

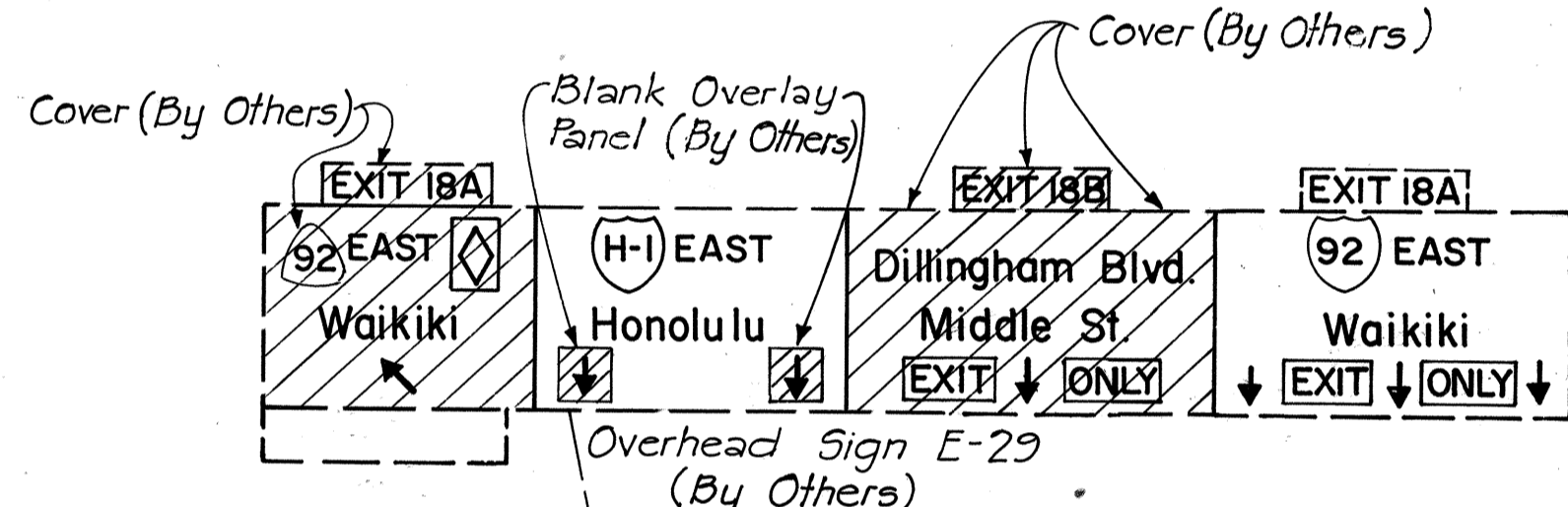
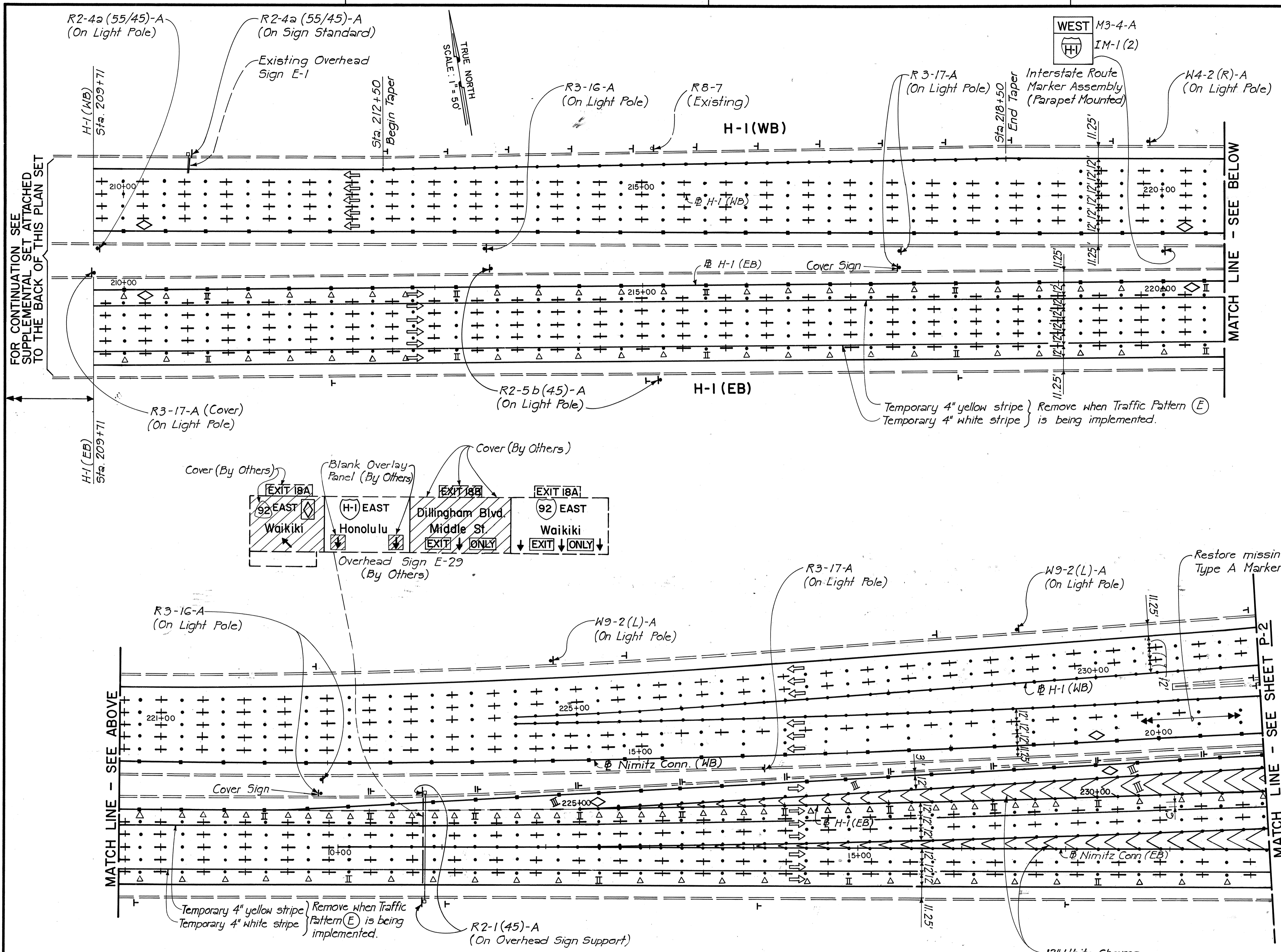
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-R-H-1(170):17	1983	45	211

NOTES

1. For General Notes see Sheet No. P-7

LEGEND

- 4" White Stripe (unless shown otherwise)
- 8" White Stripe with Type C Markers @ 20'
- 4" Yellow Stripe with Type H Markers @ 40'
- 4" Double Yellow Stripe with Type D Markers @ 20'
- . - . 4" White Stripe, 10' long, with Type C Markers @ 40'
- + . + . 4 Type A Markers & Type C Markers @ 40'
- • • Type C Markers @ 40'
- 12" White Stop Line
- - - 4" White Guide Line (unless shown otherwise)
- ⊠ New or Relocated Sign
- ◇ Pavement Diamond
- Standard Pavement Arrows
- ⊢ Crosswalk & Stop Line
- ⊢ Reflector Marker, Type RM-1 (See Note II, Sht. P-7)
- ⊢ Reflector Marker, Type RM-2 (See Note II, Sht. P-7)
- △ Traffic Delineator (Tube)
- Portable Concrete Guard Rail
- ← Direction of Traffic
- ▨ Rumble Strip (See Detail Sheet No. P-6)
- H-I (WB) III Type III Barricade
- H-I (WB) II Type II Barricade

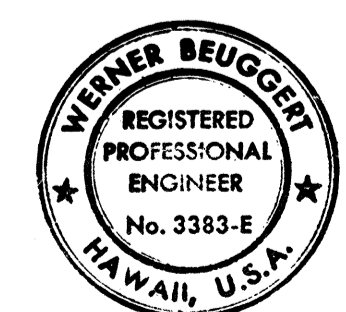


SURVEY PLOTTED BY: _____ DATE: _____
 DRAWN BY: _____
 TRACED BY: _____
 NOTE BOOK: _____
 QUANTITIES BY: _____
 CHECKED BY: _____
 NO. _____

R2-1(45)-A SPEED LIMIT 45	R2-4a(55/45)-A SPEED LIMIT 55 MINIMUM 45	R3-16-A CAR POOLS OR MORE	R3-17-A LEFT LANE BUSES AND CAR POOLS ONLY 6-8:30AM 3:30-5:30PM EXCEPT SAT SUN & HOL	R2-5b(45)-A REDUCED SPEED 45 M.P.H.	W4-2(R)-A LANE ENDS MERGE LEFT	W9-2(L)-A CH 9-2(L)-A
---------------------------------	--	---------------------------------	---	--	--------------------------------------	--------------------------

H-I (WB)
NIMITZ CONN. (WB)
HOV RAMP
H-I (EB)
NIMITZ CONN. (EB)

4/23/86	Changed pavement markings & signing on Nimitz Connector (EB) and H-1 (EB)
DATE	REVISION



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Beuiger

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
**TRAFFIC PATTERN (D)
 SIGNING & PAVEMENT MARKINGS
 PHASE III**

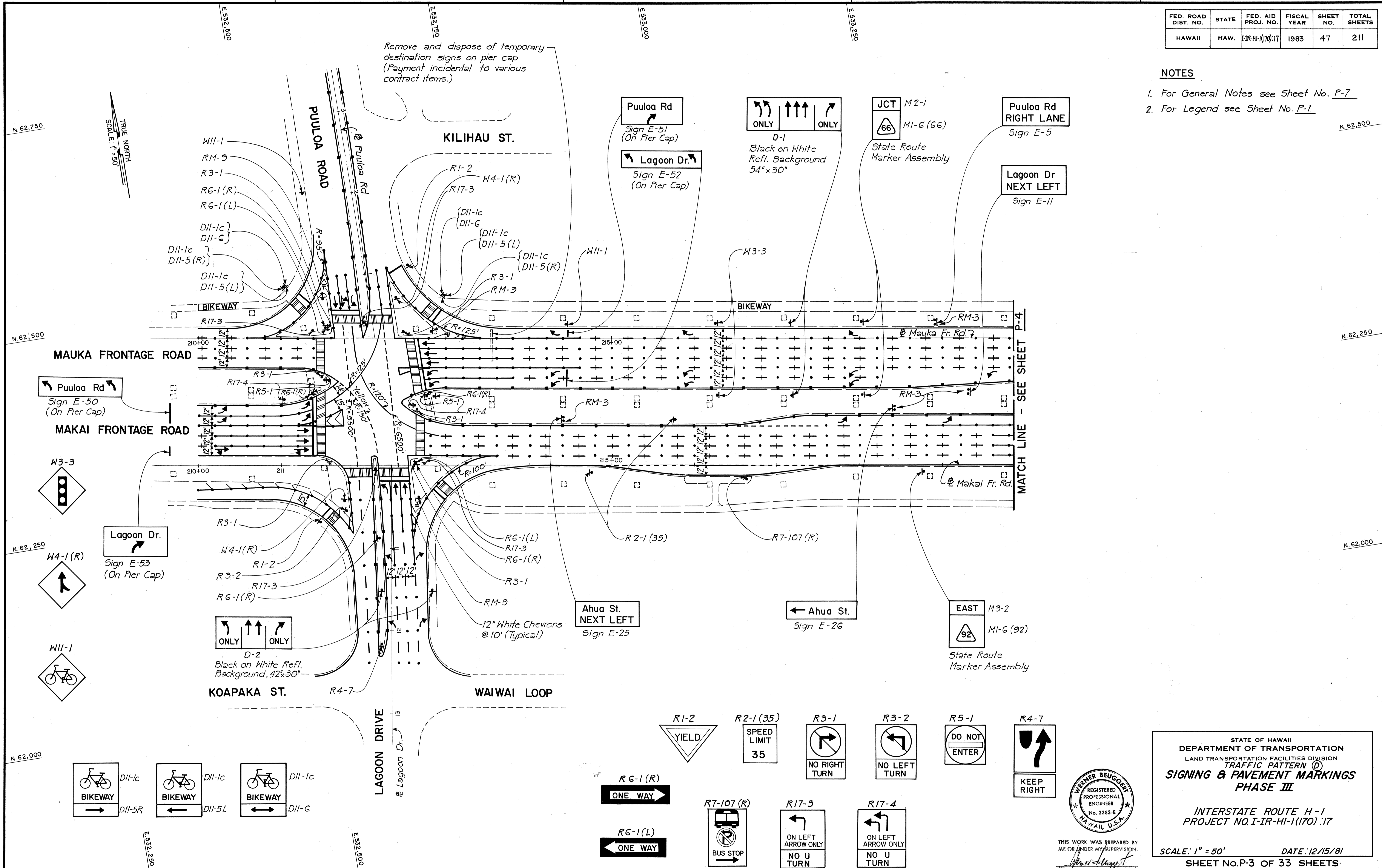
INTERSTATE ROUTE H-1
 PROJECT NO. I-IR-H-1(170):17

SCALE: 1" = 50' DATE: 12/15/81
 SHEET No. P-1 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI(170)-17	1983	47	211

NOTES

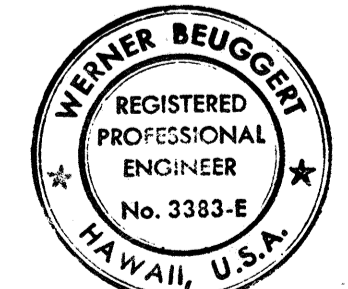
1. For General Notes see Sheet No. P-7
2. For Legend see Sheet No. P-1



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

Legend

- R1-2: YIELD
- R2-1(35): SPEED LIMIT 35
- R3-1: NO RIGHT TURN
- R3-2: NO LEFT TURN
- R5-1: DO NOT ENTER
- R4-7: KEEP RIGHT
- R6-1(R): ONE WAY (Right)
- R6-1(L): ONE WAY (Left)
- R7-107(R): BUS STOP
- R17-3: ON LEFT ARROW ONLY, NO U TURN
- R17-4: ON LEFT ARROW ONLY, NO U TURN



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Beugger

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
 TRAFFIC PATTERN (D)
SIGNING & PAVEMENT MARKINGS
PHASE III

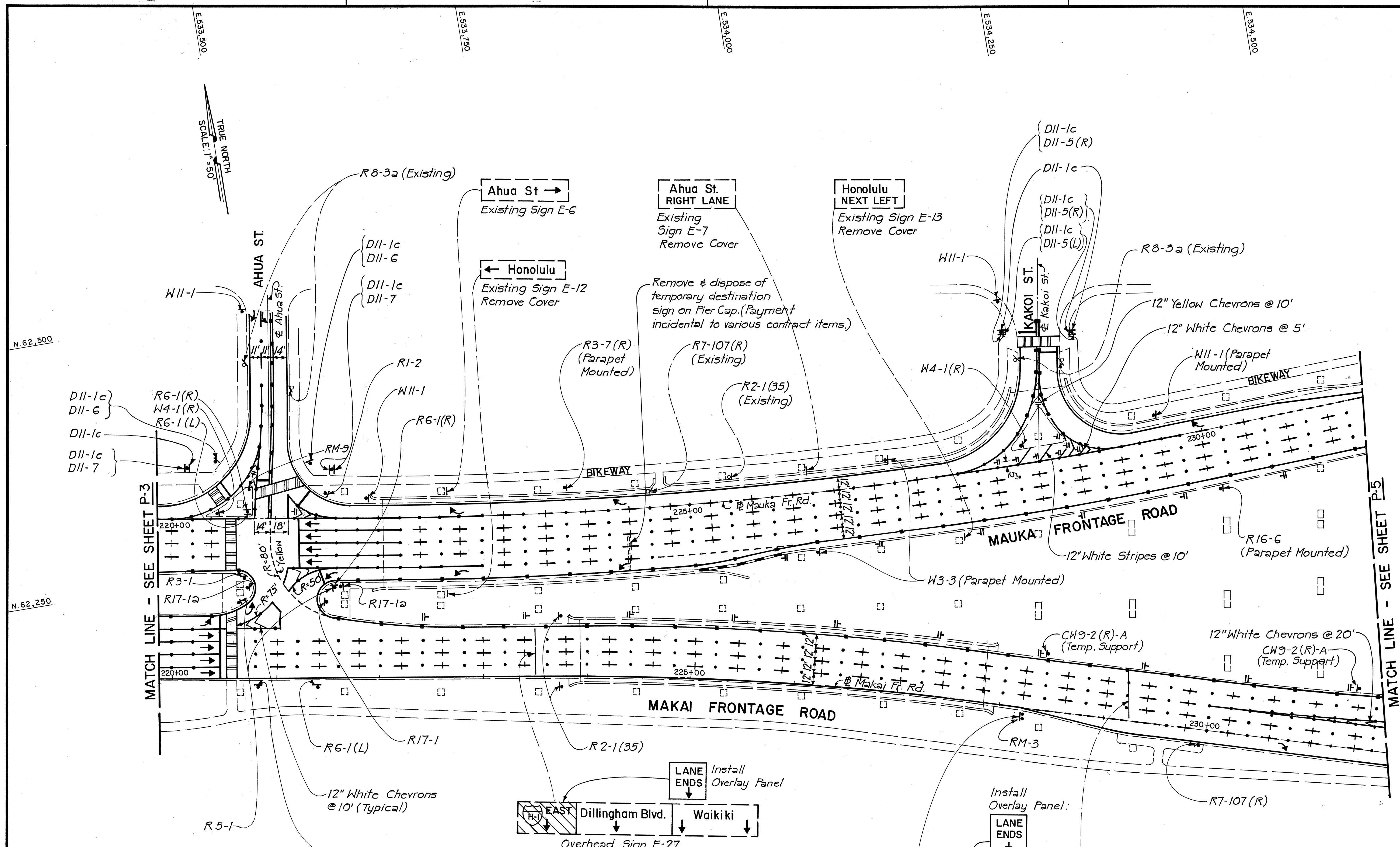
INTERSTATE ROUTE H-1
 PROJECT NO. I-IR-HI-1(170)-17

SCALE: 1" = 50' DATE: 12/15/81
 SHEET No. P-3 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI-1(170)IT	1983	48	211

NOTES

1. For General Notes see Sheet No. P-7
2. For Legend see Sheet No. P-1.



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

Legend

Install Overlay Panel: LANE ENDS

Overhead Sign E-27 (On Pier Bent #15) (By Others, except Overlay Panel)

Overhead Sign E-31 (On Pier Bent #22) (By Others, except Overlay Panel)

Pacific War Memorial Sign E-32

10/23/84	Revised pavement markings at Kakoi St. Intersection.
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
 TRAFFIC PATTERN (D)
SIGNING & PAVEMENT MARKINGS
PHASE III

INTERSTATE ROUTE H-1
 PROJECT NO. I-IR-HI-1(170).17

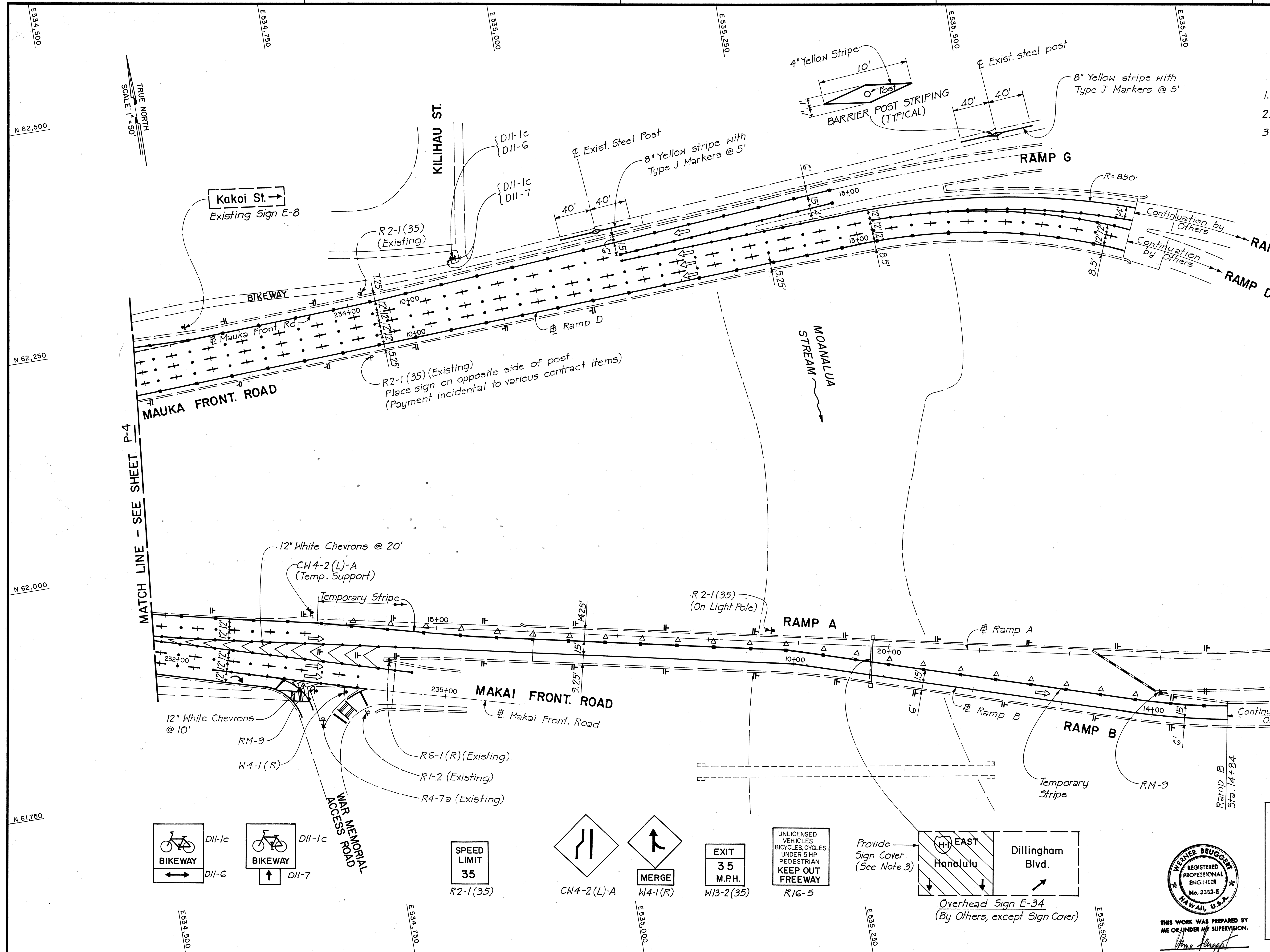
SCALE: 1" = 50' DATE: 12/15/81
 SHEET No. P-4 OF 33 SHEETS

REGISTERED PROFESSIONAL ENGINEER
 No. 3333-E
 HAWAII, U.S.A.
 WERNER BEUGGER

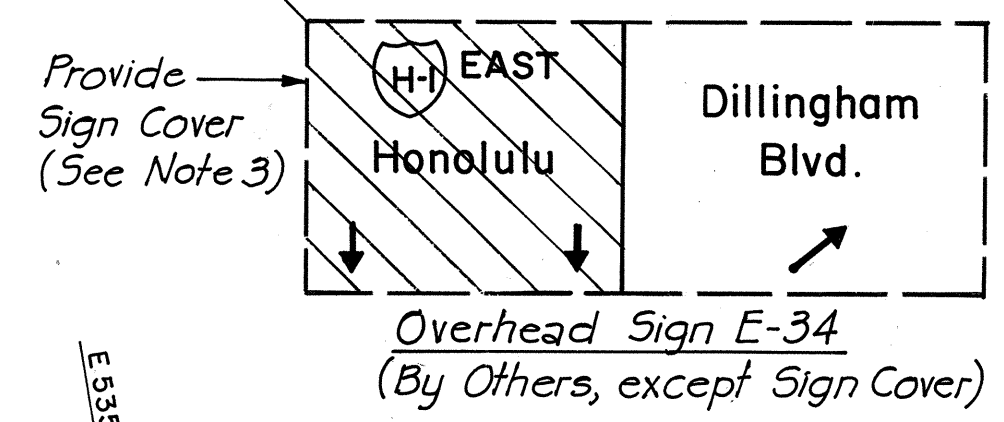
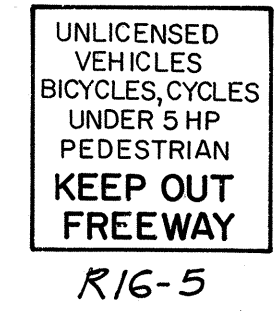
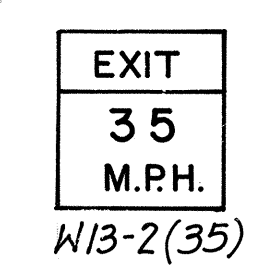
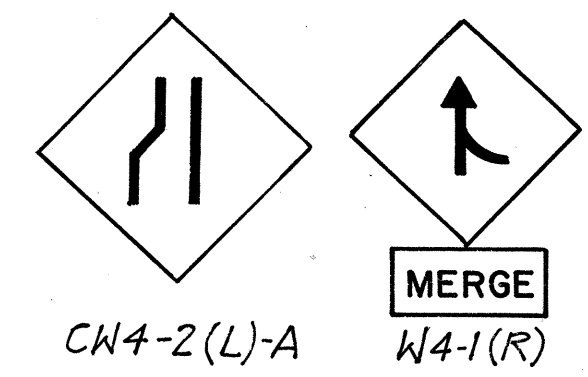
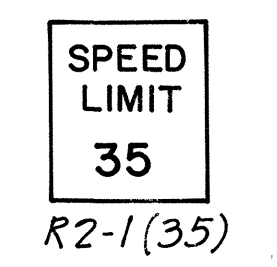
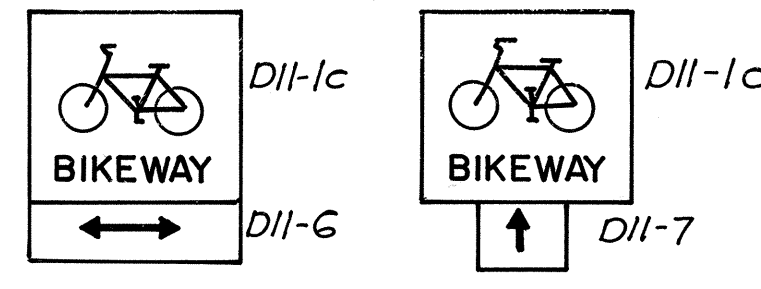
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 Wm. Skaggs

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(170)-17	1983	49	211

- NOTES**
- For General Notes see Sheet No. P-7
 - For Legend see Sheet No. P-1
 - Sign Cover shall be of 1/4" thick exterior grade plywood. Exposed surface shall be painted grey. (Payment will be considered incidental to various Contract Items.)



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



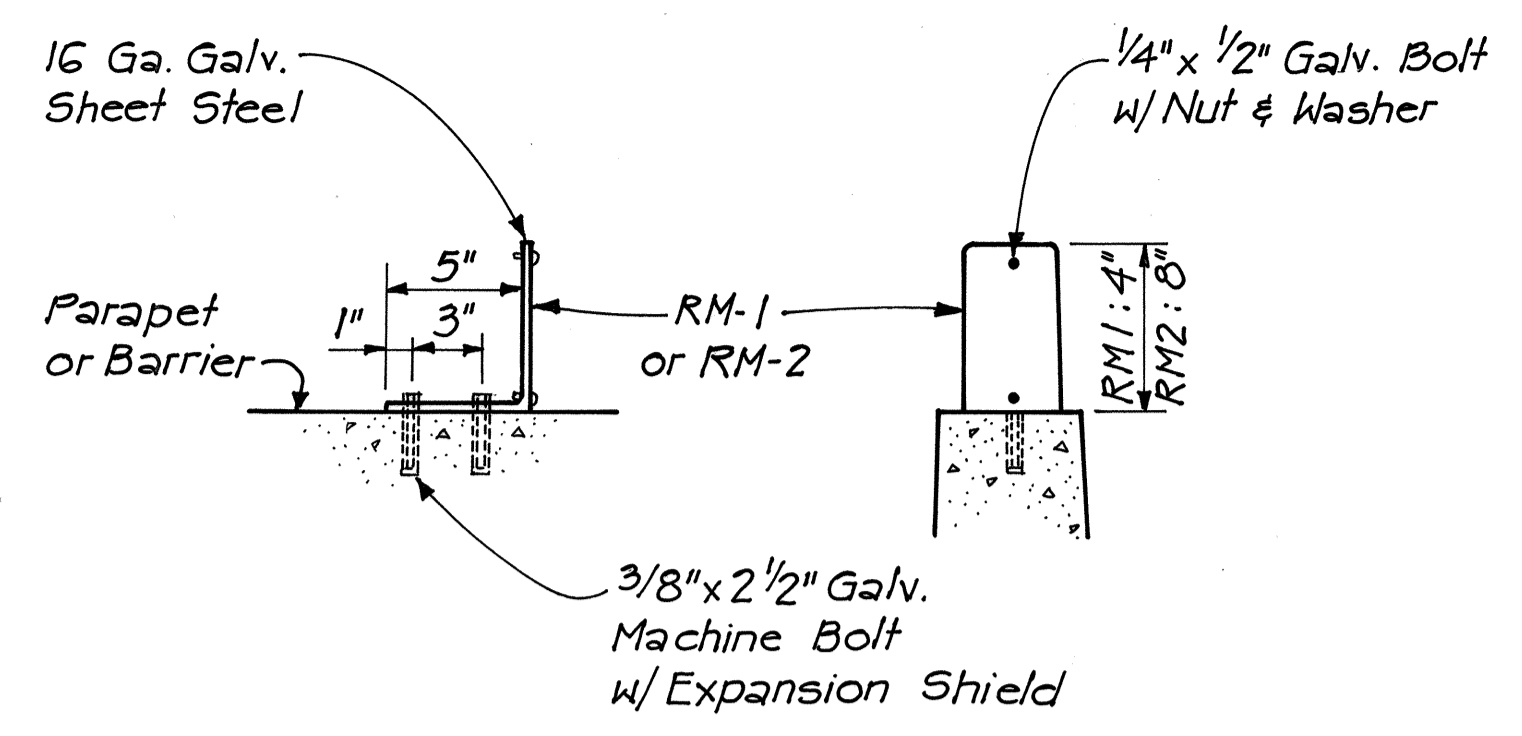
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Beugger

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
TRAFFIC PATTERN (D)
SIGNING & PAVEMENT MARKINGS
PHASE III

INTERSTATE ROUTE H-1
 PROJECT NO. I-IR-HI-1(170)-17

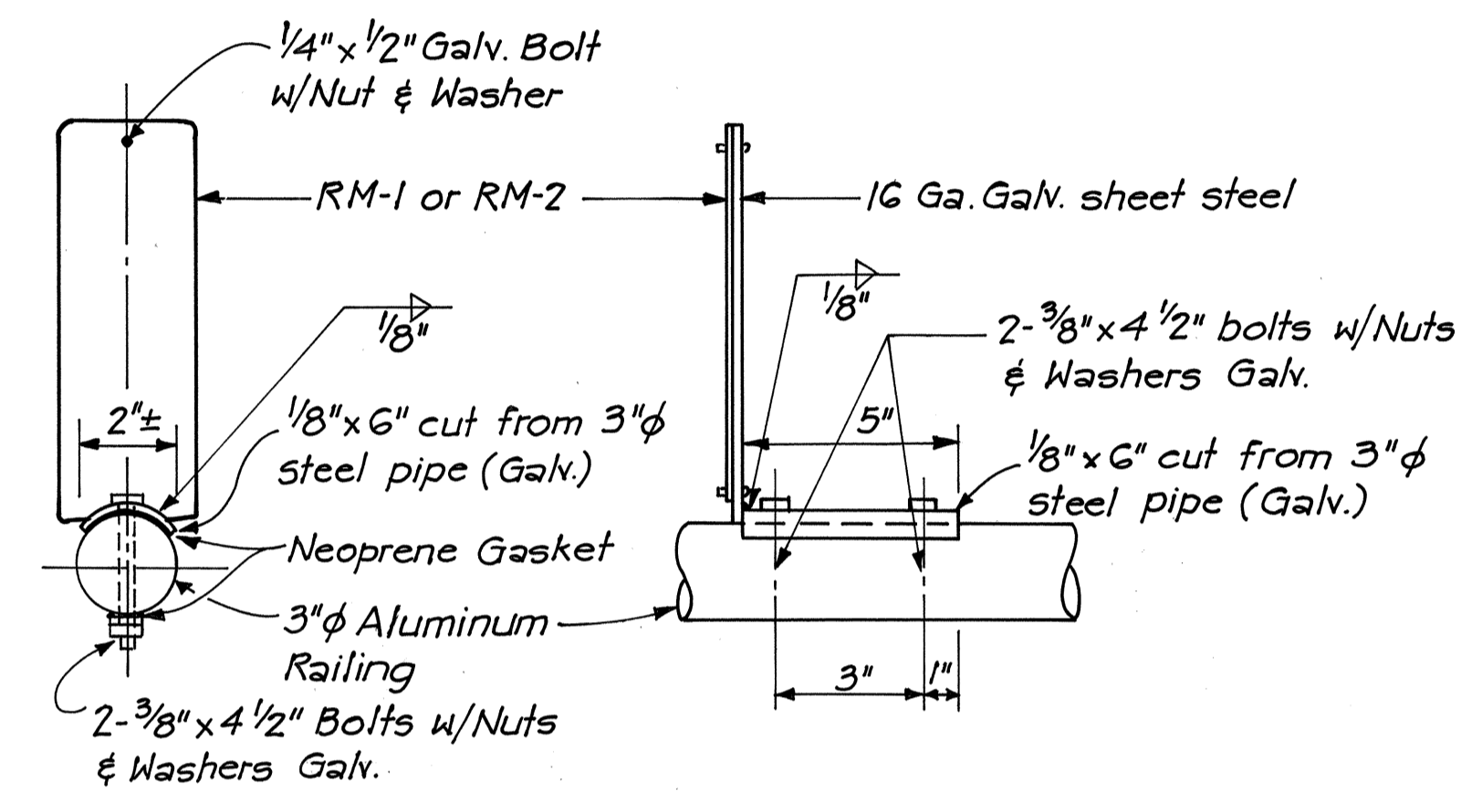
SCALE: 1" = 50' DATE: 12/15/81
 SHEET NO. P-5 OF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI-1(170):17	1983	51	211



SIDE VIEW FRONT VIEW

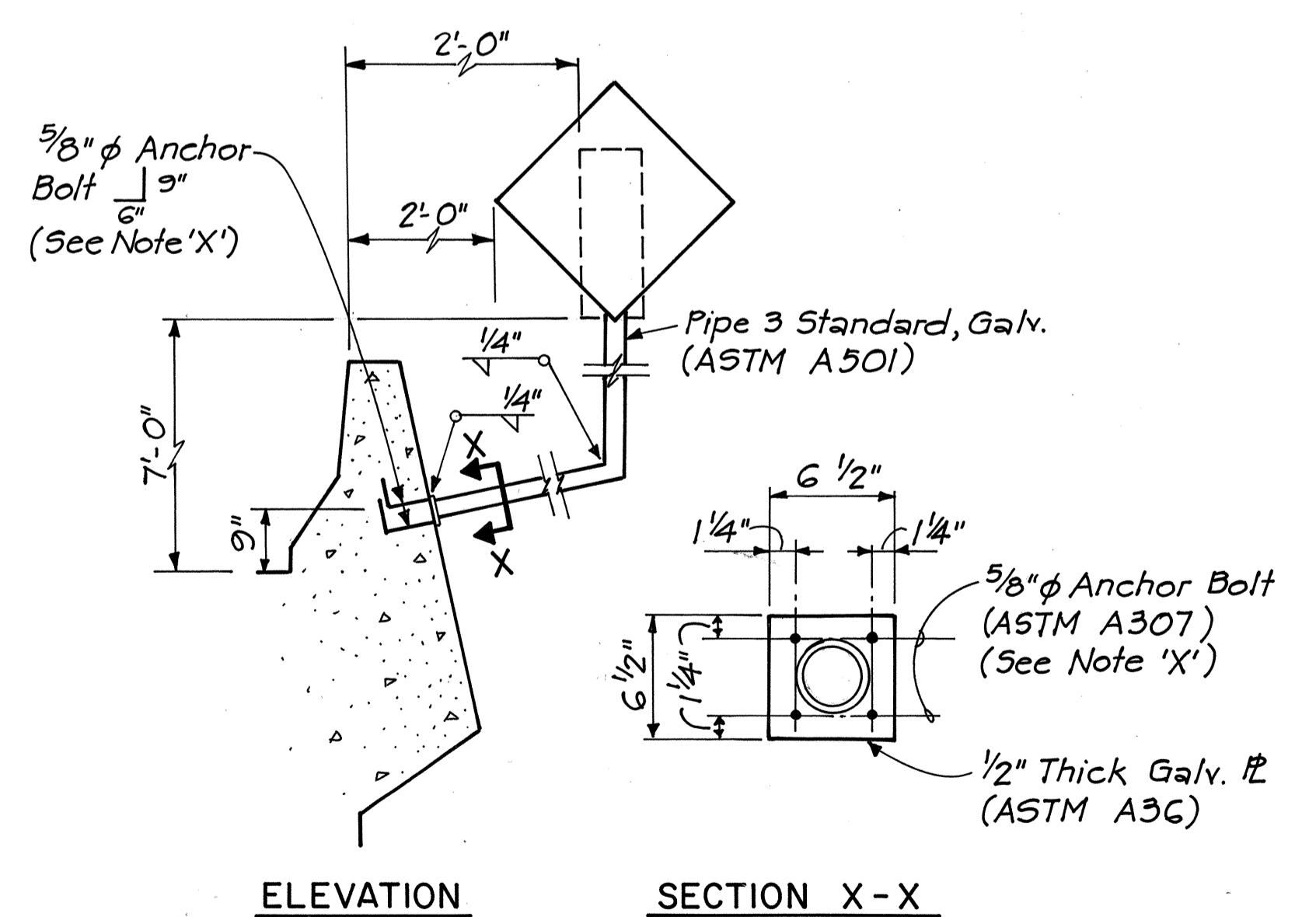
PARAPET OR BARRIER MOUNTED REFLECTOR MARKER
Scale: 1 1/2" = 1'-0"



NOTE: Contractor has the option to install 3/4" wide, 18 gage stainless steel bands with 1/16" thick stainless steel clamp in lieu of 3/8" x 4 1/2" bolts

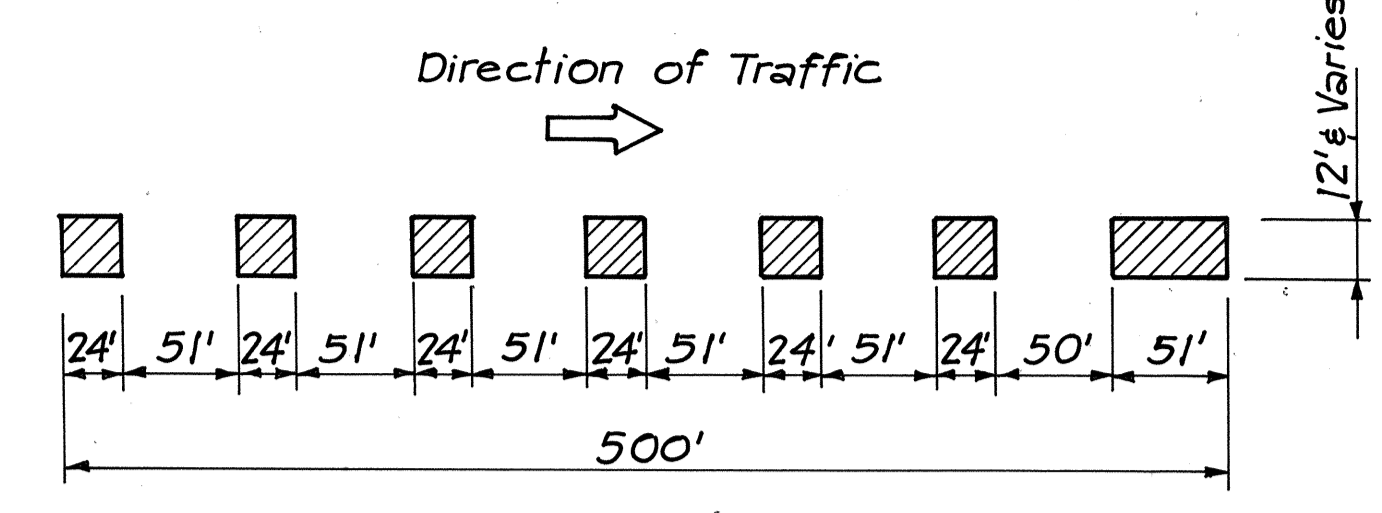
BACK ELEVATION SIDE ELEVATION

RAILING MOUNTED REFLECTOR MARKER
N.T.S.



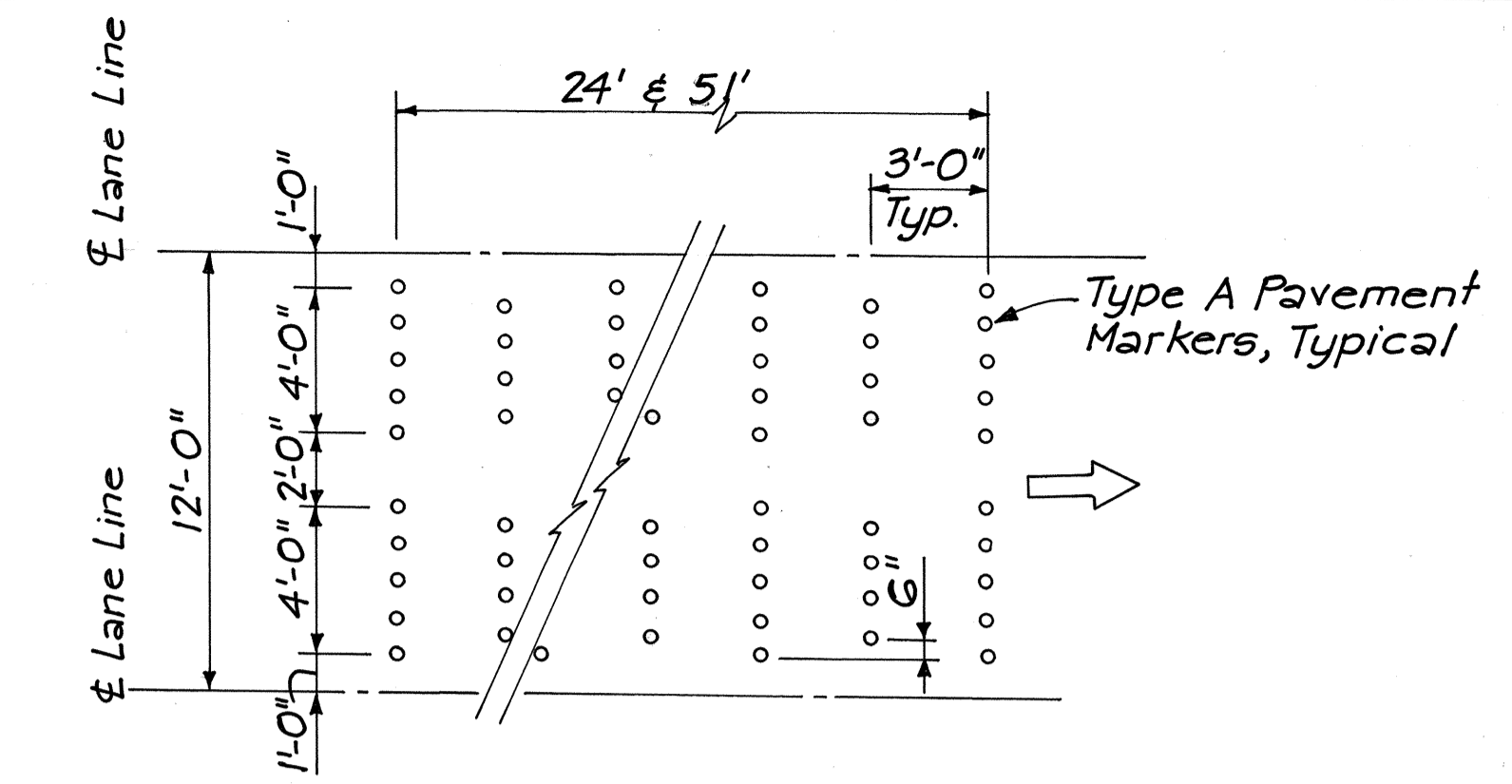
NOTE 'X': Use 5/8" x 5" long Wedge Anchor Type Expansion Bolts for sign mounting on existing structures

PARAPET MOUNTED SIGN
N.T.S.

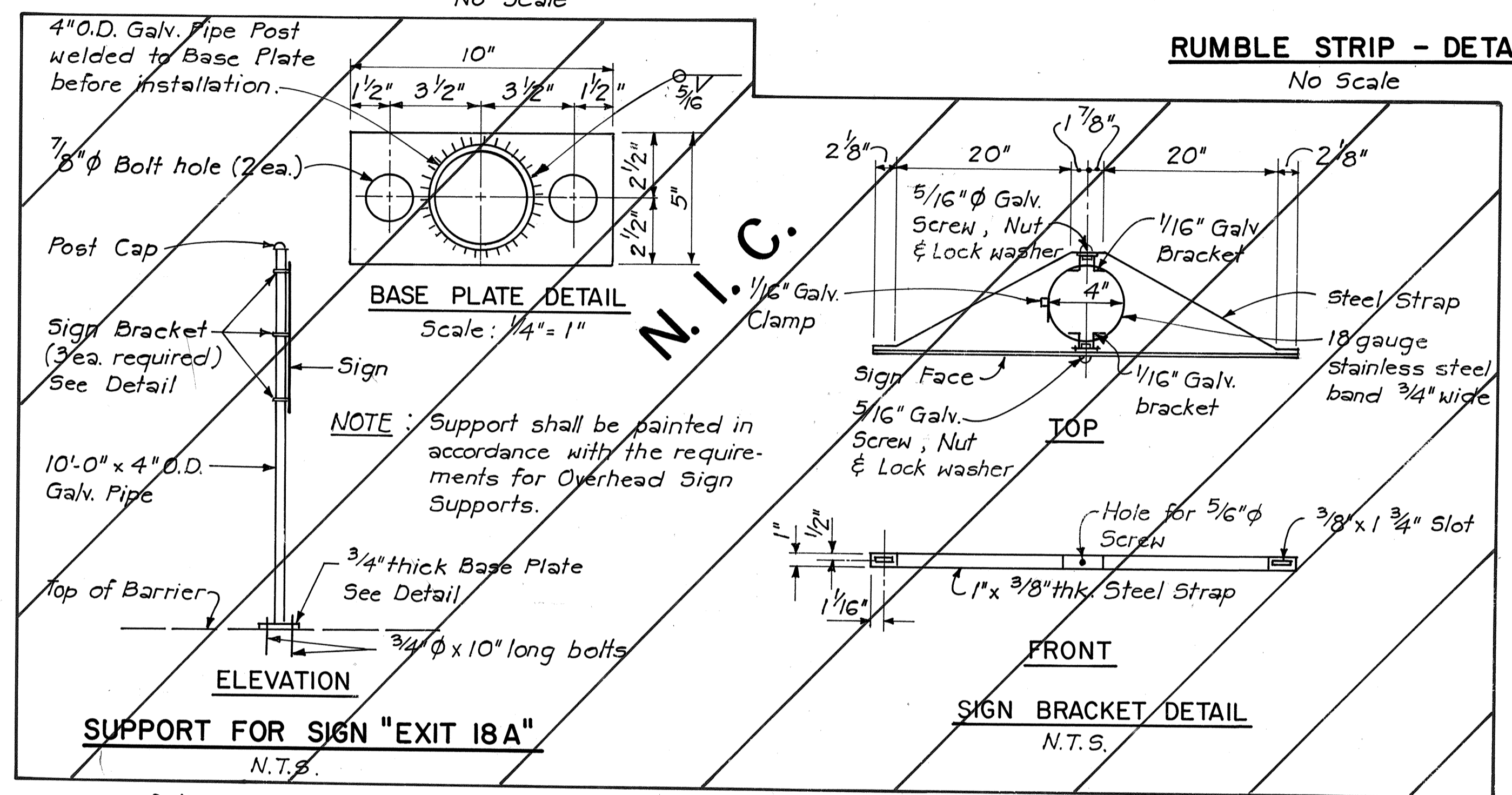


NOTE: Rumble Strip will be paid under "Type A Pavement Markers." Payment for removal of Rumble Strip is incidental to various Contract Items.

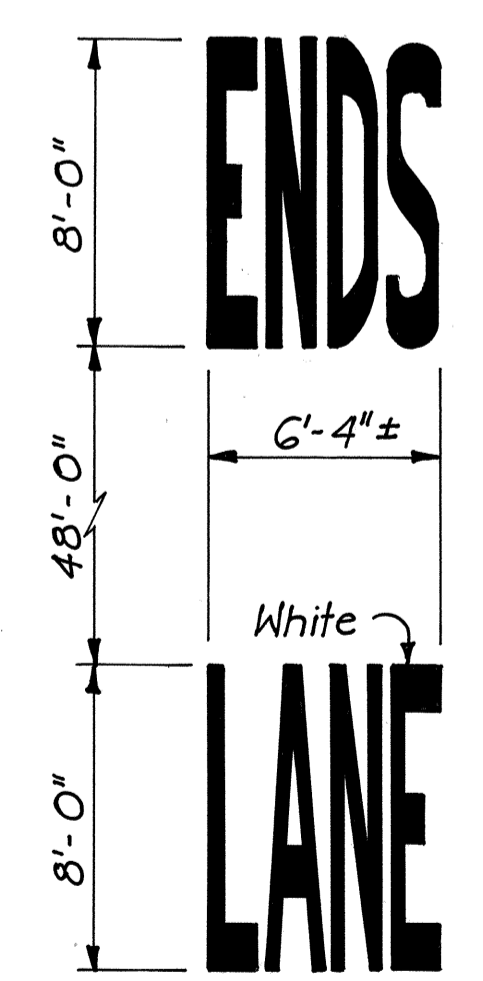
RUMBLE STRIP - LAYOUT
No Scale



RUMBLE STRIP - DETAIL
No Scale



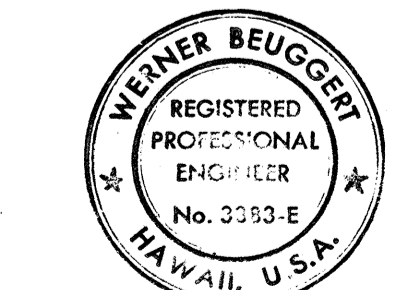
SUPPORT FOR SIGN "EXIT 18A"
N.T.S.



NOTE: Letters shall be in conformance with Standard Detail Sheet Nos. DT 307 & DT 308.

PAVEMENT WORDS
Scale: 1" = 5'

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Beuggert

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

MISCELLANEOUS DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-IR-HI-1(170):17

SCALE: AS SHOWN DATE: 12/15/81
SHEET No. P-6 OF 33 SHEETS

SIGNING SUMMARY

TYPE	MESSAGE	QUANTITY		
		W/P	WO/P	W/P ON PARAPET
R1-2	YIELD	3	—	—
R2-1(35)	SPEED LIMIT 35 MPH	4	1	1
R2-1(35)A	SPEED LIMIT 35 MPH	—	1	—
R2-1(45)A	SPEED LIMIT 45 MPH	—	2	—
R2-4a(55)A	SPEED LIMIT 55 MPH, 45 MPH MINIMUM	—	4	—
R2-5b(35)A	REDUCED SPEED 35 MPH	—	1	—
R2-5b(45)A	REDUCED SPEED 45 MPH	—	2	—
R3-1	NO RIGHT TURN	7	1	—
R3-2	NO LEFT TURN	1	—	—
R3-7(R)	RIGHT LANE MUST TURN RIGHT	—	—	1
R3-12-A	RESTRICTED LANE ENDS	—	1	—
R3-16-A	CAR POOLS 3 OR MORE	—	4	—
R3-17-A	LEFT LANE BUSES AND CAR POOLS ONLY, 24 HOURS	—	5	—
R4-7	KEEP RIGHT	1	—	—
R5-1	DO NOT ENTER	2	2	—
R6-1(R)	ONE WAY →	4	3	—
R6-1(L)	ONE WAY ←	2	2	—
R7-107(R)	BUS STOP	2	0	—
R16-5	UNLICENSED VEHICLE, BICYCLE UNDER 5HP, PEDESTRIANS KEEP OUT FREEWAY	—	1	—
R16-6	U TURN AHEAD	—	—	1
R17-1	ON LEFT ARROW ONLY ↶	1	—	—
R17-1a	ON LEFT ARROW ONLY ↷	2	—	—
R17-3	ON LEFT ARROW ONLY ↶ NO U TURN	4	—	—
R17-4	ON LEFT ARROW ONLY ↷ NO U TURN	4	—	—
W3-3	⊠	2	—	2
W4-1(R)	↑	5	—	—
W4-2(R)A	↑	—	1	—
W4-2(L)A	↓	—	—	1
W9-2(R)A	LANE ENDS MERGE RIGHT	—	—	2
W9-2(L)A	LANE ENDS MERGE LEFT	—	2	—
W11-1	↻	5	—	1
W12-2(14)6	14' 6"	—	—	2
W13-2(35)	EXIT 35 MPH	—	1	1
D-2	ONLY ↑↑ ONLY	2	—	—
D-1	ONLY ↑↑↑ ONLY	2	—	—

CW1-8	⊞	1	—	—
CW4-2(R)A	↑	1	—	—
CW9-2(L)A	LANE ENDS MERGE LEFT	2	—	—
CW9-2(R)A	LANE ENDS MERGE RIGHT	3	—	—
D11-1C	BIKEWAY	—	3	—
D11-1C, D11-5R	BIKEWAY →	2	2	—
D11-1C, D11-5L	BIKEWAY ←	1	3	—
D11-1C, D11-6	BIKEWAY ↔	5	—	—
D11-1C, D11-7	BIKEWAY ↑	2	3	—

MISCELLANEOUS :

- Reset Warning, Regulatory and Construction Sign 9 Each
- Traffic Delineators 61 Each
- Mile Post Marker with Post on Parapet 1 Each
- State Route Marker Assembly with Post 3 Each
- Interstate Route Marker Assembly with Post on Parapet 1 Each

NOTE :

Shown quantities of signs, barricades and delineators are for bidding purposes only. Contractor shall establish the actual number to be furnished based on reusable material available from site and storage, and as directed by the Engineer.

SUMMARY OF REFLECTOR MARKERS

ITEM	QUANTITY						
	SHEET P-1	SHEET P-2	SHEET P-3	SHEET P-4	SHEET P-5	SHEET P-5A	TOTAL
Type RM-1 (on Parapet, Barrier or Railing)	25	19	—	—	—	—	44
Type RM-2, with Post (See Note 11)	—	4	3	10	7	2	26
Type RM-2(on Parapet, Barrier or Railing)	9	24	—	10	14	6	63
Type RM-3	—	—	4	1	—	—	5
Type RM-9	—	1	—	—	—	—	1
Type RM-9, with Post (See Note 11)	—	1	3	2	2	—	8

SUMMARY OF PAVEMENT MARKERS

ITEM	QUANTITY						
	SHEET P-1	SHEET P-2	SHEET P-3	SHEET P-4	SHEET P-5	SHEET P-5A	TOTAL
Type A	1891	1850	516	696	304	112	5369
Type C	728	329	286	275	158	160	1936
Type D	—	—	—	9	—	—	9
Type H	110	138	71	66	102	45	532
Type J	—	—	—	—	34	—	34

GENERAL PAVEMENT MARKING NOTES

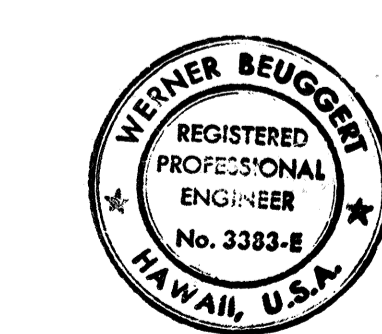
- All pavement marking stripes, arrows, diamonds and words shall be of Permanent Preformed Pavement Marking Tape, Type I, unless otherwise indicated.
- Temporary pavement marking stripes and arrows shall be of Temporary Preformed Pavement Marking Tape.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-IR-HI-1(170):17	1983	52	211

GENERAL SIGNING NOTES

- Signs, Traffic Delineators, and Barricade Warning Lights shall conform to FHWA publications, "Manual on Uniform Traffic Control Devices", 1978 and "Standard Highway Signs", 1972 and as amended.
- Unless noted otherwise, exact locations of Signs, Barricades, and Delineators will be determined by the Engineer.
- Contractor may substitute portable or temporary mountings for post mountings for construction signs with the approval of the Engineer.
- Existing and reusable Signs, Signs from storage, Barricades and Traffic Delineators shall be reset at locations shown on the plans, and as directed by the Engineer. All additional materials required shall be furnished by the Contractor. Payment for resetting Barricades and Traffic Delineators shall be considered incidental to various contract items.
- Contractor is responsible for maintaining new and existing signs, barricades and delineators in good condition during Life of Project.
- All superfluous signs & portable concrete guard rails shall be removed & stockpiled at the State's Baseyard, Lehua Ave., Pearl City, upon completion of construction work, as directed by the Engineer. Payment will be considered incidental to various Contract Items, except for portable concrete guard rails. Temporary destination signs, temporary sign panels, sign covers, superfluous delineators and barricades shall be removed & disposed of by the Contractor; payment will be considered incidental to various Contract Items.
- Payment for Signs D-1 and D-2 will be made under "Regulatory and Warning Sign, (.....) with Post".
- Necessary traffic control devices required for the temporary closure of lanes, detours during working day and any other work that may temporarily obstruct any portion of the roadway shall be considered incidental to various contract items.
- Bikeway supplementary plates will not be paid separately, but will be considered incidental to Bikeway Sign.
- Payment for Type RM-1 and Type RM-2 reflector markers will be made under "Reflector Marker...."
- Posts for Reflector Markers shall be 'Flexible Delineator Post'.
- Sign Posts shall be in accordance with Special Provisions Subsection 621.03 (G) (i) - Sign Posts.

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Beugger

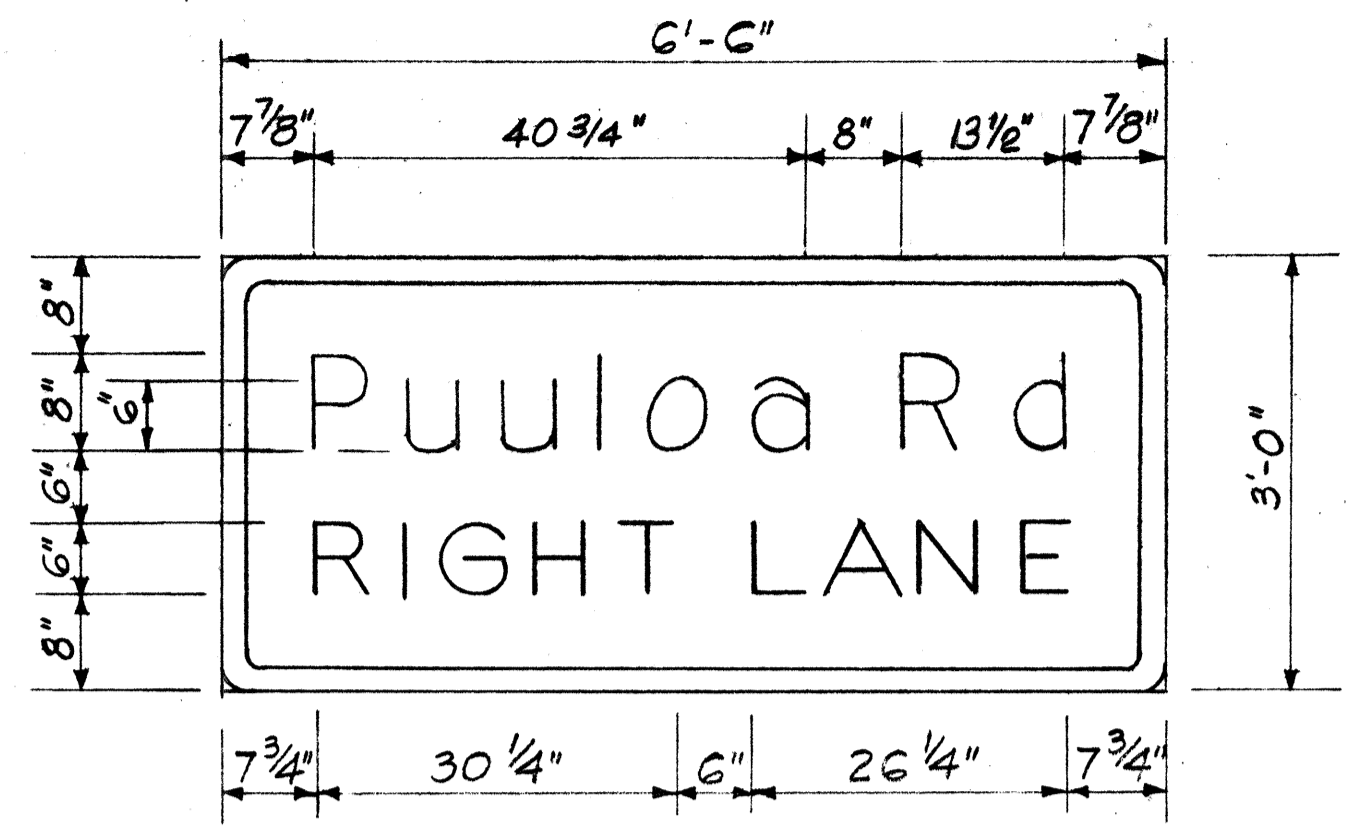
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

SUMMARIES & NOTES

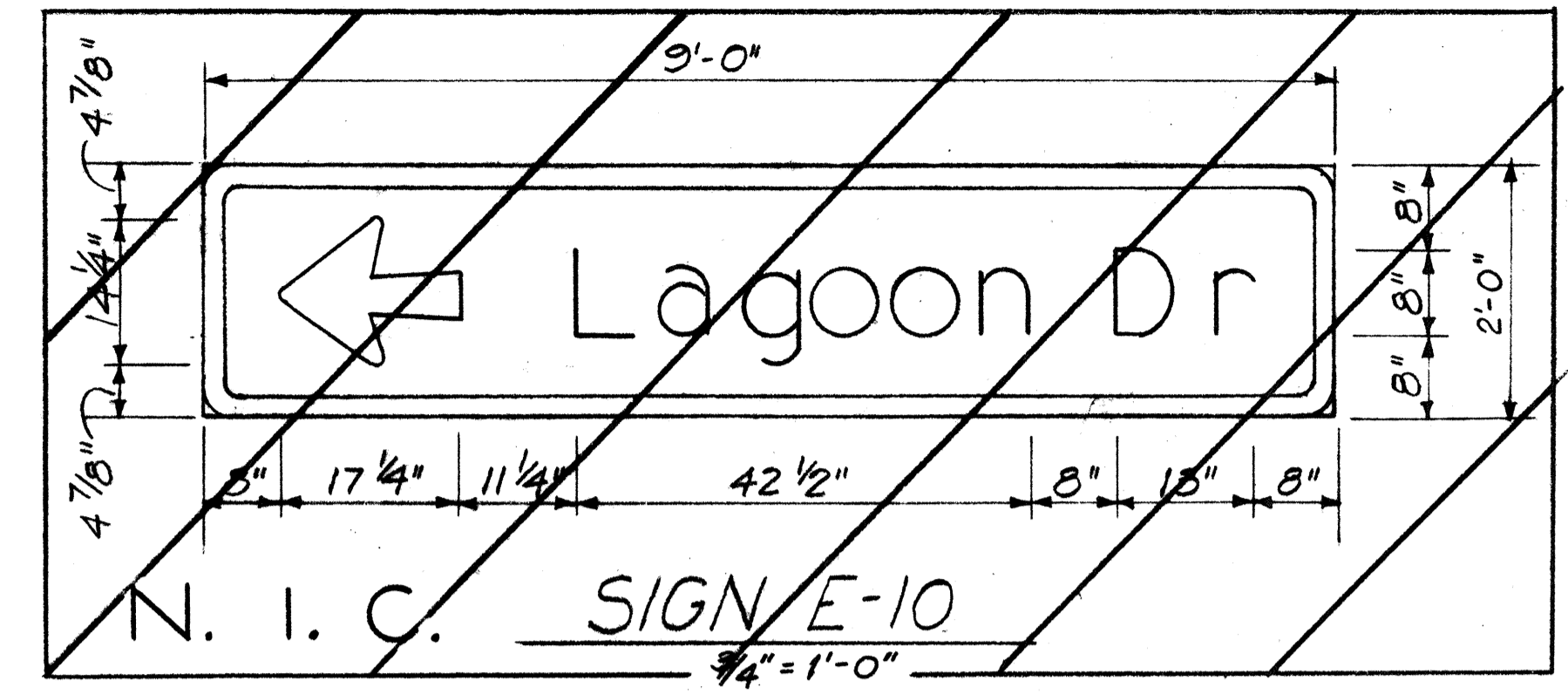
INTERSTATE ROUTE H-1
 PROJECT NO. I-IR-HI-1(170):17

SCALE: AS SHOWN DATE: 12/15/81
 SHEET No. P-7 OF 33 SHEETS

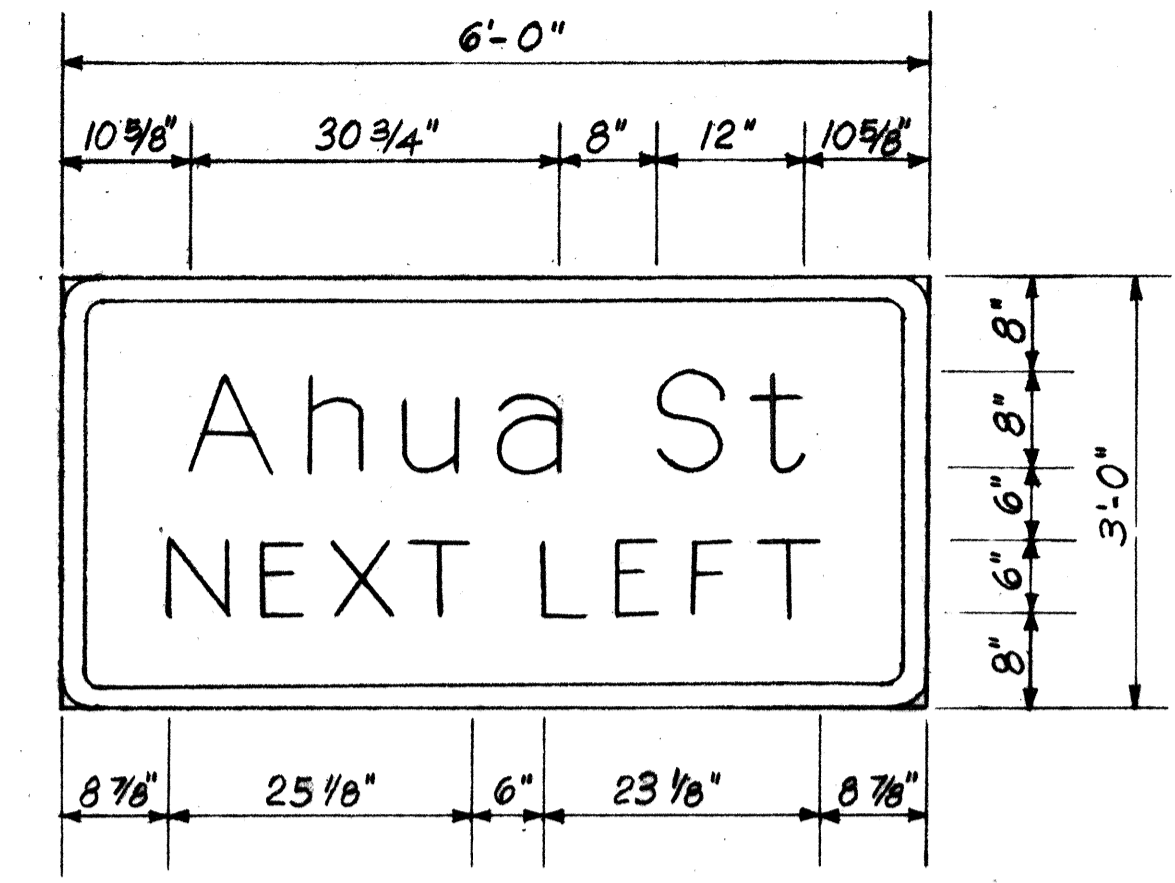
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI(170):17	1983	53	211



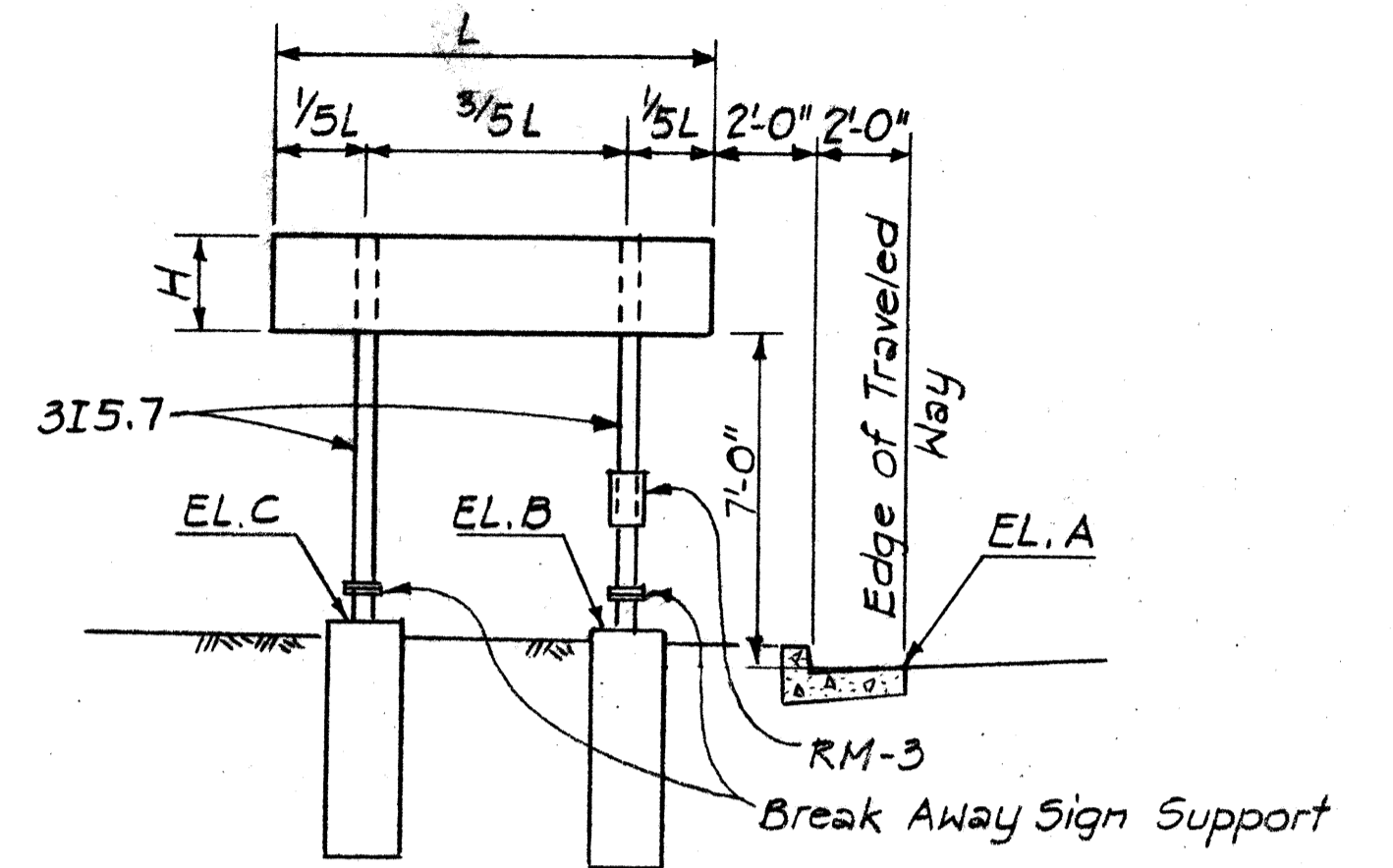
SIGN E-5
3/4" = 1'-0"



N. I. C. SIGN E-10
3/4" = 1'-0"

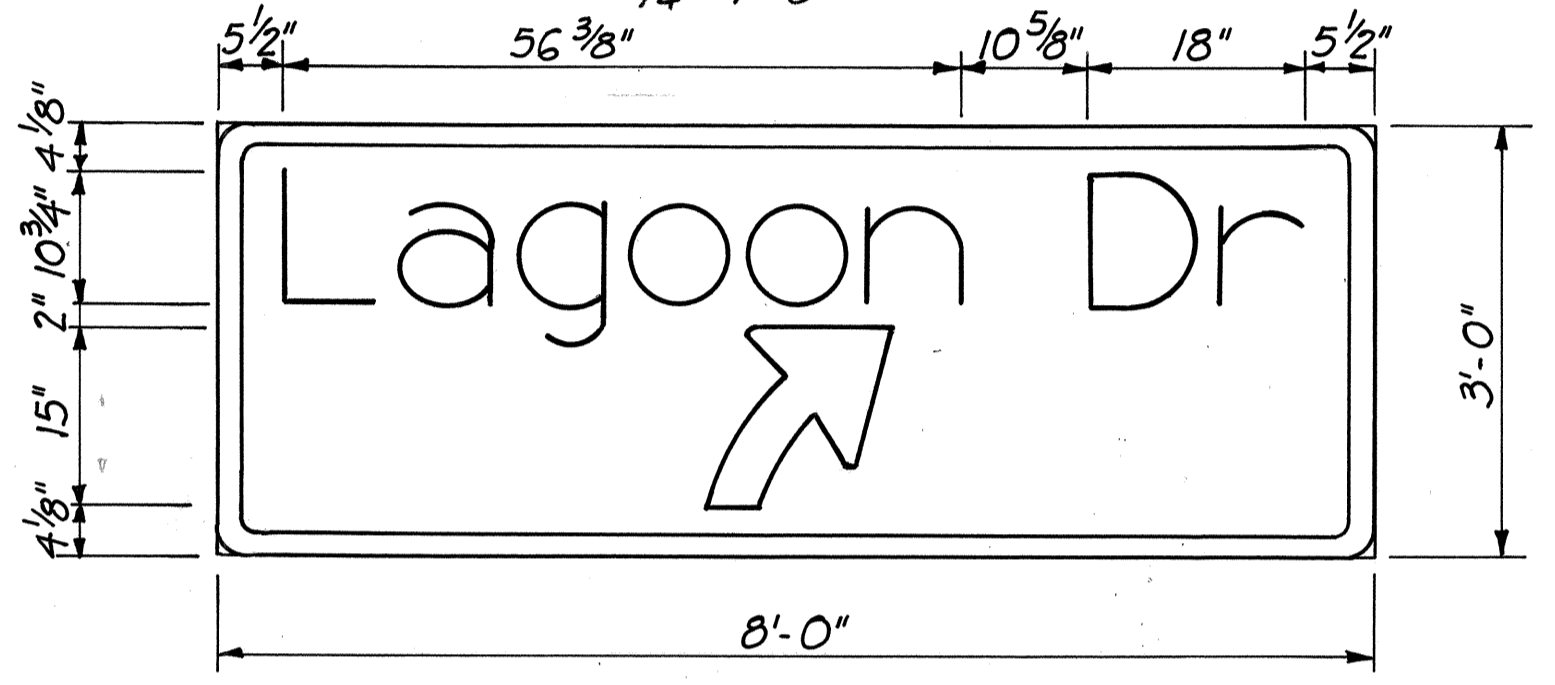


SIGN E-25
3/4" = 1'-0"

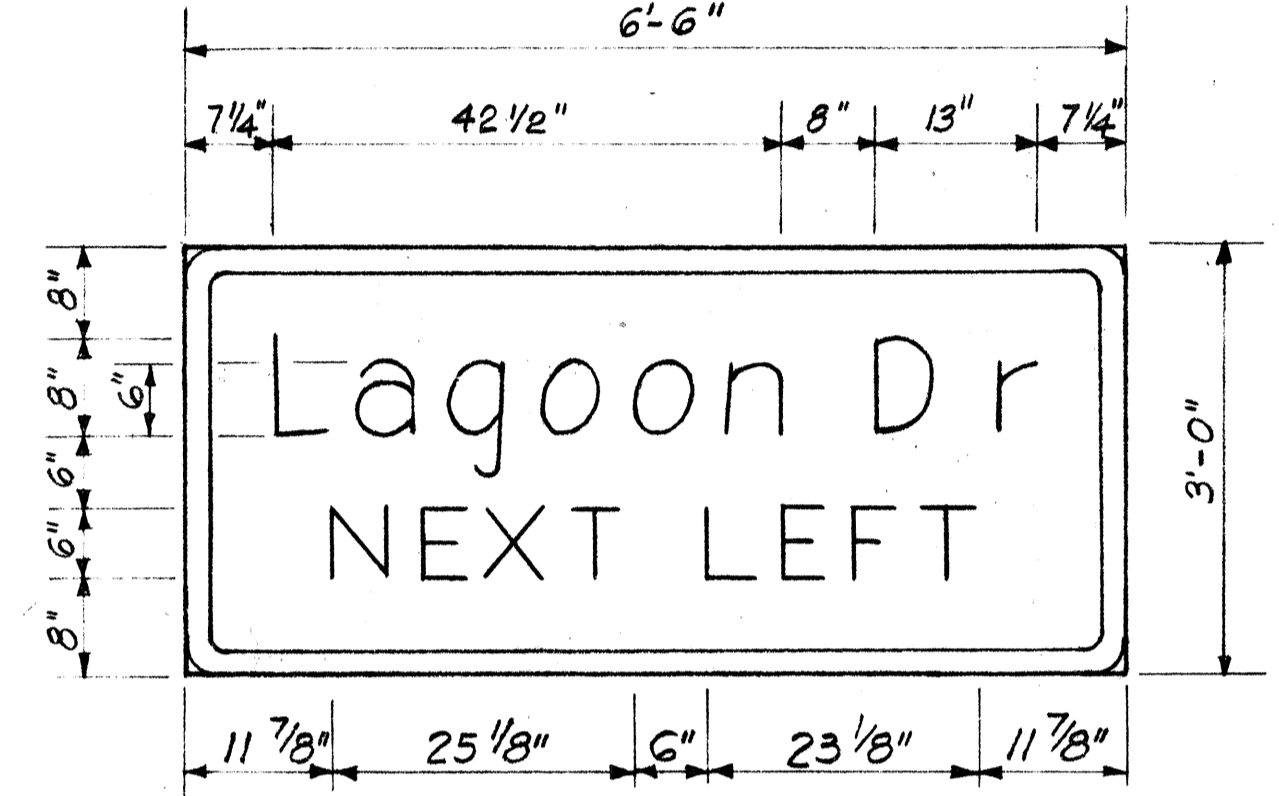


SIGN	L	H	EL.A	EL.B	EL.C	STATION
E-4	3'-0"	2'-0"	10.5	11.1	12.1	Mauka Fr. Rd. 215+40±, left
E-5	6'-6"	3'-0"	8.6	9.1	9.2	Mauka Fr. Rd. 218+95±, left
E-10	9'-0"	2'-0"	11.6	12.1	12.1	Mauka Fr. Rd. 215+40±, right
E-11	6'-6"	3'-0"	9.4	10.0	9.2	Mauka Fr. Rd. 219+40±, right
E-25	6'-0"	3'-0"	11.7	12.3	12.1	Makai Fr. Rd. 214+40±, left
E-26	8'-0"	2'-0"	10.0	10.4	10.1	Makai Fr. Rd. 218+40±, left
E-32	8'-6"	2'-6"	5.9	6.5	6.3	Makai Fr. Rd. 228+20±, right

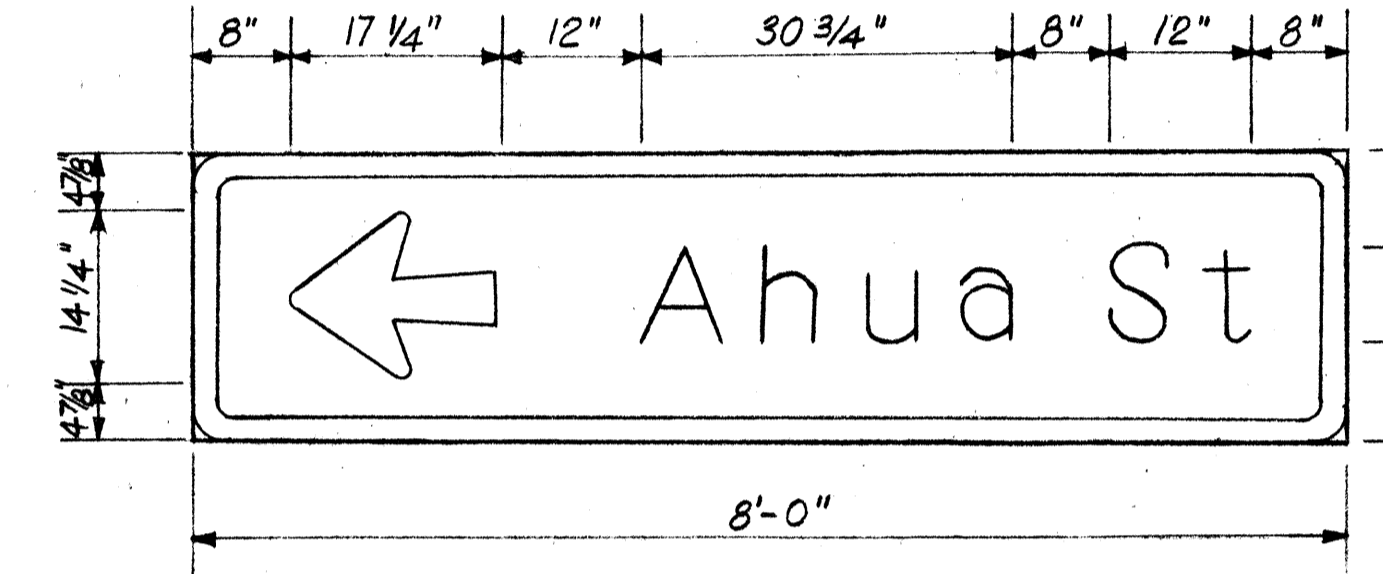
SUPPORT FOR GROUND MOUNTED SIGN
N.T.S.



