

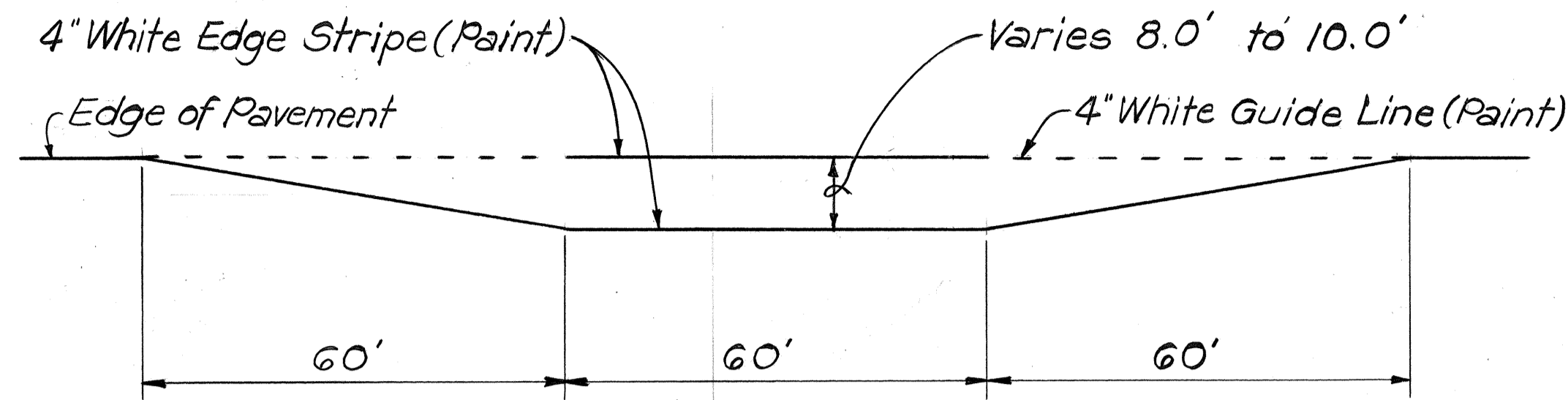
**GENERAL NOTES**

- Locations of all new Pavement Markings shall be staked out by the Contractor for approval by the Engineer prior to installation.
- Existing Pavement Markings not incorporated in the final traffic pattern shall be removed as directed by the Engineer. Costs shall be incidental to the various contract items.
- Raised Pavement Markings shall not be placed within crosswalks.
- Existing signs not shown on these plans shall remain as posted unless otherwise directed by the Engineer. Removal of existing signs shall be incidental to the various contract items.
- Final locations of all signs shall be approved by the Engineer.
- Details of Type C and Type D Markers on Plan Sht. No. 50 shall be deleted and replaced with details of Type CL and Type DL Markers as shown on this sheet. All references to Type C and Type D Markers in the plans shall mean Type CL and Type DL Markers.
- All objects (Utility poles or trees) that are within the State Highway right of way and within 30 feet of the roadway edge of pavement shall be marked as directed by the Engineer. For Details, see Plan Sht. No. 48.
- The Bus Stop signs will be furnished by the City and County of Honolulu, Department of Transportation Services. No stop signs replaced under this project due to nonavailability of materials from City & County.
- The Contractor shall reinstall the existing street name signs as directed by the Engineer. Cost shall be incidental to the various contract items.

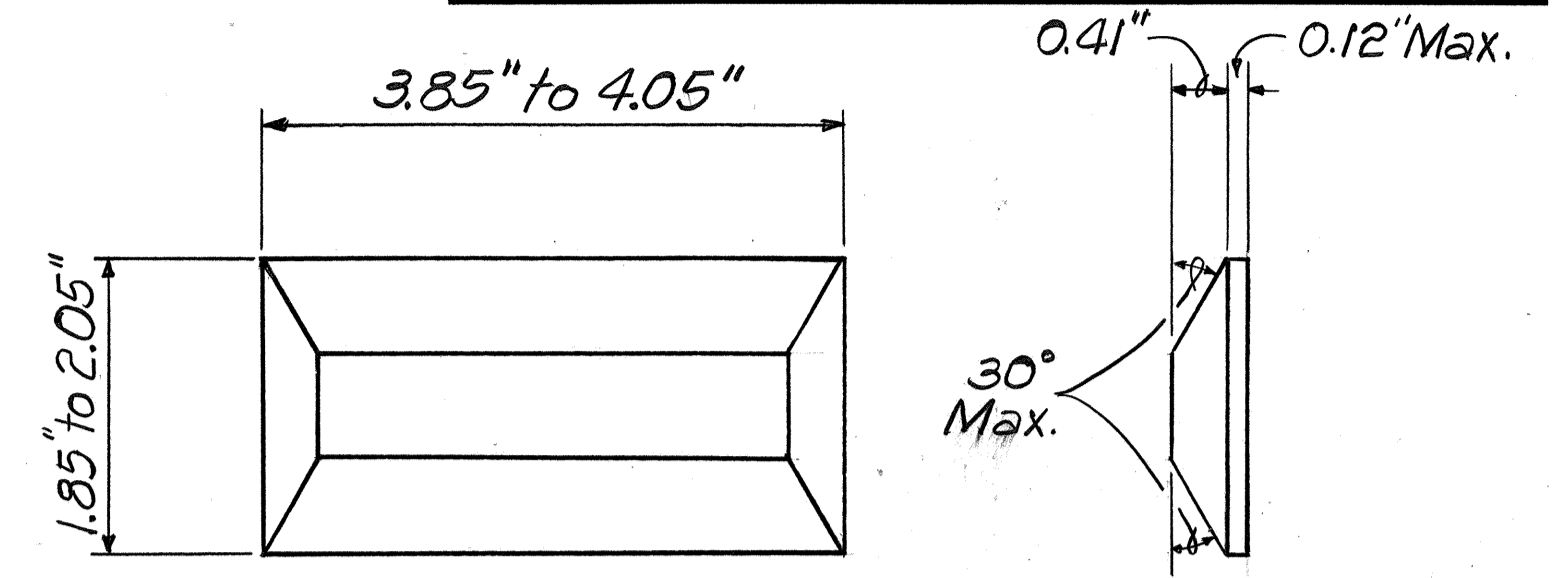
**LEGEND**

- 4 each Type "A" Raised Pavement Markers
- Type "C" Raised Pavement Markers @ 40'-0" o.c.
- 8" White Stripe (Tape) with Type "C" Raised Pavement Markers @ 20'-0" o.c.
- 4" Double Solid Yellow Stripes (Tape) with Type "D" Raised Pavement Markers @ 20'-0" o.c.
- Crosswalk (Tape) & Stop Line (Tape). All Stop Lines shall be 10'-0" from Crosswalk unless otherwise noted. The circled number indicates the number of lanes for payment.
- New Sign with Post
- Existing Sign with Post
- Highway Lighting Pole
- 4 each Type "J" Raised Pavement Markers
- Type "D" Raised Pavement Markers @ 40' o.c.

