

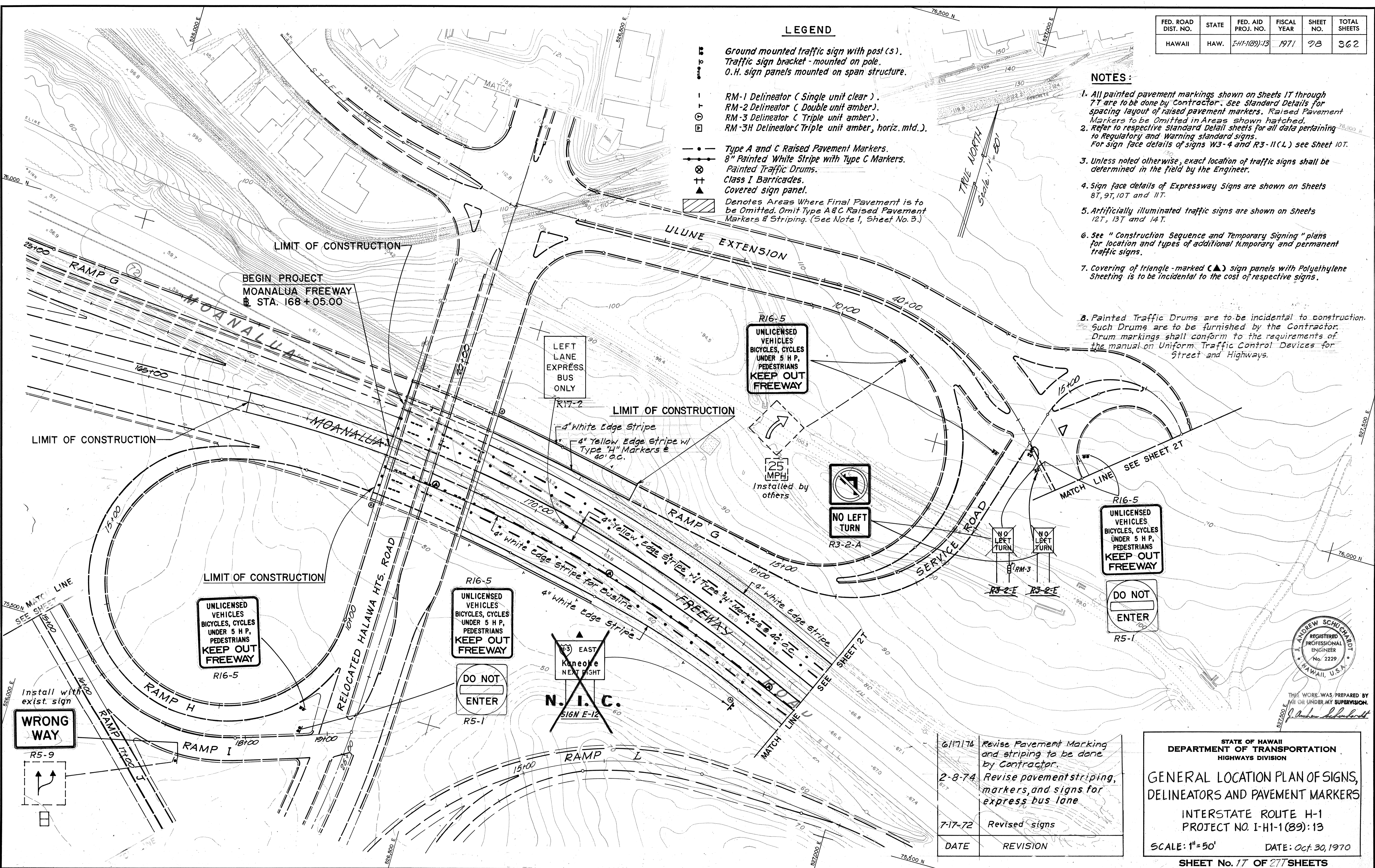
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(89)-13	1971	98	362

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.
- Painted Traffic Drums.
- +— Class I Barricades.
- ▲ Covered sign panel.
- ▨ Denotes Areas Where Final Pavement is to be Omitted. Omit Type A&C Raised Pavement Markers & Striping. (See Note 1, Sheet No. 3.)

NOTES:

1. All painted pavement markings shown on Sheets 1T through 7T are to be done by Contractor. See Standard Details for spacing layout of raised pavement markers. Raised Pavement Markers to be Omitted in Areas shown hatched.
2. Refer to respective Standard Detail sheets for all data pertaining to Regulatory and Warning standard signs. For sign face details of signs W3-4 and R3-11(CL) see Sheet 10T.
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 Sheets 8T, 9T, 10T and 11T.
5. Artificially illuminated traffic signs are shown on Sheets 12T, 13T and 14T.
6. See "Construction Sequence and Temporary Signing" plans for location and types of additional temporary and permanent traffic signs.
7. Covering of triangle-marked (▲) sign panels with Polyethylene Sheeting is to be incidental to the cost of respective signs.
8. Painted Traffic Drums are to be incidental to construction. Such Drums are to be furnished by the Contractor. Drum markings shall conform to the requirements of the manual on Uniform Traffic Control Devices for Street and Highways.



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	



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

DATE	REVISION
6/17/74	Revise Pavement Marking and striping to be done by Contractor.
2-8-74	Revise pavement striping, markers, and signs for express bus lane
7-17-72	Revised signs

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**GENERAL LOCATION PLAN OF SIGNS,
 DELINEATORS AND PAVEMENT MARKERS**

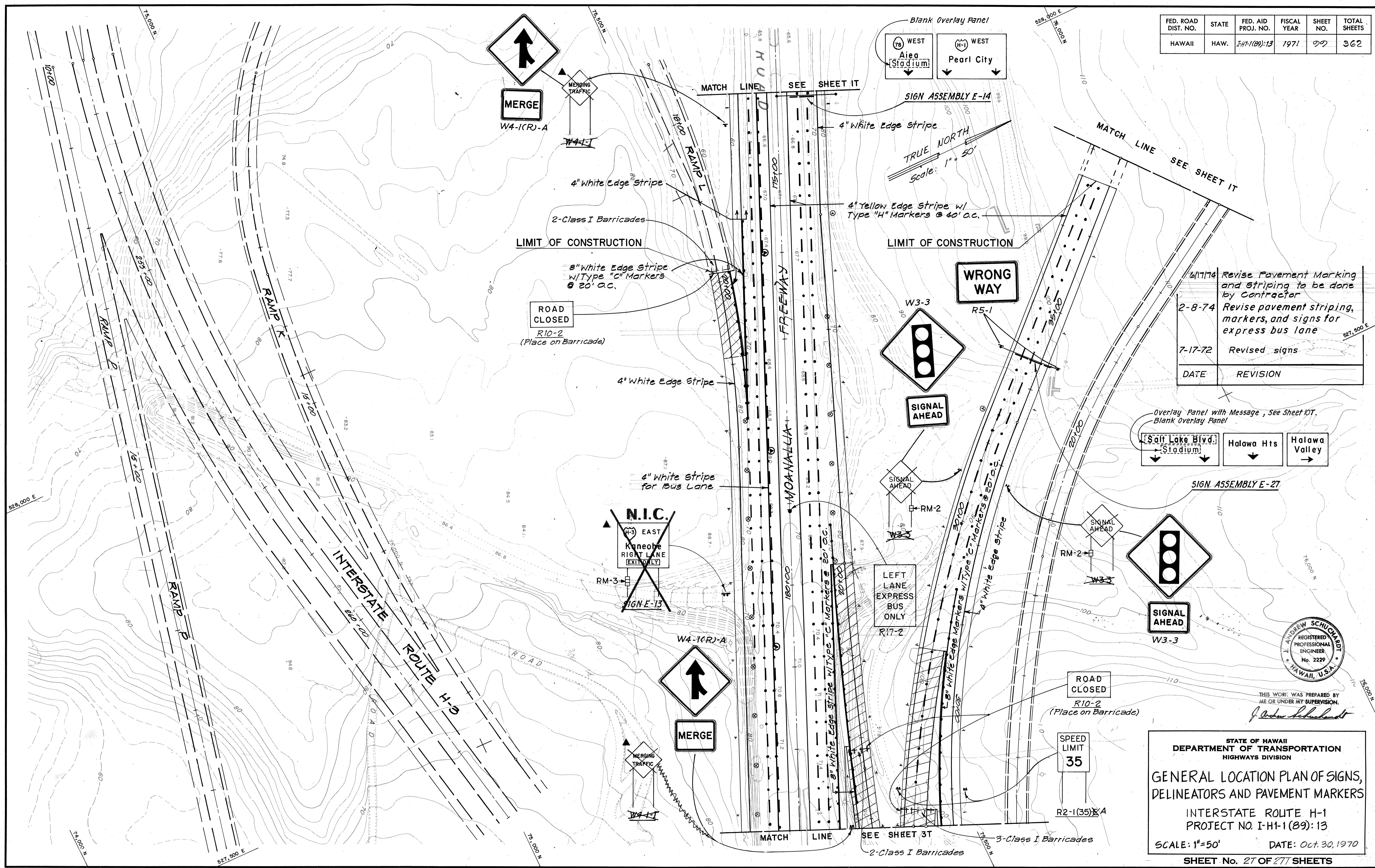
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 PROJECT NO. I-HI-1(89)-13

SCALE: 1"=50' DATE: Oct. 30, 1970

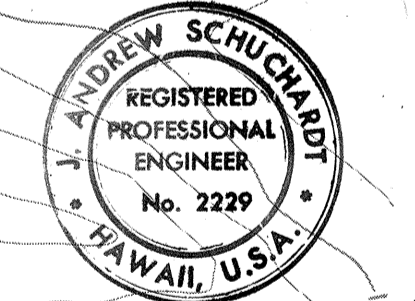
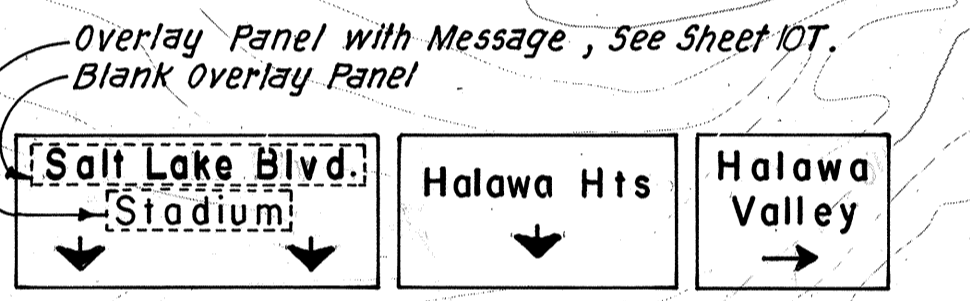
SHEET No. 17 OF 277 SHEETS

C.O. G.S.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-41-1(89)-13	1971	27	362



6/17/74	Revise Pavement Marking and striping to be done by Contractor
2-8-74	Revise pavement striping, markers, and signs for express bus lane
7-17-72	Revised signs
DATE	REVISION



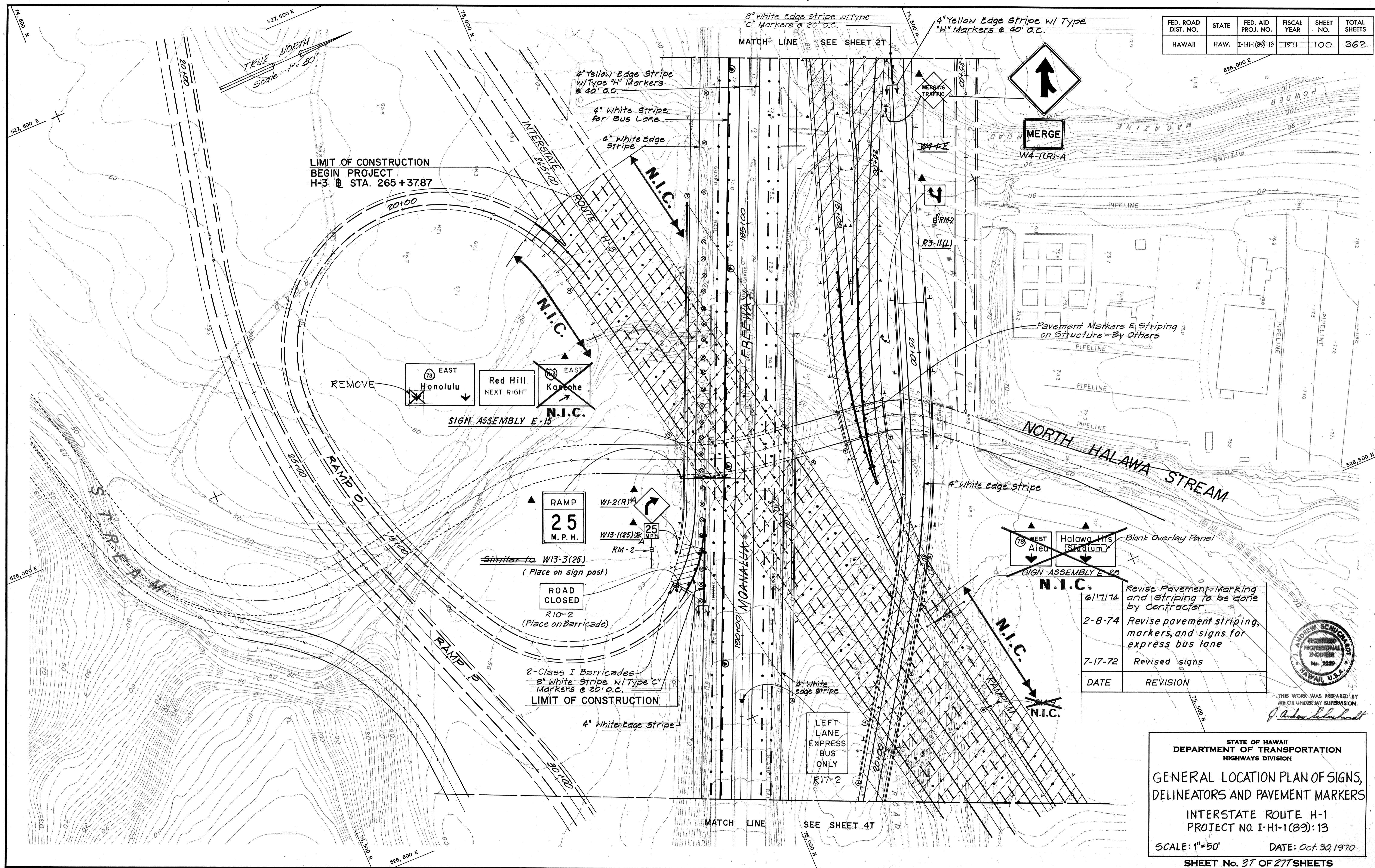
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
J. Andrew Schuchardt

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**GENERAL LOCATION PLAN OF SIGNS,
 DELINEATORS AND PAVEMENT MARKERS**
 INTERSTATE ROUTE H-1
 PROJECT NO. I-H-1(89):13
 SCALE: 1"=50' DATE: Oct. 30, 1970
 SHEET No. 27 OF 277 SHEETS

DATE	7.2.70
SURVEY PLOTTED BY	SAVA
TRACED BY	FALVA
DESIGNED BY	N. SAVA
QUANTITIES BY	E. S. MCKEAY
NO.	

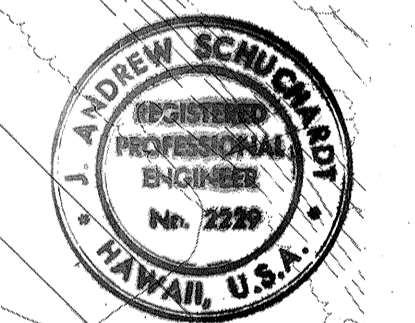
C.O. () ()

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)-13	1971	100	362



SURVEY PLOTTED BY	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

DATE	REVISION
6/17/74	Revise Pavement Marking and Striping to be done by Contractor.
2-8-74	Revise pavement striping, markers, and signs for express bus lane
7-17-72	Revised signs



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

GENERAL LOCATION PLAN OF SIGNS,
 DELINEATORS AND PAVEMENT MARKERS

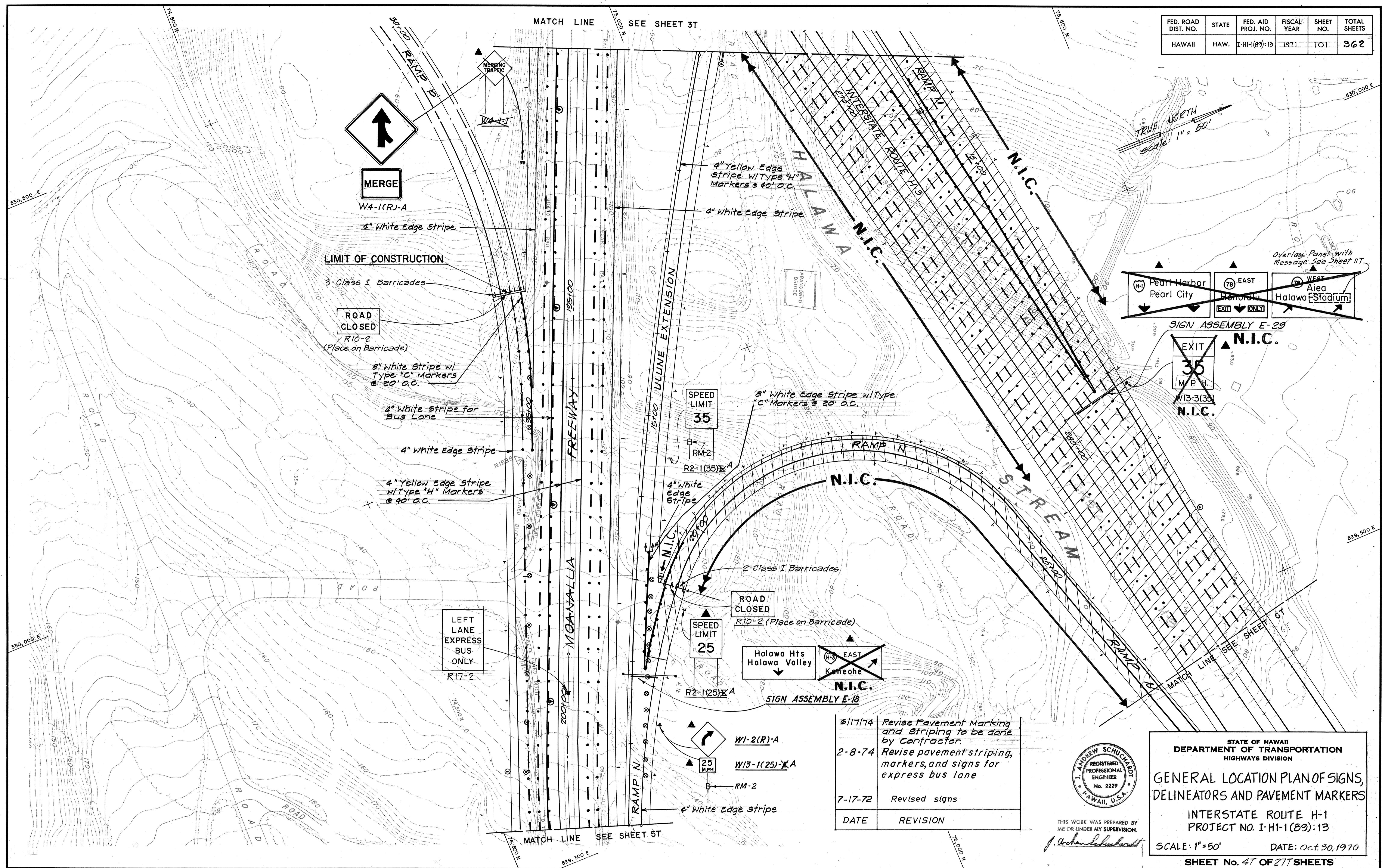
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 PROJECT NO. I-HI-1(89)-13

SCALE: 1"=50' DATE: Oct. 30, 1970

SHEET No. 37 OF 277 SHEETS

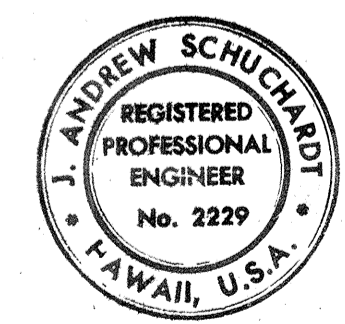
C.O. 11 (M) (M)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	101	362



SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

DATE	REVISION
6/17/74	Revise Pavement Marking and Striping to be done by Contractor.
2-8-74	Revise pavement striping, markers, and signs for express bus lane
7-17-72	Revised signs



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J. Andrew Schuchardt

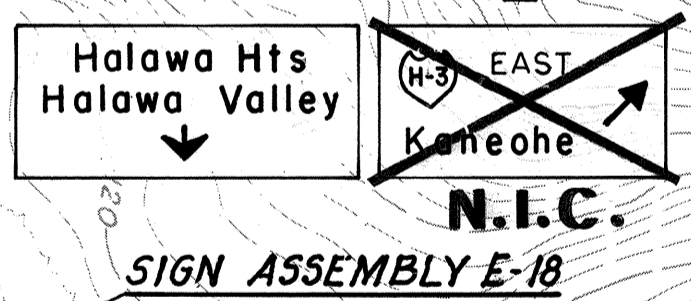
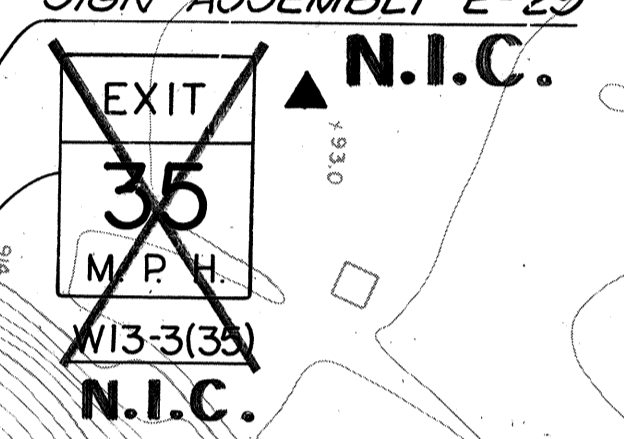
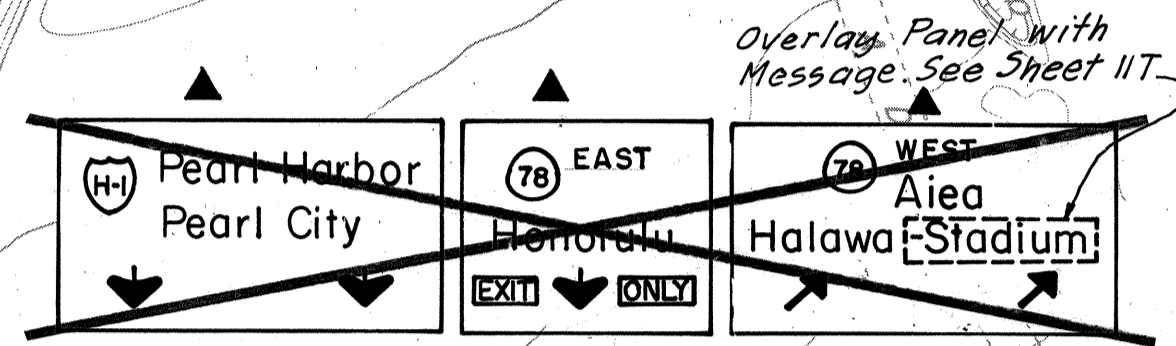
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

GENERAL LOCATION PLAN OF SIGNS,
 DELINEATORS AND PAVEMENT MARKERS

INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(89):13

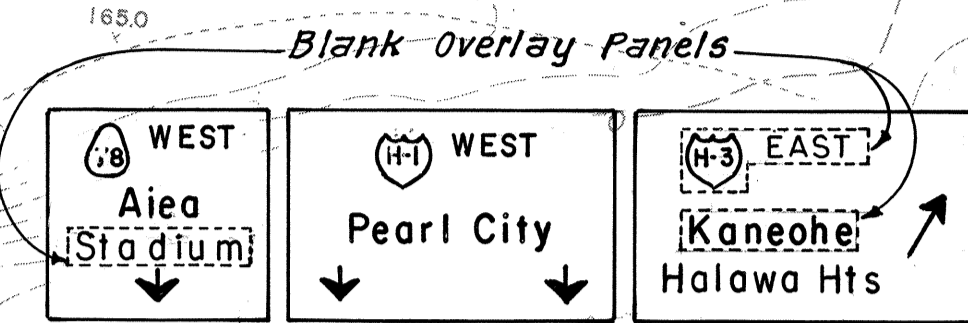
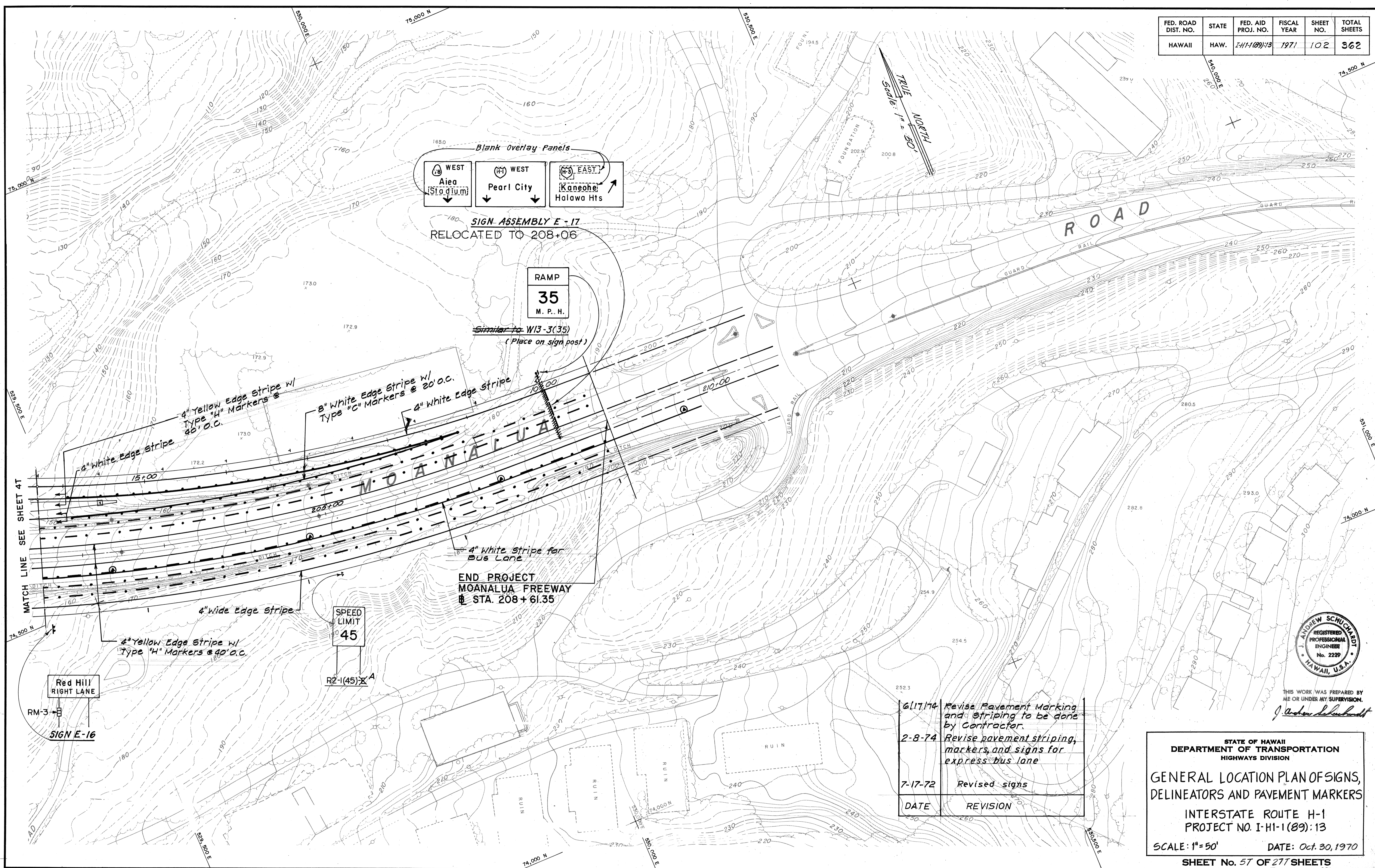
SCALE: 1"=50' DATE: Oct. 30, 1970

SHEET No. 47 OF 277 SHEETS



C.O. 11 (1) 11

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(89)13	1971	102	362



SIGN ASSEMBLY E-17
RELOCATED TO 208+06

RAMP
35
M. P. H.

Similar to W13-3(35)
(Place on sign post)

4" Yellow Edge Stripe w/
Type "H" Markers @
46' o.c.

8" White Edge Stripe w/
Type "C" Markers @ 20' o.c.

4" White Edge Stripe

4" White Stripe for
Bus Lane

END PROJECT
MOANALUA FREEWAY
STA. 208+61.35

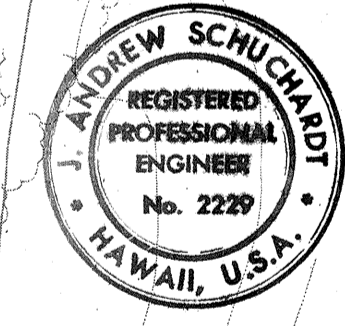
SPEED LIMIT
45

R2-1(45)X A

Red Hill
RIGHT LANE

SIGN E-16

6-17-74	Revise Pavement Marking and striping to be done by Contractor.
7-8-74	Revise pavement striping, markers, and signs for express bus lane
7-17-72	Revised signs
DATE	REVISION



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL LOCATION PLAN OF SIGNS,
DELINEATORS AND PAVEMENT MARKERS

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(89)13

SCALE: 1"=50' DATE: Oct. 30, 1970

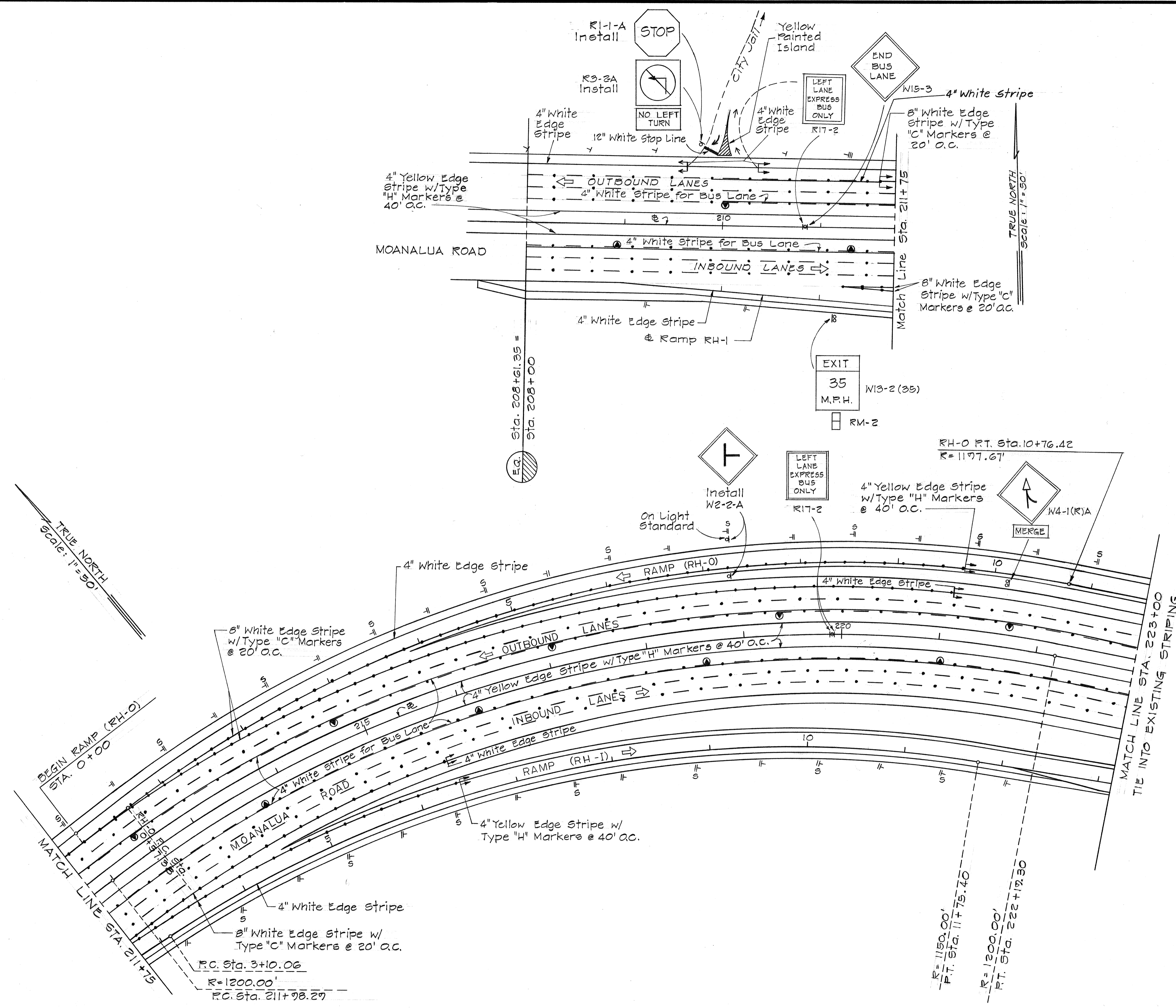
SHEET No. 57 OF 277 SHEETS

DESIGNED BY	DATE
TRACED BY	
NOTED BY	
CHECKED BY	

C.O. 11 (1) 2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(87)13	1971	C.O. 102 S-1	

- LEGEND**
- B Ground Mounted Traffic Sign w/Post(s)
 - b Traffic Sign bracket-mounted on pole or w/Post
 - R-1, R-2, R-3 Reflector Markers RM-1, RM-2, & RM-3 w/Posts
 - S Reflector Marker Mounted on Light Standard
 - ⊙ Bus Lane Delineator
 - Type A & C Pavement Markers
 - 8" White Stripe w/Type "C" Markers @ 20' o.c.



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**GENERAL LOCATION OF
SIGNS, DELINEATORS AND
PAVEMENT MARKERS**

PROJECT NO. I-HI-1(87)13

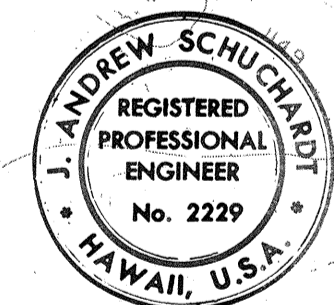
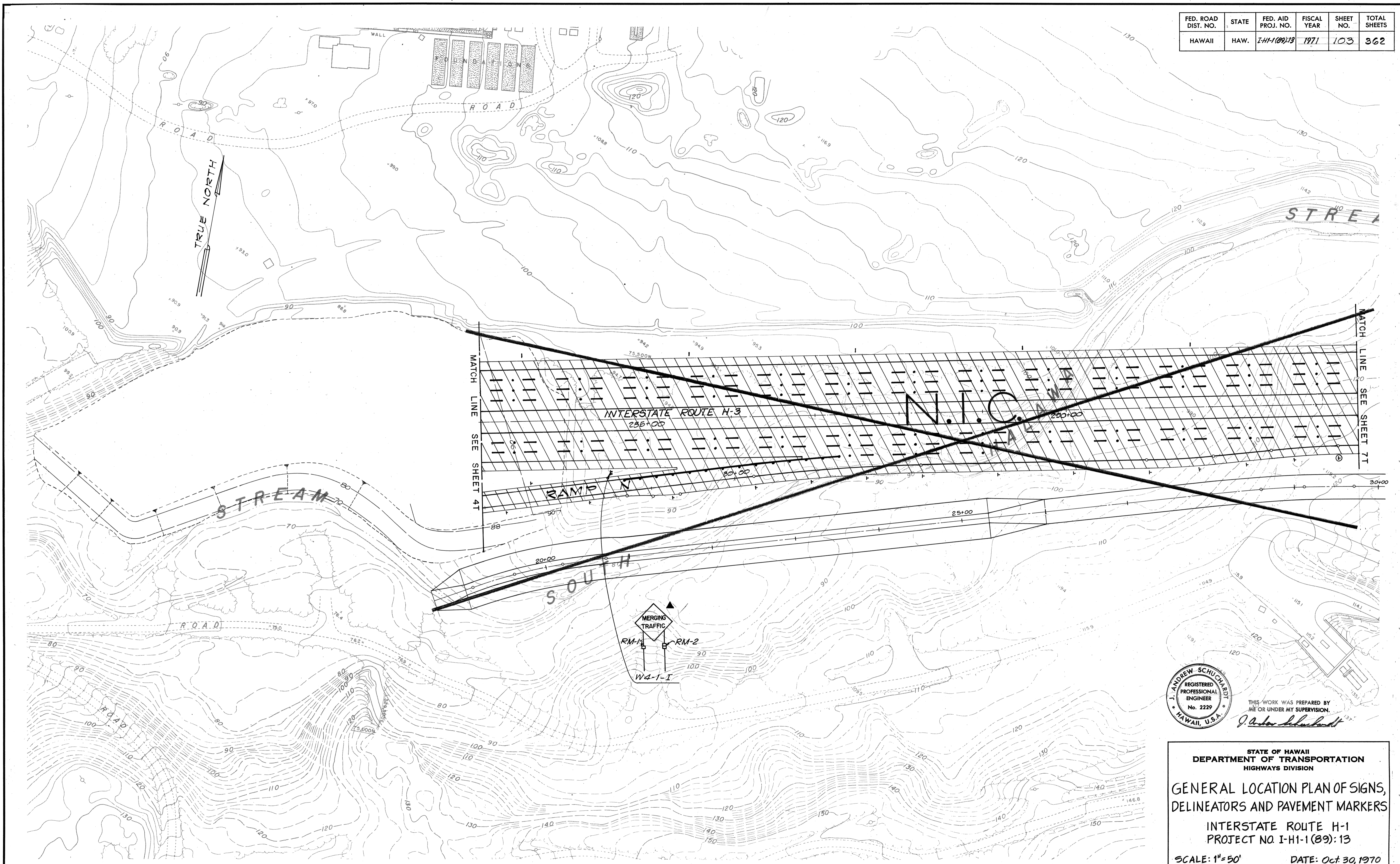
Scale: As Shown Date: June, 1974

SHEET NO. OF SHEETS

C.O. 102 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	103	362

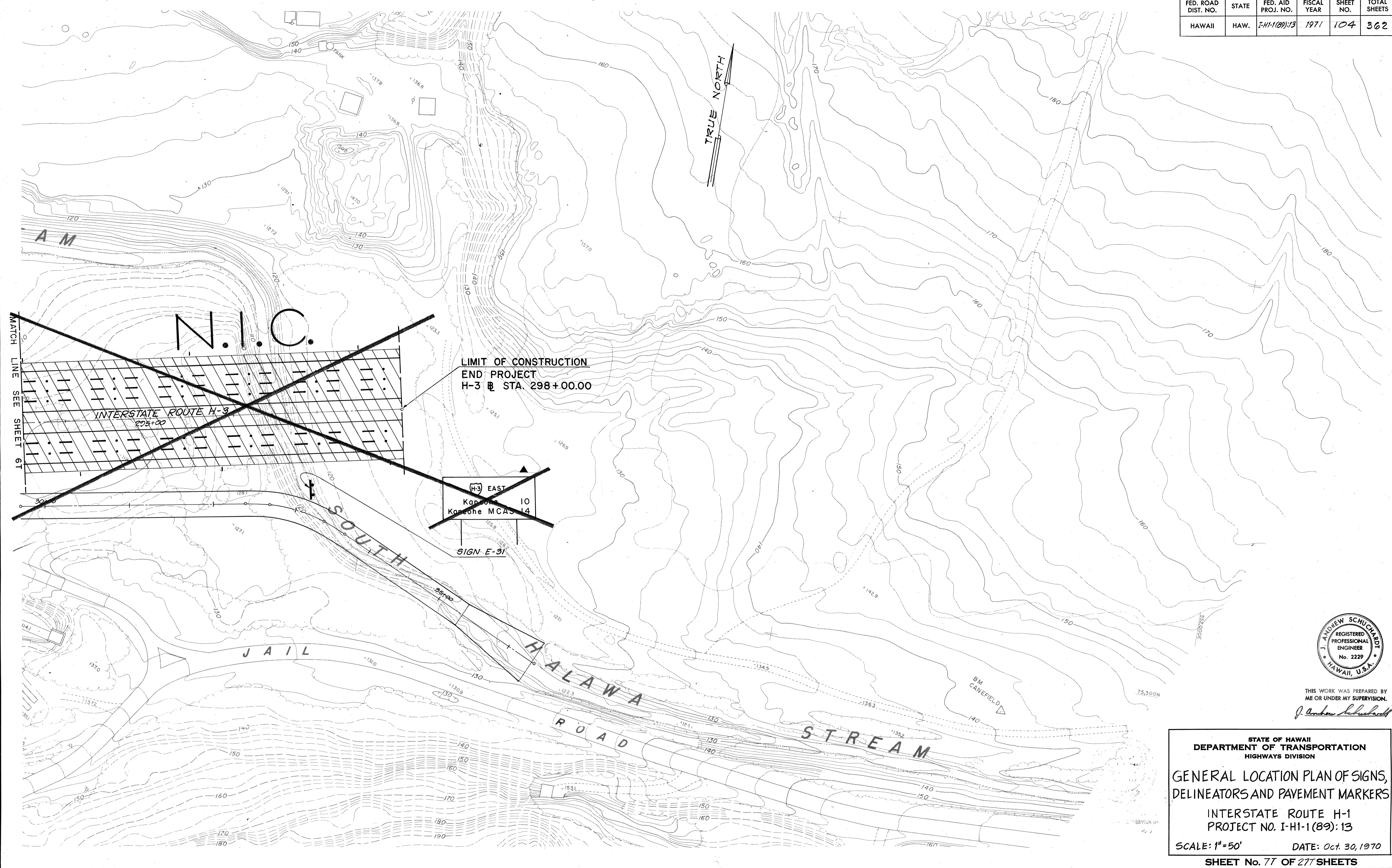
ORIGINAL PLAN
 SURVEY LOCATED BY
 DRAWN BY M. SALVA
 DESIGNED BY S. LEVINS
 NOTE BOOK
 CHECKED BY E. MERRICK
 DATE
 9.3.70



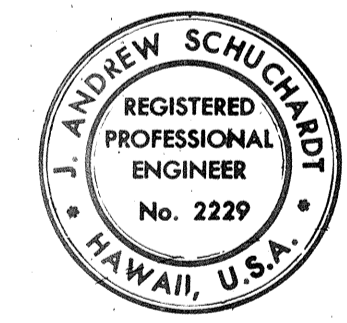
THIS WORK WAS PREPARED BY
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J. Andrew Schuchardt

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
 GENERAL LOCATION PLAN OF SIGNS,
 DELINEATORS AND PAVEMENT MARKERS
 INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(89):13
 SCALE: 1"=50' DATE: Oct 30, 1970
 SHEET No. 67 OF 277 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	104	362



DATE	3.3.72
SURVEY PLOTTED BY	S. S. SAVA
DRAWN BY	S. S. SAVA
DESIGNED BY	N. SAVA
QUANTITIES BY	E. E. MORGAN
CHECKED BY	E. E. MORGAN
ORIGINAL PLAN	
NOTE BOOK	
No.	



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STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

GENERAL LOCATION PLAN OF SIGNS,
 DELINEATORS AND PAYMENT MARKERS

INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(89):13

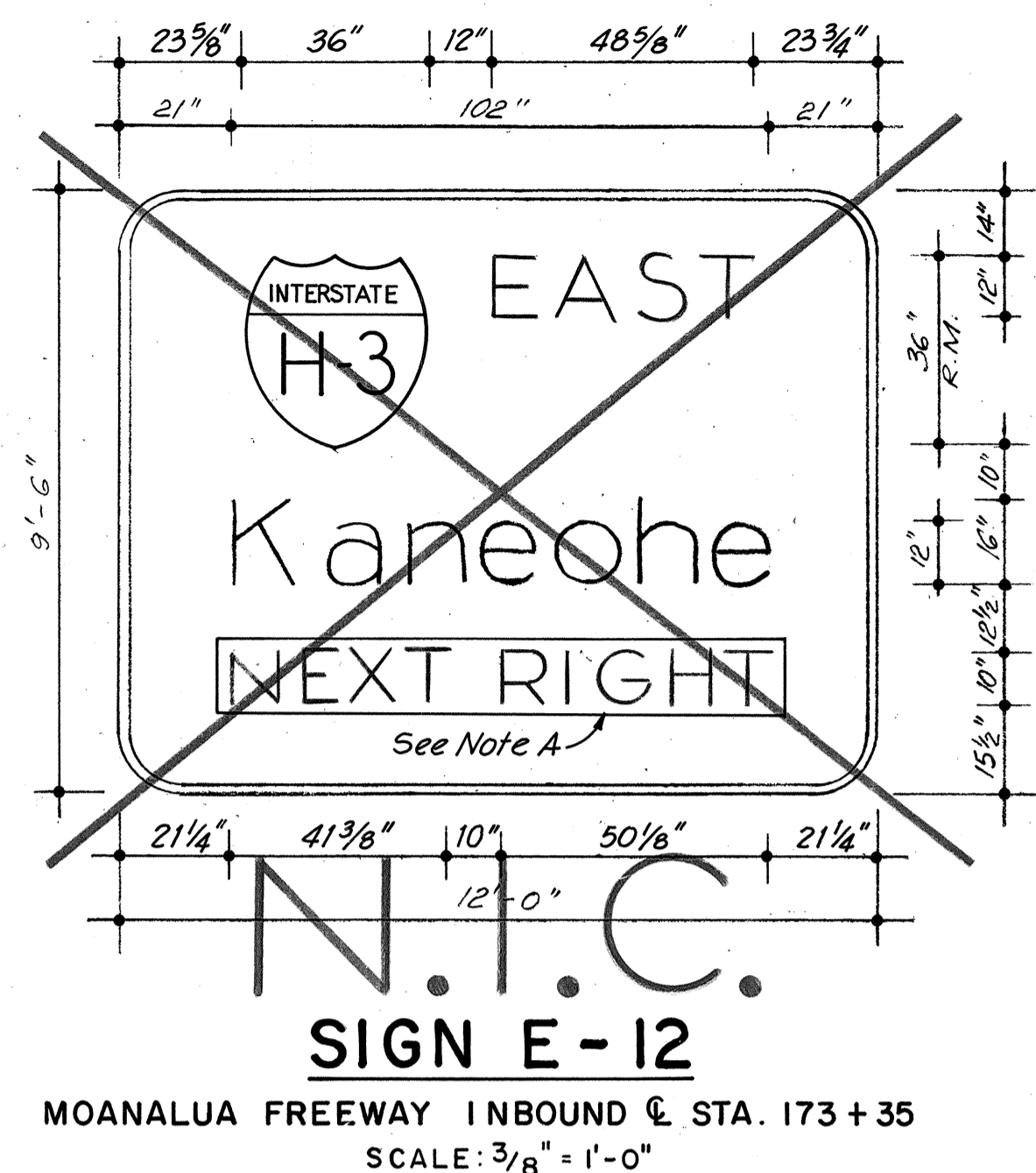
SCALE: 1"=50' DATE: Oct. 30, 1970

SHEET No. 77 OF 277 SHEETS

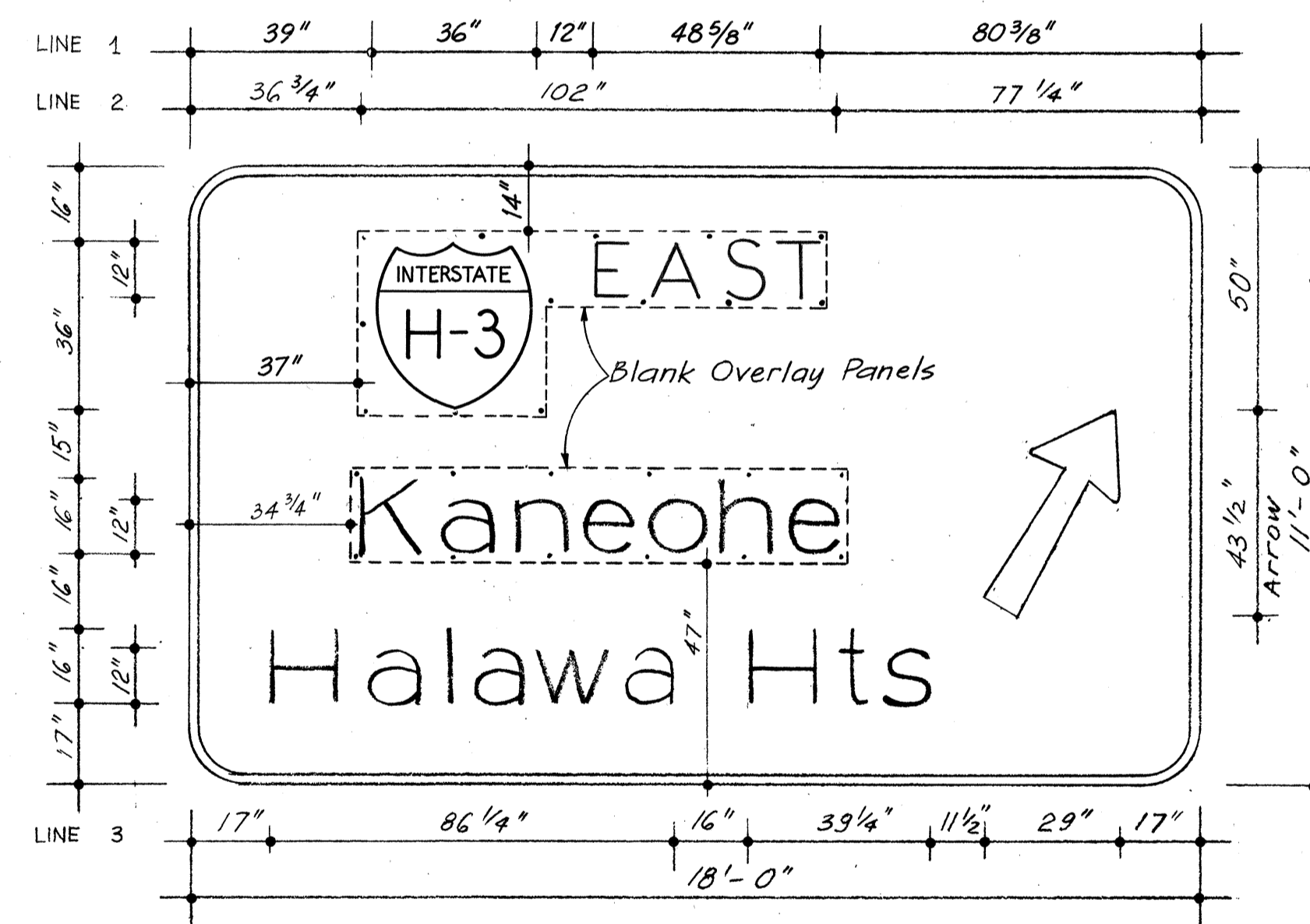
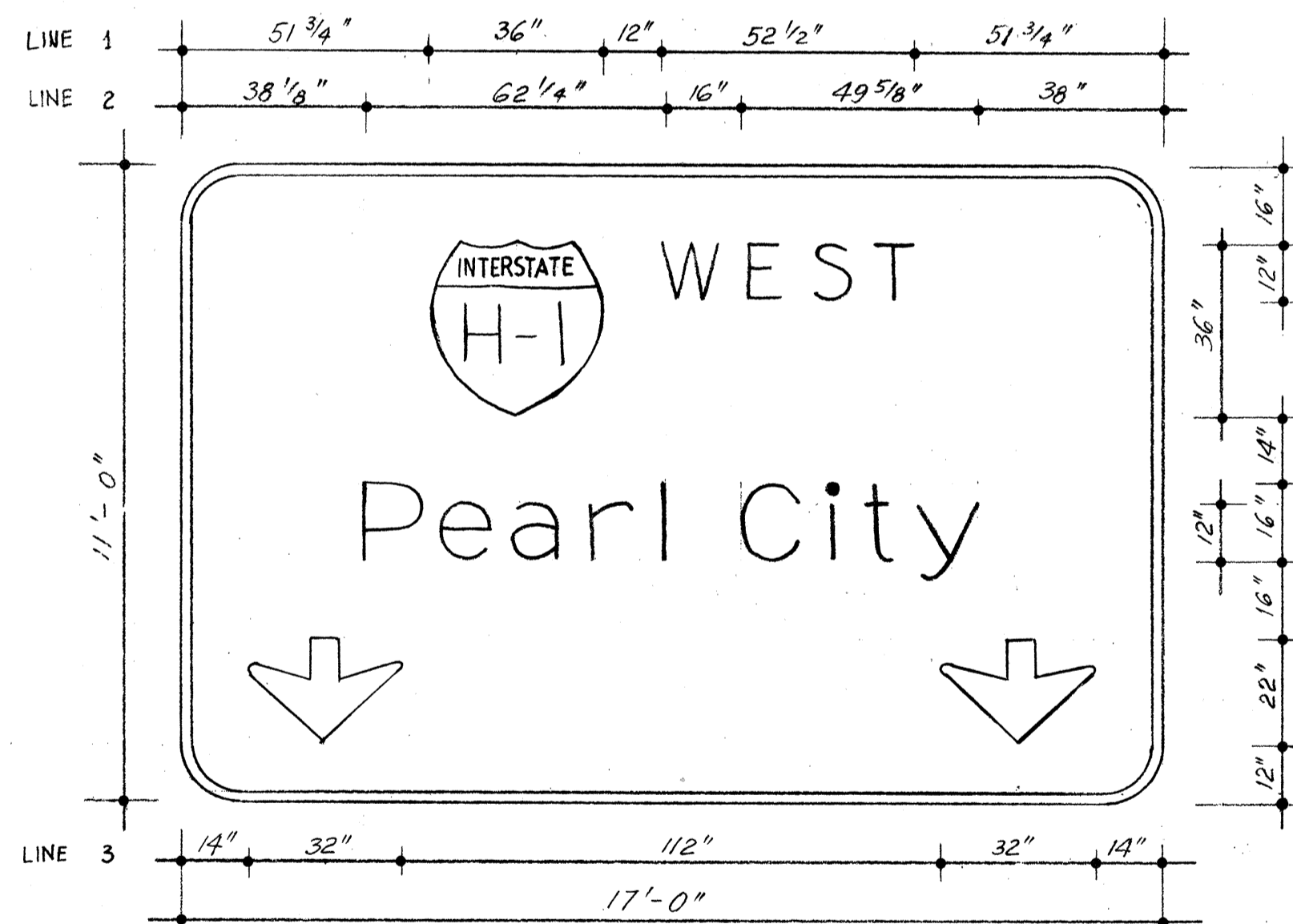
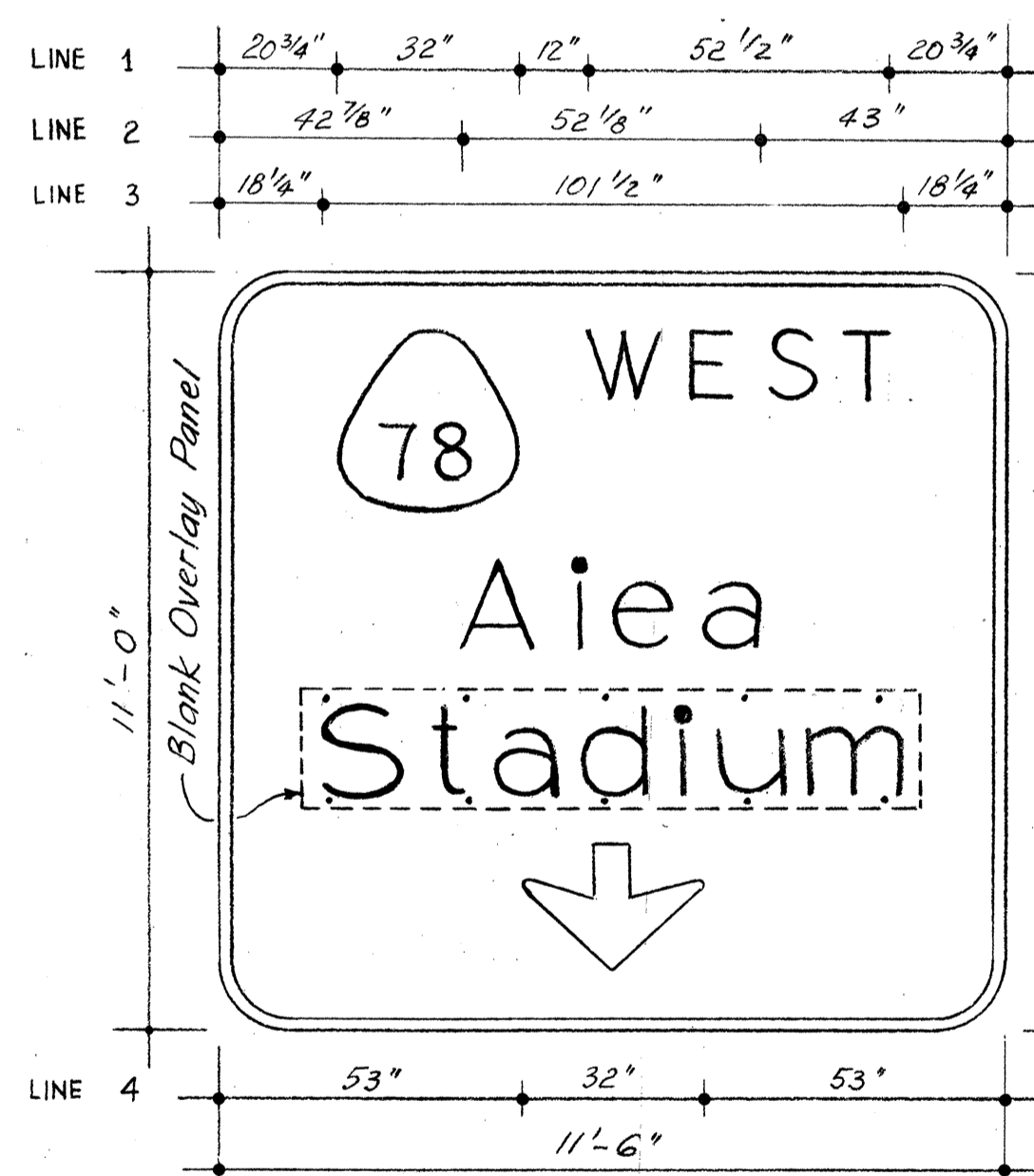
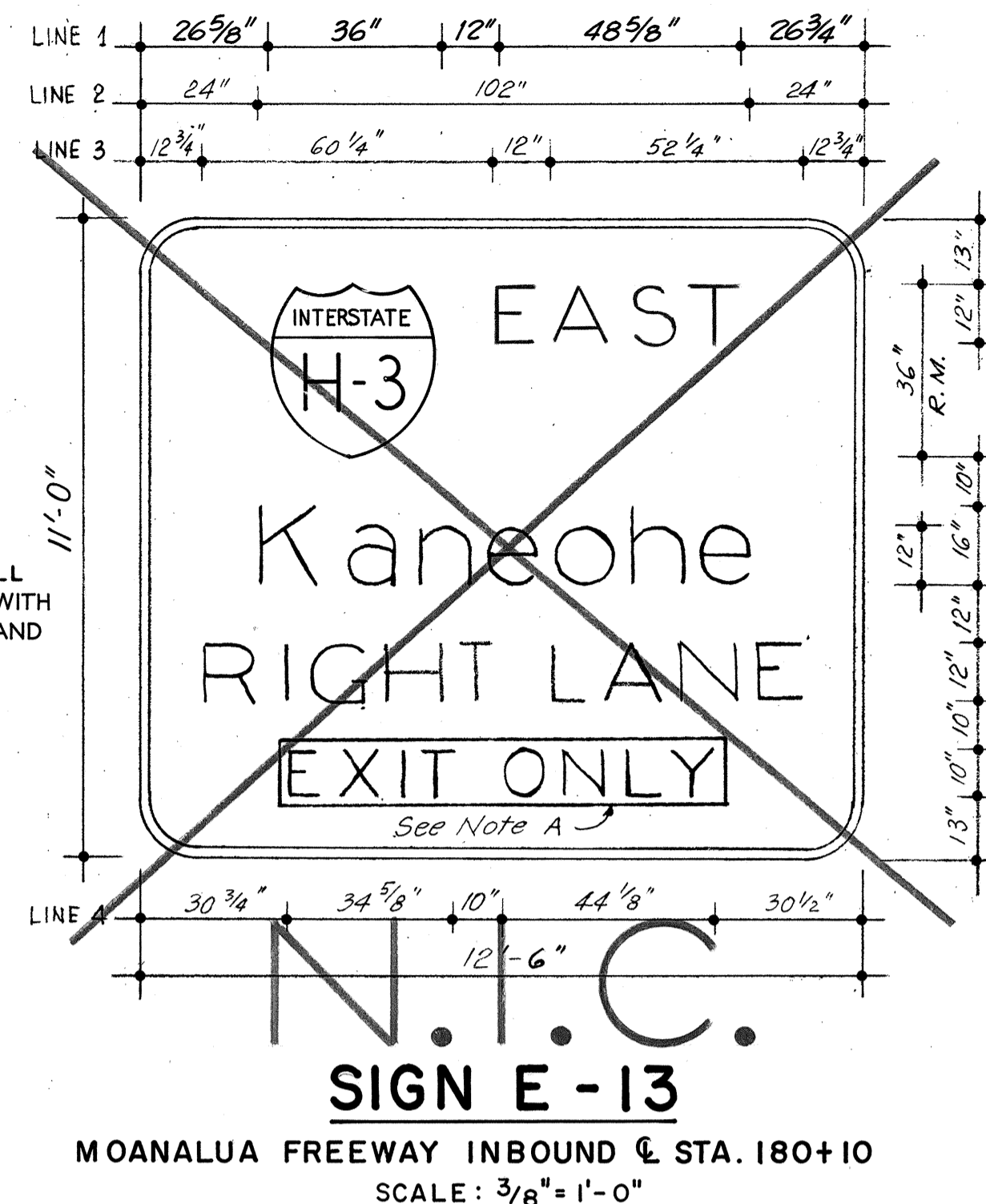
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I/H-1(89):13	1971	105	362

NOTES

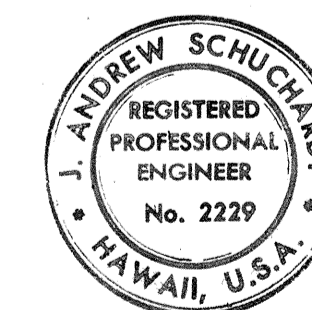
- FOR ADDITIONAL NOTES PERTAINING TO EXPRESSWAY SIGNS, SEE SHEET 10T.
- SUMMARY TABLES FOR ALL EXPRESSWAY SIGNS ARE LOCATED ON SHEET 14T.
- OUTLINES OF OVERLAY PANELS MASKING TEMPORARILY CERTAIN PORTIONS OF SIGN PANEL MESSAGE ARE SHOWN IN BROKEN LINES.
- LAYOUT OF OVERLAY PANELS WITH MESSAGES ARE SHOWN ON SHEETS 10T AND 11T.
- SUMMARY TABLES FOR ALL BLANK OVERLAY PANELS AND OVERLAY PANELS WITH MESSAGES ARE SHOWN ON SHEET 14T.
- THE WORDS "EXIT.....ONLY" OR "NEXT RIGHT" SHALL BE BLACK ON REFLECTORIZED YELLOW BACKGROUND PANELS, 16" HIGH.



