

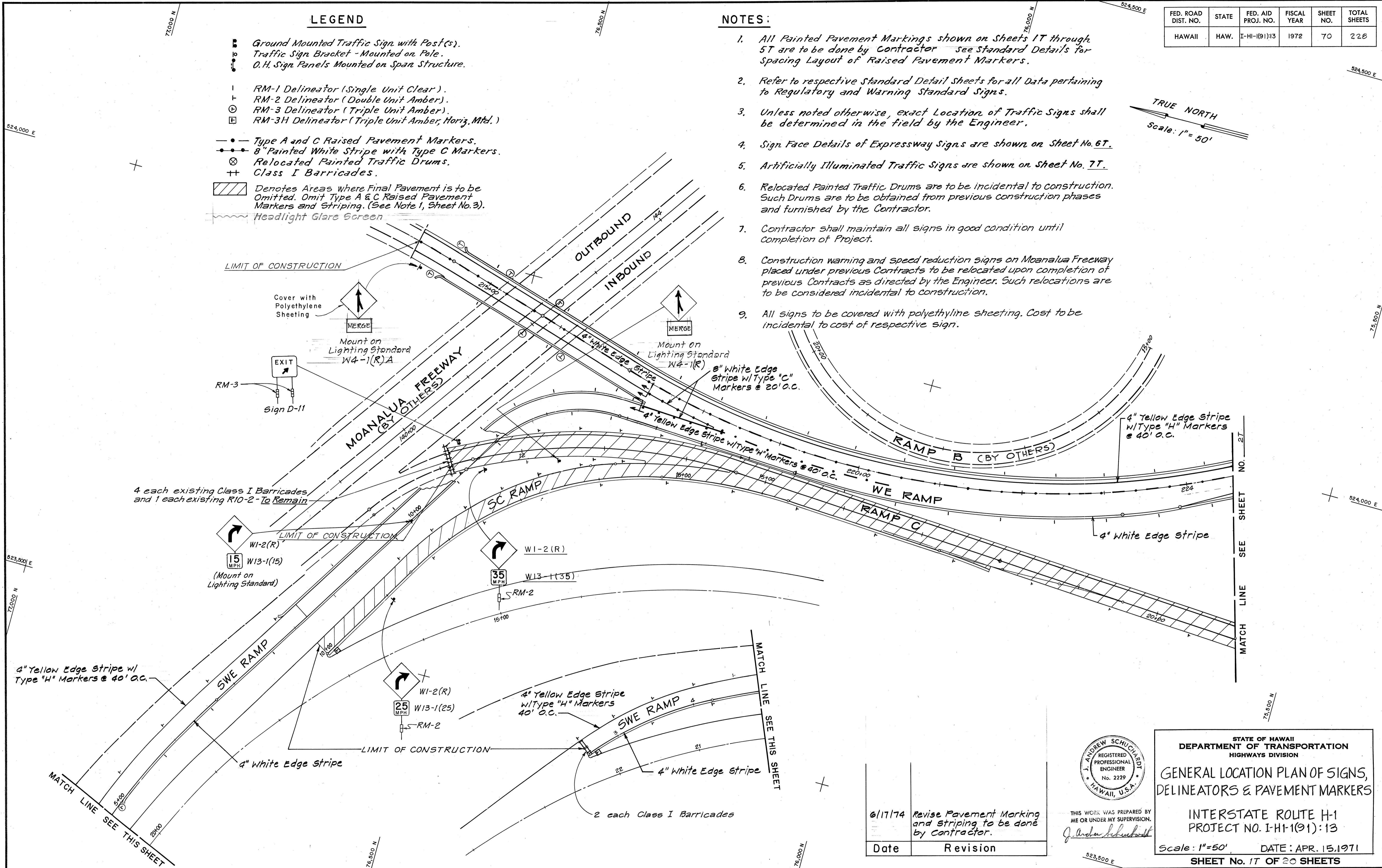
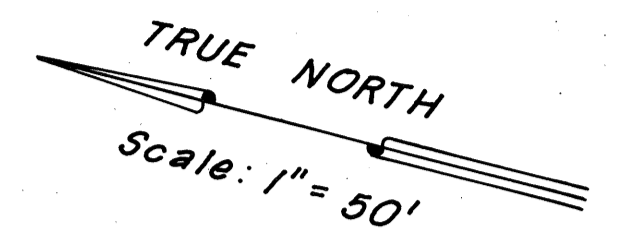
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(91):13	1972	70	228

LEGEND

- ⊕ Ground Mounted Traffic Sign with Post(s).
- ⊖ Traffic Sign Bracket - Mounted on Pole.
- ⊗ O.H. Sign Panels Mounted on Span Structure.
- RM-1 Delineator (Single Unit Clear).
- RM-2 Delineator (Double Unit Amber).
- ⊕ RM-3 Delineator (Triple Unit Amber).
- ⊖ RM-3H Delineator (Triple Unit Amber, Horiz. Mtd.)
- Type A and C Raised Pavement Markers.
- 8" Painted White Stripe with Type C Markers.
- ⊗ Relocated Painted Traffic Drums.
- ⊕ Class I Barricades.
- ▨ Denotes Areas Where Final Pavement is to be Omitted. Omit Type A & C Raised Pavement Markers and Striping. (See Note 1, Sheet No. 3).
- ⊖ Headlight Glare Screen

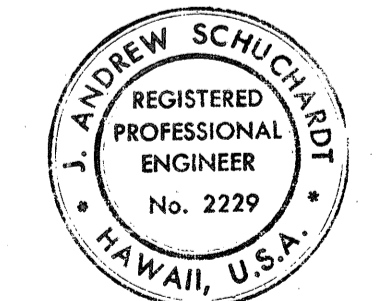
NOTES:

1. All Painted Pavement Markings shown on Sheets 1T through 5T are to be done by Contractor - See Standard Details for Spacing Layout of Raised Pavement Markers.
2. Refer to respective Standard Detail Sheets for all Data pertaining to Regulatory and Warning Standard Signs.
3. Unless noted otherwise, exact Location of Traffic Signs shall be determined in the field by the Engineer.
4. Sign Face Details of Expressway Signs are shown on Sheet No. 6T.
5. Artificially Illuminated Traffic Signs are shown on Sheet No. 7T.
6. Relocated Painted Traffic Drums are to be incidental to construction. Such Drums are to be obtained from previous construction phases and furnished by the Contractor.
7. Contractor shall maintain all signs in good condition until Completion of Project.
8. Construction warning and speed reduction signs on Moanalua Freeway placed under previous Contracts to be relocated upon completion of previous Contracts as directed by the Engineer. Such relocations are to be considered incidental to construction.
9. All signs to be covered with polyethylene sheeting. Cost to be incidental to cost of respective sign.



DATE	.....
DESIGNED BY	.....
CHECKED BY	.....
DATE	.....
DESIGNED BY	.....
CHECKED BY	.....
DATE	.....
DESIGNED BY	.....
CHECKED BY	.....

Date	Revision
6/17/74	Revise Pavement Marking and striping to be done by Contractor.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
J. Andrew Schuchardt

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

GENERAL LOCATION PLAN OF SIGNS, DELINEATORS & PAVEMENT MARKERS

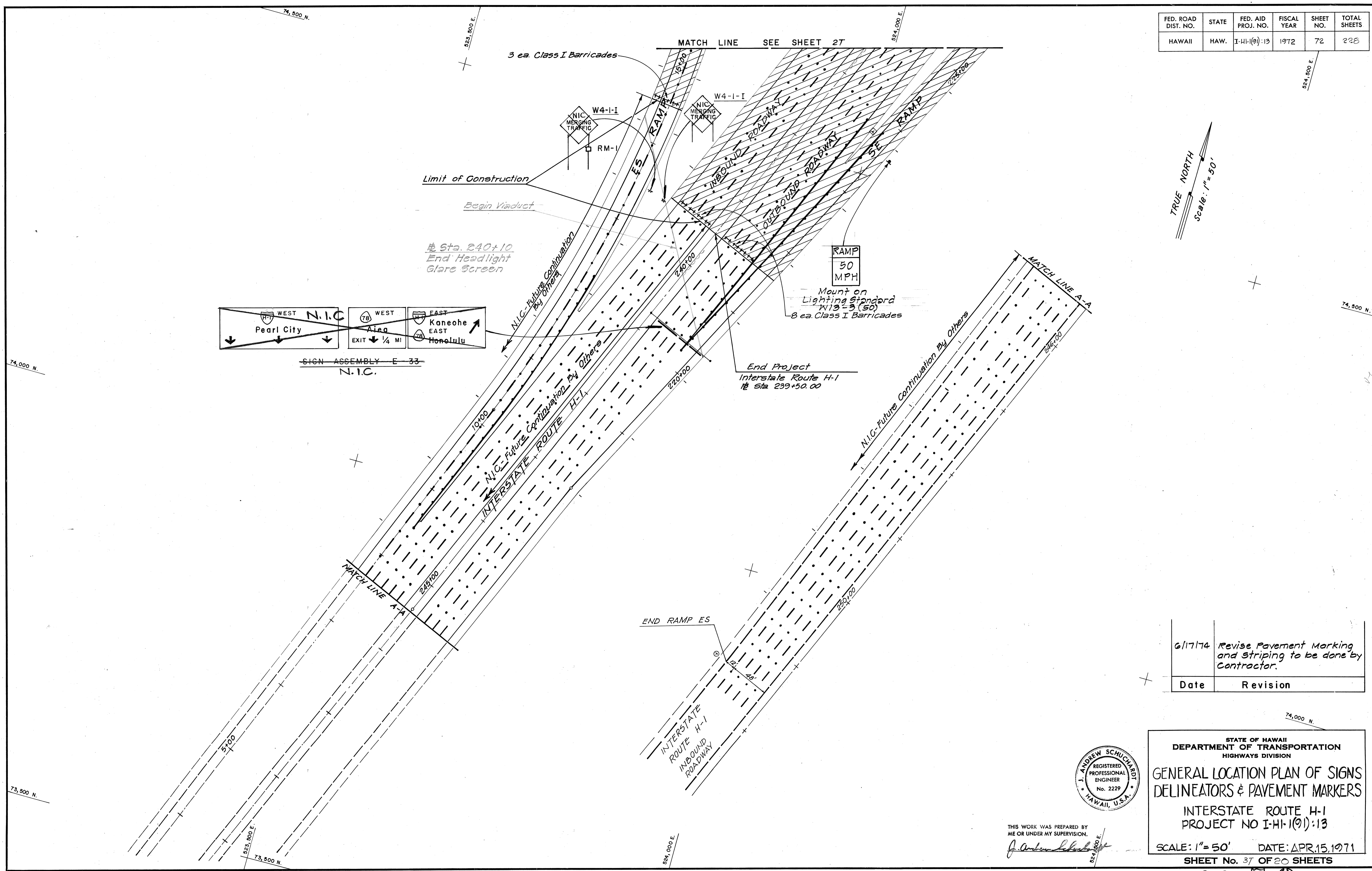
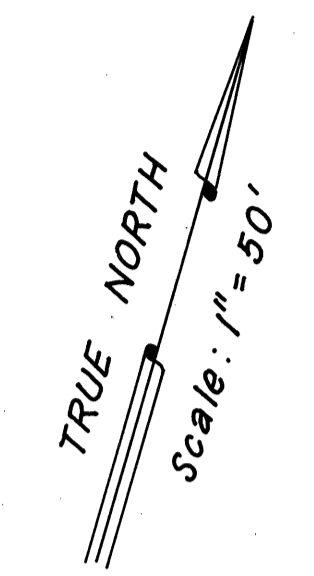
INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(91):13

Scale: 1"=50' DATE: APR. 15, 1971

SHEET No. 17 OF 20 SHEETS

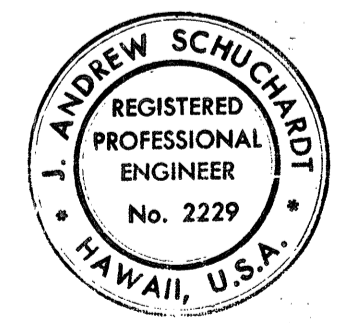
C.O. 3 (1)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(9):13	1972	72	228



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

Date	Revision
6/17/74	Revise Pavement Marking and Striping to be done by Contractor.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GENERAL LOCATION PLAN OF SIGNS
DELINEATORS & PAVEMENT MARKERS**

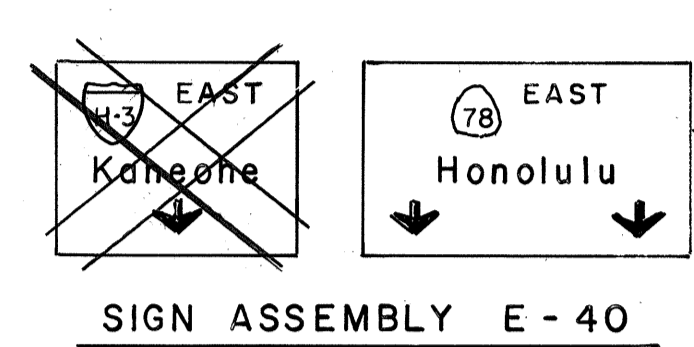
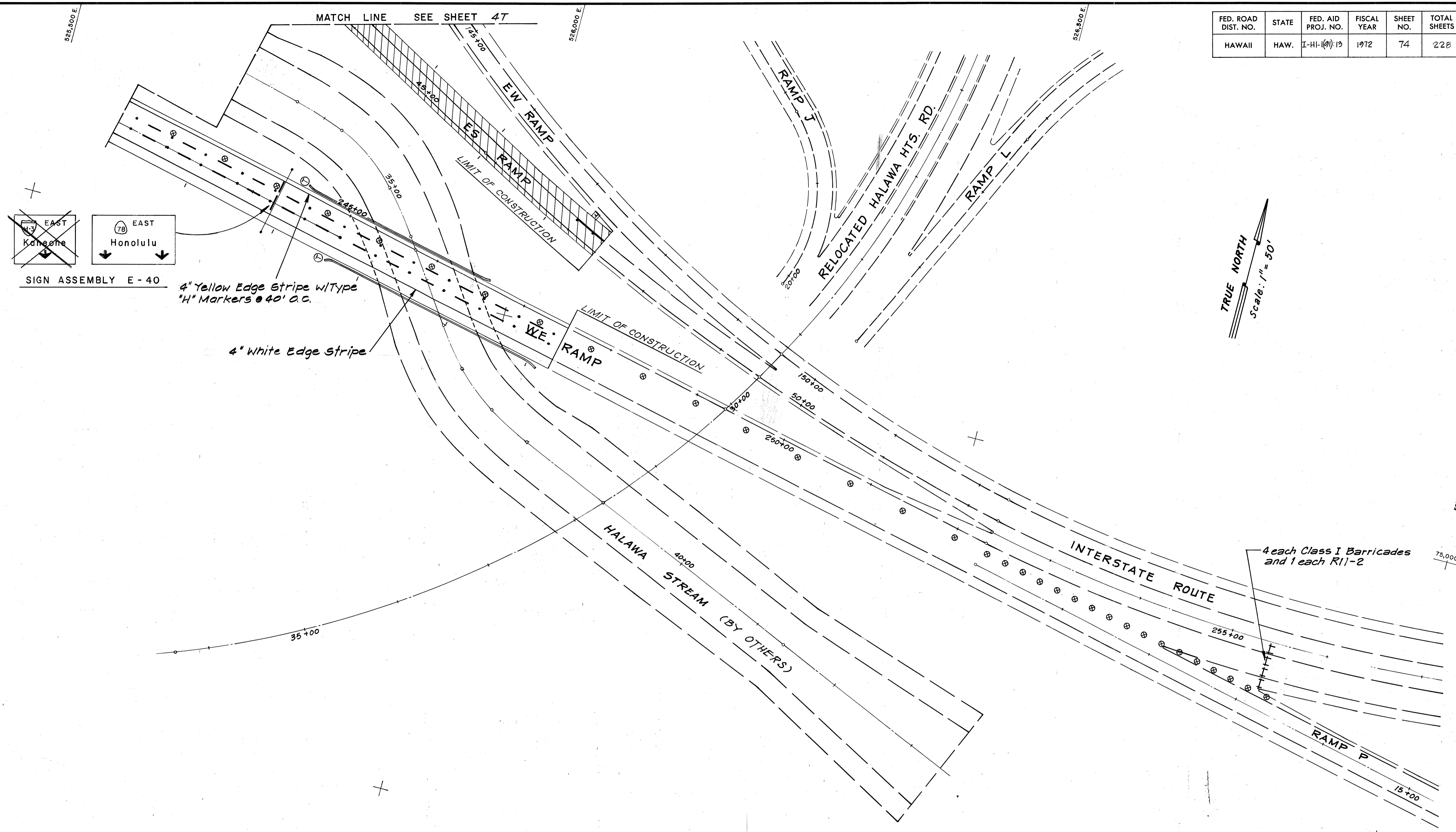
INTERSTATE ROUTE H-1
PROJECT NO I-HI-1(9):13

SCALE: 1" = 50' DATE: APR. 15, 1971

SHEET No. 37 OF 20 SHEETS

C.O. 8 2
72 CONTRACT 7

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(91)-13	1972	74	228



4" Yellow Edge Stripe w/Type "H" Markers @ 40' O.C.
 4" White Edge Stripe

4 each Class I Barricades and 1 each R11-2

DATE	BY

6/17/74	Revise Pavement Marking and Striping to be done by Contractor.
Date	Revision



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
J. Andrew Schuchardt

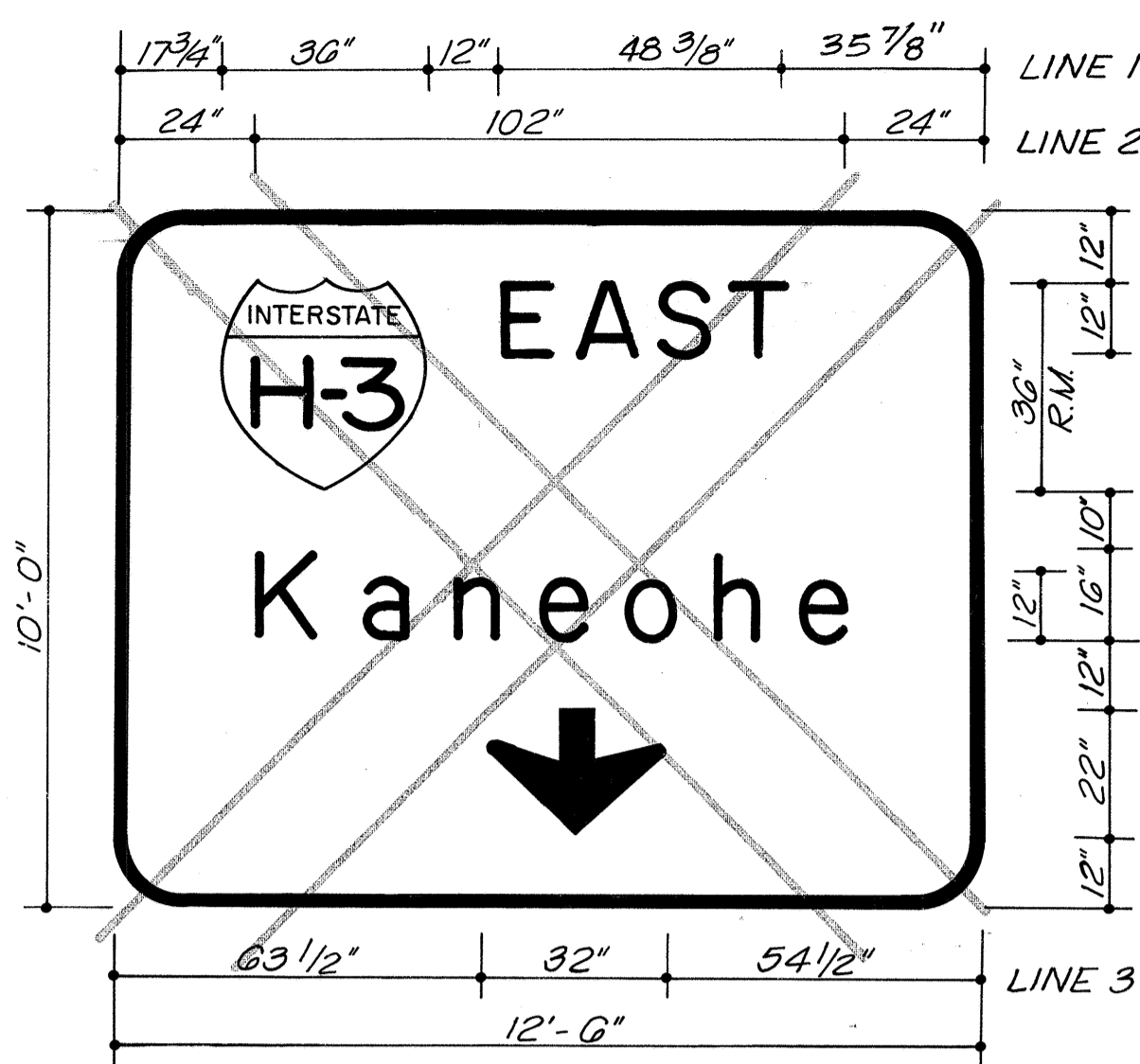
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**GENERAL LOCATION PLAN OF SIGNS
 DELINEATORS & PAVEMENT MARKERS**
 INTERSTATE ROUTE H-1
 PROJECT NO I-HI-(91):13
 SCALE: 1"=50' DATE: APR. 15, 1971
 SHEET No. 51 OF 20 SHEETS

C.O. 8 41

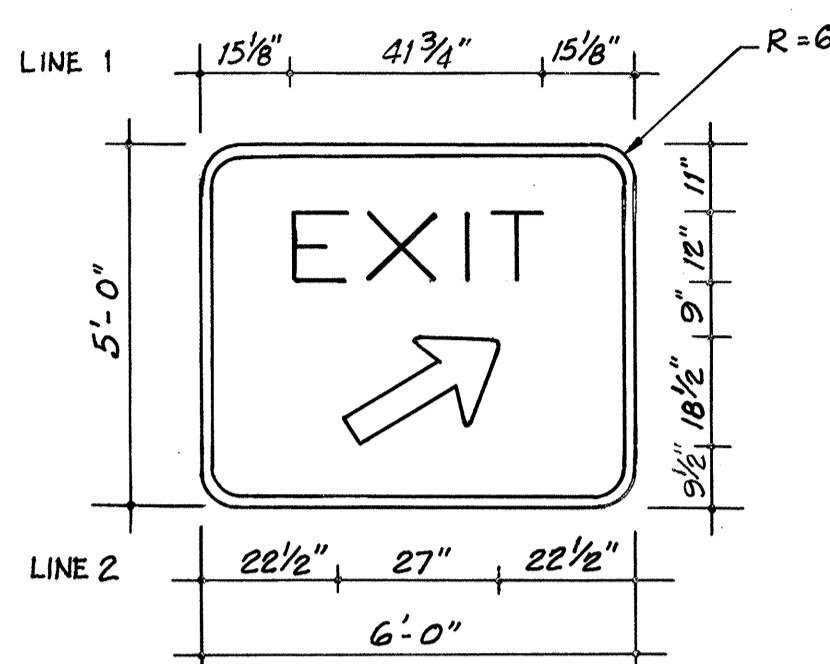
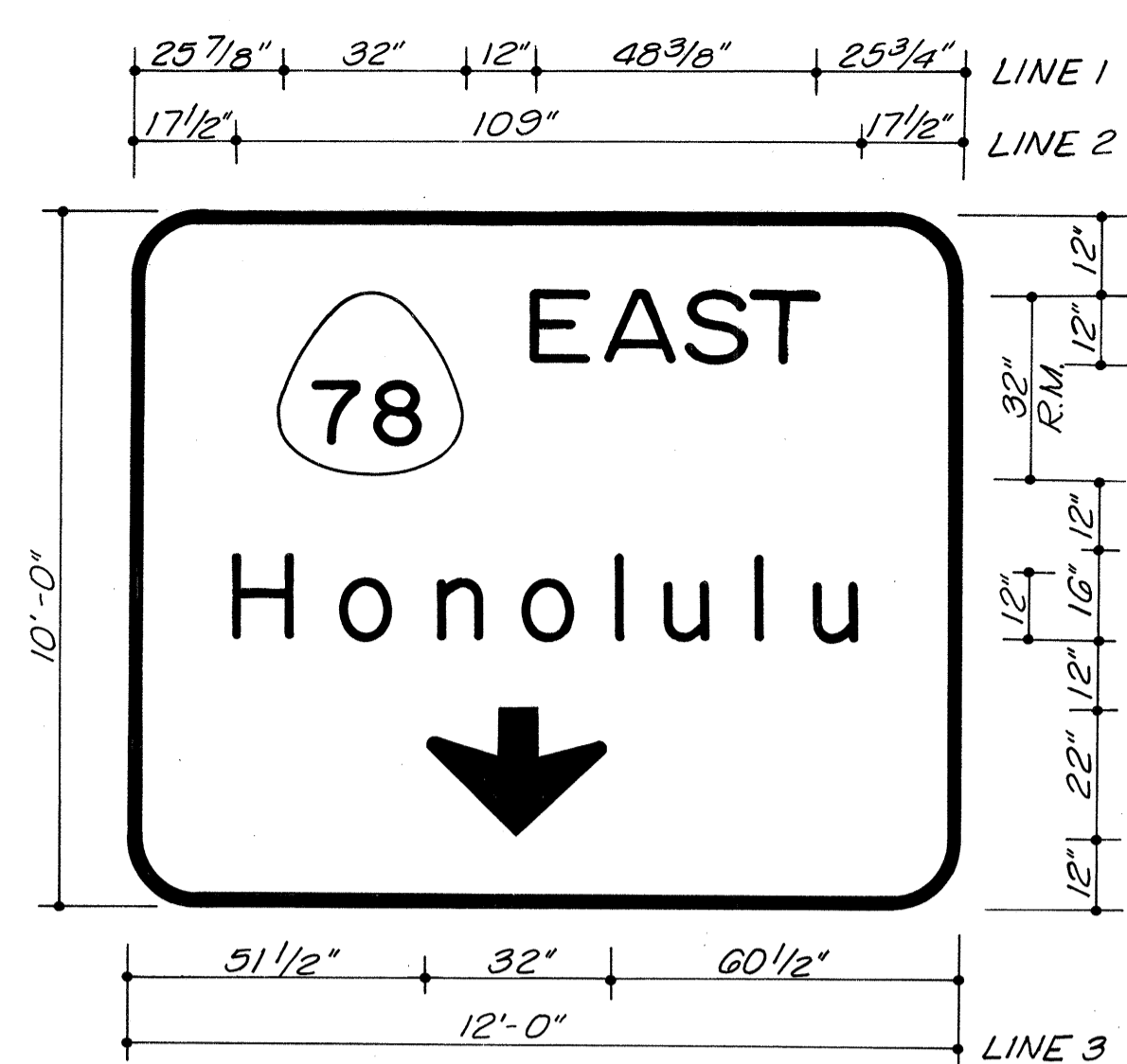
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(91):13	1972	75	228

NOTES PERTAINING TO EXPRESSWAY (E) SIGNS

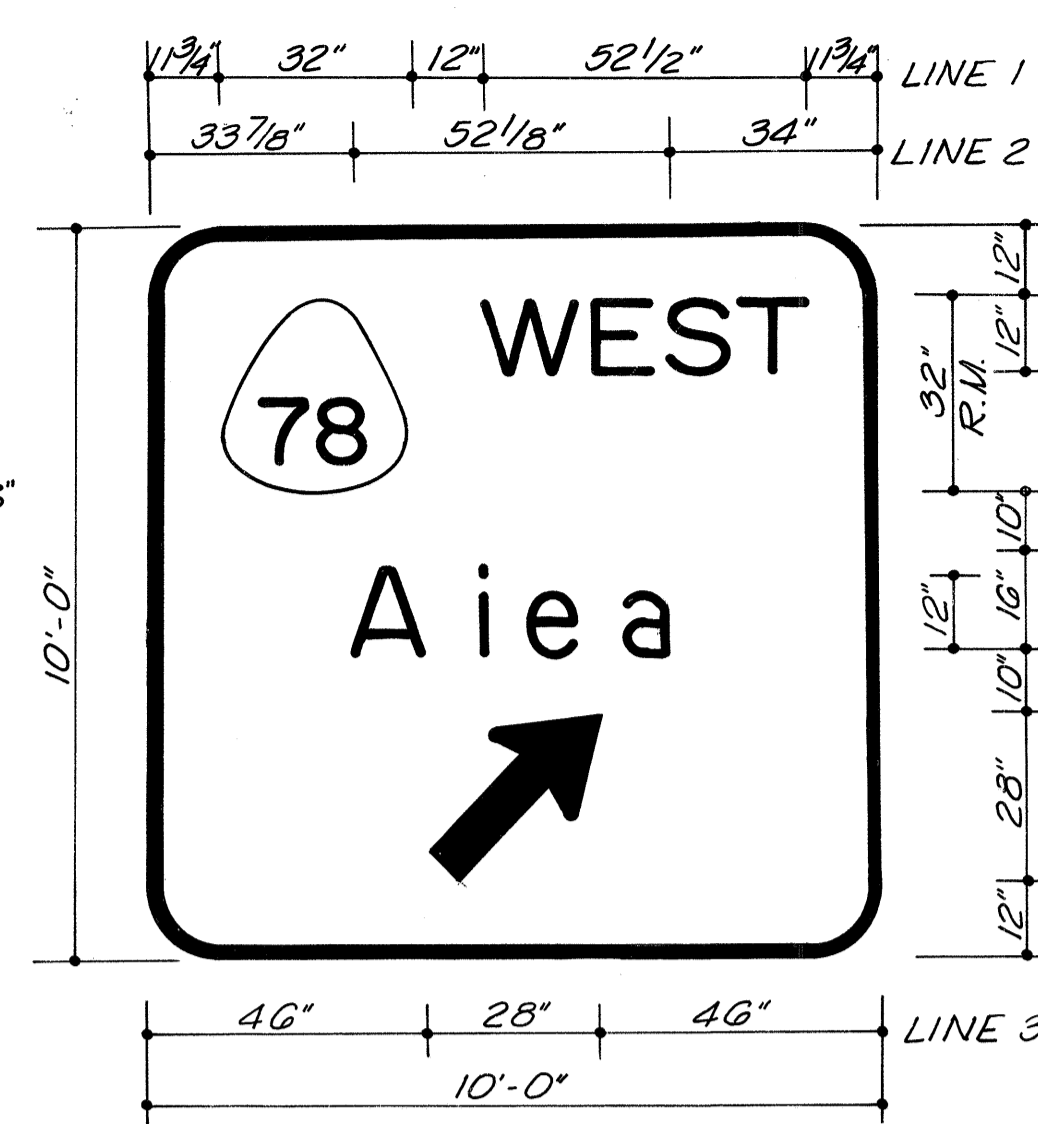
- Design of the Companion Upper and Lower Case Characters, Modified Series "E" Capital Letters and Digits, and Intercharacter Spacing for Line Messages shall meet the requirements established by the Federal Highway Administration, U.S. Department of Transportation in the "Manual on Uniform Traffic Control Devices" 1971 Edition.
- Unless otherwise noted, Sign Borders and Corner Radii for all Sign Faces Detailed herein shall be 2 inches wide, and 12 inches, respectively.
- State and Interstate Route Markers incorporated on Sign Panels shall conform to the Dimensions as shown. Marker Shape, Color, Letter and Numeral Series, etc., are to comply with those of the Official Marker Designs on the Standard Detail Sheets.
- All Arrows shall be as prescribed for Signs on the National System of Interstate and Defense Highways.
- Individual Letters, Numerals, Symbols, and Borders shall be Demountable and consist of:
 - Embossed Aluminum Cut-Outs with applied Silver-White Reflective Sheeting Material; or
 - White Porcelain Enameled Aluminum Frames in which are installed Plastic Reflex Reflectors.
- All Artificially Illuminated Expressway Signs shall have Reflectorized Message and Border on a Green Porcelain Enameled Background.
- Fasteners:
 - Demountable Characters shall be fastened to Sign Panels with Blind Rivets.
 - Demountable Characters, except as otherwise specified, shall be of one type on any Sign Panel or group of Sign Panels mounted on a common support, and shall include Letters, Numerals, Arrows and Borders.
- Where more than one Sign Panel is mounted on the same Overhead Sign Panel Support, the Left to Right position of sign Faces of Panels on the Support (as viewed by approaching traffic) is repeated in the same order on these Sign Face Detail Sheets.
- For Line Diagrams of Overhead Signs and Sign Structures See Sheet No. 77.



