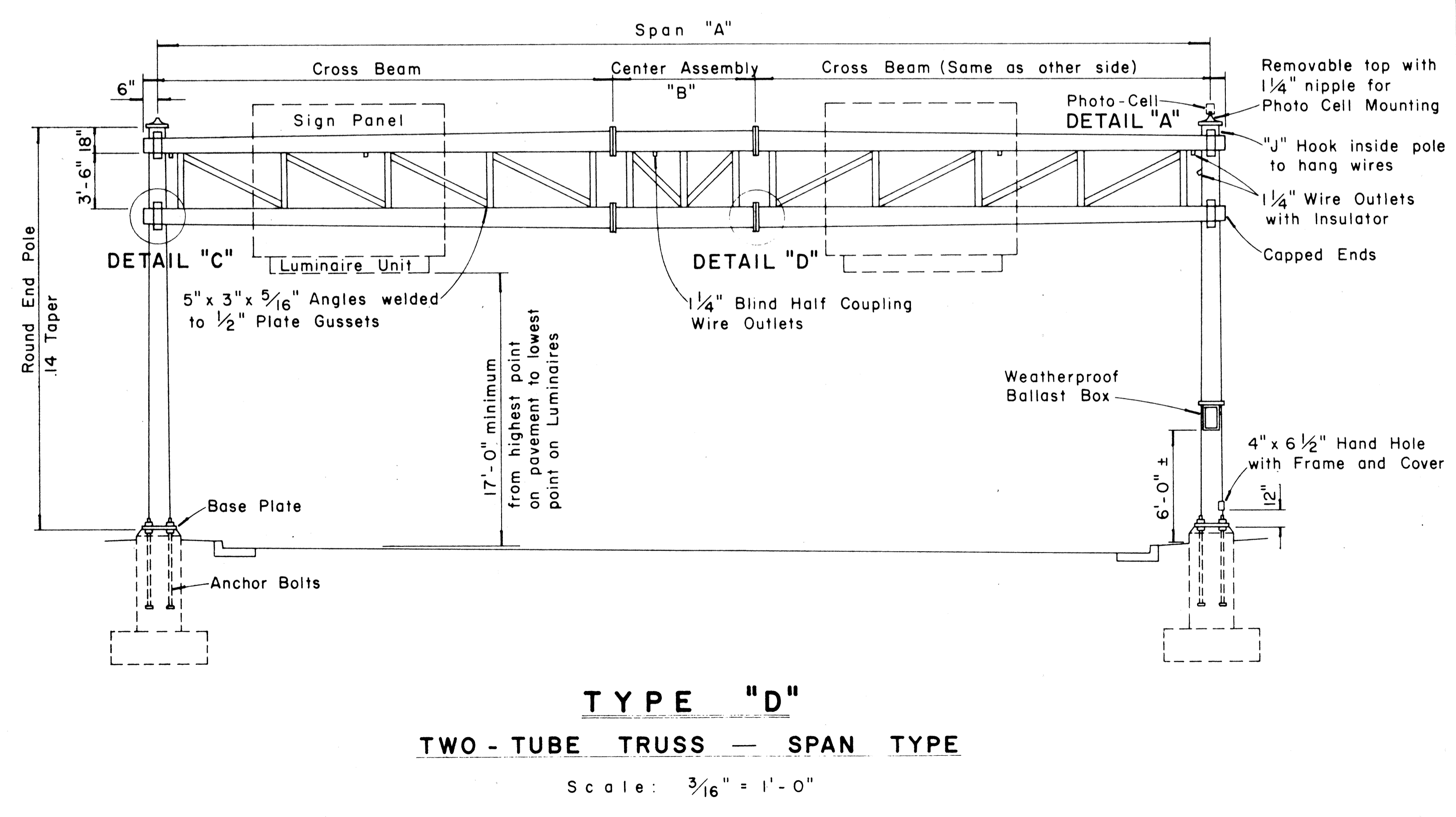
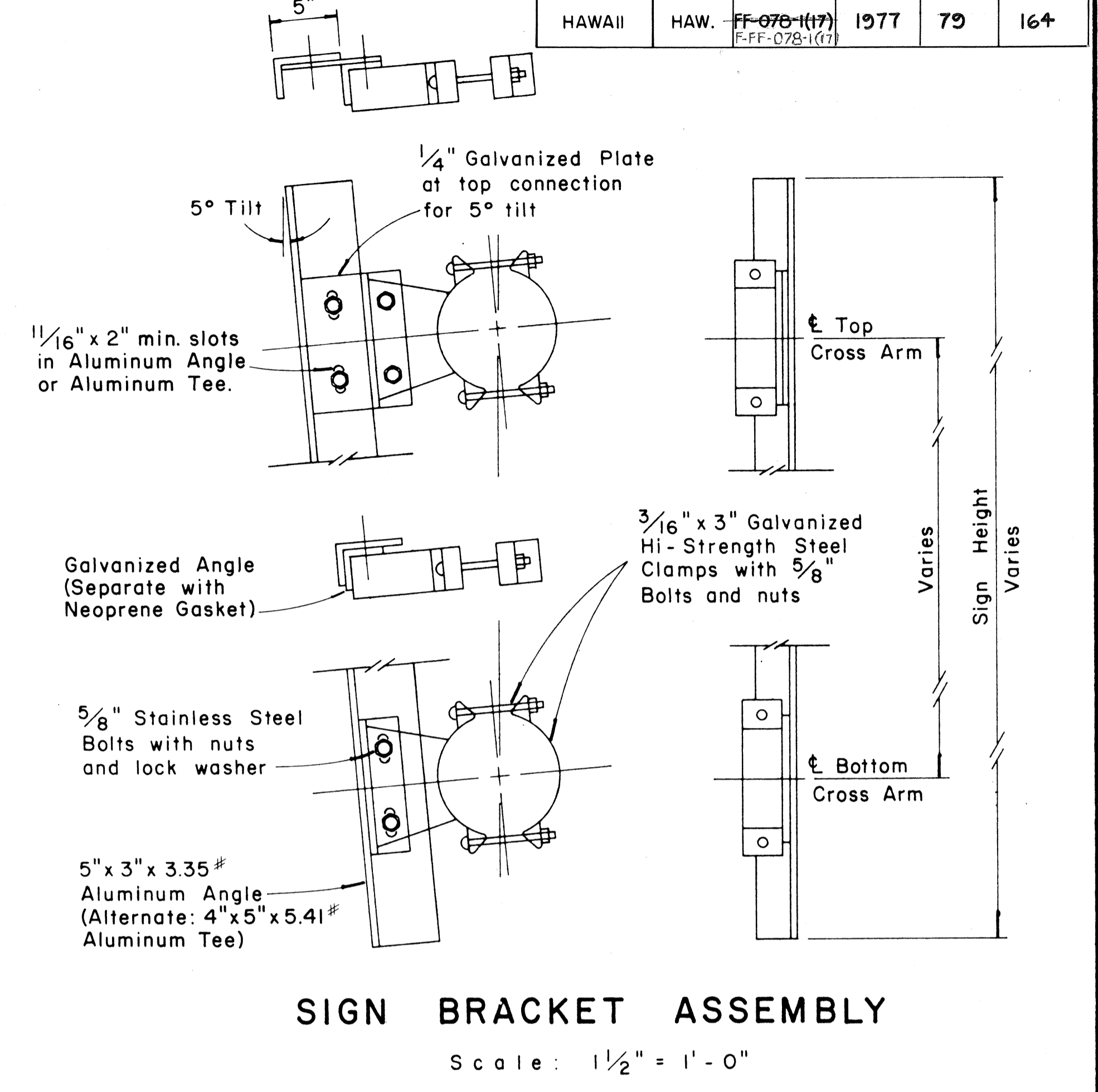
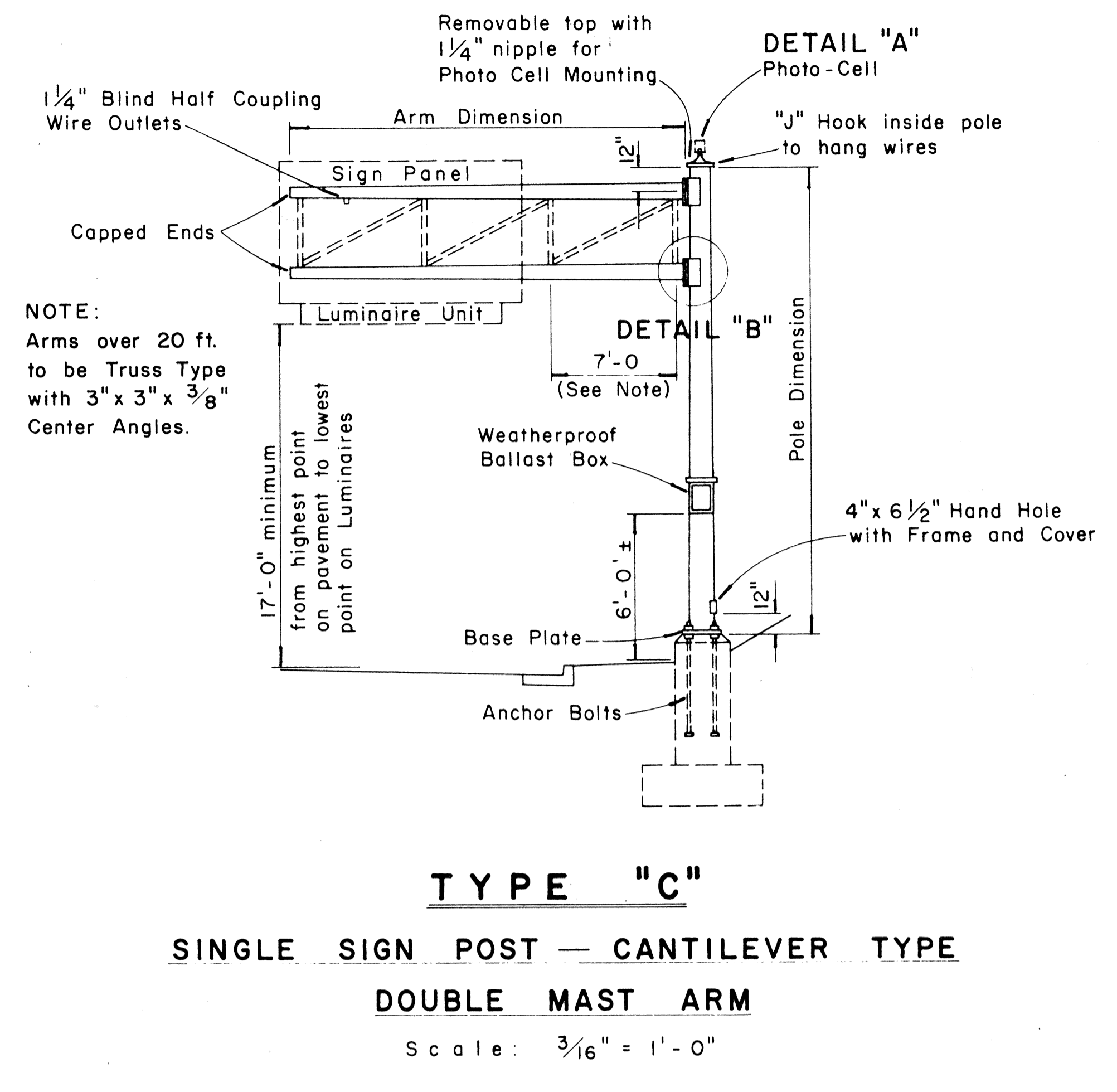
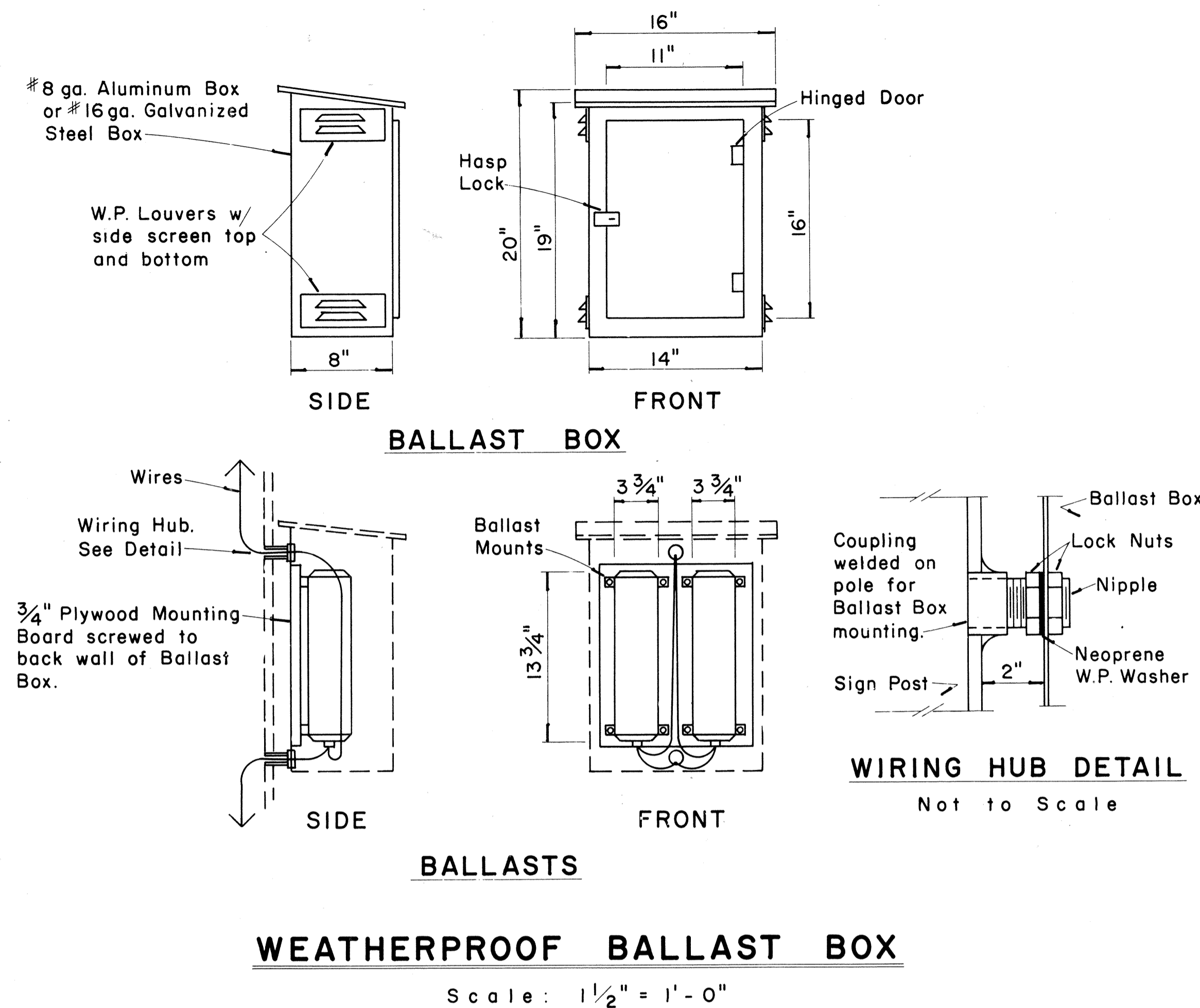
APPROVED:
John E. ...
 ASSISTANT CHIEF, ENGINEERING
 12-30-69
 DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised General Notes	H.K.	10/16/74

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
INTERSTATE ROUTE MARKERS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) F-F-078-1(17)	1977	79	164



APPROVAL RECOMMENDED:
Eishi Tanaka 12/27/69
 TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE

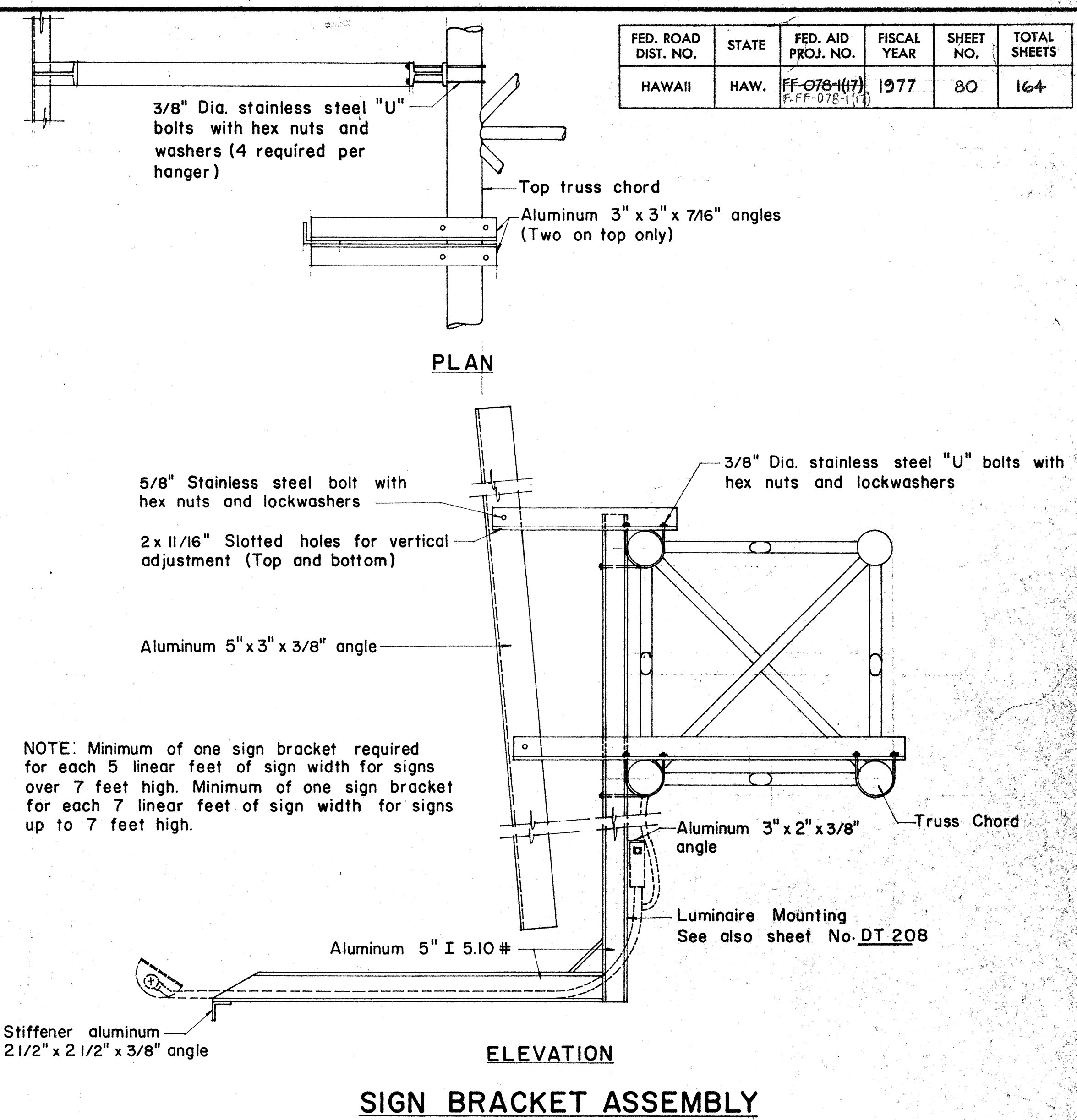
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
OVERHEAD SIGN SUPPORTS

Scale As Shown
 SHEET No. 10 OF 19 SHEETS DT 200

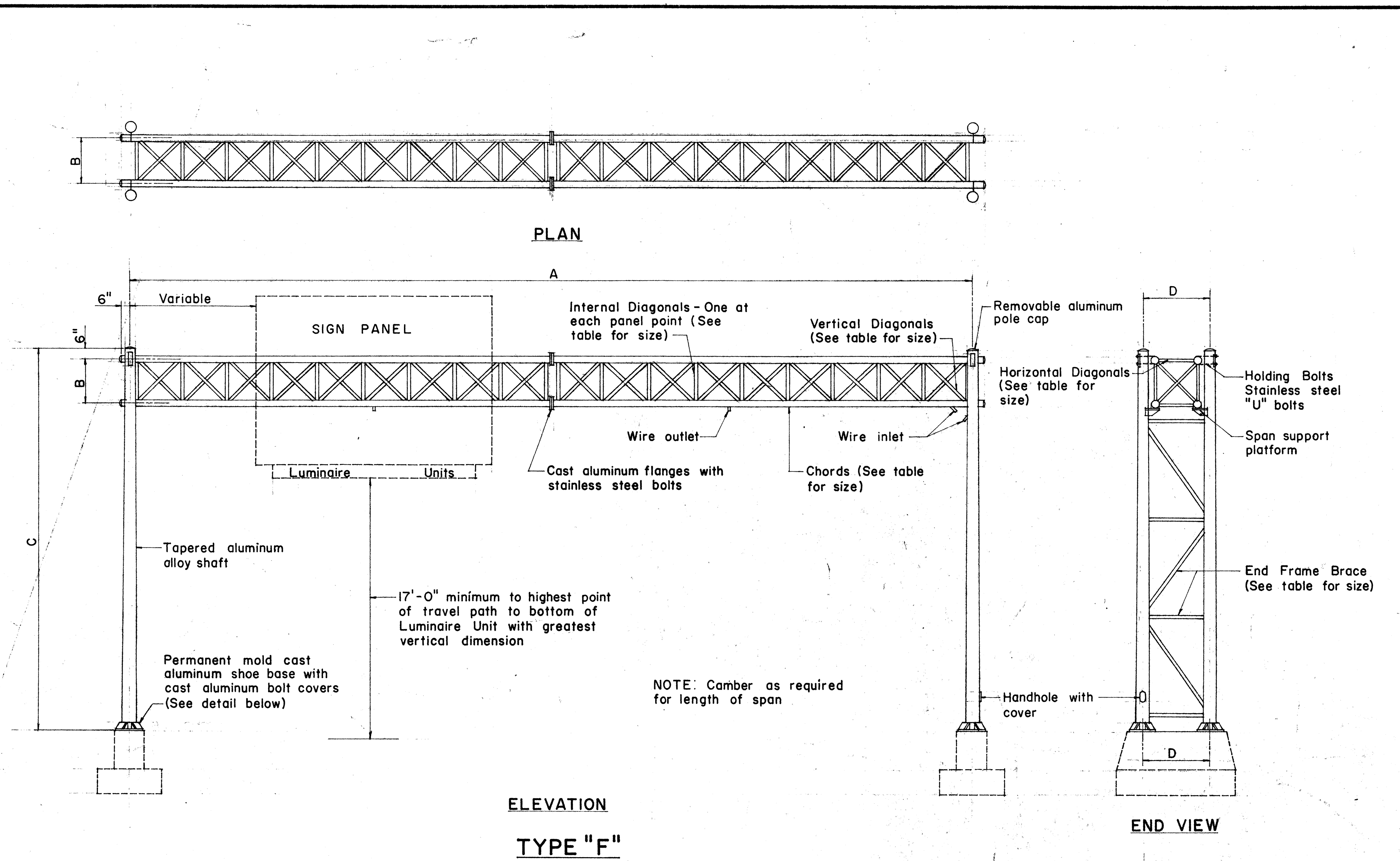
DATE
 SURVEY PLOTTED BY
 DRAWN BY
 CHECKED BY
 QUANTITIES BY
 NOTE BOOK
 No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) FF-078-1(1)	1977	80	164



NOTE: Minimum of one sign bracket required for each 5 linear feet of sign width for signs over 7 feet high. Minimum of one sign bracket for each 7 linear feet of sign width for signs up to 7 feet high.