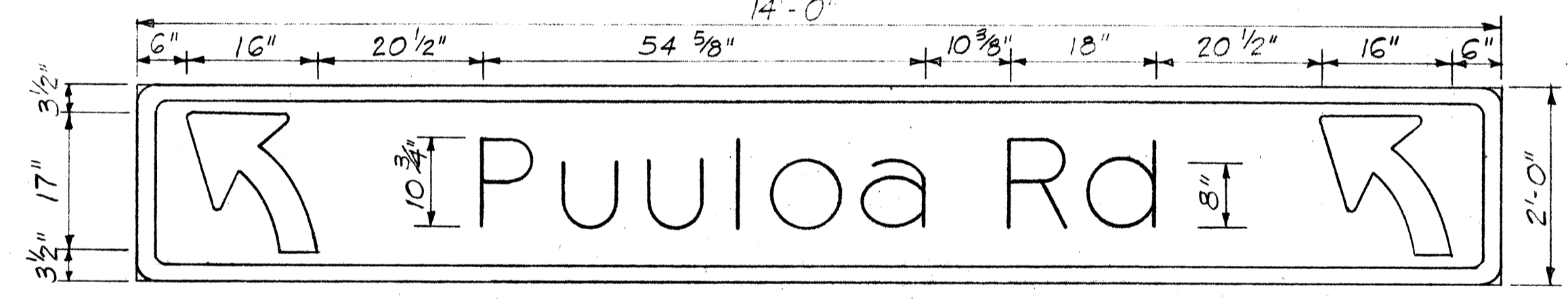
SIGN E-53
3/4" = 1'-0"



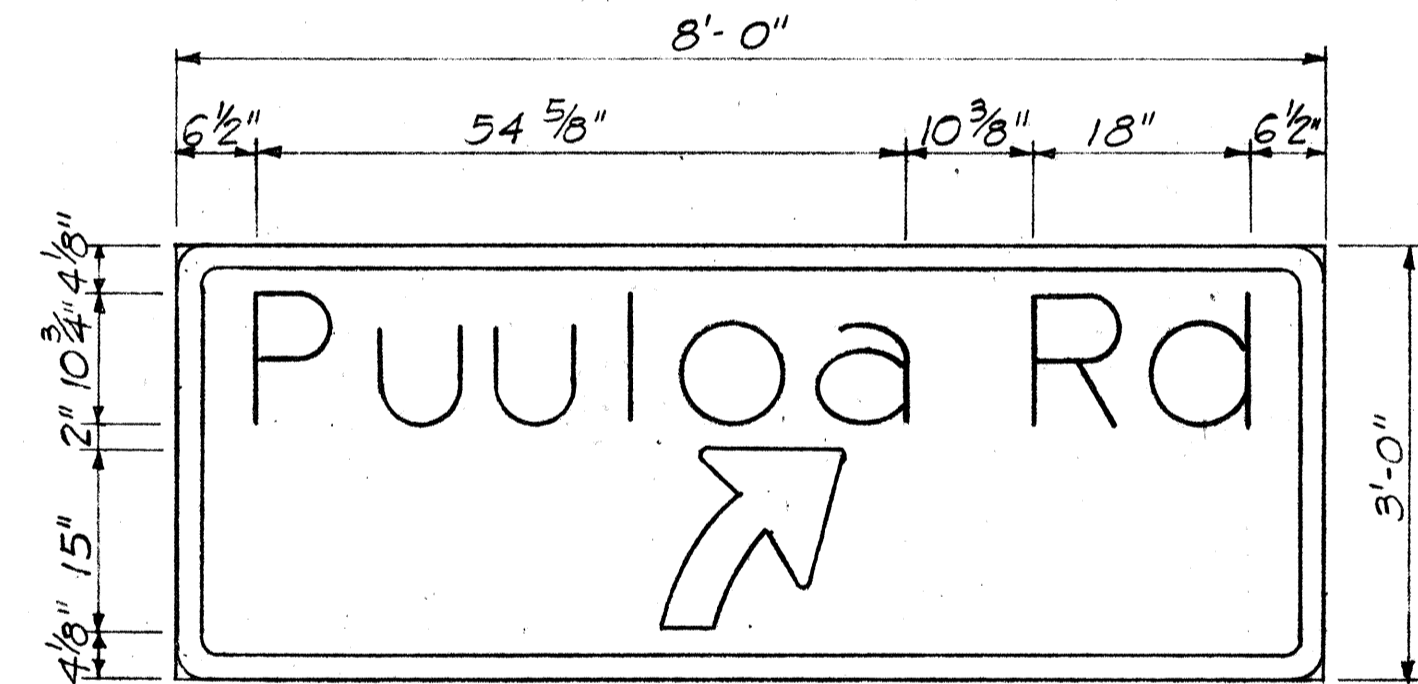
SIGN E-11
3/4" = 1'-0"



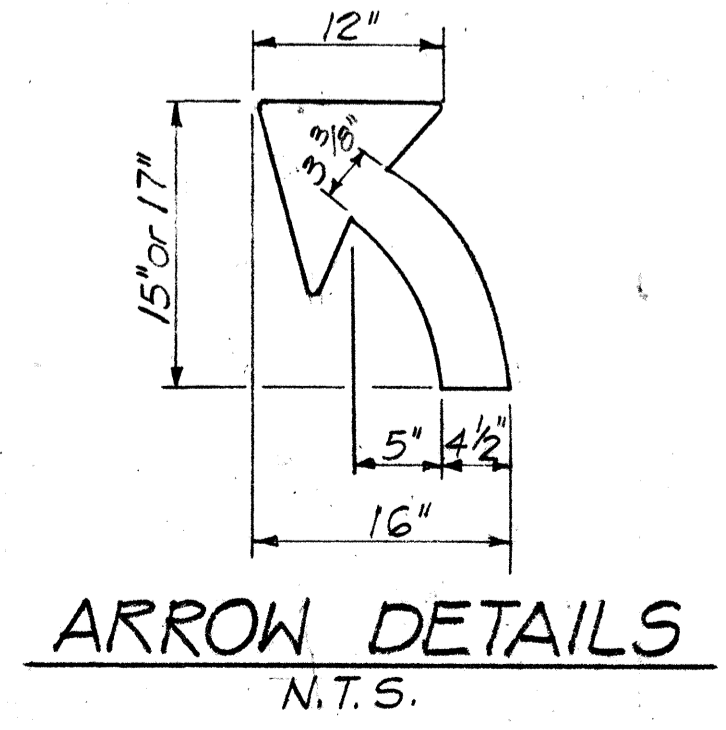
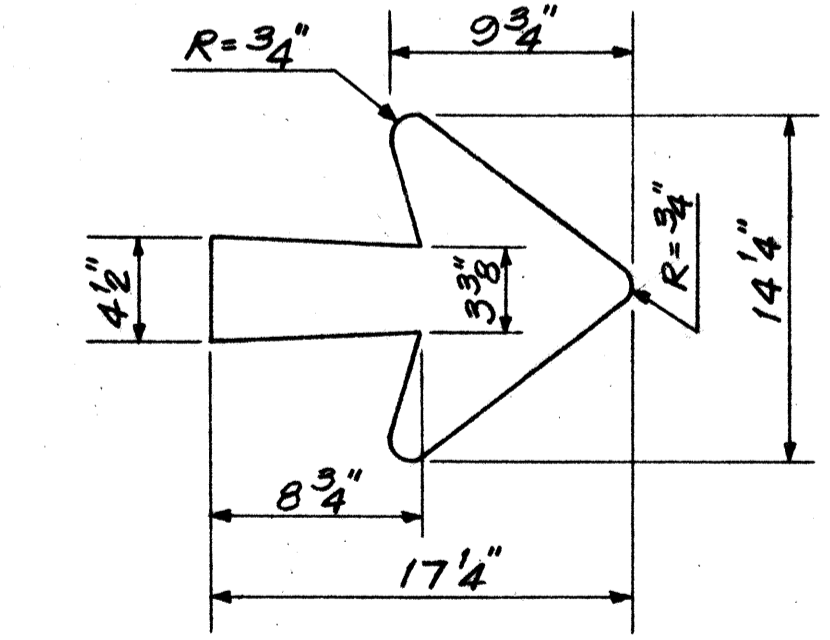
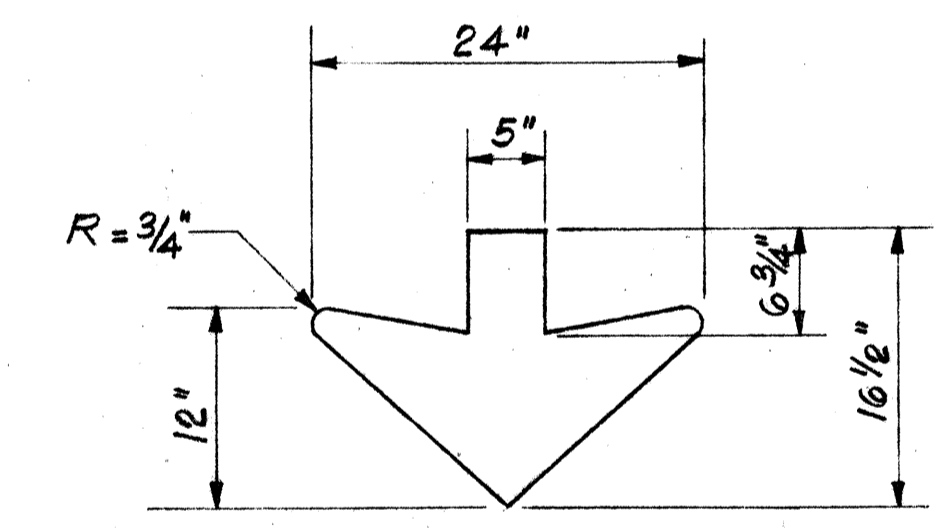
SIGN E-26
3/4" = 1'-0"



SIGN E-50
3/4" = 1'-0"

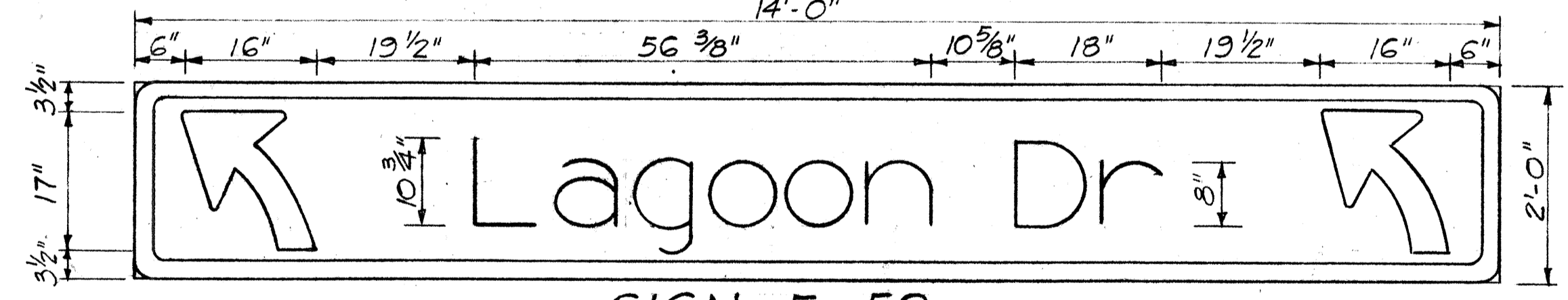


SIGN E-51
3/4" = 1'-0"

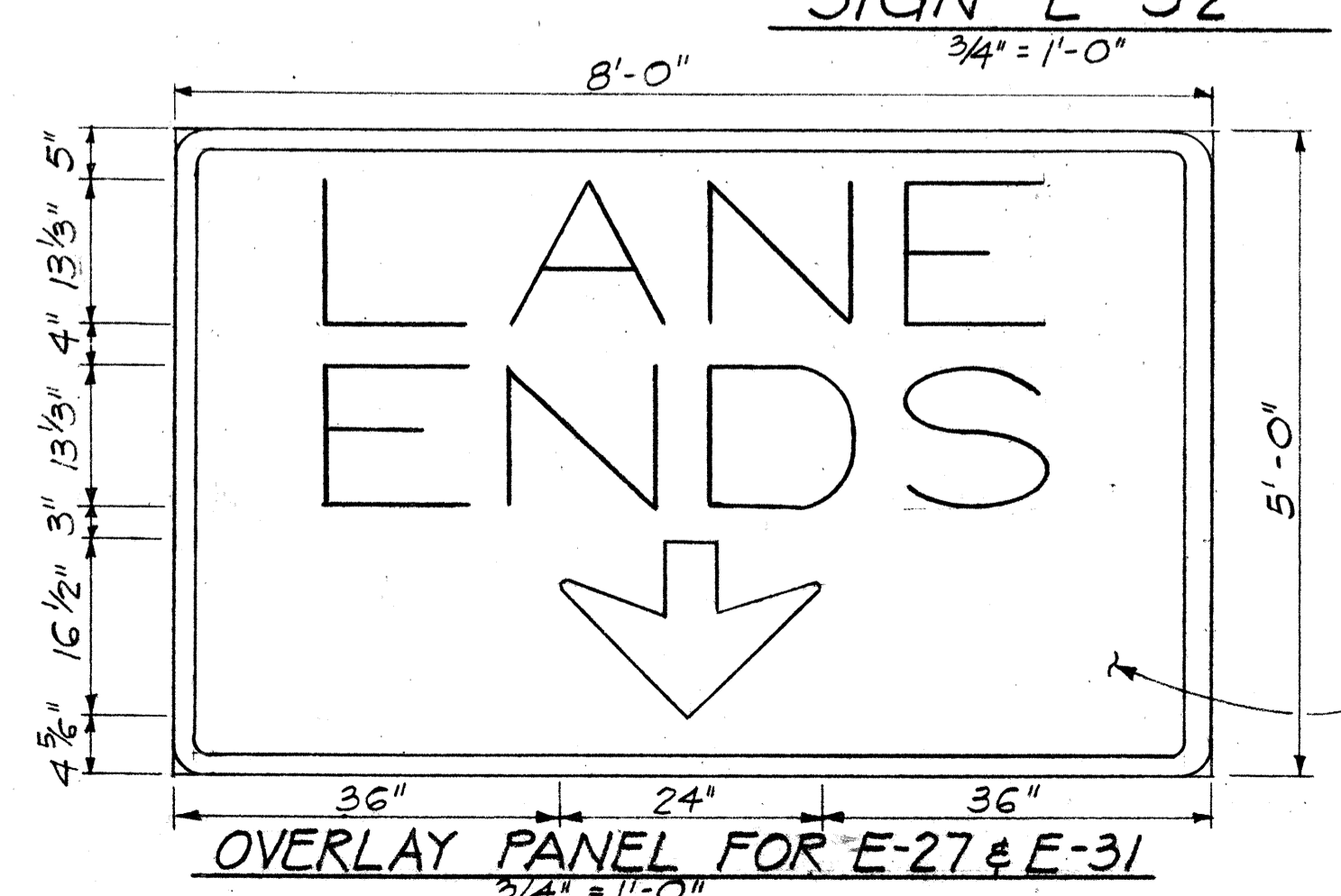


ARROW DETAILS
N.T.S.

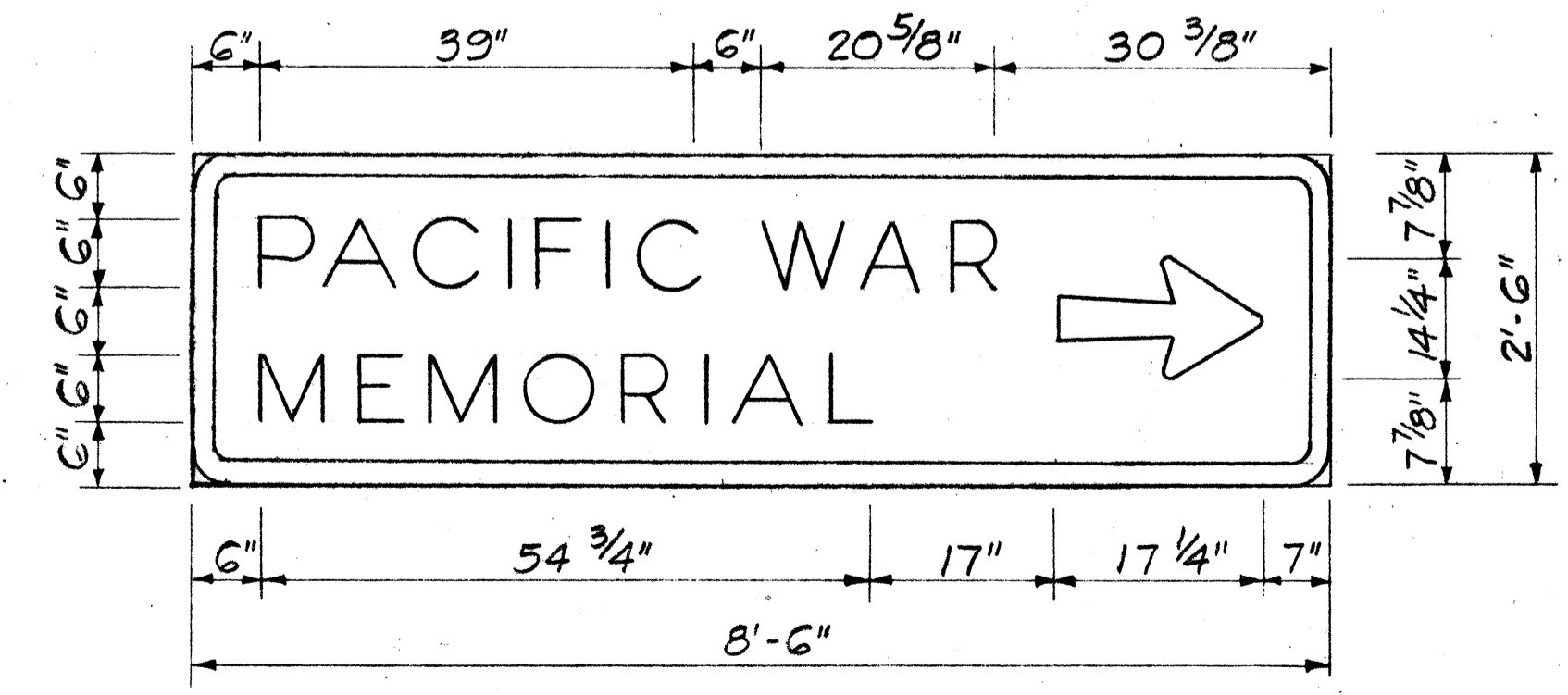
- NOTES
1. Alphabetical Characters shall be uppercase or lowercase, as shown, and shall have Series E dimensions & spacings in accordance with the FHWA Publication "Standard Alphabets for Highway Signs", Bureau of Public Roads, 1966.
 2. Borders & Separation lines shall have a width of 2 inches. Corner radius of borders shall be as specified on Standard Detail Plans.
 3. Overlay Panels shall be of 0.08-inch thick sheet aluminum & shall be of same reflectorization as sign panel. Payment will be made under "Panel for Destination Sign".



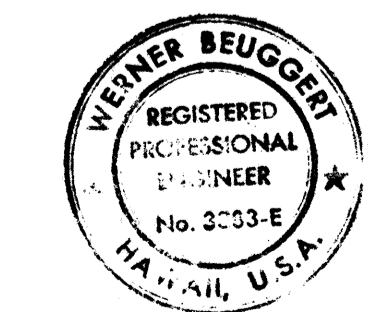
SIGN E-52
3/4" = 1'-0"



OVERLAY PANEL FOR E-27 & E-31
3/4" = 1'-0"



SIGN E-32
3/4" = 1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
Werner Bellegard

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

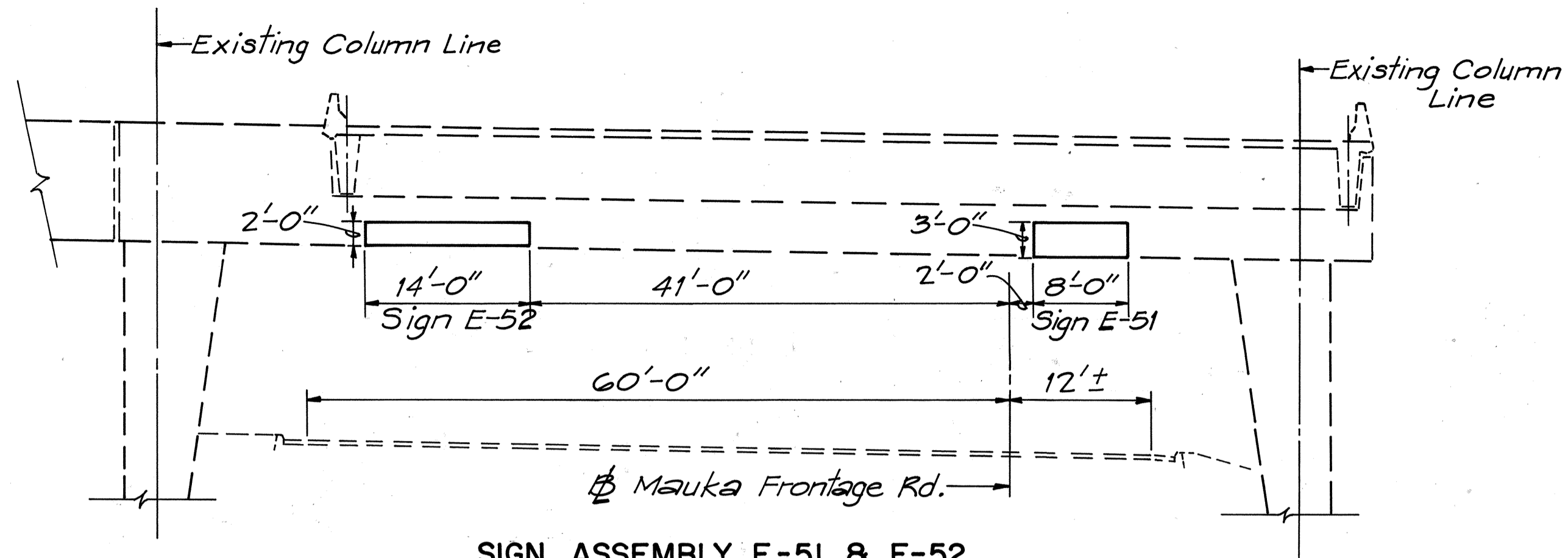
SIGN PANEL LAYOUT

INTERSTATE ROUTE H-1
PROJECT NO. I-IR-HI(170):17

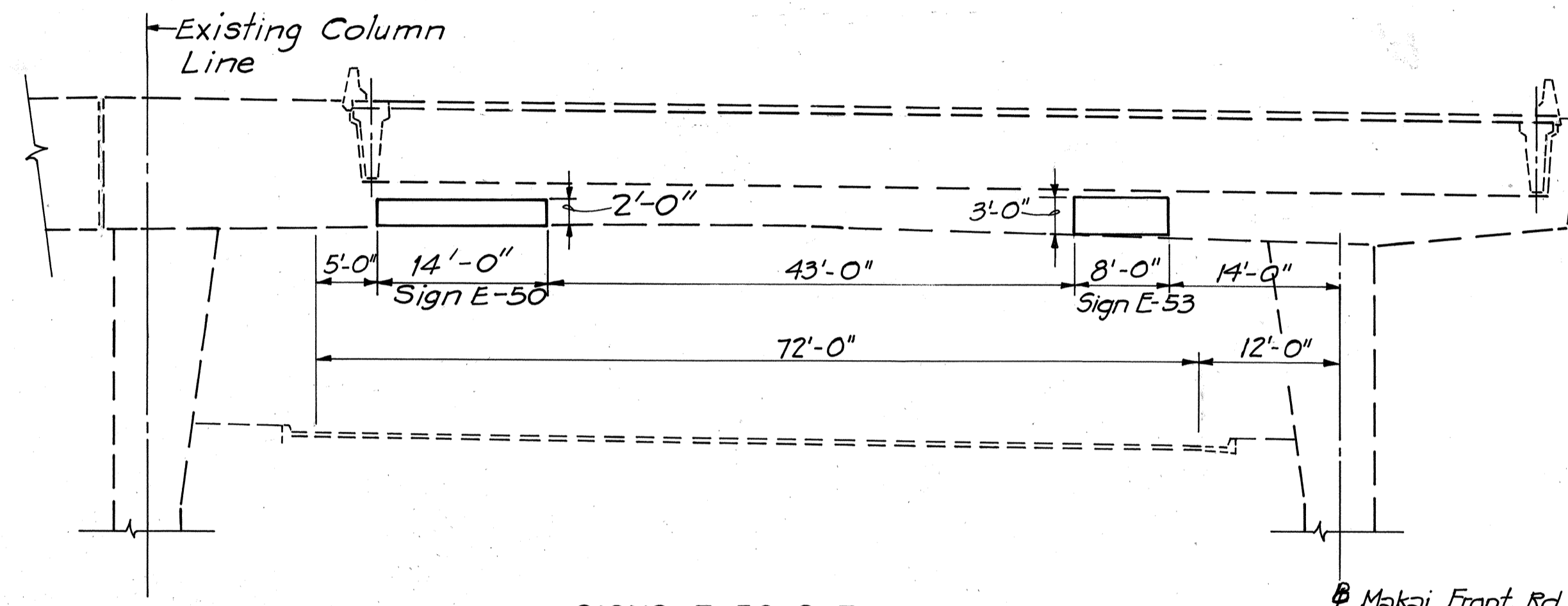
SCALE: AS SHOWN DATE: 12/15/81
SHEET No. P-8 OF 33 SHEETS

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
TRACED BY: _____
NOTE BOOK: _____
QUANTITIES BY: _____
CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI(170)17	1983	54	211



SIGN ASSEMBLY E-51 & E-52
 MAUKA FR. RD., STA. 214 + 47 ±
 SCALE: 1"=10'-0"

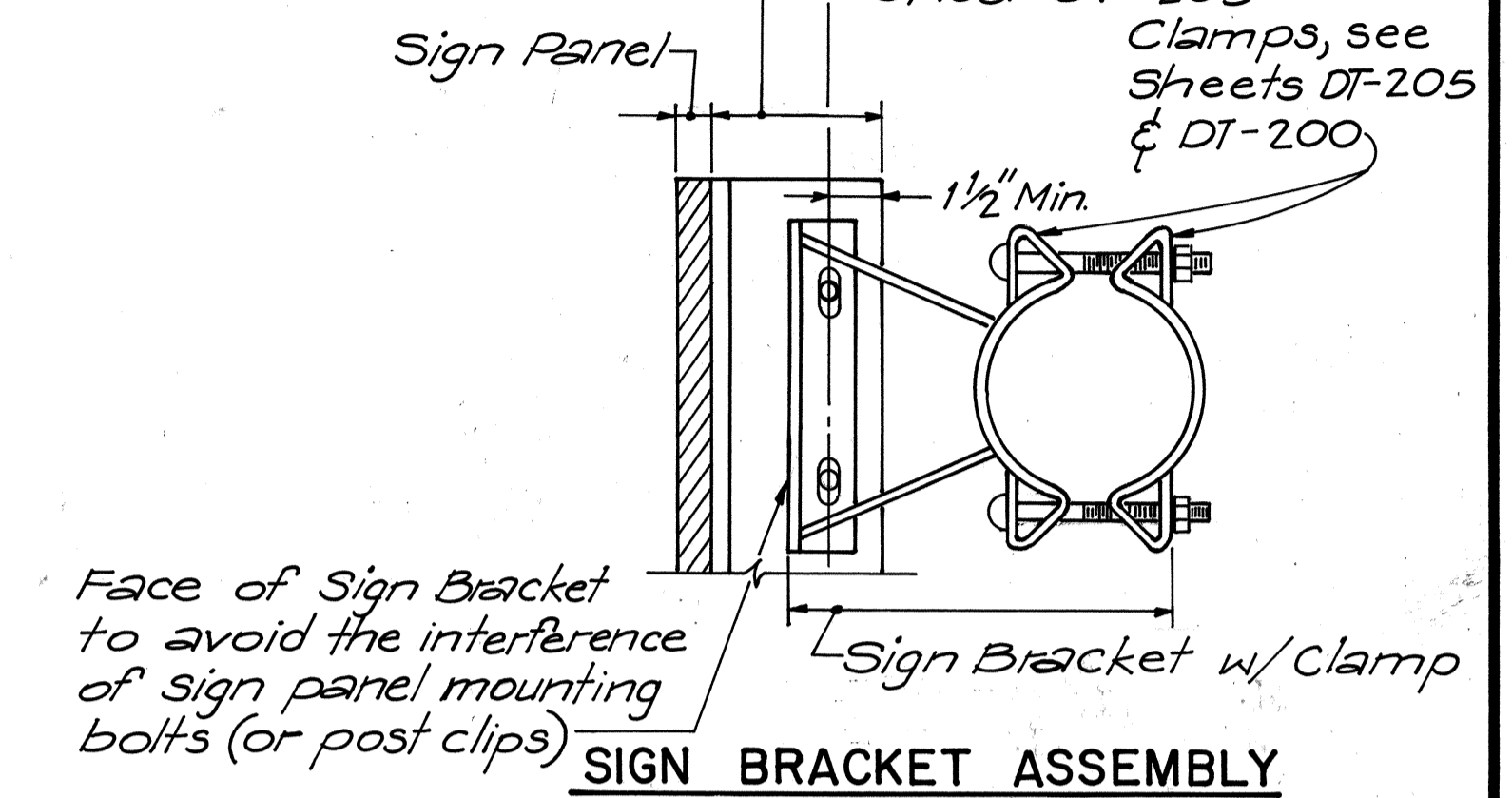


SIGNS E-50 & E-53
 MAKAI FR. RD. STA. 209 + 66.5 ±
 SCALE: 1"=10'-0"

5" Sign Panel Post (Aluminum Angle or Aluminum Tee)

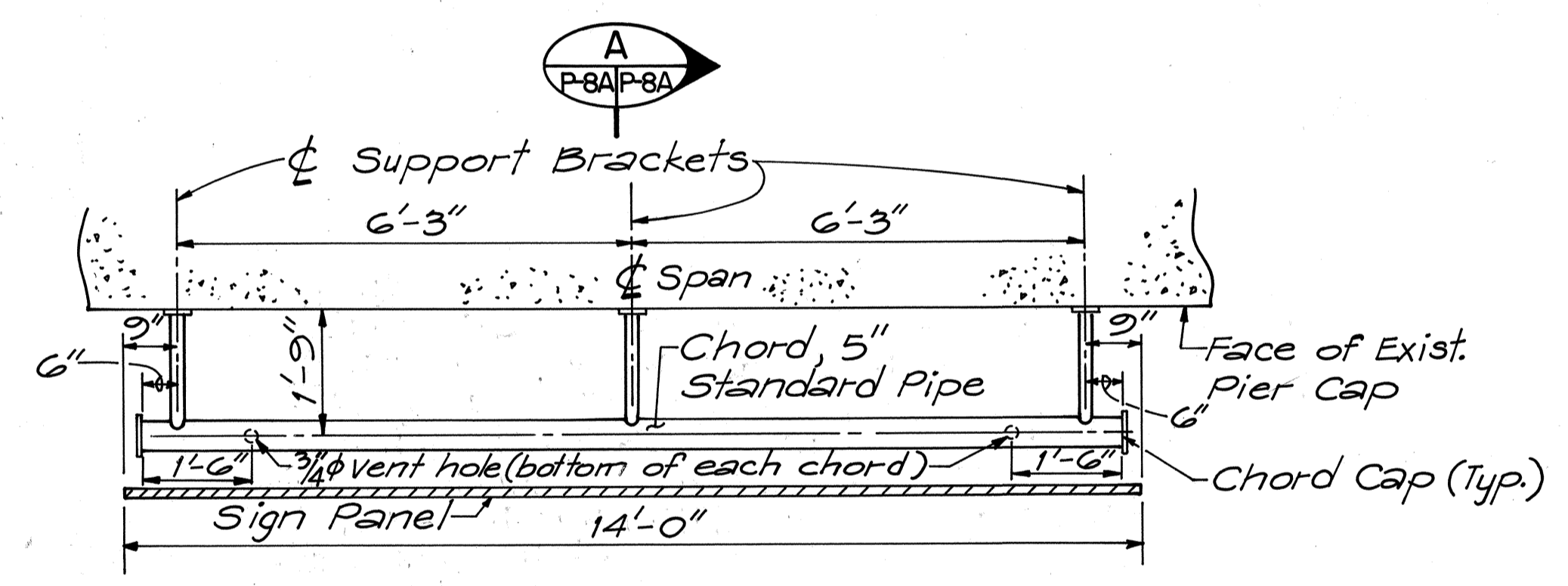
Holes for sign bracket mounting. For sizes of holes & bolts, see Sheet DT-205

Clamps, see Sheets DT-205 & DT-200

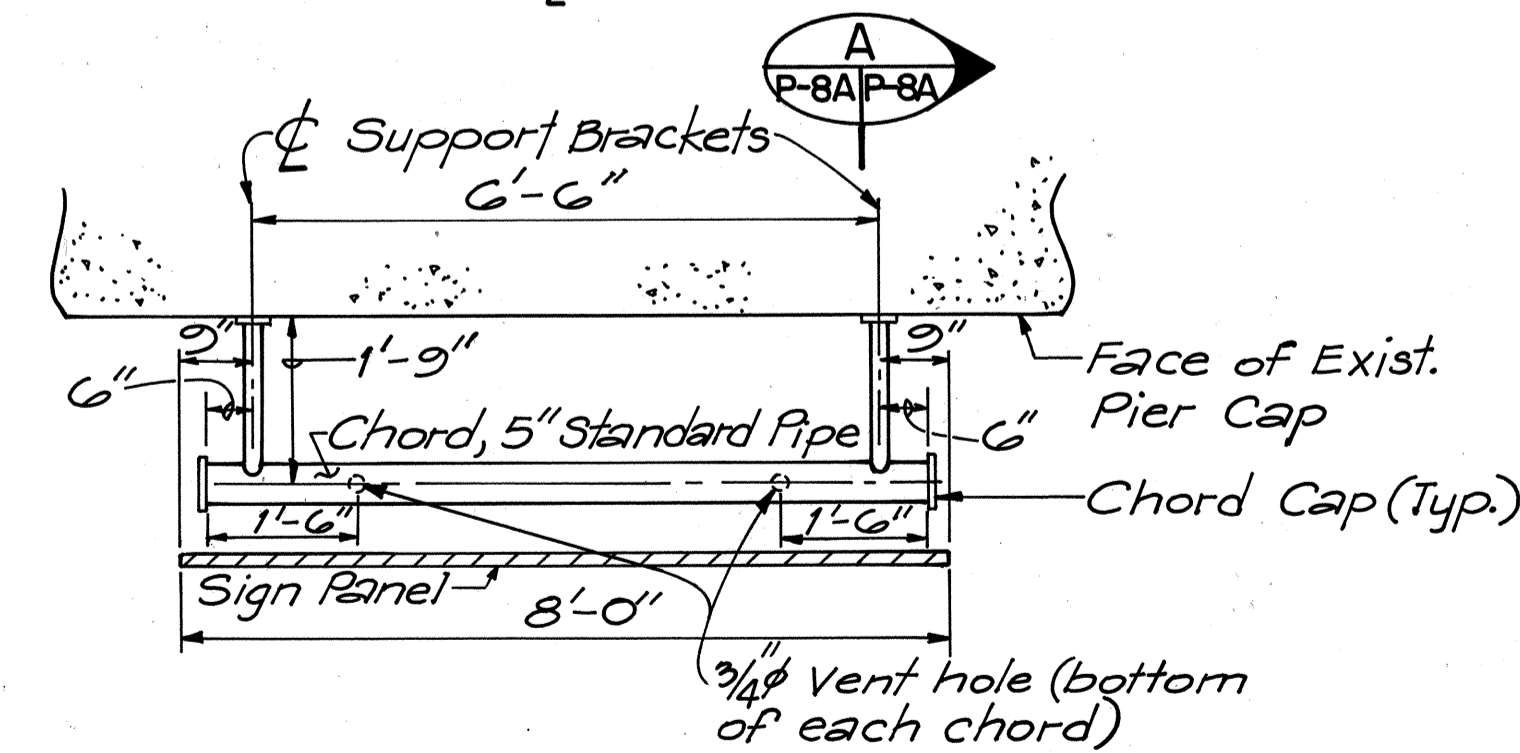


SIGN BRACKET ASSEMBLY
 SCALE: 3/16"=1'-0"
 (Detail shown above are for Signs E-50 & E-52 only. Detail for Signs E-51 & E-53, See sheet DT-205)

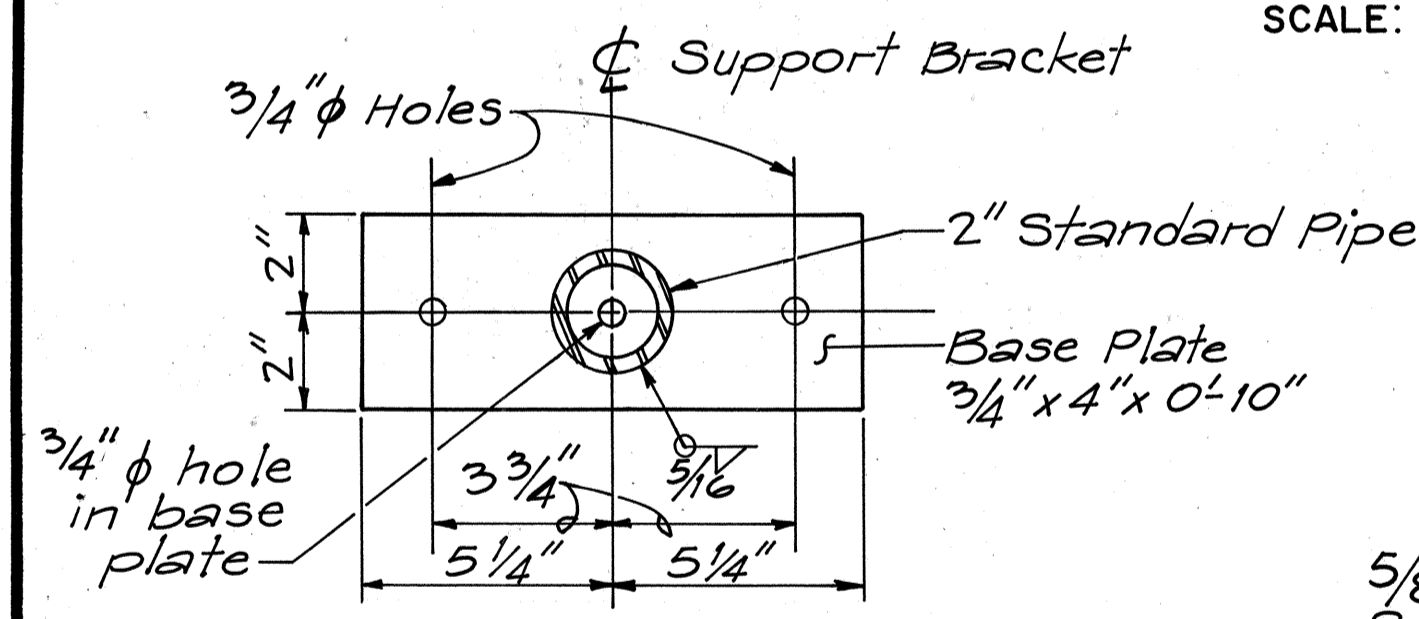
- NOTES:**
1. Sign Panels can be either laminated aluminum panels or solid aluminum extruded panels. For details of panels and connections, see Standard Sheet Nos. DT 200, DT 205 & DT 207.
 2. All members to be welded at joints, see Typical Welding Detail this sheet.
 3. Standard pipes shall be ASTM A53 Grade B and hot dipped galvanized after fabrication prior to painting.
 4. Galvanized surfaces of sign supporting structure members shall be painted, see specifications.
 5. Aluminum members and surfaces in contact with structural steel shall be isolated with neoprene material as directed by the Engineers.
 6. 5/8" expansion bolts shall have minimum ultimate tensile strength of 7,700 lbs. and minimum ultimate shear strength of 12,000 lbs. and shall be zinc coated in conformity with ASTM B633.
 7. Bracket Anchorage Base Plates shall be ASTM A36 steel and hot dipped galvanized after fabrication.
 8. All sign supporting structures are viewed in the direction of traffic.



PLAN OF TOP CHORD FRAMING - SIGNS E-50 & E-52
 (BOTTOM CHORD SIMILAR)
 SCALE: 1/2"=1'-0"

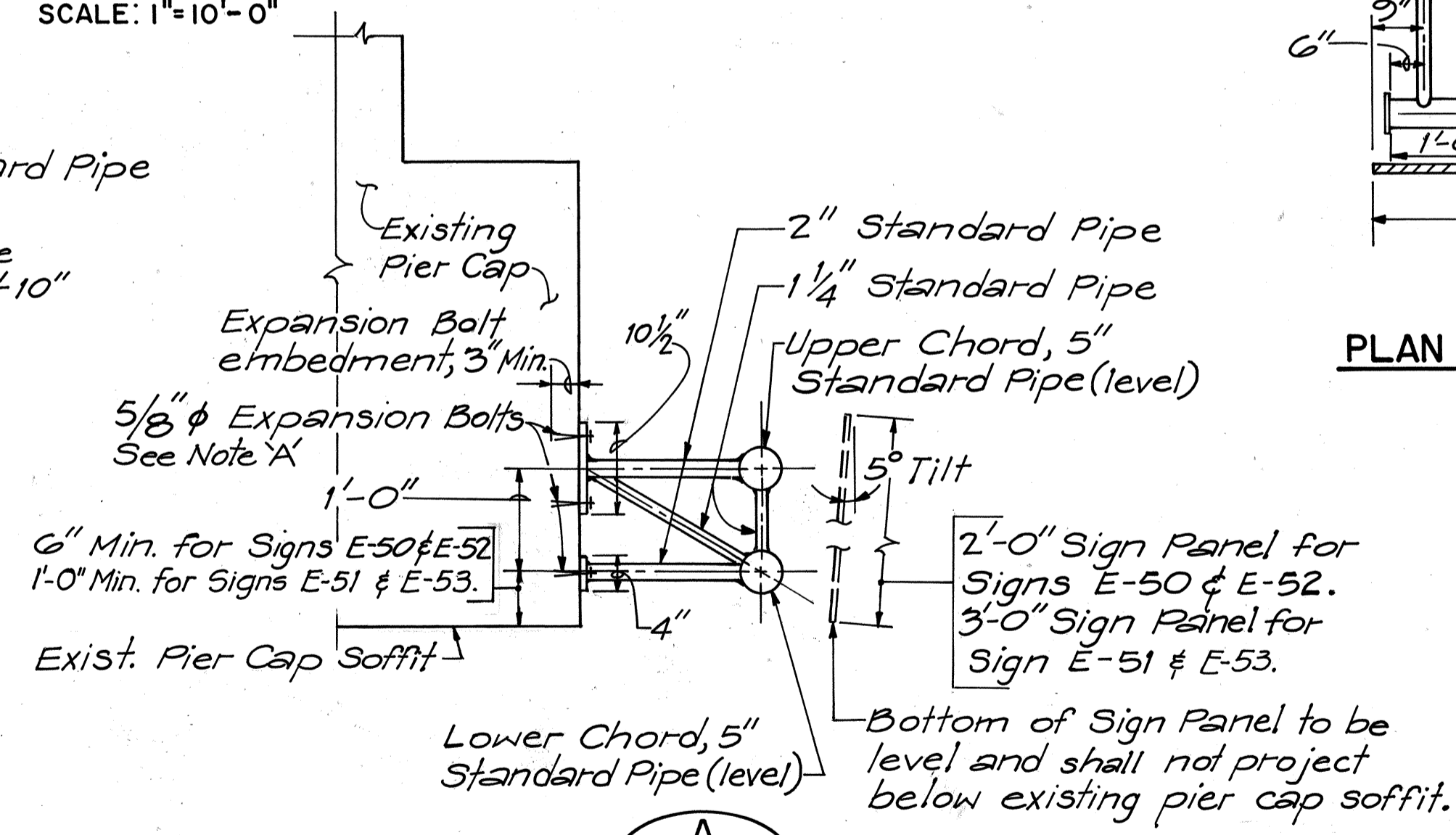


PLAN OF TOP CHORD FRAMING - SIGNS E-51 & E-53
 (BOTTOM CHORD SIMILAR)
 SCALE: 1/2"=1'-0"

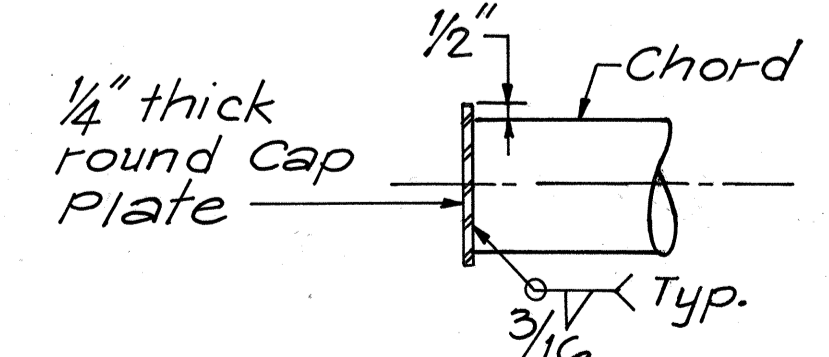


TYPICAL SUPPORT BRACKET ANCHORAGE
 SCALE: 3"=1'-0"

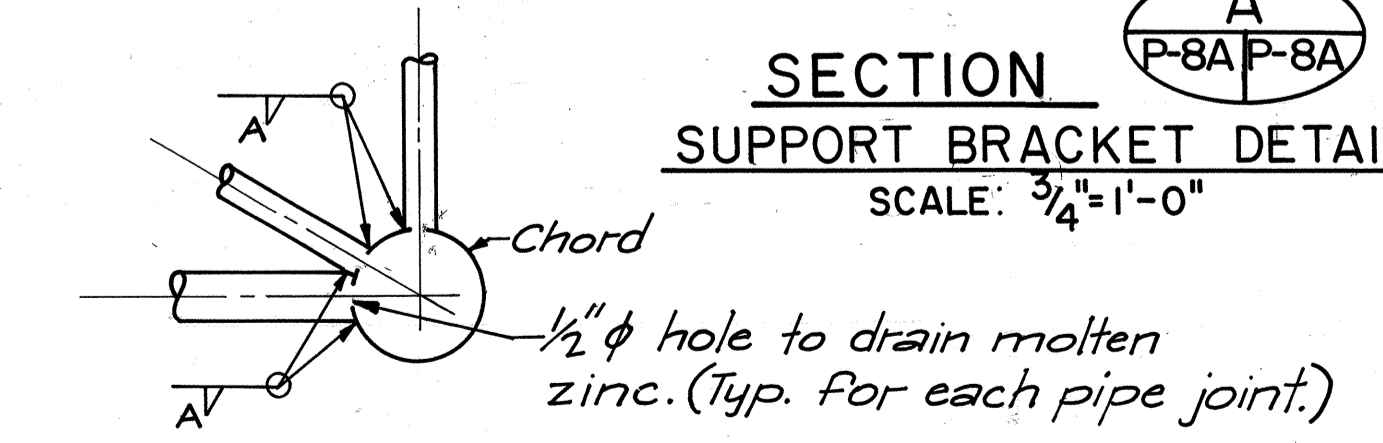
NOTE 'A': Provide 2-5/8" expansion bolts with nuts & washers for each lower and upper bracket.



SECTION SUPPORT BRACKET DETAIL
 SCALE: 3/4"=1'-0"

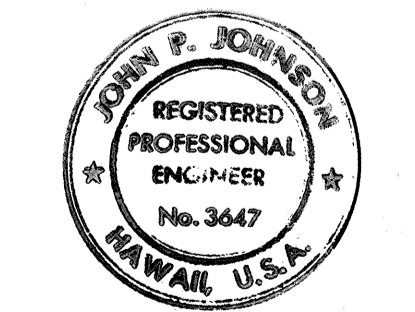


CHORD CAP DETAIL
 SCALE: 1 1/2"=1'-0"



TYPICAL WELDING DETAIL
 SCALE: 1 1/2"=1'-0"

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 John P. Johnson

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

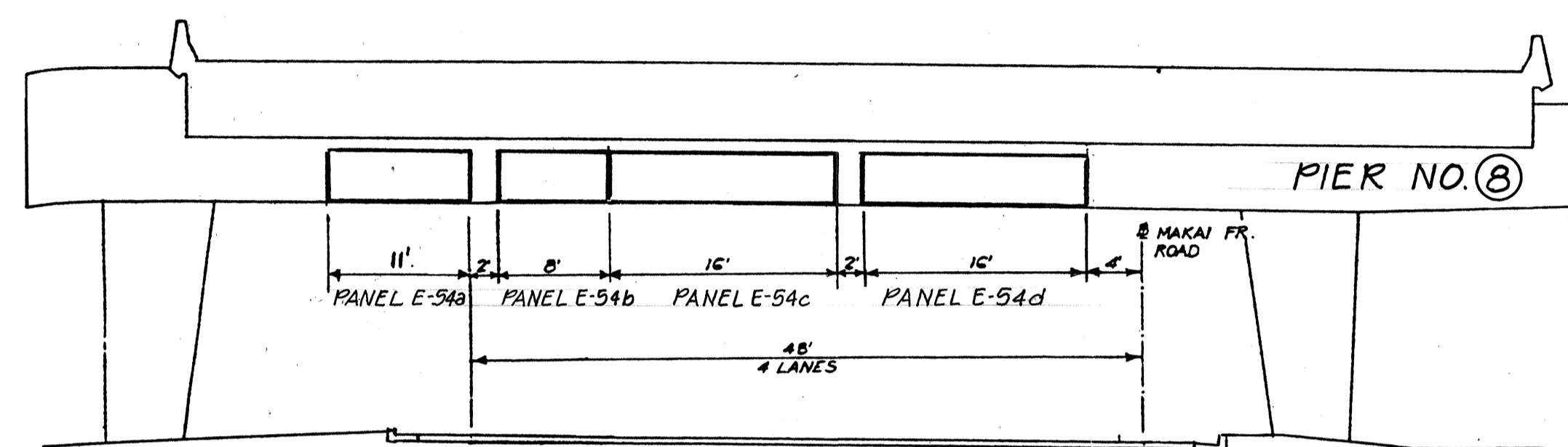
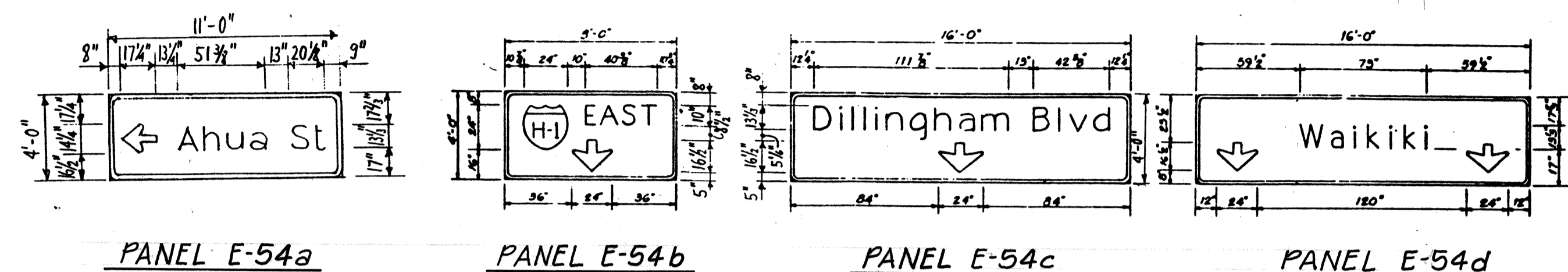
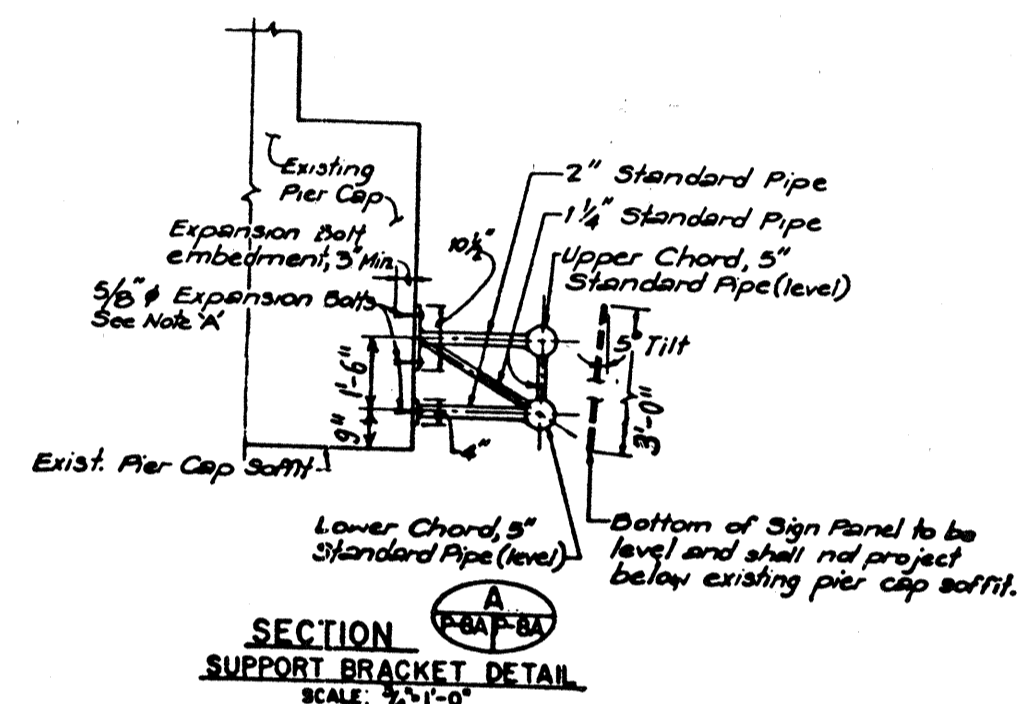
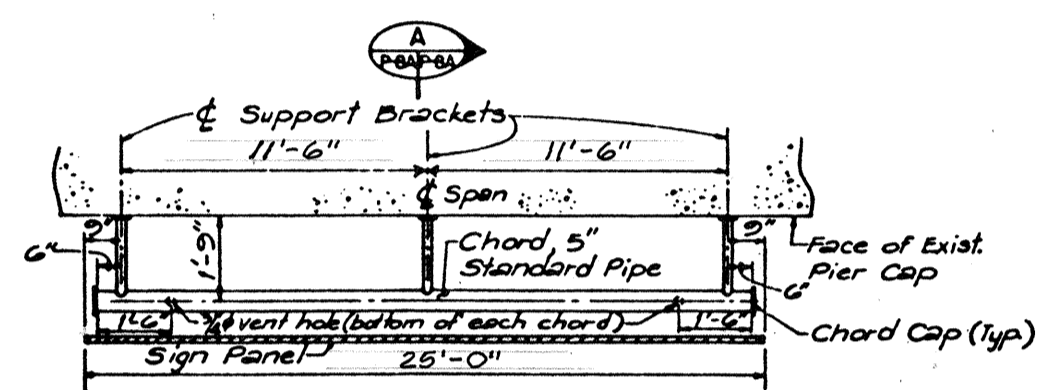
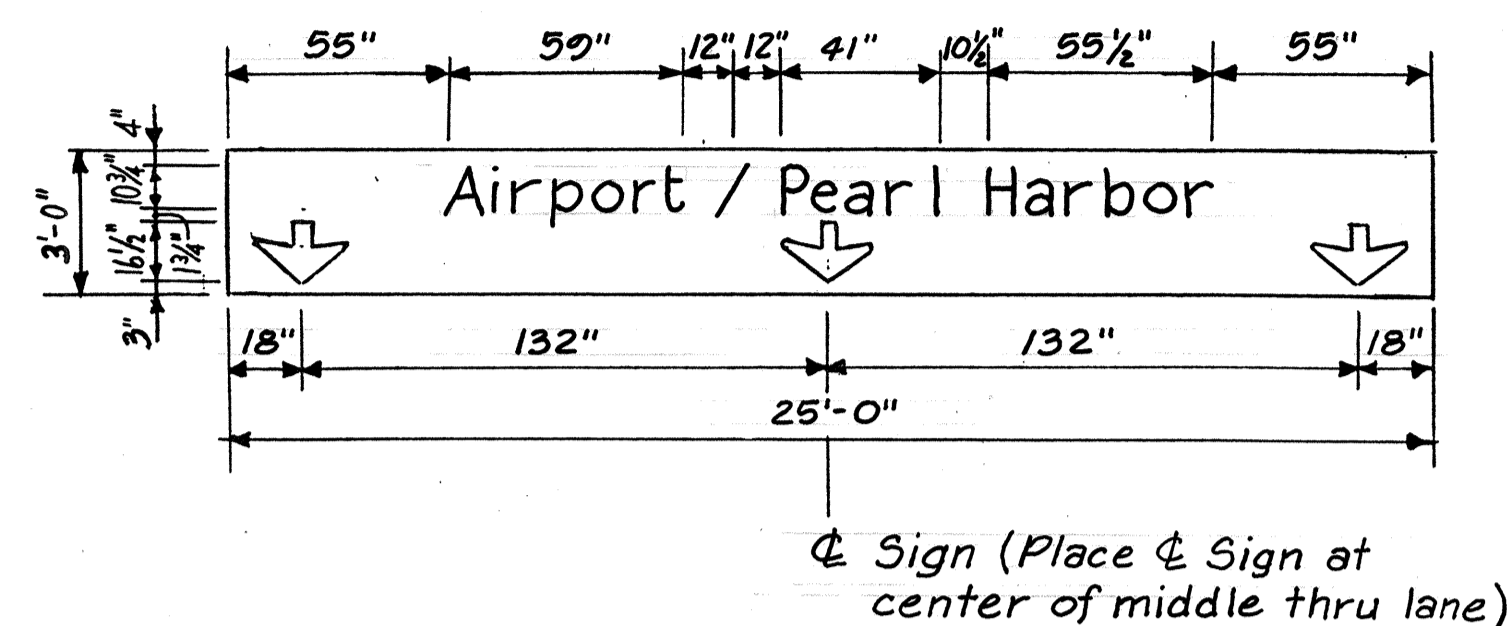
SIGNS E-50, E-51, E-52 & E-53

**SIGNS MOUNTED ON PIER CAP
 DETAILS OF SUPPORT STRUCTURE**

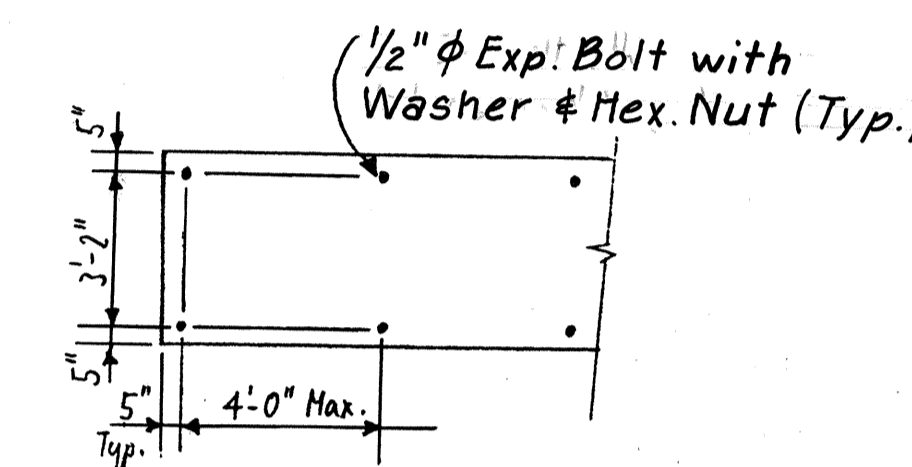
KEEHI INTERCHANGE
 F.A.I. PROJ. NO. I-IR-HI(170)17

SCALE: AS NOTED DATE: 7/29/83
 SHEET No. P-8AOF 33 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-1R-HI-1(170):17	1983	545-1	211



SIGN ASSEMBLY E-54
MAKAI FR. RD. STA. 217+06±
N.T.S.



MOUNTING OF SIGN PANELS ON PIER FACE
N.T.S.

Notes

1. See sheet 54 for additional details and notes.
2. Background shall be reflectorized with Type B reflective sheeting. Message, arrows and borders shall be reflectorized with porcelain enameled aluminum cut-outs with acrylic plastic reflex reflectors. See sheet 53 for additional notes and arrow details.
3. Sign shall be mounted Pier No. 8 of H-1 (WB) Viaduct at Mauka Fr. Rd. Sta. 214+45±. Sign panel shall be centered over middle thru lane. C.C.O. No. 30

Notes

1. Sign backing shall be of 0.100-inch thick sheet aluminum, which shall conform to ASTM B 209, alloy 6061-T6 flat sheet.
2. Background shall be reflectorized with Type B reflective sheeting. Message, arrows and borders shall be reflectorized with porcelain enameled aluminum cut-outs with acrylic plastic reflex reflectors. See sheet 53 for additional notes and arrow details.
3. Sign panel shall be mounted directly on face of Pier No. 8 of H-1 (EB) Viaduct at Makai Fr. Rd. Sta. 217+06±. C.C.O. No. 30

Note: This tracing prepared during "As-Built" posting.

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
NO.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD SIGNS E-51A & E-54
SIGNS MOUNTED ON PIER CAP
DETAILS OF SUPPORT STRUCTURE
KEEHI INTERCHANGE
F.A.I. PROJ. NO. 1-1R-HI-1(170):17

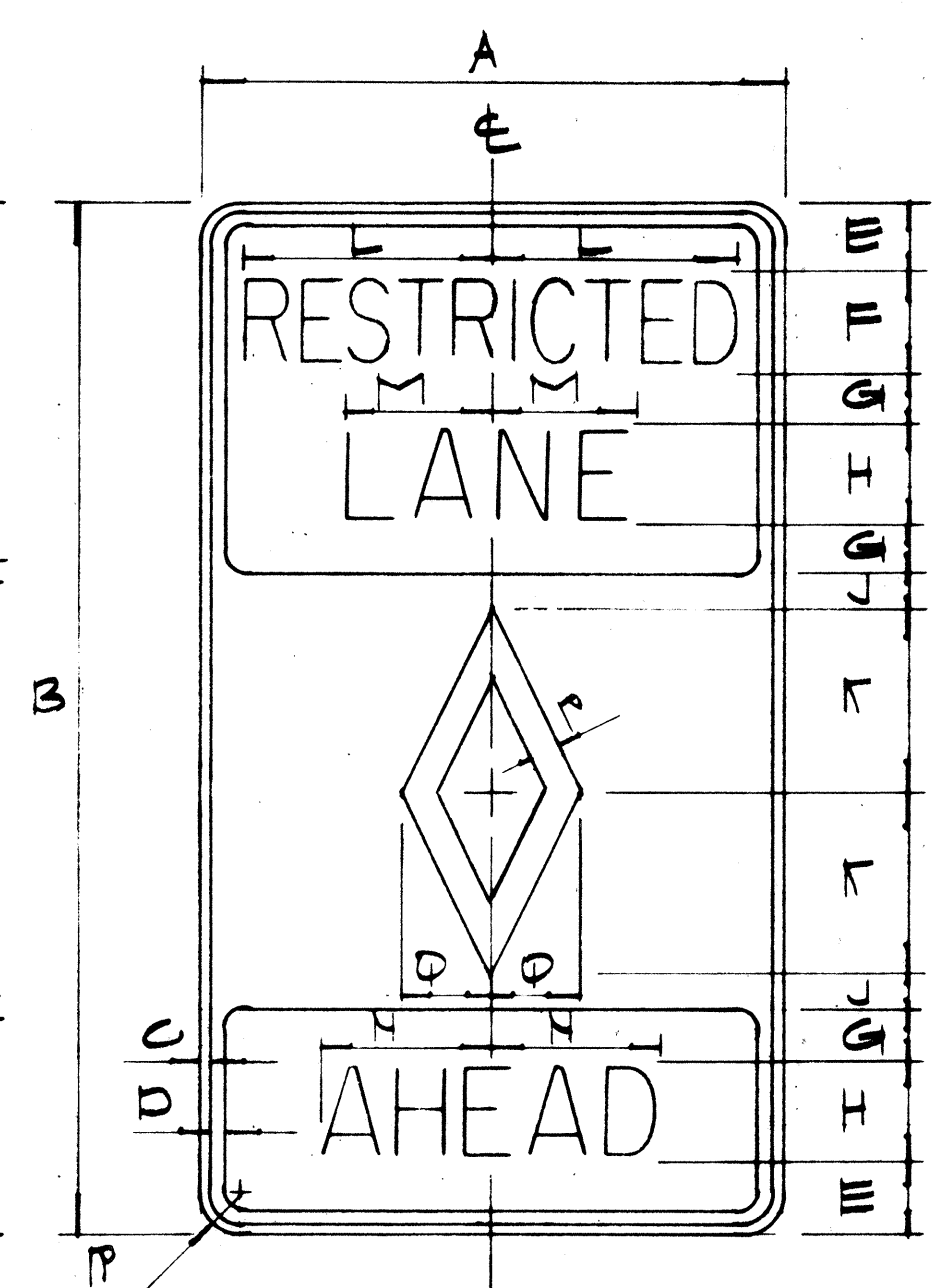
Scale: As Shown Date: June 1986
SHEET NO. 1 OF 1 SHEETS

NOTE:
DRILL 3/8" φ BOLT HOLES APPROPRIATE LOCATIONS.

COLOPS (TOP)
LEGEND: BLACK
BRGD: WHITE (REFL.)

COLOPS (MIDDLE)
SYMBOL: WHITE (REFL) ON BLACK
BRGD: BLACK

COLOPS (BOTTOM)
LEGEND: BLACK
BRGD: WHITE (REFL.)

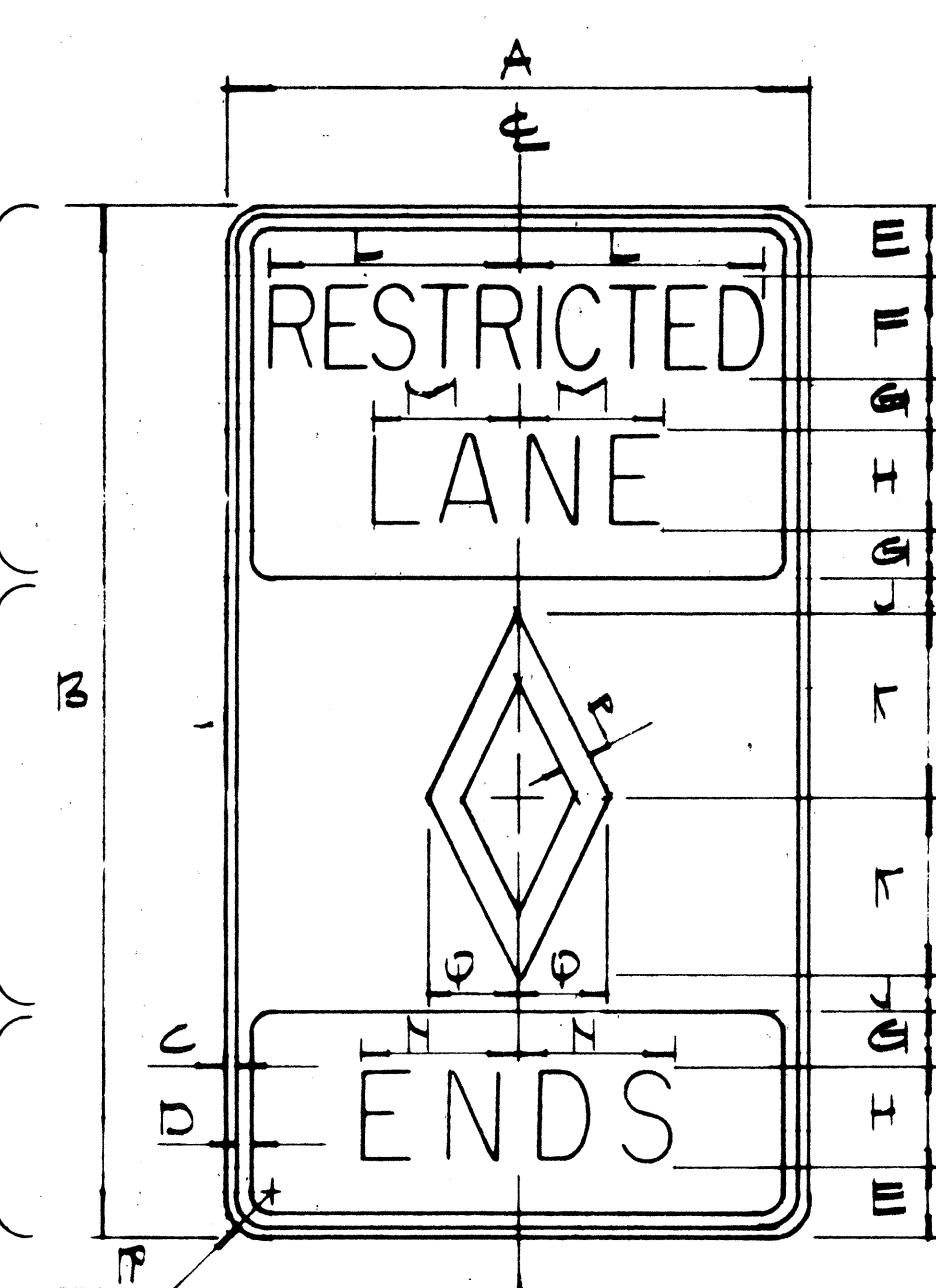


P3-10

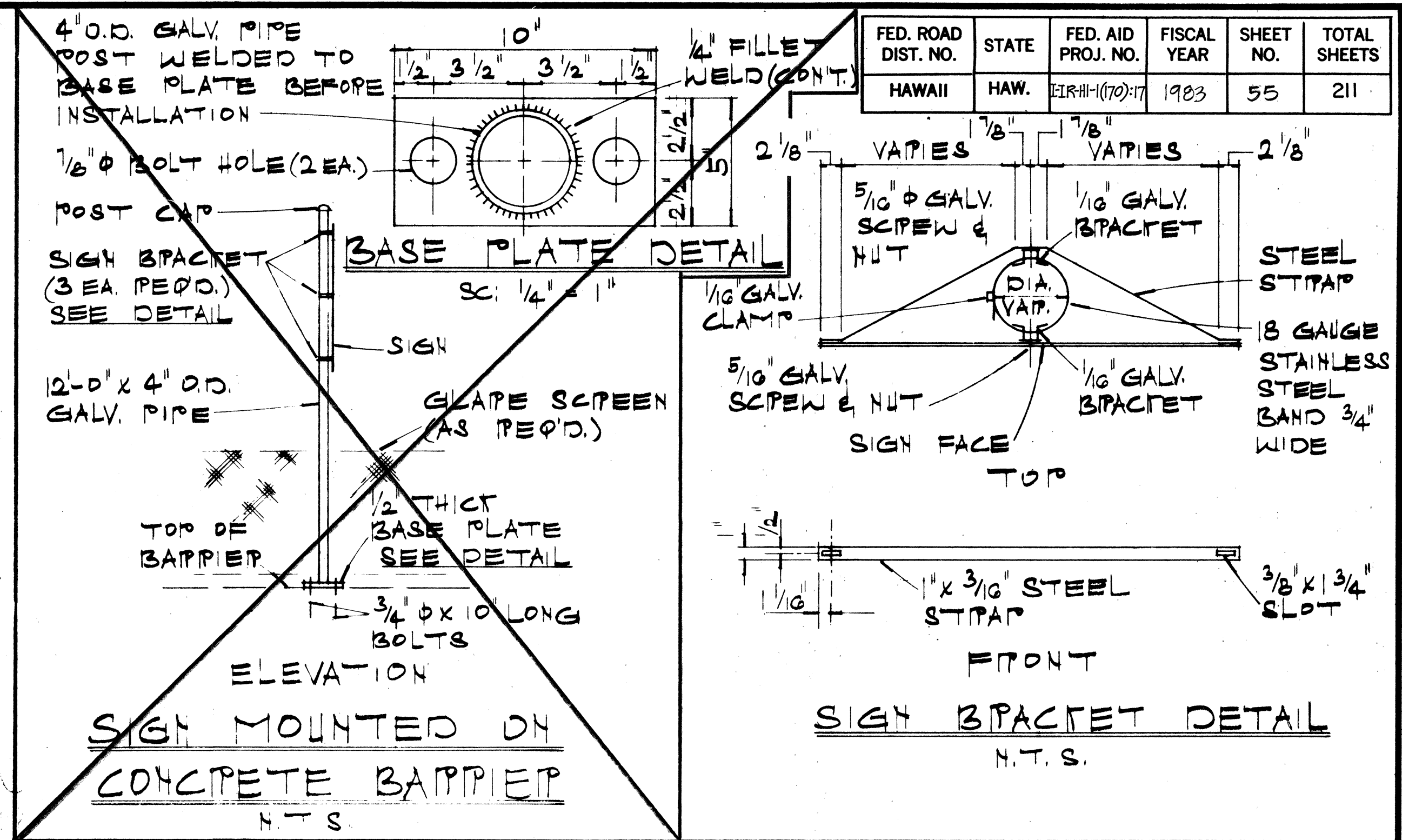
COLOPS (TOP)
LEGEND: BLACK
BRGD: WHITE (REFL.)

COLOPS (MIDDLE)
SYMBOL: WHITE (REFL) ON BLACK
BRGD: BLACK

COLOPS (BOTTOM)
LEGEND: BLACK
BRGD: WHITE (REFL.)



P3-12



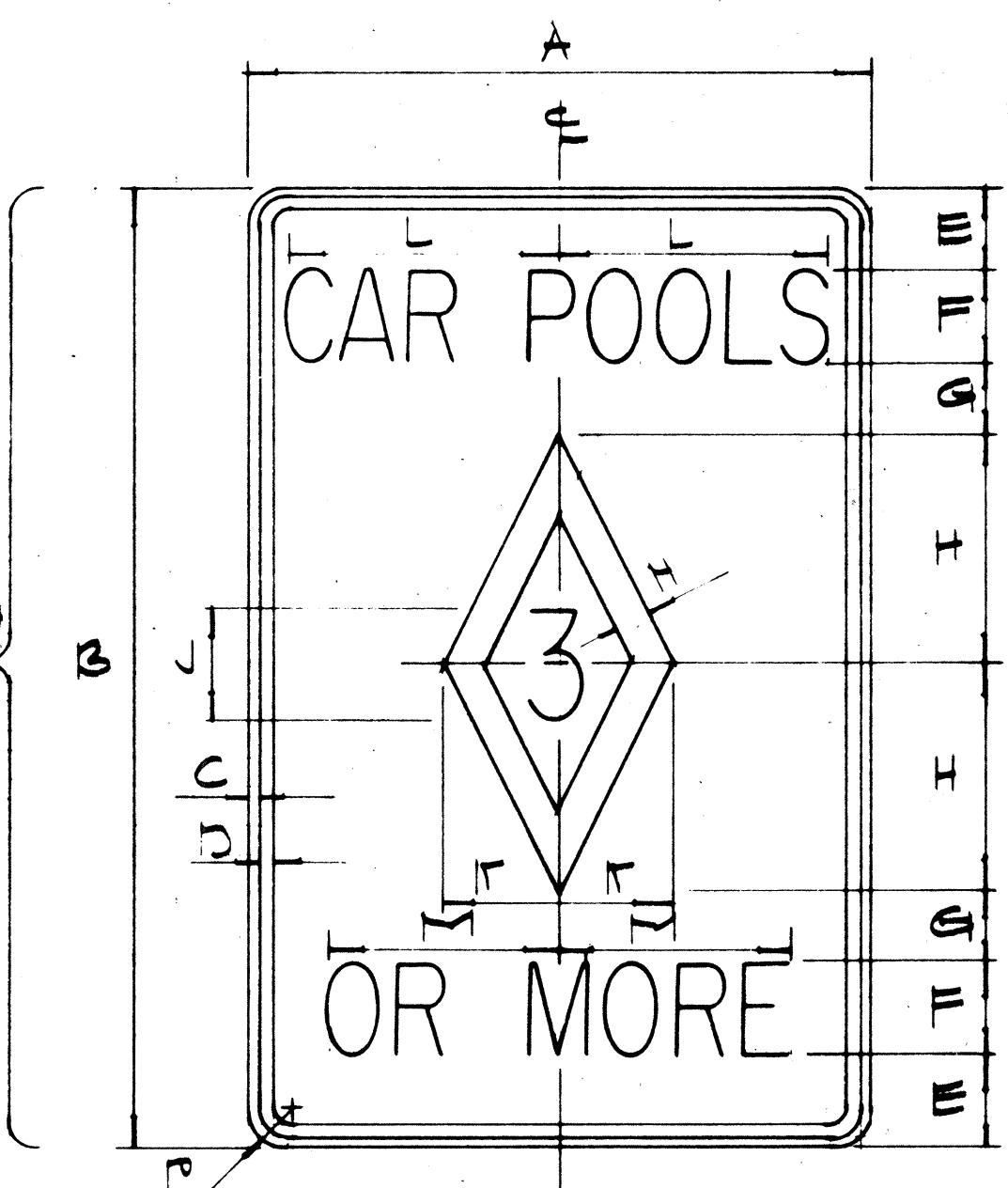
SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	φ	P
P3-10	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	G	8 3/4	1 1/8	3 3/4	1 7/8
P3-10-A	36	60	5/8	7/8	4 1/2	6B	3	6C	2	10	15 1/2	9	10 1/2	1 1/2	5	2 1/4

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	φ	P
P3-12	30	42	1/2	3/4	3/4	4B	2	4C	1 1/4	7 1/2	10 3/8	G	8 3/4	1 1/8	3 3/4	1 7/8
P3-12-A	36	60	5/8	7/8	4 1/2	6B	3	6C	2	10	15 1/2	9	10 1/2	1 1/2	5	2 1/4

GENERAL NOTES:

- SIGN DETAILS SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING FHWA PUBLICATIONS: "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS," "STANDARD HIGHWAY SIGNS," & "STANDARD ALPHABETS FOR HIGHWAY SIGNS."
- FOR ADDITIONAL DETAILS, SEE SHT. # DT 100.
- SIGN PANELS SHALL BE ONE CONTINUOUS SHEETS AND NO SPLICING WILL BE ALLOWED.