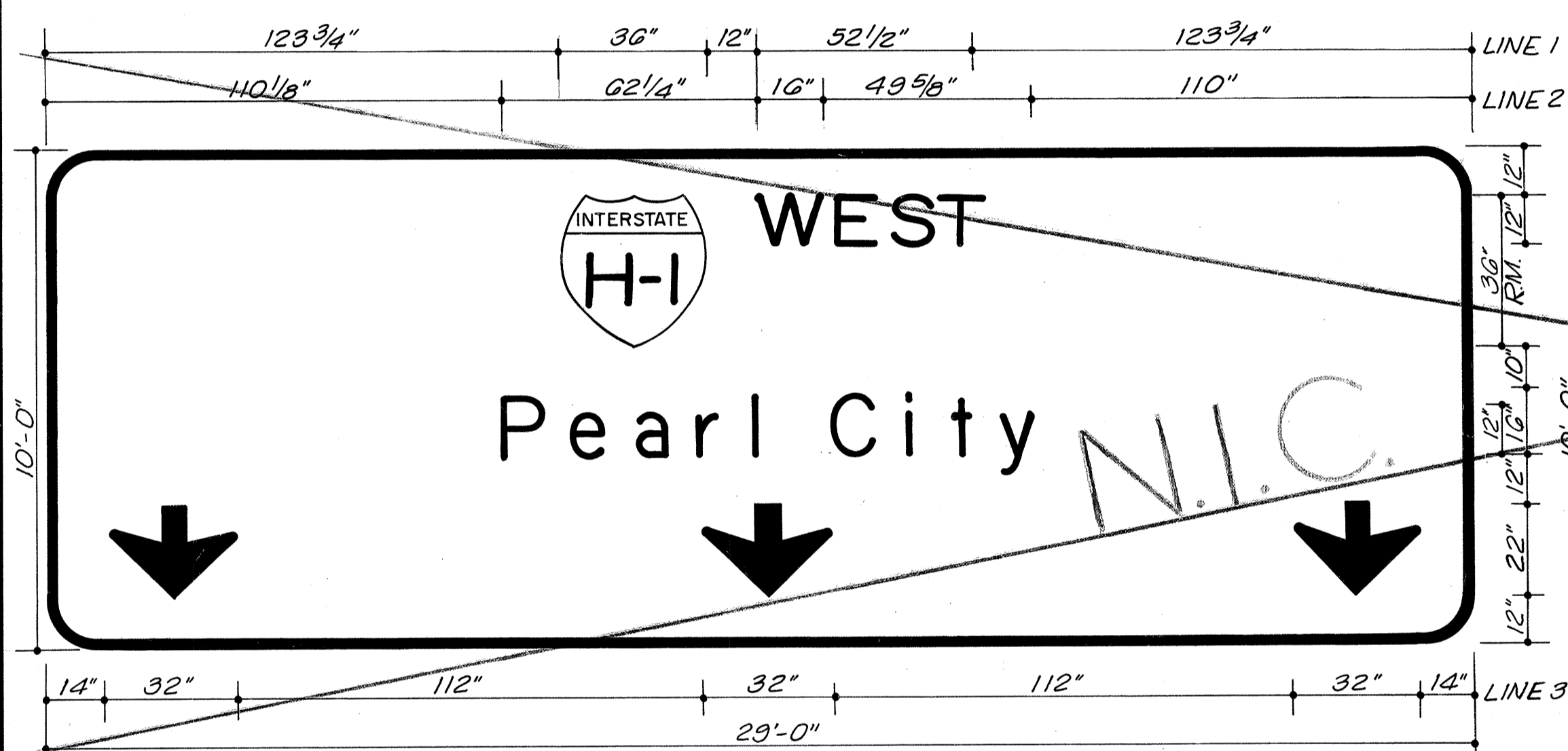
SIGN ASSEMBLY E - 30



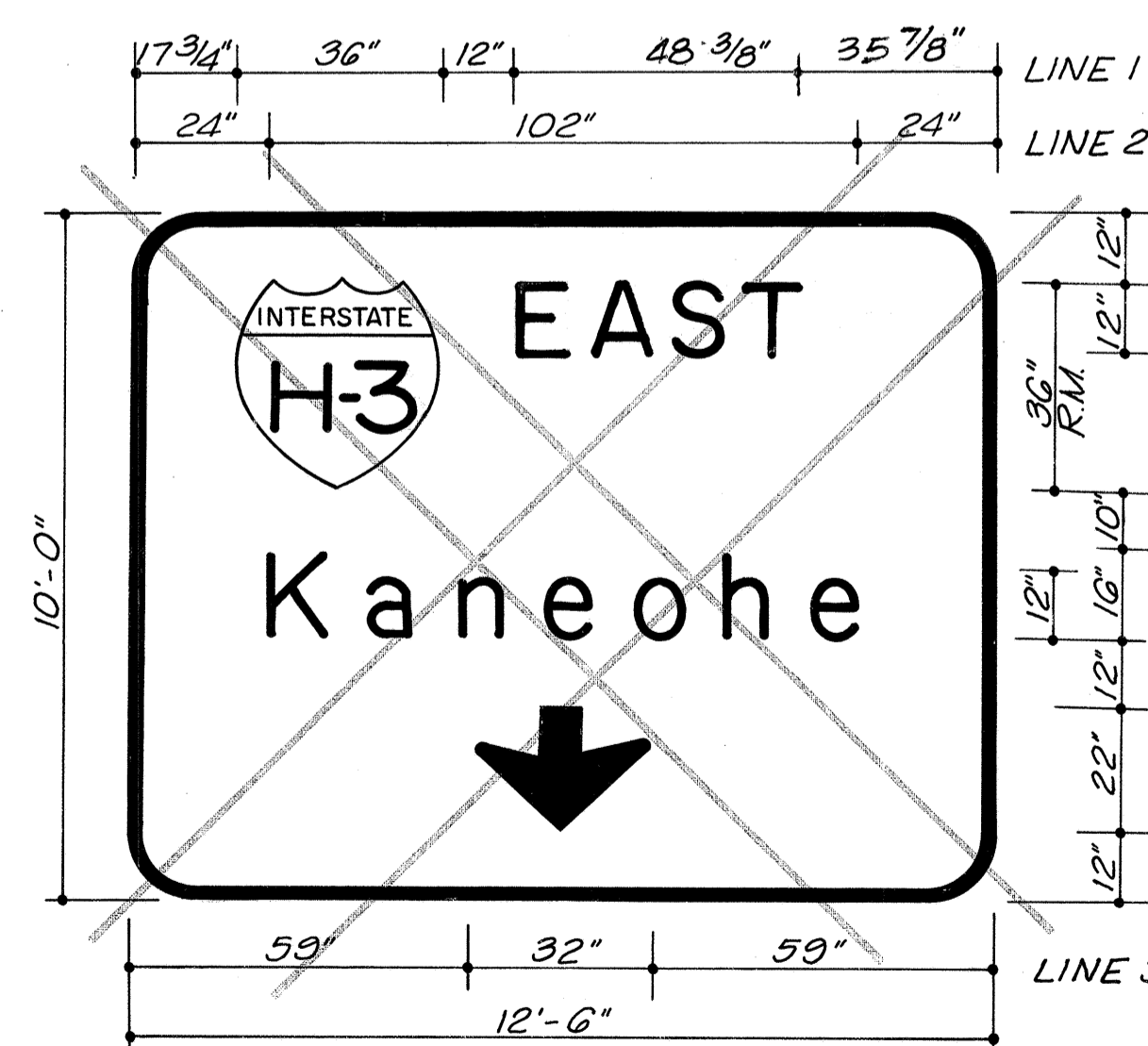
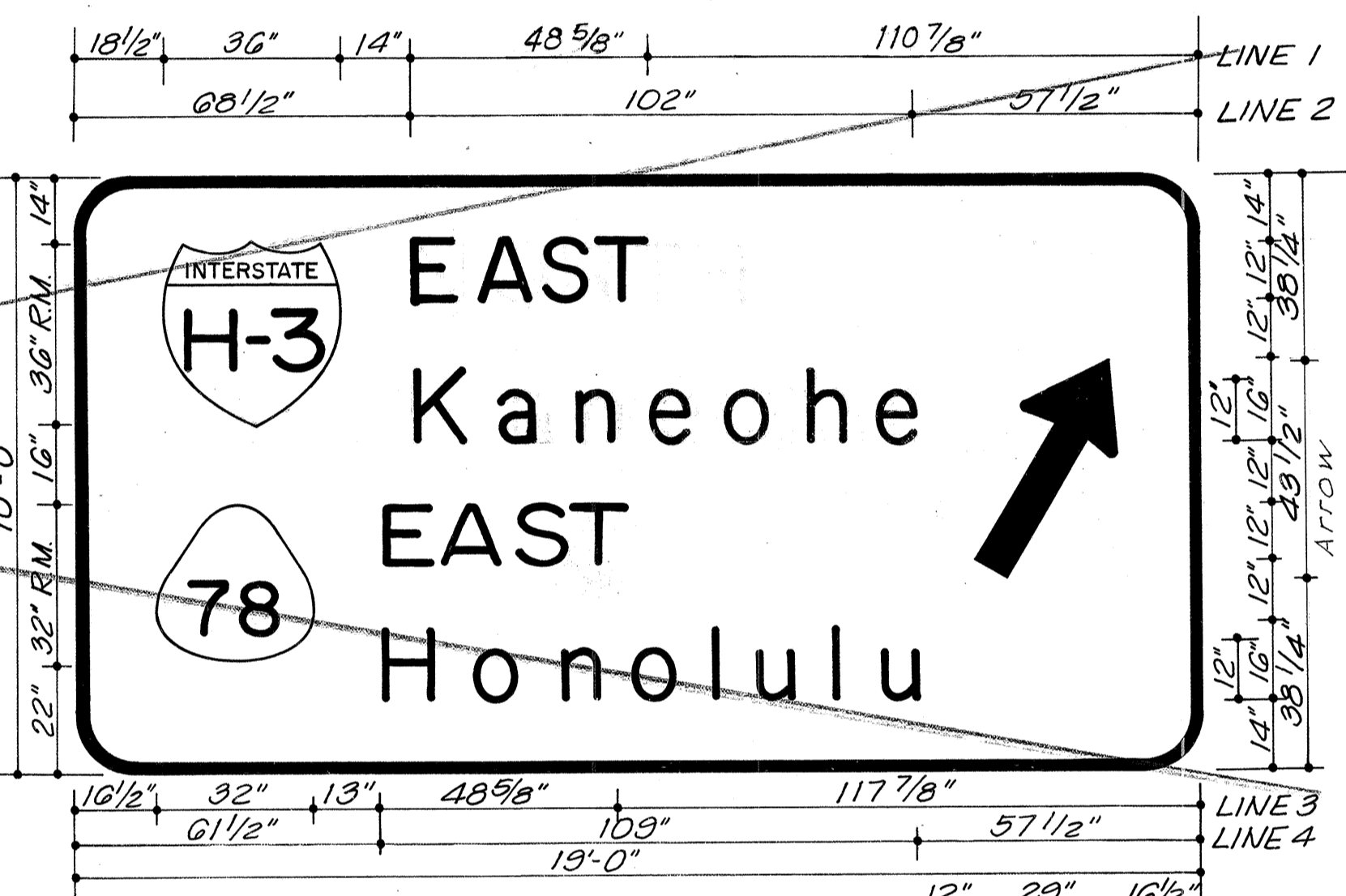
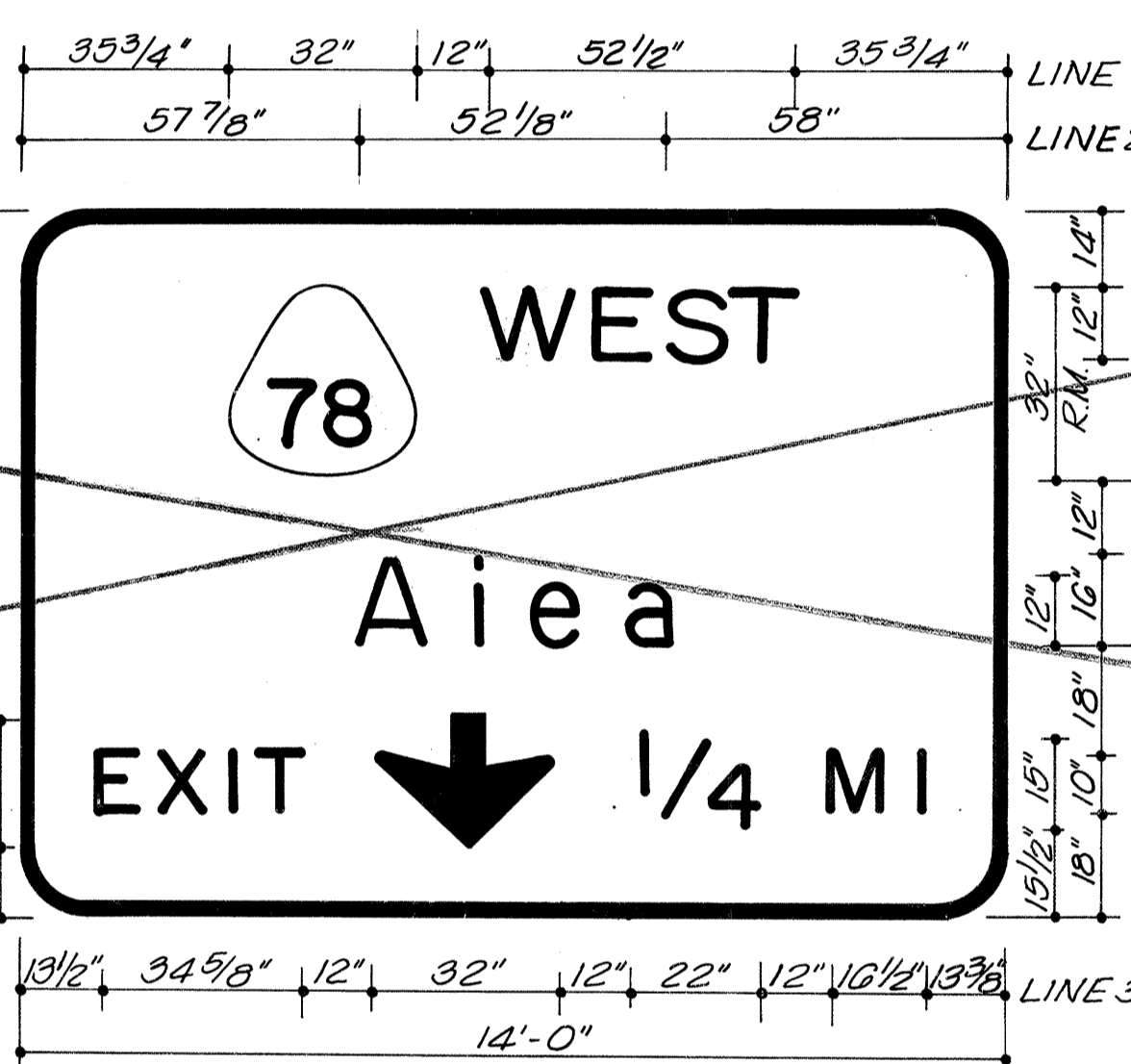
SIGN D-11



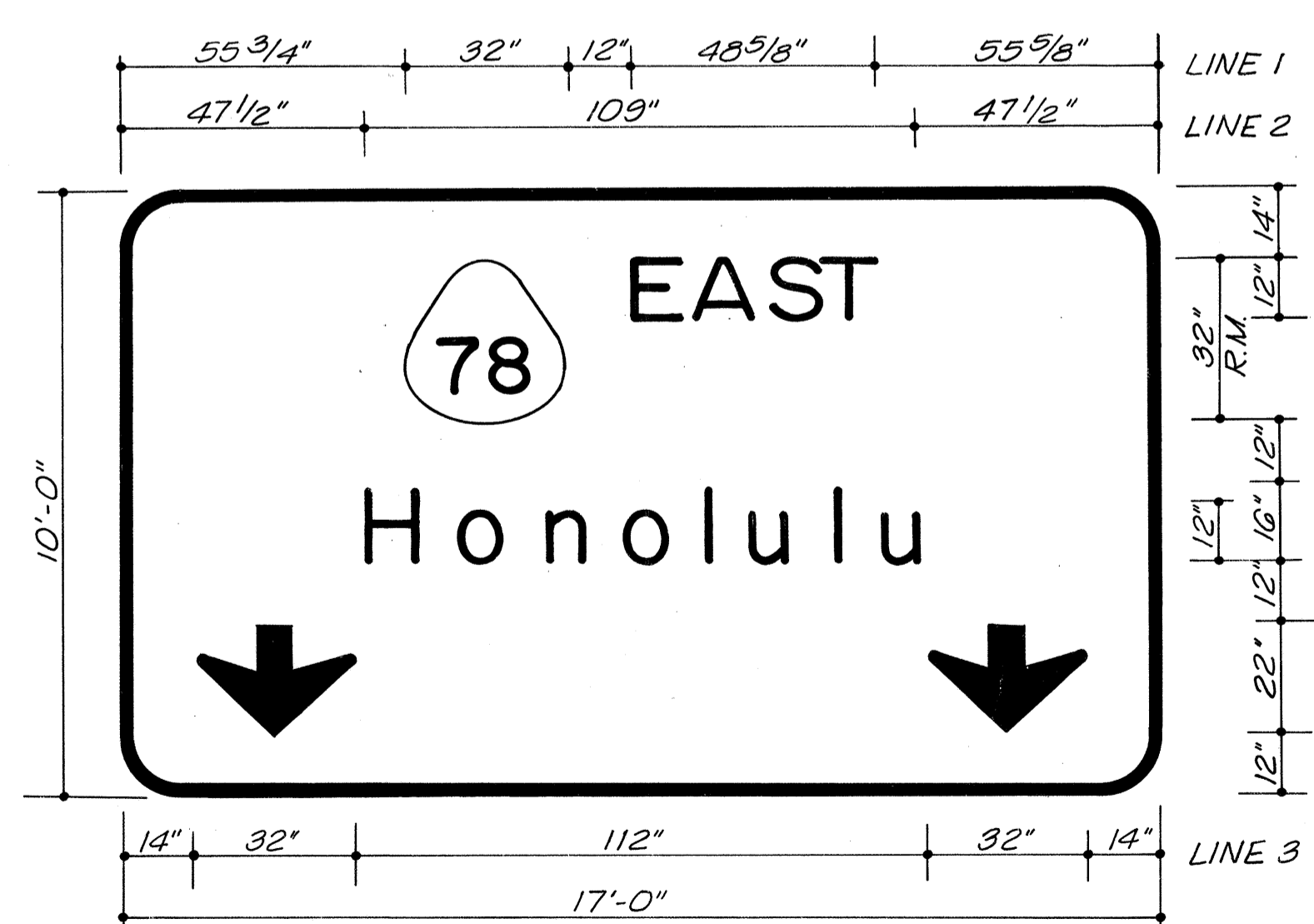
SIGN E - 32



SIGN ASSEMBLY E - 33

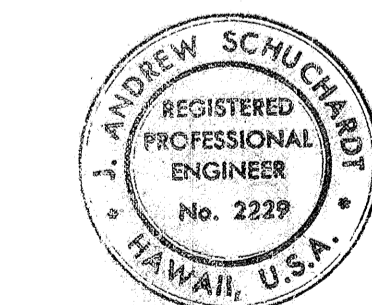


SIGN ASSEMBLY E - 40



SUMMARY OF EXPRESSWAY SIGNS		
SIGN NO.	MESSAGE	AREA (SQ. FT.)
E-30	KANEHOE, HONOLULU	120.00
E-32	AIEA	100.00
E-33	PEARL CITY, AIEA, KANEHOE	620.00
E-40	KANEHOE, HONOLULU	170.00
TOTAL		390.00

DATE: _____
 SURVEY PLOTTED BY: _____
 DRAWN BY: S. L. GOSWAMI
 DESIGNED BY: M. S. S. S. S.
 CHECKED BY: E. S. GOSWAMI



THIS WORK WAS PREPARED BY
 ME OR UNDER MY SUPERVISION
 Andrew Schuchman

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

SIGN FACE DETAILS

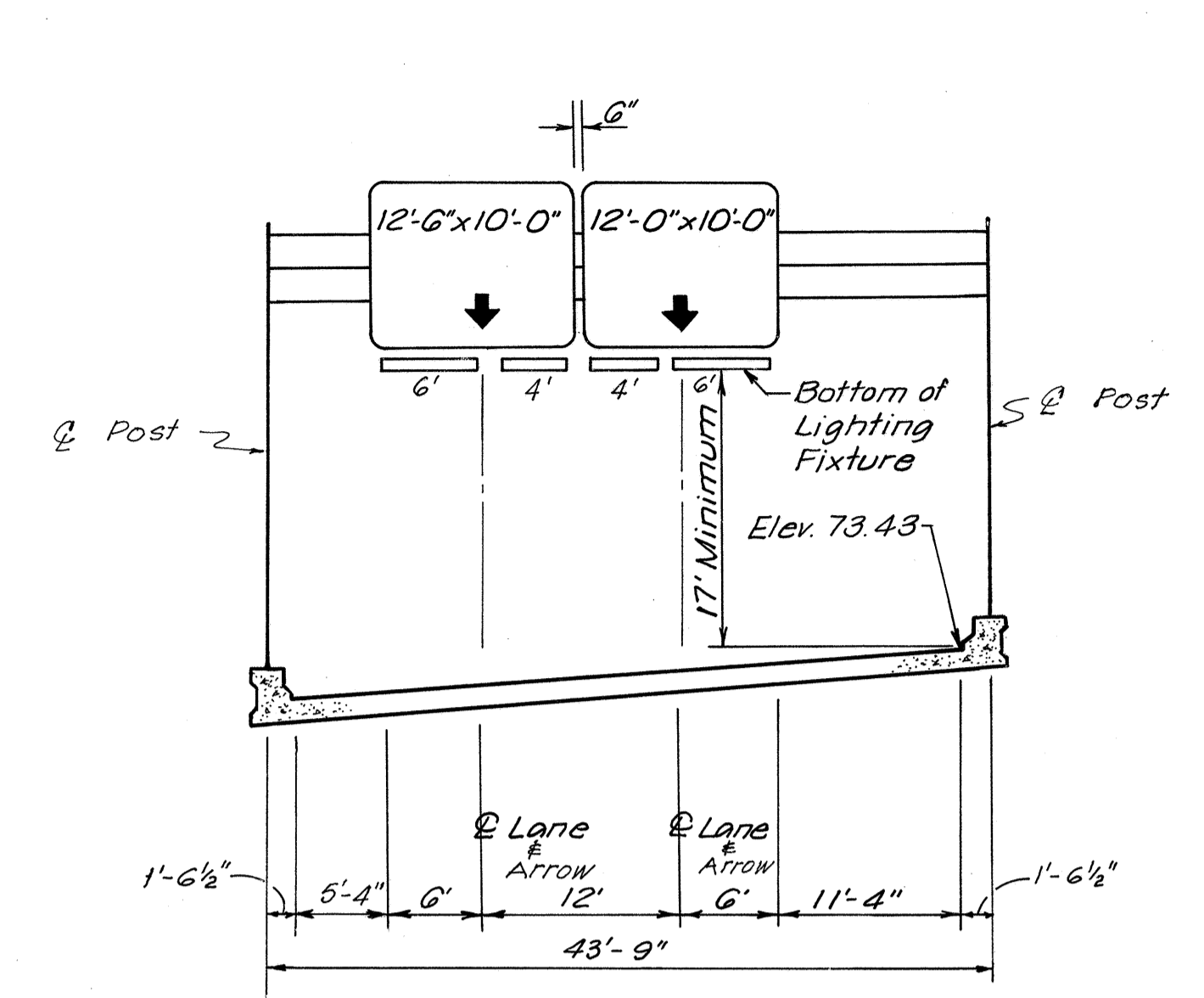
INTERSTATE ROUTE H-1
 PROJECT NO I-HI-(91):13

SCALE: 3/8" = 1'-0" DATE: APR. 15, 1971

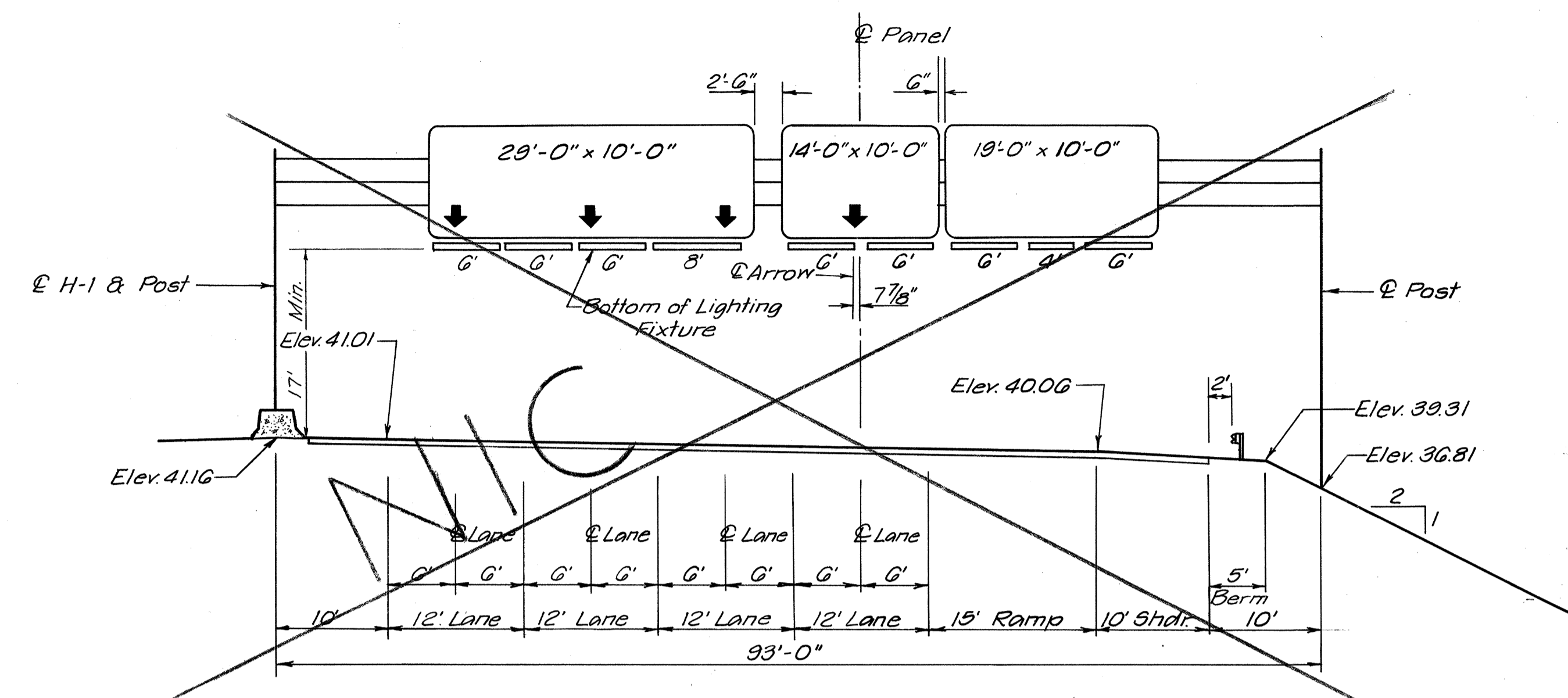
SHEET No. 6 T OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(91):13	1972	76	228

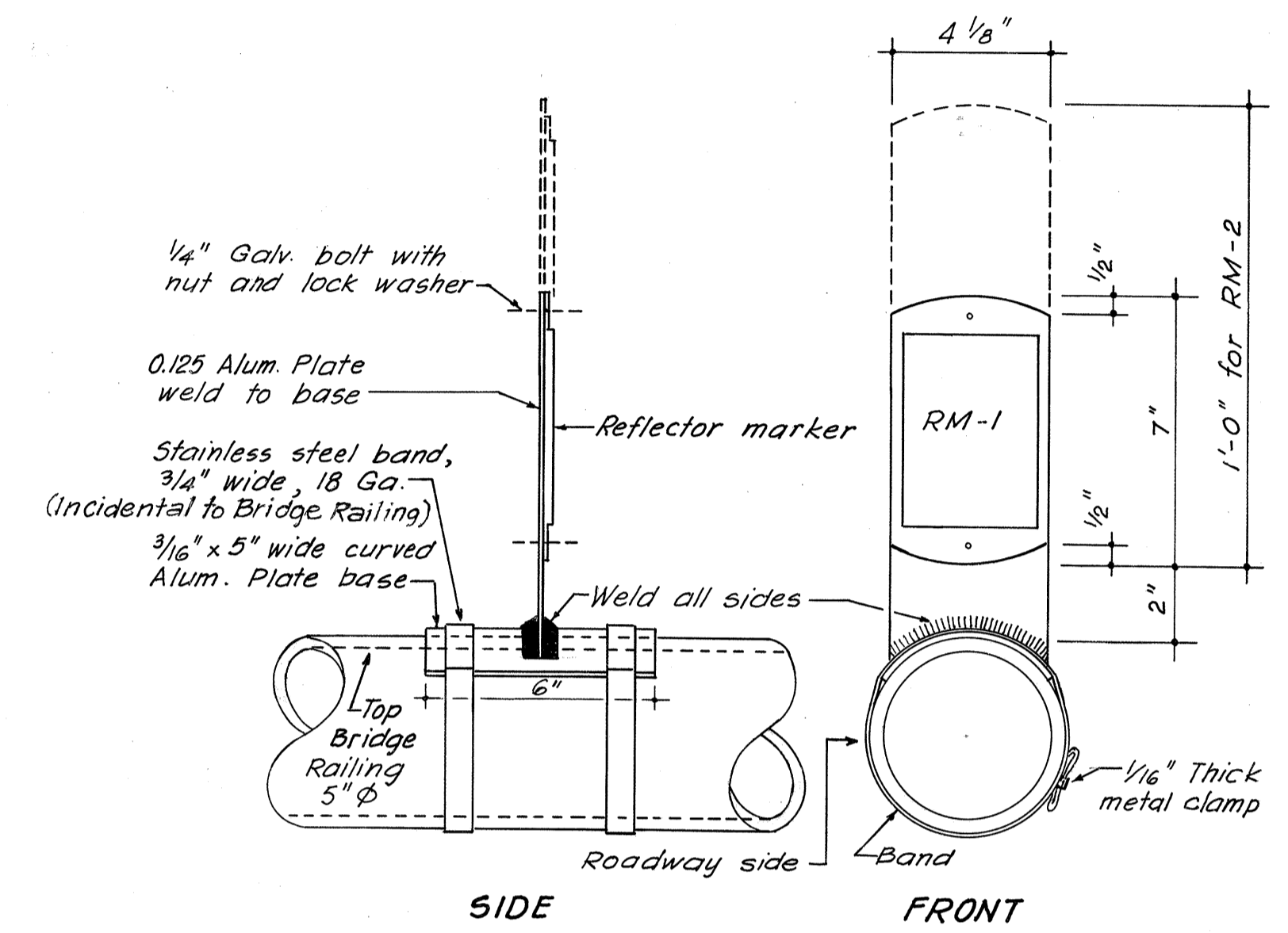
NOTES:
 1. For Sign Face Details of panels mounted on Overhead Structures, see Sheet 6T.
 2. For details of (A) Outrigger Brackets Supporting Sign Panel Lighting Fixtures, (B) Overhead Sign Structures, (C) Structure Footings, (D) Special Concrete Median Barrier Section at Overhead Sign Structure Posts, (E) Sign Panel Brackets, see Sheets 8T through 14T and Electrical Sheet.
 3. See Electrical Drawings for Sign Panel Lighting Fixture Type, Installation Details, etc.
 4. For protective treatment of exposed Overhead Sign Structure Supports, see Special Guard Rail Installations on General Location Plans, Specifications and Standard Details.



ELEVATION SIGN ASSEMBLY E-30
 WE RAMP @ STA. 225 + 25
 Scale: 1" = 10'



ELEVATION SIGN ASSEMBLY E-33
 H-1 @ STA. 240 + 75 (OUTBOUND)
 Scale: 1" = 10'



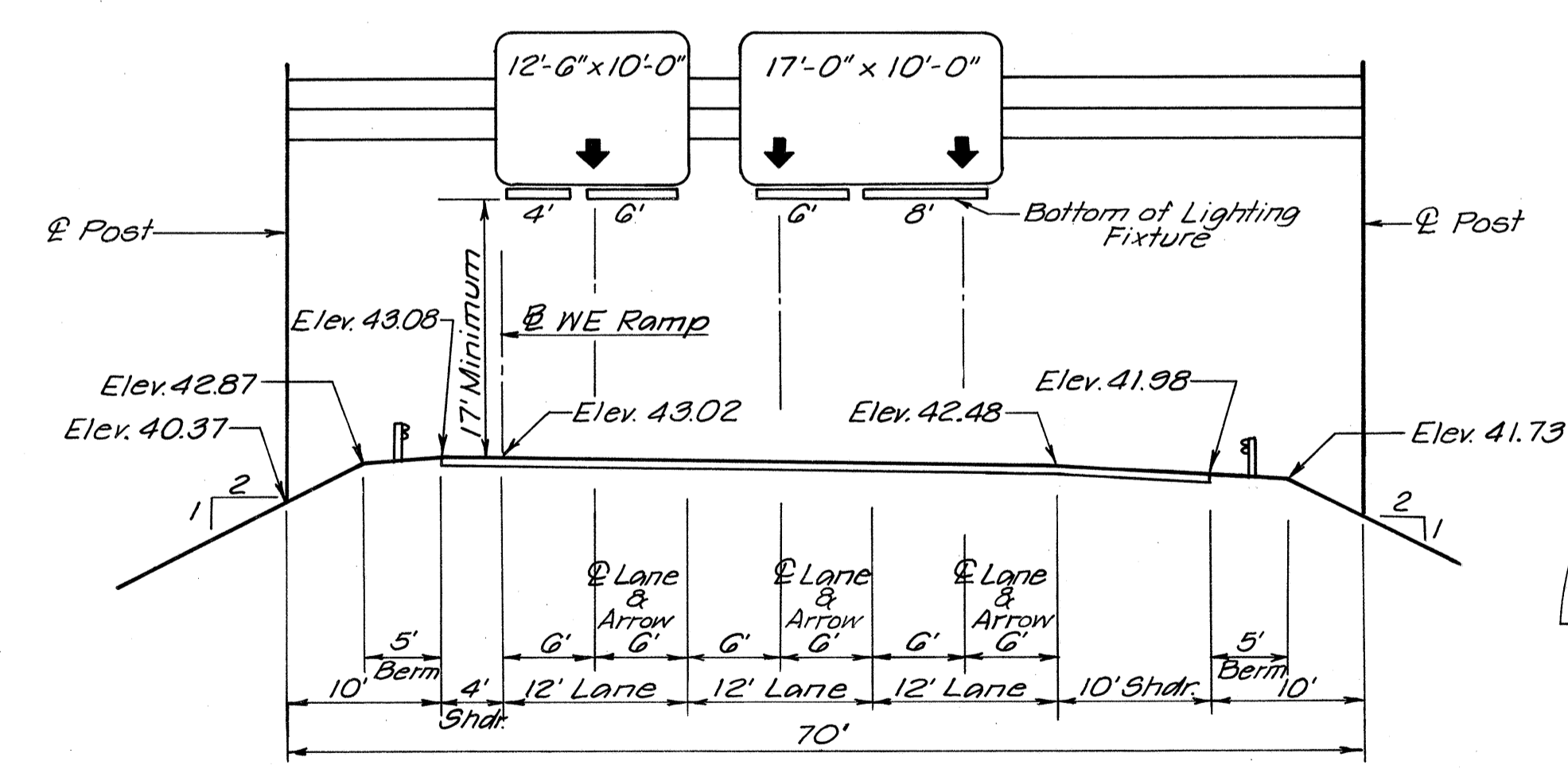
DET. OF BRACKET FOR REFLECTOR MARKERS MOUNTED ON BRIDGE RAILINGS
 Scale: 3" = 1'-0"

SHEET NO.	RM-1 CLEAR		RM-2 AMBER		RM-3 AMBER		RM-3H AMBER	
	W/POST	W/O POST	W/POST	W/O POST	W/POST	W/O POST	W/POST	W/O POST
1T	1	48	38	3	4	4	2	2
2T	49	44	9	1	11	6	-	-
3T	7	0	-	-	-	-	1	-
4T	44	5	-	-	3	-	-	-
5T	6	3	-	-	2	-	1	-
TOTAL	107	100	47	4	20	10	4	2

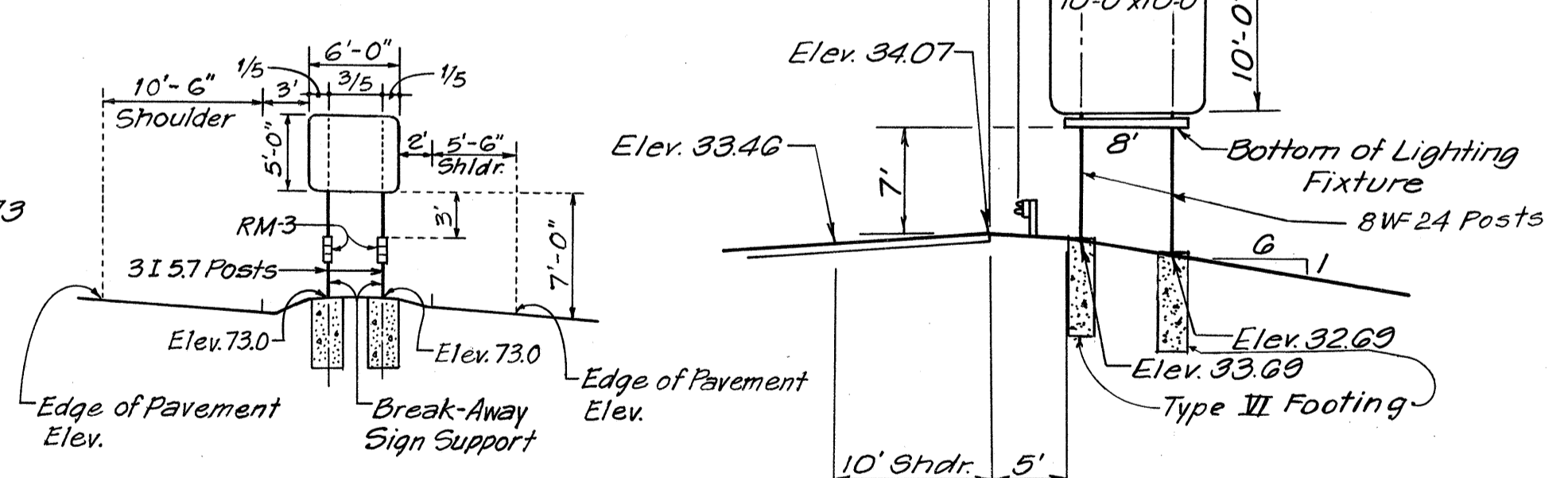
SHEET NO.	QUANTITY	
	TYPE A	TYPE C
1T	186	22
2T	269	33
3T	-	-
4T	114	23
5T	144	16
TOTAL	713	94

TYPE	MESSAGE	QUANTITY	
		W/POST	W/O POST
W1-2(R)	(CURVED ARROW)	-	3
W4-1R	MERGING TRAFFIC	-	1
W4-1R-A	MERGING	1	-
W13-1(35)	35 MPH	1	-
W13-2(35)	RAMP 35 MPH	-	1
W13-2(50)	RAMP 50 MPH	-	1
W13-1(25)	25 MPH	1	-
W13-1(15)	15 MPH	-	1
TOTAL		3	7

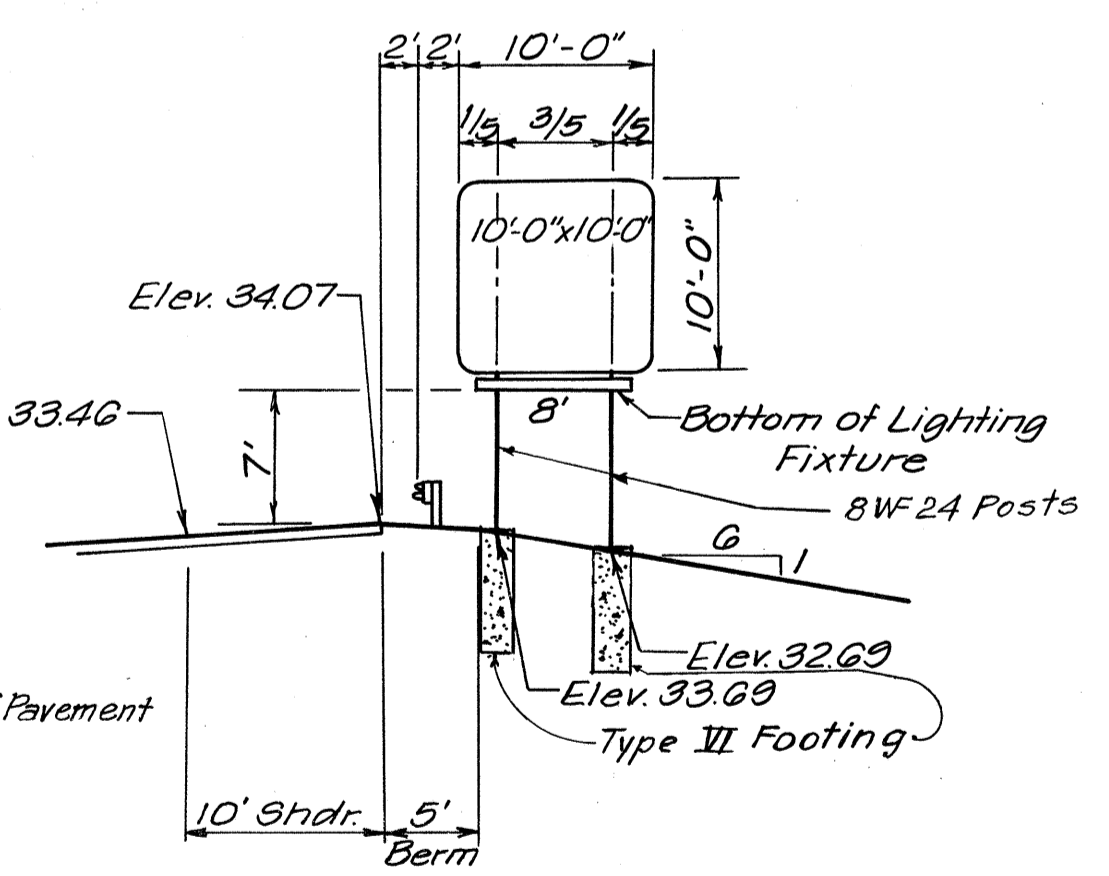
TYPE	MESSAGE	QUANTITY	
		W/POST	W/O POST
R2-1(35)-A	SPEED LIMIT 55	2	-
R11-2		-	1
TOTAL		2	1



ELEVATION SIGN ASSEMBLY E-40
 WE RAMP @ STA. 244 + 25
 Scale: 1" = 10'



SIGN D-11
 RAMP C STA. 11 + 26
 Scale: 1" = 10'



ELEVATION SIGN E-32
 H-1 @ STA. 225 + 42
 Scale: 1" = 10'

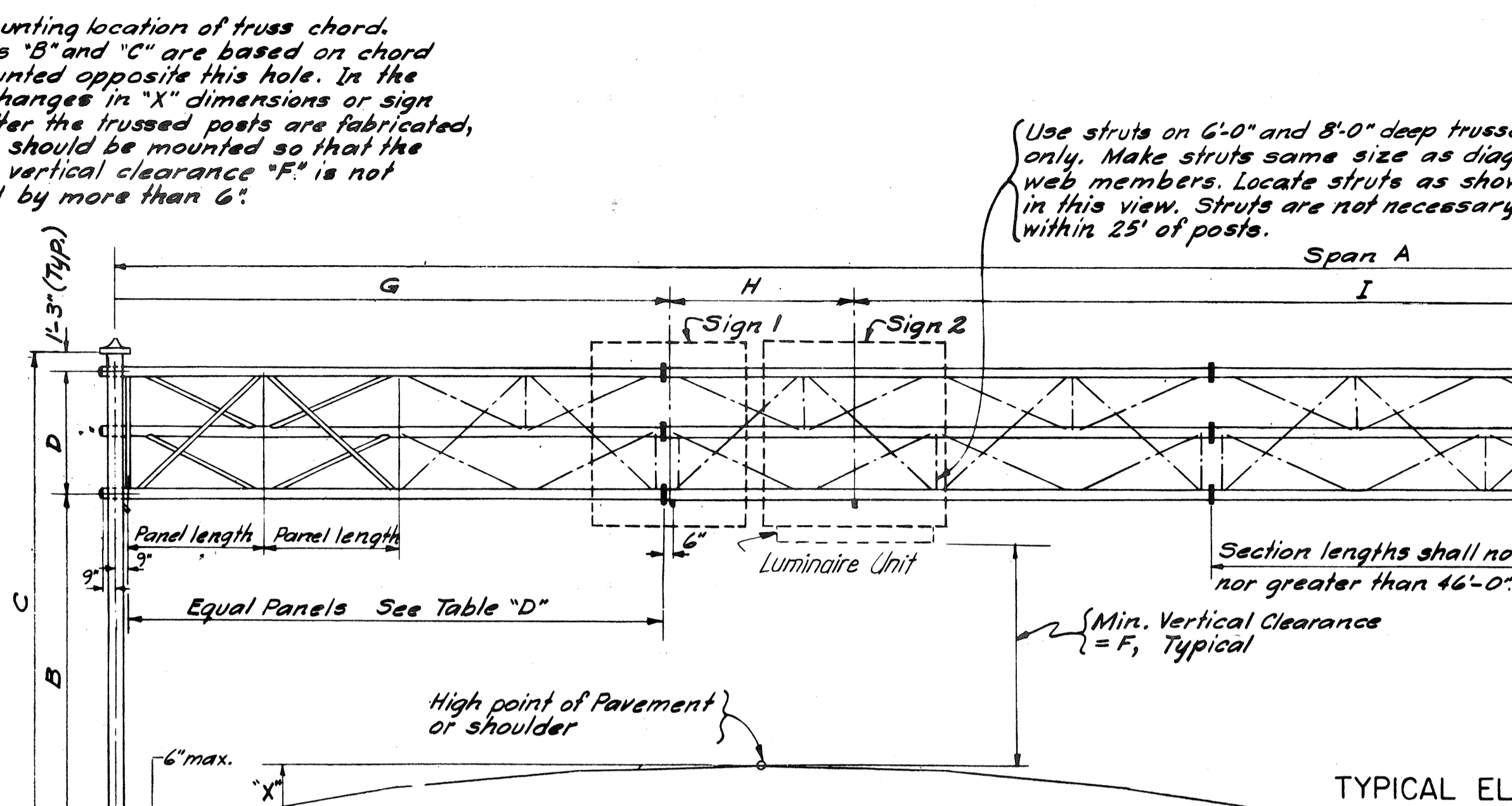
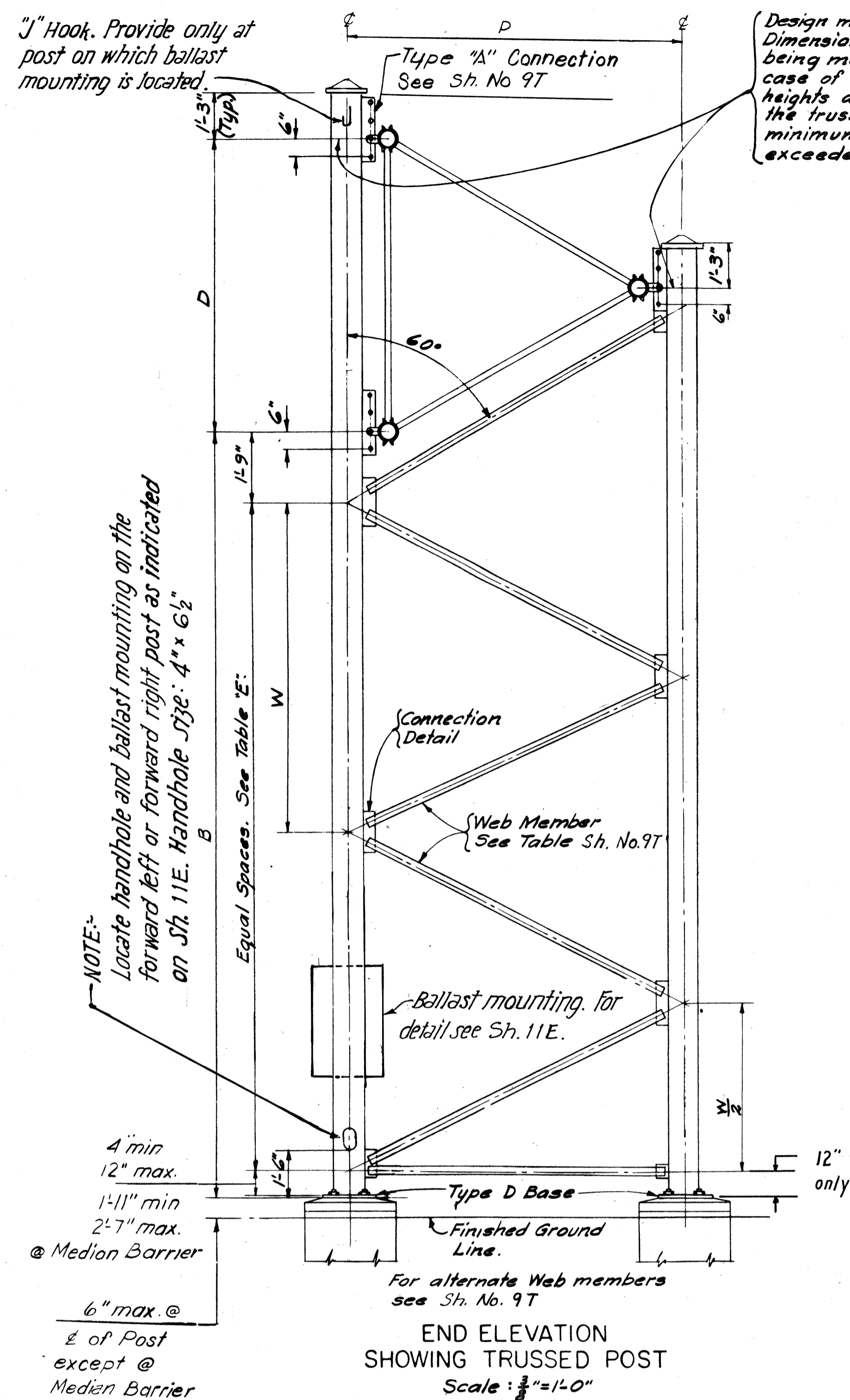
SIGN NO.	MESSAGE	AREA (SQ. FT.)
D-11	EXIT	30.00
TOTAL		30.00

