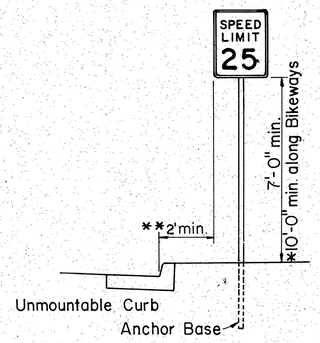
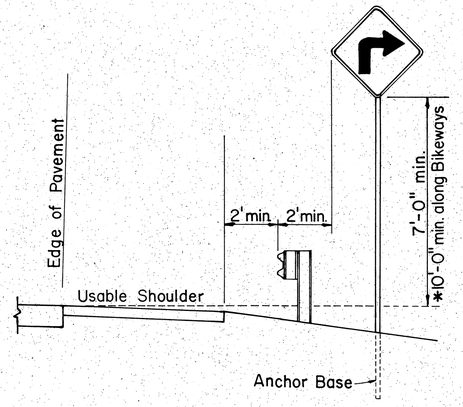
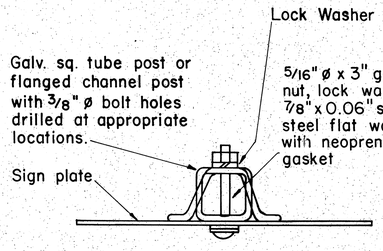
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-01-85M	1985	4	9







GALVANIZED SQUARE TUBE
OR FLANGED CHANNEL POST

GENERAL NOTES

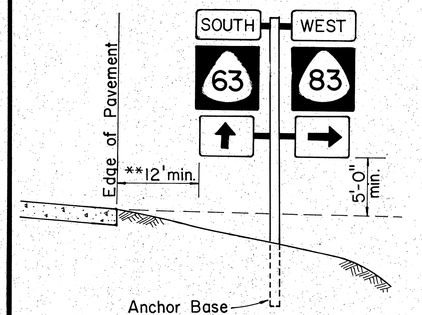
1. Signs shall be placed in conformance with positions shown and described in the "Manual on Uniform Traffic Control Devices for Streets and Highways", 1978, Part II, Section 2A-21, as amended, and as supplemented herein.
2. Sign 48" and wider or larger than 10 sq. ft. in area shall be mounted on two or more sign posts except as noted below.
3. 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:
   a. 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.
   b. 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.
   c. Signs larger than 28 sq. ft. in area shall be mounted with a minimum of three sets of band bracket 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 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 shown on the plans.

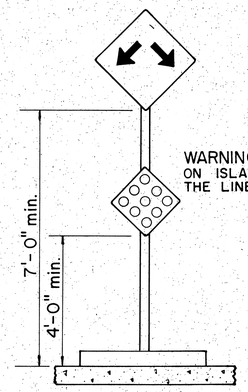
* 7. See plans for special details of signs along bikeways.

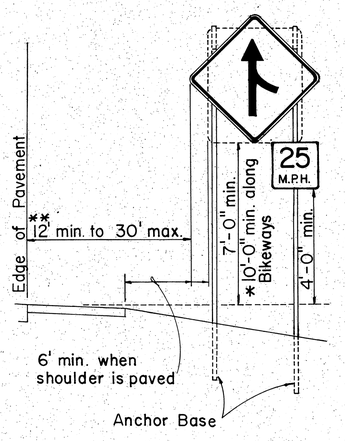
** 8. The minimum lateral distances shown are guidelines and shall be exceeded whenever possible. The Contractor shall place signs at the maximum practical lateral distance from the edge of the traveled way up to 30 feet and shall utilize protected locations whenever possible. Final locations of all signs shall be approved by the Engineer.

