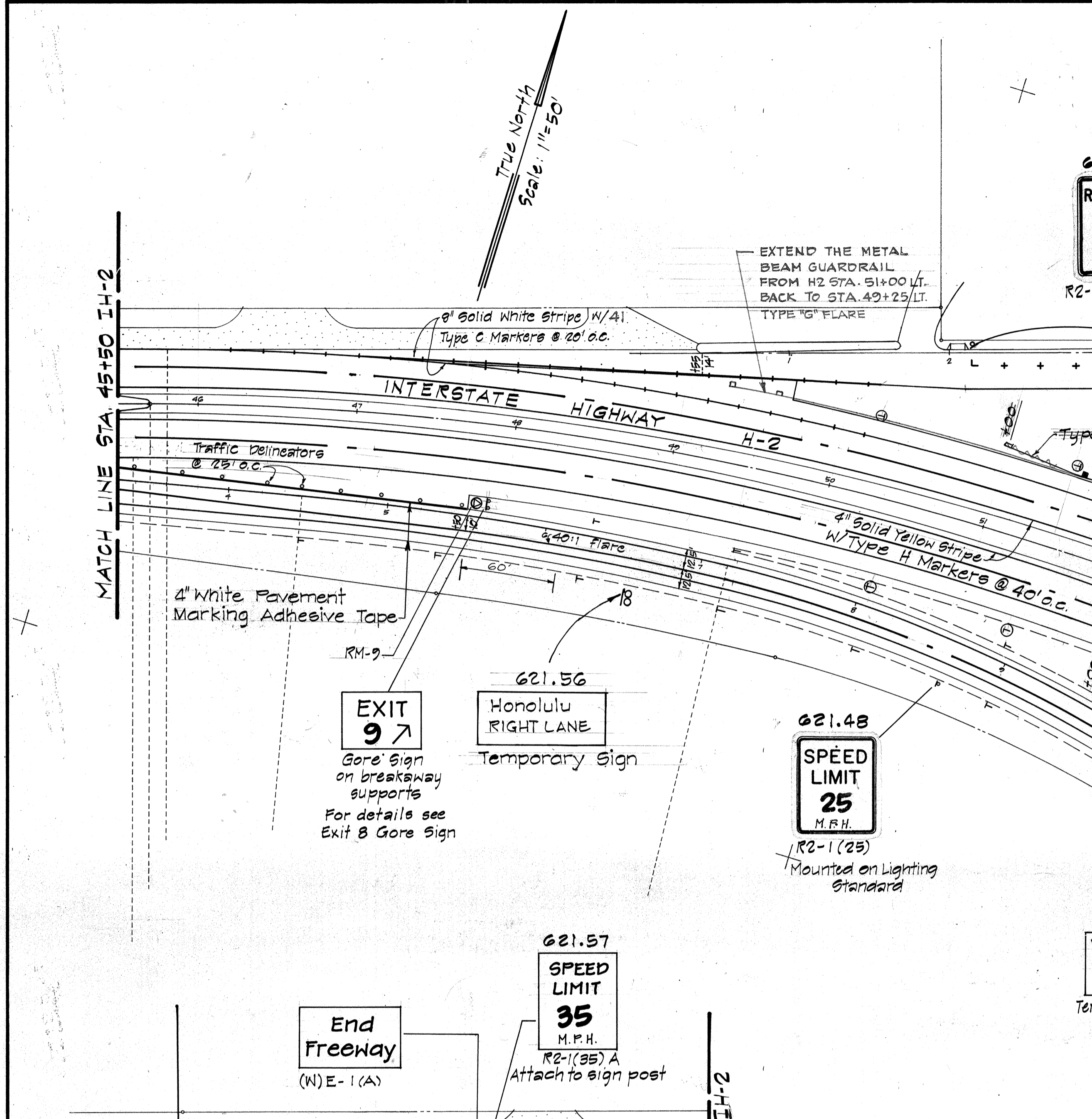
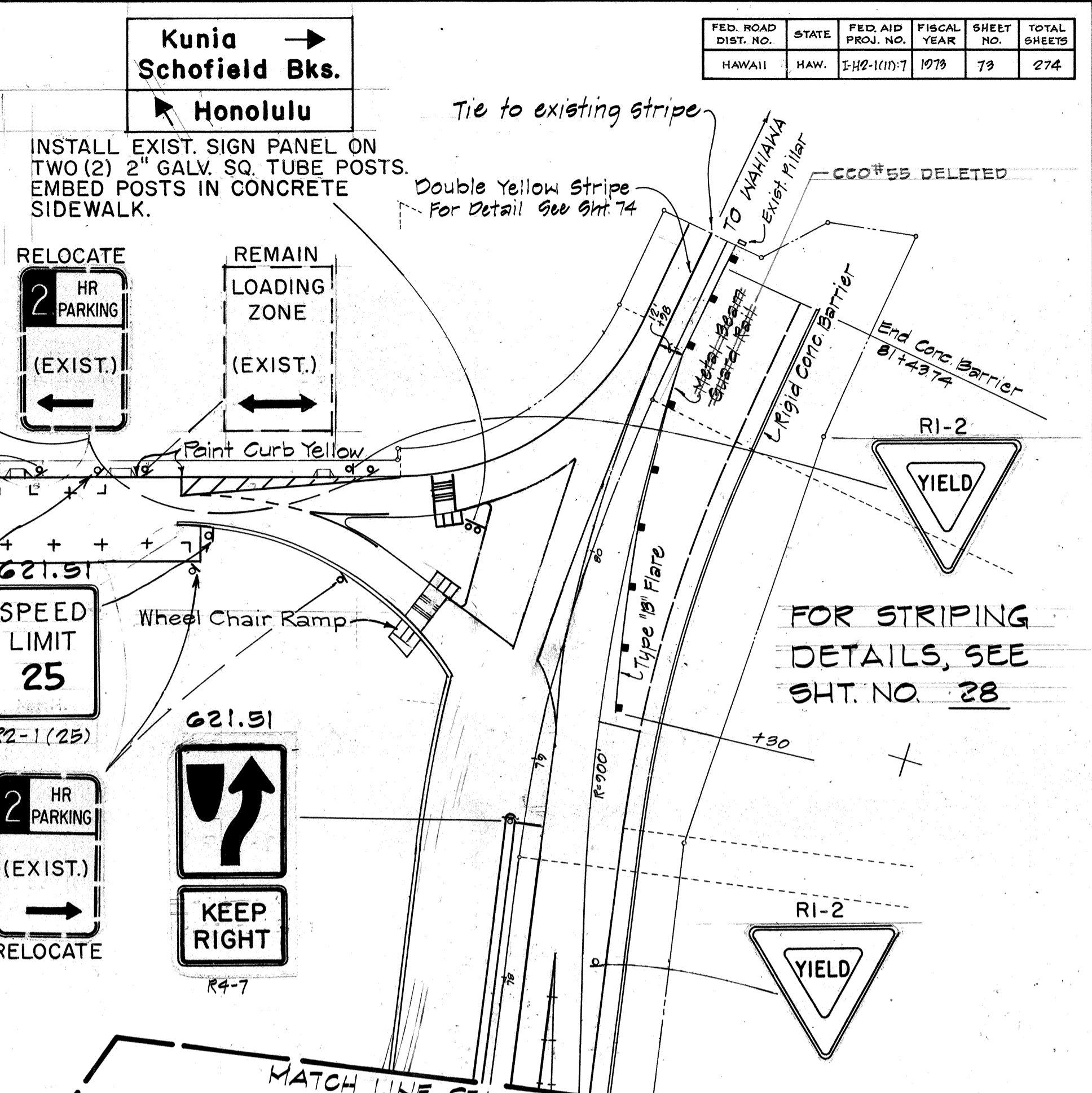
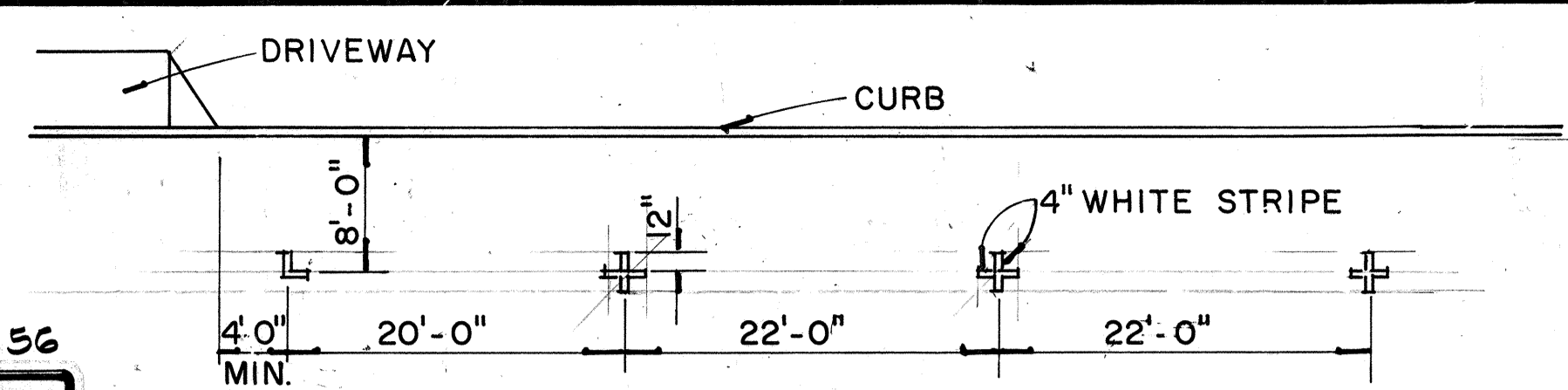


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5H2-1(11)-7	1978	79	274



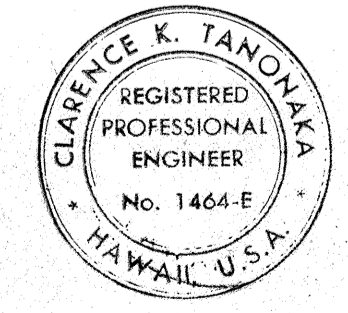
**LEGEND**

- ⊕ Single unit reflector marker - clear (RM-1)
- ⊙ Nine unit reflector marker - amber (RM-2)
- ⊖ Double unit reflector marker - amber (RM-2)
- Metal Beam Guard Rail
- Concrete Barrier

DATE	REVISION
1/14/76	Revised Signs
10/1/75	Revised Signs
7/18/75	REVISED SIGNS & STRIPING
12/27/74	Added Wheel Chair Ramp
9/9/74	Added Contract Item No. to Signs, Revised Pavement Markings
9/3/74	Intersection & Striping Revised

**GENERAL NOTES:**

- Contractor to tie new & existing lane lines with smooth transition.
- Exact location of roadside signs shall be approved by the Engineer.
- Lane lines for Interstate Highway shall conform to STANDARD DETAILS, RAISED PAVEMENT MARKERS unless otherwise noted.
- Painted stripes shall conform to standard Details.
- Exact location of roadside delineators shall be determined by the Engineer.
- Adjustment of lane lines and traffic striping for connection of Ramp E and Wilikina shall be as directed by the Engineer.
- For pavement arrow details see Manual On Uniform Traffic Control Devices (MUTCD) 1971 Ed.
- Traffic signs not incorporated in signing plan shall be salvaged and delivered to a location designated by the Engineer.
- Traffic striping not incorporated into traffic pattern shall be removed by a method approved by the Engineer.
- For 4" white lane line stripe detail, see sht. 33
- For attachment of regulatory & warning signs to lighting standards, traffic signal posts, and overhead sign posts, Contractor shall submit shop drawings.
- Traffic delineator and installation shall be approved by the Engineer.
- All "lane lines" shall be raised pavement markers unless otherwise noted.
- Pavement Marking Adhesive Tape shall be paid per linear foot under Contract Item No.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
*Clarence K. Tanoka*

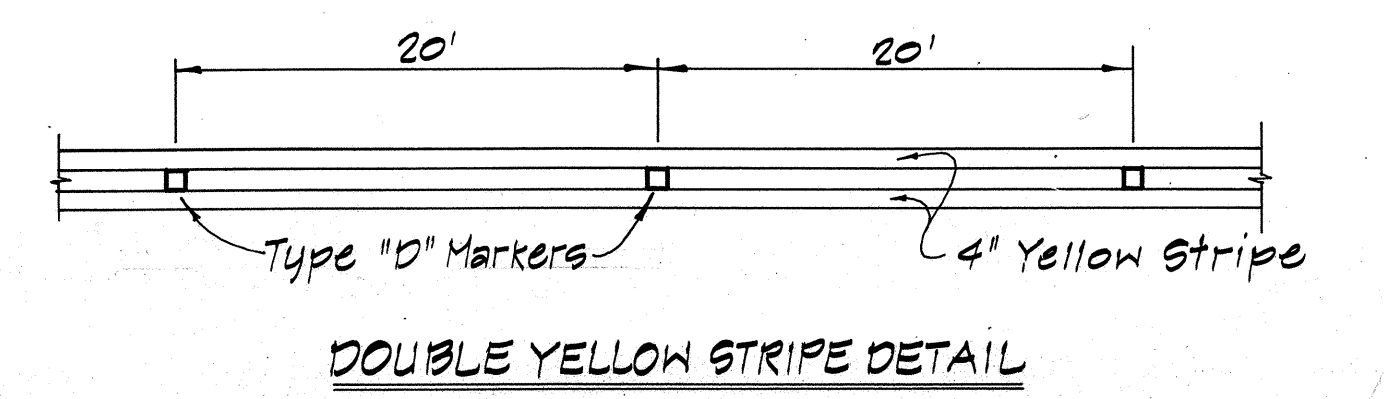
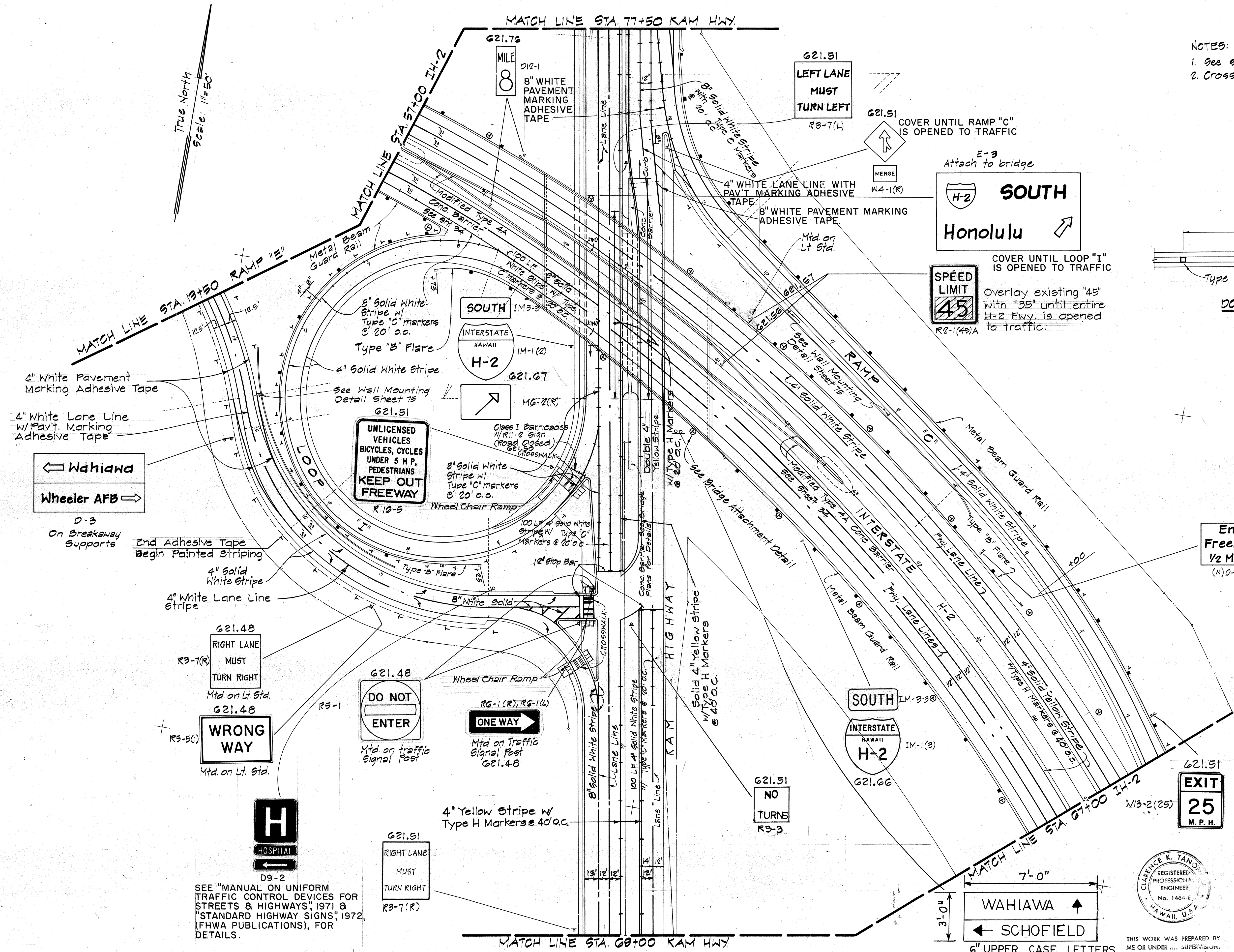
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**LAYOUT PLAN FOR TRAFFIC CONTROL DEVICES, GUARD RAIL AND CONCRETE BARRIER**

WAHIAWA INTERCHANGE  
 F.A.I. PROJECT NO. I-H2-1(11)-7  
 Scale: AS SHOWN Date: 4-25-78  
 SHEET NO. 1 OF 30 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	5-H2-100-7	1973	74	274

NOTES:  
 1. See Sht. 73 for General Notes.  
 2. Crosswalk striping shall be approved by Engineer.

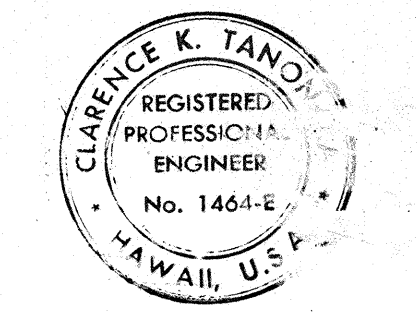


DATE	REVISION
1/14/76	Revised Signing
10/11/75	Revised Signing
7/18/75	REVISED SIGNING & STRIPING
12/27/74	Added Wheel Chair Ramps
9/9/74	Added Contract Item No. to Signs, Revised Pavement Markings
9/3/74	Intersection Striping Revised

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

LAYOUT PLAN  
 FOR  
 TRAFFIC CONTROL DEVICES,  
 GUARD RAIL AND CONCRETE BARRIER

WAHIAWA INTERCHANGE  
 F.A.I. PROJECT NO I-H2-1(11):7  
 SCALE AS SHOWN DATE: 4-25-73  
 SHEET NO. 2 OF 30 SHEETS



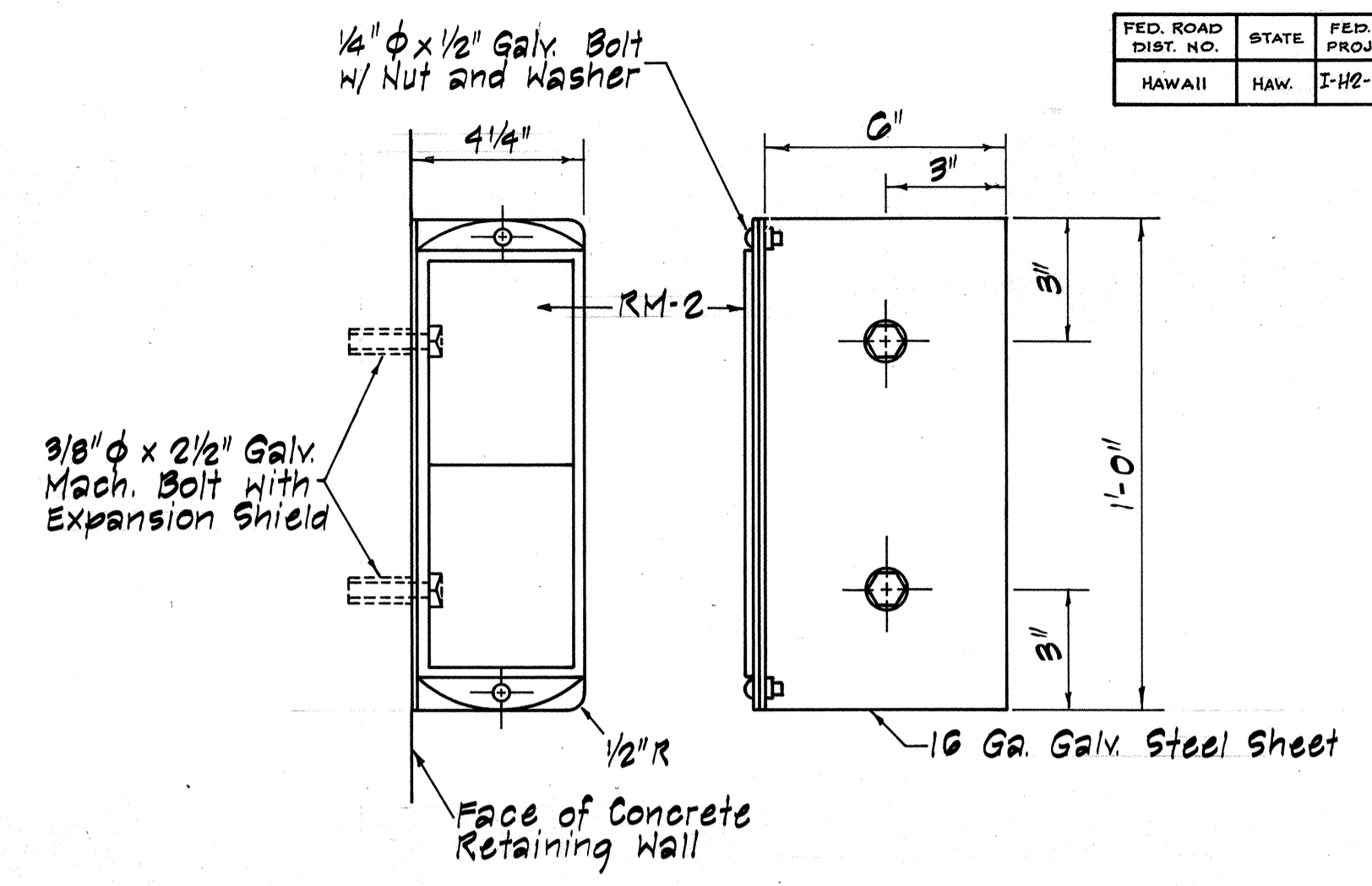
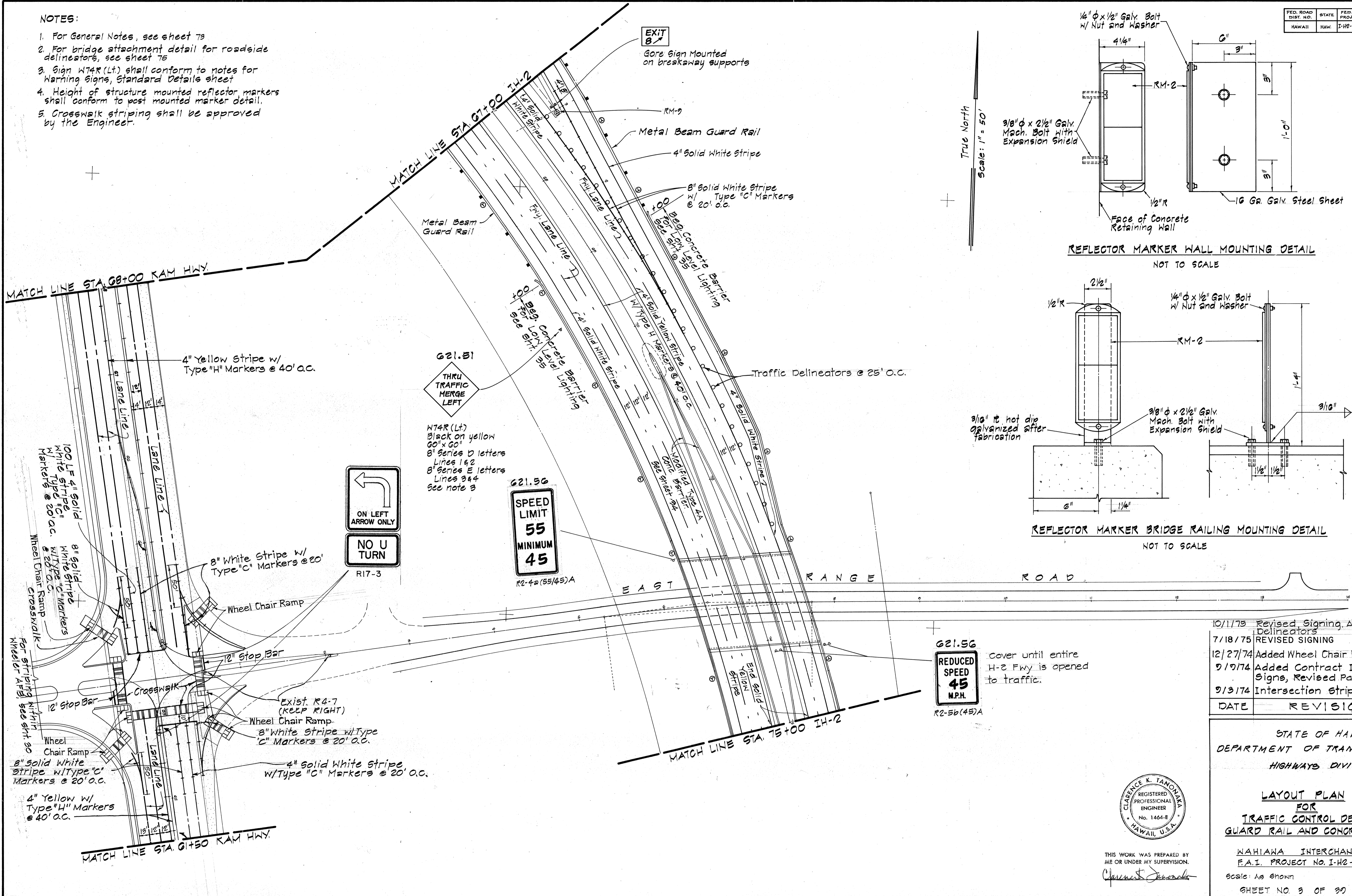
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

6" UPPER CASE LETTERS  
 WHITE REFLECTORIZED LEGENDS  
 AND BORDERS ON GREEN  
 BACKGROUND.

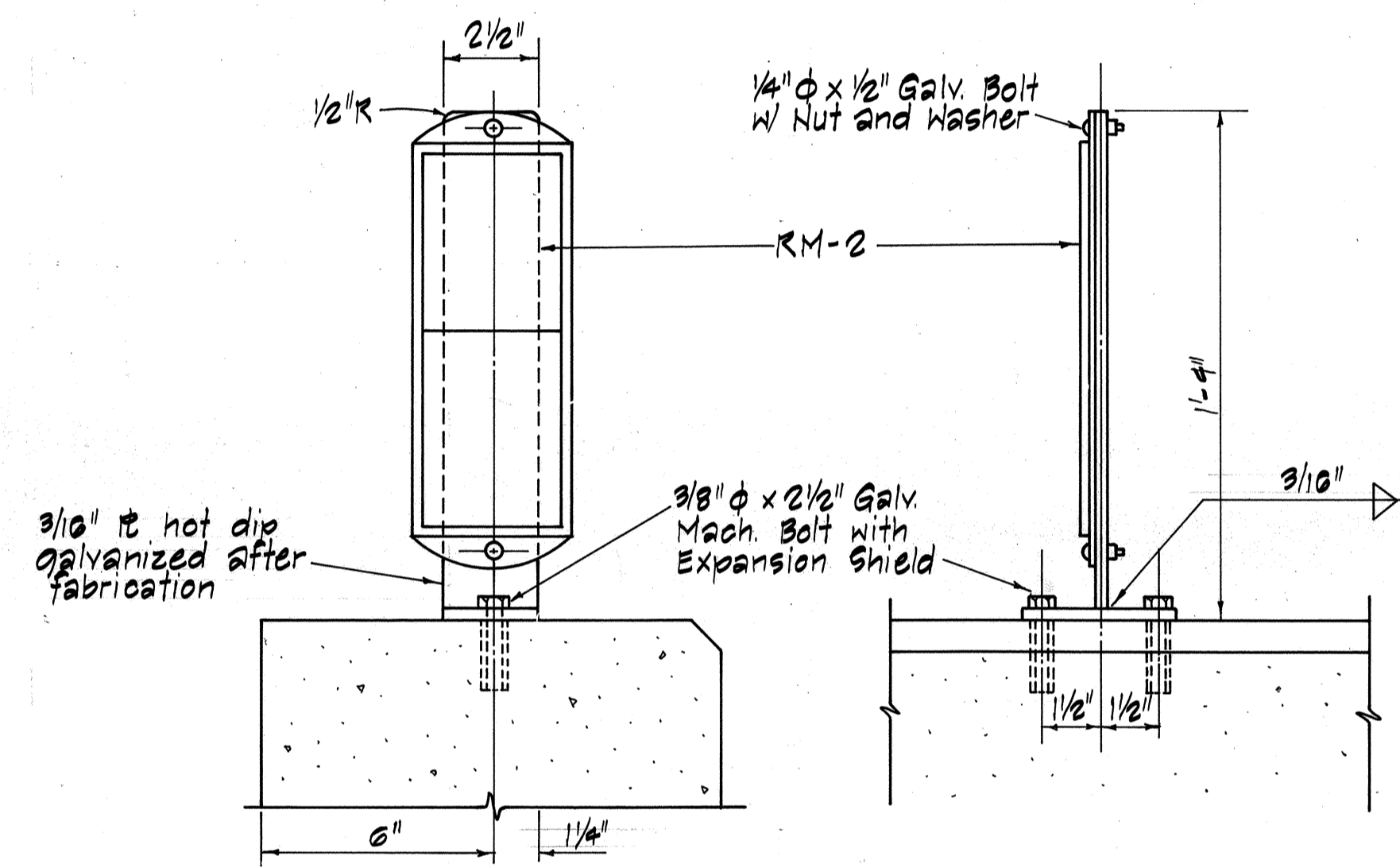
**NOTES:**

1. For General Notes, see sheet 73
2. For bridge attachment detail for roadside delineators, see sheet 75
3. Sign W74R (Lt) shall conform to notes for Warning Signs, Standard Details sheet
4. Height of structure mounted reflector markers shall conform to post mounted marker detail.
5. Crosswalk striping shall be approved by the Engineer.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-101-7	1979	75	274



True North  
Scale: 1" = 50'

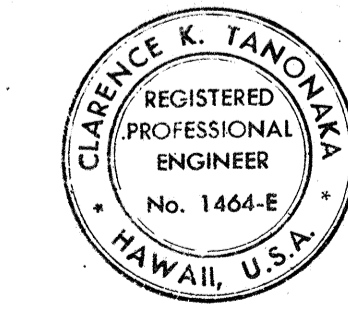


DATE	REVISION
10/1/75	Revised Signing, Added Traffic Delineators
7/18/75	REVISED SIGNING
12/27/74	Added Wheel Chair Ramps
9/19/74	Added Contract Item No. to Signs, Revised Pavement Markings
9/13/74	Intersection Striping Revised

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

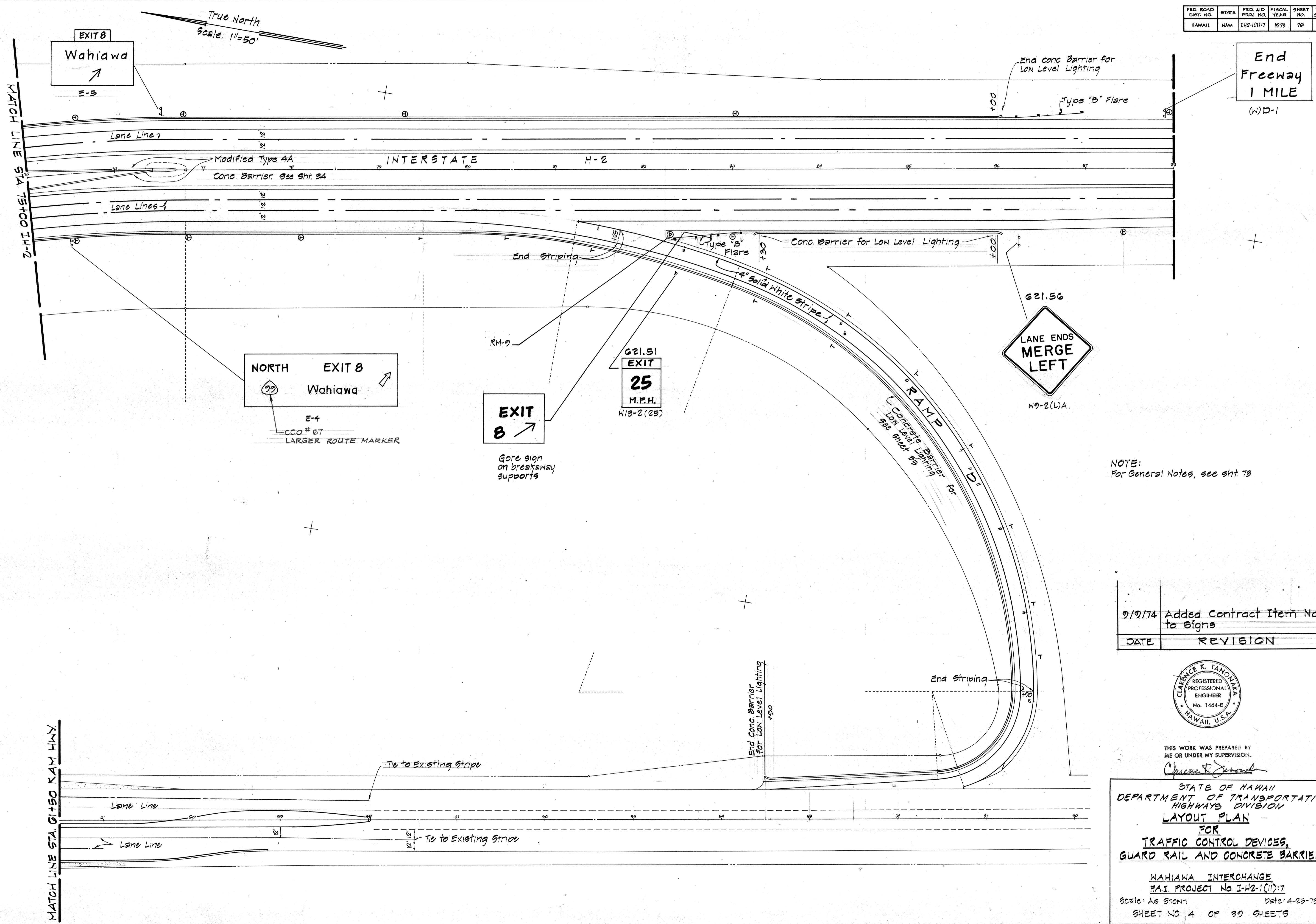
**LAYOUT PLAN  
FOR  
TRAFFIC CONTROL DEVICES,  
GUARD RAIL AND CONCRETE BARRIER**

WAHIAWA INTERCHANGE  
F.A.I. PROJECT NO. I-H2-1(11)-7  
Scale: As Shown Date: 4-25-79  
SHEET NO. 3 OF 39 SHEETS



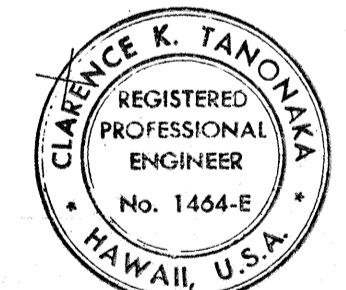
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
Clarence K. Tanonaka

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-12-100-7	1979	76	274



NOTE:  
For General Notes, see sht. 73

9/9/74	Added Contract Item No to Signs
DATE	REVISION

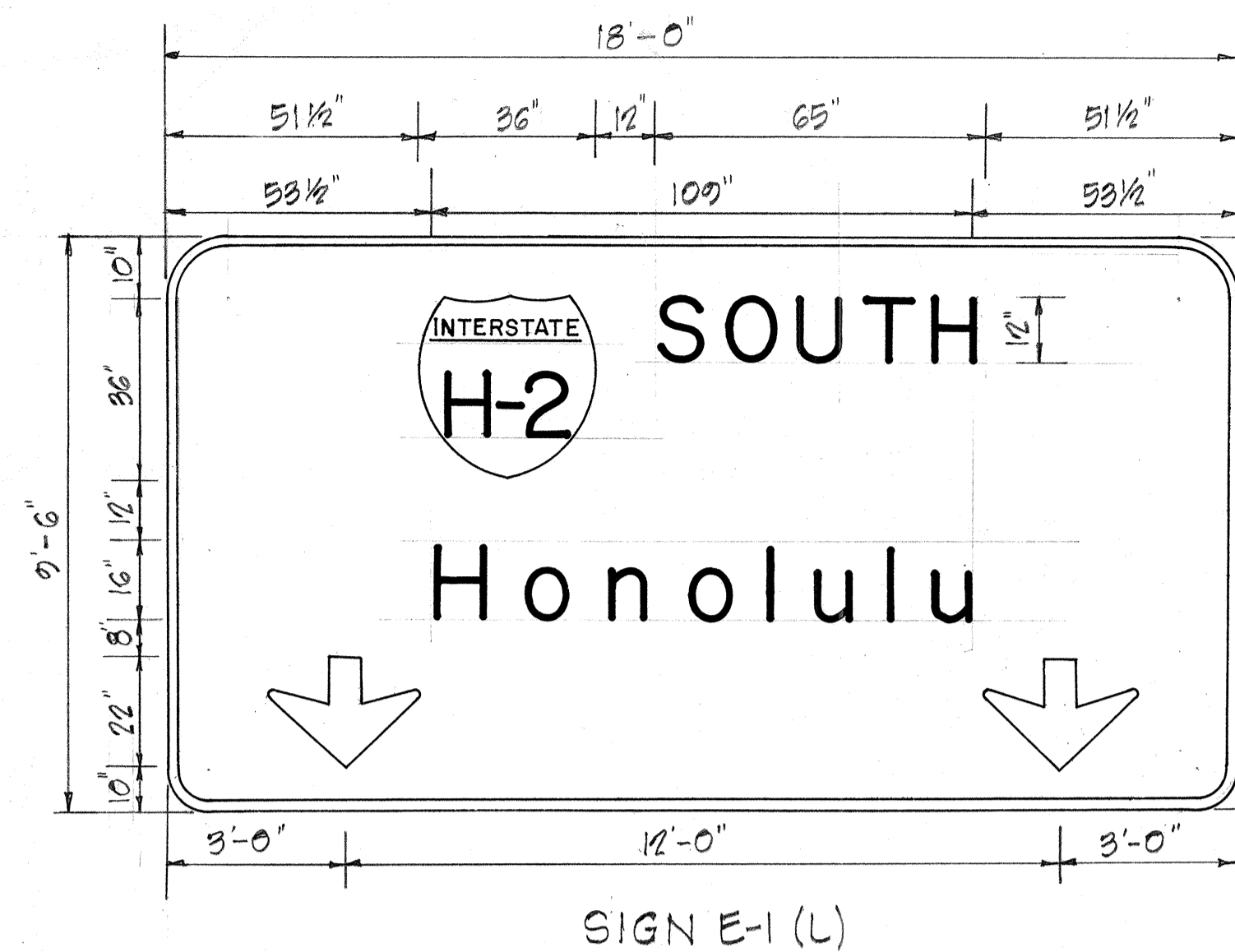


THIS WORK WAS PREPARED BY  
ME OR UNDER MY SUPERVISION.  
*Clarence K. Tanonika*

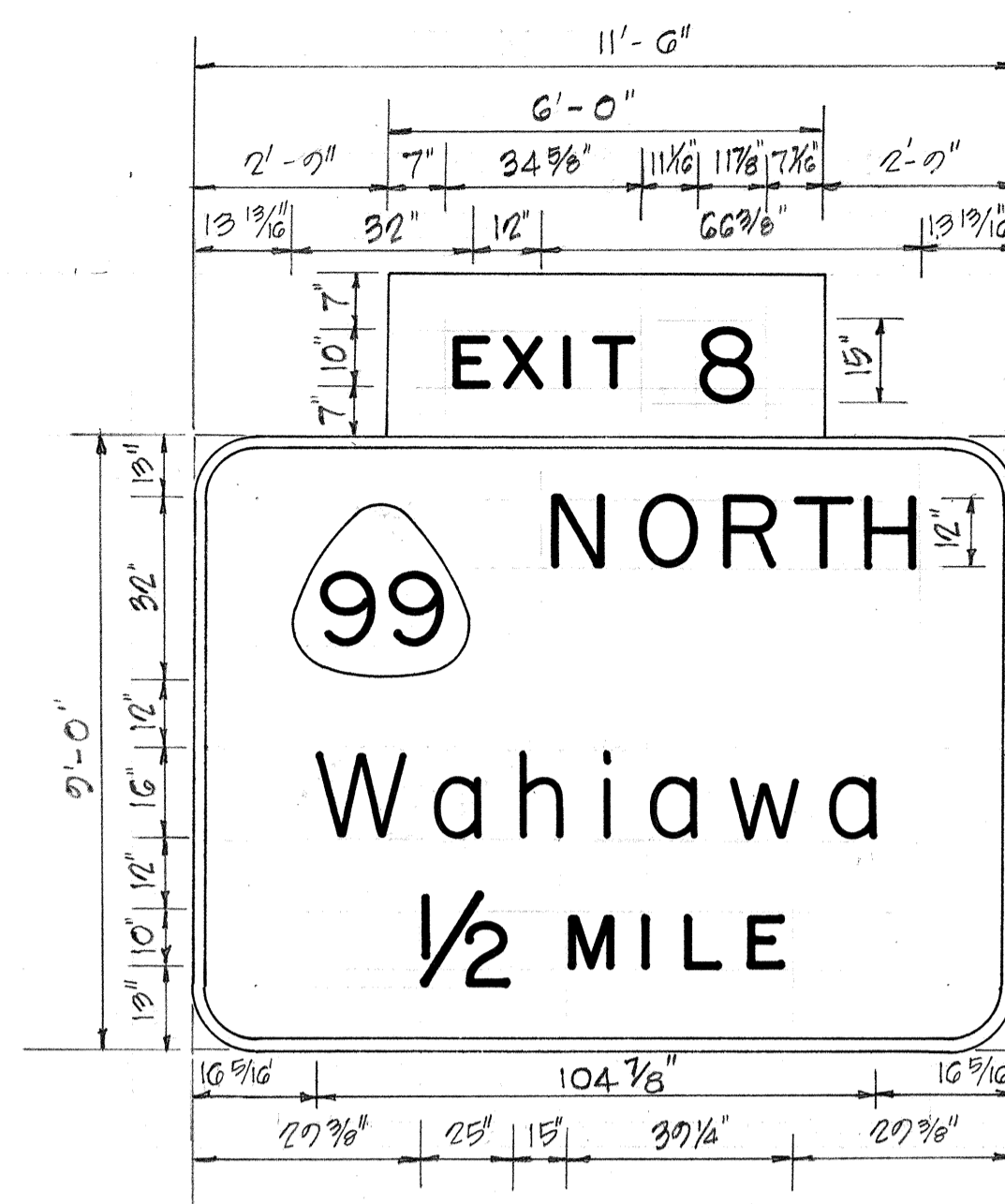
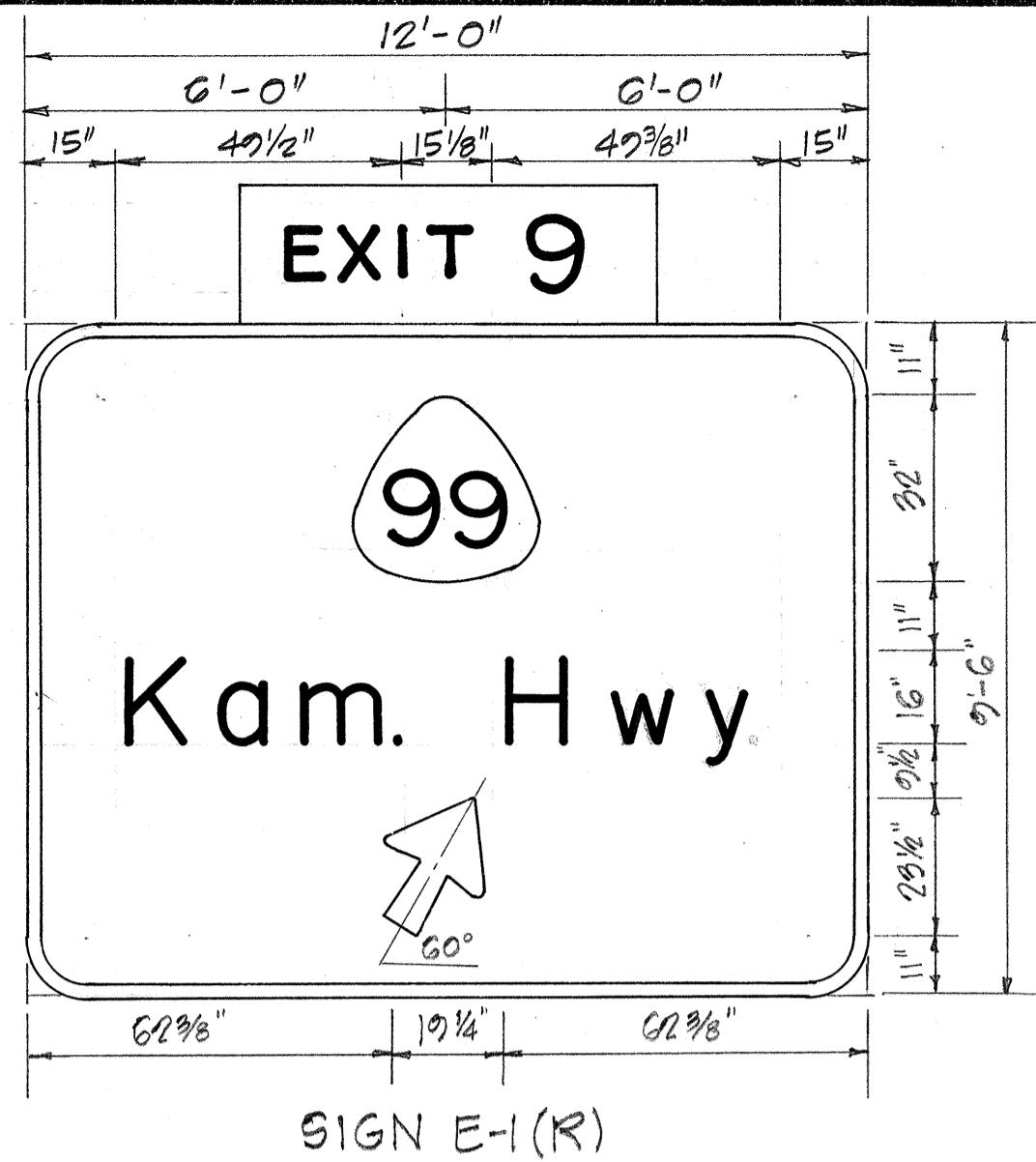
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**LAYOUT PLAN**  
FOR  
**TRAFFIC CONTROL DEVICES,  
GUARD RAIL AND CONCRETE BARRIER**

WAHIANA INTERCHANGE  
P.A.I. PROJECT No I-12-1(11)-7  
Scale: As Shown Date: 4-25-79  
SHEET NO. 4 OF 30 SHEETS

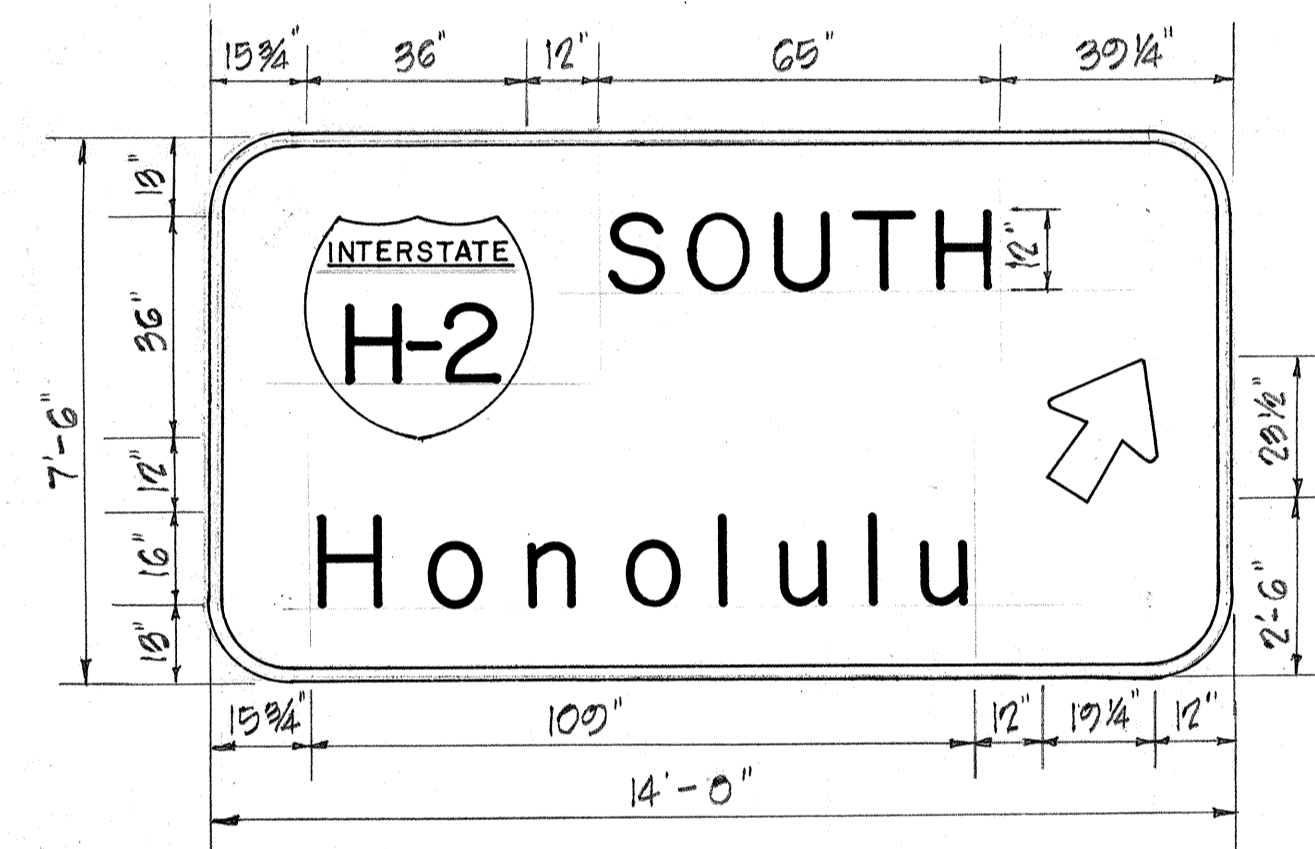
C.O. 76



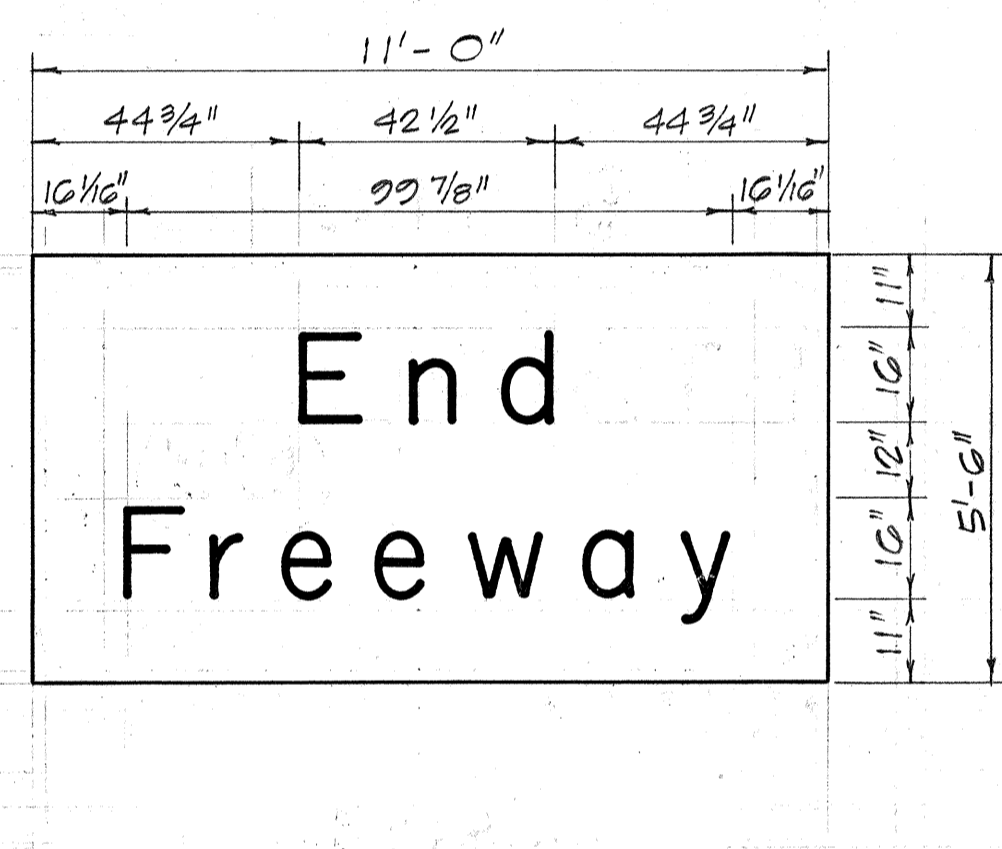
STA. 44+00



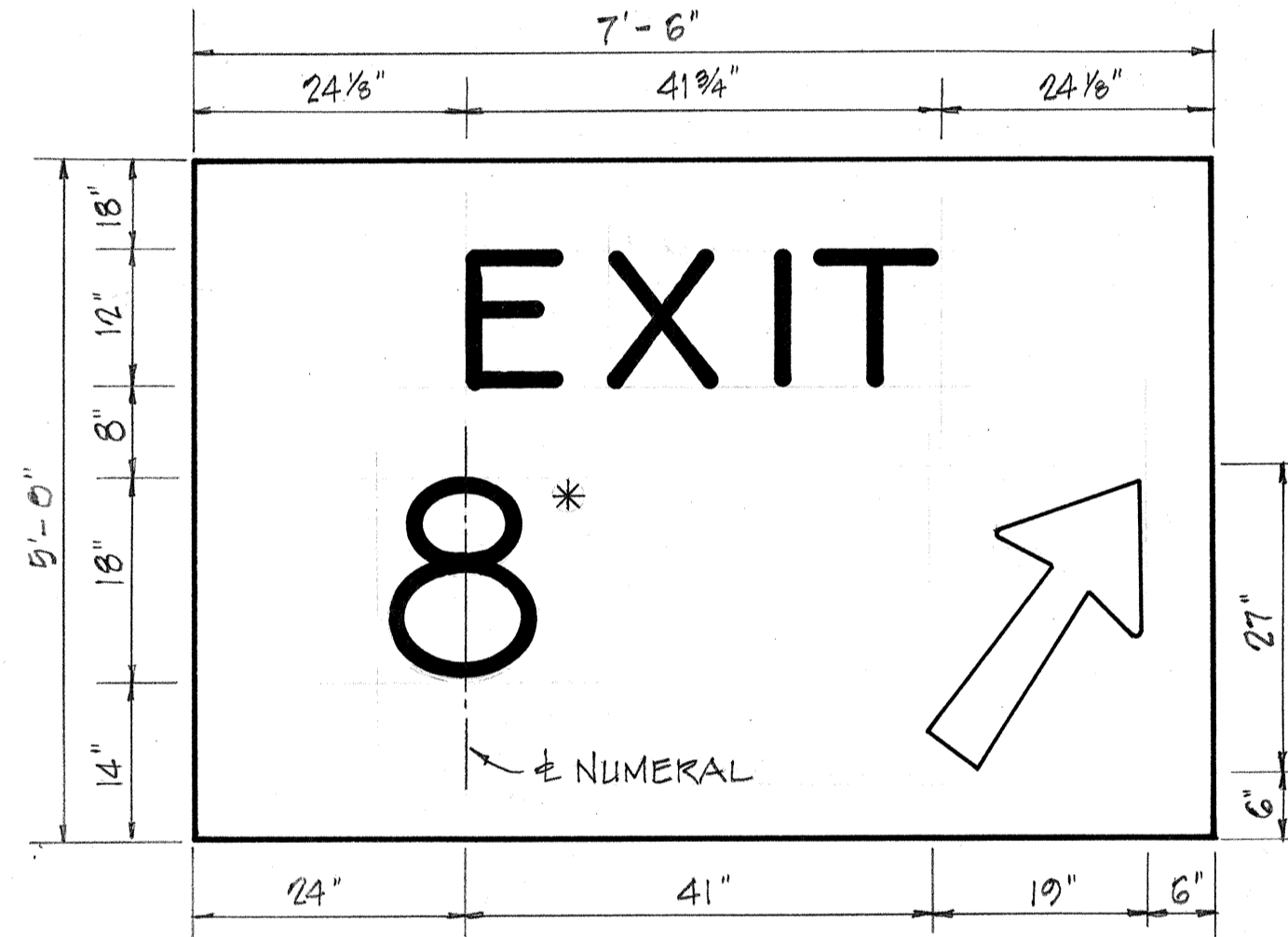
STA. 53+00



ATTACHED TO BRIDGE NO. 2



STA. 44+00



EXIT GORE SIGN - TYPICAL  
RAMP C, D (EXIT 8)  
\*RAMP E (EXIT 9)

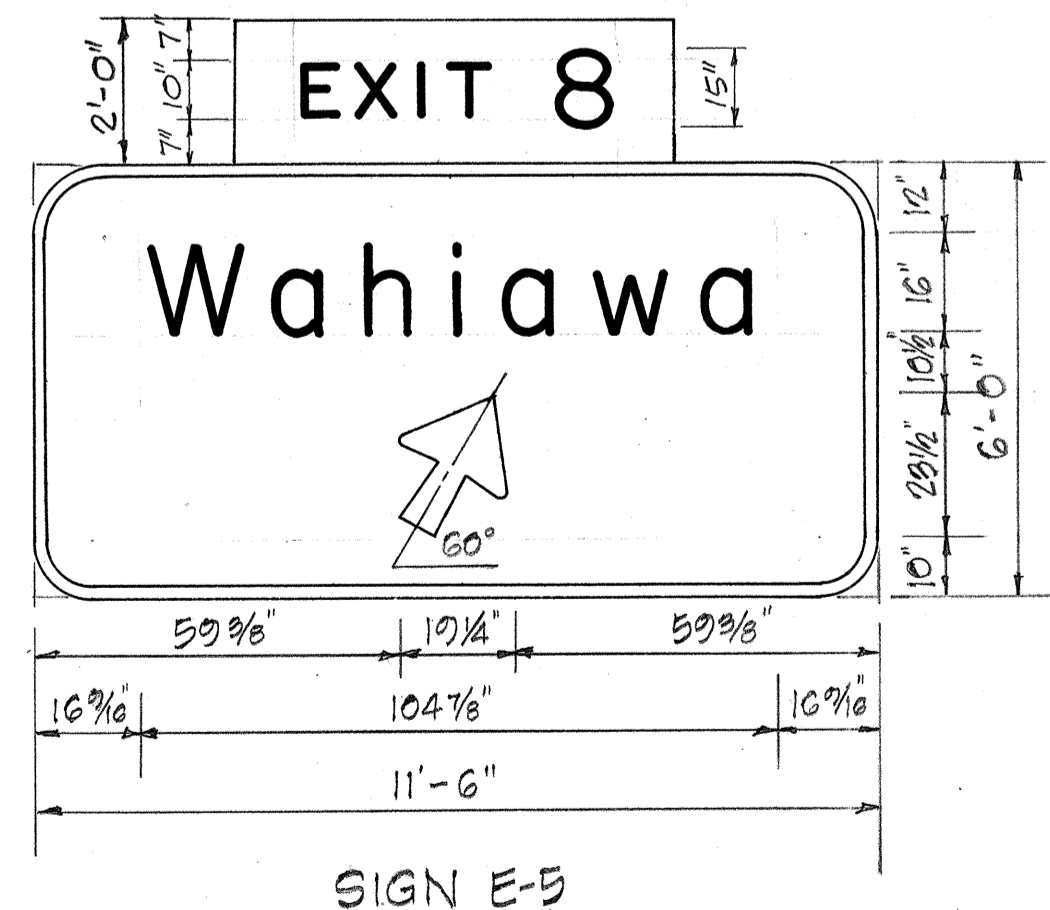
GENERAL NOTES:

- ALL LETTERS AND FIGURES SHALL CONFORM TO THE MANUAL OF "STANDARD ALPHABETS FOR HIGHWAY SIGNS," DEPT OF COMMERCE, BUREAU OF PUBLIC ROADS, 1966.
- LETTERS, NUMERALS, SYMBOLS AND BORDERS SHALL BE DEMOUNTABLE ALUMINUM CUT-OUTS WITH WHITE REFLECTIVE SHEETING OR CLEAR REFLEX REFLECTORS AND SHALL BE FASTENED ON THE SIGN PANEL WITH BLIND RIVETS. SEE SPECIAL PROVISIONS.
- DESTINATION SIGNS (D) SHALL HAVE WHITE REFLECTIVE SHEETING ON ALUMINUM CUT-OUTS ON GREEN REFLECTIVE SHEETING BACKGROUND.
- EXPRESSWAY SIGNS (E) SHALL HAVE EITHER WHITE REFLECTIVE SHEETING ON ALUMINUM CUT-OUTS OR CLEAR REFLEX REFLECTORS SET IN WHITE PORCELAIN ENAMELED ALUMINUM CUT-OUTS. BACKGROUND FOR THE EXPRESSWAY SIGNS SHALL BE GREEN PORCELAIN ENAMEL.
- EXIT GORE SIGNS SHALL BE FABRICATED IN ACCORDANCE WITH SPECIFICATIONS FOR DESTINATION SIGNS (D).
- EXPRESSWAY (E) AND DESTINATION SIGNS (D) WITH A PREFIX "W" SHALL BE FABRICATED IN ACCORDANCE WITH THEIR RESPECTIVE SPECIFICATIONS EXCEPT THE BACKGROUND SHALL BE YELLOW AND THE LETTERING BLACK.

SUMMARY OF SIGN PANELS

SIGN NO.	MESSAGE	AREA (S.F.)
E-1 (L)	HONOLULU	171
E-1 (R)	KAM. HWY.	126
E-2	WAHIAWA - 1/2 MILE	115.5
E-3	HONOLULU - SOUTH	105
E-4	WAHIAWA	62
E-5	WAHIAWA	81
(W)E-1 (A)	END FREEWAY	60.5
	TOTAL	721.0
EXIT GORE SIGN	EXITS 8, 9 (3 TOTAL)	112.5
(W)D-1	END FREEWAY - 1 MILE	88
(W)D-2	END FREEWAY - 1/2 MILE	88
D-3	WAHIAWA - WHEELER AFB	62.5
	TOTAL	351.0

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



STA. 76+50

CLARENCE K. TANDON  
 REGISTERED PROFESSIONAL ENGINEER  
 No. 1464-E  
 HAWAII, U.S.A.

AUSTIN, YEE & PARK  
 (A JOINT VENTURE)  
 745 FORT STREET, HONOLULU, HAWAII

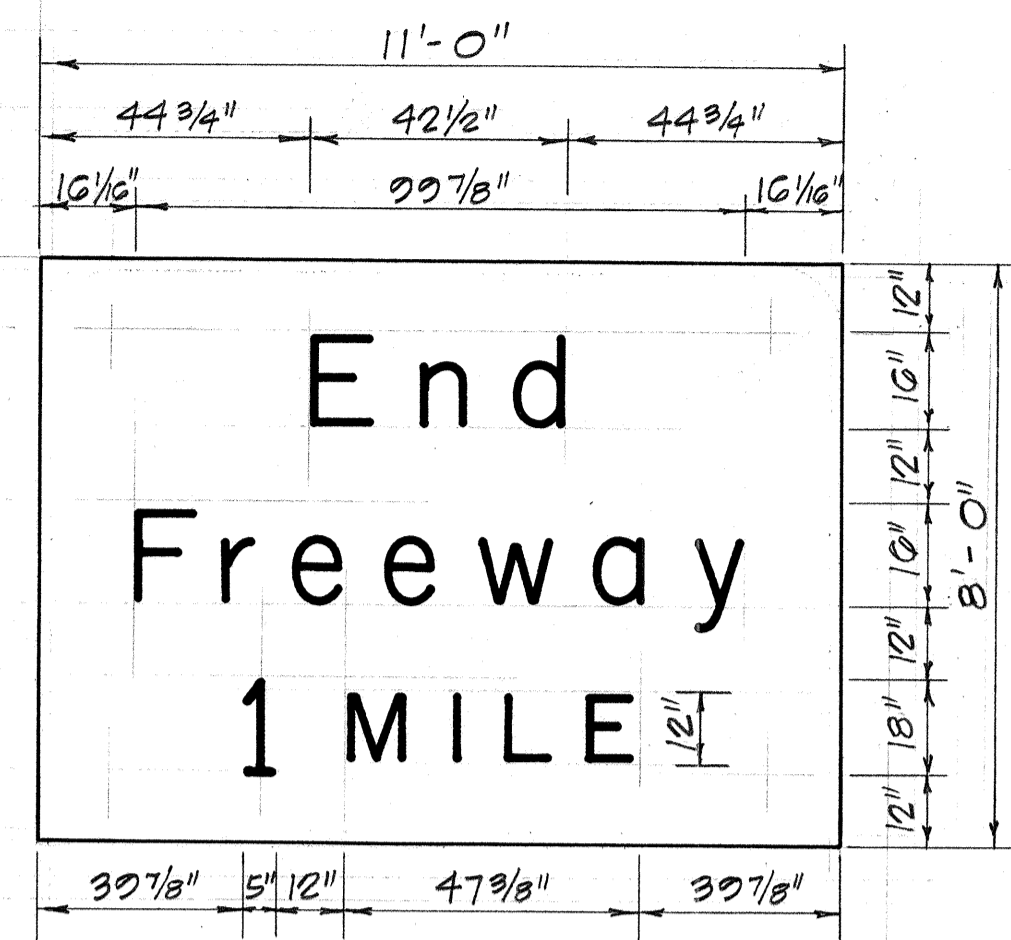
DES. EK DR. AM. CHK. CT  
*Donald Parks*  
 APPROVED FOR JOINT VENTURE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

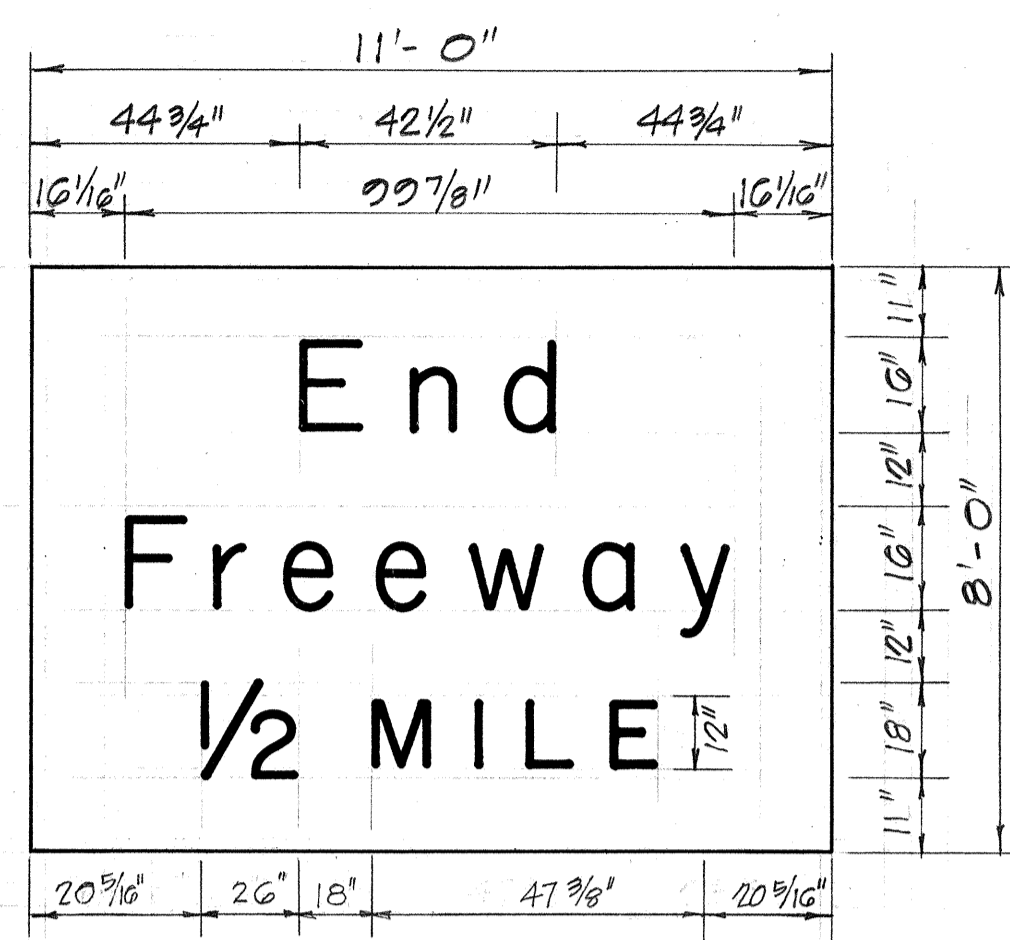
SIGN PANEL LAYOUT

WAHIAWA INTERCHANGE  
 F.A.I. PROJECT No. I-H2-1(11):7  
 SCALE: AS SHOWN DATE: 4-25-73

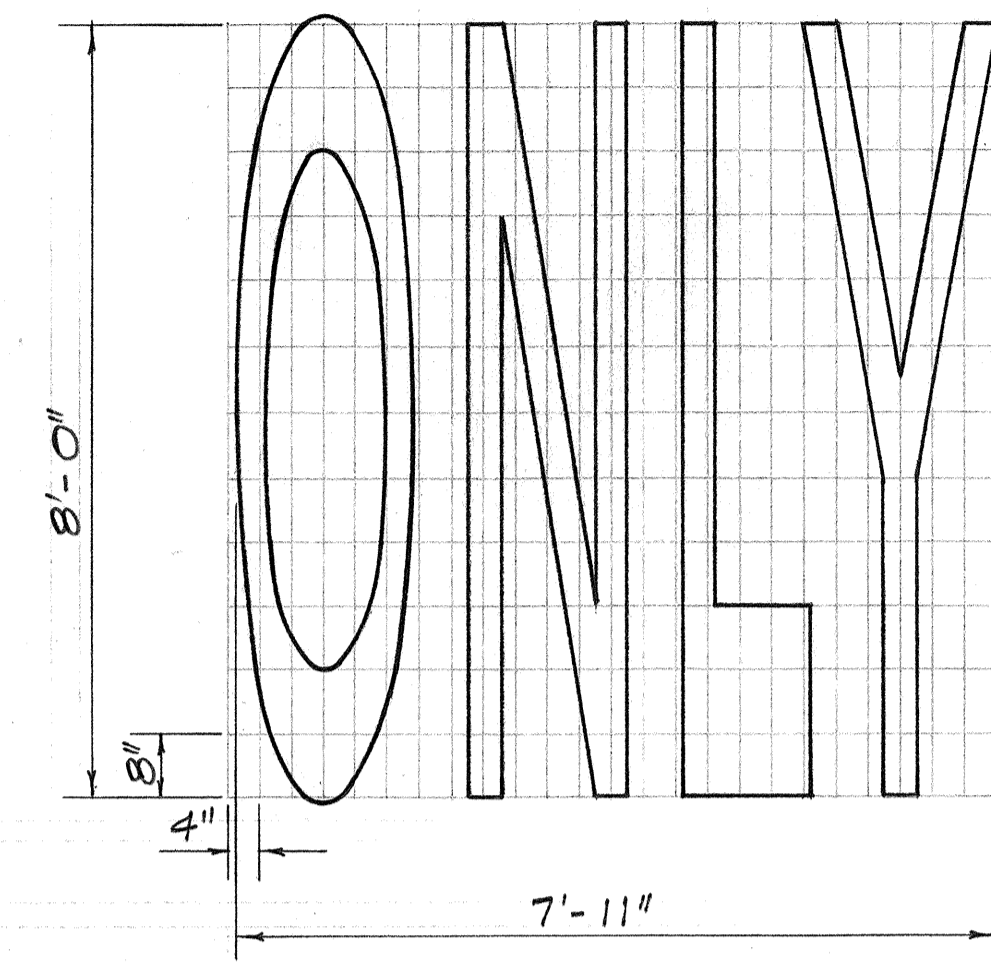
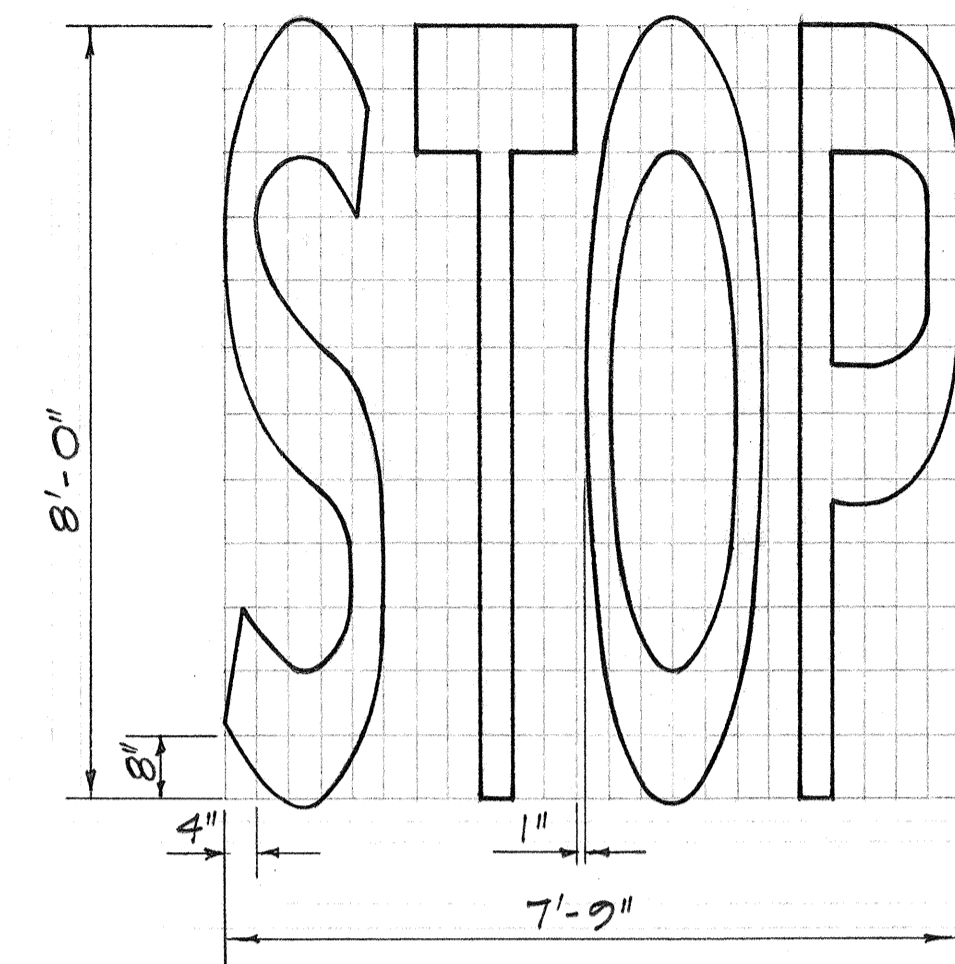
SHEET No. 5 OF 30 SHEETS