REGISTERED PROFESSIONAL ENGINEER
 No. 2229
 HAWAII, U.S.A.
 J. Andrew Schuchardt

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
MISCELLANEOUS SIGN DETAILS
 INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(91):13
 Scale: As Shown Date: APR. 15, 1971
 SHEET No. 7T OF 20 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(91):13	1972	77	228



NOTES

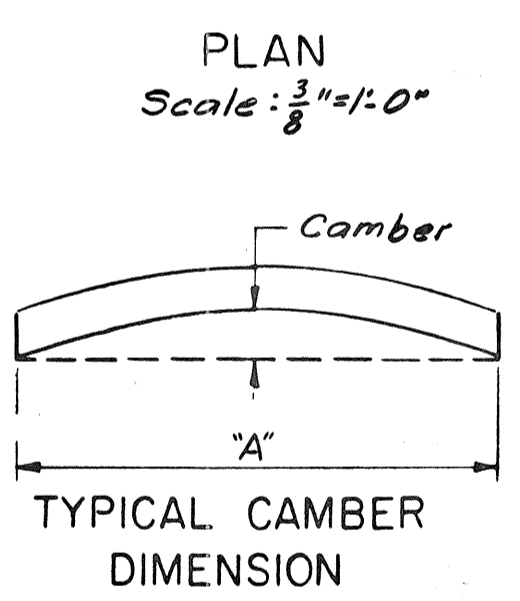
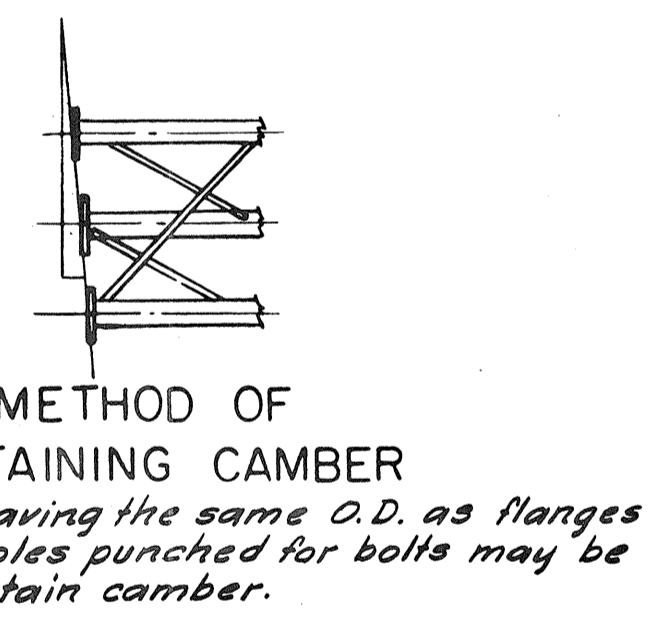
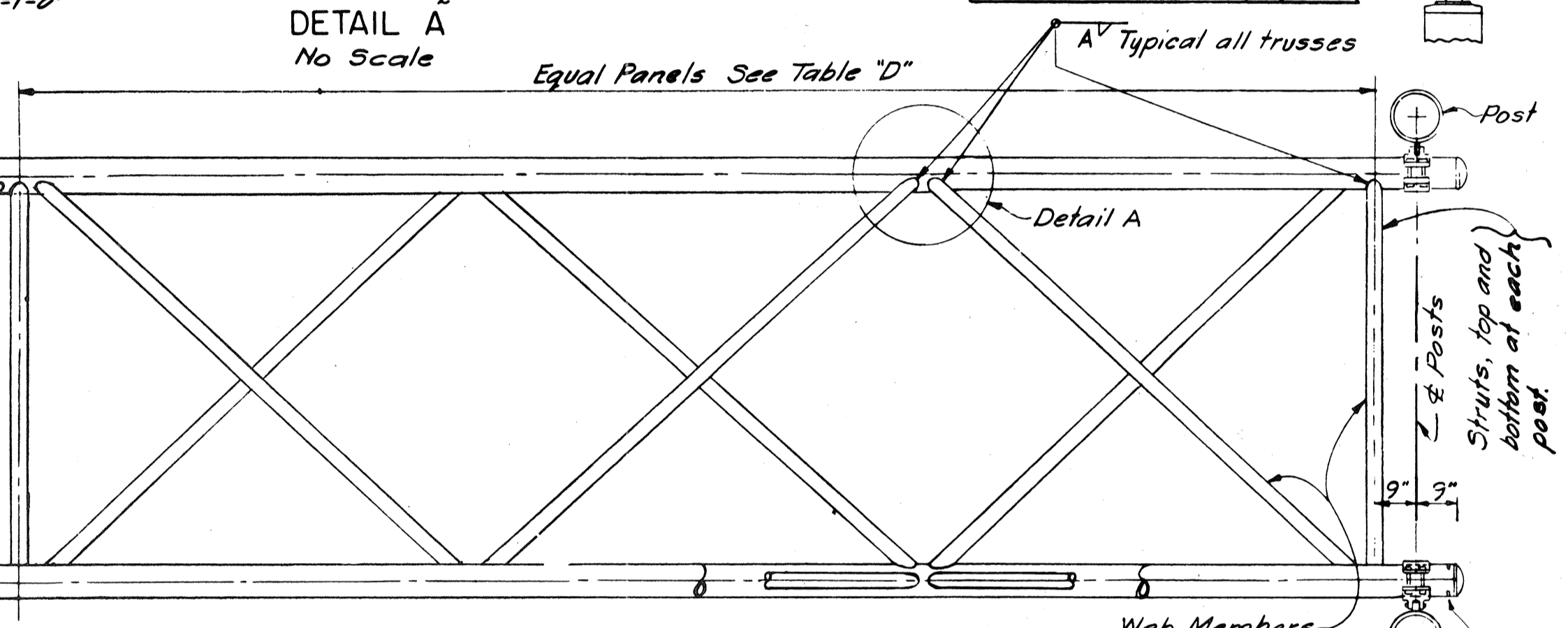
For dimensions of Type "D" bases and anchor bolts see Sh. No. 97.

For Connection Detail "B" and for the alternate details of web members of trussed posts see Sh. No. 97.

For flanged connections and post Cap details see Sh. No. 11T.

Tri-truss span and brackets are fabricated of Aluminum. Galvanized Steel in contact with Aluminum must be separated by "Fabco" or "Fabreka" Pads. Single and double poles, base plates and post to truss connections are fabricated of galvanized steel.

ASTM A53 TYPE B	ASTM A595	ASTM A252 GRADE 3	API 5Lx 52
6" Schedule 40s	3 Gauge 6"	6" Schedule 40s	6" Schedule 40s
8" Schedule 20	3 Gauge 8"	8" Schedule 20	8" Schedule 20
8" Schedule 30	3 Gauge 8"	8" Schedule 20	8" Schedule 20
8" Schedule 40s	3 Gauge 8"	8" Schedule 20	8" Schedule 20
8" Schedule 60	0 Gauge 8"	8" Schedule 40s	8" Schedule 30
8" Schedule 80x	7+7 Gauge 8"	8" Schedule 60	8" Schedule 60
10" Schedule 20	3 Gauge 10"	10" Schedule 20	10" Schedule 20
10" Schedule 30	3 Gauge 10"	10" Schedule 20	10" Schedule 20
10" Schedule 40s	3 Gauge 11"	10" Schedule 30	10" Schedule ?
10" Schedule 60x	0 Gauge 11"	10" Schedule 60x	10" Schedule 40s
10" Schedule 80	7+3 Gauge 10"	10" Schedule 60x	10" Schedule 60x
12" Schedule 20	3 Gauge 12"	12" Schedule 20	12" Schedule 20
12" Schedule 30	3 Gauge 12"	12" Schedule 30	12" Schedule 20
12" Schedule s	0 Gauge 12"	12" Schedule 30	12" Schedule 20
12" Schedule 40.	0 Gauge 12"	12" Schedule 30	12" Schedule 30
12" Schedule x	7+7 Gauge 12"	12" Schedule 40	12" Schedule s
12" Schedule 60	7+3 Gauge 12"	12" Schedule x	12" Schedule s
12" Schedule 80	3+3 Gauge 12"	12" Schedule 60	12" Schedule x



SPAN A	CAMBER	SPAN A	CAMBER
Up to 50'	2"	125' to 150'	8"
50' to 75'	3"	150' to 170'	9"
75' to 100'	4"	170' to 190'	10"
100' to 125'	6"	190' to 210'	12"

SIGN NO.	SPAN A	TYPE	PIPE SIZE	LEFT POST				P	TYPE	PIPE SIZE	RIGHT POST				XR	F	D	TRUSS CHORD SIZE	WEB SIZE	SIGN 1	SIGN 2	SIGN 3
				B	C	XL	P				B	C	XR	F									D	G	H	I
E-30	43 9 0	T	6" SCH 40S	22 1 2	27 4 2	0 9 5	5 2	T	6" SCH 40S	19 0 5	24 3 5	-2 -3 0	17 0 0	4 0 0	3' X 3/16"	2' X 3/16"	12 1 4	12 9 0				
E-33	33 0 0	T	6" SCH 30	19 1 7	26 4 7	1 1 5	7 2	T	6" SCH 20	23 4 1	30 7 1	3 0 4	17 0 0	6 0 0	1 6 1/4 X 1/4"	2 1/2 X 3/16"	20 0 0	24 0 0	17 0 0			
E-40	70 0 0	T	6" SCH 40S	22 9 1	28 0 1	1 5 4	5 2	T	6" SCH 40S	23 10 6	29 1 6	2 7 2	17 0 0	4 0 0	3 1/4 X 1/4"	2 1/2 X 3/16"	20 0 0	18 0 0				

① S = Single Post.
T = Trussed Post.

② The pipe sizes listed in this column are for ASTM A53 steel. See the table "Equivalent Post Sizes" on this sheet when using another Type of Steel. Tapered poles may be used for the structures shown on this sheet. Modify connections to fit taper. Large end of tapered sections must

have the same O.D. as the pipe specified in the table.

③ XL refers to the X dimension in the "Typical Elev." for left post. XR refers to X dimension in "Typical Elev." for right post. This dimension to be verified by contractor in field. -1.15 indicates top of pedestal above high point of pavement.

④ The number and arrangement of panels in each section must be such that the web members in each face of the tri truss form continuous trussing in the Structure from Post to Post.

⑤ For details of Footings see Sh. No. 107

⑥ For Sign Panel and Bracket details see Sh. No. 12T.

⑦ For Luminaire Mounting details see Sh. No. 12E

D'	Panel Lengths	
	Min.	Max.
4'-0"	3'-6"	4'-4"
6'-0"	5'-3"	6'-9"
8'-0"	7'-2"	8'-10"

P	"W" Min.	"W" Max.
5'-2"	4'-8"	5'-8"
7'-2"	6'-8"	7'-8"
9'-2 3/4"	8'-8"	9'-8"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD SIGN SUPPORT
3 CHORD TRUSS
INTERSTATE ROUTE H-1
PROJECT NO I-H-1(91):13

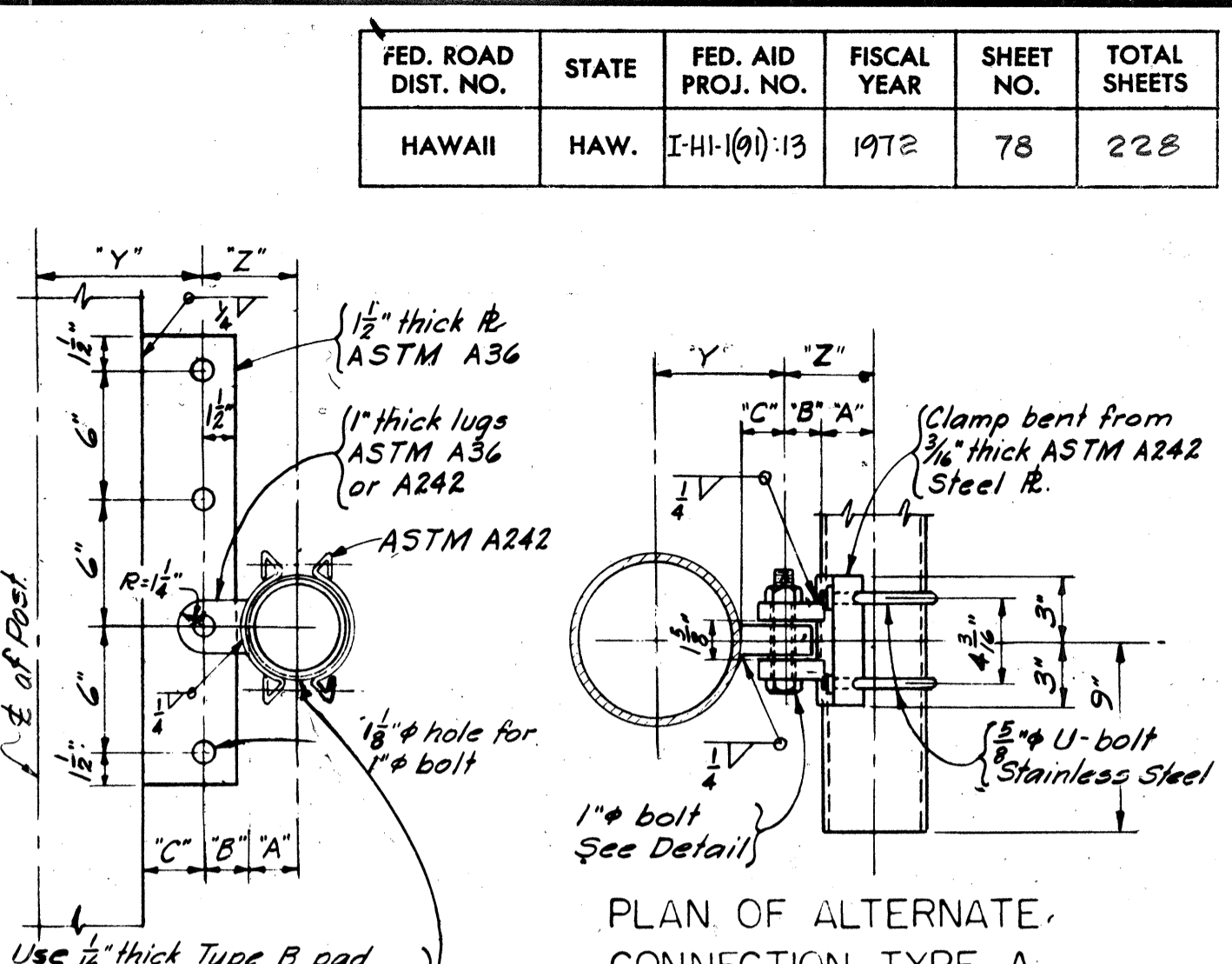
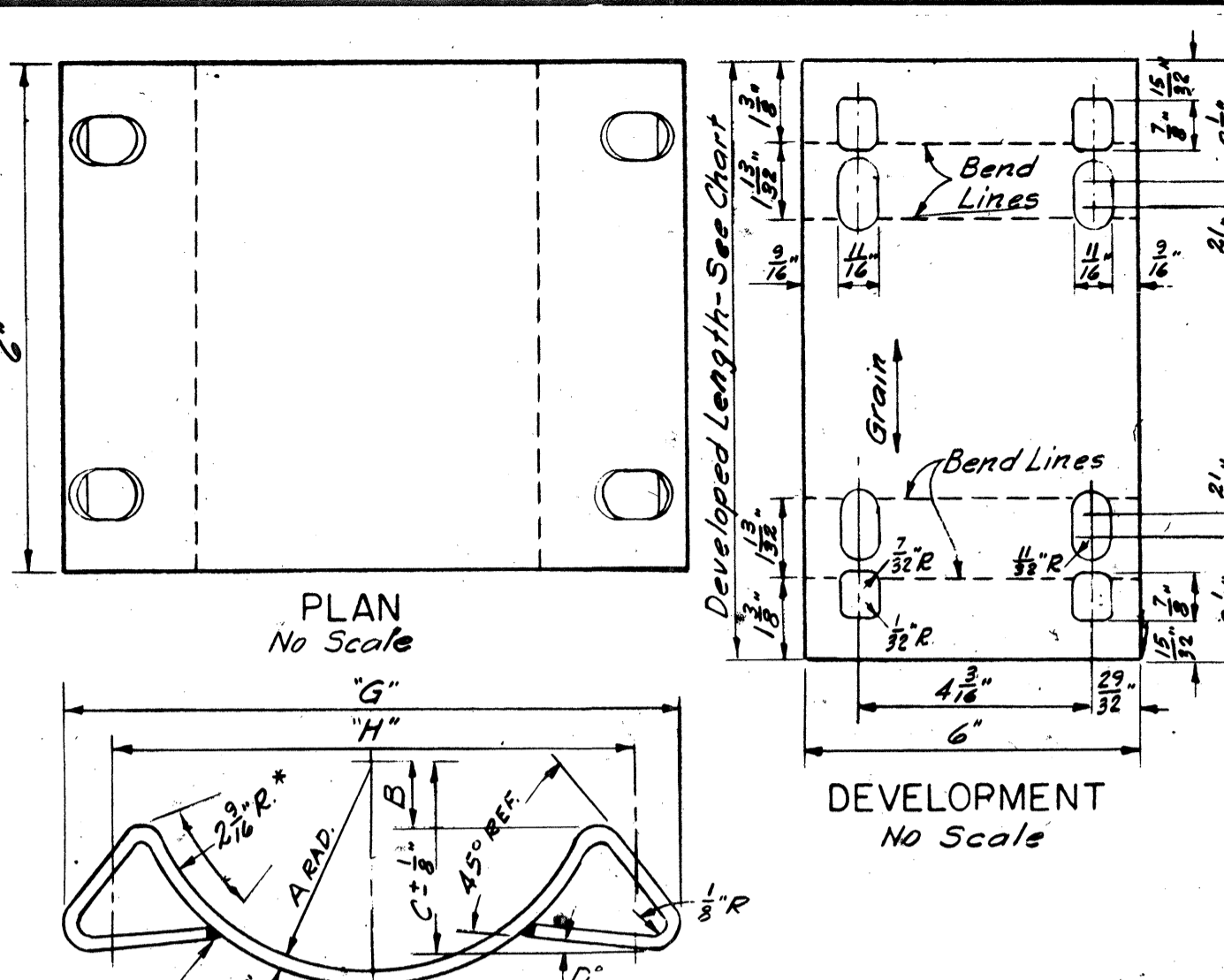
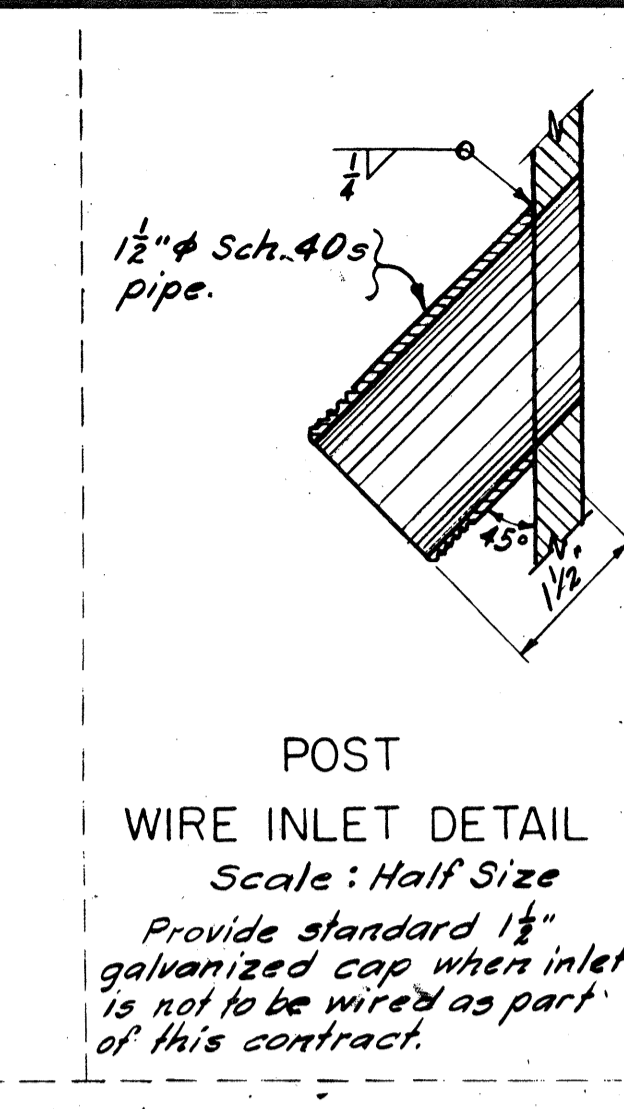
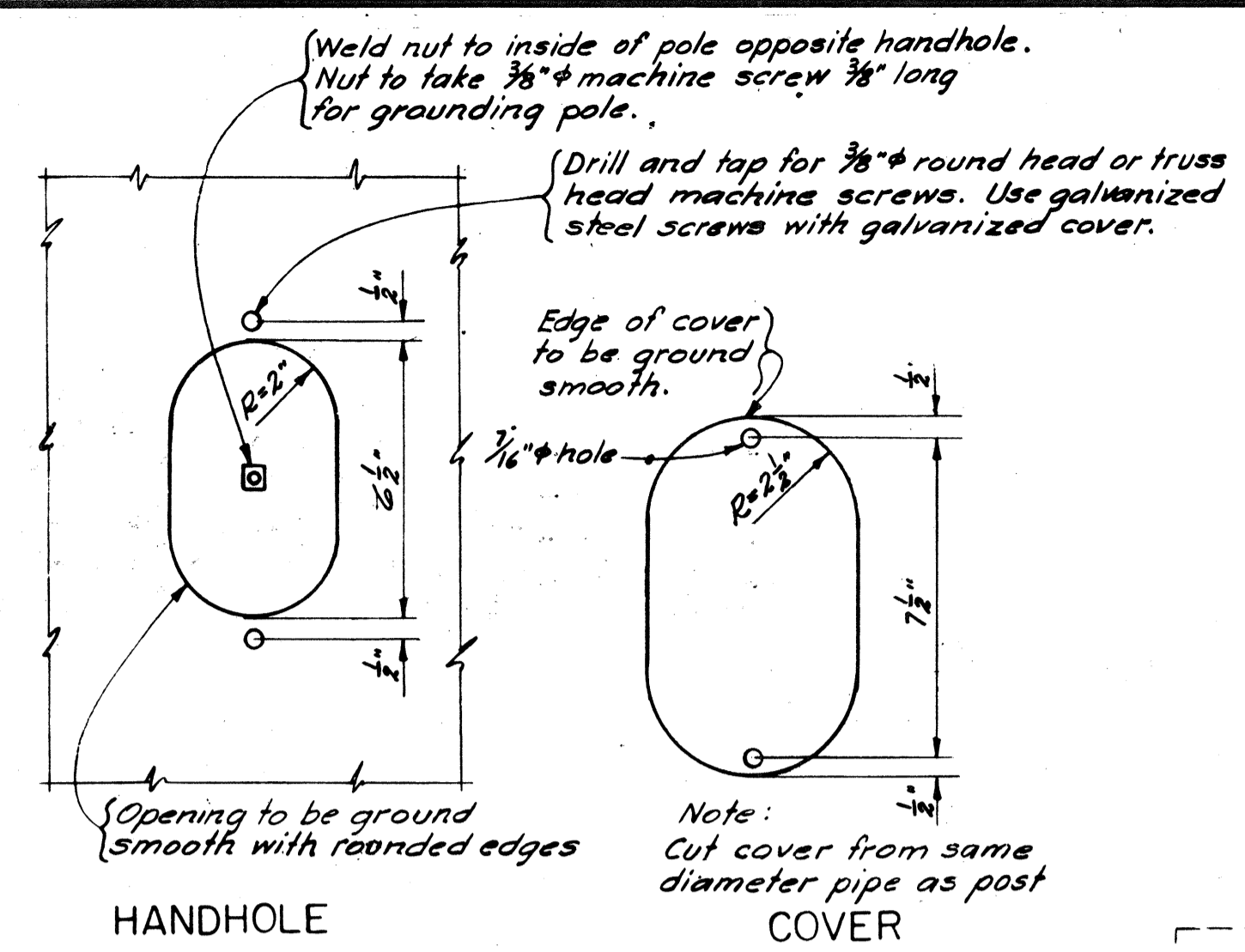
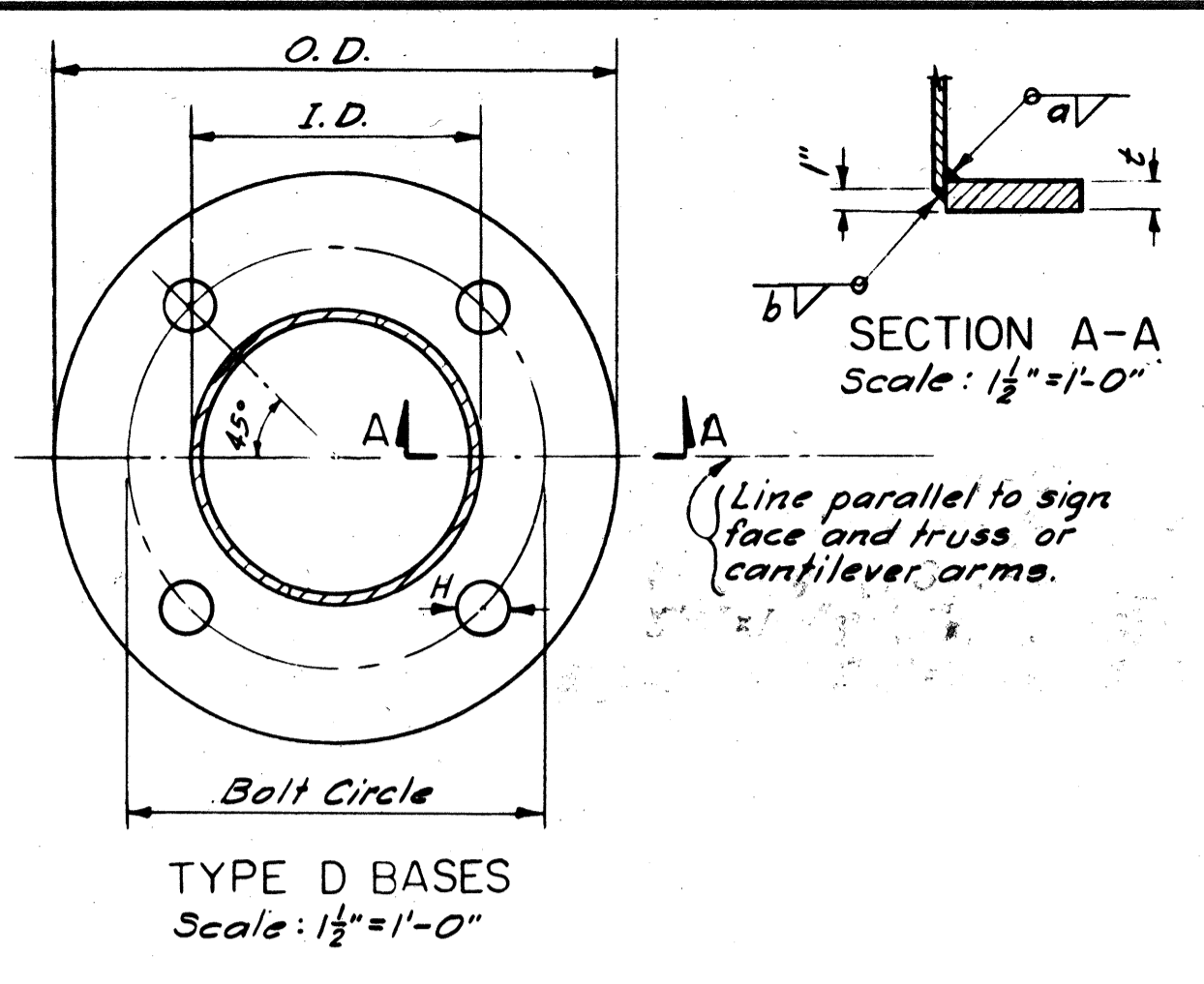
SCALE: AS SHOWN DATE: APR. 15, 1971
SHEET No. 8T OF 20 SHEETS



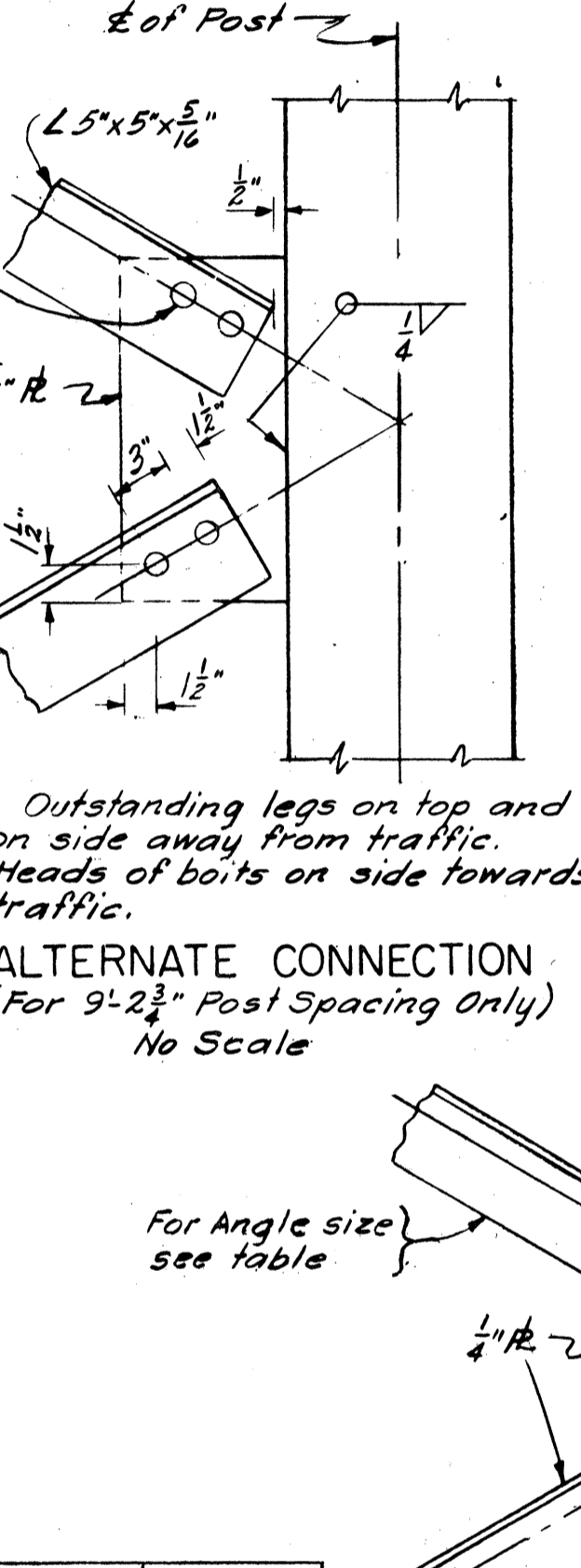
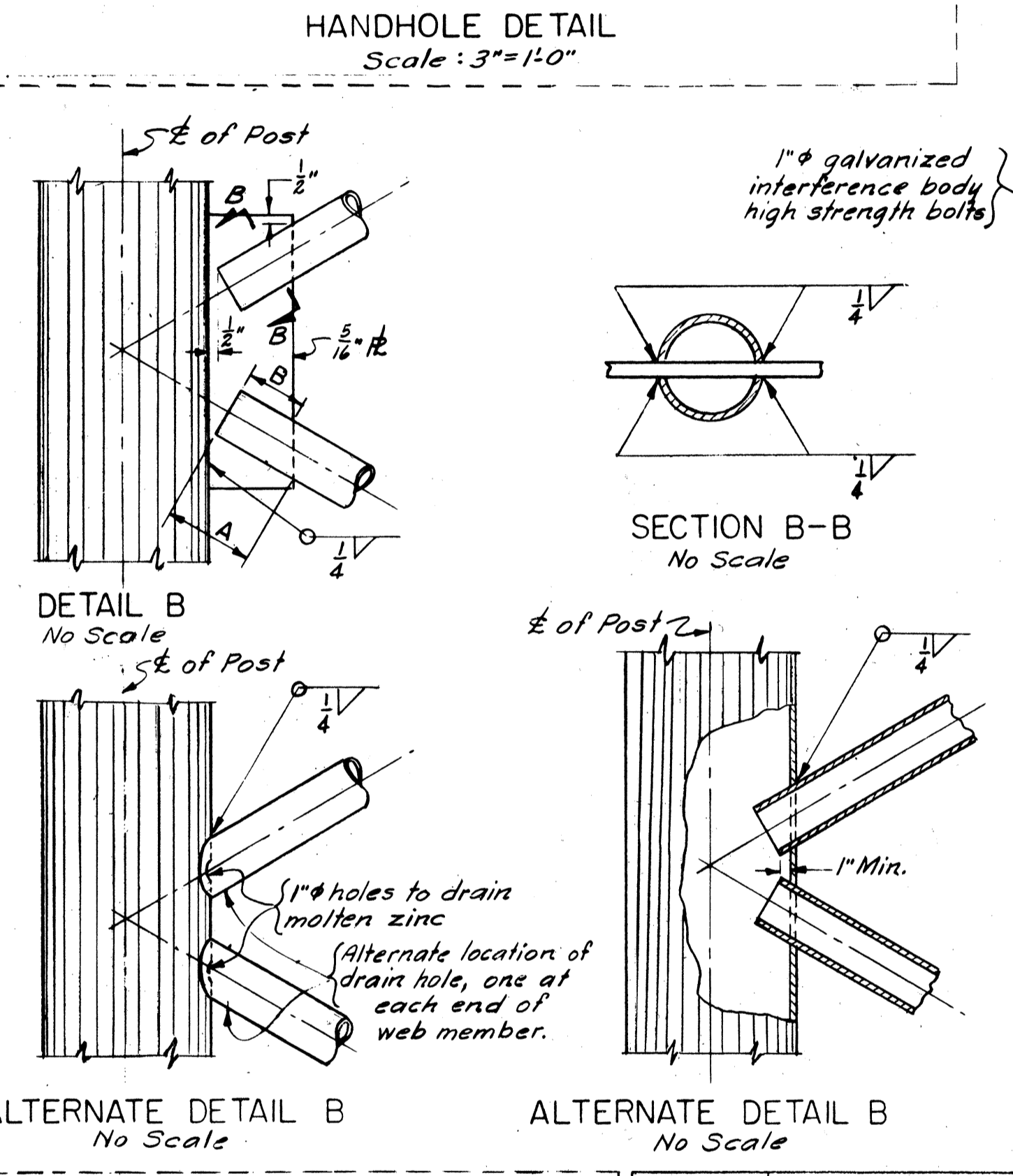
Thomas R. Ruesel

DATE: 2/17/72
DESIGNED BY: J. Schmalzer
CHECKED BY: J. Schmalzer
ORIGINAL PLAN NO. 1000H CLEARPRINT

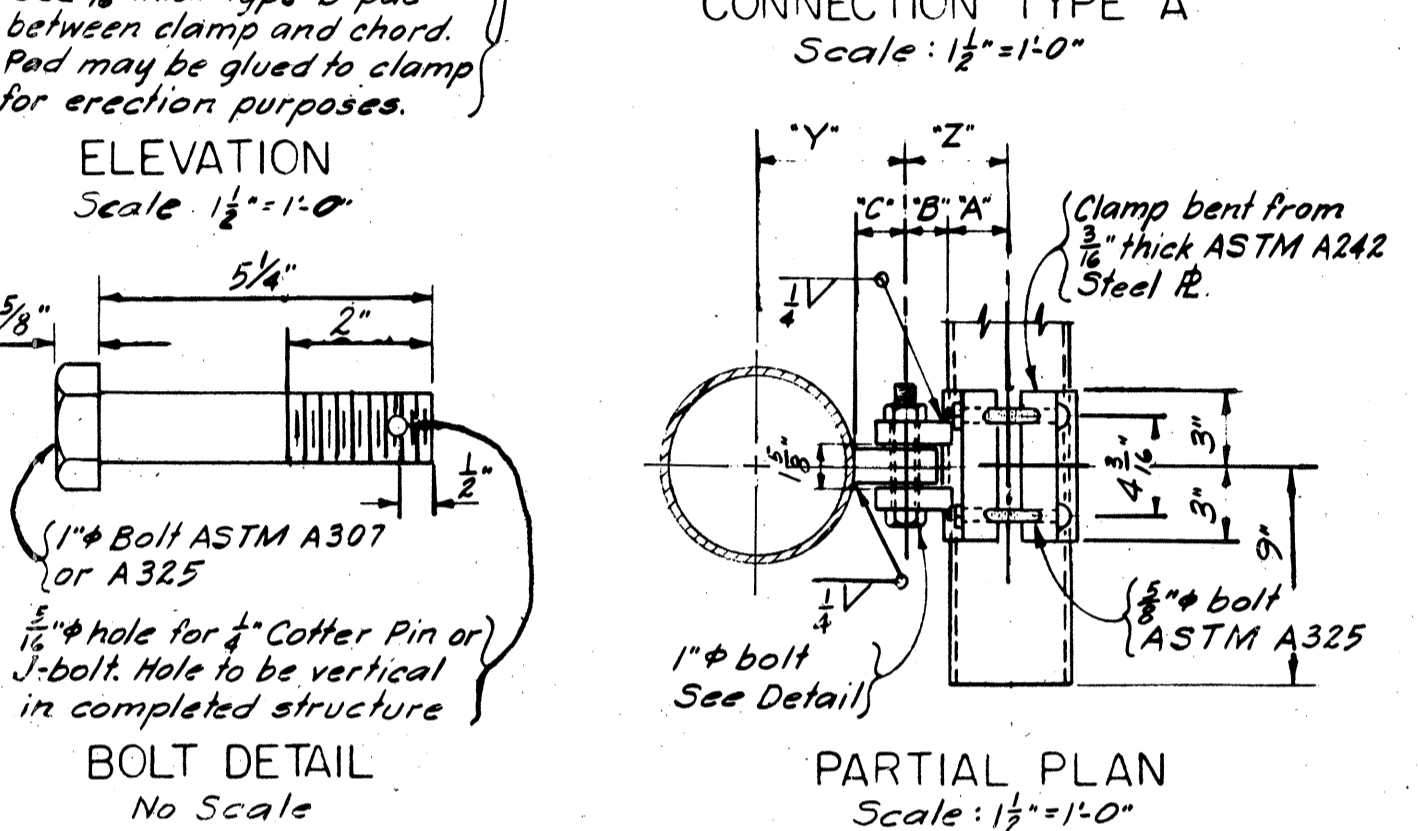
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(91)-13	1972	78	228