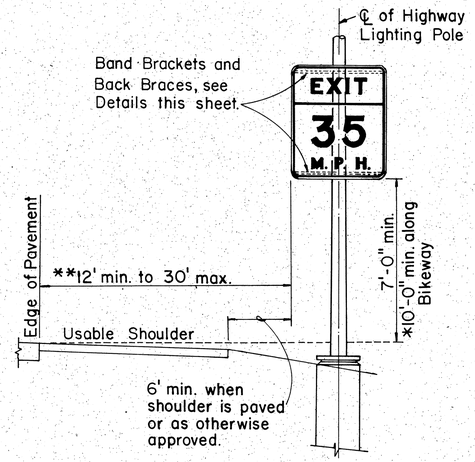
9. Signs in medians shall be placed at midpoint of median up to a maximum distance of 30 feet from the edge of traveled way. When appropriate, signs for opposing directions shall be placed back to back.
10. Anchor bases shall be installed for all signpost installations, unless otherwise shown or directed. See sheets DT 100A and DT 100B.

ROADSIDE ASSEMBLY
RURAL DISTRICT

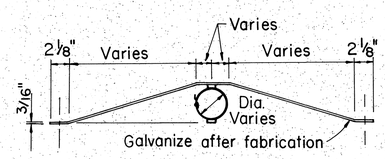






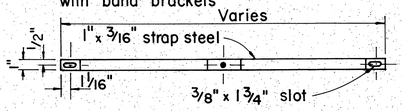


HEIGHT AND LATERAL LOCATION OF SIGNS
TYPICAL INSTALLATION



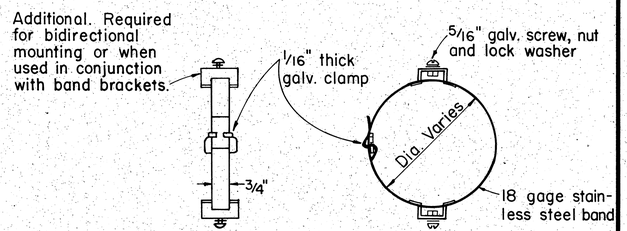
PLAN

Back braces shall be used in conjunction with band brackets



ELEVATION

BACK BRACE



LEFT SIDE VIEW PLAN

BAND BRACKET

TYPICAL MOUNTING DETAILS

NO.	REVISION	APPROVED BY	DATE
1	Supercedes Sht. DT 100 approved 11/15/77		10-18-83

APPROVAL RECOMMENDED:
Eiichi Tanaka — 10/14/83
TRAFFIC ENGINEER — DATE

APPROVED:
[signature] — 10-18-83
ASSISTANT CHIEF, ENGINEERING — DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