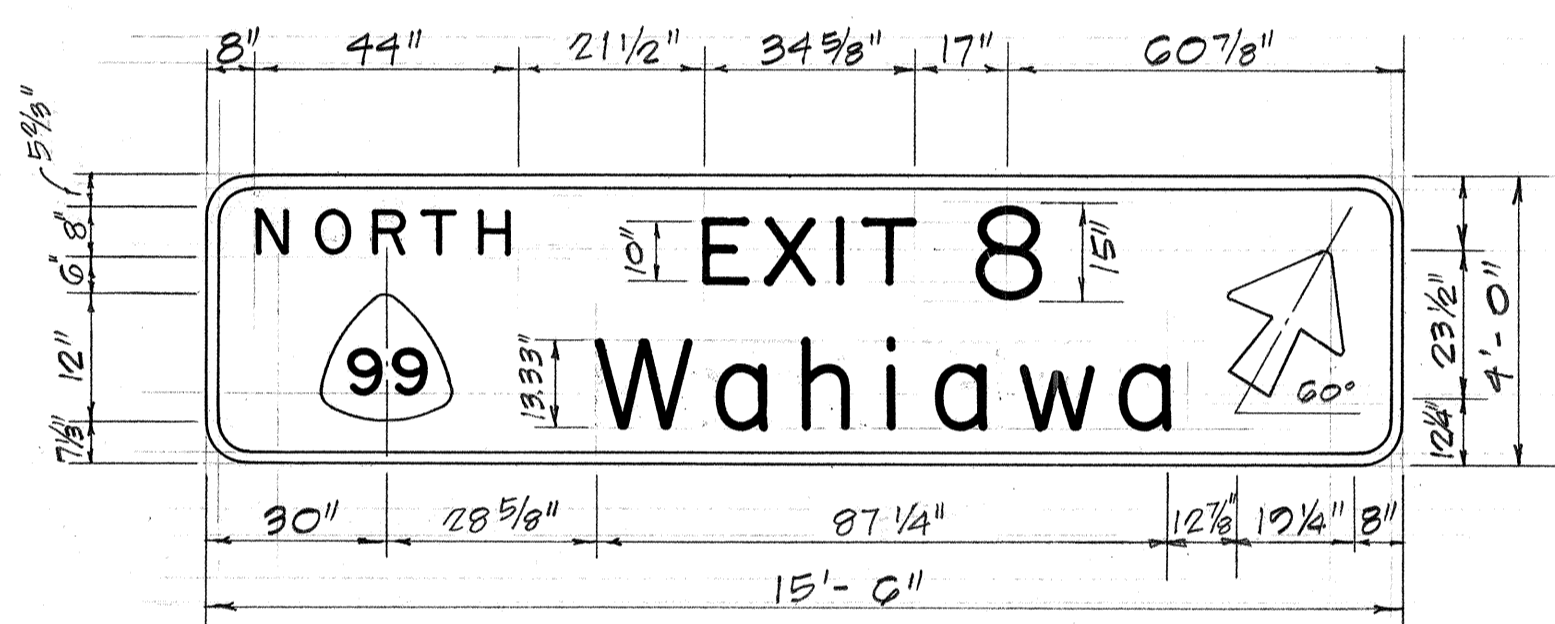
SIGN (W) D-1  
# STA. 88+00



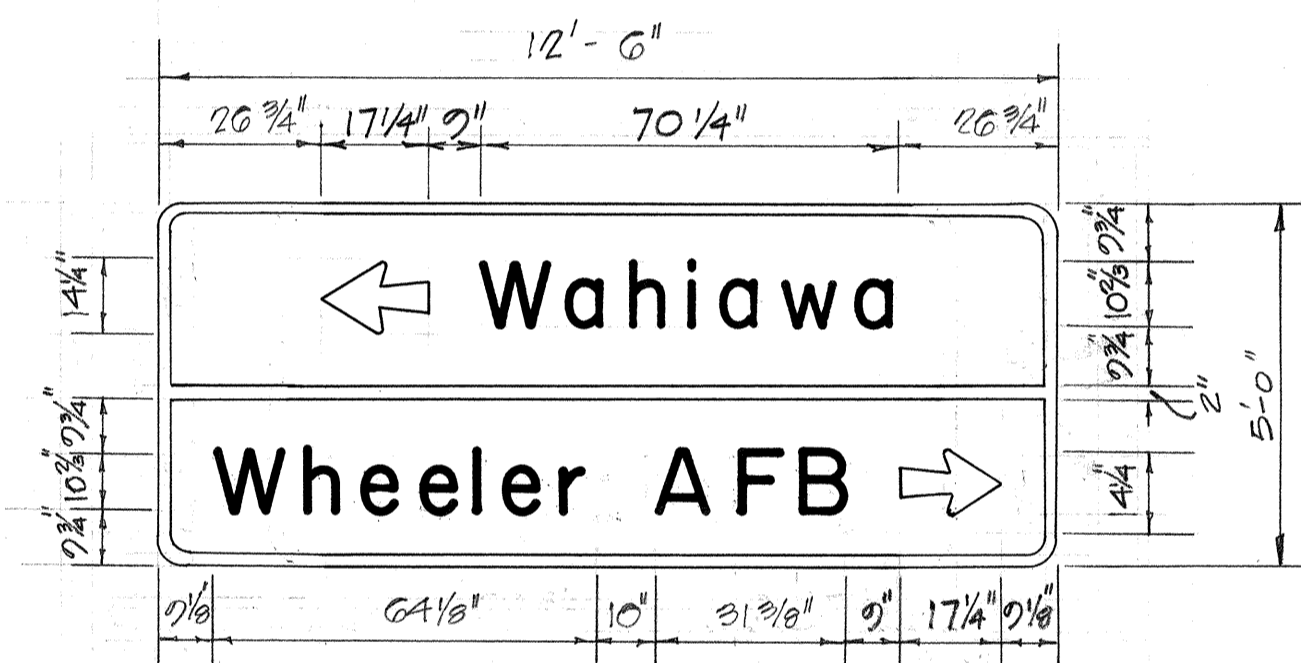
SIGN (W) D-2  
# STA. 64+50



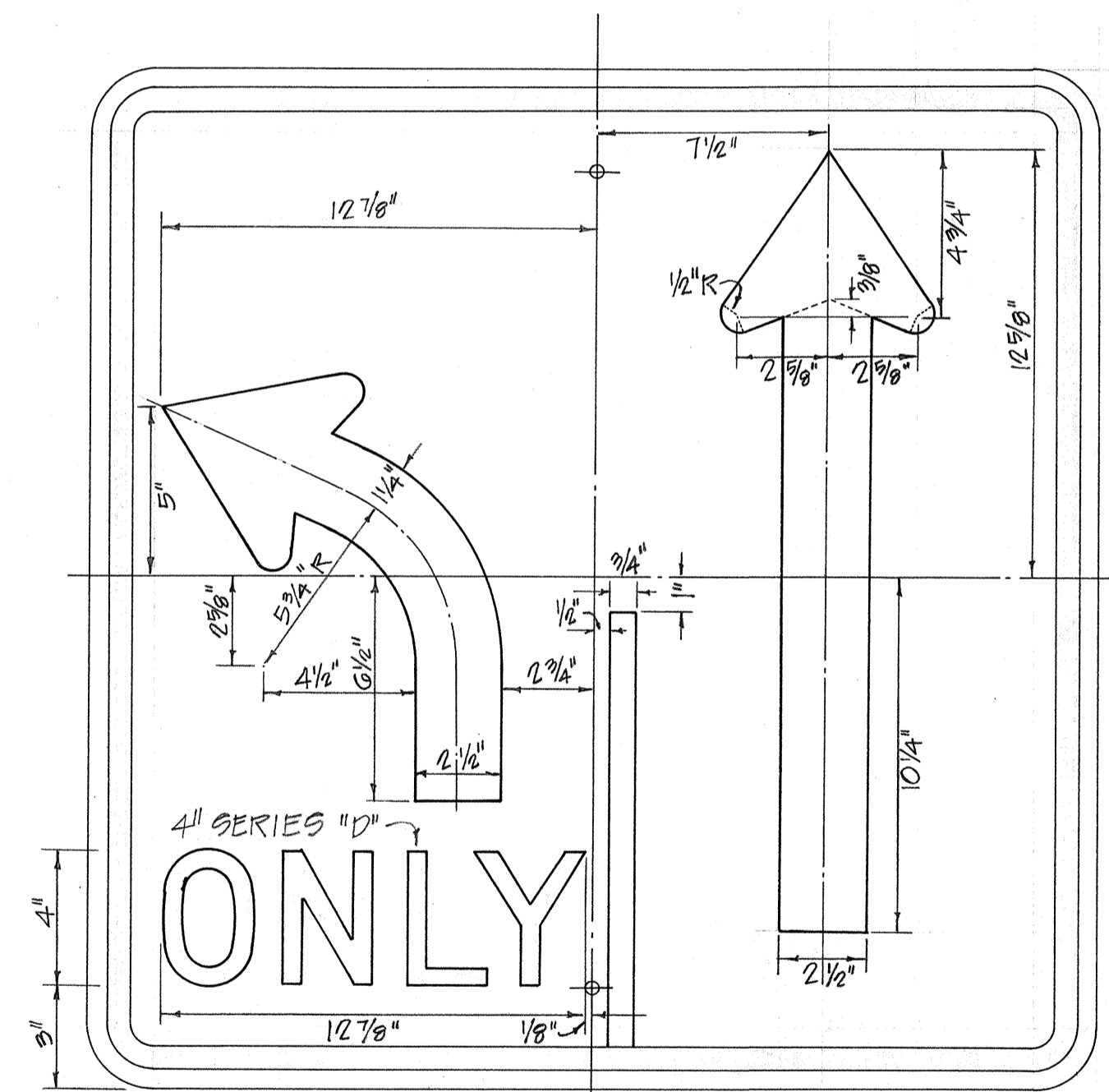
ELONGATED LETTERS FOR PAVEMENT MARKINGS



SIGN E-4  
# STA. 76+50



SIGN D-3  
RAMP "E"  
# STA. 15+00

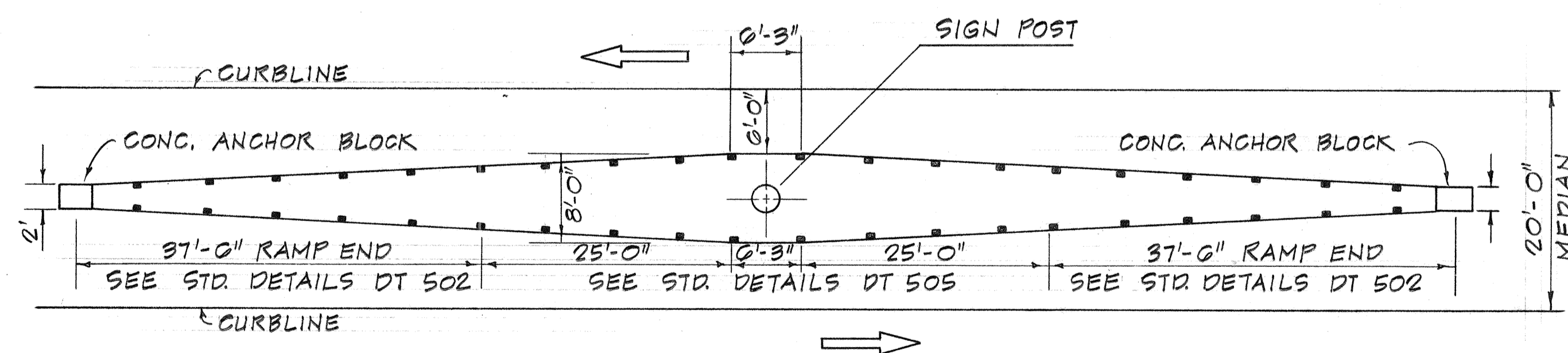


R3-17  
30"x30"

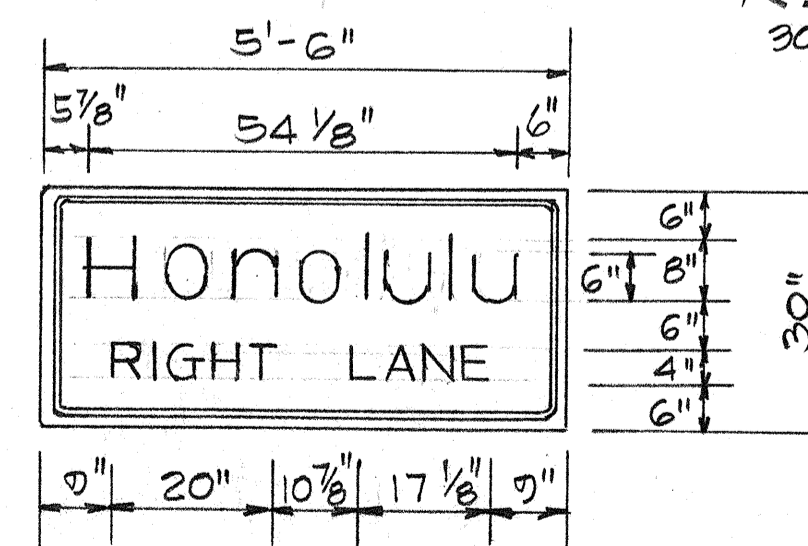


TEMPORARY SIGN \*  
RAMP "E" STA. 11+00

\*, \*\* TO BE FABRICATED IN ACCORDANCE WITH THE SPECIFICATIONS FOR WARNING SIGNS EXCEPT THAT THE BACKGROUND SHALL BE GREEN & THE LETTERING WHITE, TO REMAIN IN PLACE AT END OF CONTRACT.



GUARDRAIL DETAIL FOR OVERHEAD SIGN AT # STA. 44+00  
NOT TO SCALE

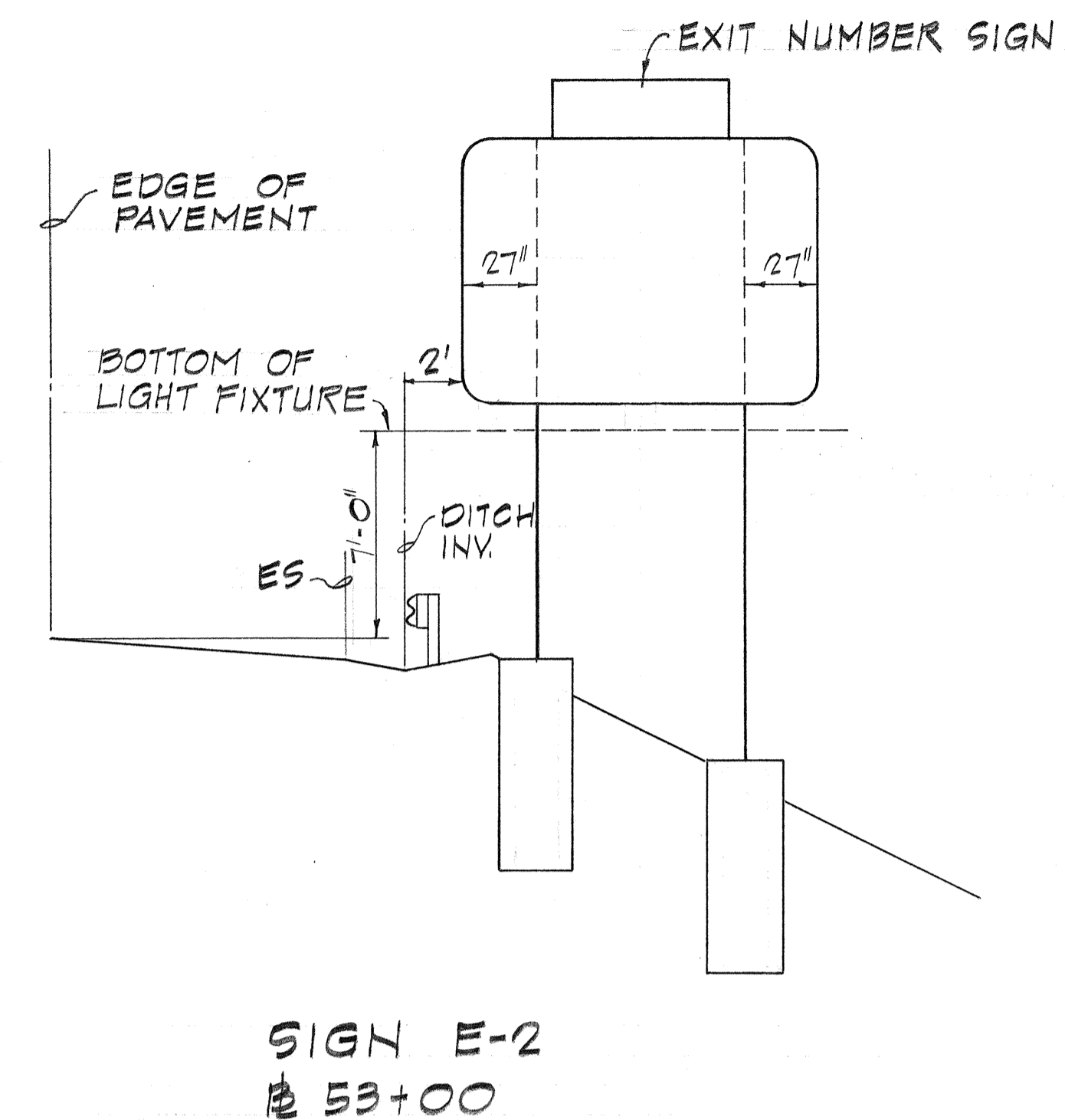
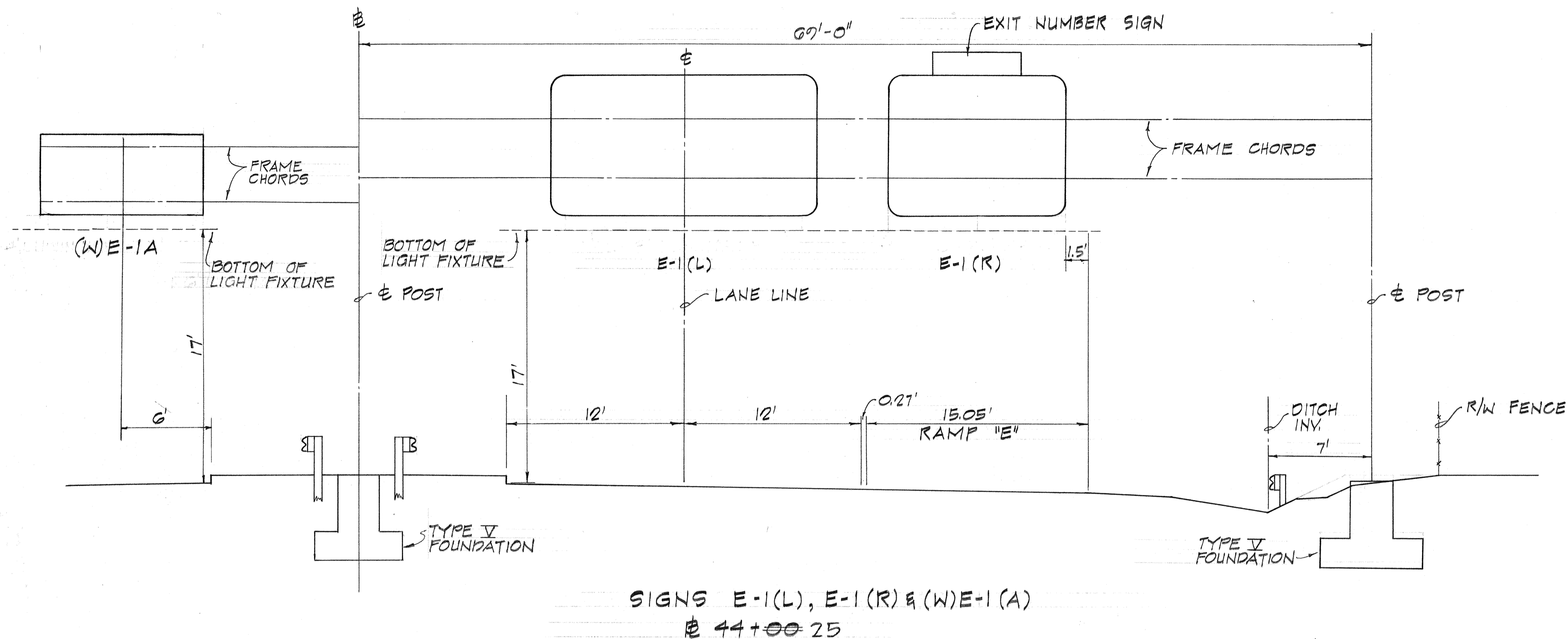


TEMPORARY SIGN \*\*  
RAMP "E" STA 6+50±

1/14/76	Additional Temporary Sign
DATE	REVISION

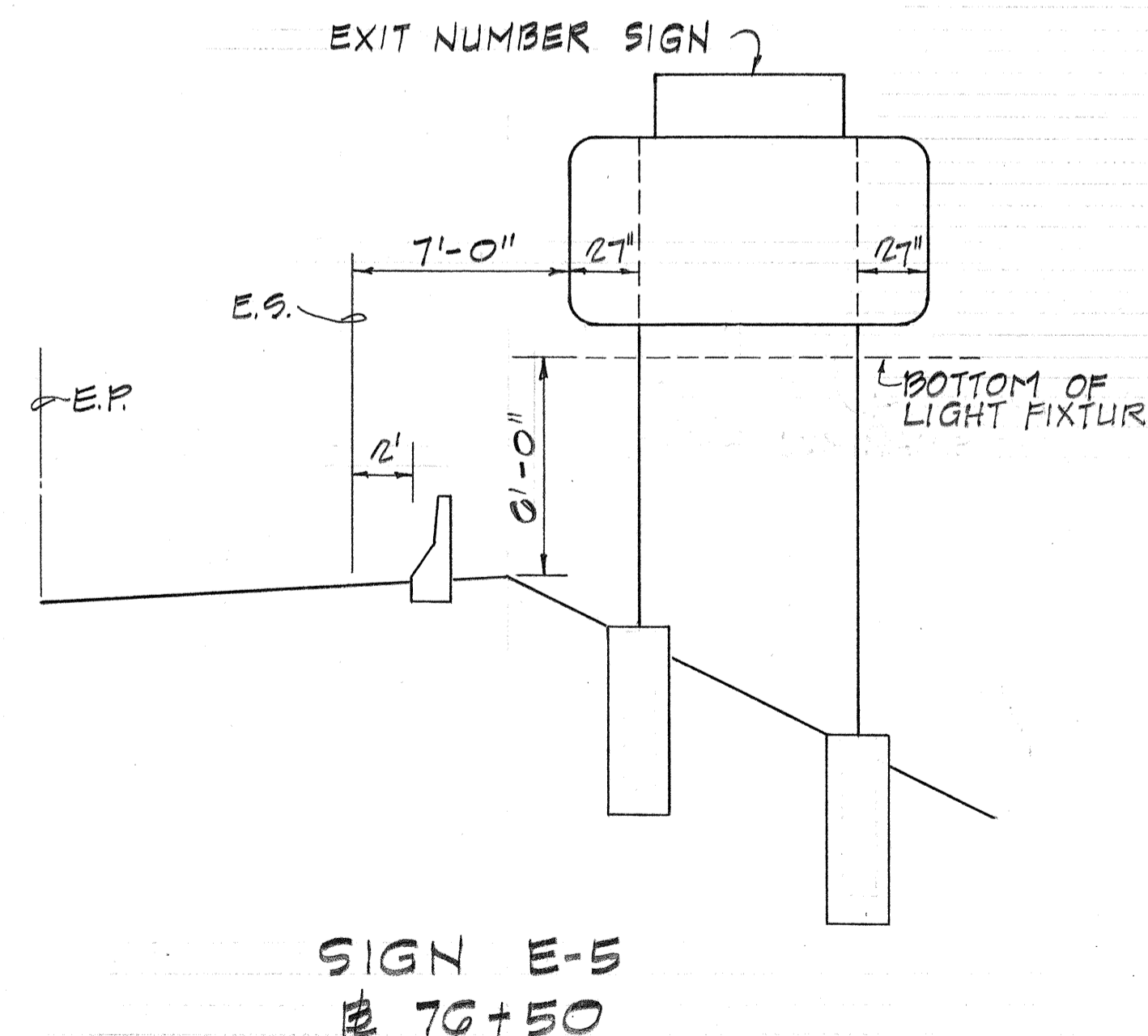
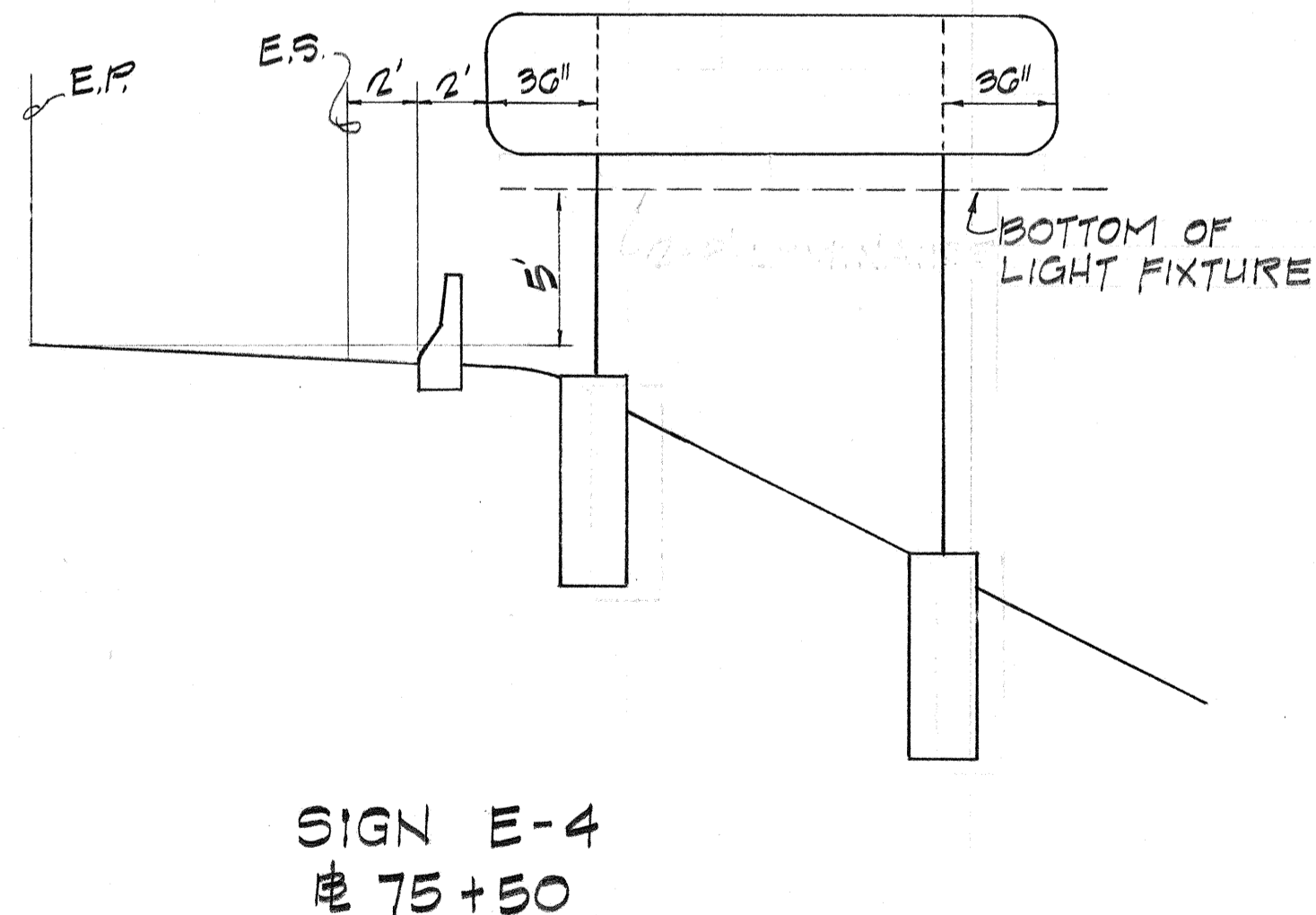
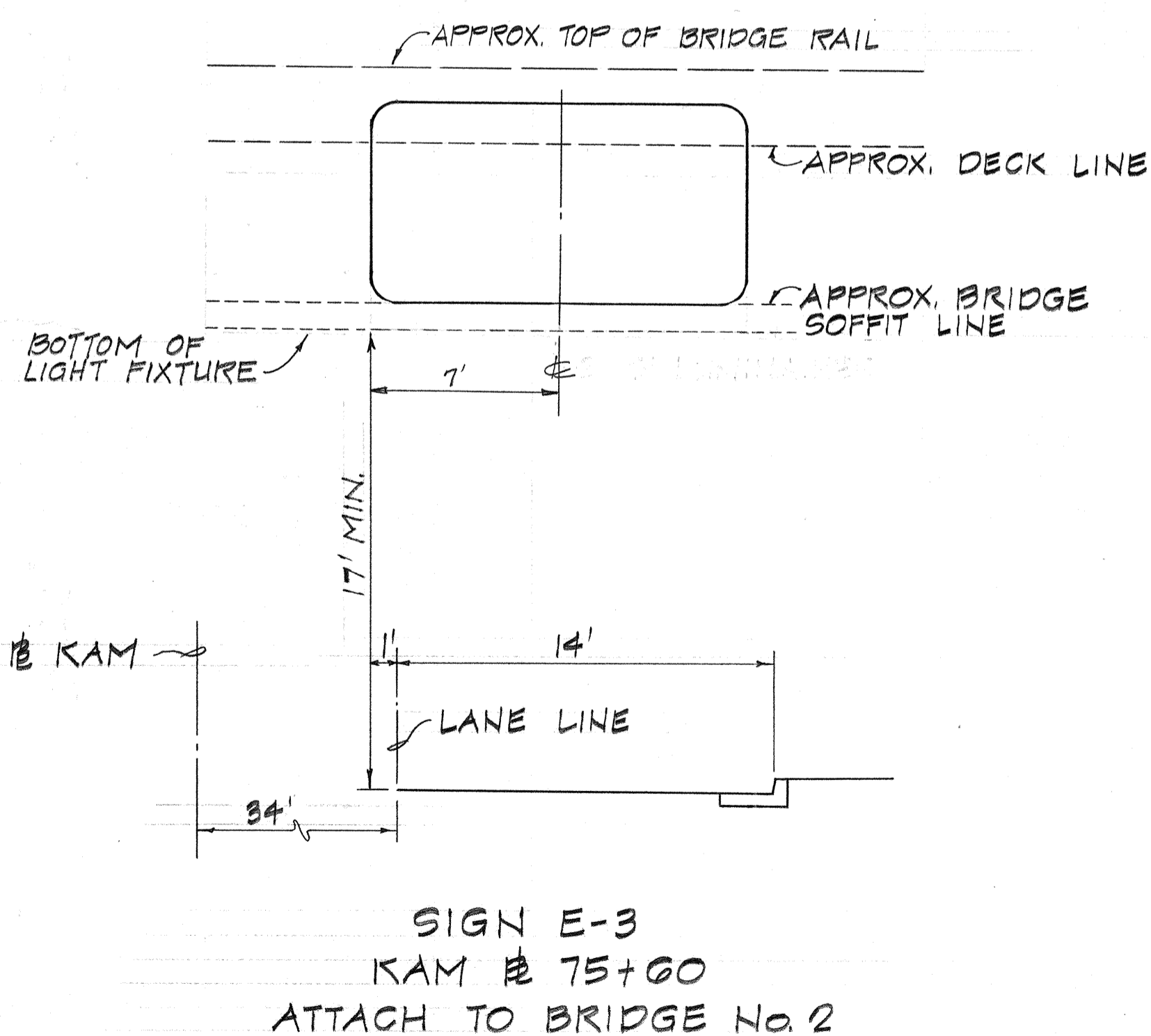
	<b>AUSTIN, YEE &amp; PARK</b> (A JOINT VENTURE) 745 FORT STREET, HONOLULU, HAWAII DES. EK. DR. A.M. CHK. C.T. 
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>SIGN PANEL AND MISCELLANEOUS LAYOUT</b> WAHIAWA INTERCHANGE F.A.I. PROJECT NO. I-H2-1(11)-7 SCALE: AS SHOWN DATE: 4-25-73 SHEET No. 6 OF 77 SHEETS

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



**NOTES**

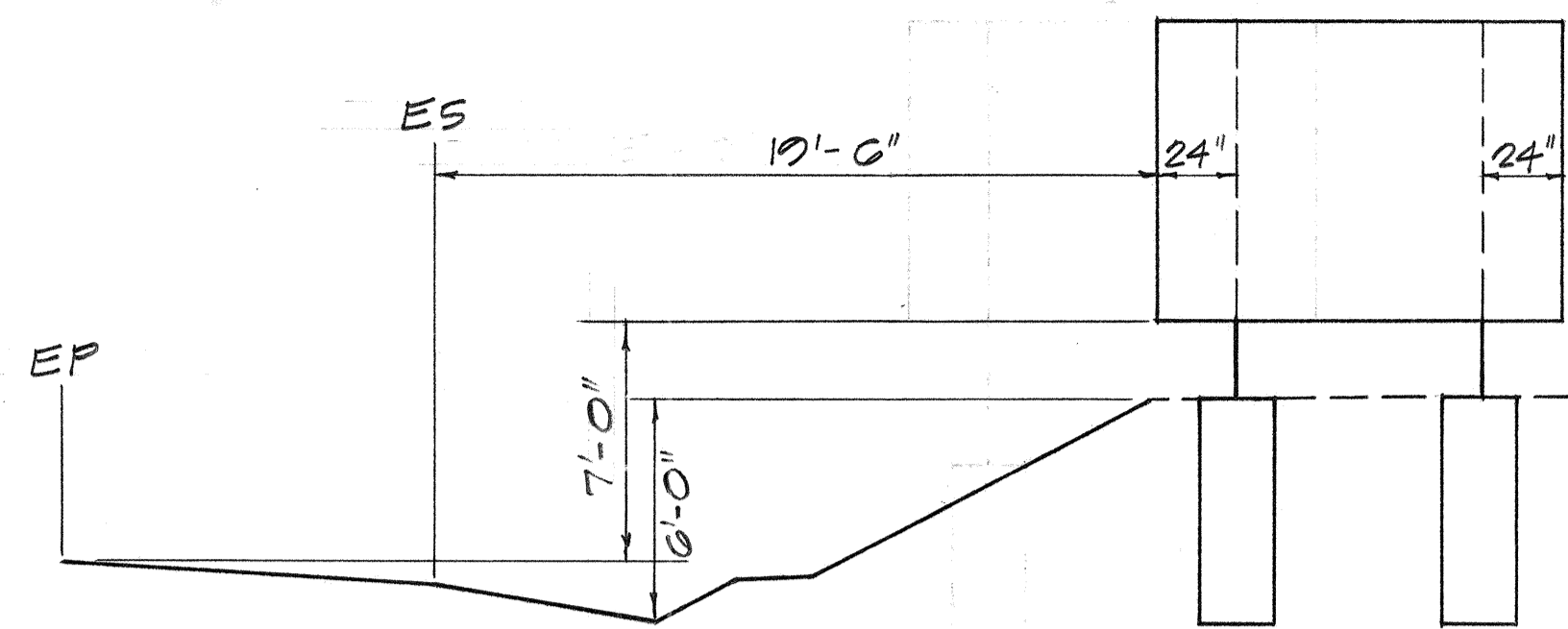
- 1.-FOR BRIDGE ATTACHMENT DETAILS FOR SIGN E-3 SEE SHEET 82
- 2.-FOOTINGS FOR SIGNS W/O BREAKAWAY SUPPORTS ARE TYPE VI UNLESS OTHERWISE NOTED.
- 3.-FOR POST, AND FOOTING SIZES FOR GROUND MOUNTED SIGNS, SEE SHEETS 04
- 4.-FOR OVERHEAD SIGN FRAME DETAILS SEE SHEET 81
- 5.-FOR GUARD RAIL LAYOUT SEE SHEET 78
- 6.-CONTRACTOR SHALL SUBMIT TO THE ENGINEER SHOP DRAWINGS FOR EXIT NUMBER SIGN CONNECTION TO EXPRESSWAY SIGNS



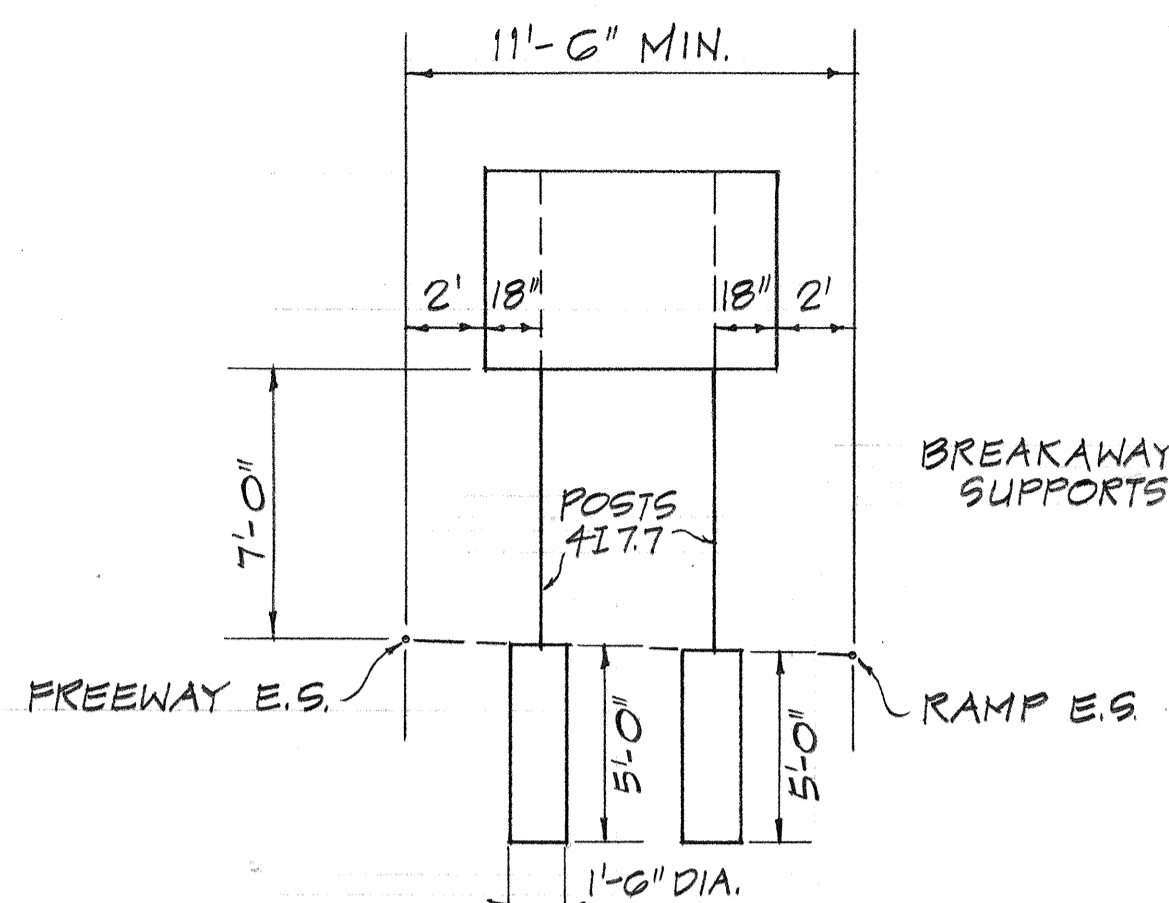
DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
No.	_____

	<b>AUSTIN, YEE &amp; PARK</b> (A JOINT VENTURE) 745 FORT STREET, HONOLULU, HAWAII
	DES. DR. CHK. 
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION APPROVED FOR JOINT VENTURE	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>SIGN LOCATIONS</b>	
WAHIAWA INTERCHANGE F.A.I. PROJECT NO. I-H2-1(1):7 SCALE: AS SHOWN DATE: 4-25-73	
SHEET No. 7 OF 39 SHEETS	

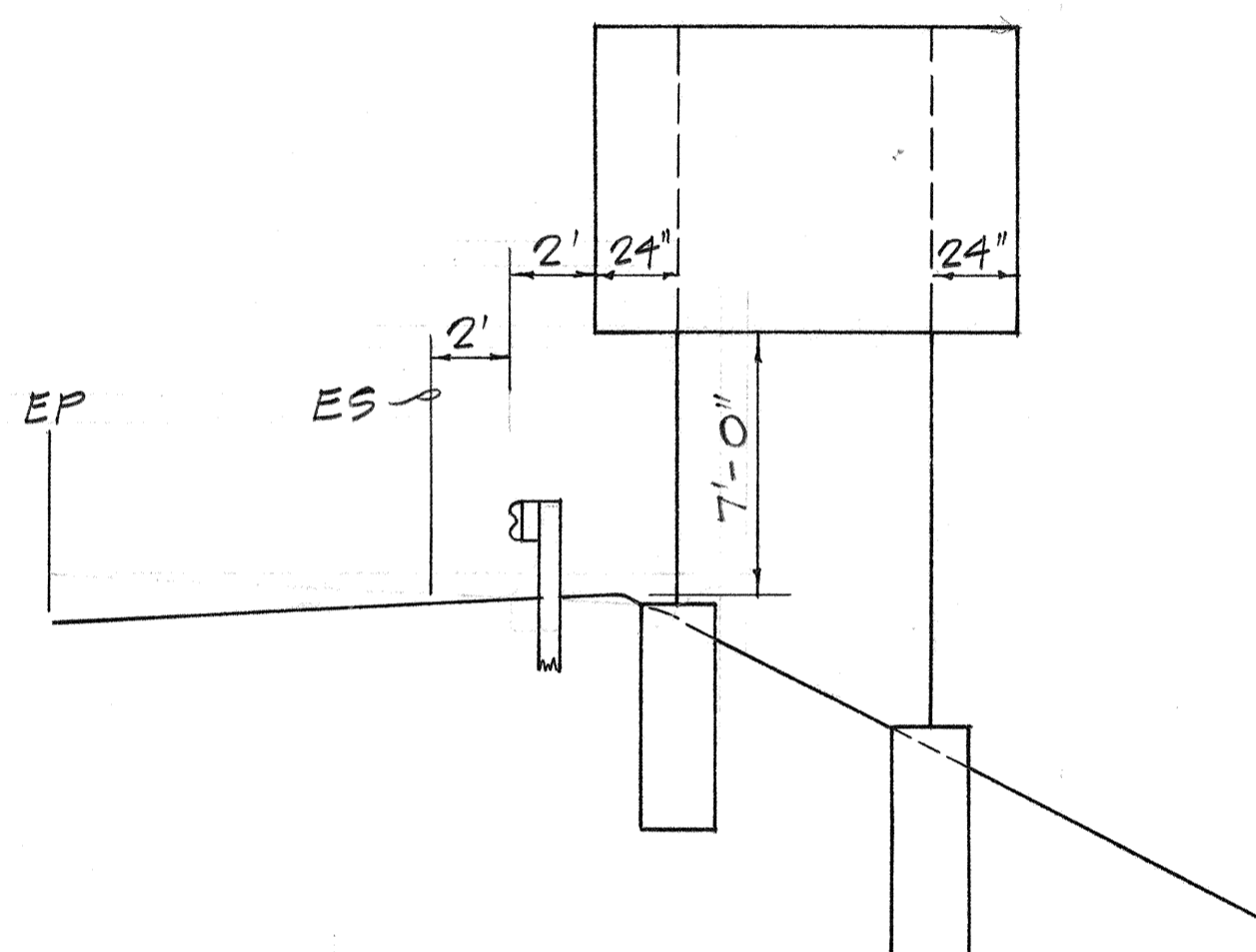
NOTE:  
SEE SHEET 70 FOR NOTES.



SIGN (W) D-1  
# 88+00



TYPICAL GORE SIGN INSTALLATION



SIGN (W) D-2  
# 64+50

SUMMARY OF ROADSIDE SIGNS

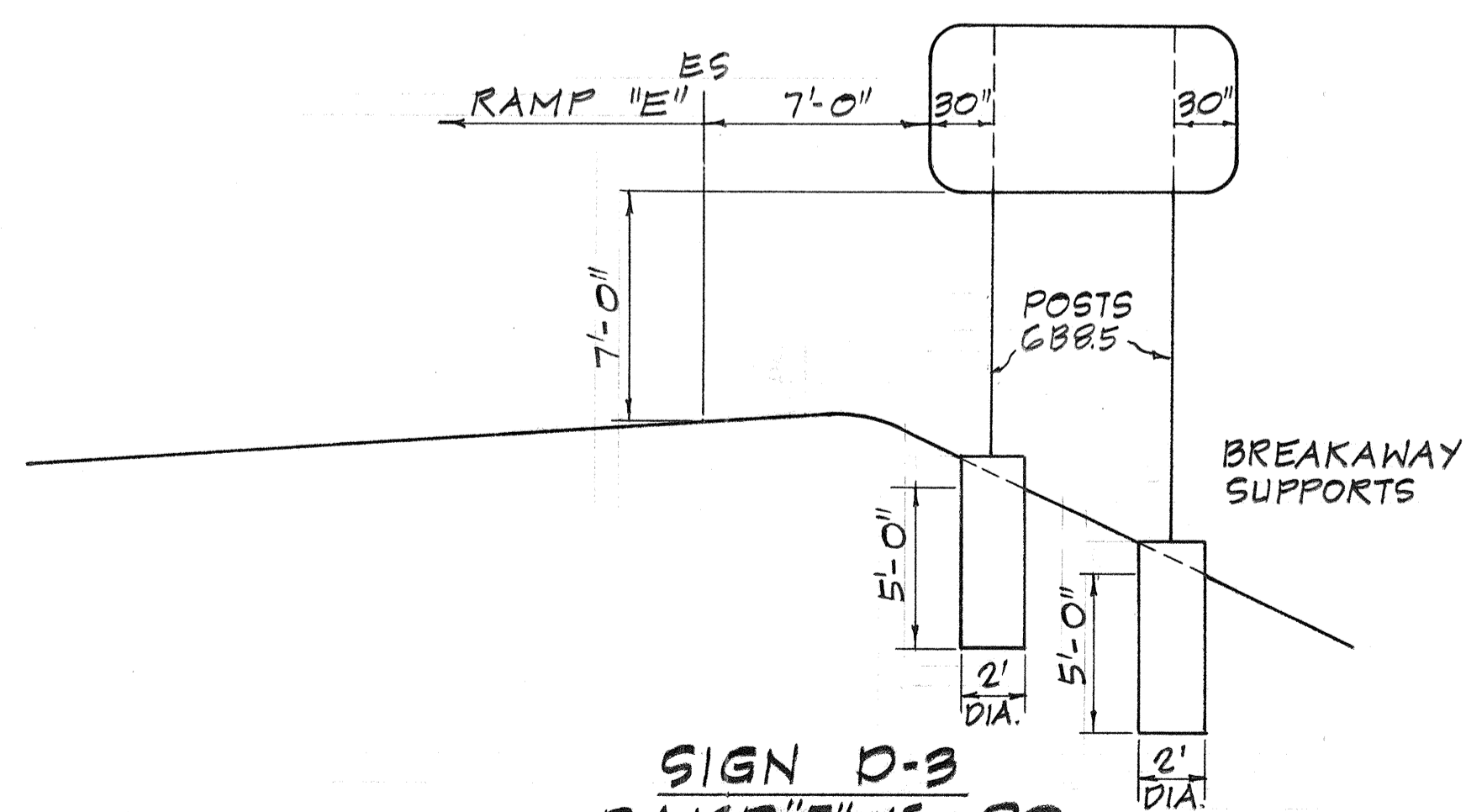
SIGN	EA.	SIGN	EA.	SIGN	EA.
R-1-1	1	R 11-2	5	CW 20-2b	2
R 2-1 (25)	2	R 16-5	1	CW 20-2d	3
R 2-1 (35) A	1	W 1-2 (L)	1	CM 4-10 (L)	1
R 2-1 (45) A	1	W 1-2 (R)	1	CM 4-10 (R)	1
R 2-4a (65/55) A	1	W 1-3 (L)	4	TEMP. SIGN	1
R 2-5b (35) A	2	W 1-3 (R)	1	M 3-3	2
R 2-5b (45) A	2	W 1-6 (L)	2	IM 1-(2)	1
R 3-3	2	W 1-6 (R)	2	IM 1-(3)	1
R 3-7 (L)	1	W 4-1 (R)	1	IM 6-2 (R)	1
R 3-7 (R)	2	W 4-2 (R)	2	D 12-1	2
R 3-17	4	W 9-2 (L)	1		
R 4-7	1	W 9-2 (L) A	1		
R 5-1	2	W 13-1 (25)	2		
R 5-9	1	W 13-2 (25)	2		
R 6-1 (L)	1	W 74 R (L)	1		
R 6-1 (R)	1	CW 20-1a	2		

SUMMARY OF REFLECTOR MARKERS

TYPE	EA
RM-1	50
RM-2	81
RM-3	3

SUMMARY OF PAVT. MARKERS

TYPE	EA
A	1000
C	700
D	225



SIGN D-3  
RAMP "E" 15+00

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

CLARENCE K. TANOMAKA  
REGISTERED PROFESSIONAL ENGINEER  
No. 1464-E  
STATE OF HAWAII

**AUSTIN, YEE & PARK**  
(A JOINT VENTURE)  
745 FORT STREET, HONOLULU, HAWAII

DES. E.K. DR. A.M. CHK. C.T.  
*Donald A. Yee*  
APPROVED FOR JOINT VENTURE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

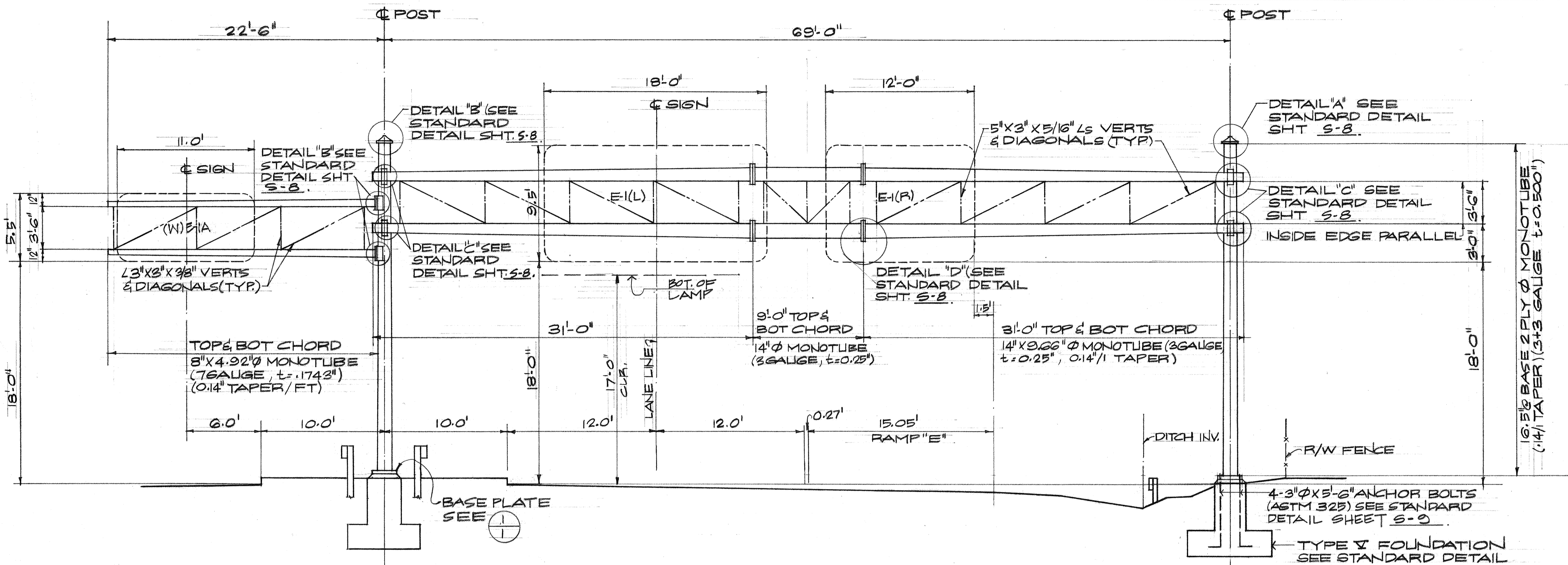
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGN LOCATIONS  
AND  
TRAFFIC DEVICE SUMMARY**

WAIHIAWA INTERCHANGE  
F.A.I. PROJECT NO. I-H2-1(1):7  
SCALE: AS SHOWN DATE: 4-25-79

SHEET No. 8 OF 30 SHEETS

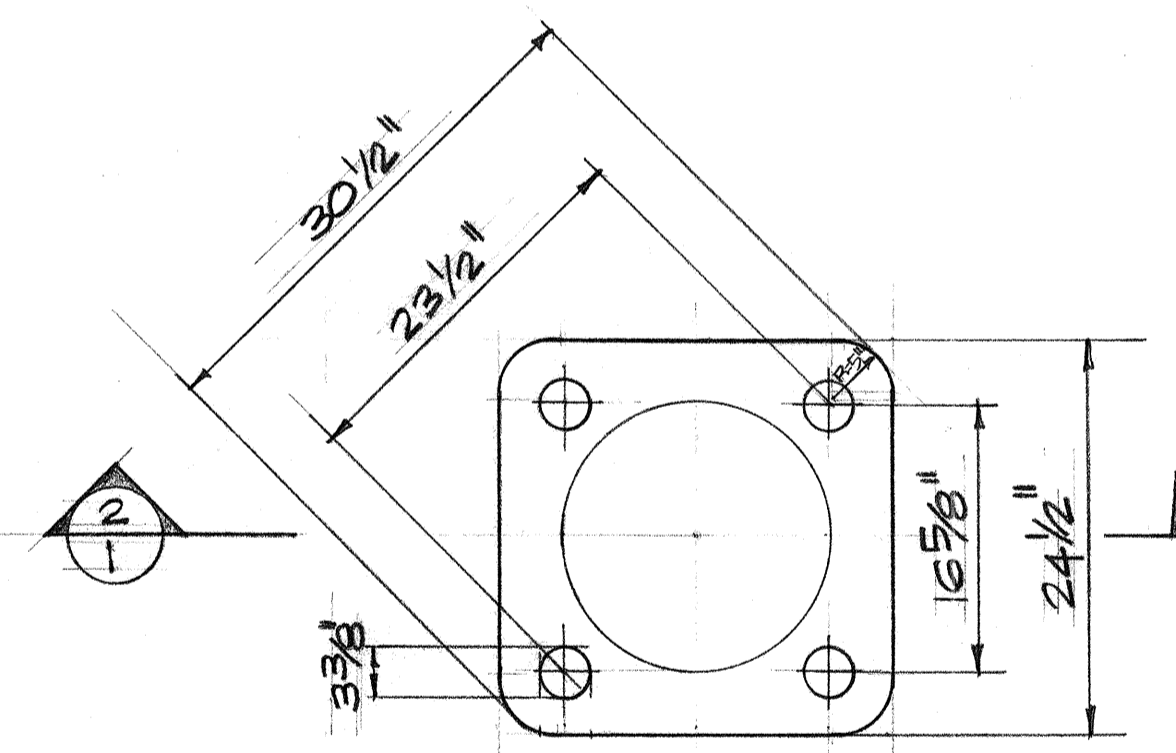
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-1(01)-7	1973	81	274



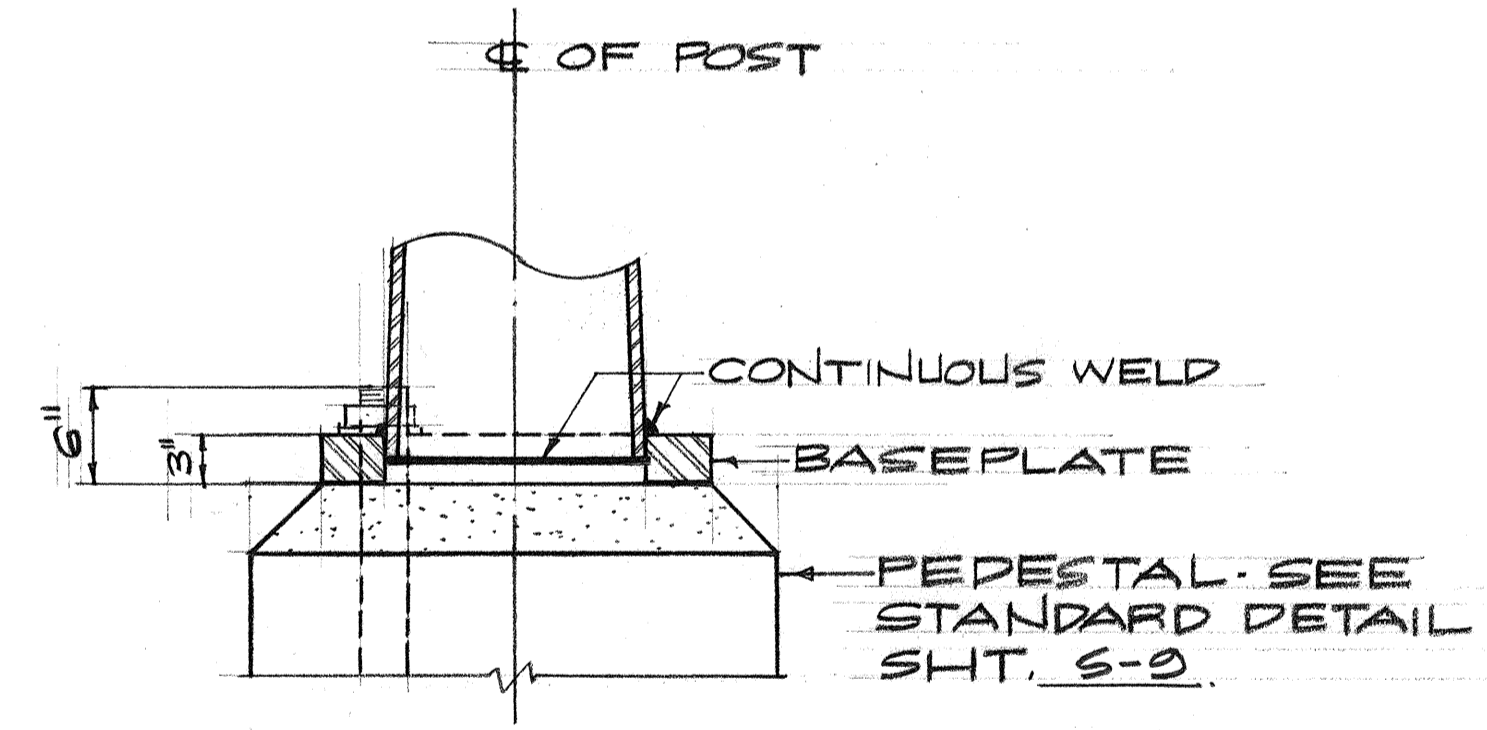
- GENERAL NOTES:**
- DESIGN CONFORMS WITH AASHO SPECIFICATIONS FOR THE DESIGN & CONSTRUCTION OF STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS DATED 1968.
  - MATERIALS & FABRICATION SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS & SPECIAL PROVISIONS.
  - TAPERED POSTS & CROSS ARMS TUBING ASTM A-595-71 (GRADE A MIN YIELD  $f = 55,000$  PSI)
  - STRUCTURAL MEMBERS ASTM A-36 MINIMUM YIELD OF 36,000 PSI.
  - ANCHOR BOLTS - STEEL W/MIN YIELD 81,000 PSI ASTM 325.
  - WELDING ELECTRODES - CLASS E 70.