POST	BASE R		MIN. t	BOLT CIRCLE	BOLT DIA.	HOLE DIA.	WELD	
	O. D.	I. D.					a	b
6 Sch 40s	14.0"	6 3/8"	1 1/8"	11 1/2"	1 3/8"	1 3/8"	1/2"	3/4"
6 Sch 80x	14.0"	6 3/8"	1 3/8"	11 1/2"	1 1/2"	1 3/4"	3/8"	3/8"
8 Sch 20	17.0"	8 3/8"	1 1/4"	13"	1 3/4"	2"	1/2"	1/4"
8 Sch 30	17.0"	8 3/8"	1 1/4"	13"	1 3/4"	2"	1/2"	1/4"
8 Sch 40s	17.0"	8 3/8"	1 3/8"	13"	1 3/8"	2"	1/2"	3/4"
8 Sch 60	18.0"	8 3/8"	1 3/8"	14"	2"	2 1/4"	3/8"	3/8"
8 Sch 80x	18.0"	8 3/8"	1 3/8"	14"	2"	2 1/4"	3/8"	1/4"
10 Sch 20	20.0"	10 3/4"	1 3/8"	16"	1 3/8"	2"	1/2"	1/4"
10 Sch 30	20.0"	10 3/4"	1 3/8"	16"	2"	2 1/4"	1/2"	1/4"
10 Sch 40s	20.0"	10 3/4"	1 1/2"	16"	2"	2 1/4"	3/8"	3/4"
10 Sch 60x	21.0"	10 3/4"	1 3/8"	17"	2 1/4"	2 1/2"	3/8"	1/2"
10 Sch 80	21.0"	10 3/4"	2 1/8"	17"	2 1/2"	2 3/4"	3/8"	1/4"
12 Sch 20	24.0"	12 3/4"	1 1/2"	19"	2"	2 1/4"	3/8"	1/4"
12 Sch 30	24.0"	12 3/4"	1 1/2"	19"	2 1/4"	2 1/2"	1/2"	3/4"
12 Sch s	24.0"	12 3/4"	1 3/8"	19"	2 1/4"	2 1/2"	3/8"	3/8"
12 Sch 40	25.0"	12 3/4"	1 3/8"	20"	2 1/4"	2 1/2"	3/8"	3/8"
12 Sch x	25.0"	12 3/4"	2 1/8"	20"	2 1/2"	2 3/4"	3/4"	1/4"
12 Sch 60	25.0"	12 3/4"	2 1/4"	20"	2 3/4"	3"	1/2"	1/4"
12 Sch 80	25.0"	12 3/4"	2 1/2"	20"	2 3/4"	3"	1"	3/8"
14 Sch 10	25.0"	14"	1 3/8"	20"	2"	2 1/4"	3/8"	3/8"
14 Sch 20	25.0"	14"	1 3/8"	20"	2 1/2"	2 1/2"	1/2"	3/4"
14 Sch 30s	27.0"	14"	1 3/8"	22"	2 1/4"	2 1/2"	3/8"	3/8"
14 Sch 40	27.0"	14"	2 1/8"	22"	2 1/2"	2 3/4"	3/4"	3/8"
16 Sch 10	27.0"	16"	1 3/8"	22"	2 1/4"	2 1/2"	3/8"	1/4"
16 Sch 30s	29.0"	16"	2 1/8"	23 1/2"	2 1/2"	2 3/4"	3/8"	3/8"
16 Sch 40x	29.0"	16"	2 3/8"	23 1/2"	3"	3 1/4"	1/2"	3/8"
18 Sch 10	30.0"	18"	1 3/8"	24 1/2"	2 1/4"	2 1/2"	1/2"	1/4"
18 Sch 20	30.0"	18"	2 1/8"	24 1/2"	2 3/4"	3"	1/2"	3/4"
18 Sch x	32.0"	18"	2 3/8"	26"	3"	3 1/4"	3/4"	1/2"
20 Sch 30x	33.0"	20"	2 3/8"	28"	3 1/4"	3 1/2"	3/4"	1/2"



CHORD DIAM.	DEVELOPED LENGTH	DIMENSIONS						BOLT LENGTH
		A	B	C	D	G	H	
3	10 5/8"	1 1/2"	1 1/2"	1 1/2"	7"	5 1/2"	4 3/8"	4"
4	11 1/2"	2 1/2"	2 3/2"	2 3/2"	1 1/2"	6 3/8"	5 1/8"	5"
5	12 3/8"	2 5/8"	1 3/4"	2 3/2"	7"	7 1/4"	5 21/32"	5"
6	13 1/8"	3"	3 1/2"	2 1/2"	5"	8 1/4"	6 3/32"	6"
8	16 1/8"	4 1/2"	1 3/2"	2 3/4"	3 1/2"	10 3/32"	8 1/16"	7"



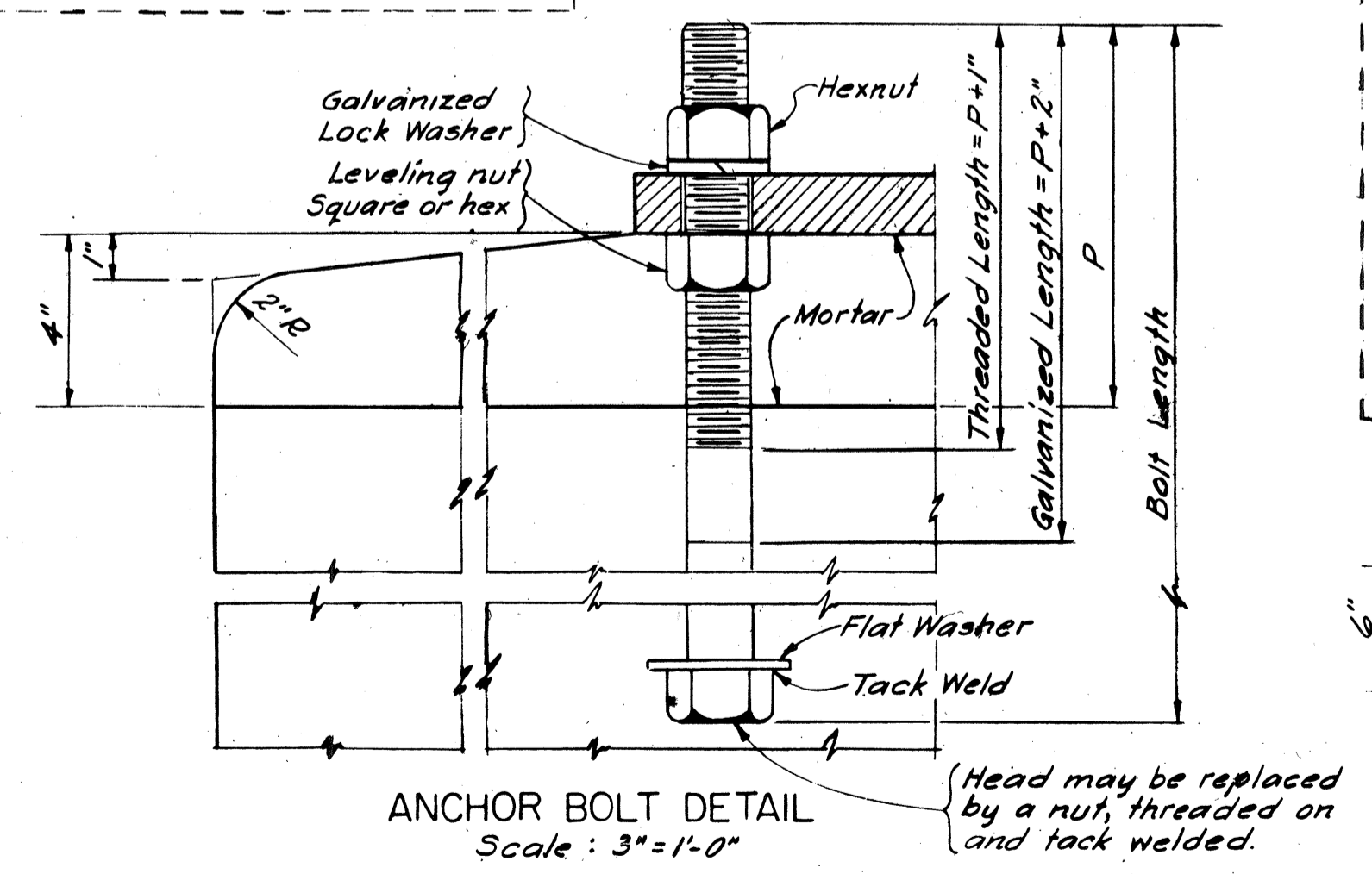
D	"Y"	"Z"	"D"	Chord Diam.	"B"	Post Diam.	"C"
4'-0"	6"	4 3/8"	4'-0"	3"	2 3/8"	6"	2 1/4"
6'-0"	7 1/8"	4 11/16"	6'-0"	4"	2 1/2"	8"	2 1/4"
8'-0"	8 3/8"	5 1/16"	8'-0"	5"	2 3/8"	10"	2 3/4"
			8'-0"	6"	2 1/2"	12"	2 3/4"

*A" = 1/2 Chord Diameter
*B" = Z" - (1/4 Chord Diameter)
*C" = Y" - (1/2 Post Diameter)

Type "A" Connection to be galvanized steel.

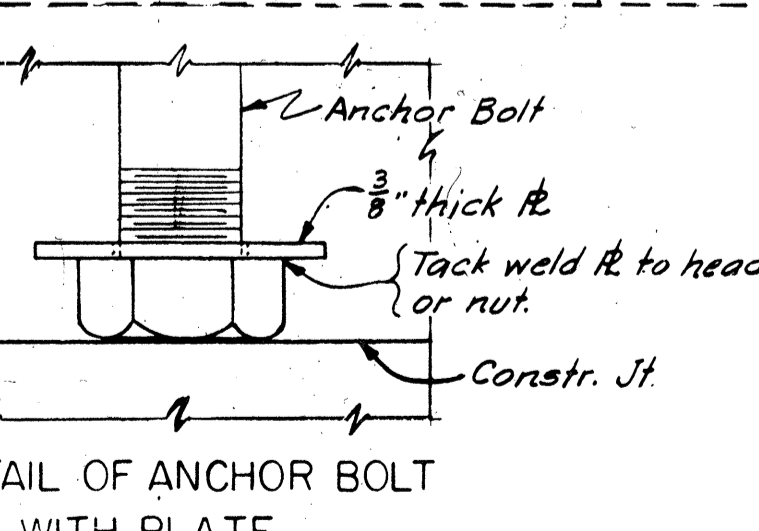
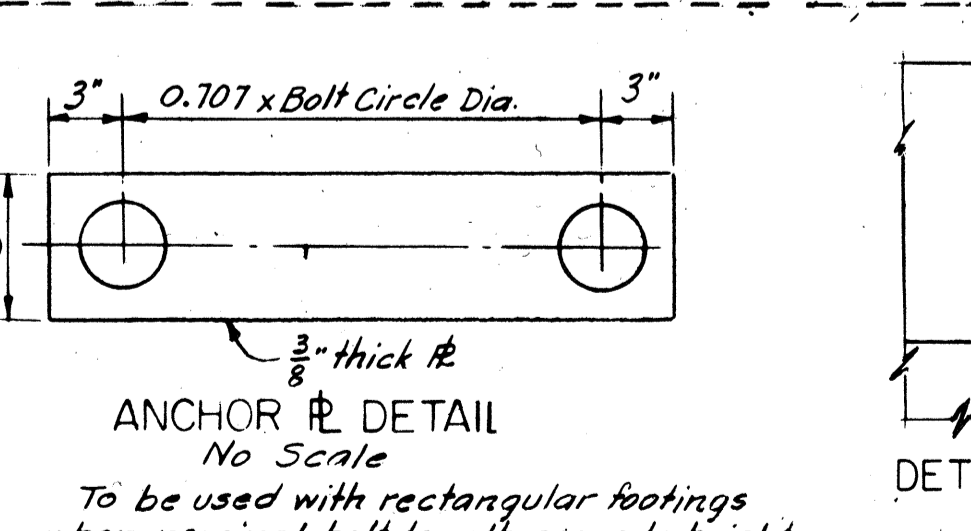
TYPE "A" CONNECTION FOR TRUSSED POSTS

BOLT DIA	BOLT LENGTH	P
1 3/8"	4'-1"	7"
1 1/2"	4'-5"	8"
1 3/4"	5'-0"	8"
2"	5'-9"	9"
2 1/4"	6'-5"	9"
2 1/2"	7'-1"	9"
2 3/4"	7'-9"	10"
3"	8'-5"	10"
3 1/4"	9'-1"	11"

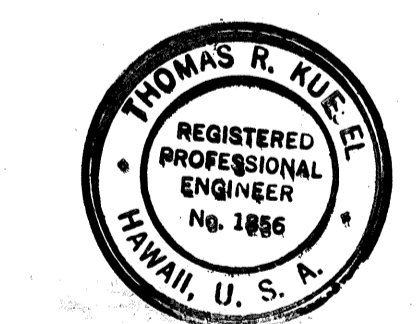


P	DIAGONALS *		WELD LENGTH A+B
	PIPE SIZE	ANGLE SIZE	
5'-2"	2 1/2" Sch. 40s	(Do not use)	6"
7'-2"	2 1/2" Sch. 40x	4" x 4" x 1/4"	6"
9'-2 3/4"	3" Sch. 40s	5" x 5" x 5/16"	7"

* Use pipe when assembly is to be single dip galvanized.
Use welded angles when assembly is to be double dip galvanized.
Use bolted angles only when assembly cannot be double dip galvanized.



DATE: 2-17-70
DESIGNED BY: J. S. ...
CHECKED BY: ...
ORIGINAL PLAN: ...
NOTE BOOK: ...



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

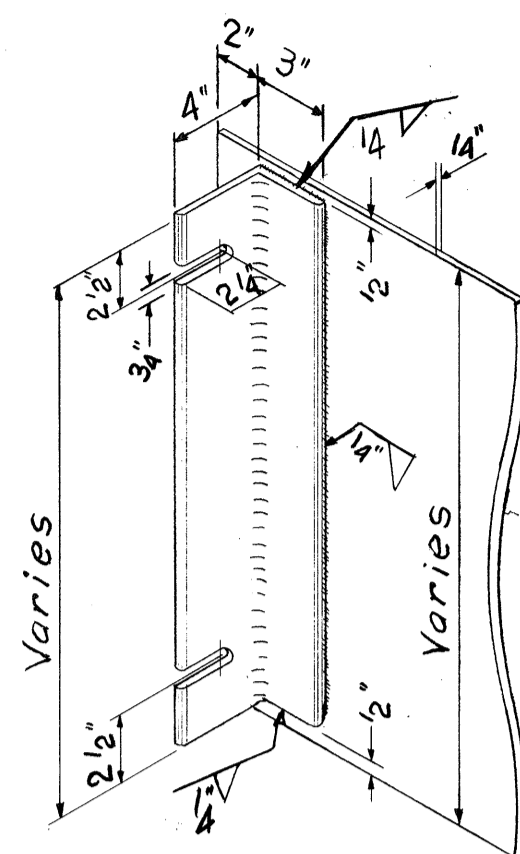
BASES & CONNECTION
INTERSTATE ROUTE H-1
PROJECT NO I-H-1(91)-13

SCALE: AS SHOWN DATE: APR. 15, 1971
SHEET No. 97 OF 20 SHEETS

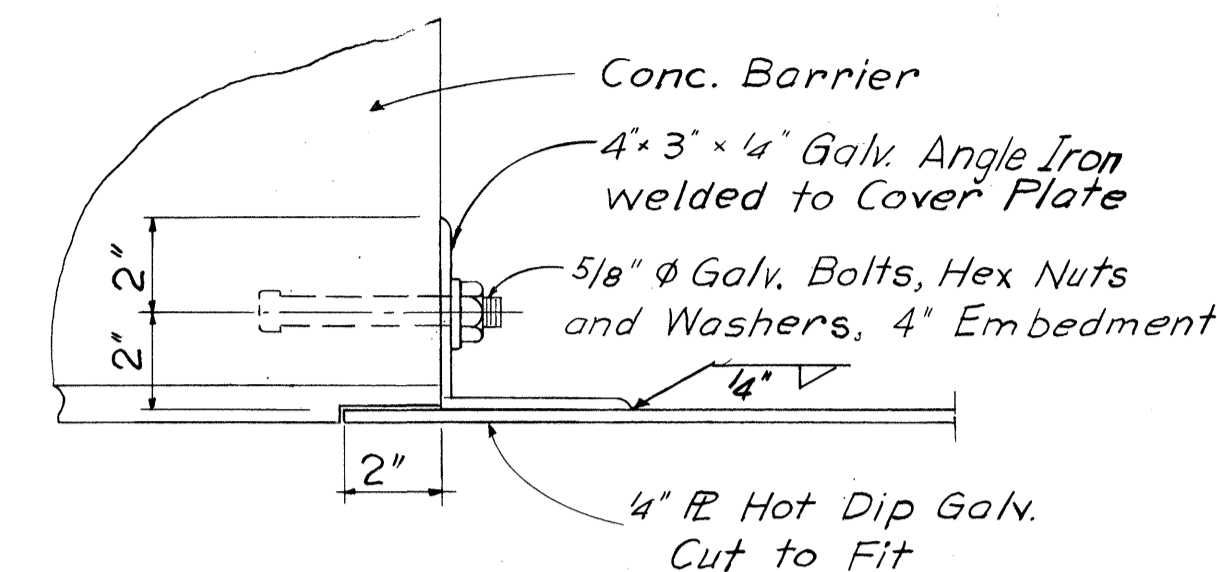
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(91):13	1972	79	228

Sign No	FTG	Rectangular Ftg. on Earth		Pedestal Vertical Reinf.	ELEV. A	ELEV. B	P POST SPACING
		Size (W×T×L)	Long Reinf. Top & Bottom				
E33	L	6'-0" × 2'-0" × 14'-4"	6-#5 Bars @ 12"	12-#5 Bars	42.24	35.0	
E33	R	6'-0" × 2'-0" × 15'-2"	6-#5 Bars @ 12"	12-#5 Bars	38.06	31.0	7'-2"
E40	L	5'-0" × 1'-6" × 11'-8"	5-#5 Bars @ 12"	8-#5 Bars	41.62	35.0	5'-2"
E40	R	5'-0" × 1'-6" × 11'-8"	5-#5 Bars @ 12"	8-#5 Bars	40.48	34.0	5'-2"

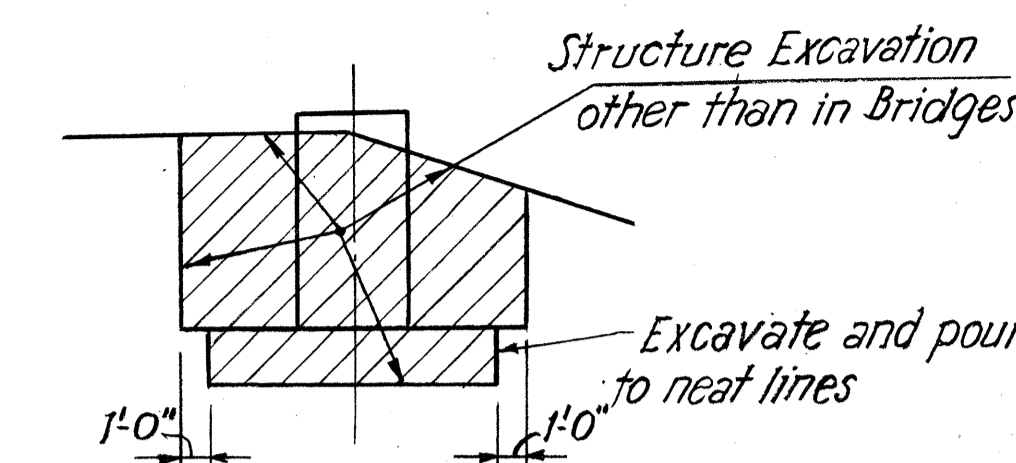
L & R refer to left and right footing when viewing signs as viewed by approaching traffic.



COVER PLATE DETAIL
Scale: 1 1/2" = 1' - 0"

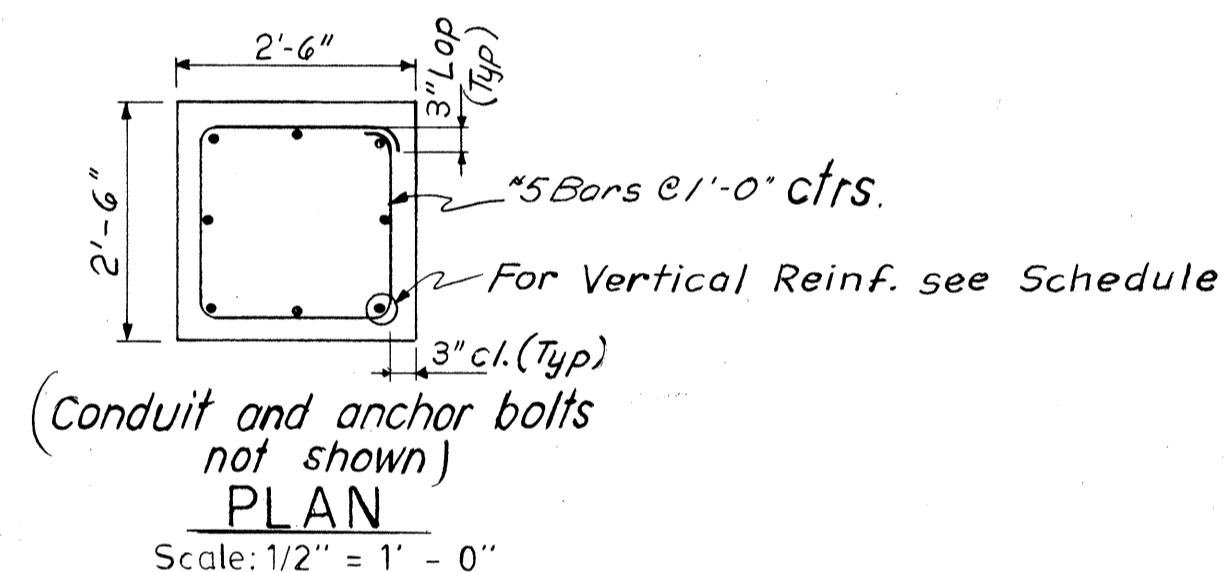


COVER PLATE ANCHOR DETAIL
Scale: 3" = 1' - 0"

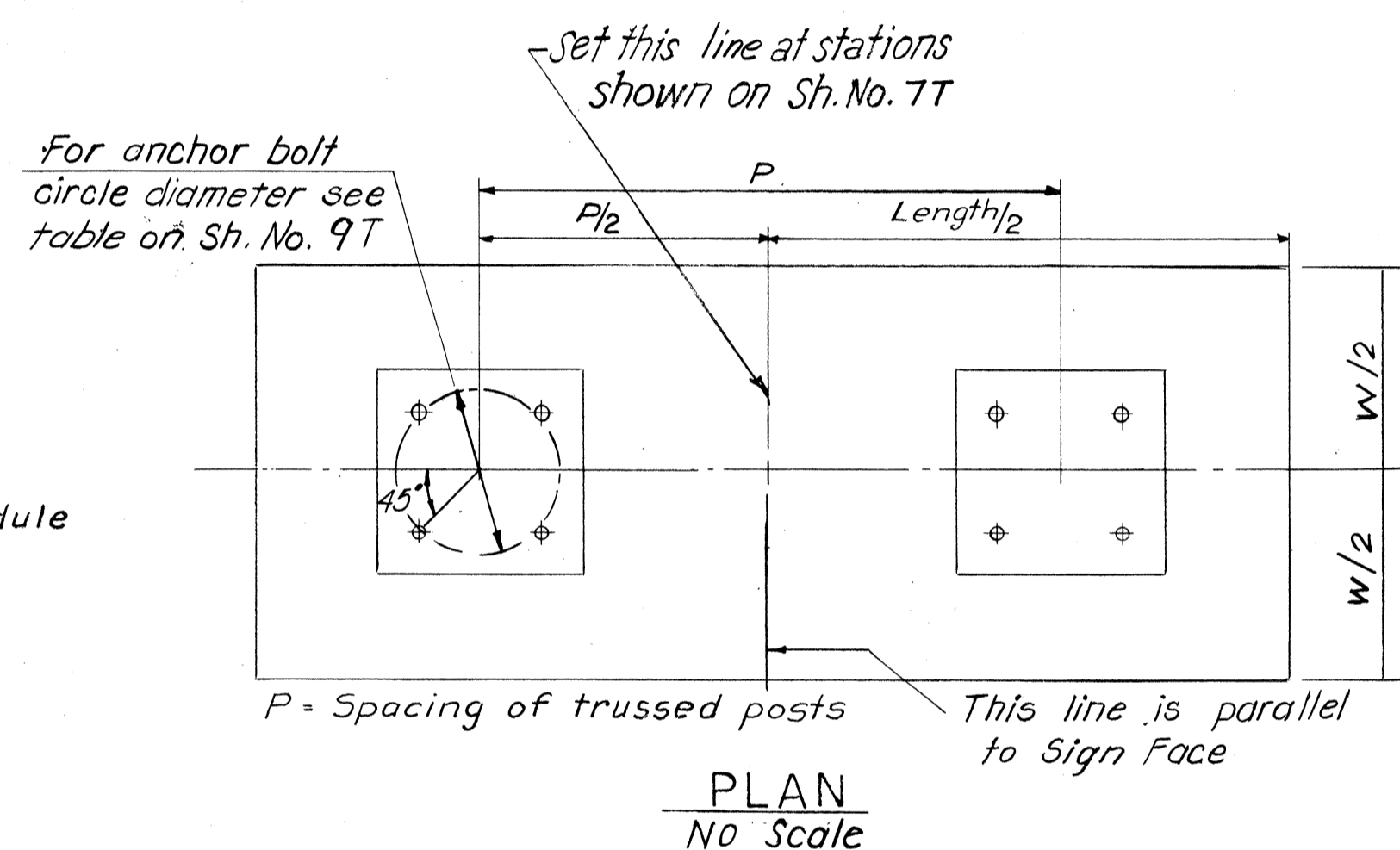


EXCAVATION PAYMENT LIMITS

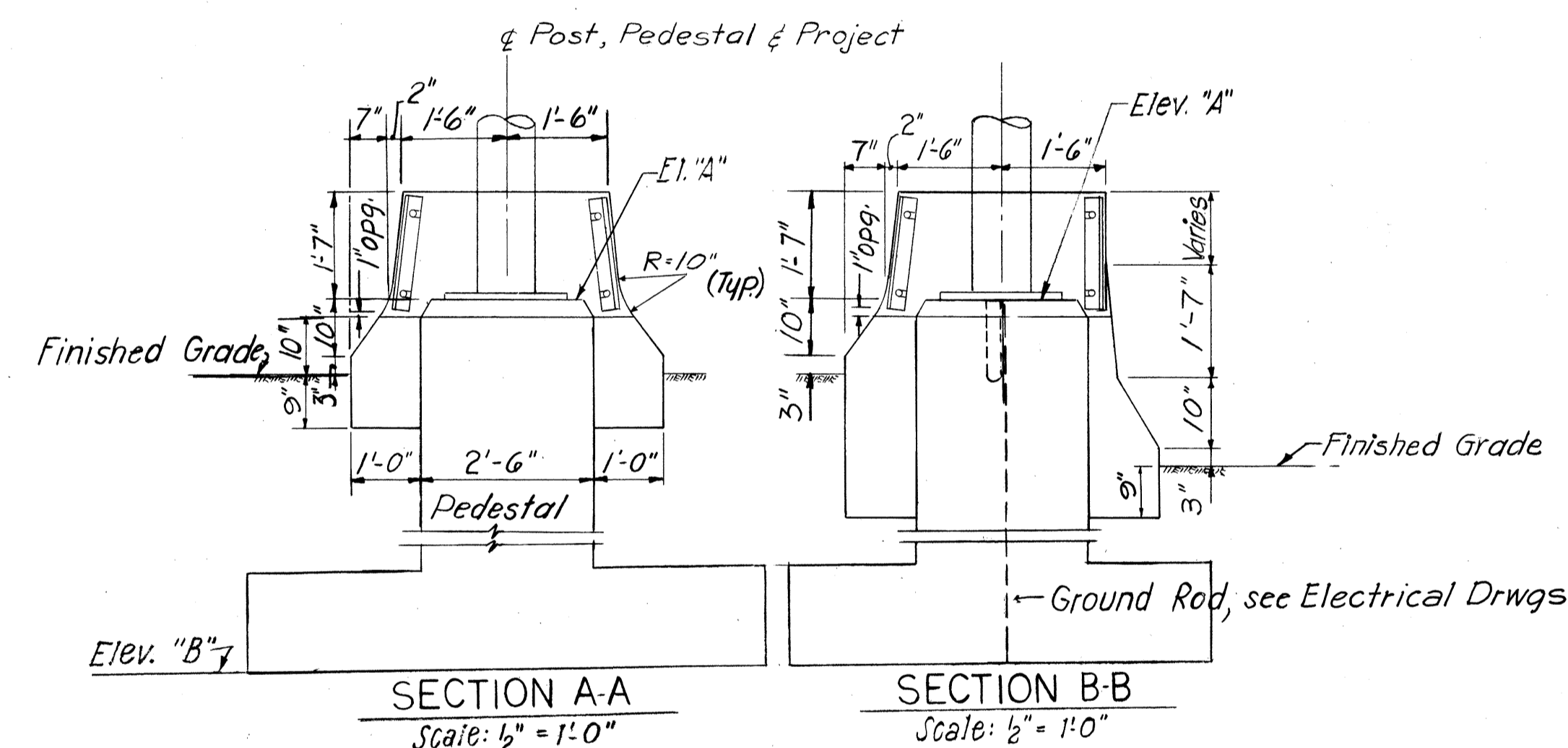
Note:
Upper limit for payment of structure shall be the lower of existing ground, finished ground, or subgrade of roadway.



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

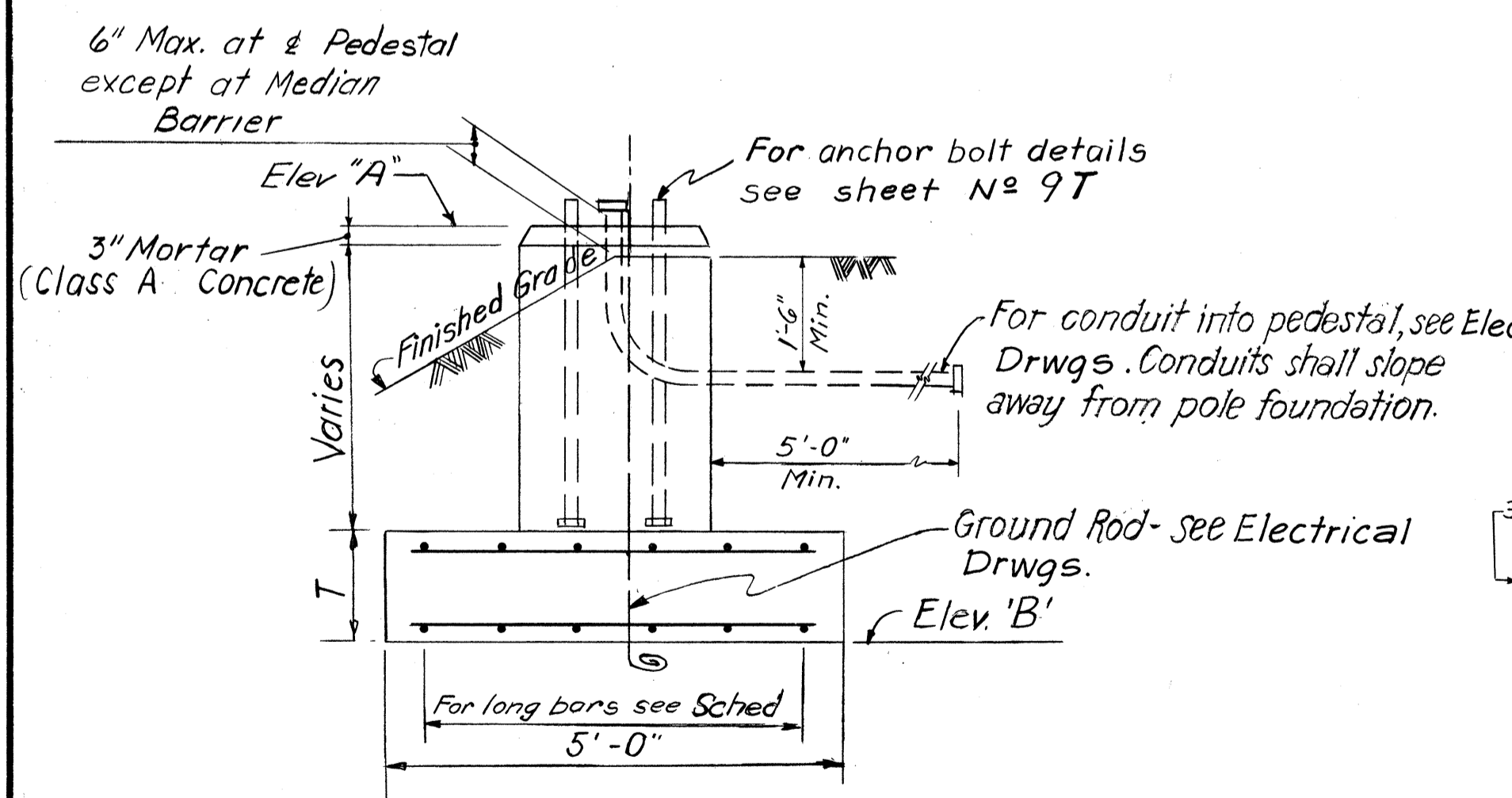


PLAN
No Scale

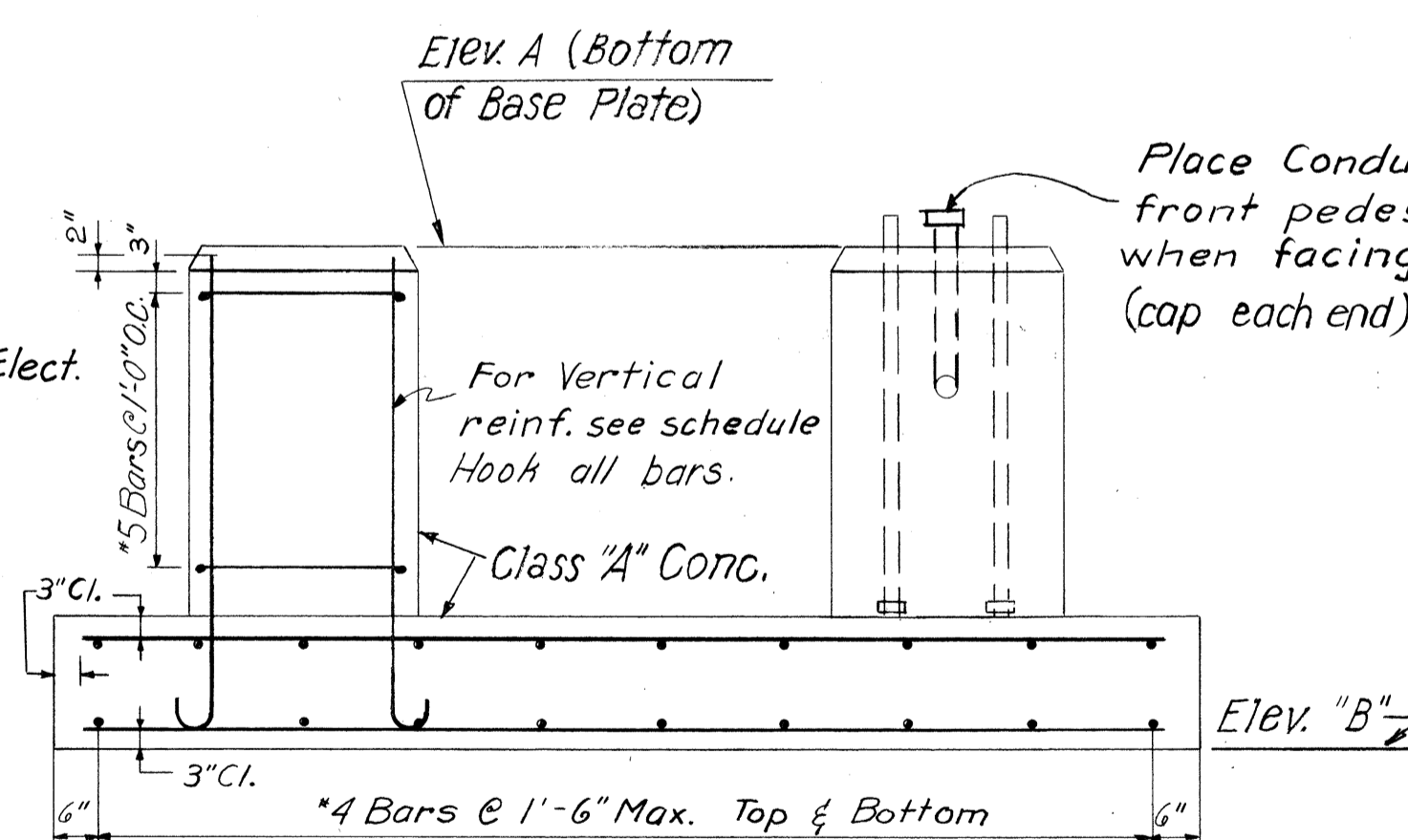


SECTION A-A
Scale: 1/2" = 1' - 0"

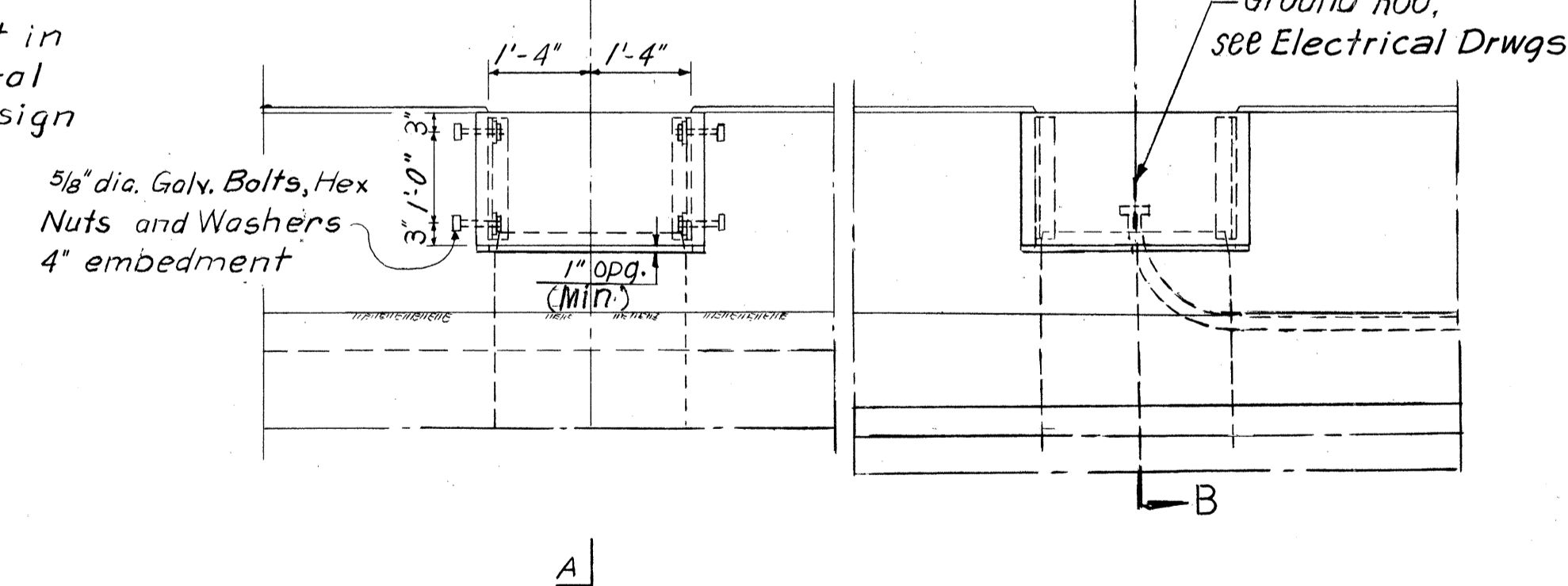
SECTION B-B
Scale: 1/2" = 1' - 0"



END ELEVATION
No Scale

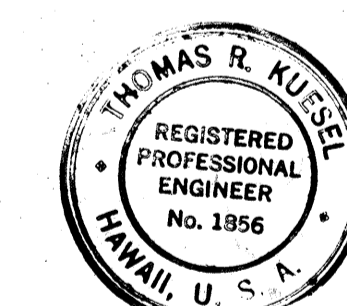


SIDE ELEVATION
No Scale



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

MEDIAN BARRIER DETAILS
For additional barrier Details, see Construction Detail Plans.