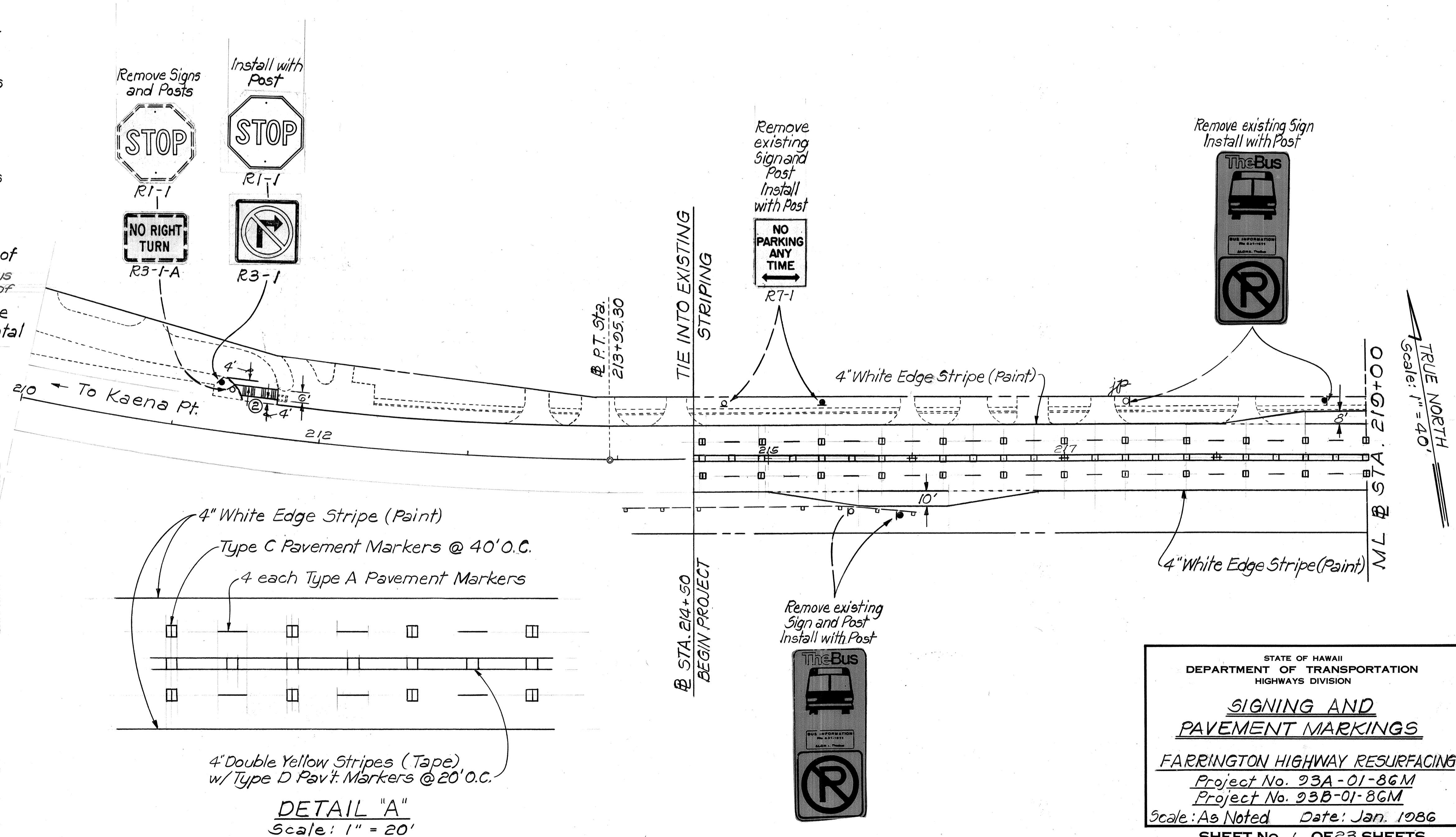
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	23A-01-86M 23B-01-86M	1986	30	52



