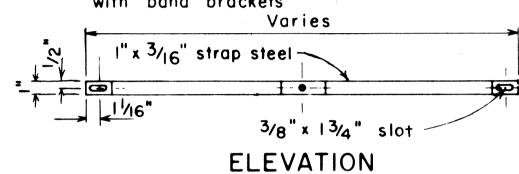


PLAN

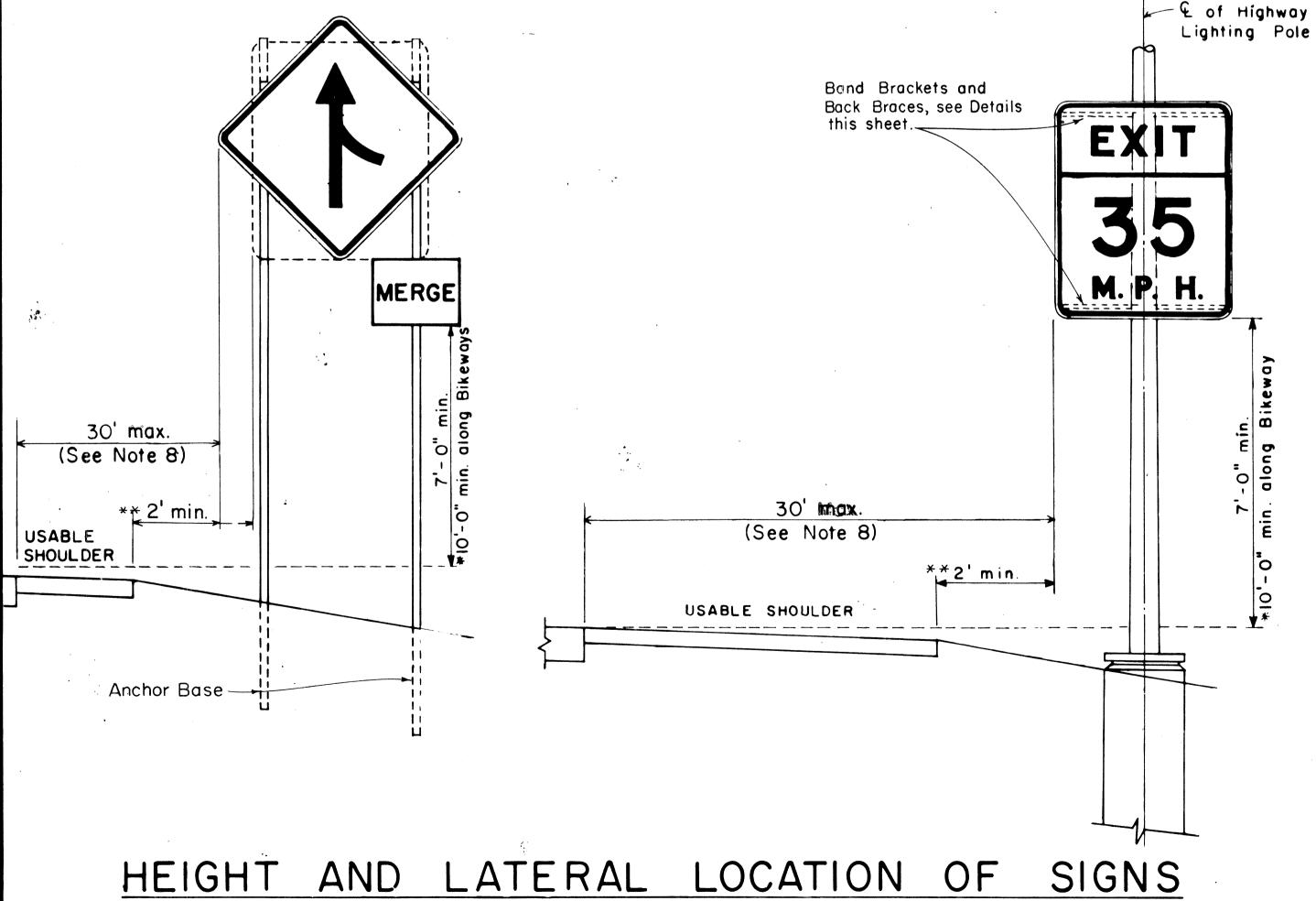
Back braces shall be used in conjunction with band brackets



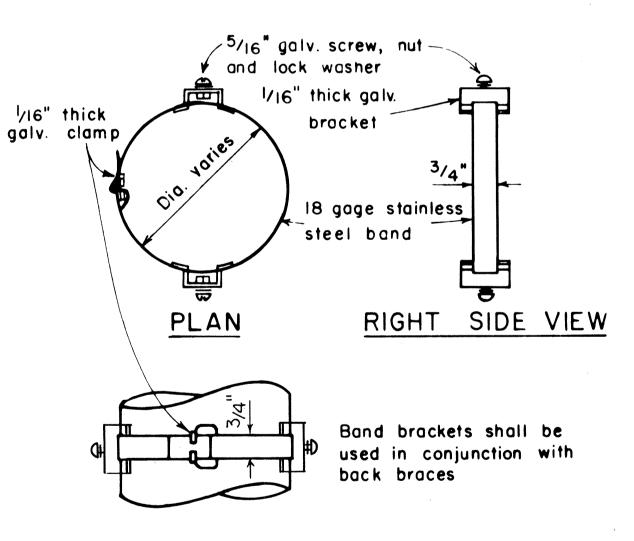
BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION

GENERAL NOTES

- I. 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.
- 2. Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two sign posts except as noted below.
- 3. Signs 48" and wider or larger than 10 sq. ft. in area may be mounted on other than two sign posts (i.e. on highway lighting poles) as follows:
- a. 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
- b. Signs larger than 28 sq. ft. in area shall be mounted with a minimum of three sets of band brackets and back braces.
- 4. All parking restriction signs with arrows shall be mounted 45° to the line of traffic flow.
- 5. Sign posts shall extend $3\frac{1}{2}$ above each sign, where required, for attachment of City and County street name signs.
- 6. (R) or (L) indicates right or left and shall be shown on the plans.
- * 7. 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.
- 9. 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.
- IO. Anchor bases shall be installed for all signpost installations, unless otherwise shown or directed. See sheets DT 100A and DT 100B.



TYPICAL INSTALLATION



LEFT SIDE VIEW

BAND BRACKET

TYPICAL MOUNTING DETAILS

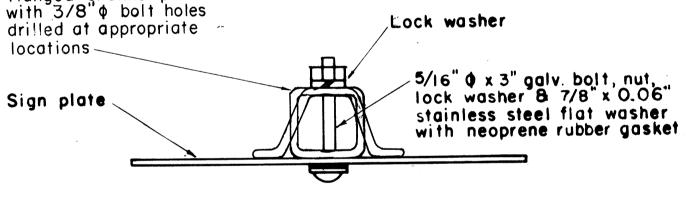
Galv. sq. tube post or flanged channel post

locations —

Sign plate

NOT TO SCALE

NO.	REVISION	APPROVED BY	DATE
_	Supercedes Sht. DT-100 approved 12/30/69	H.T.	11/15/17
2	Revised depth of signpost	H.P.	5/8/19
3	Added Notes No. 8 & No. 9	H.P.	5/18/19
4	Revised Gen. Note #4 & Mounting Details	Hr.	4/23/8
5	Revised General Notes, Lateral Sign Locations and Mounting Details	H.T.	5/15/81
6	Added Note IO. Minor revisions to notes and details.	4.5	N33/8 3



