

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FH-1(60):23	1976	C.O.134	181

SIGN NO	MESSAGE	AREA (SQ. FT.)
E-8	BINGHAM STREET	84.00
E-9	UNIVERSITY AVENUE	84.00
		168.00

INSTALLED ABOVE SIGN NO.	MESSAGE	EACH	AREA (S.F.)
E-1	EXIT 23		15
E-2L	EXIT 22		15
E-2R	EXIT 23		15
E-3L	EXIT 24A		17
E-3R	EXIT 23		15
E-8	EXIT 24A		17
E-9	EXIT 25A		17
E-10	EXIT 24B		17
E-11	EXIT 25A		17
E-12	EXIT 25A		17
E-13	EXIT 25A		17
E-14	EXIT 24B		17
	TOTAL		212 S.F.

SIGN NO.	MESSAGE	QUANTITY	AREA (SQ. FT.)
D-1	EXIT 23 ↗	1 EA	44
D-2	FREEWAY WEST	1 EA	34
D-3	EXIT 24A	1 EA	44
D-4	EXIT 24A	1 EA	44
D-5	EXIT 24B	1 EA	48
D-6	EXIT 24B ↗	1 EA	48
D-7	EXIT 25A ↗	1 EA	48
D-8	EXIT 24A BINGHAM STREET	1 EA	105
D-9	EXIT 24B UNIVERSITY AVE	1 EA	111
D-10	EXIT 24B WILDER AVE	1 EA	98
D-11	EXIT 24B UNIV. AVE	1 EA	129.50
	TOTAL		754

TYPE	MESSAGE	QUANTITY		
		W/POST	W/O POST	ON CONC. BARRIER
IM-1(3)	H-1	2		3
M3-2-A	EAST		2	3
M3-4-A	WEST		1	
IM-1(2)		1		
M6-1	→ (ARROW) ⇨		1	
	TOTAL	3	4	6

SHEET NO.	LENGTH - LF	
	YELLOW	WHITE
C.O. ADD. 127R	2600	1900
C.O. 128	5400	3100
C.O. 129	3800	1100
C.O. 130	6000	2700
C.O. 131	6200	6220
C.O. 132	3000	2860
C.O. 133	2400	1600
	TOTAL	29,400

SHEET NO.	QUANTITY		
	TYPE A	TYPE C	TYPE H
C.O. ADD. 127R	596	277	68
C.O. 128	1372	481	140
C.O. 129	956	369	100
C.O. 130	1300	421	156
C.O. 131	1304	379	160
C.O. 132	656	218	78
C.O. 133	508	159	62
	TOTAL	6,692	2,304

QUANTITIES FOR FREEWAY

SHEET NO.	LENGTH - LF	
	YELLOW	WHITE
C.O. ADD. 127R	3,010	9340
C.O. 128	2,465	4,715
C.O. 129	1,075	4,945
C.O. 130	870	3,130
C.O. 131		700
C.O. 132	2,710	4,190
C.O. 133	525	1,875
	TOTAL	10,655

SHEET NO.	QUANTITY		
	TYPE A	TYPE C	TYPE H
C.O. ADD. 127R	116	28	73
C.O. 128	148	31	61
C.O. 129	20	40	27
C.O. 130			20
C.O. 131		5	
C.O. 132		9	71
C.O. 133			13
	TOTAL	284	113

QUANTITIES FOR RAMP

DESCRIPTION	QUANTITY
PAVEMENT STRIPING - CROSSWALKS	11 LANE
PAVEMENT ARROWS	4 EACH

TYPE	MESSAGE	QUANTITY		
		W/POST	W/O POST	ON CONC. BARRIER
R2-1(45)-A	SPEED LIMIT 45	1	6	3
R2-4(50/40)-A	SPEED LIMIT 50/MINIMUM 40		1	
R7-4-A	NO STOPPING OR STANDING	3	1	4
W4-1(R)-A	↑ MERGE	6		1
W13-2(25)	EXIT 25 MPH.		2	2
W9-3(L)	THRU TRAFFIC MERGE LEFT	1		
	TOTAL	11	6	10

TYPE	MESSAGE	QUANTITY		
		W/POST	W/O POST	ON CONC. BARRIER
	MILE 24			2

DESCRIPTION	QUANTITY
HEADLIGHT GLARE SCREEN	7,600 L.F.

TYPE	MESSAGE	QUANTITY		
		W/POST	W/O POST	ON CONC. BARRIER
R1-1	STOP			1
R5-9	WRONG WAY			3
R6-1(R)	ONE WAY			12
R7-1	NO PARKING ANY TIME			4
D9-1Q	PHONE EXIT 1/4 MILE			1
W13-2(25)	EXIT 25 MPH.		1	1
	TOTAL		1	22

SHEET NO.	RM-2			RM-3			RM-9		
	W/POST	W/O POST	ON CONC. BARRIER	W/POST	W/O POST	ON CONC. BARRIER	W/POST	W/O POST	ON CONC. BARRIER
C.O. ADD. 127R									1
C.O. 128									
C.O. 129									1
C.O. 130									1
C.O. 131		2		4	1	1	2		
C.O. 132			1						1
	TOTAL		2	1	4	1	1	2	4

8/24/77	REVISED PAV'T STRIPING & RAISED PAV'T MARKERS SUMMARIES
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SUMMARY OF SIGNS

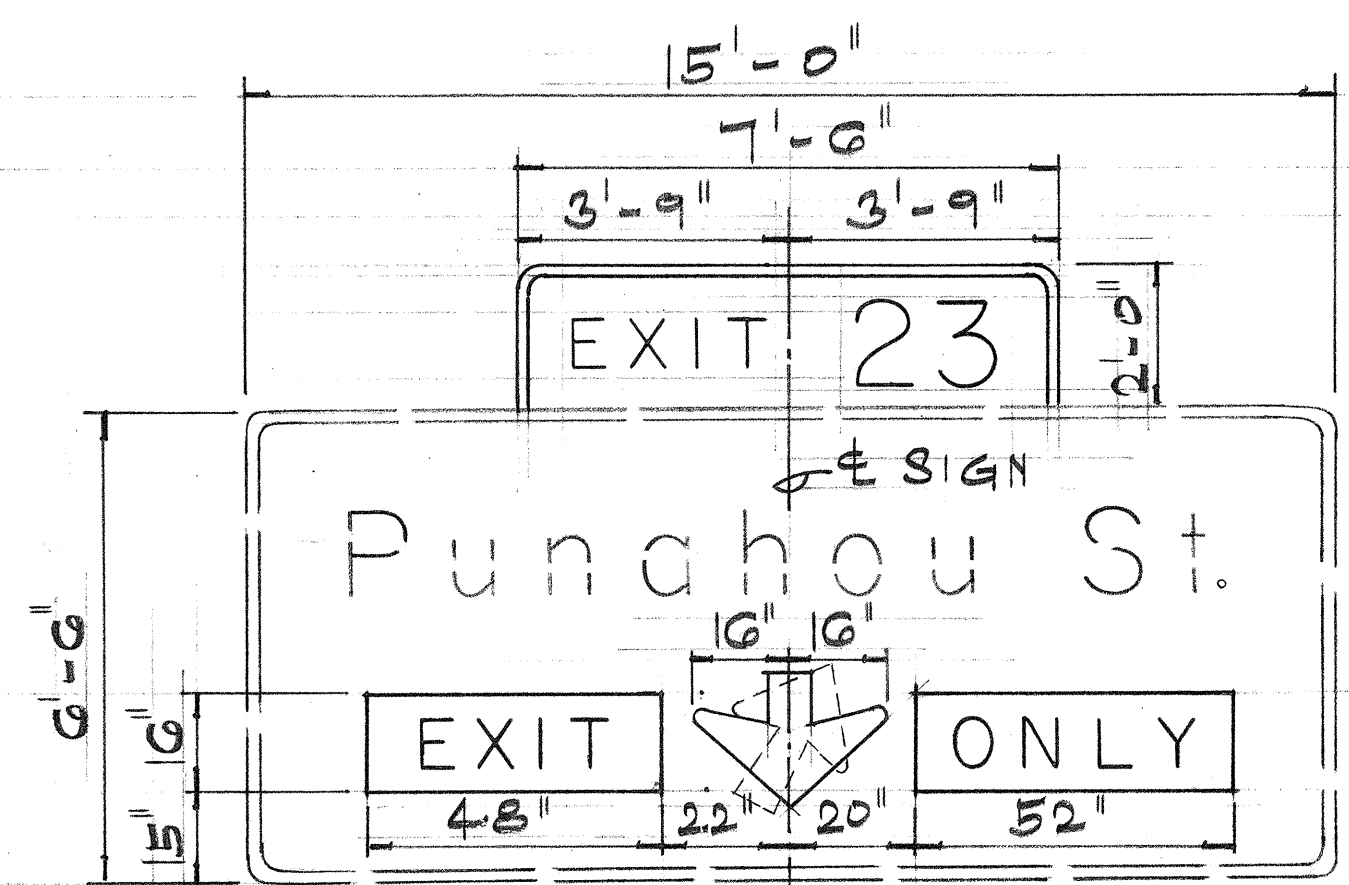
REFLECTOR MARKERS
PAVEMENT MARKERS AND
PAVEMENT STRIPING

F.A.I. PROJ. NO. I-HI-1(60):23

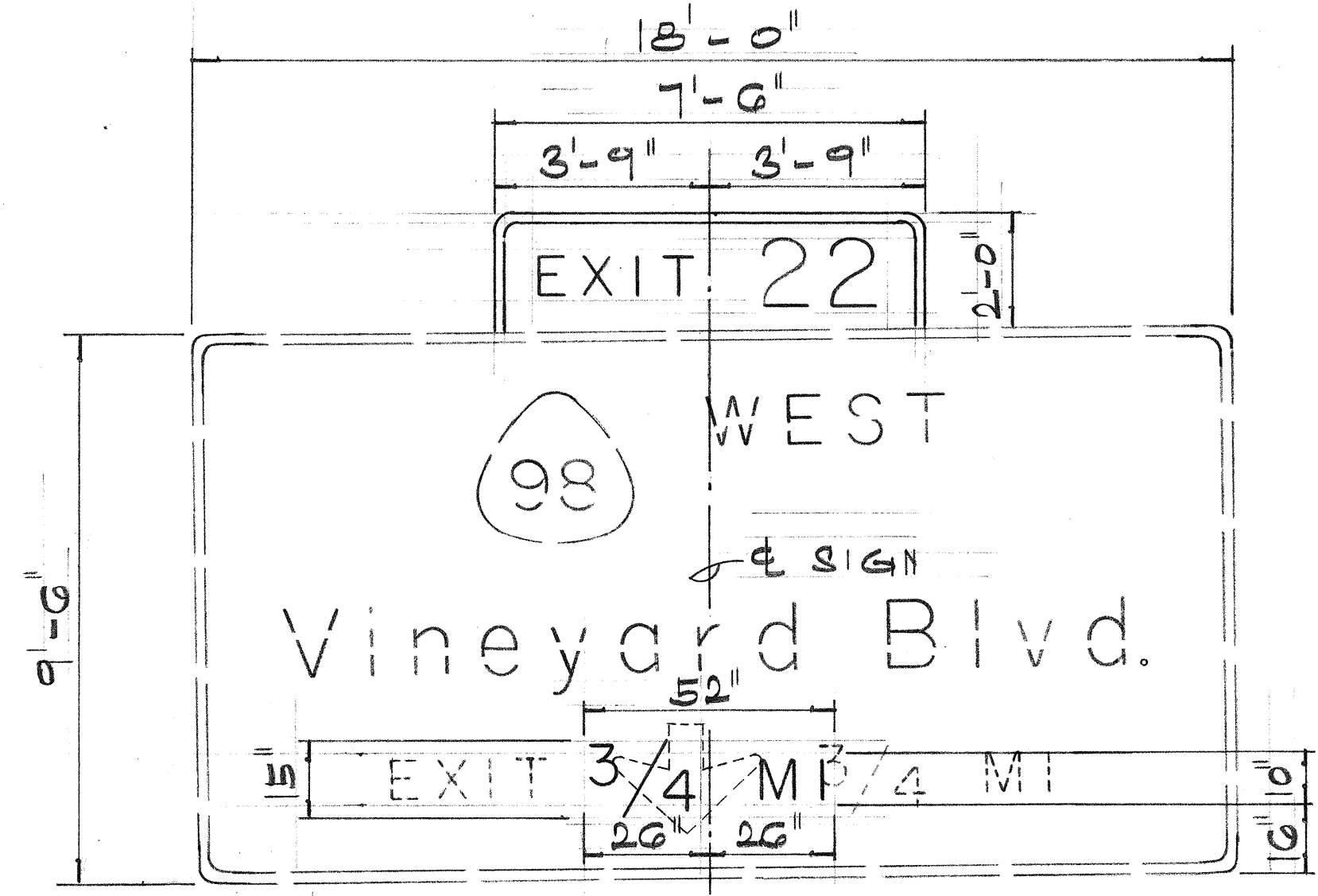
SHEET NO. 147 OF 537 SHEETS

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

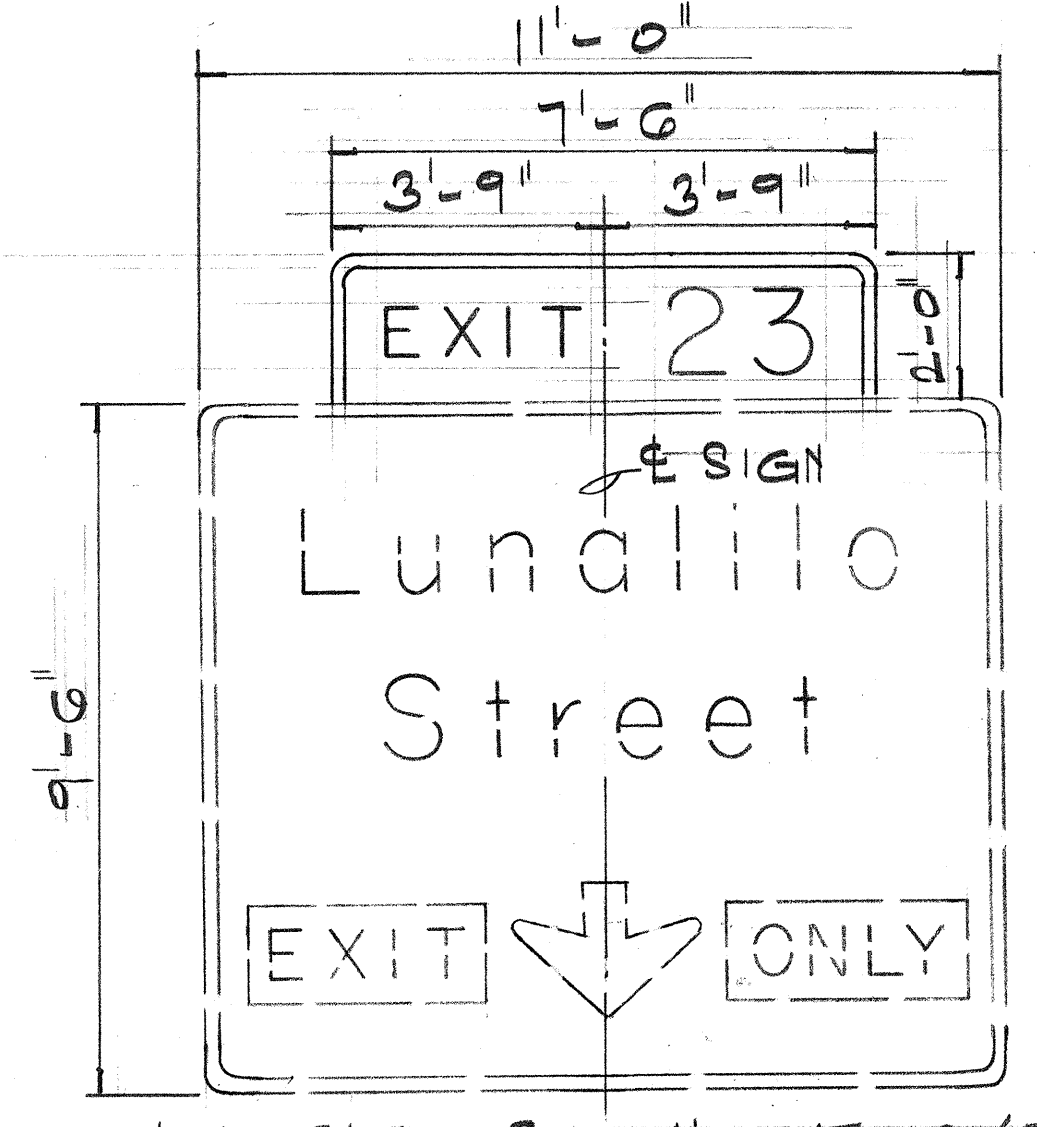
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	C.O. 135	101



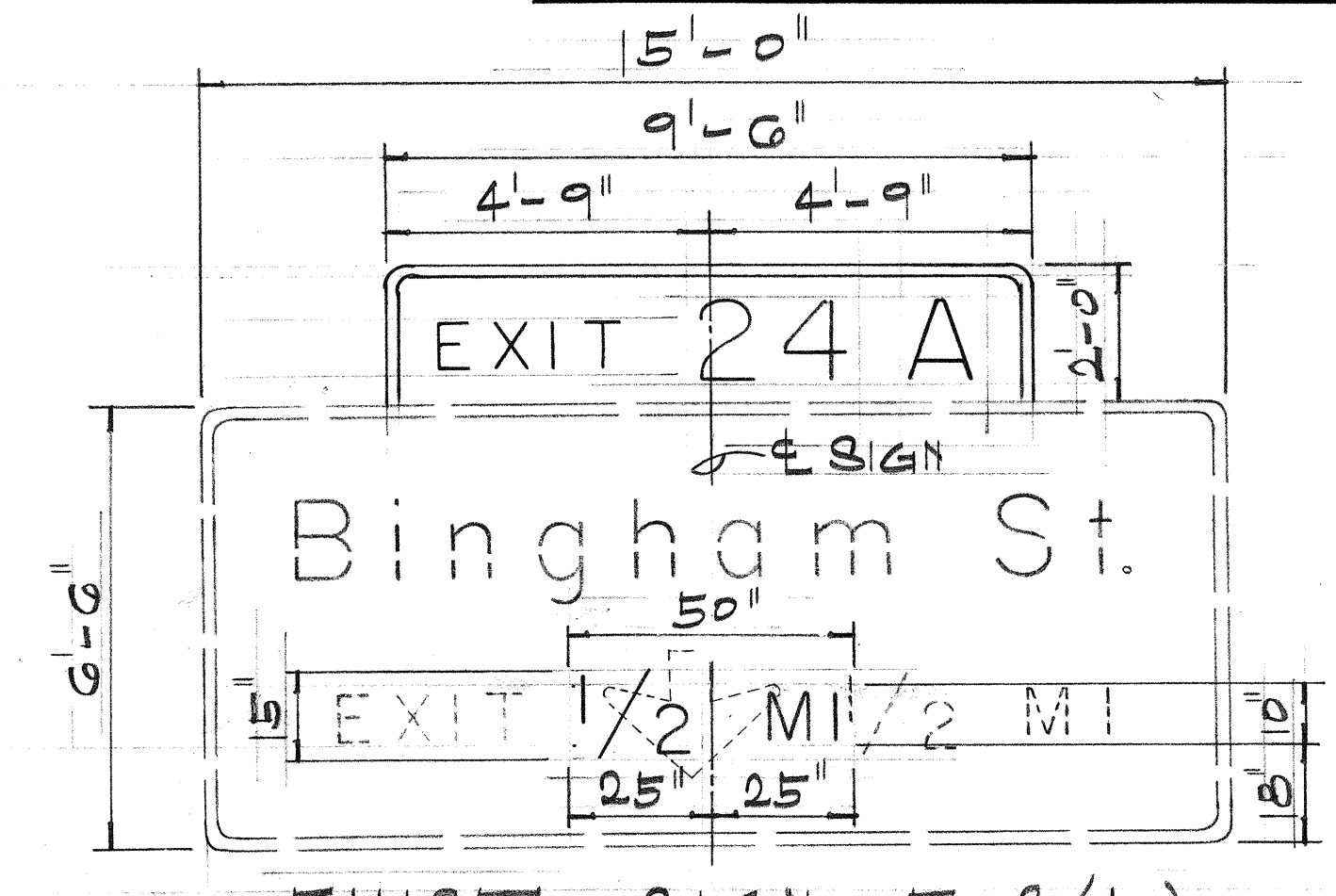
- EXIST. SIGN E-1**
1. INSTALL EXIT 23 SIGN PANEL
 2. REMOVE EXIST. ARROW
 3. INSTALL ↓ (DOWN) ARROW
 4. INSTALL EXIT ONLY SIGN PANELS



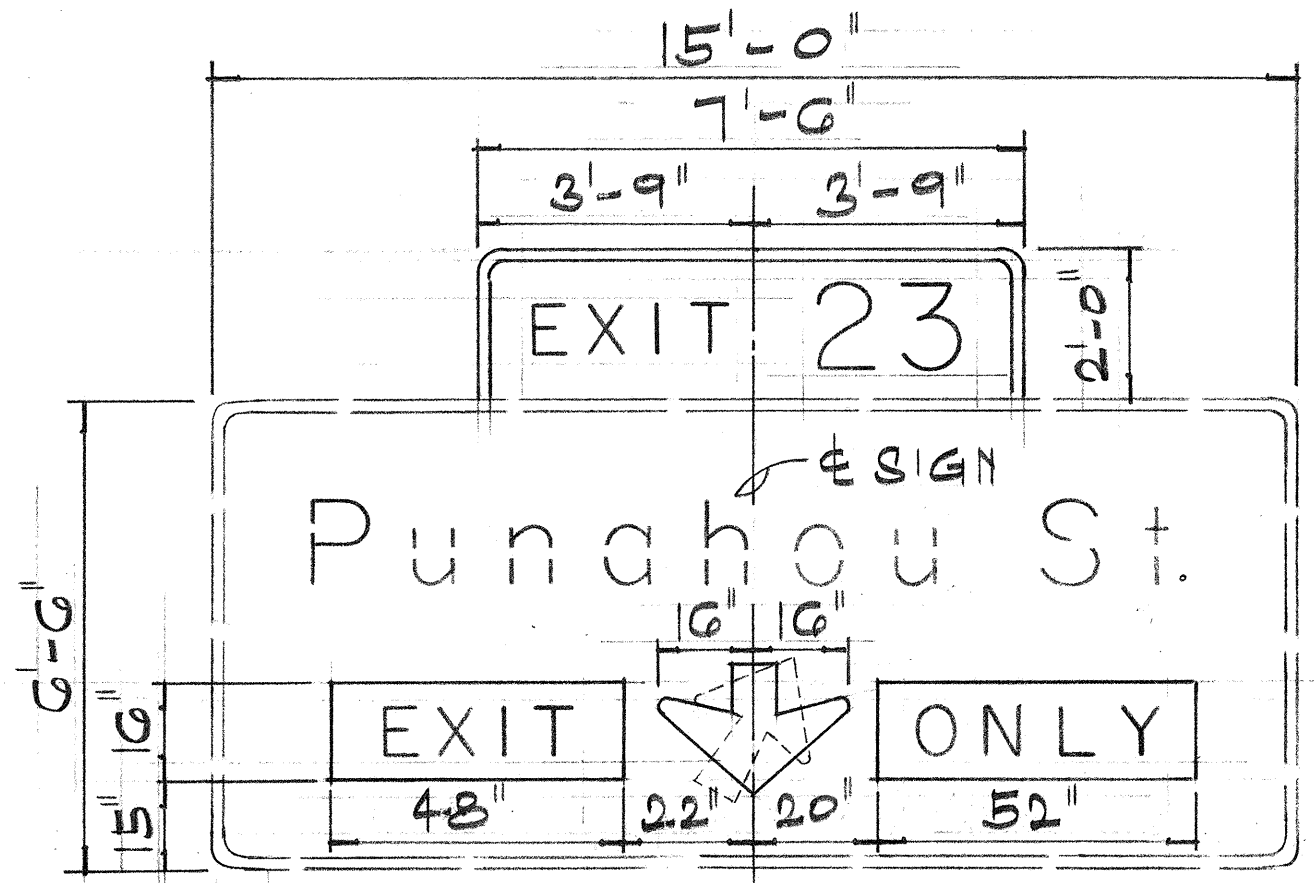
- EXIST. SIGN E-2(L)**
1. INSTALL EXIT 22 SIGN PANEL
 2. REMOVE "EXIT ↓ 3/4 MI"
 3. INSTALL "3/4 MI"



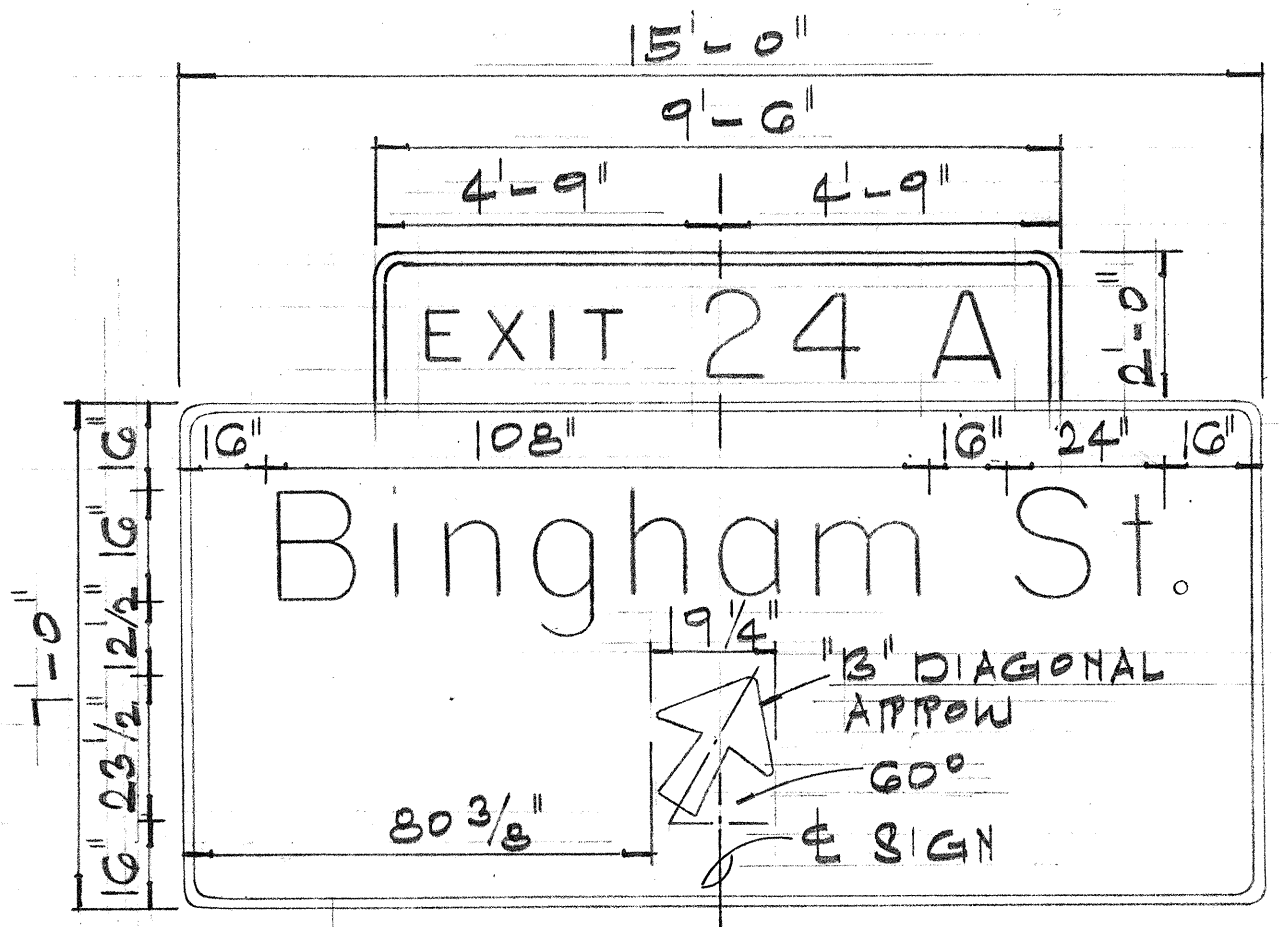
- EXIST. SIGN E-2(R)**
1. INSTALL EXIT 23 SIGN PANEL



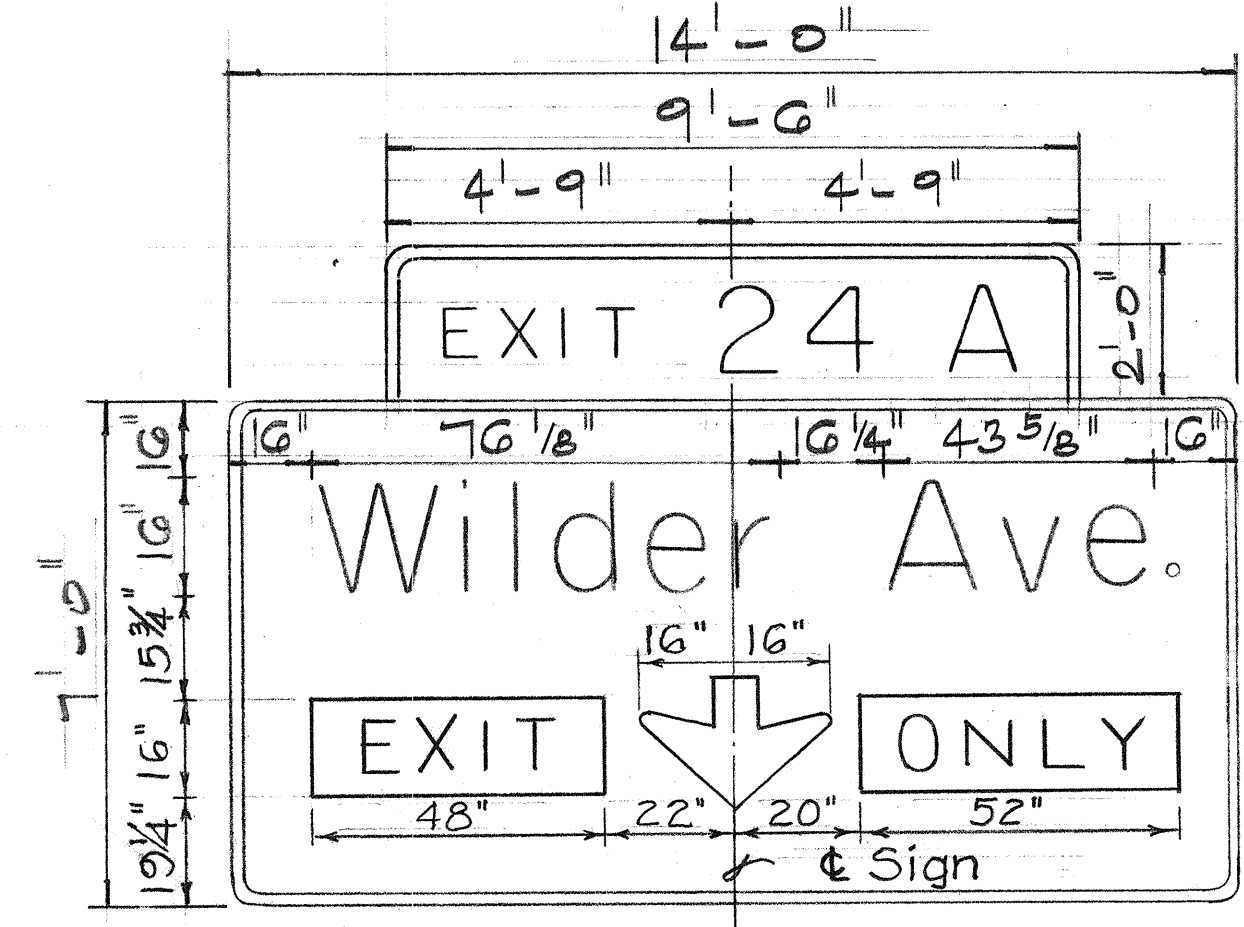
- EXIST. SIGN E-3(L)**
1. INSTALL EXIT 24 A SIGN PANEL
 2. REMOVE "EXIT ↓ 1/2 MI"
 3. INSTALL "1/2 MI"



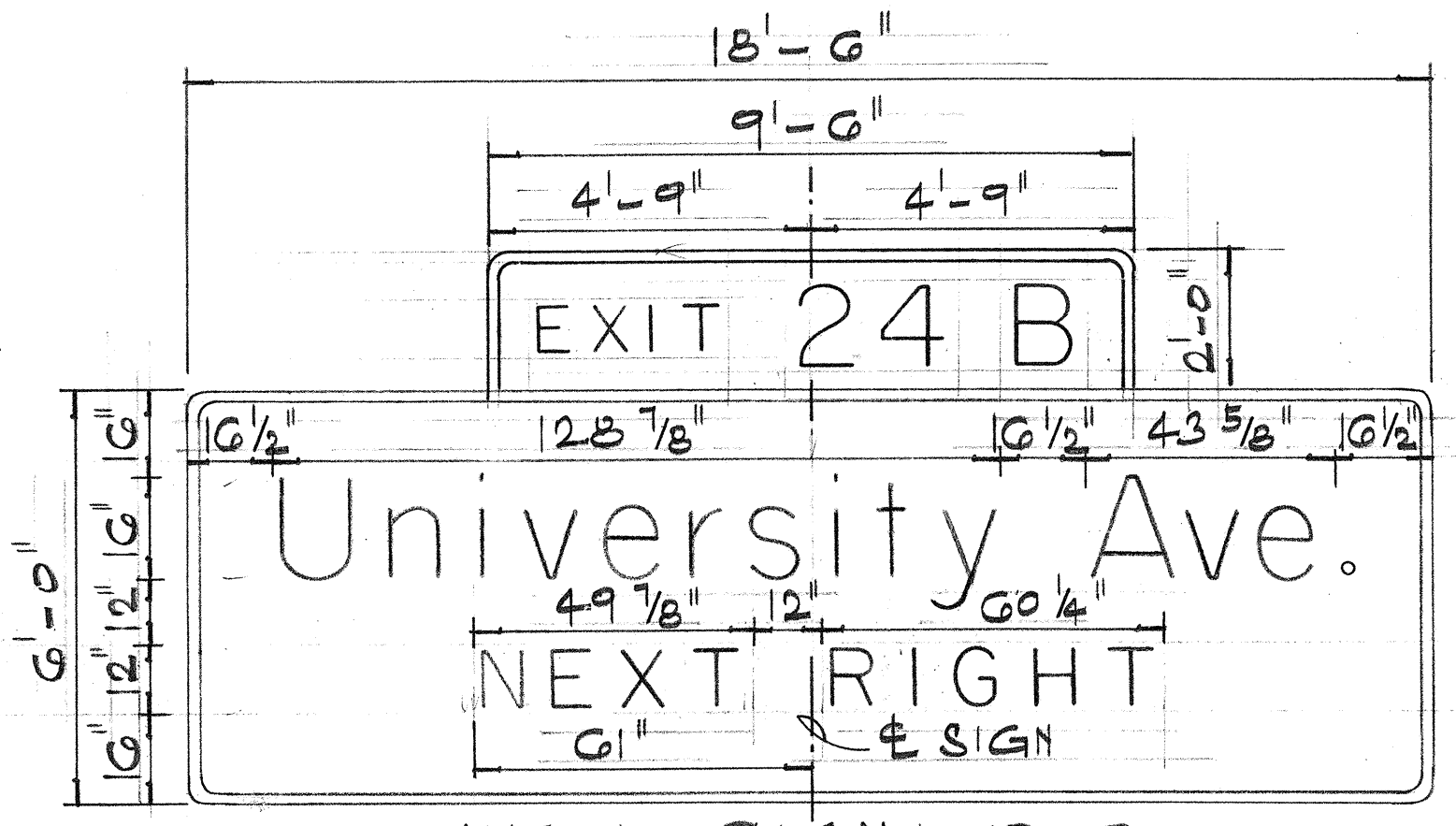
- EXIST. SIGN E-3(R)**
1. INSTALL EXIT 23 SIGN PANEL
 2. REMOVE EXIST. ARROW
 3. INSTALL ↓ (DOWN) ARROW
 4. INSTALL EXIT ONLY SIGN PANELS



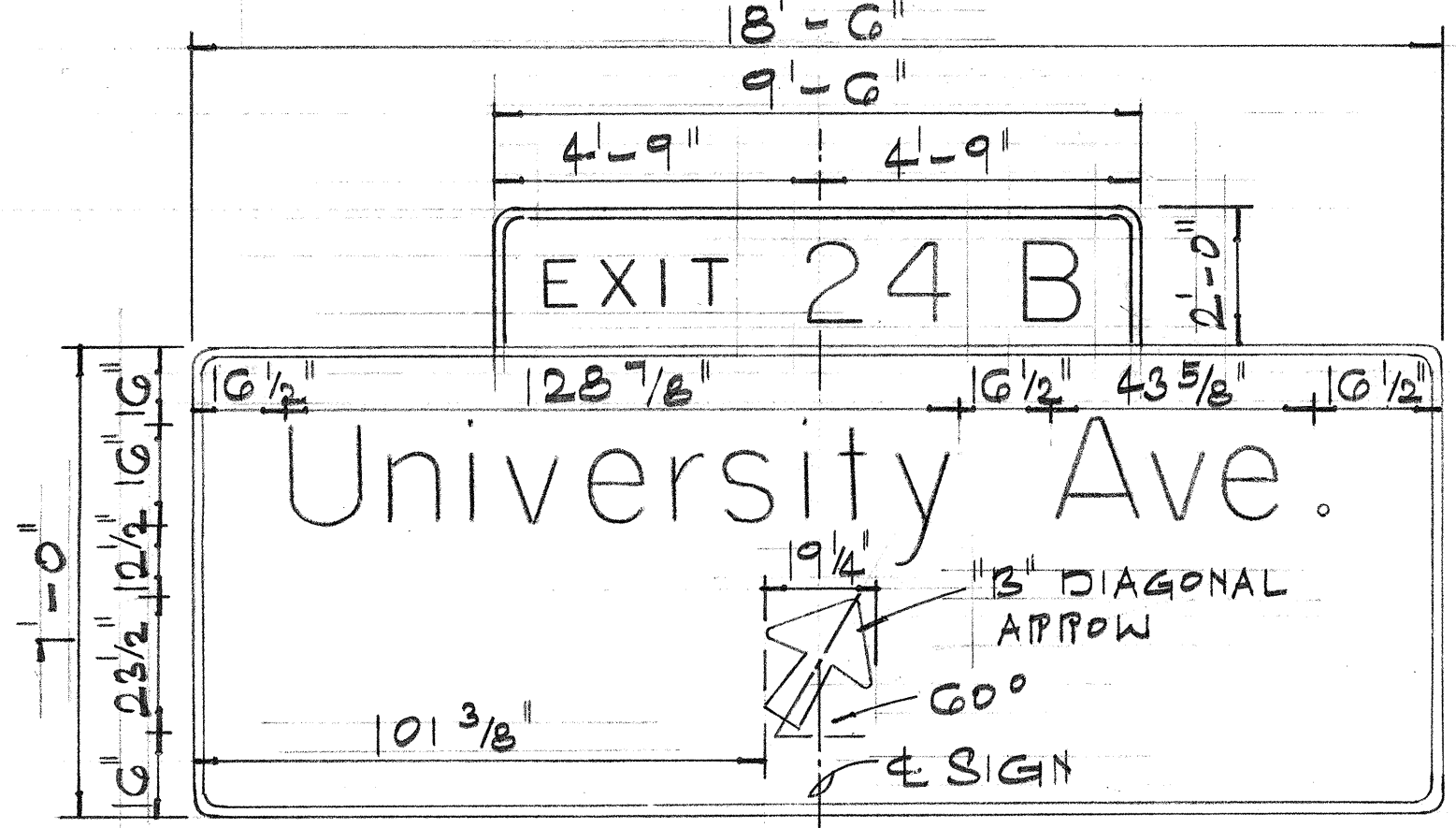
NEW SIGN D-8



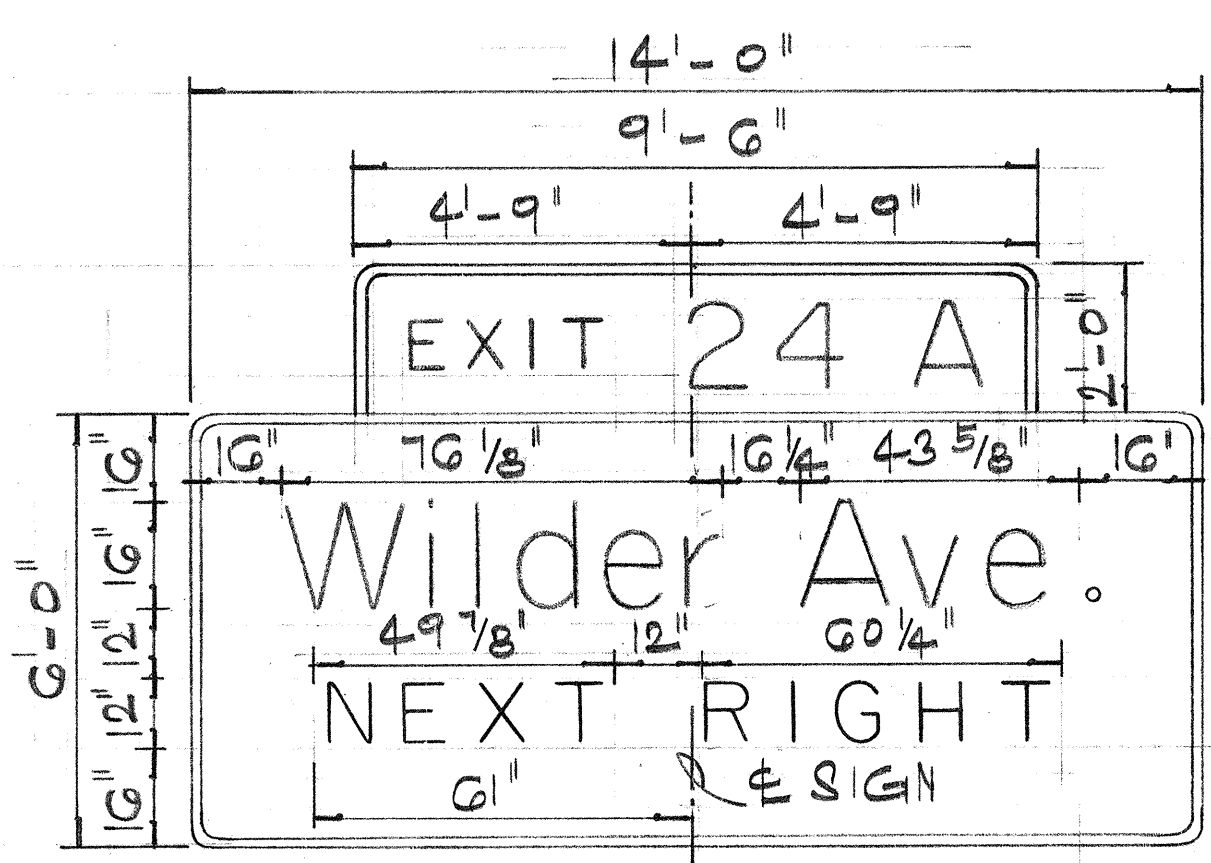
NEW SIGN D-10



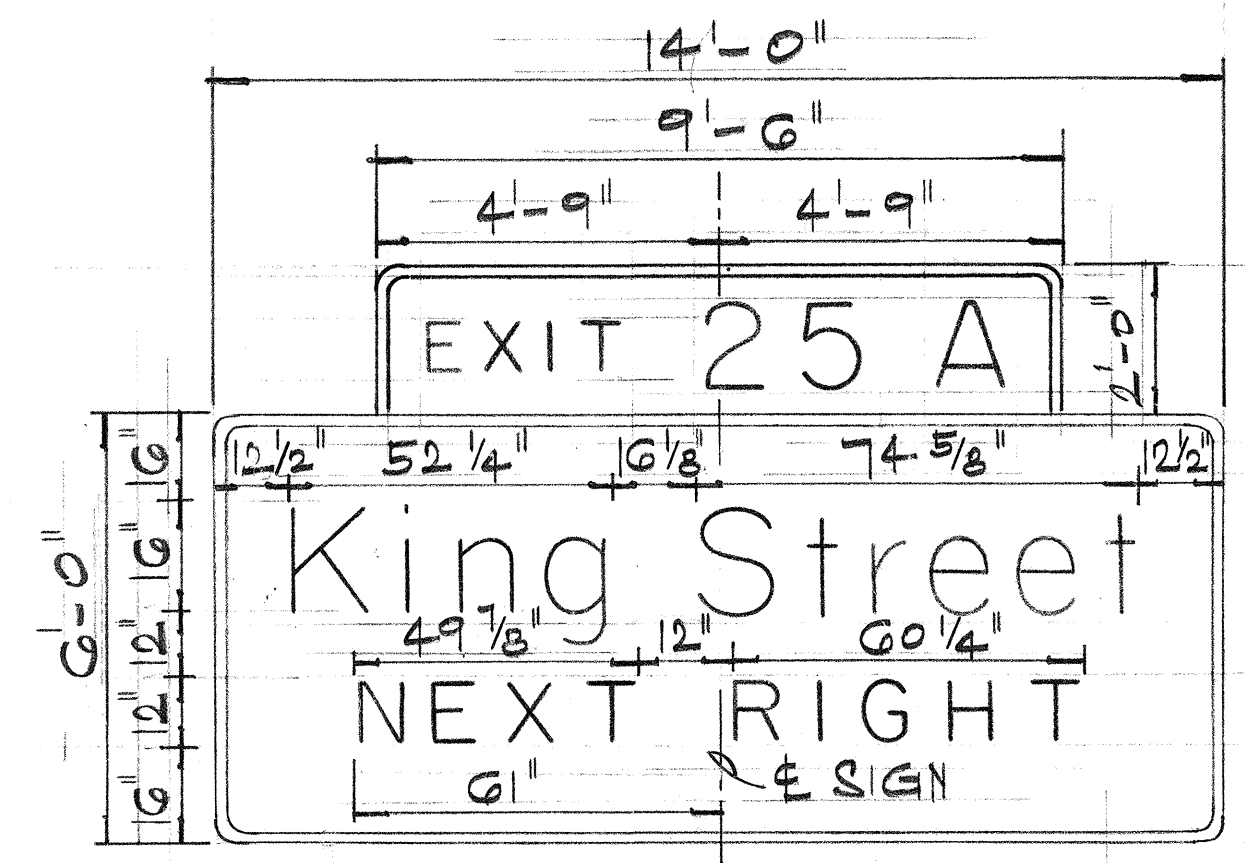
NEW SIGN D-9



NEW SIGN D-11



NEW SIGN E-8



NEW SIGN E-9

8/24/77	Revise Sign D-10
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN PANEL LAYOUT

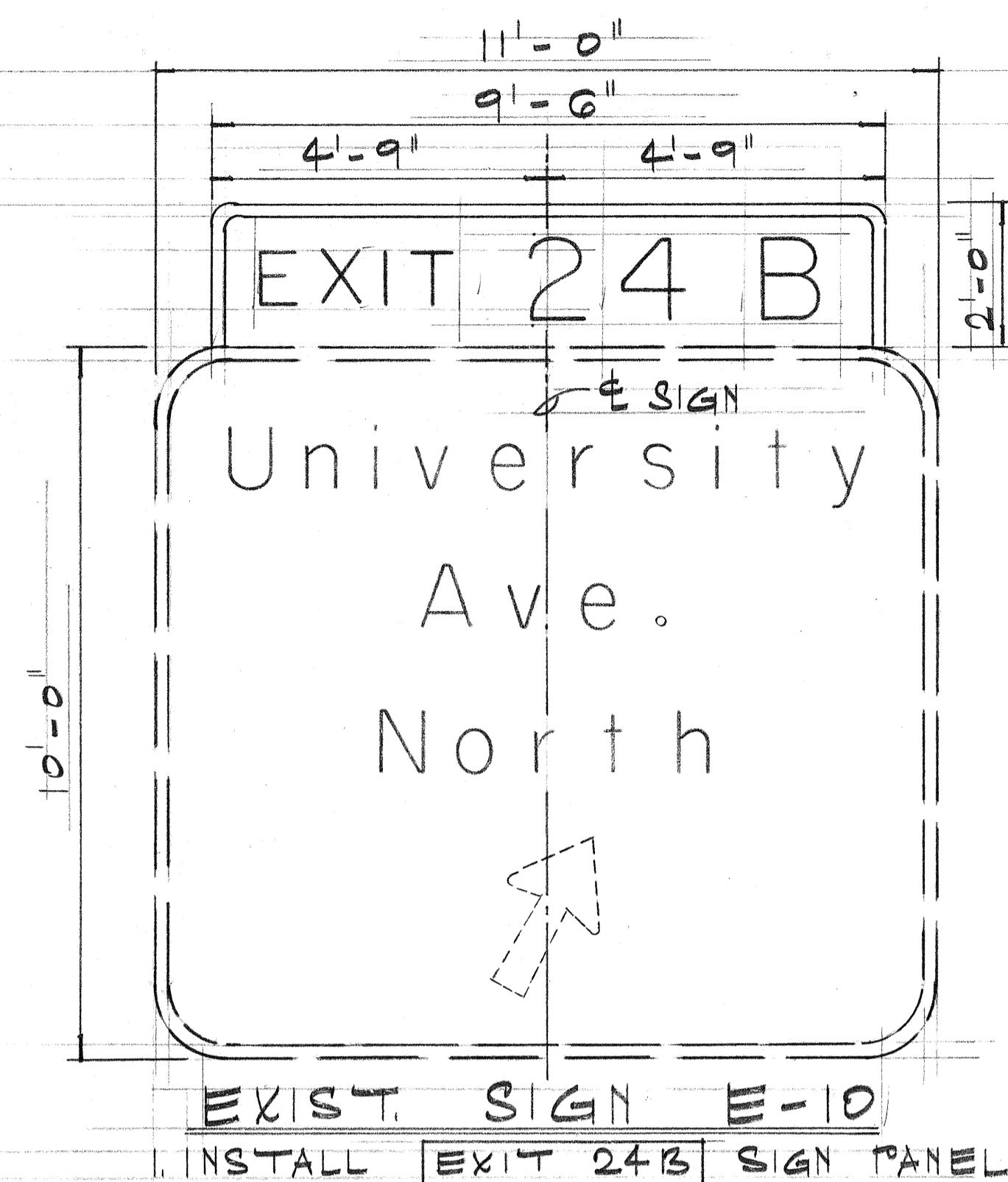
F.A.I. PROJ. NO. I-HI-1(60):23

Scale: 3/8" = 1' Date: 1976

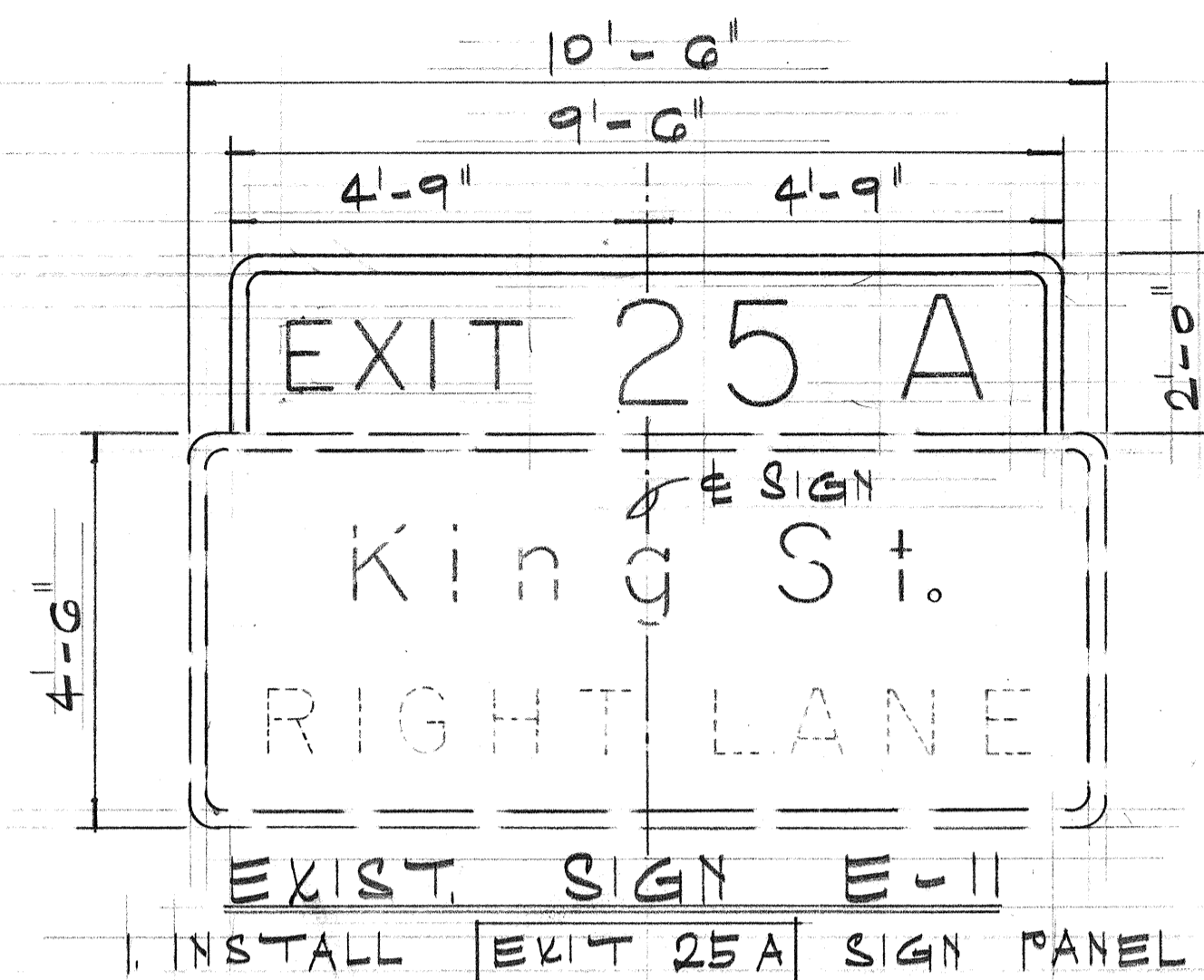
SHEET NO. 15T OF 53T SHEETS

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

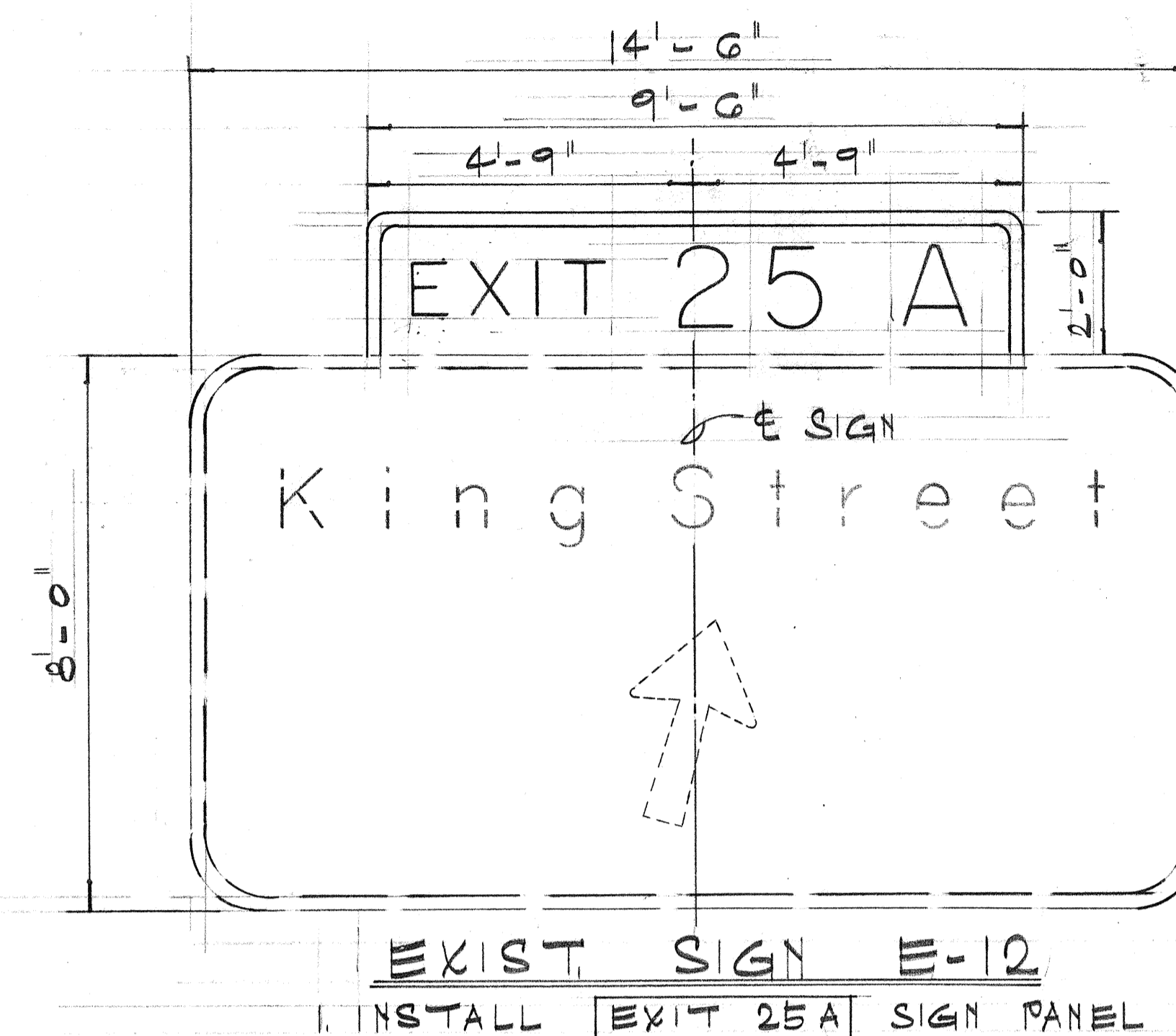
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI(60):23	1976	136	181



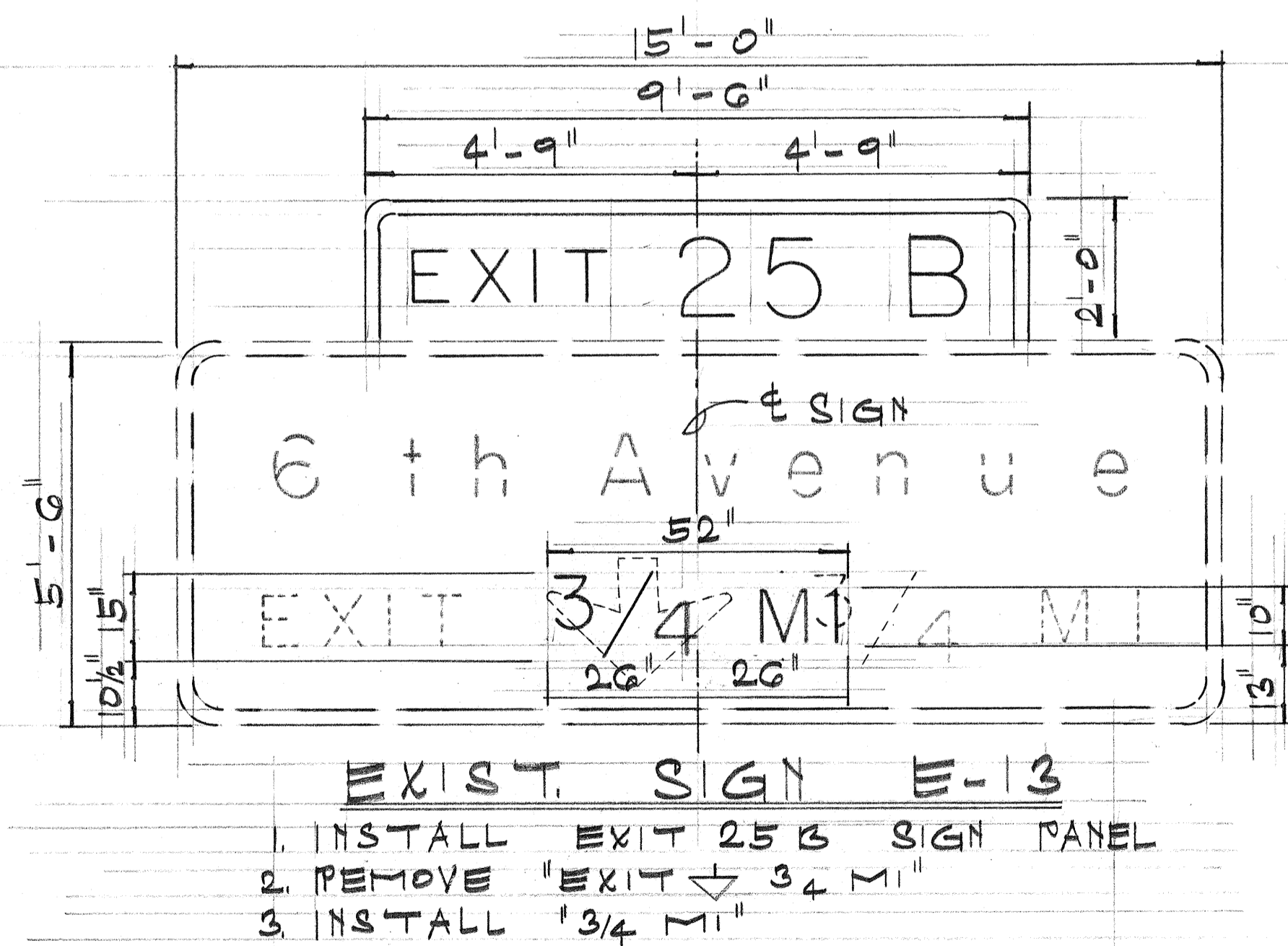
EXIST. SIGN E-10
1. INSTALL EXIT 24B SIGN PANEL



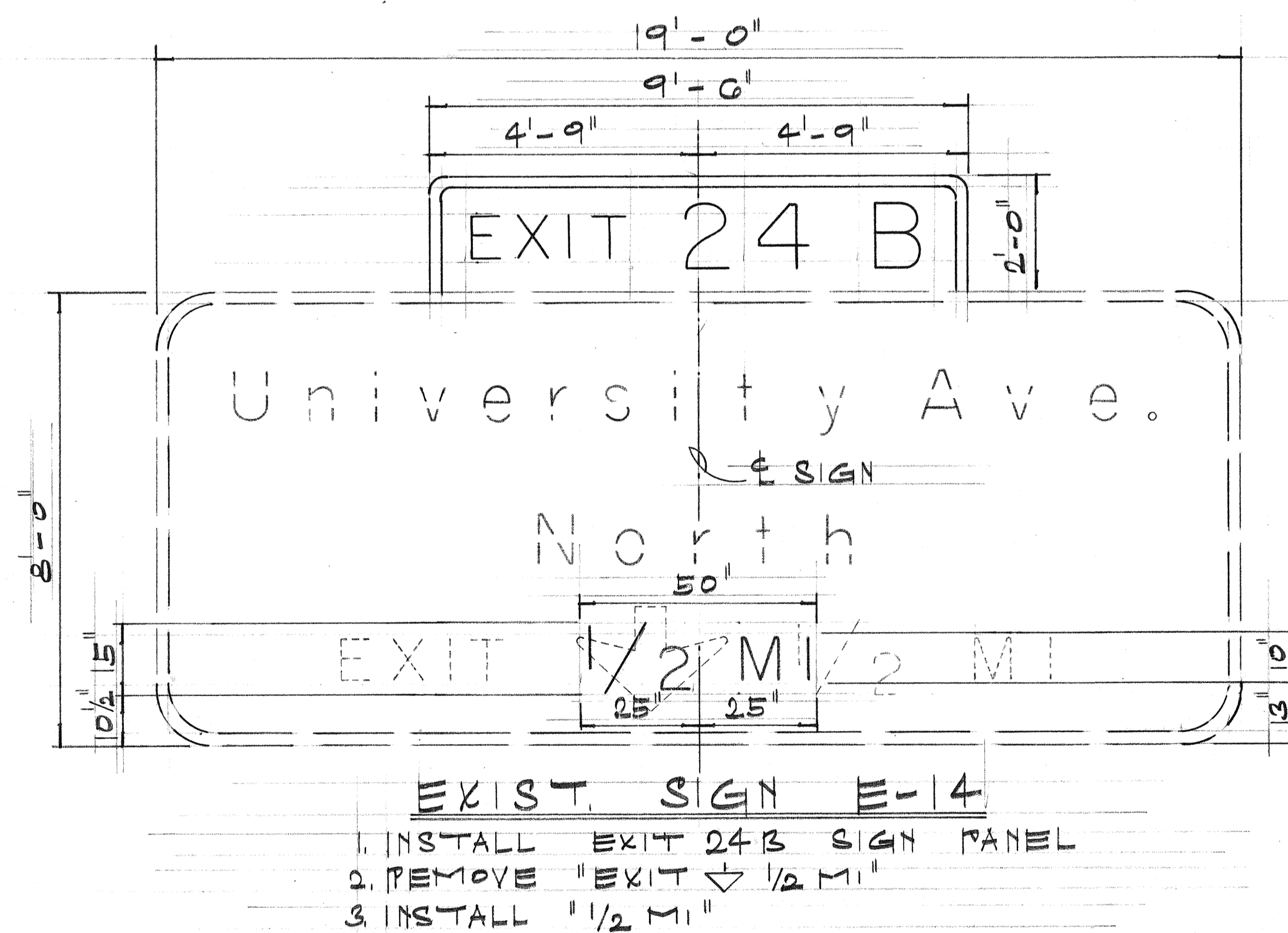
EXIST. SIGN E-11
1. INSTALL EXIT 25A SIGN PANEL



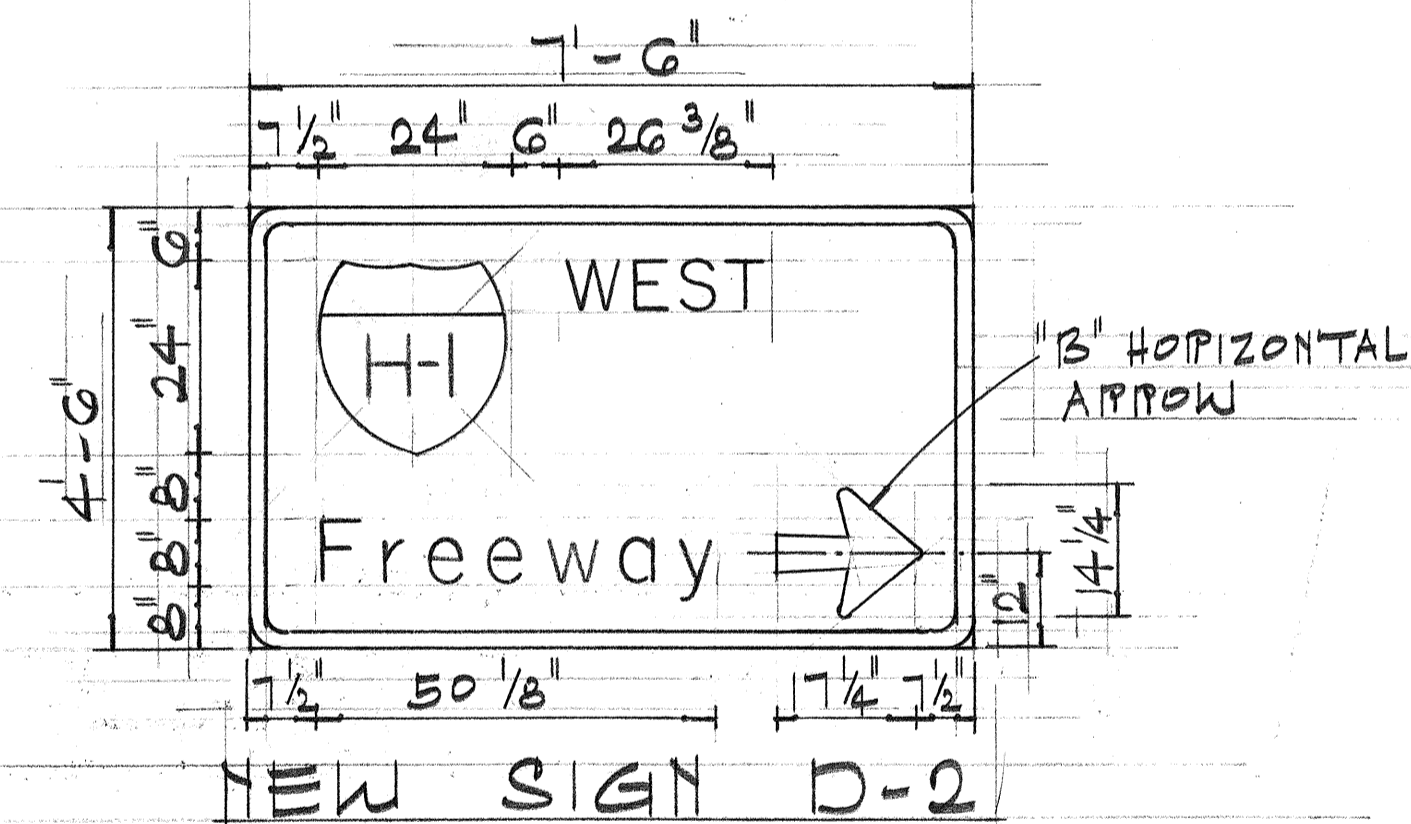
EXIST. SIGN E-12
1. INSTALL EXIT 25A SIGN PANEL



EXIST. SIGN E-13
1. INSTALL EXIT 25B SIGN PANEL
2. REMOVE "EXIT 3/4 MI"
3. INSTALL "3/4 MI"



EXIST. SIGN E-14
1. INSTALL EXIT 24B SIGN PANEL
2. REMOVE "EXIT 1/2 MI"
3. INSTALL "1/2 MI"



NEW SIGN D-2

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

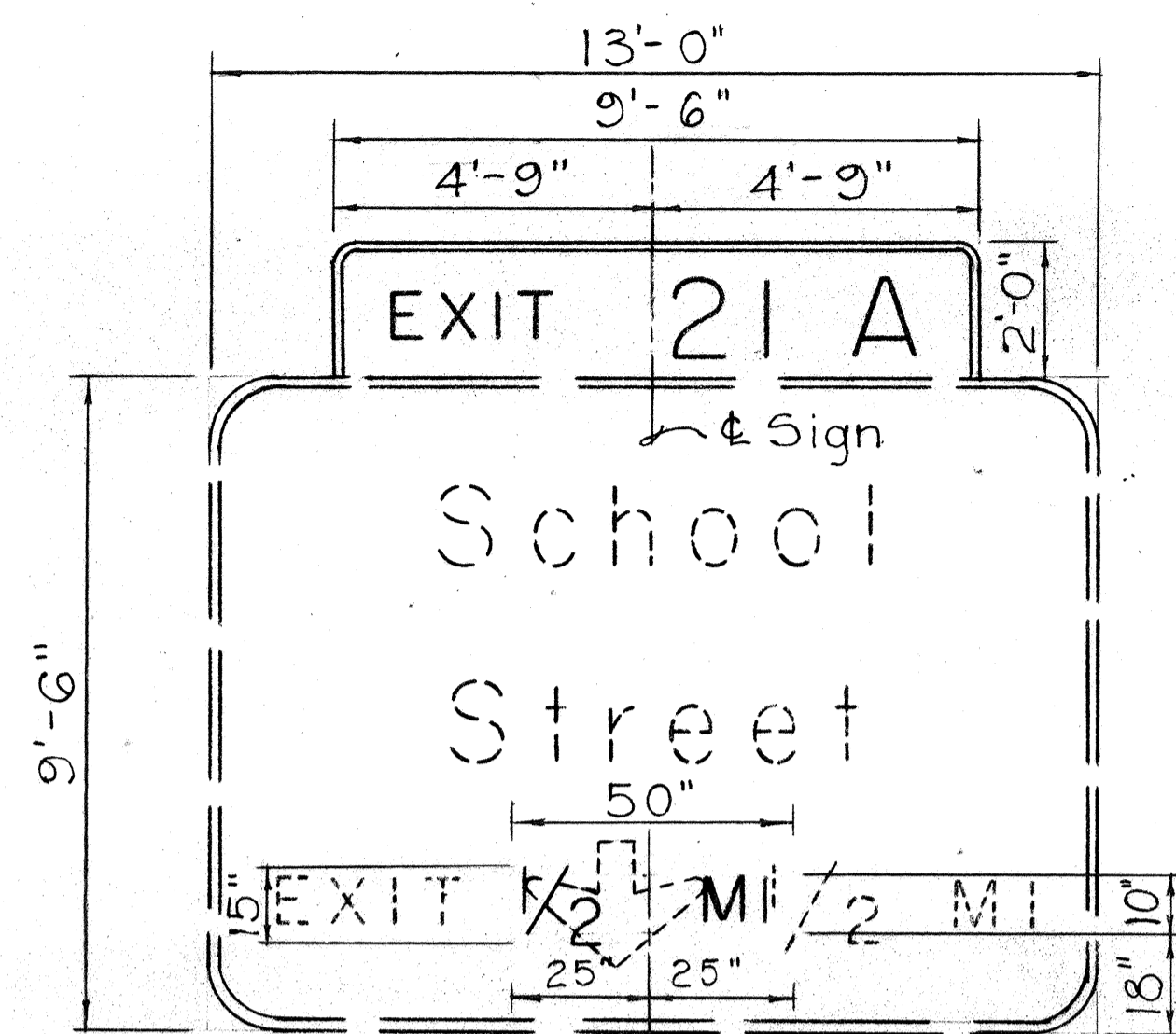
SIGN PANEL LAYOUT

F.A.I. PROJ. NO. I-HI-1(60):23

Scale: 1/2"=1' Date: Sept. 1976

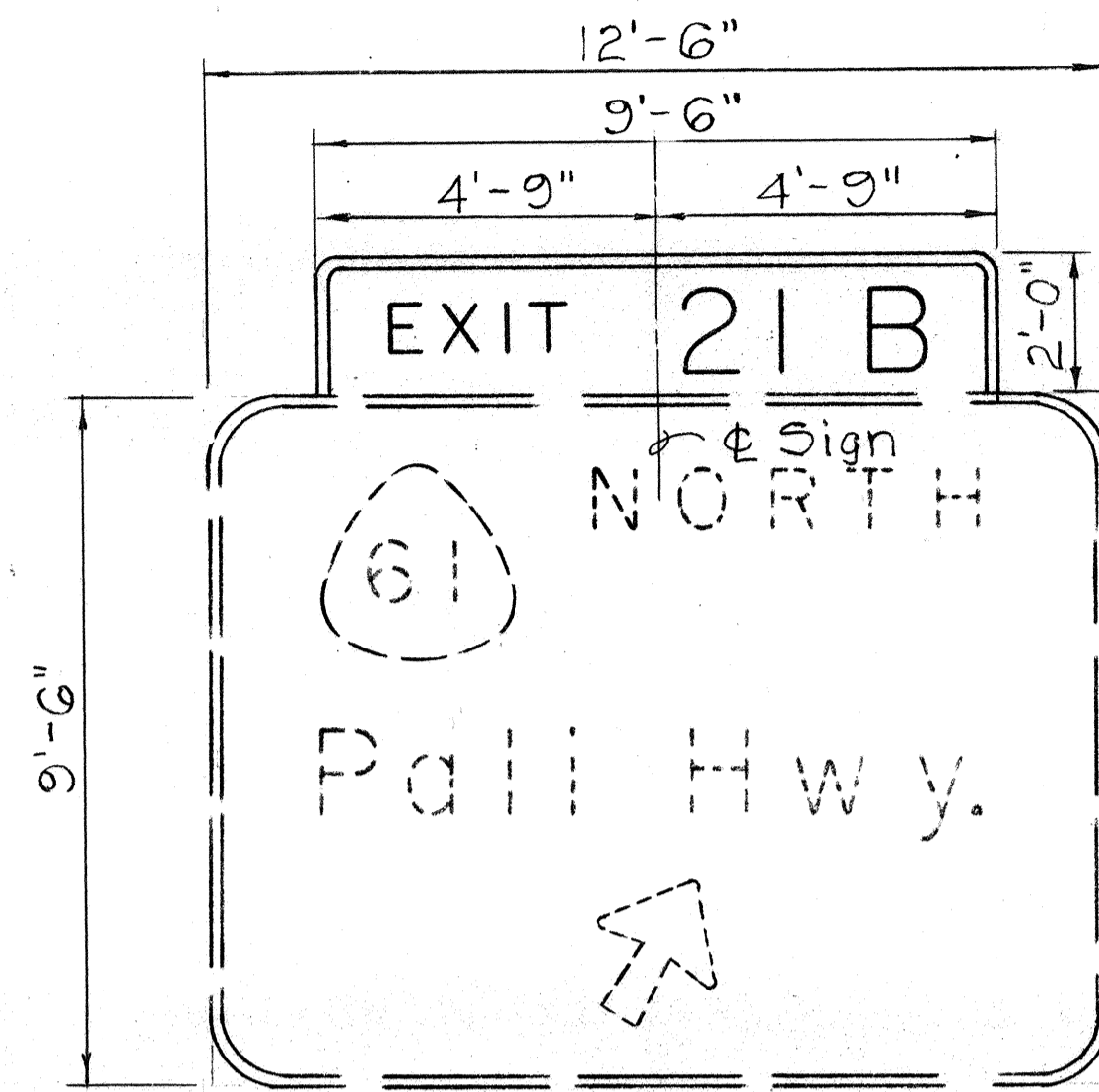
SHEET No. 161 OF 531 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1978	CO.1365-1	181



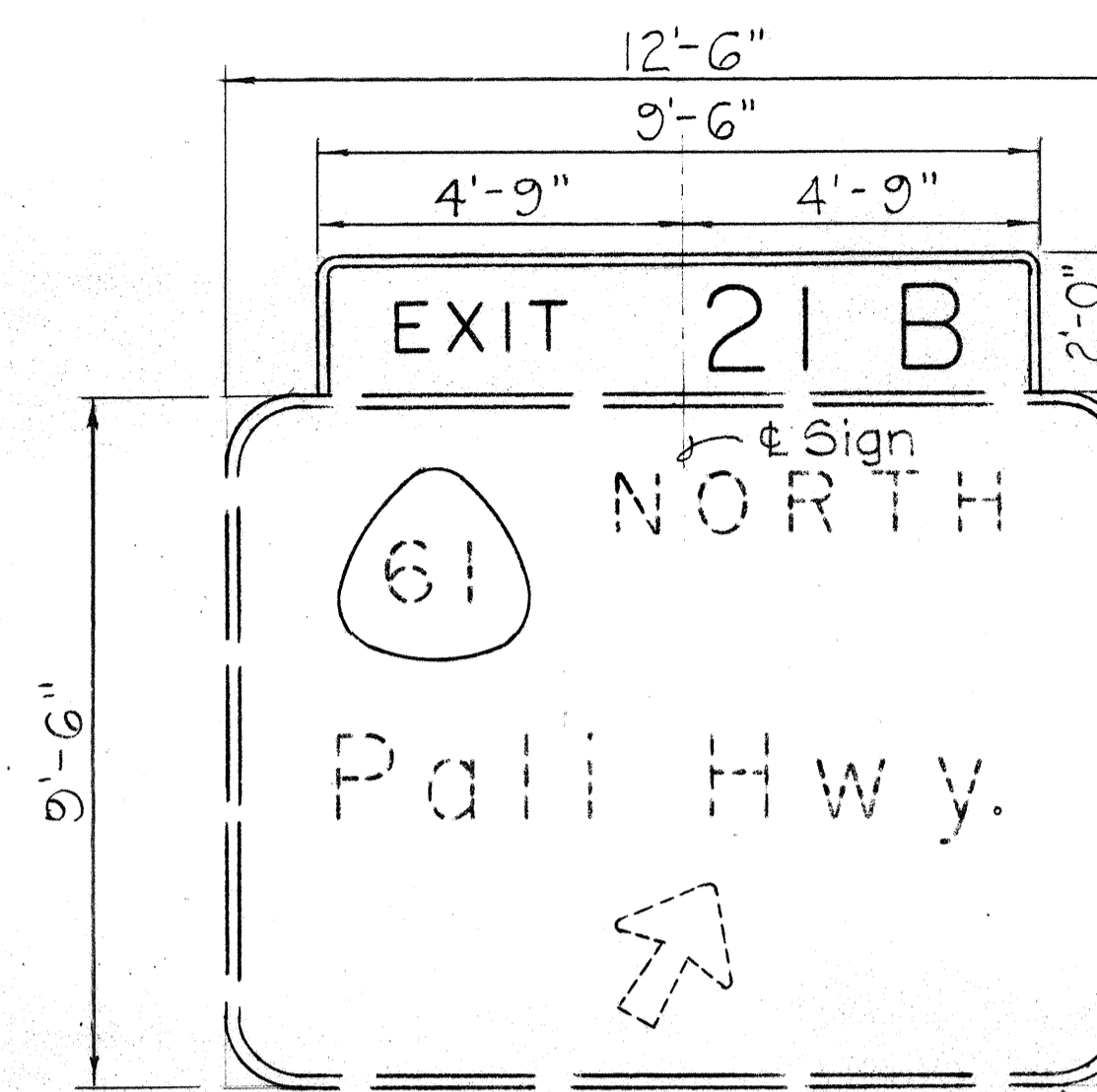
EXIST. SIGN E-15(L)

1. Install [EXIT 21A] Sign Panel
2. Remove "EXIT ∇ 1/2 MI"
3. Install "1/2 MI"



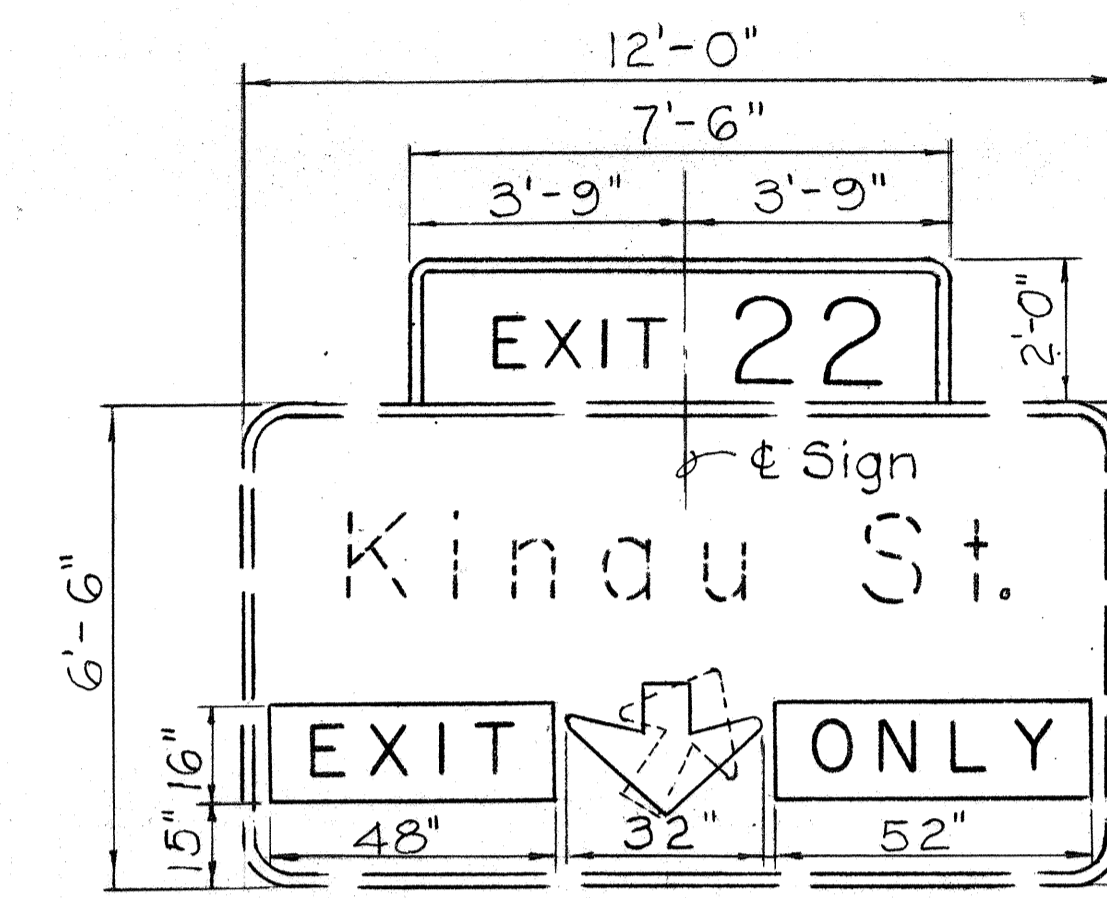
EXIST. SIGN E-15(R)

1. Install [EXIT 21B] Sign Panel



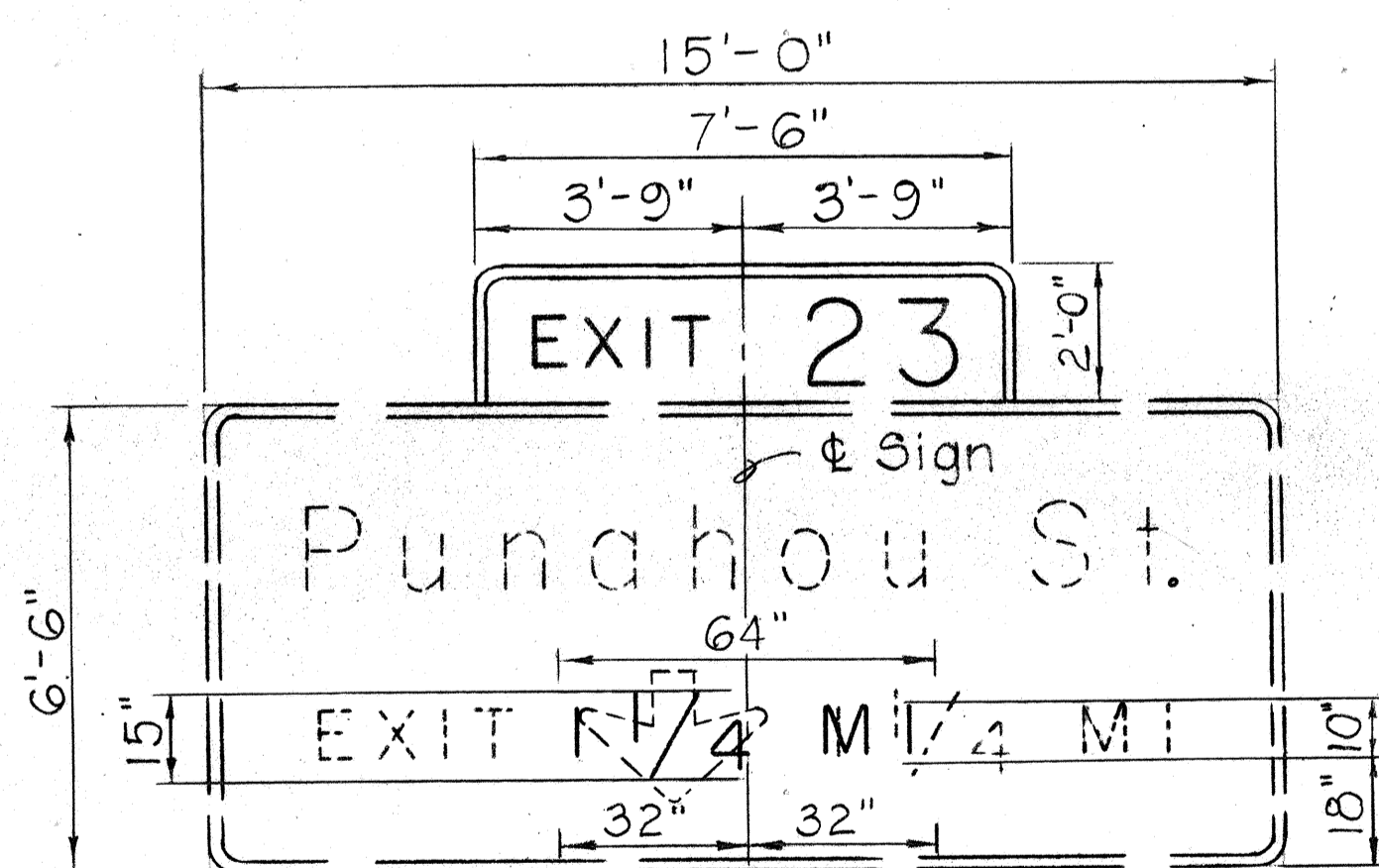
EXIST. SIGN E-16

1. Install [EXIT 21B] Sign Panel



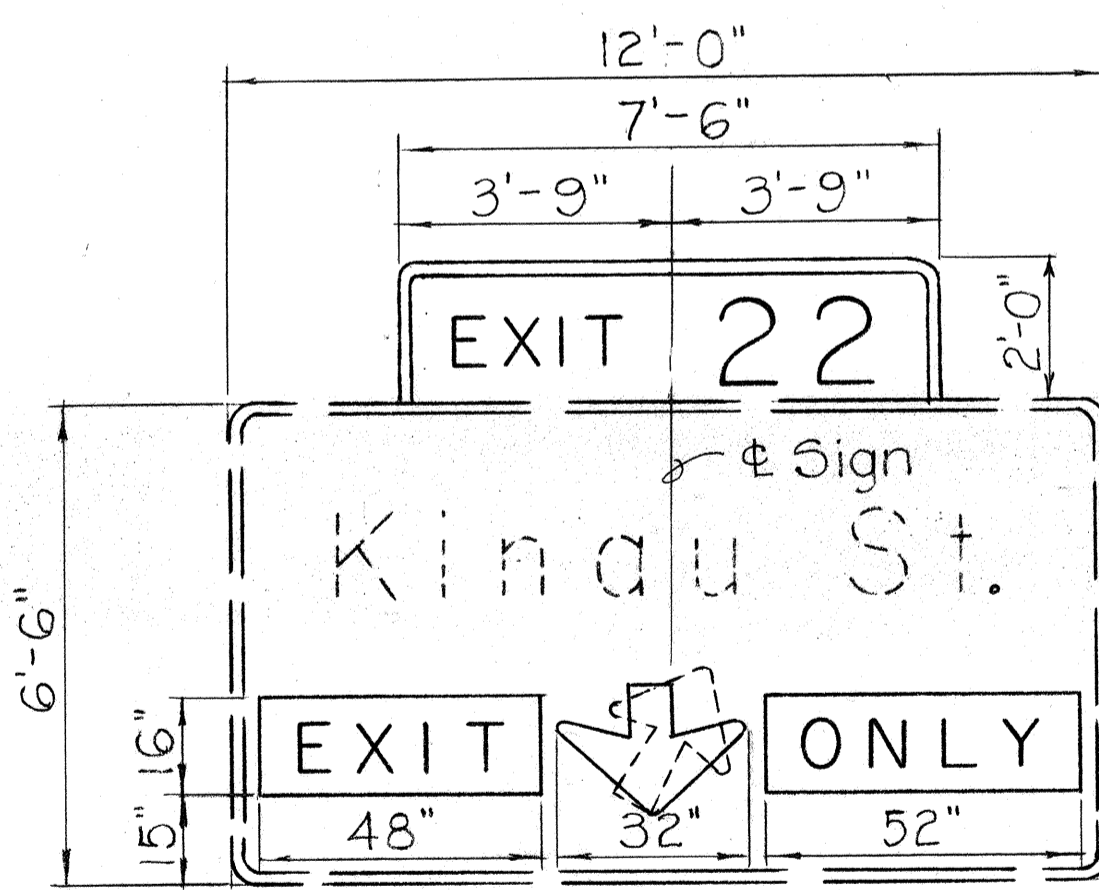
RELOCATED EXIST. SIGN E-17

1. Install [EXIT 22] Sign Panel
2. Remove Existing Arrow
3. Install ∇ (Down) Arrow
4. Install [EXIT] [ONLY] Sign Panels



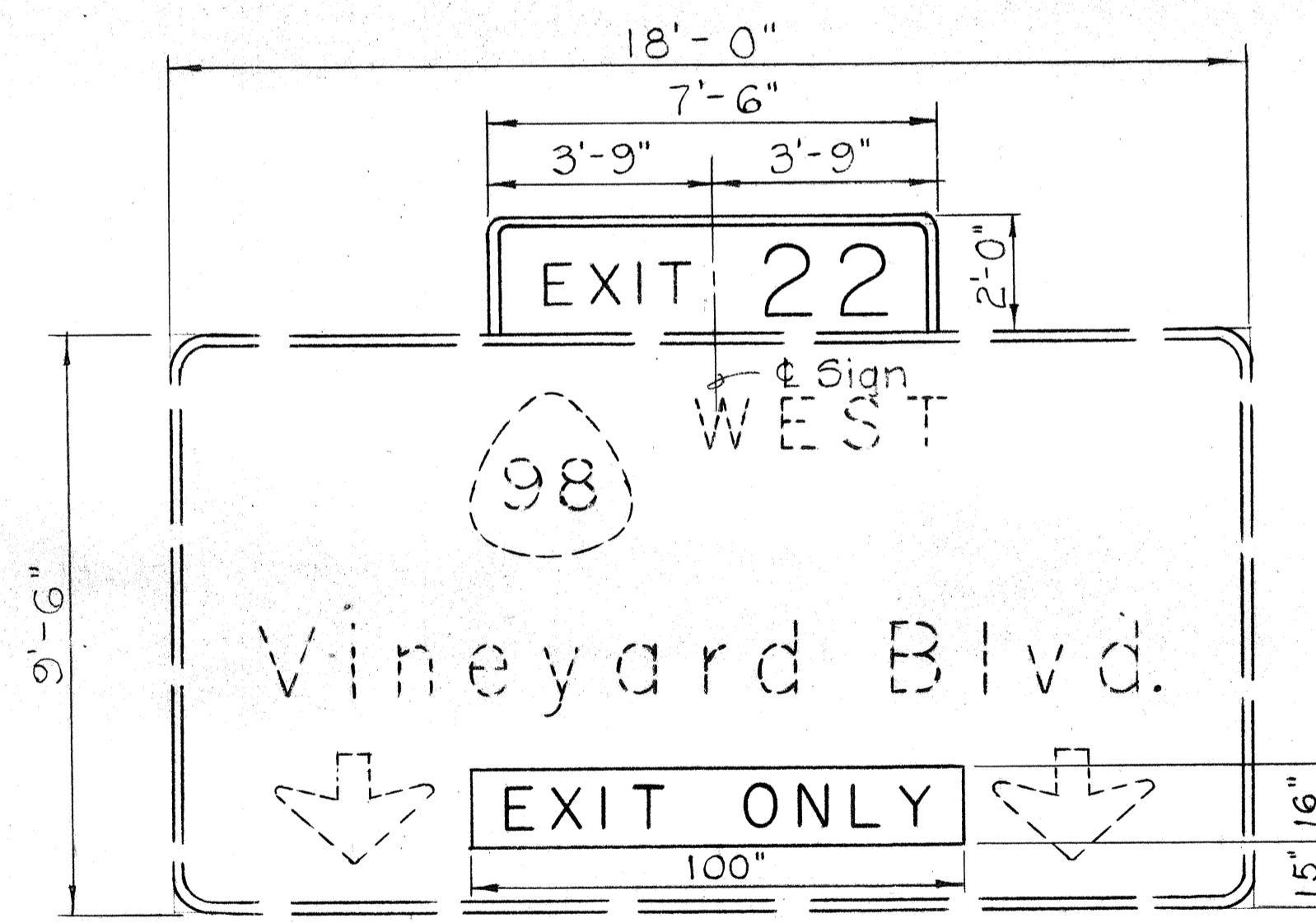
EXIST. SIGN E-18(L)

1. Install [EXIT 23] Sign Panel
2. Remove "EXIT ∇ 1/4 MI"
3. Install "1/4 MI"



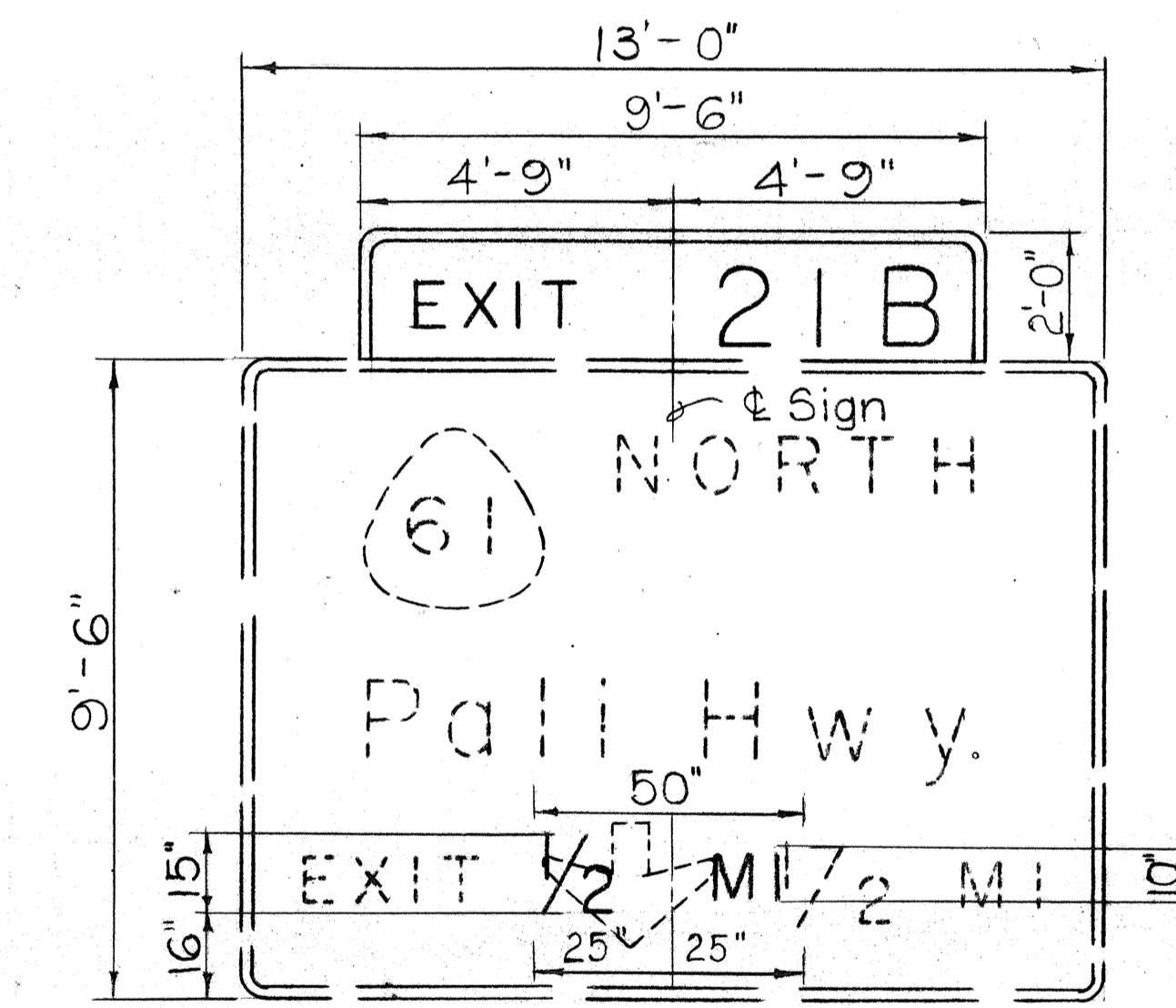
EXIST. SIGN E-18(R)