**SIGNS E-1(L), E-1(R) & (W)E-1A**  
**INTERSTATE HWY STA. 44+00**  
 SCALE 1"=5'

**NOTE:**  
 SEE STANDARD DETAIL DWG. SHT. S-8 & S-9 FOR TYPICAL DETAILS.



**1 TYPICAL BASE PLATE**  
 SCALE 1"=1'-0"



**2 SECTION**  
 SCALE 1"=1'-0"

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

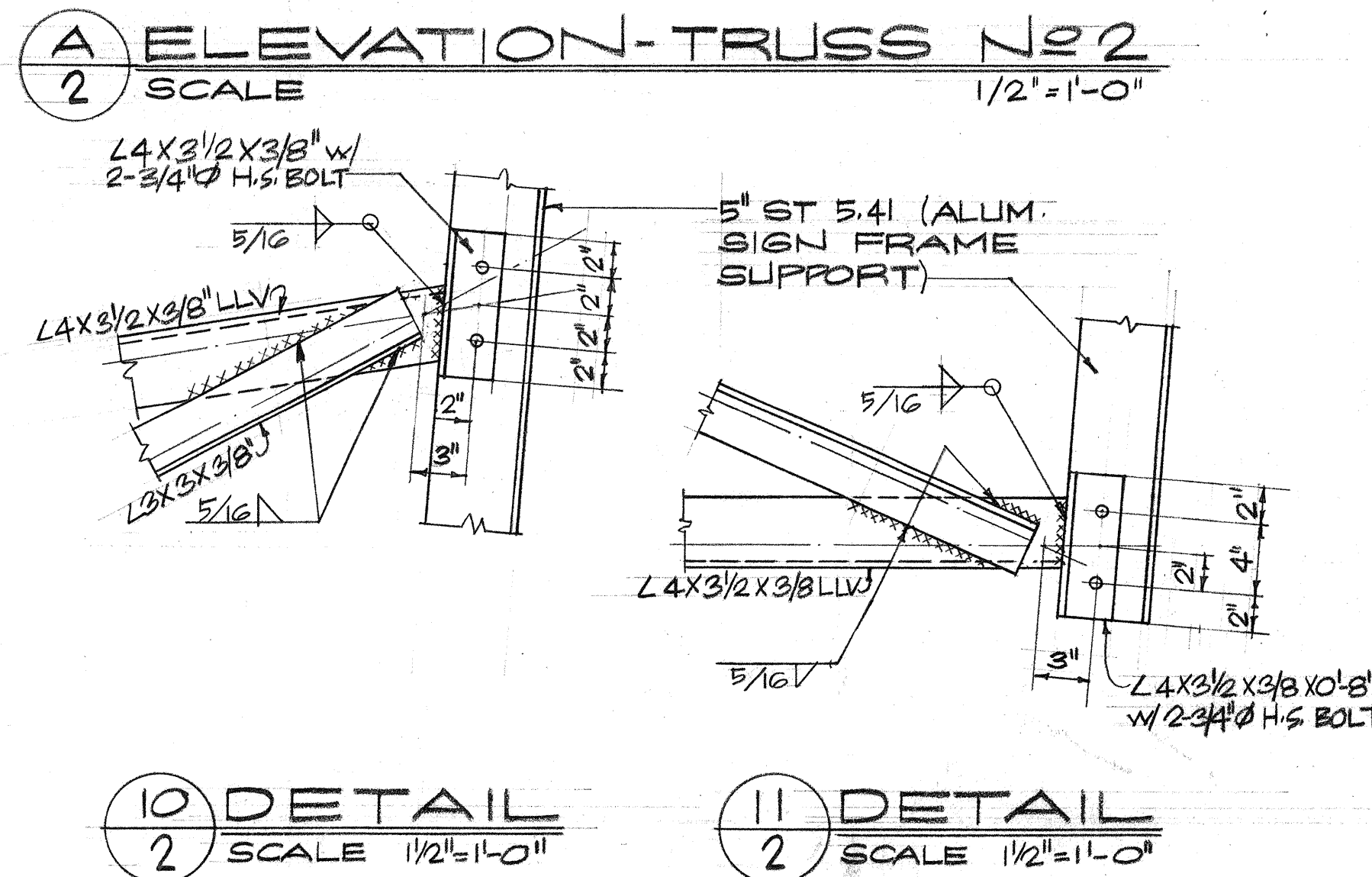
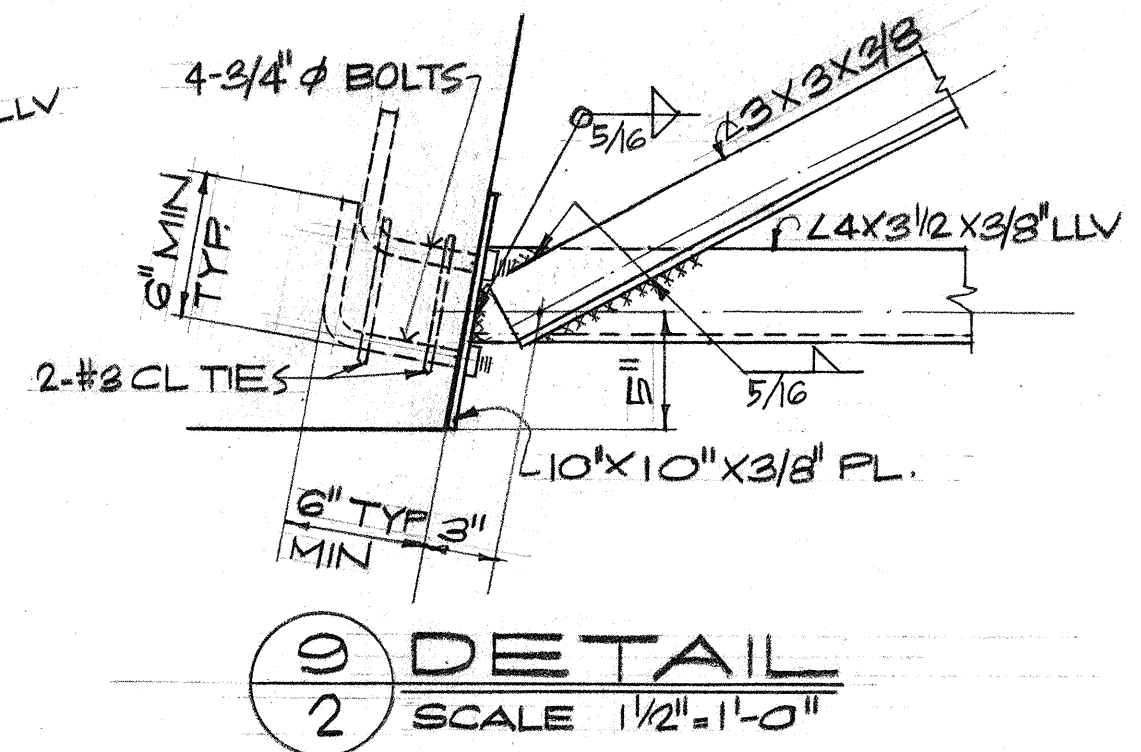
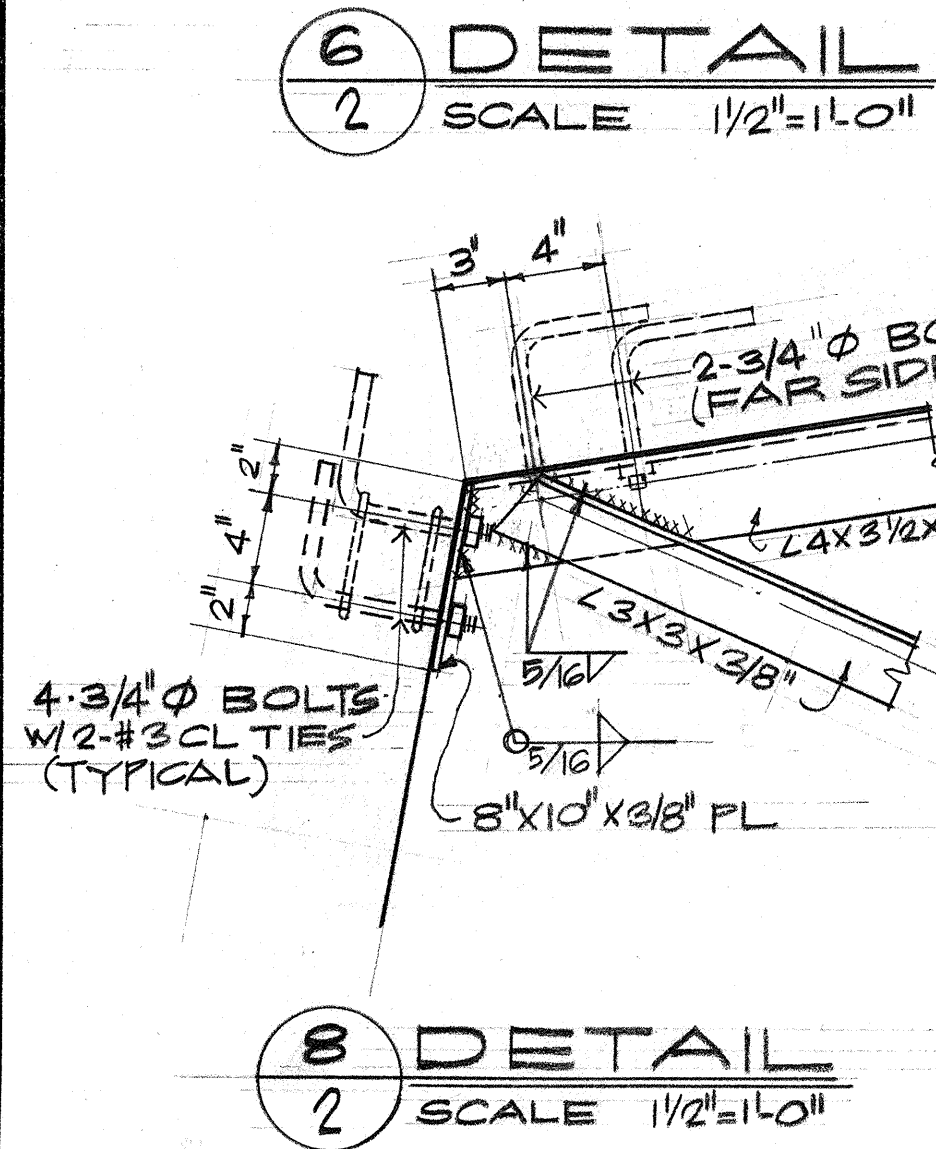
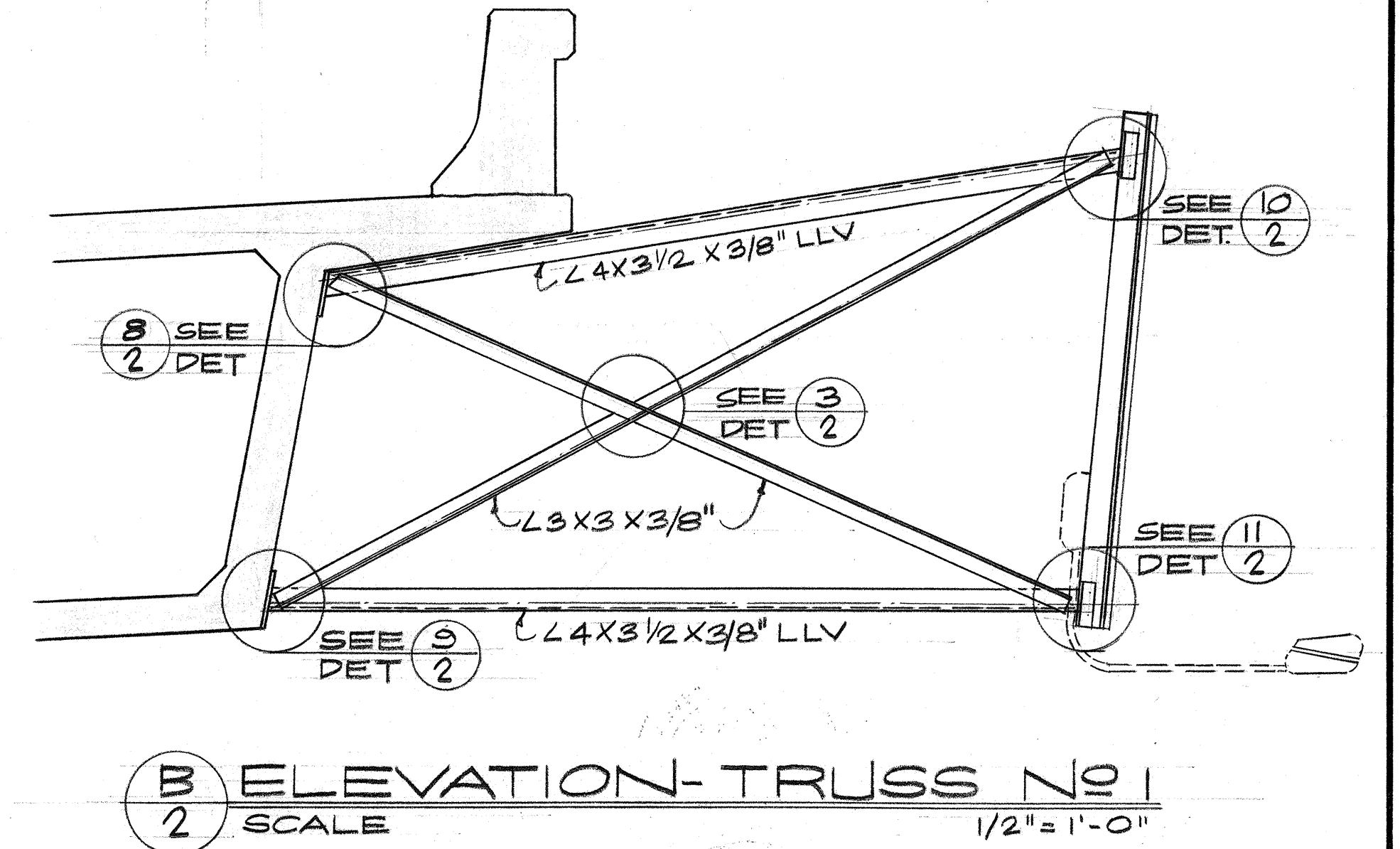
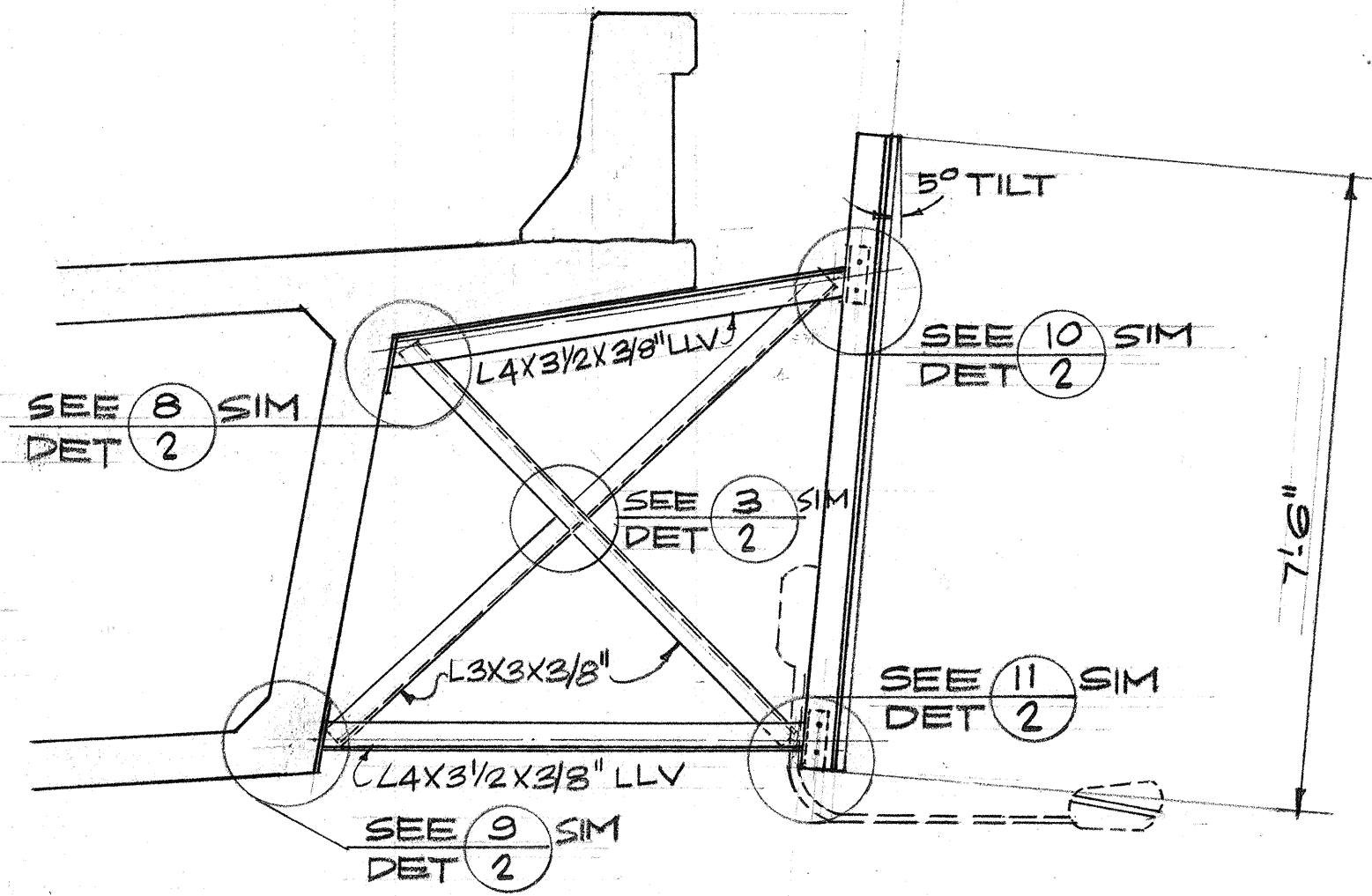
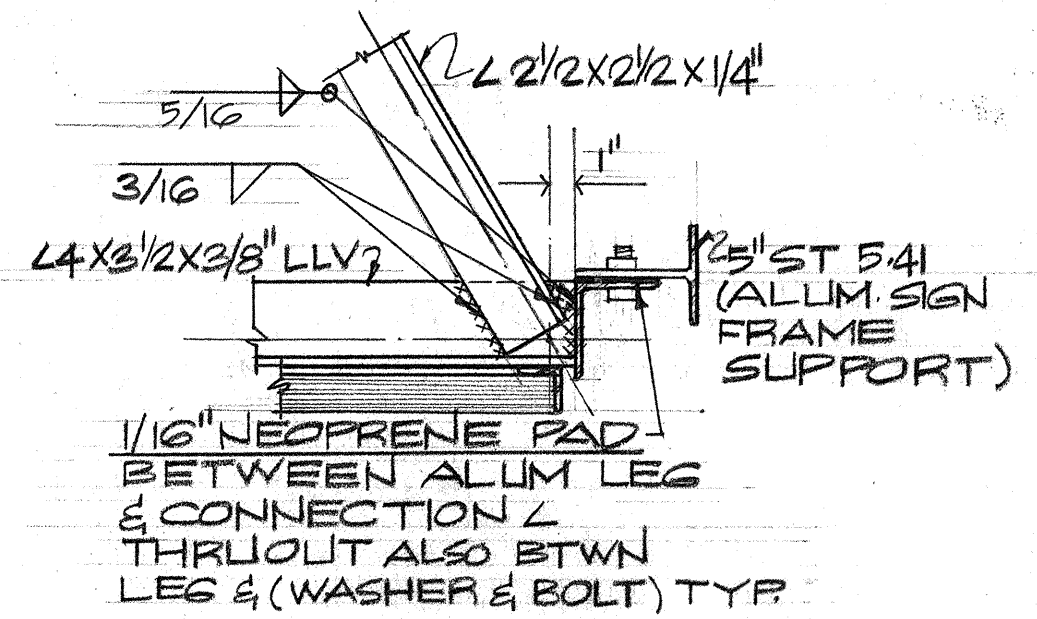
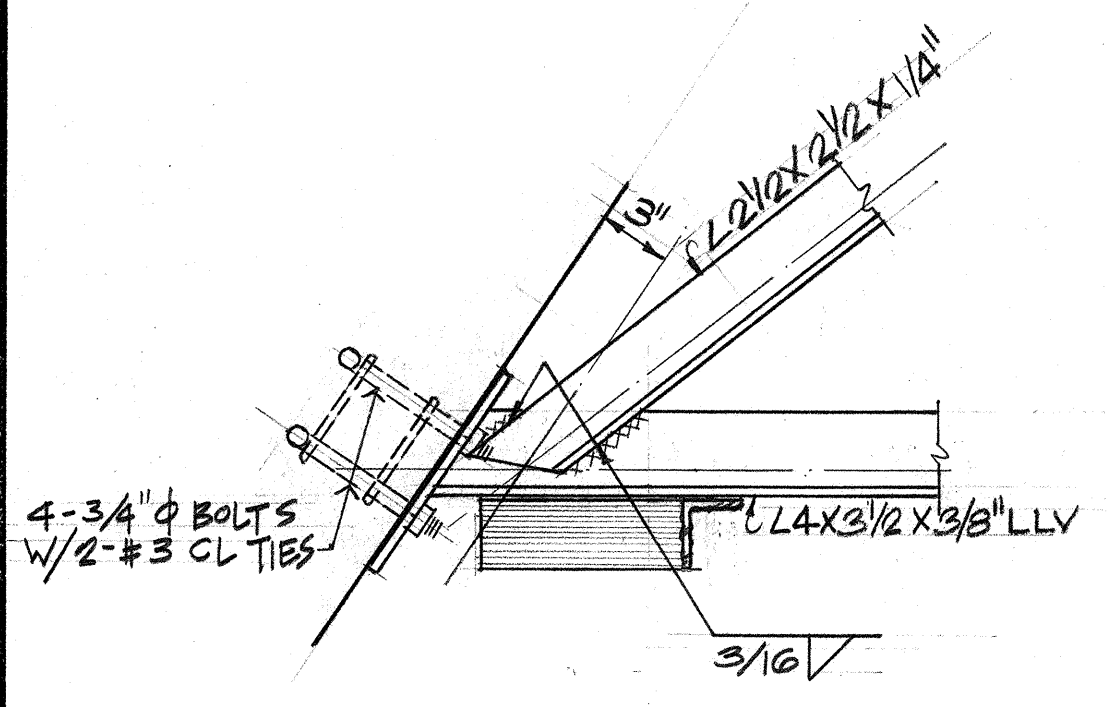
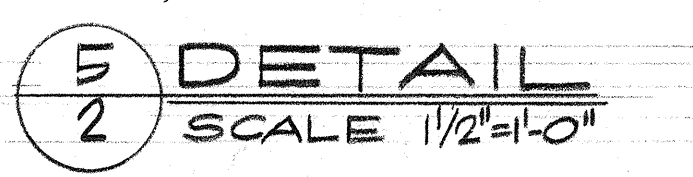
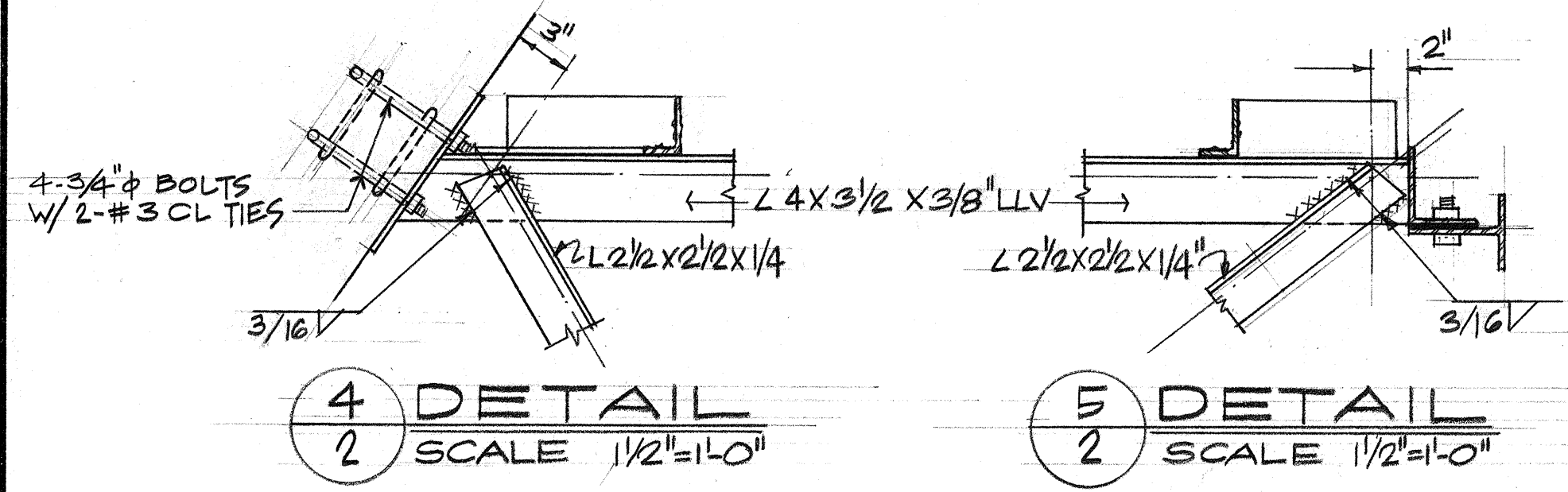
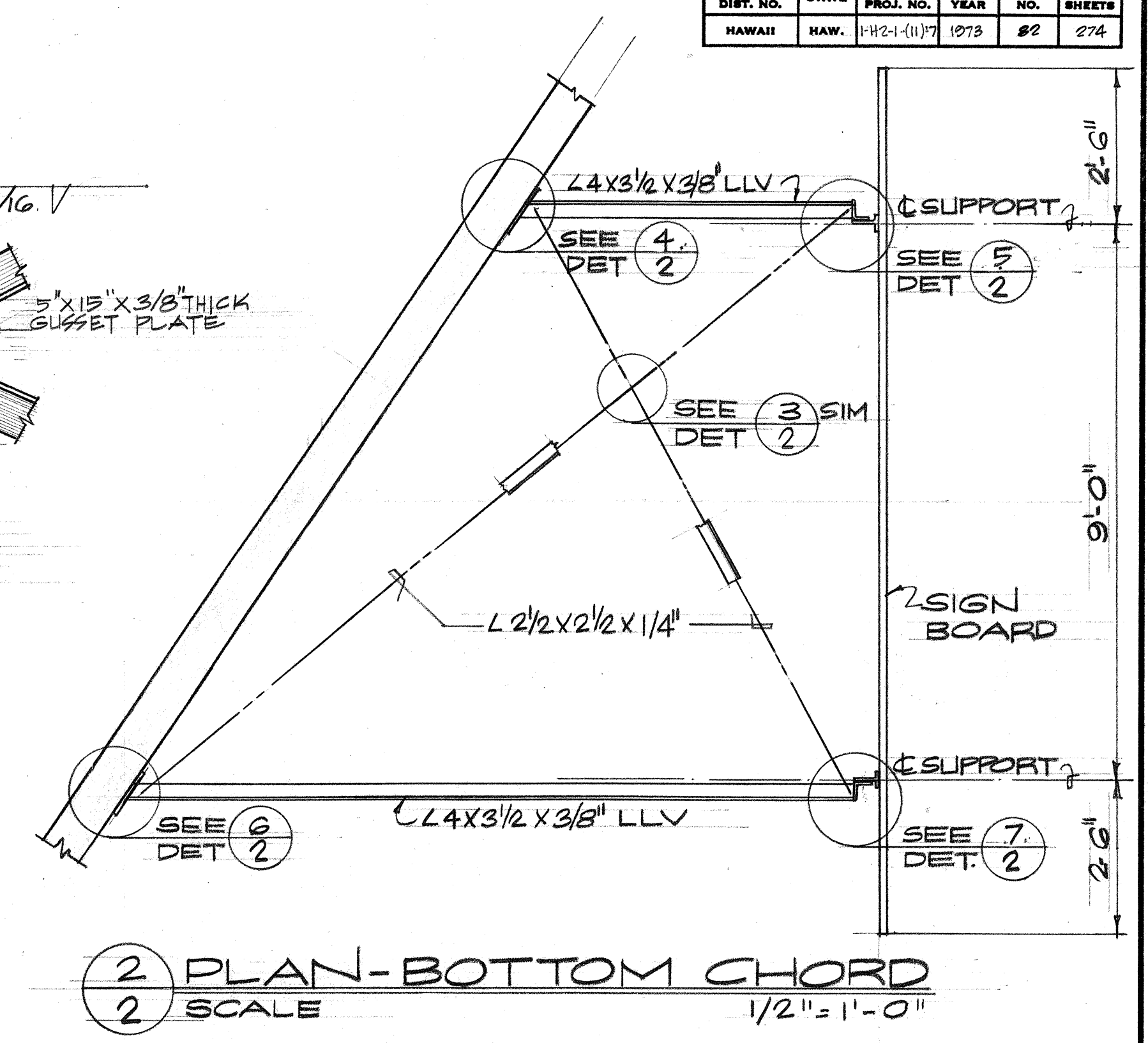
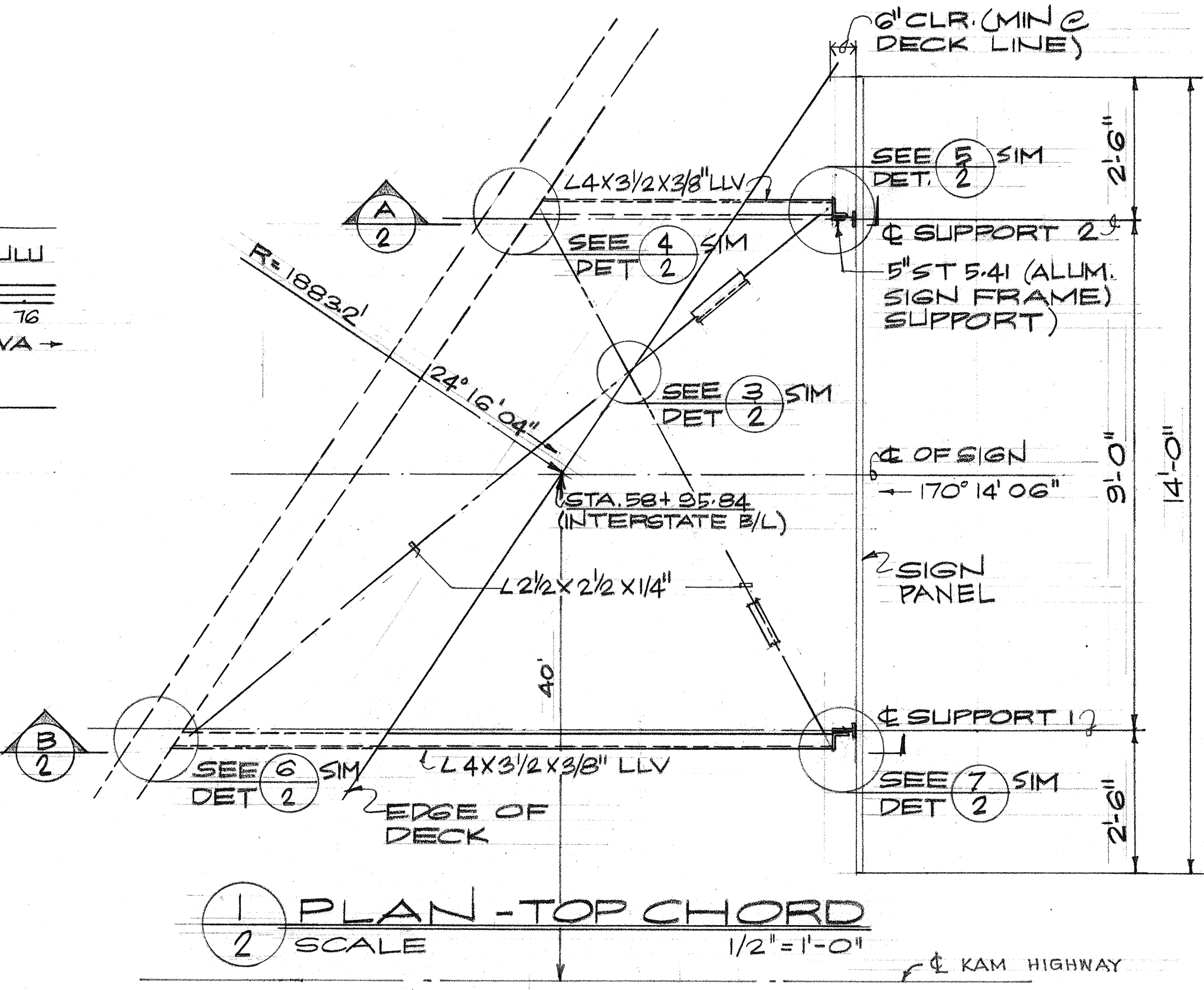
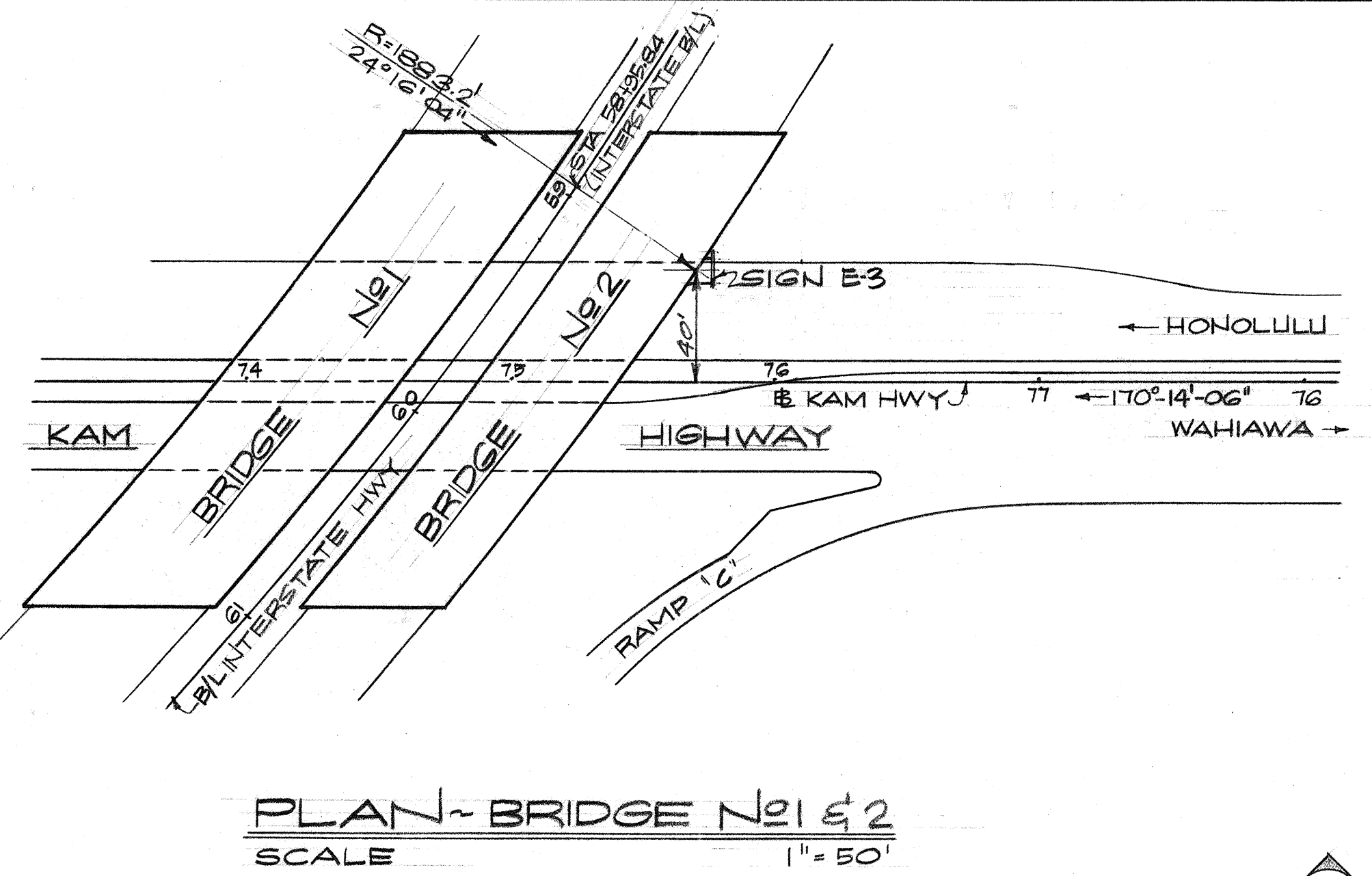
	<b>AUSTIN, YEE &amp; PARK</b> (A JOINT VENTURE) 745 FORT STREET HONOLULU, HAWAII
	DES. DR. CHK.  APPROVED FOR JOINT VENTURE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**SIGN SUPPORT FOR**  
**SIGNS (W)E-1(A), E-1(L) & E-1(R)**

WAHIAWA INTERCHANGE  
 E.A.I. PROJECT NO. I-42-1(01)-7  
 SCALE AS NOTED DATE: 4-29-73

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	H-2-1(11)7	1973	82	274

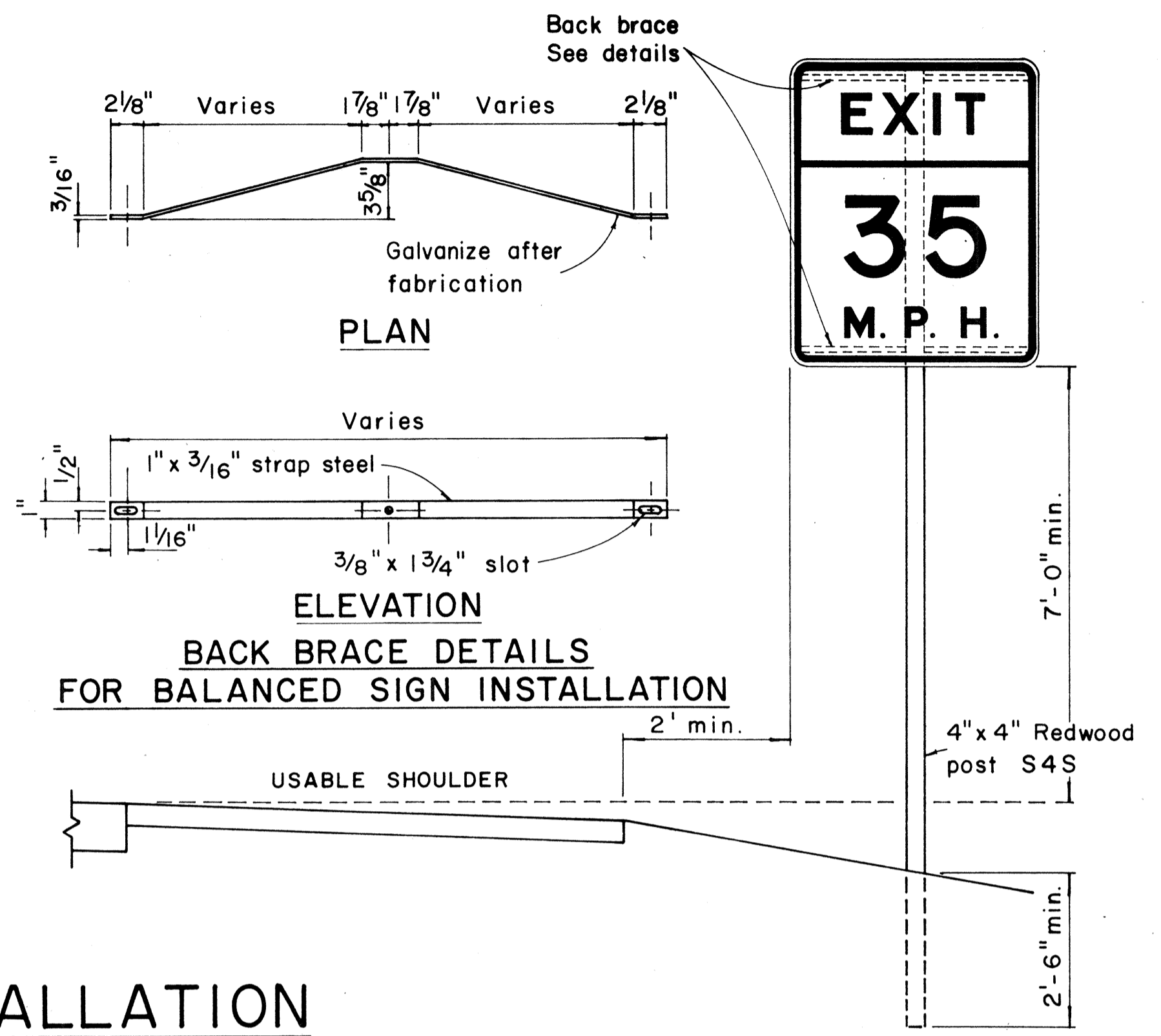
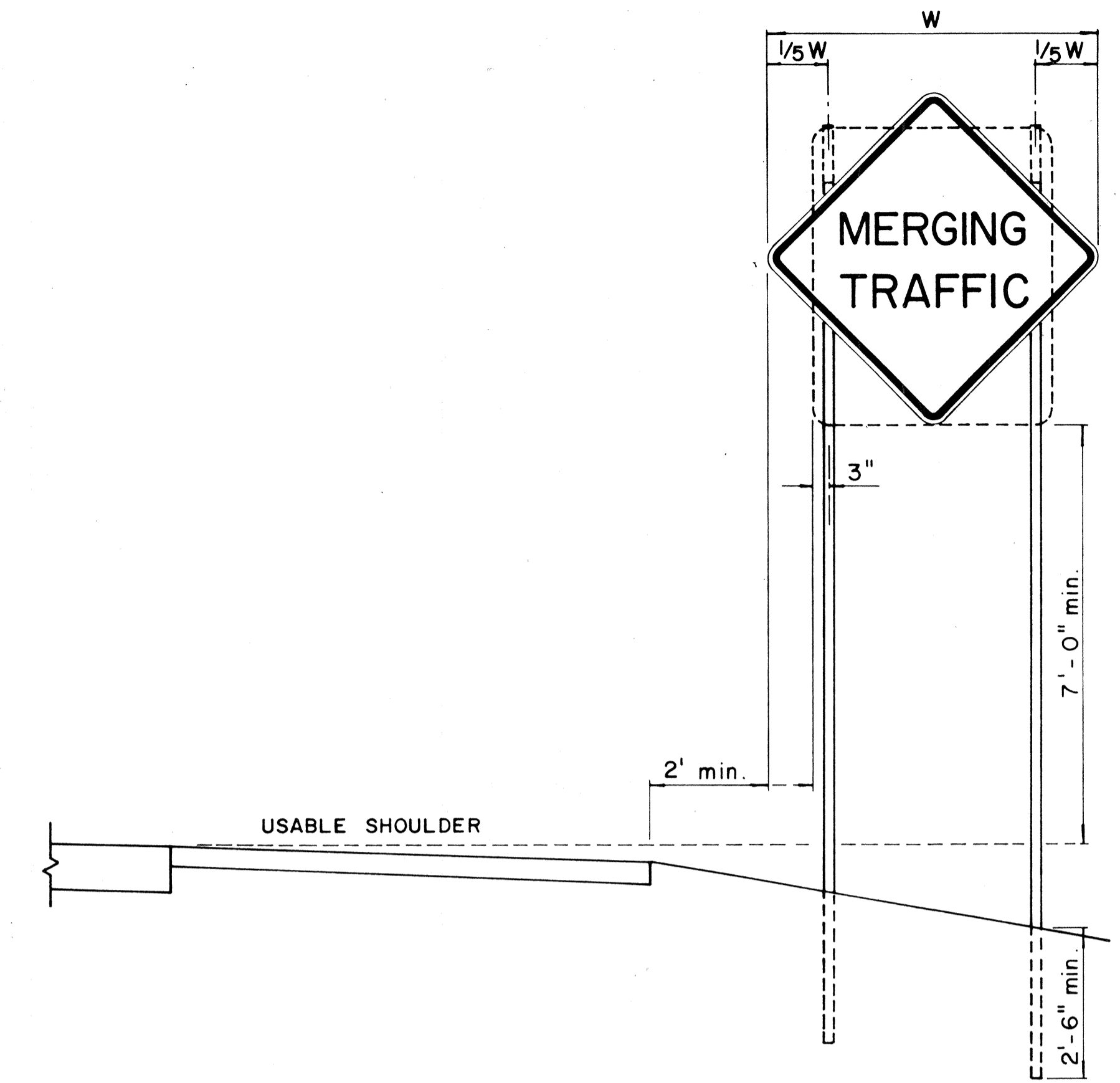
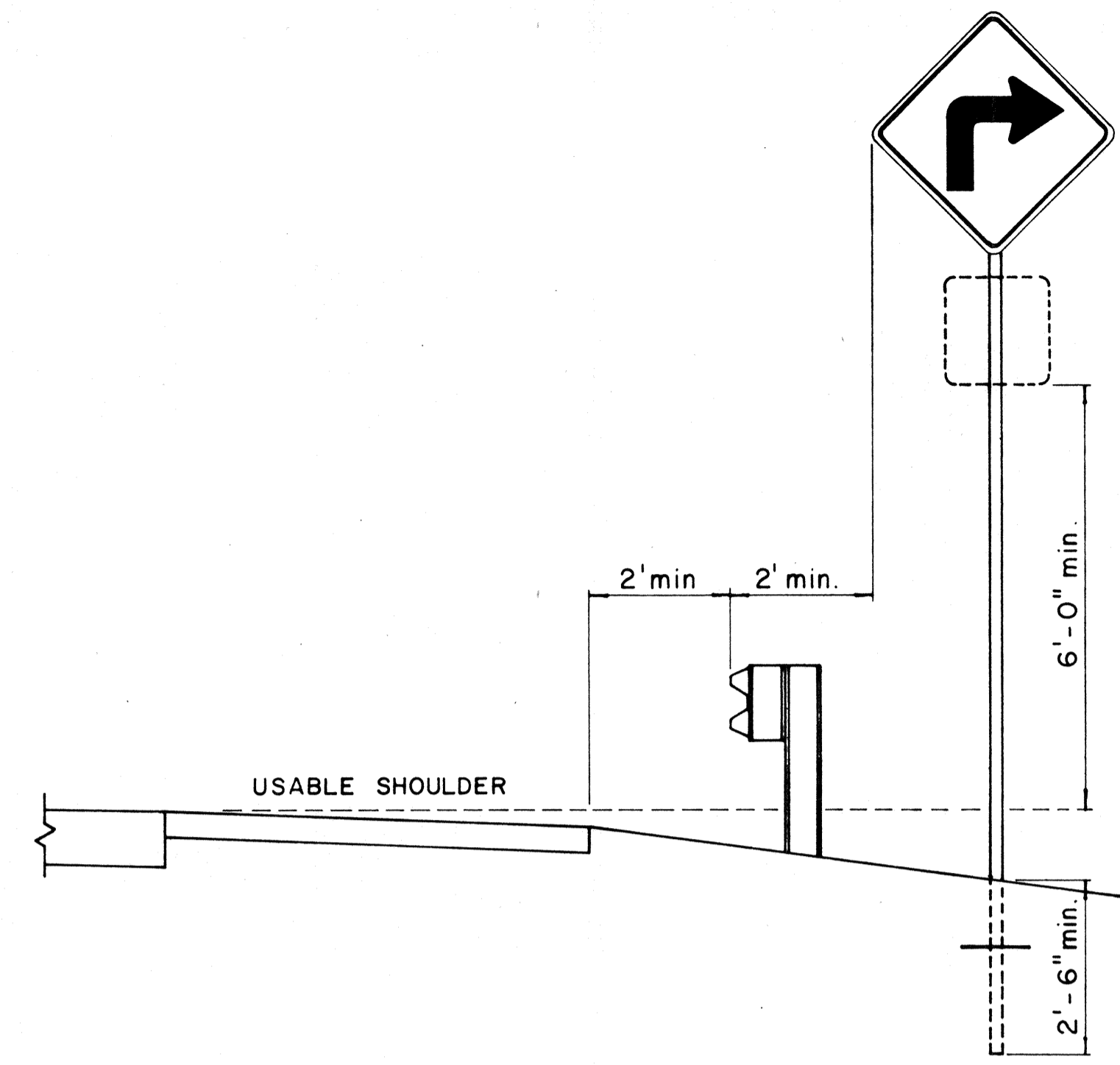
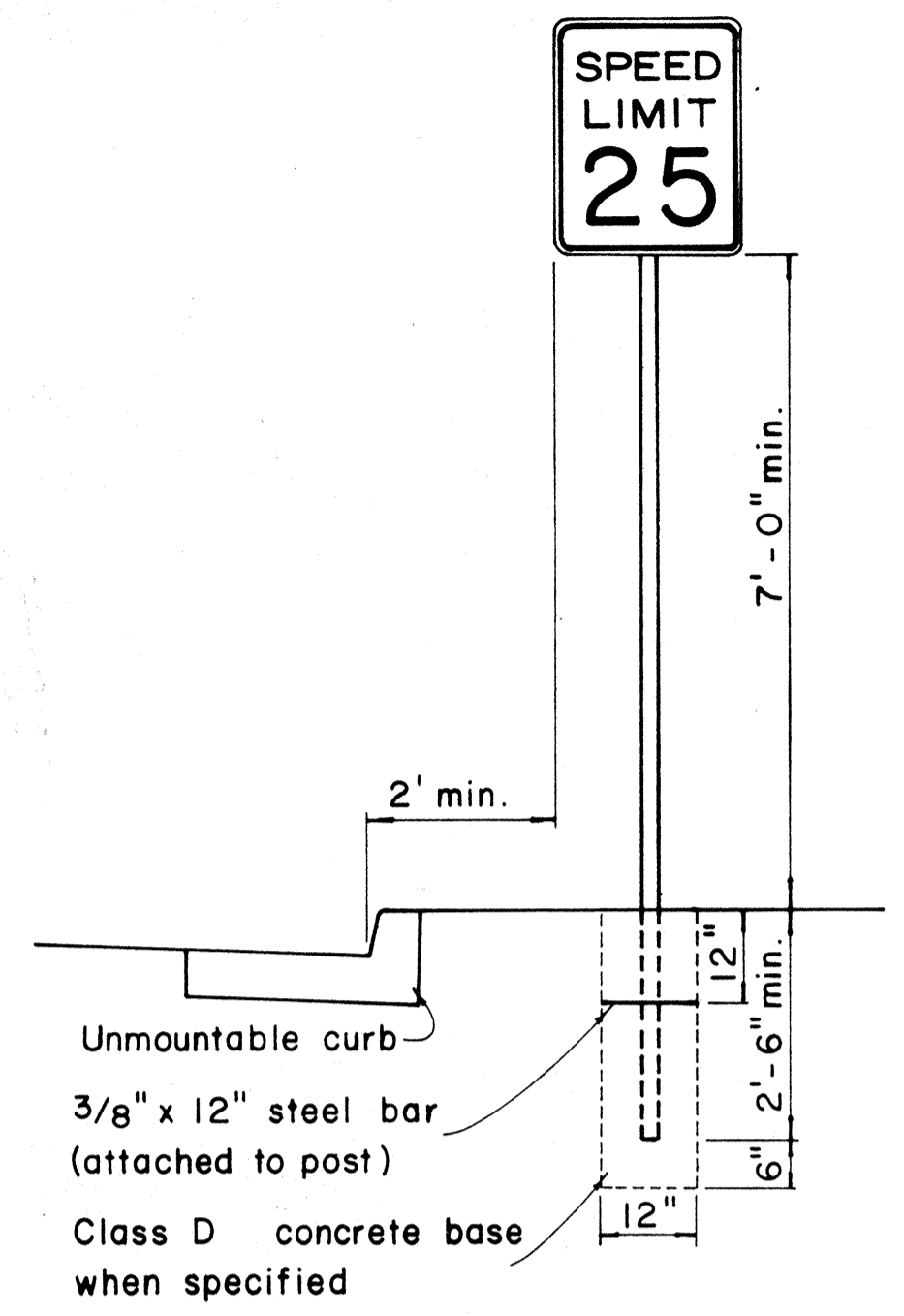


- GENERAL NOTES**
- STRUCTURAL STEEL: ALL STRUCTURAL STEEL SHALL BE STRUCTURAL CARBON STEEL, ASTM DESIGNATION A-36.
  - WELDING: ALL WELDING SHALL CONFORM TO THE LATEST STANDARD SPECIFICATIONS FOR WELDED HIGHWAY & RAILWAY BRIDGES (DESIGN, CONSTRUCTION & REPAIR) OF AMERICAN WELDING SOCIETY.
  - FABRICATION OF STRUCTURAL STEEL SHALL CONFORM TO THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
  - ALL STRUCTURAL STEEL ASSEMBLIES, INCLUDING PLATES AND BOLTS SHALL BE GALVANIZED AFTER FABRICATION, IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARD SPECIFICATIONS.
  - ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED BY FIELD GALVANIZING AS REQUIRED BY SPECIAL PROVISIONS.
  - ALL DIMENSIONS FOR SIGN BRACKET SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTORS BEFORE FABRICATION OF ASSEMBLY.

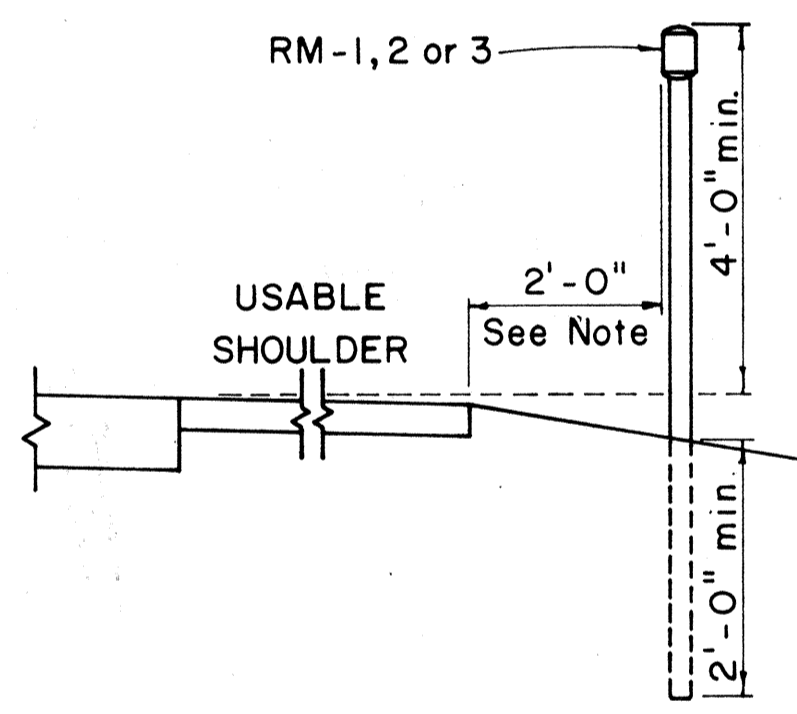
	<b>AUSTIN, YEE &amp; PARK</b> (A JOINT VENTURE) 745 FORT STREET HONOLULU, HAWAII
	DES. _____ DR. _____ CHK. _____ 
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>SIGN SUPPORT FOR SIGN E-3</b>	
WAHIAWA INTERCHANGE F.A.I. PROJECT NO I-H2-1(11):7	
SCALE AS NOTED DATE: 4-25-73	
SHEET No. 10 OF 30 SHEETS	

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

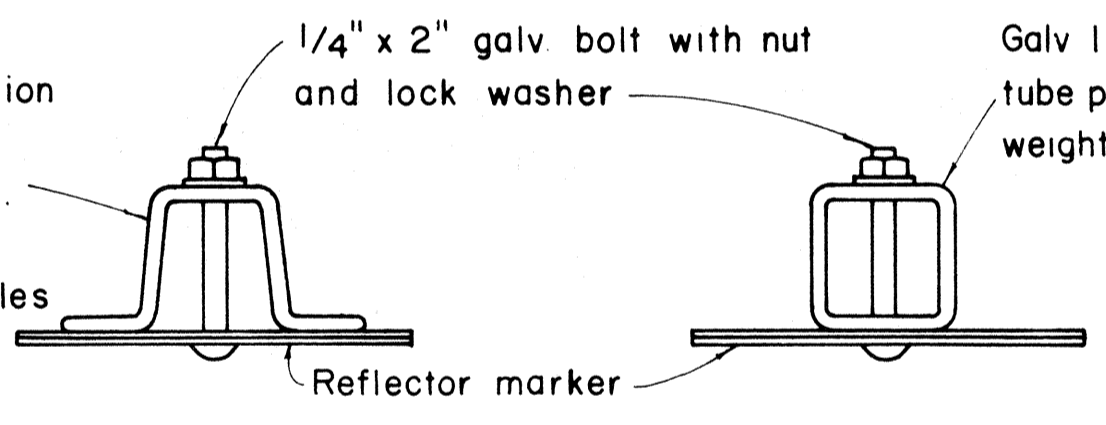
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-1007	1973	89	274



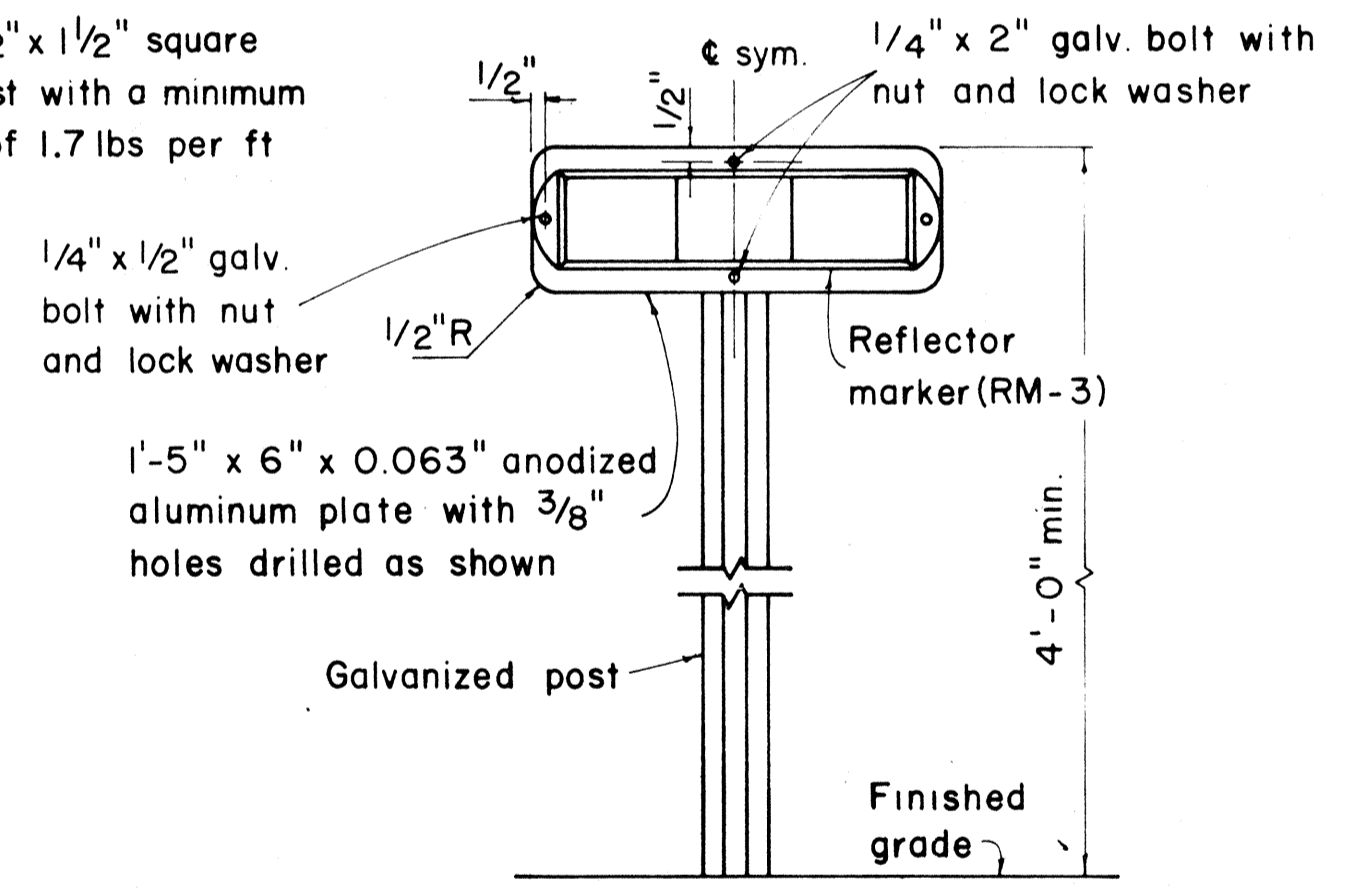
## HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



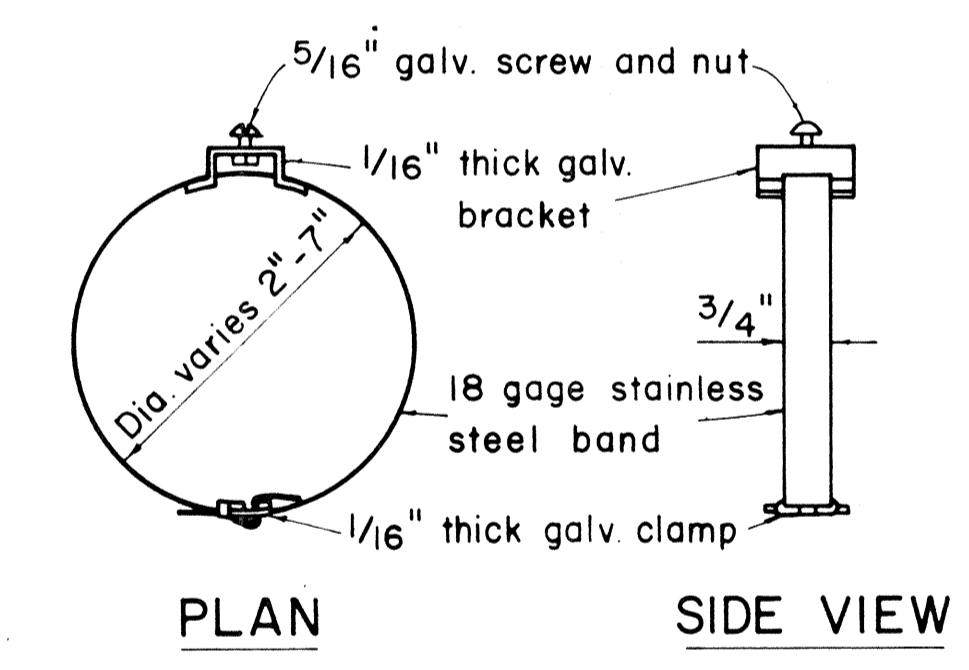
Galv. flanged channel 1/8" x 3/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft shall have a single row of 3/8" holes centered in the web at 1" o.c.



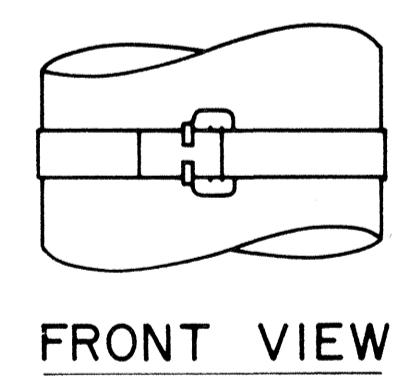
TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL  
HORIZONTAL REFLECTOR MARKER  
RM-3H



PLAN SIDE VIEW



FRONT VIEW

- GENERAL NOTES:**
- Sign posts shall be 2" galv. standard pipe or 2" x 2" galv. sq. tube post.
  - Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two 2" galv. standard pipe or two 2" x 2" galv. sq. tube post or 4" x 4" redwood post S4S.
  - Signs shall be attached to post with 5/16" galv. bolts with nuts and 7/8" x 0.06 stainless steel washers with neoprene rubber gasket.
  - Sign posts shall extend 3 1/2" above sign where required for City and County street name signs.
  - Reflector markers RM-1, 2, 3 shall be glass square 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.

## TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

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

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

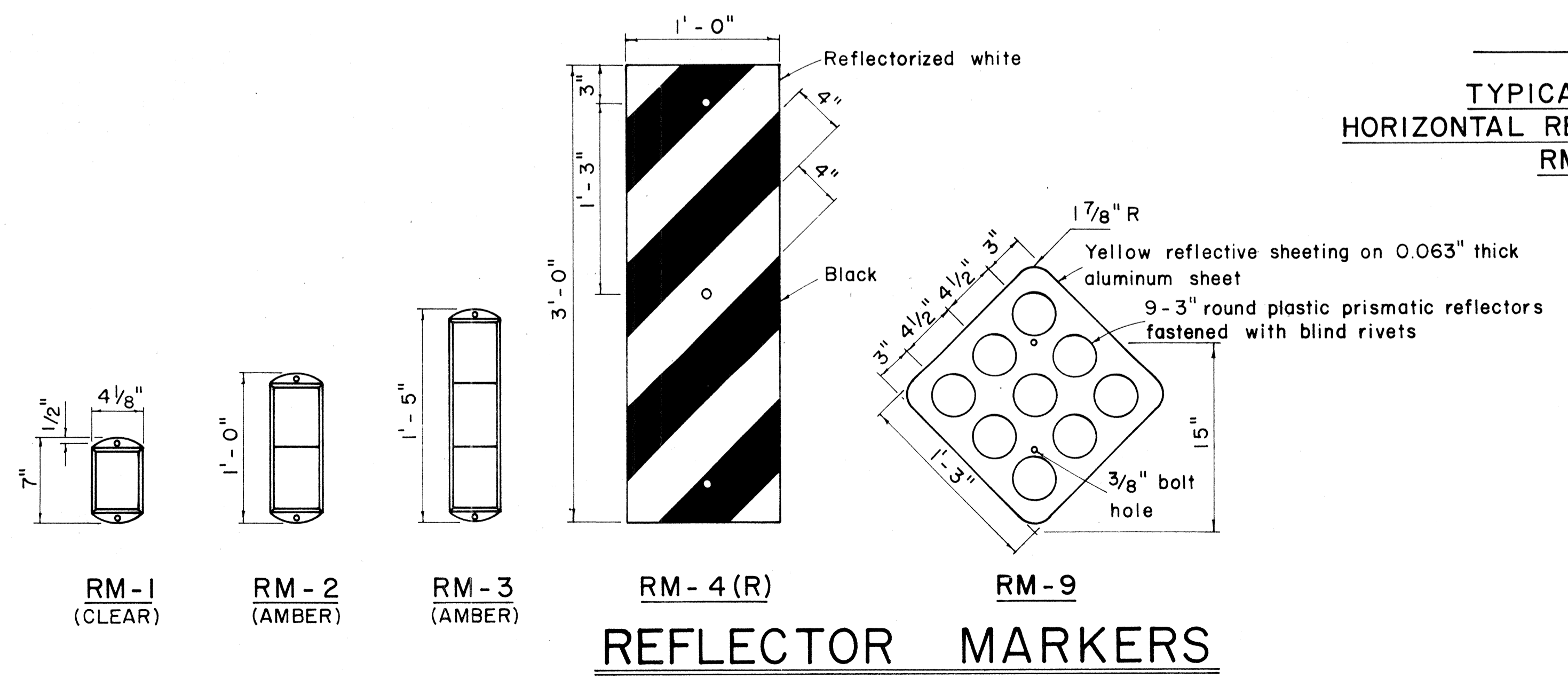
NO	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**  
 MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968  
 SHEET No. 11 OF 39 SHEETS DT 100

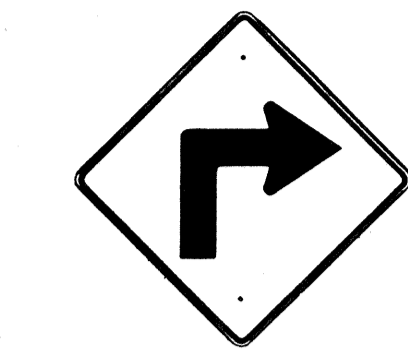
SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 ORIGINAL PLAN: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 QUANTITIES BY: \_\_\_\_\_  
 No. \_\_\_\_\_



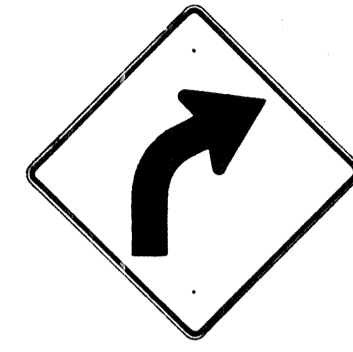
REFLECTOR MARKERS



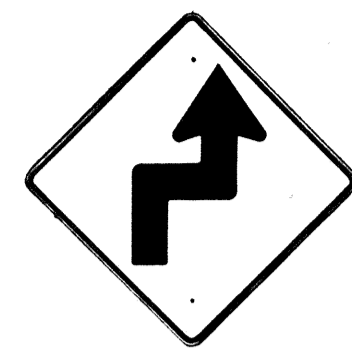
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-12-(1)-7	1973	85	274



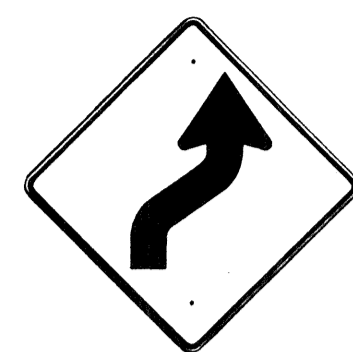
W1-1(R) 30"x30"  
W1-1(R)-A 48"x48"



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



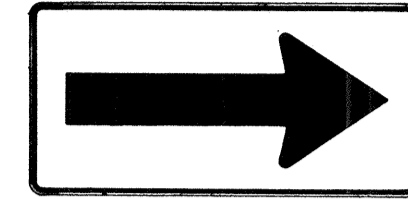
W1-3(R) 30"x30"  
W1-3(R)-A 48"x48"



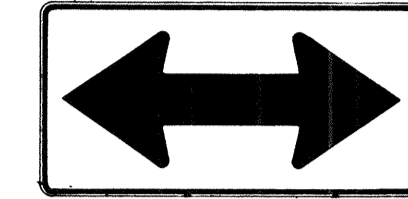
W1-4(R) 30"x30"  
W1-4(R)-A 48"x48"



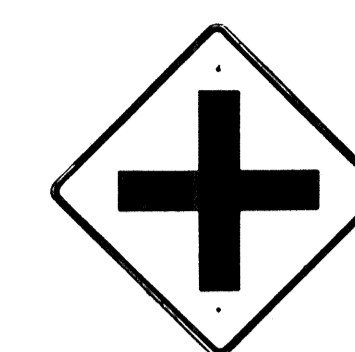
W1-5(R) 30"x30"  
W1-5(R)-A 48"x48"



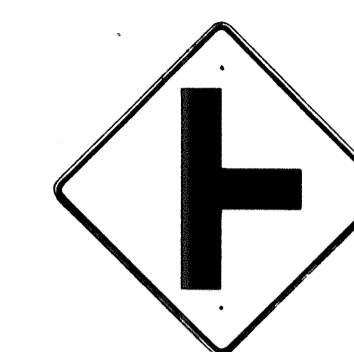
W1-6 48"x24"



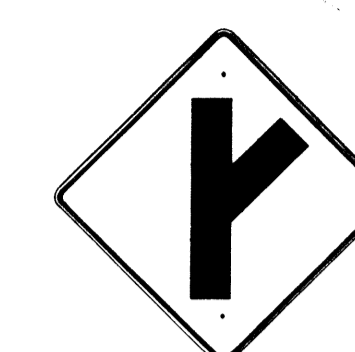
W1-7 48"x24"



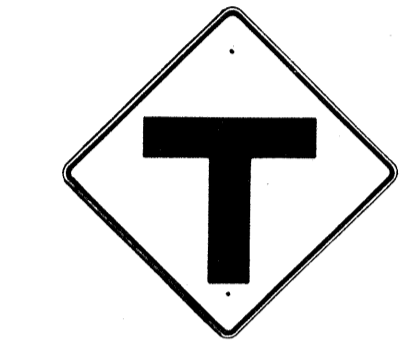
W2-1 30"x30"  
W2-1-A 48"x48"



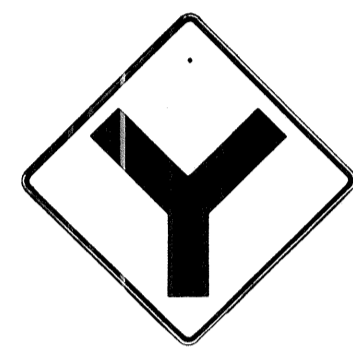
W2-2 30"x30"  
W2-2-A 48"x48"



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



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



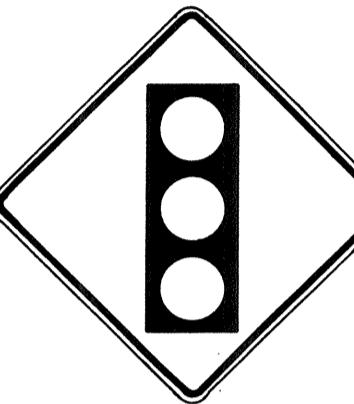
W2-5 30"x30"  
W2-5-A 48"x48"



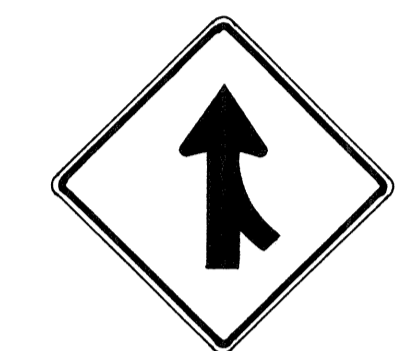
W3-1 30"x30"  
W3-1-A 36"x36"



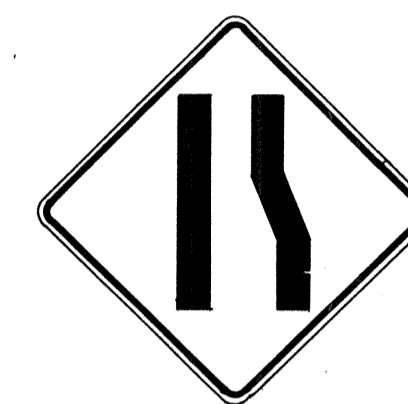
W3-2 30"x30"  
W3-2-A 36"x36"



W3-3 36"x36"  
24"x18"



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



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



W5-1 36"x36"



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



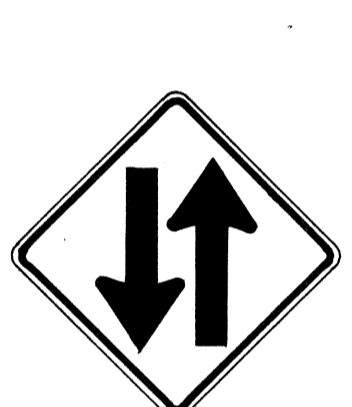
W5-3 36"x36"



W6-1 36"x36"  
24"x18"



W6-2 36"x36"  
24"x18"



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



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



W7-2 24"x18"



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



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



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



W8-4 30"x30"  
W8-4-A 36"x36"



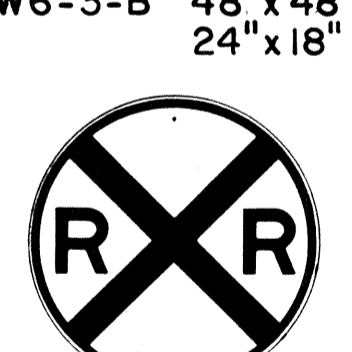
W8-5 30"x30"  
24"x18"  
W8-5-A 36"x36"  
24"x18"



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



W9-2(L) 36"x36"  
W9-2(L)-A 48"x48"



W10-1 36" Diameter



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



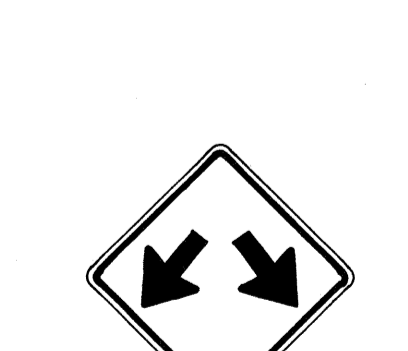
W11-2 30"x30"  
24"x18"  
W11-2-A 36"x36"  
24"x18"



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



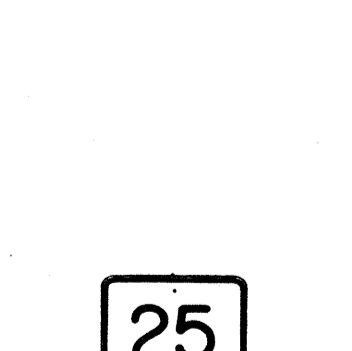
W11-5 30"x30"  
24"x18"  
W11-5-A 36"x36"  
24"x18"



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



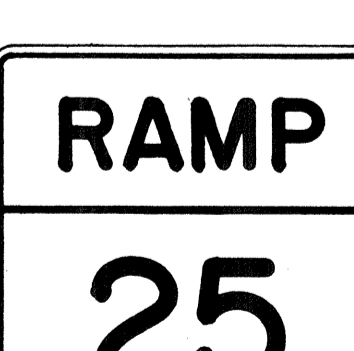
W12-2(12'-6") 36"x36"  
24"x18"



W13-1(25) 18"x18"  
W13-1(25)-A 24"x24"



W13-2(25) 48"x60"



W13-3(25) 48"x60"



W14-1 30"x30"



W14-3 36"x48"x48"

**GENERAL NOTES**

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

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

APPROVED:  
*Walter Belsin* 3-20-72  
ASSISTANT CHIEF, ENGINEERING DATE

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

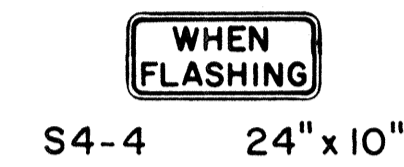
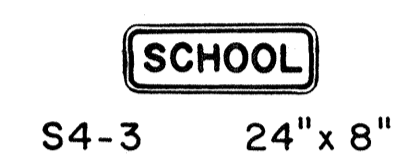
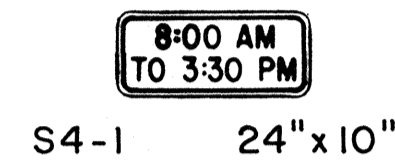
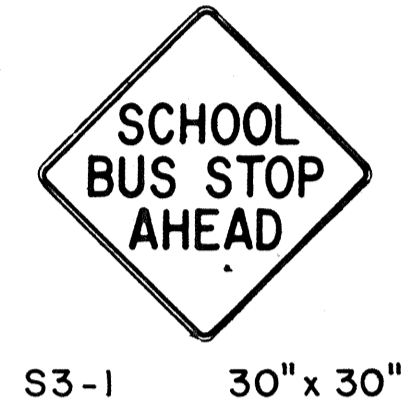
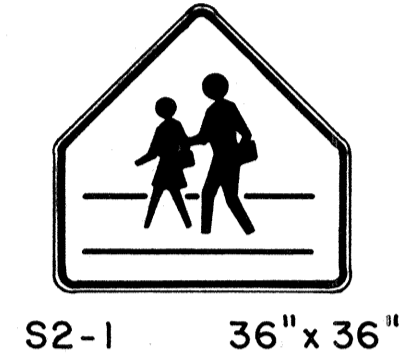
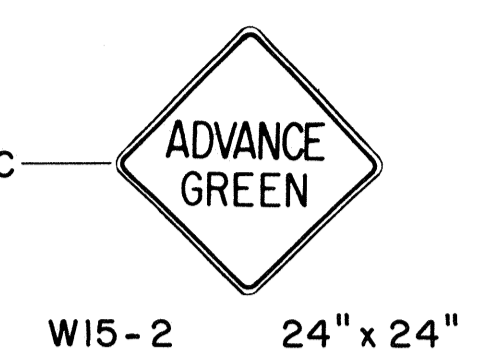
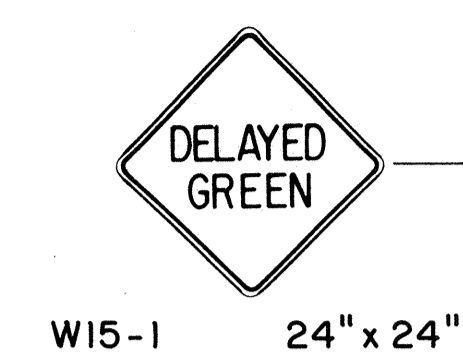
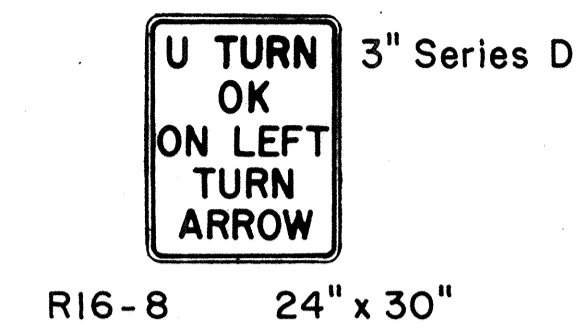
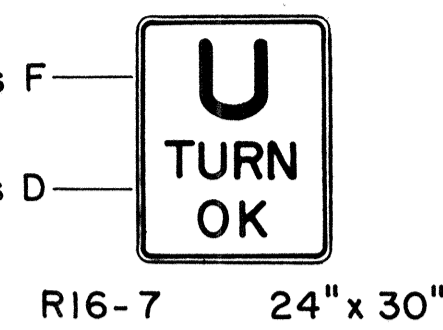
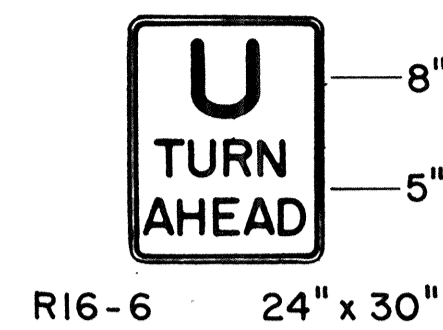
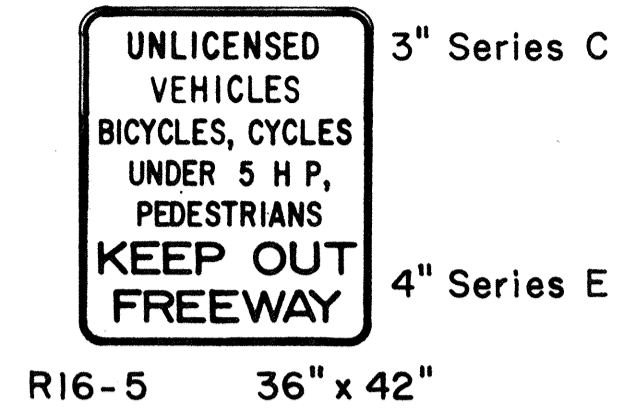
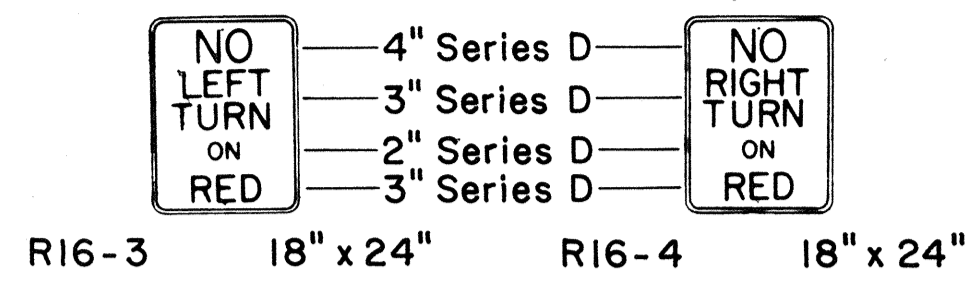
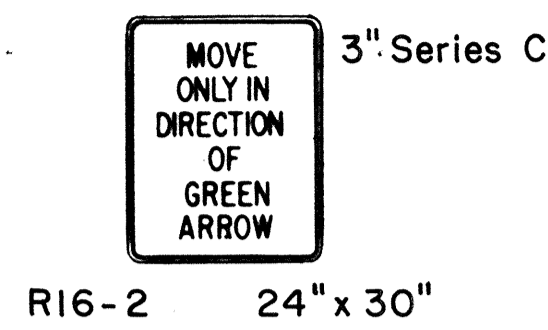
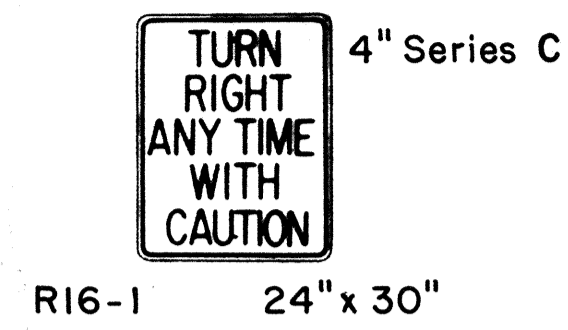
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**WARNING SIGNS**

NOT TO SCALE DATE: 4-25-73

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.	I-42-1(1)17	1973	86	274



**GENERAL NOTES**

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

APPROVAL RECOMMENDED:  
*Evelyn Tanaka*  
 TRAFFIC ENGINEER DATE 3/17/72

APPROVED:  
*Richard Zatsick*  
 ASSISTANT CHIEF, ENGINEERING DATE 2-20-72

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

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**  
**MISCELLANEOUS**  
**REGULATORY & WARNING SIGNS**

NOT TO SCALE DATE: 4-25-73  
 SHEET No. 14 OF 39 SHEETS DT 103

DATE \_\_\_\_\_  
 SURVEY PLOTTED BY \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 TRACED 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-42-1(11)7	1973	87	274



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"



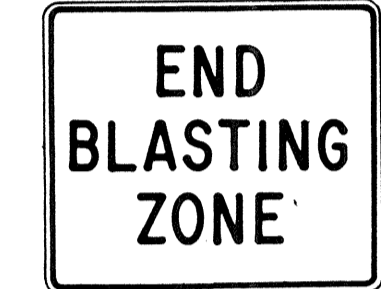
CW21-6 30" x 30"



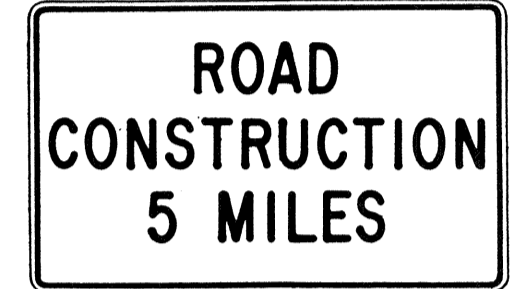
CW22-1b 48" x 48"



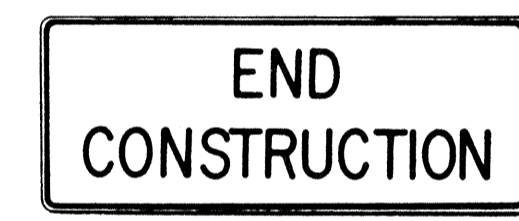
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



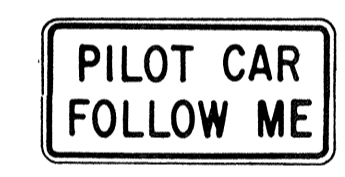
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



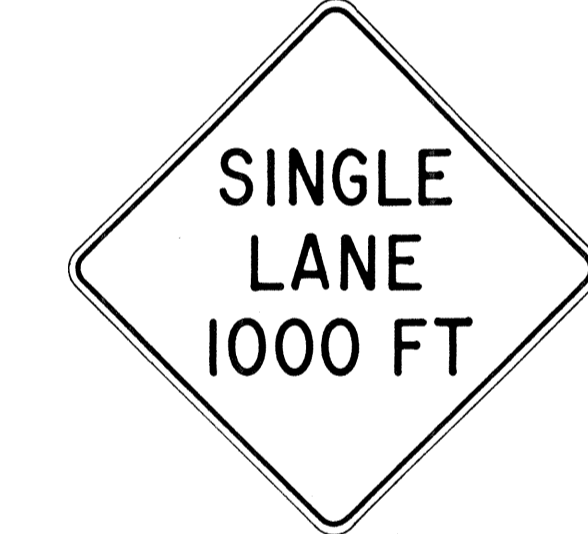
CM4-10(R) 48" x 18"



CG20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

**GENERAL NOTES**

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

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

APPROVED:  
*Hubert Salsich* 3/22/72  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	HT	3/23/72

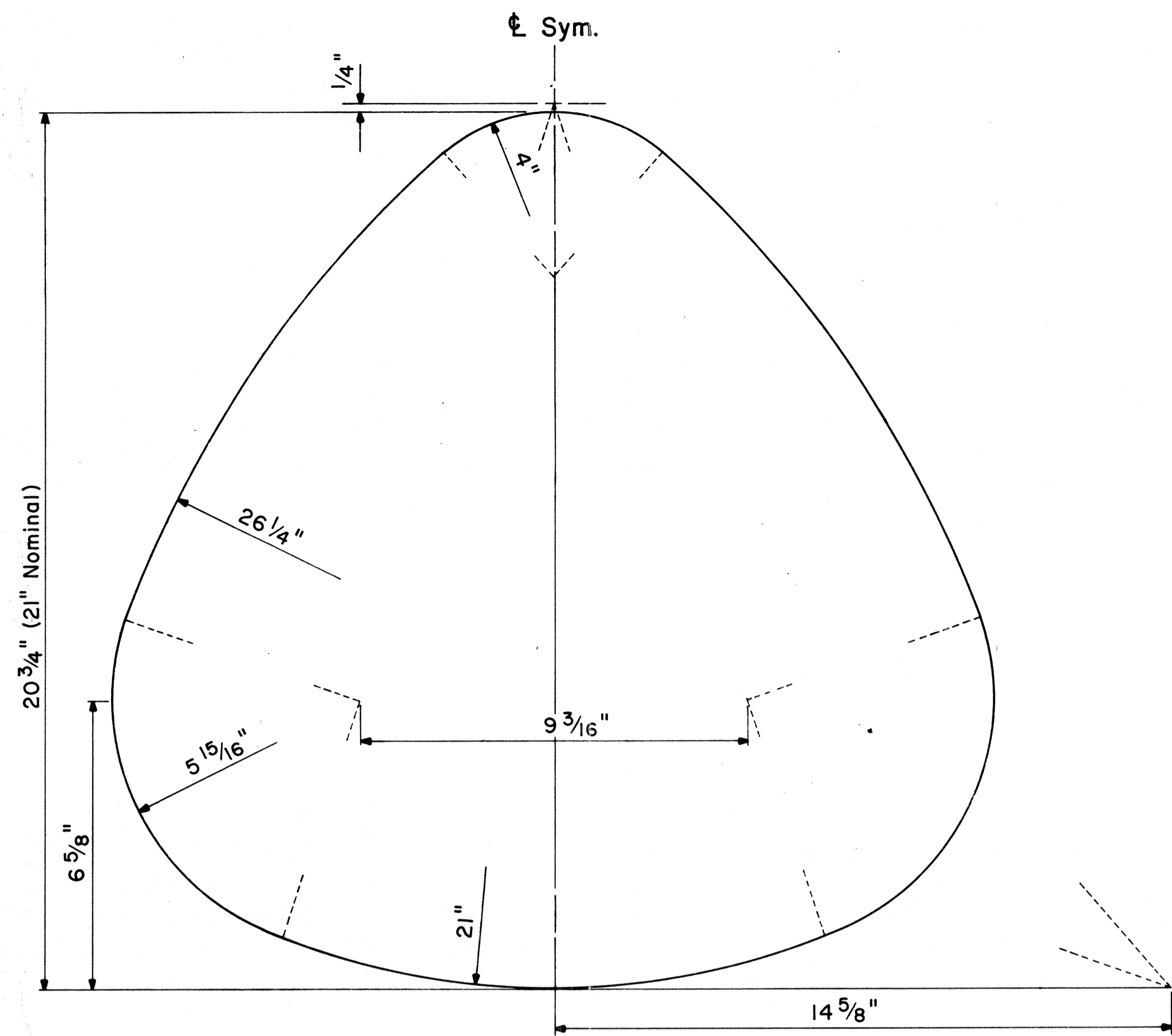
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**  
**CONSTRUCTION SIGNS**