NOTE A: OVERLAY PANEL SHOWN SHALL BE OF 0.040 IN. THICK SHEET ALUMINUM WITH YELLOW REFLECTORIZED BACKGROUND, AND BLACK CHARACTERS.



DATE	7.27.70
DESIGNED BY	L. PALVA
CHECKED BY	E. S. MOORE
NOTED BY	
ORIGINAL FILED	
REVISION	



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J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

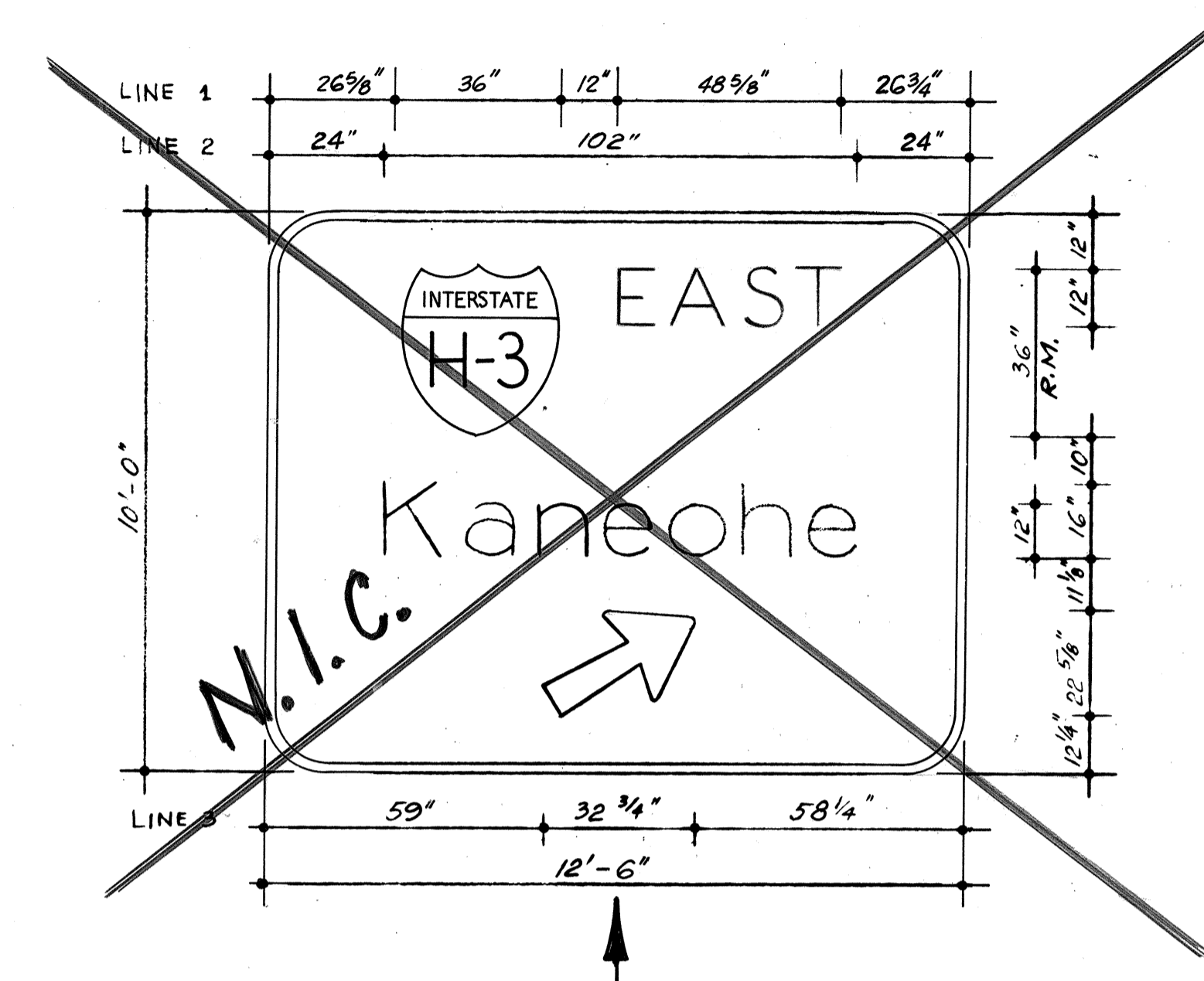
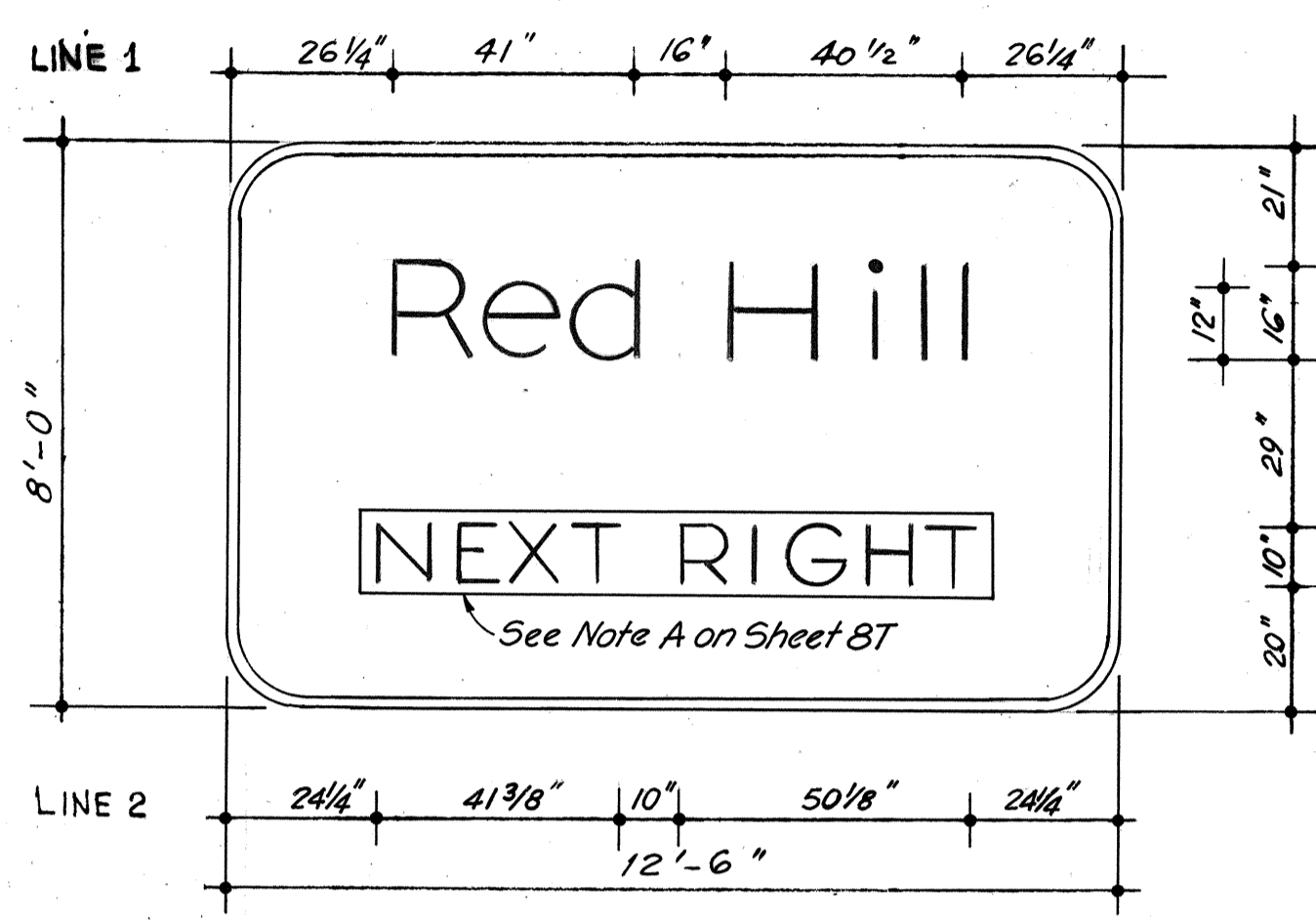
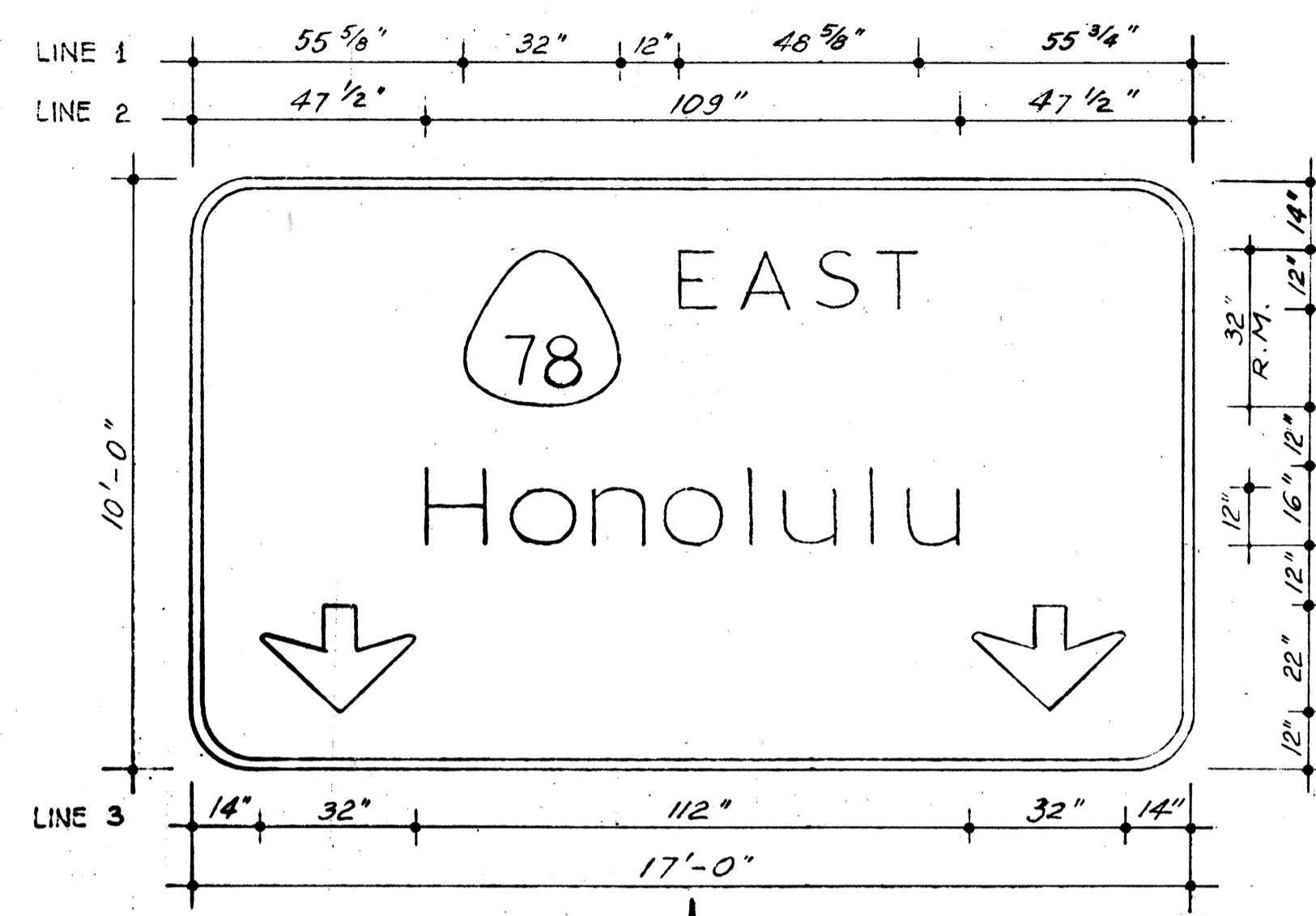
SIGN FACE DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(89):13
SCALE: AS SHOWN DATE: Oct. 30, 1970

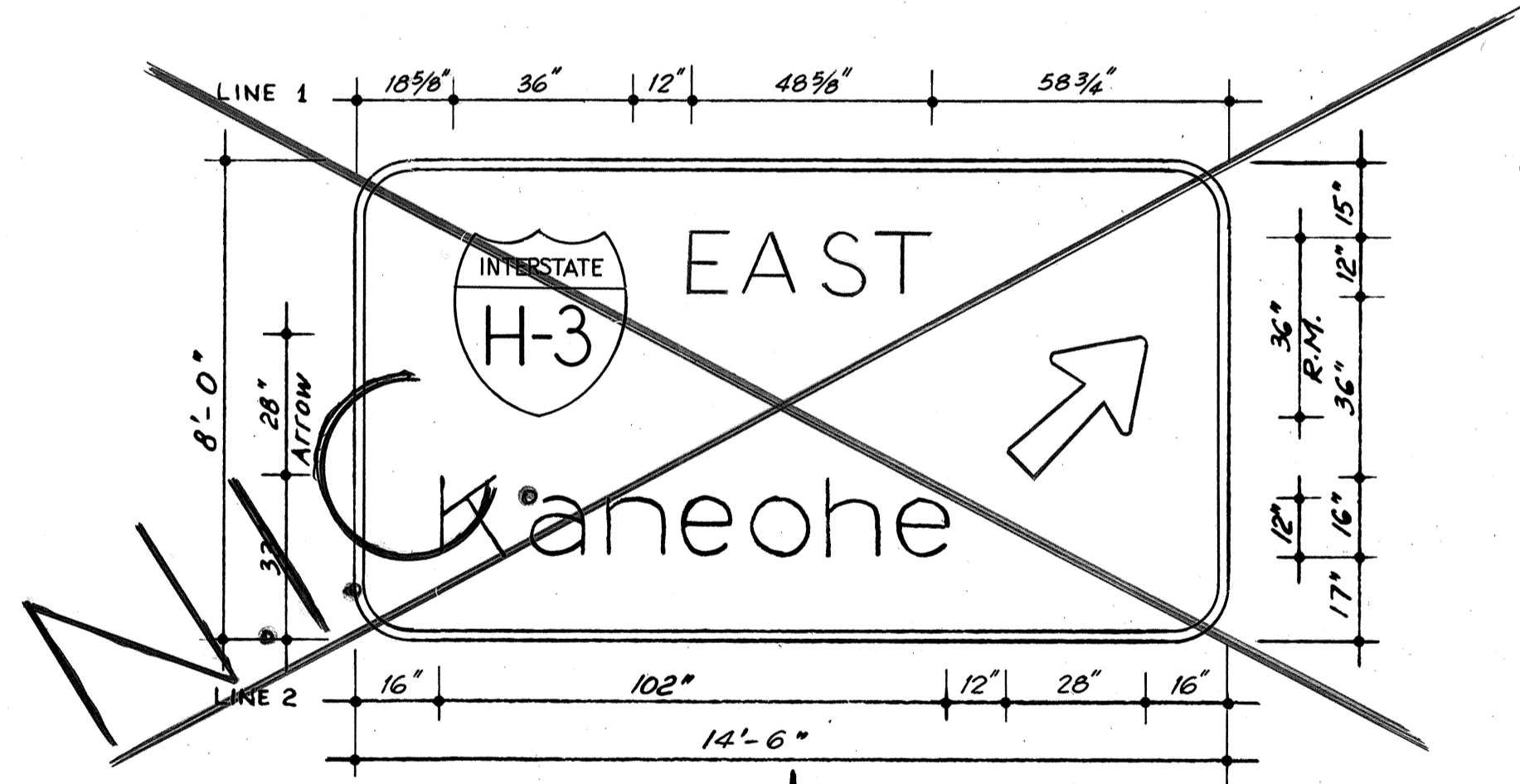
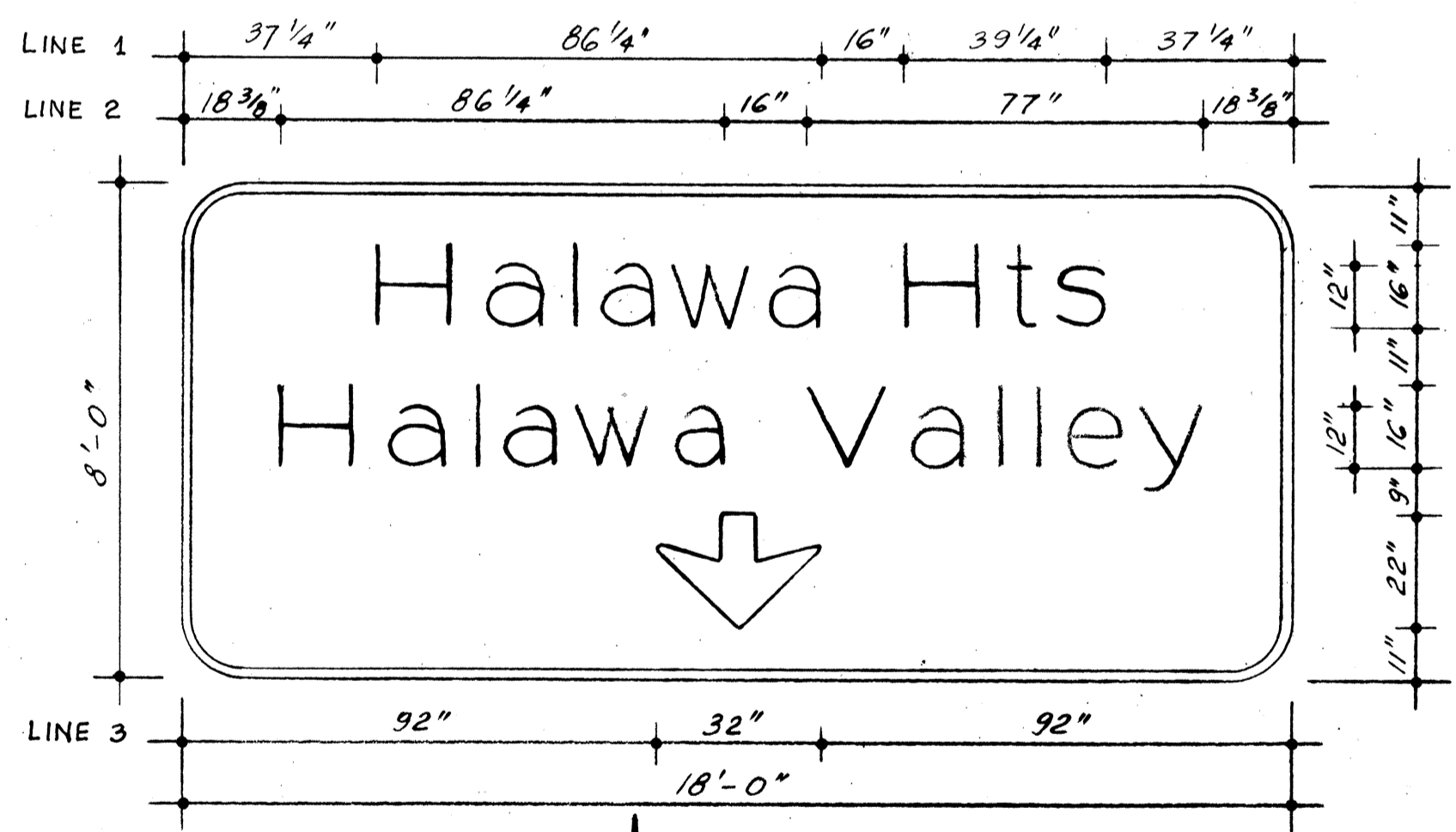
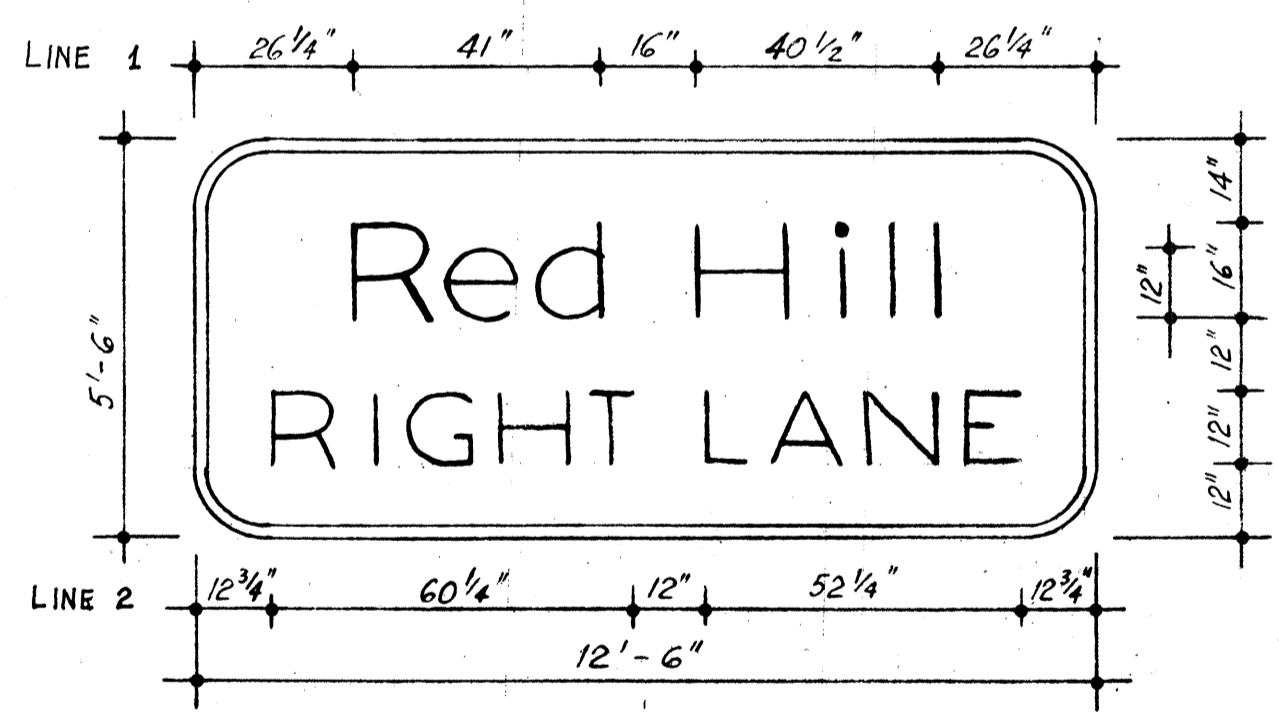
SHEET No. 87 OF 277 SHEETS

11 (1) 15

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	100	362



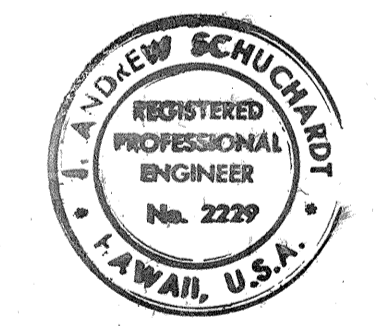
SIGN ASSEMBLY E-15
MOANALUA FREEWAY INBOUND @ STA. 188+10
SCALE: 3/8" = 1'-0"



SIGN E-16
MOANALUA FREEWAY INBOUND @ STA. 201+60.00
SCALE: 3/8" = 1'-0"

SIGN ASSEMBLY E-18
ULUNE EXTENSION @ STA. 11+85
SCALE: 3/8" = 1'-0"

DATE	7/11/70
DESIGNED BY	
DRAWN BY	
CHECKED BY	
APPROVED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



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J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

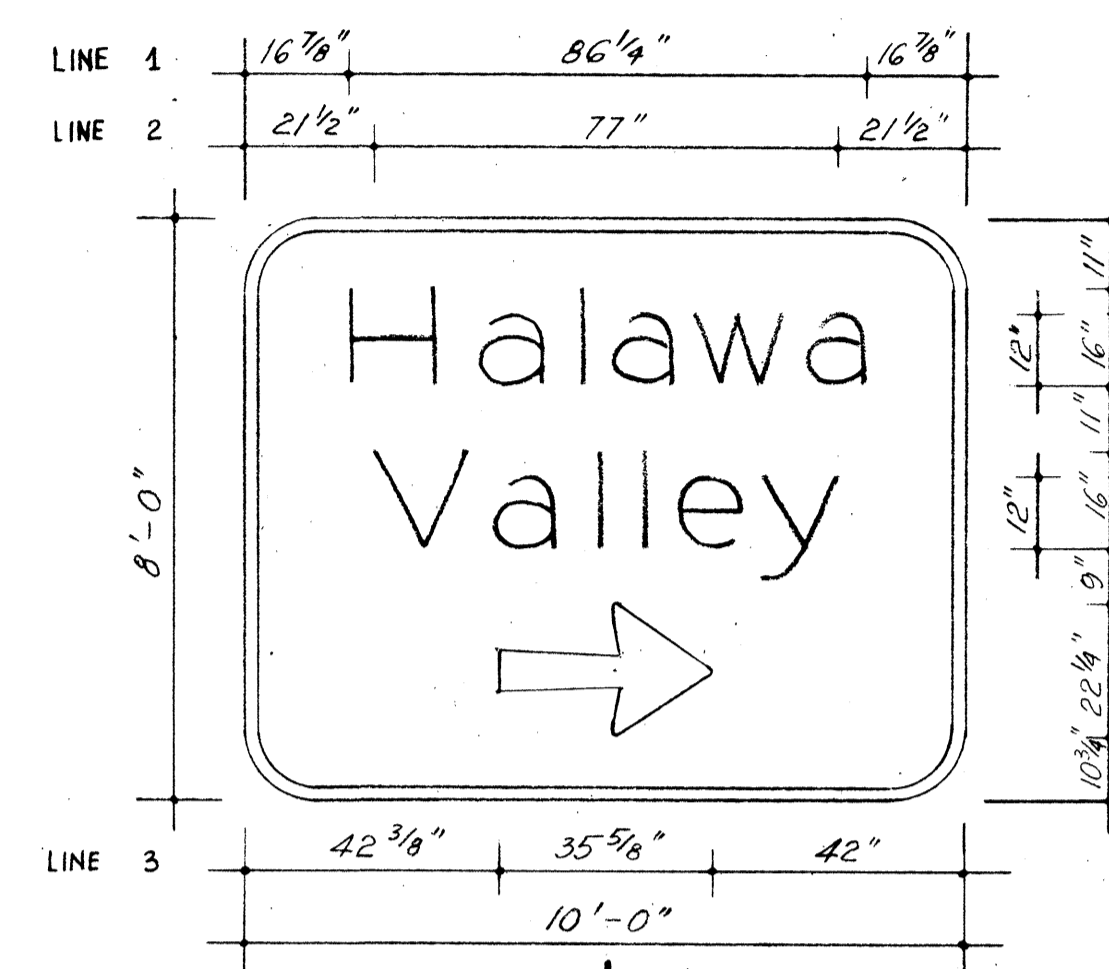
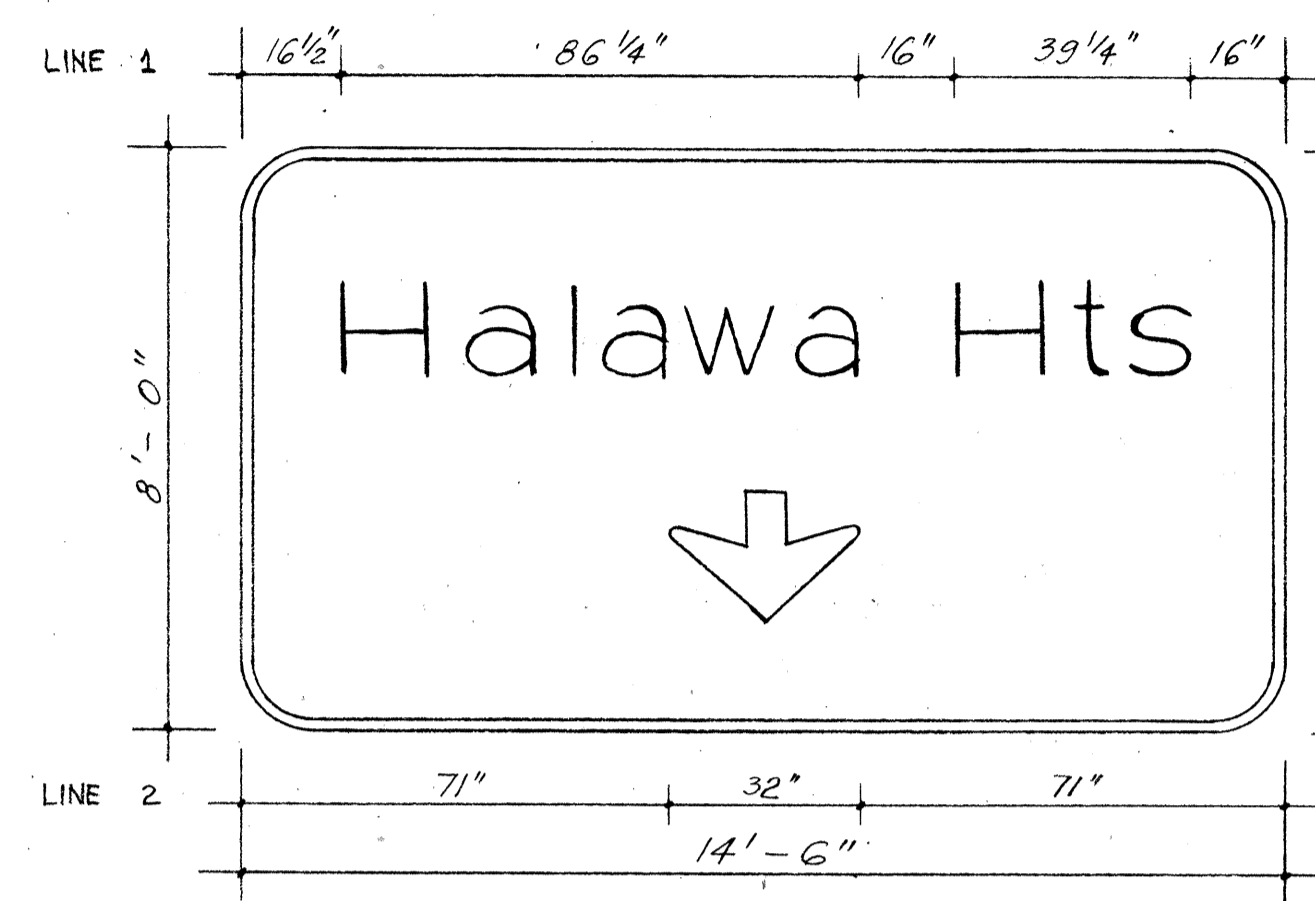
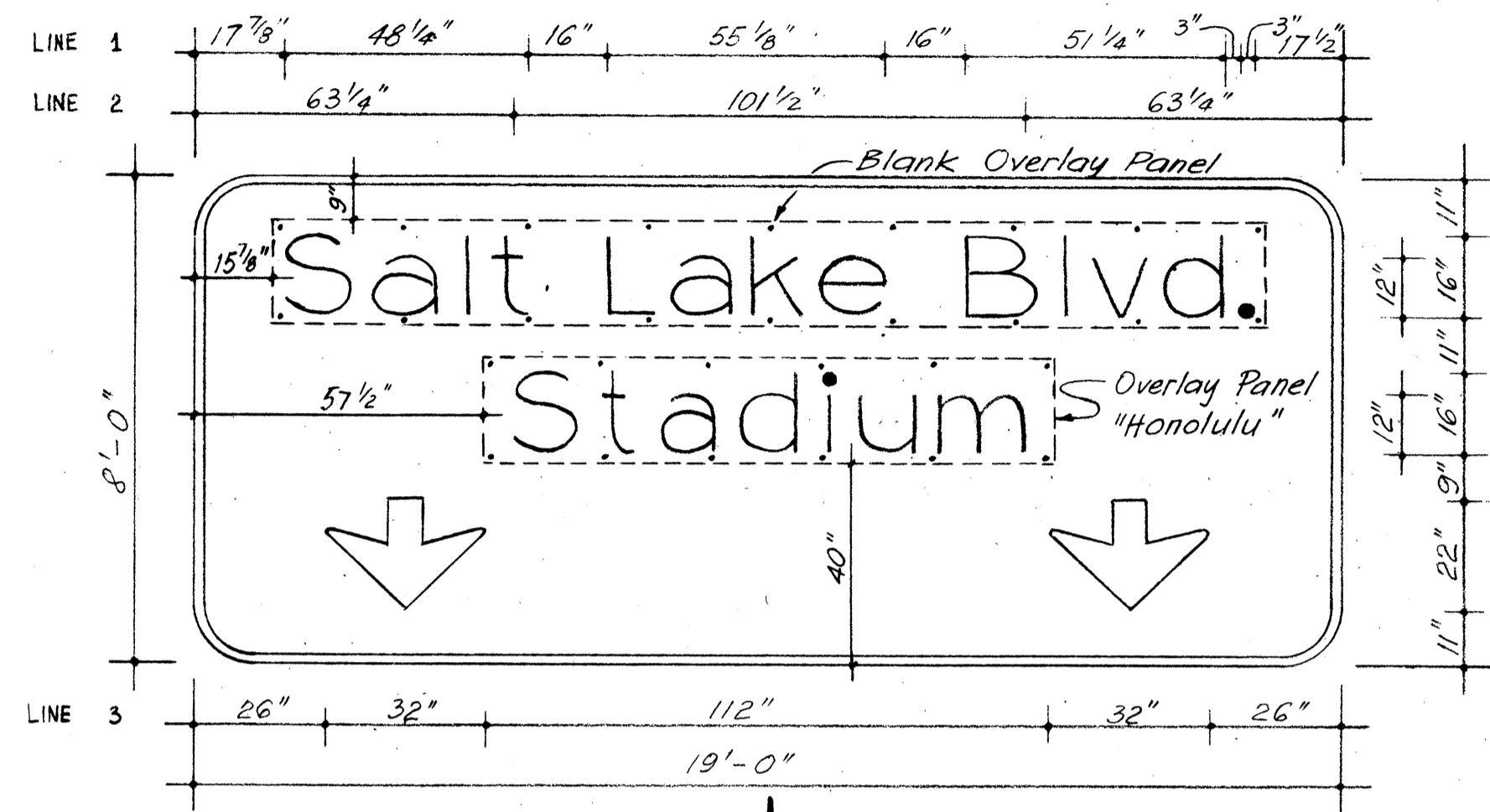
SIGN FACE DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(89):13
SCALE: AS SHOWN DATE: Oct. 30, 1970
SHEET No. 97 OF 277 SHEETS

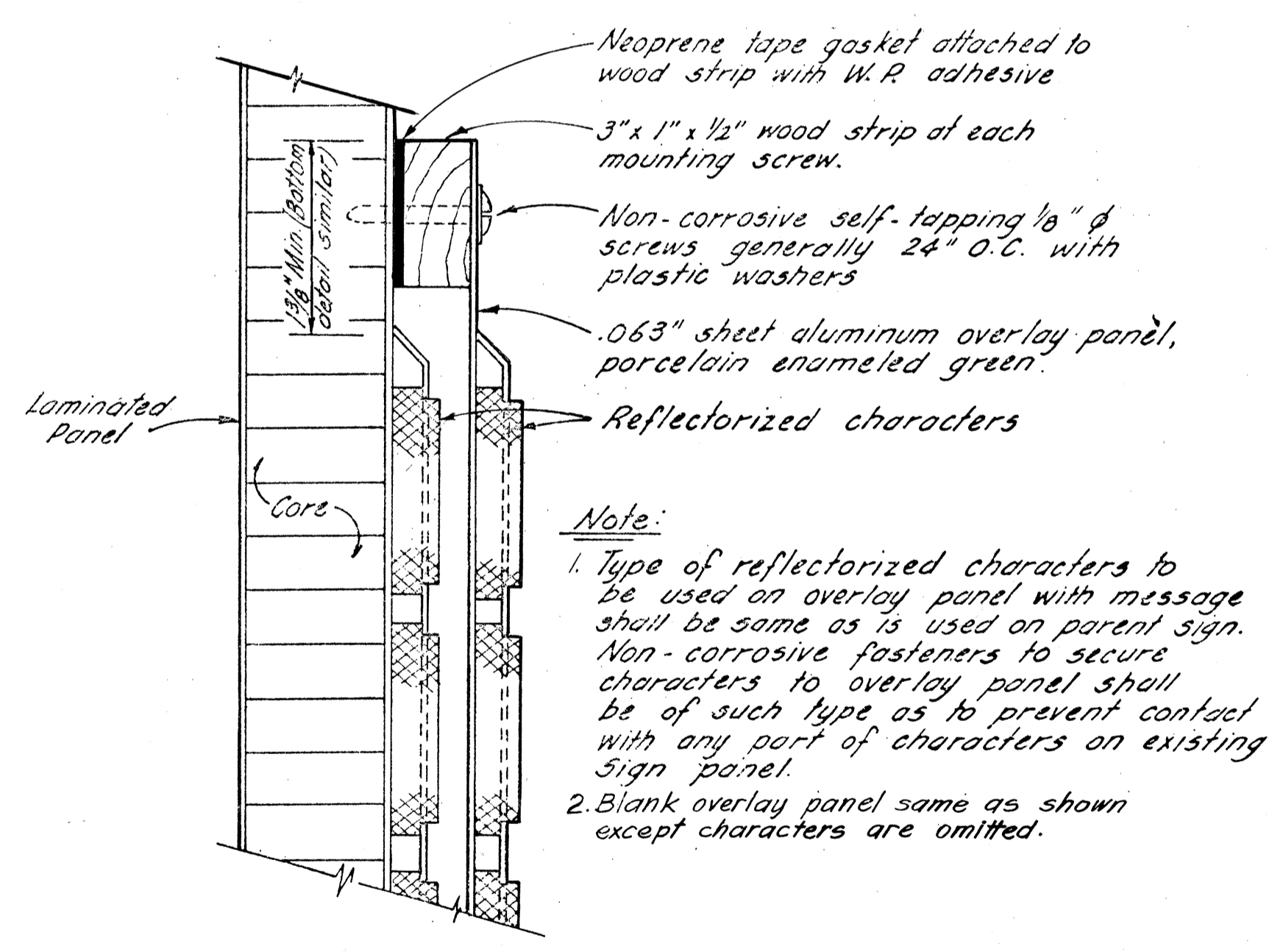
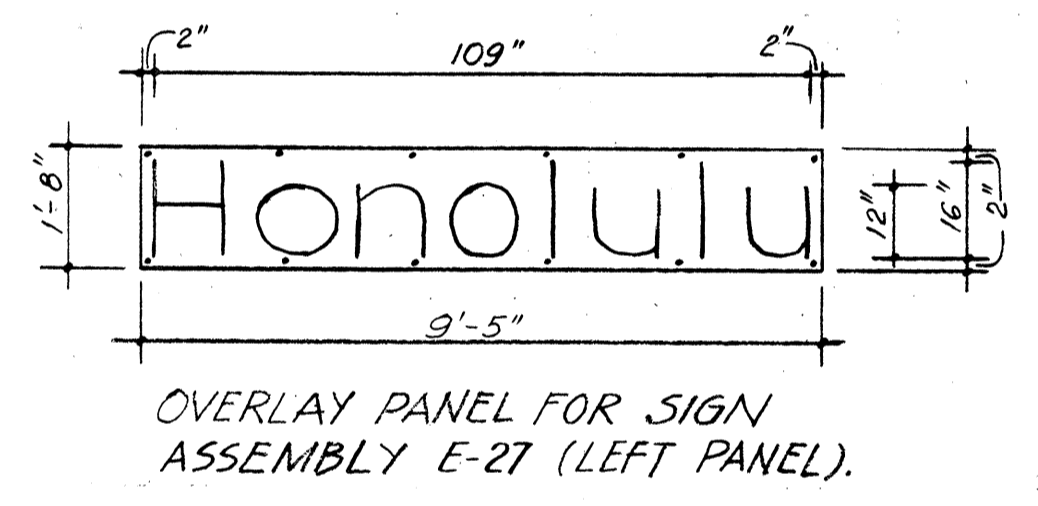
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(89):13	1971	107	362

NOTES PERTAINING TO EXPRESSWAY (E) SIGNS AND DESTINATION (D) SIGNS

- DESIGN OF THE COMPANION UPPER AND LOWER CASE CHARACTERS, MODIFIED SERIES "E" CAPITAL LETTERS AND DIGITS, AND INTER-CHARACTER SPACING FOR LINE MESSAGES SHALL MEET THE REQUIREMENTS ESTABLISHED BY THE BUREAU OF PUBLIC ROADS, U.S. DEPARTMENT OF COMMERCE, IN ITS REFERENCE GUIDE, "STANDARD ALPHABETS FOR HIGHWAY SIGNS", 1966 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:
 - (A) EMBOSSED ALUMINUM CUT-OUTS WITH APPLIED SILVER-WHITE REFLECTIVE SHEETING MATERIAL; OR
 - (B) 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. DESTINATION SIGNS SHALL BE COMPLETELY REFLECTORIZED WITH SILVER-WHITE REFLECTIVE SHEETING FOR MESSAGE CUT-OUTS AND BORDER STRIPS, AND GREEN REFLECTIVE SHEETING FOR SIGN BACKGROUND. NON-ILLUMINATED EXPRESSWAY SIGN PANELS SHALL BE FABRICATED IN ACCORDANCE WITH SPECIFICATIONS FOR DESTINATION SIGNS.
- FASTENERS: DEMOUNTABLE CHARACTERS SHALL BE FASTENED TO SIGN PANELS WITH BLIND RIVETS. OVERLAY PANELS SHALL BE FASTENED TO PARENT SIGN PANELS WITH SELF-TAPPING SCREWS AS SHOWN.
- 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.



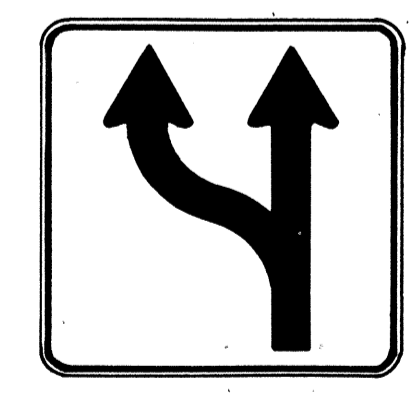
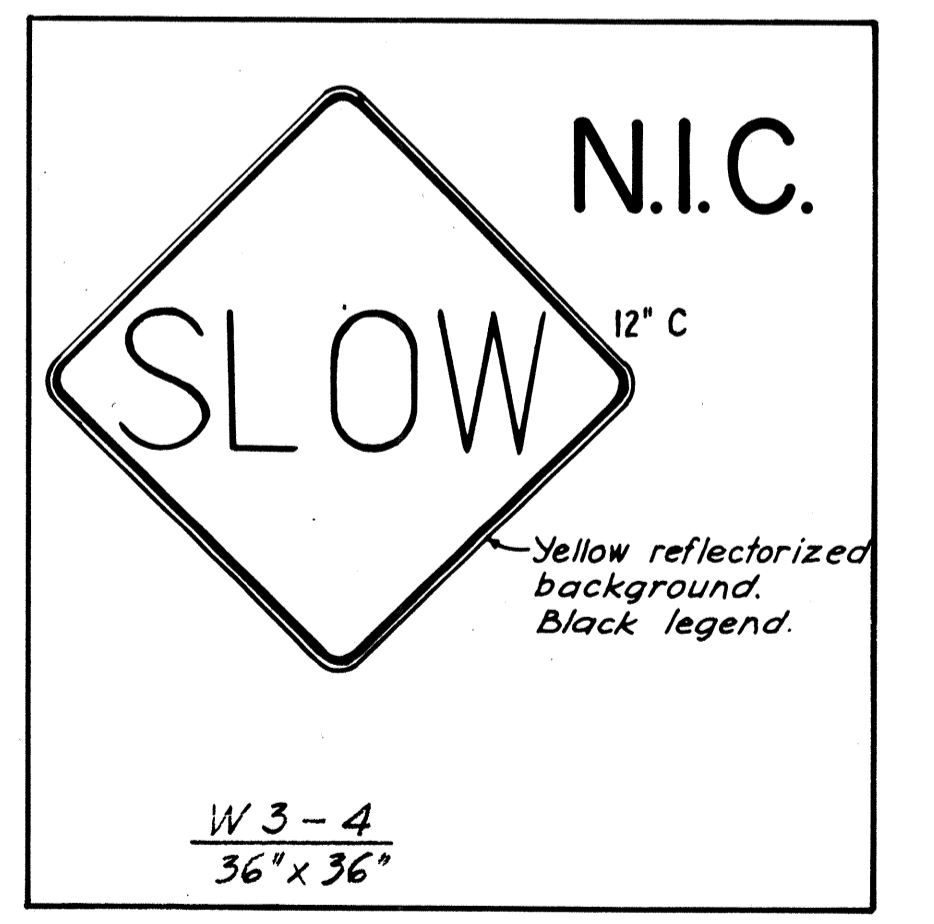
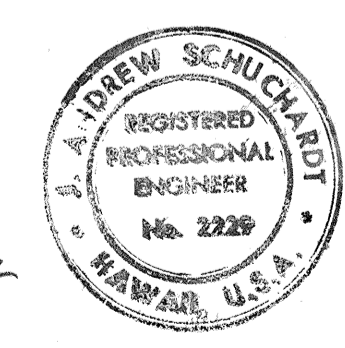
SIGN ASSEMBLY E-27
ULUNE EXTENSION @ STA. 34+35
SCALE: 3/8" = 1'-0"



DETAIL OF TEMPORARY OVERLAY PANEL WITH MESSAGE

Scale: Full Size

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J. Andrew Schuchardt



SPECIAL SIGN DETAILS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN FACE DETAILS

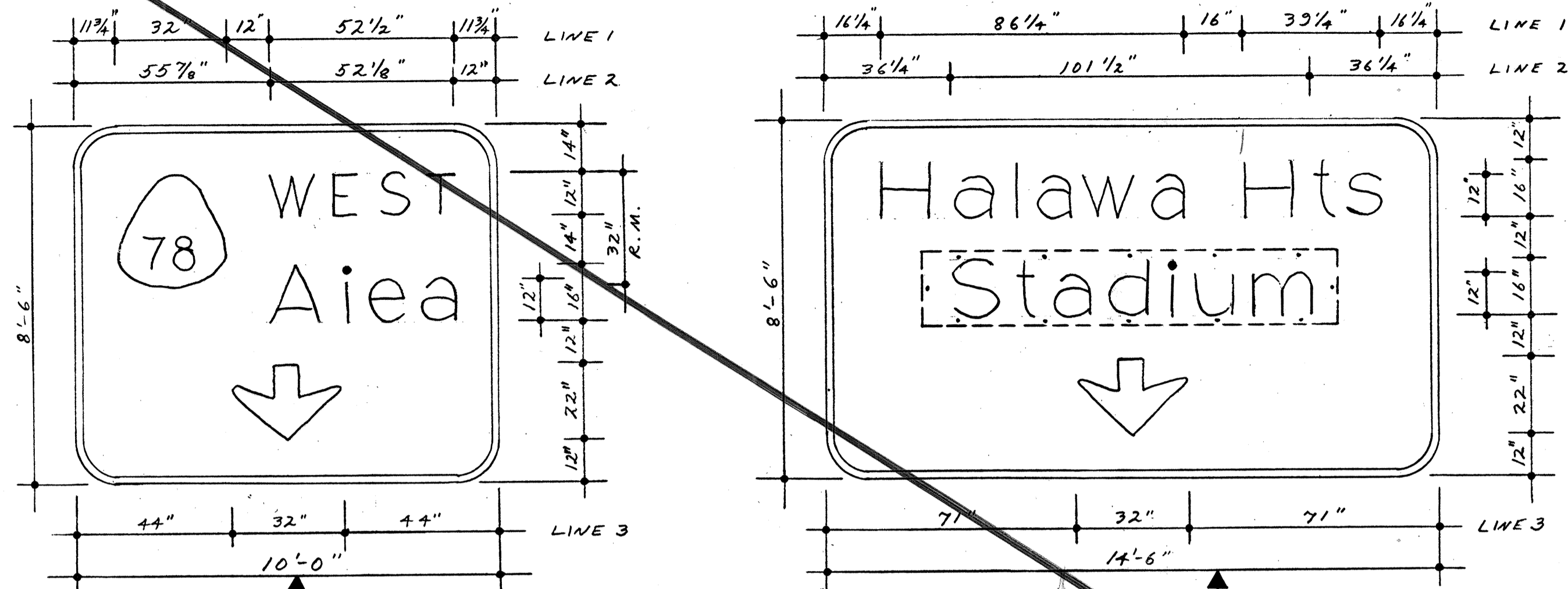
INTERSTATE ROUTE H-1
PROJECT NO. IHI-1(89):13

SCALE: AS SHOWN DATE: Oct 30, 1970

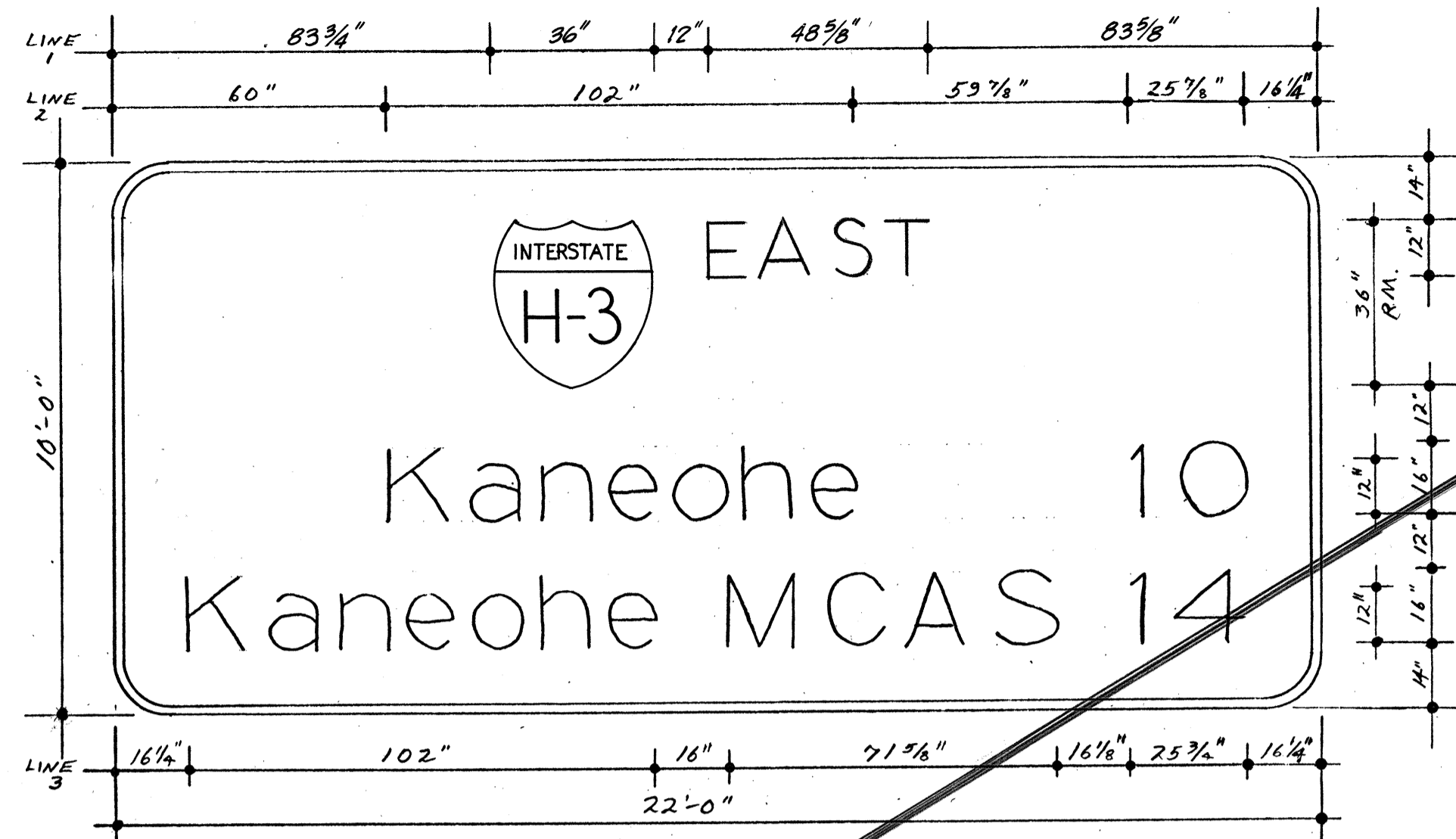
SHEET No. 107 OF 277 SHEETS

DATE	7/21/70
CHECKED BY	E. S. MOLEARY
QUANTITIES BY	
DESIGNED BY	M. SAVA
DRAWN BY	M. SAVA
ORIGINAL PLAN	
NO. 36	

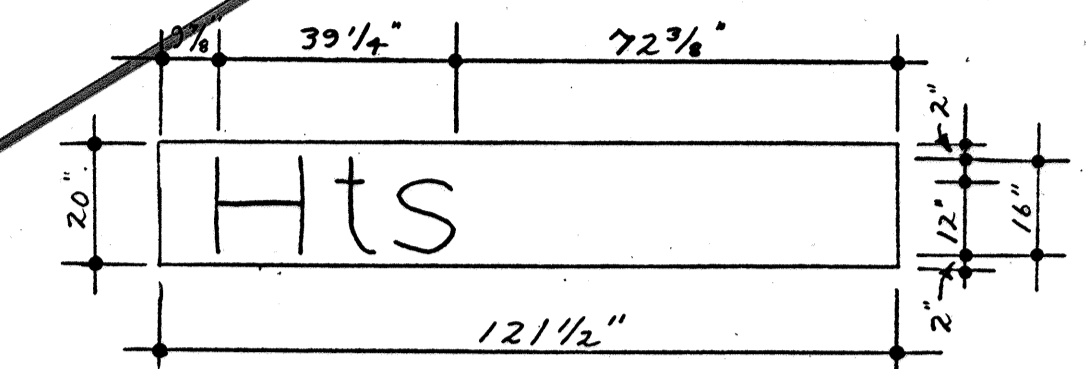
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	108	362



SIGN ASSEMBLY E-28
RAMP M STA. 19 + 35

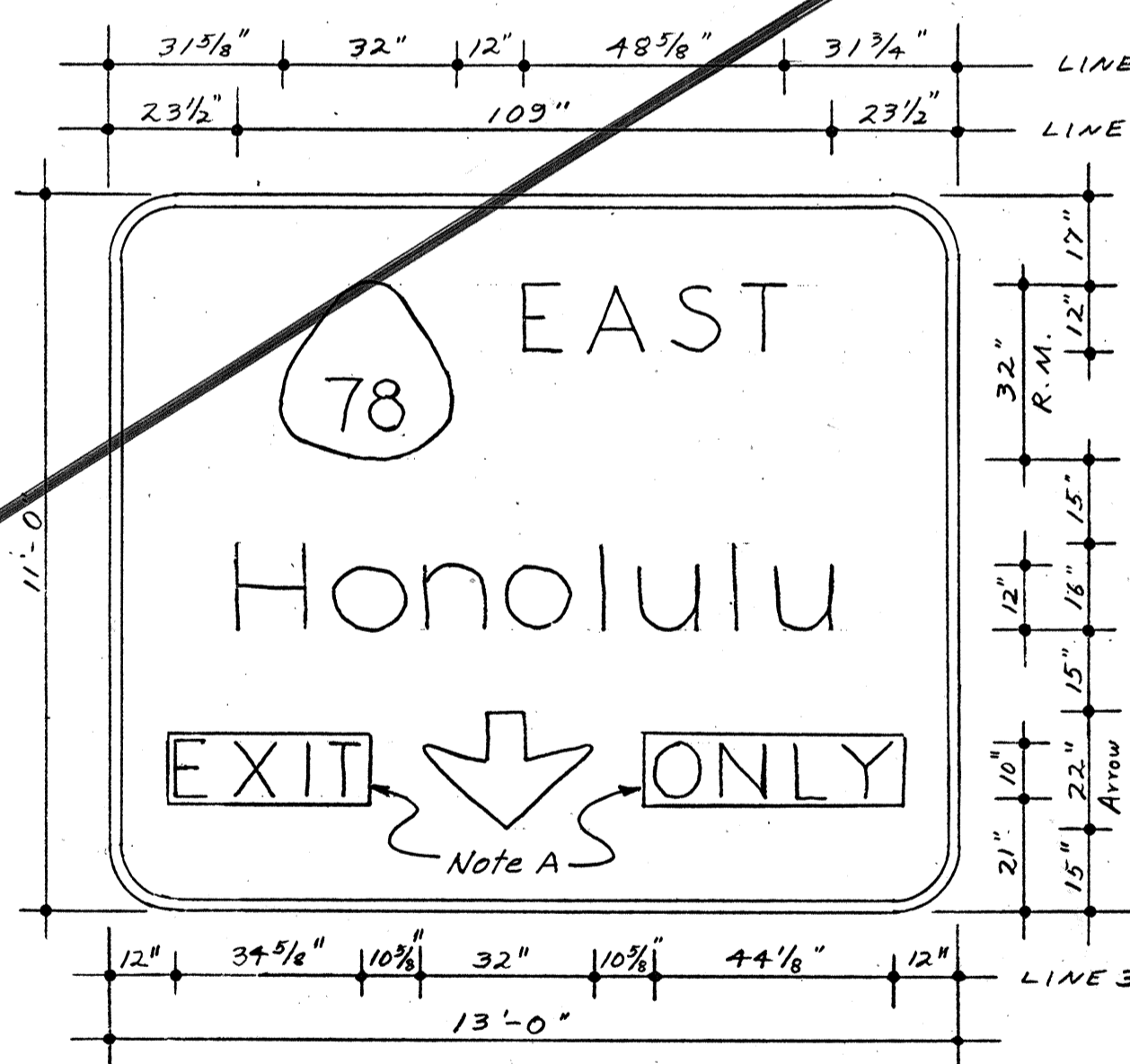
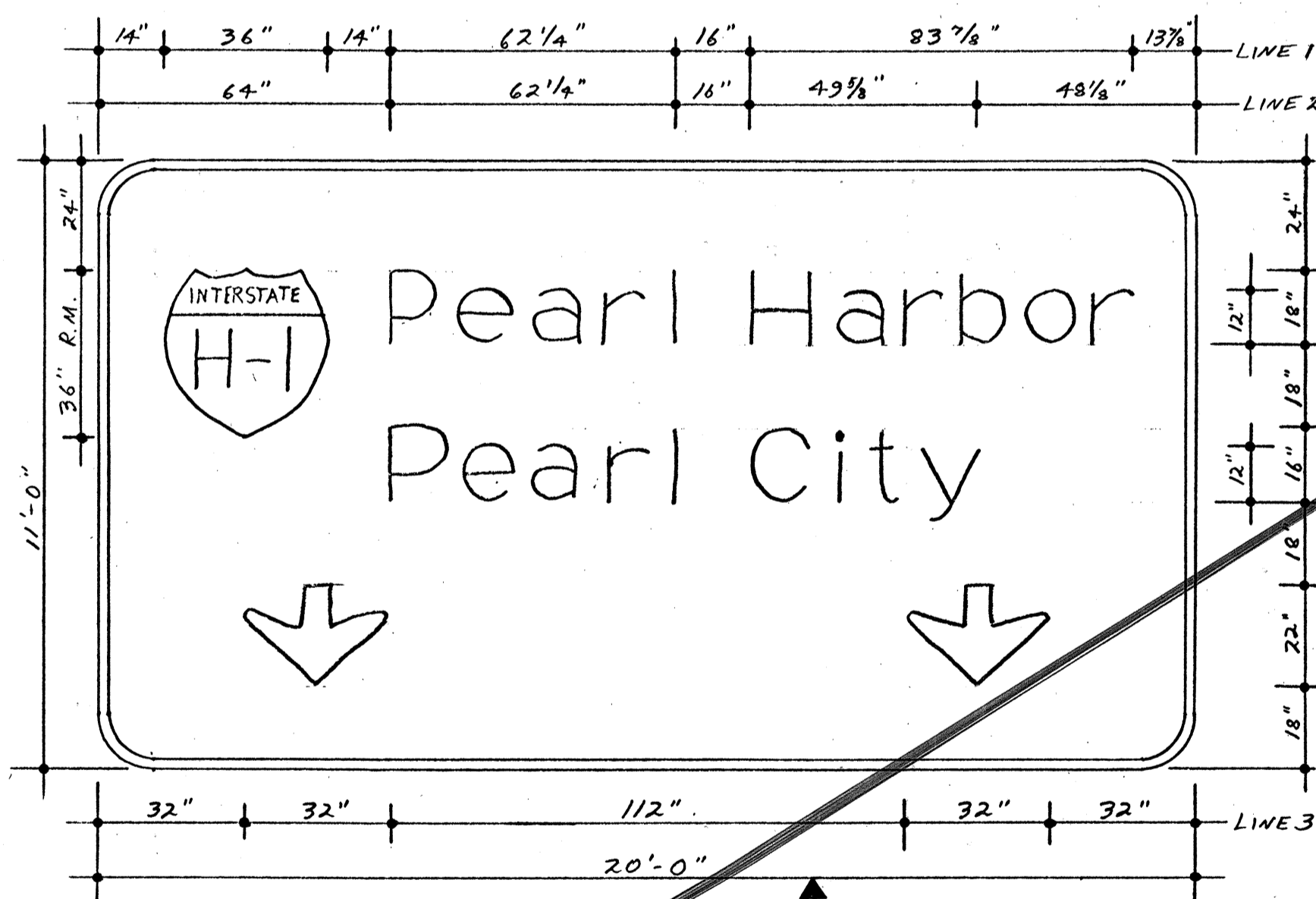


SIGN E-31
INTERSTATE ROUTE H-3 OUTBOUND STA. 296 + 90

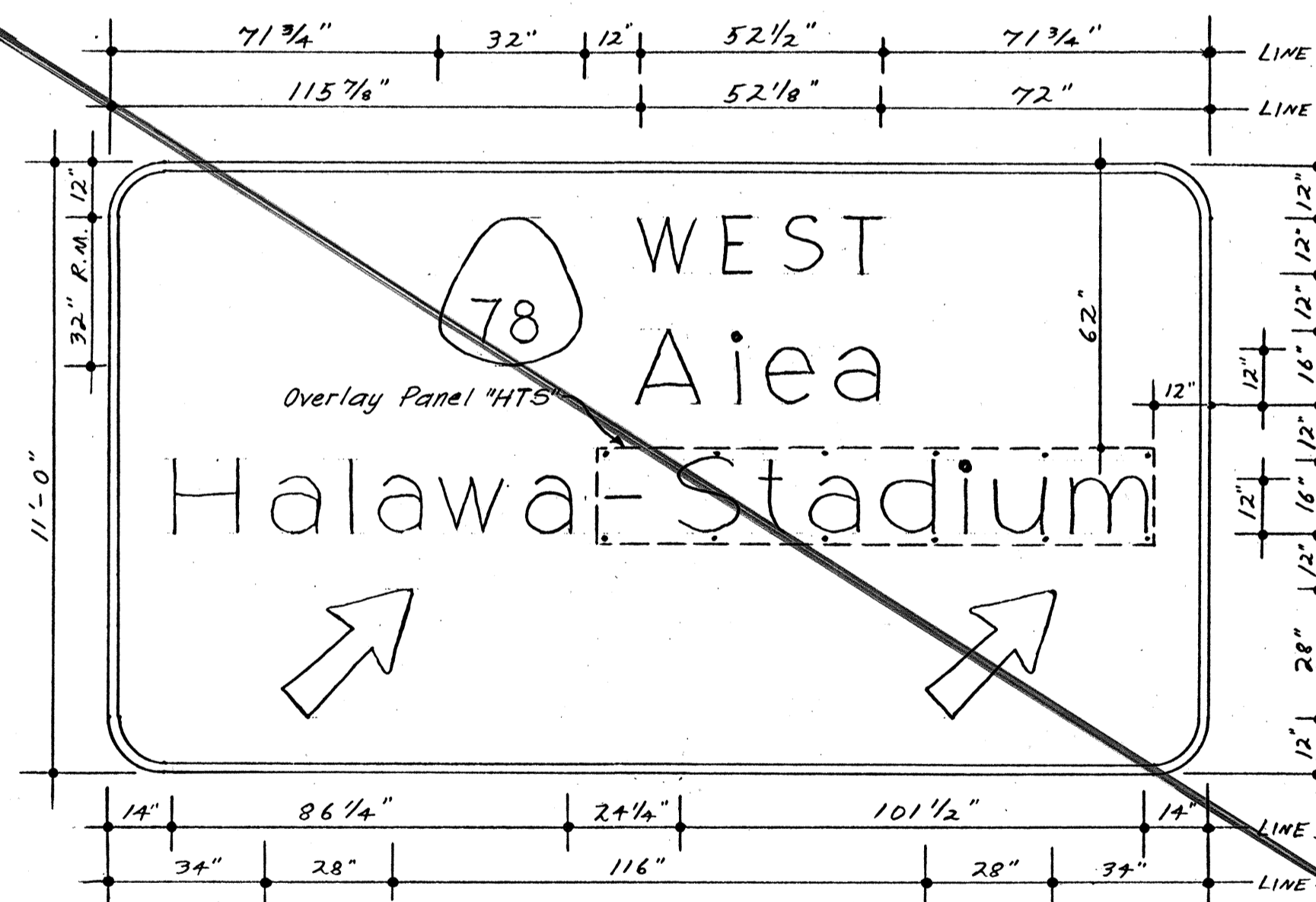


OVERLAY PANEL FOR SIGN ASSEMBLY E-29 (RIGHT PANEL)

N.I.C.