**STRIPING DETAIL AT BUS TURNOUT**  
Scale: 1" = 20'



**TYPE CL**  
(Red-Clear Reflective Marker)  
or  
**TYPE DL**  
(Two-Way Yellow Reflective Marker)  
Not To Scale



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

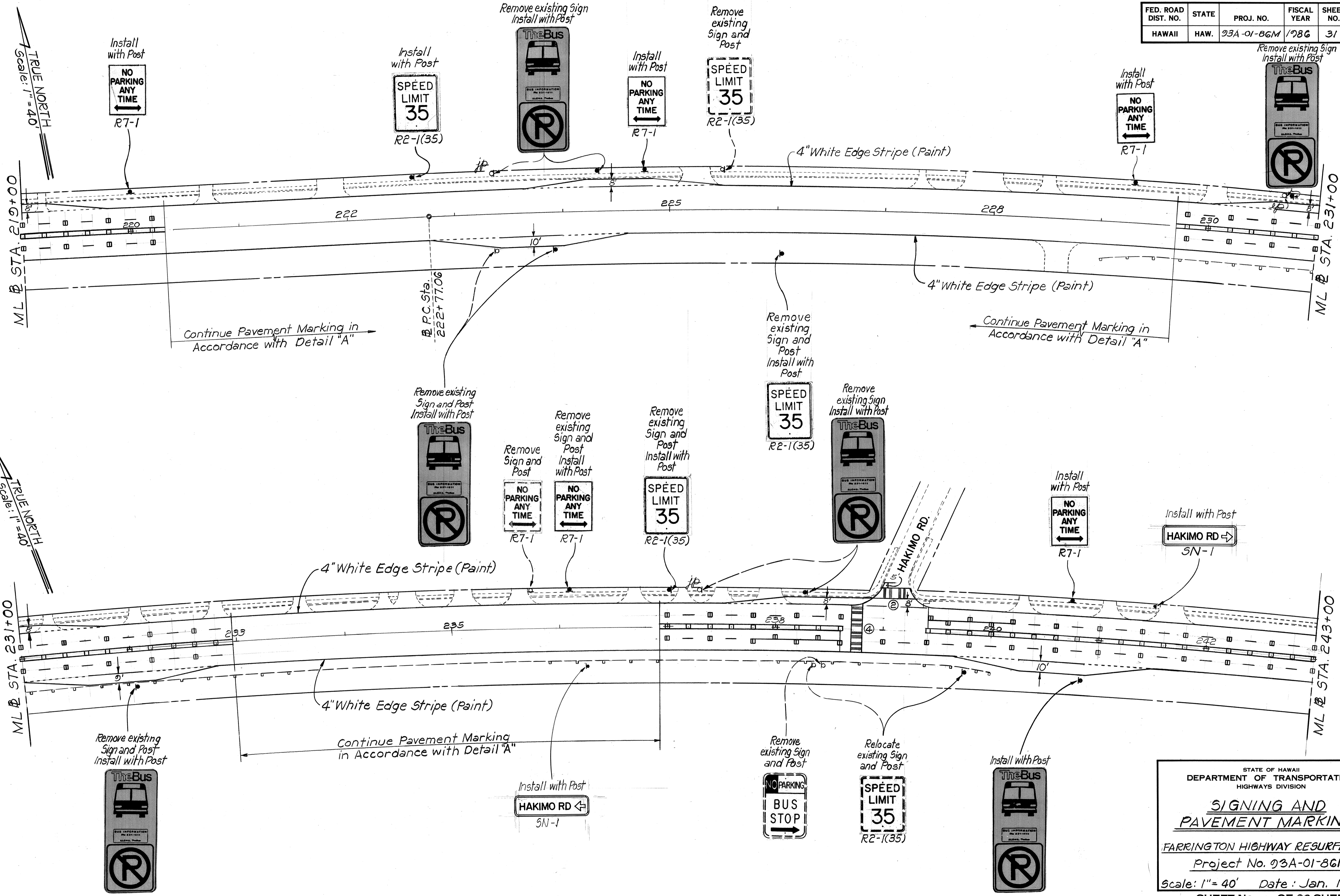
**SIGNING AND PAVEMENT MARKINGS**

FARRINGTON HIGHWAY RESURFACING  
Project No. 23A-01-86M  
Project No. 23B-01-86M  
Scale: As Noted Date: Jan. 1986

SHEET No. 1 OF 23 SHEETS

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-01-86M	1986	31	52



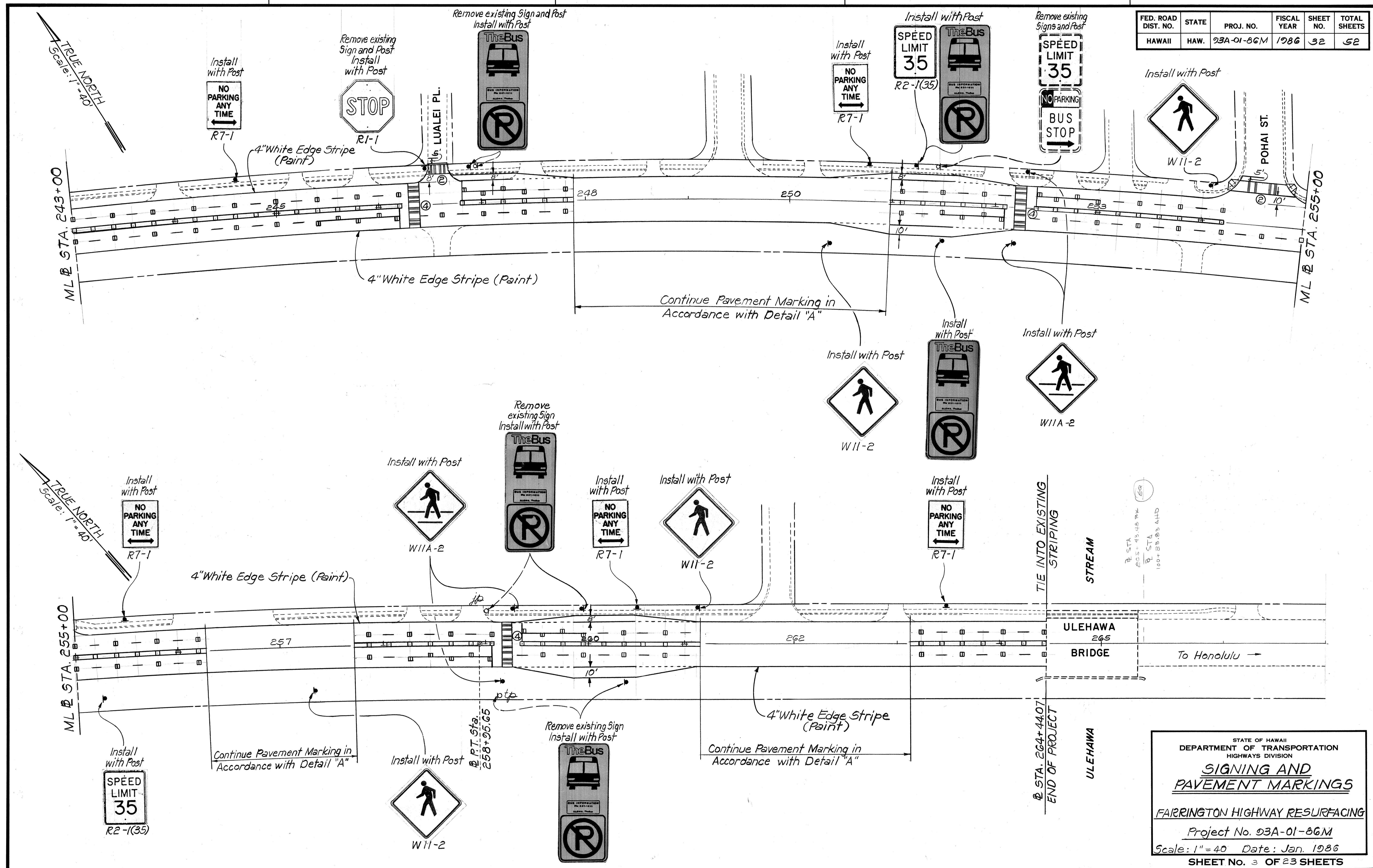
SURVEY PLOTTED BY	DATE
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN NO.	
NOTE BOOK NO.	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING AND PAVEMENT MARKINGS**

FARRINGTON HIGHWAY RESURFACING  
Project No. 93A-01-86M  
Scale: 1" = 40' Date: Jan. 1986  
SHEET NO. 2 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-01-86M	1986	32	52



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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