MISCELLANEOUS SIGN DETAILS

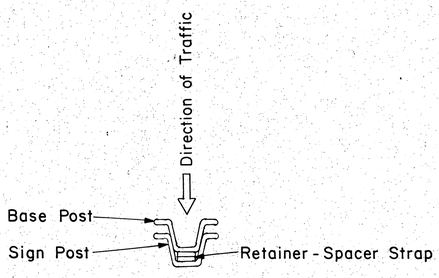
Not to Scale: Oct. 1983

SHEET No. 1 OF 6 SHEETS DT 100

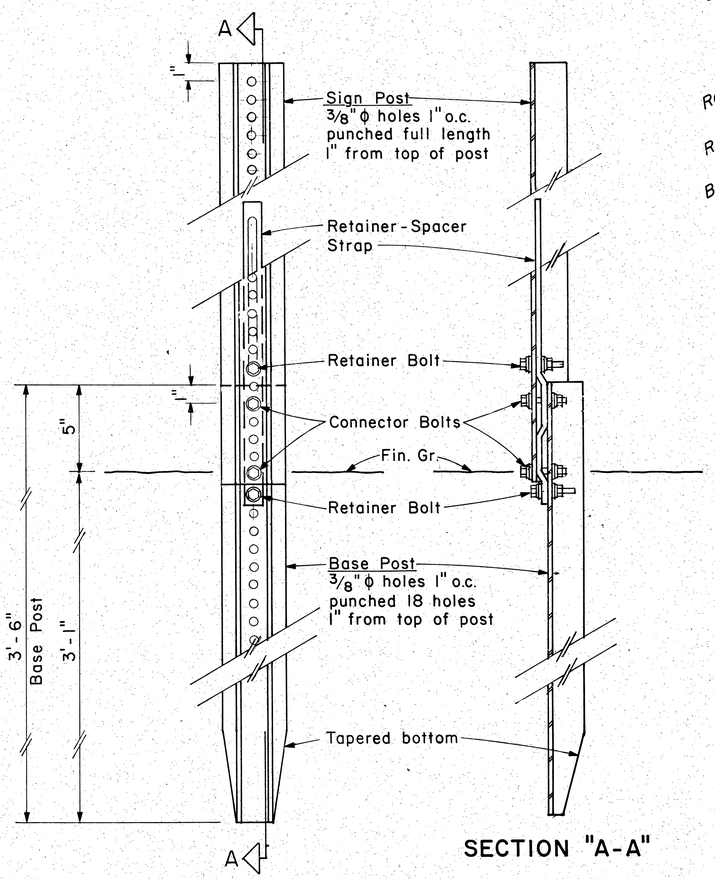
ORIGINAL PLAN	NOTE BOOK	No.	DATE

SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-01-85M	1985	5	9



TOP VIEW

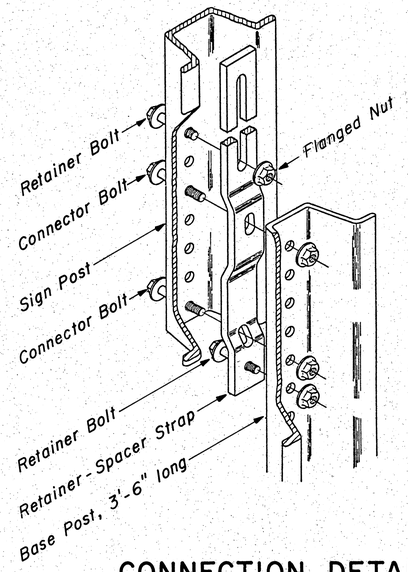


BACK VIEW

SECTION "A-A"

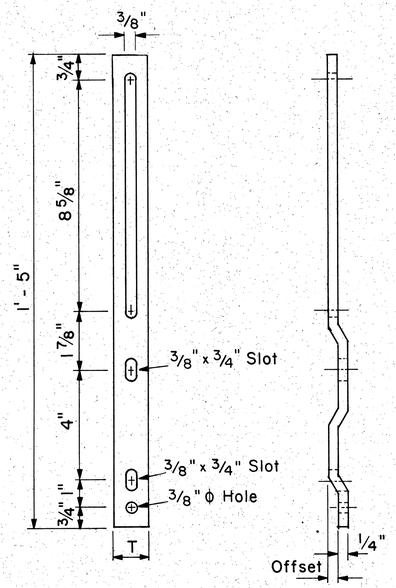
ANCHOR BASE DETAIL

Scale: 3" = 1'-0"



CONNECTION DETAIL

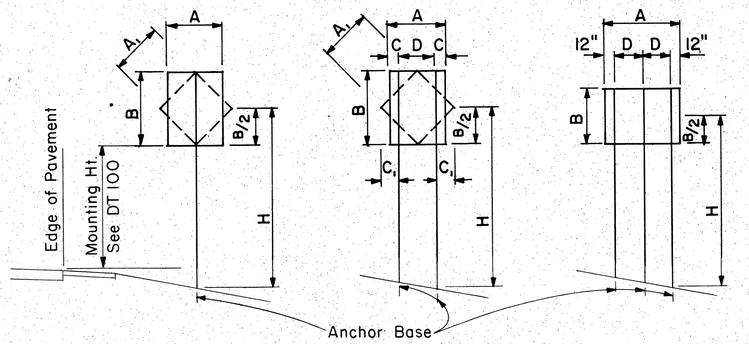
Not to Scale



RETAINER-SPACER STRAP

Not to Scale

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



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

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	
4.00 lbs./ft.	112	–	–	–	–	–	9.33	

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	
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	
4.00 lbs./ft.	362	51.71	45.25	40.22	36.20	32.91	30.17	

WINDLOAD CHARTS

A or A1	C	C1
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

1. 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 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 x B x H
   Therefore, if sign area (A x B) is known,
   Maximum H = $\frac{\text{Factor}}{\text{sign area (A x B)}}$
   and if H is known,
   Maximum sign area (A x B) = $\frac{\text{Factor}}{H}$

APPROVAL RECOMMENDED:

Eiichi Tanaka — 9/21/82
TRAFFIC ENGINEER — DATE

APPROVED:

[signature] — 9/23/82
ASSISTANT CHIEF, ENGINEERING — DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

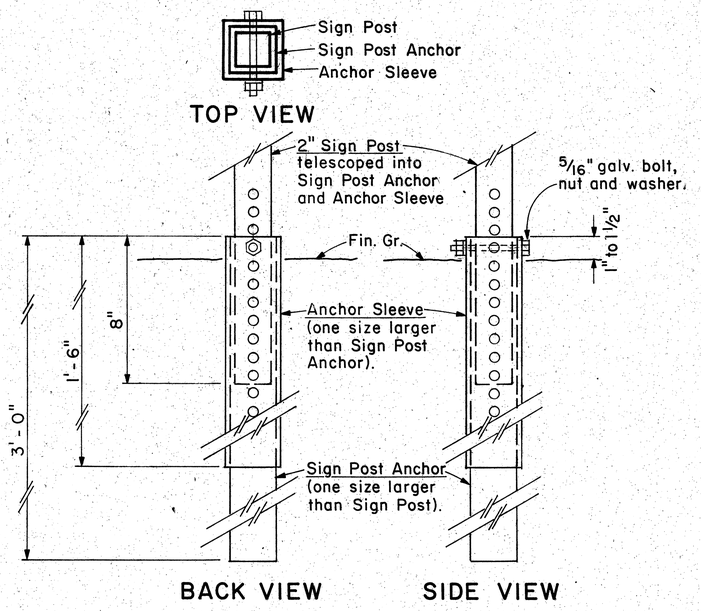
STANDARD DETAILS

GALVANIZED FLANGED CHANNEL SIGN POST MOUNTING

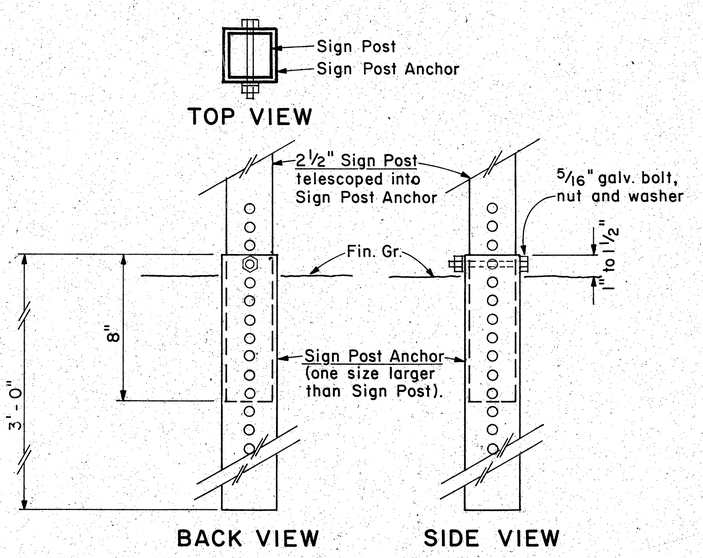
Scale: As Shown — Date: Sept. 1982

SHEET No. 2 OF 6 SHEETS DT 100A

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



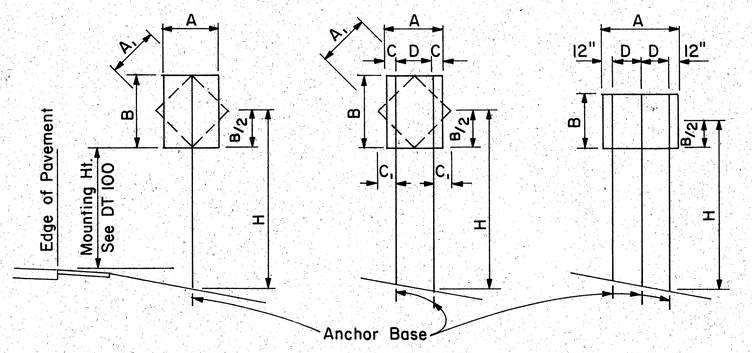
2" SIGN POST INSTALLATION



2½" SIGN POST INSTALLATION

ANCHOR BASE DETAIL

Scale: 3" = 1'-0"