SIGN BRACKET ASSEMBLY

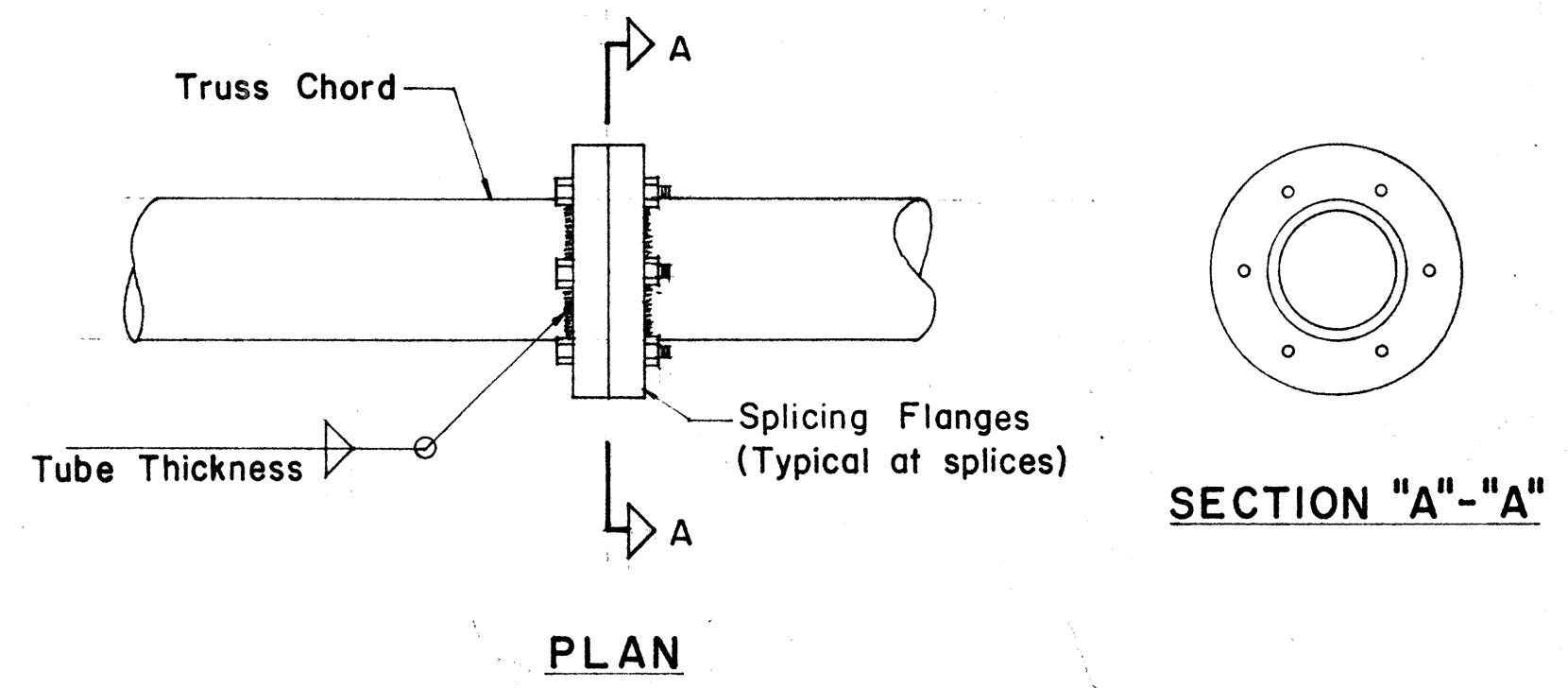


ELEVATION TYPE "F"

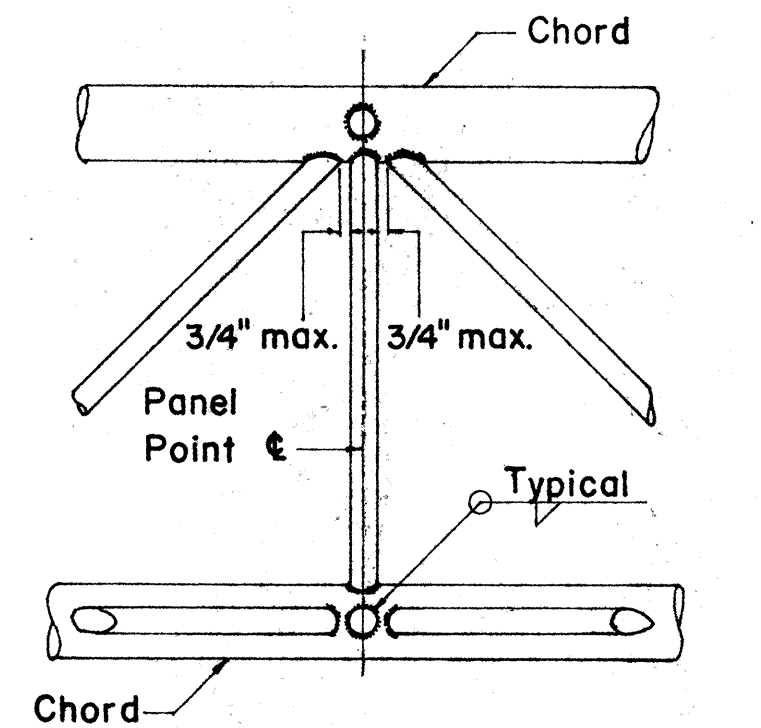
SIGN NO.	A	B	C	D	E	F	SPAN SECTIONS REQ'D.	CHORD SIZE	END FRAME SHAFT SIZE AND TAPER	VERTICAL DIAGONAL SIZE	HORIZONTAL DIAGONAL SIZE	INTERNAL DIAGONAL SIZE	END FRAME BRACE SIZE	BOLT CIRCLE DIA.	ANCHORAGE

APPROVAL RECOMMENDED:
Etschi Tanaka 12/20/69
 TRAFFIC ENGINEER DATE
 APPROVED:
John J. ... 12-20-69
 ASSISTANT CHIEF, ENGINEERING DATE

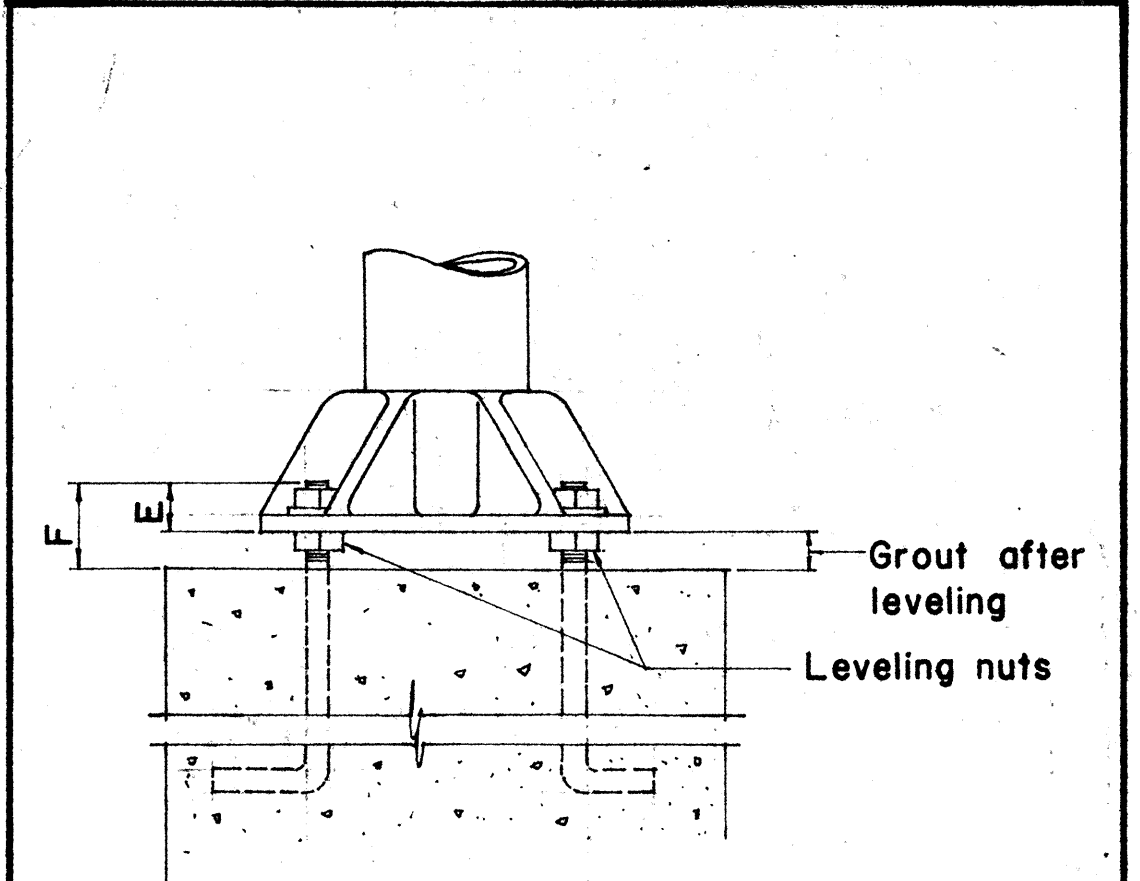
DATE: _____
 CHECKED BY: _____
 DESIGNED BY: _____
 DRAWN BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 No. _____



DETAIL OF CHORD SPLICES



TYPICAL JOINT DET.
 NOTE: Fillet weld size to be tube thickness plus 1/16".

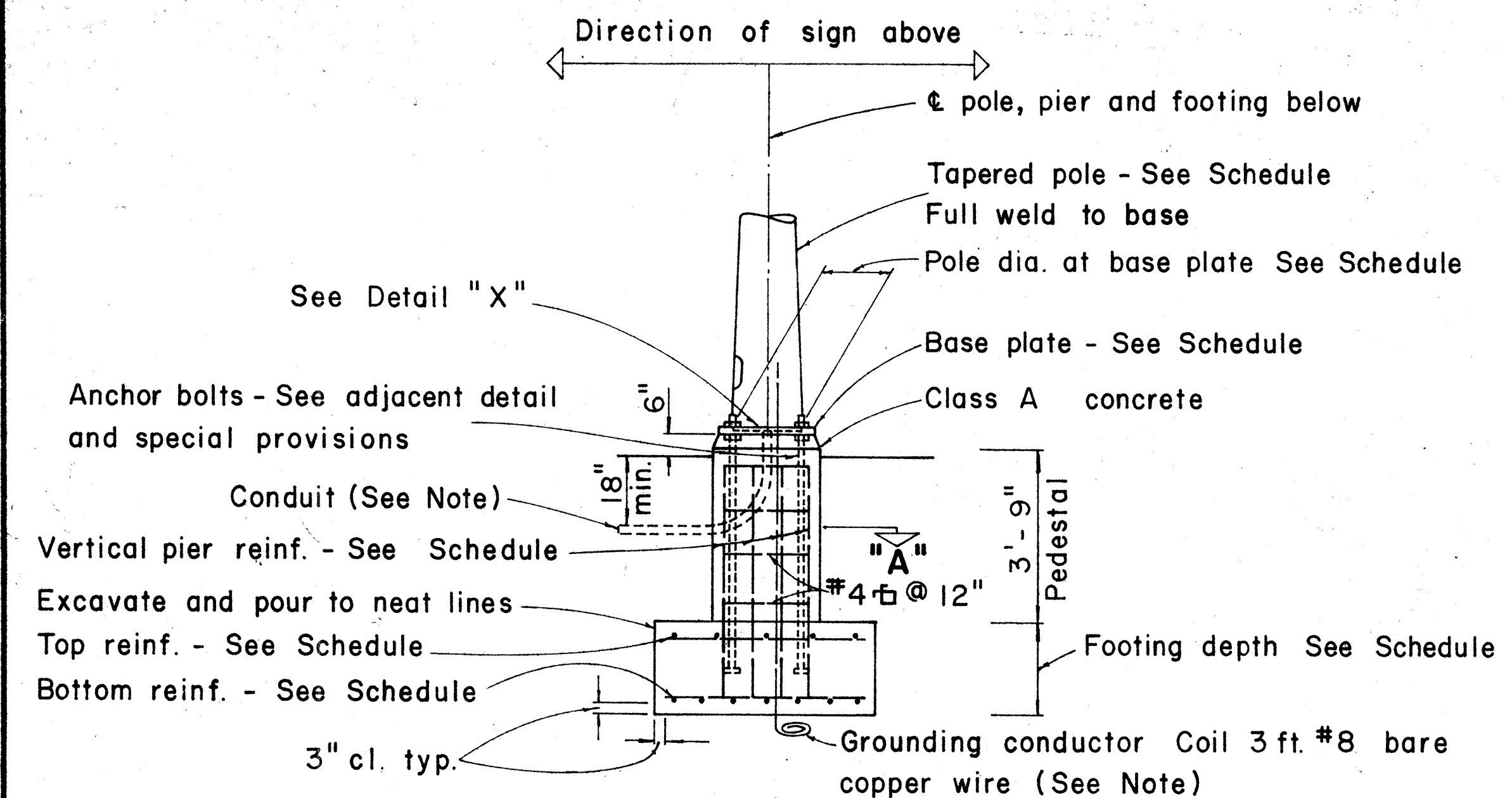


DETAIL OF BASE

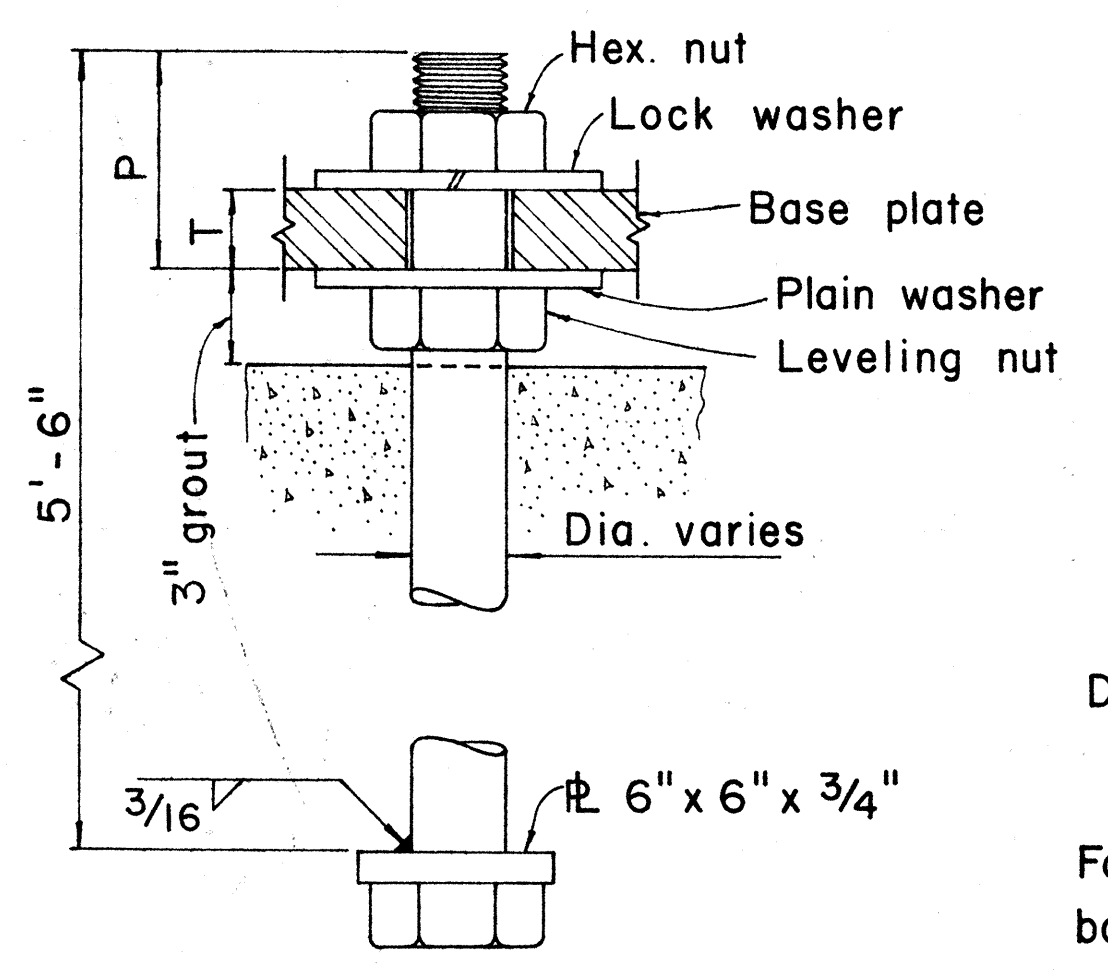
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
TYPE "F"
OVERHEAD SIGN SUPPORT
BOX TRUSS TYPE
ALUMINUM

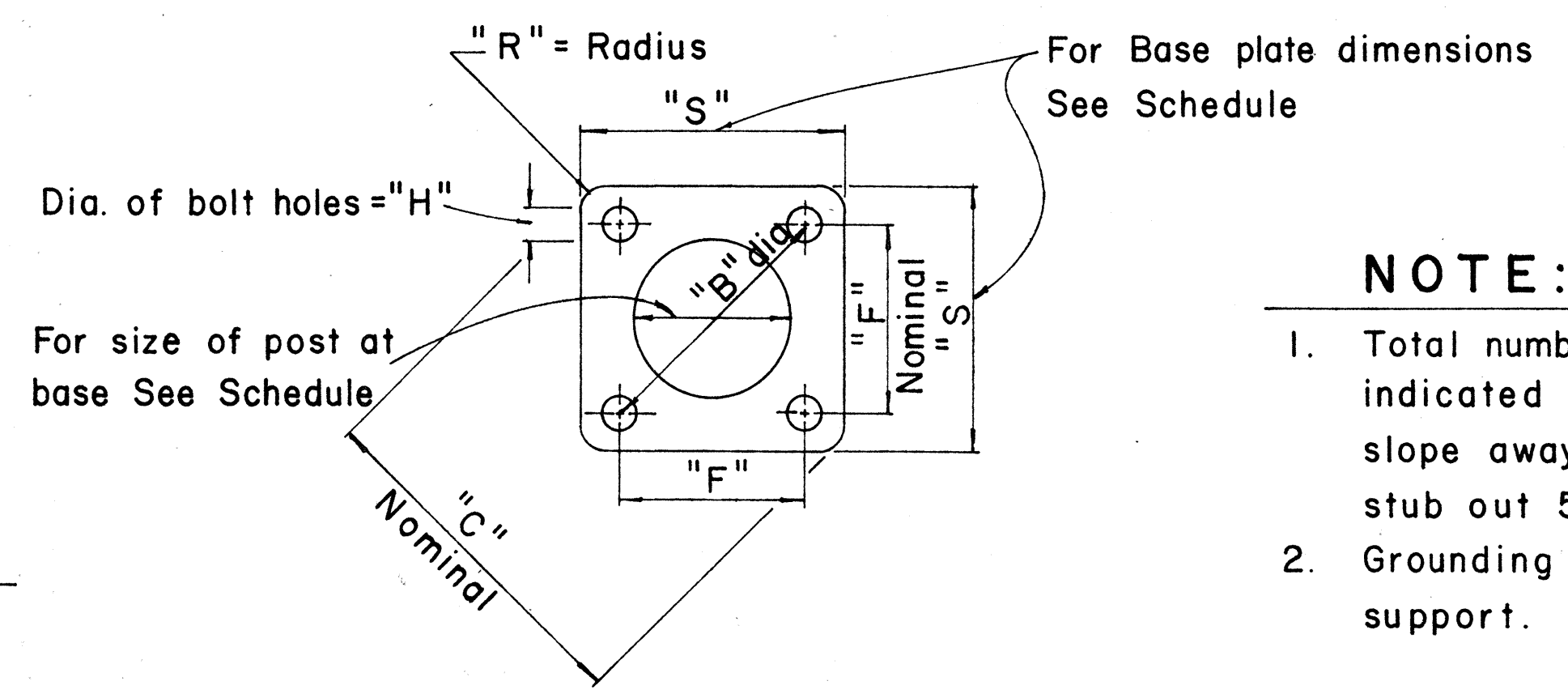
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) FF-078-1(7)	1977	81	164



TYPICAL POLE FOUNDATION DETAIL



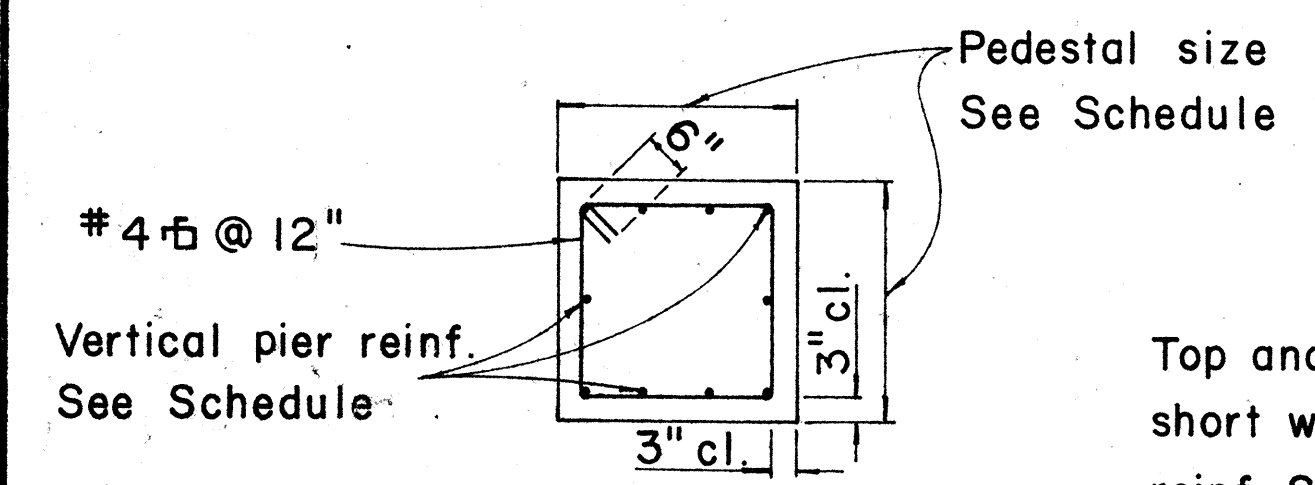
TYPICAL ANCHOR BOLT 4 REQ'D



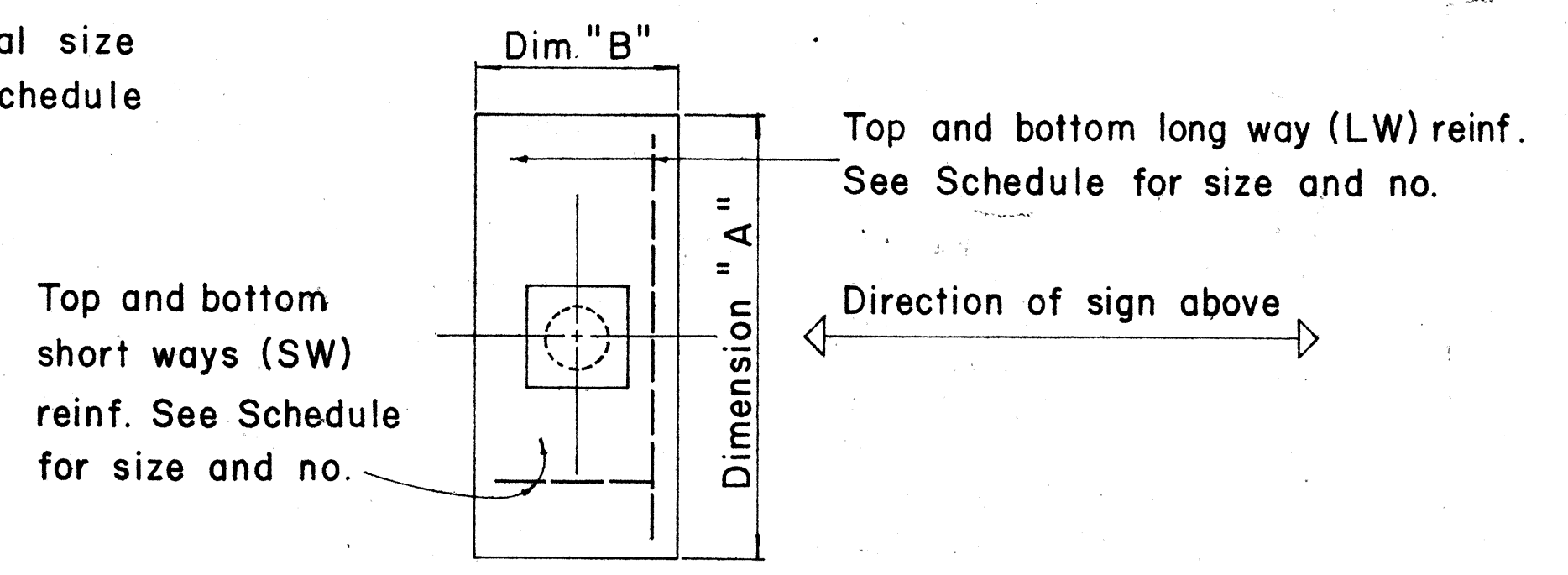
TYPICAL BASE PLATE

NOTE:

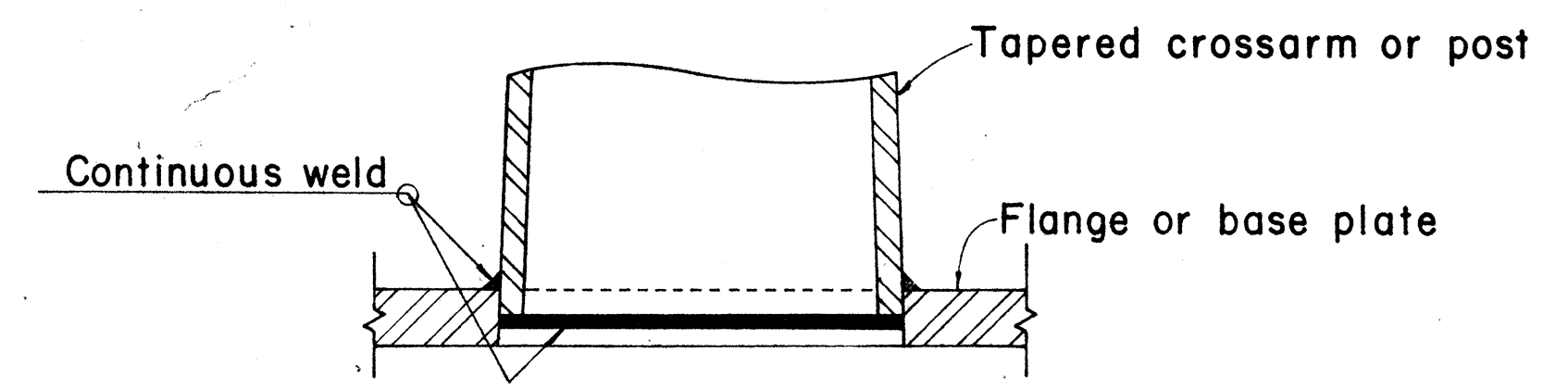
1. Total number of conduits into pole foundation as indicated on Lighting plans. Conduits shall slope away from pole foundation. Conduit shall stub out 5'-0" min. for direct burial entry.
2. Grounding conductor shall be bonded to sign support.



