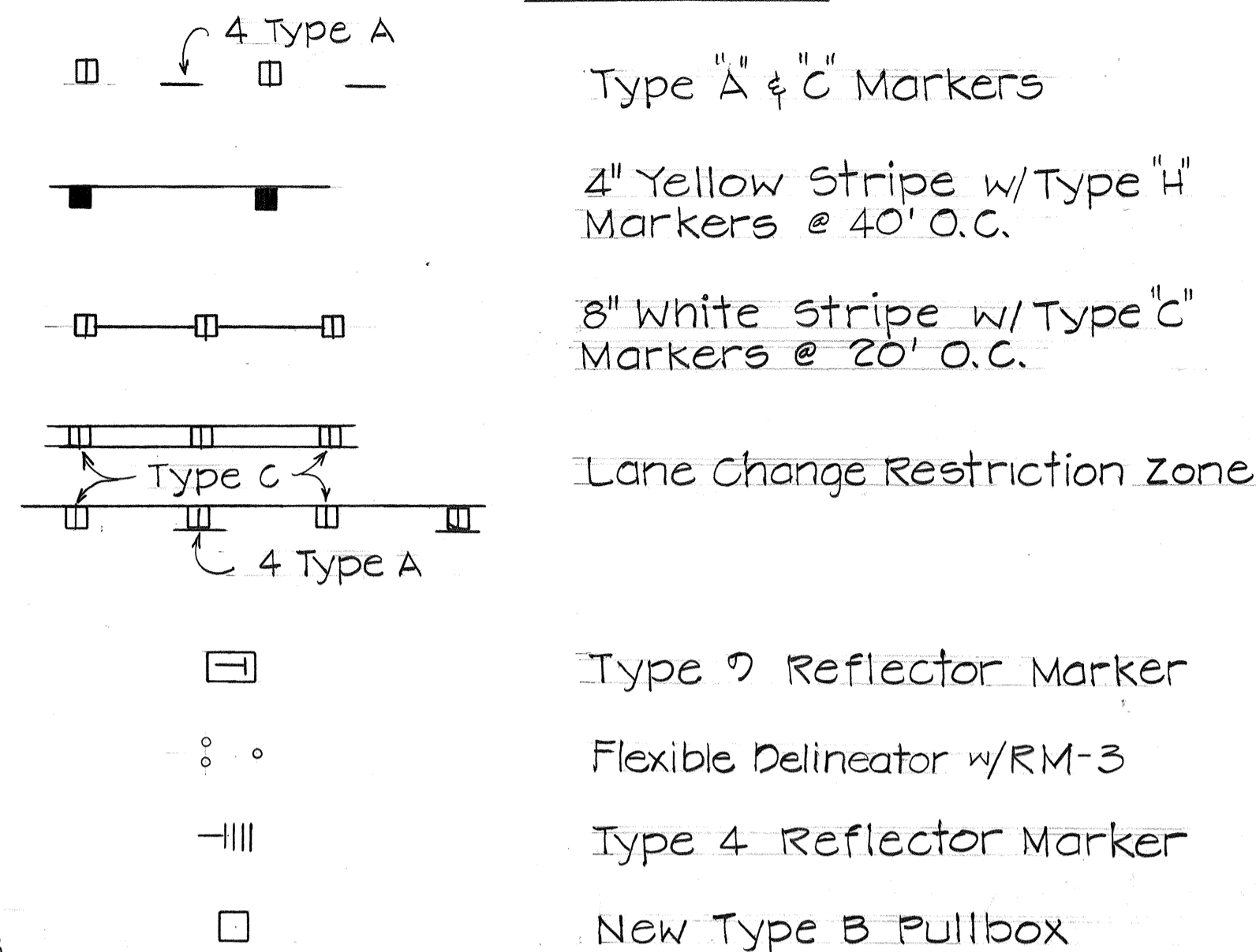


**PAVEMENT MARKING AND SIGNING NOTES**

1. Locations of all new pavement markings and signings shall be staked out in the field by the Contractor for approval by the Engineer prior to installation.
2. Existing pavement markings and signings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various contract items.
3. Existing signs shall not be removed until new signs are installed as replacements or the messages are no longer applicable.
4. For details of Entrance and Exit Markings, refer to Standard Detail DT 304, Plan Sheet No. 56.
5. The Contractor shall use pavement marking tape for all entrance and exit markings, and lane change restriction zone markings.
6. Existing Signs on Malona St. and Olomea St. shall remain unless otherwise noted or directed by the Engineer.
7. Existing low clearance Warning Signs shall remain. All other existing regulatory and warning signs and route marker assemblies on H-1 freeway shall be removed unless otherwise noted or directed by the Engineer.

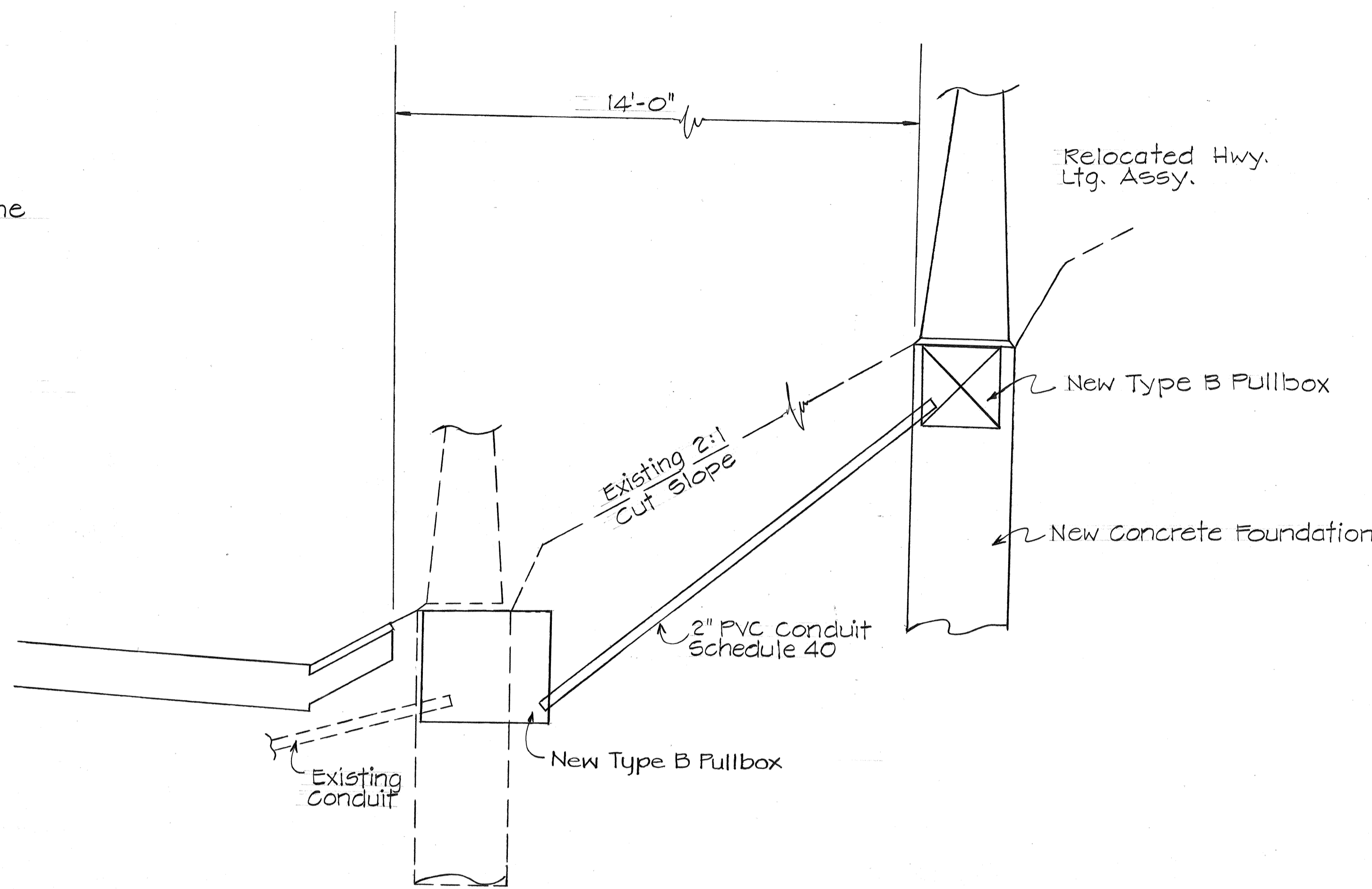
**LEGEND**



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1 (198)	1985	34	59

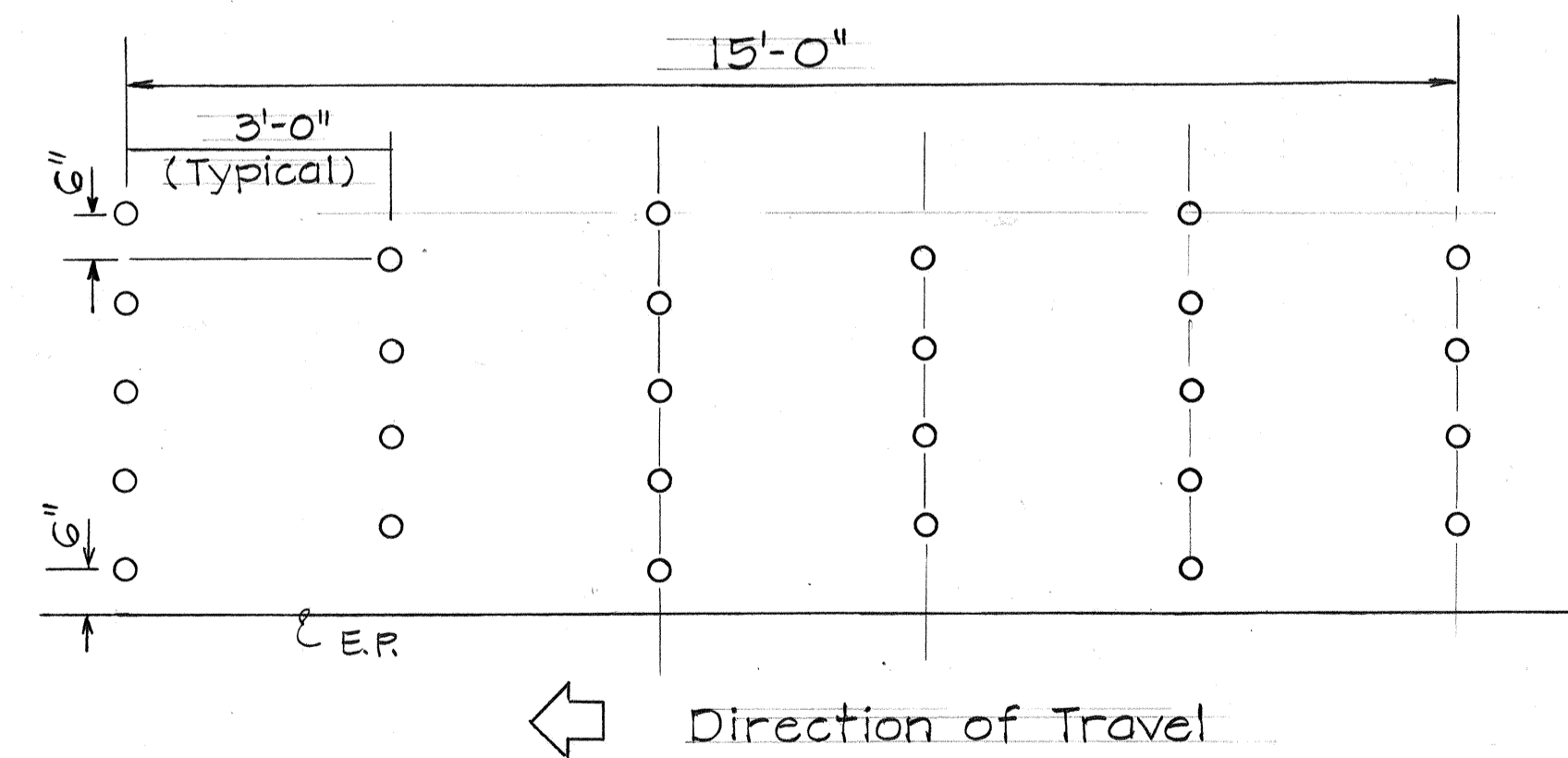
**HIGHWAY LIGHTING NOTES**

1. The final locations of all highway lighting equipment shall be approved by the Engineer.
2. All highway lighting equipment not incorporated into the final lighting system shall be abandoned or removed as directed by the Engineer. Costs shall be incidental to the various highway lighting contract items.
3. The Contractor shall verify the locations of all existing utilities with the respective owners prior to start of construction.
4. Existing highway lighting standards to be replaced or relocated shall be removed together with its respective footing or foundations. The Contractor may elect to remove only the top portion of the footing. In such cases, the contractor shall ensure that the remaining footing shall be six (6) inches below the existing ground. Costs shall be considered incidental to Item No. 622.0011, Highway Lighting System.
5. Existing highway lighting equipment to be reinstalled shall be cleaned prior to such installation. Costs shall be considered incidental to Item No. 622.0011, Highway Lighting System.



**TYPICAL DETAIL  
RELOCATION OF HIGHWAY LIGHTING ASSEMBLY**

- (# Sta. 105+40 ± Lt)
- (# Sta. 106+75 ± Lt)
- (# Sta. 113+60 ± Rt)
- (# Sta. 115+00 ± Rt)
- (# Sta. 116+40 ± Rt)
- Similar to above except Conduit crosses Ramp)



**TYPICAL RUMBLE STRIP**

for (# Sta. 120+00 ± Rt. to 122+00 ± Rt)

DATE	REVISION
6/12/85	Revised Locations of Relocated Hwy. Ltg. Assembly.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**NOTES, LEGEND AND MISCELLANEOUS DETAILS**

INTERSTATE ROUTE H-1  
F.A.I. PROJ. NO. IR-HI-1(198)

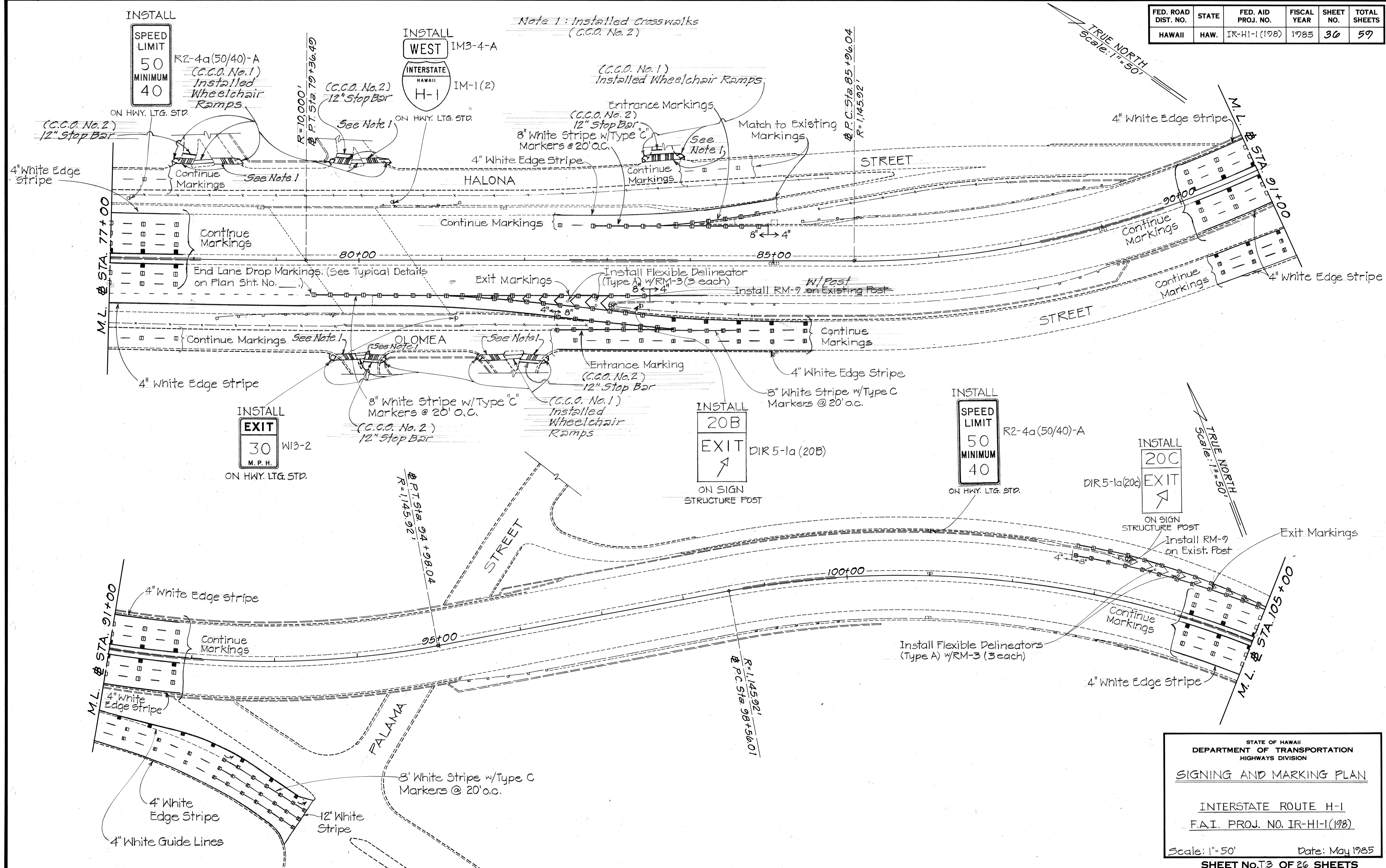
Scale: 1"=50' Date: May 1985

SHEET No. 11 OF 26 SHEETS

DATE: \_\_\_\_\_  
SURVEY PLOTTED BY: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
TRACED BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
QUANTITIES BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
ORIGINAL PLAN NO. \_\_\_\_\_



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	36	59



DATE	_____
DESIGNED BY	_____
DRAWN BY	_____
CHECKED BY	_____
NO. _____	_____

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

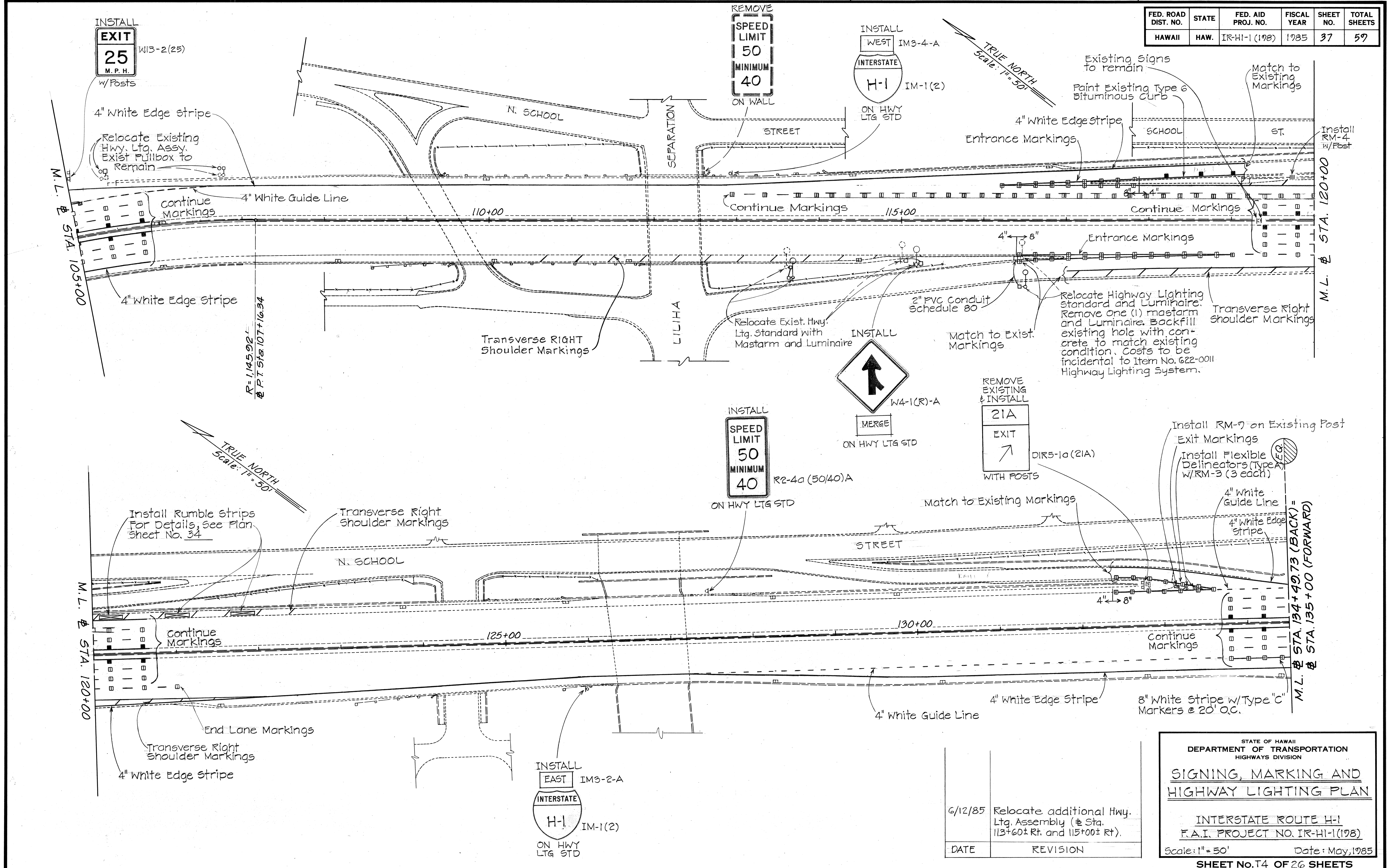
**SIGNING AND MARKING PLAN**

INTERSTATE ROUTE H-1  
F.A.I. PROJ. NO. IR-HI-1(198)

Scale: 1"=50'      Date: May 1985

**SHEET No. 36 OF 26 SHEETS**

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1 (198)	1985	37	59



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

6/12/85	Relocate additional Hwy. Ltg. Assembly (@ Sta. 113+60± Rt. and 115+00± Rt).
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

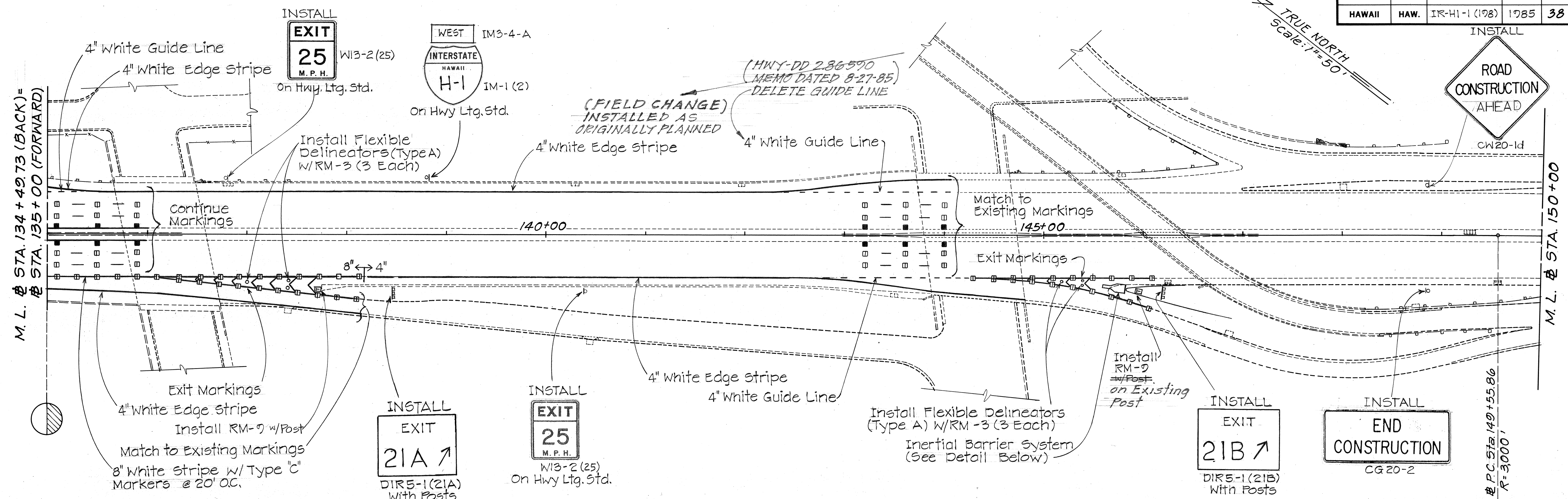
**SIGNING, MARKING AND  
HIGHWAY LIGHTING PLAN**

INTERSTATE ROUTE H-1  
F.A.I. PROJECT NO. IR-HI-1 (198)

Scale: 1" = 50' Date: May, 1985

SHEET No. T4 OF 26 SHEETS

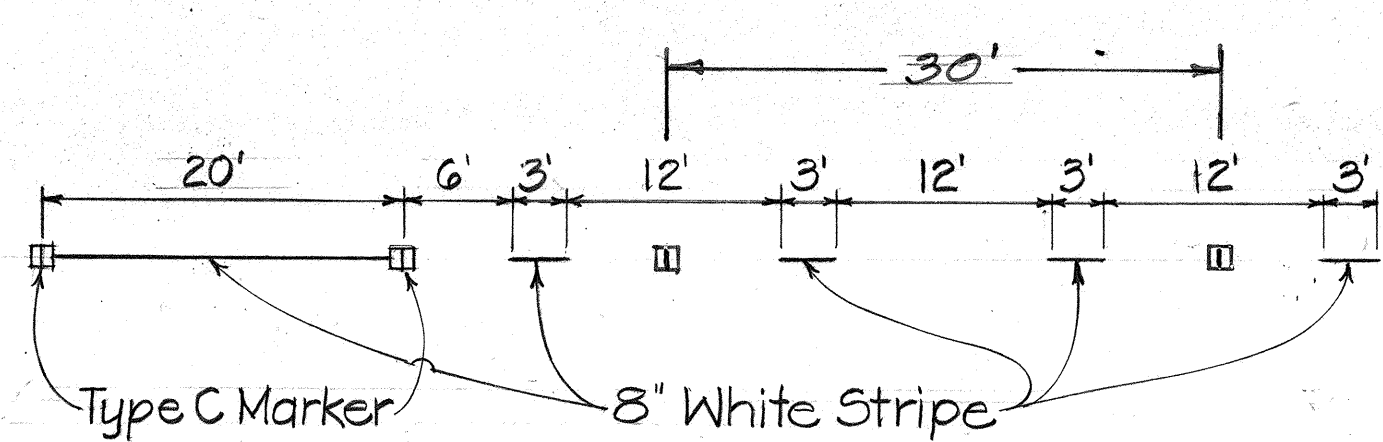
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1 (198)	1985	38	59



M. L. @ STA. 134 + 40.73 (BACK) =  
@ STA. 135 + 00 (FORWARD)

M. L. @ STA. 150 + 00

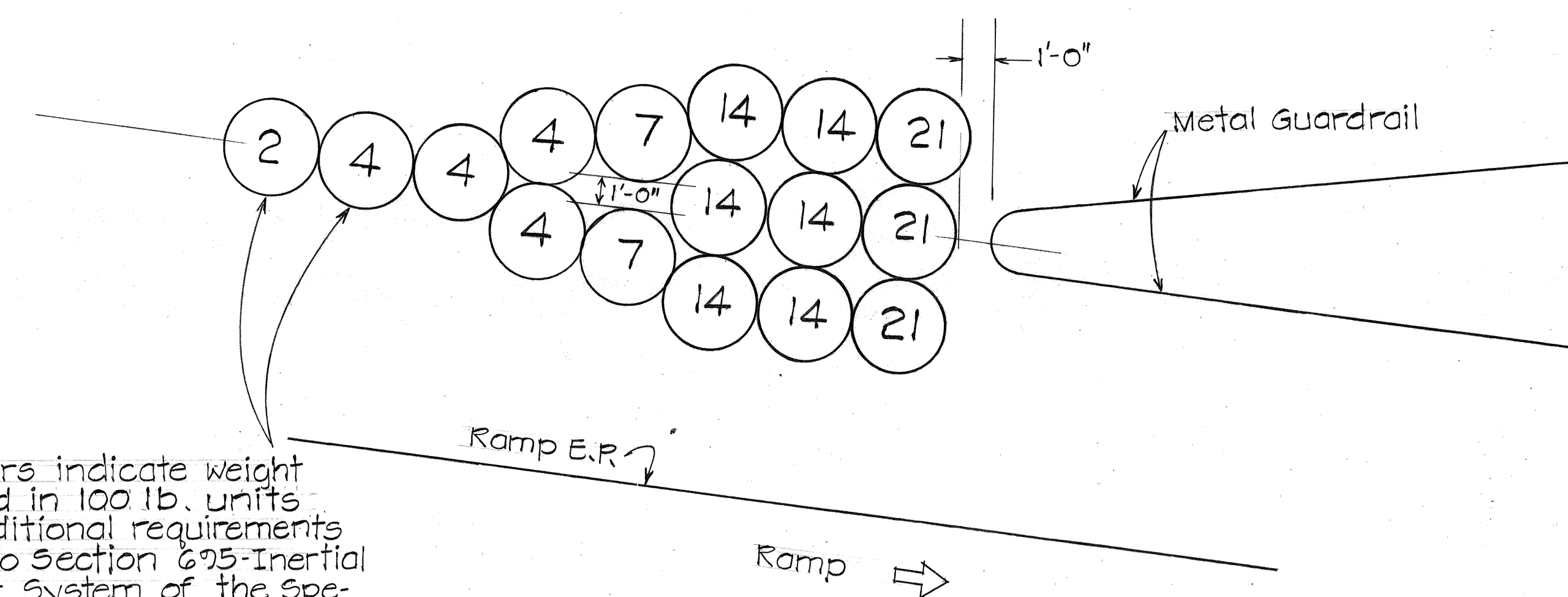
H-1 Eastbound →  
← E.R.



TYPICAL LANE DROP MARKINGS

Scale: 3/32" = 1'-0"

(FIELD CHANGE) ADDED TYPE "C" MARKERS @ 30' O.C.



Numbers indicate weight of sand in 100 lb. units. For additional requirements refer to Section 625-Inertial Barrier System of the Special Provisions.

INERTIAL BARRIER SYSTEM

Not to Scale

DATE	
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING, MARKING AND MISCELLANEOUS DETAILS**

INTERSTATE ROUTE H-1  
F.A.I. PROJECT NO IR-HI-1 (198)

Scale: 1" = 50' Date: May, 1985

SHEET No. 38 OF 26 SHEETS

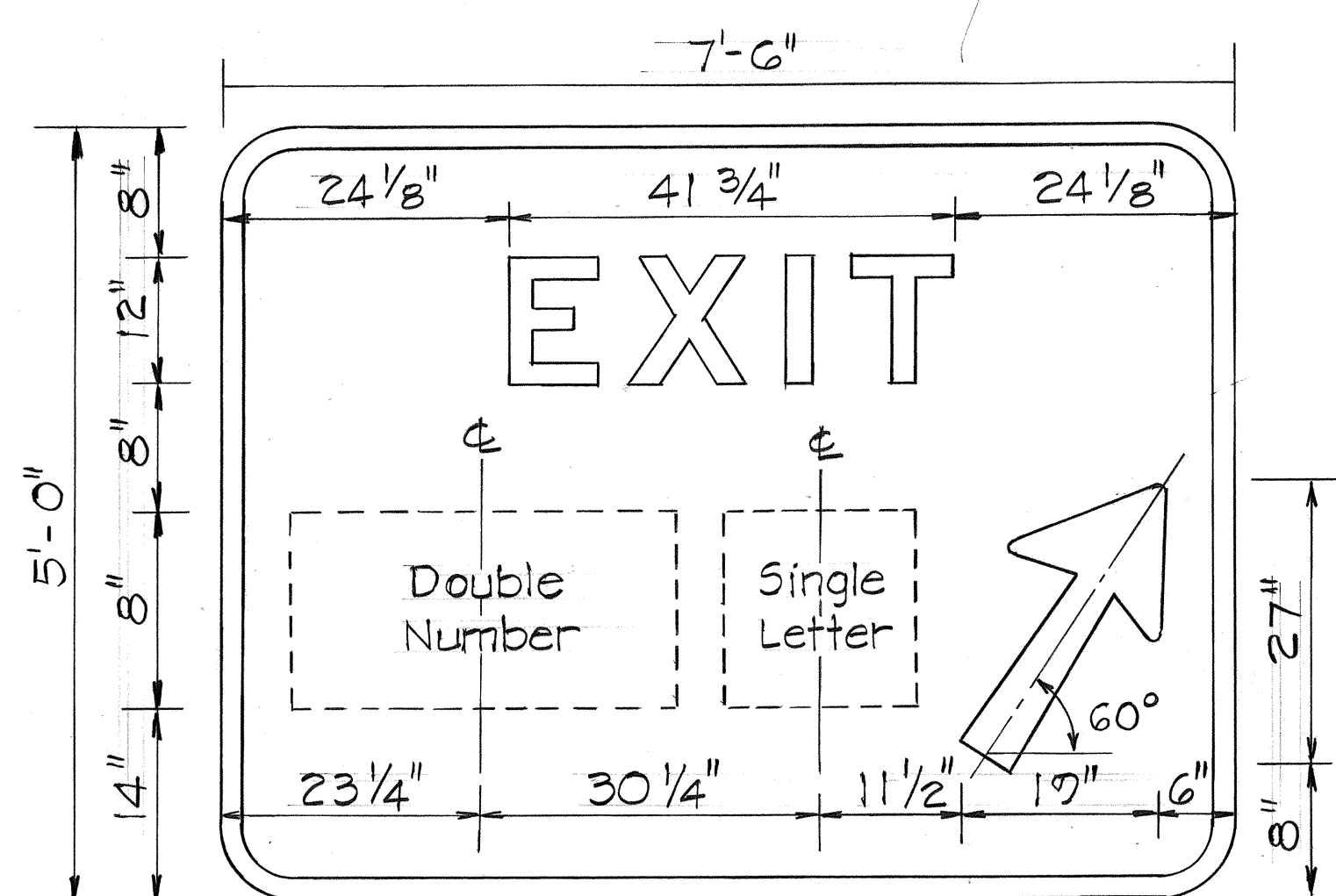
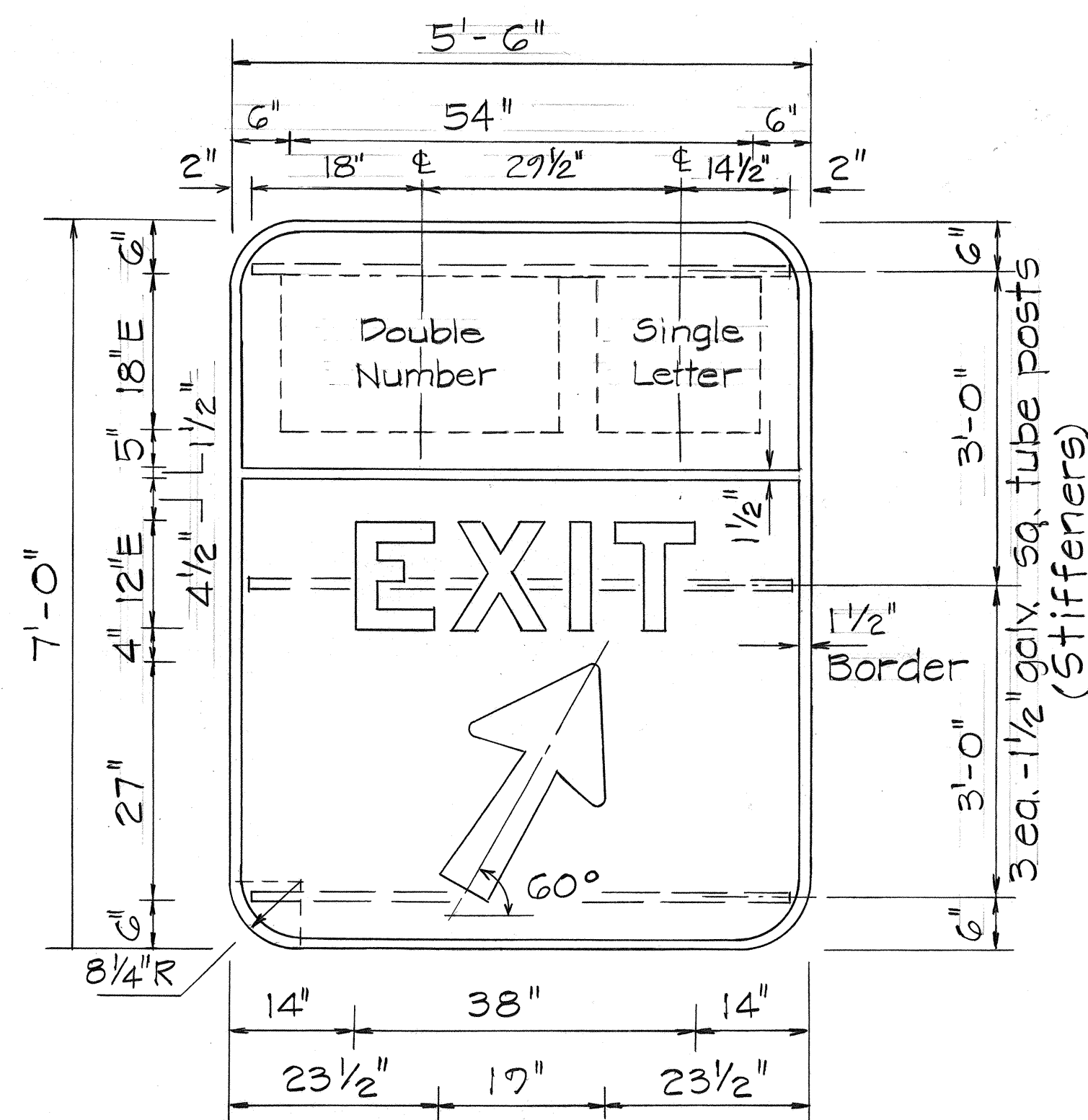
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	39	59

GENERAL NOTES

- Signs shall conform to the latest editions & amendments of the following FHWA publications:
  - "Manual on Uniform Traffic Control Devices for Streets & Highways" (MUTCD).
  - "Standard Highway Signs".
  - "Standard Alphabets for Highway Signs".

GORE SIGN

- Sign backing shall be 0.100 inch sheet aluminum as specified in Subsection 712.20 (B)(1).
- Corners of the sign panels shall be rounded to fit the border.
- Sign panels shall have 3/8" φ bolt holes drilled at appropriate locations.
- All backing for signs 4 feet by 6 feet or less shall be of one sheet. Larger sign panels may be spliced however, the Contractor shall submit all sign splicing details to the Engineer for approval.