GALVANIZED SQUARE TUBE OR FLANGED CHANNEL POST

> 11/10/77 DATE APPROVED: Thurbert 3 Gladeish 11/15/11 DATE ASSISTANT CHIEF, ENGINEERING

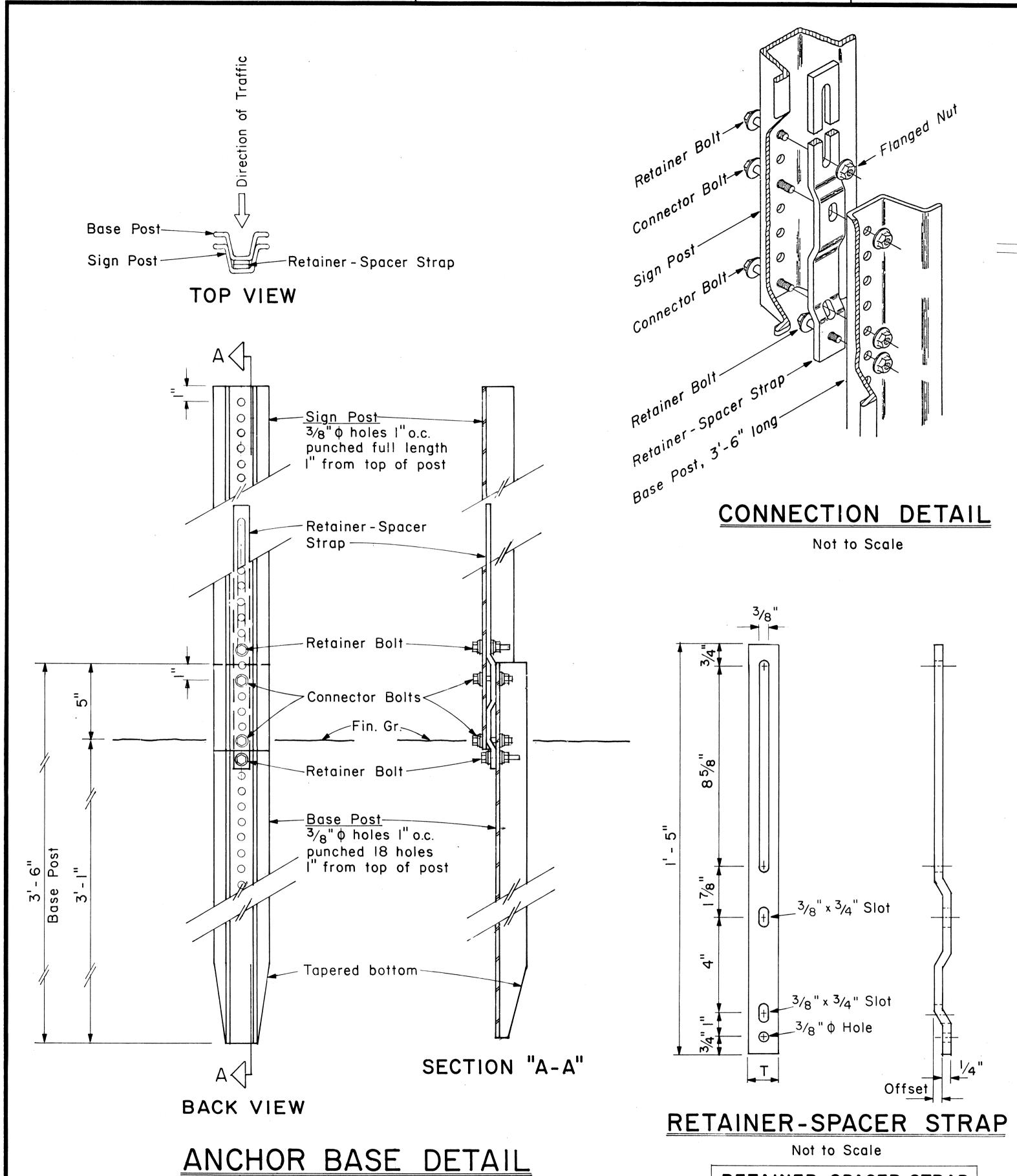
APPROVAL RECOMMENDED:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

STANDARD DETAILS MISCELLANEOUS SIGN DETAILS

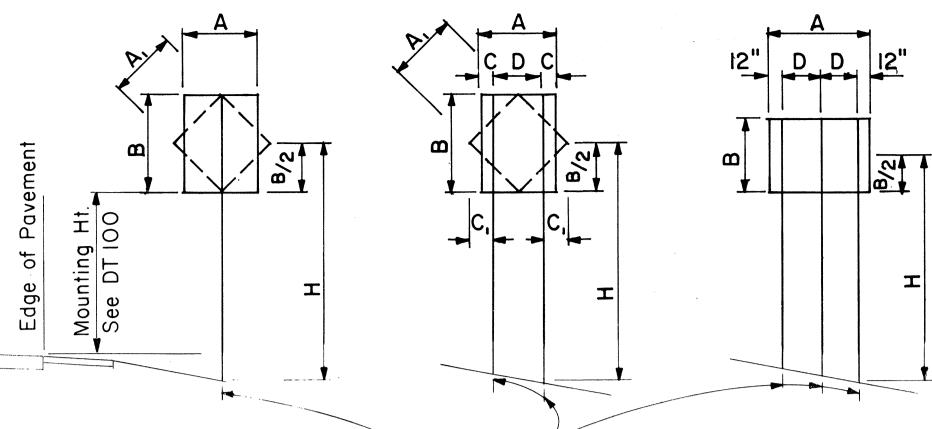
Not to scale

June, 1977 SHEET NO. / OF TO SHEETS DT 100



Scale: 3"= 1'-0"

RETAINER-SPACER STRAP								
Post Size	Т	Offset						
2.50 lbs./ft.	1.00"	0.145"						
4.00 lbs./ft.	1.12"	0.280"						



Anchor Base

I-POST

2-POST

<u>3 - POST</u>

Sign area IO sq.ft. and less

Sign area greater than 10 sq. ft. or A= 48"- 60"

A = greater than 60"

TYPICAL INSTALLATION

Not to Scale

FLANG	ED CH	ANNEL	: 1 -	POST	INSTA	LLATIO	ON	
Post Size	AxBxH H = Ground Level to Midpoint (ft.)							
F051 312e	(Factor)	7	8	9 10		11	12	
2.50 lbs./ft.	57	8.14	7.13	6.33	5.70	5.18	4.75	0
4.00 lbs./ft.	112		_				9.33	AX

FLANG	ED CH	ANNEL	: 2-	POST	INSTA	LLATI	ON	
Doot Sine	AxBxH H = Ground Level to Midpoint (ft.)							
Post Size	(Factor)	7	8	9	10	11	12	
2.50 lbs./ft.	124	17.71	15.50	13.77	12.40	11.27	10.33	A×B
4.00 lbs./ft.	241	34.43	30.13	26.78	24.10	21.91	20.08	¥

FLANG	ED CH	ANNEL	.: 3-	POST	INSTA	LLATIO	NC	
Post Size		H = Grou	nd Level	to Mid	point (ft.)			
F051 312e	(Factor)	7	8	9	10	11	12	
2.50 lbs./ft.	187	26.71	23.38	20.78	18.70	17.00	15.58	B sq.ft.)
4.00 lbs./ft.	362	51.71	45.25	40.22	36.20	32.91	30.17	A × B (Area,sq