SIGN ASSEMBLY E-29
INTERSTATE ROUTE H-3 INBOUND STA. 279 + 69



DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	2370



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J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN FACE DETAILS

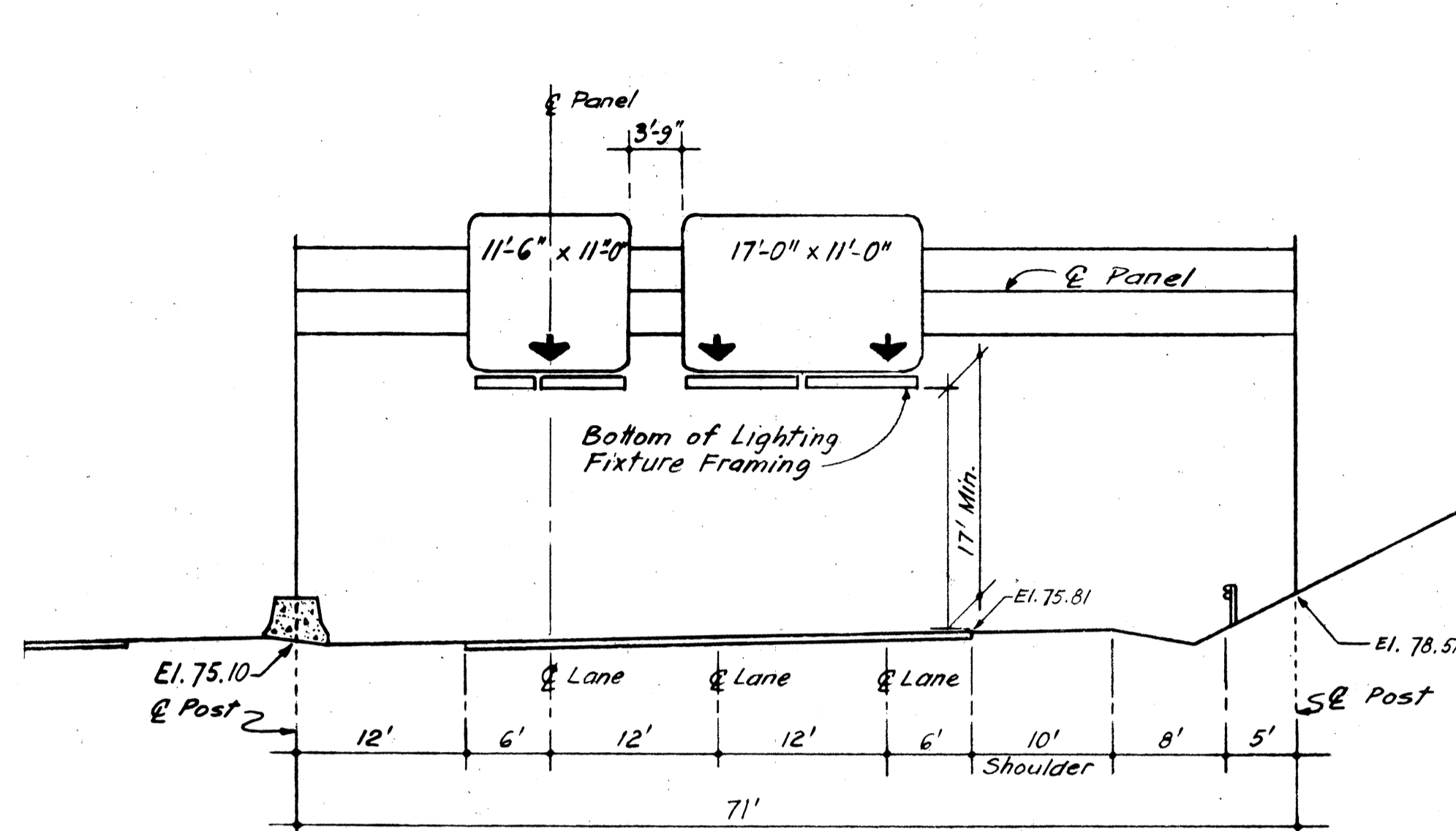
INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(89):13

SCALE: AS SHOWN DATE: Oct. 30, 1970

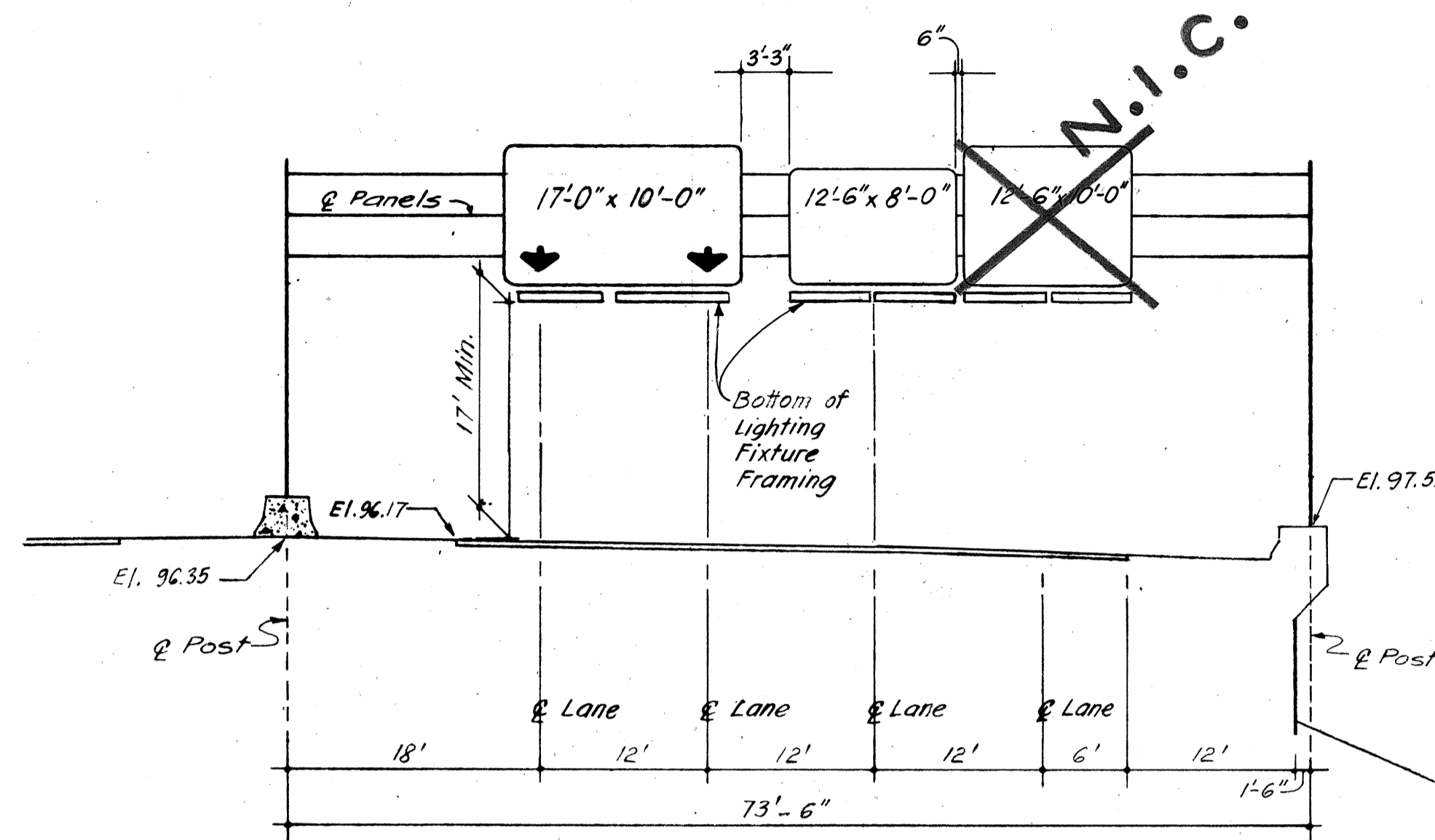
SHEET No. 117 OF 277 SHEETS

See NOTE A on Sheet 8T for Overlay Panel materials.

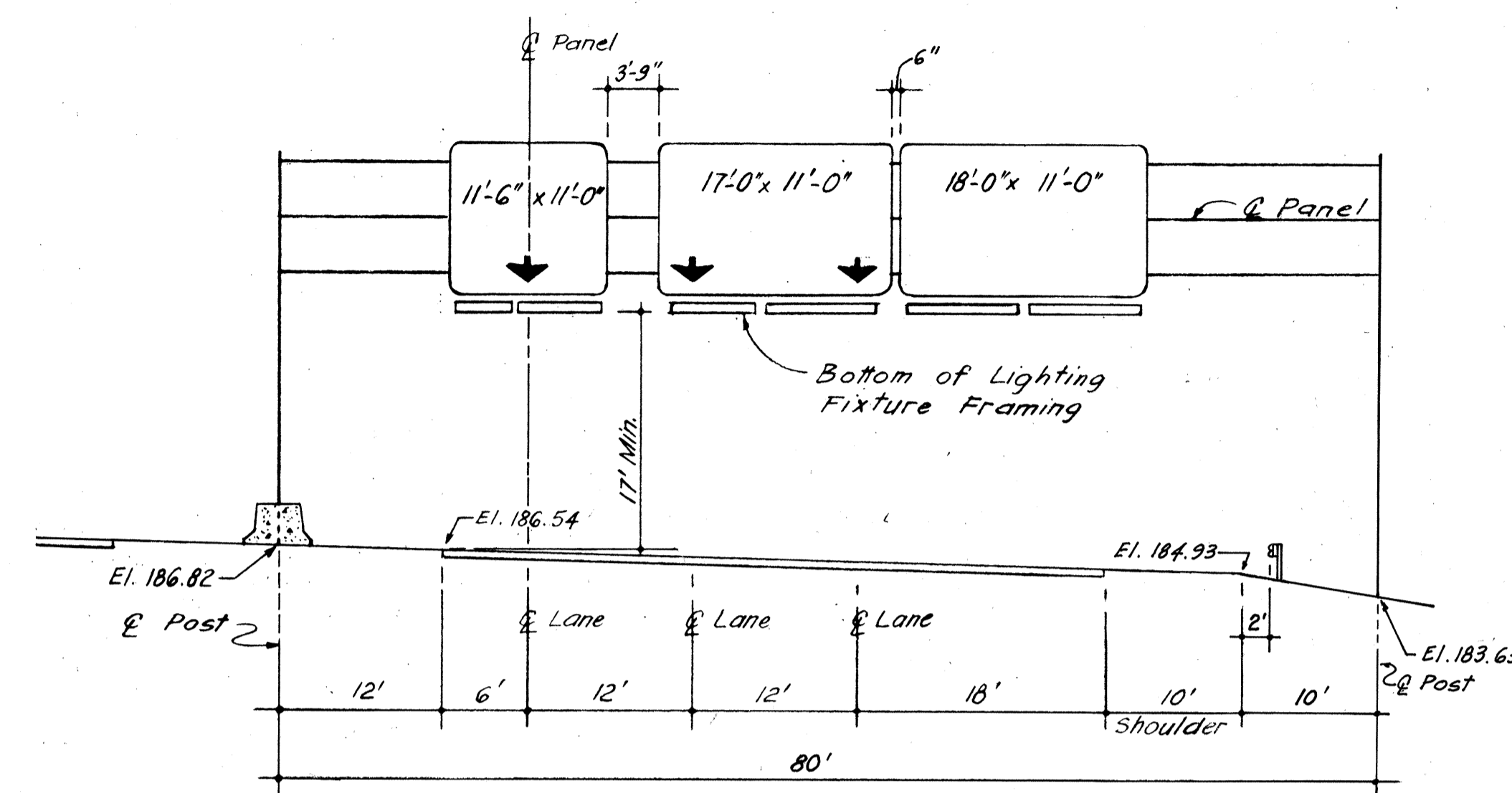
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(89)13	1971	107	362



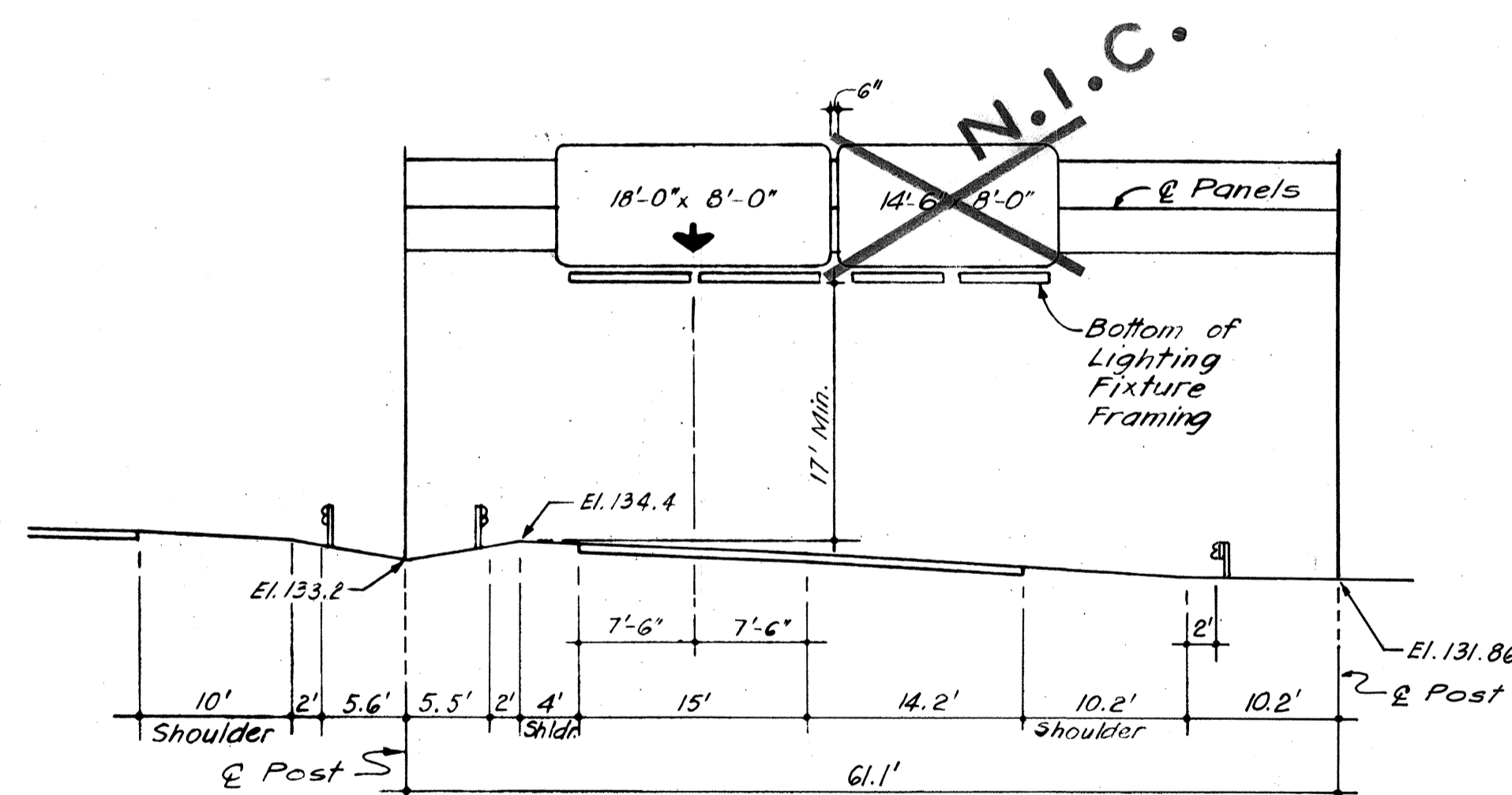
ELEVATION SIGN ASSEMBLY E-14
MOANALUA FREEWAY OUTBOUND STA 174+05



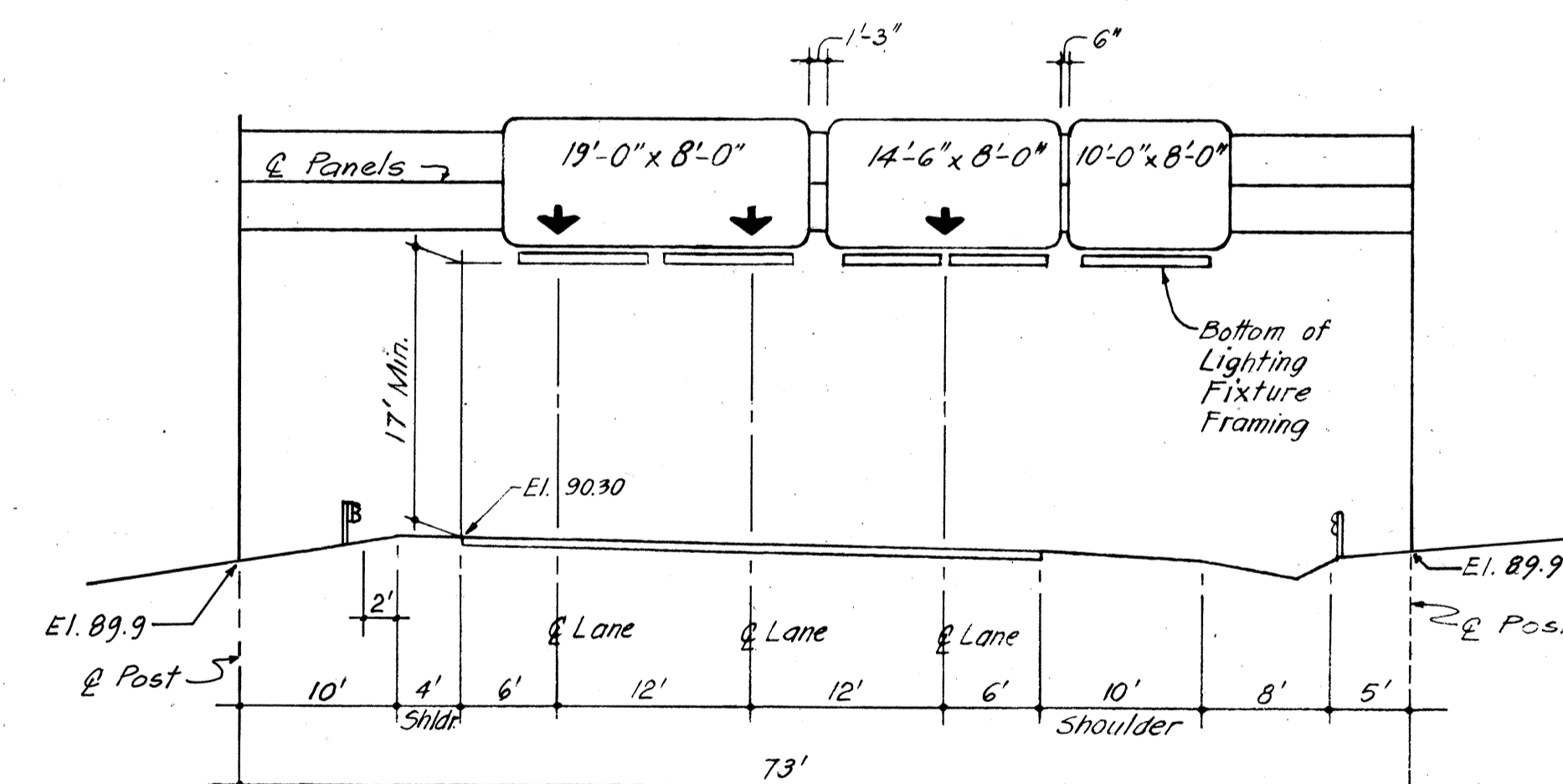
ELEVATION SIGN ASSEMBLY E-15
MOANALUA FREEWAY INBOUND STA 188+10



ELEVATION SIGN ASSEMBLY E-17
MOANALUA FREEWAY OUTBOUND STA 208+00



ELEVATION SIGN ASSEMBLY E-18
ULUNE EXTENSION STA 11+85



ELEVATION SIGN ASSEMBLY E-27
ULUNE EXTENSION STA 34+35

NOTES

- FOR SIGN FACE DETAILS OF PANELS MOUNTED ON OVERHEAD SIGN STRUCTURES, SEE SHEETS 8T, 9T, 10T AND 11T.
- 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 15T THROUGH 26T AND ELECTRICAL DRAWINGS.
- SEE ELECTRICAL DRAWINGS FOR SIGN PANEL LIGHTING FIXTURE TYPES, INSTALLATION DETAILS, ETC.
- FOR PROTECTIVE TREATMENT OF EXPOSED OVERHEAD SIGN STRUCTURE SUPPORTS, SEE SPECIAL GUARD RAIL INSTALLATIONS ON GENERAL LOCATION PLANS, SPECIFICATIONS AND STANDARD DETAILS.

DATE	7.21.70
DESIGNED BY	M. SAWA
DRAWN BY	M. SAWA
CHECKED BY	E. S. MURRAY
NOTED BY	
ORIGINAL PLAN	
NOTE BOOK	



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS SIGN DETAILS

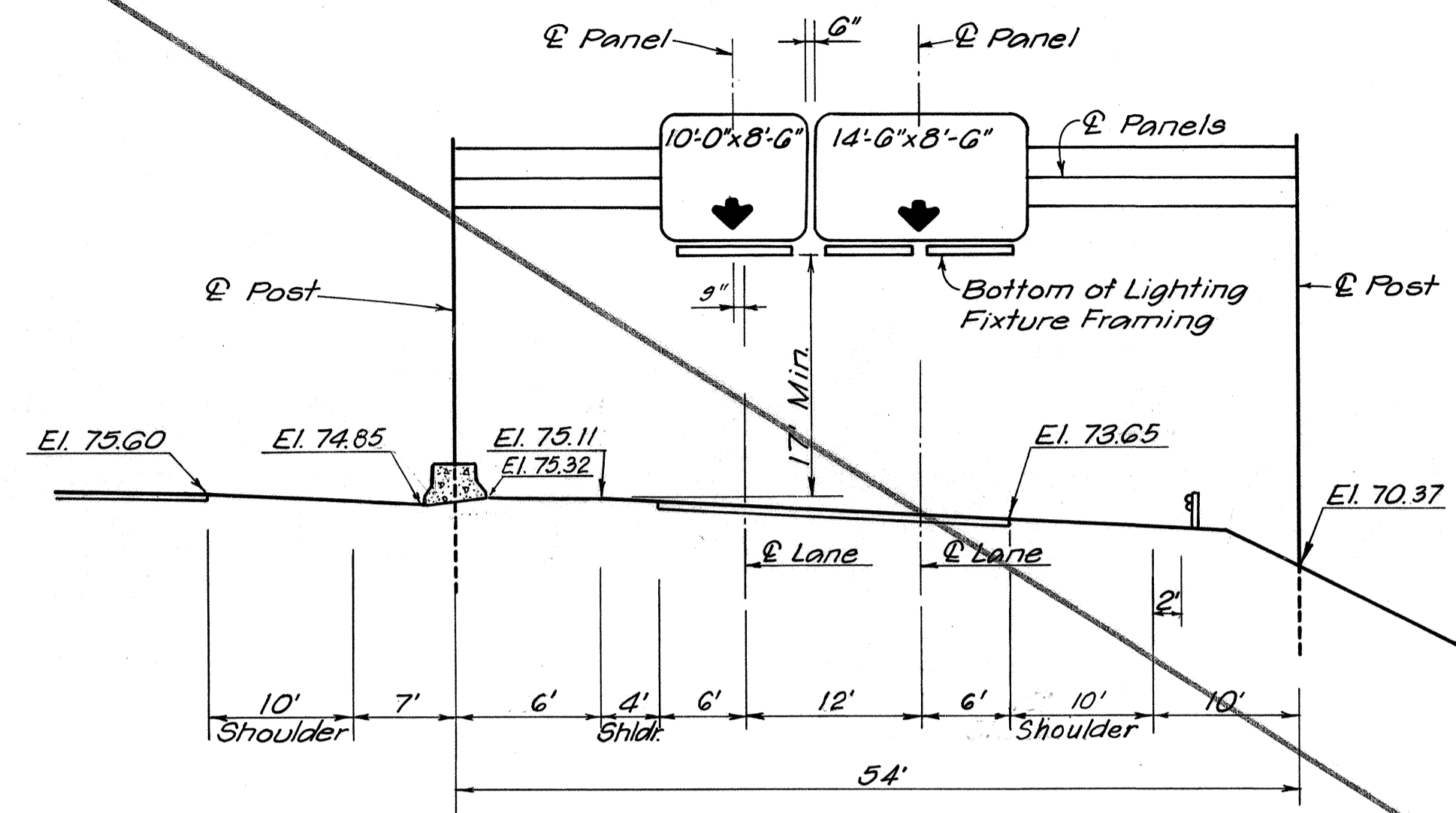
INTERSTATE ROUTE H-1
PROJECT NO. I-H1-1(89)13

SCALE: 1" = 10'-0" DATE: Oct. 30, 1970

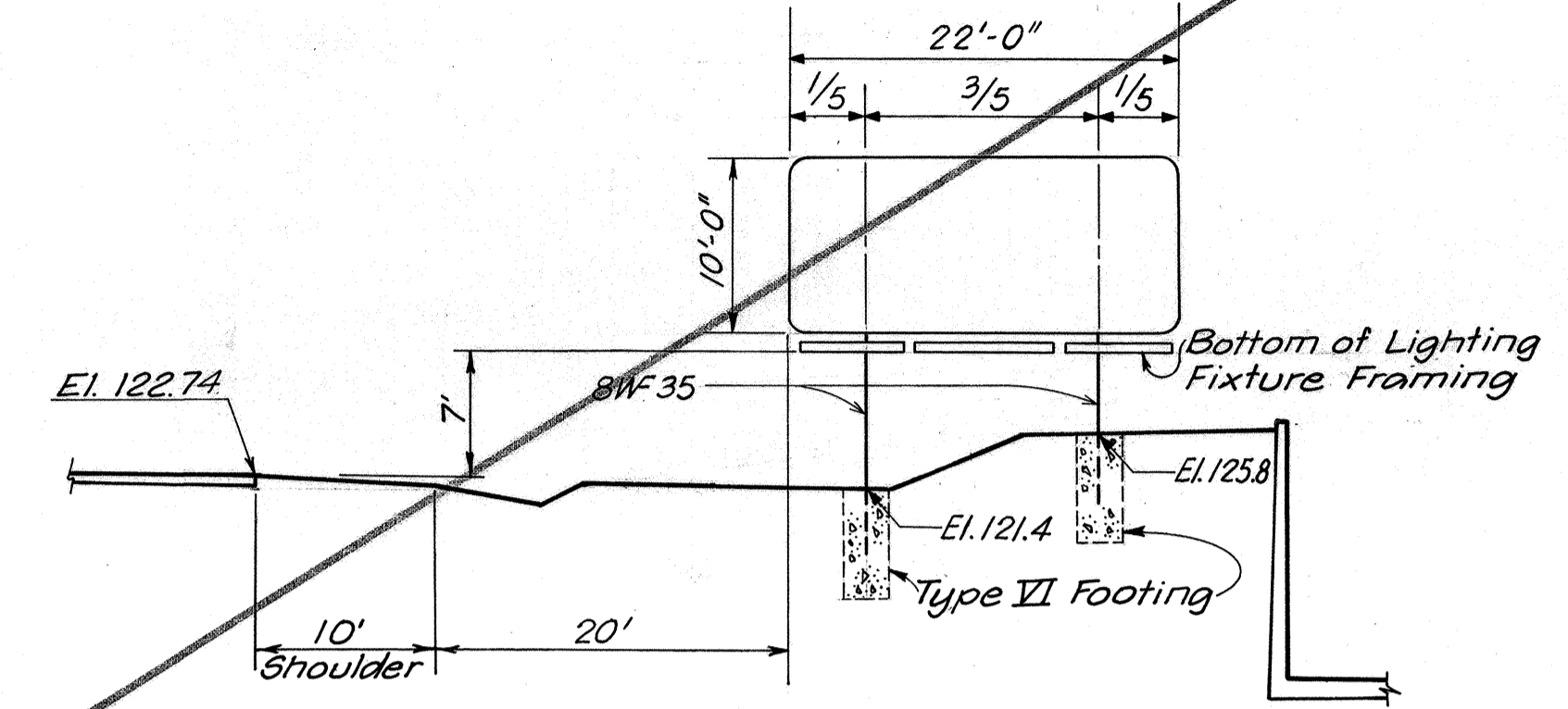
SHEET No. 127 OF 277 SHEETS

91 (1) (6)

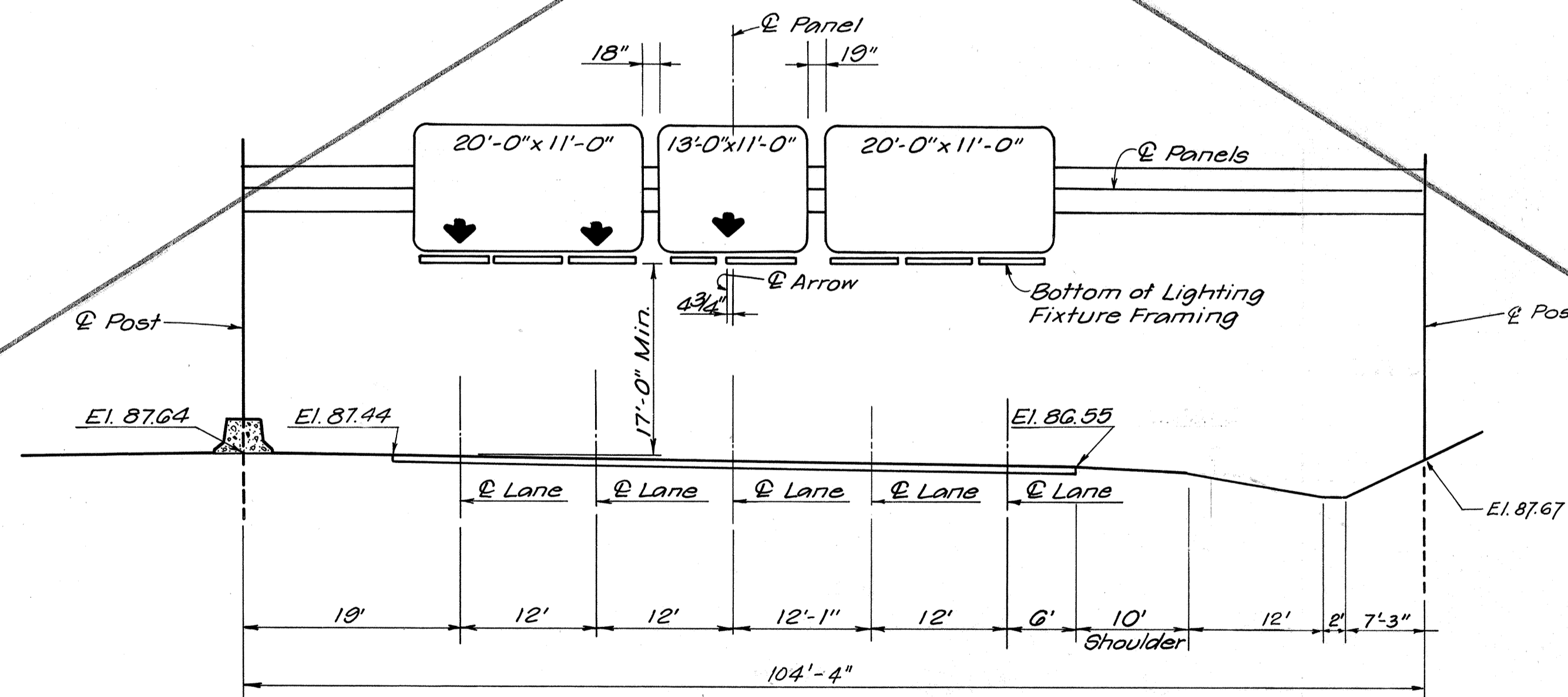
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89):13	1971	110	362



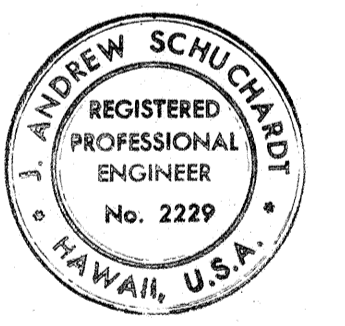
ELEVATION SIGN ASSEMBLY E-28
RAMP M STA. 19+35



ELEVATION SIGN ASSEMBLY E-31
INTERSTATE ROUTE H-3 OUTBOUND STA. 296+90



ELEVATION SIGN ASSEMBLY E-29
INTERSTATE ROUTE H-3 INBOUND STA. 279+69



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ME OR UNDER MY SUPERVISION.
J. Andrew Schuchardt

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS SIGN DETAILS

INTERSTATE ROUTE H-1
PROJECT NO. I-HI-1(89):13

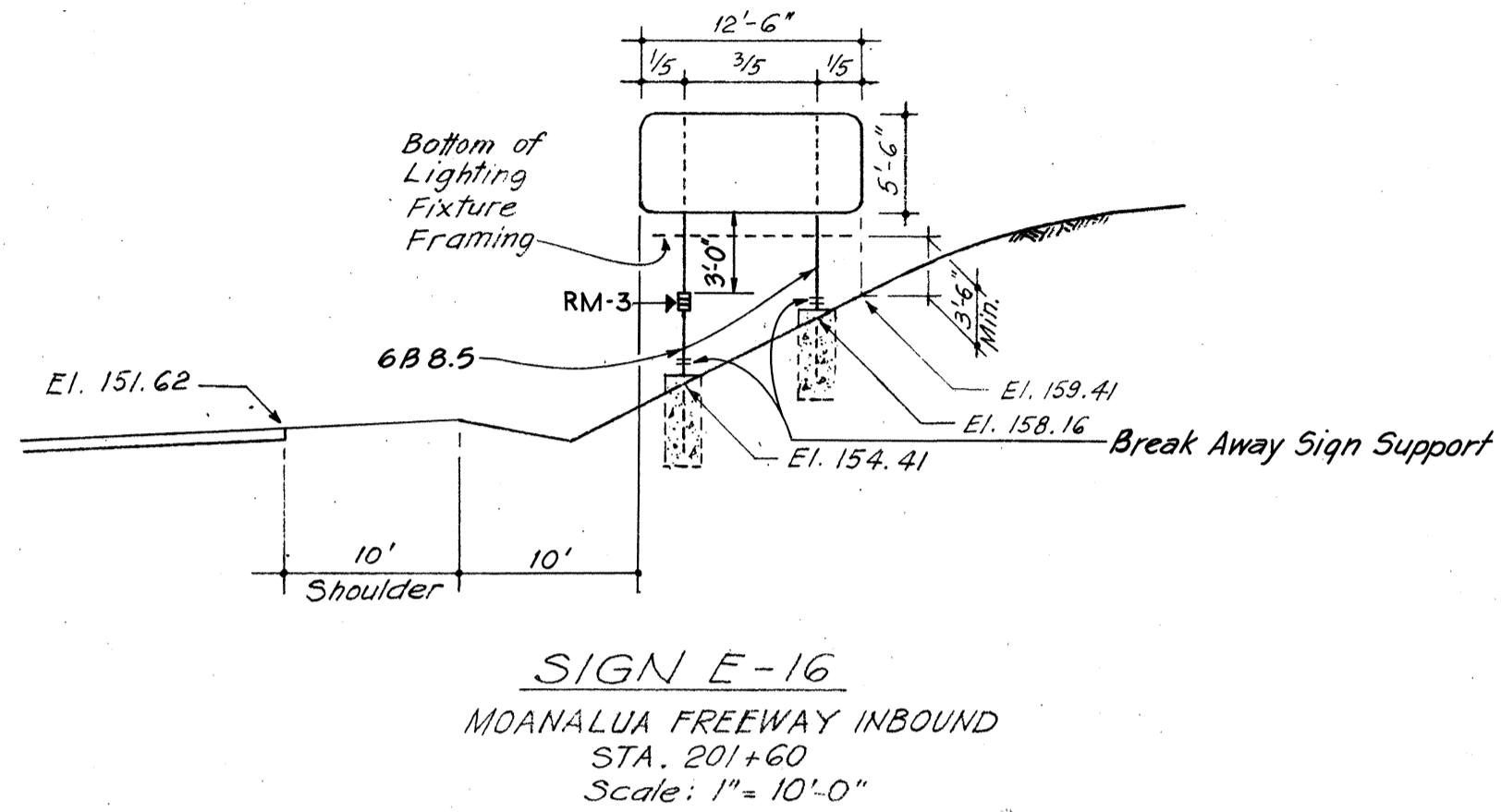
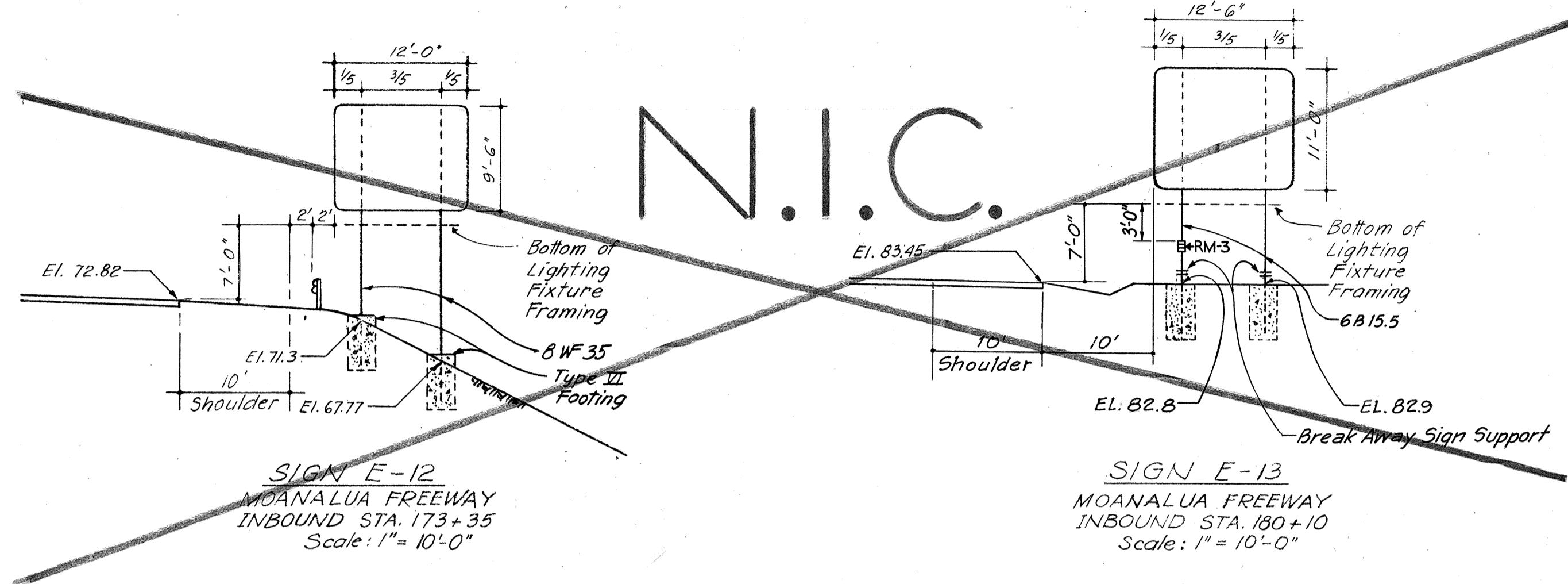
SCALE: 1" = 10'-0"
DATE: Oct. 30, 1970
SHEET No. 137 OF 277 SHEETS

DATE: 9.3.70
SURVEY PLOTTED BY: [blank]
DRAWN BY: S. J. [blank]
DESIGNED BY: E. S. [blank]
CHECKED BY: [blank]
NO. [blank]

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)-13	1971	111	362

NOTES

- FOR SIGN FACE DETAILS OF PANELS MOUNTED ON STRUCTURAL STEEL POSTS SEE SHEETS 8T, 9T AND 11T.
- FOR DETAILS OF OUTRIGGER BRACKETS SUPPORTING SIGN PANEL LIGHTING FIXTURES, SEE SHEET 3E.
- SEE ELECTRICAL DRAWINGS FOR SIGN PANEL LIGHTING FIXTURE TYPES, INSTALLATION DETAILS, ETC.



TYPE	MESSAGE	QUANTITY	
		W/POST	W/O POST
W1-2(R)-A	(CURVED ARROW)	1	-
W13-1(25)-XA	25 M.P.H.	-	1
W1-2(R)-A	(CURVED ARROW)	1	-
W13-1(25)-XA	25 M.P.H.	-	1
W3-3	SIGNAL AHEAD	2	-
W4-1-X(R)-A	MERGING TRAFFIC	4	-
W4-1-1	MERGING TRAFFIC	3	-
SIMILAR TO W13-3(25)	RAMP 25 M.P.H.	-	1
SIMILAR TO W13-3(35)	RAMP 35 M.P.H.	-	1
W13-3(35)	EXIT 35 M.P.H. N.I.C.	1	-
TOTAL		8	4

SHEET NO.	RM-1 CLEAR		RM-2 AMBER		RM-3 AMBER		RM-3H AMBER		RM-9	
	W/POST	W/O POST	W/POST	W/O POST	W/POST	W/O POST	W/POST	W/O POST	W/POST	W/O POST
1T OF 21T	2	-	9	-	3	1	-	-	-	-
2T OF 21T	2	-	33	2	2	-	-	-	-	-
3T OF 21T	3	-	34	8	7	-	1	-	1	-
4T OF 21T	7	-	15	2	2	-	-	-	-	-
5T OF 21T	4	-	9	-	1	1	-	-	-	-
6T OF 21T	-	-	-	-	-	-	-	-	-	-
7T OF 21T	-	-	-	-	-	-	-	-	-	-
TOTAL	18	-	100	12	15	2	1	-	1	-

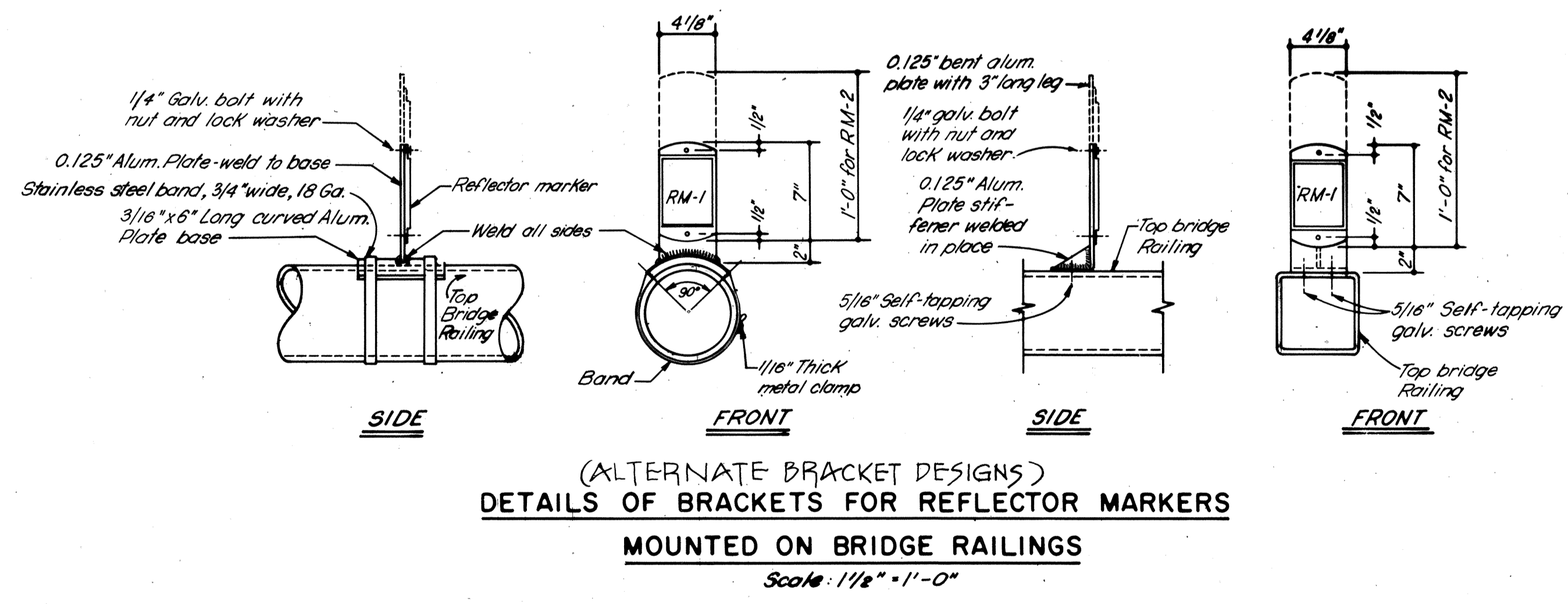
SHEET NO.	QUANTITY	
	TYPE A	TYPE C
1T OF 21T	366	33
2T OF 21T	738	95
3T OF 21T	558	54
4T OF 21T	668	74
5T OF 21T	520	94
6T OF 21T	-	-
7T OF 21T	-	-
TOTAL	2850	350

SIGN NO.	MESSAGE	AREA (SQ. FT.)
E-12	KANEHOE	114.00
E-13	KANEHOE	137.50
E-14	AIEA, PEARL CITY	313.50
E-15	HONOLULU, RED HILL, KANEHOE-N.I.C.	270.00
E-16	RED HILL	68.75
E-17	AIEA, PEARL CITY, KANEHOE	511.50
E-18	HALAWA HTS., KANEHOE-N.I.C.	144.00
E-27	SALT LAKE BLVD., HALAWA HTS., HALAWA VALLEY	348.00
E-28	AIEA, HALAWA HTS.	210.25
E-29	PEARL HARBOR, HONOLULU, AIEA	583.00
E-31	KANEHOE	220.00
TOTAL		1655.75

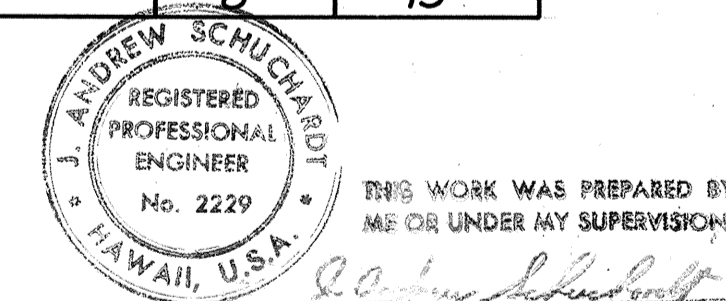
TYPE	MESSAGE	QUANTITY	
		W/POST	W/O POST
R3-2-XA	NO LEFT TURN	2	-
R3-11(L)	(DIVERGING ARROWS)	1	-
R10-2	ROAD CLOSED	-	6
R2-1(25)-XA	SPEED LIMIT (25)	1	-
R2-1(35)-XA	SPEED LIMIT (35)	3	-
R2-1(45)-XA	SPEED LIMIT (45)	1	-
R5-1	DO NOT ENTER	3	-
R5-9	WRONG WAY	3	-
R16-5	KEEP OUT FREEWAY	3	-
TOTAL		8	15

SIGN NO.	MESSAGE COVERED	AREA (SQ. FT.)
E-14	STADIUM	15.00
E-17	STADIUM	15.00
E-17	(ROUTE MARKER) EAST	18.50
E-17	KANEHOE	15.00
E-27	SALT LAKE BLVD.	27.50
E-28	STADIUM N.I.C.	15.00
TOTAL		91.00

SIGN NO.	MESSAGES	AREA (SQ. FT.)
E-27	HONOLULU	15.75
E-29	HTS. N.I.C.	17.00
TOTAL		15.75



(ALTERNATE BRACKET DESIGNS)
 DETAILS OF BRACKETS FOR REFLECTOR MARKERS
 MOUNTED ON BRIDGE RAILINGS
 Scale: 1/16" = 1'-0"