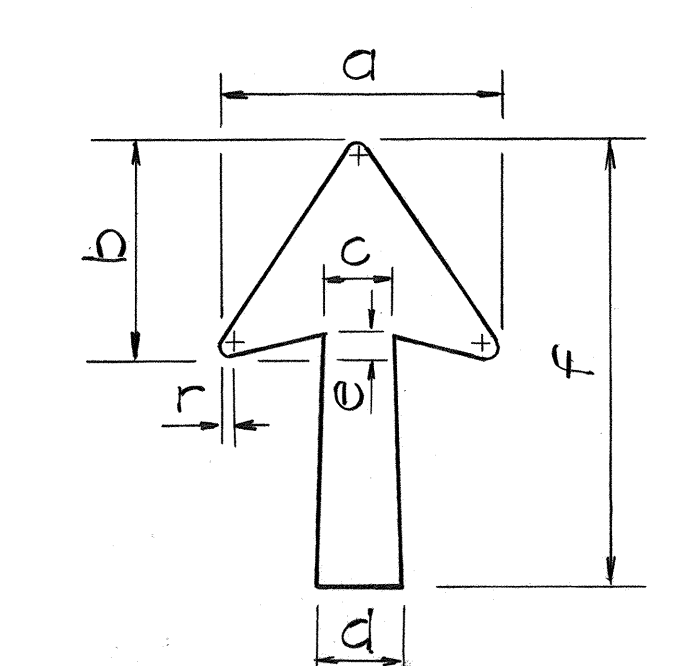


DIR 5-1 (21A)  
DIR 5-1 (21B)  
GORE EXIT SIGNS

Hwy-DD  
2.86590  
MEMO DATED  
8-27-85

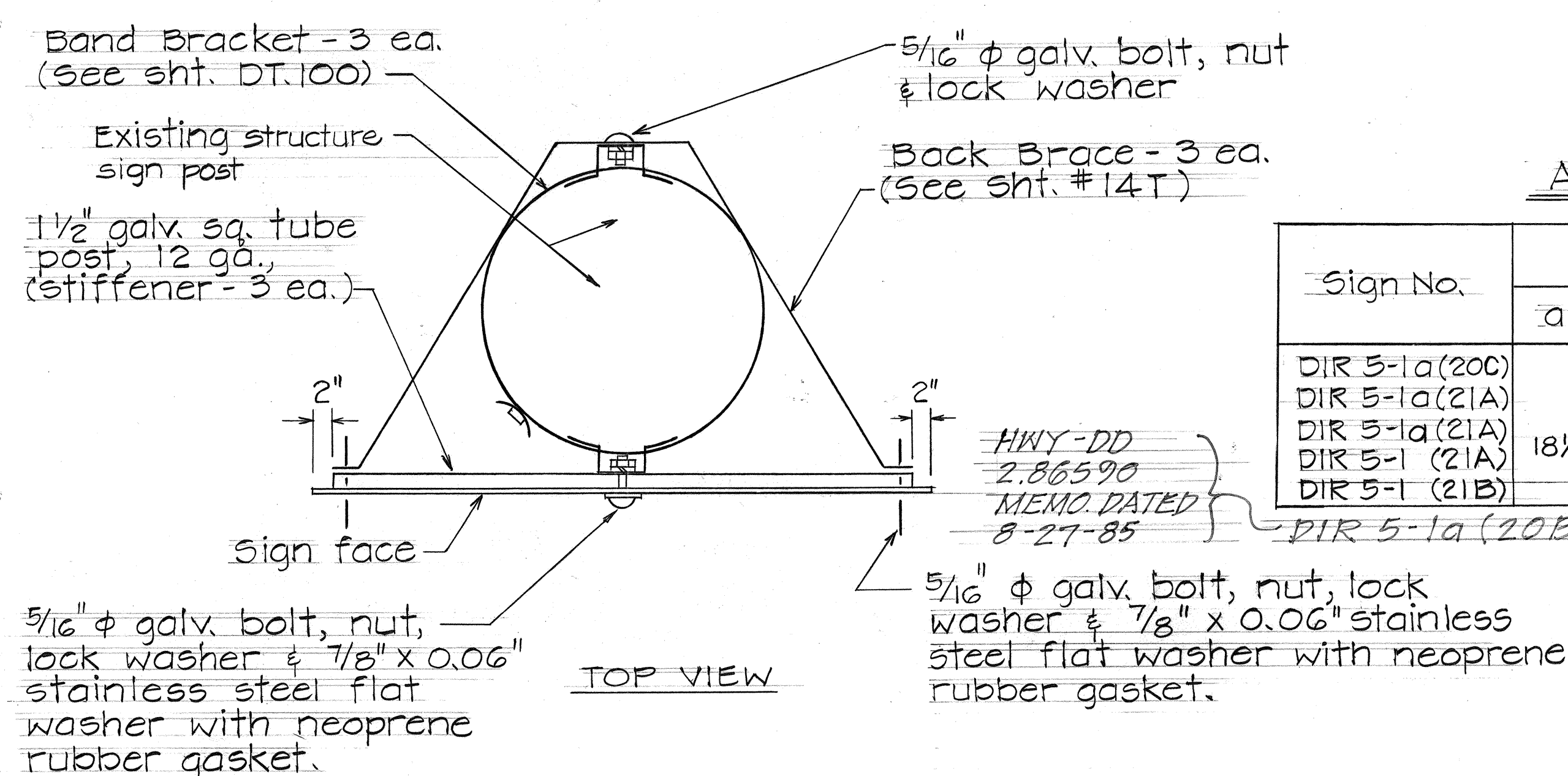
DIR 5-1a (20C)  
DIR 5-1a (20B)  
DIR 5-1a (21A)

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



ARROW DETAIL

Sign No.	Dimensions in Inches						
	a	b	c	d	e	f	r
DIR 5-1a(20C)							
DIR 5-1a(21A)							
DIR 5-1a(21A)	18 1/4	14	4 1/2"	6"	1 1/2	29 1/4	3/4
DIR 5-1 (21A)							
DIR 5-1 (21B)							



GORE SIGN MOUNTING DETAIL  
Not to Scale

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NO.	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

GORE SIGNS

INTERSTATE ROUTE H-1  
F.A.I. PROJ. NO. IR-HI-1(198)

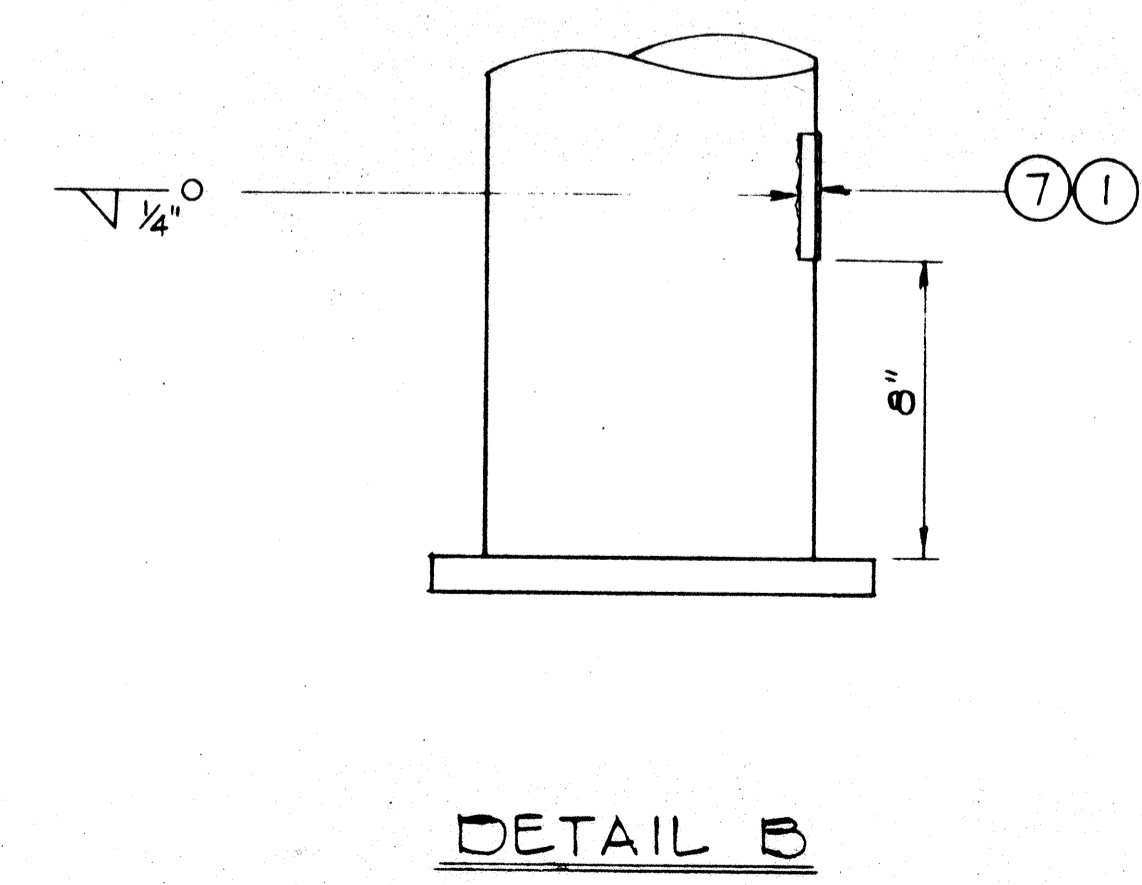
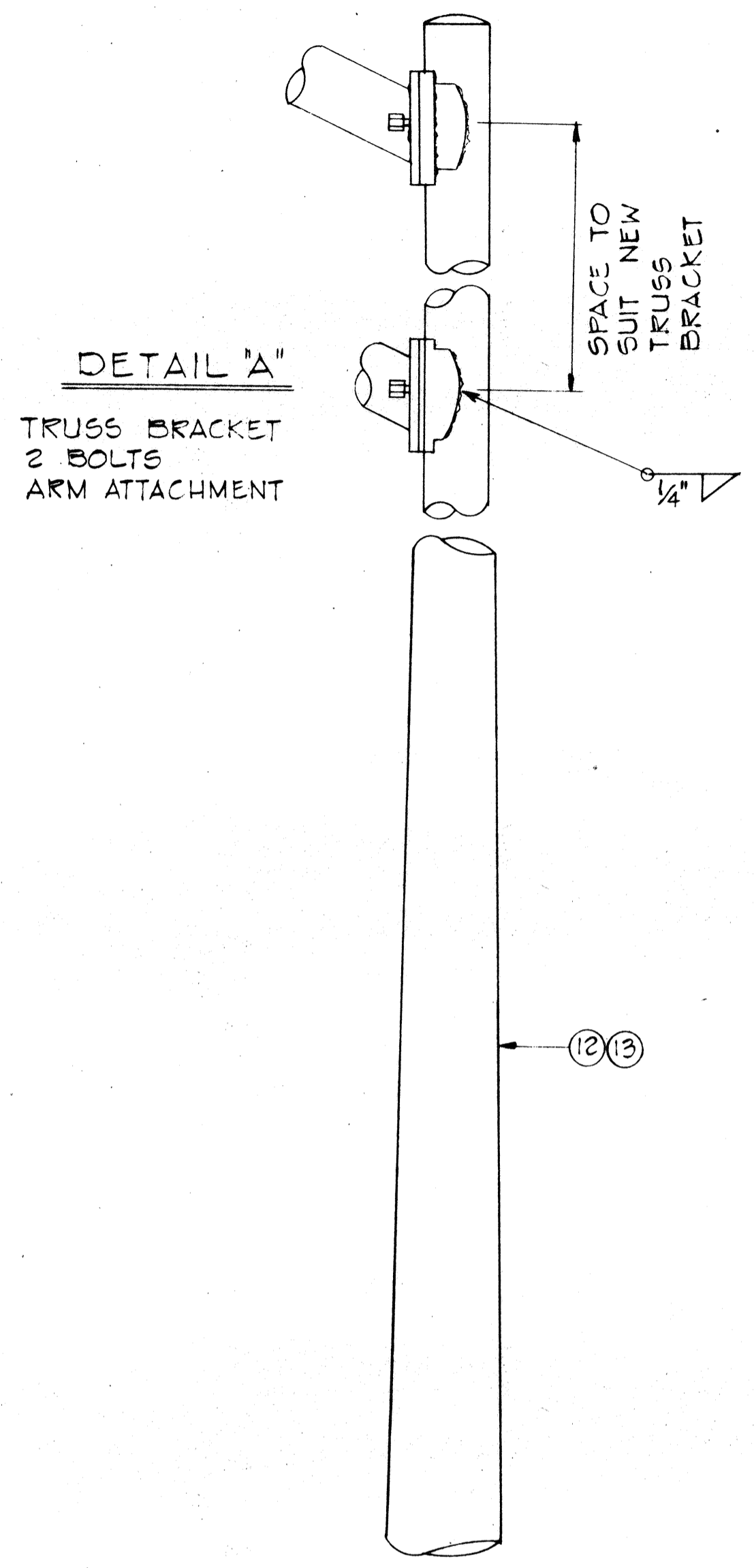
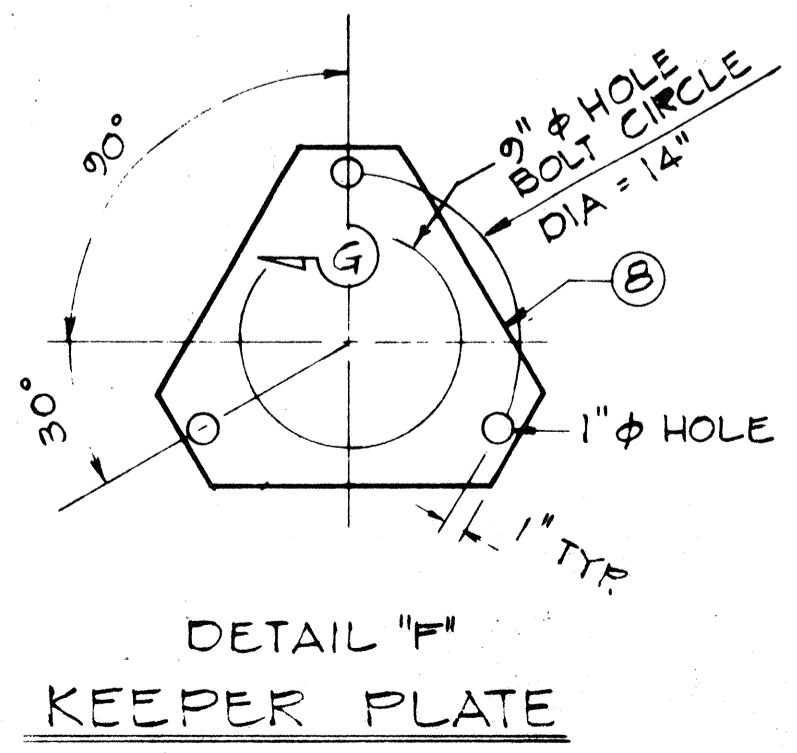
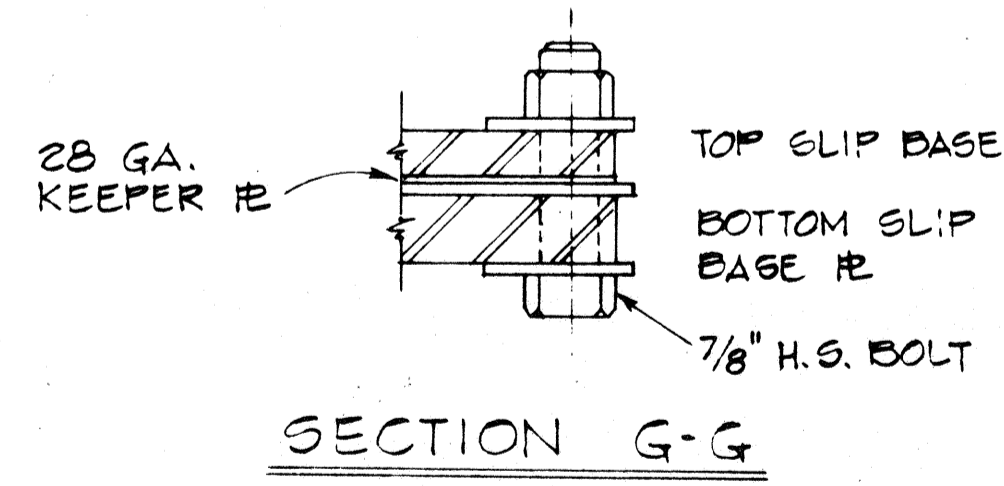
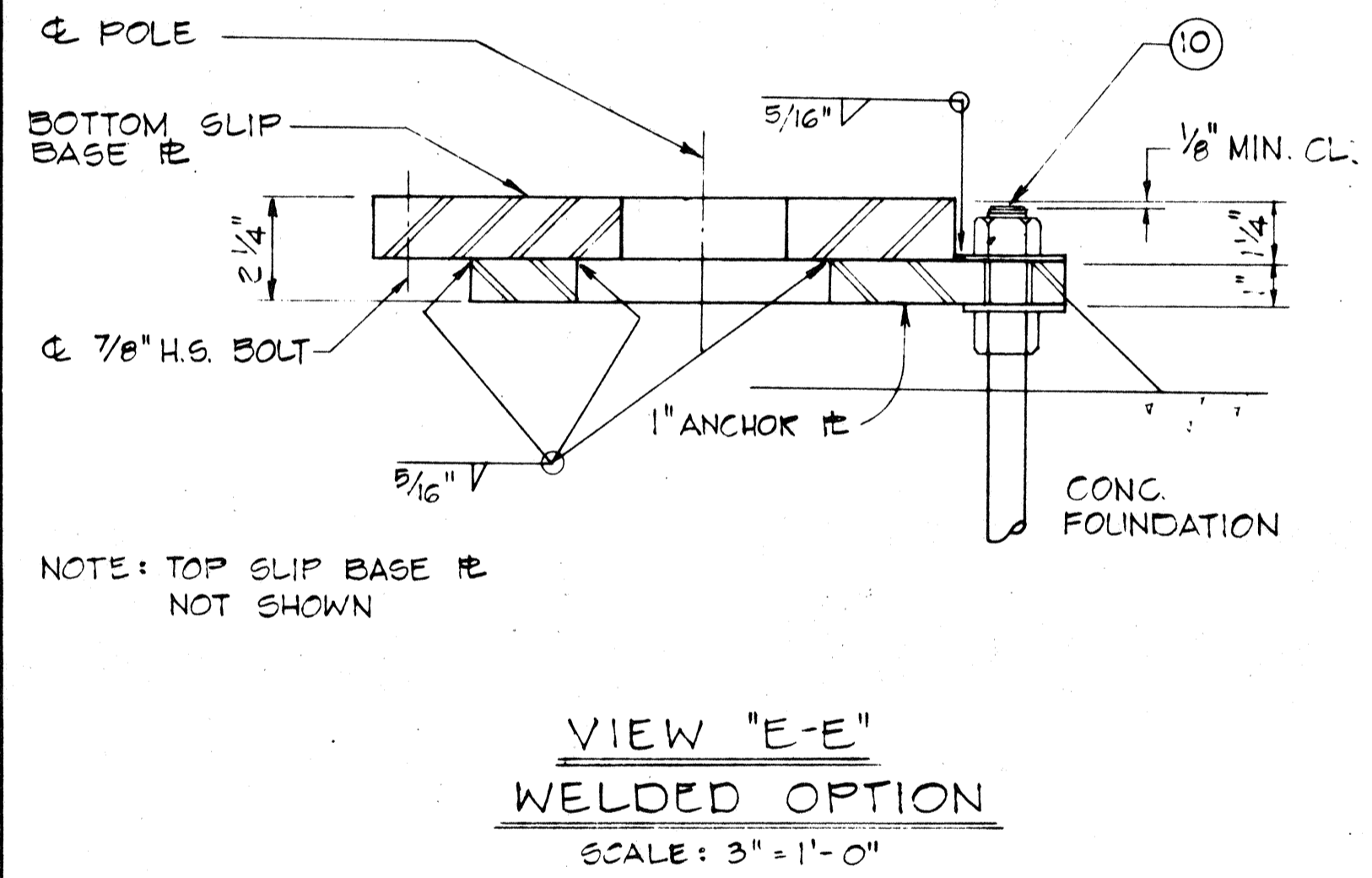
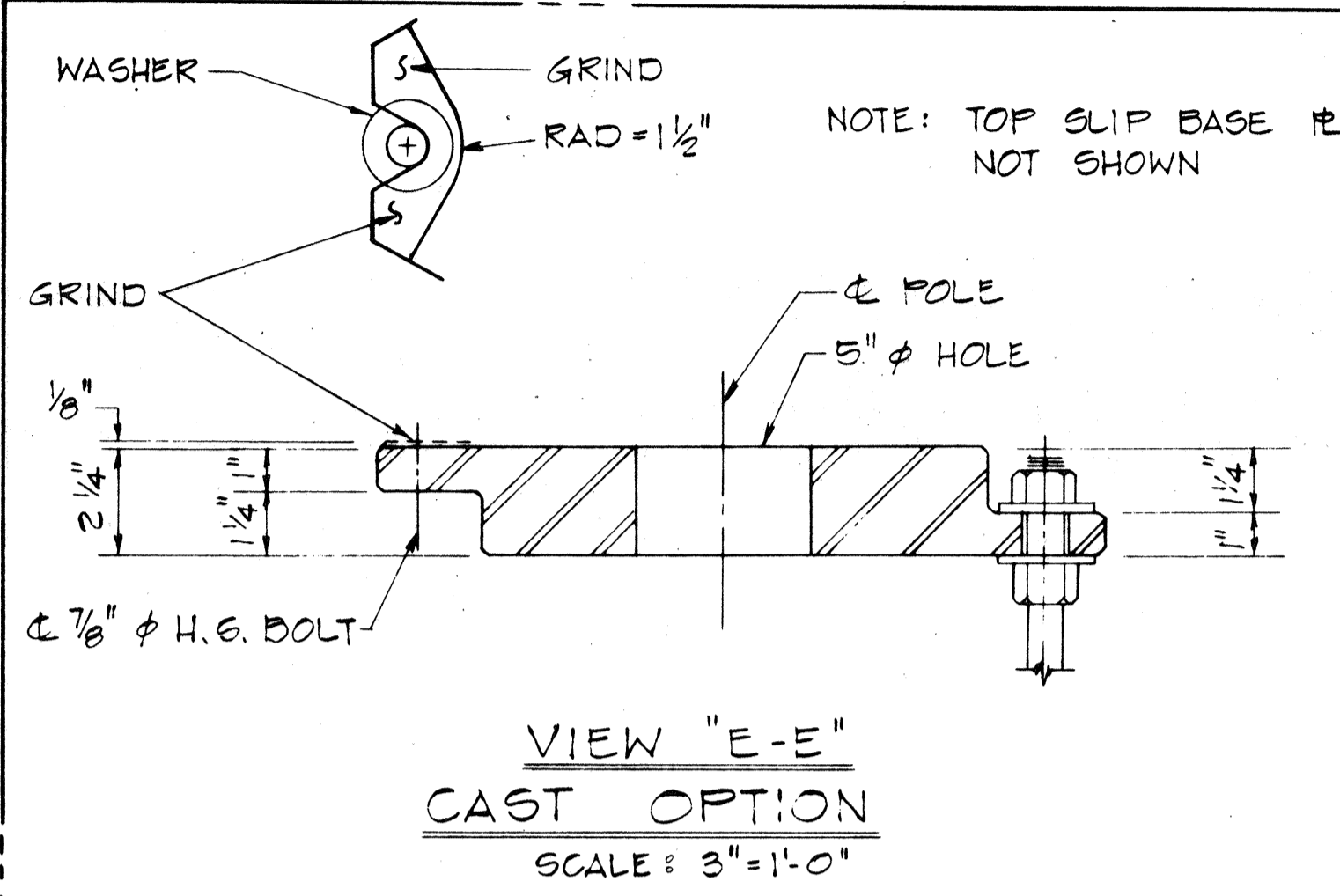
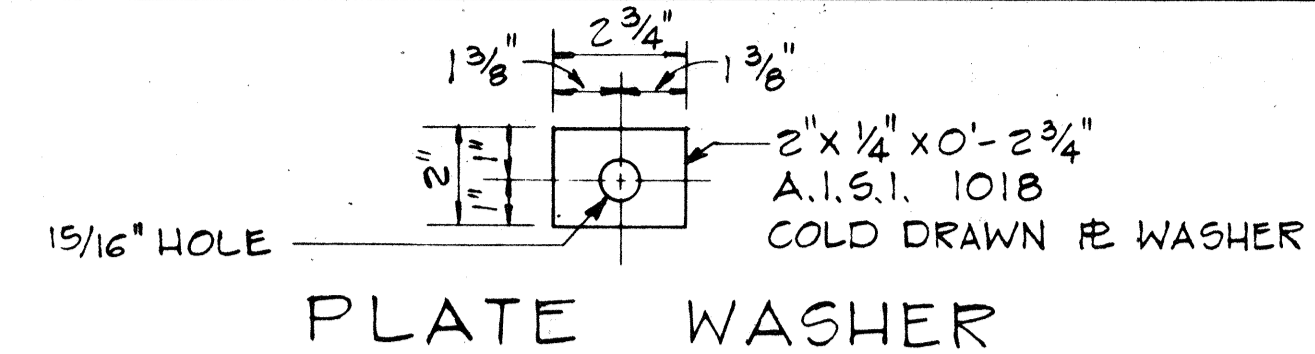
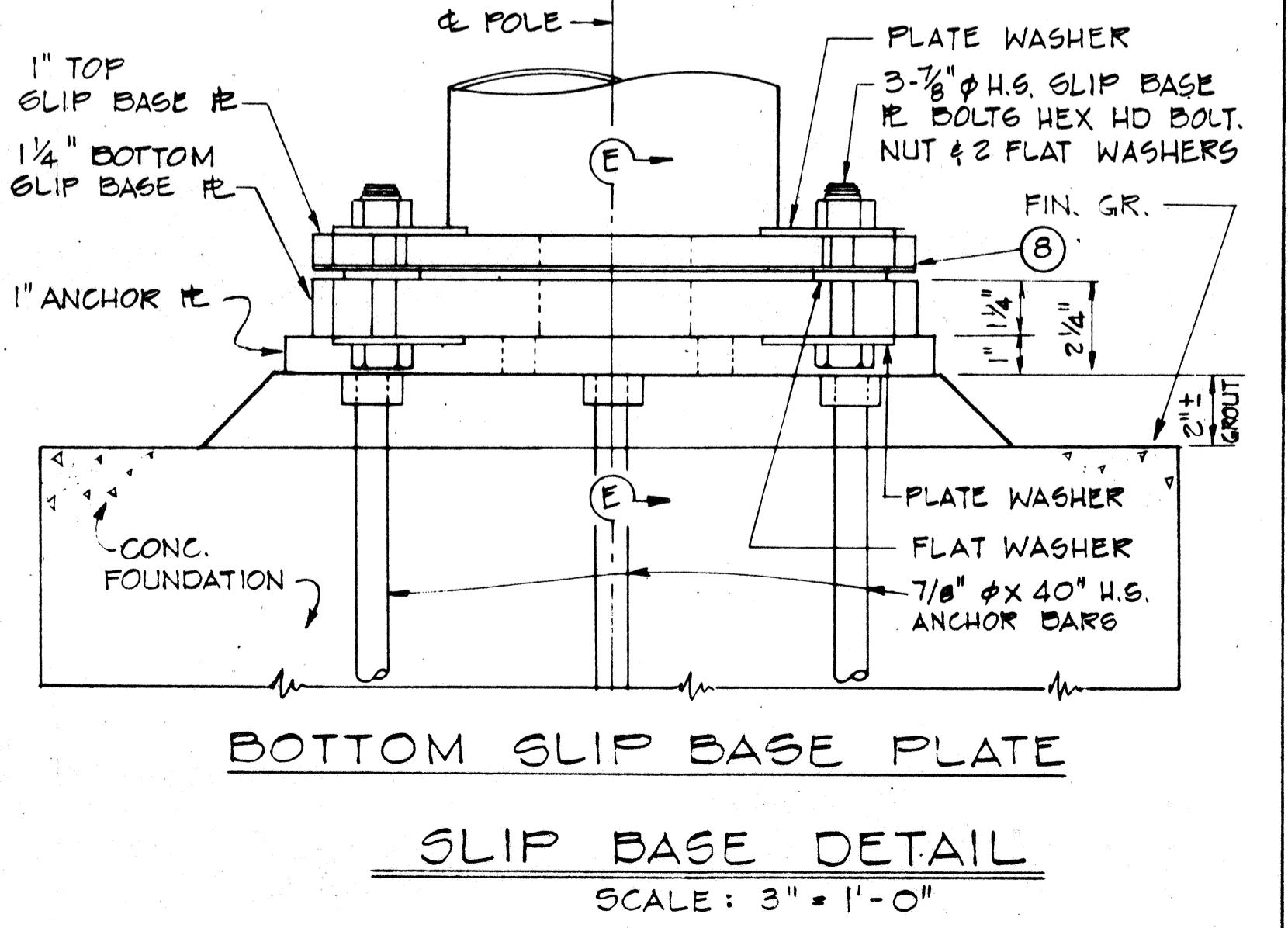
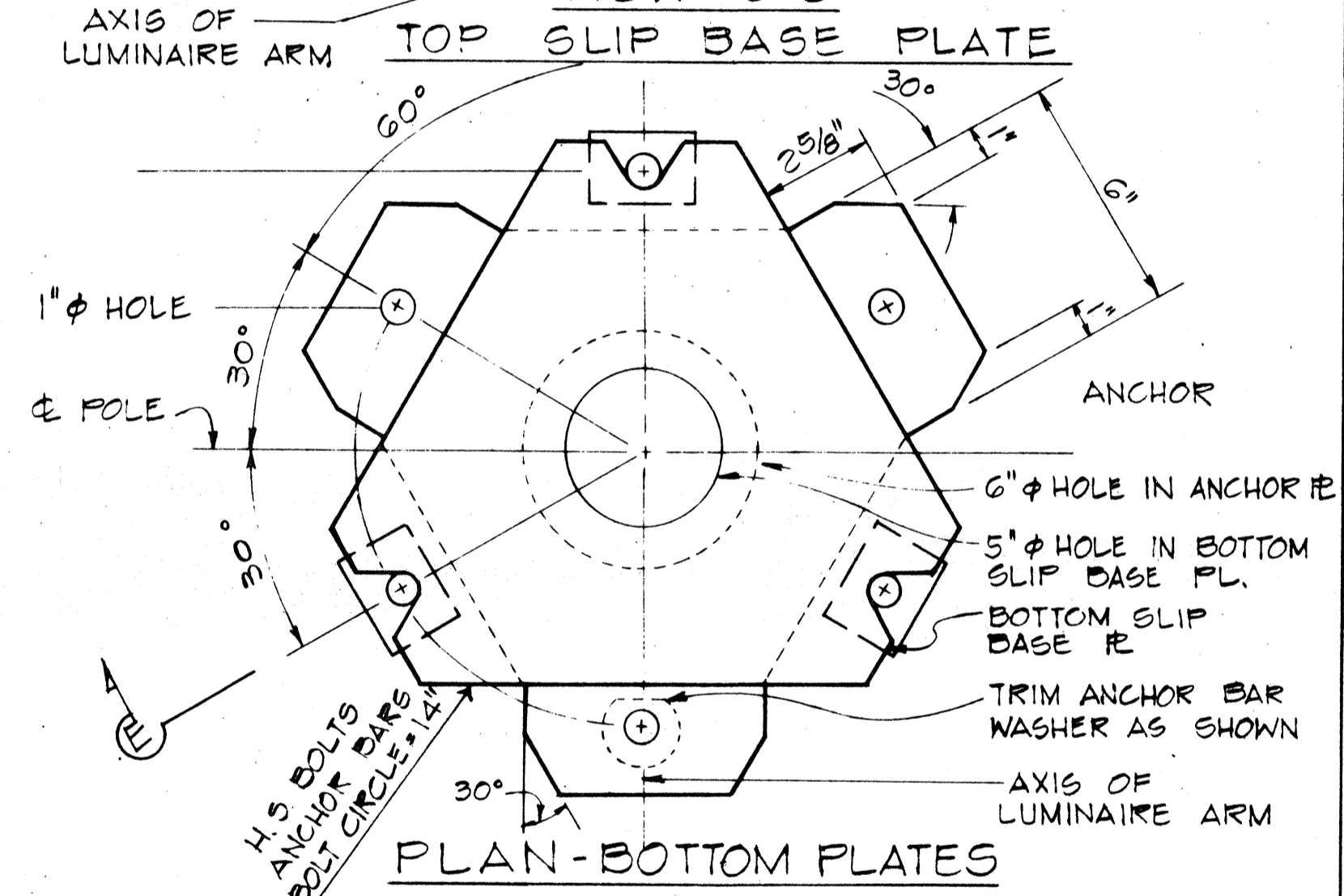
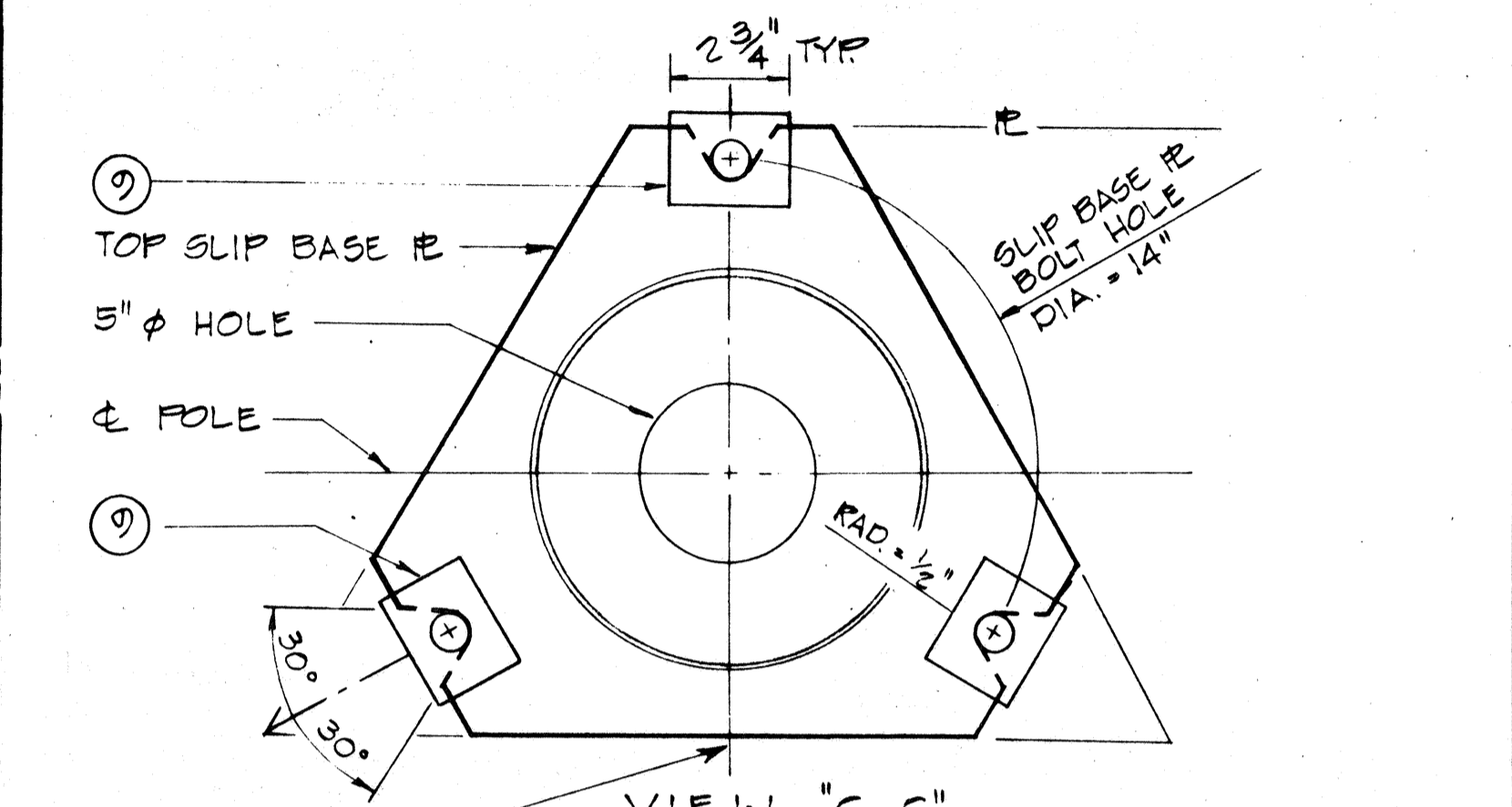
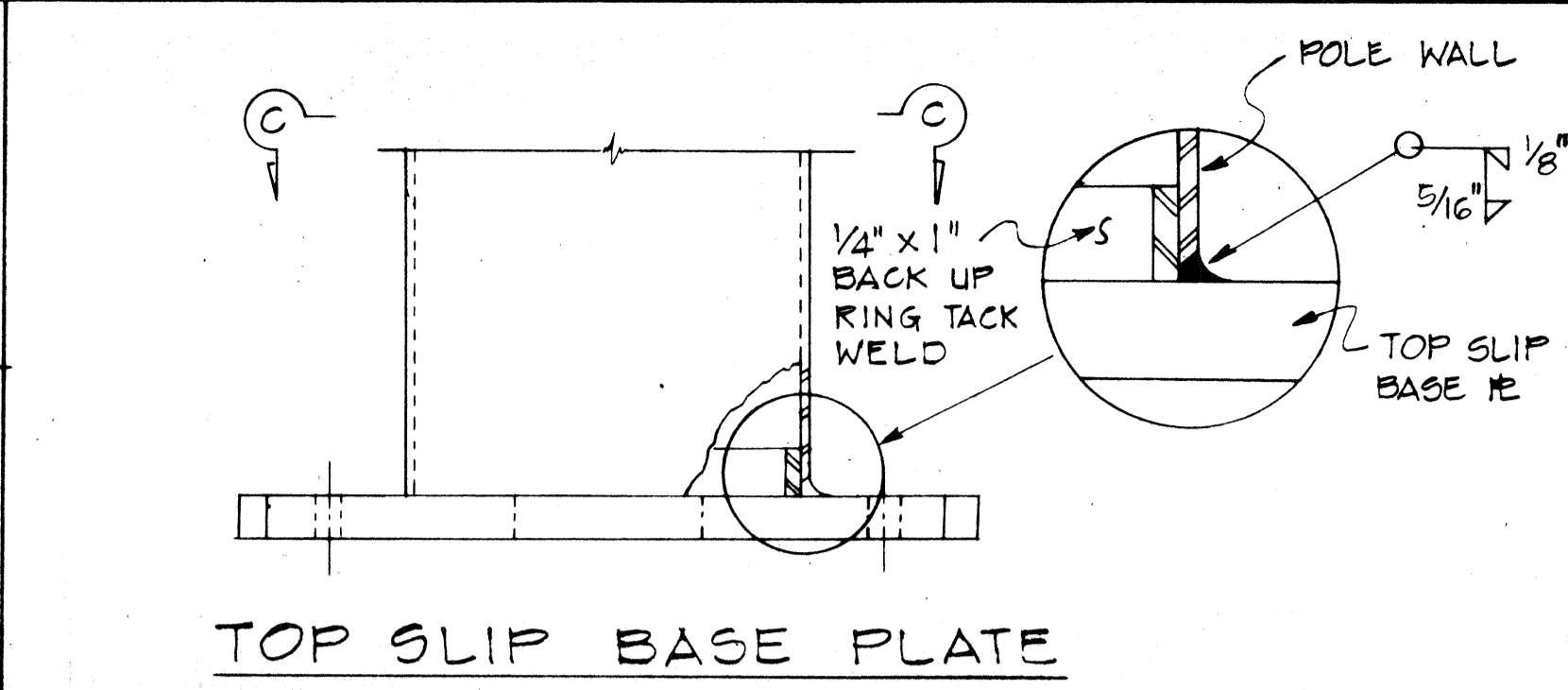
Scale: 1" = 50' Date: May 1985  
SHEET No. 39 OF 26 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	LR-HI-1(198)	1985	40	59

**NOTES**

- ① ALL STEEL SHAFTS, P'S, MAST ARMS, BOLTS, SCREWS NUTS & WASHERS TO BE GALV. AFTER FAB. OR MODIFICATION.
- ② P'S TO CONFORM TO ASTM A-36.
- ③ CAST OPTION TO CONFORM TO ASTM A-486 CL. 50.
- ④ TORQUE 7/8" P.H.S. SLIP BASE P. BOLTS TO 84 FT. LBS
- ⑤ 7/8" P.H.S. ANCHOR BARS, WRENCH TIGHTEN-TORQUE REQUIREMENT WAIVED.
- ⑥ FABRICATORS ELECTING LARGER THAN MIN ARM DIAMETERS MUST ADJUST DETAILS AS REQUIRED TO PERMIT SOLID SEATING OF CAP SCREWS. IN LIEU OF TORQUE REQUIREMENTS FOR H.S. BOLTS, CAP SCREWS SHALL BE TIGHTENED BY THE TURN OF NUT METHOD 1/6 TURN FROM SNUG TIGHT CONDITION. NO WASHER WILL BE REQUIRED.
- ⑦ 4" x 6 1/2" HANDHOLE REINFORCED W/ #3 GA. RING 1 1/2" WIDE WELDED TO OUTSIDE OF POLE COVER OF 10 GA. P. LOCATE 90 DEGREES OF MAST ARM UNLESS SHOWN OTHERWISE.
- ⑧ 28 GA. KEEPER P., PLACE ON TOP OF MIDDLE FLAT WASHER ASTM A526 125 COMMERCIAL.
- ⑨ PLATE WASHER
- ⑩ 3- 7/8" P.H.S. BARS, THREAD 6" & GALV. 10", W/ HEX, HD, NUT, LEVELING NUT & WASHER
- ⑪ HEX. HD. NUT SHOWN OR AS AN ALT. DET. ANCHOR P'S MAY BE RETAINED W/ 5/16" FILLET WELDS ALL ROUND OR FORMED HEADS.
- ⑫ ROUND TAPERED STEEL TUBE W/ MAX. TAPER OF 0.15"/FOOT.
- ⑬ NO. 11 GAGE SHEET STEEL OF WELDABLE GRADE ACCEPTABLE IF STEEL AFTER FABRICATION HAS A MIN. YIELD STRENGTH OF 40,000 P.S.I.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**HIGHWAY LIGHTING  
SLIP BASE POLE**

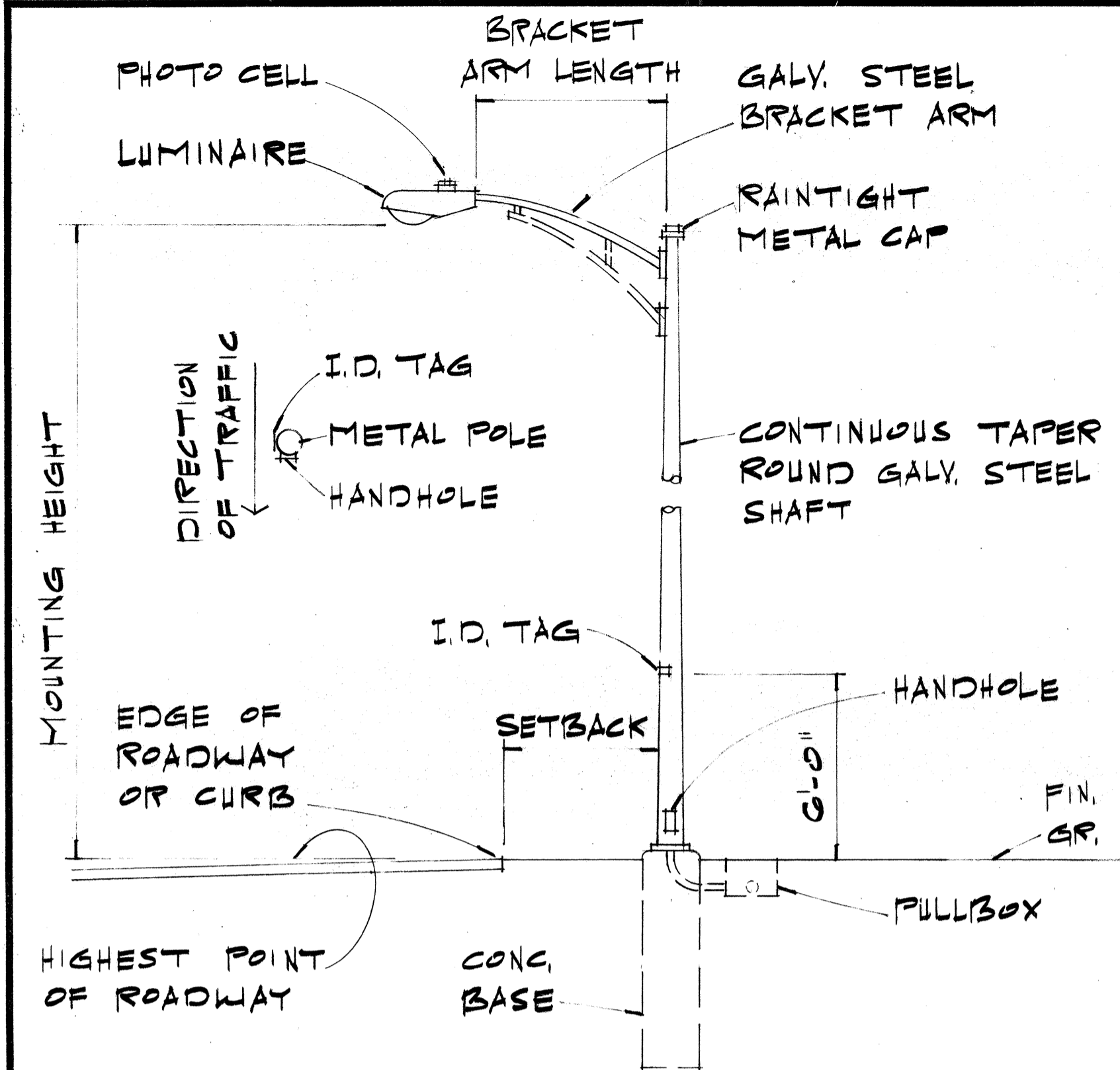


DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
QUANTITIES BY	_____
DRAWN BY	_____
TRACED BY	_____
FLIPPED BY	_____
ORIGINAL PLAN	_____
NO.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[R-H-178]	1985	41	50

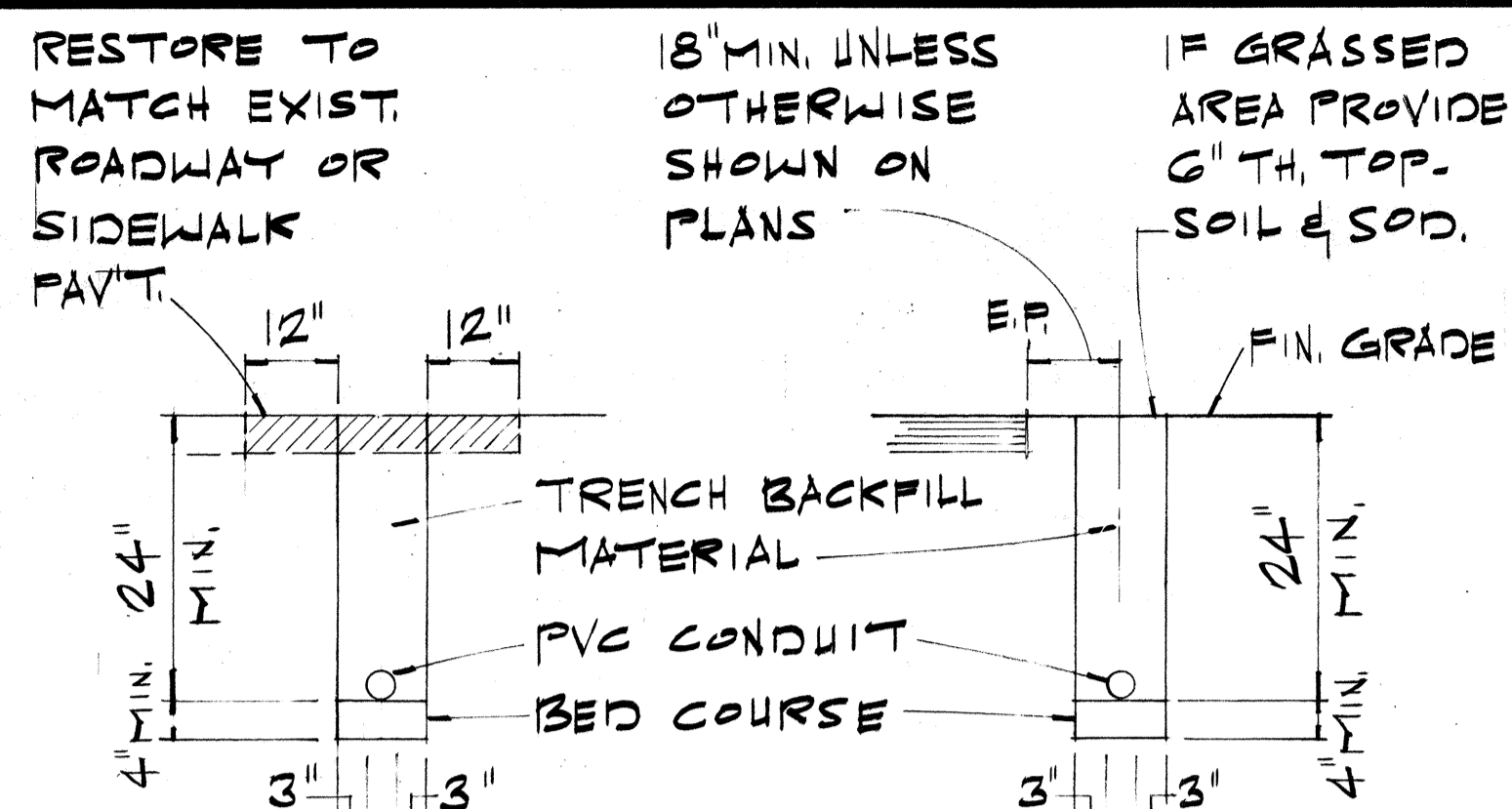
### GENERAL NOTES

1. ALL LUMINAIRES SHALL BE HIGH PRESSURE SODIUM TYPE W/ WATTAGE & IES TYPE LIGHT DISTRIBUTION AS SHOWN ON PLANS.
2. ALL SECONDARY CIRCUIT EXTENSIONS TO SERVICE SHALL BE PROVIDED BY CONTRACTOR. ALL CONNECTIONS MADE BY SUBJECT TO CHARGE SHALL BE PAID BY THE CONTRACTOR.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING & INFORMING OF STREET LIGHT LOCATIONS ON PROJECT SITE PRIOR TO INSTALLATION OF SECONDARY CIRCUIT CONNECTION.
4. THE CONTRACTOR SHALL NOTIFY & COORDINATE WORK W/ THE STATE ELECTRICAL MAINTENANCE SECTION, ADDRESS: \_\_\_\_\_ PHONE: \_\_\_\_\_ 72 HOURS IN ADVANCE OF COMMENCING INSTALLATION OF STREET LIGHT SYSTEM.
5. THE CONTRACTOR SHALL LOCATE & VERIFY EXISTING STREET LIGHT SECONDARY VOLTAGE BEFORE ORDERING LIGHTING EQUIPMENT.