WINDLOAD CHARTS

NO.	REVISION	APPROVED BY	DATE
٠			

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360AB-01-84	1984	21	29

A or A,	С	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"

- 2. Retainer Spacer Strap shall be AISI 1020 steel and galvanized in accordance with ASTM A 123.
- 3. 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 $\frac{5}{16}$ - 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.
- 4. All accessories, fittings and stiffener details (as required) shall be submitted to Engineer for approval 20 days prior to installation.
- 5. For additional details see sht. DT 100.
- 6. Basic formulas for use with the windload charts: Factor = $A \times B \times H$ Therefore, if sign area(AxB) is known,

Maximum $H = \frac{Factor}{sign area(AxB)}$

and if H is known,

Maximum sign area($A \times B$) = $\frac{Factor}{H}$

APPROVAL RECOMMENDED:

Euche Janaka
TRAFFIC ENGINEER 9/21/82 DATE APPROVED:

ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

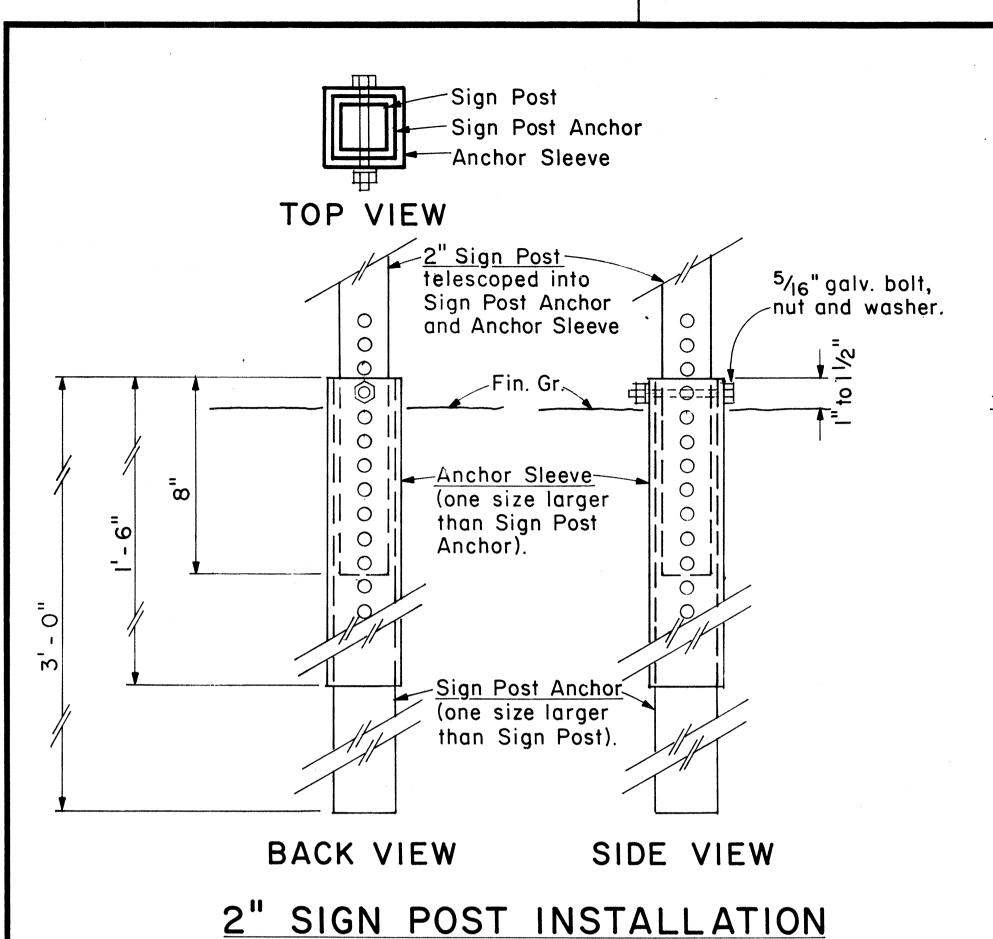
STANDARD DETAILS

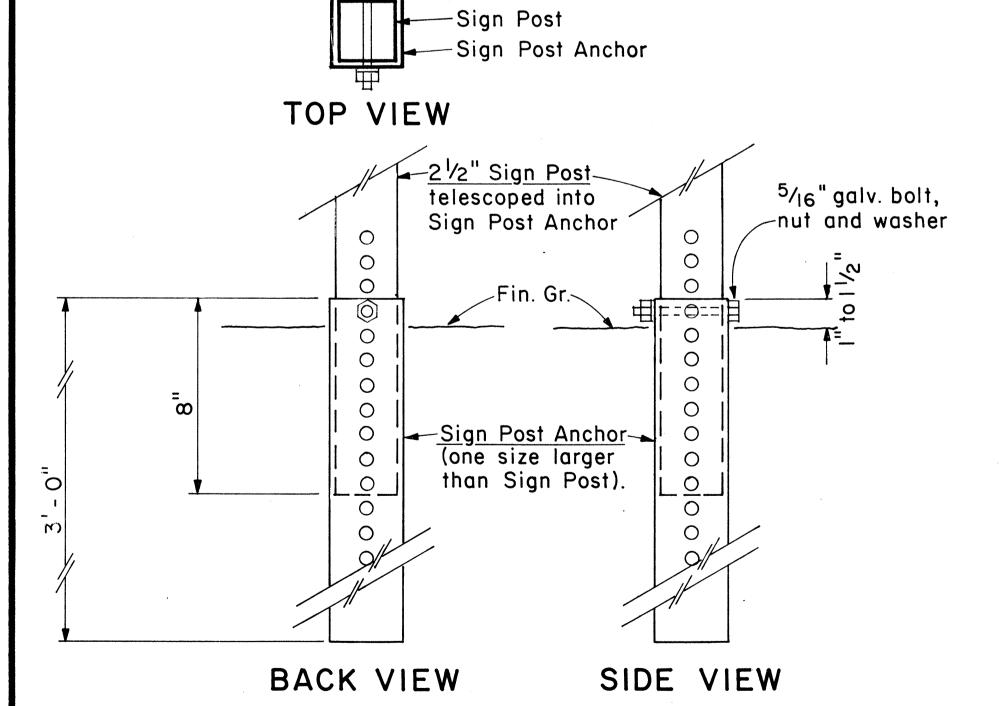
GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING

Scale: As Shown

Date: Sept. 1982

SHEET NO. 2 OF 10 SHEETS DT 100

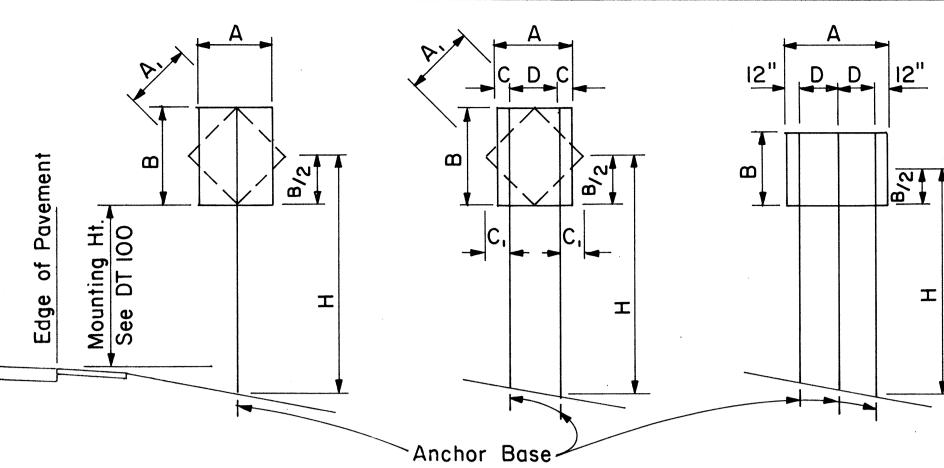




21/2" SIGN POST INSTALLATION

ANCHOR BASE DETAIL

Scale: 3"= 1'-0"