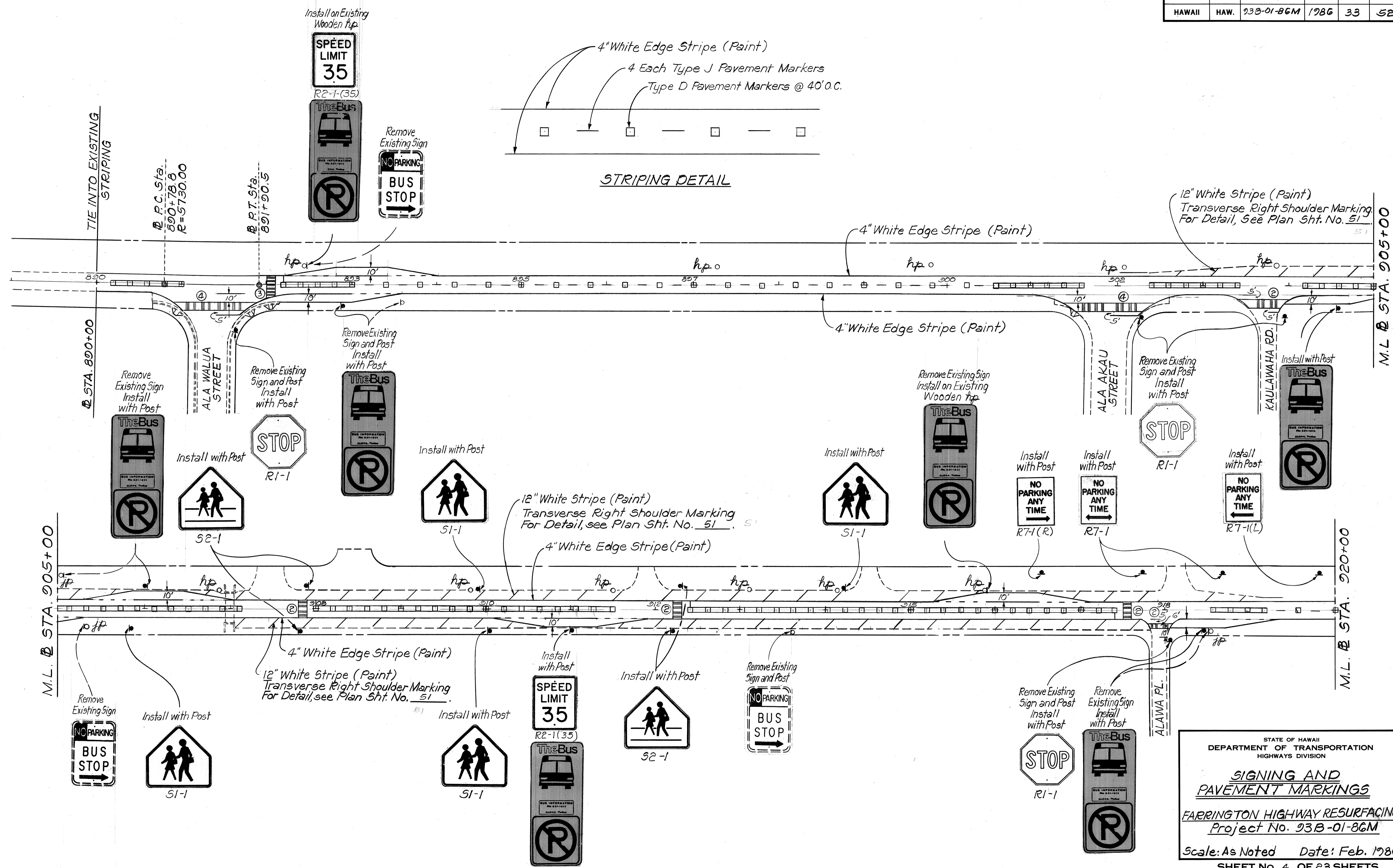
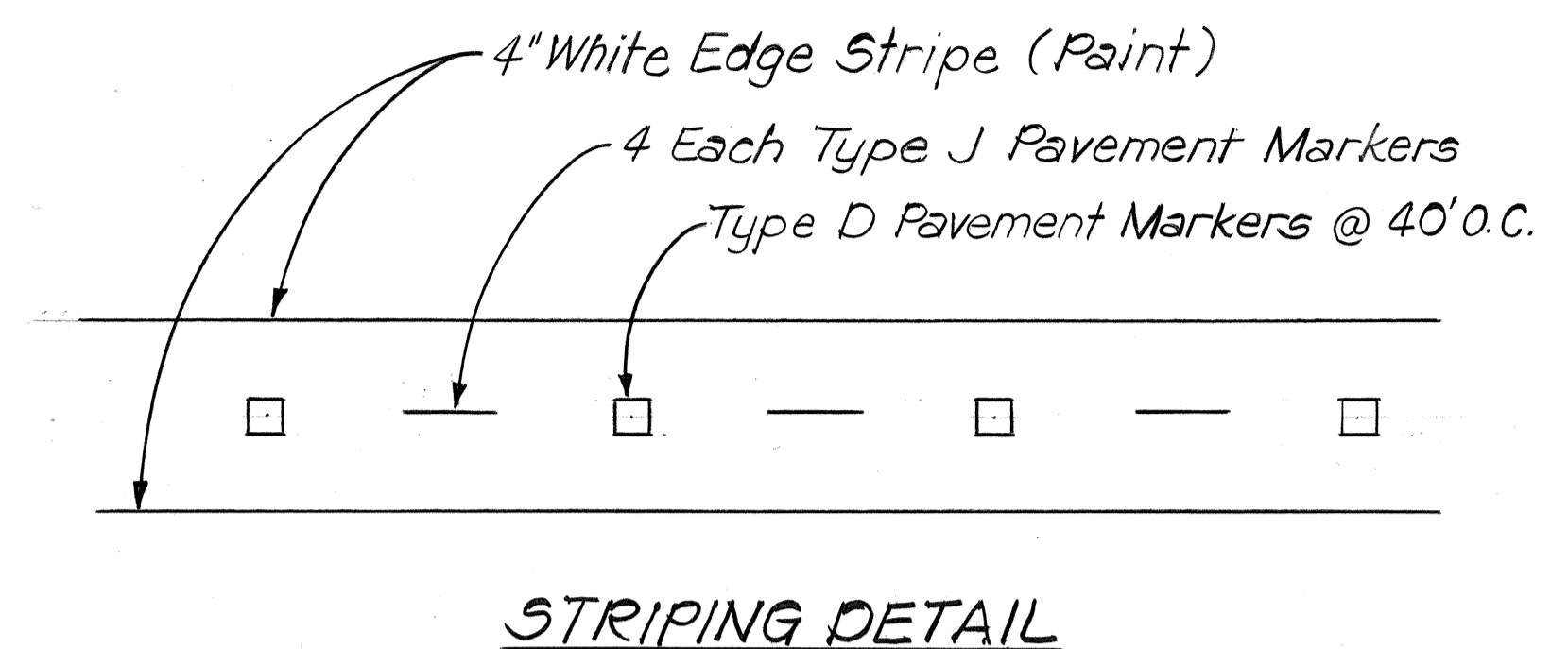
**SIGNING AND  
PAVEMENT MARKINGS**

FAIRINGTON HIGHWAY RESURFACING

Project No. 93A-01-86M  
Scale: 1" = 40' Date: Jan. 1986

SHEET NO. 3 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-01-86M	1986	33	52