### STREET LIGHT DETAIL

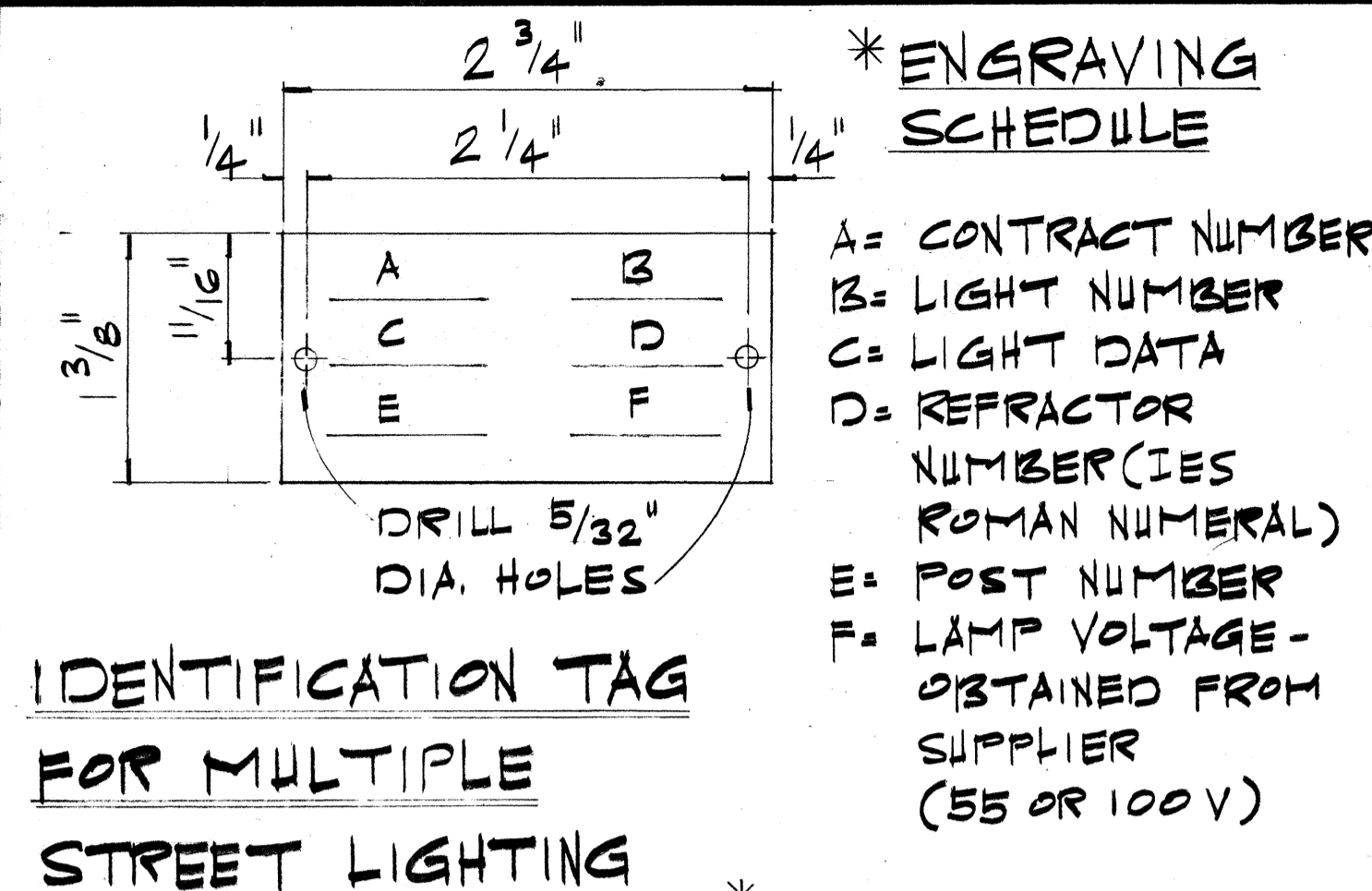
SCALE: 1/4" = 1'-0"



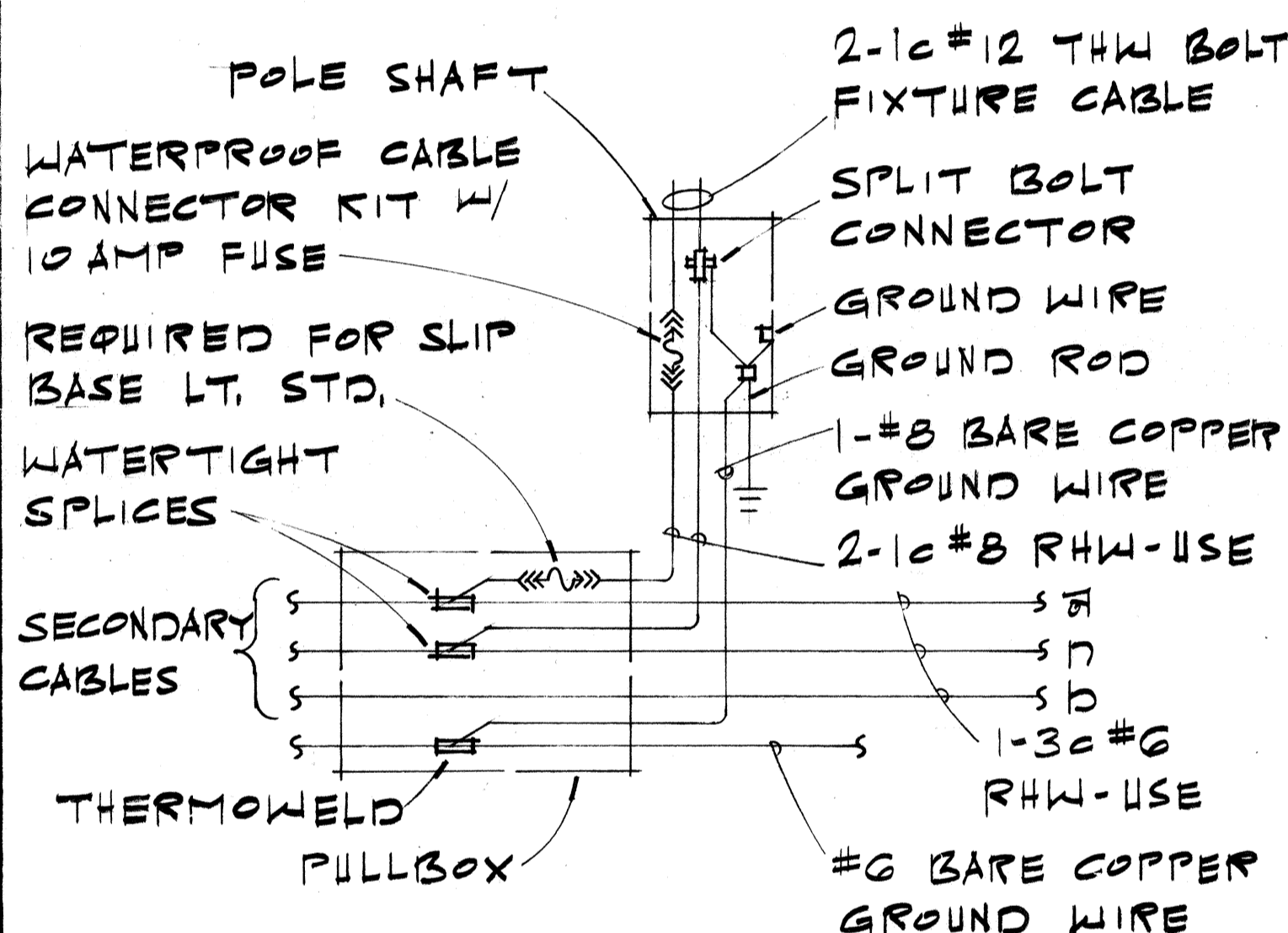
### ROAD CROSSING EDGE OF SHOULDER OR CURB CROSSING

### TYPICAL DUCT SECTION DETAIL

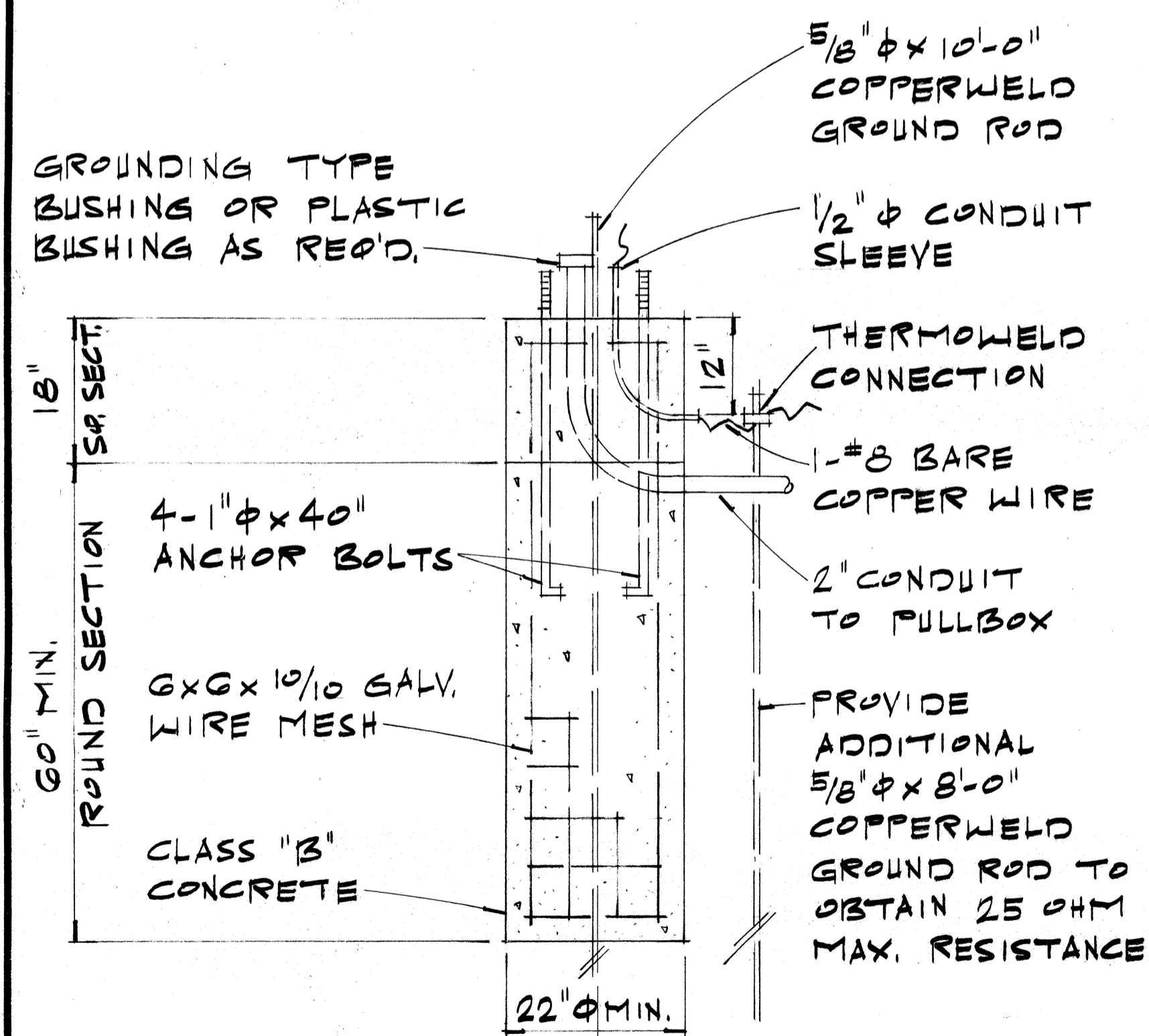
NOTE: SCALE: 1/2" = 1'-0"  
FOR MULTIPLE CONDUIT LAYOUTS PROVIDE 3" CL. SPACING BETWEEN CONDUITS.



NOTE:  
1. MAKE FROM 3-PLY LAMINATED PLASTIC (BLACK-WHITE-BLACK) W/ 1/5" HIGH COMMERCIAL GOTHIC LETTERS ENGRAVED.  
2. ATTACH TO POLE W/ #7 CADMIUM PLATED SCREWS.

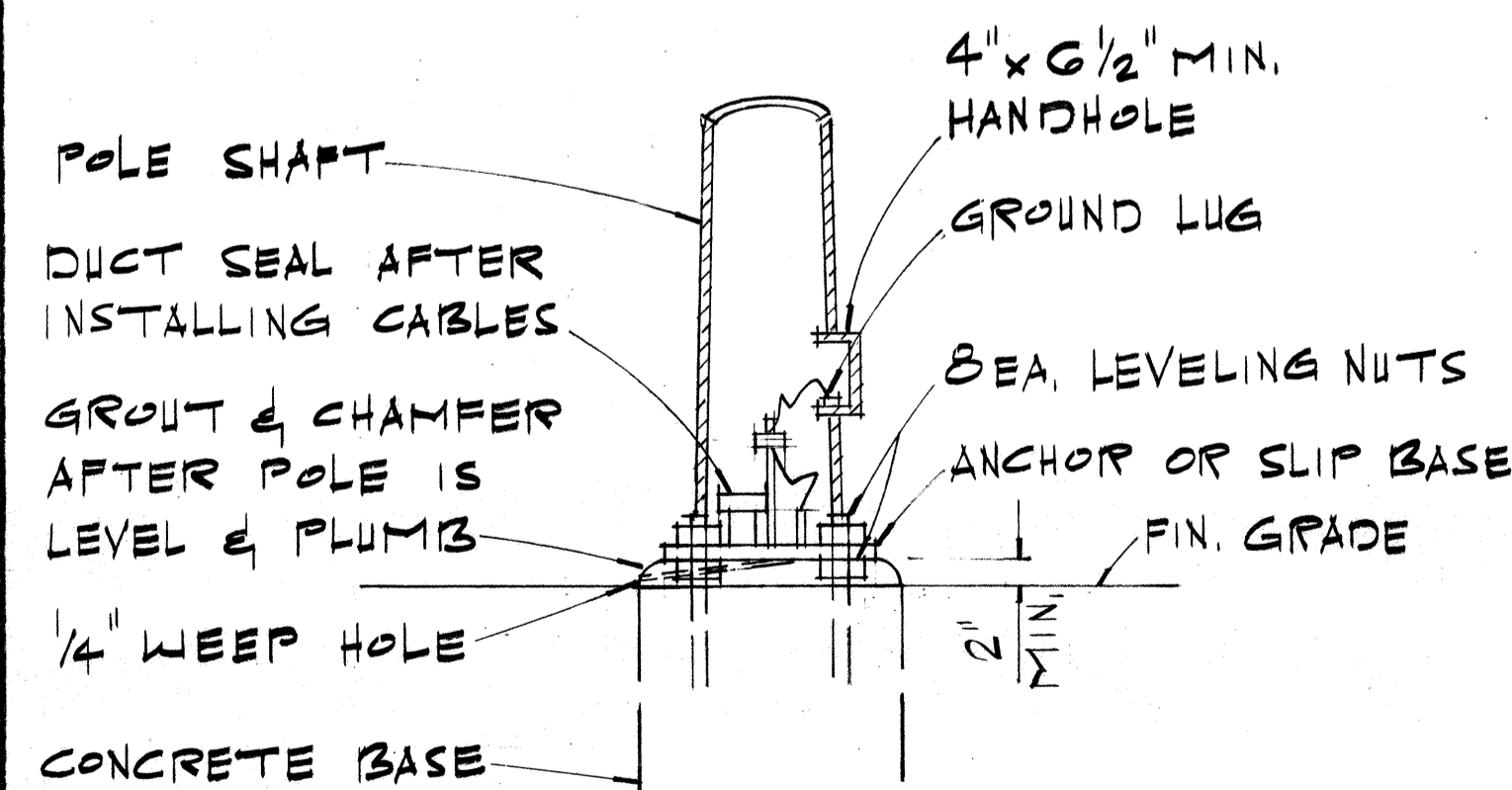


### WIRING CONNECTION DIAGRAM



### CONCRETE BASE DETAIL

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



### POLE MOUNTING DETAIL

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

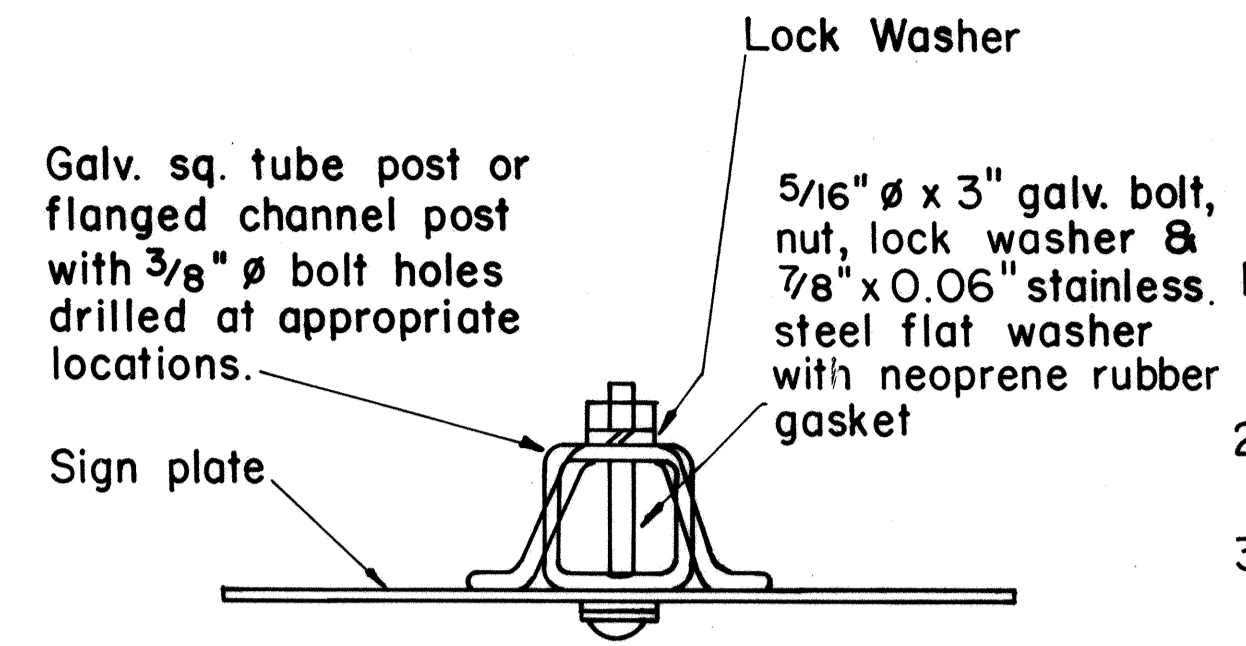
DATE	_____
SURVEY PLOTTED BY	_____
ORIGINAL PLAN	_____
DRAWN BY	_____
TRACED BY	_____
DESIGNED BY	_____
NO. _____	CHECKED BY _____

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
TYPICAL DETAILS  
HIGHWAY LIGHTING LUMINAIRE  
MOUNTED ON METAL POLE

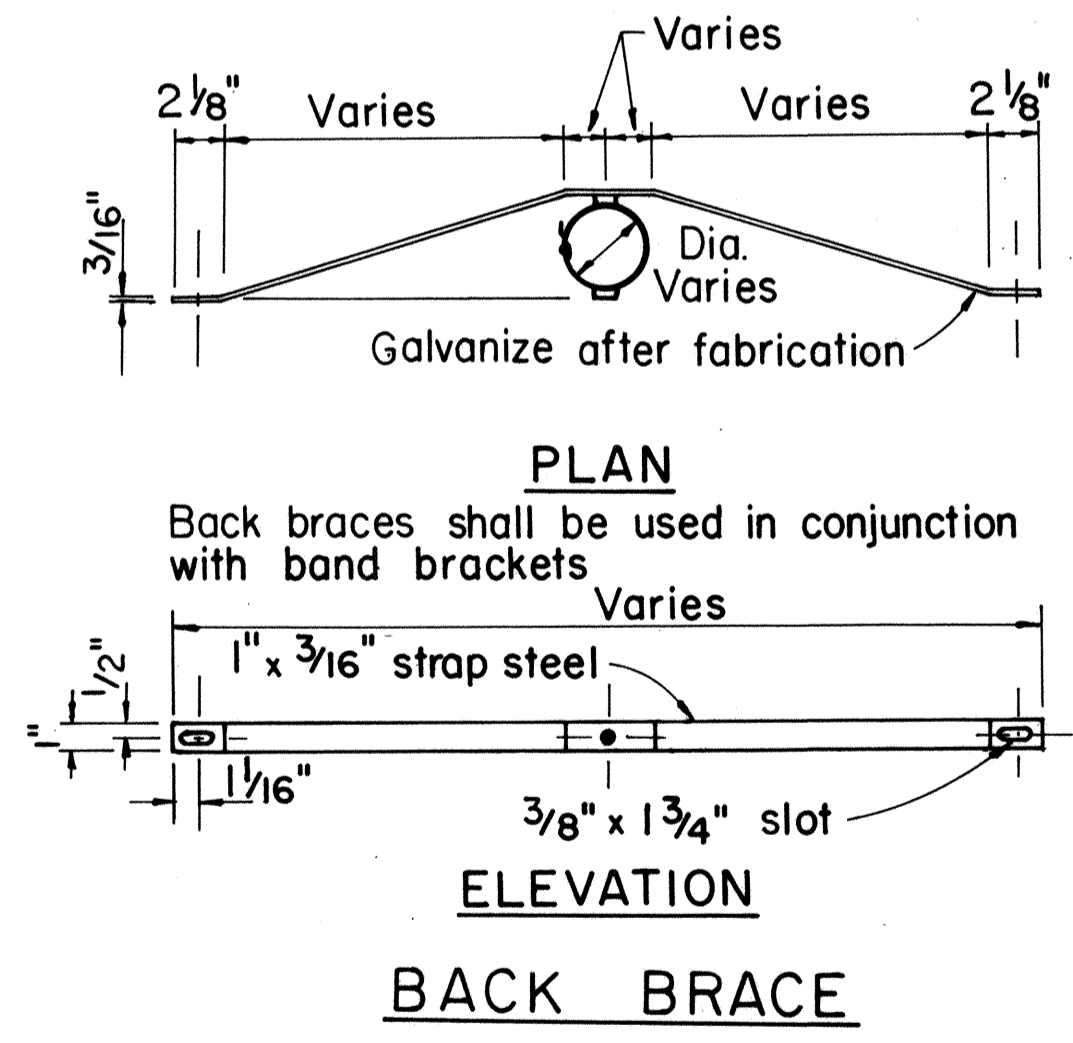
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	42	59

**GENERAL NOTES**

- Signs shall be placed in conformance with positions shown and described in the "Manual on Uniform Traffic Control Devices for Streets and Highways", 1978, Part II, Section 2A-21, as amended, and as supplemented herein.
- Sign 48" and wider or larger than 10 sq. ft. in area shall be mounted on two or more sign posts except as noted below.
- Signs 48" and wider or larger than 10 sq. ft. in area may be mounted on objects other than sign posts (i.e. on highway lighting poles) as follows:
  - Signs 48" and wider but less than 10 sq. ft. in area shall be mounted with a minimum of two sets of band bracket and back braces.
  - Signs larger than 10 sq. ft. and less than 28 sq. ft. in area shall be mounted with a minimum of two sets of band brackets and back braces.
  - Signs larger than 28 sq. ft. in area shall be mounted with a minimum of three sets of band bracket and back braces.
- All parking restriction signs with arrows shall be mounted 45° to the line of traffic flow.
- Sign posts shall extend 3 1/2" above each sign, where required, for attachment of City and County street name signs.
- (R) or (L) indicates right or left and shown on the plans.
- See plans for special details of signs along bikeways.
- The minimum lateral distances shown are guidelines and shall be exceeded whenever possible. The Contractor shall place signs at the maximum practical lateral distance from the edge of the traveled way up to 30 feet and shall utilize protected locations whenever possible. Final locations of all signs shall be approved by the Engineer.
- Signs in medians shall be placed at midpoint of median up to a maximum distance of 30 feet from the edge of traveled way. When appropriate, signs for opposing directions shall be placed back to back.
- Anchor bases shall be installed for all signpost installations, unless otherwise shown or directed. See sheets DT 100A and DT 100B.

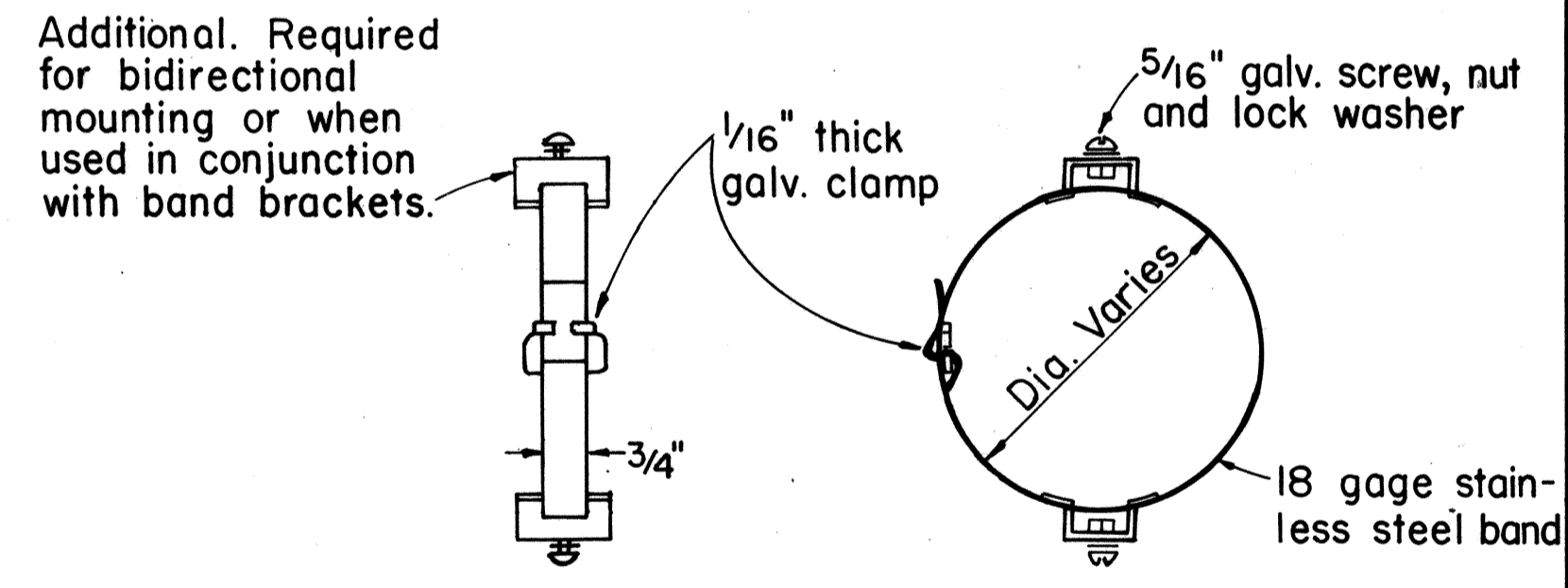


**GALVANIZED SQUARE TUBE OR FLANGED CHANNEL POST**



**TYPICAL MOUNTING DETAILS**

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 100 approved 11/15/77	[Signature]	10-18-85



**BAND BRACKET**

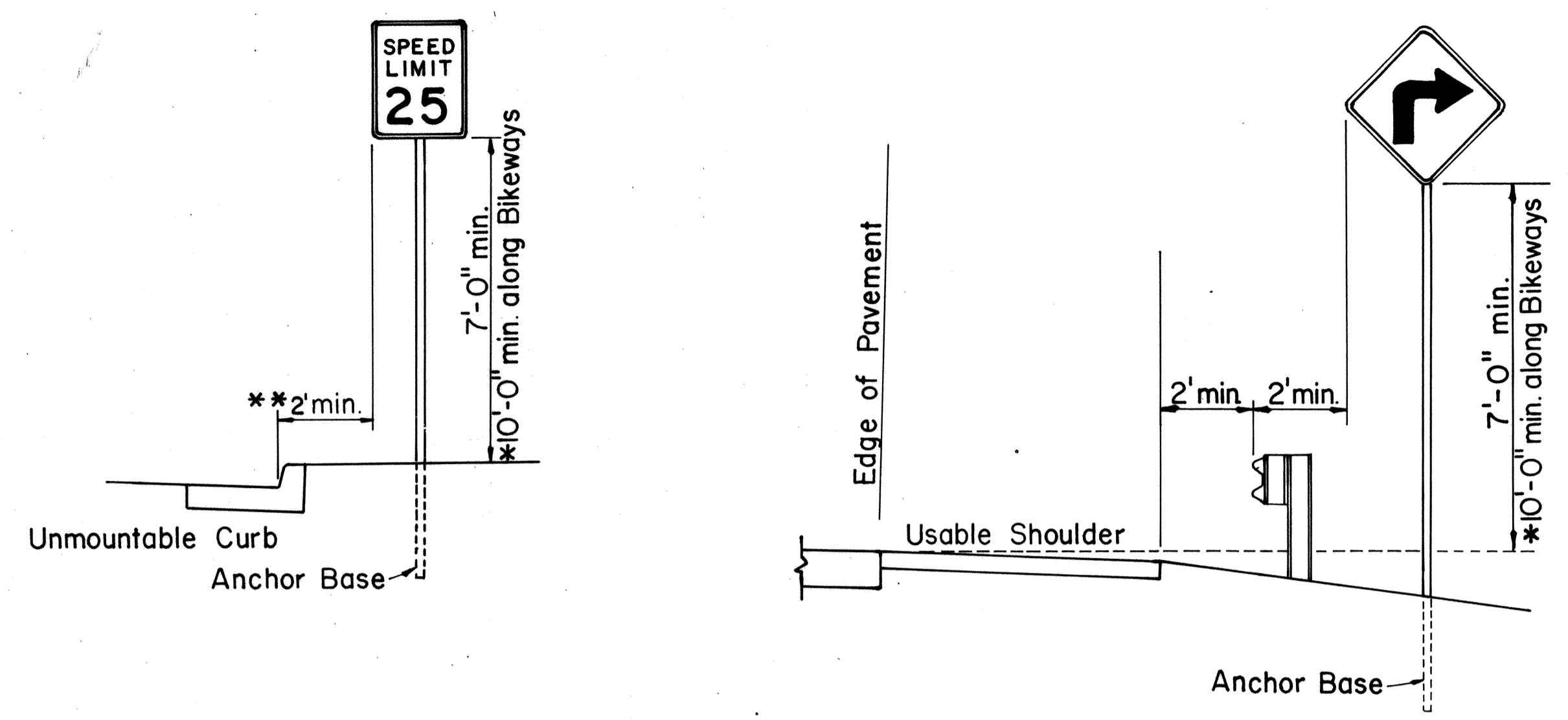
APPROVAL RECOMMENDED:  
 [Signature] *Eiichi Tanaka* 10/17/83  
 TRAFFIC ENGINEER DATE

APPROVED:  
 [Signature] *S. Fujiyama* 10-18-85  
 ASSISTANT CHIEF, ENGINEERING DATE

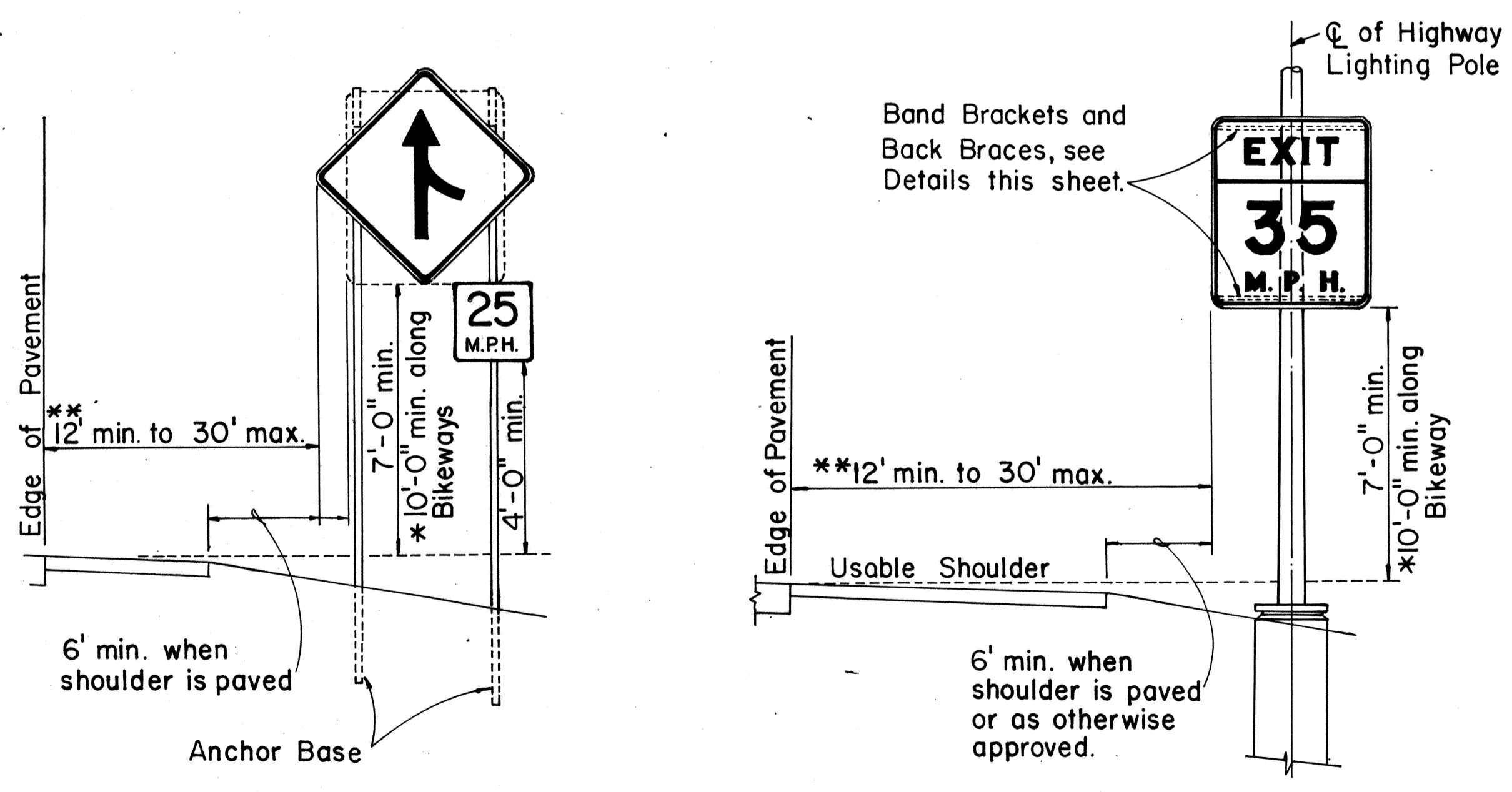
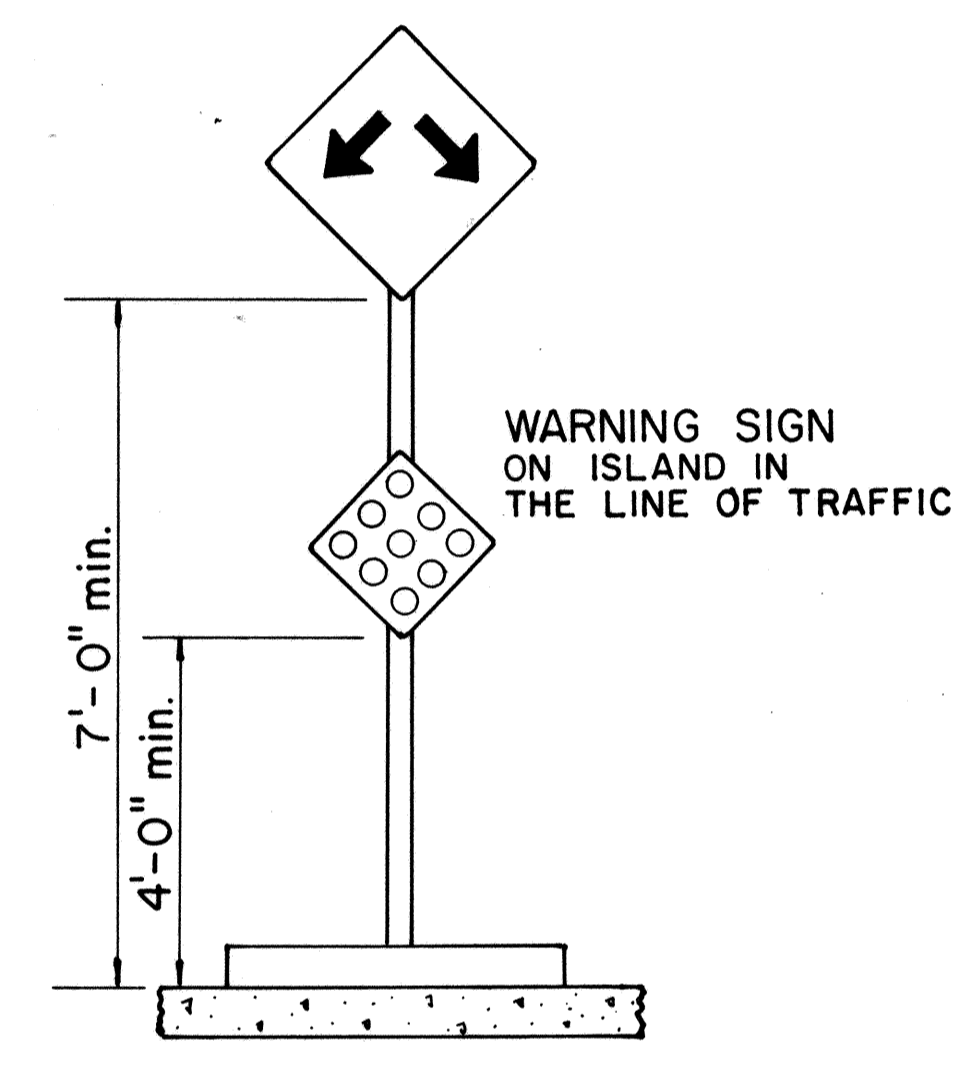
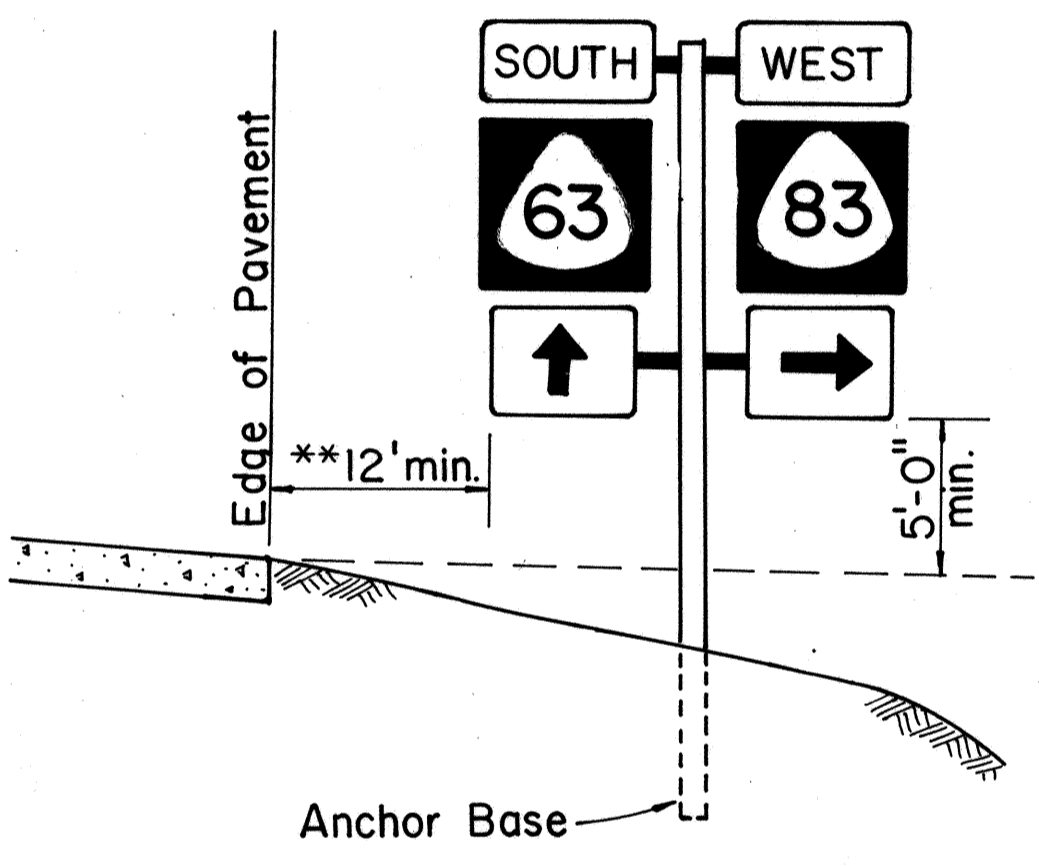
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**  
**MISCELLANEOUS SIGN DETAILS**