1. Install [EXIT 22] Sign Panel
2. Remove Existing Arrow
3. Install ∇ (Down) Arrow
4. Install [EXIT] [ONLY] Sign Panels



EXIST. SIGN E-19(R)

1. Install [EXIT 22] Sign Panel
2. Install [EXIT ONLY] Sign Panel



EXIST. SIGN E-19(C)

1. Install [EXIT 21B] Sign Panel
2. Remove "EXIT ∇ 1/2 MI"
3. Install "1/2 MI"

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN PANEL LAYOUT

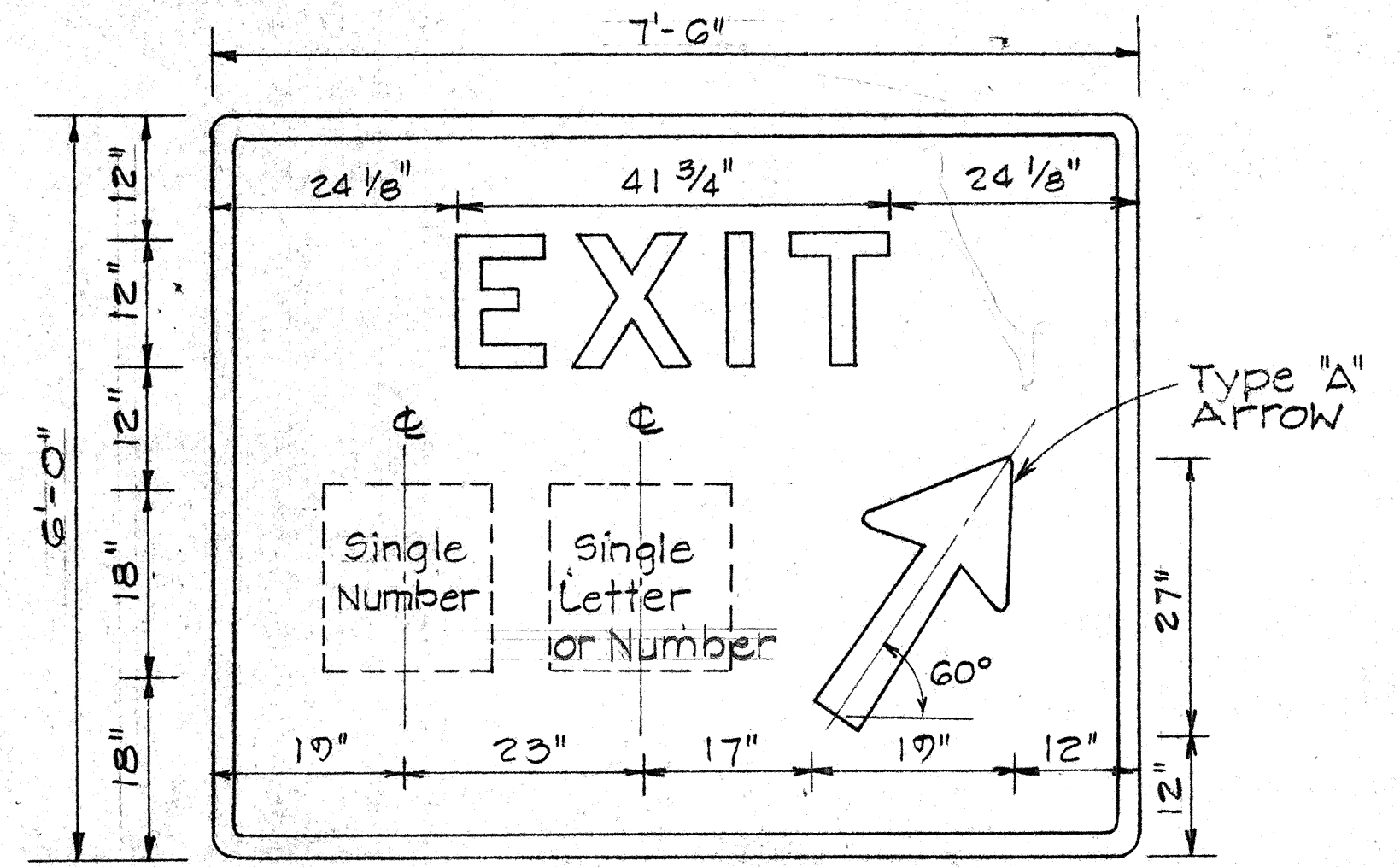
PALI HWY. TO OLD WAIALAE RD.
F.A.I. PROJECT NO. I-HI-1(60):23

Scale: 3/8" = 1'-0" DEC. 1977

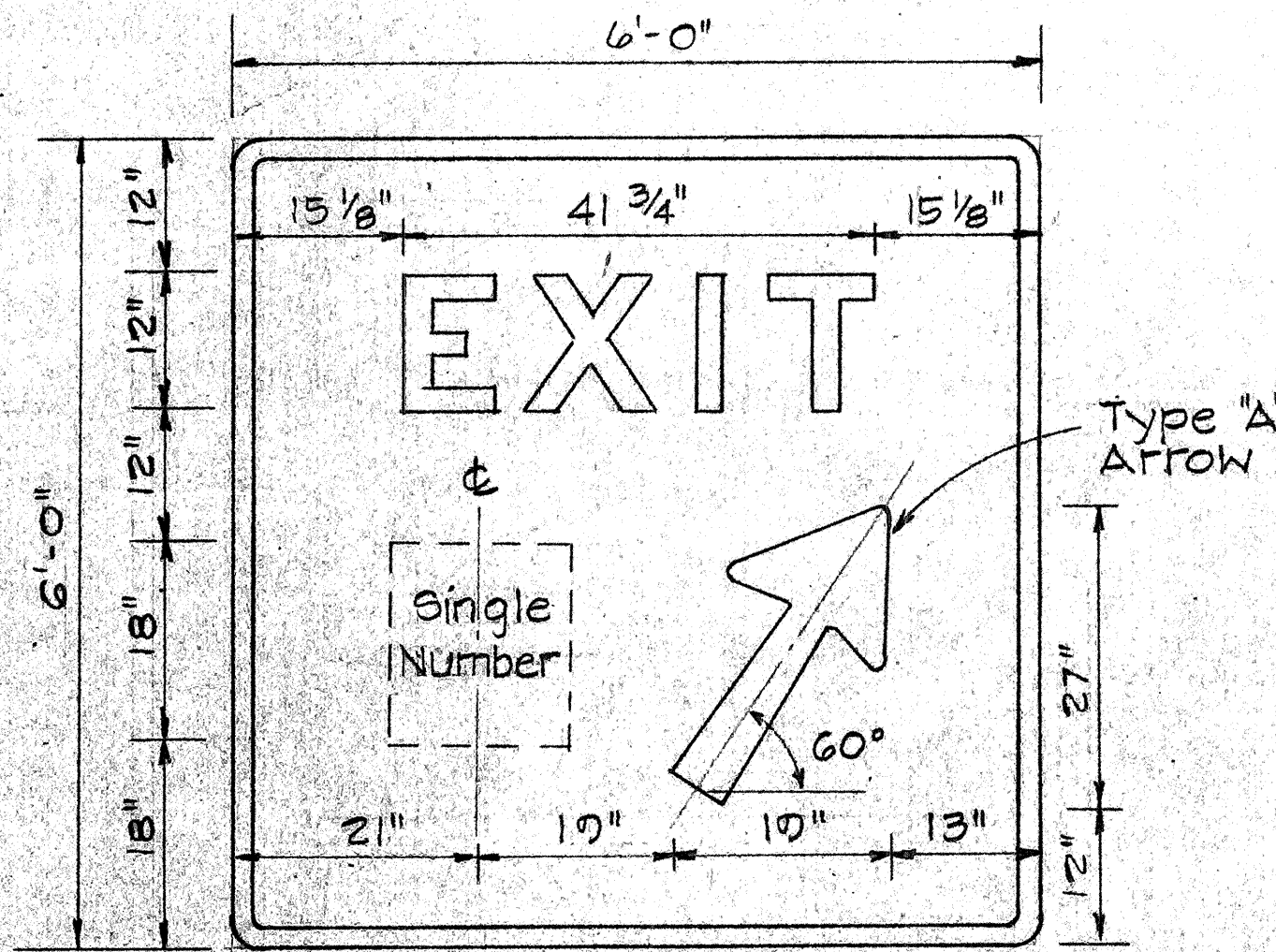
SHEET NO. 16 OF 31 SHEETS

C.O. 1365-1

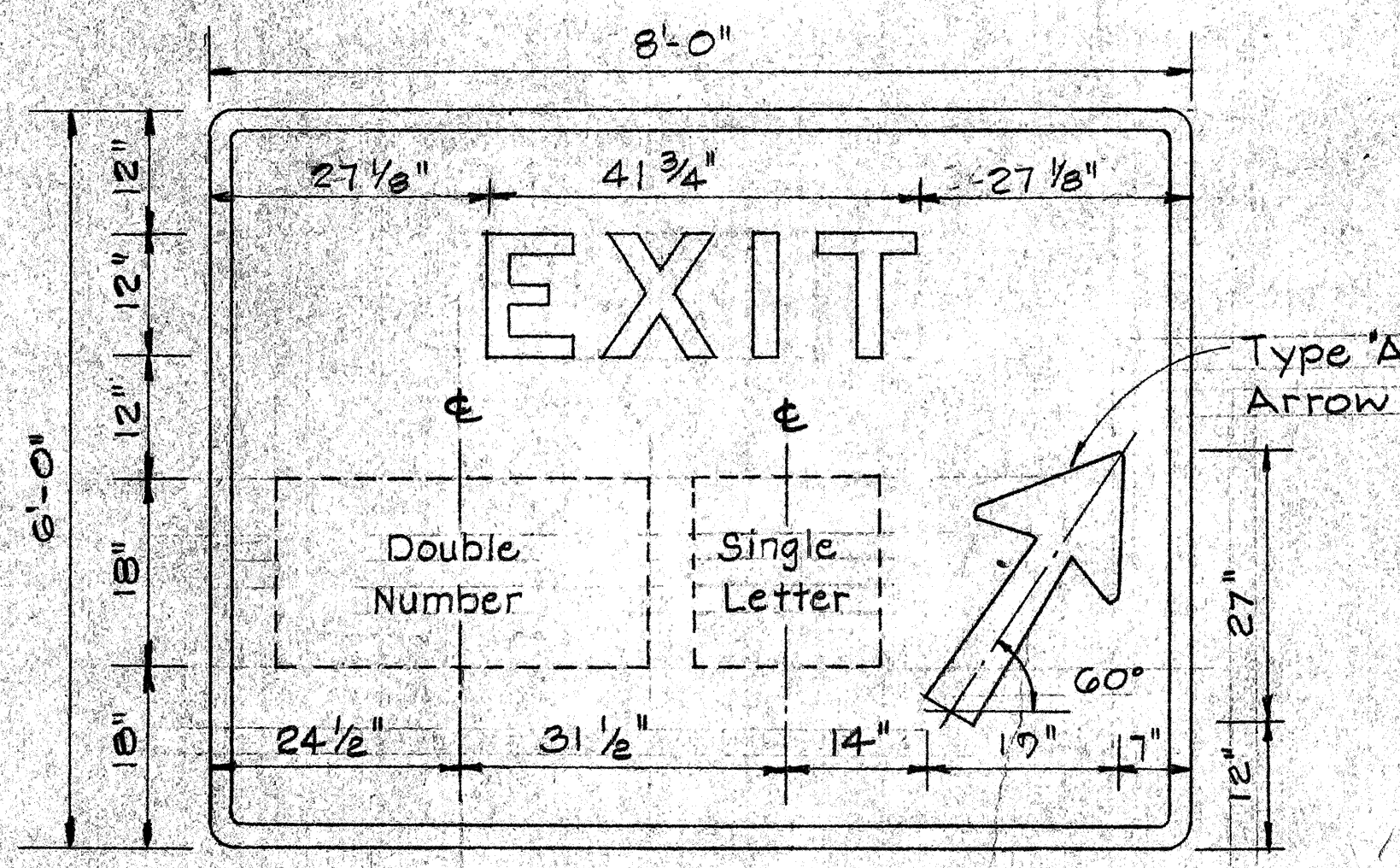
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	137	181



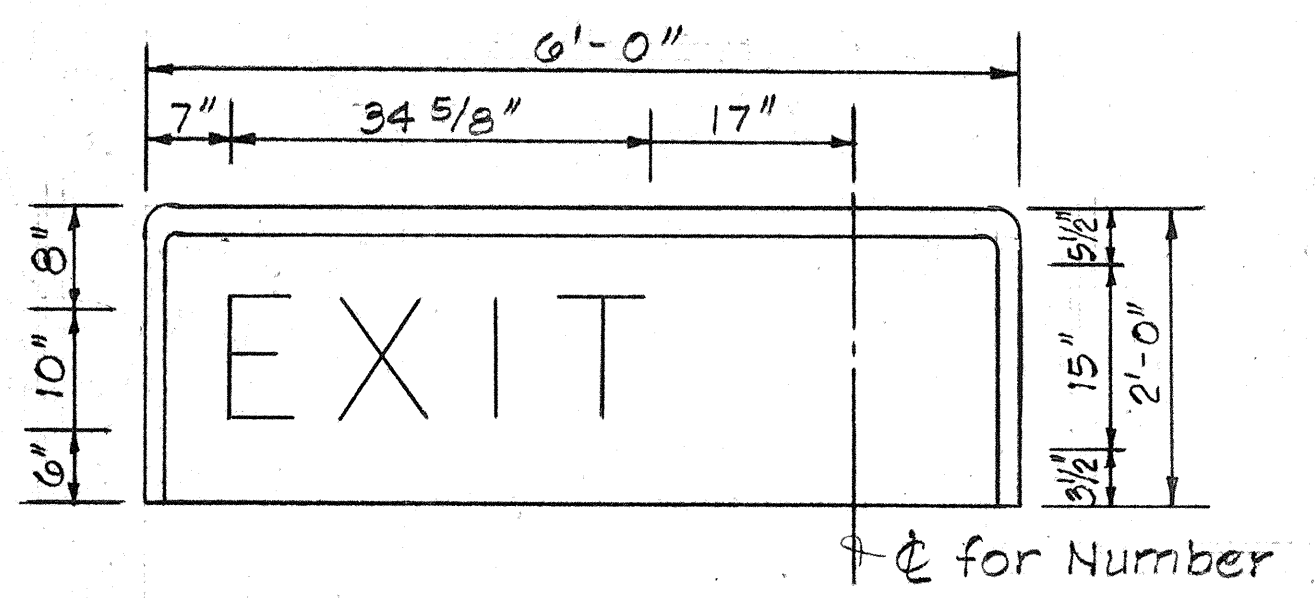
PANEL LAYOUT FOR SIGNS D-13 & D-14



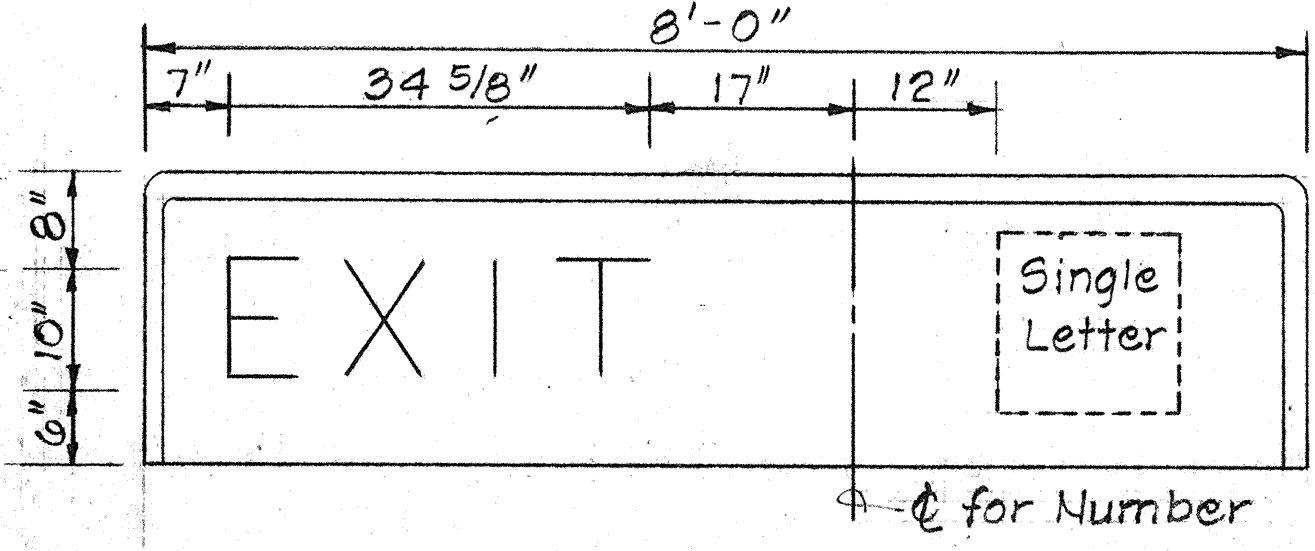
PANEL LAYOUT FOR SIGN D-5



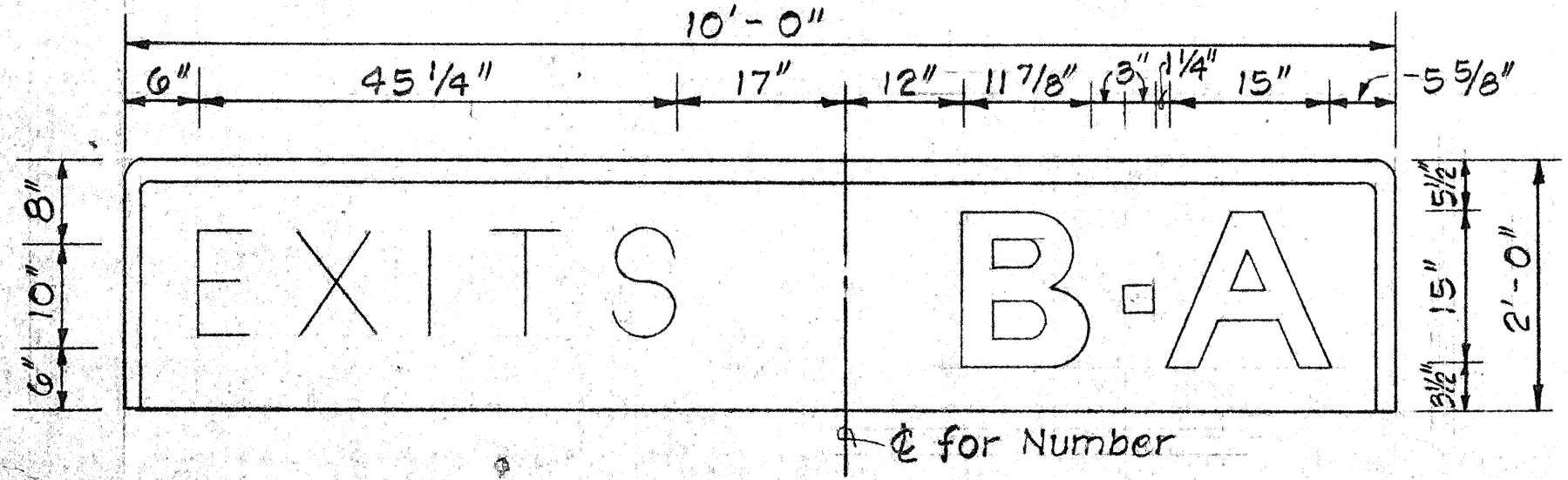
PANEL LAYOUT FOR SIGNS D-6 "24B", D-7 "25A", D-12 "21B", D-13, D-14 & D-15
GORE EXIT SIGNS
Scale: 3/4" = 1'-0"



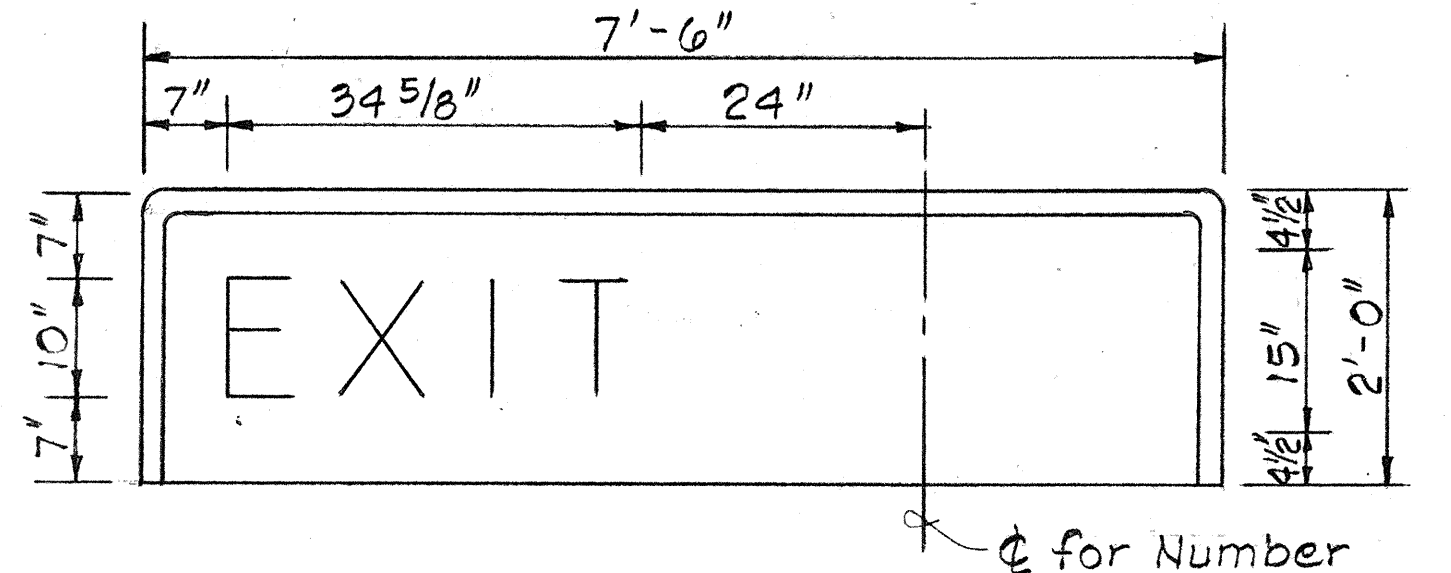
Single Number



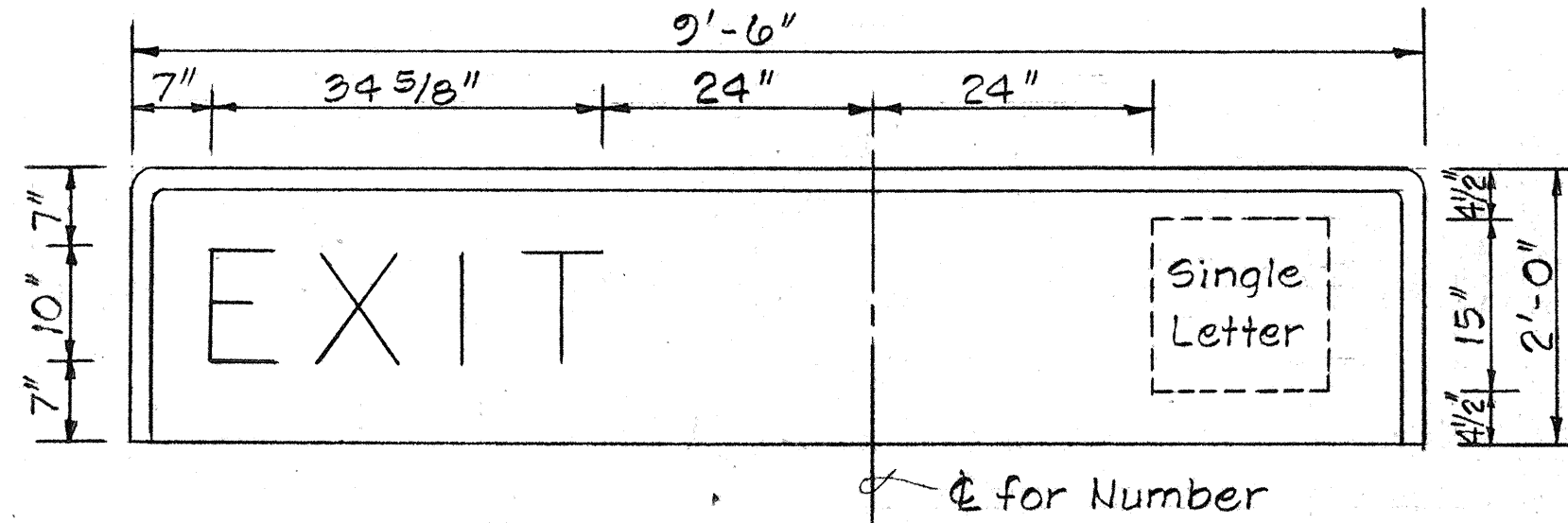
Single Number w/ Single Letter



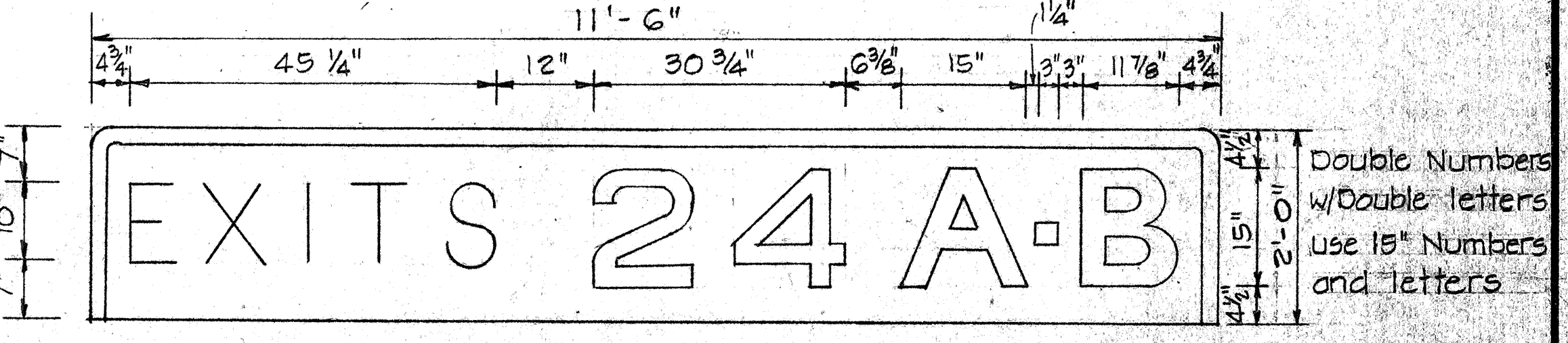
Single Number w/ Double Letter



Double Number Use 15" Numbers



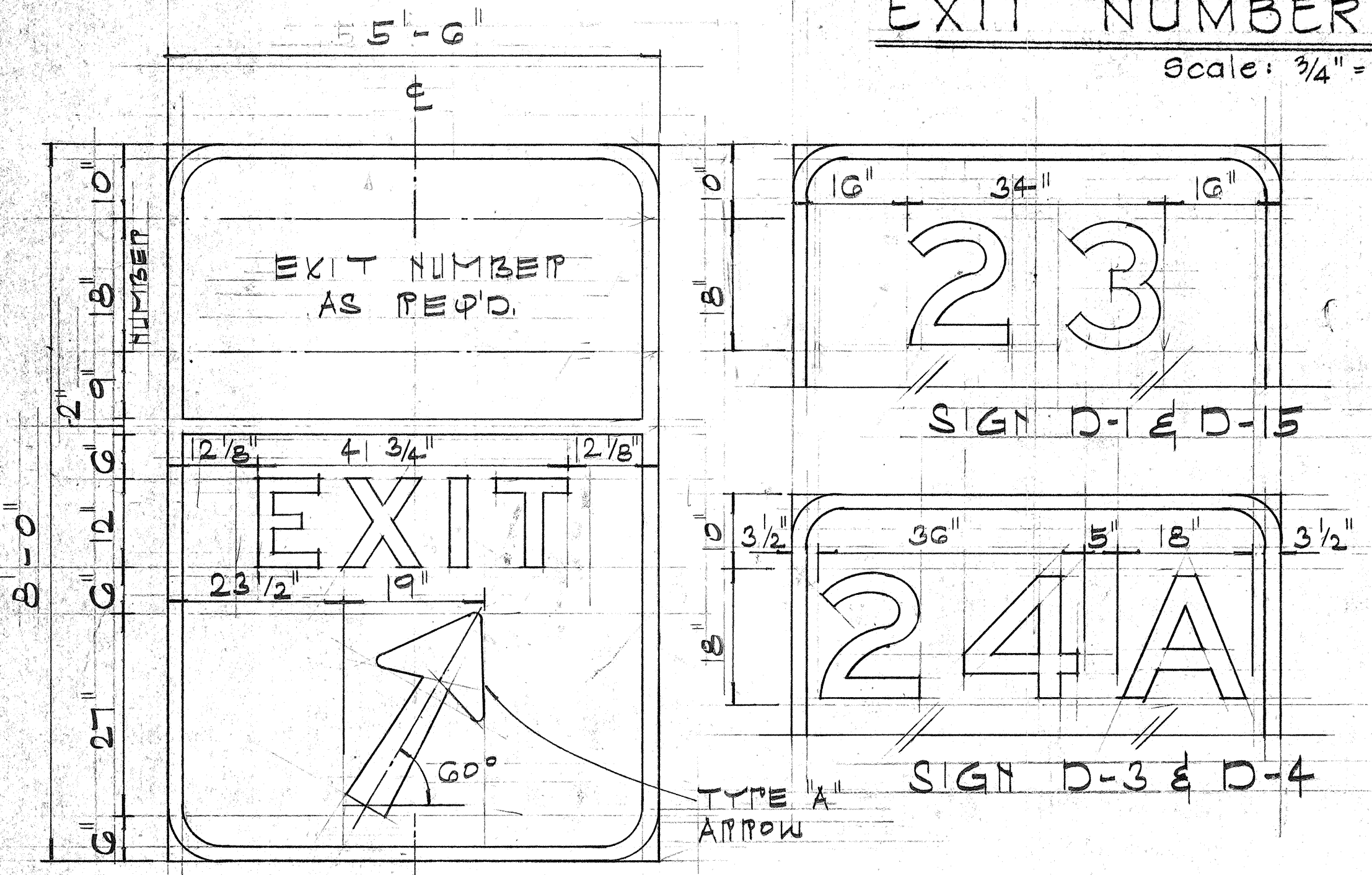
Double Number w/ Single Letter Use 15" Numbers and Letters



Double Numbers w/ Double Letters Use 15" Numbers and Letters

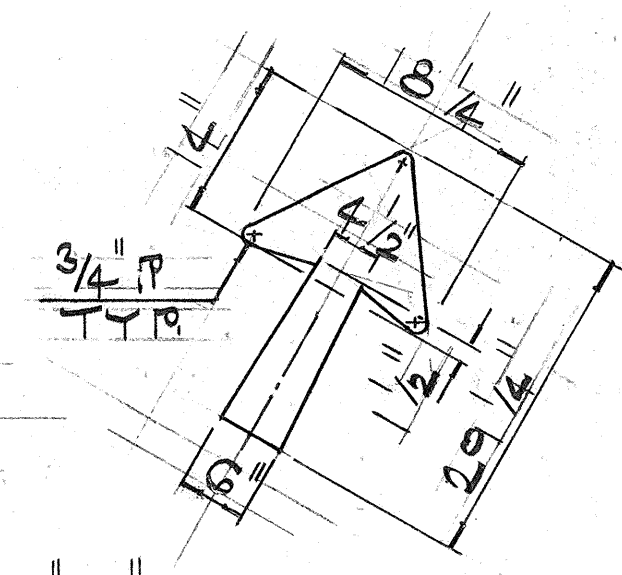
EXIT NUMBER PANELS

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



PANEL LAYOUTS FOR SIGNS D-1, D-3, D-4 & D-15

- Design of Exit Number Panels shall conform to plans and specifications for either the Expressway or Destination sign to which the Exit Number Panel will be attached.
- Sign message shall be lettered in uppercase according to Standard Alphabets for Highway Signs, FHWA, 1966. Use Series "E" letters unless otherwise noted.
- Arrows, borders, and route markers shall conform with details as shown on plans.
- Contractor shall submit for approval, shop drawings for the attachment of Exit Number Panels to sign panels.
- For additional notes see sht # 22T



TYPE "A" ARROW DETAIL
N.T.S.

DATE	REVISION
1-5-77	ADDED SIGNS D-12, D-13, D-14 & D-15

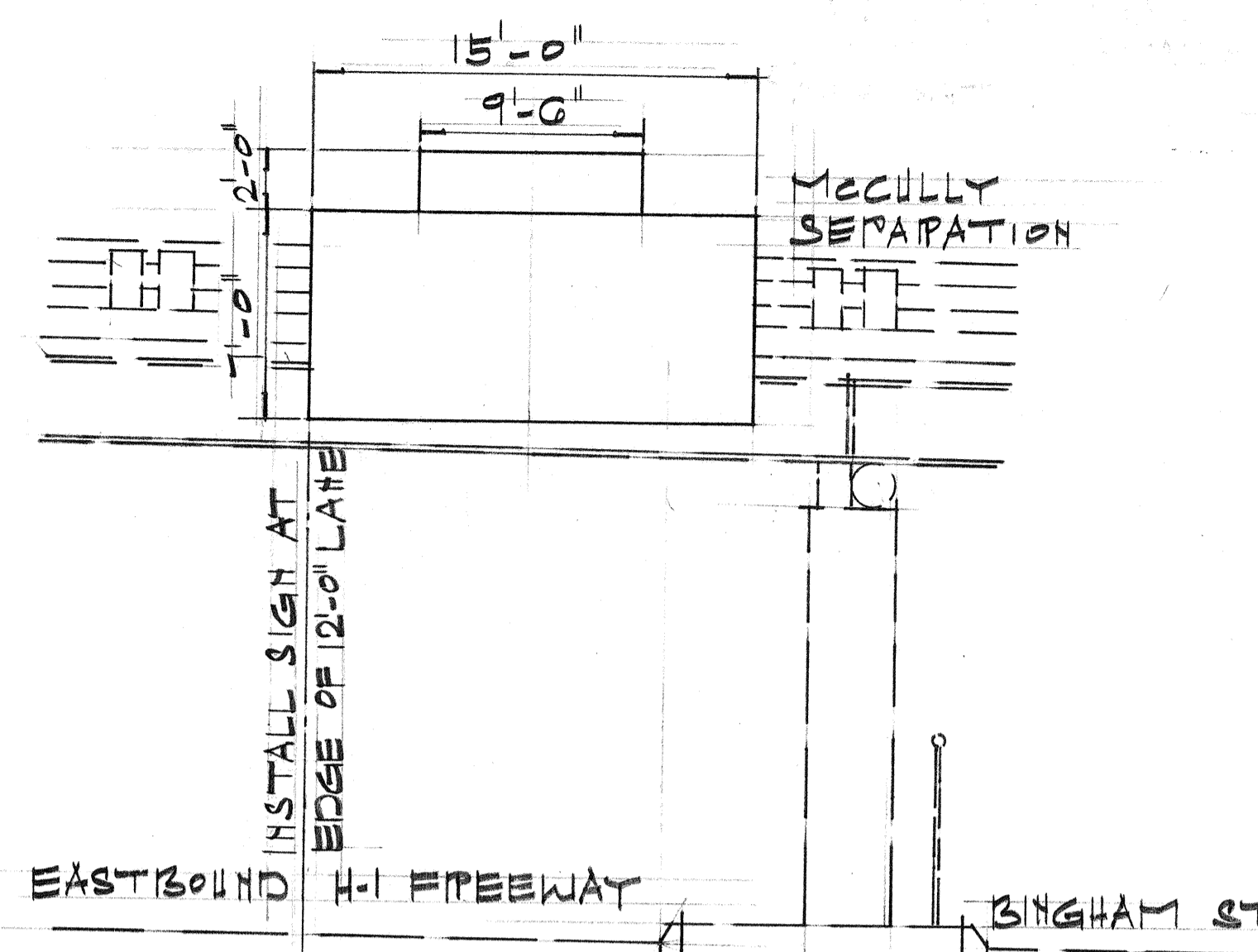
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SIGN PANEL LAYOUT
PALI HWY. TO WAIALAE RD.
F.A.I. PROJ. NO. I-HI-1(60):23

Scale: As Shown Date: Sept. 1976
SHEET NO. 177 OF 581 SHEETS

ORIGINAL PLAN
DRAWN BY
CHECKED BY
DATE

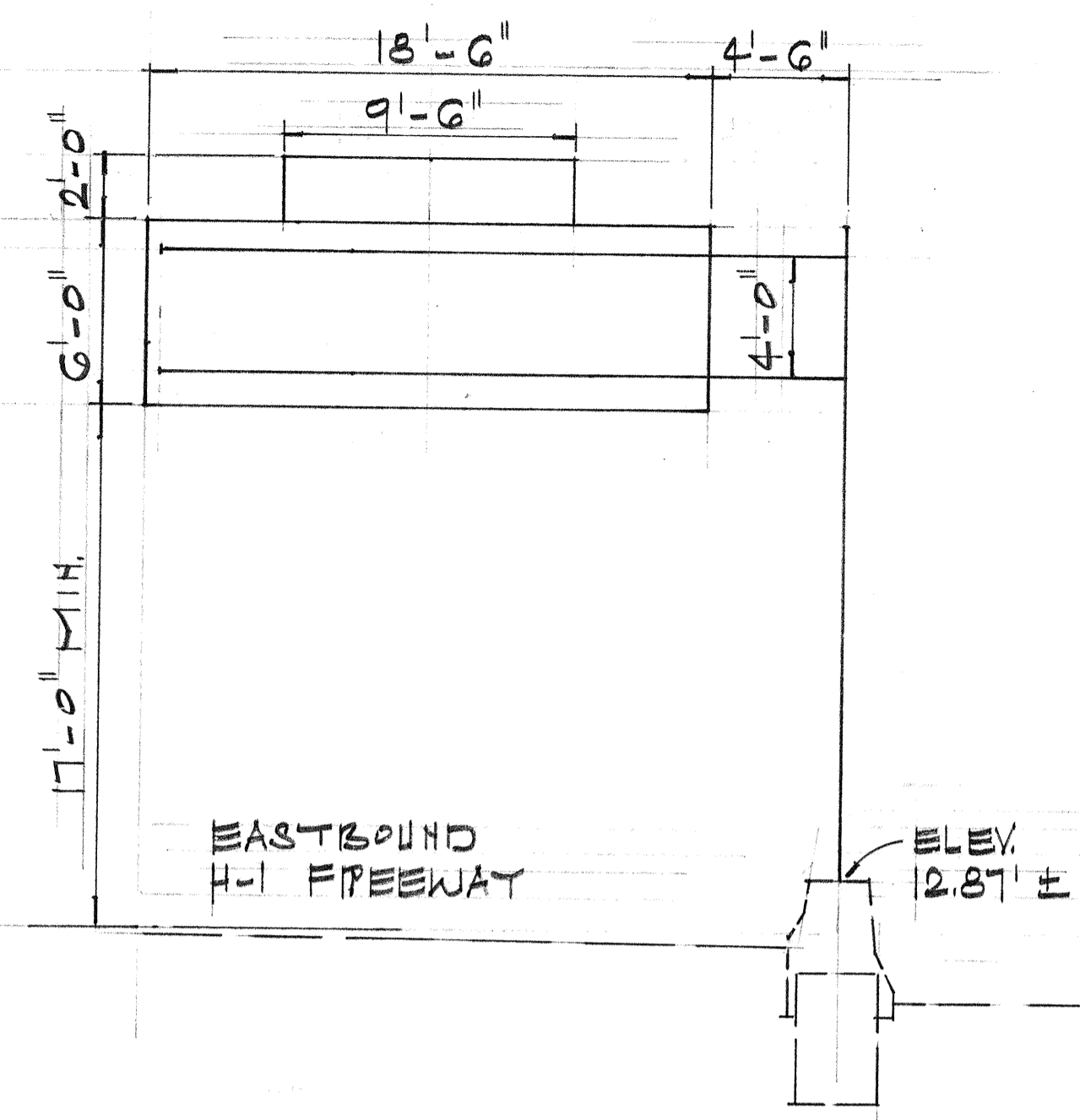
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(60):23	1976	108	181



SIGN D-8

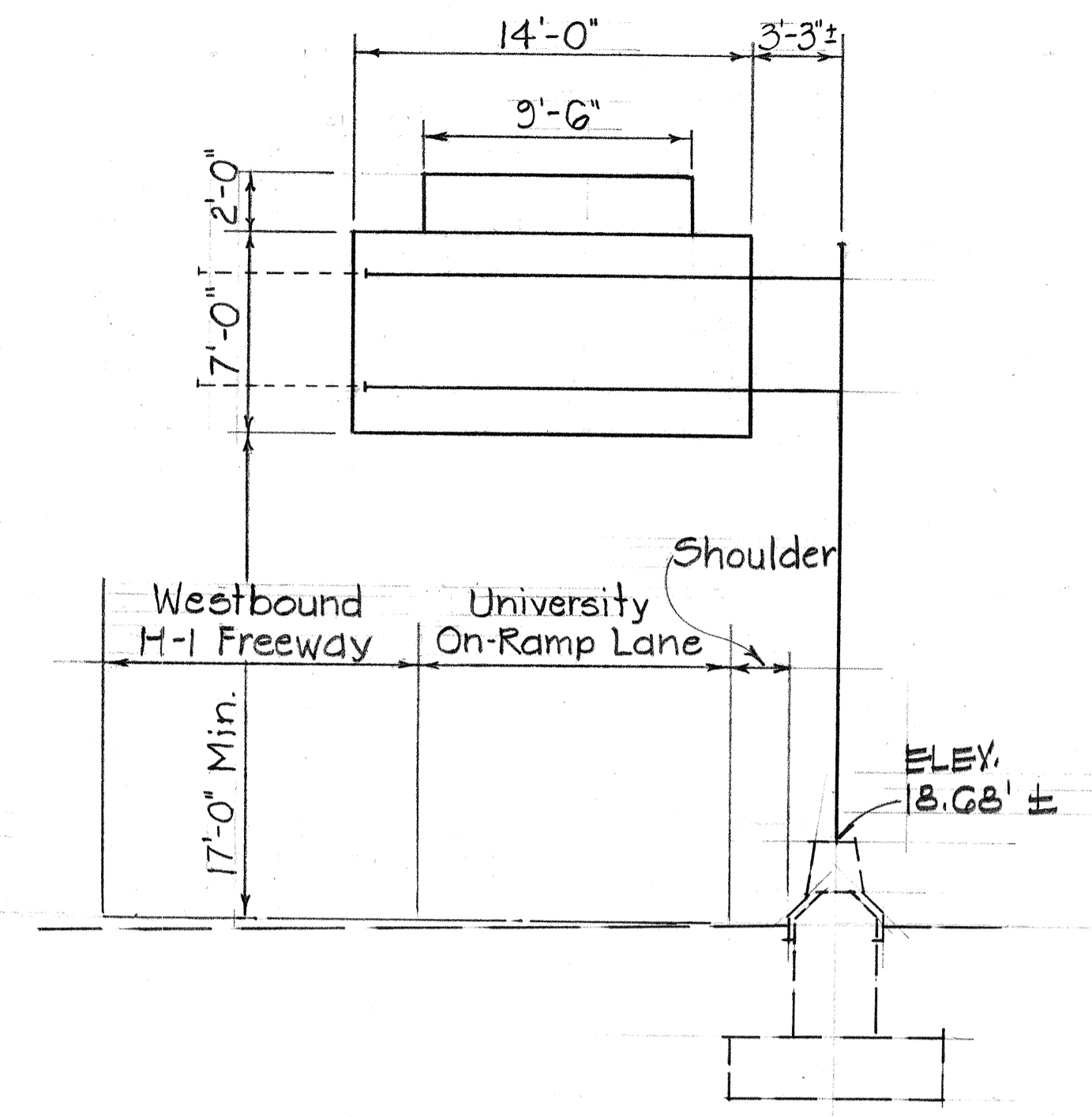
MERCURY SEPARATION

NOTE:
FOR MOUNTING DETAILS
SEE SHT. 217



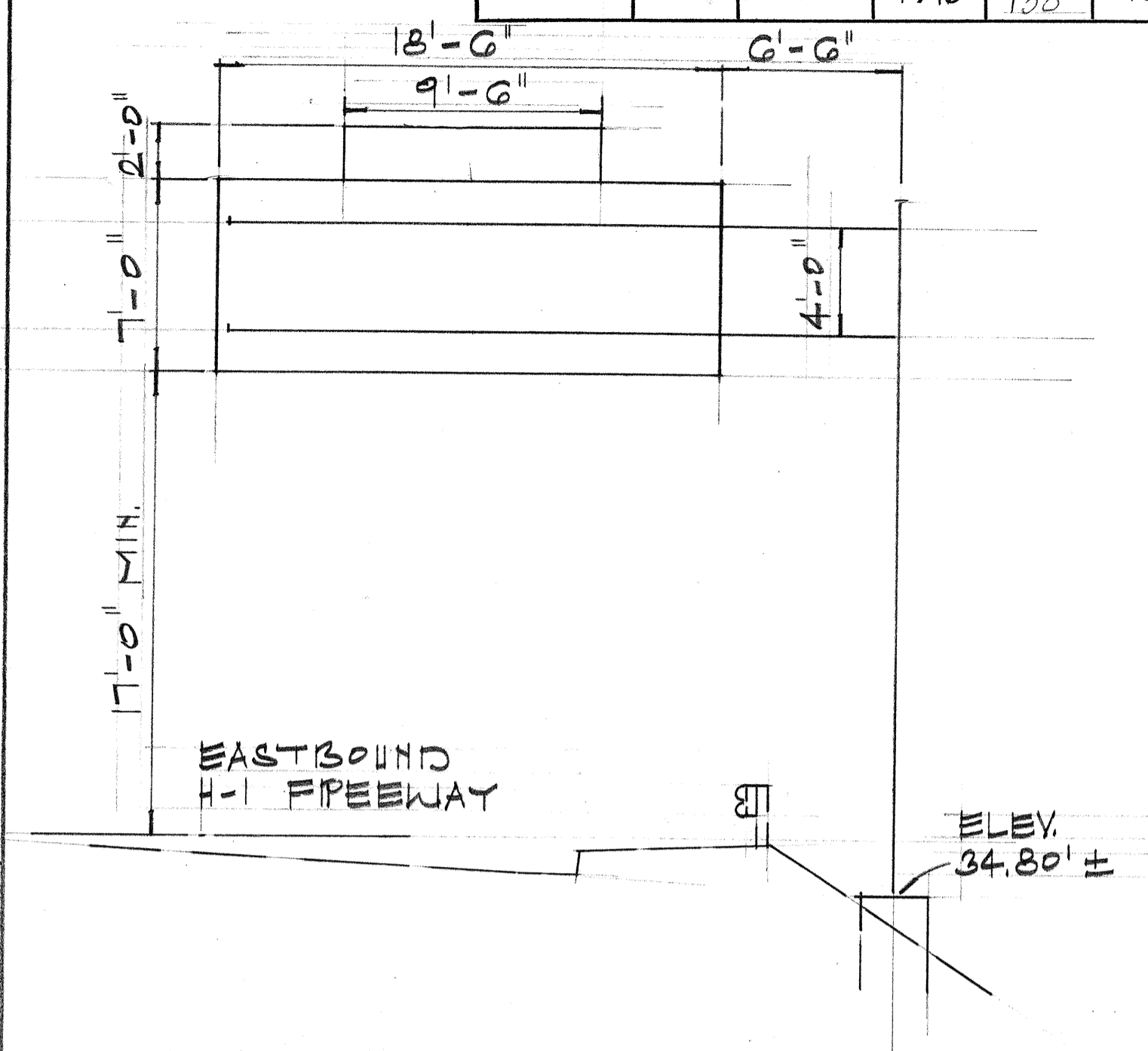
SIGN D-9

H-1 $\frac{1}{2}$ STA. 281+00 PT.



SIGN D-10

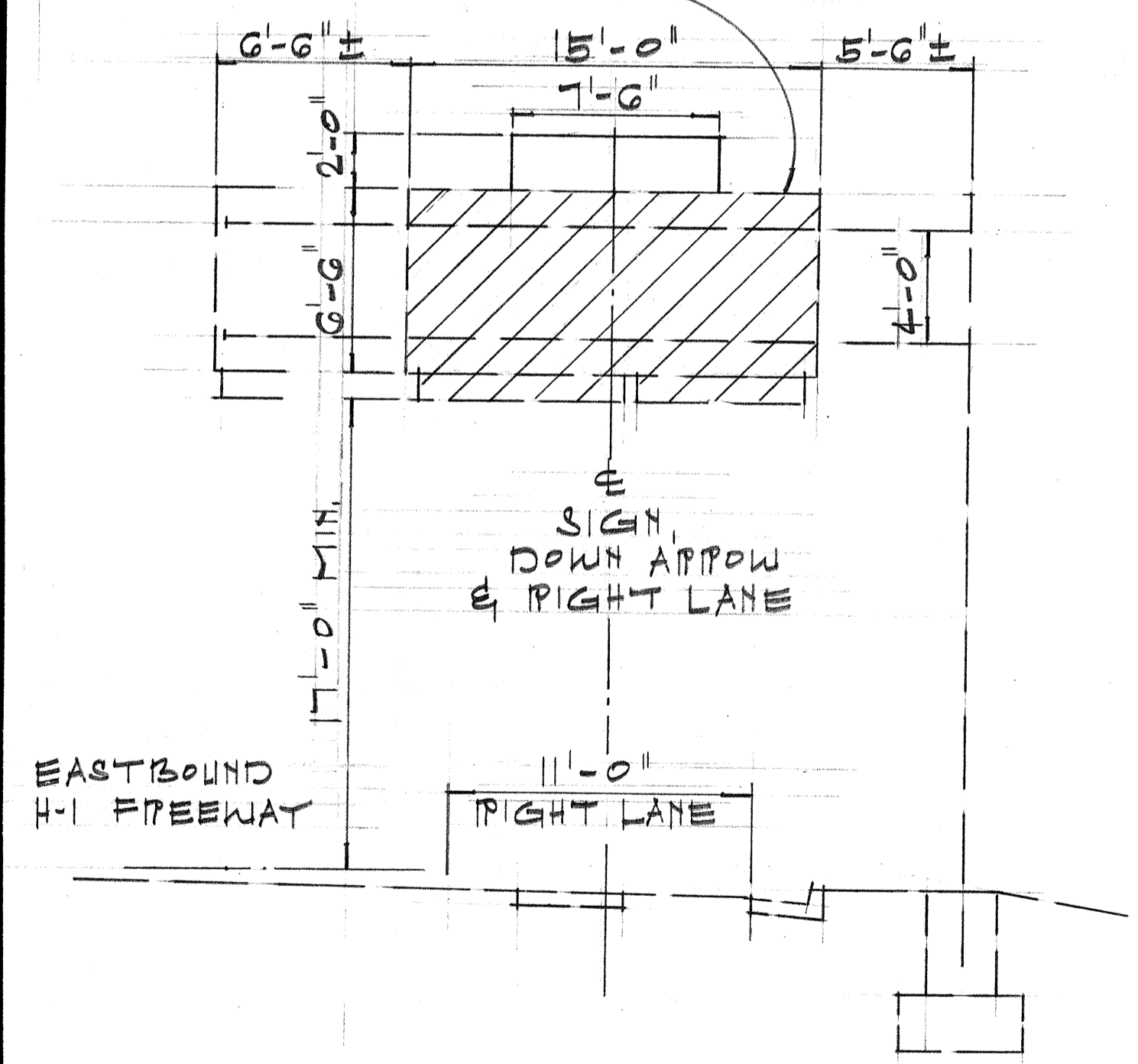
H-1 $\frac{1}{2}$ STA. 4+50 LT.



SIGN D-11

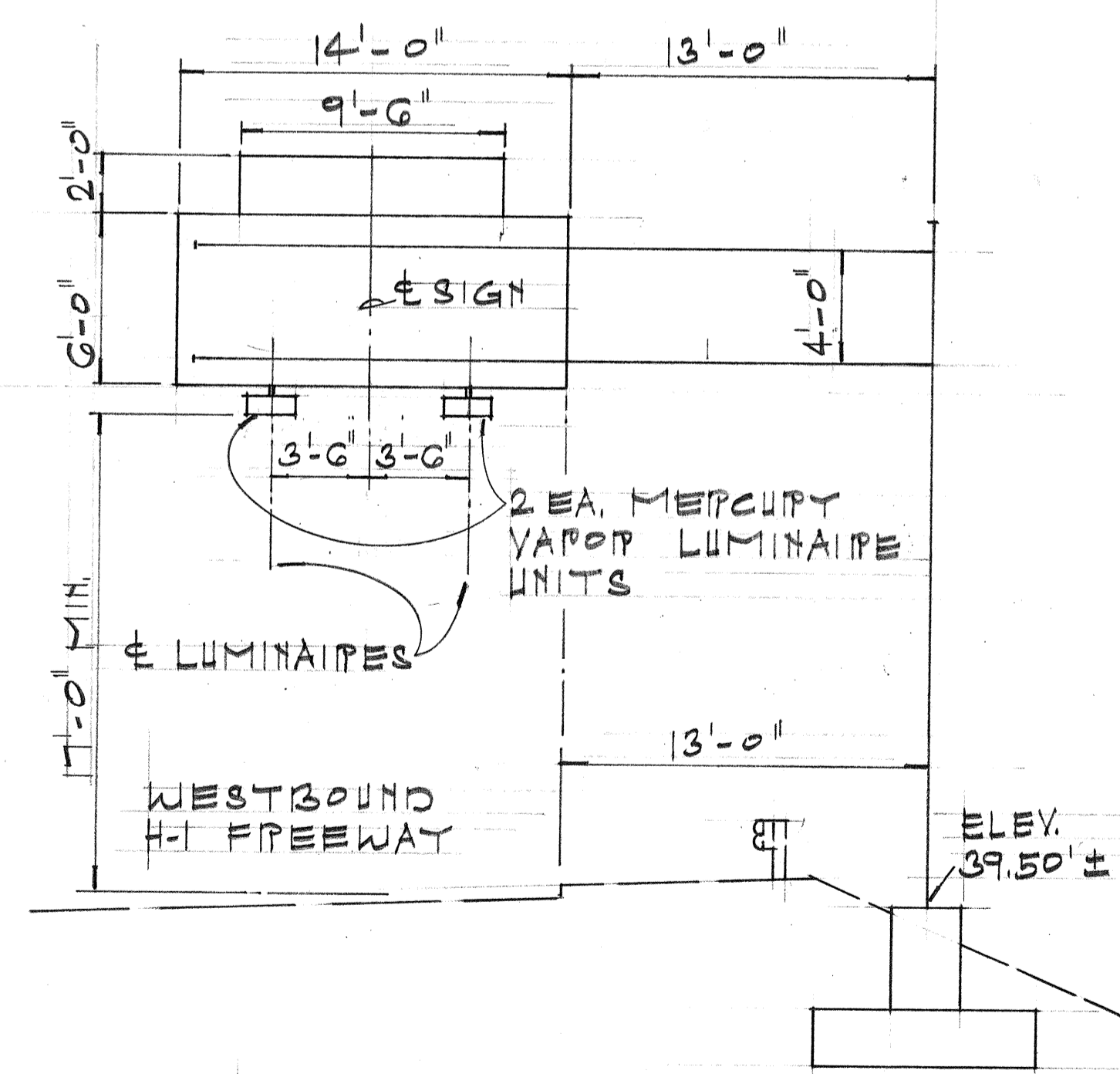
H-1 $\frac{1}{2}$ STA. 13+50 PT.

RELOCATE EXIST. SIGN SO THAT THE NEW DOWN ARROW IS CENTERED OVER THE RIGHT LANE



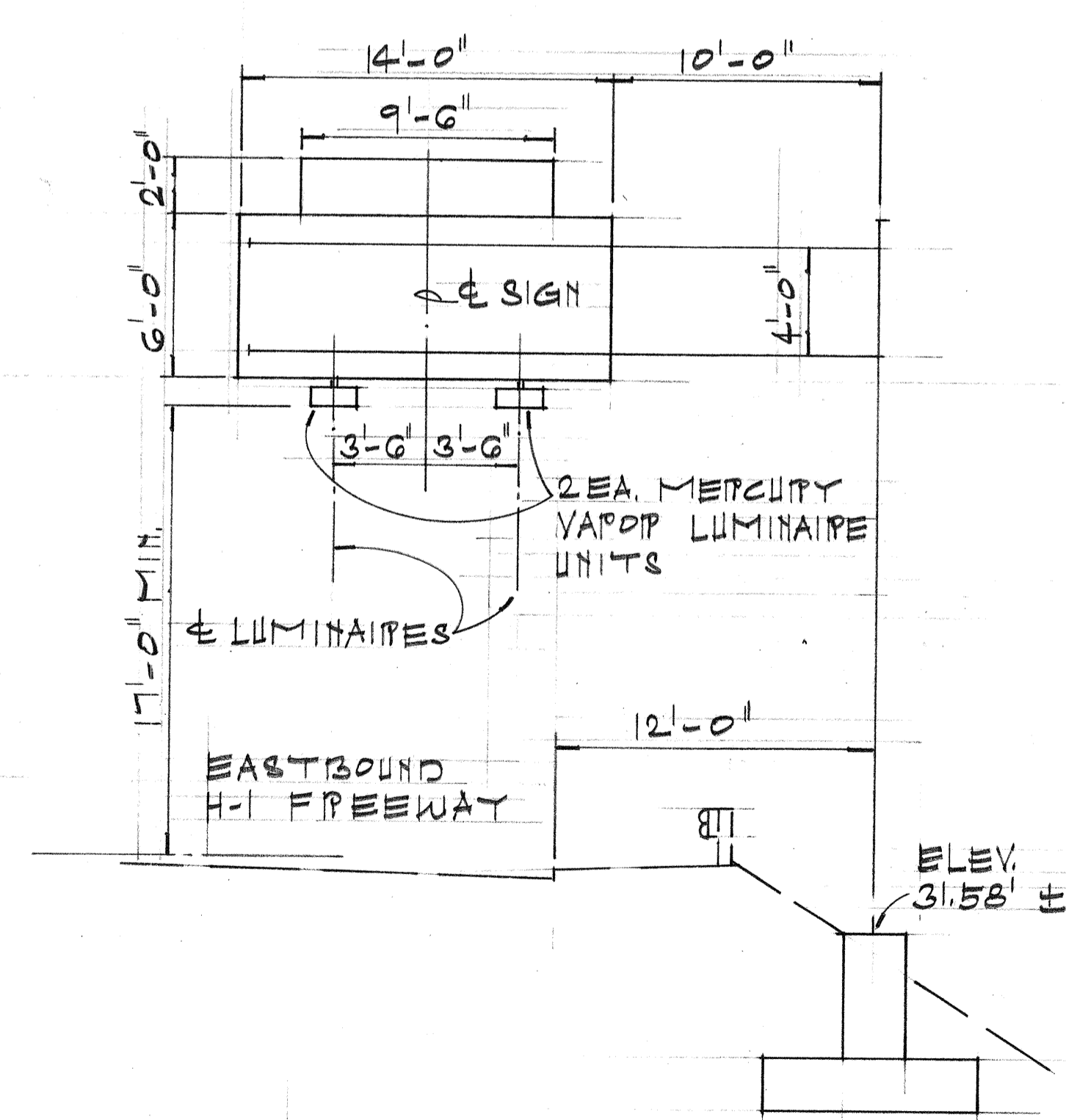
SIGN E-1

H-1 $\frac{1}{2}$ STA. 228+00 PT.



SIGN E-8

H-1 $\frac{1}{2}$ STA. 12+50 LT.



SIGN E-9

H-1 $\frac{1}{2}$ STA. 21+00 PT.

NOTE:
1. FOR FOUNDATION DETAILS (SIGNS D-9, D-10, D-11, E-8 & E-9) SEE SHT. 207
2. FOR MERCURY VAPOR LUMINAIRE DETAILS (SIGNS E-8 & E-9) SEE SHT. 217

8/24/77	Revised Framing Layout for Sign D-10
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FRAME LAYOUT

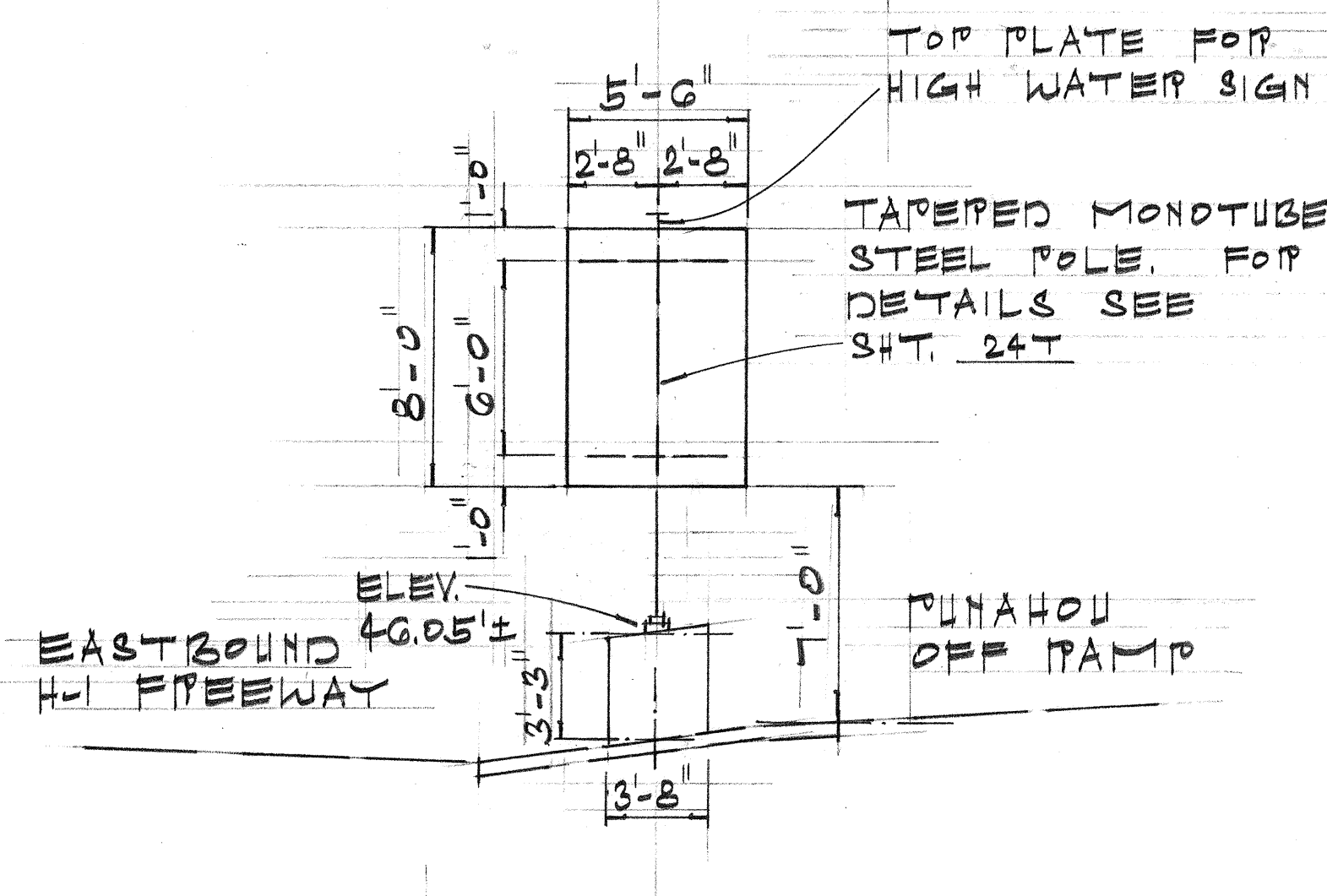
PALI HWY. TO OLD WAIALAE RD.
F.A.I. PROJ. NO. I-HI-1(60):23

NOT TO SCALE

SHEET NO. 187 OF 537 SHEETS

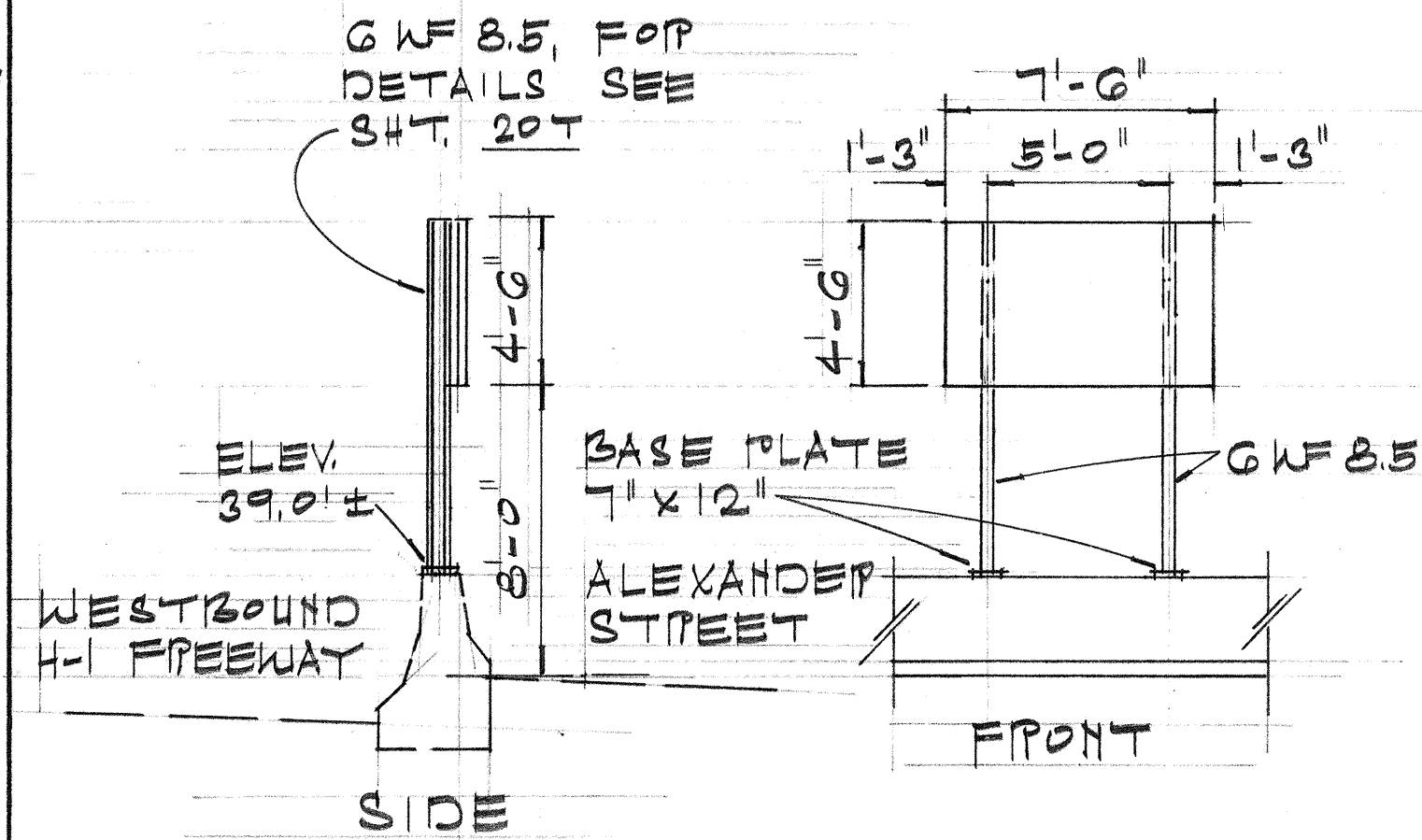
ORIGINAL PLAN	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	139	161



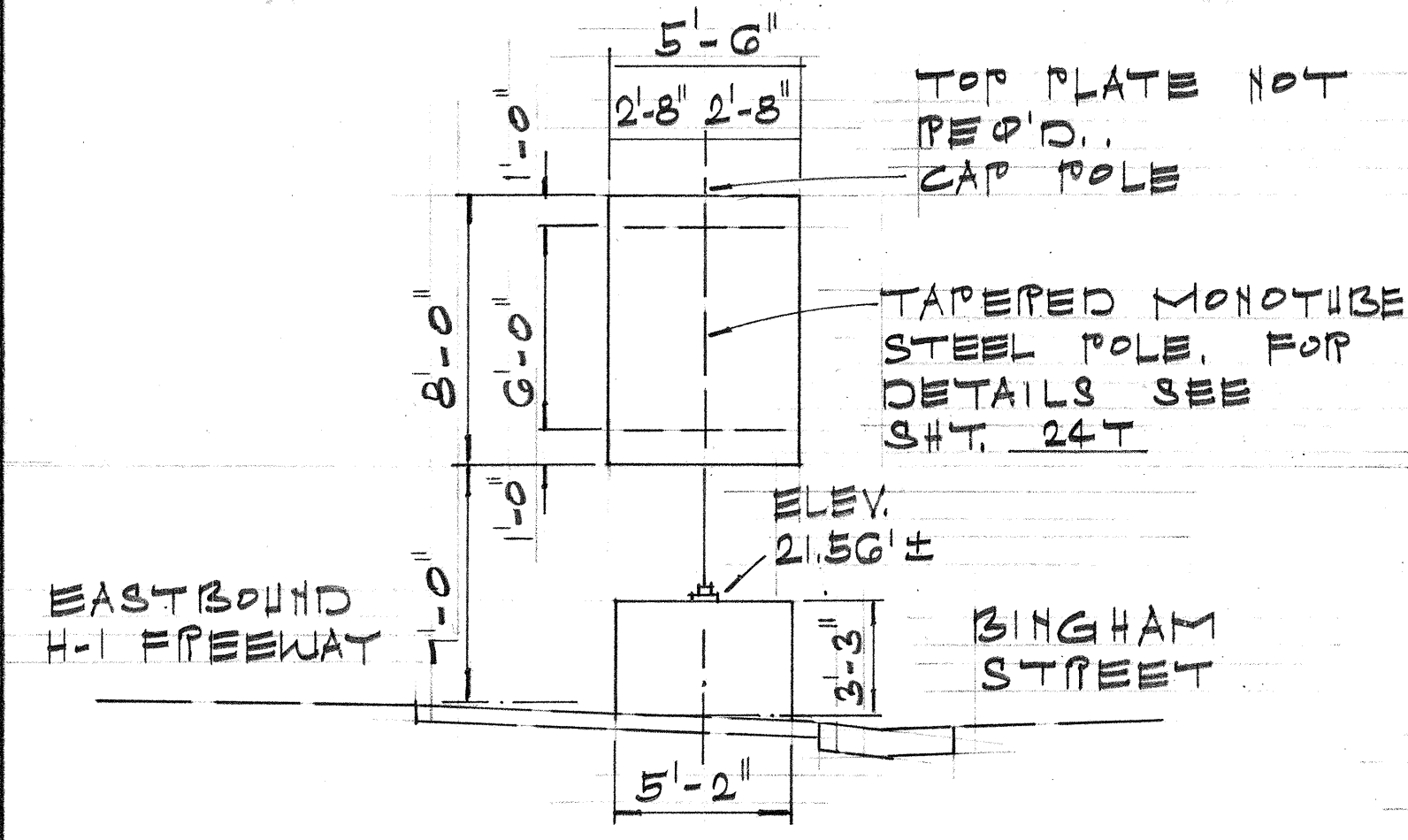
SIGN D-1

MOUNTED ON CUSHION BARRIER BUTTRESS
H-1 B STA. 240+70 RT.



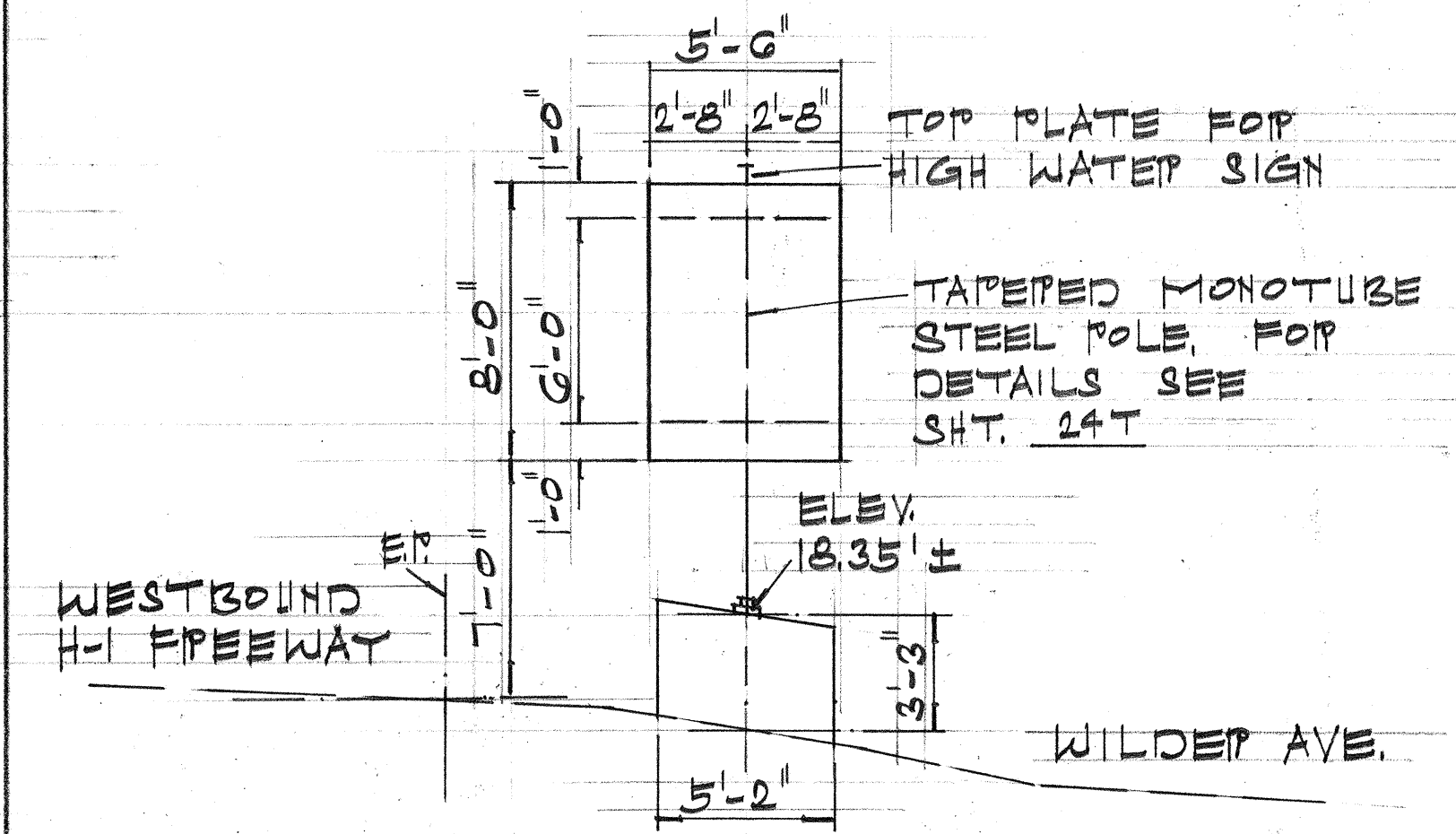
SIGN D-2

MOUNTED ON GUARD RAIL, TYPE 4
H-1 B STA. 256+00 LT.



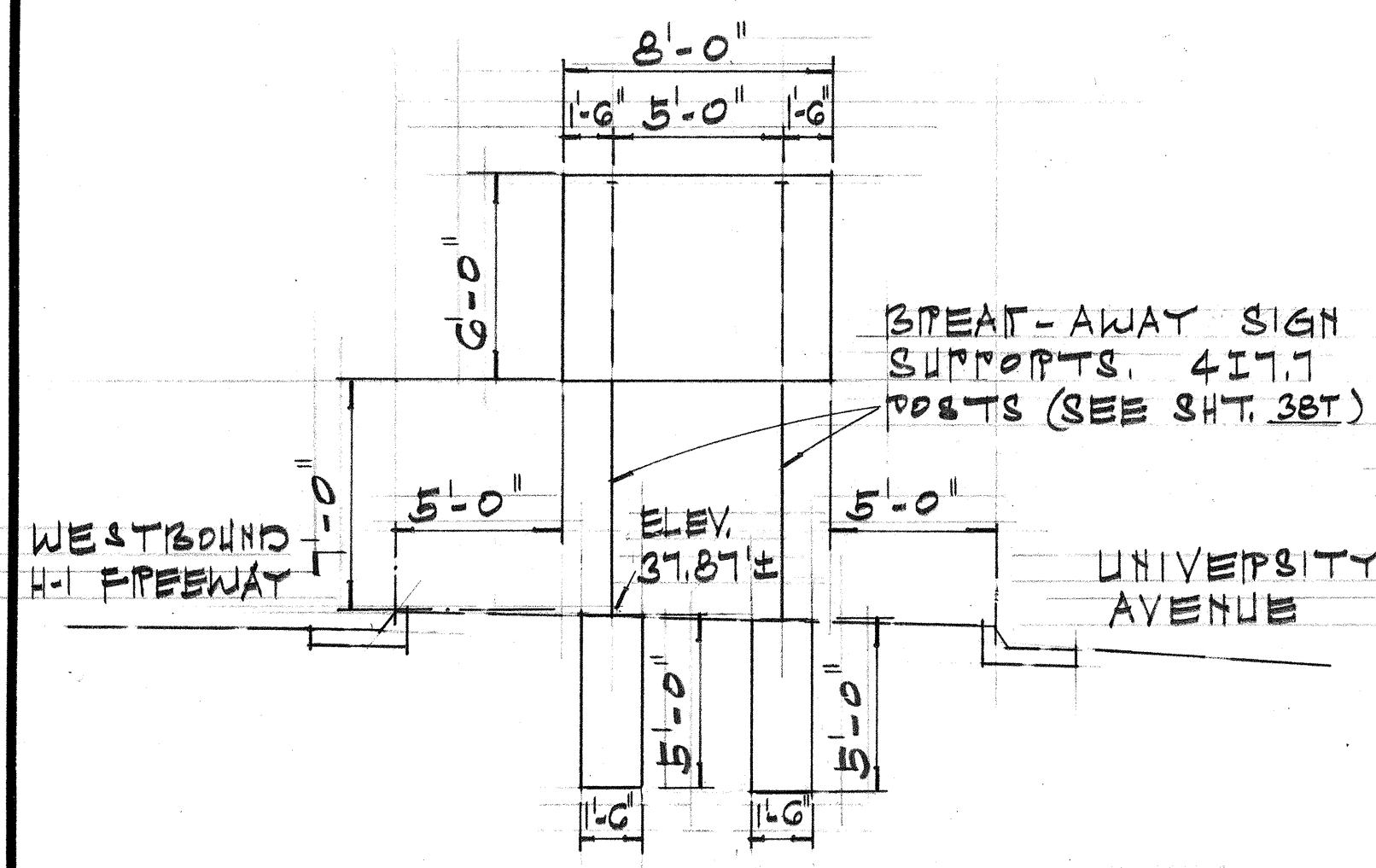
SIGN D-3

MOUNTED ON CUSHION BARRIER BUTTRESS
H-1 B STA. 269+00 RT.



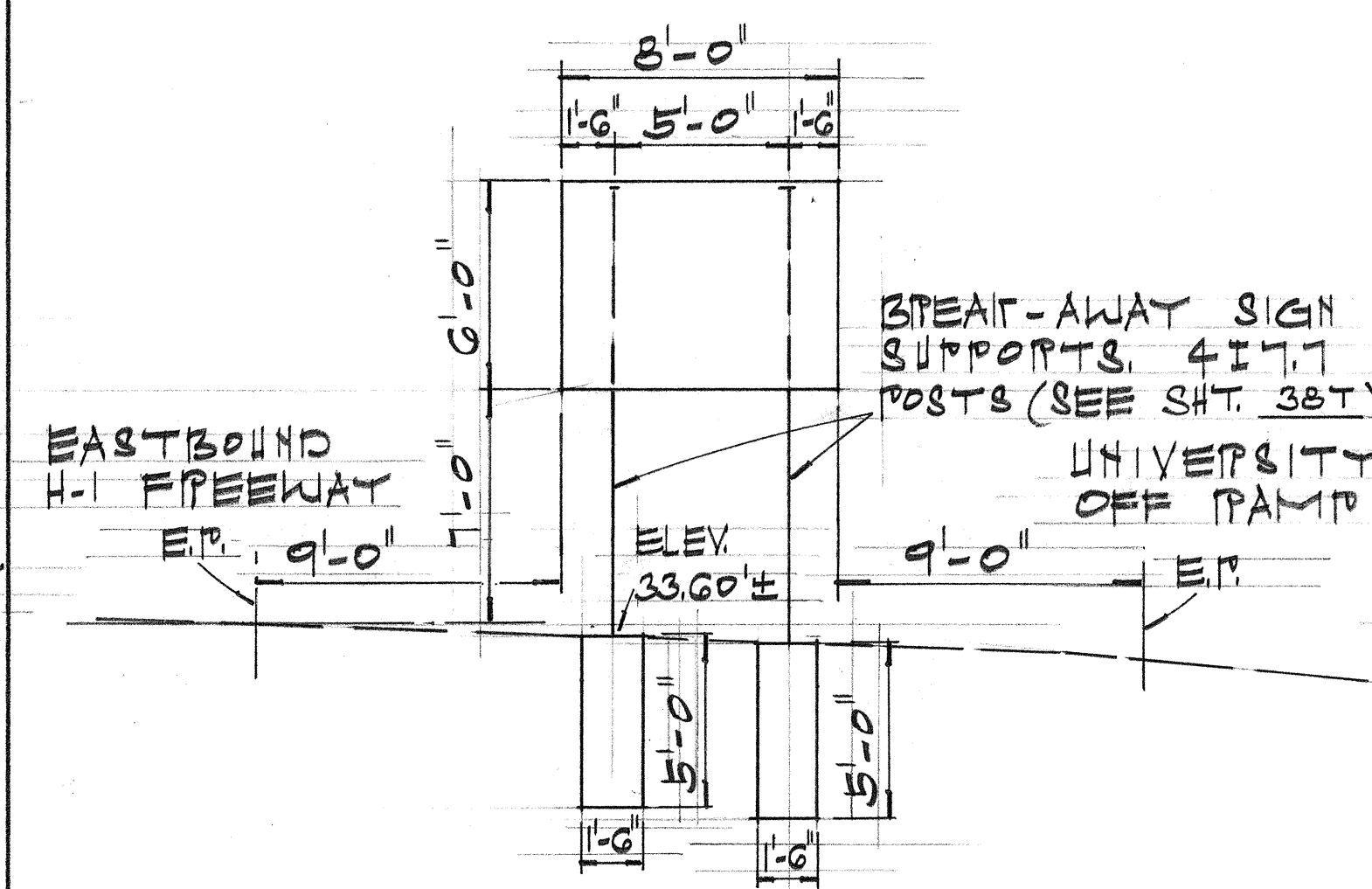
SIGN D-4

MOUNTED ON CUSHION BARRIER BUTTRESS
H-1 B STA. 280+70 LT.



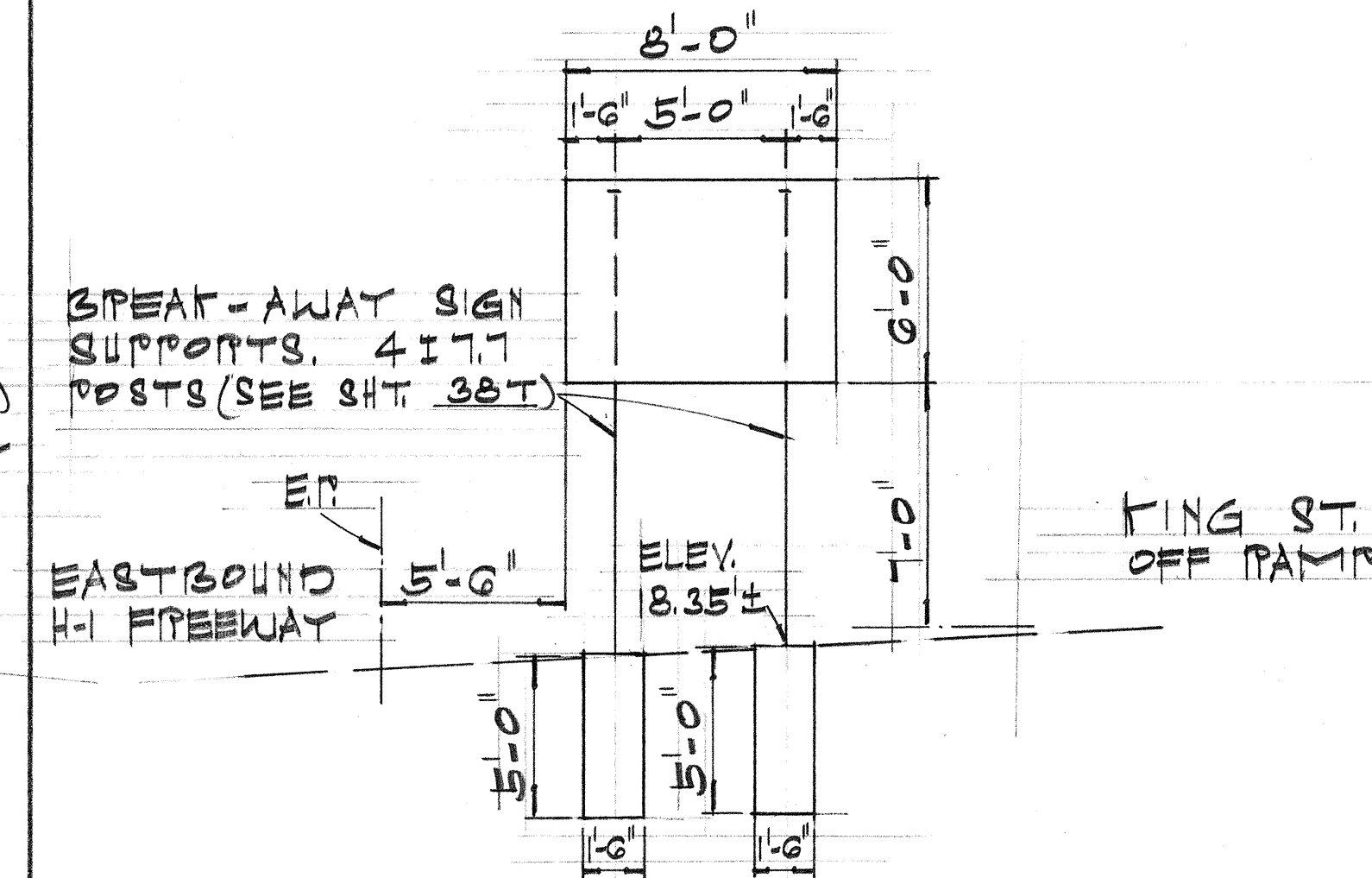
SIGN D-5

H-1 B STA. 18+70 LT.



SIGN D-6

H-1 B STA. 18+90 RT.



SIGN D-7

H-1 B STA. 33+80 RT.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

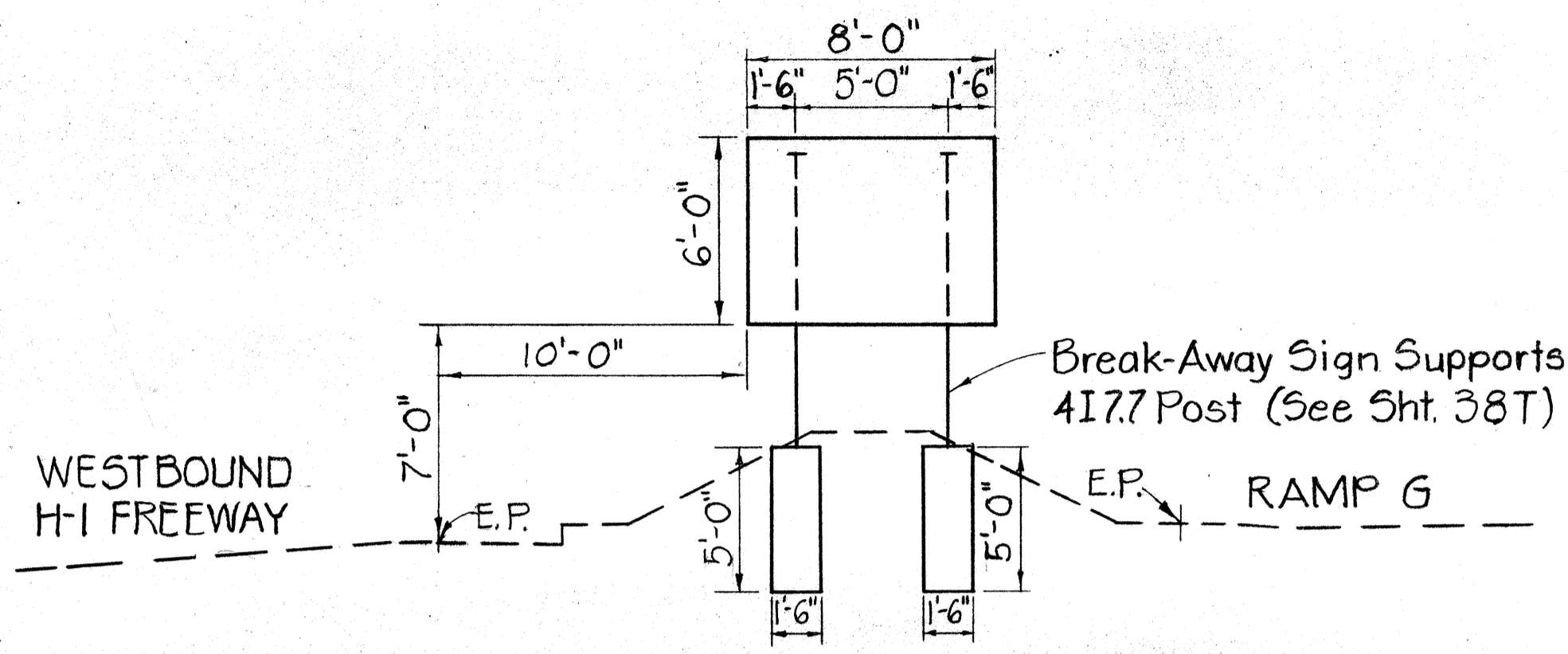
FRAME LAYOUT

PALI HWY. TO OLD WAIALAE RD.
F.A.I. PROJ. NO. I-HI-1(60):23

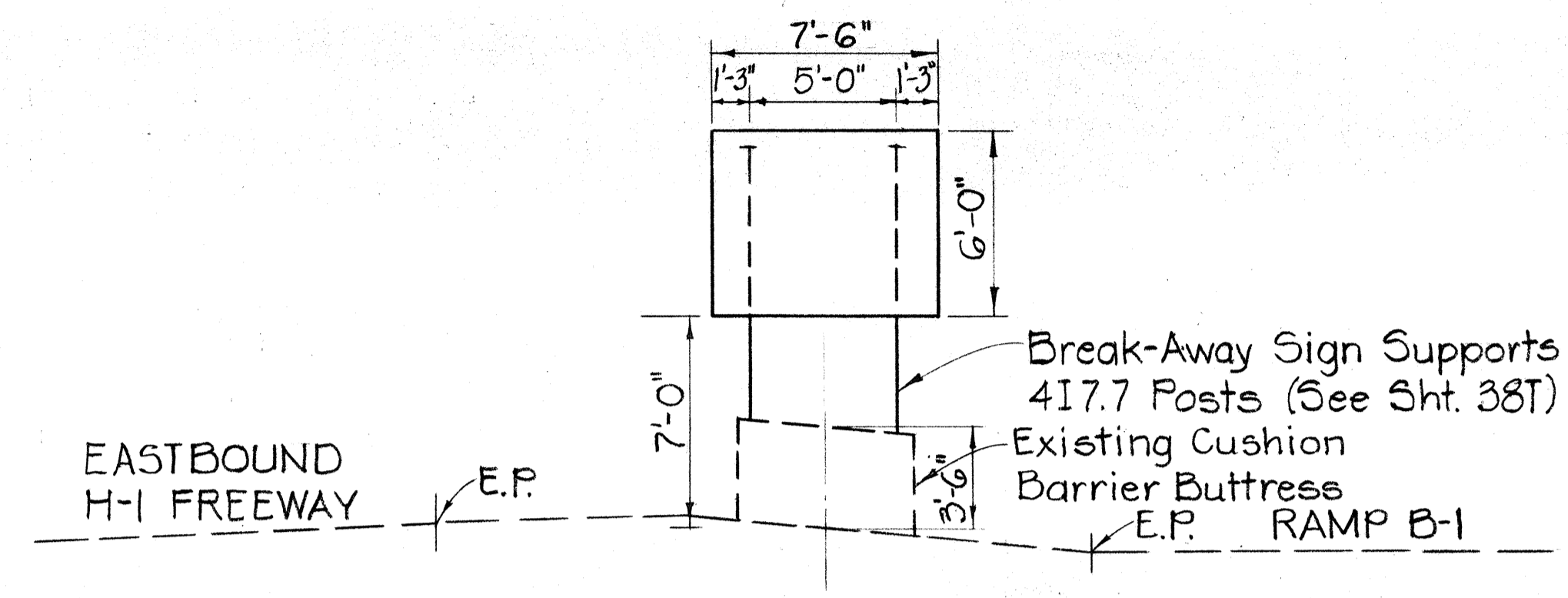
NOT TO SCALE

SHEET NO. 197 OF 537 SHEETS

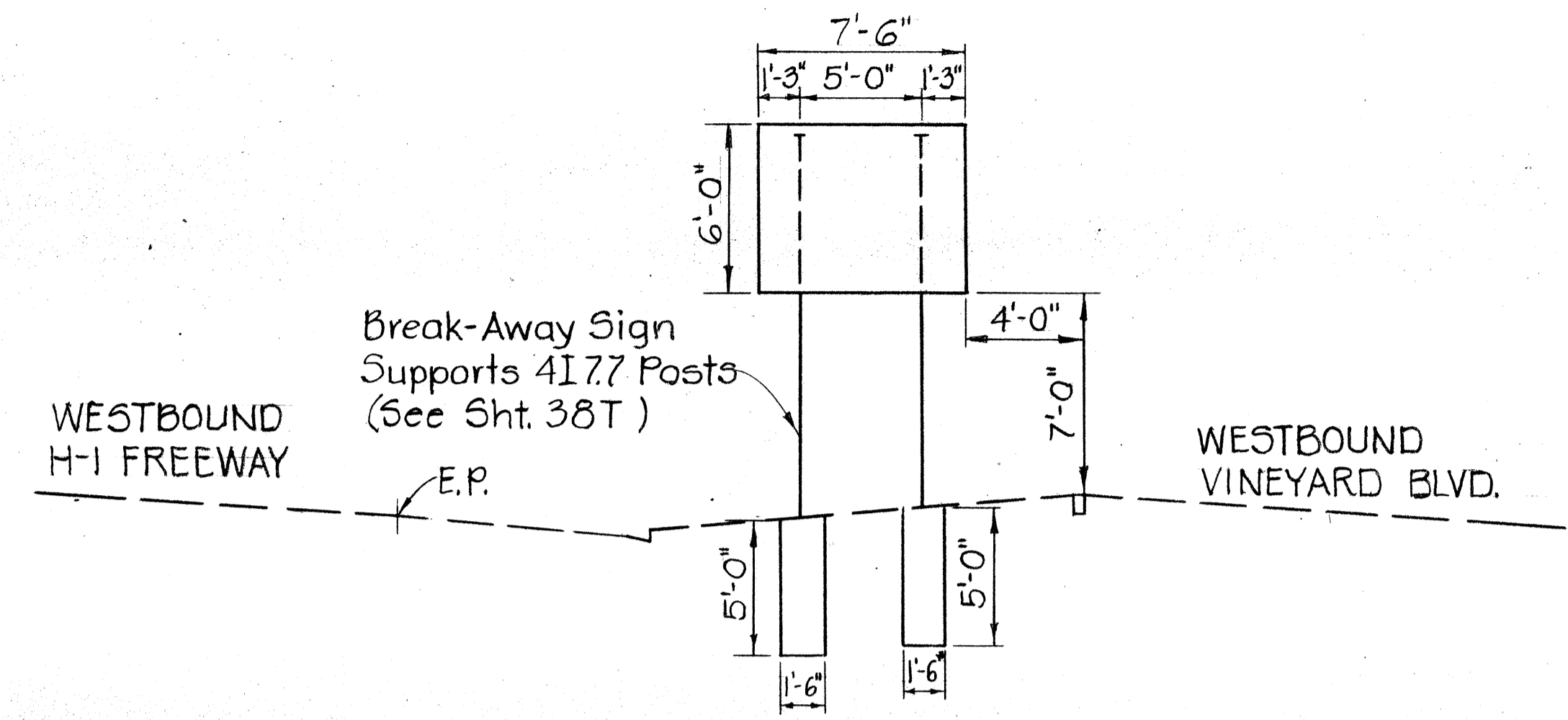
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1978	C.O.1395-1	181



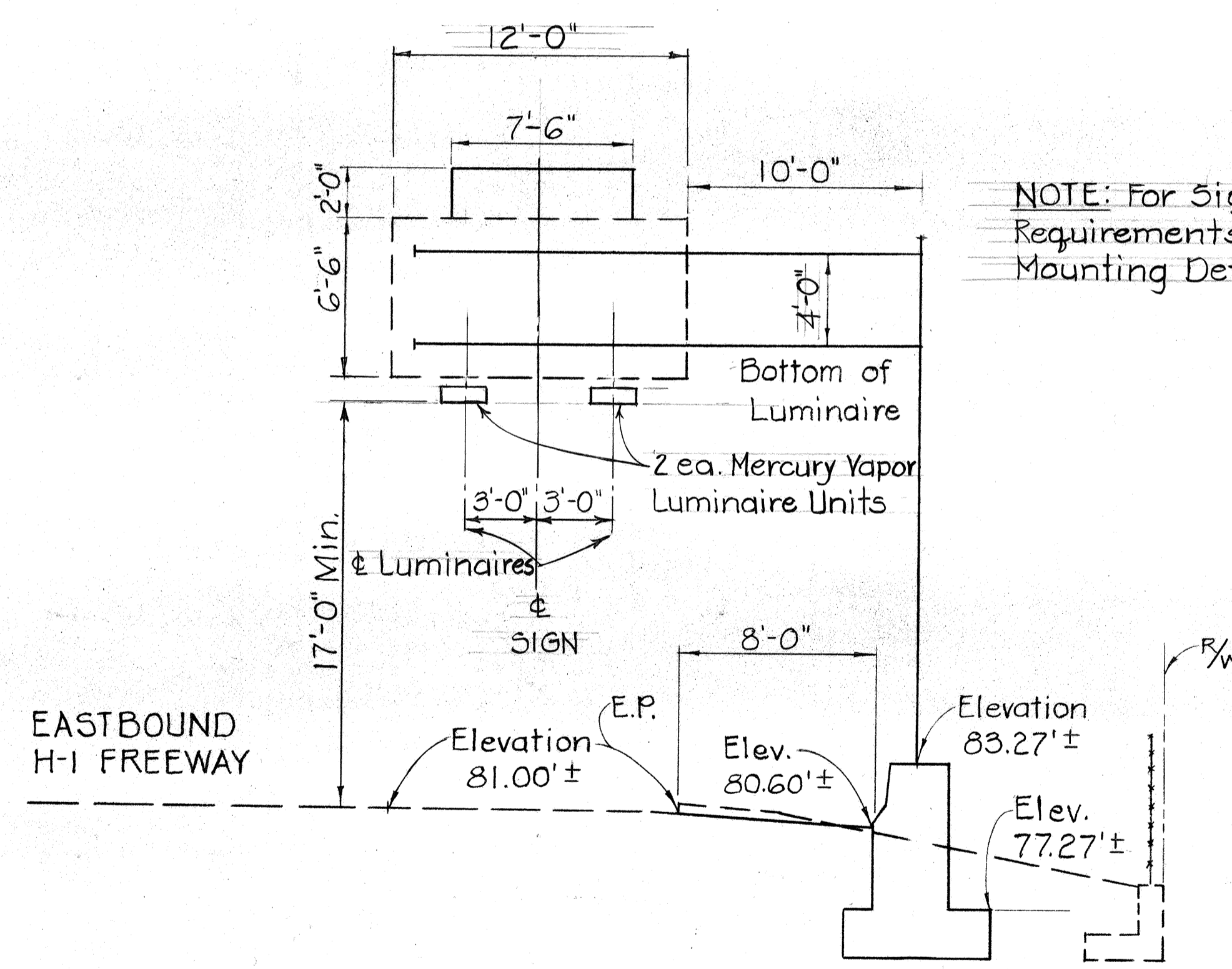
SIGN D-12
H-1 @ Sta. 156+70 Lt.