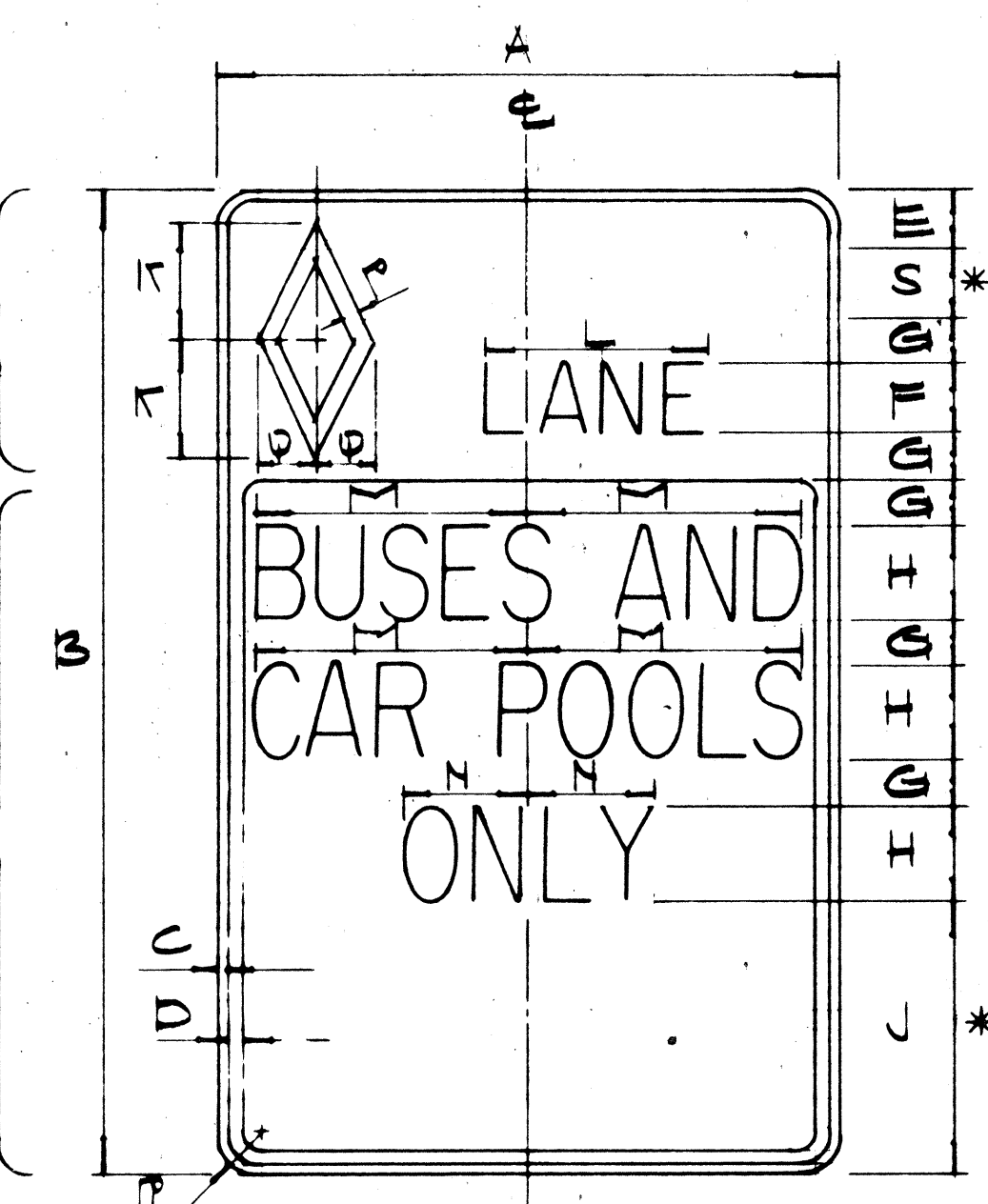
COLOPS
LEGEND: BLACK
NUMBER: BLACK
SYMBOL: BLACK ON WHITE (REFL.)
BRGD: WHITE (REFL.)



P3-16

COLOPS (TOP)
LEGEND: WHITE (REFL.)
SYMBOL: WHITE (REFL) ON BLACK
BRGD: BLACK

COLOPS (BOTTOM)
LEGEND: BLACK
BRGD: WHITE (REFL.)



P3-17

* INSERT ALTERNATE MESSAGE (SEE SCHEDULE)

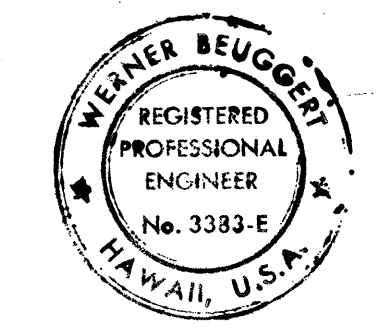
ALTERNATE MESSAGE	SPACE	P3-17		P3-17-A	
		SERIES	DIM.	SERIES	DIM.
LEFT	S	3'D	8 7/8"	4"D	11 3/4"
CONED	S	3'D	12 1/2"	4"D	16 3/4"
SIGNED	S	3'D	13 3/4"	4"D	18 1/2"
WHEN CONED	J	4'B	24"	6"B	36 3/4"
WHEN SIGNED	J	4'B	24"	6"B	38 3/4"
24 HRS	J	4'C	17 1/2"	6"C	27"
6-8:30 AM		2'C		3'C	
3:30-5:30 PM	J	2'C		3'C	
EXCEPT SAT SUN & HOL		1'C		2'C	

NOTE:
ALL ALTERNATE MESSAGES SHALL BE VISUALLY CENTERED WITHIN AREAS AS SPECIFIED.

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	φ	P
P3-16	30	42	1/2	3/4	4	4C	3	10	5C	5	12	10 1/4	1 1/2	1 7/8		
P3-16-A	42	60	5/8	7/8	5	6C	4	15	8D	7 1/2	18	16	2	2 1/4		

SIGN	DIMENSIONS (INCHES)															
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	φ	P
P3-17	30	42	1/2	3/4	2 1/2	3D	2	4C	1 1/2	5	9 5/8	12	5 1/2	3/4	2 1/2	1 7/8
P3-17-A	42	60	5/8	7/8	4	4D	3	6C	15	7 1/2	12 3/4	18	8 1/4	1 1/8	3 3/4	2 1/4

ORIGINAL PLAN
DATE: _____
DRAWN BY: _____
DESIGNED BY: _____
QUANTITIES BY: _____
CHECKED BY: _____



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Beugert

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

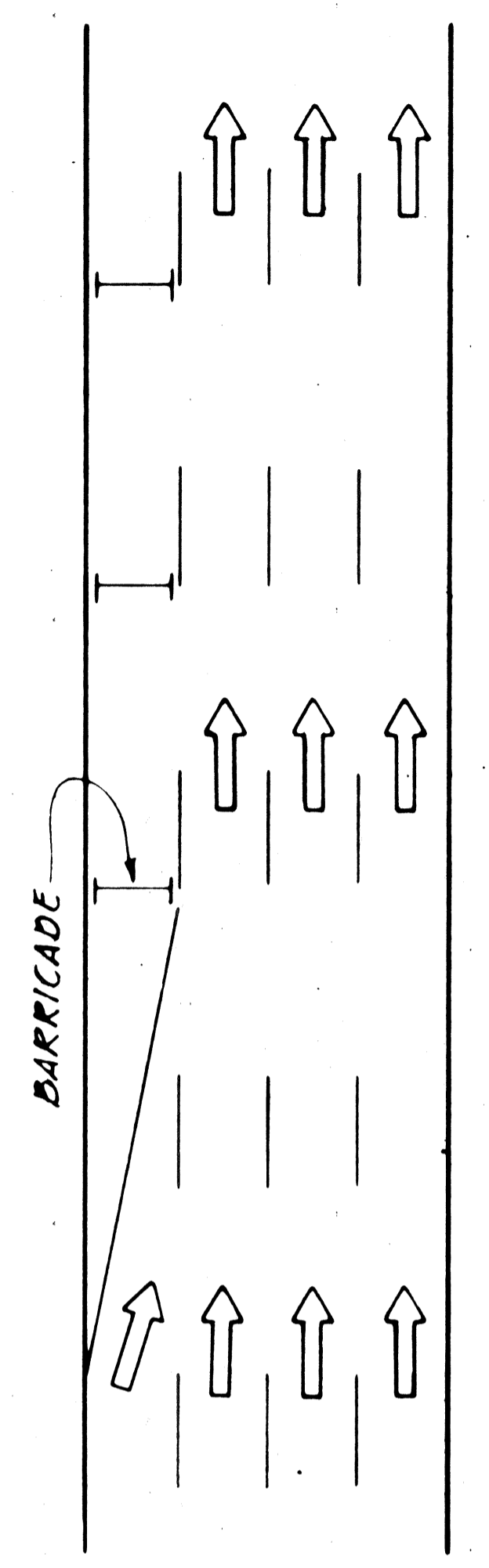
TYPICAL DETAILS
BUS-CAR POOL SIGNS

INTERSTATE ROUTE H-1
PROJECT NO. IIR-HI-1(70):17

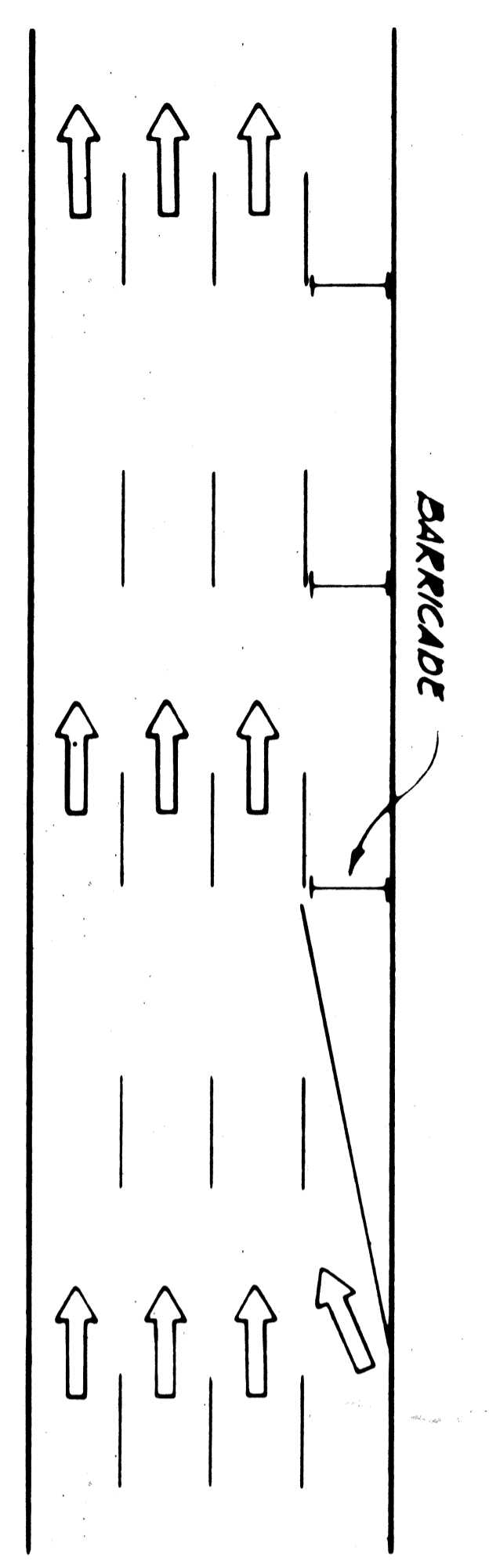
NOT TO SCALE JAN. 1979

SHEET No. P-9 OF 33 SHEETS

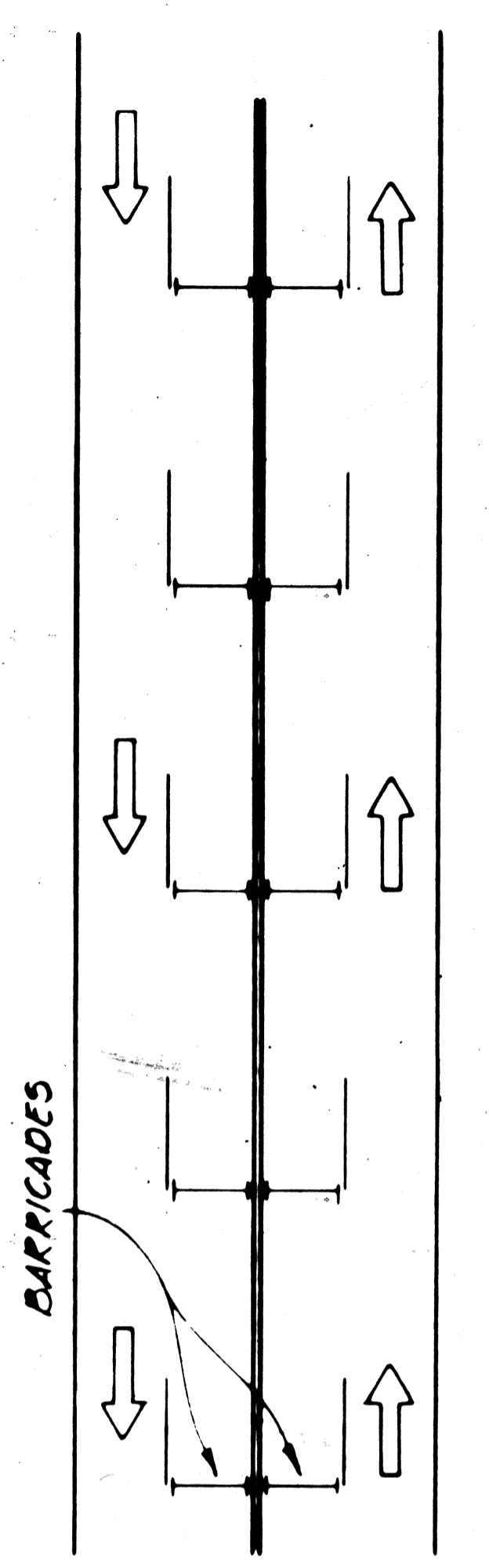
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IRH(170)-17	1983	56	211



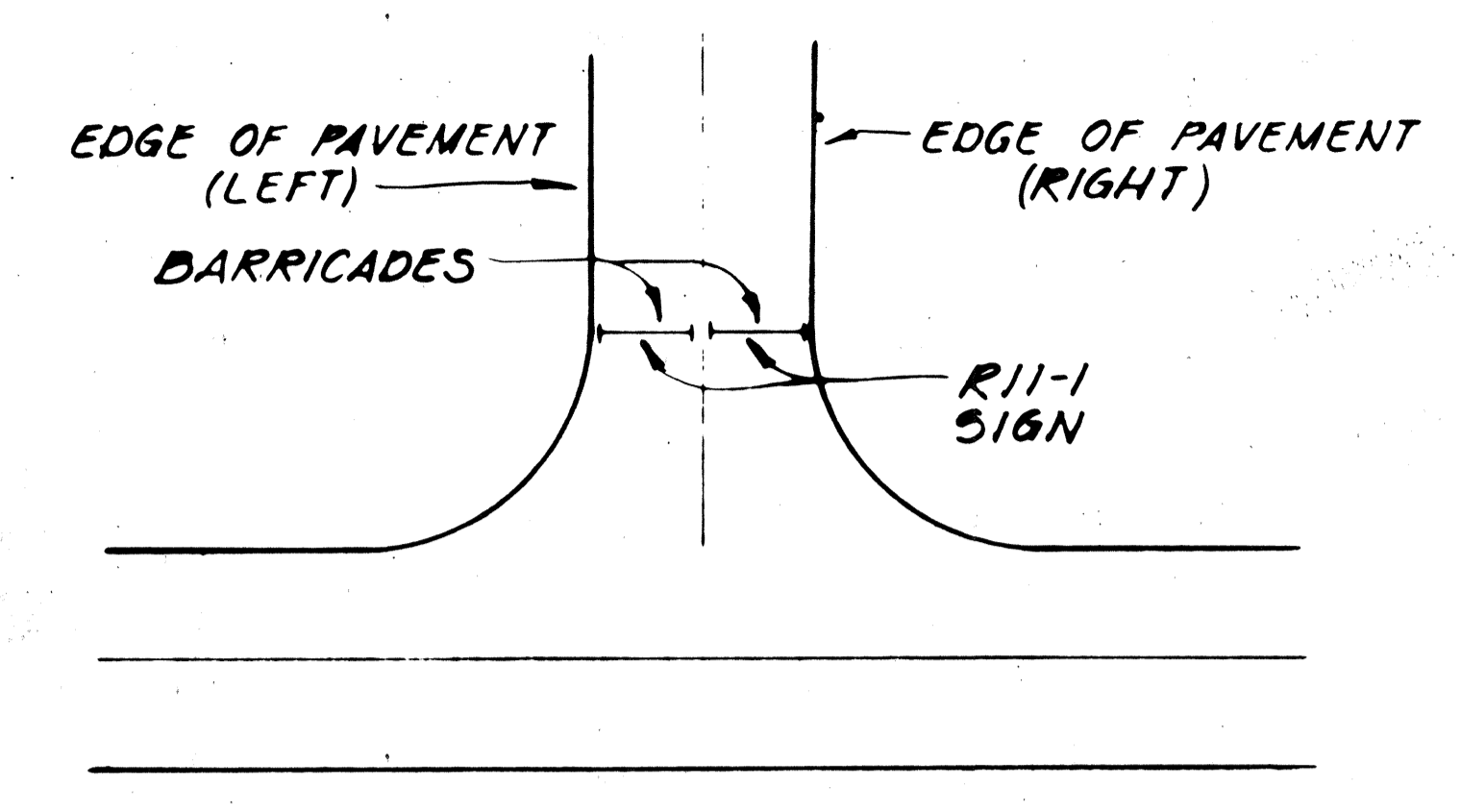
ROADWAY DELINEATION TO THE RIGHT
NOT TO SCALE



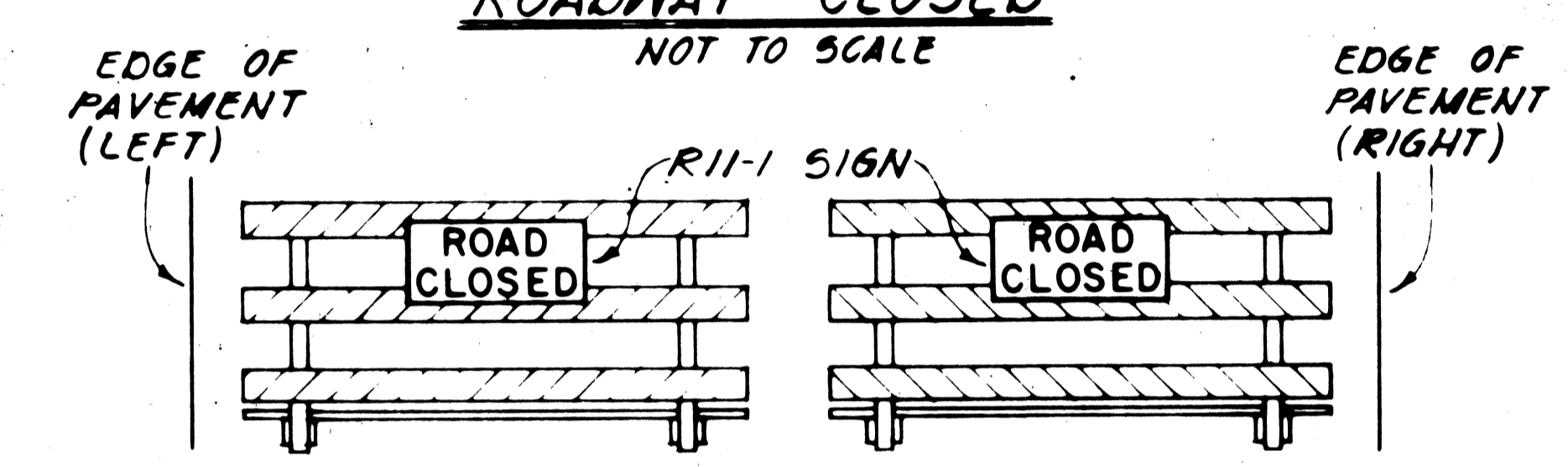
ROADWAY DELINEATION TO THE LEFT
NOT TO SCALE



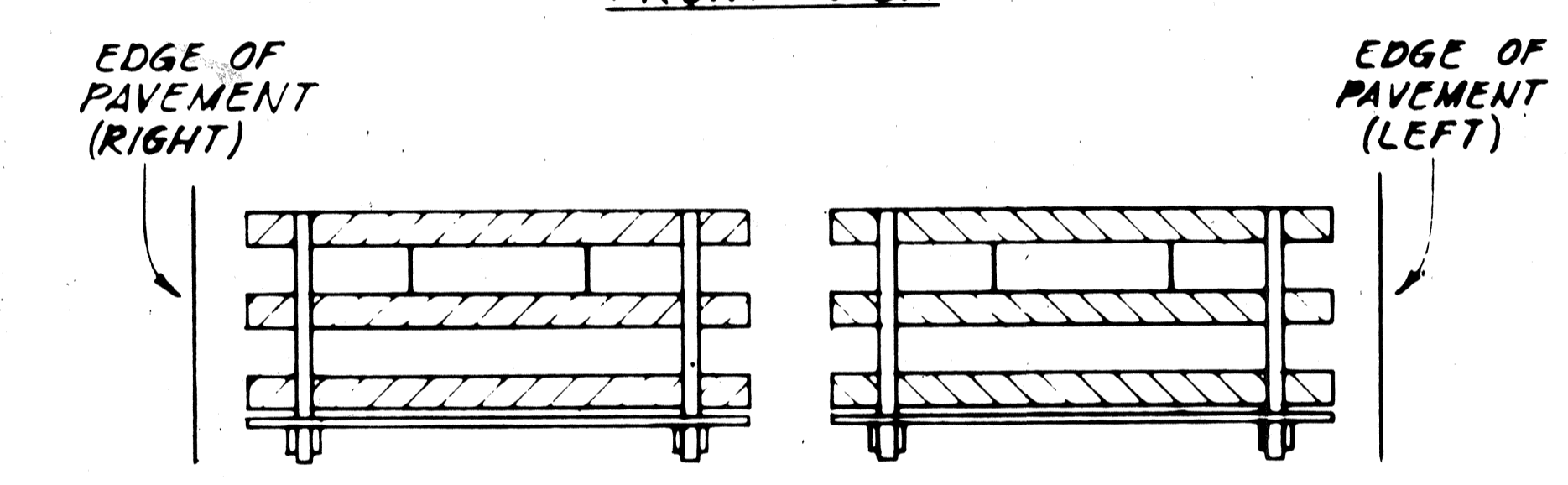
ROADWAY DELINEATION FOR 2-WAY TRAFFIC
NOT TO SCALE



ROADWAY CLOSED
NOT TO SCALE

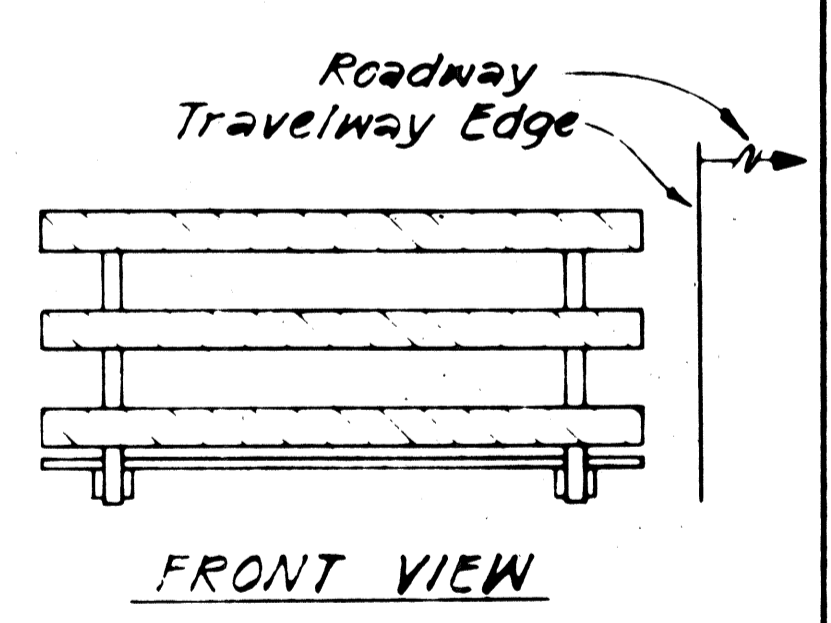


FRONT VIEW

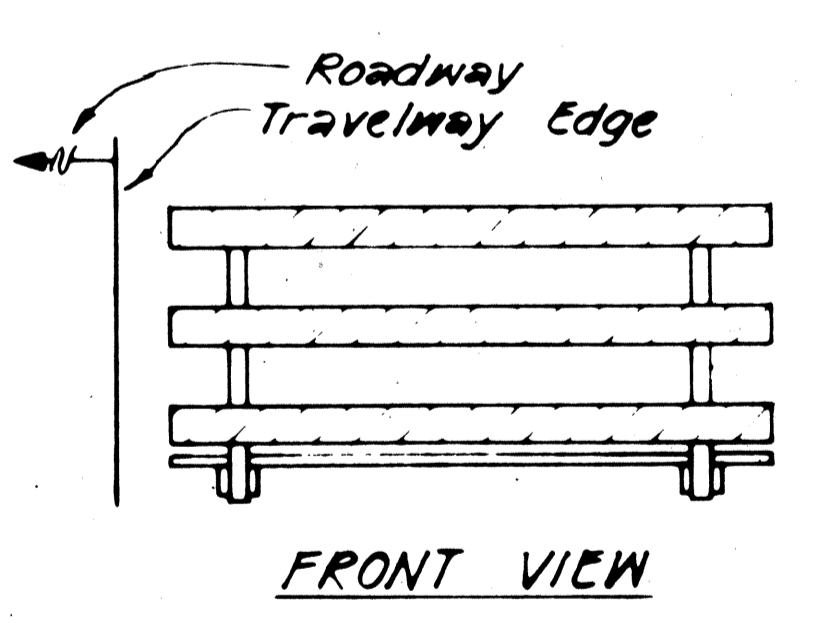


BACK VIEW

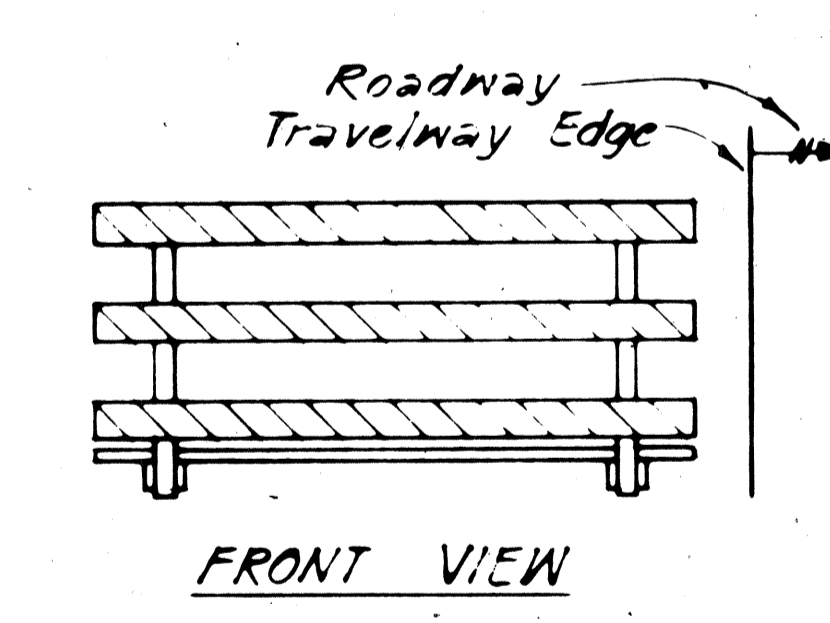
BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE



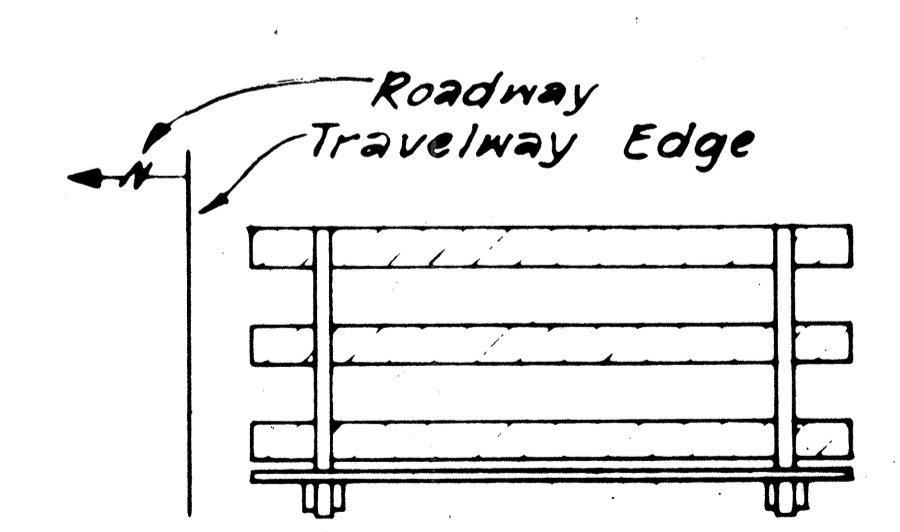
FRONT VIEW



FRONT VIEW

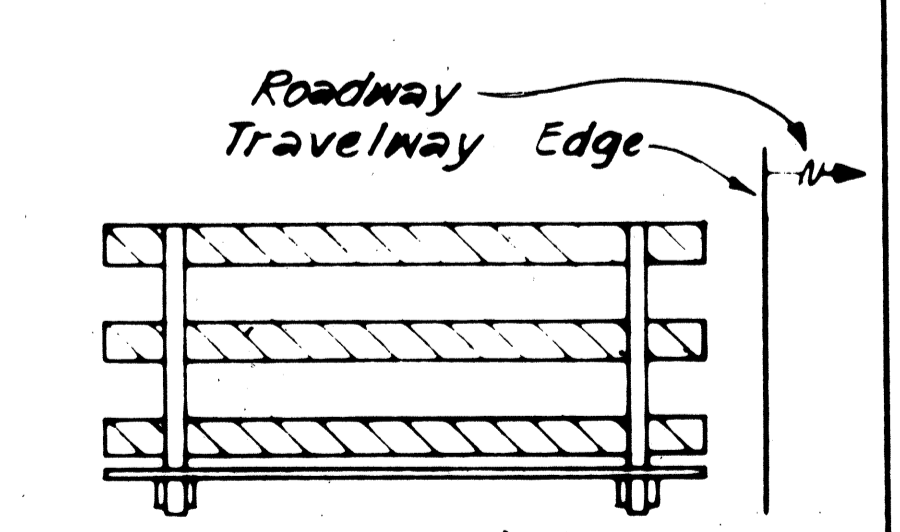


FRONT VIEW



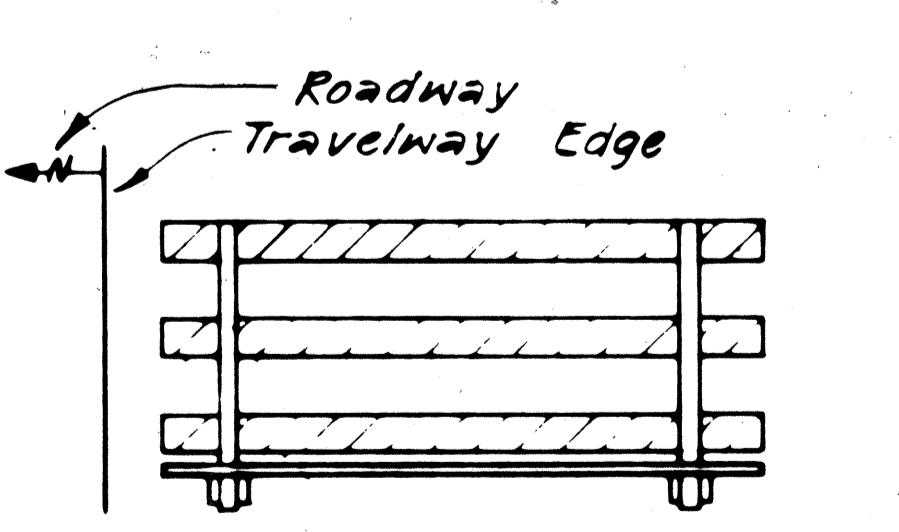
BACK VIEW

BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE



BACK VIEW

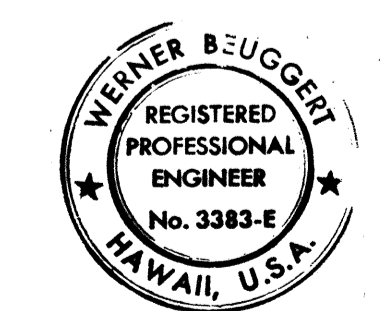
BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE



BACK VIEW

BARRICADE STRIPING ARRANGEMENT
NOT TO SCALE

DRAWN BY: []
 CHECKED BY: []
 DATE: []



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Werner Buegger

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

TYPICAL DETAILS
BARRICADE STRIPING DETAILS

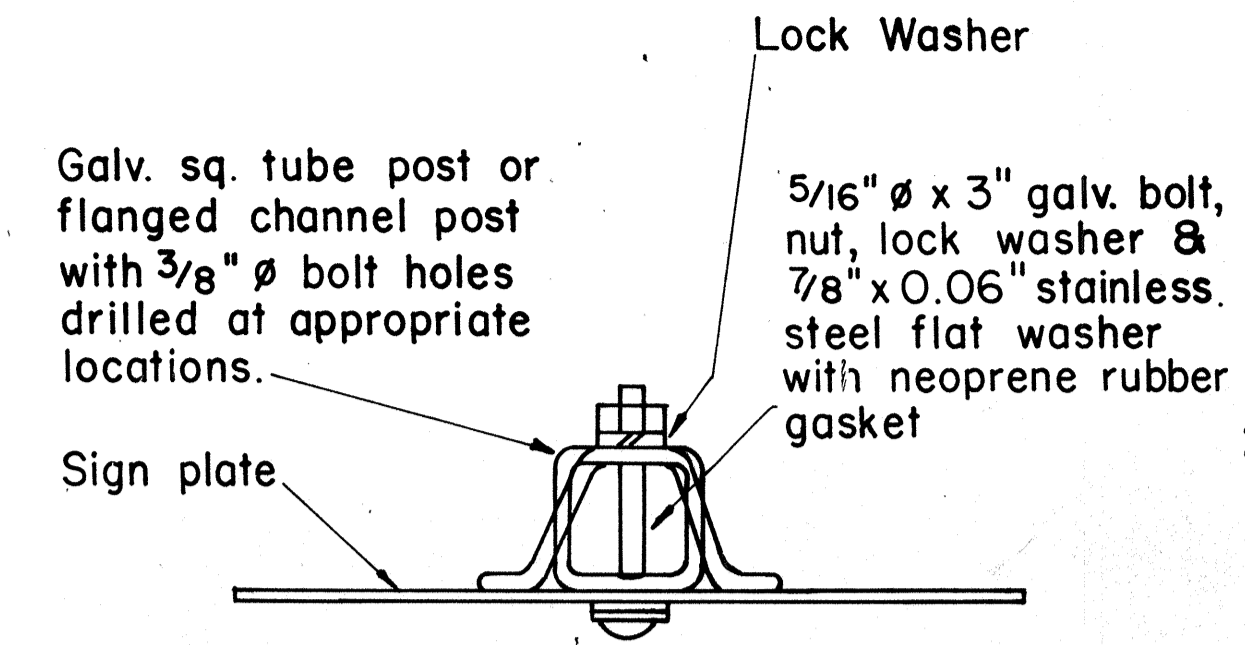
INTERSTATE ROUTE H-1
 PROJECT NO I-IR-HI-(170)-17

SCALE: AS SHOWN DATE: 4/30/81
 SHEET NO. P-10 OF 33 SHEETS

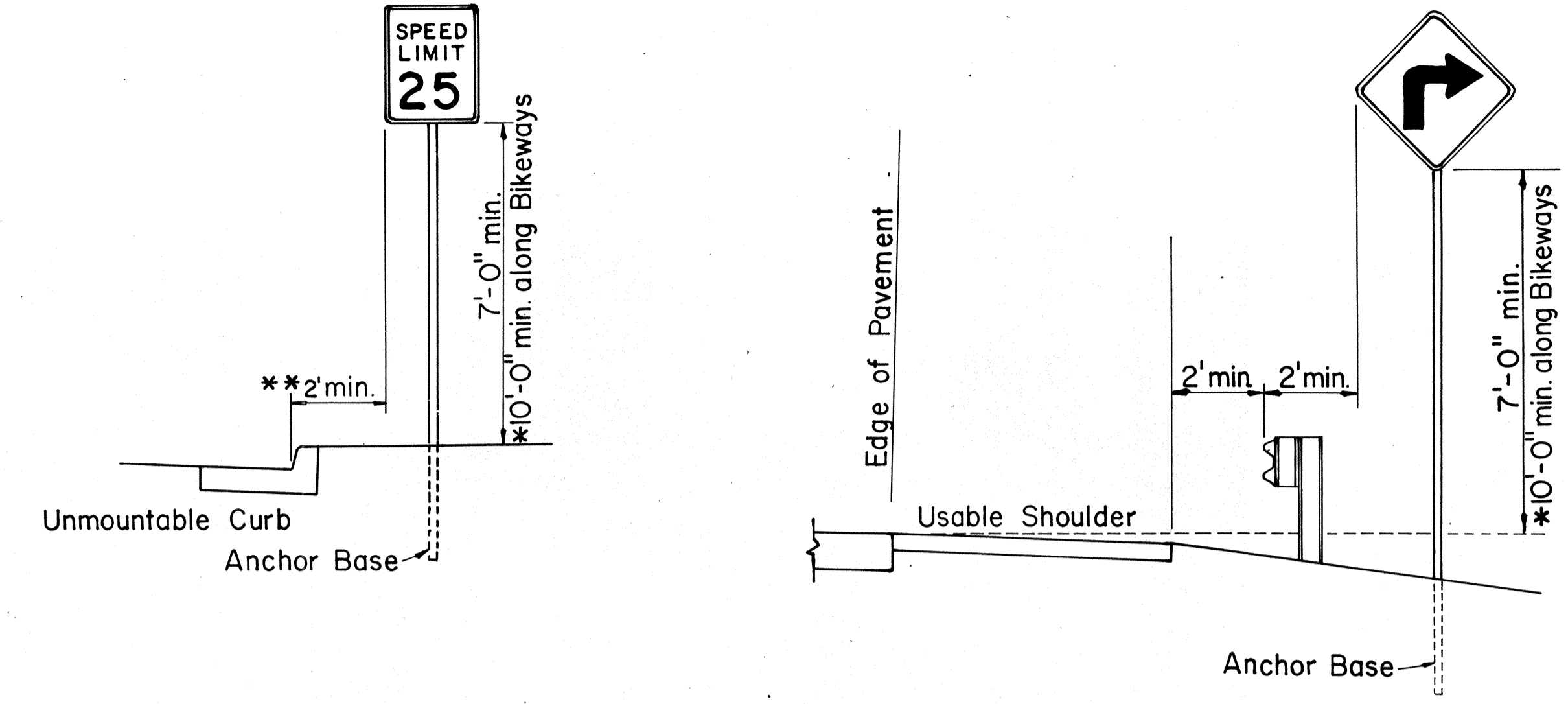
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI-1(170):17	1983	57	211

GENERAL NOTES

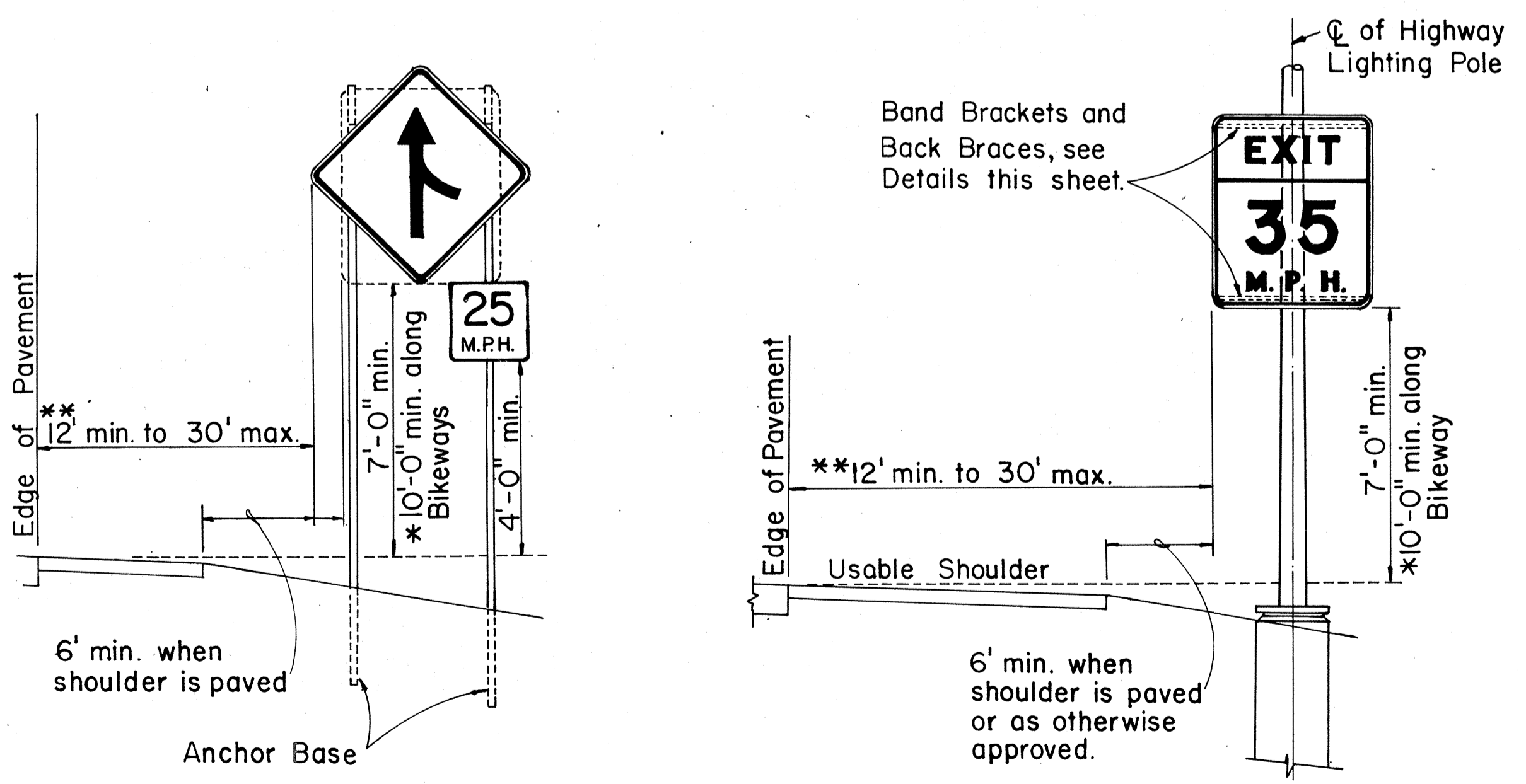
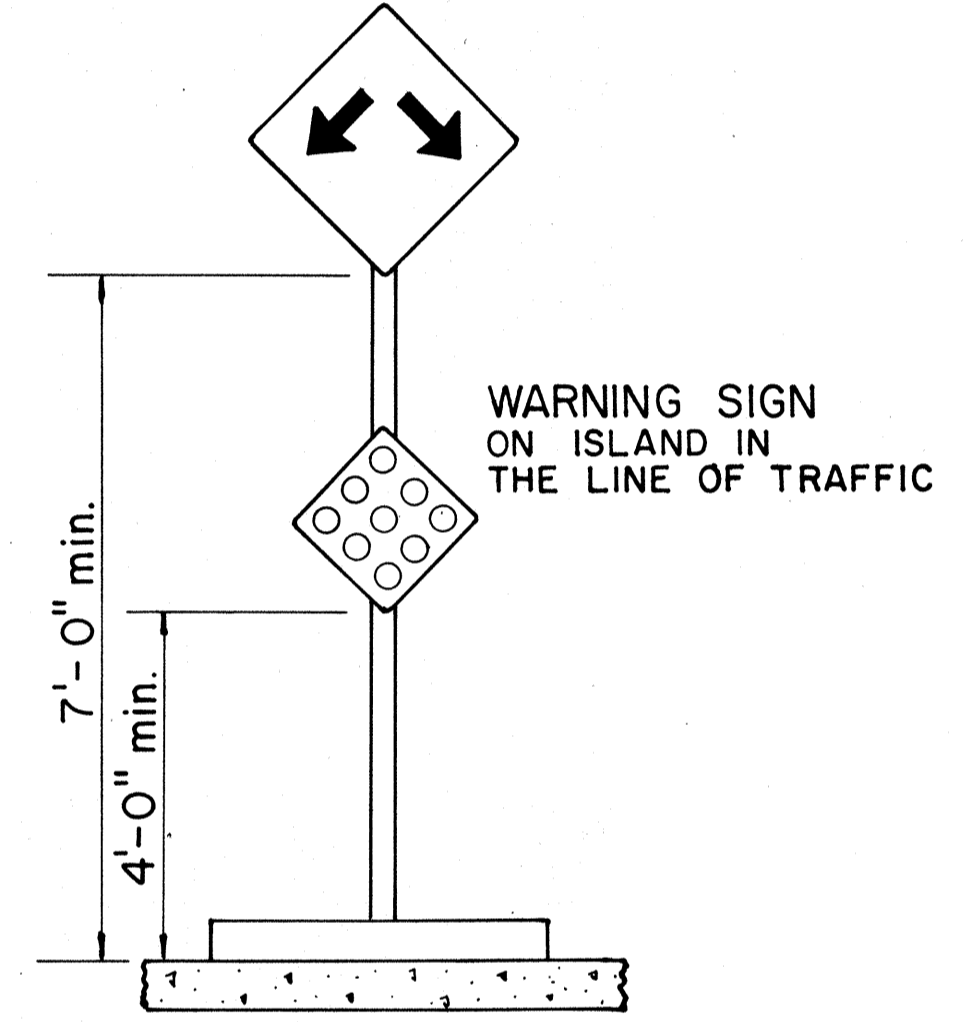
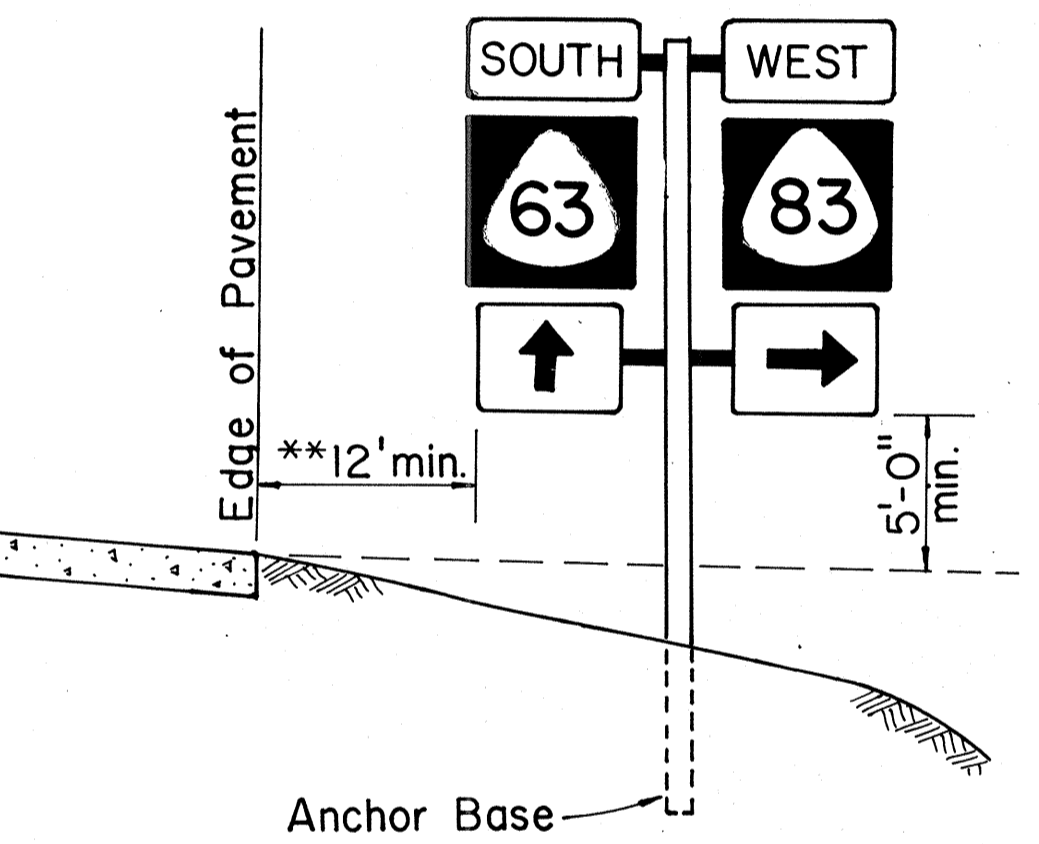
- Signs shall be placed in conformance with positions shown and described in the "Manual on Uniform Traffic Control Devices for Streets and Highways", 1978, Part II, Section 2A-2I, as amended, and as supplemented herein.
- Sign 48" and wider or larger than 10 sq. ft. in area shall be mounted on two or more sign posts except as noted below.
- Signs 48" and wider or larger than 10 sq. ft. in area may be mounted on objects other than sign posts (i.e. on highway lighting poles) as follows:
 - Signs 48" and wider but less than 10 sq. ft. in area shall be mounted with a minimum of two sets of band bracket and back braces.
 - Signs larger than 10 sq. ft. and less than 28 sq. ft. in area shall be mounted with a minimum of two sets of band brackets and back braces.
 - Signs larger than 28 sq. ft. in area shall be mounted with a minimum of three sets of band bracket and back braces.
- All parking restriction signs with arrows shall be mounted 45° to the line of traffic flow.
- Sign posts shall extend 3 1/2" above each sign, where required, for attachment of City and County street name signs.
- (R) or (L) indicates right or left and shown on the plans.
- * 7. See plans for special details of signs along bikeways.
- ** 8. The minimum lateral distances shown are guidelines and shall be exceeded whenever possible. The Contractor shall place signs at the maximum practical lateral distance from the edge of the traveled way up to 30 feet and shall utilize protected locations whenever possible. Final locations of all signs shall be approved by the Engineer.
- Signs in medians shall be placed at midpoint of median up to a maximum distance of 30 feet from the edge of traveled way. When appropriate, signs for opposing directions shall be placed back to back.
- Anchor bases shall be installed for all signpost installations, unless otherwise shown or directed. See sheets DT 100A and DT 100B.



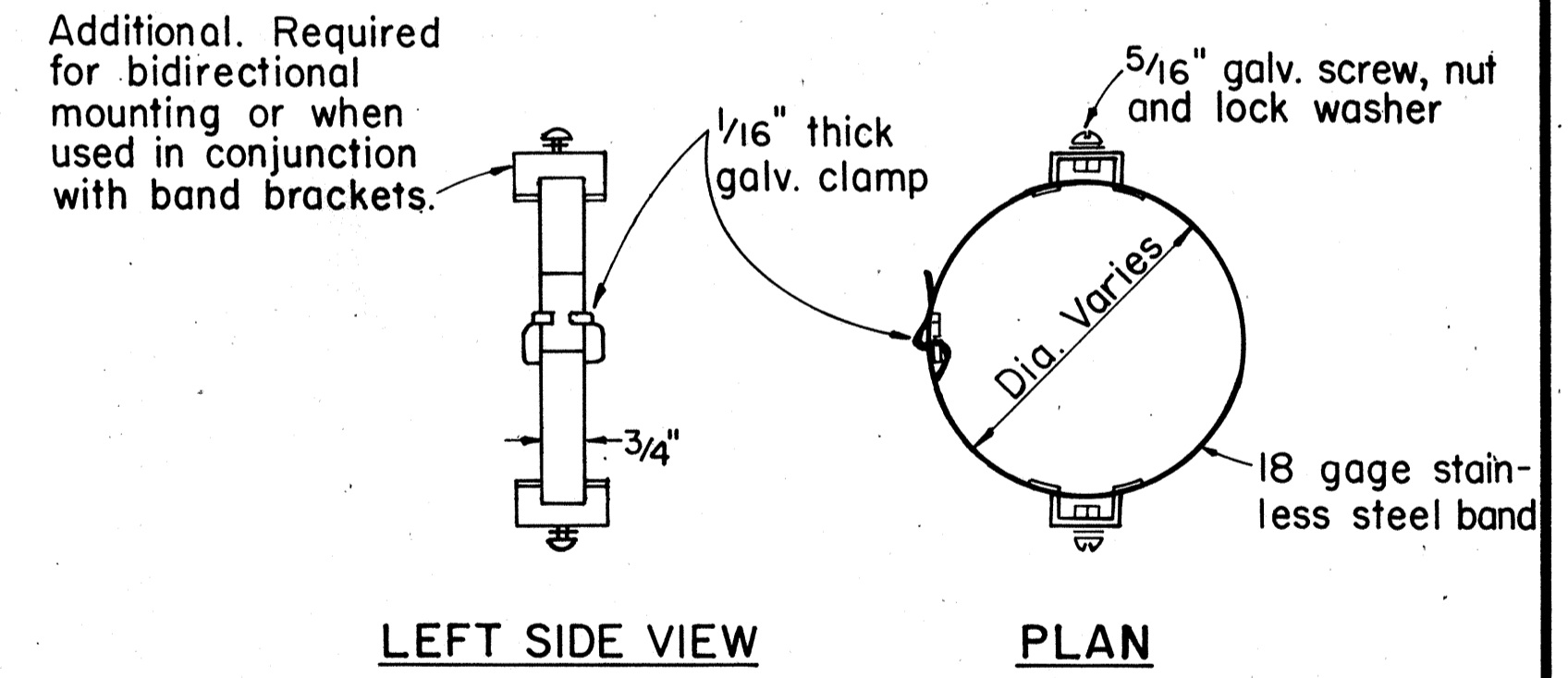
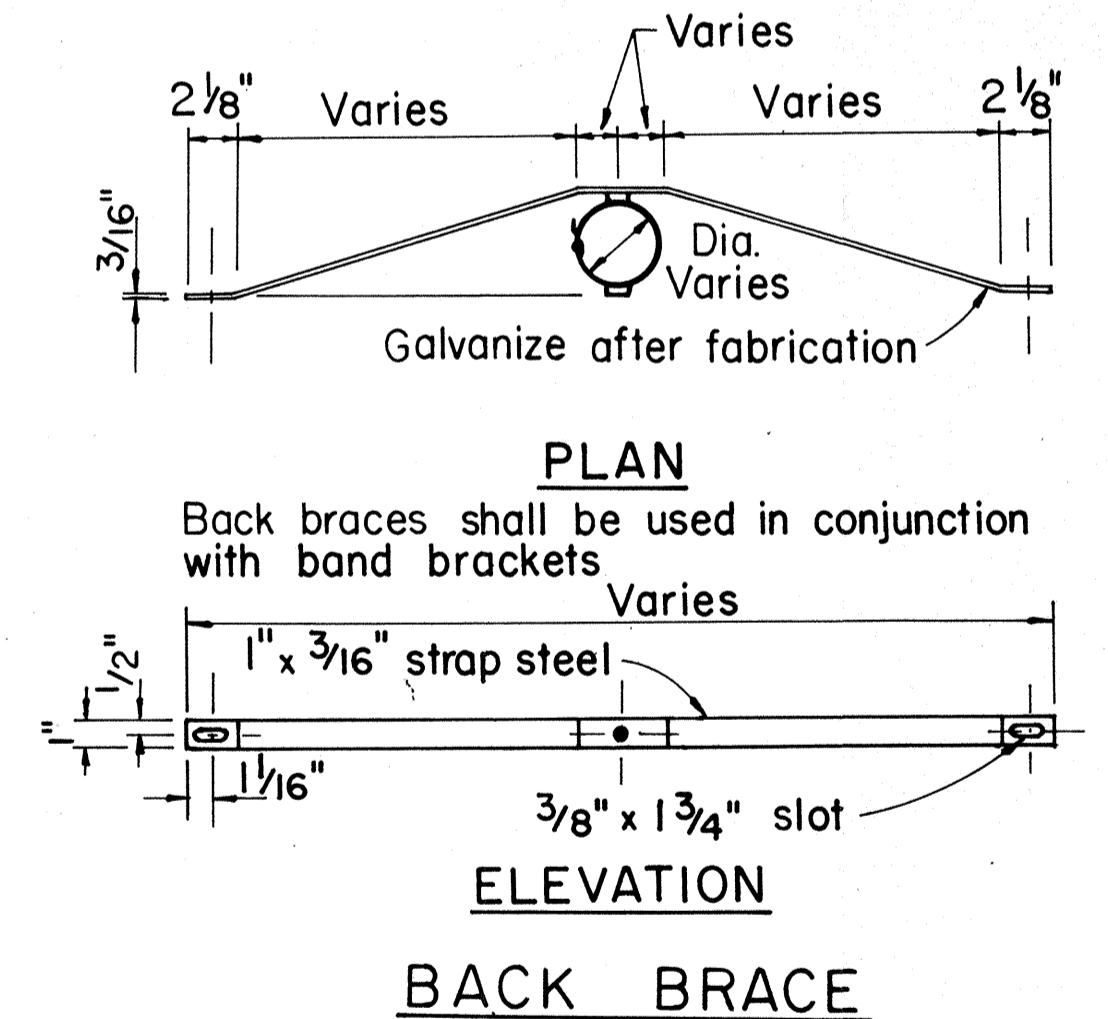
GALVANIZED SQUARE TUBE OR FLANGED CHANNEL POST



ROADSIDE ASSEMBLY RURAL DISTRICT



HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION



TYPICAL MOUNTING DETAILS

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 100 approved 11/15/77	[Signature]	10-18-83

APPROVAL RECOMMENDED:
Eiichi Tanaka 10/14/83
 TRAFFIC ENGINEER DATE

APPROVED:
S. Fujiyama 10-18-83
 ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS

MISCELLANEOUS SIGN DETAILS

Not to Scale: Oct. 1983
 SHEET No. P-II OF 33 SHEETS DT 100

SURVEY PLOTTED BY	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.	I-IR-HI-1(72):17	1983	58	211

A or A ₁	C	C ₁
36"	6"	-
48"	9"	19"
60"	12"	24"

NOTE: Frame stiffeners are required when D is greater than 24". See Gen. Note 4.

GENERAL NOTES

- Sign posts and base posts shall be flanged channel type structural steel conforming to ASTM A 499 and galvanized in accordance with ASTM A 123.
NOMINAL DIMENSIONS:
2.50 lbs./ft. - 3.125" x 1.562"
4.00 lbs./ft. - 3.500" x 1.750"
- Retainer - Spacer Strap shall be AISI 1020 steel and galvanized in accordance with ASTM A 123.
- Retainer and Connector Bolts shall be 5/16 - 18 UNC x 1.75" long hex. head, integral flange conforming to ASTM A 354 Grade BC. Nuts shall be 5/16 - 18 UNC hex. head, integral flange conforming to ASTM A 563 Grade D. All bolts and nuts shall be cadmium plated per Federal spec. QQP 416 B, Class 2, Type 2.
- All accessories, fittings and stiffener details (as required) shall be submitted to Engineer for approval 20 days prior to installation.
- For additional details see sht. DT 100.
- Basic formulas for use with the windload charts:
Factor = A x B x H
Therefore, if sign area (A x B) is known,
Maximum H = $\frac{\text{Factor}}{\text{sign area (A x B)}}$
and if H is known,
Maximum sign area (A x B) = $\frac{\text{Factor}}{H}$

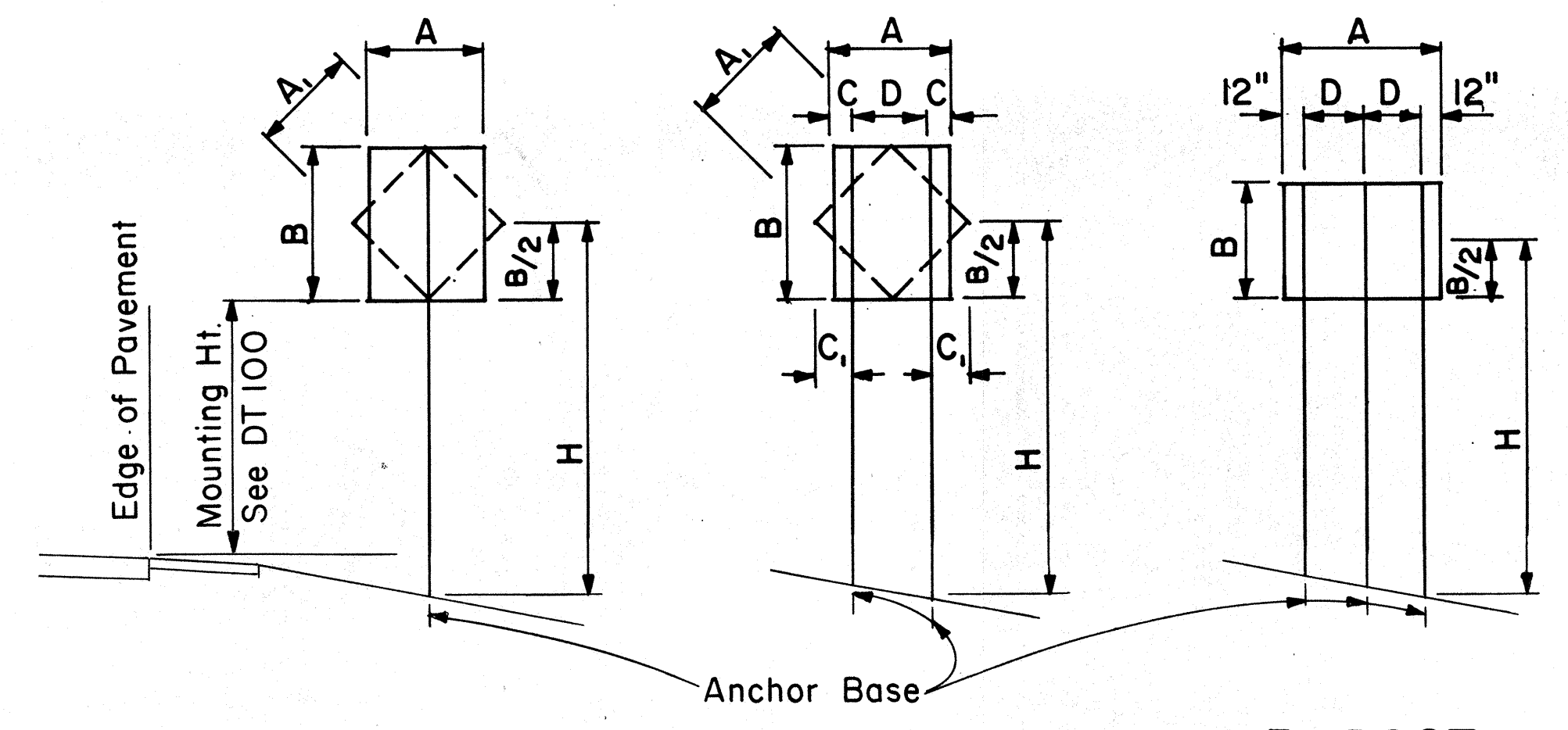
APPROVAL RECOMMENDED:
Eishi Tanaka 9/21/82
TRAFFIC ENGINEER DATE

APPROVED:
Robert Zafiris 9/22/82
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
GALVANIZED FLANGED CHANNEL
SIGN POST MOUNTING

Scale: As Shown Date: Sept. 1982
SHEET NO. P-11A OF 33 SHEETS DT 100A



1-POST Sign area 10 sq. ft. and less
2-POST Sign area greater than 10 sq. ft. or A=48"-60"
3-POST A = greater than 60"

TYPICAL INSTALLATION
Not to Scale

FLANGED CHANNEL: 1-POST INSTALLATION

Post Size	A x B x H (Factor)	H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
		7	8	9	10	11	12	
2.50 lbs./ft.	57	8.14	7.13	6.33	5.70	5.18	4.75	A x B (Area, sq. ft.)
4.00 lbs./ft.	112	-	-	-	-	-	9.33	

FLANGED CHANNEL: 2-POST INSTALLATION

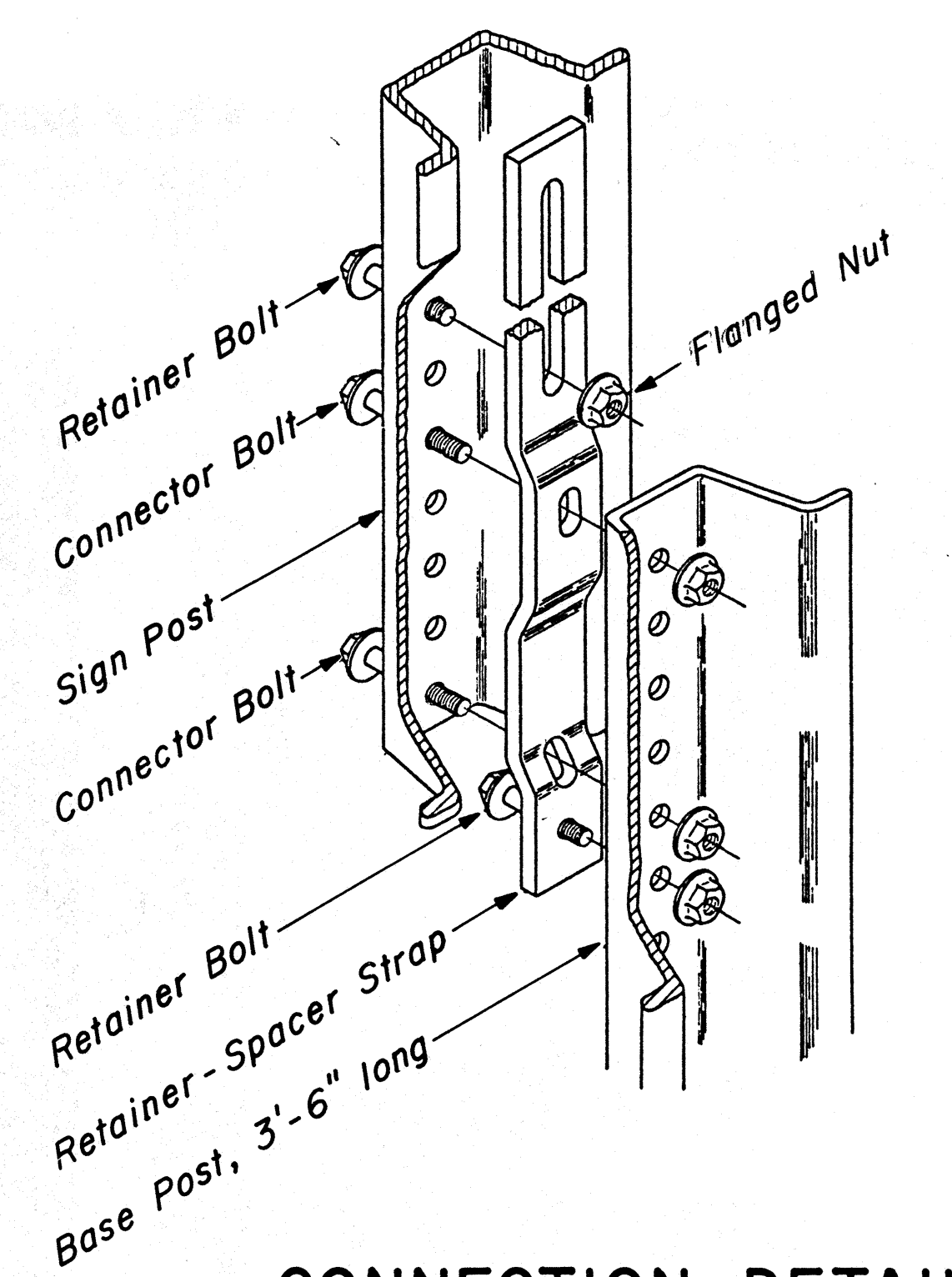
Post Size	A x B x H (Factor)	H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
		7	8	9	10	11	12	
2.50 lbs./ft.	124	17.71	15.50	13.77	12.40	11.27	10.33	A x B (Area, sq. ft.)
4.00 lbs./ft.	241	34.43	30.13	26.78	24.10	21.91	20.08	

FLANGED CHANNEL: 3-POST INSTALLATION

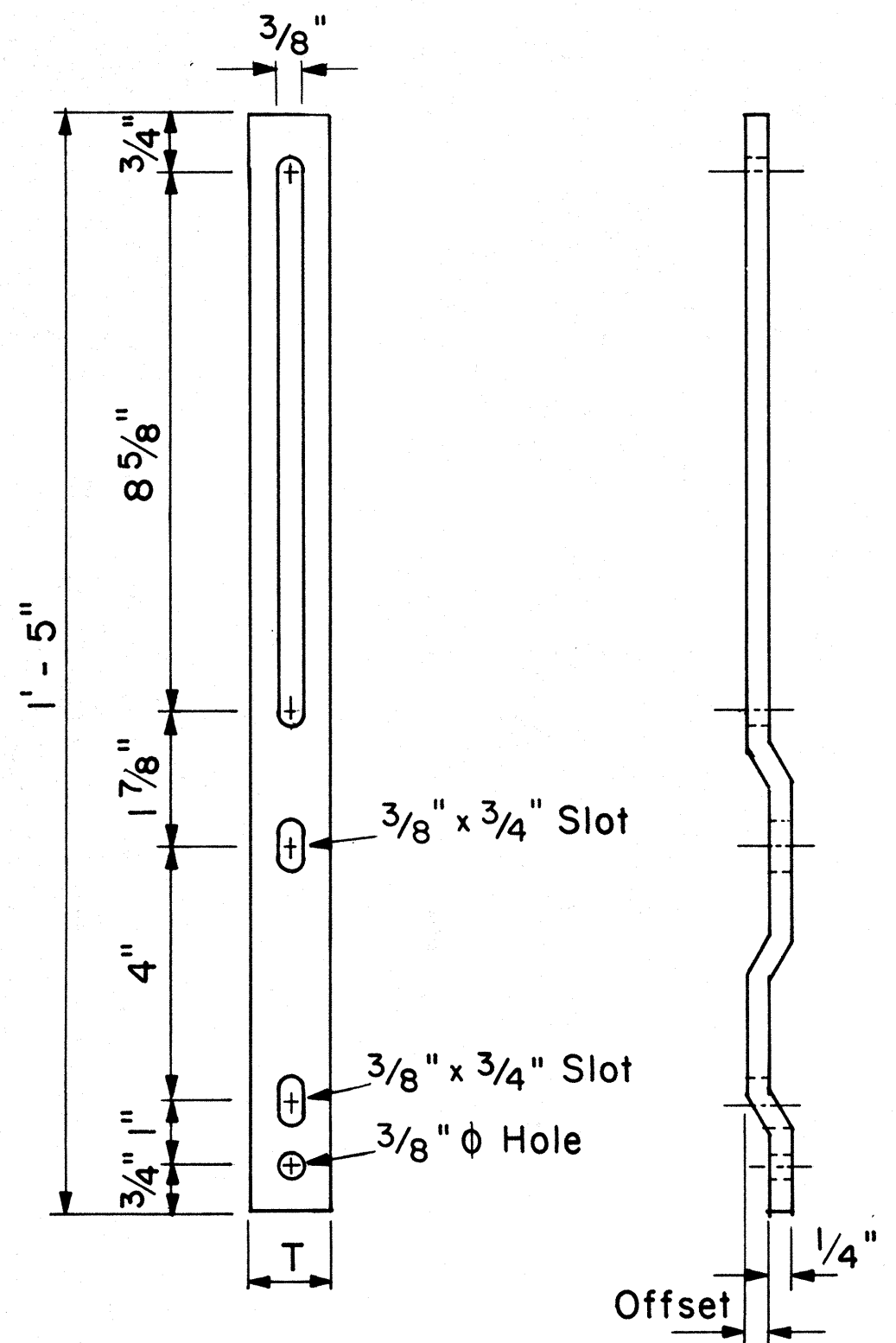
Post Size	A x B x H (Factor)	H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
		7	8	9	10	11	12	
2.50 lbs./ft.	187	26.71	23.38	20.78	18.70	17.00	15.58	A x B (Area, sq. ft.)
4.00 lbs./ft.	362	51.71	45.25	40.22	36.20	32.91	30.17	

WINDLOAD CHARTS

NO.	REVISION	APPROVED BY	DATE



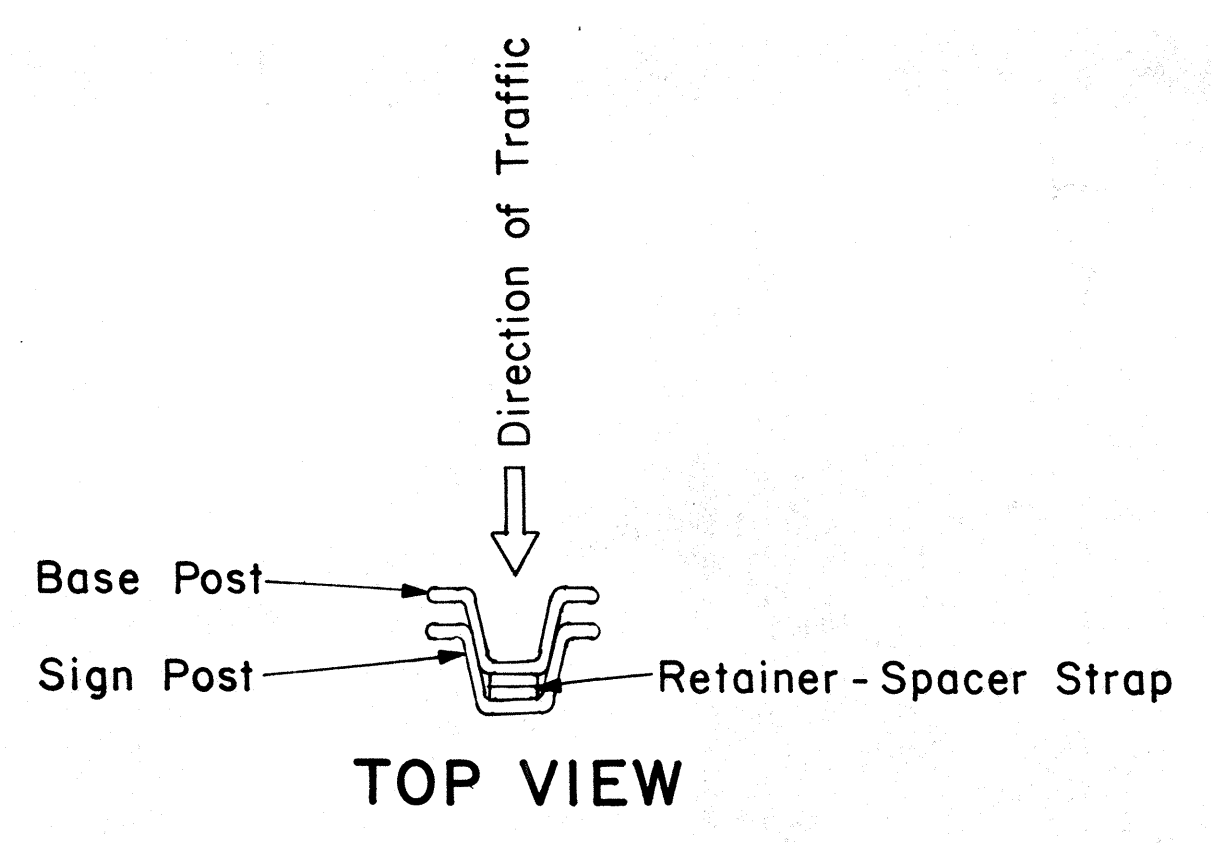
CONNECTION DETAIL
Not to Scale



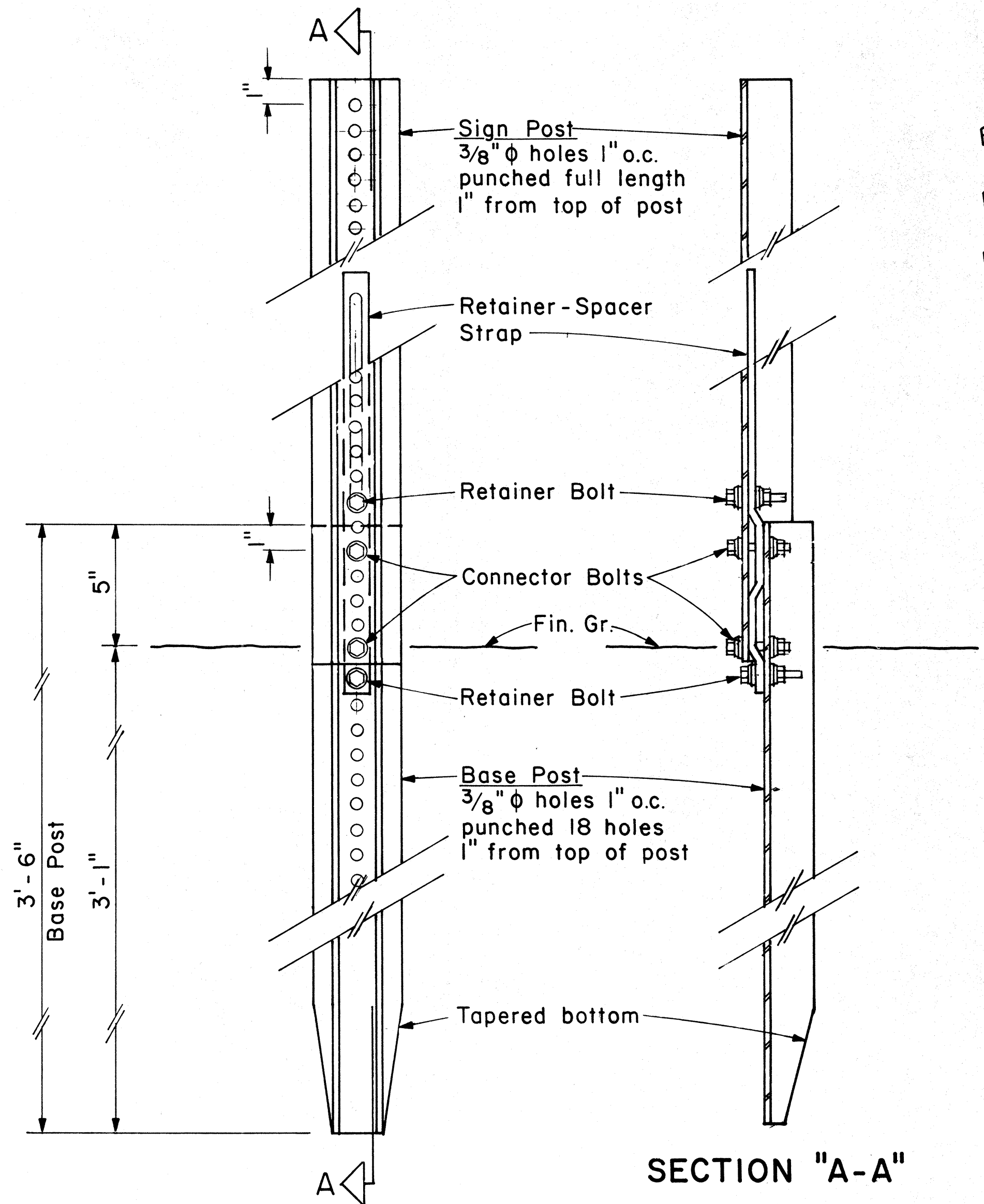
RETAINER-SPACER STRAP
Not to Scale

RETAINER-SPACER STRAP

Post Size	T	Offset
2.50 lbs./ft.	1.00"	0.145"
4.00 lbs./ft.	1.12"	0.280"



TOP VIEW



SECTION "A-A"

BACK VIEW

ANCHOR BASE DETAIL

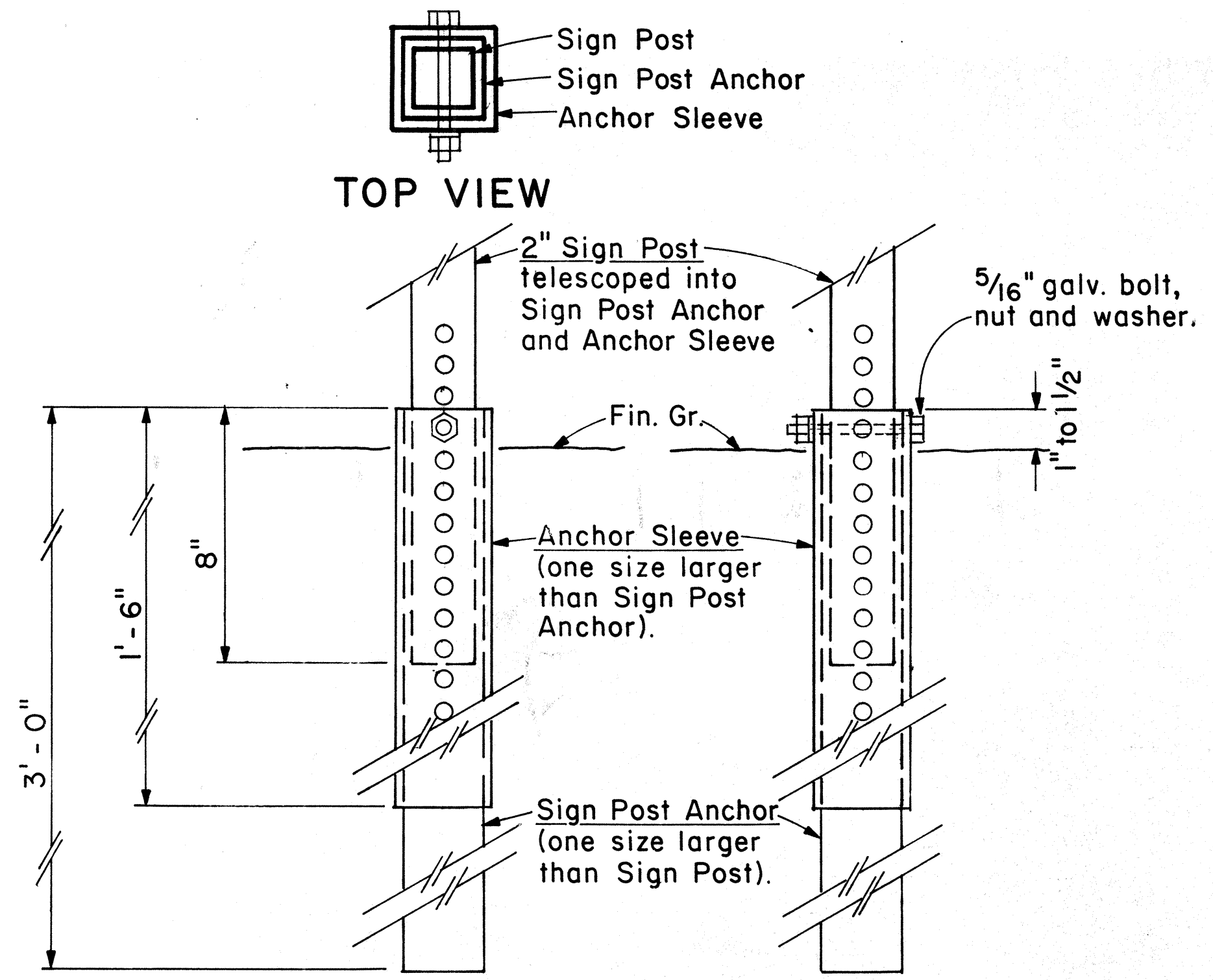
Scale: 3" = 1'-0"

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

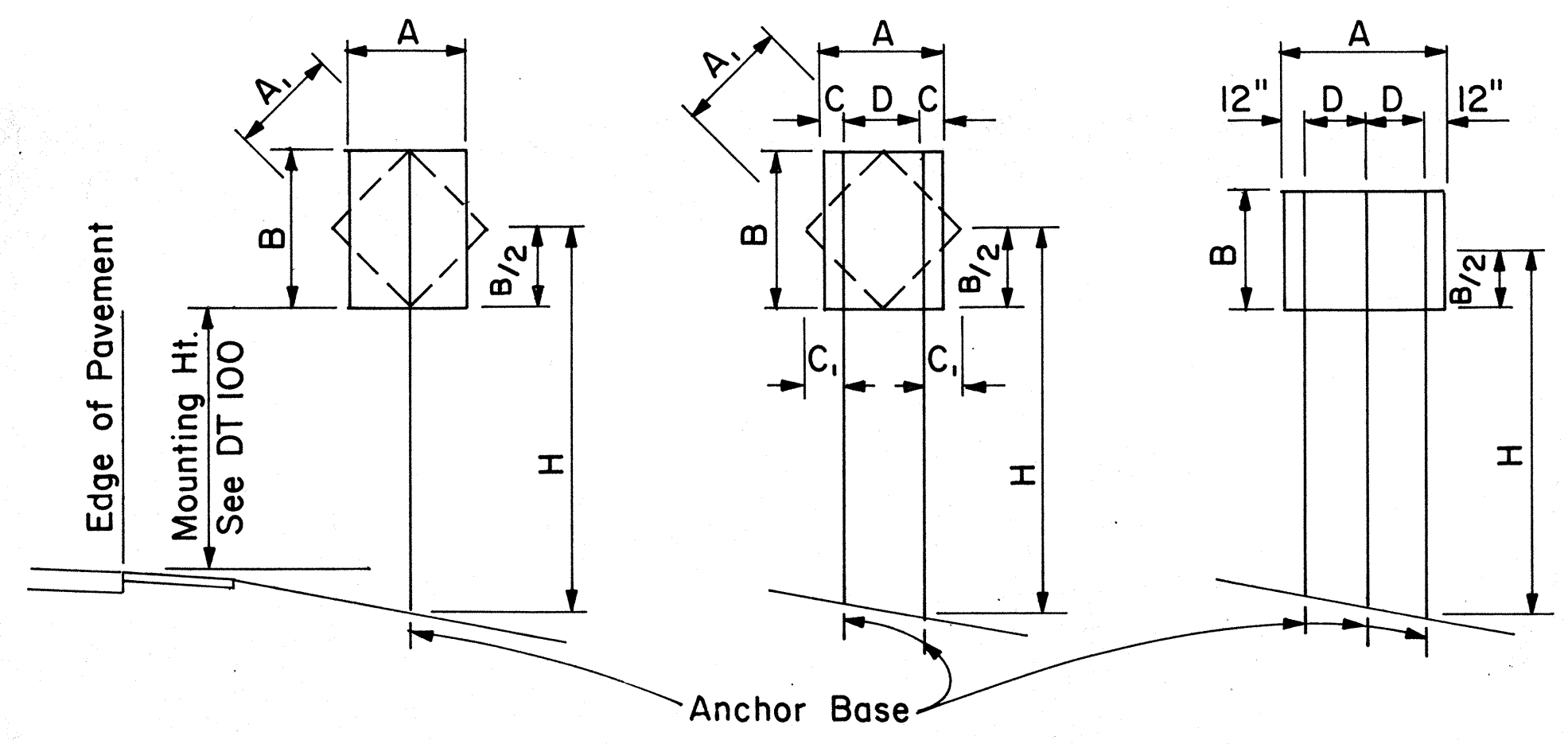
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI-1(70):17	1983	59	211

GENERAL NOTES

- Square tube sign posts shall conform to Subsection 713.11(C) Square Tube Posts of the Specifications.
- All accessories, fittings and stiffener details (as required) shall be submitted to Engineer for approval 20 days prior to installation.
- Square tube posts shall be perforated with 7/16" ϕ holes, 1" o.c., 4 sides, along entire length of post.
- All posts shall be 12 gage unless otherwise specified or shown on the plans.
- For additional details see sht. DT 100.
- Basic formulas for use with the windload charts:
 $Factor = A \times B \times H$
Therefore, if sign area (A x B) is known,
 $Maximum\ H = \frac{Factor}{sign\ area\ (A \times B)}$
and if H is known,
 $Maximum\ sign\ area\ (A \times B) = \frac{Factor}{H}$



BACK VIEW SIDE VIEW
2" SIGN POST INSTALLATION



1 - POST Sign area 10 sq. ft. and less
2 - POST Sign area greater than 10 sq. ft. or A=48"-60"
3 - POST A= greater than 60"

TYPICAL INSTALLATION

Not to Scale

A or A ₁	C	C ₁
36"	6"	-
48"	9"	19"
60"	12"	24"

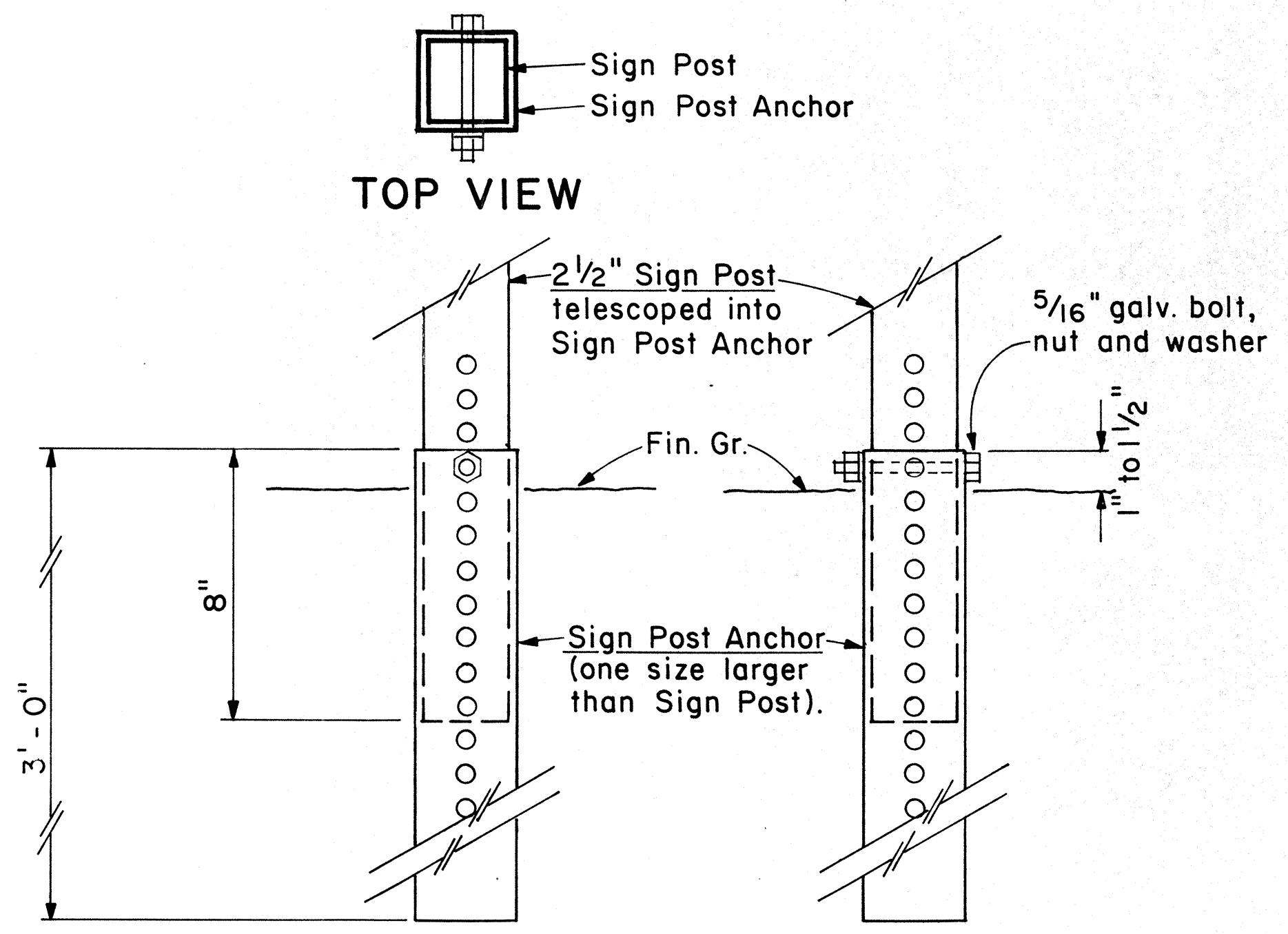
NOTE: Frame stiffeners are required when D is greater than 24". See Gen. Note 2.