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

LINE DIAGRAMS OF GROUND MOUNTED SIGNS AND SIGN SUPPORTS

INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(89)-13

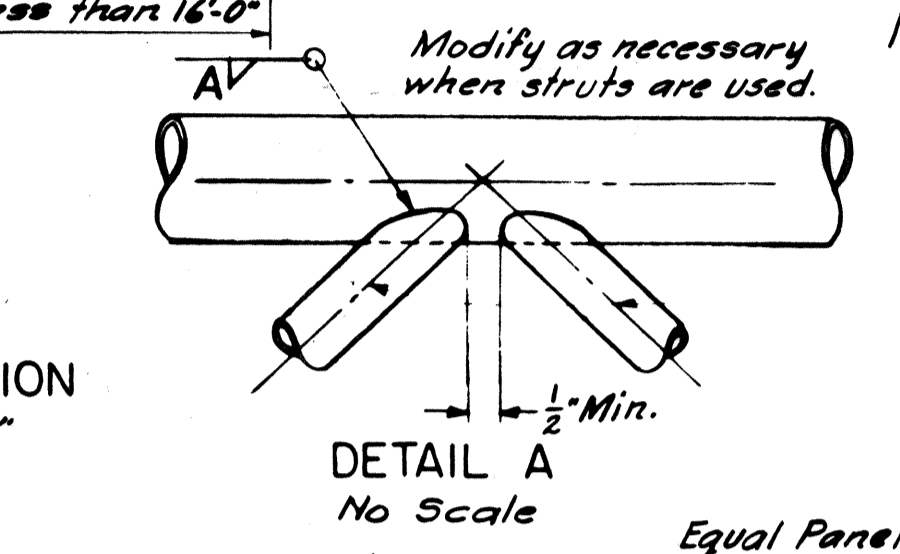
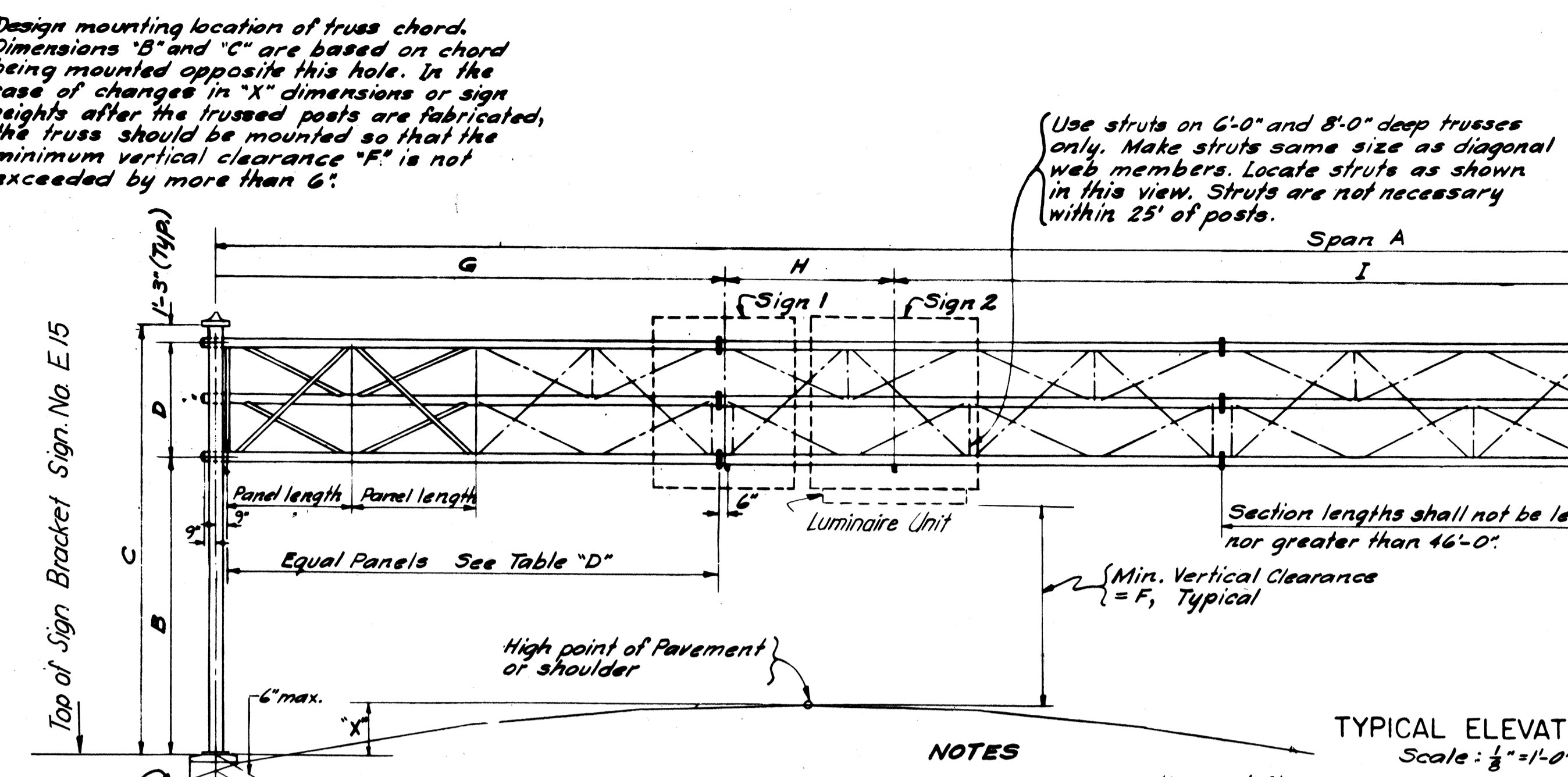
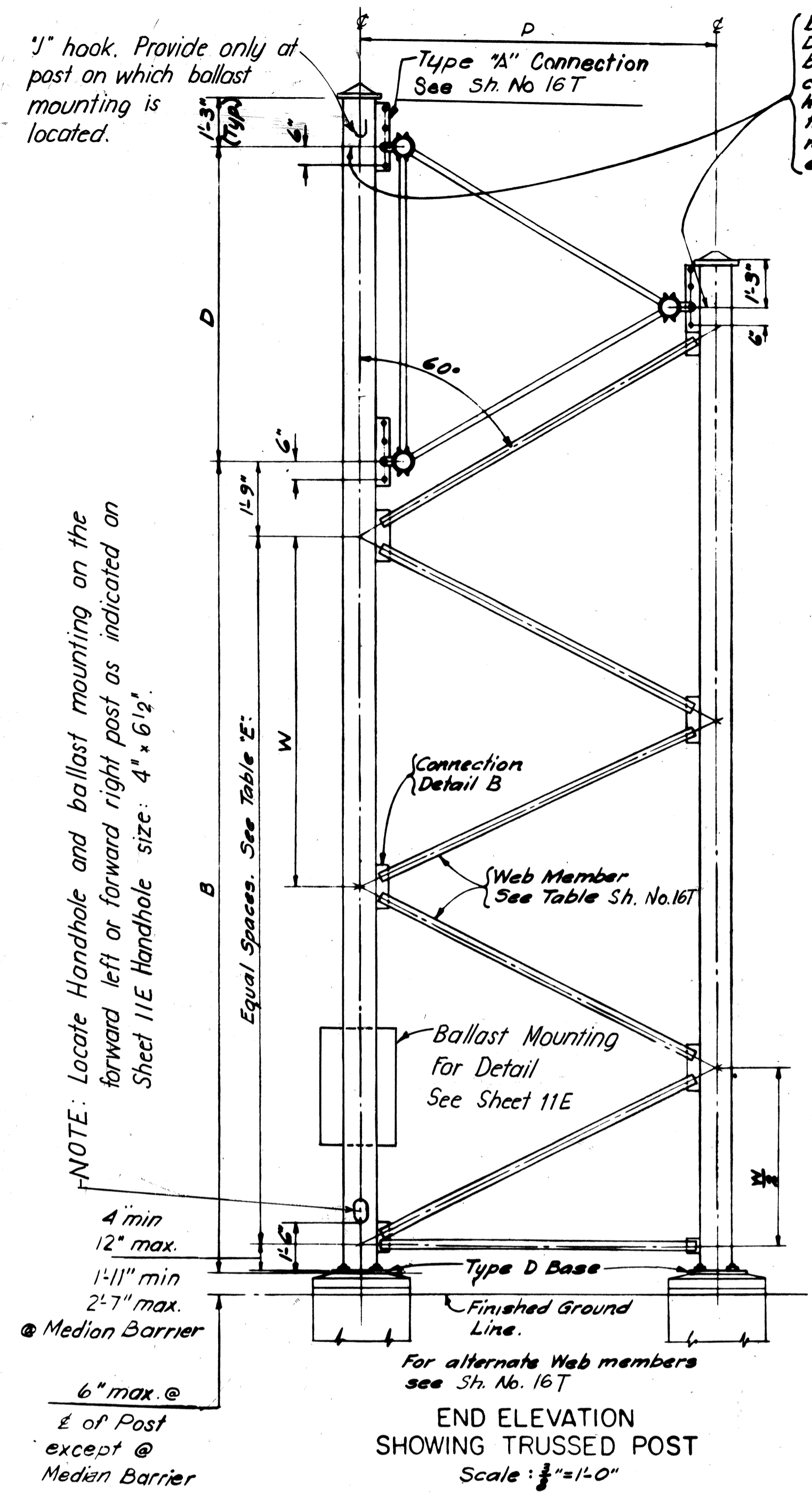
SCALE: AS SHOWN DATE: Oct. 30, 1970

SHEET No. 147 OF 277 SHEETS

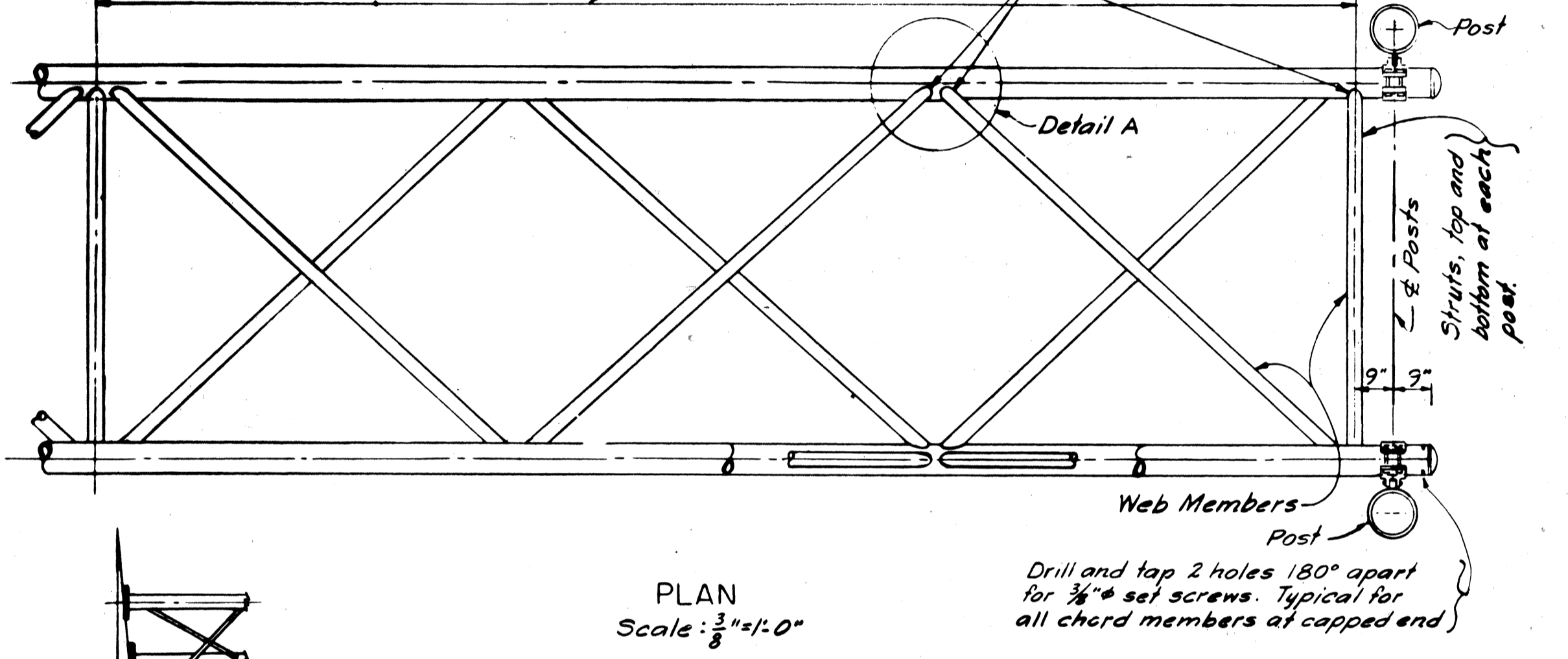
DATE	REVISION
7-17-72	Revised Regulatory and Warning sign summaries

DATE: 7-17-72
 SURVEY PLANNED BY: J. S. SAVA
 DRAWN BY: J. S. SAVA
 DESIGNED BY: J. S. SAVA
 QUANTITIES BY: J. S. SAVA
 CHECKED BY: E. S. ANDERSON

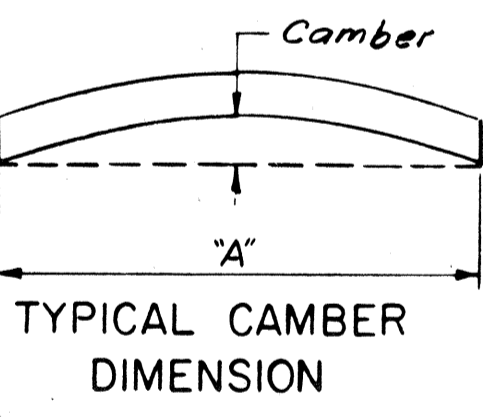
C.O. 91 91 91



NOTE: Provide 1/2" wire inlet -
 1. On bottom chord of truss at center line of each sign and at end of truss 12" from post.
 2. On front left & right leg of trussed post 6" below bottom chord of truss.
 For details see sheets 16T & 17T



METHOD OF OBTAINING CAMBER
 Washers having the same O.D. as flanges and with holes punched for bolts may be used to obtain camber.



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"

NOTES
 For dimensions of Type "D" bases and anchor bolts see Sh. No. 16T
 For Connection Detail "B" and for the alternate details of web members of trussed posts see Sheet 16T
 For flanged connections see Sh. No. 17T
 Tri-truss span and brackets are fabricated of Aluminum.
 Galvanized Steel in contact with Aluminum must be separated by "Fibro" or "Fibretek" 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

SIGN NO	SPAN A	TYPE (1)	PIPE SIZE (2)	LEFT POST				RIGHT POST				TRUSS				SIGN 1	SIGN 2	SIGN 3	
				B	C	XL (3)	P	B	C	XR (3)	F	D	CHORD SIZE	WEB SIZE					
E 14	71 0 0	T	8" SCH 20	21 2 7	26 5 7	0 -6 5	5 2 0	T	6" SCH 40S	17 10 6	23 1 6	-3 10 5	17 0 0	4 0 0	4" X 1/4"	2" X 3/16"	18 0 0	18 0 0	
E 15	73 6 0	T	8" SCH 20	20 0 2	25 3 2	-1 3 1	5 2 0	T	8" SCH 20	19 11 0	25 2 0	-1 4 3	17 0 0	4 0 0	4" X 5/16"	2" X 3/16"	24 0 0	18 0 0	13 0 0
E 17	80 0 0	T	8" SCH 20	20 4 5	25 7 5	-1 4 6	5 2 0	T	8" SCH 20	23 10 5	29 1 5	2 1 1	17 0 0	4 0 0	5" X 5/16"	2 1/2" X 3/16"	18 0 0	18 0 0	18 0 0
E 18	61 1 2	T	6" SCH 40S	20 8 0	25 11 0	0 4 4	5 2 0	T	6" SCH 40S	22 3 0	27 6 0	1 11 6	17 0 0	4 0 0	3" X 1/4"	2" X 3/16"	19 0 0	16 9 0	
E 27	73 0 0	T	6" SCH 40S	20 0 0	25 3 0	0 -3 4	5 2 0	T	6" SCH 40S	20 0 0	25 3 0	0 -3 4	17 0 0	4 0 0	4" X 1/4"	2" X 3/16"	26 0 0	18 0 0	12 9 0
E 28	84 0 0	T	6" SCH 40S	19 3 2	24 6 2	1 3 3	5 2 0	T	6" SCH 40S	24 3 2	29 6 2	3 8 4	17 0 0	4 0 0	3" X 3/16"	2" X 3/16"	15 3 0	12 9 0	
E 29	104 4 0	T	10" SCH 20	19 8 5	26 11 5	1 3 2	7 2 0	T	8" SCH 20	19 7 5	26 10 5	1 4 2	17 0 0	6 0 0	5" X 5/16"	3" X 3/16"	24 7 2	18 0 0	18 1 0

- ① 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. -3 10 5 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. 19T.
- ⑥ For Sign Panel and Bracket details see Sh. No. 18T.
- ⑦ For Luminaire Mounting details see Sh. No. 13E.

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

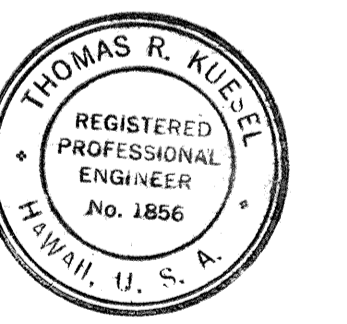
P	"W" Min.	"W" Max.
5'-2"	4'-8"	5'-8"
7'-2"	6'-8"	7'-8"
9'-2 3/4"	8'-8"	9'-8"

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

OVERHEAD SIGN SUPPORT
 3 CHORD TRUSS
 INTERSTATE ROUTE H-1
 PROJECT NO. I-H-1(89)13

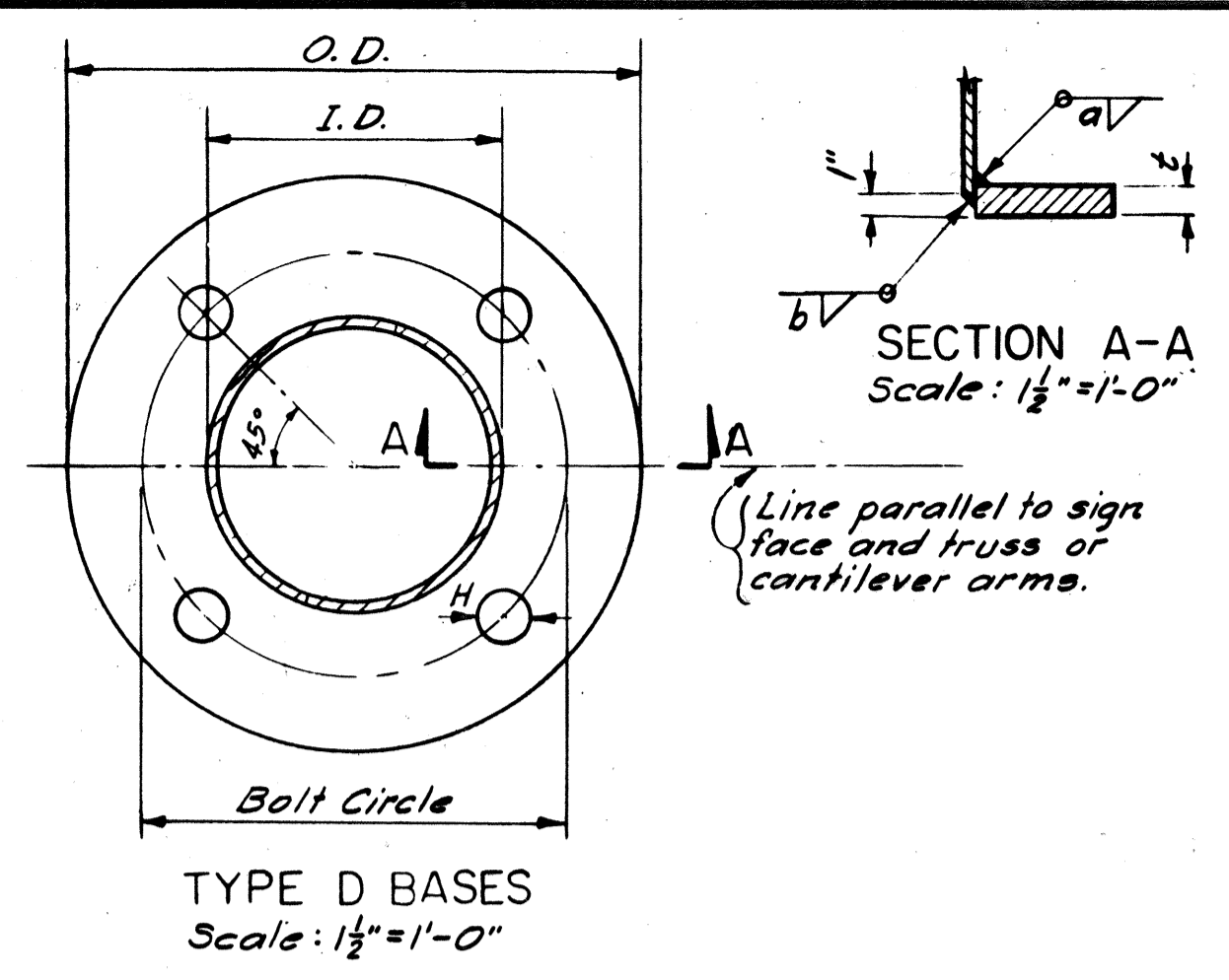
SCALE: AS SHOWN DATE: Oct 30, 1970
 SHEET No. 157 OF 277 SHEETS

DATE: 7/10/70
 SURVEY PLATTED BY: [Signature]
 DRAWN BY: [Signature]
 DESIGNED BY: [Signature]
 QUANTITIES BY: [Signature]
 CHECKED BY: [Signature]

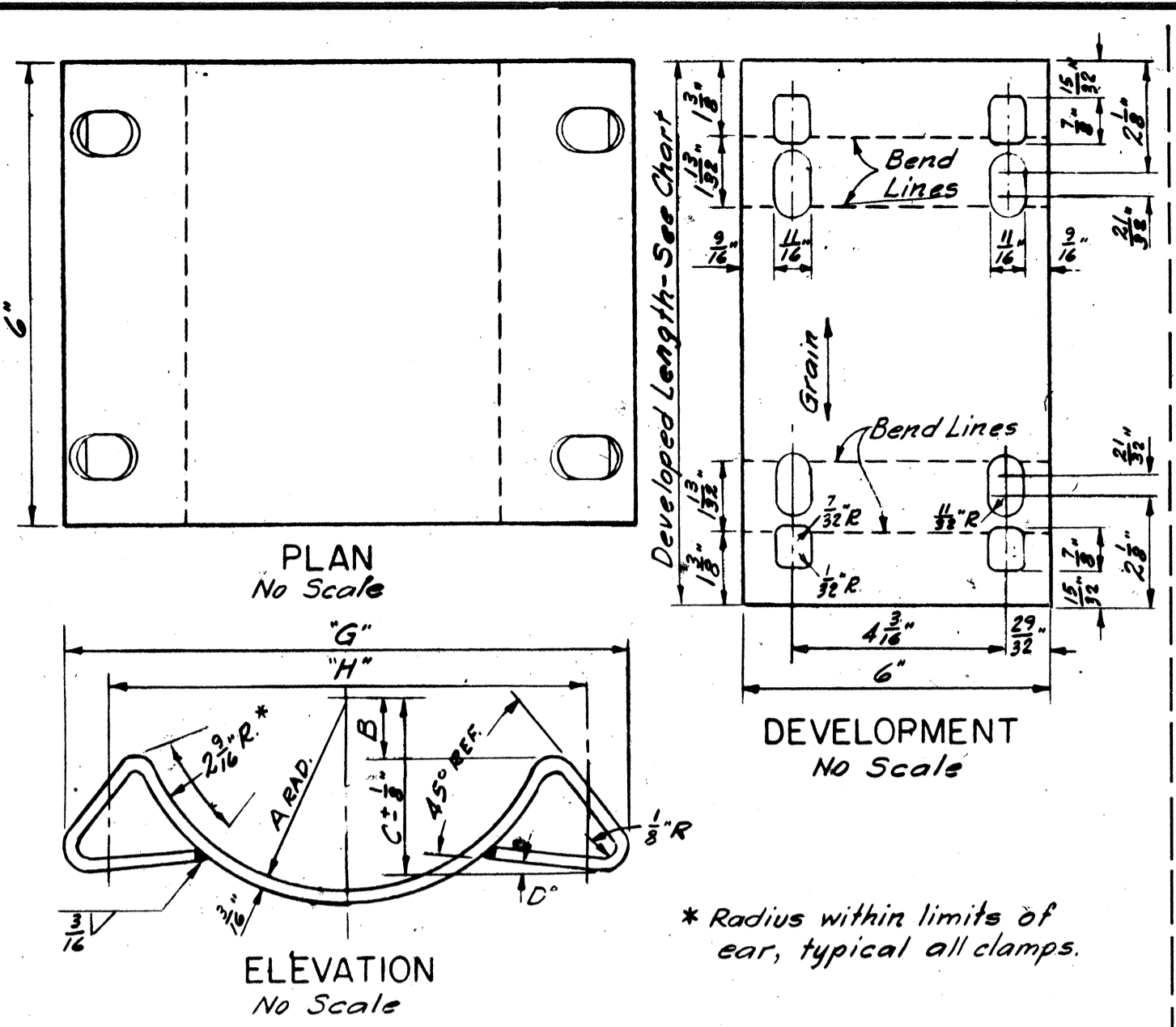
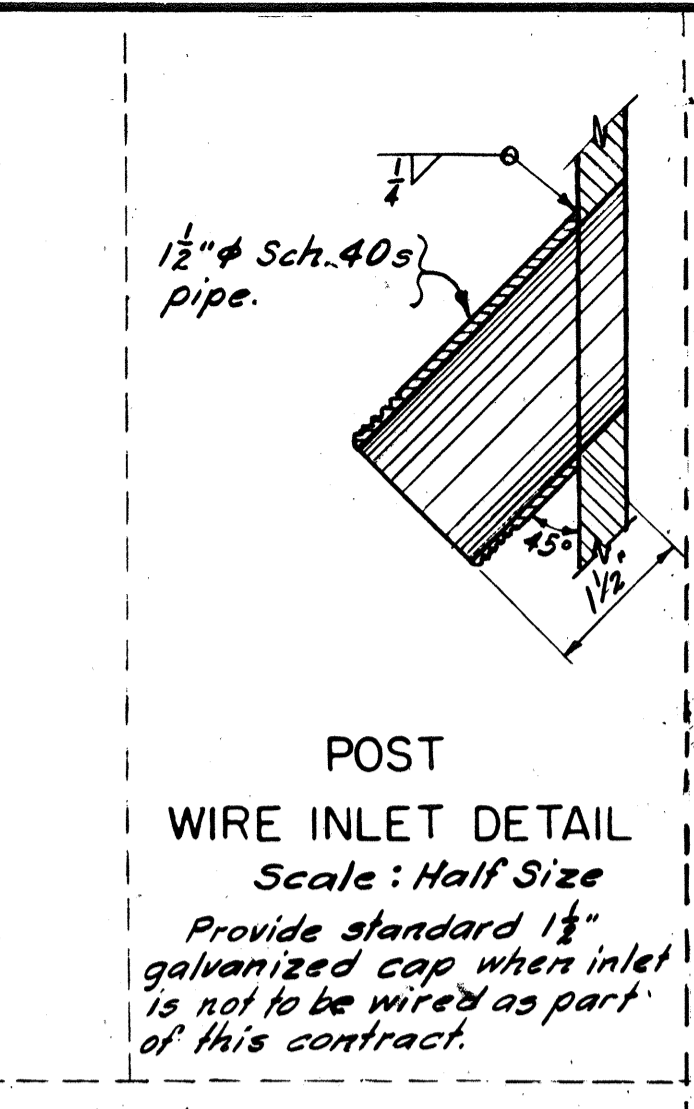
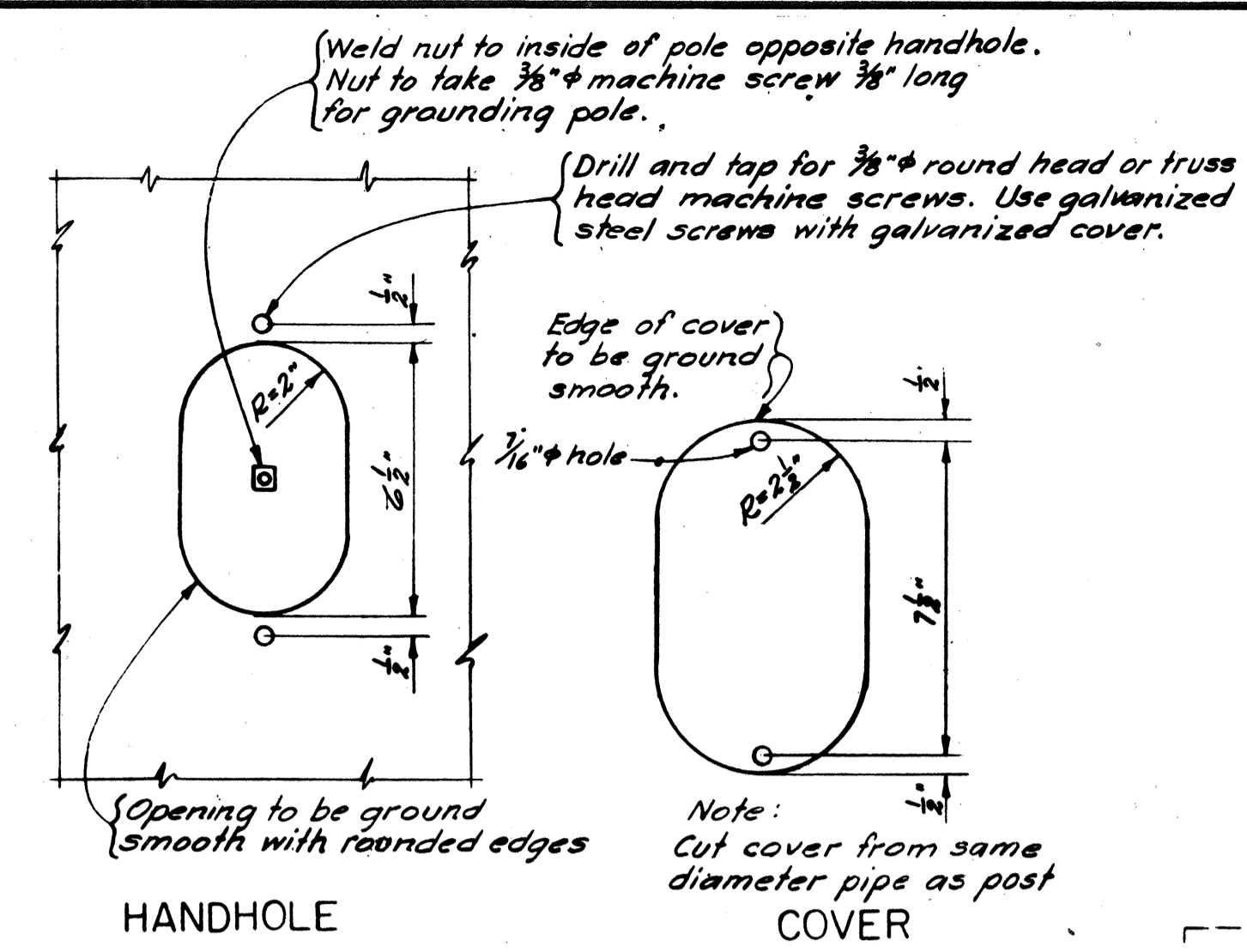


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 N.I.C. [Signature]

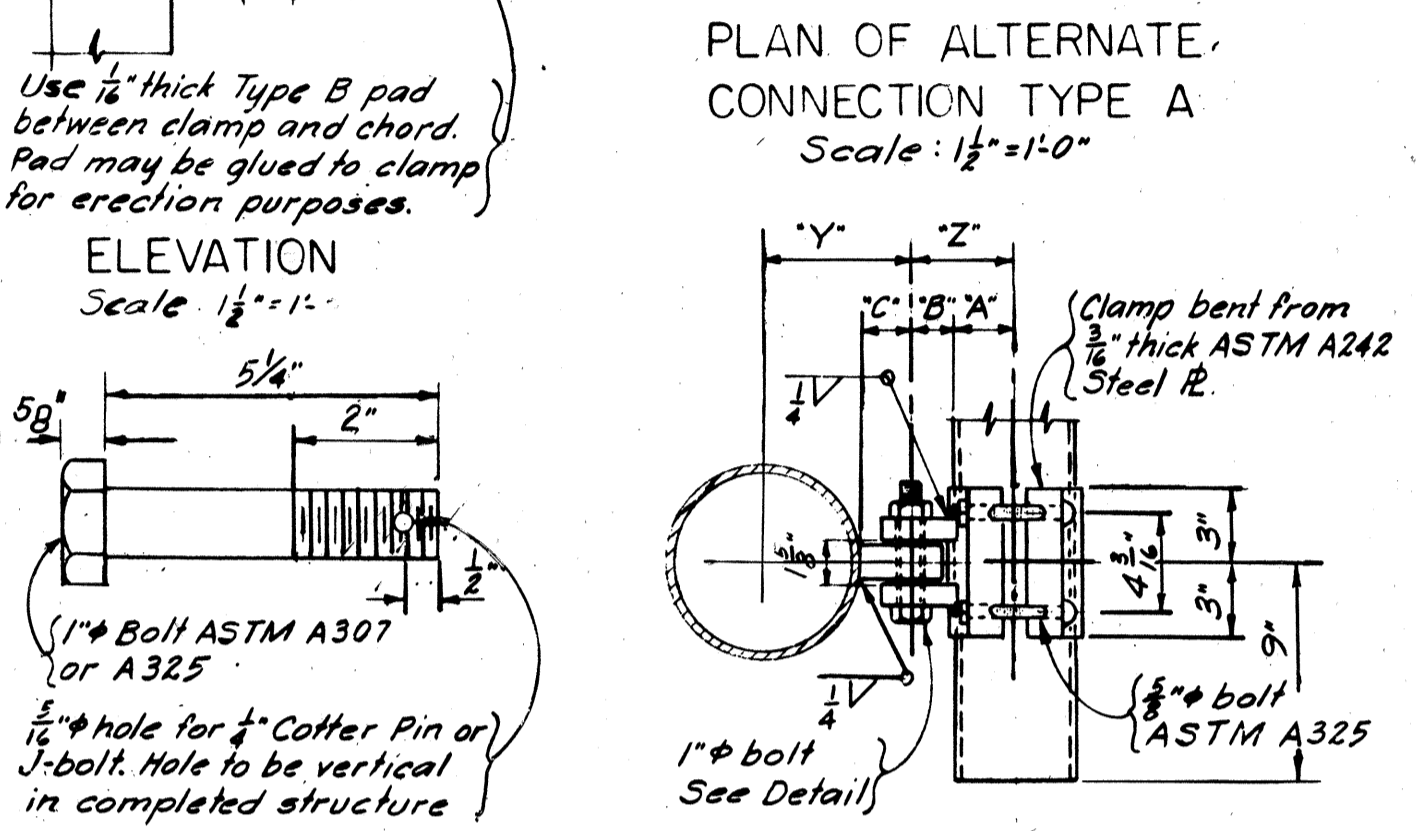
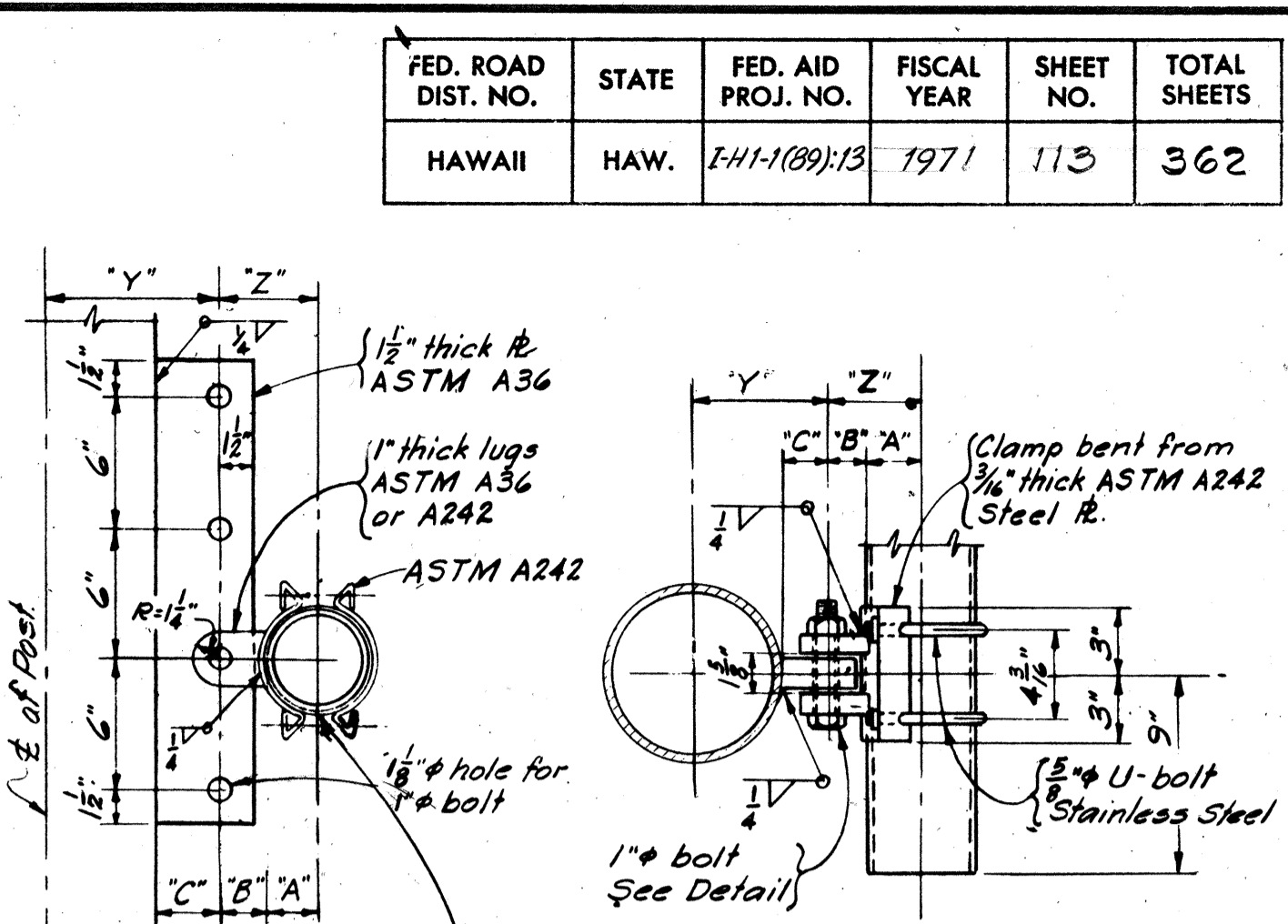
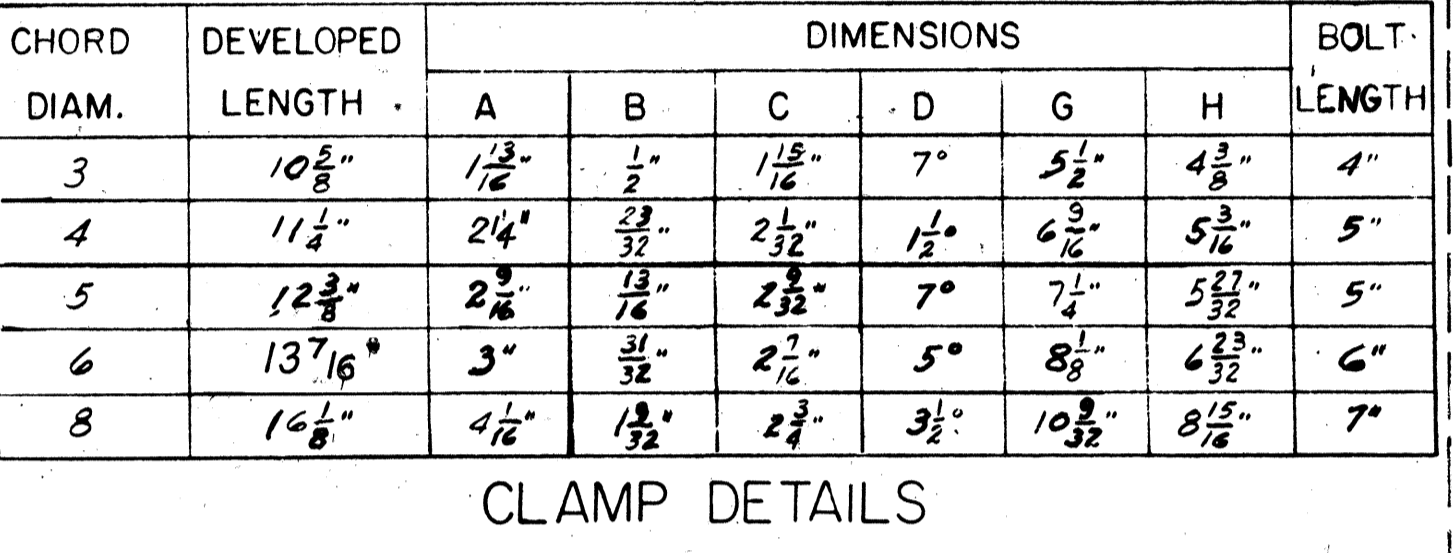
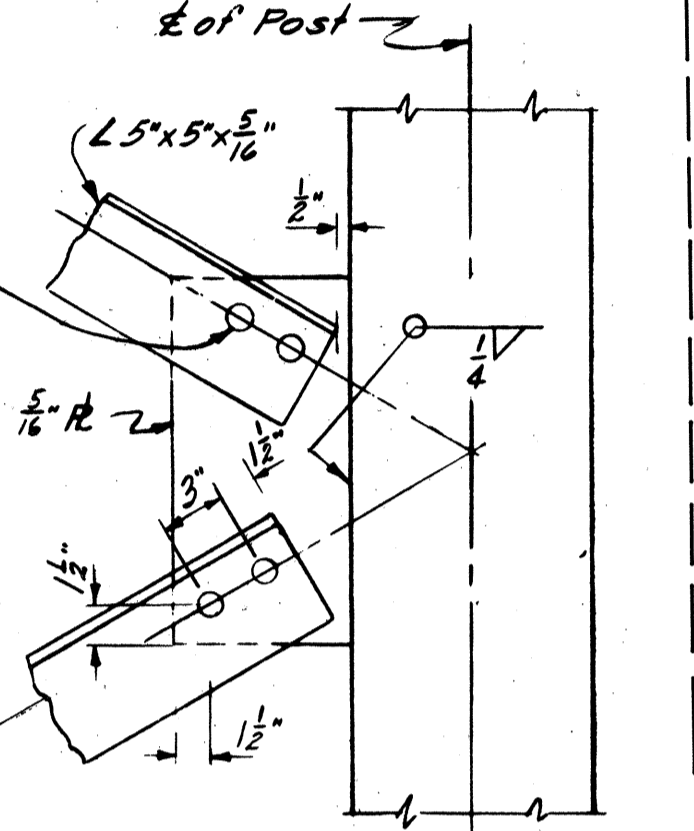
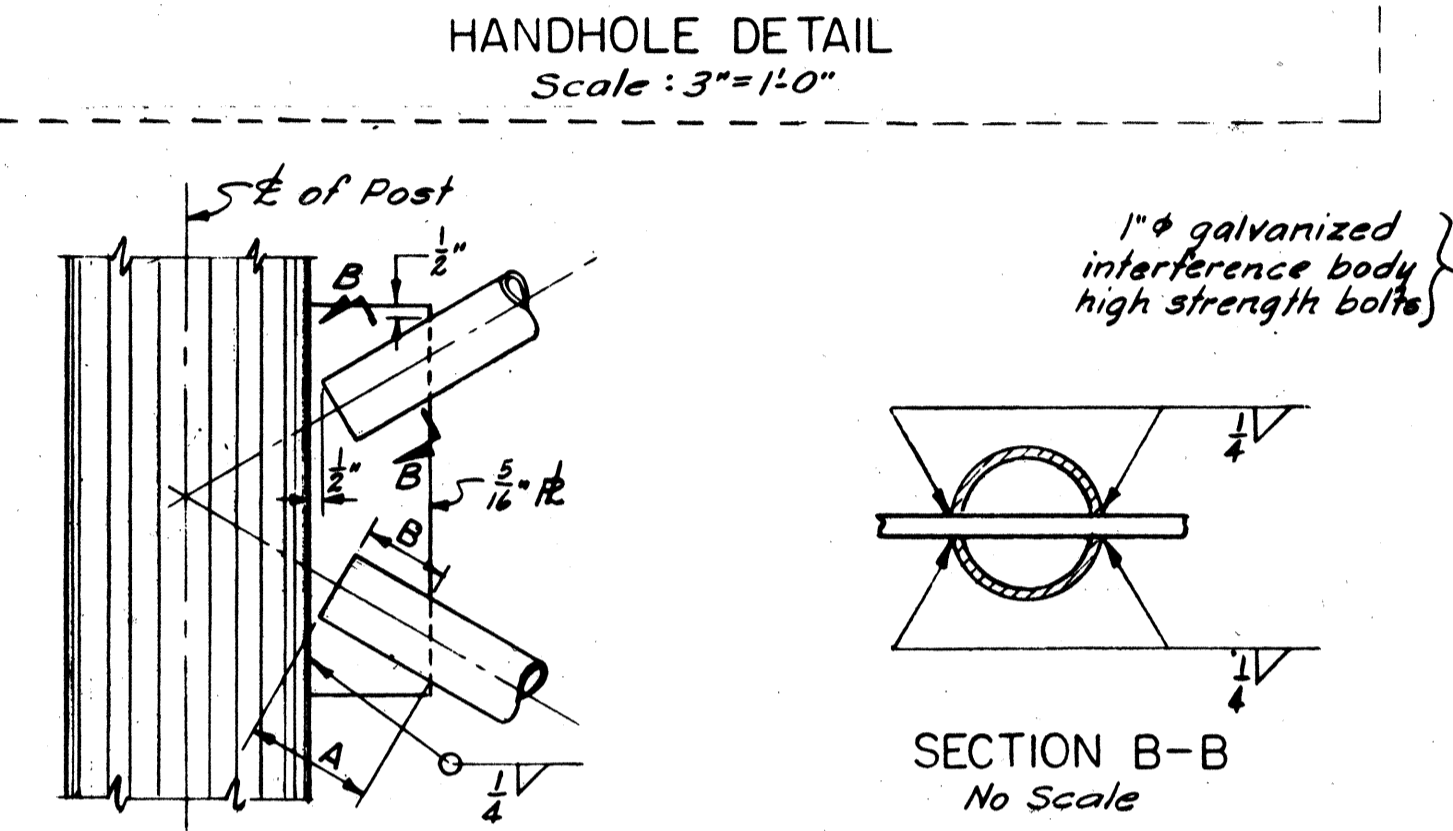
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)-13	1971	113	362



TYPE D BASES										
POST	BASE #	O. D.	BASE #	MIN. t	BOLT CIRCLE	HOLE DIA.	HOLE DIA.	a	b	WELD
6 Sch 40s	14.0"	6 3/8"	1 1/2"	1 1/2"	11 1/2"	1 3/8"	1 3/8"	1/2"	1/4"	1/4"
6 Sch 80x	14.0"	6 3/8"	1 3/8"	1 3/8"	11 1/2"	1 1/2"	1 1/2"	3/8"	3/8"	3/8"
8 Sch 20	17.0"	8 3/8"	1 1/4"	1 3/4"	13"	1 3/4"	2"	3/8"	1/4"	1/4"
8 Sch 30	17.0"	8 3/8"	1 1/4"	1 3/4"	13"	1 3/4"	2"	1/4"	1/4"	1/4"
8 Sch 40s	17.0"	8 3/8"	1 3/8"	1 3/8"	13"	1 3/4"	2"	1/2"	3/8"	3/8"
8 Sch 60	18.0"	8 3/8"	1 1/2"	1 4"	14"	2"	2 1/4"	3/8"	3/8"	3/8"
8 Sch 80x	18.0"	8 3/8"	1 1/4"	1 4"	14"	2"	2 1/4"	3/4"	1/2"	1/2"
10 Sch 20	20.0"	10 3/4"	1 3/8"	1 6"	16"	1 3/4"	2"	1/2"	1/4"	1/4"
10 Sch 30	20.0"	10 3/4"	1 3/8"	1 6"	16"	2"	2 1/4"	1/2"	1/4"	1/4"
10 Sch 40s	20.0"	10 3/4"	1 1/4"	1 6"	16"	2"	2 1/4"	5/8"	3/8"	3/8"
10 Sch 60x	21.0"	10 3/4"	1 3/8"	1 7"	17"	2 1/4"	2 1/4"	3/4"	1/2"	1/2"
10 Sch 80	21.0"	10 3/4"	2 1/4"	1 7"	17"	2 1/2"	2 3/4"	7/8"	1/2"	1/2"
12 Sch 20	24.0"	12 3/4"	1 1/2"	1 9"	19"	2"	2 1/4"	3/8"	1/4"	1/4"
12 Sch 30	24.0"	12 3/4"	1 1/4"	1 9"	19"	2 1/4"	2 1/4"	5/8"	3/8"	3/8"
12 Sch s	24.0"	12 3/4"	1 1/4"	1 9"	19"	2 1/4"	2 1/4"	5/8"	3/8"	3/8"
12 Sch 40	25.0"	12 3/4"	1 1/4"	2 0"	20"	2 1/4"	2 1/4"	5/8"	3/8"	3/8"
12 Sch x	25.0"	12 3/4"	2 1/8"	2 0"	20"	2 1/2"	2 3/4"	3/4"	1/2"	1/2"
12 Sch 60	25.0"	12 3/4"	2 1/4"	2 0"	20"	2 3/4"	3"	1/2"	1/4"	1/4"
12 Sch 80	25.0"	12 3/4"	2 1/2"	2 0"	20"	2 3/4"	3"	1"	5/8"	5/8"
14 Sch 10	25.0"	14"	1 3/4"	2 0"	20"	2"	2 1/4"	3/8"	1/4"	1/4"
14 Sch 20	25.0"	14"	1 3/4"	2 0"	20"	2 1/4"	2 1/4"	1/2"	3/8"	3/8"
14 Sch 30s	27.0"	14"	1 1/2"	2 2"	22"	2 1/4"	2 1/4"	5/8"	3/8"	3/8"
14 Sch 40	27.0"	14"	2 1/4"	2 2"	22"	2 1/2"	2 3/4"	3/4"	3/8"	3/8"
14 Sch 10	27.0"	16"	1 3/4"	2 2"	22"	2 1/4"	2 1/4"	3/8"	1/4"	1/4"
16 Sch 30s	29.0"	16"	2 1/8"	2 3 1/2"	23 1/2"	2 1/2"	2 3/4"	3/8"	3/8"	3/8"
16 Sch 40x	29.0"	16"	2 3/8"	2 3 1/2"	23 1/2"	3"	3 1/4"	7/8"	3/8"	3/8"
18 Sch 10	30.0"	18"	1 1/2"	2 4 1/2"	24 1/2"	2 1/4"	2 1/4"	1/2"	1/4"	1/4"
18 Sch 20	30.0"	18"	2 1/8"	2 4 1/2"	24 1/2"	2 3/4"	3"	1/2"	3/8"	3/8"
18 Sch x	32.0"	18"	2 3/8"	2 6"	26"	3"	3 1/4"	3/4"	1/2"	1/2"
20 Sch 30x	33.0"	20"	2 7/8"	2 8"	28"	3 1/4"	3 1/2"	3/4"	1/2"	1/2"



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



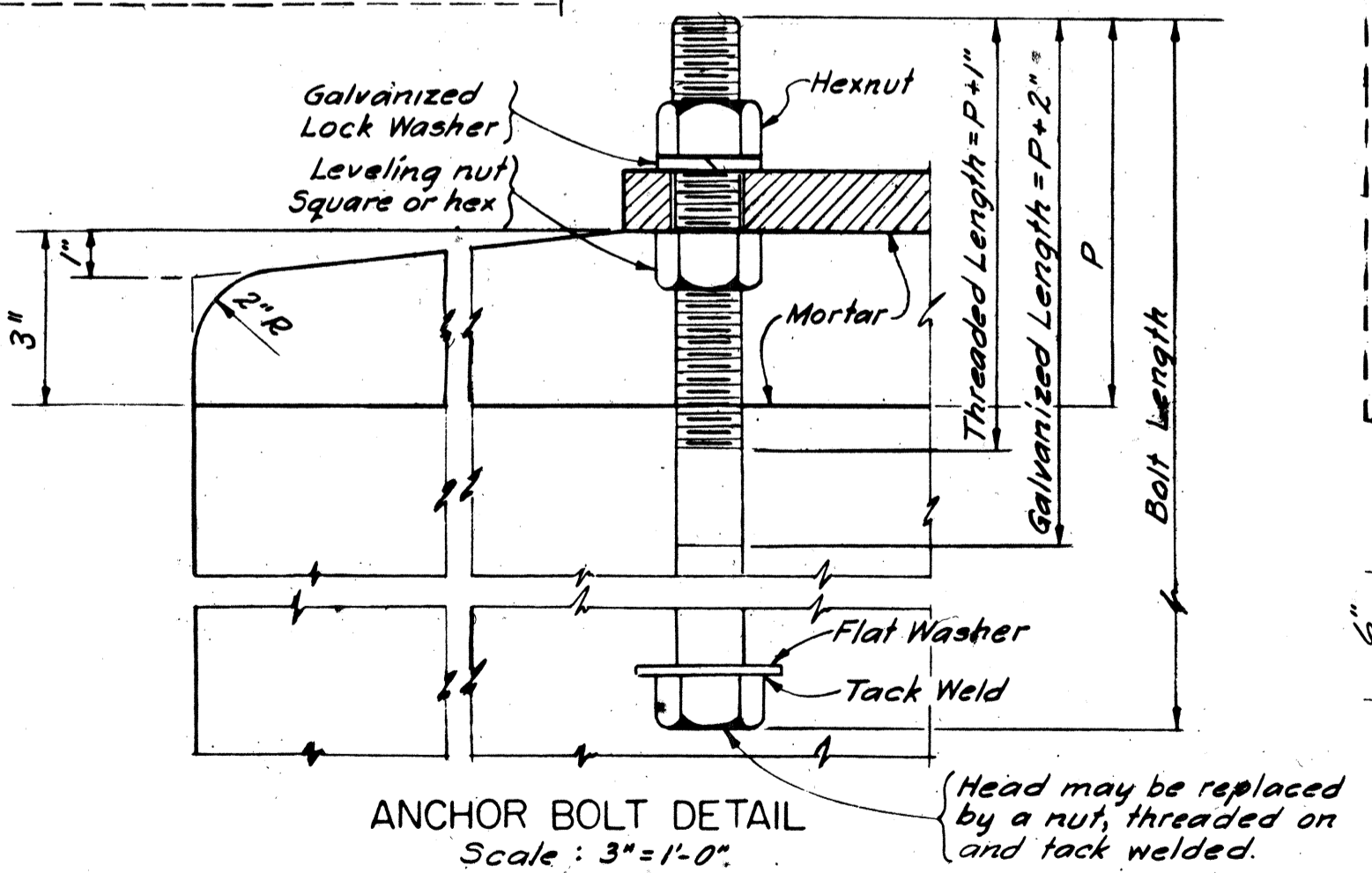
D	Y	Z	D	Chord Diam.	B	Post Diam.	C
4'-0"	6"	4 3/8"	4'-0"	4"	2 3/8"	6"	2 1/4"
6'-0"	7 1/8"	4 1/16"	6'-0"	4"	2 3/8"	8"	2 1/4"
8'-0"	8 3/8"	5 1/16"	6'-0"	5"	2 3/8"	10"	2 3/4"
			8'-0"	6"	2 1/4"	10"	2 3/4"
			8'-0"	8"	2 1/4"	12"	2 3/4"

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

Type 'A' Connection to be galvanized steel.

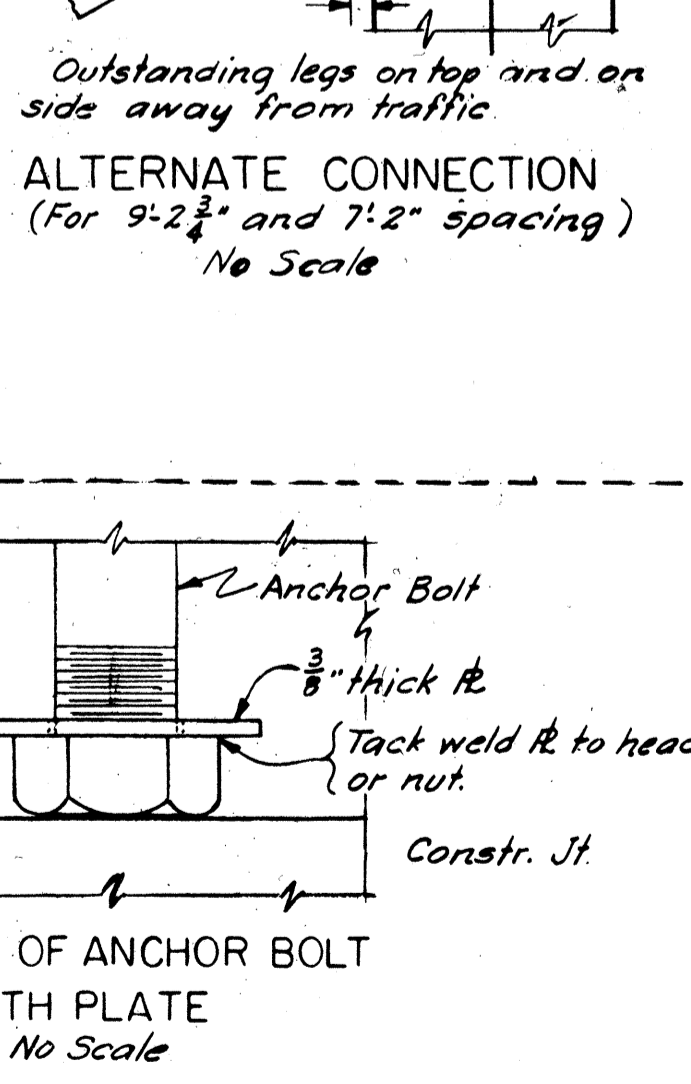
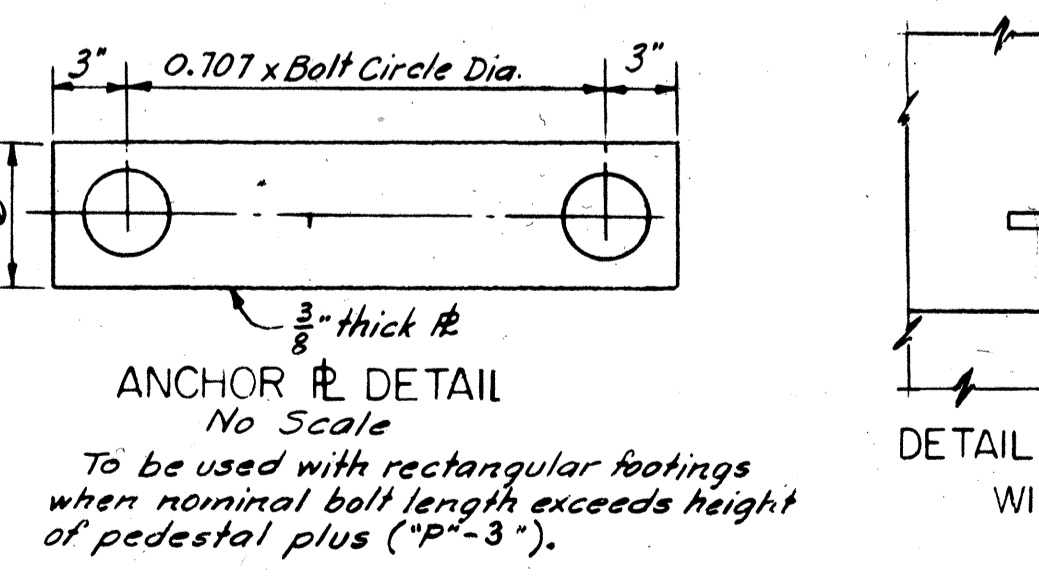
SURVEY PLATTED BY: _____
 DRAWN BY: _____
 DESIGNED BY: _____
 QUANTITIES BY: _____
 CHECKED BY: _____
 ORIGINAL PLAN: _____
 NOTE BOOK: _____
 NO. _____

ANCHOR BOLTS		
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"

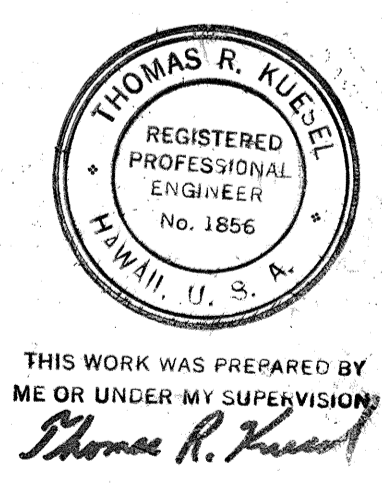


P	DIAGONALS **		WELD LENGTH A+B
	PIPE SIZE	ANGLE SIZE (Do not use)	
5'-2"	2 1/2" Sch. 40s	(Do not use)	6"
7'-2"	2 1/2" Sch. 40s	4 x 4 x 1/4"	6"
9'-2 1/2"	3" Sch. 40s	5 x 5 x 3/8"	7"

** 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.



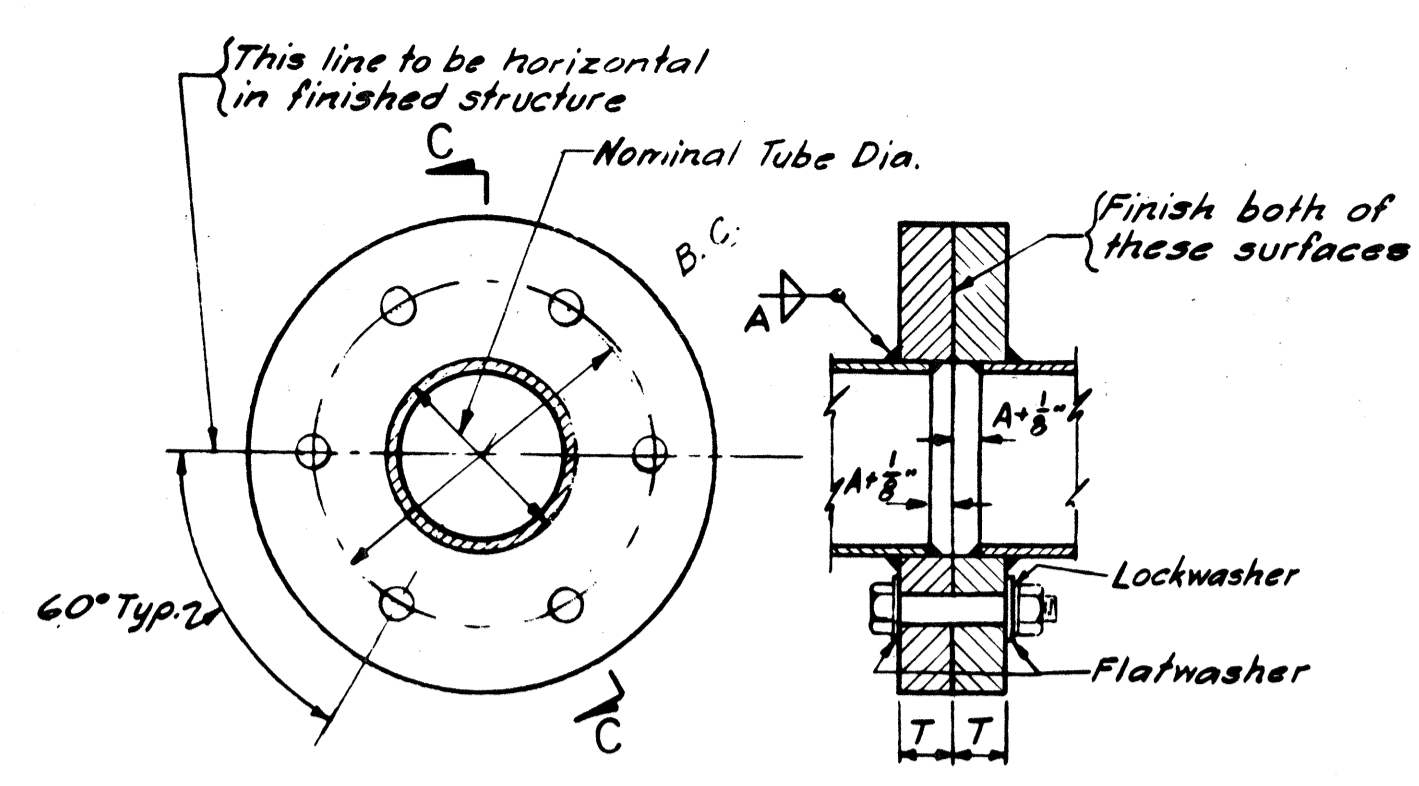
① When used with pedestals on rectangular footings these anchor bolts may be shortened if necessary so that the lower end rests on the top of the rectangular footing. 3/8" thick anchor plates will be required, see detail at right.