SIGN D-13
Mounted On Existing Cushion Barrier Buttrass
H-1 @ Sta. 179+85± Rt.

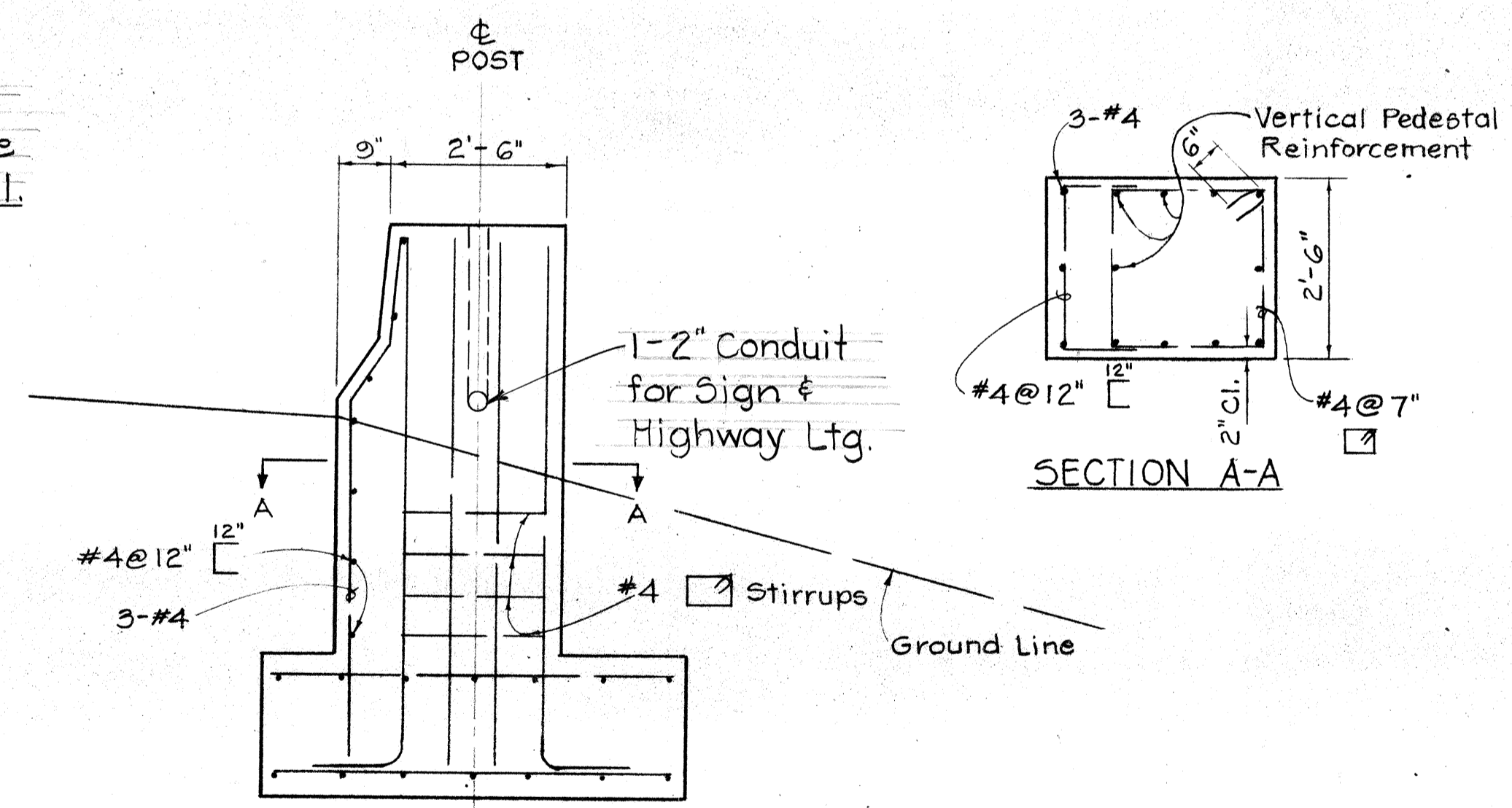


SIGN D-14
H-1 @ Sta. 187+25± Lt.

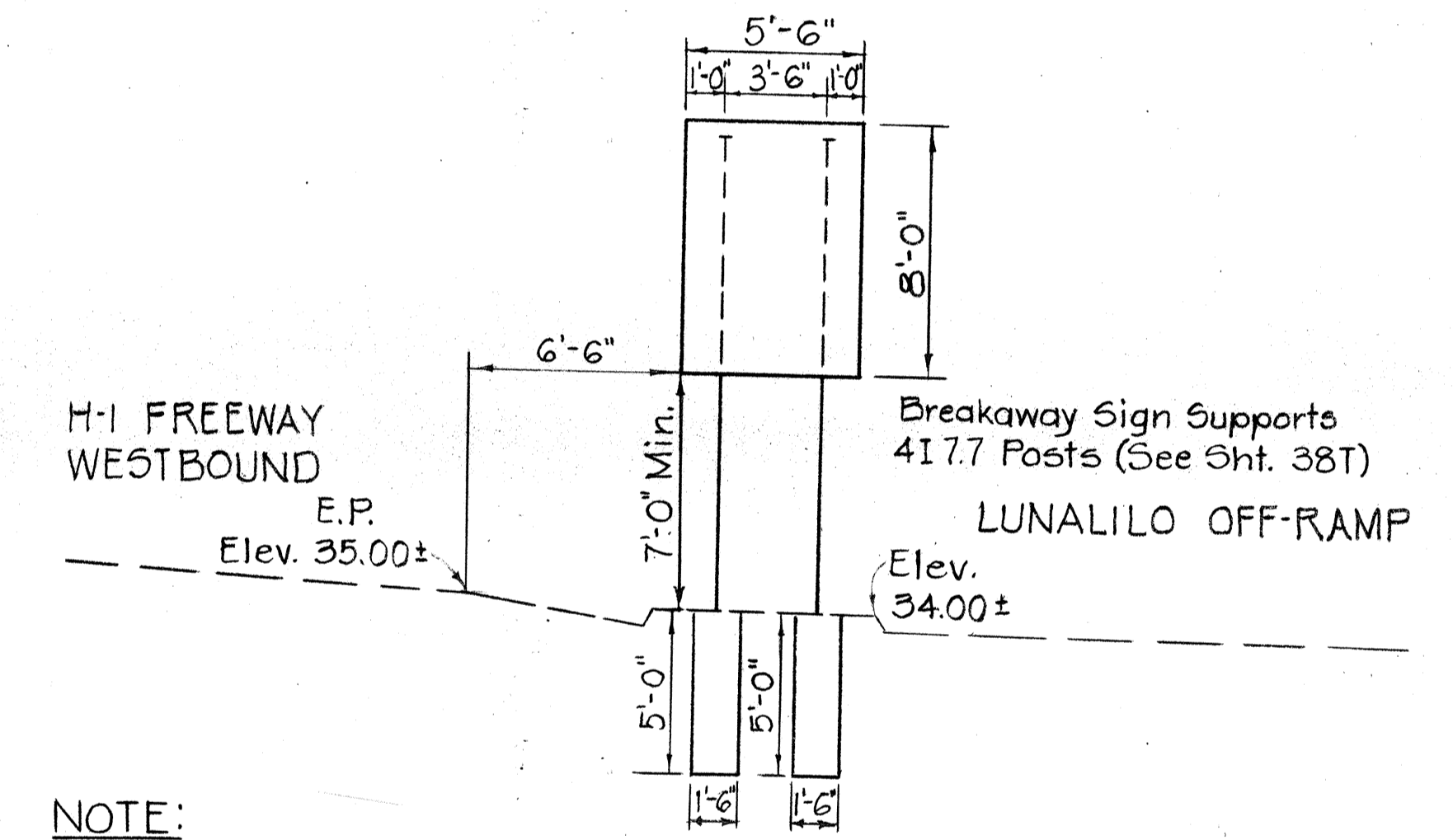


SIGN E-17
H-1 @ Sta. 170+00 Rt.

NOTE: For Sign Luminaire Requirements and Luminaire Mounting Details see Sht. 171.



FOUNDATION DETAILS (SIGN E-17)
Scale: 1/2" = 1'-0"



NOTE: FOR GORE SIGN PANEL LAYOUT FOR SIGN D-15 SEE SHEET 171.

SIGN D-15
@ Sta. 224+67

SIGN	CROSSARM CANT. DBLE.	POST	BASE	ANCHOR BOLT.	PEDESTAL HT.	* PEDESTAL SIZE	VERTICAL REINF.	CLOSED STIRRUP	** FTG.
E-17 Sta. 170+00 Rt.	3GA 9"	OGA 15"	23" x 23" x 2"	2"	6'-0"	2'-6" x 2'-6"	10-#10	#4 @ 7"	IV

SCHEDULE FOR SIGN

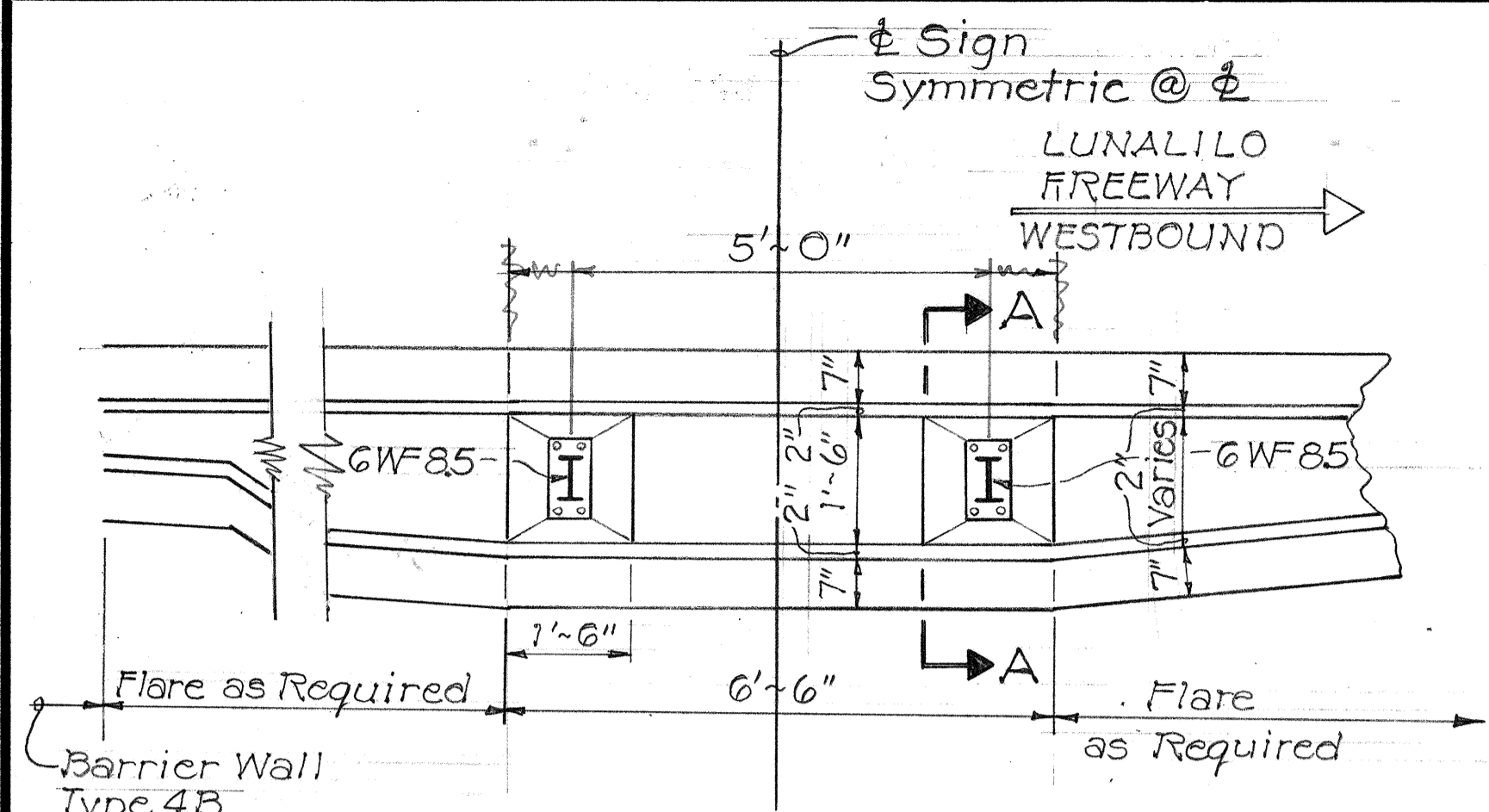
* See above sketch for actual shape of Pedestal. Use same Bolt Details as used for Signs D-11, E-8 & E-9.
** For Typical Details and Foundation Dimensions not shown see sheet C.O.1575-1.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

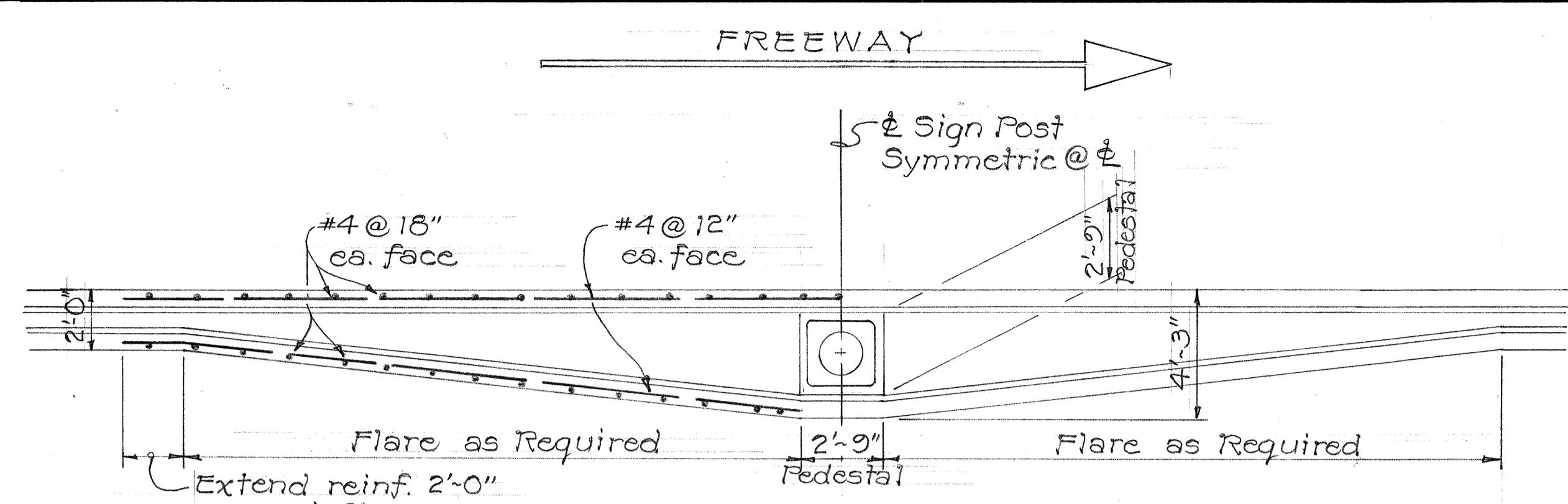
FRAME LAYOUT
PALI HWY TO WEST END
OF KAPIOLANI VIADUCT
F.A.I. PROJ. NO. I-HI-1(60):23
Scale: As Shown Date: Dec. 1977
SHEET NO. 197A OF 237 SHEETS

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

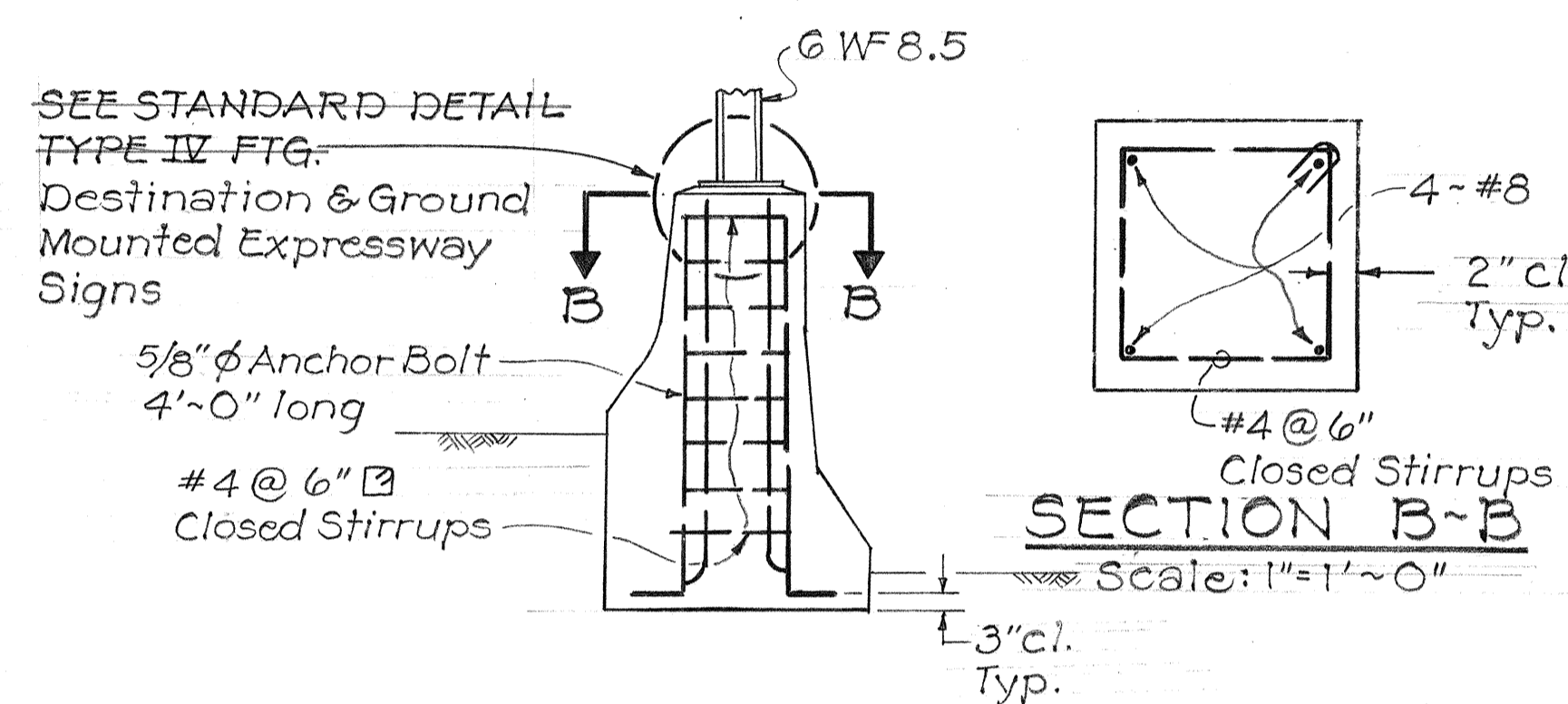
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI(60):23	1976	140	181



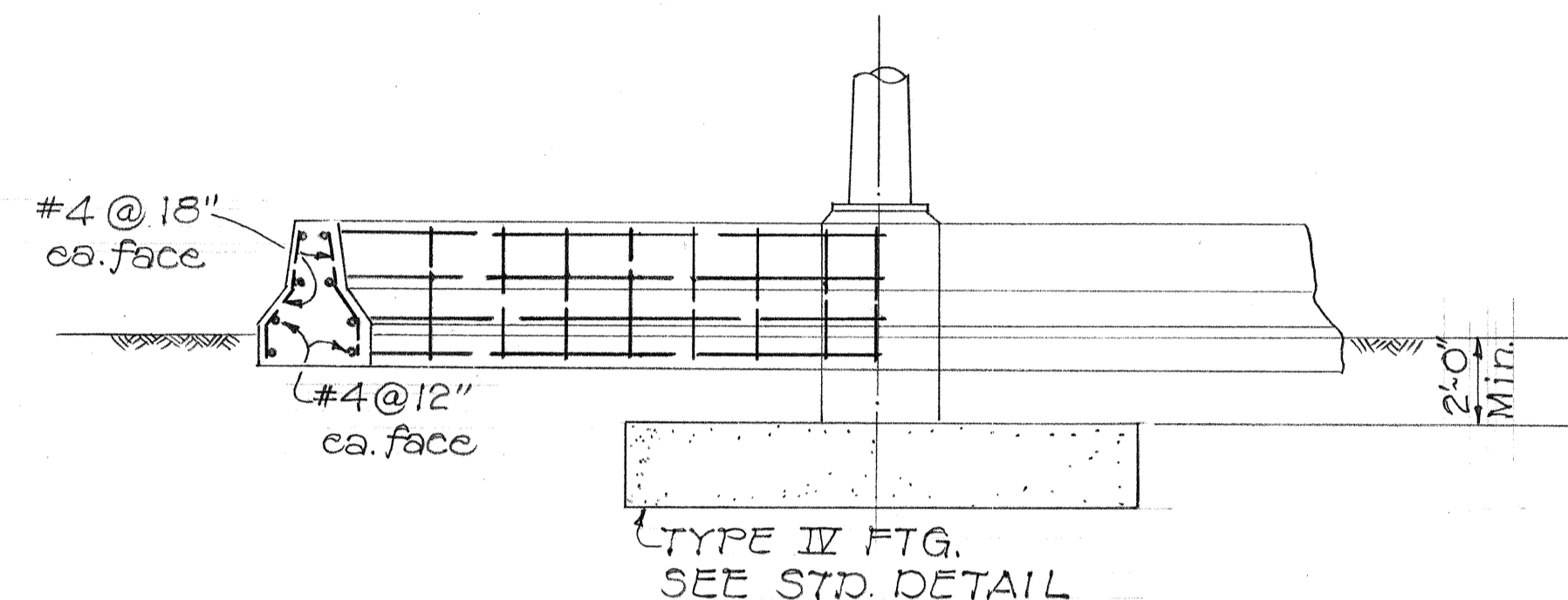
PLAN
Scale: 1/2"=1'-0"



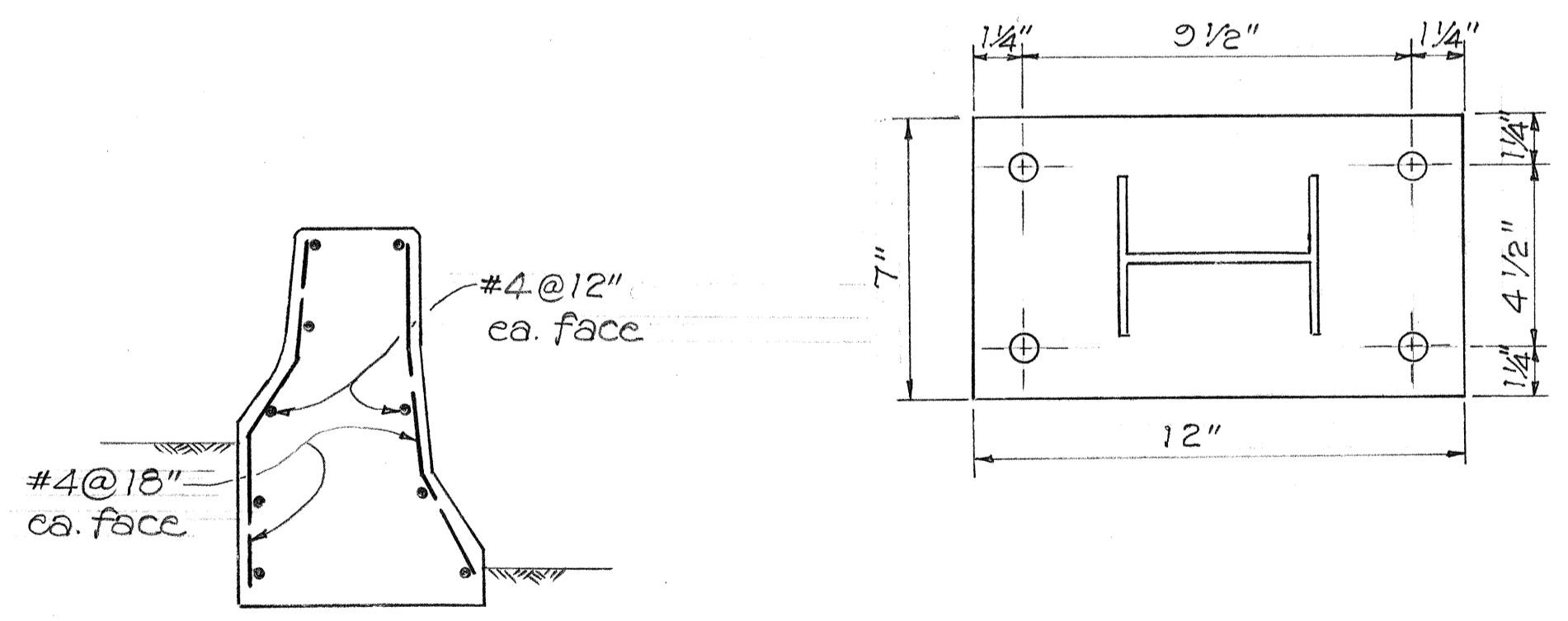
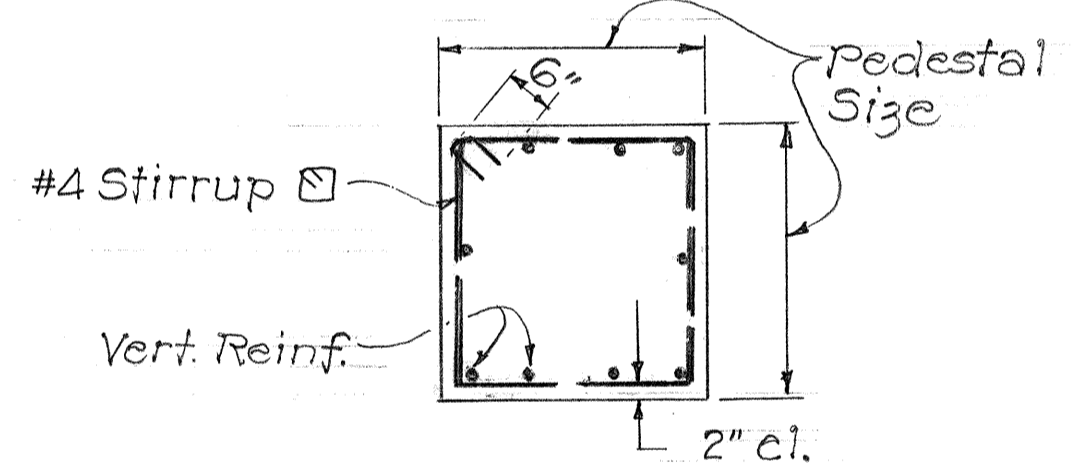
PLAN
Scale: 1/4"=1'-0"



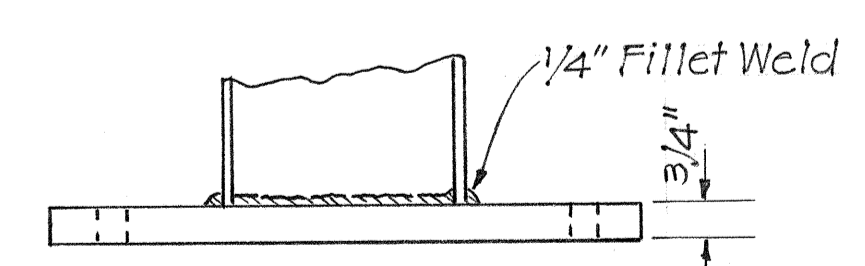
SECTION A-A
SIGN D-2
Scale: 1/2"=1'-0"



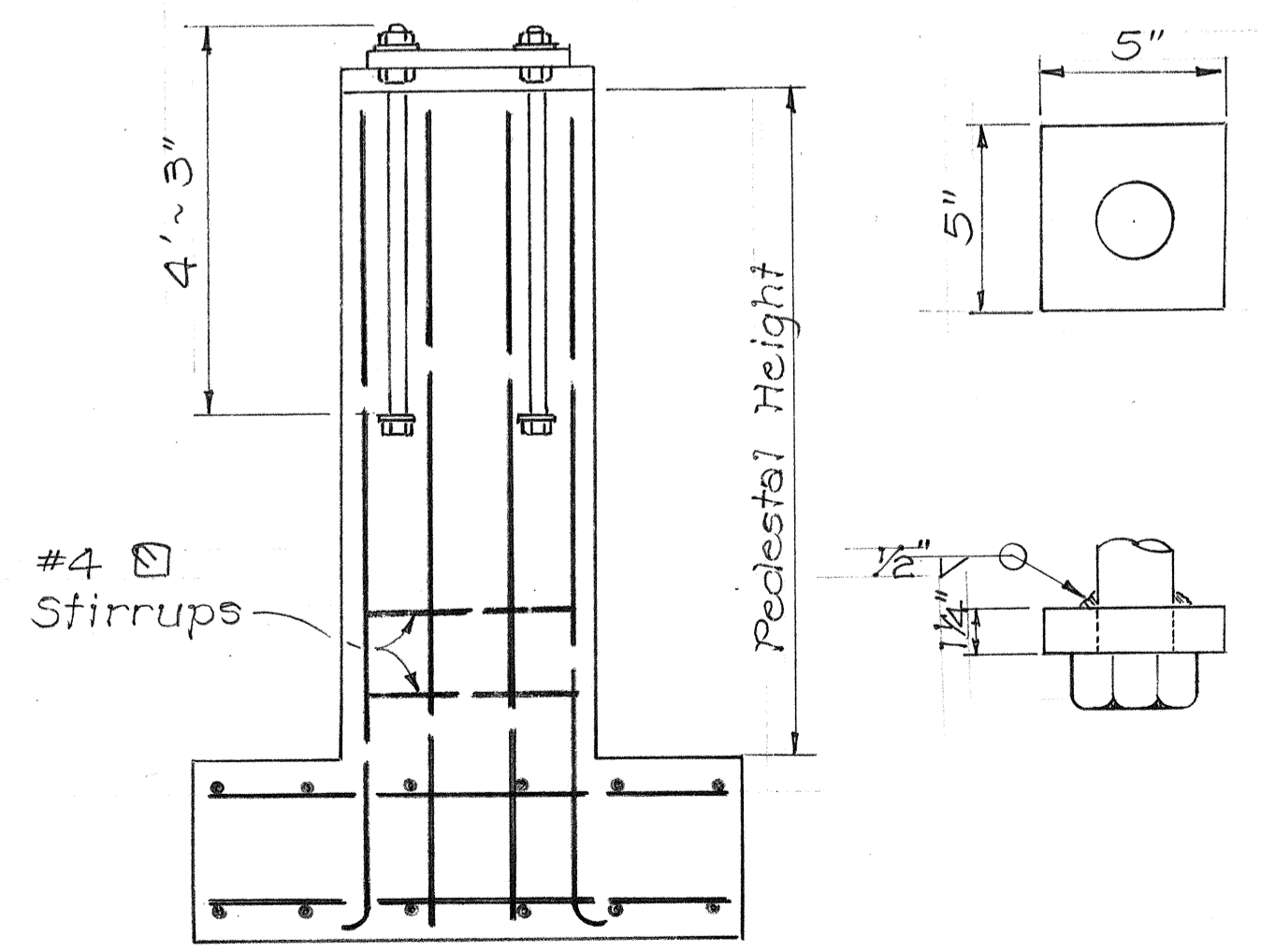
ELEVATION
SIGN D-10, D-9
Scale: 1/4"=1'-0"



ADDED REINF. DETAIL
Scale: 1/2"=1'-0"



BASE PLATE
Scale: 3"=1'-0"



SIGN D-11, E8, E9
Not to Scale

FOUNDATION DETAIL
SCALE: AS SHOWN

SIGN NO.	CROSSARM CANT. DBL.	POST	BASE #	ANCHOR BOLT
D-10 STA. 4+50 LT.	3 GA. 10"	3 GA. 18"	26 1/2" x 26 1/2" x 2"	2"
D-9 STA. 281+00 RT.	3 GA. 10"	0 GA. 18"	26 1/2" x 26 1/2" x 2 1/2"	2 1/4"

SIGN NO.	PEDESTAL HEIGHT	PEDESTAL SIZE	VERTICAL REINF.	CLOSED STIRRUP	FTG.
D-10 STA. 4+50 LT.	4'-8"	2'-9" x 2'-9"	10 #10	#4 @ 6"	IV
D-9 STA. 281+00 RT.	4'-8"	2'-9" x 2'-9"	10 #11	#4 @ 6"	IV

SIGN NO.	CROSSARM CANT. DBL.	POST	BASE #	ANCHOR BOLT
E-8 STA. 12+50 LT.	0 GA. 9"	0 GA. 15"	23" x 23" x 2"	2"
E-9 STA. 21+00 RT.	3 GA. 9"	0 GA. 15"	23" x 23" x 2"	2"
D-11 STA. 13+50 RT.	0 GA. 14"	0 GA. 18"	26 1/2" x 26 1/2" x 2 1/2"	2 1/4"

SIGN NO.	PEDESTAL HEIGHT	PEDESTAL SIZE	VERTICAL REINF.	CLOSED STIRRUP	FTG.
E-8 STA. 12+50 LT.	8'-6"	2'-6" x 2'-6"	10 #10	#4 @ 7"	IV
E-9 STA. 21+00 RT.	8'-6"	2'-6" x 2'-6"	10 #10	#4 @ 7"	IV
D-11 STA. 13+50 RT.	8'-6"	2'-9" x 2'-9"	10 #11	#4 @ 6"	IV

SCHEDULE FOR SIGNS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FOUNDATION DETAILS AND SCHEDULE FOR SIGNS

PALI HWY. TO OLD WAIALAE RD.
F.A.I. PROJ. NO I-HI-1(60):23

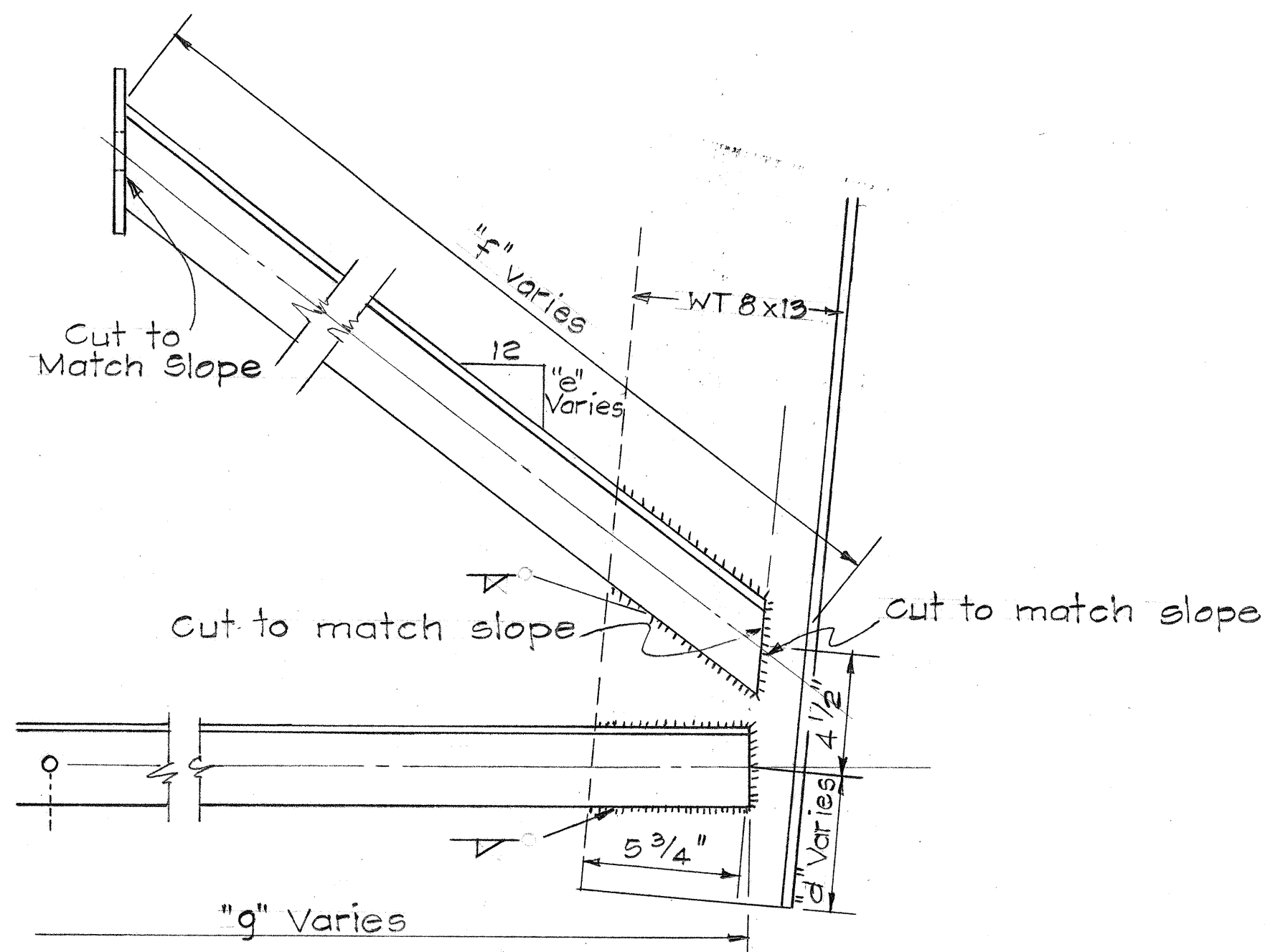
SCALE: As Shown Sept. 1976

SHEET No. 20 OF 53 SHEETS

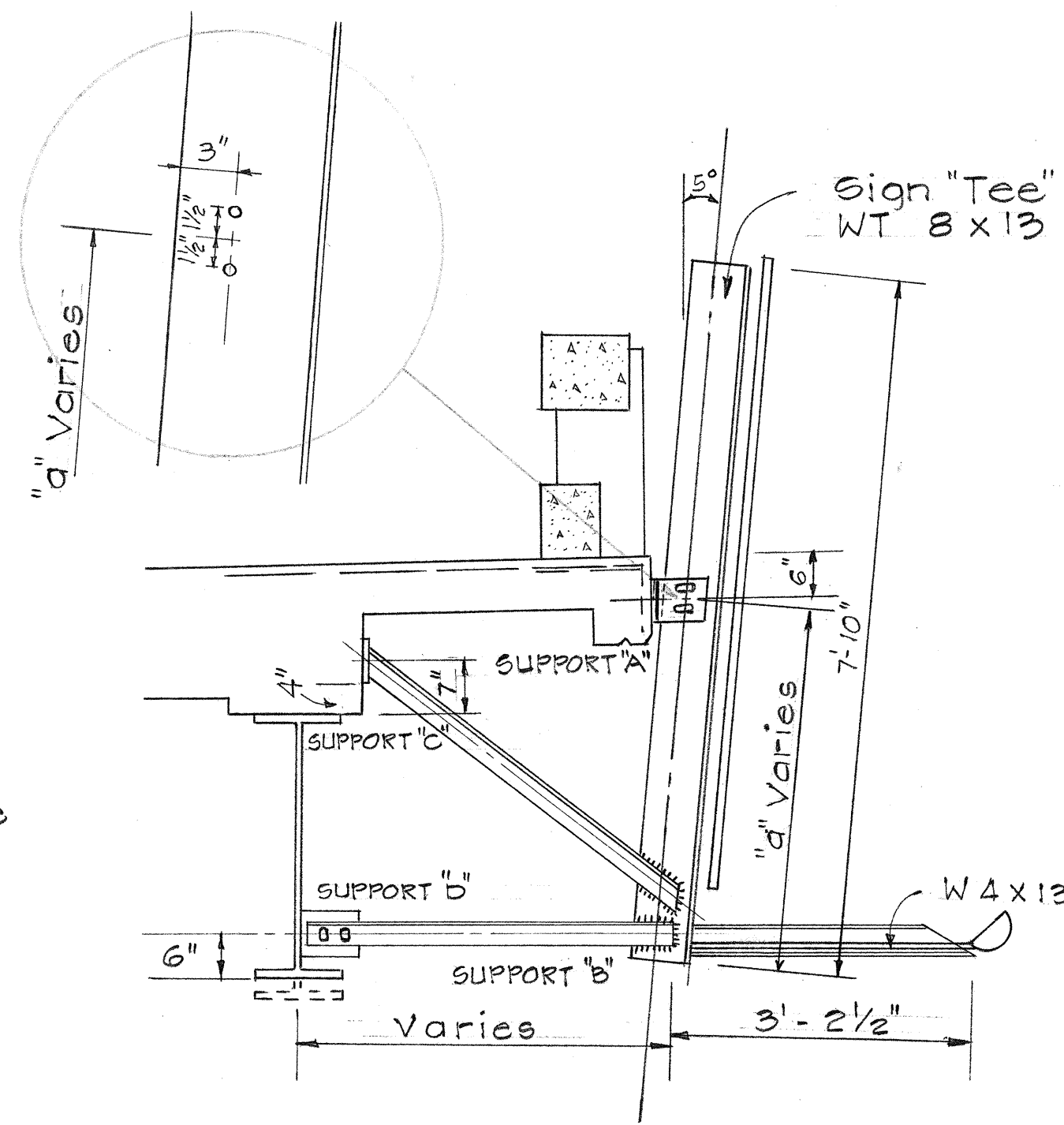
DATE _____
SURVEY PLOTTED BY _____
DESIGNED BY _____
QUANTITIES BY _____
CHECKED BY _____

ORIGINAL PLAN _____
NOTE BOOK _____
No. _____

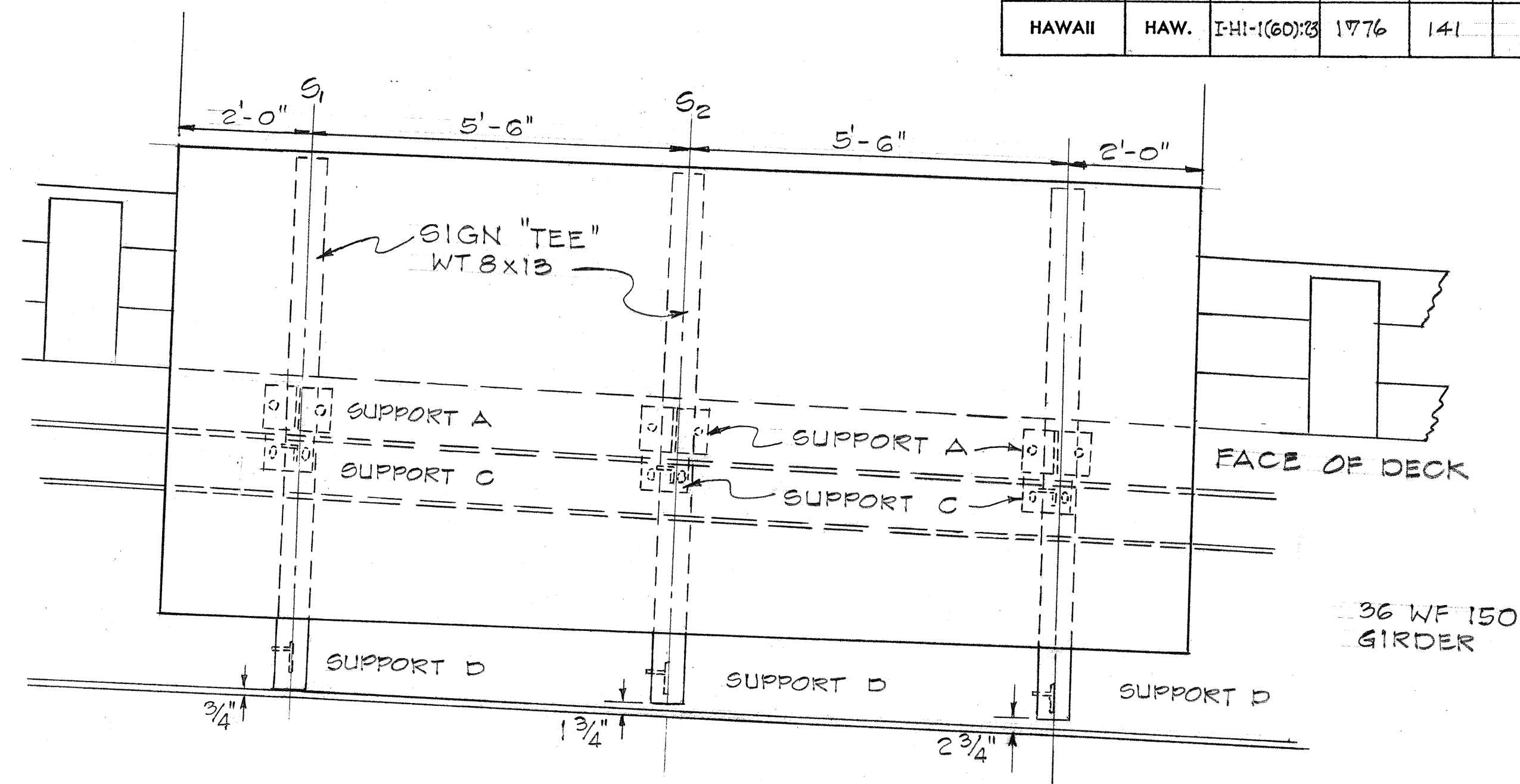
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	141	181



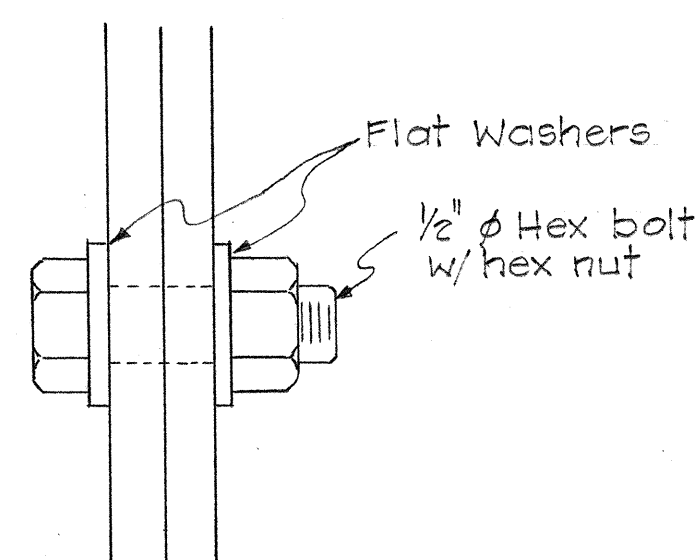
DETAIL
SUPPORT "B"



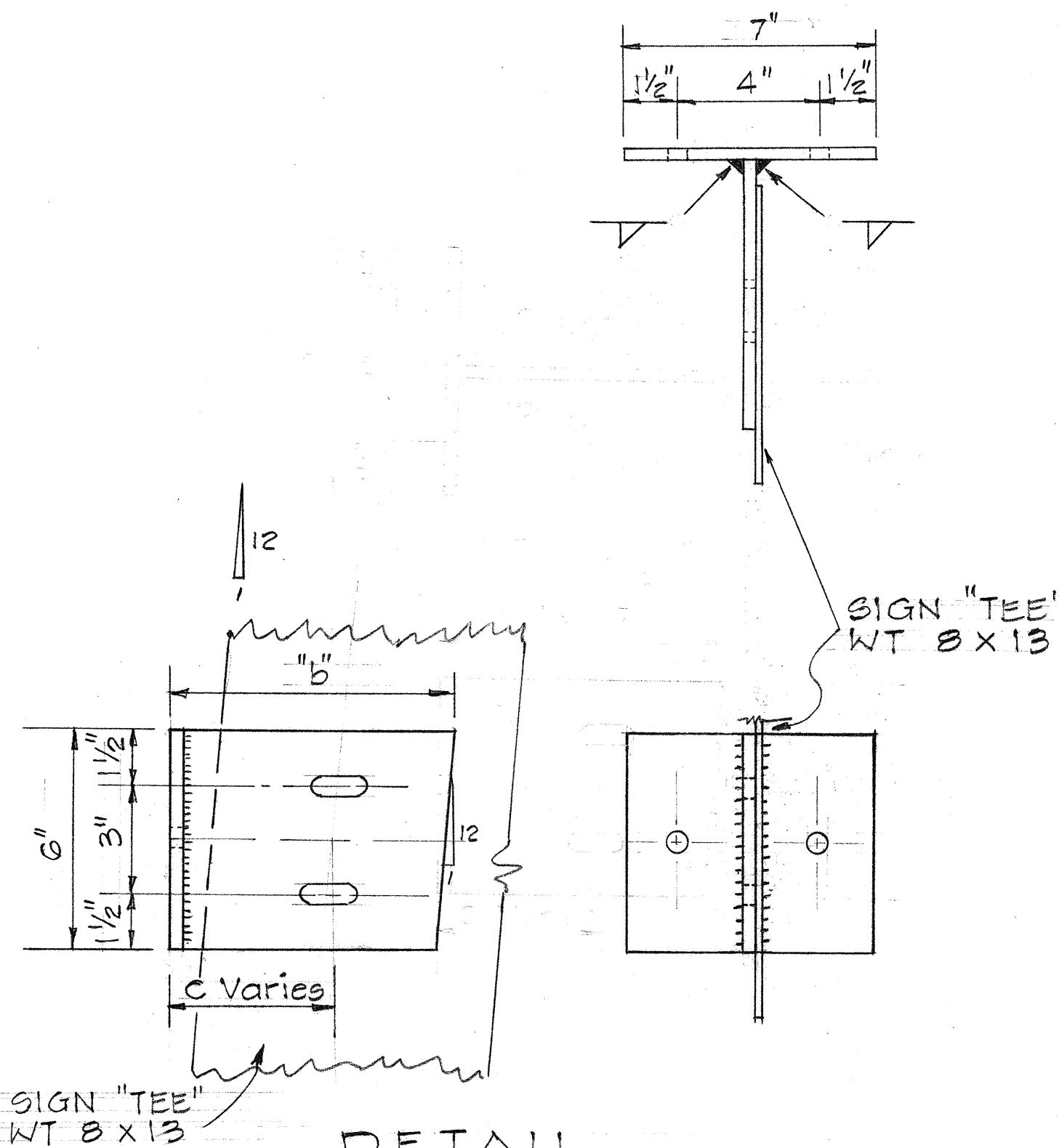
DETAIL SECTION



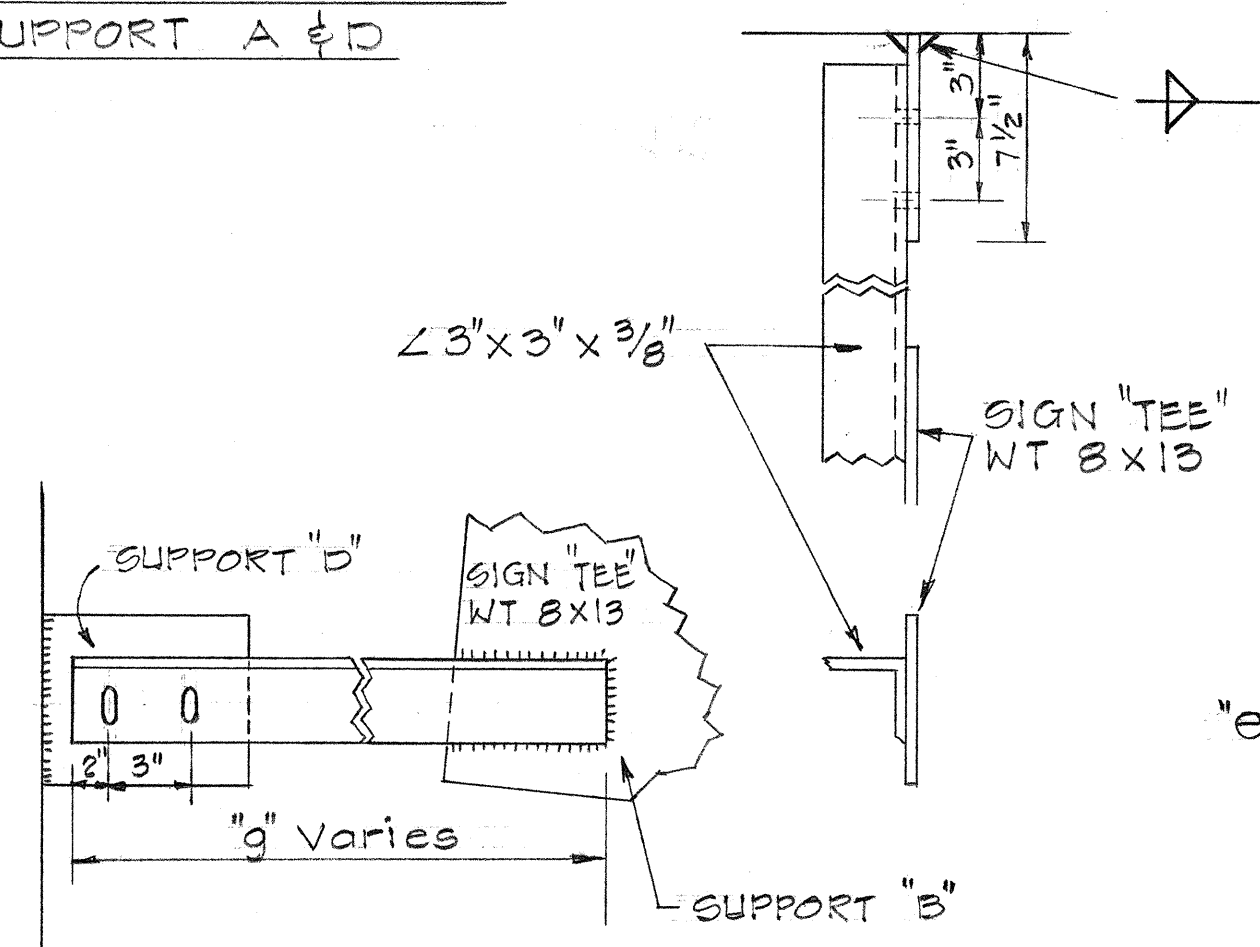
DETAIL FOR OVERHEAD DESTINATION SIGN D-8
MOUNTED ON McCULLY STREET STRUCTURE



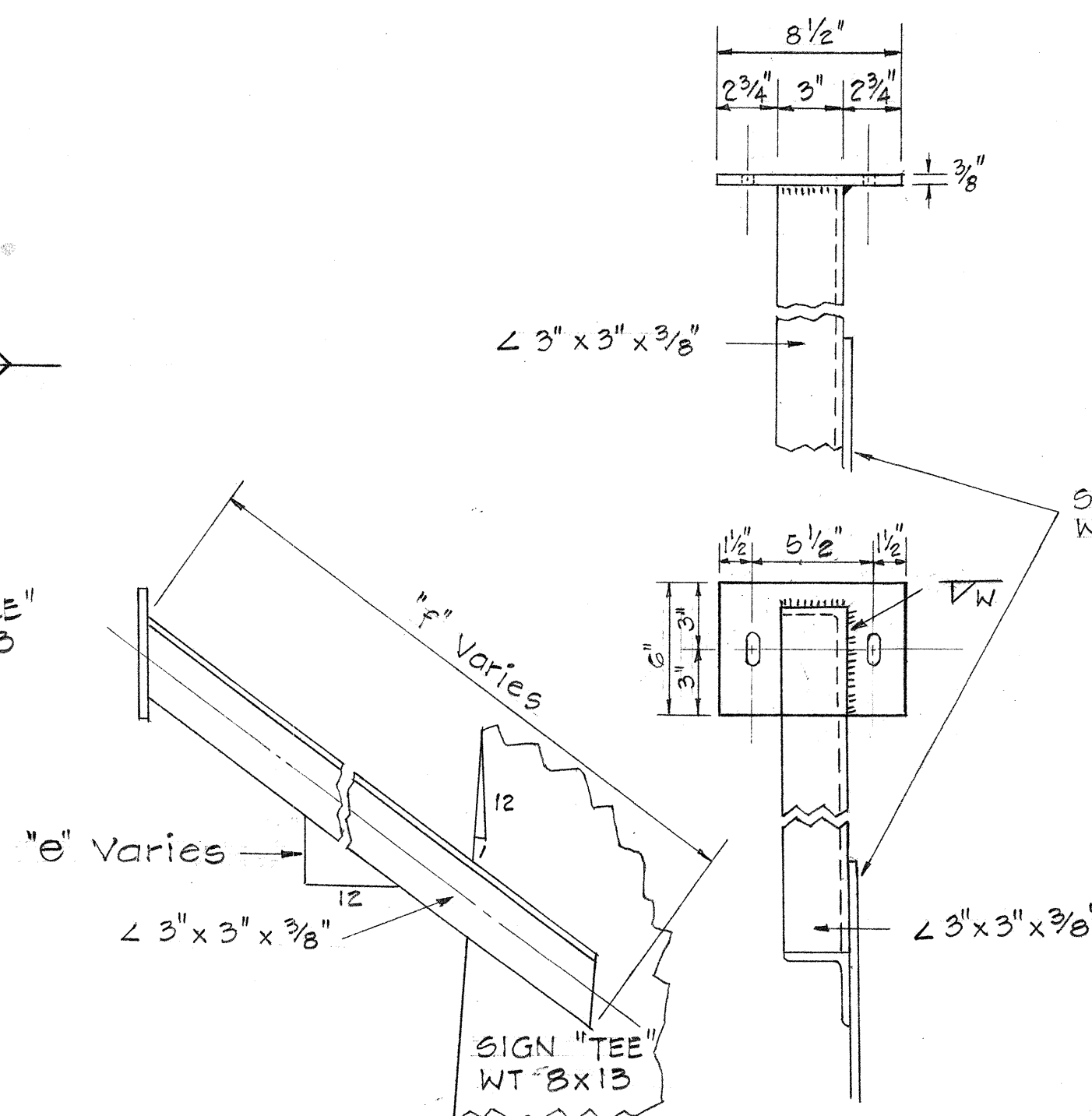
TYPICAL BOLTED CONNECTION
FOR SUPPORT A & D



DETAIL
SUPPORT "A"
FABRICATE FROM 3/8" PLATES



DETAIL
SUPPORT "D"



DETAIL
SUPPORT "C"

BINGHAM STREET SIGN

	a	b	c	d	e	f	g
S ₁	4'-2 7/8"	8"	4 3/4"	5"	7 3/16"	4'-7 1/2"	4'-2"
S ₂	4'-1 7/8"	8"	4 3/4"	4"	7 3/16"	4'-7 1/2"	4'-2"
S ₃	4'-0 7/8"	8"	4 3/4"	3"	7 3/16"	4'-7 1/2"	4'-2"

BOLTS - 1/2" φ ASTM A-307

BOLT HOLES 7/16" φ - 7/16" x 1"

ANCHOR BOLTS 1/2" φ expansion bolt with 5" minimum embedment

WELDS - All welds 5/16" fillet welds

PLATES - All plates 3/8" gusset plates

DATE: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTE BOOK No. _____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAIL OF BINGHAM STREET
EXPRESSWAY SIGN MOUNTED
ON McCULLY STREET STRUCTURE

F.A.I. PROJ. NO. I-HI-1(60):23

SCALE: Not to Scale Date: Sept. 1976

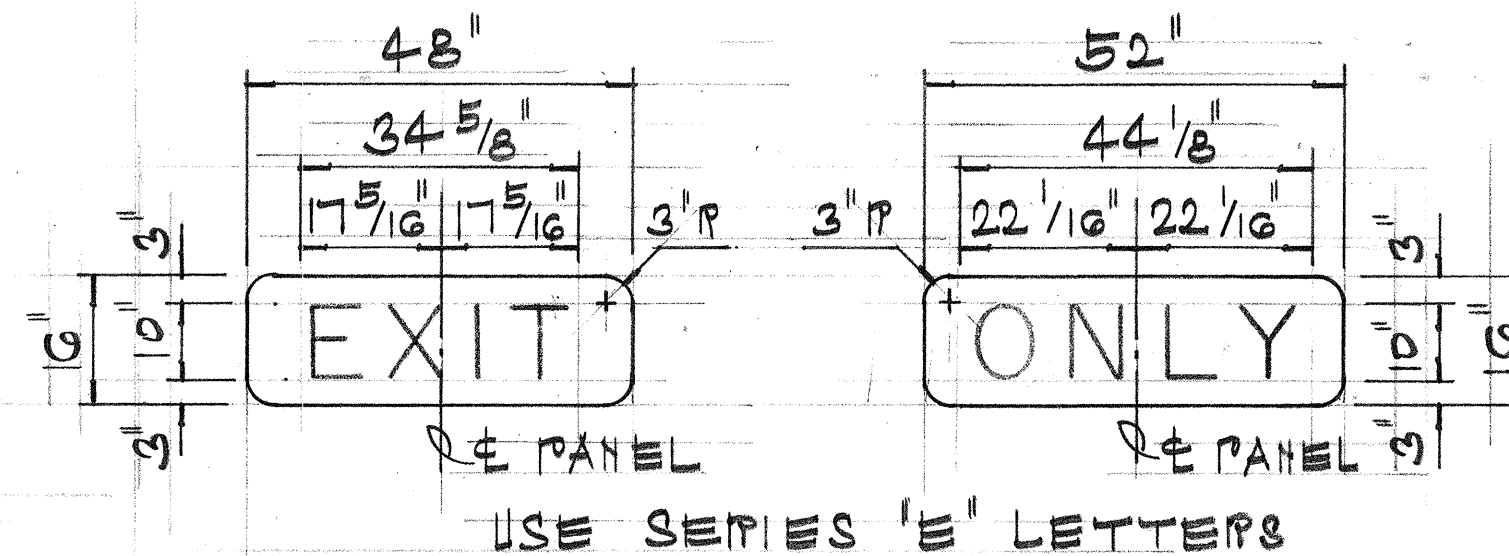
SHEET No. 211 OF 531 SHEETS

GENERAL NOTES

(EXPRESSWAY & DESTINATION SIGNS)

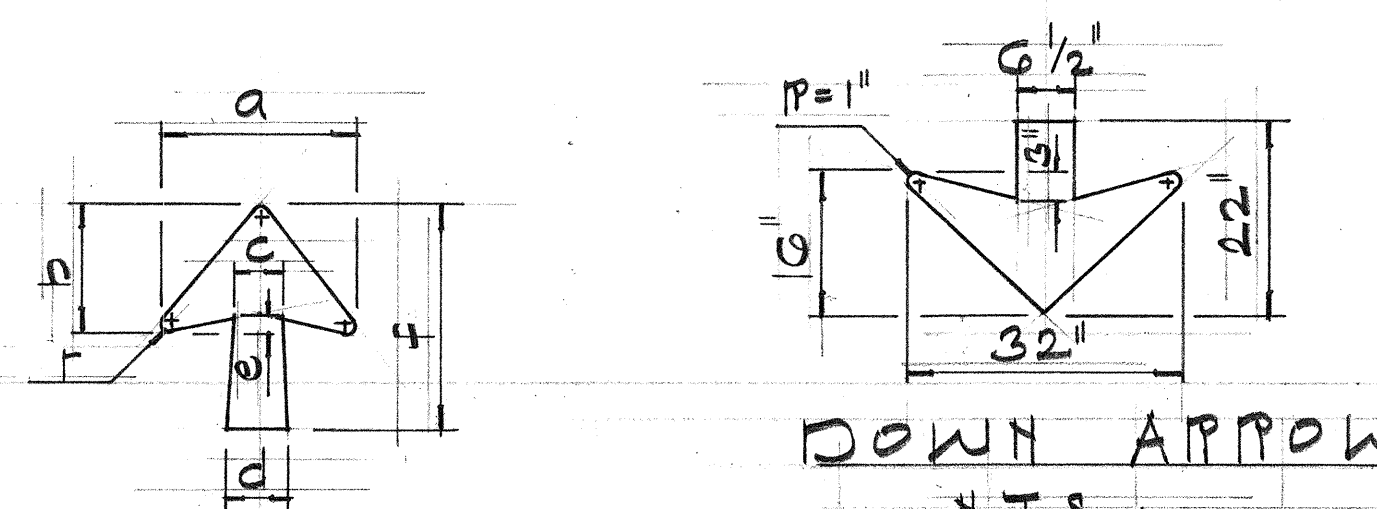
- EXPRESSWAY & DESTINATION SIGNS SHALL CONFORM TO THE FHWA PUBLICATION, "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS", 1971, & AS AMENDED.
- SIGN MESSAGE SHALL CONFORM TO THE FHWA PUBLICATION, "STANDARD ALPHABETS FOR HIGHWAY SIGNS", 1966. USE SERIES "E" LETTERS & NUMERALS UNLESS OTHERWISE SPECIFIED.
- ROUTE MAPPERS & BORDERS SHALL CONFORM WITH DETAILS AS SHOWN ON PLANS.
- LETTERS, NUMERALS & ARROWS FOR EXPRESSWAY SIGNS (E) SHALL BE a) CLEAR REFLEX REFLECTORS SET IN WHITE PORCELAIN ENAMELED DEMOUNTABLE ALUMINUM CUT-OUTS, OR b) WHITE REFLECTIVE SHEETING ON DEMOUNTABLE ALUMINUM CUT-OUTS. BACKGROUND SHALL BE OF a) GREEN PORCELAIN ENAMEL, OR b) GREEN REFLECTIVE SHEETING.
- LETTERS, NUMERALS & ARROWS FOR DESTINATION SIGNS (D) SHALL BE OF WHITE REFLECTIVE SHEETING ON DEMOUNTABLE ALUMINUM CUT-OUTS. BACKGROUND SHALL BE OF GREEN REFLECTIVE SHEETING.
- CUT-OUTS SHALL BE FASTENED TO SIGN PANEL WITH ALUMINUM BLIND RIVETS.
- CONTRACTOR SHALL HAVE THE OPTION OF REUSING EXIST. LEGENDS PROVIDED THAT THESE LEGENDS ARE OF GOOD CONDITION & OF THE SAME TYPE AS SHOWN ON THE EXIST. SIGN ON WHICH THE EXIST. LEGEND WILL BE REUSED. CONTRACTOR SHALL VERIFY CONDITION OF EXIST. LEGENDS WITH THE ENGINEER.
- "EXIT ONLY" PANELS SHALL HAVE A BLACK LEGEND ON DEMOUNTABLE ALUMINUM CUT-OUTS ON REFLECTORIZED YELLOW BACKGROUND. PANELS SHALL BE 0.040" SHEET ALUMINUM.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60)23	1976	142	181



"EXIT ONLY" PANELS

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



DOWN ARROW

N.T.S.

TYPE	ARROW DIMENSIONS IN INCHES						
	a	b	c	d	e	f	r
1 1/2" HORIZONTAL	1 1/4	2 13/16	3 3/8	4 1/2	1 5/16	1 1/4	3/4
1 1/2" DIAGONAL	2 1/8	1 1/4	5	6 3/4	1 3/4	2 5/8	1

ARROW DETAILS

N.T.S.

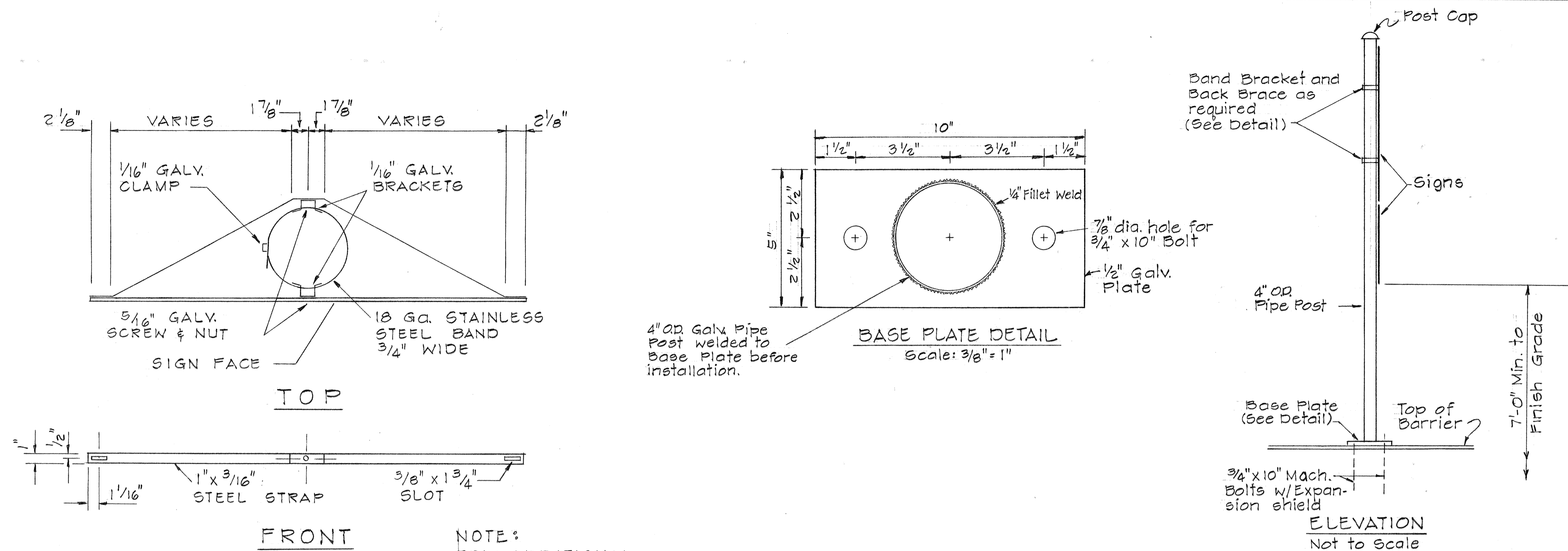
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS
SIGN DETAILS

PALI HWY. TO OLD WAIALAE RD.
FAI PROJ. NO. I-HI-1(60)23
SCALE: AS SHOWN DATE: SEPT. 1976
SHEET NO. 22 OF 53 SHEETS

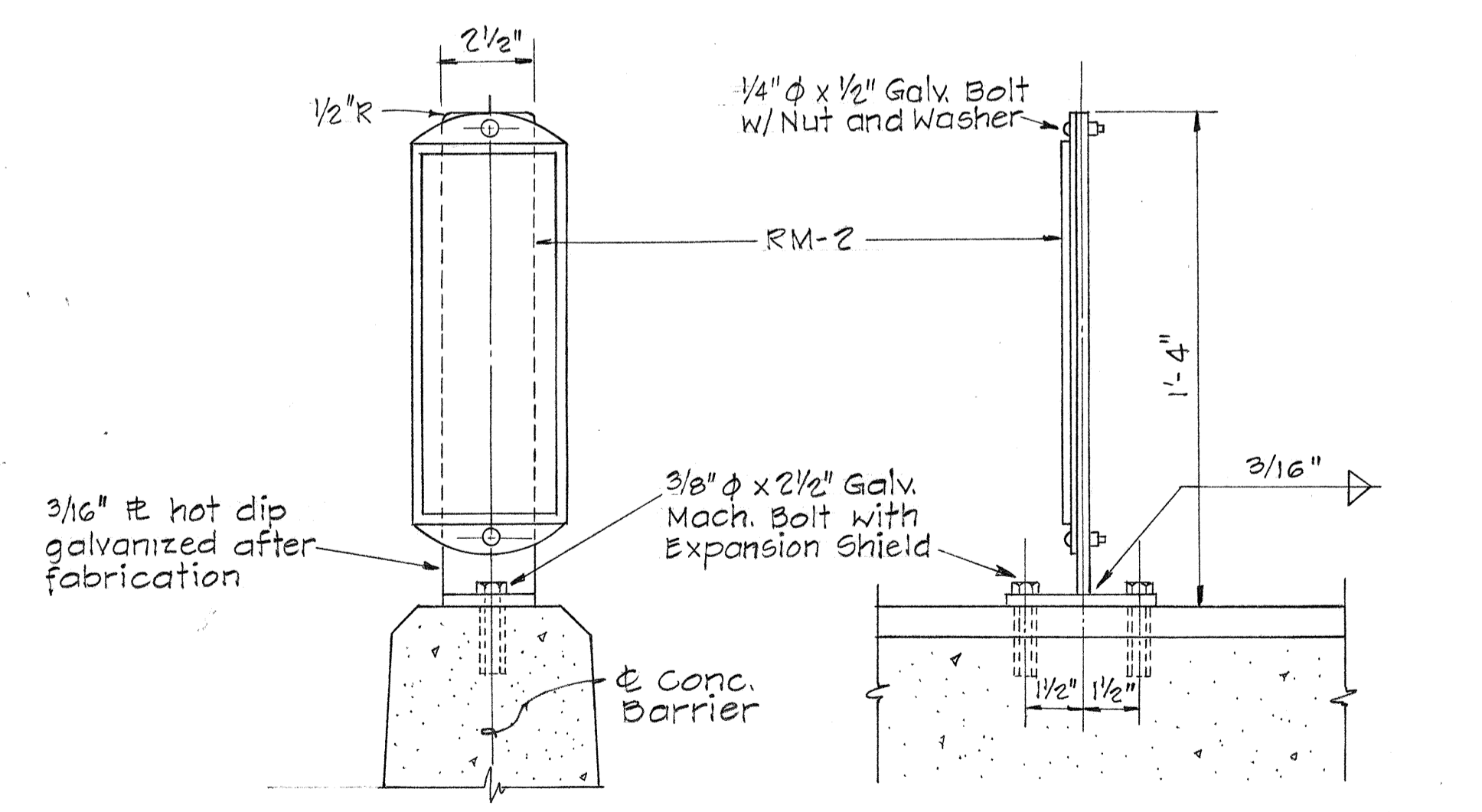
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	143	161



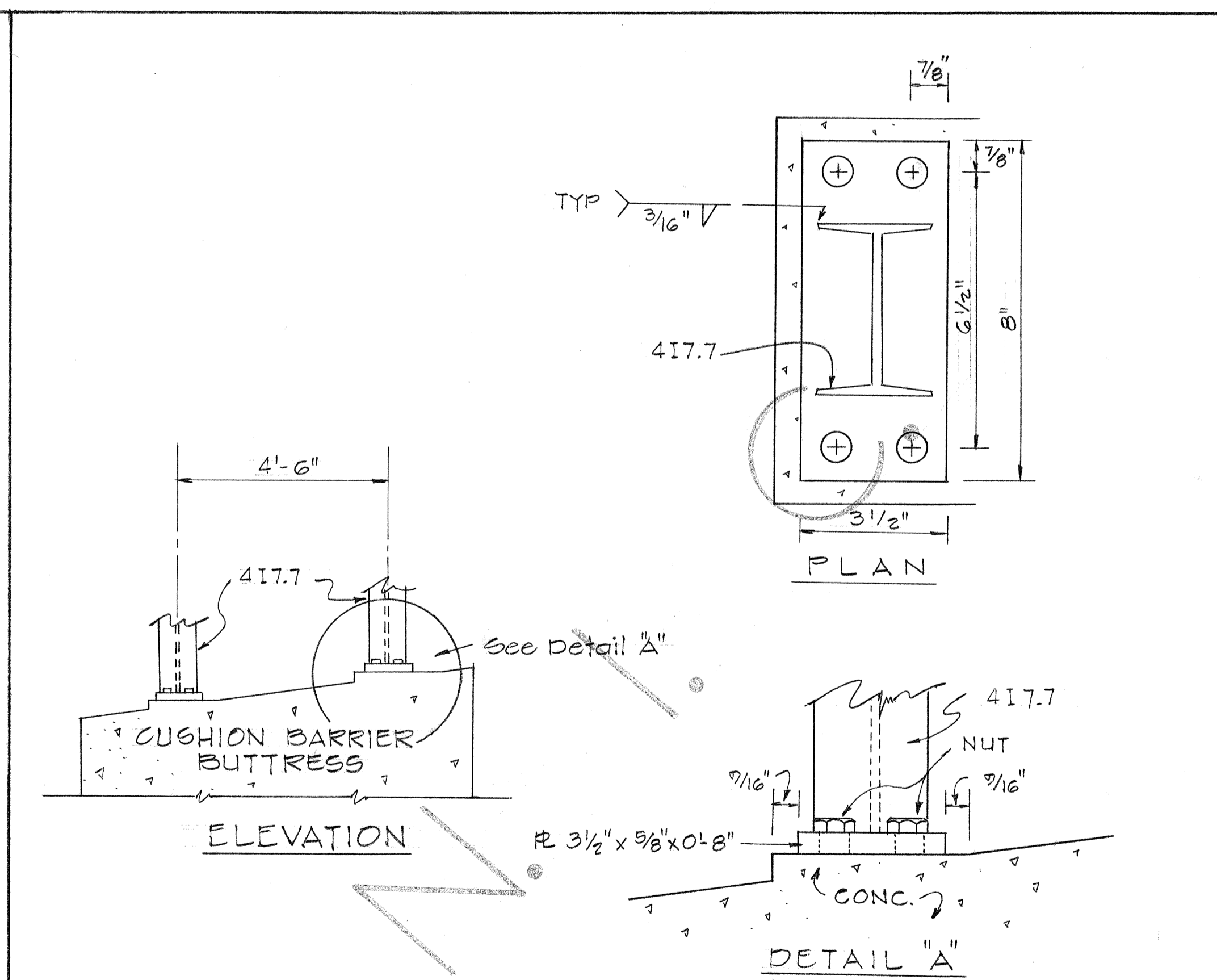
NOTE:
FOR ADDITIONAL
DETAILS SEE
STD. DETAIL
SHT. DT100

DETAILS OF SIGN MOUNTED ON CONCRETE BARRIER

MOUNTING DETAIL OF
* SIGN INSTALLED ON PIPE POST, LIGHT
STANDARD OR EXPRESSWAY SIGN POST
Scale: 1/2" = 1'-0"
* FOR SIGNS 48"
& WIDER



DETAILS OF REFLECTOR MARKER MOUNTED ON CONCRETE BARRIER
NOT TO SCALE



BASE PLATE CONNECTION FOR
SIGN MOUNTED ON CUSHION BARRIER BUTTRESS
NOT TO SCALE

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

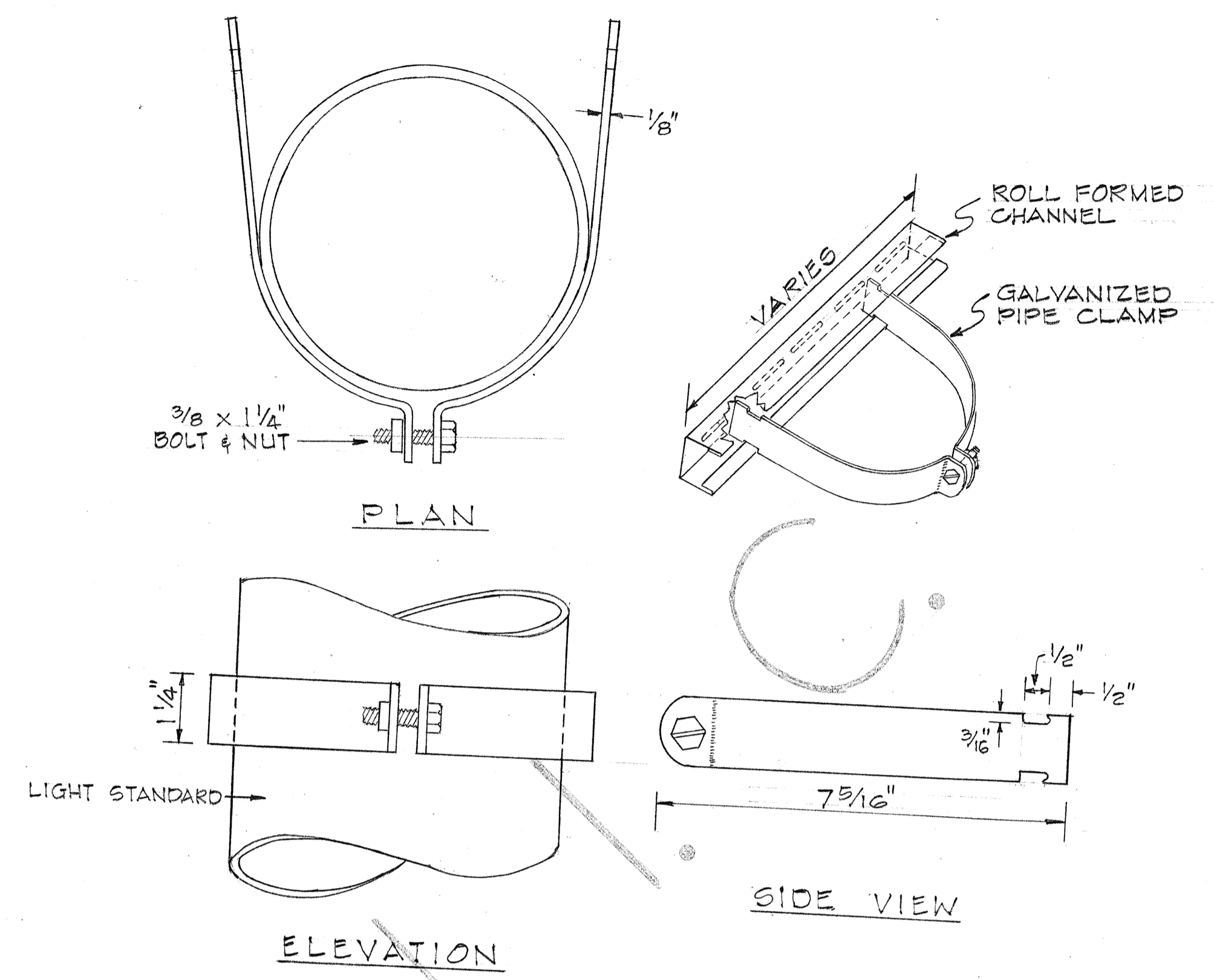
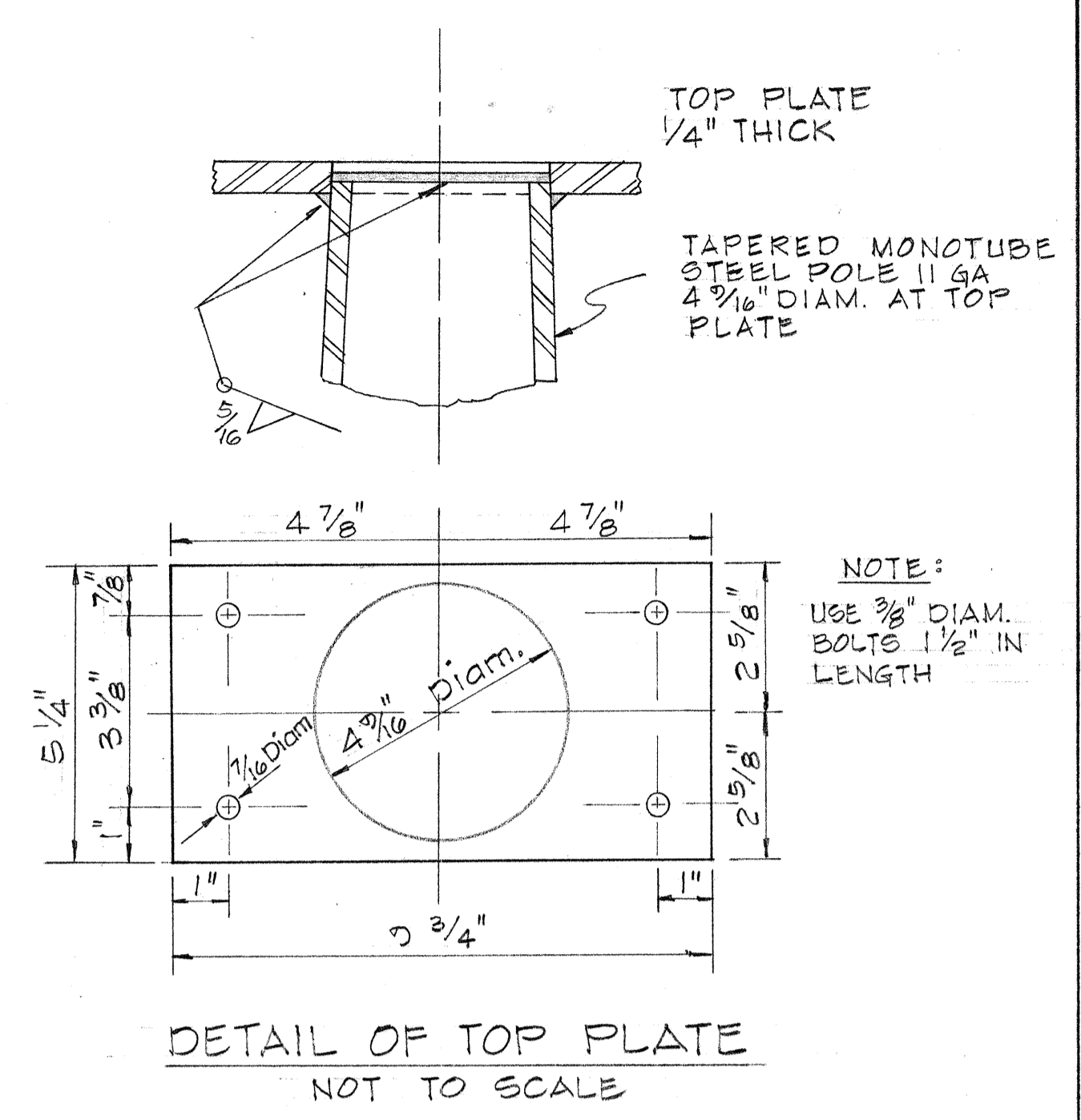
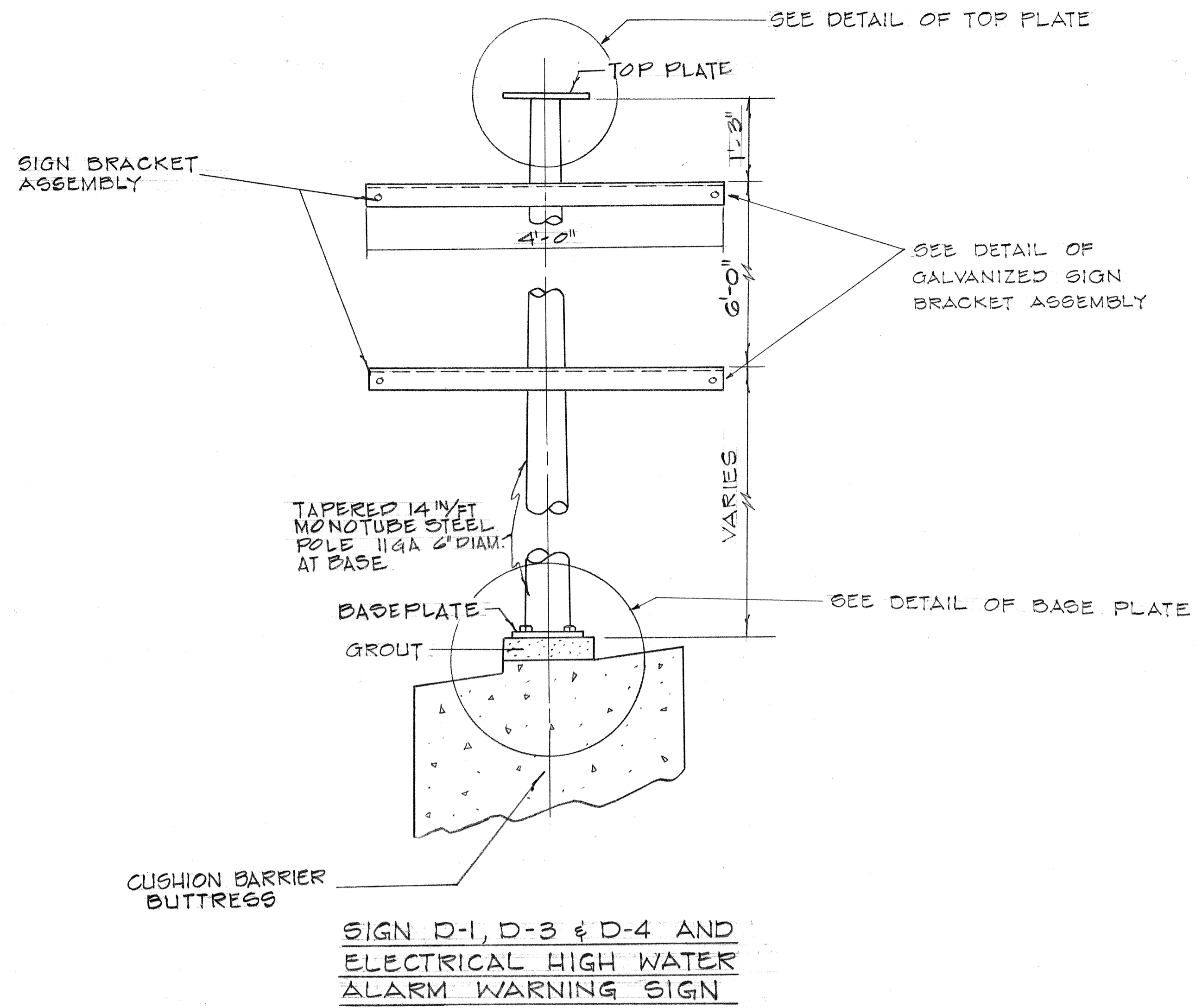
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MISCELLANEOUS SIGN DETAILS

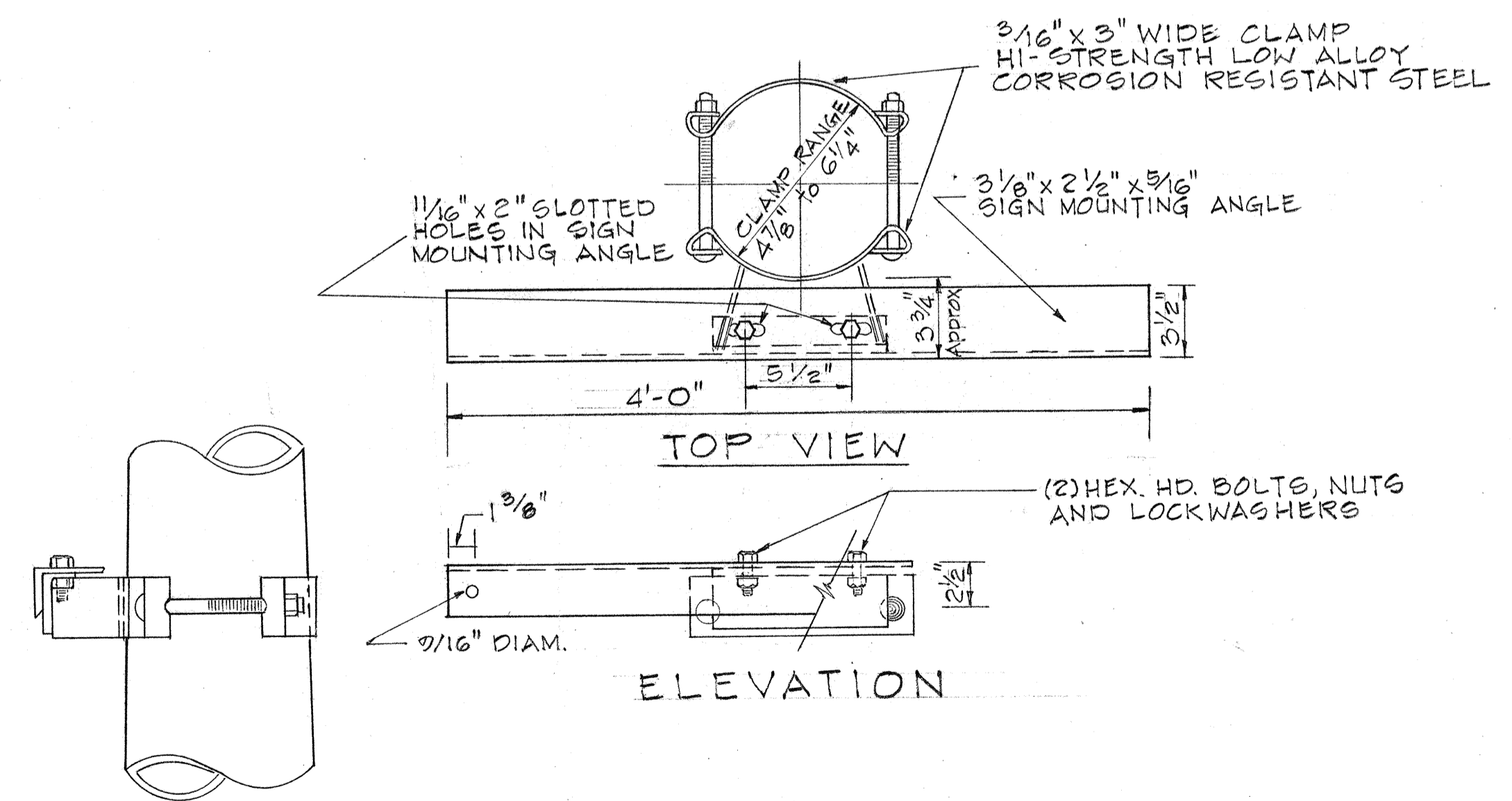
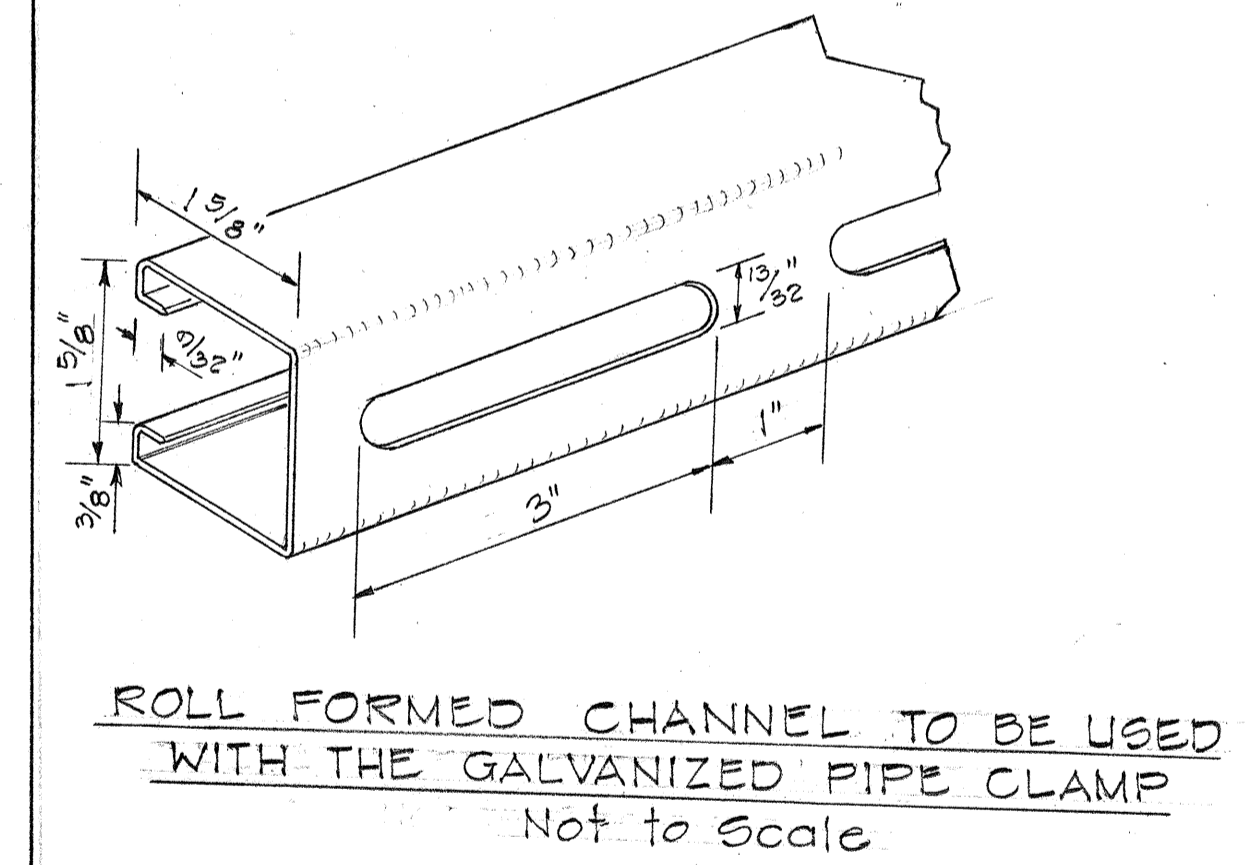
SAFETY IMPROVEMENTS
PALI HWY. TO OLD WAIALAE RD.
F.A.I. PROJECT NO. I-HI-1(60):23