SQUARE TUBE: 1- POST INSTALLATION		H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
Post Size	A x B x H (Factor)	7	8	9	10	11	12	
2"	62	8.8	7.7	6.8	6.1	5.6	4.8	A x B (Area, sq. ft.)
2 1/2"	107	-	-	-	-	9.6	8.8	

SQUARE TUBE: 2- POST INSTALLATION		H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
Post Size	A x B x H (Factor)	7	8	9	10	11	12	
2"	122	17.4	15.2	13.5	12.2	11.0	10.1	A x B (Area, sq. ft.)
2 1/2"	212	30.2	26.5	23.5	21.1	19.2	17.6	
2 1/2", 10 ga.	260	37.0	32.0	28.6	26.0	23.5	21.5	

SQUARE TUBE: 3- POST INSTALLATION		H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
Post Size	A x B x H (Factor)	7	8	9	10	11	12	
2"	183	26.0	22.8	20.3	18.2	16.6	15.2	A x B (Area, sq. ft.)
2 1/2"	318	45.4	39.5	35.2	31.5	28.8	26.5	
2 1/2", 10 ga.	388	55.0	48.5	43.0	38.5	35.0	32.0	

WINDLOAD CHARTS



BACK VIEW SIDE VIEW
2 1/2" SIGN POST INSTALLATION

ANCHOR BASE DETAIL

Scale: 3" = 1'-0"

APPROVAL RECOMMENDED:
Eishi Tanaka 9/21/82
TRAFFIC ENGINEER DATE
APPROVED:
Robert Z. Ishii 9/22/82
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
GALVANIZED SQUARE TUBE
SIGN POST MOUNTING

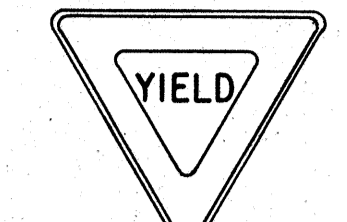
Scale: As Shown Date: Sept. 1982

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


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-R-H-1(10)	1983	60	211



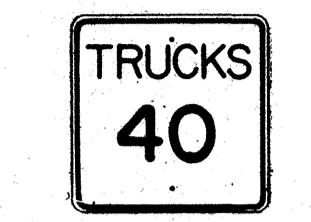
R1-1 30" x 30"
R1-1-A 36" x 36"
4-WAY
R1-3 12" x 6"
R1-3-A 18" x 9"



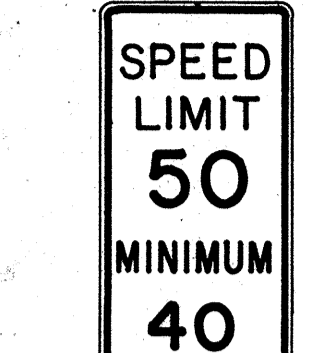
R1-2 36" x 36" x 36"
R1-2-A 48" x 48" x 48"



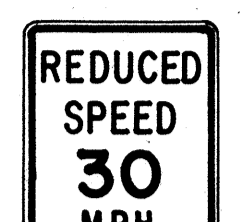
R2-1(50) 24" x 30"
R2-1(50)-A 48" x 60"




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




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




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




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



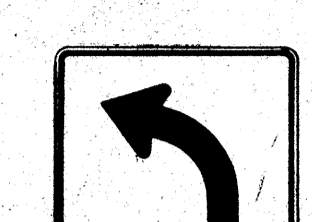
R3-2 24" x 24"
24" x 18"
R3-2-A 48" x 48"
48" x 36"




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




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



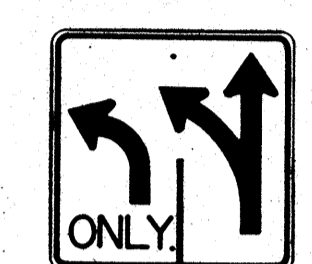
R3-5(L) 30" x 36"
R3-5(L)-A 48" x 60"



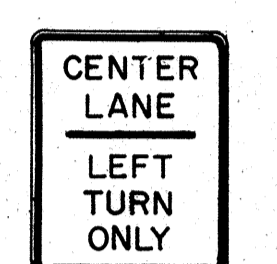
R3-6(L) 30" x 36"
R3-6(L)-A 48" x 60"




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



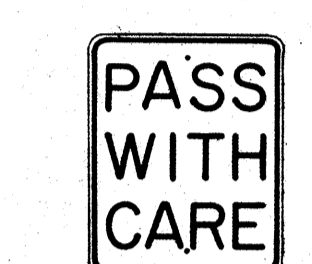
R3-8(L) 30" x 30"
R3-8(L)-A 36" x 36"
R3-8(L)-B 48" x 48"



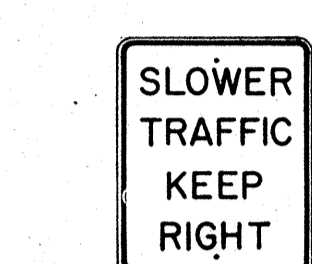
R3-9 24" x 30"



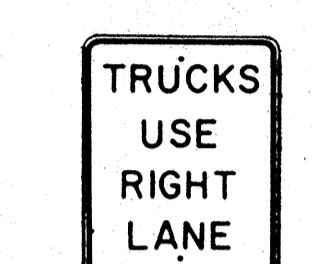
R4-1 24" x 30"



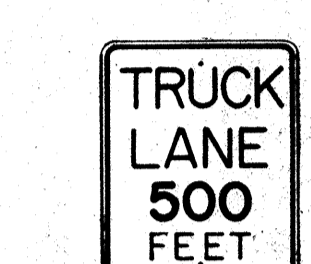
R4-2 24" x 30"



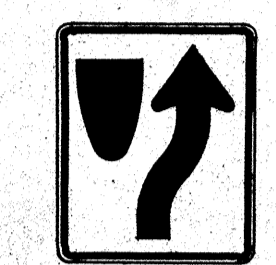
R4-3 24" x 30"
R4-3-A 48" x 60"



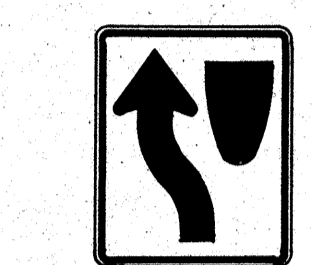
R4-5 24" x 30"



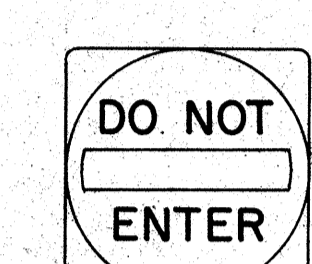
R4-6(500) 24" x 30"




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



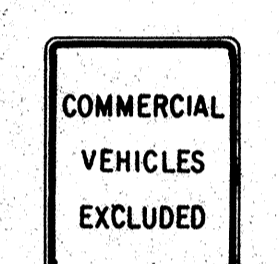
R4-8 24" x 30"
24" x 18"




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



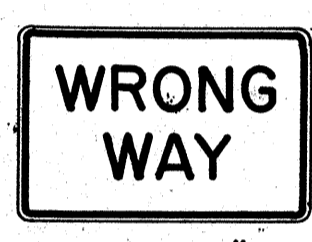
R5-2 24" x 24"
24" x 18"



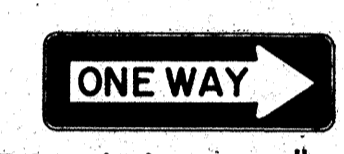
R5-4 24" x 30"




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




R5-9 36" x 24"



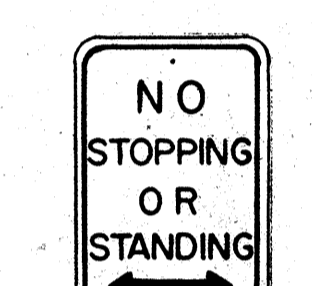
R6-1(R) 36" x 12"




R6-2(R) 18" x 24"



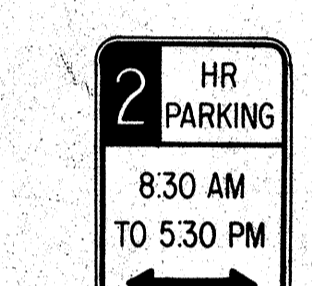
R7-1 12" x 18"
R7-1-A 24" x 30"



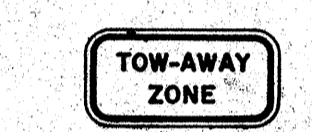
R7-4 12" x 18"
R7-4-A 24" x 30"



R7-107(R) 12" x 18"



R7-108 12" x 18"



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



R8-1 24" x 30"




R8-2 24" x 30"




R8-3 24" x 30"




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



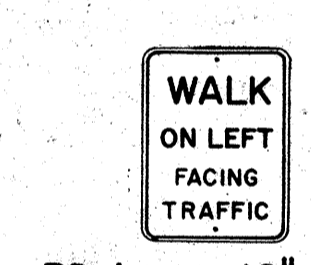
R8-5 24" x 30"



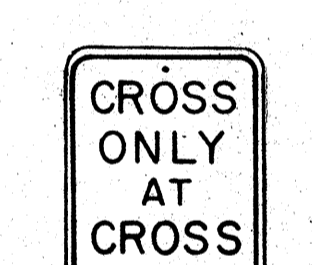
R8-6 24" x 30"



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



R9-1 18" x 24"




R9-2 12" x 18"



R9-3 12" x 18"




R9-4 18" x 24"



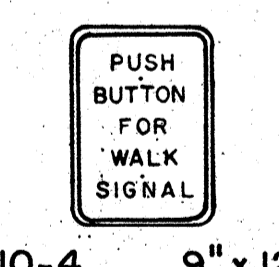
R10-1 12" x 18"




R10-2 12" x 18"




R10-3 9" x 12"



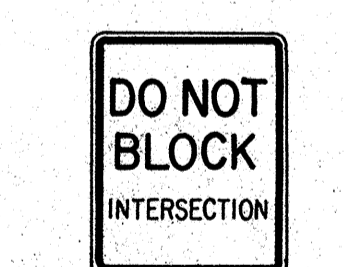
R10-4 9" x 12"




R10-5 24" x 30"



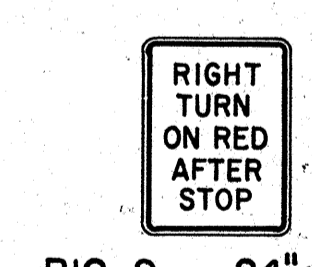
R10-6 24" x 36"




R10-7 24" x 30"



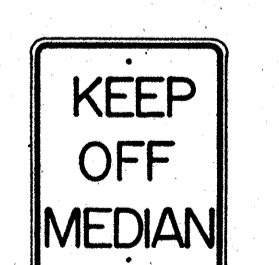
R10-8 24" x 30"



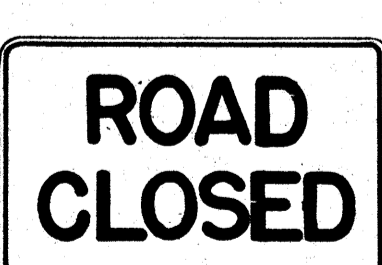
R10-9 24" x 30"



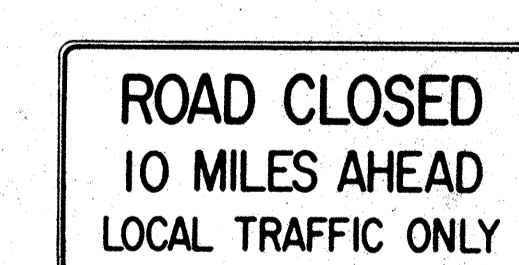
R10-10 24" x 30"



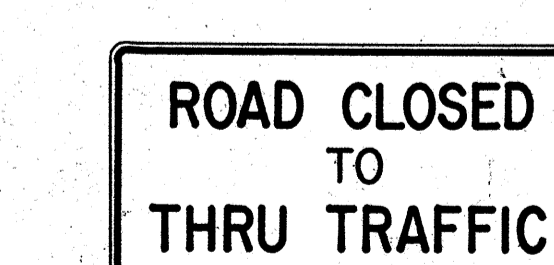
R11-1 24" x 30"



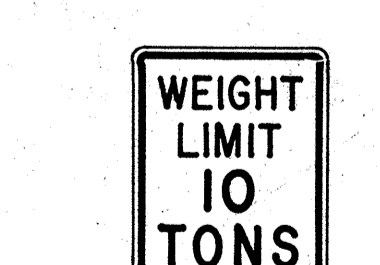
R11-2 48" x 30"



R11-3(10) 60" x 30"



R11-4 60" x 30"



R12-1(10) 24" x 30"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- All signs shall be erected without educational plaques unless called for in the plans.

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

APPROVED:
Robert Zolner 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.	10/10/74
3	Added General Note 5	H.C.	8/9/79

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
REGULATORY SIGNS

NOT TO SCALE
SHEET No. P-12 OF 33 SHEETS DT 101

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII*	HAW.	117H(70)17	1983	61	211

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"x48"

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 warning signs shall be reflectorized unless otherwise specified.
3. All warning 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.
5. Signs prefixed with "CW" on the plans shall indicate orange and black construction signs, and shall be reflectorized.

APPROVAL RECOMMENDED:
E. T. T. T.
 TRAFFIC ENGINEER 3/17/12 DATE

APPROVED:
W. J. J. J.
 ASSISTANT CHIEF, ENGINEERING 3-20-12 DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.T.	2/20/12
2	Revised General Note 1	H.T.	10/16/12
3	Revised General Note 5	M.H.	9-16-75
4	Revised General Note 5	H.T.	7-14-70
5	Added Note 1	H.T.	11-9-79

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
WARNING SIGNS

NOT TO SCALE

SHEET No. 61 OF 33 SHEETS DT 102

NOTE
 1. All signs shall be erected without educational plaques unless called for in the plans.

DATE: _____
 SURVEY PLOTTED BY: _____
 DRAWN BY: _____
 DESIGNED 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.	1-IRH-170-17	1983	62	211

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 signs shall be erected without educational plaques unless called for in the plans.

ALL WAY R1-4 18"x6"

REDUCED SPEED AHEAD R2-5d(35) 24"x30"
R2-5d(35)-A 48"x60"

SPEED LIMIT ENFORCED BY VASCAR 4" Series D
- 4" Series C
- 3" Series D
- 5" Series C
R2-10 24"x30"

CENTER LANE ONLY R3-9b 24"x36"

BUS STOP R7-107(R) 12"x24"

RESERVED PARKING R7-8 12"x18"
R7-8-A 24"x30"

NO PARKING ANY TIME 4" Series C
1 1/2"
R8-3a 24"x24"
24"x18"
R8-3a-A 48"x48"

NO PED XING R9-3a 18"x18"
18"x12"
R9-3a-A 24"x24"
24"x18"

USE CROSSWALK R9-3b(R) 18"x12"

USE CROSSWALK R9-3b(L) 18"x12"

NO TURN ON RED R10-11a 24"x30"

TURN RIGHT ANY TIME WITH CAUTION 4" Series C
R16-1 24"x30"

NO LEFT TURN ON RED 4" Series D -
3" Series D -
2" Series D -
3" Series D -
R16-3 18"x24"

NO RIGHT TURN ON RED R16-4 18"x24"

UNLICENSED VEHICLES BICYCLES, CYCLES UNDER 5 H.P., PEDESTRIANS KEEP OUT FREEWAY 3" Series C
4" Series E
R16-5 36"x42"

U TURN AHEAD 8" Series F
5" Series D
R16-6 24"x30"

U TURN OK 8" Series F
5" Series D
R16-7 24"x30"

MOTOR-DRIVEN CYCLES PROHIBITED 4" Series B
R5-8 30"x24"

U TURN AHEAD W17-1(L) 60"x60"

STOP AHEAD W3-1a 36"x36"
24"x18"
W3-1a-A 48"x48"
24"x18"

YIELD AHEAD W3-2a 36"x36"
24"x18"
W3-2a-A 48"x48"
24"x18"

STOP AHEAD WHEN FLASHING 6" Series C
W3-4 48"x48"

TRUCK CROSSING W8-6 30"x30"
W8-6-A 36"x36"

THRU TRAFFIC MERGE LEFT 6" Series E
W9-3(L) 48"x48"

EQUESTRIAN XING W11-7 36"x36"
24"x18"
W11-7-A 48"x48"
24"x18"

FIRE STATION W11-8 36"x36"
24"x18"
W11-8-A 48"x48"
24"x18"

WHEELCHAIR ACCESSIBLE W11-9 36"x36"
W11-9-A 48"x48"

LIMITED SIGHT DISTANCE W14-4 36"x36"
W14-4-A 48"x48"

DELAYED GREEN 4" Series C
W15-1 24"x24"

ADVANCE GREEN W15-2 24"x24"

END FREEWAY 1/2 MI 8" Series E
CW16-1(1/2) 60"x60"

RIGHT LANE EXIT ONLY 8" Series E
W18-1 48"x60"

SCHOOL BUS STOP AHEAD S4-1 24"x10"
S4-2 24"x10"

SCHOOL S4-3 24"x8"

WHEN CHILDREN ARE PRESENT S4-4 24"x10"

WHEN FLASHING S4-4 24"x10"

SIDEWALK CLOSED 7" Series D
CW23-4 48"x48"

USE SIDEWALK 4" Series C
R18-1 24"x18"

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

APPROVED:
Harbert Z. Dateishi 5/3/78
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 103 approved 3/20/72	H.T.	5/3/78
2	Added General Note 6	H.T.	11/9/78

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

MISCELLANEOUS SIGNS

NOT TO SCALE DATE: MAY, 1978
SHEET No. P-14 OF 33 SHEETS. DT 103

DATE: _____

SURVEY PLOTTED BY: _____

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.	HRH-1(72)17	1983	63	211



CW20-1a 48" x 48"



CW20-2d 48" x 48"



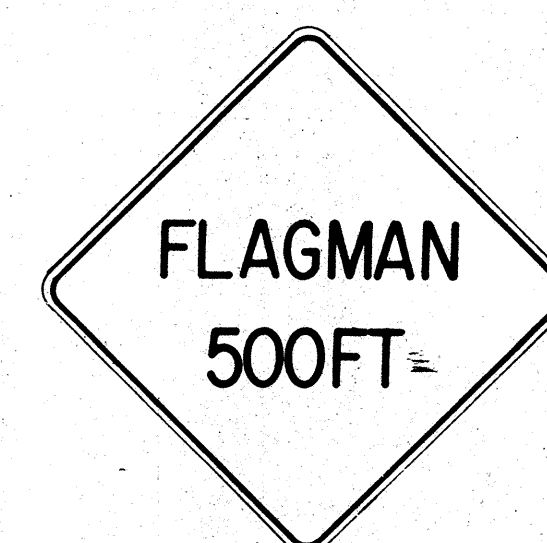
CW20-3b 48" x 48"



CW20-4d 48" x 48"



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



CW20-7c 48" x 48"



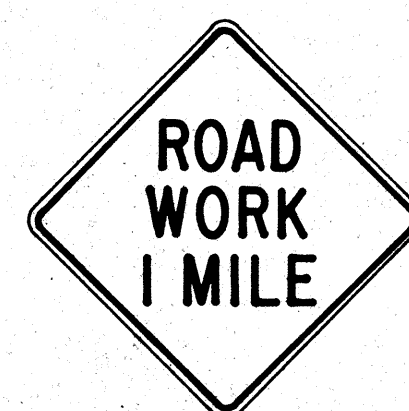
CW21-1 30" x 30"



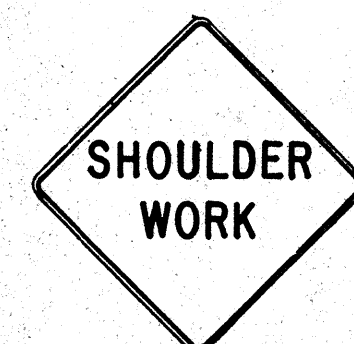
CW21-2 30" x 30"



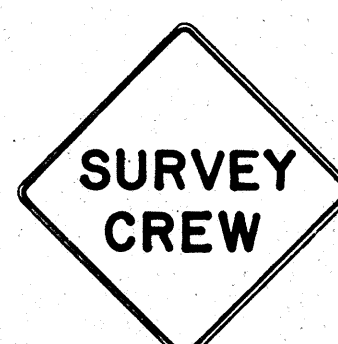
CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



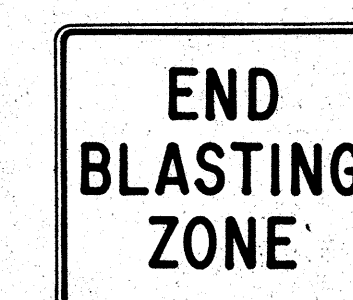
CW21-6 30" x 30"



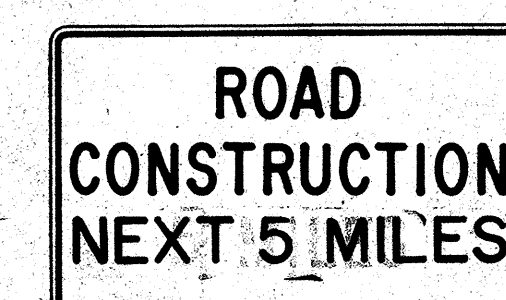
CW22-1b 48" x 48"



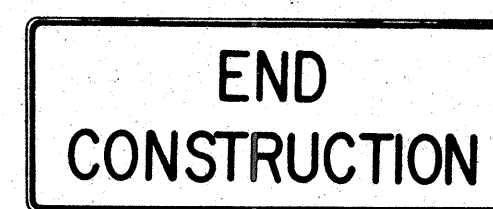
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



CG20-2 60" x 24"



CM4-9(R) 30" x 24"



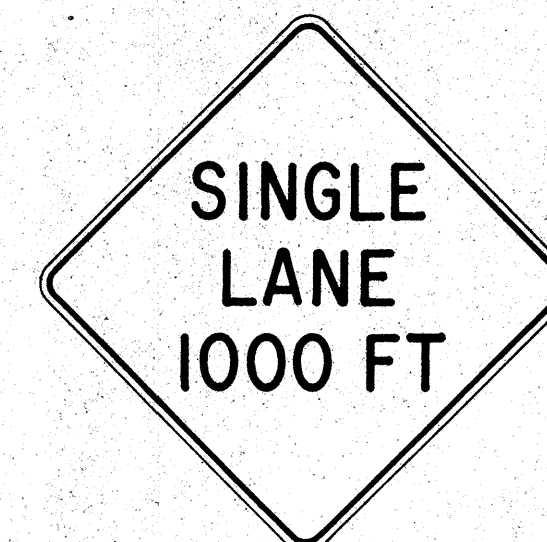
CM4-10(R) 48" x 18"



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
TRAFFIC ENGINEER
3/21/72
DATE

APPROVED:
Arthur Sakai
ASSISTANT CHIEF, ENGINEERING
3/23/72
DATE

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

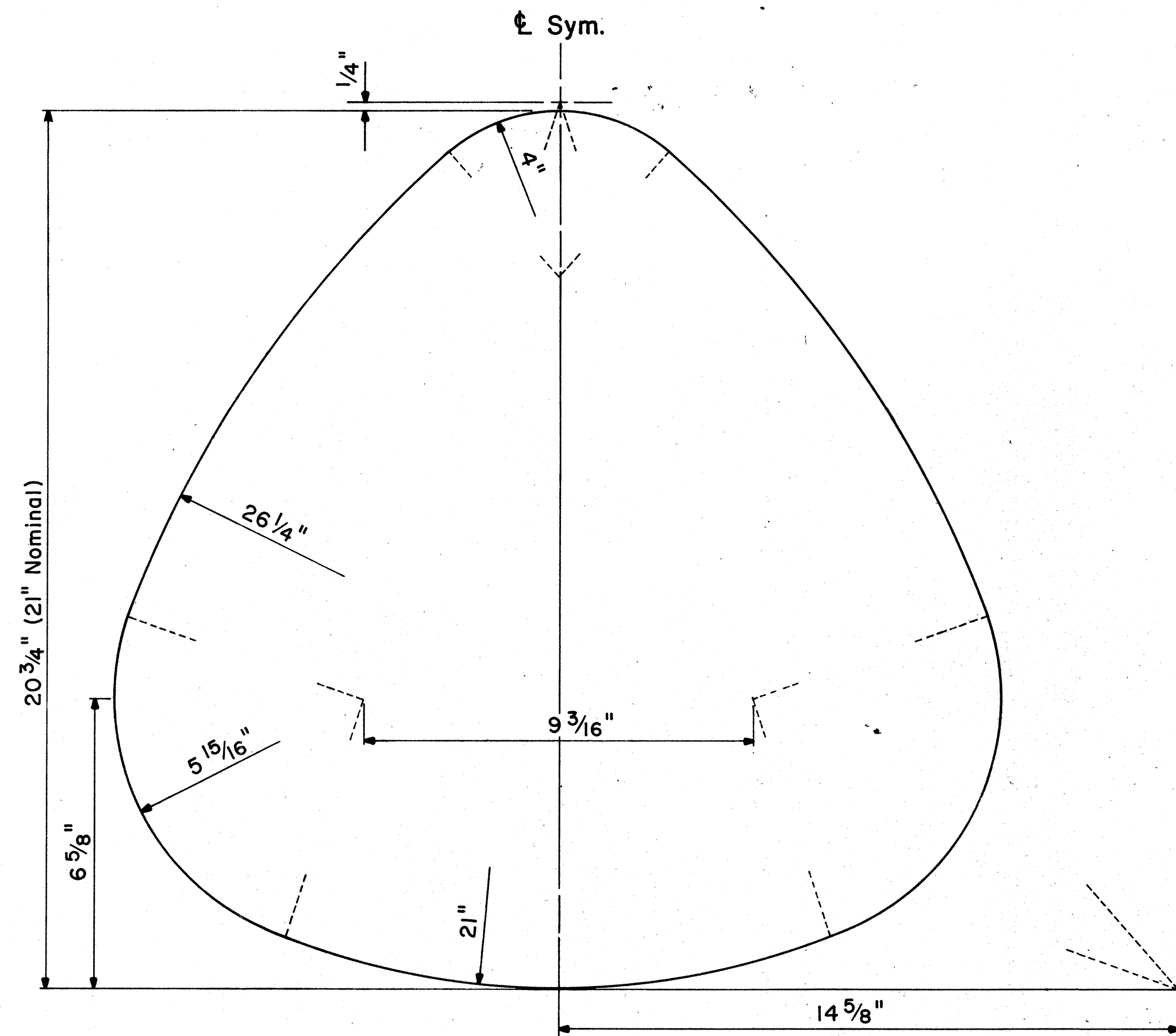
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

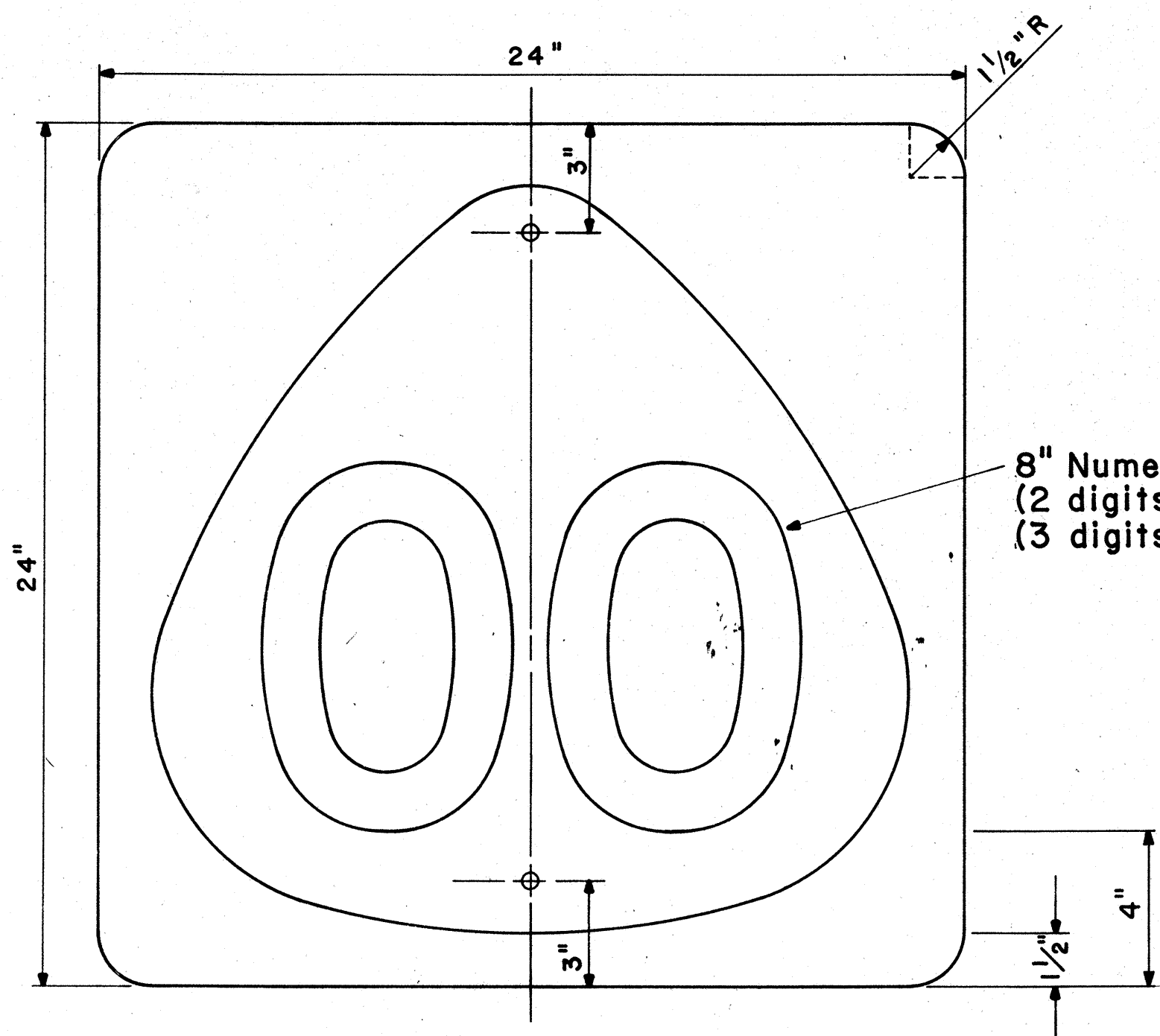
SURVEY PLOTTED BY	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IRH(10)17	1983	64	211



STATE ROUTE MARKER DETAIL

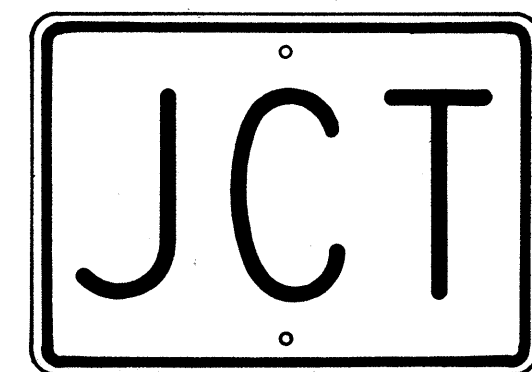
Not to Scale



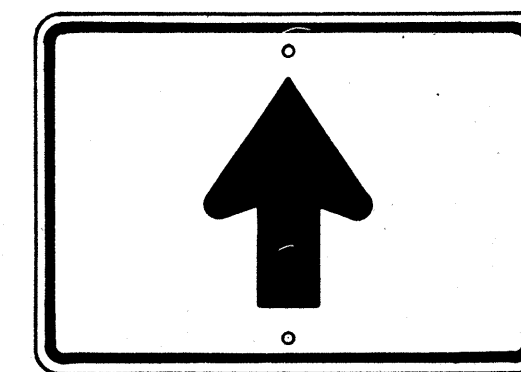
STATE ROUTE MARKER

MI-6(00) 24" x 24"

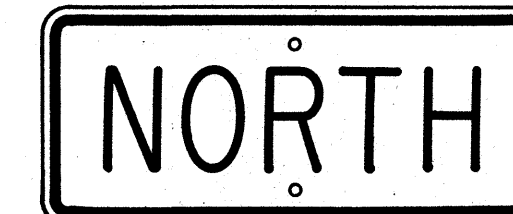
Scale: 1/4" = 1"



M2-1 21" x 15"



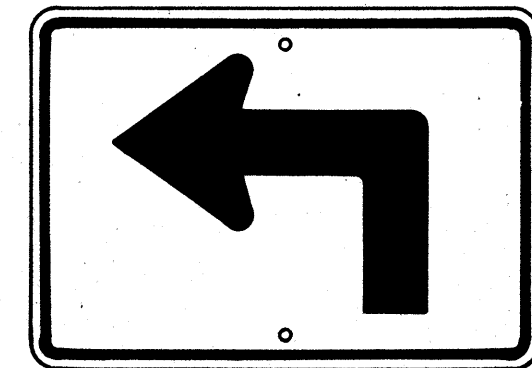
M6-3 21" x 15"



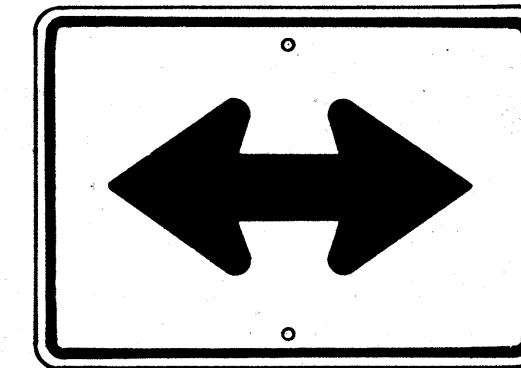
M3-1 24" x 12"
M3-1-A 36" x 18"



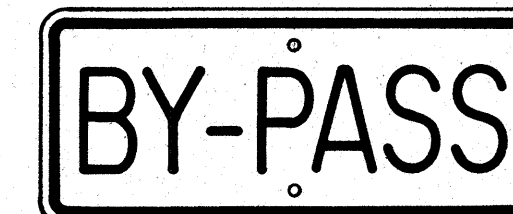
M4-1 24" x 12"



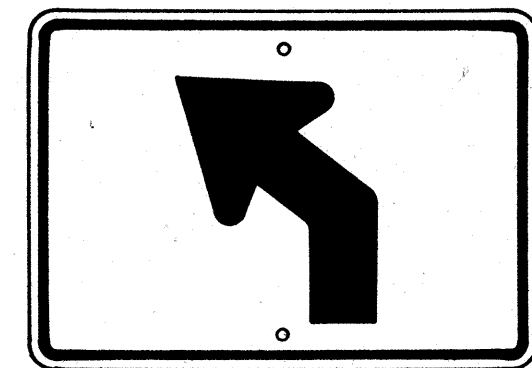
M5-1(L) 21" x 15"



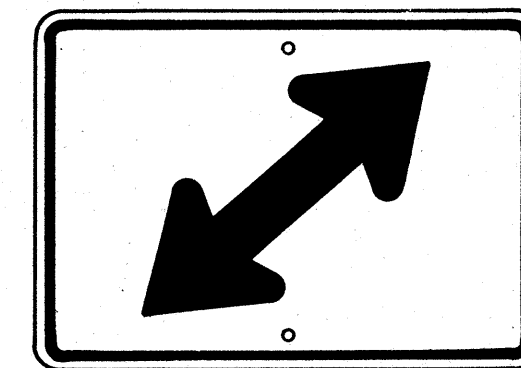
M6-4 21" x 15"



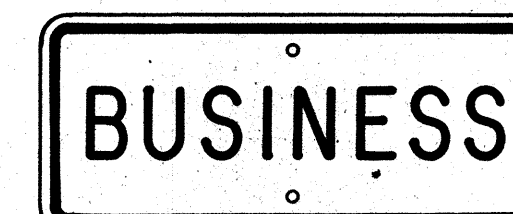
M4-2 24" x 12"



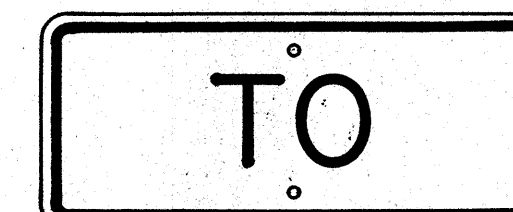
M5-2(L) 21" x 15"



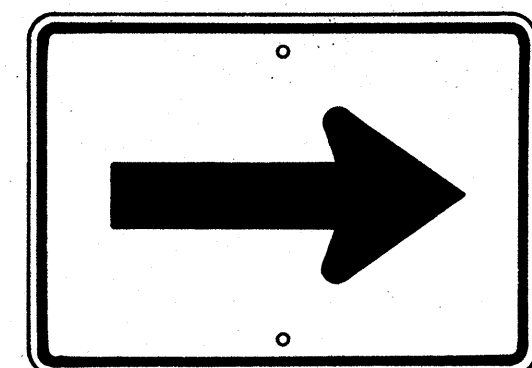
M6-5(R) 21" x 15"



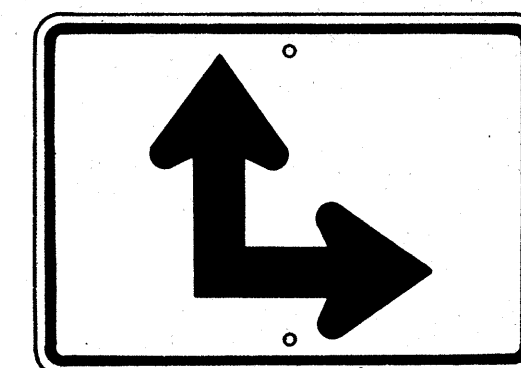
M4-3 24" x 12"



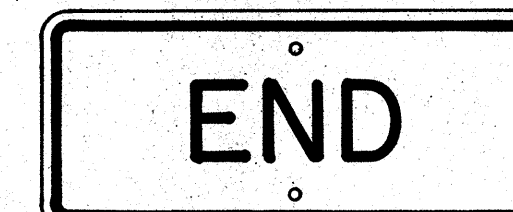
M4-5 24" x 12"



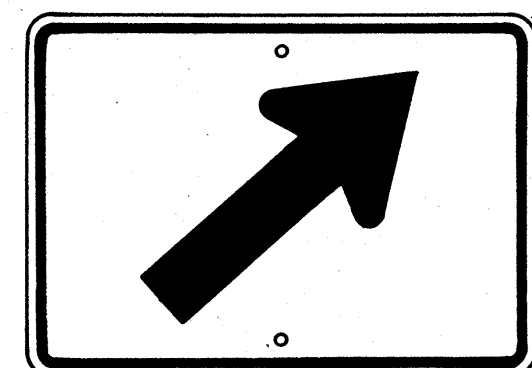
M6-1 21" x 15"



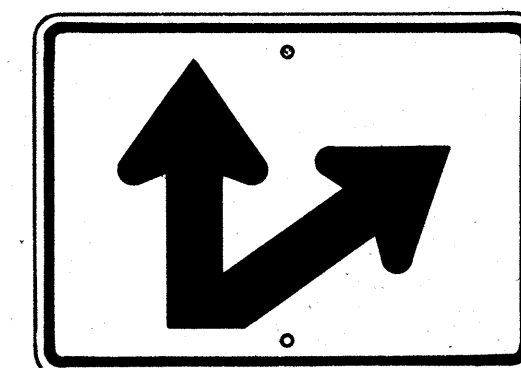
M6-6(R) 21" x 15"



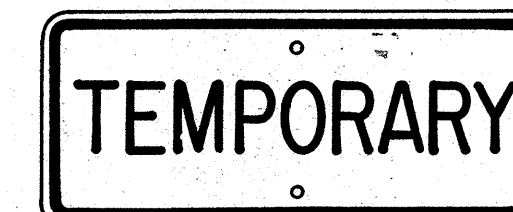
M4-6 24" x 12"



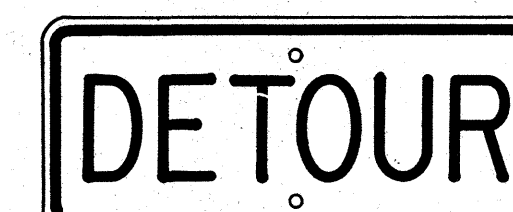
M6-2(R) 21" x 15"



M6-7(R) 21" x 15"



M4-7 24" x 12"



M4-8 24" x 12"

AUXILIARY MARKERS

Not to Scale

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.

APPROVAL RECOMMENDED:
Erich Tamaka 6/6/72
TRAFFIC ENGINEER DATE

APPROVED:
Abel S. Saldia 6-1-72
ASSISTANT CHIEF, ENGINEERING DATE

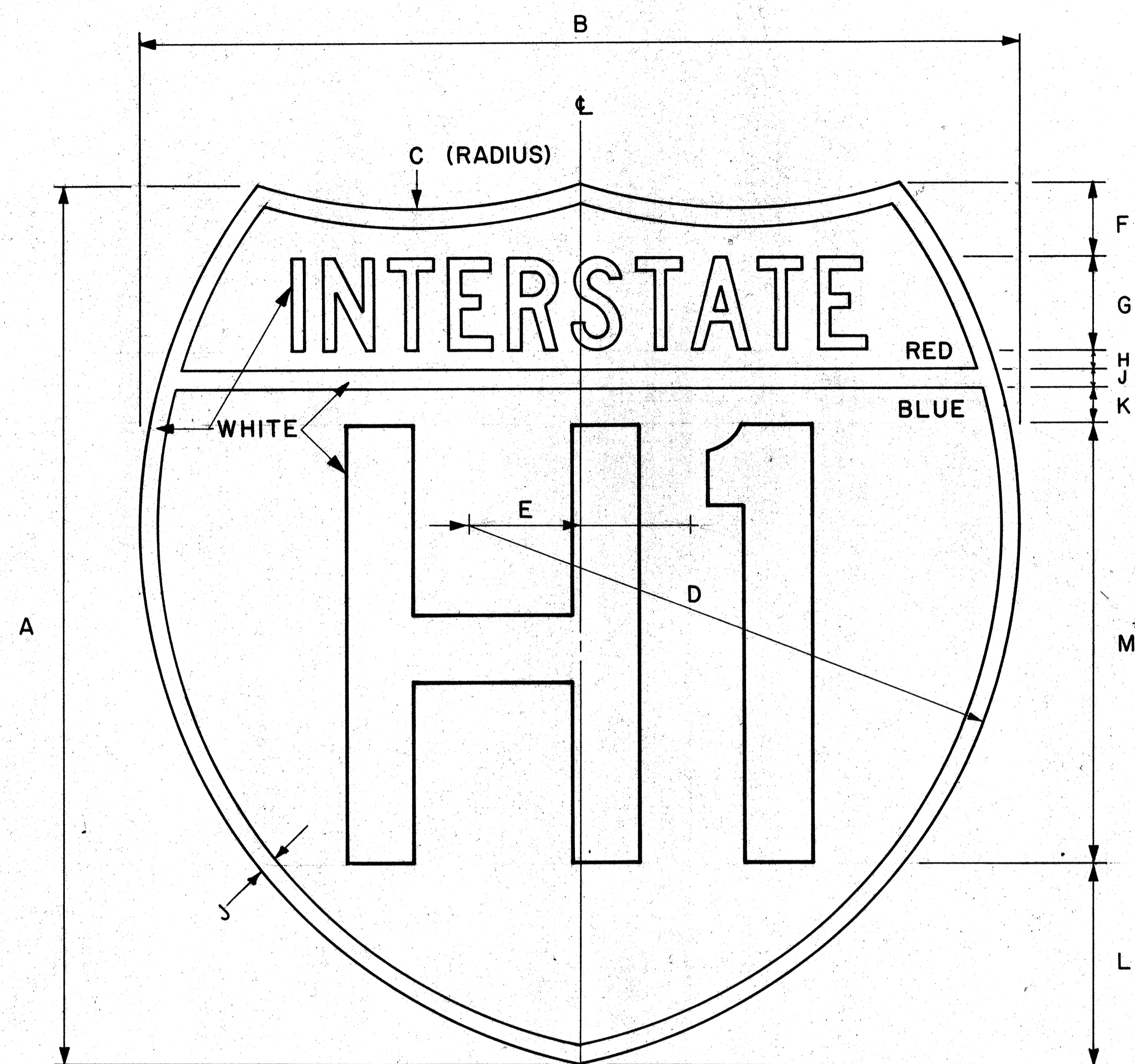
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 105 Approved 12-30-69	H.C.	6/1/72
2	Revised General Note 1	H.C.	10/16/74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
STATE ROUTE MARKER
AND AUXILIARY MARKERS

Scale: As Shown
SHEET NO P-160F 33 SHEETS DT-105

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ERH-17017	1983	65	211



INTERSTATE ROUTE MARKER
IM-1()

Scale: 3/8" = 1"

GENERAL NOTES

- Interstate route marker details shall conform to the latest FHWA publications:
 - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
 - "Standard Alphabets for Highway Signs," and as amended.
 - "Standard Highway Signs," and as amended.
- All Interstate route markers shall be reflectorized with reflective sheeting.
- All Interstate route markers shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.
- The Interstate route marker shall be a cut-out shield in a red, white and blue design as shown on the plans.

INTERSTATE ROUTE MARKER SCHEDULE (INCHES)												
SIZE ()	A	B	C	D	E	F	G	H	J	K	L	M
1	24	24	15	15	3	2	2 1/2 C	1/2	1/2	1	5 1/2	12D
2	36	36	22 1/2	22 1/2	4 1/2	3	3 3/4 C	3/4	3/4	1 1/2	8 1/4	18D
3	48	48	30	30	6	4	5 C	1	1	2	11	24D

* If letters and numerals cannot be accommodated within available space, Series C letters may be used.

APPROVAL RECOMMENDED:

Eishi Tanaka 4/12/78
TRAFFIC ENGINEER DATE

APPROVED:

Harold S. Rakeishi 4/18/78
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Replaces DT 106 Approved 12/30/69.	H.T.	4-18-78

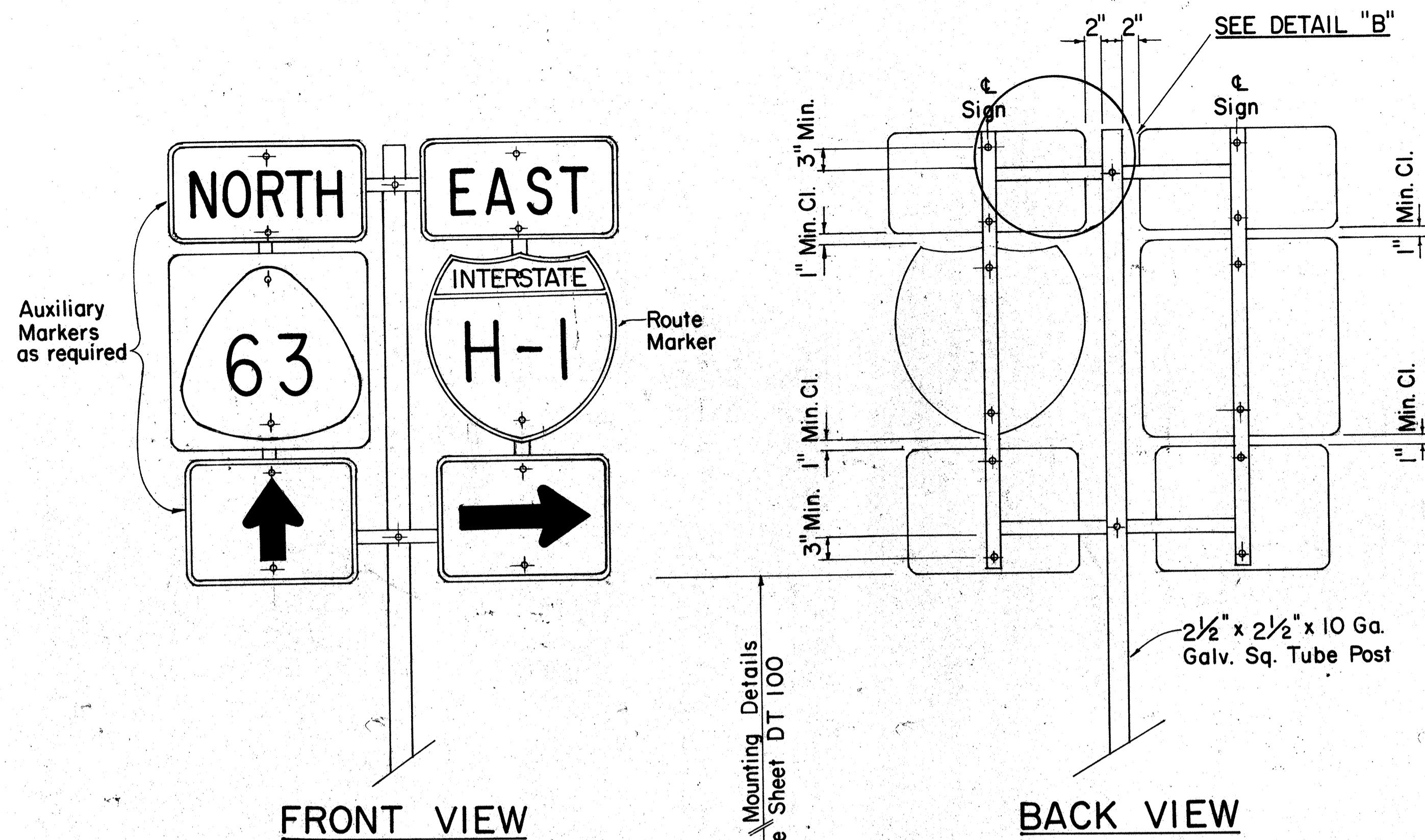
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
INTERSTATE ROUTE MARKER

Scale: 3/8" = 1" Date: January, 1978

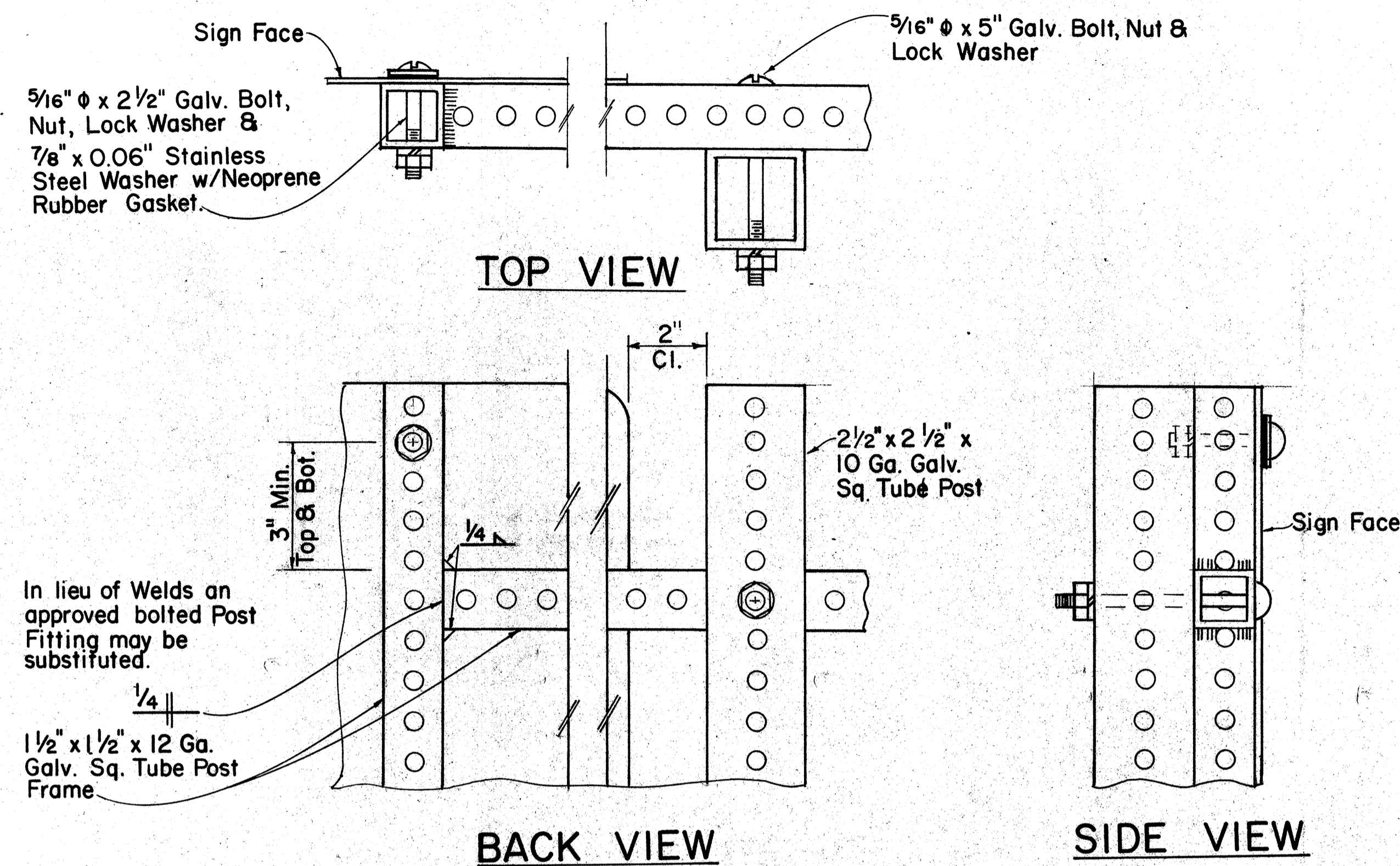
ORIGINAL PLAN
DATE: _____
DESIGNED BY: _____
CHECKED BY: _____
NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-17-17	1983	66	211



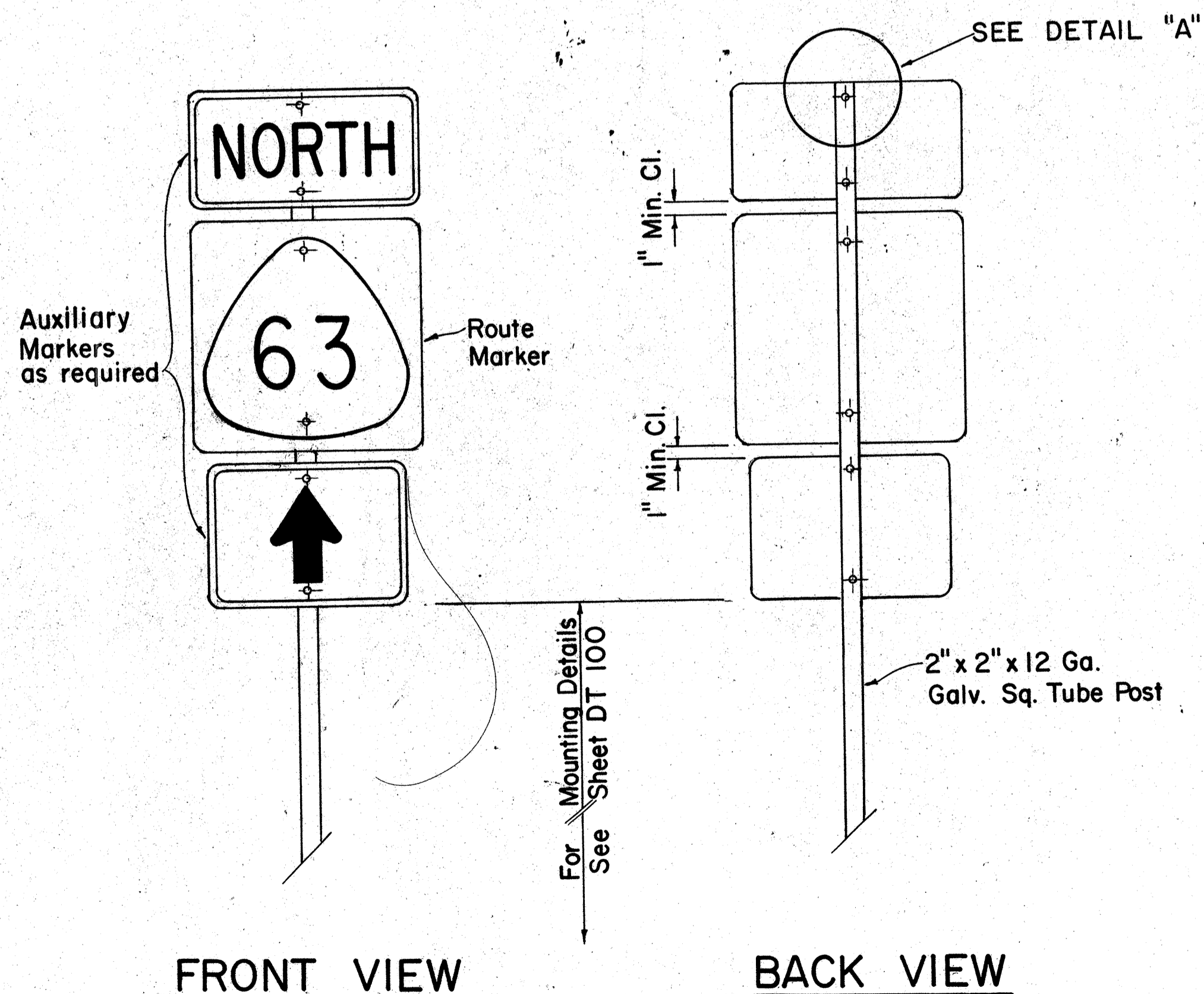
TYPE "B" ASSEMBLY

SCALE: 1" = 1'-0"



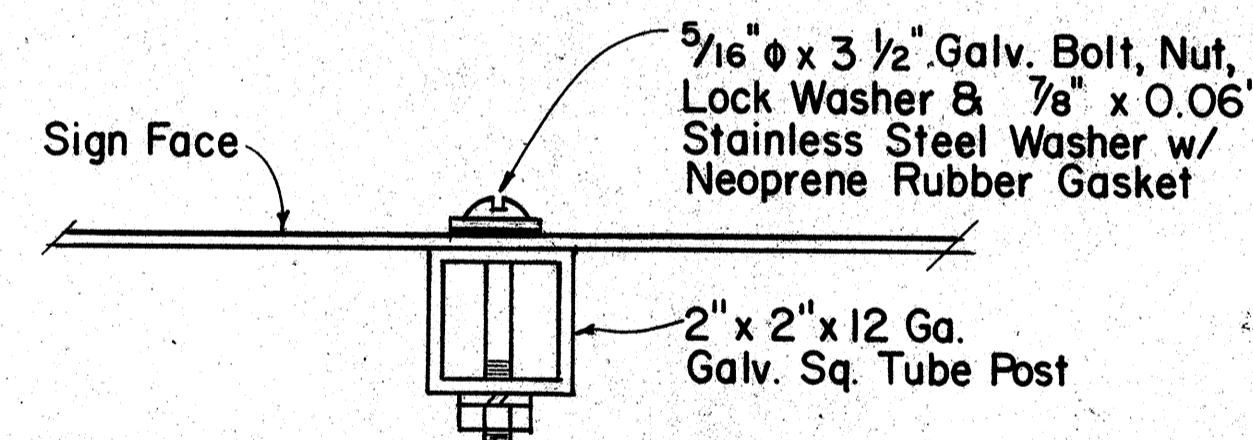
DETAIL "B"

SCALE: 3/8" = 1"



TYPE "A" ASSEMBLY

SCALE: 1" = 1'-0"



DETAIL "A"

SCALE: 3/8" = 1"

APPROVAL RECOMMENDED:
Etschi Tanaka 1/31/80
 TRAFFIC ENGINEER DATE

APPROVED:
Herbert Zakeishi 1/31/80
 ASSISTANT CHIEF, ENGINEERING DATE

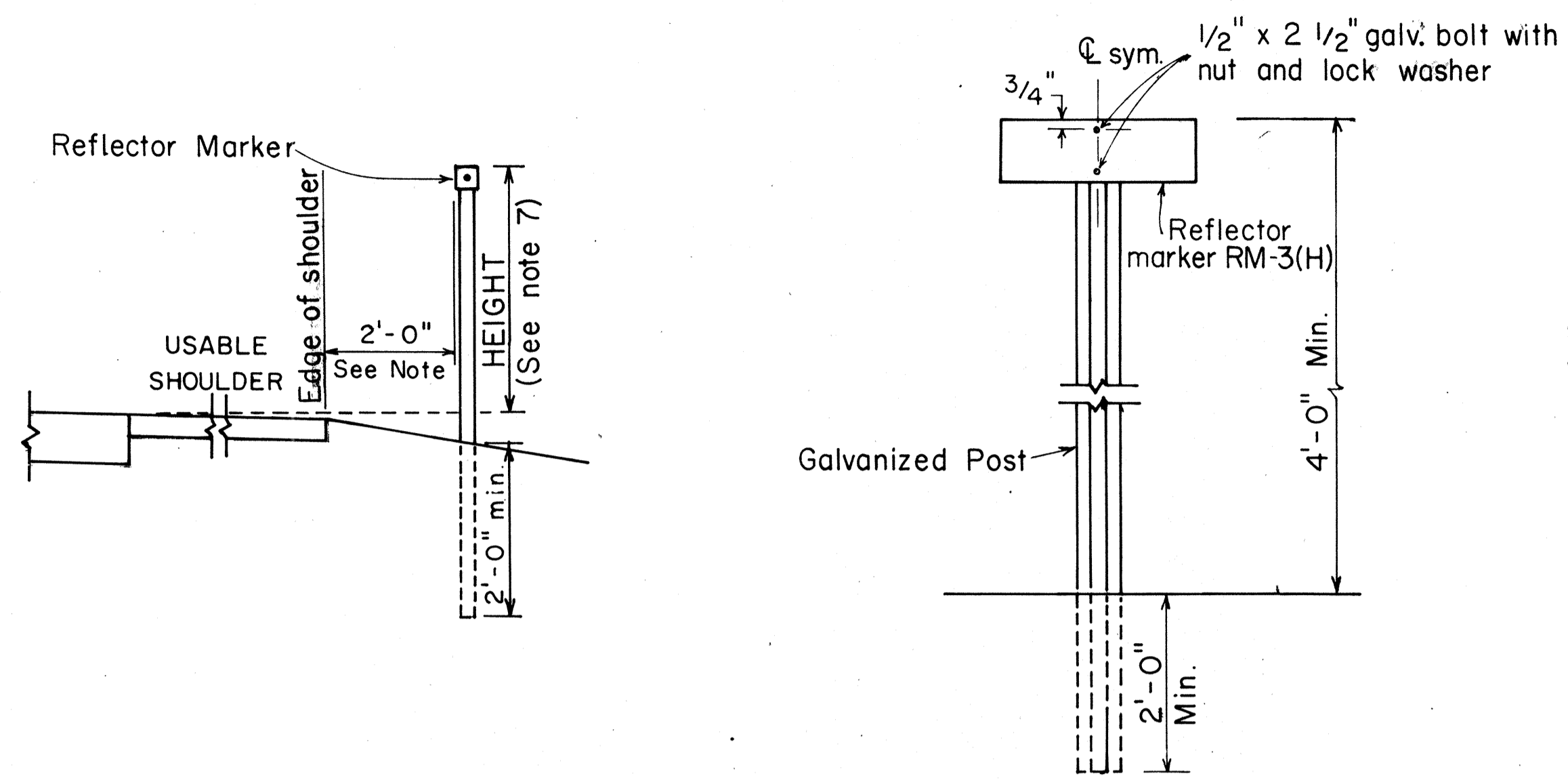
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 107 dated 12/30/69.	H.T.	1/31/80

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
ROUTE MARKER
ASSEMBLIES
 SCALE: AS SHOWN
 SHEET No. P-18 OF 33 SHEETS DT 107

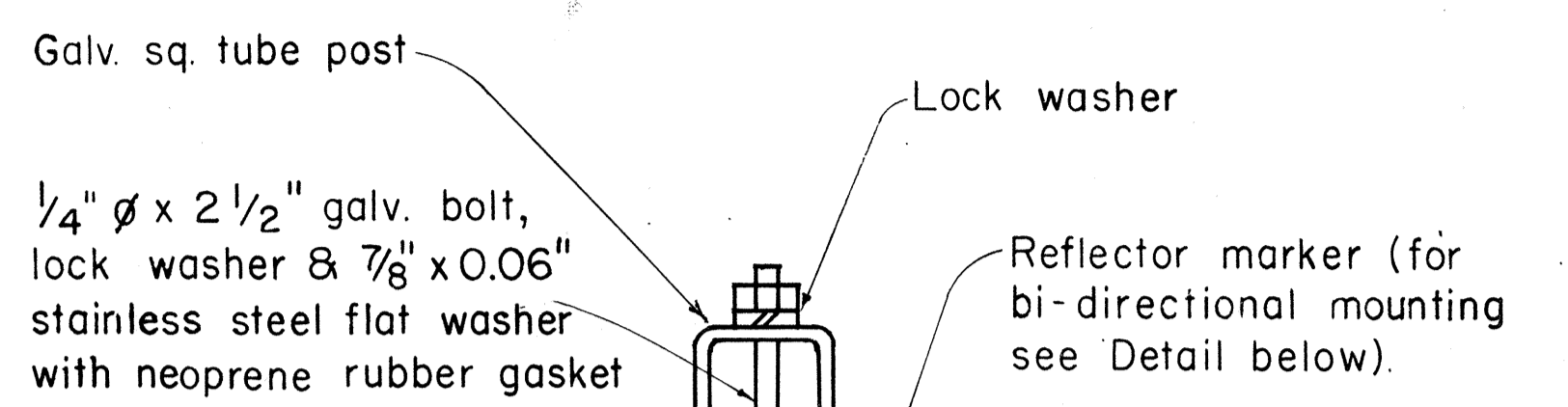
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-HH(170)7	1983	67	211

GENERAL NOTES:

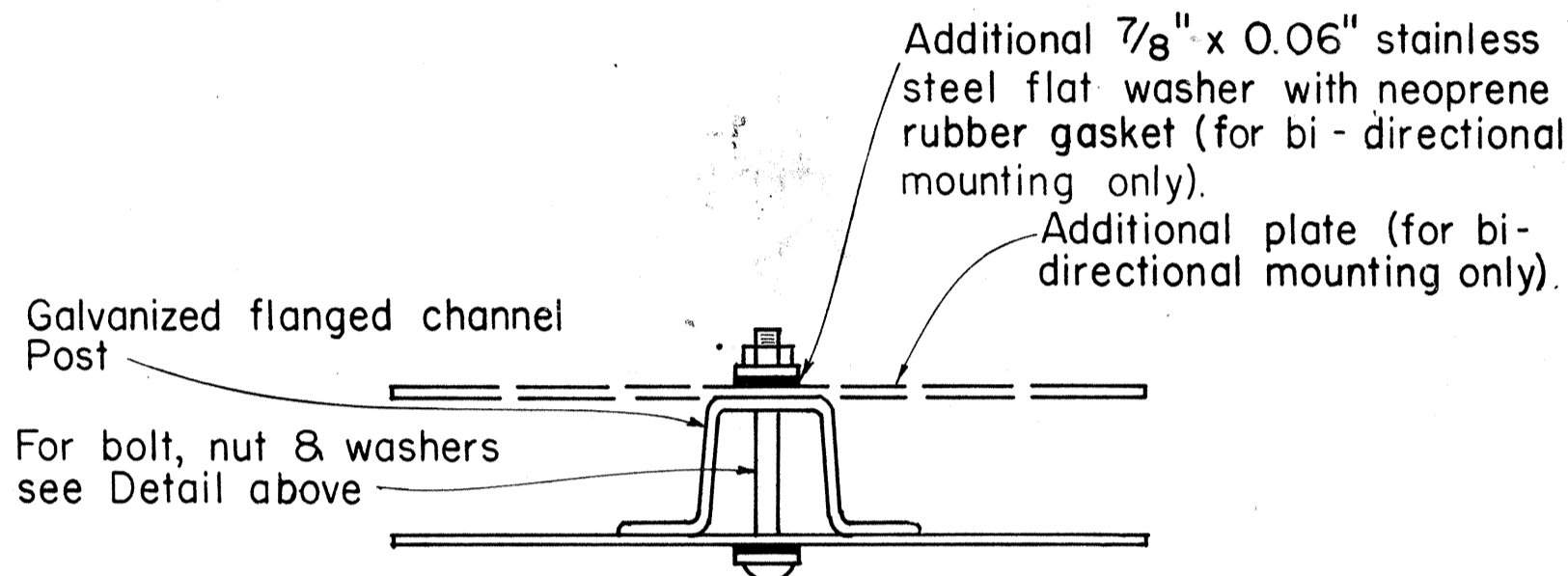
1. Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
2. (R) or (L) indicates right or left and shall be as shown on the plans.
3. Reflector markers RM-1 and RM-2 shall be:
 - a) Yellow if placed along the left edge of divided 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 RM-4, the stripes shall slope downward at an angle of 45° toward the side of the obstruction that traffic is to pass.
5. For reflector marker RM-9, reflective sheeting material may be used as an alternate.
6. (H) indicates horizontal mounting of reflector marker.
7. Height = 4'-0" min. for RM-1, RM-2 and RM-3.
Height = 5'-6" min. for RM-4 and RM-9.
8. Final locations of reflector markers shall be approved by the Engineer.