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

BASES & CONNECTION
 DETAILS
 INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(89)-13

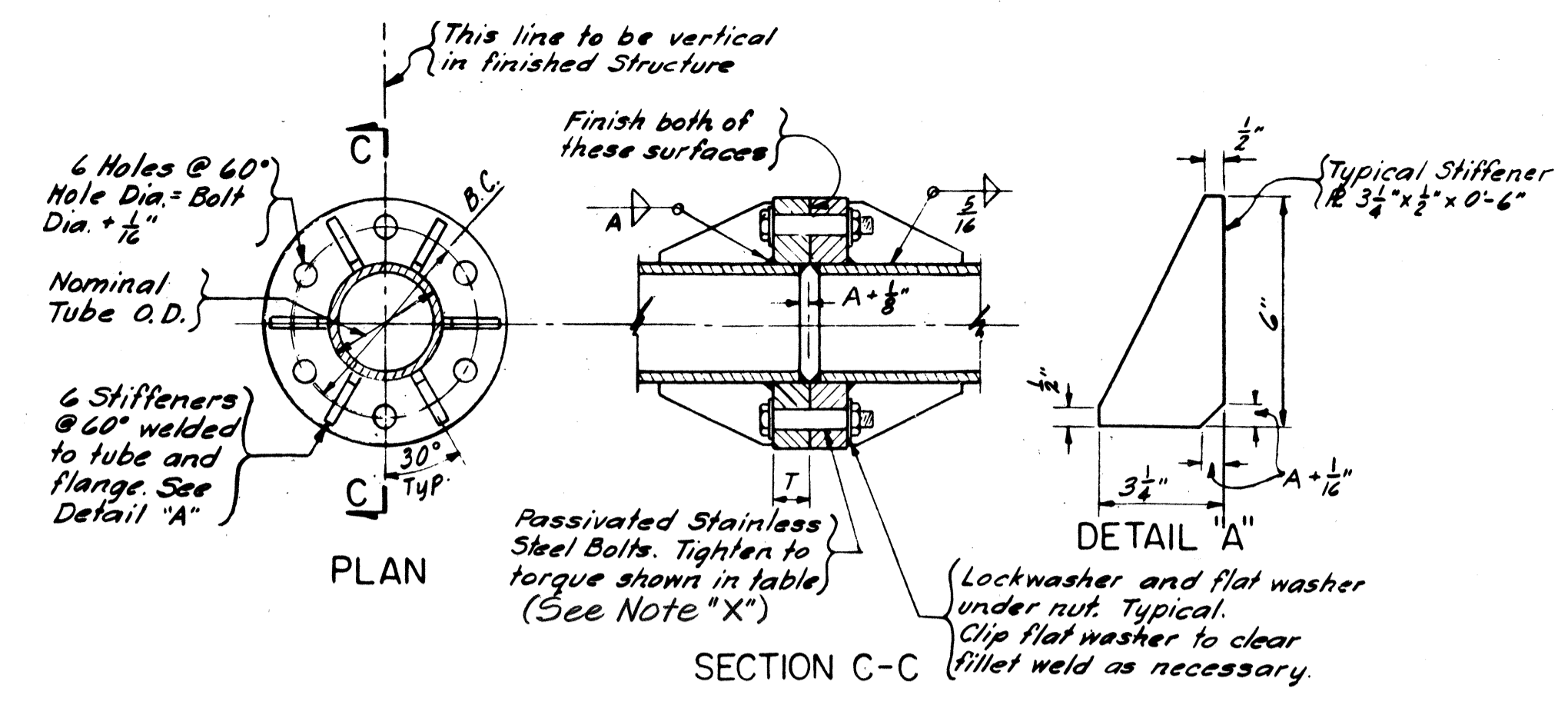
SCALE: AS SHOWN DATE: Oct. 30, 1970
 SHEET No. 16 OF 277 SHEETS



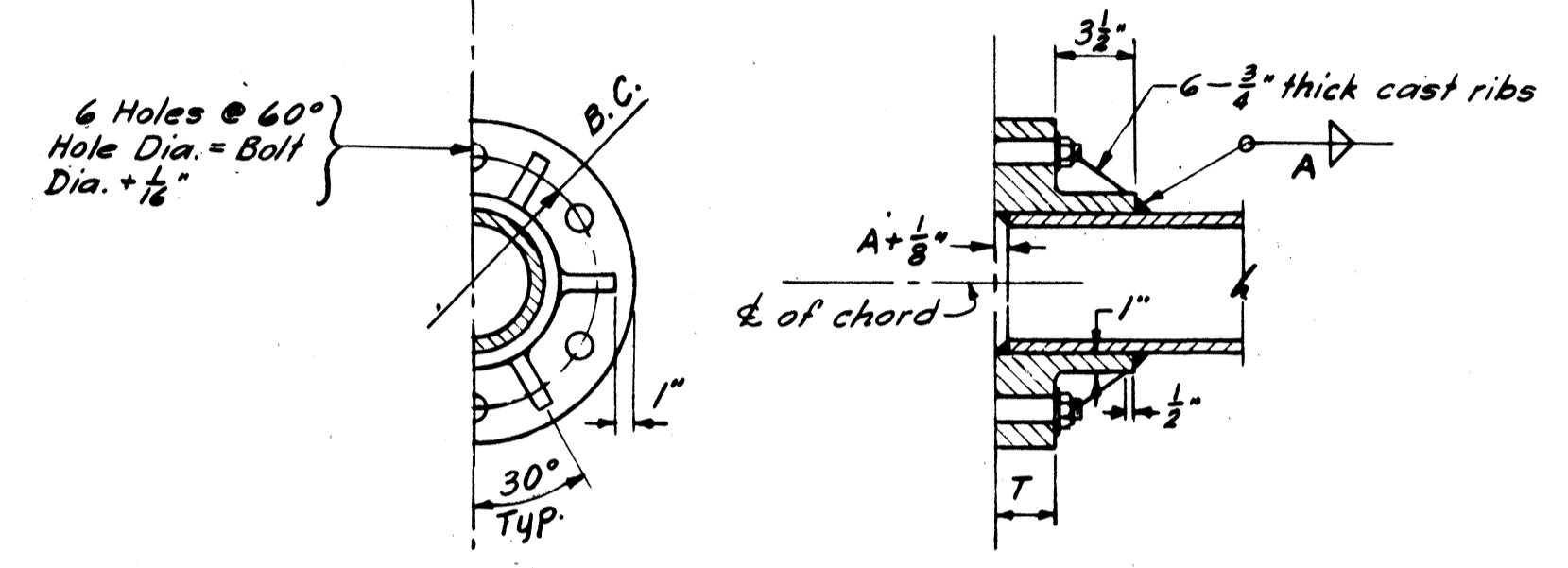
PLAN SECTION C-C
TYPE A FLANGE CONNECTION
 Scale: 3"=1'-0"
 All bolts are Passivated Stainless Steel
 (See Note "X")

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



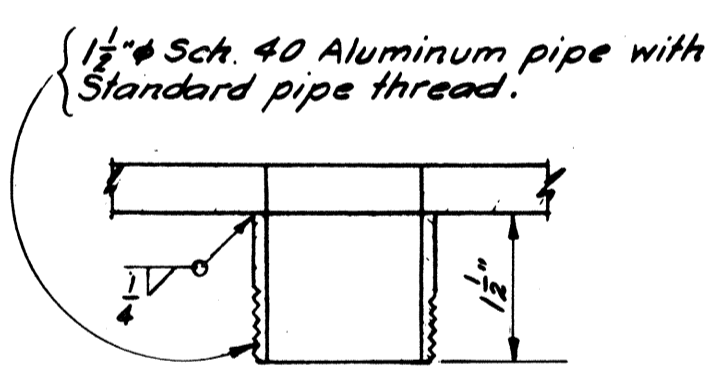
PLAN SECTION C-C DETAIL "A"
TYPE B FLANGE CONNECTION
 FABRICATED
 Not to Scale



PLAN SECTION C-C
TYPE B FLANGE CONNECTION
 CAST
 Not to Scale

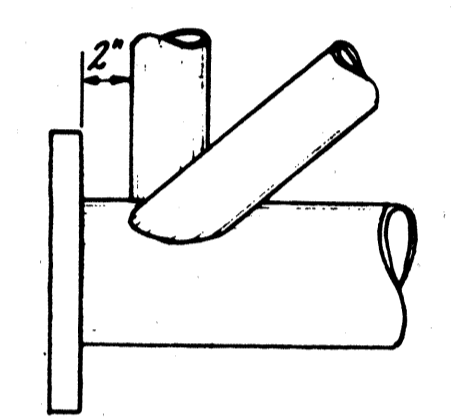
NOTE "X"

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 minimum 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 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.

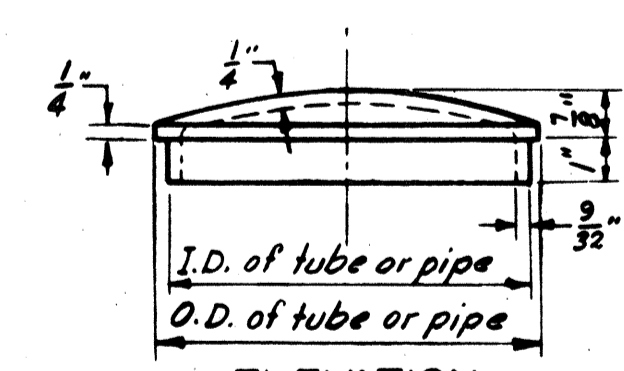


WIRE INLET DETAIL FOR TRUSS OR CHORD
 Scale: Half Size

	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 1/4"	3/4"	9"	75
	8" x 1/2"	3/8"	13 1/2"	1 1/4"	7/8"	11"	75
	8" x 5/8"	1/2"	13 1/2"	1 1/4"	1"	11"	100
CAST FLANGE	8" x 3/4"	5/8"	13 1/2"	1 1/4"	1"	11"	150
	5" x 1/2"	1/2"	13"	1 1/4"	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 5/8"	3/8"	16"	1 1/2"	1"	13"	150	
8" x 3/4"	3/8"	16"	1 1/2"	1"	13"	200	



TYPICAL CONNECTION AT FLANGE
 No Scale



ELEVATION CAP FOR ARMS
 No Scale



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 Thomas R. Kuehl

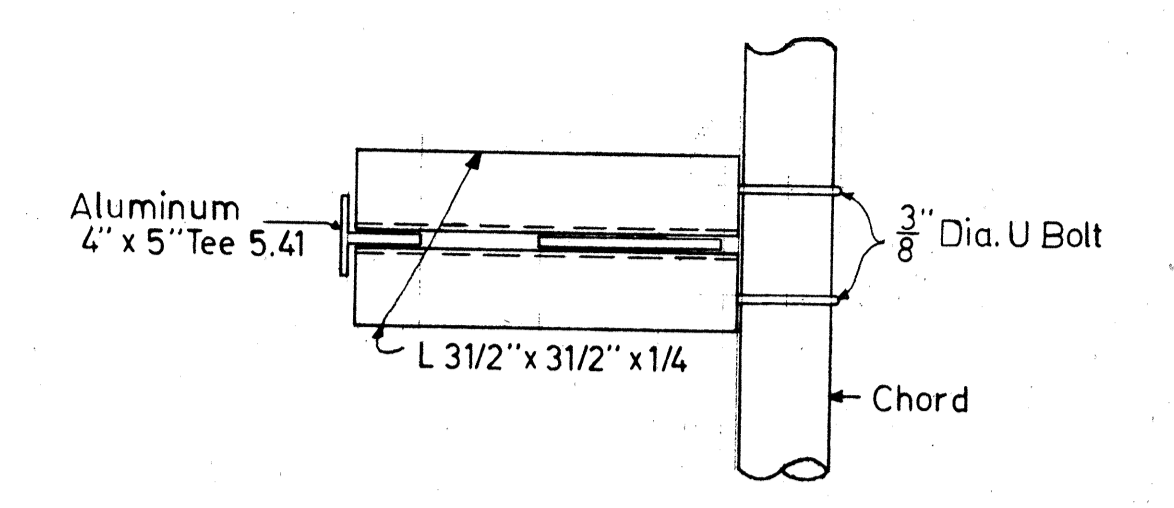
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

FLANGE CONNECTIONS
 INTERSTATE ROUTE H-1
 PROJECT NO. I-HI-1(89)13

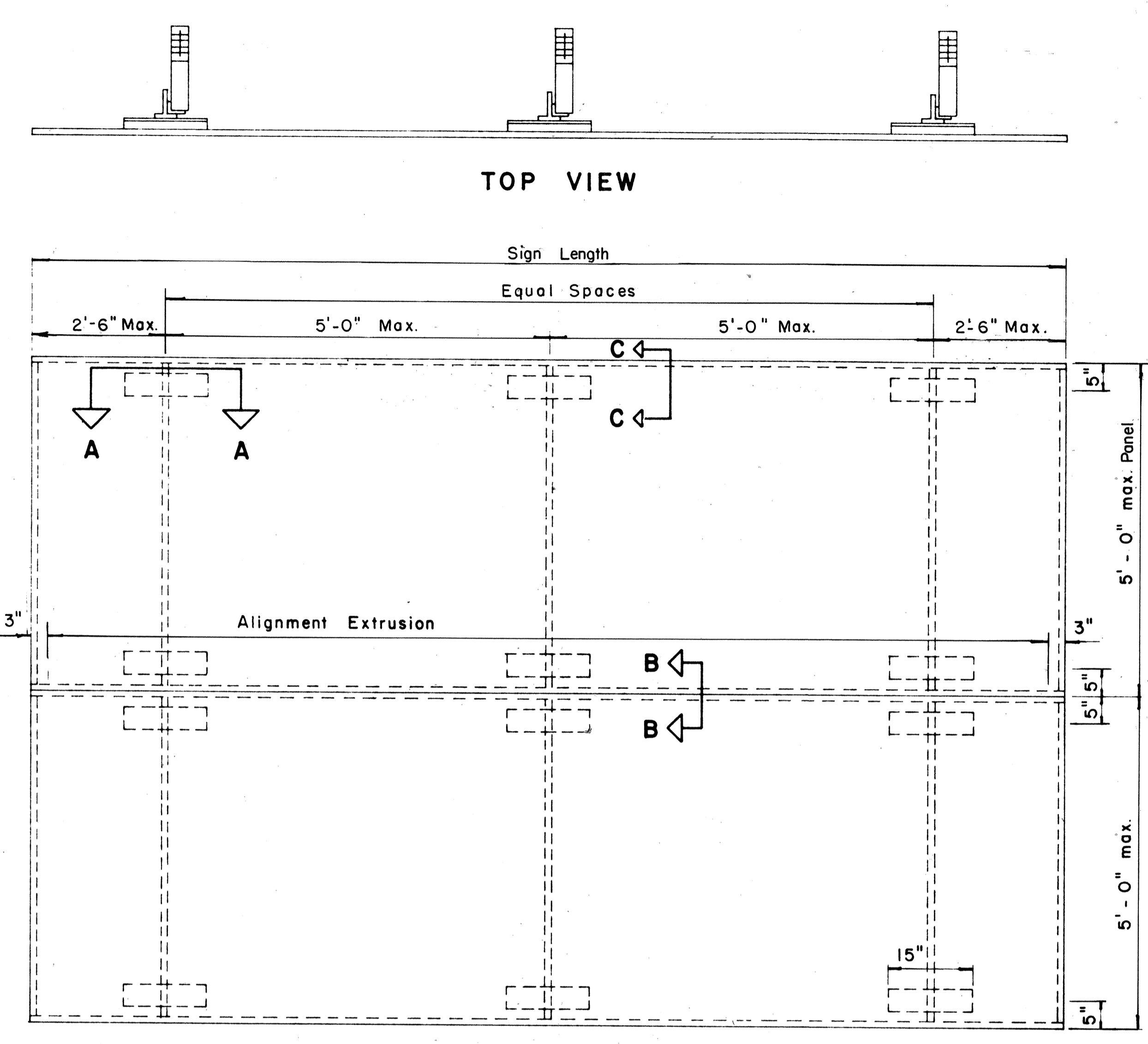
SCALE: AS SHOWN DATE: Oct. 30, 1970
 SHEET No. 177 OF 277 SHEETS

DATE: 7/10/70
 CHECKED BY: [Signature]
 DESIGNED BY: [Signature]
 DRAWN BY: [Signature]
 ORIGINAL PLAN: [Signature]
 NOTE BOOK: [Signature]

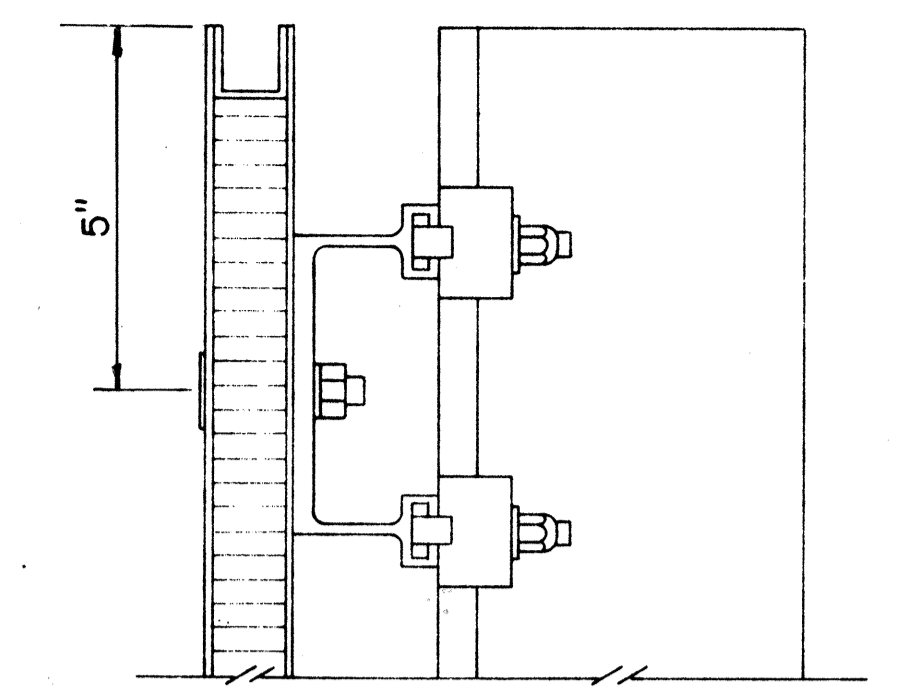
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FHW-109-13	1971	115	362



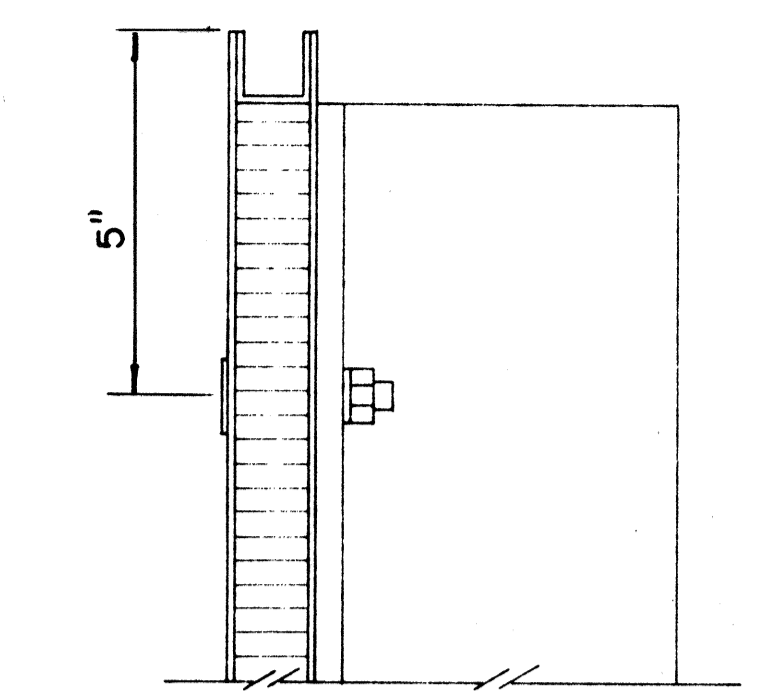
SECTION D-D
Scale: 1" = 1' - 0"



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

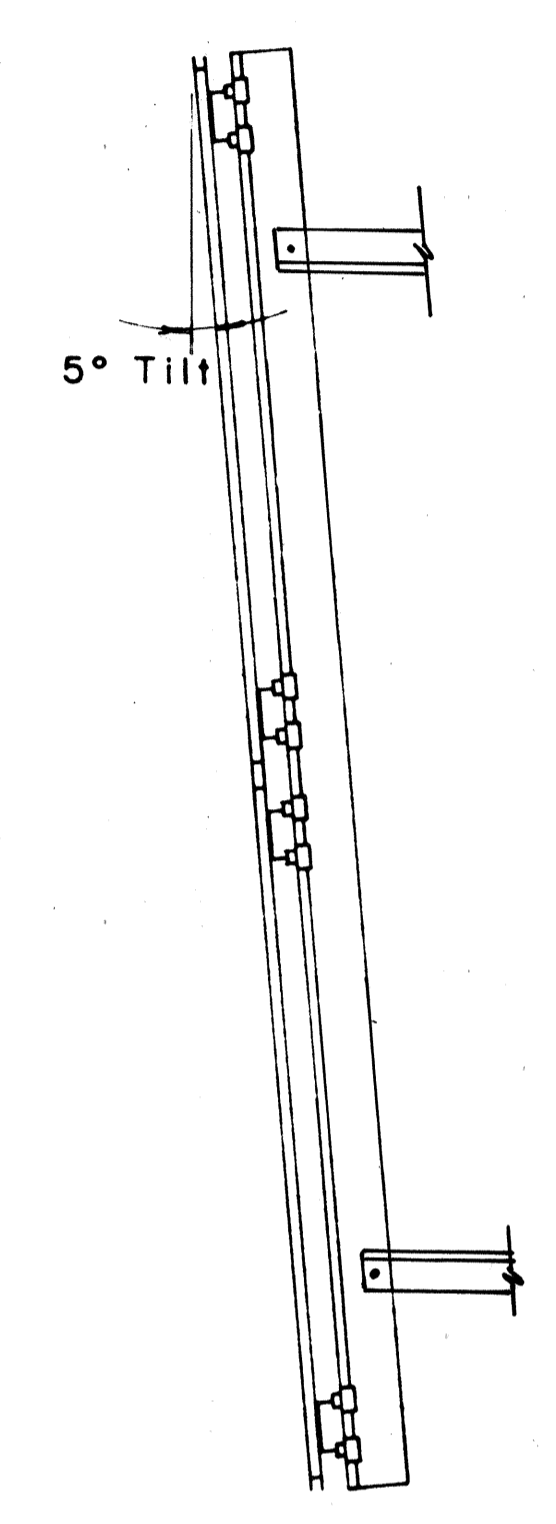


SECTION "C-C"
Scale: $\frac{3}{8}$ " = 1"

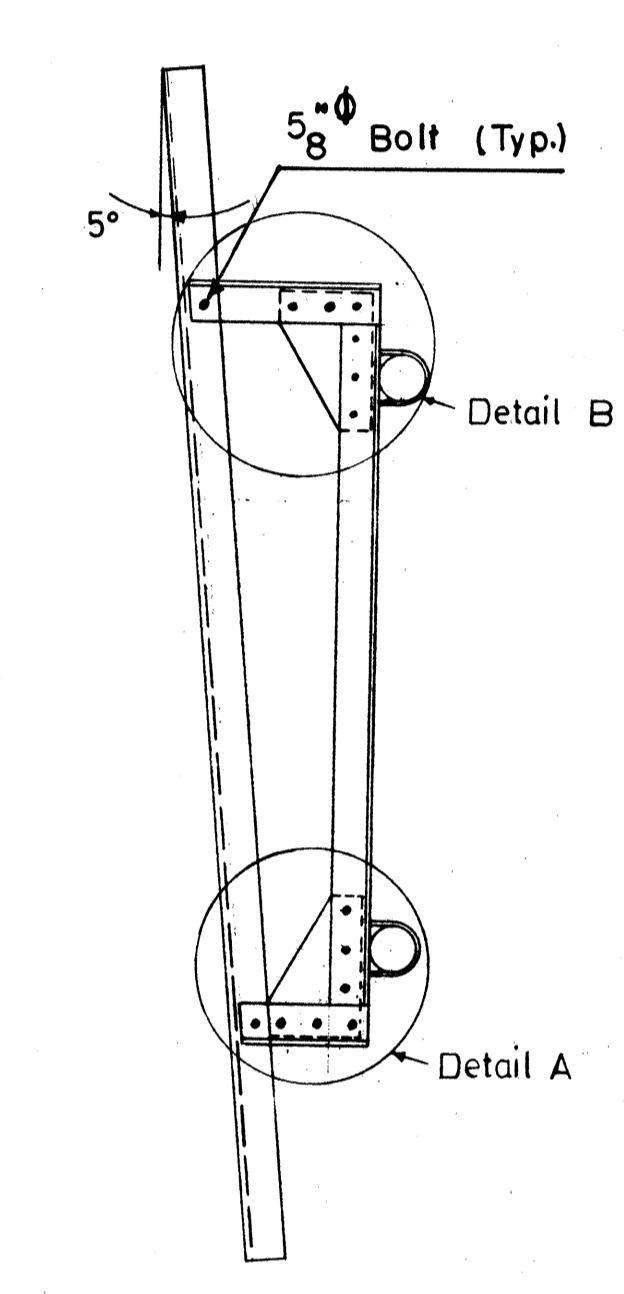


SECTION "C-C" (Alternate)
Scale: $\frac{3}{8}$ " = 1"

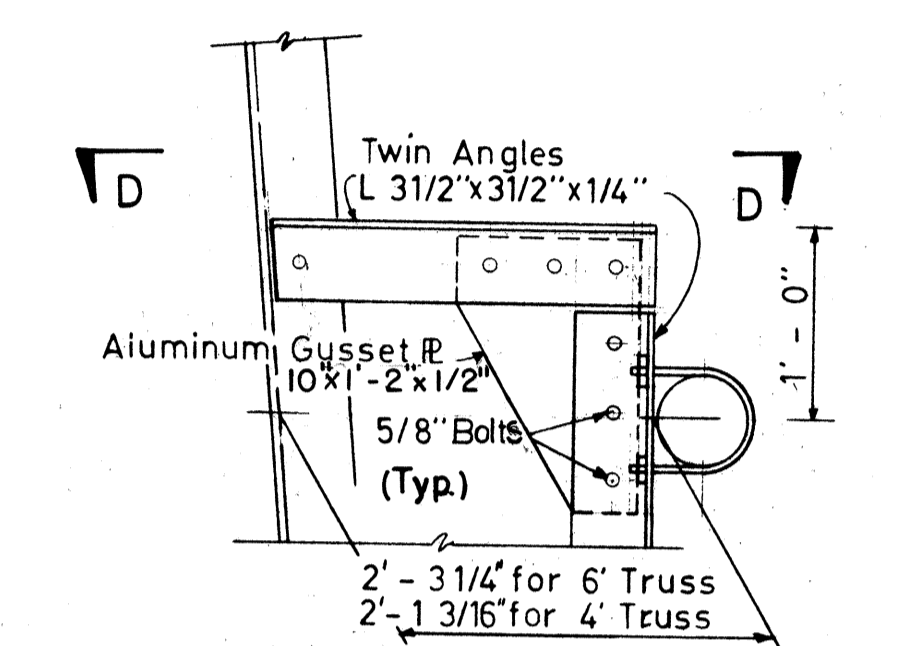
NOTE: $\frac{3}{8}$ " Dia. "U" Bolts to be Stainless Steel with hex nuts and washers.
 $\frac{5}{8}$ " Bolts to be Stainless Steel with Nuts and Lock Washers.



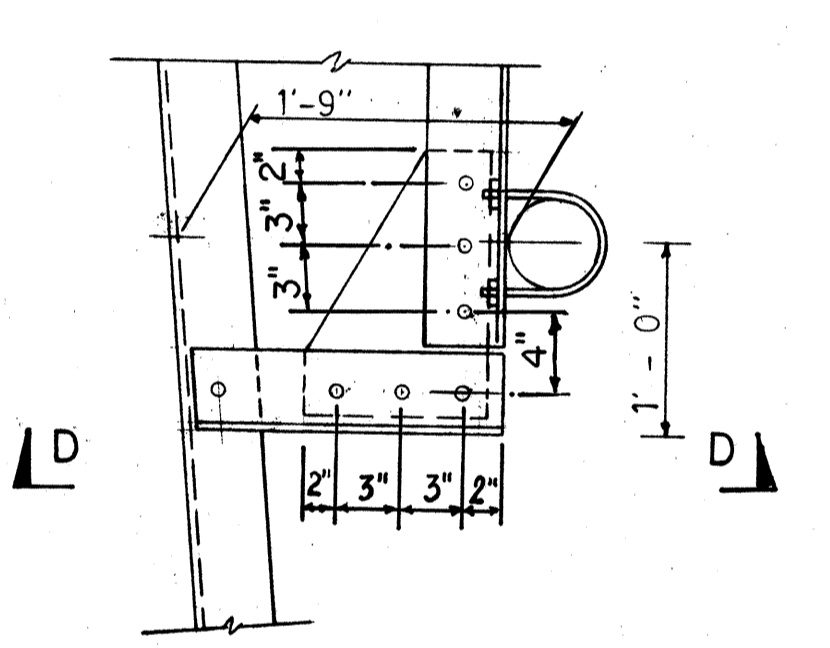
SIDE VIEW



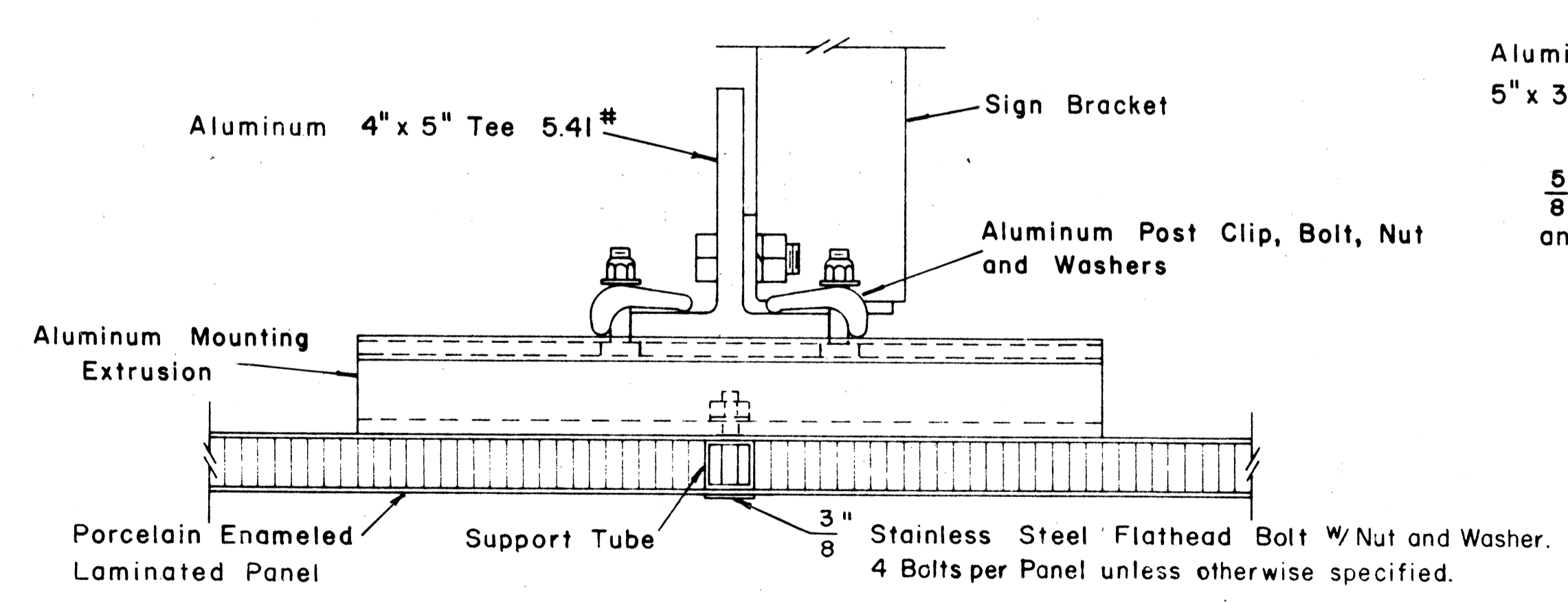
FRONT MOUNTING
Scale: $\frac{1}{2}$ " = 1' - 0"



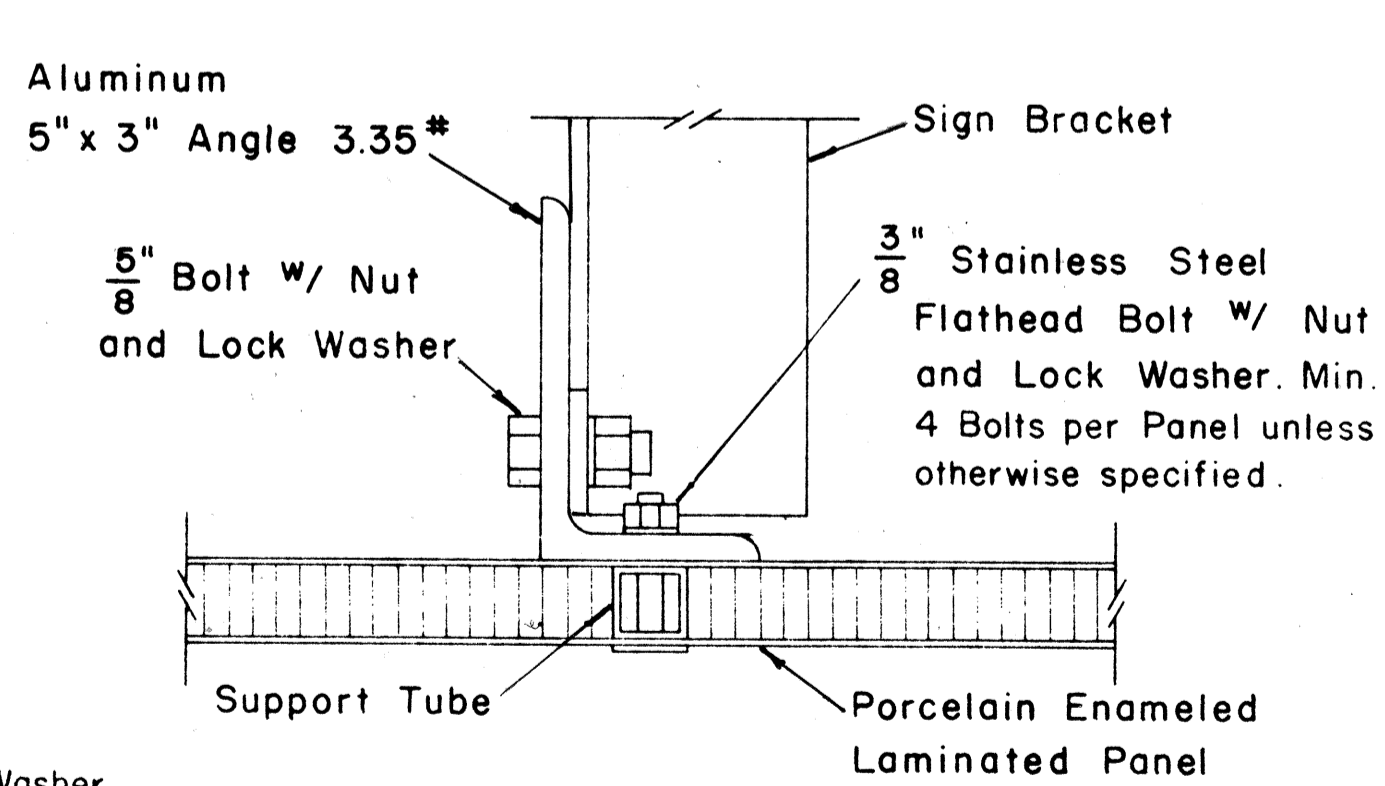
DETAIL B
Not to Scale



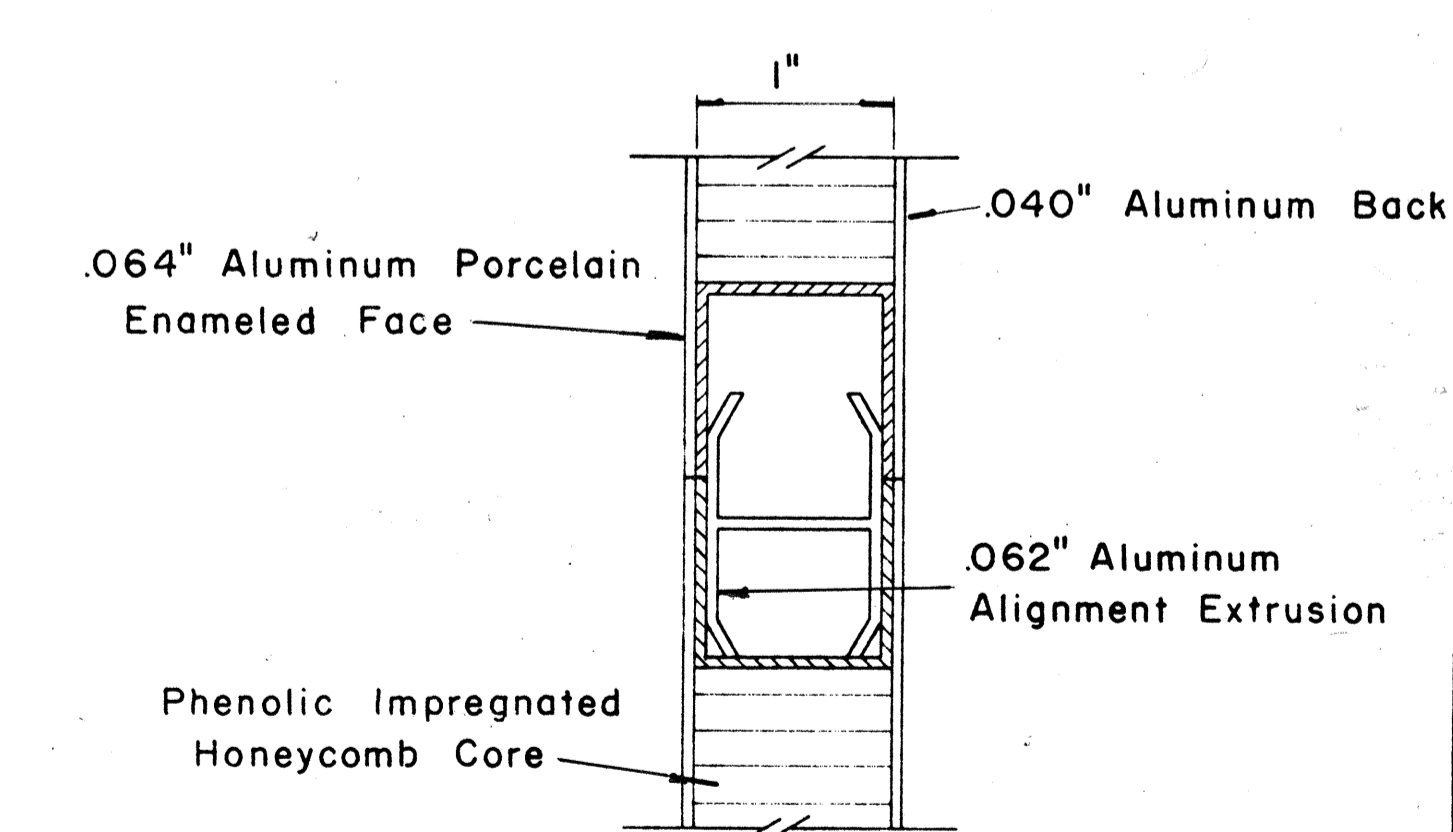
DETAIL A
Not to Scale



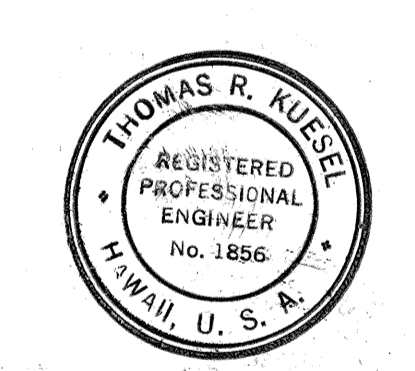
SECTION "A-A"
Scale: $\frac{3}{8}$ " = 1"



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



CLOSURE DETAIL SECTION "B-B"
FULL SCALE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
Thomas R. Kuehl

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(OVERHEAD)

Scale: As Shown DATE: Oct. 30, 1970

SHEET No. 18T OF 27T SHEETS

91 91 92

SURVEY PLOTTED BY: DATE: 7/19/70
 DRAWN BY: DESIGNED BY: L. S. ...
 QUANTITIES BY: CHECKED BY: ...
 ORIGINAL PLAN: NO. ...
 NOTE BOOK: ...
 No. ...

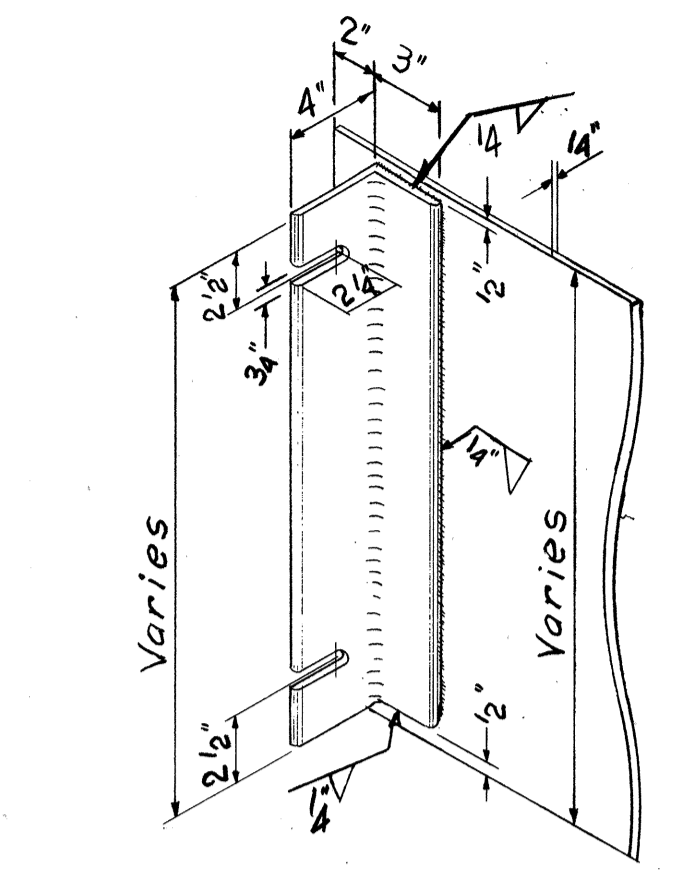
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(89)13	1971	116	362

FOUNDATION SCHEDULE						
Sign No	FTG	Rectangular		Pedestal Vertical Reinf.	ELEV. A	ELEV. B
		Size (W×T×L)	Fig. on Earth Long Reinf. Top & Bottom			
E14	L	5'-0"×1'-6"×11'-8"	5-#5 Bars @ 12"	8-#5 Bars	76.36	69.5
E14	R	5'-0"×1'-6"×9'-3"			79.70	73.5
E17	L	5'-0"×1'-6"×13'-8"			187.95	181.5
E17	R	5'-0"×1'-6"×13'-8"			184.45	178.0
E18	L	5'-0"×1'-6"×10'-0"			134.03	127.5
E18	R	5'-0"×1'-6"×10'-0"			132.44	126.0
E27	L	5'-0"×1'-6"×11'-8"			90.6	84.5
E27	R	5'-0"×1'-6"×11'-8"			90.6	84.5
E28	L	5'-0"×1'-6"×9'-3"			76.4	69.0
E28	R	5'-0"×1'-6"×9'-3"	5-#5 bars @ 12"	8-#5 Bars	71.40	65.0
E29	L	6'-0"×2'-0"×15'-2"	6-#5 bars @ 12"	12-#5 Bars	88.72	82.0
E29	R	6'-0"×1'-6"×13'-8"	5-#5 bars @ 12"	8-#5 Bars	88.8	82.5

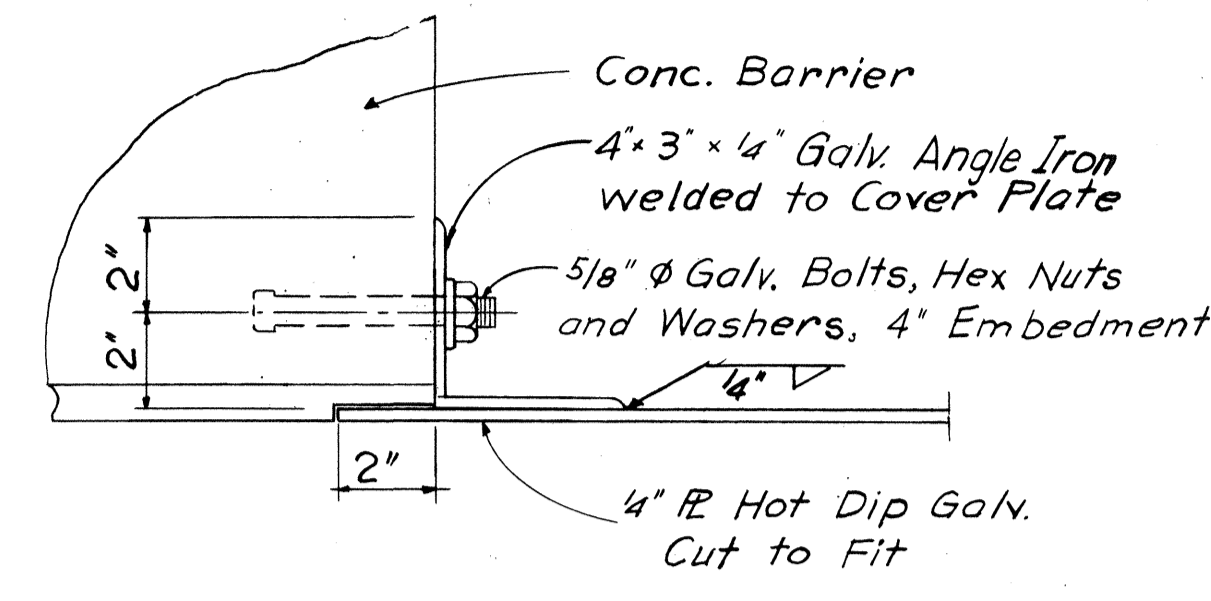
N.I.C.

N.I.C.

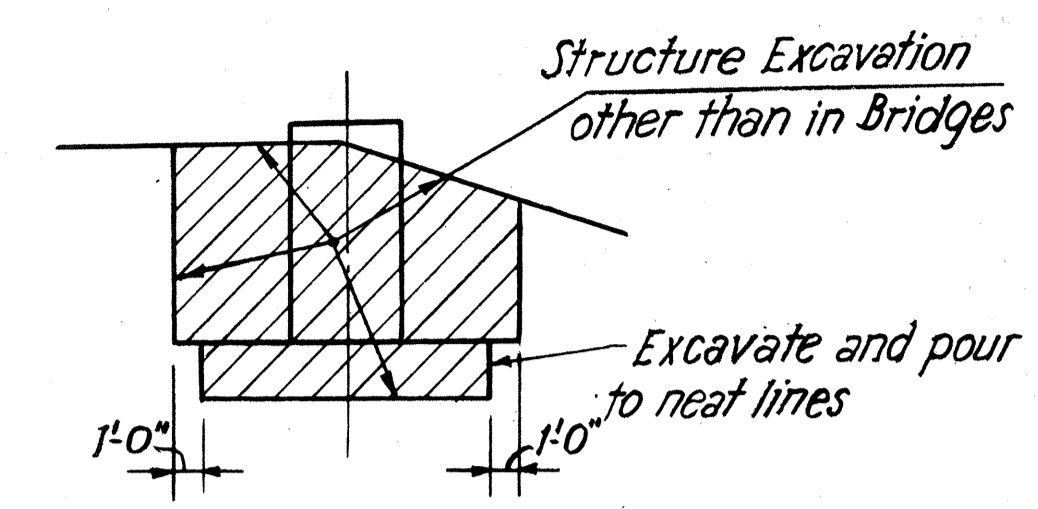
L & R refer to left and right footing when viewing signs as viewed by approaching traffic.
For Sign No. E15 see Bracket on Bridge Structure # 4.



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

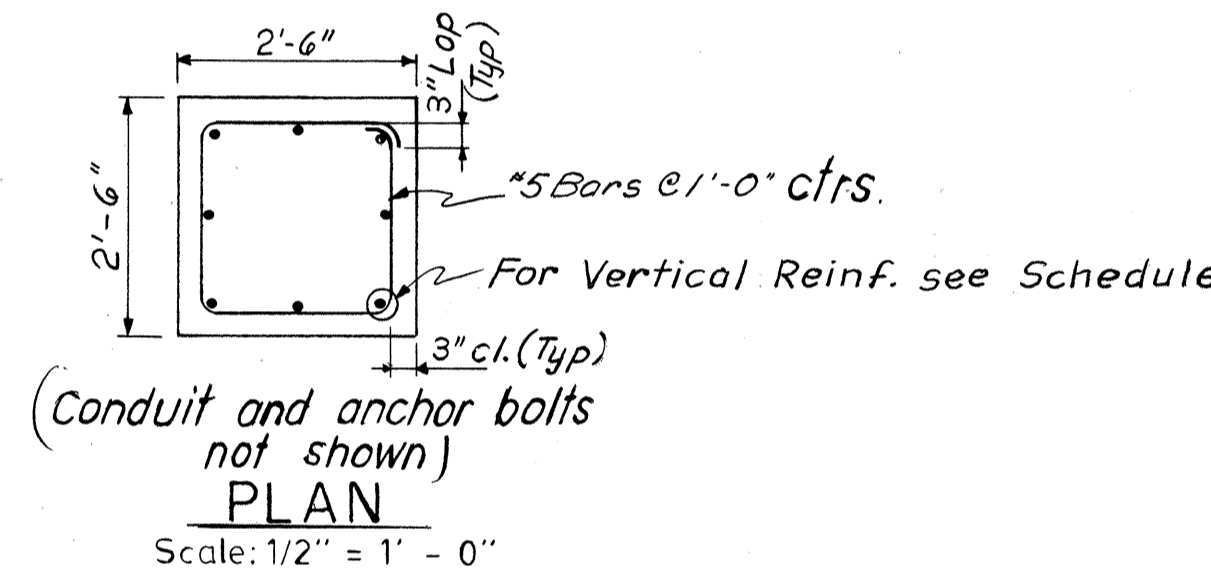


COVER PLATE ANCHOR DETAIL
Scale: 3" = 1' - 0"

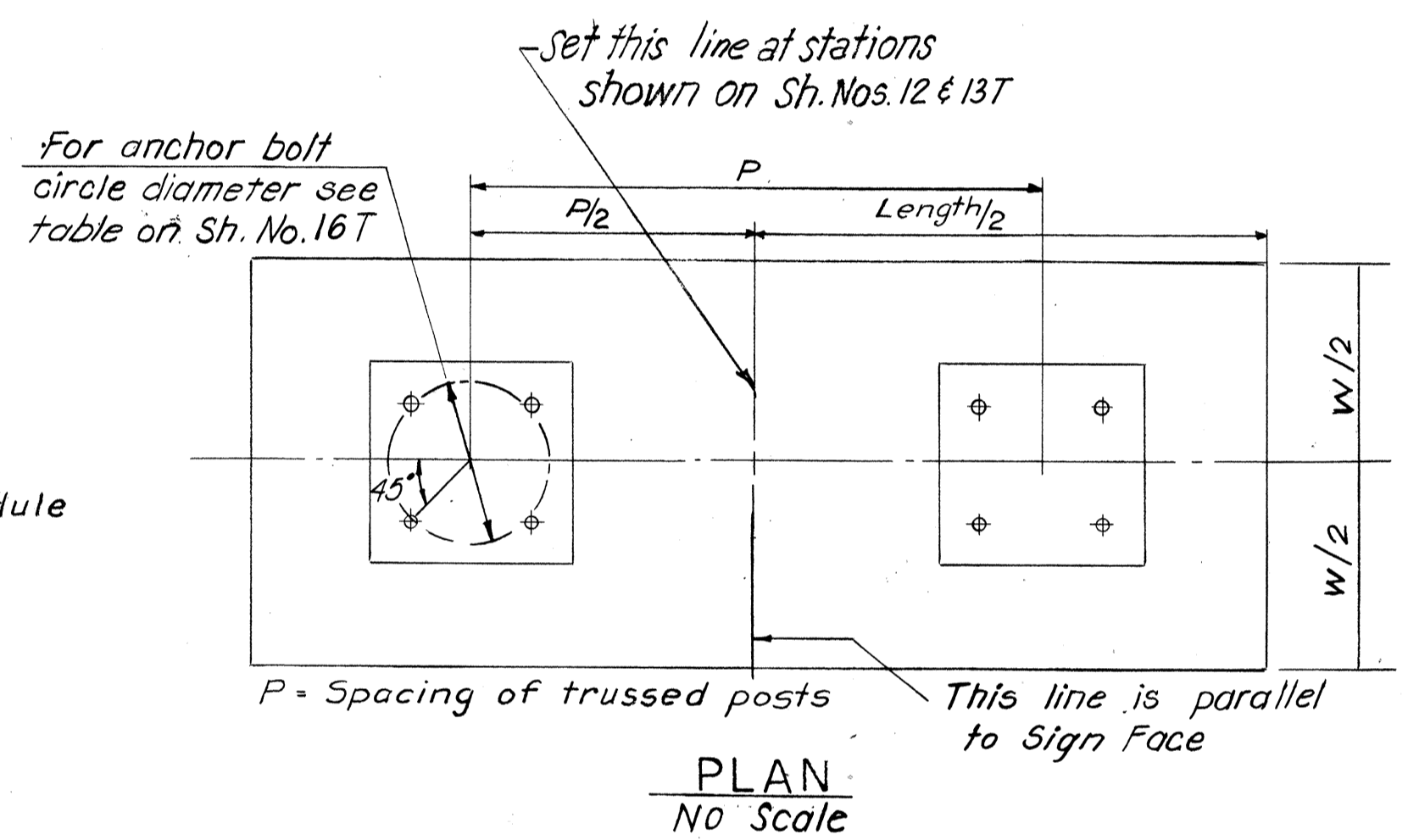


EXCAVATION PAYMENT LIMITS

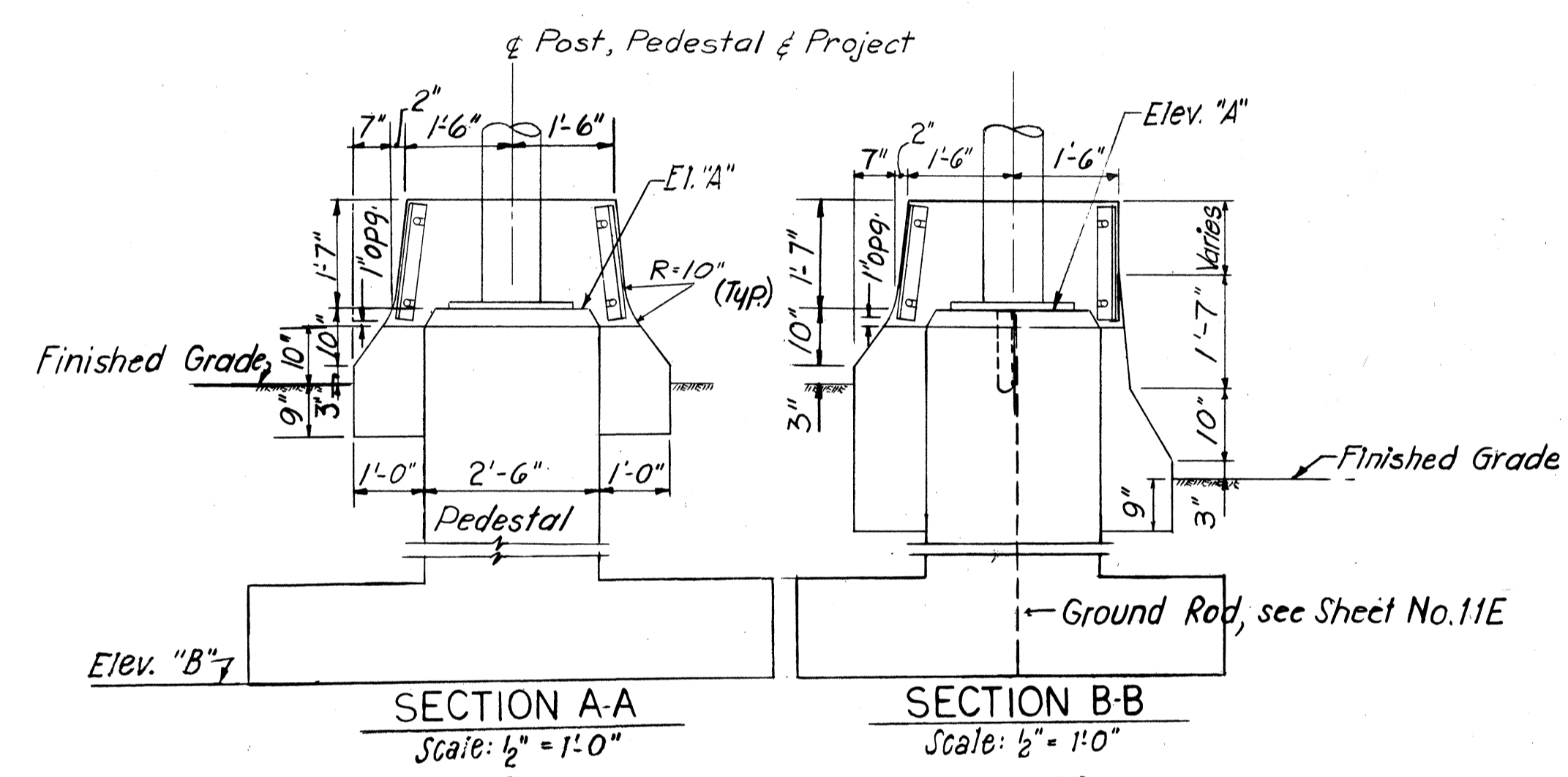
Note:
Upper limit for payment of struct. excav. shall be the lower of existing ground, finished ground, or subgrade of roadway.