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

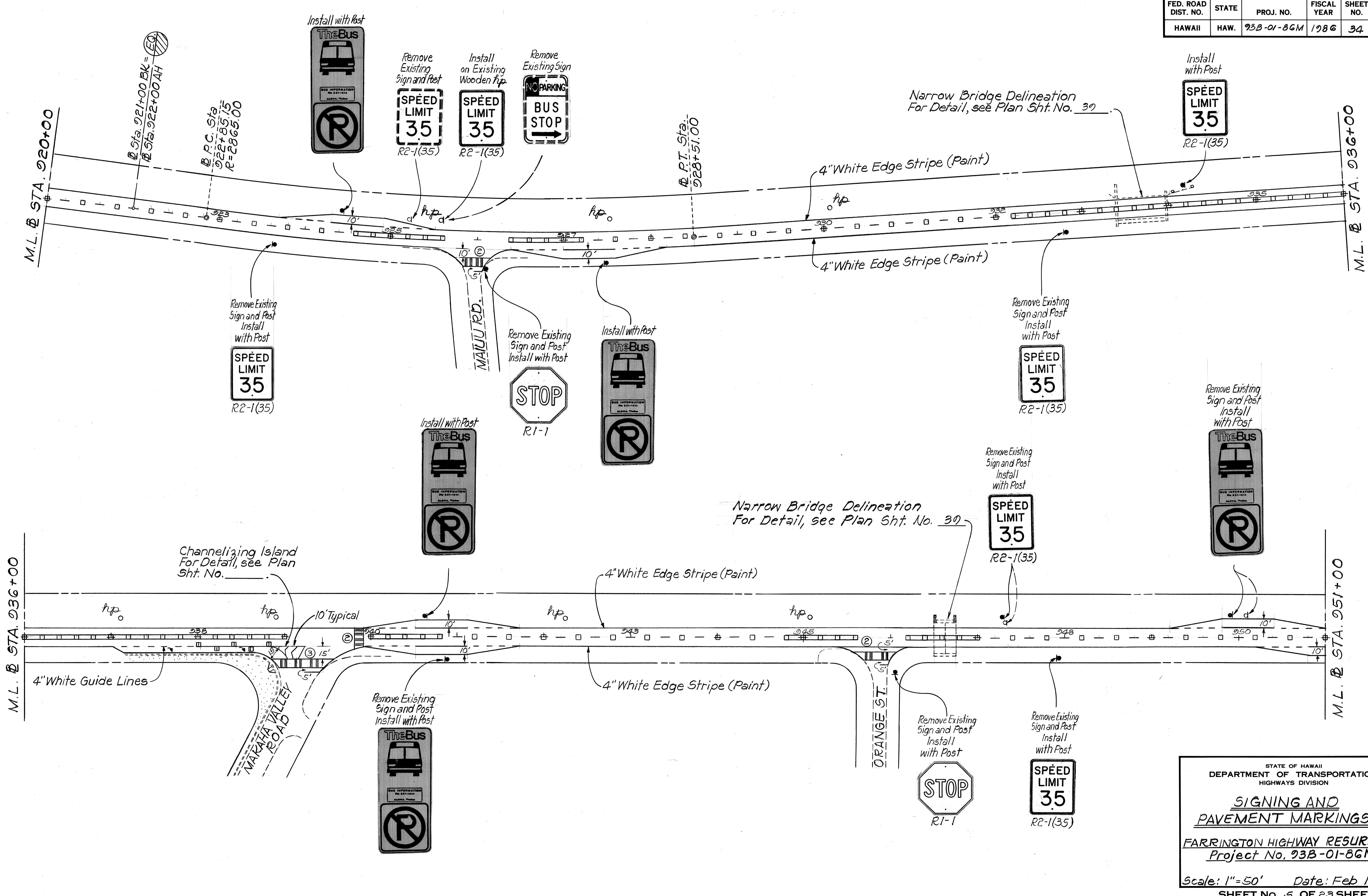
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**SIGNING AND PAVEMENT MARKINGS**

FARRINGTON HIGHWAY RESURFACING  
 Project No. 93B-01-86M

Scale: As Noted Date: Feb. 1986  
 SHEET No. 4 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-01-86M	1986	34	52



SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NO. _____	

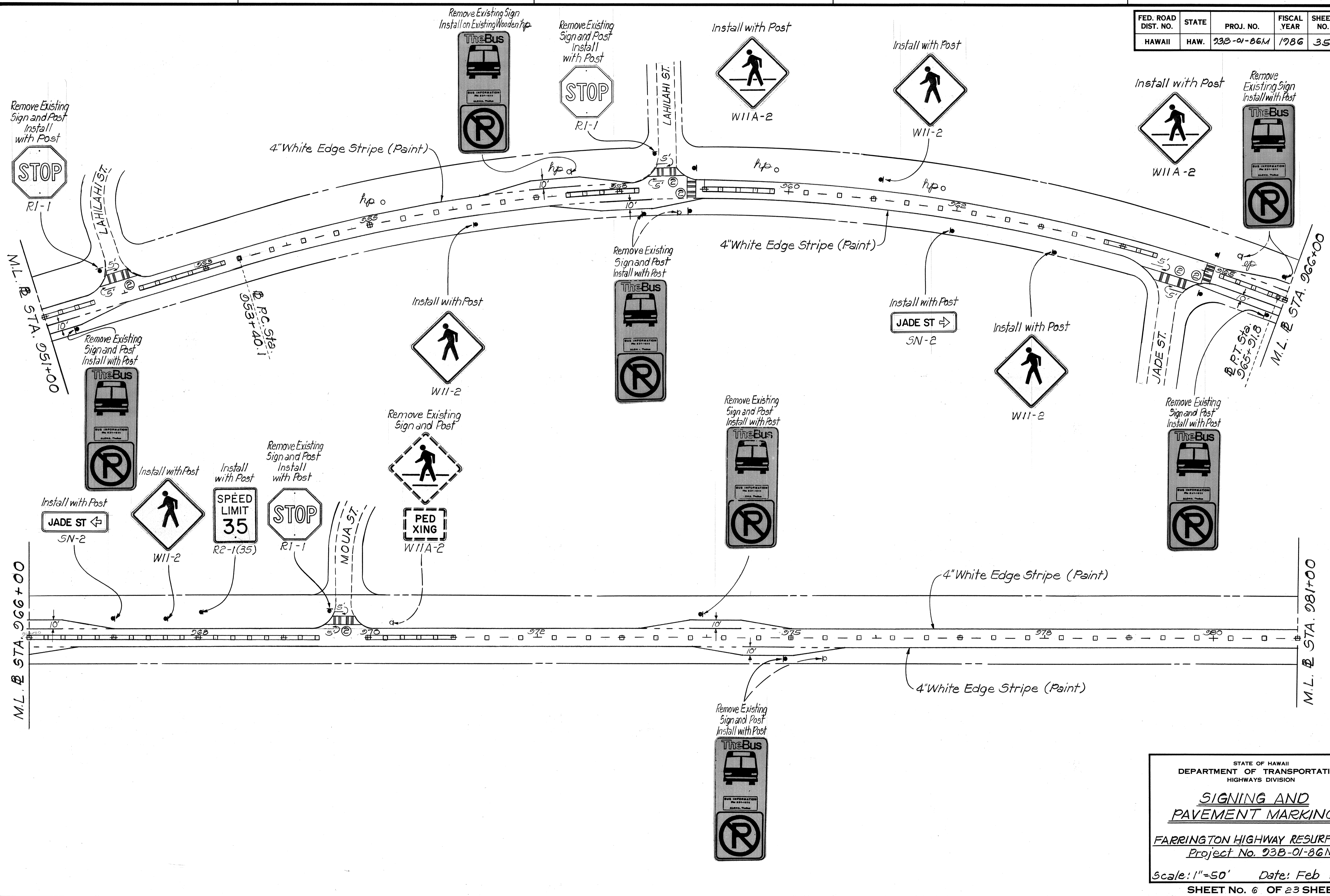
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING AND  
PAVEMENT MARKINGS**