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

A or A1	C	C1
36"	6"	-
48"	9"	19"
60"	12"	24"

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

SQUARE TUBE: 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"	62	8.8	7.7	6.8	6.1	5.6	4.8	
2½"	107	-	-	-	-	9.6	8.8	

SQUARE TUBE: 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"	122	17.4	15.2	13.5	12.2	11.0	10.1	
2½"	212	30.2	26.5	23.5	21.1	19.2	17.6	
2½", 10 ga.	260	37.0	32.0	28.6	26.0	23.5	21.5	

SQUARE TUBE: 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"	183	26.0	22.8	20.3	18.2	16.6	15.2	
2½"	318	45.4	39.5	35.2	31.5	28.8	26.5	
2½", 10 ga.	388	55.0	48.5	43.0	38.5	35.0	32.0	

WINDLOAD CHARTS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-01-85M	1985	6	9

GENERAL NOTES

1. 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" ϕ holes, 1" 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 x B x H
   Therefore, if sign area (A x B) is known,
   Maximum $H = \frac{\text{Factor}}{\text{sign area (A x B)}}$
   and if H is known,
   Maximum sign area (A x B) $= \frac{\text{Factor}}{H}$

APPROVAL RECOMMENDED:

Eiichi Tanaka — TRAFFIC ENGINEER — 9/21/82 DATE

APPROVED:

Herbert Takeshita — ASSISTANT CHIEF, ENGINEERING — 9/22/82 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

SHEET NO. 3 OF 6 SHEETS DT100B

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-01-85M	1985	7	9

CW20-1a 48"x48"

CW20-2d 48"x48"

CW20-3b 48"x48"

CW20-4d 48"x48"

CW20-5d(L) 48"x48"

CW20-7c 48"x48"

CW21-1 30"x30"

CW21-2 30"x30"

CW21-3 36"x36"

CW21-4 36"x36"

CW21-5 30"x30"

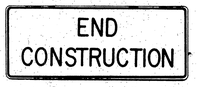
CW21-6 30"x30"

CW22-1b 48"x48"

CW22-2 42"x36"

CW22-3 42"x36"

CG20-1(5) 60"x36"



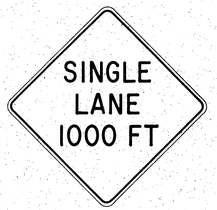
CG20-2 60"x24"

CM4-9(R) 30"x24"

CM4-10(R) 48"x18"

CG20-4 36"x18"

CW23-1 36"x36"



CW23-2b 48"x48"

CW23-3(R) 48"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 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:
Eiichi Tanaka — TRAFFIC ENGINEER — 3/21/12 DATE

APPROVED:
Walter Ralston — ASSISTANT CHIEF, ENGINEERING — 3/23/12 DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	H.T.	3/23/12
2	Revised General Note 1	H.T.	10/10/14
3	Revised General Note 2	MF	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

SHEET No. 4 OF 6 SHEETS DT 104

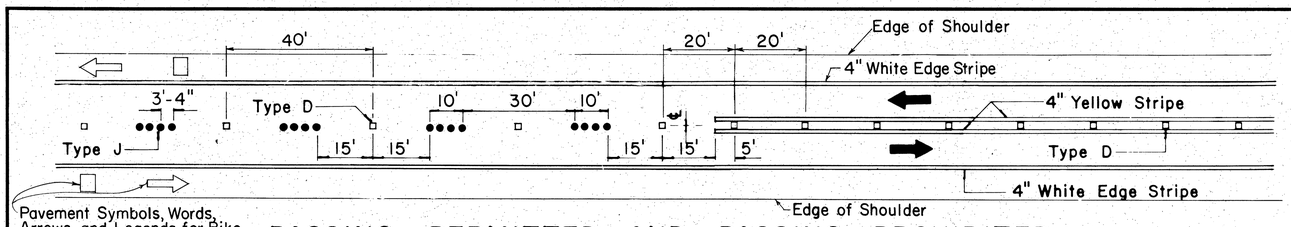
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