Not to Scale: Oct. 1983  
 SHEET No. 79 OF 26 SHEETS DT 100



**ROADSIDE ASSEMBLY RURAL DISTRICT**



**HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION**

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	43	59

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

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

### GENERAL NOTES

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

APPROVAL RECOMMENDED:

*Eishi Tanaka* 9/2/82  
TRAFFIC ENGINEER DATE

APPROVED:

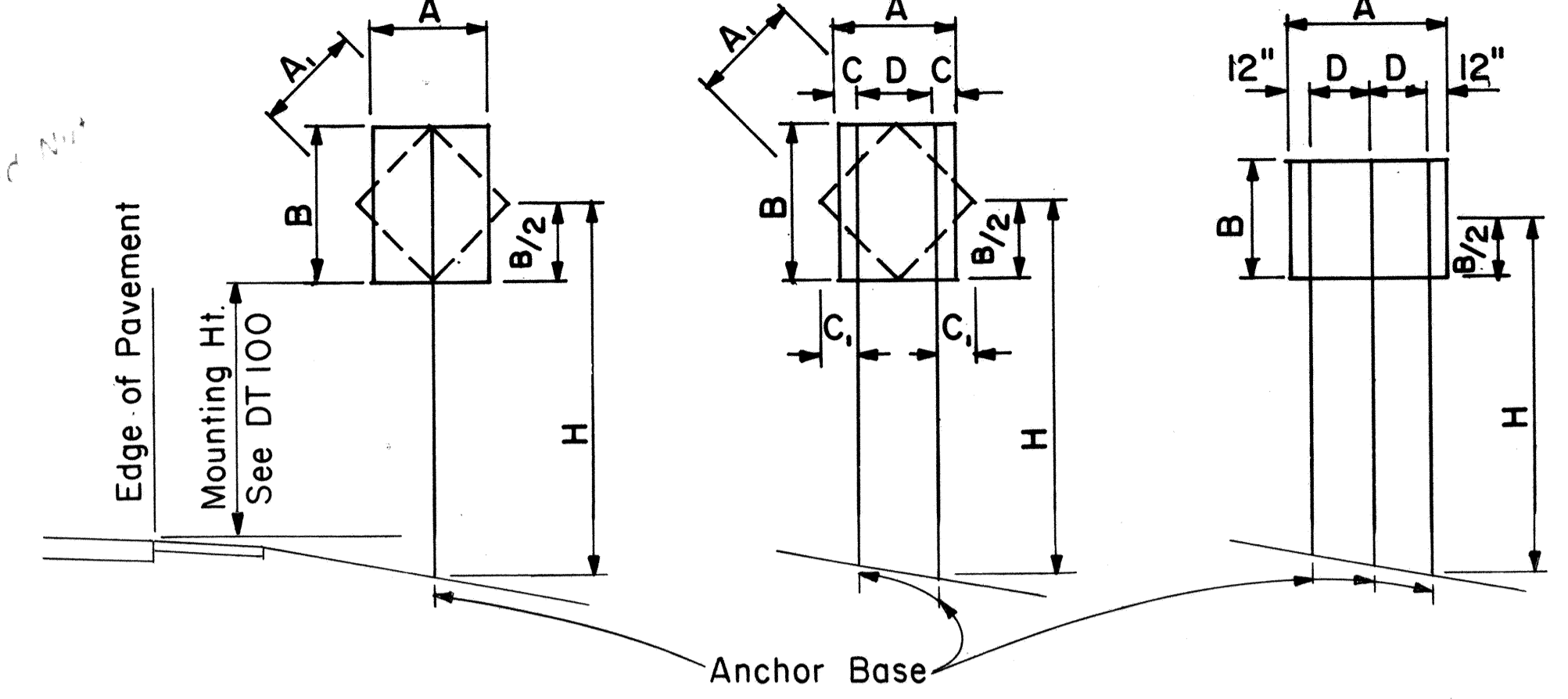
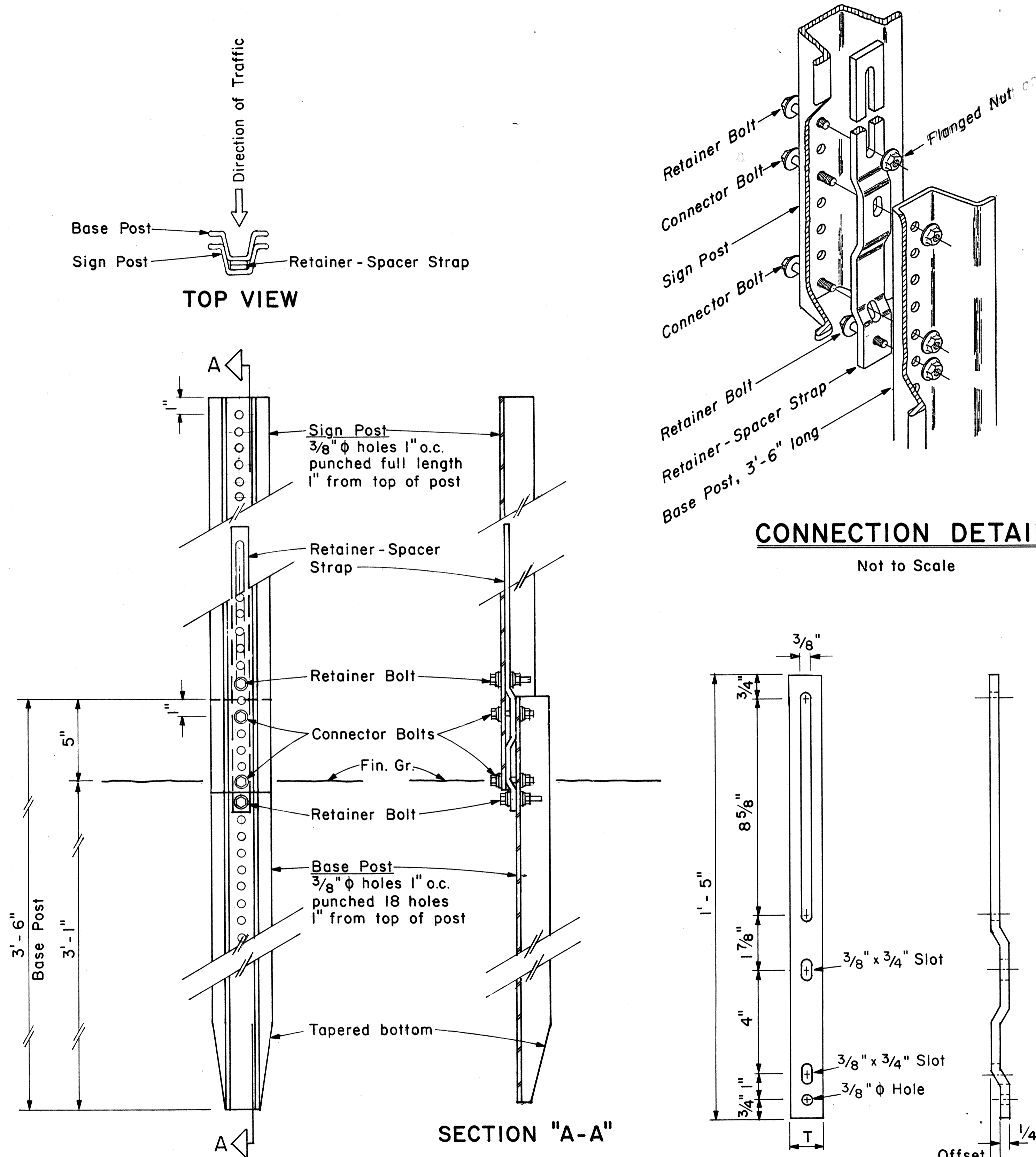
*Hubert Salsiches* 9/2/82  
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STANDARD DETAILS  
GALVANIZED FLANGED CHANNEL  
SIGN POST MOUNTING

Scale: As Shown Date: Sept. 1982

SHEET NO. 110 OF 26 SHEETS DT 100A



**FLANGED CHANNEL: 1-POST INSTALLATION**

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

**FLANGED CHANNEL: 2-POST INSTALLATION**

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

**FLANGED CHANNEL: 3-POST INSTALLATION**

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

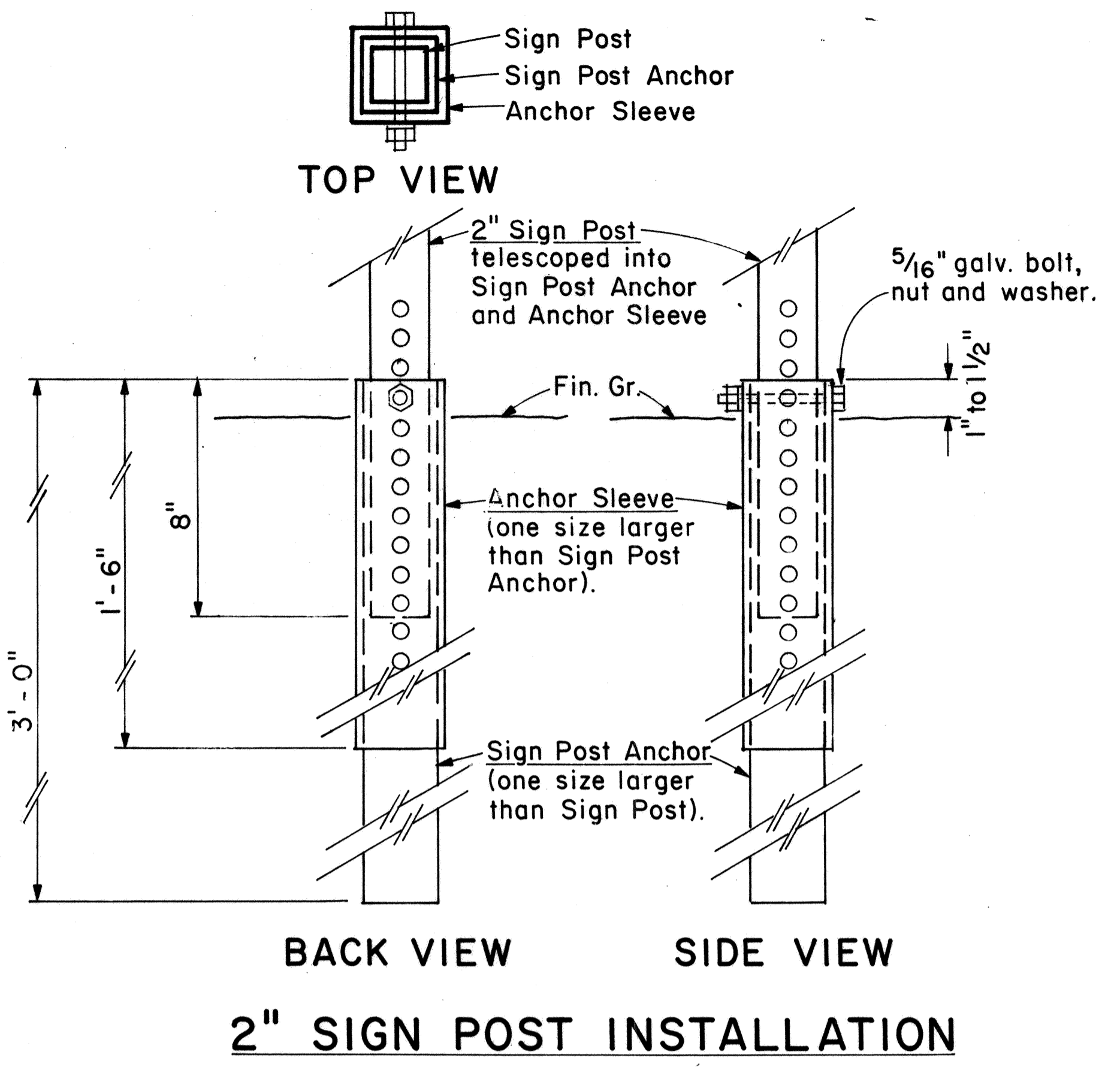
### WINDLOAD CHARTS

NO.	REVISION	APPROVED BY	DATE

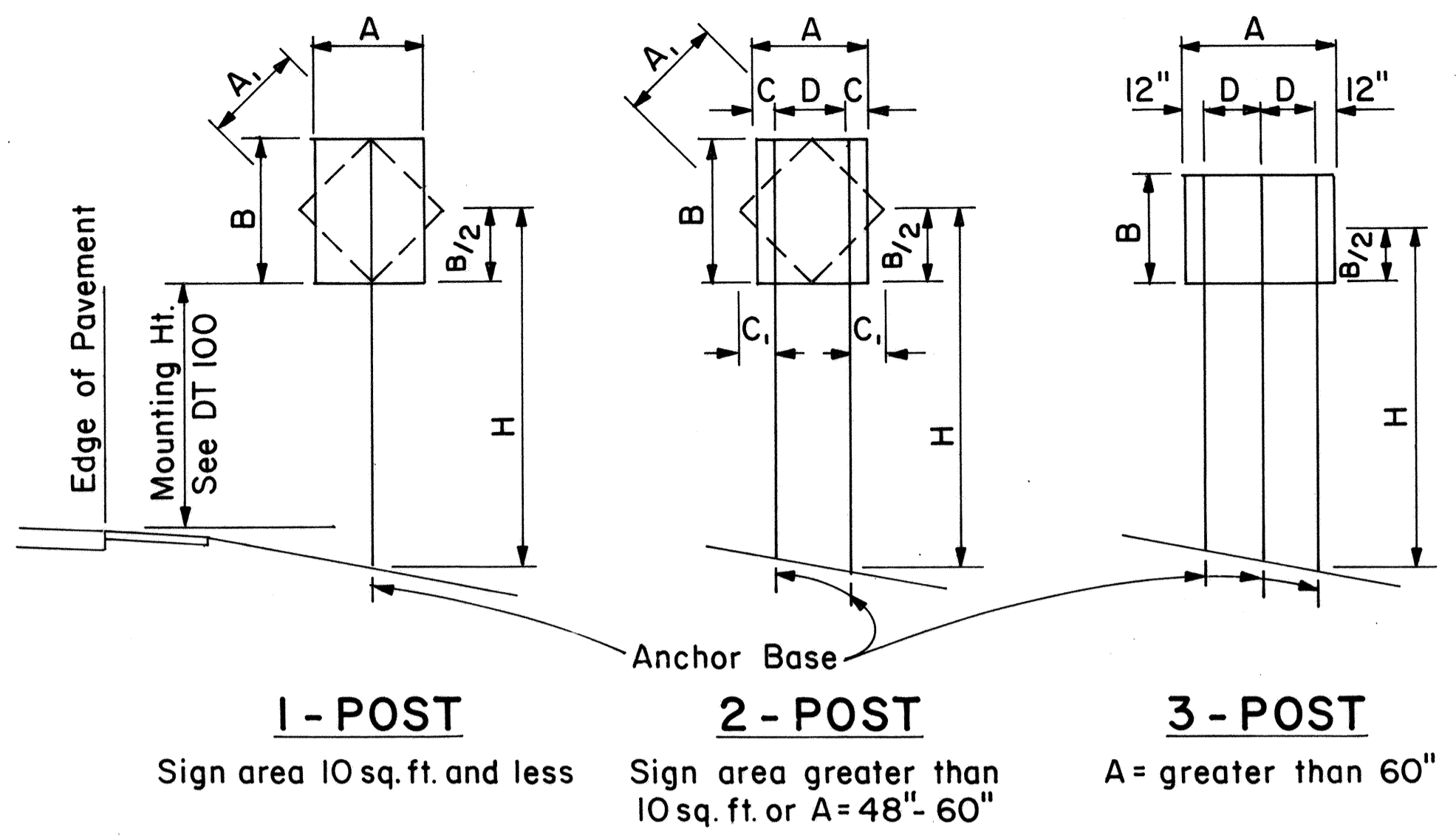
DATE: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
QUANTITIES BY: \_\_\_\_\_  
NOTE BOOK: \_\_\_\_\_  
ORIGINAL PLAN: \_\_\_\_\_  
No. \_\_\_\_\_

### GENERAL NOTES

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



**2" SIGN POST INSTALLATION**



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

**TYPICAL INSTALLATION**  
Not to Scale

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

A x B (Area, sq. ft.)

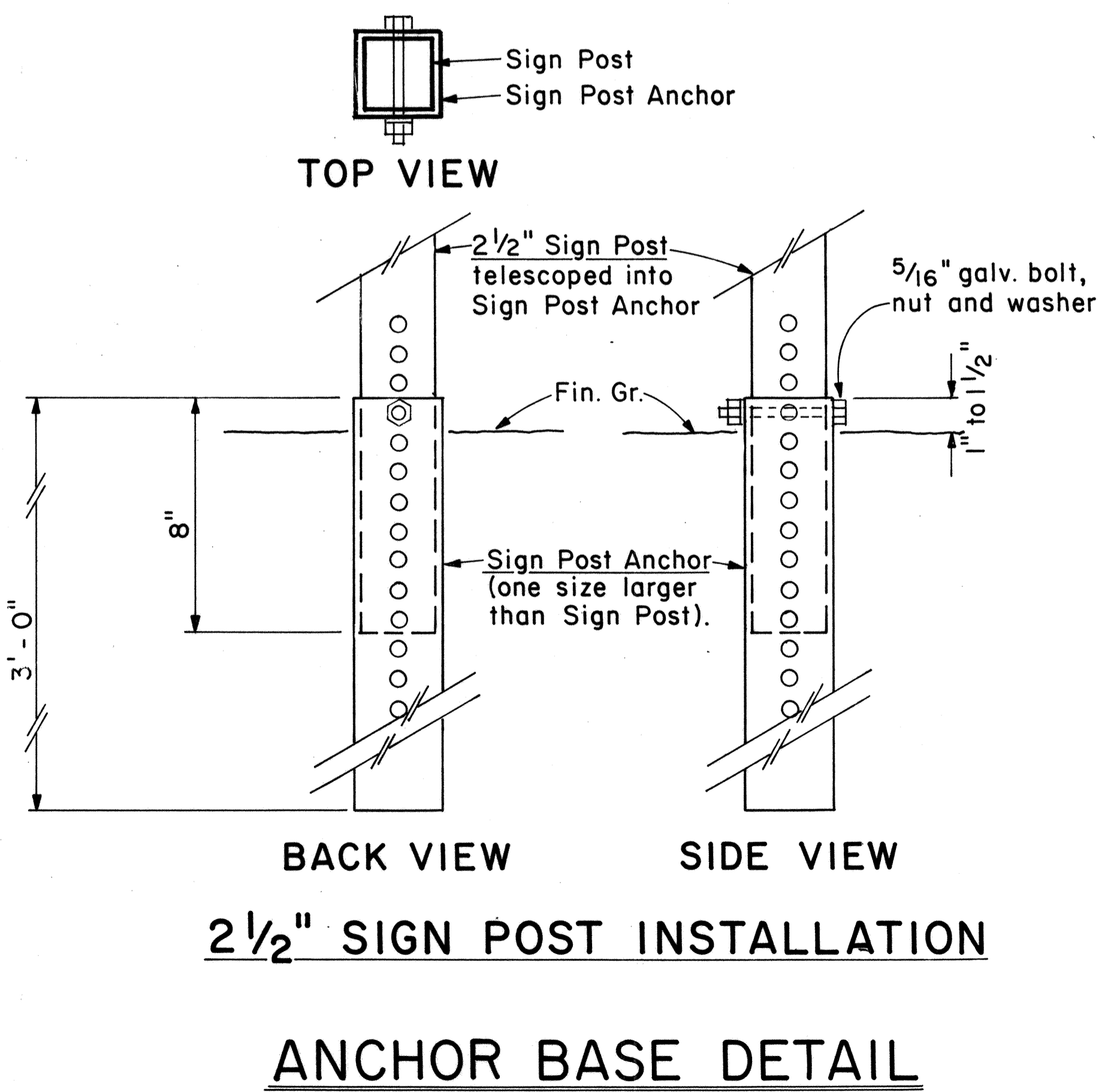
SQUARE TUBE: 2- POST INSTALLATION							
Post Size	A x B x H (Factor)	H = Ground Level to Midpoint (ft.)					
		7	8	9	10	11	12
2"	122	17.4	15.2	13.5	12.2	11.0	10.1
2 1/2"	212	30.2	26.5	23.5	21.1	19.2	17.6
2 1/2", 10 ga.	260	37.0	32.0	28.6	26.0	23.5	21.5

A x B (Area, sq. ft.)

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

A x B (Area, sq. ft.)

**WINDLOAD CHARTS**



**2 1/2" SIGN POST INSTALLATION**

**ANCHOR BASE DETAIL**

Scale: 3" = 1'-0"

A or A <sub>1</sub>	C	C <sub>1</sub>
36"	6"	-
48"	9"	19"
60"	12"	24"

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

APPROVAL RECOMMENDED:  
*Eishi Tanaka* 9/2/82  
TRAFFIC ENGINEER DATE

APPROVED:  
*Robert S. Salschi* 9/22/82  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

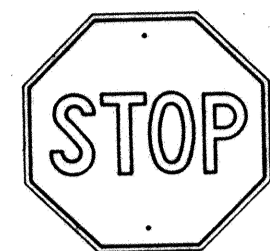
STANDARD DETAILS  
GALVANIZED SQUARE TUBE  
SIGN POST MOUNTING

Scale: As Shown Date: Sep 1982

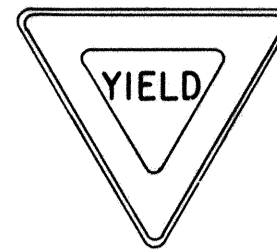
SHEET NO. 44 OF 26 SHEETS DT 100B

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

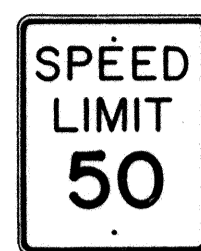
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H-198	1985	45	50



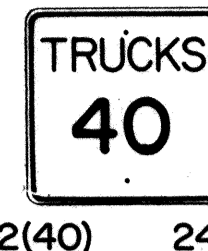
R1-1 30" x 30"  
R1-1-A 36" x 36"  
4-WAY  
R1-3 12" x 6"  
R1-3-A 18" x 9"



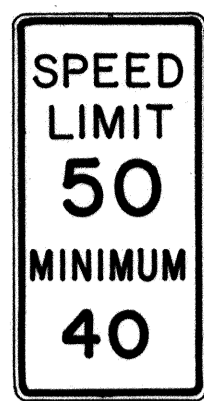
R1-2 36" x 36" x 36"  
R1-2-A 48" x 48" x 48"



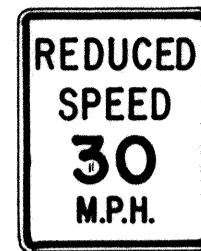
R2-1(50) 24" x 30"  
R2-1(50)-A 48" x 60"



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



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



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



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



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



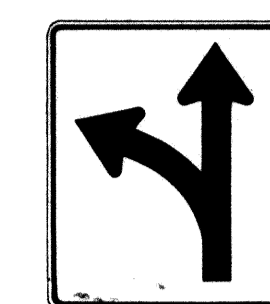
R3-3 24" x 24"  
R3-3-A 48" x 48"



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



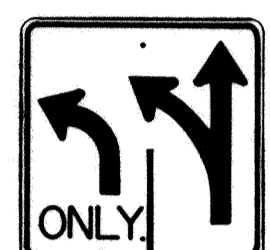
R3-5(L) 30" x 36"  
R3-5(L)-A 48" x 60"



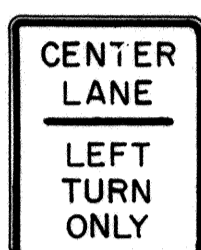
R3-6(L) 30" x 36"  
R3-6(L)-A 48" x 60"



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



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



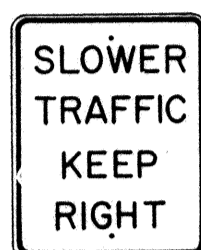
R3-9 24" x 30"



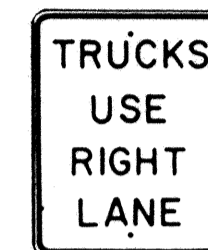
R4-1 24" x 30"



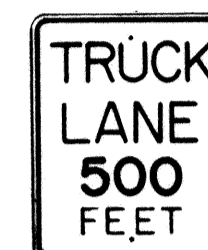
R4-2 24" x 30"



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



R4-5 24" x 30"



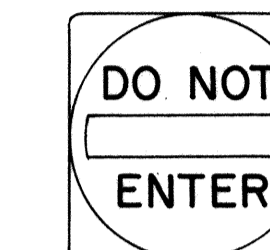
R4-6(500) 24" x 30"



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



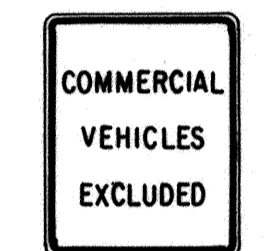
R4-8 24" x 30"  
24" x 18"



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



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



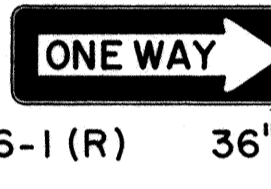
R5-4 24" x 30"



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



R5-9 36" x 24"



R6-1 (R) 36" x 12"



R6-2(R) 18" x 24"



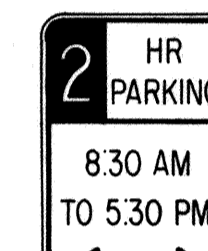
R7-1 12" x 18"  
R7-1-A 24" x 30"



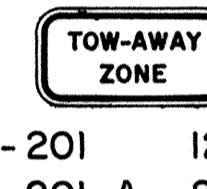
R7-4 12" x 18"  
R7-4-A 24" x 30"



R7-1,7(R) 12" x 18"



R7-108 12" x 18"



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



R8-1 24" x 30"



R8-2 24" x 30"



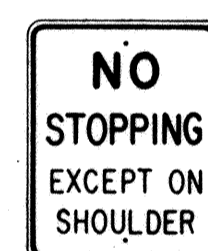
R8-3 24" x 30"



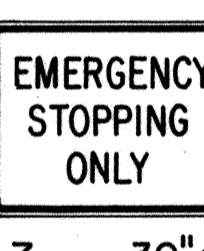
R8-4 30" x 24"  
R8-4-A 48" x 36"



R8-5 24" x 30"



R8-6 24" x 30"



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



R9-1 18" x 24"



R9-2 12" x 18"



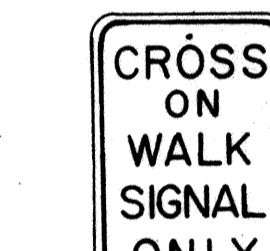
R9-3 12" x 18"



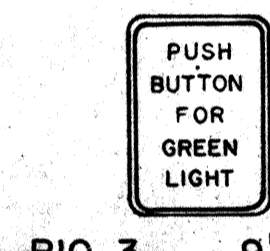
R9-4 18" x 24"



R10-1 12" x 18"



R10-2 12" x 18"



R10-3 9" x 12"



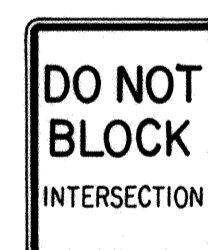
R10-4 9" x 12"



R10-5 24" x 30"



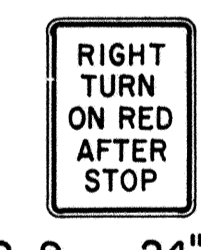
R10-6 24" x 36"



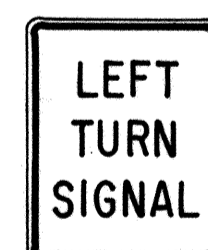
R10-7 24" x 30"



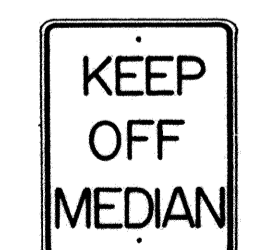
R10-8 24" x 30"



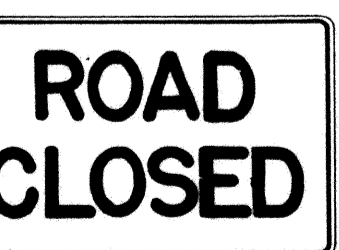
R10-9 24" x 30"



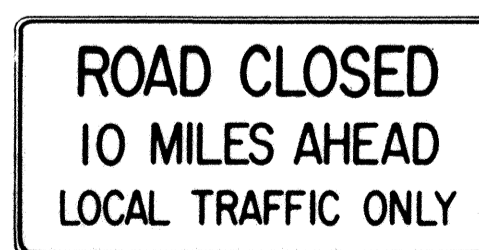
R10-10 24" x 30"



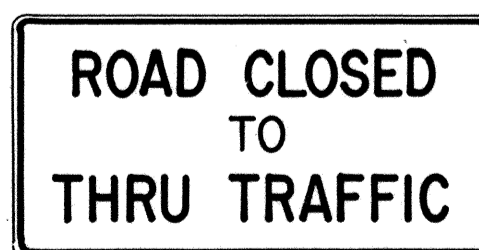
R11-1 24" x 30"



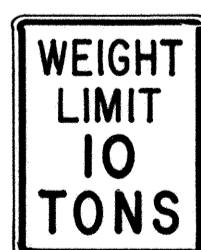
R11-2 48" x 30"



R11-3(10) 60" x 30"



R11-4 60" x 30"



R12-1(10) 24" x 30"

### GENERAL NOTES

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

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

APPROVED:  
*Halmit Zabin* 3-20-72  
ASSISTANT CHIEF, ENGINEERING DATE

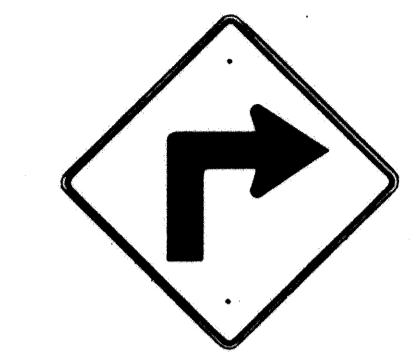
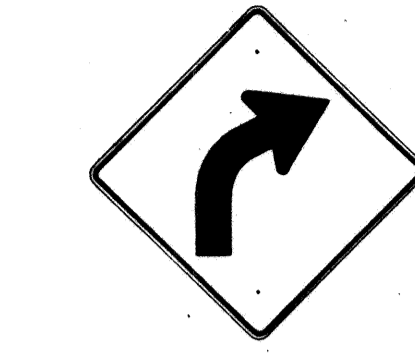
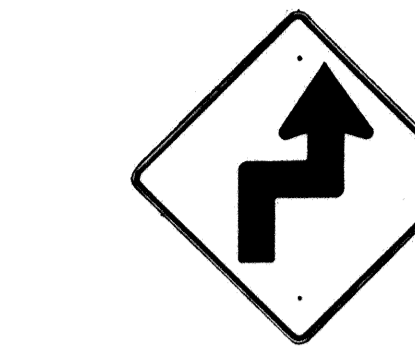
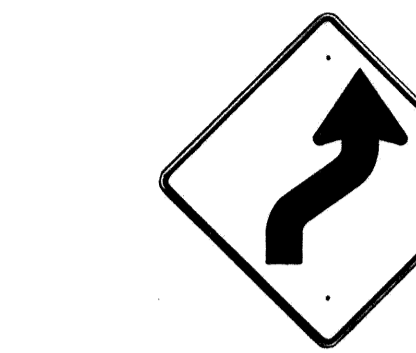
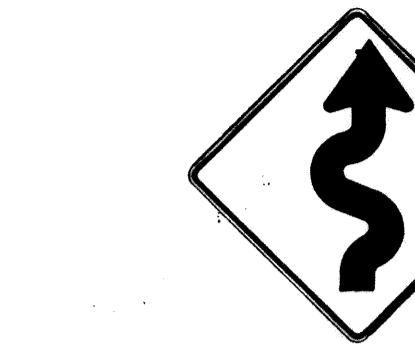
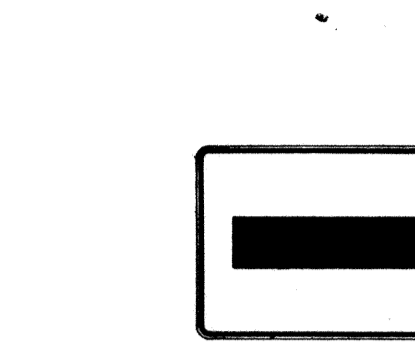
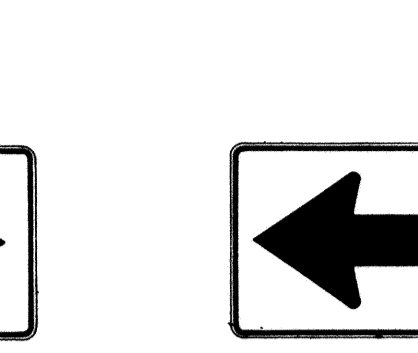
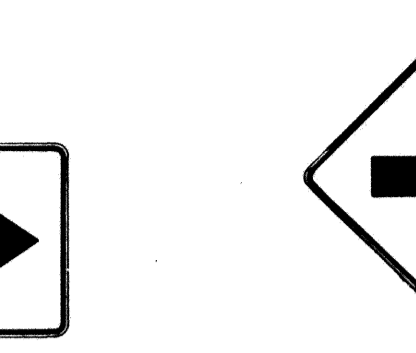
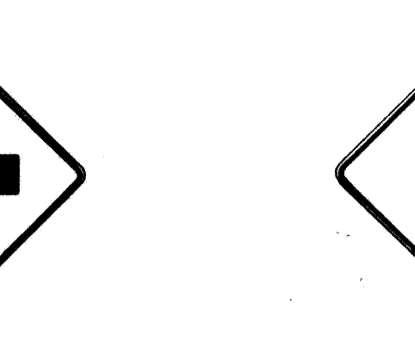
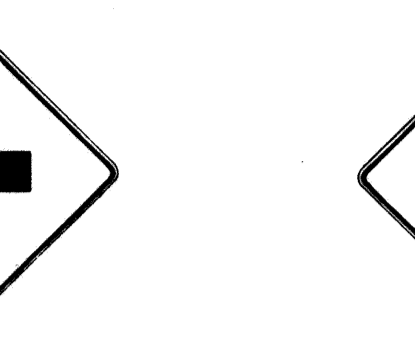
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.T.	2/20/72
2	Revised General Note 1.	H.T.	10/12/74
3	Added General Note 5	H.T.	8/9/79

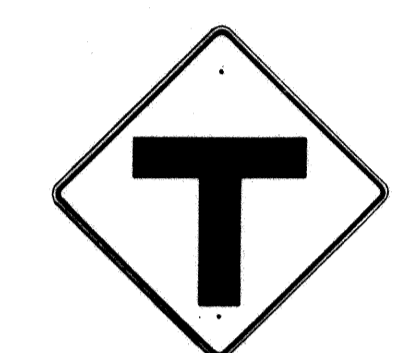
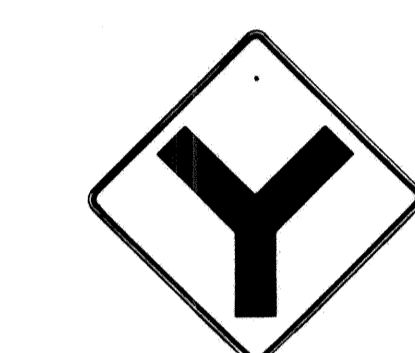


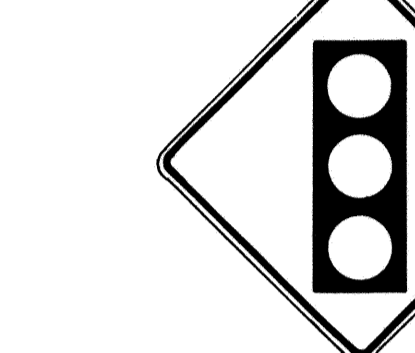

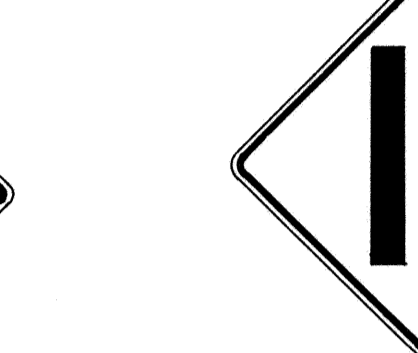
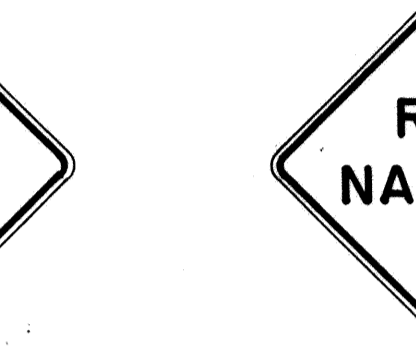
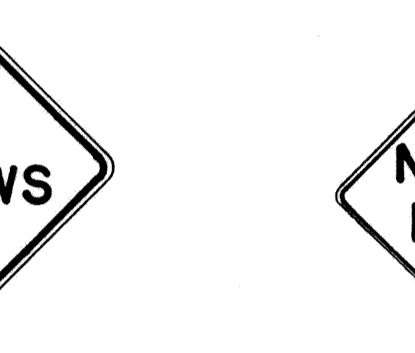
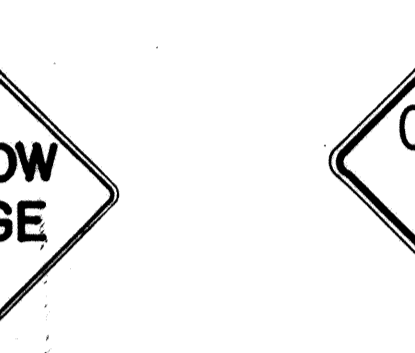
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STANDARD DETAILS**  
**REGULATORY SIGNS**





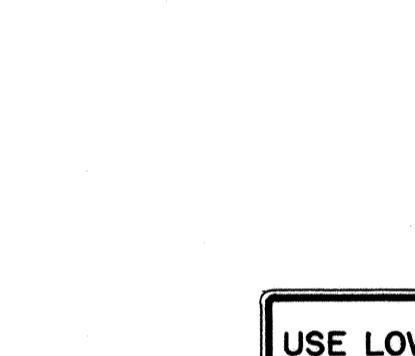
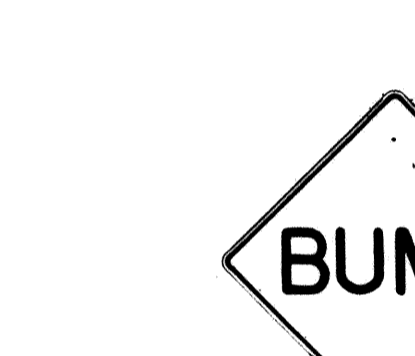

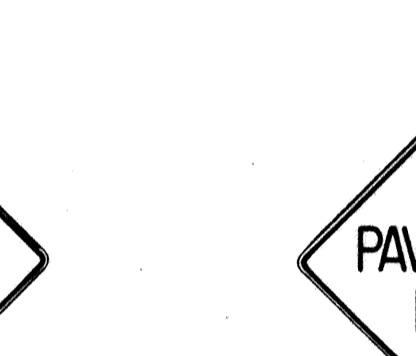
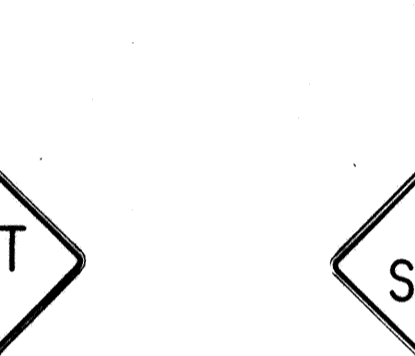

NOT TO SCALE  
SHEET No. 45 OF 26 SHEETS DT 101

DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
No. \_\_\_\_\_

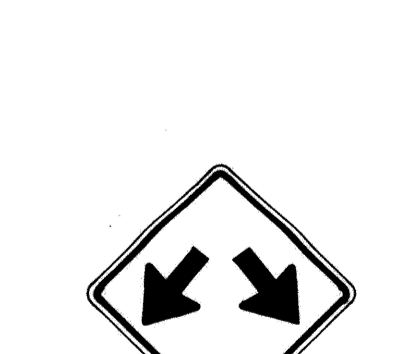

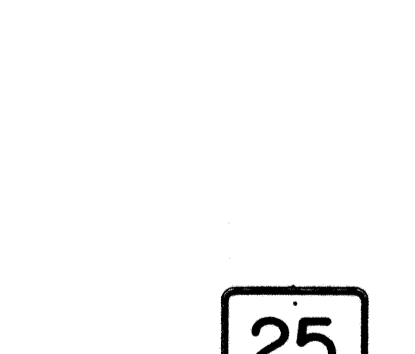




FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII*	HAW.	IR-H-1 (198)	1985	46	59

 W1-1(R) 30"x30" W1-1(R)-A 48"x48"	 W1-2(R) 30"x30" W1-2(R)-A 48"x48"	 W1-3(R) 30"x30" W1-3(R)-A 48"x48"	 W1-4(R) 30"x30" W1-4(R)-A 48"x48"	 W1-5(R) 30"x30" W1-5(R)-A 48"x48"	 W1-6 48"x24"	 W1-7 48"x24"	 W2-1 30"x30" W2-1-A 48"x48"	 W2-2 30"x30" W2-2-A 48"x48"	 W2-3(R) 30"x30" W2-3(R)-A 48"x48"
---	---	--	---	---	---	---	---	---	---

 W2-4 30"x30" W2-4-A 48"x48"	 W2-5 30"x30" W2-5-A 48"x48"	 W3-1 30"x30" W3-1-A 36"x36"	 W3-2 30"x30" W3-2-A 36"x36"	 W3-3 36"x36" 24"x18"	 W4-1(R) 30"x30" 24"x18" W4-1(R)-A 48"x48" 24"x18"	 W4-2(R) 36"x36" W4-2(R)-A 48"x48"	 W5-1 36"x36"	 W5-2 30"x30" W5-2-A 36"x36"	 W5-3 36"x36"
---	---	--	---	--	---	---	---	---	---

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

 W9-1(R) 30"x30" W9-1(R)-A 36"x36" W9-1(R)-B 48"x48"	 W9-2(L) 36"x36" W9-2(L)-A 48"x48"	 W10-1 36" Diameter	 W11-1 30"x30" 24"x18" W11-1-A 36"x36" 24"x18"	 W11-2 30"x30" 24"x18" W11-2-A 36"x36" 24"x18"	 W11-4 30"x30" 24"x18" W11-4-A 36"x36" 24"x18"	 W11-5 30"x30" 24"x18" W11-5-A 36"x36" 24"x18"
--	---	--	---	---	---	---

 W12-1 24"x24" W12-1-A 36"x36" W12-1-B 48"x48"	 W12-2(12'-6") 36"x36" 24"x18"	 W13-1(25) 18"x18" W13-1(25)-A 24"x24"	 W13-2(25) 48"x60"	 W13-3(25) 48"x60"	 W14-1 30"x30"	 W14-3 36"x48"x48"
--	---	--	--	--	--	--

**GENERAL NOTES**

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

APPROVAL RECOMMENDED:  
*Erich Tamaha* 3/17/72  
TRAFFIC ENGINEER DATE

APPROVED:  
*Hubert Rabin* 3-20-72  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.T.	3/20/72
2	Revised General Note 1	H.T.	10/16/74
3	Revised General Note 5	MT	9-16-75
4	Revised General Note 5	H.T.	9-14-76
5	Added Note 1	H.T.	11-9-79

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

NOT TO SCALE

SHEET No. 13 OF 26 SHEETS DT 102

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

DATE \_\_\_\_\_  
SURVEY PLOTTED BY \_\_\_\_\_  
DRAWN BY \_\_\_\_\_  
DESIGNED BY \_\_\_\_\_  
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.	1R-HH(78)	1985	47	59

General Notes

- Sign details shall conform to the latest editions of the following FHWA publications:
  - "Standard Alphabets for Highway Signs," and as amended.
  - "Standard Highway Signs," and as amended.
  - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- All signs shall be reflectorized with reflective sheeting, unless otherwise specified.
- All signs shall have  $\frac{3}{8}$ " bolt holes drilled at appropriate locations.
- Numerals in ( ) indicate numerals to be inserted for sign message. (R) or (L) indicates right or left.
- Signs prefixed with "CW" on the plans shall indicate orange and black construction signs, and shall be reflectorized with reflective sheeting.
- All signs shall be erected without educational plaques unless called for in the plans.