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

TYPICAL INSTALLATION Not to Scale

SQU	ARE T	UBE:	I - P(OST IN	STALL	ATION		
Doot Size	AxBxH	H = Ground Level to Midpoint (ft.)						
Post Size	(Factor)	7	8	9	10	11	12	
2"	62	8.8	7.7	6.8	6.1	5.6	4.8	(B)
21/2"	107	-		_	_	9.6	8.8	A × A

SQUARE TUBE: 2 - POST INSTALLATION								
Post Size	AxBxH		H = Groui	nd Level	to Midp	oint (ft.)		
1 031 3126	(Factor)	7	8	9 ,	10	11	12	
2"	122	17.4	15.2	13.5	12.2	11.0	10.1	ft.)
2 1/2"	212	30.2	26.5	23.5	21.1	19.2	17.6	A x B (Area, sq. ft.)
2 ½", 10 ga.	260	37.0	32.0	28.6	26.0	23.5	21.5	(Ar

SQU	ARE T	UBE:	3 - P	OST IN	ISTALL	ATION		
Post Size	AxBxH	!	H = Grou	nd Level	to Midp	ooint (ft.))	
1 031 3126	(Factor)	7	8	9	10	11	12	
2"	183	26.0	22.8	20.3	18.2	16.6	15.2	1.ft.)
21/2"	318	45.4	39.5	35.2	31.5	28.8	26.5	A x B (Area, sq.ft.)
2 ½", 10 ga.	388	55.0	48.5	43.0	38.5	35.0	32.0	ব

WINDLOAD CHARTS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	3G0AB-01-84	1984	22	29

GENERAL NOTES

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

 Maximum H = Factor Maximum H = $\frac{\text{rucio.}}{\text{sign area}(A \times B)}$ and if H is known, Maximum sign area($A \times B$) = $\frac{Factor}{II}$

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

Therbort Zalzishi 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: Sept. 1982

9/2//82

DATE

SHEET NO. 3 OF 10 SHEETS DT 1008

48" 24" NOTE: Frame stiffeners are required when D is greater than 24". See Gen. Note 2.

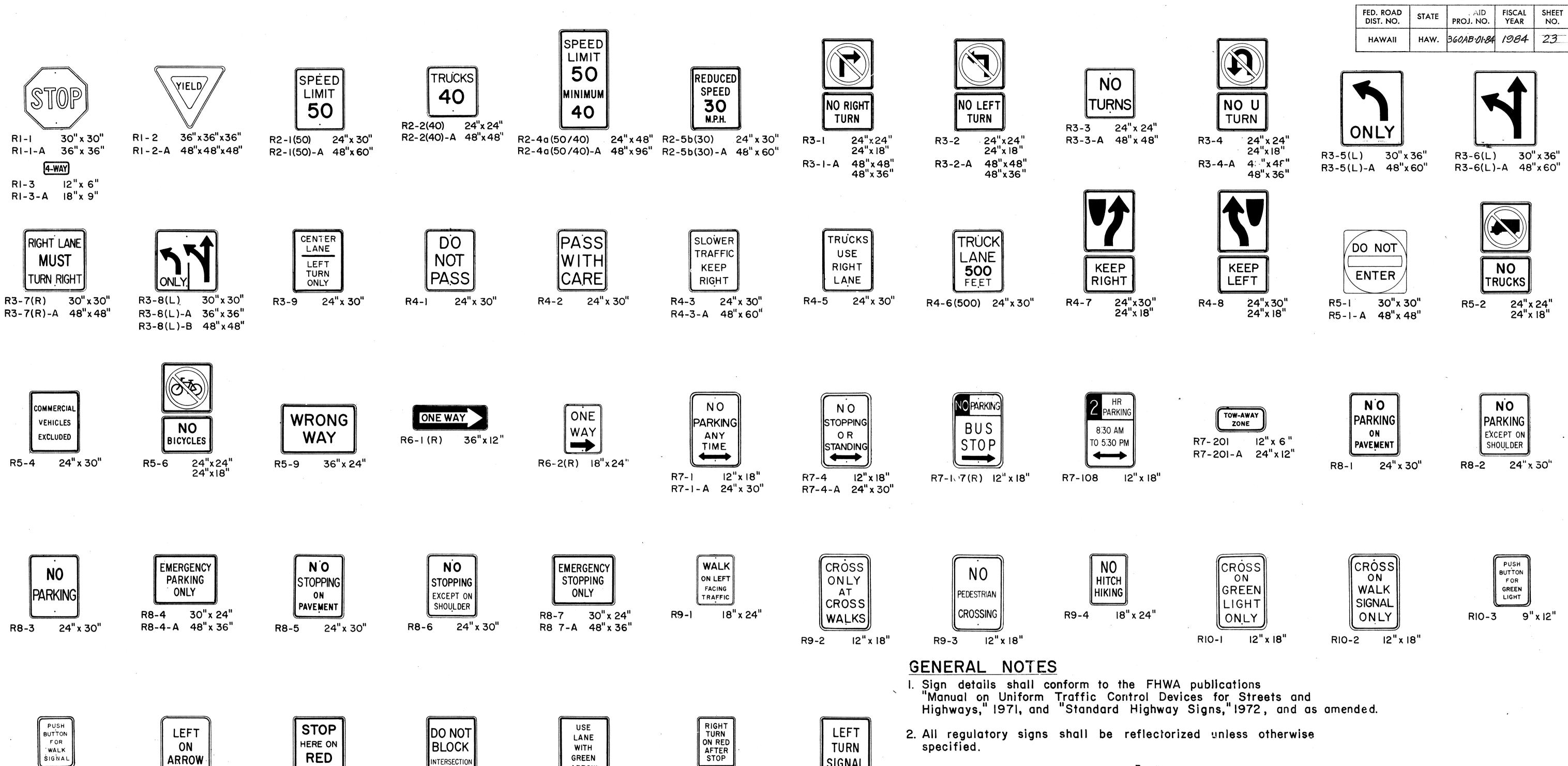
C,

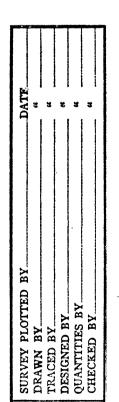
C

6"

A or A,

36"







ONLY

RIO-5 24" x 30"

9" x 12"

RIO-4

KEEP

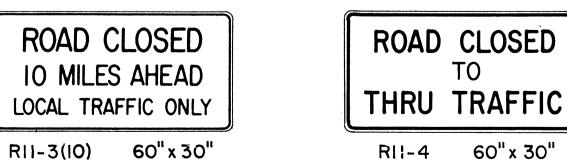
OFF

MEDIAN

RII-I 24" x 30"

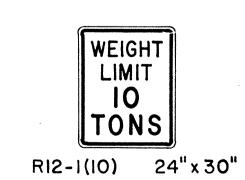


RIO-6 24" x 36"



RIO-7

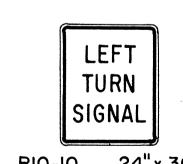
24" x 30"

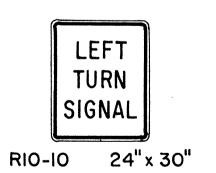


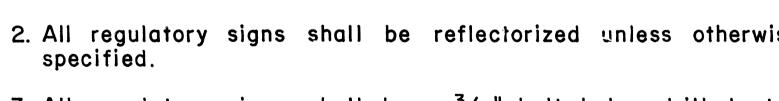
RIO-9 24" x 30"

ARROW

RIO-8 24"x 30"







- 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.