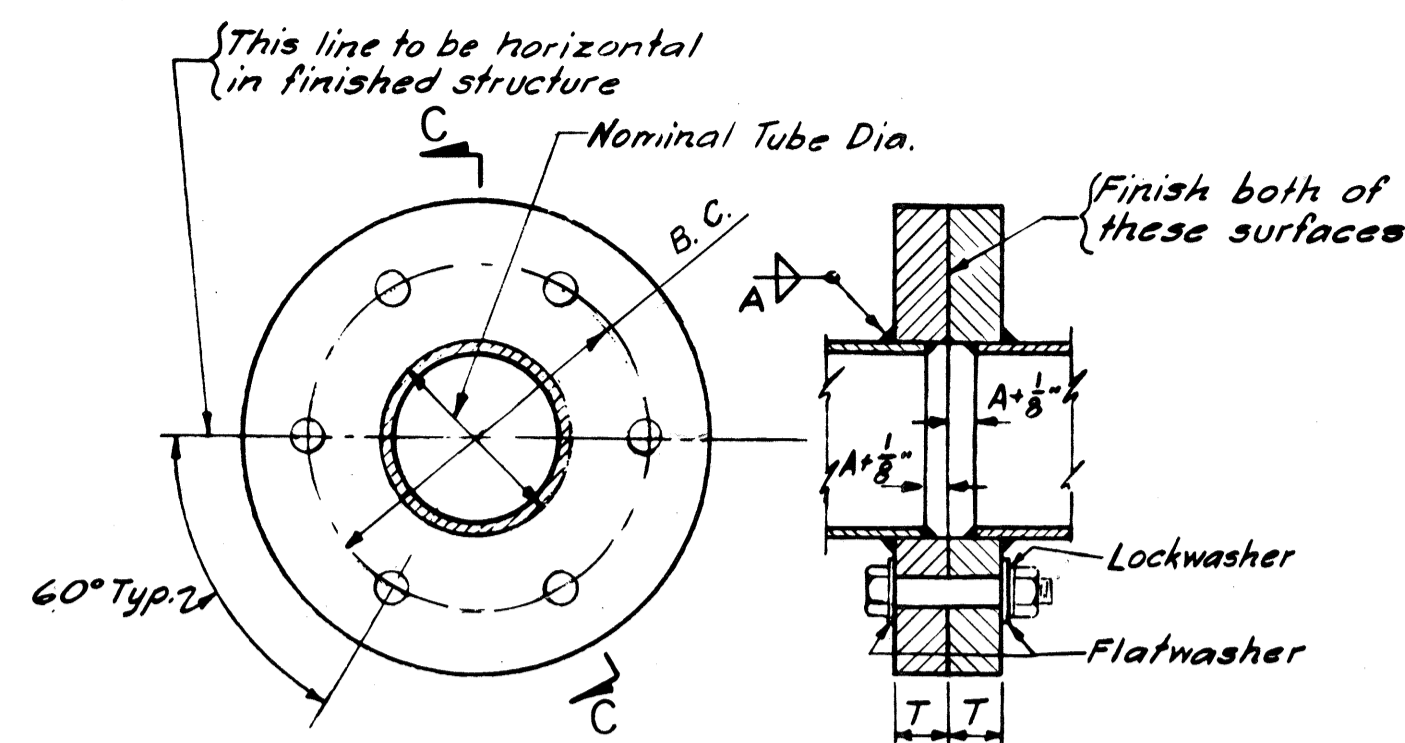
Thomas R. Kusel

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD SIGN
FOUNDATIONS
INTERSTATE ROUTE I-1
PROJECT NO I-HI-(91):13
SCALE: AS SHOWN DATE: APR. 15, 1971
SHEET No. 107 OF 20 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	11/10/72
TRACED BY	11/10/72
QUANTITIES BY	11/10/72
CHECKED BY	11/10/72
NO.	

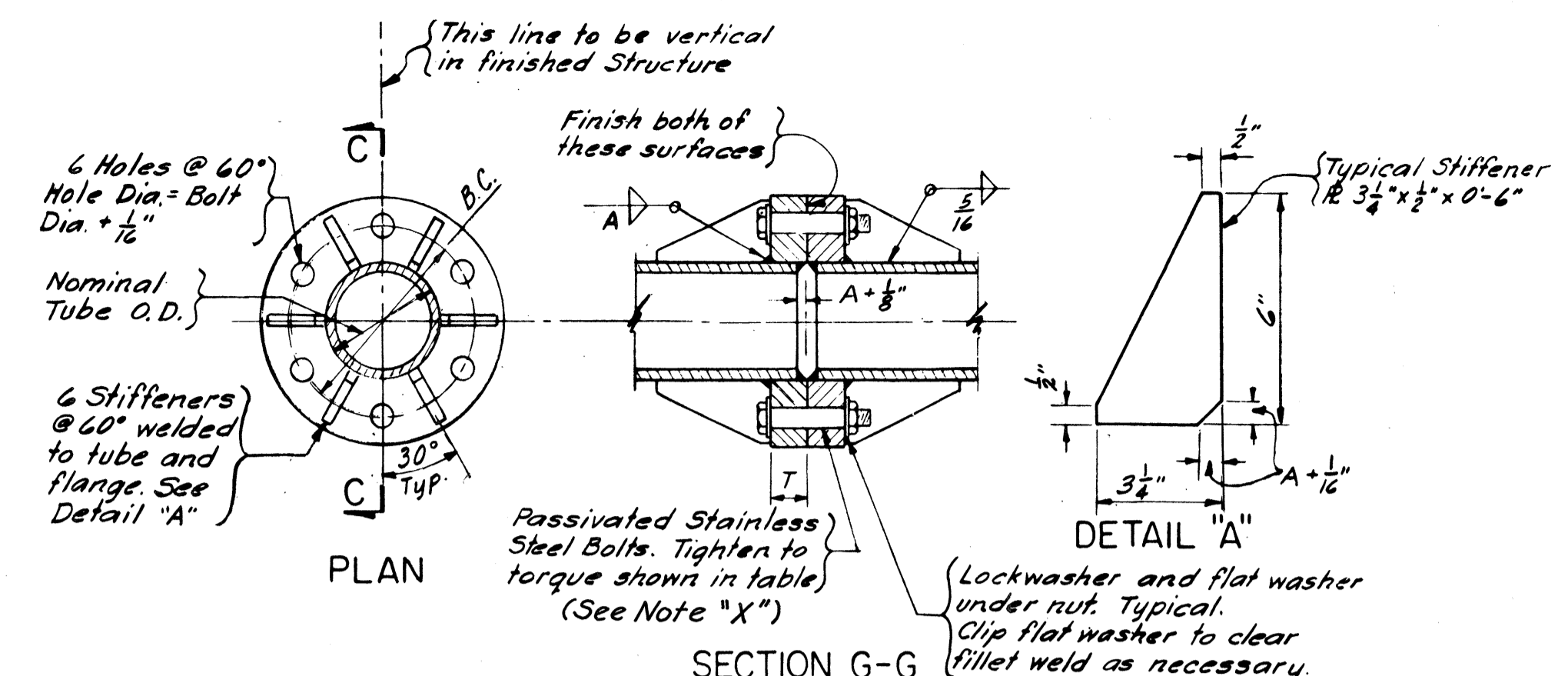
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(91):13	1972	80	228



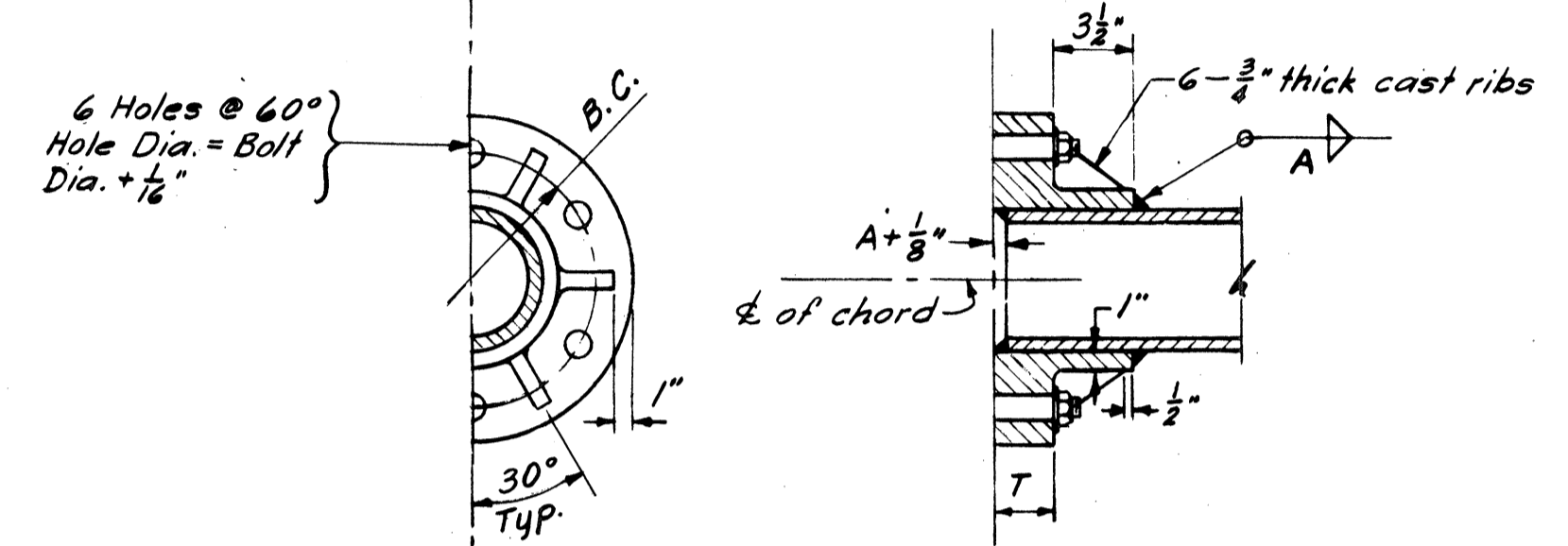
PLAN SECTION C-C
TYPE A FLANGE CONNECTION
Scale: 3"=1'-0"
All bolts are Passivated Stainless Steel
(See Note "X")

CHORD SIZE	FLANGE			BOLT DIA.	BOLT CIRCLE	BOLT TORQUE FT. LBS.
	"A"	O.D.	"T"*			
3" x 3/16"	3/16"	7"	3/8"	1/2"	5"	100
3" x 1/4"	1/4"	7"	3/8"	1/2"	5"	100
3" x 5/16"	5/16"	7"	3/8"	1/2"	5"	100
4" x 1/4"	1/4"	8 1/2"	3/8"	5/8"	6 1/2"	150
4" x 3/8"	3/8"	8 1/2"	3/8"	5/8"	6 1/2"	150
5" x 3/16"	3/16"	9 1/2"	1"	3/8"	7 1/2"	150
5" x 1/4"	1/4"	11 1/2"	1 1/4"	3/4"	9"	200
6" x 5/16"	5/16"	11 1/2"	1 1/4"	3/4"	9"	200
6" x 3/8"	3/8"	11 1/2"	1 1/4"	3/4"	9"	200
8" x 1/4"	1/4"	13 1/2"	1 1/4"	3/4"	11"	200
8" x 5/16"	5/16"	13 1/2"	1 1/4"	3/4"	11"	200
8" x 3/8"	3/8"	13 1/2"	1 1/4"	3/4"	11"	200

* Cast flanges may be used. All dimensions will be the same except that the thickness "T" shall be 1/4" greater in each case.

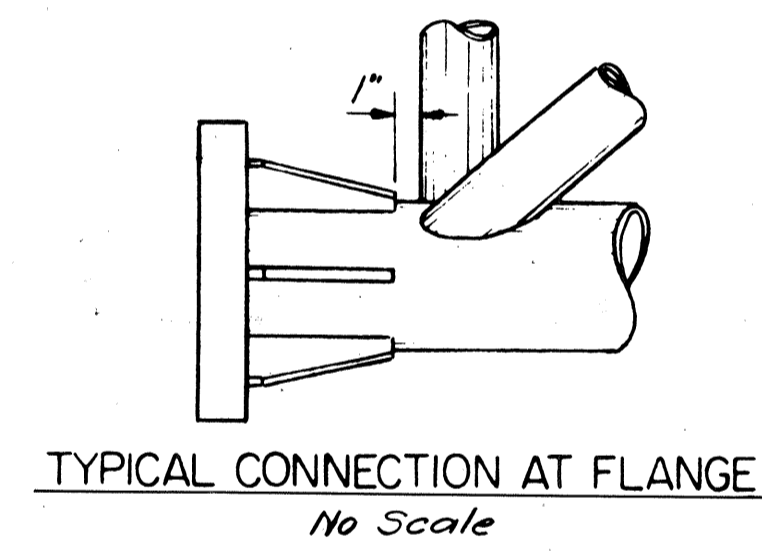
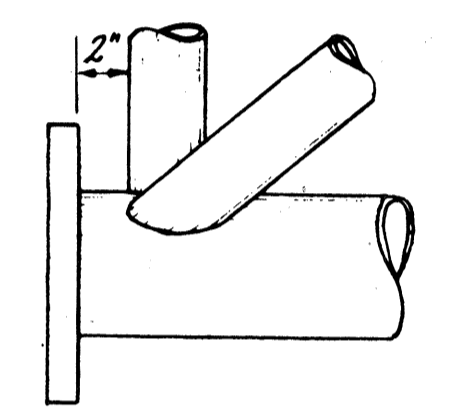


TYPE B FLANGE CONNECTION
FABRICATED
Not to Scale

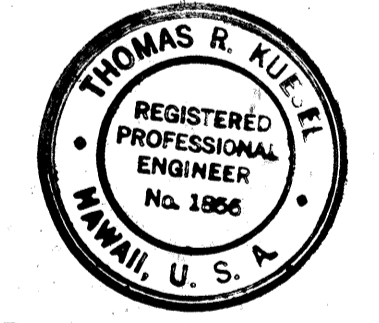
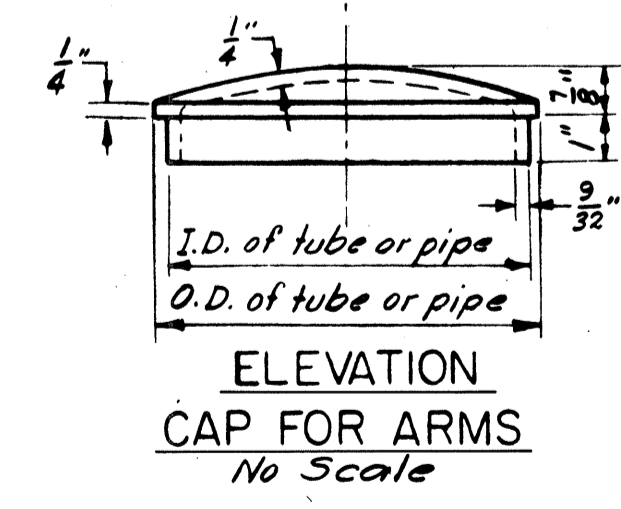
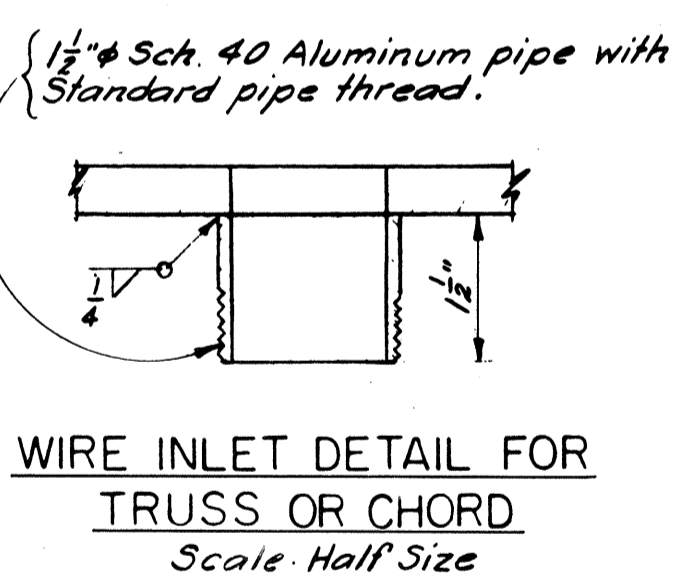


TYPE B FLANGE CONNECTION
CAST
Not to Scale

	CHORD SIZE	FLANGE			BOLT DIA.	BOLT CIRCLE	BOLT TORQUE FT. LBS.
		A	O.D.	T			
FABRICATED FLANGE	5" x 1/2"	3/8"	10 1/2"	1"	3/4"	8"	75
	6" x 1/2"	3/8"	11 1/2"	1 1/2"	3/4"	9"	75
	8" x 1/2"	3/8"	13 1/2"	1 1/2"	7/8"	11"	75
	8" x 5/8"	1/2"	13 1/2"	1 1/2"	1"	11"	100
CAST FLANGE	8" x 3/4"	3/8"	13 1/2"	1 1/2"	1"	11"	150
	5" x 1/2"	1/2"	13"	1 1/2"	3/4"	10"	100
	6" x 1/2"	1/2"	14"	1 1/2"	3/4"	11"	100
	8" x 1/2"	1/2"	16"	1 1/2"	7/8"	13"	100
	8" x 3/8"	3/8"	16"	1 1/2"	1"	13"	150
8" x 3/4"	3/4"	16"	1 1/2"	1"	13"	200	



NOTE X:
Stainless steel bolts shall conform to the Standard Specification for Alloy-Steel Bolting Materials for High-Temperature Service, ASTM Designation A193, current edition, Type B6 (AISI Type 410 with a min. yield of 85000 psi). Nuts shall conform to the Standard Specification for Carbon and Alloy Steel Nuts for High-Pressure and High-Temperature Service, ASTM Designation A194, current edition, Type 6 (AISI Type 416). Flat washers and lock washers shall conform to the Standard Specification for Corrosion-Resisting Chromium-Nickel Steel Plate, Sheet and Strip, ASTM Designation A167, current edition, Type 304. After heat treatment all stainless steel hardware must be descaled and cleaned to conform to ASTM Designation A380-57, Descaling and Cleaning Stainless Steel Surfaces, and then passivated.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Thomas R. Kuehl

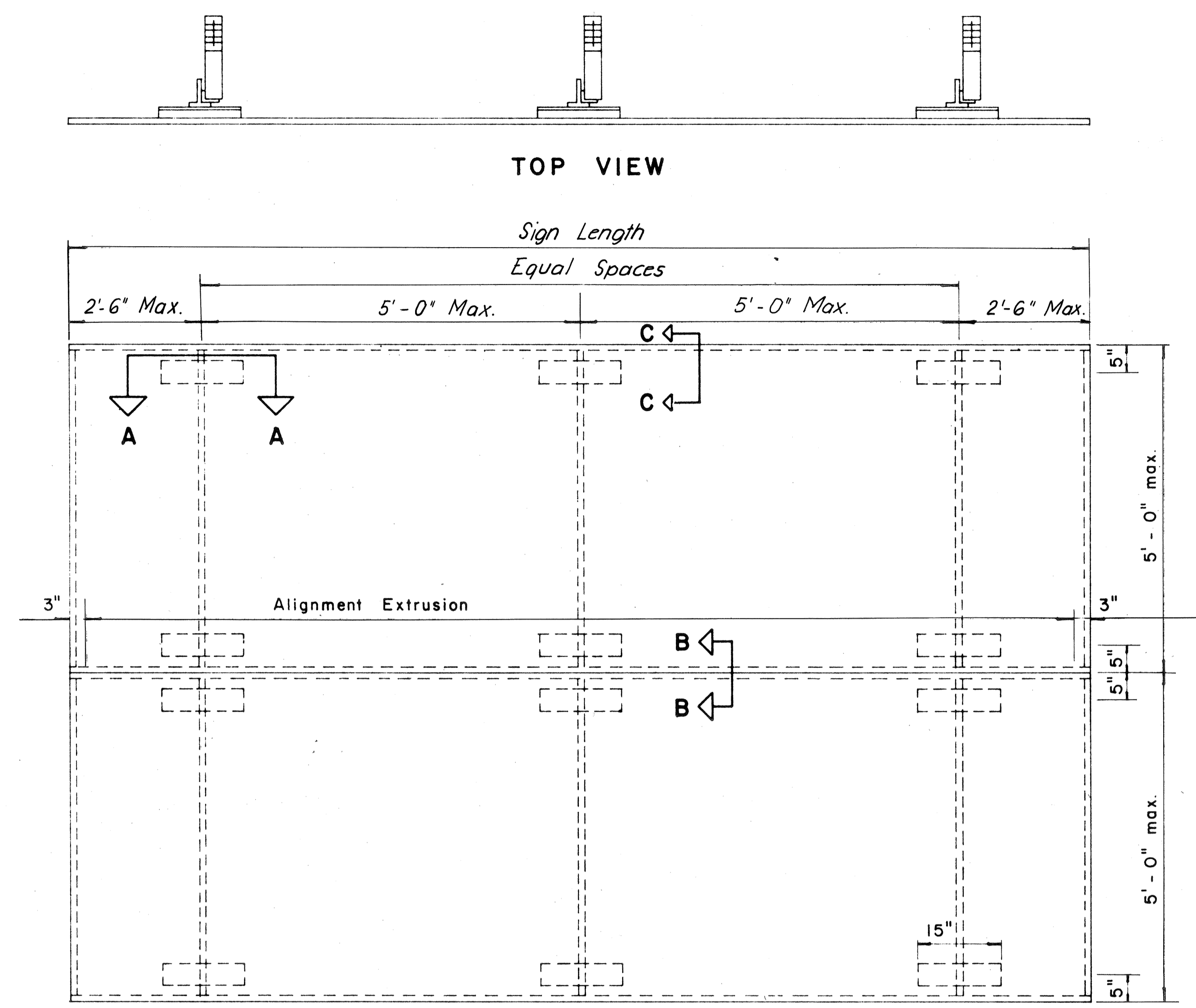
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FLANGE CONNECTIONS
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(91):13

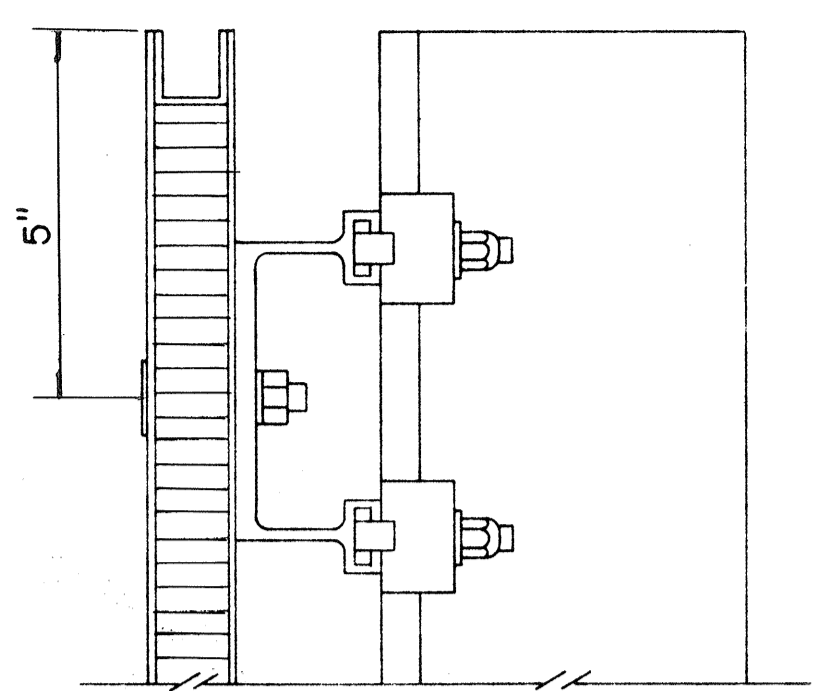
SCALE: AS SHOWN DATE: APR 15, 1971
SHEET No. 117 OF 20 SHEETS

DESIGNED BY	DATE
DRAWN BY	2/27/72
CHECKED BY	2/27/72
APPROVED BY	

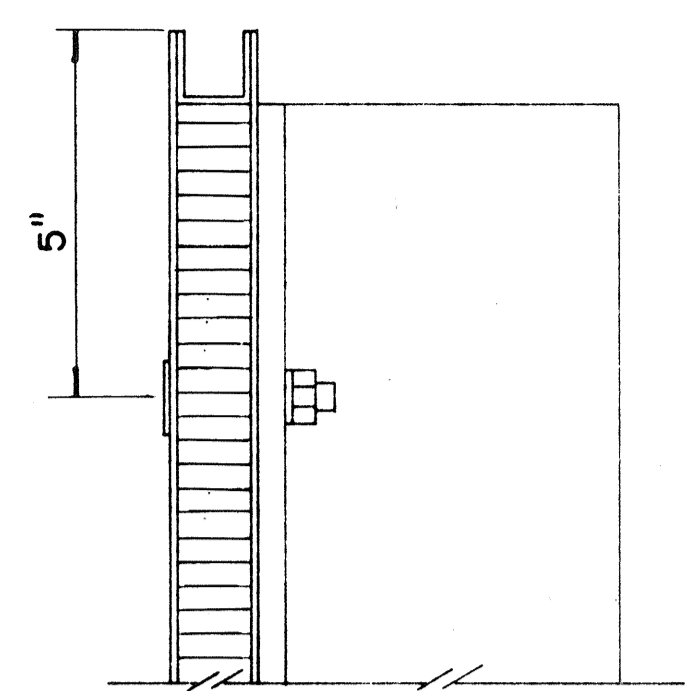
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	111-01-10	1972	81	228



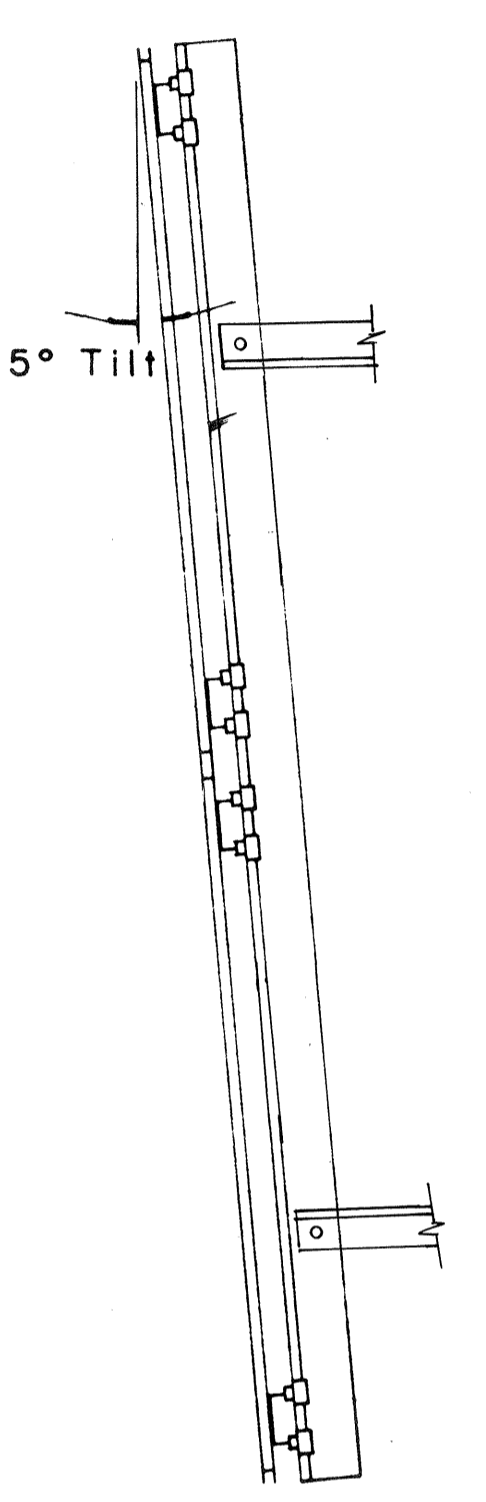
TYPICAL SIGN ASSEMBLY
Scale: $\frac{3}{4}$ " = 1' - 0"



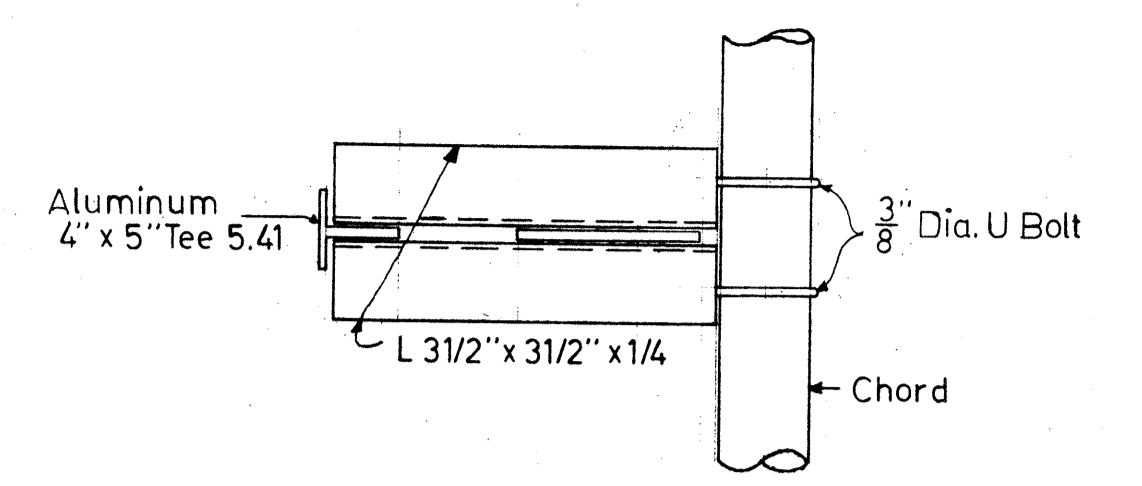
SECTION "C-C"
Scale: $\frac{3}{8}$ " = 1"



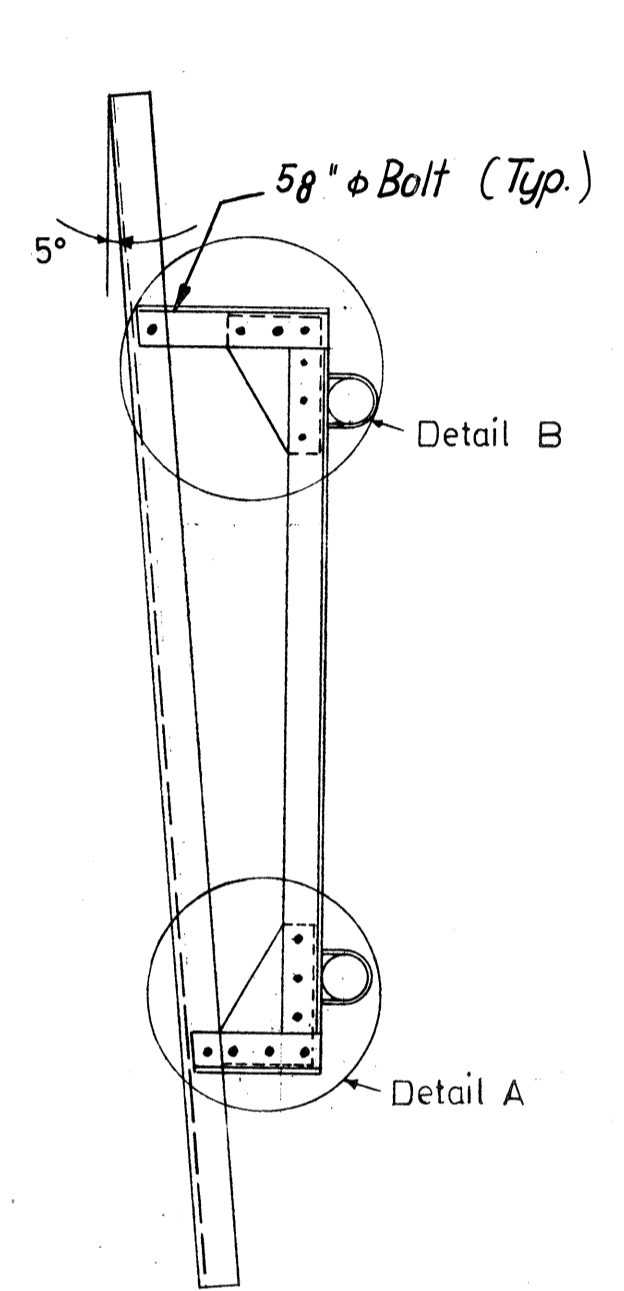
SECTION "C-C" (Alternate)
Scale: $\frac{3}{8}$ " = 1"



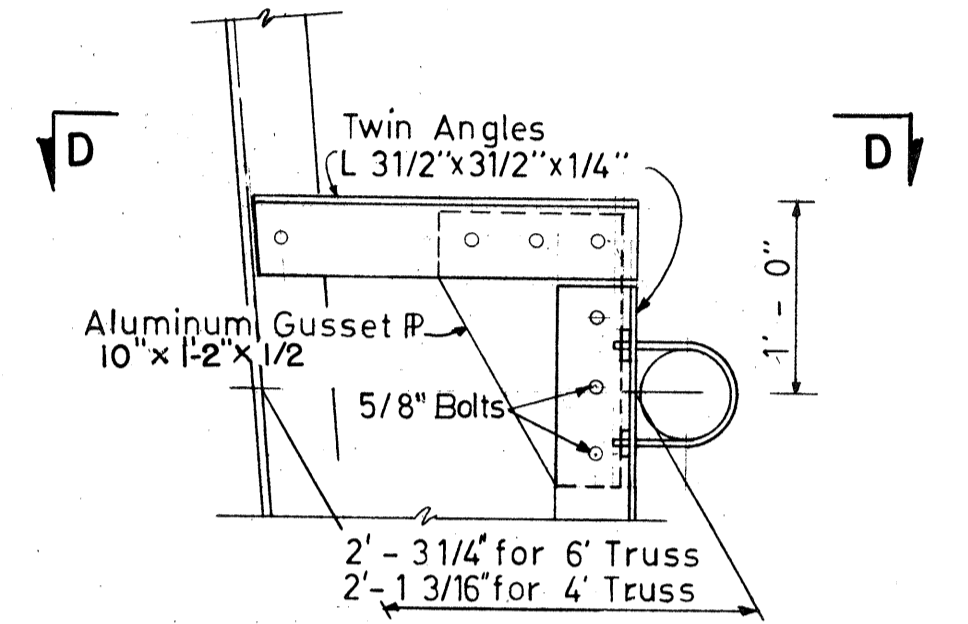
SIDE VIEW



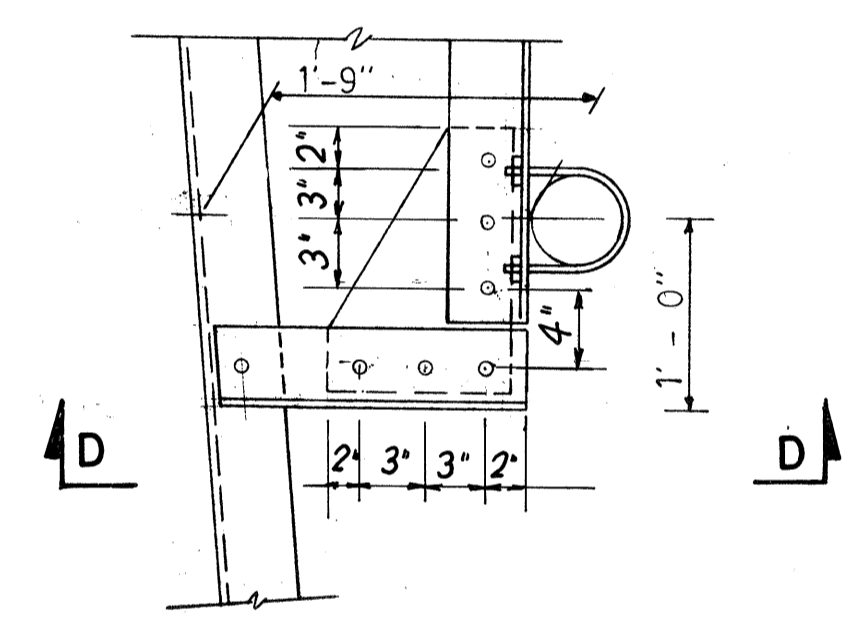
SECTION D-D
Scale: 1" = 1' - 0"



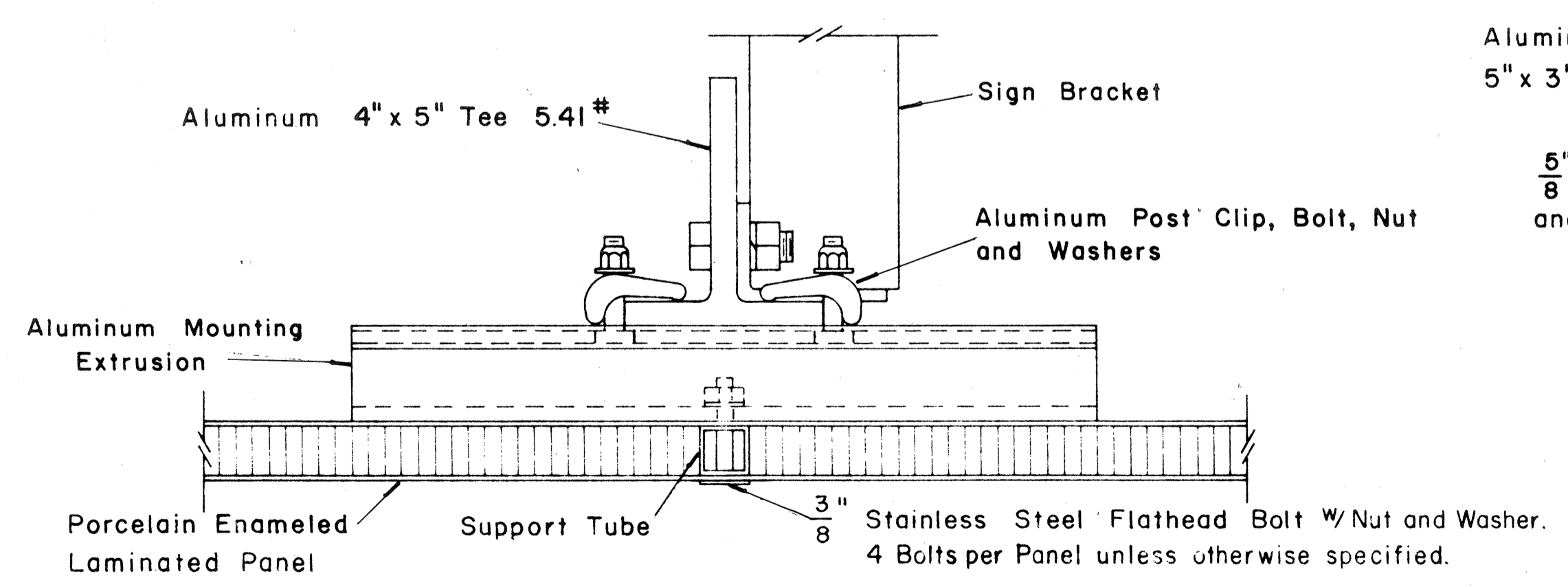
FRONT MOUNTING
Scale: $\frac{1}{2}$ " = 1' - 0"