FARRINGTON HIGHWAY RESURFACING  
Project No. 93B-01-86M

Scale: 1"=50' Date: Feb 1986  
SHEET NO. 5 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	23B-01-86M	1986	35	52



DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

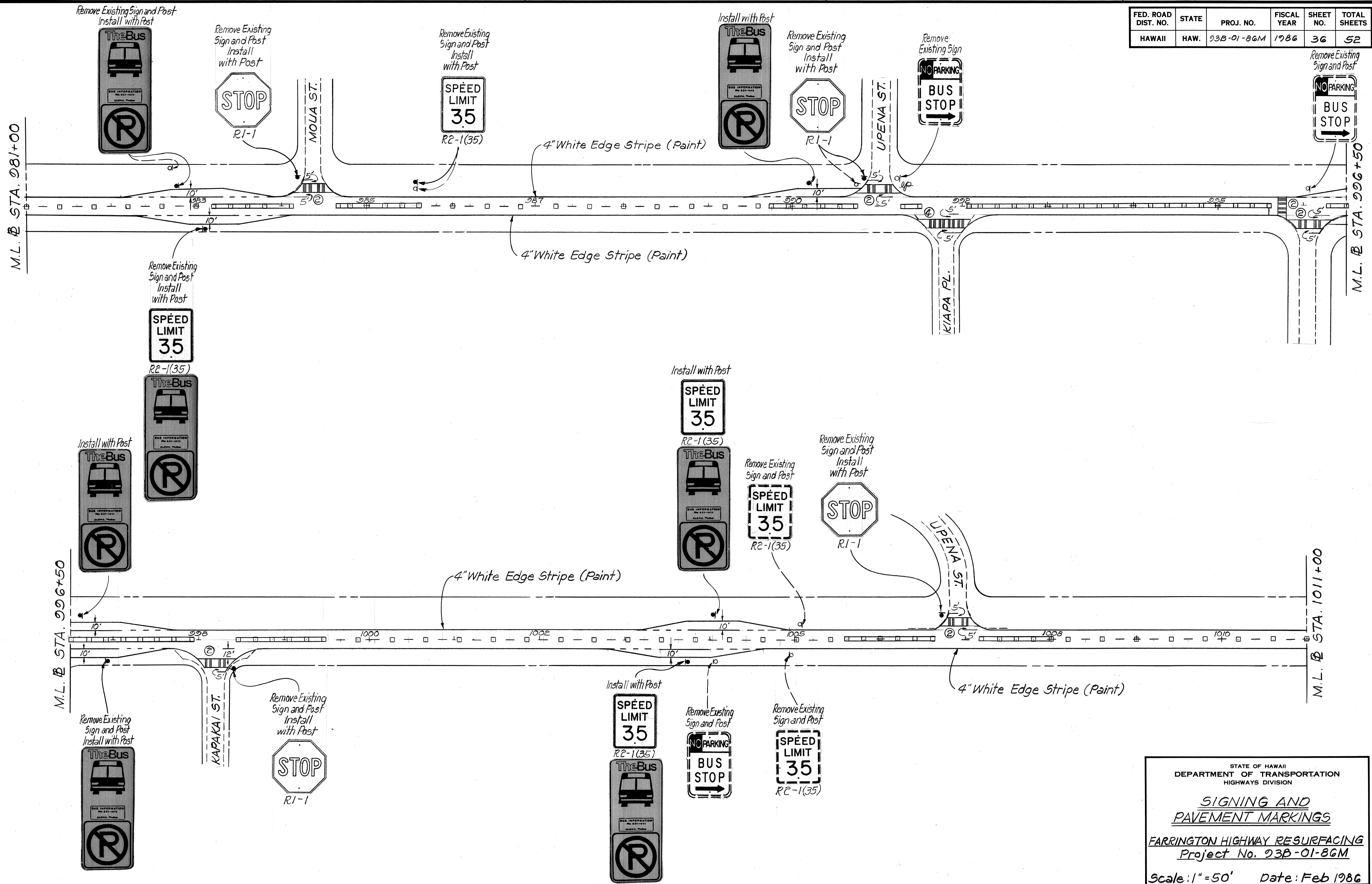
**SIGNING AND  
PAVEMENT MARKINGS**

FARRINGTON HIGHWAY RESURFACING  
Project No. 93B-01-86M

Scale: 1"=50' Date: Feb 1986

SHEET No. 6 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	23B-01-86M	1986	36	52