REFLECTOR MARKER MOUNTING DETAIL

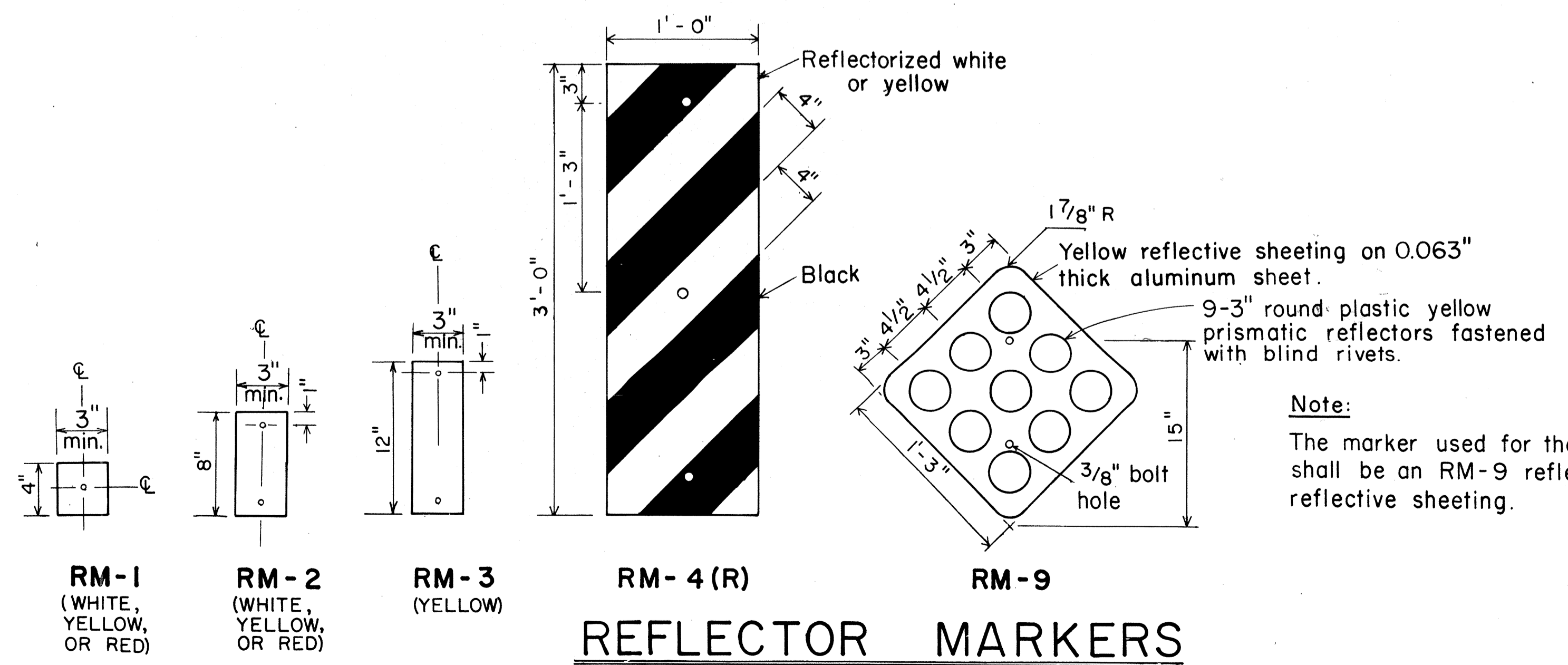


GALVANIZED SQUARE TUBE POST



GALVANIZED FLANGED CHANNEL POST

TYPICAL MOUNTING DETAILS



Note:
The marker used for the end of a roadway shall be an RM-9 reflectORIZED with red reflective sheeting.

NO.	REVISION	APPROVED BY	DATE
1	Revised Mounting Details	H.T.	4/23/80
2	Revised General Notes, Mounting Details and Reflector Markers.	H.T.	7-28-83

APPROVAL RECOMMENDED:
Erich Tanaka 1/7/77
TRAFFIC ENGINEER DATE

APPROVED:
Herbert S. Sakai 1/15/77
ASSISTANT CHIEF, ENGINEERING DATE

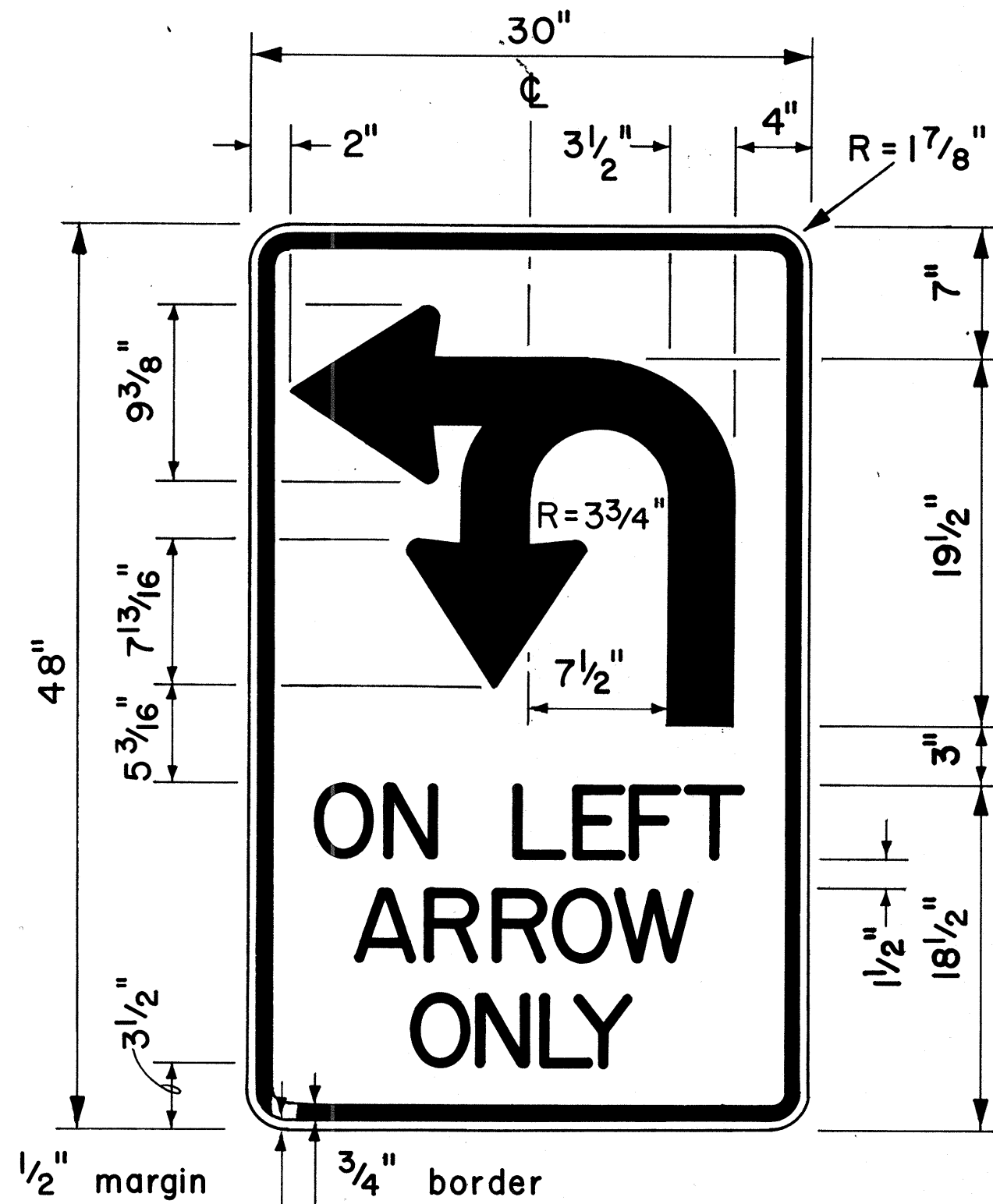
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS REFLECTOR MARKERS

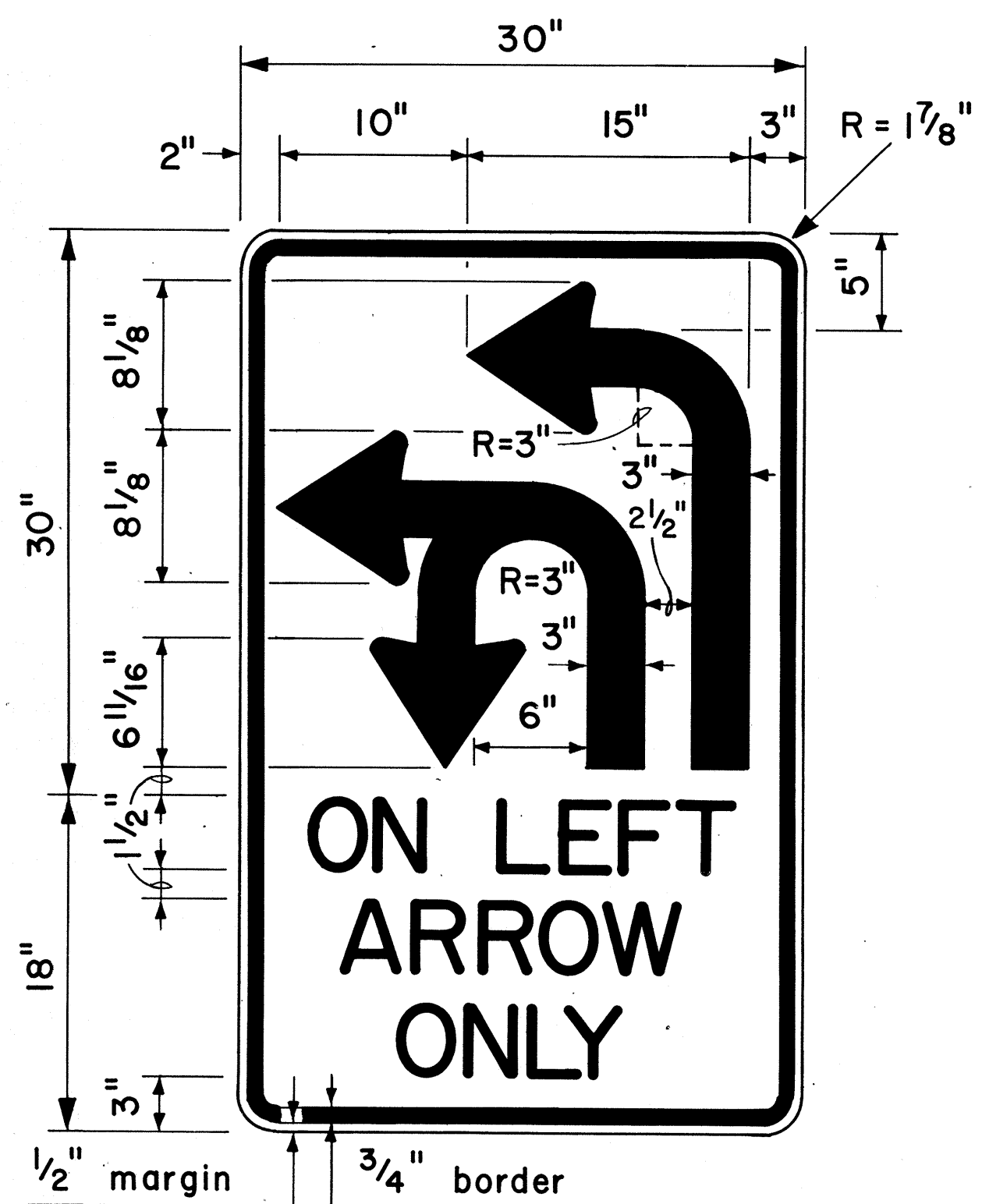
Not to scale June, 1977
SHEET No. P-19 OF 33 SHEETS DT 110

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

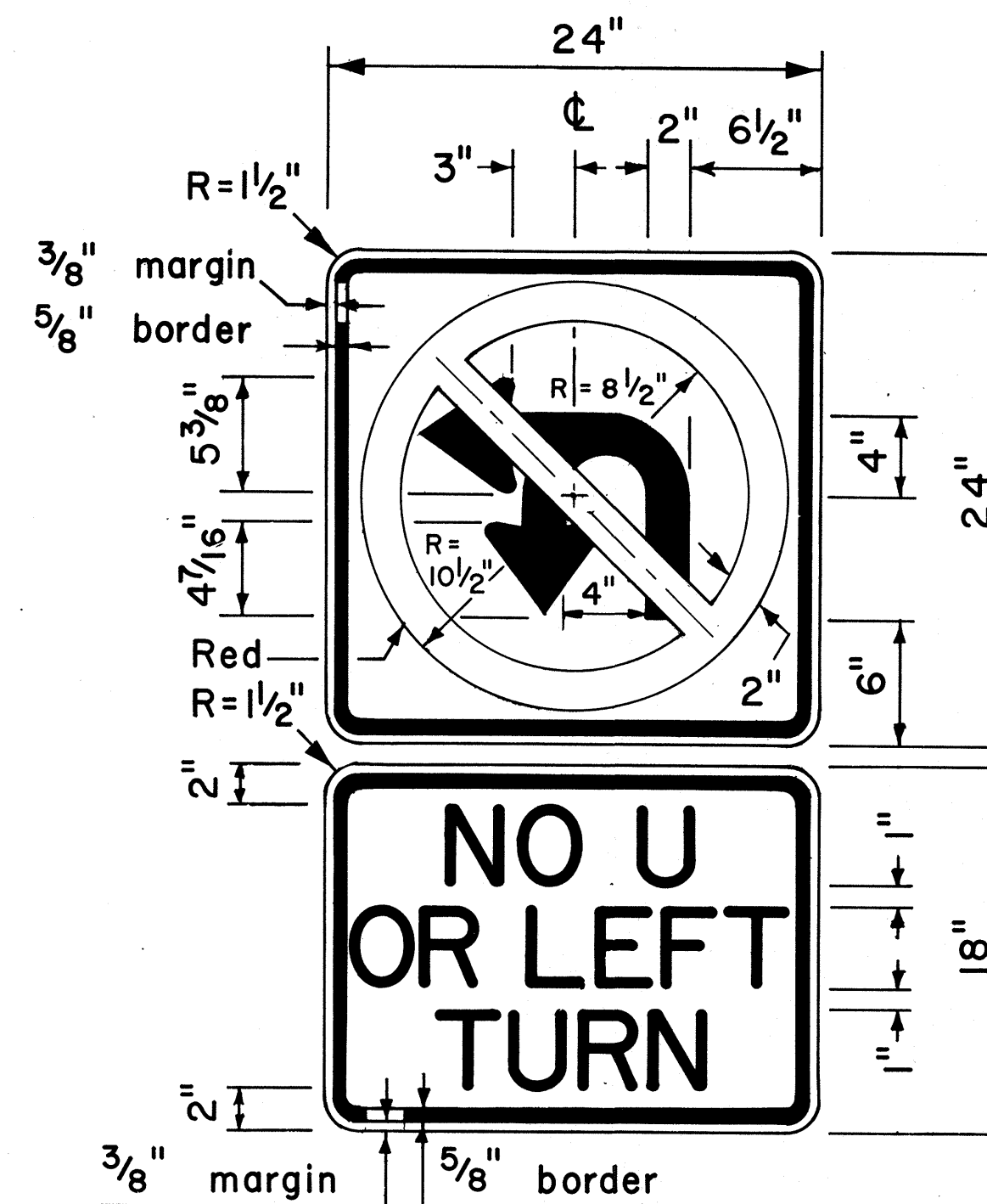
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-1071	1968	68	211



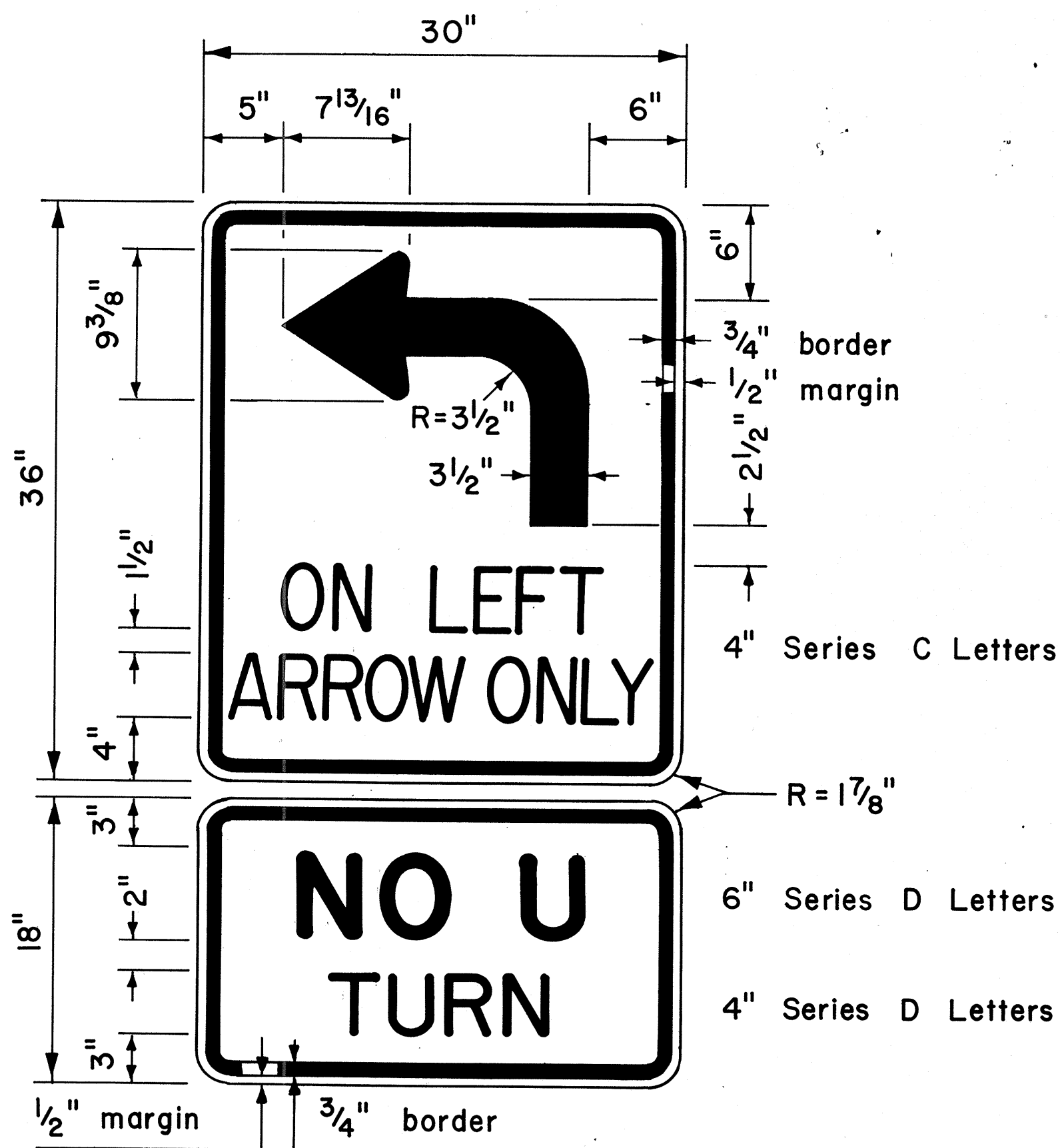
4" Series D Letters
R17-1



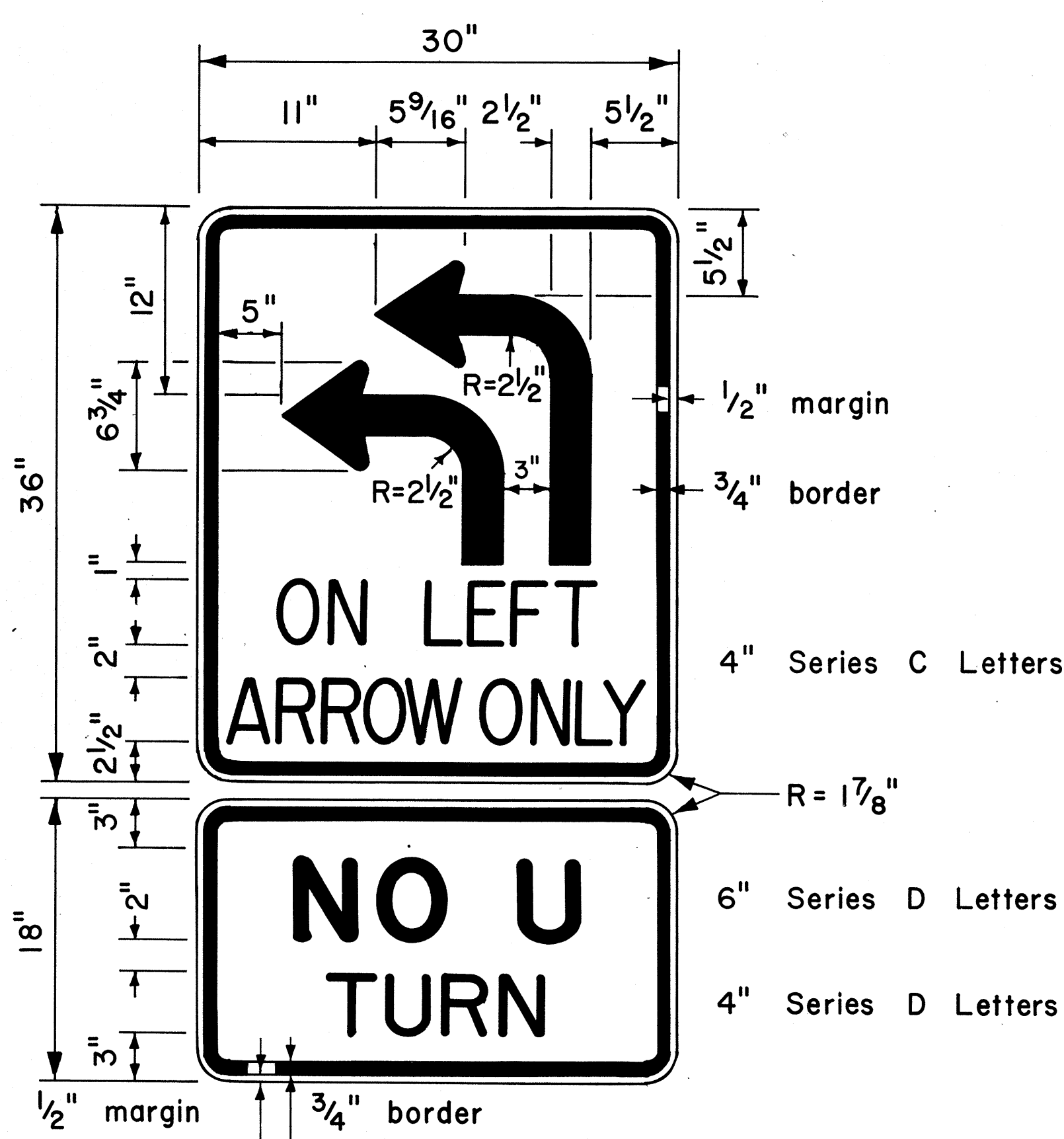
4" Series D Letters
R17-2



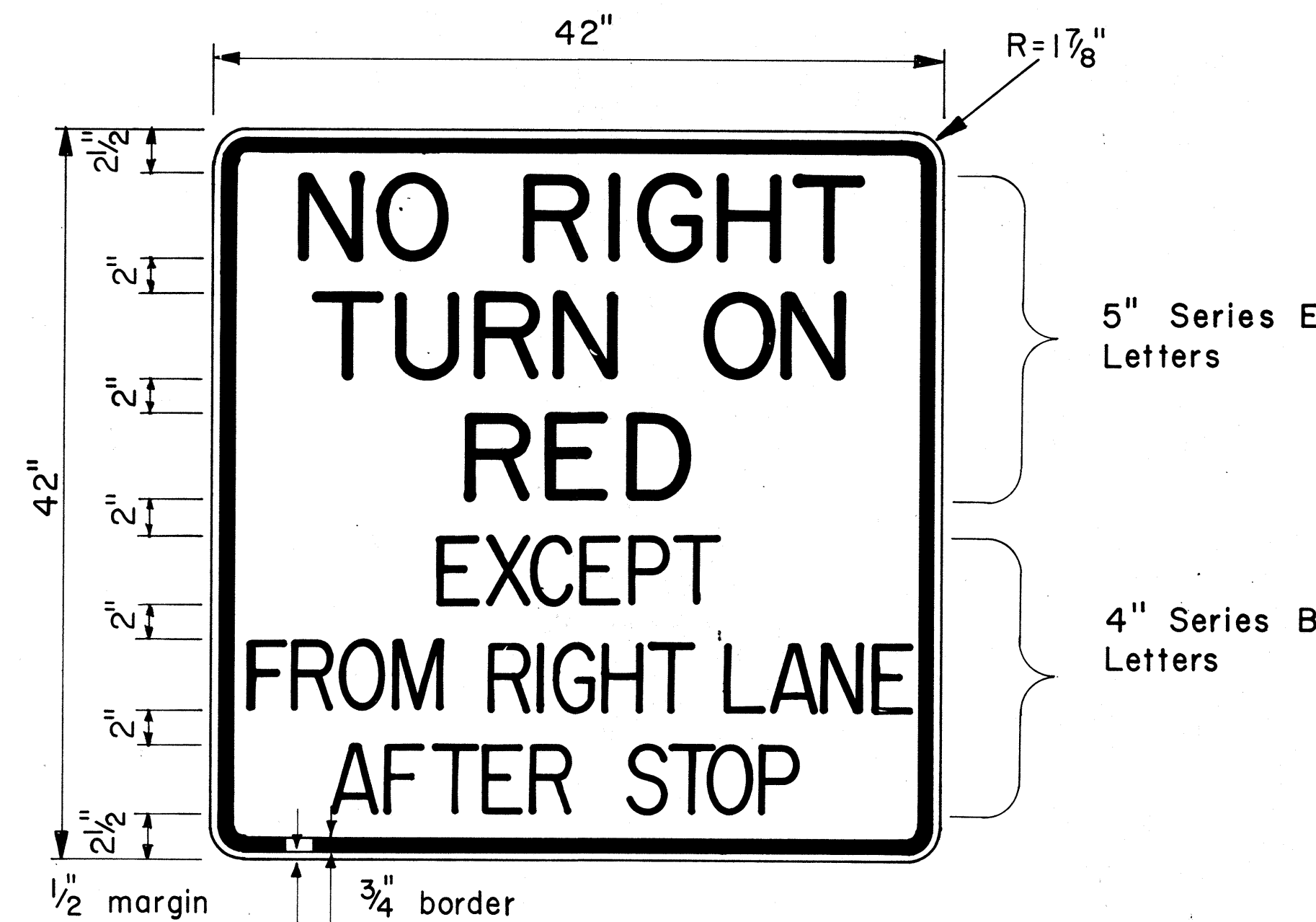
4" Series D Letters
R3-4b



R17-3



R17-4



RIO-11d

GENERAL NOTES

1. Sign details shall conform to the latest editions of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways," and "Standard Highway Signs," 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.

APPROVAL RECOMMENDED:
Eiichi Tanaka 8/1/77
 TRAFFIC ENGINEER DATE

APPROVED:
Hudson Zaleski 8/16/77
 ASSISTANT CHIEF, ENGINEERING DATE

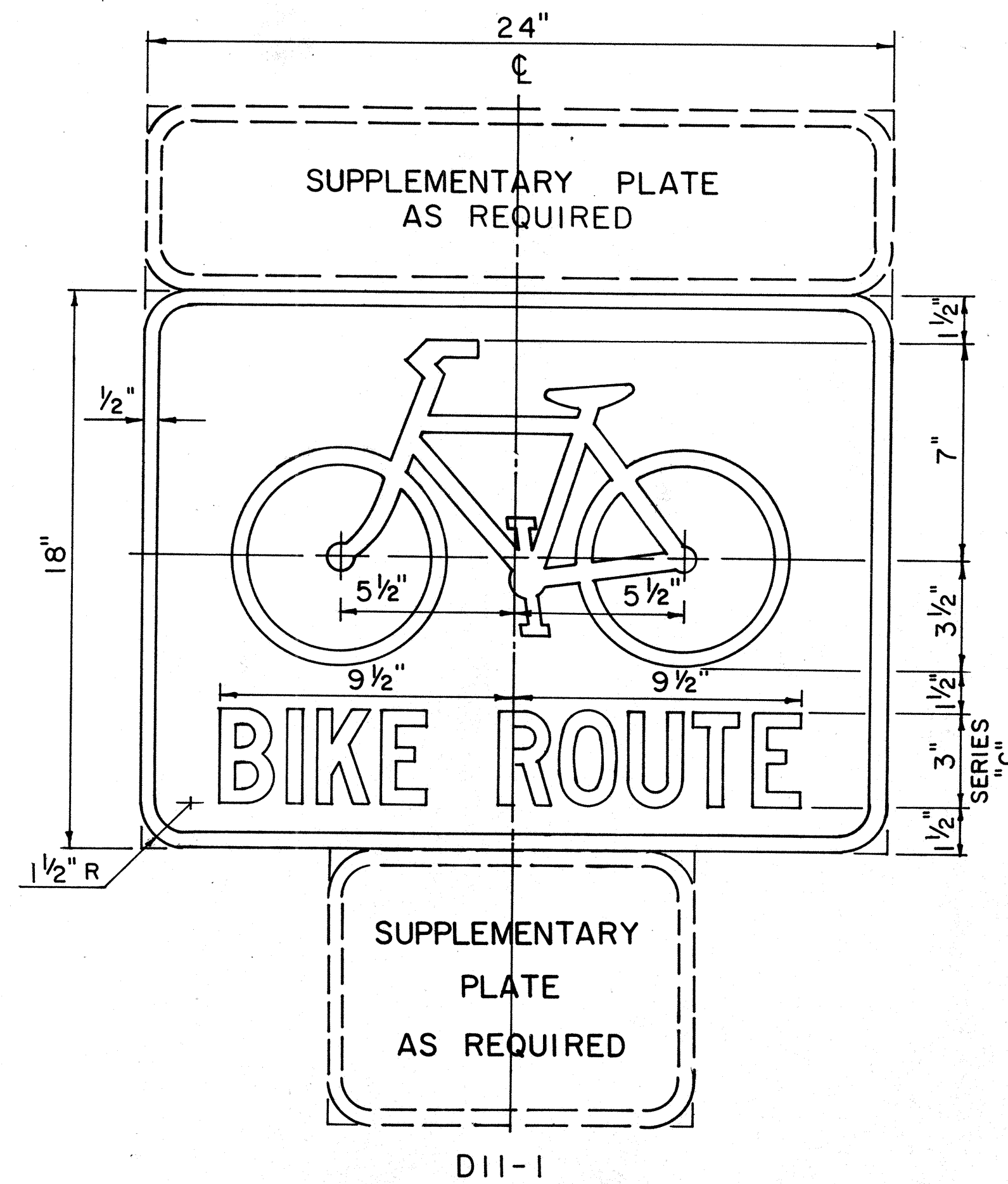
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

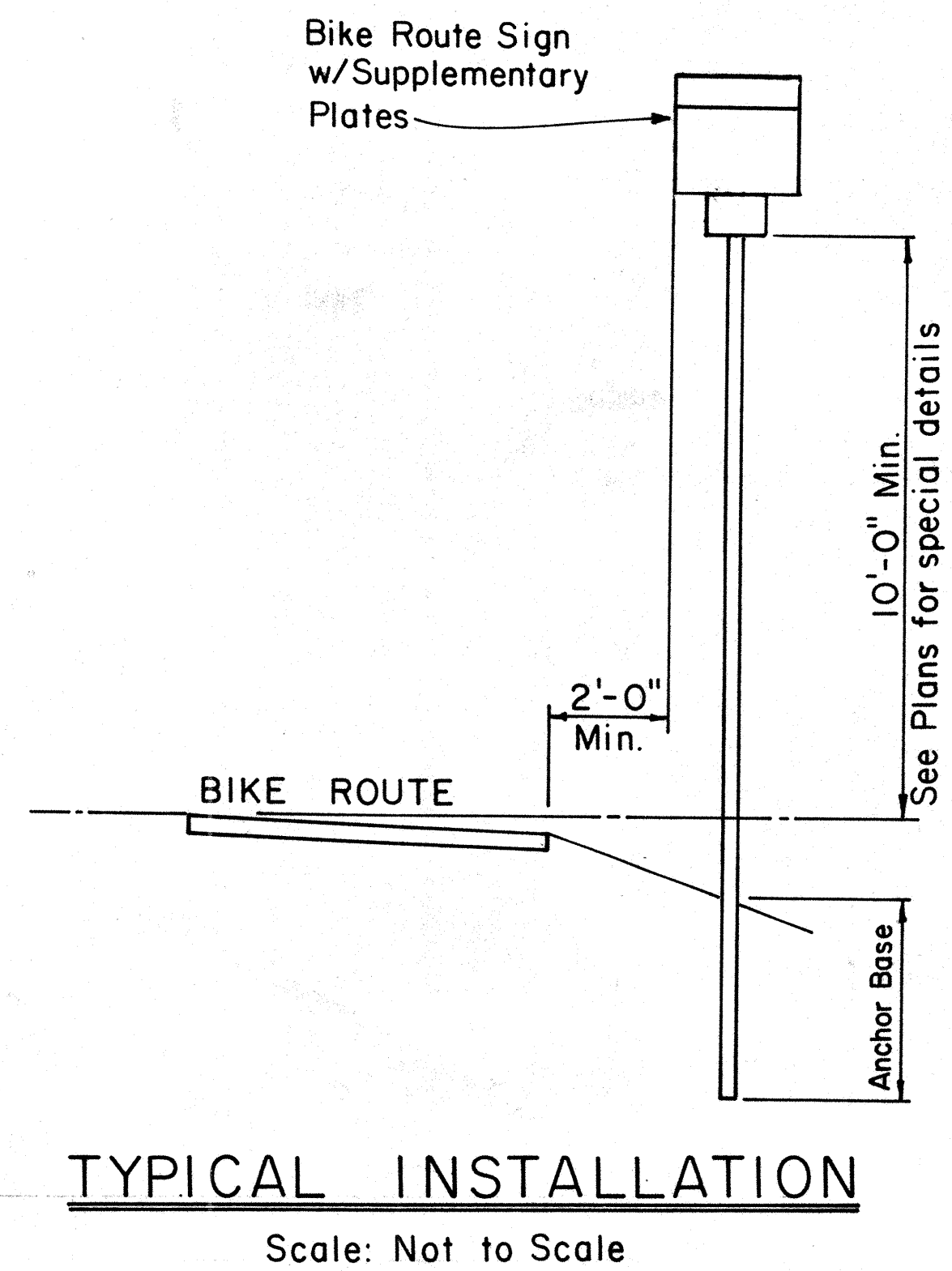
STANDARD DETAILS
 MISCELLANEOUS
 INTERSECTION SIGNS

Scale: 1/2" = 1'-0" Date: Aug., 1977
 SHEET No. P-200F 33 SHEETS DT 112

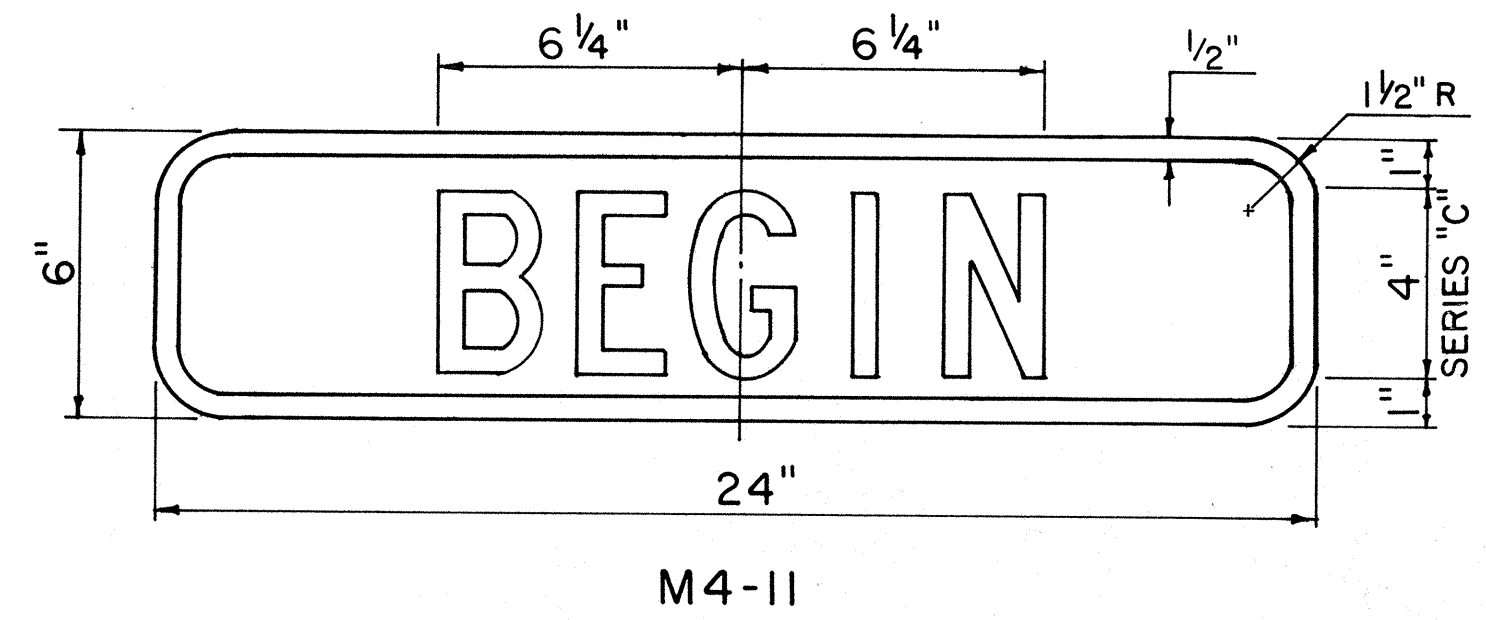
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI-(77):17	1983	69	211



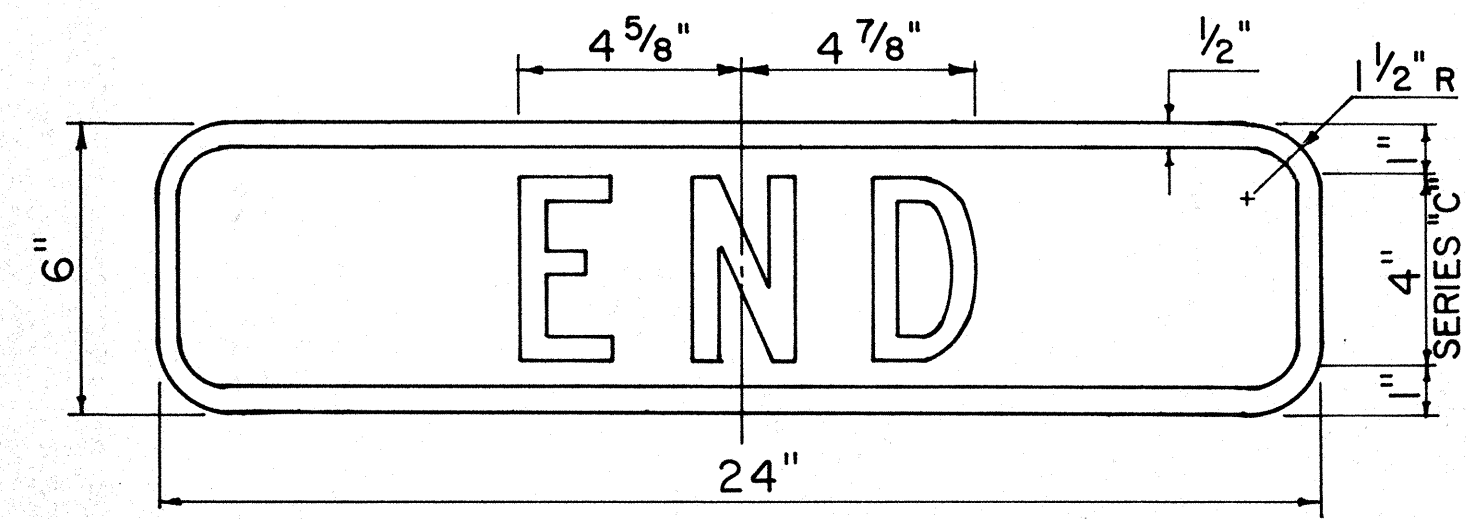
BIKE ROUTE SIGN
Scale: 3" = 1'-0"



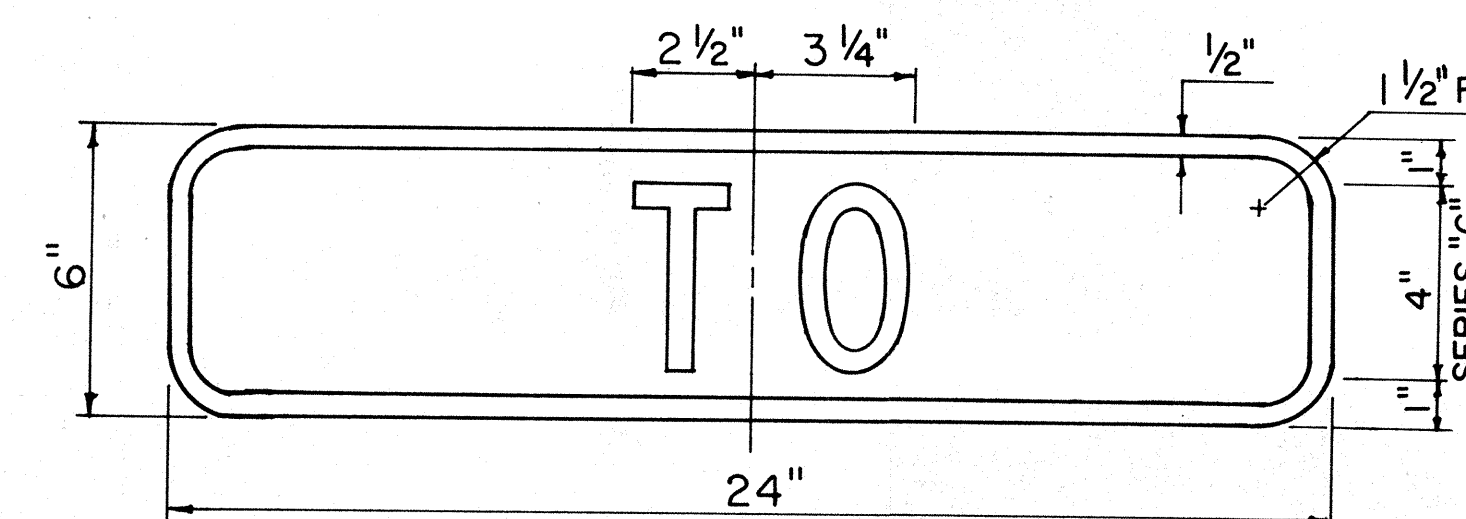
TYPICAL INSTALLATION
Scale: Not to Scale



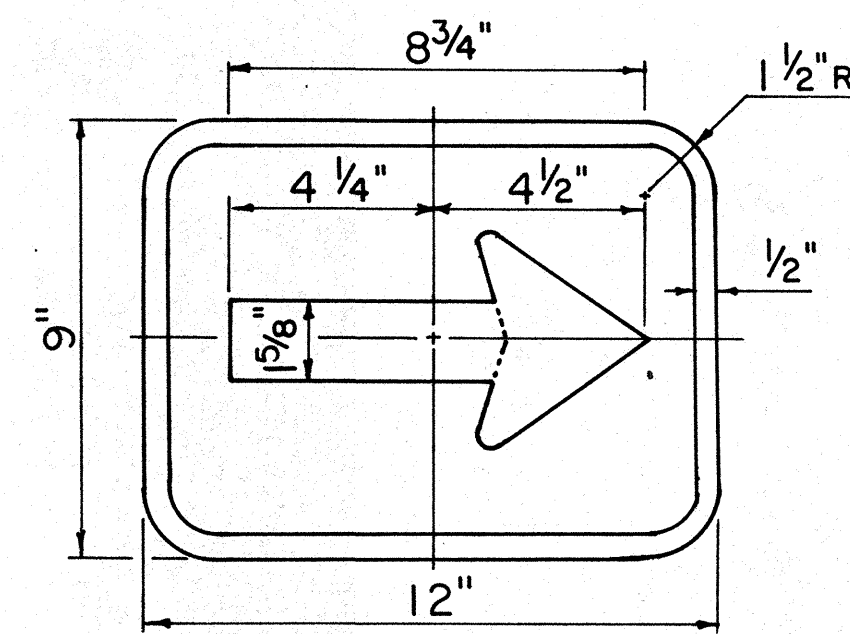
M4-11



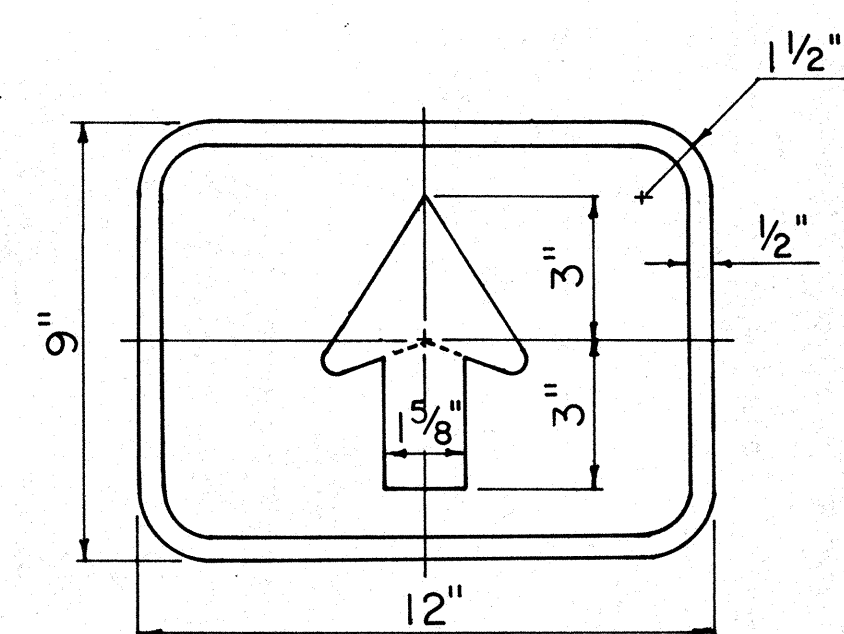
M4-12



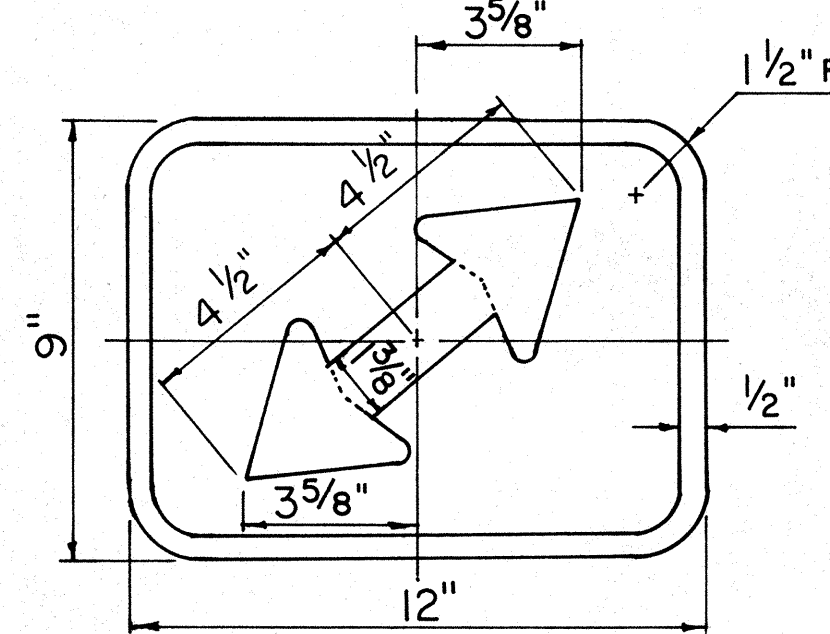
M4-13



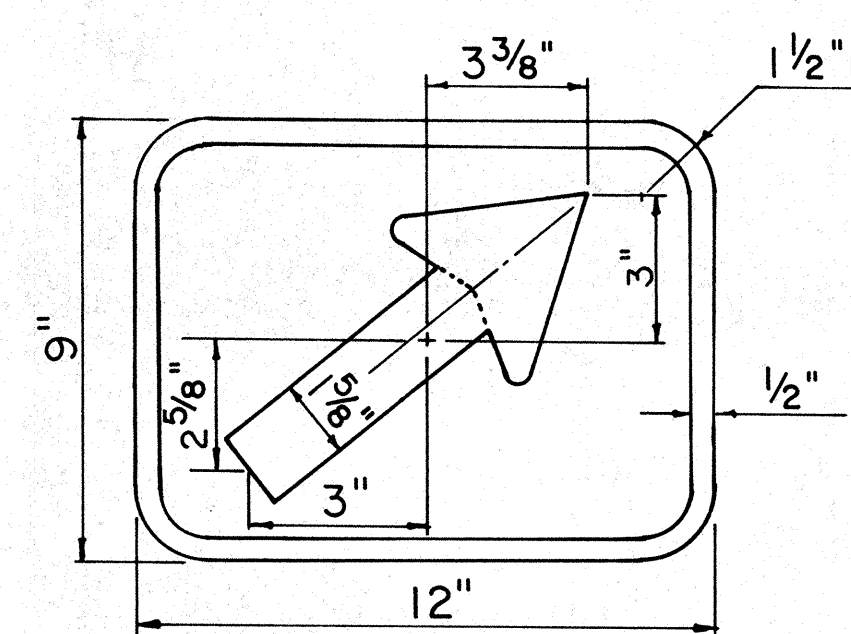
M7-1



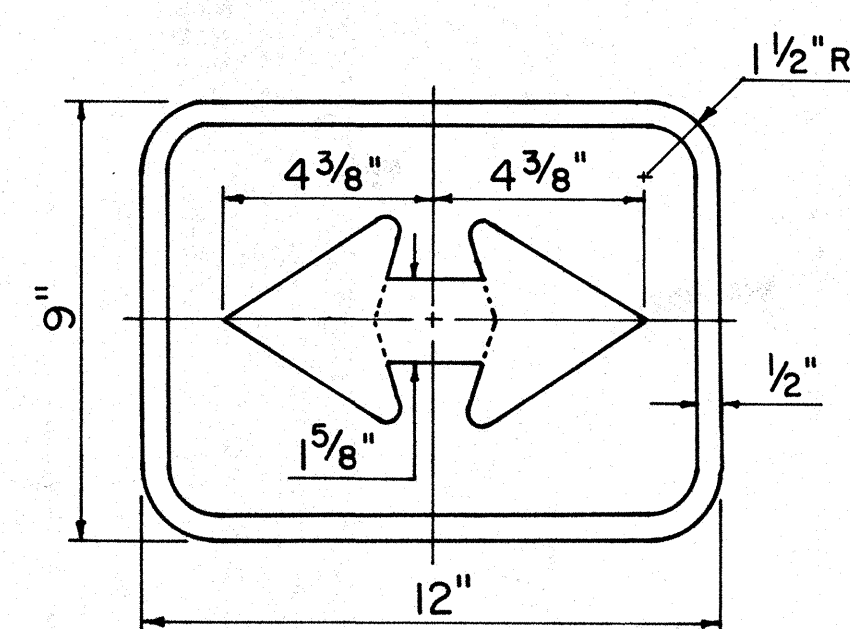
M7-2



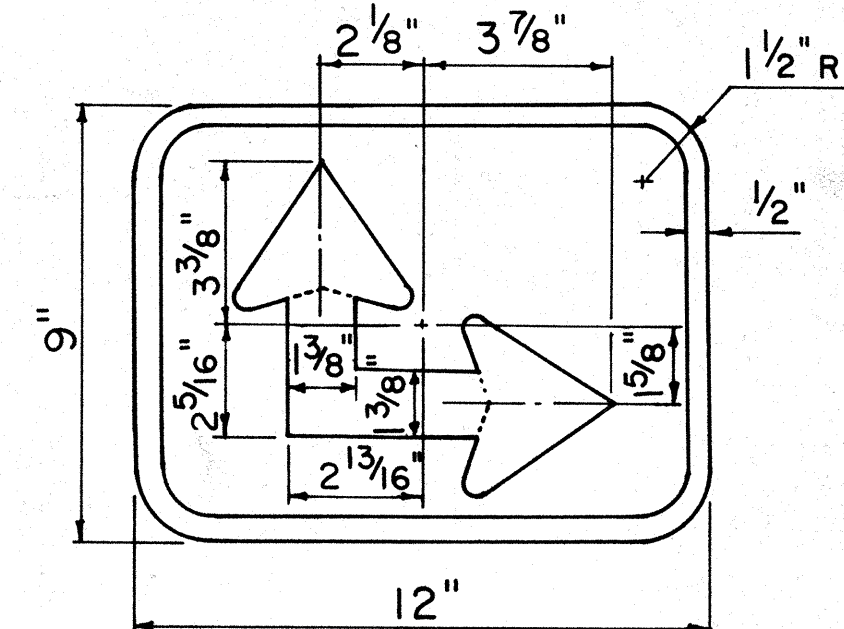
M7-3



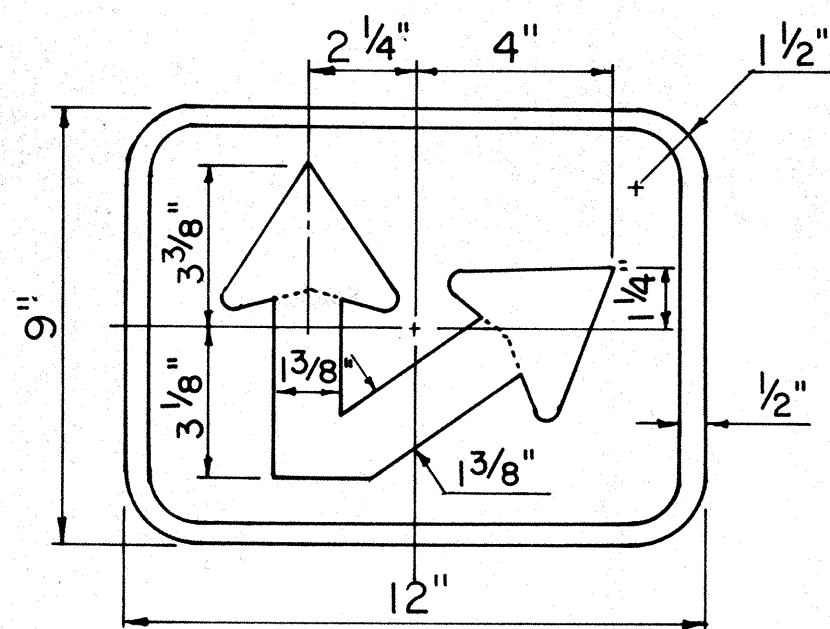
M7-4



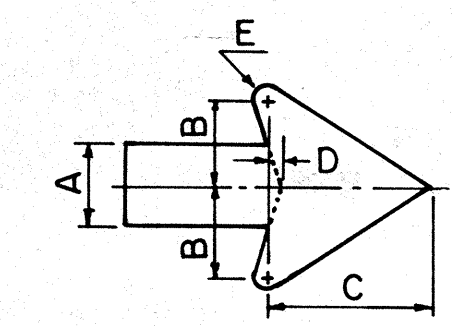
M7-5



M7-6



M7-7



A	B	C	D	E
1 3/8"	1 9/16"	2 13/16"	3/16"	1/4"
1 5/8"	1 7/8"	3 5/16"	1/4"	5/16"

ARROW DETAILS

SUPPLEMENTARY PLATES
Scale: 3" = 1'-0"

GENERAL NOTES

1. Sign details shall conform to the latest editions and amendments of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways", "Standard Highway Signs" and "Standard Alphabets for Highway Signs".
2. Legend and borders shall be white (reflectORIZED) on a green (reflectORIZED) background.
3. Drill 3/8" φ bolt holes (for mounting) at appropriate locations.
4. Sign panel backing shall be sheet aluminum conforming to the requirements specified in Subsection 712.20(B)(1) Sheet Aluminum.
5. Corners of sign panels shall be rounded to fit the border.
6. See shts. DT 100, DT 100A and DT 100B for additional signpost installation and anchor base details.

APPROVAL RECOMMENDED:

Eichi Tanaka 9/1/82
TRAFFIC ENGINEER DATE

APPROVED:

Hubert Zalschig 9/22/82
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes DT 114 Approved 11/7/77	H.T.	9/22/82

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

BIKE ROUTE SIGN
& SUPPLEMENTARY PLATES

Scale: As Shown July 1982

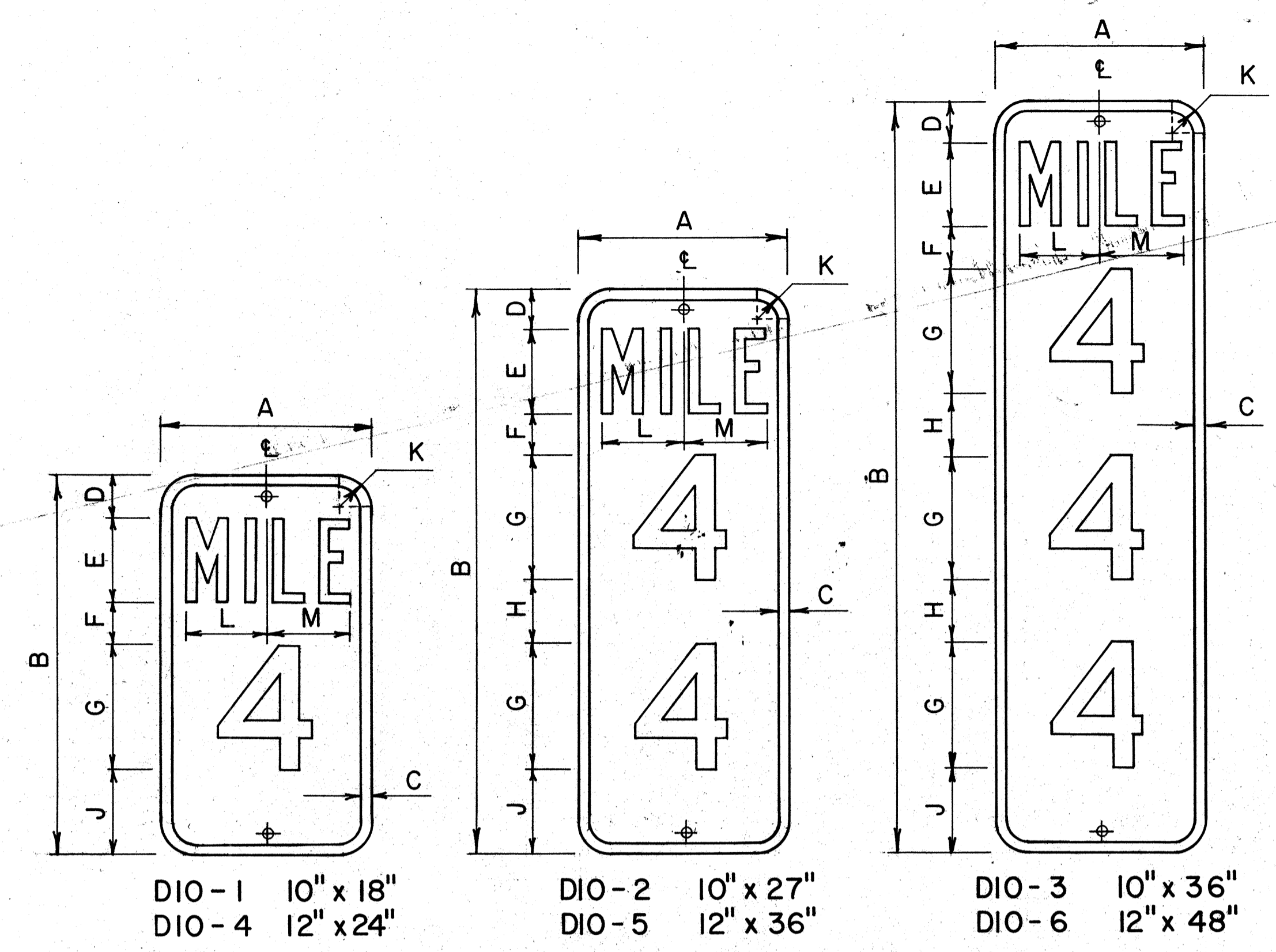
SHEET No. P-21 OF 33 SHEETS DT 114

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	13RHH(70)17	1983	70	211

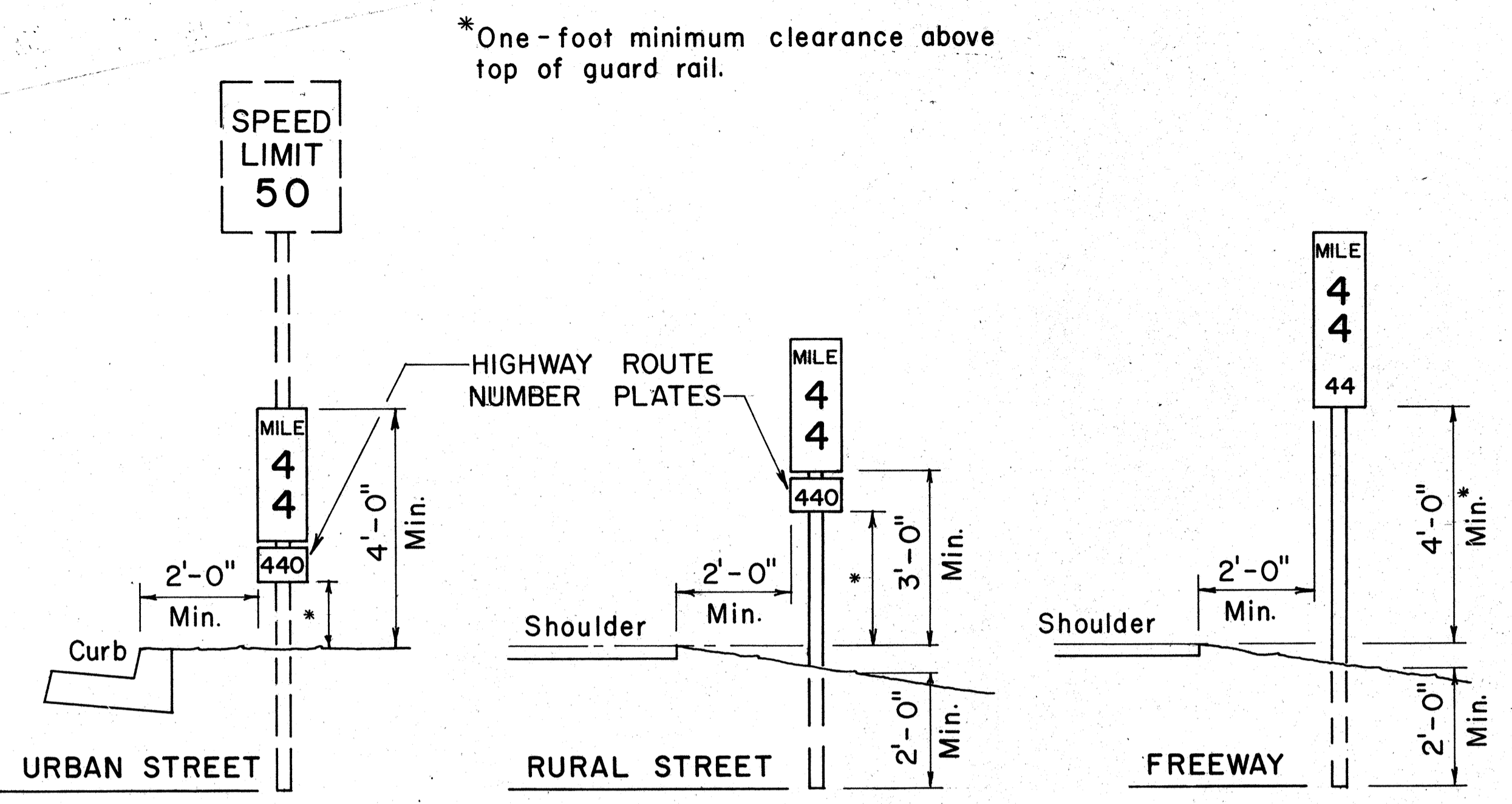
GENERAL NOTES:

- 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.
 - 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.)

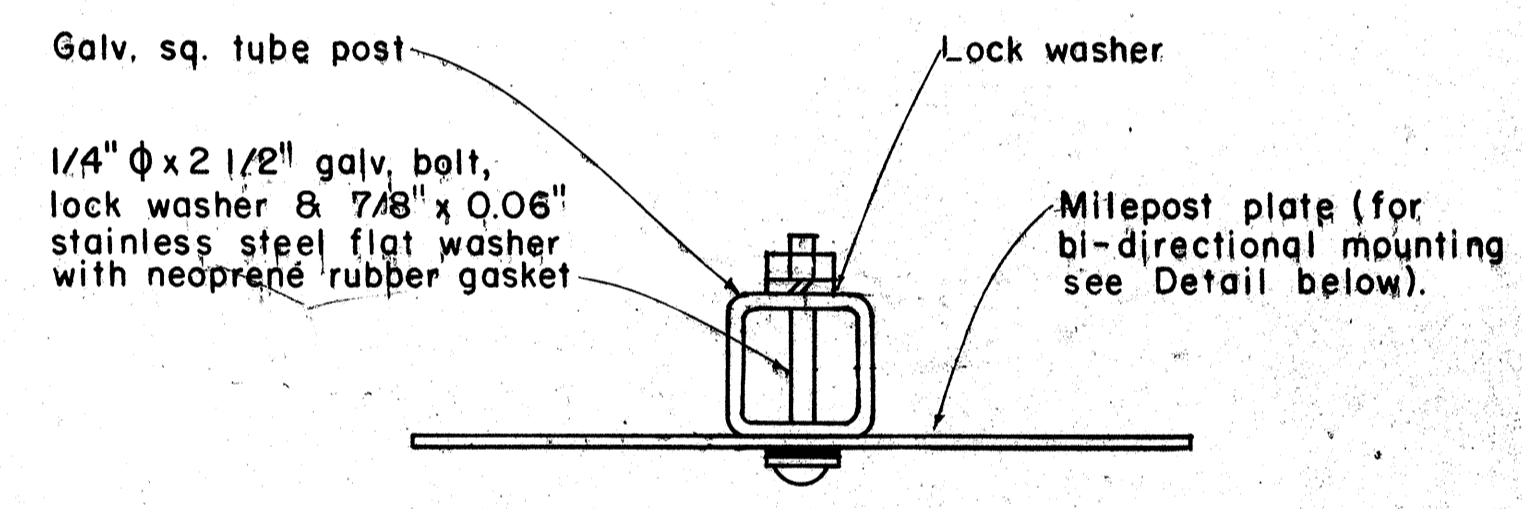


MILEPOST MARKER PLATE DETAILS
Scale: 3/16" = 1"

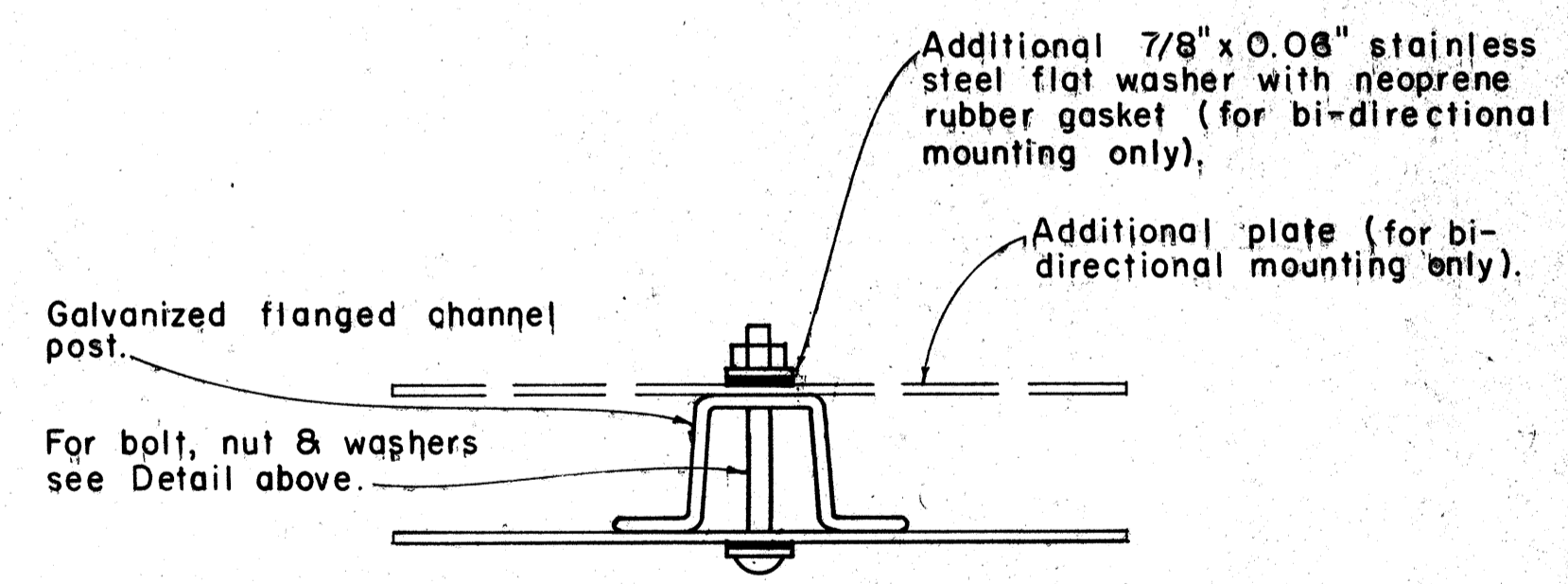
MILEPOST PLATE SCHEDULE (INCHES)															
NAME	SIZE	A	B	C	D	E	F	G	H	J	K	L	M	LETTER SERIES	NUMERAL SERIES
DIO-1	10 x 18	10	18	1/2	2	4	2	6		4	1 1/2	3 5/8	3 3/8	B	C
DIO-4	12 x 24	12	24	1/2	3	4	3	10		4	1 1/2	4 3/8	4 3/8	C	C
DIO-2	10 x 27	10	27	1/2	2	4	2	6	3	4	1 1/2	3 5/8	3 7/8	B	C
DIO-5	12 x 36	12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



TYPICAL ROADSIDE INSTALLATION
Scale: 1/2" = 1'-0"

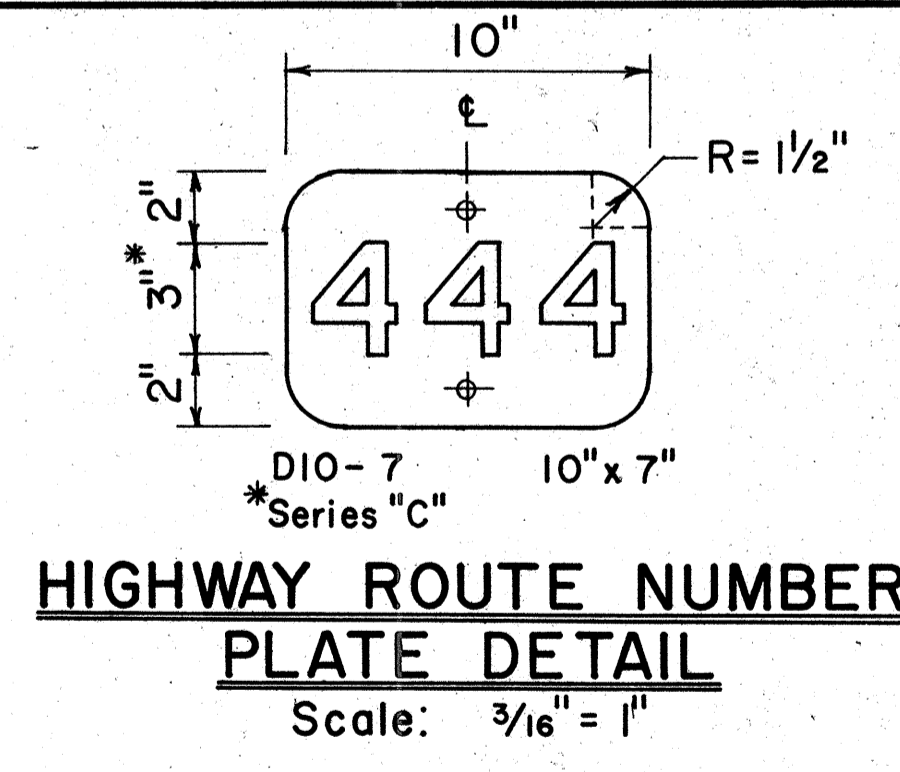


GALVANIZED SQUARE TUBE POST

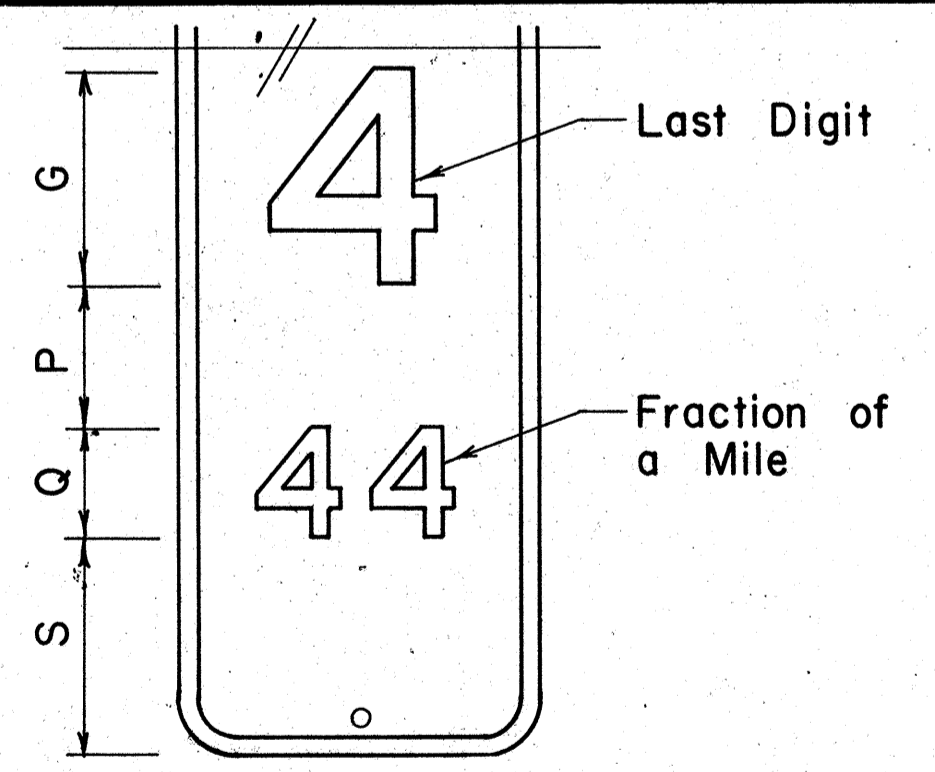


GALVANIZED FLANGED CHANNEL POST

TYPICAL MOUNTING DETAILS
Scale: 1/2" = 1"



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
D10-1a	10" x 27"	6"	4"	3"	6"	C
D10-4a	12" x 36"	10"	4"	5"	7"	C
D10-2a	10" x 36"	6"	4"	3"	6"	C
D10-5a	12" x 48"	10"	4"	5"	6"	C
D10-3a	10" x 45"	6"	4"	3"	6"	C
D10-6a	12" x 60"	10"	4"	5"	6"	C

NO.	REVISION	APPROVED BY	DATE
1	Revised Mounting Details	Ht.	4/23/80

APPROVAL RECOMMENDED:
Eiichi Tanaka 4/17/78
TRAFFIC ENGINEER DATE

APPROVED:
Robert B. Sakai 4/23/80
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