ALL WAY  
R1-4 18" x 6"

REDUCED SPEED  
35  
AHEAD  
R2-5d(35) 24" x 30"  
R2-5d(35)-A 48" x 60"

SPEED LIMIT ENFORCED BY VASCAR  
4" Series D  
- 4" Series C  
- 3" Series D  
- 5" Series C  
R2-10 24" x 30"

CENTER LANE ONLY  
R3-9b 24" x 36"

BUS STOP  
R7-107(R) 12" x 24"

RESERVED PARKING  
R7-8 12" x 18"  
R7-8-A 24" x 30"

ANY TIME  
R8-3a 24" x 24"  
24" x 18"  
R8-3a-A 48" x 48"

NO PED XING  
R9-3a 18" x 18"  
18" x 12"  
R9-3a-A 24" x 24"  
24" x 18"

USE CROSSWALK  
R9-3b(R) 18" x 12"

USE CROSSWALK  
R9-3b(L) 18" x 12"

NO TURN ON RED  
R10-11a 24" x 30"

TURN RIGHT ANY TIME WITH CAUTION  
4" Series C  
R16-1 24" x 30"

NO LEFT TURN ON RED  
4" Series D -  
- 3" Series D -  
- 2" Series D -  
- 3" Series D -  
R16-3 18" x 24"

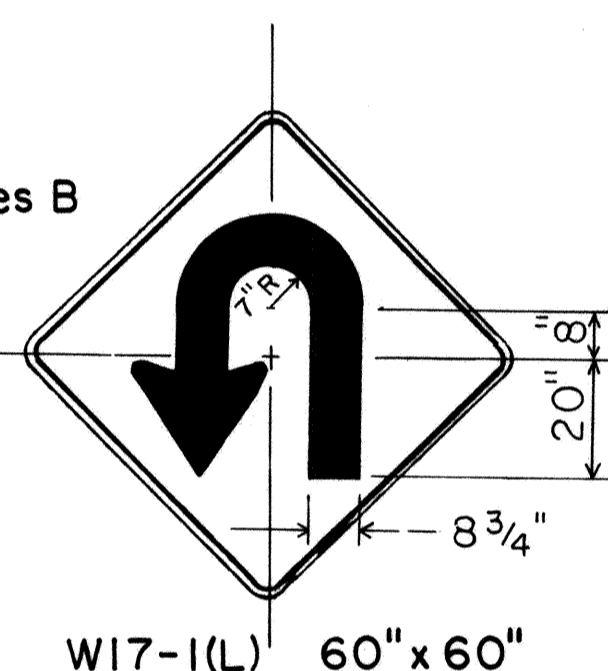
NO RIGHT TURN ON RED  
R16-4 18" x 24"

UNLICENSED VEHICLES BICYCLES, CYCLES UNDER 5 H.P., PEDESTRIANS KEEP OUT FREEWAY  
3" Series C  
4" Series E  
R16-5 36" x 42"

TURN AHEAD  
8" Series F  
- 5" Series D  
R16-6 24" x 30"

TURN OK  
8" Series F  
5" Series D  
R16-7 24" x 30"

MOTOR-DRIVEN CYCLES PROHIBITED  
4" Series B  
R5-8 30" x 24"



STOP AHEAD  
W3-1a 36" x 36"  
24" x 18"  
W3-1a-A 48" x 48"  
24" x 18"

YIELD AHEAD  
W3-2a 36" x 36"  
24" x 18"  
W3-2a-A 48" x 48"  
24" x 18"

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

TRUCK CROSSING  
W8-6 30" x 30"  
W8-6-A 36" x 36"

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

EQUESTRIAN XING  
W11-7 36" x 36"  
24" x 18"  
W11-7-A 48" x 48"  
24" x 18"

FIRE STATION  
W11-8 36" x 36"  
24" x 18"  
W11-8-A 48" x 48"  
24" x 18"

W11-9 36" x 36"  
W11-9-A 48" x 48"

LIMITED SIGHT DISTANCE  
W14-4 36" x 36"  
W14-4-A 48" x 48"

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

ADVANCE GREEN  
W15-2 24" x 24"

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

RIGHT LANE EXIT ONLY  
8" Series E  
W18-1 48" x 60"

S1-1 36" x 36"

S2-1 36" x 36"

SCHOOL BUS STOP AHEAD  
S3-1 30" x 30"

8:00 AM TO 3:30 PM  
S4-1 24" x 10"

WHEN CHILDREN ARE PRESENT  
S4-2 24" x 10"

SCHOOL  
S4-3 24" x 8"

WHEN FLASHING  
S4-4 24" x 10"

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

USE SIDEWALK  
4" Series C  
R18-1 24" x 18"

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT103 approved 3/20/72	H.T.	5/2/78
2	Added General Note 6	H.T.	11/9/78

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

APPROVED:  
*Robert Z. Pakeishi*  
ASSISTANT CHIEF, ENGINEERING  
5/2/78  
DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**

MISCELLANEOUS SIGNS

NOT TO SCALE  
DATE: MAY, 1978  
SHEET No. 114 OF 26 SHEETS DT 103

DATE: \_\_\_\_\_  
SURVEY ECLECTED 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.	IR-HI-(198)	1985	48	59



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"



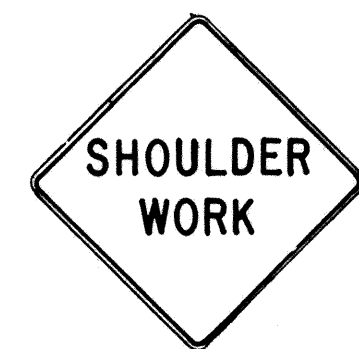
CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



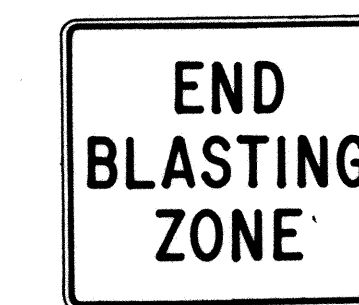
CW21-6 30" x 30"



CW22-1b 48" x 48"



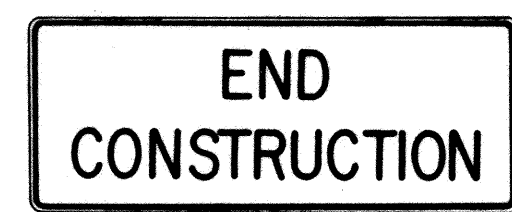
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



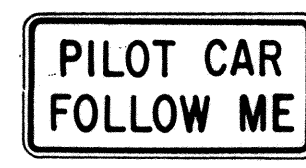
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



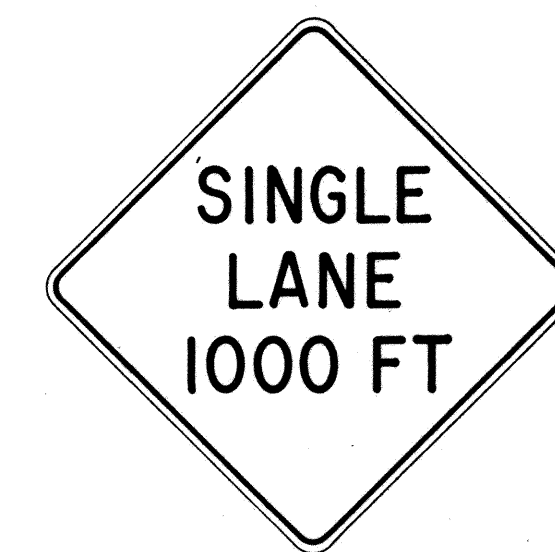
CM4-10(R) 48" x 18"



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," 1972, and as amended.
2. All construction signs shall be reflectorized.
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:  
*Walter Salsich* 3/23/72  
ASSISTANT CHIEF, ENGINEERING DATE

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

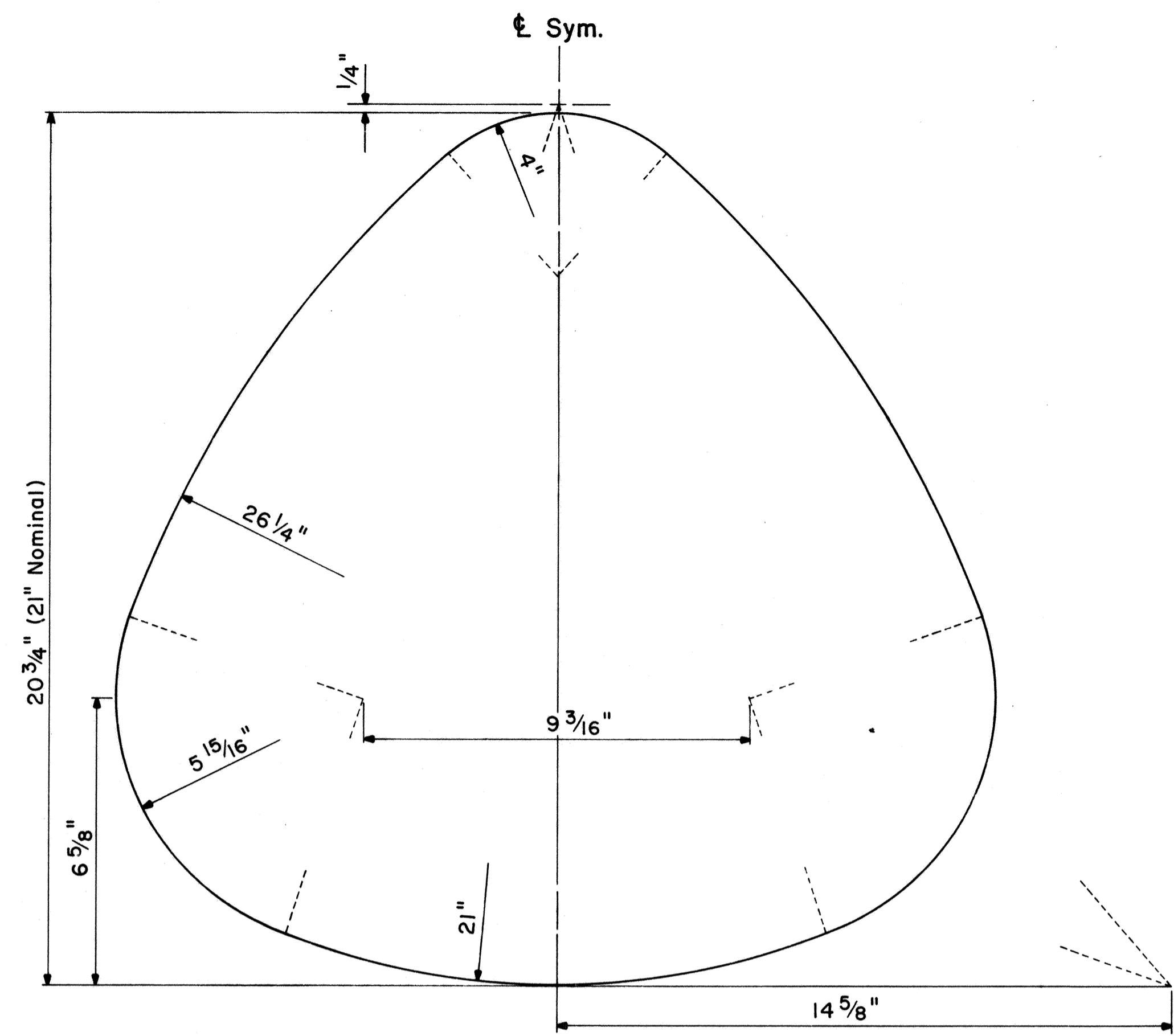
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

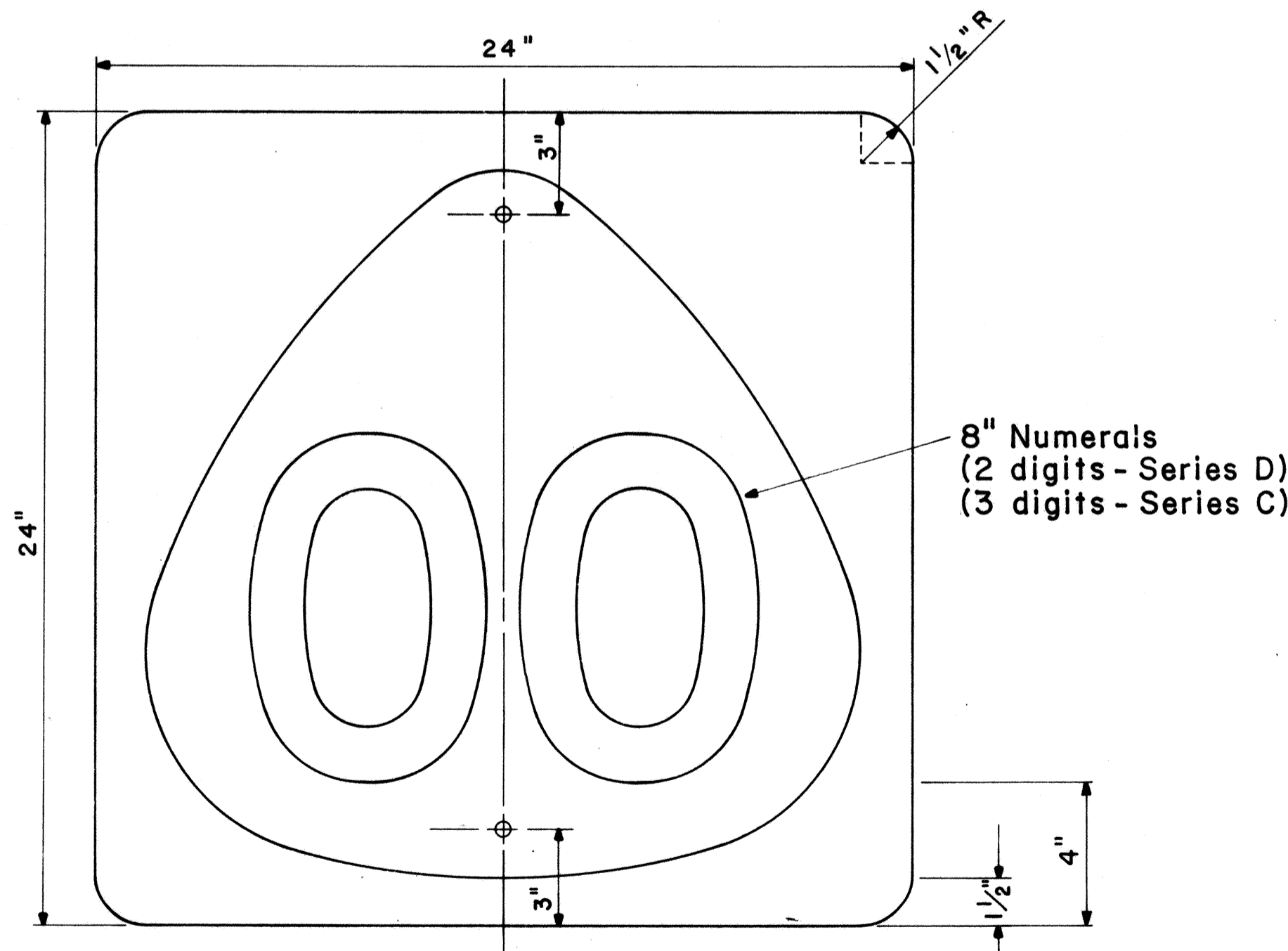
NOT TO SCALE

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

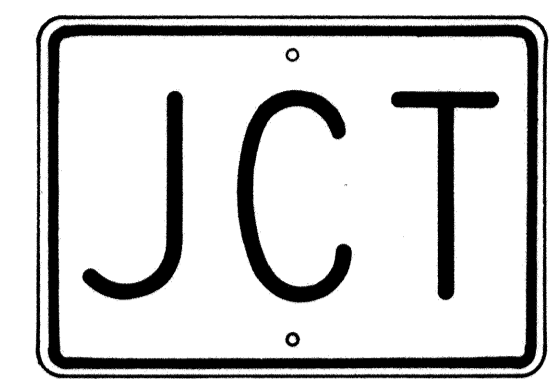
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	49	50



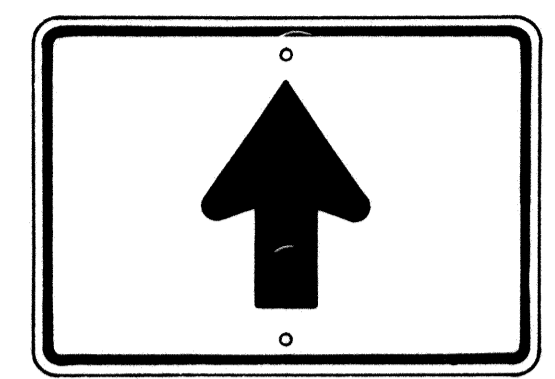
**STATE ROUTE MARKER DETAIL**  
Not to Scale



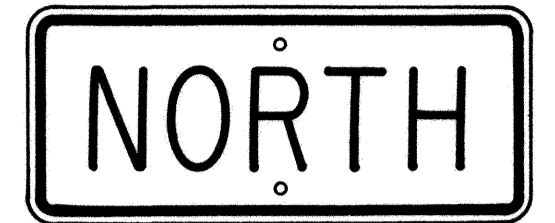
**STATE ROUTE MARKER**  
M1-6(00) 24" x 24"  
Scale: 1/4" = 1"



M2-1 21" x 15"



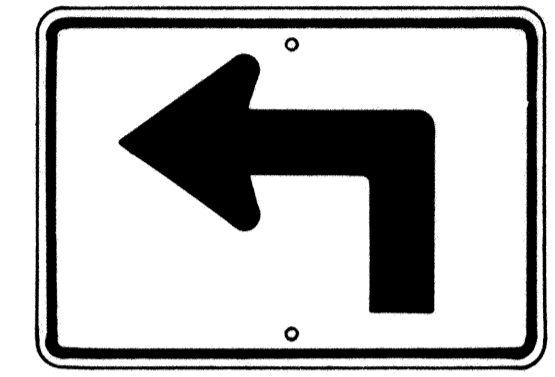
M6-3 21" x 15"



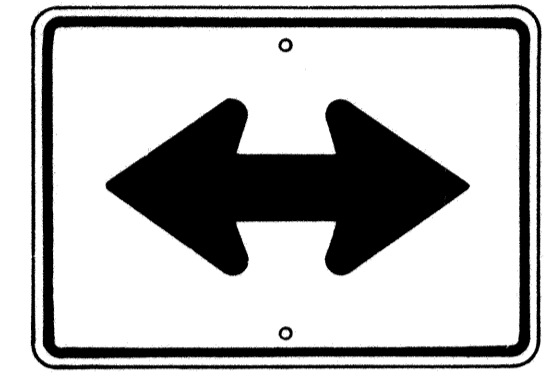
M3-1 24" x 12"  
M3-1-A 36" x 18"



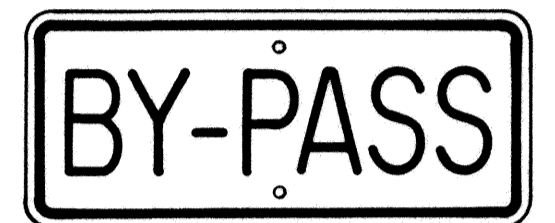
M4-1 24" x 12"



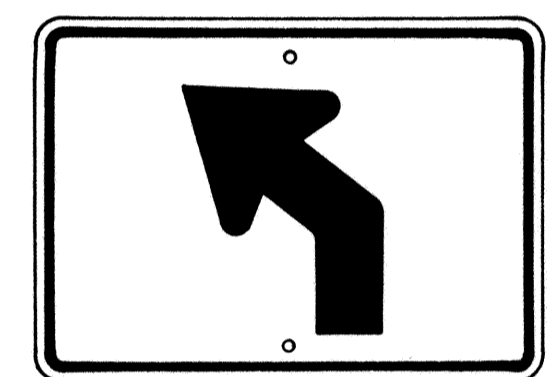
M5-1(L) 21" x 15"



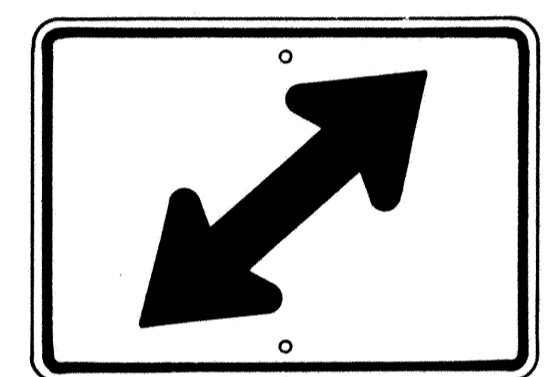
M6-4 21" x 15"



M4-2 24" x 12"



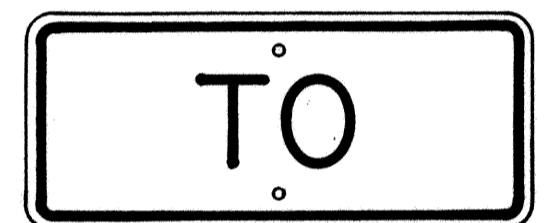
M5-2(L) 21" x 15"



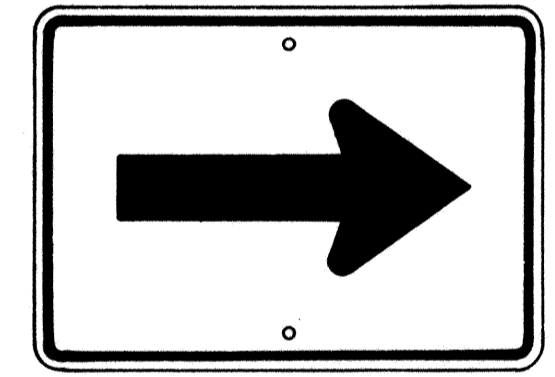
M6-5(R) 21" x 15"



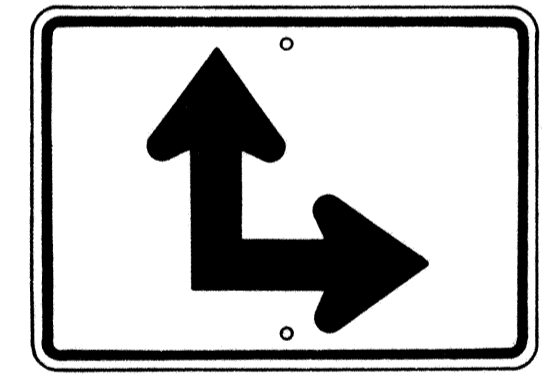
M4-3 24" x 12"



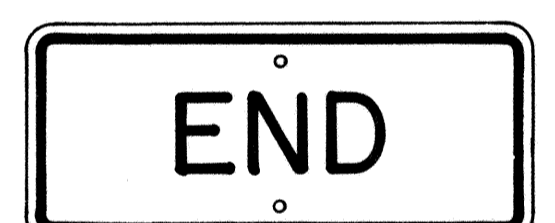
M4-5 24" x 12"



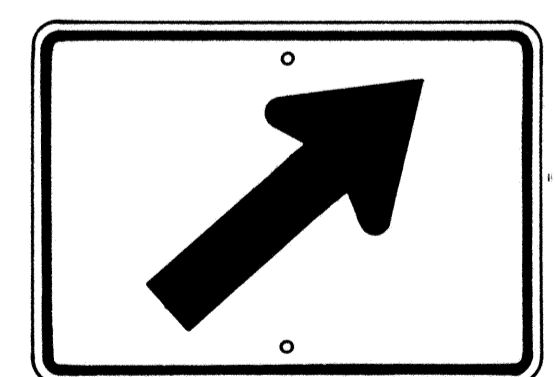
M6-1 21" x 15"



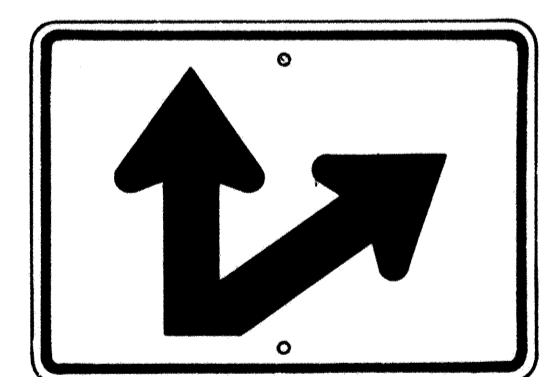
M6-6(R) 21" x 15"



M4-6 24" x 12"



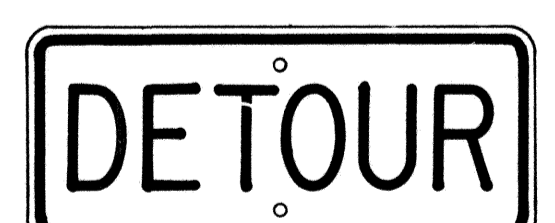
M6-2(R) 21" x 15"



M6-7(R) 21" x 15"



M4-7 24" x 12"



M4-8 24" x 12"

**GENERAL NOTES**

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

**AUXILIARY MARKERS**

Not to Scale

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

APPROVED:  
*Shigeru S. Sakai* 6-1-72  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 105 Approved 12-30-69	HT.	6/11/72
2	Revised General Note 1	HT.	10/16/74

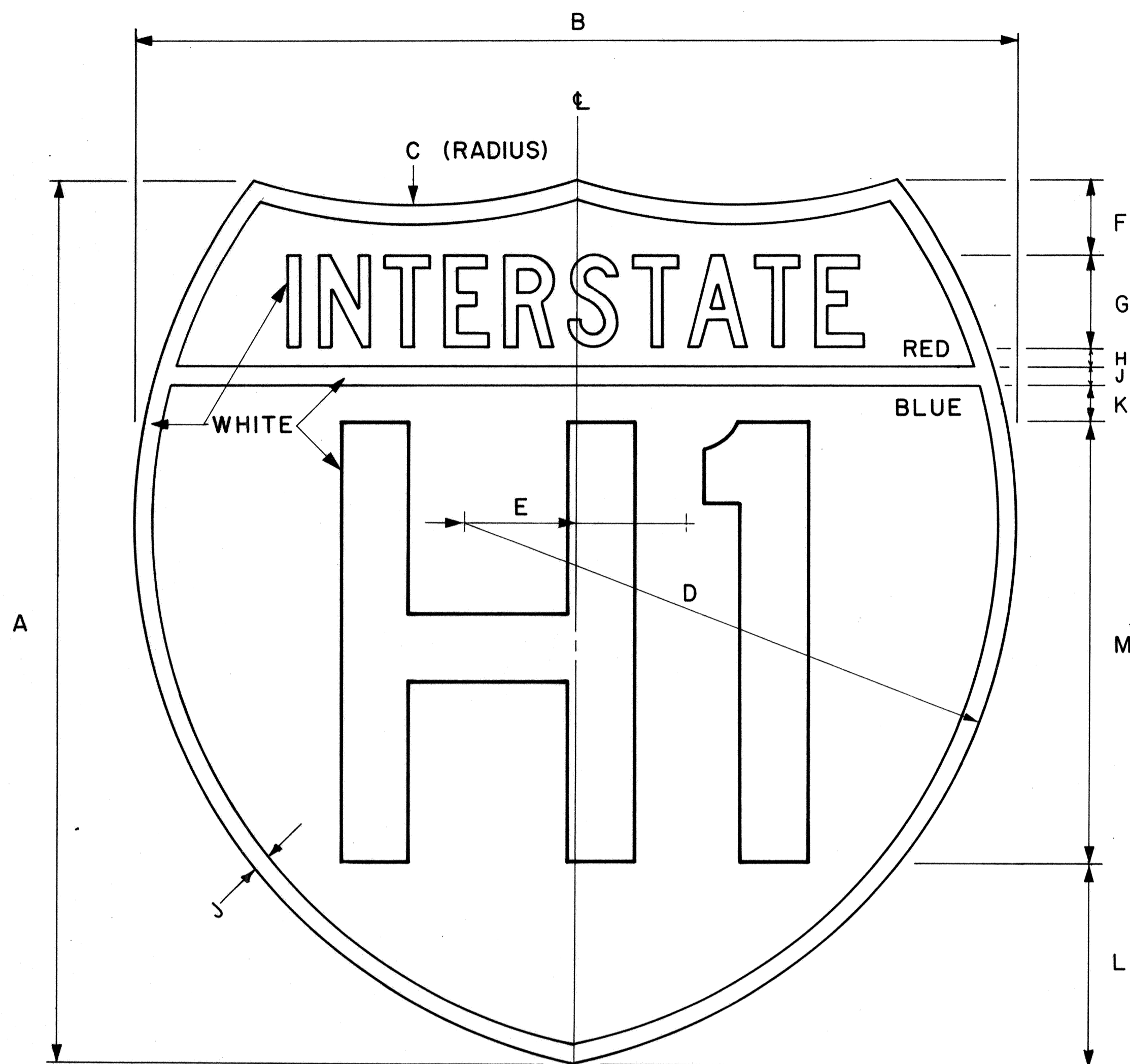
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

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

Scale: As Shown  
SHEET NO. 49 OF 26 SHEETS DT 105

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HH(198)	1985	50	59



**INTERSTATE ROUTE MARKER**  
**IM-1( )**

Scale: 3/8" = 1"

**GENERAL NOTES**

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

**INTERSTATE -ROUTE MARKER SCHEDULE**  
**(INCHES)**

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

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

APPROVAL RECOMMENDED:

*Eishi Tanaka* 4/17/78  
TRAFFIC ENGINEER DATE

APPROVED:

*Harbert S. Zaksishi* 4/18/78  
ASSISTANT CHIEF, ENGINEERING DATE

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

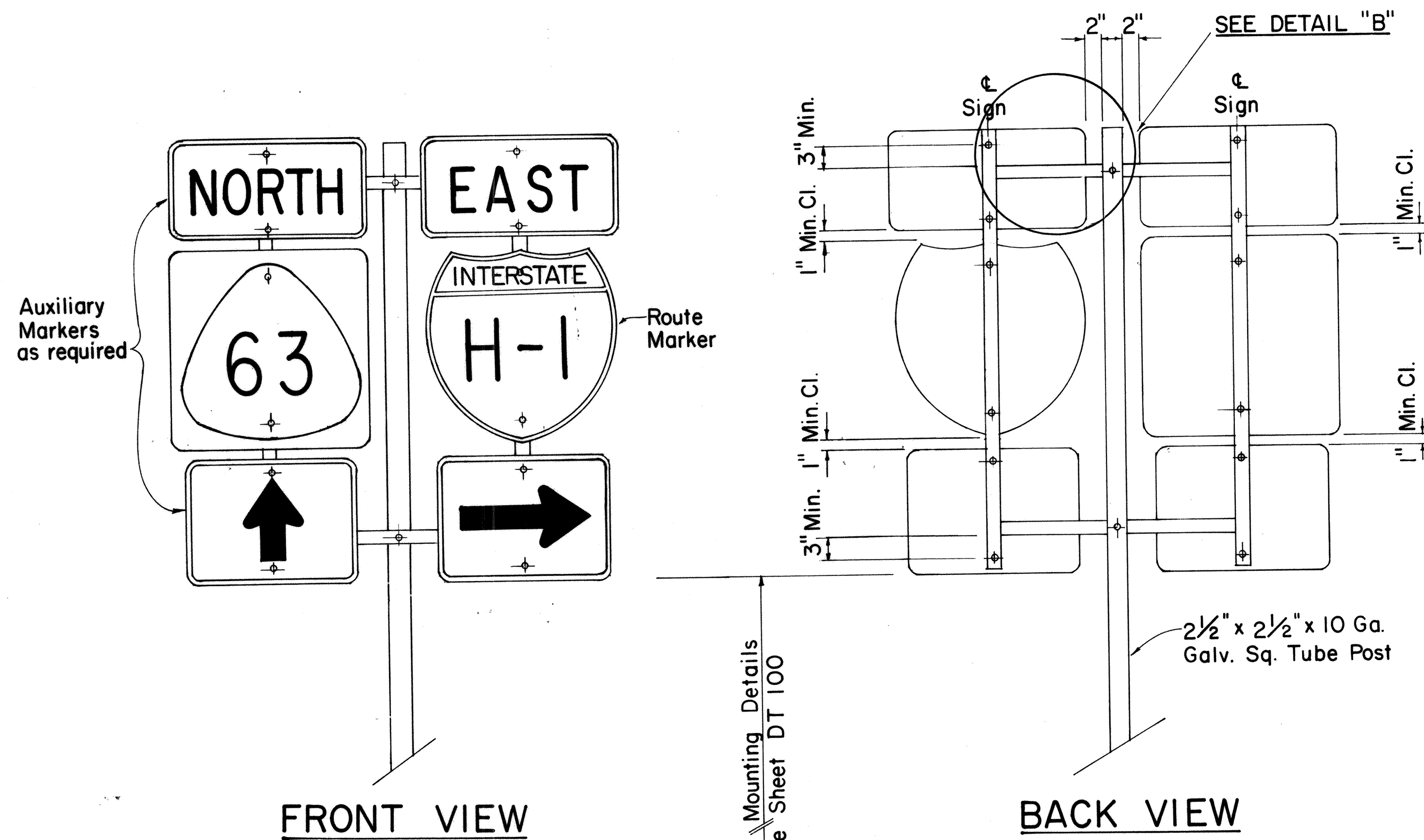
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAILS**  
**INTERSTATE ROUTE MARKER**

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

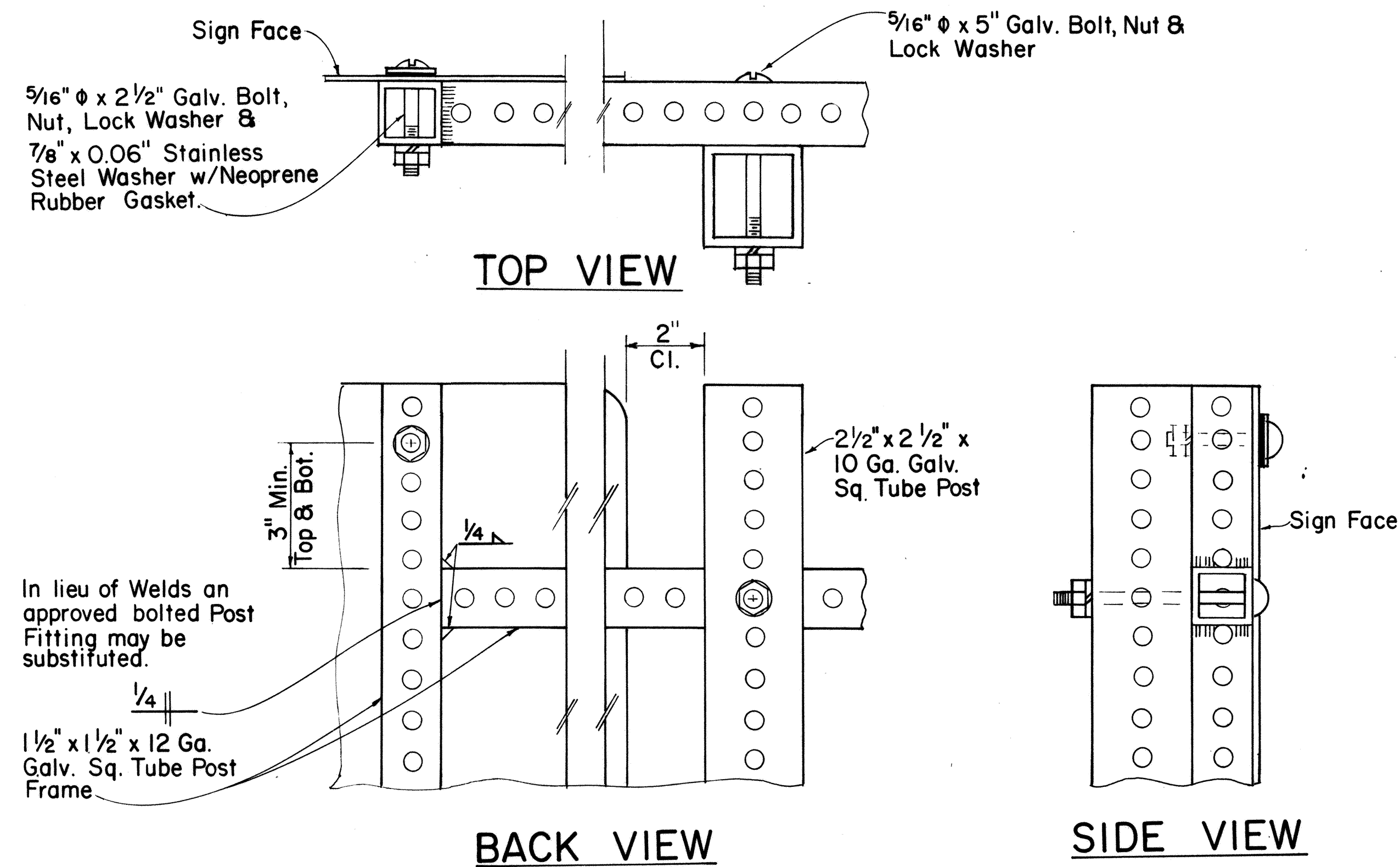
ORIGINAL PLAN  
 SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 TRACED BY \_\_\_\_\_  
 DESIGNED BY \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 No. \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HH-1(178)	1985	51	59



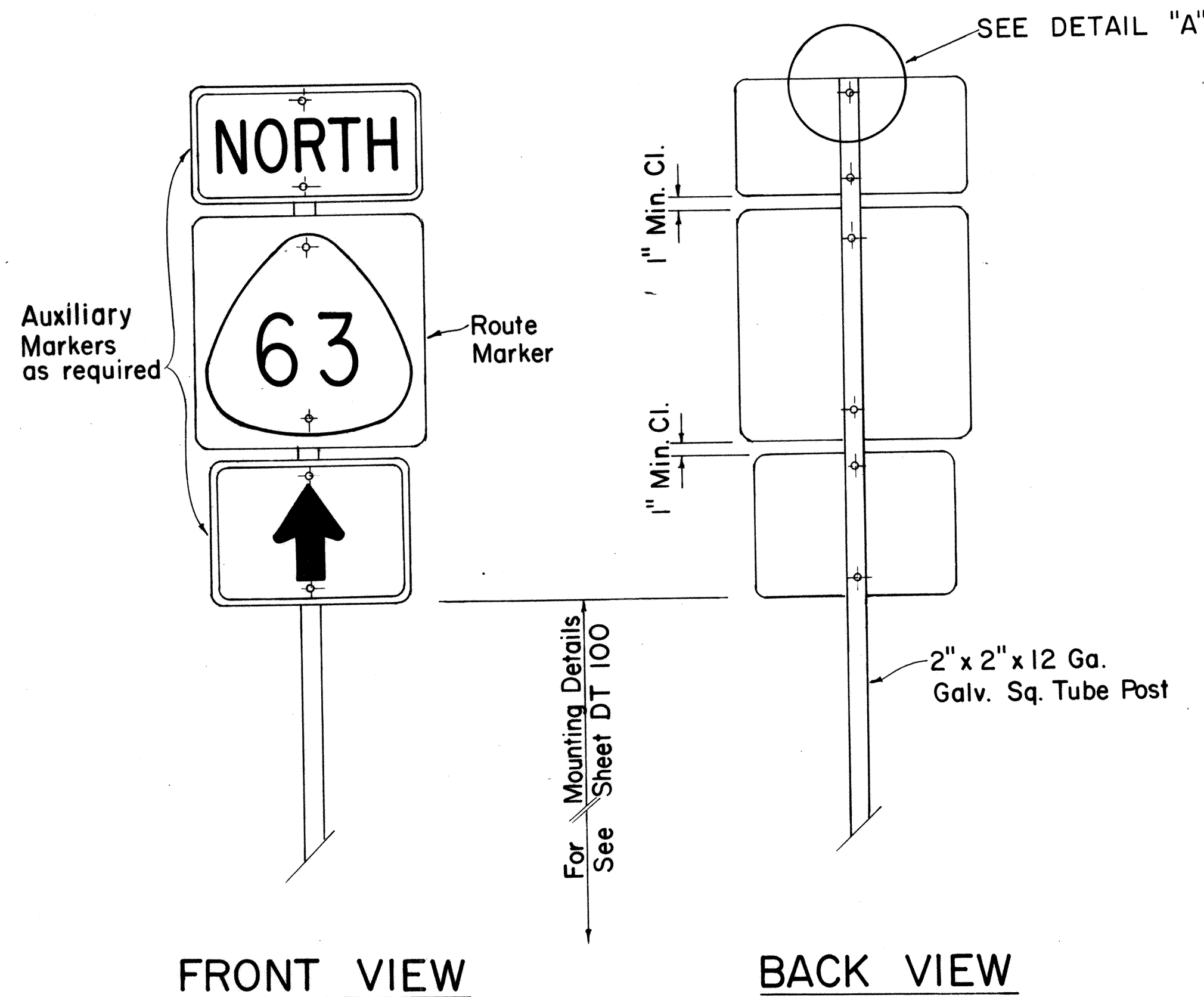
**TYPE "B" ASSEMBLY**

SCALE: 1" = 1'-0"



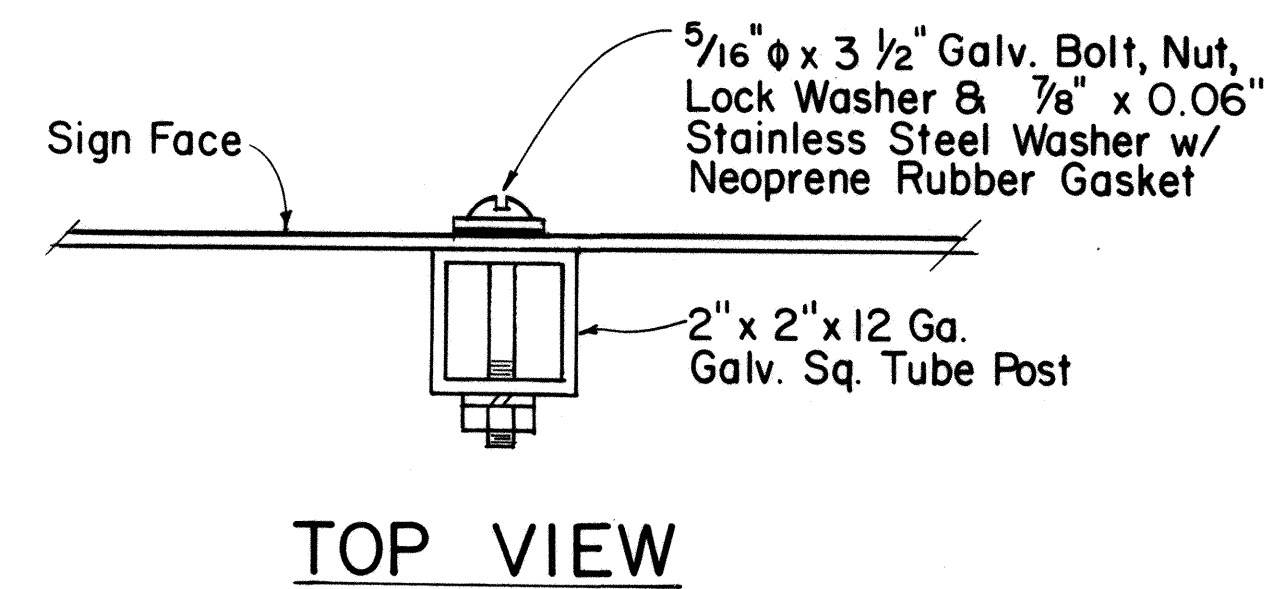
**DETAIL "B"**

SCALE: 3/8" = 1"