K&E IMPERIAL TRACING CLOTH LA 3207

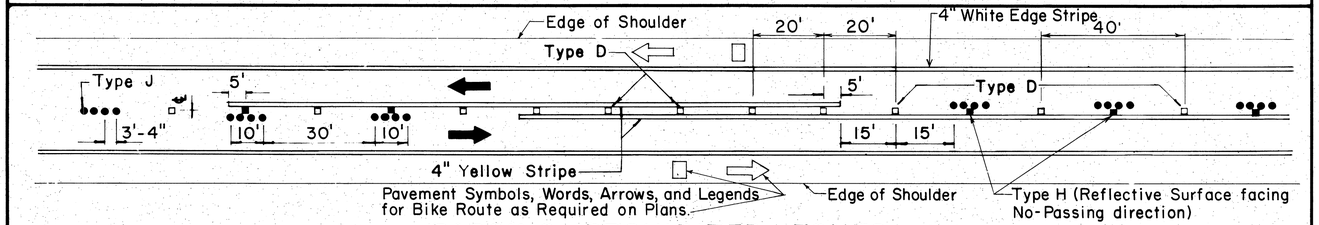
7

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-01-85M	1985	8	9

TWO - LANE

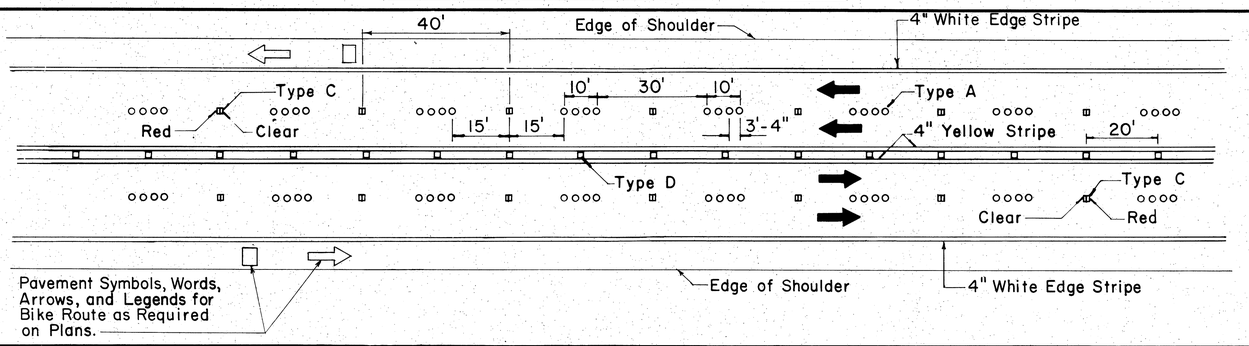


PASSING PERMITTED AND PASSING PROHIBITED

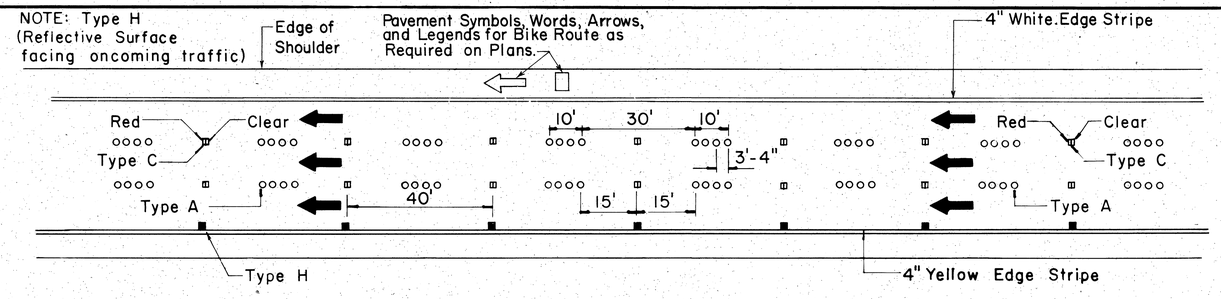


PASSING PROHIBITED ZONES

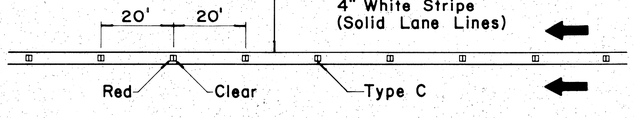
MULTI - LANE



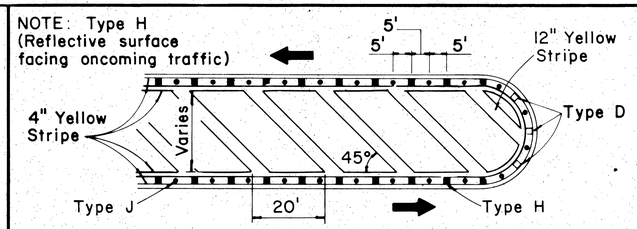
DIVIDED HIGHWAY AND FREEWAY



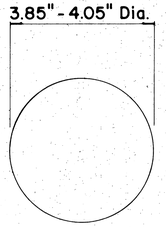
MISCELLANEOUS



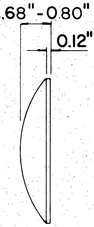
CHANNELIZING LINES OR SOLID LANE LINES

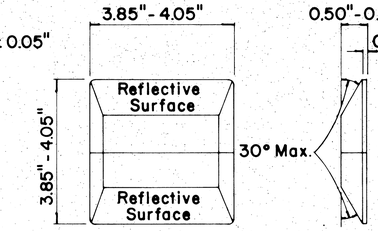


MEDIAN NOSE DELINEATION



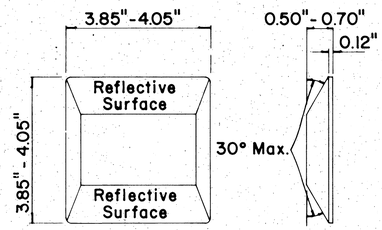
TYPE A
NON-REFLECTIVE WHITE MARKER



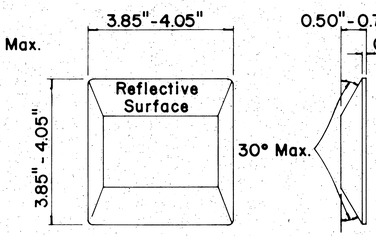