SCALE: As Shown DATE: Sept. 1976
SHEET No. 23 OF 531 SHEETS

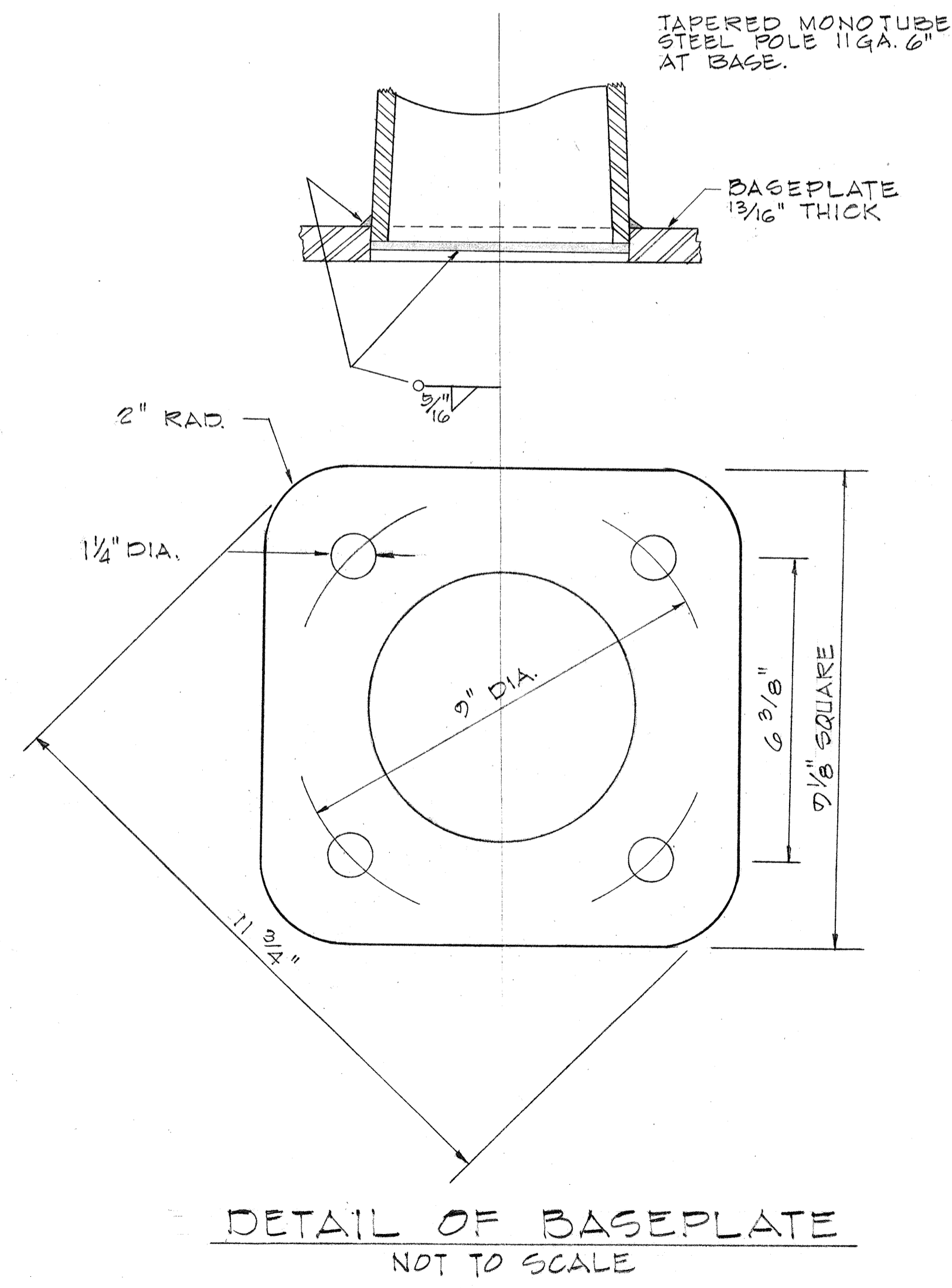
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(60):23	1976	144	181



GALVANIZED PIPE CLAMP FOR SIGNS MOUNTED ON 5 3/4" O.D. LIGHT STANDARD



DETAIL OF GALVANIZED SIGN BRACKET ASSEMBLY



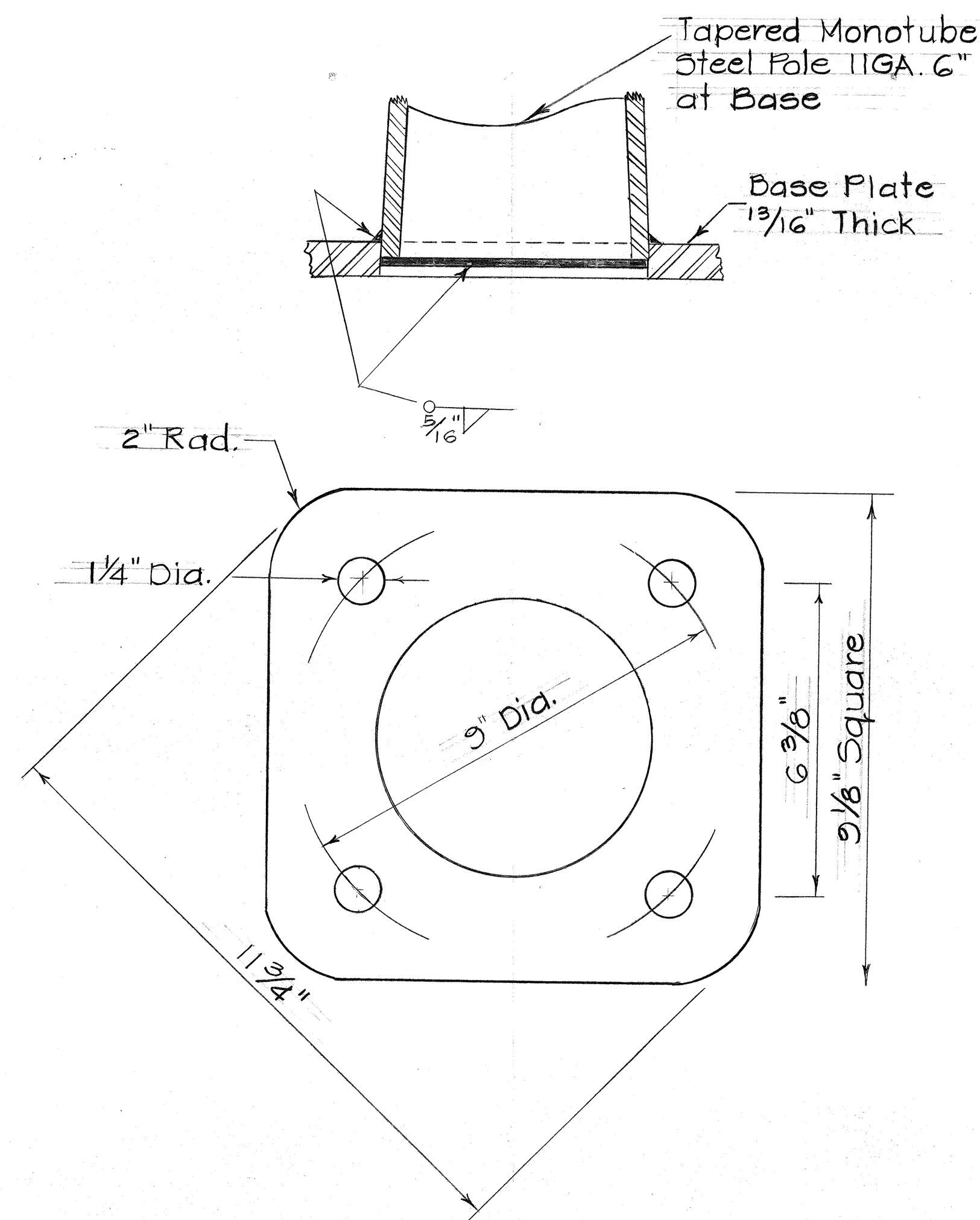
DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
QUANTITIES BY	_____
TRACED BY	_____
PLANNED BY	_____
ORIGINAL PLAN	_____
NO.	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

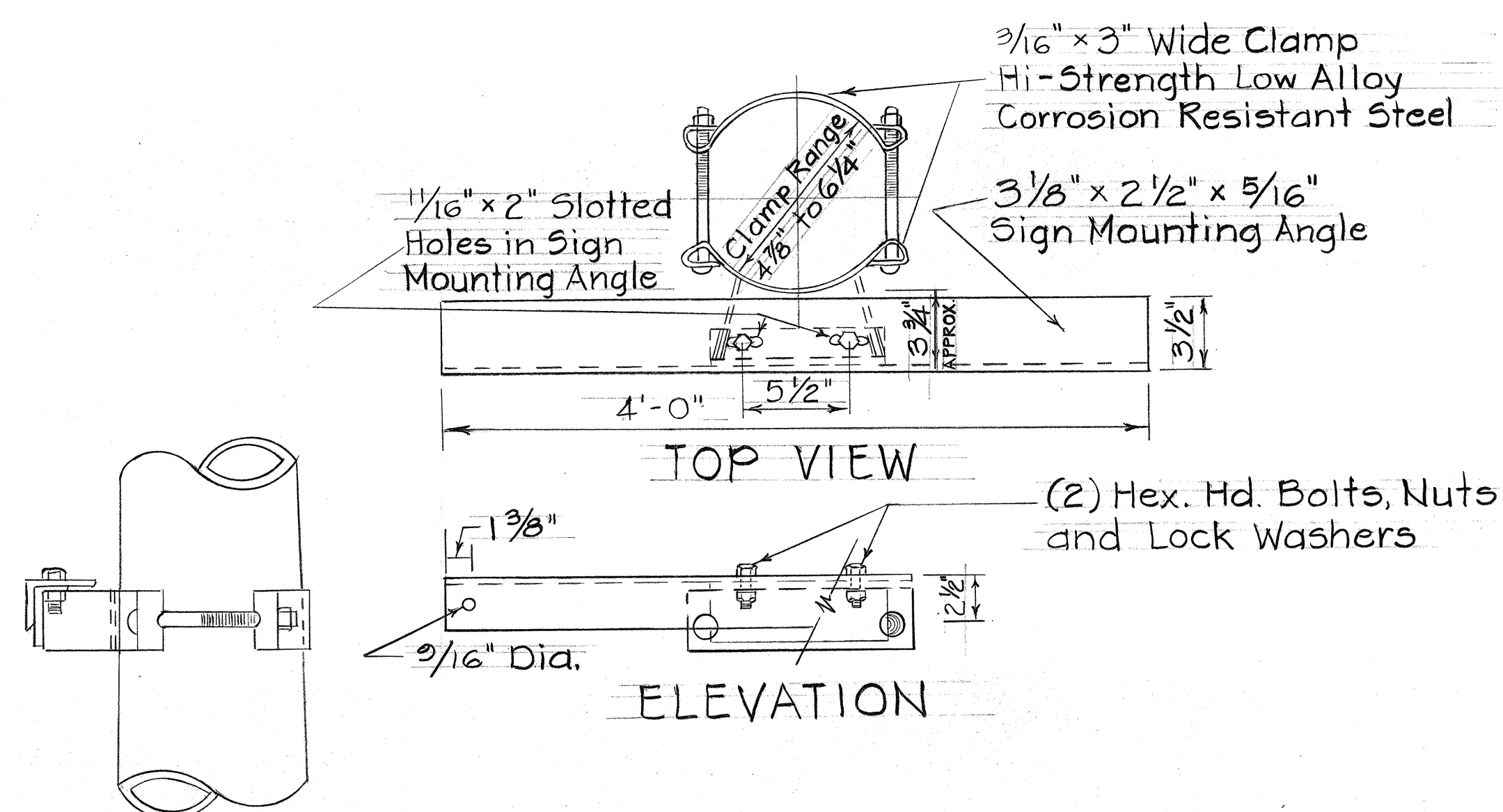
MISCELLANEOUS SIGN DETAILS
PALI HWY. TO OLD WAIALAE
F.A.I. PROJECT No. I-HI-1(60):23

Scale: Not to Scale Date: Sept. 1976
SHEET No. 24T OF 53T SHEETS

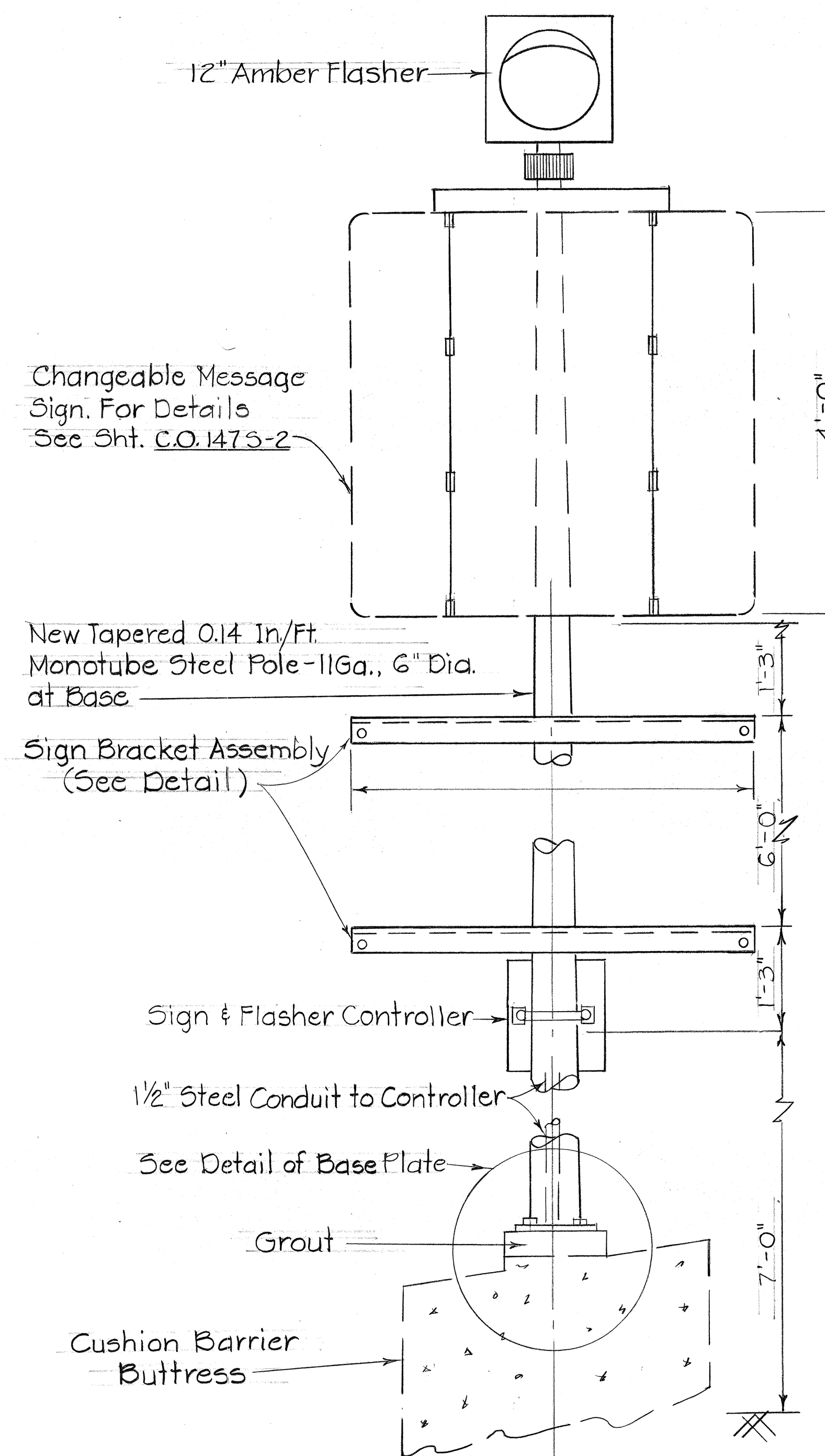
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1978		



DETAIL OF BASE PLATE
Not to Scale



DETAIL OF GALVANIZED SIGN BRACKET ASSEMBLY
Not to Scale



SIGN D-1 & D-4 AND HWA CHANGEABLE SIGN.

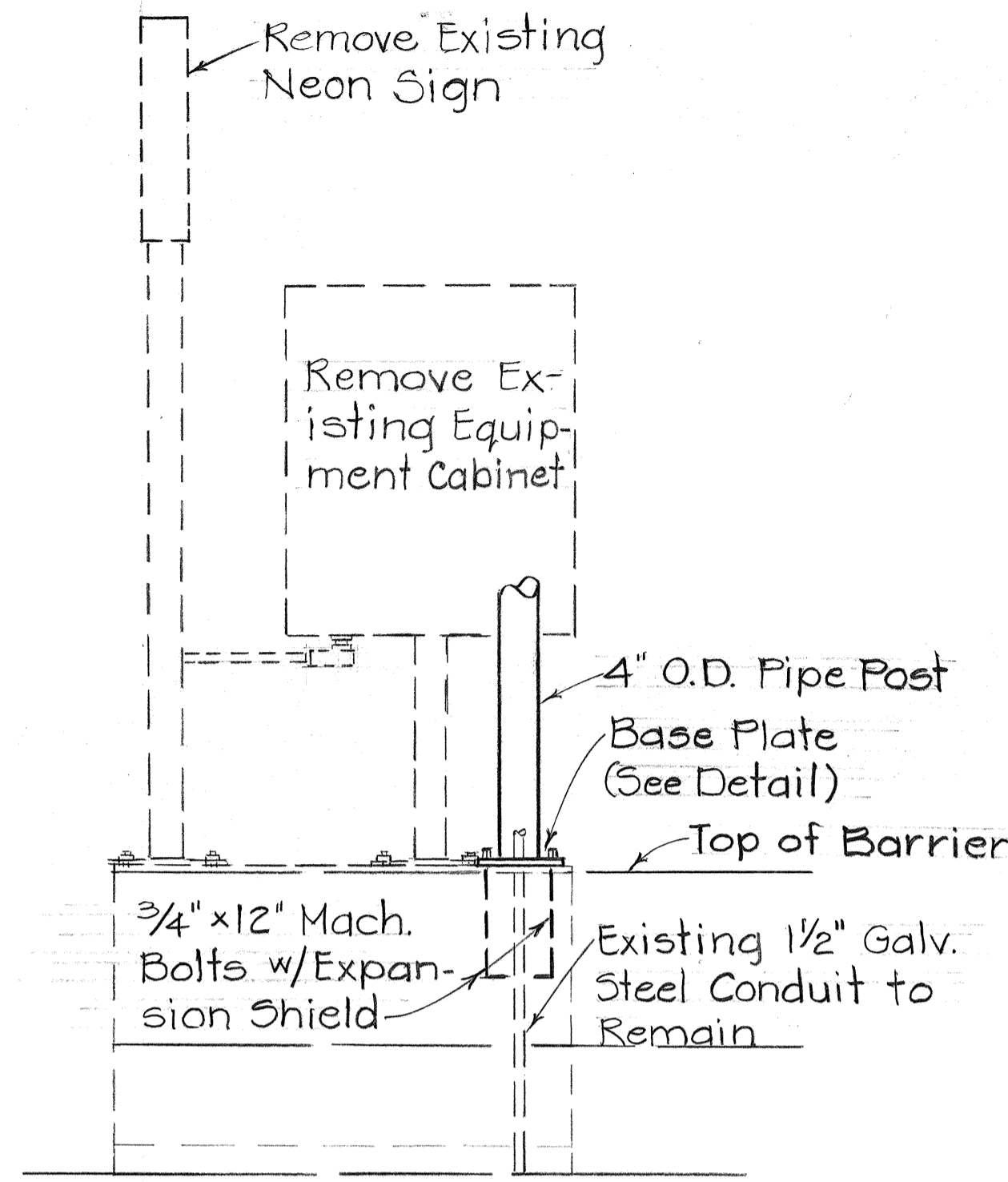
H-1 STA. 240+70 RT. & STA. 280+70 LT.
Not to Scale

DATE	REVISION
10/12/77	Replaced Original Sht. #145

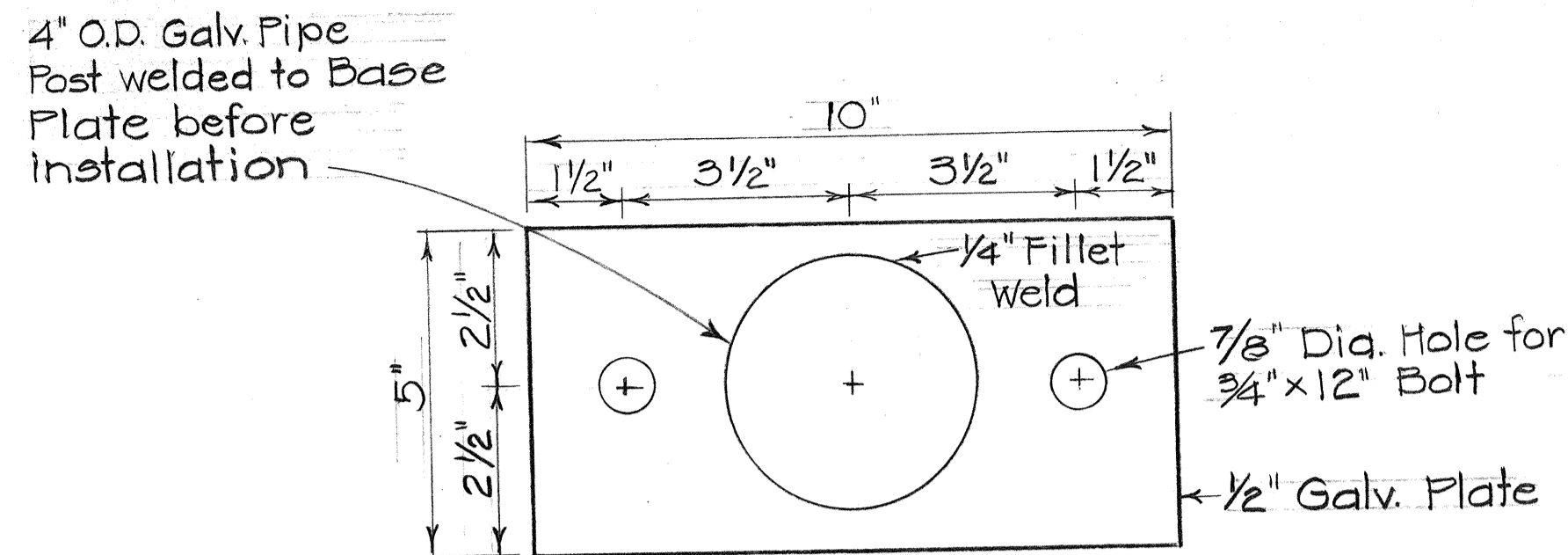
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DETAILS OF HIGHWATER WARNING ALARM SYSTEM
PALI HWY. TO OLD WAIALAE ROAD
F.A.I. PROJ. NO. I-HI-1(60):23
Scale: As Shown Date: Oct. 1977
SHEET No. 25 OF 33 SHEETS

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

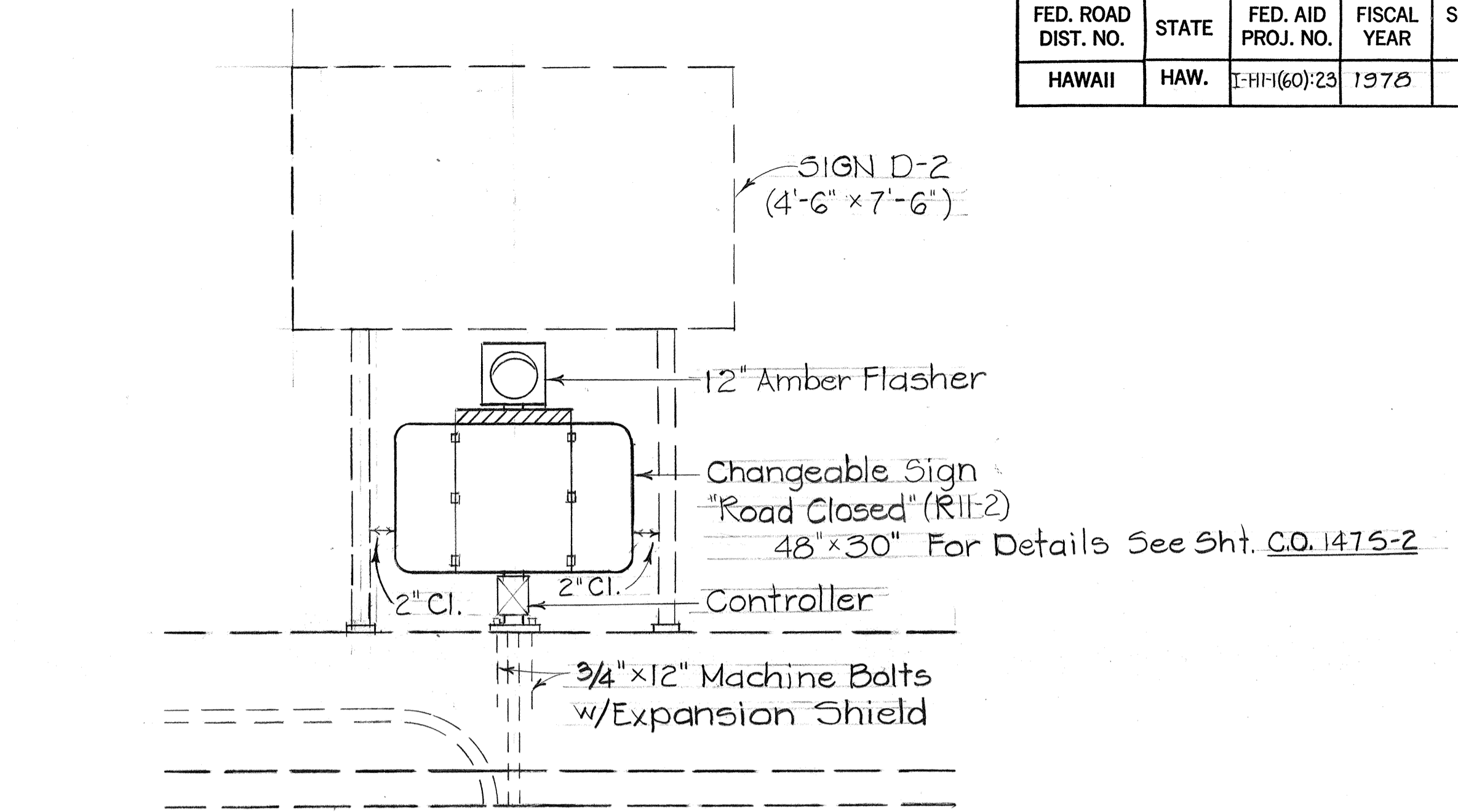
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI(60):23	1975		



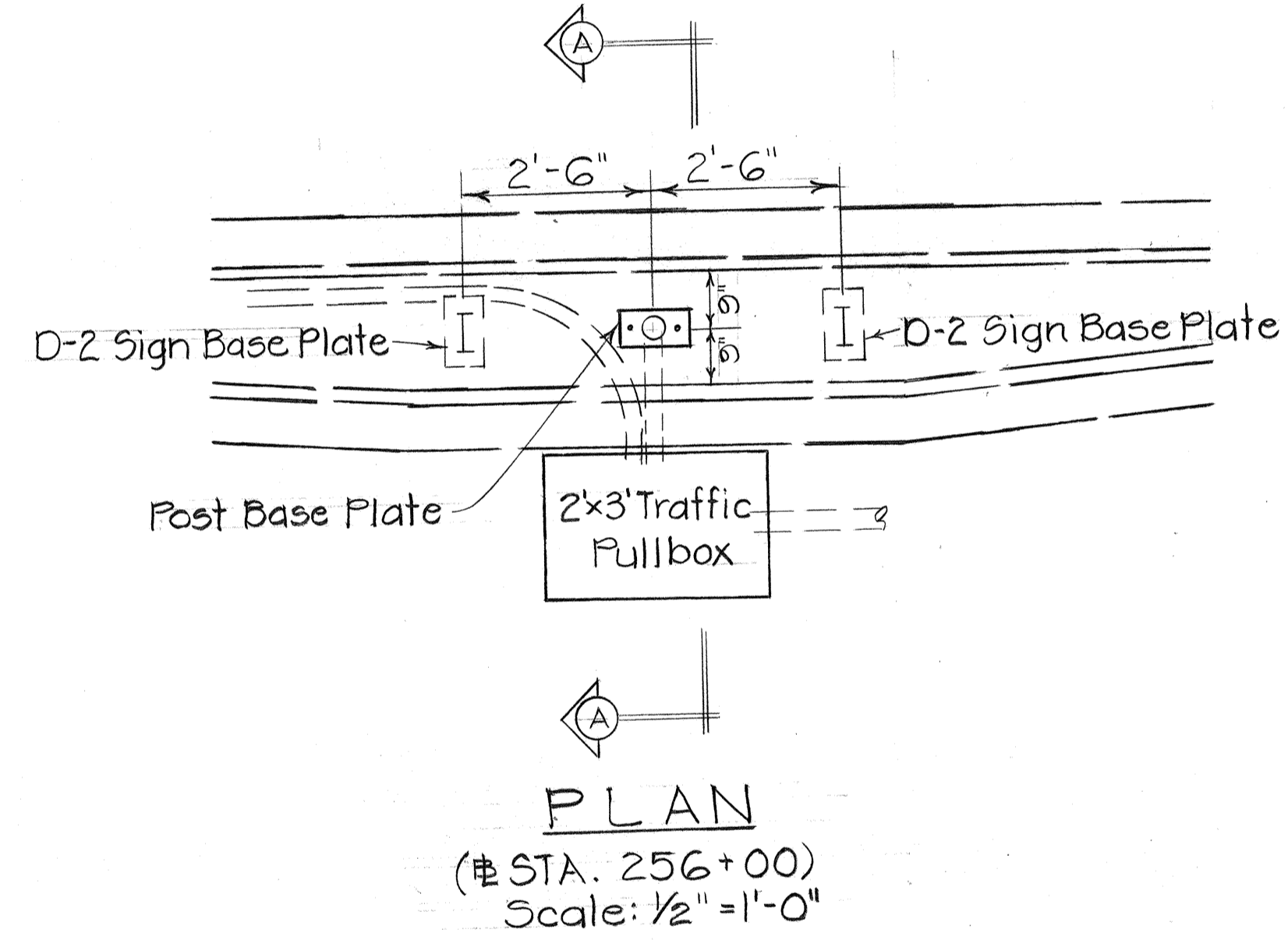
ELEVATION
Scale: 3/4" = 1'-0"



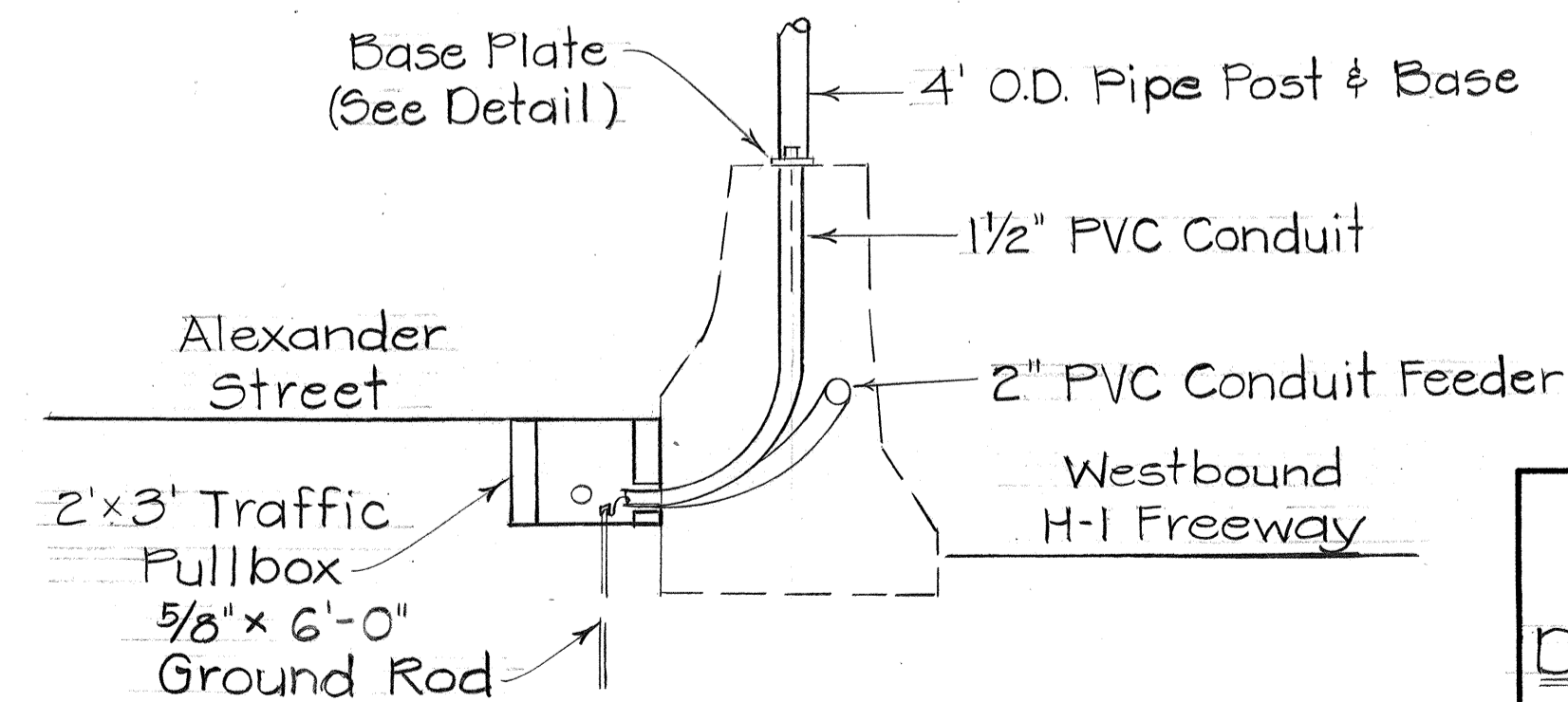
BASE PLATE DETAIL
Scale: 3/8" = 1'-0"



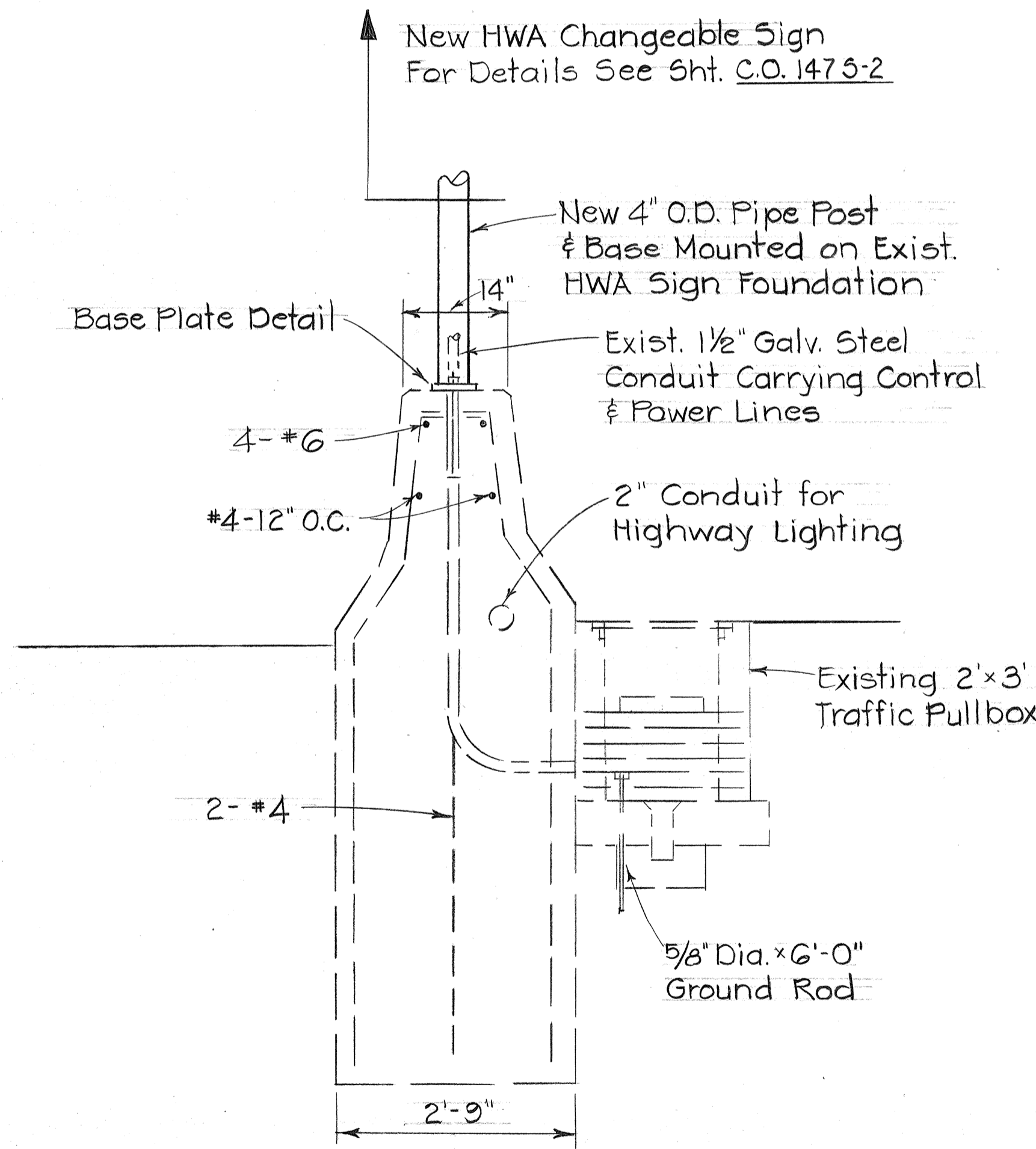
ELEVATION
N.T.S.



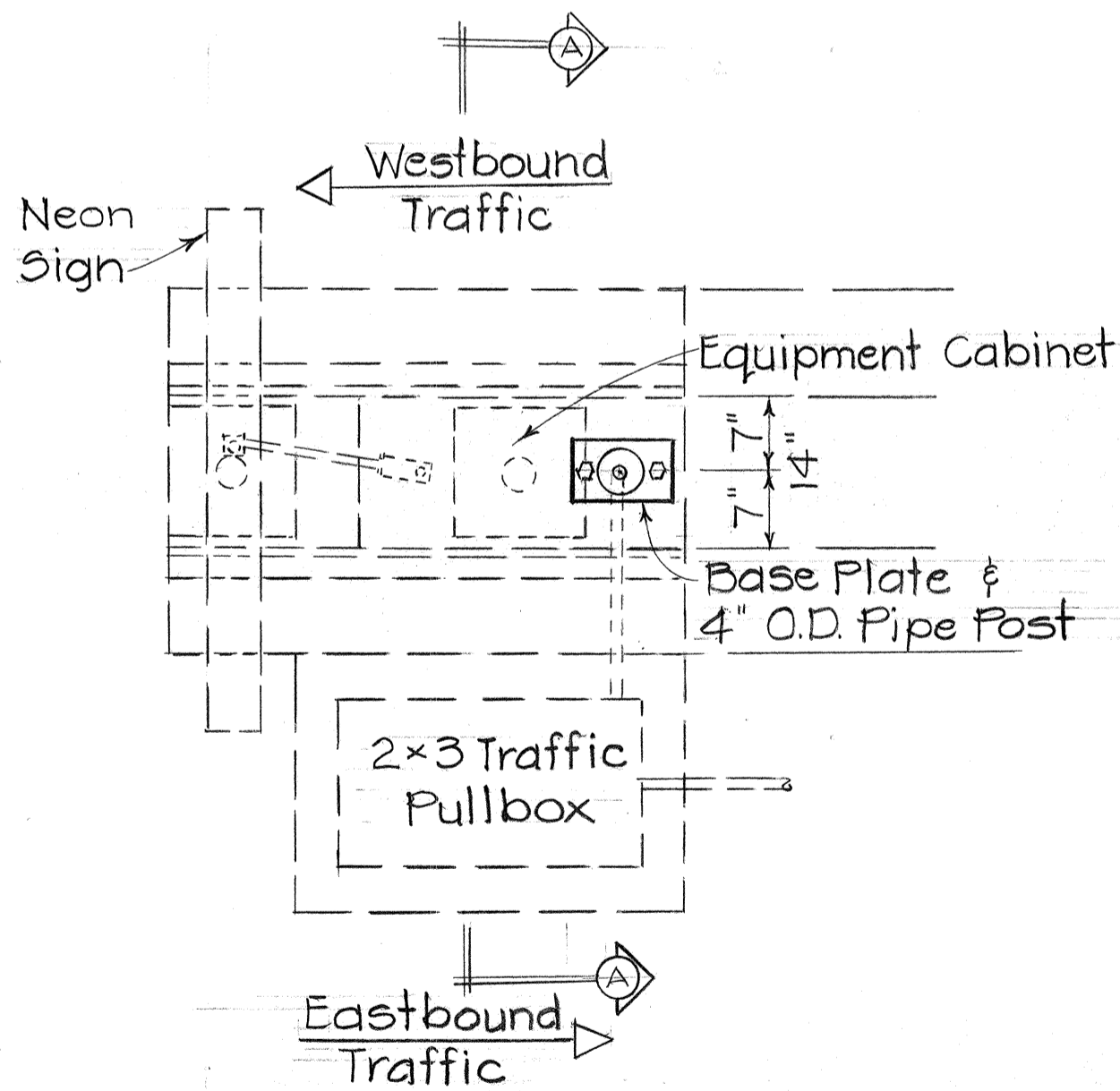
PLAN
(# STA. 256+00)
Scale: 1/2" = 1'-0"



SECTION "A-A"
(# STA. 256+00LT.)
N.T.S.



SECTION "A-A"
(# STA. 235+22)
Scale: 3/4" = 1'-0"



PLAN
(# STA. 235+22)
Scale: 3/4" = 1'-0"

10/12/77	Replaced Original Sht. #146
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
**DETAILS OF HIGHWAY
WARNING ALARM SYSTEM**
PALI HWY. TO OLD WAIALAE ROAD
F.A.I. PROJ. NO. I-HI-1(60):23

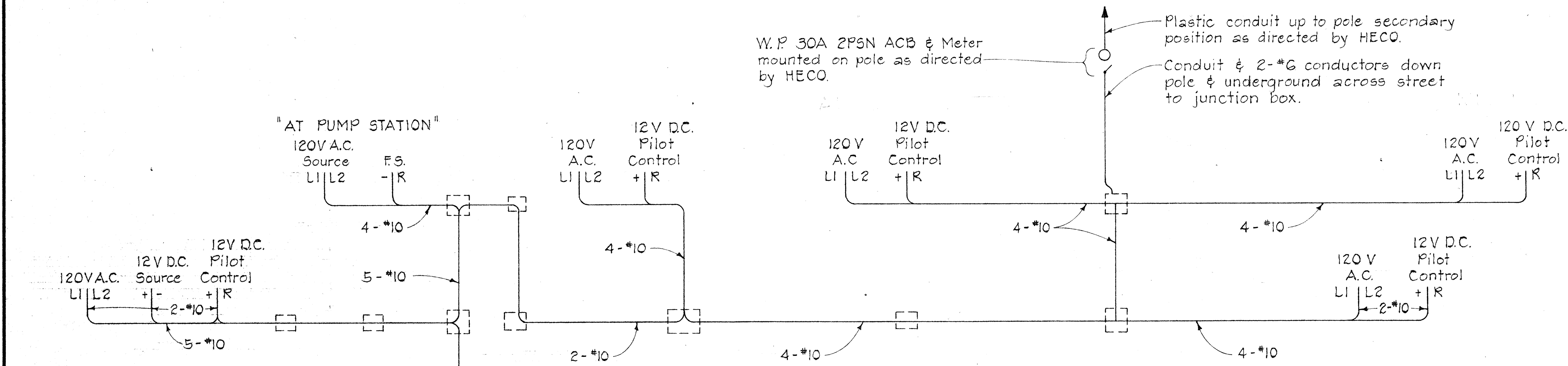
Scale: As Shown Date: Oct. 1977

SHEET NO. 26 OF 53 SHEETS

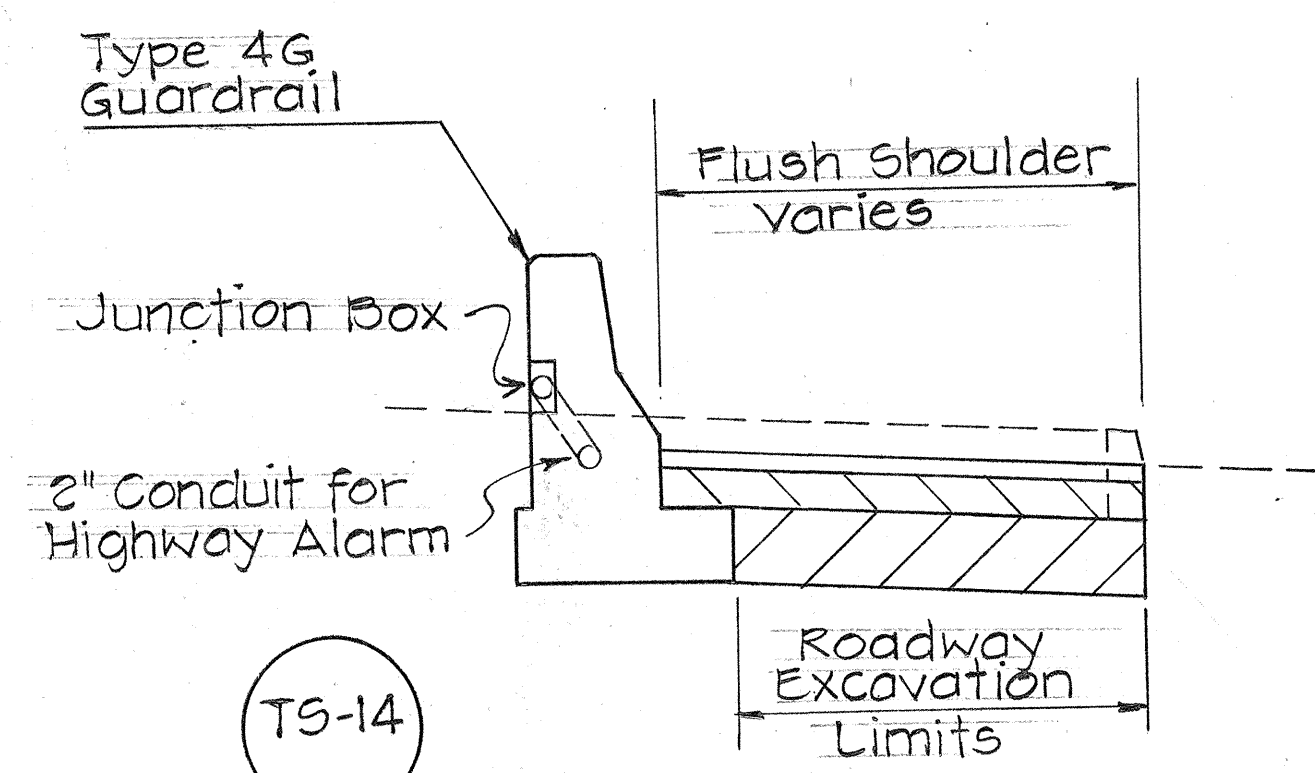
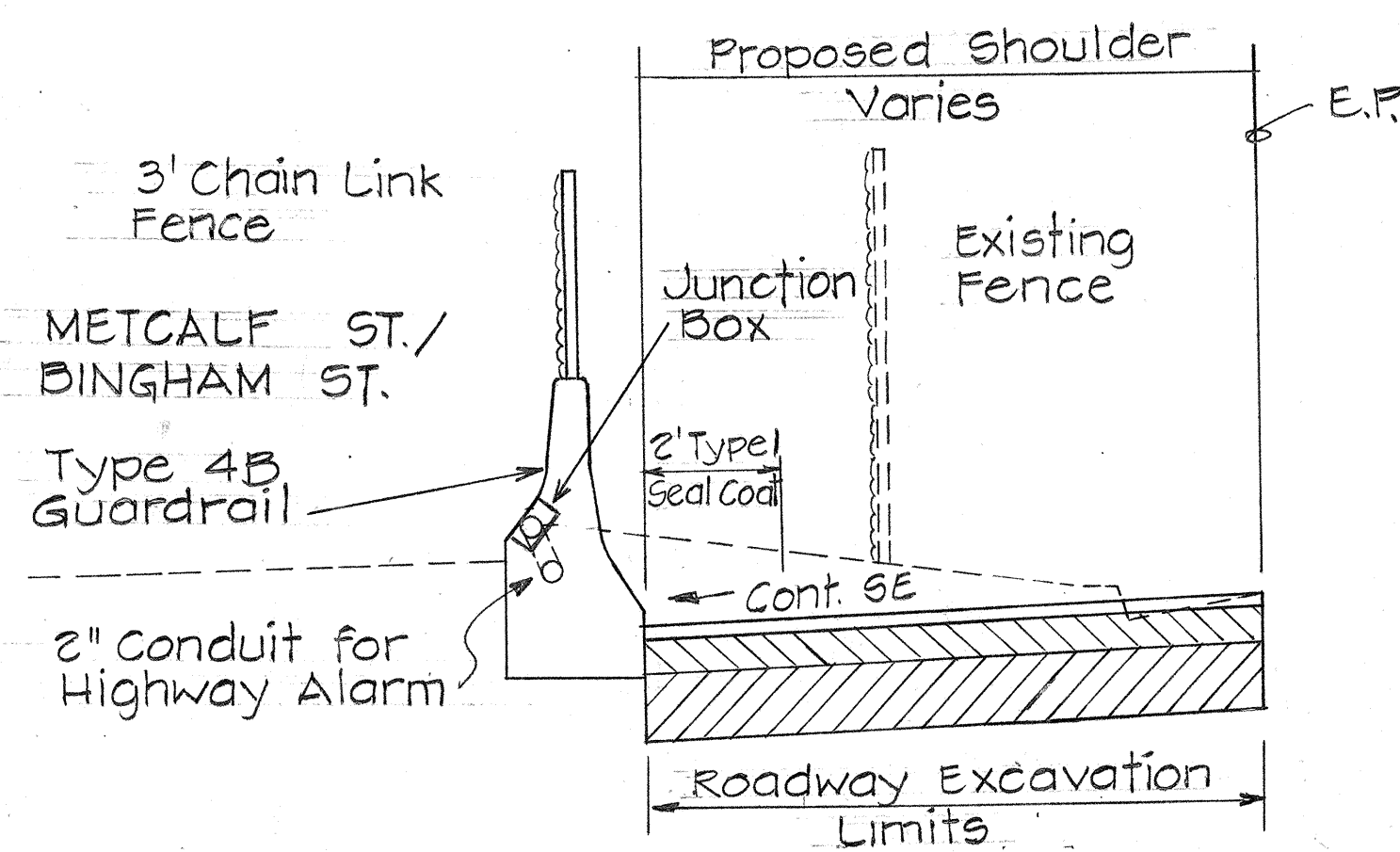
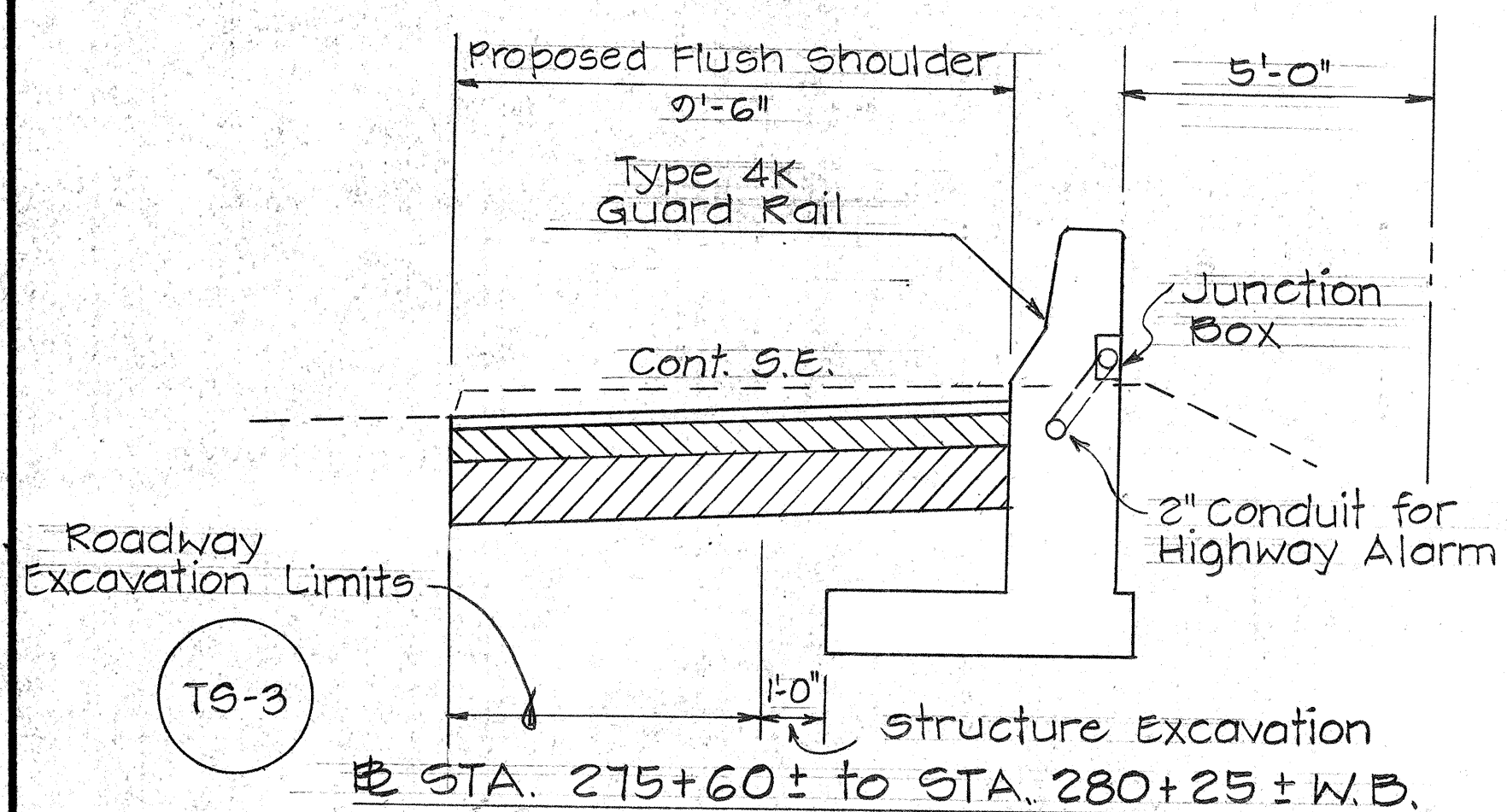
C.O. 146

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	147	181

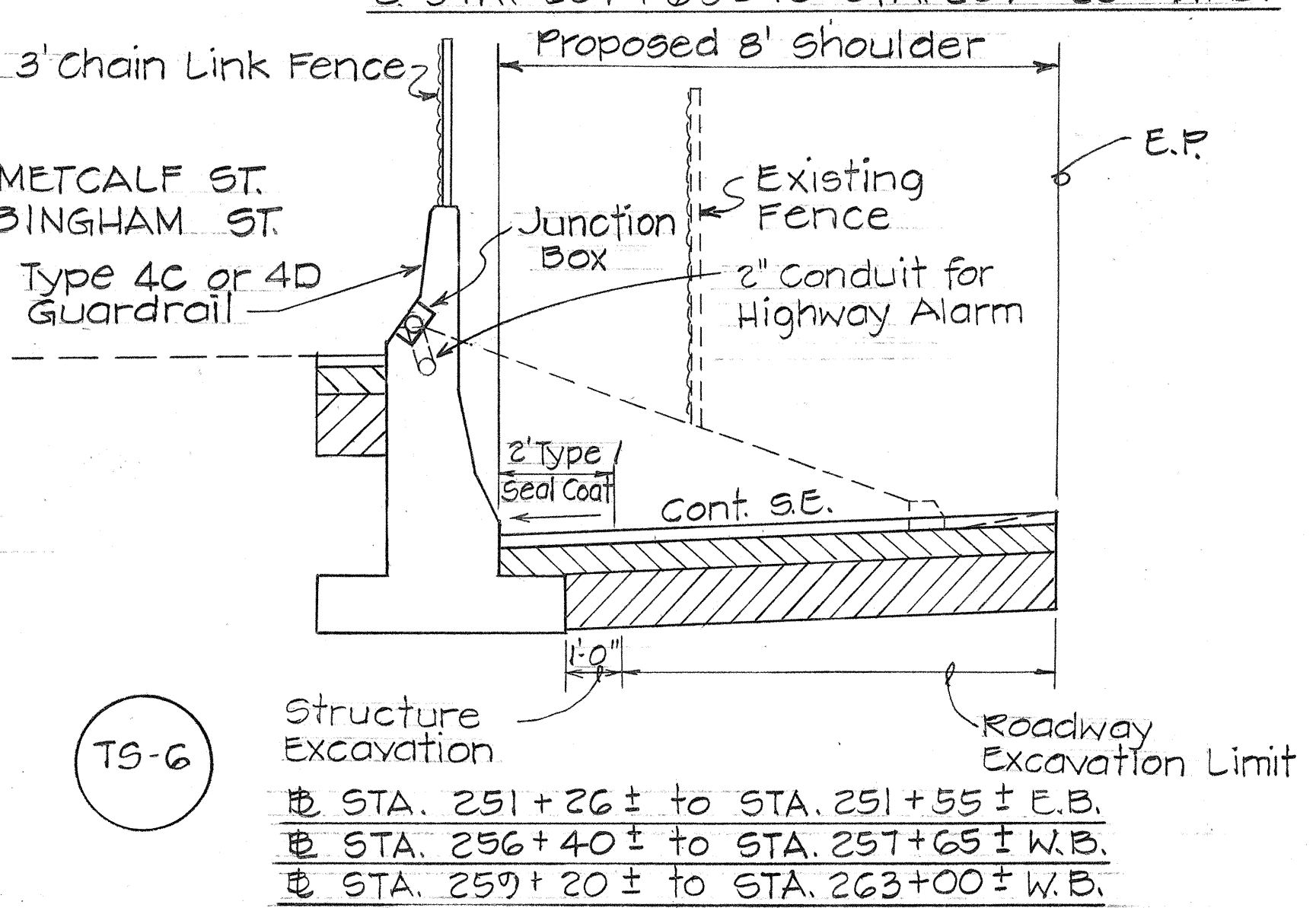
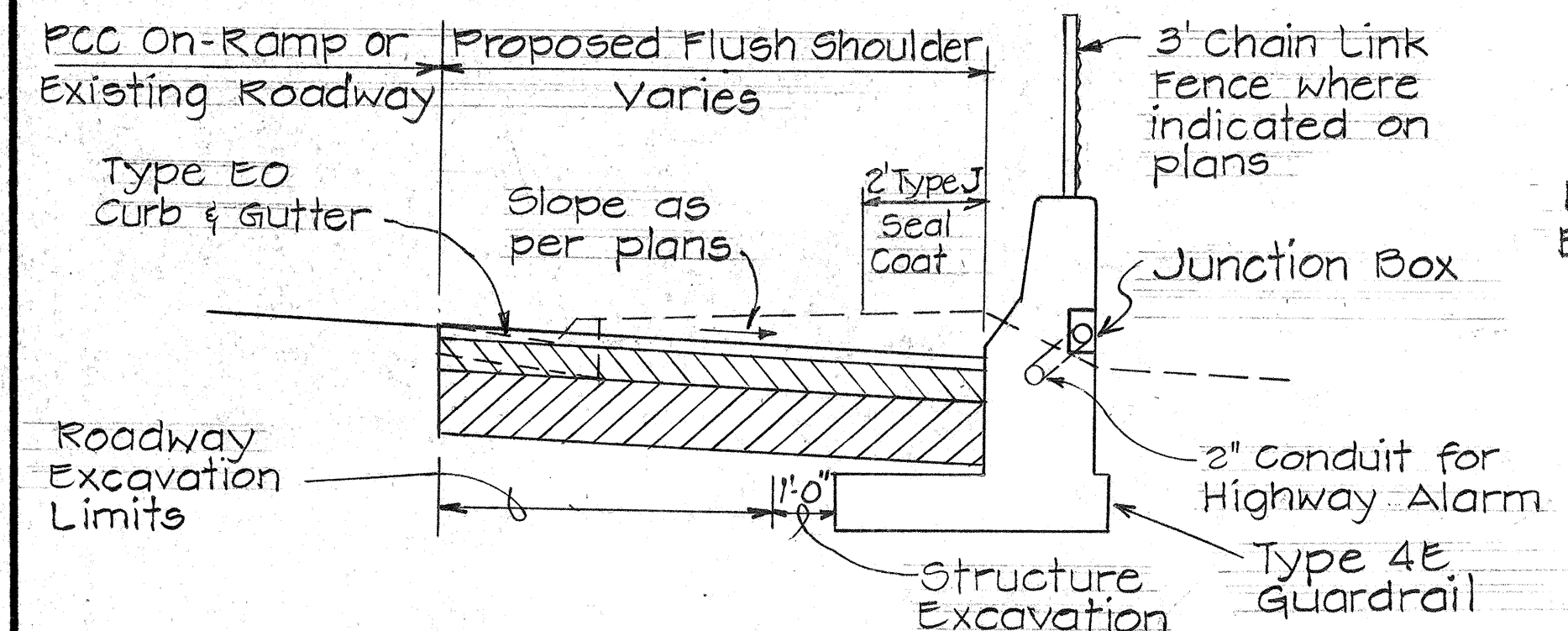


EXISTING HIGH WATER ALARM SCHEMATIC ONE LINE DIAGRAM
Not to Scale



- ⊕ STA. 235+94± to STA. 238+56± E.B.
- ⊕ STA. 237+65± to STA. 239+27± W.B.
- ⊕ STA. 239+38± to STA. 239+65± E.B.
- ⊕ STA. 264+28± to STA. 274+60± W.B.
- ⊕ STA. 264+13± to STA. 265+36± E.B.

NOTE
Install cast metal junction box 8" high x 16" wide x 4" deep with cast metal cover and neoprene gasket seal every 200 Ft. for pulling wire.



DATE
SURVEY PLANNED BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
NO. _____	

6/6/77	Install Junction Box
Date	Revision

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

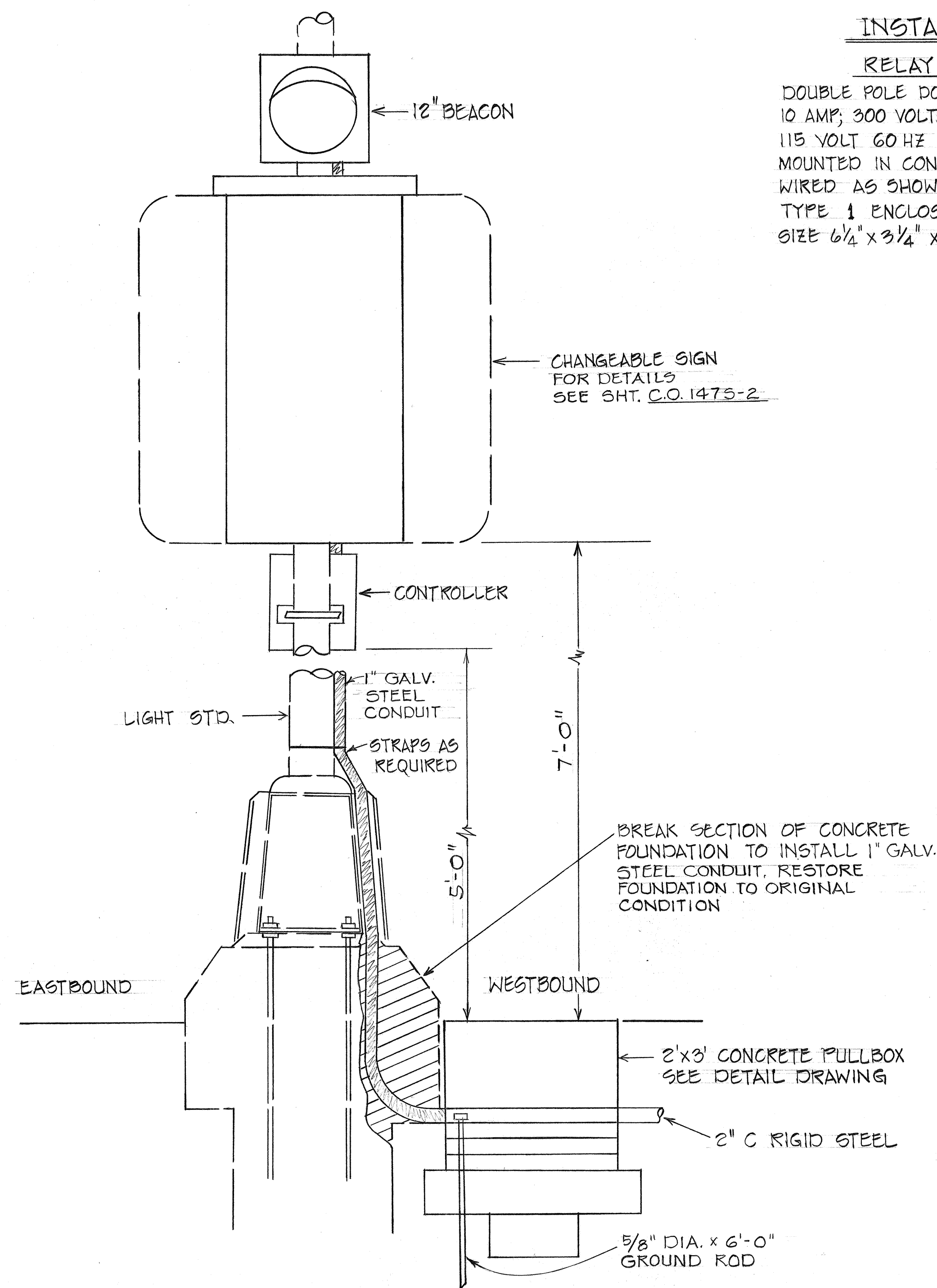
EXISTING HIGH WATER WARNING ALARM SYSTEM

INTERSTATE ROUTE H-1
MEDIAN IMPROVEMENTS
F.A.I. Proj. No. I-HI-1(60):23

Scale: As Shown Date: Sept. 1976

SHEET No. 27 OF 53 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1978	C.O.1475-1	181

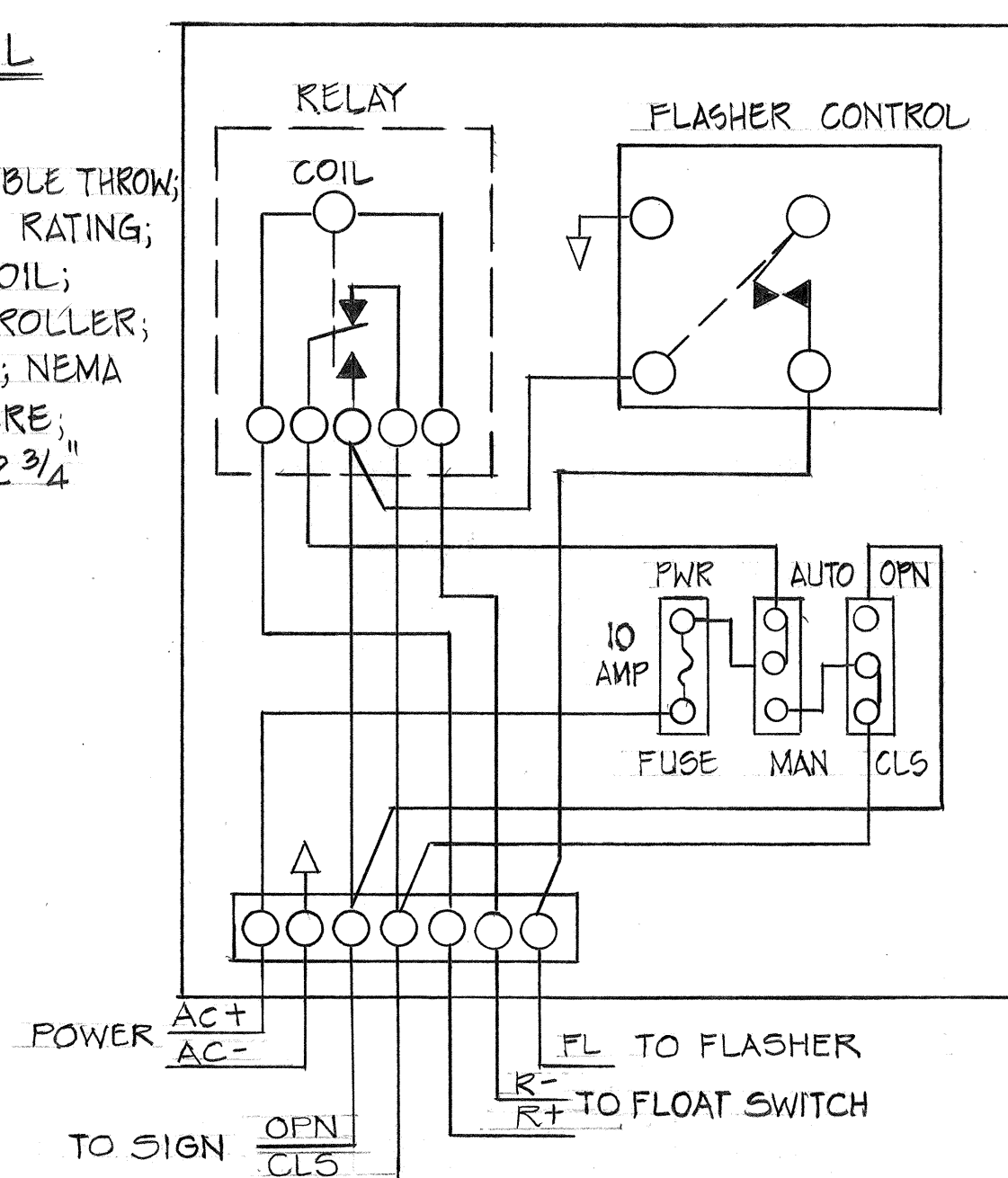


HIGHWATER WARNING ALARM CHANGEABLE SIGN

STA. 7+40

INSTALL RELAY

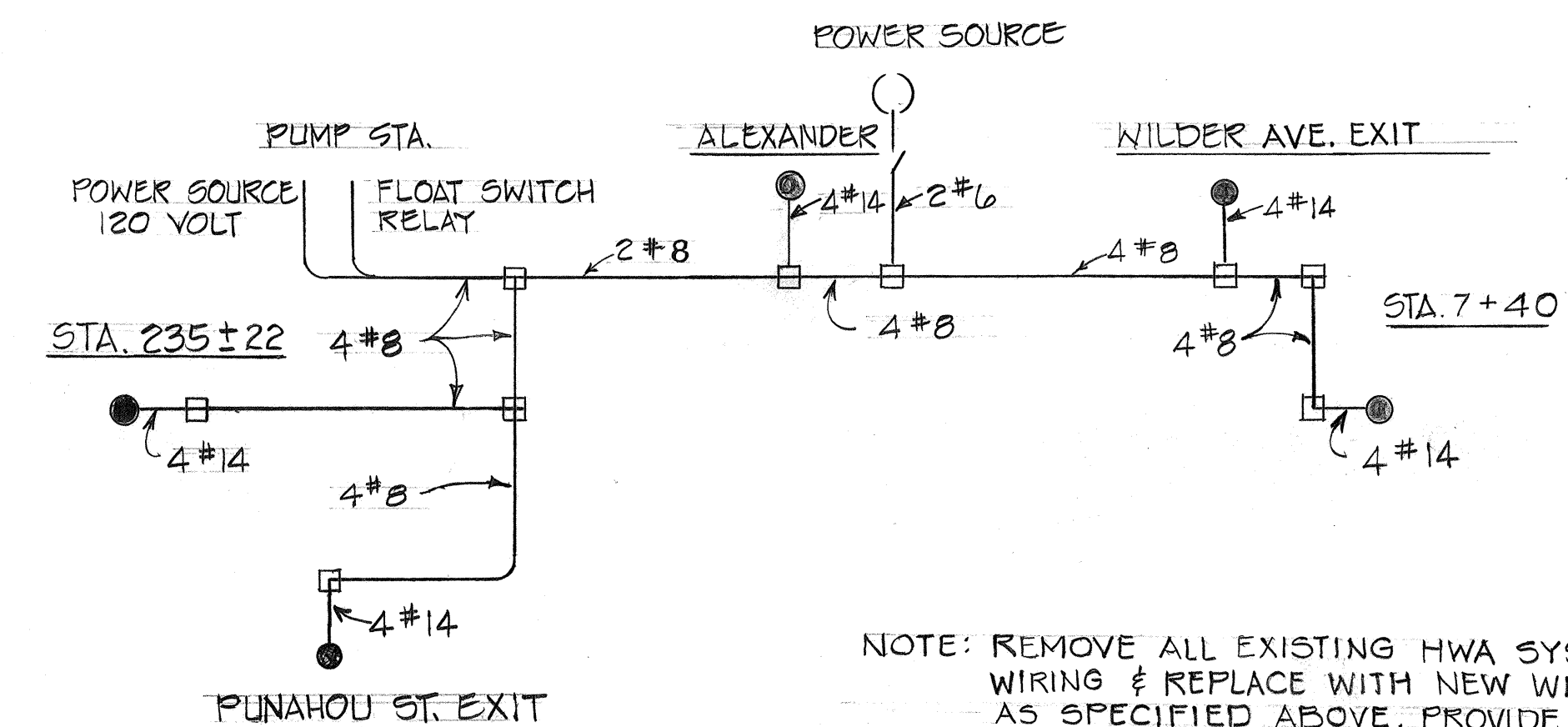
DOUBLE POLE DOUBLE THROW; 10 AMP; 300 VOLTS RATING; 115 VOLT 60 HZ COIL; MOUNTED IN CONTROLLER; WIRED AS SHOWN; NEMA TYPE 1 ENCLOSURE; SIZE 6 1/4" x 3 1/4" x 2 3/4"



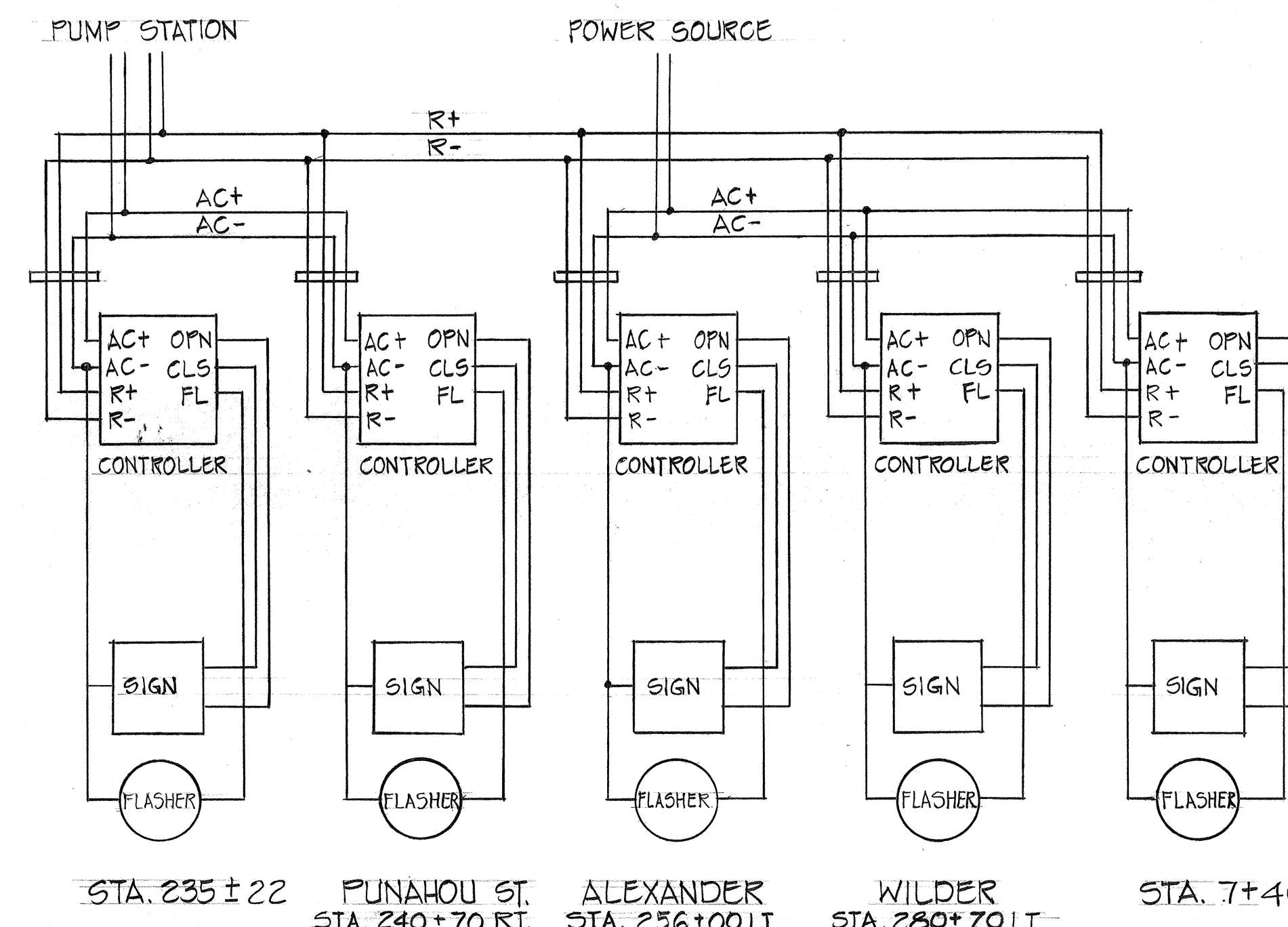
CONTROL BOX WIRING

SIGN CONTROLLER

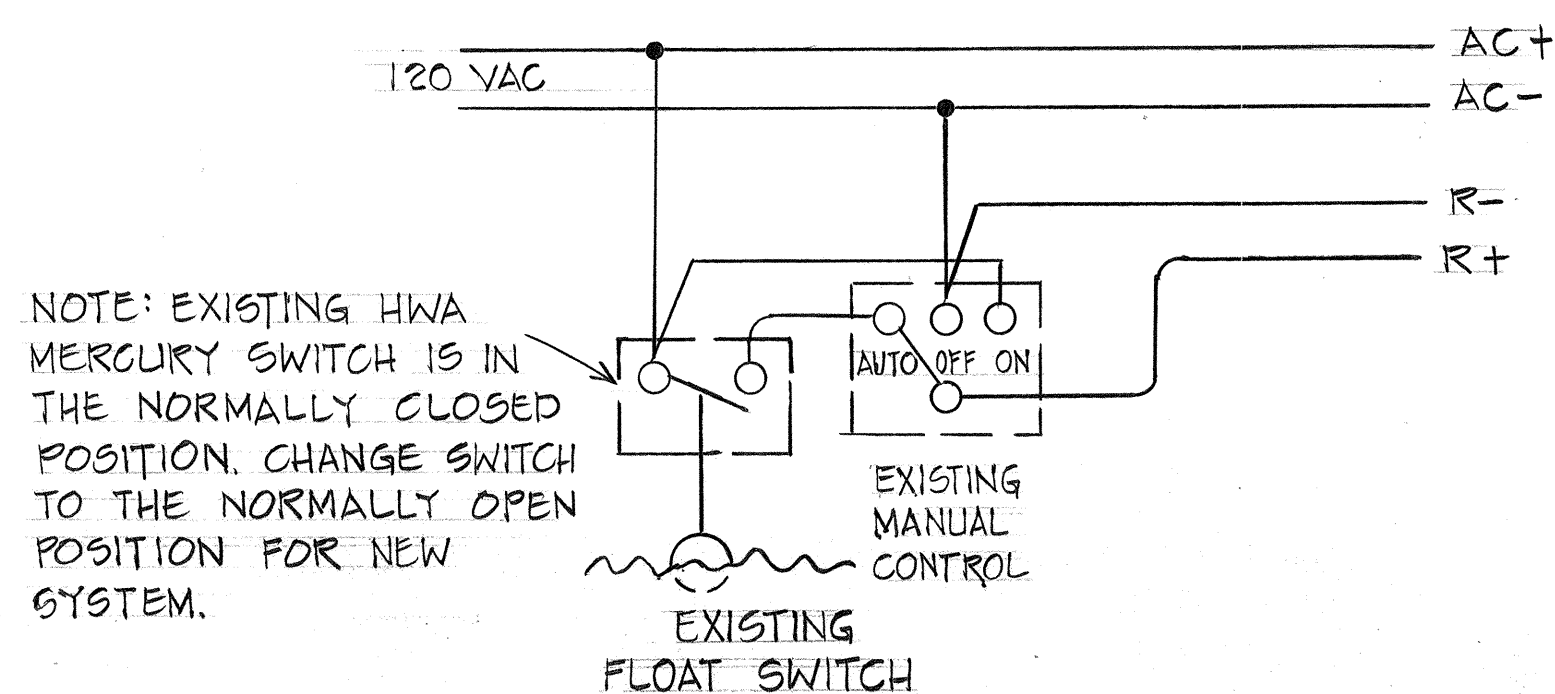
- WELDED ALUMINUM (1/8") GASKET CABINET
- SOLID STATE FLASHER
- POWER AND FLASHER FUSE
- TERMINAL STRIP
- AUTO/MANUAL SWITCH
- OPEN/CLOSE SWITCH
- PREWIRED
- STANDARD POLICE LOCK AND KEY
- SIZE 11 1/4" x 13" x 5 1/4"



ONE LINE DIAGRAM



SIGN WIRING



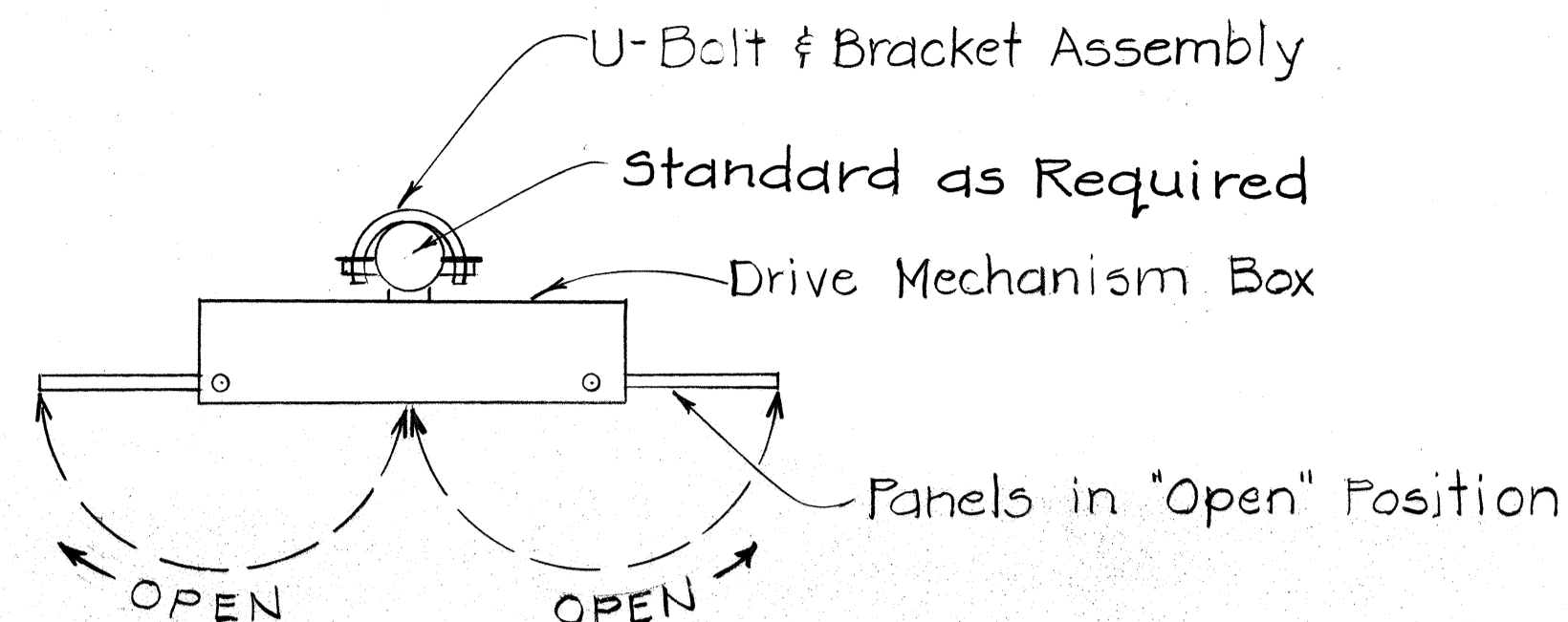
PUMP HOUSE WIRING

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION
DETAILS OF HIGHWATER WARNING ALARM SYSTEM
 PALI HWY. TO OLD WAIALAE ROAD
 F.A.I. PROJ. NO. I-HI-1(60):23
 Not to Scale Date: Oct. 1977
 SHEET No. 21TAOF53T SHEETS

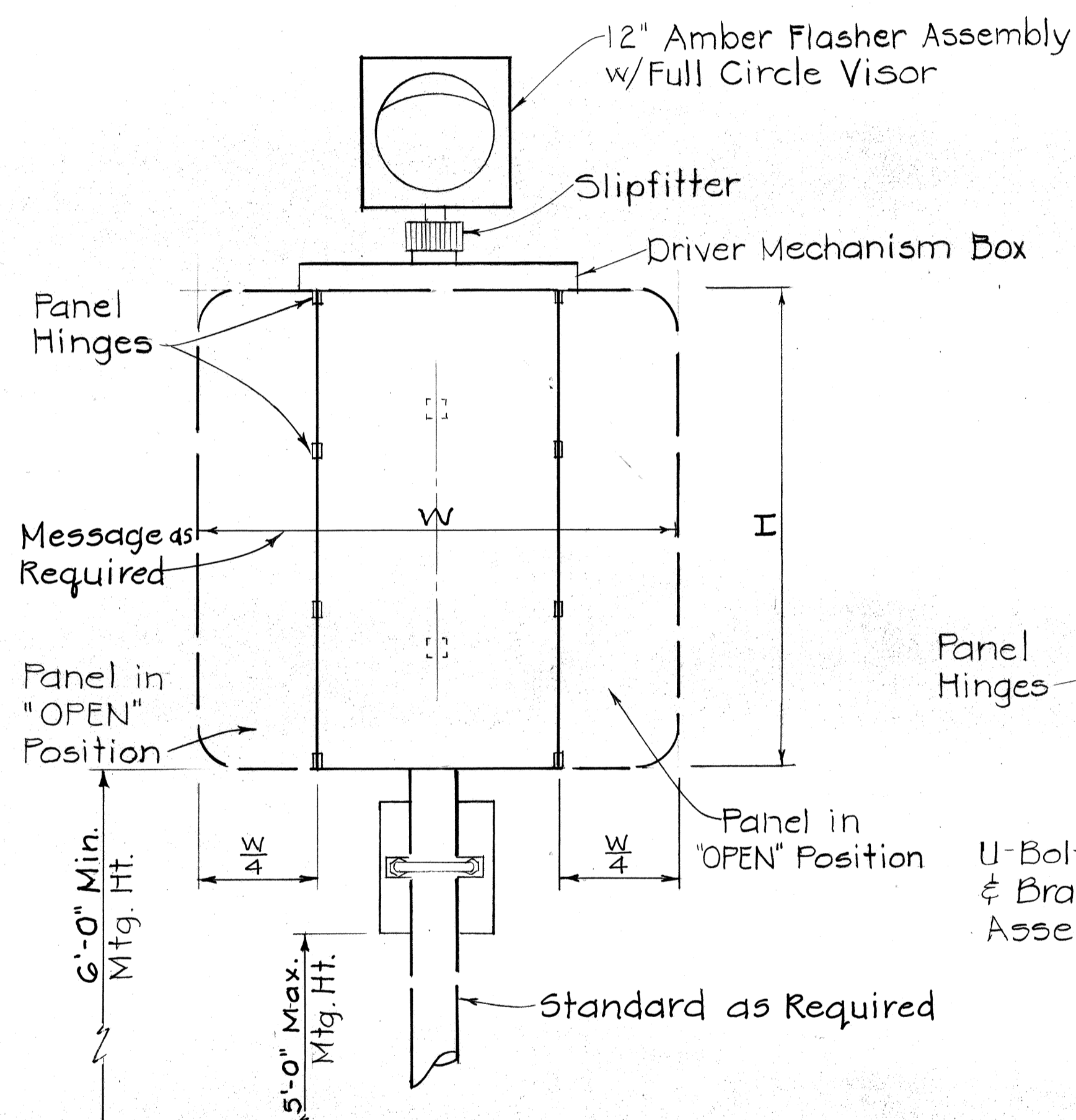
C.O. 1475-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1978	C.O.1475-2	181

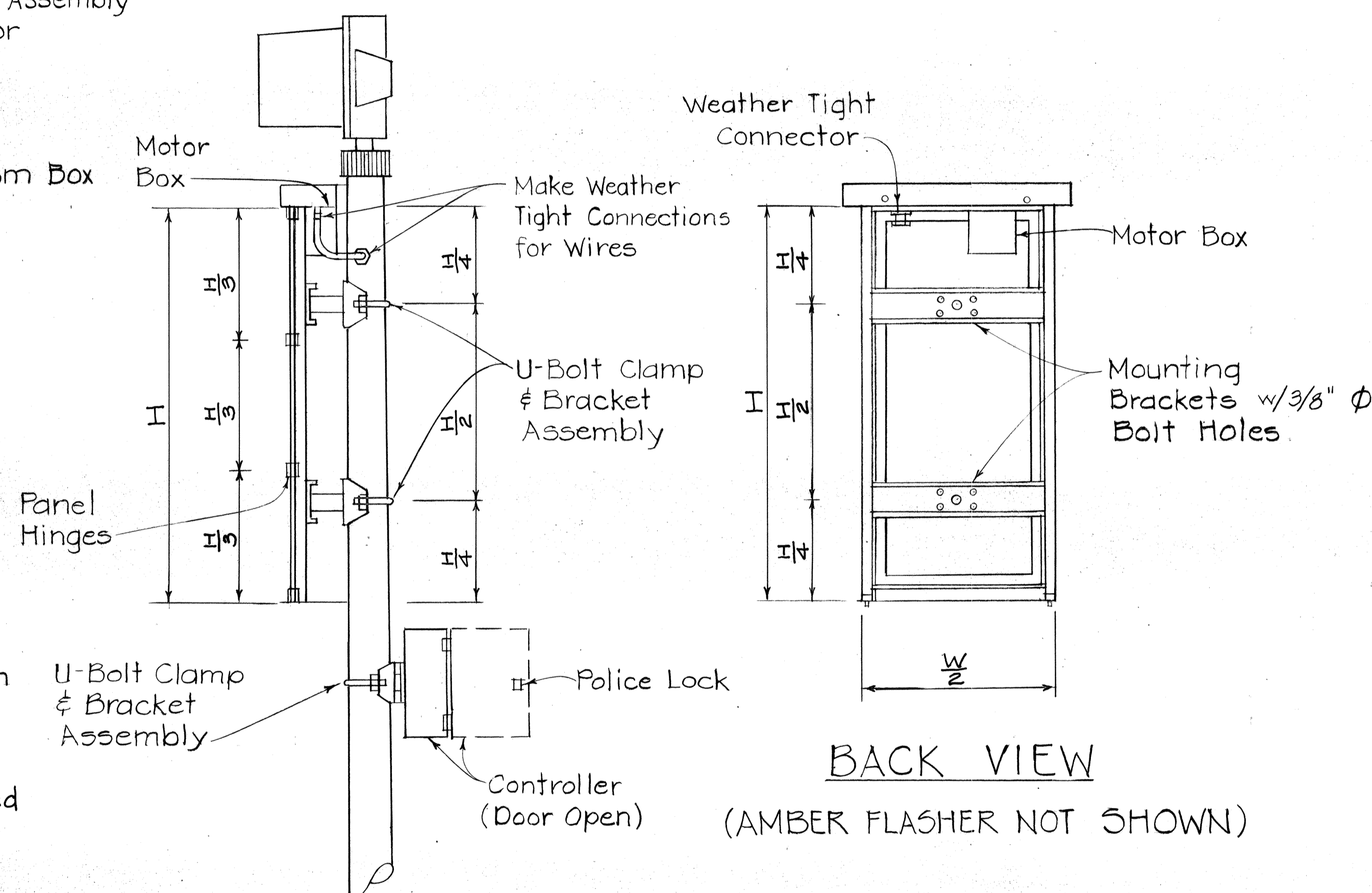


TOP VIEW

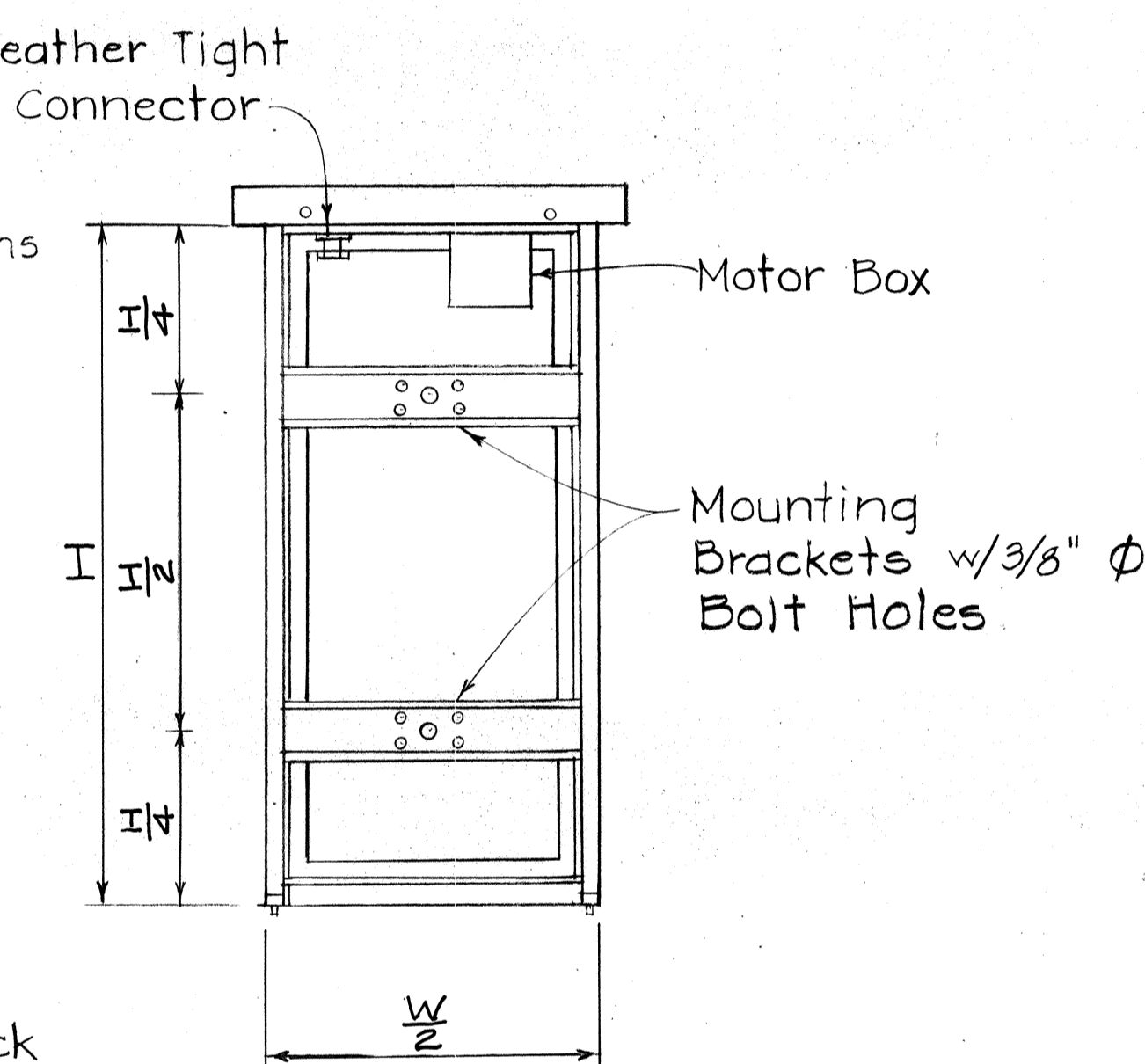
(AMBER FLASHER NOT SHOWN)



FRONT VIEW

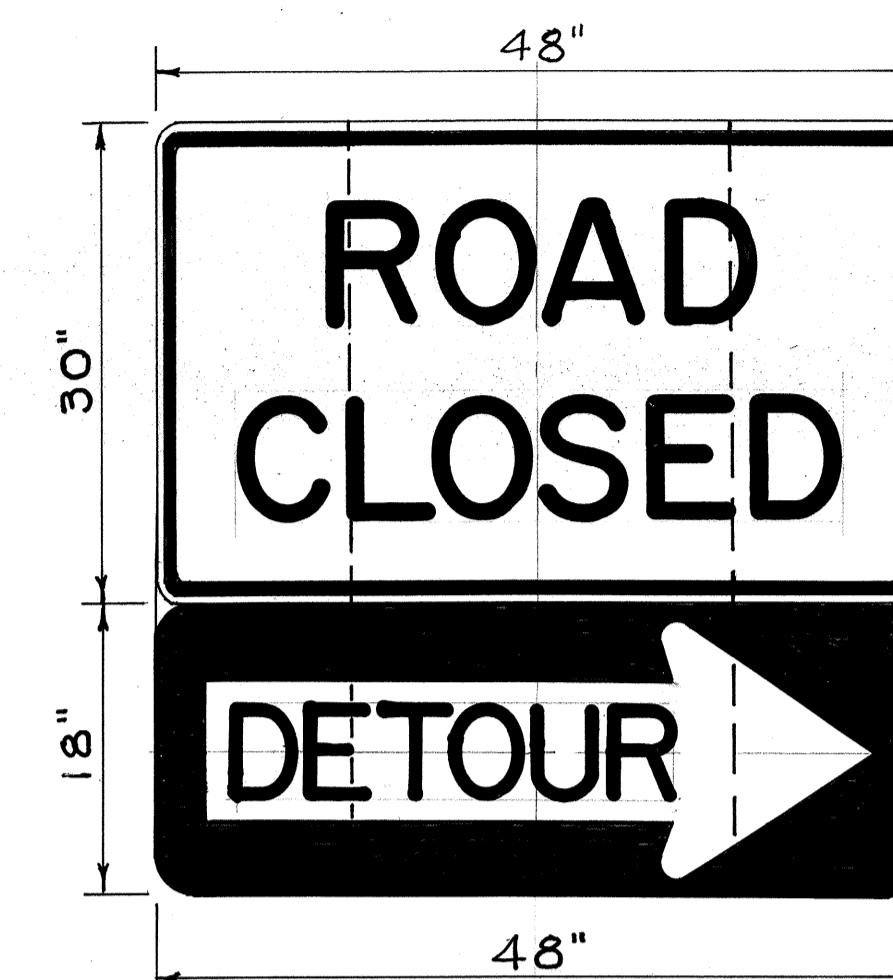


SIDE VIEW



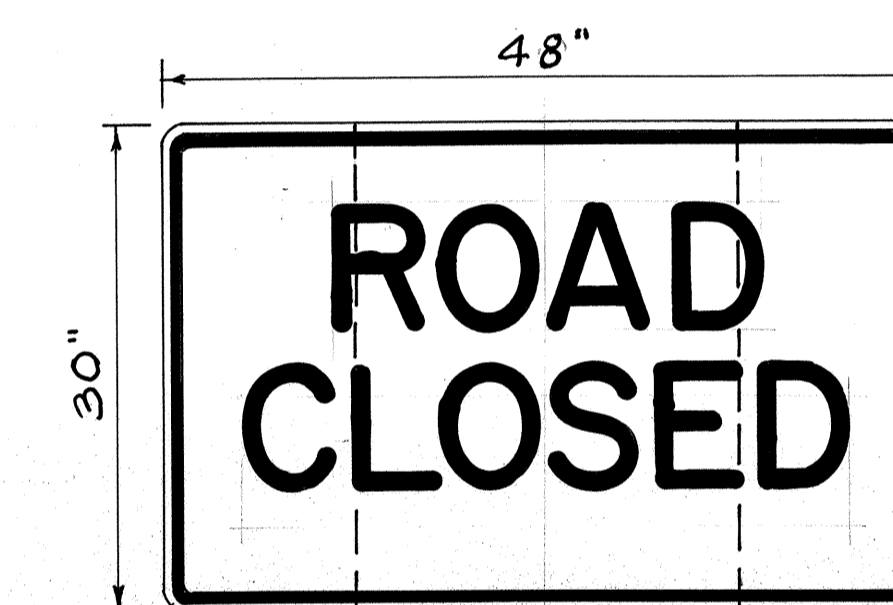
BACK VIEW

(AMBER FLASHER NOT SHOWN)



EM-1

w/R11-2 MESSAGE (TOP) & CM4-10(R) MESSAGE (BOT)



EM-2

w/R11-2 MESSAGE

NOTE:
1. Except where noted, signs EM-1 & EM-2 shall conform to the requirement for Regulatory and Warning Signs.