**TYPE "A" ASSEMBLY**

SCALE: 1" = 1'-0"



**DETAIL "A"**

SCALE: 3/8" = 1"

APPROVAL RECOMMENDED:

*Eiichi Tanaka* 7/31/80  
TRAFFIC ENGINEER DATE

APPROVED:

*Herbert Zakeishi* 7/31/80  
ASSISTANT CHIEF, ENGINEERING DATE

NO	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 107 dated 12/30/69.	H.T.	7/31/80

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**ROUTE MARKER**  
**ASSEMBLIES**

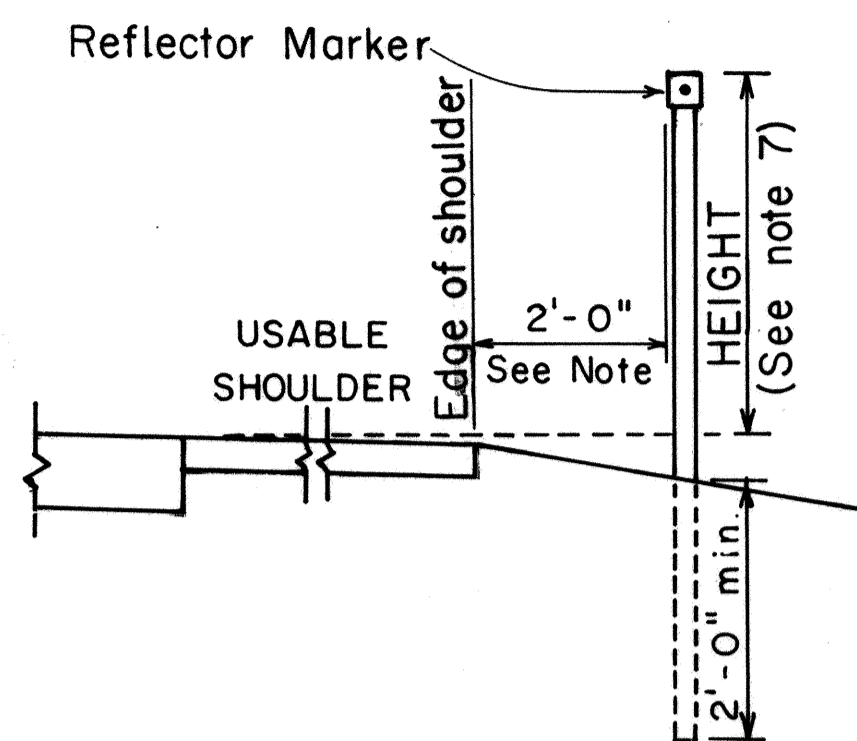
SCALE: AS SHOWN  
SHEET NO. 18 OF 26 SHEETS DT 107

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

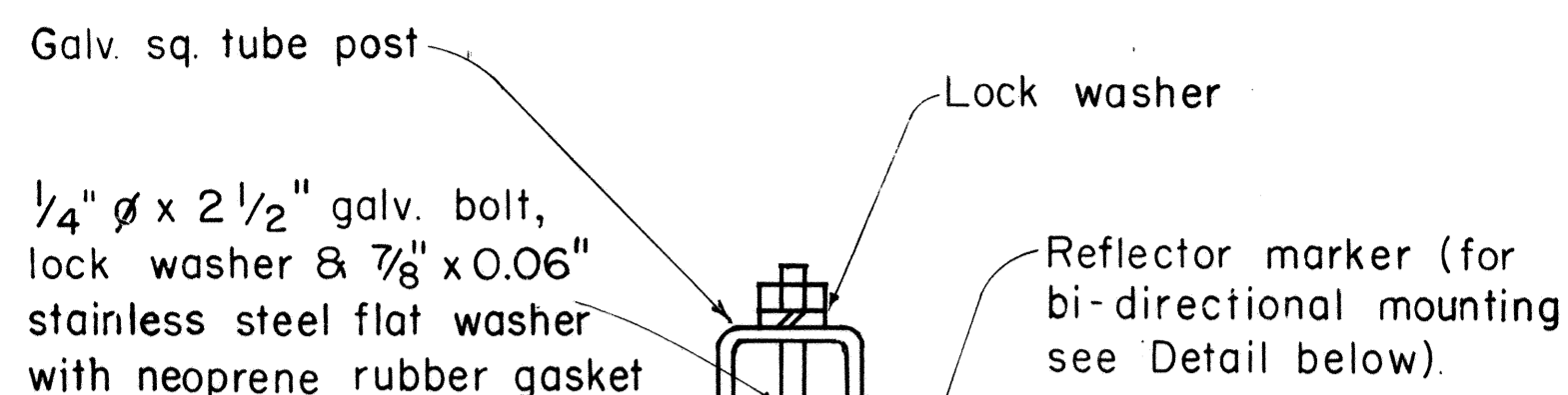
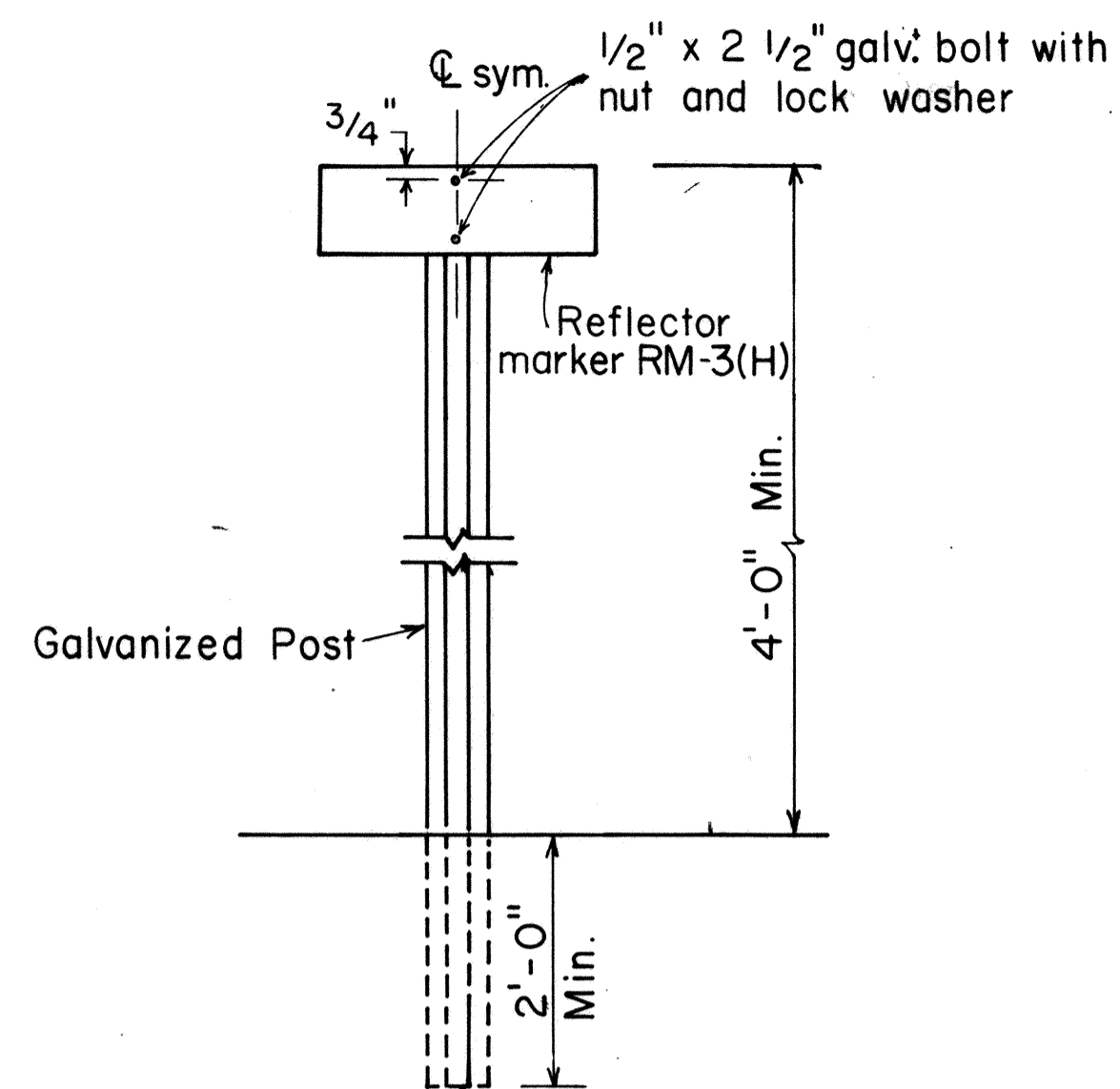
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-108	1985	52	50

**GENERAL NOTES:**

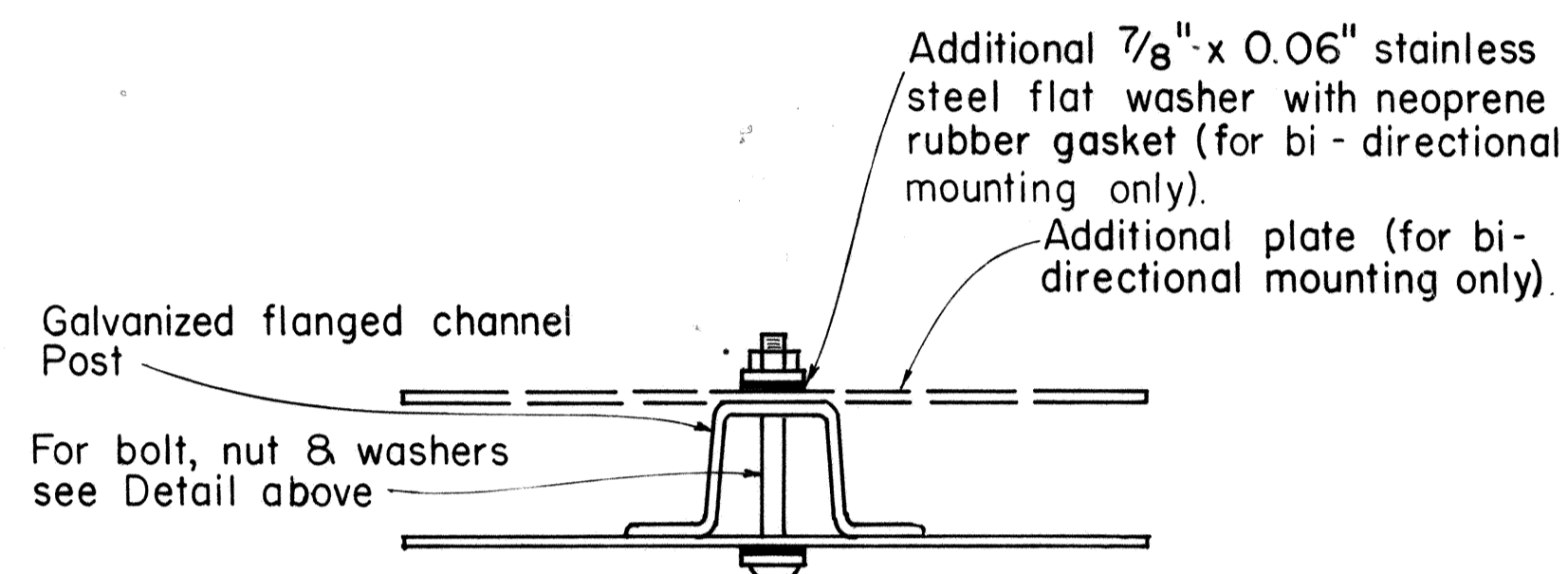
1. Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
2. (R) or (L) indicates right or left and shall be as shown on the plans.
3. Reflector markers RM-1 and RM-2 shall be:
  - a) Yellow if placed along the left edge of divided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



**REFLECTOR MARKER MOUNTING DETAIL**

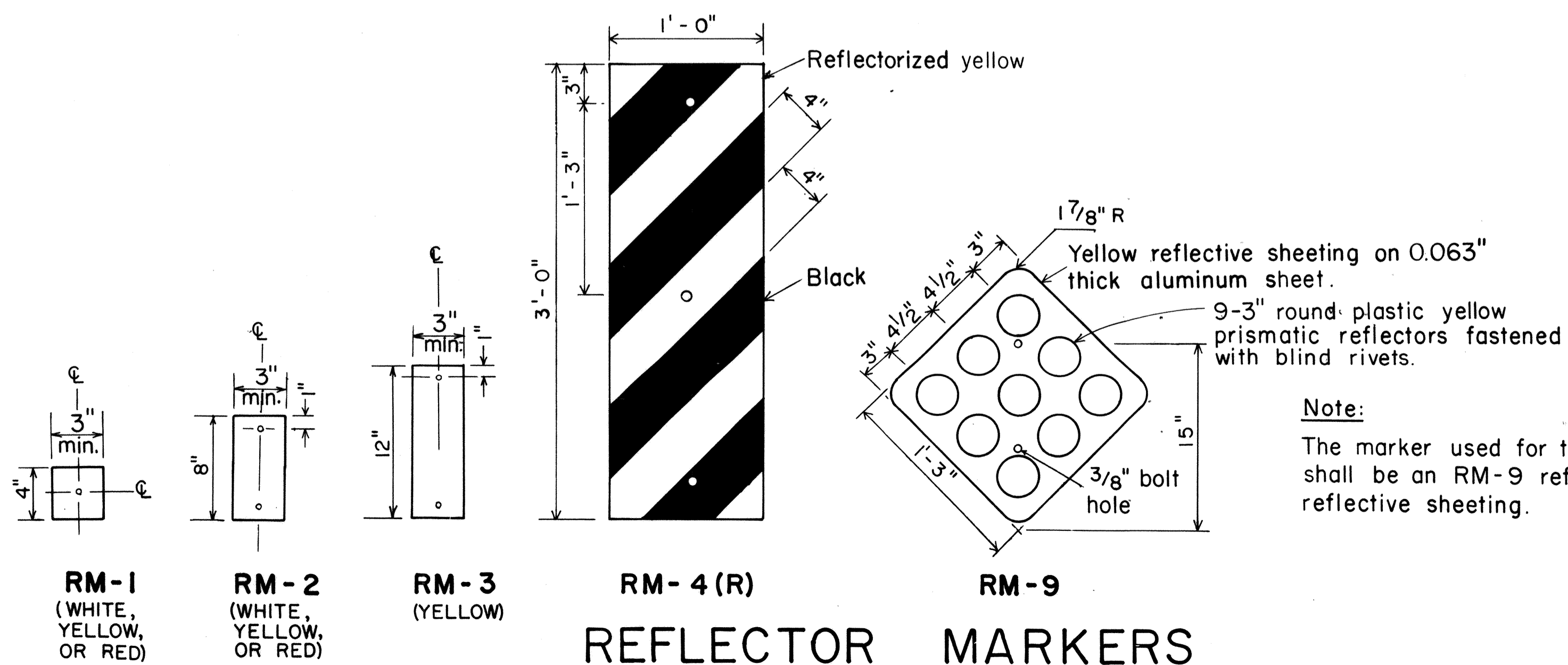


**GALVANIZED SQUARE TUBE POST**



**GALVANIZED FLANGED CHANNEL POST**

**TYPICAL MOUNTING DETAILS**



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

NO.	REVISION	APPROVED BY	DATE
1	Revised Mounting Details	H-1	4/23/80
2	Revised General Notes, Mounting Details and Reflector Markers.	H-1	9-28-83
3	Eliminated White for RM-4	H-1	1-30-88

APPROVAL RECOMMENDED:  
*Eddie Tanaka* 11/7/77  
TRAFFIC ENGINEER DATE

APPROVED:  
*Herbert B. Sakai* 11/15/77  
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

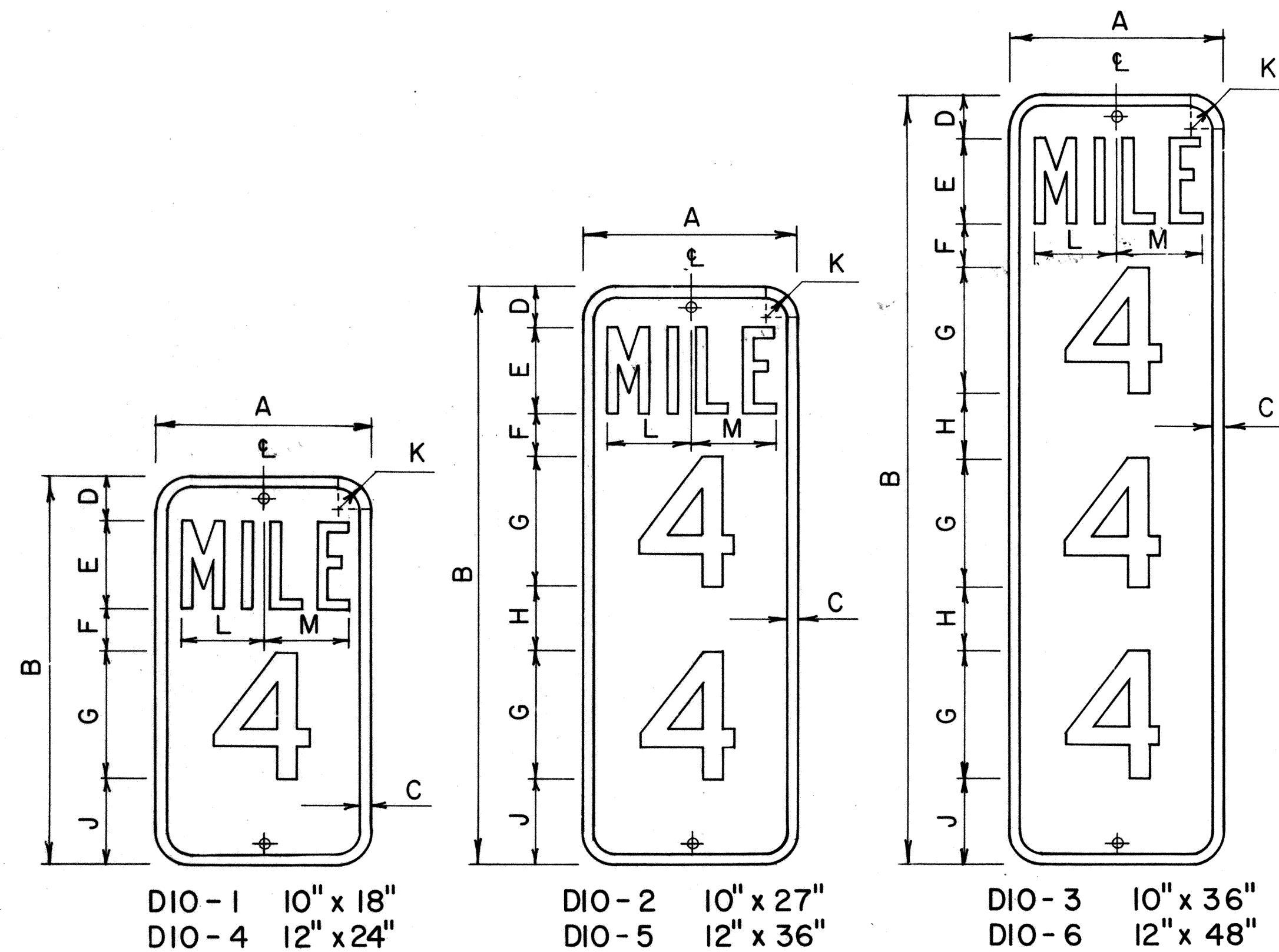
**STANDARD DETAILS**  
MISCELLANEOUS REFLECTOR MARKERS

Not to scale June, 1977

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	53	59

**GENERAL NOTES:**

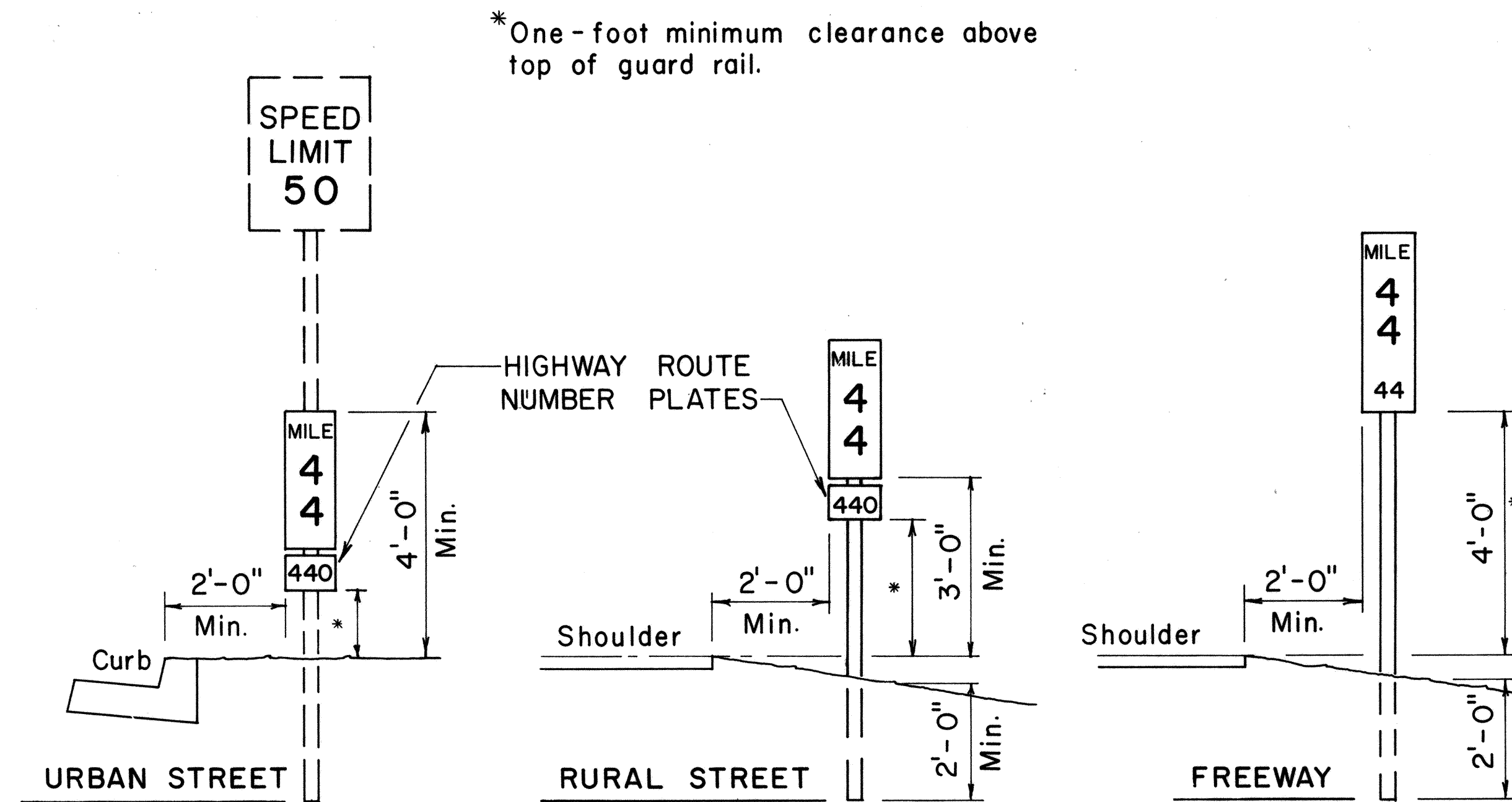
- Milepost marker and highway route number plates shall conform to the latest editions of the following FHWA publications:
  - "Standard Alphabets for Highway Signs," and as amended.
  - "Standard Highway Signs," and as amended.
  - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Milepost markers and highway route numbers shall be completely reflectorized with reflective sheeting as follows:
  - Milepost markers shall have white legends and border on a green background.
  - Highway route numbers shall have black numerals on a white background.
- The plate backings for milepost markers and highway route numbers shall conform to the requirements for standard highway signs. The plates shall have 3/8" bolt holes drilled at appropriate locations.
- Highway route number plates shall be used in conjunction with milepost marker plates on all roadways, except Interstate freeways. Fabrication and installation costs of highway route number plates shall be considered incidental to the milepost marker assembly.
- Milepost markers shall be installed on all roadways as follows:
  - One milepost on each side of multi-lane roadways.
  - Back-to-back mileposts on one side of 2-lane roadways. (Right side of roadway in direction of increasing mileage.)



**MILEPOST MARKER PLATE DETAILS**

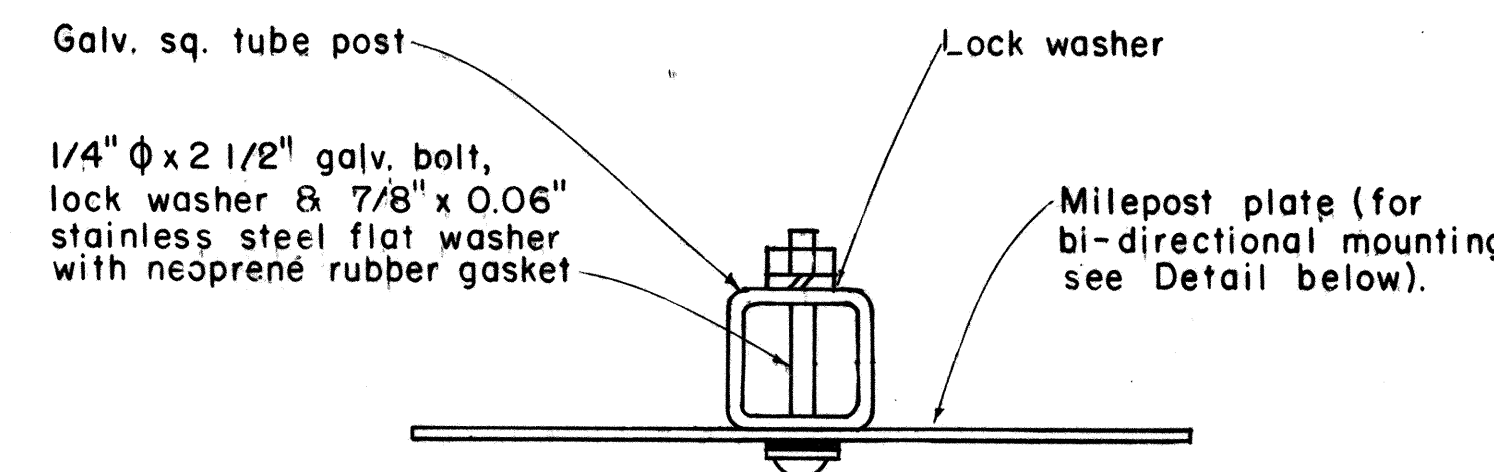
Scale: 3/16" = 1"

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

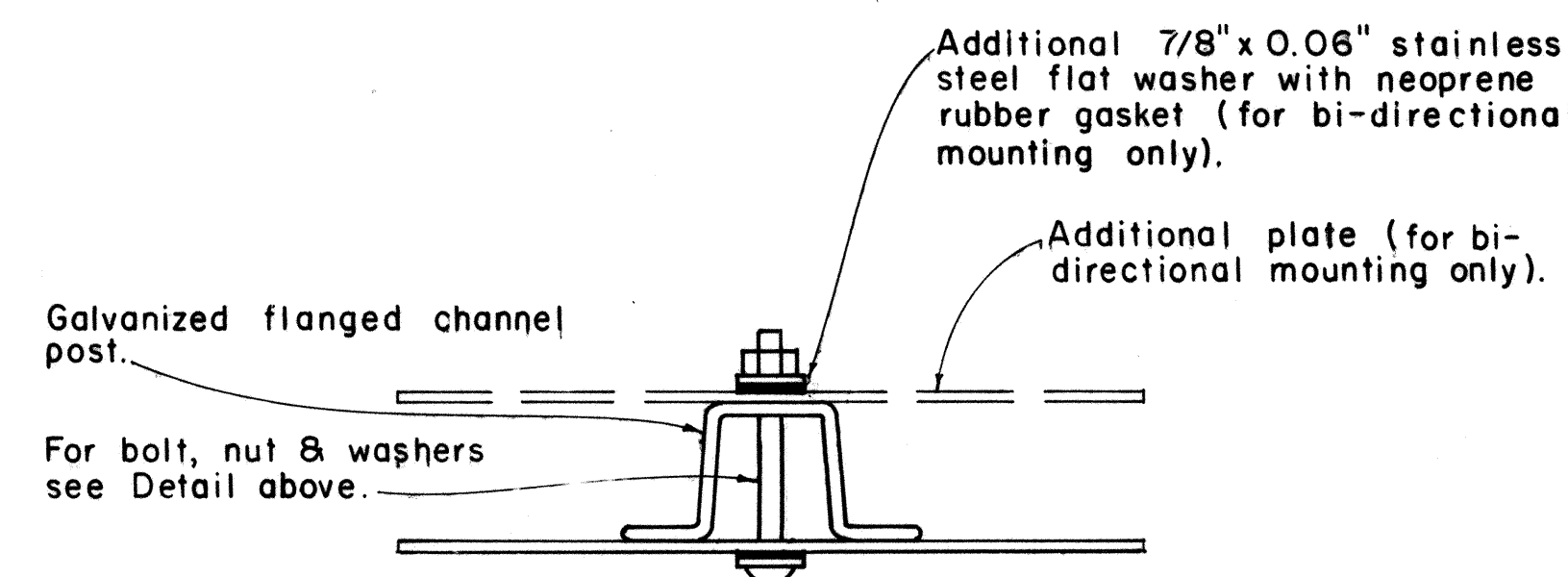


**TYPICAL ROADSIDE INSTALLATION**

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



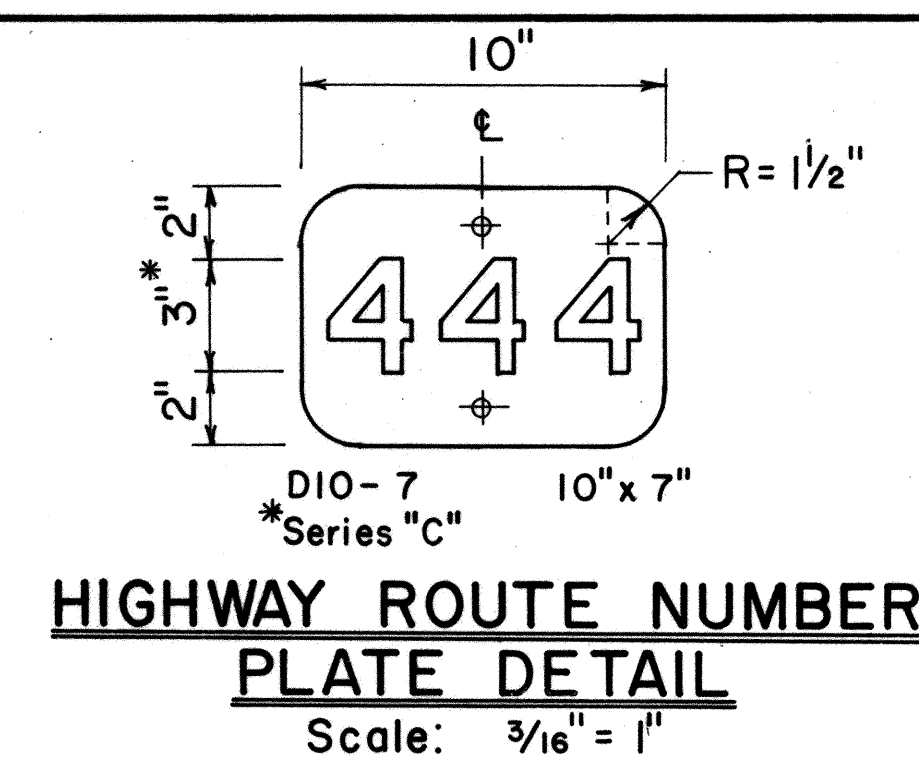
**GALVANIZED SQUARE TUBE POST**



**GALVANIZED FLANGED CHANNEL POST**

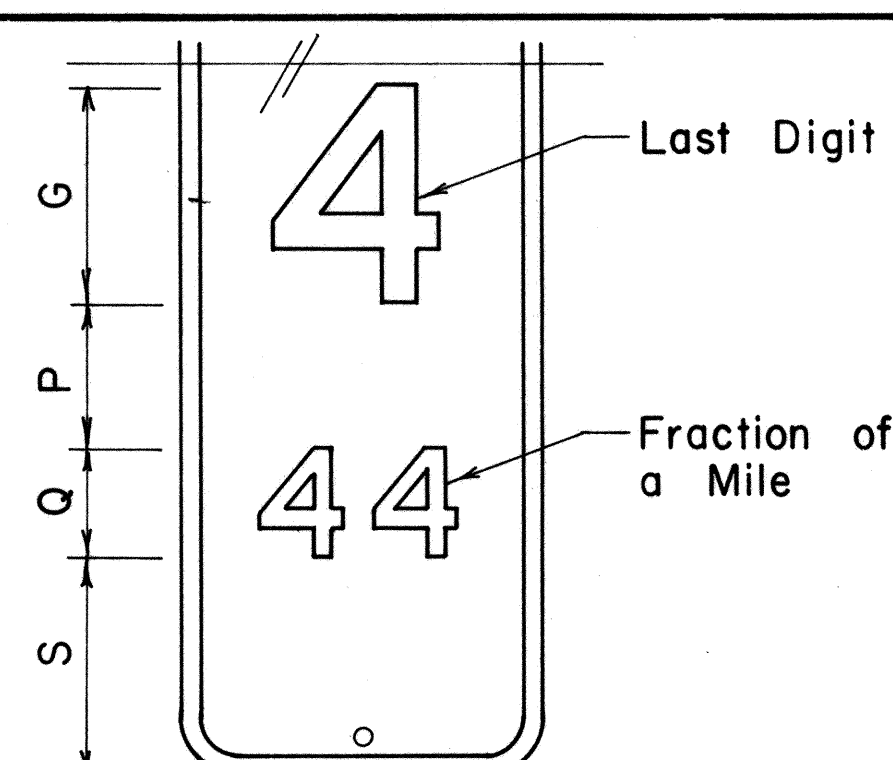
**TYPICAL MOUNTING DETAILS**

Scale: 1/2" = 1"



**HIGHWAY ROUTE NUMBER PLATE DETAIL**

Scale: 3/16" = 1"



**MILEPOST MARKER FRACTION DETAIL**

Scale: 3/16" = 1"

MILEPOST PLATE SCHEDULE WITH FRACTION OF A MILE						
NAME	SIZE	G	P	Q	S	NUMERAL SERIES
DIO-1a	10" x 27"	6"	4"	3"	6"	C
DIO-4a	12" x 36"	10"	4"	5"	7"	C
DIO-2a	10" x 36"	6"	4"	3"	6"	C
DIO-5a	12" x 48"	10"	4"	5"	6"	C
DIO-3a	10" x 45"	6"	4"	3"	6"	C
DIO-6a	12" x 60"	10"	4"	5"	6"	C

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

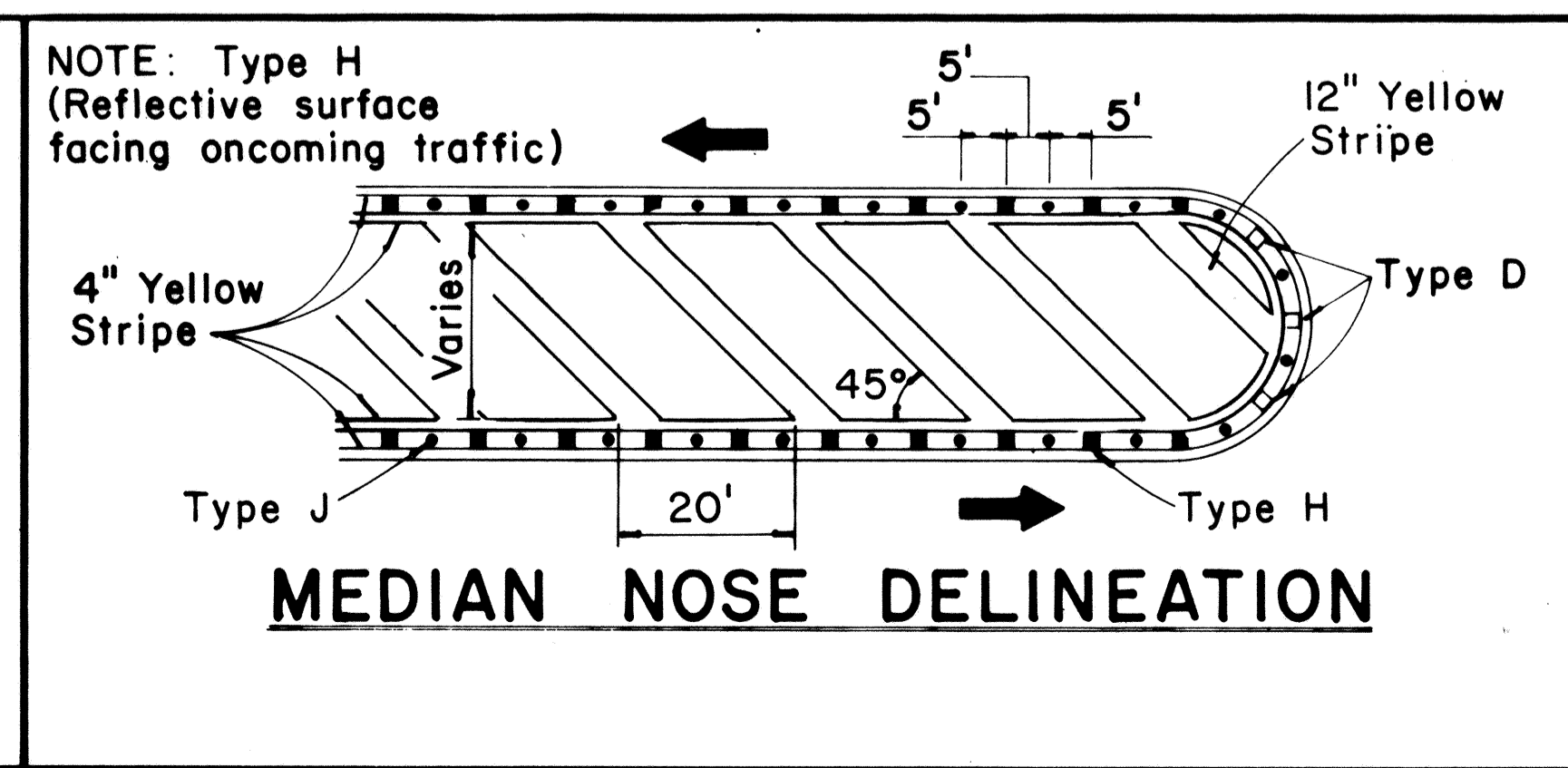
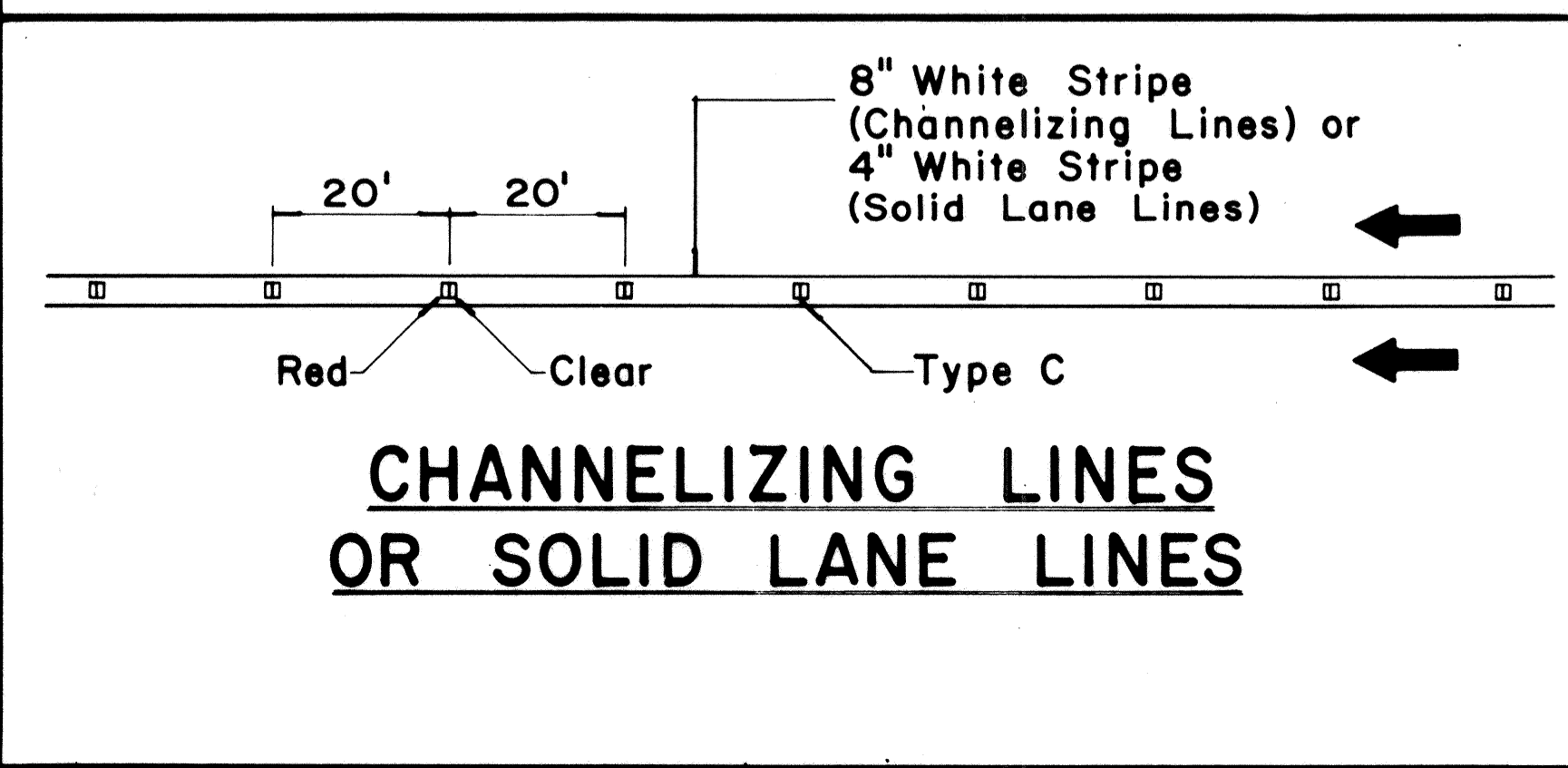
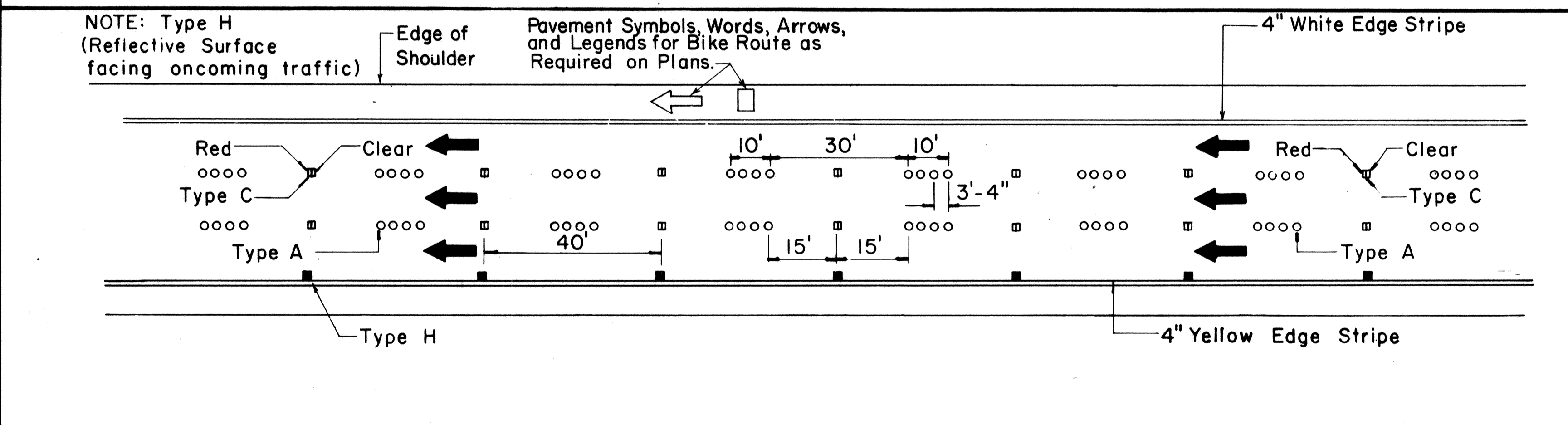
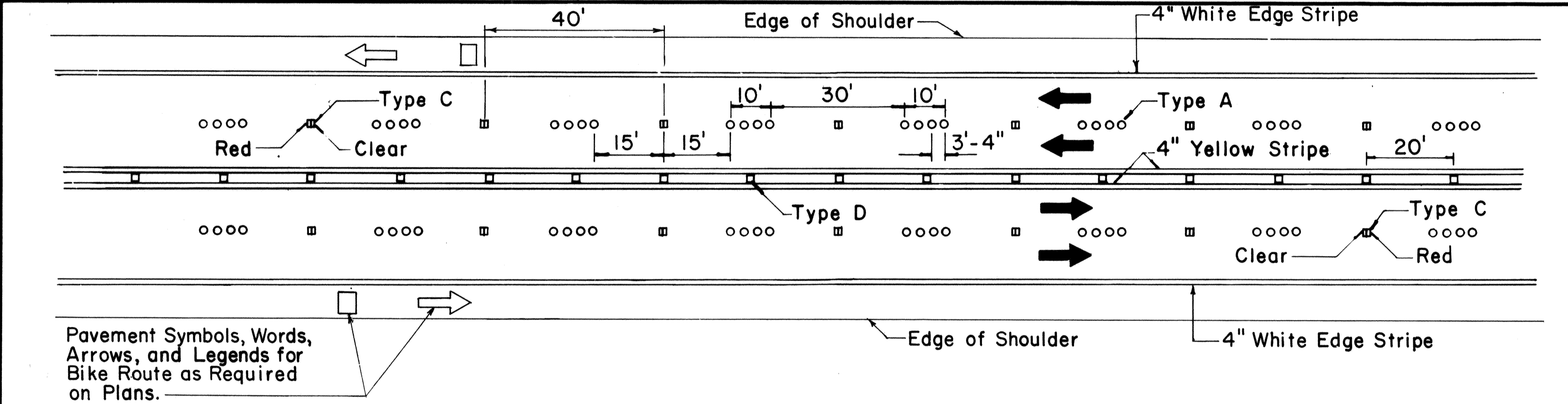
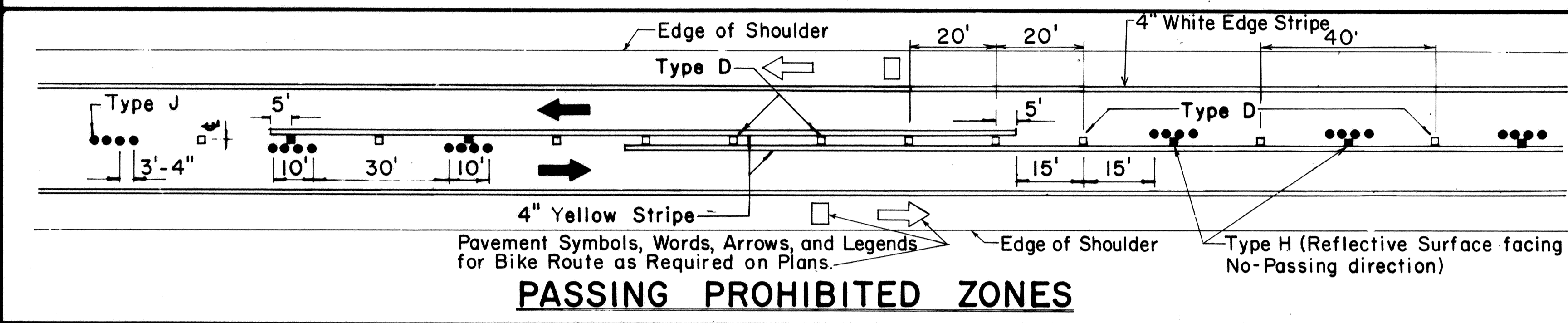
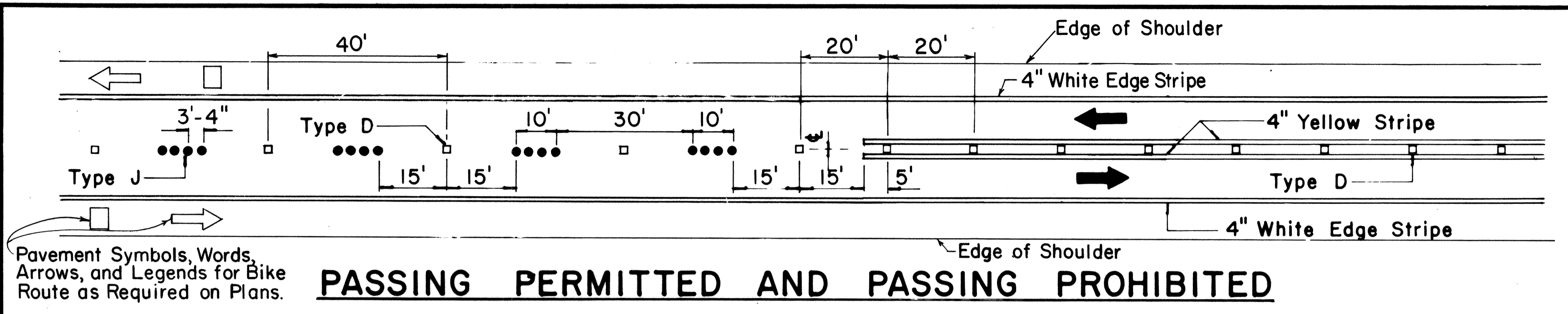
APPROVAL RECOMMENDED:  
*Eishi Tanaka* / 1/17/78  
 TRAFFIC ENGINEER DATE