NO.	REVISION	APPROVED BY	DATE
ı	Supersedes Sht. DT 101 Approved 12-30-69	H:(3/20/12
2	Revised General Note 1	H1.	10/16/14
3	Added General Note 5	H:1 .	P/3/15
•			
			2
			nggapat rije.

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



24"x 24" 24"x 18"

PROJ. NO. YEAR NO.

29

PARKING EXCEPT ON SHOULDER R8-2 24" x 30"

> PUSH BUTTON FOR GREEN LIGHT

RIO-3 9"x I2"

APPROVAL RECOMMENDED: Tanoka TRAFFIC ENGINEER

3/17/72 DATE

3-20-12

DATE

APPROVED: Halant Zalzid ASSISTANT CHIEF, ENGINEERING

> STATE OF HAWAII **DEPARTMENT OF TRANSPORTATION** HIGHWAYS DIVISION

STANDARD DETAILS REGULATORY SIGNS

NOT TO SCALE

SHEET No. 4 OF 10 SHEETS DT 101

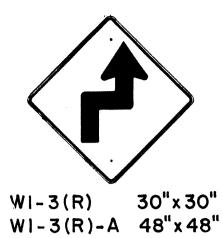
IMPERIAL M LA 3207



30"x 30" 48"x 48"



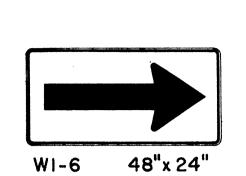
WI-2(R) 30"x 30" WI-2(R)-A 48"x 48"



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



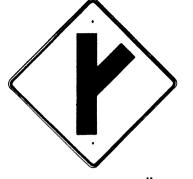
WI-5(R) 30"x30" WI-5(R)-A 48"x48"



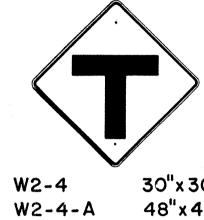




30" x 30" 48" x 48"



W2-3(R) 30"x 30" W2-3(R)-A 48"x 48"



30"x 30" 48"x 48"



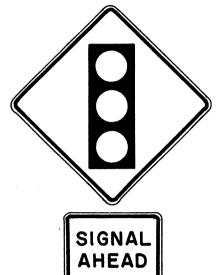
30"x 30" 48"x 48" W2-5 W2-5-A

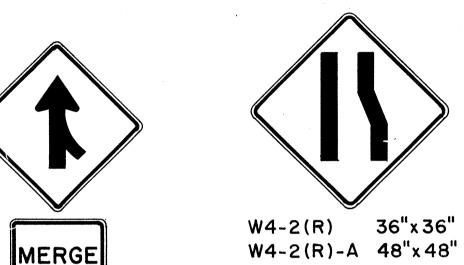


30"x 30" 36"x 36" W3-1 W3-1-A



W3-2 W3-2-A 30" x 30" 36" x 36"





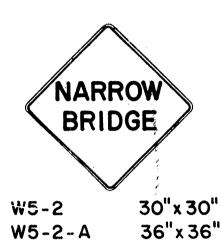
30" x 30" 24" x 18" W4-I(R)-A 48"x 48" 24"x 18"

(BUMP)

W8-I 30"x 30" W8-I-A 36"x 36"



W5-1 36"x 36"



30"x 30" 36"x 36"



36"x36"

W5-3

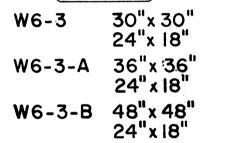
36"x 36" 24"x 18"

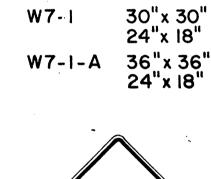


ENDS W6-2 36" x 36" 24" x 18"



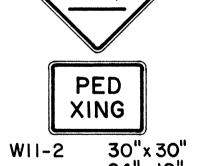
TWO WAY



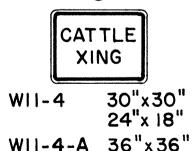














W8-2 30" x 30" W8-2-A 36" x 36"

FARM MACHINERY

WII-5 30"x30" 24"x 18' WII-5-A 36" x 36" 24" x 18"



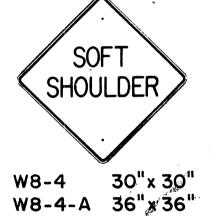
GENERAL NOTES

appropriate locations.

shall be reflectorized.

specified.

W8-3 30" x 30" W8-3-A 36" x 36" 30" x 30"



I. 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

3. All warning signs shall have 3/8" bolt holes drilled at

30"x 30"

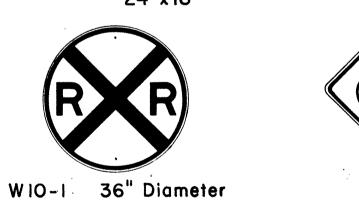
24"x 18" W8-5-A 36"x 36" 24"x18"



W9-I(R) 30"x 30" W9-I(R)-A 36"x 36" W9-I(R)-B 48"x 48".



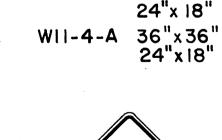
W9-2(L)-A 48"x 48"



XING 30"x 30" 24"x 18" WII-I-A 36"x36" 24"x18"



24"x 18" WII-2-A 36"x36" 24"x18"



DEAD

END





W14-3 36" x 48" x 48 30"x 30"

	NO.	REVISION	APPROVED BY	DATE
	ı	Supersedes Sht. DT 102 Approved 12-30-69	H.T.	3/20/19
)	2	Revised General Note I	141.	10/16/14
8 ^{lı}	3	Revised General Note 5	M	9-16-75
	4	Revised General Note 5	PH.T.	9-14-70
	5	Added Note I	.HT.	11-9-79
a l			1,-	•
, AME				

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

black construction signs, and

plans shall indicate orange and



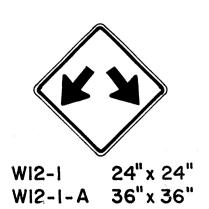




STANDARD DETAILS WARNING SIGNS

NOT TO SCALE

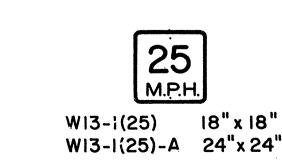
SHEET No. 5 OF 10 SHEETS DT 102

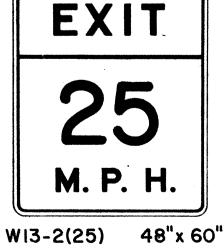


WI2-I-B 48"x 48"

12'-6" LOW CLEARANCE

W12-2(12'-6") 36" x 36" 24" x 18"





25 M. P. H. WI3-3(25) 48"x 60"

RAMP

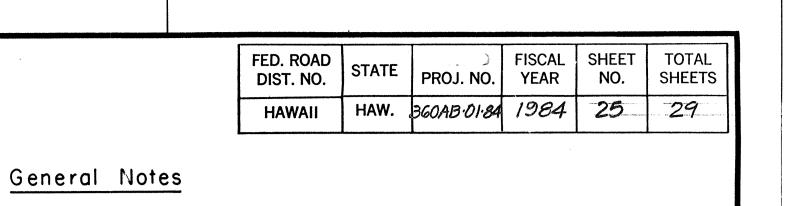
NOTE I. All signs shall be erected without educational plaques unless called for in the plans.