TYPE C
RED-CLEAR REFLECTIVE MARKER

TYPE J
NON-REFLECTIVE YELLOW 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:

Ericki Tanaka — TRAFFIC ENGINEER — 7/21/78 DATE

APPROVED:

Herbert R. Rakeiaha — ASSISTANT CHIEF, ENGINEERING — 7/24/78 DATE

No.	REVISION	APPROVED BY	DATE
1	Supercedes DT 300 approved 11/18/71.	H.F.	7/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.F.	10/15/79
3	Added General Note 3. Revised left edge stripe.	[illegible]	9-28-83

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

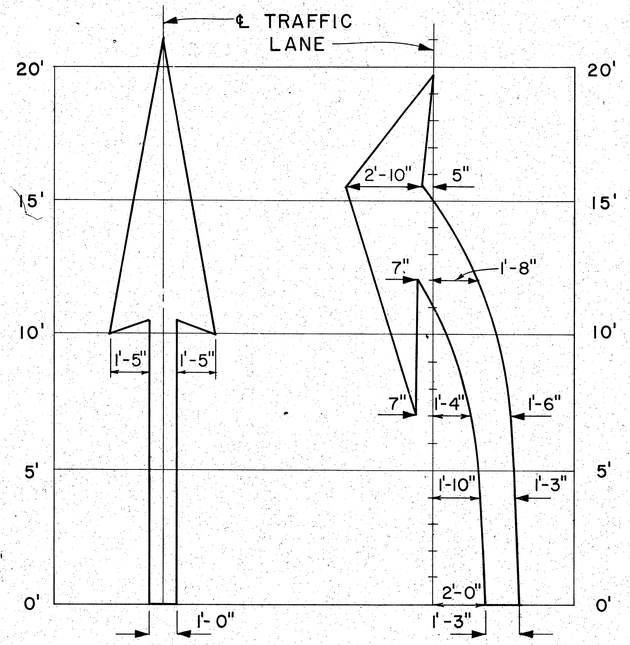
STANDARD DETAILS
RAISED PAVEMENT MARKERS AND STRIPING

Not to Scale — July 1978

SHEET No. 5 OF 6 SHEETS DT 300

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | NOTE BOOK | QUANTITIES BY | CHECKED BY | DATE