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

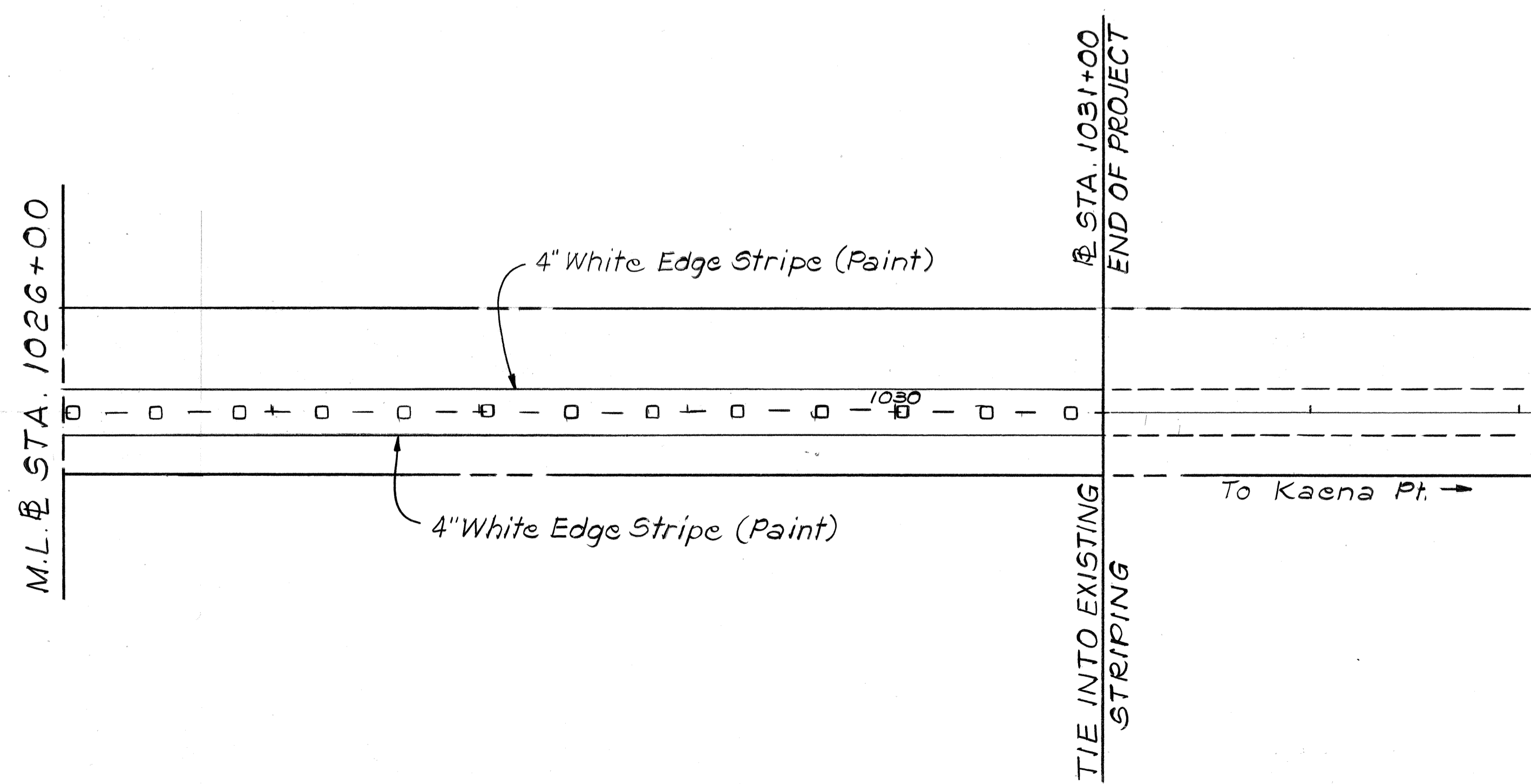
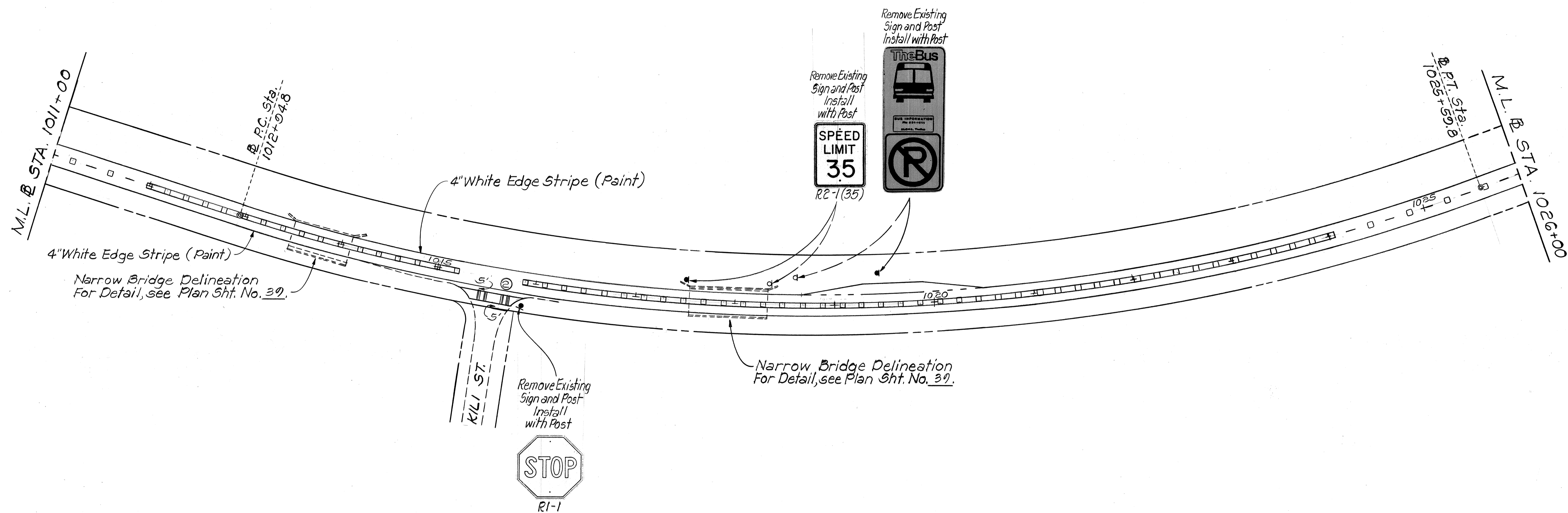
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING AND  
PAVEMENT MARKINGS**

FARRINGTON HIGHWAY RESURFACING  
Project No. 23B-01-86M

Scale: 1" = 50' Date: Feb 1986  
SHEET No. 7 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	23B-01-86M	1986	37	52



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

2/19/87	Revised End of Project from Sta. 1020+50 to Sta. 1031+00.
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**SIGNING AND  
PAVEMENT MARKINGS**

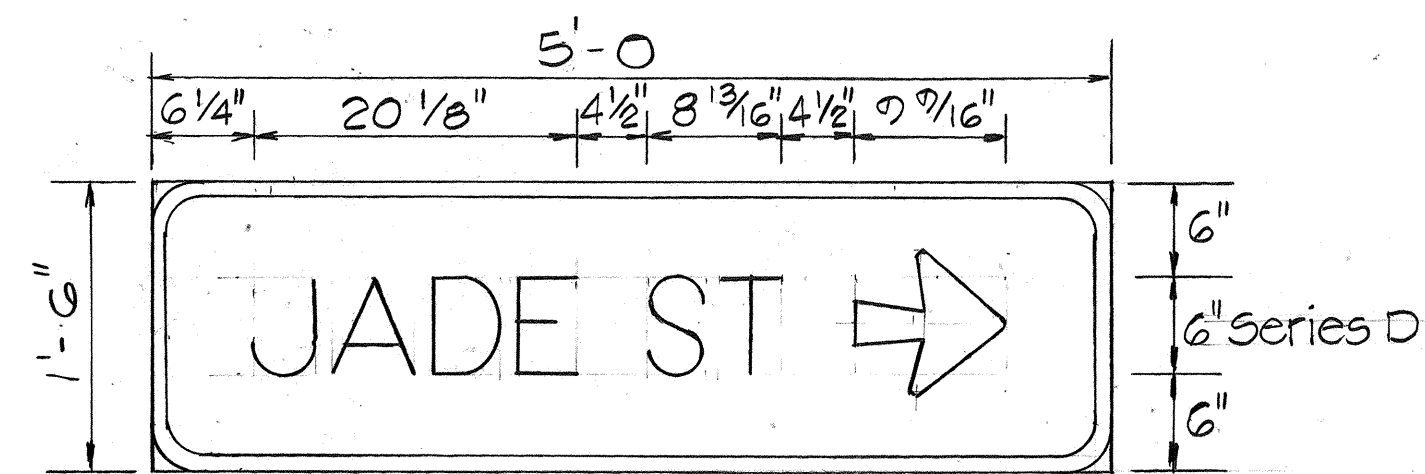
FARRINGTON HIGHWAY RESURFACING  
Project No. 23B-01-86M