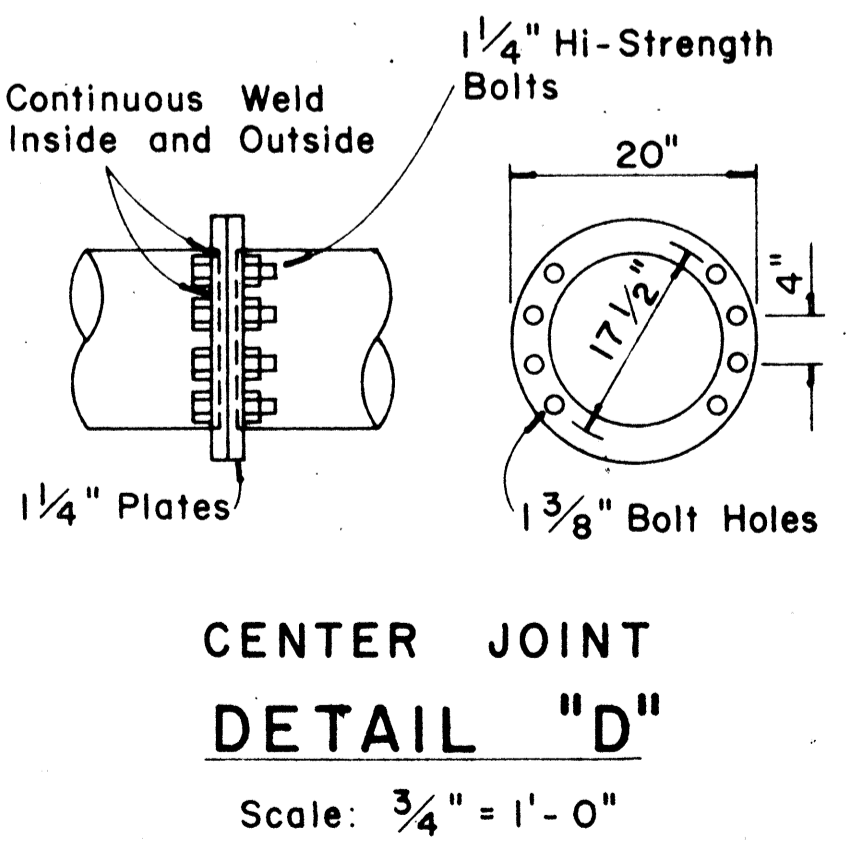
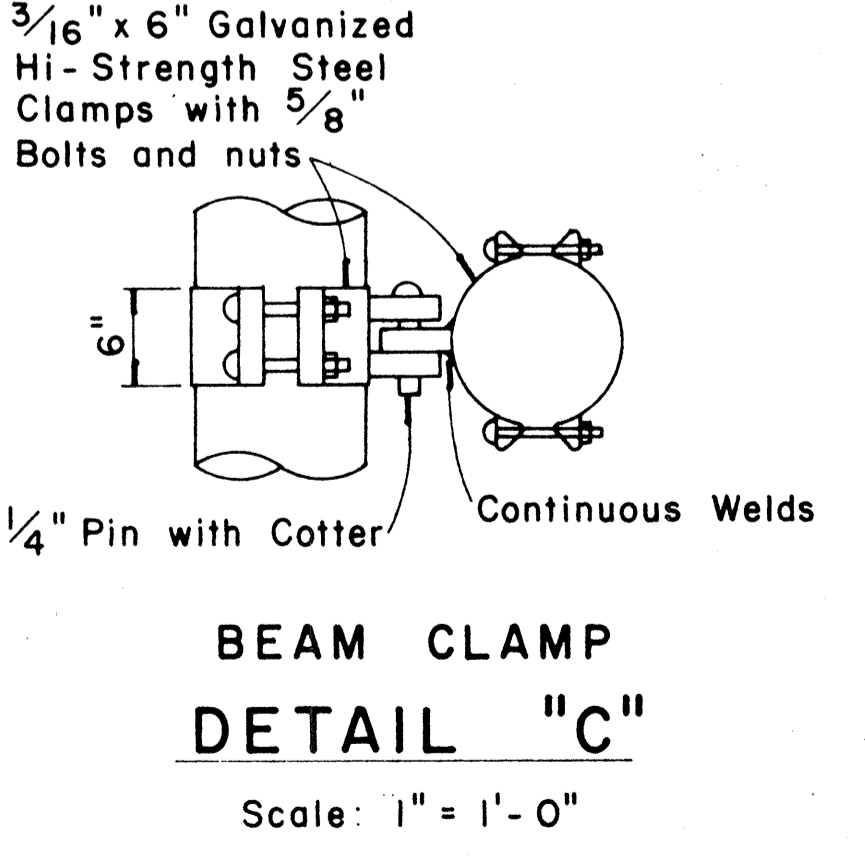
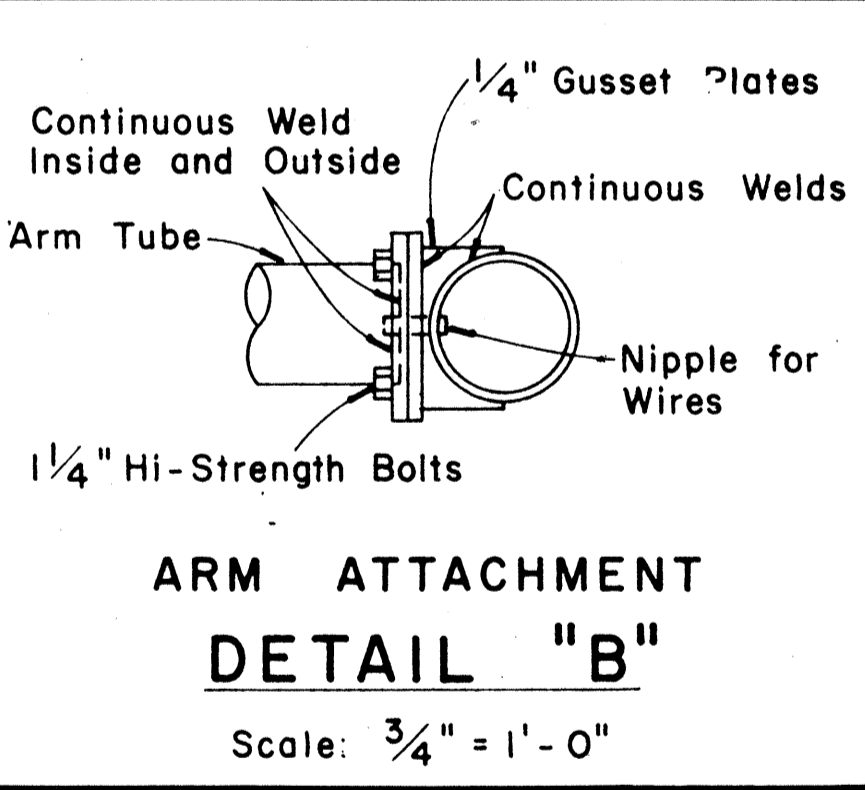
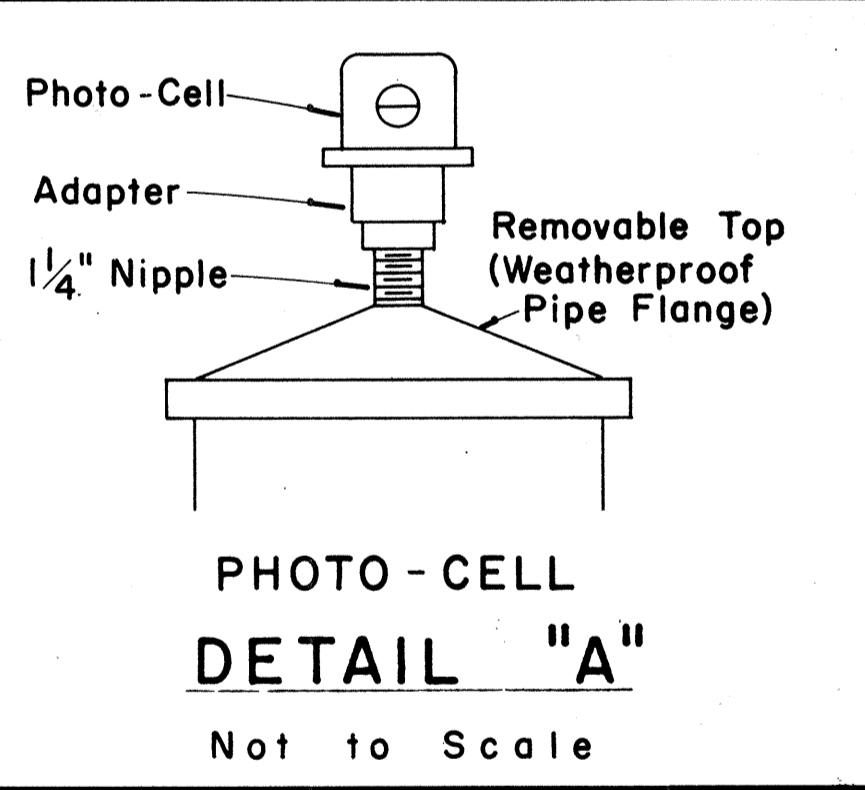
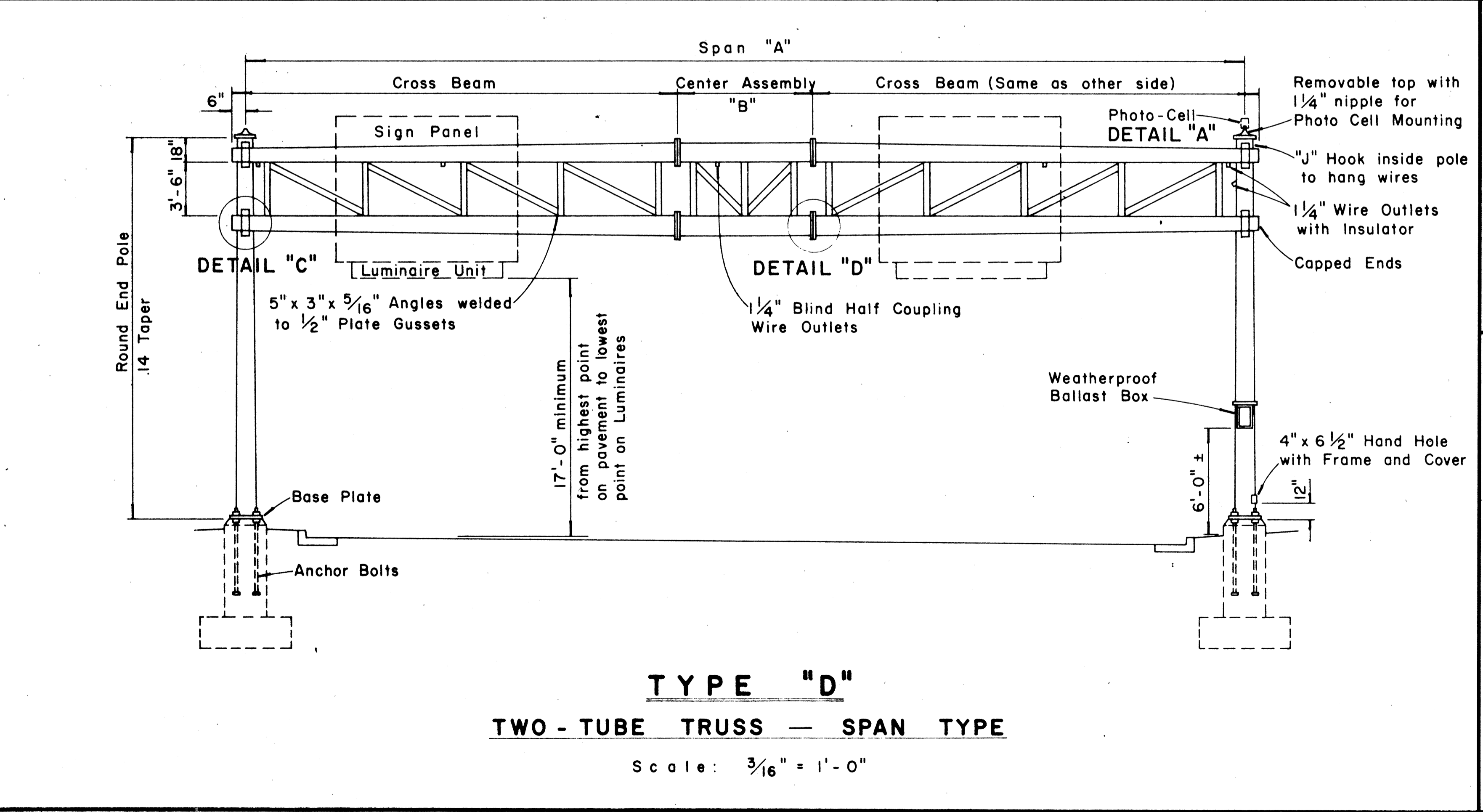
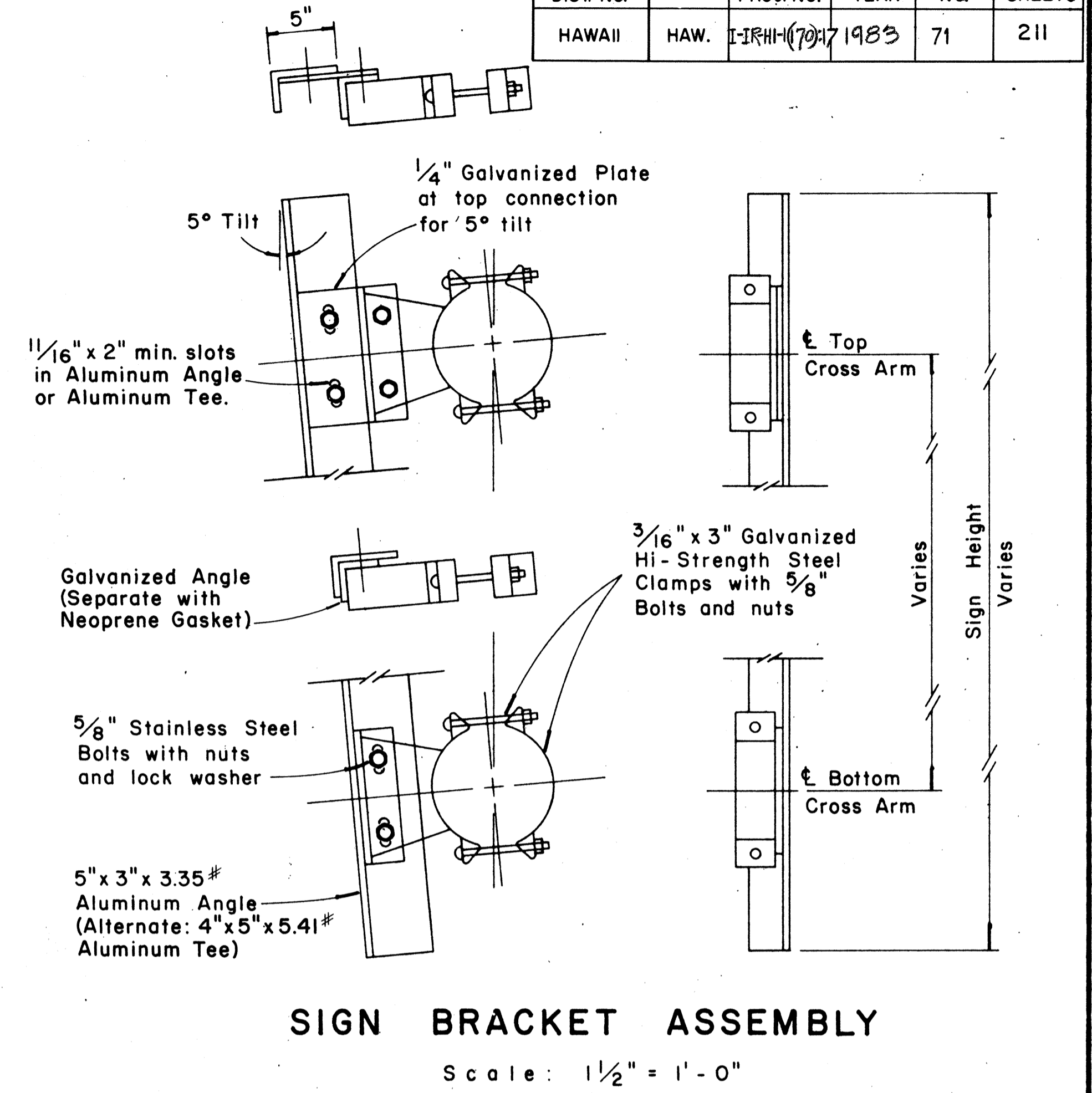
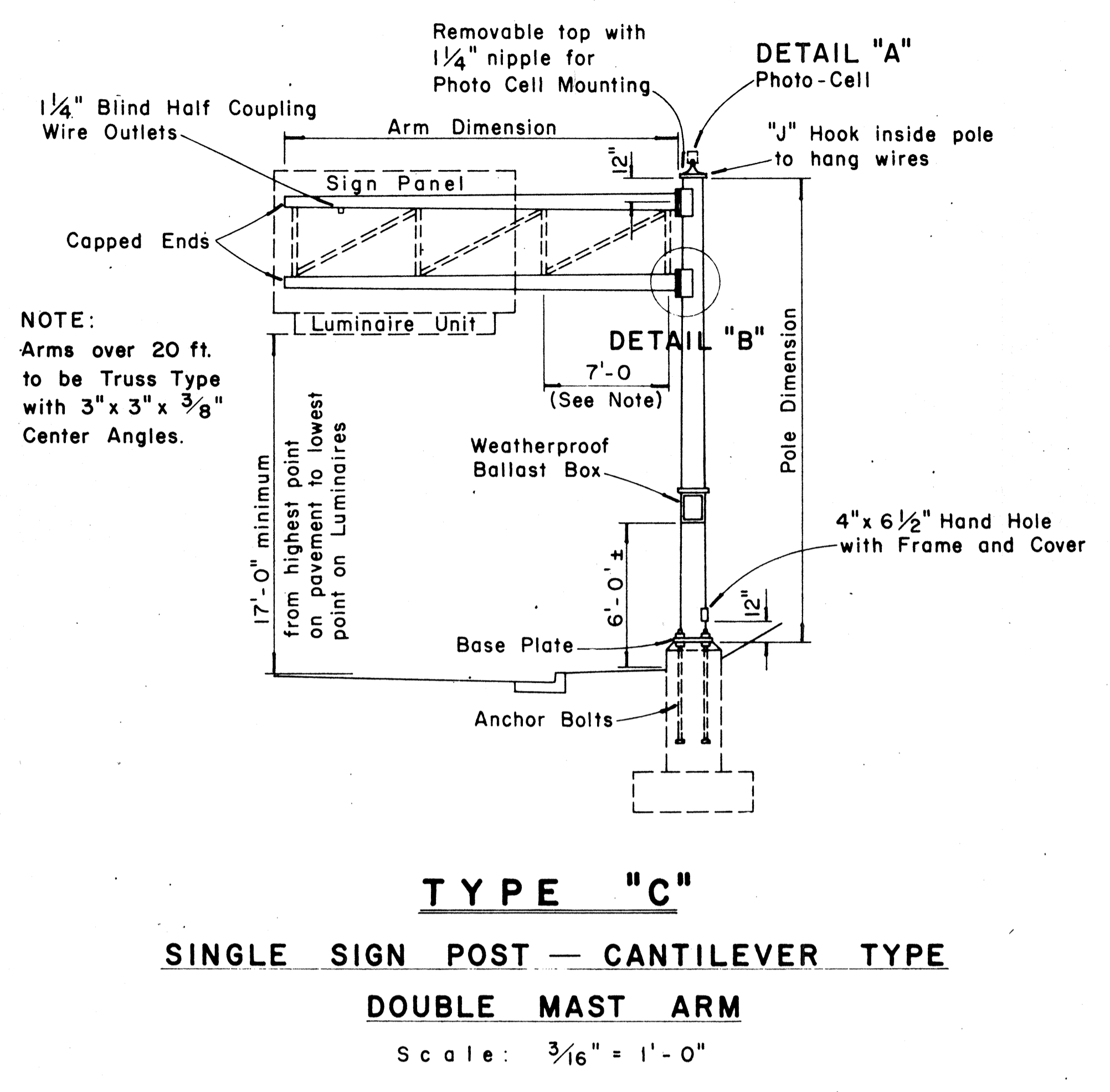
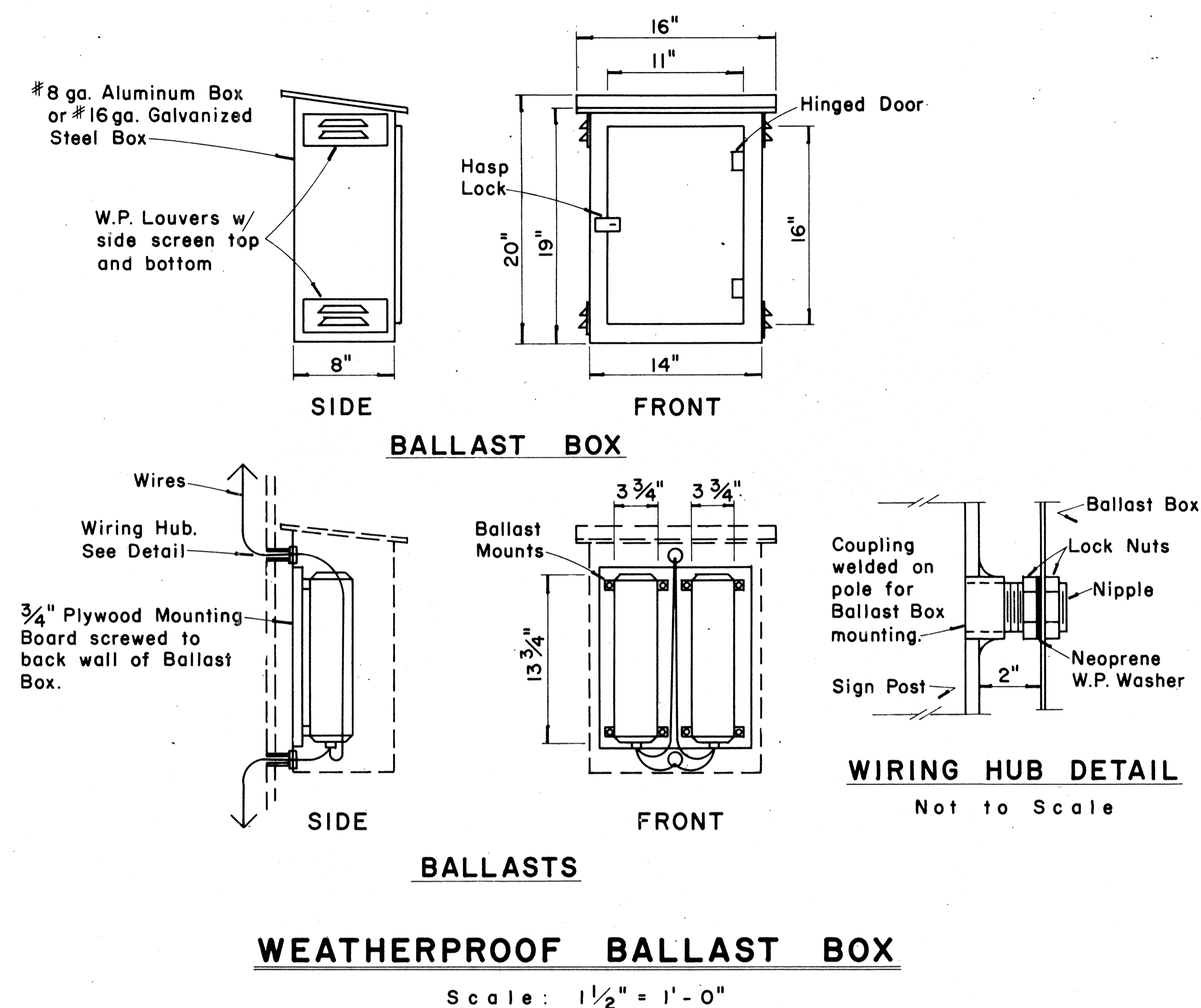
STANDARD DETAILS

MILEPOSTS

SCALE: As Shown DATE: December, 1977
SHEET No. P-220F 33 SHEETS DT 116

SURVEY PLOTTED BY: _____
 DATE: _____
 DRAWN BY: _____
 TRACED BY: _____
 NOTE BOOK NO. _____
 QUANTITIES BY: _____
 CHECKED BY: _____
 No. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-111(70)7	1983	71	211



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

APPROVED:
Mulw S Sakai 12-30-69
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

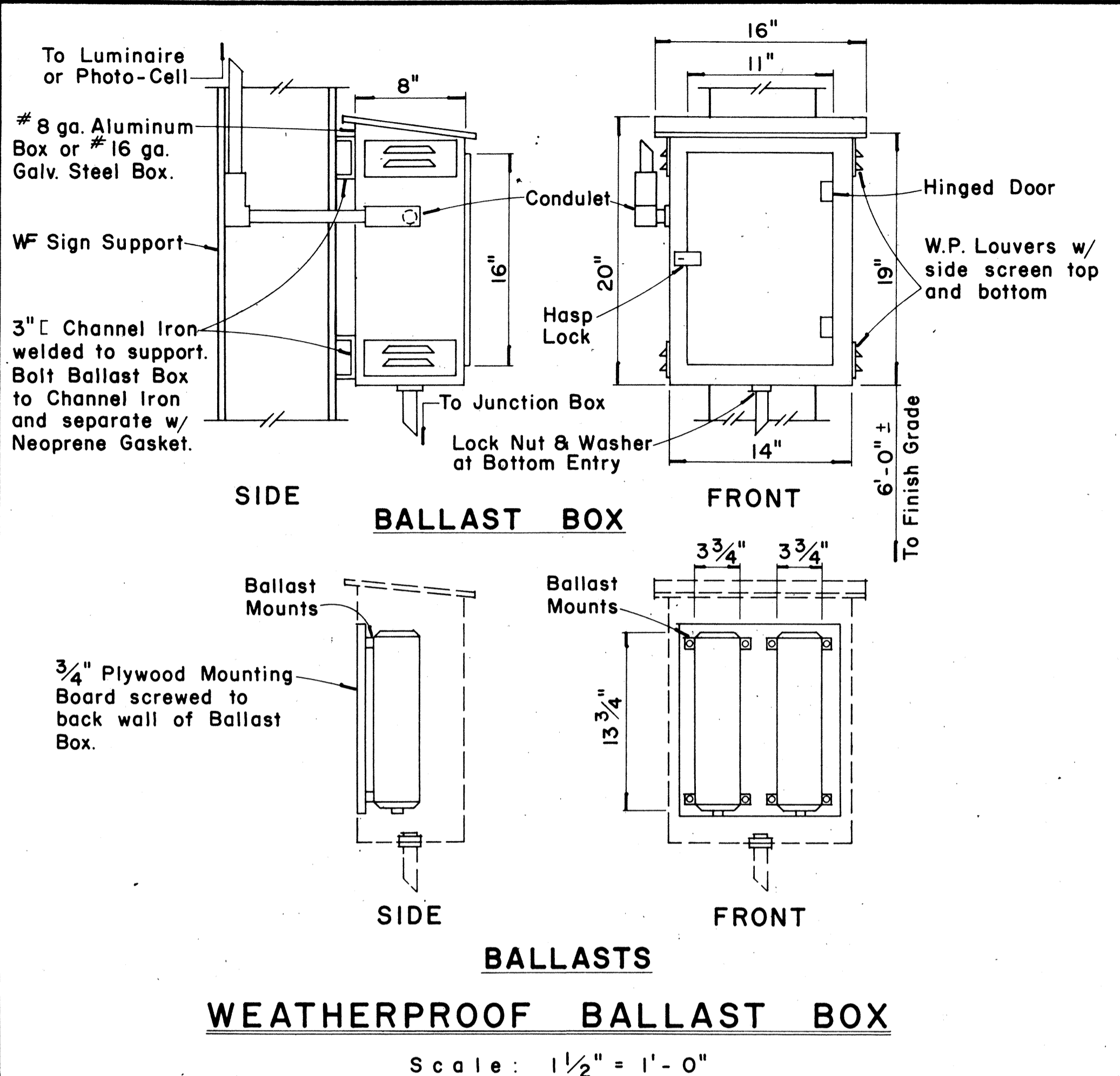
STANDARD DETAILS
OVERHEAD SIGN SUPPORTS

Scale: As Shown
 SHEET No. P22AOF 33 SHEETS DT 200

DATE
 DRAWN BY
 CHECKED BY
 QUANTITIES BY
 NOTE BOOK

* 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.

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 J10	50 sq. ft.	14'	14"	5"	24"	17 1/4"	1 5/8"	6"	1 1/4"	9"	6"	10"	2"	1"	1 1/8" ø	4 1/2'	4 1/2'	
8 WF24	90 sq. ft.	21'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	5'	
8 WF35	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 WF45	190 sq. ft.	25'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
10 WF45	200 sq. ft.	25'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
12 WF50	230 sq. ft.	25'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	
12 WF50	250 sq. ft.	23'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HR-H(17)17	1983	71A	211

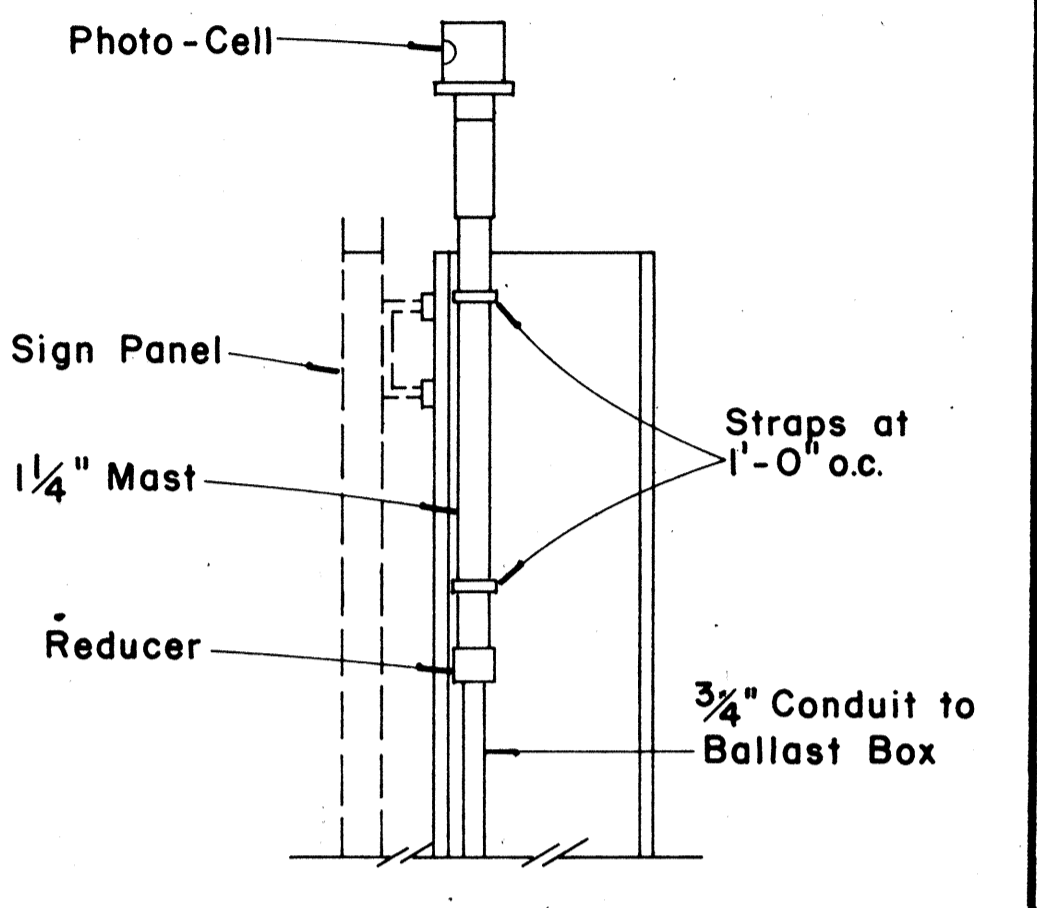
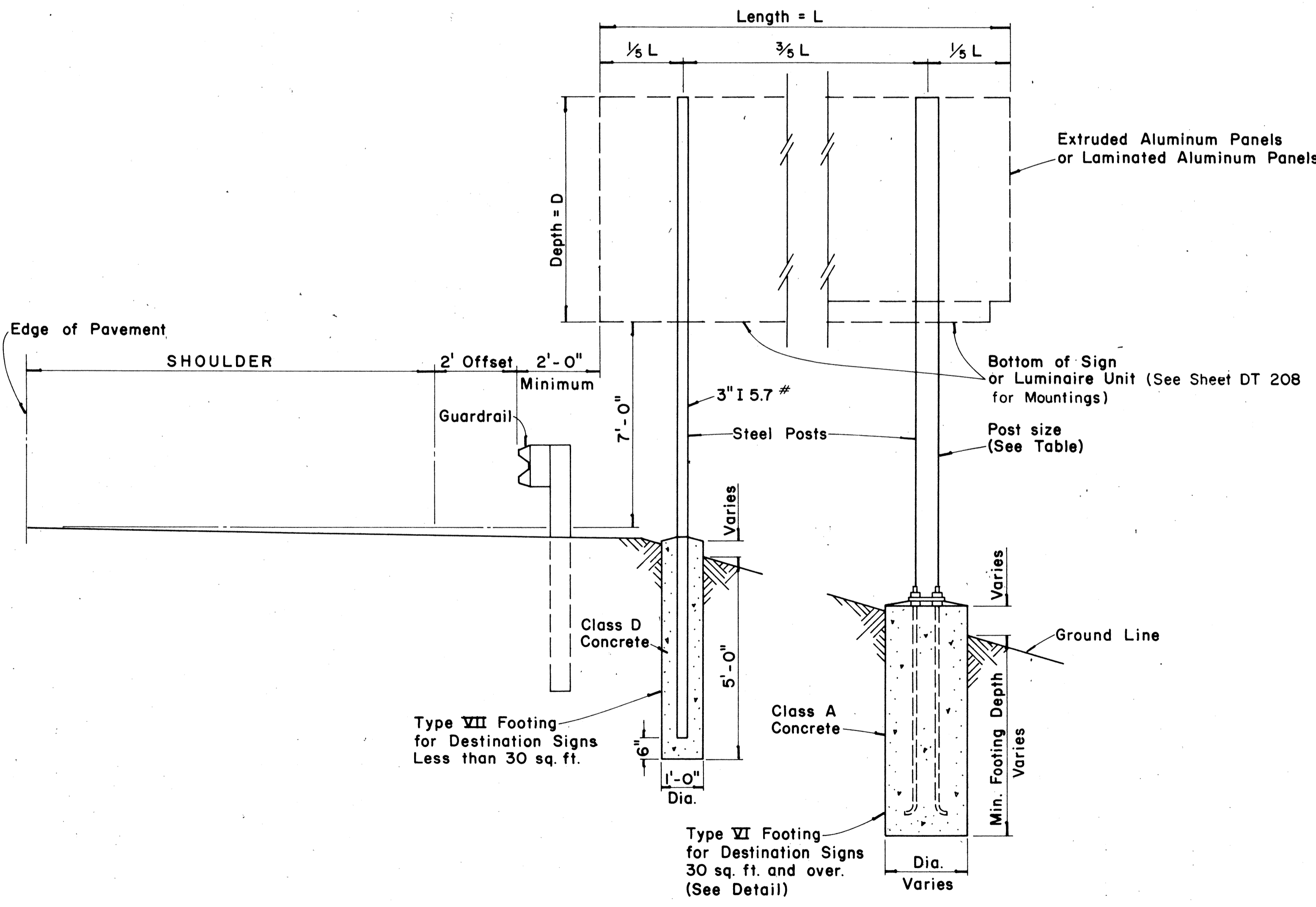
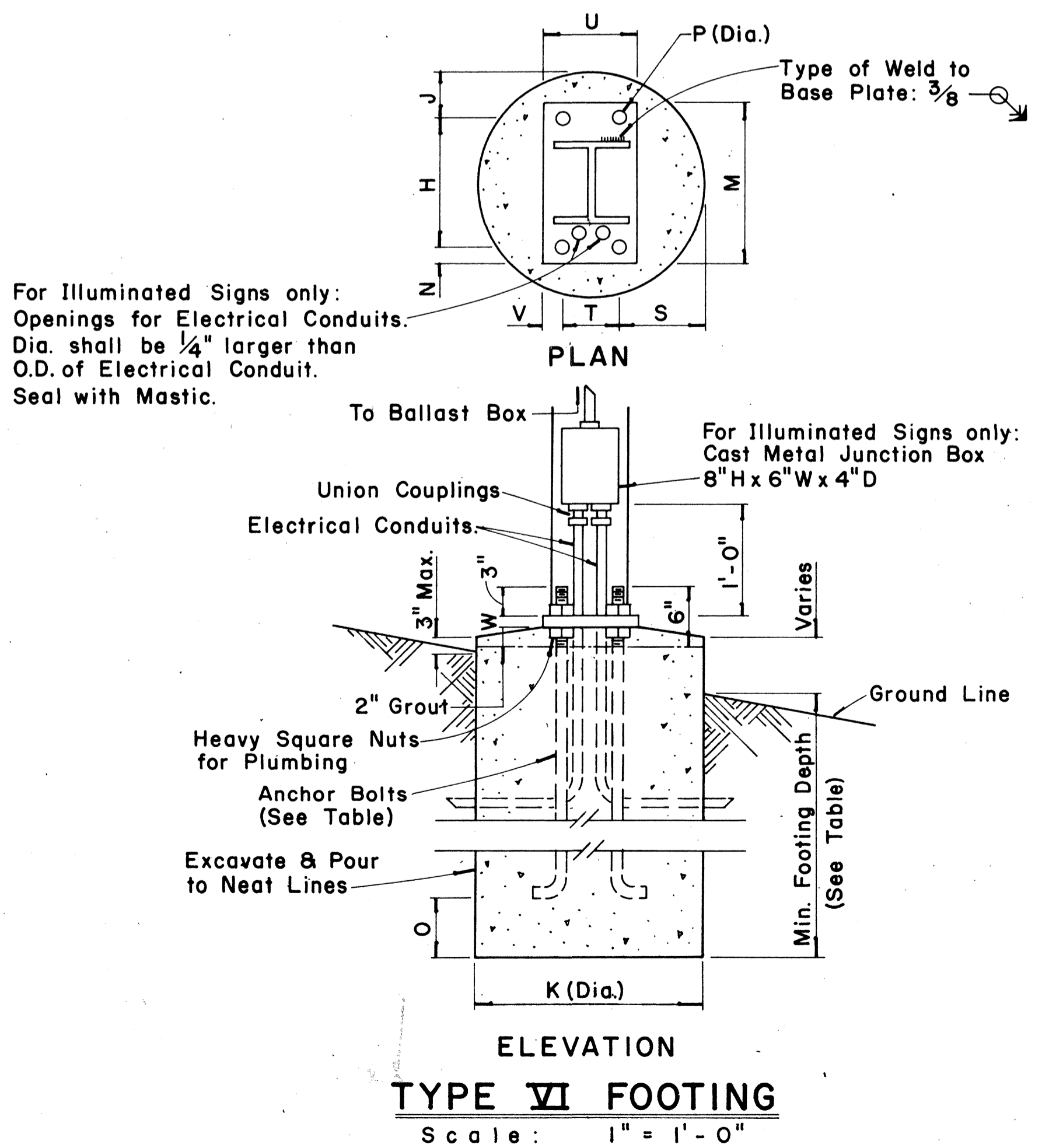


PHOTO-CELL DETAIL
 Scale: 1/2" = 1'-0"



TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN
 Not to Scale



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

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

NO.	REVISION	APPROVED BY	DATE
1	Add note for luminaire mounting.	H.T.	6/3/80

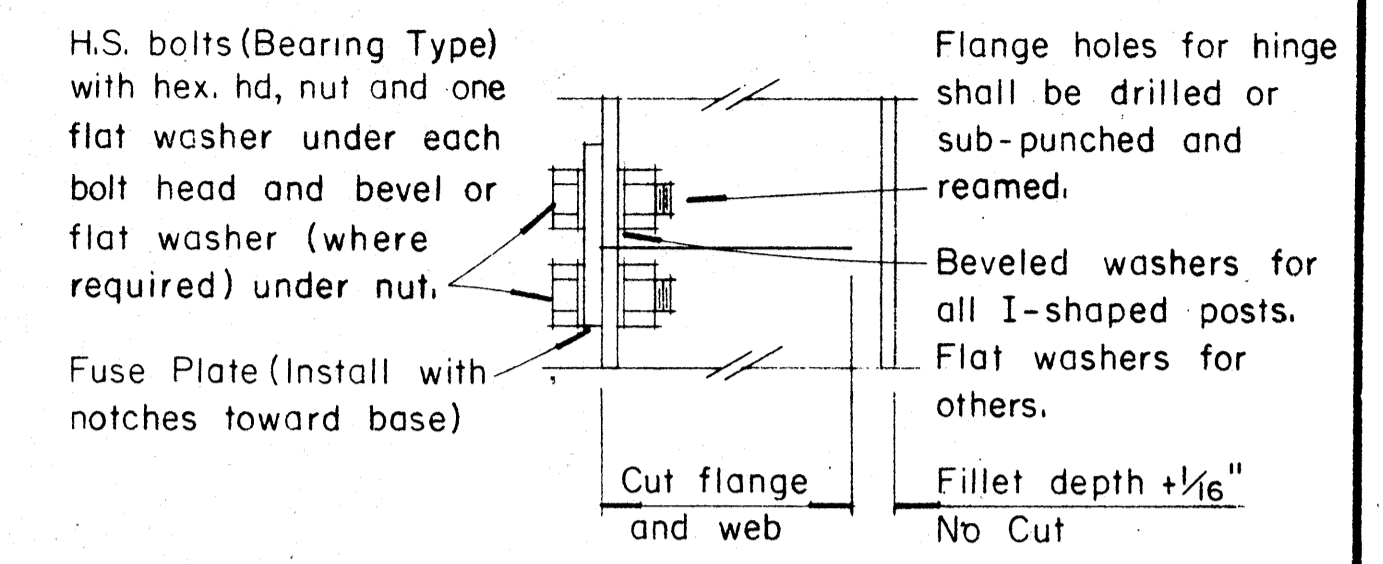
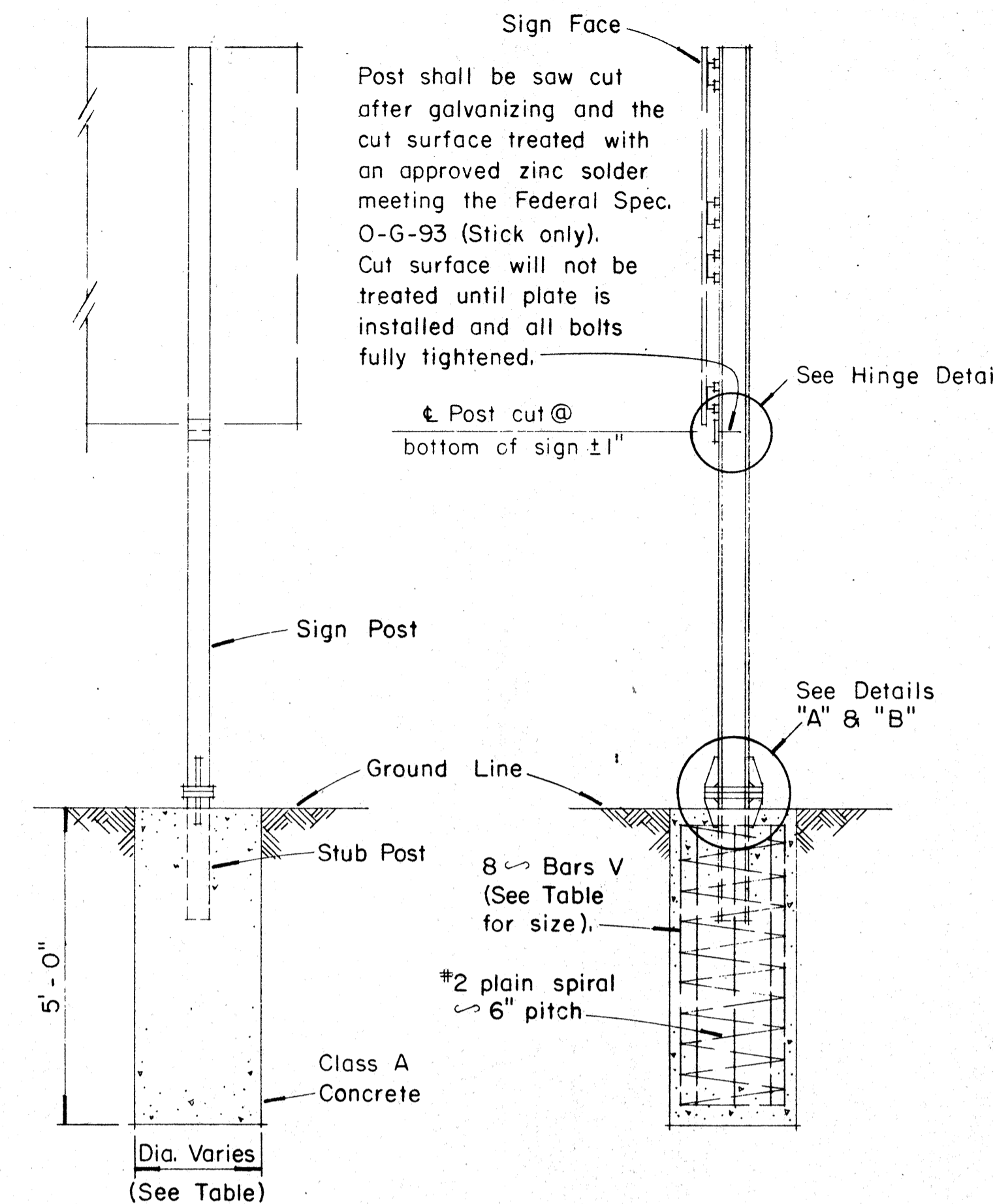
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
 DESTINATION & GROUND MOUNTED
 EXPRESSWAY SIGNS

Scale: As Shown
 SHEET No.P22BOF 33 SHEETS DT 203

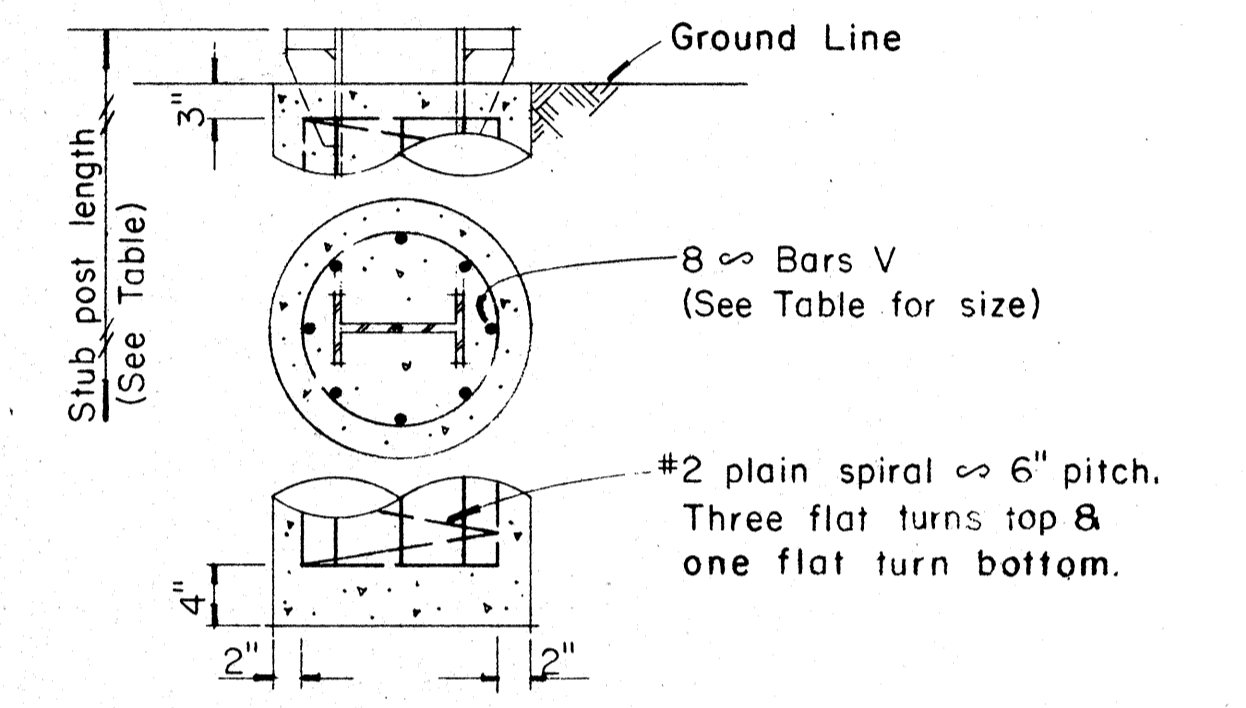
DATE: _____
 SURVEY PLOTTED BY: _____
 DRAWN BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-11(17)47	1983	72	211

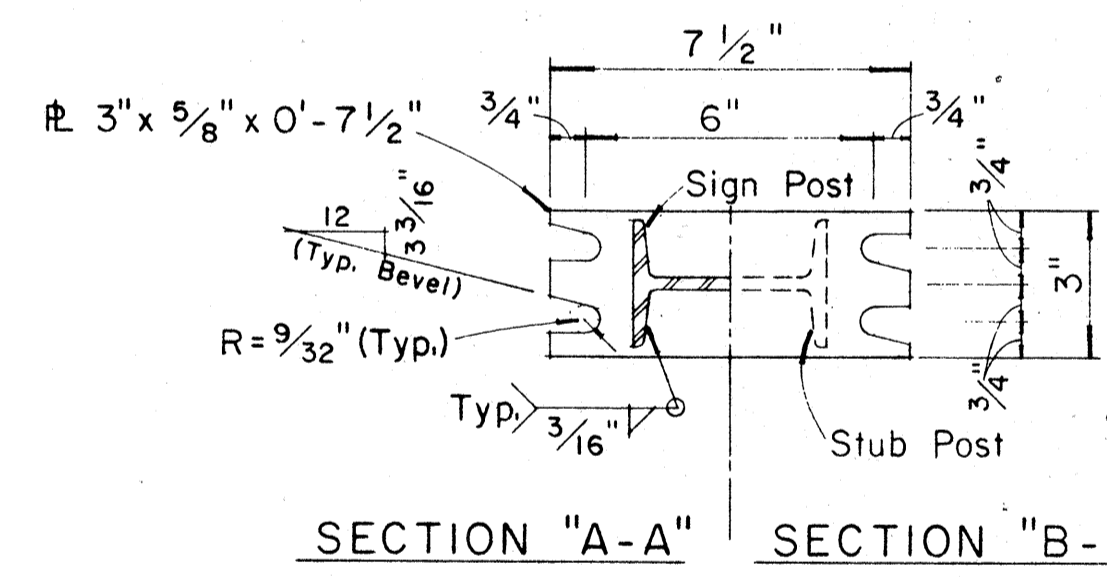
BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE										FOUNDATION DATA					
Post Size	Bolt Size & Torque	A	B	C	D	E	t ₁	t ₂	W	R	F	G	H	J	K	L	N	d ₁	t ₃	Bolt Dia.	Wt. of each Fuse #	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5											3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2" #	1.09#	2'-0"	3"	2'-0"	#5
6 B 12	5/8" # x 2 3/4"	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	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	Torque = 450" #										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" # x 3 1/2"	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	Torque = 750" #										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" # 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" #	0.64#	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7	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



HINGE DETAIL

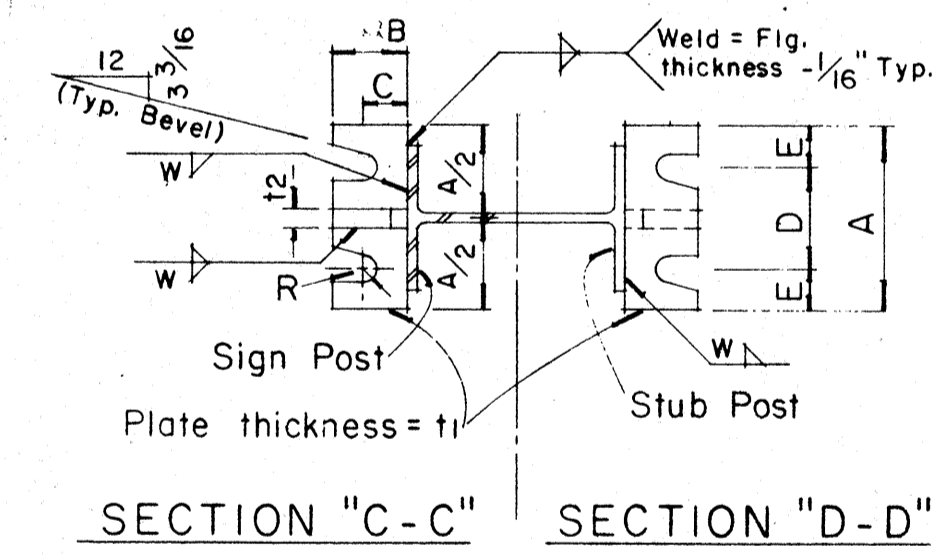


FOUNDATION DETAIL

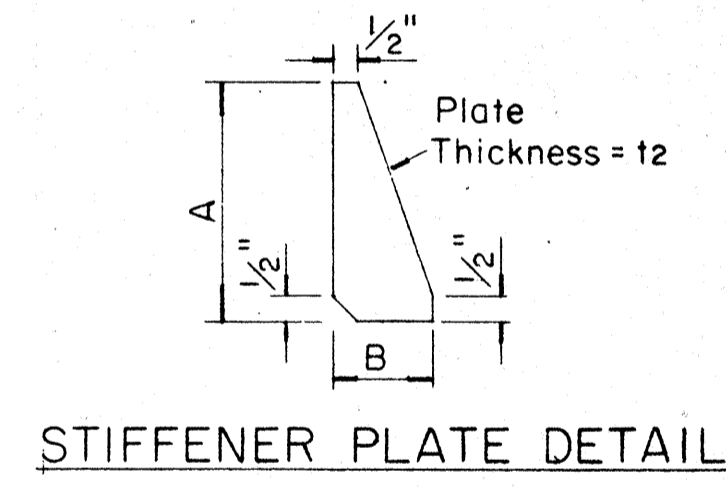


SECTION "A-A" SECTION "B-B"

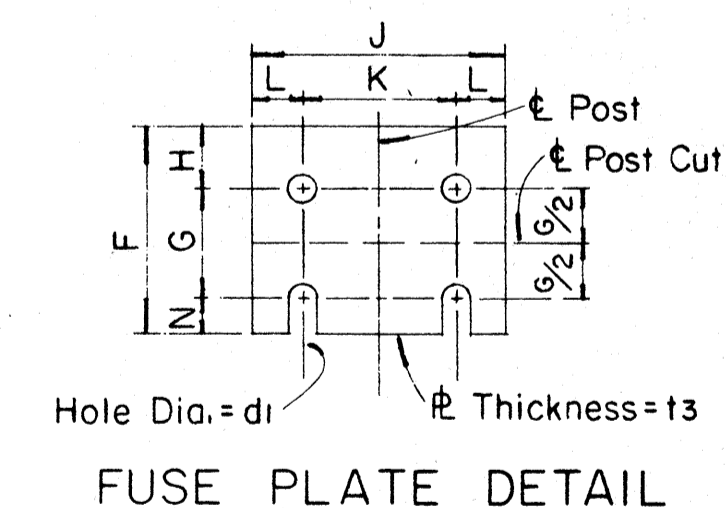
NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



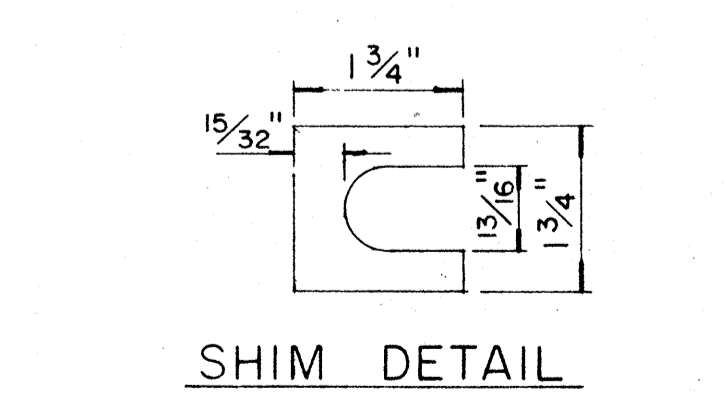
SECTION "C-C" SECTION "D-D"



STIFFENER PLATE DETAIL



FUSE PLATE DETAIL



SHIM DETAIL

Furnish 2-0.012" ± thick and 2-0.032" ± thick shims per post. Shims shall be fabricated from brass shim stock or strip conforming to ASTM - B36.

GENERAL NOTES

- Design shall conform 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 to the requirements of ASTM A 441.
- Galvanize all of the post projecting above the concrete plus 6 inches 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:

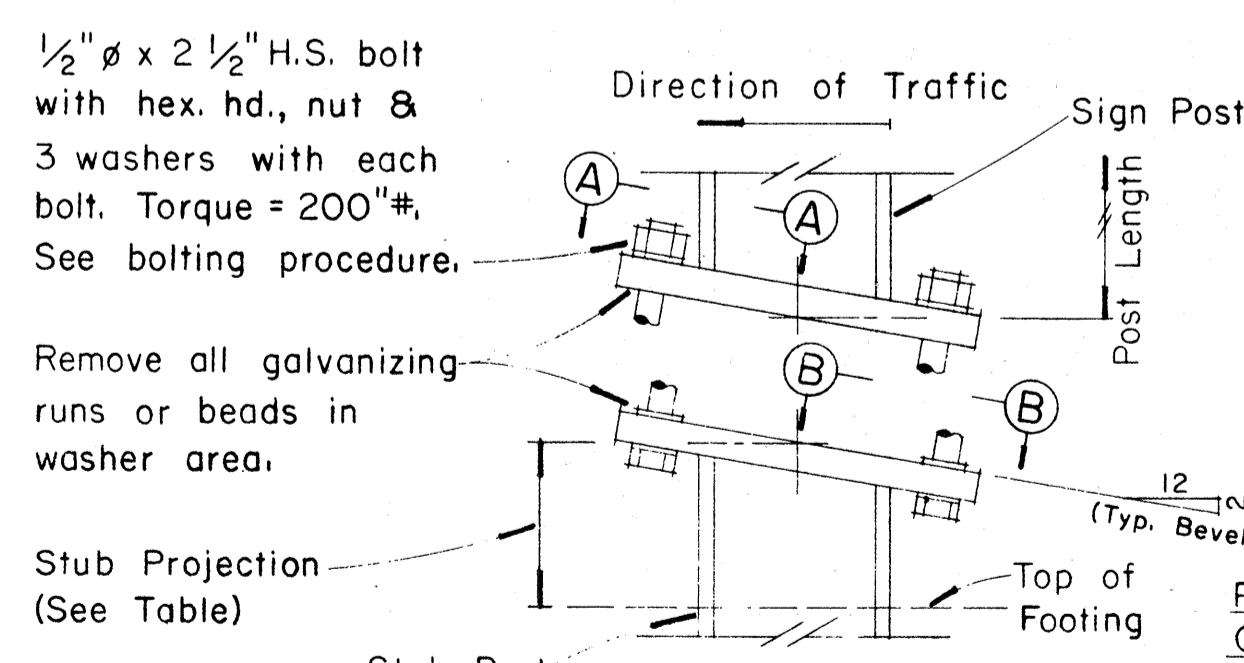
Bolt Size	Min. Tension	Bolt Size	Min. Tension
1/2" #	12050 Lbs.	3/4" #	28400 Lbs.
5/8" #	19200 Lbs.	7/8" #	36050 Lbs.
- Supplemental Sign shall not be installed below the Breakaway Hinges.

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

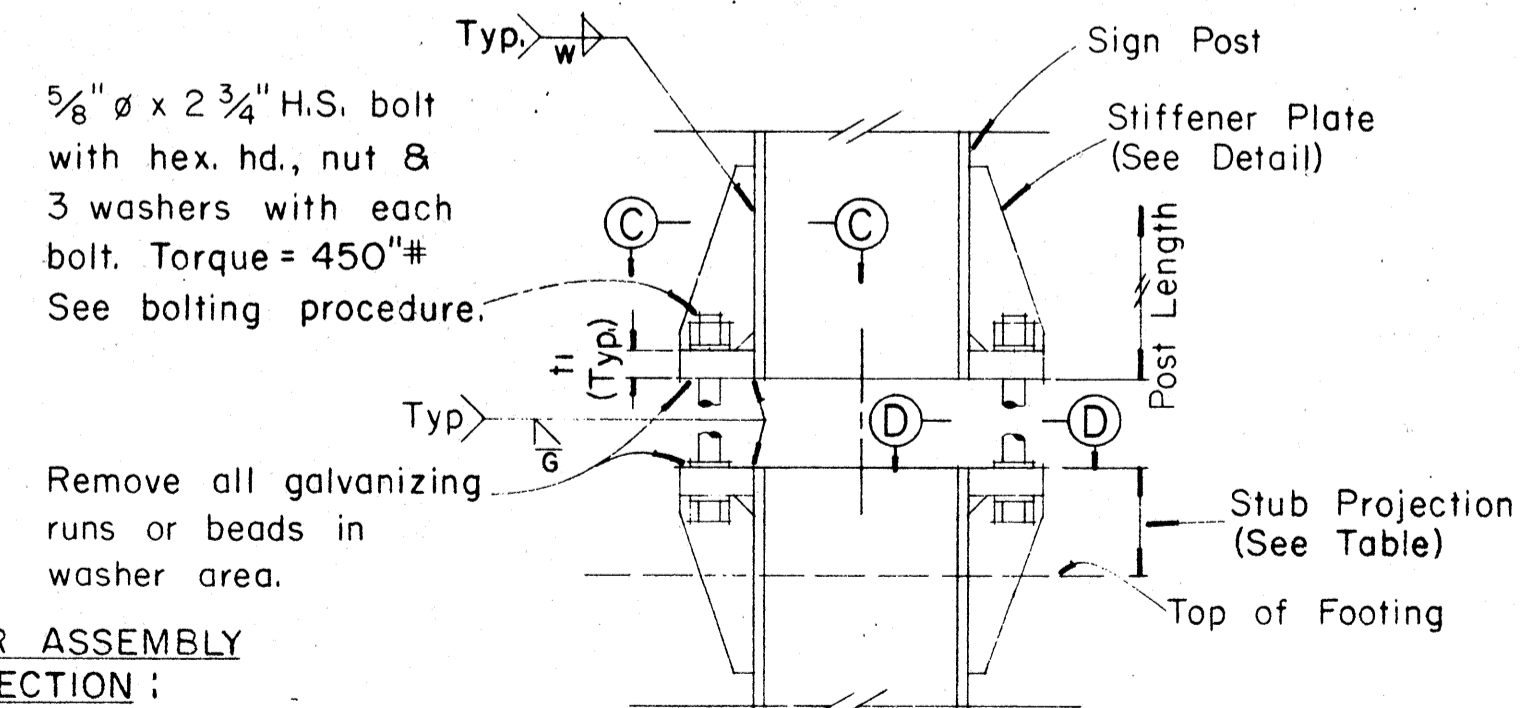
APPROVED:
John P. [Signature]
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE
1	Added General Note No. 9	H.T.	6/3/80

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS
Not to Scale
SHEET No. P23 OF 33 SHEETS DT-204



DETAIL "A"
SIGN POST & STUB POST
(For 4I7.7 and 3I5.7 Shapes)

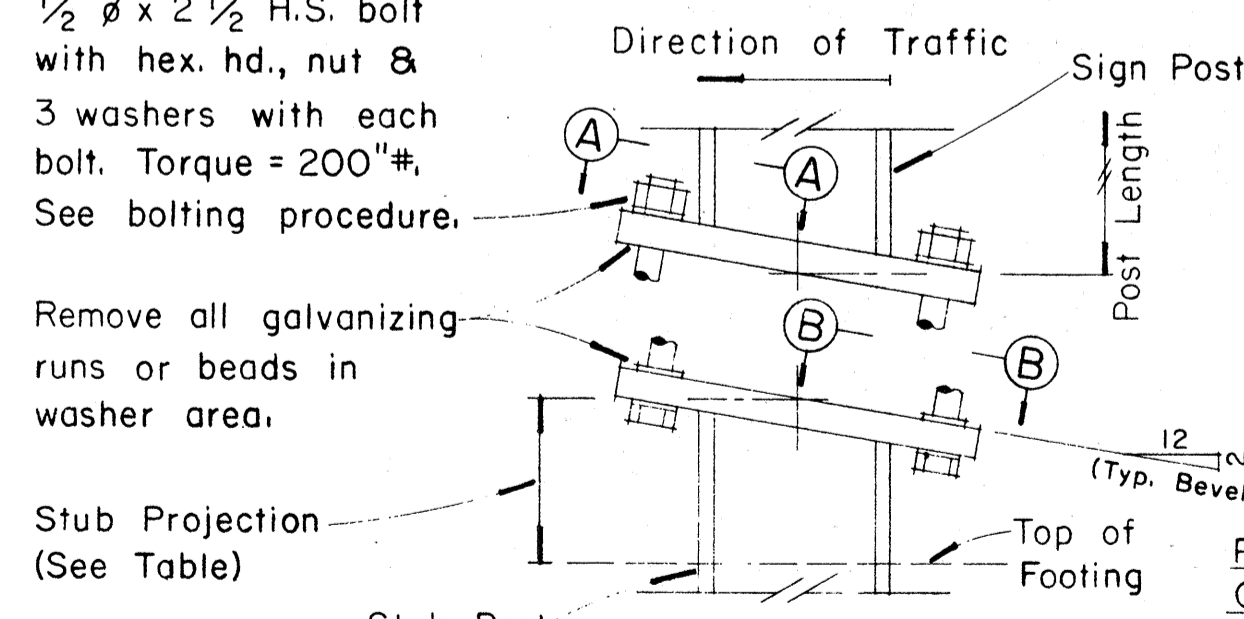


DETAIL "B"
SIGN POST & STUB POST
(For W and B Shapes)

PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:
1. Assemble post to stub with bolts and with one flat washer on each bolt between plates.
2. Shim as required to plumb post.
3. 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)
4. Burr threads at junction with nut using a center punch to prevent nut loosening.

1/2" # 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)
Top of Footing
Stub Post

5/8" # 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.
Stub Projection (See Table)
Top of Footing
Stub Post



DETAIL "A"
SIGN POST & STUB POST
(For 4I7.7 and 3I5.7 Shapes)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11R-11(79)-17	1983	73	211

(OVERHEAD SIGNS)
SUPPORT SPACING TABLE

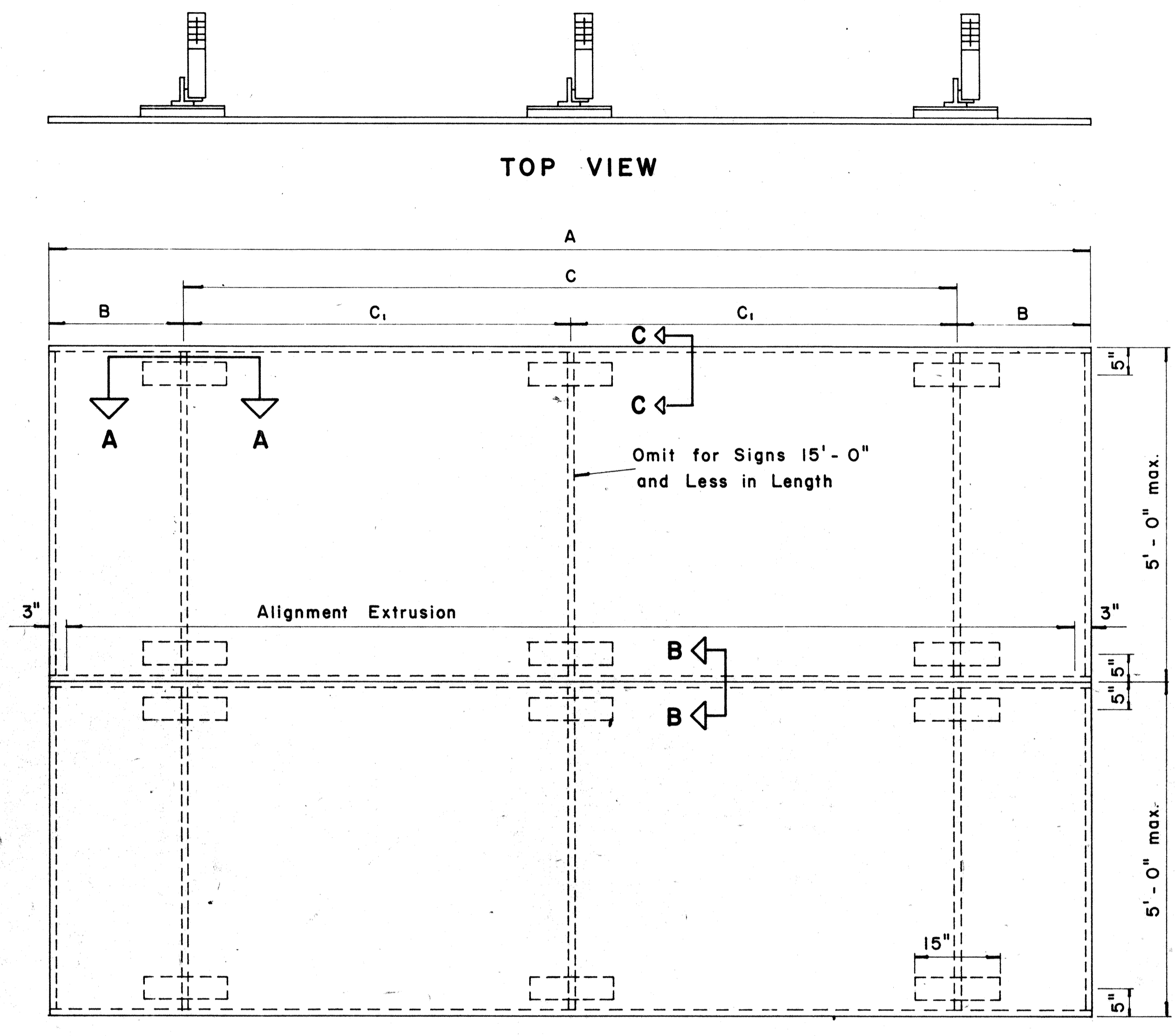
PANEL THICK.	LENGTH OF SIGN A	NO. OF SUPPORTS	OVERHANG B	SUPPORT SPACING C or C ₁
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"	84"
1"	11'-6"	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:
Etschi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

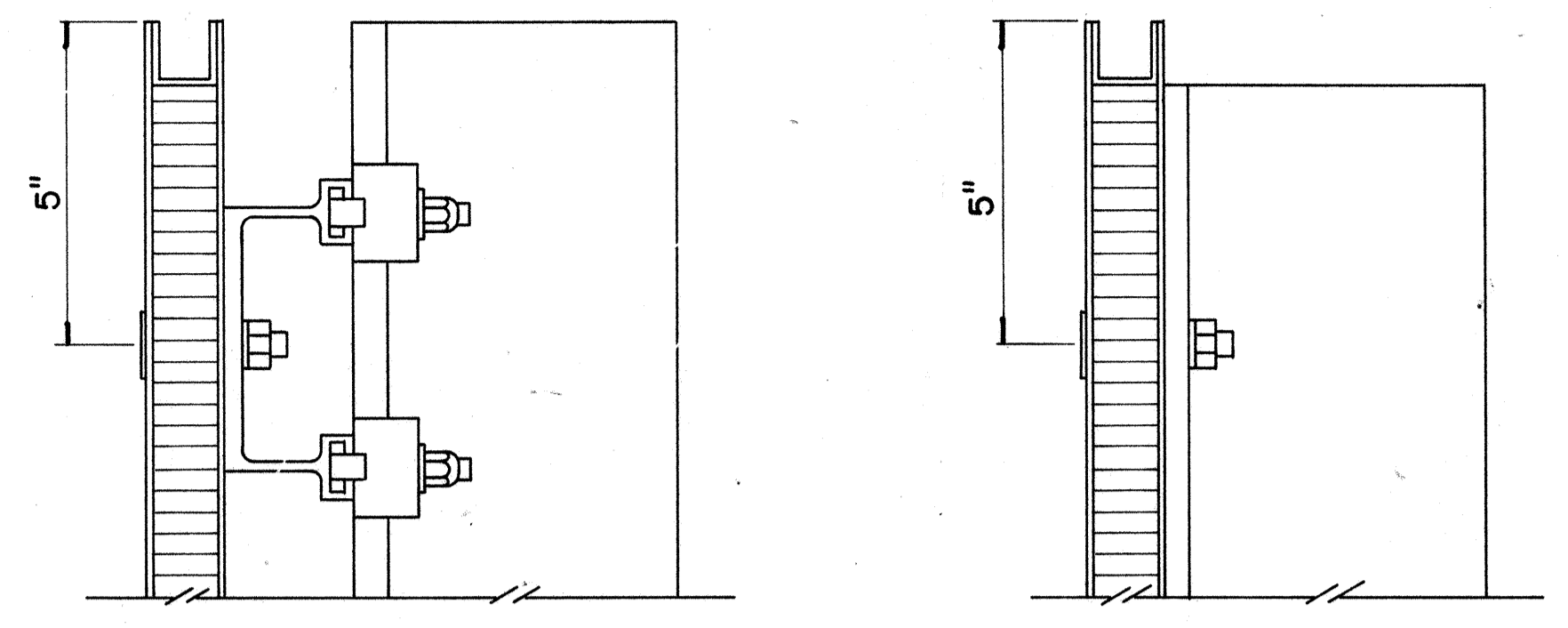
APPROVED:
John S. Saha 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

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

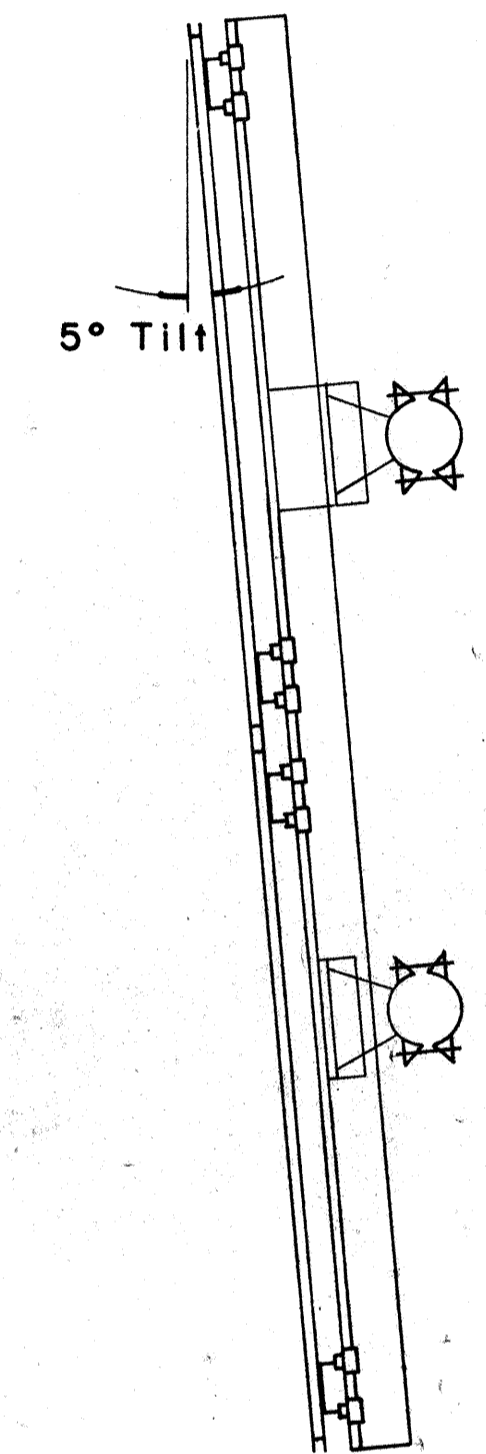


TYPICAL SIGN ASSEMBLY
Scale: $\frac{3}{4}$ " = 1'-0"

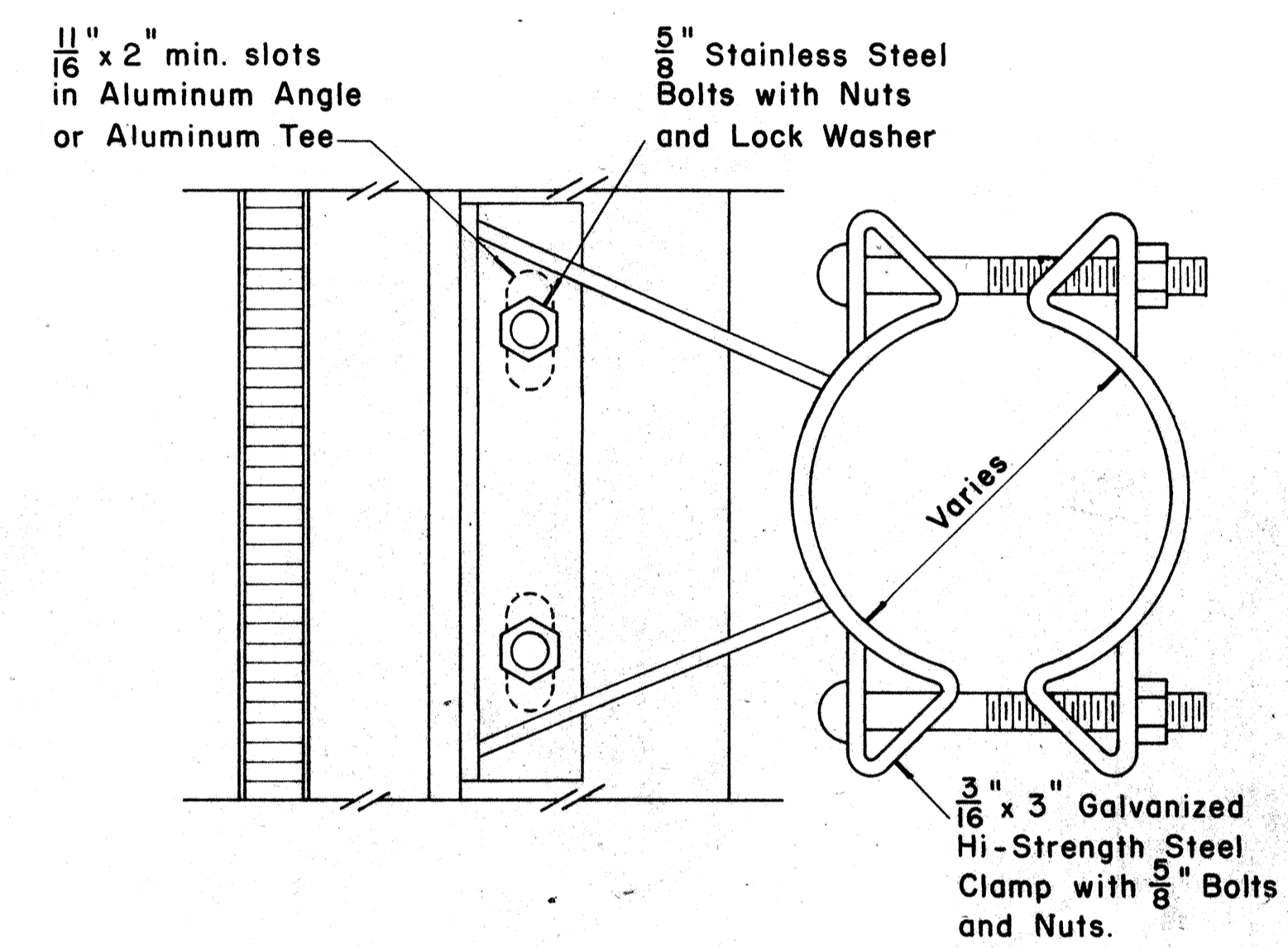


SECTION "C-C"
Scale: $\frac{3}{8}$ " = 1"

SECTION "C-C" (Alternate)
Scale: $\frac{3}{8}$ " = 1"

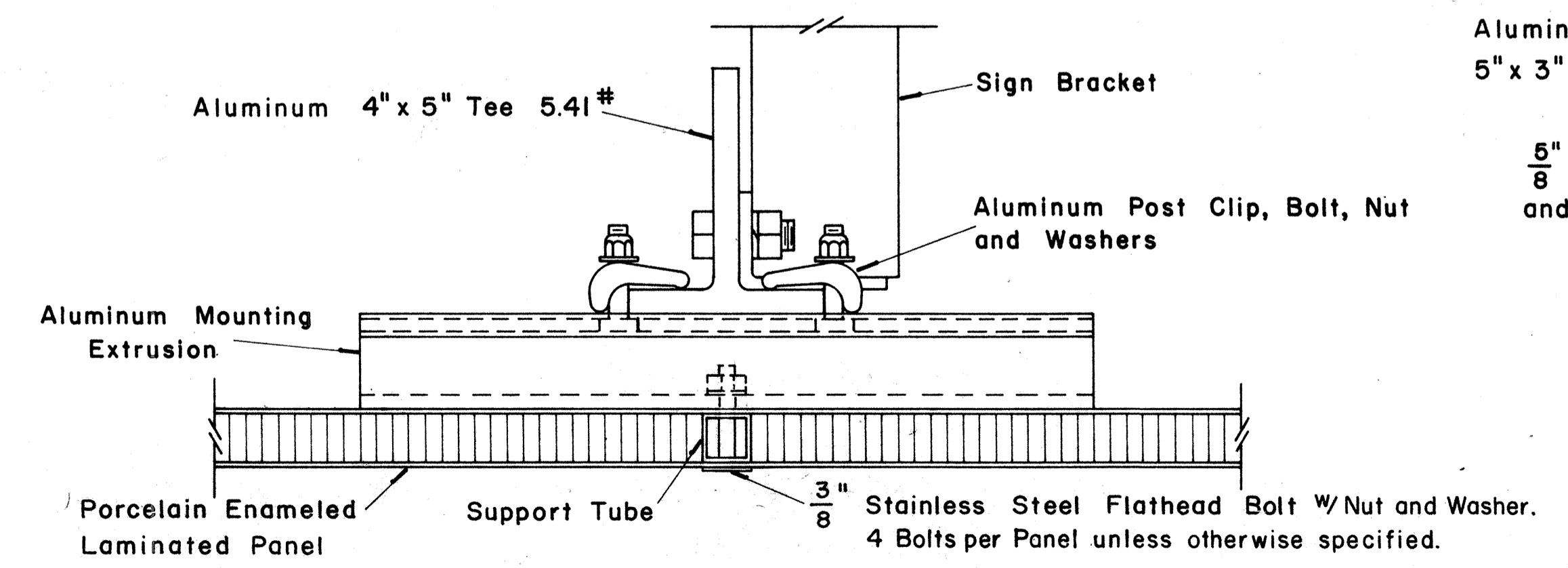


SIDE VIEW

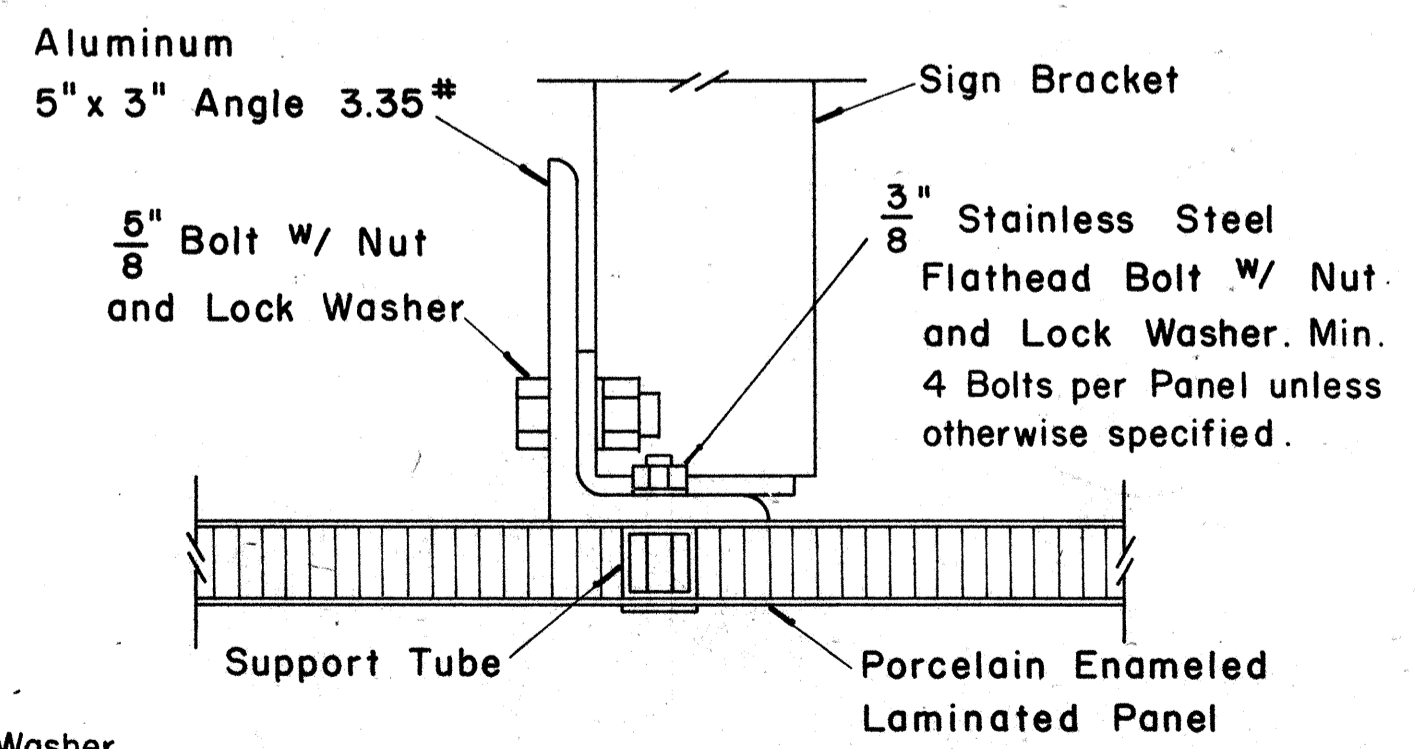


SIGN BRACKET ASSEMBLY
Scale: $\frac{3}{8}$ " = 1"

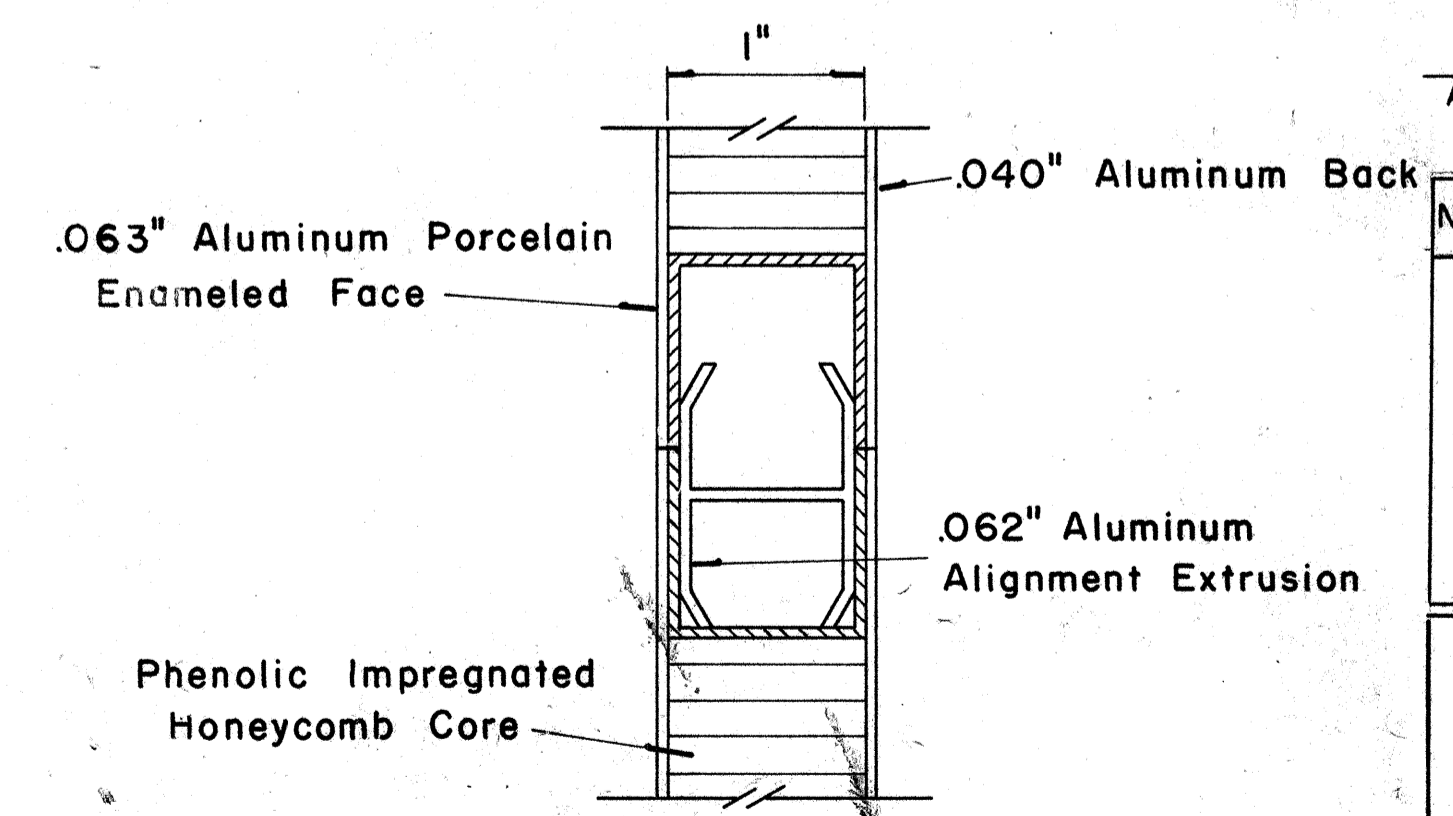
NOTE: For additional details of Sign Bracket Assembly, see Standard Detail Sheet "Overhead Sign Supports."