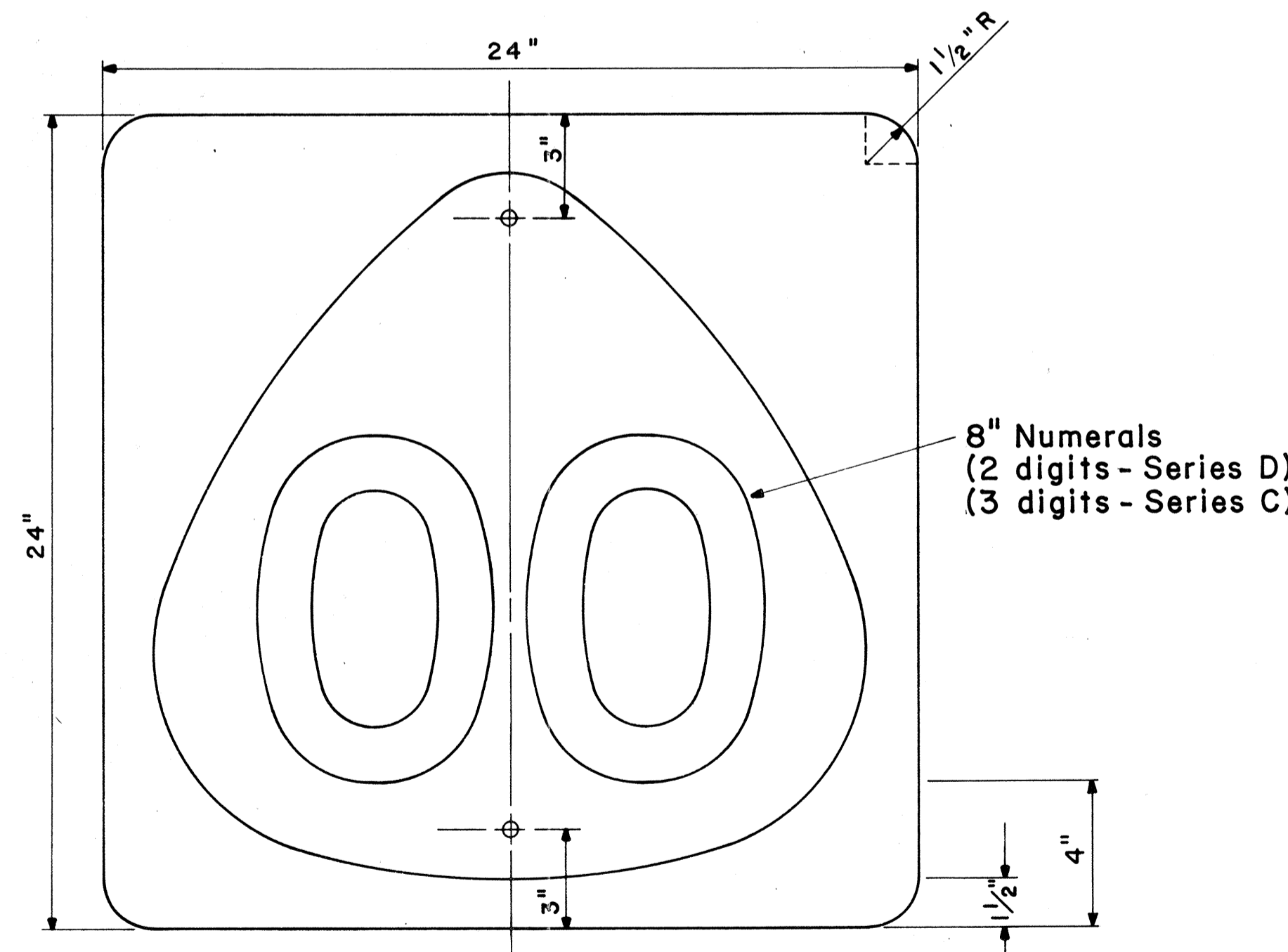
NOT TO SCALE DATE: 4-25-73  
 SHEET No. 15 OF 39 SHEETS DT 104

ORIGINAL PLAN  
 SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 REVISIONS BY \_\_\_\_\_  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 No. \_\_\_\_\_

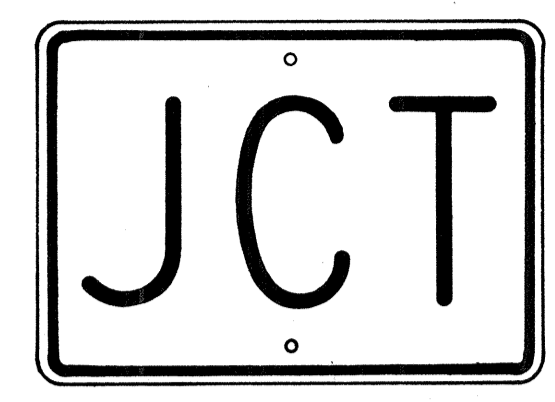
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)7	1973	88	274



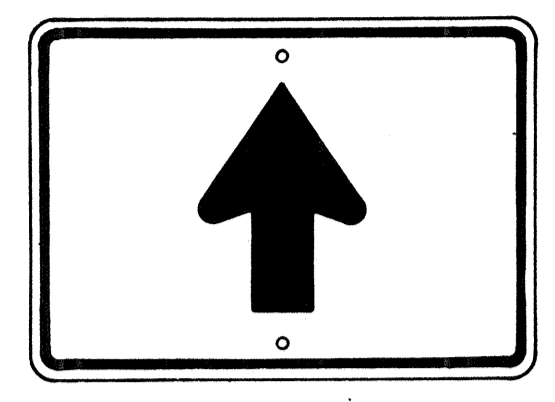
**STATE ROUTE MARKER DETAIL**  
Not to Scale



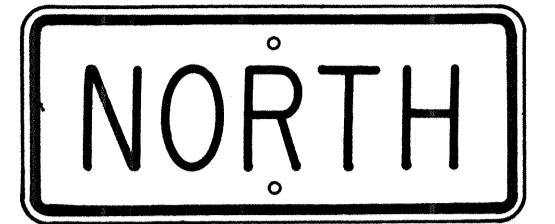
**STATE ROUTE MARKER**  
M1-6 (00) 24" x 24"  
Scale: 1/4" = 1"



M2-1 21" x 15"



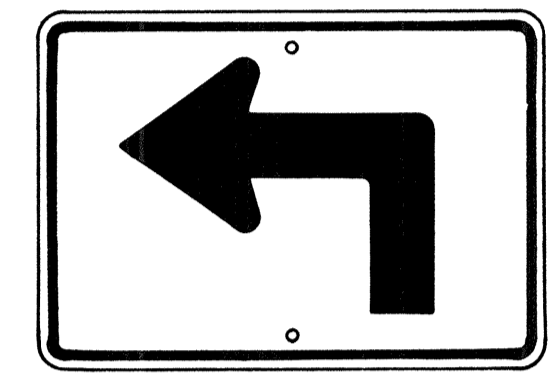
M6-3 21" x 15"



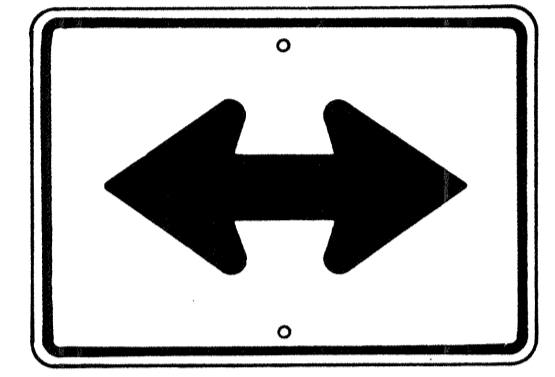
M3-1 24" x 12"  
M3-1-A 36" x 18"



M4-1 24" x 12"



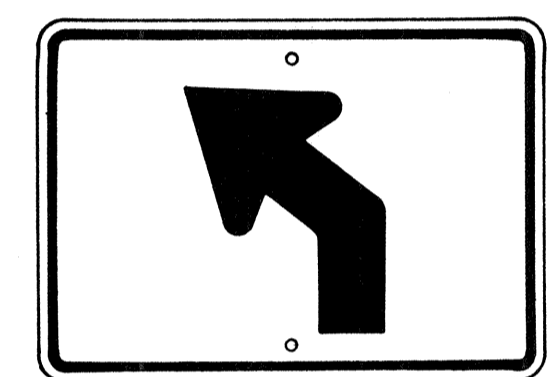
M5-1(L) 21" x 15"



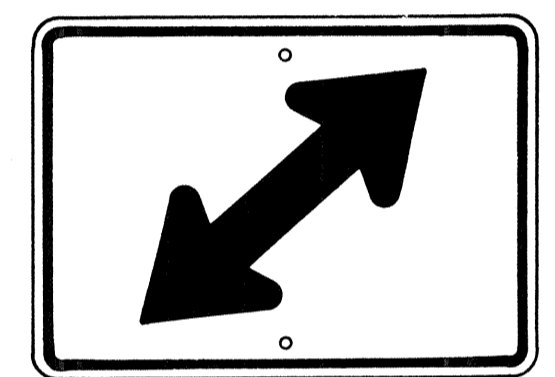
M6-4 21" x 15"



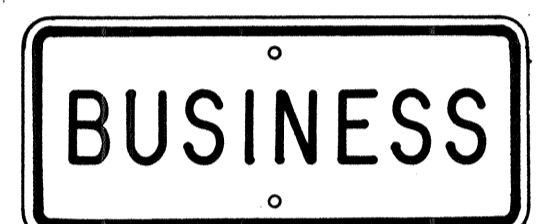
M4-2 24" x 12"



M5-2(L) 21" x 15"



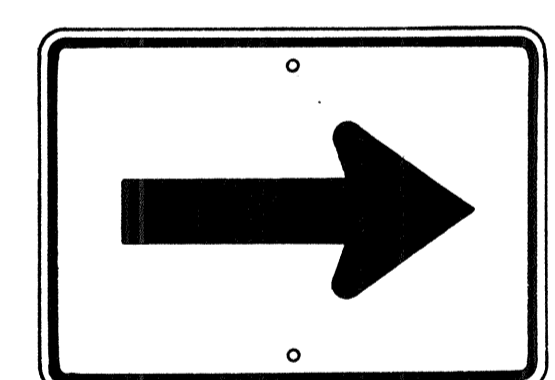
M6-5(R) 21" x 15"



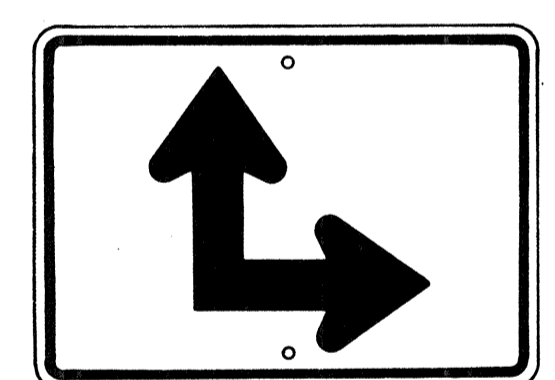
M4-3 24" x 12"



M4-5 24" x 12"



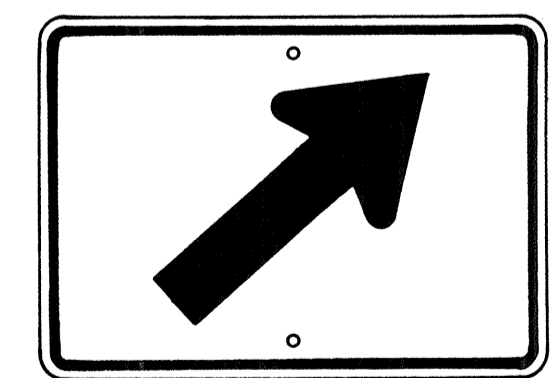
M6-1 21" x 15"



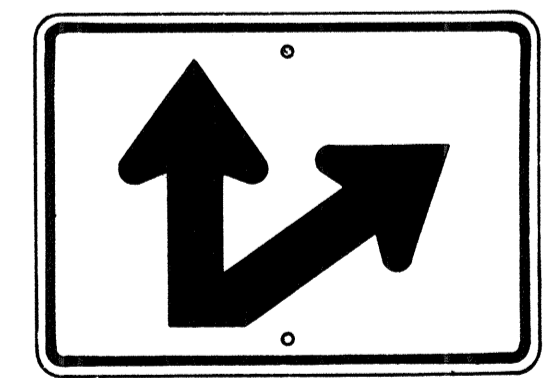
M6-6(R) 21" x 15"



M4-6 24" x 12"



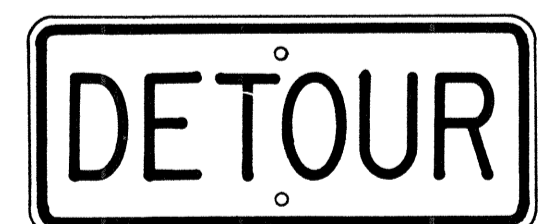
M6-2(R) 21" x 15"



M6-7(R) 21" x 15"



M4-7 24" x 12"



M4-8 24" x 12"

**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."
2. All markers shall be reflectorized unless otherwise specified.
3. All markers shall have 3/8" bolt holes drilled at appropriate locations.
4. Numerals in ( ) indicates numerals to be inserted for marker message. (R) or (L) indicates right or left.
5. 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
6. Markers prefixed with "IM" on the plans shall have a white legend on a blue background.

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

APPROVAL RECOMMENDED:  
*Eichi Tanaka* 6/6/72  
TRAFFIC ENGINEER DATE

APPROVED:  
*Arthur S. Delo* 6-1-72  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 105 Approved 12-30-69	HT	6/1/72

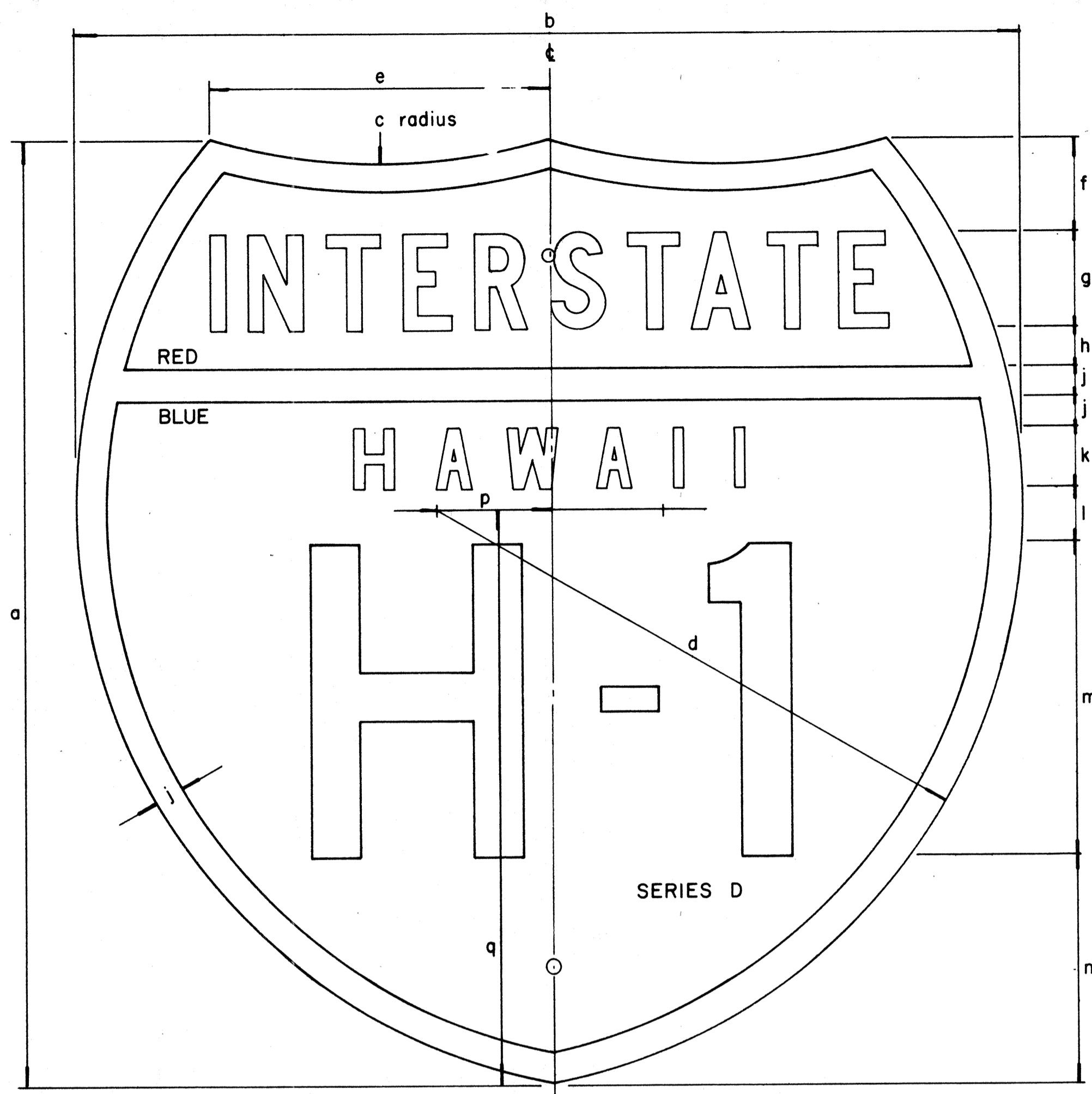
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**STATE ROUTE MARKER**  
**AND AUXILIARY MARKERS**

Scale: As Shown DATE: 4-25-73  
SHEET NO. 16 OF 39 SHEETS DT 105

**AUXILIARY MARKERS**  
Not to Scale

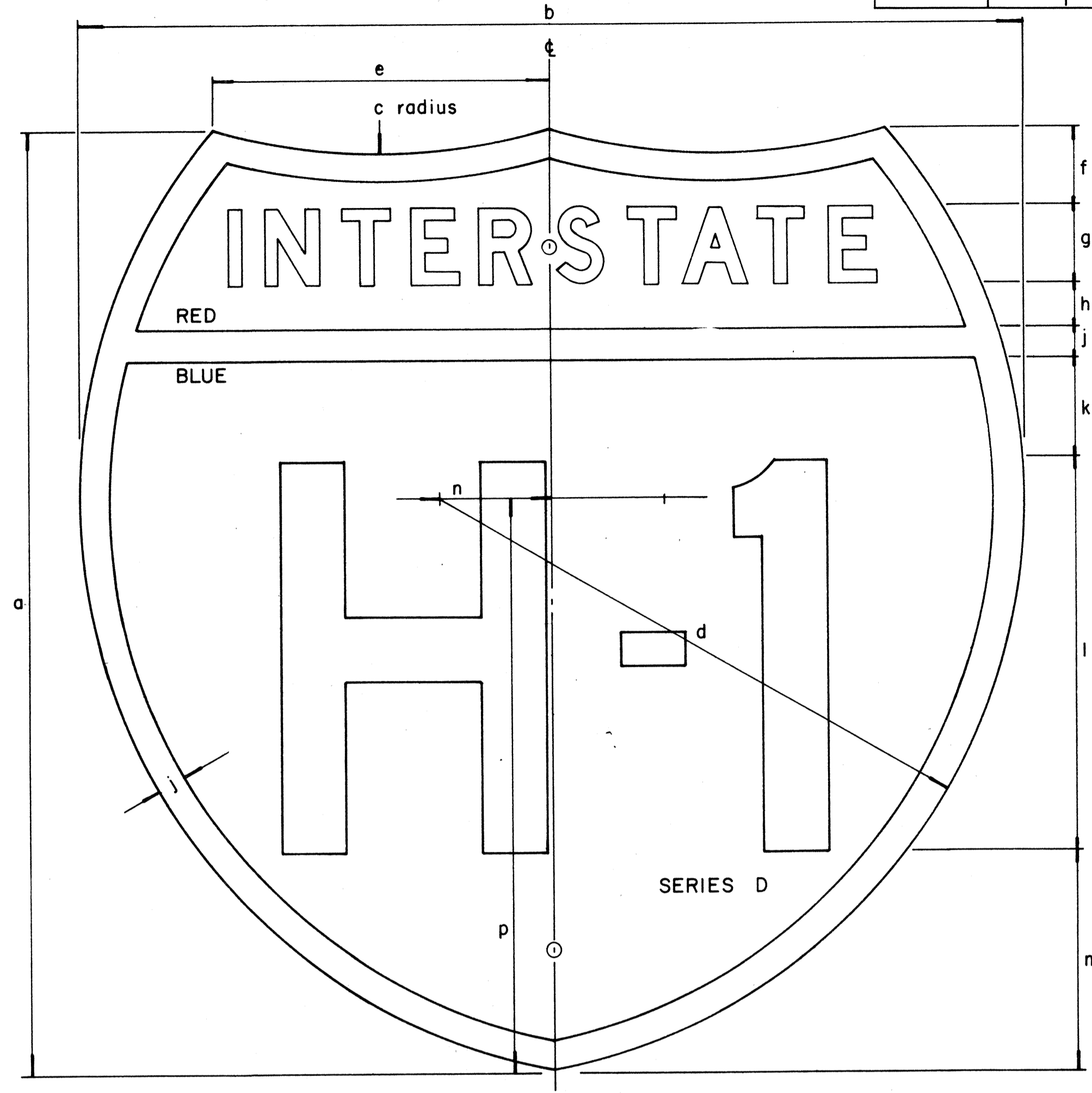
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)-7	1973	80	274



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

- The shape, dimensions, symbols, wording, lettering, color and reflectorizing of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June, 1961 and the BPR manual "Standard Highway Signs," dated September, 1961, unless otherwise specified.
- All letters and figures shall conform to the manual "Standard Alphabets for Highway Signs," Dept. of Commerce, Bureau of Public Roads, 1966
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have 3/8" bolt holes drilled at appropriate locations unless otherwise specified.
- The Interstate Route Marker shall be a cut-out shield, in a red, white and blue design as shown on the plans.

APPROVAL RECOMMENDED:

*Eichi Tanaka*  
TRAFFIC ENGINEER 12/29/69  
DATE

APPROVED:

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

NO.	REVISION	APPROVED BY	DATE

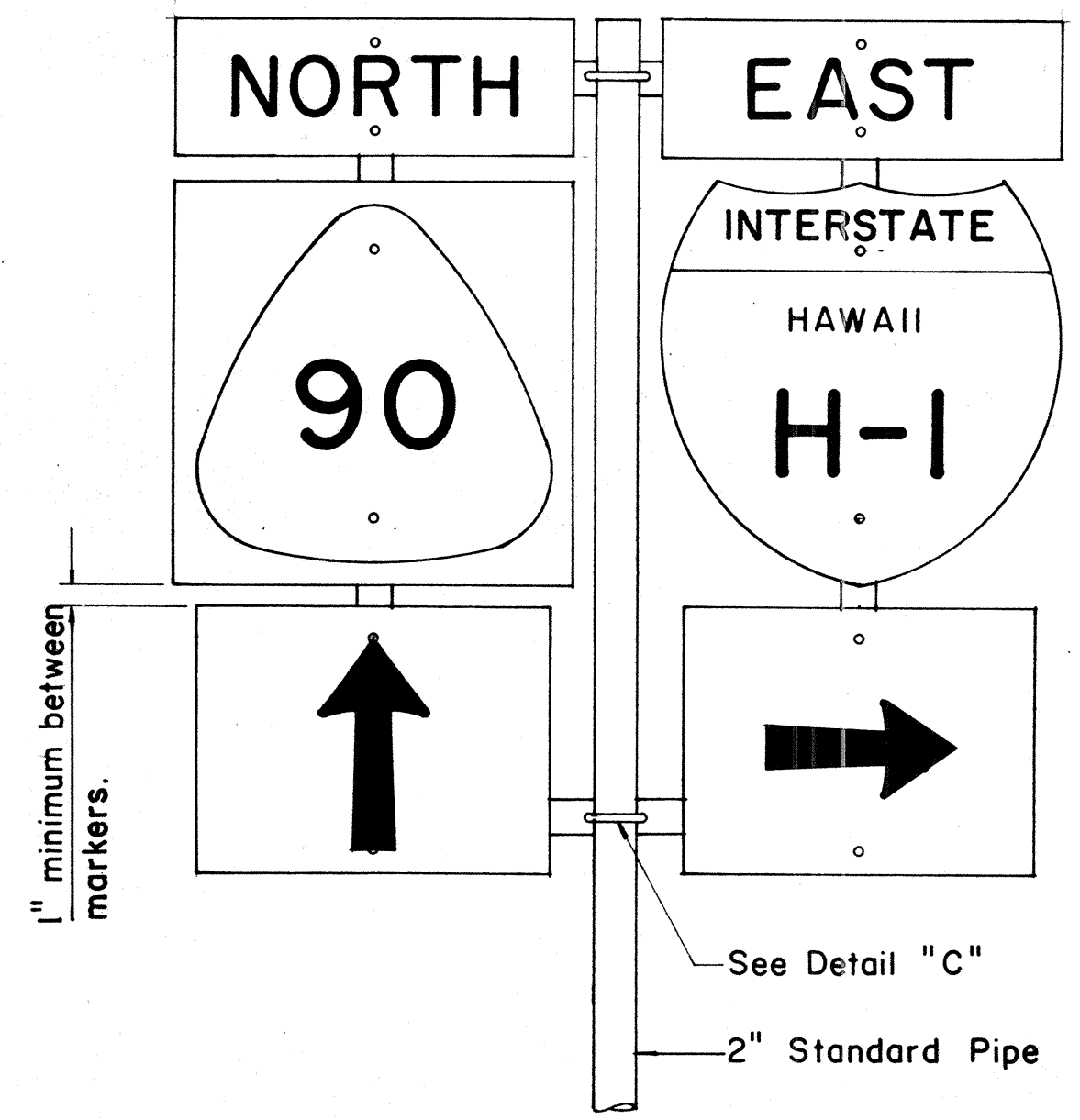
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**INTERSTATE ROUTE MARKERS**

DATE: 4-25-73

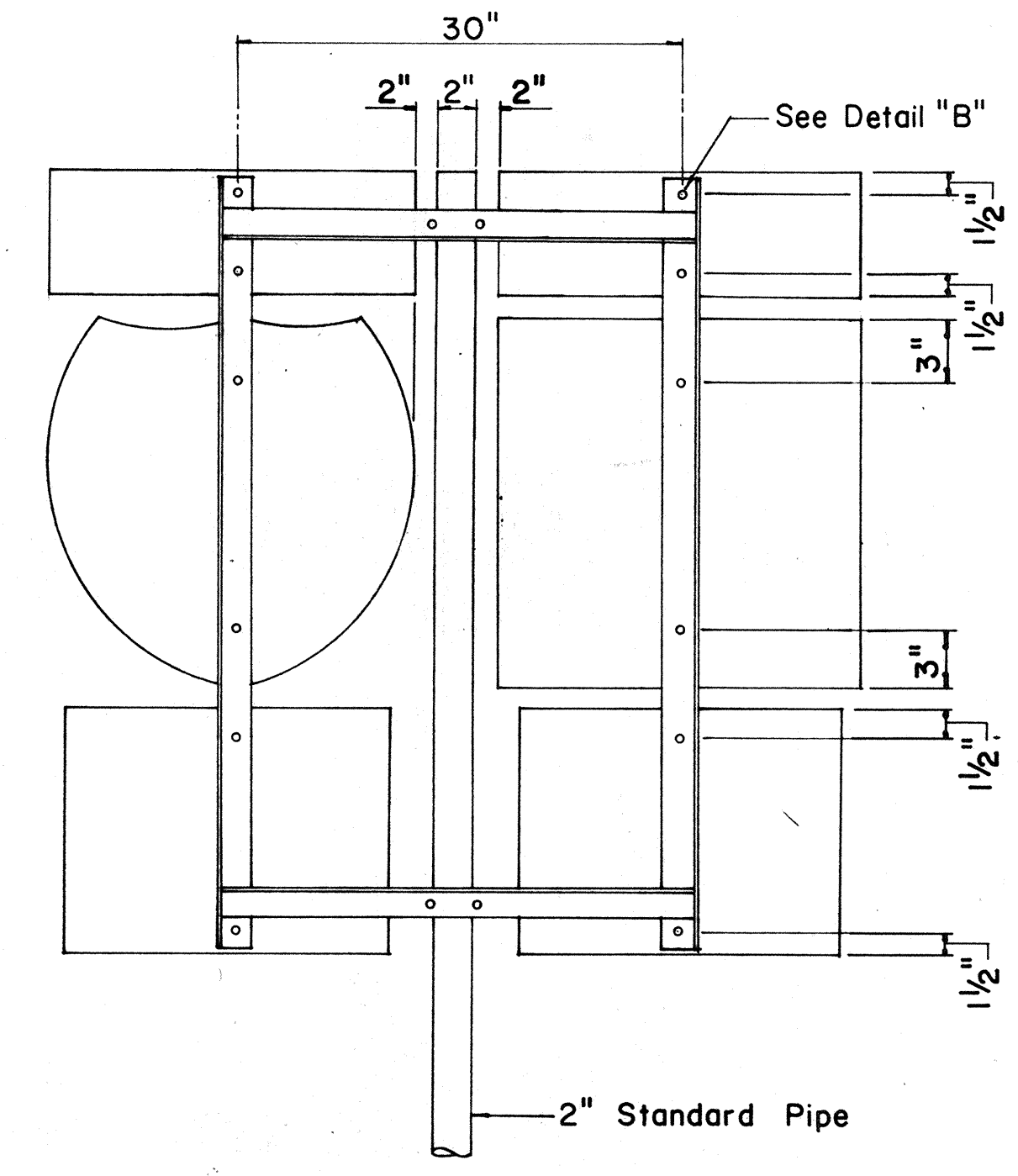
DATE  
SURVEY PLOTTED BY  
PLAN  
FRACED BY  
DESIGNED BY  
NOTE BOOK  
QUANTITIES BY  
CHECKED BY  
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-12-1(1)7	1973	90	274



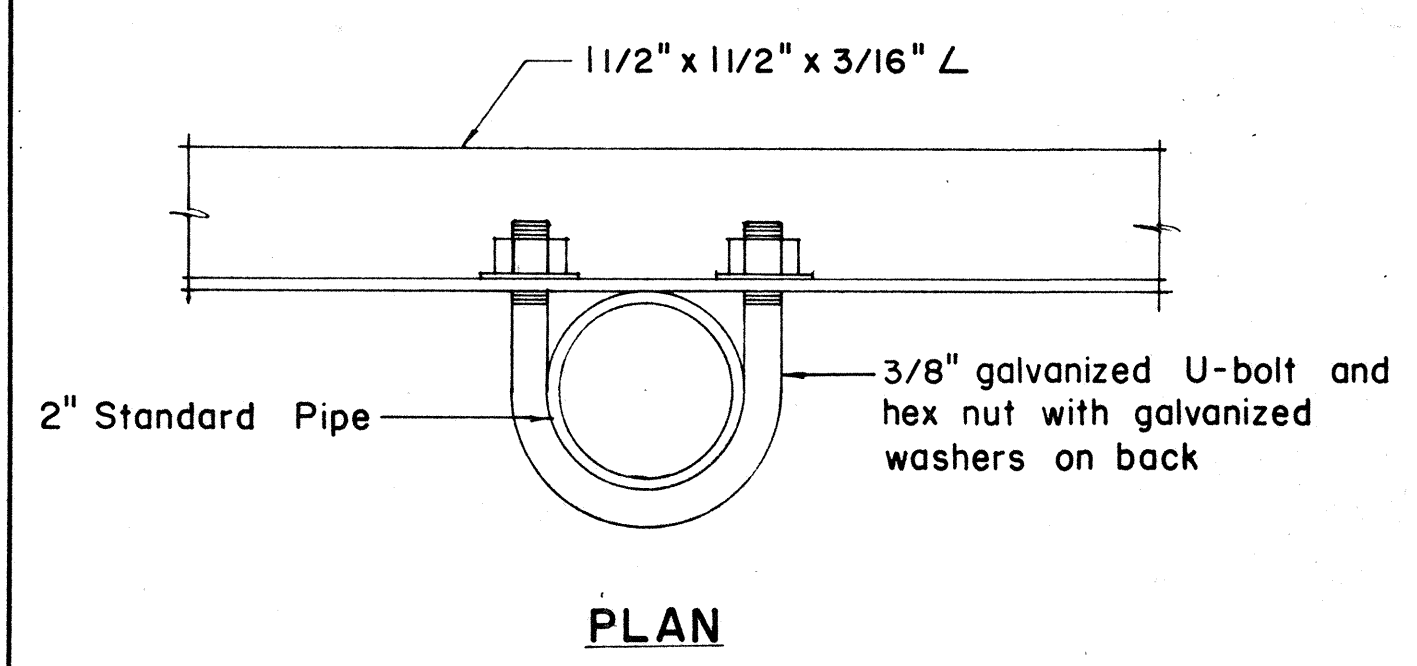
FRONT ELEVATION

TYPE "B" ASSEMBLY  
Not to Scale

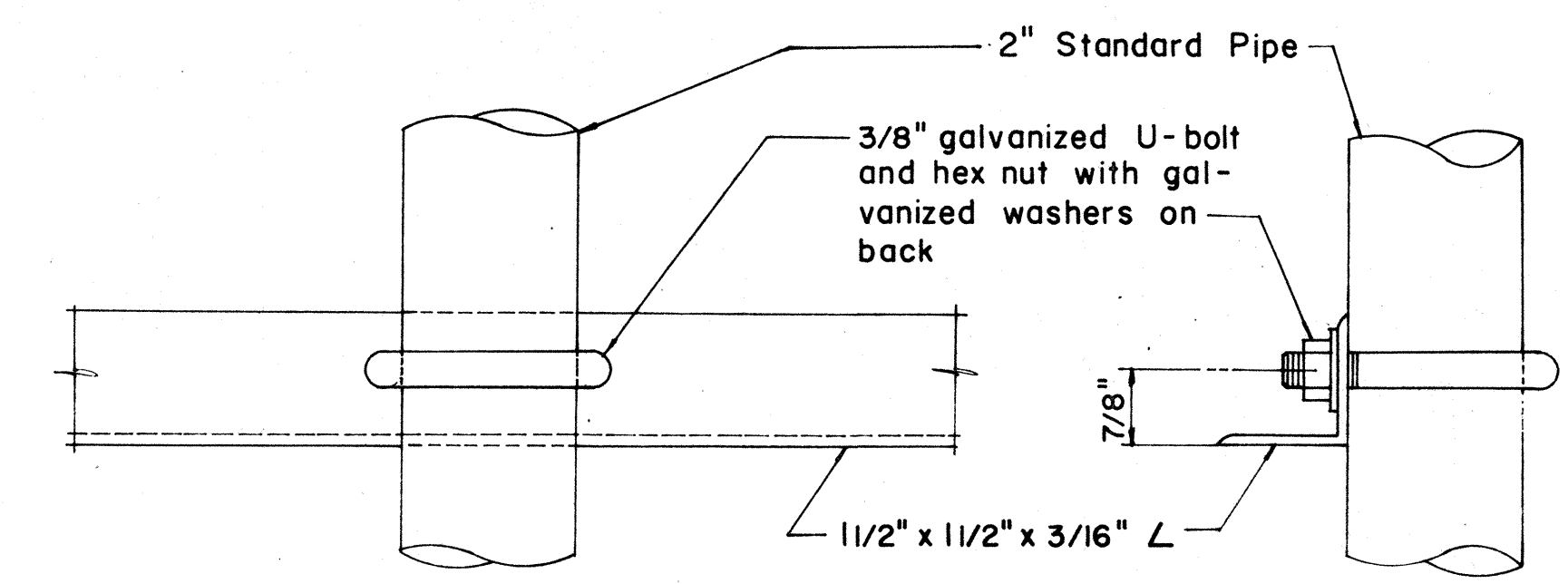


REAR ELEVATION

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.



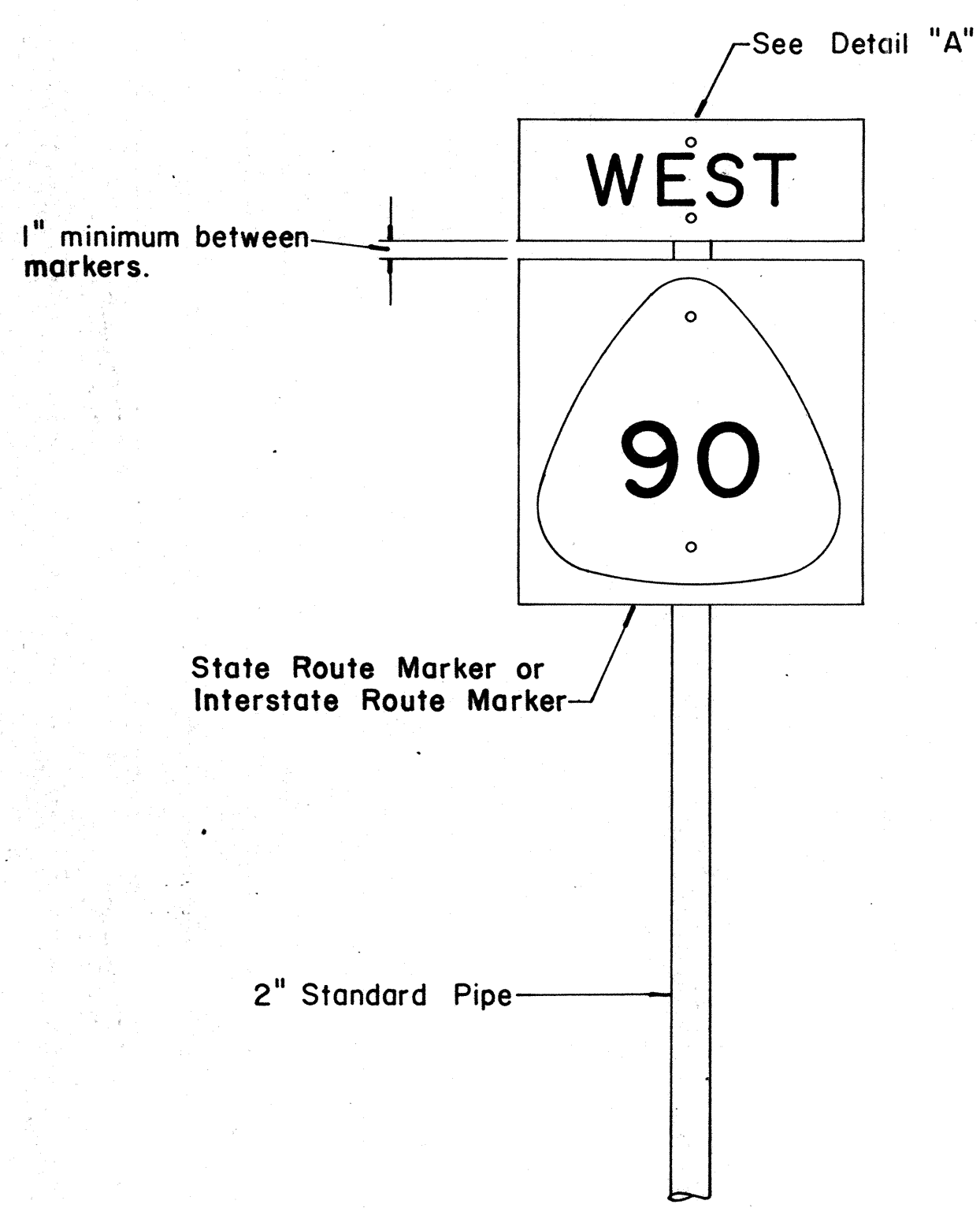
PLAN



FRONT ELEVATION

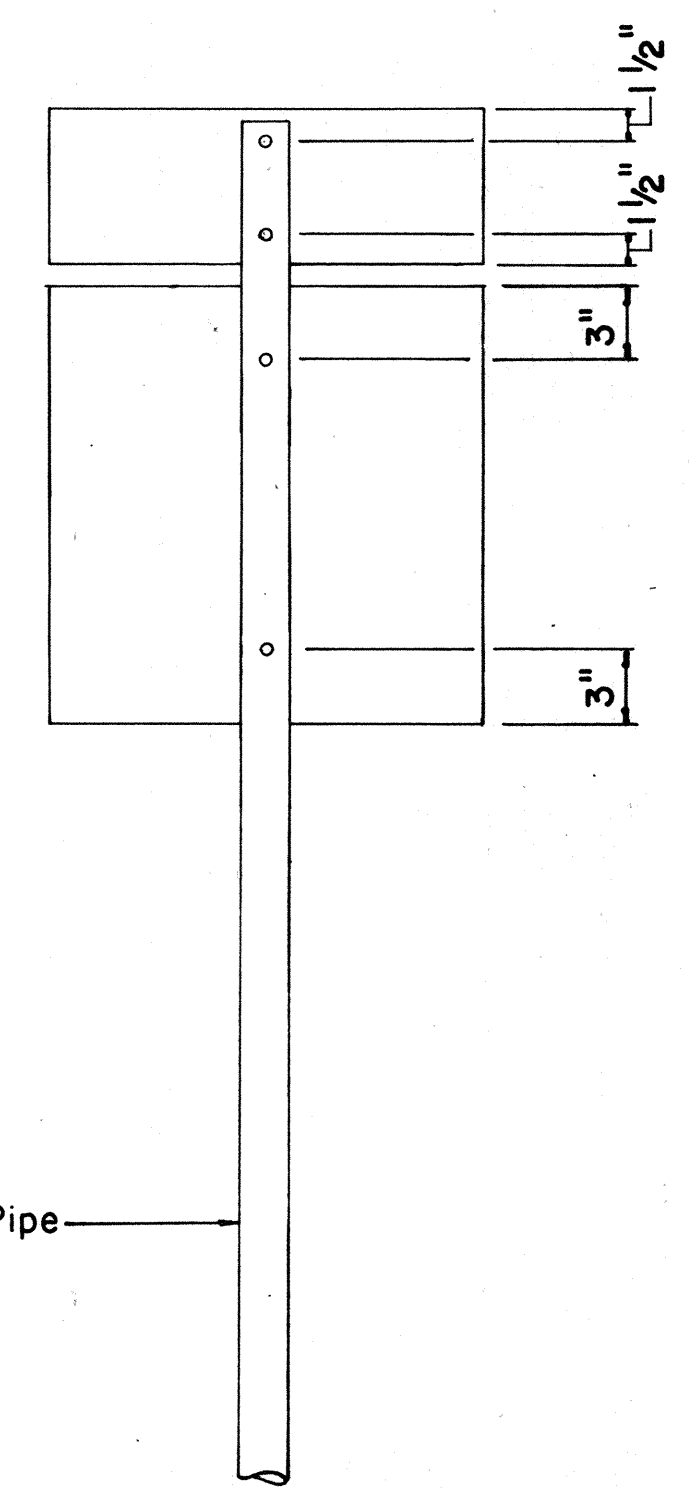
SIDE ELEVATION

DETAIL "C"



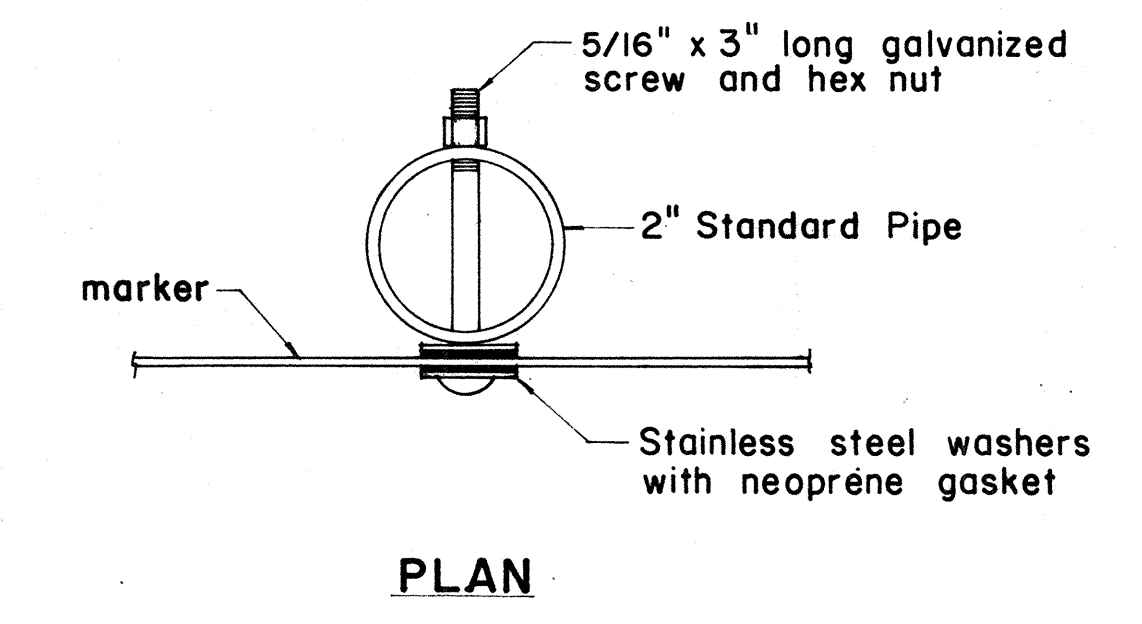
FRONT ELEVATION

TYPE "A" ASSEMBLY  
Not to Scale

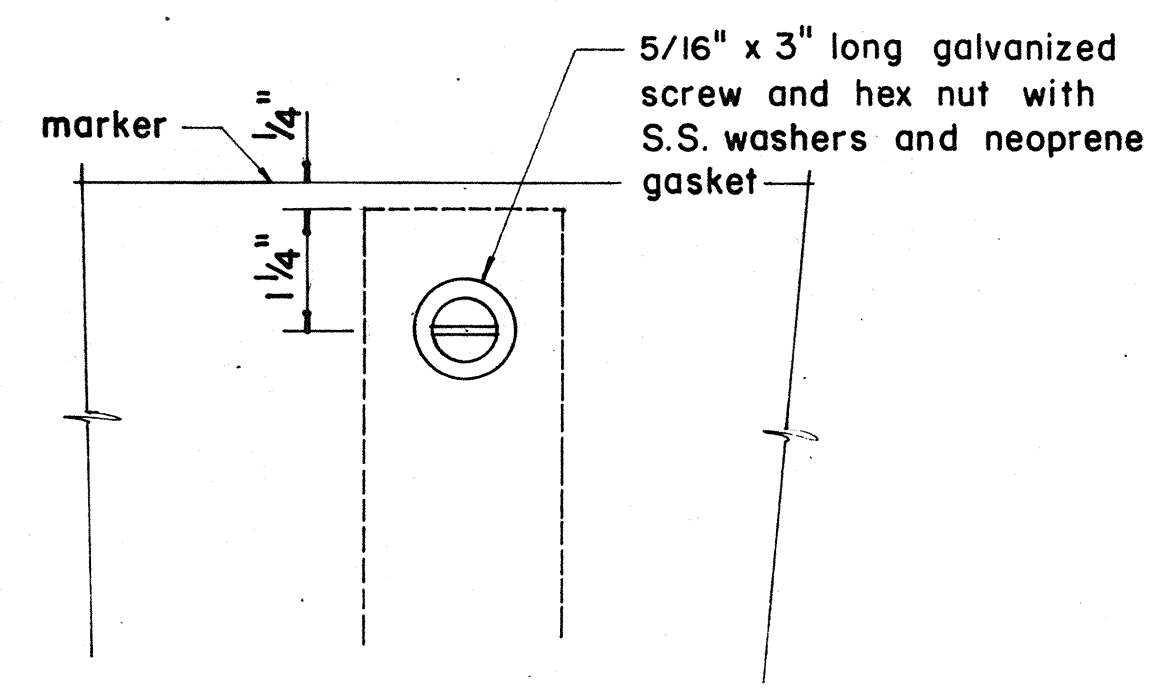


REAR ELEVATION

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

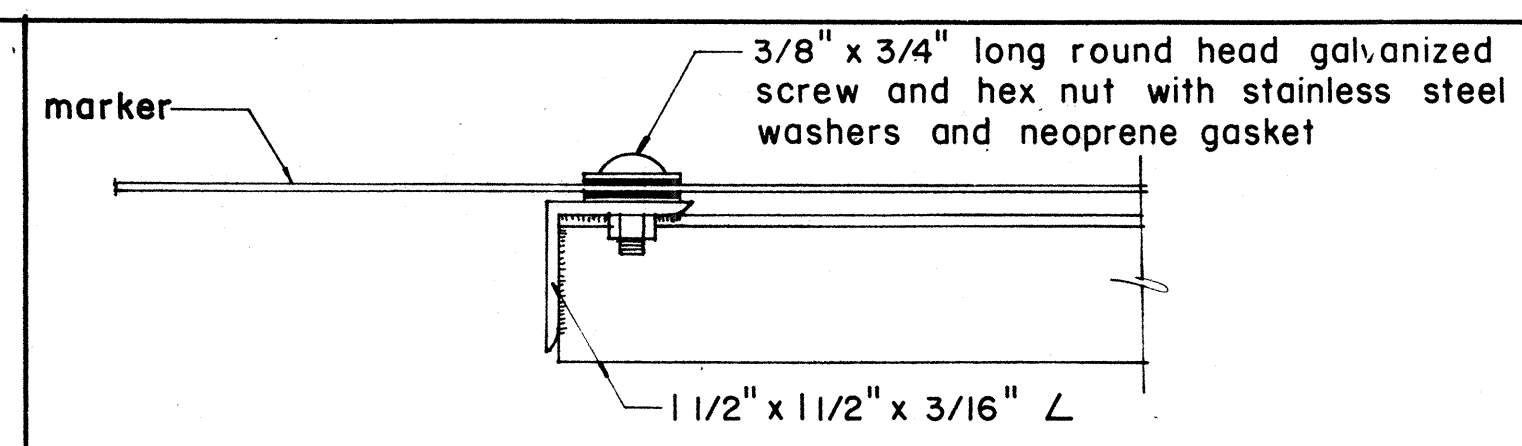


PLAN

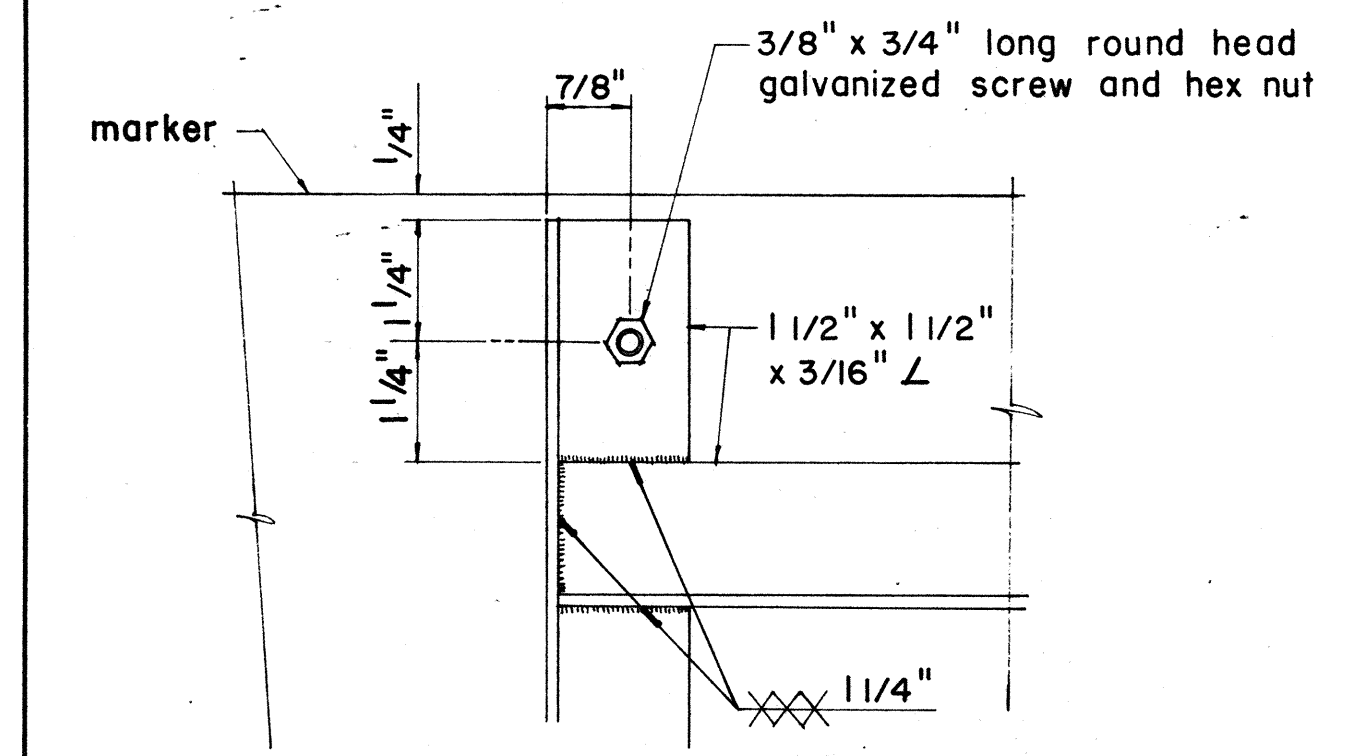


FRONT ELEVATION

DETAIL "A"

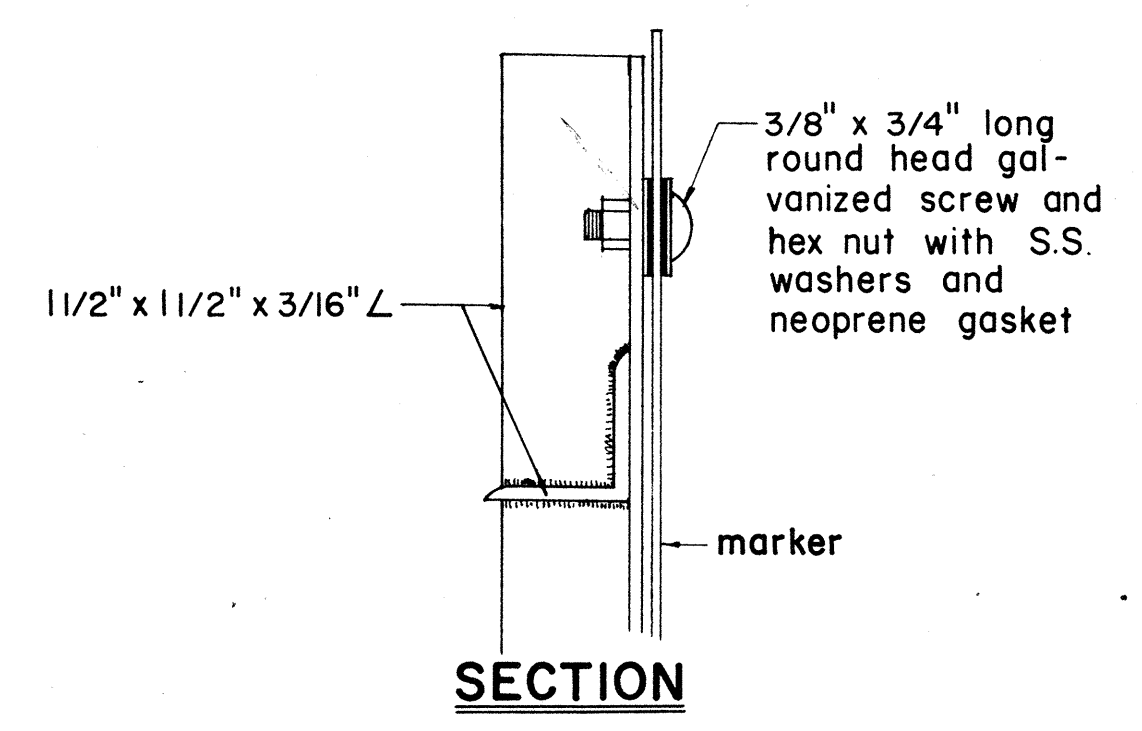


PLAN



ELEVATION

DETAIL "B"



SECTION

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

APPROVED:  
*Walter J. Pelt* 12-30-69  
ASSISTANT CHIEF, ENGINEERING DATE

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

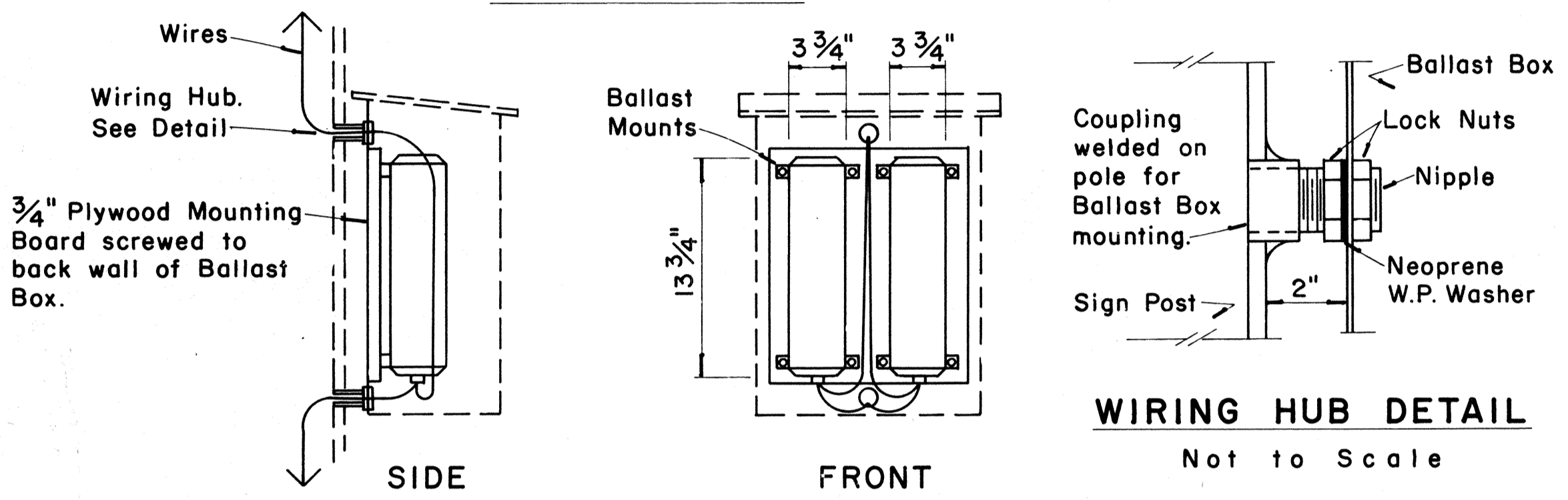
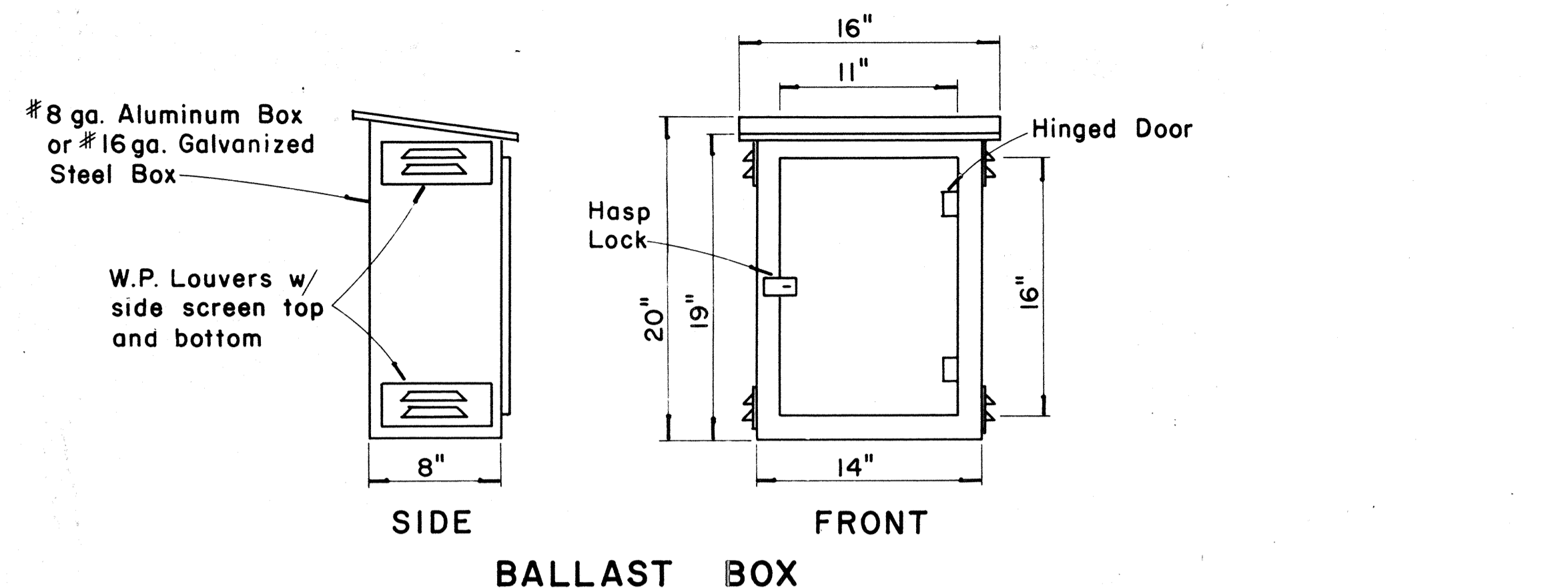
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STANDARD DETAILS  
ROUTE MARKER ASSEMBLIES

Scale: As Shown DATE: 4-25-73  
SHEET No. 18 OF 30 SHEETS DT 107

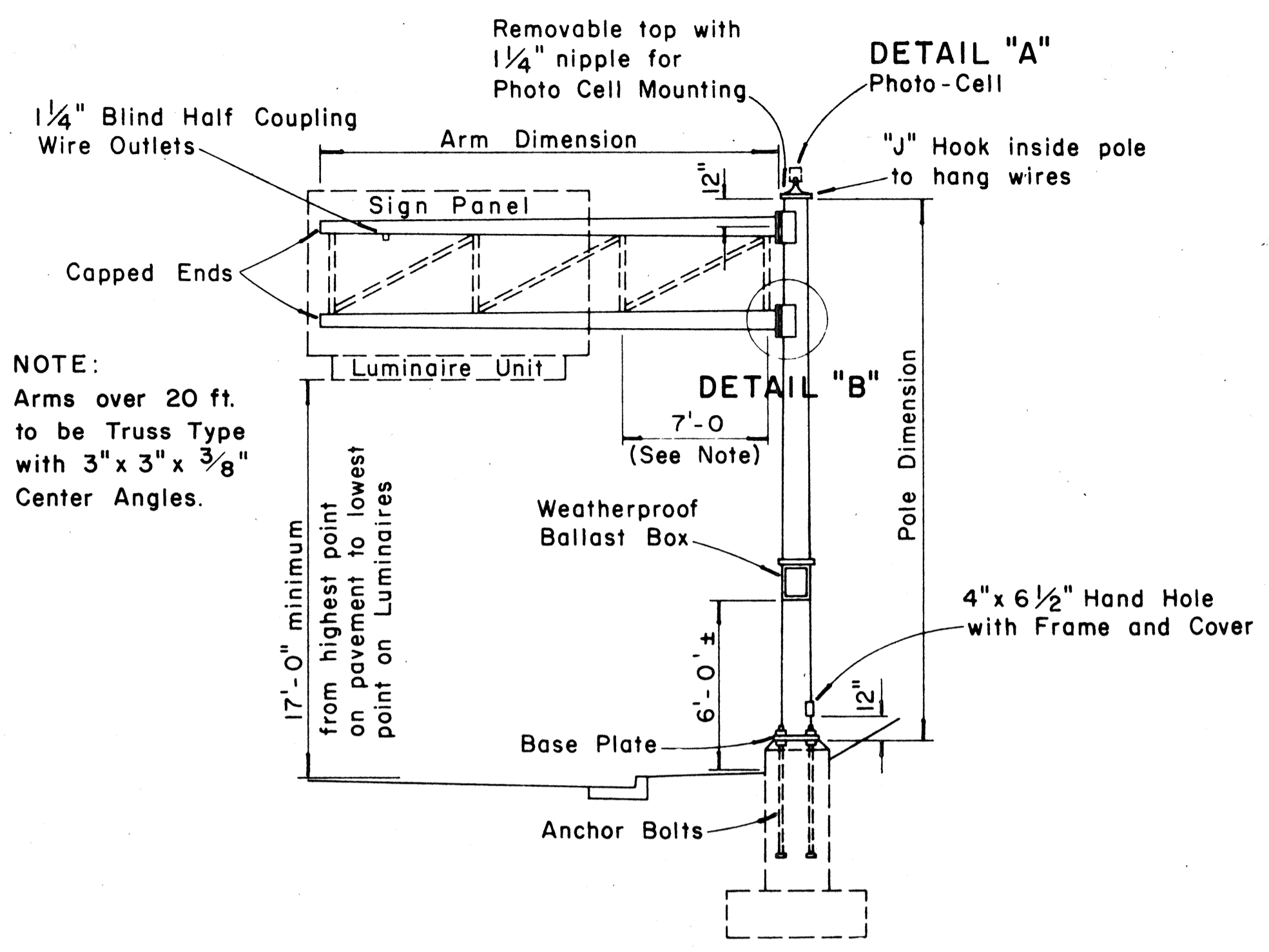
DATE  
DESIGNED BY  
CHECKED BY  
DATE  
DESIGNED BY  
CHECKED BY  
DATE  
DESIGNED BY  
CHECKED BY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)-7	1973	91	274



**WEATHERPROOF BALLAST BOX**

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

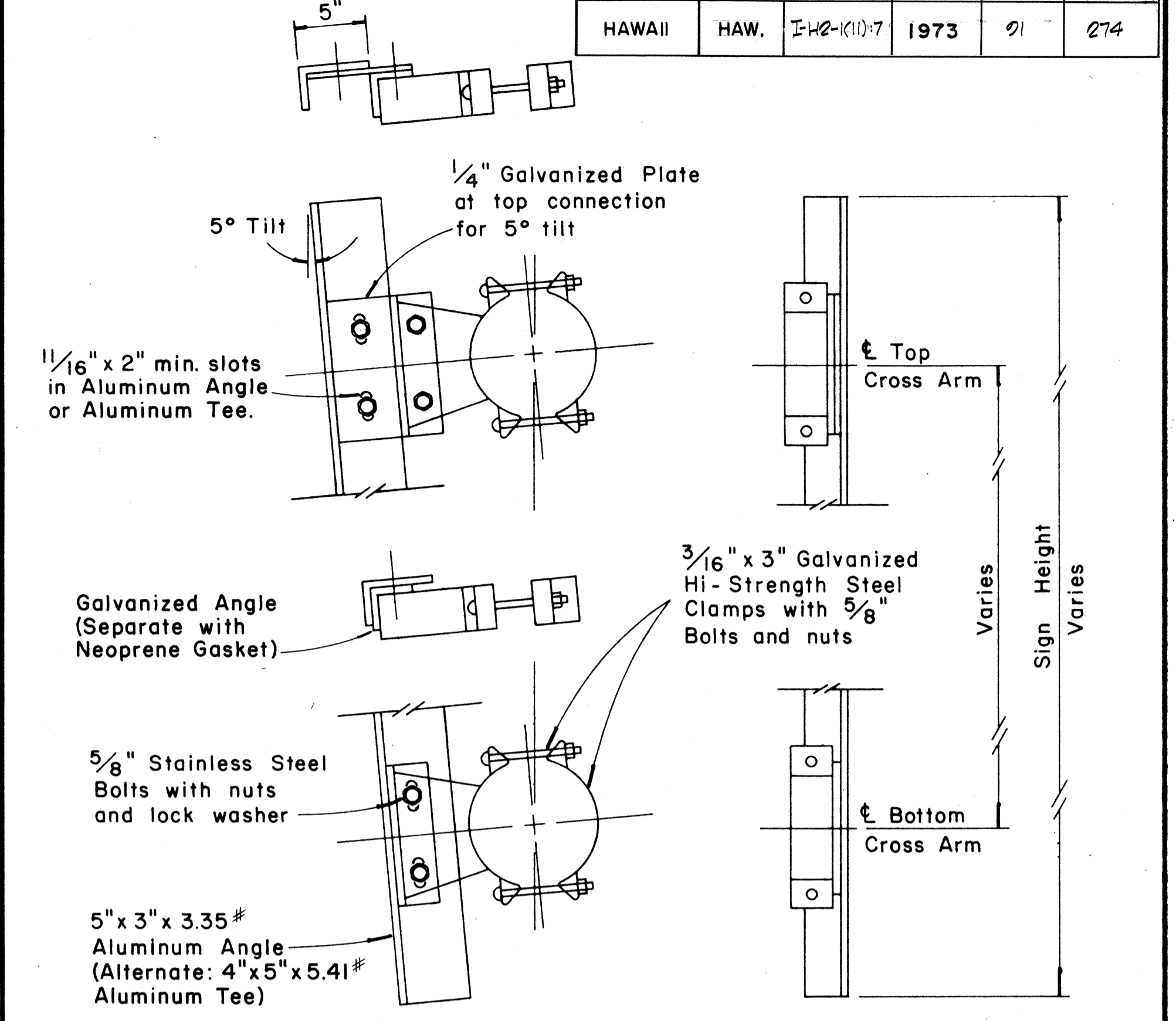


**TYPE "C"**

**SINGLE SIGN POST — CANTILEVER TYPE**

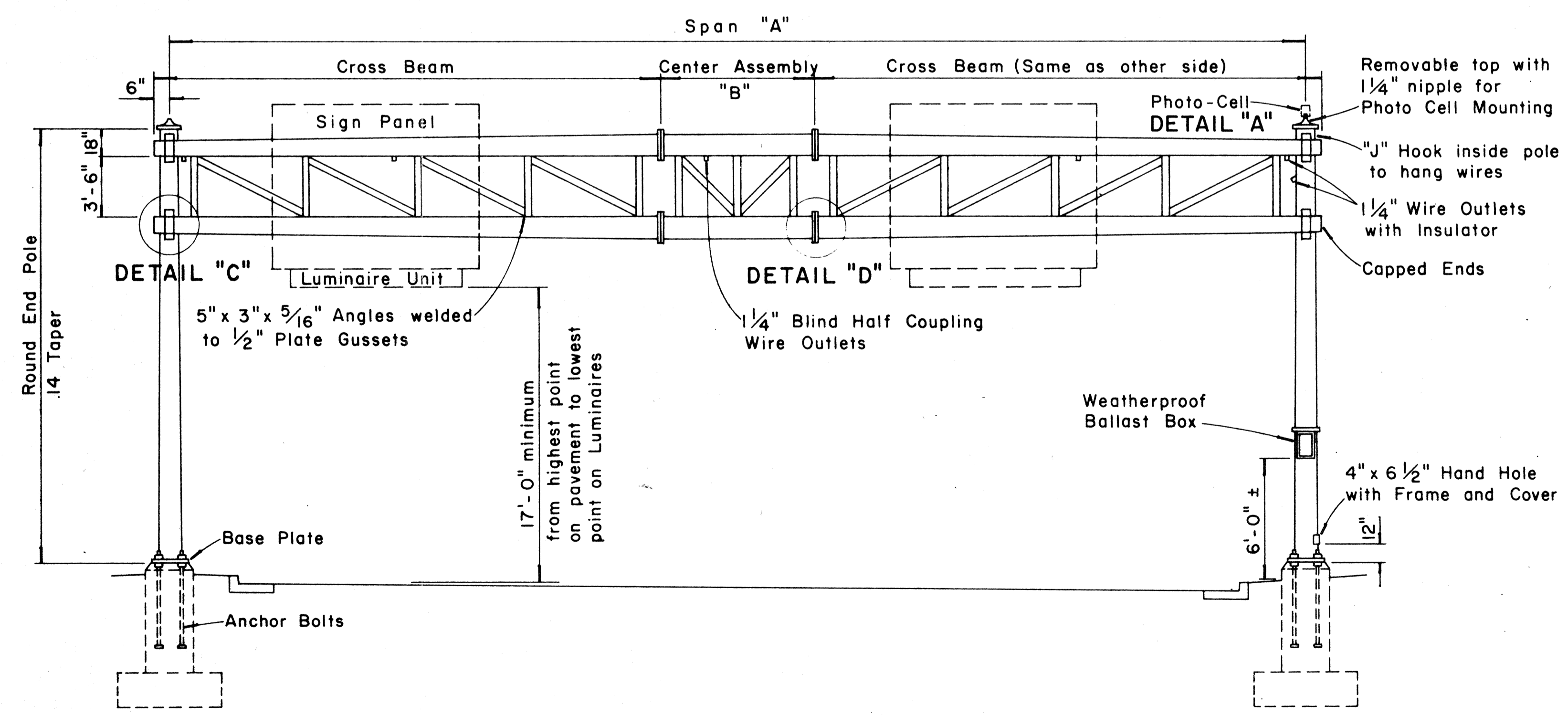
**DOUBLE MAST ARM**

Scale: 3/16" = 1'-0"



**SIGN BRACKET ASSEMBLY**

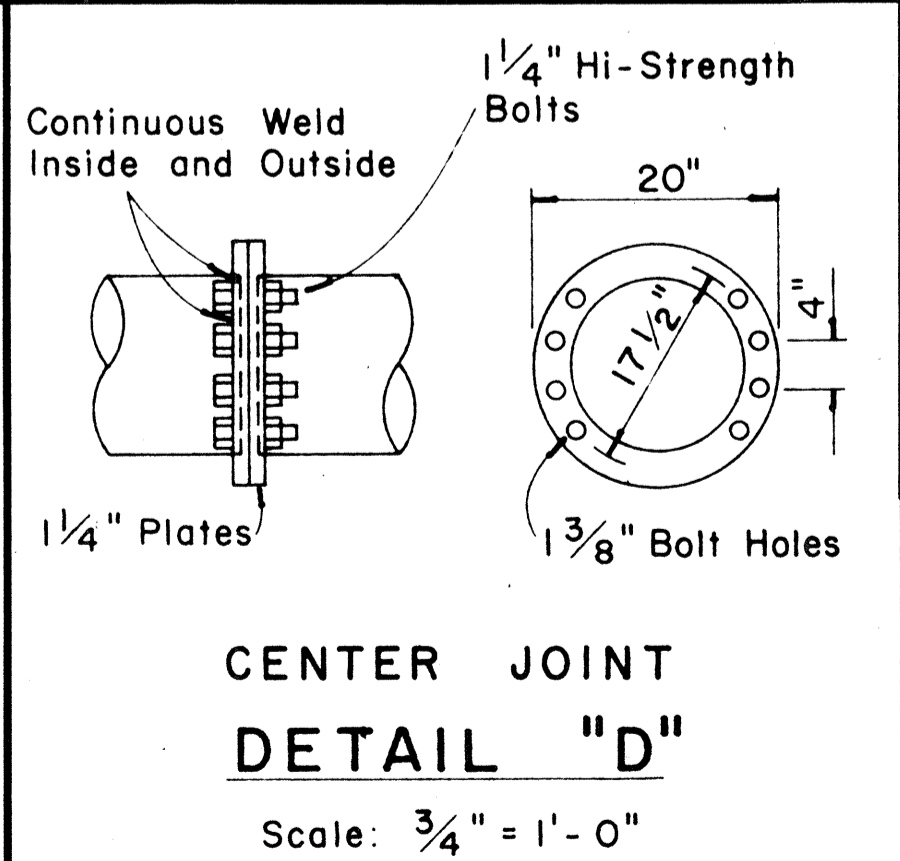
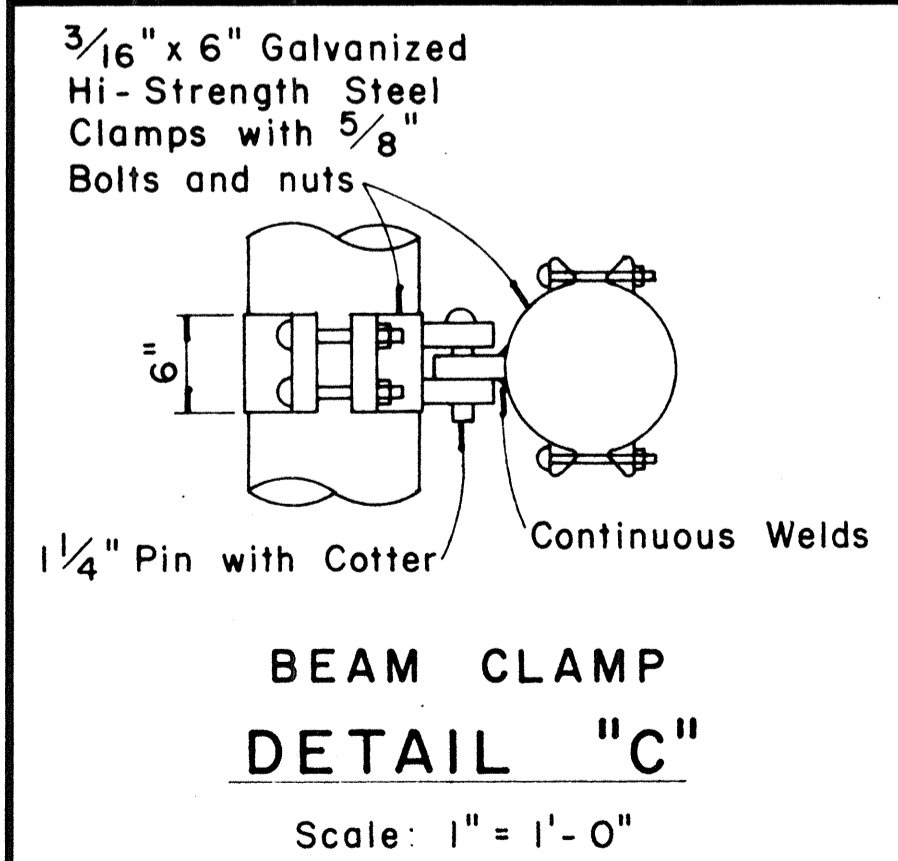
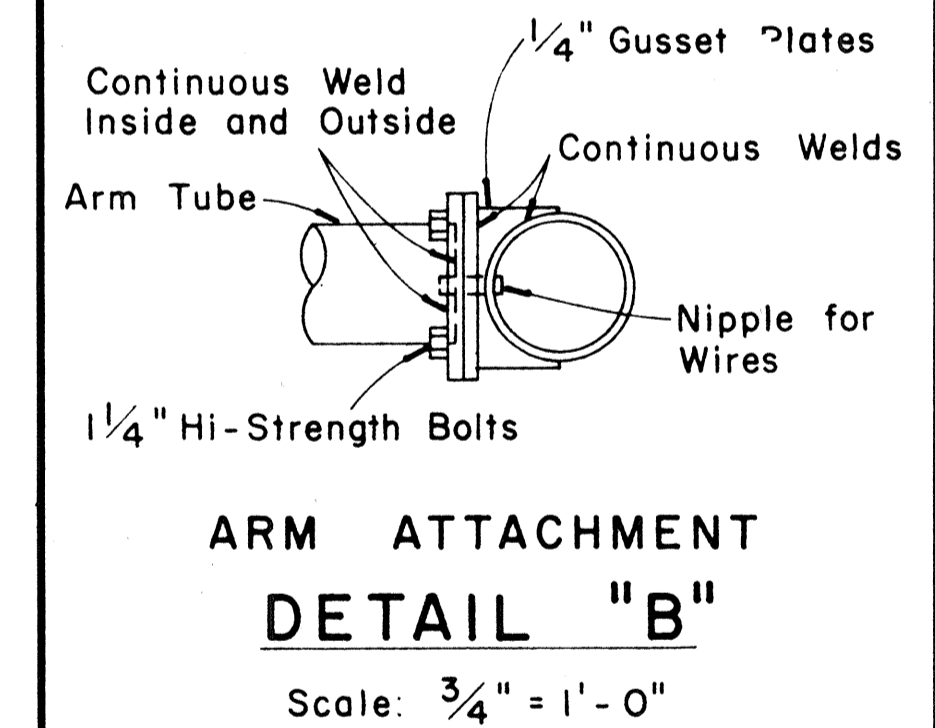
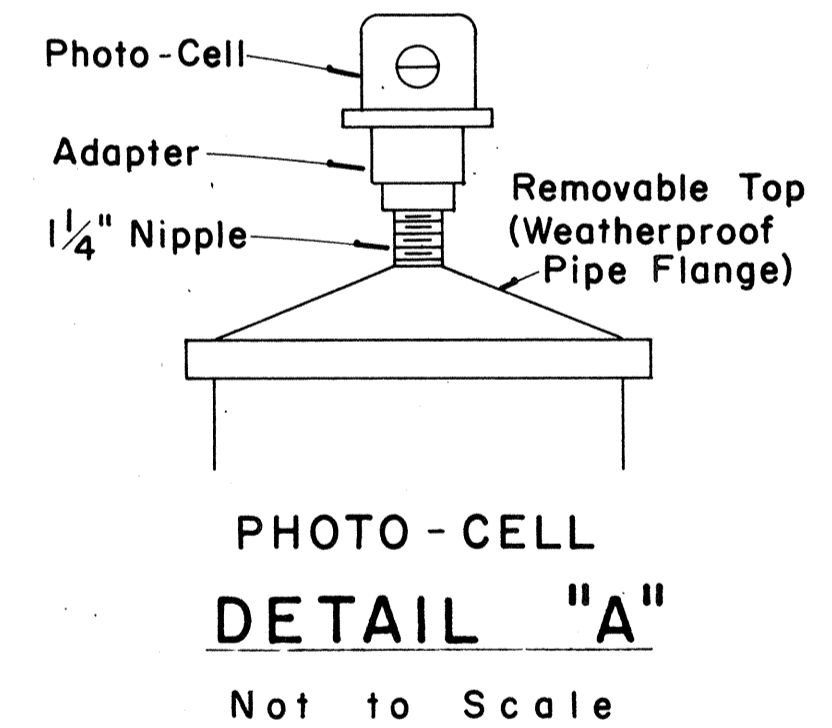
Scale: 1/2" = 1'-0"