APPROVED:  
*Robert B. Sakai* / 1/12/78  
 ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS**  
**MILEPOSTS**  
 SCALE: As Shown DATE: December, 1977  
 SHEET No. T20 OF 26 SHEETS DT 116

SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 TRACED 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.	IRHH(198)	1985	54	59

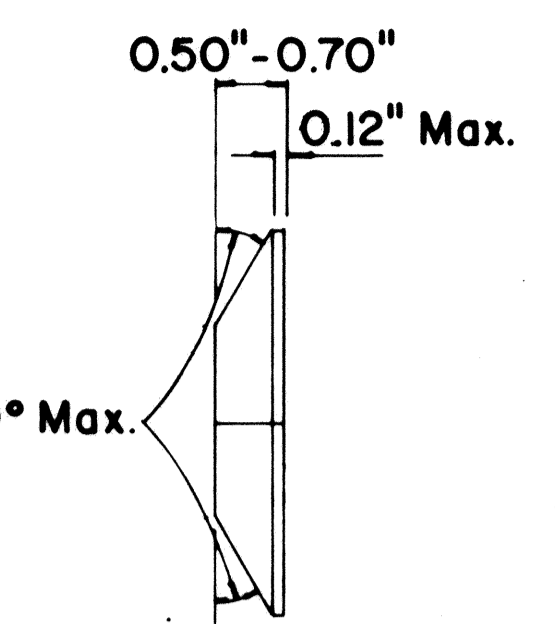
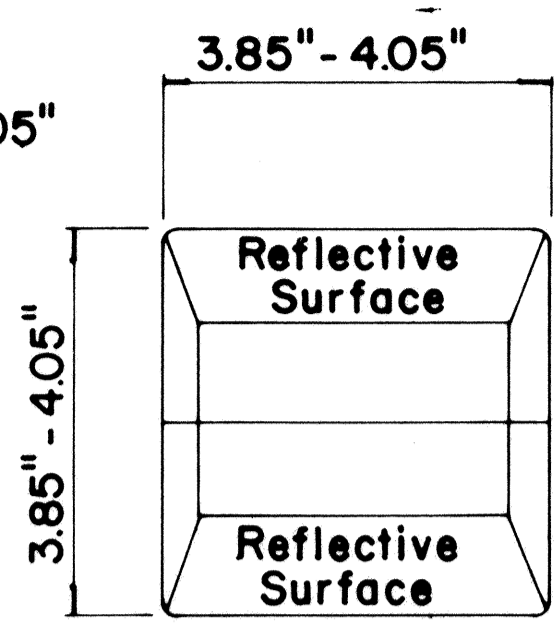
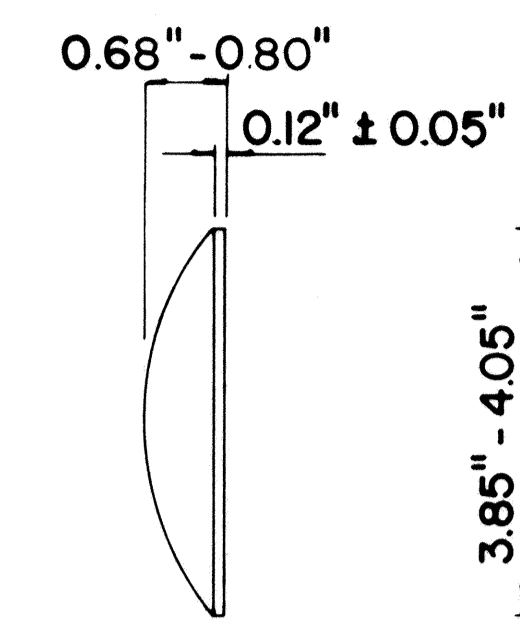
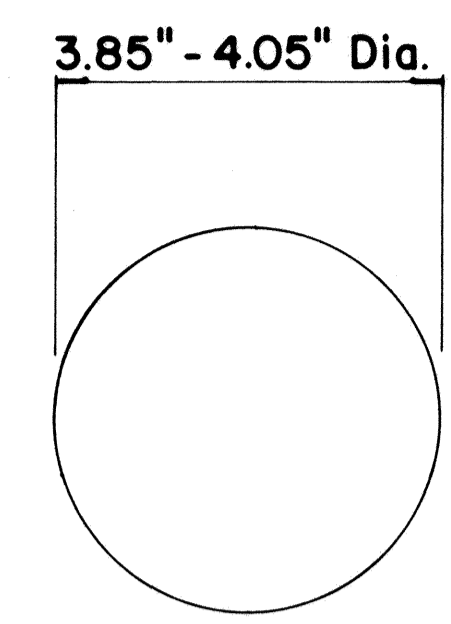


TWO - LANE

MULTI - LANE

DIVIDED HIGHWAY AND FREEWAY

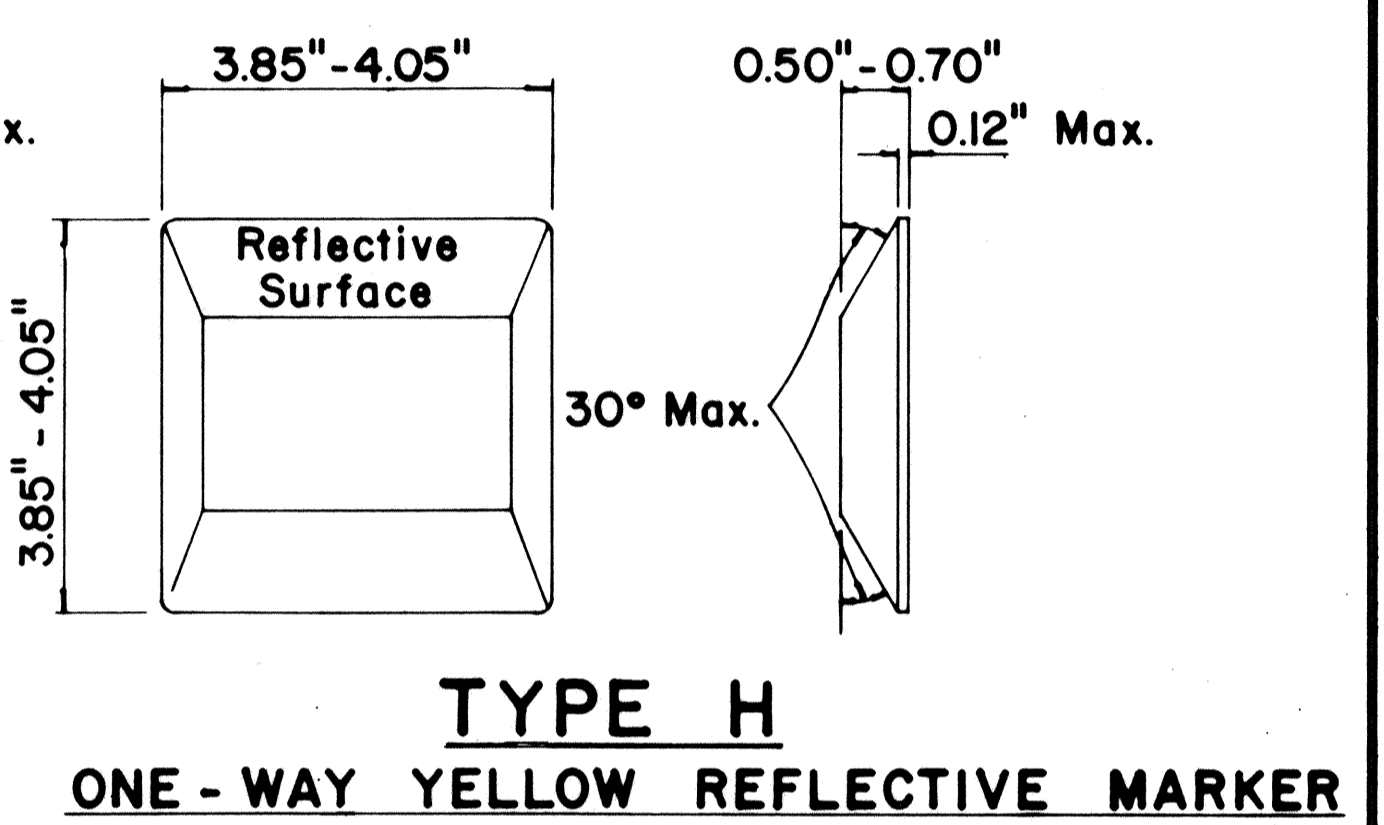
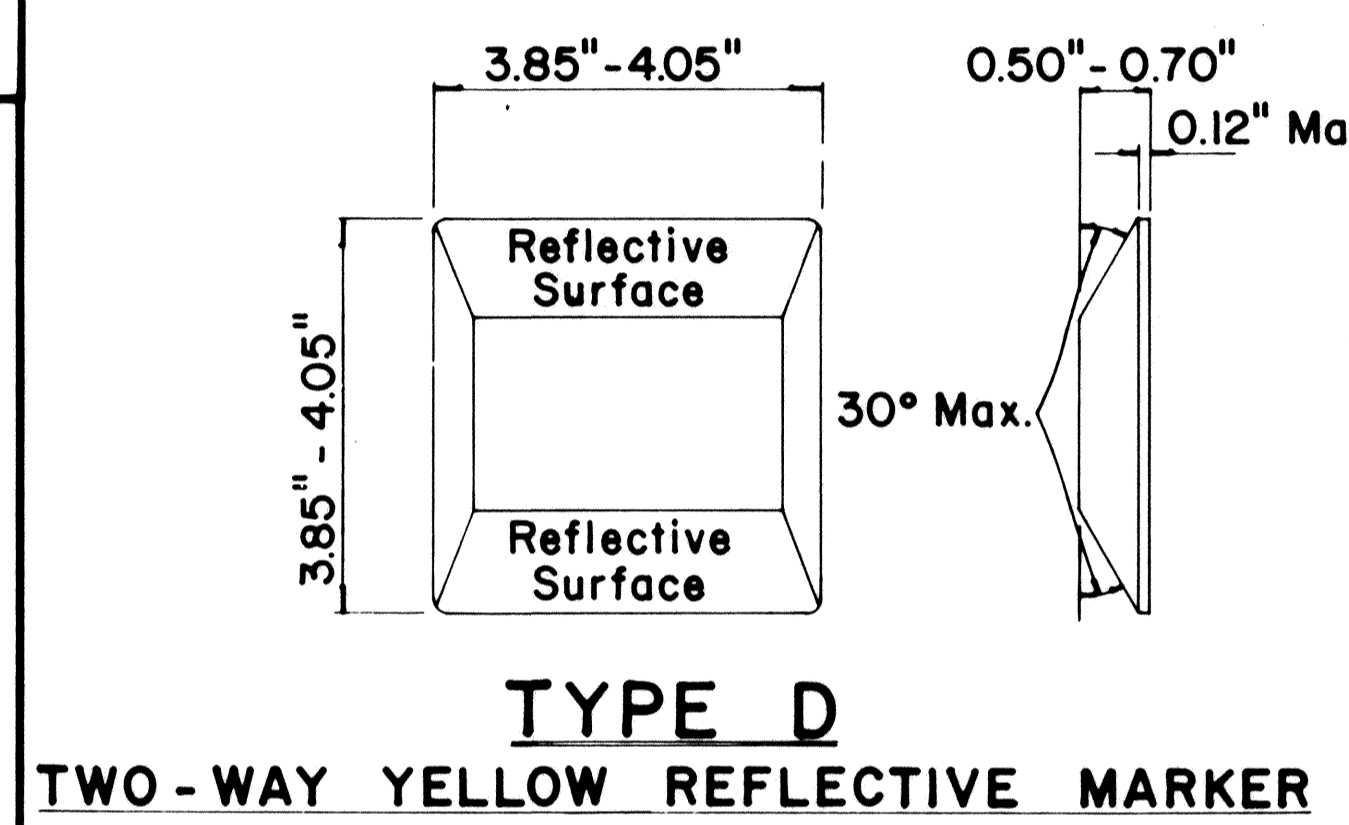
MISCELLANEOUS



**TYPE A**  
NON-REFLECTIVE WHITE MARKER

**TYPE J**  
NON-REFLECTIVE YELLOW MARKER

**TYPE C**  
RED-CLEAR REFLECTIVE MARKER



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

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

**GENERAL NOTES**

1. Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
2. Layout and installation of pavement marking and striping shall be done by the Contractor. The Contractor shall check the layouts with the Engineer prior to performing work.
3. Edge lines shall not be continued through intersections and shall not be broken for driveways unless otherwise shown or directed.

**LEGEND**

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

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

APPROVED:  
*Harbert J. Zalewski* 7/24/78  
 ASSISTANT CHIEF, ENGINEERING DATE

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

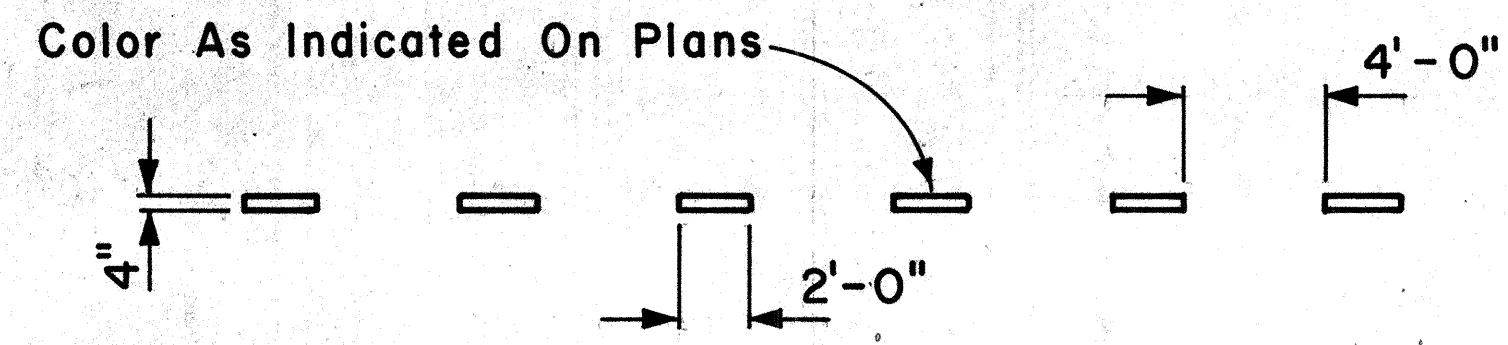
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**  
**RAISED PAVEMENT MARKERS**  
**AND STRIPING**

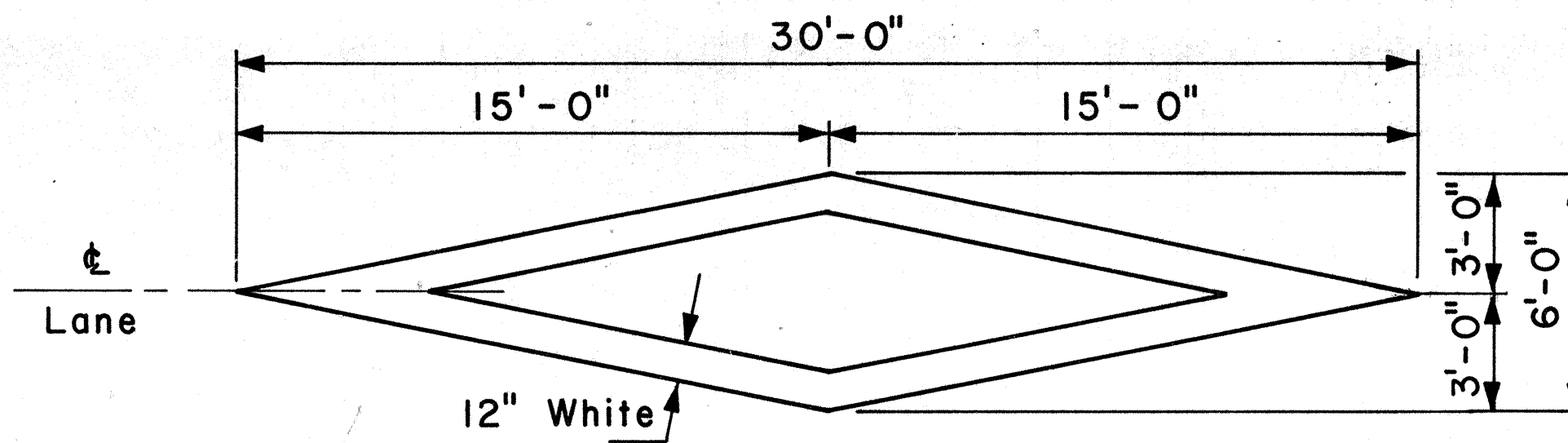
Not to Scale July 1978  
 SHEET No. T21 OF 26 SHEETS DT 300

DATE \_\_\_\_\_  
 SURVEY PLOTTED BY \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 DESIGNED BY \_\_\_\_\_  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 ORIGINAL PLAN \_\_\_\_\_  
 NOTE BOOK \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(178)	1975	55	59



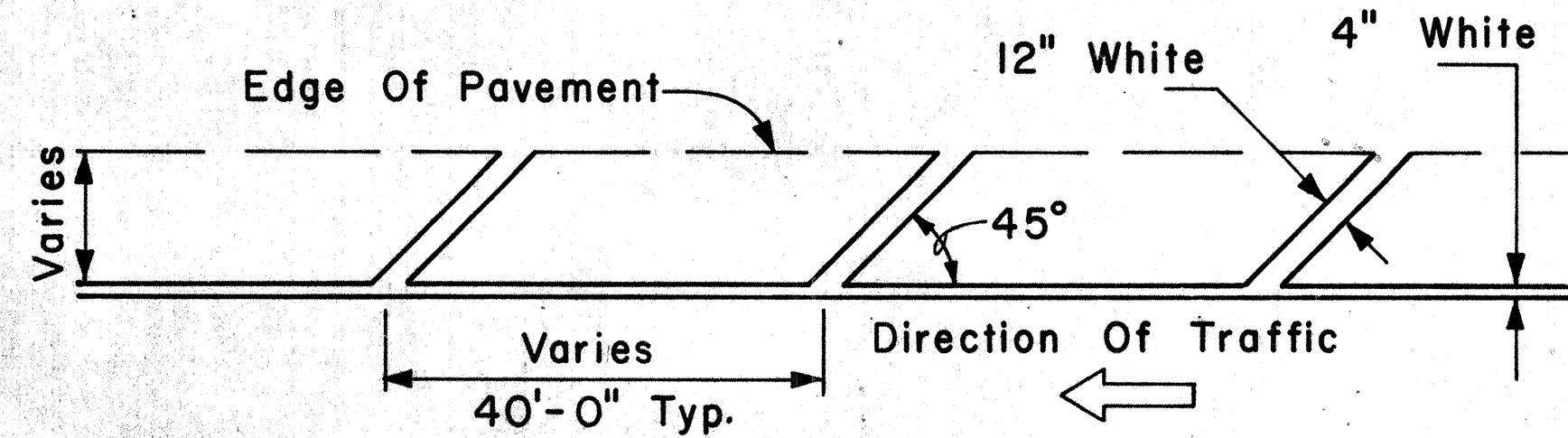
**4" GUIDE LINE**



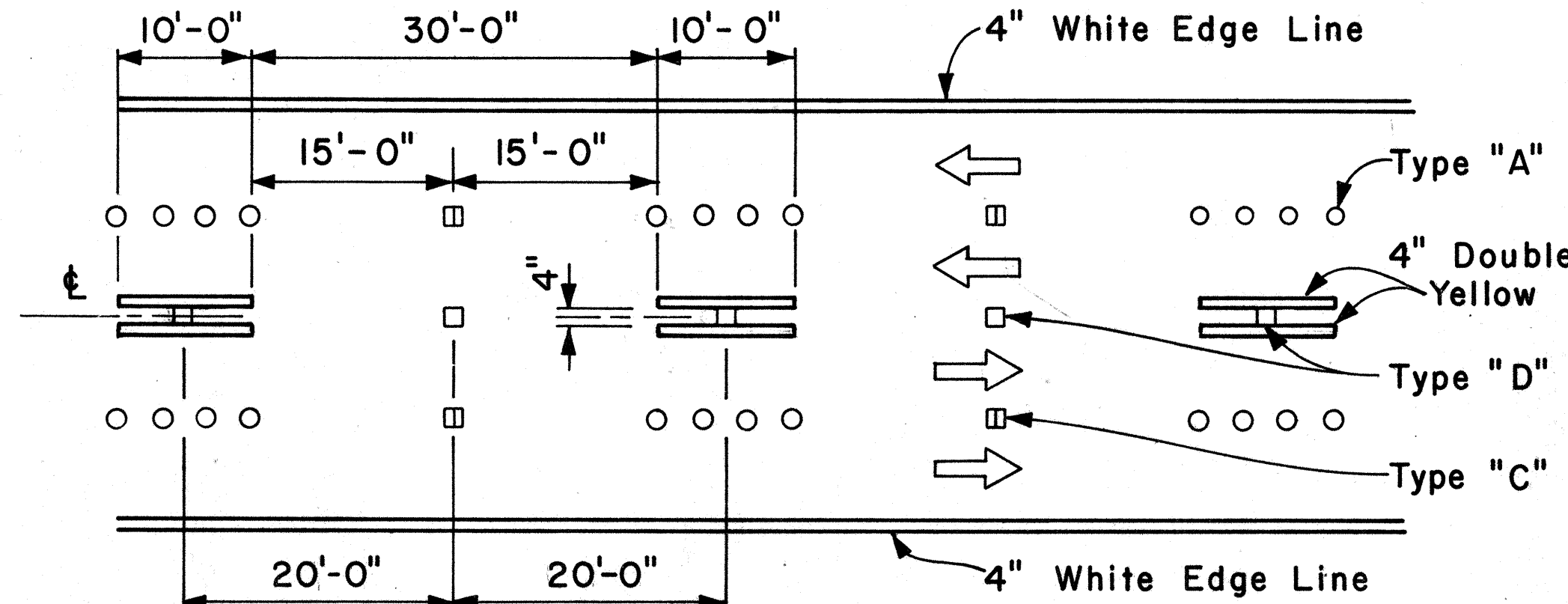
**PAVEMENT DIAMOND**

**GENERAL NOTES:**

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

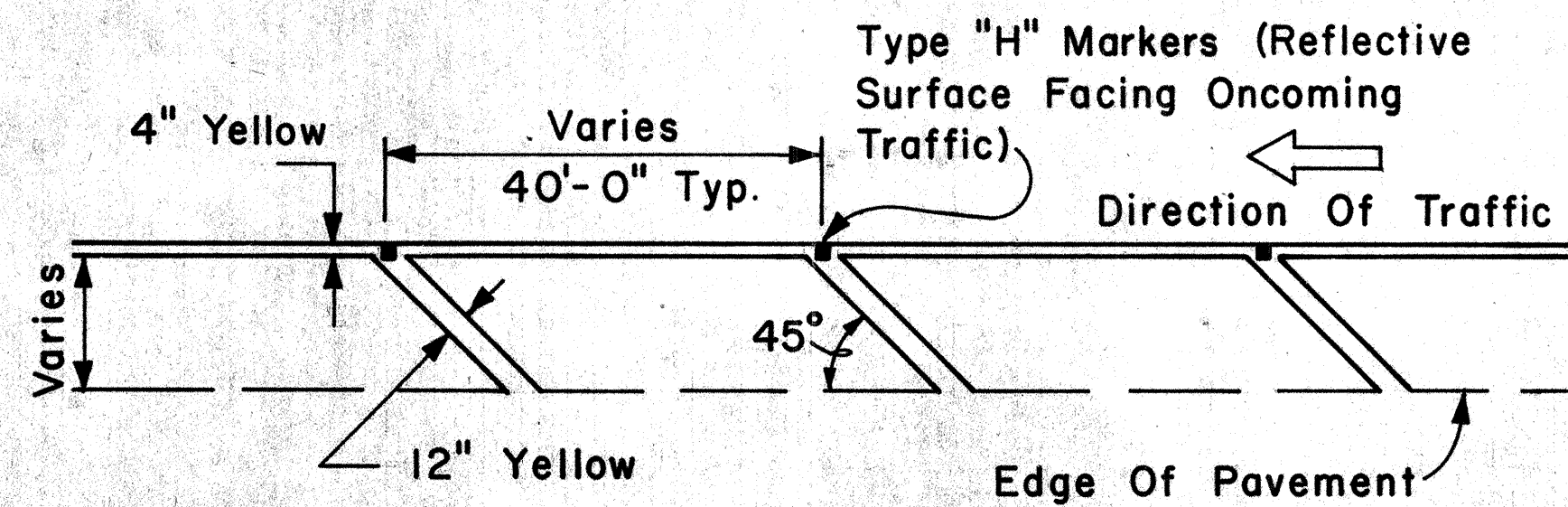


**TRANSVERSE RIGHT SHOULDER MARKING**

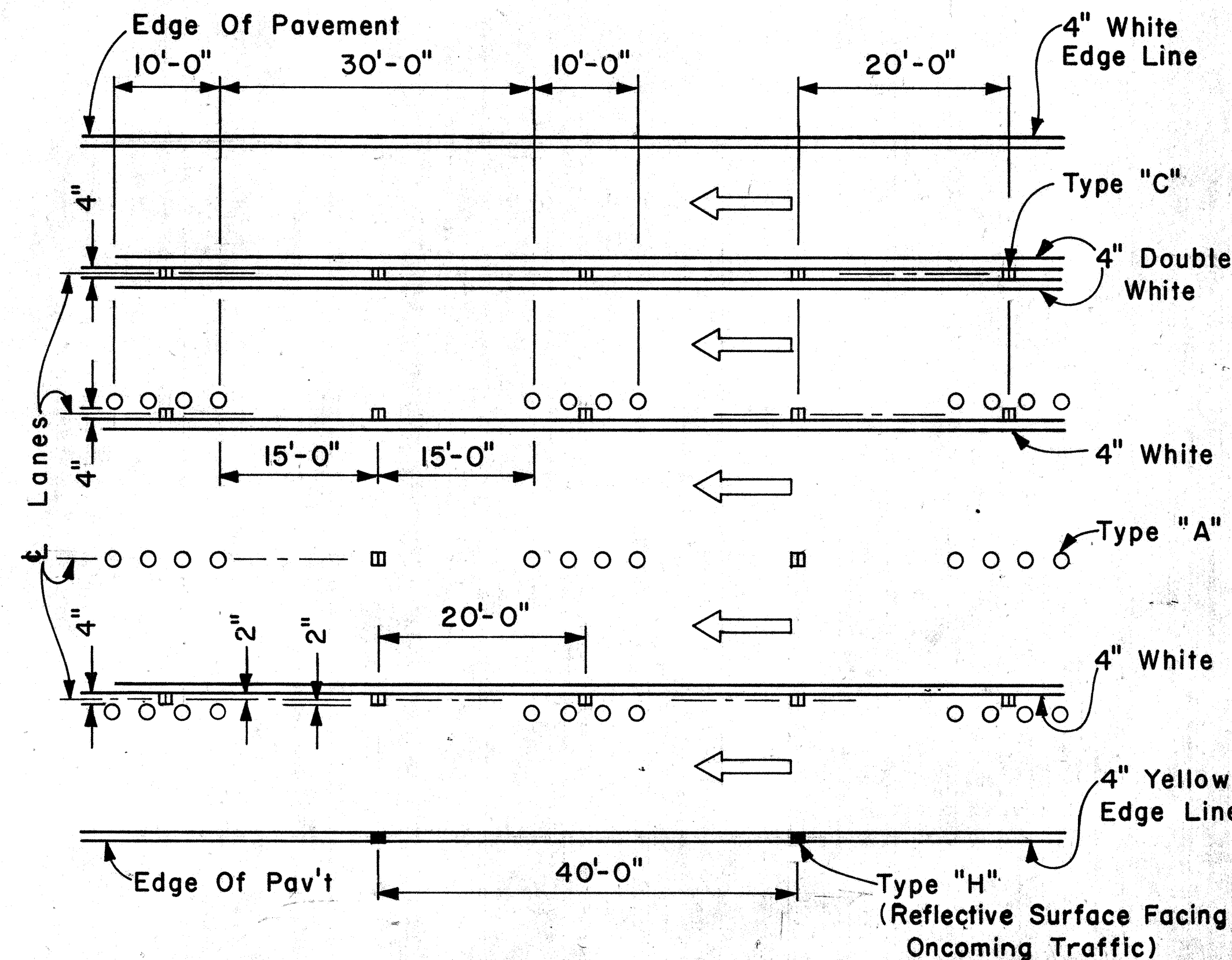


NOTE: Traffic Cone Usage Required.

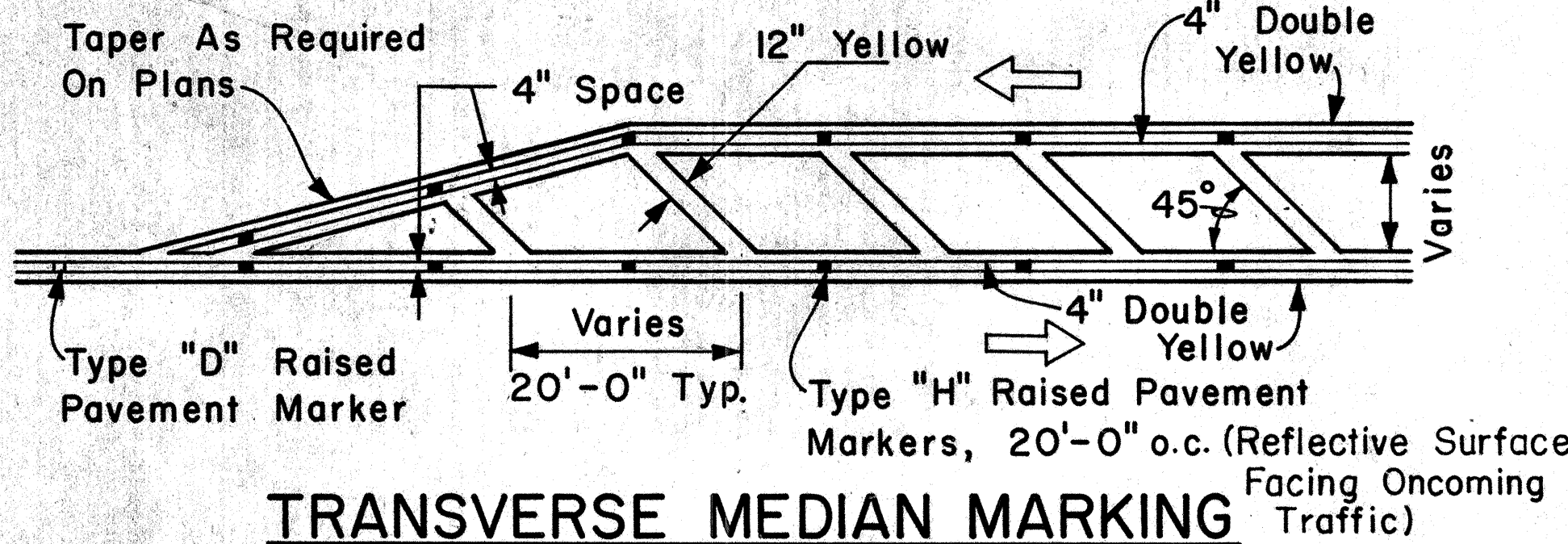
**MULTI-LANE REVERSIBLE LANES**



**TRANSVERSE LEFT SHOULDER MARKING**



**MULTI-LANE LANE CHANGE RESTRICTION ZONES**



**TRANSVERSE MEDIAN MARKING**

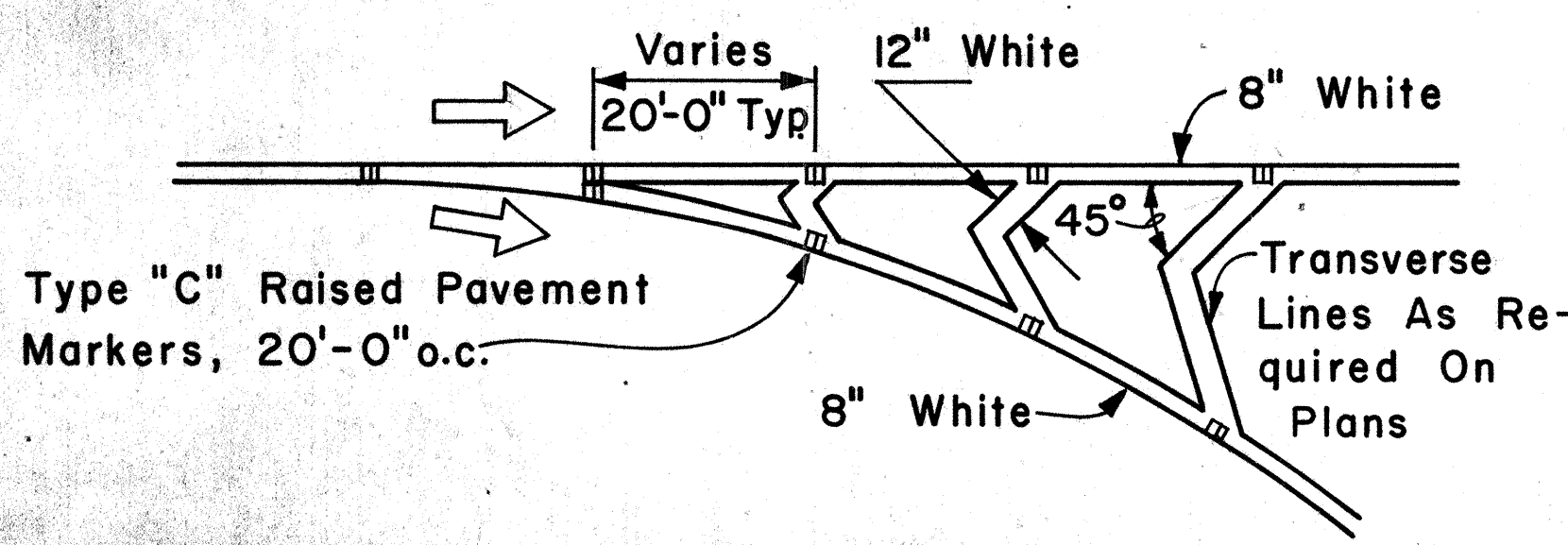
APPROVAL RECOMMENDED:  
*Eishi Tanaka* 5/2/78  
 TRAFFIC ENGINEER DATE

APPROVED:  
*Herbert S. Sakai* 5/3/78  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS**  
 MISCELLANEOUS  
 PAVEMENT MARKINGS  
 Scale: Not to Scale Date: April, 1978  
 SHEET NO. 22 OF 26 SHEETS DT 302

DATE: \_\_\_\_\_  
 SURVEY PLOTTED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 QUANTITIES BY: \_\_\_\_\_  
 NO. \_\_\_\_\_