SECTION "A"



TYPICAL FOOTING DETAIL



DETAIL "X"

FOUNDATION SCHEDULE

Type	Dimension		Depth	Bot Reinf.		Top Reinf.		Pedestal	
	A	B		L. W.	S. W.	L. W.	S. W.	Size	Vert. Reinf.
I	7'-0"	3'-0"	2'-0"	3-#6	8-#4	#4 @ 12 each way		1'-11"	10-#5
II	9'-0"	4'-6"	2'-0"	6-#6	10-#4	Do.		2'-6"	10-#7
III	10'-0"	5'-0"	2'-0"	5-#8	11-#4	Do.		2'-6"	10-#8
IV	12'-0"	6'-0"	2'-0"	7-#9	13-#4	Do.		2'-9"	10-#10
V	14'-0"	7'-0"	2'-0"	8-#11	19-#4	Do.		2'-9"	10-#11

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

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

NO.	REVISION	APPROVED BY	DATE
1	Foundation Schedule	H.C.	8/11/70

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DETAILS & SCHEDULES

NOT TO SCALE

SHEET No. 12 OF 10 SHEETS DT 202

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

* For moment calculations only. Post shall be from top of foundation to top of sign.
 ** For fills with side slopes flatter than 4:1, Minimum Footing Depth shall be 4 1/2 feet.

DATA TABLE FOR TYPE VI FOOTING																	
POST SIZE	MAXIMUM SIGN AREA	POST HEIGHT TOP OF FOUNDATION TO CENTER OF SIGN *	DIMENSIONS											ANCHOR BOLT DIA.	MINIMUM FOOTING DEPTH		
			H	J	K	M	N	O	P	S	T	U	V		W	CUT	FILL**
8 J 10	50 sq. ft.	14'	14"	5"	24"	17 1/4"	1 3/8"	6"	1 1/4"	9"	6"	10"	2"	1"	1 1/8" ø	4 1/2'	4 1/2'
8 WF 24	90 sq. ft.	21'															5'
8 WF 35	190 sq. ft.	15'	16 1/2"	6 3/4"	30"	20"	1 3/4"	6"	1 3/8"	11 3/4"	6 1/2"	10"	1 3/4"	1"	1 1/4" ø	6'	7'
10 WF 45	190 sq. ft.	25'															
10 WF 45	200 sq. ft.	25'															
12 WF 50	230 sq. ft.	25'															
12 WF 50	250 sq. ft.	23'															

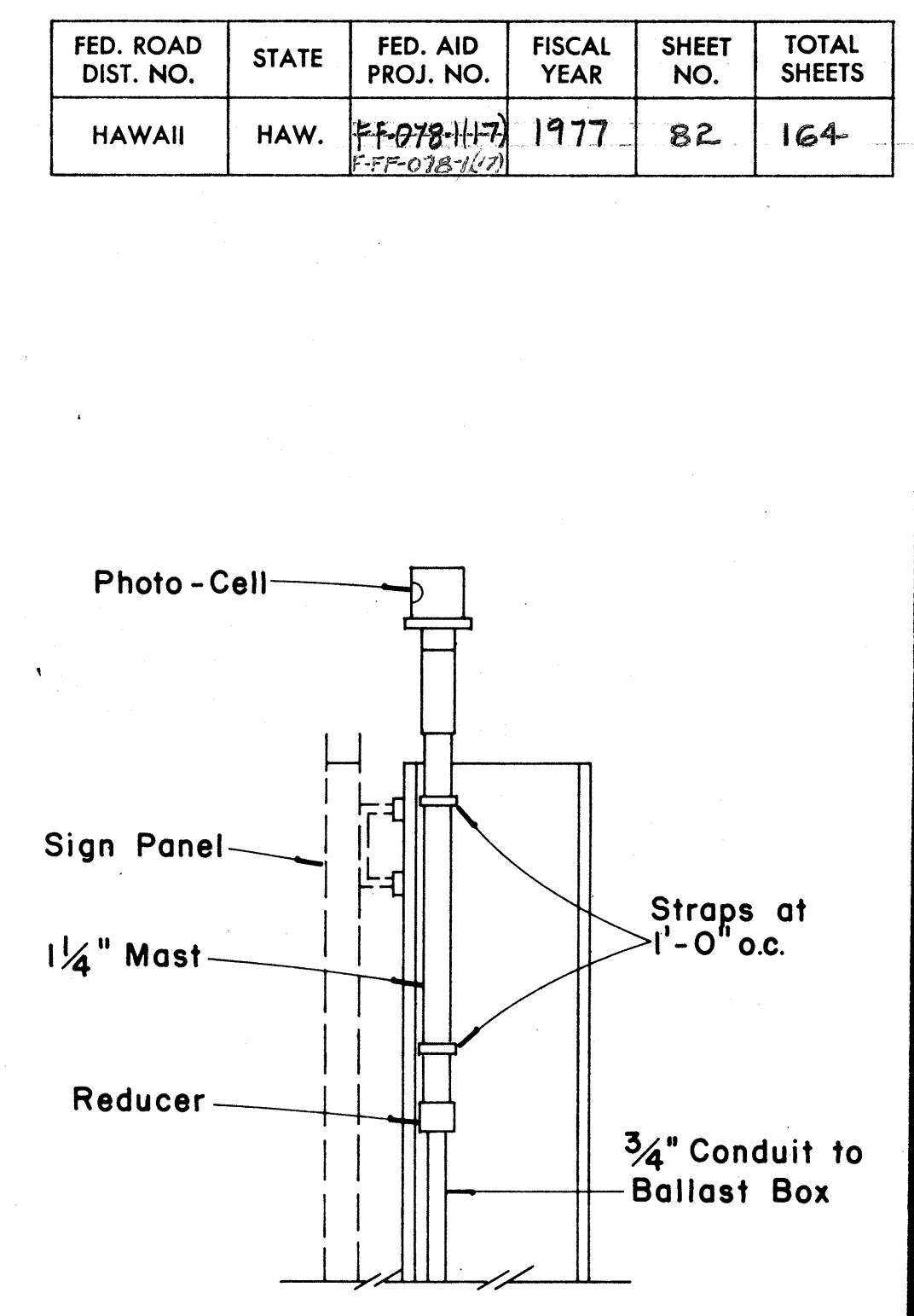
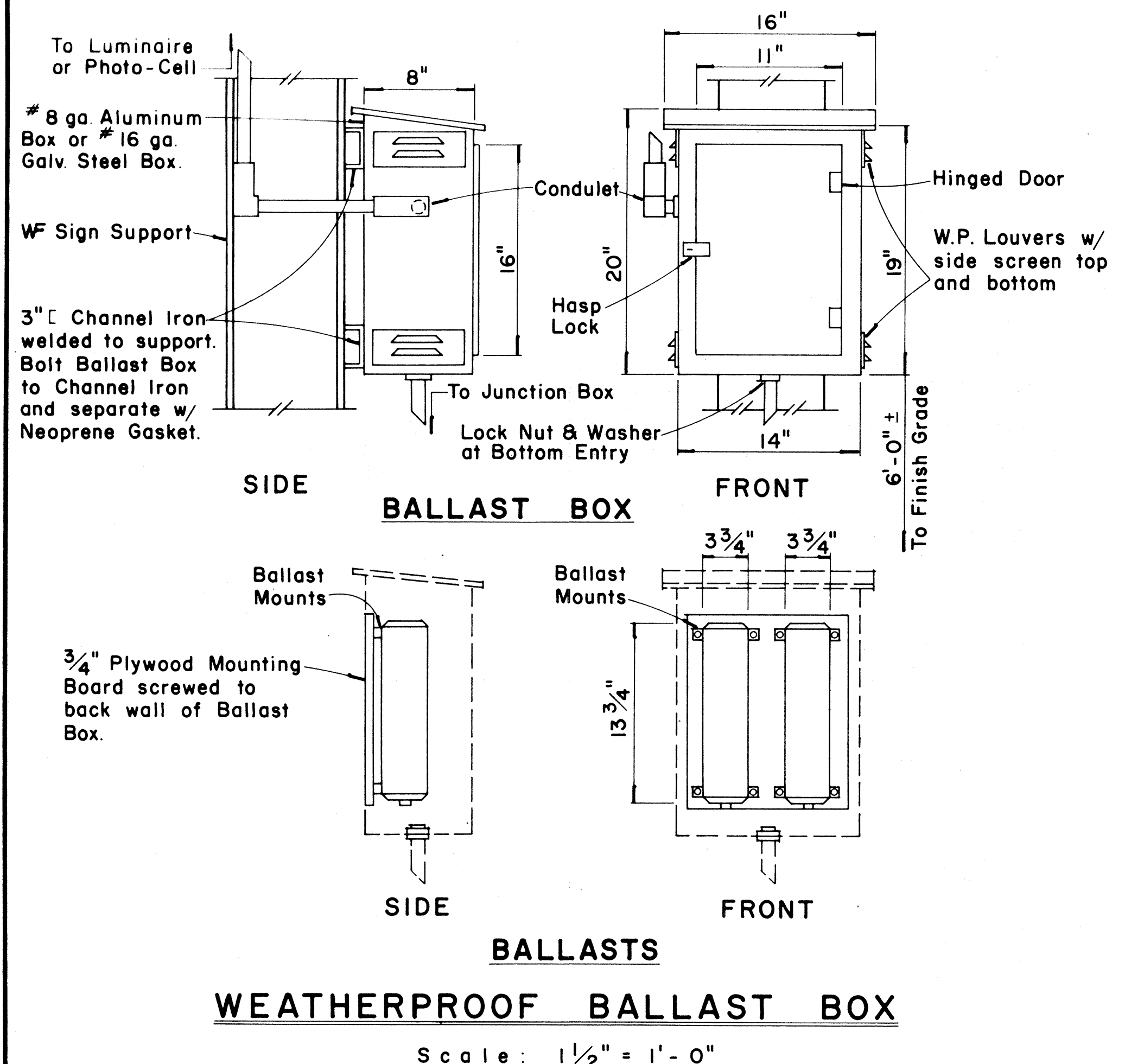
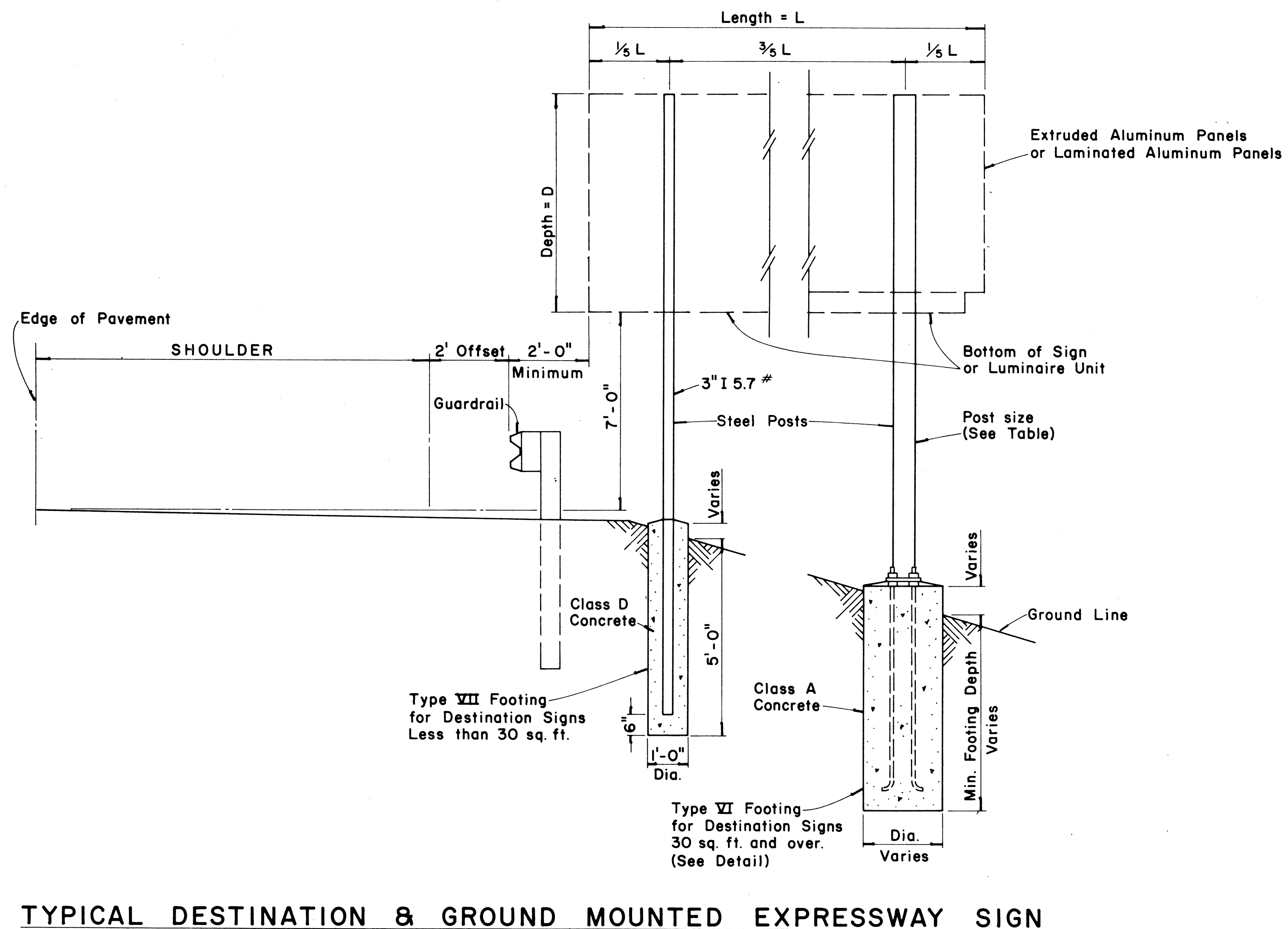
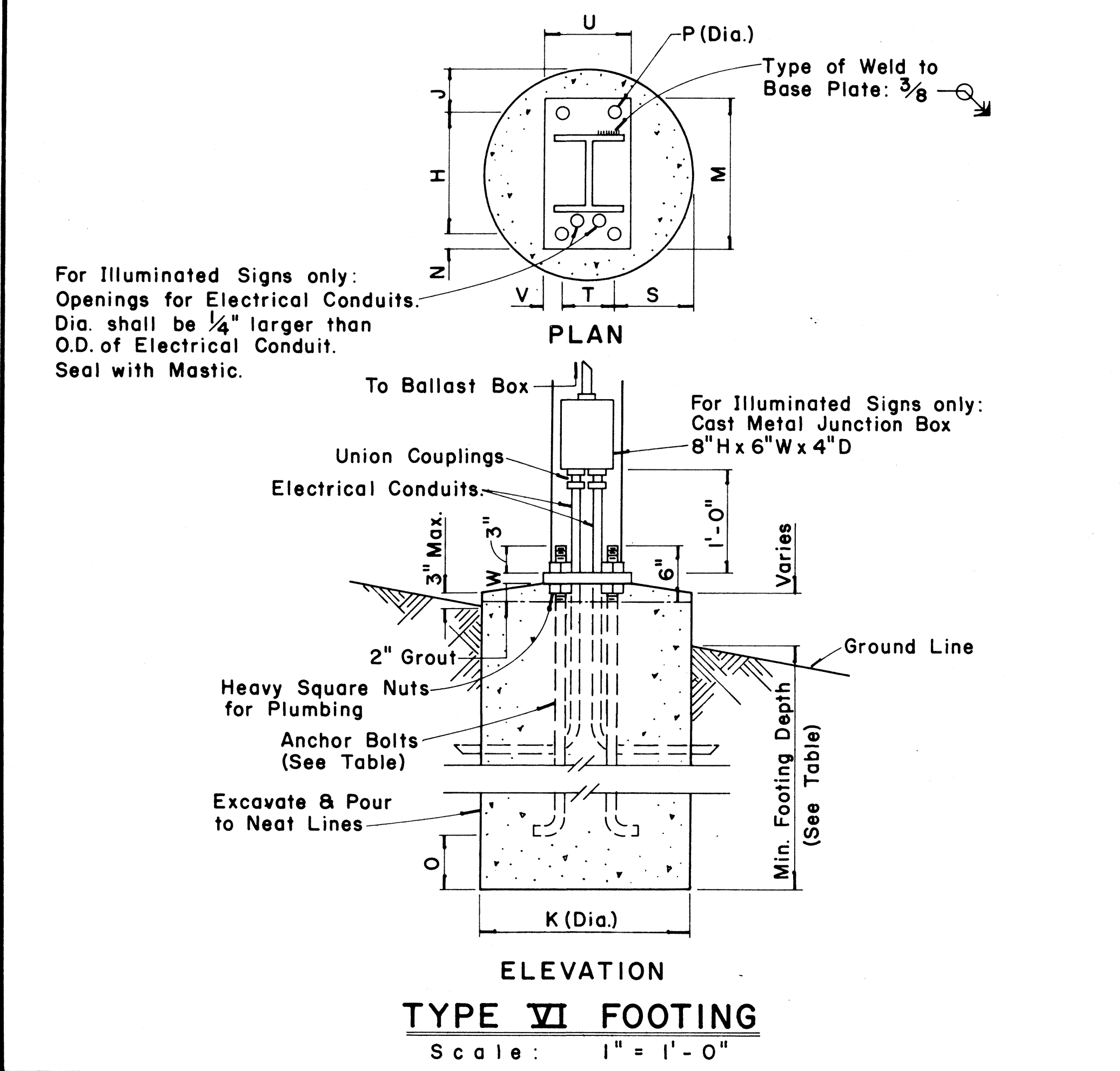


PHOTO-CELL DETAIL
 Scale: 1/2" = 1'-0"



TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN
 Not to Scale



For Illuminated Signs only:
 Openings for Electrical Conduits.
 Dia. shall be 1/4" larger than
 O.D. of Electrical Conduit.
 Seal with Mastic.