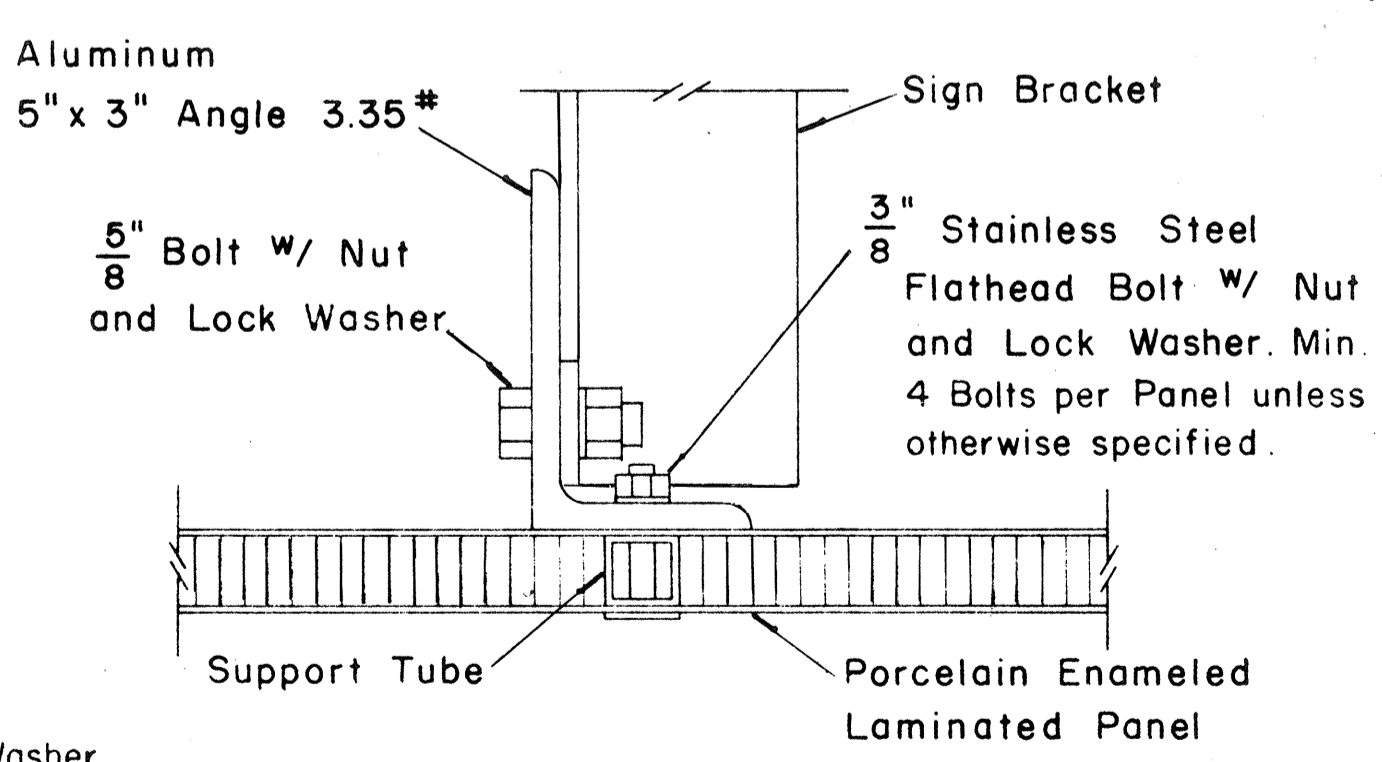
DETAIL B
Not to Scale



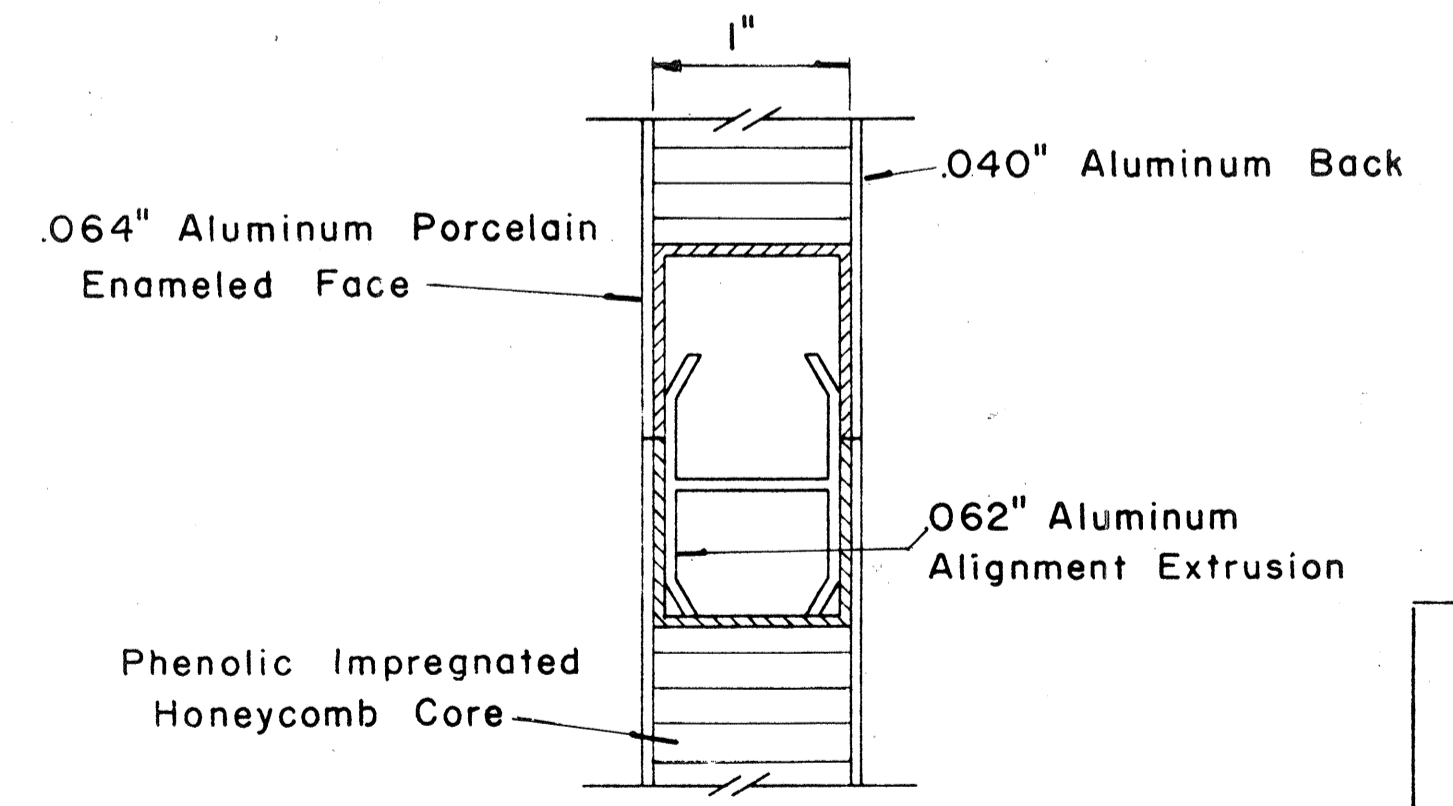
DETAIL A
Not to Scale



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



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



CLOSURE DETAIL SECTION "B-B"
FULL SCALE



THOMAS H. KUEHN
REGISTERED PROFESSIONAL ENGINEER
NO. 1866
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(OVERHEAD)

Scale: As Shown

SHEET No. 127 OF 20 SHEETS

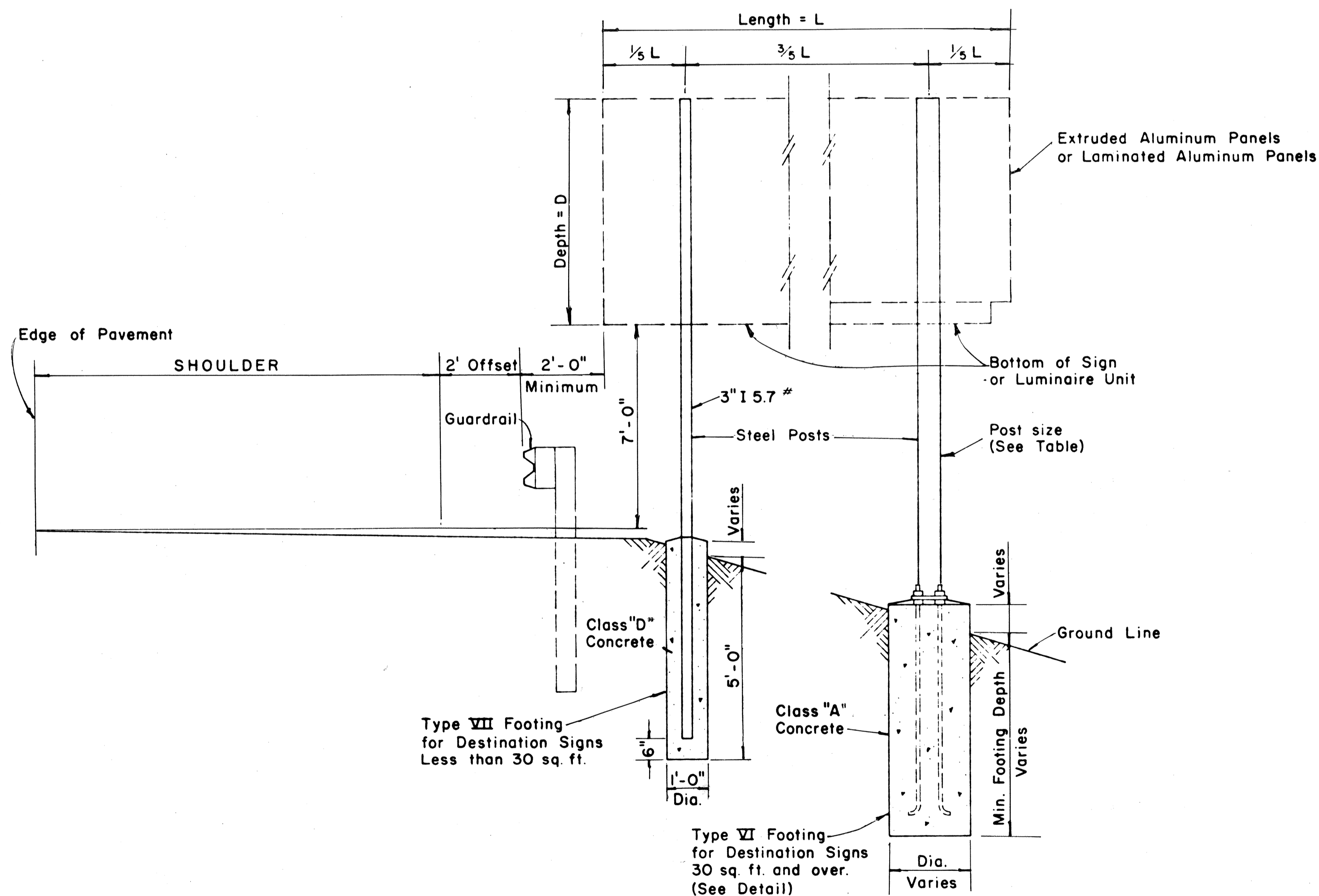
DATE: 7-17-70
DESIGNED BY: [Signature]
CHECKED BY: [Signature]

PRINTED ON NO. 10001 CLEARPRINT

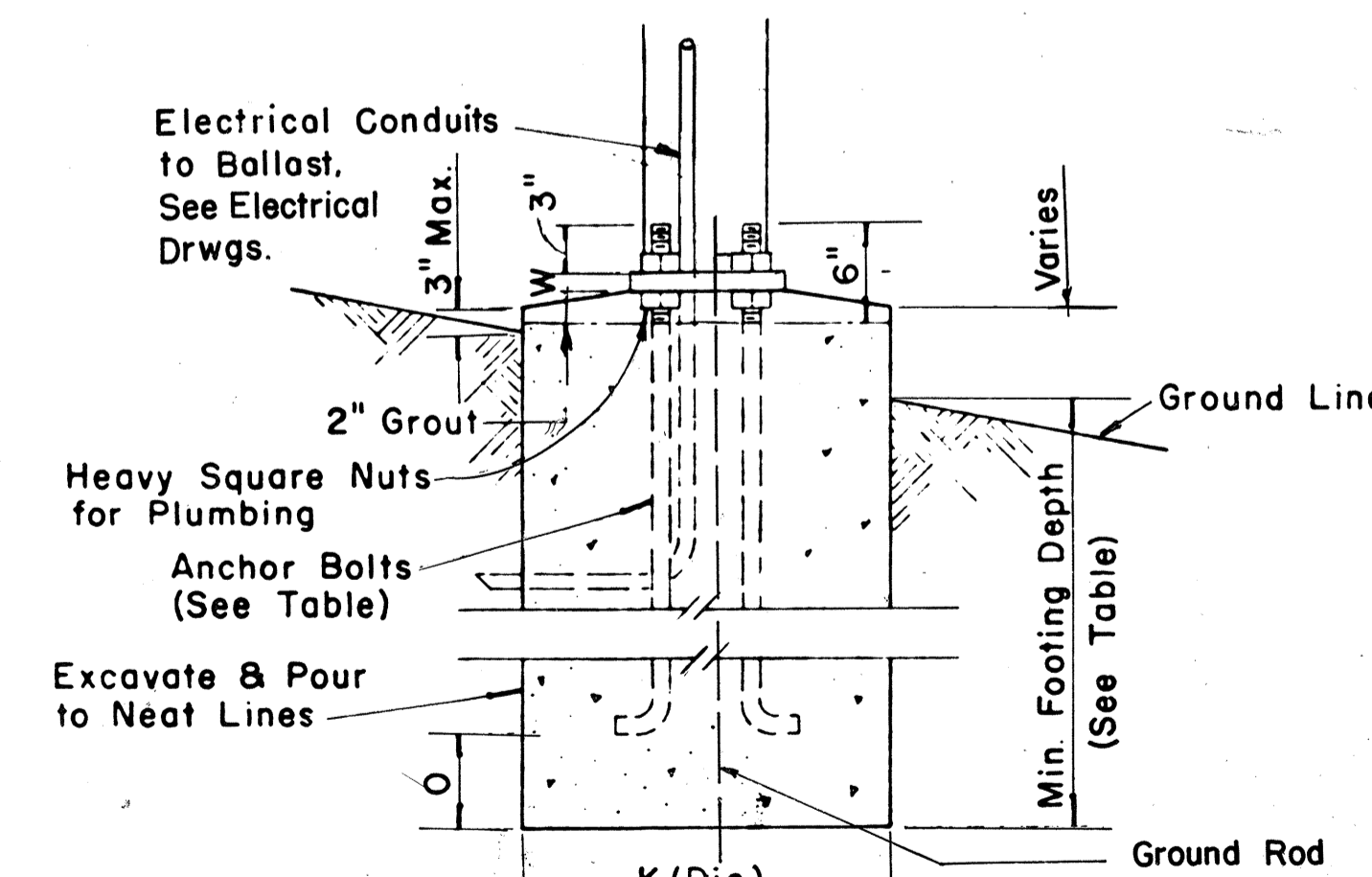
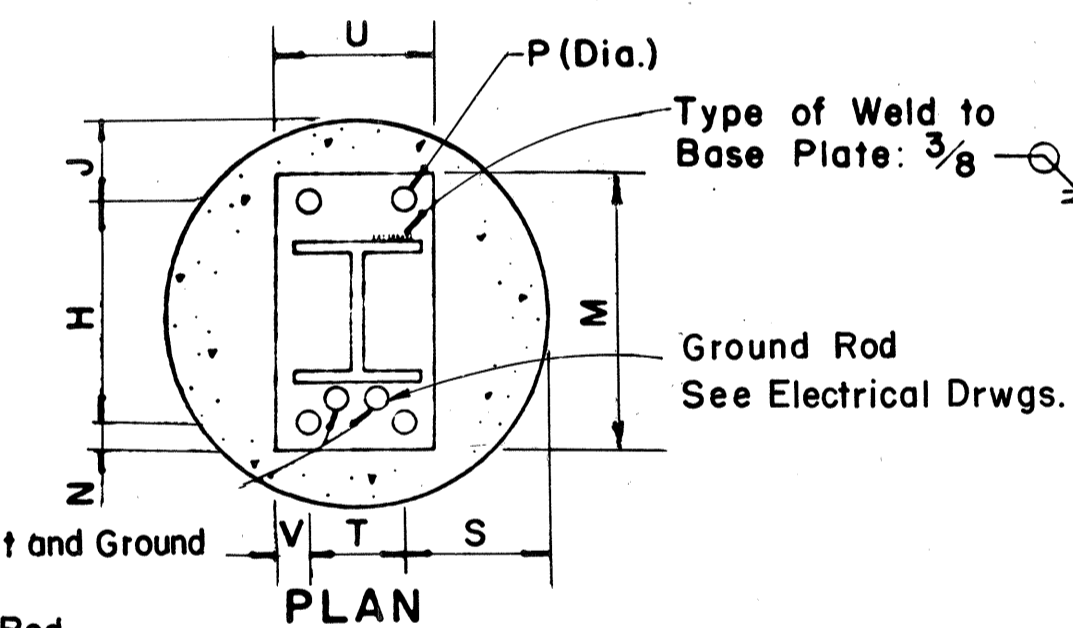
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(91):13	1972	82	228

* 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 J 10	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 WF 24	90 sq. ft.	21'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	5'
8 WF 35	190 sq. ft.	15'	16 1/2"	6 3/4"	30"	20"	1 3/4"	6"	1 3/5"	11 3/4"	6 1/2"	10"	1 3/4"	1"	1 1/4" Ø	6'	7'
10 WF 45	190 sq. ft.	25'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
10 WF 45	200 sq. ft.	25'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
12 WF 50	230 sq. ft.	25'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	7'	↓
12 WF 50	250 sq. ft.	23'	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓



For Illuminated Signs only:
 Openings for Electrical Conduit and Ground Rod Dia. shall be 1/4" large
 O.D. of Electrical Conduit and Rod Seal with Mastic.

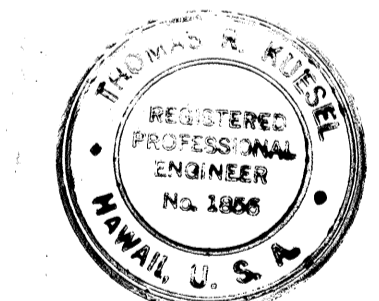


ELEVATION
TYPE VI FOOTING
 Scale: 1" = 1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	7-17-72
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN

Not to Scale



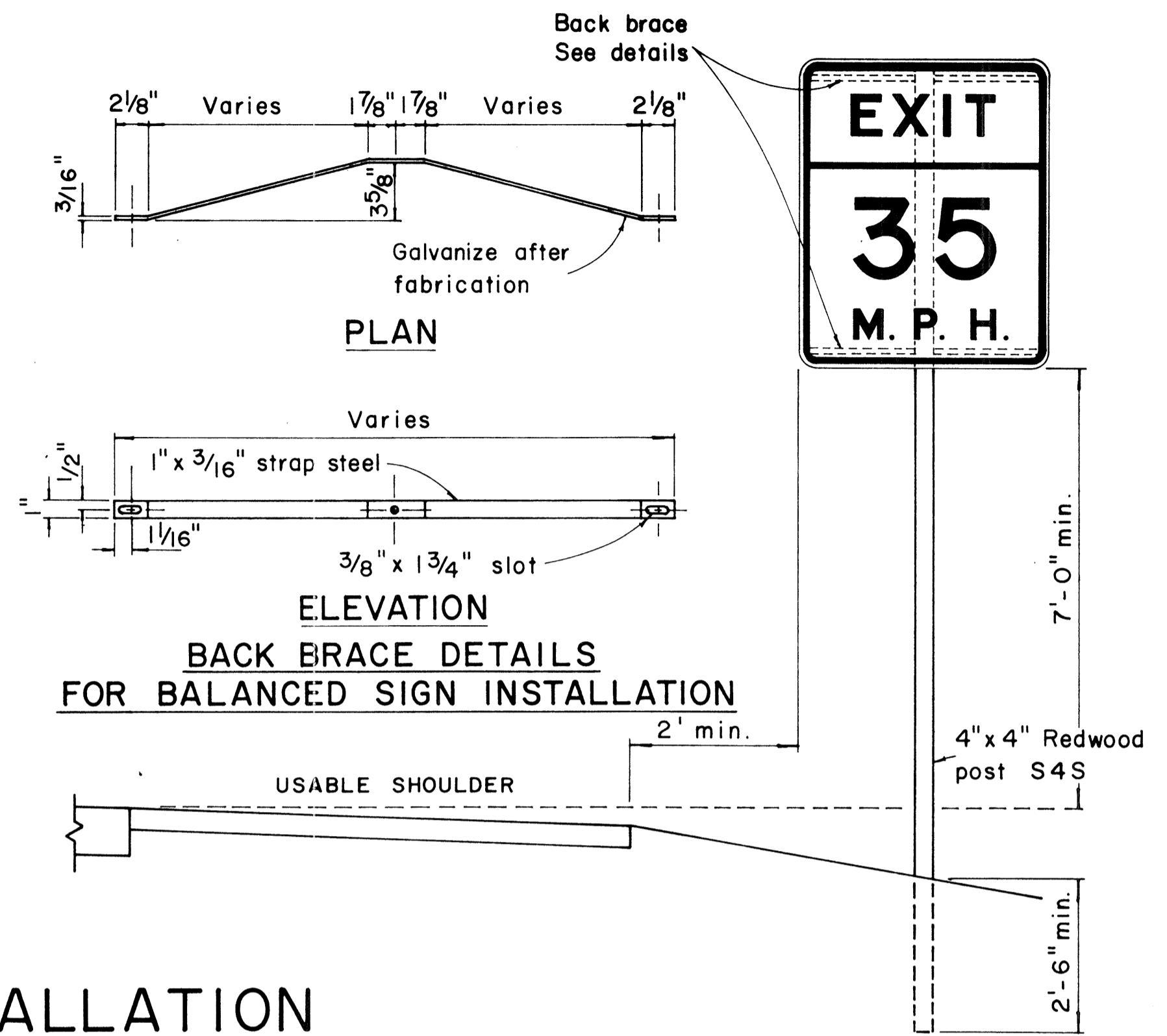
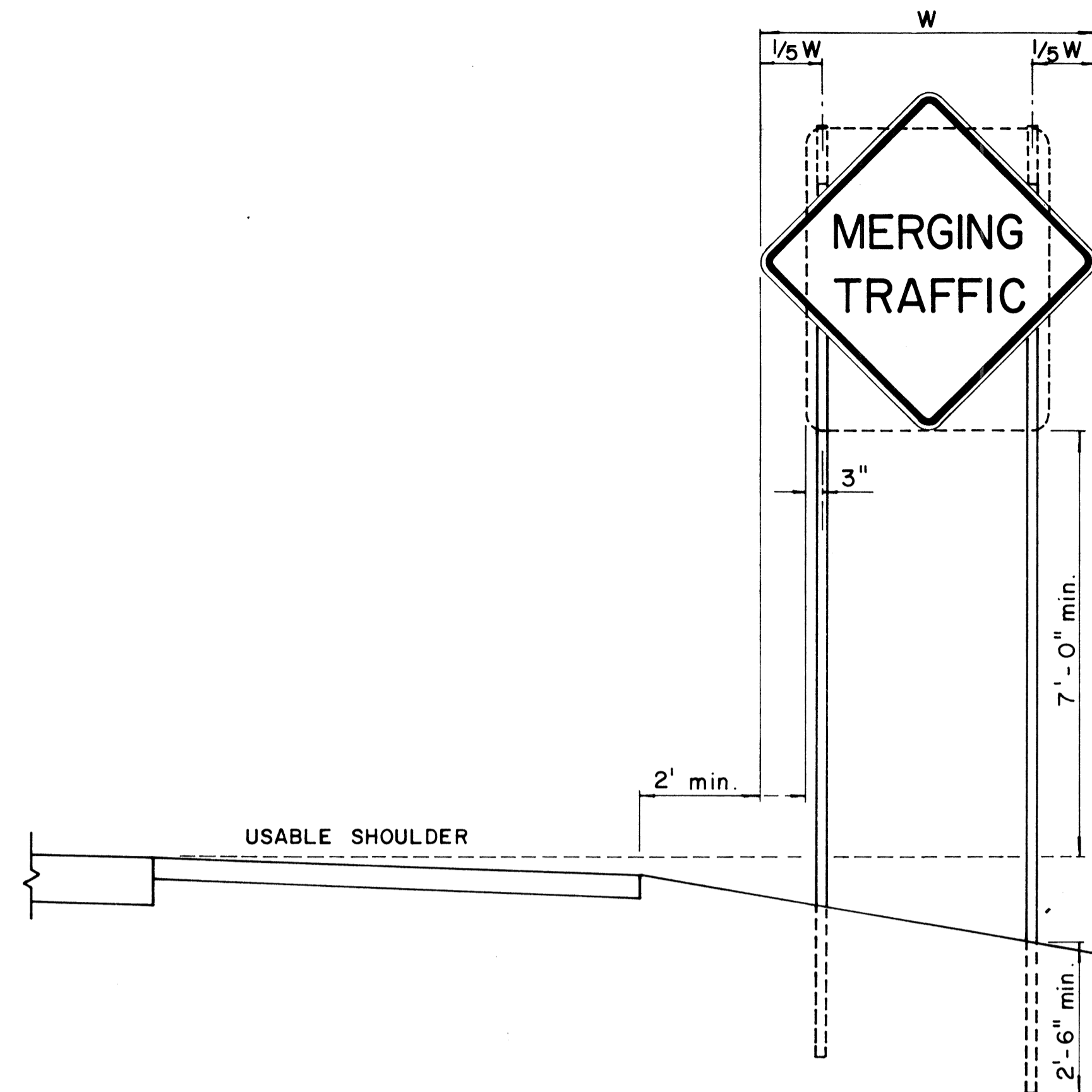
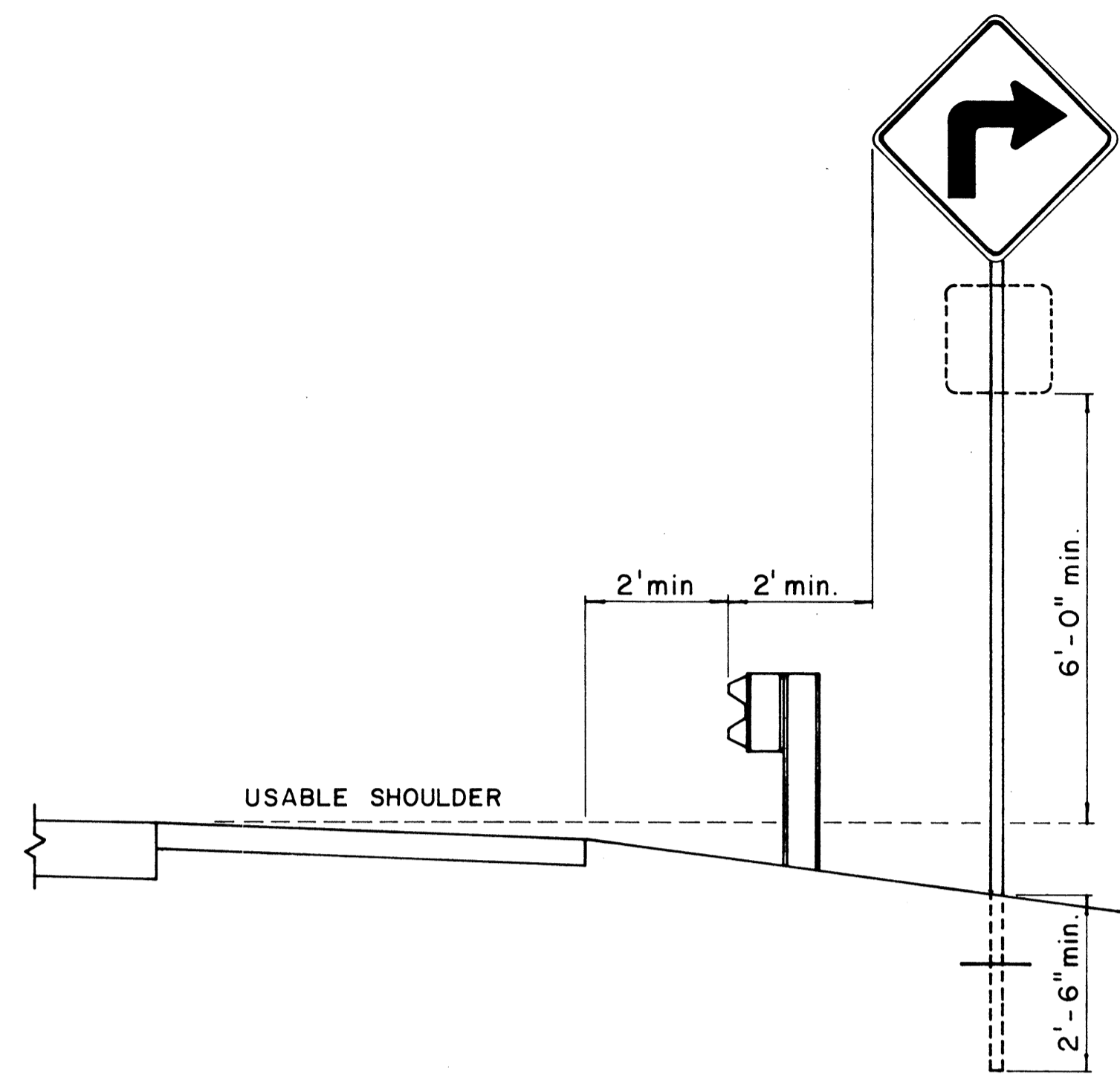
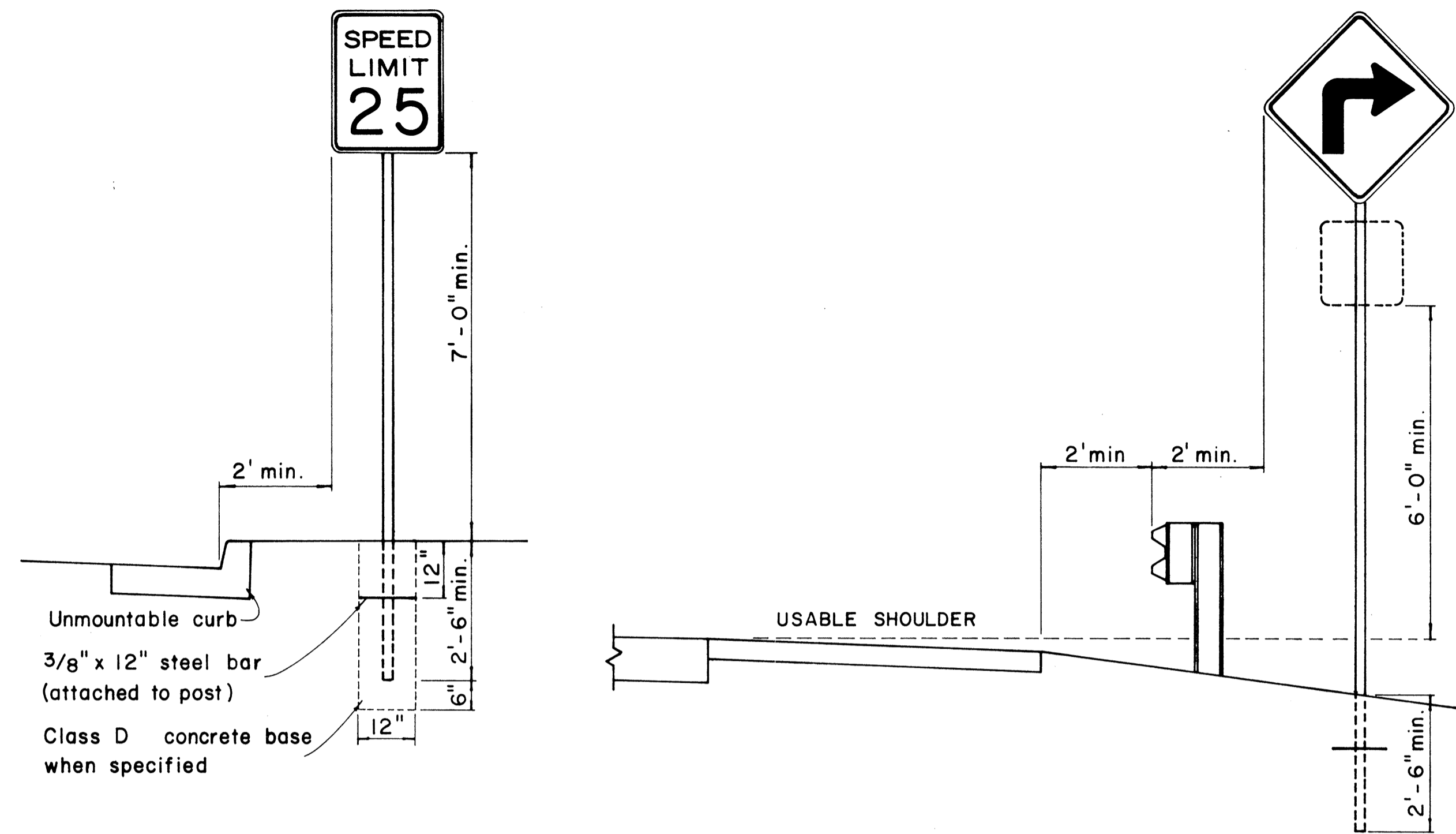
Thomas H. Knecht

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

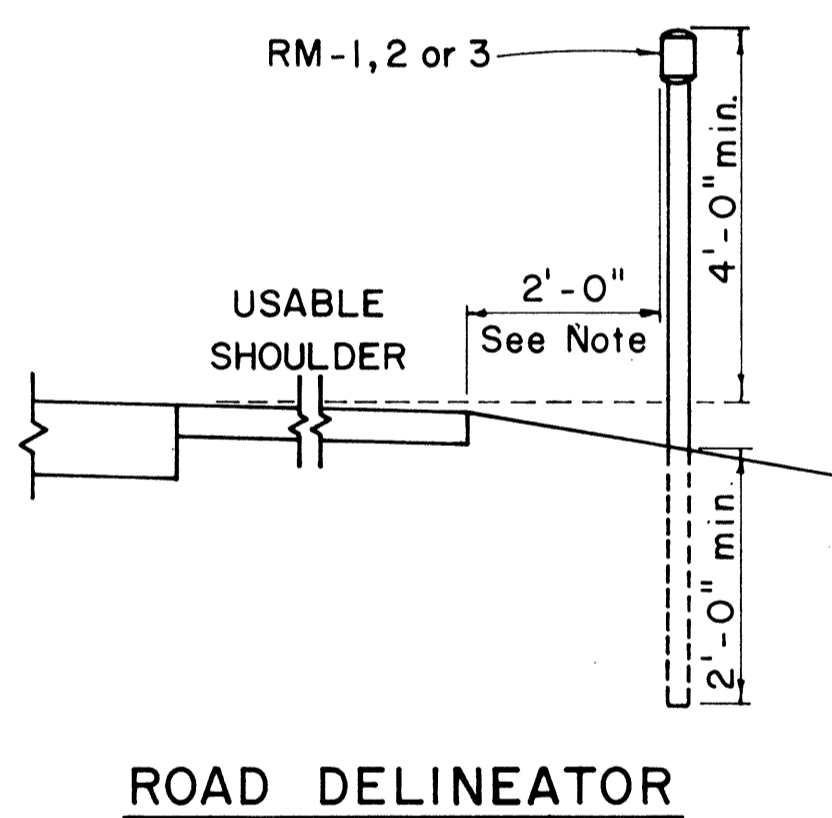
DETAILS

DESTINATION & GROUND MOUNTED EXPRESSWAY SIGNS
 INTERSTATE ROUTE H-1
 PROJECT NO I-H-1(91):13
 Scale: As Shown DATE: APR. 15, 1971
 SHEET No. 137 OF 20 SHEETS

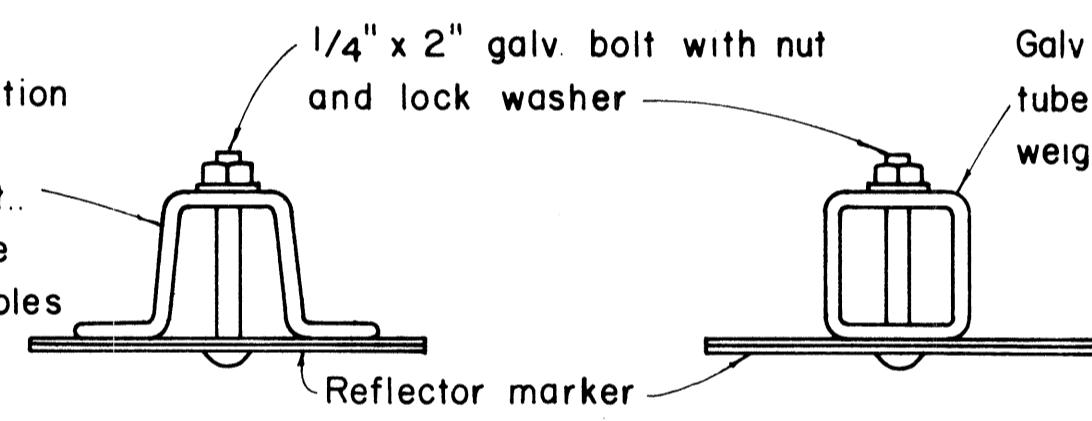
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(9)13	1972	83	228



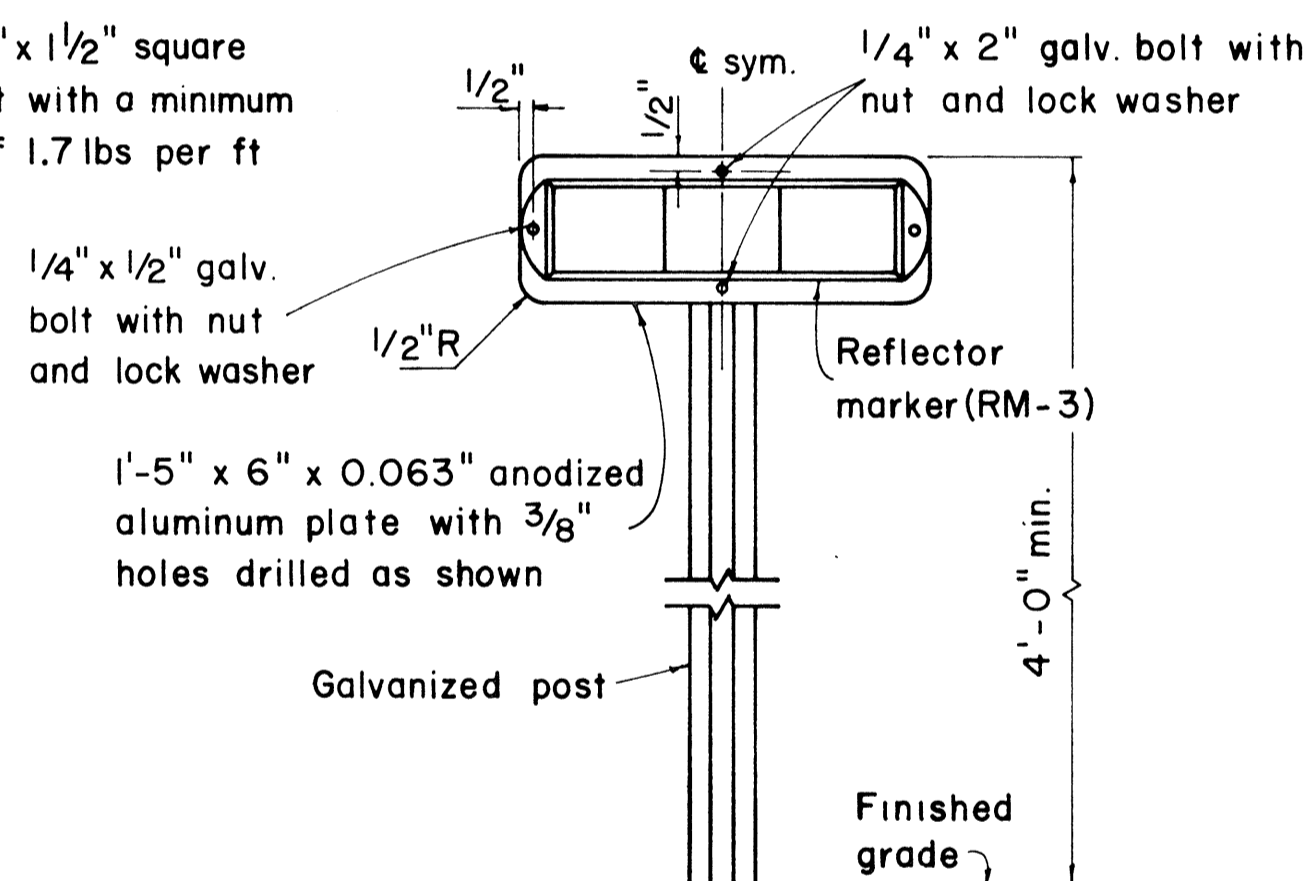
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



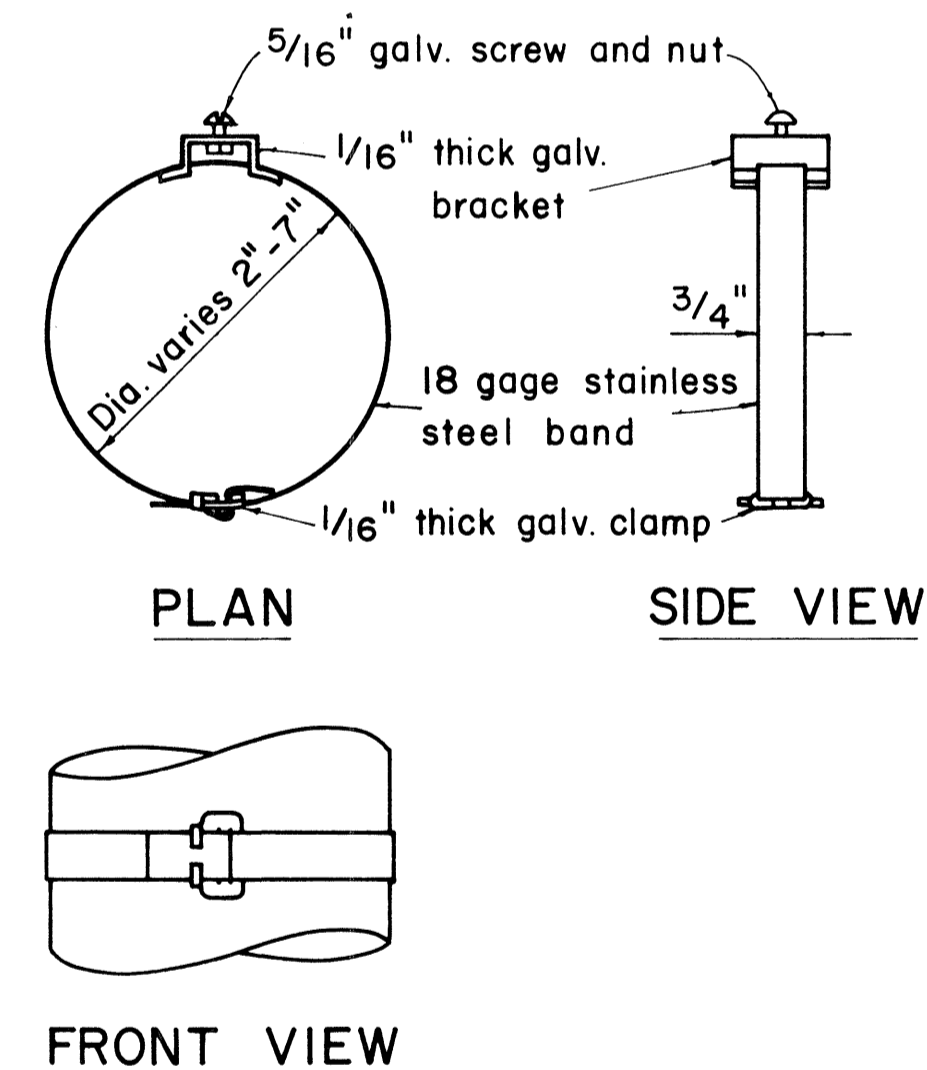
Galv. flanged channel 1/8" x 3 1/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft shall have a single row of 3/8" holes centered in the web at 1" o.c.



TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL HORIZONTAL REFLECTOR MARKER RM-3H



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

GENERAL NOTES:

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

APPROVAL RECOMMENDED:
Eichi Tanaka 12/22/69
 TRAFFIC ENGINEER DATE

APPROVED:
[Signature] 12-20-69
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

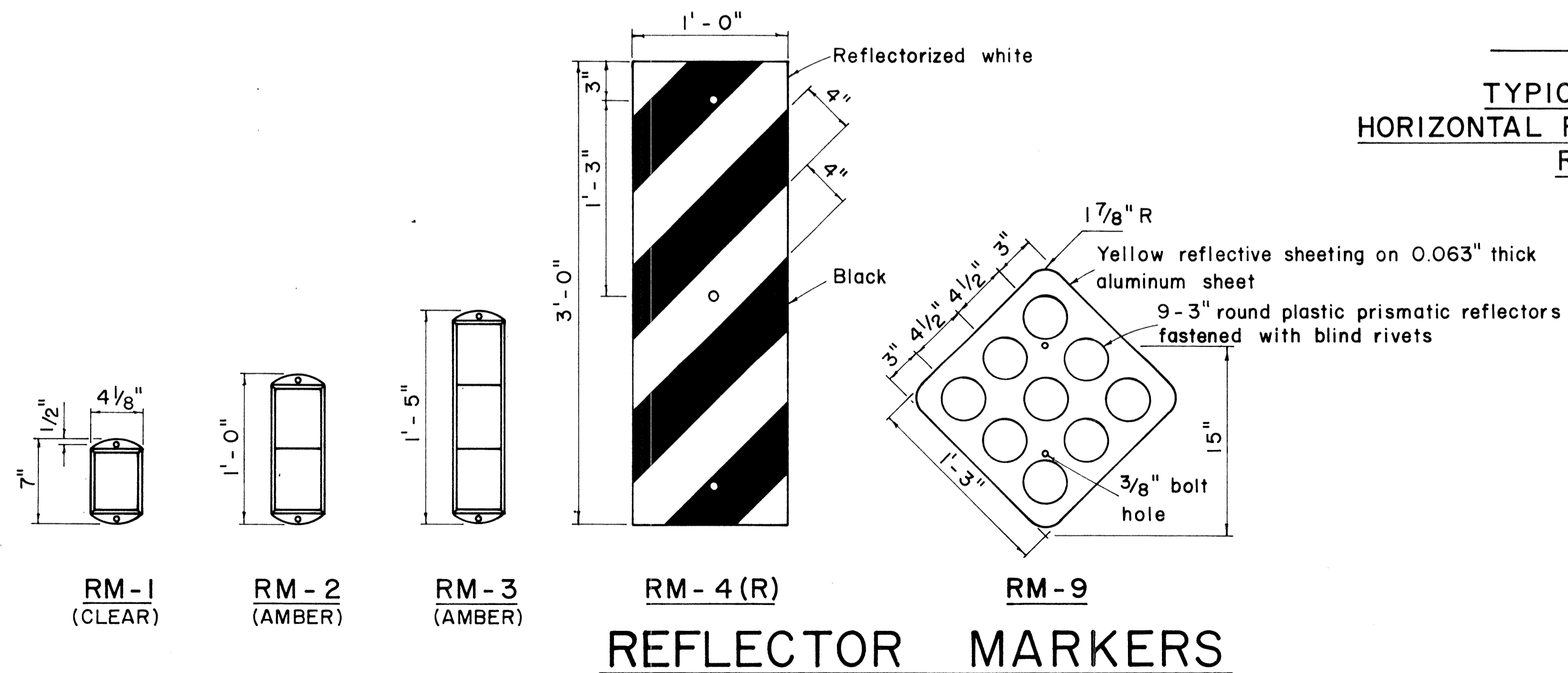
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
 MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

SHEET No. 147 OF 20 SHEETS DT 100

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



REFLECTOR MARKERS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I.H.I.(71)-13	1972	84	228

 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

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

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

APPROVED:
Julius J. ... 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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION


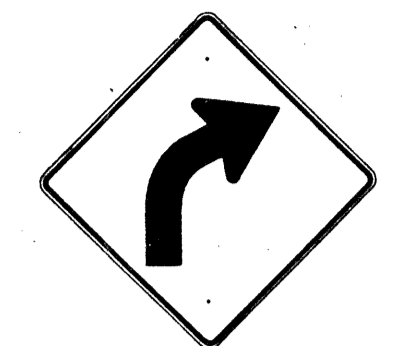
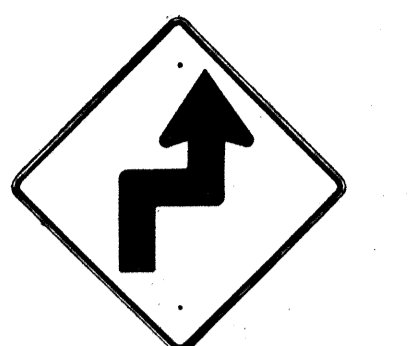
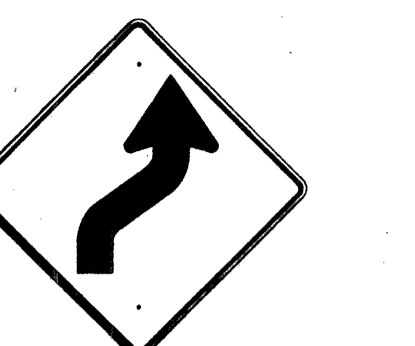

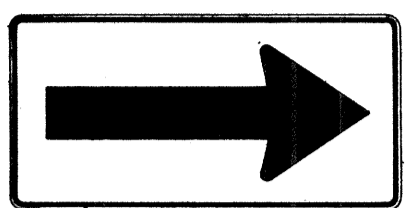
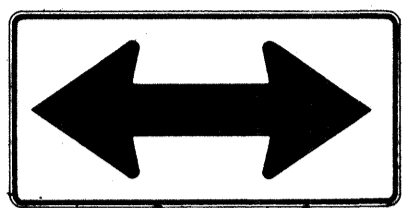
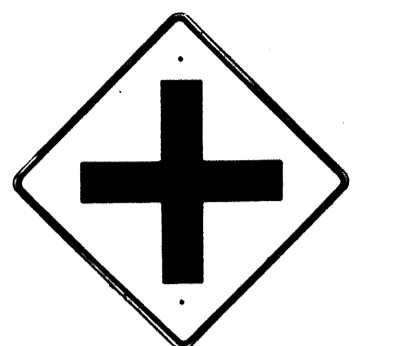
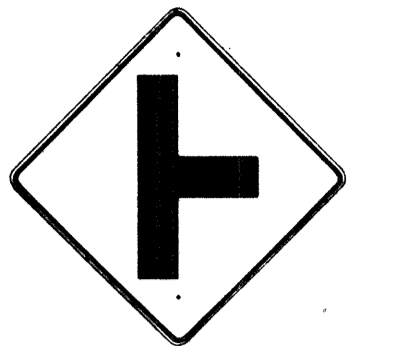
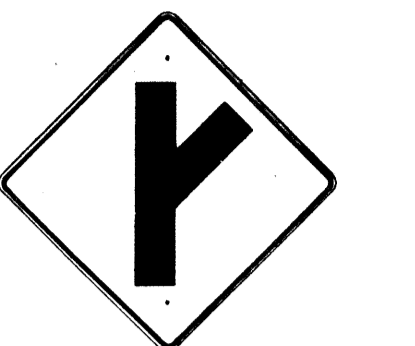
STANDARD DETAILS
REGULATORY SIGNS

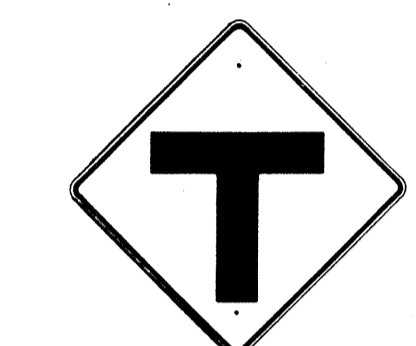



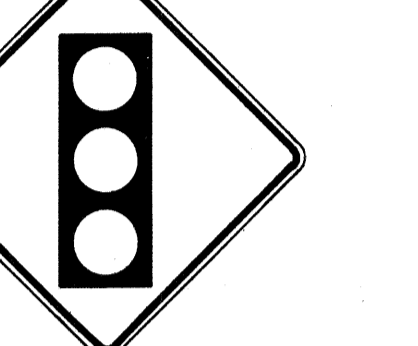

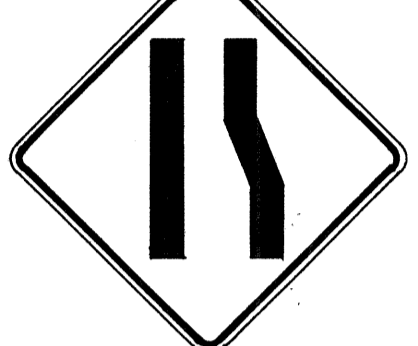



NOT TO SCALE





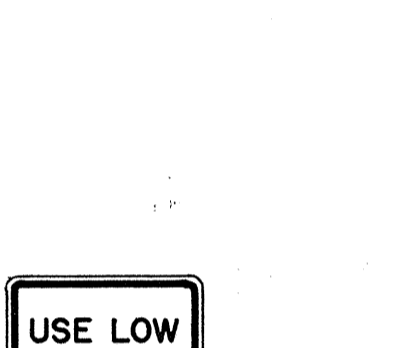





SHEET No. 157 OF 20 SHEETS DT 101



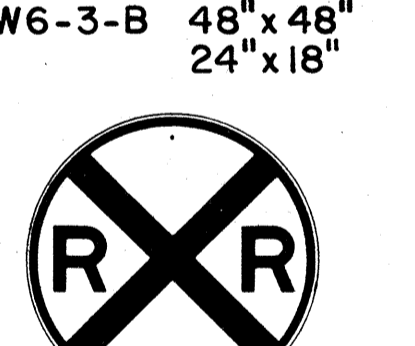




DATE: _____
 SURVEY PLOTTED BY: _____
 DRAWN BY: _____
 DESIGNED BY: _____
 NOTE BOOK QUANTITIES BY: _____
 CHECKED BY: _____
 No. _____

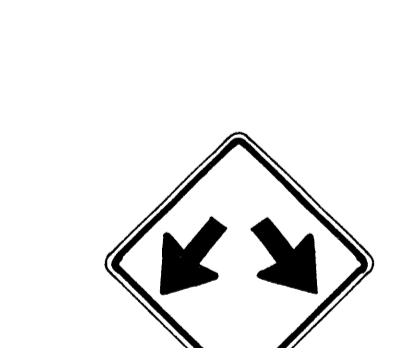

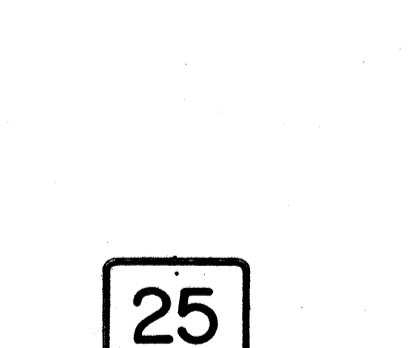




FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(7)-13	1972	85	228

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

 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"
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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."
- All warning signs shall be reflectorized unless otherwise specified.
- All warning signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- Signs prefixed with "CW" on the plans shall indicate orange and black construction signs.

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

APPROVED:
Walter D. Sison 3-20-72
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.T.	3/20/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
WARNING SIGNS

NOT TO SCALE

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

(OVERHEAD SIGNS)
SUPPORT SPACING TABLE

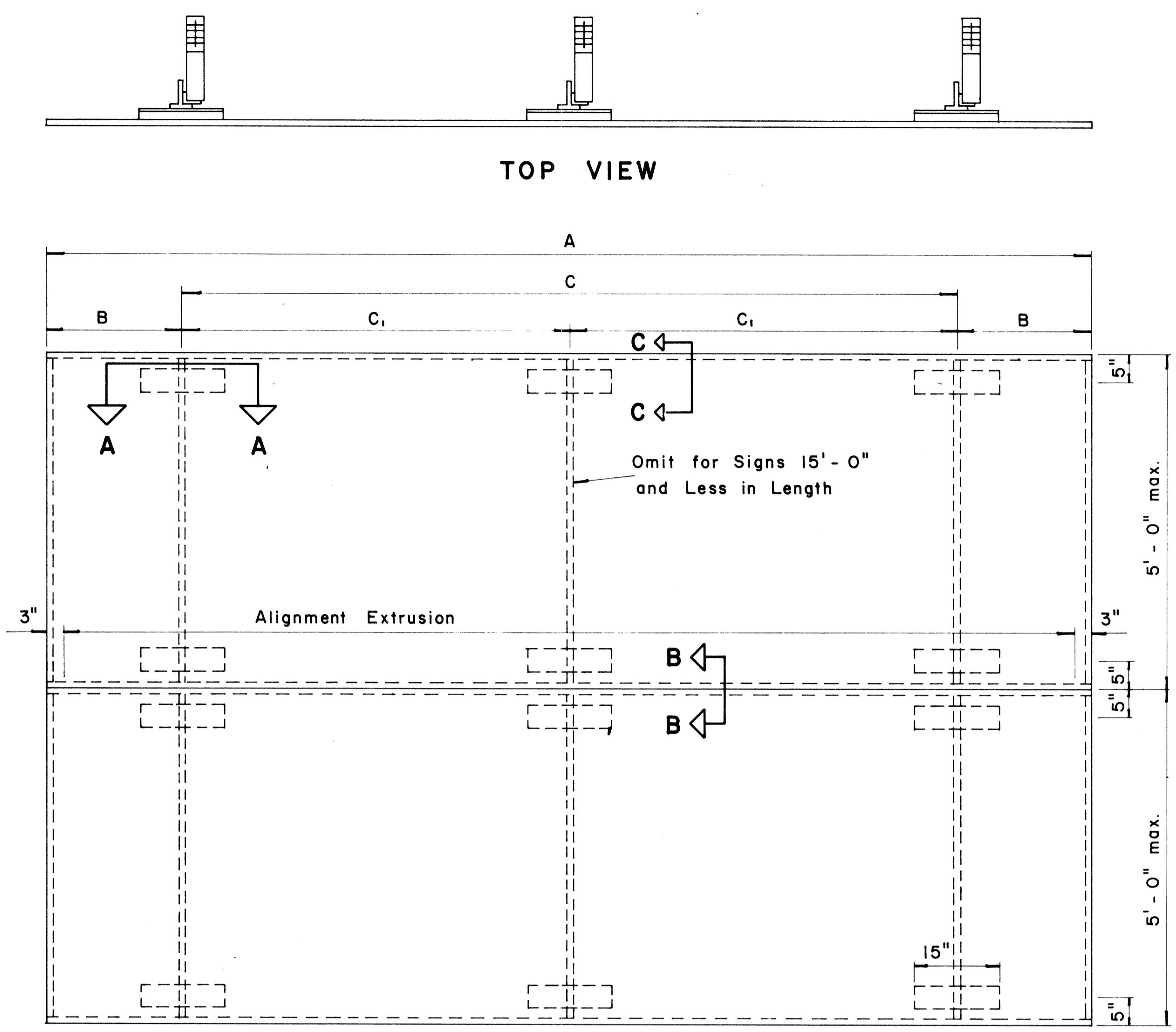
PANEL THICK.	LENGTH OF SIGN A	NO. OF SUPPORTS	OVERHANG B	SUPPORT SPACING C or C ₁
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"	84"
1"	11'-6"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

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

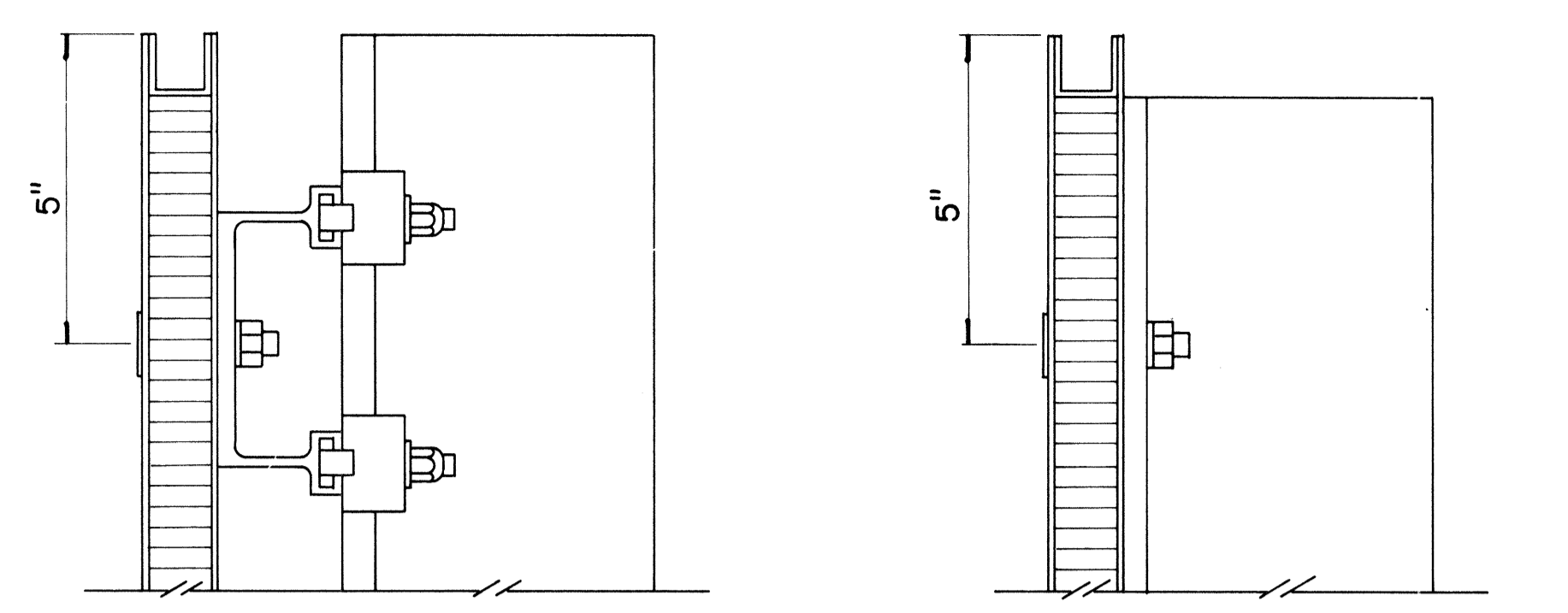
NO.	REVISION	APPROVED BY	DATE

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



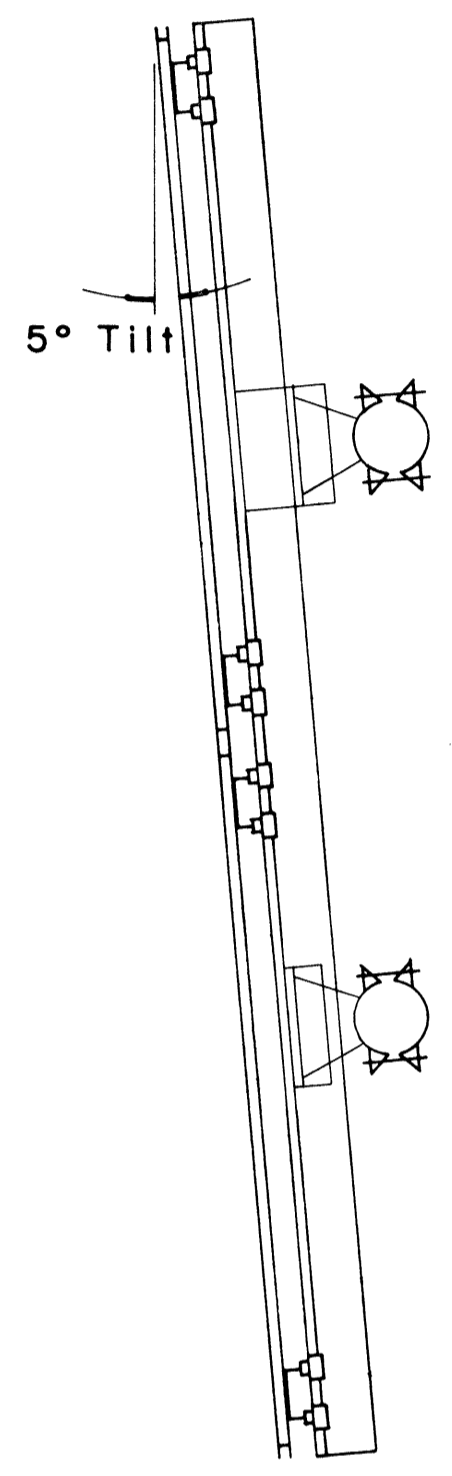
TYPICAL SIGN ASSEMBLY

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

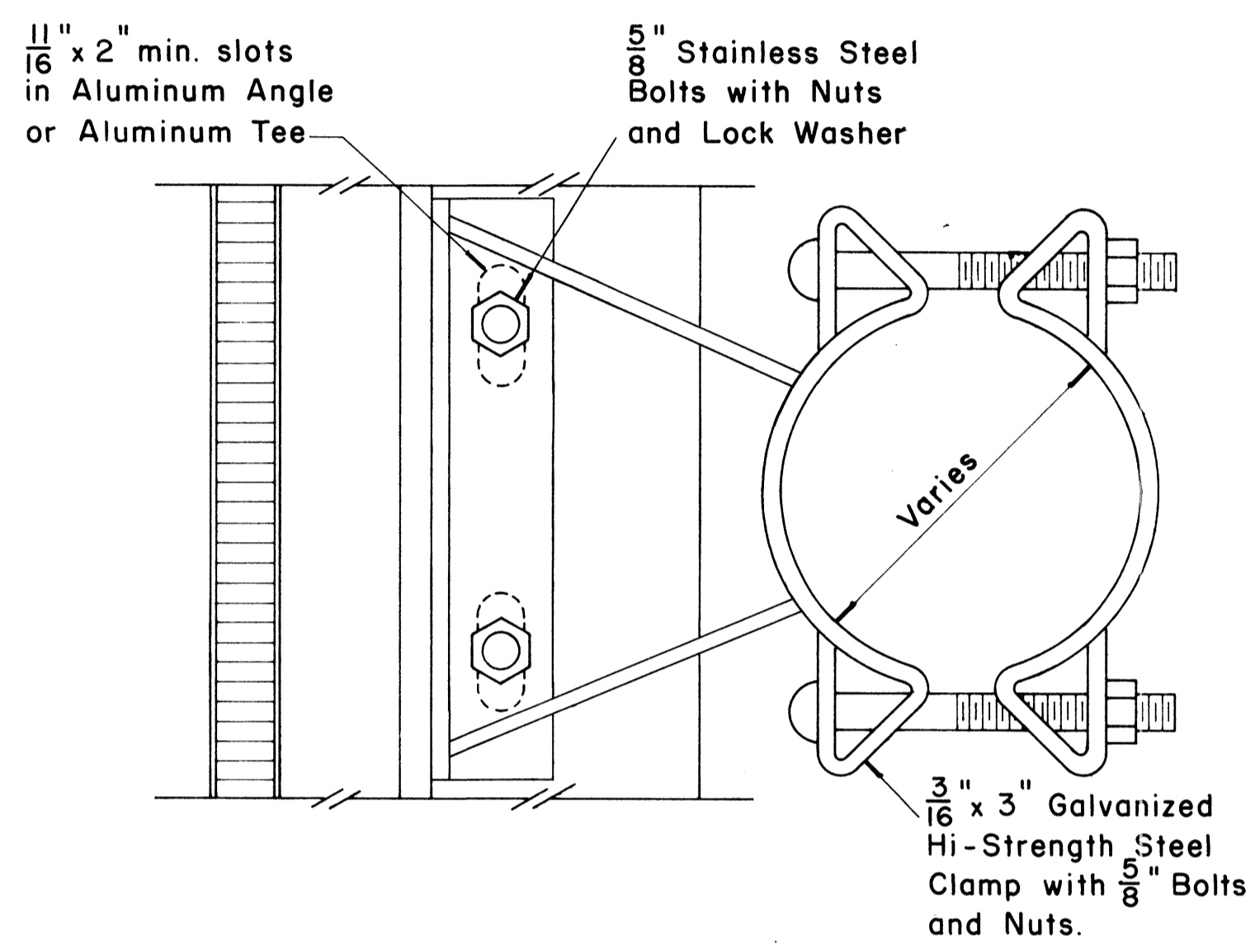


SECTION "C-C" SECTION "C-C" (Alternate)

Scale: 3/8" = 1" Scale: 3/8" = 1"



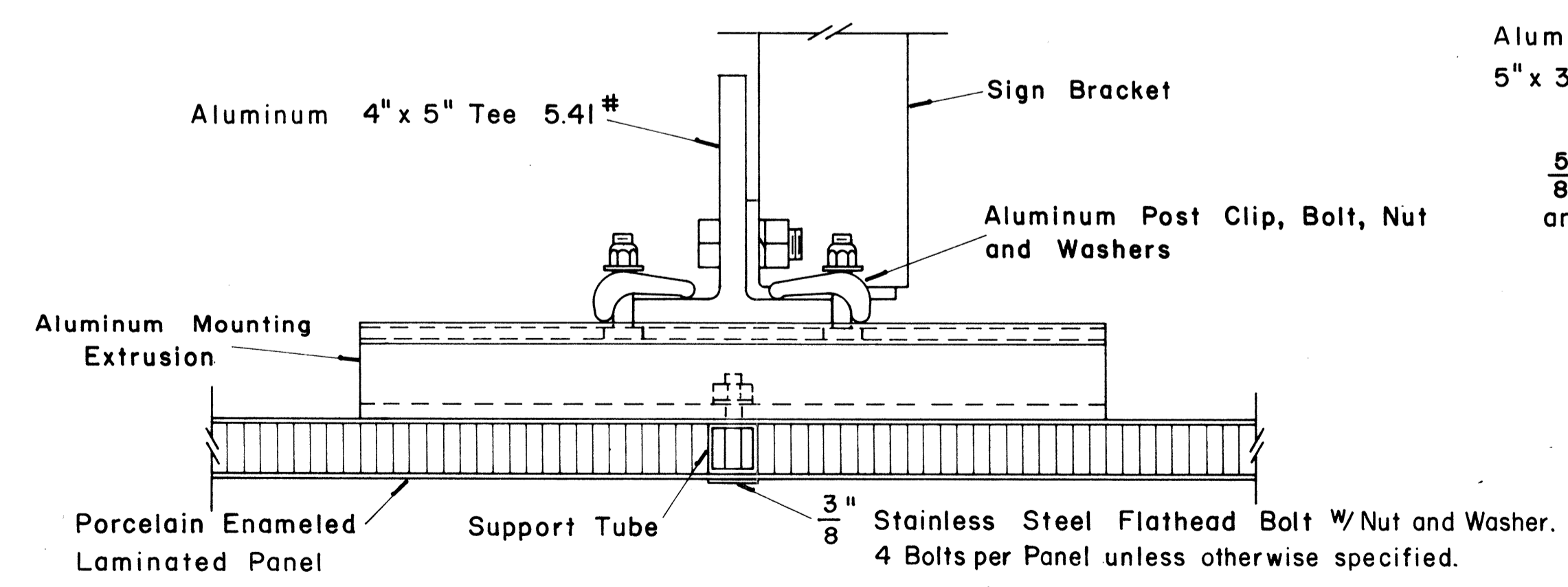
SIDE VIEW



SIGN BRACKET ASSEMBLY

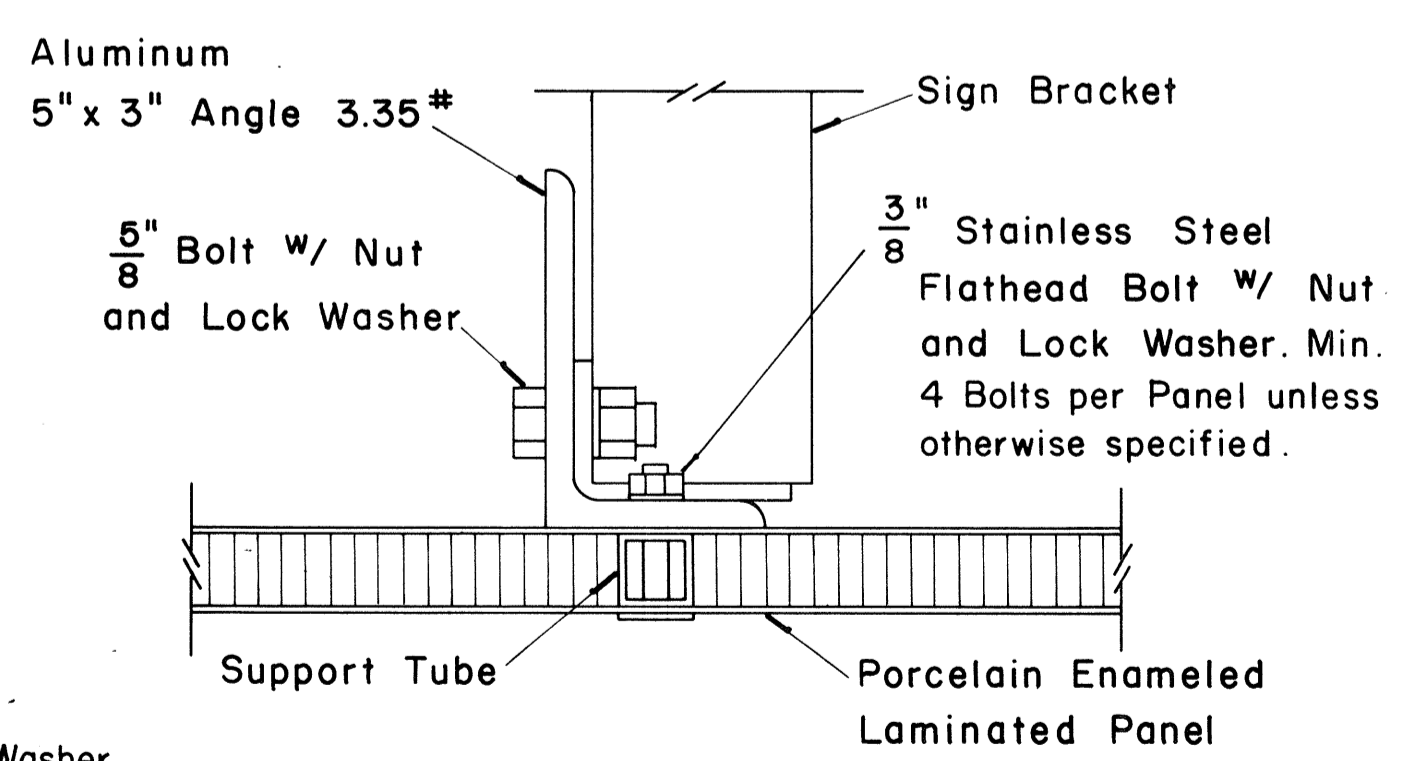
Scale: 3/8" = 1"

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



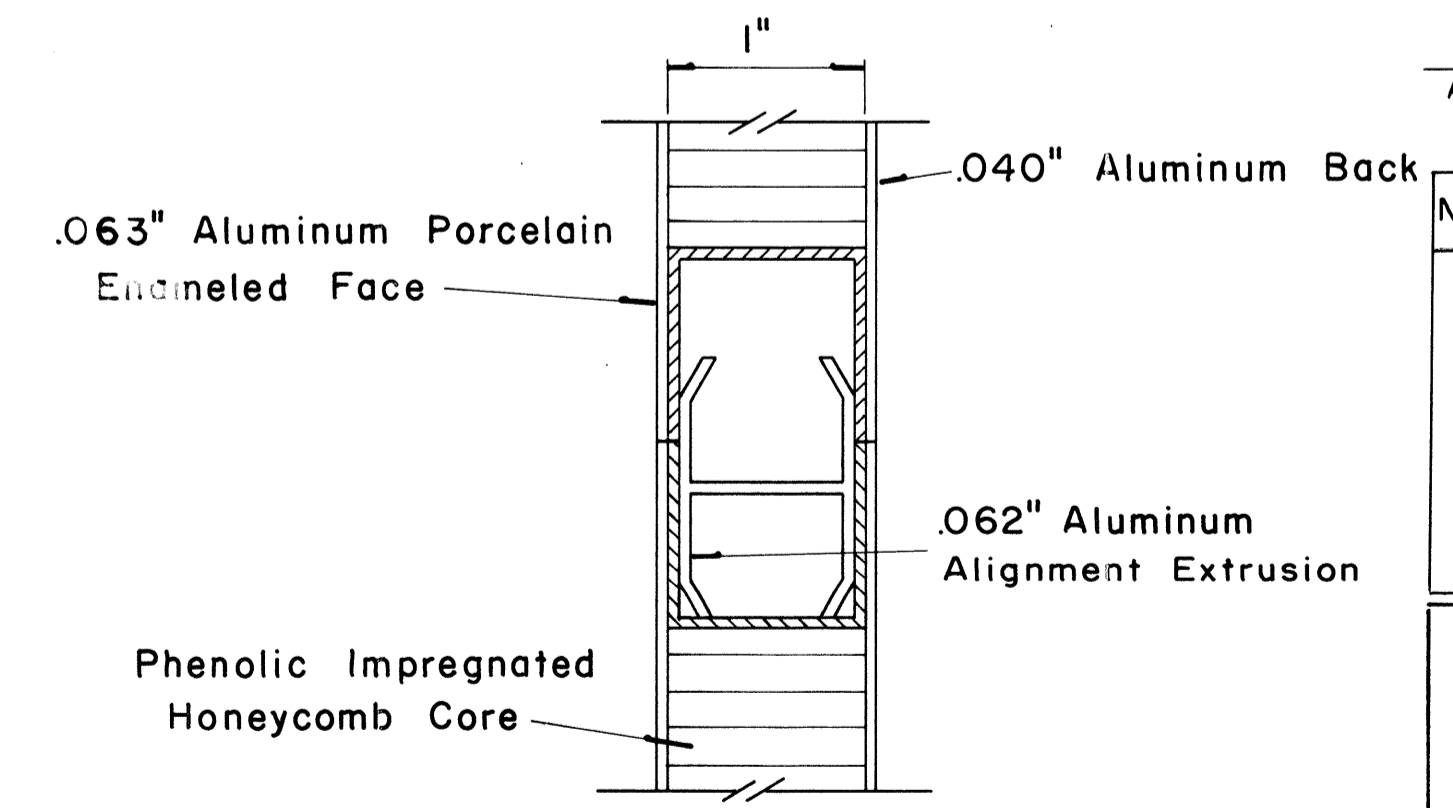
SECTION "A-A" (Alternate)

Scale: 3/8" = 1"



SECTION "A-A" (Alternate)

Scale: 3/8" = 1"



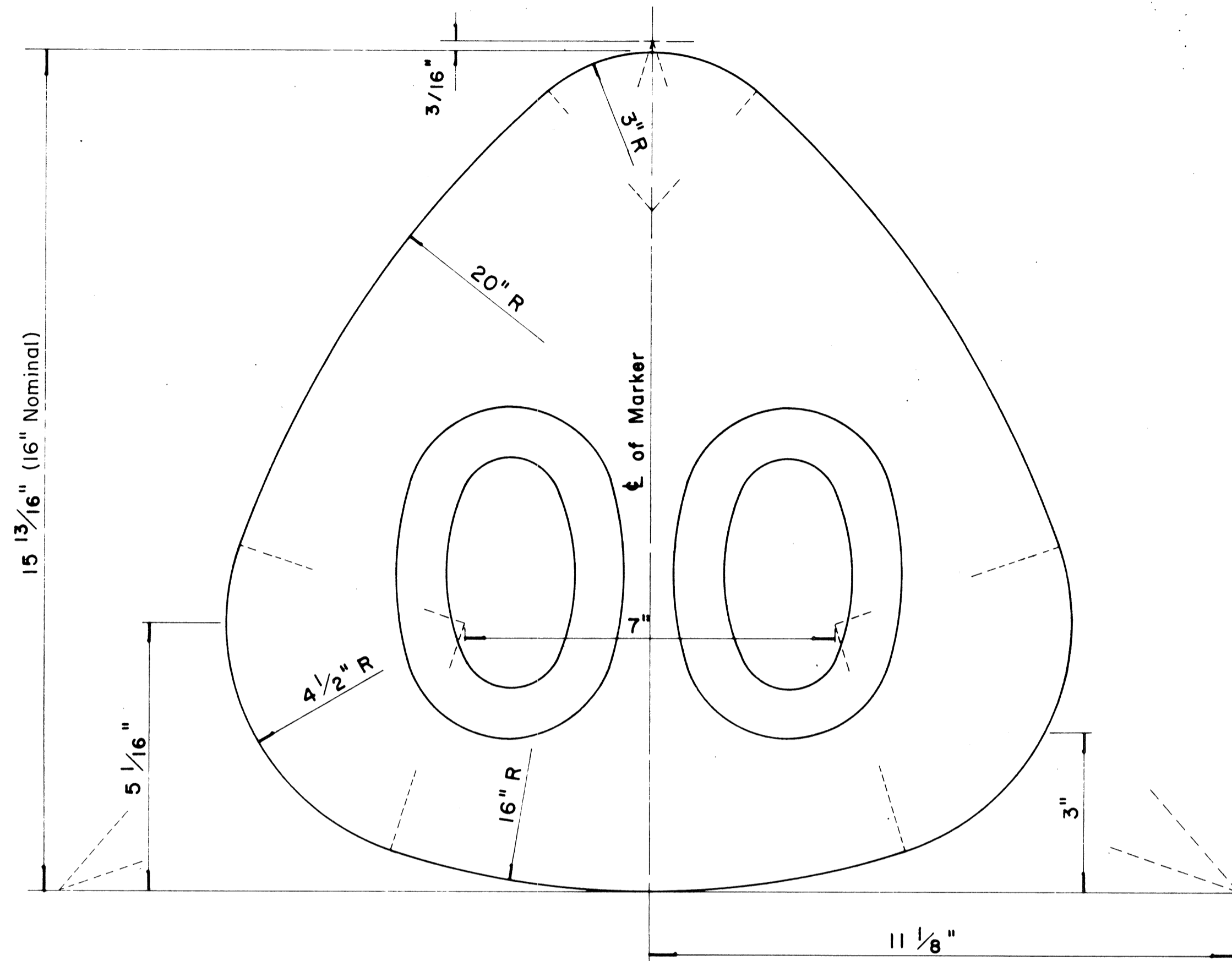
CLOSURE DETAIL SECTION "B-B"

FULL SCALE

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



MARKER SIZE	MULTIPLY DIMENSIONS BY	NUMERAL SIZE
		2 Digit - Series D 3 Digit - Series C
16"	1	6"
21"	1.3	8"
32"	2.0	12"
42"	2.63	16"



**STATE ROUTE MARKER
FOR GUIDE SIGNS**

Scale: Half Size

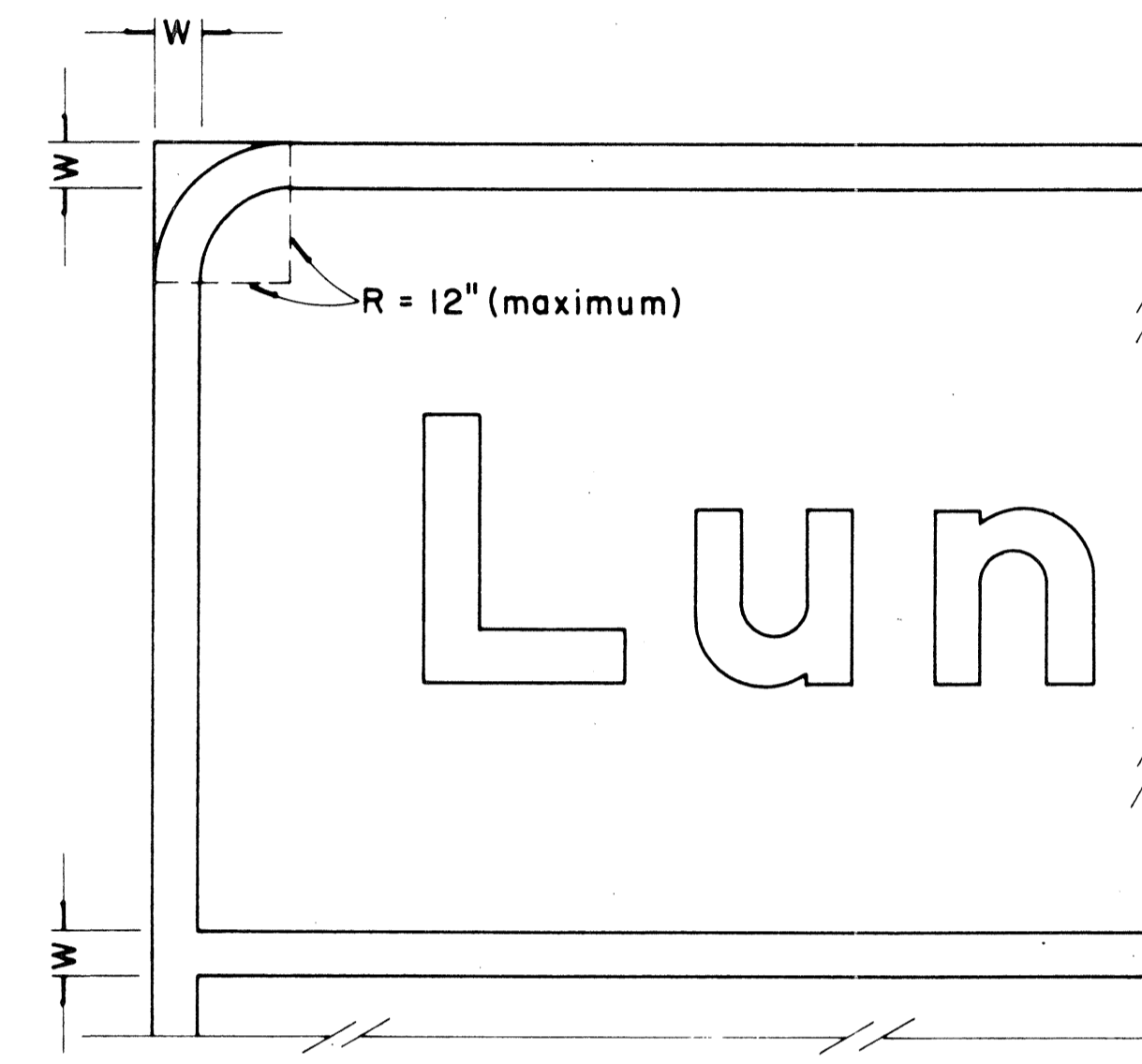
NOTE :

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.
- * 4. The 16" State Route Marker shall be used only with the Construction Identification sign.