3/17/12

DATE

3-20-12

DATE



ALL WAY RI-4 18"x6" REDUCED SPEED 35 AHEAD

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

4" Series D ENFORCED - 4" Series C BY - 3" Series D VASCAR - 5" Series C

CENTER LANE ONLY

R3-9b 24"x36"

R7-107(R) 12" x 24"

RESERVED PARKING R7-8 | 12"x18" R7-8-A 24"x30"

ANY TIME - 4" Series C **↔**

24" x 24" 2**4**" x 18" R8-3a

R9-3a 18"x 18" 18"x 12" R9-3a-A 24"x24" 24"x18"

-8" Series F

R8-3a-A 48"x 48"

2. All signs shall be reflectorized with reflective sheeting, unless otherwise specified.

amended.

3. All signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations.

I. Sign details shall conform to the latest editions

b. "Standard Highway Signs," and as amended,

Streets and Highways," and as amended,

c. Manual on Uniform Traffic Control Devices for

a. "Standard Alphabets for Highway Signs," and as

of the following FHWA publications:

4. Numerals in () indicate 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 with reflective sheeting.

6. All signs shall be erected without educational plaques unless called for in the plans.

USE -> CROSSWALK

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

← USE Crosswalk R9-3b(L) 18" x 12"

TURN

RIO-IIa 24" x 30'

NO

R2-10 24"x 30"

CAUTION

RI6-I 24" x 30"

TURN
RIGHT
ANY TIME 4" Series C

RI6-3 18"x 24"

NO RIGHT TURN ON RED RI6-4 18"x 24"

- 4" Series D -- 3" Series D -

UNDER 5 H P, PEDESTRIANS

RI6-5 36"x 42"

TRUCK

CROSSING

UNLICENSED

VEHICLES

KEEP OUT } 4" Series E

RI6-6 24"x 30"

BICYCLES, CYCLES > 3" Series C

MOTOR-DRIVEN CYCLES – 8" Series F 4" Series B PROHIBITED

W17-1(L) 60"x 60"

STOP AHEAD

YIELD AHEAD

W3-2a 36"x 36" 24"x | 8" W3-2a-A 48"x48" 24"x18"

6" Series C **AHEAD** WHEN FLASHING

W8-6 30" x 30" W3-4 48"x 48"



36"x 36" W3-la 24 x 18" W3-la-A 48"x48" 24"x 18"

W8-6-A 36"x 36"

W9-3(L) 48"x 48"

RIGHT

LANE

EXIT

EQUESTRIAN XING

WII-7 36"x36" 24" x 18"

WII-7-A 48" x 48" 24" x 18"



36"x36' SI-I



STATION WII-8 36"x 36"

24"x18" WII-8-A 48"x 48" 24"x 18"

S2-1 36"x 36"

WII-9 36"x36" WII-9-A 48" x 48"

SCHOOL BUS STOP

AHEAD

S3-I 30"x30"

SIGHT DISTANCE

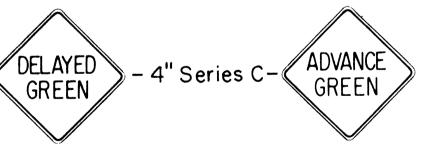
36" x 36" W14-4 W14-4-A 48" x 48"

8:00 AM TO 3:30 PM

S4-1 24"x10"

WHEN CHILDREN ARE PRESENT

\$4-2 24"x10"



WI5-I 24"x 24"

WI5-2 24"x 24"



ONLY WI8-I 48" x 60"

8" Series E

 $CW16-1(\frac{1}{2}) 60" \times 60"$

4" Series C

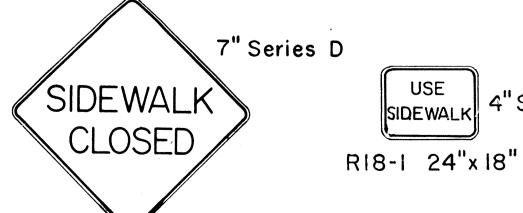
SIDEWALK CLOSED

CW23-4 48"x48"

WHEN FLASHING \$4-4 24"x10"

SCHOOL

S4-3 24"x8"



APPROVED DATE REVISION Supersedes Sht. DT 103 approved 3/20/72 5/5/18 2 Added General Note 6 H.I. 11/9/19

APPROVAL RECOMMENDED: TRAFFIC ENGINEER

5/2/78 DATE

5/3/18 DATE

25

APPROVED:

Horbert 2. Dal Ei shi ASSISTANT CHIEF, ENGINEERING

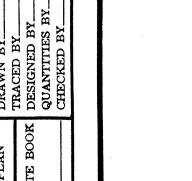
> STATE OF HAWAII **DEPARTMENT OF TRANSPORTATION** HIGHWAYS DIVISION

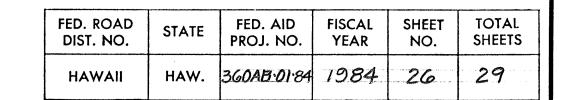
STANDARD DETAILS

MISCELLANEOUS SIGNS

DATE: MAY, 1978 NOT TO SCALE SHEET NO. 6 OF 10 SHEETS DT 103

TA::::

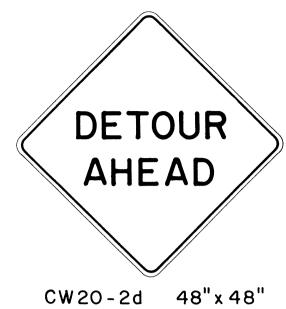






CW20-1a

48" x 48"











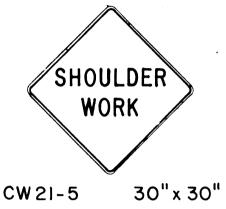


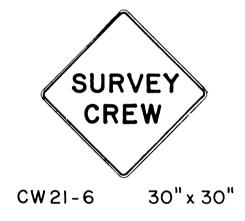


ROAD MACHINERY

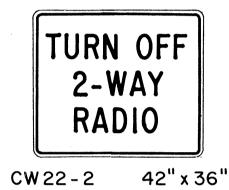
CW 21-3 36" x 36"









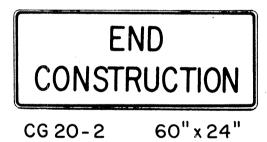




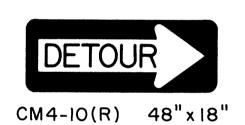
CW22-3 42" x 36"



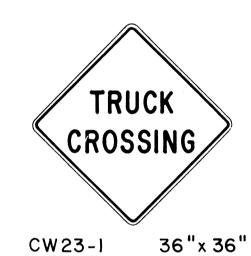
CG 20-1(5) 60" x 36"

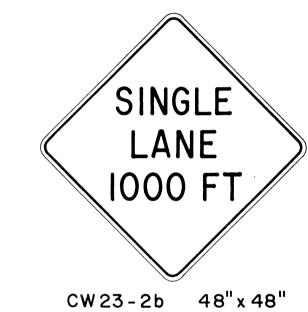














GENERAL NOTES

- I. 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.