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

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

NO.	REVISION	APPROVED BY	DATE

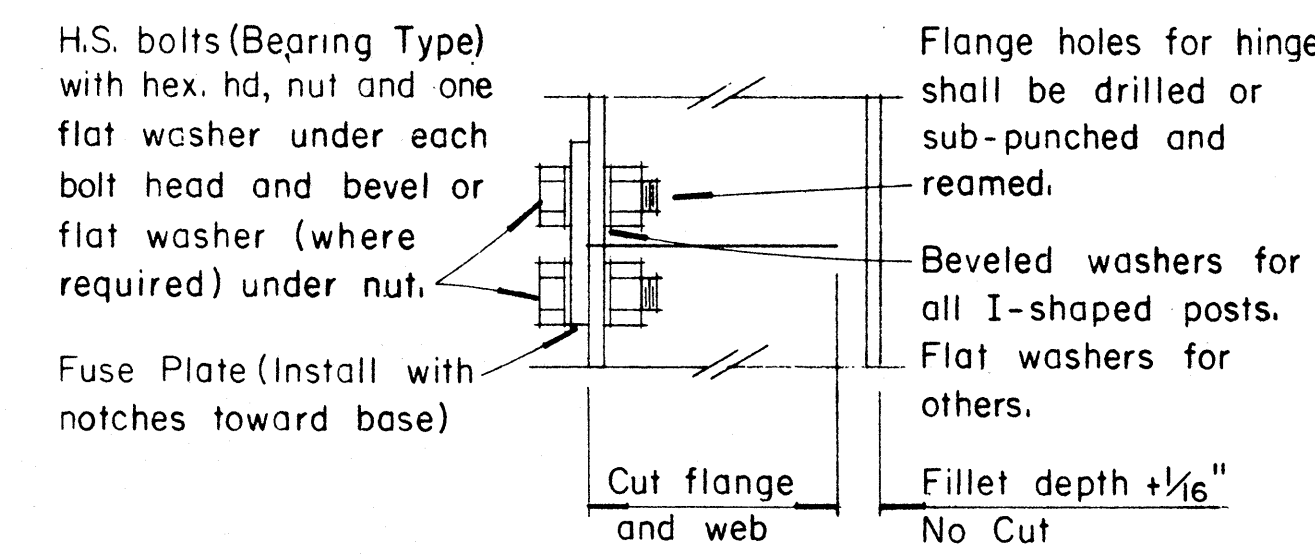
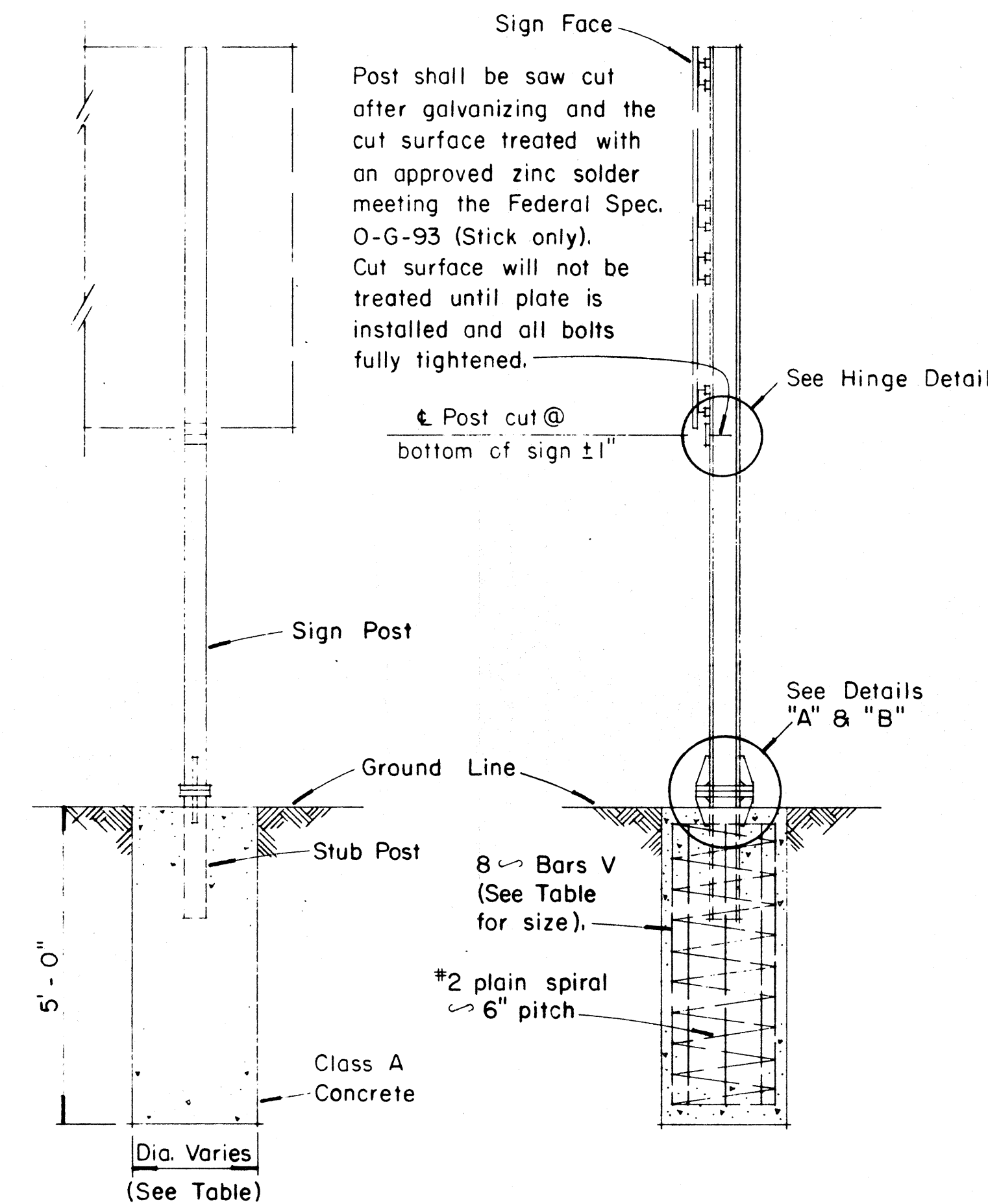
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
 DESTINATION & GROUND MOUNTED
 EXPRESSWAY SIGNS

Scale: As Shown
 SHEET No. 13 OF 12 SHEETS DT 203

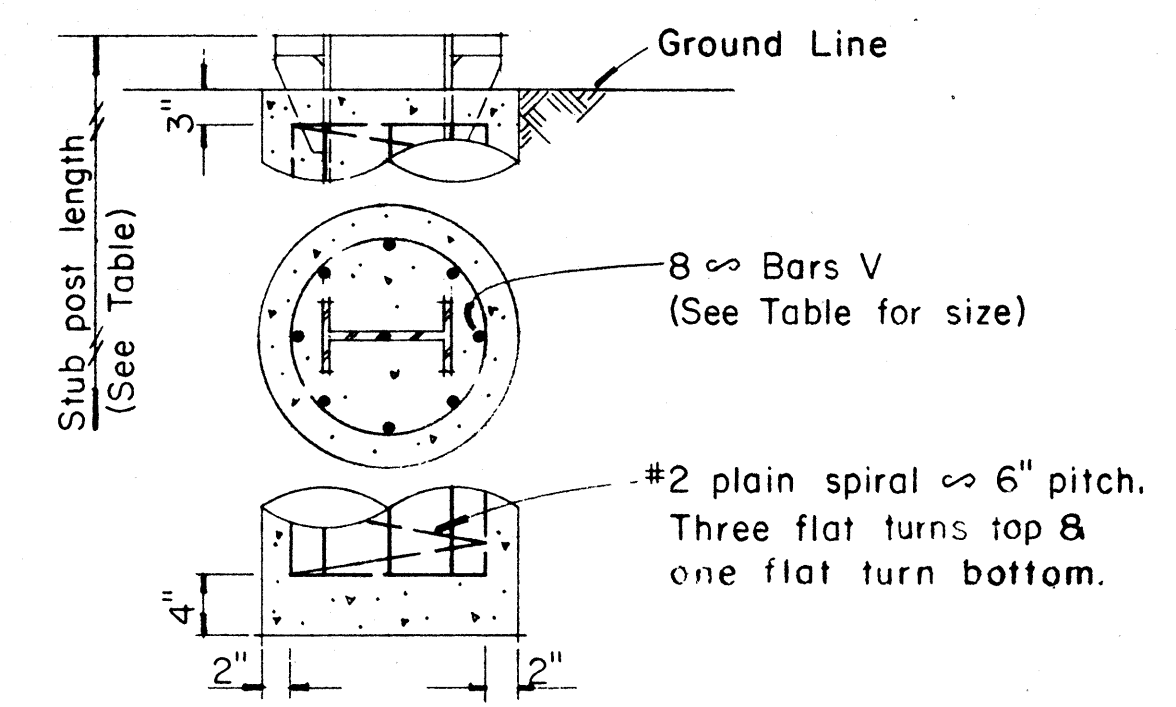
SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 DESIGNED BY: _____
 QUANTITIES BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN NO. _____
 NOTE BOOK NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-117 FF-078-117	1977	83	164

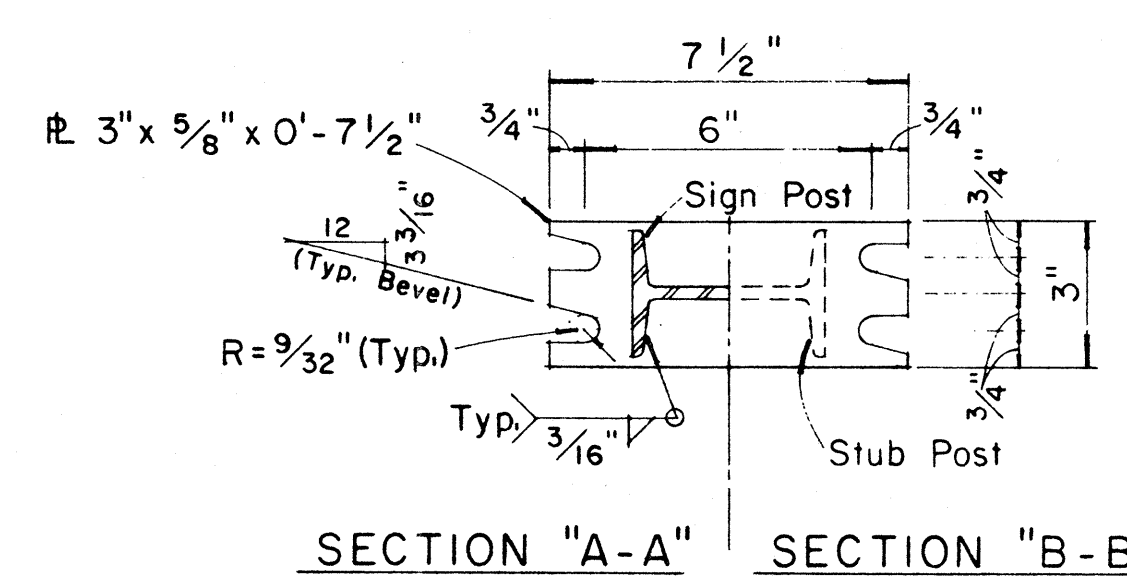
BASE CONNECTION DATA TABLE											FUSE PLATE DATA TABLE										FOUNDATION DATA				
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse lb	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5											3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2"	1.09*	2'-0"	3"	2'-0"	#5
6 B 12	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 1/4"	1 1/32"	3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1/16"	3/8"	5/8"	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"	13/16"	1/2"	3/4"	3.75*	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	13/16"	1/2"	3/4"	3.27*	2'-6"	3"	2'-0"	#7
8 WF 20											4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	15/16"	9/16"	7/8"	3.93*	3'-0"	2 1/2"	2'-0"	#8
10 WF 21	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"	13/32"	5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8"	4.75*	3'-0"	2 1/2"	2'-0"	#9
10 WF 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8"	4.79*	3'-0"	2 1/2"	2'-0"	#10
12 WF 27											5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	15/16"	9/16"	7/8"	5.42*	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200"*	SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64*	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7		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"	0.64*	1'-6"	3 1/2"	1'-6"	#5



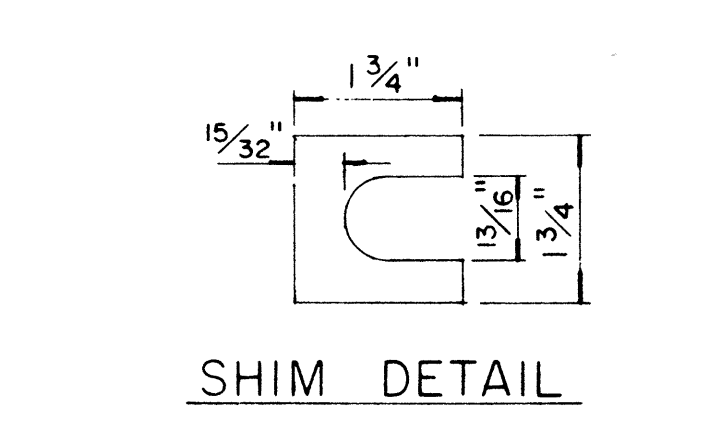
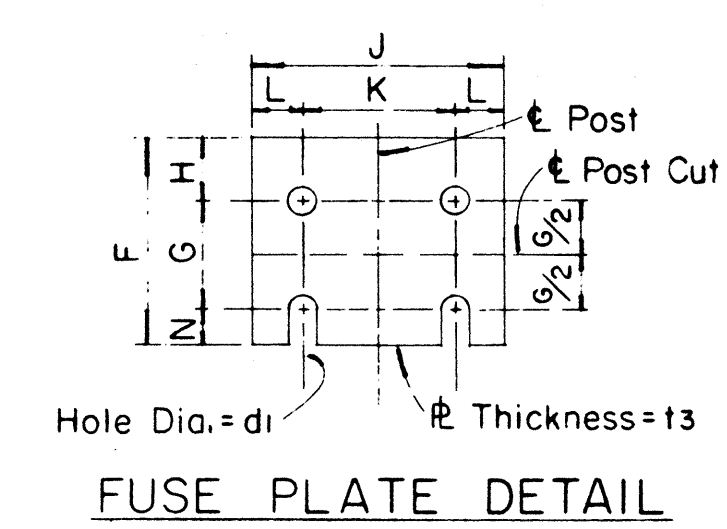
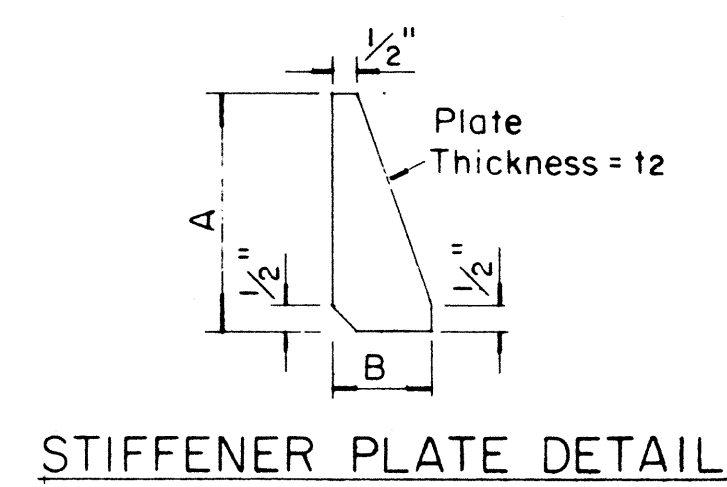
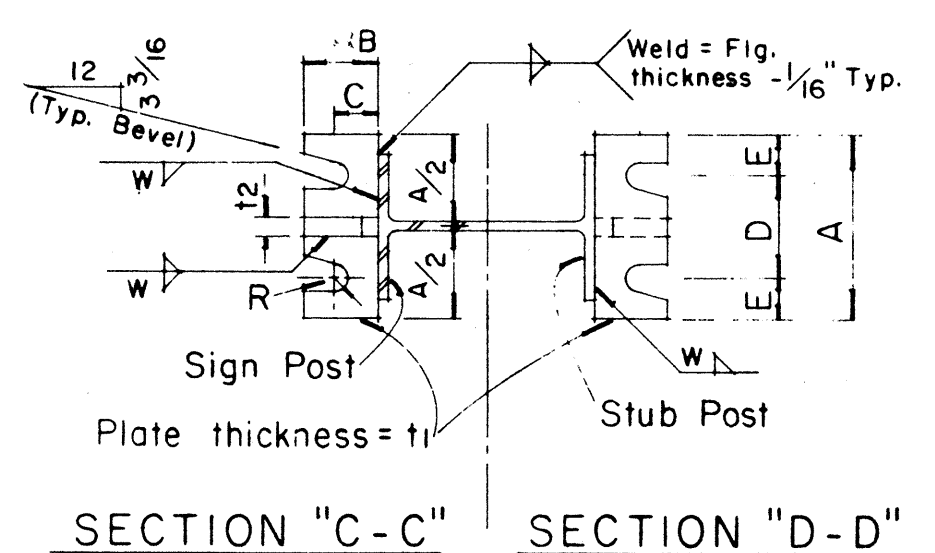
HINGE DETAIL



FOUNDATION DETAIL



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



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

GENERAL NOTES

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

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

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

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

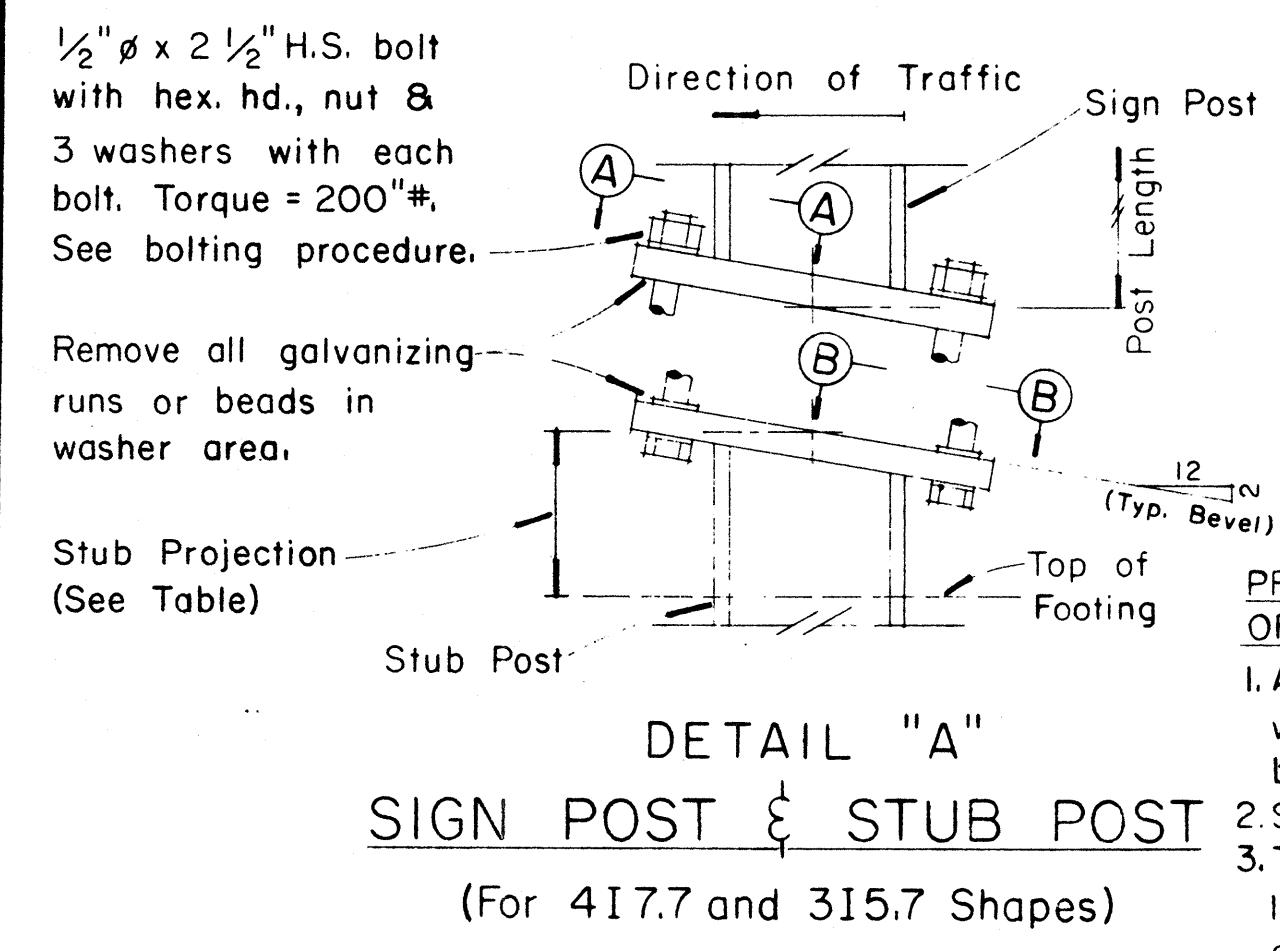
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

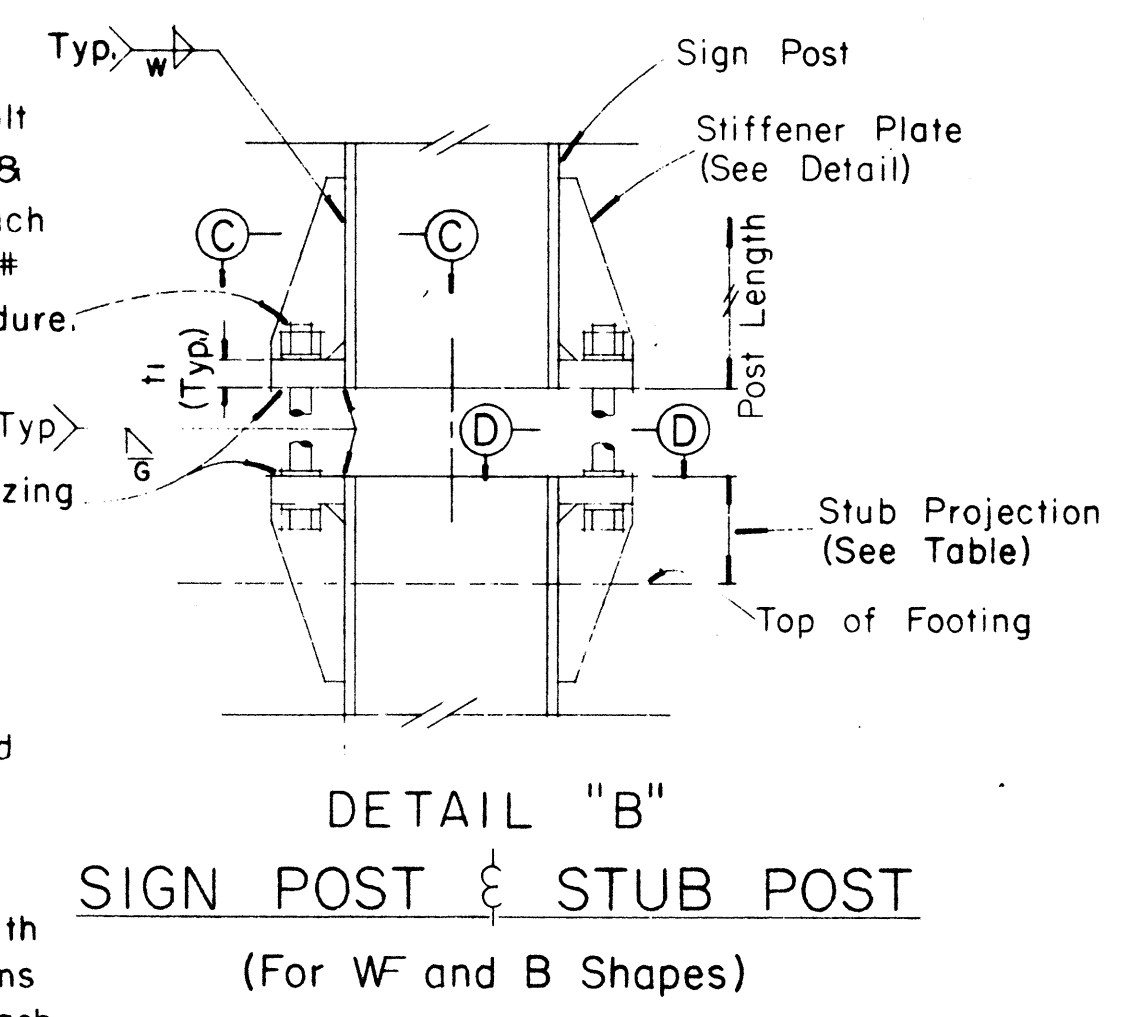
Not to Scale

DATE
DESIGNED BY
CHECKED BY
QUANTITIES BY
NOTE BOOK
ORIGINAL PLAN



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.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17)	1977	84	164