**TYPE "D"**

**TWO-TUBE TRUSS — SPAN TYPE**

Scale: 3/16" = 1'-0"



APPROVAL RECOMMENDED:  
*Erich Tanaka* 12/27/69  
 TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**

**OVERHEAD SIGN SUPPORTS**

Scale As Shown DATE: 4-25-73

**SHEET No. 10 OF 39 SHEETS DT 200**

DATE

SURVEY PLOTTED BY

DRAWN BY

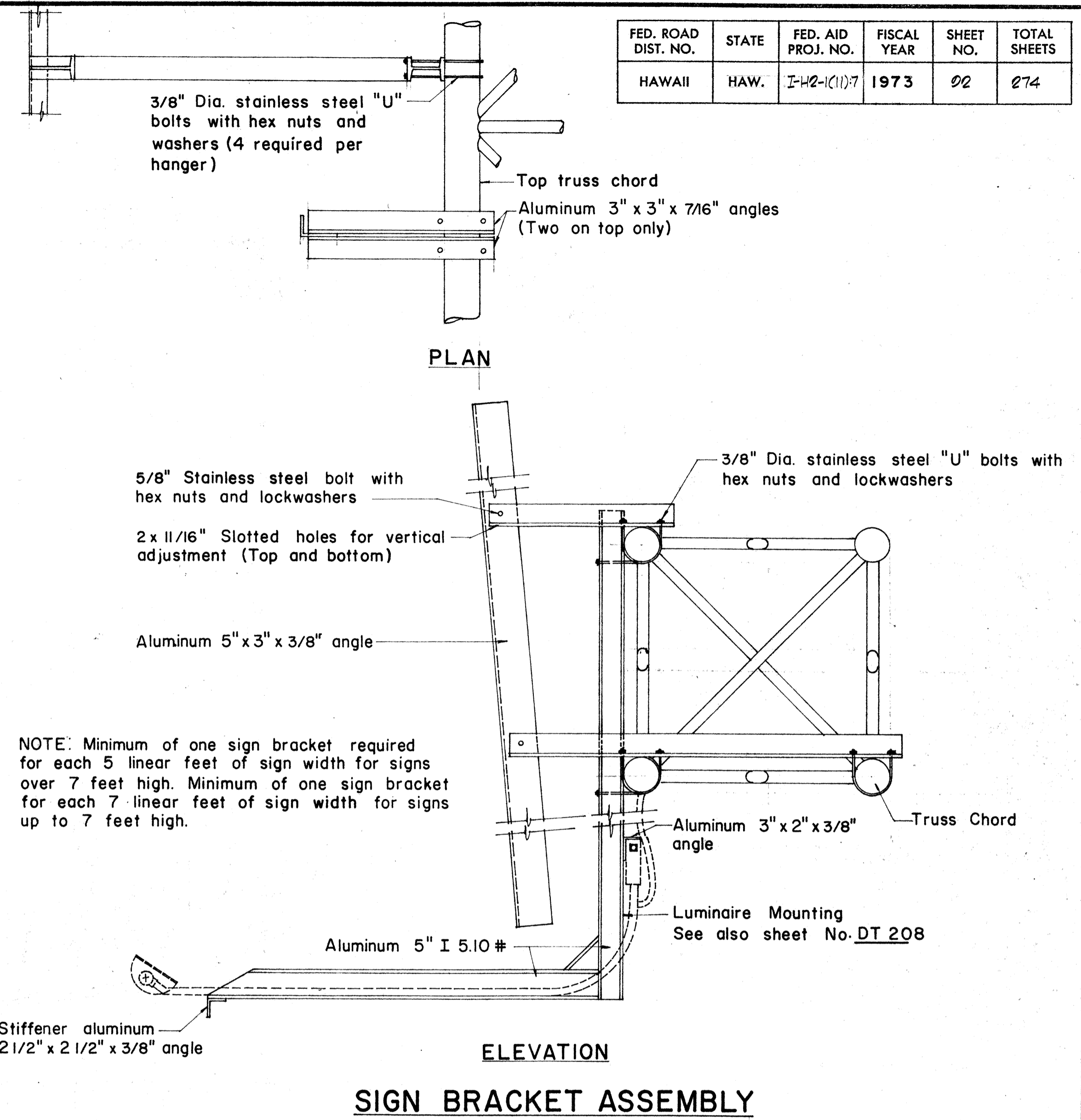
DESIGNED BY

QUANTITIES BY

CHECKED BY

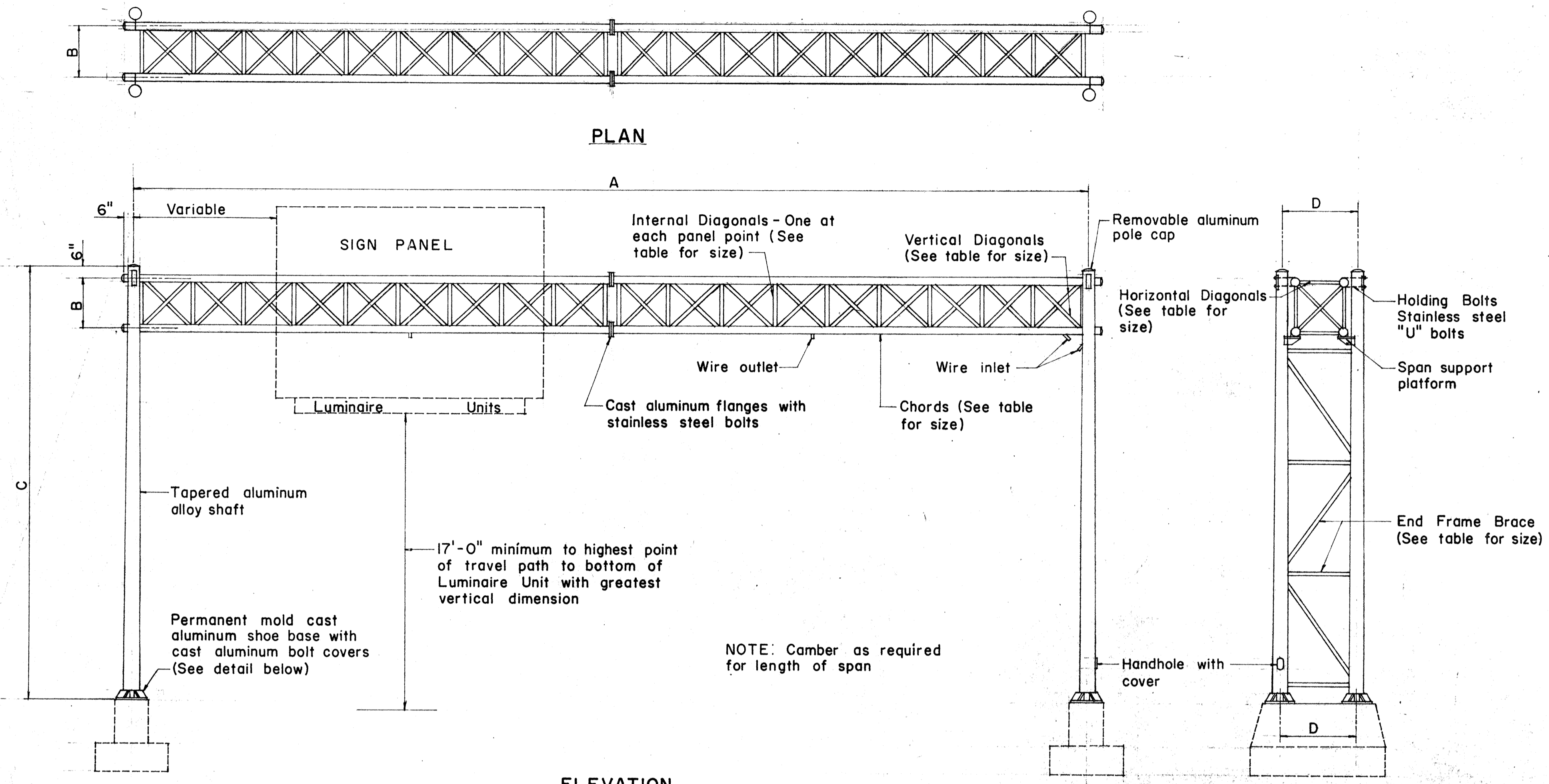
NO.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)-7	1973	02	074



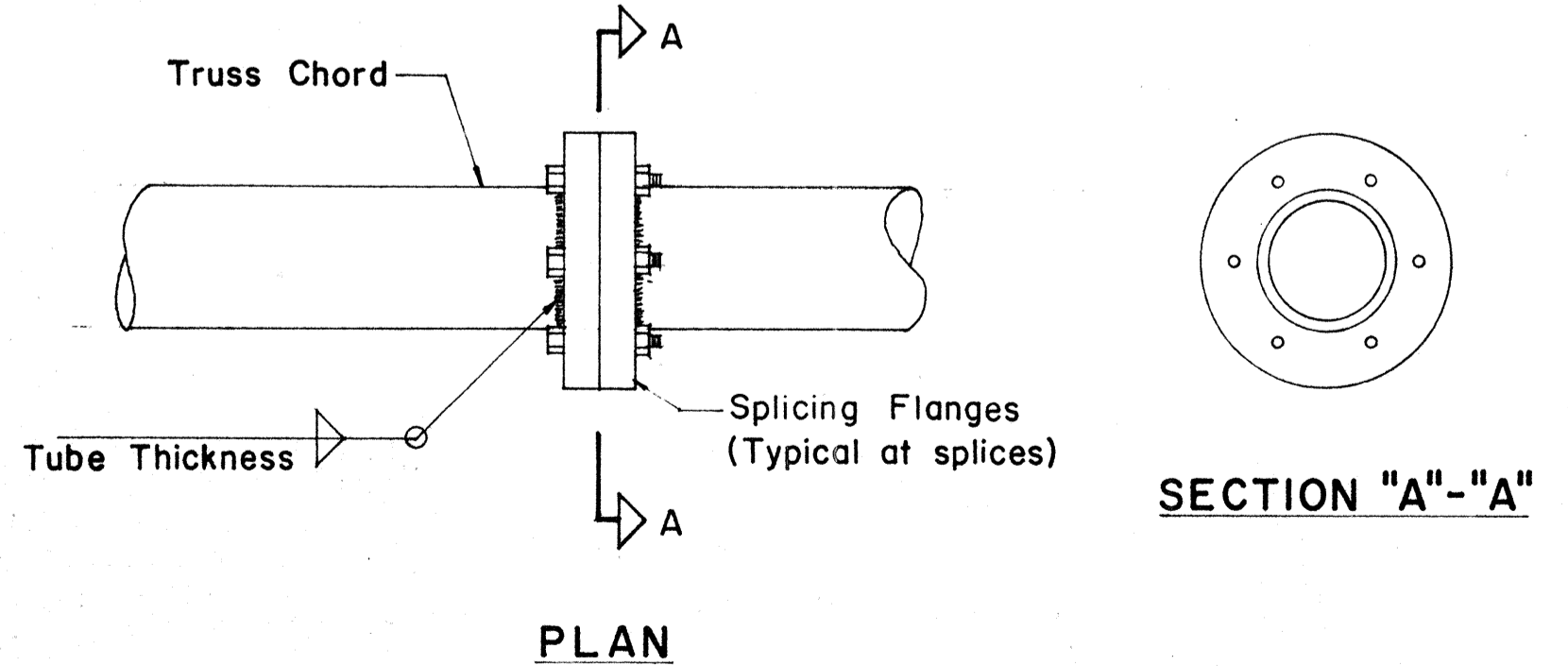
NOTE: Minimum of one sign bracket required for each 5 linear feet of sign width for signs over 7 feet high. Minimum of one sign bracket for each 7 linear feet of sign width for signs up to 7 feet high.

**SIGN BRACKET ASSEMBLY**

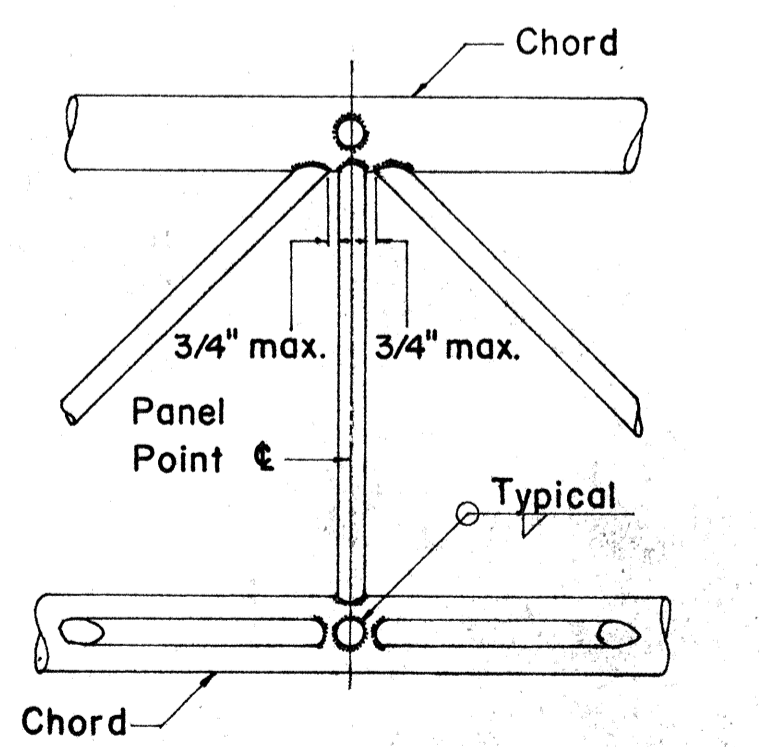


**ELEVATION TYPE "F"**

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

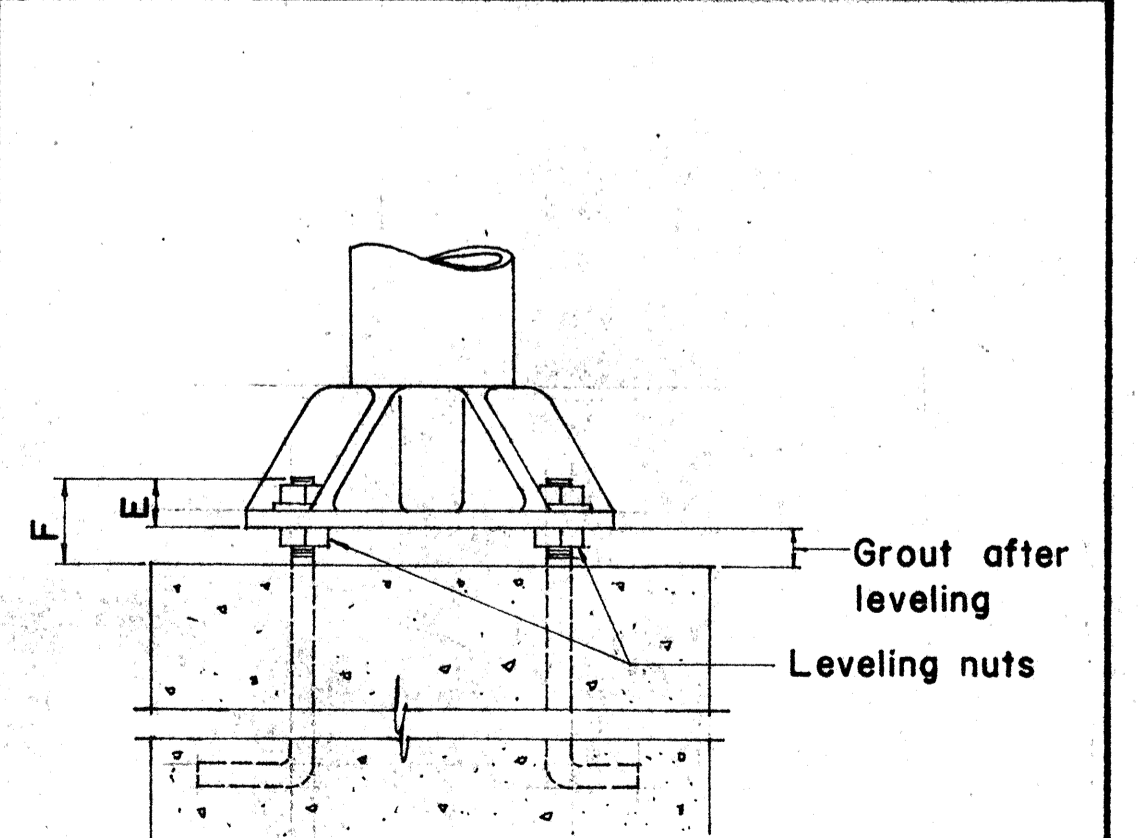


**DETAIL OF CHORD SPLICES**



**TYPICAL JOINT DET.**

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



**DETAIL OF BASE**

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

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

NO.	REVISION	APPROVED BY	DATE

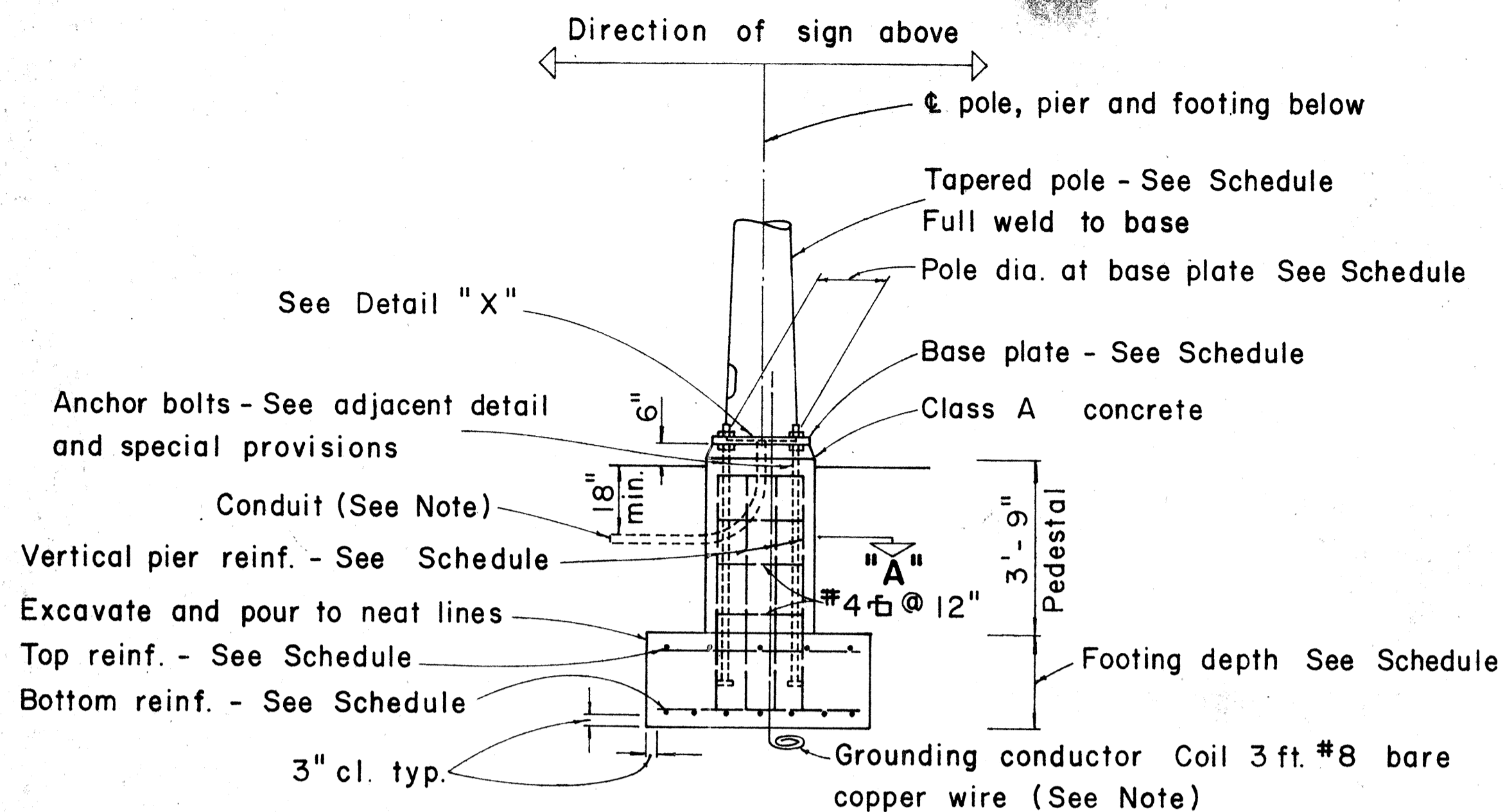
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**TYPE "F"**  
**OVERHEAD SIGN SUPPORT**  
**BOX TRUSS TYPE**  
**ALUMINUM**

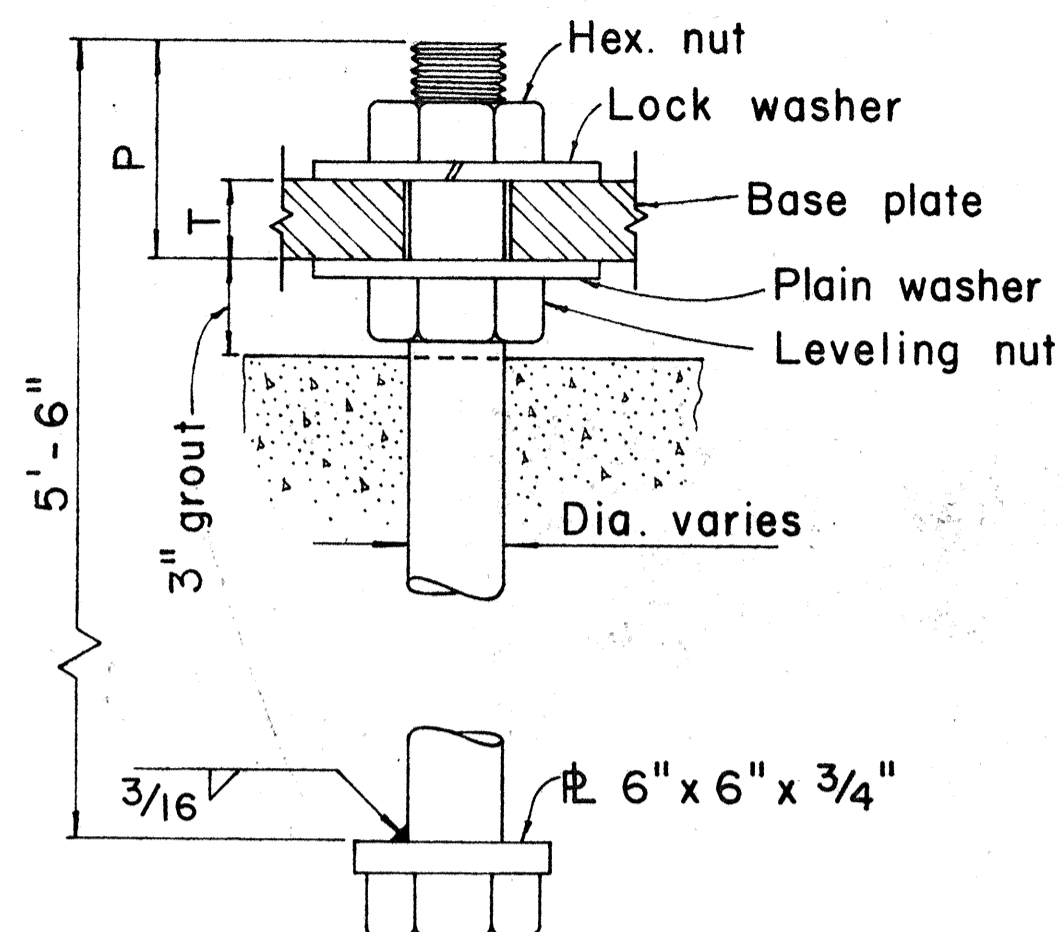
NOT TO SCALE DATE: 4-25-73  
 SHEET No. 20 OF 39 SHEETS DT 201

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

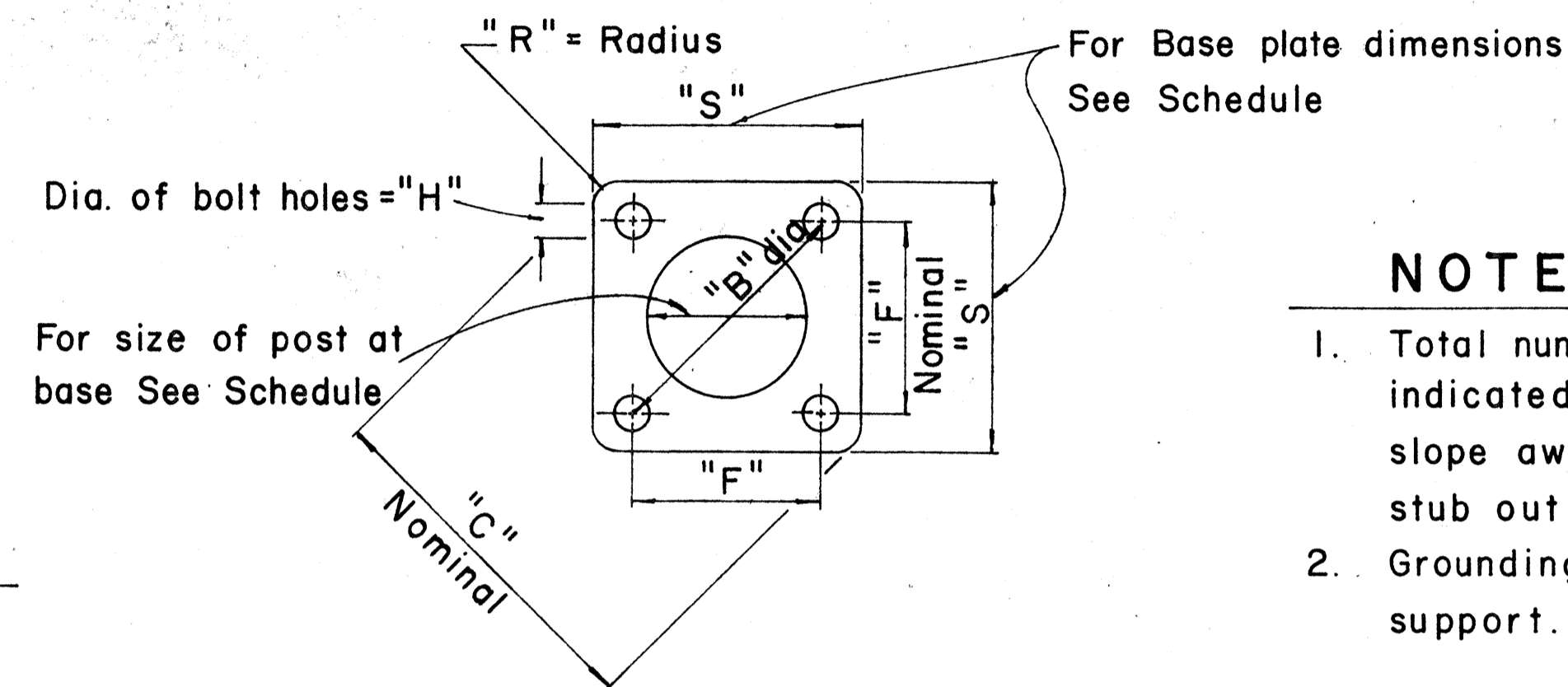
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	142-1(1)7	1973	23	274



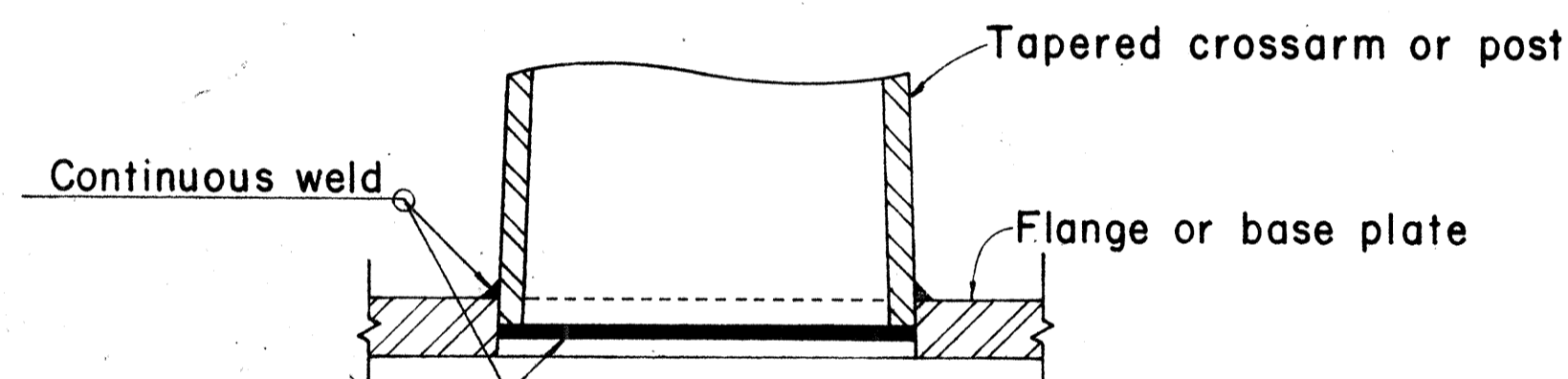
**TYPICAL POLE FOUNDATION DETAIL**



**TYPICAL ANCHOR BOLT 4 REQ'D**



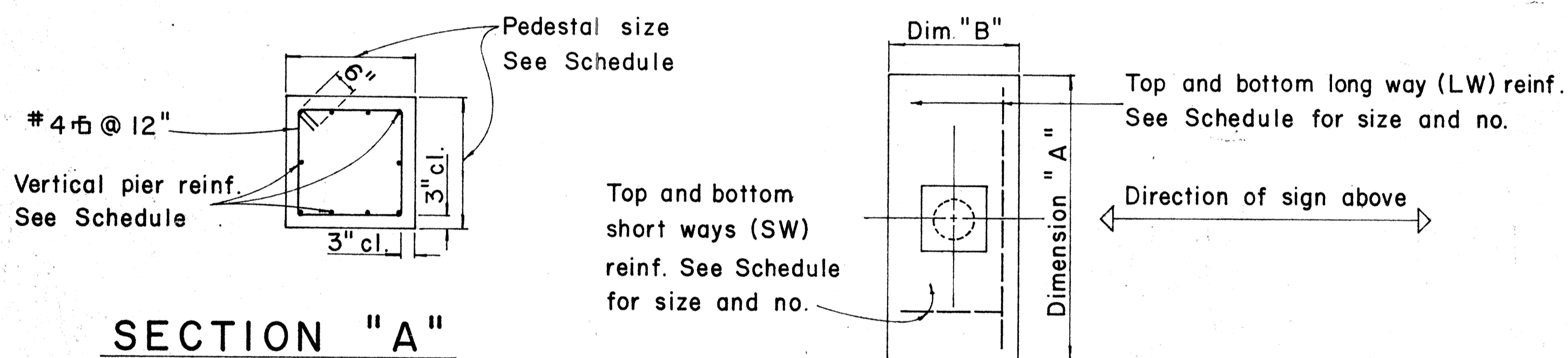
**TYPICAL BASE PLATE**



**DETAIL "X"**

**NOTE:**

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



**SECTION "A"**

**TYPICAL FOOTING DETAIL**

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

**FOUNDATION SCHEDULE**

APPROVAL RECOMMENDED:

*Eiichi Tanaka* 12/29/69  
TRAFFIC ENGINEER DATE

APPROVED:

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

NO.	REVISION	APPROVED BY	DATE
1	Foundation Schedule	H.C.	2/14/70

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

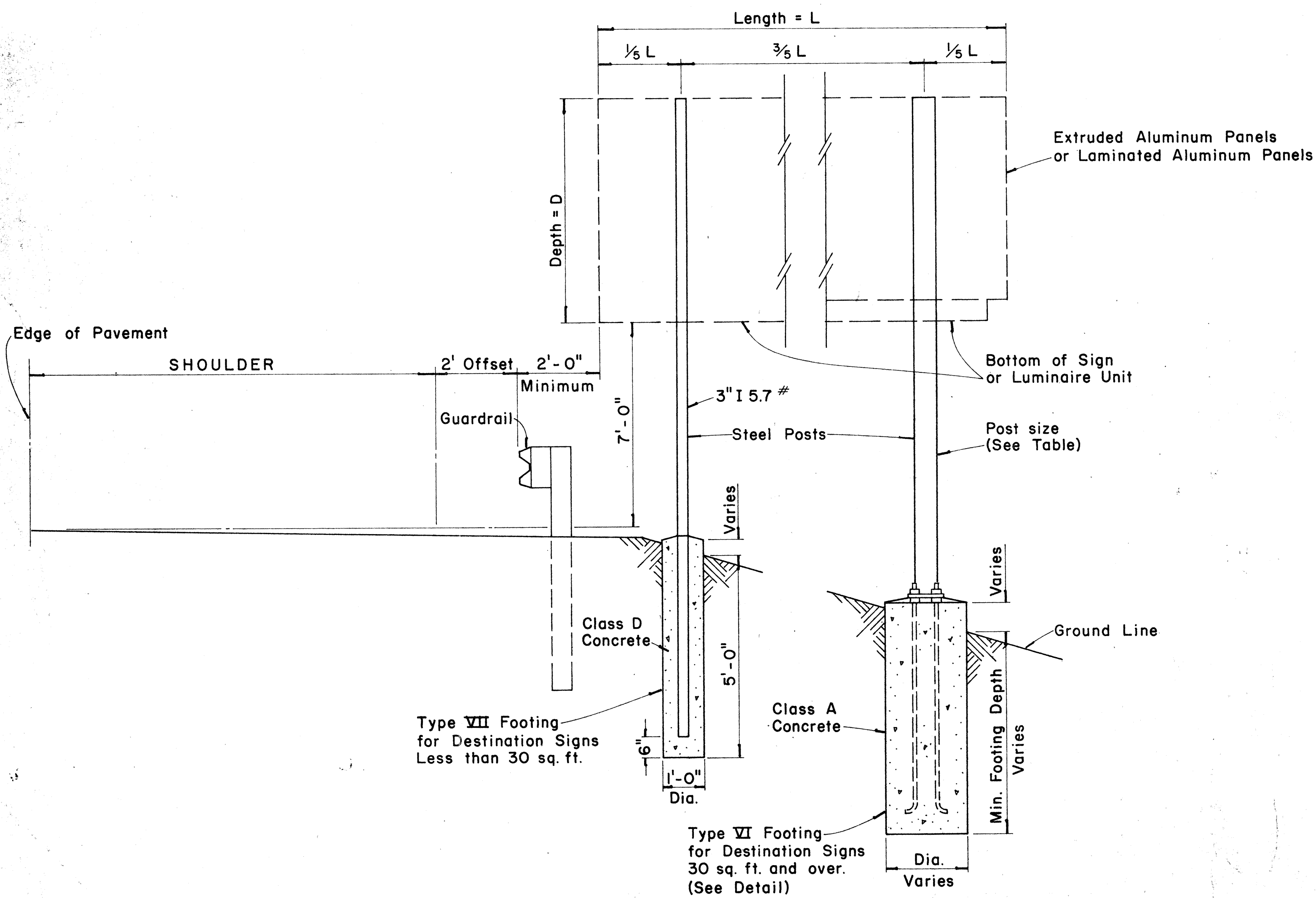
**DETAILS & SCHEDULES**

NOT TO SCALE DATE: 4-25-73

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

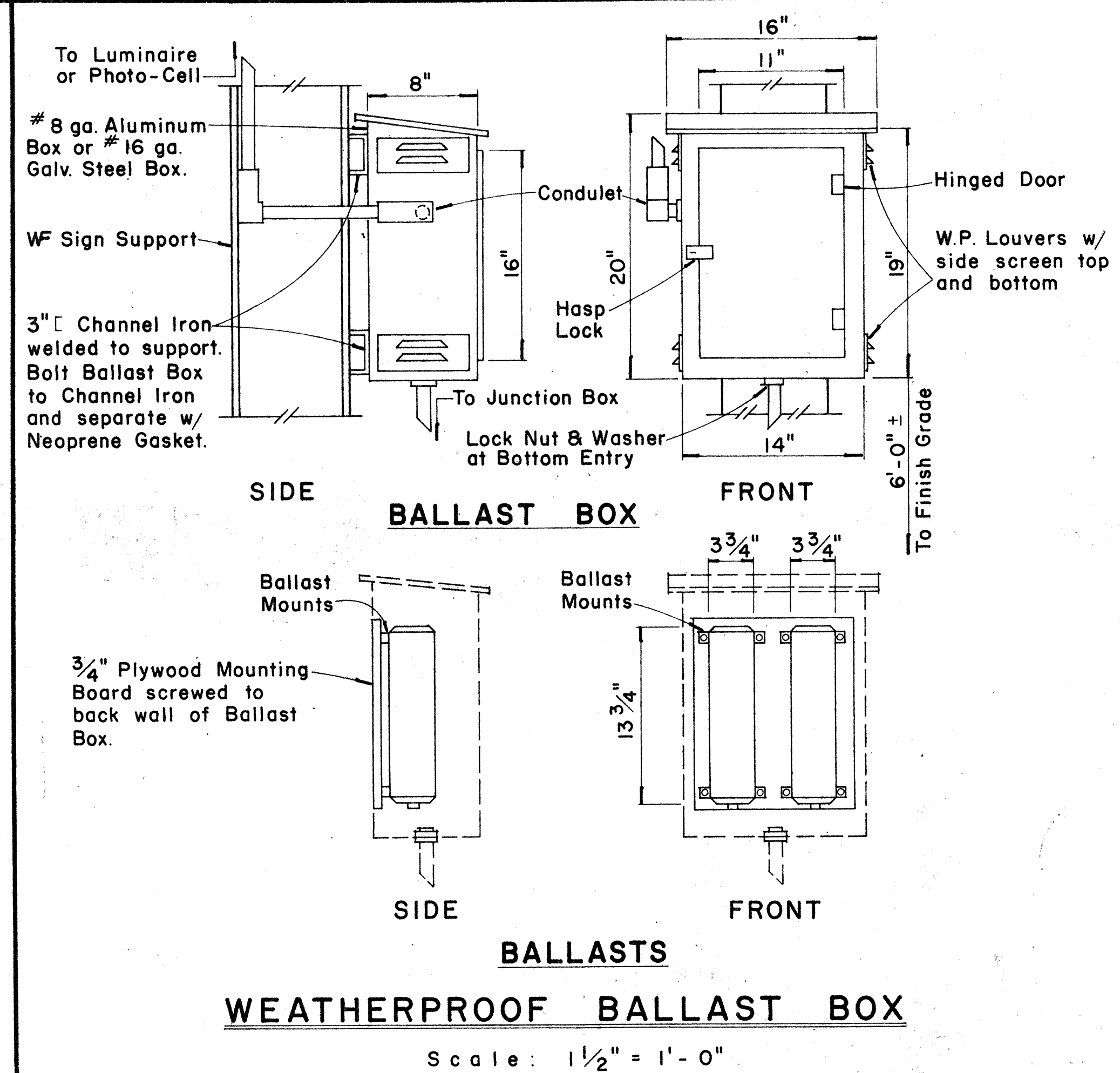
\* For moment calculations only. Post shall be from top of foundation to top of sign.  
 \*\* For fills with side slopes flatter than 4:1, Minimum Footing Depth shall be 4 1/2 feet.

DATA TABLE FOR TYPE VI FOOTING														MINIMUM FOOTING DEPTH			
POST SIZE	MAXIMUM SIGN AREA	POST HEIGHT TOP OF FOUNDATION TO CENTER OF SIGN *	DIMENSIONS											ANCHOR BOLT DIA.	MINIMUM FOOTING DEPTH		
			H	J	K	M	N	O	P	S	T	U	V		W	CUT	FILL**
8 J10	50 sq. ft.	14'	14"	5"	24"	17 1/4"	1 5/8"	6"	1 1/4"	9"	6"	10"	2"	1"	1 1/8" ø	4 1/2'	4 1/2'
8 WF24	90 sq. ft.	21'															5'
8 WF35	190 sq. ft.	15'	16 1/2"	6 3/4"	30"	20"	1 3/4"	6"	1 3/8"	11 3/4"	6 1/2"	10"	1 3/4"	1"	1 1/4" ø	6'	7'
10 WF45	190 sq. ft.	25'															
10 WF45	200 sq. ft.	25'															
12 WF50	230 sq. ft.	25'															
12 WF50	250 sq. ft.	23'															



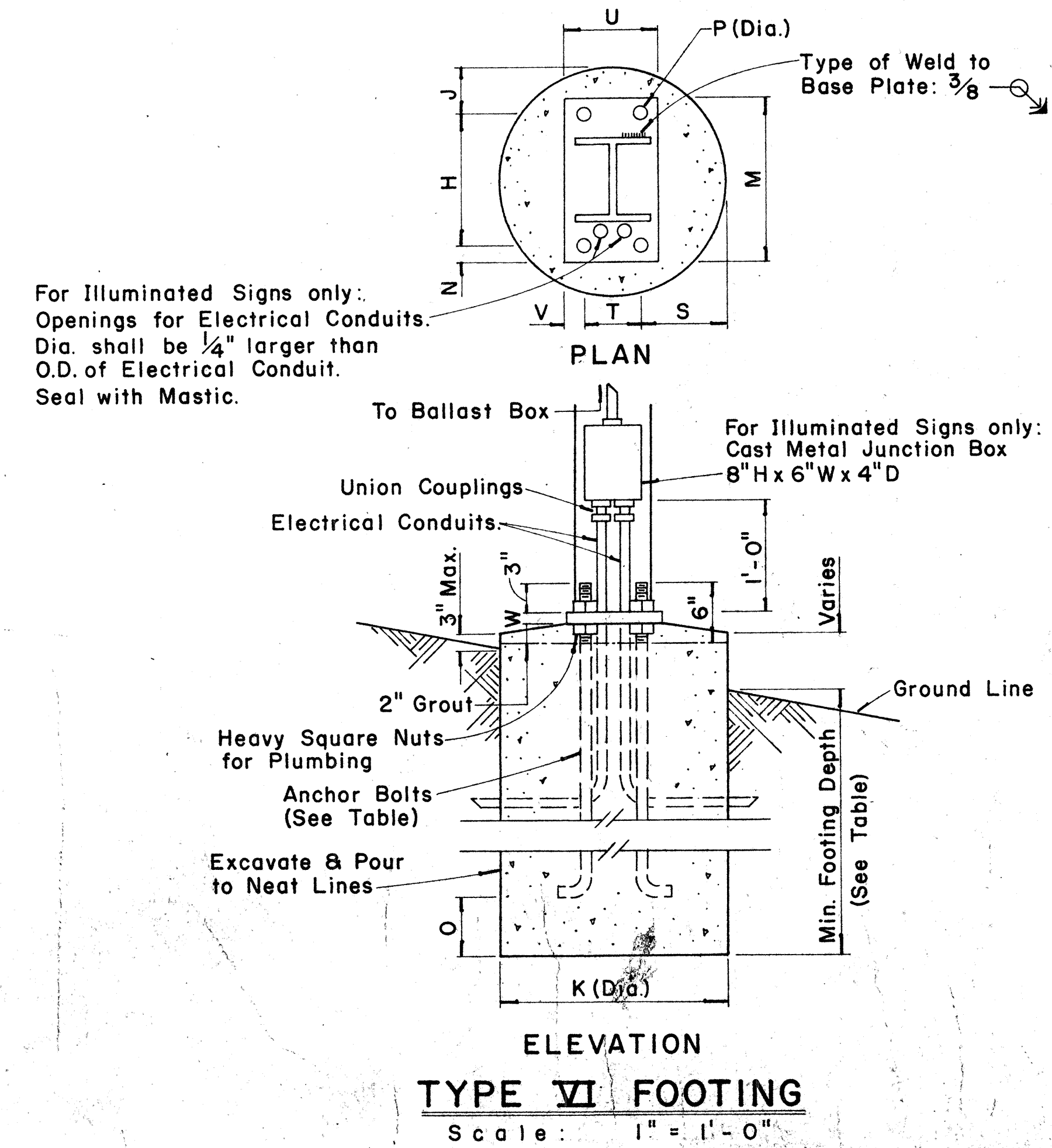
TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN

Not to Scale



WEATHERPROOF BALLAST BOX

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



TYPE VI FOOTING

Scale: 1" = 1'-0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)-7	1973	04	274

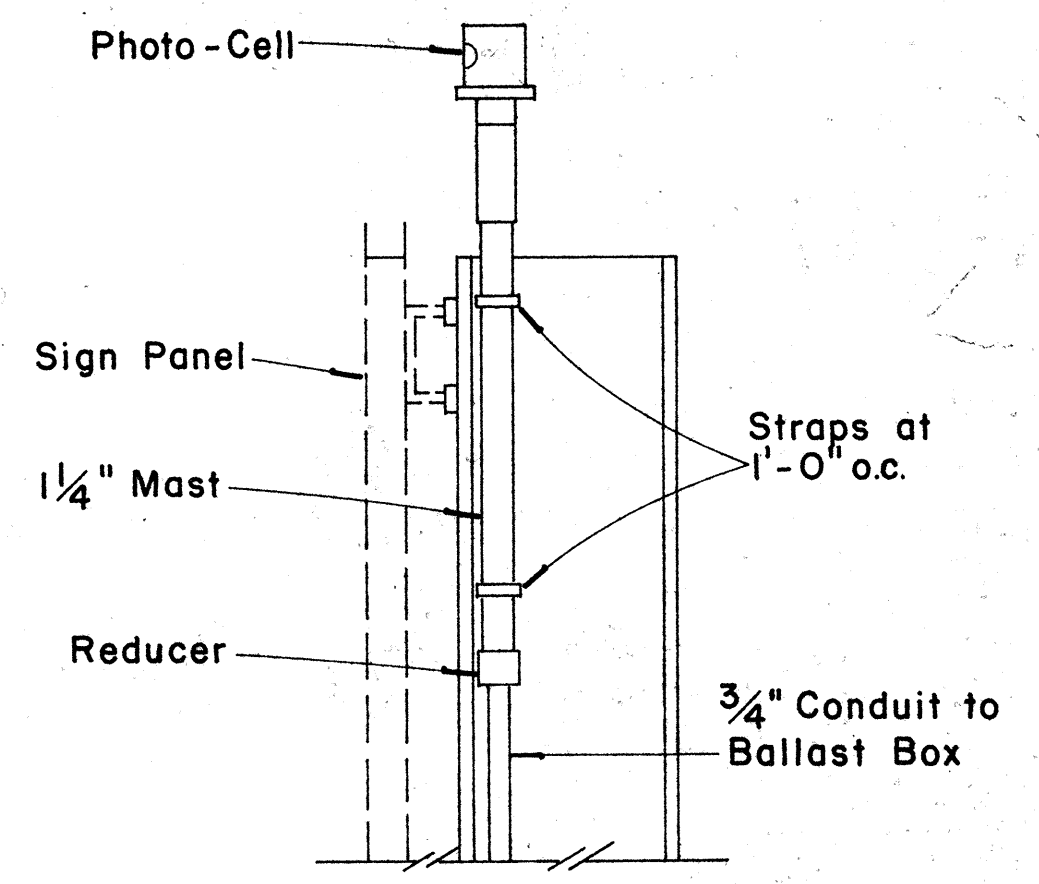


PHOTO-CELL DETAIL

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

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

APPROVED:  
*John J. [Signature]* 12-29-69  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

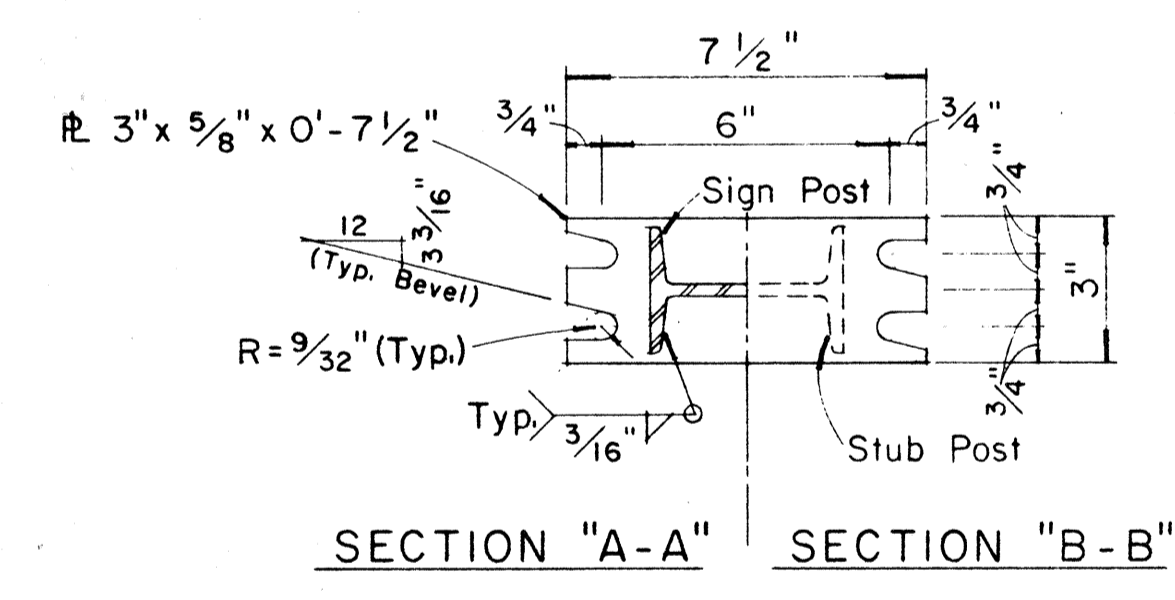
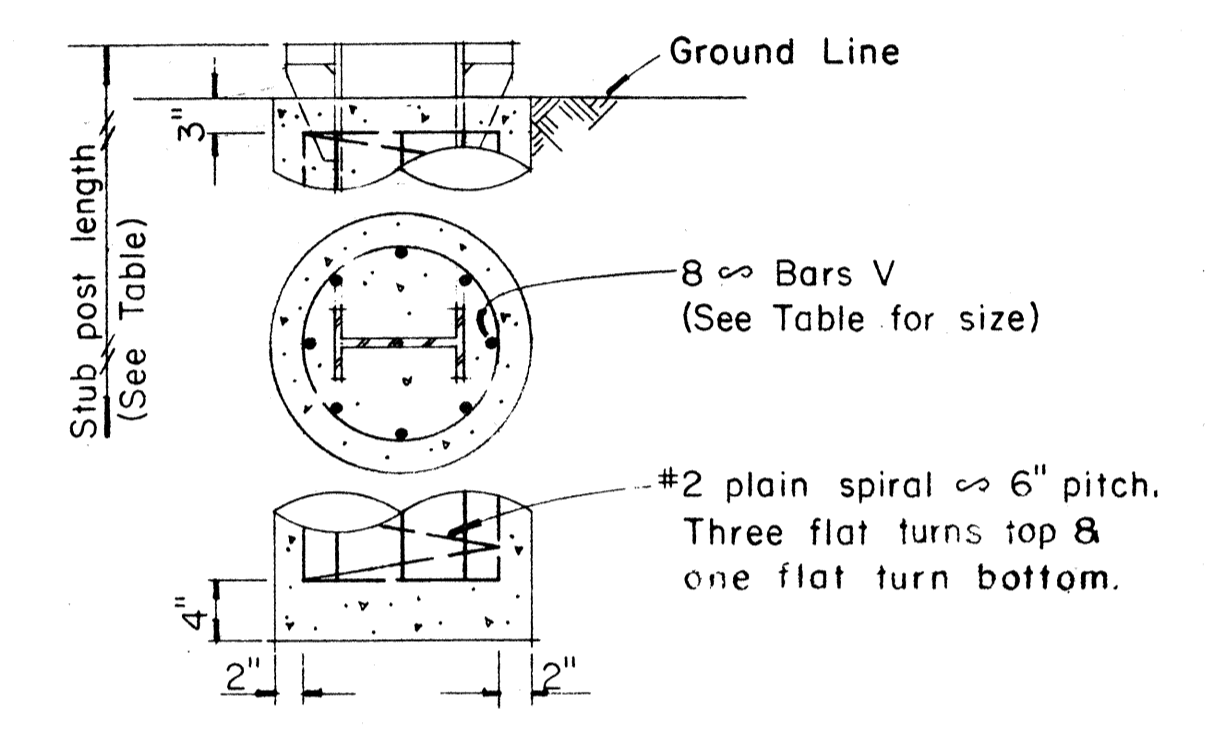
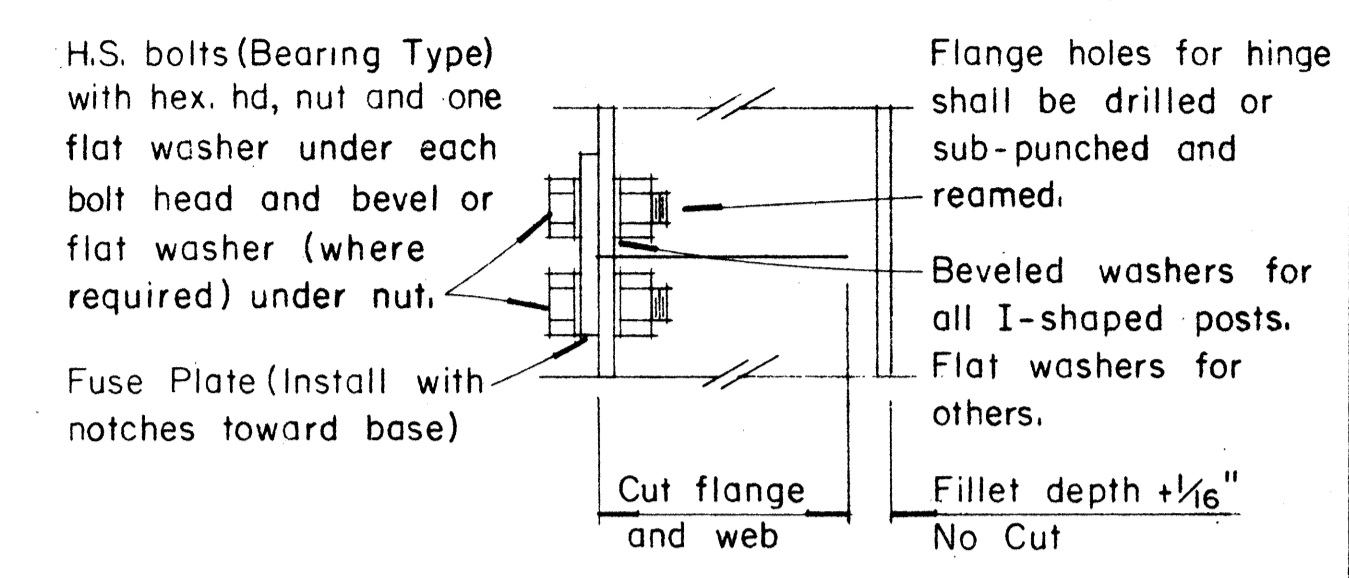
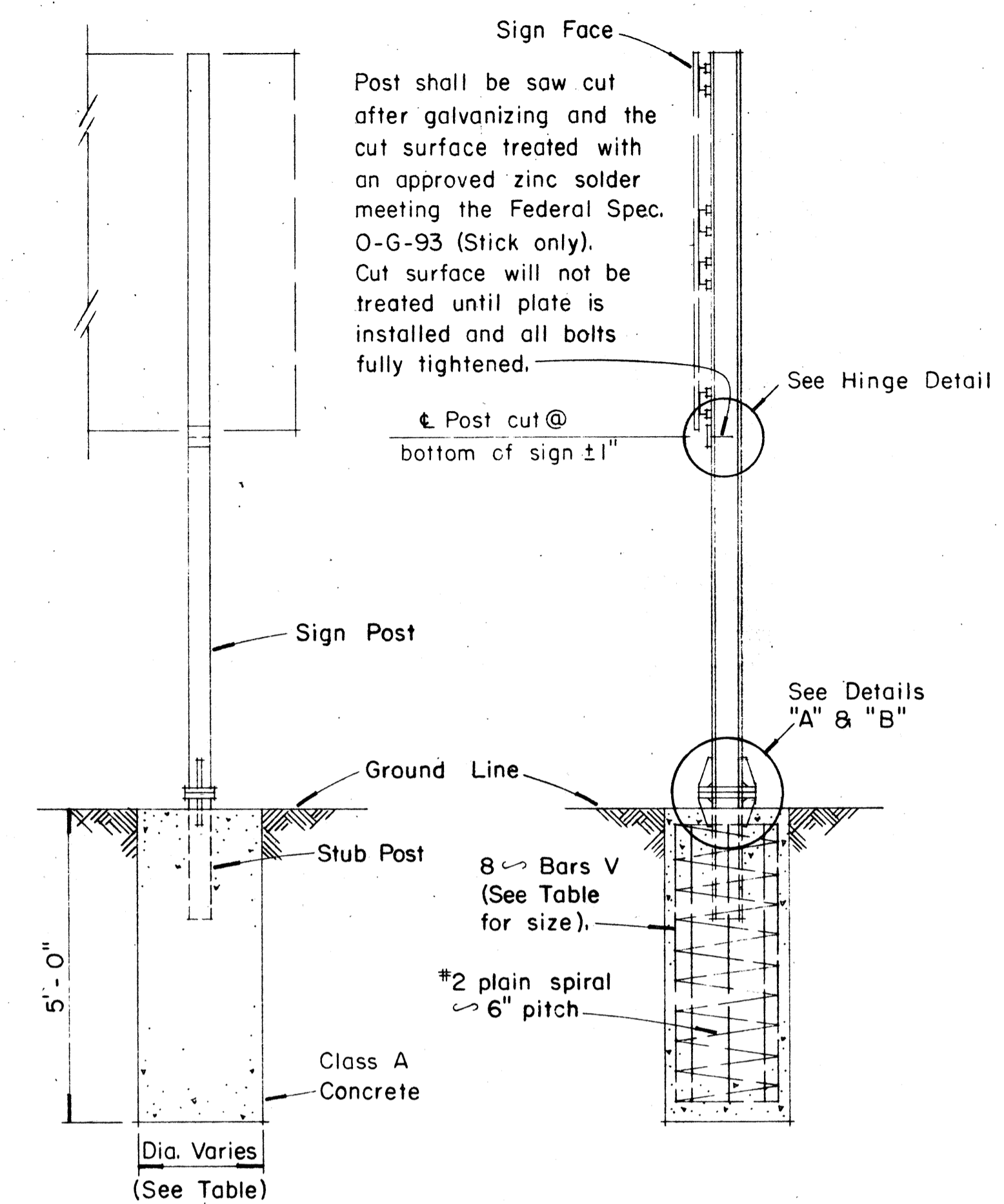
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

STANDARD DETAILS  
 DESTINATION & GROUND MOUNTED  
 EXPRESSWAY SIGNS

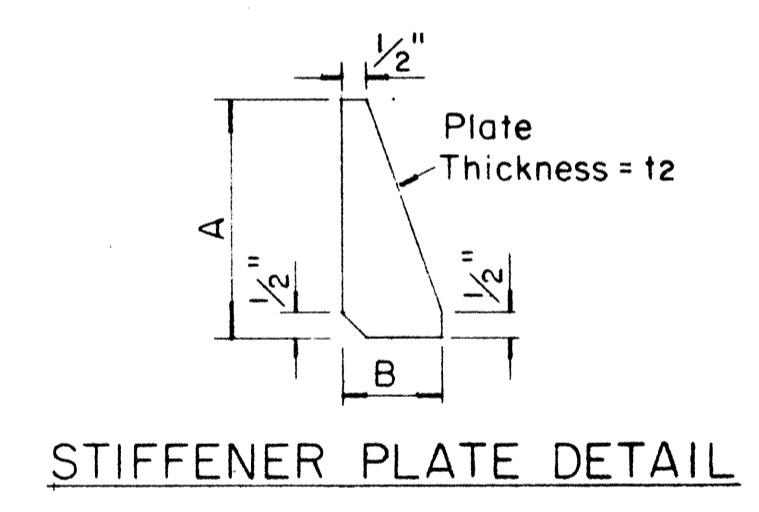
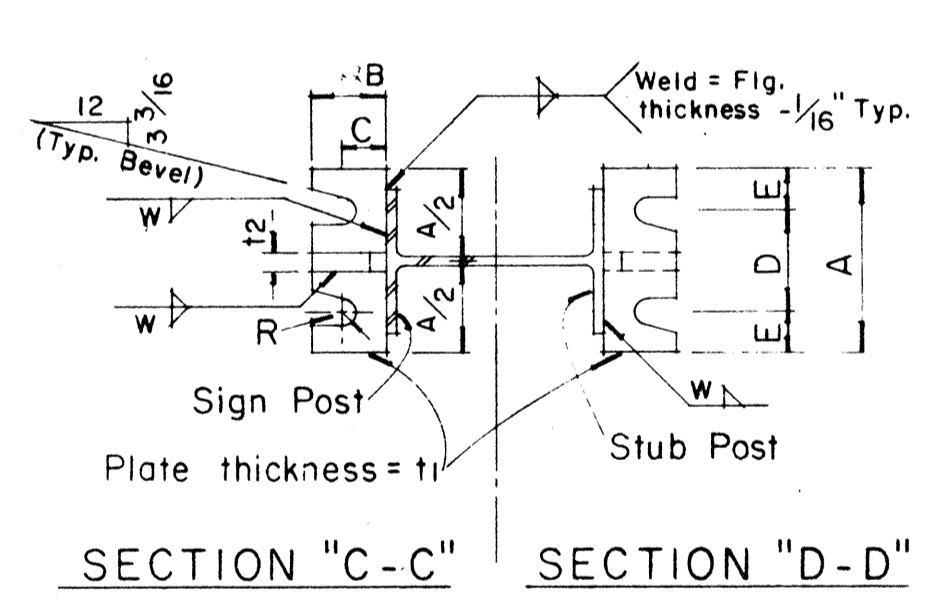
Scale: As Shown DATE: 4-25-73  
 SHEET No. 22 OF 39 SHEETS DT 203

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	T-142-1(11)-7	1973	08	274

BASE CONNECTION DATA TABLE											FUSE PLATE DATA TABLE										FOUNDATION DATA				
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse lb	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5											3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2"	1.09#	2'-0"	3"	2'-0"	#5
6 B 12	5/8" ϕ x 2 3/4" Torque = 450#	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1 1/16"	3/8"	5/8"	1.60#	2'-0"	3"	2'-0"	#5
6 B 15.5											4 1/2"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	1 3/16"	1/2"	3/4"	3.75#	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 3/16"	1/2"	3/4"	3.27#	2'-6"	3"	2'-0"	#7
8 WF 20											4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	1 5/16"	9/16"	7/8"	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 WF 21	3/4" ϕ x 3 1/2" Torque = 750#	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	1 3/32"	5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	1 5/16"	9/16"	7/8"	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 WF 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	1 5/16"	9/16"	7/8"	4.79#	3'-0"	2 1/2"	2'-0"	#10
12 WF 27											5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	1 5/16"	9/16"	7/8"	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200#	SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7		SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5



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



GENERAL NOTES

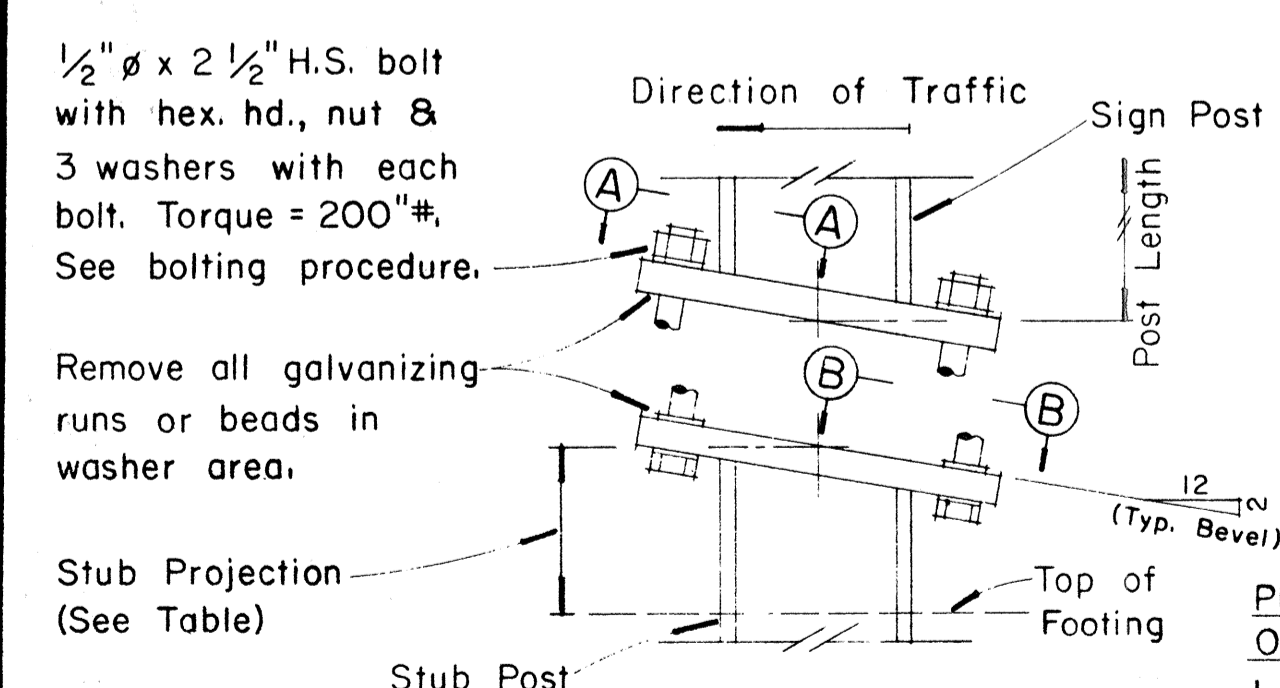
- Design conforms with AASHTO Specifications for the design and Construction of Structural Supports for Highway Signs.
- Materials and Fabrication shall conform to the requirements of the Standard Specifications and Special Provisions.
- All holes shall be drilled. All plate cuts shall preferably be 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.

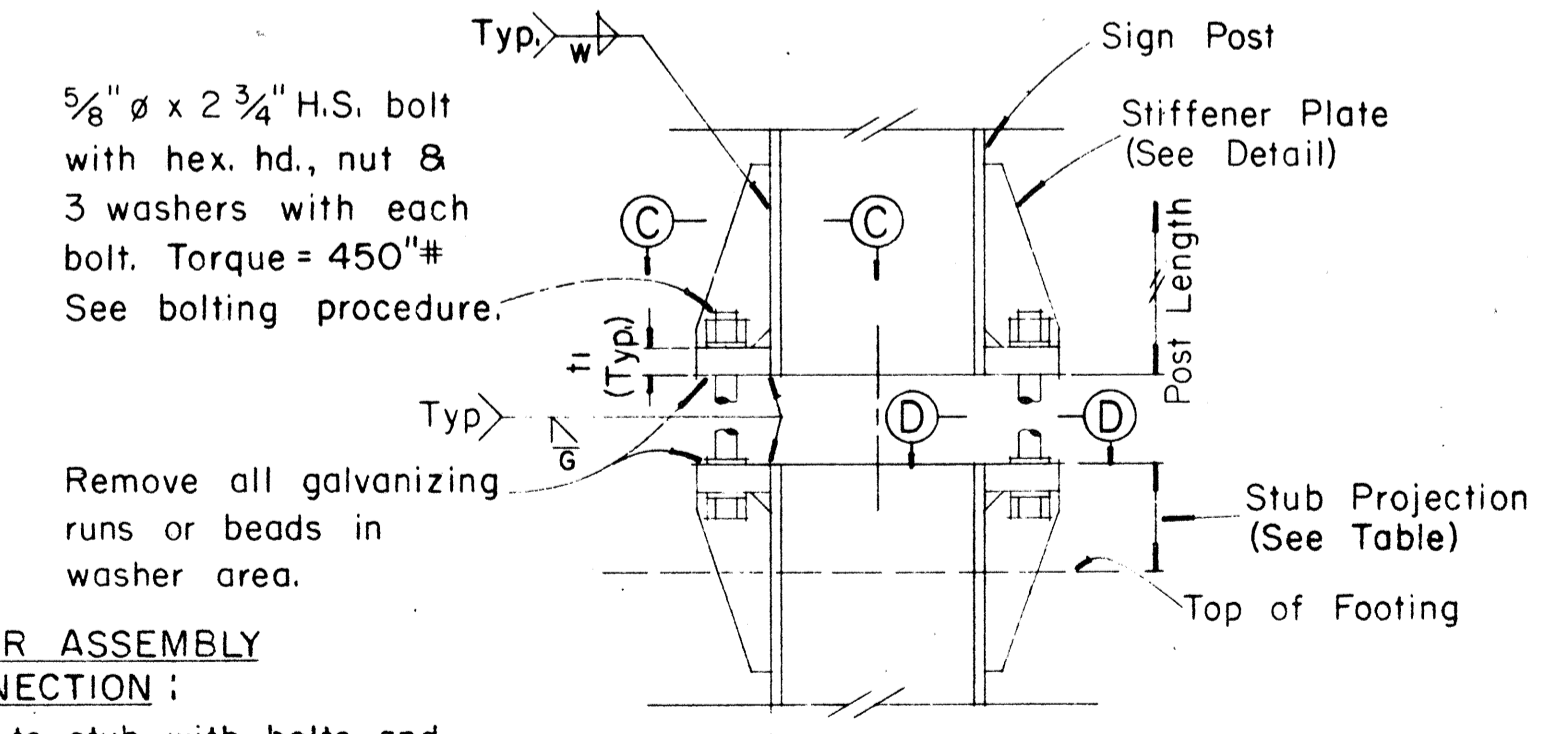
APPROVAL RECOMMENDED:  
*Eiichi Tanaka* 12/23/69  
TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE



DETAIL "A"  
SIGN POST & STUB POST  
(For 417.7 and 315.7 Shapes)

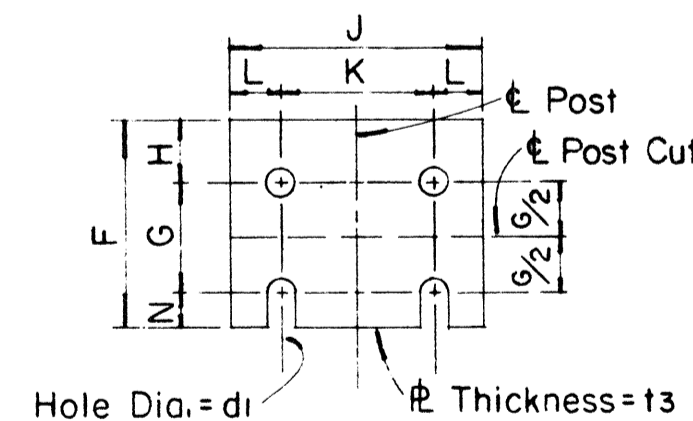


DETAIL "B"  
SIGN POST & STUB POST  
(For WF and B Shapes)

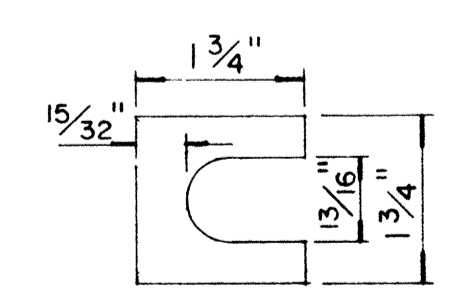
PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:

- Assemble post to stub with bolts and with one flat washer on each bolt between plates.
- Shim as required to plumb post.
- Tighten all bolts the max. possible with 12" to 15" wrench to bed washers & shims and to clean bolt threads then loosen each bolt in turn & retighten bolts in systematic order to prescribed torque. (See Table)
- Burr threads at junction with nut using a center punch to prevent nut loosening.