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

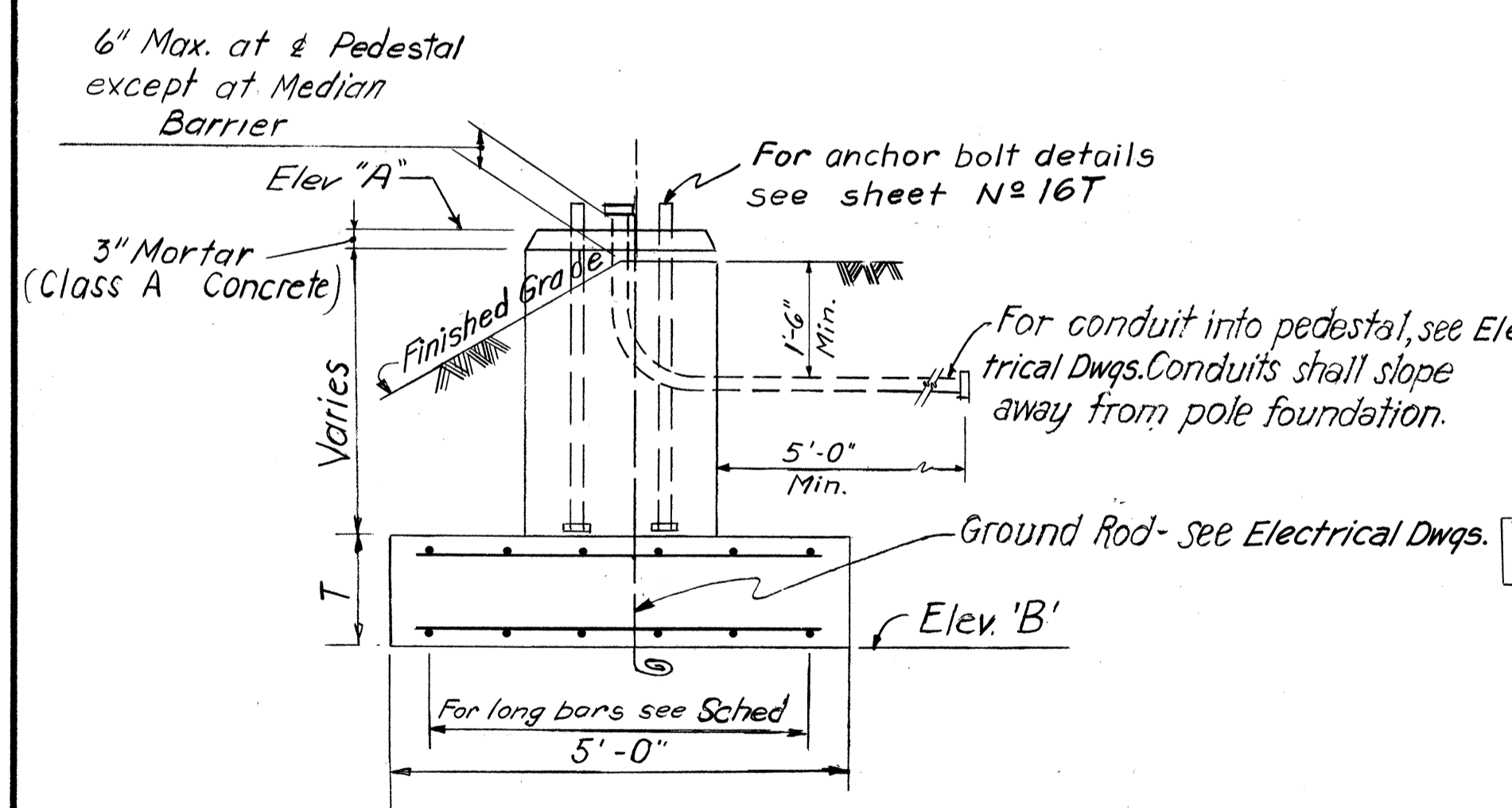


PLAN
No Scale

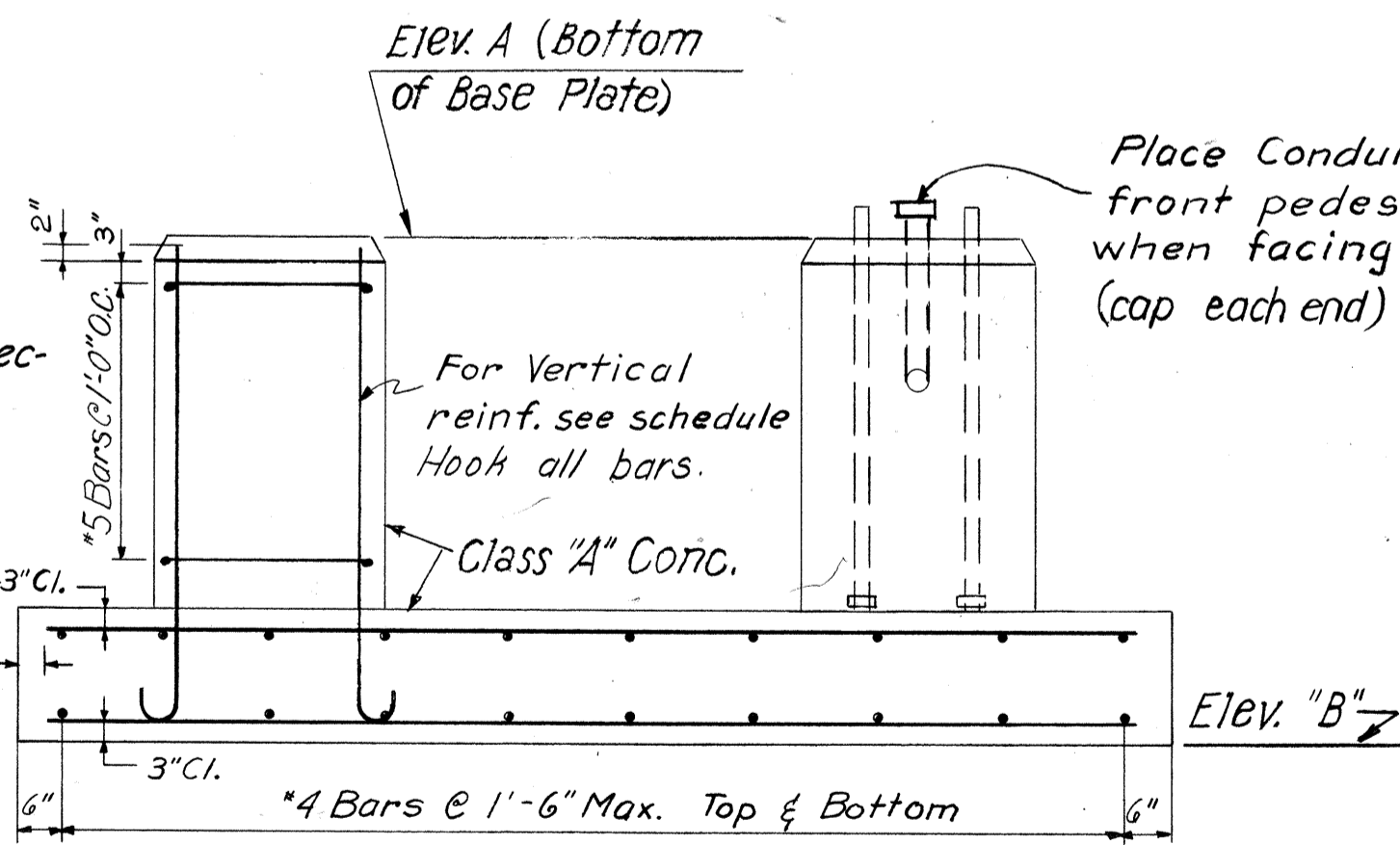


SECTION A-A
Scale: 1/2" = 1' - 0"

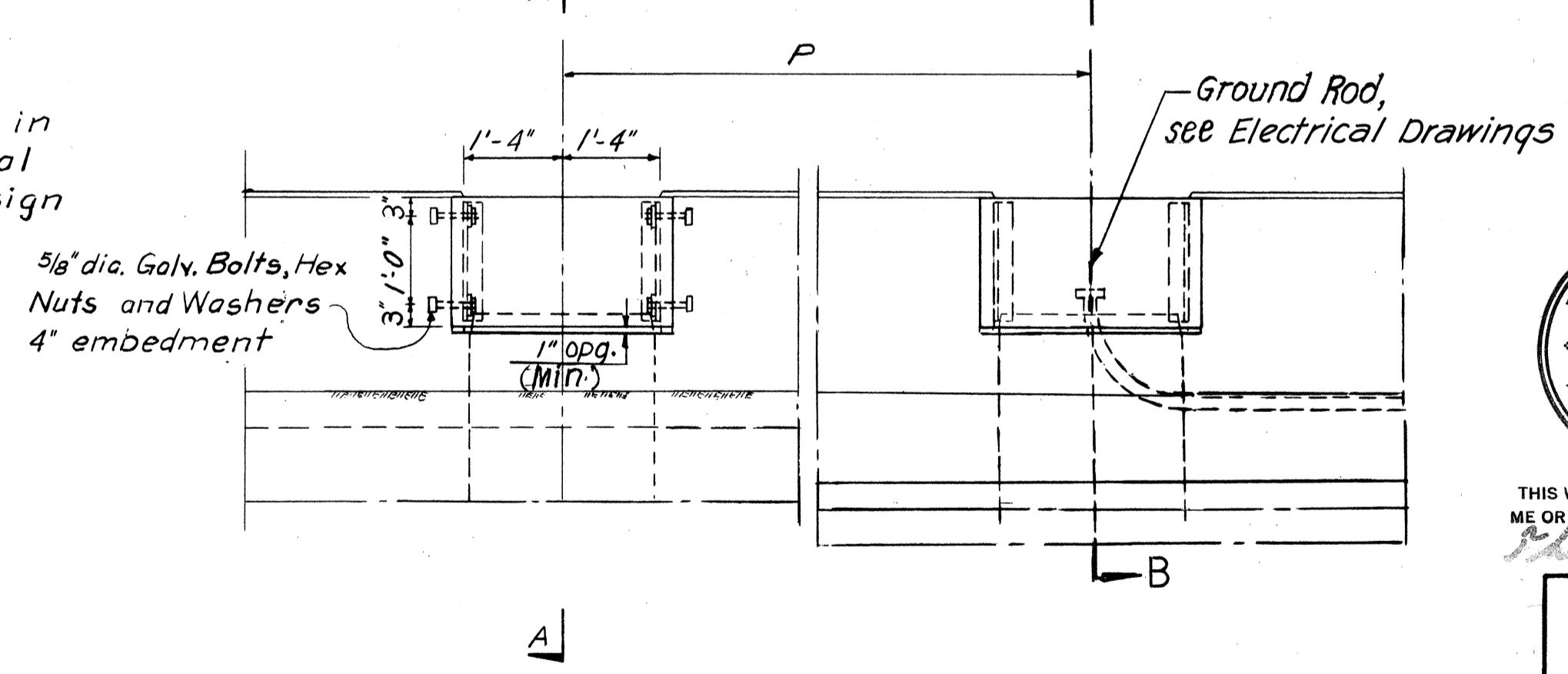
SECTION B-B
Scale: 1/2" = 1' - 0"



END ELEVATION
No Scale

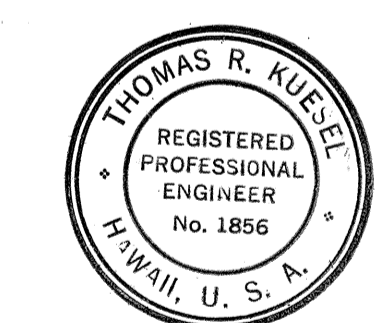


SIDE ELEVATION
No Scale



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

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



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION,
Thomas R. Kuebler

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD SIGN
FOUNDATIONS
INTERSTATE ROUTE H-1
PROJECT NO. I-H-1(89)13

SCALE: AS SHOWN DATE: Oct 30, 1970

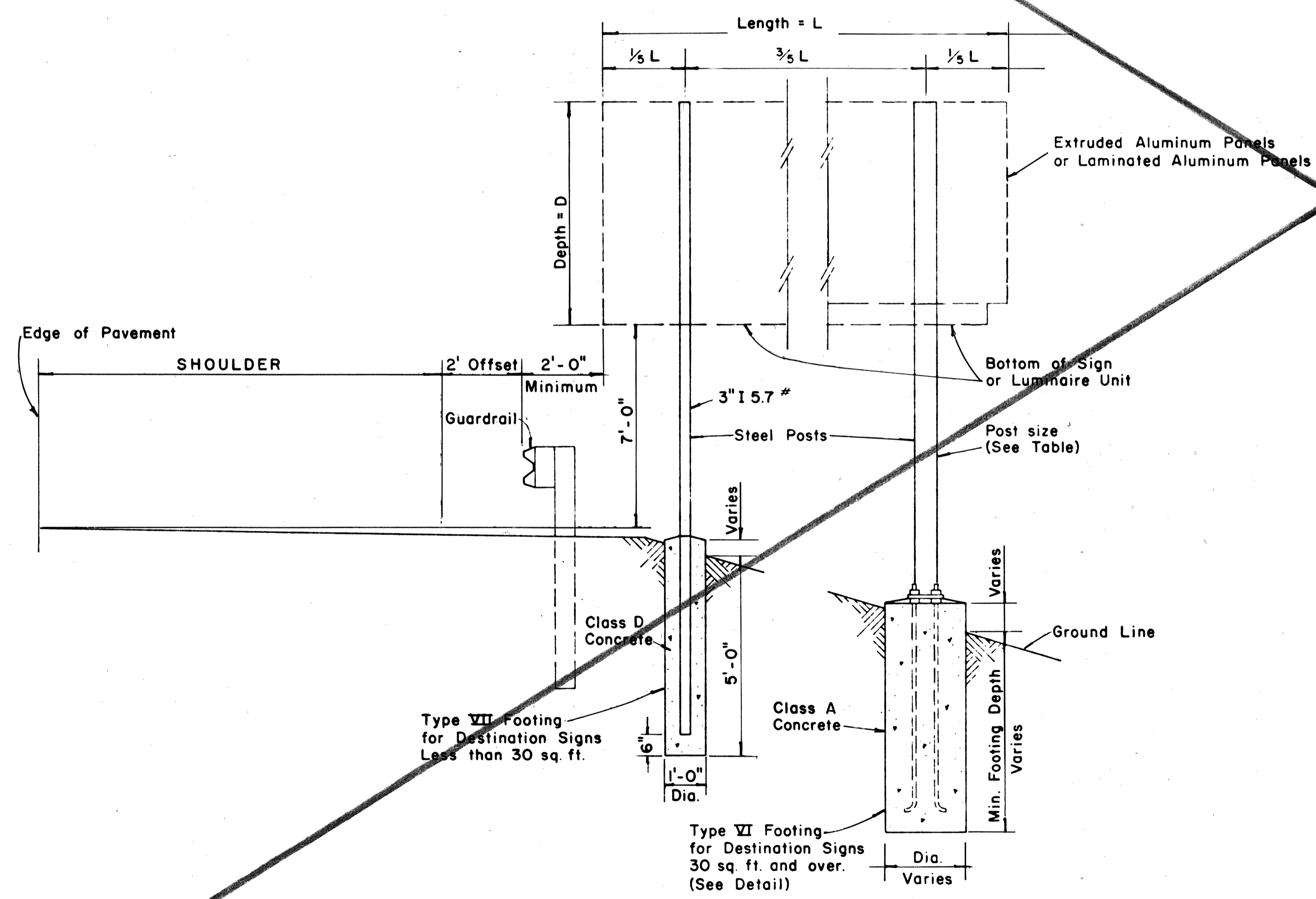
SHEET No. 19T OF 277 SHEETS

DATE: 10/30/70
DRAWN BY: [Signature]
CHECKED BY: [Signature]
NO. 19T

* 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.

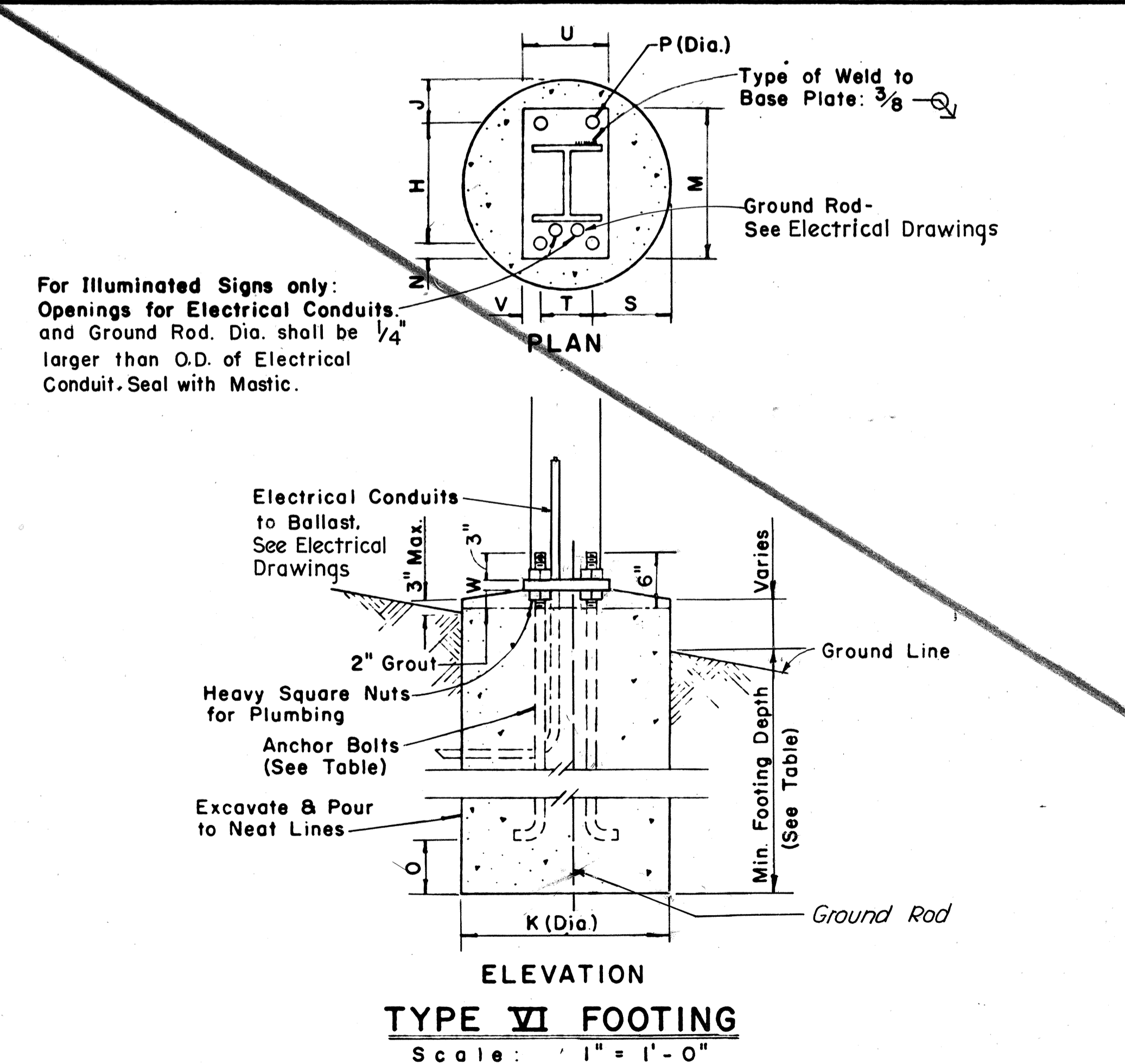
POST SIZE	MAXIMUM SIGN AREA	POST HEIGHT TO CENTER OF SIGN *	DIMENSIONS													ANCHOR BOLT DIA.	MINIMUM FOOTING DEPTH	
			H	J	K	M	N	O	P	S	T	U	V	W	CUT		FILL**	
8 J 10	50 sq. ft.	14'	14"	5"	24"	17 1/4"	1 5/8"	6"	1 1/4"	9"	6"	10"	2"	1"	1 1/8" Ø	4 1/2'	4 1/2'	
8 WF 24	90 sq. ft.	21'														5'	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

N.I.C.



TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN

Not to Scale



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

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

ORIGINAL PLAN
 SURVEY PLOTTED BY
 DRAWN BY
 CHECKED BY
 DATE 7/20/72
 QUANTITIES BY
 7/11/72



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

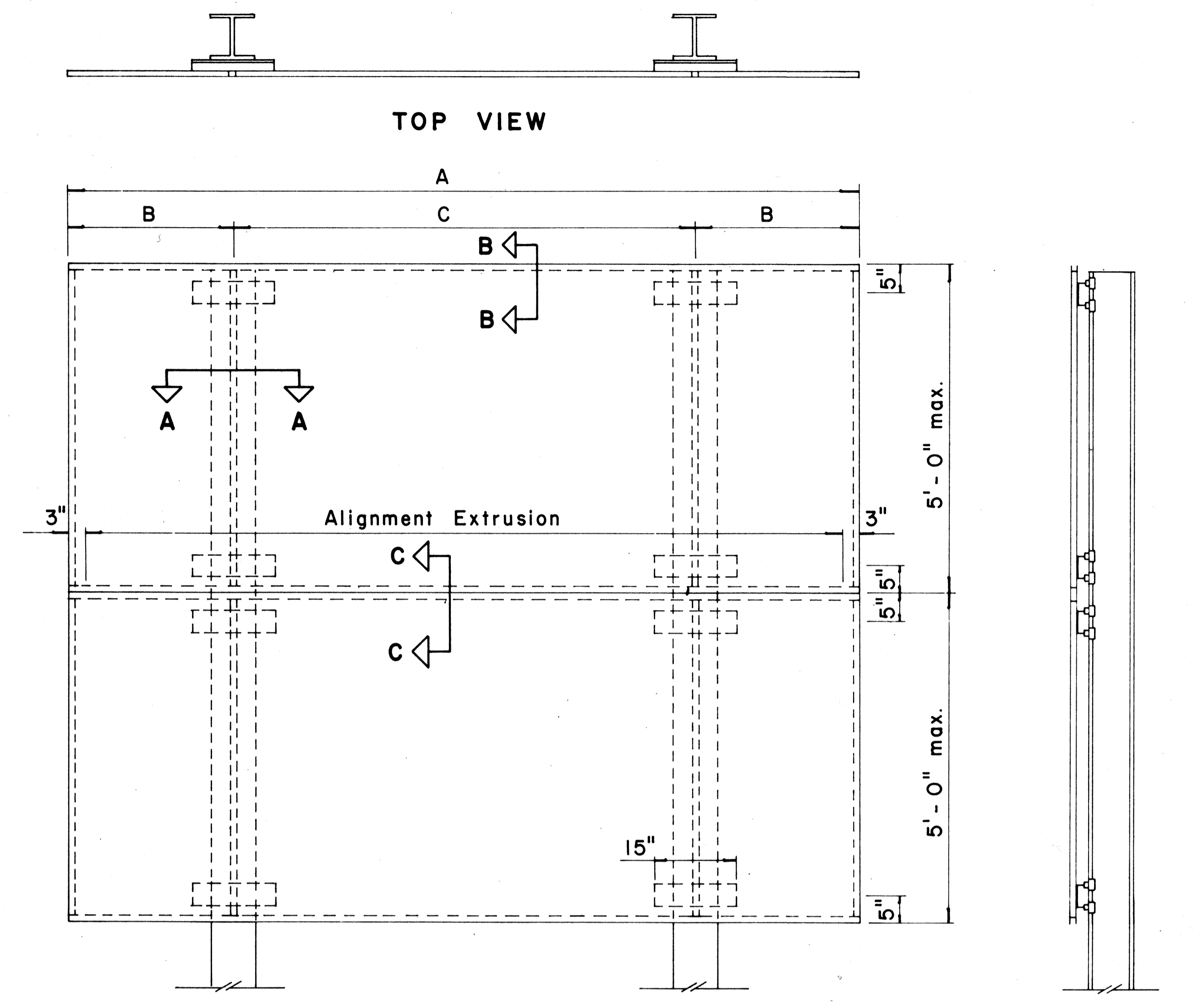
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DESTINATION & GROUND MOUNTED
 EXPRESSWAY SIGNS

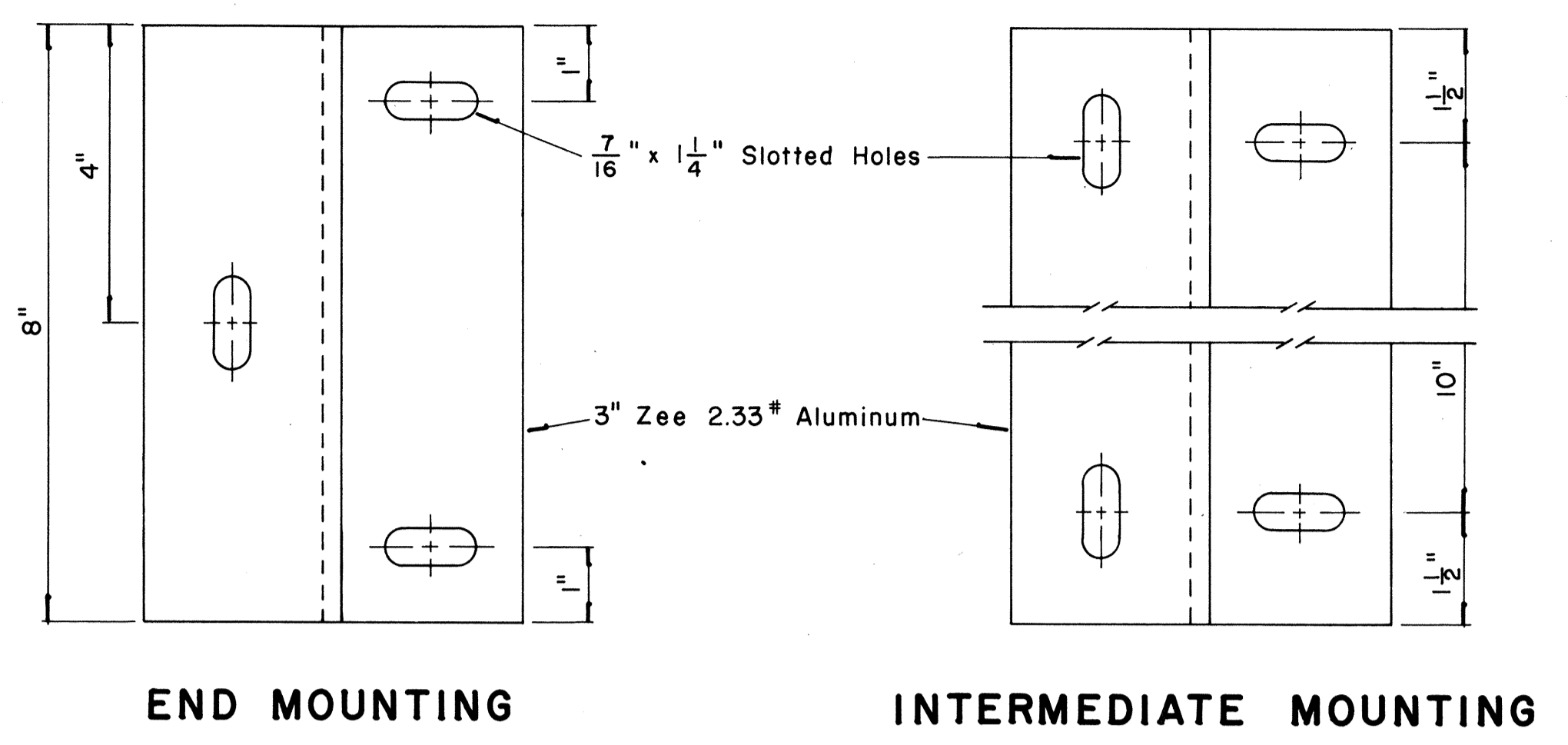
Scale: As Shown Date: Oct. 30, 1970
 SHEET No. 20T OF 27T SHEETS

(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

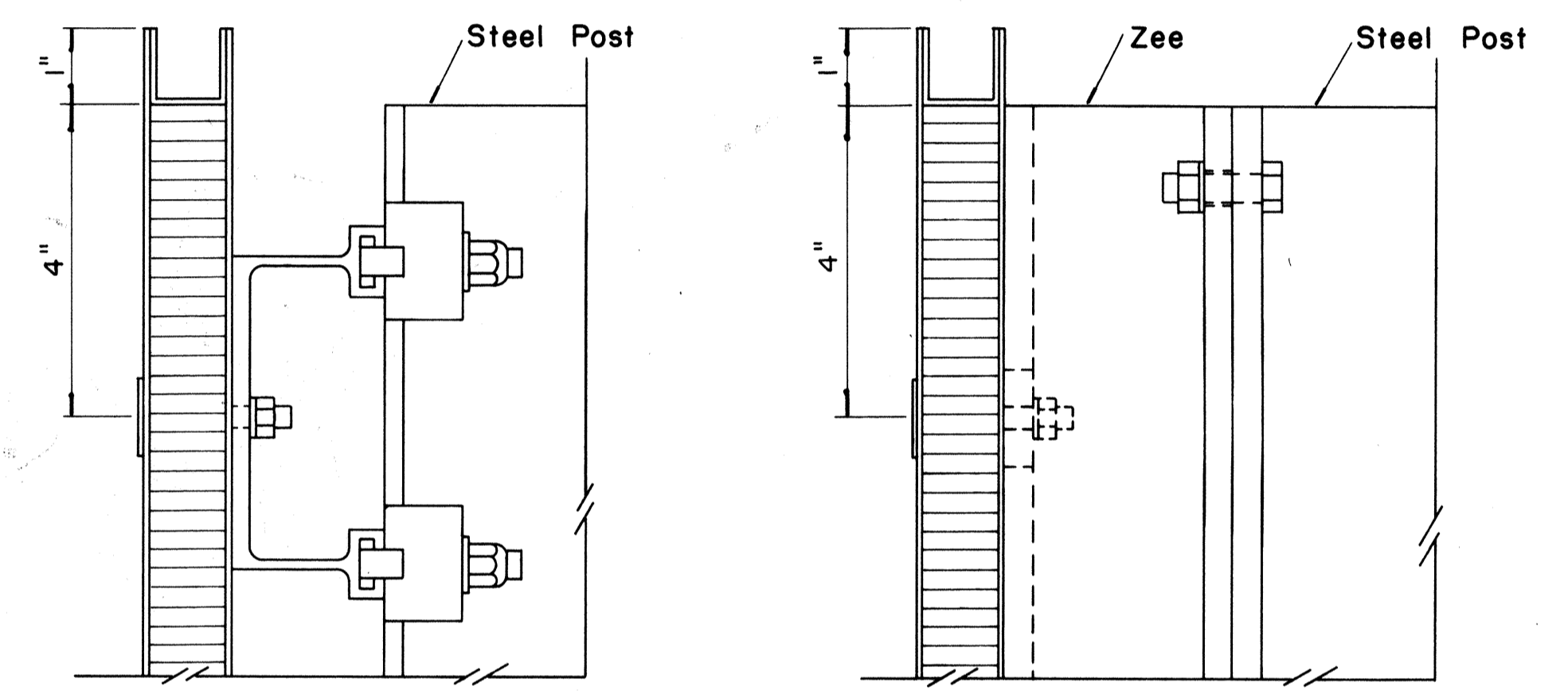
PANEL THICK.	LENGTH OF SIGN	NO. OF SUPPORTS	OVERHANG		SUPPORT SPACING
			B	C	
1"	6'-0"	2	12"		48"
1"	6'-6"	2	15"		48"
1"	7'-0"	2	15"		54"
1"	7'-6"	2	18"		54"
1"	8'-0"	2	18"		60"
1"	8'-6"	2	20"		62"
1"	9'-0"	2	22"		64"
1"	9'-6"	2	23"		68"
1"	10'-0"	2	24"		72"
1"	10'-6"	2	24"		78"
1"	11'-0"	2	24"		84"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



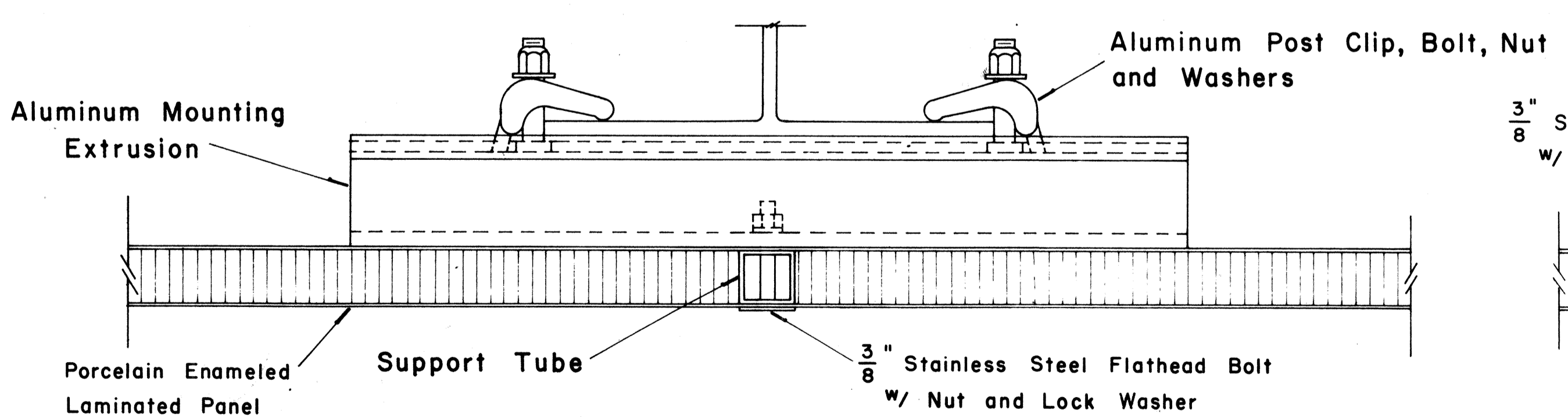
TYPICAL SIGN ASSEMBLY
Scale: $\frac{3}{4}$ " = 1'-0"



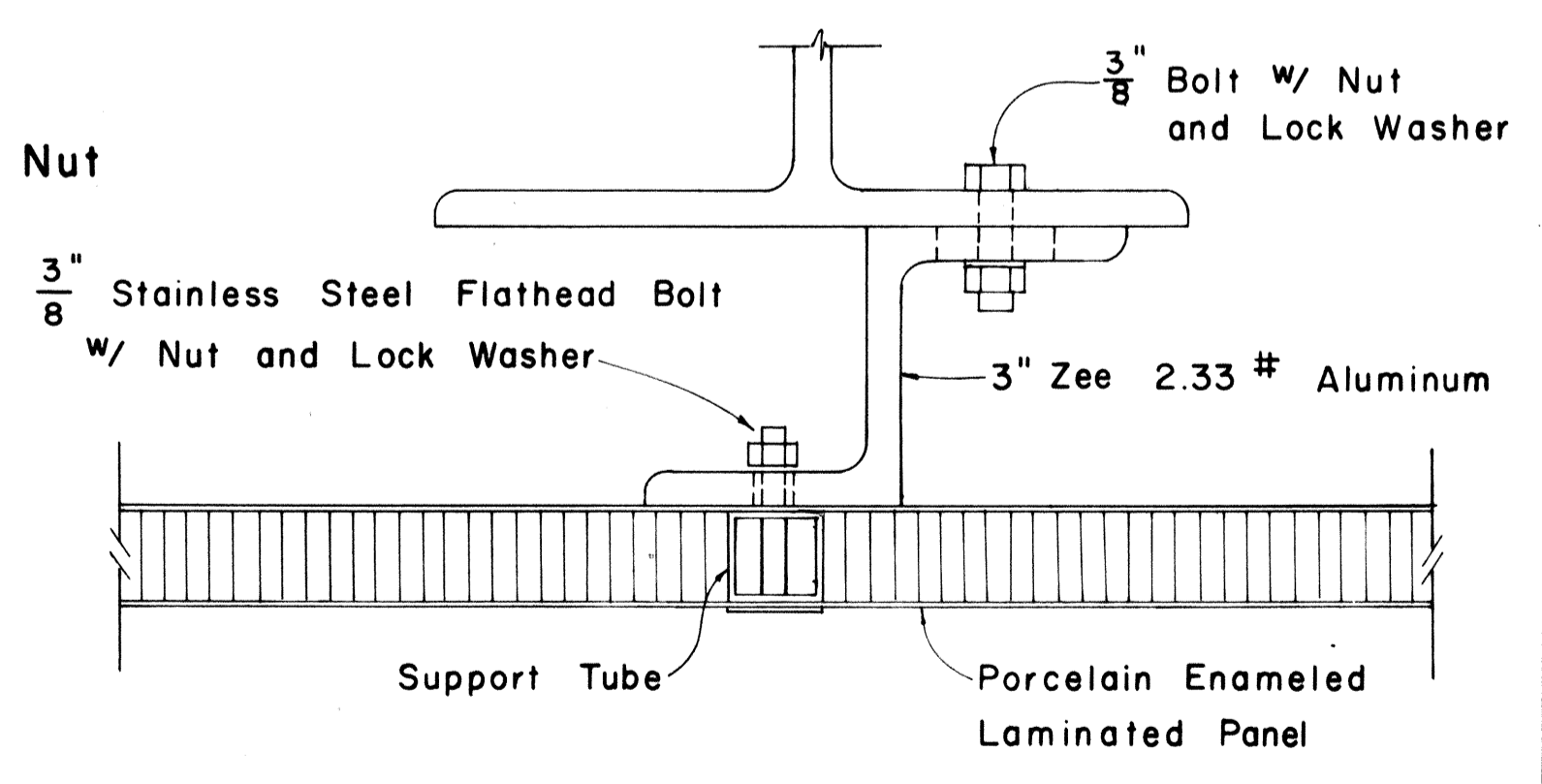
ZEE MOUNTING DETAILS
Scale: $\frac{1}{2}$ " = 1"



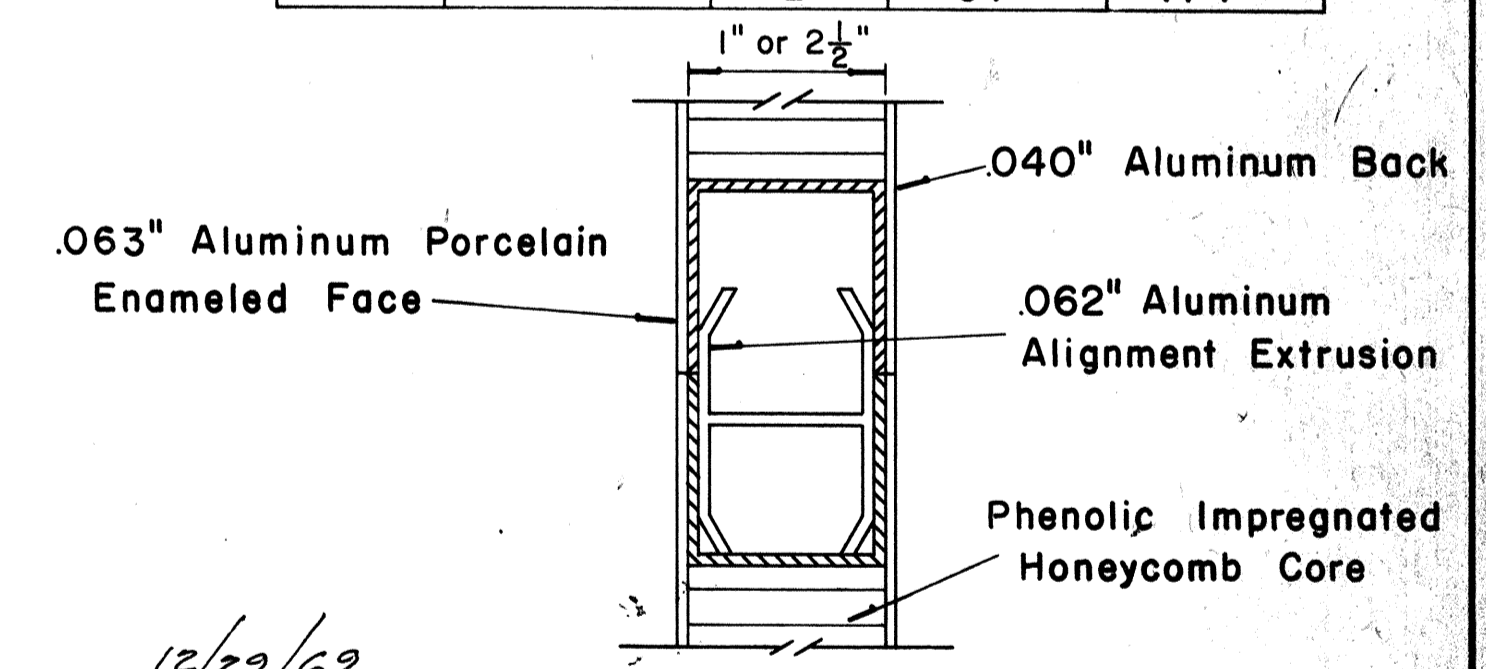
SECTION "B-B"
Scale: $\frac{1}{2}$ " = 1"
SECTION "B-B" (Alternate)
Scale: $\frac{1}{2}$ " = 1"



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



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



CLOSURE DETAIL SECTION "C-C"
FULL SCALE

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

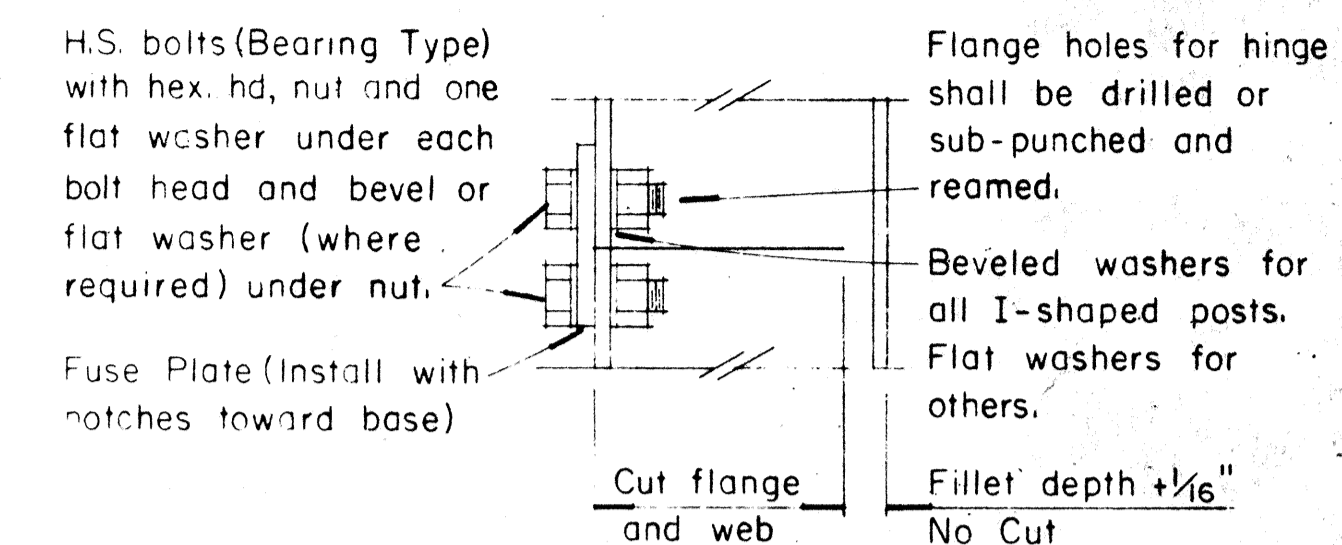
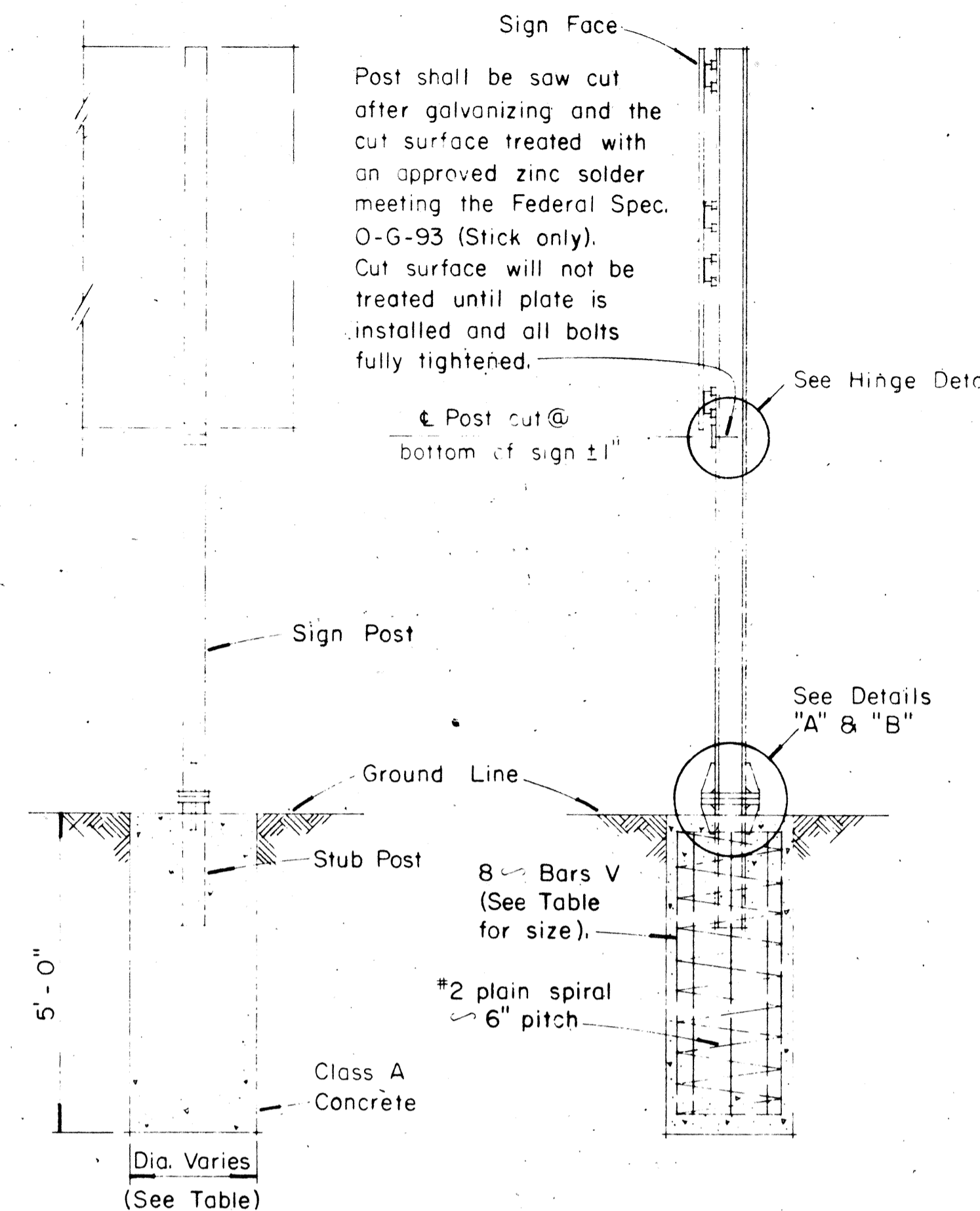
STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(GROUND MOUNTED)

Scale: As Shown Date: Oct. 30, 1970

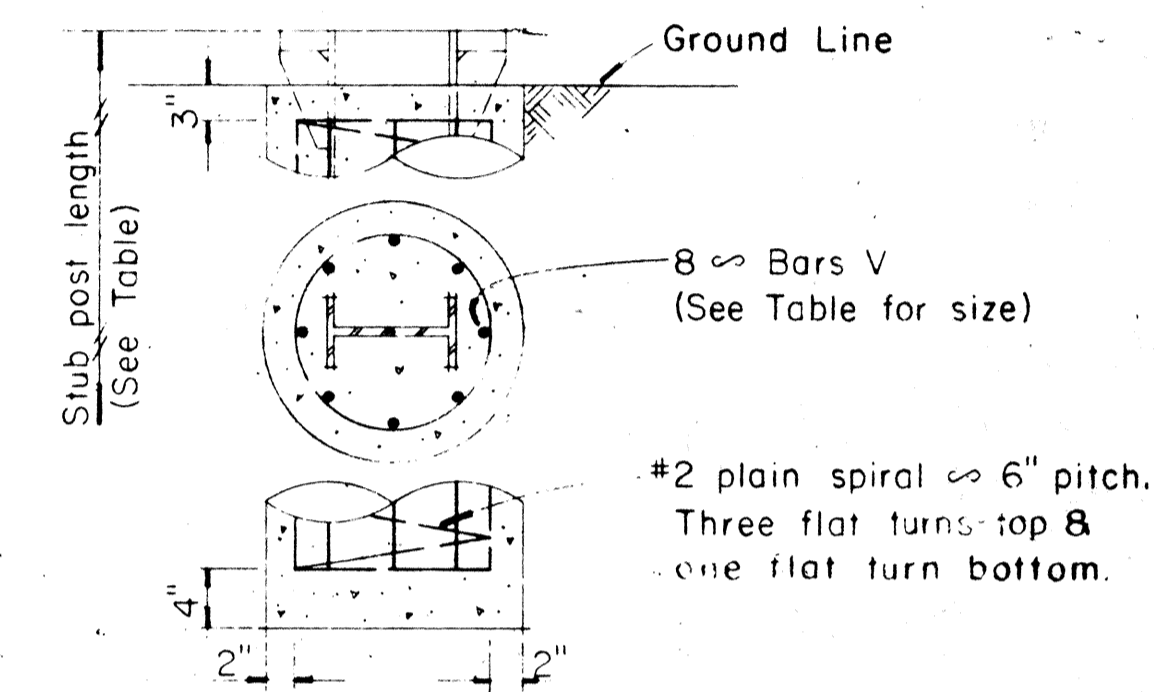
SURVEY PLOTTED BY: _____
 DATE: _____
 ORIGINAL PLAN: _____
 DRAWN BY: _____
 CHECKED BY: _____
 NOTE BOOK: _____
 No. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(89)13	1971	119	362

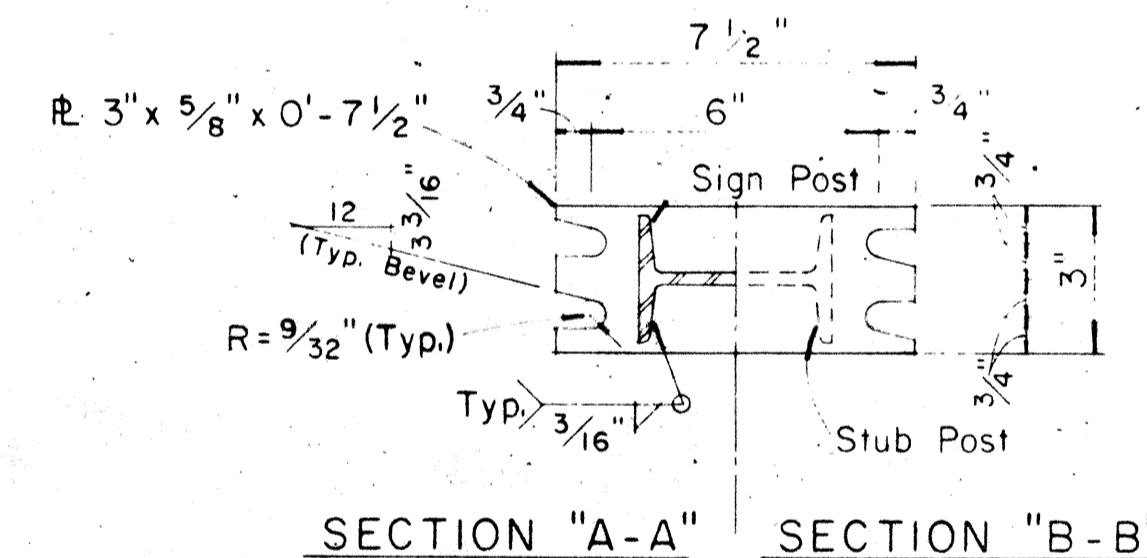
BASE CONNECTION DATA TABLE											FUSE PLATE DATA TABLE											FOUNDATION DATA			
Post Size	Bolt Size & Torque	A	B	C	D	E	t ₁	t ₂	W	R	F	G	H	J	K	L	N	d ₁	t ₃	Bolt Dia.	Wt. of each Fuse Pl.	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5											3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2"	1.09#	2'-0"	3"	2'-0"	#5
6 B 12	5/8" ϕ x 2 3/4" Torque = 450**	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1 1/16"	3/8"	5/8"	1.60#	2'-0"	3"	2'-0"	#5
6 B 15.5											4 1/2"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	1 3/16"	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"	1 3/16"	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"	1 5/16"	9/16"	7/8"	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 WF 21	3/4" ϕ x 3 1/2" Torque = 750**	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	1 3/32"	5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	1 5/16"	9/16"	7/8"	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 WF 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	1 5/16"	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"	1 5/16"	9/16"	7/8"	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200**	SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7		SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5



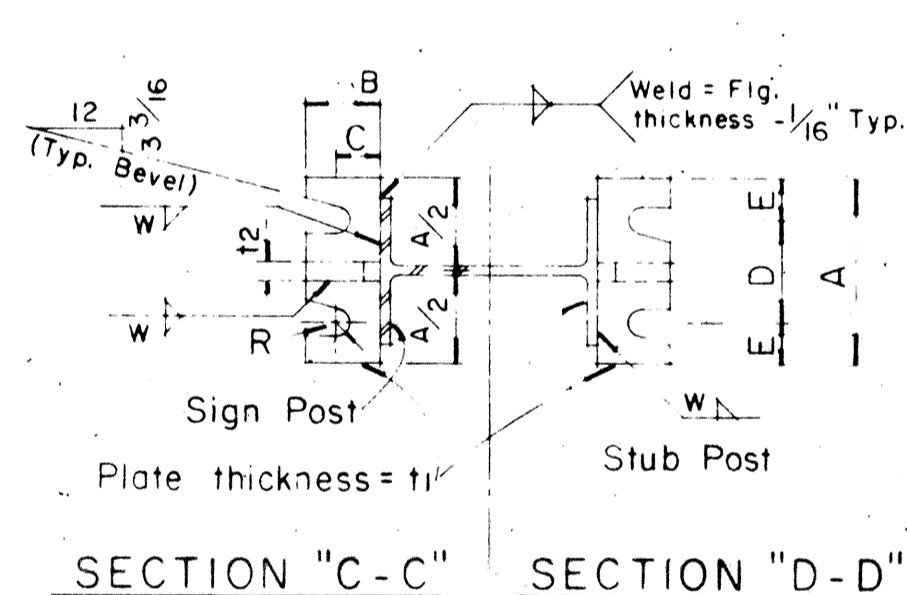
HINGE DETAIL



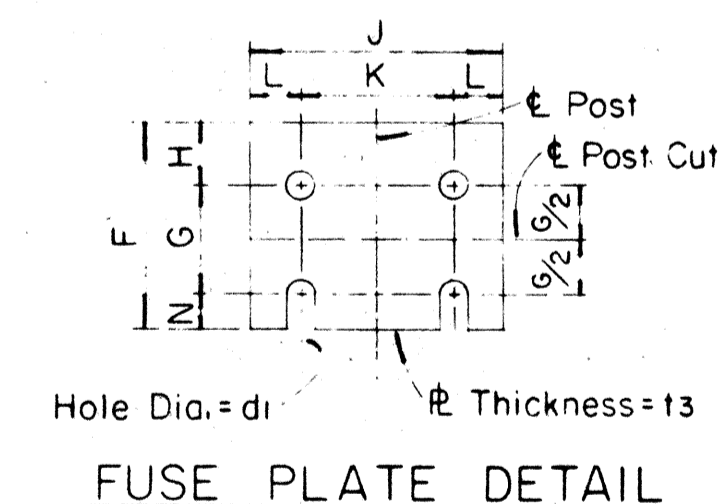
FOUNDATION DETAIL



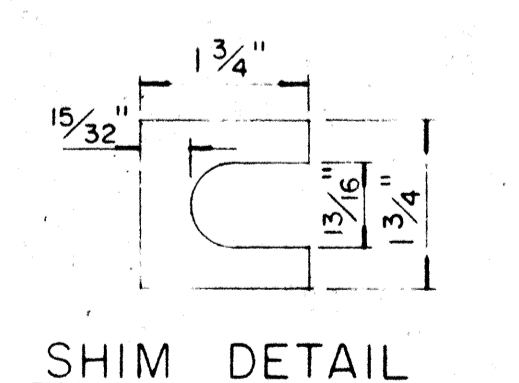
NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



STIFFENER PLATE DETAIL



FUSE PLATE DETAIL



SHIM DETAIL

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

GENERAL NOTES

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

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

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

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

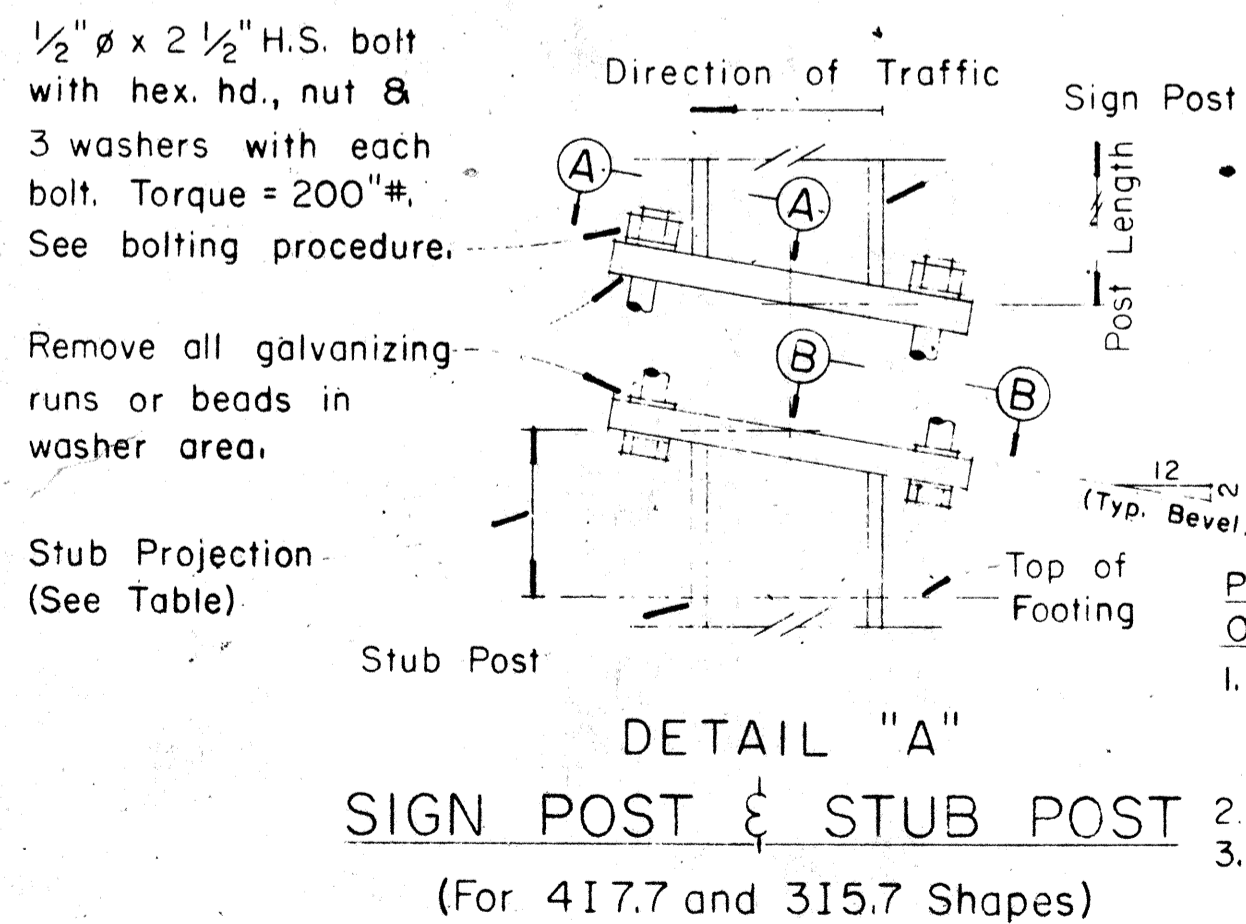
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