(OVERHEAD SIGNS)
SUPPORT SPACING TABLE

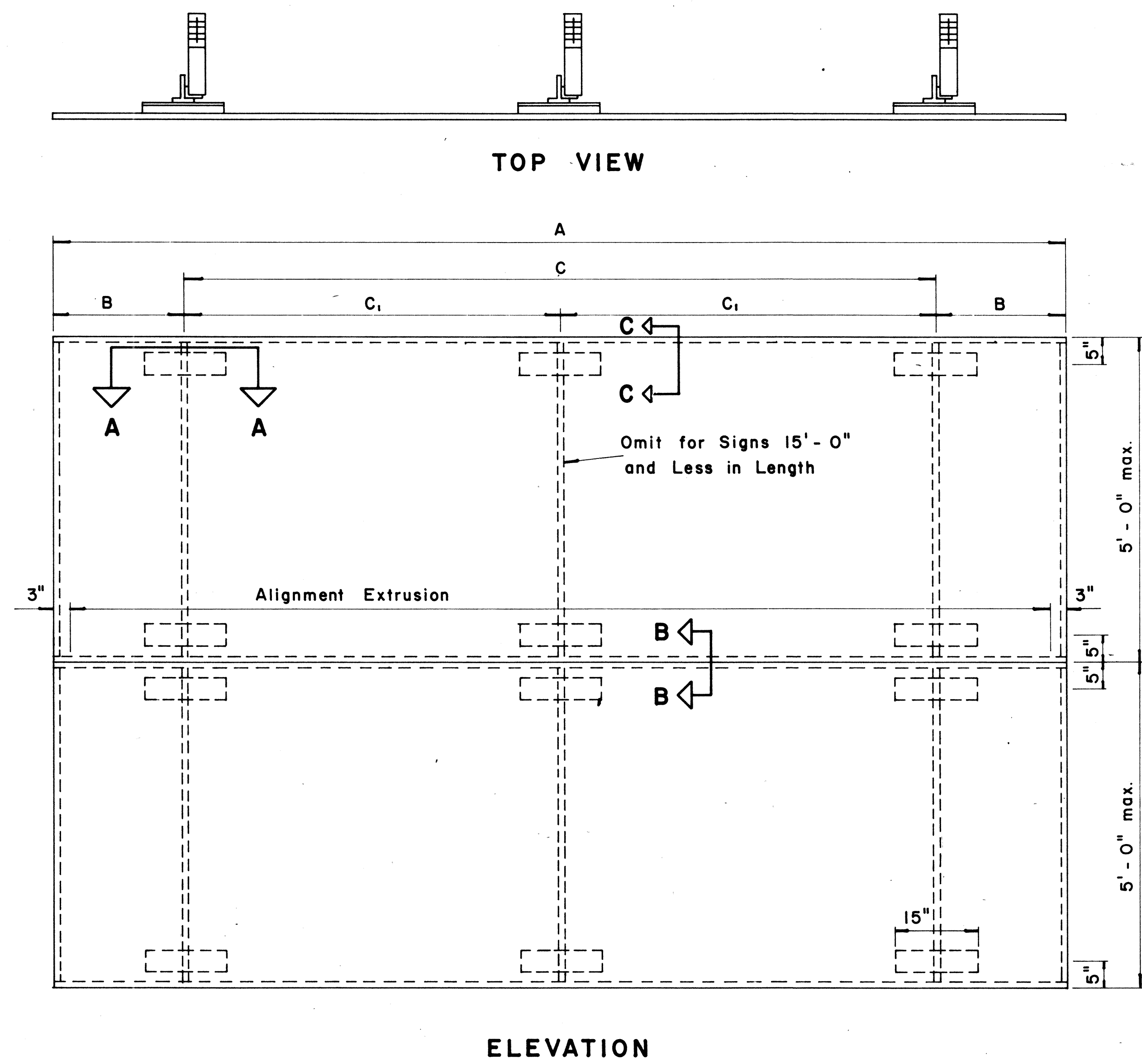
PANEL THICK.	LENGTH OF SIGN A	NO. OF SUPPORTS	OVERHANG B	SUPPORT SPACING C or C ₁
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"	84"
1"	11'-6"	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"
1"	15'-6"	3	24"	69"
1"	16'-0"	3	24"	72"
1"	16'-6"	3	24"	75"
1"	17'-0"	3	24"	78"
1"	17'-6"	3	24"	81"
1"	18'-0"	3	24"	84"
1"	18'-6"	3	27"	84"
1"	19'-0"	3	27"	87"
1"	19'-6"	3	27"	90"
1"	20'-0"	3	30"	90"
1"	20'-6"	3	30"	93"
1"	21'-0"	3	30"	96"
1"	21'-6"	3	33"	96"
1"	22'-0"	3	36"	96"
1"	22'-6"	3	36"	99"
1"	23'-0"	3	36"	102"
1"	23'-6"	3	36"	105"
1"	24'-0"	3	36"	108"

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

APPROVED:
W. J. ...
ASSISTANT CHIEF, ENGINEERING 12-29-69 DATE

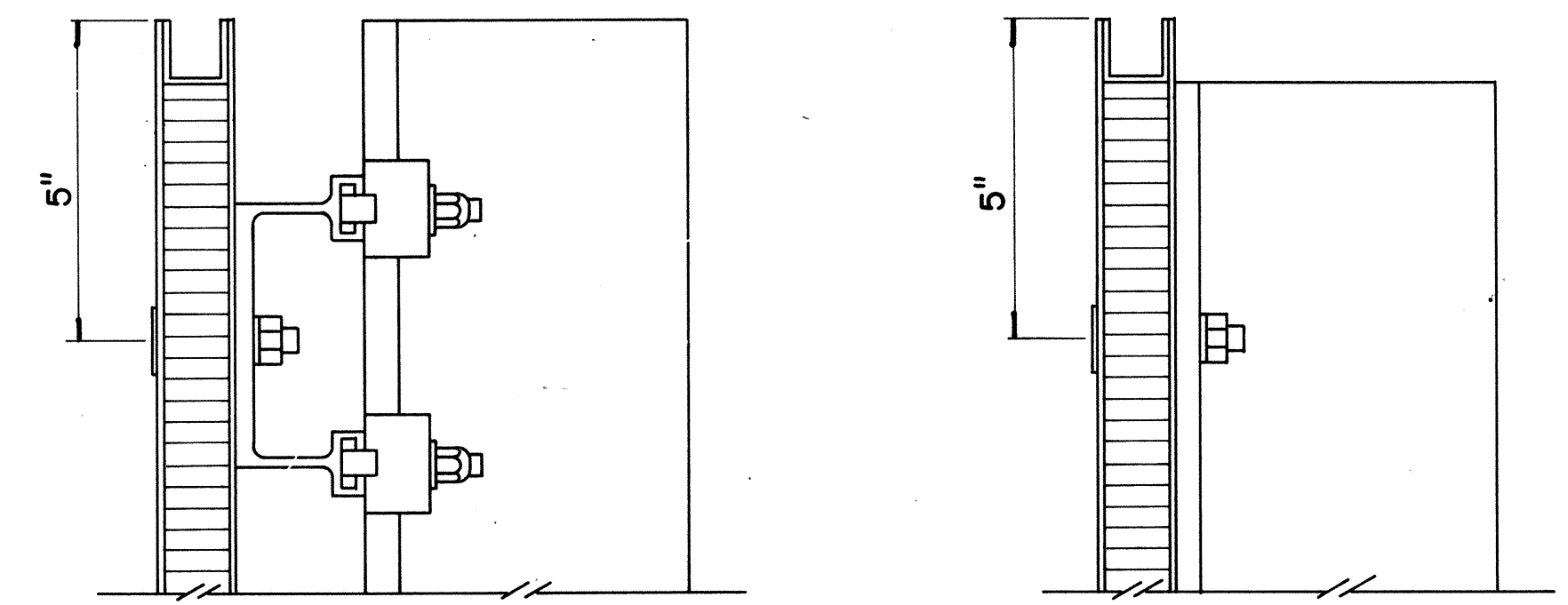
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(OVERHEAD)
Scale: As Shown



TYPICAL SIGN ASSEMBLY

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

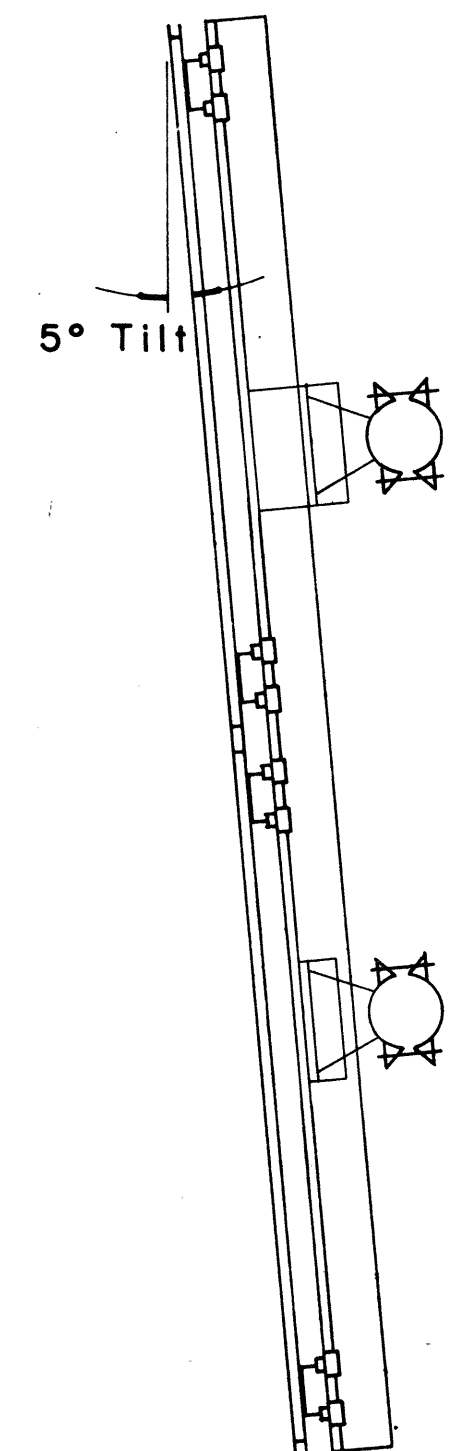


SECTION "C-C"

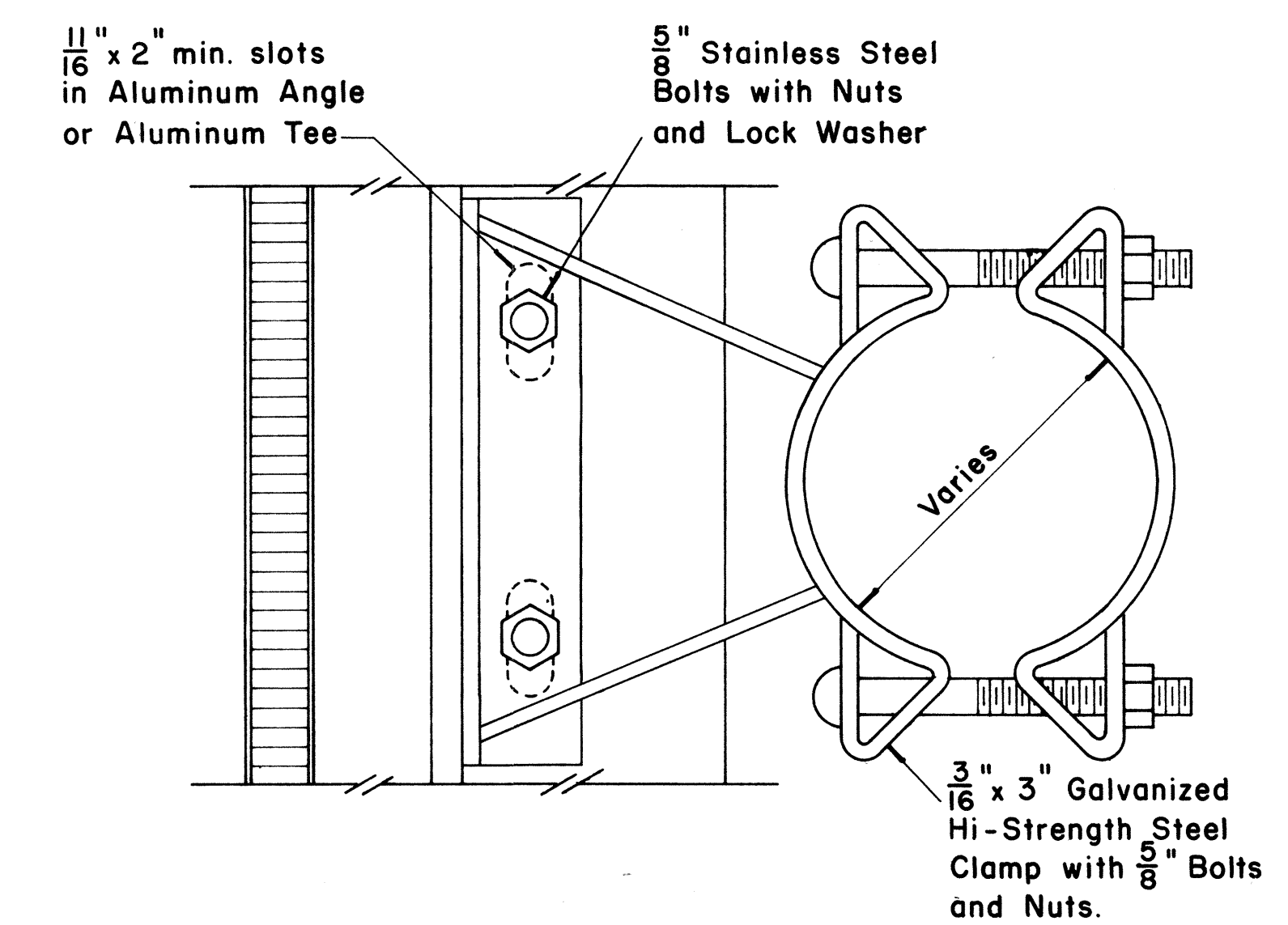
Scale: 3/8" = 1"

SECTION "C-C" (Alternate)

Scale: 3/8" = 1"



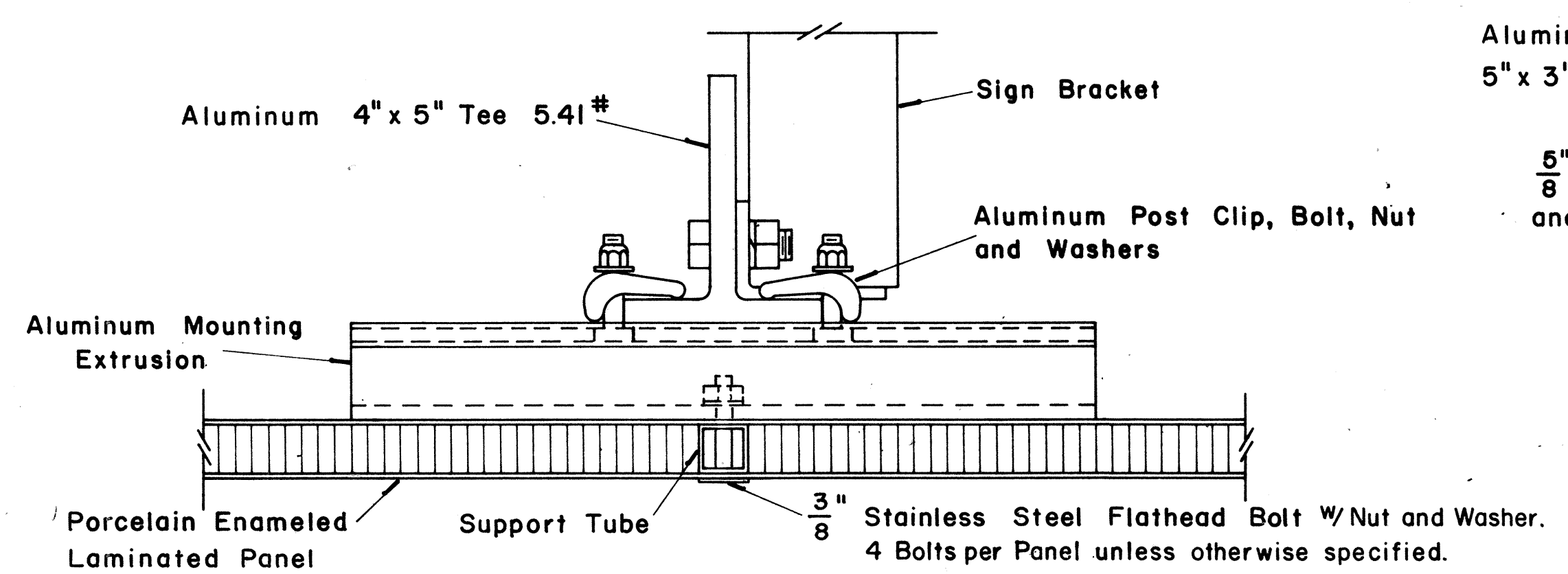
SIDE VIEW



SIGN BRACKET ASSEMBLY

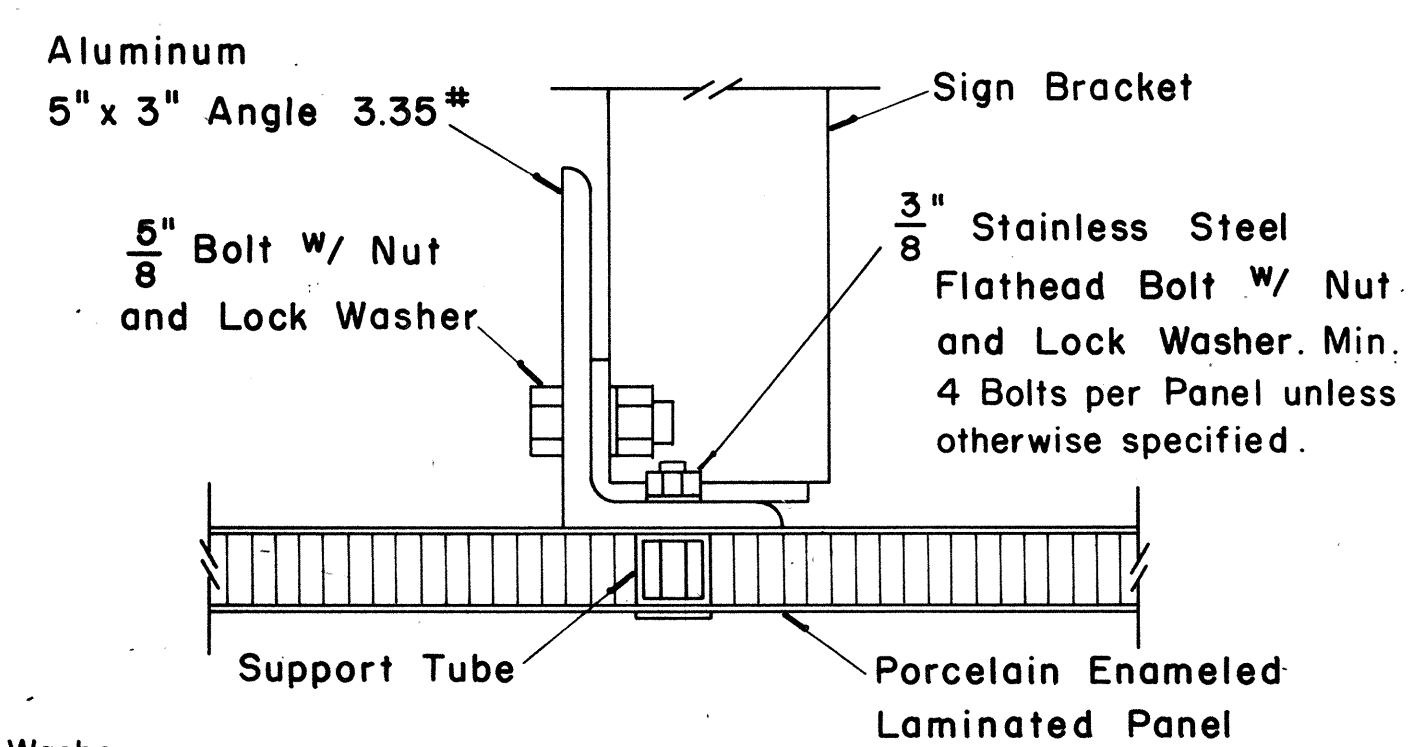
Scale: 3/8" = 1"

NOTE: For additional details of Sign Bracket Assembly, see Standard Detail Sheet "Overhead Sign Supports."



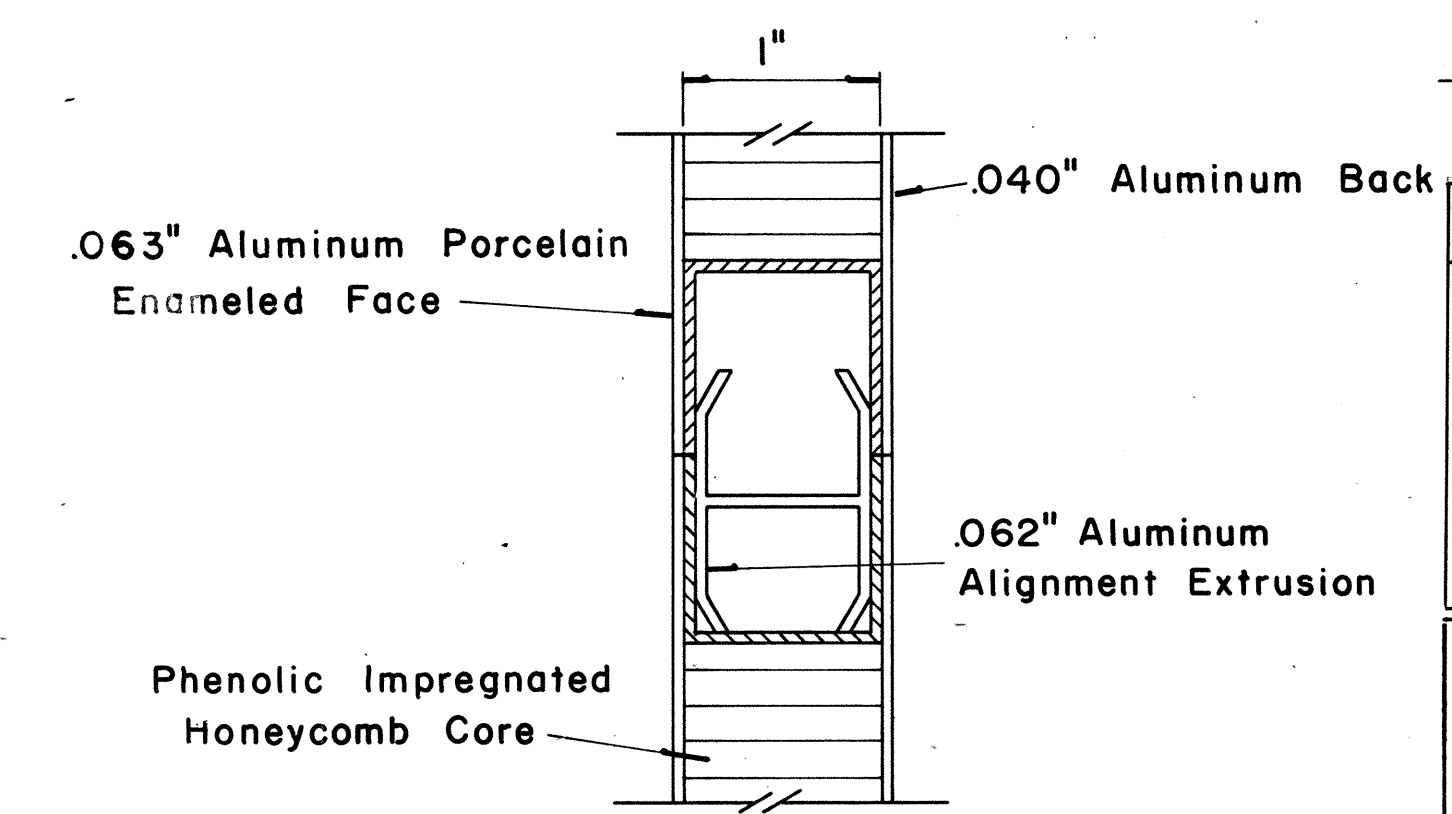
SECTION "A-A"

Scale: 3/8" = 1"



SECTION "A-A" (Alternate)

Scale: 3/8" = 1"



CLOSURE DETAIL SECTION "B-B"