ELECTRO-MECHANICAL CHANGEABLE MESSAGE SIGN

SINGLE MESSAGE TYPE

NOT TO SCALE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

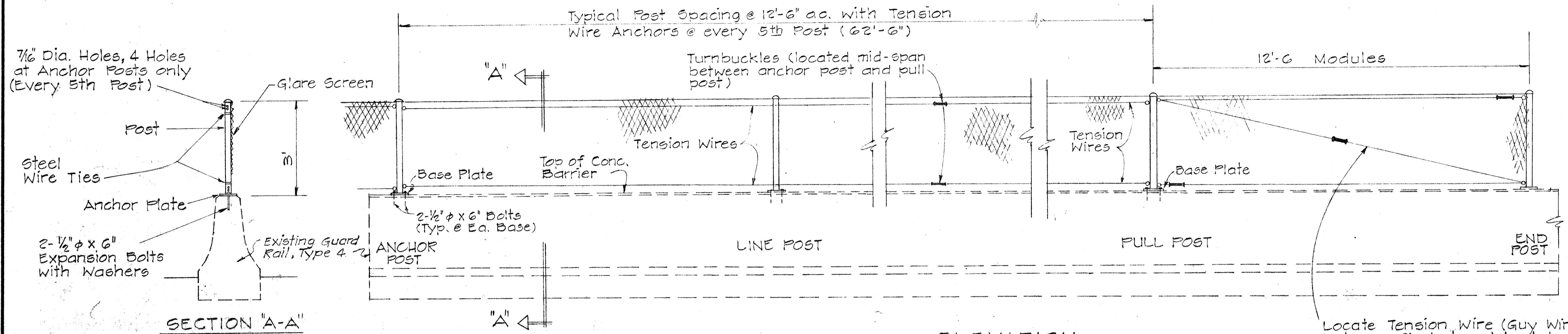
ELECTRO-MECHANICAL
CHANGEABLE SIGNS

F.A.I. PROJ. NO. I-HI-1(60):23
NOT TO SCALE

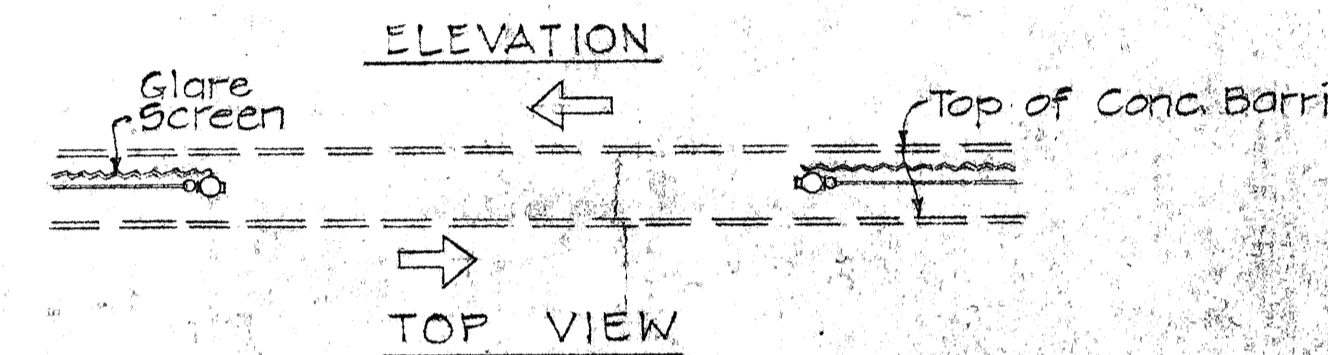
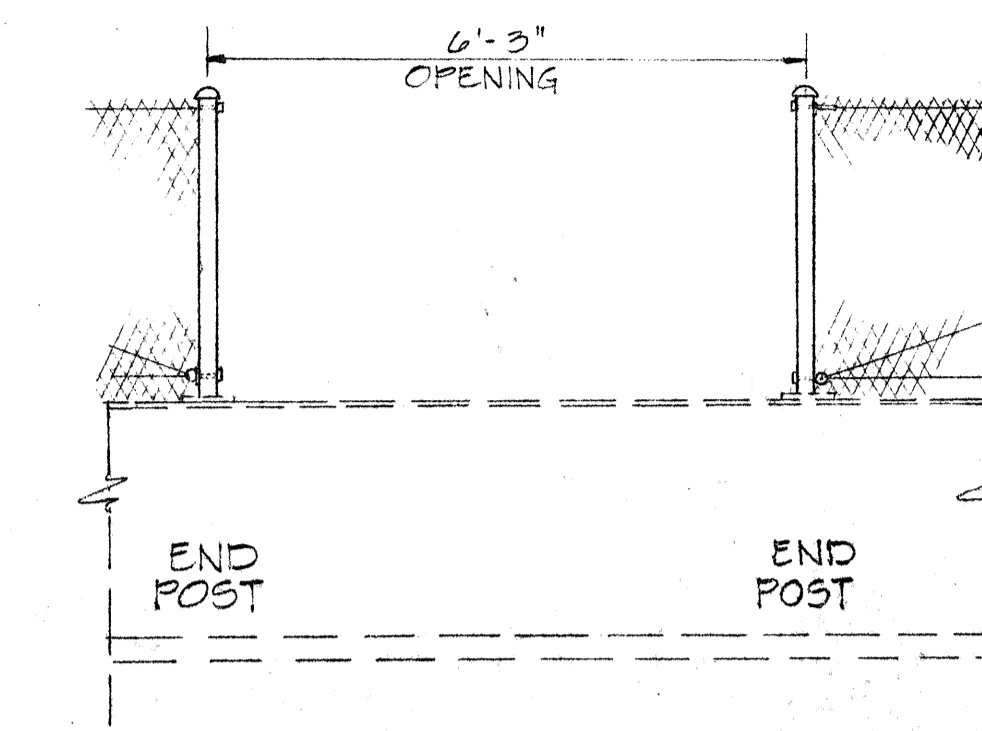
SHEET No. 271 BOF 531 SHEETS

C.O. 1475-2

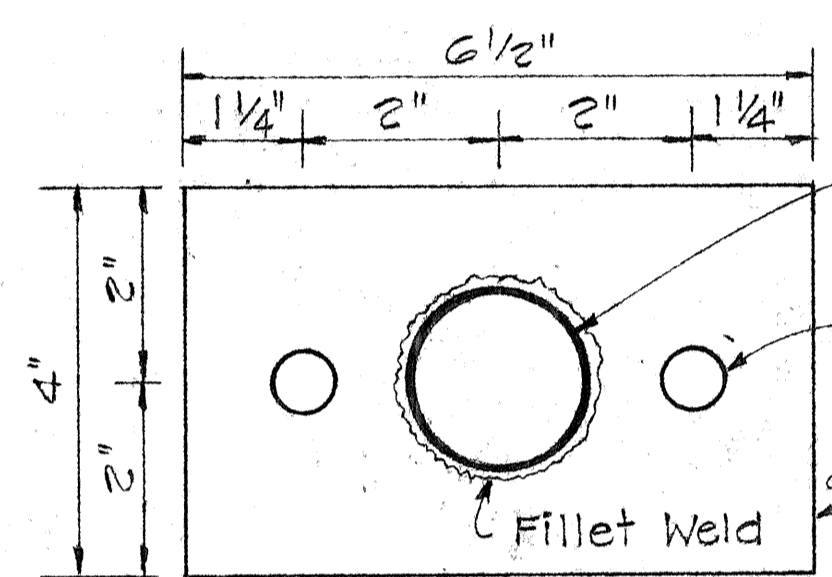
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	148	181



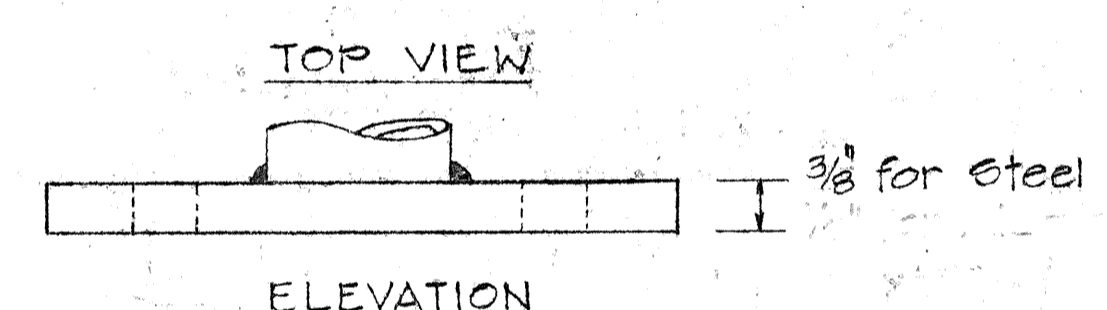
SECTION "A-A"



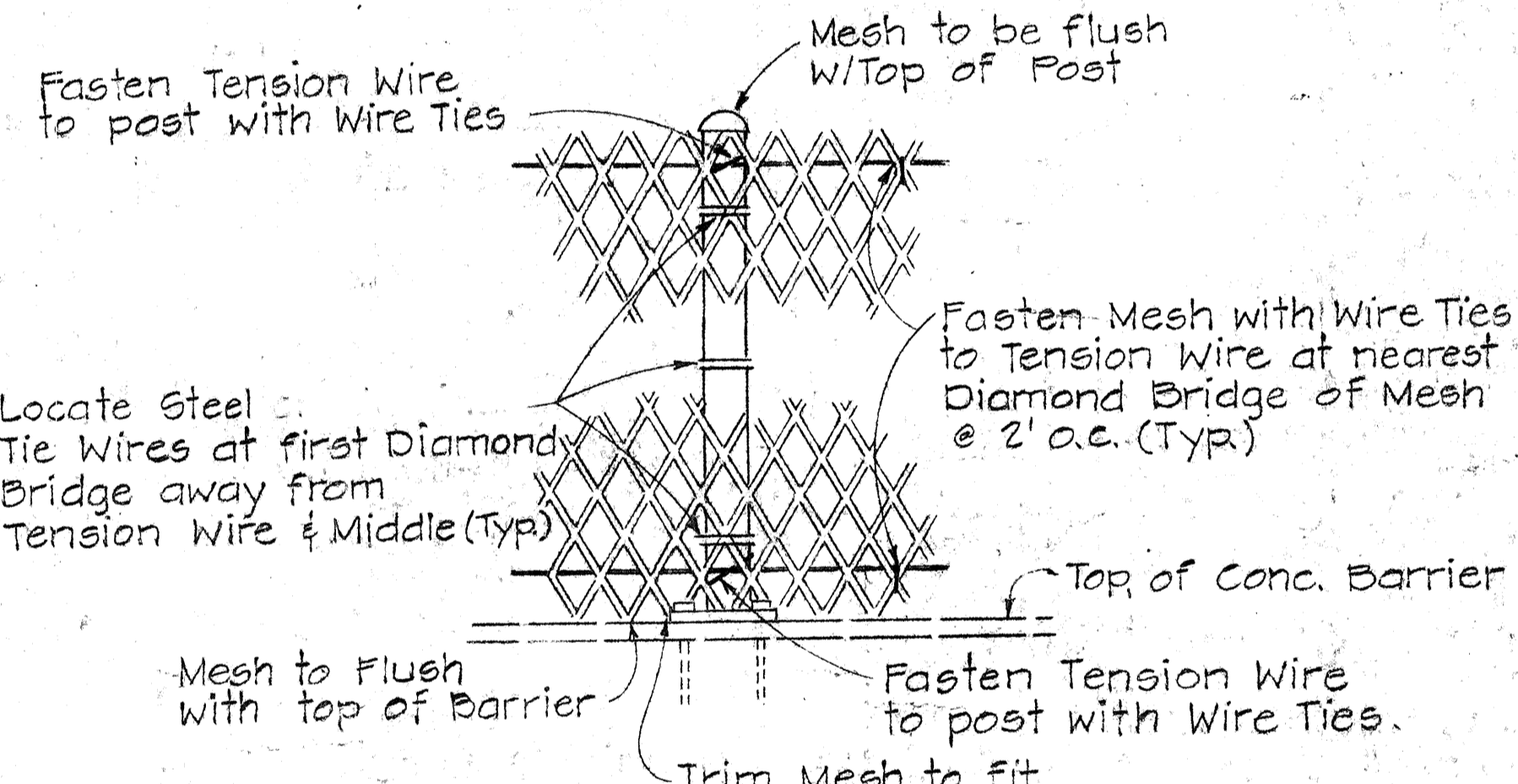
EMERGENCY OPENING
Scale: 1/2" = 1'-0"



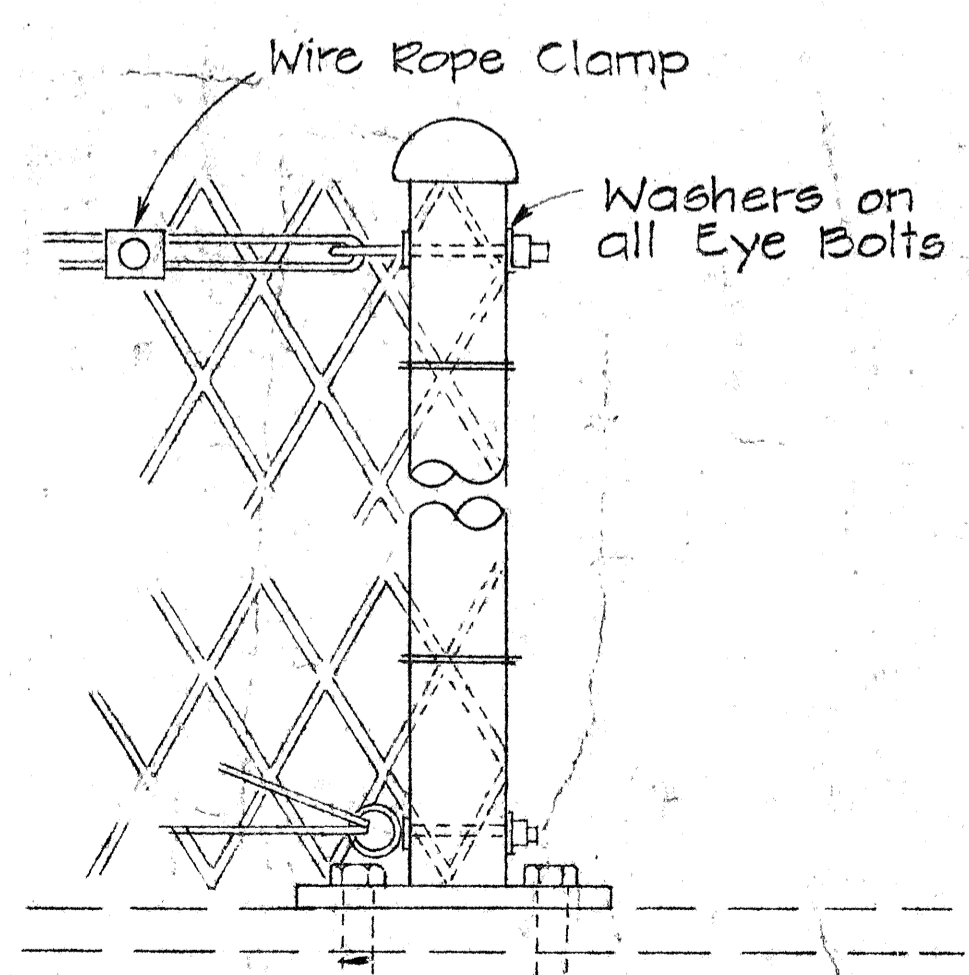
ELEVATION
Scale: 1/2" = 1'-0"



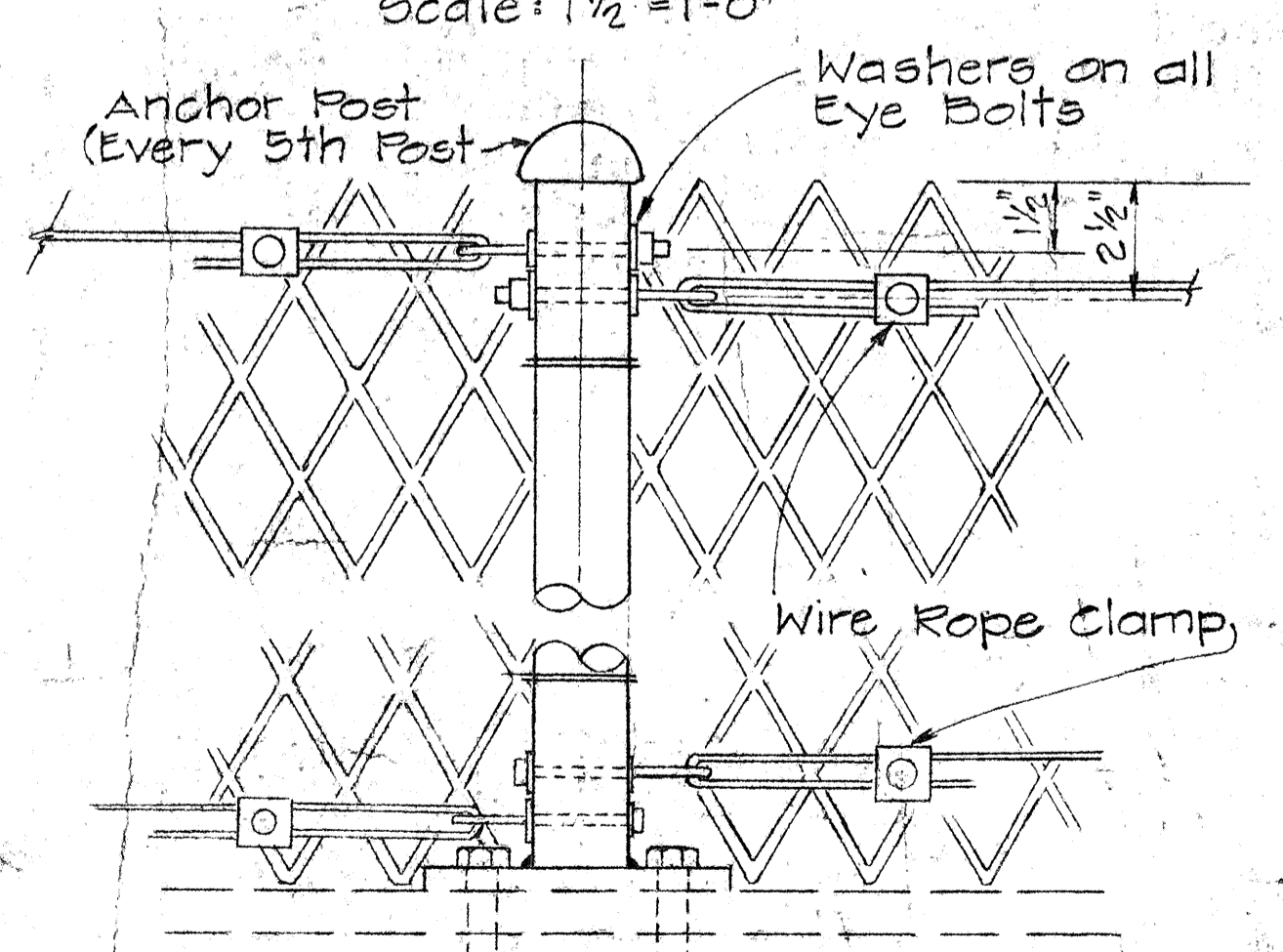
BASE PLATE DETAIL
Scale: 6" = 1'-0"



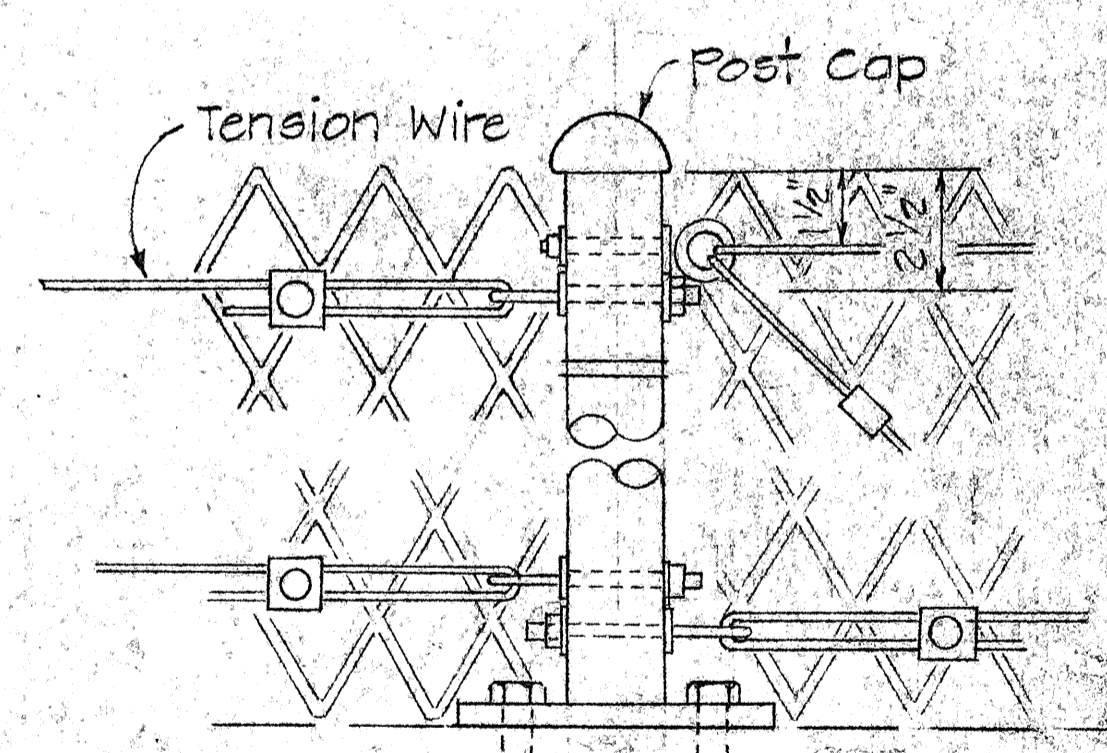
LINE POST CONNECTIONS
Viewed From Mesh Side
Scale: 1/2" = 1'-0"



END POST DETAIL
Scale: 3/4" = 1'-0"



TENSION WIRE ANCHOR DETAIL
Scale: 3/4" = 1'-0"



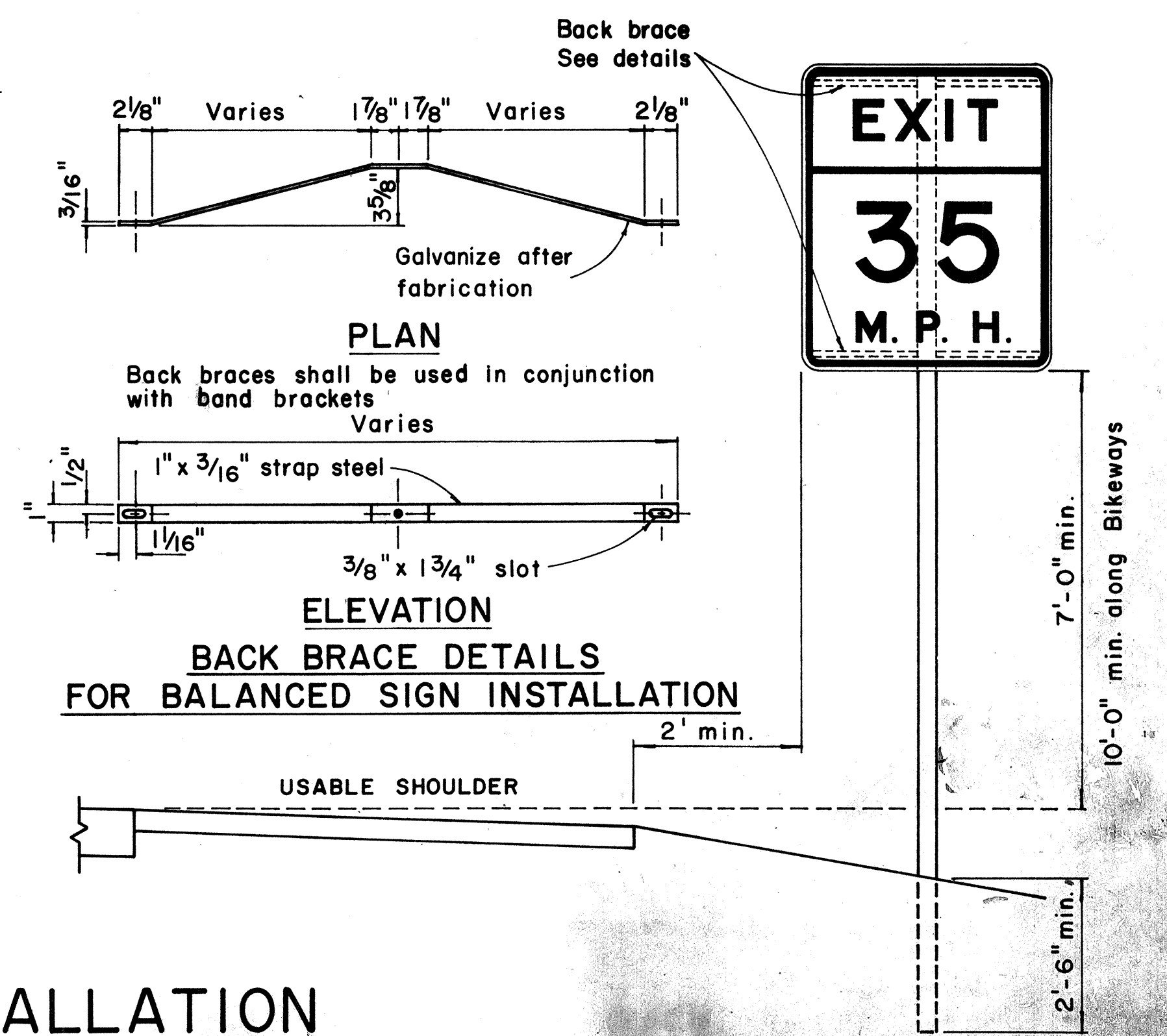
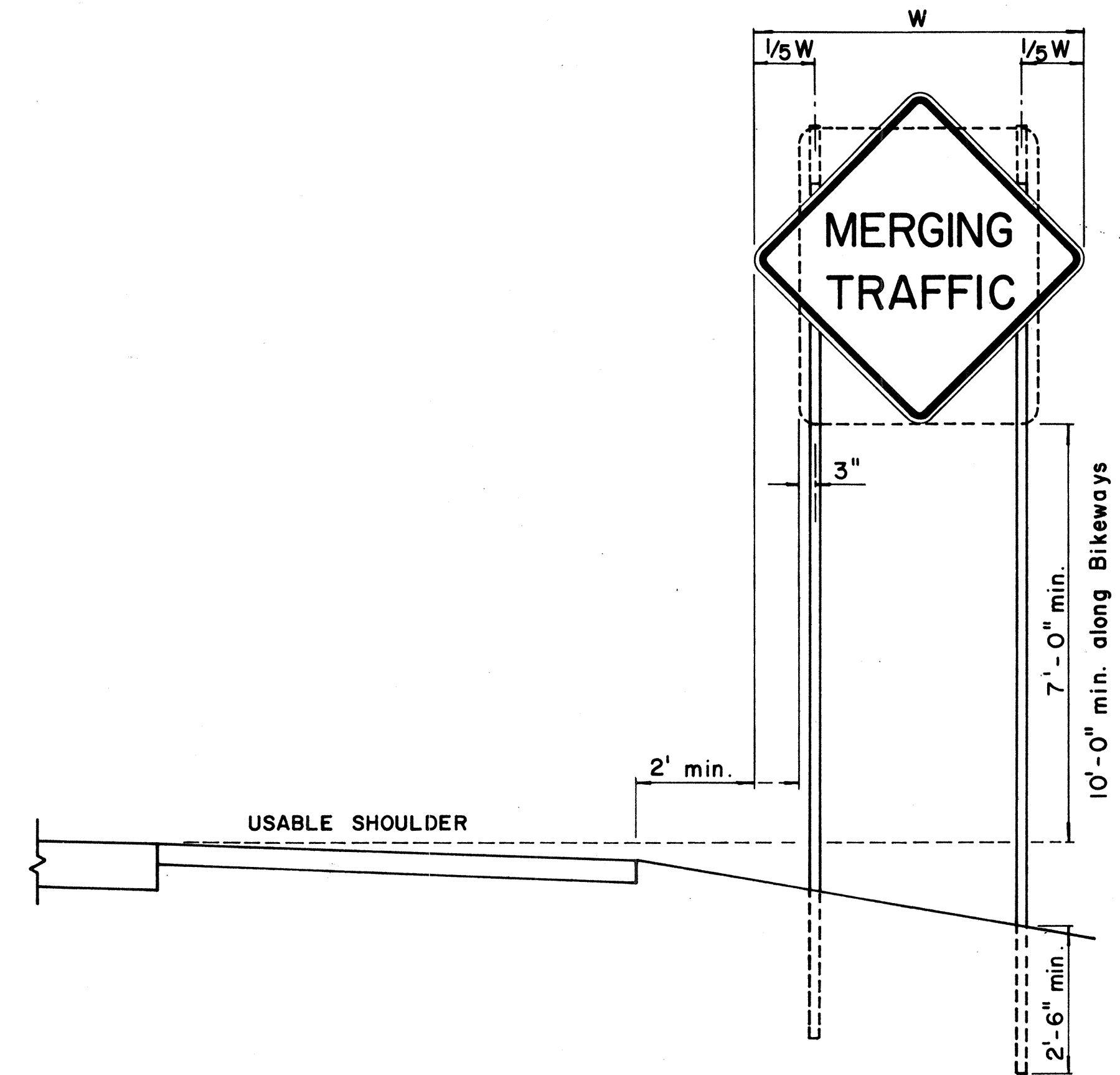
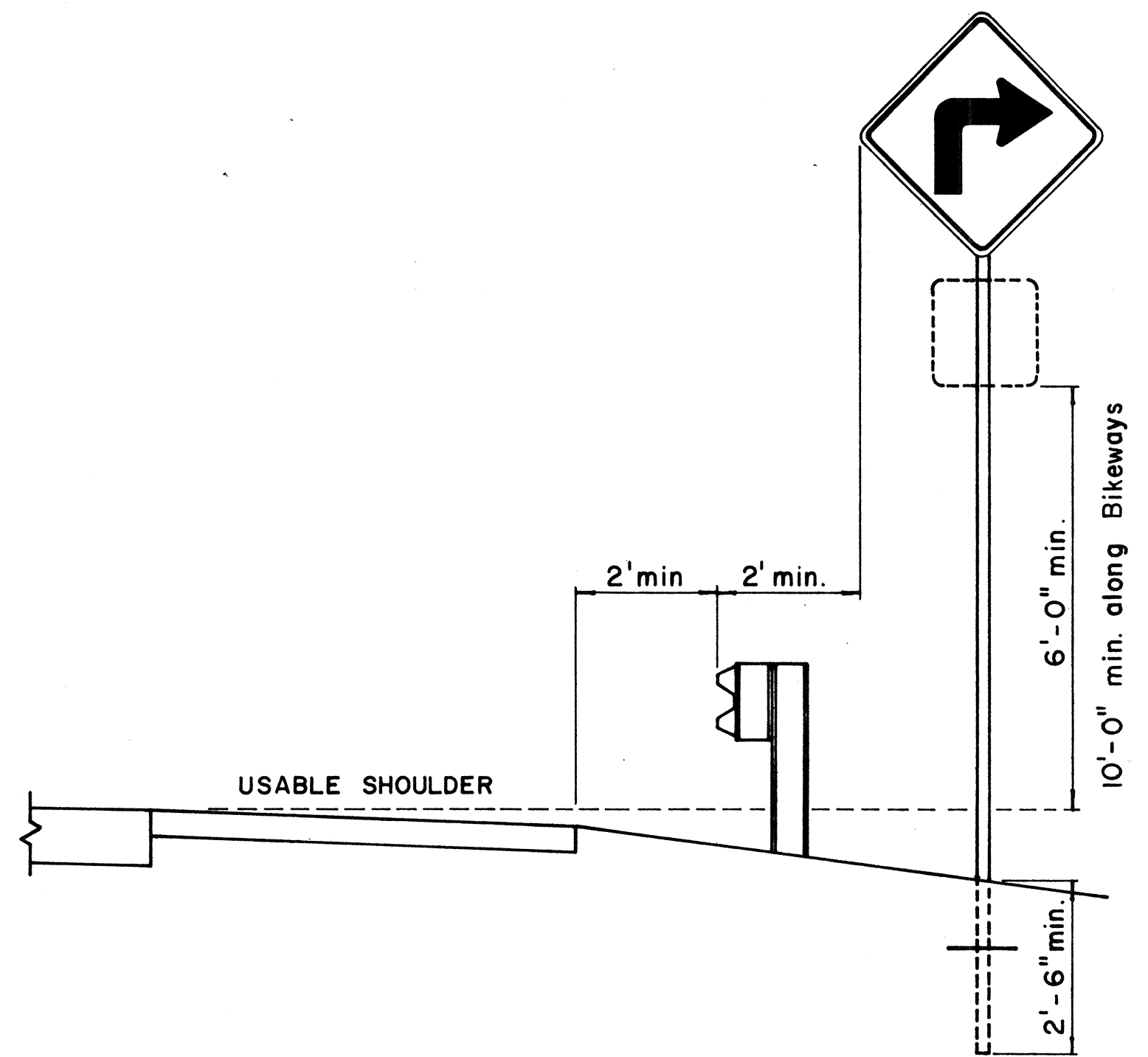
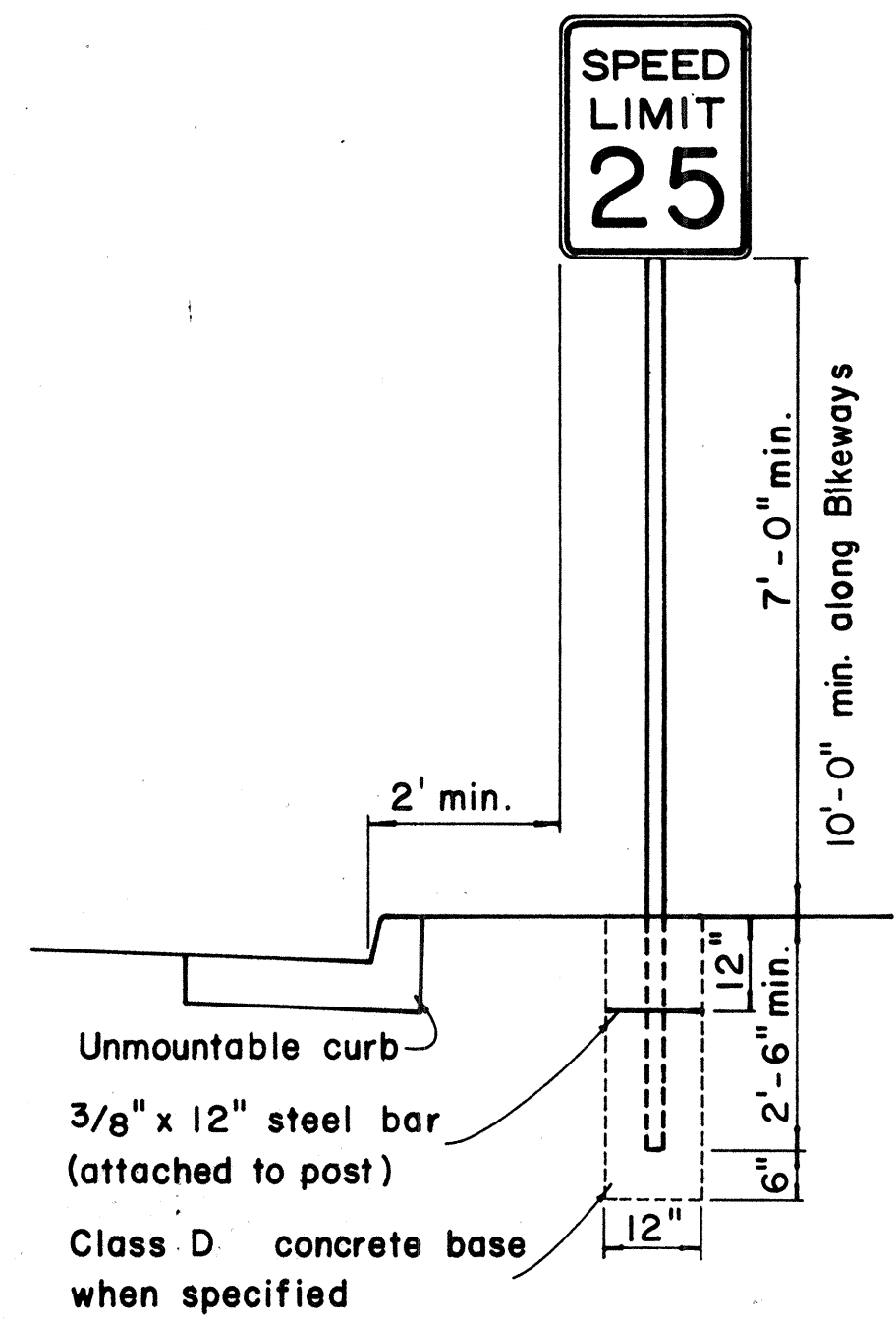
PULL POST DETAIL
Scale: 3/4" = 1'-0"

NOTES
1. Emergency openings to be located at approximately 600 Ft. intervals or as directed by the Engineer.

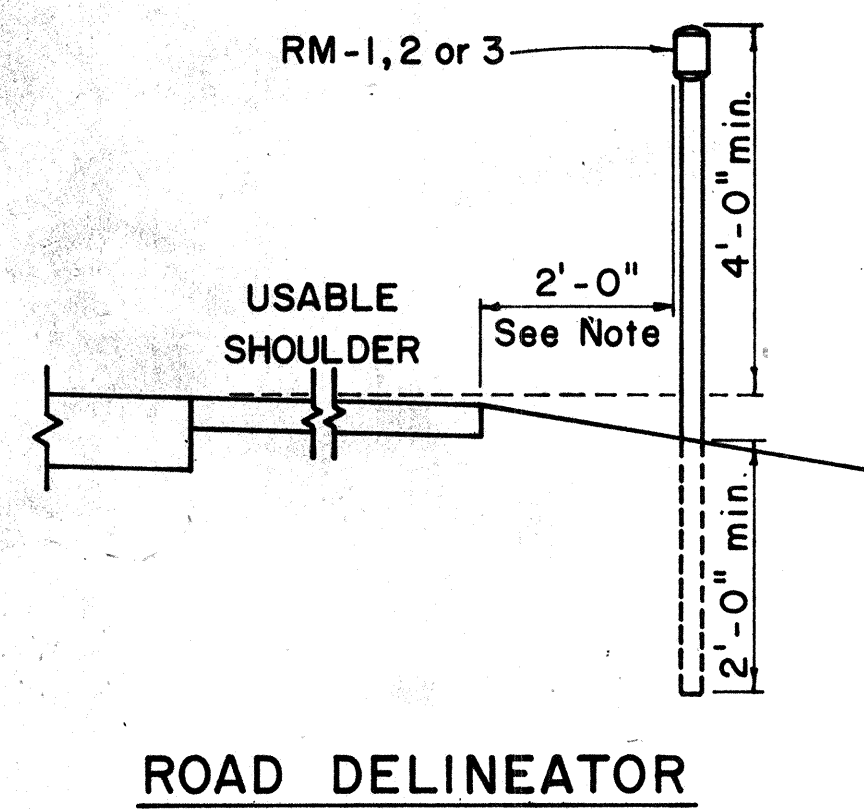
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
No.	_____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**HEADLIGHT
GLARE SCREEN**
PALI HWY TO OLD WAIALAE ROAD
F.A.I. PROJ. NO. I-HI-1(60):23
Scale: As Shown Date: Sept. 1976
SHEET No. 28 OF 53 SHEETS

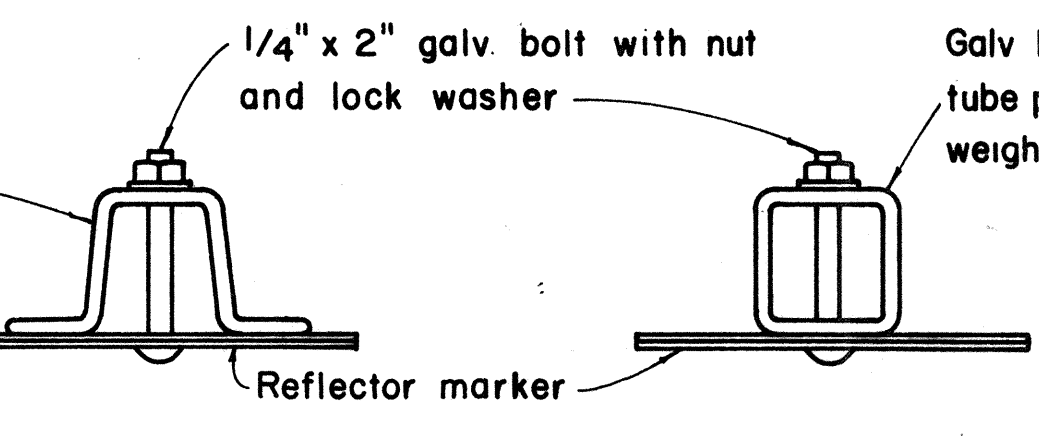
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1H-1(60)23	1976	140	181



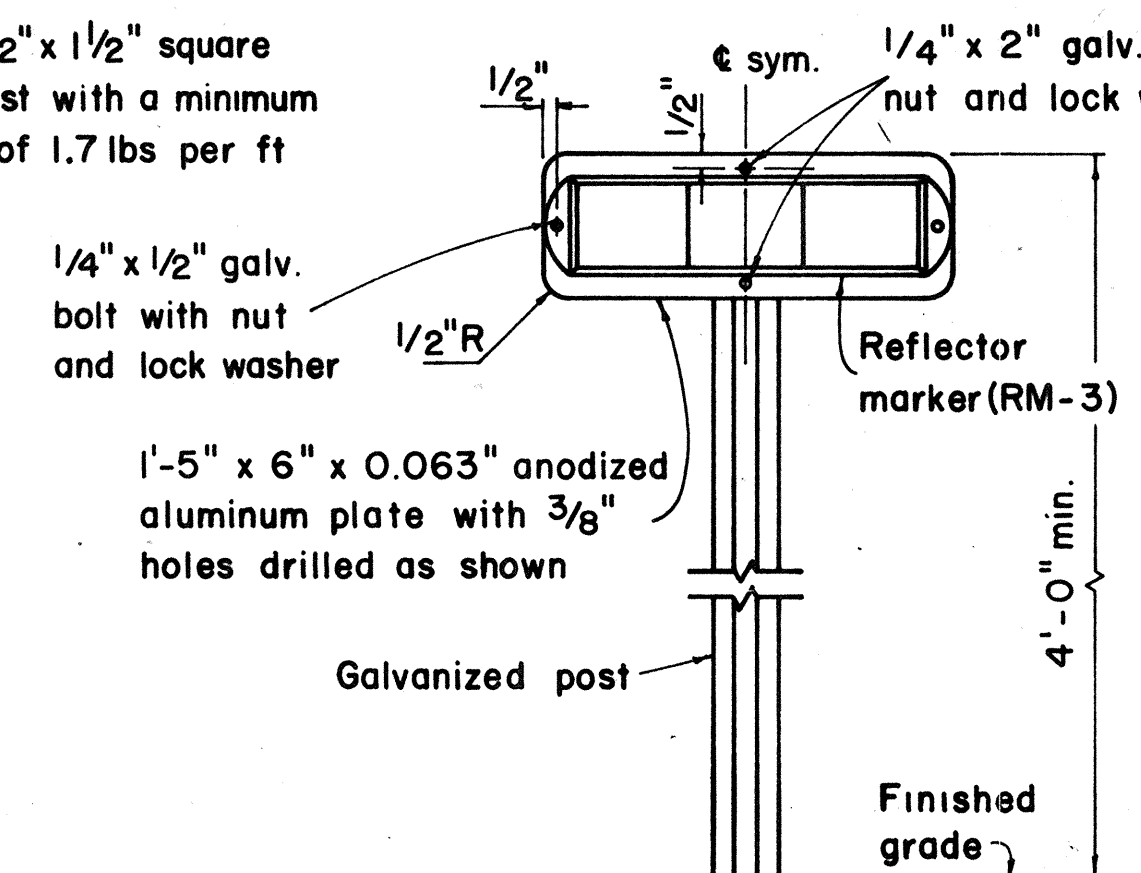
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



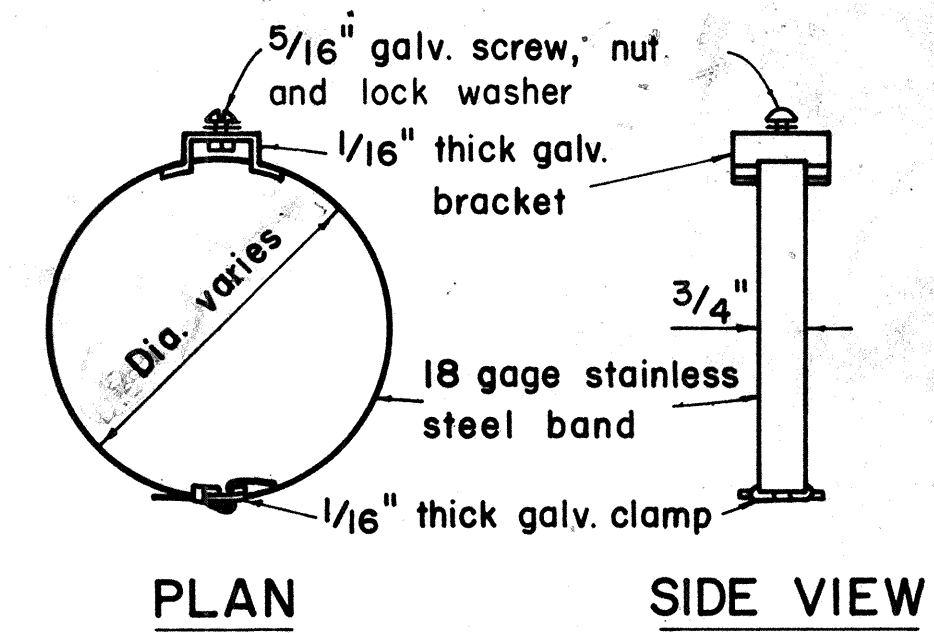
Galv. flanged channel 1/8" x 3/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft. shall have a single row of 3/8" holes centered in the web at 1" o.c.



TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL
HORIZONTAL REFLECTOR MARKER
RM-3H



PLAN SIDE VIEW
FRONT VIEW

Band brackets shall be used in conjunction with back braces

TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

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

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

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

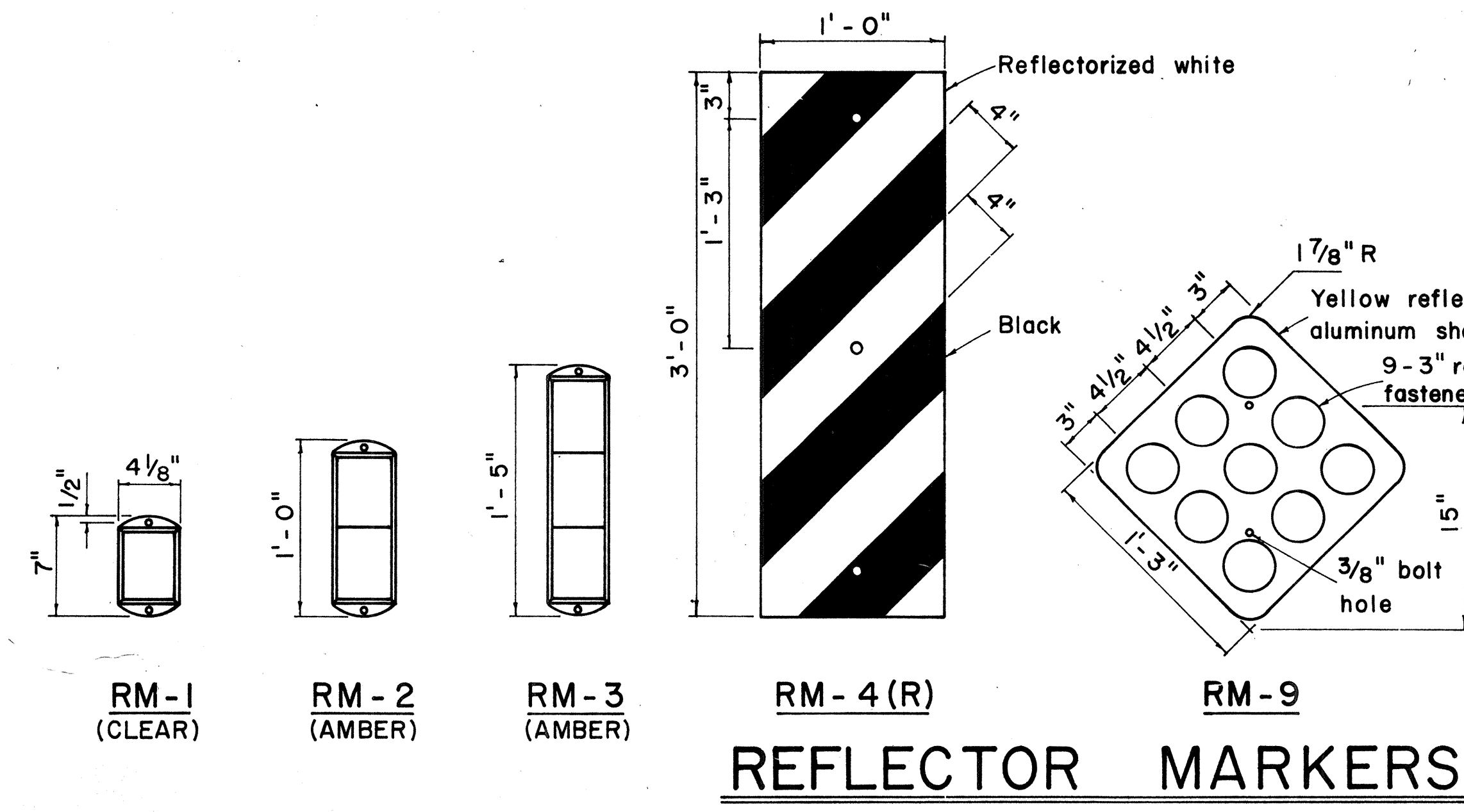
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale

NO.	REVISION	APPROVED BY	DATE
1.	Revised Details.	H.T.	7-14-76

ORIGINAL PLAN
 DATE
 DESIGNED BY
 CHECKED BY
 QUANTITIES BY
 NO.



REFLECTOR MARKERS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	111(60)23	1976	150	181

GENERAL NOTES

1. Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
2. All regulatory signs shall be reflectorized unless otherwise specified.
3. All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.
4. Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

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

APPROVED:
Robert Zelen 3-20-72
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.C.	3/20/72
2	Revised General Note 1.	H.C.	10/16/74

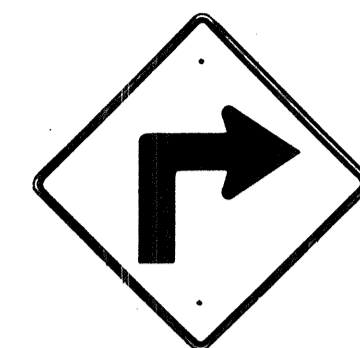
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**STANDARD DETAILS
 REGULATORY SIGNS**

NOT TO SCALE

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

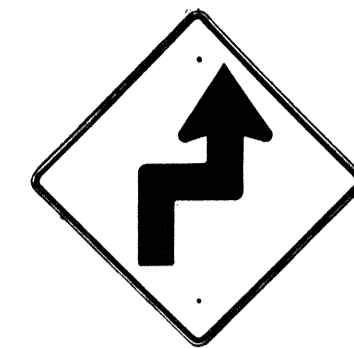
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII*	HAW.	I-111(60):23	1976	151	181



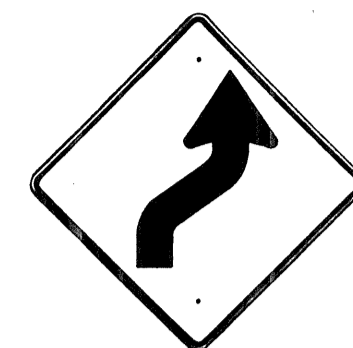
W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



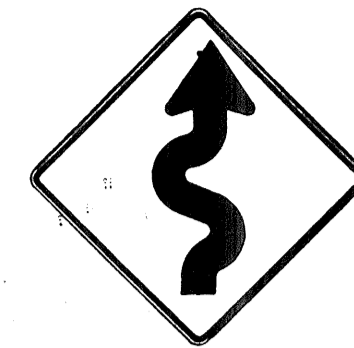
W1-2(R) 30"x30"
W1-2(R)-A 48"x48"



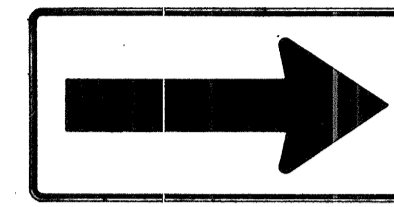
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



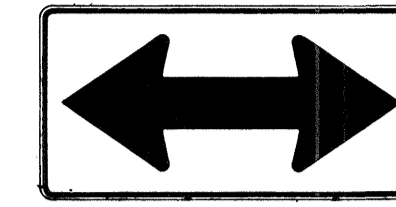
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



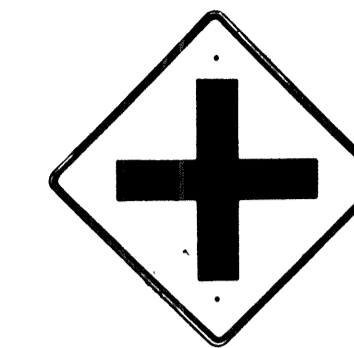
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



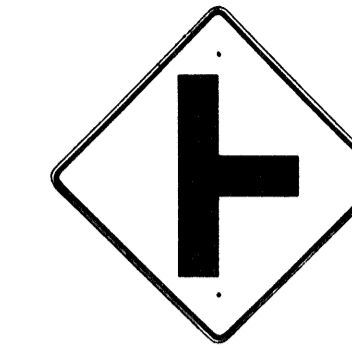
W1-6 48"x24"



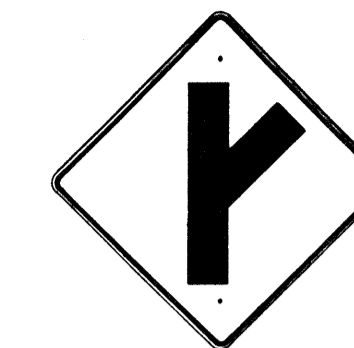
W1-7 48"x24"



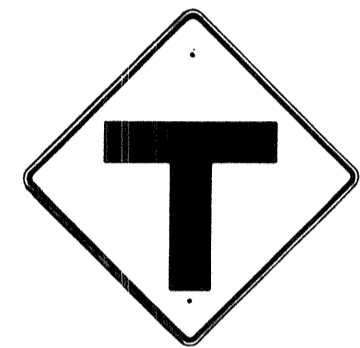
W2-1 30"x30"
W2-1-A 48"x48"



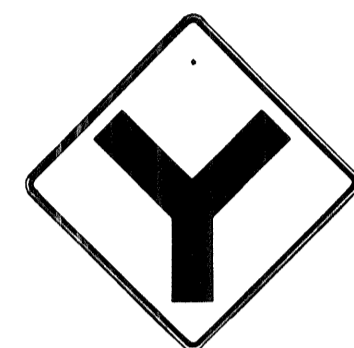
W2-2 30"x30"
W2-2-A 48"x48"



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



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



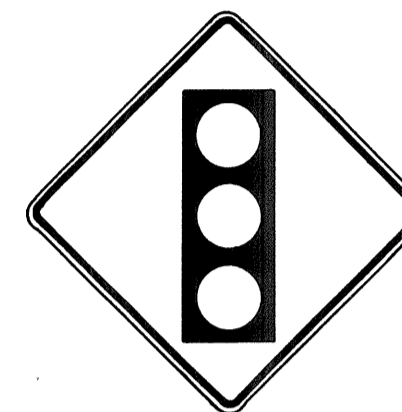
W2-5 30"x30"
W2-5-A 48"x48"



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



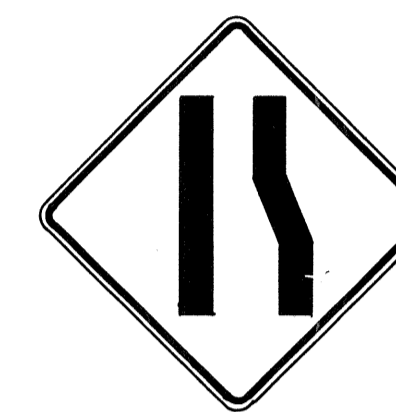
W3-2 30"x30"
W3-2-A 36"x36"



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"



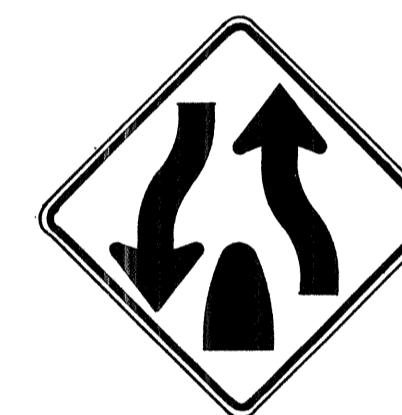
W5-2 30"x30"
W5-2-A 36"x36"



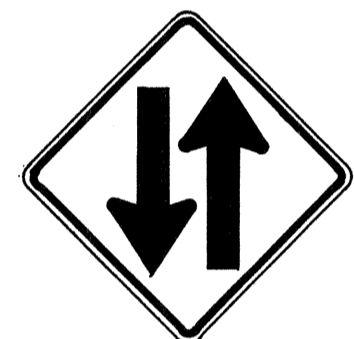
W5-3 36"x36"



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"



USE LOW GEAR
W7-2 24"x18"



BUMP
W8-1 30"x30"
W8-1-A 36"x36"



DIP
W8-2 30"x30"
W8-2-A 36"x36"



PAVEMENT ENDS
W8-3 30"x30"
W8-3-A 36"x36"



SOFT SHOULDER
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"



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



LANE ENDS MERGE LEFT
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"



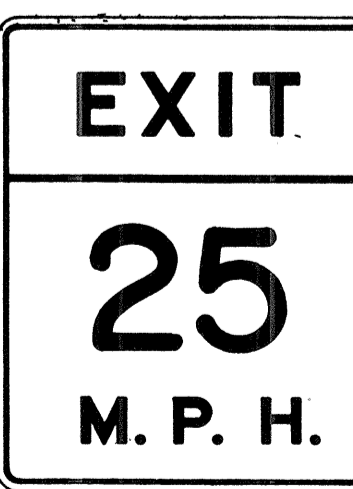
W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"



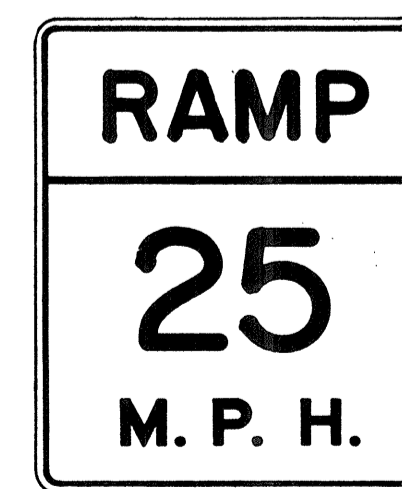
LOW CLEARANCE
W12-2(12'-6") 36"x36"
24"x18"



25 M.P.H.
W13-1(25) 18"x18"
W13-1(25)-A 24"x24"



W13-2(25) 48"x60"



W13-3(25) 48"x60"



W14-1 30"x30"



W14-3 36"x48"x48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All warning signs shall be reflectorized unless otherwise specified.
- All warning signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- Signs prefixed with "CW" on the plans shall indicate orange and black construction signs, and shall be reflectorized.

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

APPROVED:
Hubert Ralsin 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
2	Revised General Note 1	H.T.	10/16/74
3	Revised General Note 5	M.T.	9-16-75
4	Revised General Note 5	H.T.	9-14-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
WARNING SIGNS

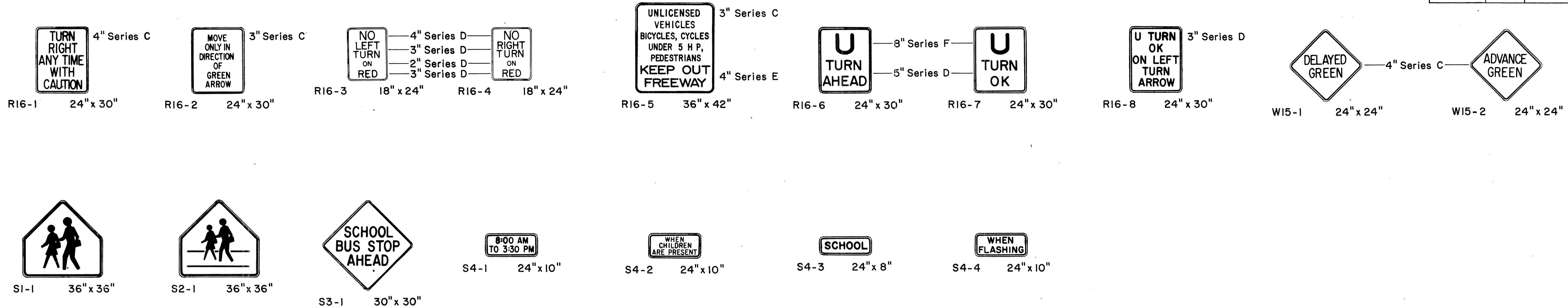
NOT TO SCALE

SHEET No. 311 OF 531 SHEETS DT 102

DESIGNED BY: _____
CHECKED BY: _____
DATE: _____

ORIGINAL PLAN: _____
FRACED BY: _____
NOTE BOOK: _____
QUANTITIES BY: _____
CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[H-11(60):23	1976	152	181



GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All regulatory and warning signs shall be reflectorized unless otherwise specified.
- All regulatory and warning signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

APPROVAL RECOMMENDED:
Eisaku Tanaka 3/17/12
 TRAFFIC ENGINEER DATE
 APPROVED:
Shelton Zatsick 3-20-12
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 103 Approved 12-30-69	N.T.	3/20/12
2	Revised General Note 1	H.T.	10/16/14

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
MISCELLANEOUS
REGULATORY & WARNING SIGNS
 NOT TO SCALE
 SHEET No. 322 OF 531 SHEETS DT 103

ORIGINAL PLAN	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	111-60-23	1976	153	181



CW20-1a 48" x 48"



CW20-2d 48" x 48"



CW20-3b 48" x 48"



CW20-4d 48" x 48"



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



CW20-7c 48" x 48"



CW21-1 30" x 30"



CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



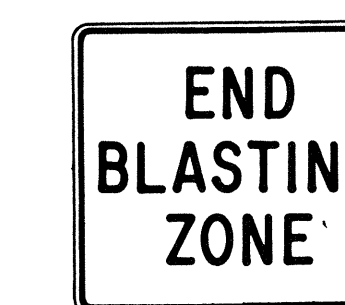
CW21-6 30" x 30"



CW22-1b 48" x 48"



CW22-2 42" x 36"



CW22-3 42" x 36"



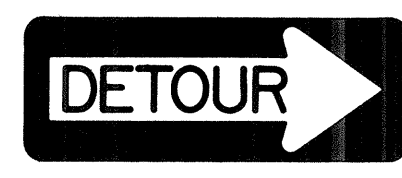
CG20-1(5) 60" x 36"



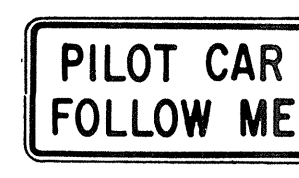
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



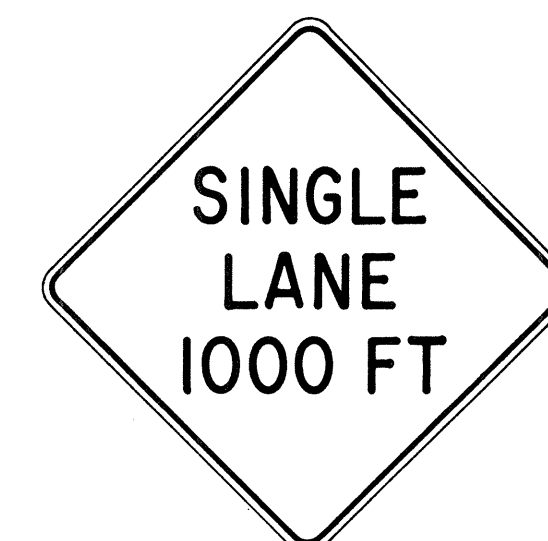
CM4-10(R) 48" x 18"



CG20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All construction signs shall be reflectorized.
- All construction signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- For "CW" series signs, suffixes a,b,c and d are as follows:
a-1500 FT, b-1000 FT, c-500 FT and d-AHEAD.

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

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

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

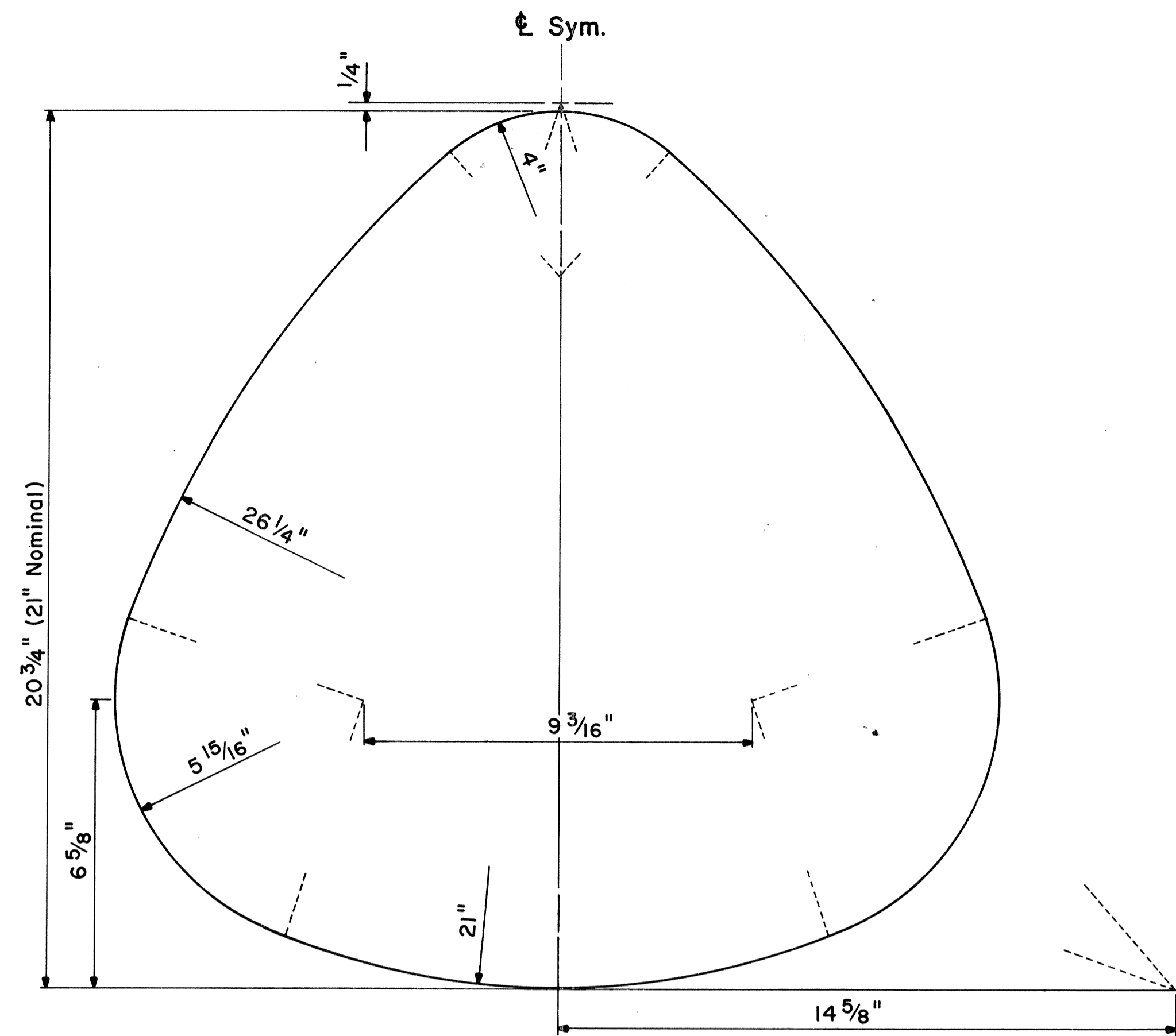
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

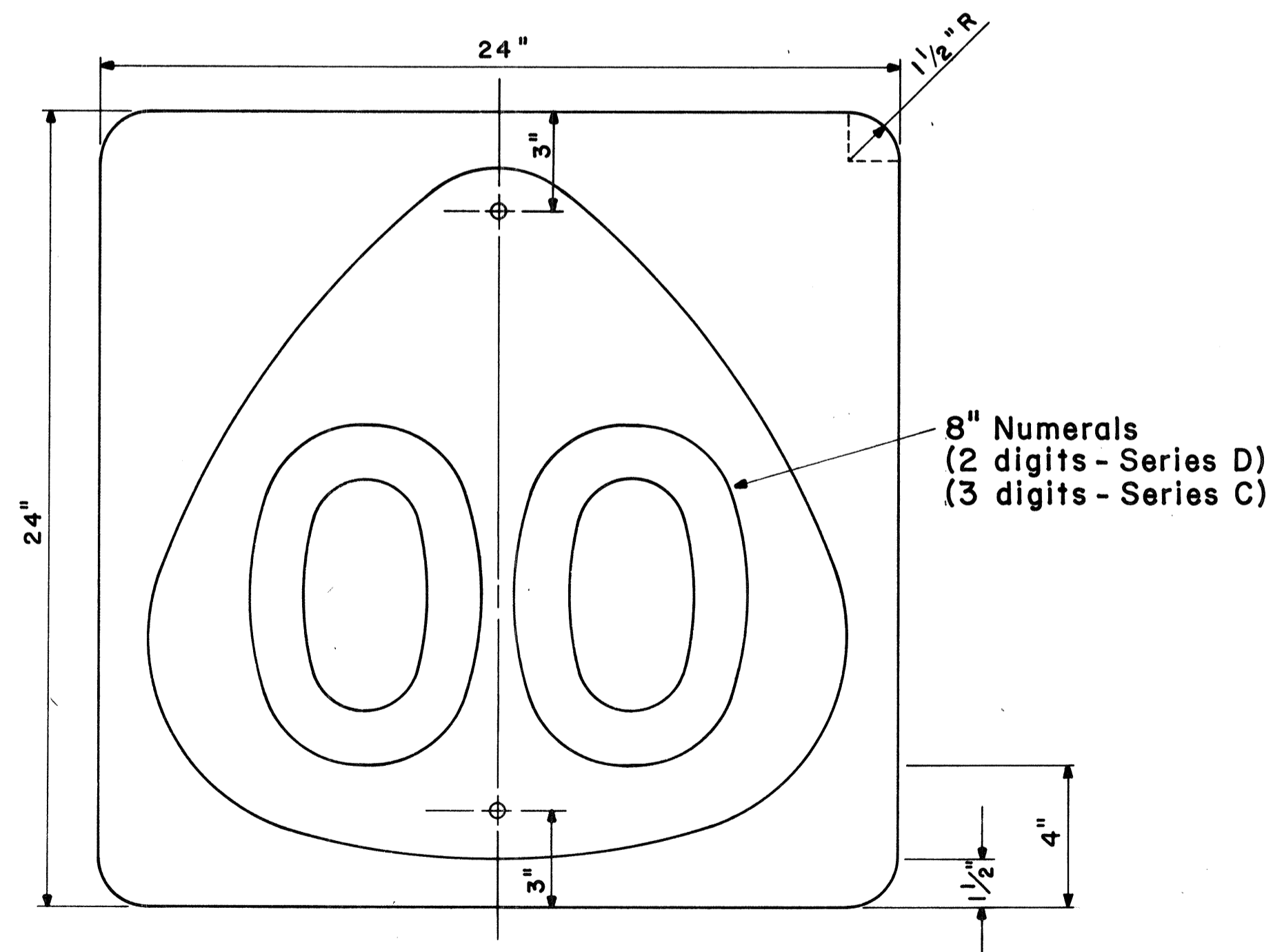
ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NOTED BY	
DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11(60)-23	1976	154	181



STATE ROUTE MARKER DETAIL

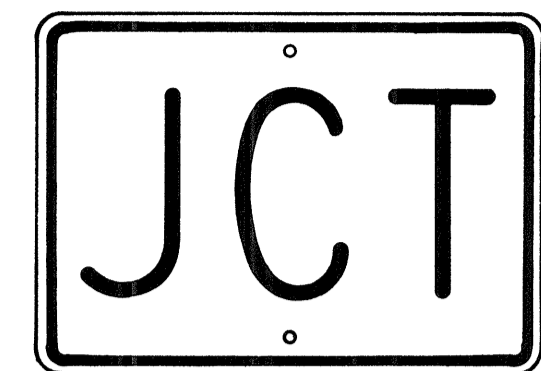
Not to Scale



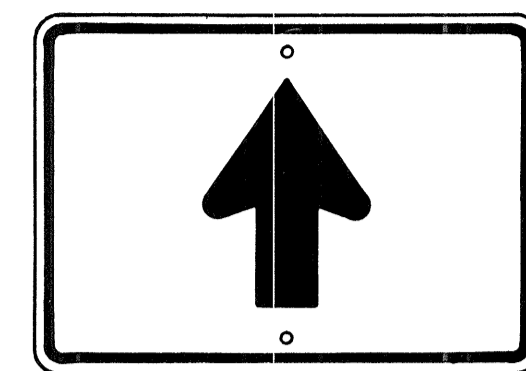
STATE ROUTE MARKER

MI-6 (00) 24" x 24"

Scale: 1/4" = 1"



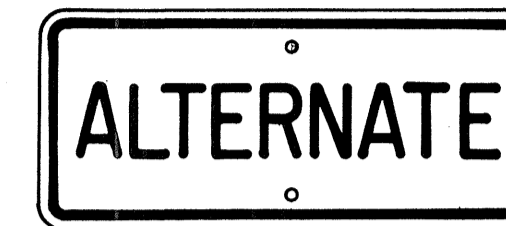
M2-1 21" x 15"



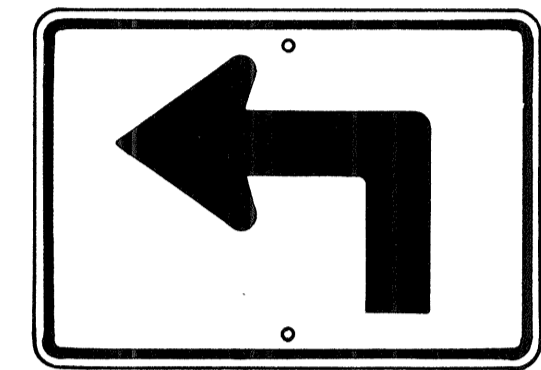
M6-3 21" x 15"



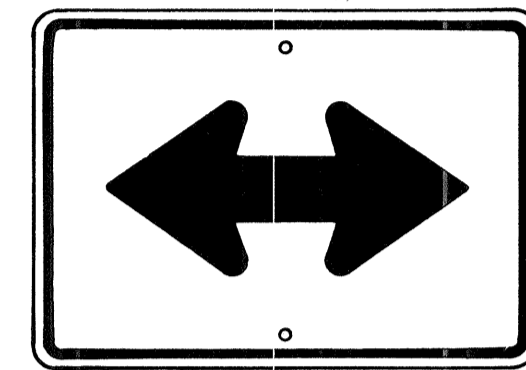
M3-1 24" x 12"
M3-1-A 36" x 18"



M4-1 24" x 12"



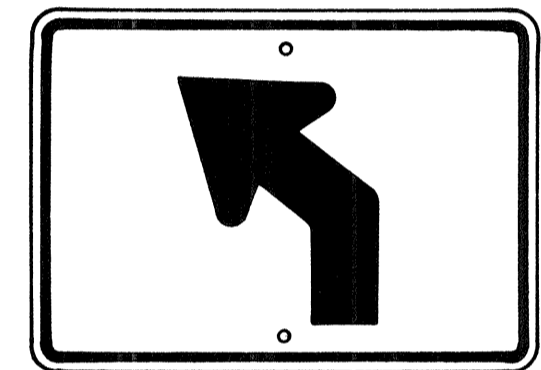
M5-1(L) 21" x 15"



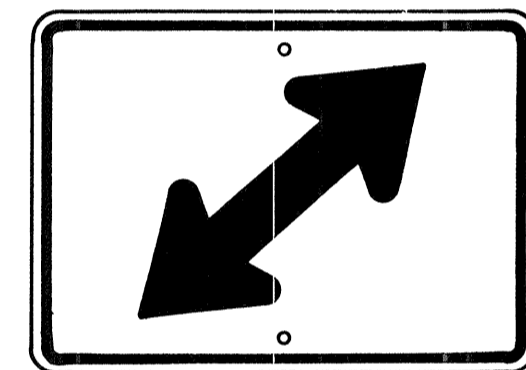
M6-4 21" x 15"



M4-2 24" x 12"



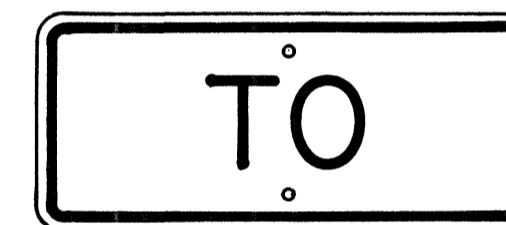
M5-2(L) 21" x 15"



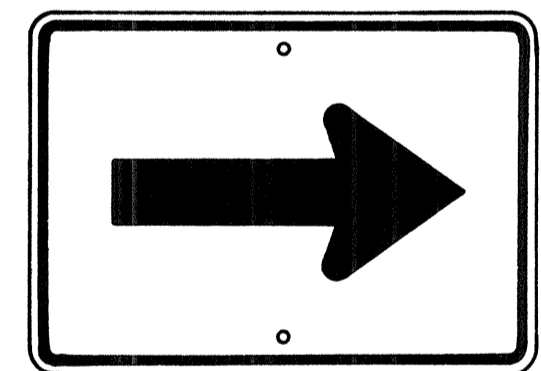
M6-5(R) 21" x 15"



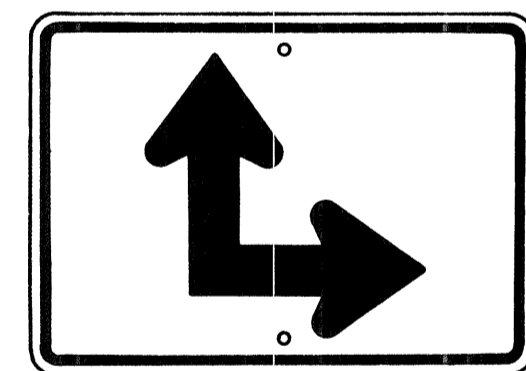
M4-3 24" x 12"



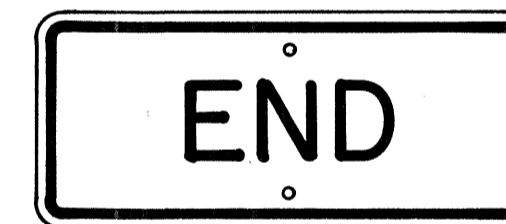
M4-5 24" x 12"



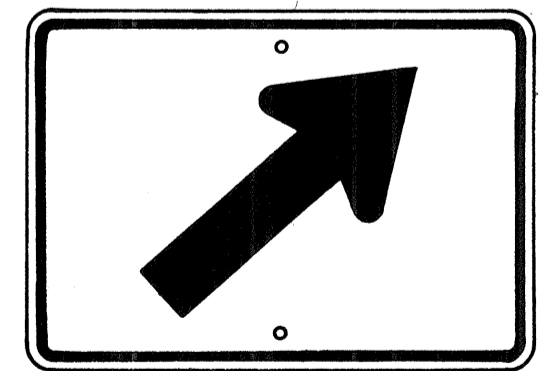
M6-1 21" x 15"



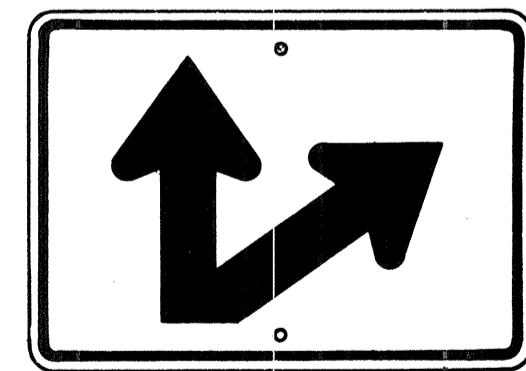
M6-6(R) 21" x 15"



M4-6 24" x 12"



M6-2(R) 21" x 15"



M6-7(R) 21" x 15"



M4-7 24" x 12"



M4-8 24" x 12"

AUXILIARY MARKERS

Not to Scale

GENERAL NOTES

- Marker details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, "Standard Alphabets for Highway Signs," 1966, and "Standard Highway Signs," 1972, and as amended.
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for marker message. (R) or (L) indicates right or left.
- Sign message of Cardinal Direction Marker (M3 series) shall be denoted by the following:
 - M3-1 : NORTH
 - M3-2 : EAST
 - M3-3 : SOUTH
 - M3-4 : WEST
- Markers prefixed with "IM" on the plans shall have a white legend on a blue background.

APPROVAL RECOMMENDED:
Eishi Tanaka 6/6/72
 TRAFFIC ENGINEER DATE

APPROVED:
Abdul S. Saleh 6-7-72
 ASSISTANT CHIEF, ENGINEERING DATE

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

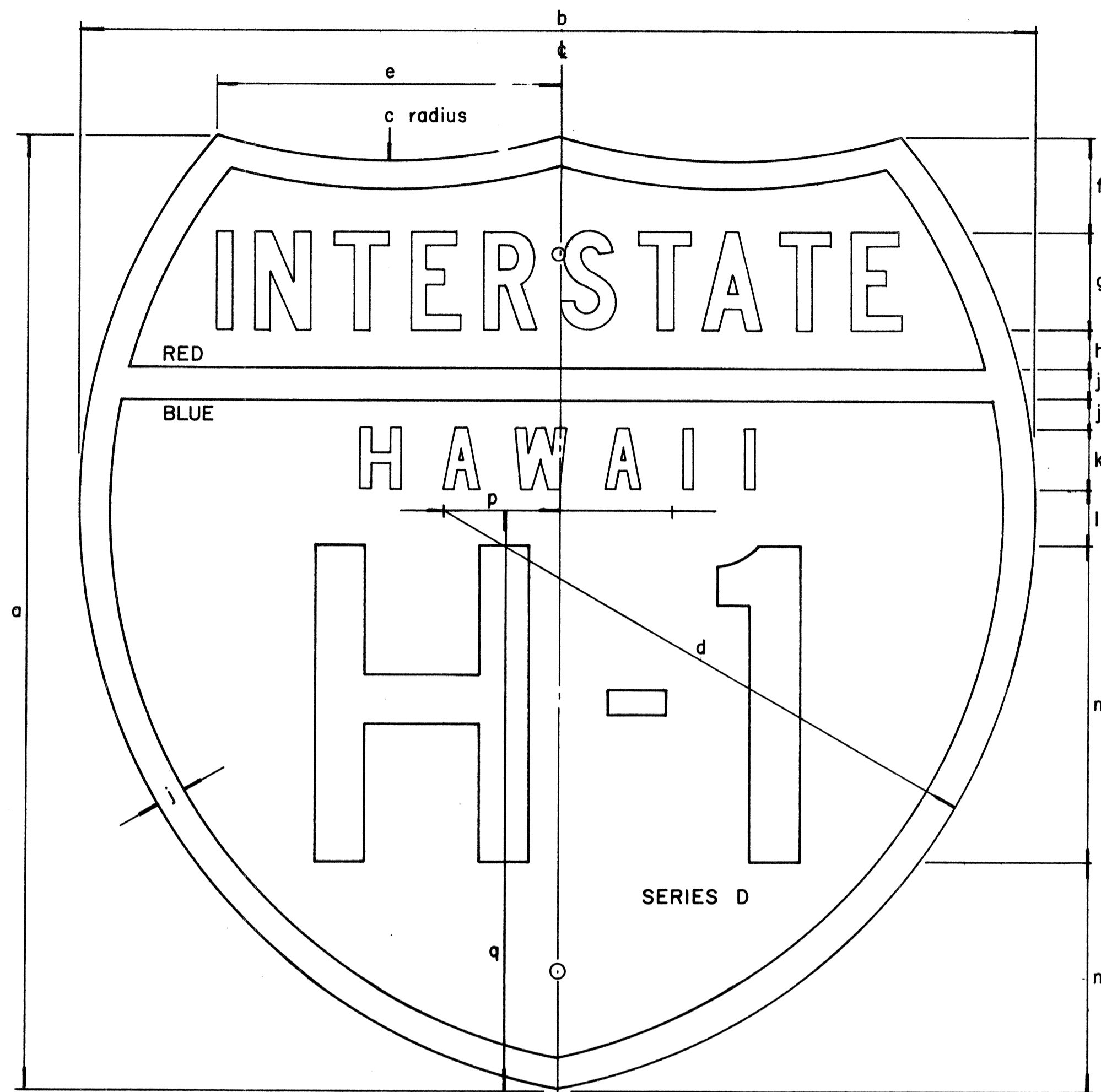
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
STATE ROUTE MARKER
AND AUXILIARY MARKERS

Scale: As Shown
 SHEET NO. 154 OF 181 SHEETS DT 105

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

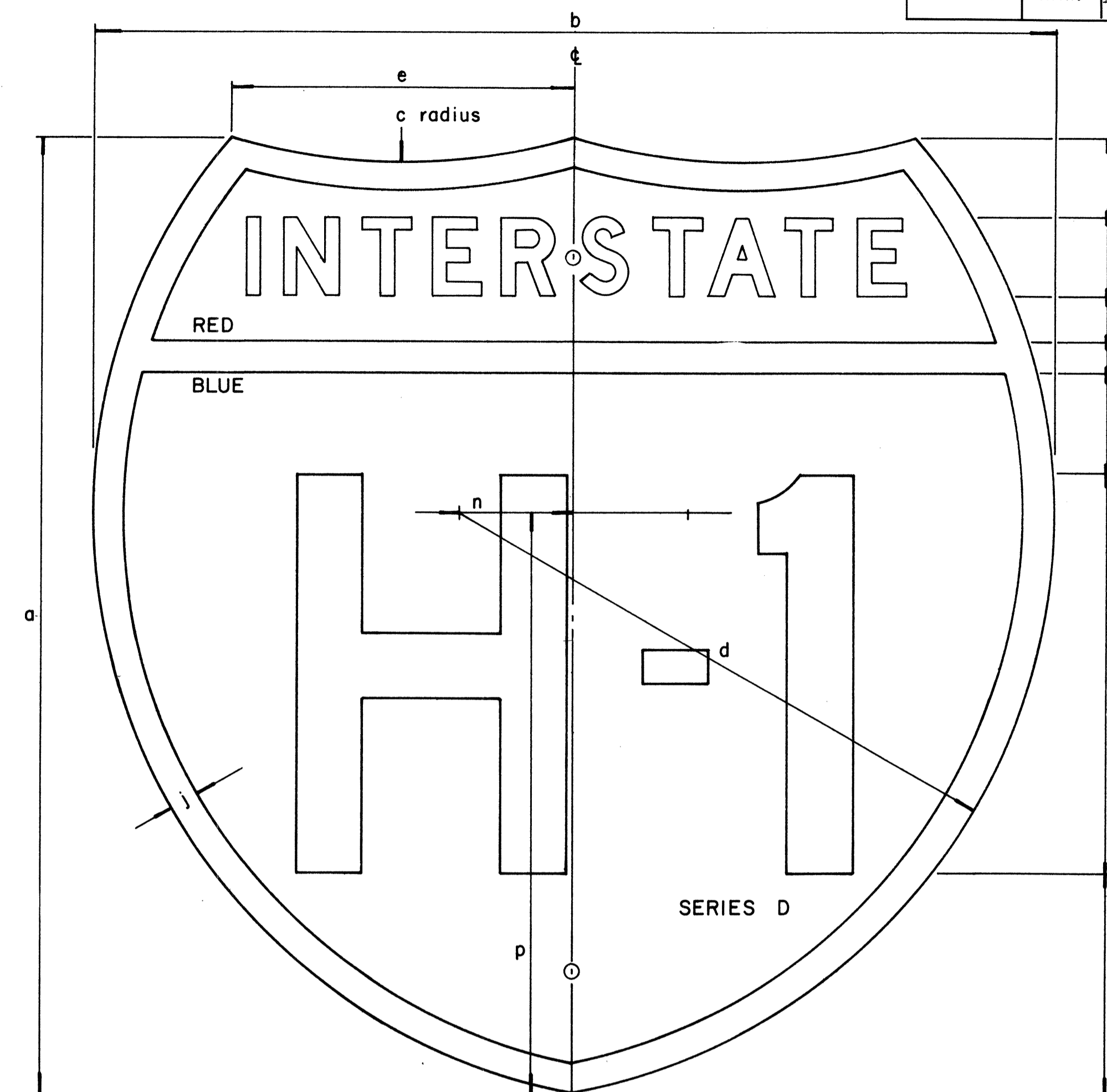
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH(60)23	1976	155	181



INTERSTATE ROUTE MARKER
IM-1()

INTERSTATE SHIELDS - INDEPENDENT USE

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



INTERSTATE ROUTE MARKER
IM-2()

INTERSTATE SHIELDS ON GUIDE SIGNS

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

GENERAL NOTES

1. Marker details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, "Standard Alphabets for Highway Signs," 1966, and "Standard Highway Signs," 1972, and as amended.
2. All markers shall be reflectorized unless otherwise specified.
3. All markers shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.
4. The interstate Route Marker shall be a cut-out shield, in a red, white and blue design as shown on the plans.