FUSE PLATE DETAIL



SHIM DETAIL



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

DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
QUANTITIES BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

Not to Scale DATE: 4-25-73  
SHEET No. 23 OF 39 SHEETS DT 204

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)-7	1973	06	274

(OVERHEAD SIGNS)  
SUPPORT SPACING TABLE

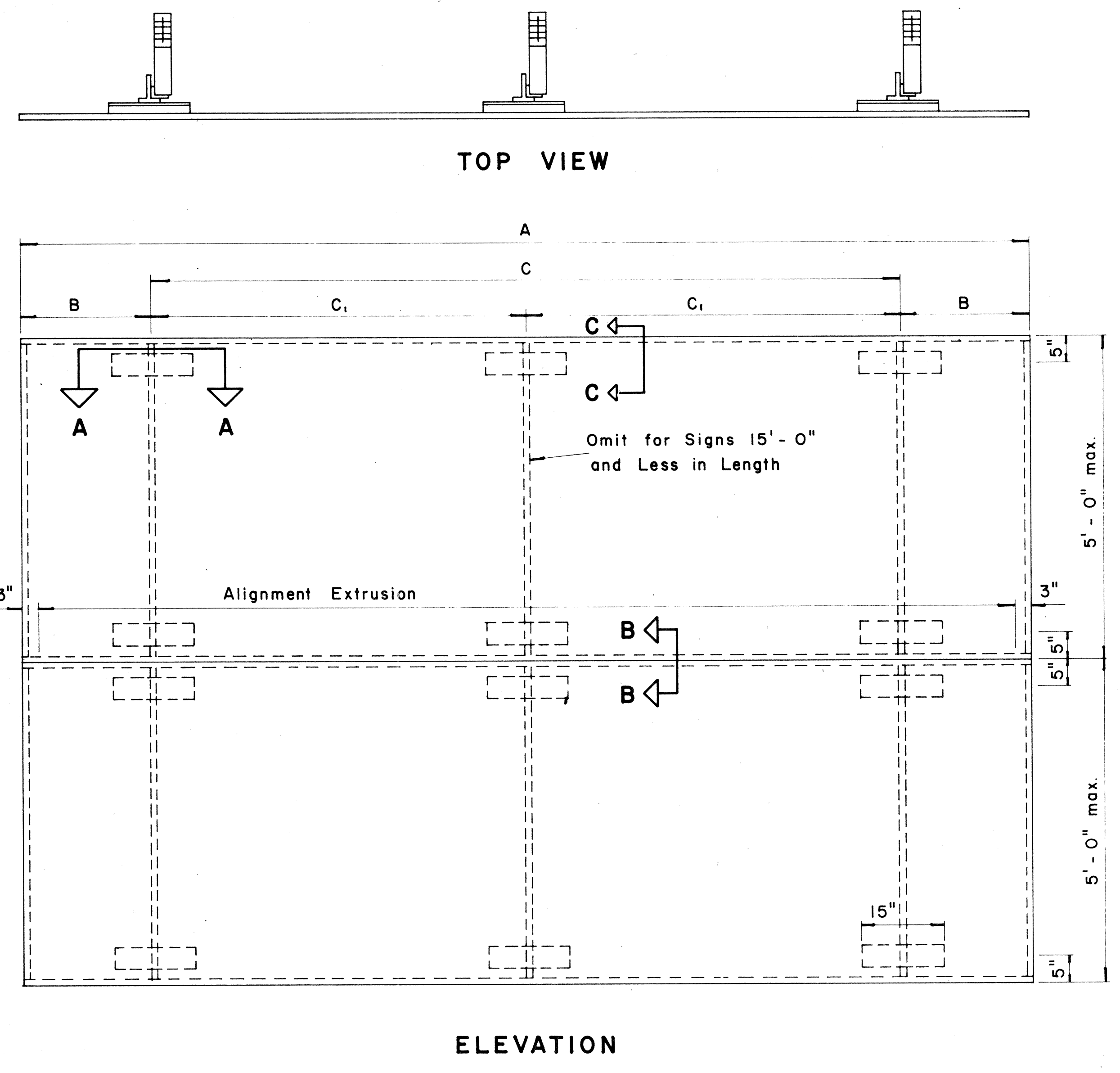
PANEL THICK.	LENGTH OF SIGN A	NO. OF SUPPORTS	OVERHANG B	SUPPORT SPACING C or C <sub>1</sub>
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"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

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

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

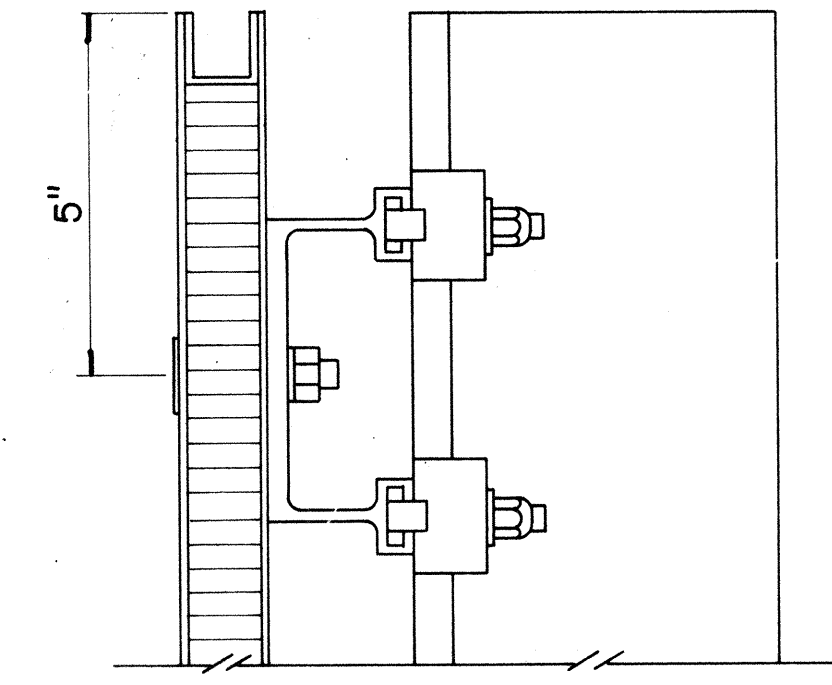
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STANDARD DETAILS**  
LAMINATED ALUMINUM  
SIGN PANELS  
(OVERHEAD)  
Scale: As Shown DATE: 4-25-73  
SHEET No. 24 OF 39 SHEETS DT 205



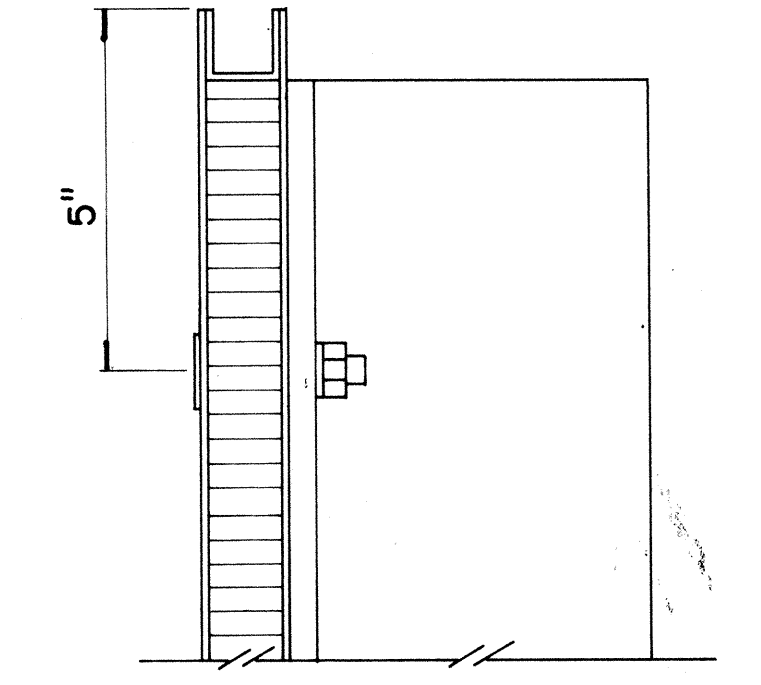
TYPICAL SIGN ASSEMBLY

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



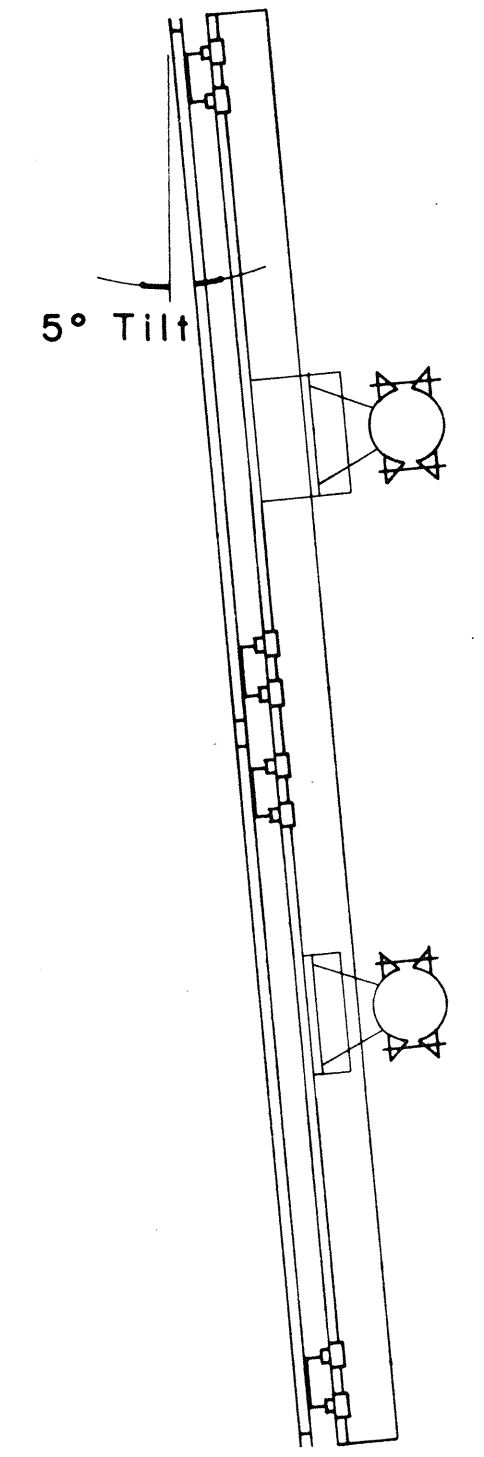
SECTION "C-C"

Scale: 3/8" = 1"

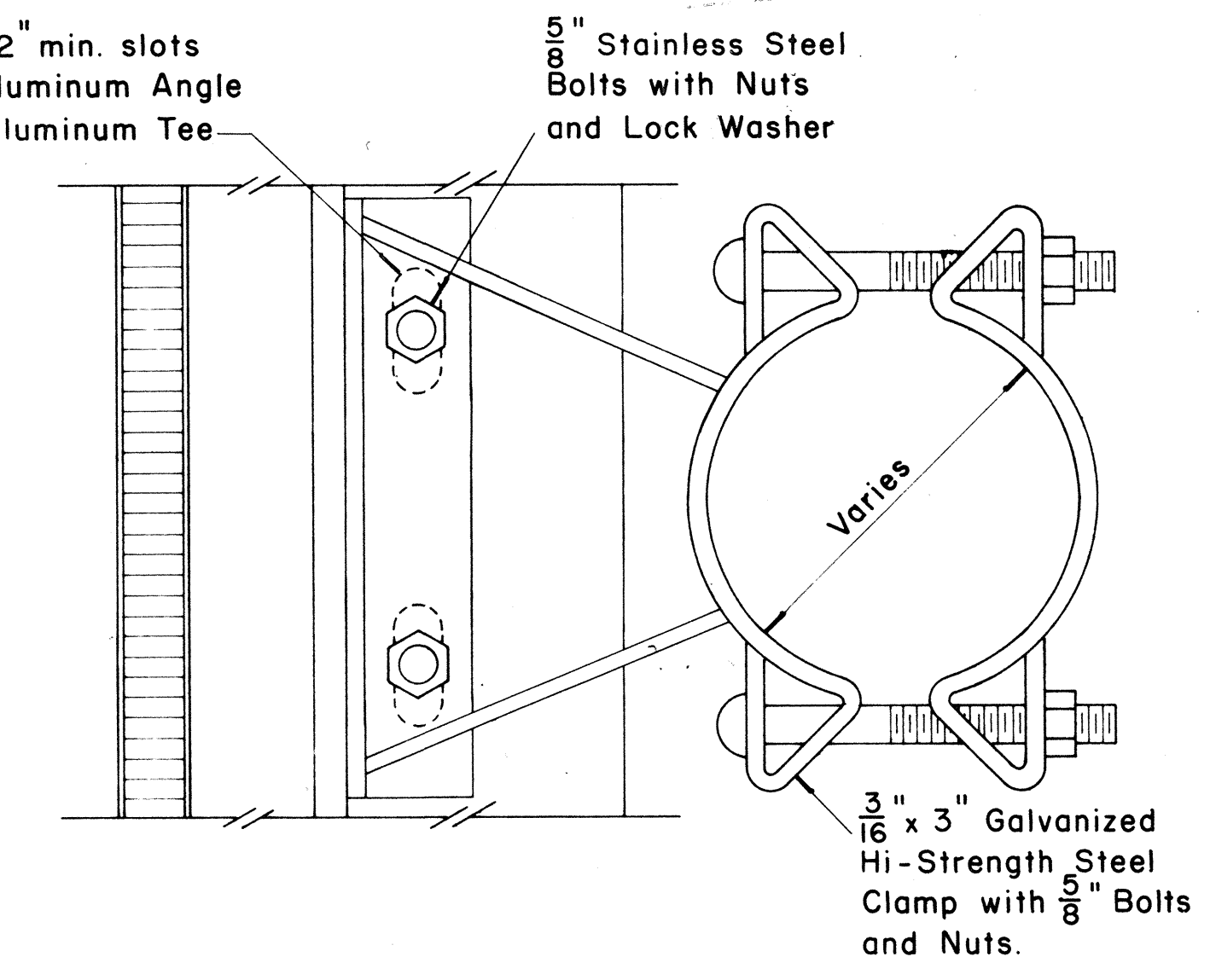


SECTION "C-C" (Alternate)

Scale: 3/8" = 1"



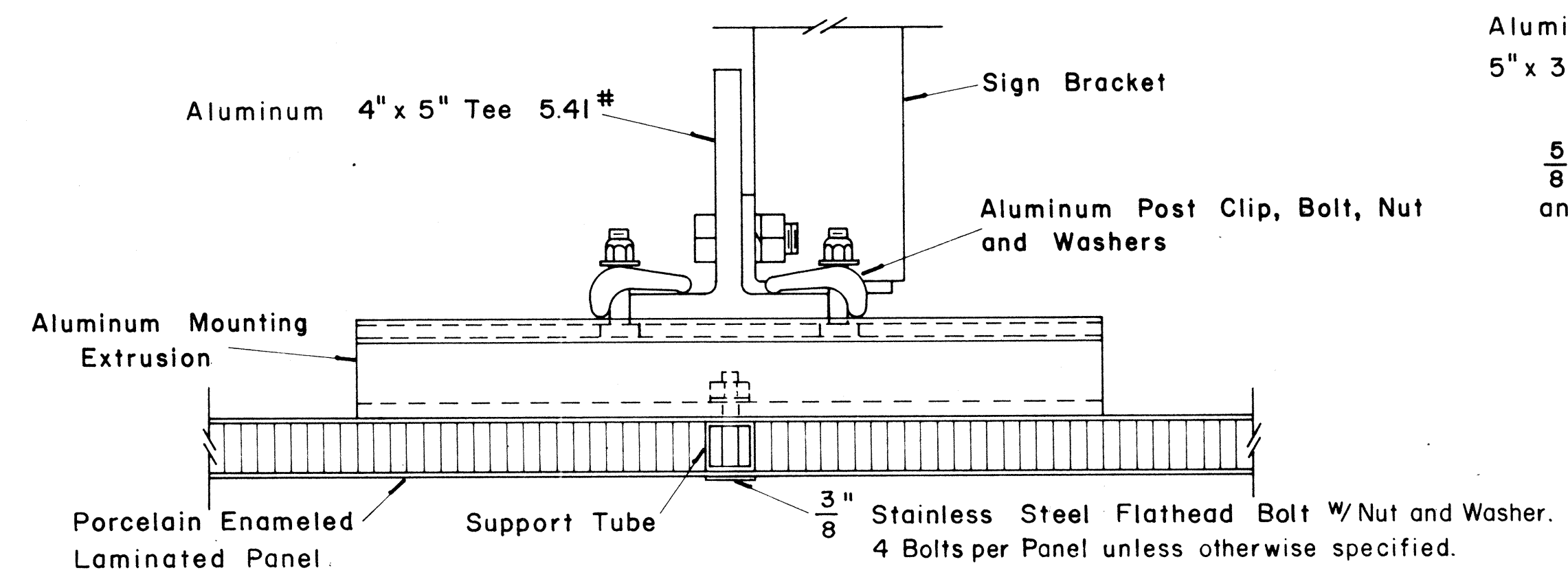
SIDE VIEW



SIGN BRACKET ASSEMBLY

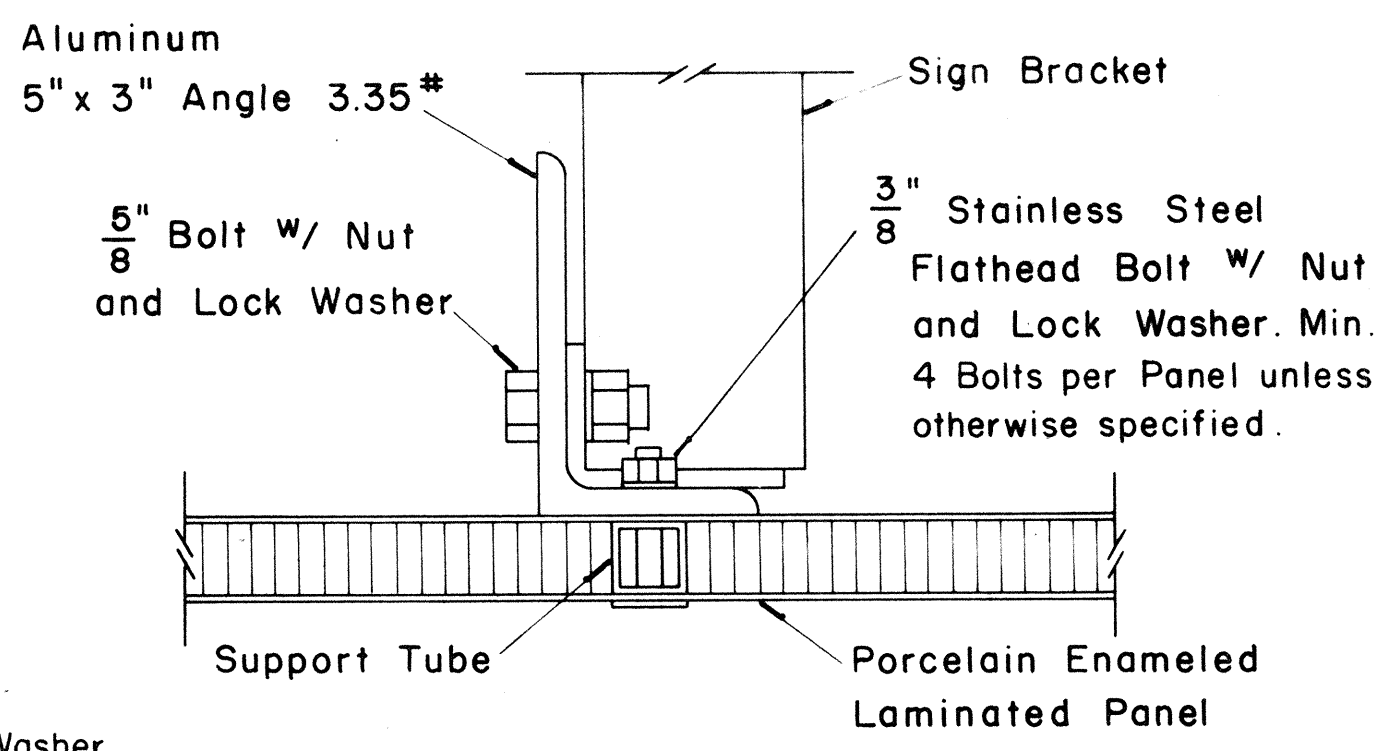
Scale: 3/8" = 1"

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



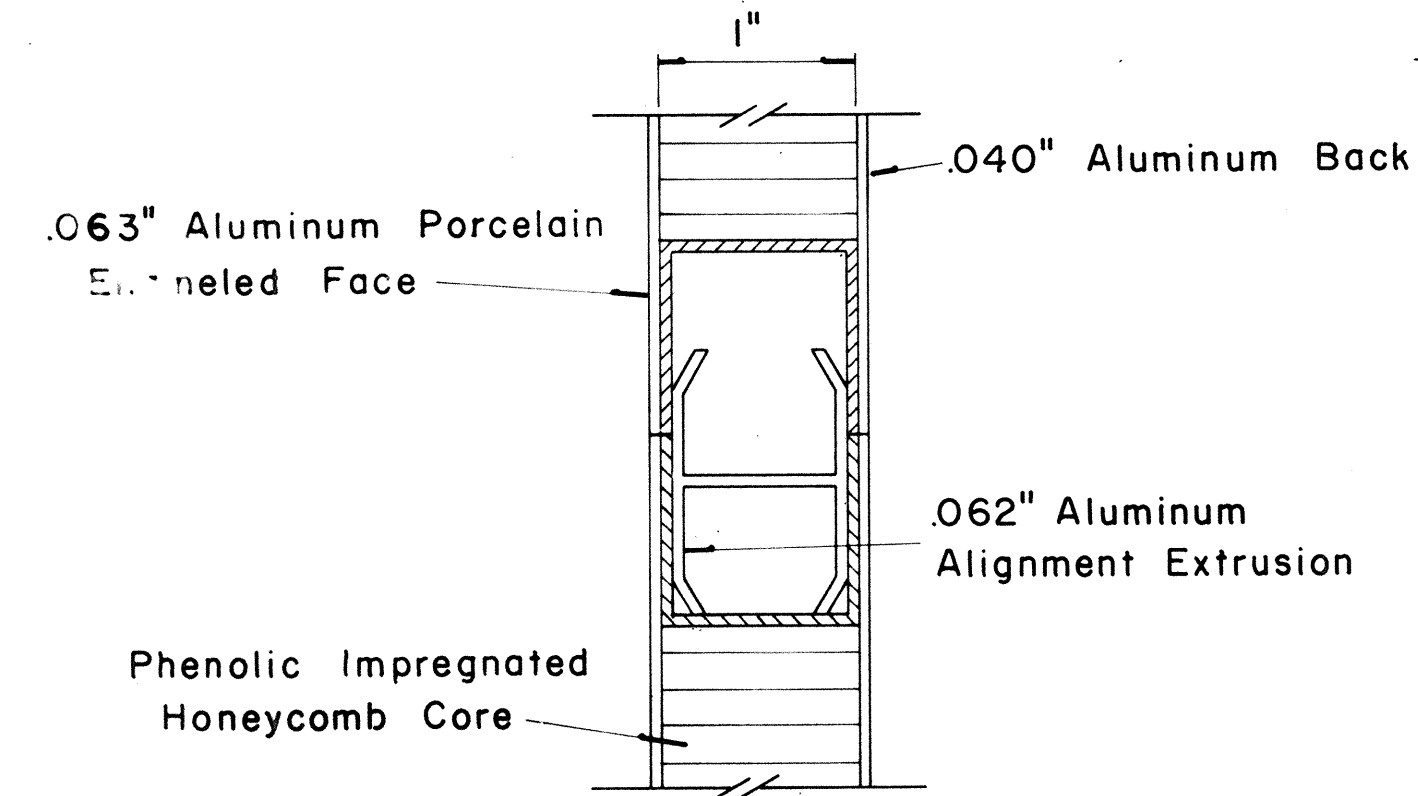
SECTION "A-A"

Scale: 3/8" = 1"



SECTION "A-A" (Alternate)

Scale: 3/8" = 1"



CLOSURE DETAIL SECTION "B-B"

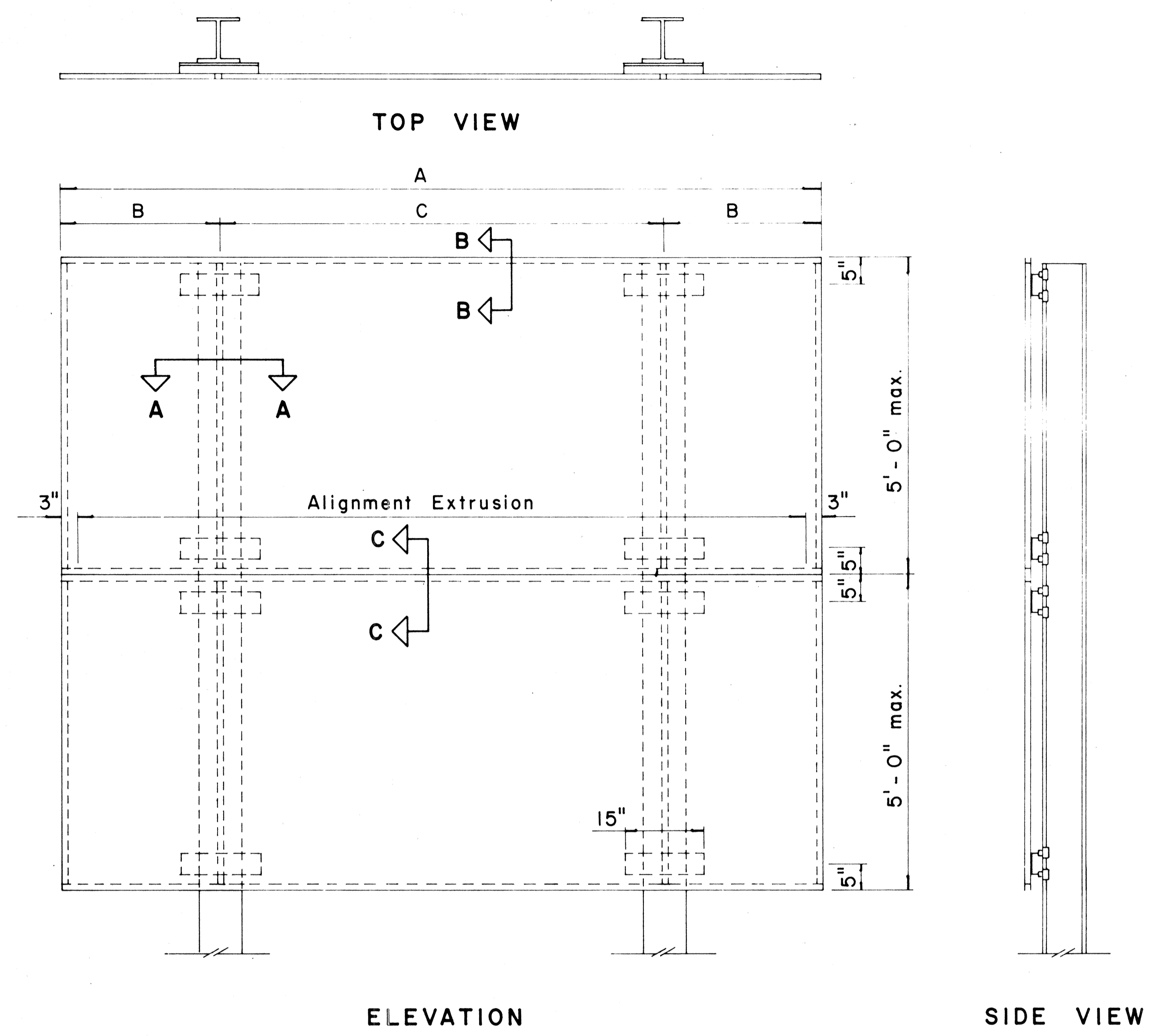
FULL SCALE

DATE: \_\_\_\_\_  
SURVEY PLOTTED BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
QUANTITIES BY: \_\_\_\_\_  
No. \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-1(1)7	1973	07	274

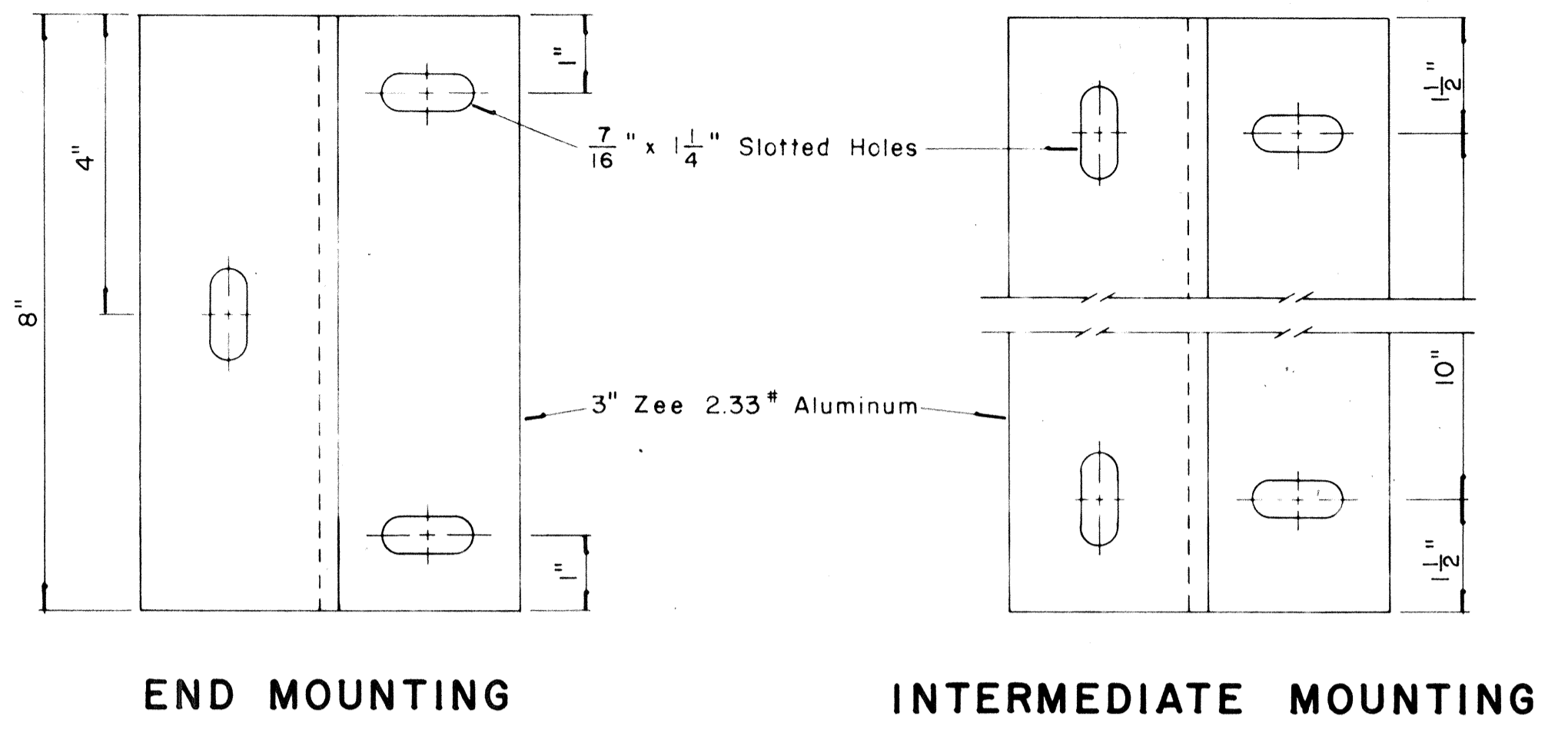
(GROUND MOUNTED SIGNS)  
SUPPORT SPACING TABLE

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"	



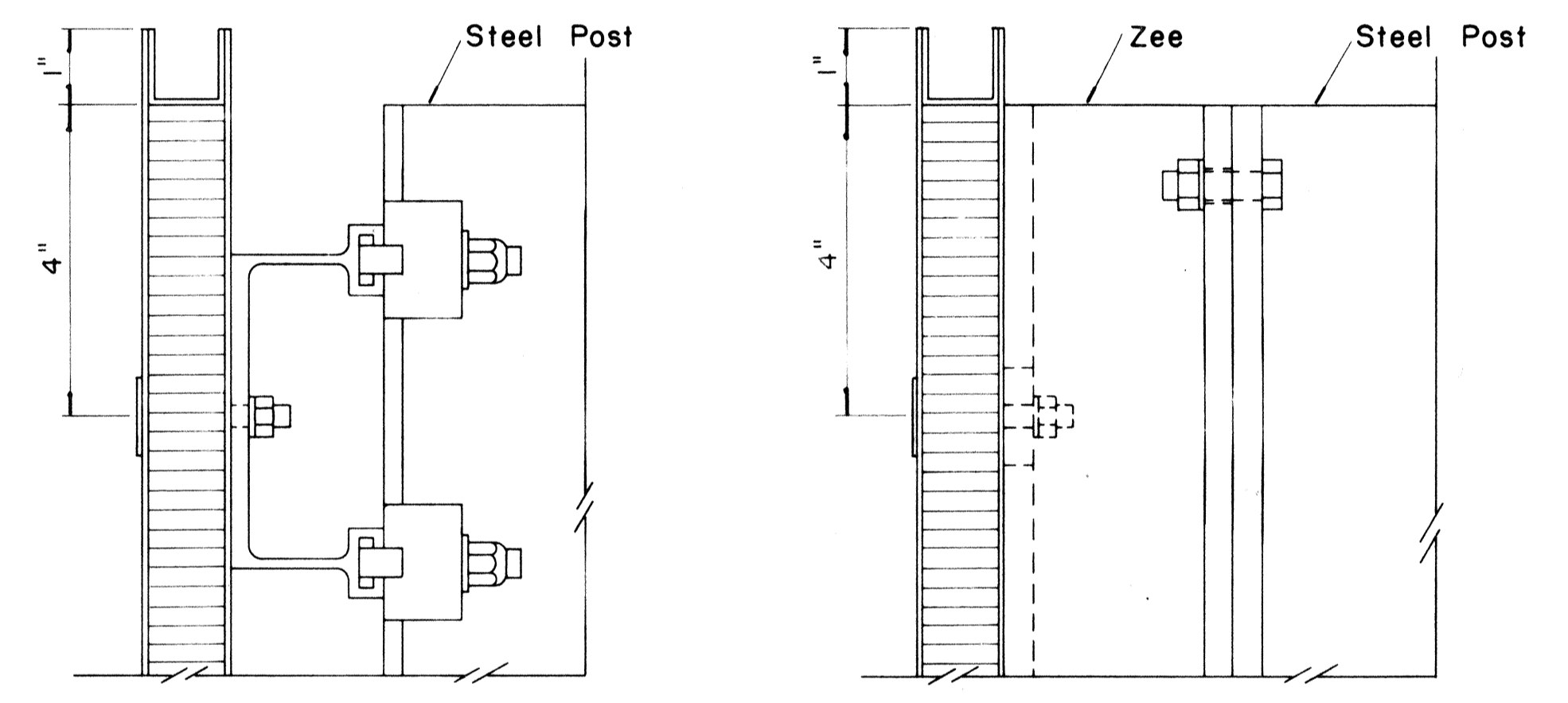
TYPICAL SIGN ASSEMBLY

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



ZEE MOUNTING DETAILS

Scale: 1/2" = 1"

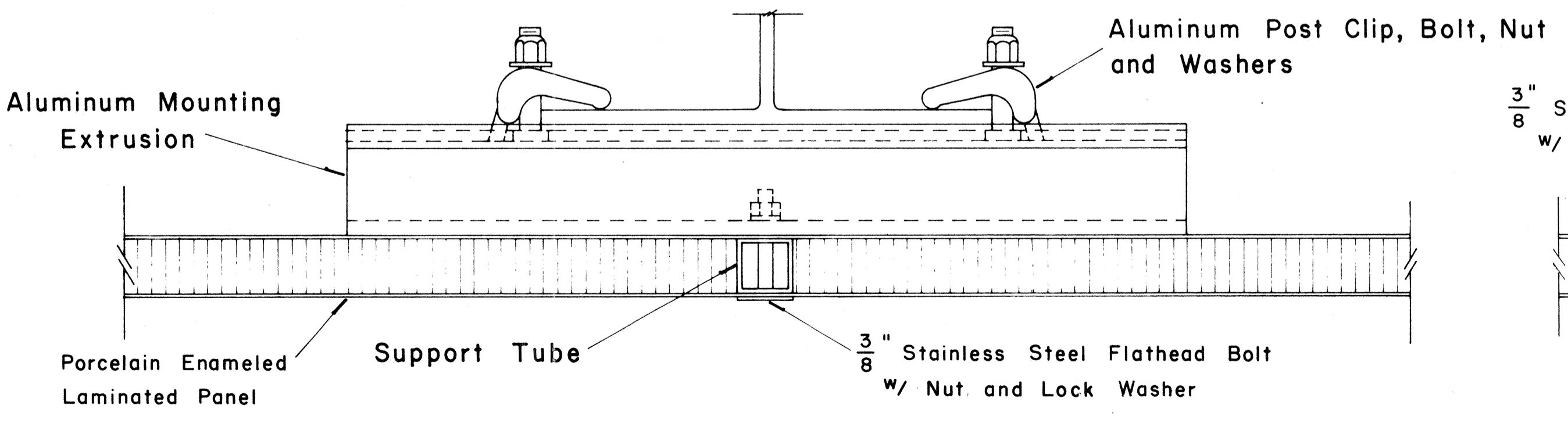


SECTION "B-B"

Scale: 1/2" = 1"

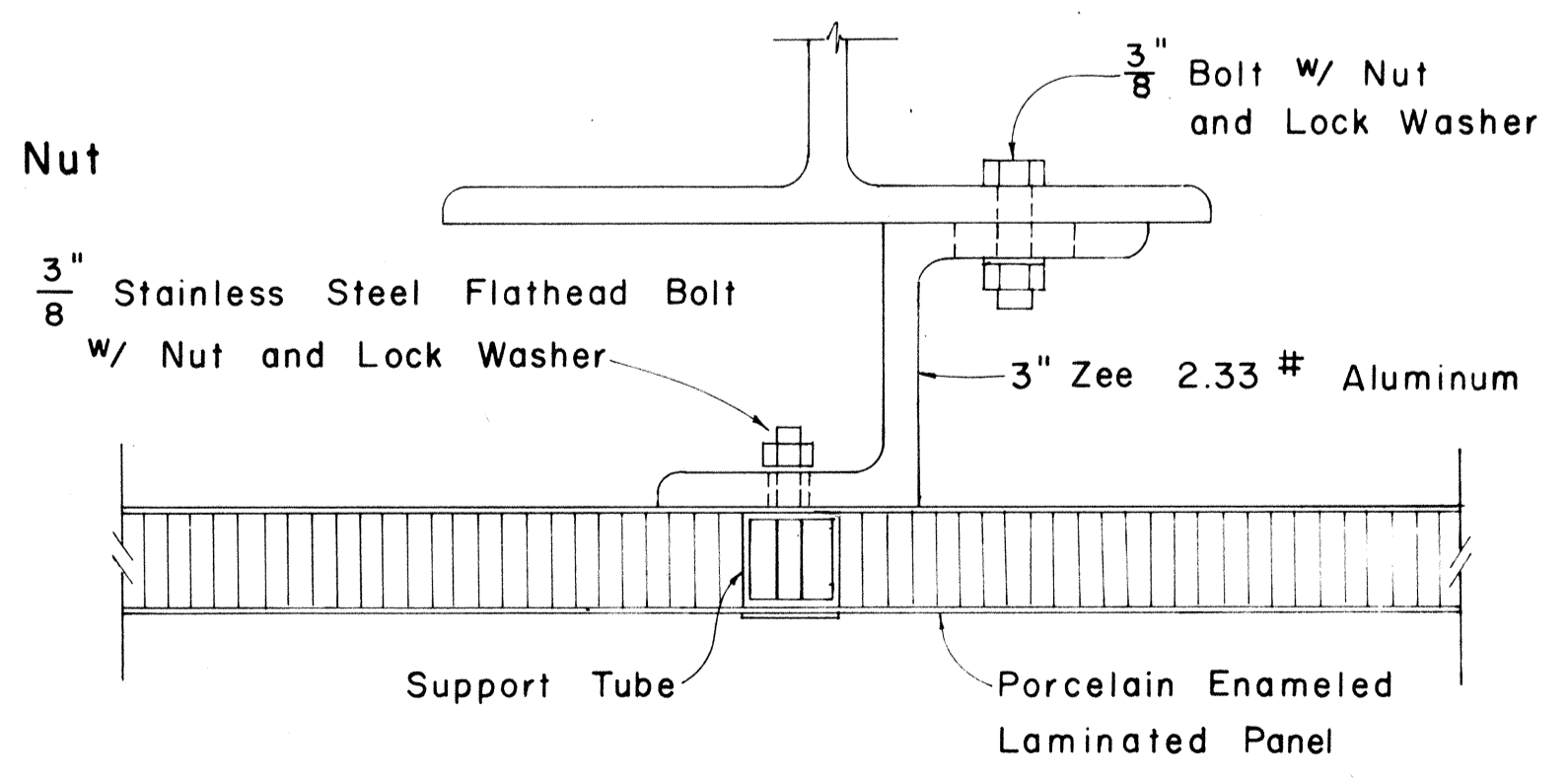
SECTION "B-B" (Alternate)

Scale: 1/2" = 1"



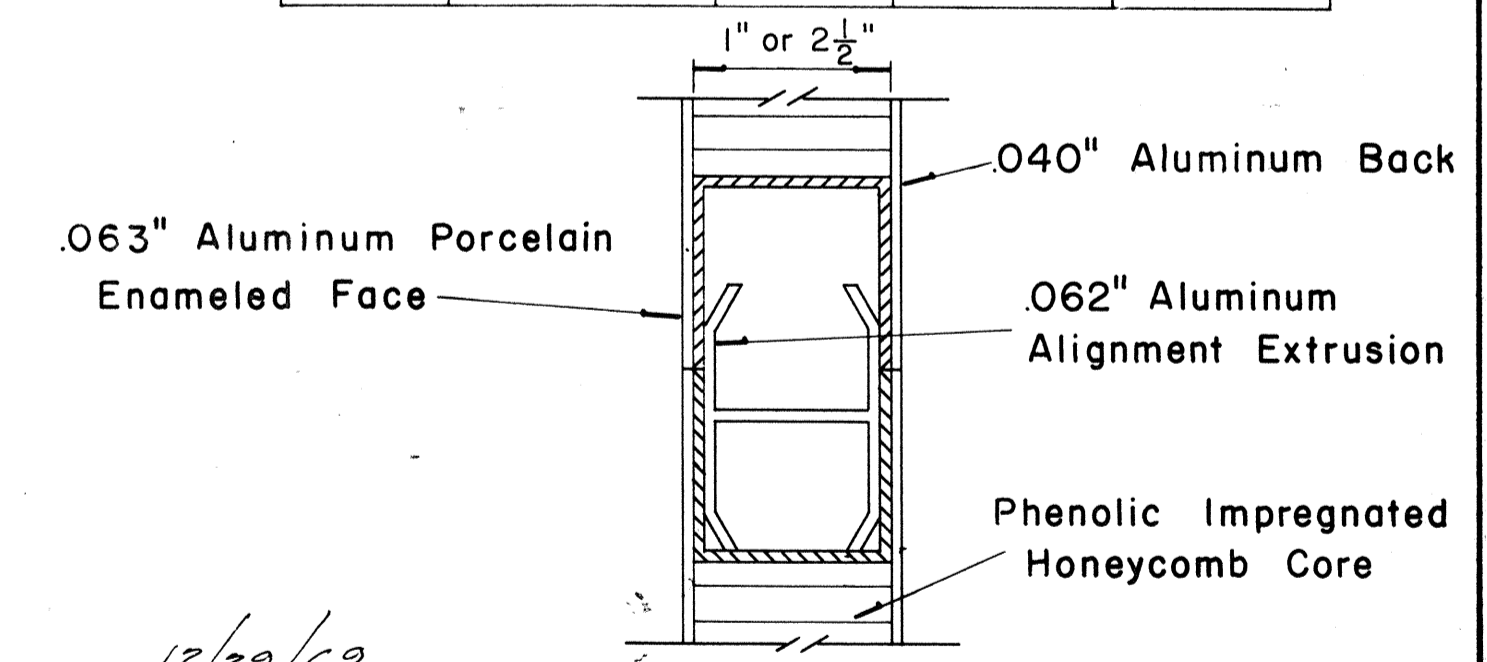
SECTION "A-A"

Scale: 1/2" = 1"



SECTION "A-A" (Alternate)

Scale: 1/2" = 1"



CLOSURE DETAIL SECTION "C-C"

FULL SCALE

APPROVAL RECOMMENDED:  
*Eiichi 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  
(GROUND MOUNTED)

Scale: As Shown DATE: 4-25-73

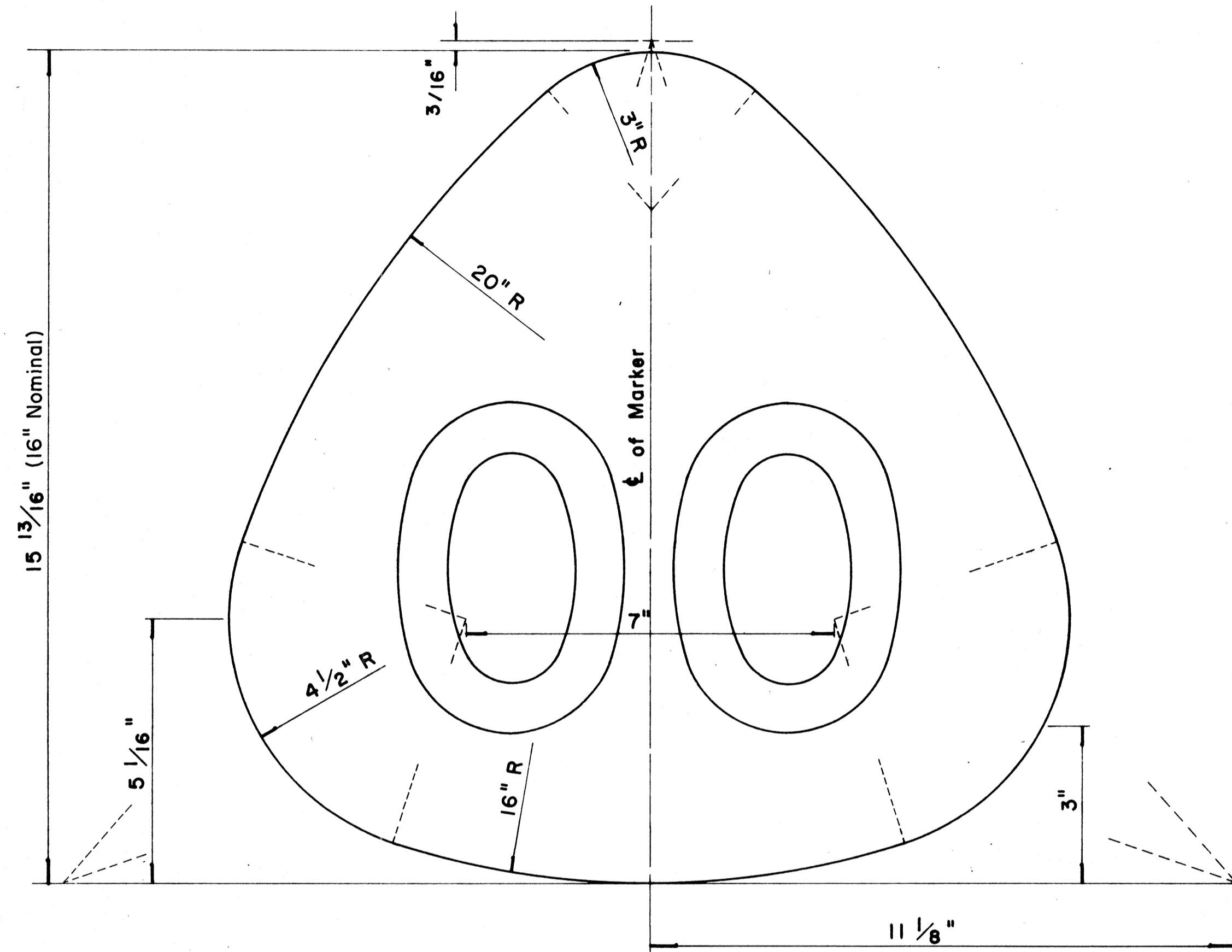
SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 ORIGINAL PLAN \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 No. \_\_\_\_\_





FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-100-7	1973	00	274

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



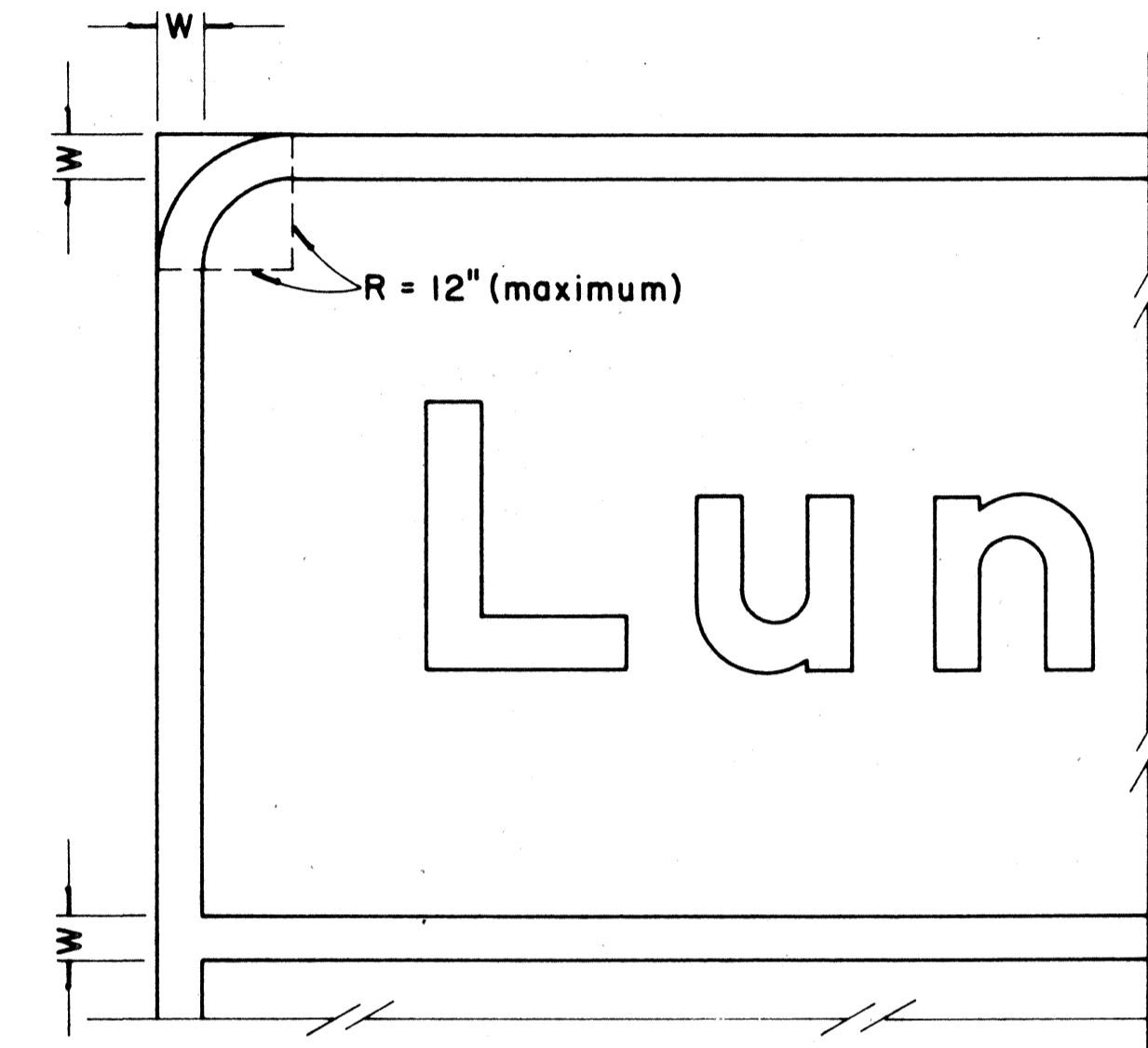
**STATE ROUTE MARKER  
FOR GUIDE SIGNS**

Scale: Half Size

**NOTE:**

- State Route Markers on Guide signs shall have black numerals on a white reflectorized background mounted on a flat aluminum cut-out.
- Numerals shall conform to the FHWA publication "Standard Alphabets for Highway Signs," 1966.
- Cut-outs shall be fastened on sign panel with aluminum blind rivets. See Standard Specifications.
- \* The 16" State Route Marker shall be used only with the Construction Identification sign.

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:**

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

APPROVAL RECOMMENDED:

*Eishi Tanaka* 4/11/72  
TRAFFIC ENGINEER DATE

APPROVED:

*Robert Z. Sakemi* 4/12/72  
ASSISTANT CHIEF, ENGINEERING DATE

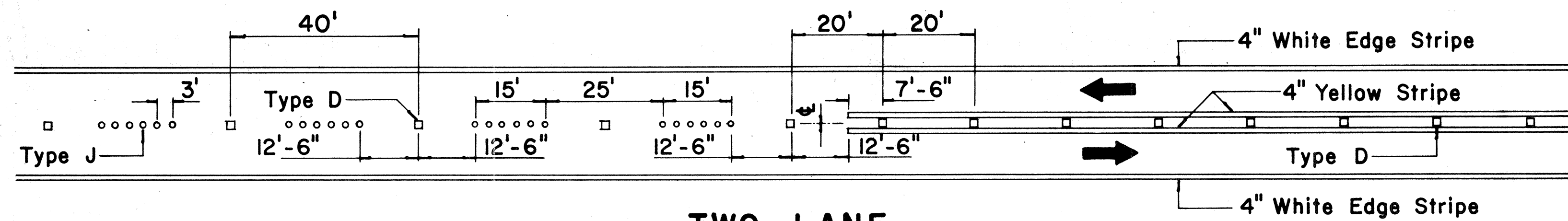
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 209 Approved 12-30-69	HT	4/12/72

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

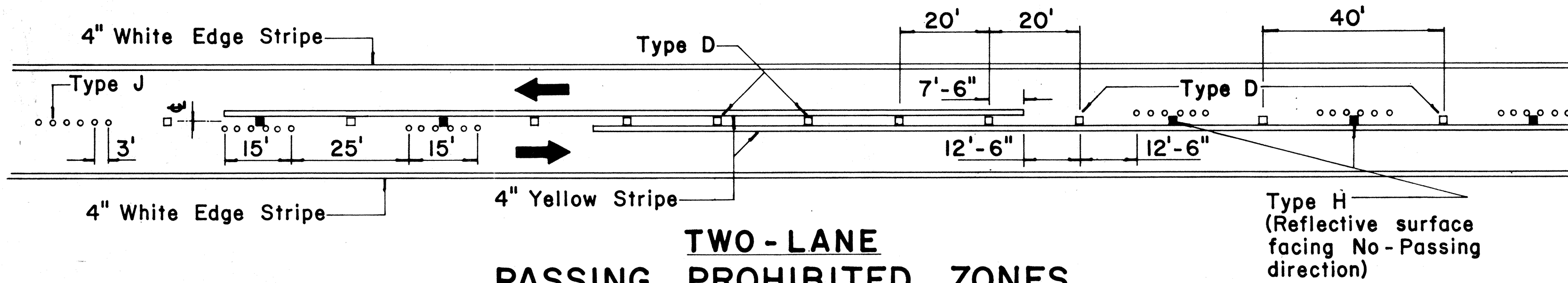
Scale: As Shown DATE: 4-25-73  
SHEET No. 27 OF 39 SHEETS DT 209

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

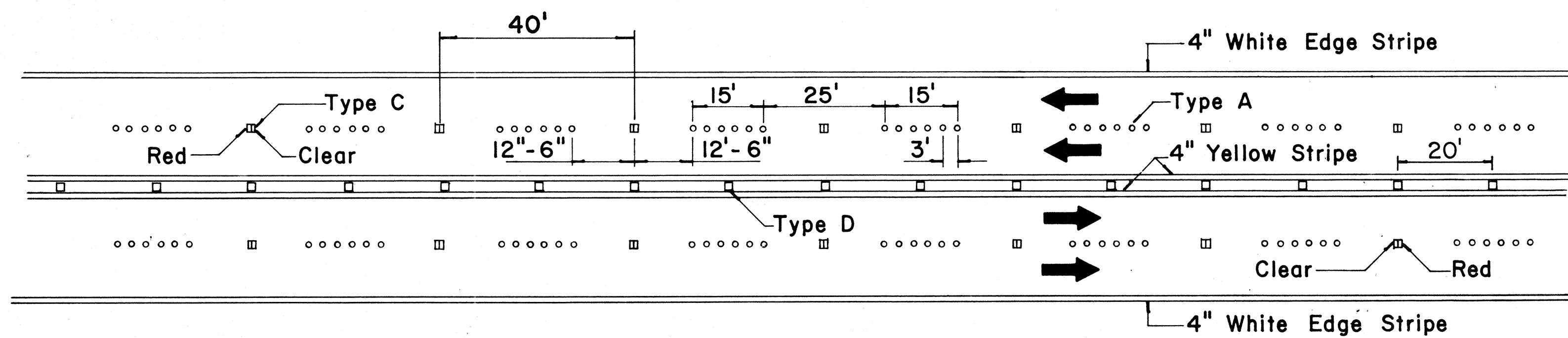
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-101	1973	100	214



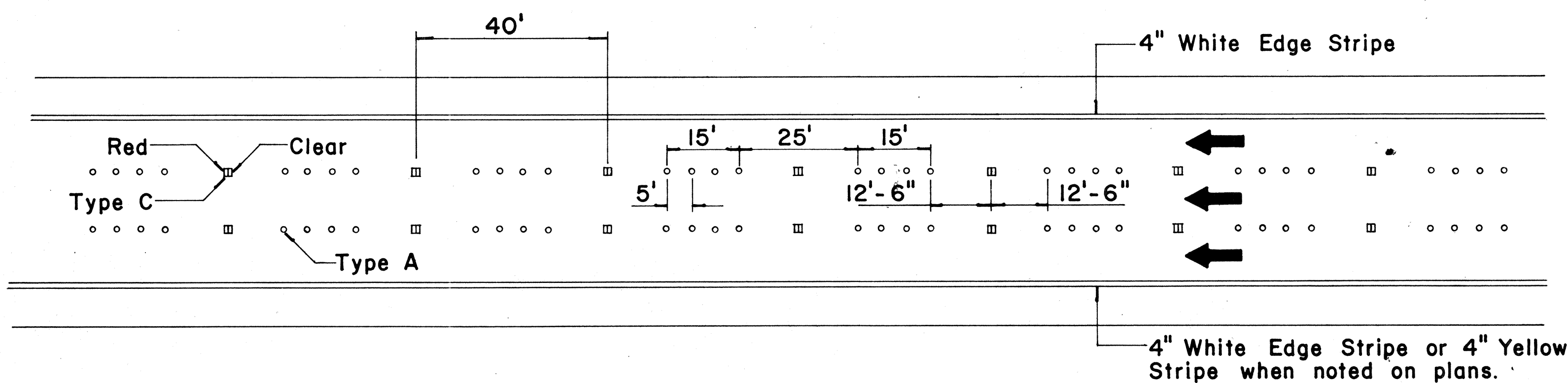
**TWO-LANE  
PASSING PERMITTED AND PASSING PROHIBITED**



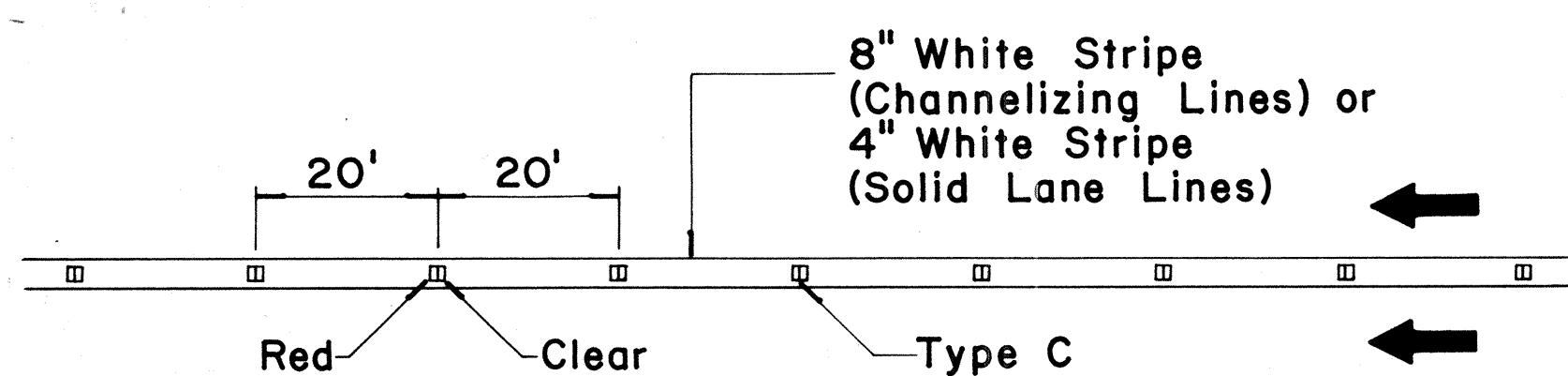
**TWO-LANE  
PASSING PROHIBITED ZONES**



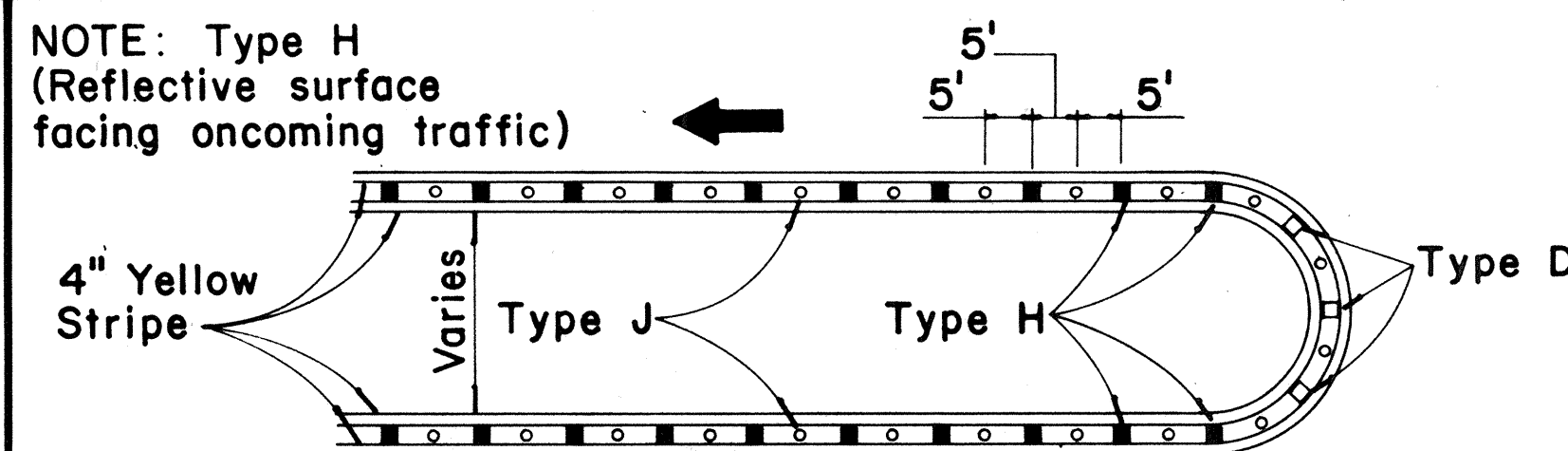
**MULTI-LANE  
LANE LINES AND CENTER LINE**



**FREEWAY LANE LINES**



**CHANNELIZING LINES  
OR SOLID LANE LINES**



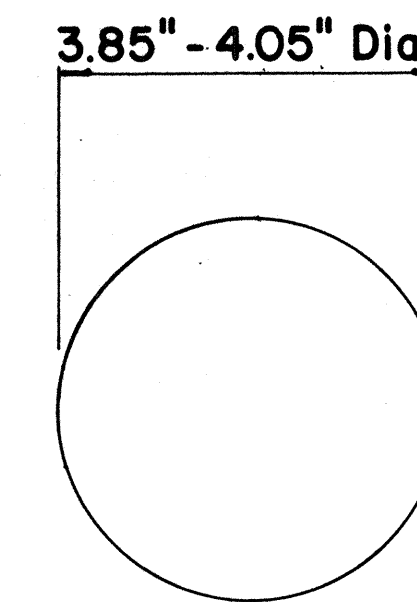
**MEDIAN NOSE DELINEATION**

TWO - LANE

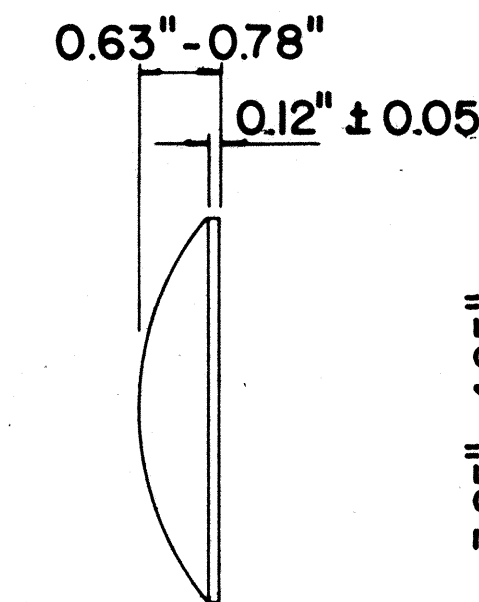
MULTI - LANE

FREEWAY

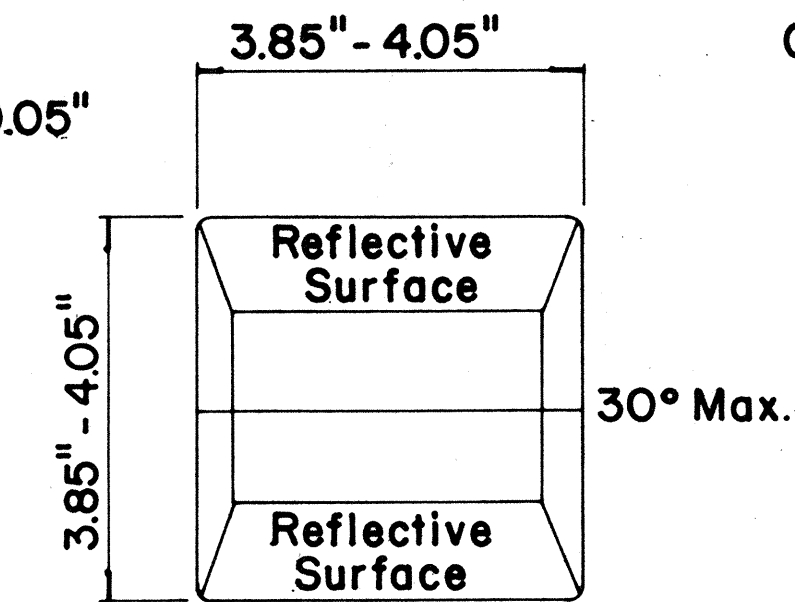
MISCELLANEOUS



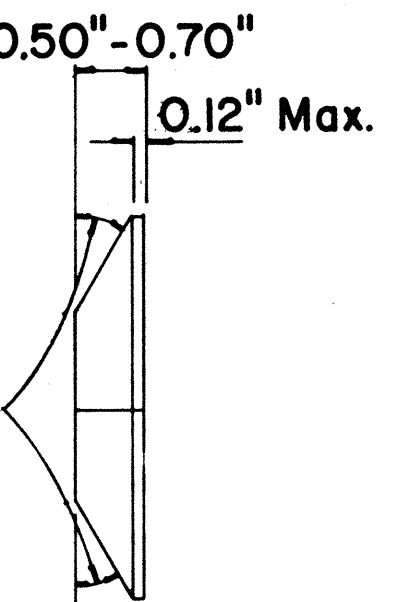
**TYPE A  
NON-REFLECTIVE WHITE MARKER**



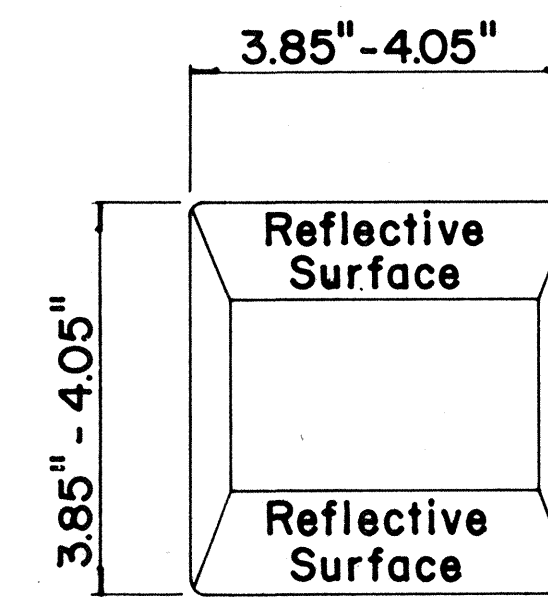
**TYPE J  
NON-REFLECTIVE YELLOW MARKER**



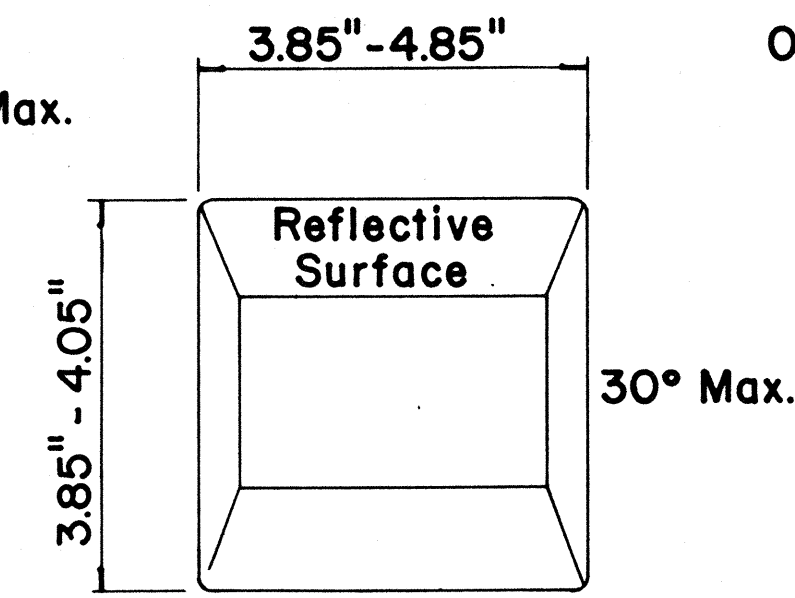
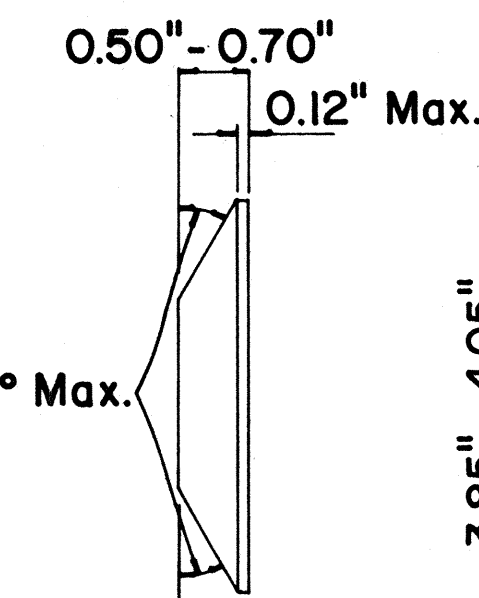
**TYPE C  
RED-CLEAR REFLECTIVE MARKER**



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



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



**GENERAL NOTES**

1. Painted stripes to be done by State forces unless otherwise specified.

APPROVAL RECOMMENDED:  
*Eisaku Tanaka* 11/18/71  
TRAFFIC ENGINEER DATE

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

No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.C.	10-21-72
2	Revised General Notes.	H.C.	10-21-72

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS  
RAISED PAVEMENT MARKERS**

Not to Scale October 1971

SHEET No. 28 OF 39 SHEETS DT 300

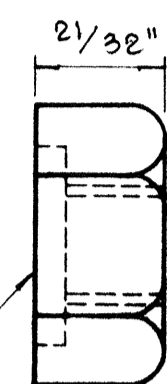
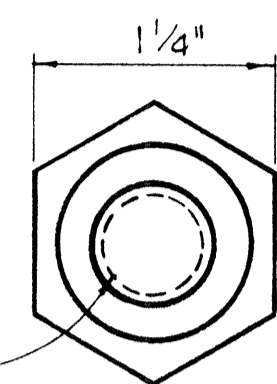
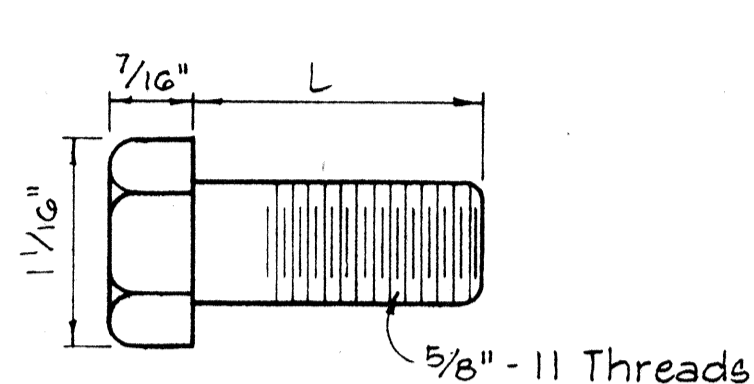
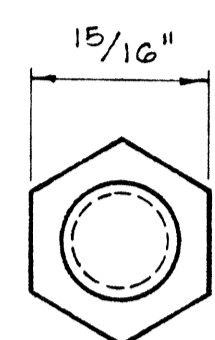
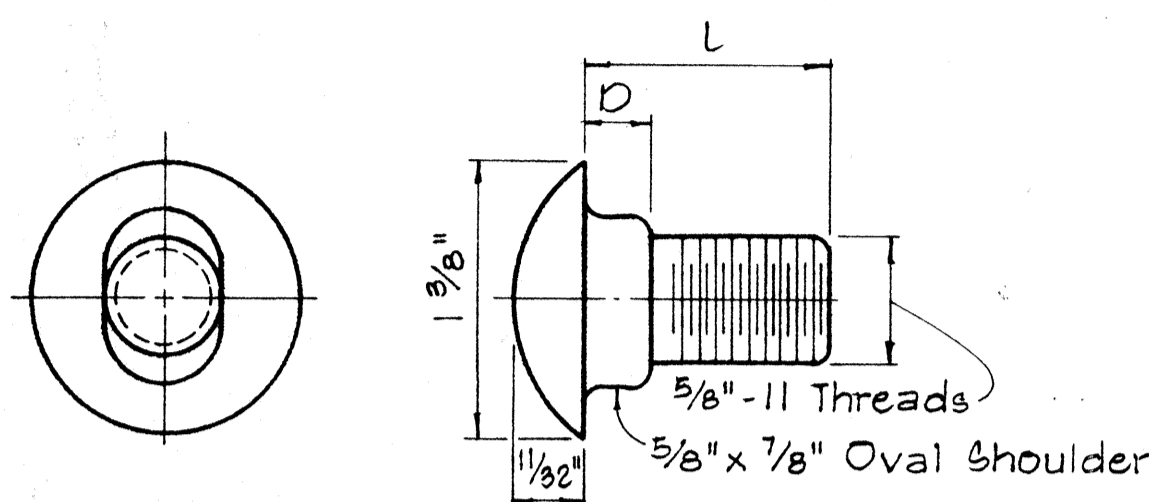
DATE	
SURVEY PLATTED BY	
DESIGNED BY	
FRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	



BOLT DIMENSIONS		
TYPE A BOLT		
Splice Bolt	5/16"	1 1/4"
Post Bolt for Conc. Post w/ Double Wood Blocks	3/32"	24"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	18"
Rail Bolt for Metal Block	3/32"	2"

BOLT DIMENSIONS		
TYPE B BOLT		
Post Bolt for Conc. Post w/ Metal Blocks		5 1/2"
Post Bolt for Metal Post w/ Metal Block		1 3/4"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-(11)-7	1973	102	274



5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only. Plain nut for Type B Bolt.