SECTION "A-A"
Scale: $\frac{3}{8}$ " = 1"



SECTION "A-A" (Alternate)
Scale: $\frac{3}{8}$ " = 1"



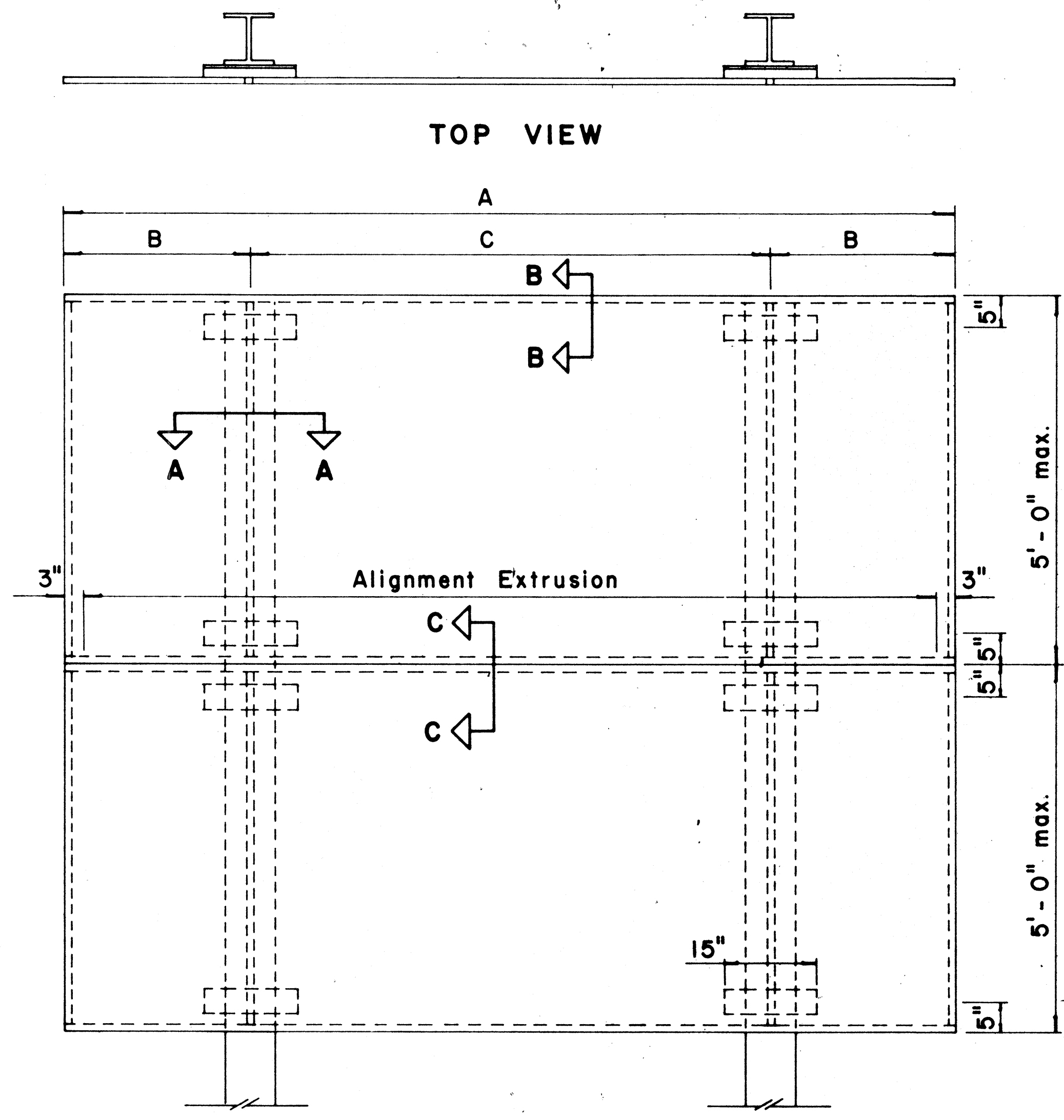
CLOSURE DETAIL SECTION "B-B"
FULL SCALE

DATE: _____
DESIGNED BY: _____
CHECKED BY: _____
DRAWN BY: _____
NOTED BY: _____
ORIGINAL PLAN: _____
NO. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-11(17)17	1983	74	211

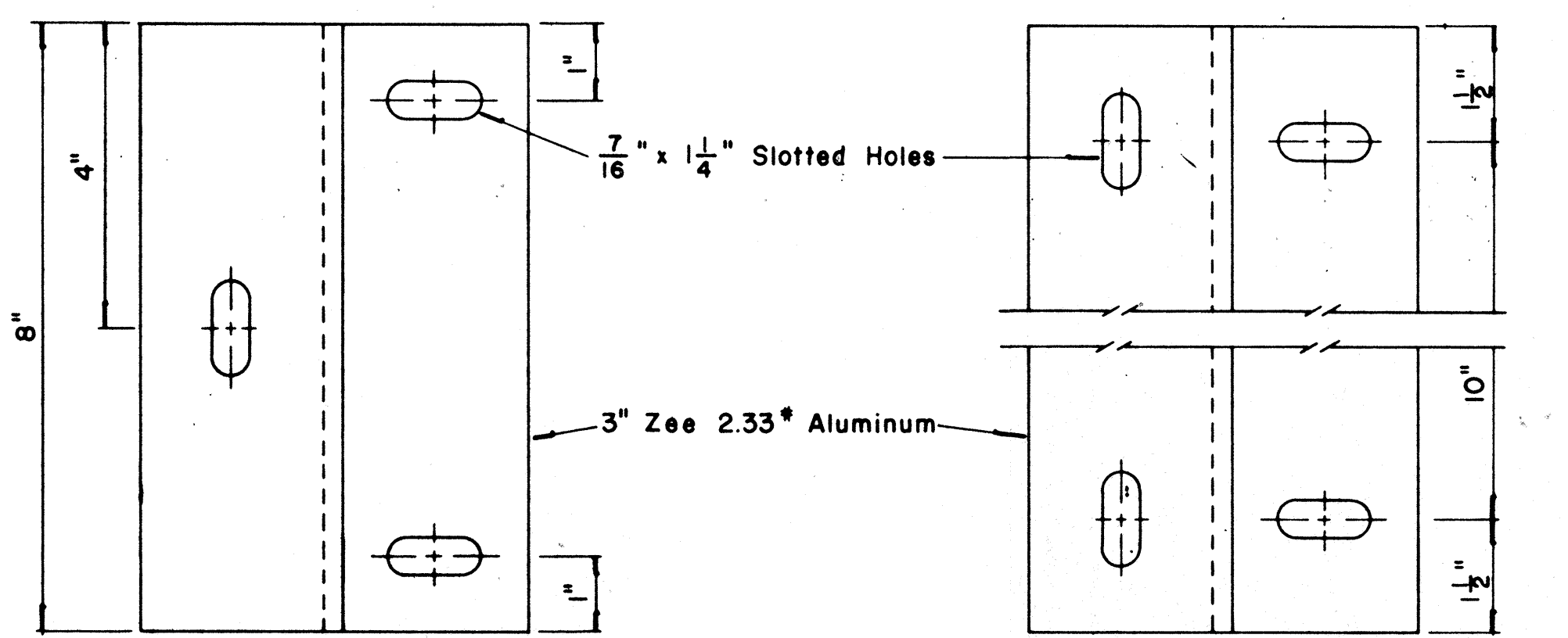
(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

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



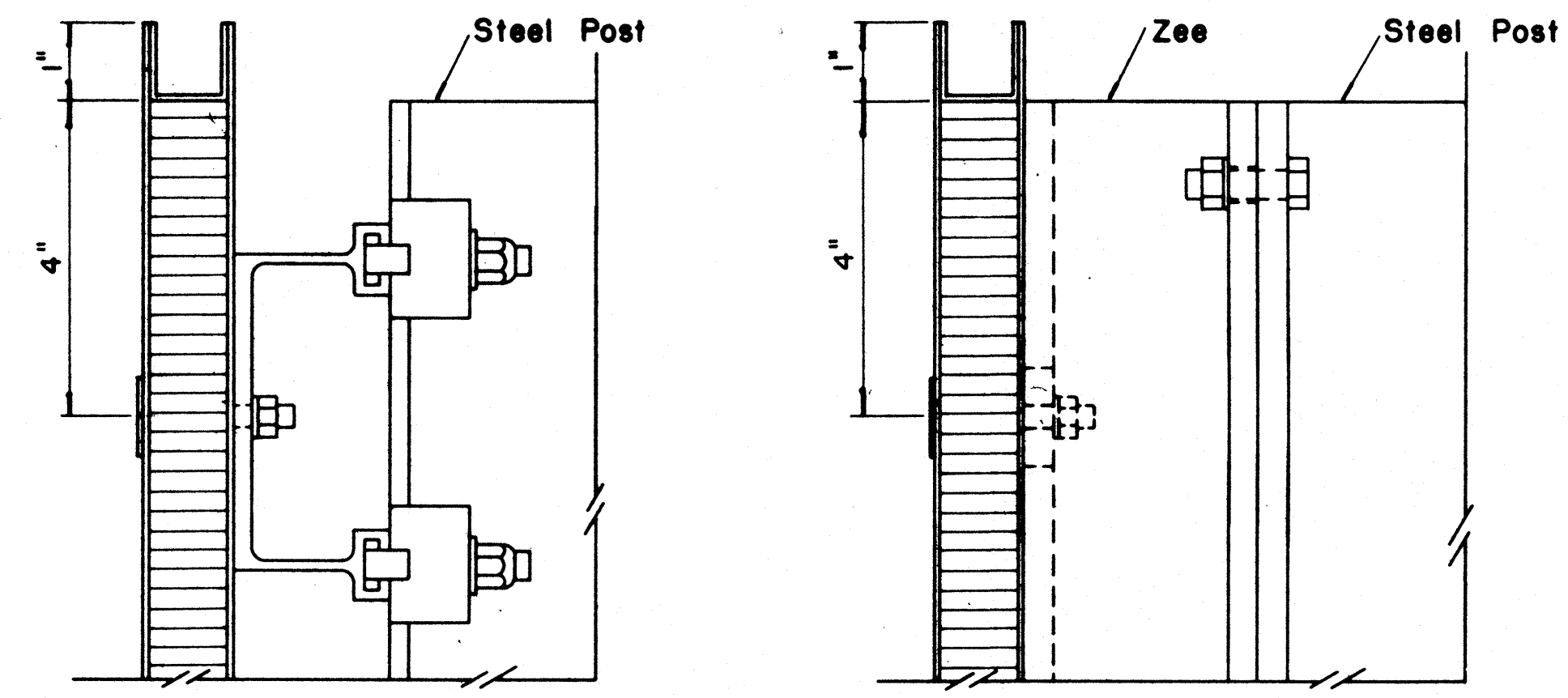
TYPICAL SIGN ASSEMBLY

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



ZEE MOUNTING DETAILS

Scale: 1/2" = 1"

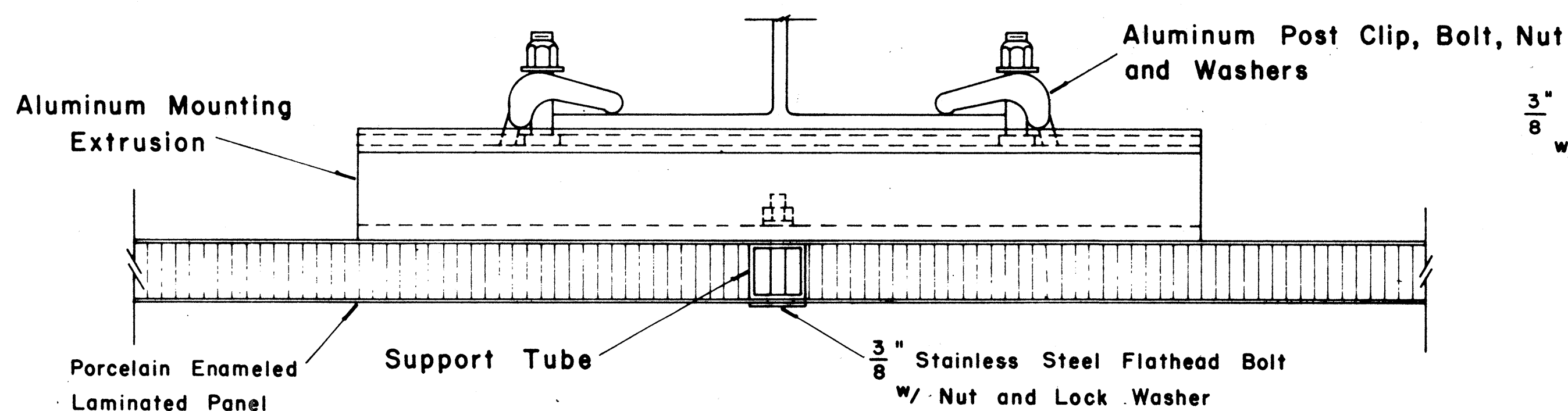


SECTION "B-B"

Scale: 1/2" = 1"

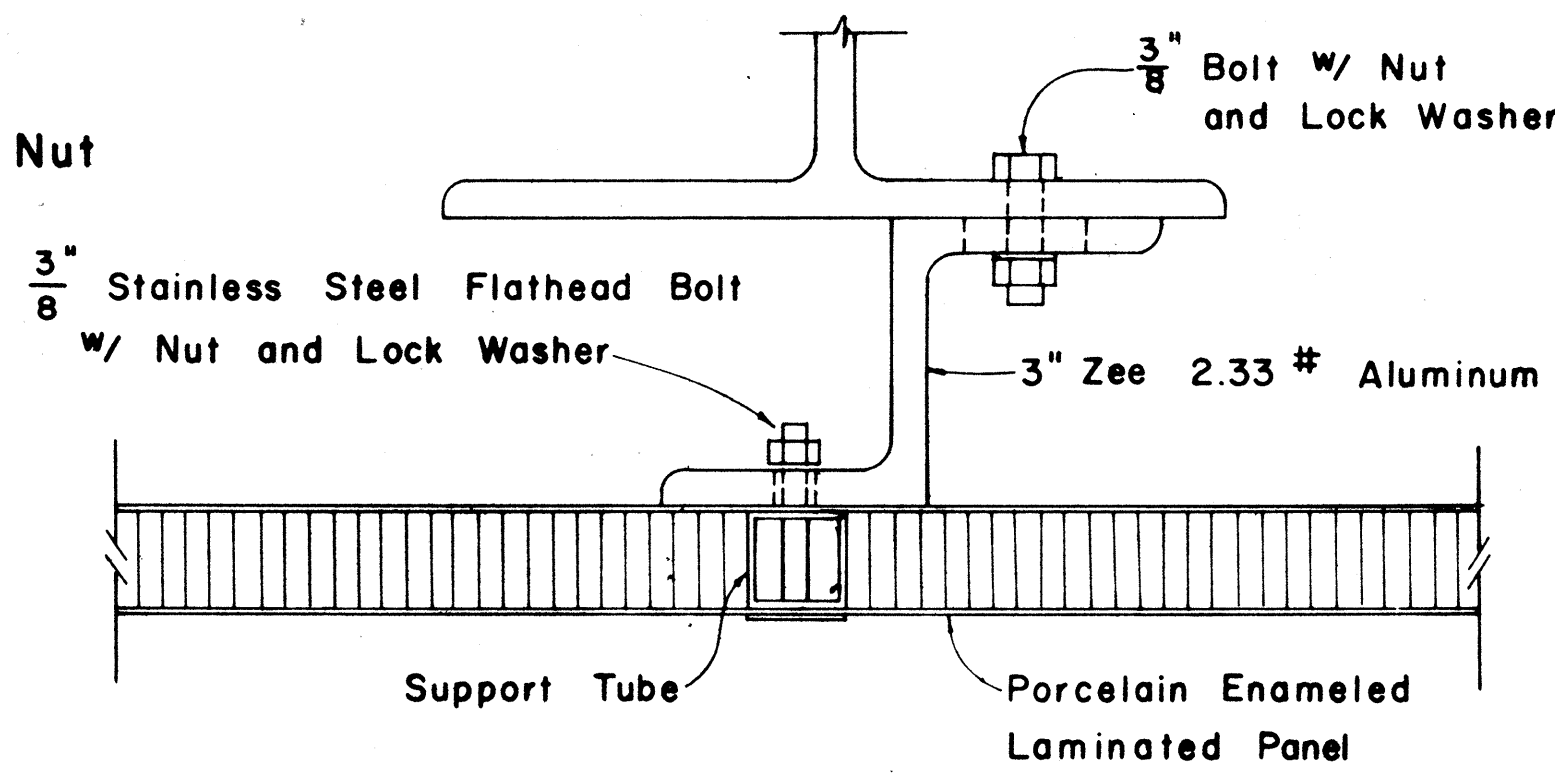
SECTION "B-B" (Alternate)

Scale: 1/2" = 1"



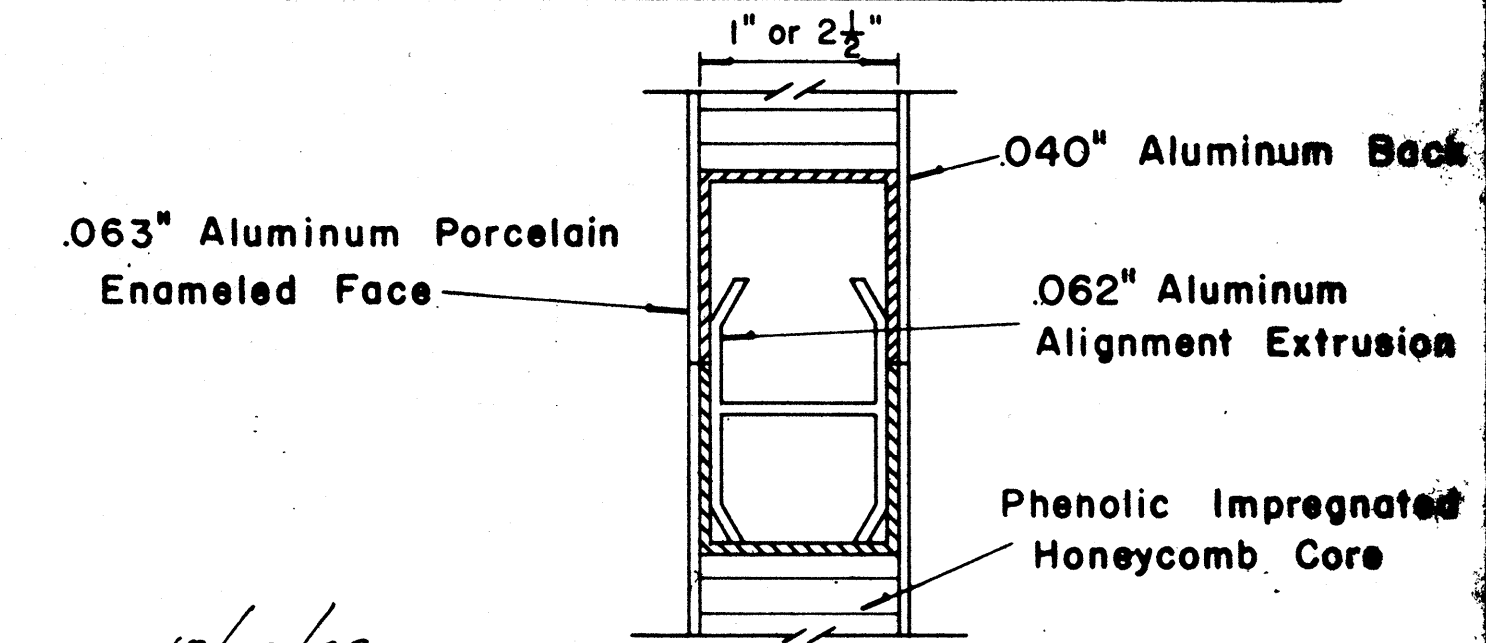
SECTION "A-A"

Scale: 1/2" = 1"



SECTION "A-A" (Alternate)

Scale: 1/2" = 1"



CLOSURE DETAIL SECTION "C-C" FULL SCALE

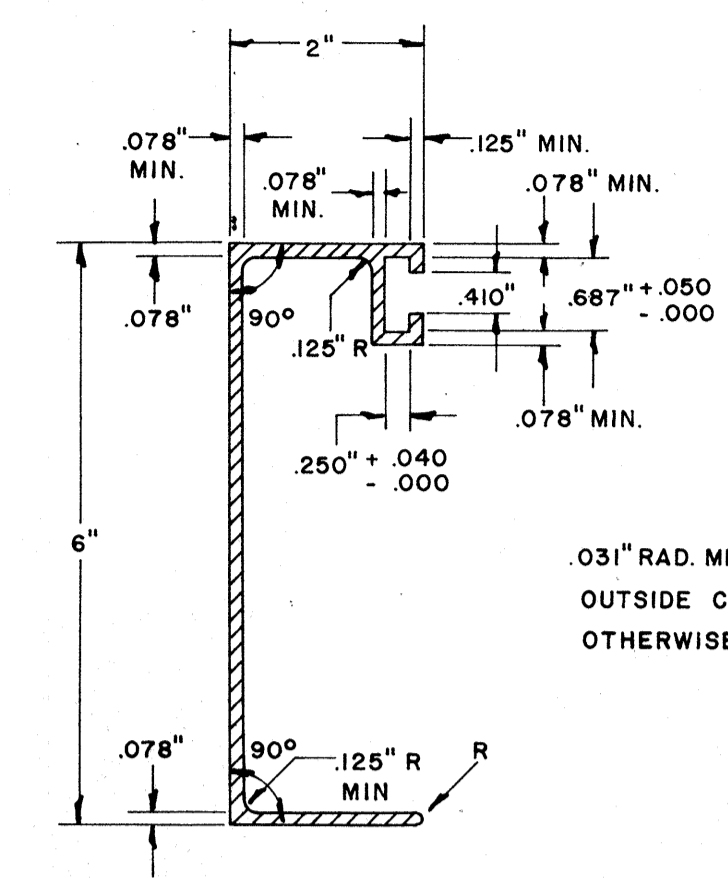
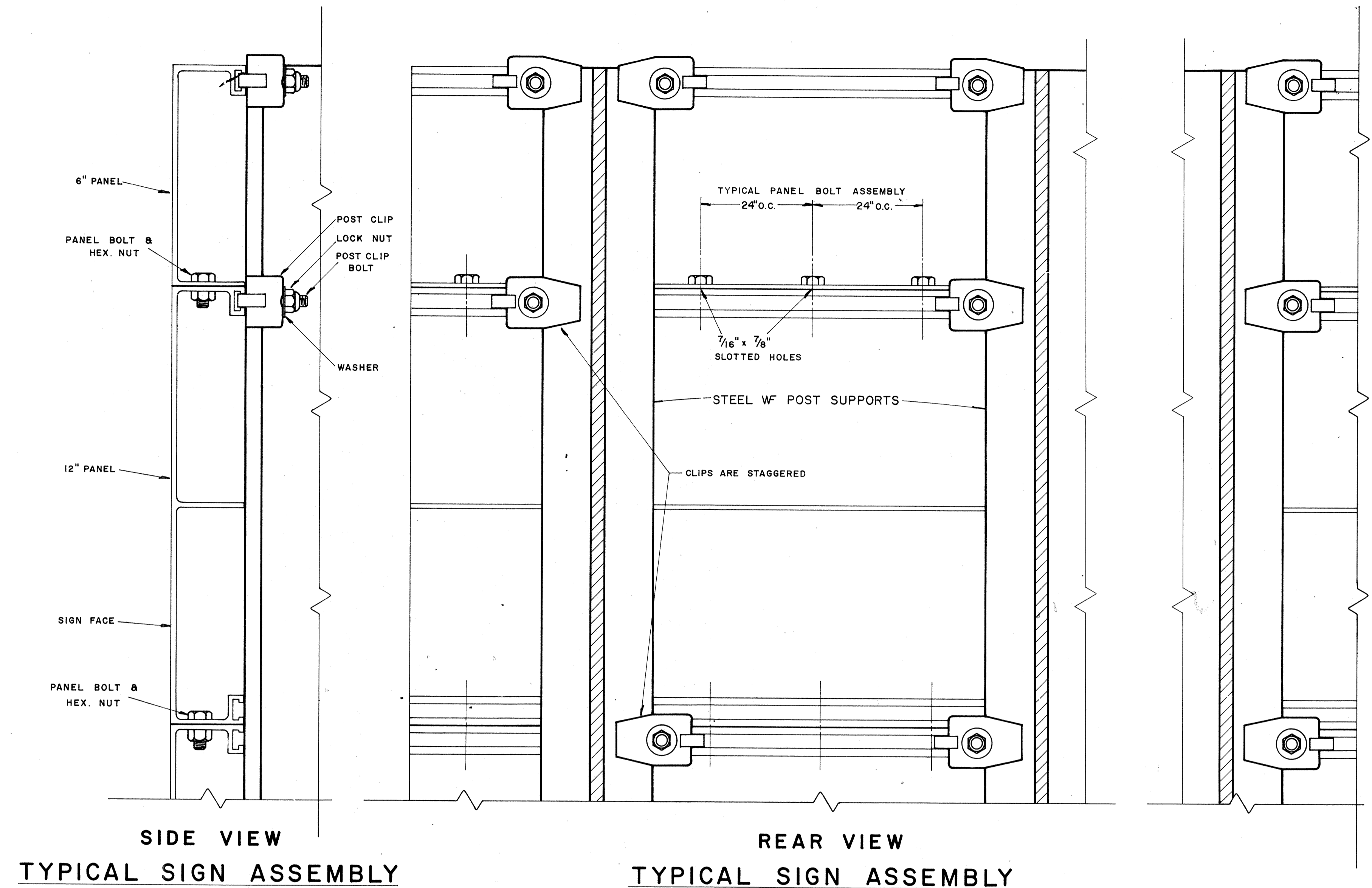
APPROVAL RECOMMENDED:
Eishi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

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

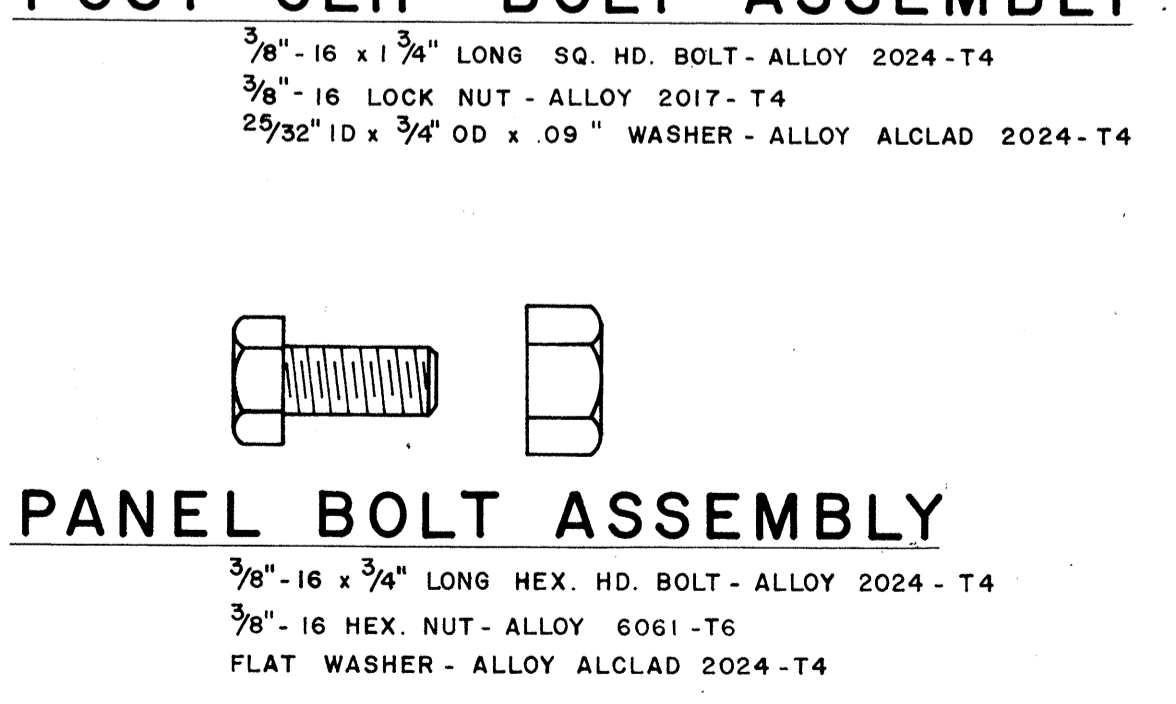
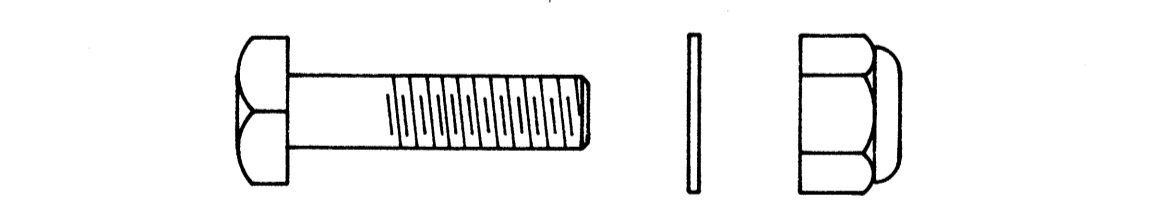
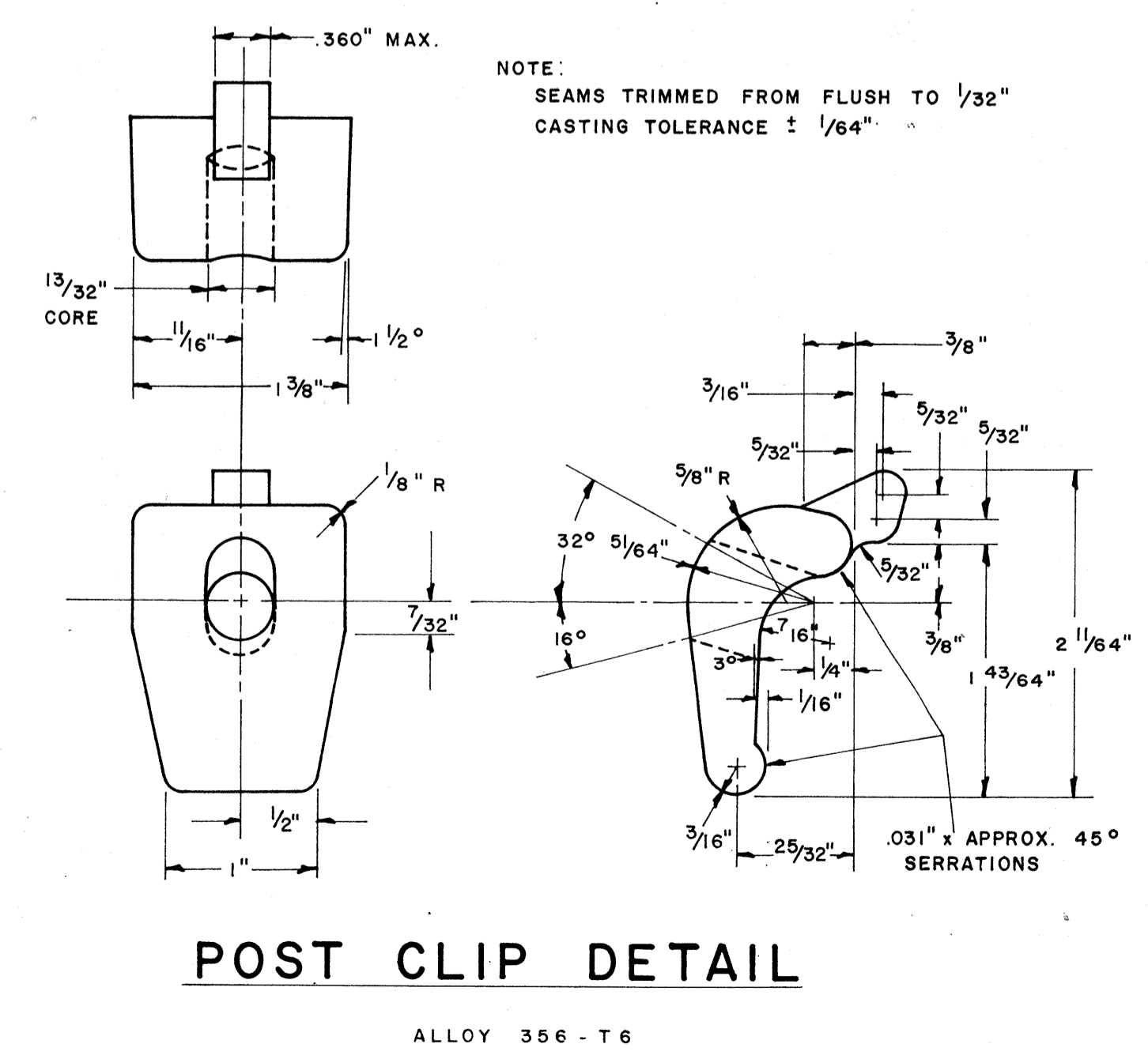
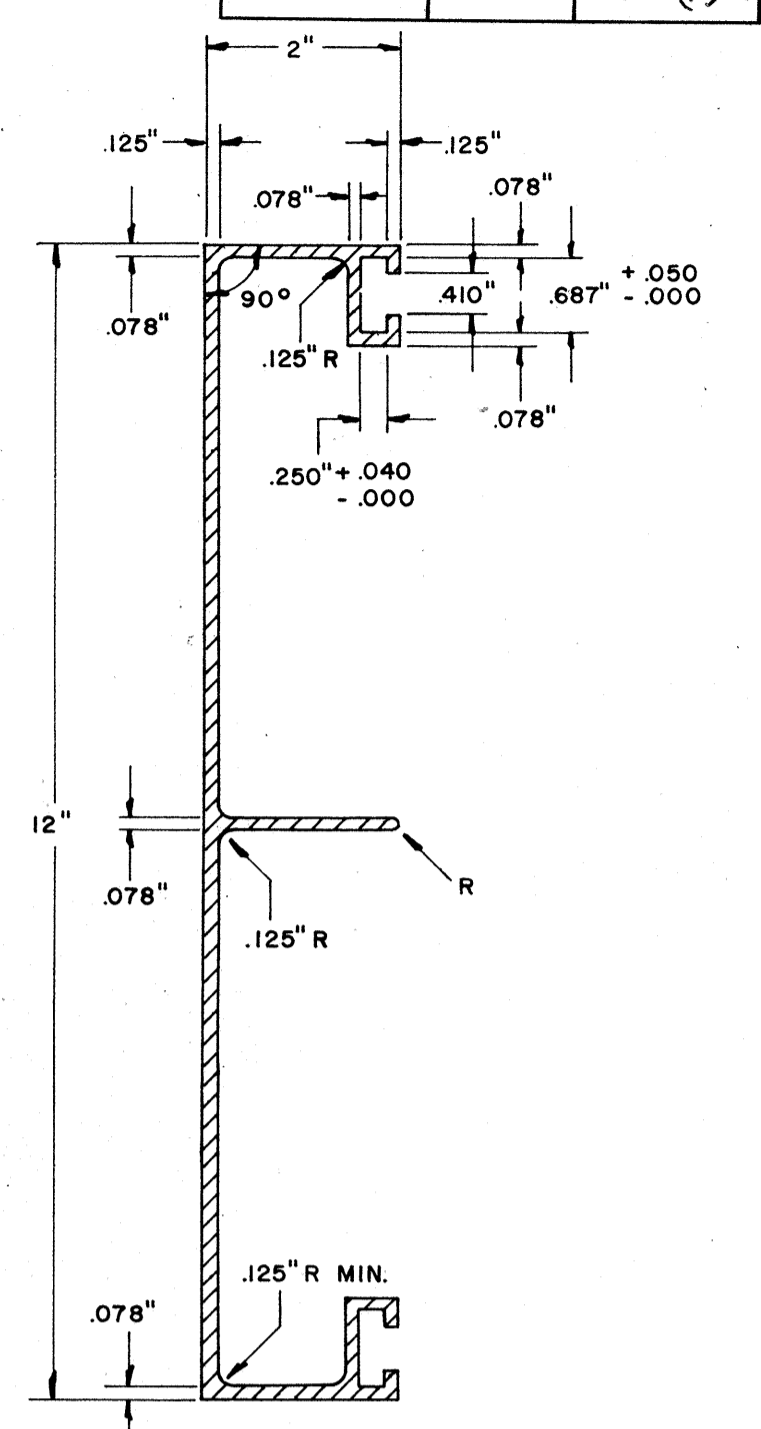
NO.	REVISION	APPROVED BY	DATE

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-11(70)17	1983	75	211



**SOLID EXTRUDED SIGN
PANEL DETAILS**



NOTE:
Extruded Aluminum Panels to be used for
Destination Signs with Reflective Sheeting Background

APPROVAL RECOMMENDED:
Eiichi Tanaka 12/29/82
TRAFFIC ENGINEER DATE

APPROVED:
[Signature] 12-30-82
ASSISTANT CHIEF, ENGINEERING DATE

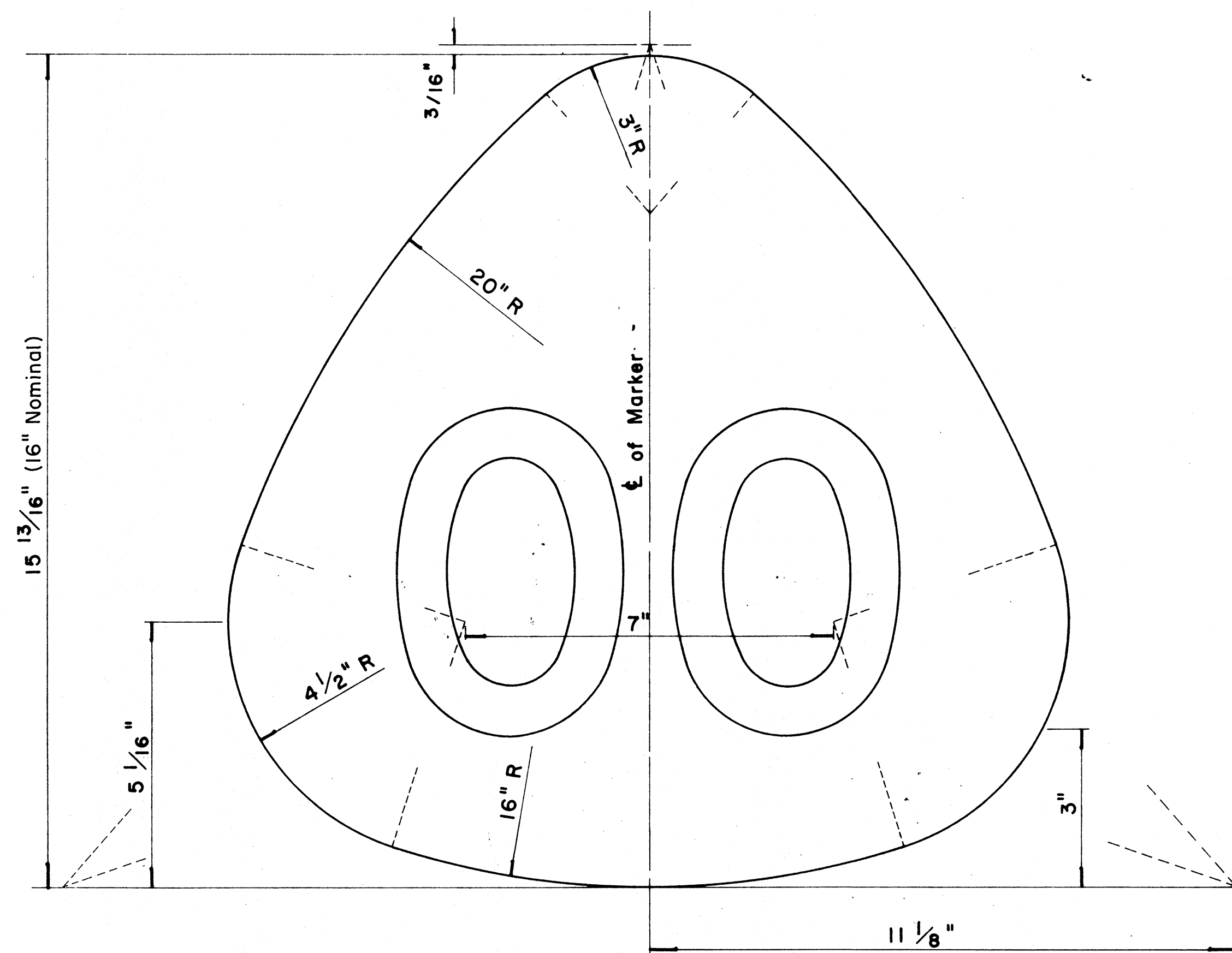
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
SOLID ALUMINUM
EXTRUDED SIGN PANEL
AND
ACCESSORY DETAILS
SCALE:

DATE: _____
SURVEY PLOTTED BY: _____
DESIGNED 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.	IR-11-170-17	1983	76	211

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



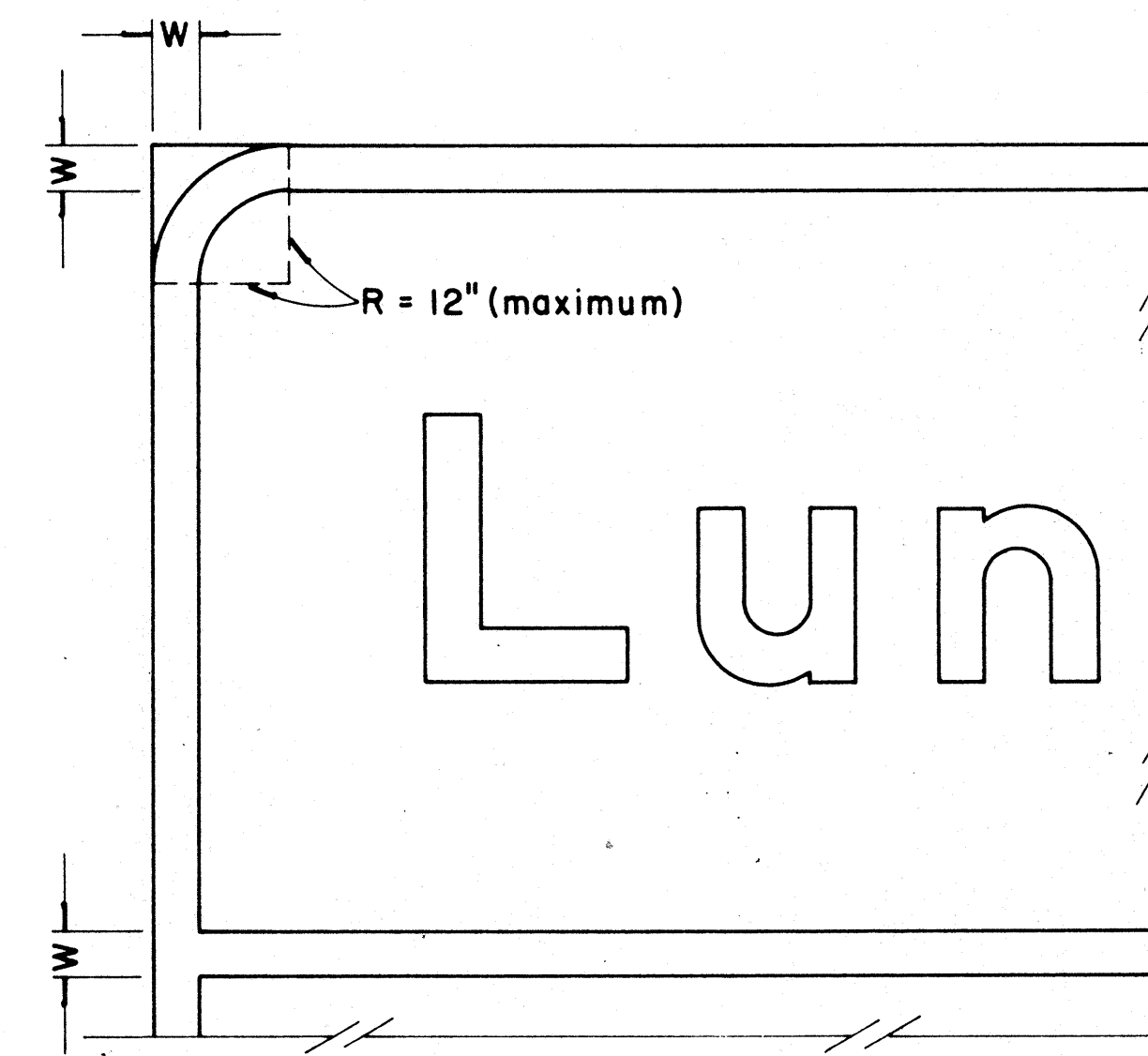
**STATE ROUTE MARKER
FOR GUIDE SIGNS**

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.

RADI 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:

Etsuki Tanaka 4/11/72
TRAFFIC ENGINEER DATE

APPROVED:

Shelby S. Sakai 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.	7-14-70

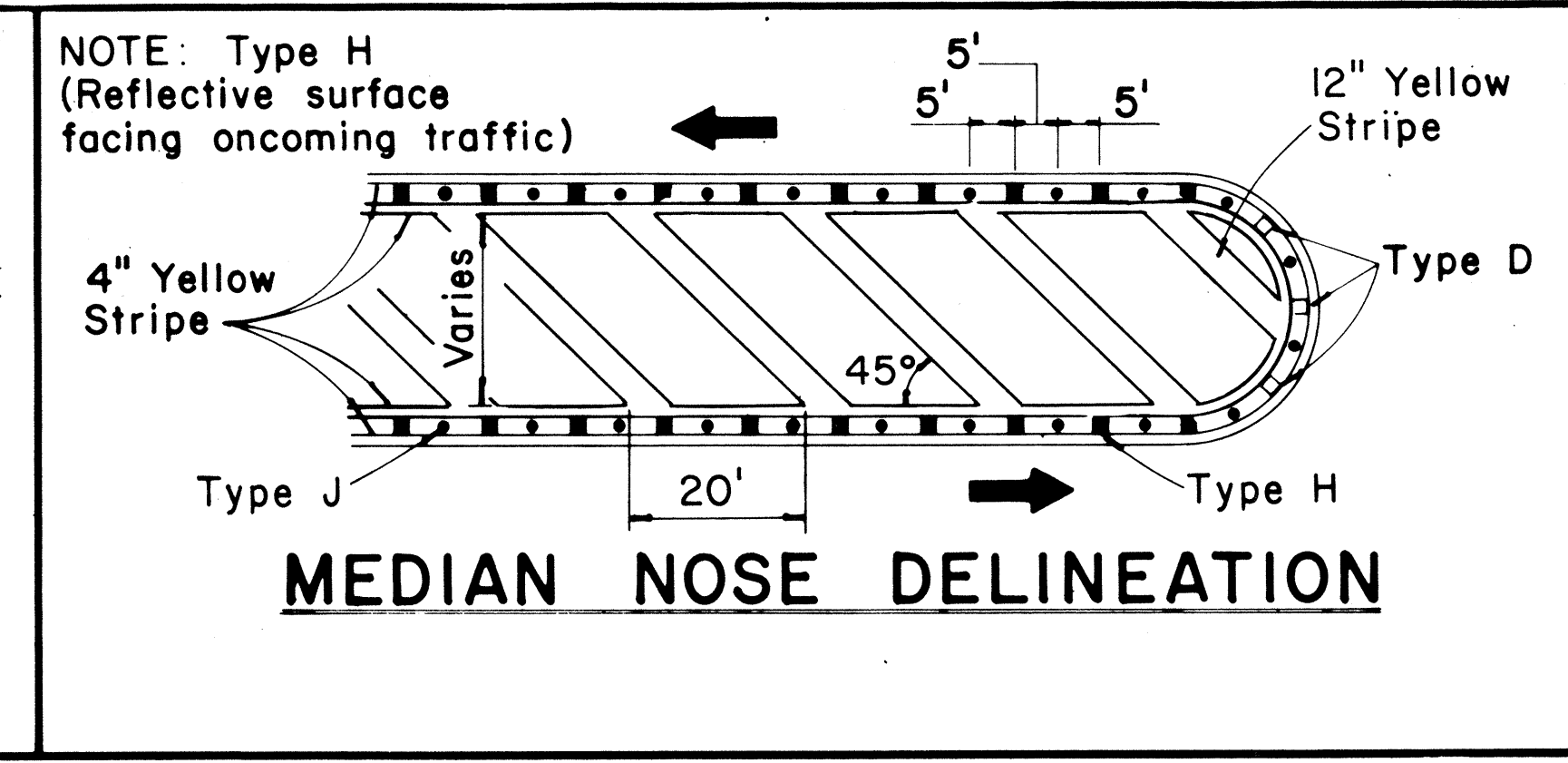
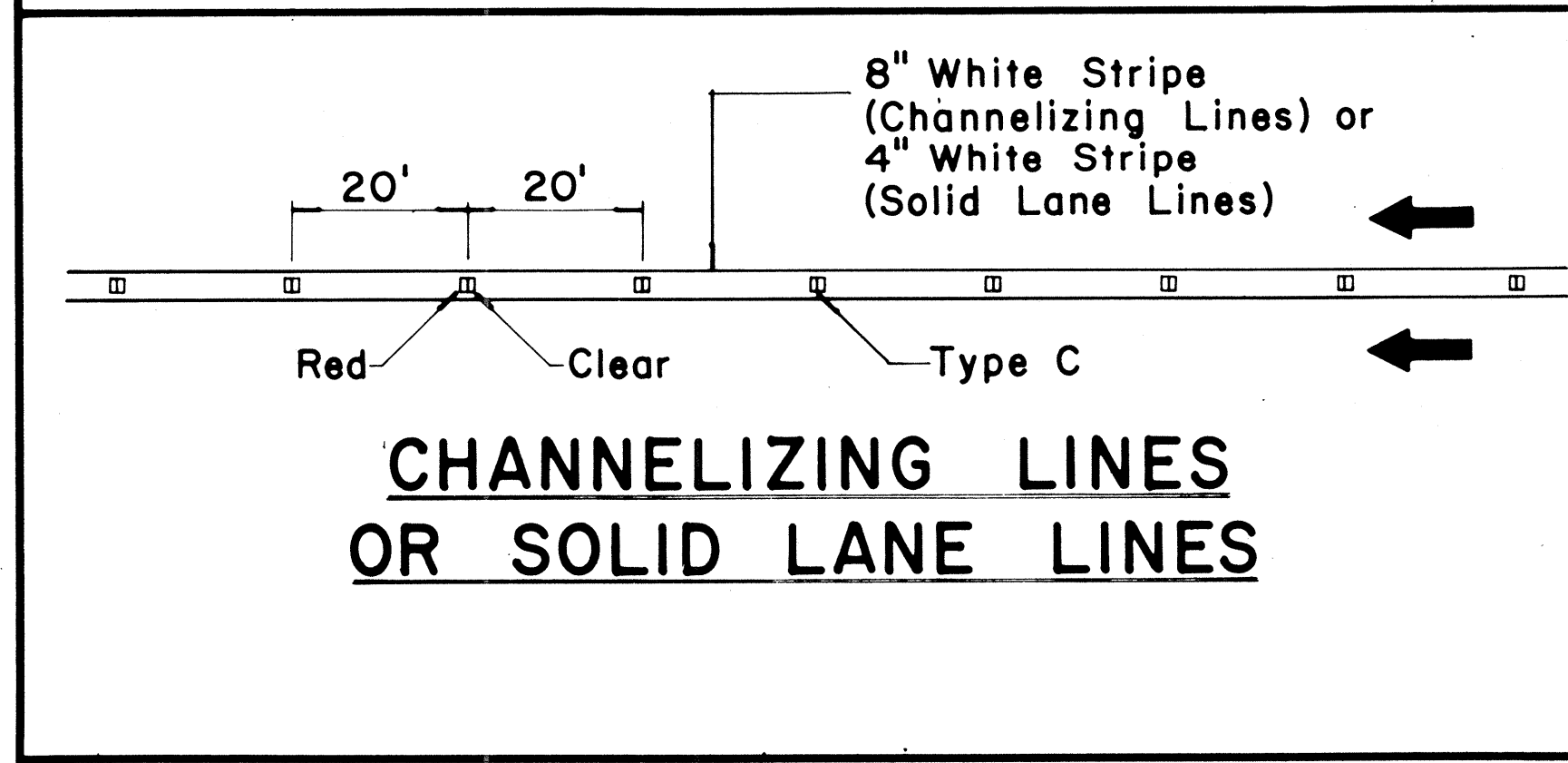
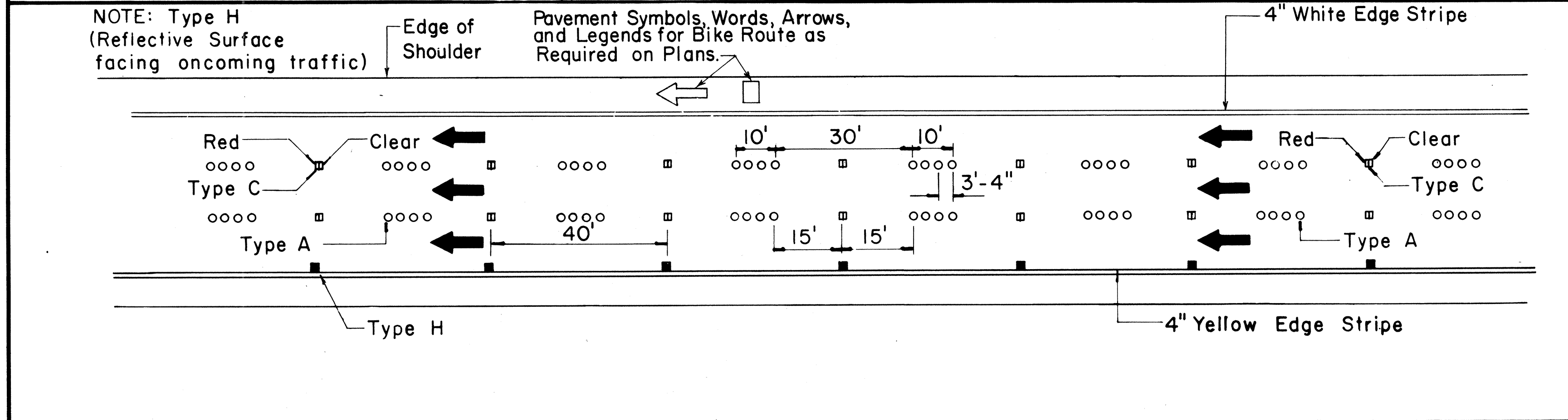
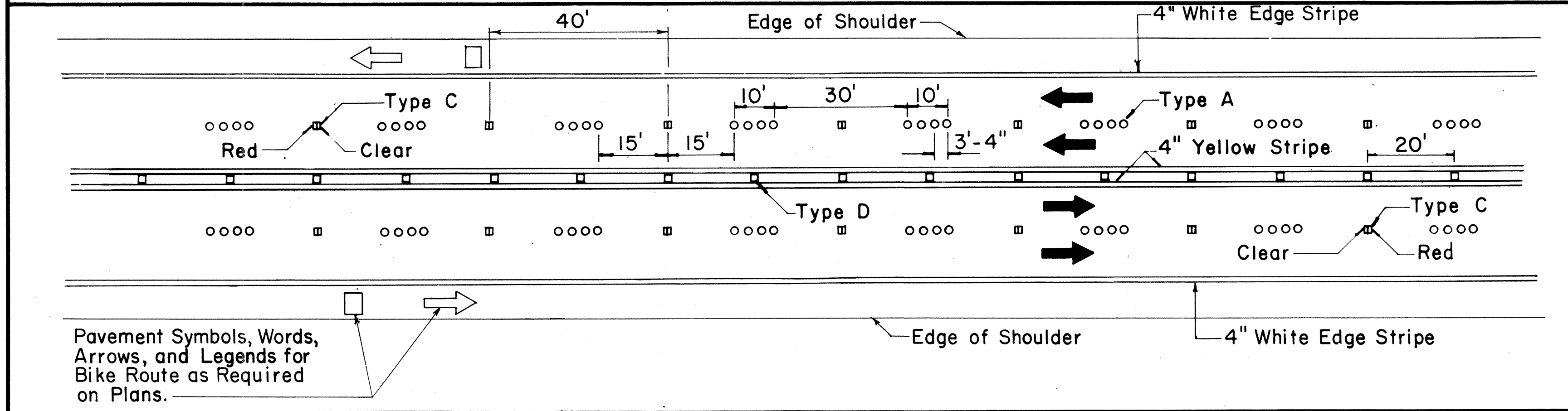
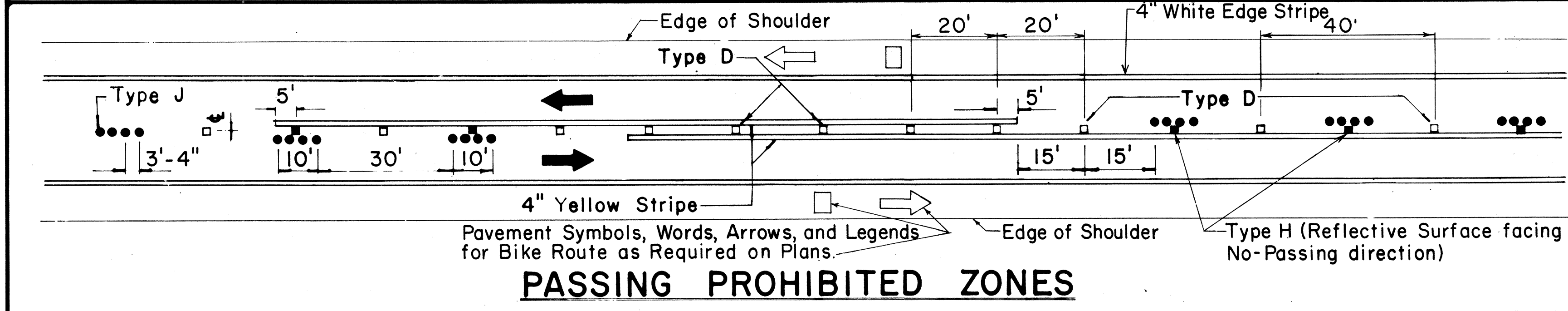
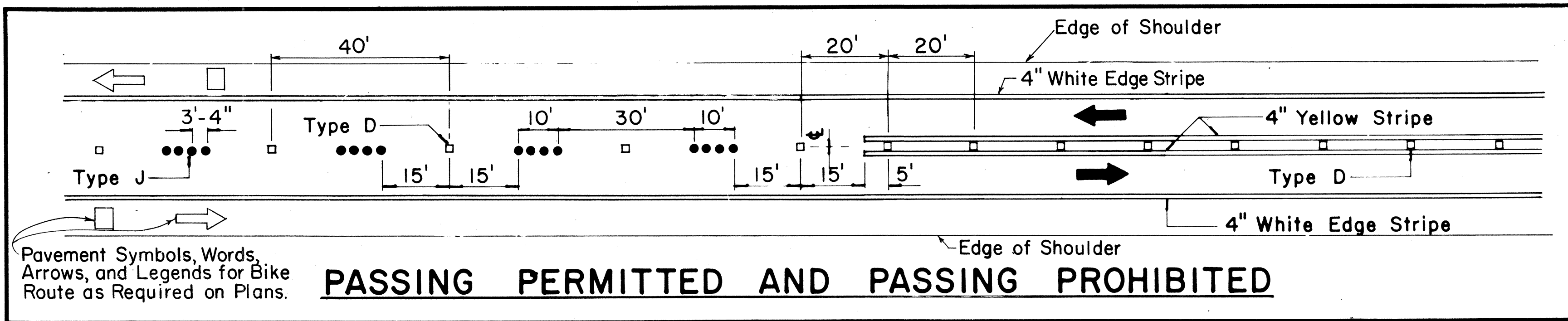
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
**STATE ROUTE MARKER
AND BORDER DETAIL
FOR GUIDE SIGNS**

Scale: As Shown

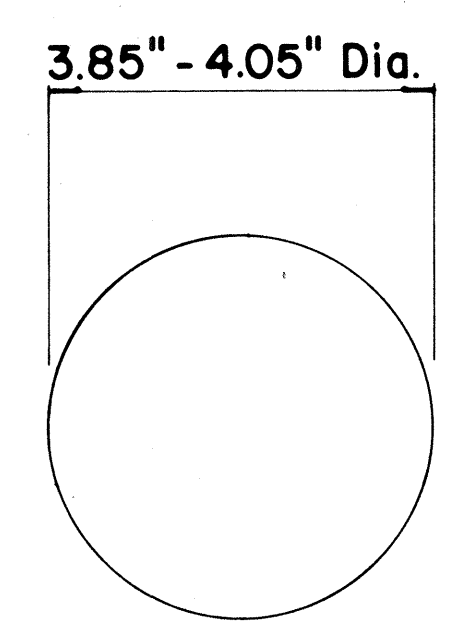
SHEET No. P-26 OF 33 SHEETS DT 209

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
PLANNED BY	
TRACED BY	
ORIGINAL PLAN	
NO.	

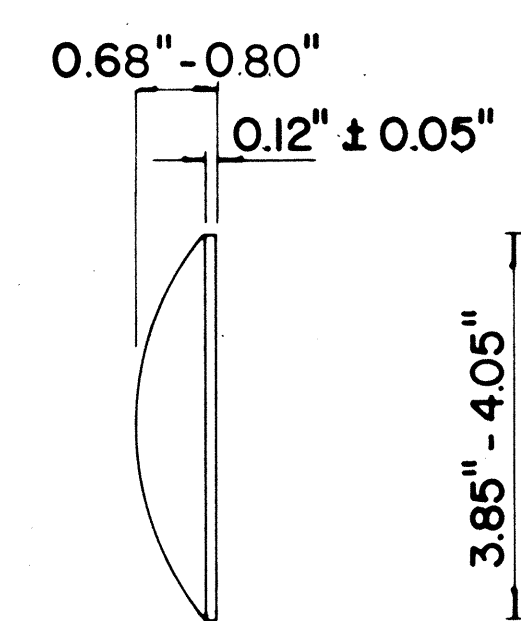
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FIR-HI(70)17	1983	77	211



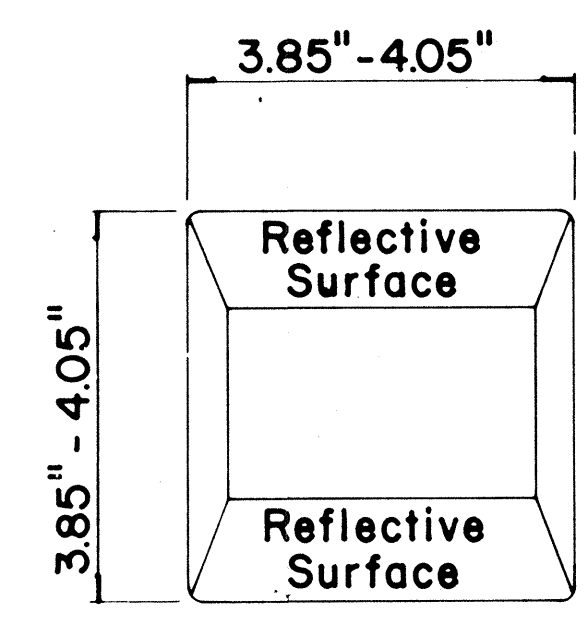
TWO - LANE
MULTI - LANE
DIVIDED HIGHWAY AND FREEWAY
MISCELLANEOUS



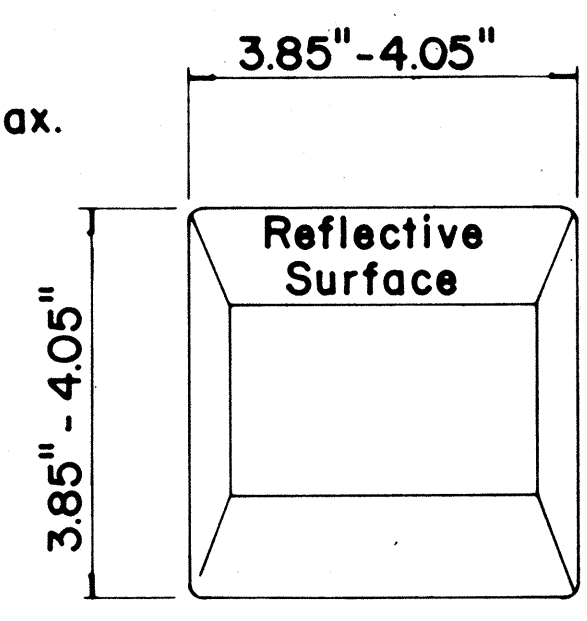
TYPE A
NON-REFLECTIVE WHITE MARKER
TYPE J
NON-REFLECTIVE YELLOW MARKER



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.
- Edge lines shall not be continued through intersections and shall not be broken for driveways unless otherwise shown or directed.

LEGEND

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

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

APPROVED:
Robert S. Zekich 7/24/78
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.F.	1/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.F.	10/15/79
3	Added General Note 3. Revised left edge stripe.	H.F.	9-28-83

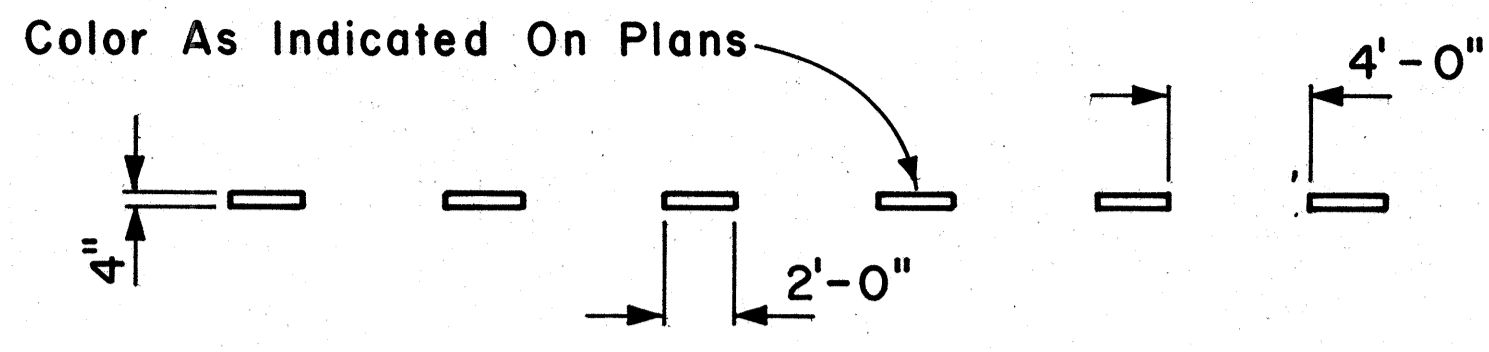
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
RAISED PAVEMENT MARKERS
AND STRIPING

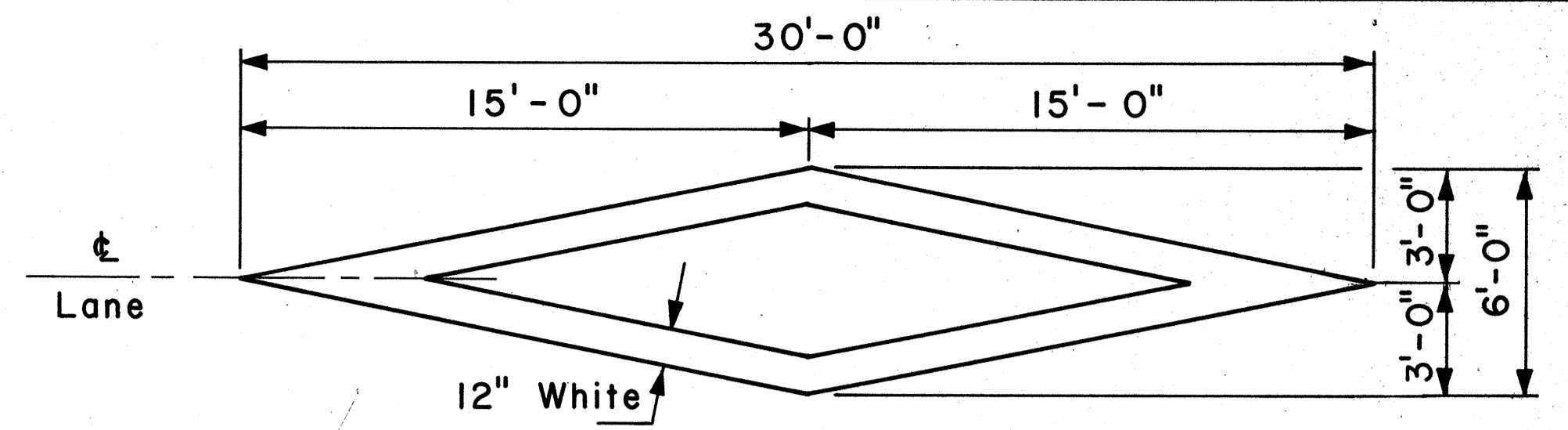
Not to Scale July 1978
SHEET No.P-27 OF 33 SHEETS DT 300

DATE
SURVEY PLOTTED BY
DESIGNED BY
NOTE BOOK
QUANTITIES BY
CHECKED BY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-IRH-170-17	1983	78	211



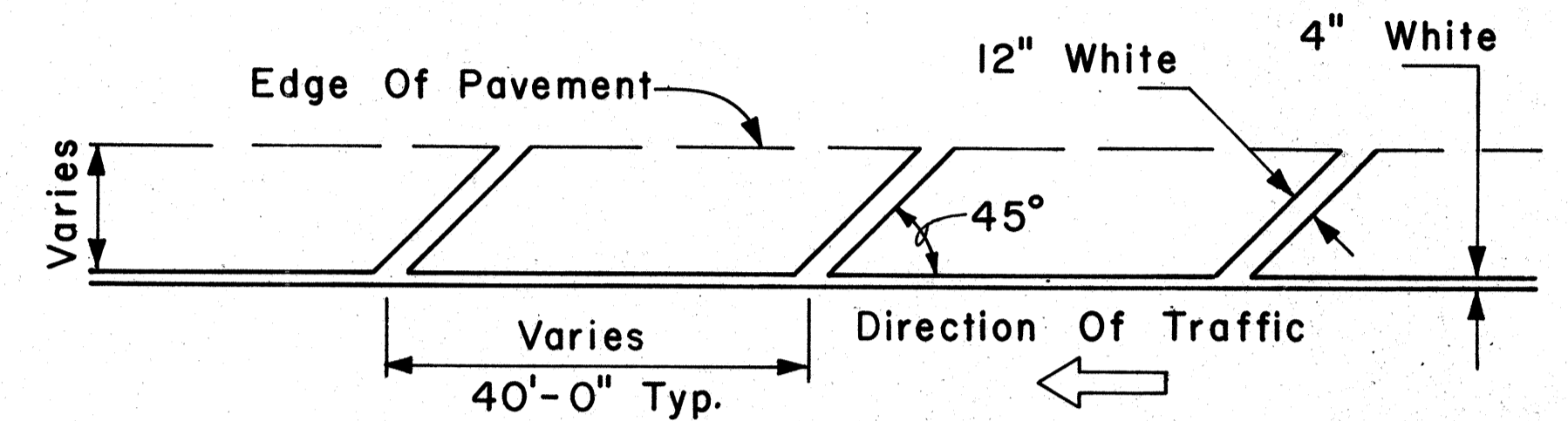
4" GUIDE LINE



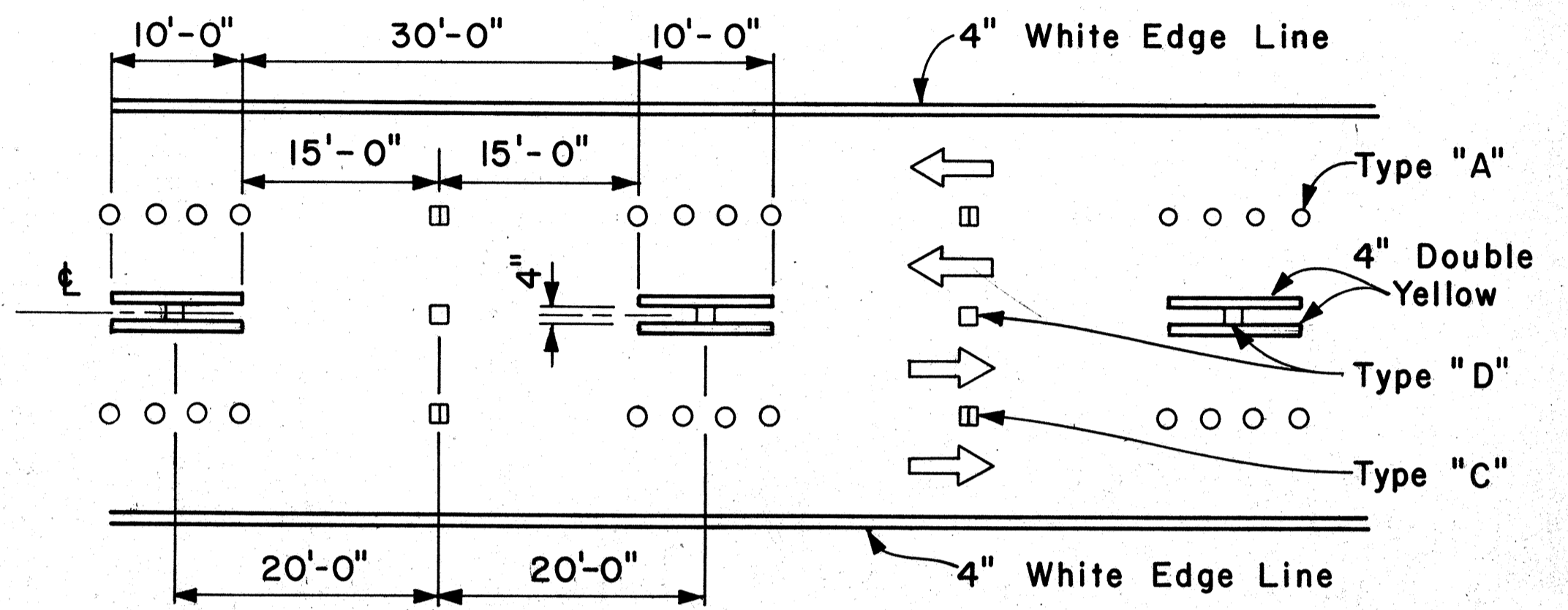
PAVEMENT DIAMOND

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.