APPROVAL RECOMMENDED:

Euichi Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

APPROVED:

John P. ...
ASSISTANT CHIEF, ENGINEERING

12-29-69
DATE

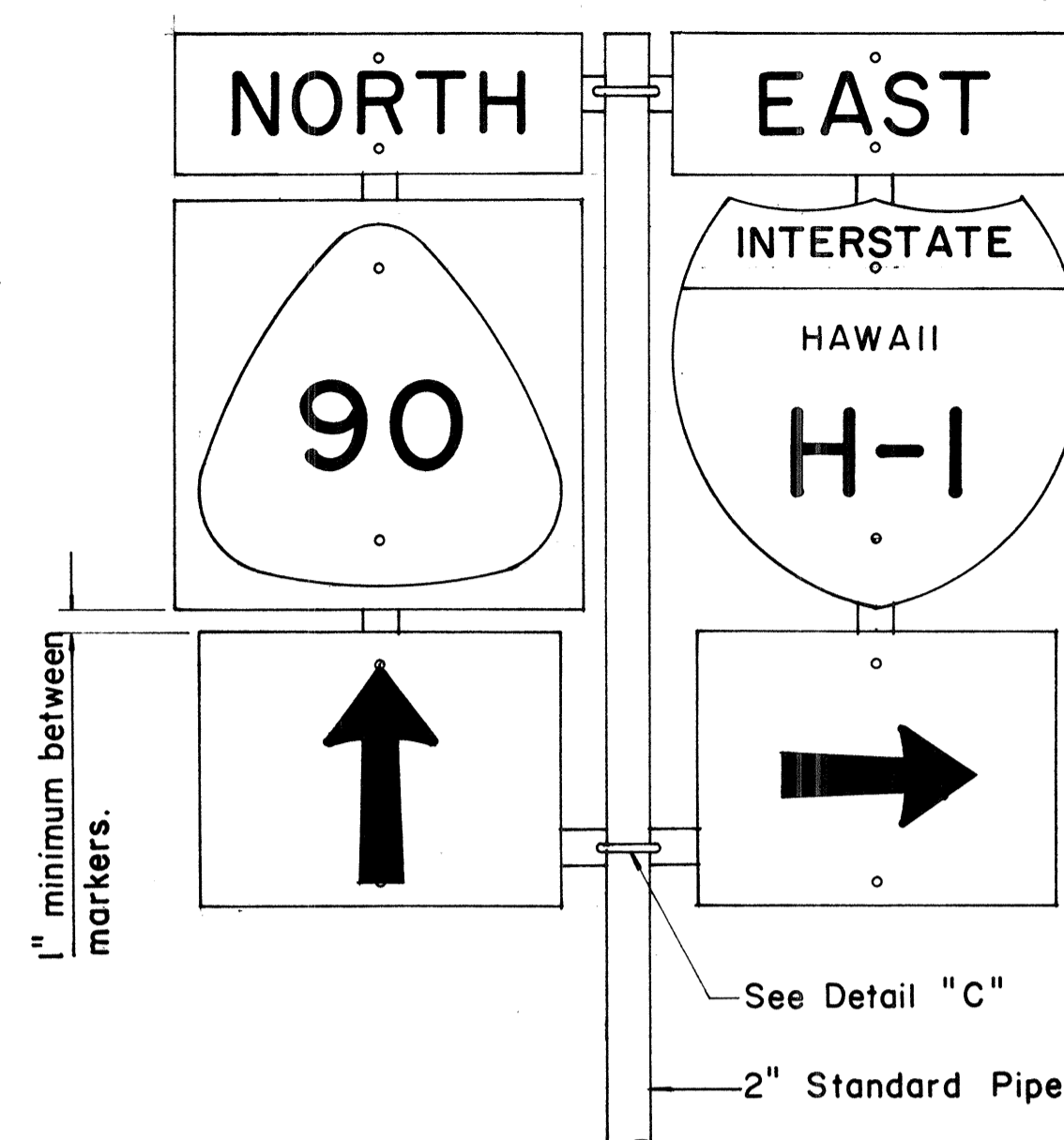
NO.	REVISION	APPROVED BY	DATE
1	Revised General Notes	HK	10/16/74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
INTERSTATE ROUTE MARKERS

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

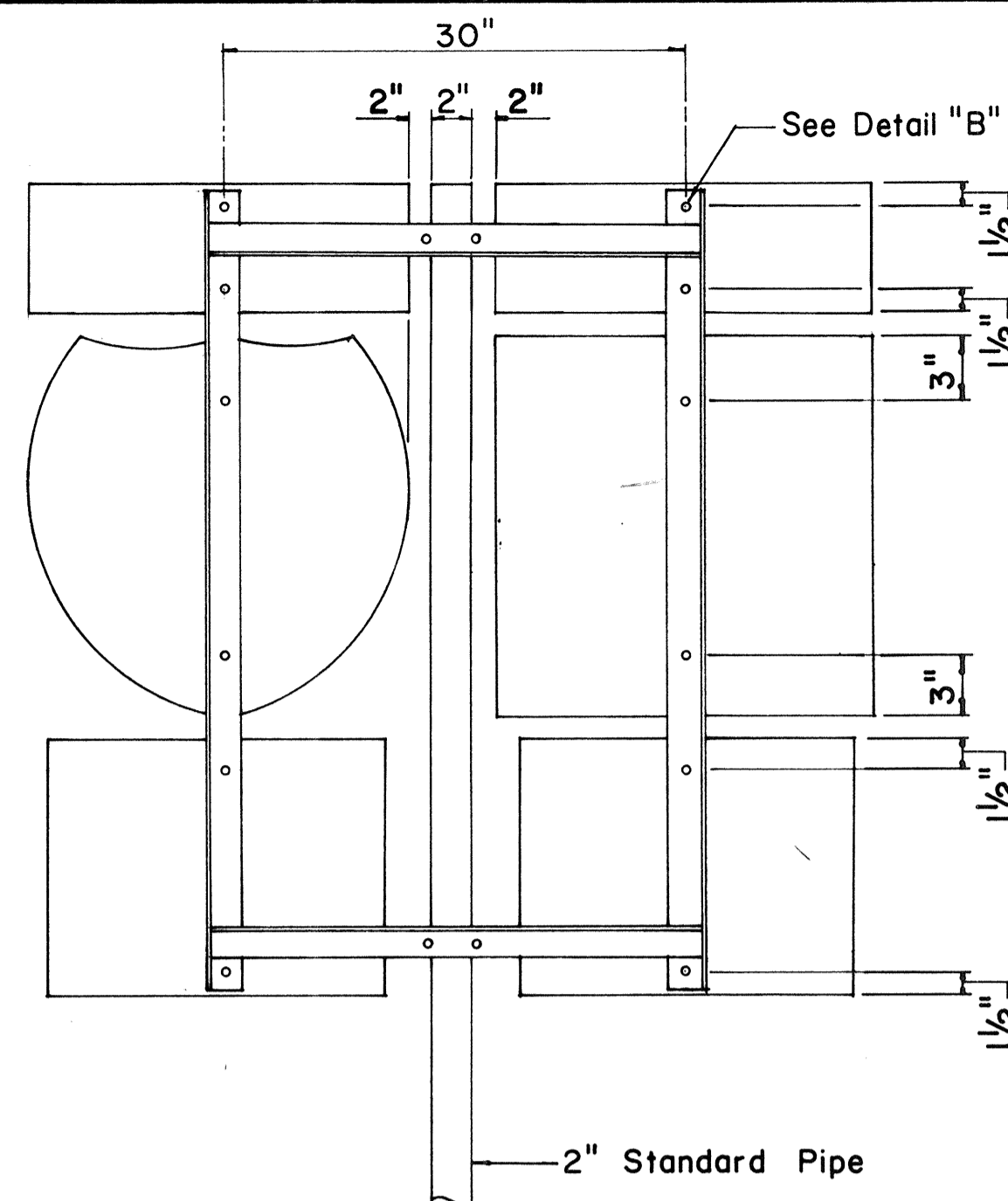
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-60:23	1976	156	181



FRONT ELEVATION

TYPE "B" ASSEMBLY

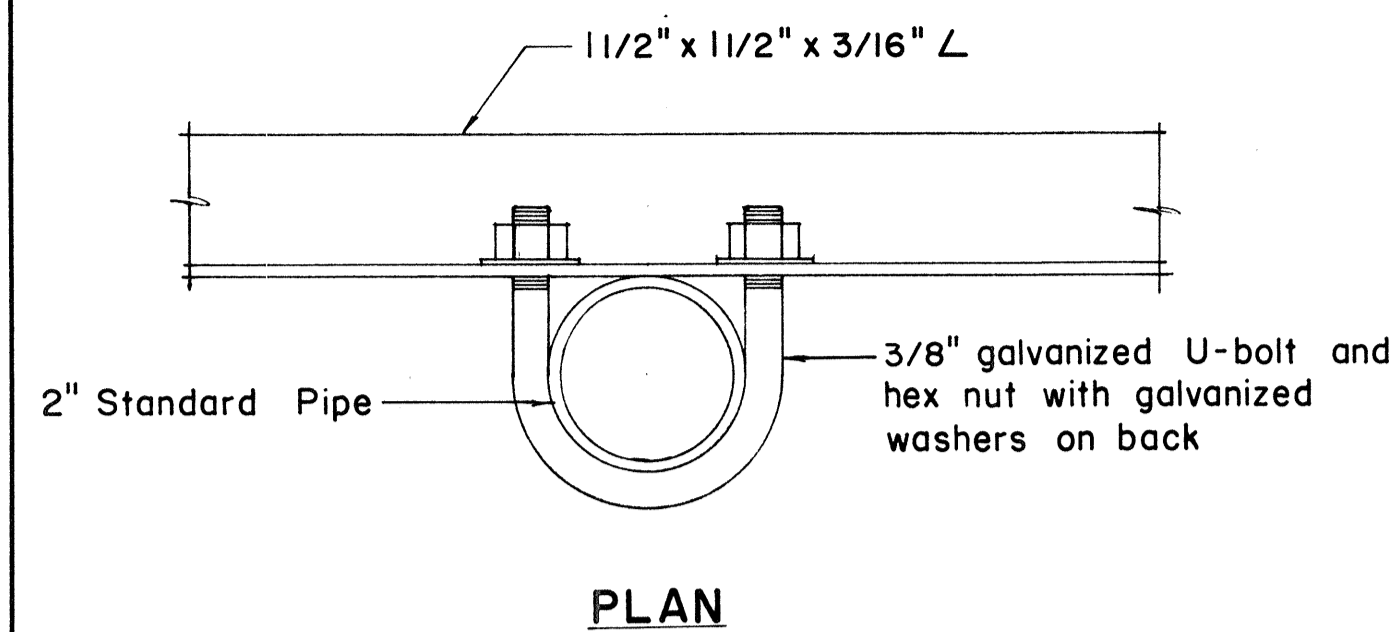
Not to Scale



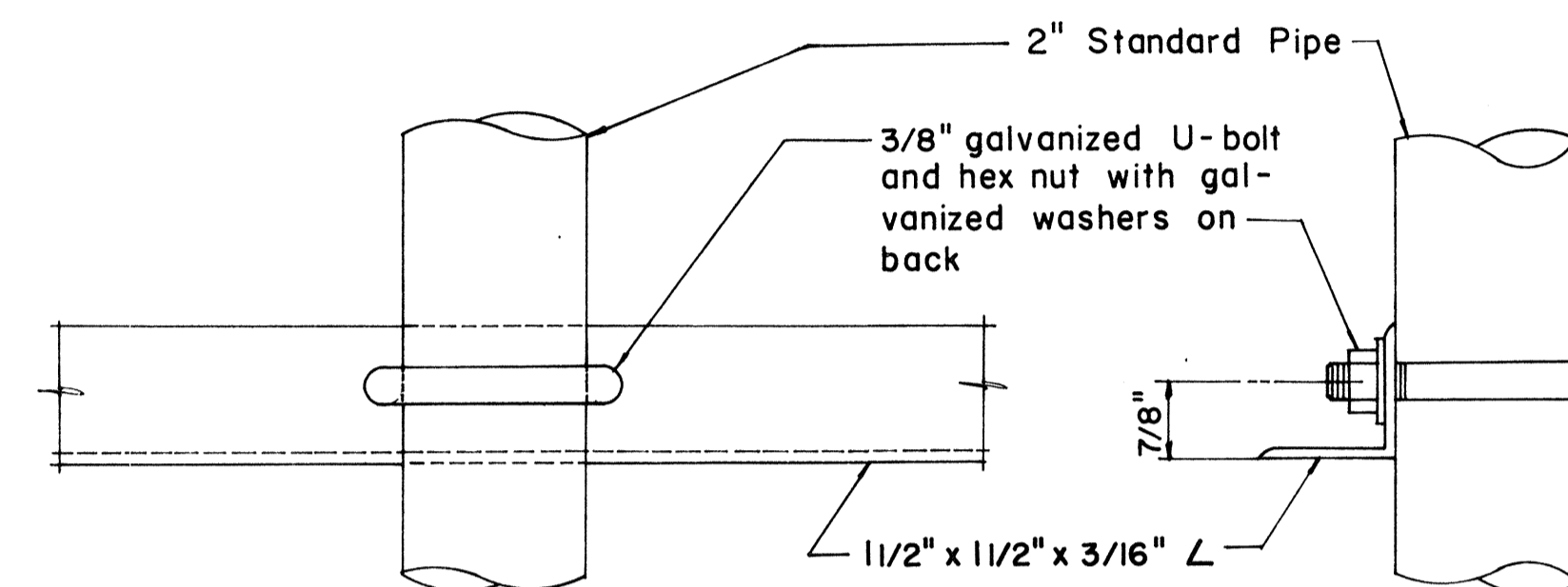
REAR ELEVATION

NOTE:

1. Minimum clearance between markers shall be one inch. (Larger clearances shall be in multiples of one inch.)
2. Pipe post for Type "A" & Type "B" Assembly shall be 2" Standard Pipe.



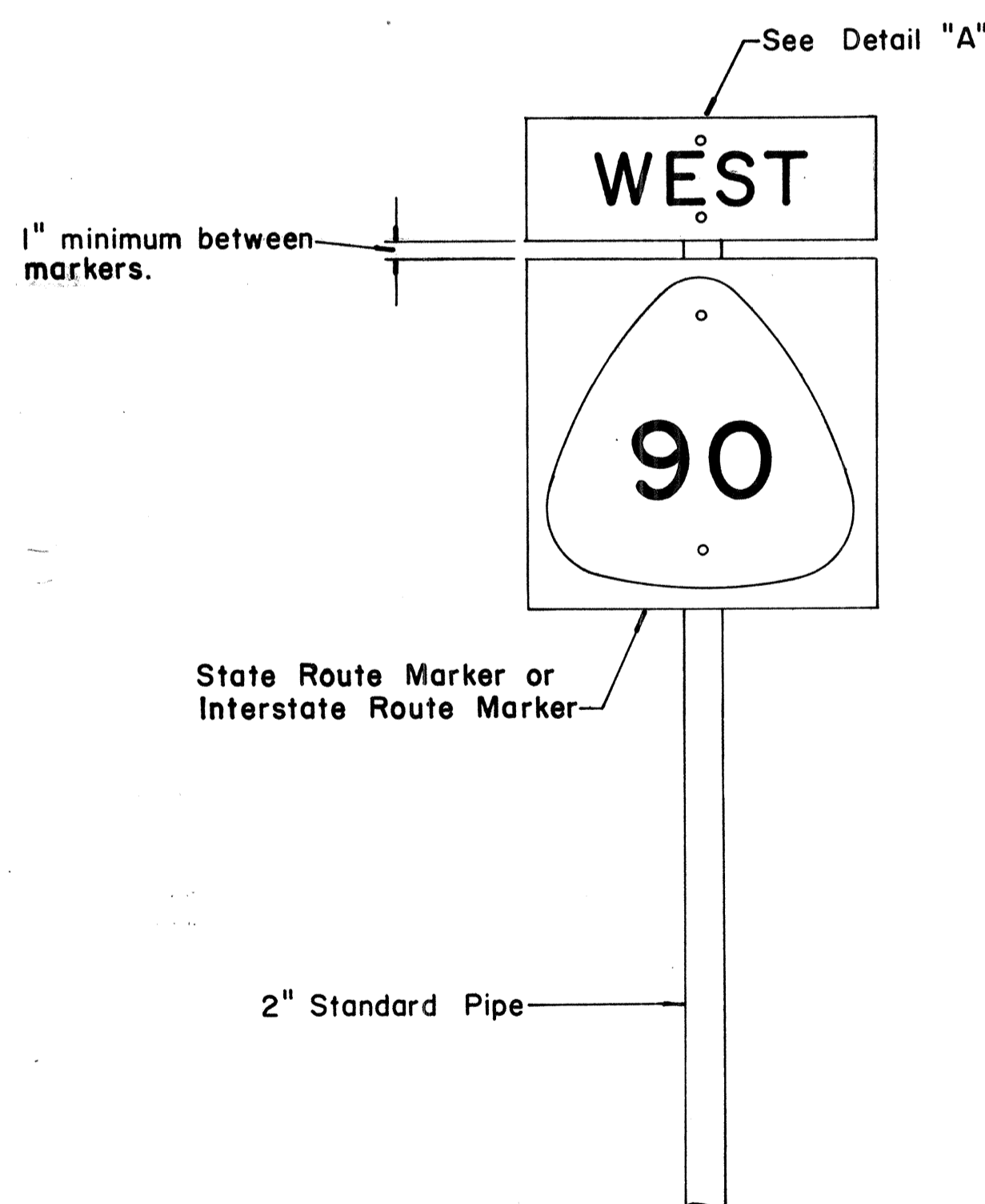
PLAN



FRONT ELEVATION

SIDE ELEVATION

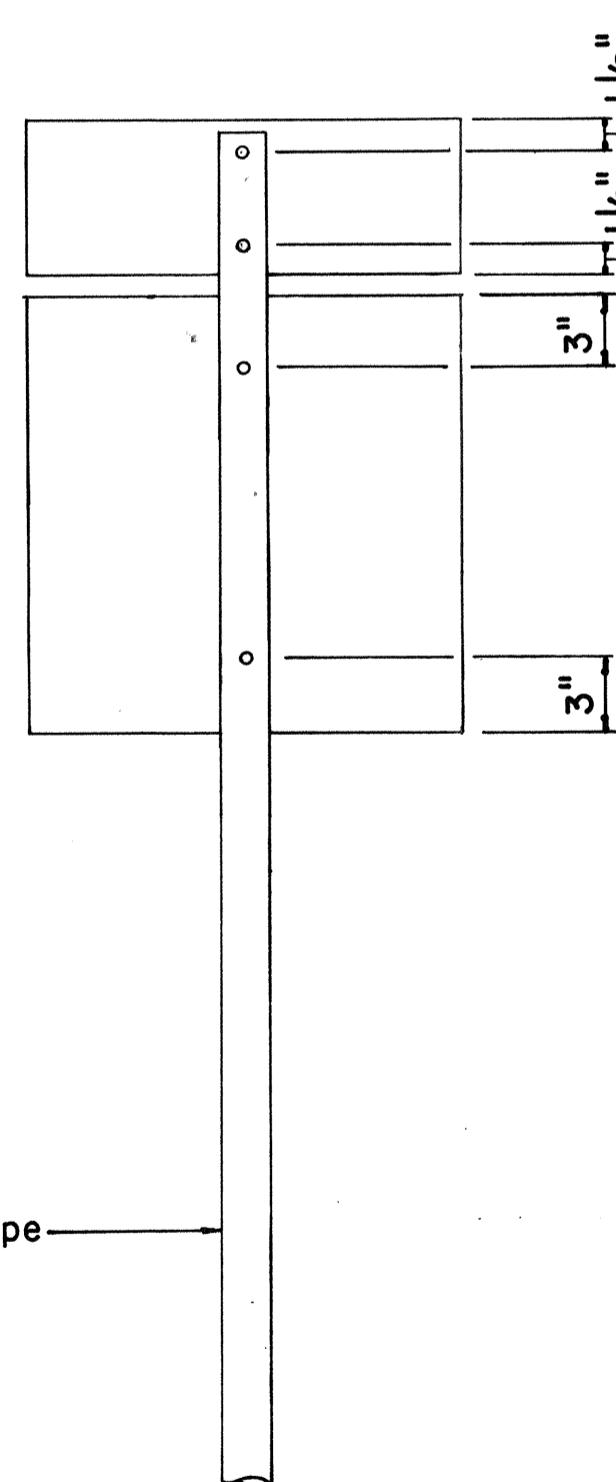
DETAIL "C"



FRONT ELEVATION

TYPE "A" ASSEMBLY

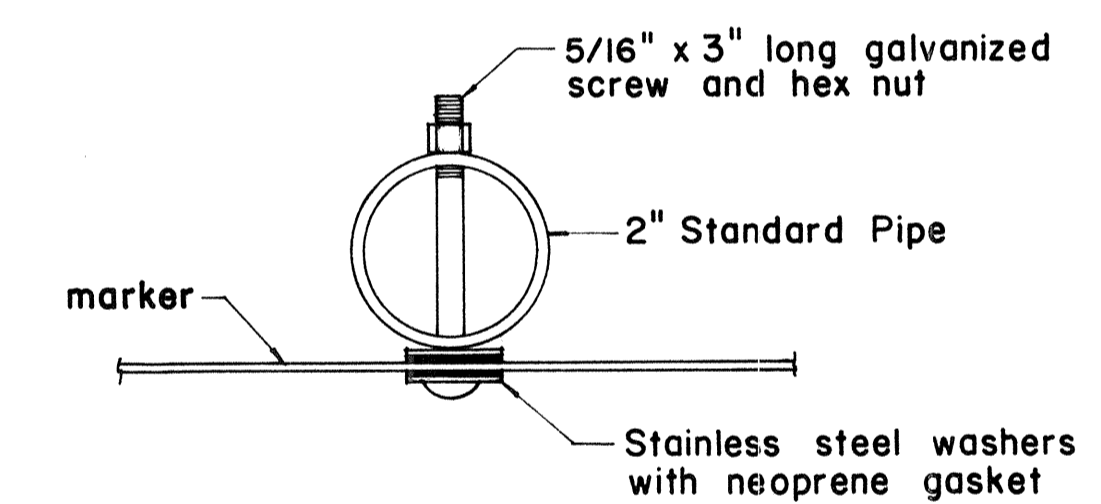
Not to Scale



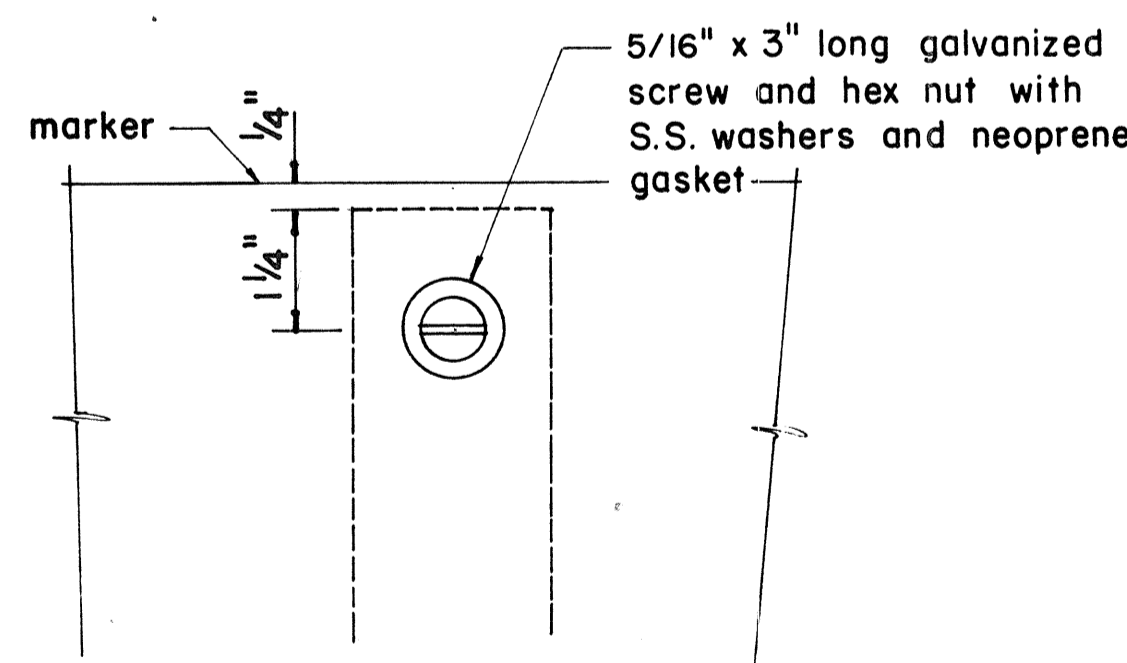
REAR ELEVATION

NOTE:

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

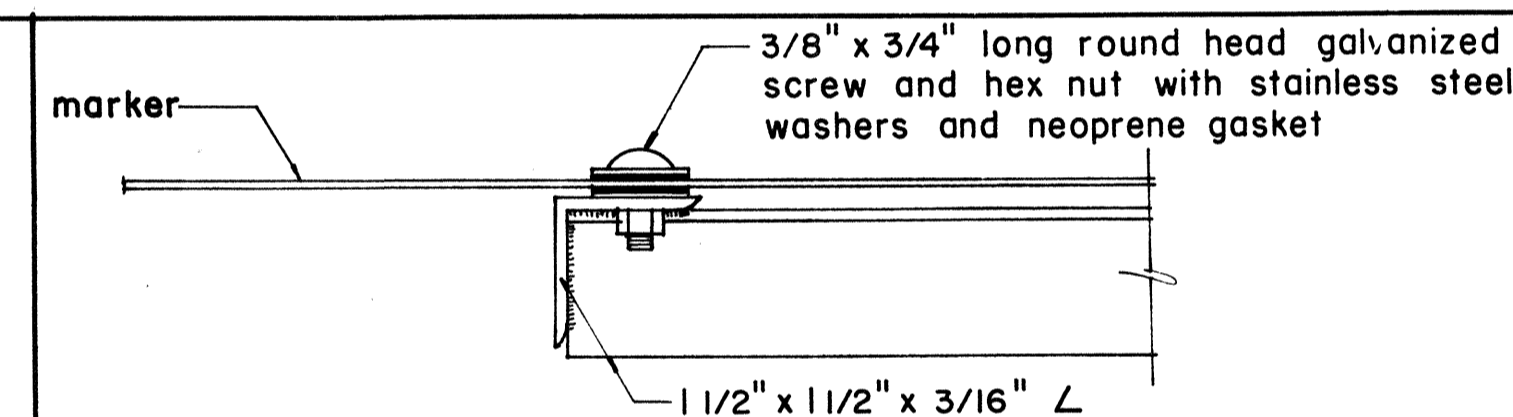


PLAN

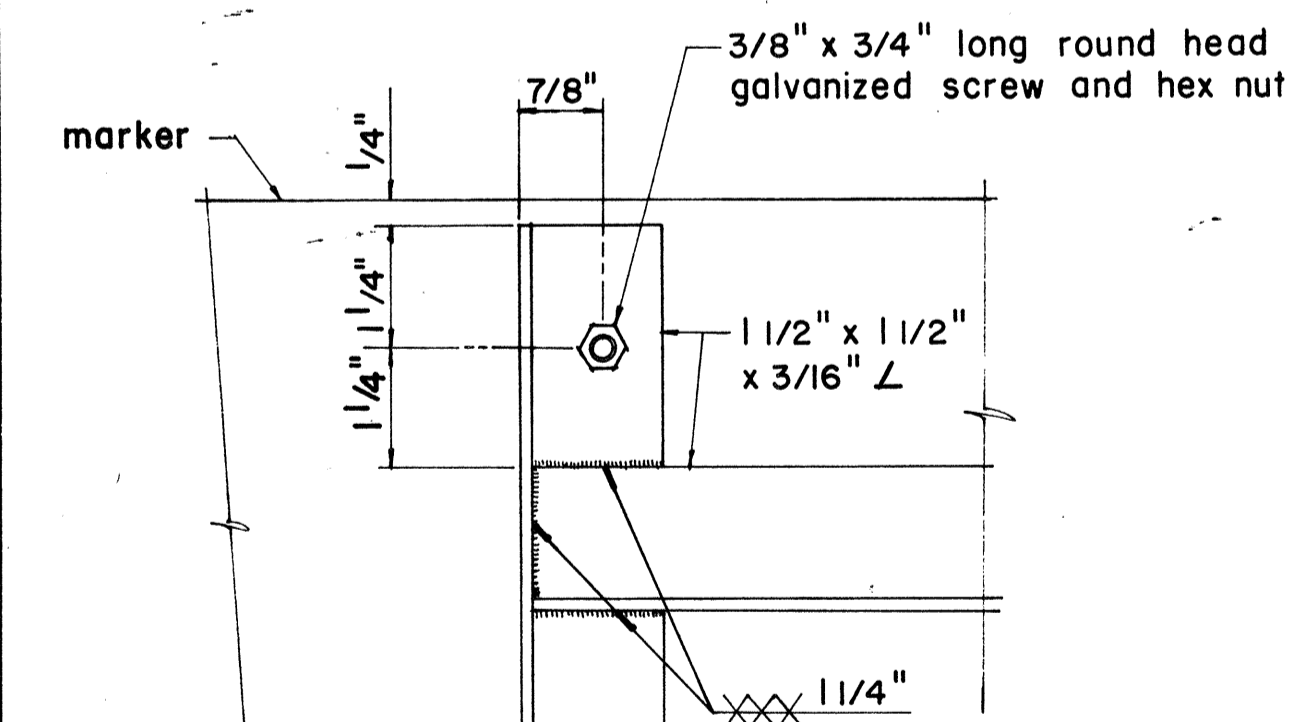


FRONT ELEVATION

DETAIL "A"

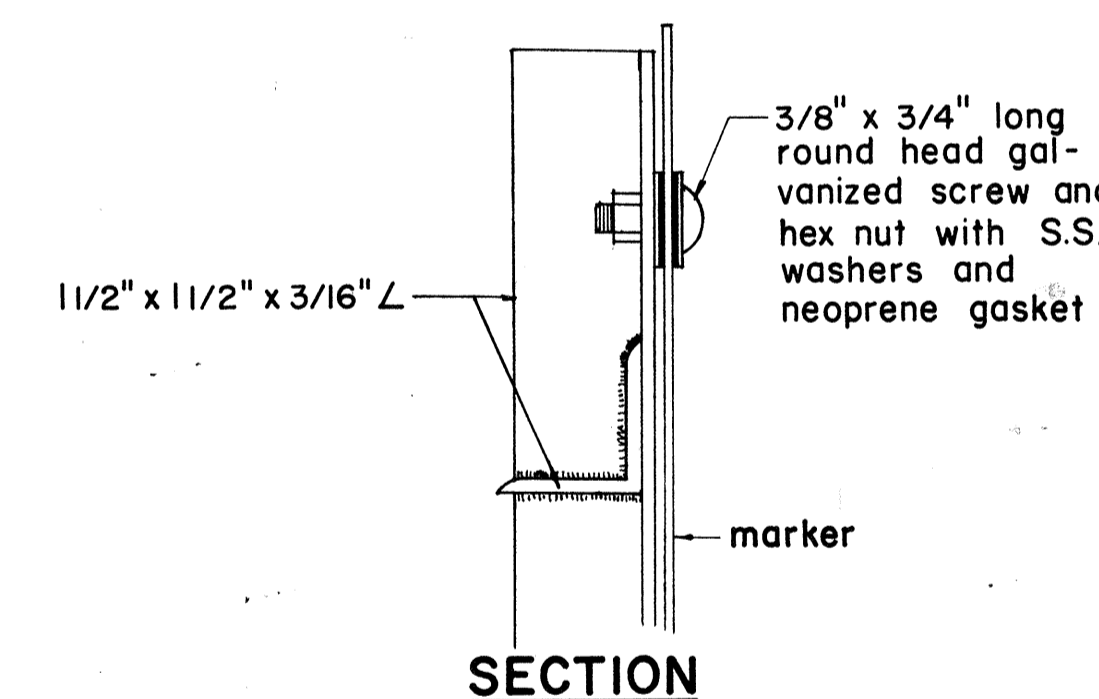


PLAN



ELEVATION

DETAIL "B"



SECTION

APPROVAL RECOMMENDED:
Eichi Tanaka
 TRAFFIC ENGINEER

12/23/69
 DATE

APPROVED:
John J. [Signature]
 ASSISTANT CHIEF, ENGINEERING

12-30-69
 DATE

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**STANDARD DETAILS
 ROUTE MARKER ASSEMBLIES**

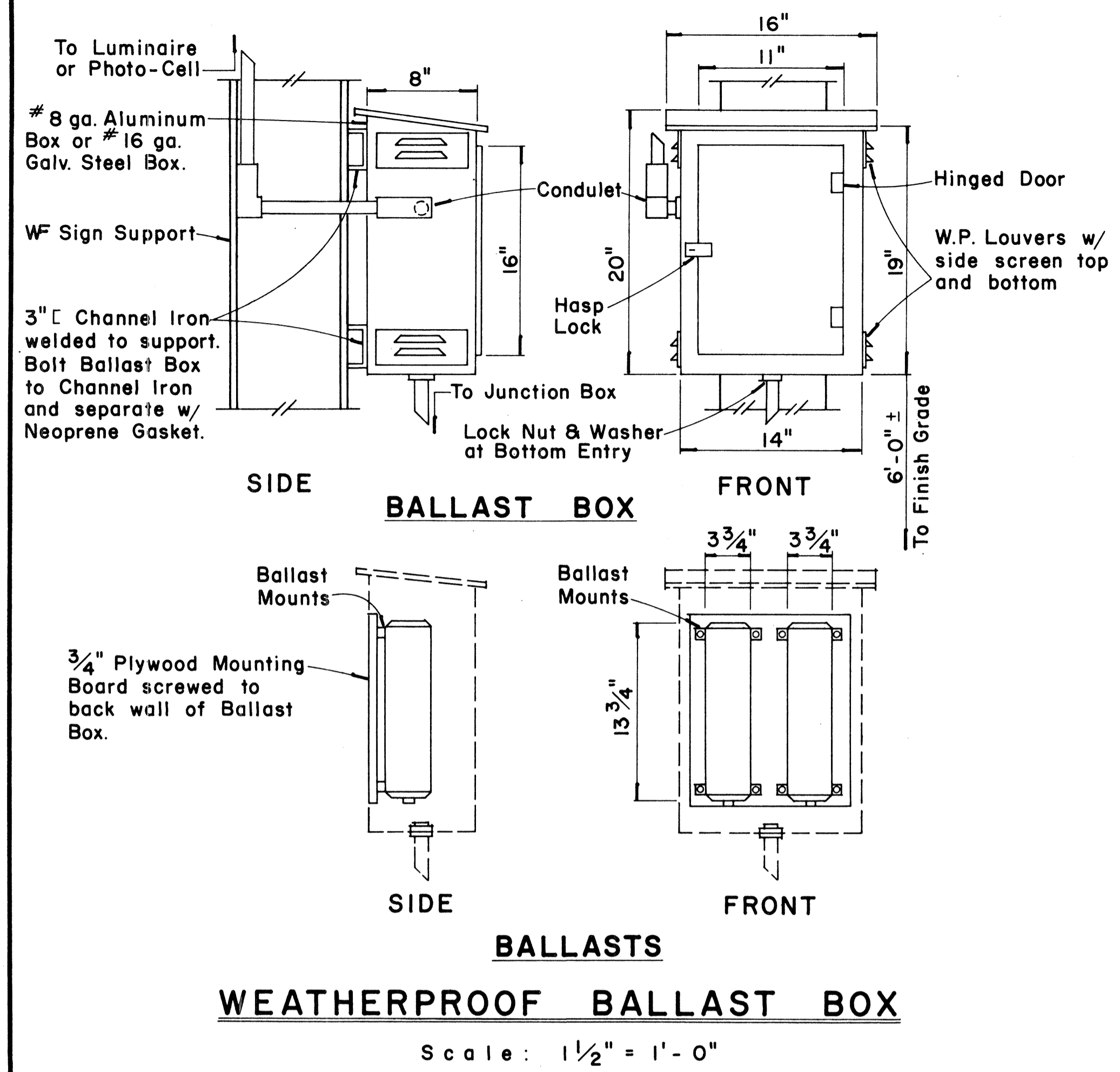
Scale: As Shown

SHEET No. 36 OF 53 SHEETS DT 107

DATE	
DESIGNED BY	
CHECKED BY	
NO.	

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

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



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(60)-23	1976	157	181

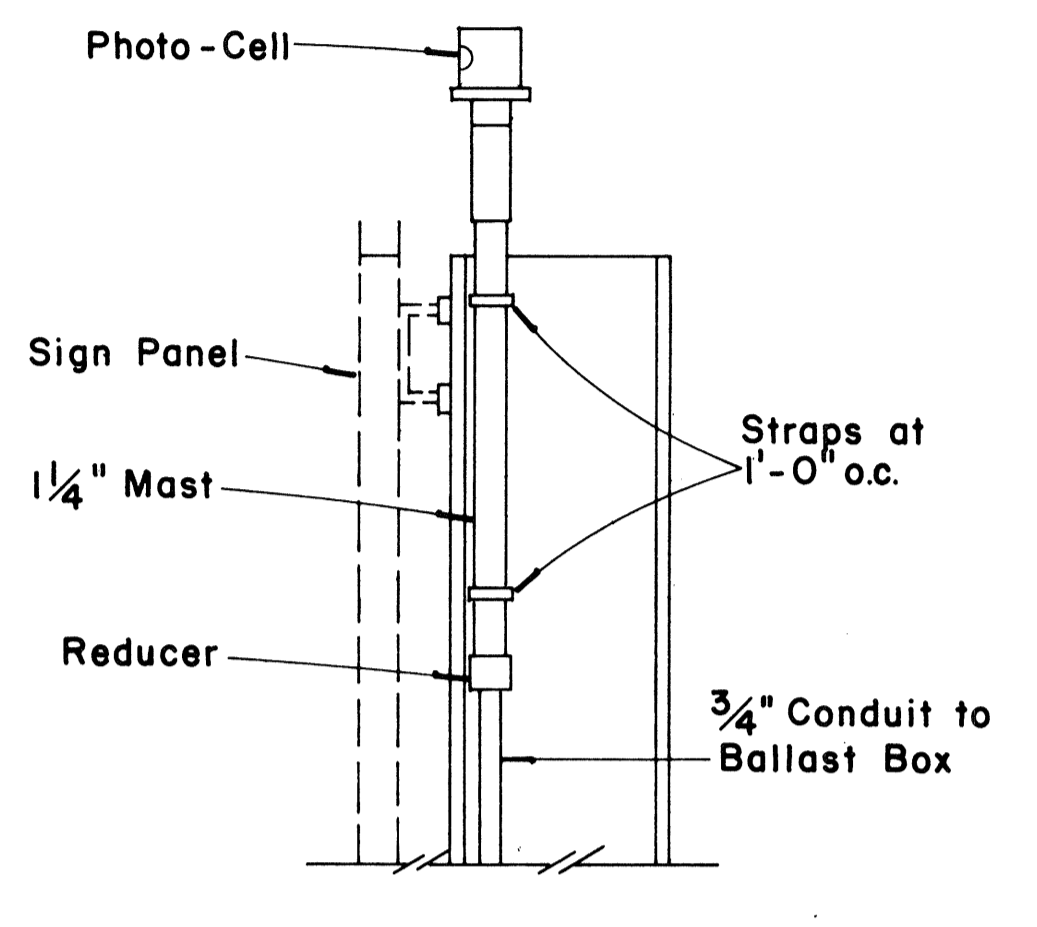
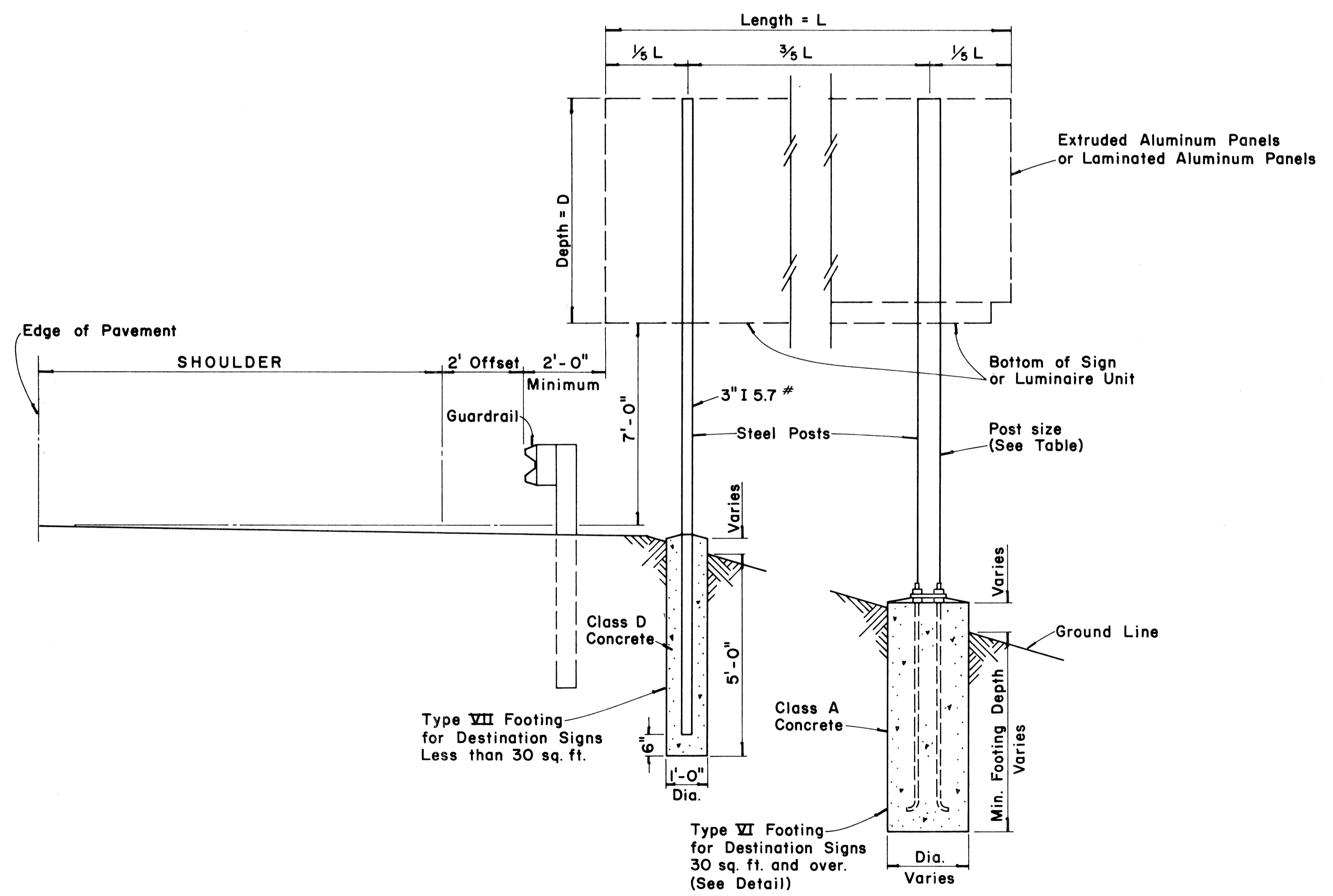
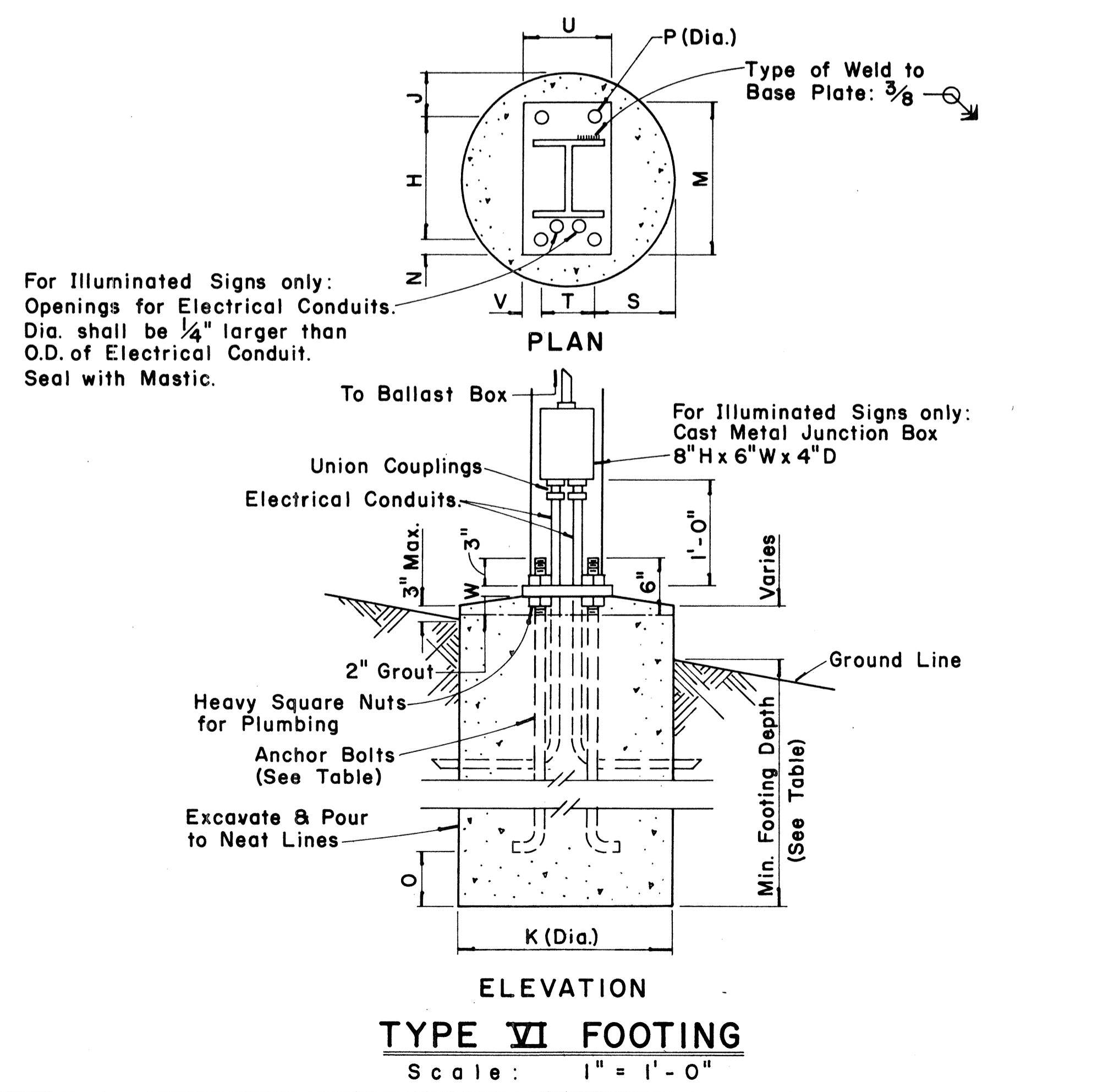


PHOTO-CELL DETAIL
 Scale: 1/2" = 1'-0"



TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN
 Not to Scale



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

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

APPROVED:
John P. ... 12-29-69
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

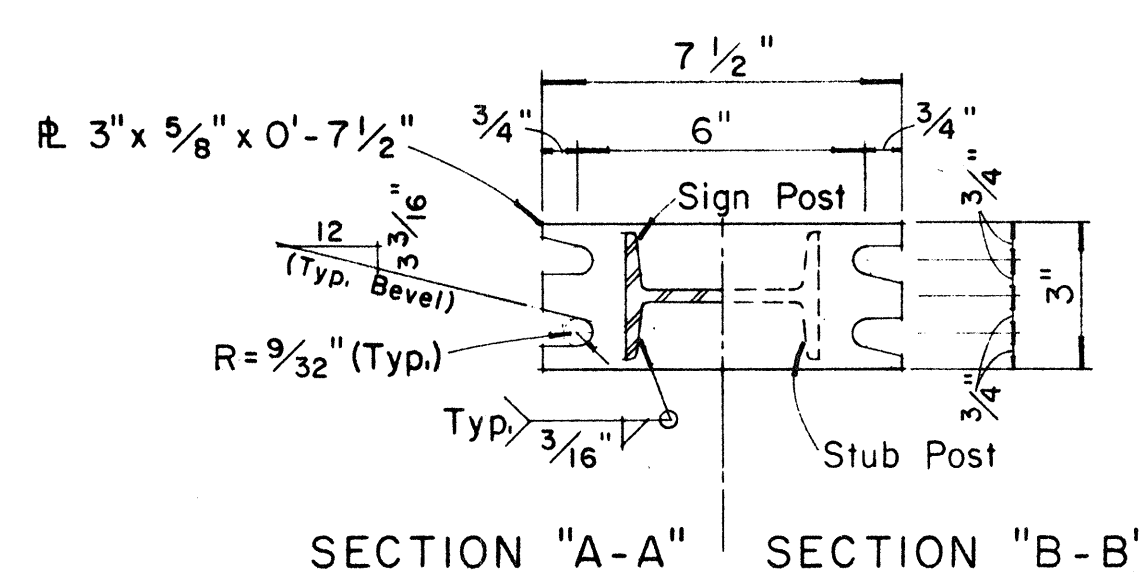
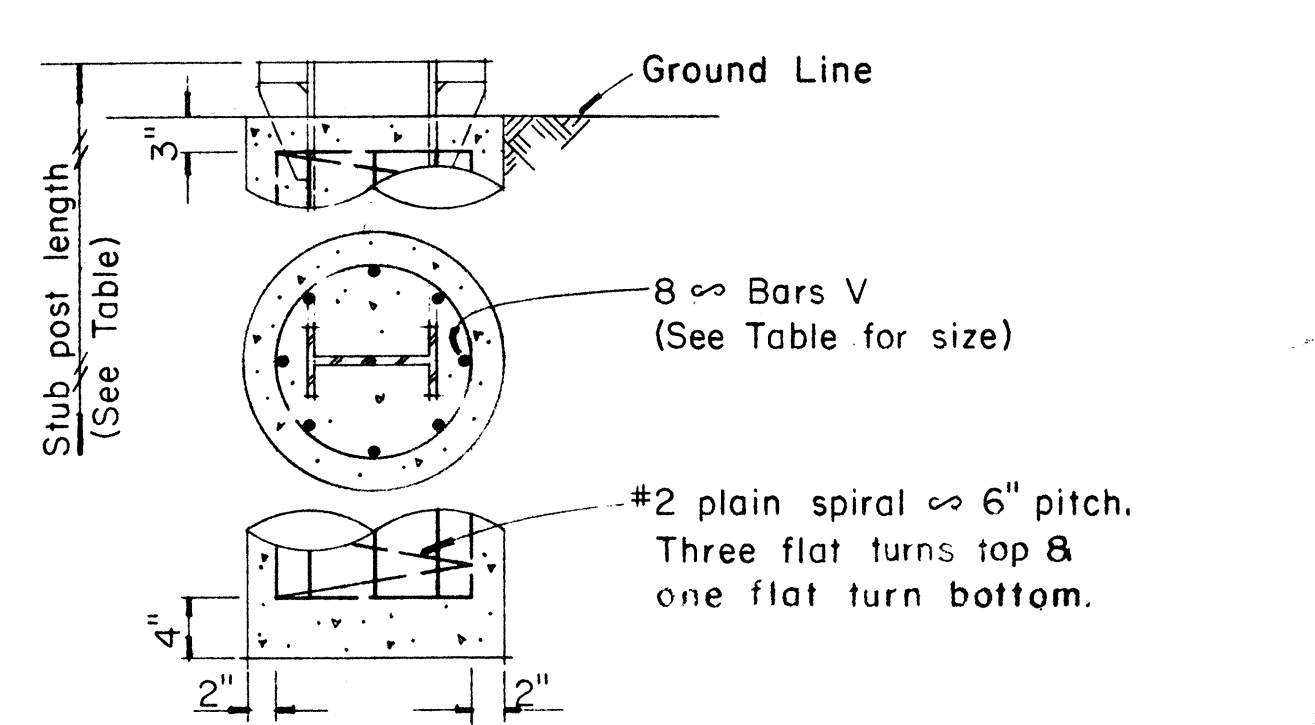
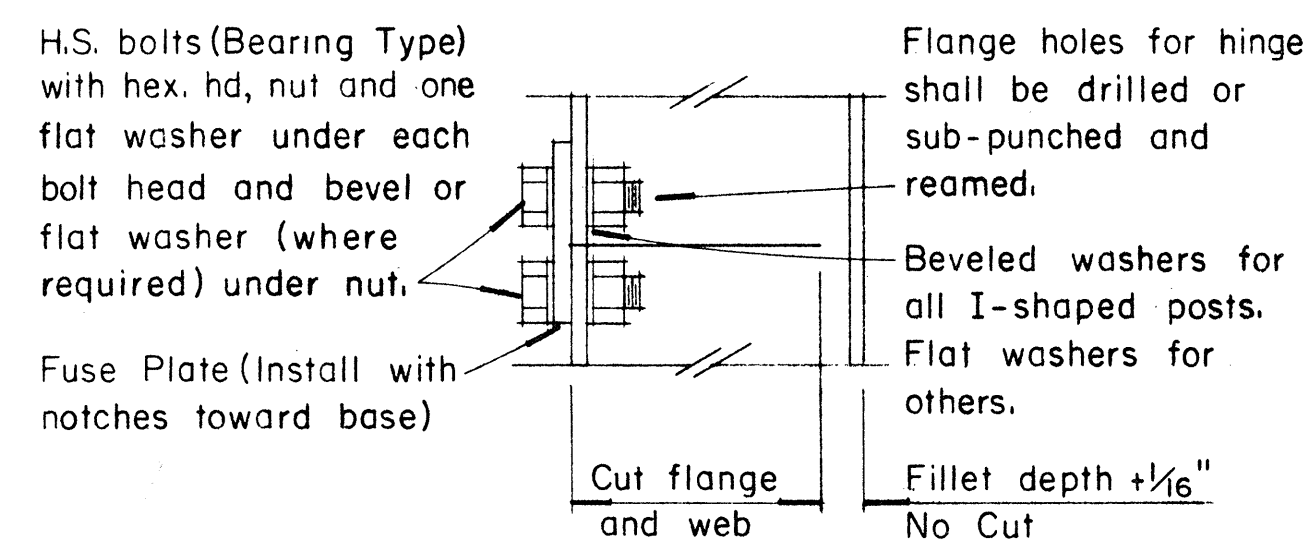
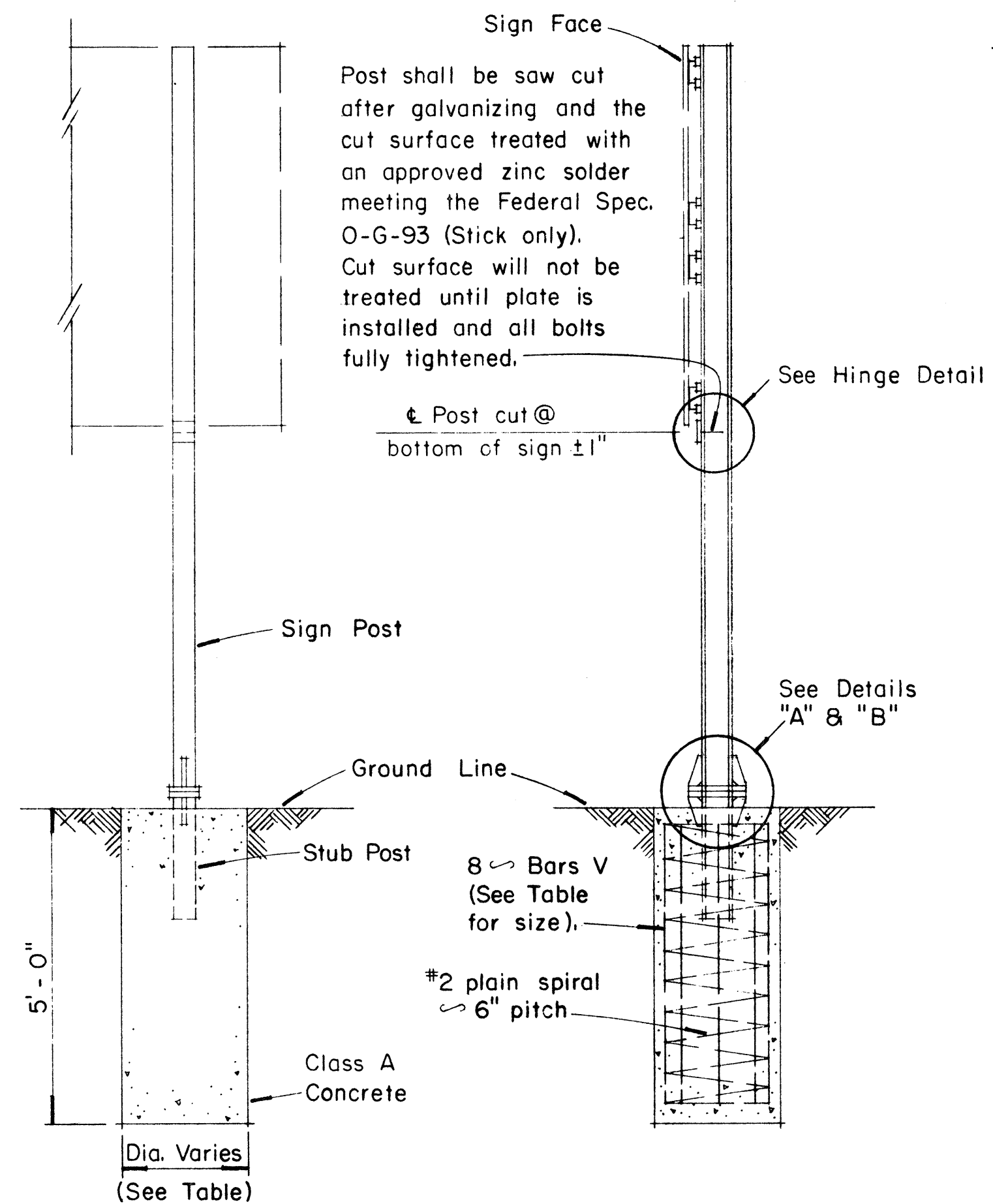
STANDARD DETAILS
DESTINATION & GROUND MOUNTED
EXPRESSWAY SIGNS

Scale: As Shown
 SHEET No. 37T OF 58T SHEETS DT 203

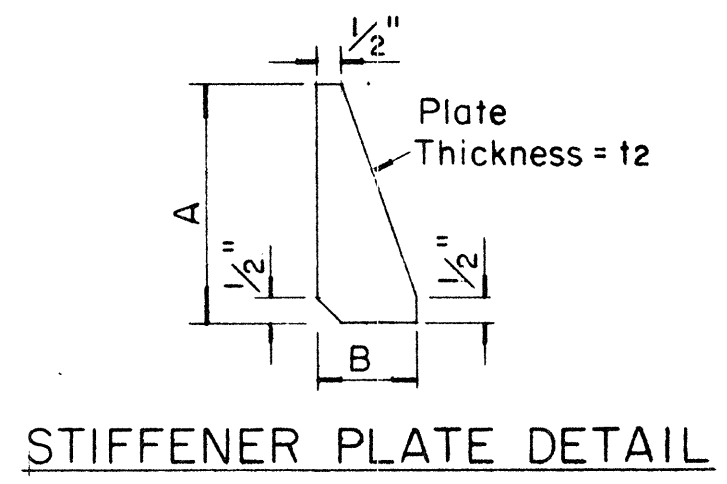
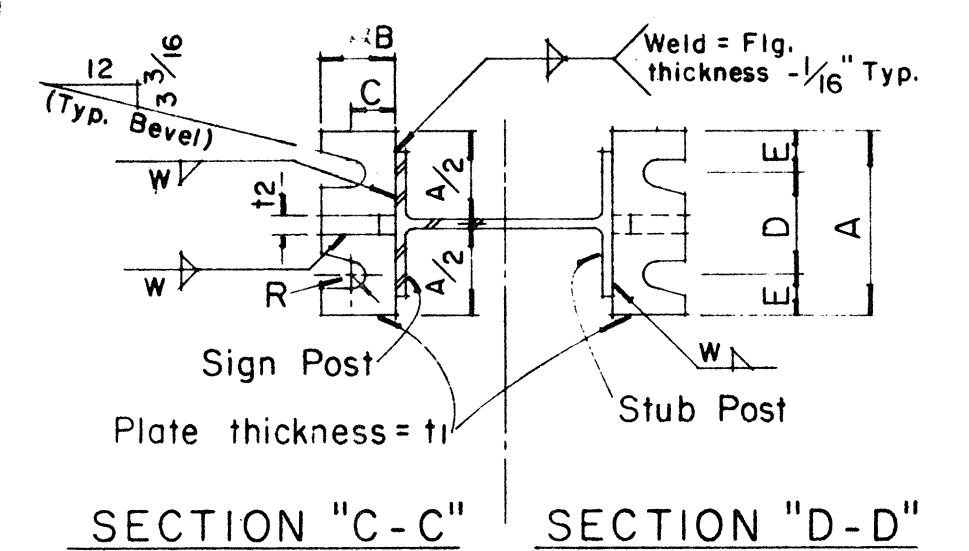
DATE
 SURVEY PLOTTED BY
 DRAWN BY
 CHECKED BY
 QUANTITIES BY
 NOTE BOOK
 No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	111(60)23	1976	158	181

BASE CONNECTION DATA TABLE											FUSE PLATE DATA TABLE								FOUNDATION DATA						
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse P.	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"	13/16"	1/2"	3/4"	3.75#	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	13/16"	1/2"	3/4"	3.27#	2'-6"	3"	2'-0"	#7
8 WF 20											4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	15/16"	9/16"	7/8"	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 WF 21	3/4" ϕ x 3 1/2" Torque = 750#	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	13/32"	5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8"	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 WF 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8"	4.79#	3'-0"	2 1/2"	2'-0"	#10
12 WF 27											5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	15/16"	9/16"	7/8"	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200#	SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7		SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5



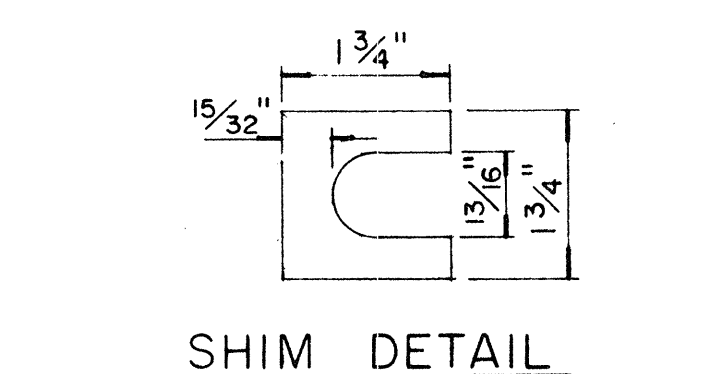
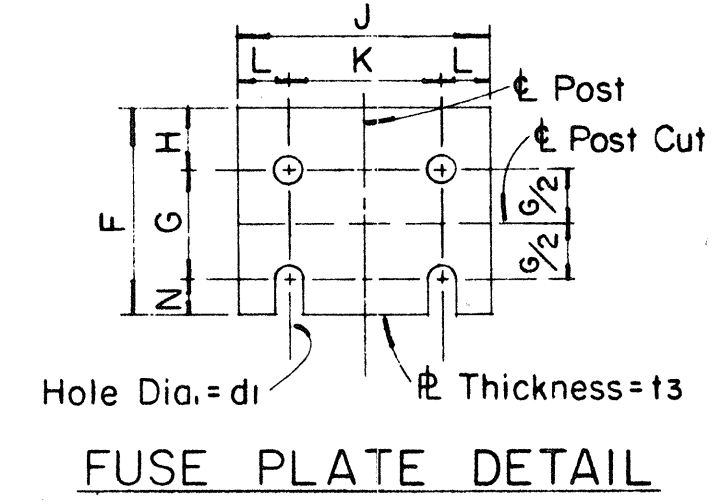
NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



GENERAL NOTES

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

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



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

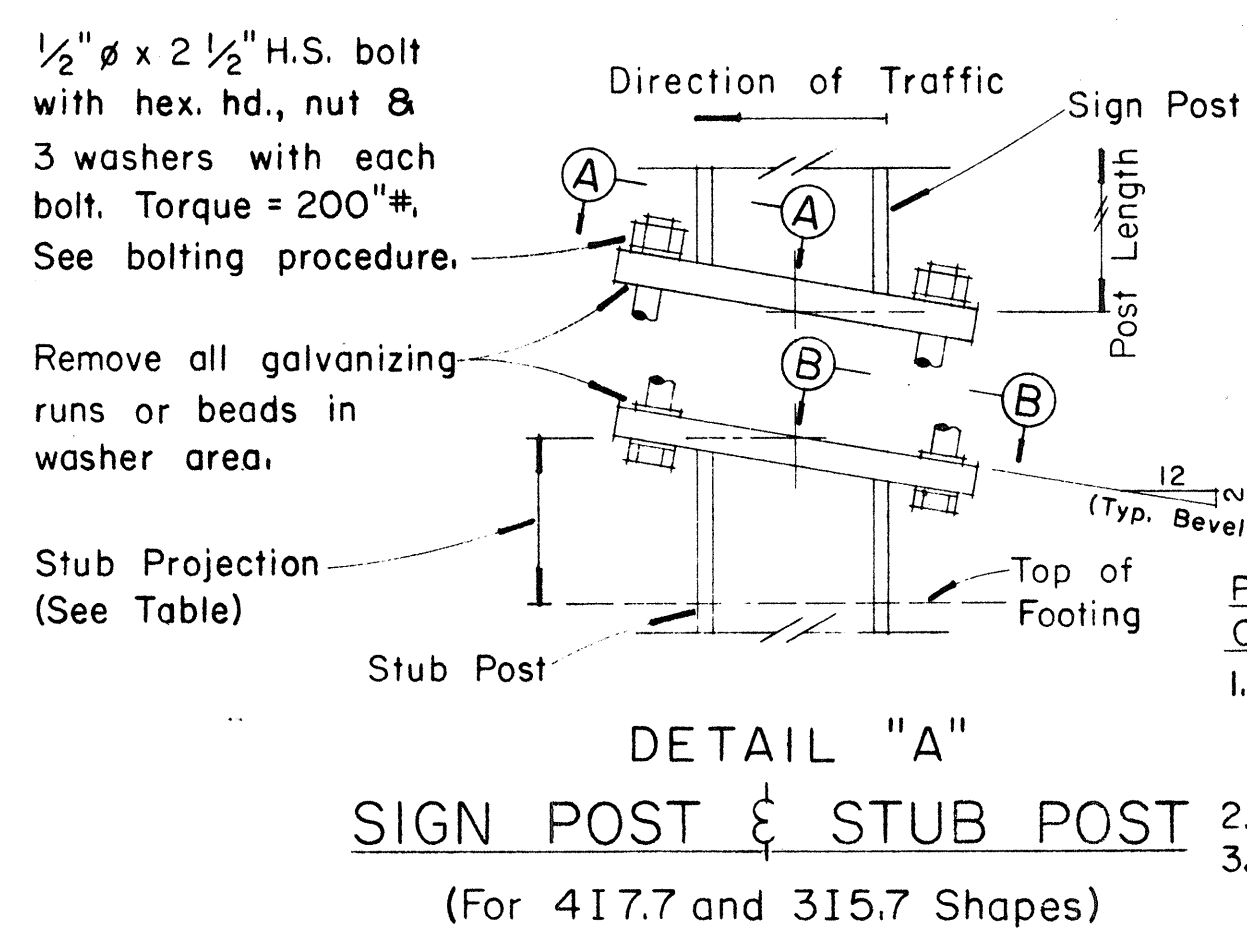
APPROVAL RECOMMENDED:
Erich Tanaka
TRAFFIC ENGINEER
DATE: 12/29/69

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

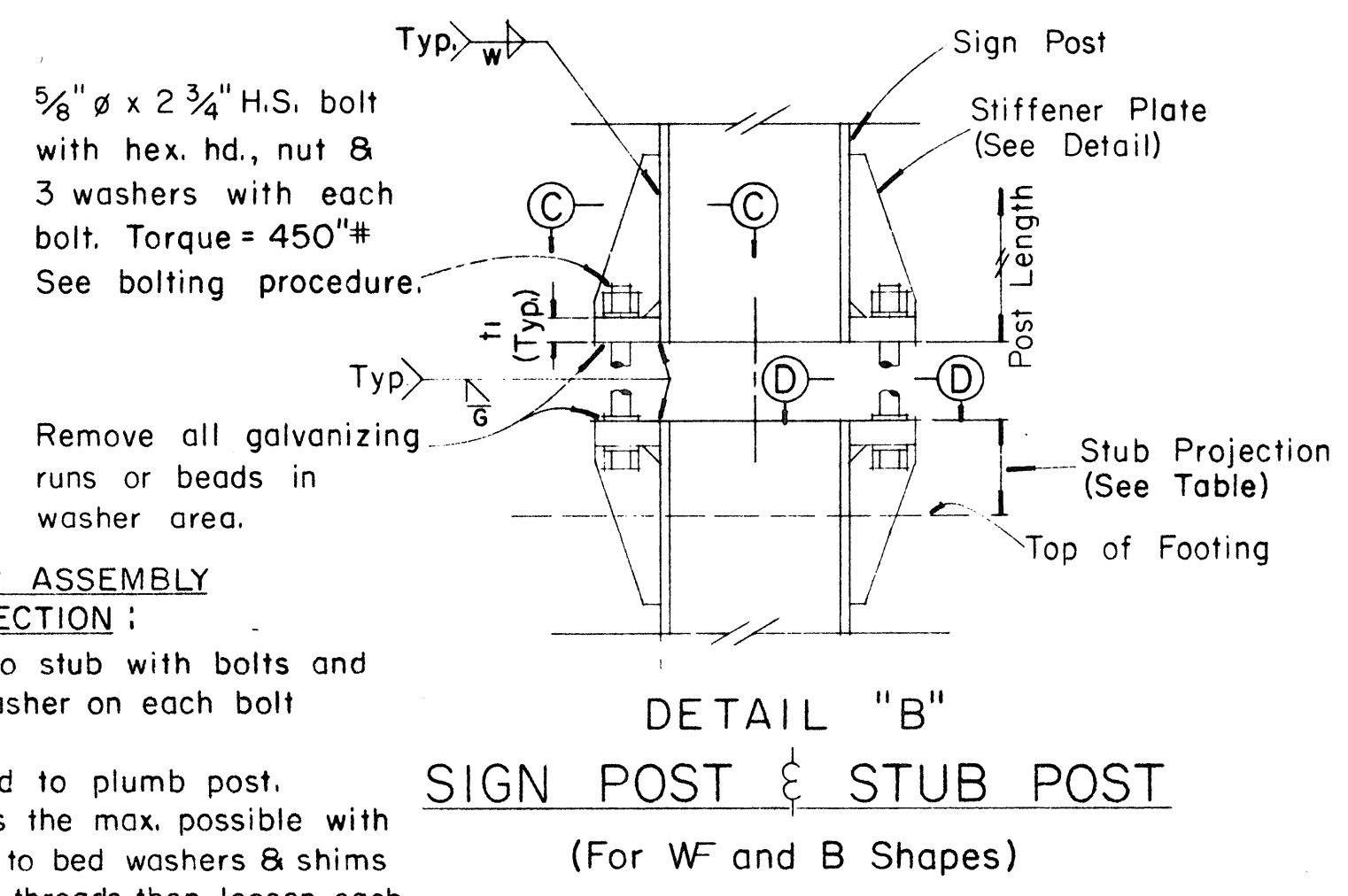
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS
Not to Scale
SHEET No. 387 OF 531 SHEETS DT204

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTE BOOK 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.	111(60)23	1976	157	181

(OVERHEAD SIGNS)
SUPPORT SPACING TABLE

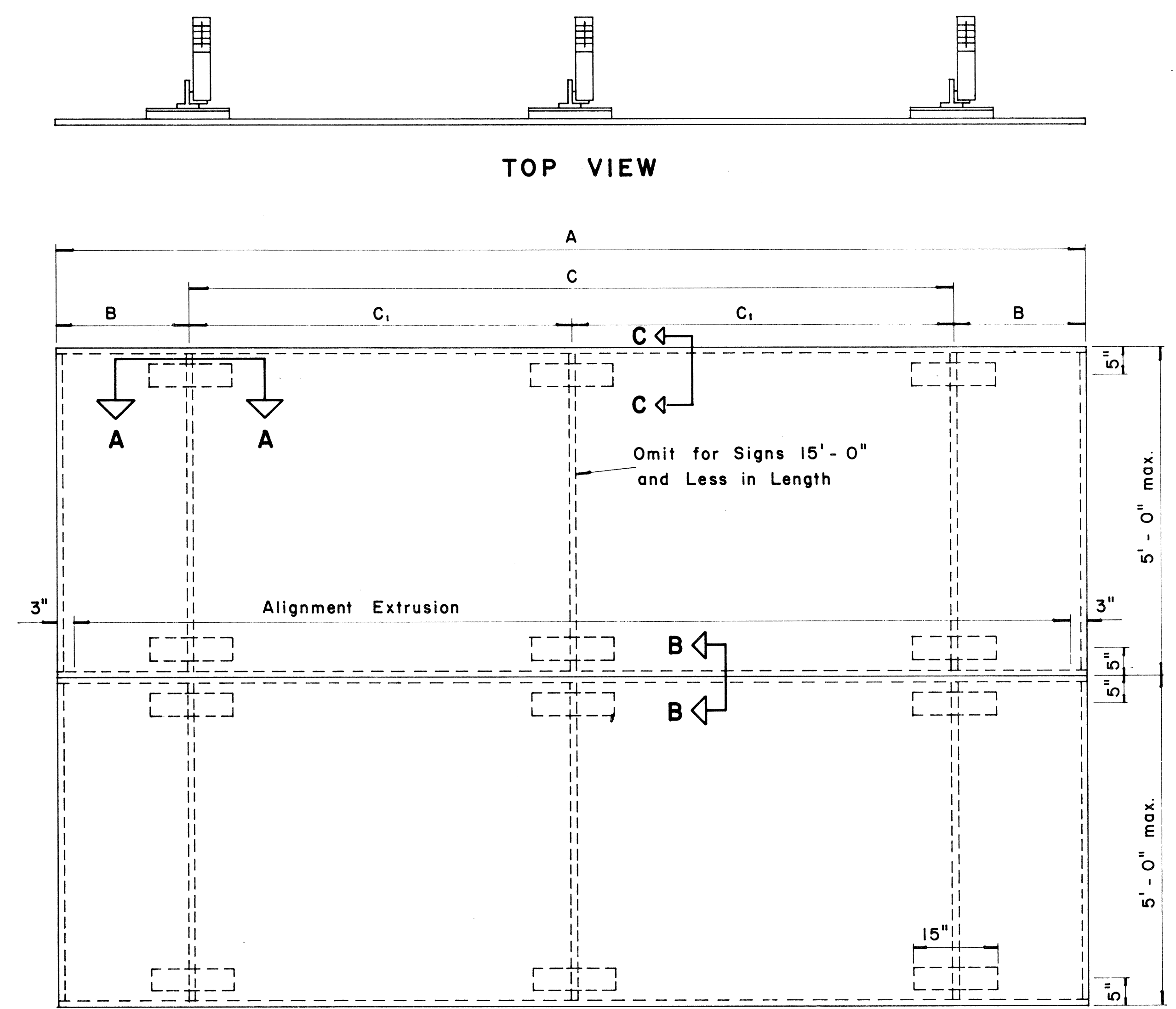
PANEL THICK.	LENGTH OF SIGN		NO. OF SUPPORTS	OVERHANG		SUPPORT SPACING
	A	B		B	C or C ₁	
1"	6'-0"	2	2	12"	48"	
1"	6'-6"	2	2	15"	48"	
1"	7'-0"	2	2	15"	54"	
1"	7'-6"	2	2	18"	54"	
1"	8'-0"	2	2	18"	60"	
1"	8'-6"	2	2	20"	62"	
1"	9'-0"	2	2	22"	64"	
1"	9'-6"	2	2	23"	68"	
1"	10'-0"	2	2	24"	72"	
1"	10'-6"	2	2	24"	78"	
1"	11'-0"	2	2	24"	84"	
1"	11'-6"	2	2	27"	84"	
1"	12'-0"	2	2	30"	84"	
1"	12'-6"	2	2	30"	90"	
1"	13'-0"	2	2	30"	96"	
1"	13'-6"	2	2	30"	102"	
1"	14'-0"	2	2	30"	108"	
1"	14'-6"	2	2	36"	102"	
1"	15'-0"	2	2	36"	108"	
1"	15'-6"	3	3	24"	69"	
1"	16'-0"	3	3	24"	72"	
1"	16'-6"	3	3	24"	75"	
1"	17'-0"	3	3	24"	78"	
1"	17'-6"	3	3	24"	81"	
1"	18'-0"	3	3	24"	84"	
1"	18'-6"	3	3	27"	84"	
1"	19'-0"	3	3	27"	87"	
1"	19'-6"	3	3	27"	90"	
1"	20'-0"	3	3	30"	90"	
1"	20'-6"	3	3	30"	93"	
1"	21'-0"	3	3	30"	96"	
1"	21'-6"	3	3	33"	96"	
1"	22'-0"	3	3	36"	96"	
1"	22'-6"	3	3	36"	99"	
1"	23'-0"	3	3	36"	102"	
1"	23'-6"	3	3	36"	105"	
1"	24'-0"	3	3	36"	108"	

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

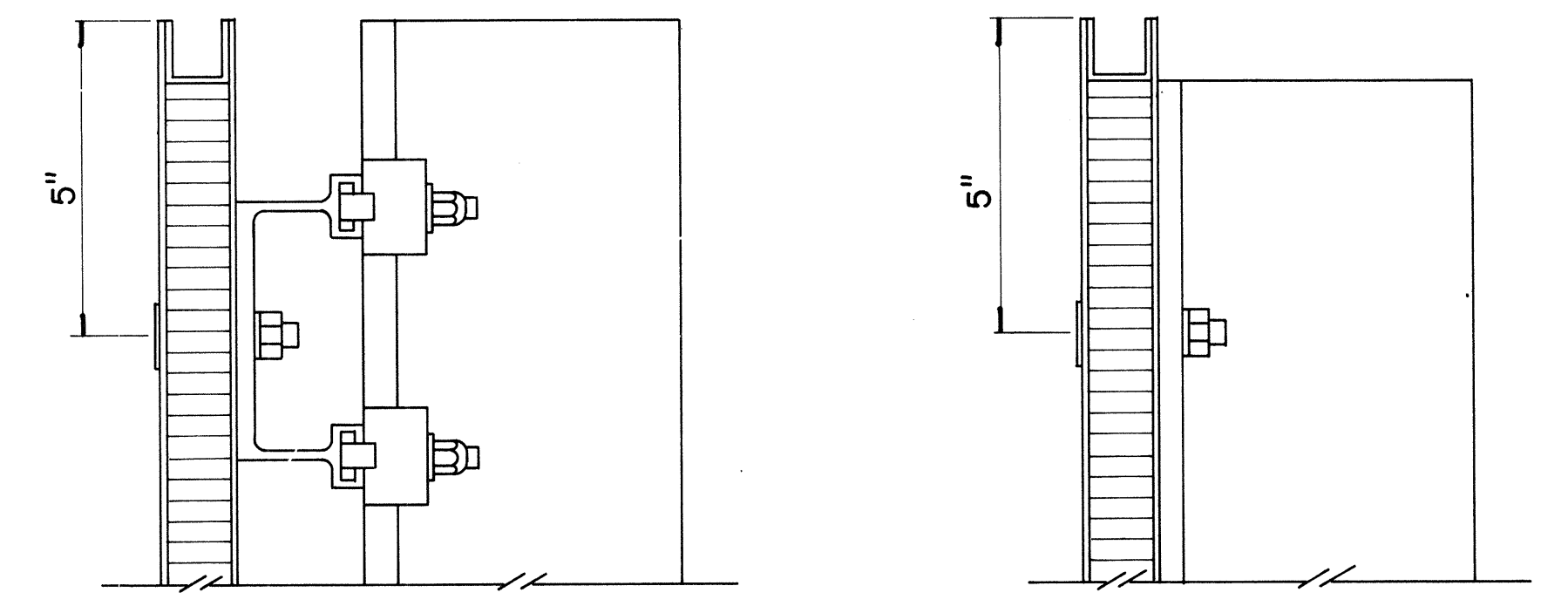
APPROVED:
John J. [Signature] 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

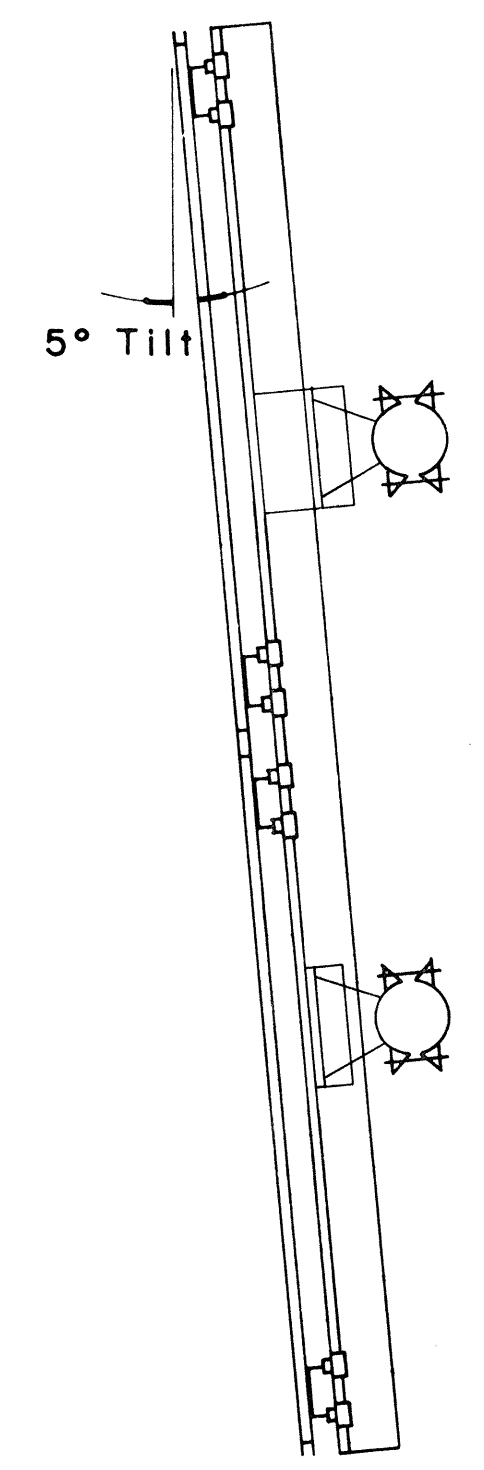
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(OVERHEAD)
Scale: As Shown



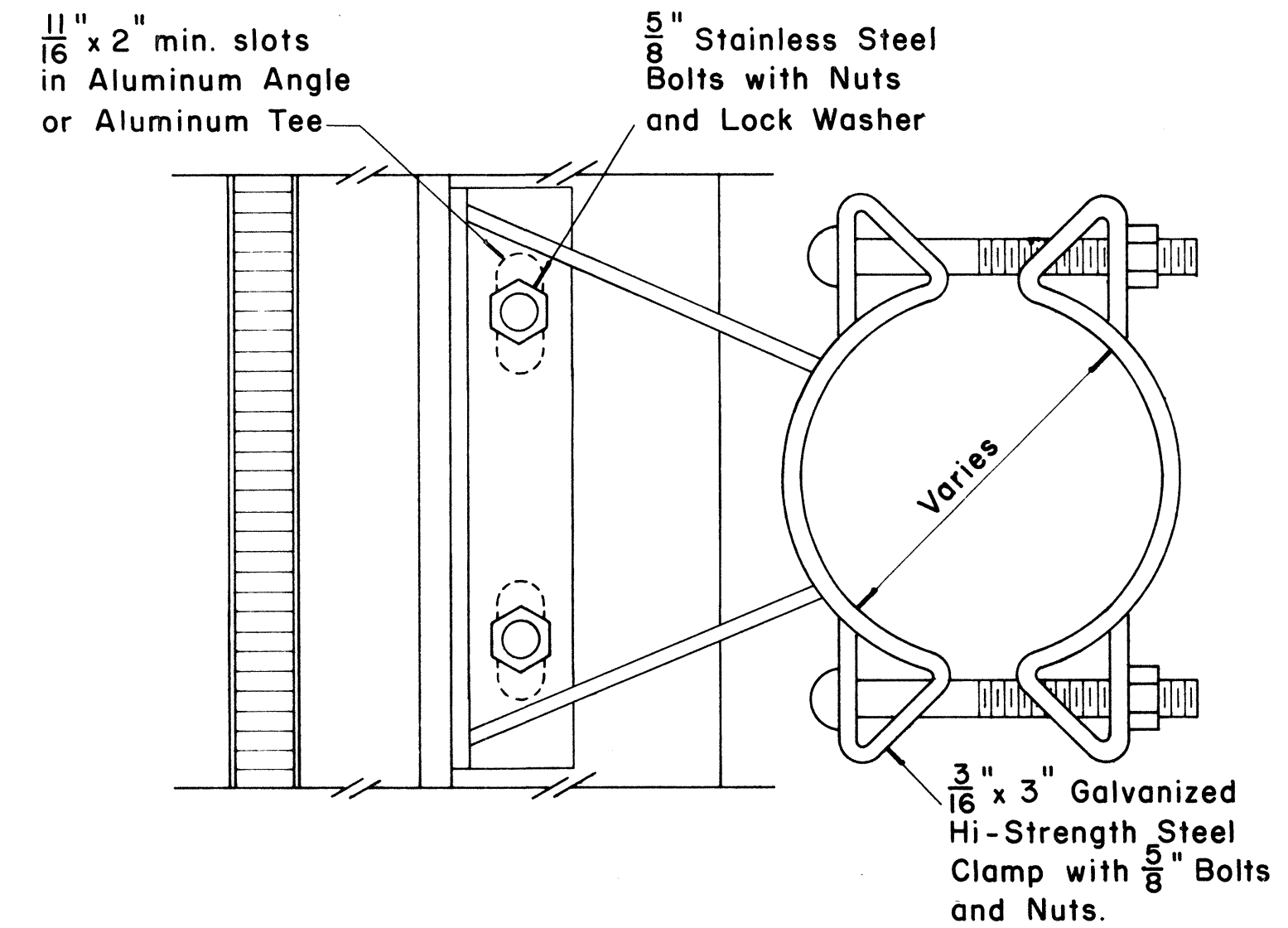
TYPICAL SIGN ASSEMBLY
Scale: $\frac{3}{4}$ " = 1'-0"



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

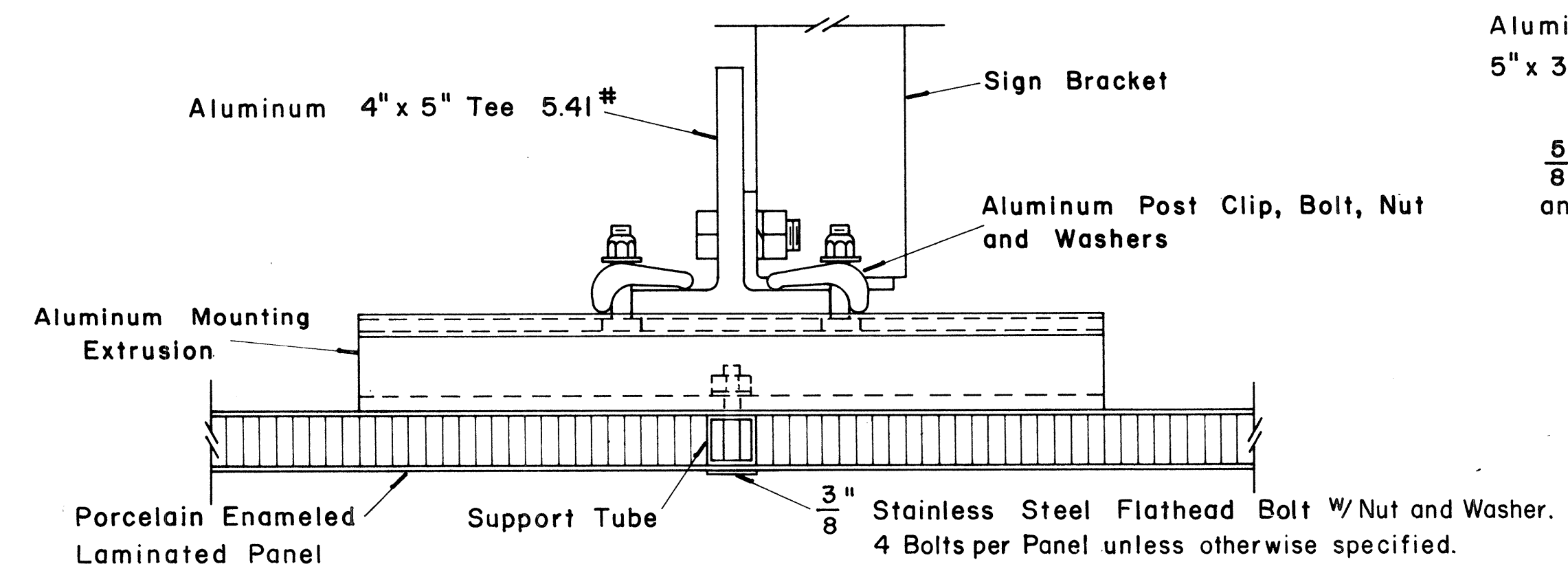


SIDE VIEW

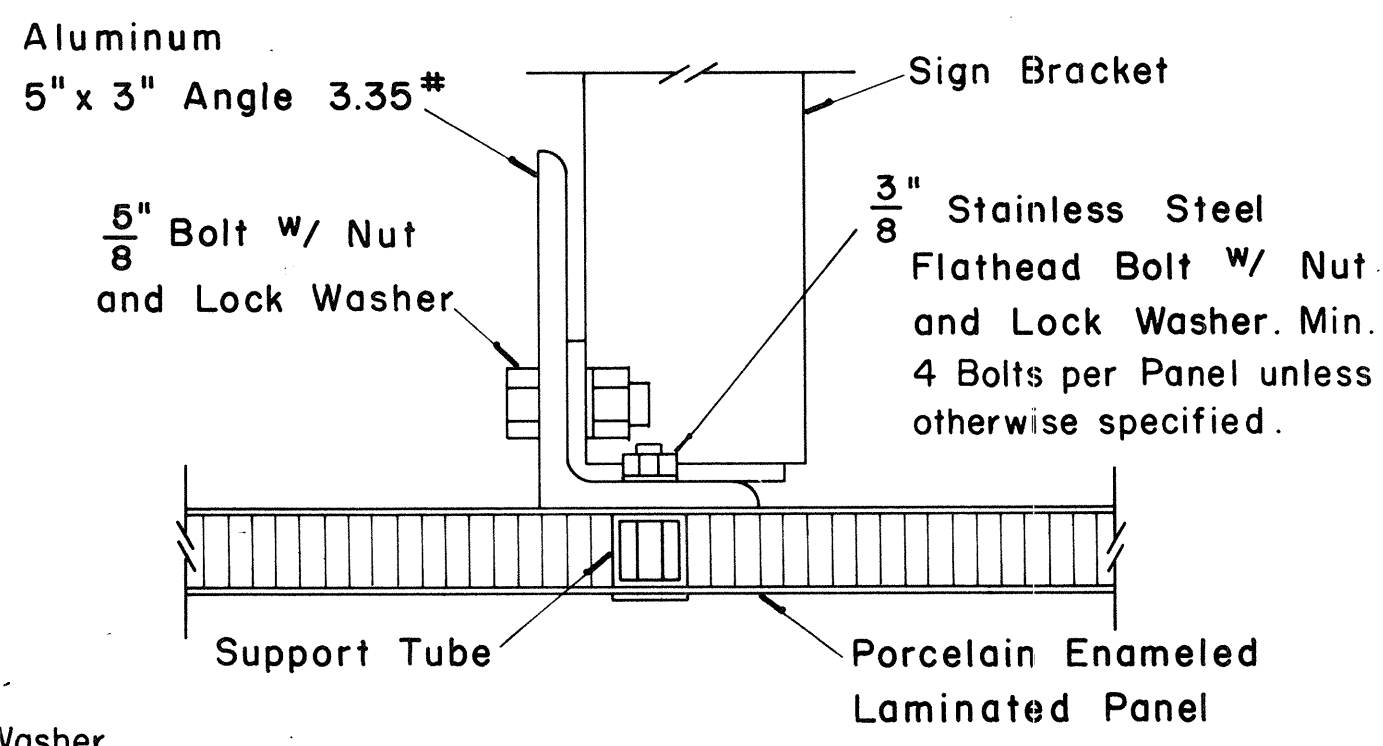


SIGN BRACKET ASSEMBLY
Scale: $\frac{3}{8}$ " = 1"

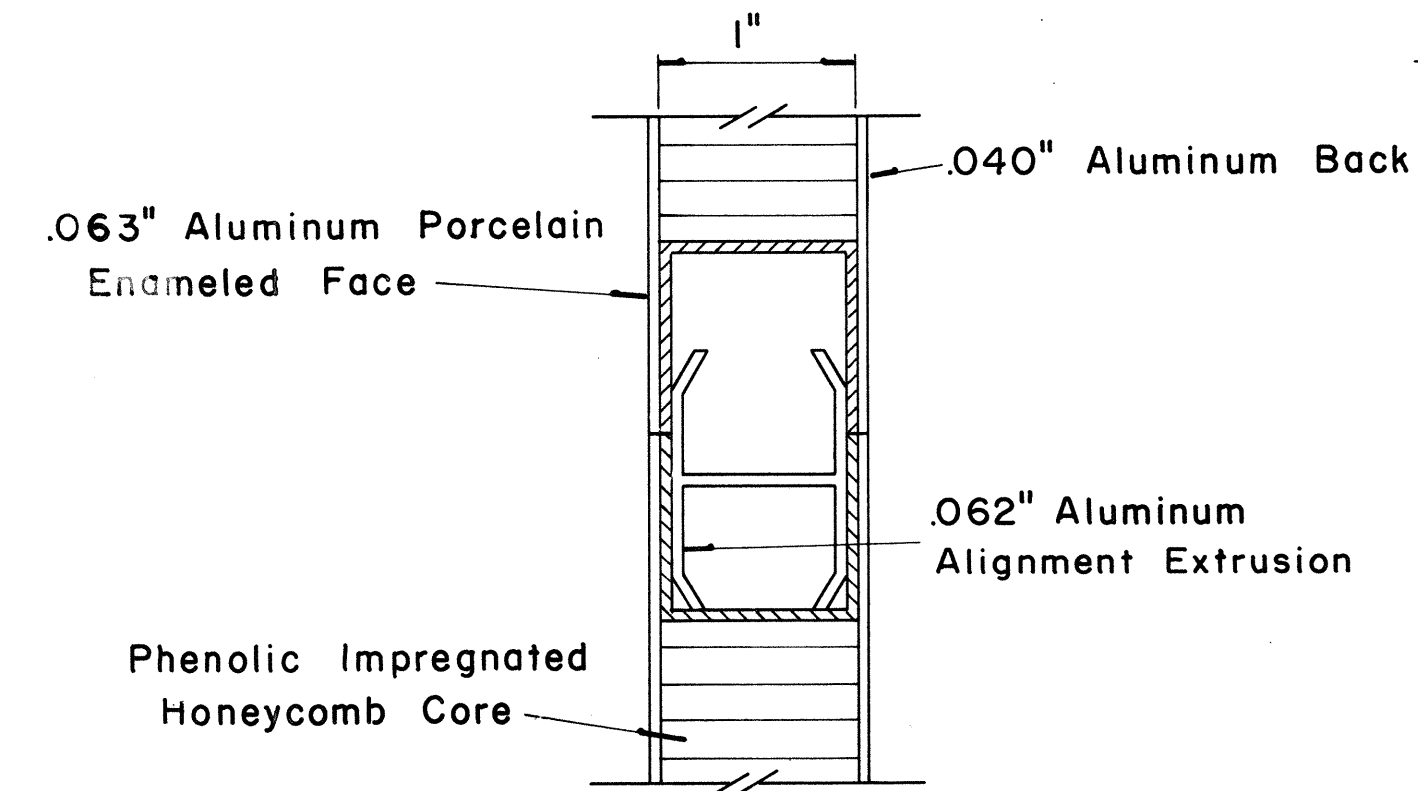
NOTE: For additional details of Sign Bracket Assembly, see Standard Detail Sheet "Overhead Sign Supports."