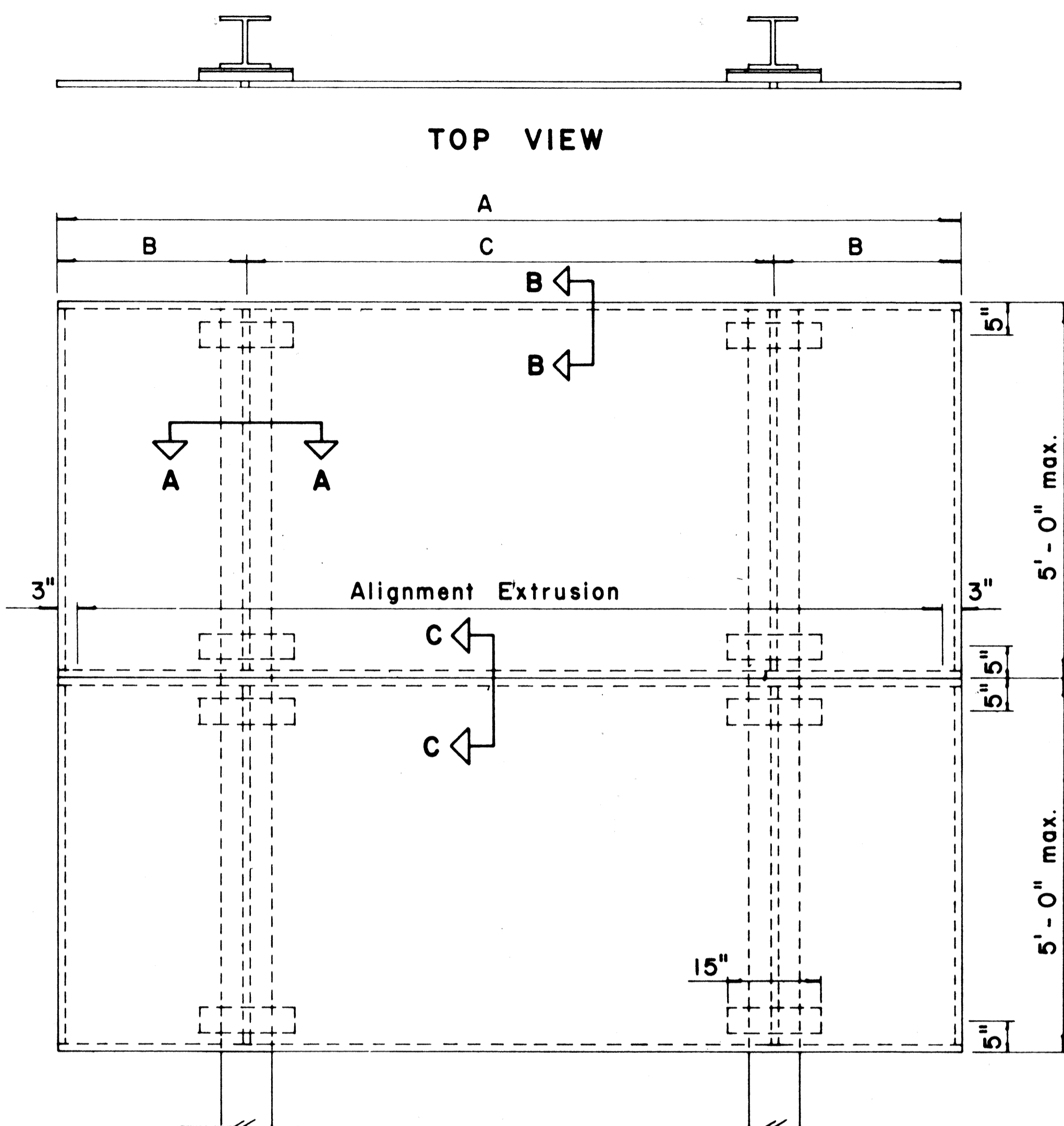
FULL SCALE

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
DESIGNED BY: _____
QUANTITIES BY: _____
CHECKED BY: _____
ORIGINAL PLAN No. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) FF-078-1(17)	1977	85	164

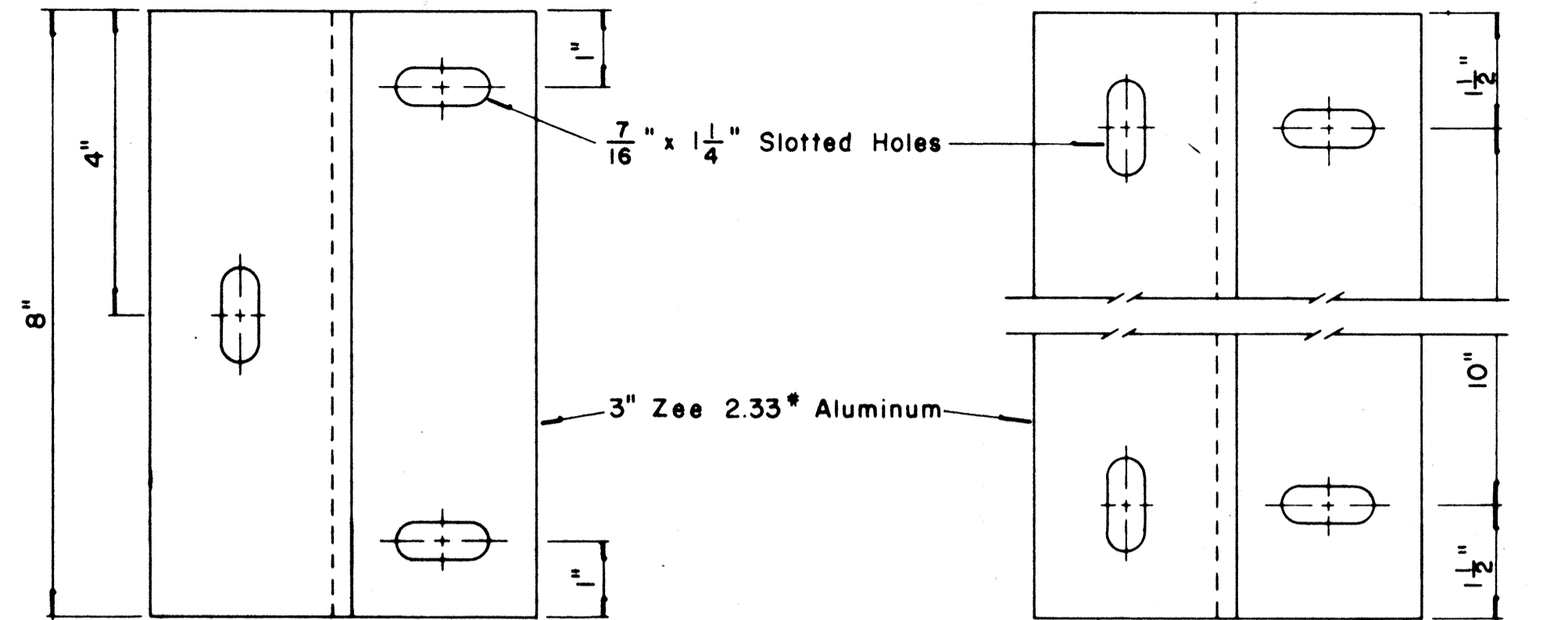
(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

PANEL THICK.	LENGTH OF SIGN	NO. OF SUPPORTS	OVERHANG		SUPPORT SPACING
			A	B	
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"	



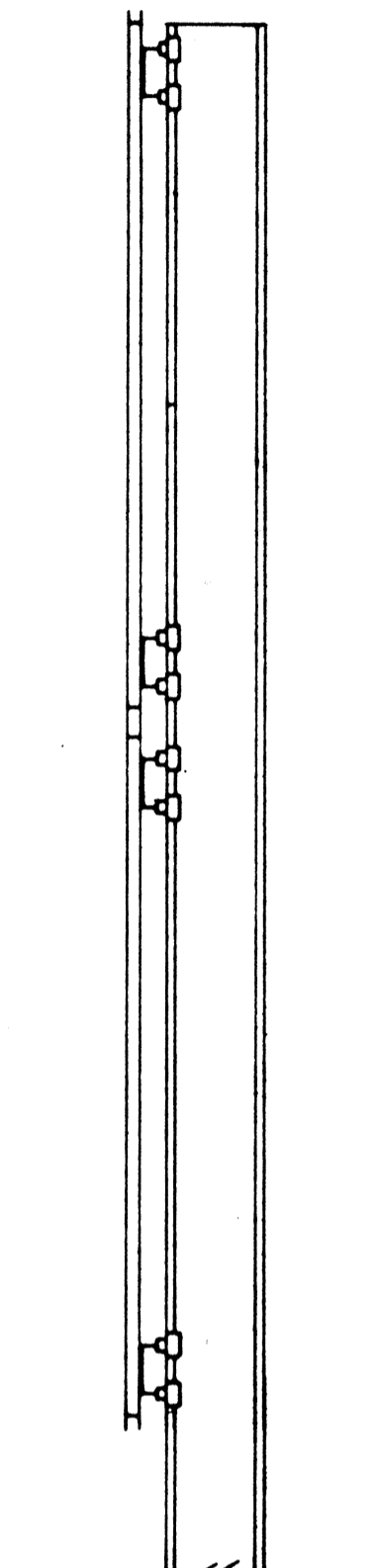
TYPICAL SIGN ASSEMBLY

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

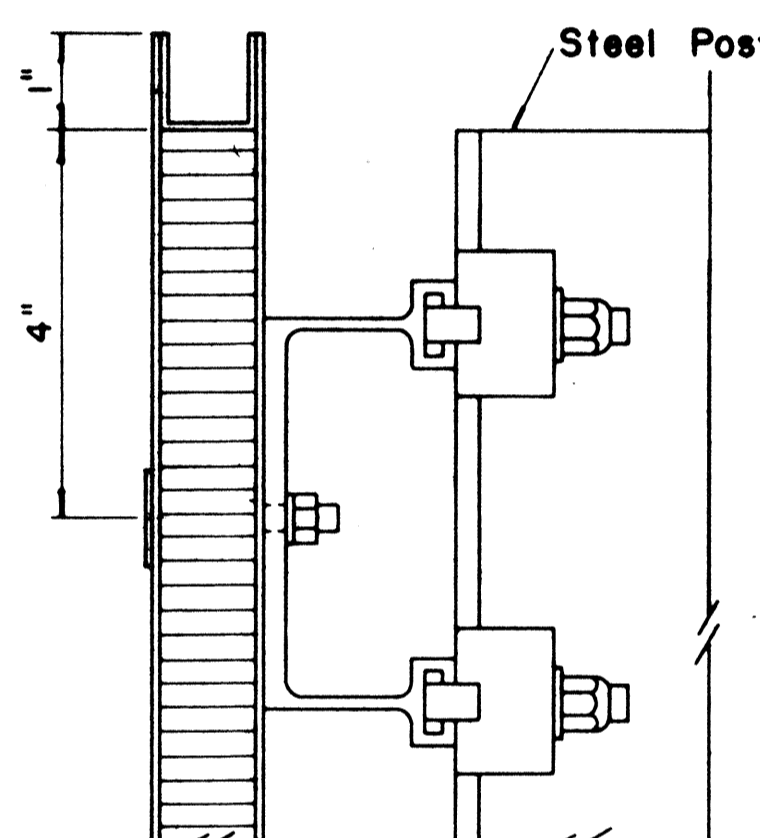


ZEE MOUNTING DETAILS

Scale: 1/2" = 1"

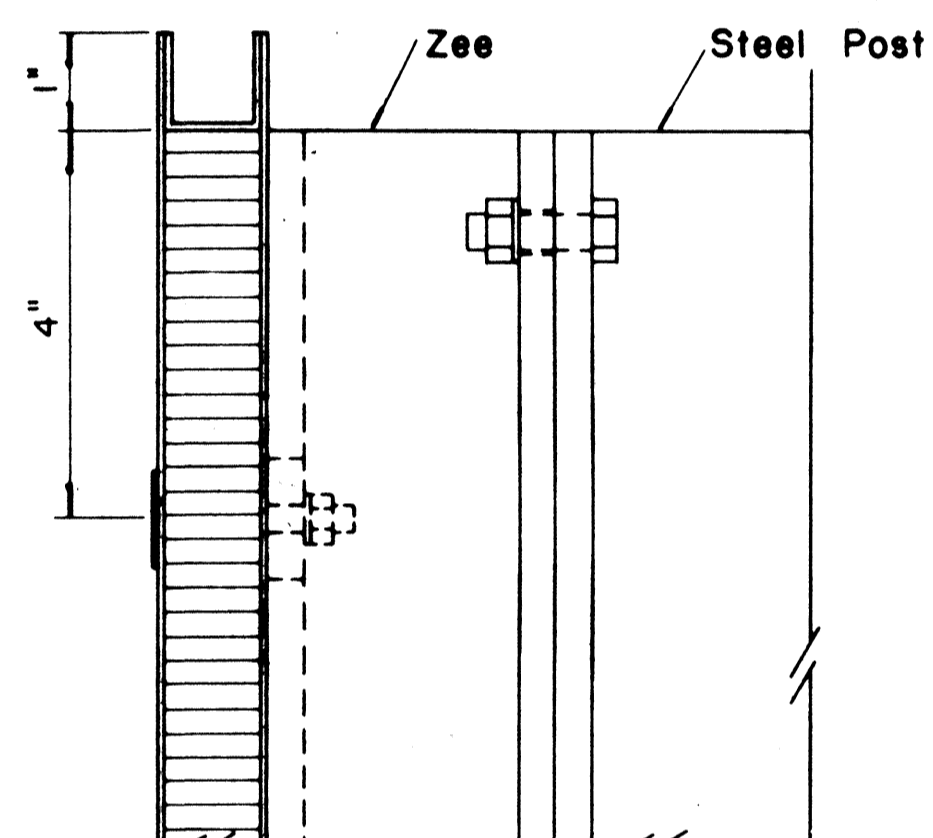


SIDE VIEW



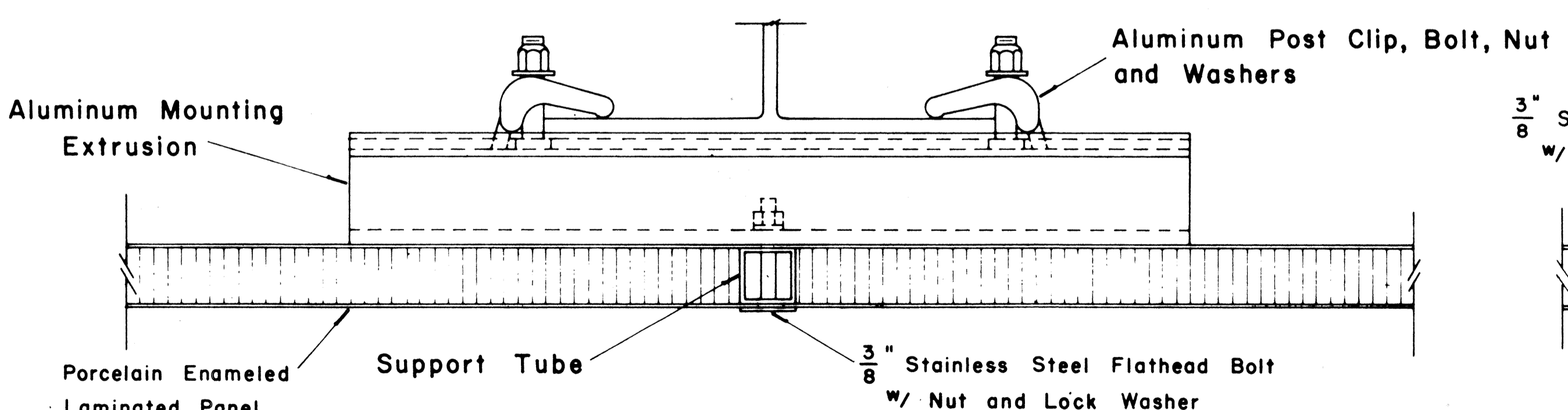
SECTION "B-B"

Scale: 1/2" = 1"



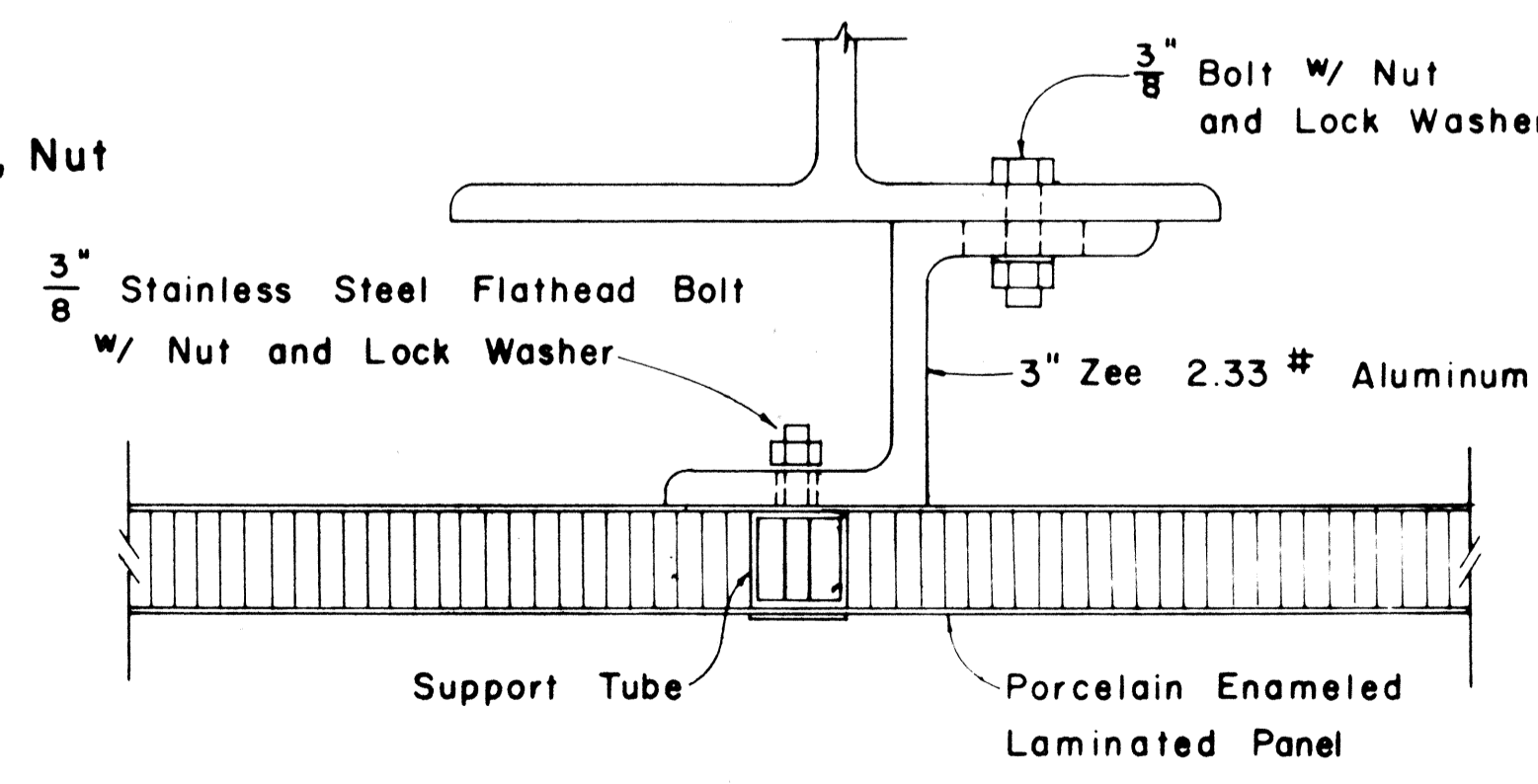
SECTION "B-B" (Alternate)

Scale: 1/2" = 1"



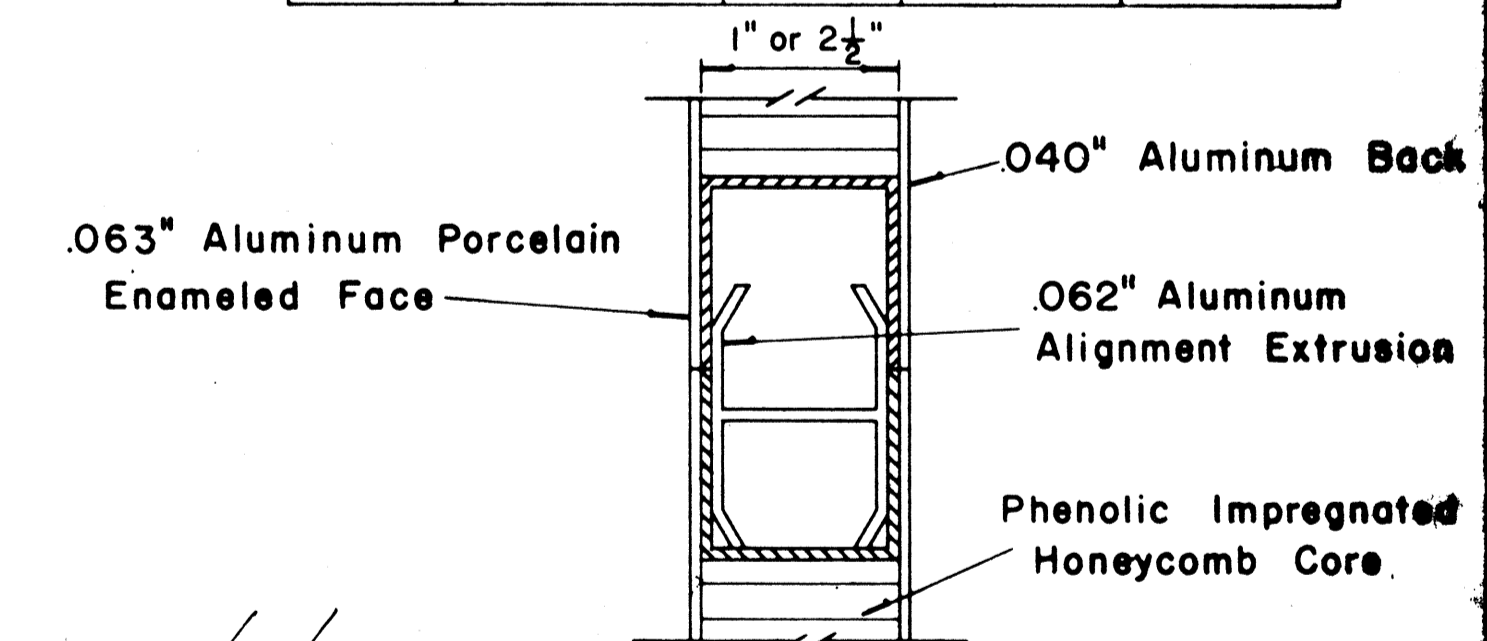
SECTION "A-A"

Scale: 1/2" = 1"



SECTION "A-A" (Alternate)

Scale: 1/2" = 1"



CLOSURE DETAIL SECTION "C-C"

FULL SCALE

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(GROUND MOUNTED)