K&E IMPERIAL LA 3207



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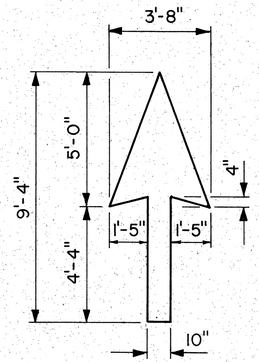
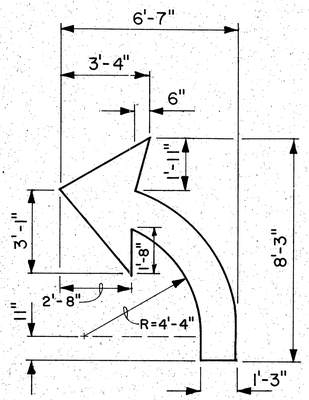
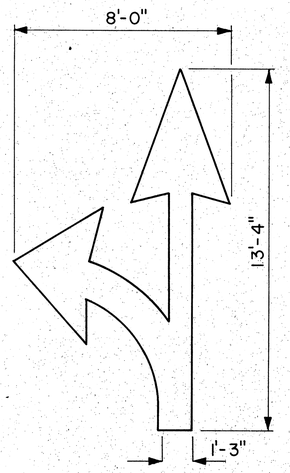


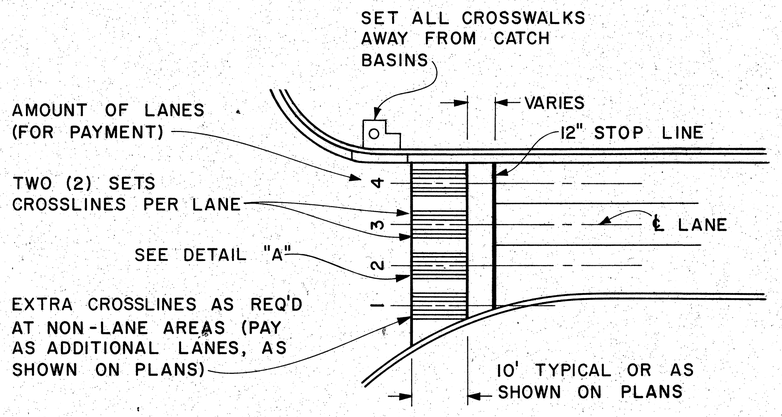




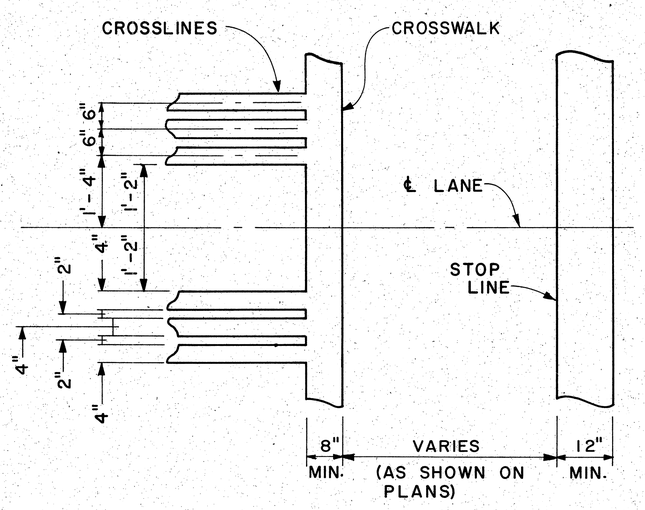
STANDARD

PAVEMENT ARROWS

Scale: 3/8" = 1'



PLAN



DETAIL "A"

CROSSWALK & STOP LINE

Scale: Not to Scale

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-01-85M	1985	9	9

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.

APPROVAL RECOMMENDED:
Eiichi Tanaka — TRAFFIC ENGINEER — 5/2/78 DATE

APPROVED:
Herbert Q. Takiishi — ASSISTANT CHIEF, ENGINEERING — 5/3/78 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. 6 OF 6 SHEETS DT 306

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