TYPE A BOLT

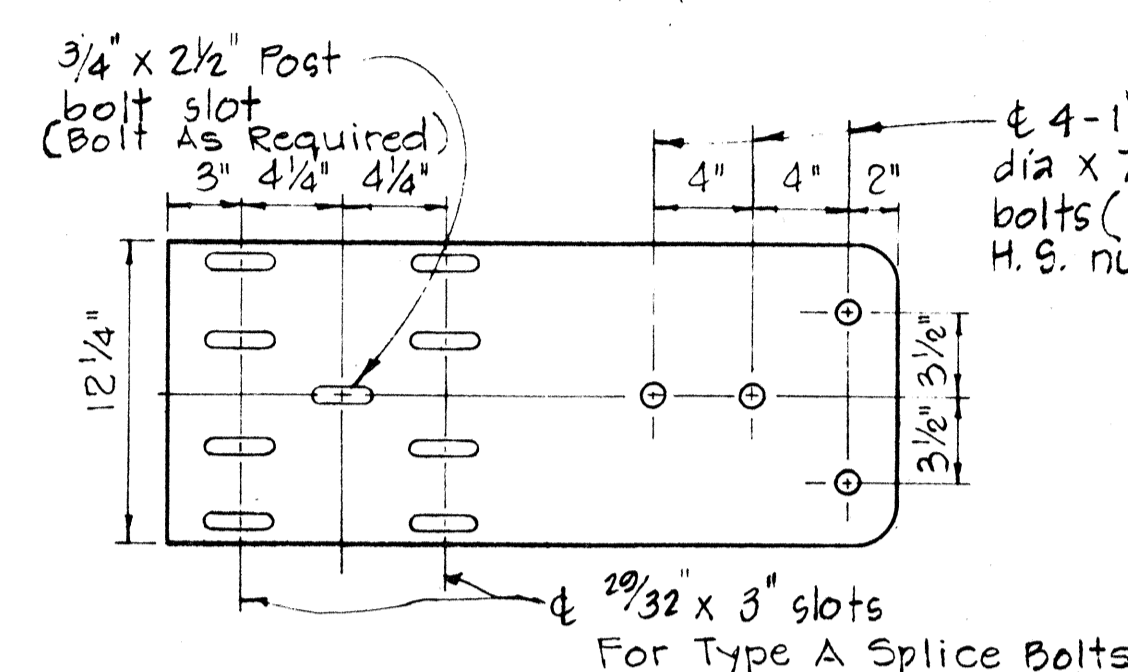
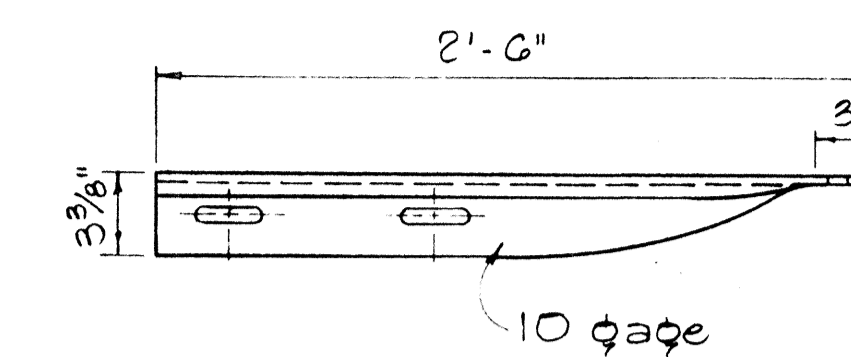
TYPE B BOLT

SPlice RAIL AND POST BOLTS

Scale: Full Size

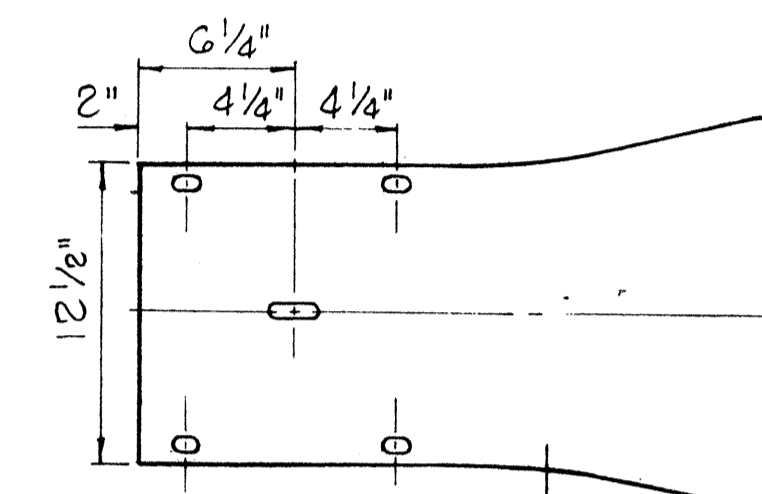
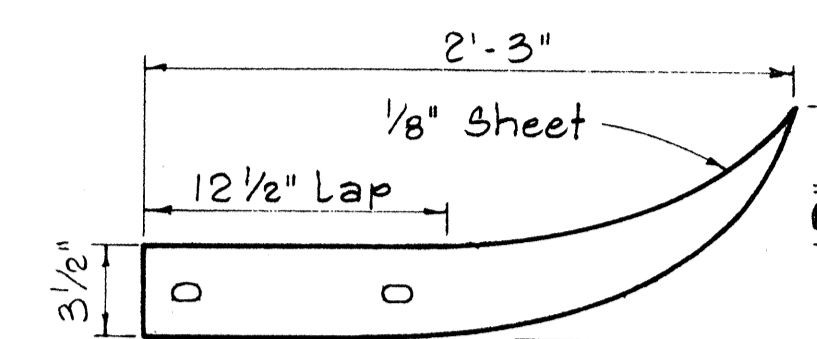
HEXAGON NUT

Scale: Full Size



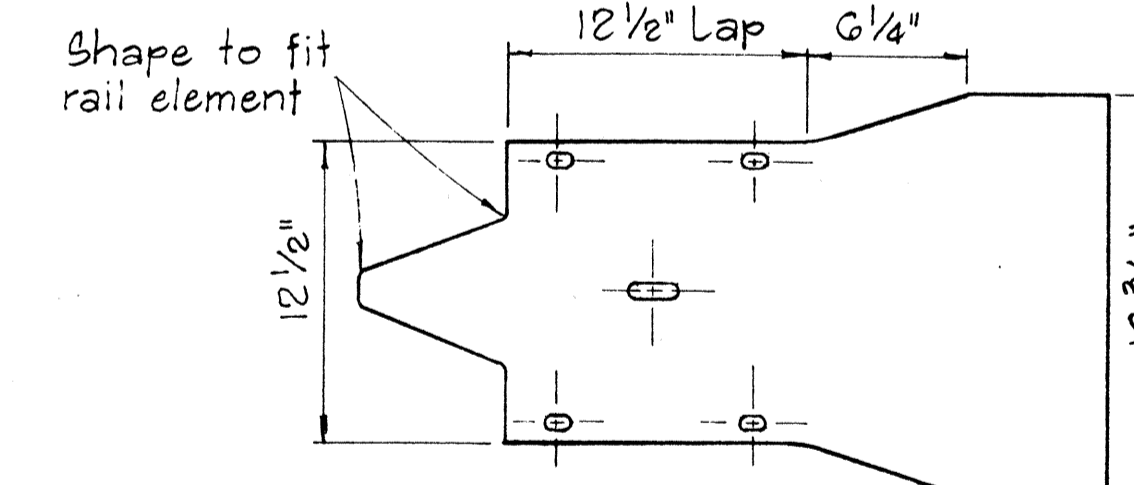
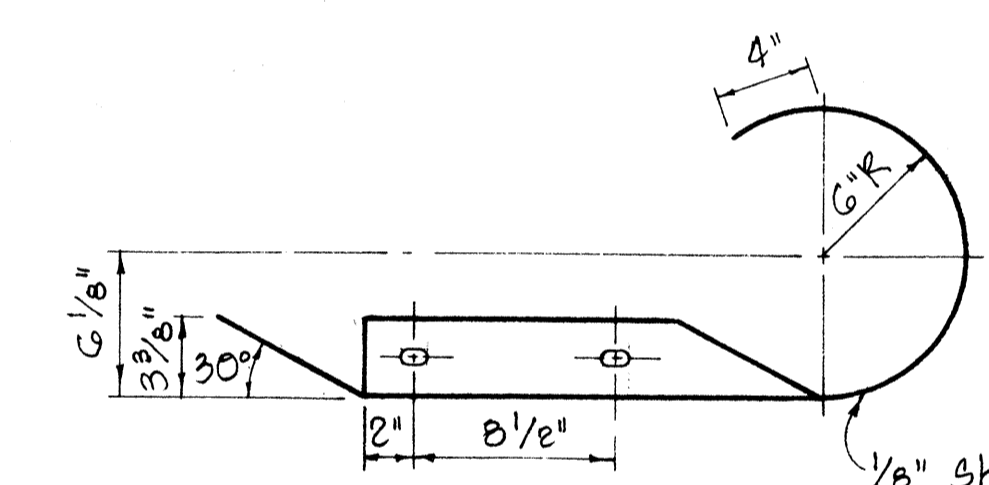
SPECIAL END SHOE

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



FLARED END

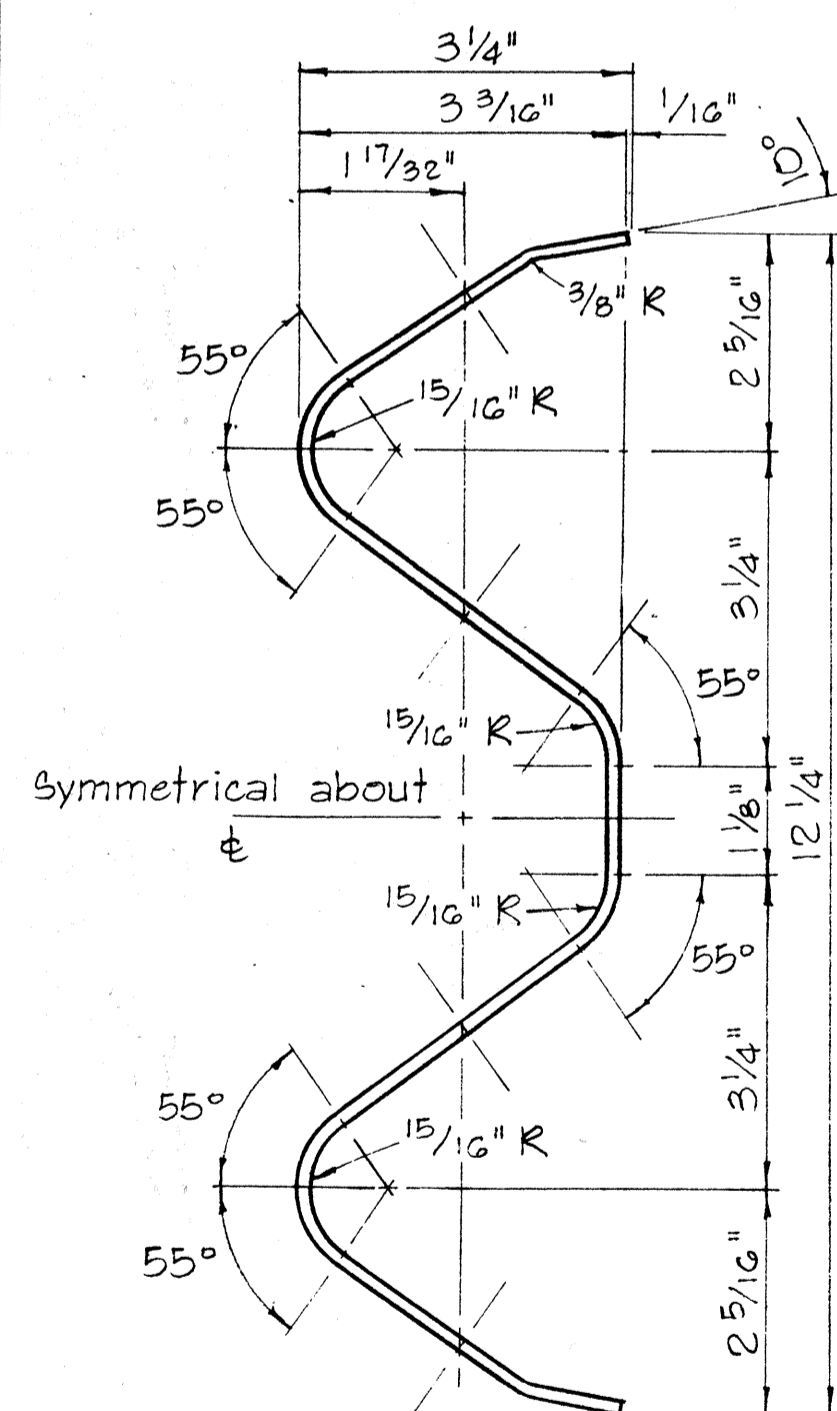
Scale: 1 1/2" = 1'-0"



CURVED END

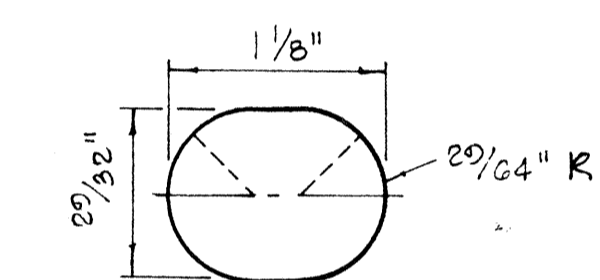
Scale: 1 1/2" = 1'-0"

APPROVAL RECOMMENDED: *E. M. Tanaka* 12/22/68 DATE  
 TRAFFIC ENGINEER  
 APPROVED: *[Signature]* 12-20-68 DATE  
 ASSISTANT CHIEF, ENGINEERING



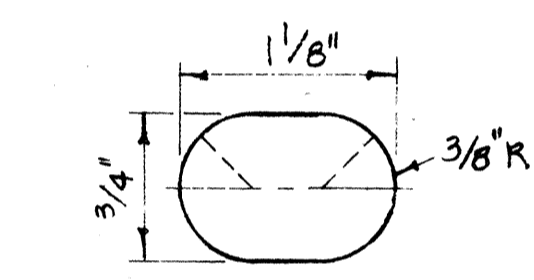
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

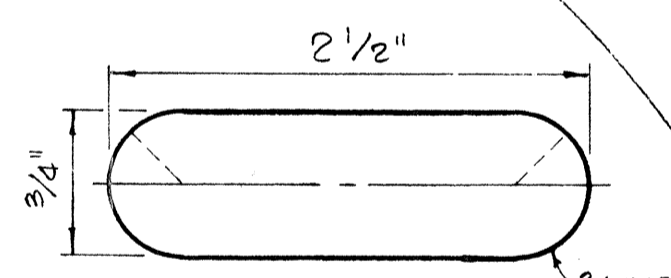


SPlice BOLT SLOT FOR ALL ENDS

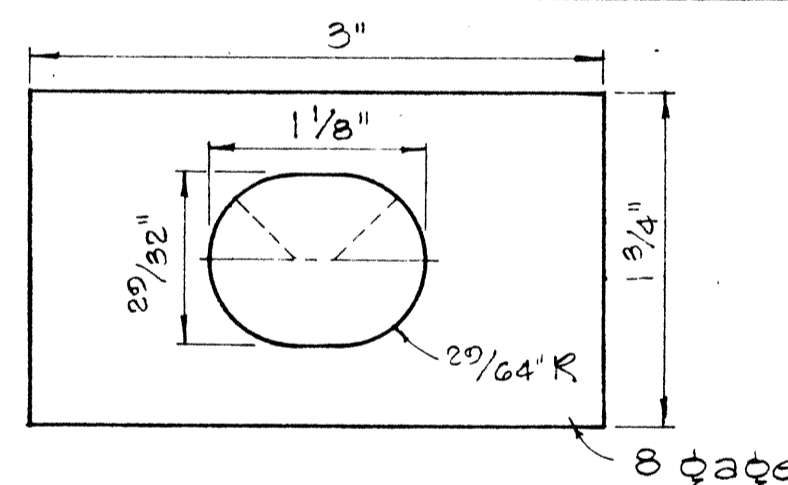
Scale: Full Size



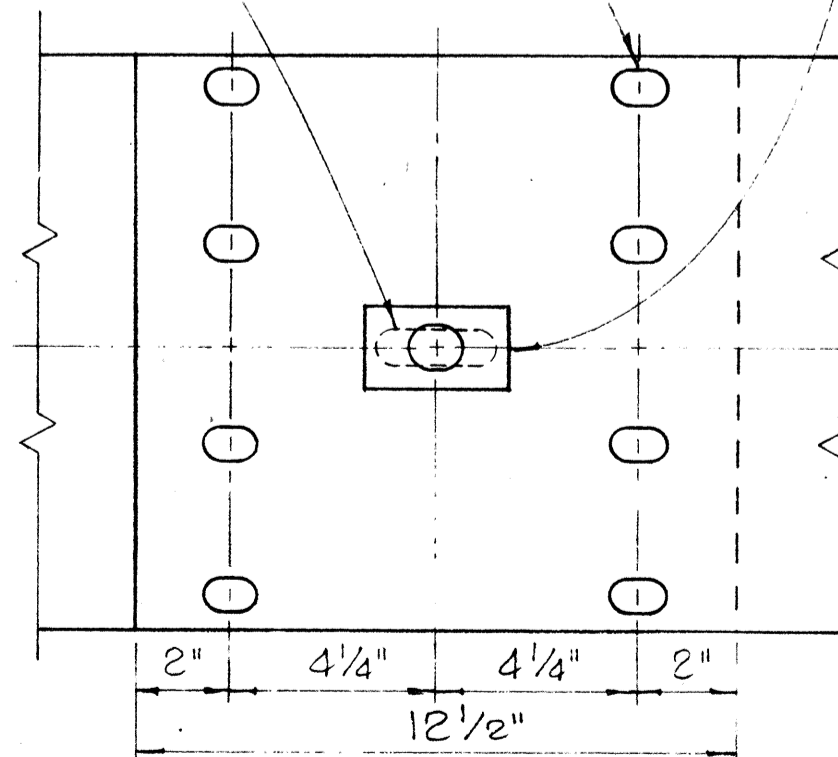
SPlice BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT

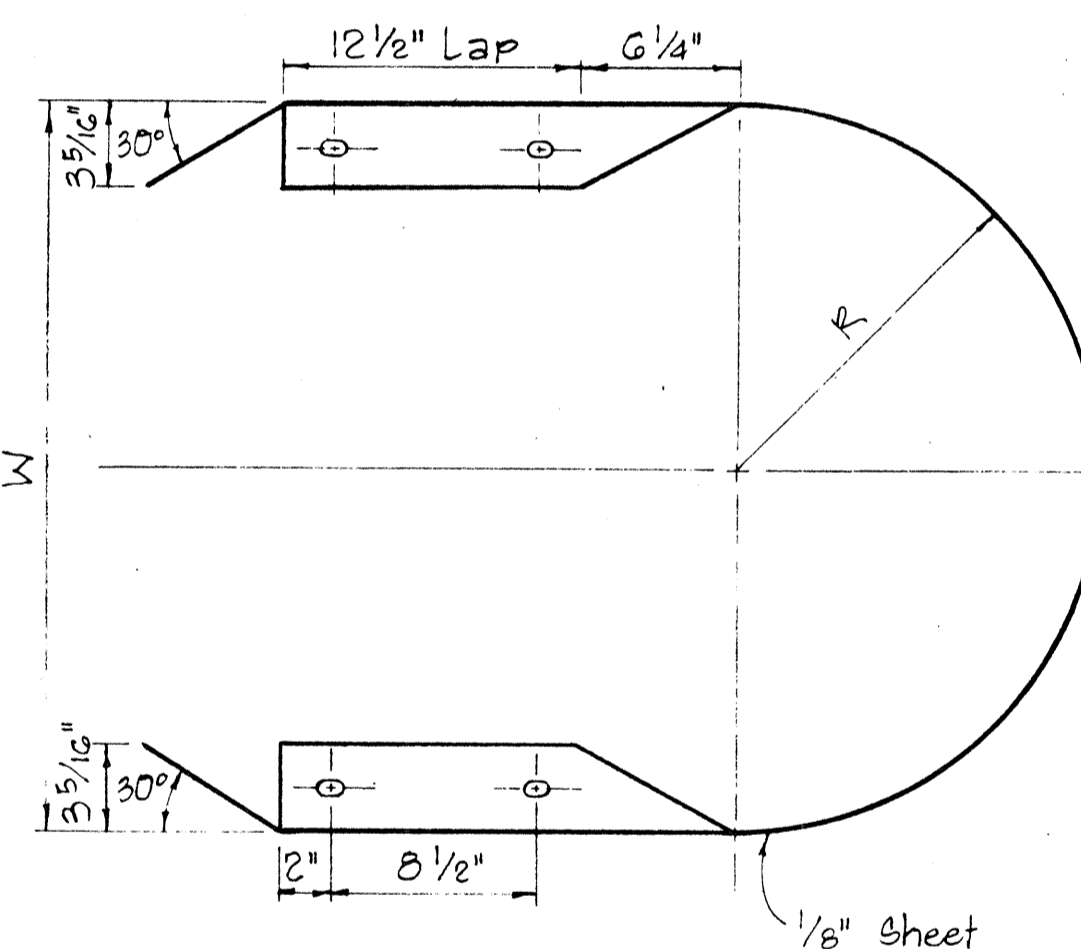


RAIL WASHER



RAIL SPLICE

Scale: 3" = 1'-0"



MEDIAN END

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

NOTES:

- H.S. Bolts shall conform to the requirements of ASTM A 325.
- Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHTO 180.

MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"

NO	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

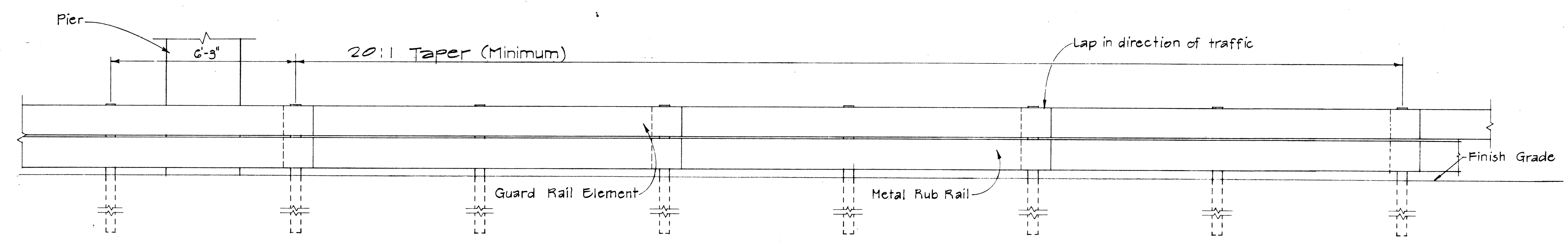
STANDARD DETAILS  
 METAL GUARD RAIL

Scale: As Noted August, 1968

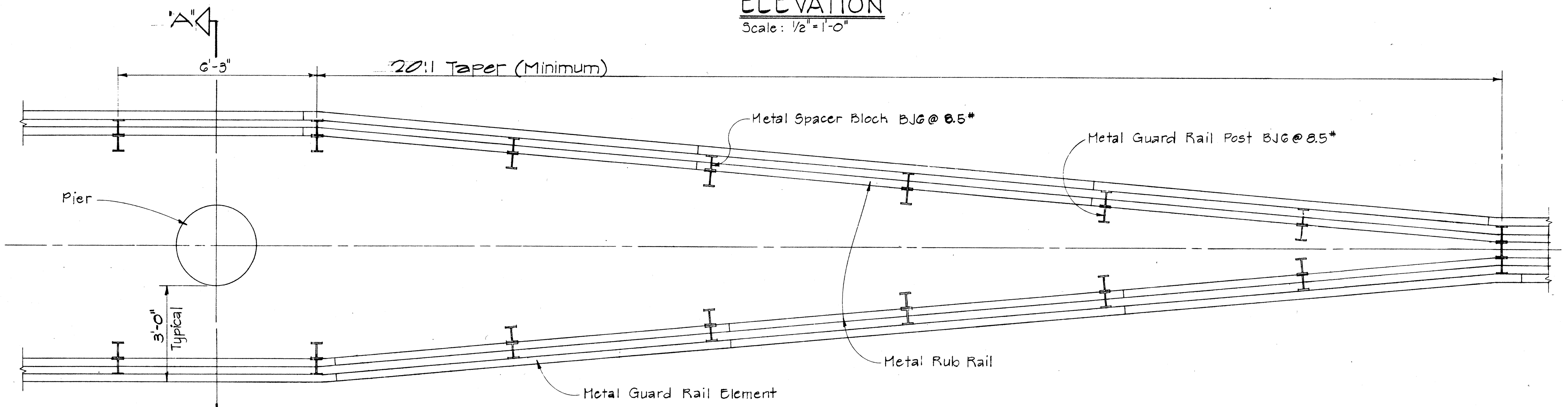
SHEET No. 30 OF 39 SHEETS OT 501



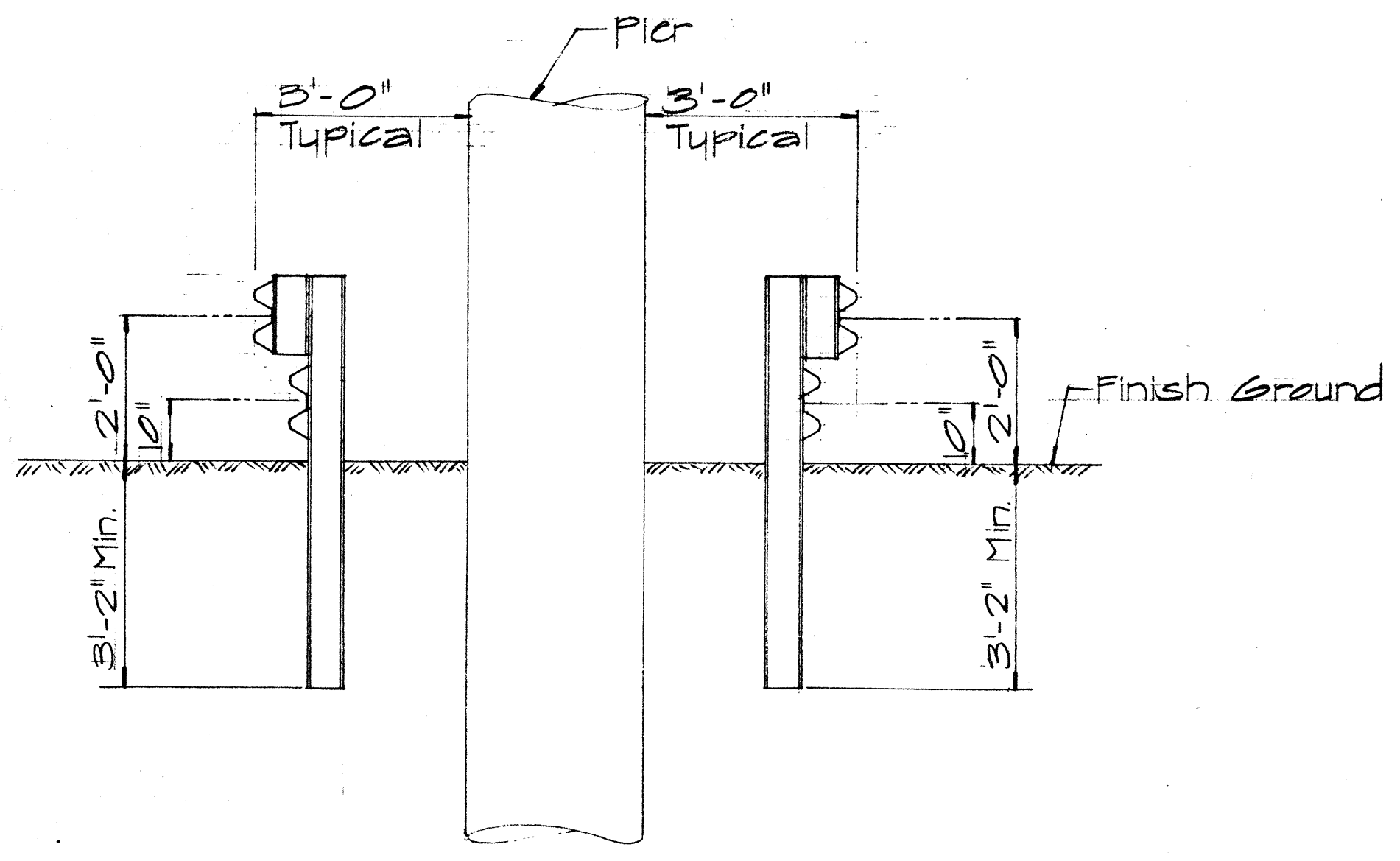
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	142-101-7	1973	104	214



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



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



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

APPROVAL RECOMMENDED:  
*Eishi Tanaka* 12/23/69  
TRAFFIC ENGINEER DATE

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

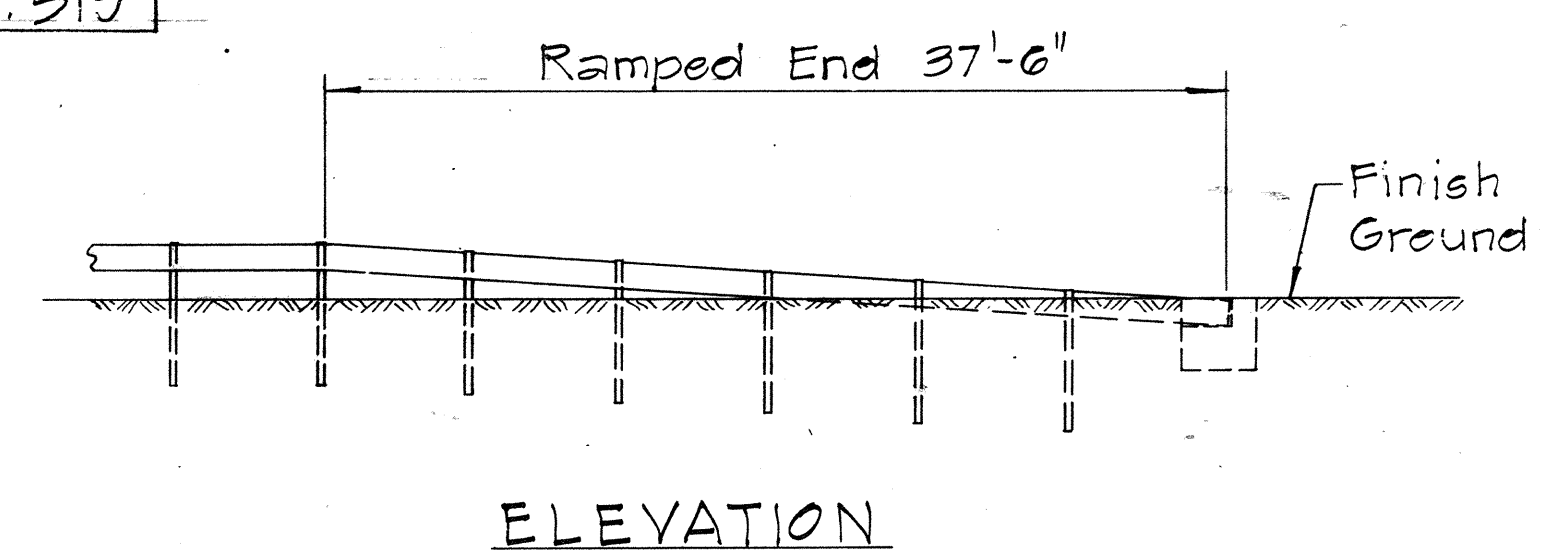
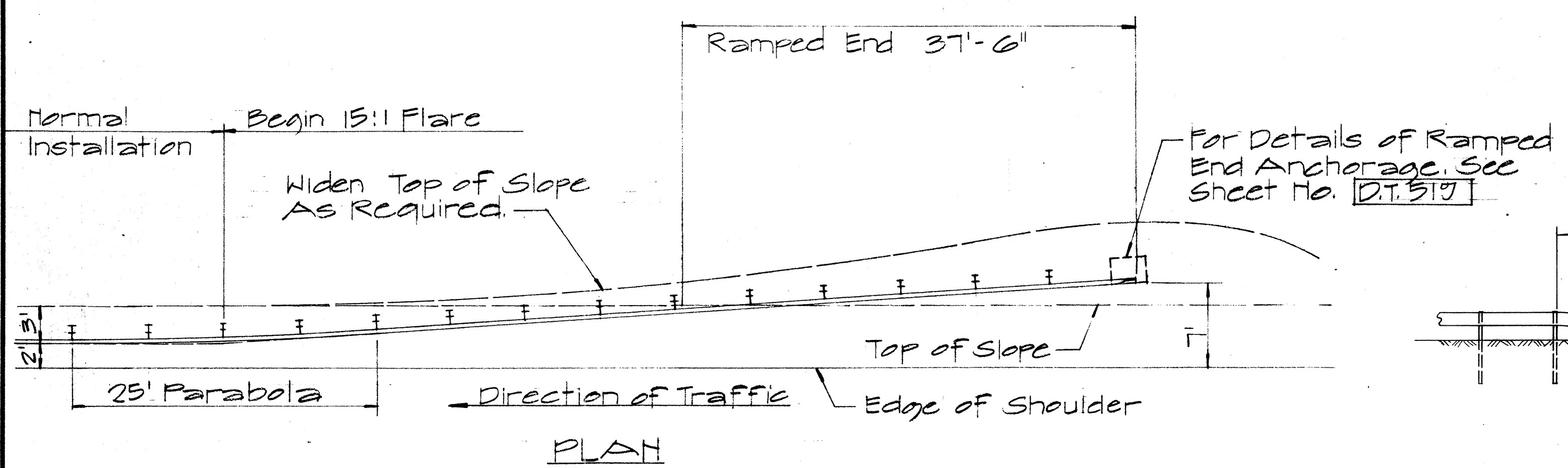
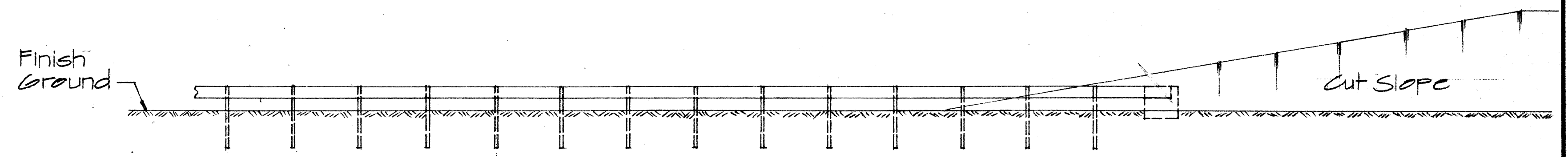
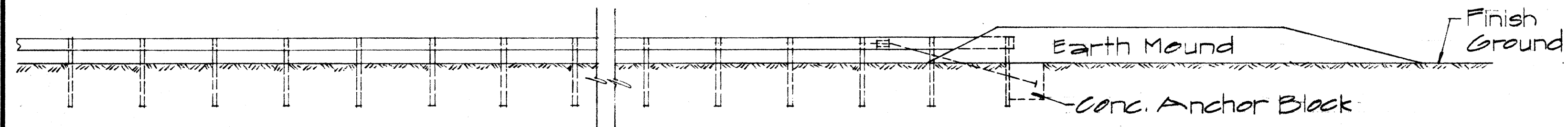
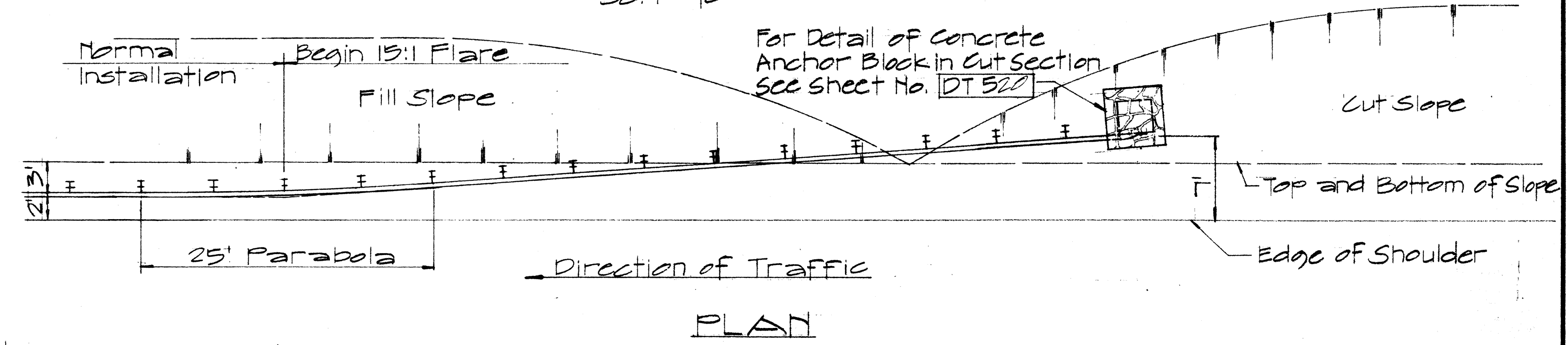
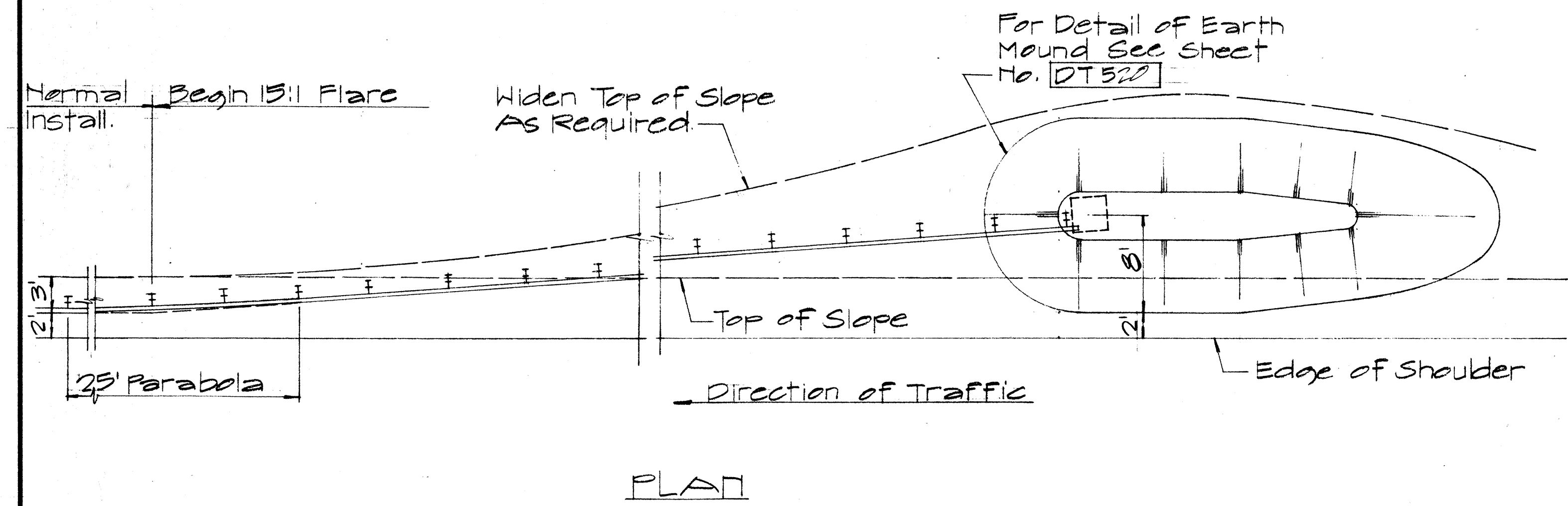
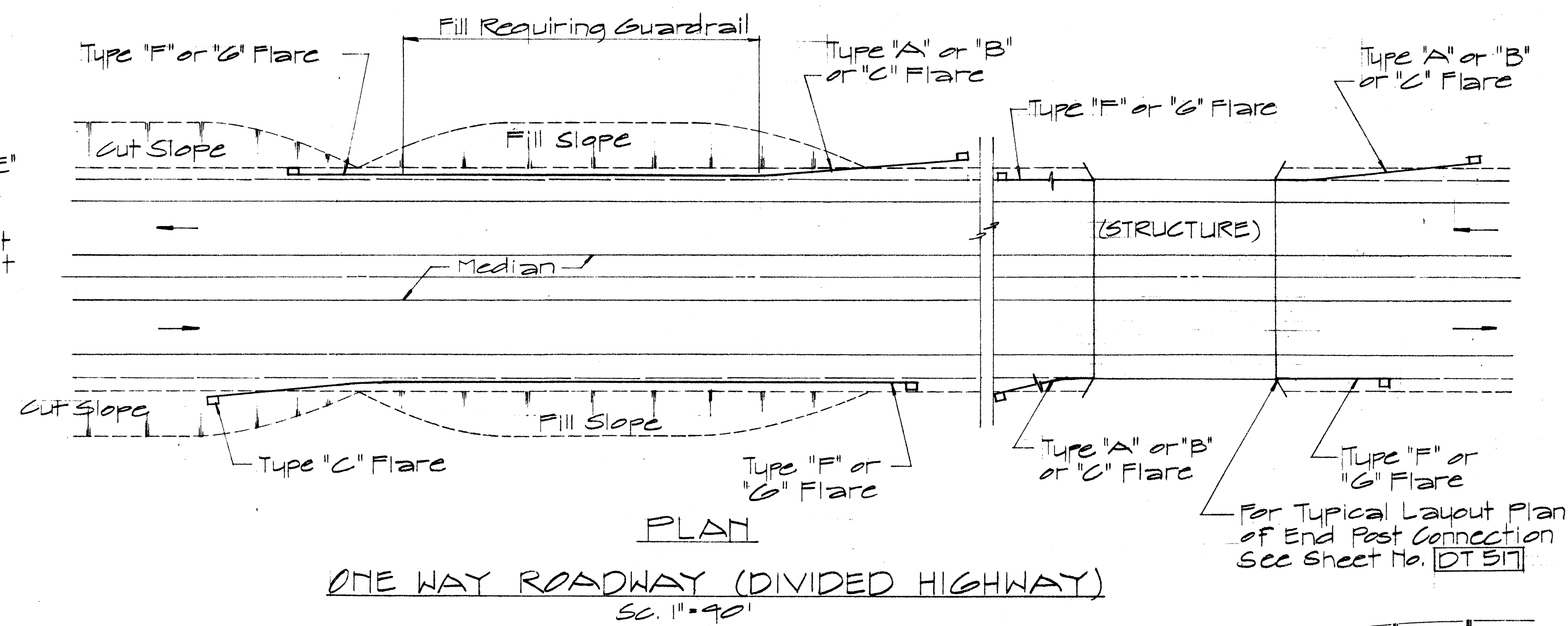
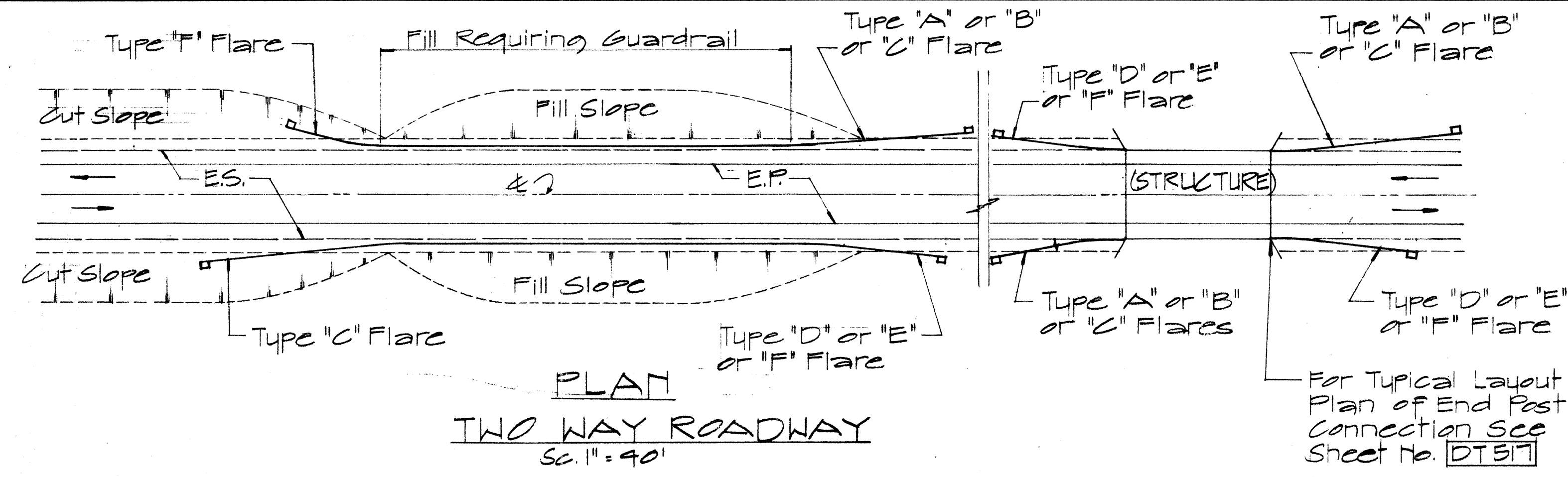
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**TRANSITION DETAIL OF  
METAL GUARD RAIL  
WITH RUB RAIL AT  
OBSTRUCTION**  
Scale: As Shown Nov. 1968

DATE  
DRAWN BY  
DESIGNED BY  
CHECKED BY  
NO. 1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	342-1(1)77	1973	109	274

NOTE:  
Metal guard rail connection to structures requires End Post Connection. See structure plans.



ELEVATION  
TYPE "C" FLARE  
Sc. 1/8" = 1'-0"

APPROVAL RECOMMENDED:  
*Etsuki Tanaka* 12/29/63  
TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE

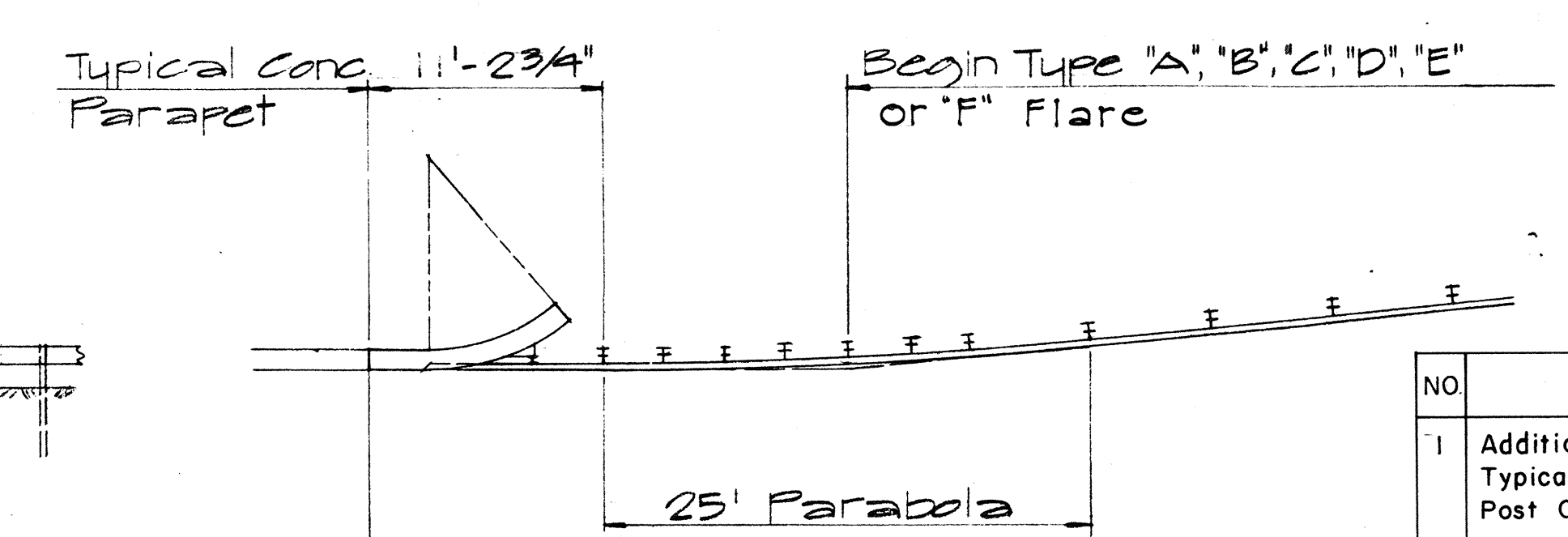
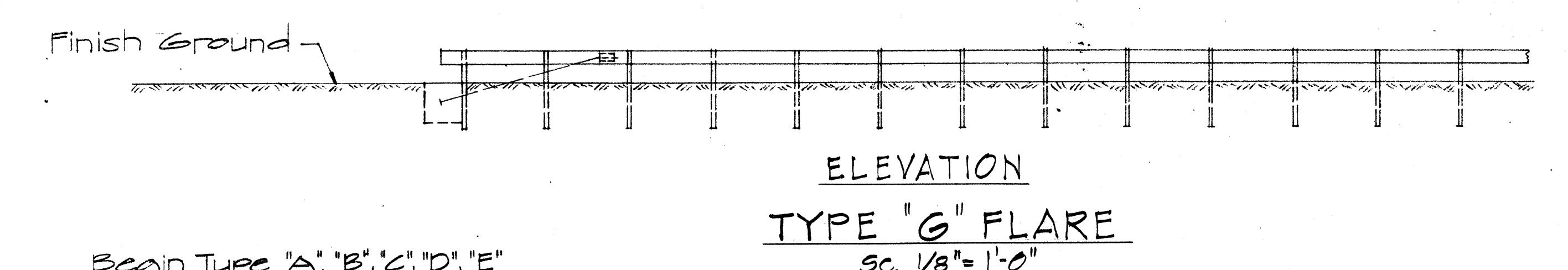
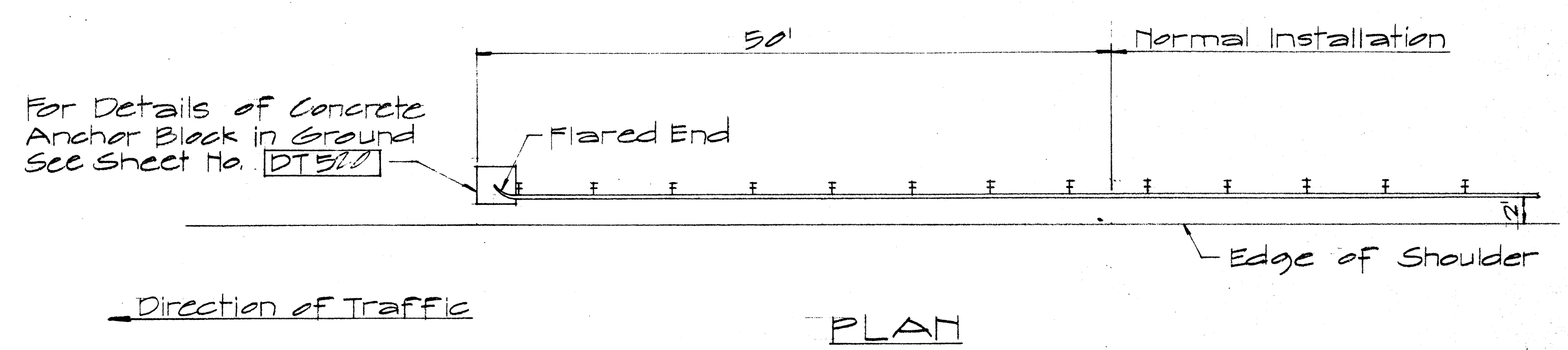
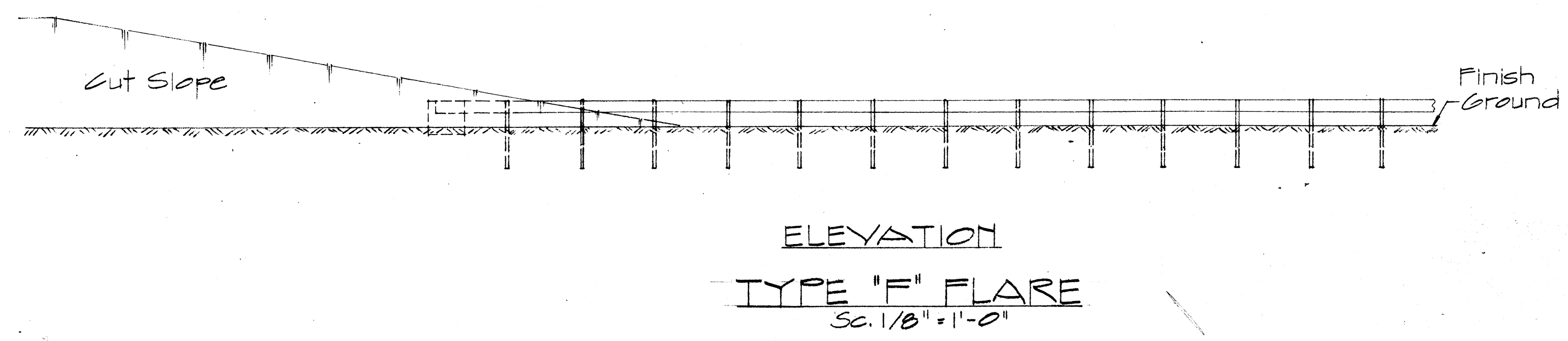
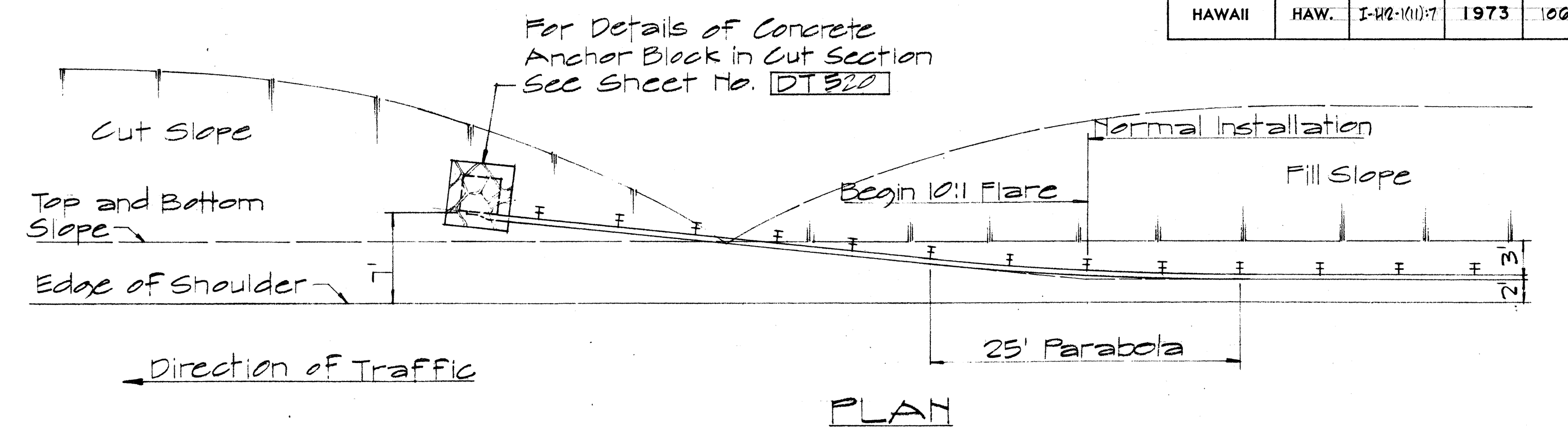
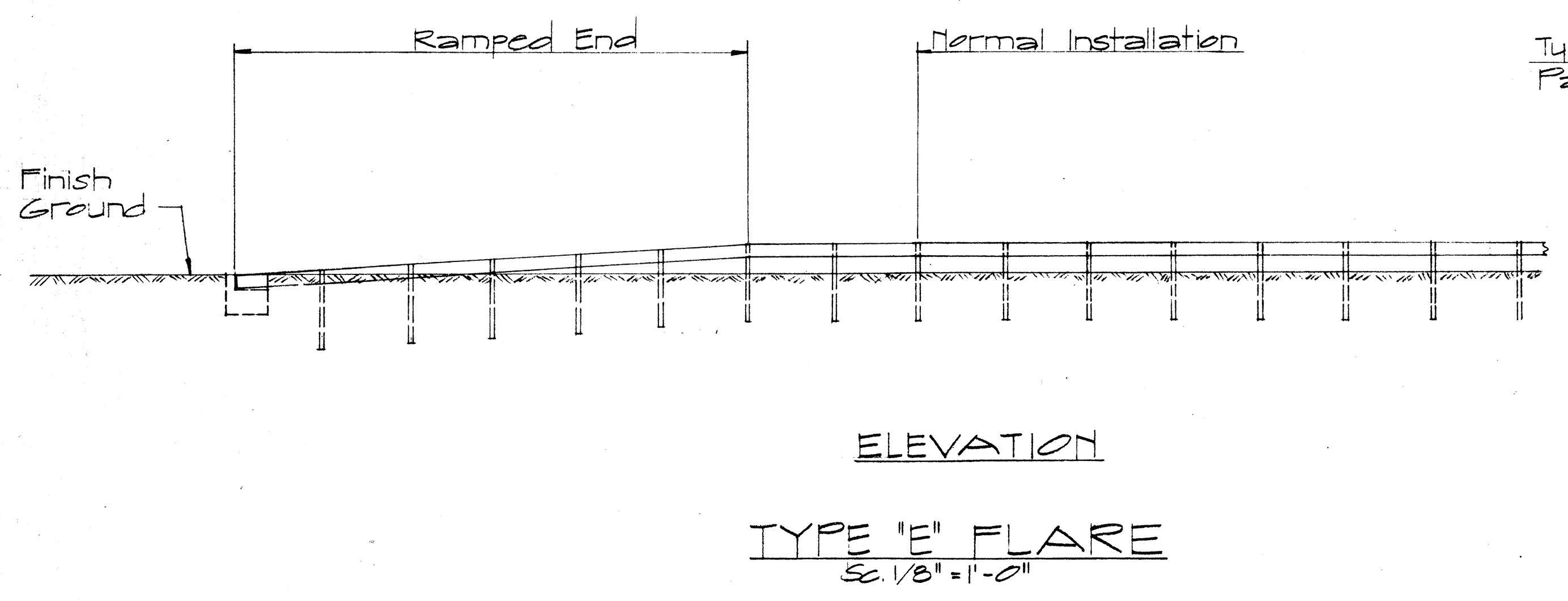
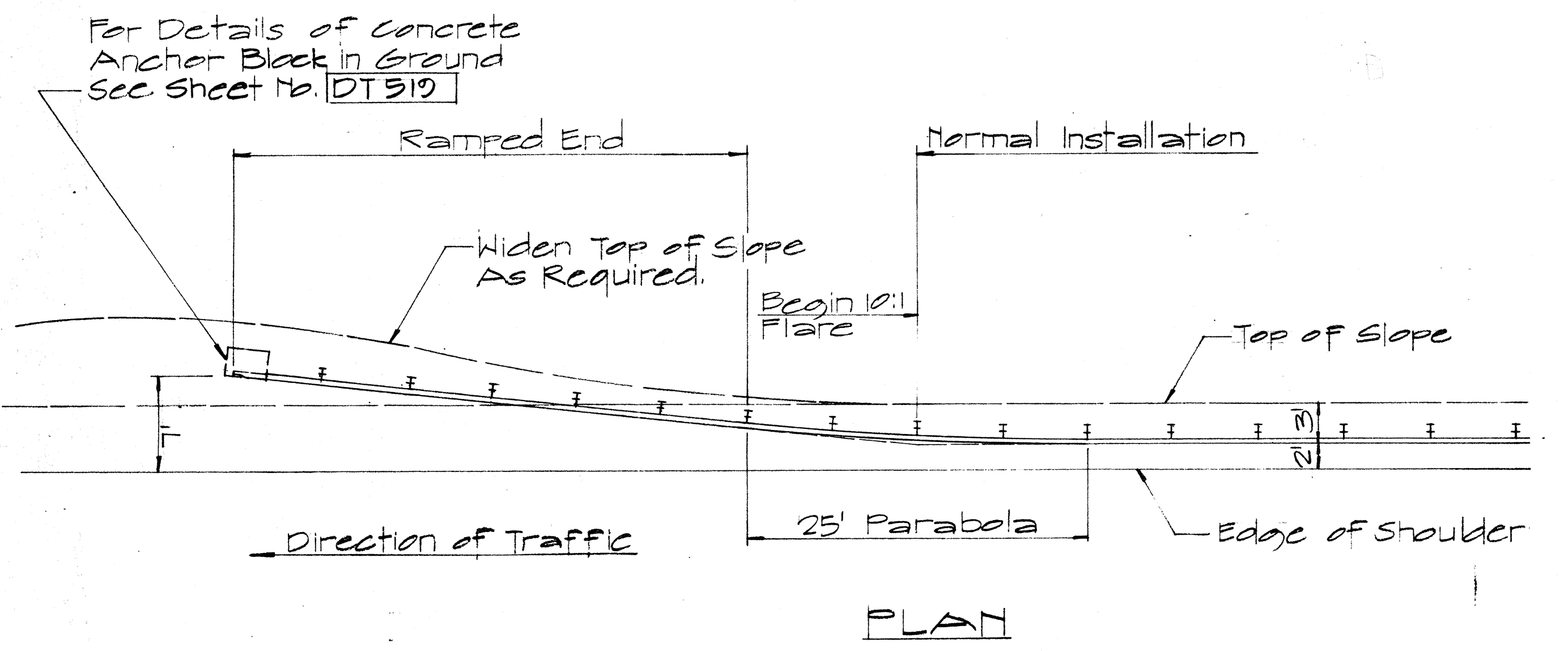
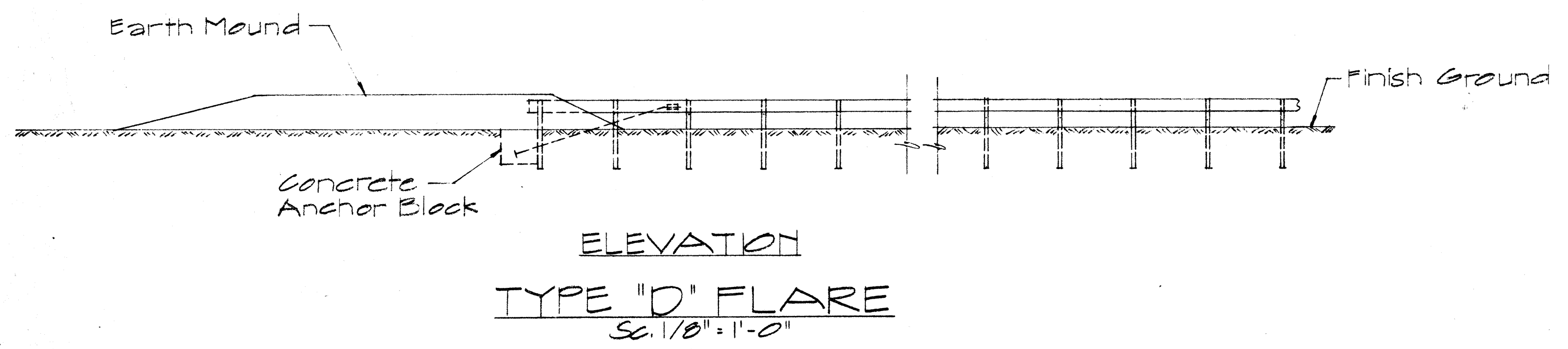
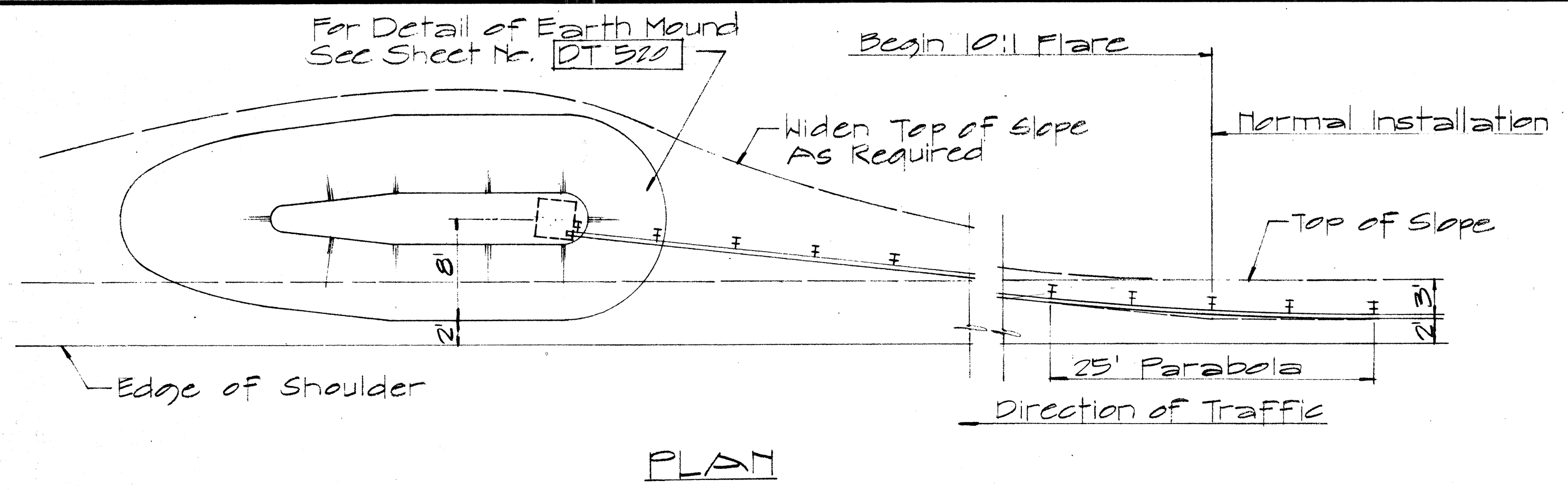
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS  
OF APPROACH END  
FLARE - ONE & TWO  
WAY ROADWAY**

Sc. As Noted April 1969  
SHEET No. 33 OF 39 SHEETS DT 516

DATE  
SURVEY PLATTED BY  
DRAWN BY  
CHECKED BY  
ORIGINAL PLAN  
NOTE BOOK  
No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-100-7	1973	106	214



NO.	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan of End Post Connection	H.T.	4-12-72

APPROVAL RECOMMENDED:  
*Euski Tanaka* 12/29/69  
 TRAFFIC ENGINEER DATE

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

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

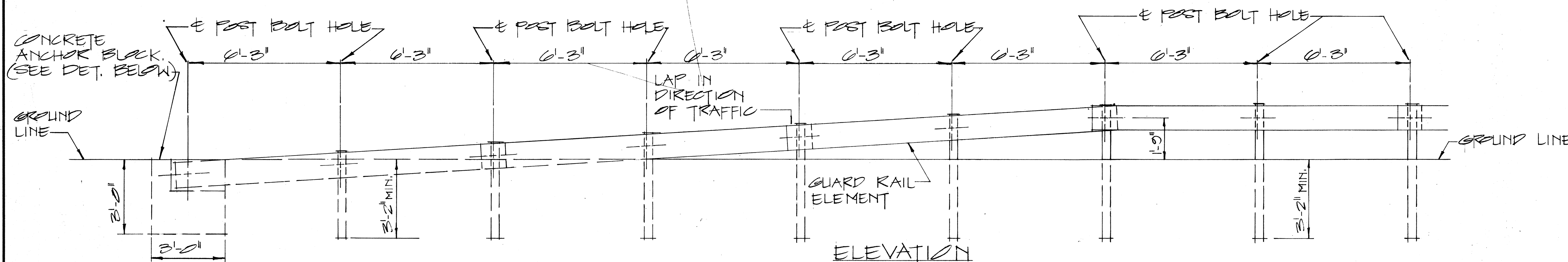
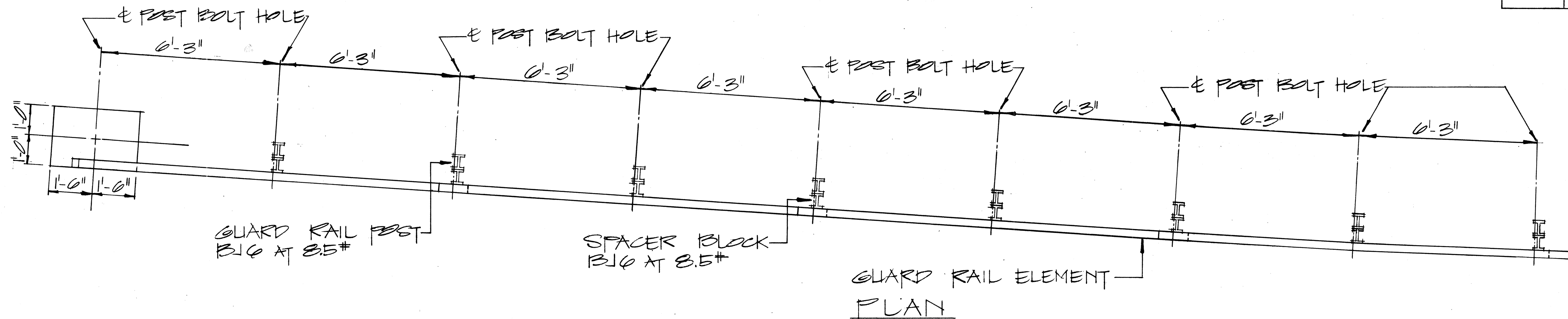
STANDARD DETAILS  
 TRAILING END  
 FLARE - ONE & TWO  
 WAY ROADWAY

Scale: As Noted April 1970

SHEET No. 34 OF 39 SHEETS DT 517

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

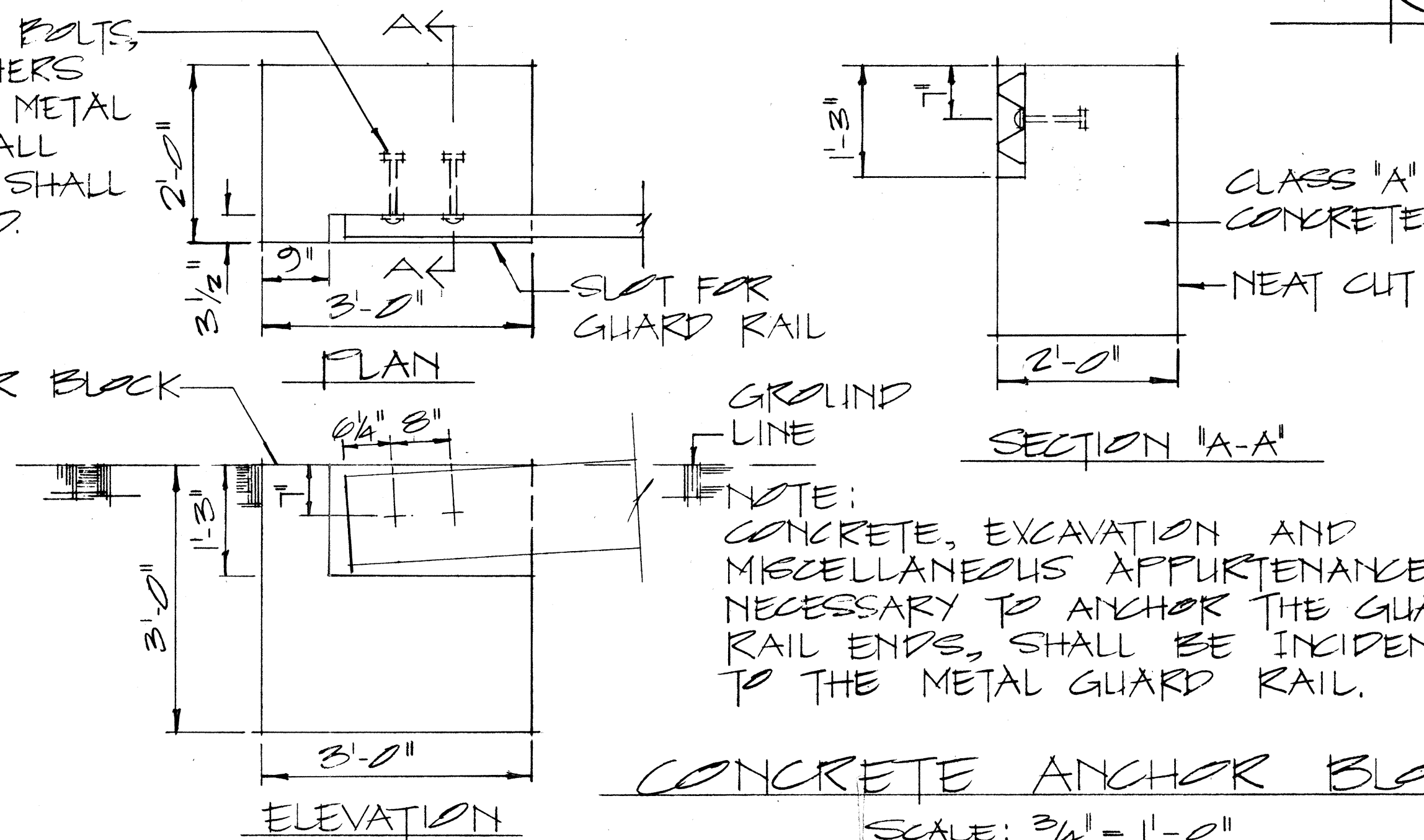
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-42-101-7	1973	107	214



### RAMP END ANCHORAGE

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

2-5/8" x 7/4" LONG BOLTS BY NUTS & WASHERS INCIDENTAL TO METAL GUARD RAIL. ALL METAL PIECES SHALL BE GALVANIZED.