REVISION	APPROVED BY	DATE
Supersedes Sht. DT 104 Approved 12-30-69	H.T.	3/23/17
Revised General Note I	14.1.	10/16/14
Revised General Note 2	Mit	9-16-75
Revised General Note 2 and sign CG20-1(5)	H.P.	9-16-75
and sign CG2O-1(5)		
	Supersedes Sht. DT 104 Approved 12-30-69 Revised General Note 1 Revised General Note 2	Supersedes Sht. DT 104 Approved 12-30-69 Revised General Note 1 Revised General Note 2

APPROVAL RECOMMENDED:

Eiichi make

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

DATE

3/23/12

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

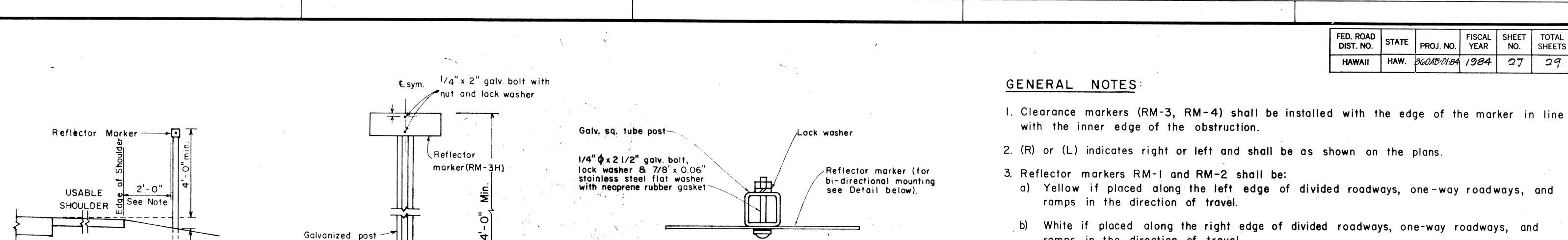
CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 7 OF 10 SHEETS DT 104

IMPERIAL LA 3207

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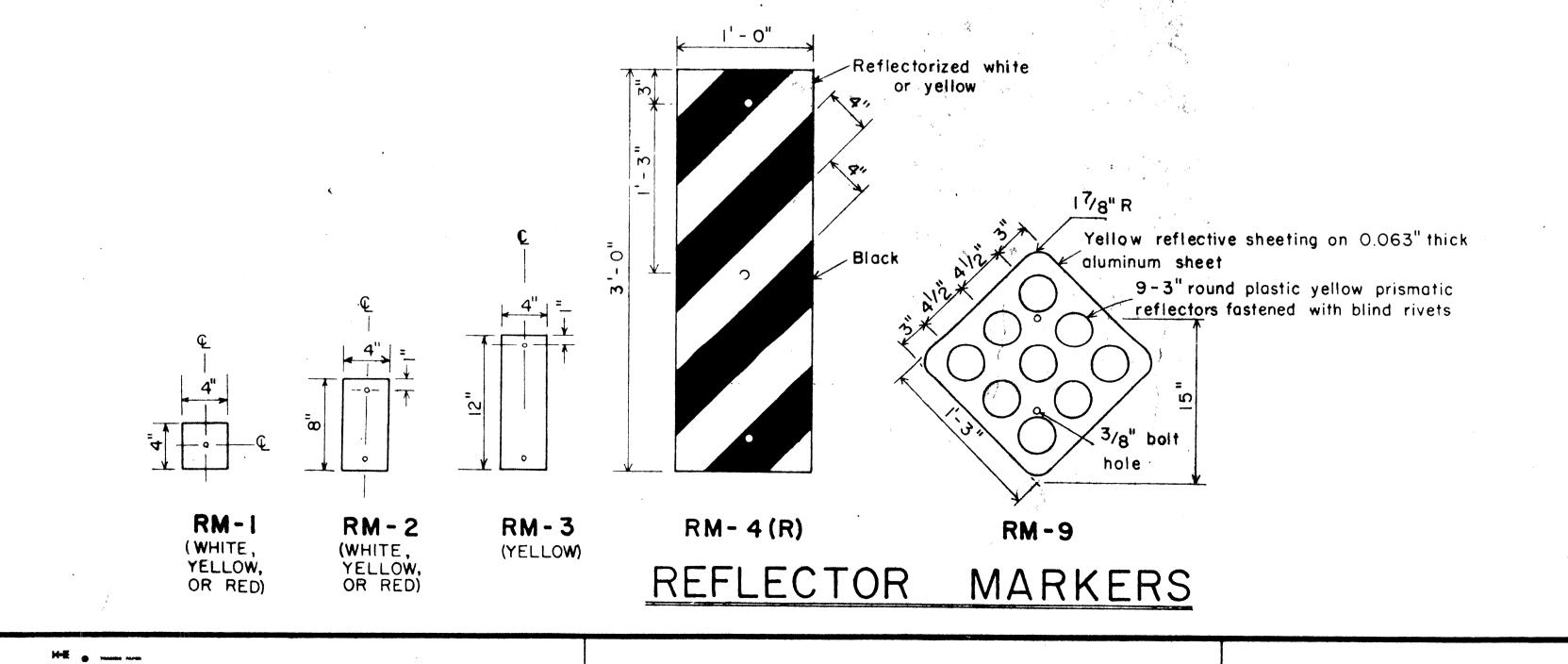
GALVANIZED SQUARE TUBE POST

Additional 7/8" x 0.06" stainless steel flat washer with neoprene rubber gasket (for bi-directional mounting only). -Additional plate (for bidirectional mounting only). Galvanized flanged channel For bolt, nut & washers see Detail above.

GALVANIZED FLANGED CHANNEL POST

TYPICAL MOUNTING DETAILS

- b) White if placed along the right edge of divided roadways, one-way roadways, and ramps in the direction of travel.
- 4. For reflector marker RM-9, reflective sheeting material may be used as an alternate.
- 5 For RM-4, the stripes shall slope downward at an angle of 45° in the direction of traffic.

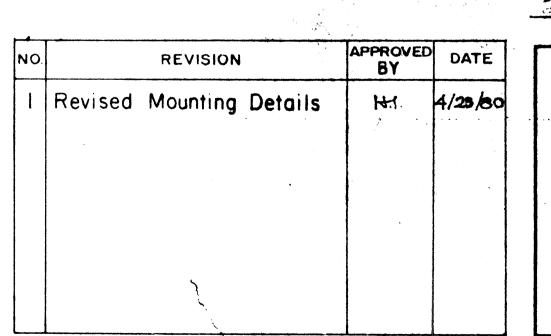


Finished grade

MOUNTING DETAIL

REFLECTOR

MARKER



APPROVAL RECOMMENDED 7/7/77 DATE TRAFFIC ENGINEER APPROVED:

Assistant Chief, Engineering STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION

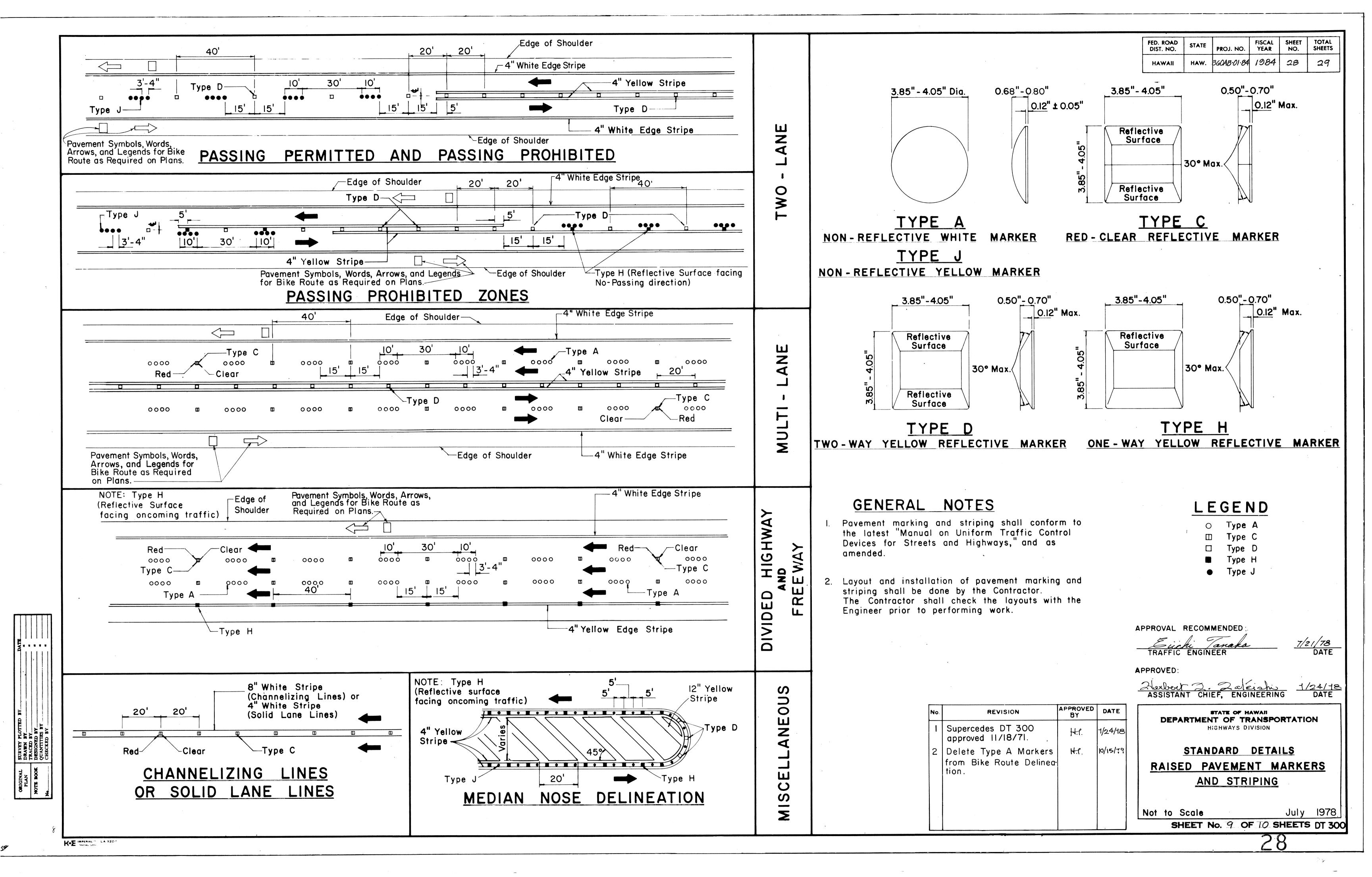
STANDARD DETAILS

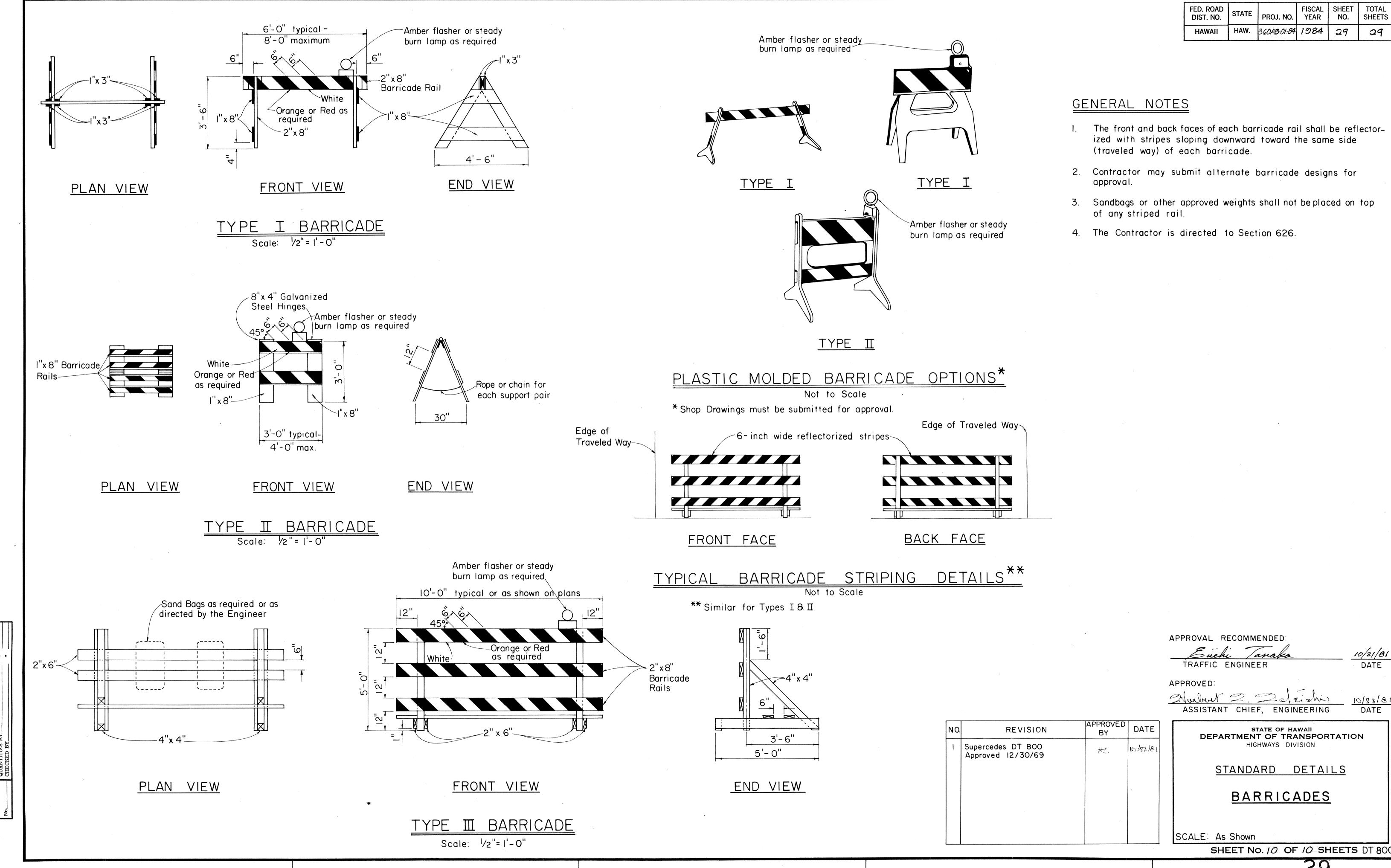
MISCELLANEOUS REFLECTOR MARKERS

Not to scale

SHEET NO. 8 OF 10 SHEETS DT 110

June, 1977





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10/21/81 DATE

10/23/81 DATE

SHEETS