DATE	.....
SURVEY PLOTTED BY	.....
DRAWN BY	.....
TRACED BY	.....
NOTED 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.	1-171-1(0)113	1972	87	228

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



**BORDER DETAIL
FOR GUIDE SIGNS**

Not to Scale

NOTE :

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

APPROVAL RECOMMENDED:

Etsuki Tanaka 4/11/72
TRAFFIC ENGINEER DATE

APPROVED:

Malu S. Sakaihi 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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

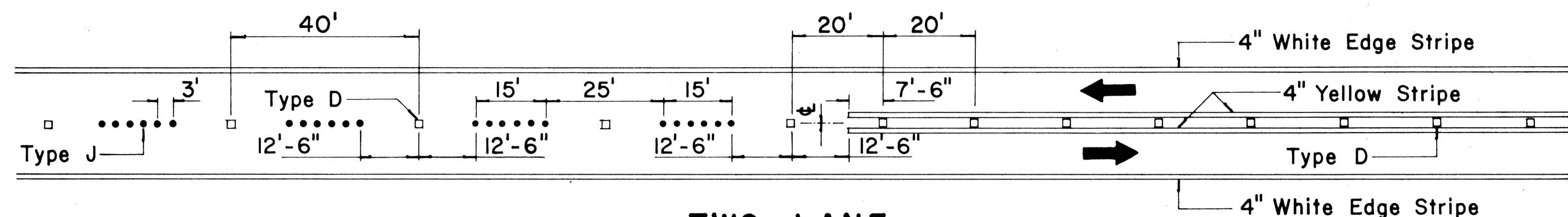
STANDARD DETAILS

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

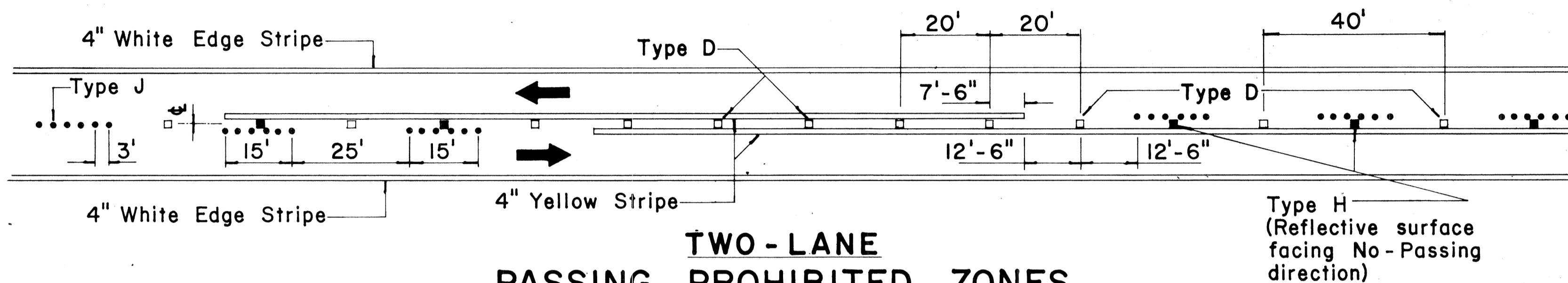
Scale: As Shown 87

SS

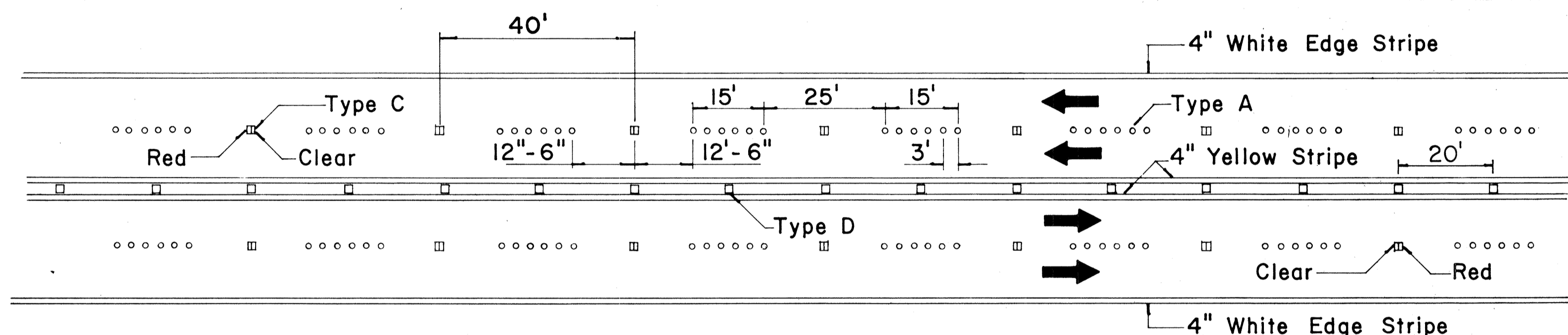
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(71):13	1972	88	228



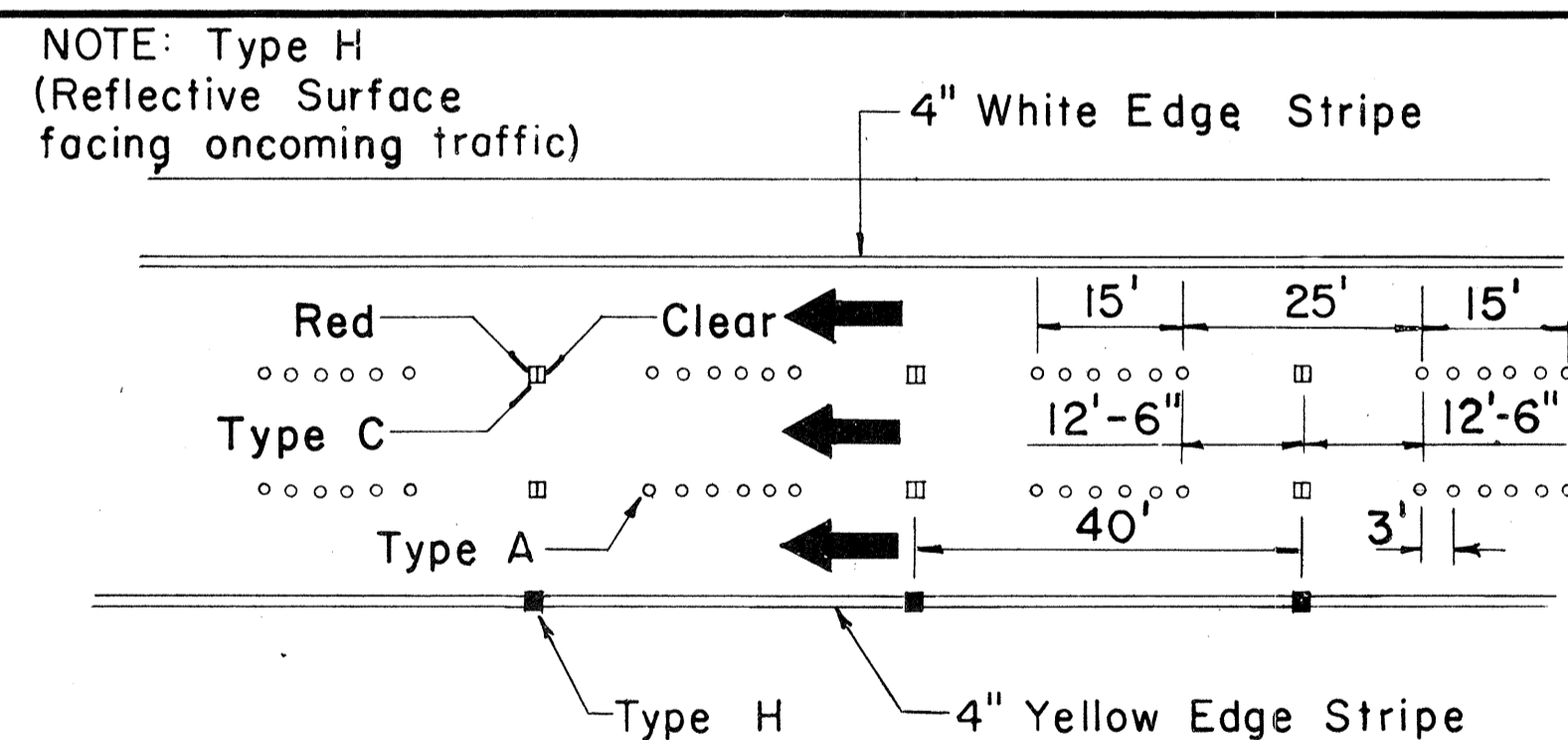
**TWO-LANE
PASSING PERMITTED AND PASSING PROHIBITED**



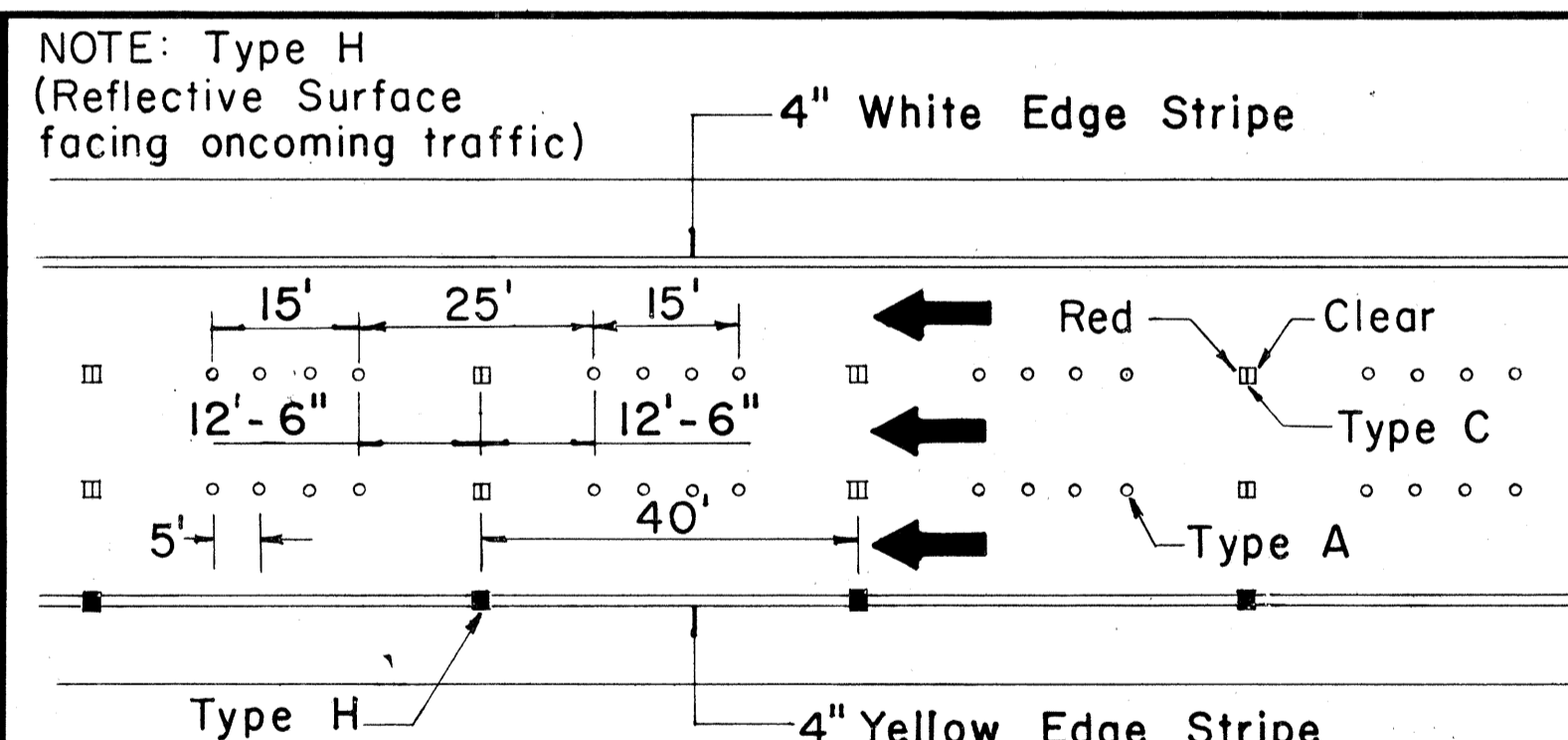
**TWO-LANE
PASSING PROHIBITED ZONES**



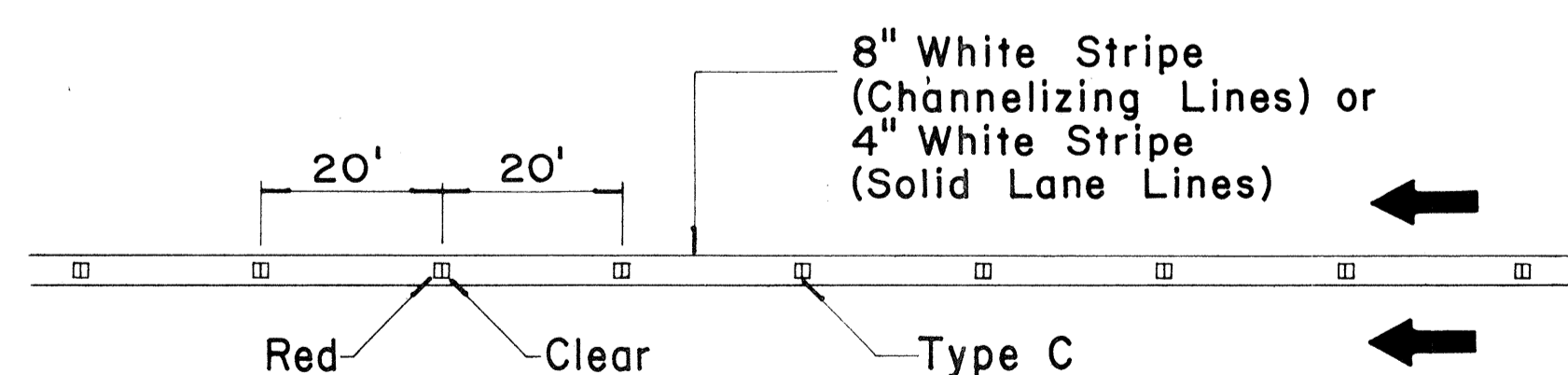
**MULTI-LANE
LANE LINES AND CENTER LINE**



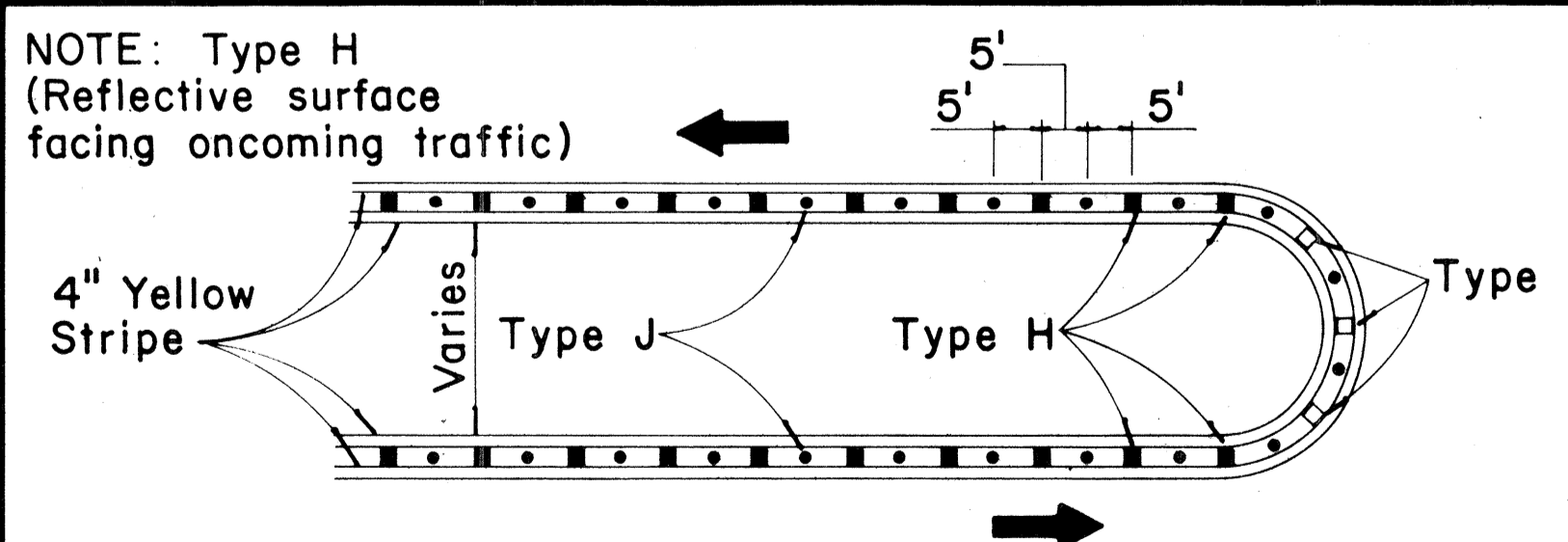
DIVIDED HIGHWAY LANE LINES



FREEWAY LANE LINES



**CHANNELIZING LINES
OR SOLID LANE LINES**



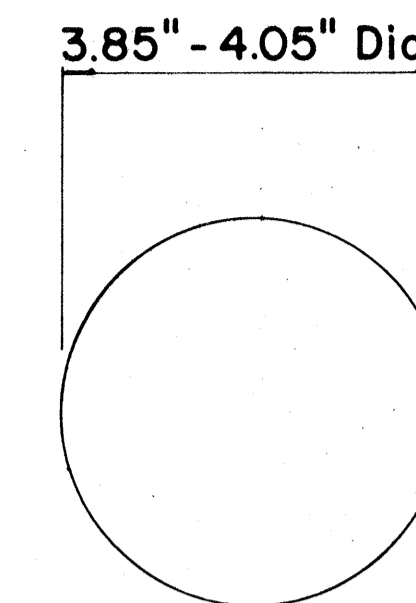
MEDIAN NOSE DELINEATION

TWO - LANE

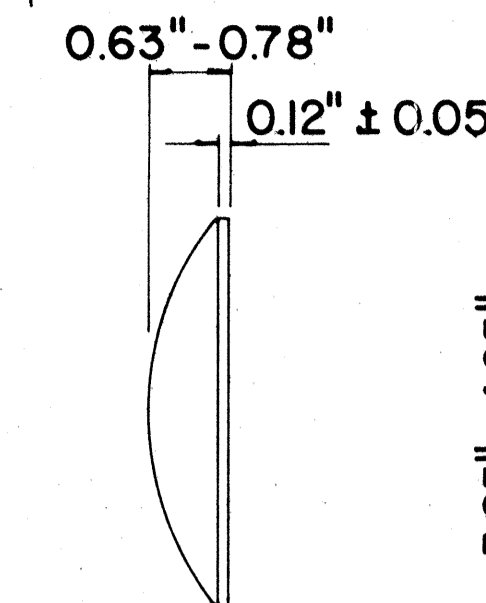
MULTI - LANE

DIVIDED HIGHWAY
AND
FREEWAY

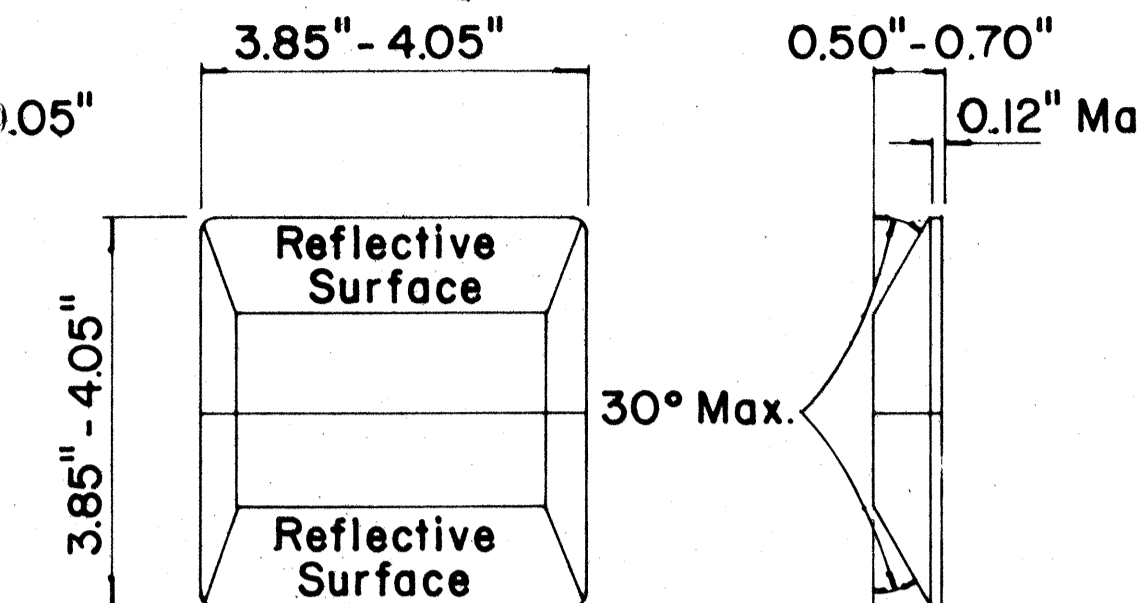
MISCELLANEOUS



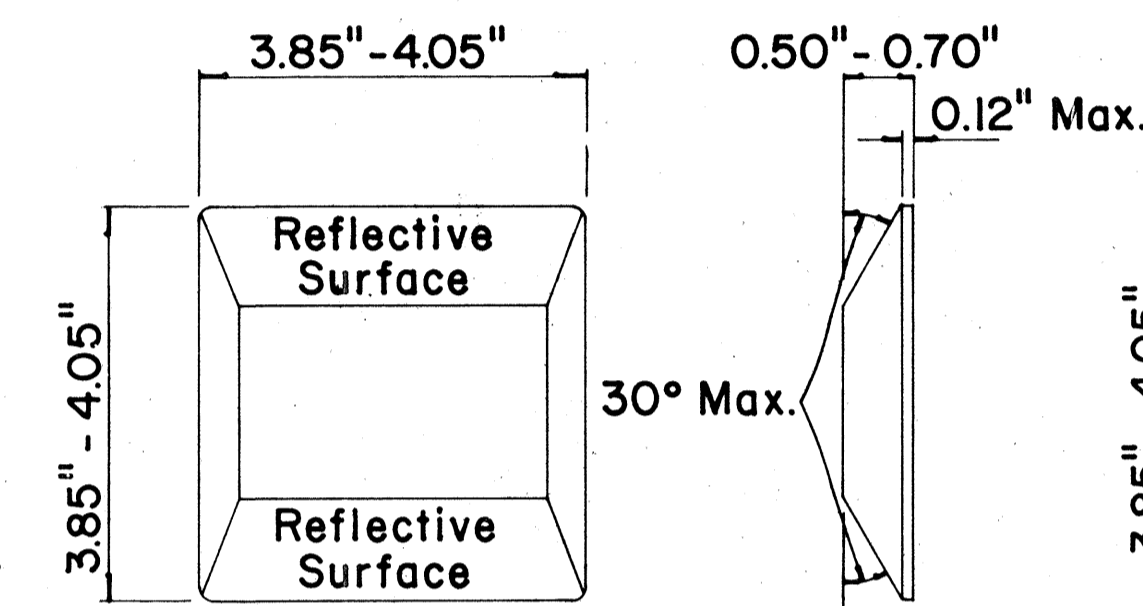
**TYPE A
NON-REFLECTIVE WHITE MARKER**



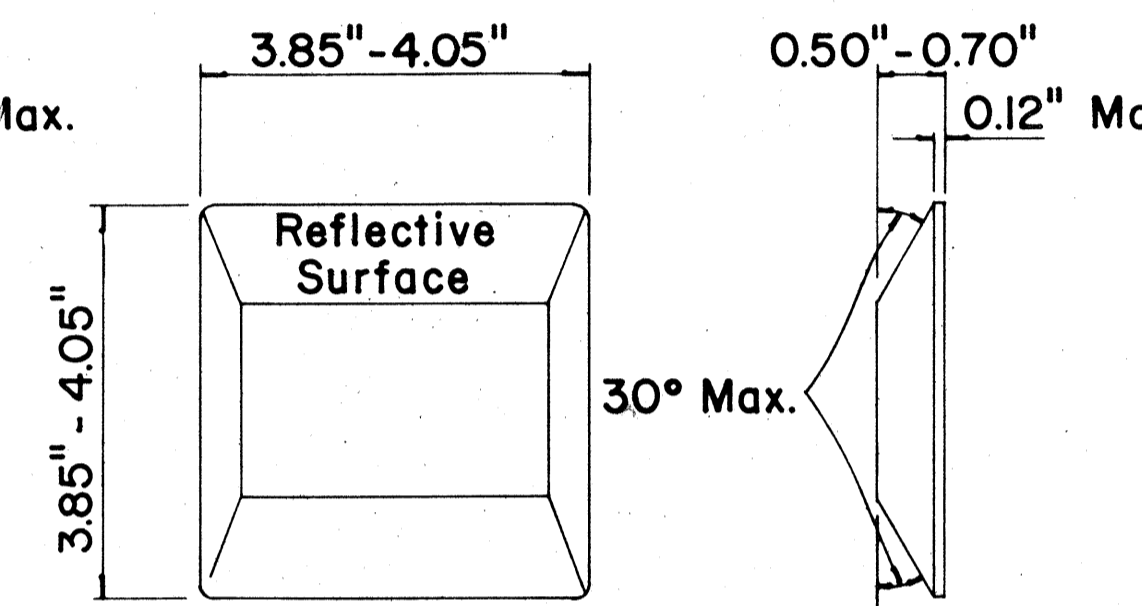
**TYPE J
NON-REFLECTIVE YELLOW MARKER**



**TYPE C
RED-CLEAR REFLECTIVE MARKER**



**TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER**



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

GENERAL NOTES

1. Painted stripes to be done by Contractor unless otherwise specified.

LEGEND

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

APPROVAL RECOMMENDED:
Eishi Tanaka 11/18/71
TRAFFIC ENGINEER DATE

APPROVED:
Shelton Sato 11/18/71
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.T.	10-21-72
2	Revised General Notes.	H.T.	10-21-72
3	Change 4" white edge stripe to 4" solid yellow edge stripe to left edge of a travel path and Add. Type H Reflector Marker	H.T.	5-22-74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
RAISED PAVEMENT MARKERS**

PROJ. NO. I-HI-1(71):13

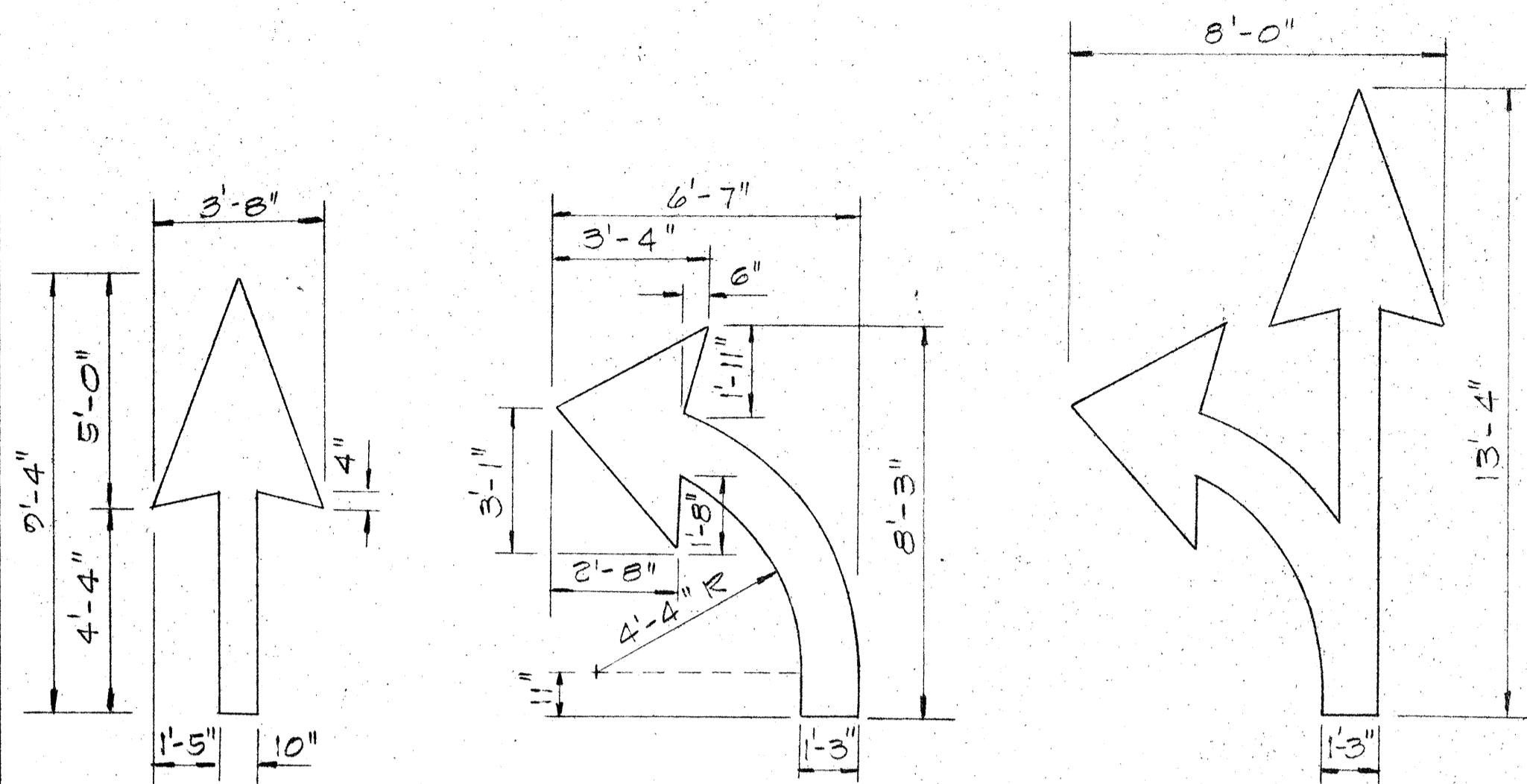
Not to Scale October 1971

SHEET No. OF SHEETS DT 300

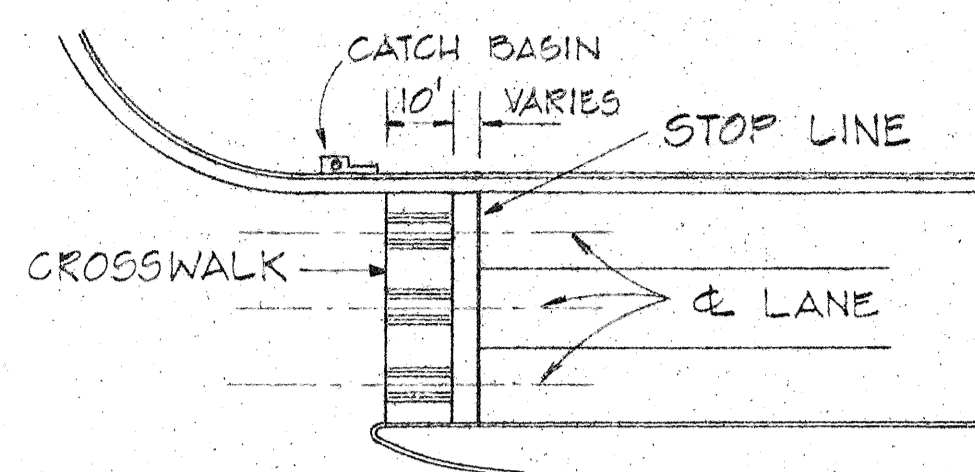
DATE
REVISION
DRAWN BY
CHECKED BY
DESIGNED BY
No.

C.O. \$\$\$

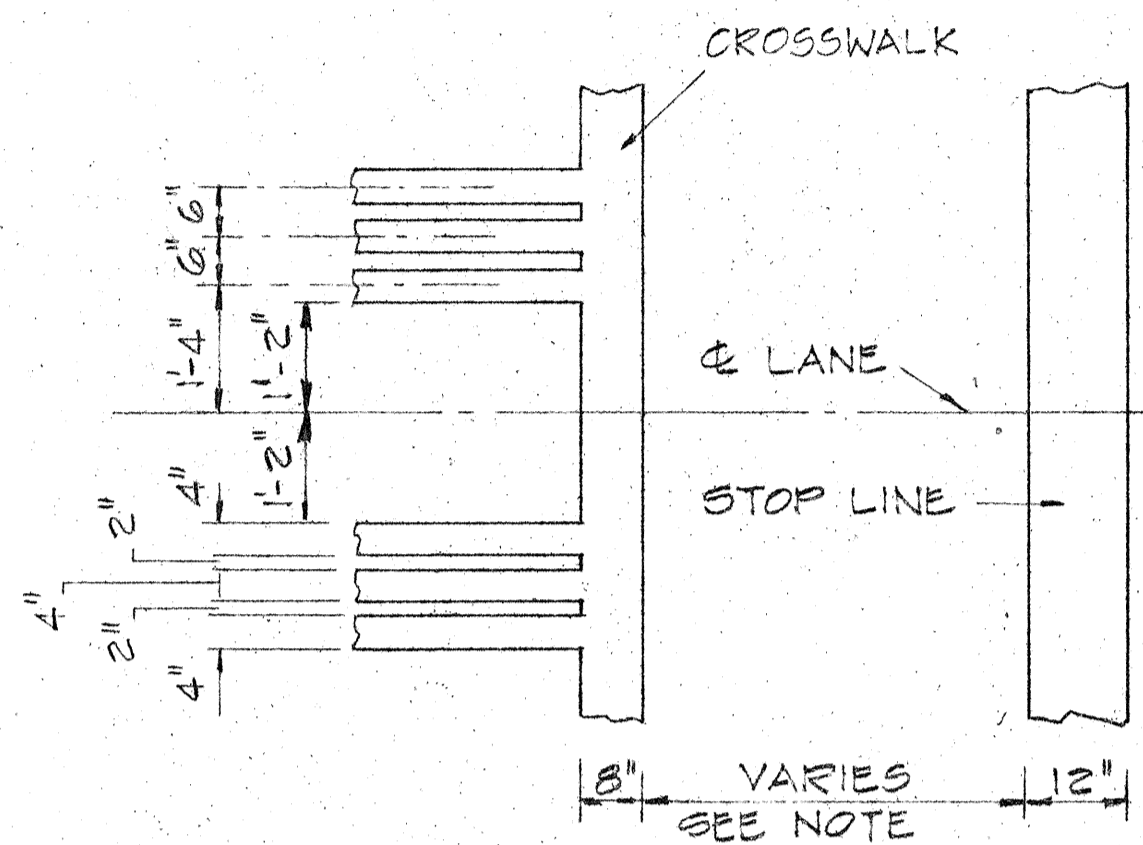
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(01):13	1972	885-1	228



PAVEMENT ARROWS
NOT TO SCALE



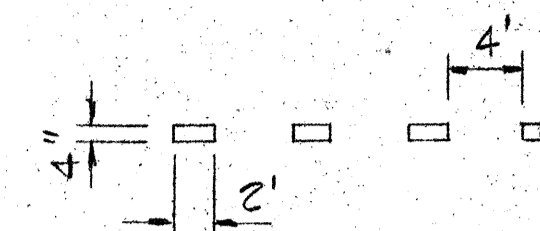
NOTE: SET ALL CROSSWALKS AWAY FROM CATCH BASINS



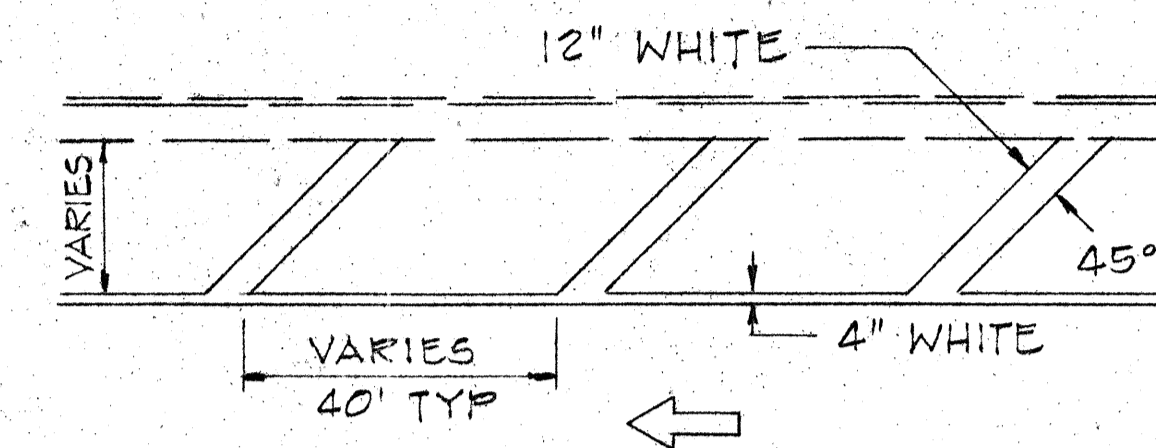
CROSSWALK & STOP LINE

NOT TO SCALE

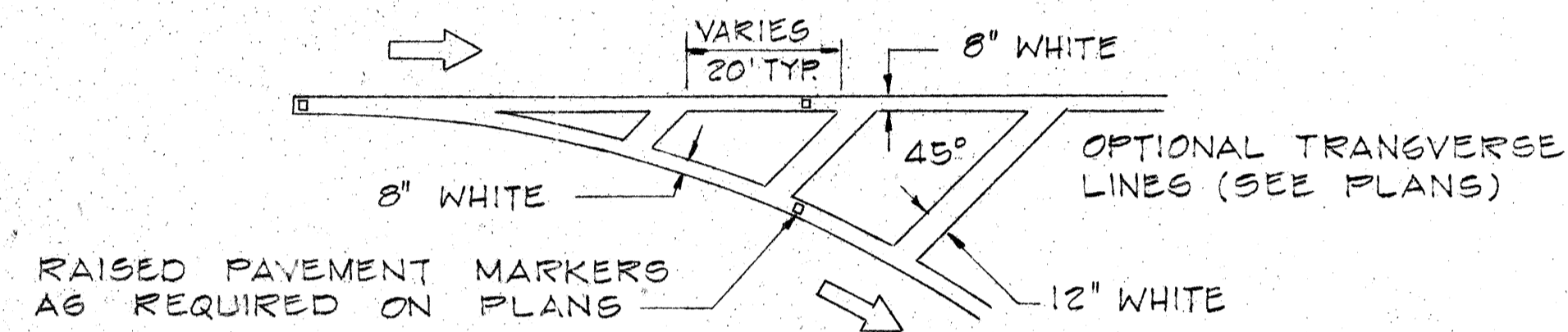
NOTE: STOP LINES AT UNSIGNALIZED INTERSECTIONS AND AT MIDBLOCK CROSSWALKS SHALL BE PLACED A MINIMUM OF 10 FEET BEFORE THE CROSSWALK, HOWEVER A DISTANCE OF 20 FEET IS PREFERABLE. STOP LINES AT SIGNALIZED INTERSECTIONS SHALL BE PLACED A MINIMUM OF FOUR FEET BEFORE THE CROSSWALK.



4" WHITE GUIDE LINE
NOT TO SCALE



TRANSVERSE SHOULDER MARKING
NOT TO SCALE



CHANNELIZING ISLAND

NOT TO SCALE

GENERAL NOTES - PAVEMENT MARKINGS

1. Pavement Markings shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and as shown on the plans.
2. Layout of pavement markings and striping shall be done by the Contractor. Contractor shall check layout of markers & striping with the Engineer prior to performing work.
3. For additional pavement marking details see plan sht #DT 300.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS OF PAVEMENT MARKINGS

PROJ. NO. I-HI-1(01):13
SCALE: AS SHOWN DATE:
SHEET NO. OF SHEETS