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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

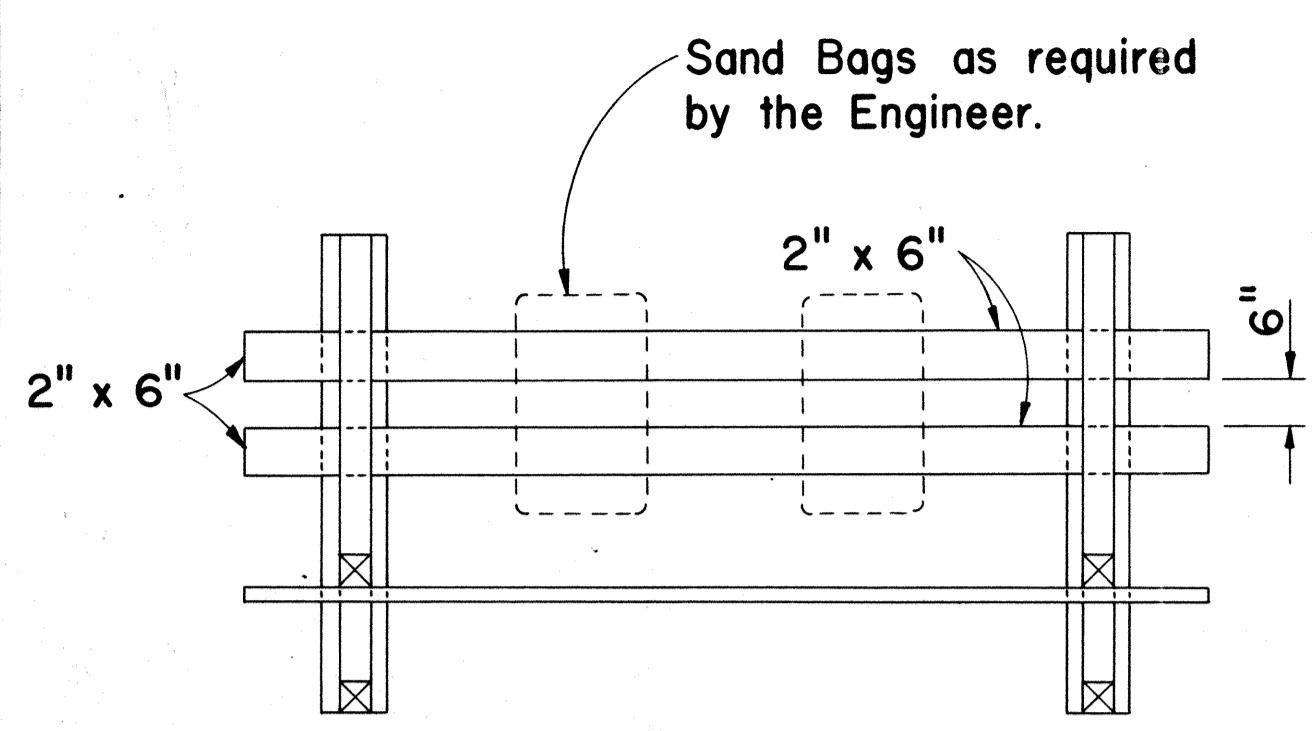
STANDARD DETAILS  
 GUARD RAIL, TYPE 3  
 RAMP END ANCHORAGE

SCALE: AS SHOWN DATE: 4-25-73

SHEET No. 35 OF 39 SHEETS PT510

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

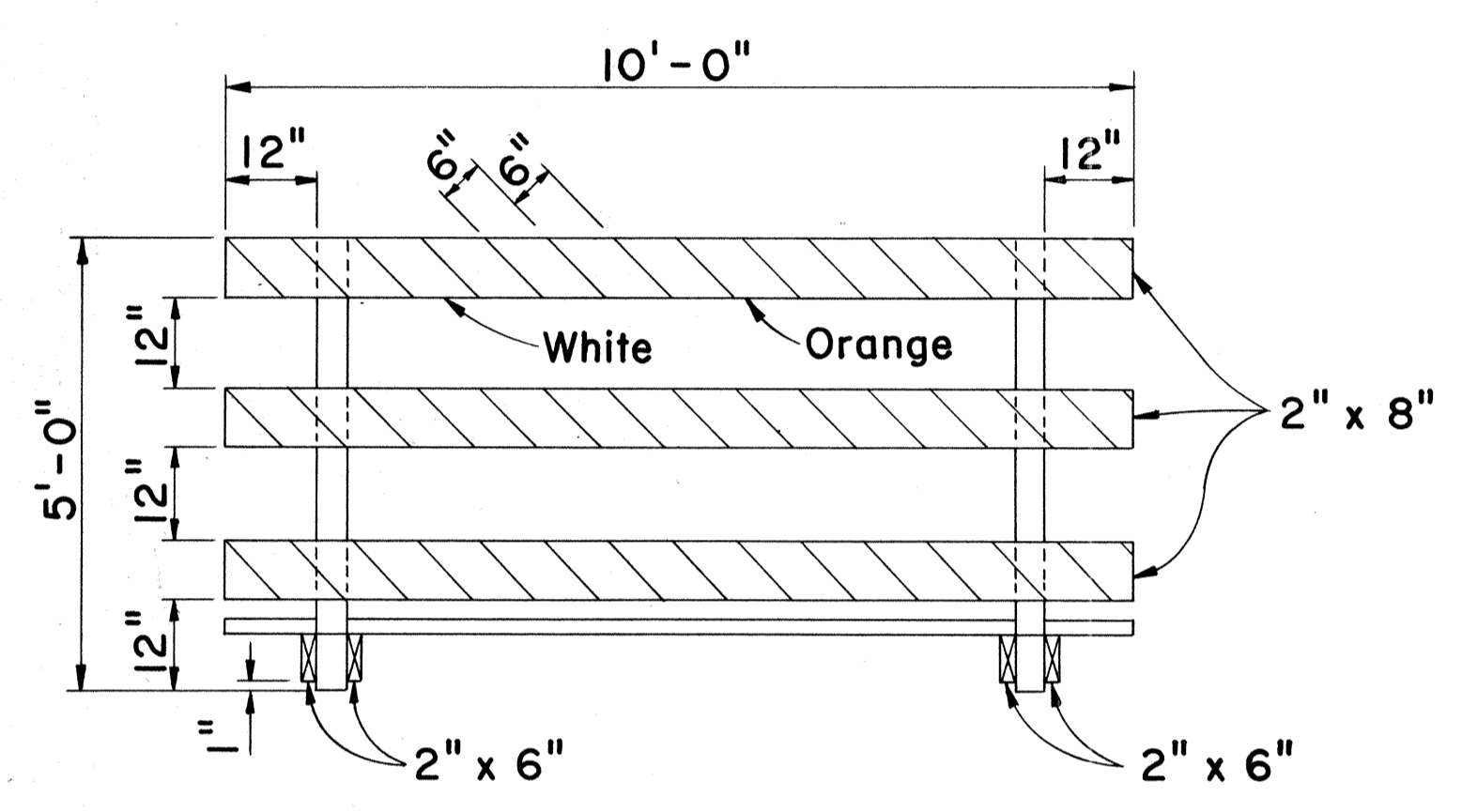
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H2-1(1)-1	1973	108	274



PLAN VIEW

**GENERAL NOTES**

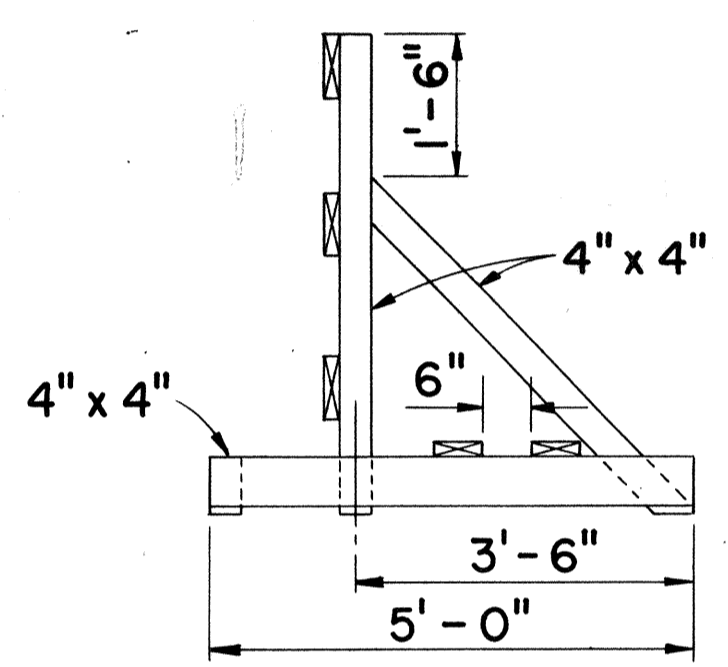
1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
2. The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.
3. The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized.



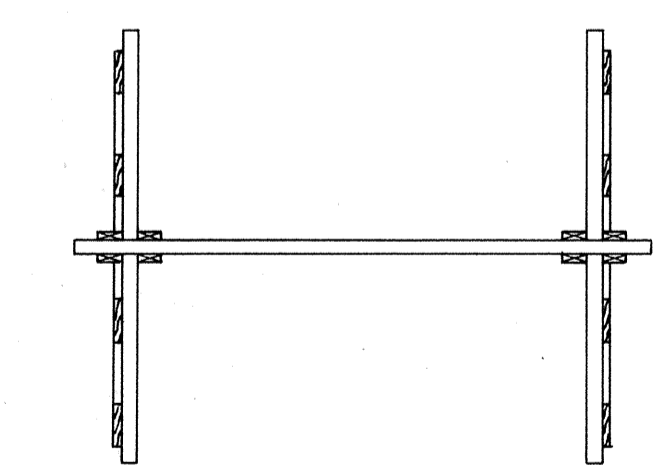
FRONT VIEW

**CLASS I BARRICADE**

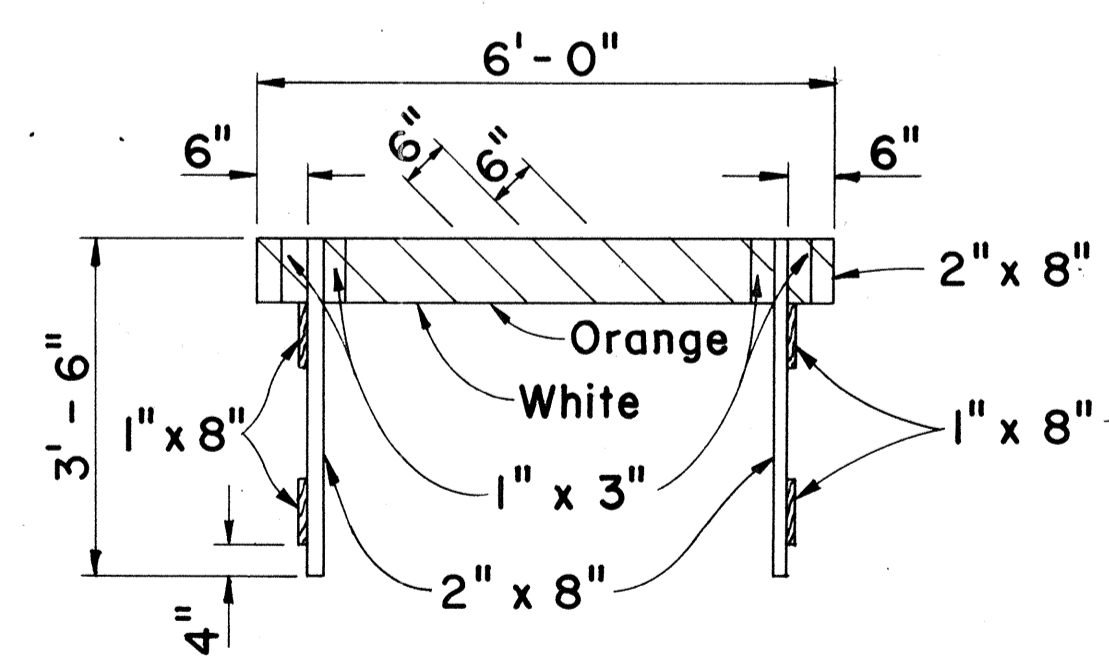
Scale: 1/2" = 1'-0"



END VIEW



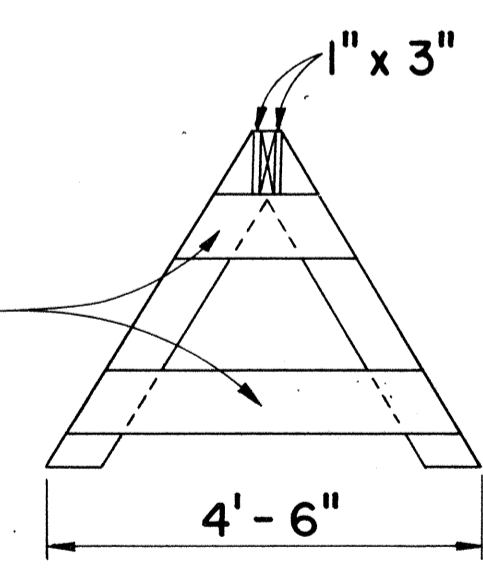
PLAN VIEW



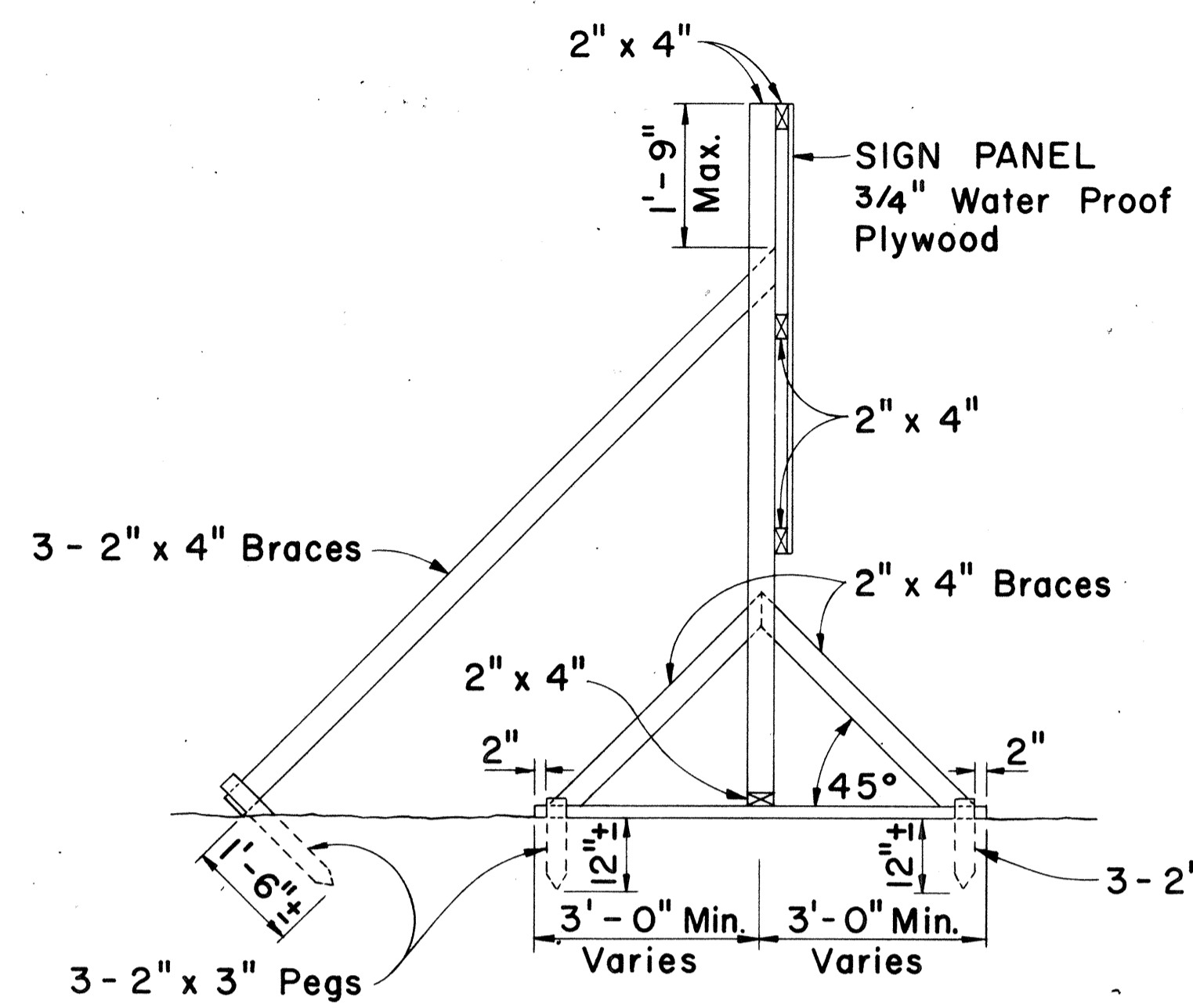
FRONT VIEW

**CLASS II BARRICADE**

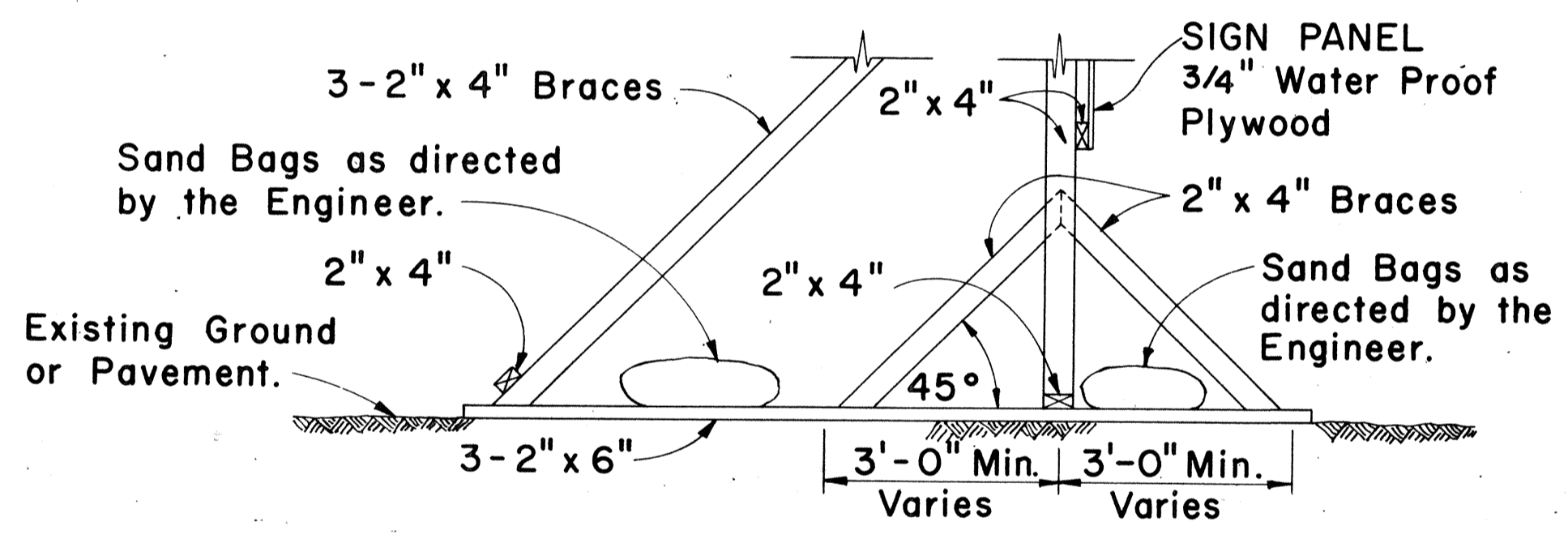
Scale: 1/2" = 1'-0"



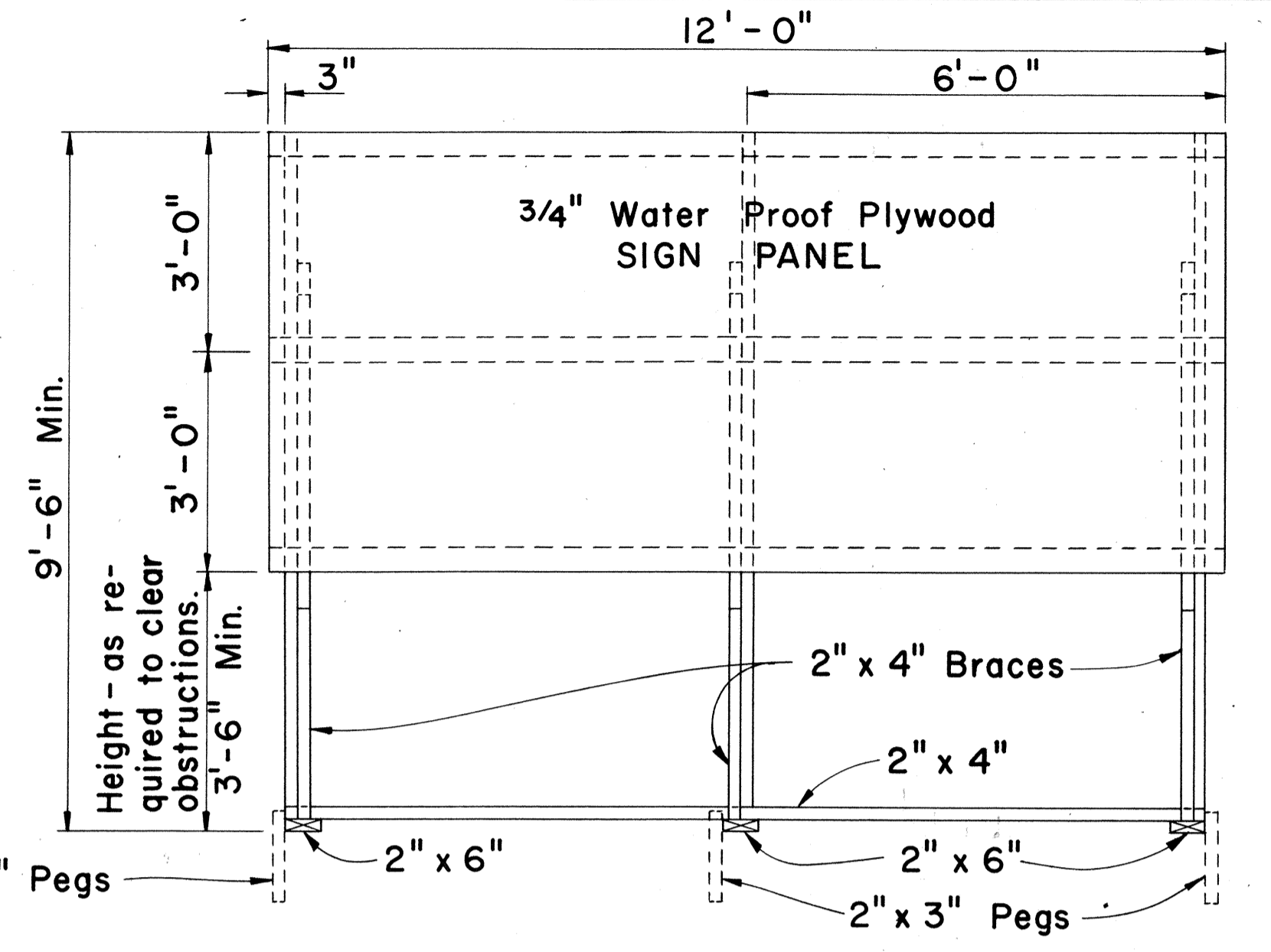
END VIEW



**SIDE VIEW**  
(SIGN FRAME ANCHORED IN GROUND)  
Scale: 1/2" = 1'-0"



**SIDE VIEW**  
(SIGN FRAME WEIGHTED DOWN)  
Scale: 1/2" = 1'-0"



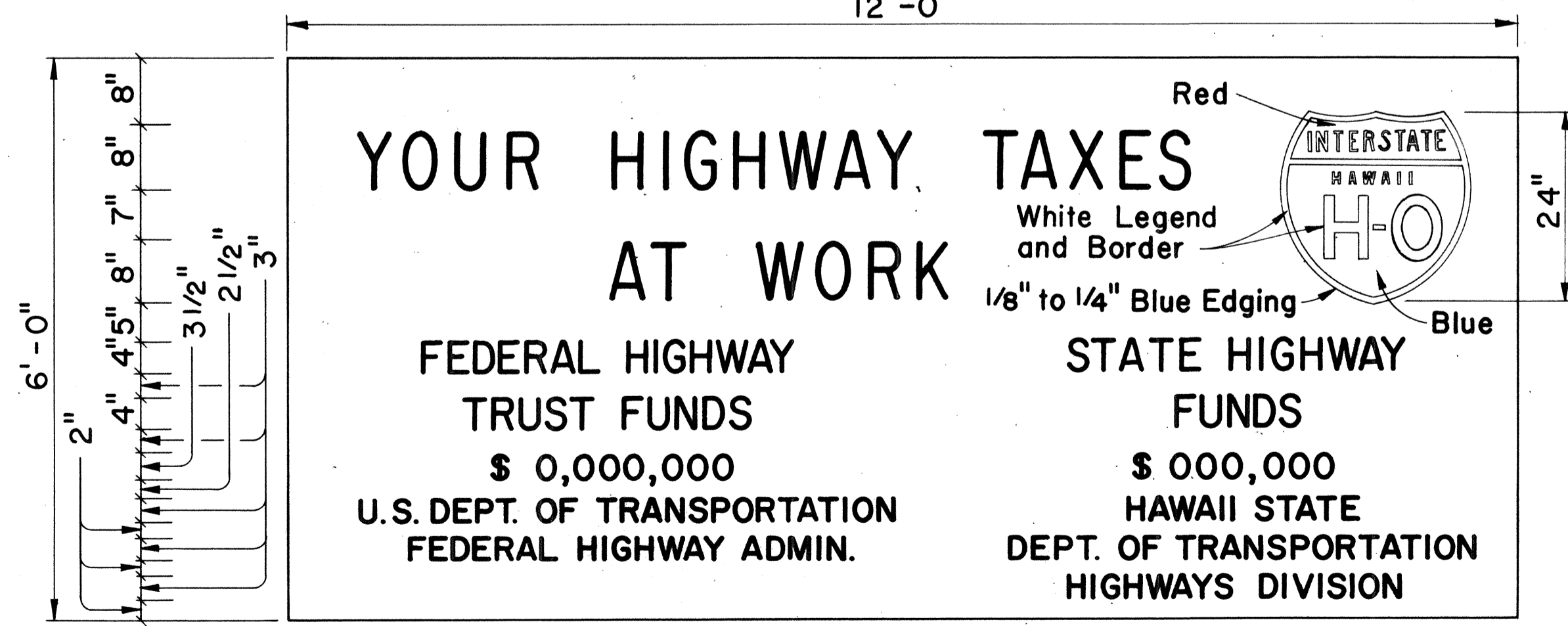
**FRONT VIEW**  
Scale: 1/2" = 1'-0"

**GENERAL NOTES**

1. The sign legend shall be black on white background except for the Interstate Route marker which shall be as shown on the plan.
2. The Contractor shall construct, install and maintain the project signs at the locations shown on the Plans and as ordered by the Engineer.
3. Letters shall be Series "C" of the sizes shown on the Plan and shall conform with the "Standard Alphabet for Highway Signs", Bureau of Public Roads, 1966.
4. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.

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

APPROVED:  
*Arthur J. Scott* 12-30-69  
 ASSISTANT CHIEF, ENGINEERING DATE



**SIGN PANEL**  
Scale: 3/4" = 1'-0"

**INTERSTATE SYSTEM**  
**CONSTRUCTION IDENTIFICATION SIGN**

Scale: As Shown

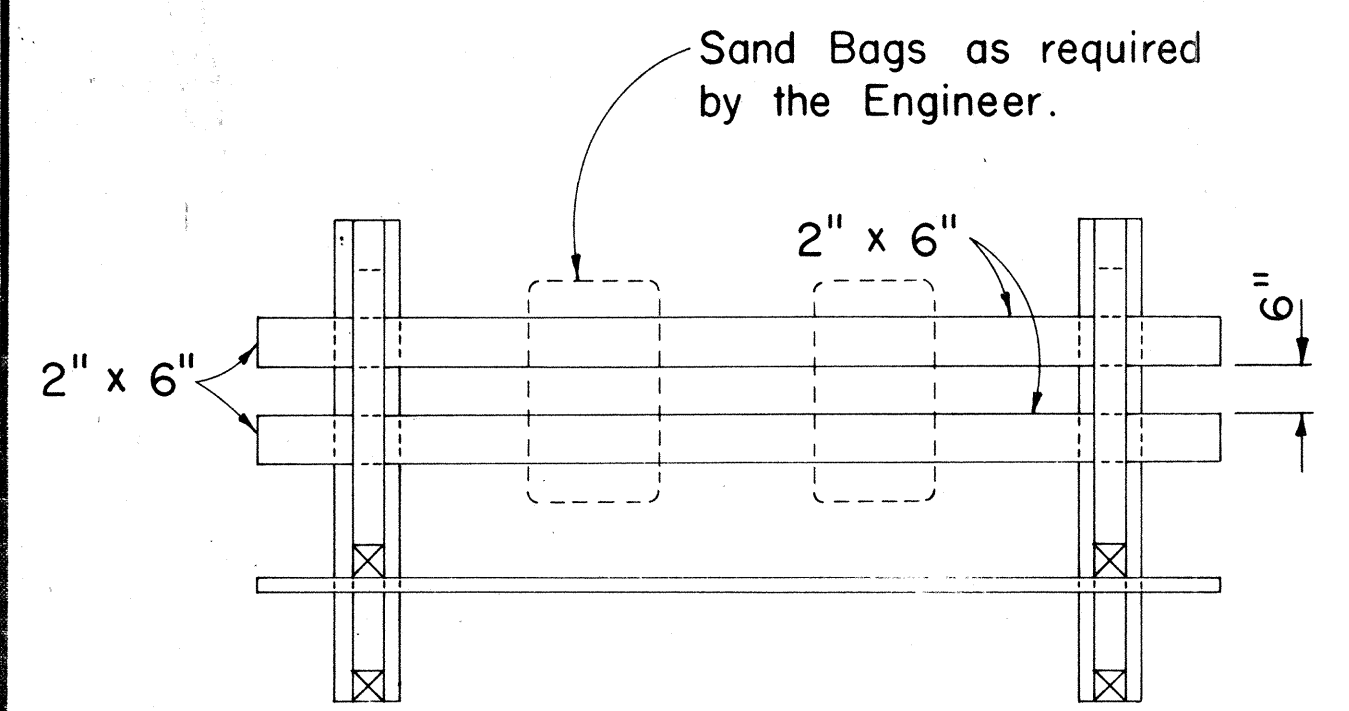
NO.	REVISION	APPROVED BY	DATE
1	Reduce sign width to 12'-0"	H.T.	9-3-10
2	Delete "Bureau of Public Roads"	H.T.	9-29-10
3	Add Note No. 3 for Barricades	H.T.	5-4-11
4	Revise stripe color for Barricades	H.T.	10-21-12

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**TYPICAL DETAILS**  
 CONSTRUCTION IDENTIFICATION SIGN  
 AND  
 WOOD BARRICADES

SCALE: As Shown DATE: 4-25-73  
 SHEET No. 36 OF 39 SHEETS DT 800

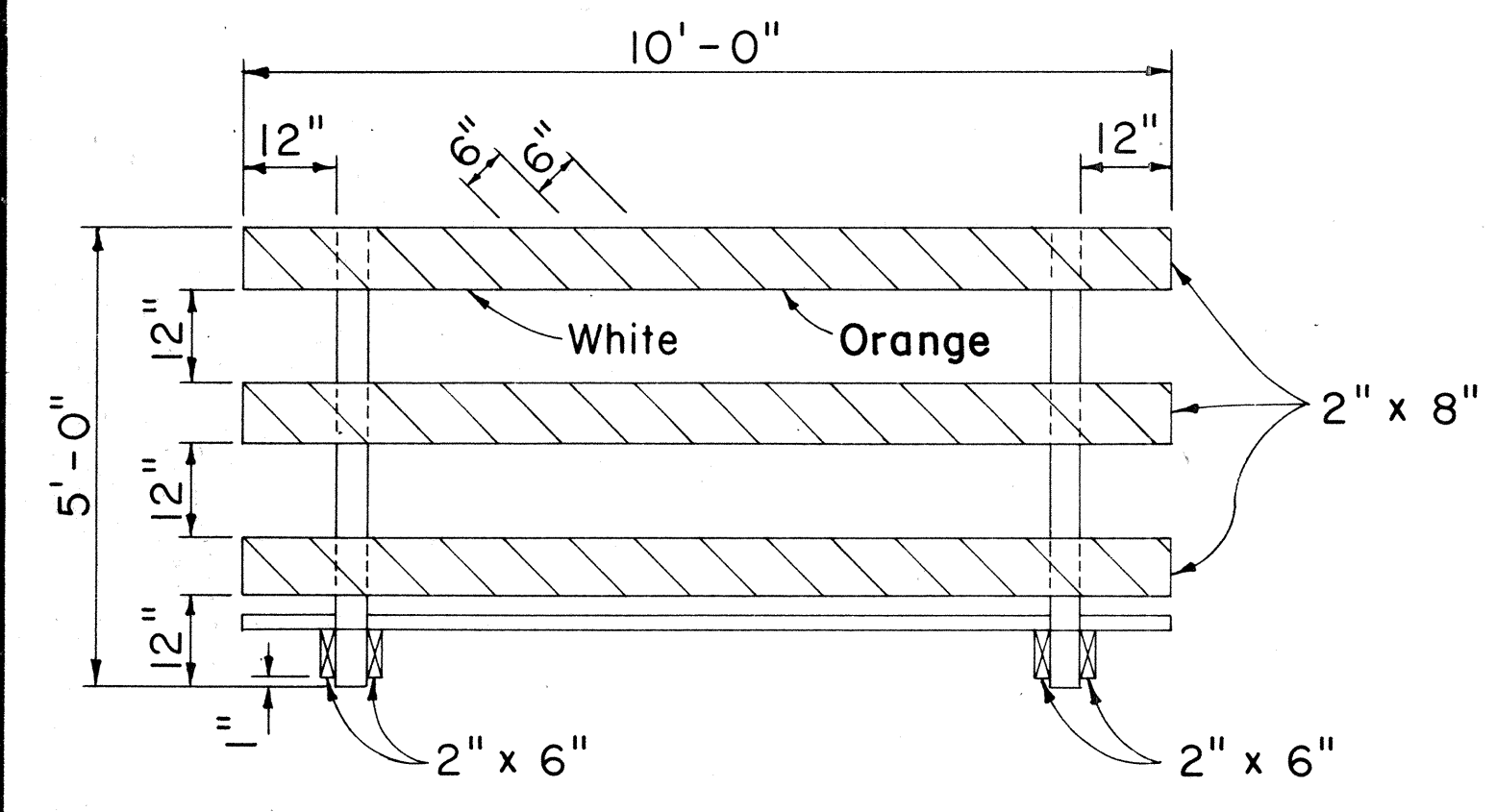
DATE: \_\_\_\_\_  
 SURVEY LOCATED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 ORIGINAL PLAN: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 No. \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	T-142-(11)-7	1973	109	274



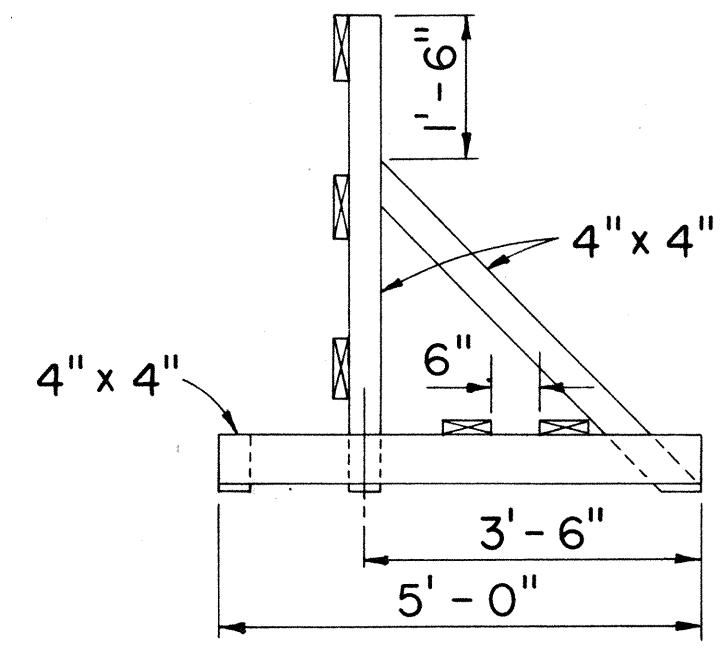
PLAN VIEW

- GENERAL NOTES**
1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
  2. The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.
  3. The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized.

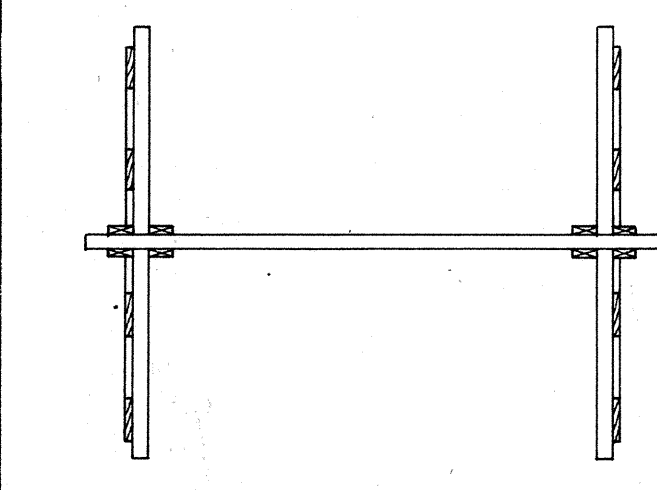


FRONT VIEW

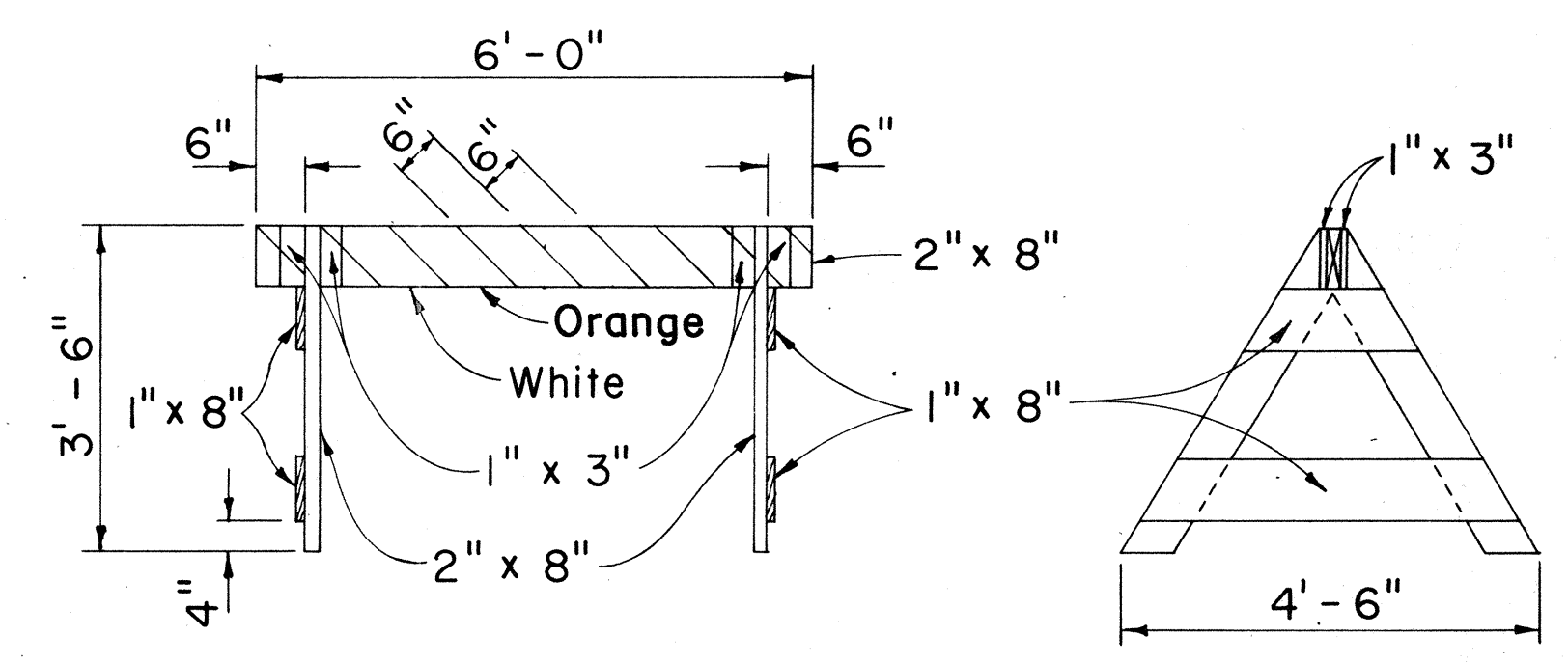
**CLASS I BARRICADE**  
Scale: 1/2" = 1'-0"



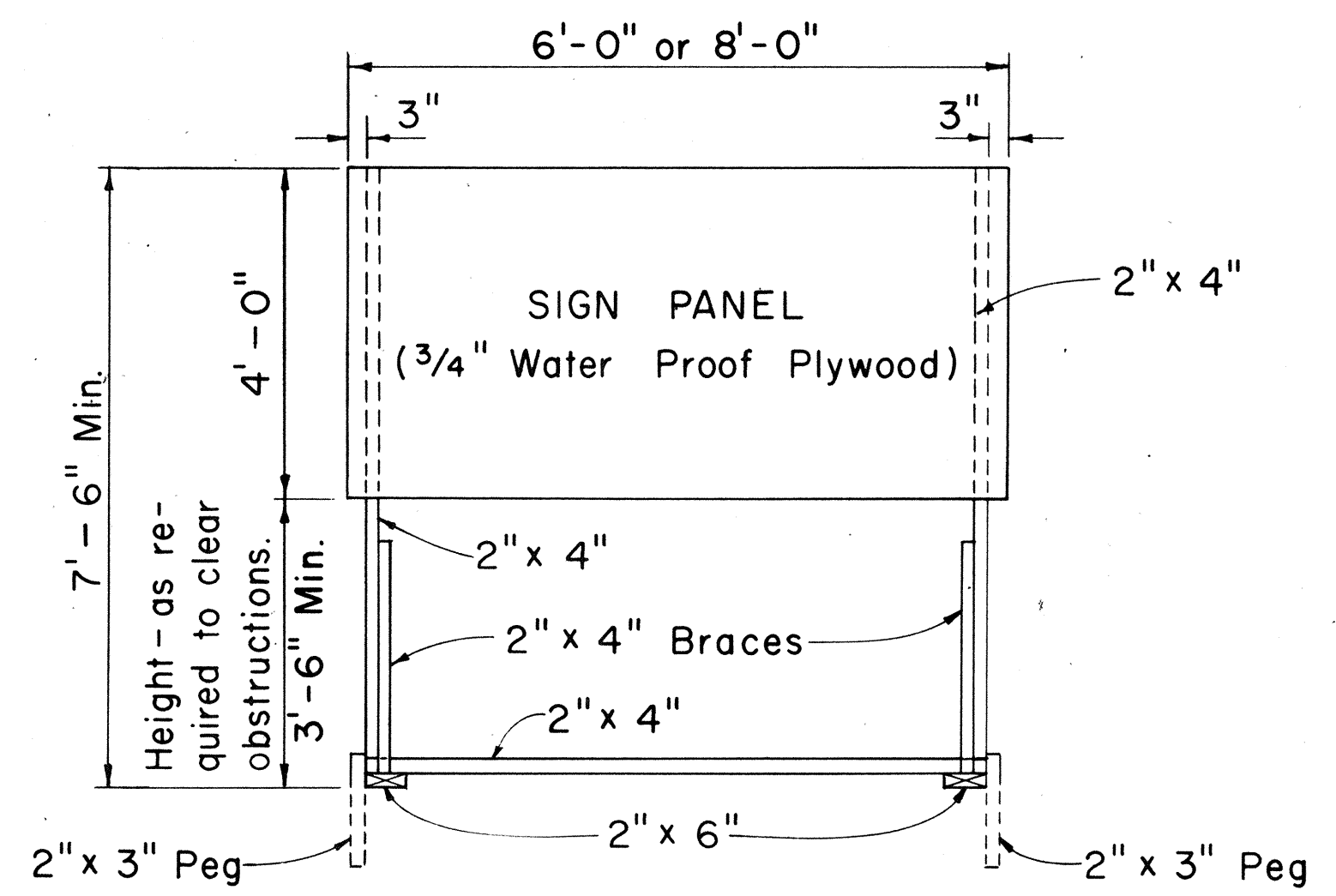
END VIEW



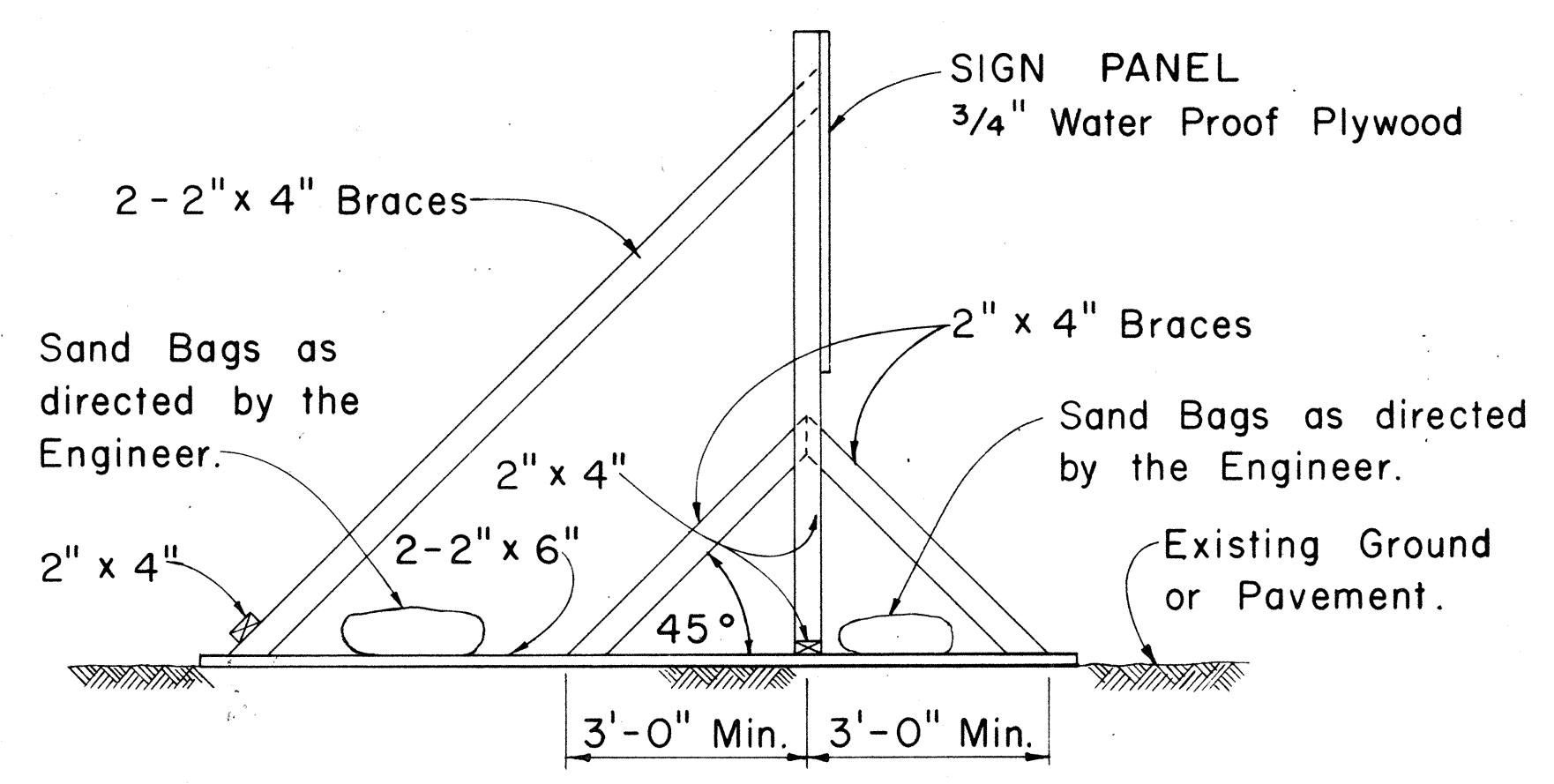
PLAN VIEW



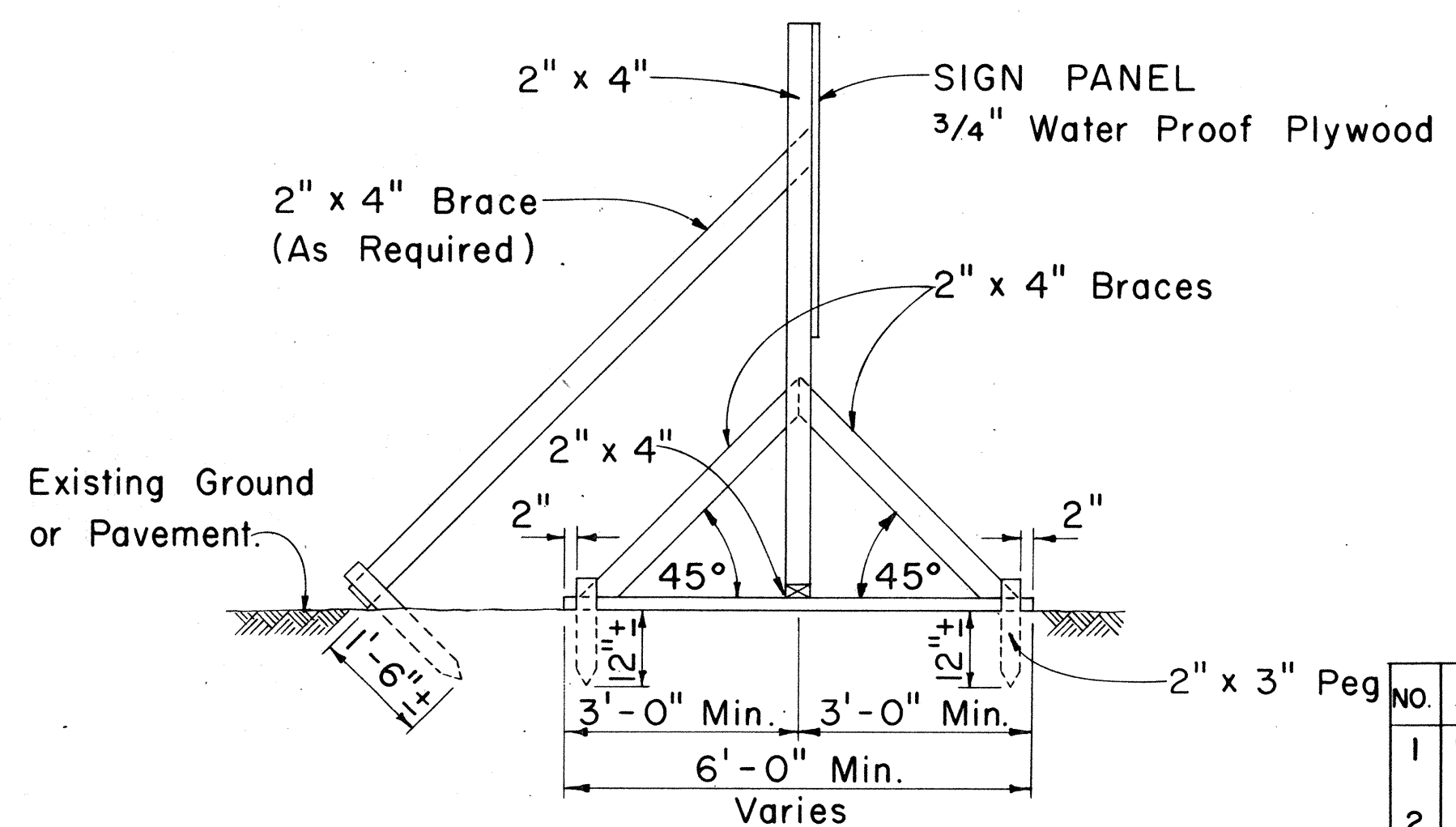
**CLASS II BARRICADE**  
Scale: 1/2" = 1'-0"



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

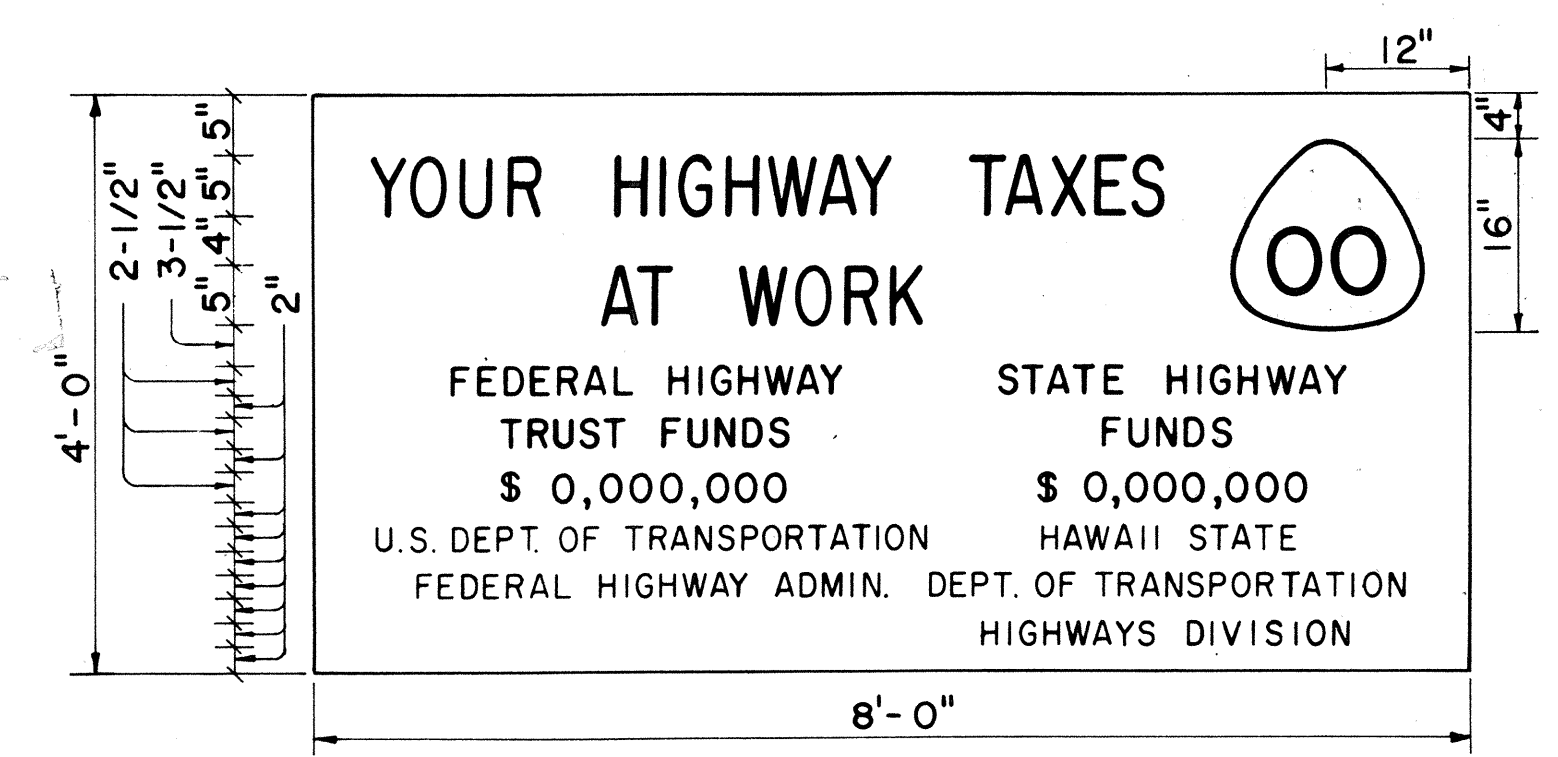


SIDE VIEW  
(SIGN FRAME WEIGHTED DOWN)  
Scale: 1/2" = 1'-0"

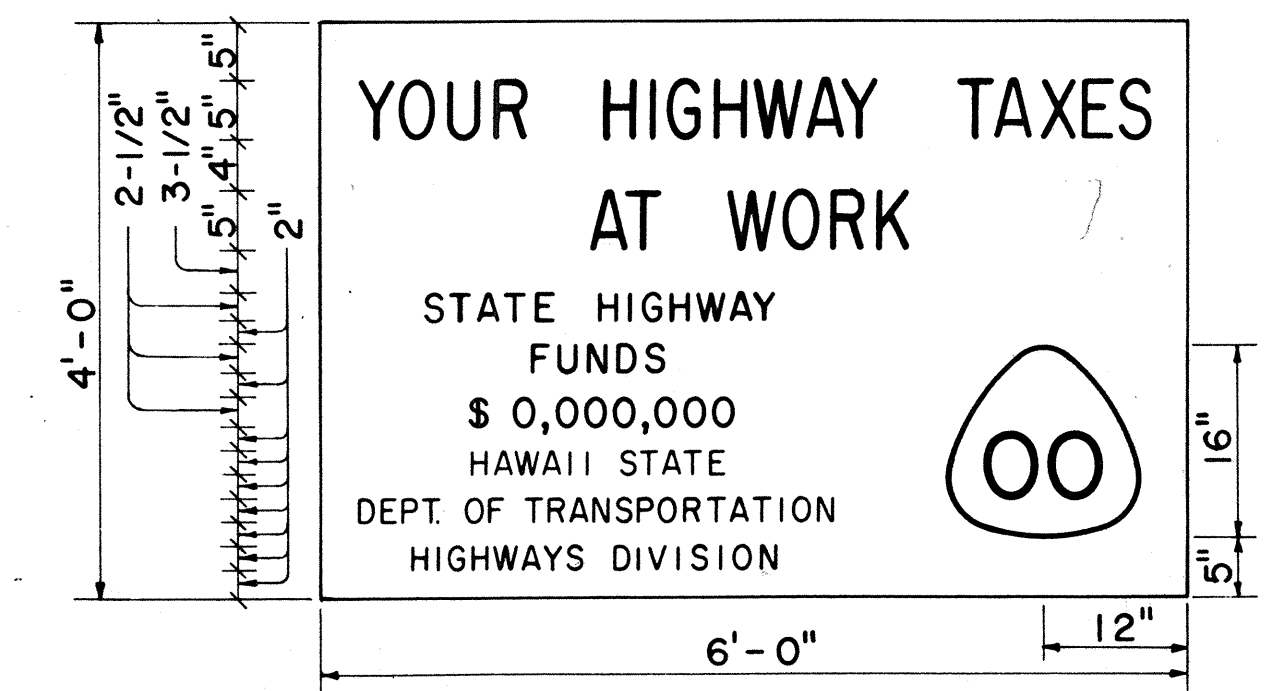


SIDE VIEW  
(SIGN FRAME ANCHORED IN GROUND)  
Scale: 1/2" = 1'-0"

~~CONSTRUCTION IDENTIFICATION SIGN~~ CCO#9 DELETED  
Scale: As Shown



SIGN PANEL  
PRIMARY AND SECONDARY SYSTEMS  
Scale: 3/4" = 1'-0"



SIGN PANEL  
NON-FEDERAL AID PROJECT  
Scale: 3/4" = 1'-0"

**GENERAL NOTES**

1. The sign legend shall be black on white background.
  2. The Contractor shall construct, install and maintain the project signs at the locations shown on the plans and as ordered by the Engineer.
  3. Letters shall be Series "C" of the sizes shown on the plan and shall conform to the FHWA publication "Standard Alphabets for Highway Signs," 1966.
  4. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.
  5. For State Route Marker detail, see sht. DT 209. Include 1/2" black border around edge of marker.
- APPROVAL RECOMMENDED:  
*Eishi Tanaka* 12/29/69  
TRAFFIC ENGINEER DATE
- APPROVED:  
*Alan J. S. S. S.* 12/30/69  
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Delete "Bureau of Public Roads"	H.T.	4-29-70
2	Add Note No.3 for Barricades	H.T.	5-4-71
3	Revise Route Marker	H.T.	4-12-72
4	Revise stripe color for Barricades.	H.T.	10-21-72

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
CONSTRUCTION IDENTIFICATION SIGN  
AND  
WOOD BARRICADES

Scale: As Shown DATE: 4-29-73  
SHEET No. 37 OF 39 SHEETS DT 801

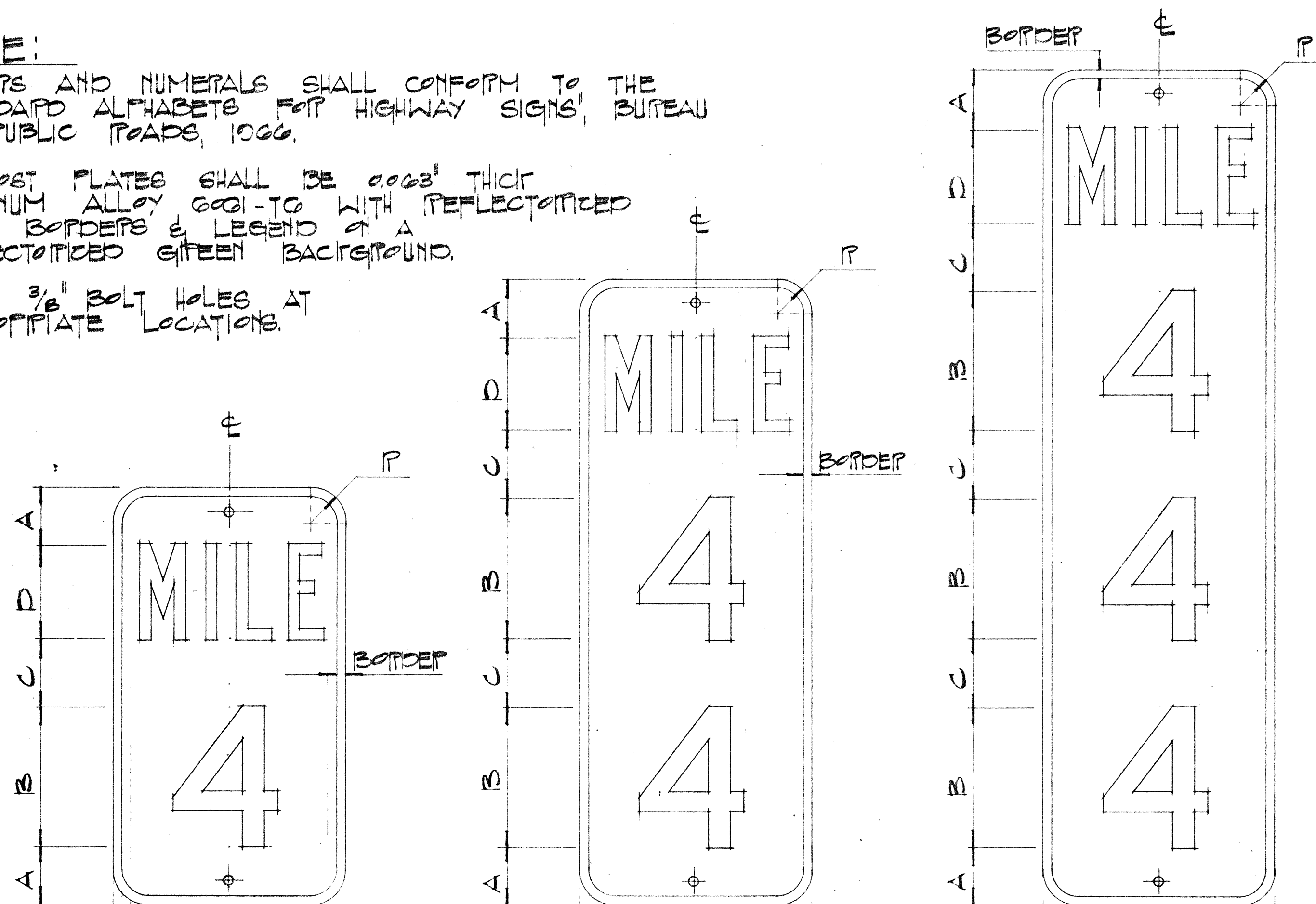
DATE  
SERVEY PLOTTED BY  
PLAN  
DESIGNED BY  
NOTE BOOK  
QUANTITIES BY  
CHECKED BY



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H2-(11)-7	1973	111	274

**NOTE:**

- LETTERS AND NUMERALS SHALL CONFORM TO THE "STANDARD ALPHABETS FOR HIGHWAY SIGNS", BUREAU OF PUBLIC ROADS, 1966.
- MILEPOST PLATES SHALL BE 0.003" THICK ALUMINUM ALLOY 6061-T6 WITH REFLECTORIZED WHITE BORDERS & LEGEND ON A REFLECTORIZED GREEN BACKGROUND.
- DRIILL 3/8" BOLT HOLES AT APPROPRIATE LOCATIONS.



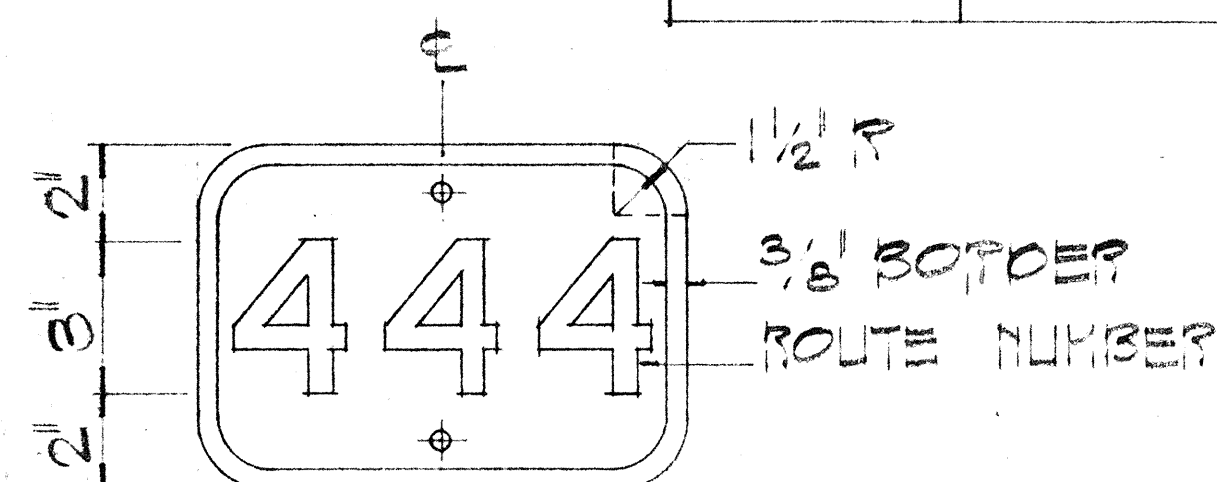
D10-1 10" x 18"  
D12-1 12" x 24"  
D10-2 10" x 27"  
D12-2 12" x 36"  
D10-3 10" x 36"  
D12-3 12" x 48"

**MILEPOST PLATES**

Scale: 1/4" = 1"

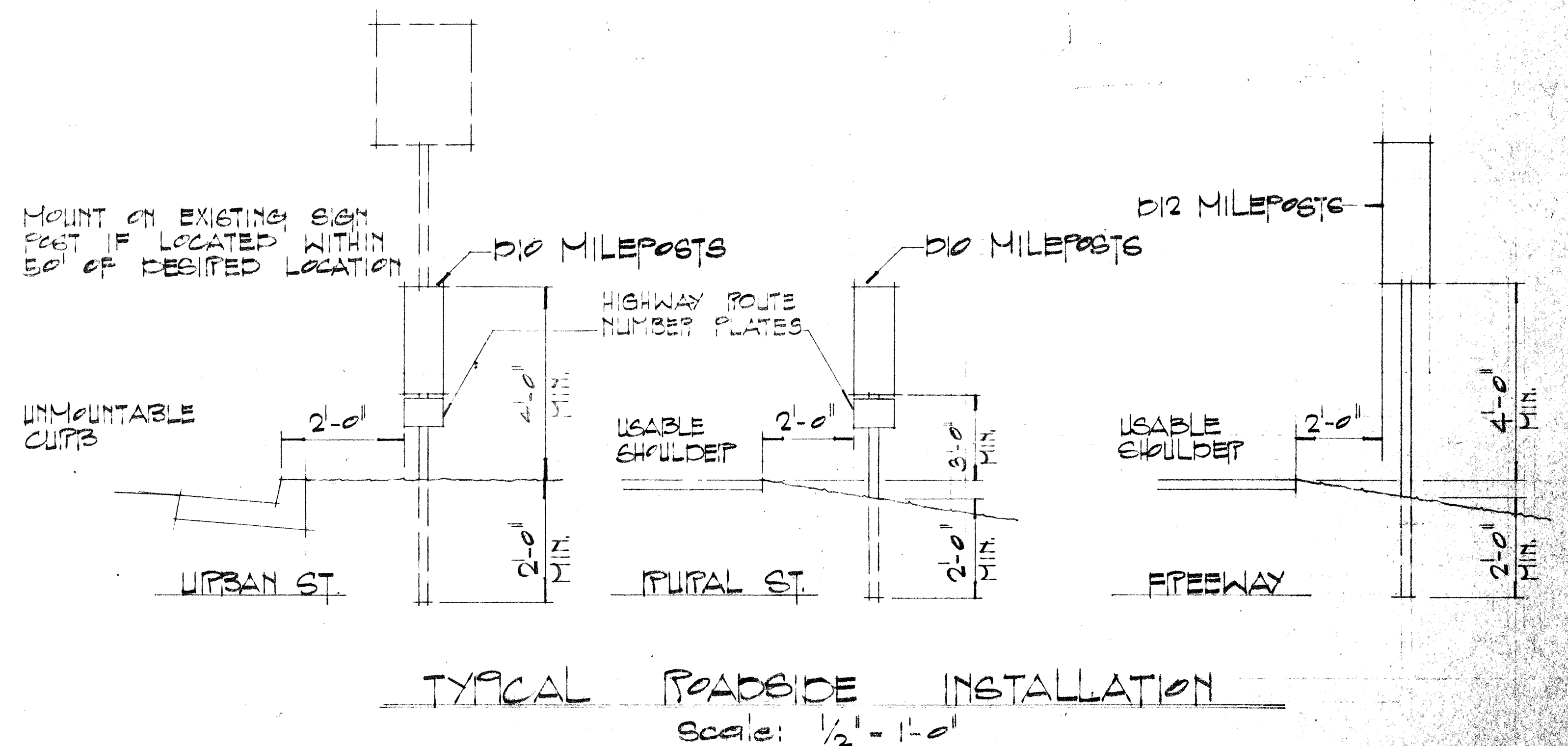
**MILEPOST PLATE SCHEDULE**

NAME	SIZE	IN INCHES						LETTER SERIES	NUMERAL SERIES
		A	B	C	D	R	BORDER		
D10-1 D12-1	10 x 18 12 x 24	2 1/2 3	6 10	3 3	4 5	1 1/2	3/8	B	D
D10-2 D12-2	10 x 27 12 x 36	2 1/2 2 1/2	6 10	3 3	4 5	1 1/2	3/8	B	D
D10-3 D12-3	10 x 36 12 x 48	2 1/2 2	6 10	3 3	4 5	1 1/2	3/8	B	D

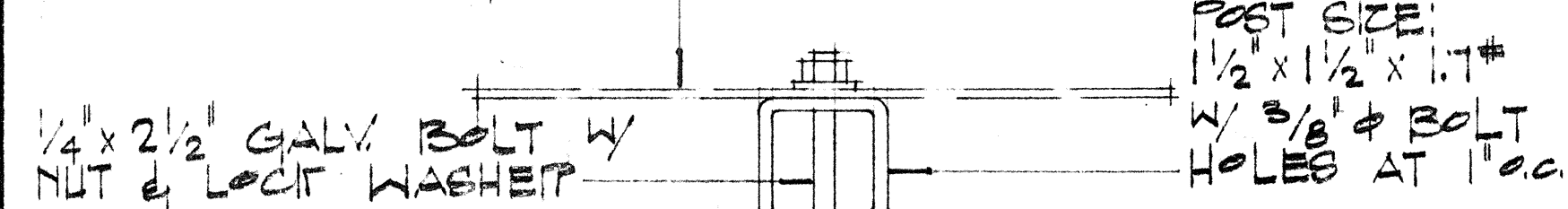


D10-7 10" x 11"  
**HIGHWAY ROUTE NUMBER PLATE**  
(FOR URBAN & RURAL STREET MILEPOSTS)

**NOTE:**  
HIGHWAY ROUTE NUMBER PLATES FOR URBAN & RURAL STREET MILEPOSTS SHALL BE 0.003" THICK ALUMINUM ALLOY 6061-T6 WITH BLACK NUMERALS & BORDERS ON A REFLECTORIZED WHITE BACKGROUND.

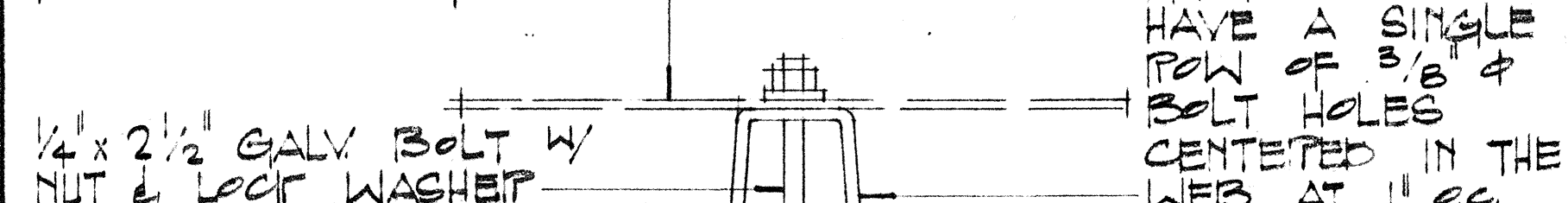


**ADDITIONAL MILEPOST PLATE FOR 2-LANE HIGHWAY**



**GALVANIZED SQUARE TUBE POST**

**ADDITIONAL MILEPOST PLATE FOR 2-LANE HIGHWAY**

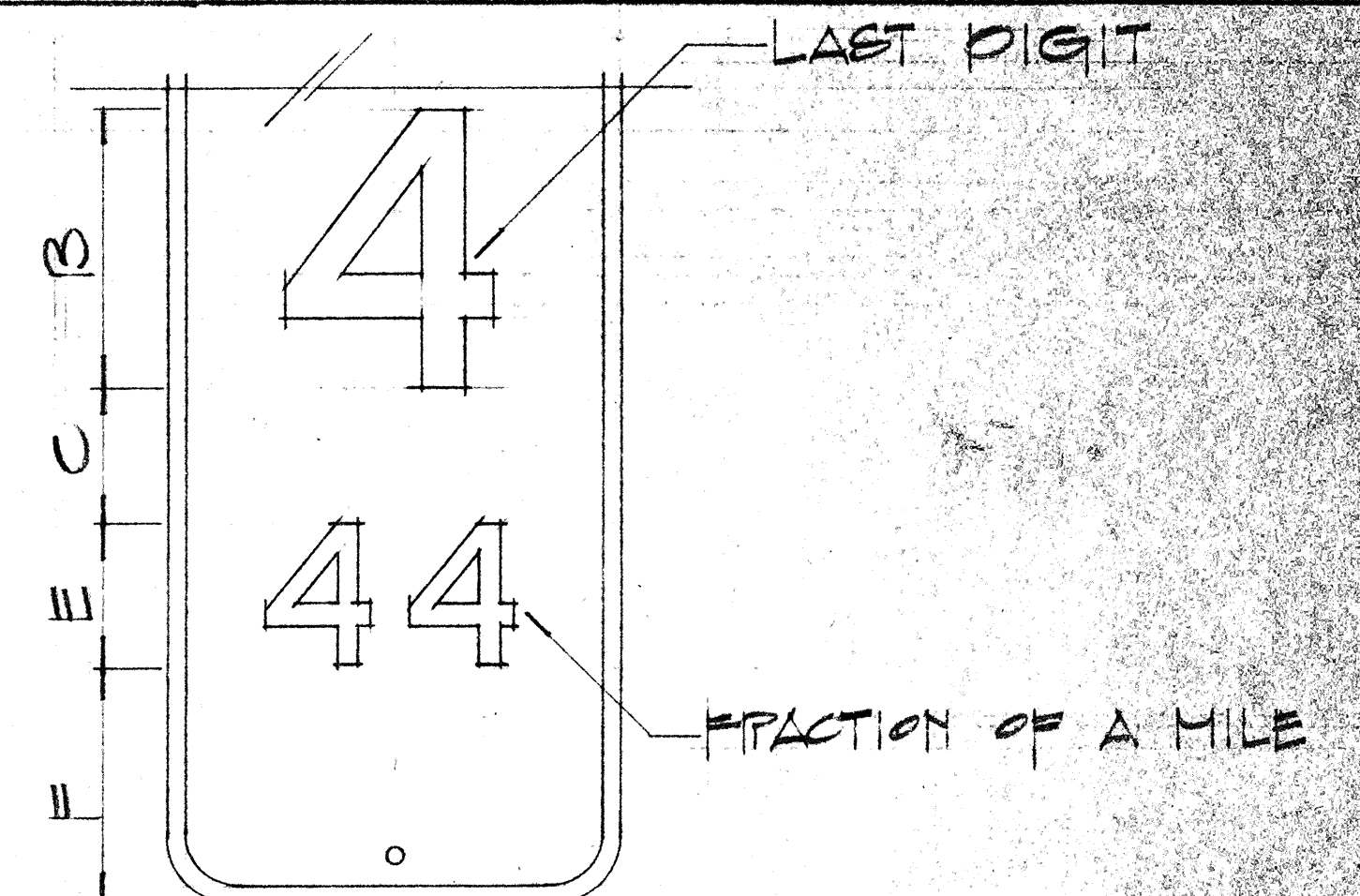


**GALVANIZED FLANGED CHANNEL POST**

**TYPICAL MOUNTING DETAILS**

Scale: 1/2" = 1"

No.	REVISION	APPROVED BY	DATE



**MILEPOST PLATE SCHEDULE WITH FRACTION OF A MILE (LAST STATION)**

NAME	SIZE	B	C	E	F	NUMERAL SERIES
D10-1F	10" x 27"	10"	3"	5"	5 1/2"	D
D12-1F	12" x 36"	10"	3"	5"	5 1/2"	D
D10-2F	10" x 36"	10"	3"	5"	5 1/2"	D
D12-2F	12" x 48"	10"	3"	5"	5 1/2"	D
D10-3F	10" x 48"	10"	3"	5"	5 1/2"	D
D12-3F	12" x 60"	10"	3"	5"	5 1/2"	D

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MILEPOSTS**

WAIHAWA INTERCHANGE  
FAI PROJECT NO. I-H2-(11)-7  
Scale: As Shown January 1972  
SHEET No. 39 OF 39 SHEETS

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