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



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



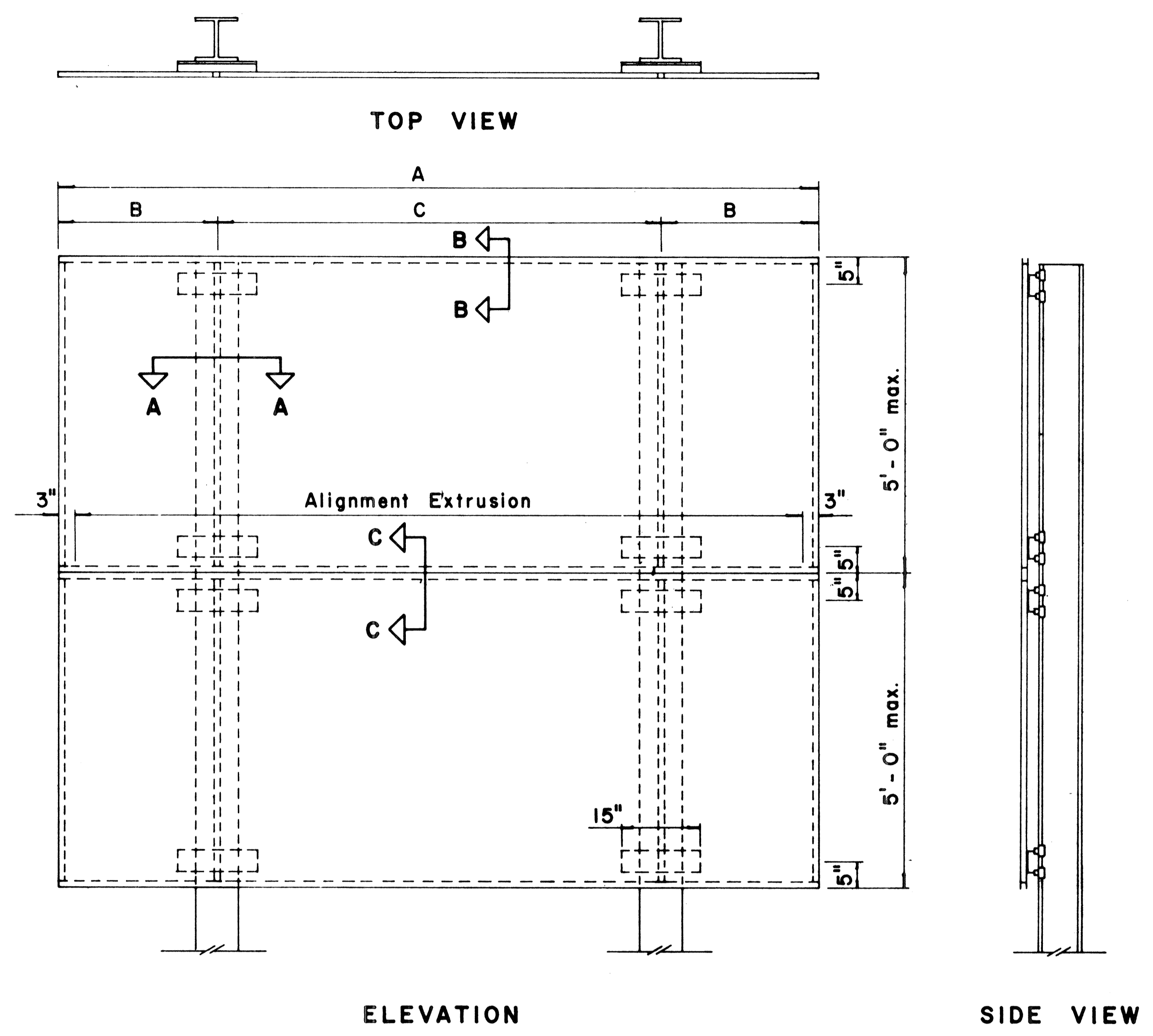
CLOSURE DETAIL SECTION "B-B"
FULL SCALE

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

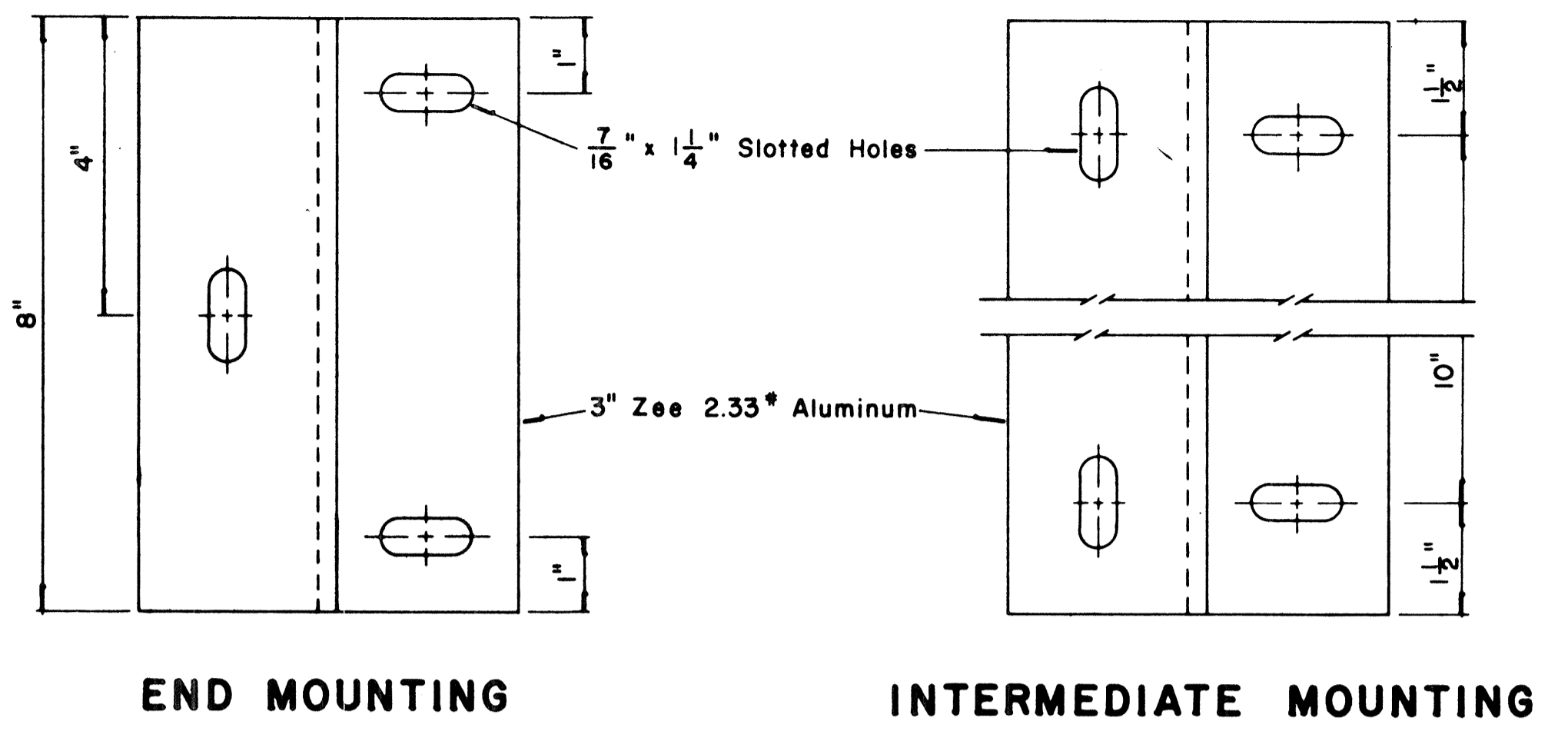
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH(60)23	1976	160	181

(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

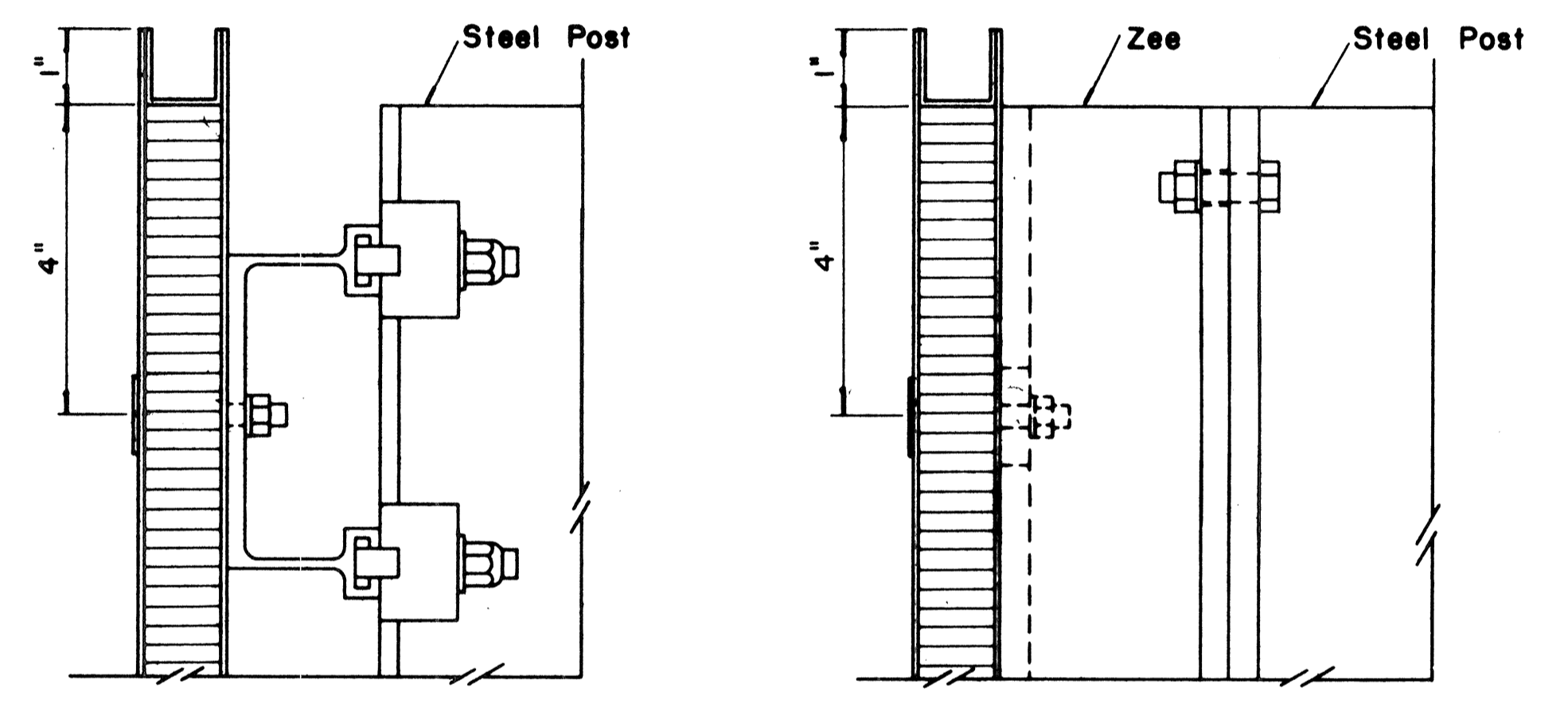
PANEL THICK.	LENGTH OF SIGN	NO. OF SUPPORTS	OVERHANG		SUPPORT SPACING
			A	B	
1"	6'-0"	2	12"		48"
1"	6'-6"	2	15"		48"
1"	7'-0"	2	15"		54"
1"	7'-6"	2	18"		54"
1"	8'-0"	2	18"		60"
1"	8'-6"	2	20"		62"
1"	9'-0"	2	22"		64"
1"	9'-6"	2	23"		68"
1"	10'-0"	2	24"		72"
1"	10'-6"	2	24"		78"
1"	11'-0"	2	24"		84"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



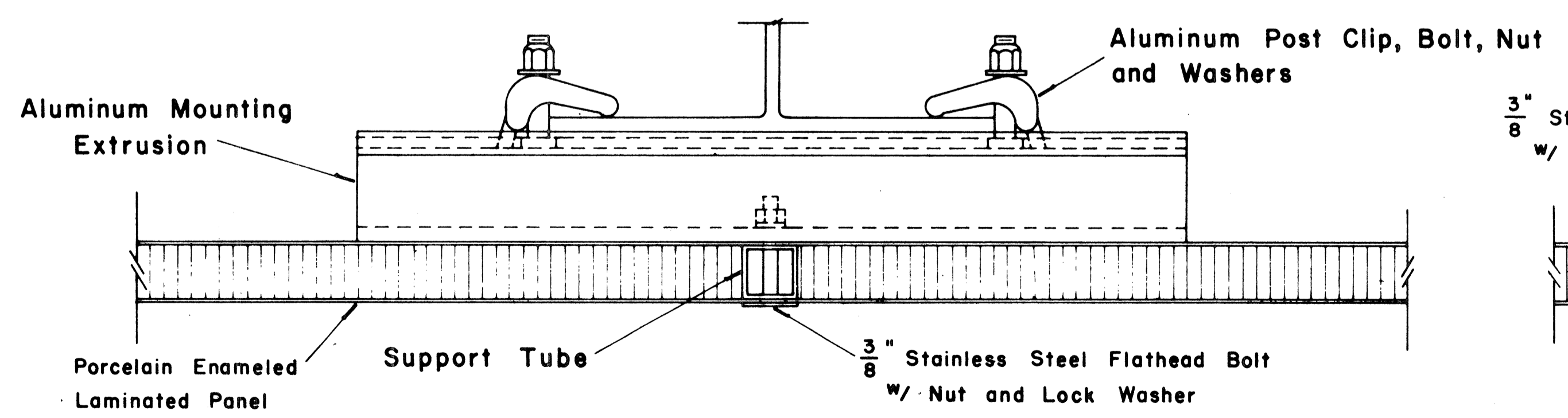
TYPICAL SIGN ASSEMBLY
Scale: 3/4" = 1'-0"



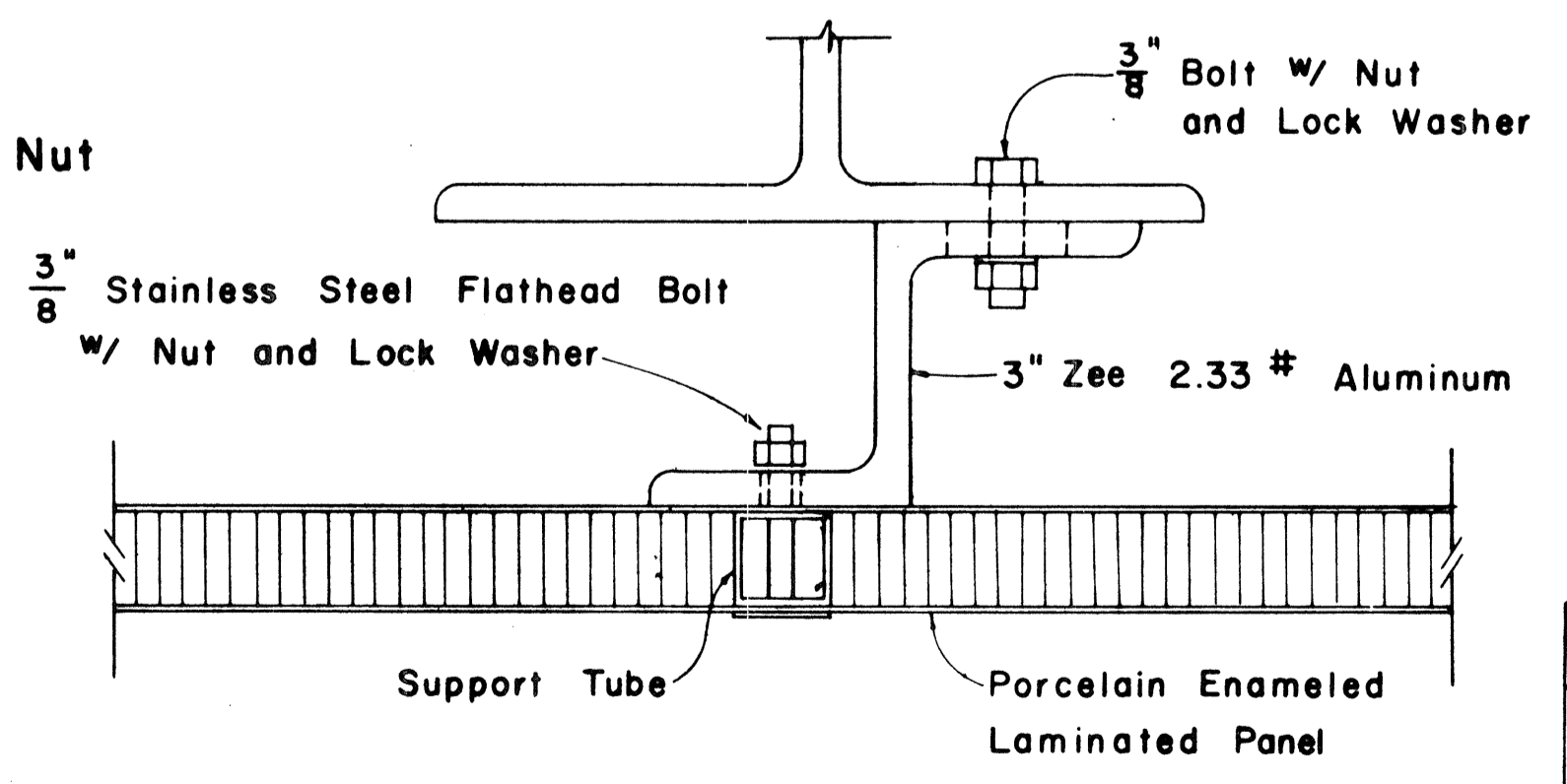
ZEE MOUNTING DETAILS
Scale: 1/2" = 1"



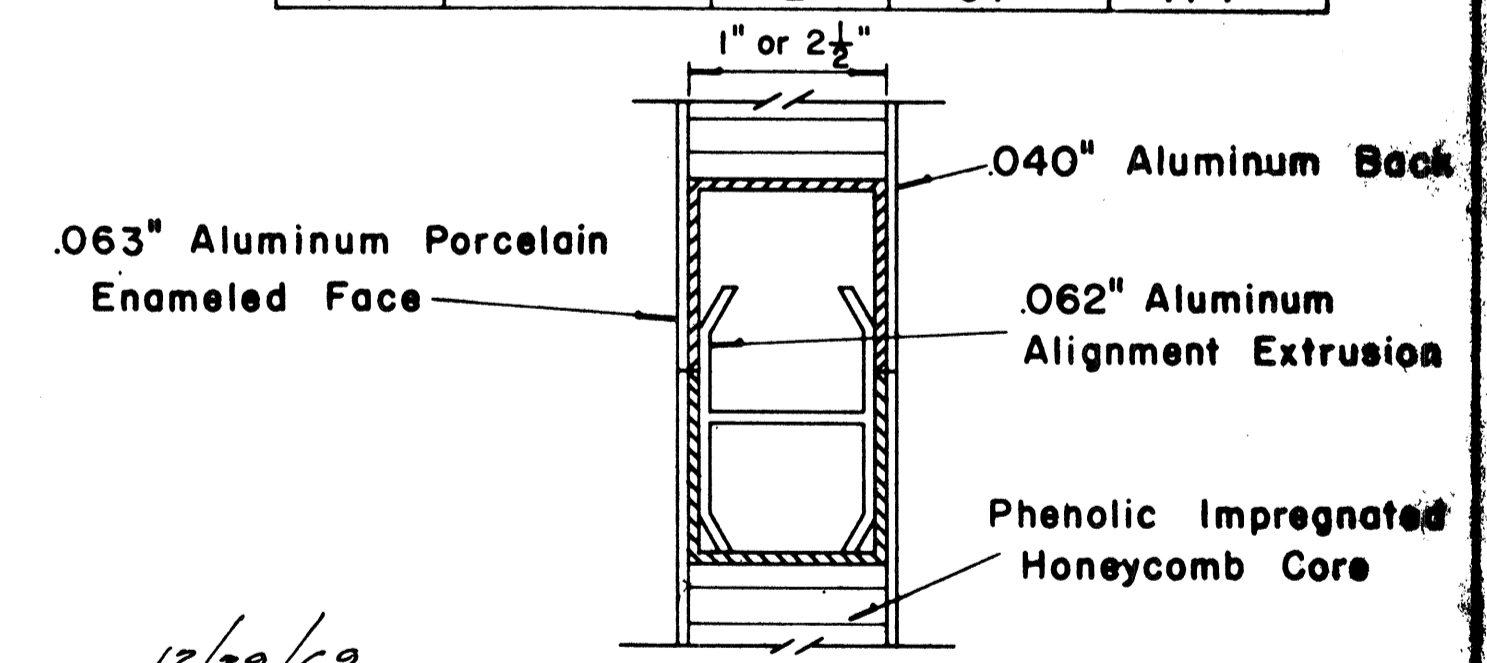
SECTION "B-B" (Alternate)
Scale: 1/2" = 1"



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



SECTION "A-A" (Alternate)
Scale: 1/2" = 1"



CLOSURE DETAIL SECTION "C-C"
FULL SCALE

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

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

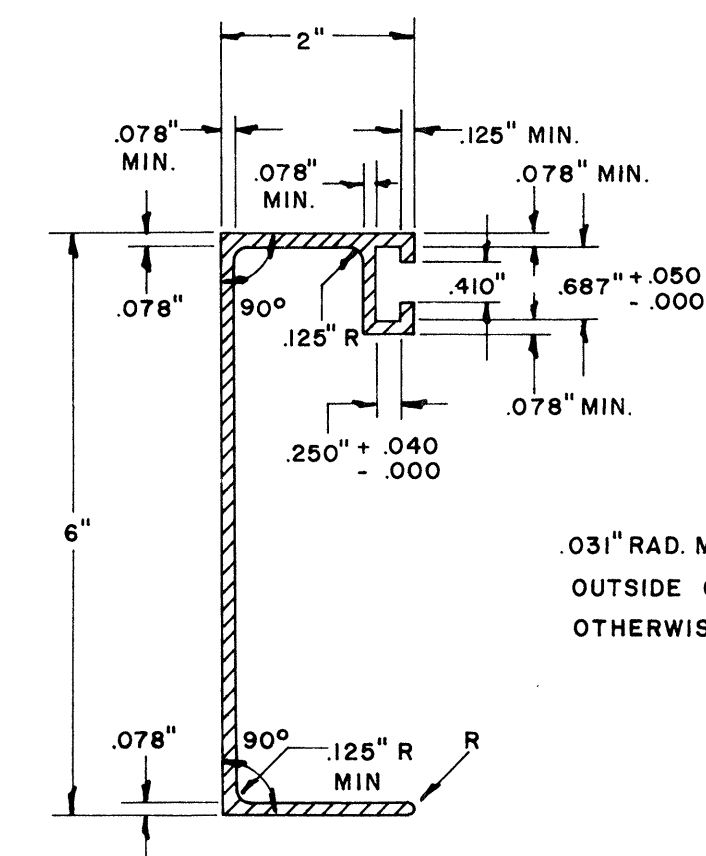
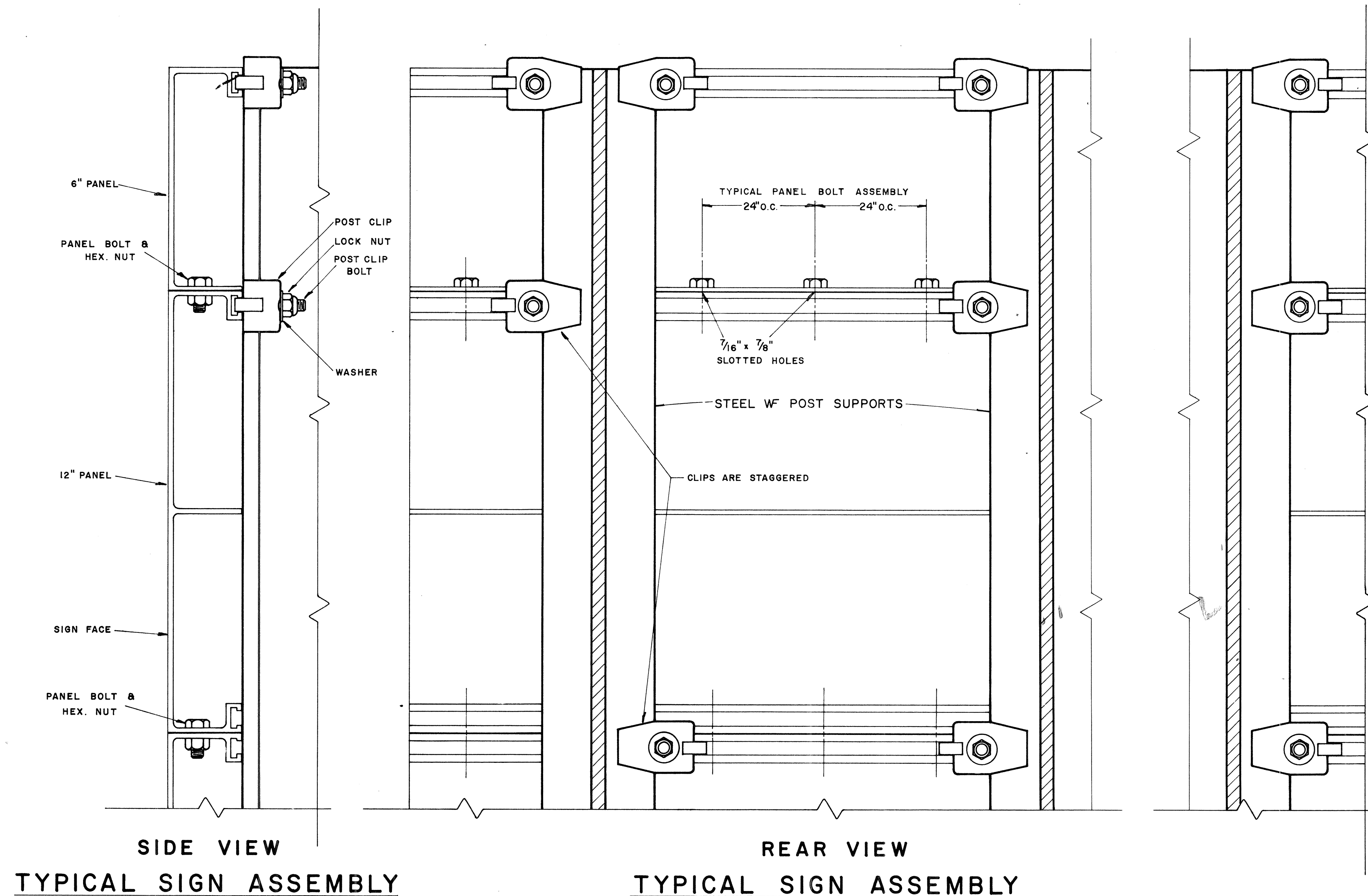
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

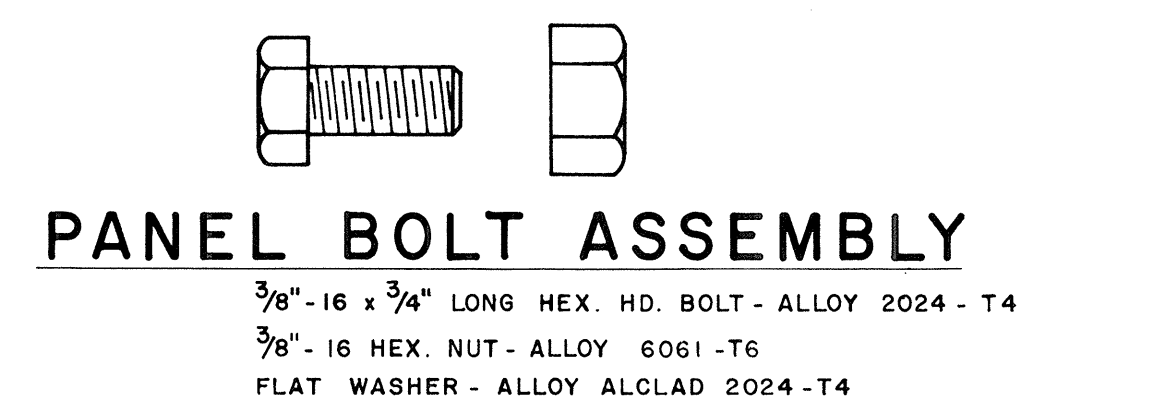
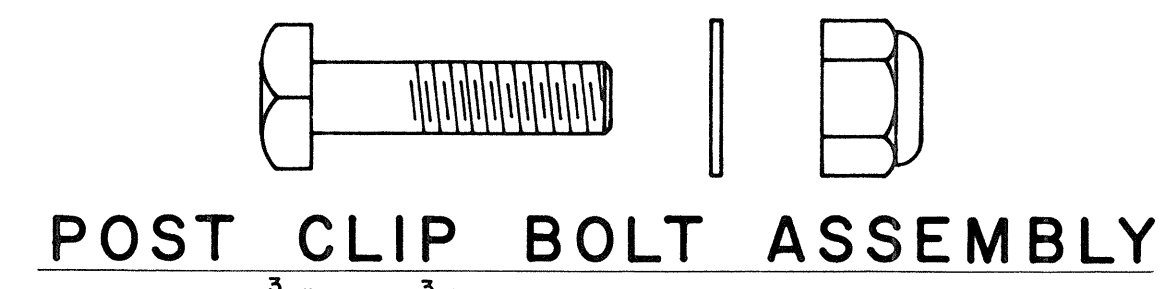
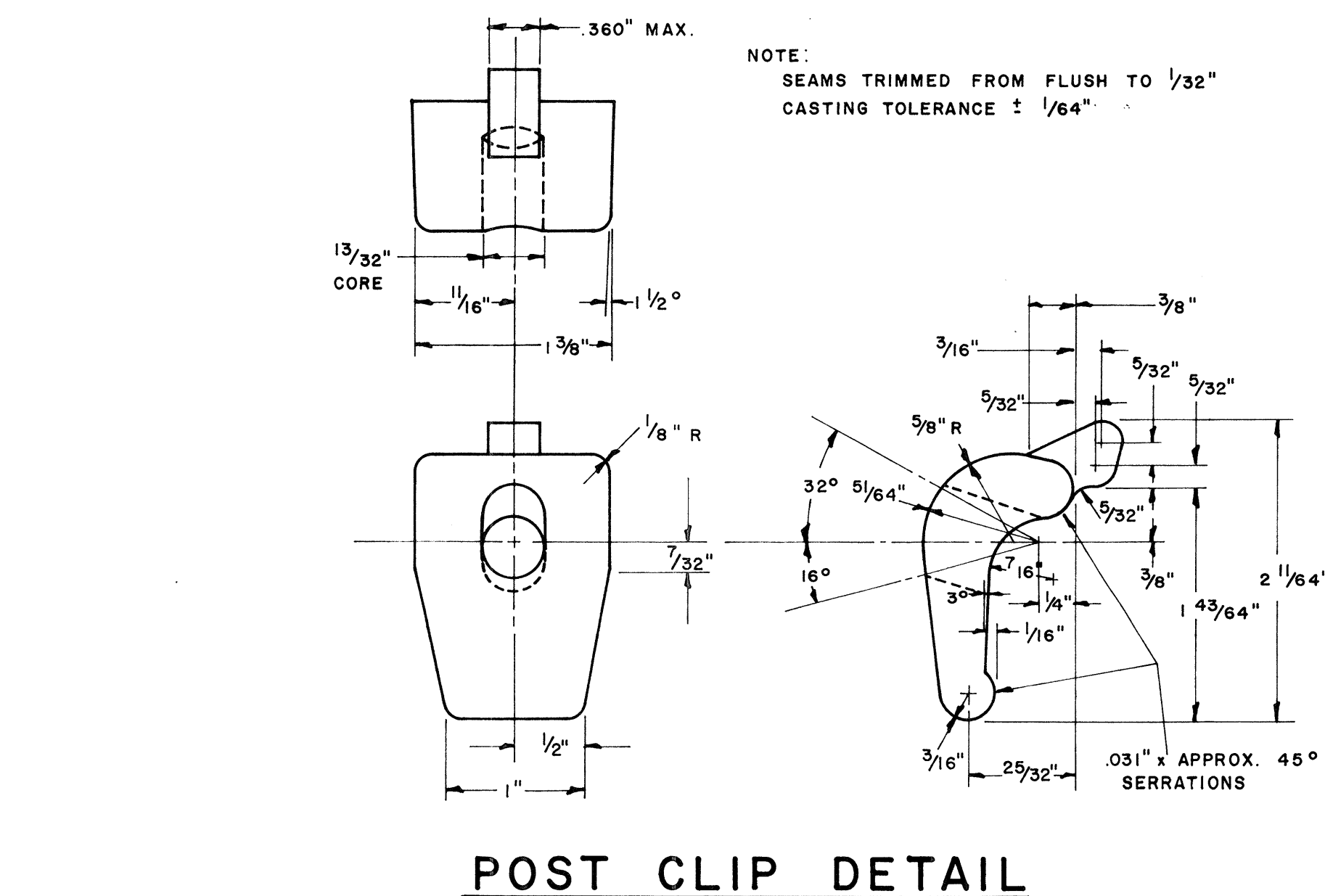
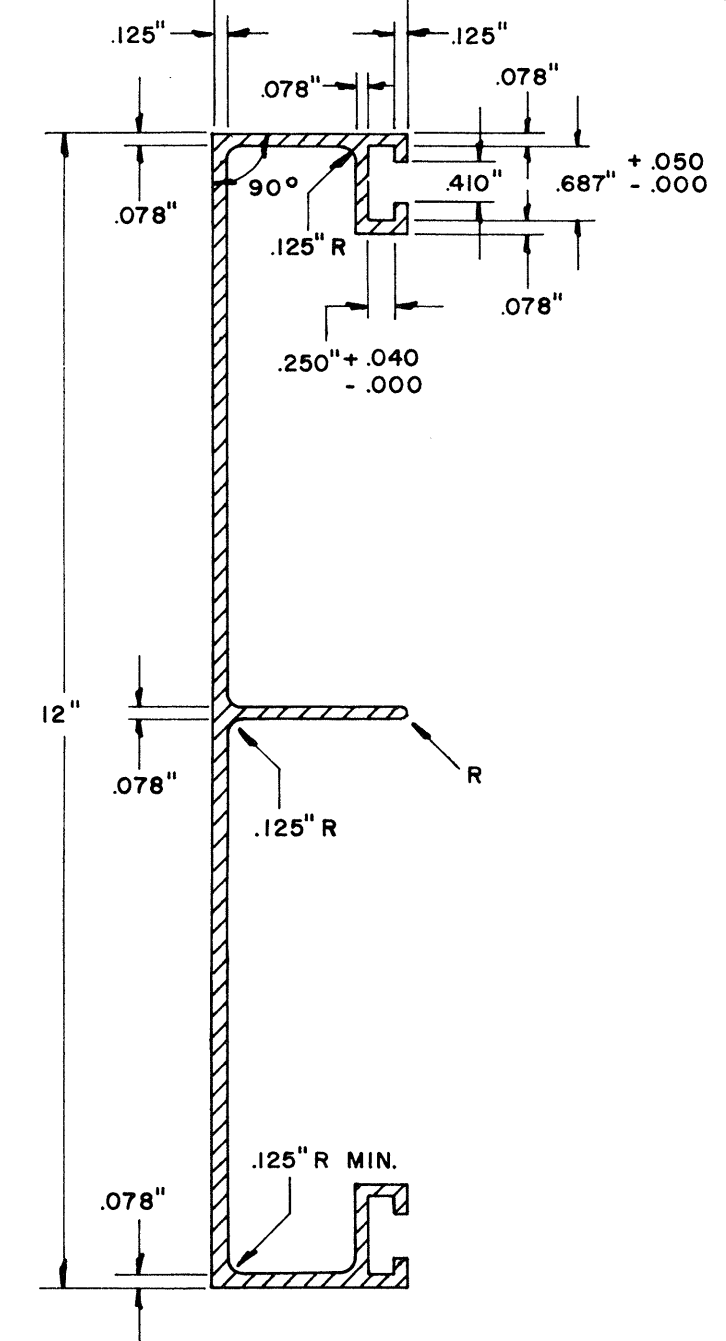
STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(GROUND MOUNTED)
Scale: As Shown

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HH(60)23	1976	161	181



SOLID EXTRUDED SIGN PANEL DETAILS



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

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

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

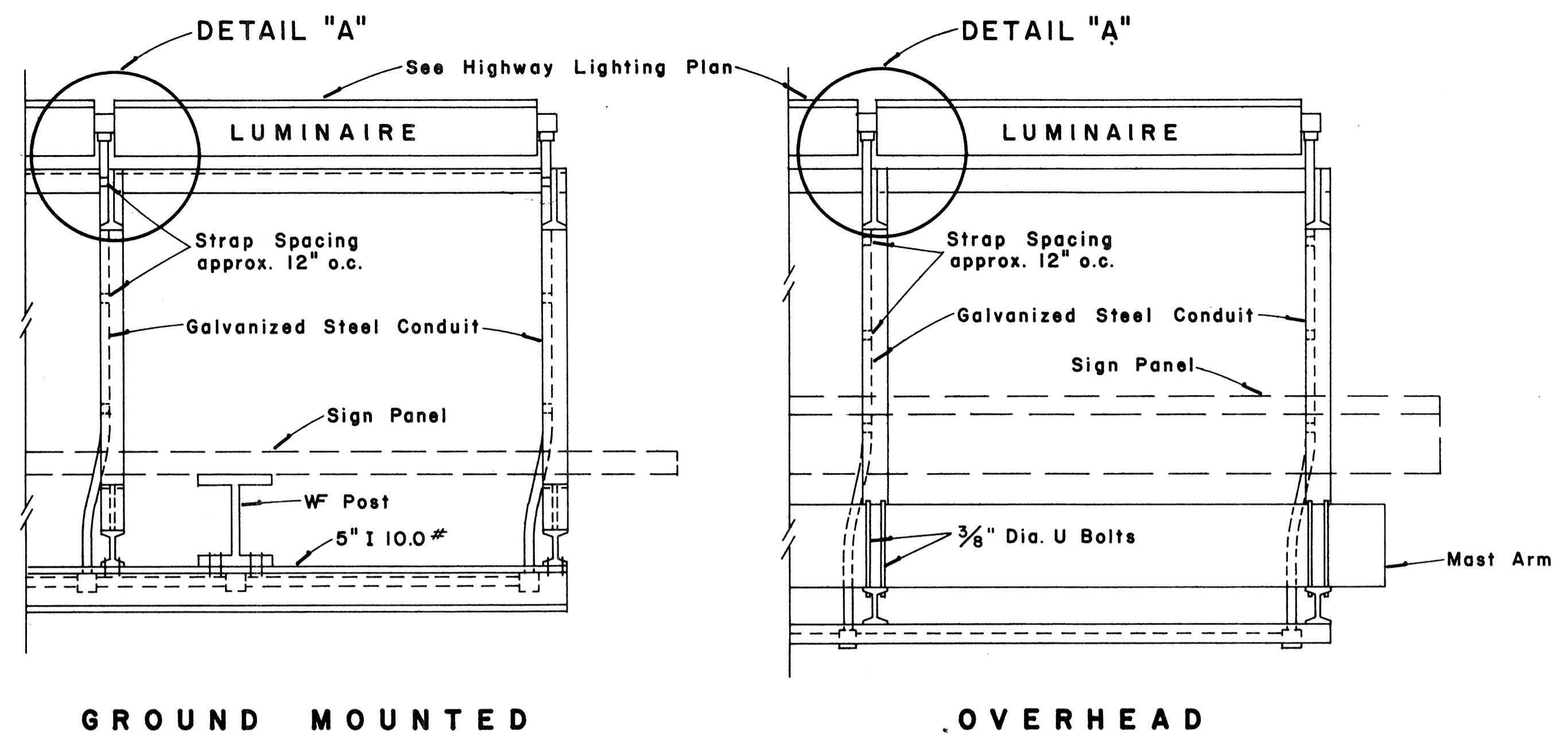
NO.	REVISION	APPROVED BY	DATE

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

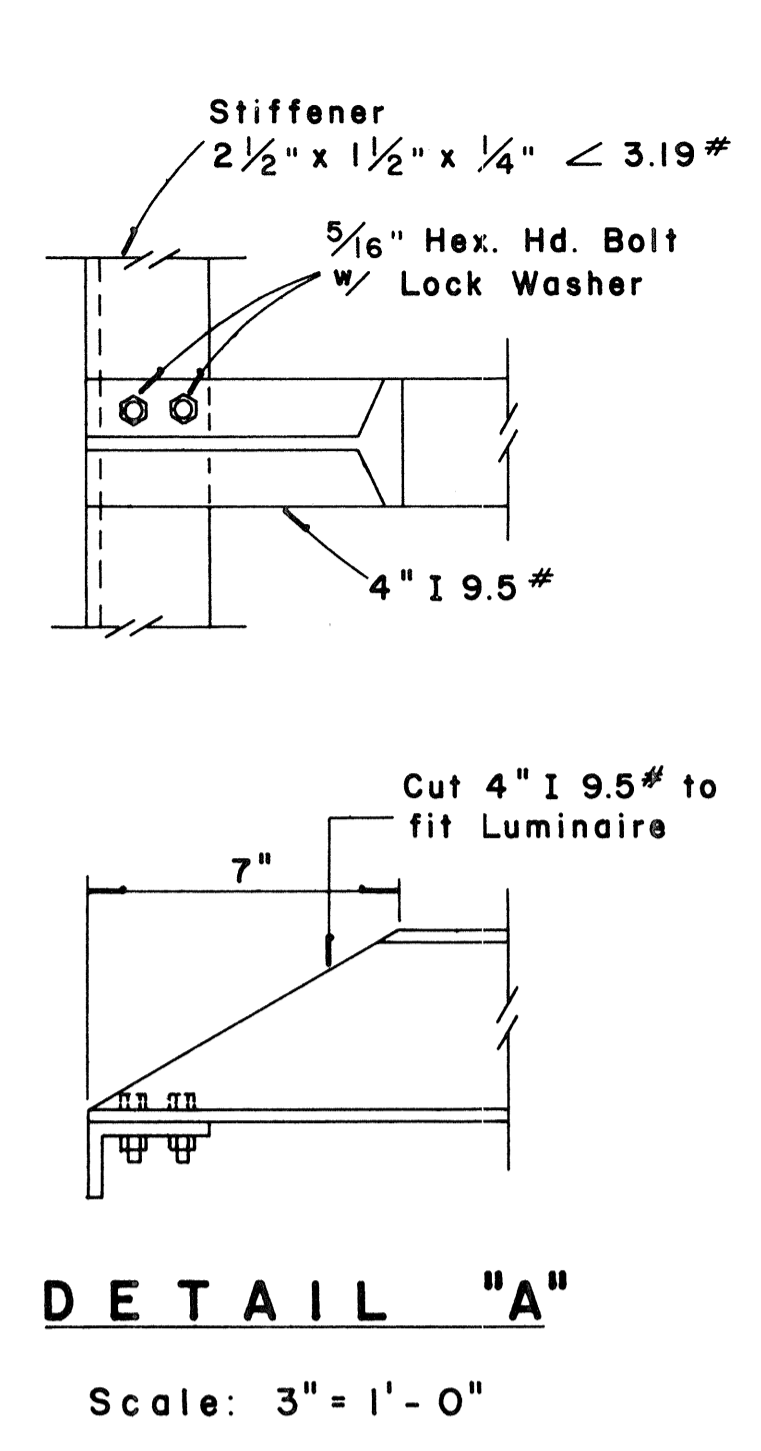
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH(60)23	1976	162	181

GENERAL NOTES

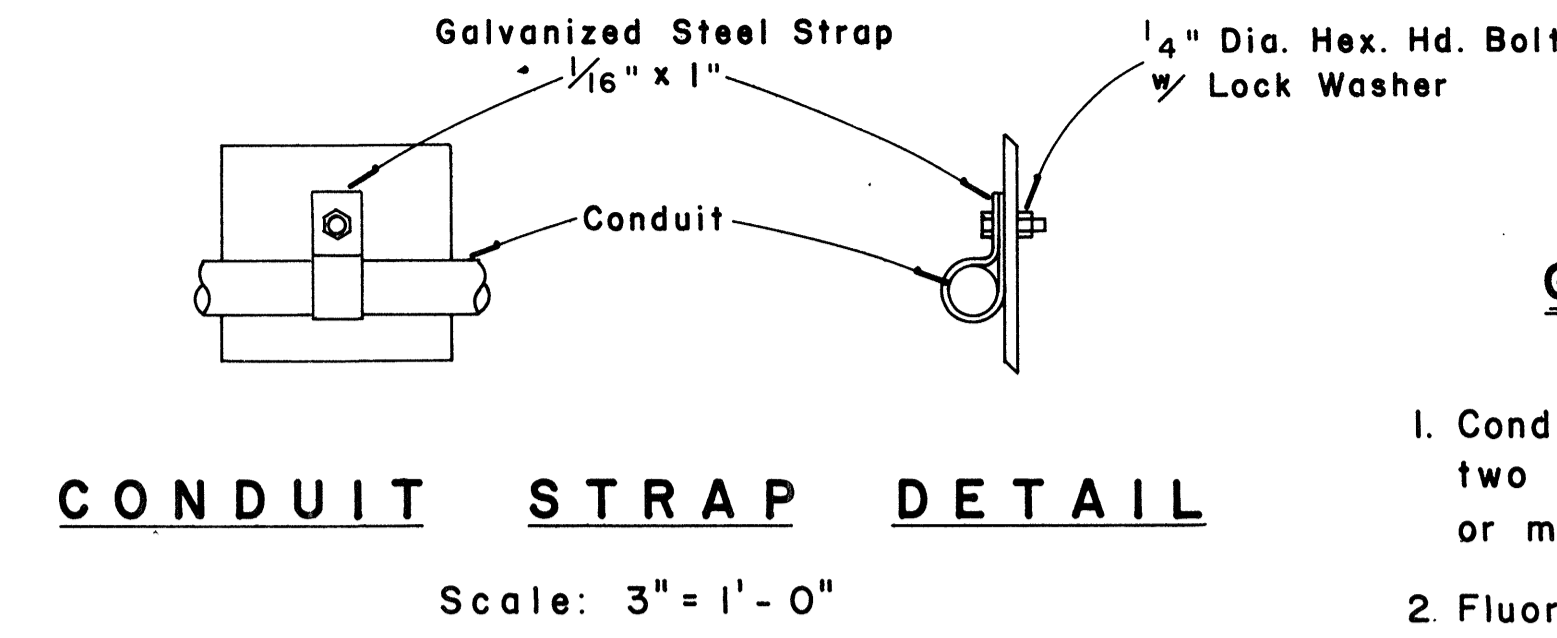
1. Conduit sizes: 3/4" diameter for one or two Luminaire Units, 1" diameter for three or more Luminaire Units.
2. Fluorescent Fixtures shall be installed as recommended by the manufacturer.
3. Luminaire brackets shall be spaced to fit 4'-0" to 6'-0" luminaires with fittings. Eight feet (8'-0") luminaires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



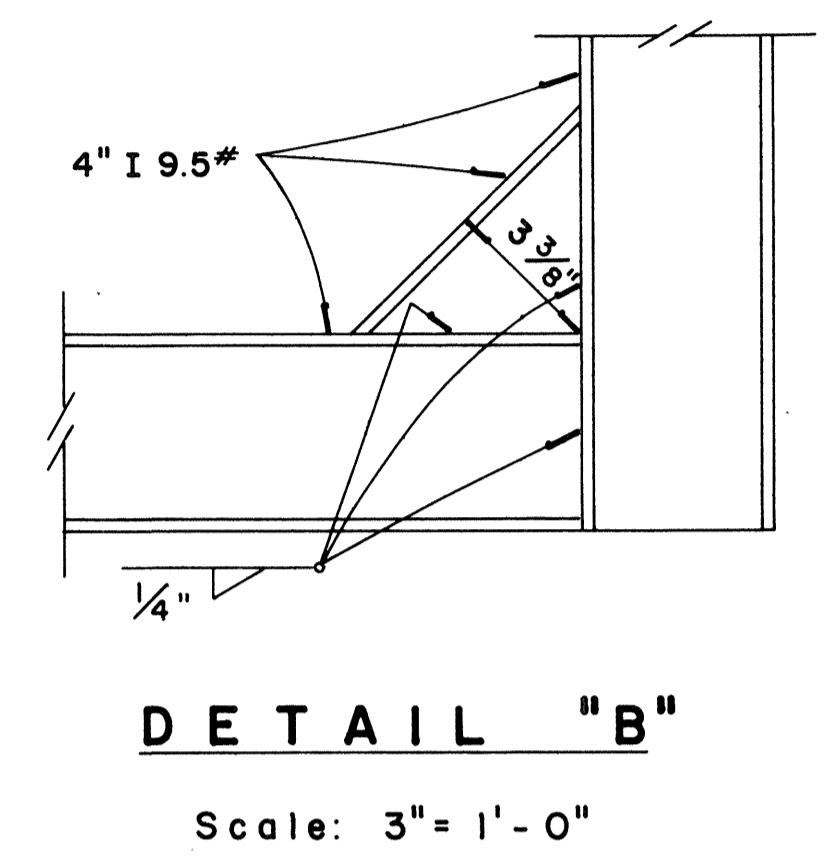
**TOP VIEW
LUMINAIRE MOUNTING**
Scale: 1" = 1'-0"



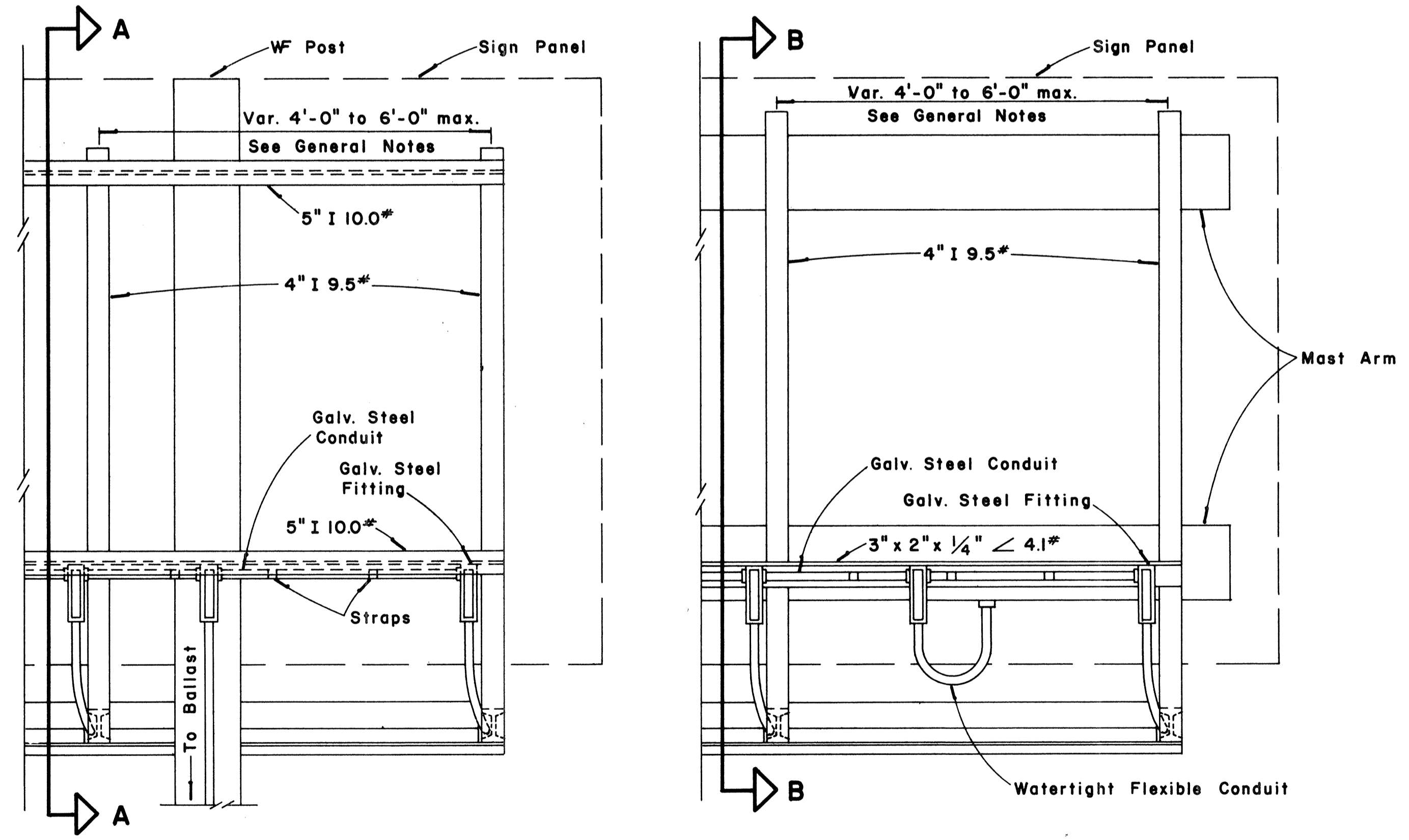
DETAIL "A"
Scale: 3" = 1'-0"



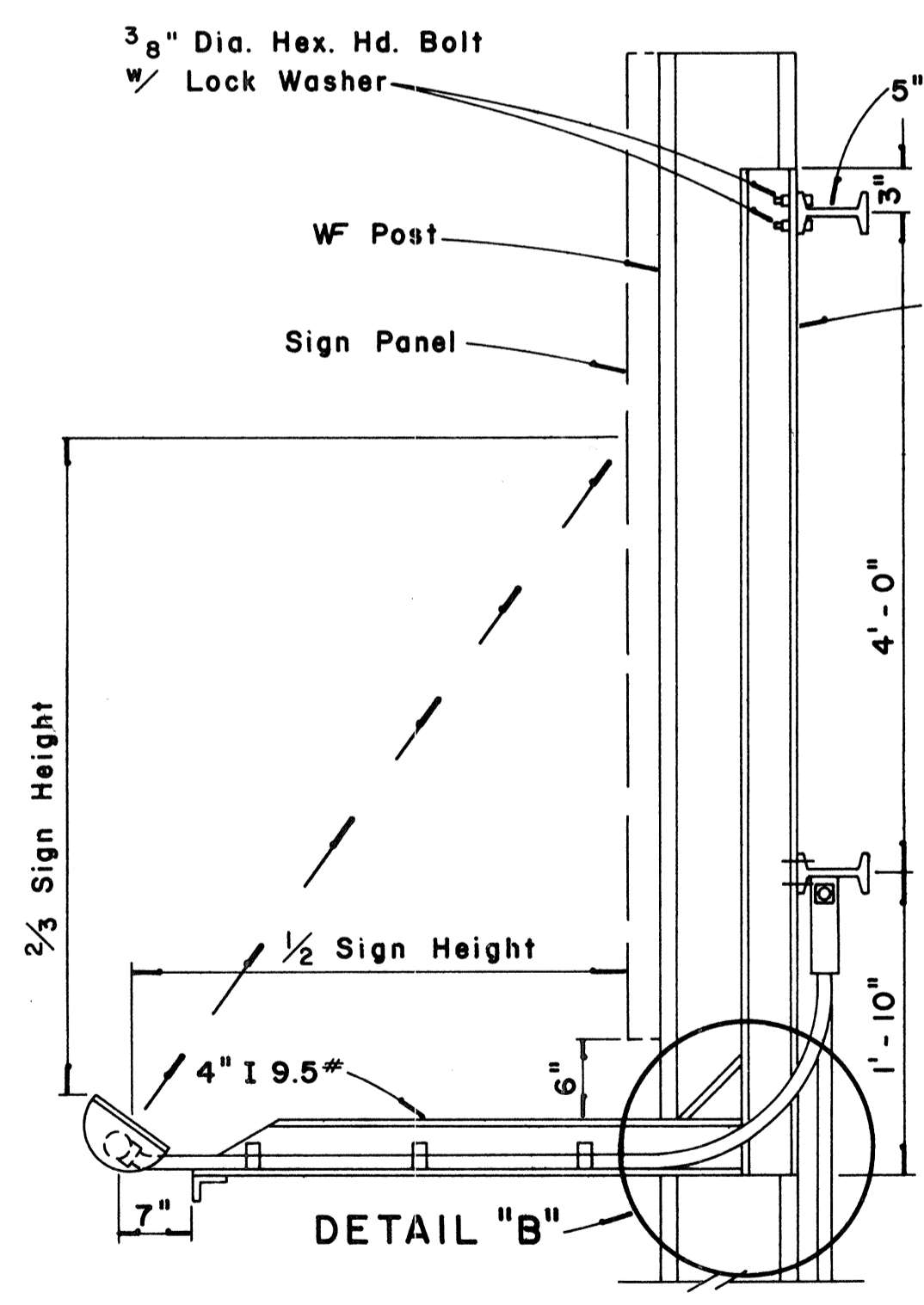
CONDUIT STRAP DETAIL
Scale: 3" = 1'-0"



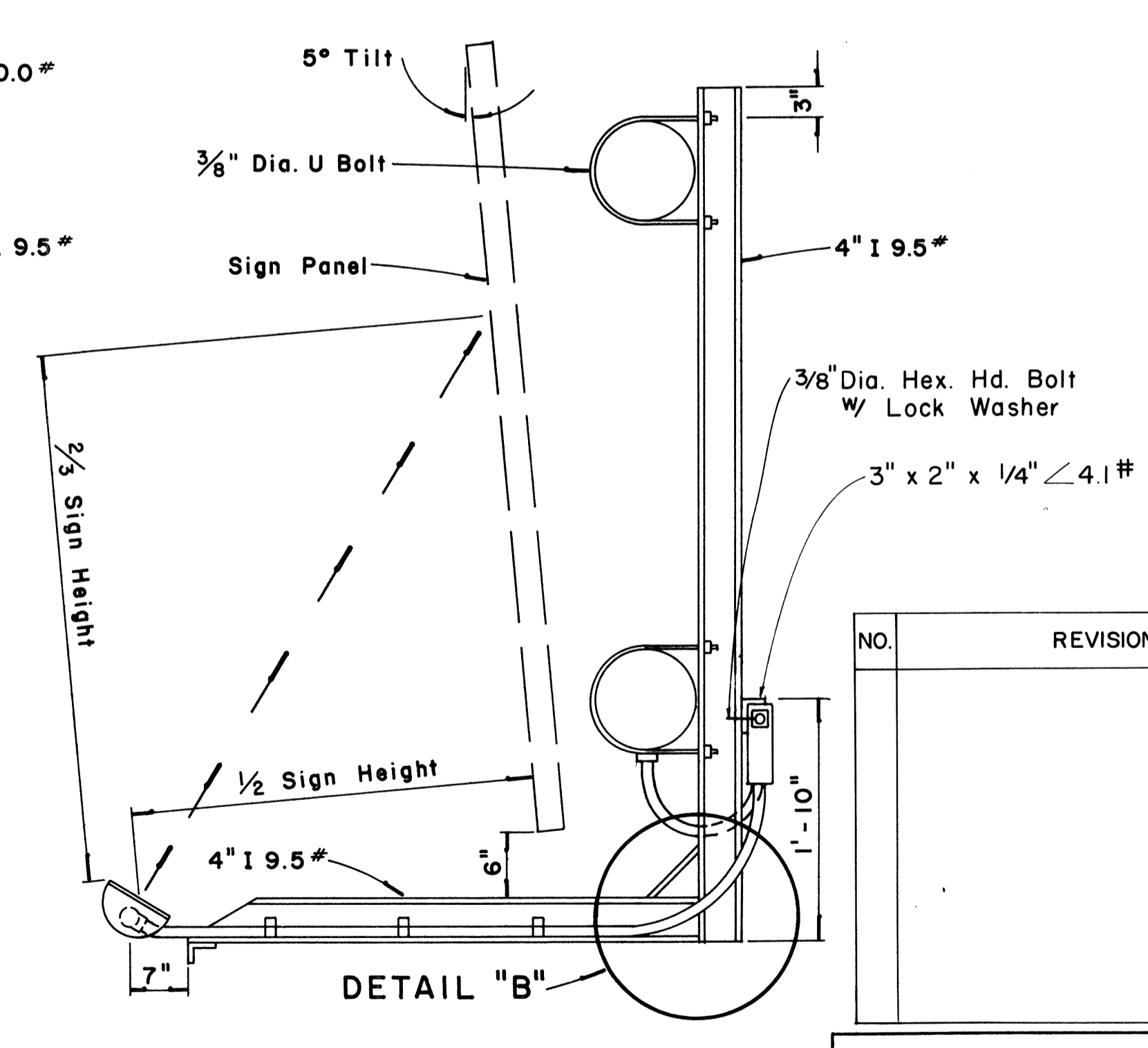
DETAIL "B"
Scale: 3" = 1'-0"



**REAR VIEW
LUMINAIRE MOUNTING**
Scale: 1" = 1'-0"



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



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

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

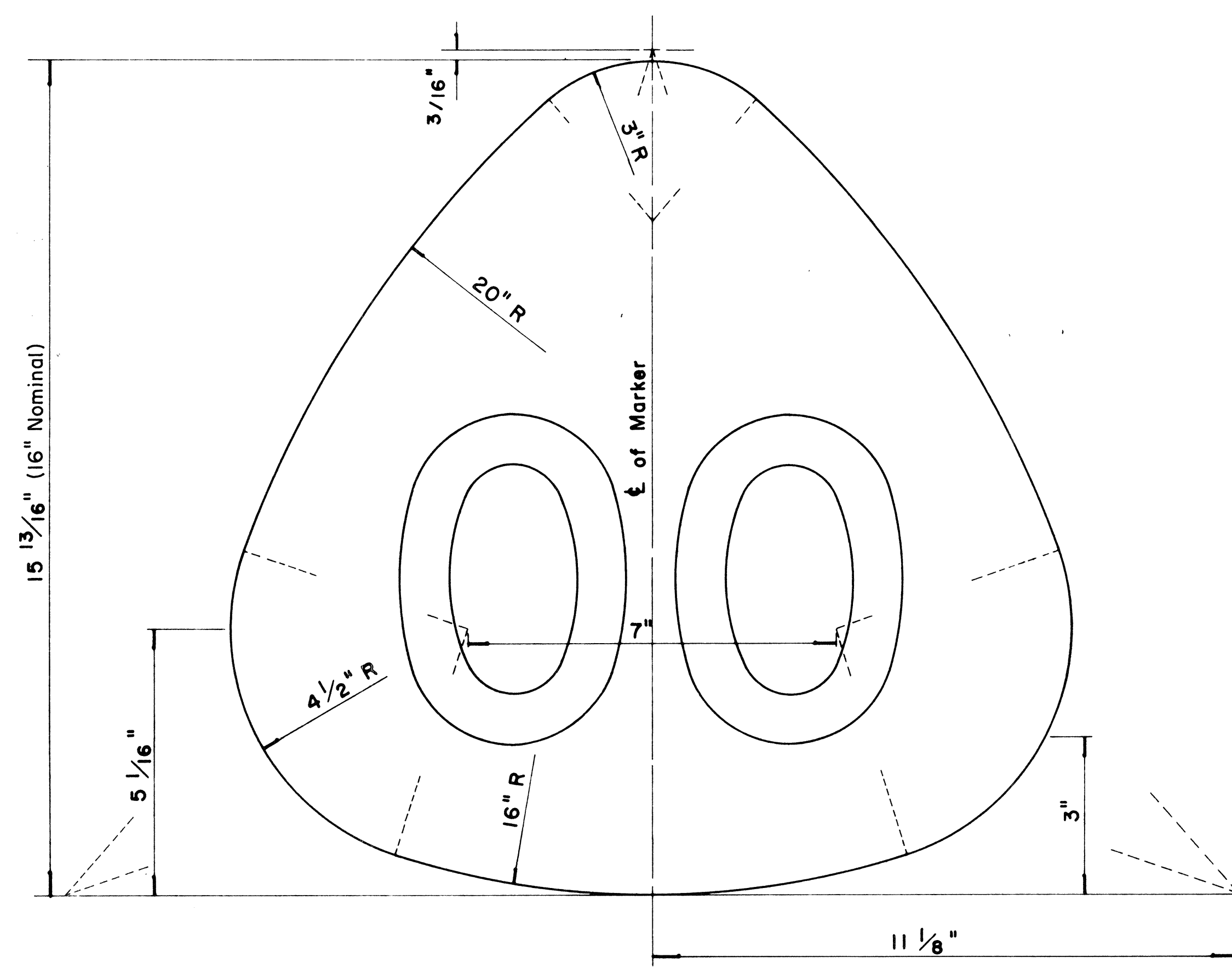
**EXPRESSWAY SIGNS
LUMINAIRE MOUNTINGS**

Scale: As Shown
SHEET No. 42T OF 53T SHEETS DT 208

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60):23	1976	163	181

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



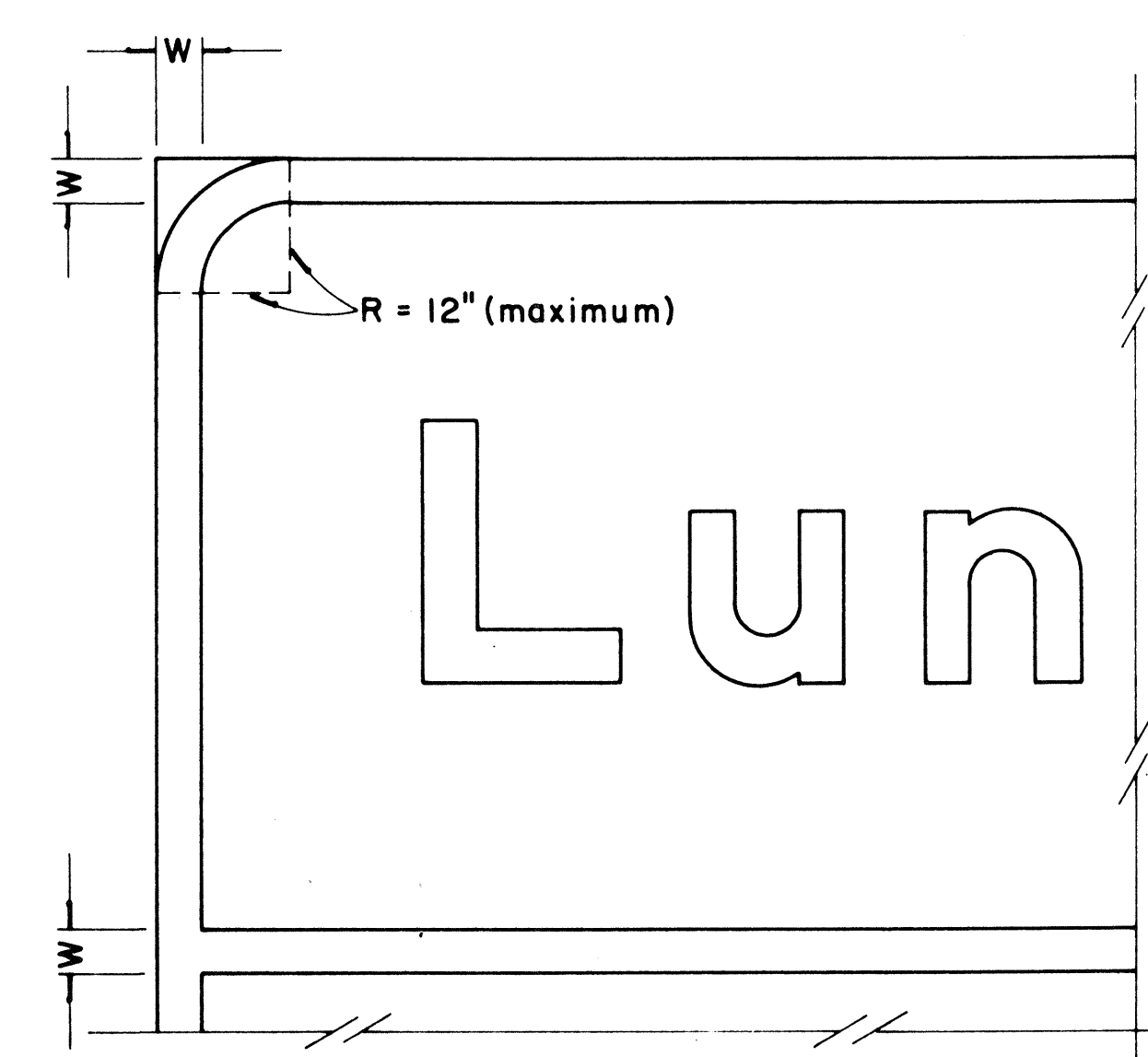
**STATE ROUTE MARKER
FOR GUIDE SIGNS**

Scale: Half Size

NOTE:

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

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



**BORDER DETAIL
FOR GUIDE SIGNS**

Not to Scale

NOTE:

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

APPROVAL RECOMMENDED:

Eishi Tanaka 4/11/72
TRAFFIC ENGINEER DATE

APPROVED:

Rubert S. Sakai 4/12/72
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 209 Approved 12-30-69	H.T.	4/12/72
2	Revised Notes and Schedules	H.T.	9-14-70

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

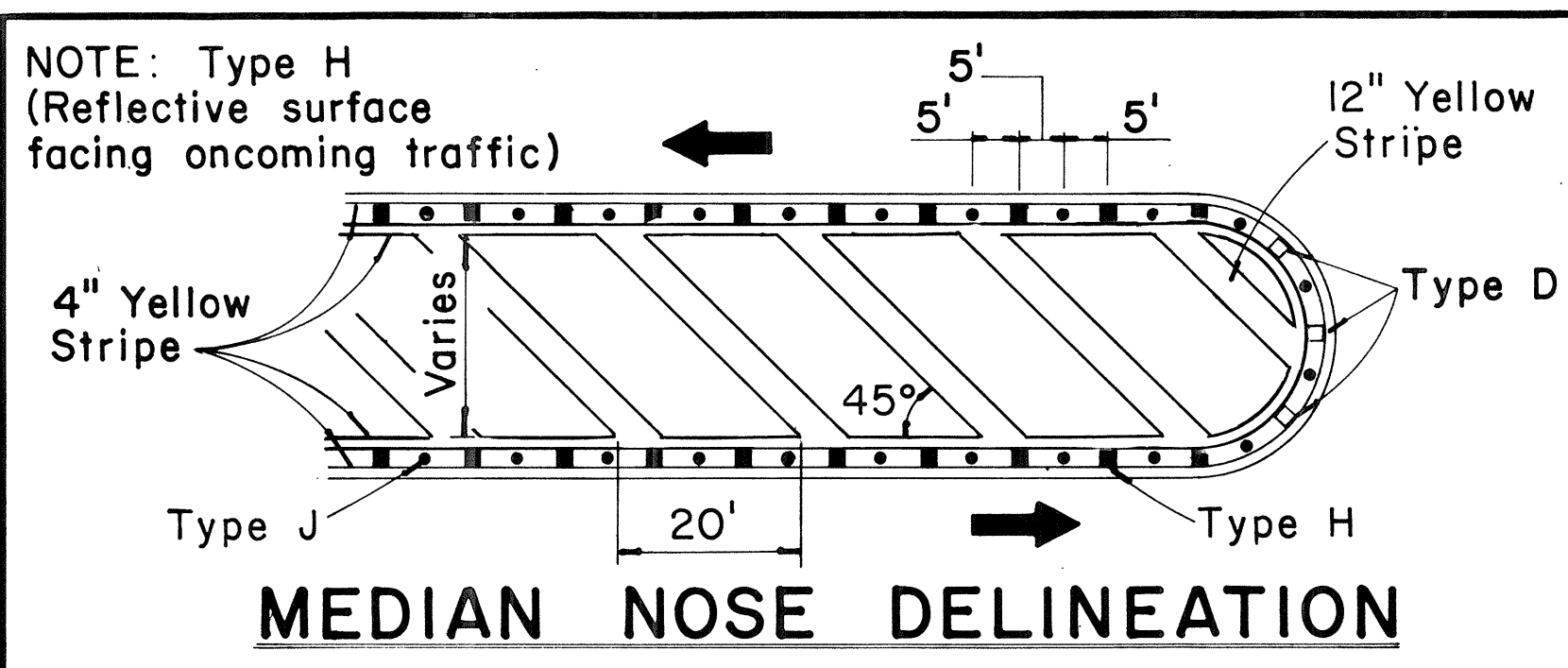
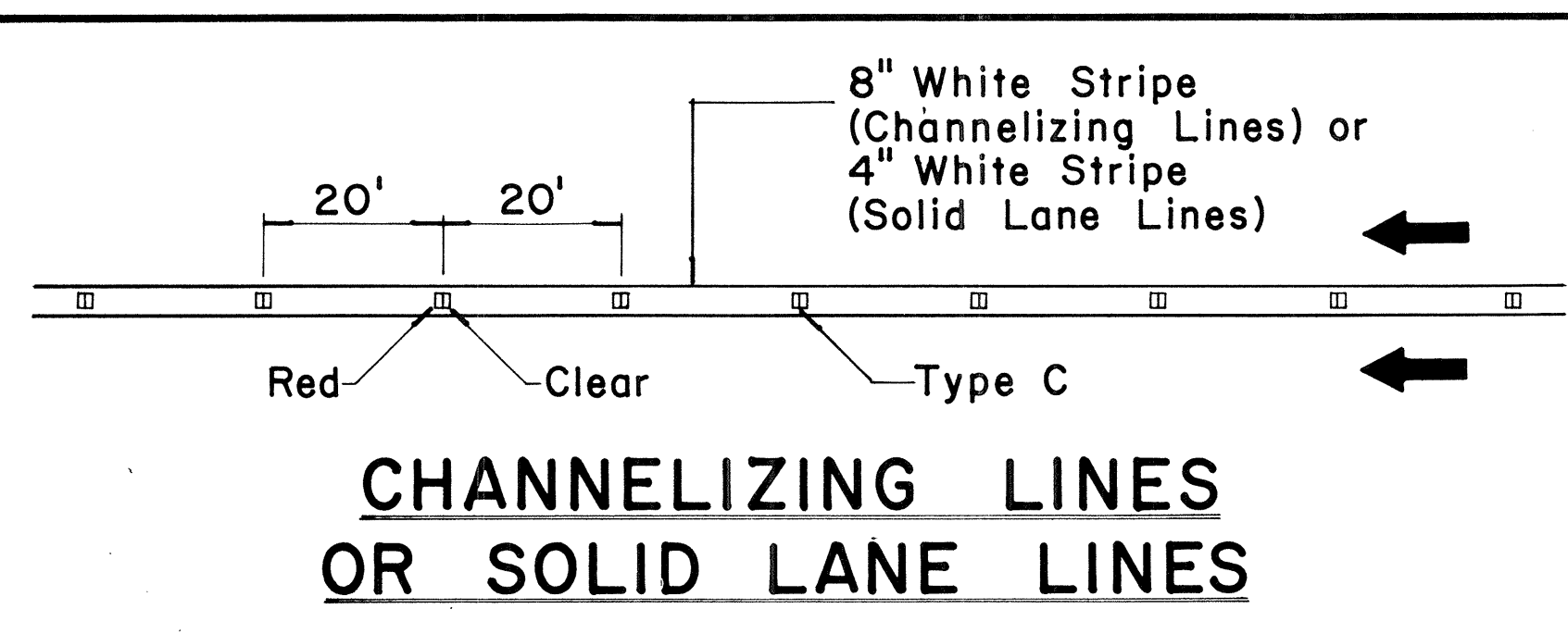
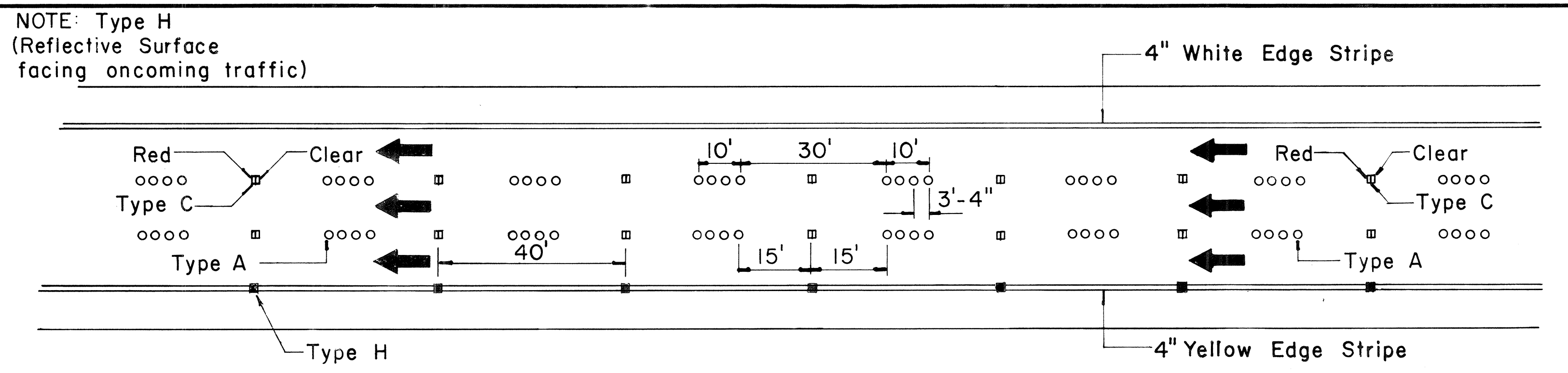
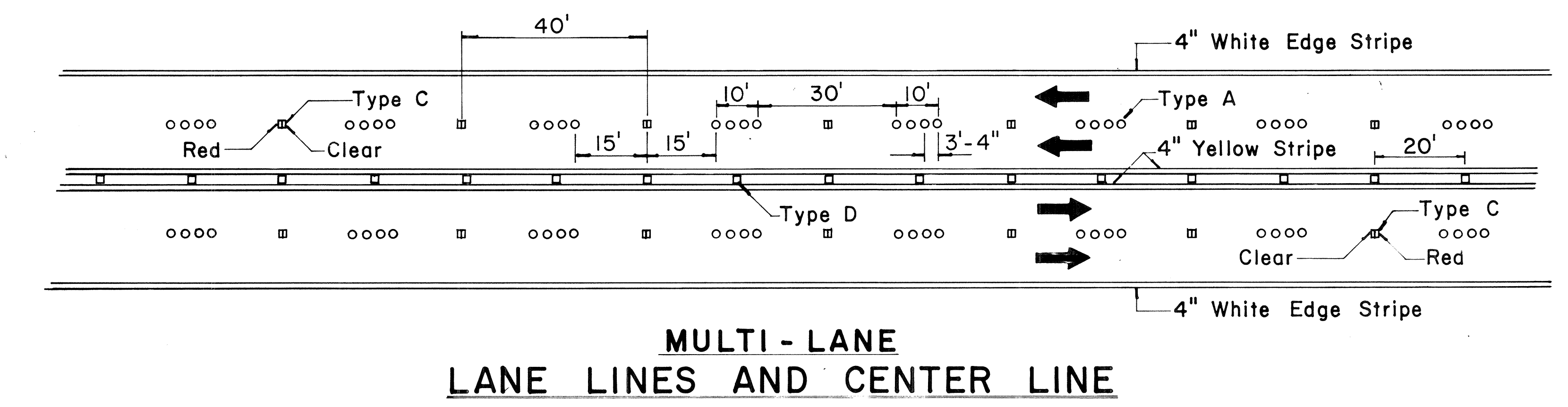
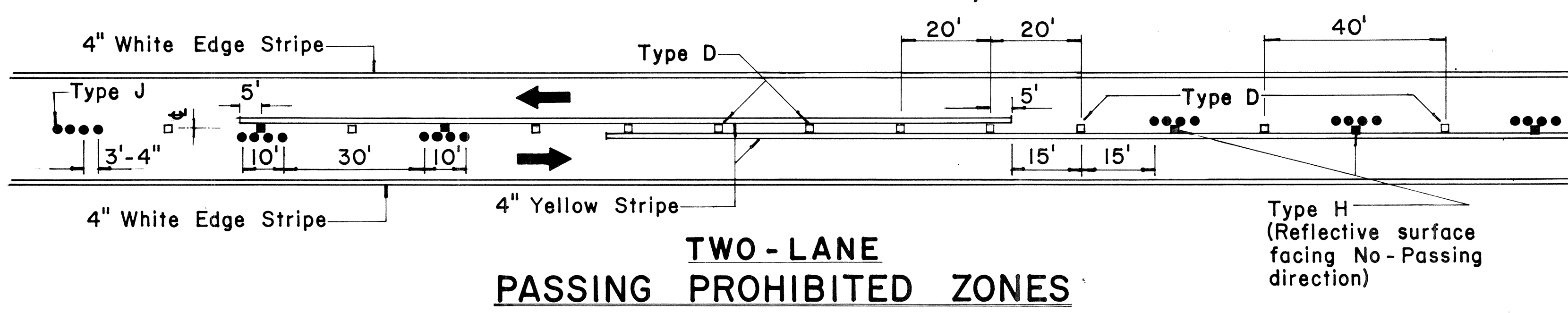
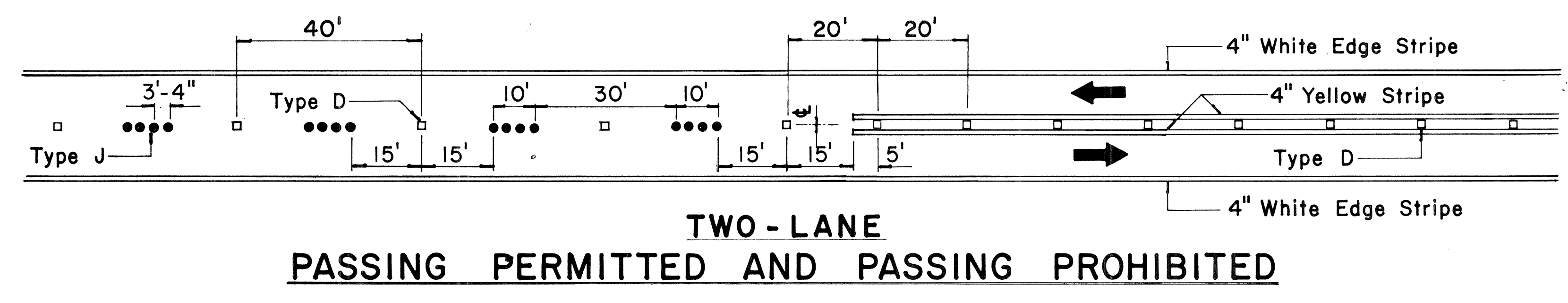
**STATE ROUTE MARKER
AND BORDER DETAIL
FOR GUIDE SIGNS**

Scale: As Shown

SHEET No. 43T OF 53T SHEETS DT 209

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(60)23	1978	C.O. 164	181

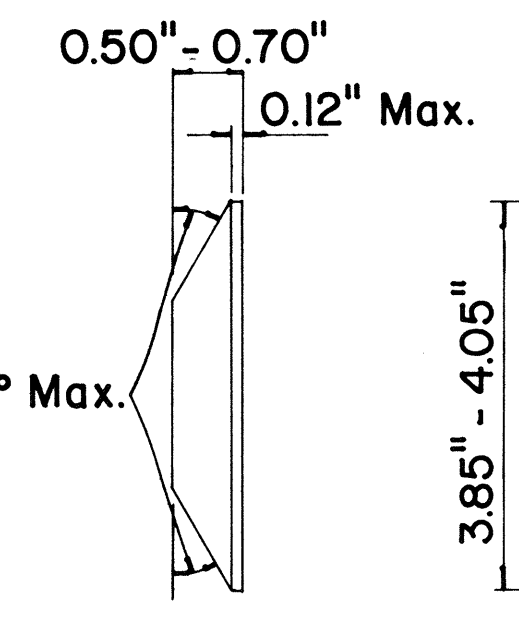
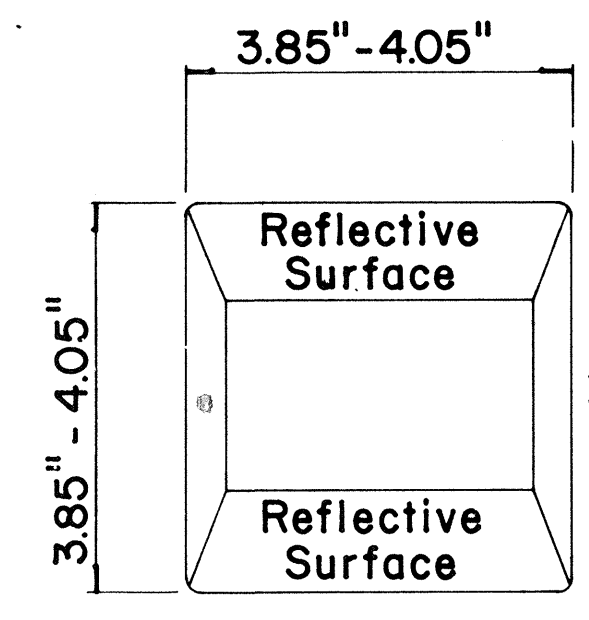
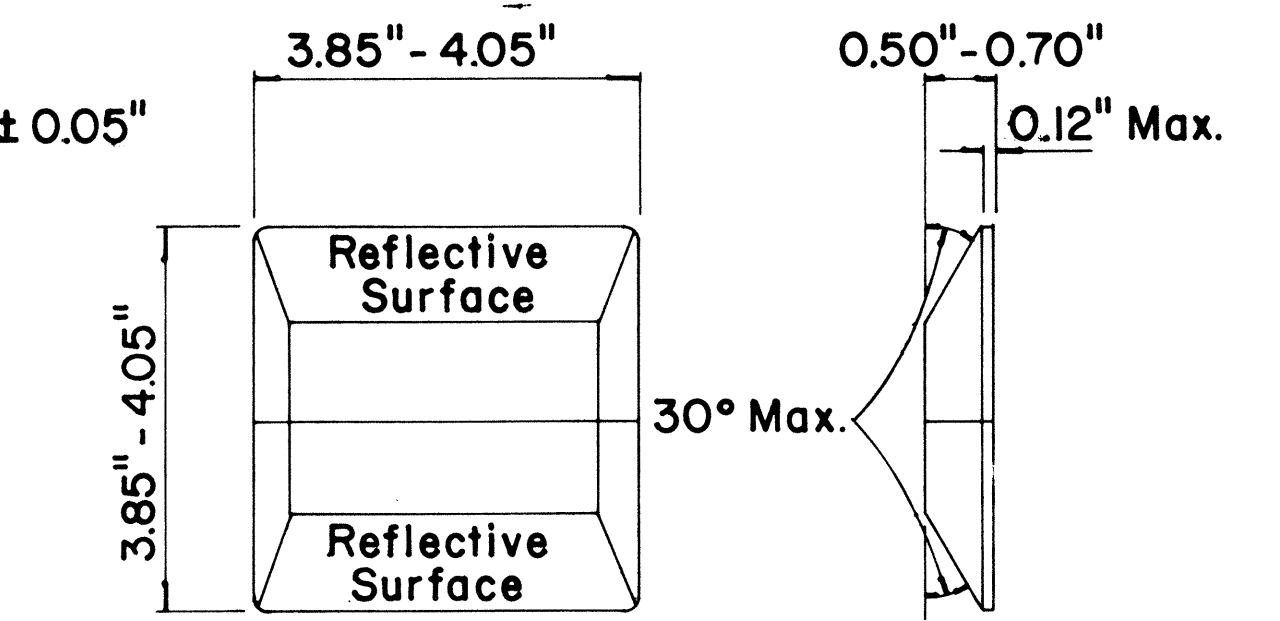
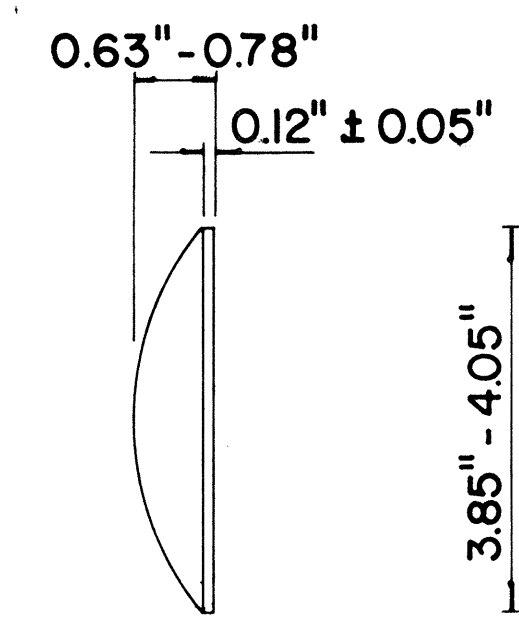
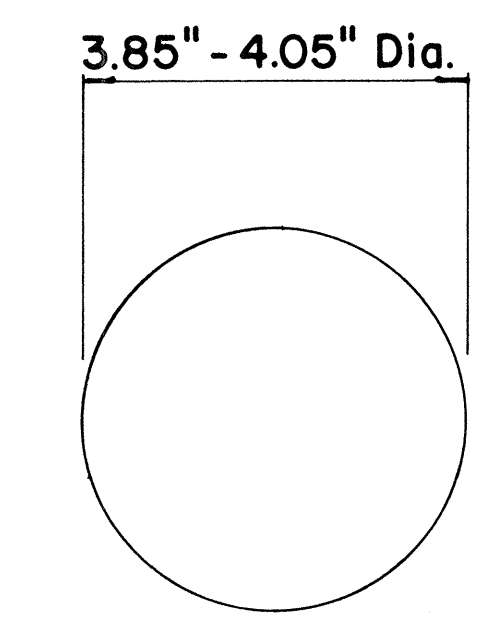


TWO - LANE

MULTI - LANE

DIVIDED HIGHWAY
AND
FREEWAY

MISCELLANEOUS



GENERAL NOTES

- Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Layout and installation of pavement marking and striping shall be done by the Contractor. The Contractor shall check the layouts with the Engineer prior to performing work.