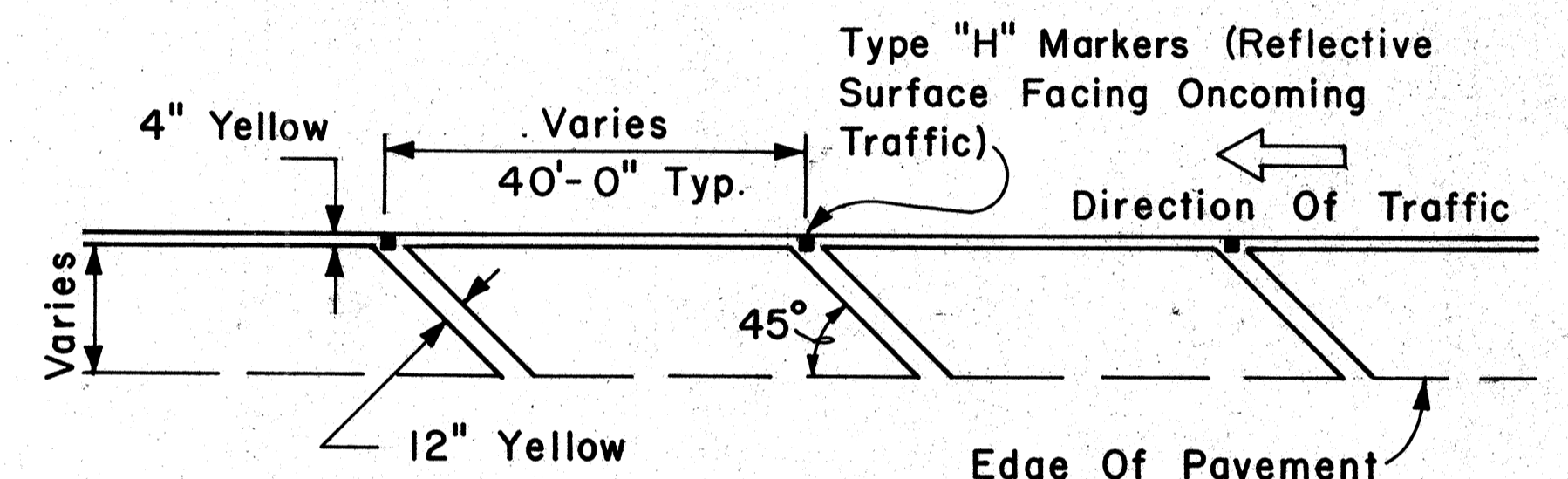


TRANSVERSE RIGHT SHOULDER MARKING

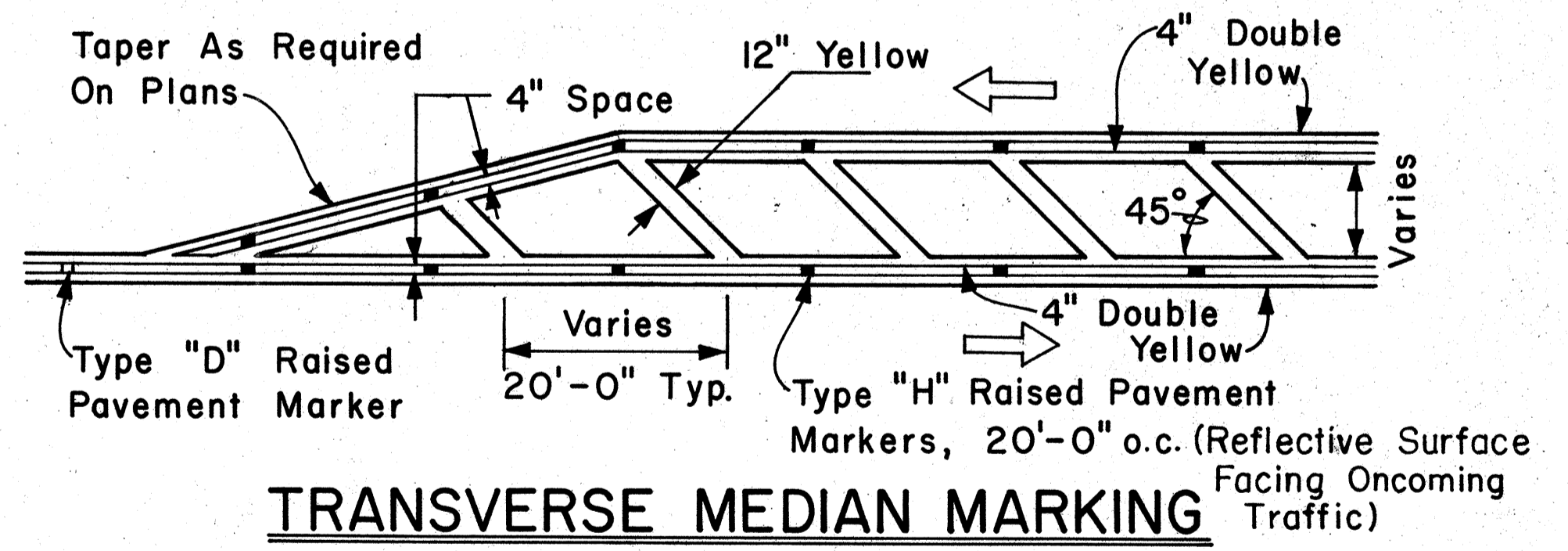


MULTI-LANE REVERSIBLE LANES

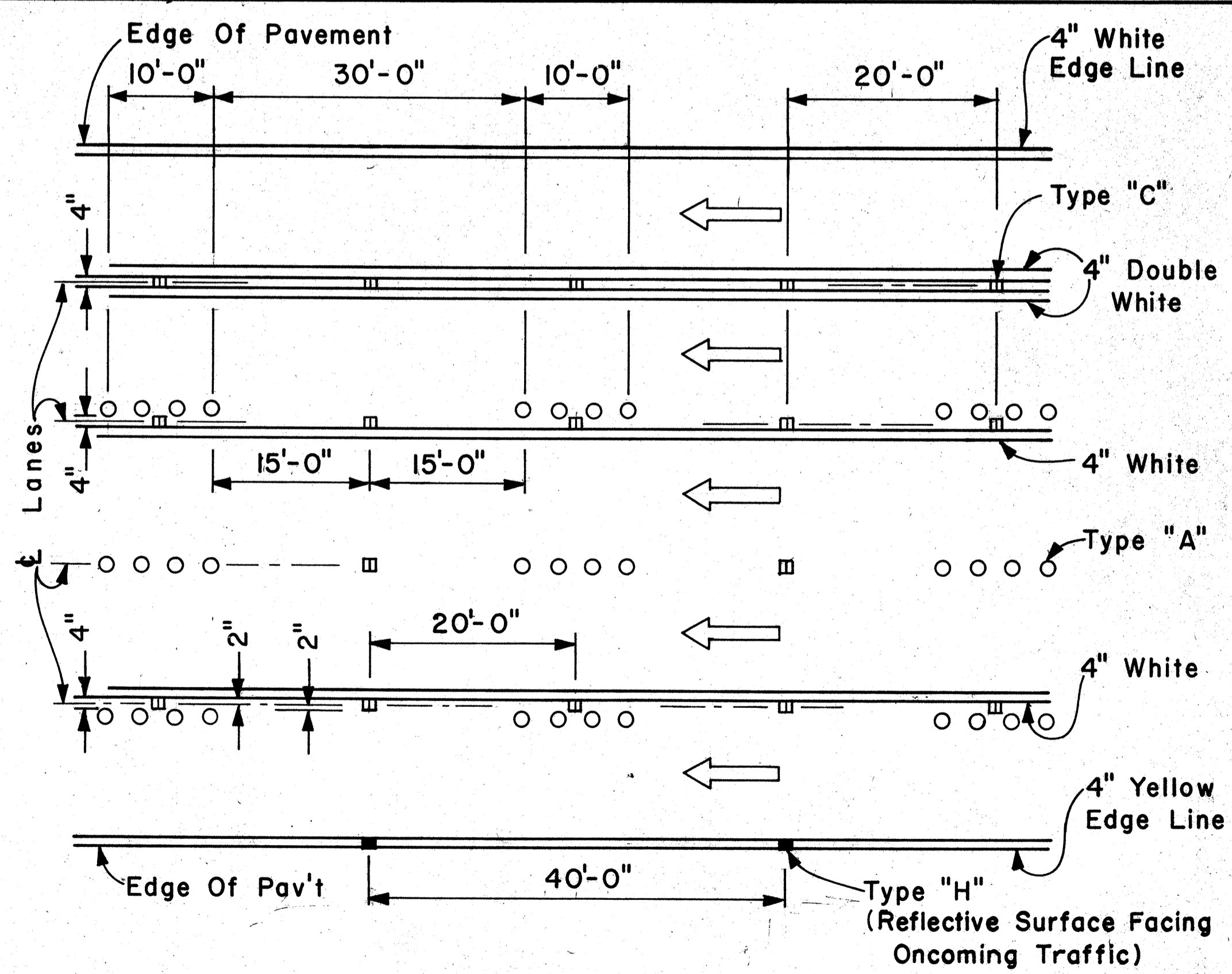
NOTE: Traffic Cone Usage Required.



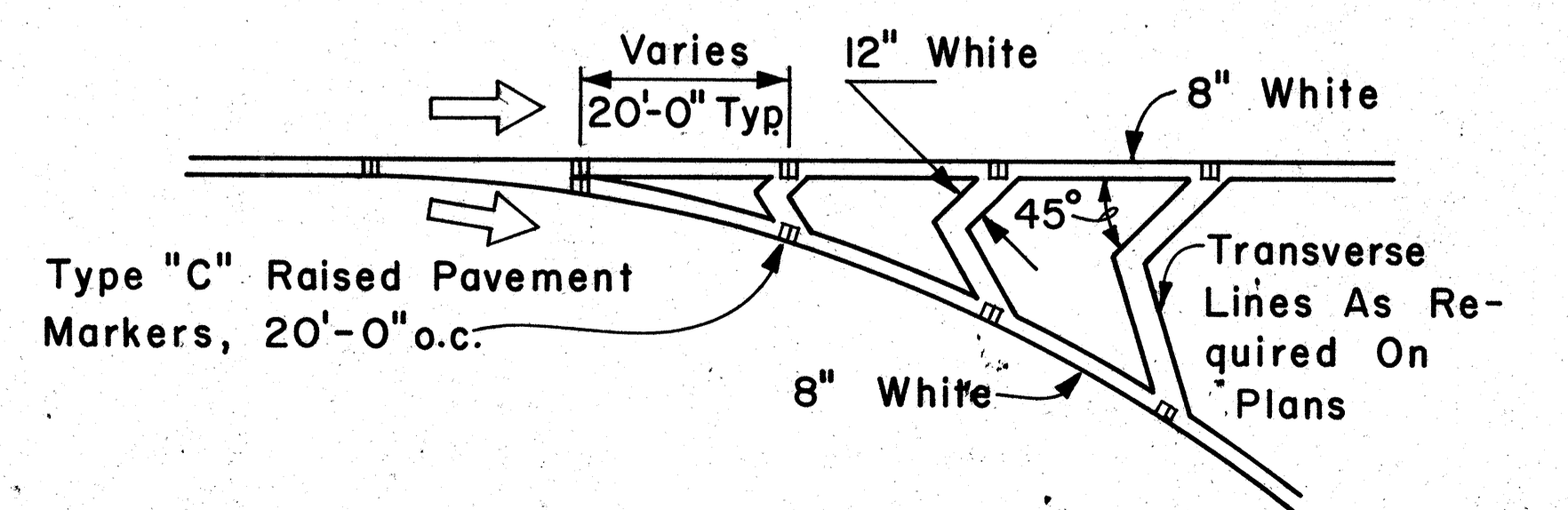
TRANSVERSE LEFT SHOULDER MARKING



TRANSVERSE MEDIAN MARKING



MULTI-LANE LANE CHANGE RESTRICTION ZONES



CHANNELIZING ISLAND

APPROVAL RECOMMENDED:
E. Ishi Tanaka 5/2/78
 TRAFFIC ENGINEER DATE

APPROVED:
Harbour S. Zabeichu 5/3/78
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
 MISCELLANEOUS
 PAVEMENT MARKINGS

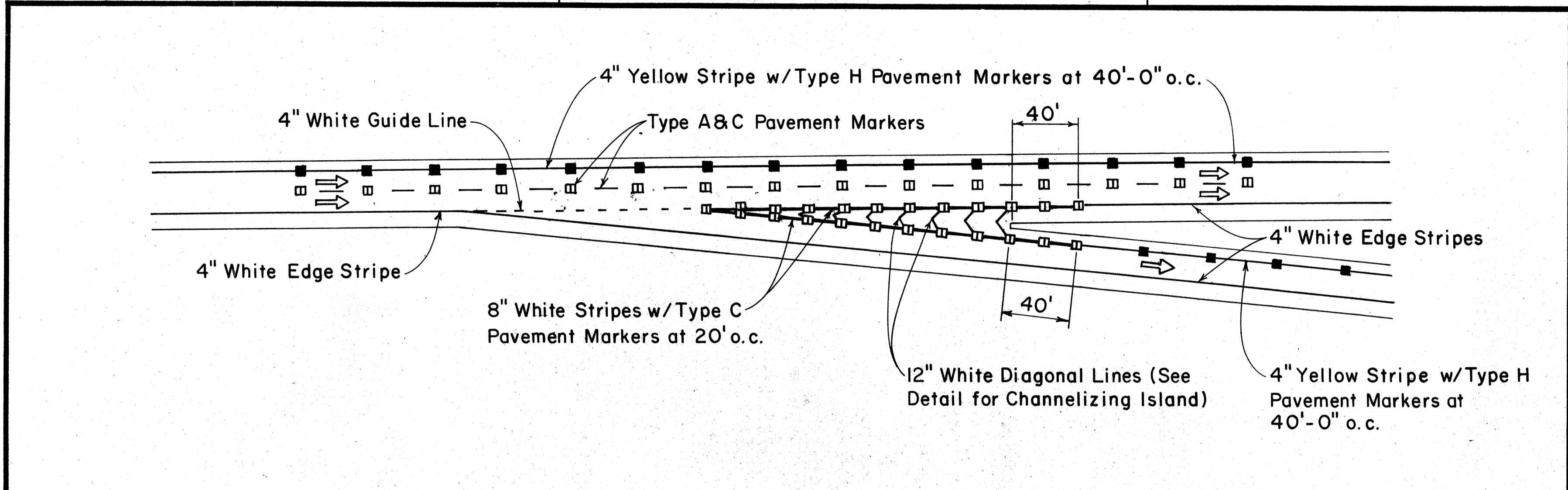
Scale: Not to Scale Date: April, 1978
 SHEET No.P-28 OF 33 SHEETS DT 302

ORIGINAL PLAN NO. _____
 SURVEY PLOTTED BY _____ DATE _____
 TRACED BY _____
 DESIGNED BY _____
 QUANTITIES BY _____
 CHECKED BY _____

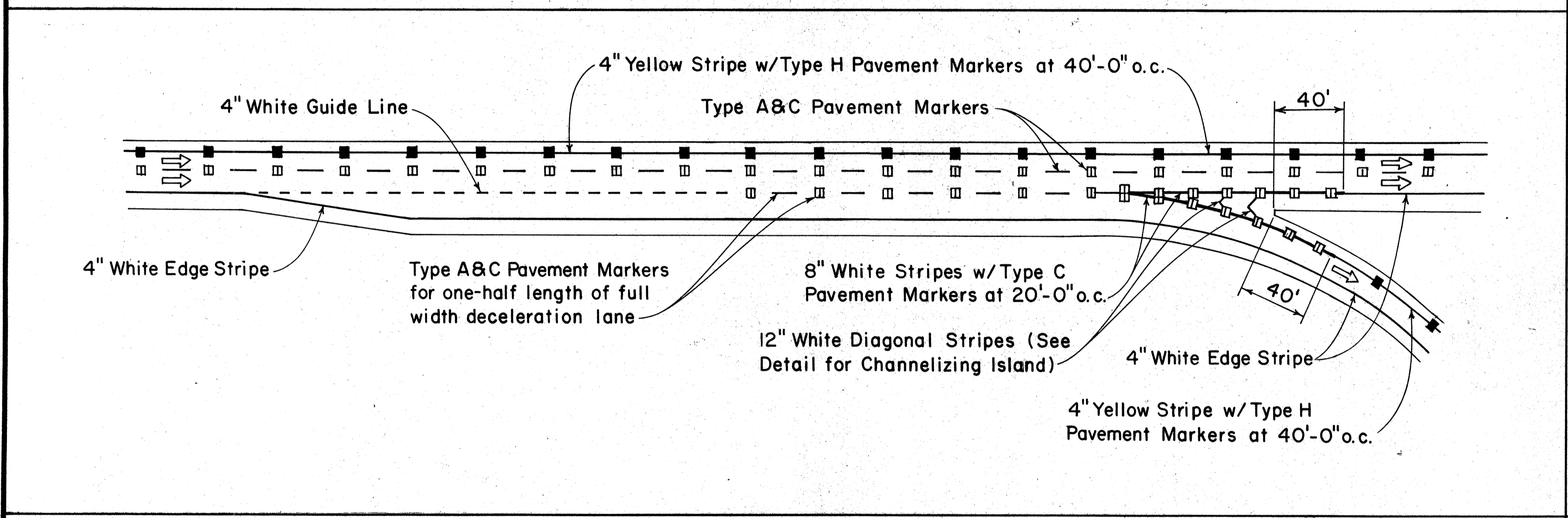
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FIR-H(170)	1983	79	211

GENERAL NOTES:

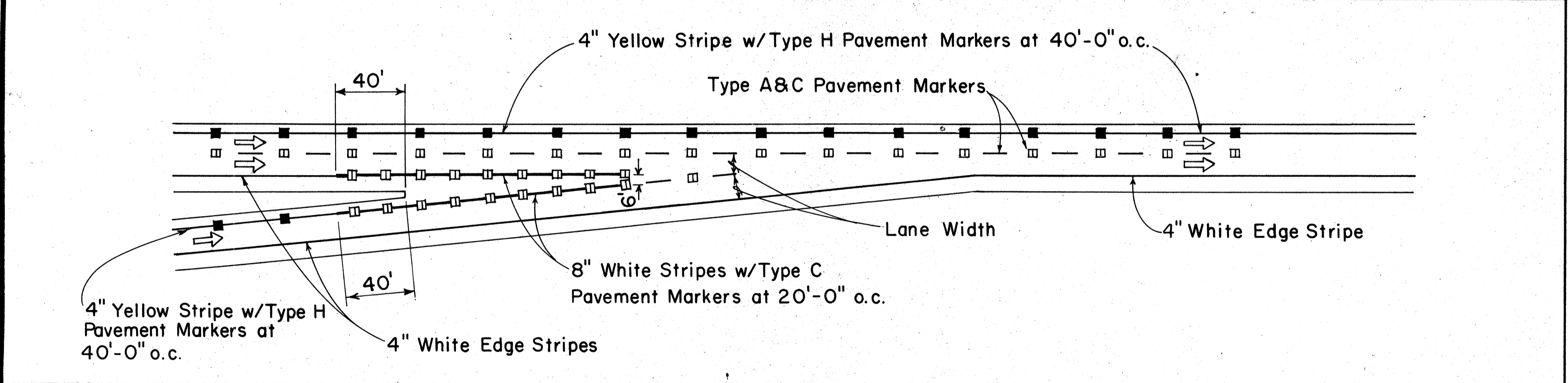
1. Pavement Markings and Striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," by the FHWA, and as amended.
2. Layout of Pavement Markings and Striping shall be done by the Contractor. The Contractor shall check layout of markings and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



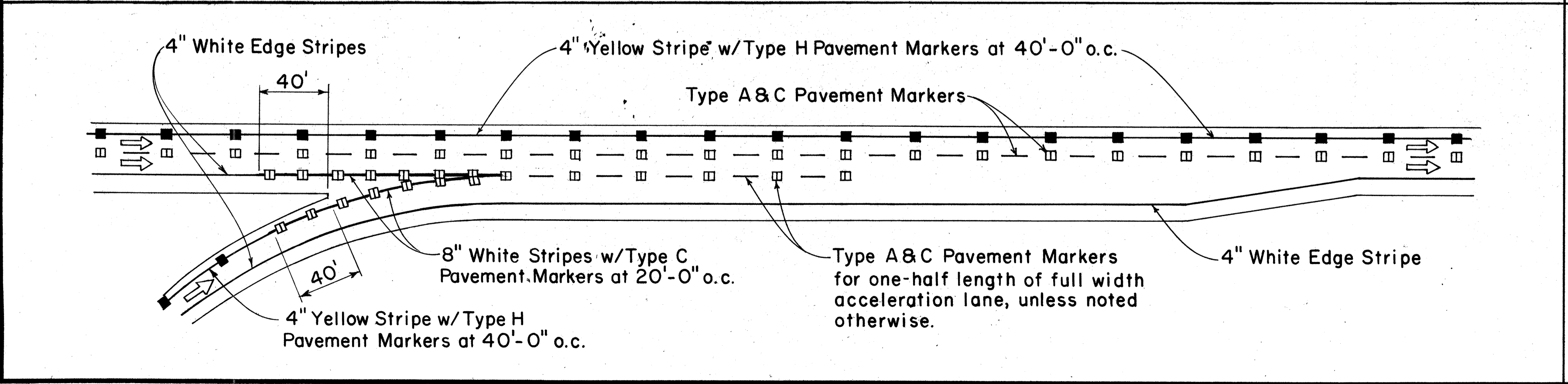
TAPERED DECELERATION LANE
TYPICAL ROADWAY EXIT MARKINGS



PARALLEL DECELERATION LANE
TYPICAL ROADWAY EXIT MARKINGS



TAPERED ACCELERATION LANE
TYPICAL ROADWAY ENTRANCE MARKINGS



PARALLEL ACCELERATION LANE
TYPICAL ROADWAY ENTRANCE MARKINGS

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

APPROVED:
Robert S. Zaleski 7/24/78
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

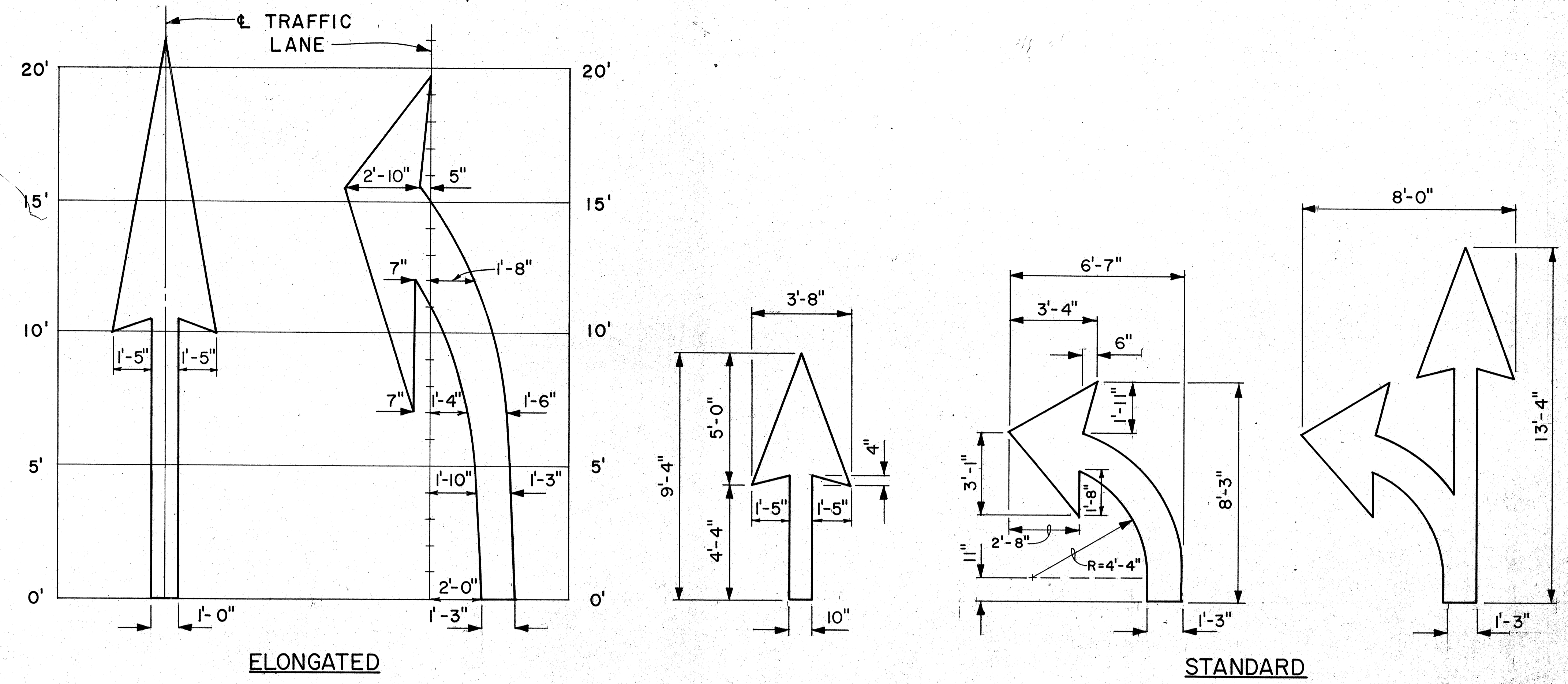
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
MISCELLANEOUS
PAVEMENT MARKINGS

Not to Scale July 1978
SHEET No. P-29 OF 33 SHEETS DT 304

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F1R11-1(70)	1983	80	211

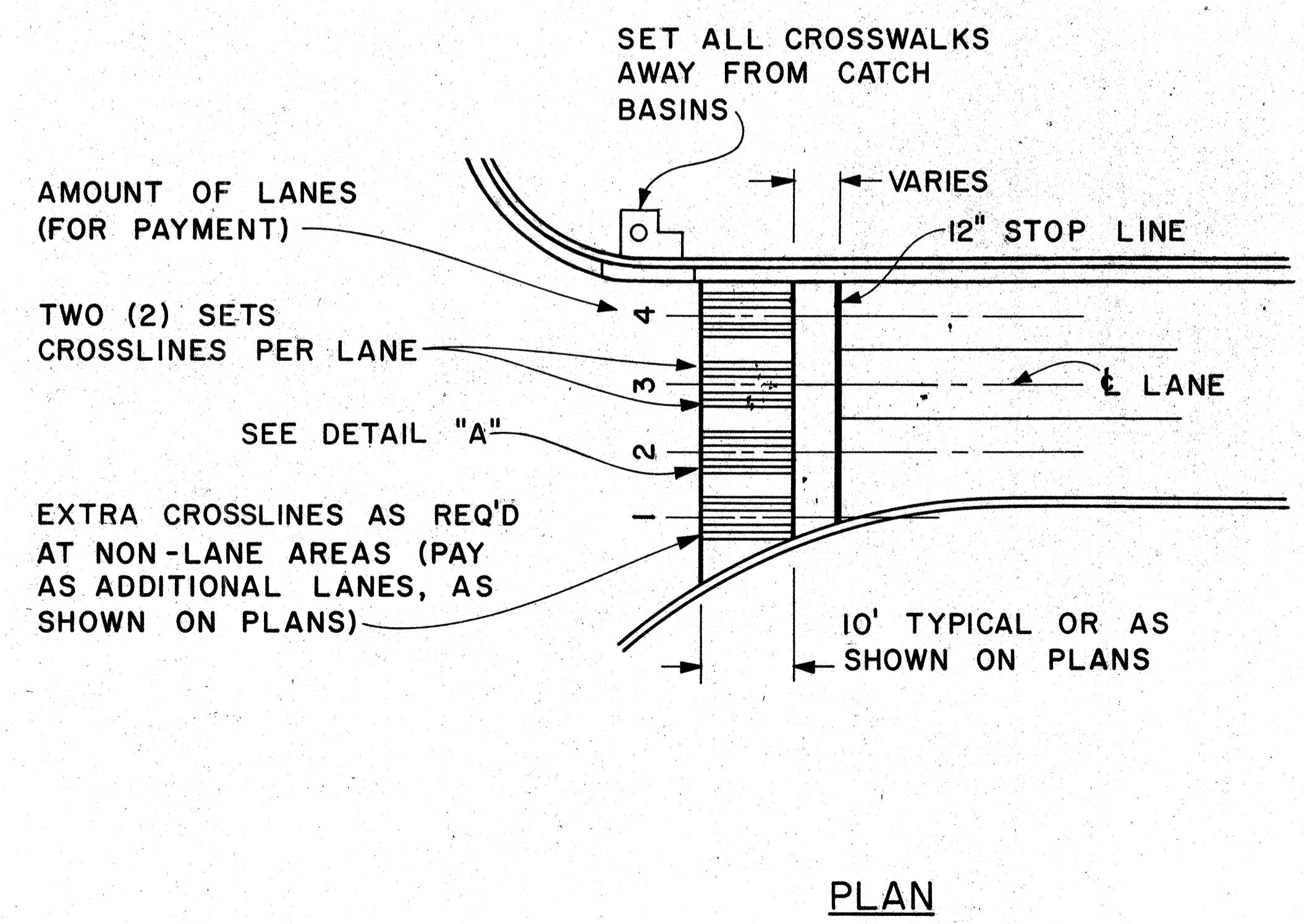


PAVEMENT ARROWS
Scale: 3/8" = 1'

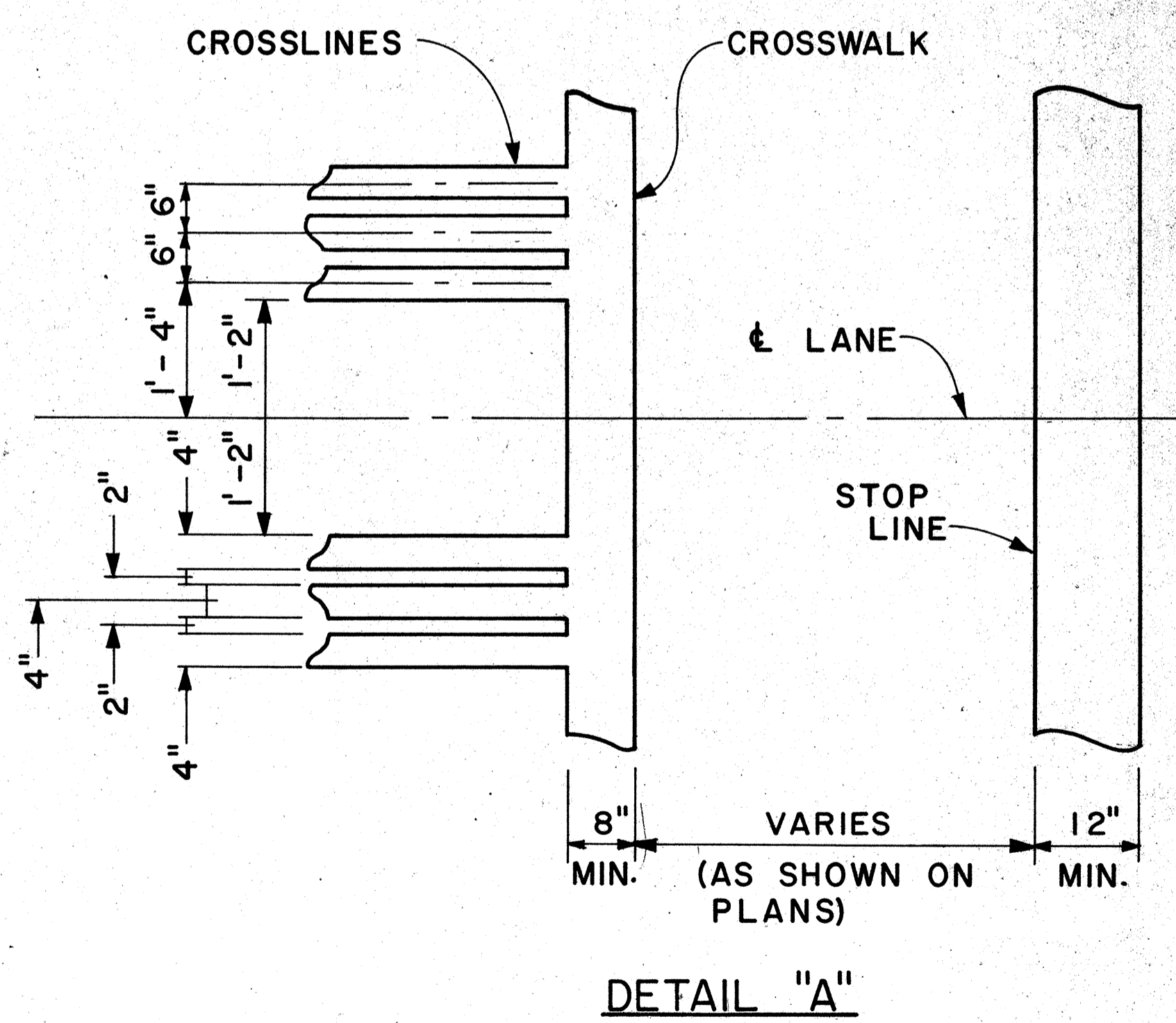
GENERAL NOTES:

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.

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



PLAN



DETAIL "A"

CROSSWALK & STOP LINE
Scale: Not to Scale

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS

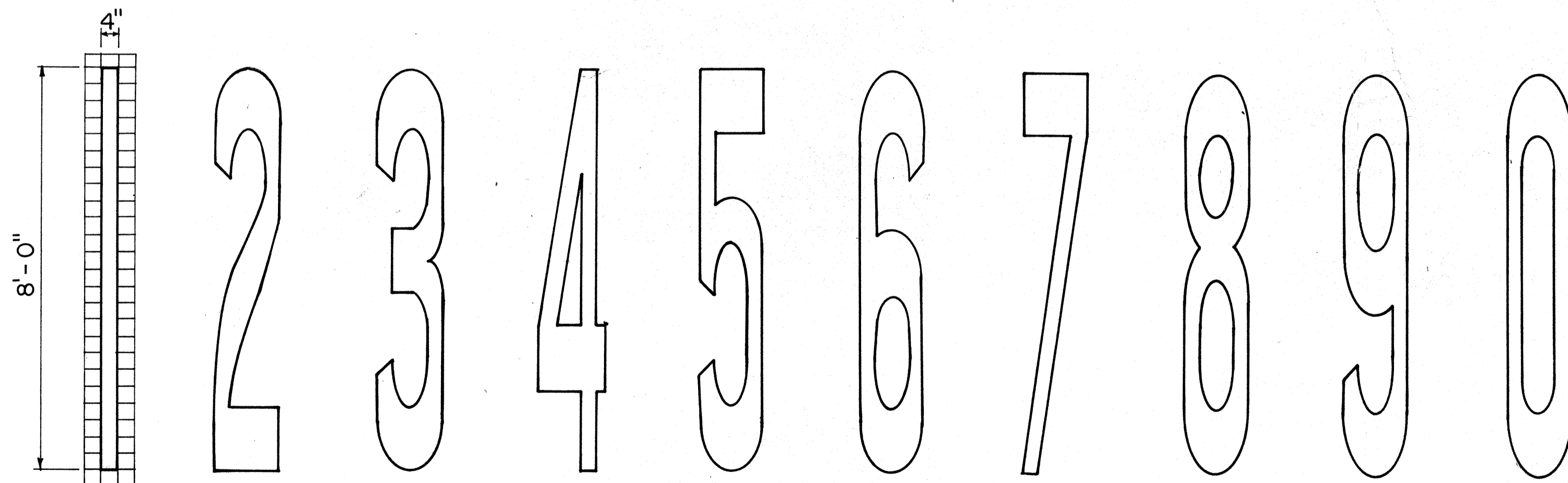
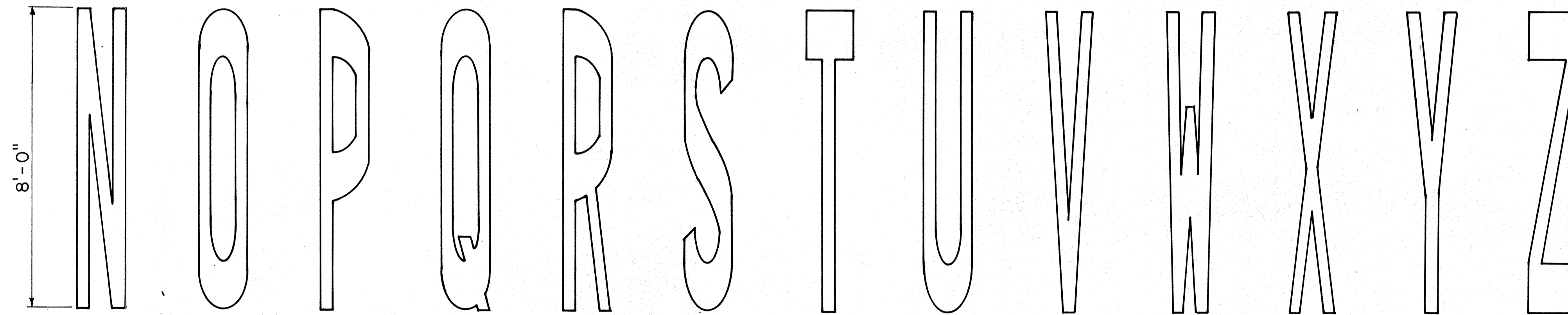
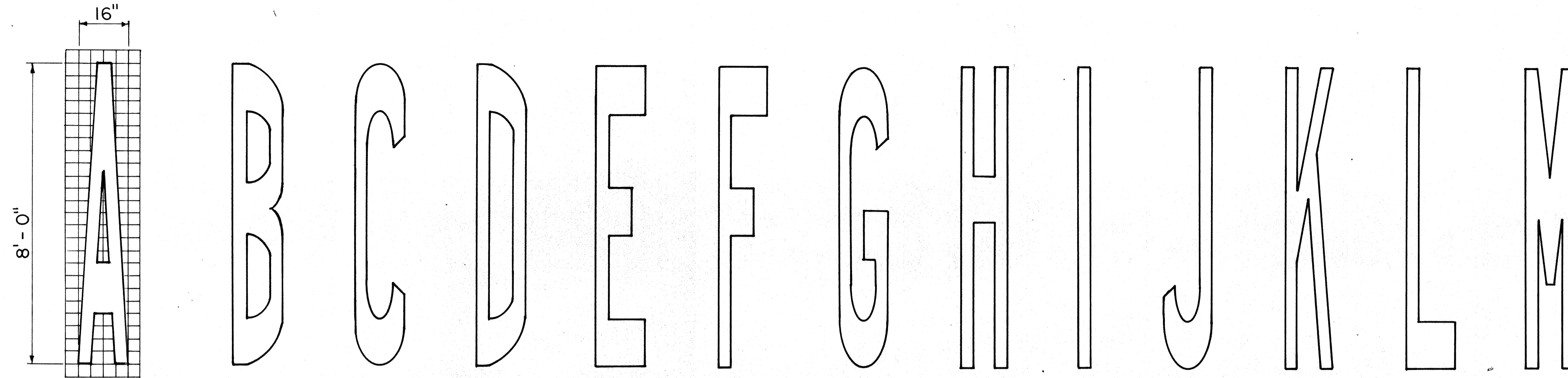
MISCELLANEOUS
 PAVEMENT MARKINGS

Scale: As Shown Date: March, 1978
 SHEET No. P-300 OF 33 SHEETS DT 306

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-IR-HI(70):17	1983	81	211

GENERAL NOTES

1. Pavement Alphabets, Numbers and Symbols shall conform to the latest edition of the FHWA publication, "Manual on Uniform Traffic Control Devices for Streets and Highways" and its amendments.
2. The characters are based on a 24x4 (height x width) grid system to facilitate enlarging. Horizontal strokes are 4 units high and verticle strokes are 1 unit wide.
3. Unless otherwise noted, the typical height and width of each character shall respectively be 8'-0" and 1'-4". The horizontal strokes shall be 16" high and the vertical strokes shall be 4" wide.
4. All pavement messages and symbols shall be laid out by the Contractor and approved by the Engineer prior to installation.



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

APPROVAL RECOMMENDED:
Eiichi Tanaka
 TRAFFIC ENGINEER 1/28/83
 DATE

APPROVED:
S. Fujiyama
 ASSISTANT CHIEF, ENGINEERING 1-31-83
 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

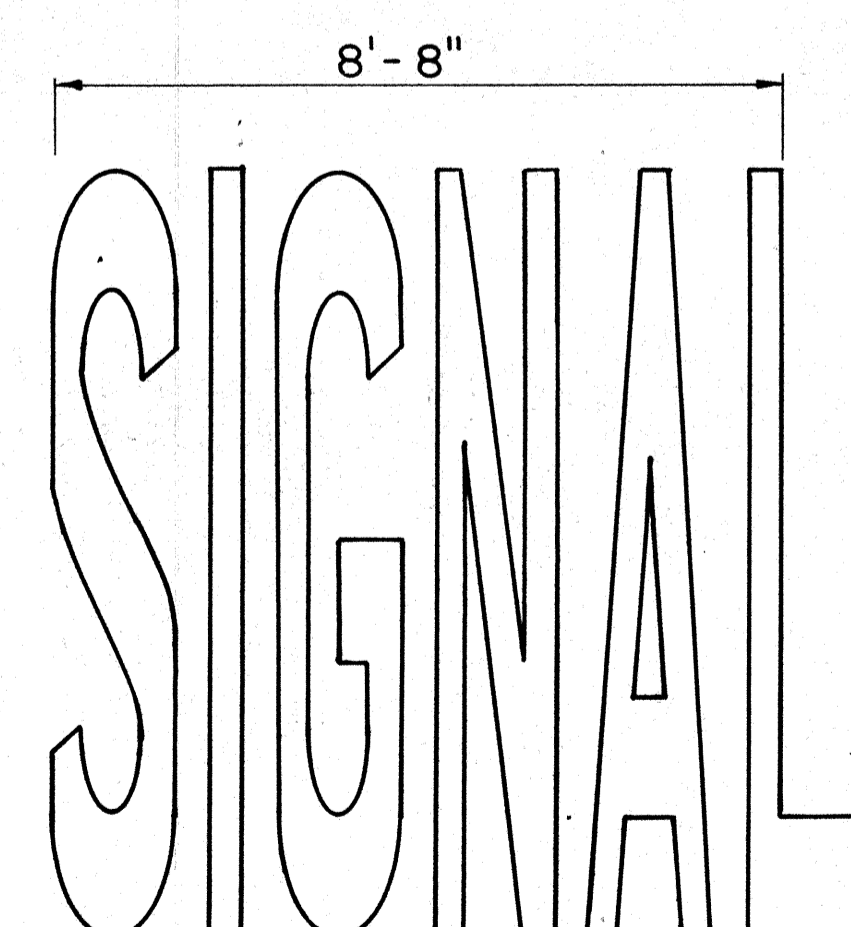
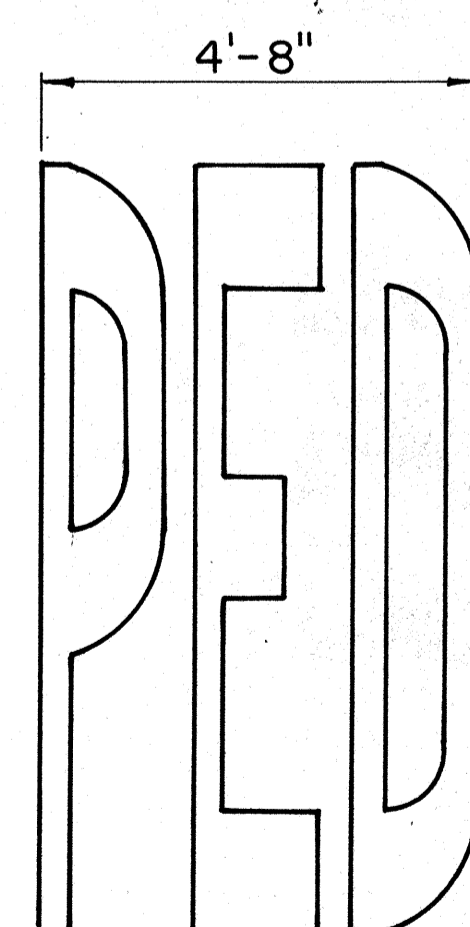
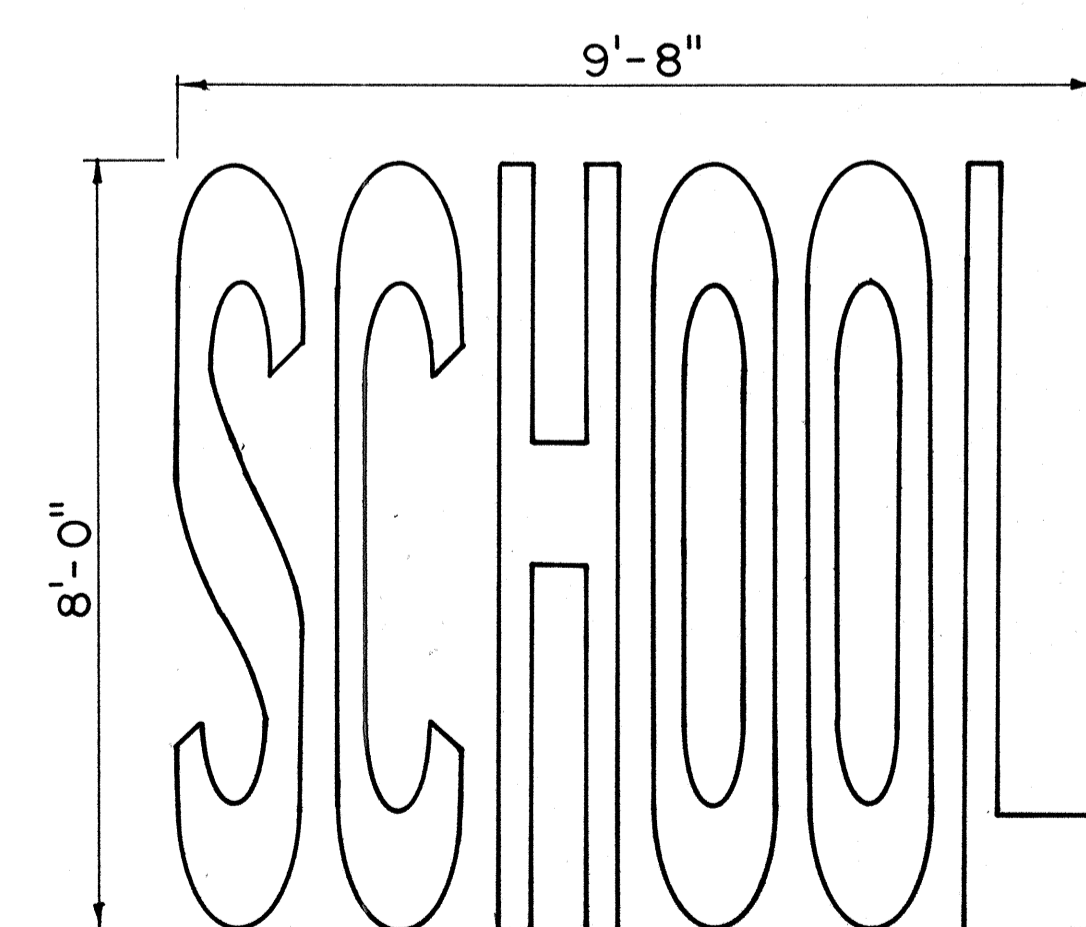
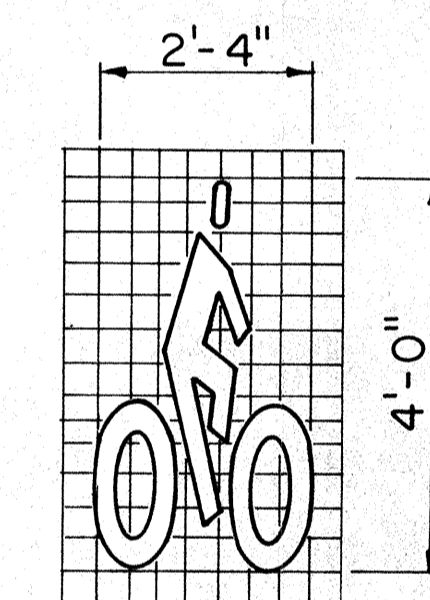
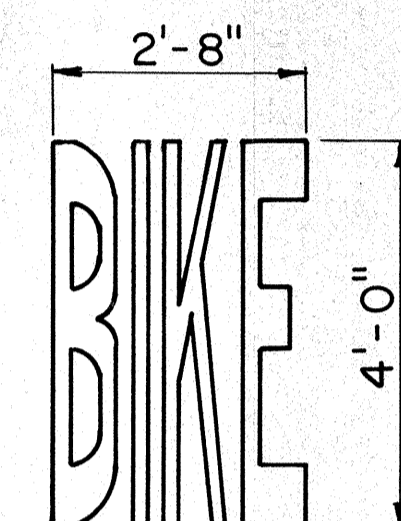
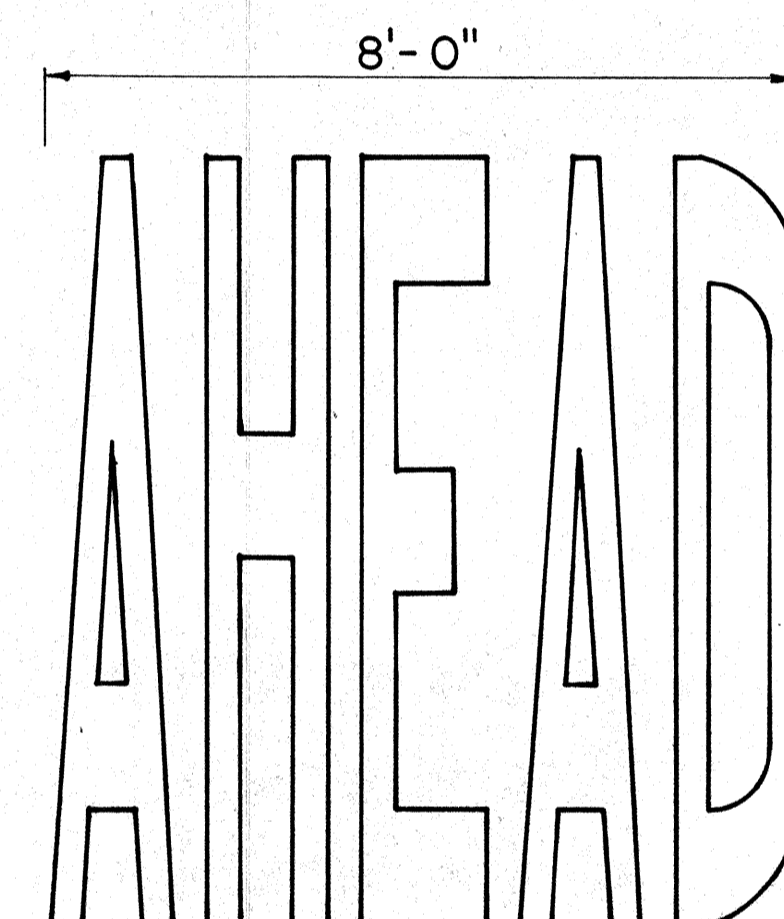
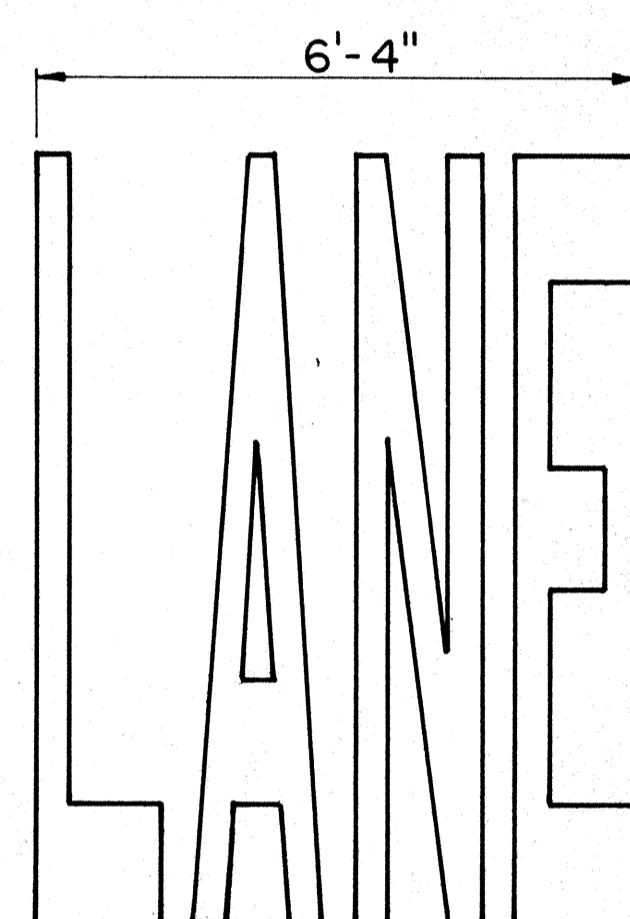
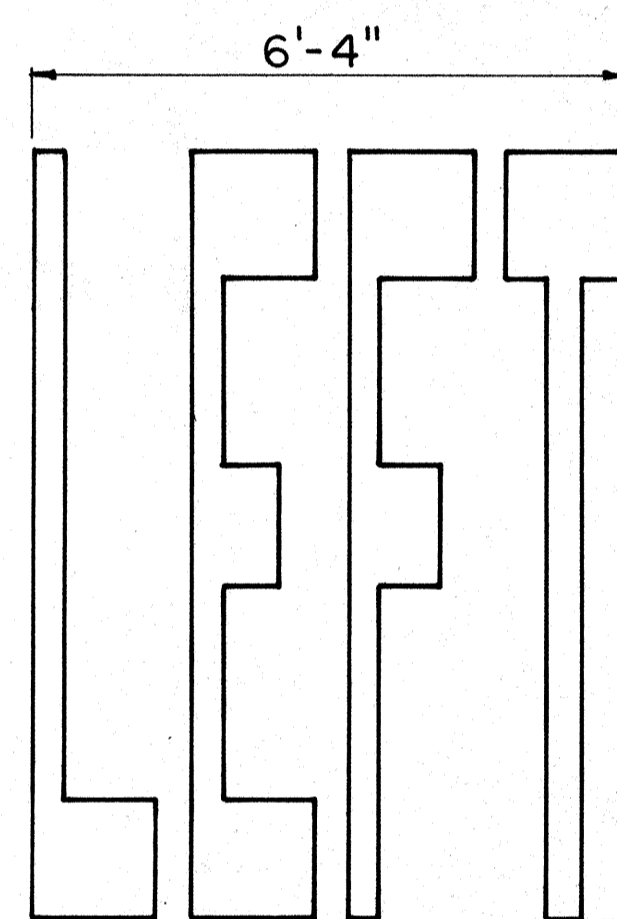
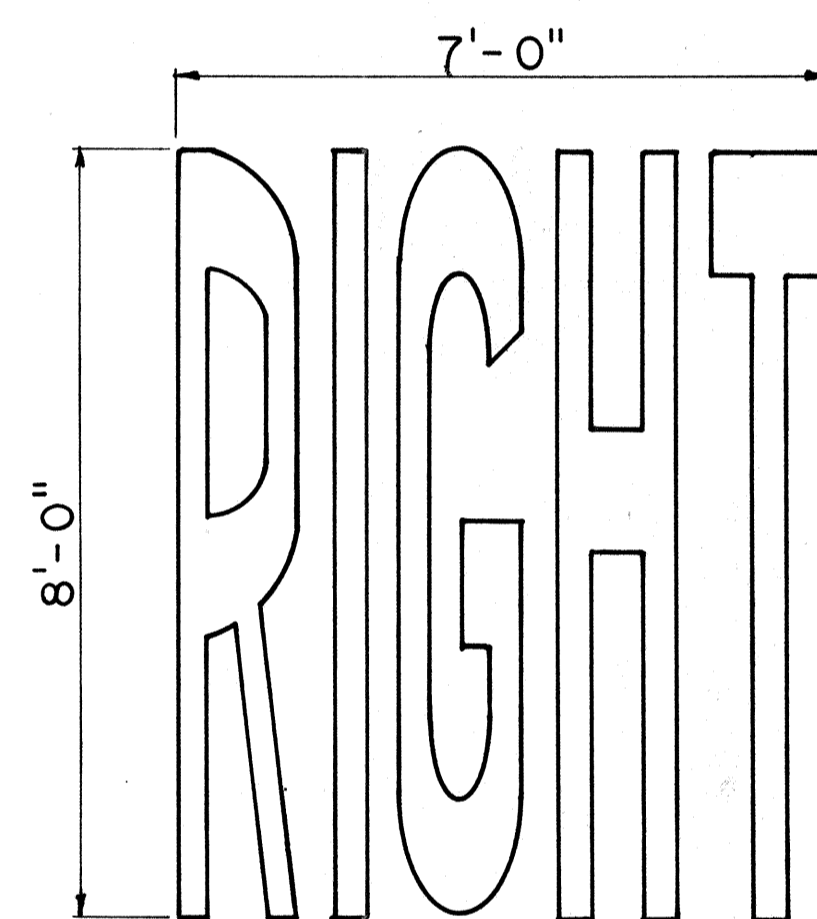
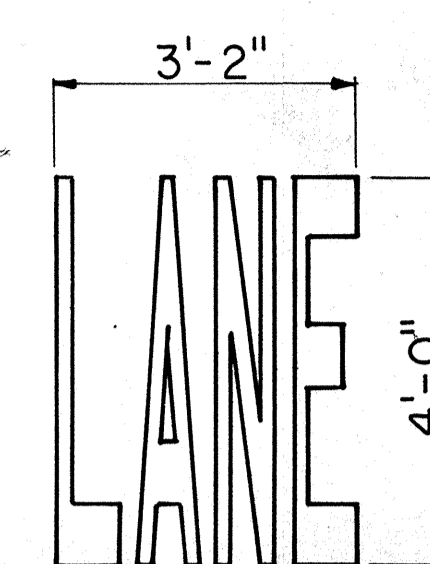
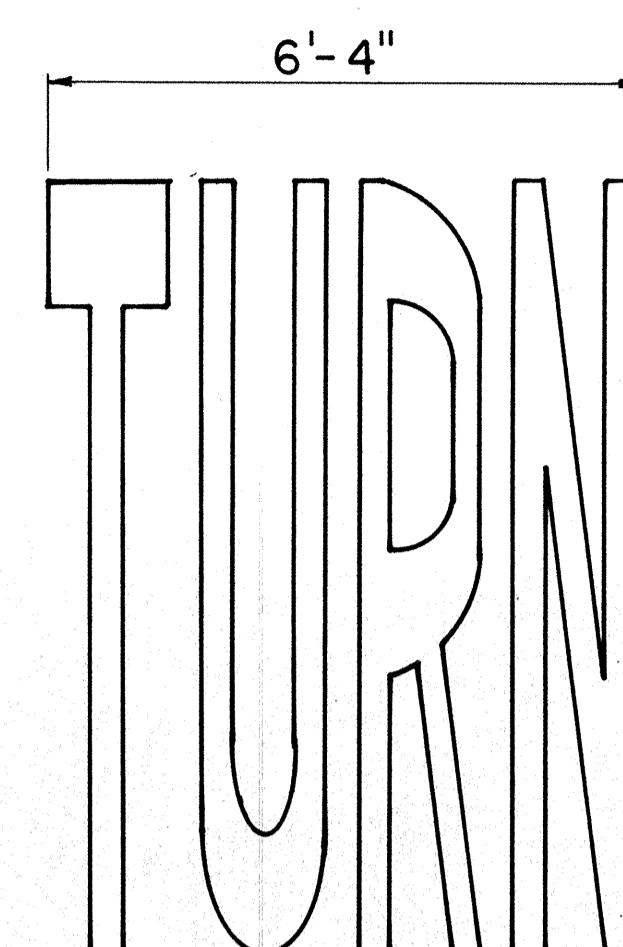
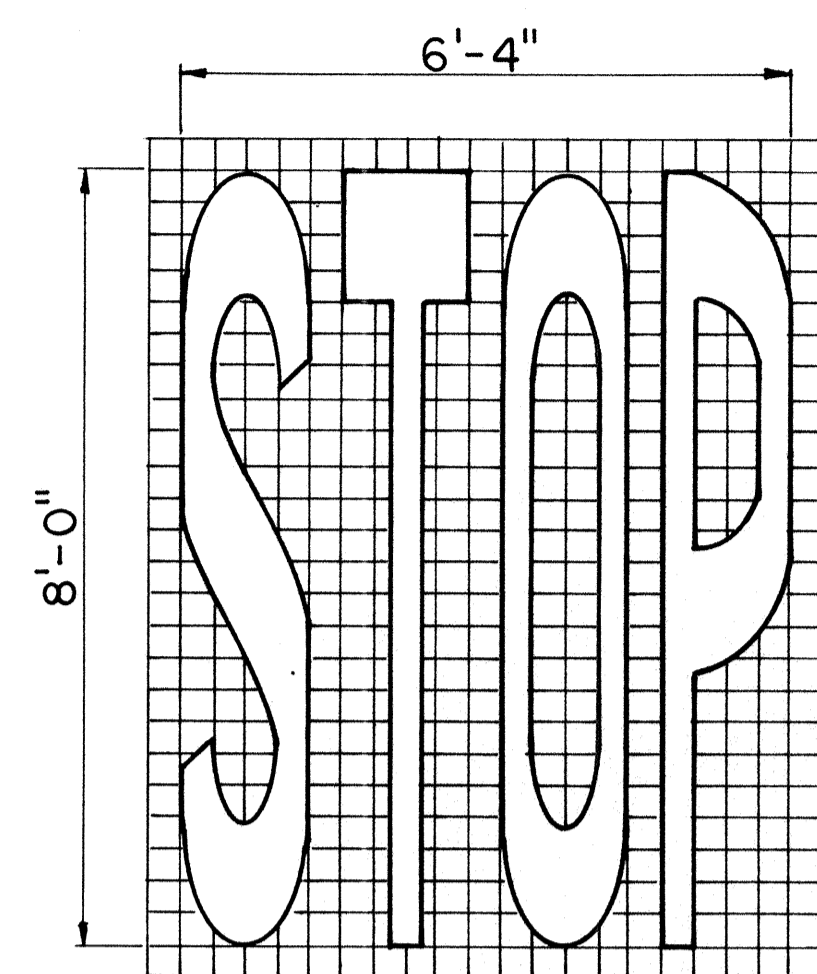
STANDARD DETAILS

**PAVEMENT ALPHABETS,
 NUMBERS & SYMBOLS**

Not to Scale

SHEET No. P-31 OF 33 SHEETS DT 307

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-1R-HI-1(170):17	1983	82	211



GENERAL NOTES

- All messages not shown must be approved by the Engineer prior to installation.
- The space between characters in a message shall be 1 grid unit unless otherwise shown or directed.
- All pavement messages shall be white in color.

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

APPROVAL RECOMMENDED:

Eiichi Tanaka
TRAFFIC ENGINEER 1/28/83
DATE

APPROVED:

J. Fujiyama
ASSISTANT CHIEF, ENGINEERING 1-31-83
DATE

NO.	REVISION	APPROVED BY	DATE

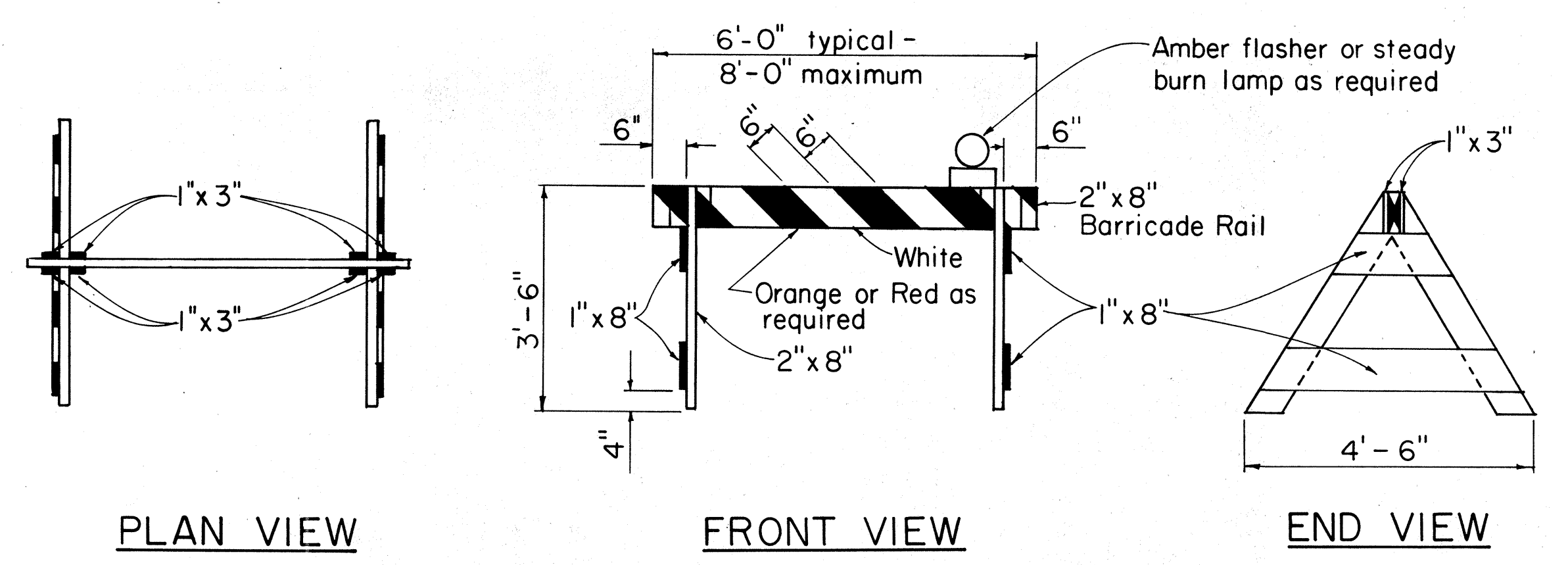
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

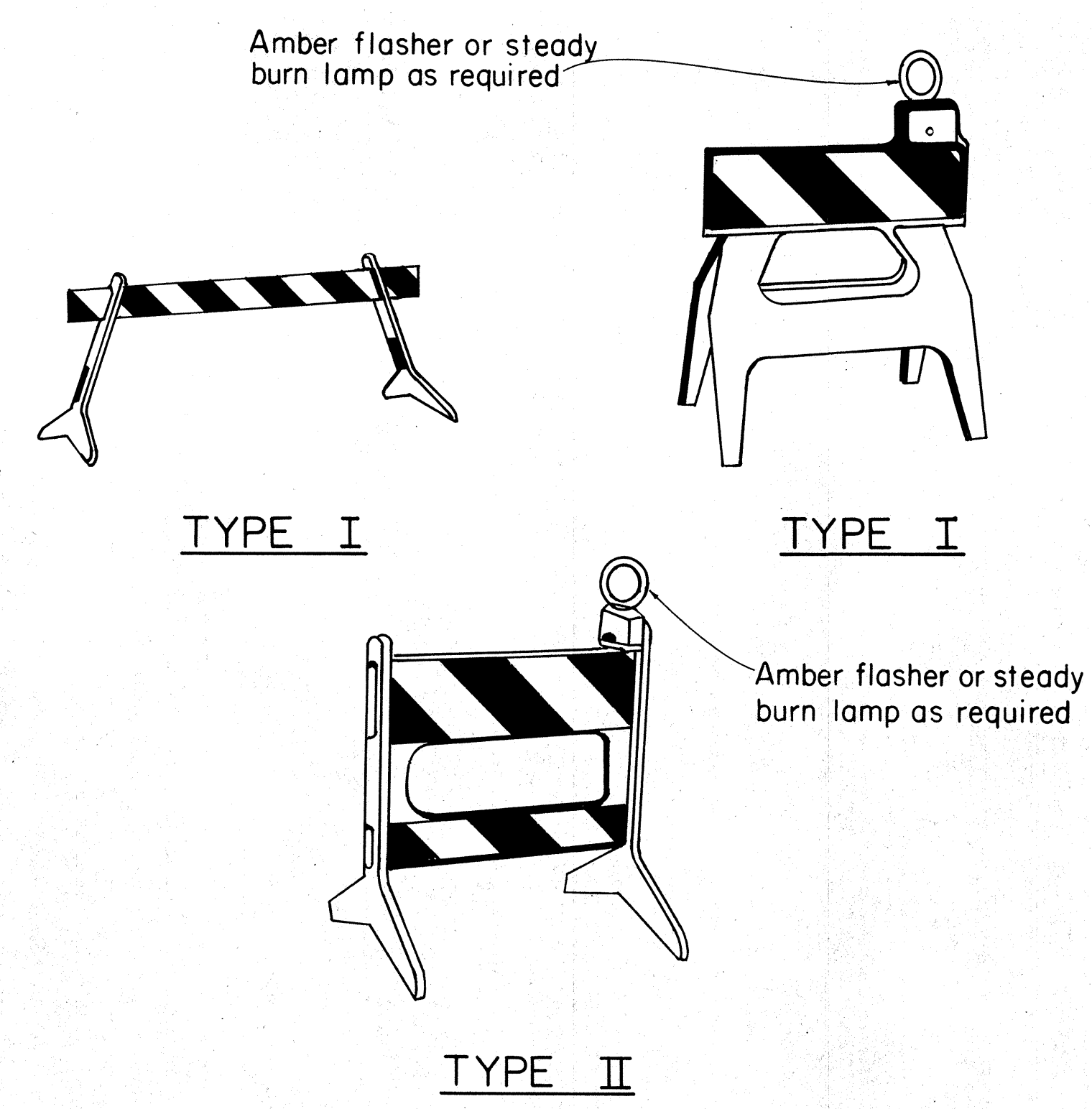
PAVEMENT ALPHABETS,
NUMBERS & SYMBOLS

Not to Scale

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IRH-17-17	1983	83	211

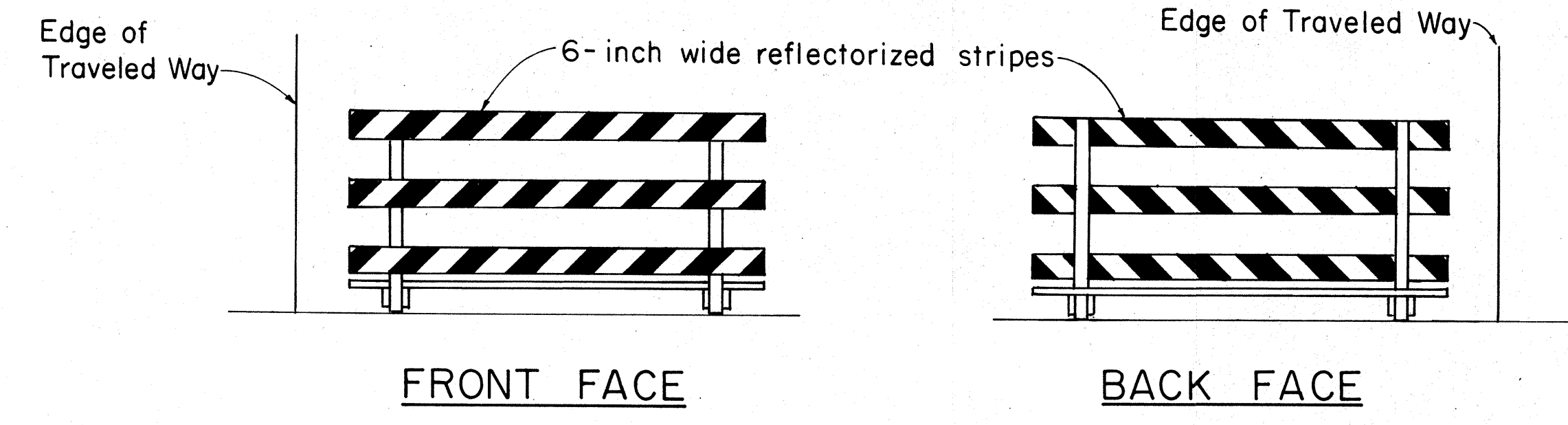


TYPE I BARRICADE
Scale: 1/2" = 1'-0"



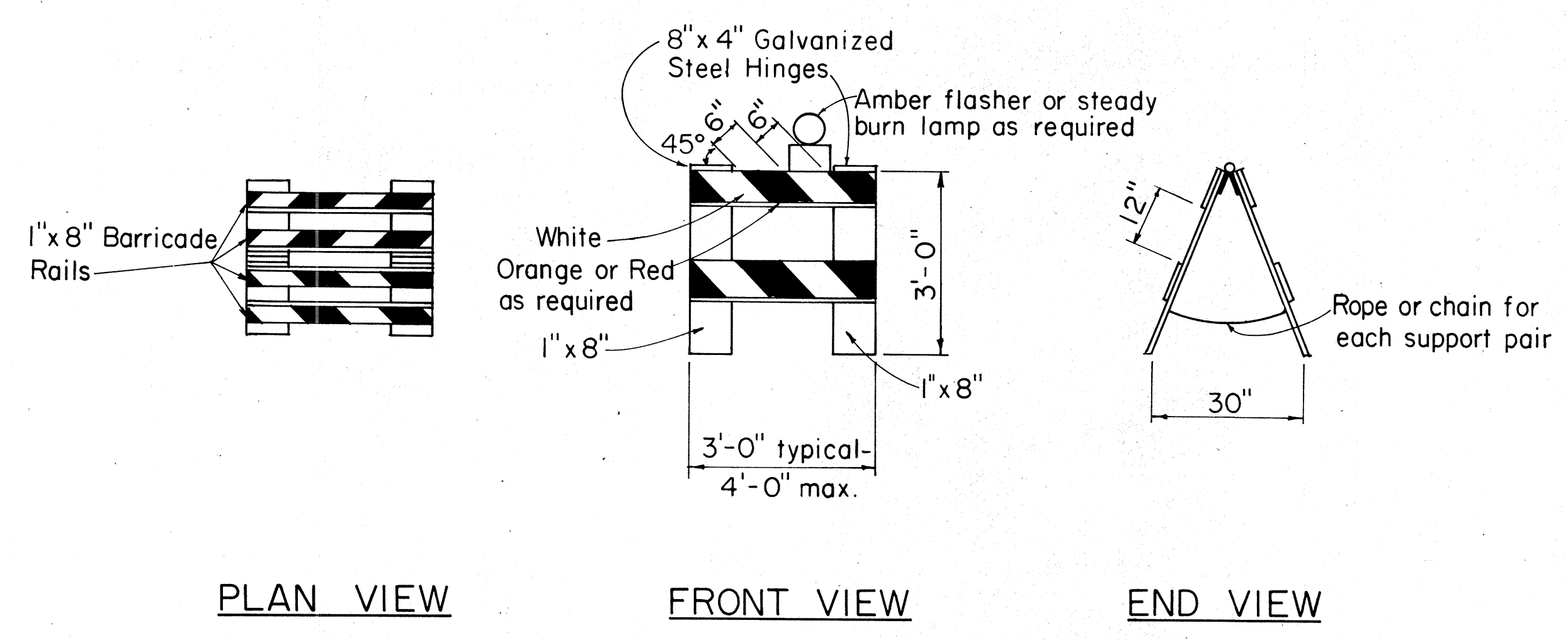
PLASTIC MOLDED BARRICADE OPTIONS*
Not to Scale

* Shop Drawings must be submitted for approval.

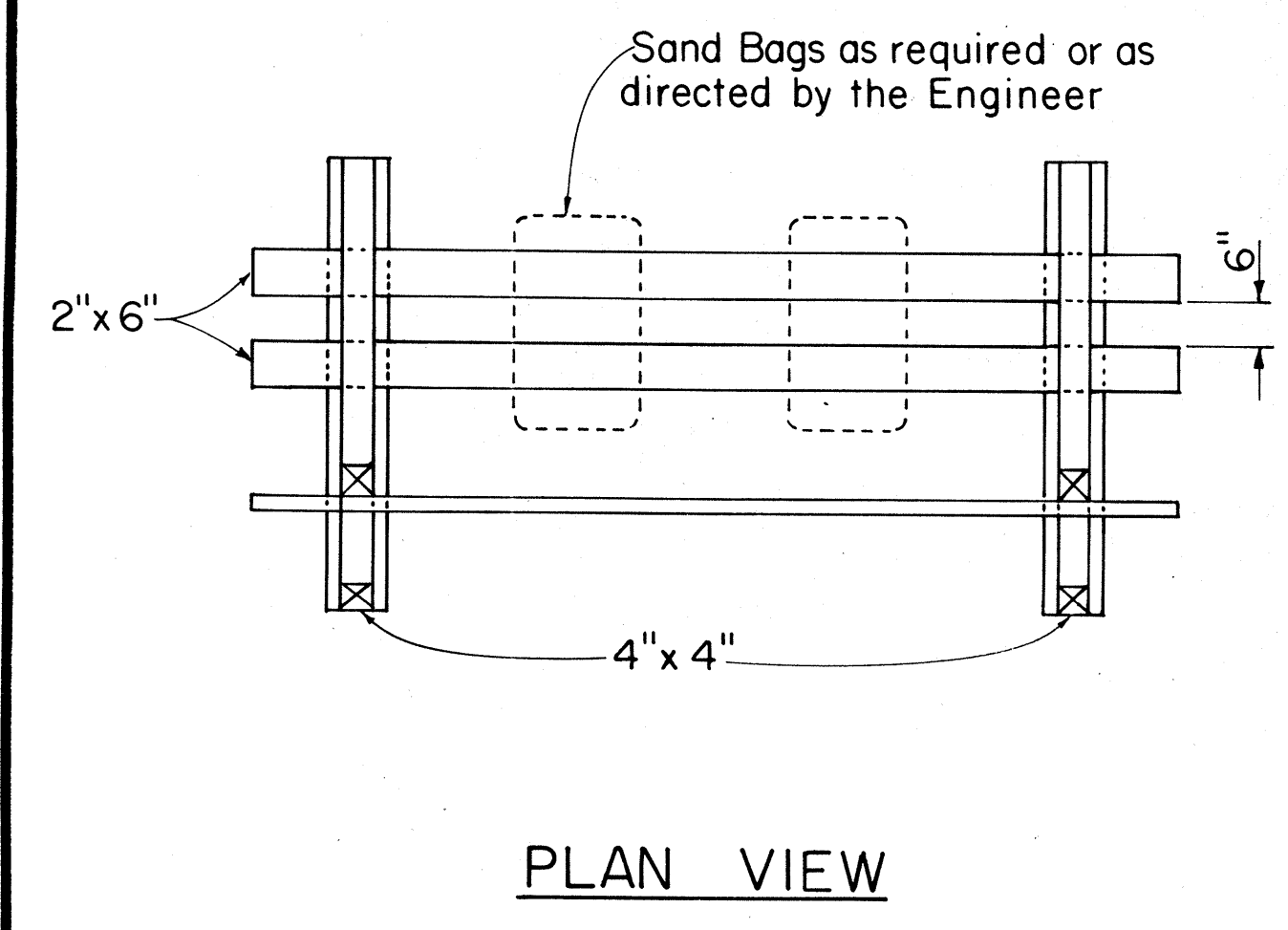


TYPICAL BARRICADE STRIPING DETAILS**
Not to Scale

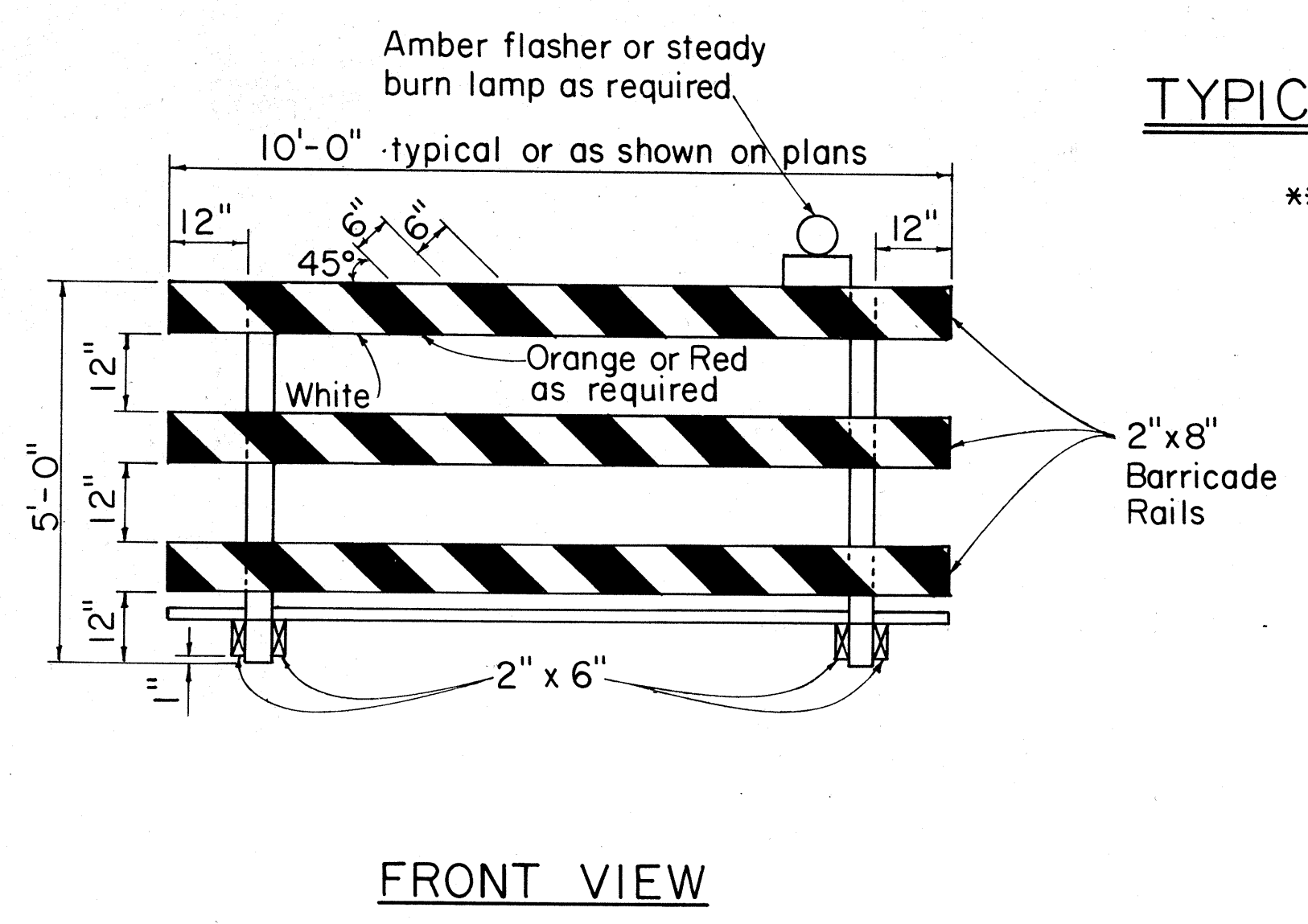
** Similar for Types I & II



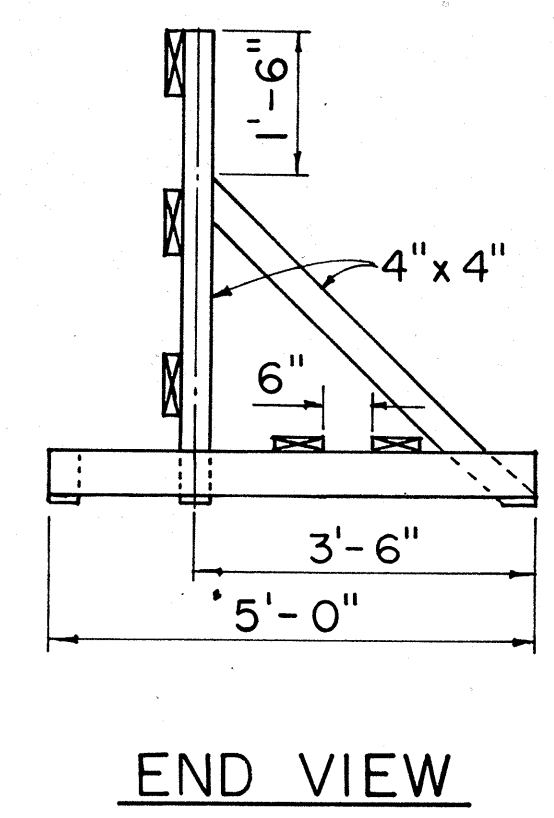
TYPE II BARRICADE
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW



END VIEW

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

GENERAL NOTES

1. The front and back faces of each barricade rail shall be reflectorized with stripes sloping downward toward the same side (traveled way) of each barricade.
2. Contractor may submit alternate barricade designs for approval.
3. Sandbags or other approved weights shall not be placed on top of any striped rail.
4. The Contractor is directed to Section 626.

APPROVAL RECOMMENDED:
Etsuki Tanaka 10/21/81
TRAFFIC ENGINEER DATE

APPROVED:
Shelton P. DeFazio 10/23/81
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes DT 800 Approved 12/30/69	HT	10/23/81

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

BARRICADES

SCALE: As Shown

SHEET No. P-33 OF 33 SHEETS DT 800

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