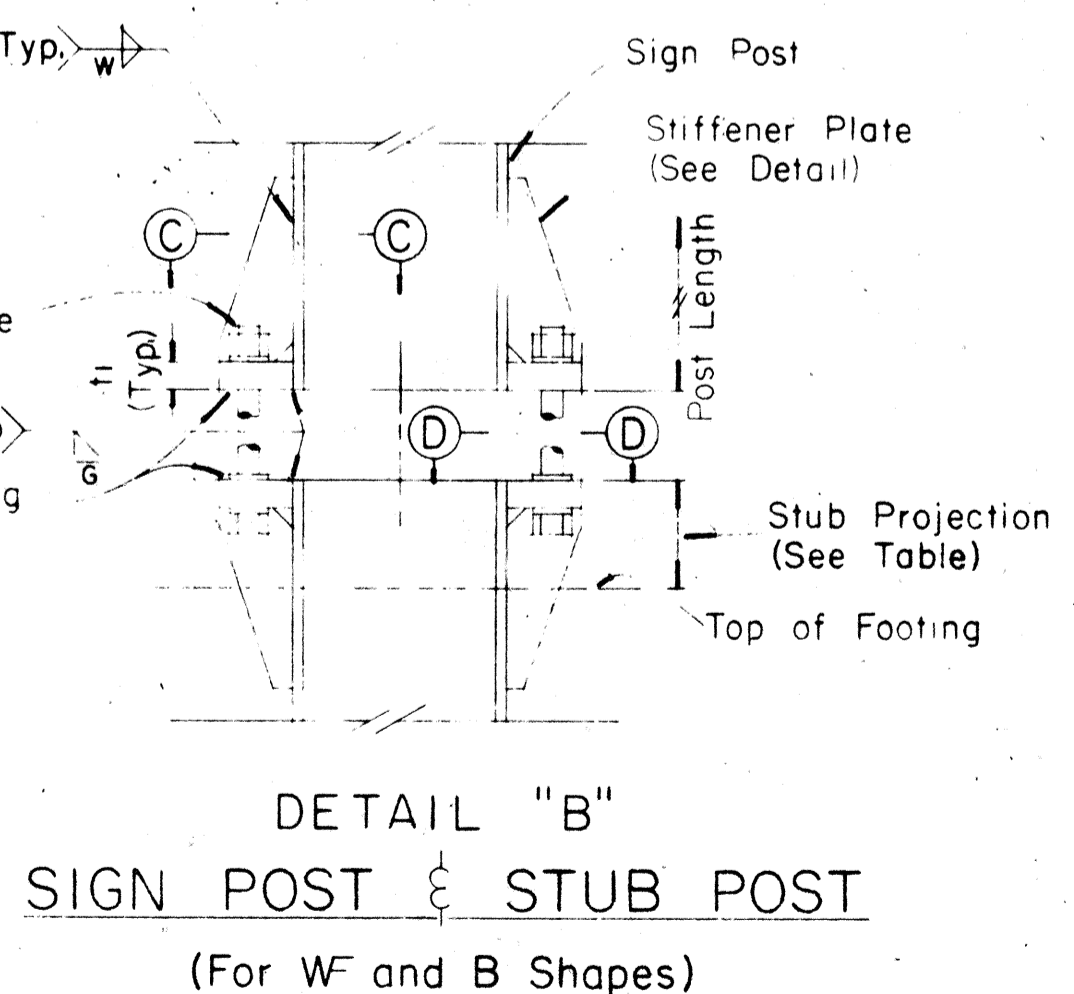
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS

Not to Scale
SHEET No. 22 OF 277 SHEETS DT 204

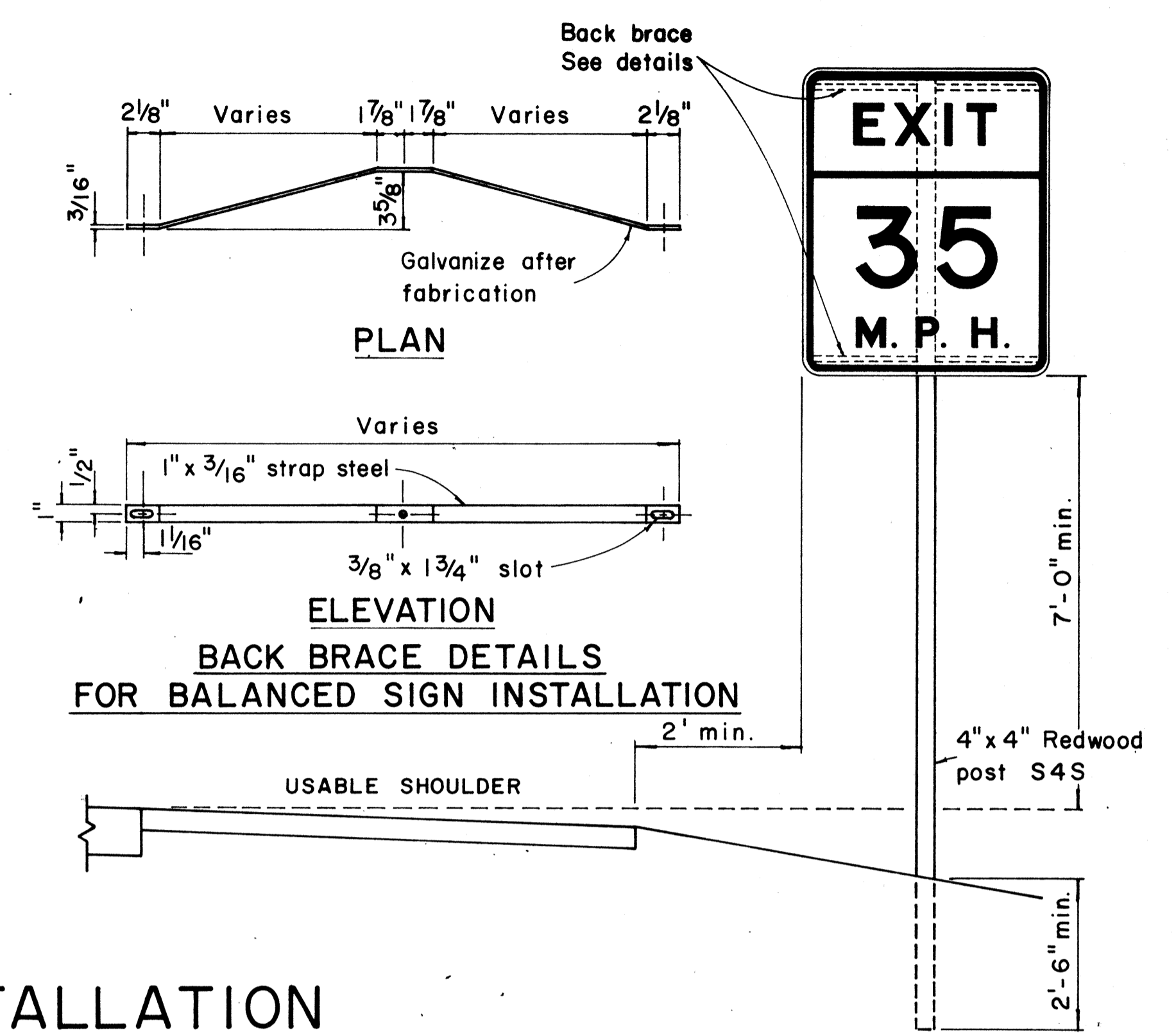
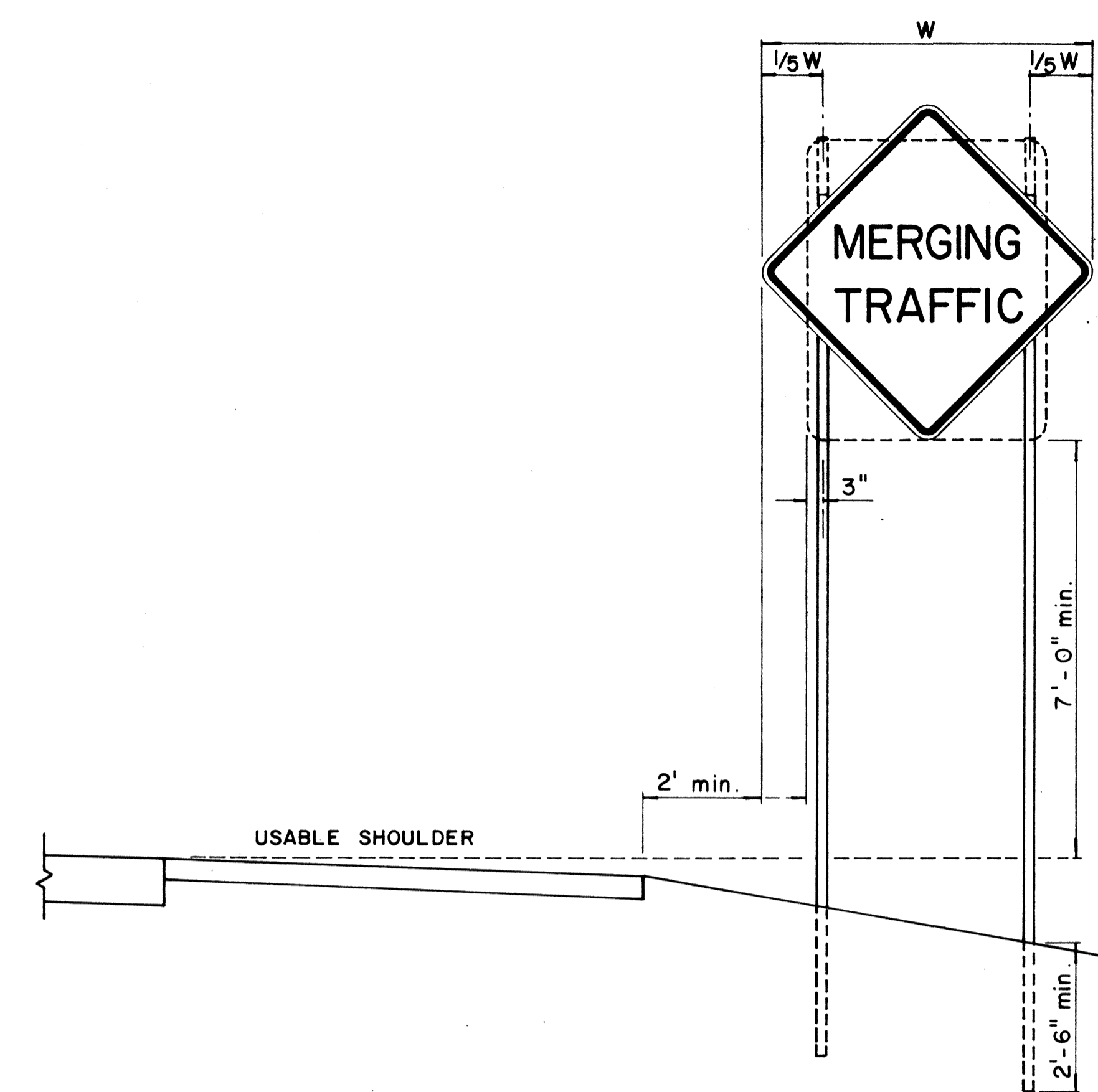
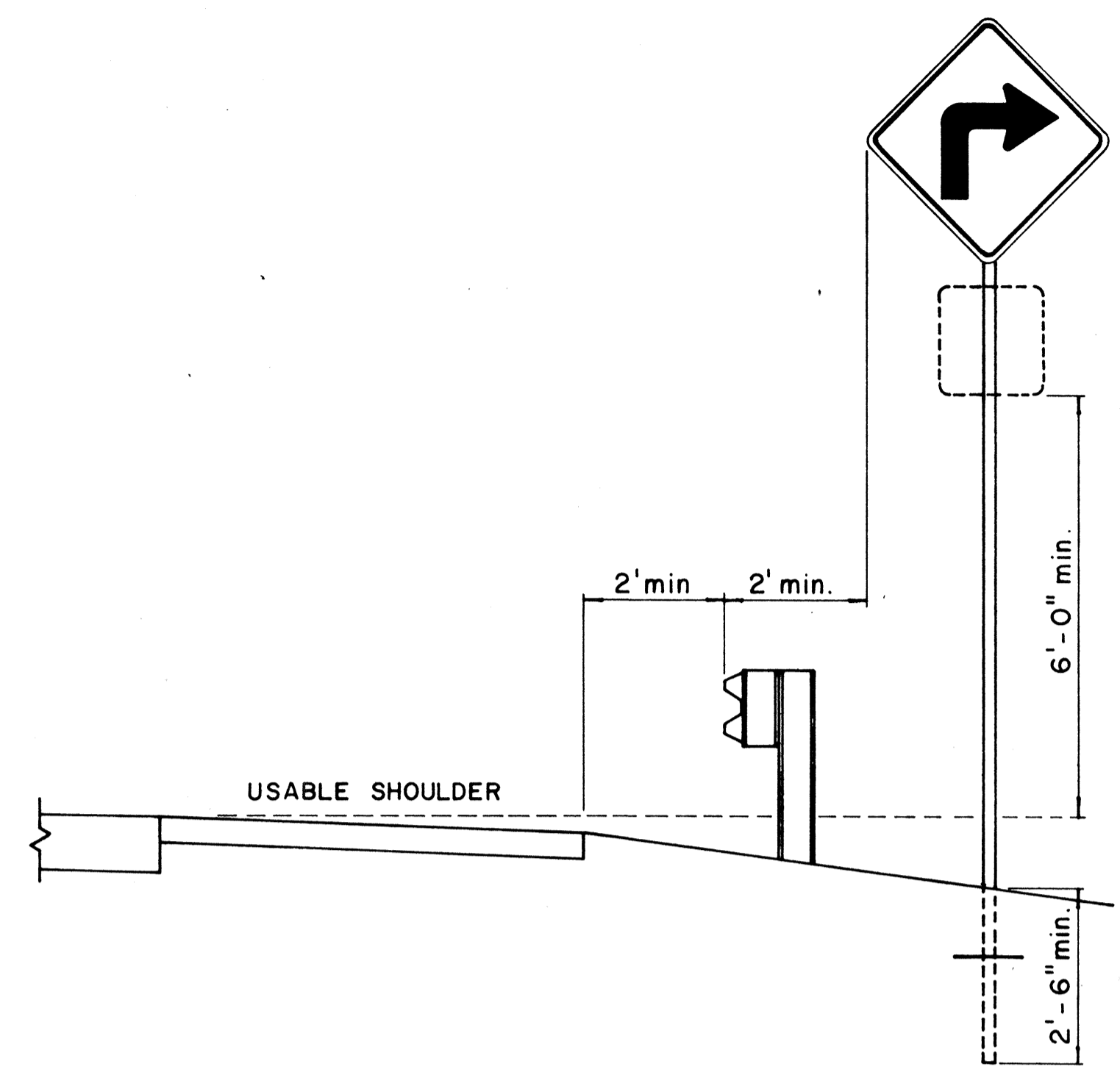
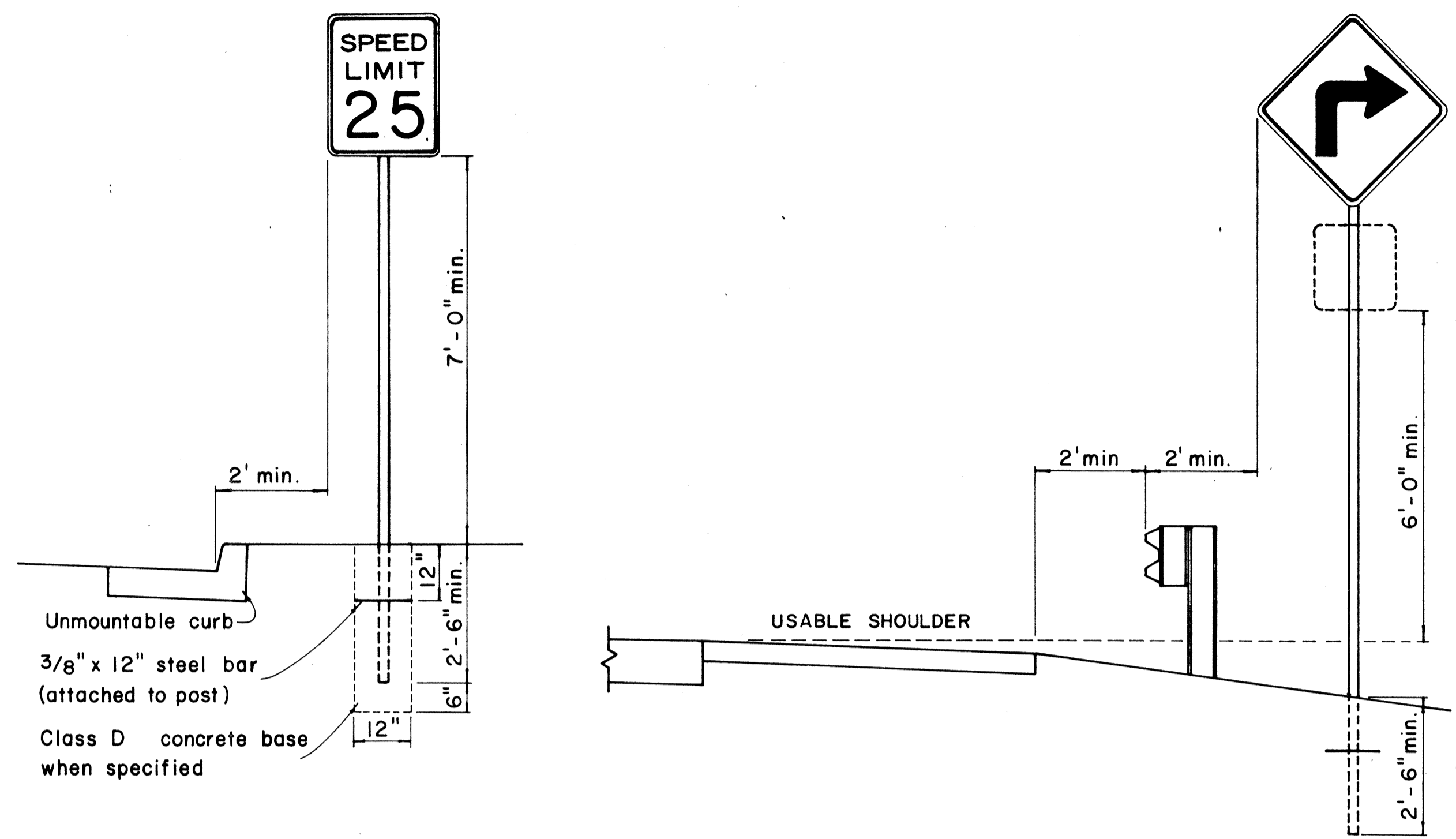
DATE
SURVEY PLOTTED BY
DRAWN BY
DESIGNED BY
CHECKED BY
NOTE BOOK
QUANTITIES BY
No.



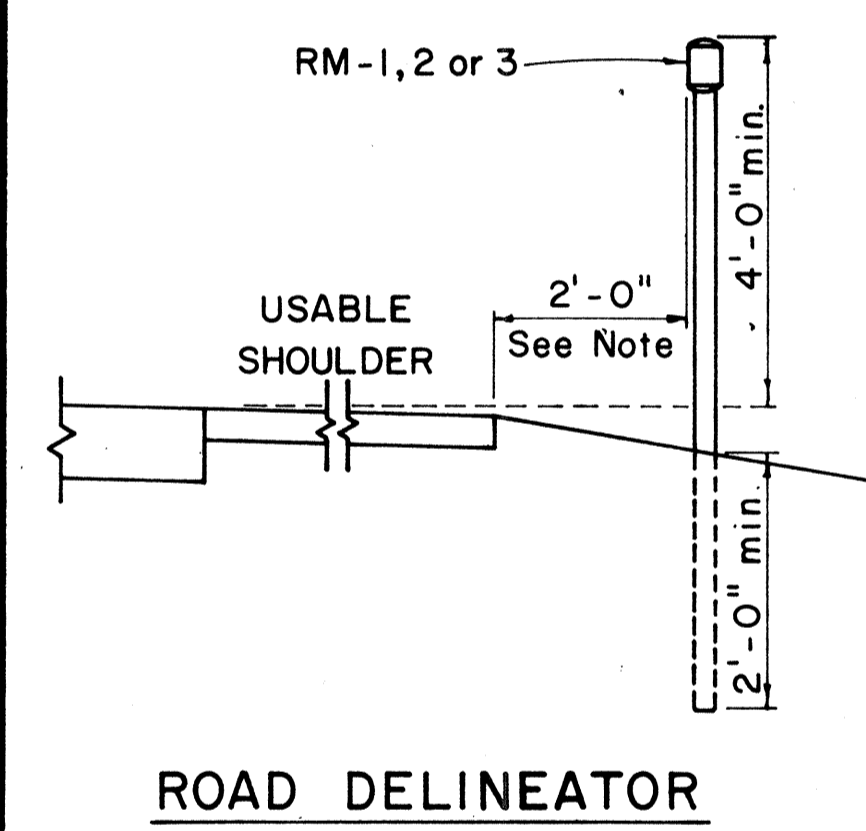
PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:
1. Assemble post to stub with bolts and with one flat washer on each bolt between plates.
2. Shim as required to plumb post.
3. Tighten all bolts the max. possible with 12" to 15" wrench to bed washers & shims and to clean bolt threads then loosen each bolt 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.



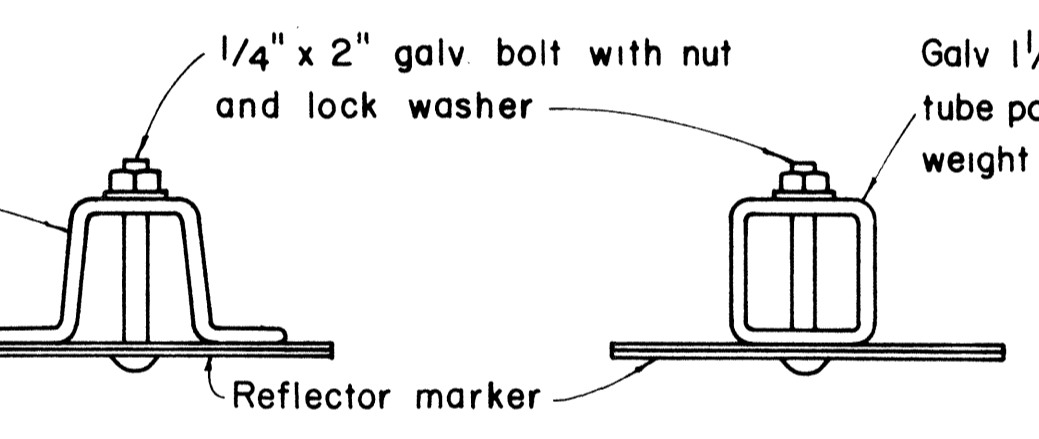
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	141-1(89)13	1971	120	362



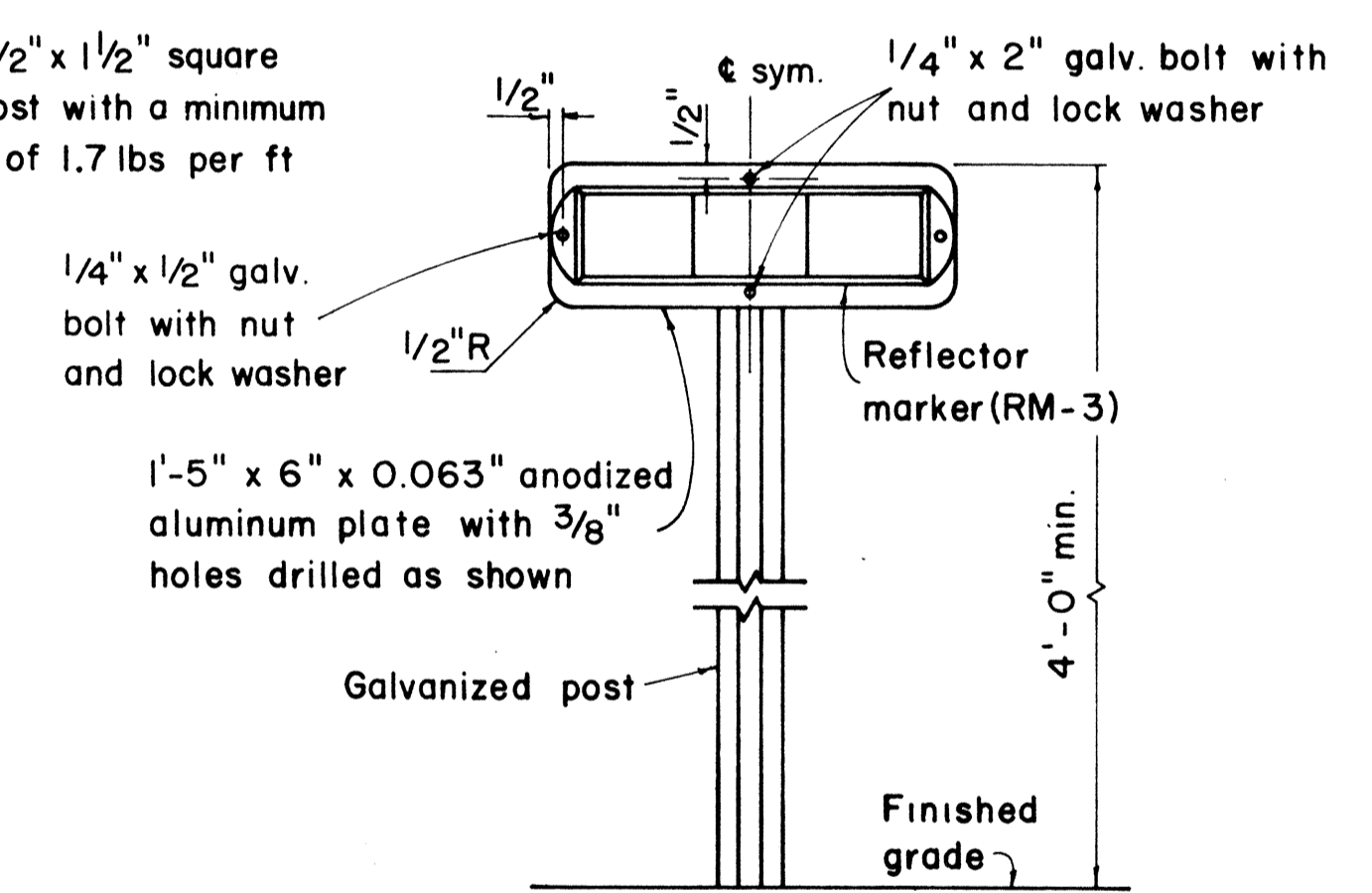
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



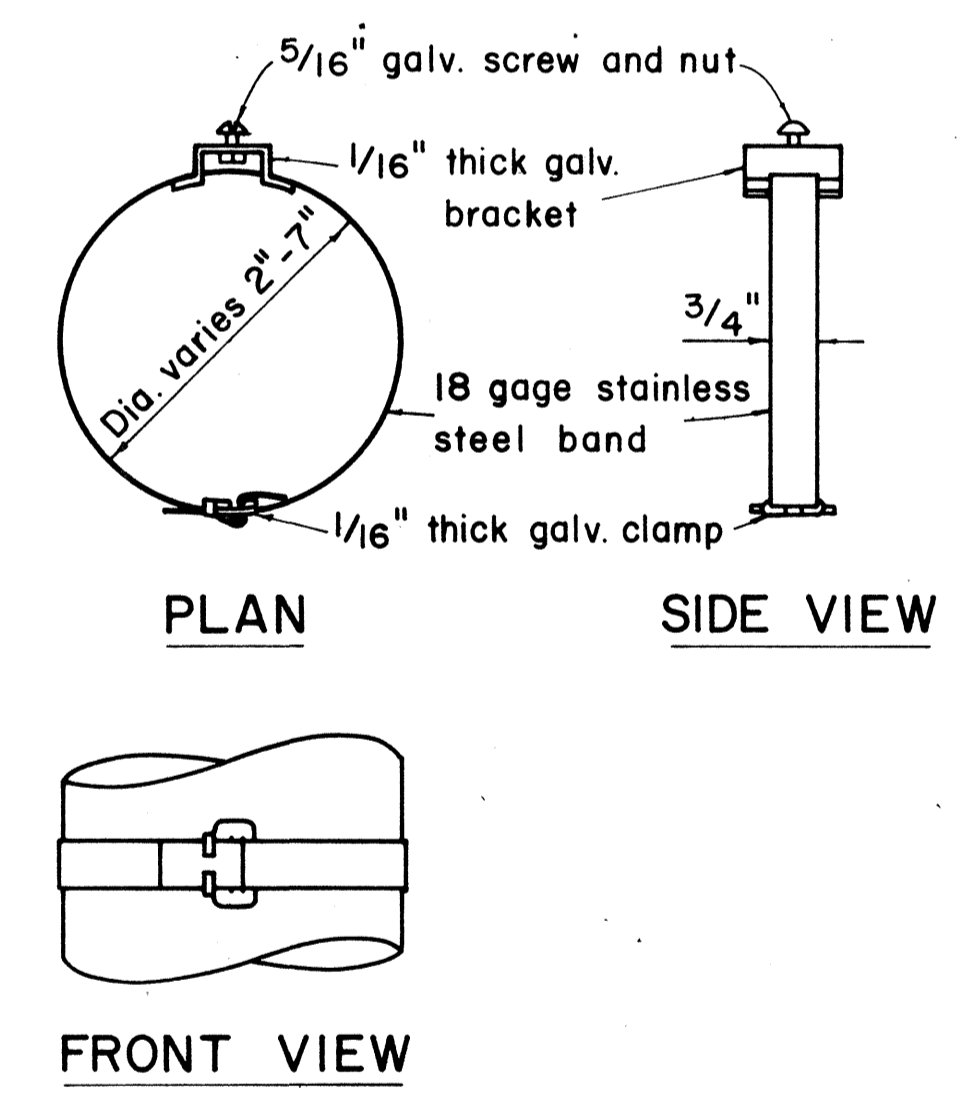
Galv. flanged channel 1/8" x 3/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft. shall have a single row of 3/8" holes centered in the web at 1" o.c.



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 3/2" 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:
Euchi Tanaka 12/29/69
 TRAFFIC ENGINEER DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

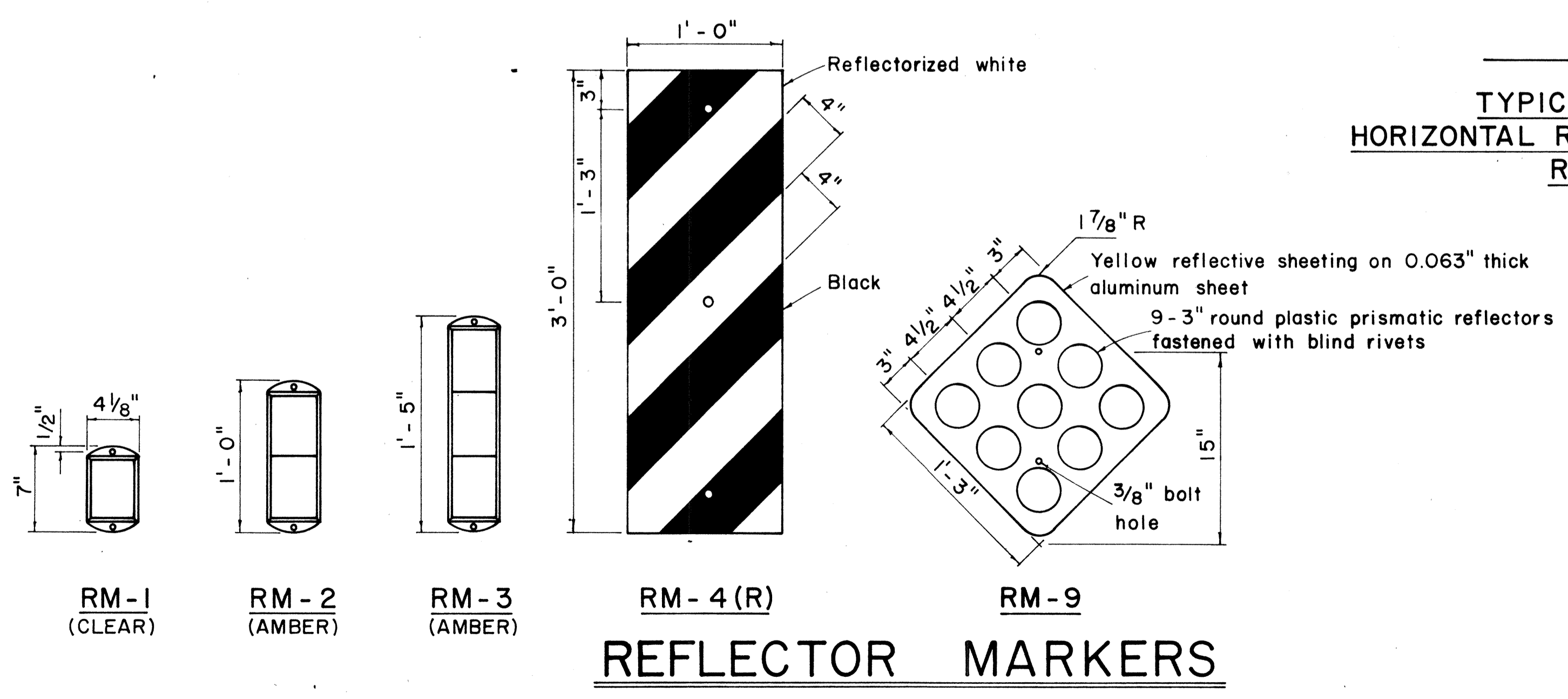
MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

SHEET No. 237 OF 277 SHEETS DT 100

NO.	REVISION	APPROVED BY	DATE

ORIGINAL PLAN
 SURVEY PLOTTED BY
 DATE
 DESIGNED BY
 TRACED BY
 NOTE BOOK
 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-HI-(89)13	1972	CO. 121	362

 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:
Robert J. Sabin 3-20-72
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.T.	3/20/72

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
REGULATORY SIGNS

NOT TO SCALE

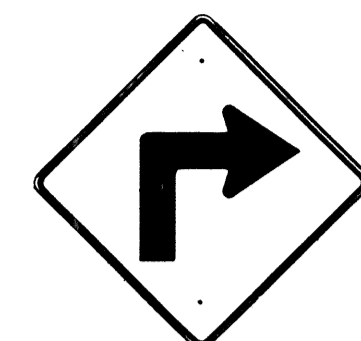
SHEET No. OF SHEETS DT 101

THIS SHEET SUPERSEDES SHEET NO. 121

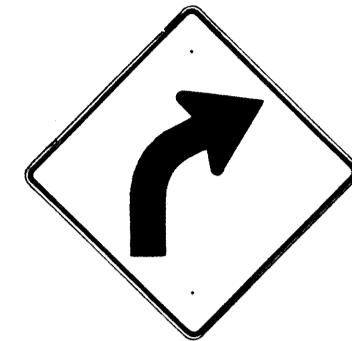
C.O. 121

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

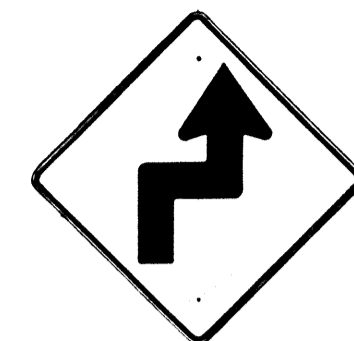
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[HI-(89):13	1972	C.O.122	362



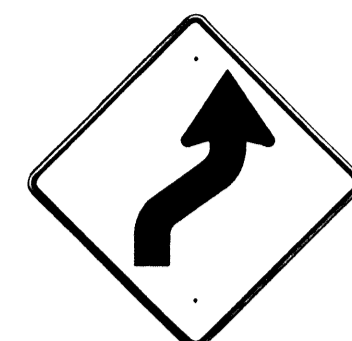
W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



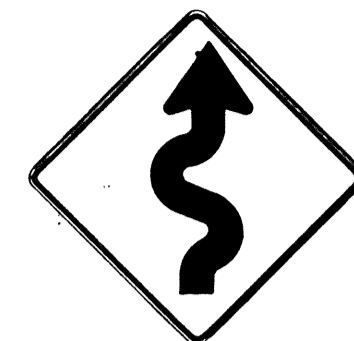
W1-2(R) 30"x30"
W1-2(R)-A 48"x48"



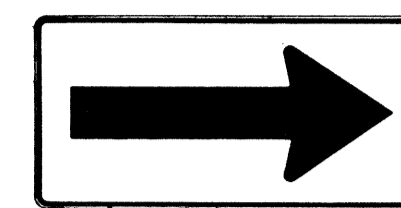
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



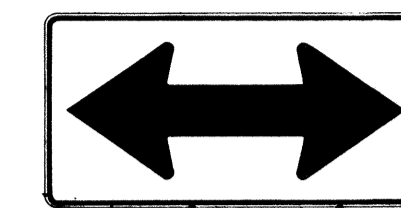
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



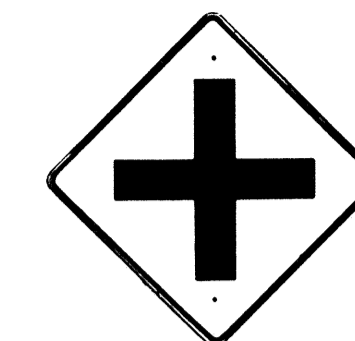
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



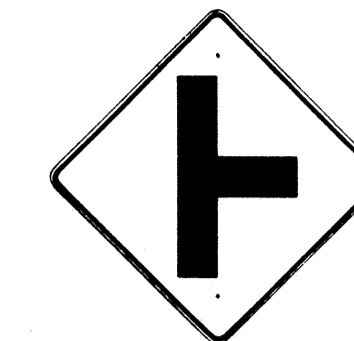
W1-6 48"x24"



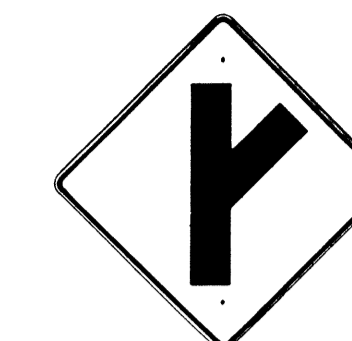
W1-7 48"x24"



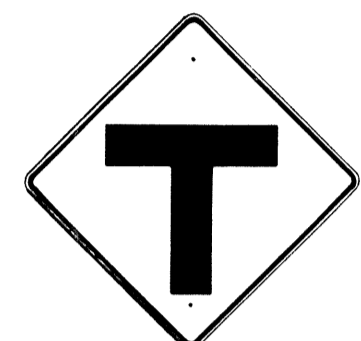
W2-1 30"x30"
W2-1-A 48"x48"



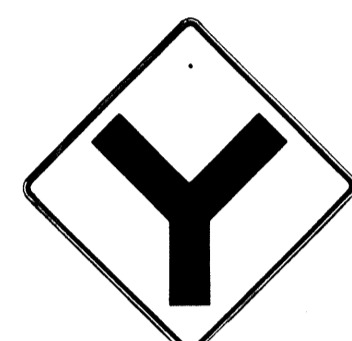
W2-2 30"x30"
W2-2-A 48"x48"



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



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



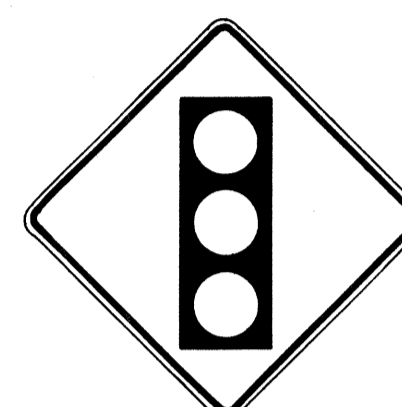
W2-5 30"x30"
W2-5-A 48"x48"



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



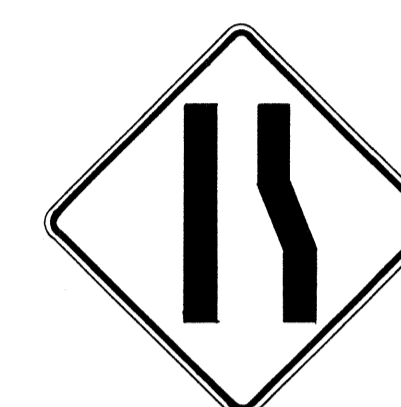
W3-2 30"x30"
W3-2-A 36"x36"



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



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



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



W5-1 36"x36"



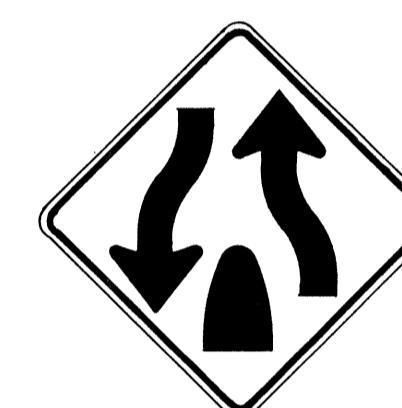
W5-2 30"x30"
W5-2-A 36"x36"



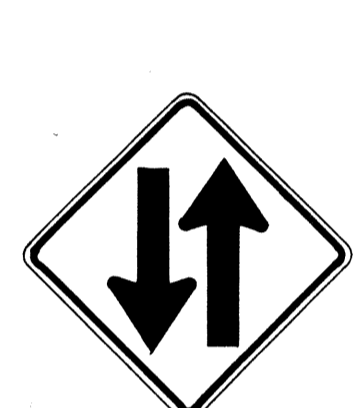
W5-3 36"x36"



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



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



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



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



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"



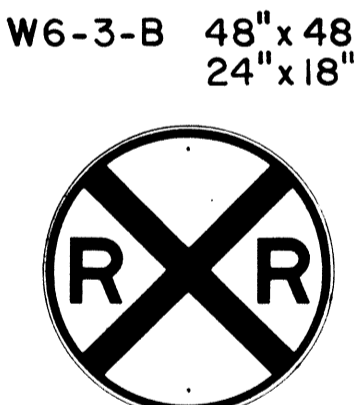
SLIPPERY WHEN WET
W8-5 30"x30"
24"x18"
W8-5-A 36"x36"
24"x18"



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



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



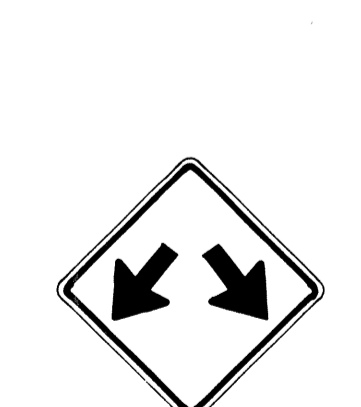
PED XING
W11-2 30"x30"
24"x18"
W11-2-A 36"x36"
24"x18"



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



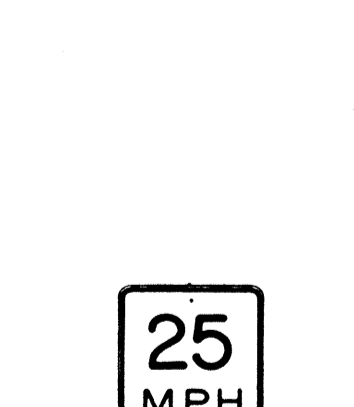
FARM MACHINERY
W11-5 30"x30"
24"x18"
W11-5-A 36"x36"
24"x18"



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



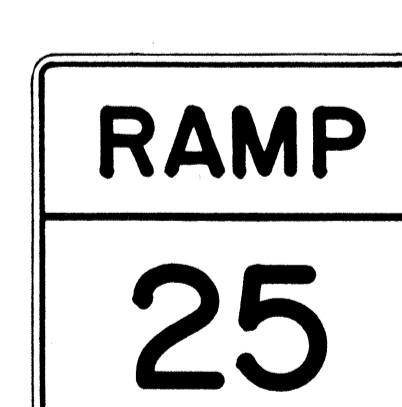
LOW CLEARANCE
W12-2(12'-6") 36"x36"
24"x18"



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."
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.

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

APPROVED:
Shirley Belside 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

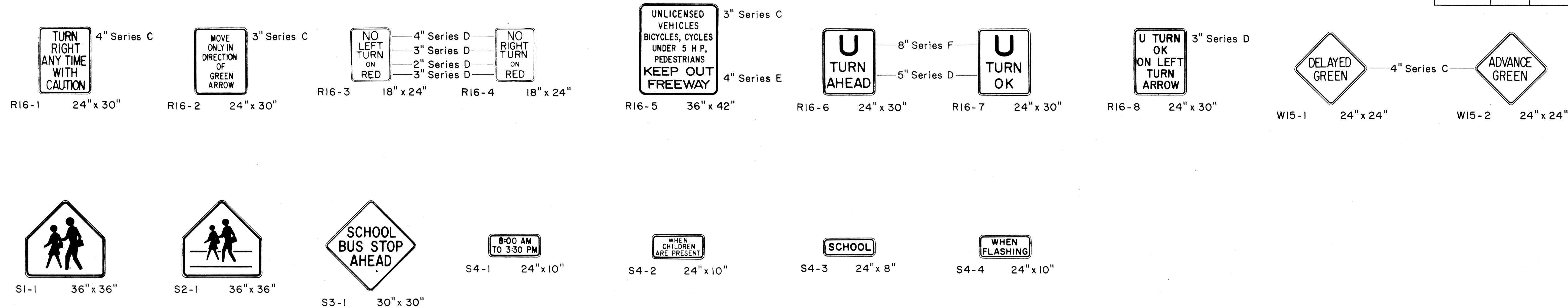
NOT TO SCALE

SHEET No. OF SHEETS DT 102

THIS SHEET SUPERSEDES SHEET NO. 122

DATE: _____
SUNNY PLOTTED BY: _____
DRAWN BY: _____
TRACED BY: _____
DESIGNED BY: _____
CHECKED BY: _____
No. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)13	1972	C.O. 122 S-1	362



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 and warning signs shall be reflectorized unless otherwise specified.
3. All regulatory and 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.

APPROVAL RECOMMENDED:
Erich Tanaka 3/17/72
 TRAFFIC ENGINEER DATE
 APPROVED:
Robert Zatsich 2-20-72
 ASSISTANT CHIEF, ENGINEERING DATE

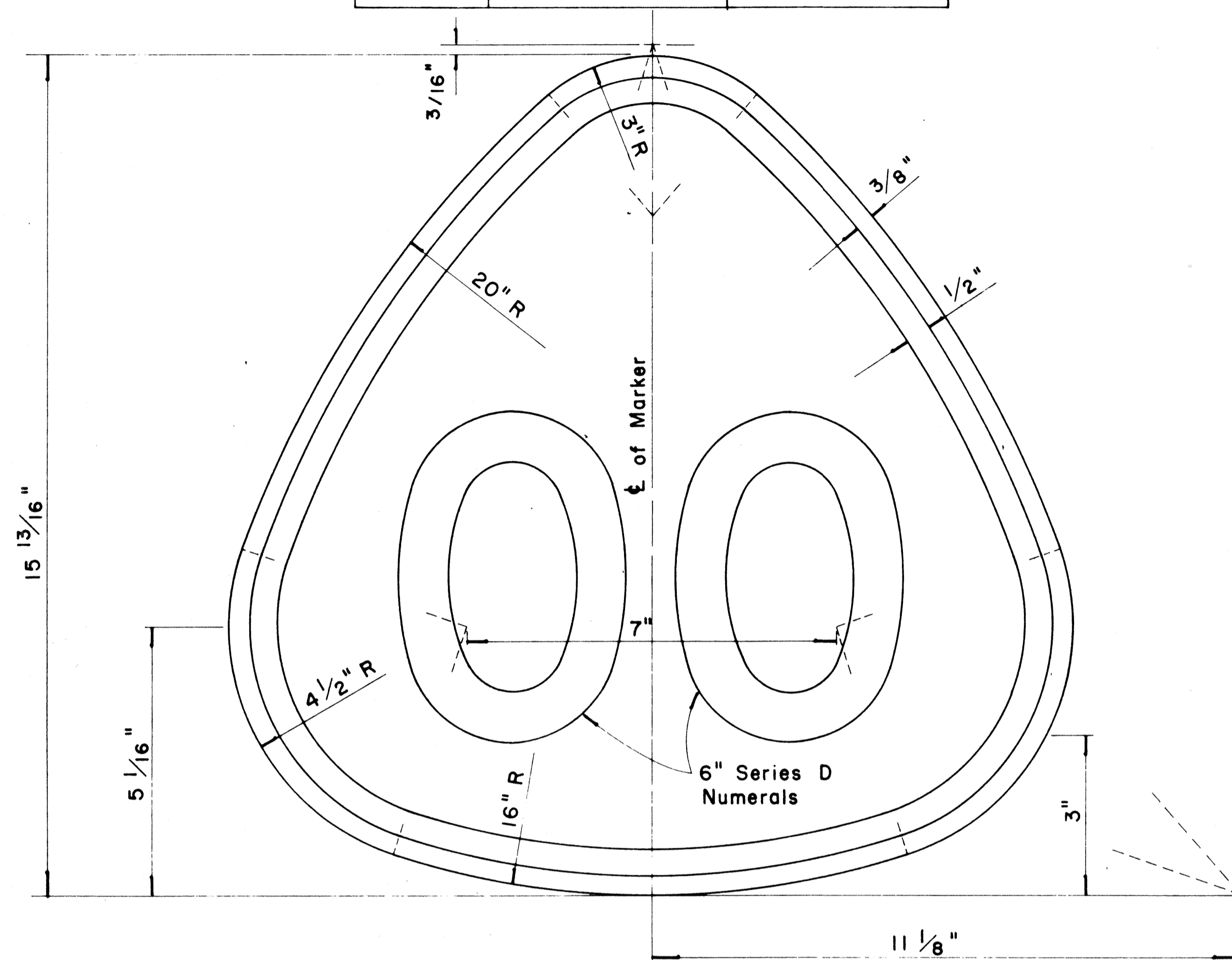
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 103 Approved 12-30-69	N.C.	3/20/72

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
MISCELLANEOUS
REGULATORY & WARNING SIGNS
 NOT TO SCALE

THIS SHEET IS A SUPPLEMENT TO SHEET NO. C.O. 122

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

Shield Size	Multiply Dimensions by	Numeral Size
16"	1	6" Series D
21"	1.3	8" Series D
32"	2.0	12" Series D
42"	2.63	15" Series D
48"	3	18" Series D



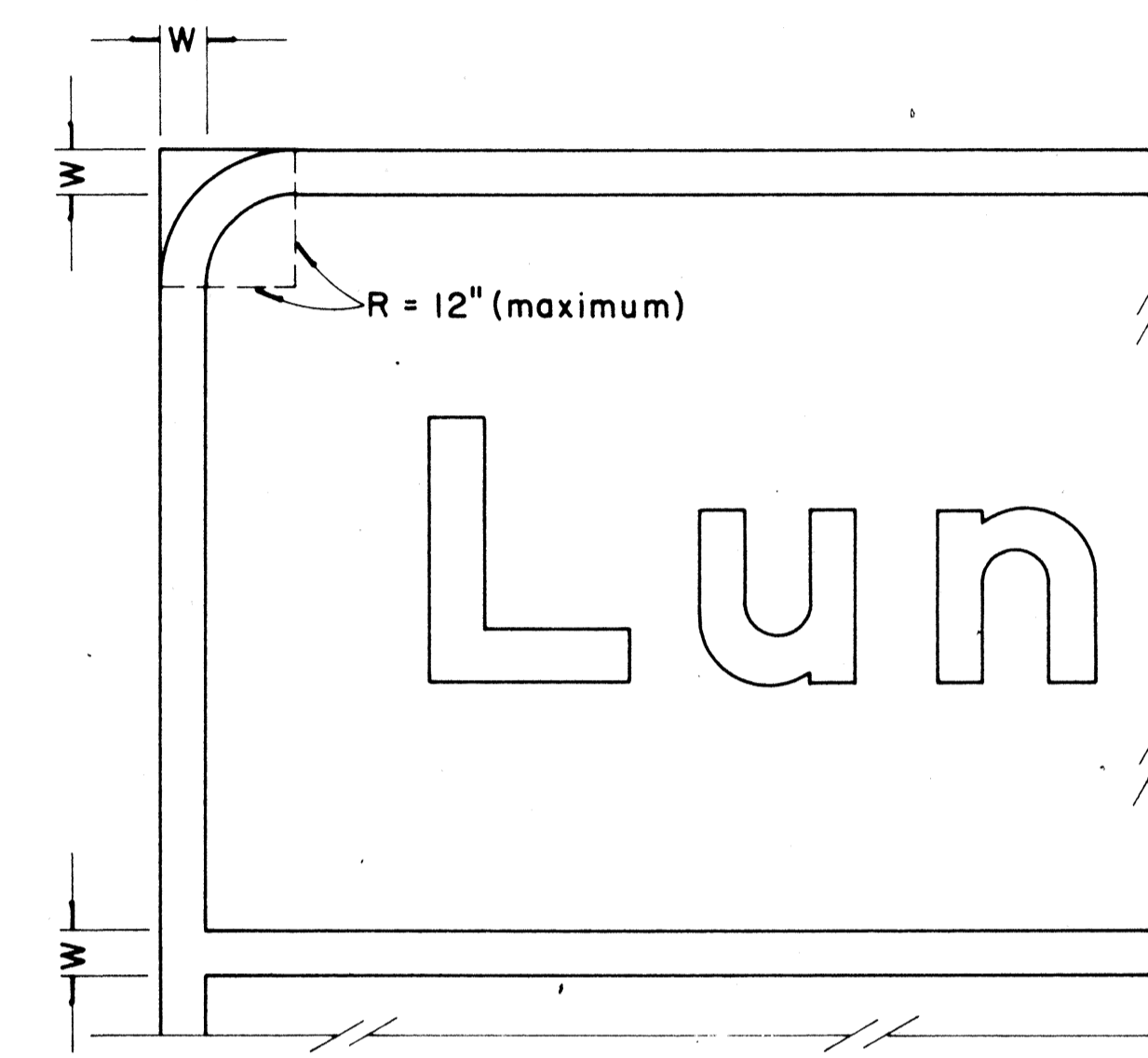
**STATE ROUTE MARKER
FOR
DESTINATION & EXPRESSWAY SIGNS**

Scale: Half Size

NOTE:

1. State Route Markers on Destination and Expressway signs shall have black numerals and borders on a white reflectorized background mounted on a flat aluminum cut-out.
2. All numerals shall be Series "D" from the "Standard Alphabets for Highway Signs," Bureau of Public Roads, 1966.
3. All Cut-outs shall be fastened on sign panel with Aluminum blind rivets. See Standard Specification.