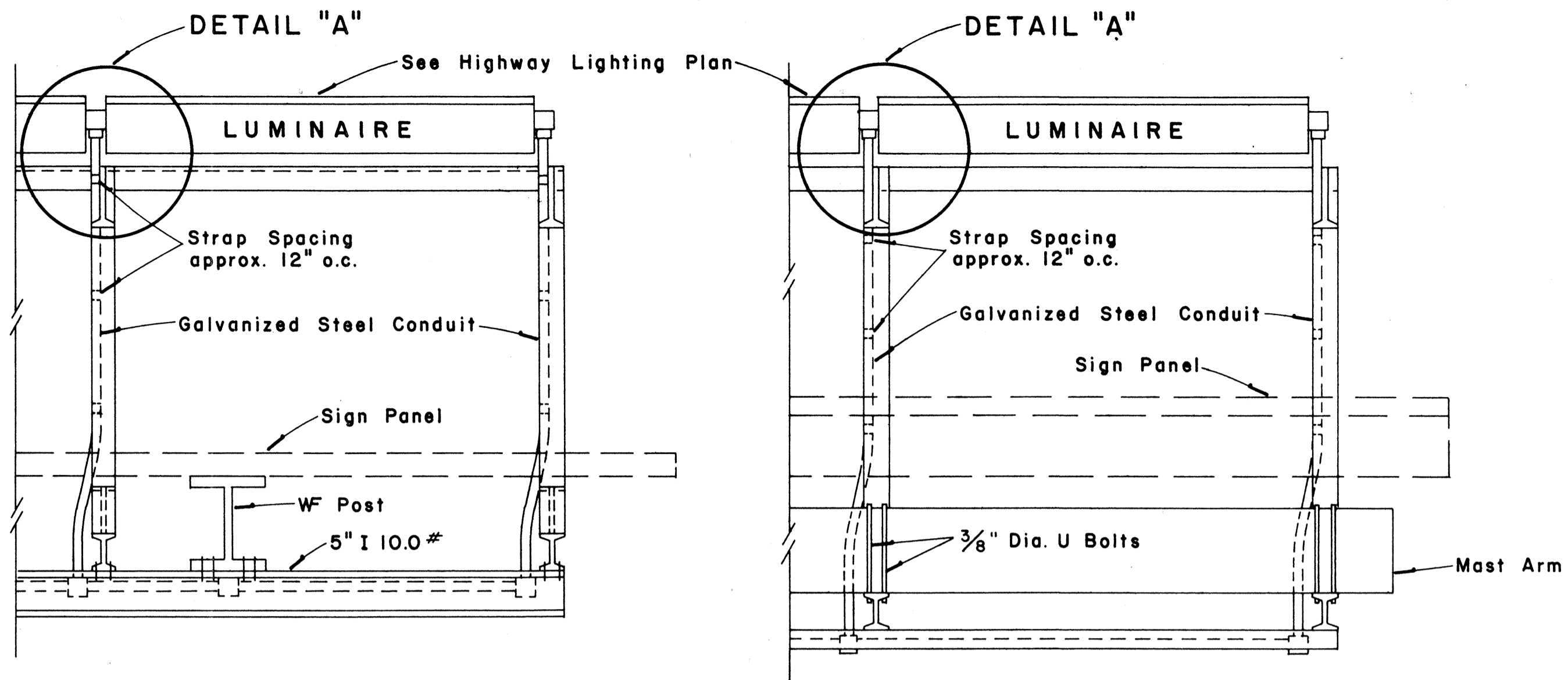
Scale: As Shown

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

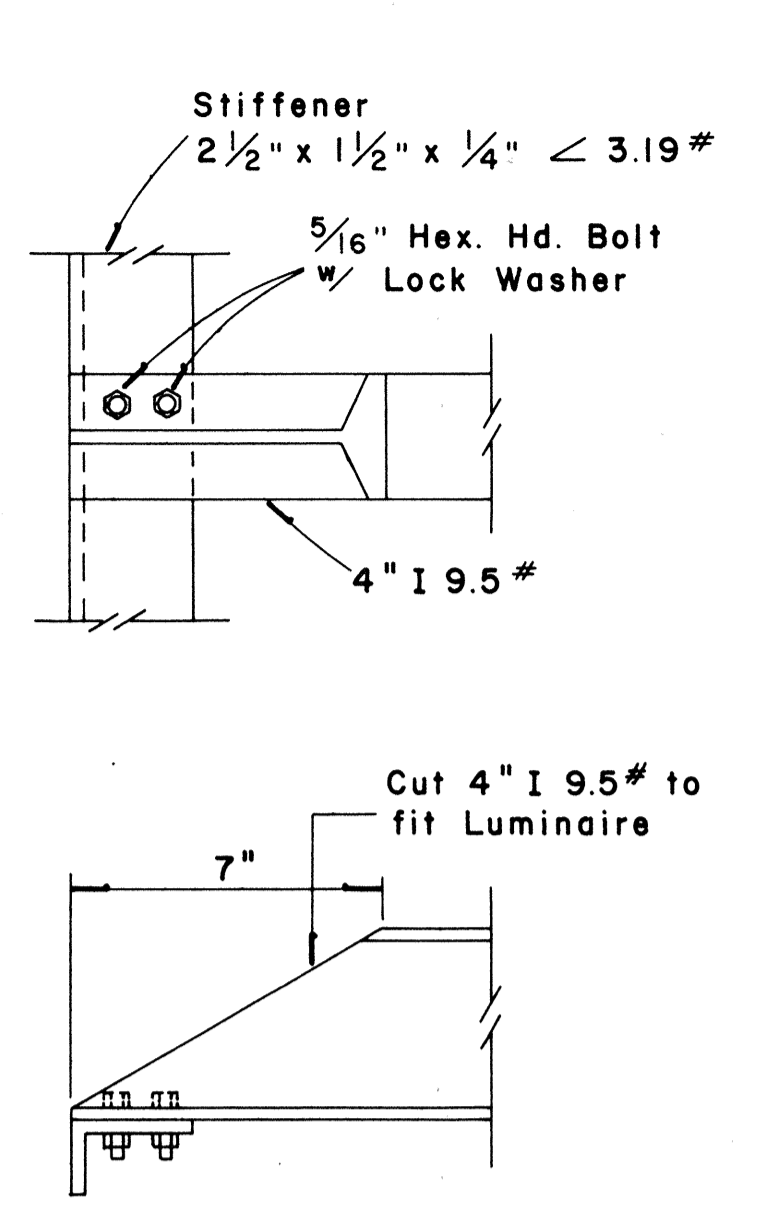
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17) P.P.F-078-1(17)	1977	86	164

GENERAL NOTES

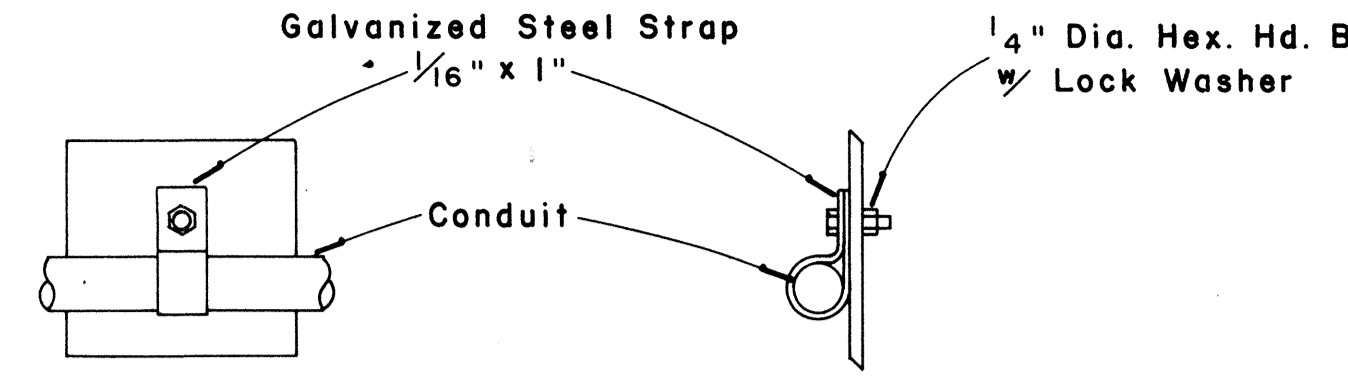
1. Conduit sizes: 3/4" diameter for one or two Luminaire Units, 1" diameter for three or more Luminaire Units.
2. Fluorescent Fixtures shall be installed as recommended by the manufacturer.
3. Luminaire brackets shall be spaced to fit 4'-0" to 6'-0" luminaires with fittings. Eight feet (8'-0") luminaires shall have an additional bracket at midpoint.
4. All parts of the bracket shall be hot-dip galvanized, prime coated with a suitable primer and painted with three coats of dark green enamel.



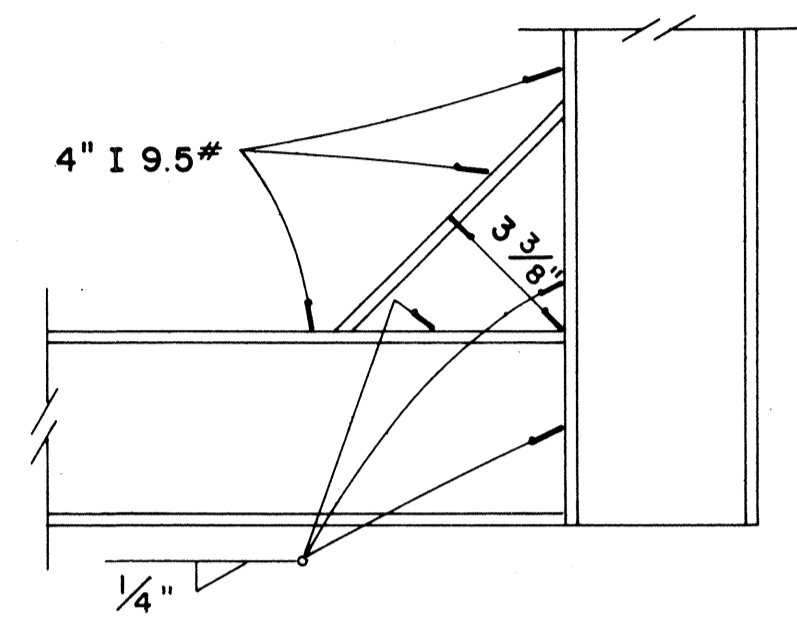
GROUND MOUNTED OVERHEAD
TOP VIEW LUMINAIRE MOUNTING
 Scale: 1" = 1'-0"



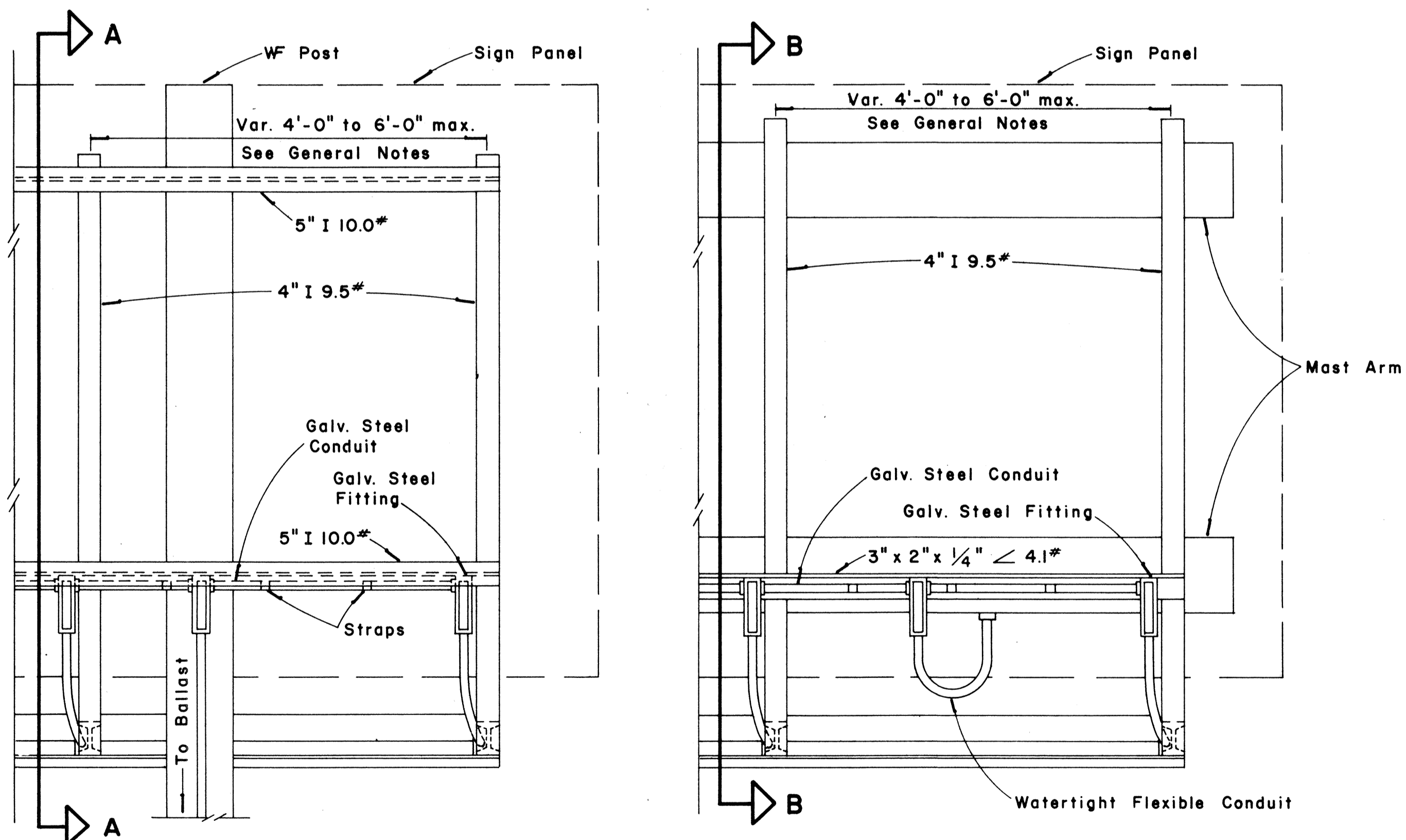
DETAIL "A"
 Scale: 3" = 1'-0"



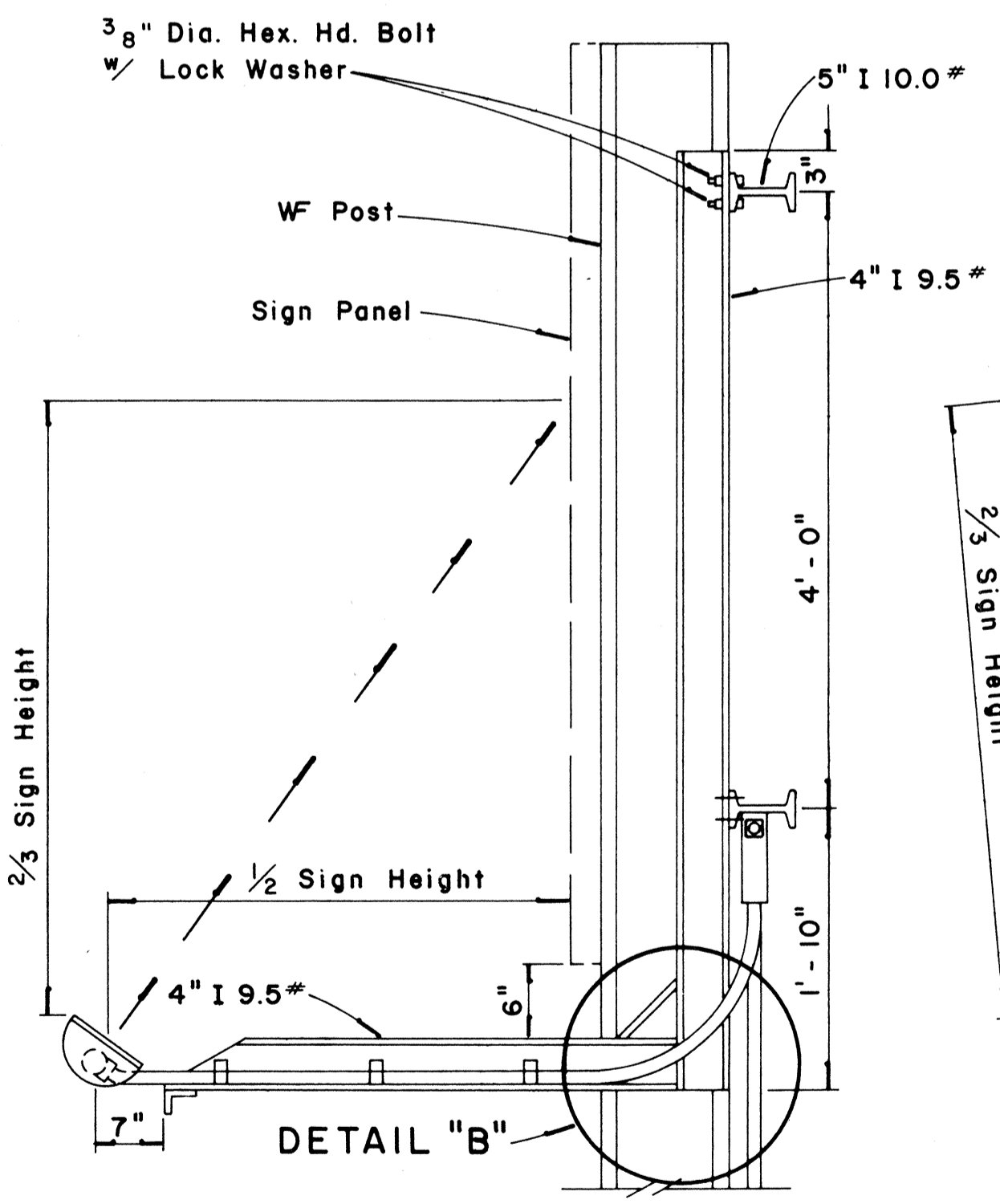
CONDUIT STRAP DETAIL
 Scale: 3" = 1'-0"



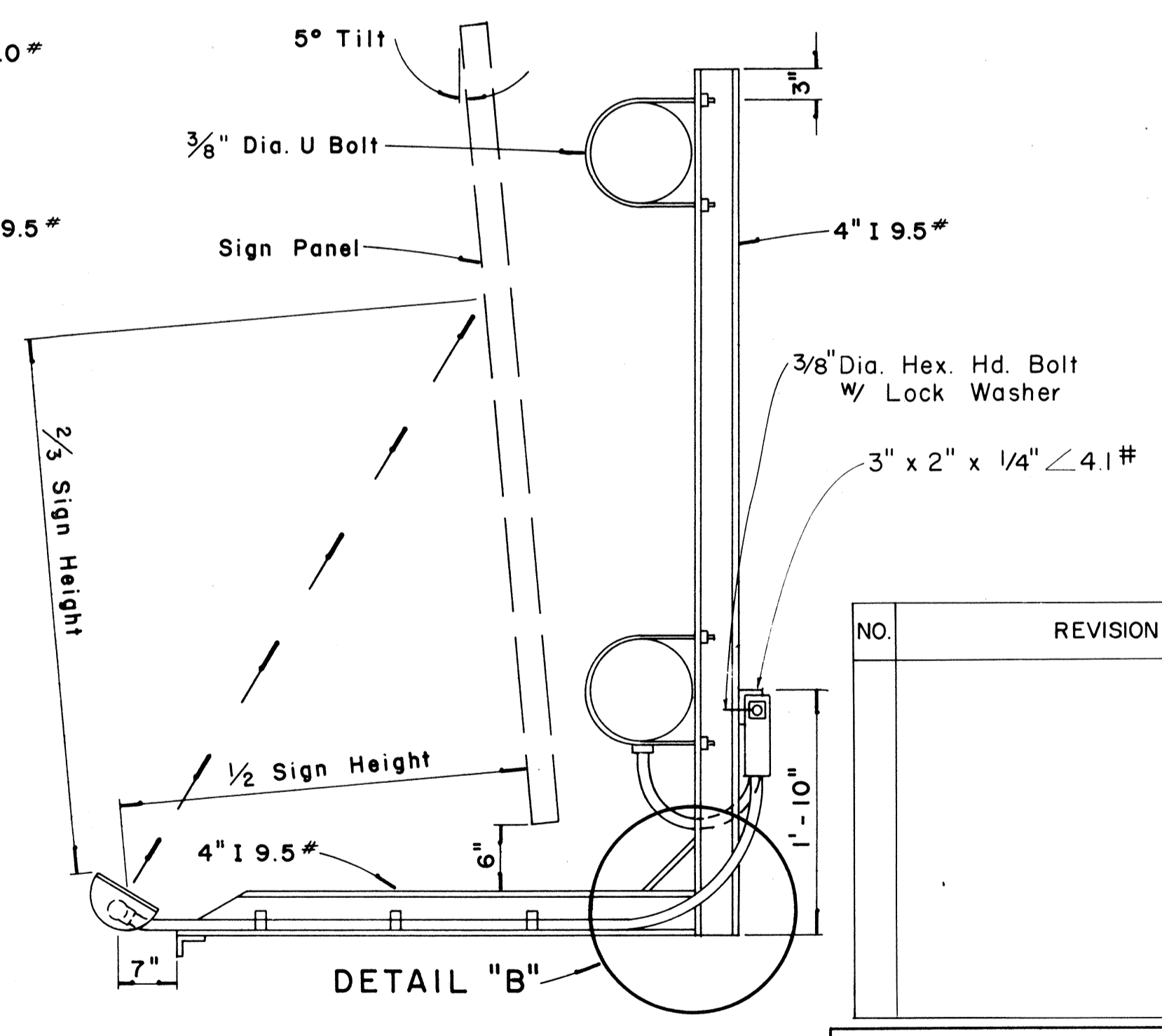
DETAIL "B"
 Scale: 3" = 1'-0"



GROUND MOUNTED OVERHEAD
REAR VIEW LUMINAIRE MOUNTING
 Scale: 1" = 1'-0"



SECTION "A-A"
 Scale: 1" = 1'-0"



SECTION "B-B"
 Scale: 1" = 1'-0"

APPROVAL RECOMMENDED:
Etschi Tanaka
 TRAFFIC ENGINEER
 DATE: 12/29/62

APPROVED:
Andy Z. Z...
 ASSISTANT CHIEF, ENGINEERING
 DATE: 12/30/62

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**EXPRESSWAY SIGNS
 LUMINAIRE MOUNTINGS**

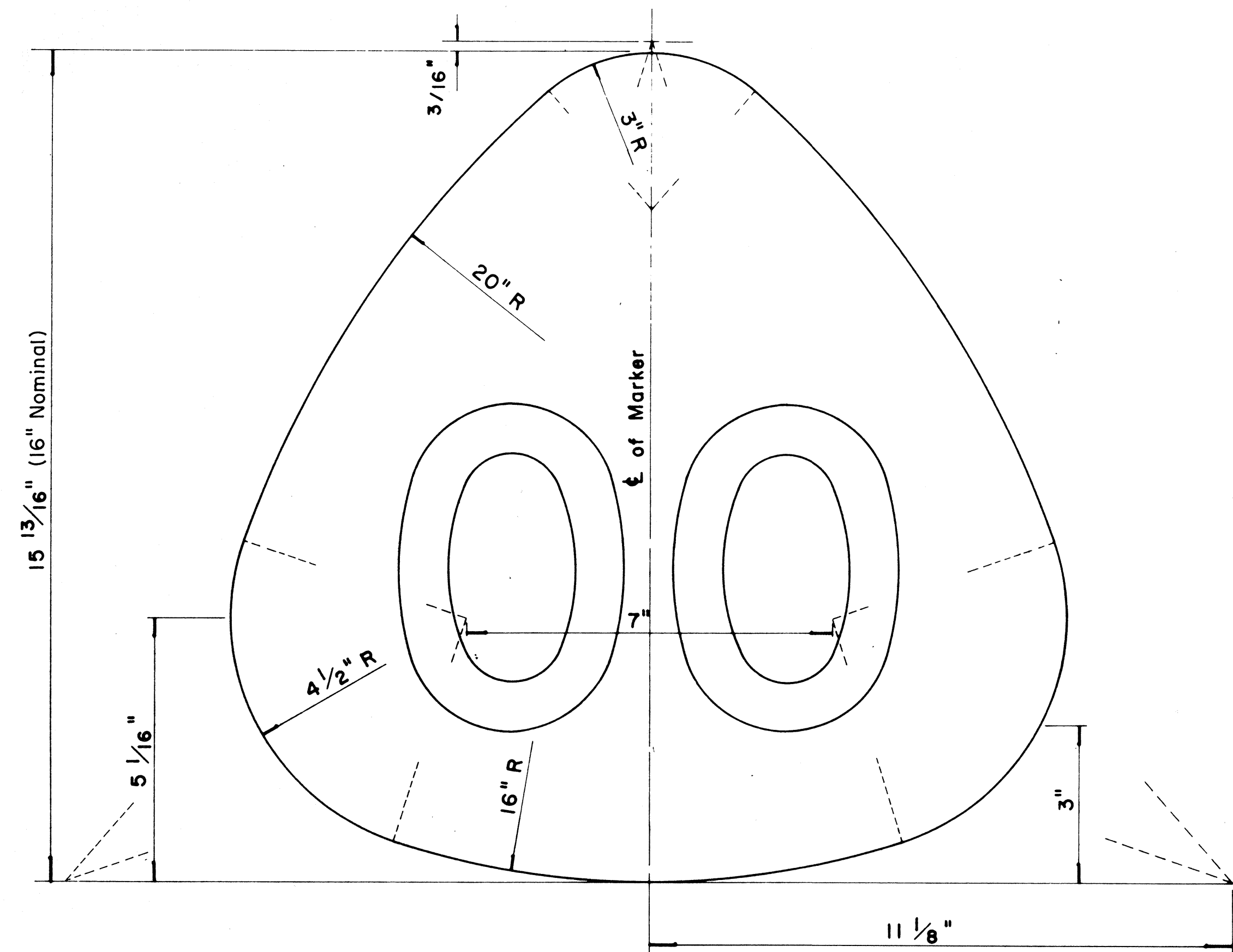
Scale: As Shown

SURVEY PLOTTED BY: _____
 DRAWN 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.	FF-078-117 F-F-078-117	1977	87	164