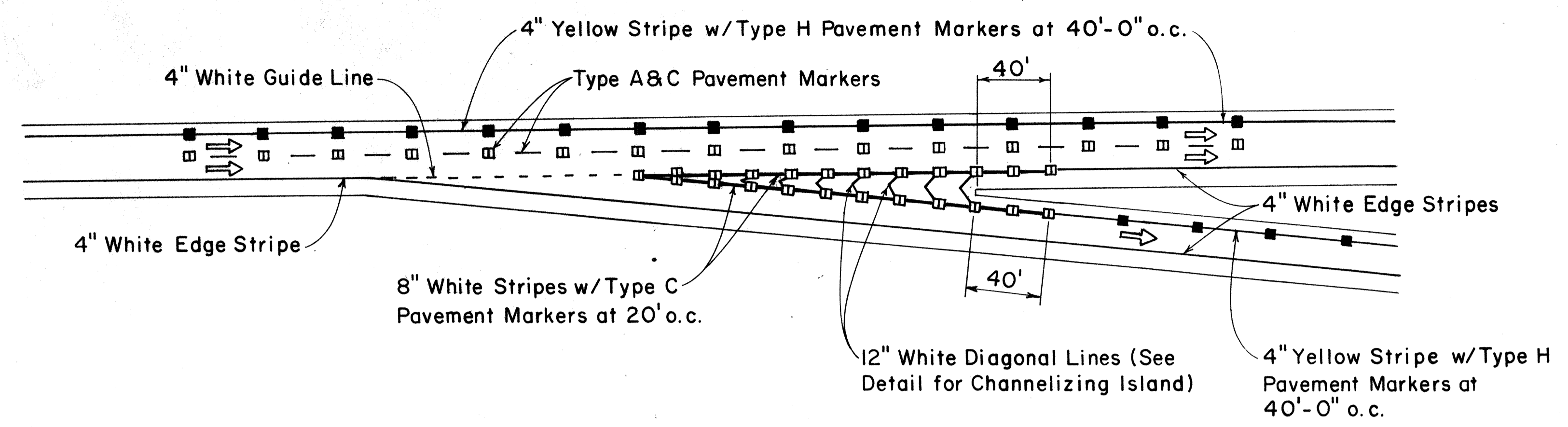


**CHANNELIZING ISLAND**

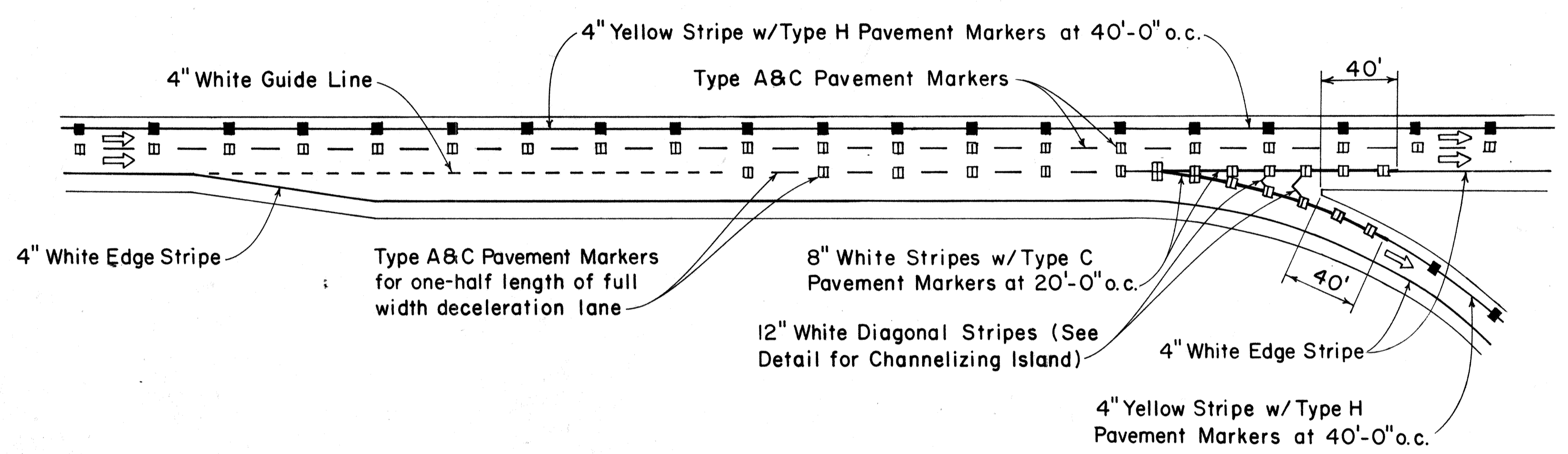
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	[R-H-1(198)	1985	56	59

**GENERAL NOTES:**

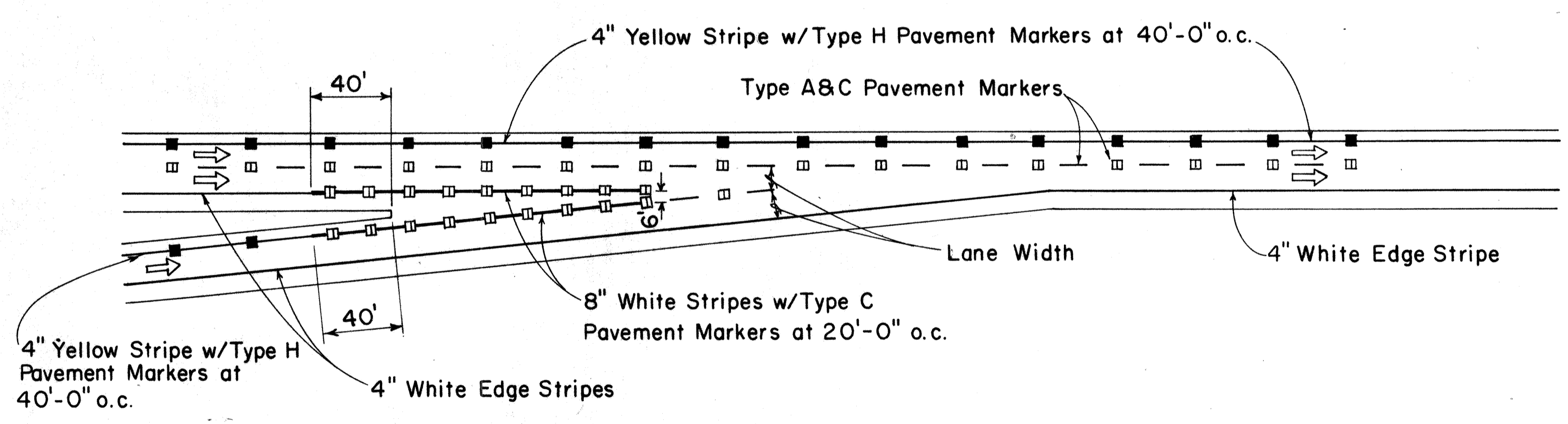
1. Pavement Markings and Striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," by the FHWA, and as amended.
2. Layout of Pavement Markings and Striping shall be done by the Contractor. The Contractor shall check layout of markings and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



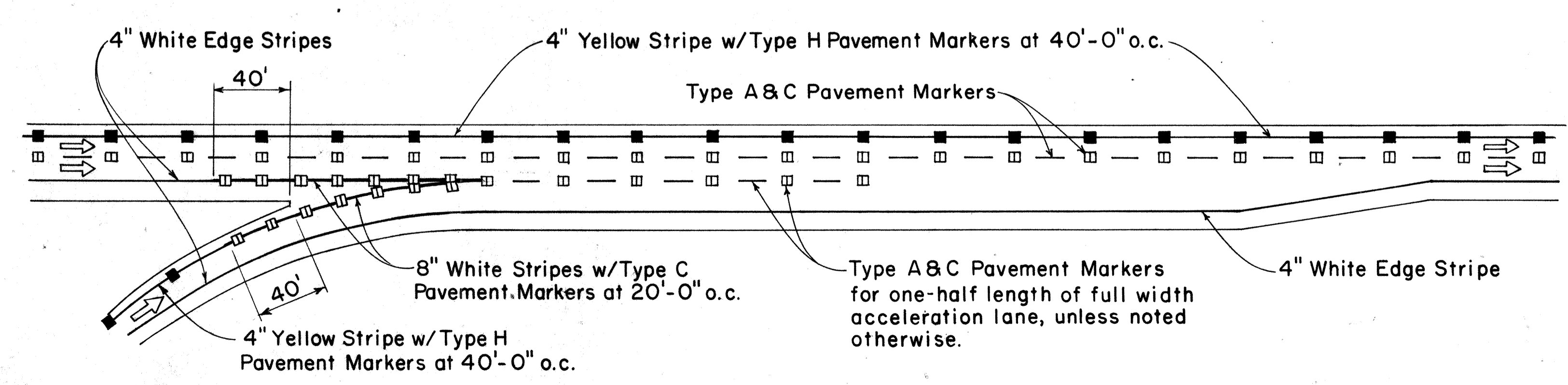
TAPERED DECELERATION LANE  
TYPICAL ROADWAY EXIT MARKINGS



PARALLEL DECELERATION LANE  
TYPICAL ROADWAY EXIT MARKINGS



TAPERED ACCELERATION LANE  
TYPICAL ROADWAY ENTRANCE MARKINGS



PARALLEL ACCELERATION LANE  
TYPICAL ROADWAY ENTRANCE MARKINGS

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

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

NO.	REVISION	APPROVED BY	DATE

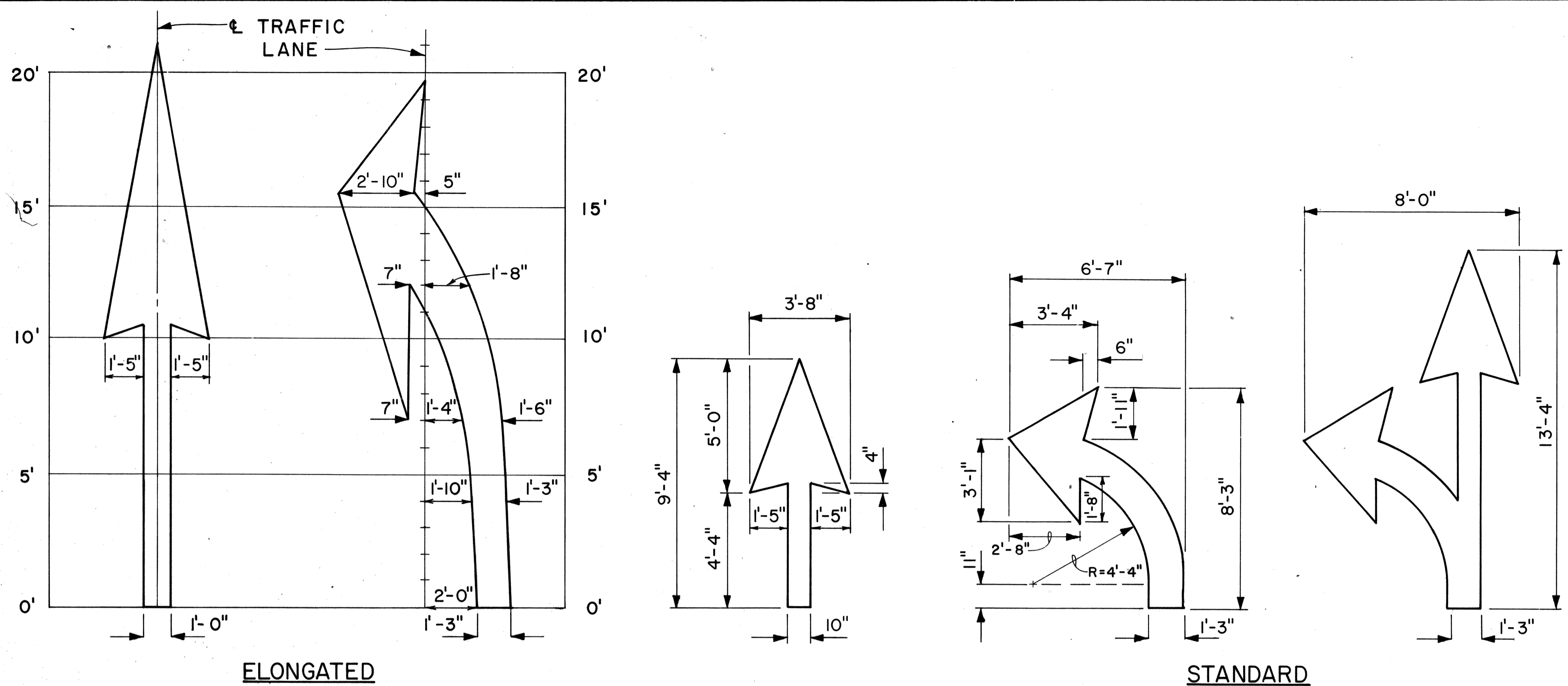
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAILS**  
**MISCELLANEOUS**  
**PAVEMENT MARKINGS**

Not to Scale July 1978  
SHEET NO. 23 OF 26 SHEETS DT 304

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

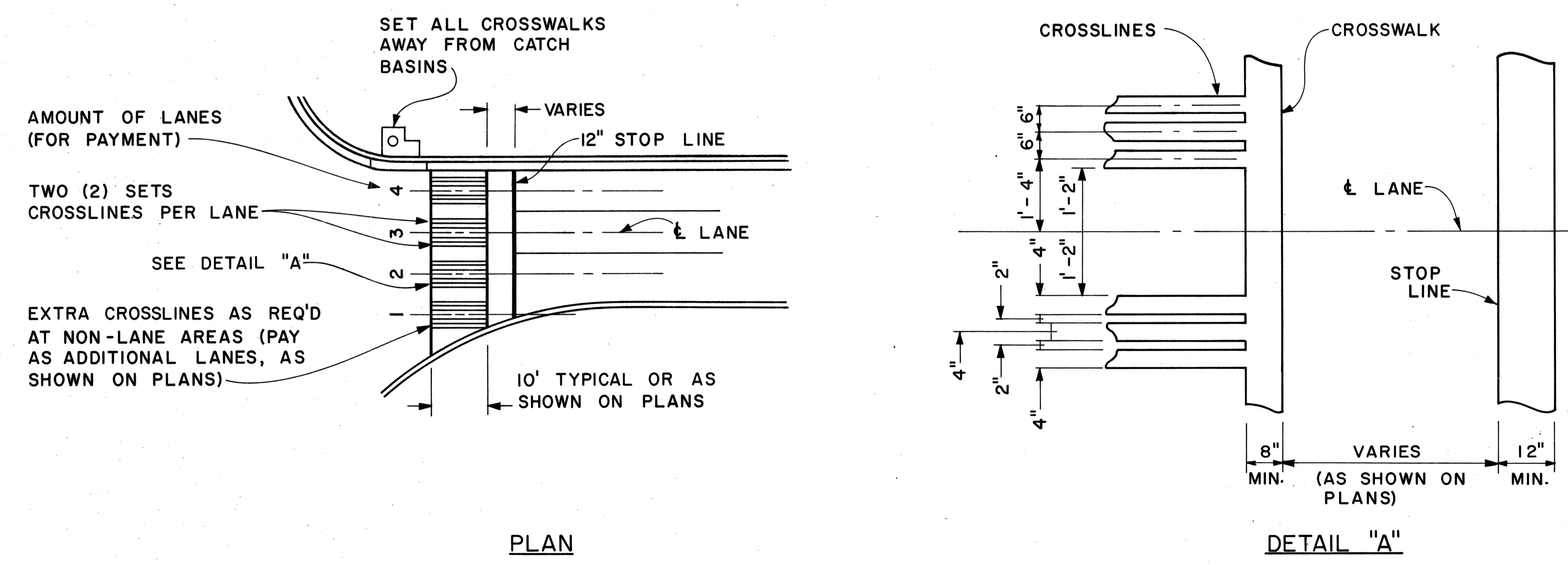
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-11(198)	1985	57	59



**PAVEMENT ARROWS**  
Scale: 3/8" = 1'

**GENERAL NOTES:**

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



**CROSSWALK & STOP LINE**  
Scale: Not to Scale

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

APPROVED:  
*Herbert S. Sakai* 5/2/78  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

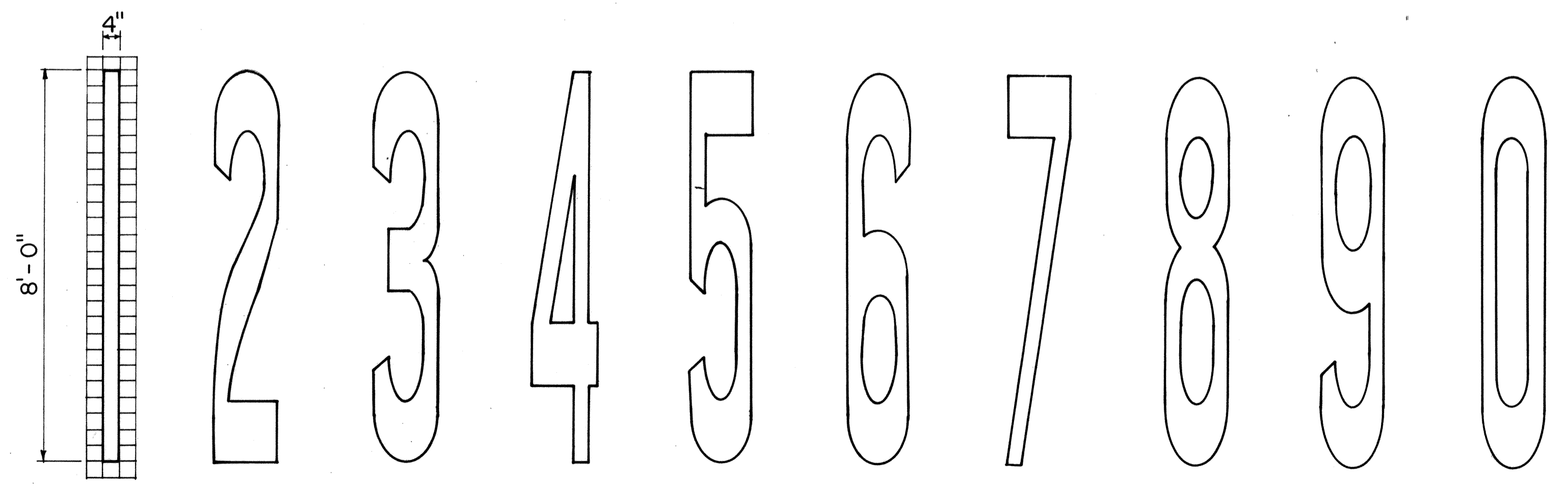
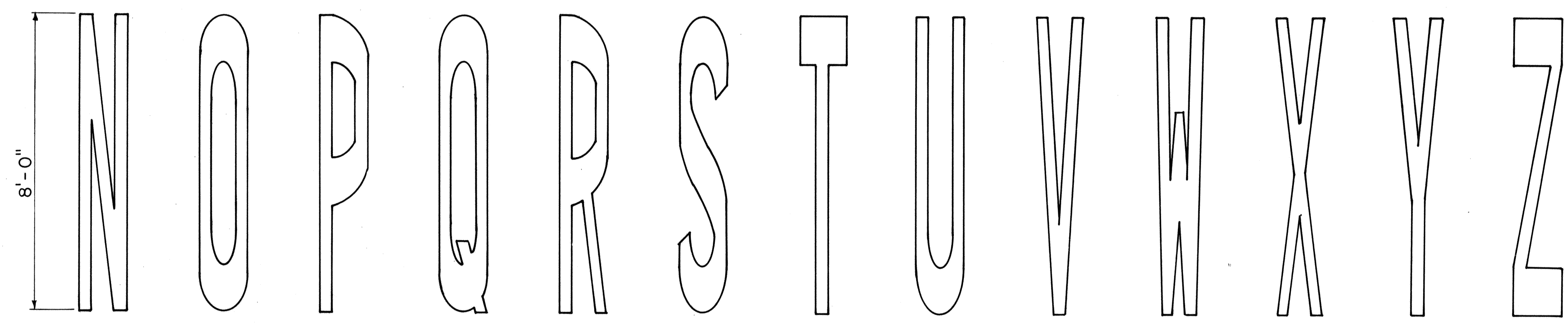
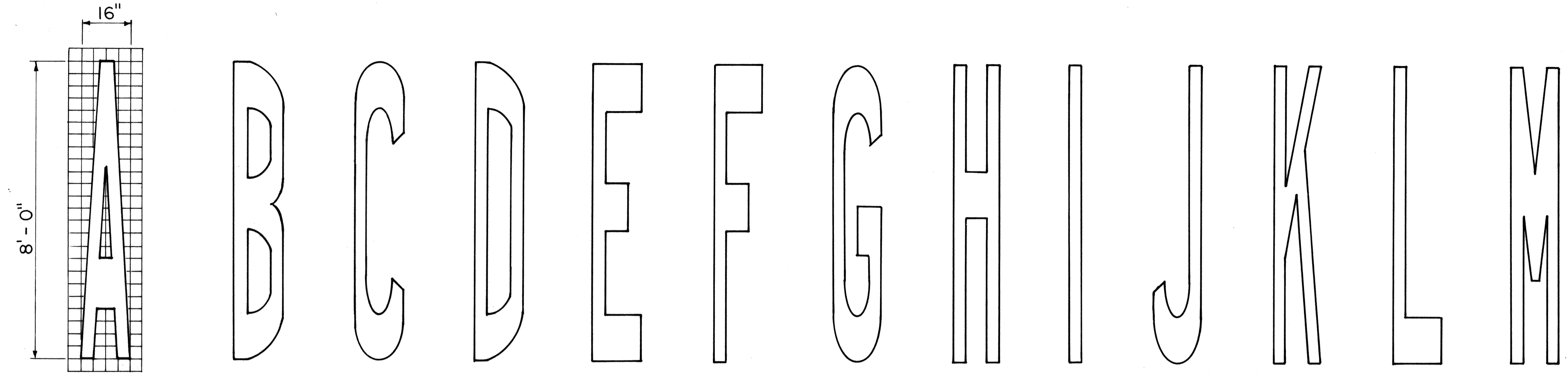
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS**  
MISCELLANEOUS  
PAVEMENT MARKINGS  
Scale: As Shown Date: March, 1978  
SHEET NO. 24 OF 26 SHEETS DT 306

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	58	59

**GENERAL NOTES**

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



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

APPROVAL RECOMMENDED:  
*Eishi Tanaka*  
 TRAFFIC ENGINEER 1/28/83  
 DATE

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

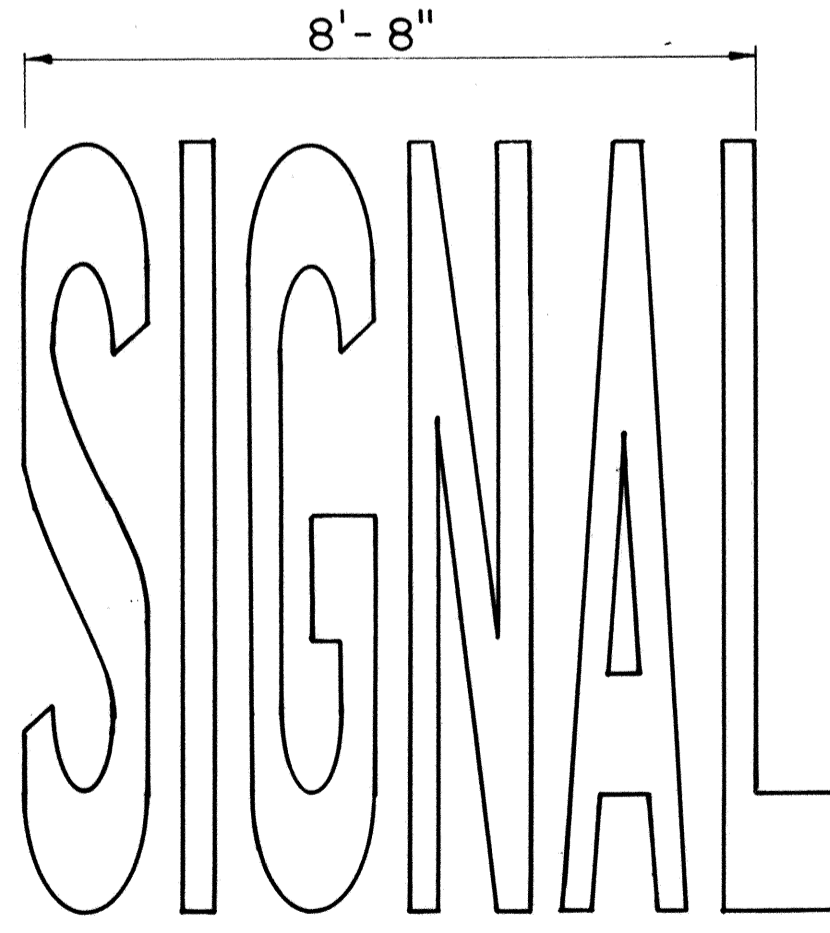
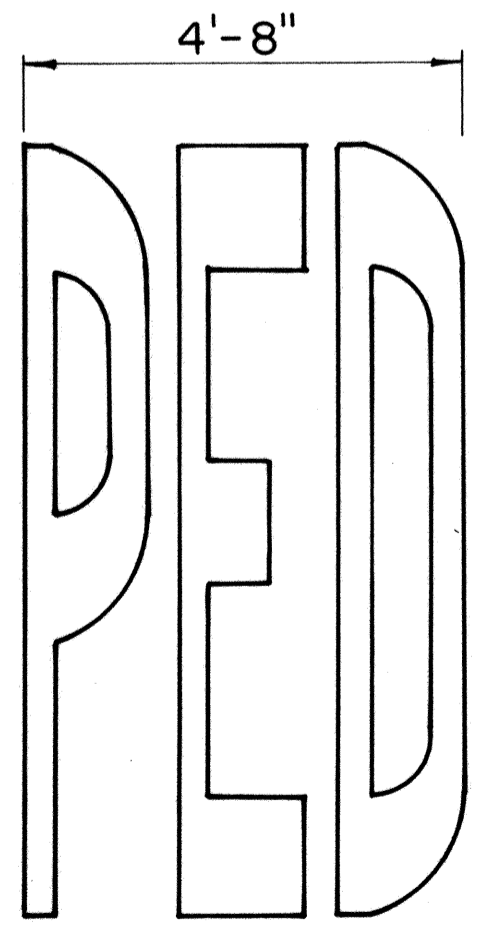
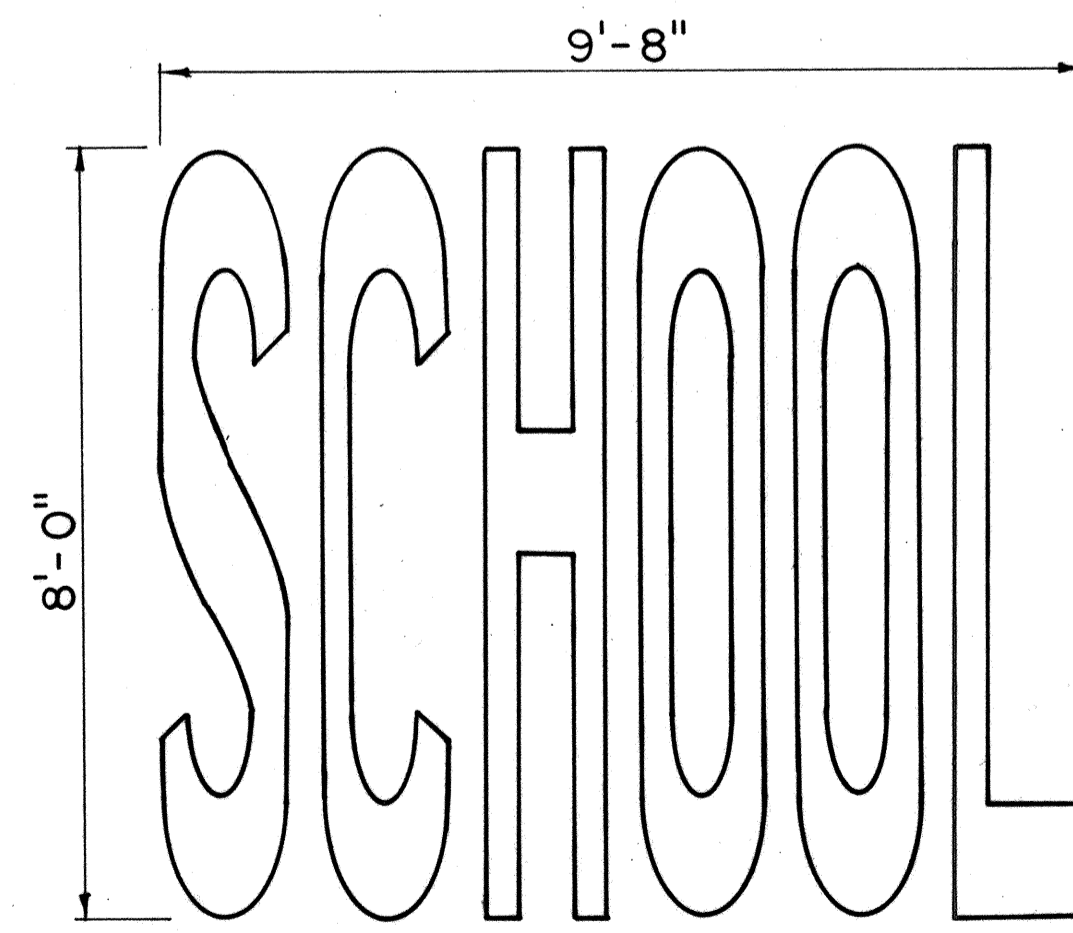
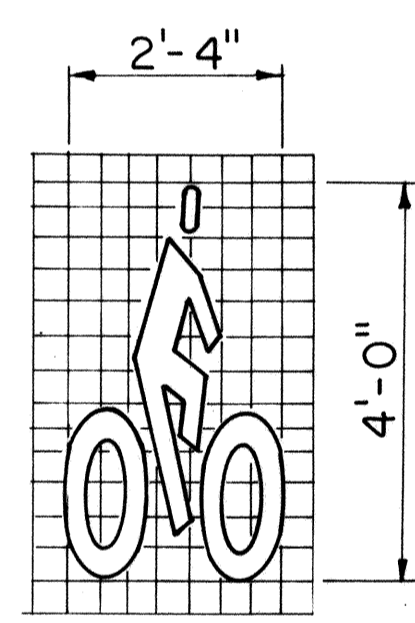
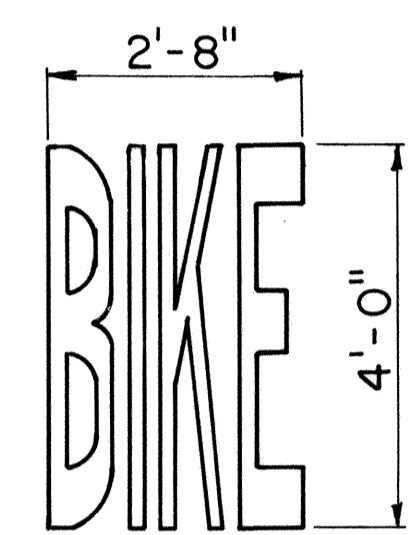
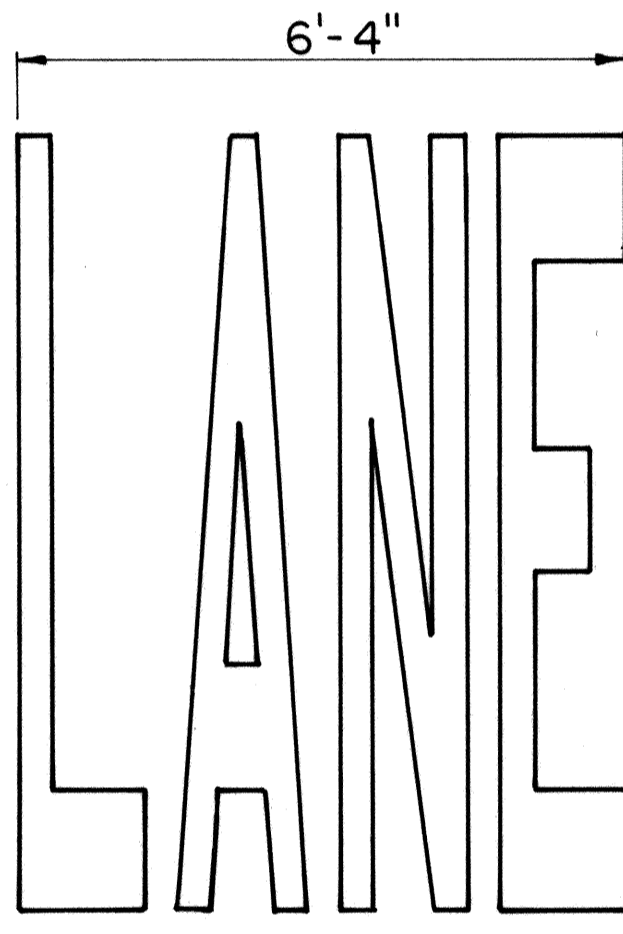
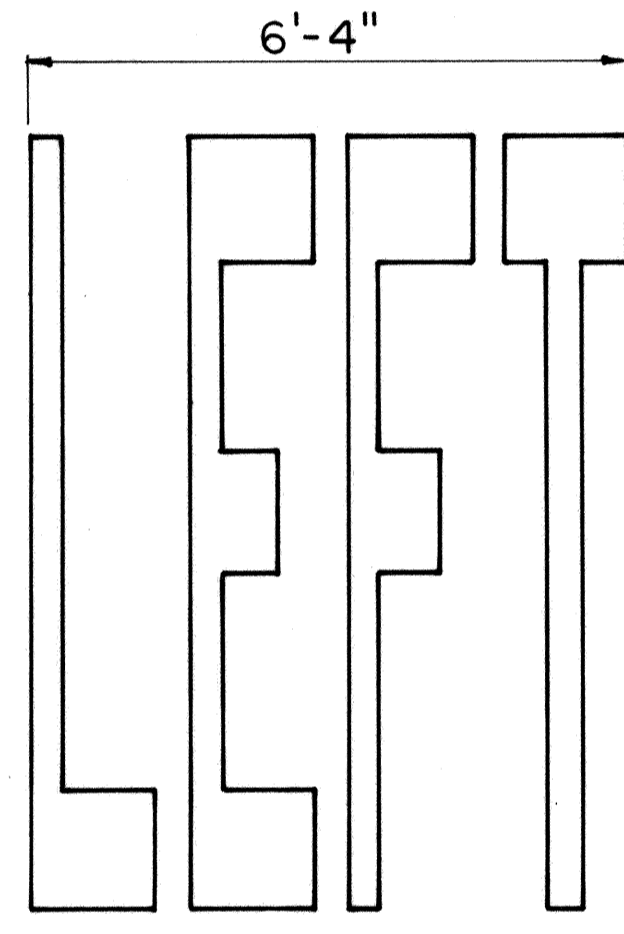
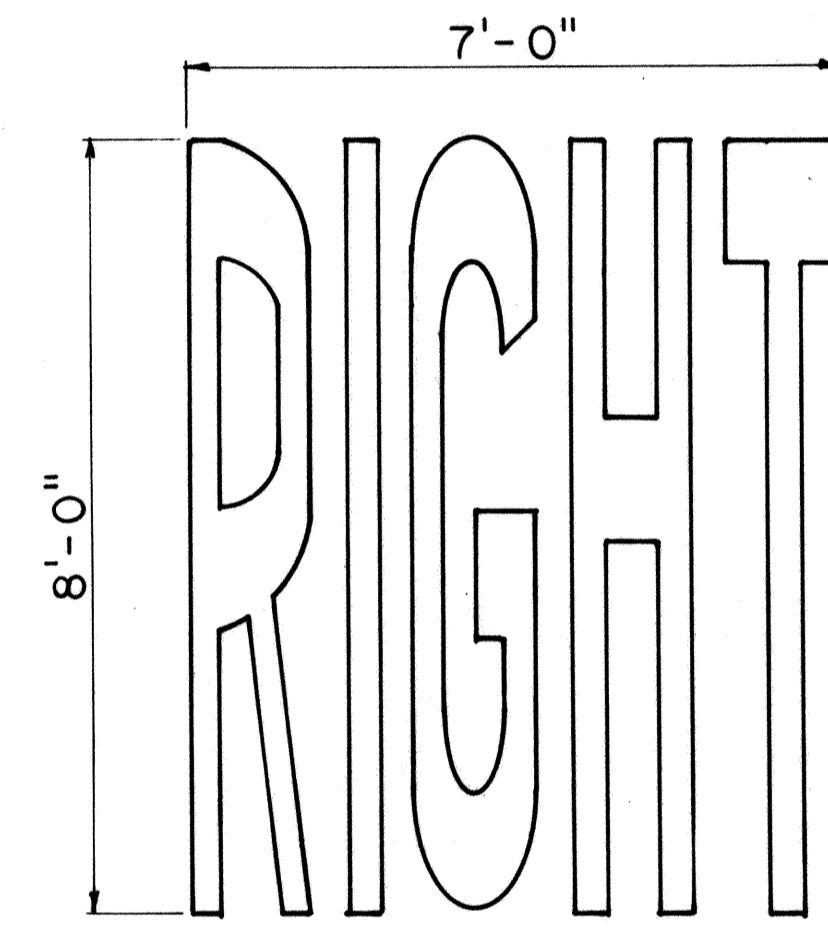
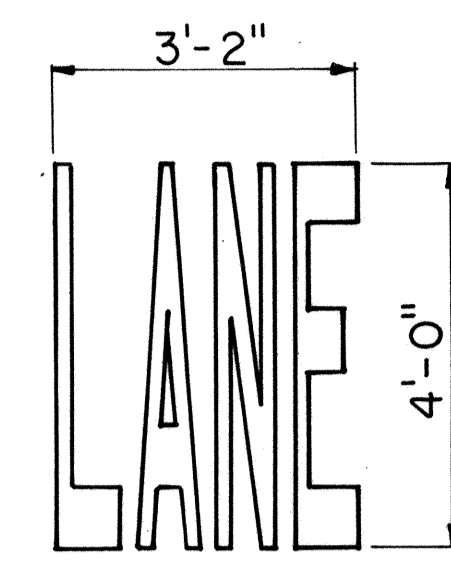
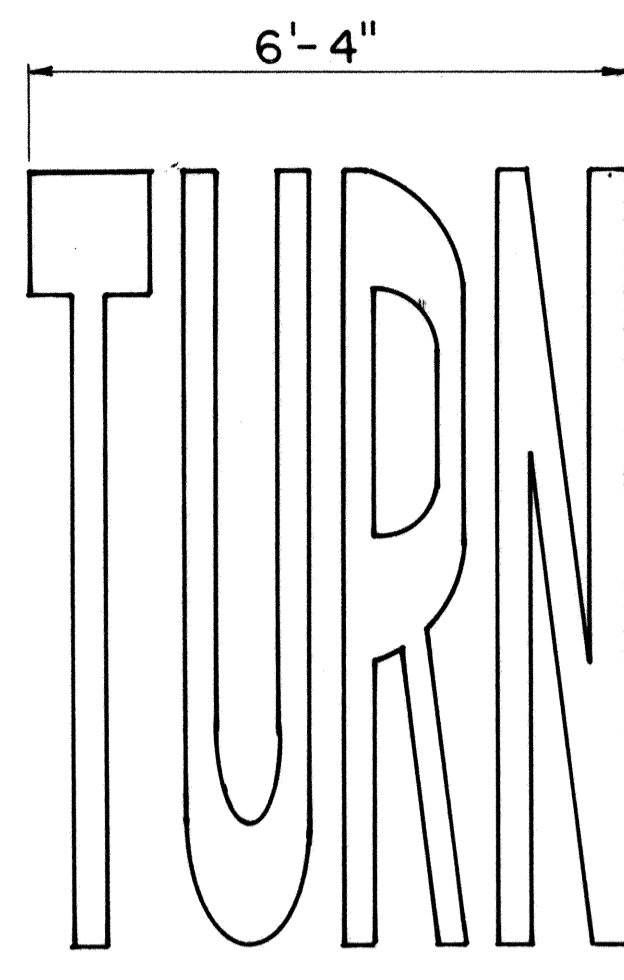
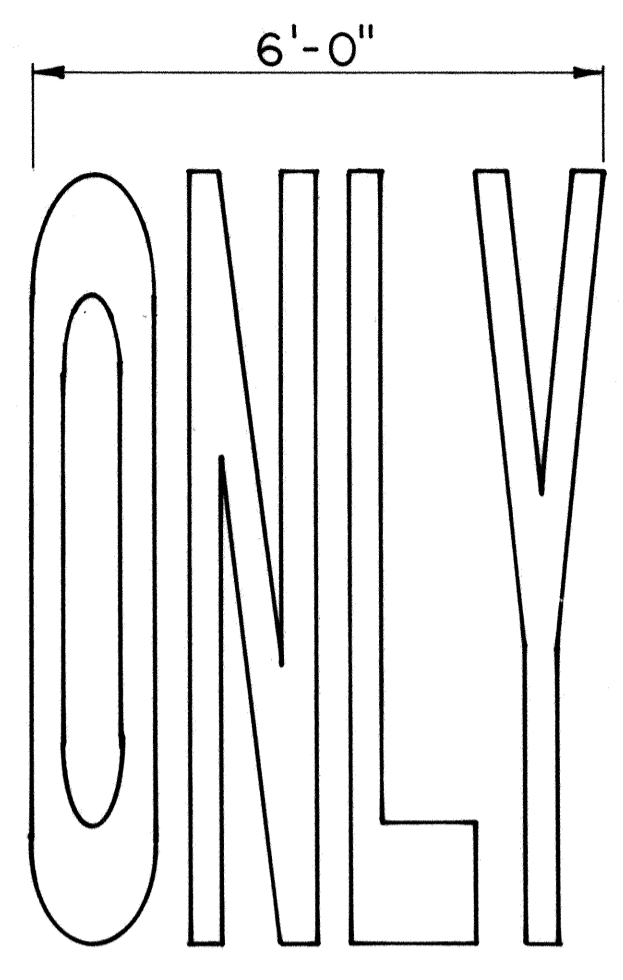
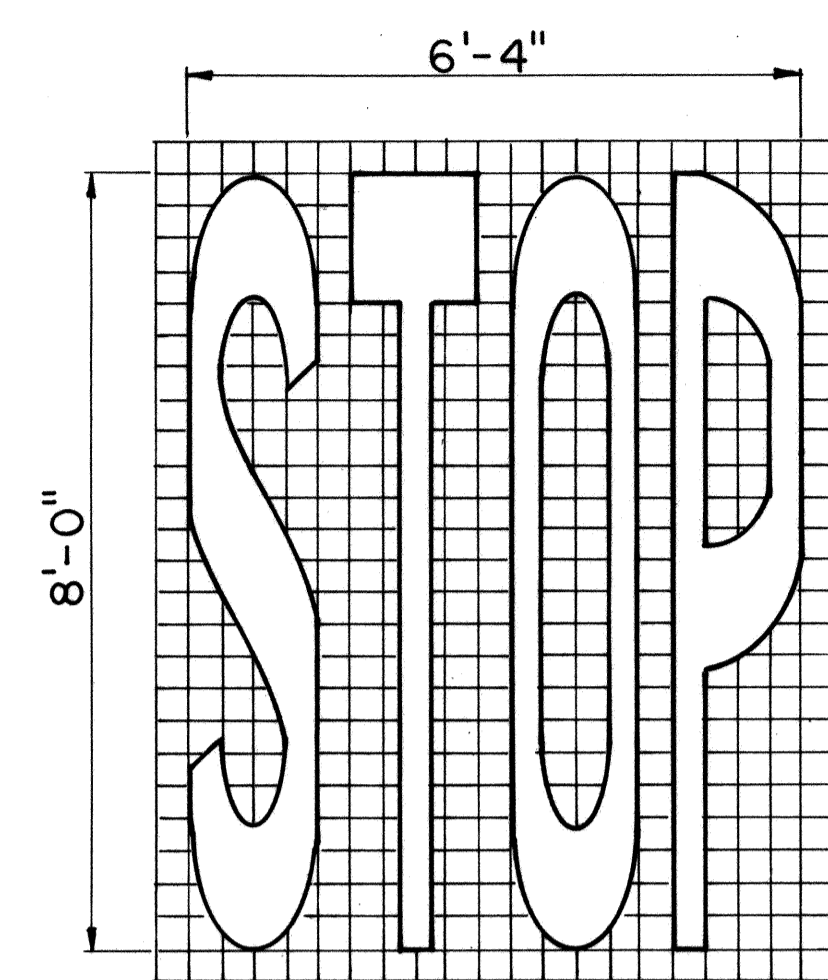
**STANDARD DETAILS**

**PAVEMENT ALPHABETS,  
 NUMBERS & SYMBOLS**

Not to Scale

SHEET NO 25 OF 26 SHEETS DT 307

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-HI-1(198)	1985	59	59



**GENERAL NOTES**

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

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

APPROVAL RECOMMENDED:  
*Eichi Tanaka* 1/28/83  
 TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**

**PAVEMENT ALPHABETS,  
 NUMBERS & SYMBOLS**

Not to Scale

SHEET NO. T26 OF 26 SHEETS DT 308