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
DESTINATION & EXPRESSWAY SIGNS**

No Scale

NOTE:

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

APPROVAL RECOMMENDED:

Etschi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:

John J. Zlati 12/30/69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

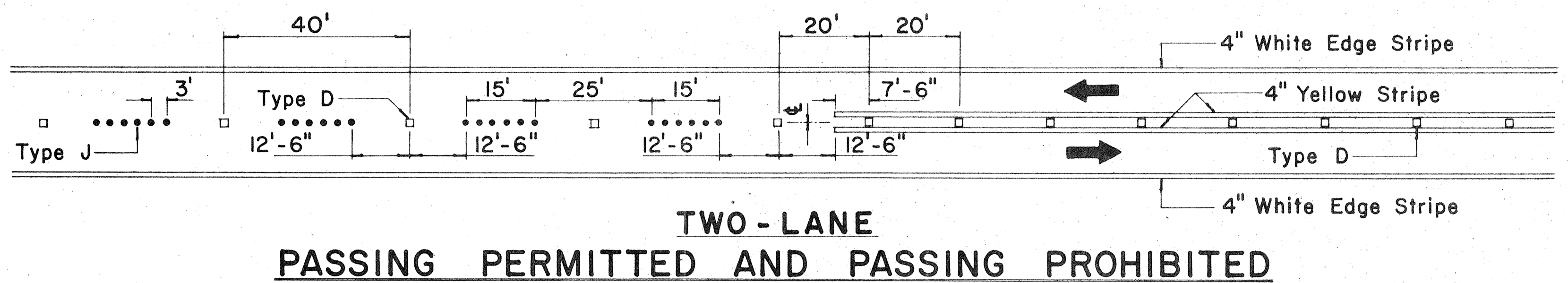
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DESTINATION & EXPRESSWAY SIGNS
STATE ROUTE MARKER
AND
BORDER DETAIL

Scale: As Shown Date: Oct 30, 1970

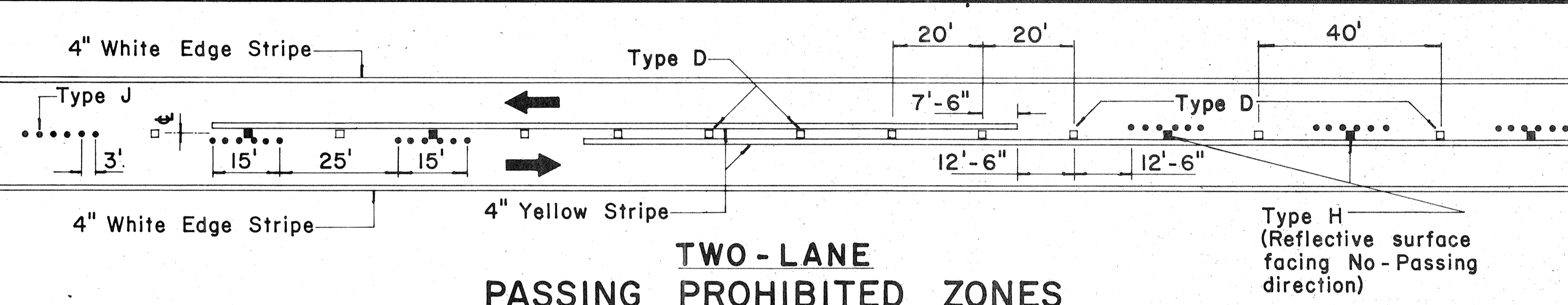
SHEET No. 267 OF 277 SHEETS DT 209

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

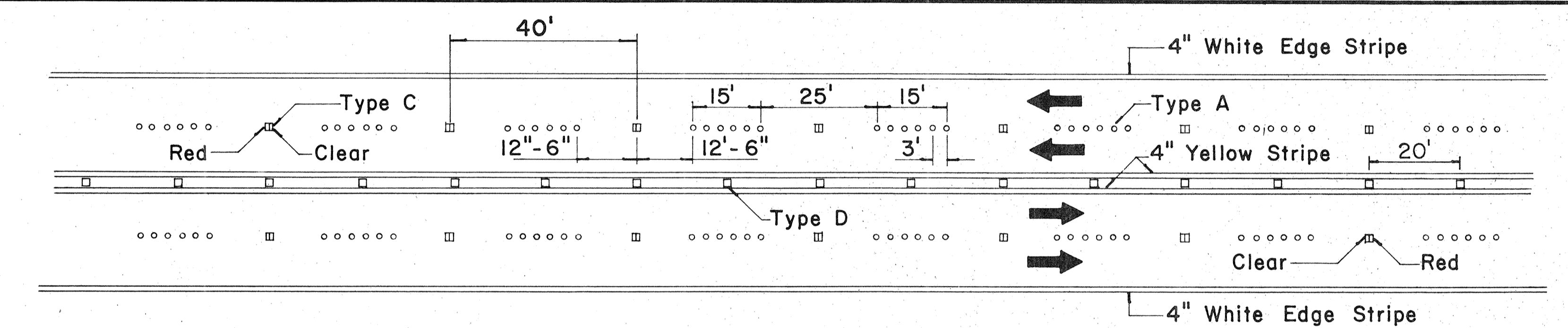
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)-13	1971	124	362



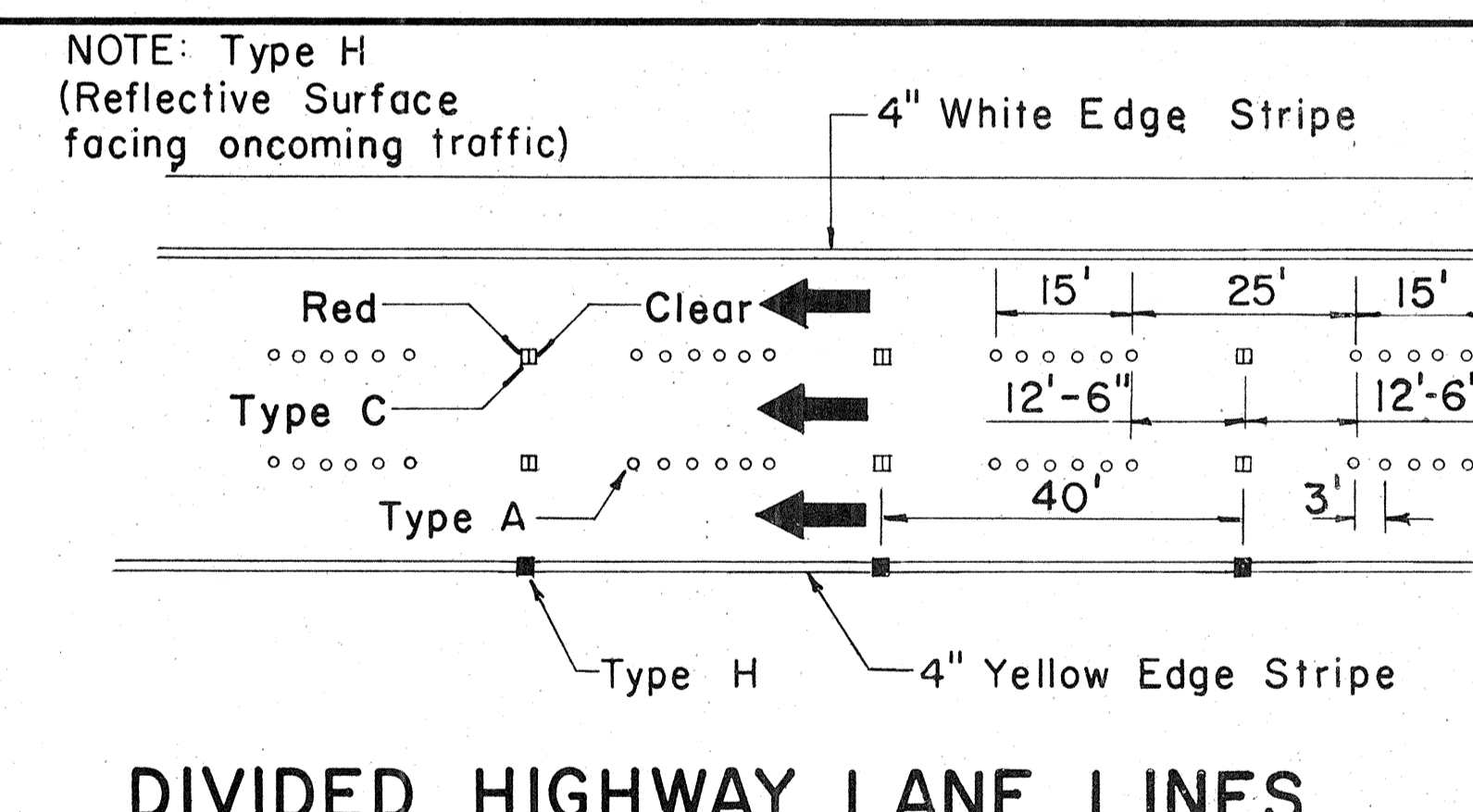
**TWO-LANE
PASSING PERMITTED AND PASSING PROHIBITED**



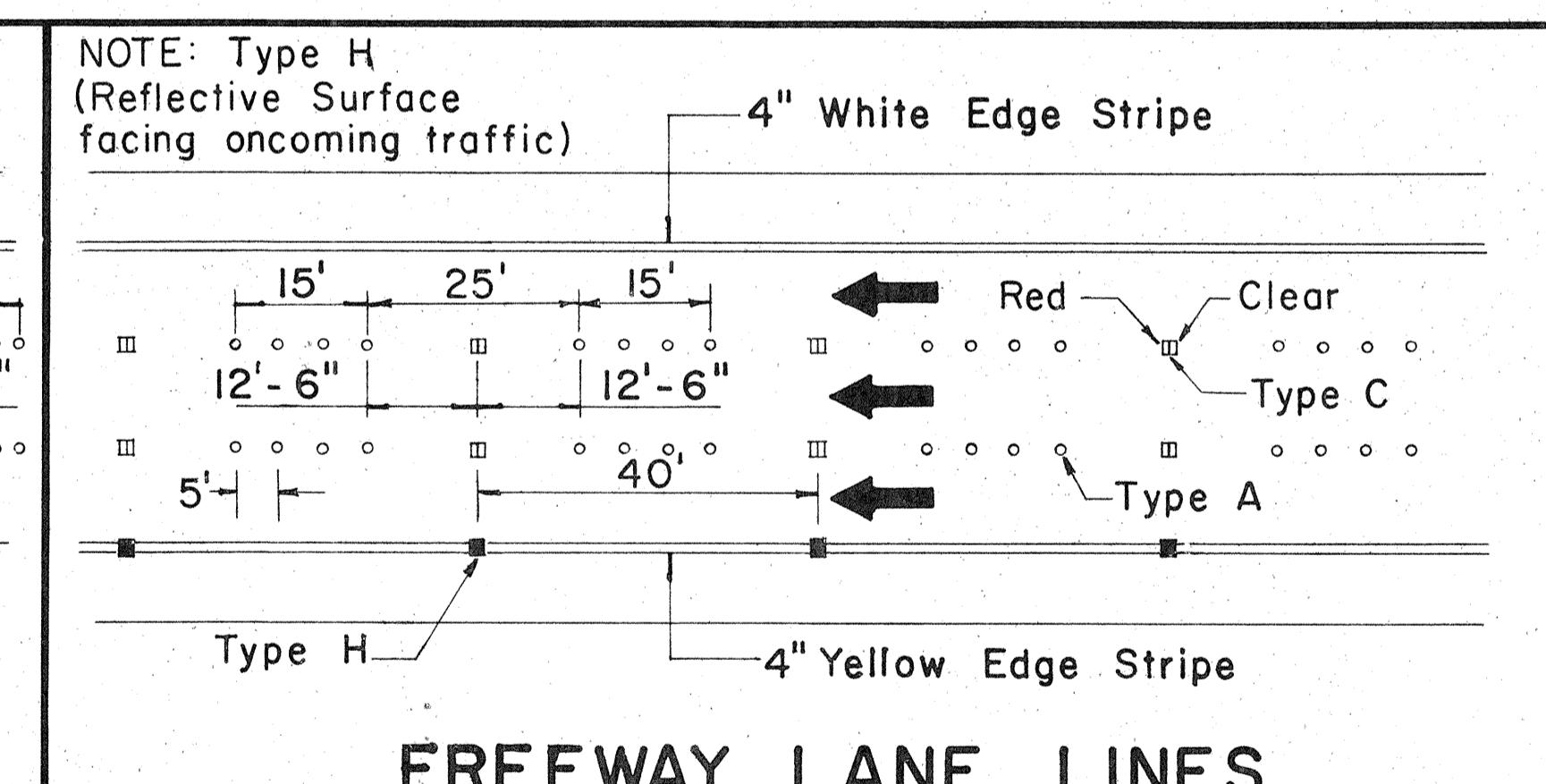
**TWO-LANE
PASSING PROHIBITED ZONES**



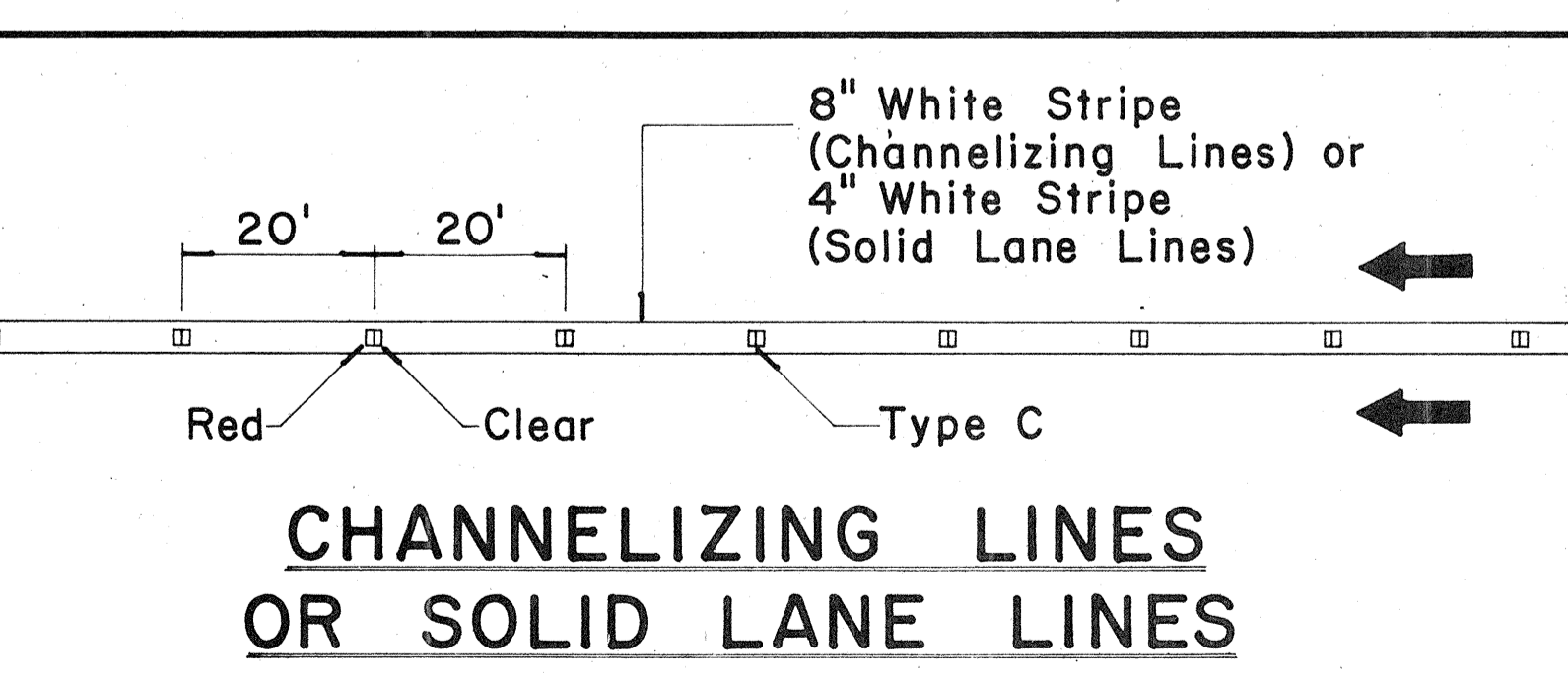
**MULTI-LANE
LANE LINES AND CENTER LINE**



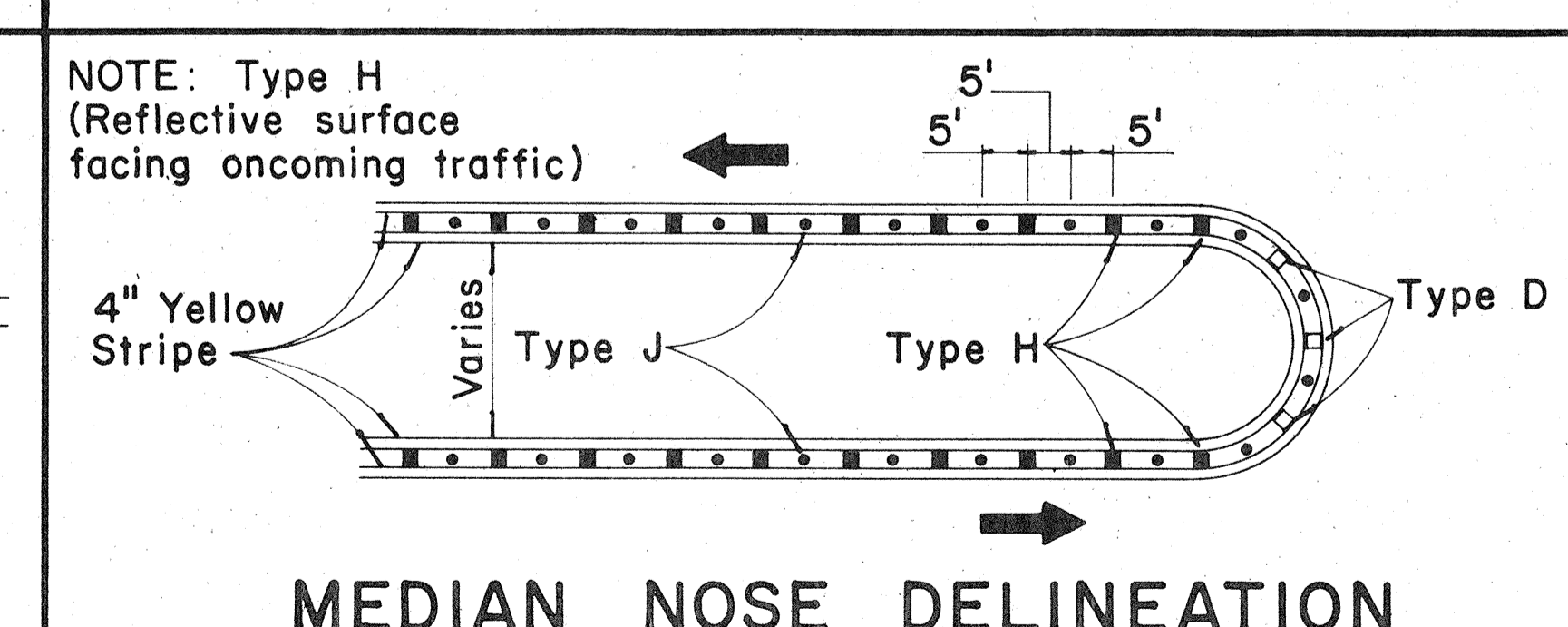
DIVIDED HIGHWAY LANE LINES



FREEWAY LANE LINES



**CHANNELIZING LINES
OR SOLID LANE LINES**



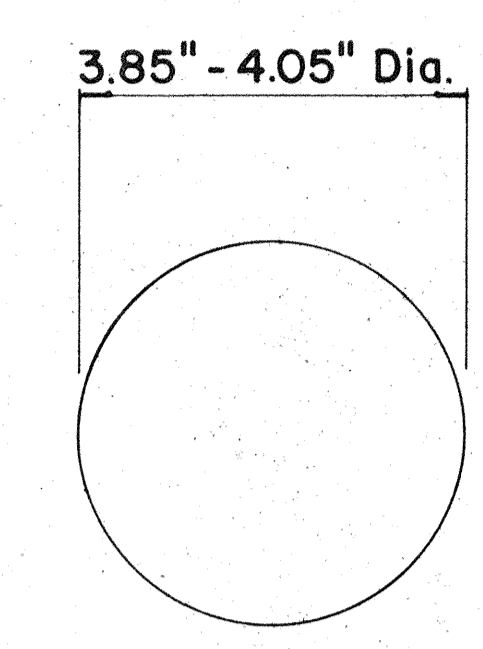
MEDIAN NOSE DELINEATION

TWO-LANE

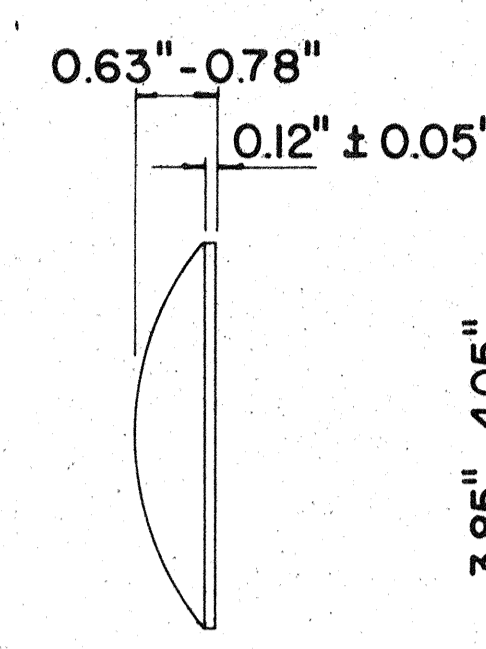
MULTI-LANE

DIVIDED HIGHWAY
AND
FREEWAY

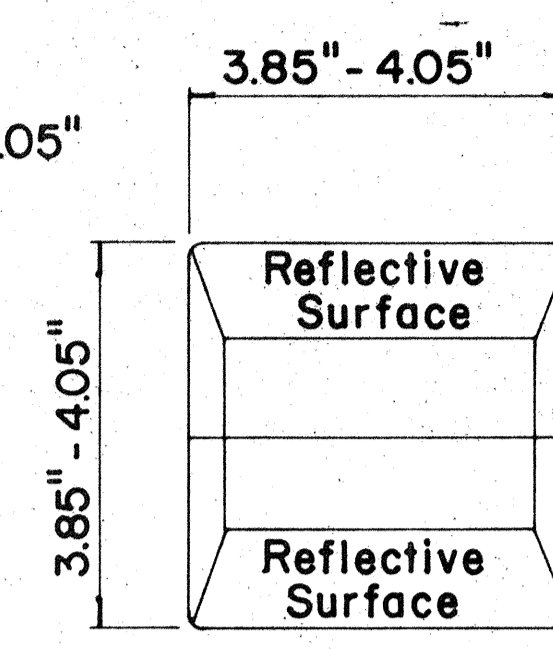
MISCELLANEOUS



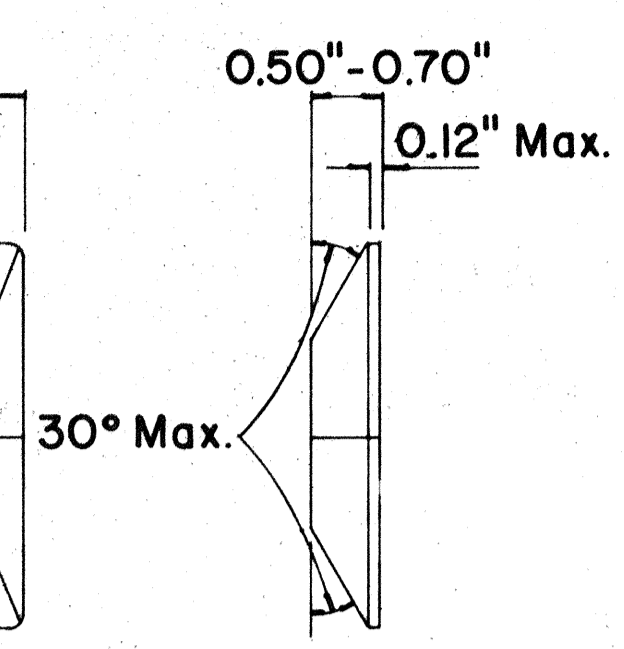
**TYPE A
NON-REFLECTIVE WHITE MARKER**



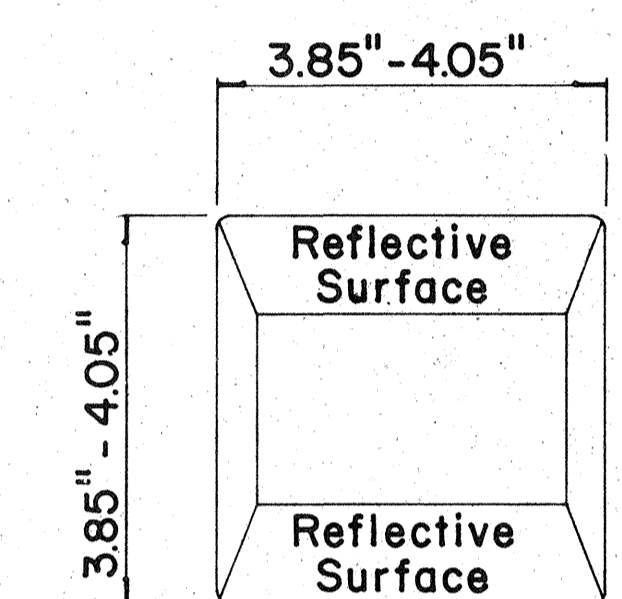
**TYPE J
NON-REFLECTIVE YELLOW MARKER**



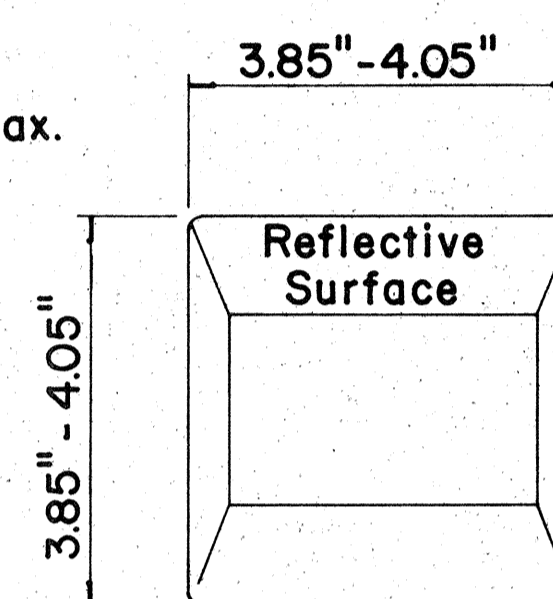
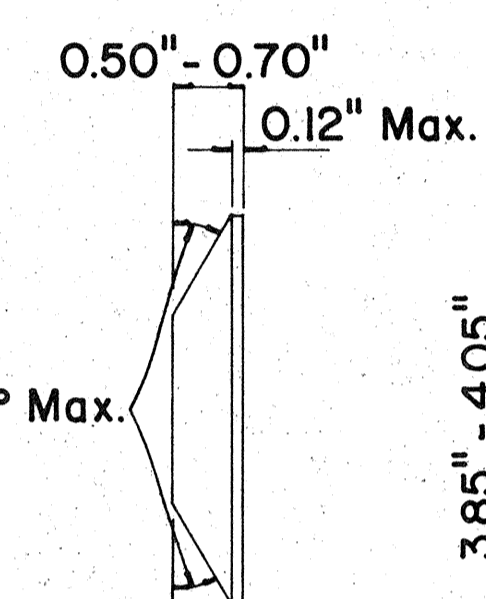
**TYPE C
RED-CLEAR REFLECTIVE MARKER**



**TYPE H
ONE-WAY YELLOW 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:
Eisaku Tanaka 11/18/71
TRAFFIC ENGINEER DATE

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
RAISED PAVEMENT MARKERS**

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(89)-13

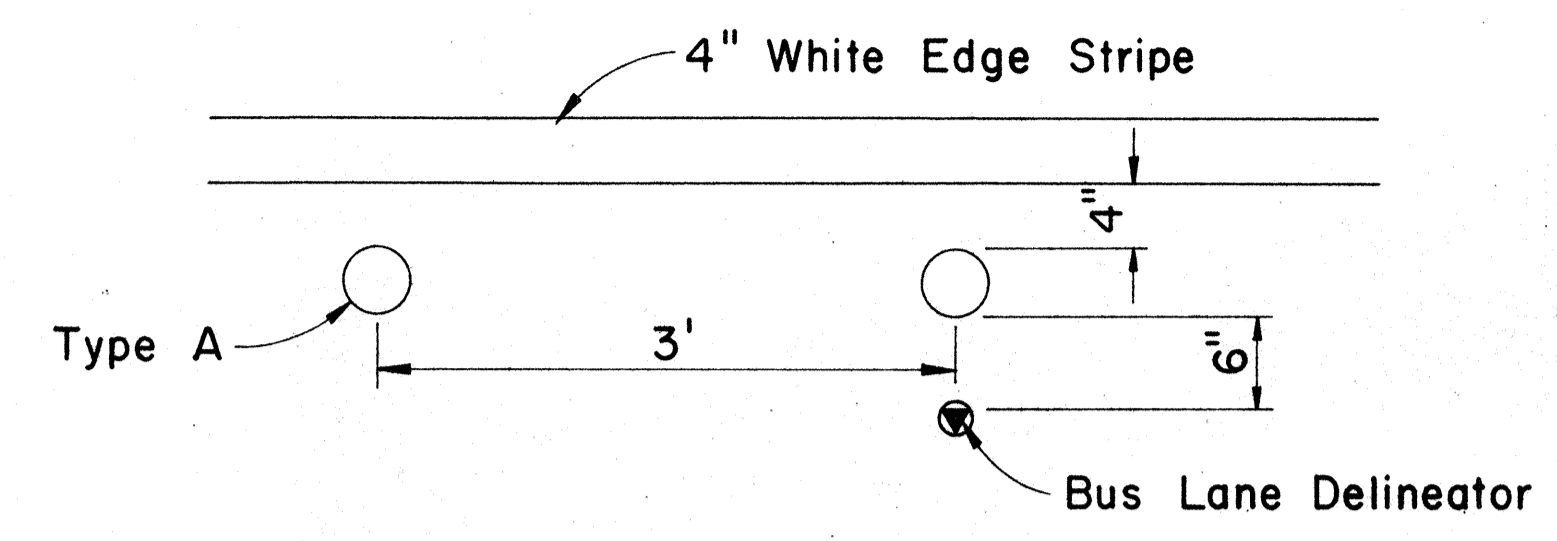
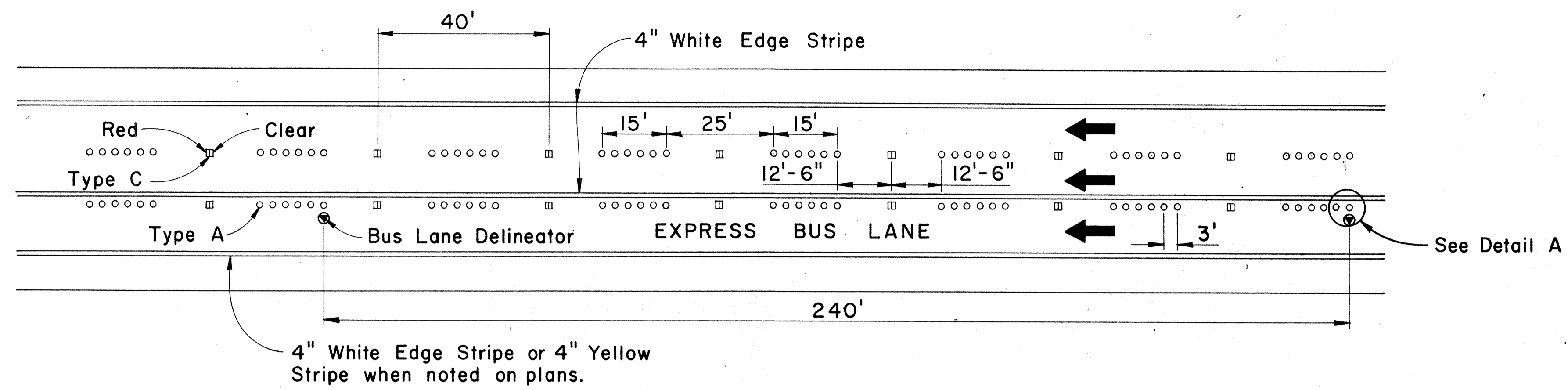
Not to Scale October 1971

SHEET No. OF SHEETS DT 300

C.O. 124

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

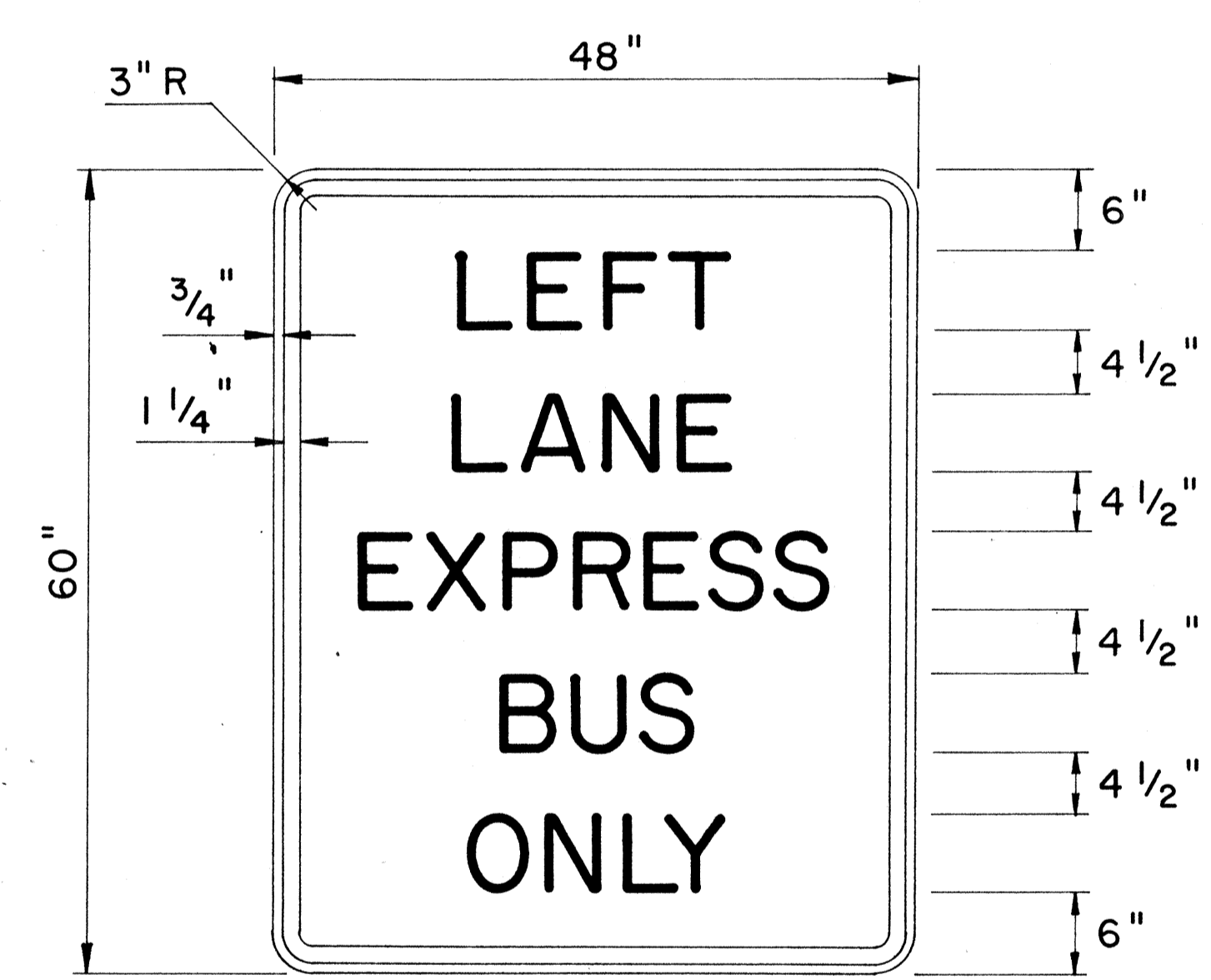
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



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

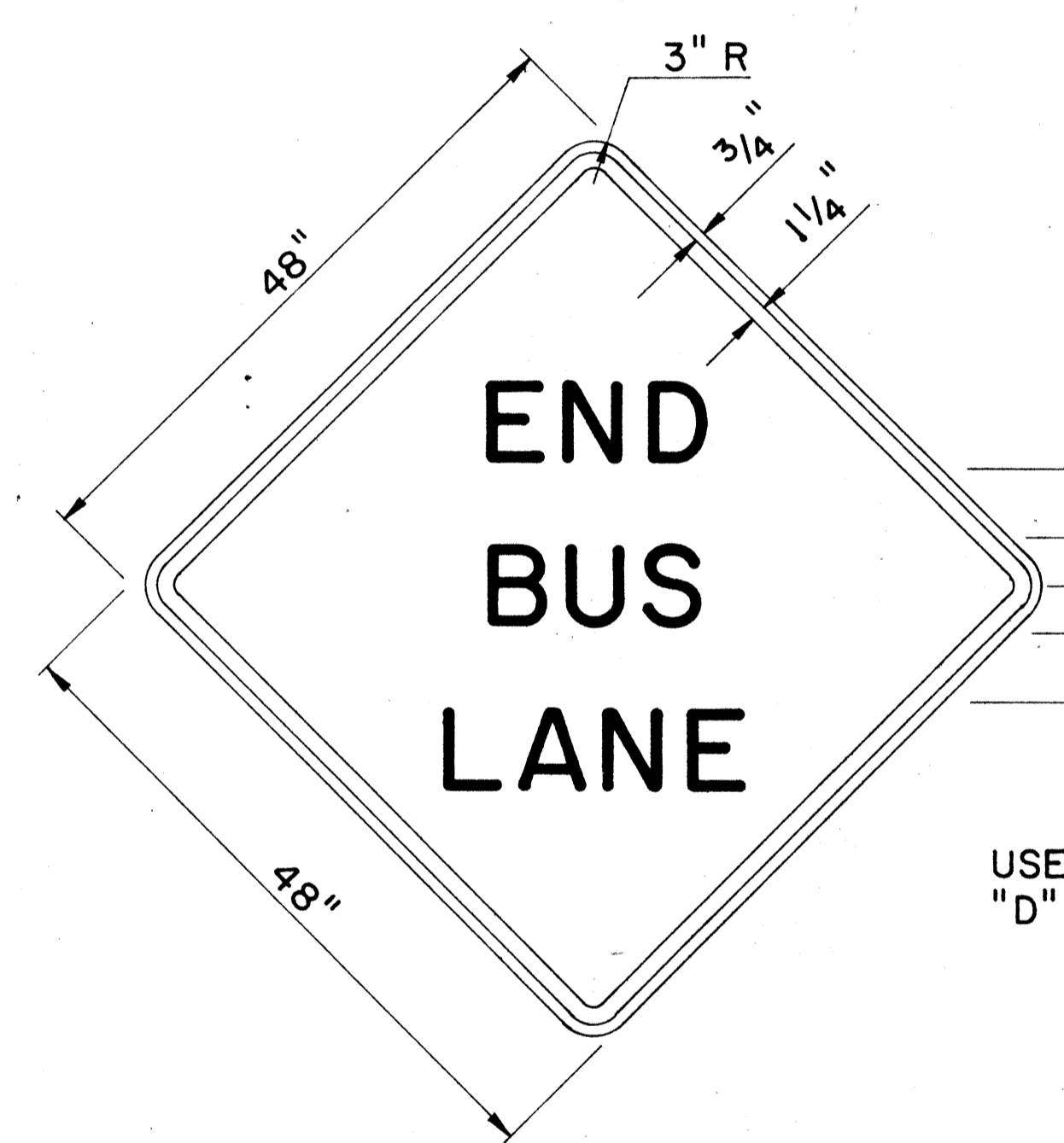
FREWAY LANE LINES WITH EXPRESS BUS LANE

Not To Scale



R17-2

USE 6" SERIES "D" LETTERS



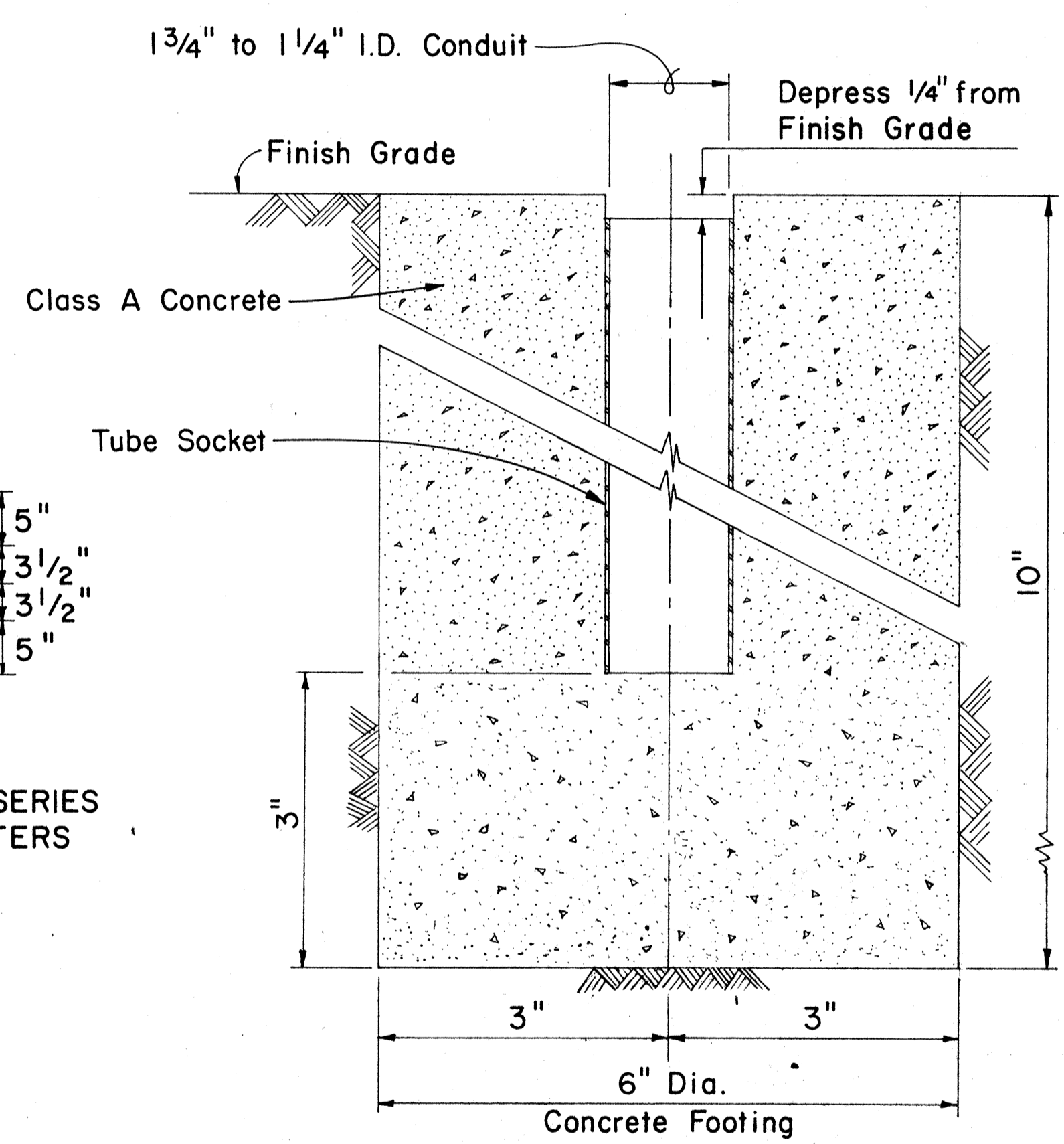
W15-3

USE 7" SERIES "D" LETTERS

MISCELLANEOUS REGULATORY & WARNING SIGNS

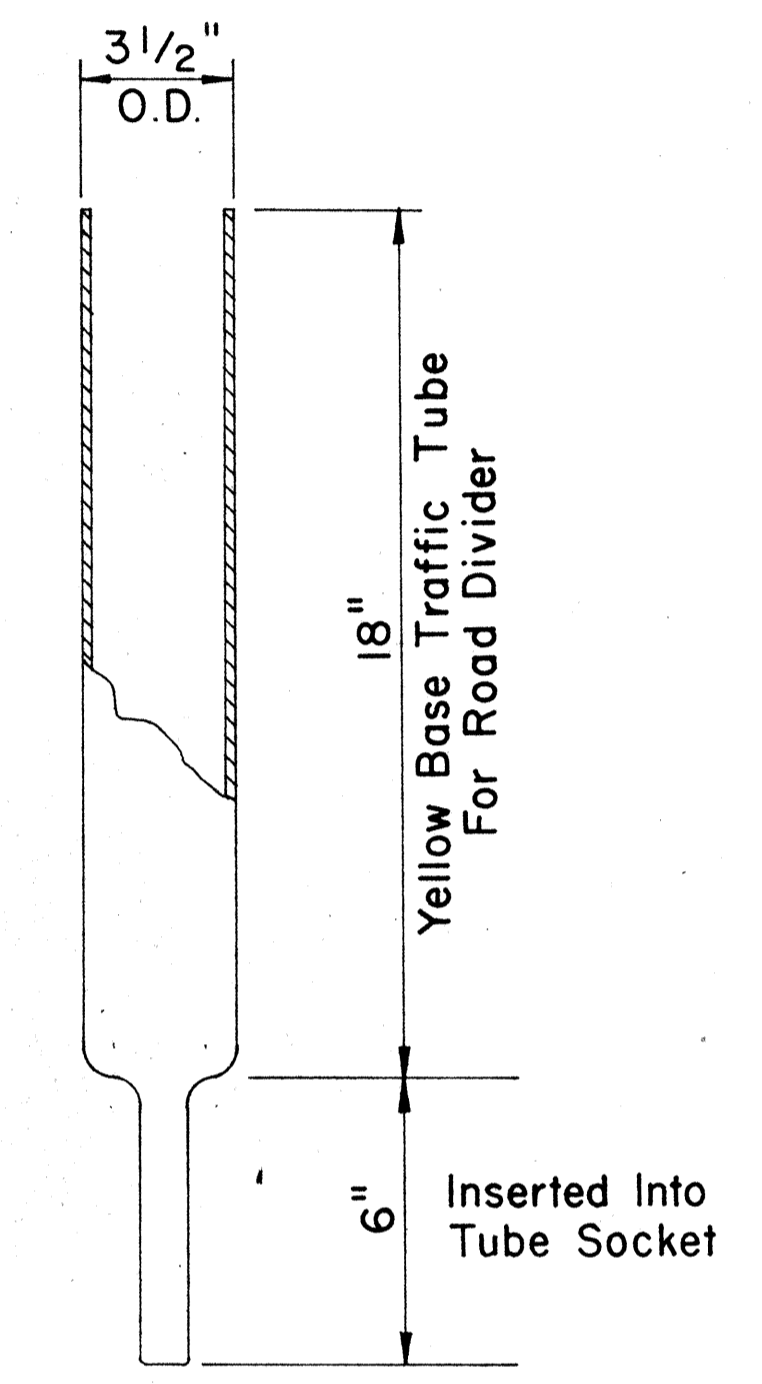
GENERAL NOTES:

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. Regulatory Sign (R17-2) and Warning Sign (W15-3) shall be reflectorized unless otherwise specified and shall have 3/8" bolt holes drilled at appropriate locations.
3. For Mounting Details see Standard Detail Sheet (DT-100) and Detail on sheet no. C.O.124 S-2
4. Contractor to check for snug fit of Bus Lane Delineator in Tube Socket prior to installation.



TUBE SOCKET

Scale: 3/4" = 1"



DETACHABLE BUS LANE DELINEATOR

Scale: 1/4" = 1"

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
NO.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISC. PAVEMENT MARKING AND SIGNING DETAILS

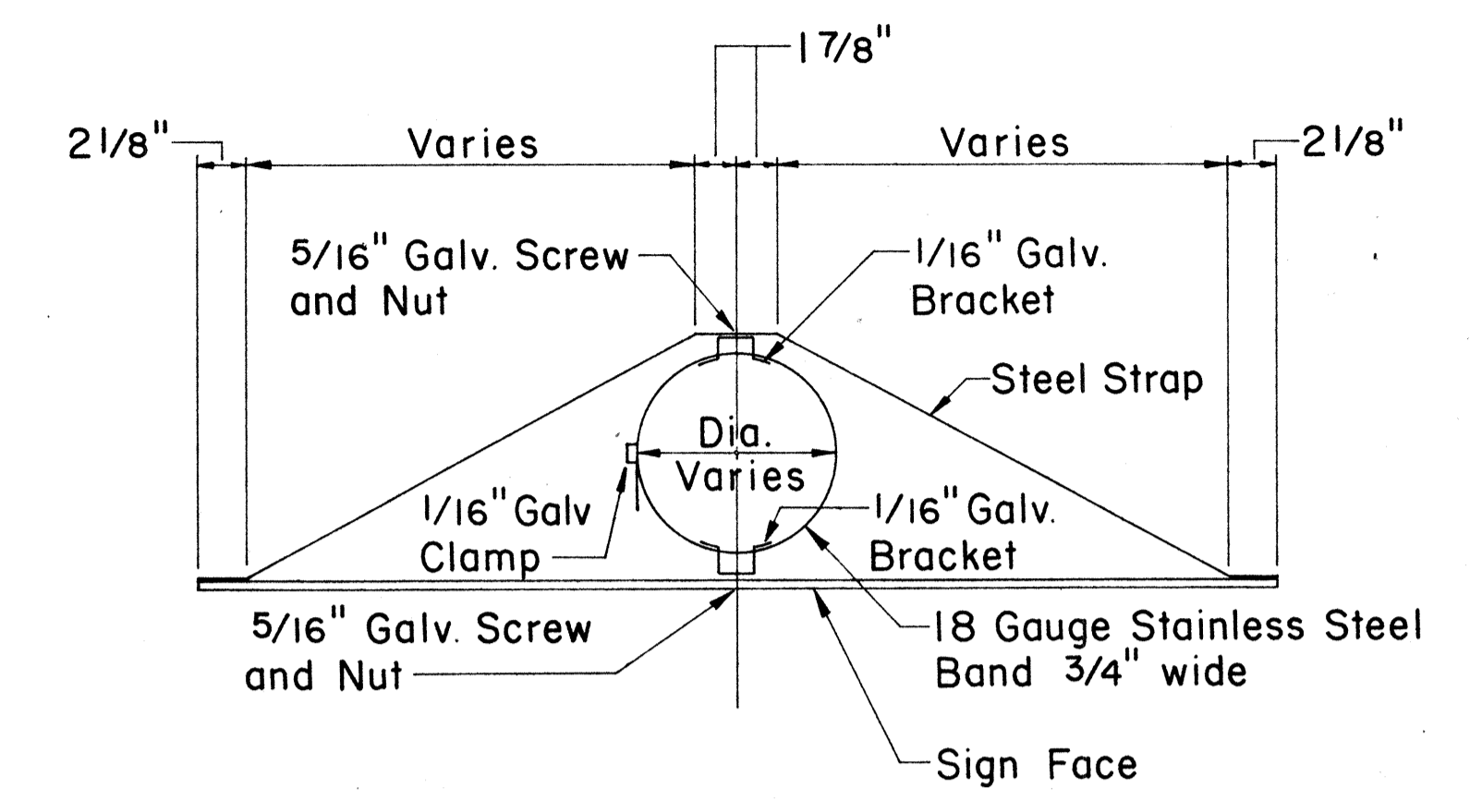
*INTERSTATE ROUTE H-1
PROJECT No. I-H-1(89)13*

Scale: As Noted

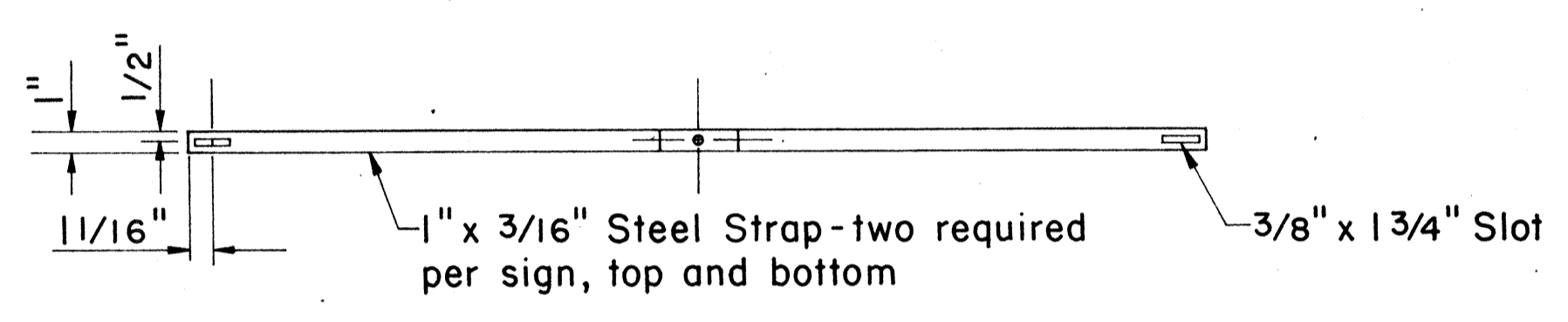
SHEET No. 21A OF 27 SHEETS

C.O.124 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



TOP



FRONT

MOUNTING DETAIL FOR SIGNS RI7-2 AND WI5-3
 Scale: 1 1/2" = 1' - 0"

DESIGNED BY	DATE
TRACED BY	
DESIGNED BY	
CHECKED BY	
NO.	

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

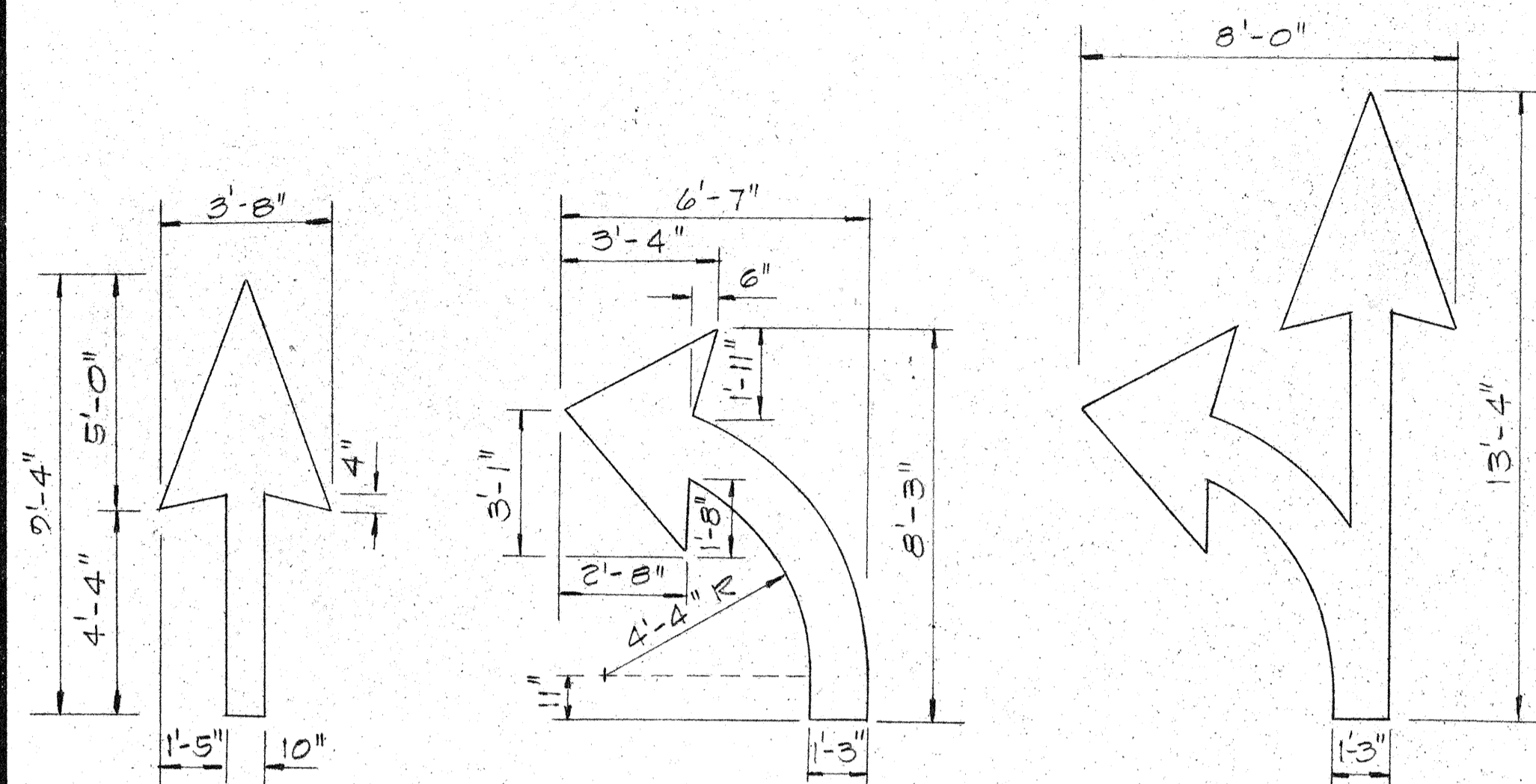
**MISCELLANEOUS
 SIGNING DETAIL**

INTERSTATE ROUTE H-1
 PROJECT No. I-HI-1(89)13

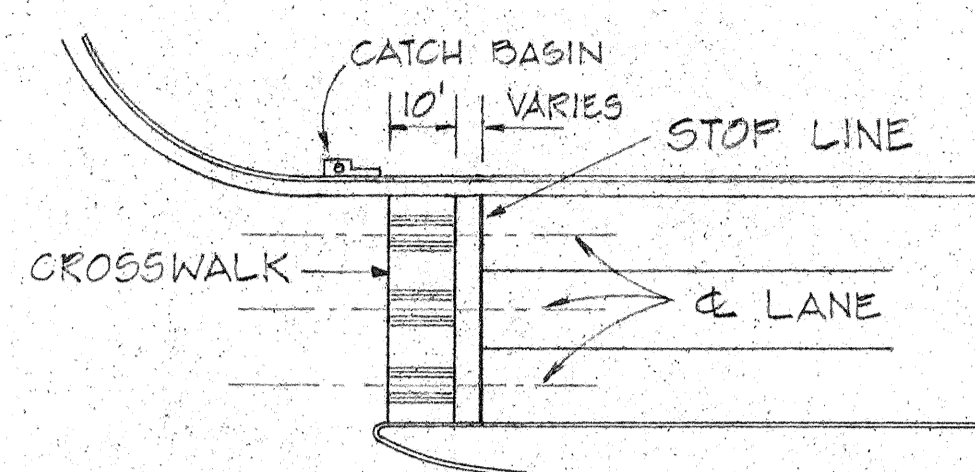
SCALE: AS NOTED

SHEET No. 277B OF 277 SHEETS

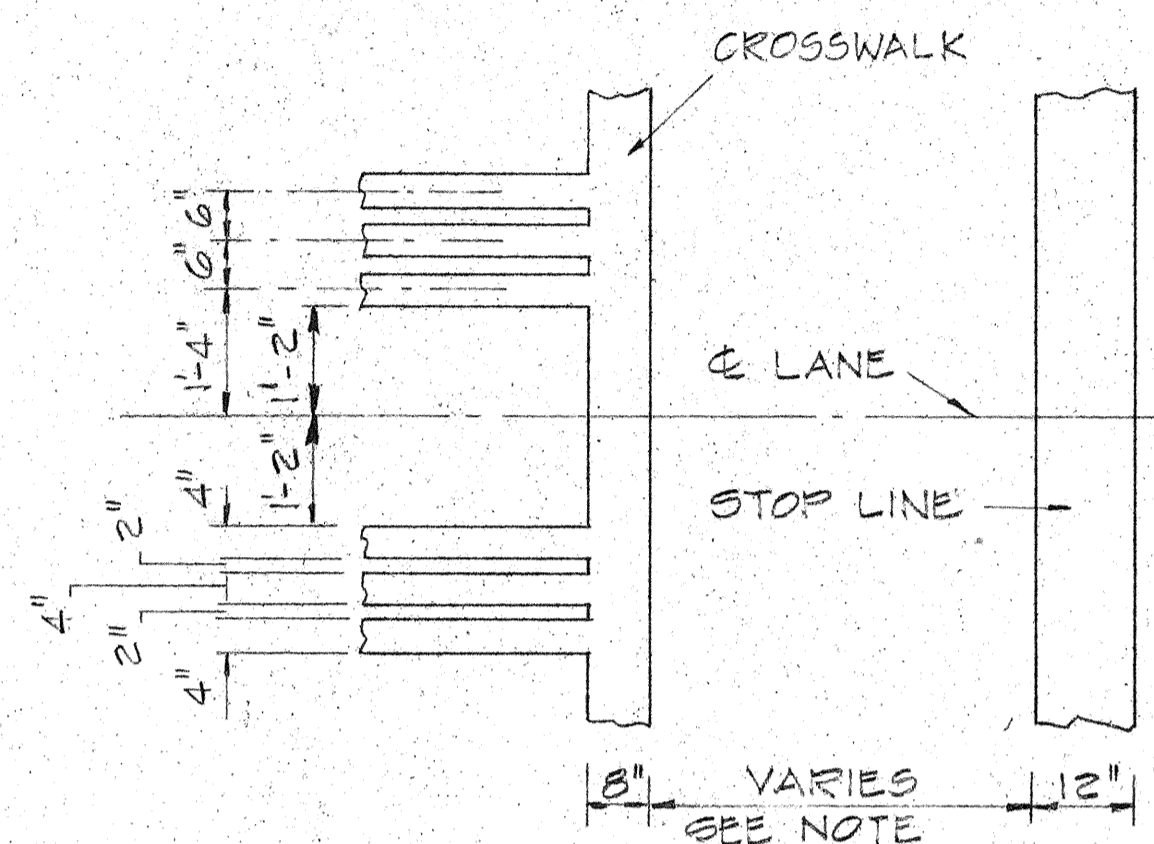
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(89)13	1971	1245-3	362



PAVEMENT ARROWS
NOT TO SCALE



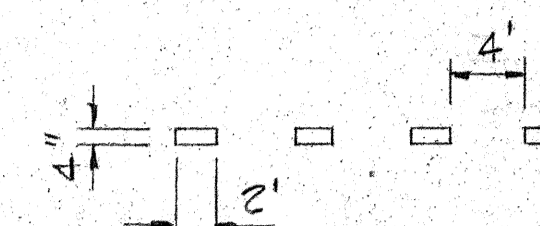
NOTE: SET ALL CROSSWALKS AWAY FROM CATCH BASINS



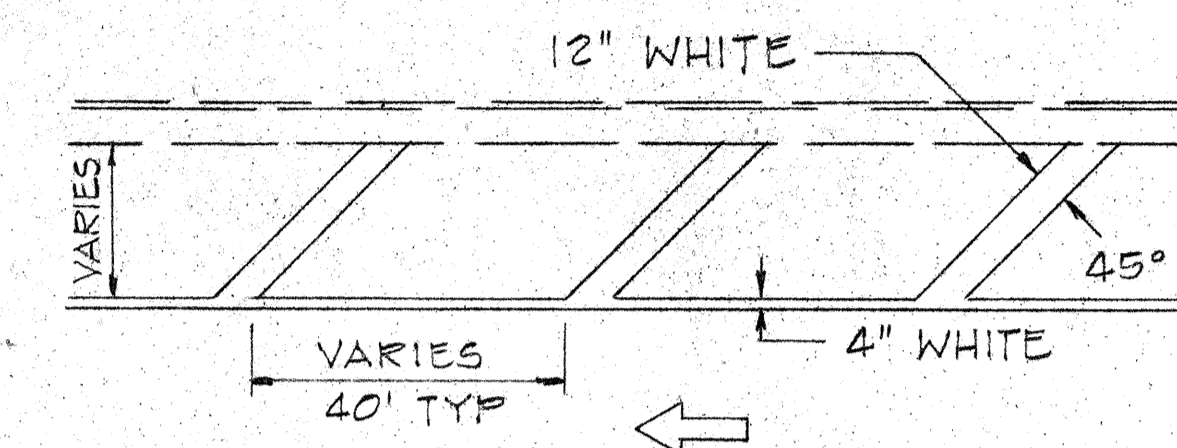
CROSSWALK & STOP LINE

NOT TO SCALE

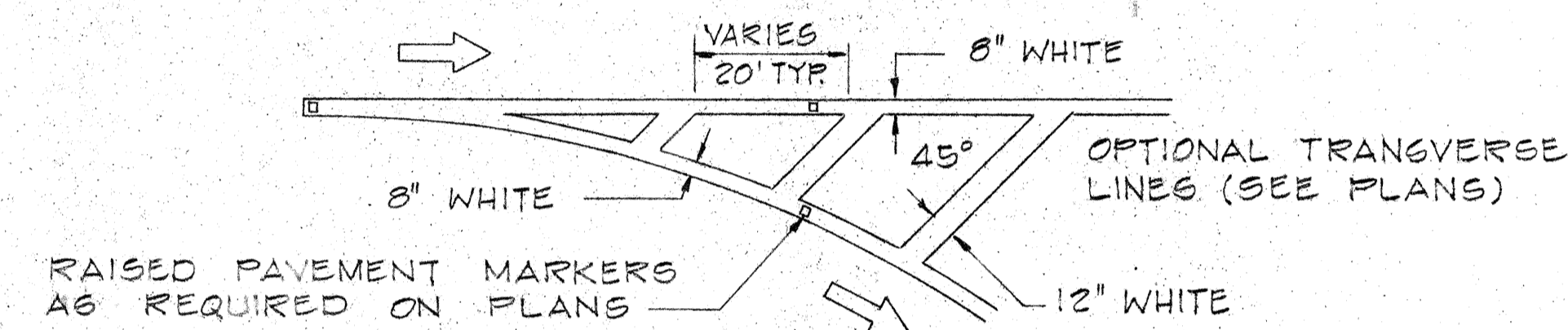
NOTE: STOP LINES AT UNSIGNALIZED INTERSECTIONS AND AT MIDDLEBLOCK CROSSWALKS SHALL BE PLACED A MINIMUM OF 10 FEET BEFORE THE CROSSWALK, HOWEVER A DISTANCE OF 20 FEET IS PREFERABLE. STOP LINES AT SIGNALIZED INTERSECTIONS SHALL BE PLACED A MINIMUM OF FOUR FEET BEFORE THE CROSSWALK.



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.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS OF PAVEMENT MARKINGS

INTERSTATE ROUTE H-1
PROJ. NO. I-HI-1(89)13

SCALE: AS SHOWN DATE:

SHEET NO. OF SHEETS

C.O. 1245-3

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