LEGEND

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

APPROVAL RECOMMENDED:
Eishi 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.T.	10-21-72
2	Revised General Notes.	H.T.	10-21-72
3	Change 4" white edge stripe to 4" solid yellow edge stripe to left edge of a travel path and Add Type H Reflector Marker.	H.T.	5-22-74
4	Revised details, General Notes & Title Box.	H.T.	1-13-77

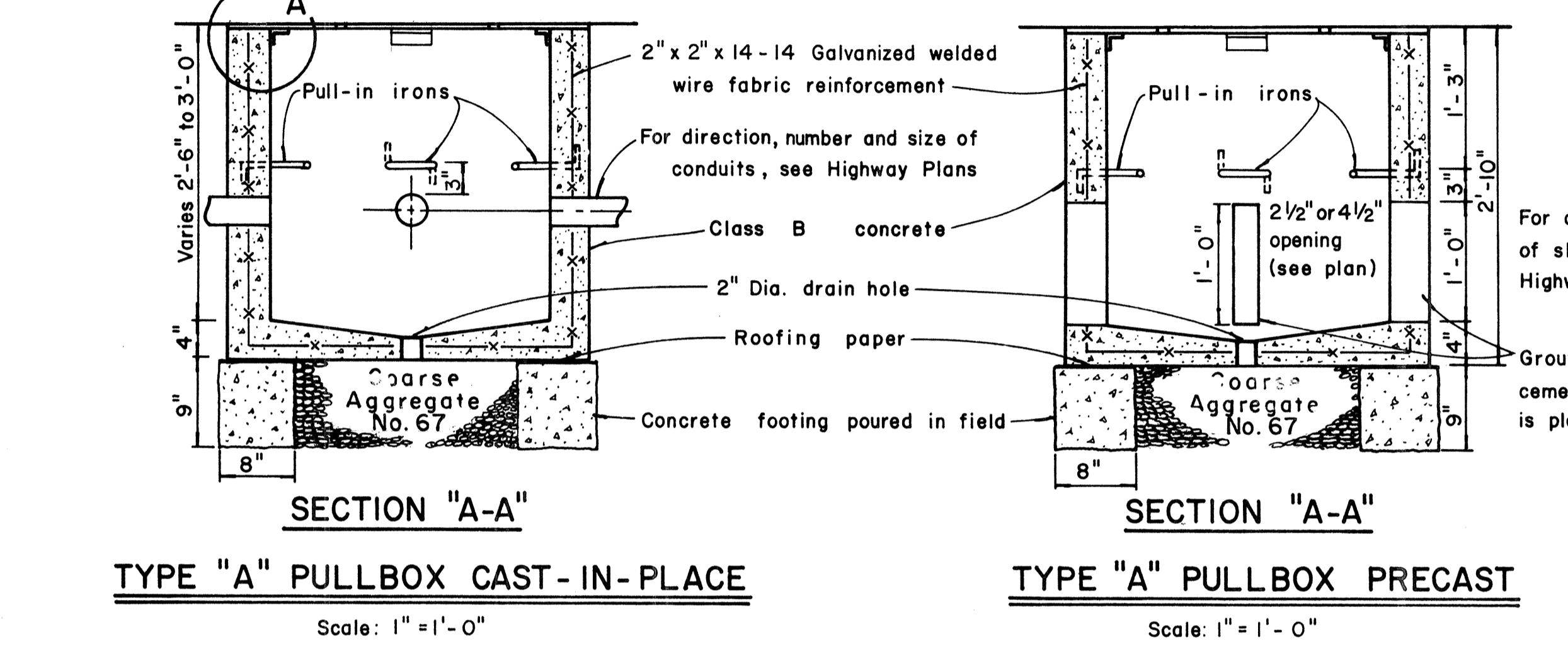
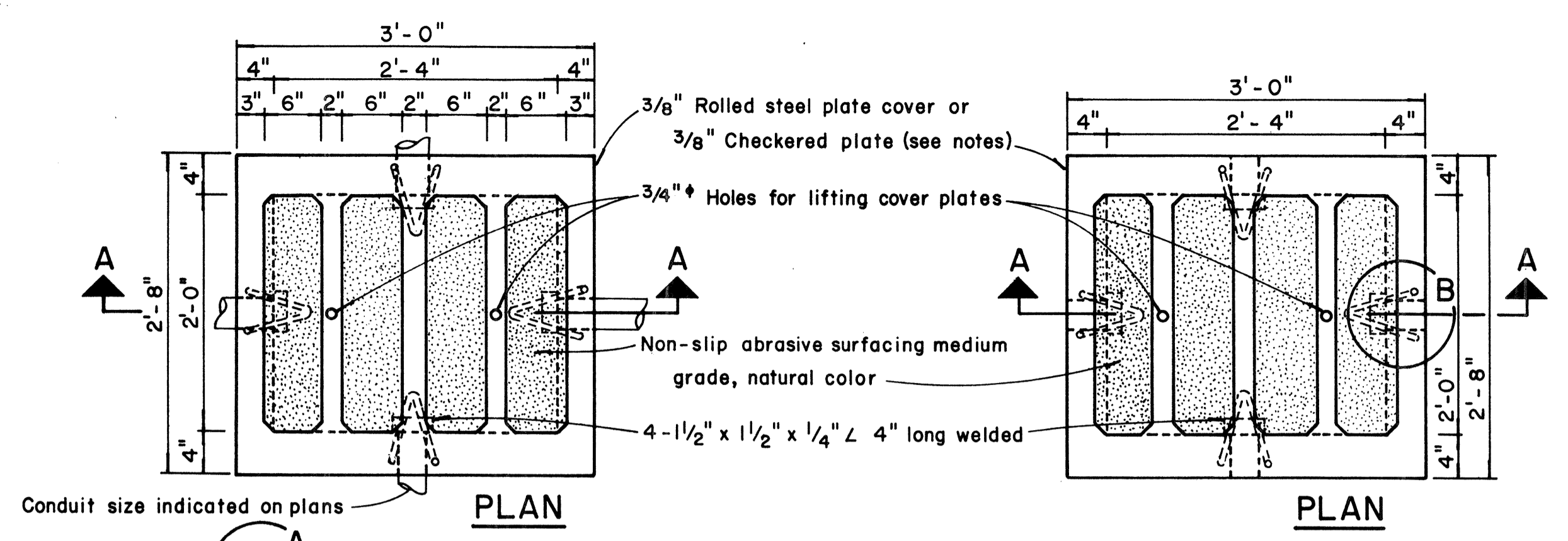
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAILS
RAISED PAVEMENT MARKERS
AND STRIPING**

Not to Scale October 1971
SHEET No. 44 OF 53 SHEETS DT 300

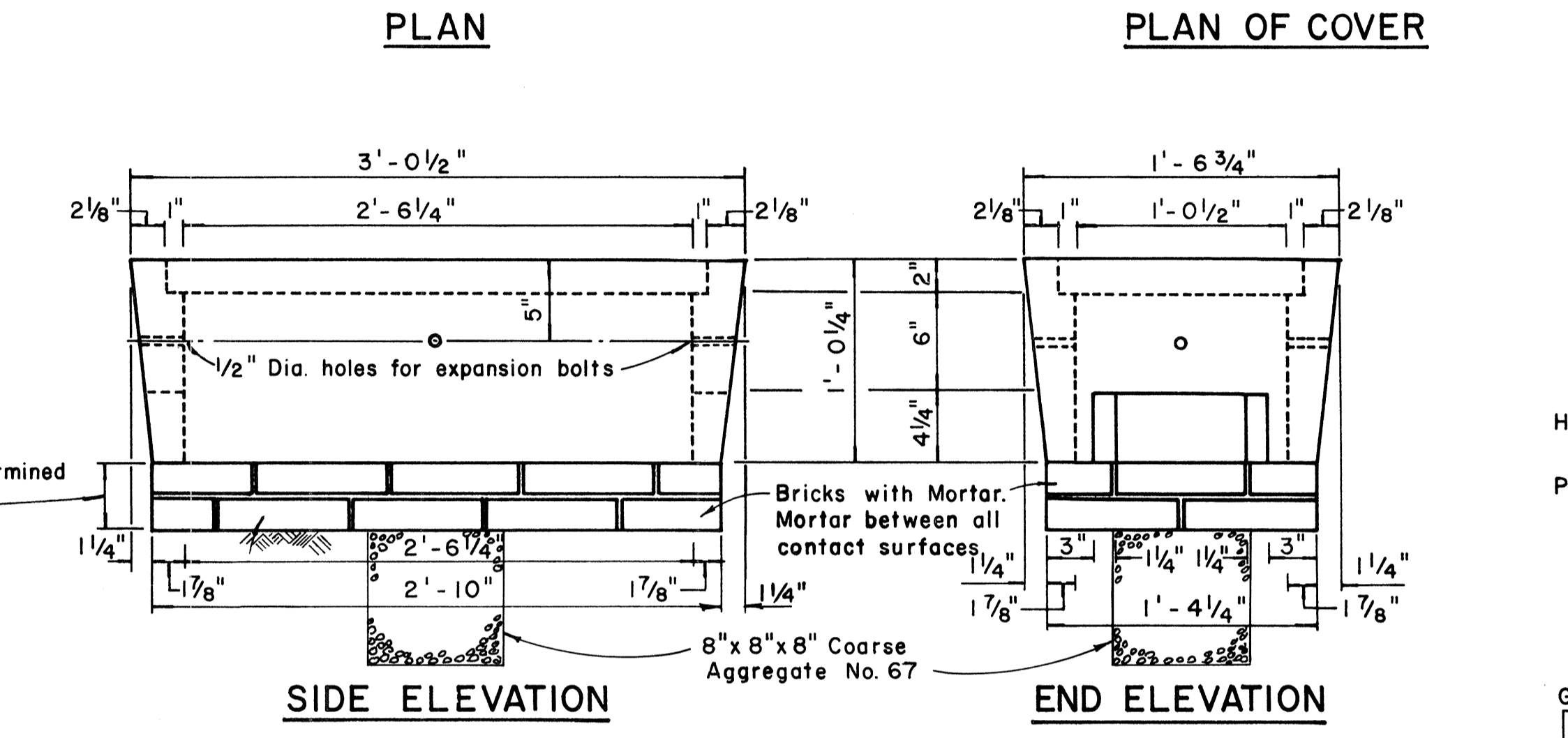
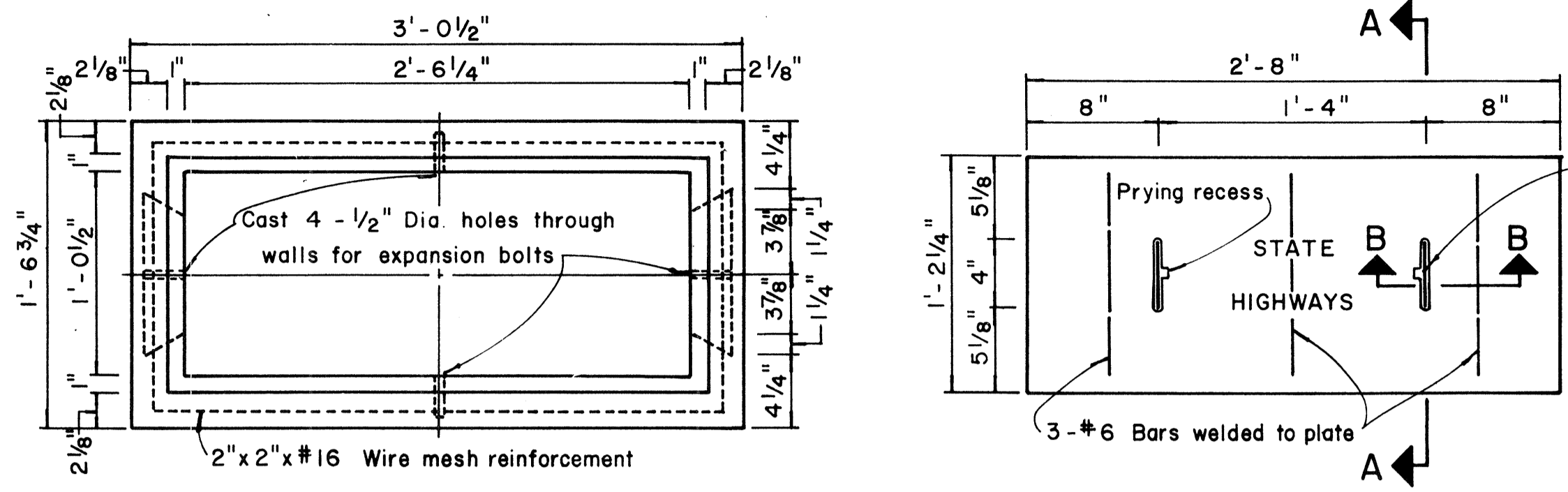
SURVEY PLOTTED BY: _____ DATE: _____
 ORIGINAL PLAN: _____
 DESIGNED BY: _____
 NOTE BOOK: _____
 QUANTITIES BY: _____
 CHECKED BY: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-111(60):23	1976	165	181

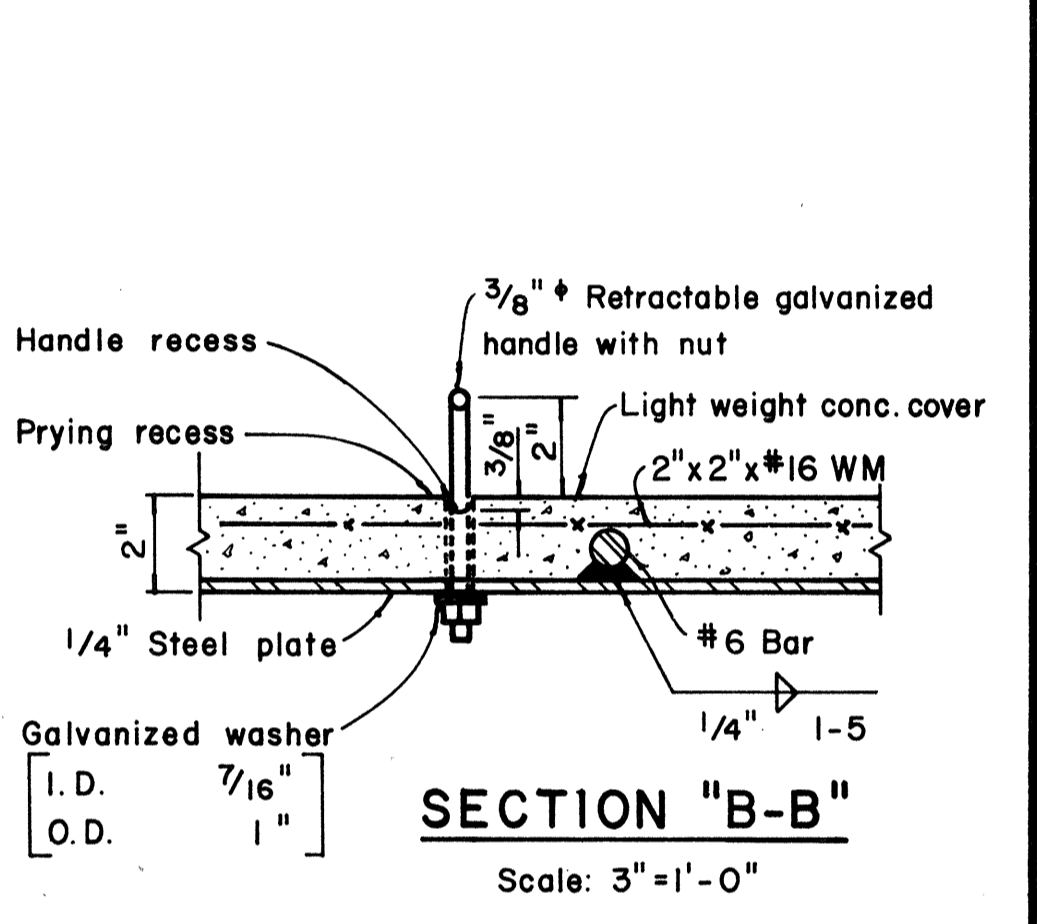
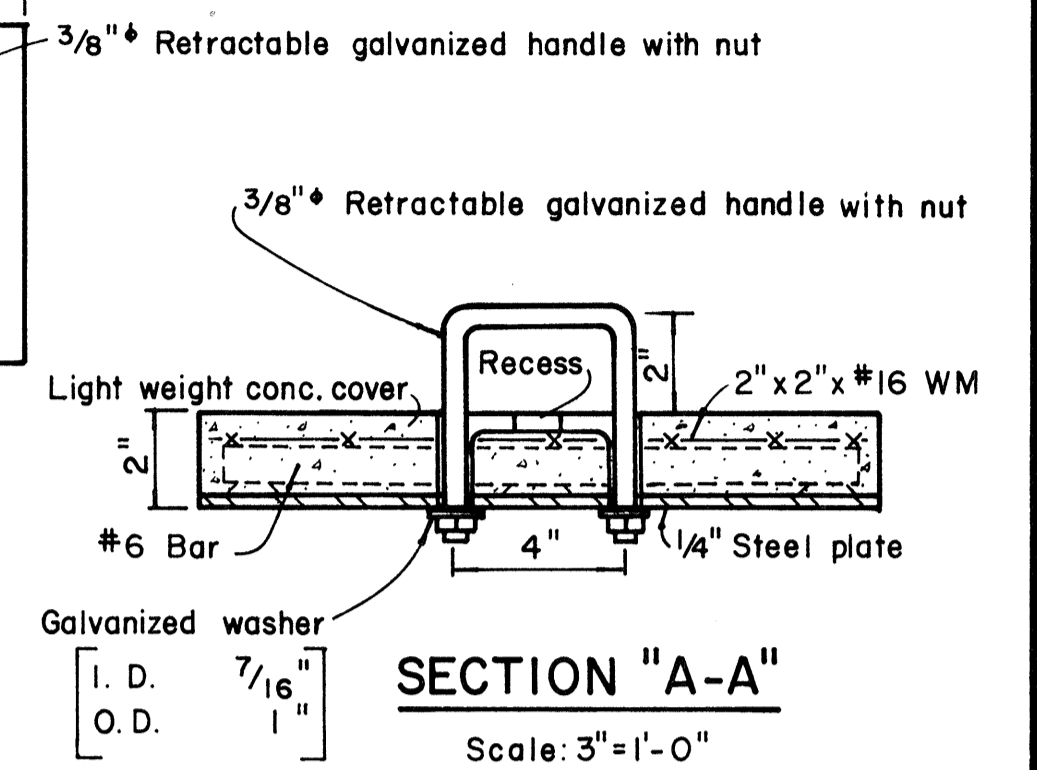


TYPE "A" PULLBOX CAST-IN-PLACE
Scale: 1" = 1'-0"

TYPE "A" PULLBOX PRECAST
Scale: 1" = 1'-0"

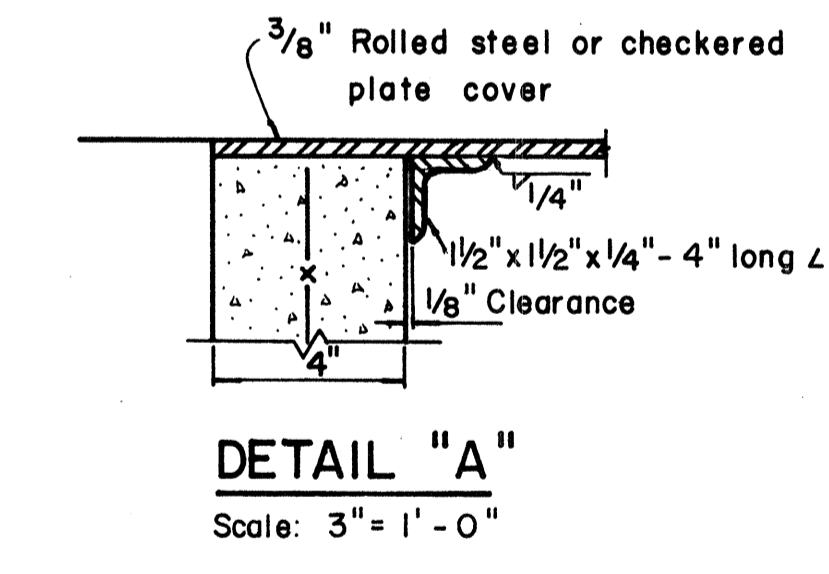


TYPE "C" PULLBOX
Scale: 1/2" = 1'-0"

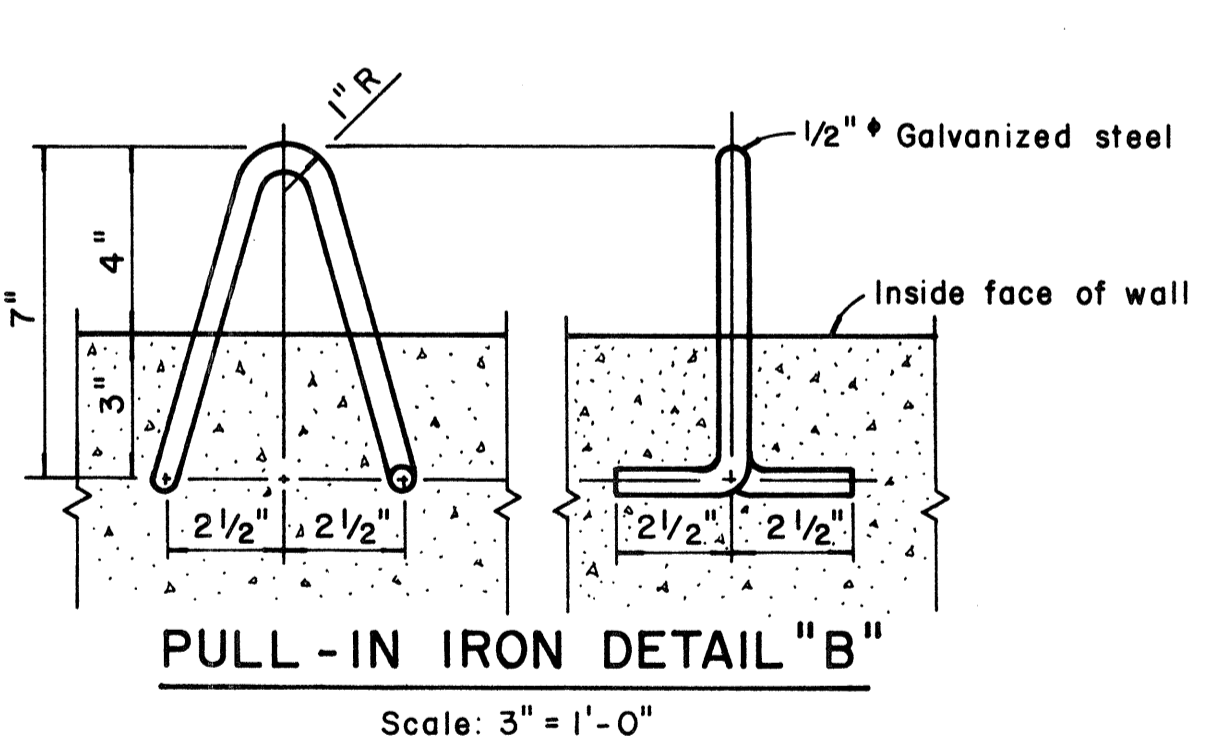


SECTION "A-A"
Scale: 3" = 1'-0"

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

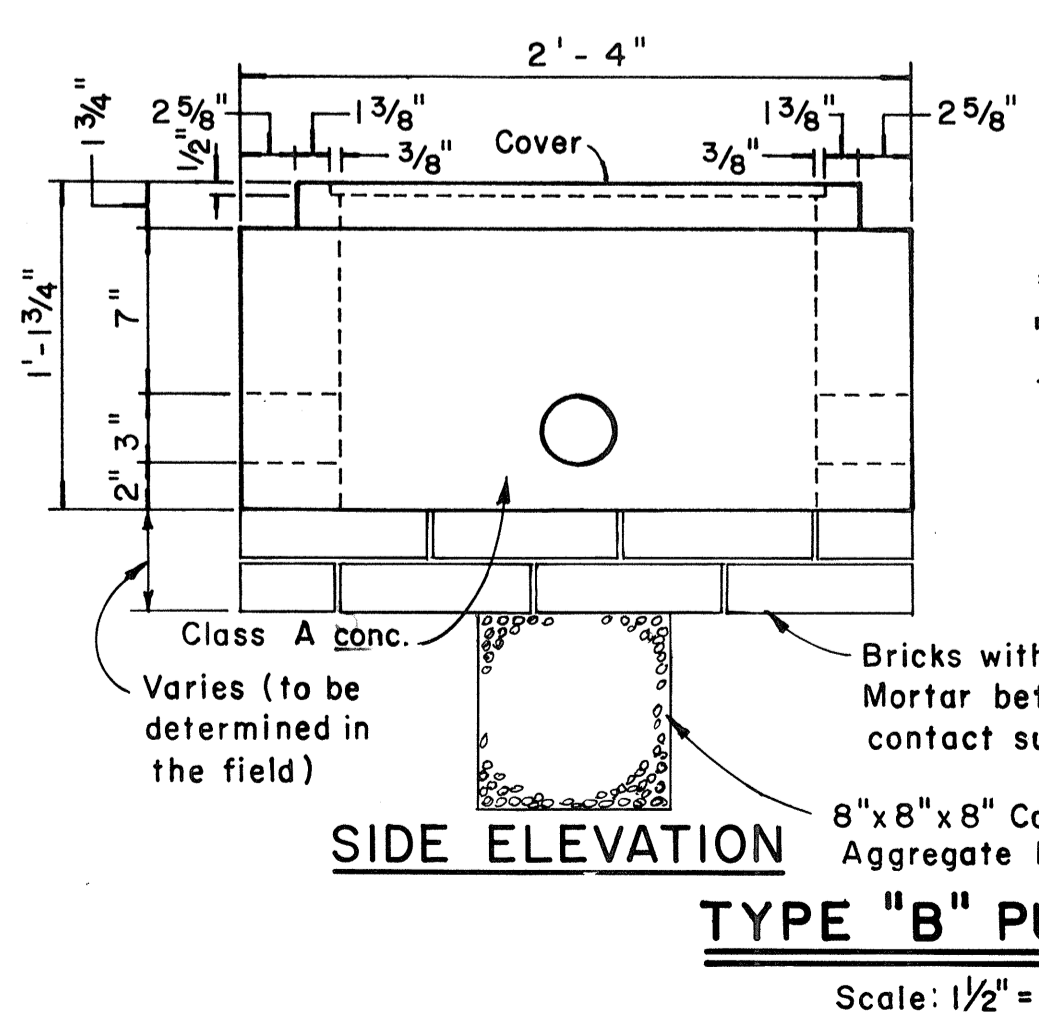
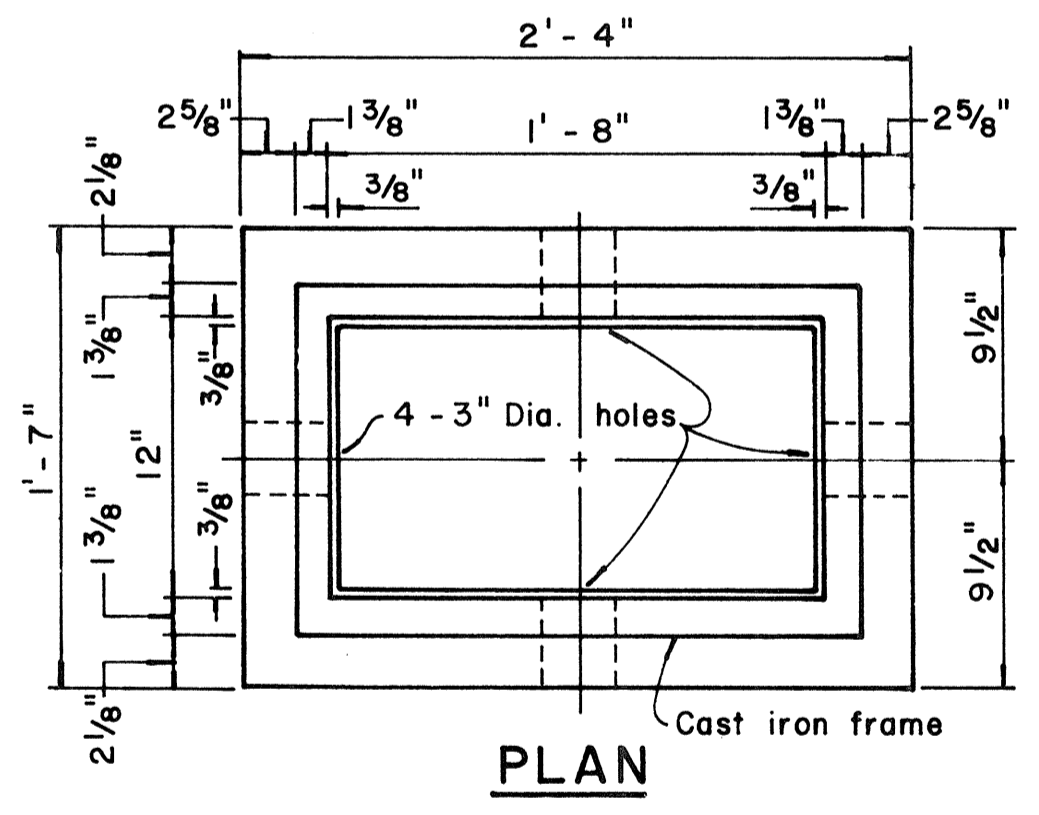


DETAIL "A"
Scale: 3" = 1'-0"

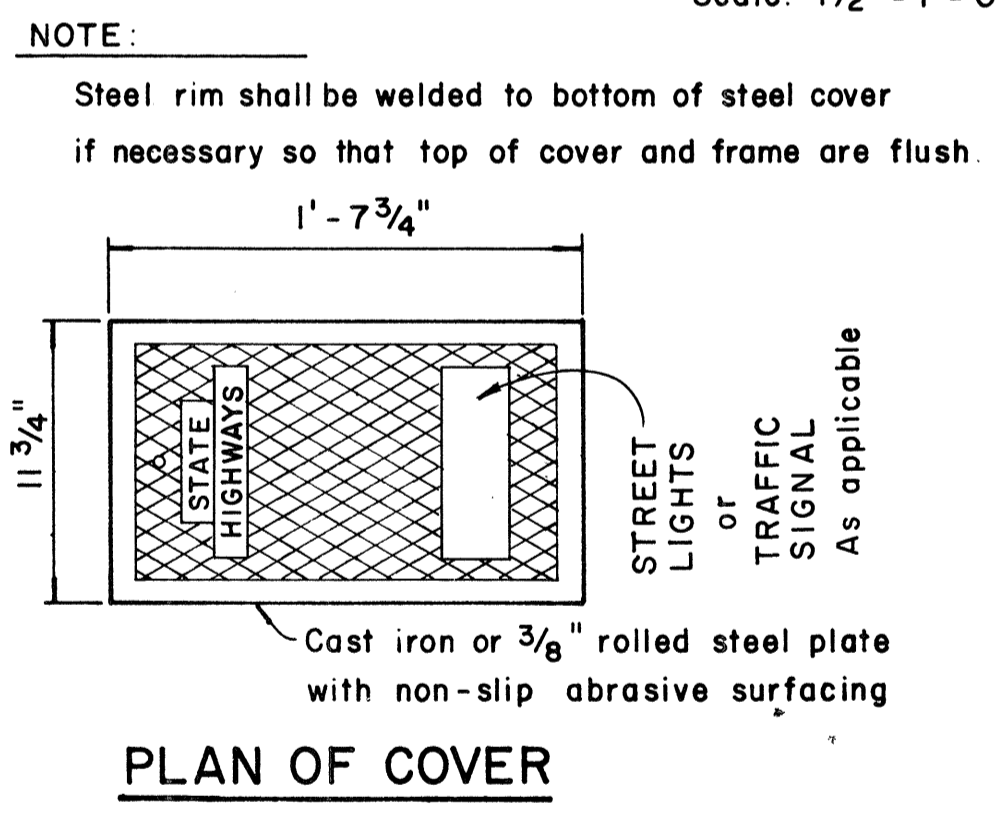


PULL-IN IRON DETAIL "B"
Scale: 3" = 1'-0"

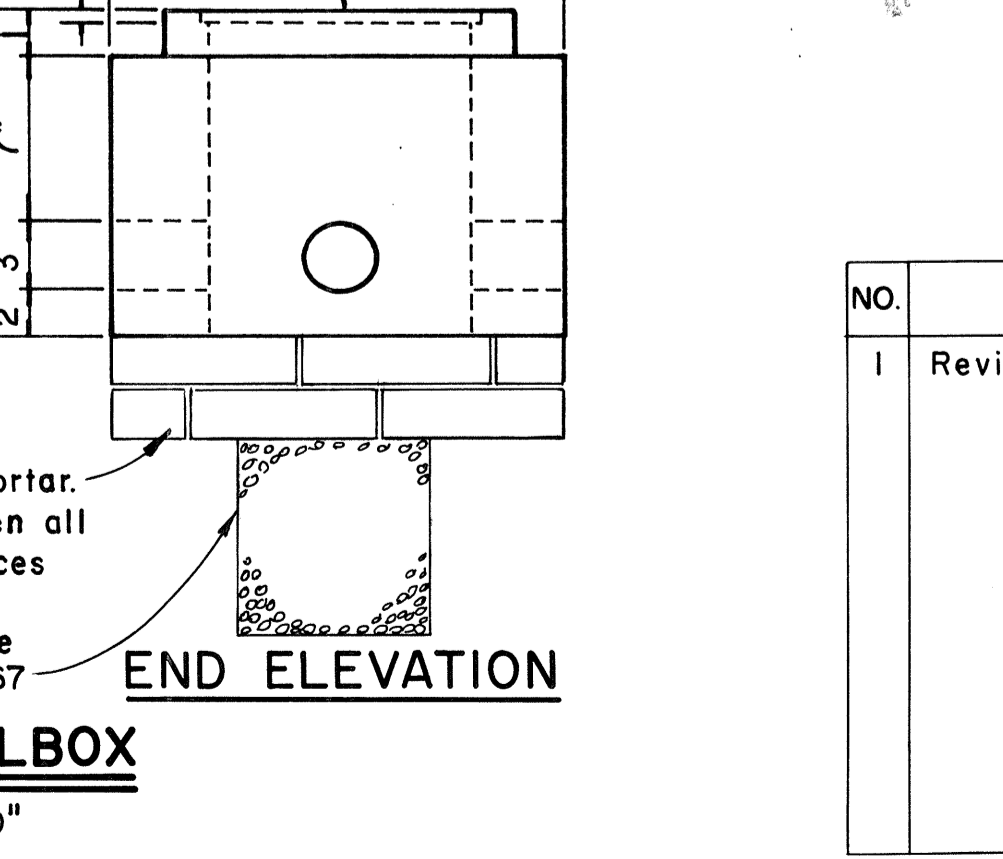
- NOTES: (FOR TYPE "A" PULLBOX)
- 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
 - 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
 - Pull irons shall be placed opposite each conduit slot.
 - Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
 - Each pullbox shall have a pair of pull irons opposite each other for lifting purposes.



TYPE "B" PULLBOX
Scale: 1/2" = 1'-0"



PLAN OF COVER



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

NOTE:
Steel rim shall be welded to bottom of steel cover if necessary so that top of cover and frame are flush.

APPROVAL RECOMMENDED:
Erich Tanaka 12/2/62
TRAFFIC ENGINEER DATE

APPROVED:
John J. ... 12-20-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised Type B & C Pullbox details	H.T.	3-5-76

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

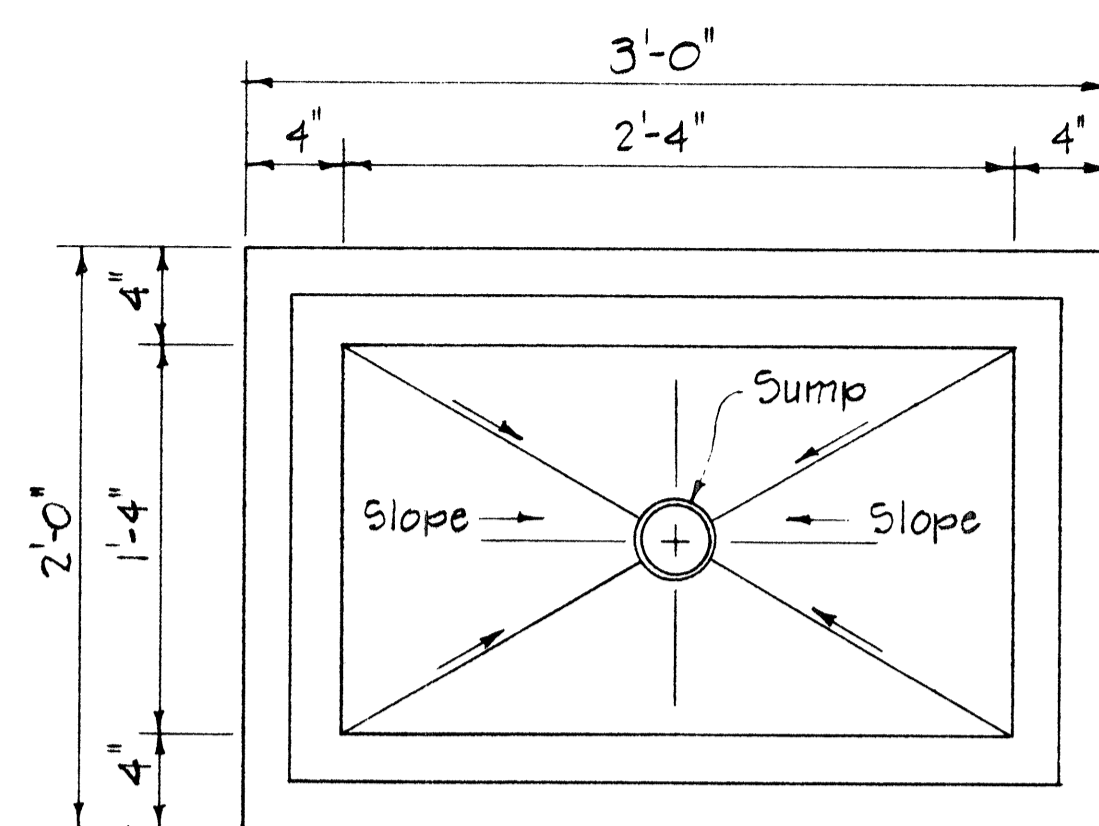
STANDARD DETAILS
PULLBOXES

Scale as noted Date

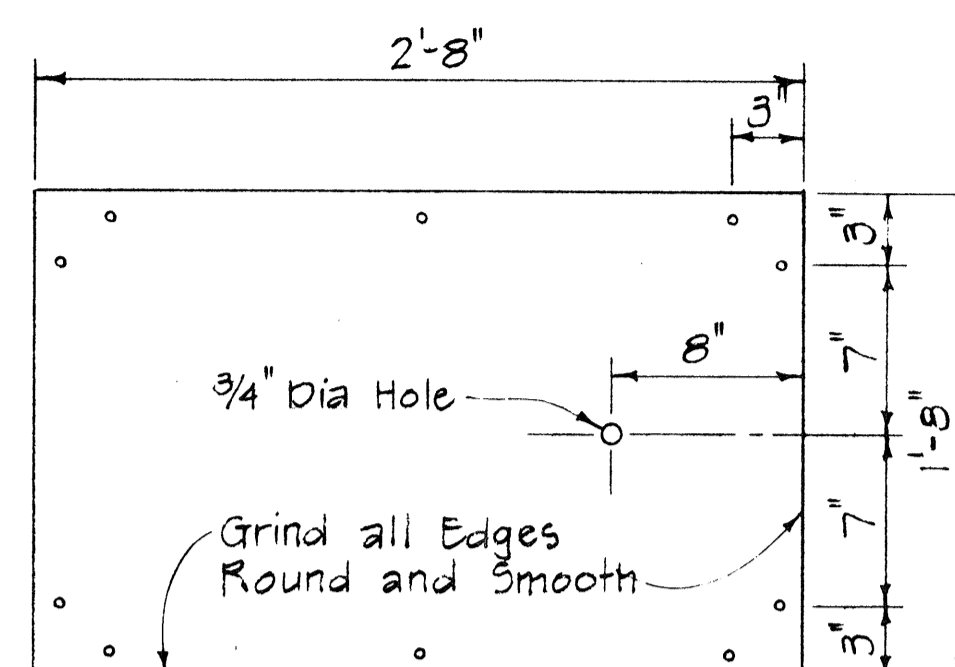
SHEET No. 451 OF 531 SHEETS DT 401

DATE
DRAWN BY
CHECKED BY
DESIGNED BY
QUANTITIES BY
NO. 1

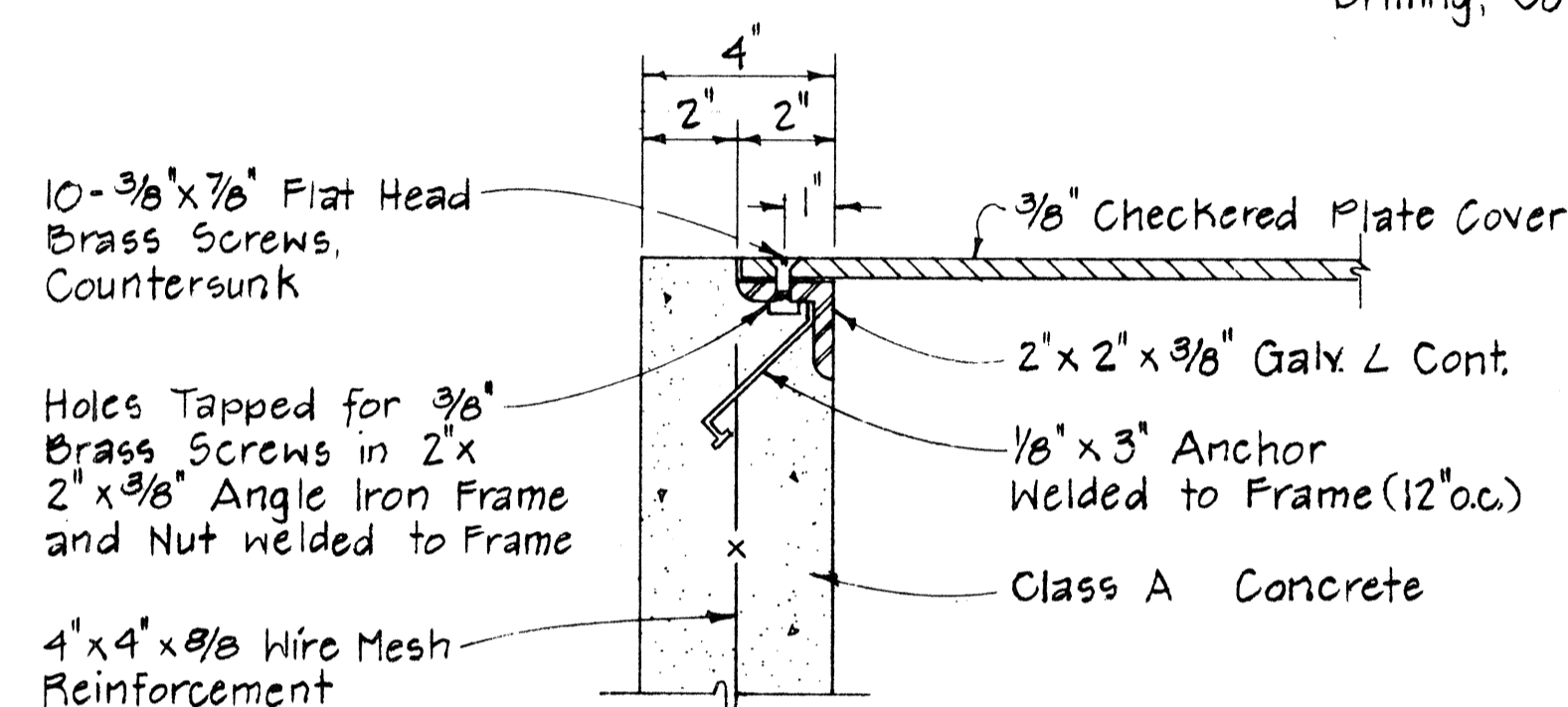
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HH(60)23	1976	166	181



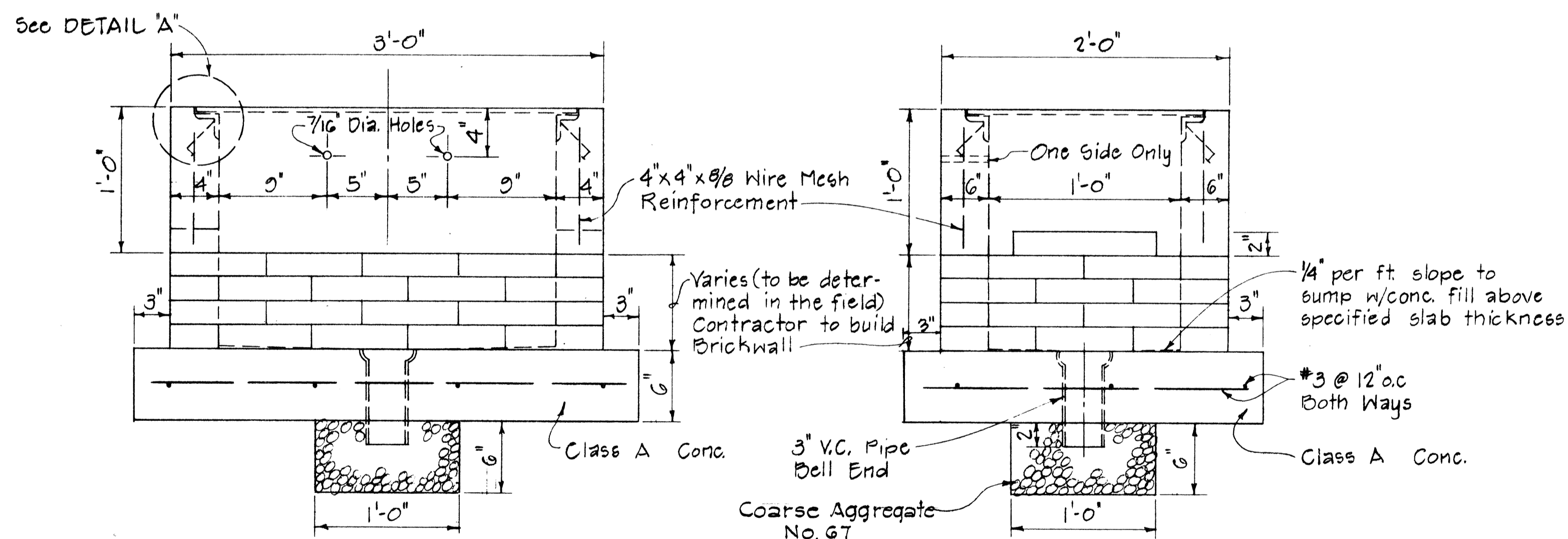
PLAN
Scale: 1/2" = 1'-0"



3/8" CHECKED PLATE COVER
(Hot Dip Galvanizing Checkered Plate after Drilling, Countersinking and Grinding Edge)
Scale: 1/2" = 1'-0"



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



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

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

2'-0" x 3'-0" CONCRETE PULLBOX

NOTES:

- Concrete Pullbox shall consist of all work necessary for constructing the Pullbox for the Highway Lighting System shall include furnishing & installing all materials, appurtenances and galvanizing as shown above.
- A mounting bracket or a 10" x 10" x 6" high (minimum) shelf shall be provided in each Pullbox for the installation of an isolating transformer (Incidental to Highway Lighting System)

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

APPROVED:
William J. ...
ASSISTANT CHIEF, ENGINEERING 12/30/69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAIL OF 2' x 3'
CONCRETE PULLBOX

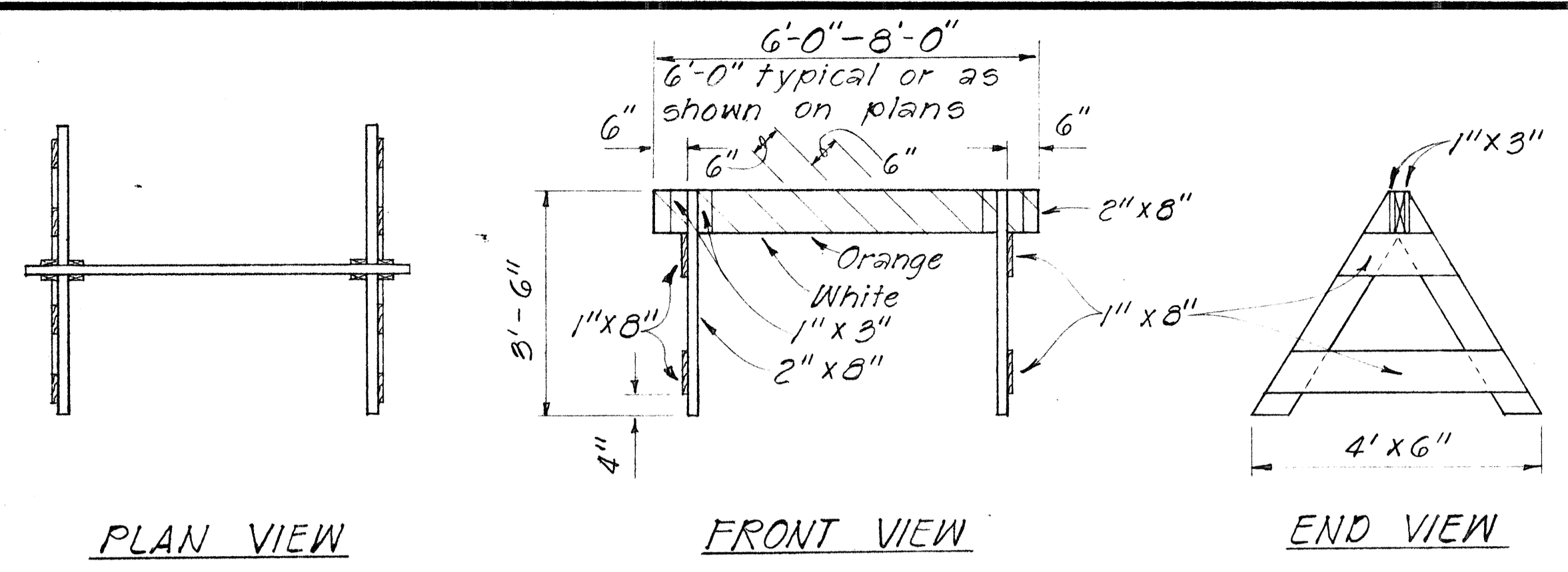
SCALE AS SHOWN FEB. 1969

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NOTE BOOK	
NO.	

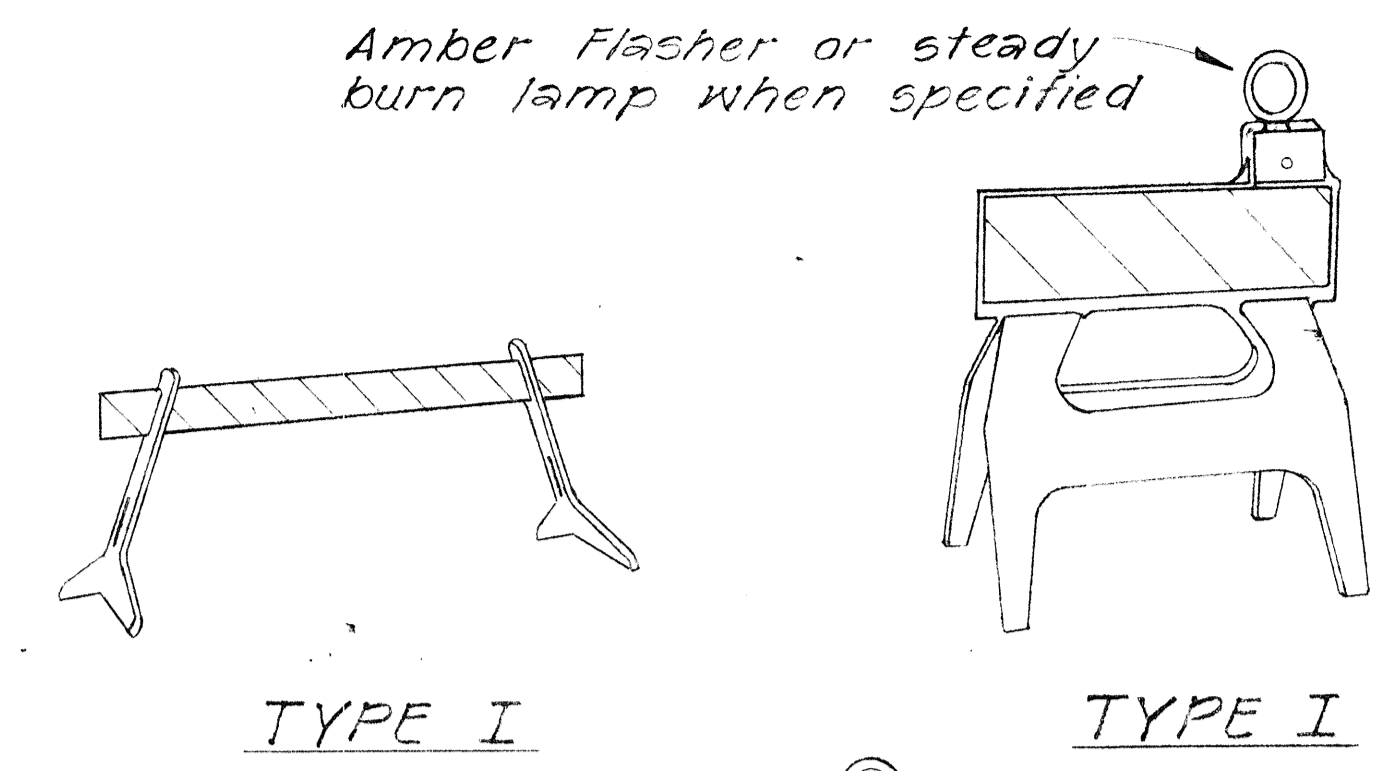
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH(60):23	1976	167	181

GENERAL NOTES

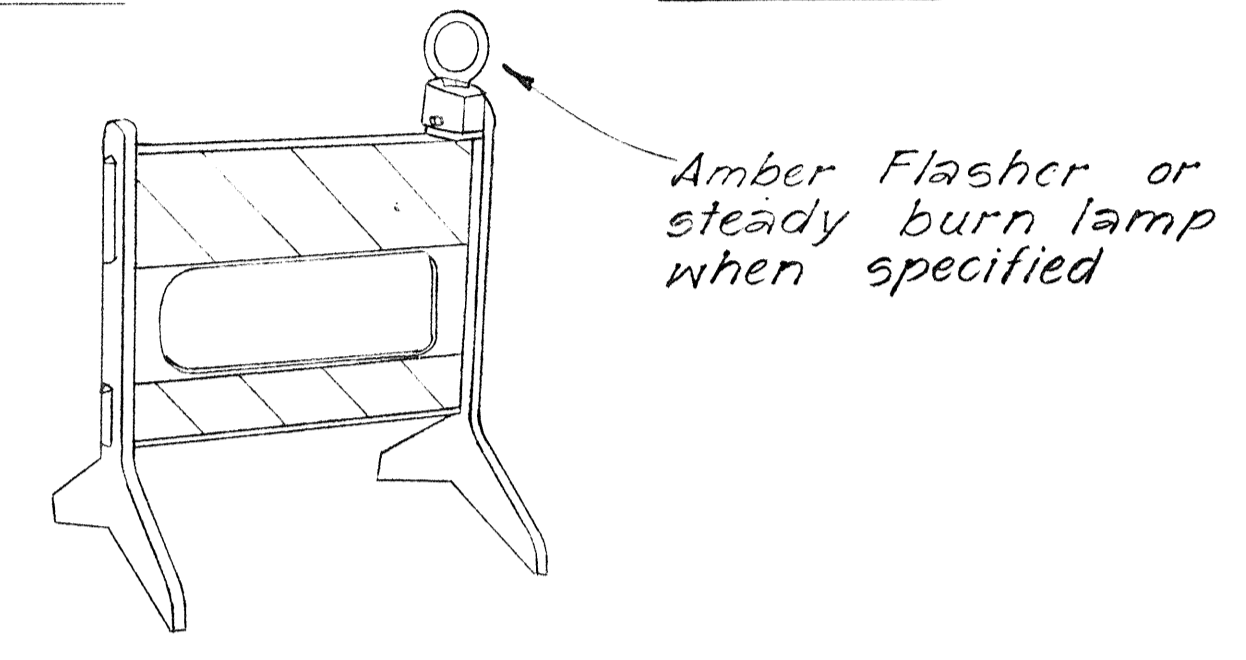
1. The Contractor shall construct, install and maintain the barricades at the locations shown on the Plans.
2. The barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property, unless otherwise specified.
3. The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized with reflective sheeting.
4. Both faces of the barricade rails shall be striped. See Striping Detail Arrangement.
5. Contractor may submit alternate designs for approval.
6. Barricade details shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, by the Federal Highway Administration and as amended.
7. If wooden rails are used, 26 ga. galv. steel sheet shall be first tacked on to the rails and then overlaid with reflective sheeting.



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



TYPE I TYPE I



TYPE II

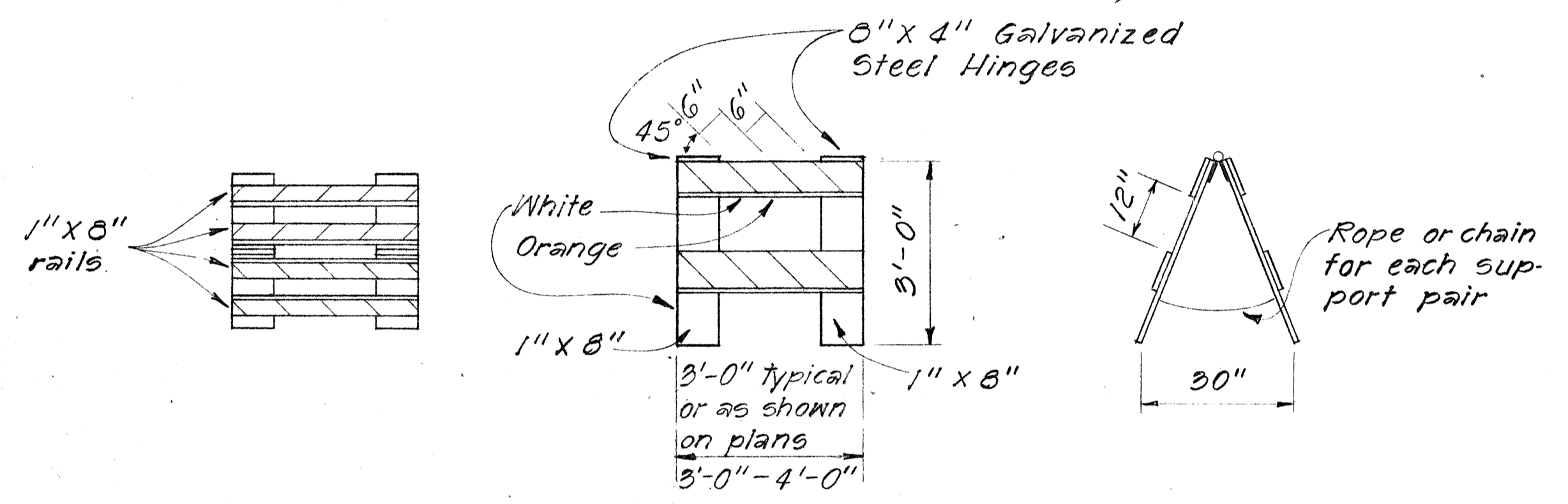
PLASTIC MOLDED BARRICADE OPTIONS *

Not to Scale
* Shop Drawings must be submitted for approval.

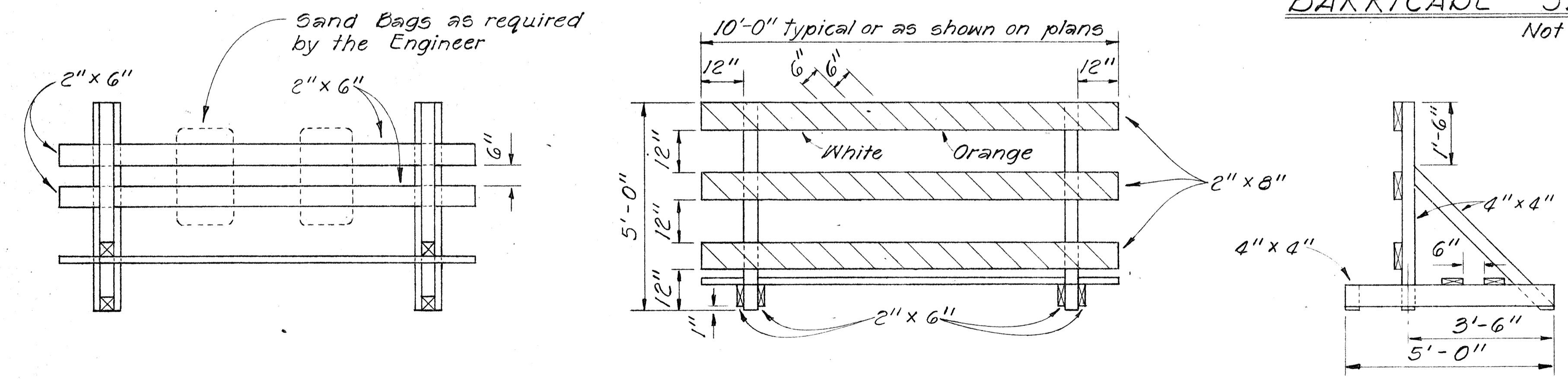


FRONT FACE BACK FACE

BARRICADE STRIPING DETAILS
Not to Scale



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



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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

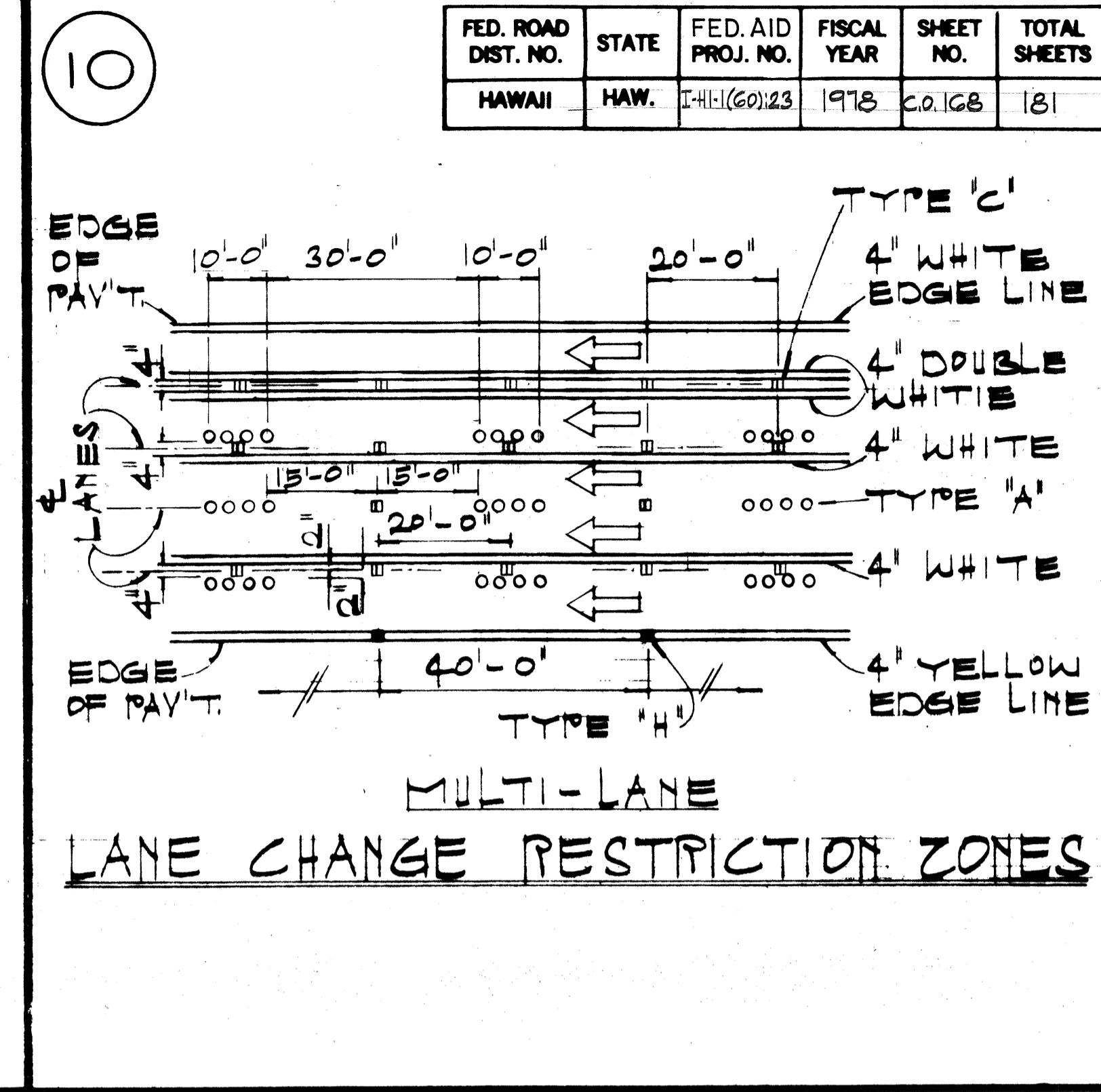
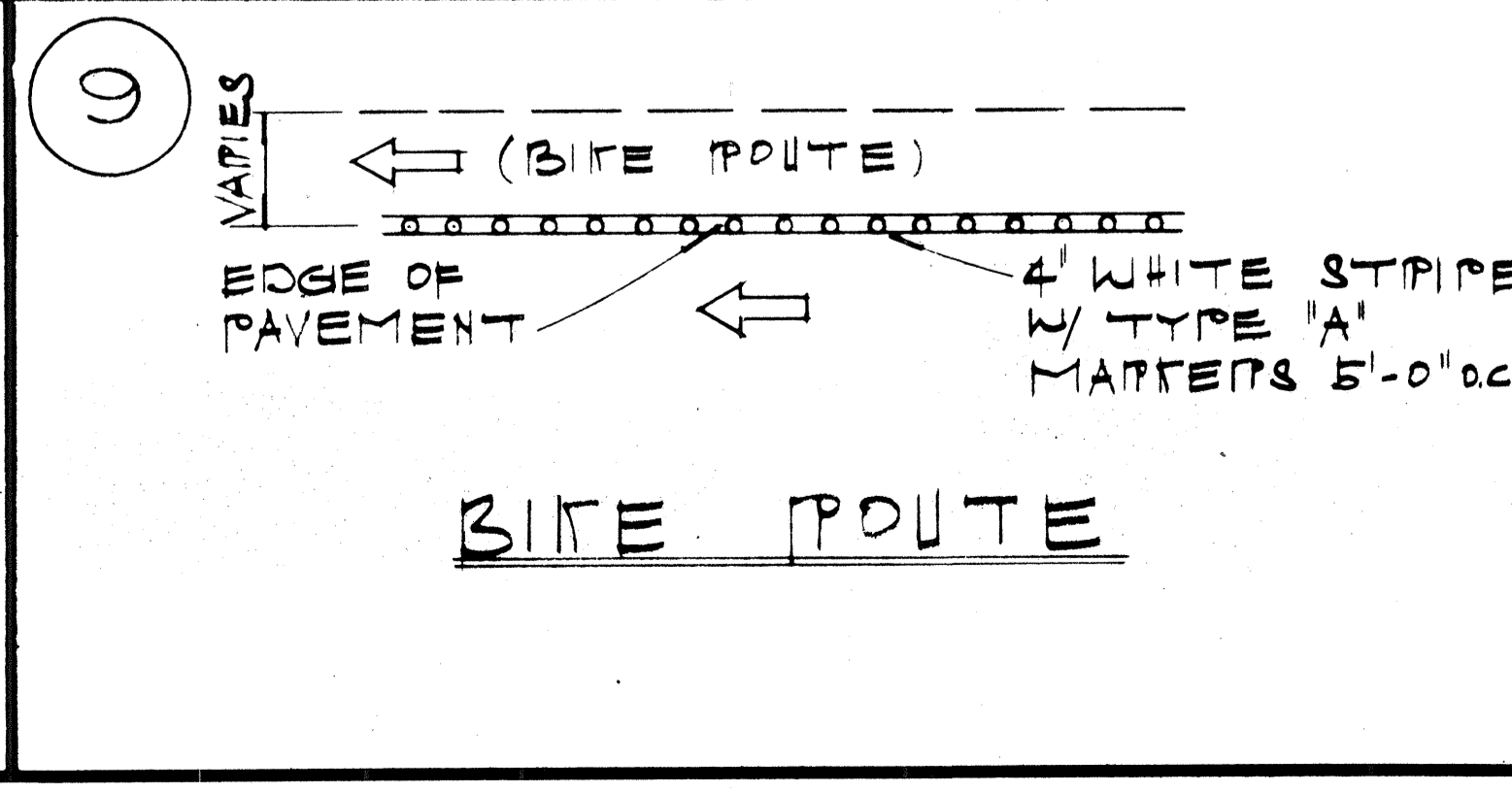
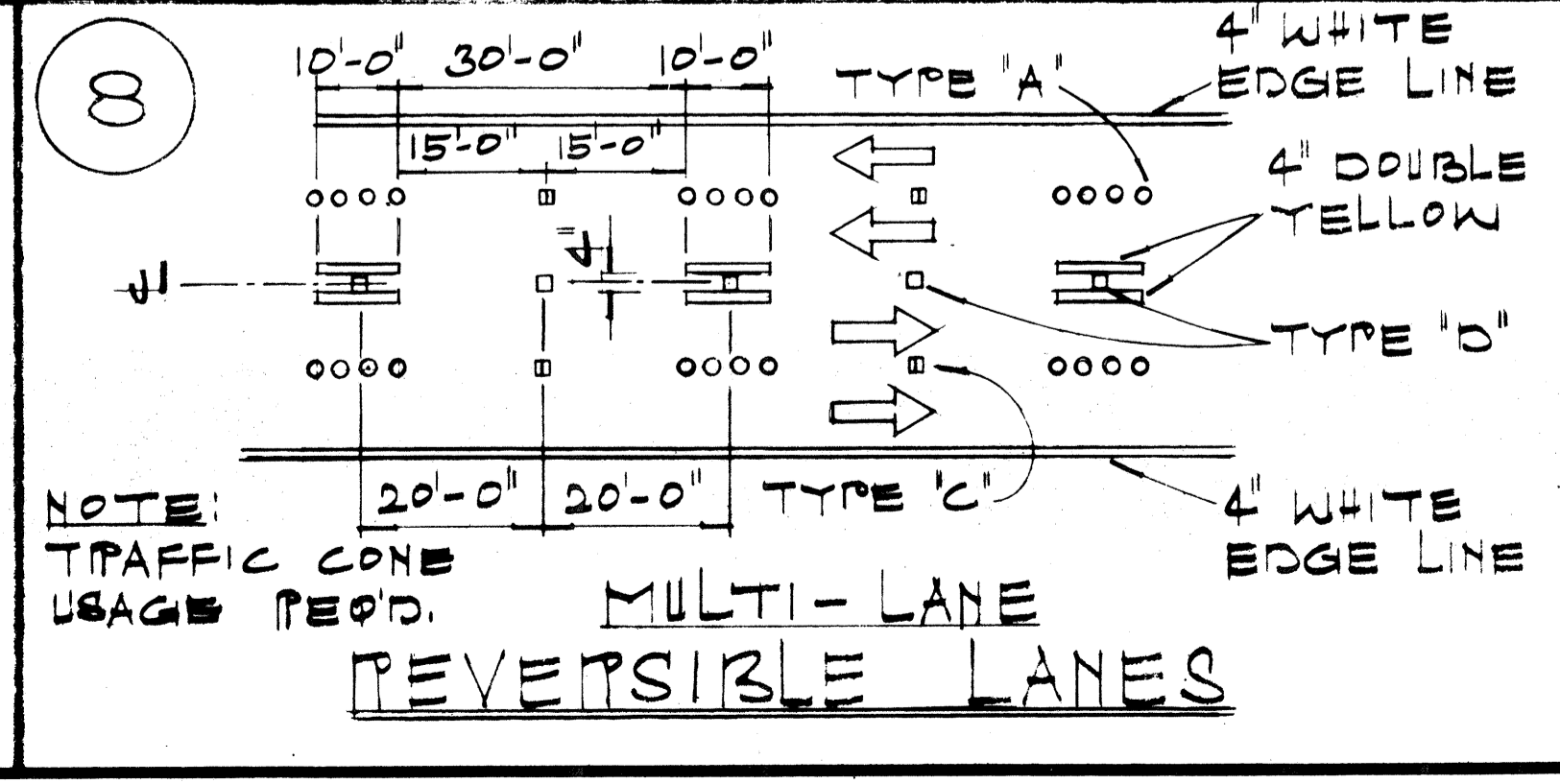
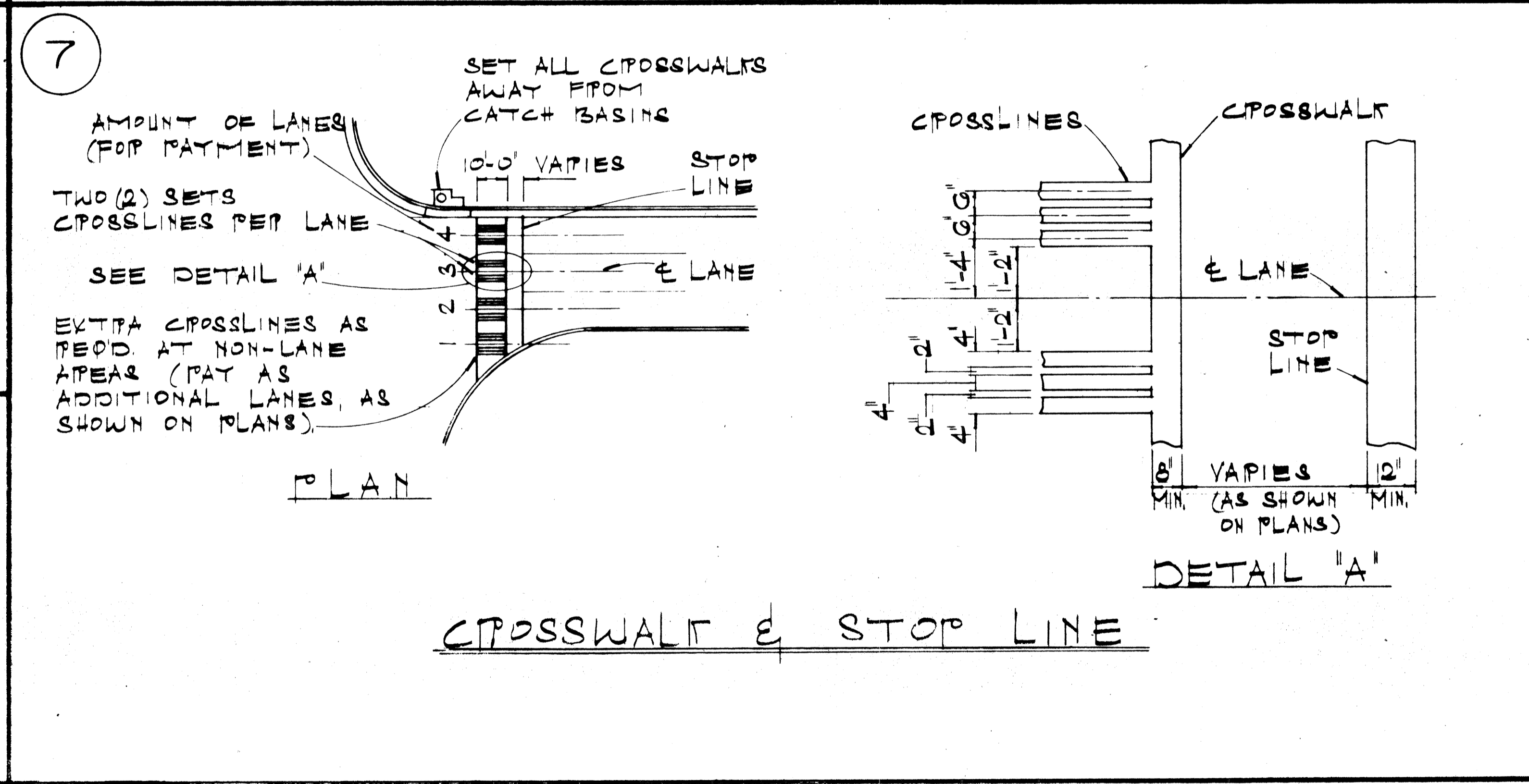
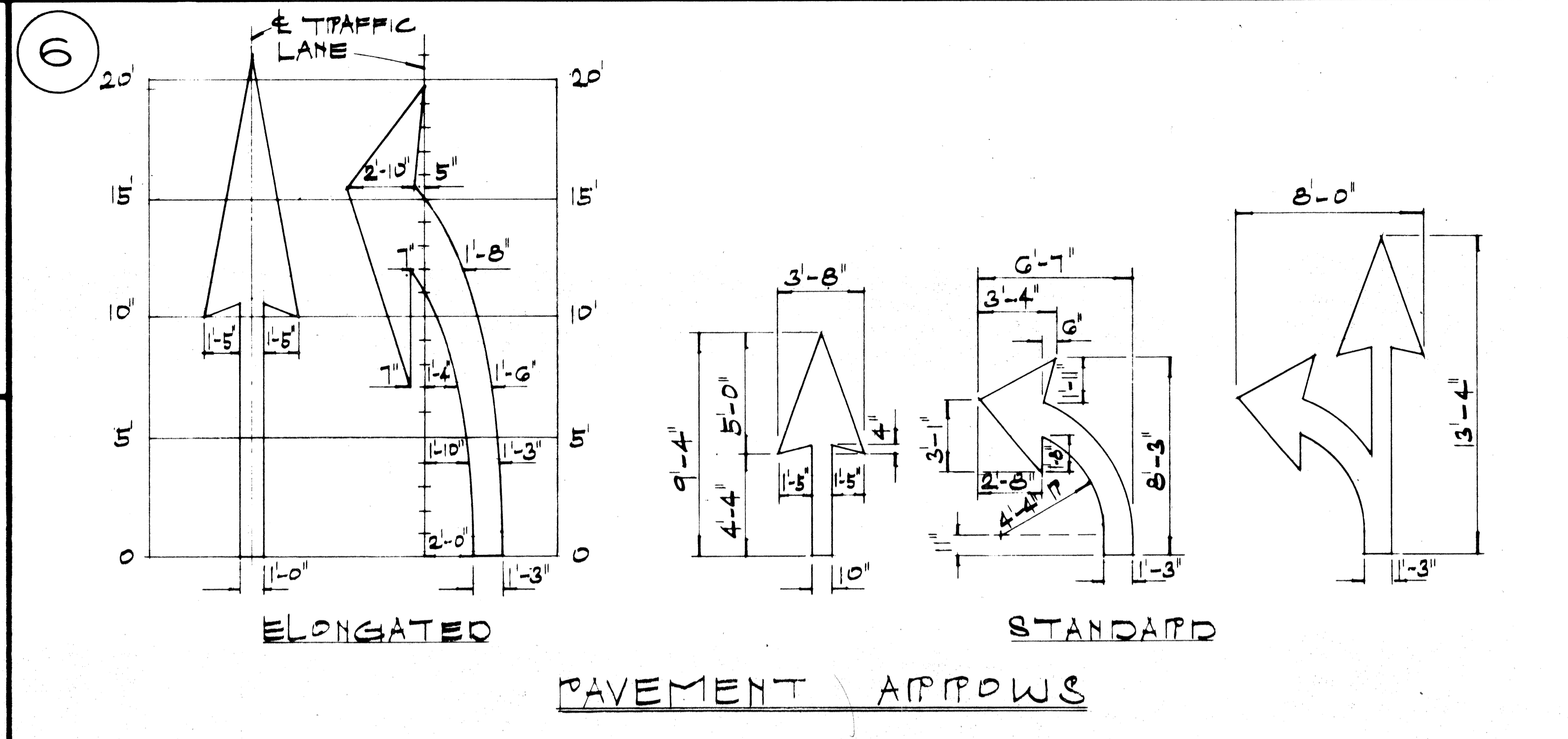
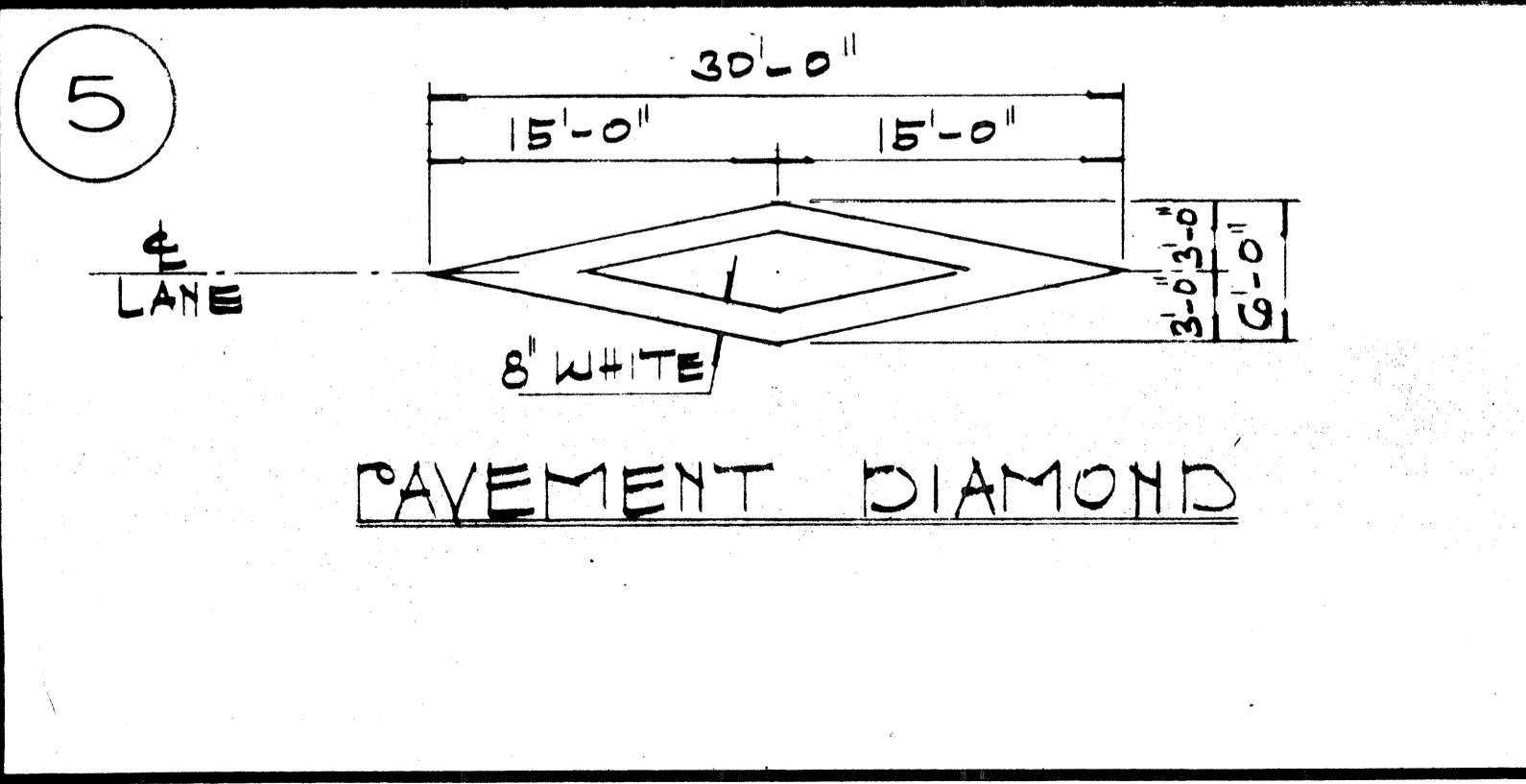
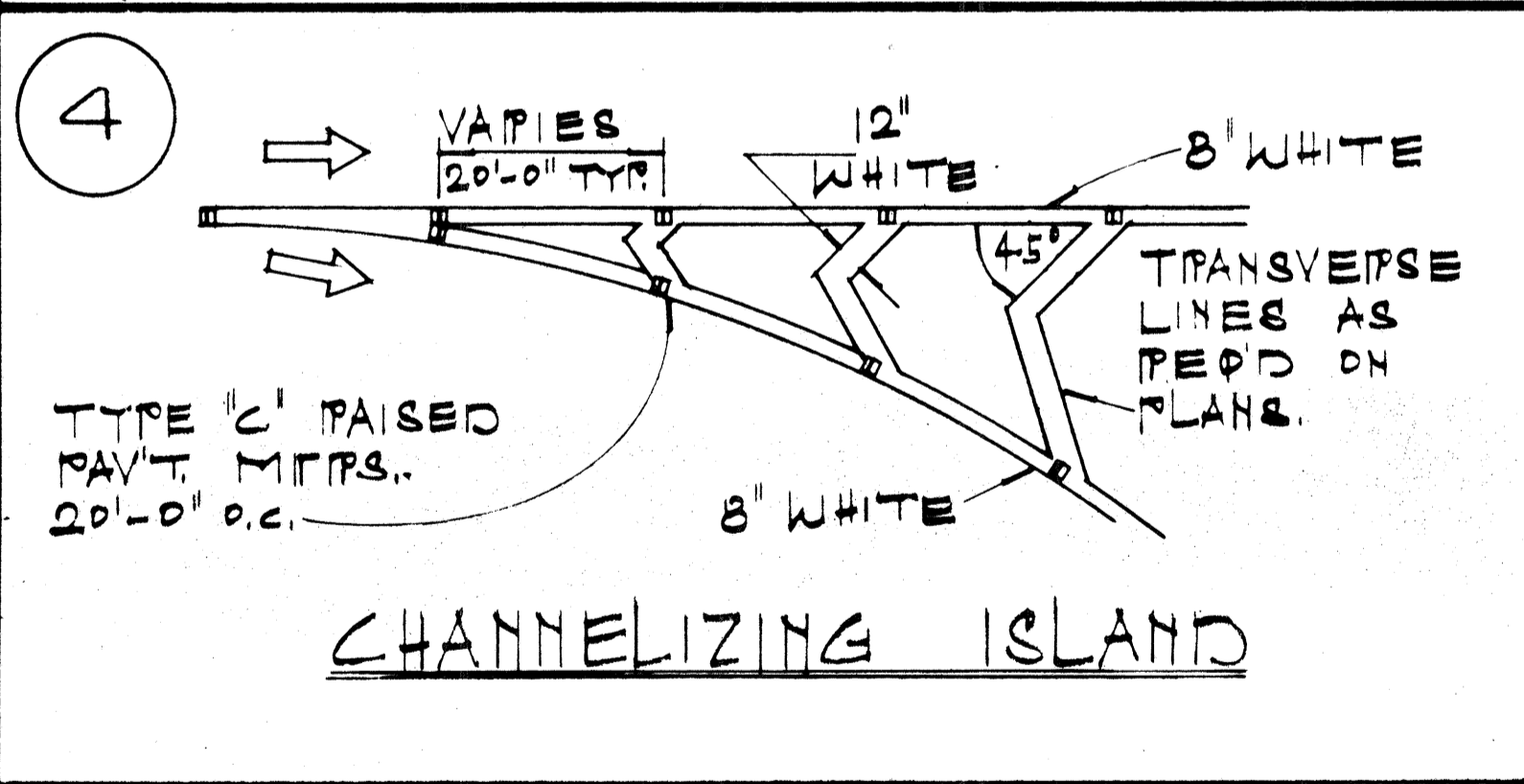
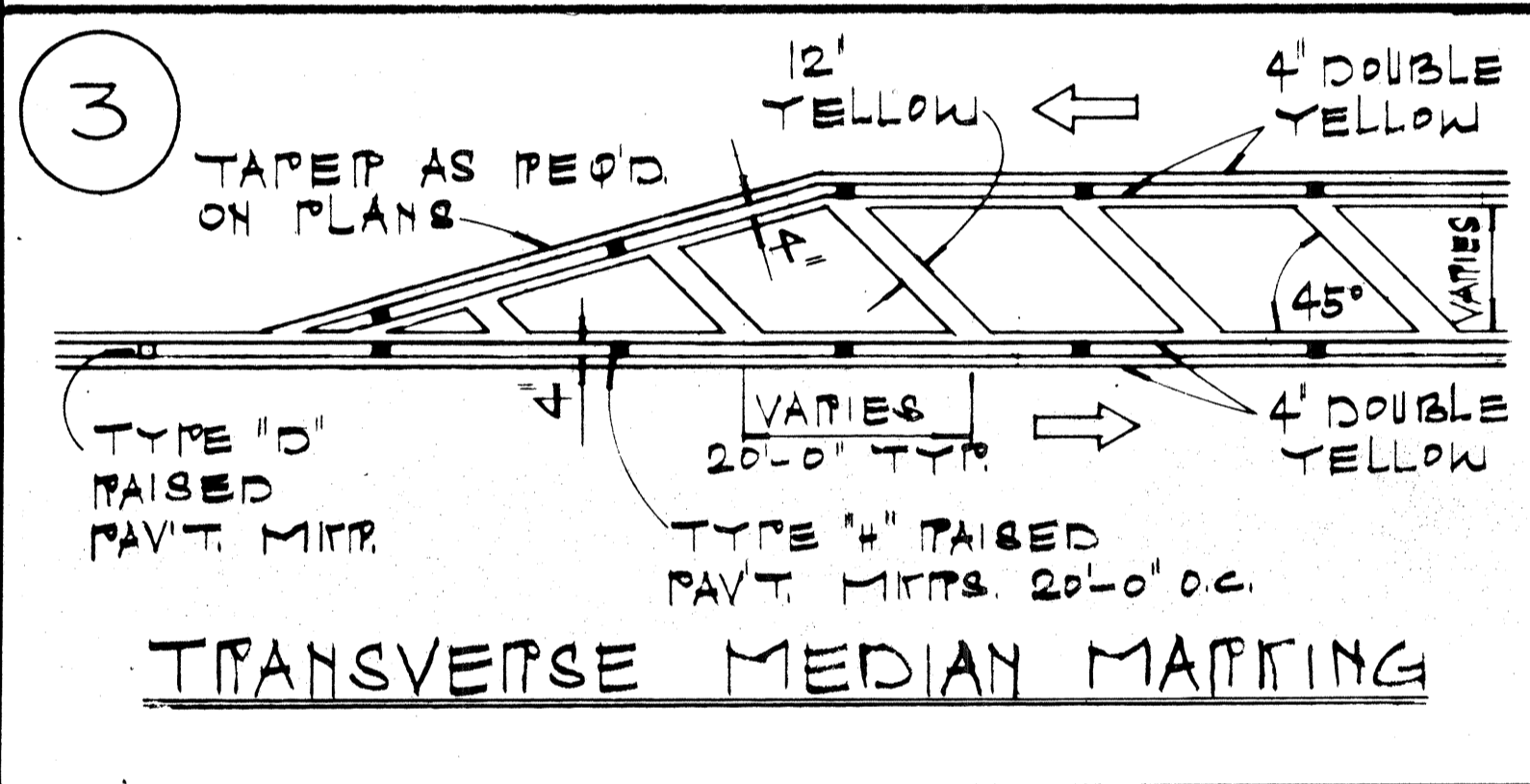
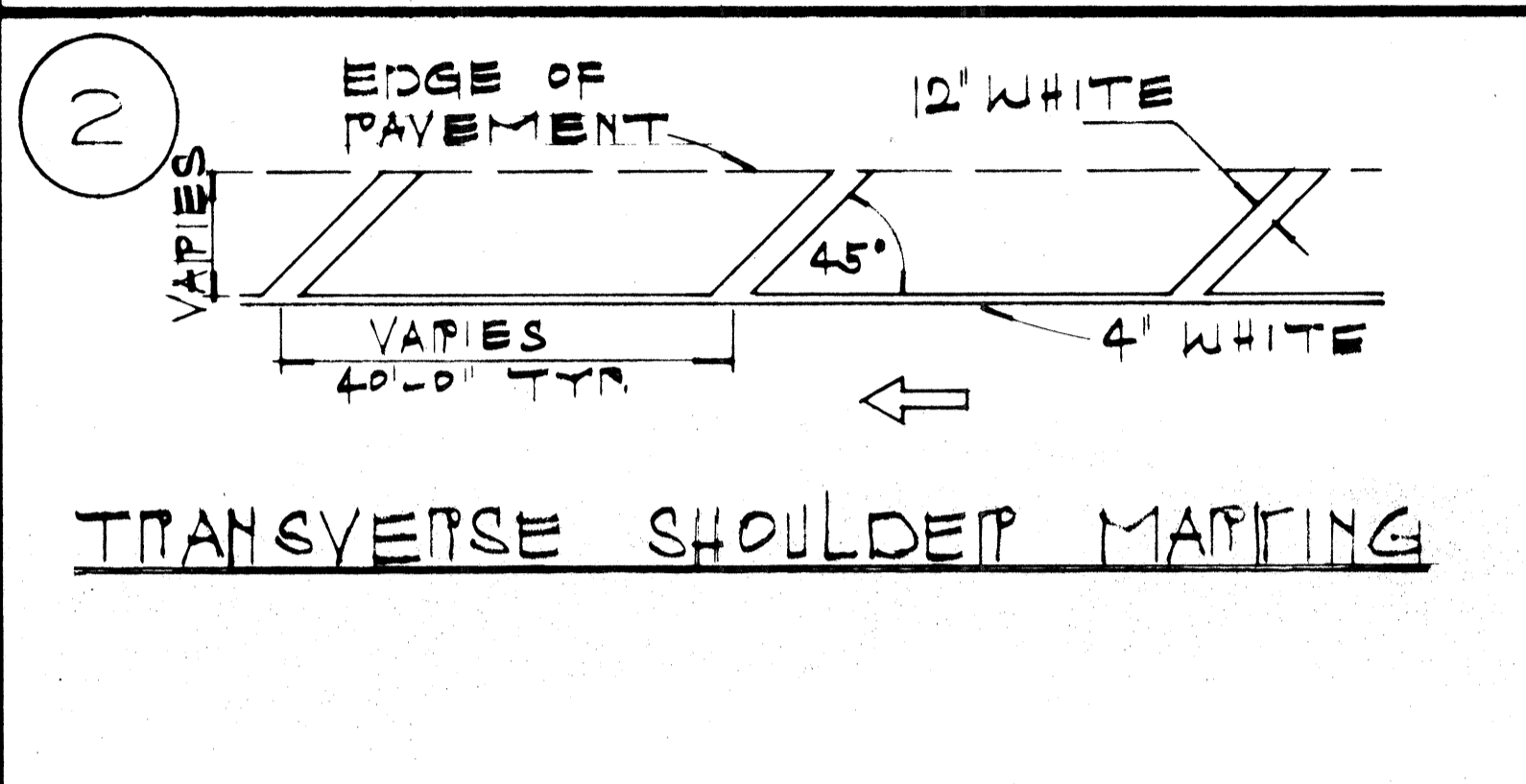
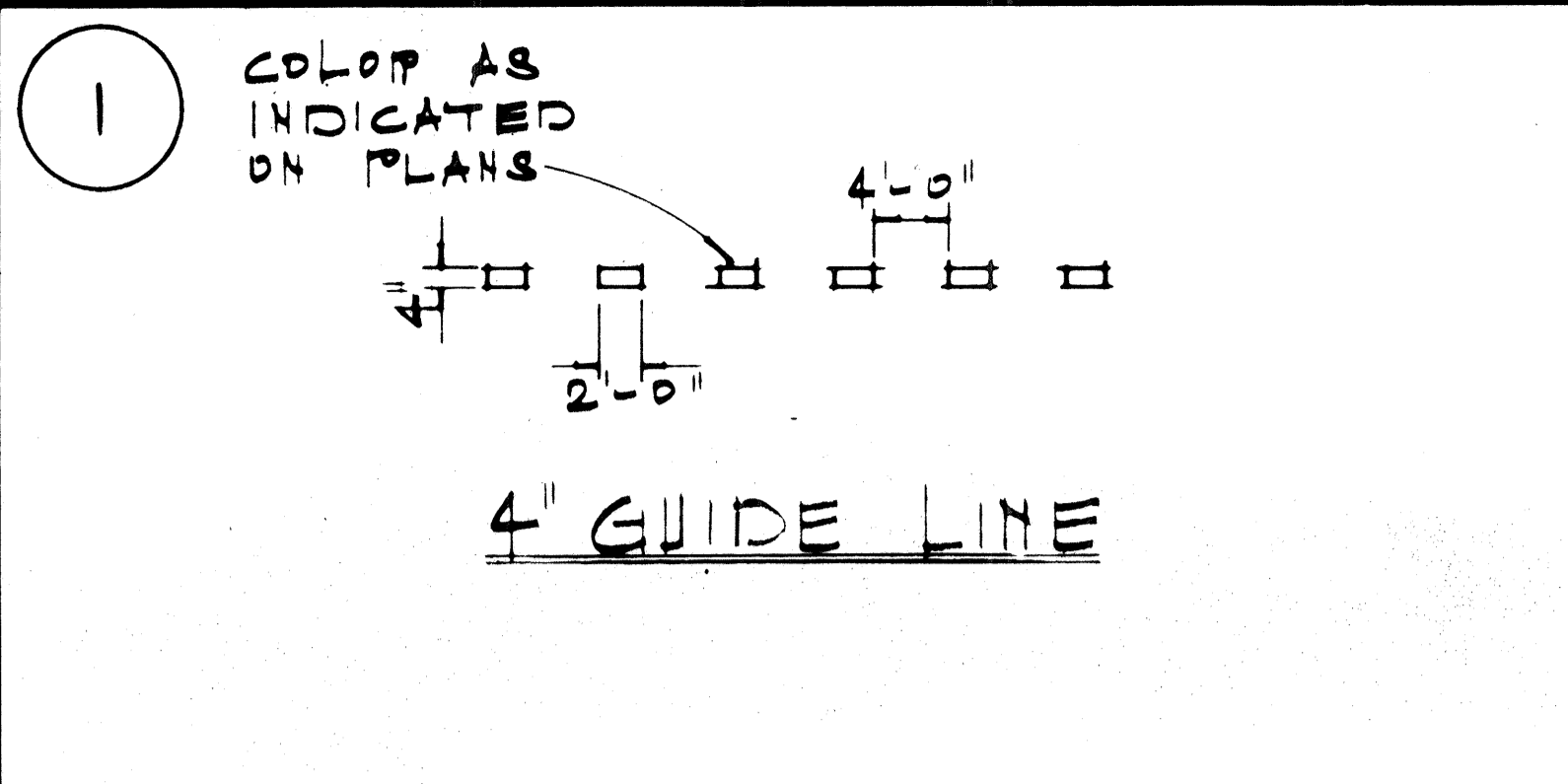
BARRICADES

SCALE: As Shown

SHEET NO. 47 OF 53 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	141(60)23	1978	C.O.168	181



GENERAL NOTES:

- PAVEMENT MARKINGS SHALL CONFORM TO THE 'MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS & HIGHWAYS', 1971, (MUTCD), SUBSEQUENT REVISIONS TO THE MUTCD & AS SHOWN ON THE PLANS.
- LAYOUT OF PAVEMENT MARKINGS & STRIPING SHALL BE DONE BY THE CONTRACTOR. THE CONTRACTOR SHALL CHECK LAYOUT OF MARKERS & STRIPING WITH THE ENGINEER PRIOR TO PERFORMING WORK.
- FOR ADDITIONAL PAVEMENT MARKING DETAILS SEE SHTS. C.O.164 & 168S.

DATE	REVISION
8-24-77	REVISED TYPE "A" MARKER SPACING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

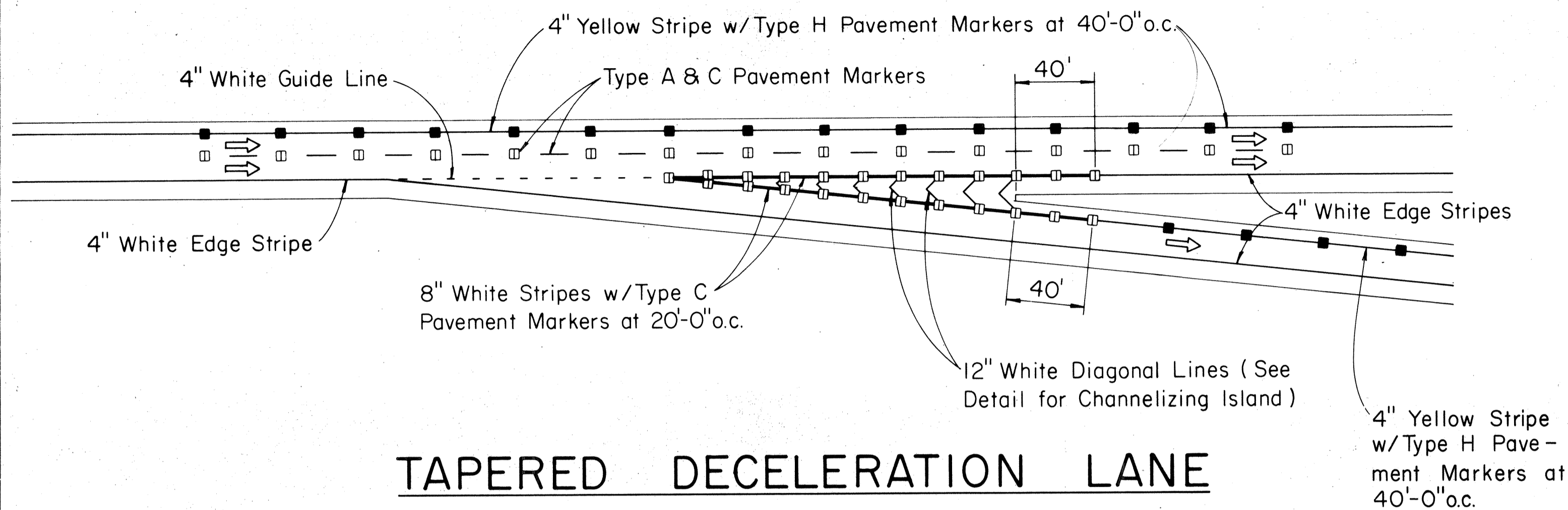
**TYPICAL DETAILS
MISCELLANEOUS
PAVEMENT MARKINGS**

NOT TO SCALE

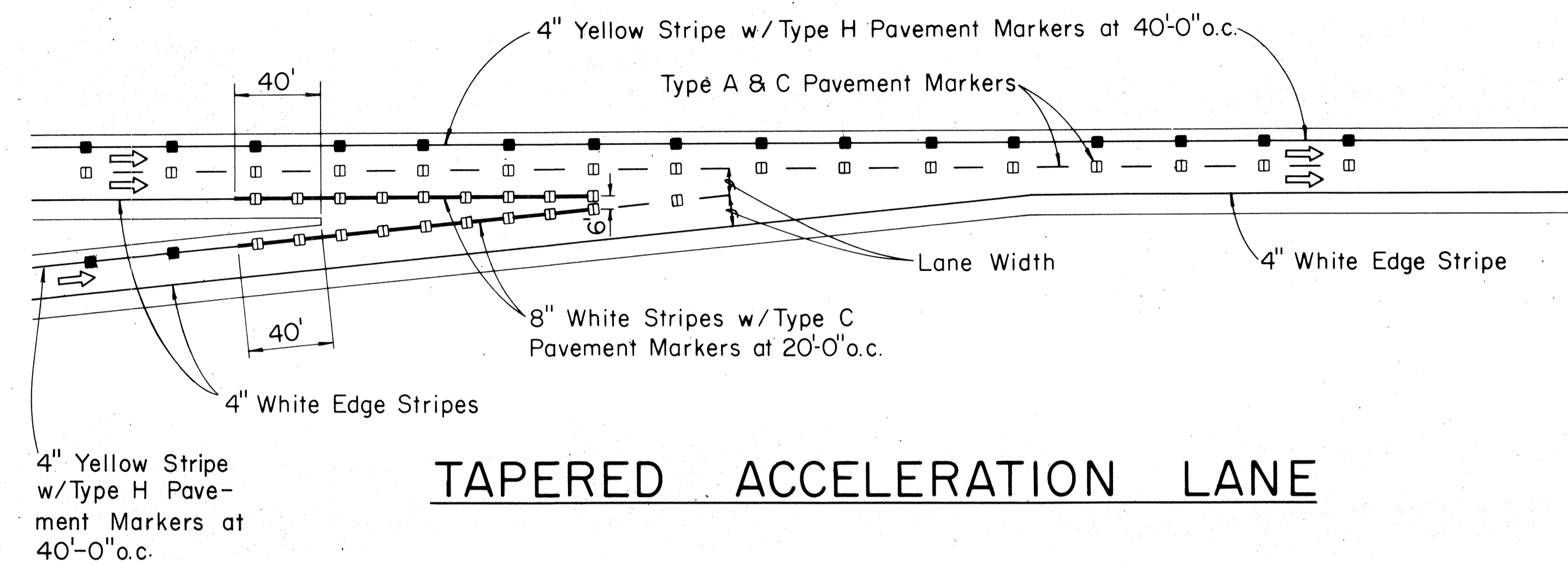
SHEET NO. 48T OF 53T SHEETS

DATE	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
NO.	

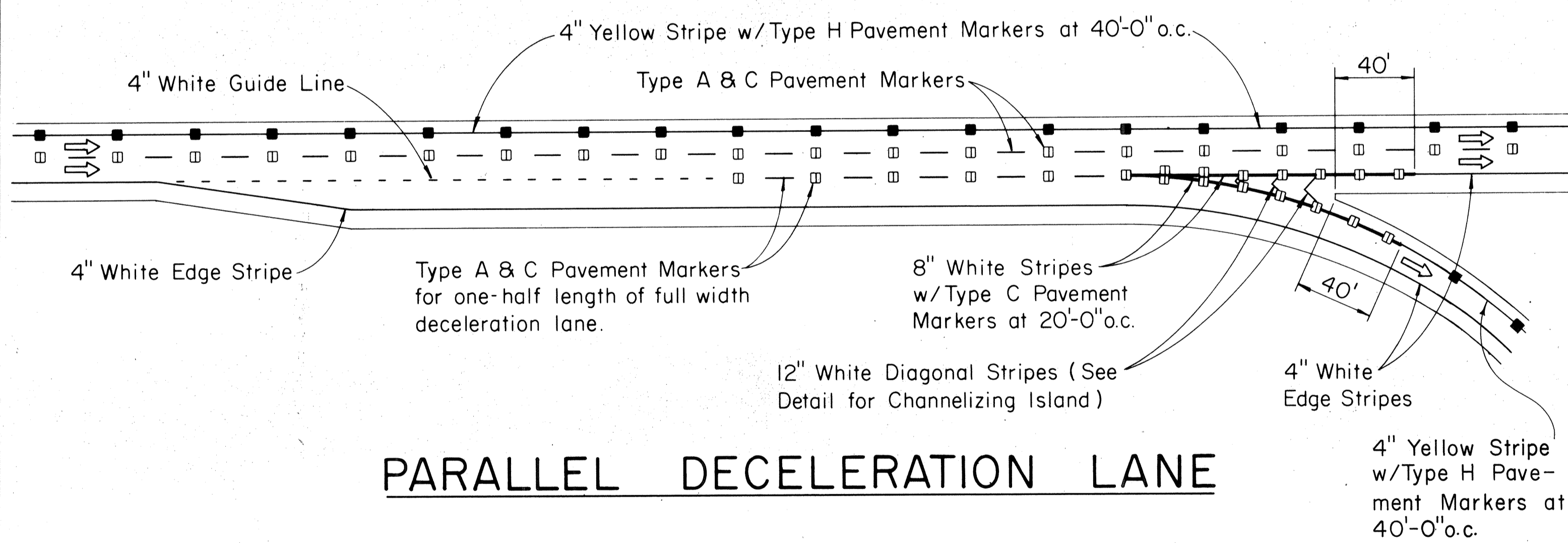
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11 (C0) 23	1978	C0.168 S-1	181



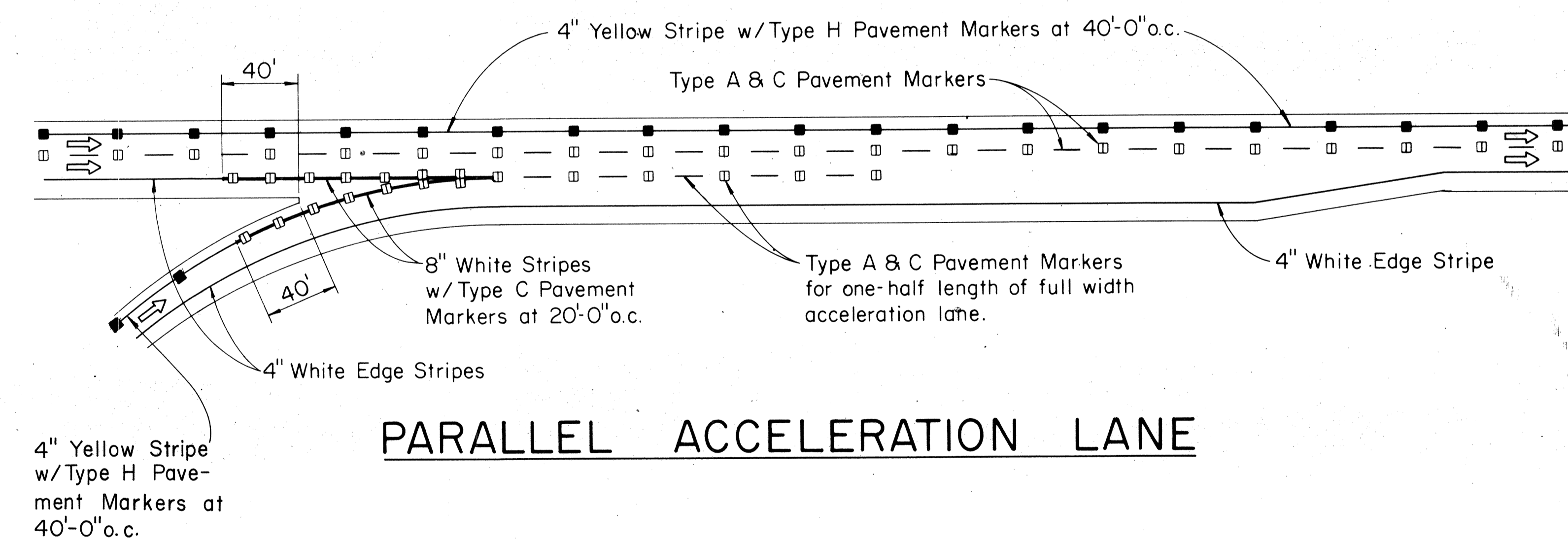
TAPERED DECELERATION LANE



TAPERED ACCELERATION LANE



PARALLEL DECELERATION LANE



PARALLEL ACCELERATION LANE

TYPICAL ROADWAY EXIT MARKINGS

TYPICAL ROADWAY ENTRANCE MARKINGS

NOTES:

1. For additional details, see sheets DT 300 & C0.168

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

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

Not to Scale DATE: JULY, 1977
SHEET No. OF SHEETS

C0.168 S-1