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"

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"

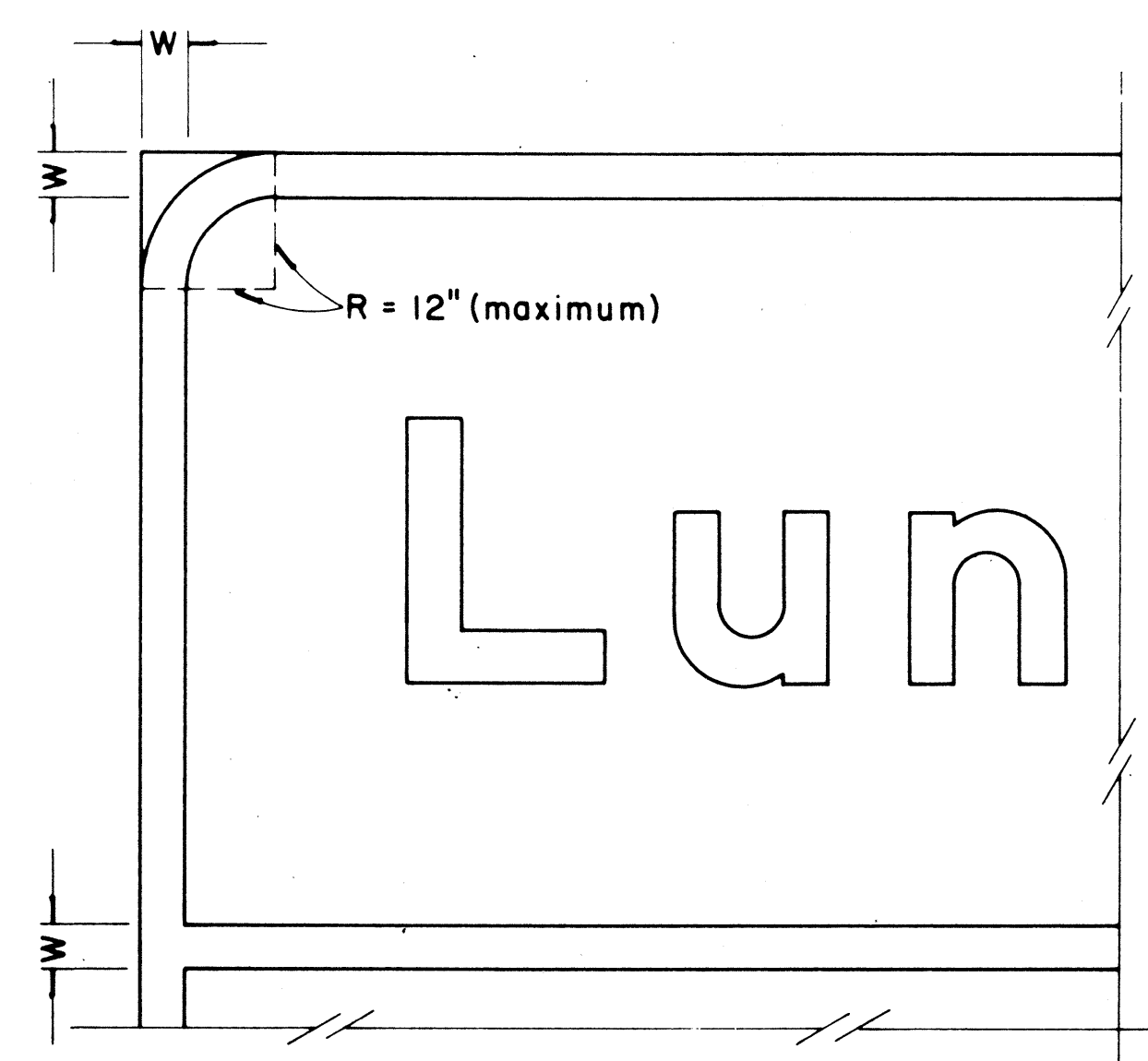


**STATE ROUTE MARKER
FOR GUIDE SIGNS**

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.



**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:

Eishi Tanaka 4/11/72
TRAFFIC ENGINEER DATE

APPROVED:

Mulu R. Sakemi 4/12/72
ASSISTANT CHIEF, ENGINEERING 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.	9-14-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

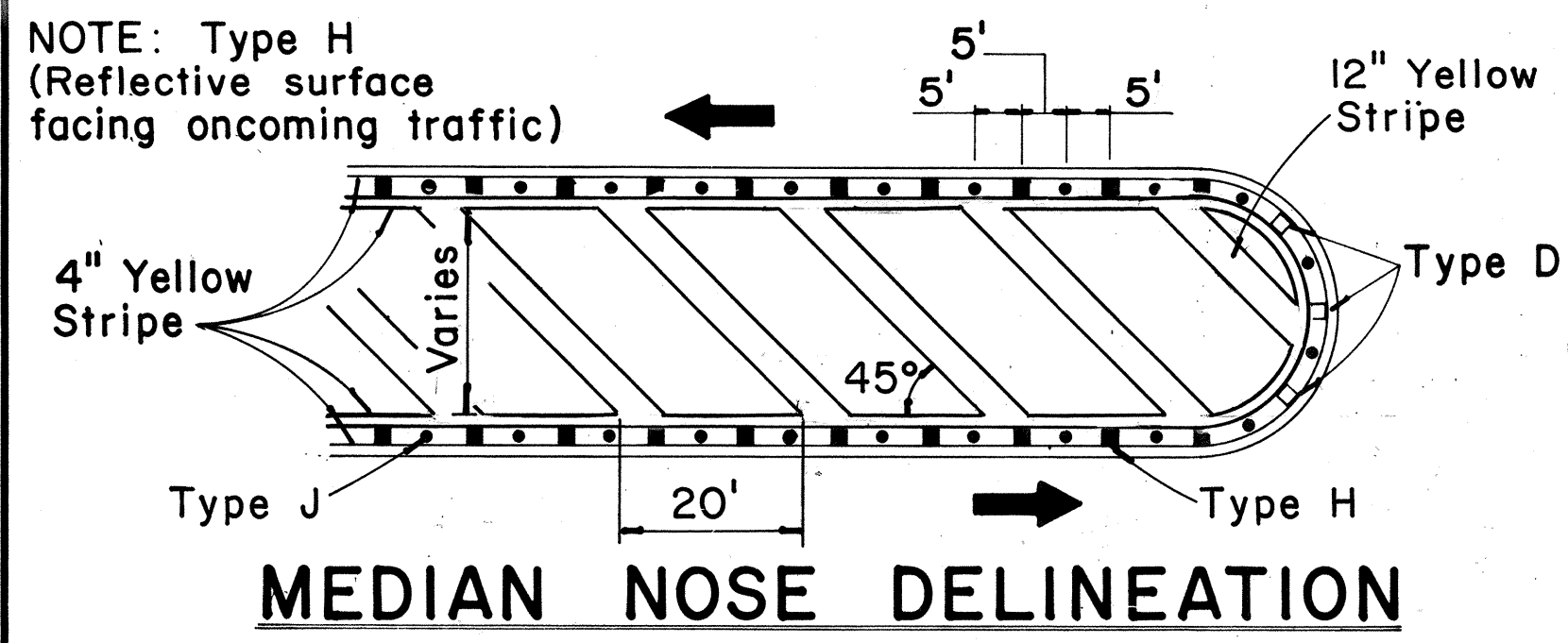
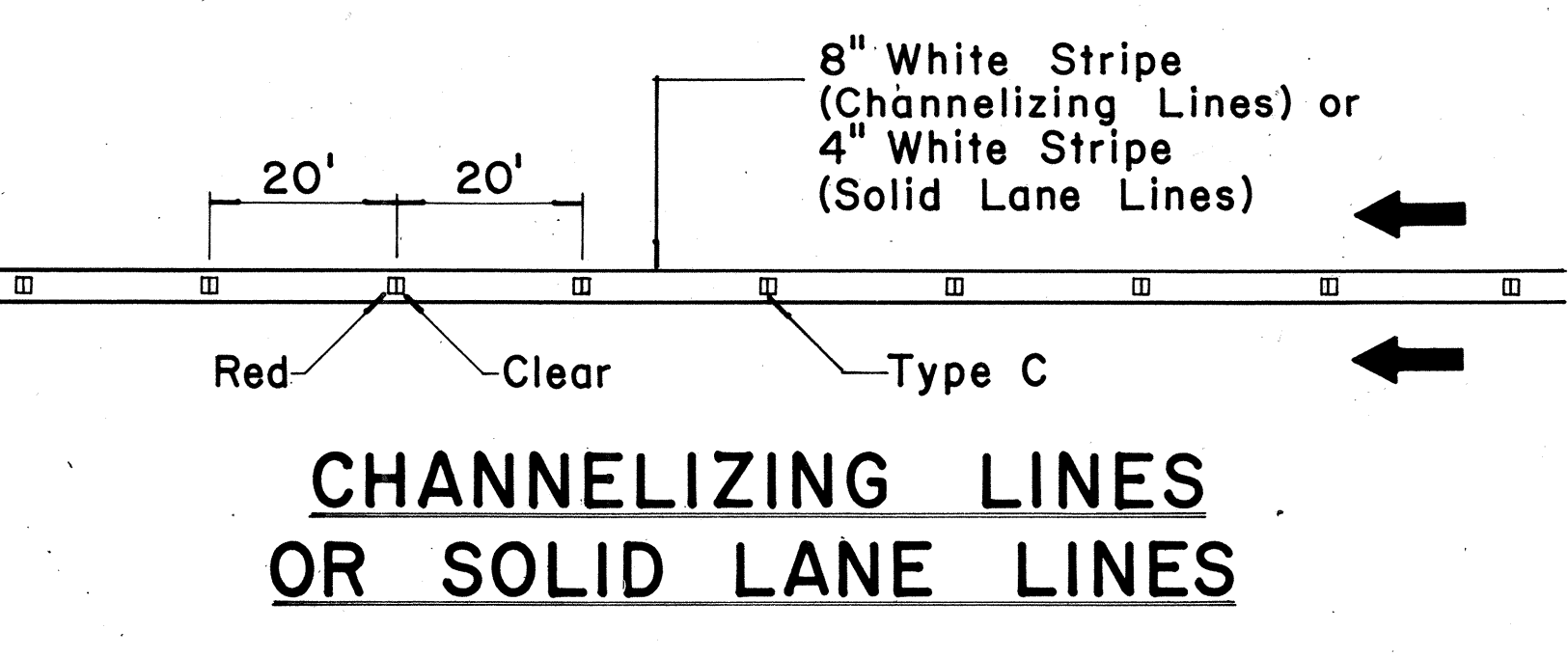
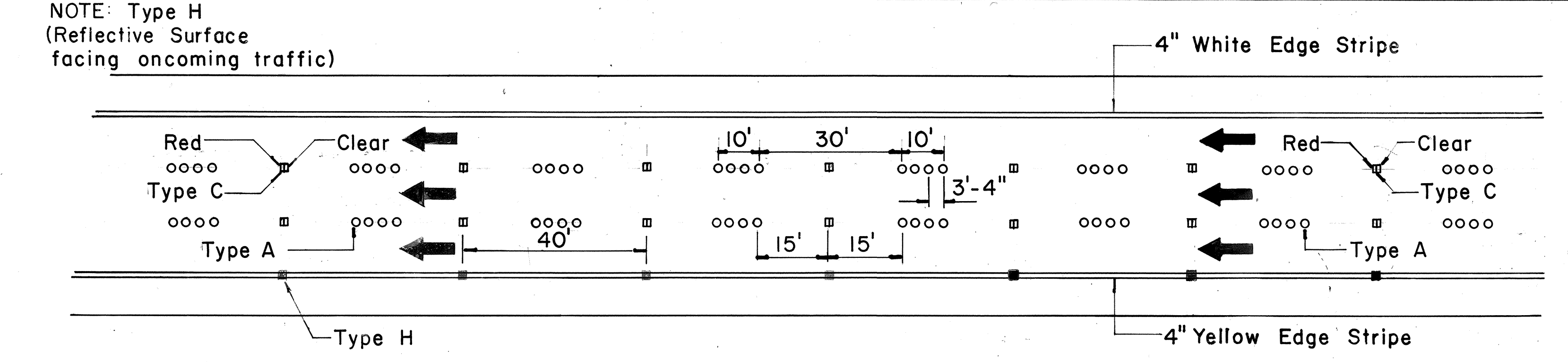
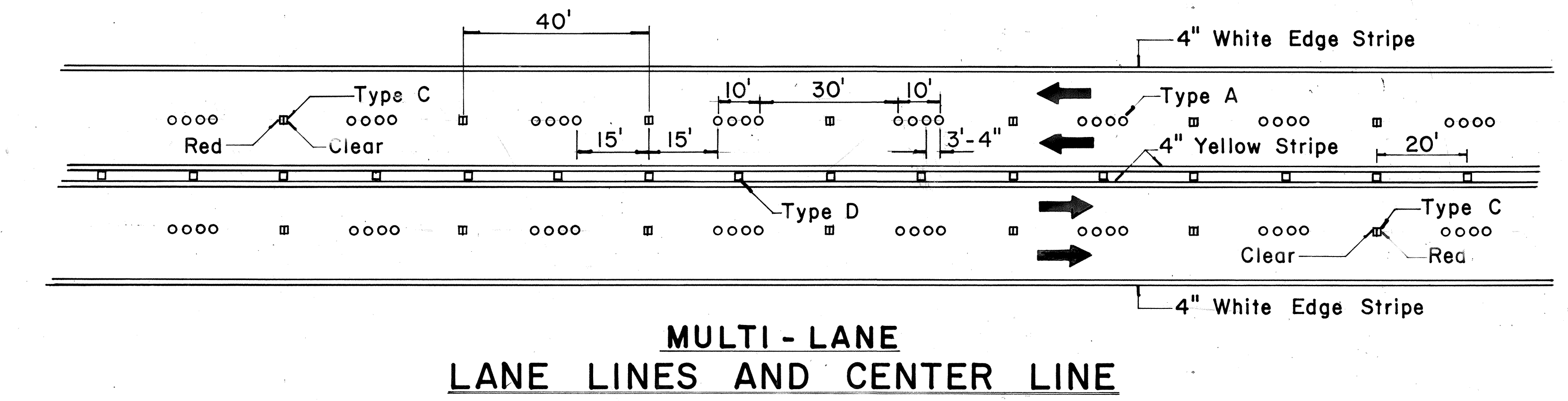
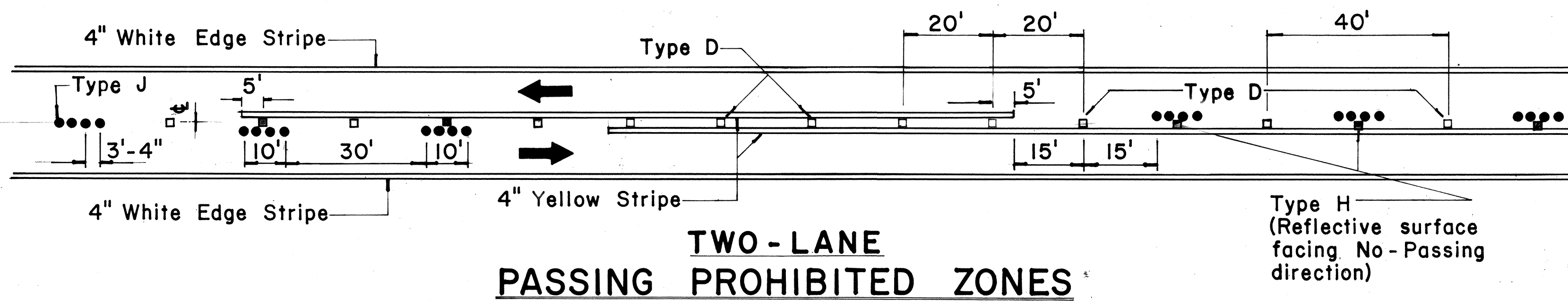
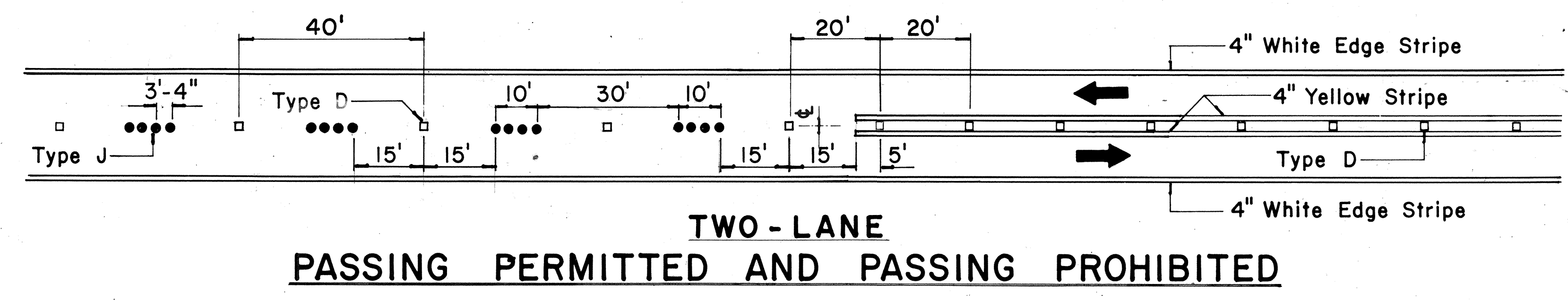
**STATE ROUTE MARKER
AND BORDER DETAIL
FOR GUIDE SIGNS**

Scale: As Shown

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
DESIGNED BY	
CHECKED BY	
DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FF-078-1(17)	1977	88	164

F-FF-078-1(17)

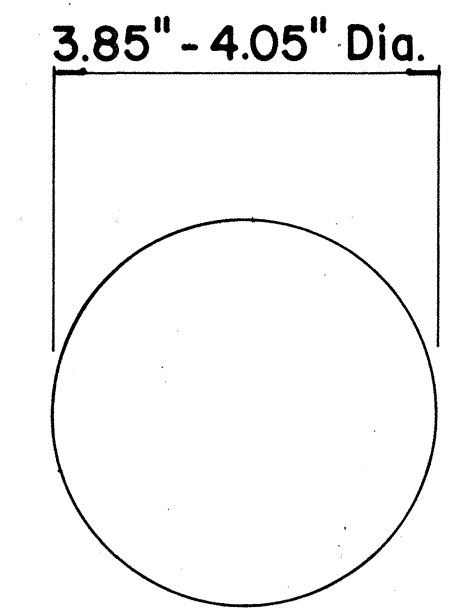


TWO - LANE

MULTI - LANE

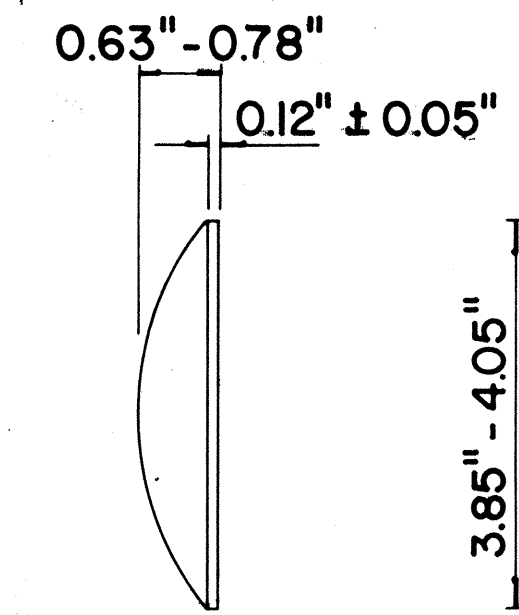
DIVIDED HIGHWAY AND FREEWAY

MISCELLANEOUS

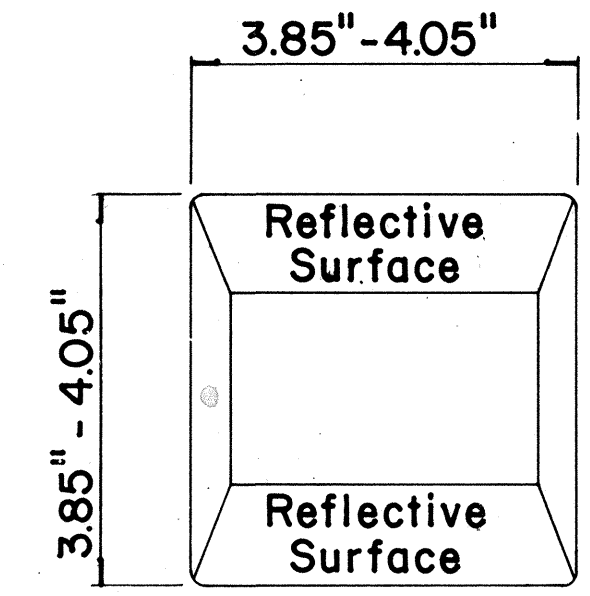


TYPE A
NON-REFLECTIVE WHITE MARKER

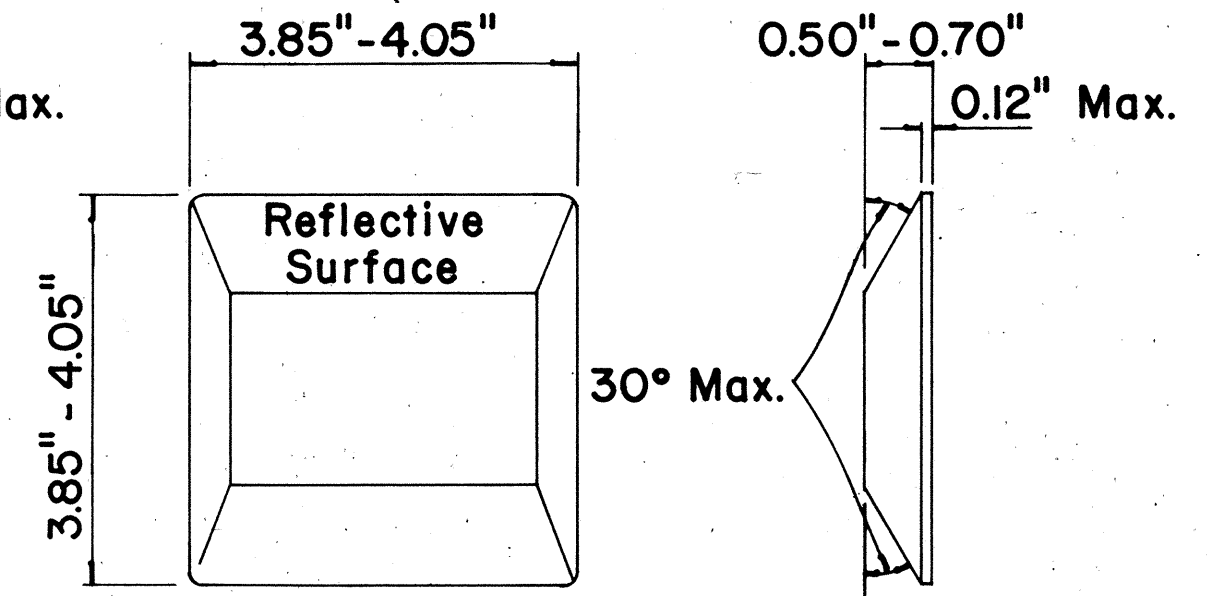
TYPE J
NON-REFLECTIVE YELLOW MARKER



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:
E. Ichi Tanaka 11/18/71
 TRAFFIC ENGINEER DATE

APPROVED:
Shiro Sakai 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.C.	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.C.	1-15-77

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
RAISED PAVEMENT MARKERS
AND STRIPING

Not to Scale October 1971
 SHEET No. 88 OF 164 SHEETS DT 300

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