Scale: 1"=50' Date: Feb. 1986  
SHEET No. 8 OF 23 SHEETS

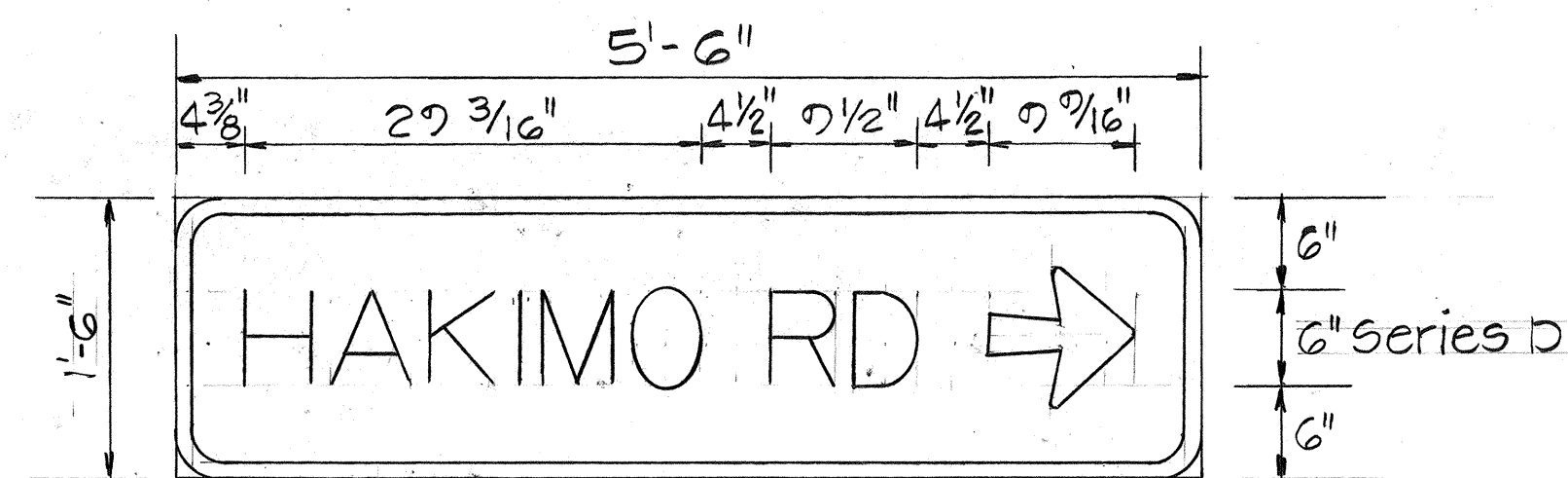
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	23A-01-86M 23B-01-86M	1986	38	52

STREET NAME SIGN NOTES

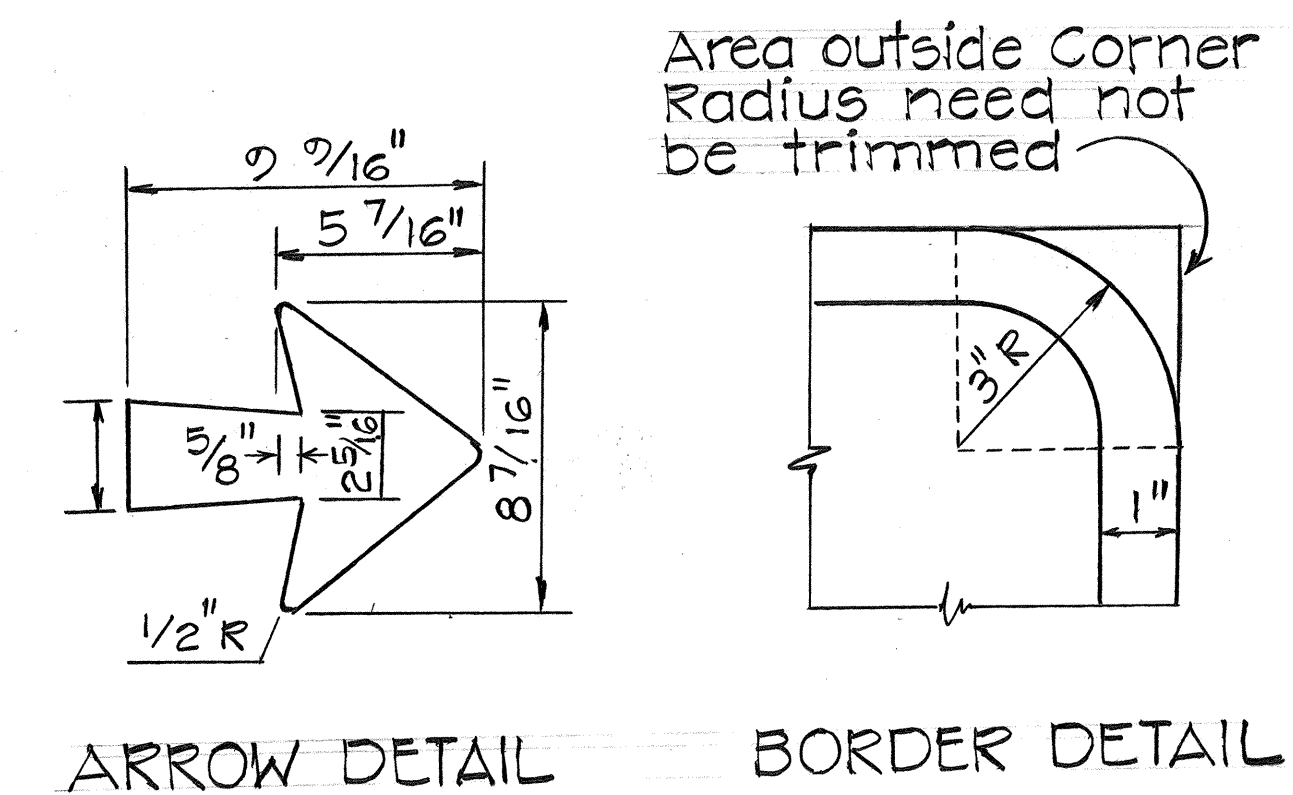
- Street name signs ( ) shall conform to the latest FHWA publications: "Manual on Uniform Traffic Control Devices for Streets & Highways." and as amended "Standard Alphabets for Highway Signs."
- Letters:  
Series D Upper Case  
Color:  
Letters } White Reflective sheeting on Demountable Aluminum  
Borders } cut-outs fastened to Sign Panel with Aluminum Blind Rivets.  
Arrow }  
Background Green Reflective sheeting.  
Sign Panel:  
0.100" TH. Sheet Aluminum.
- If splicing of Sign Panel is Necessary, Contractor shall submit splice details to Engineer for approval.
- For Typical Frame Layout and Mounting Details, see Plan Sht. \_\_\_\_\_ balanced Sign Installation.



SIGN SN-2  
Scale: 1" = 1'-0"



SIGN SN-1  
Scale: 1" = 1'-0"



ARROW DETAIL

BORDER DETAIL

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

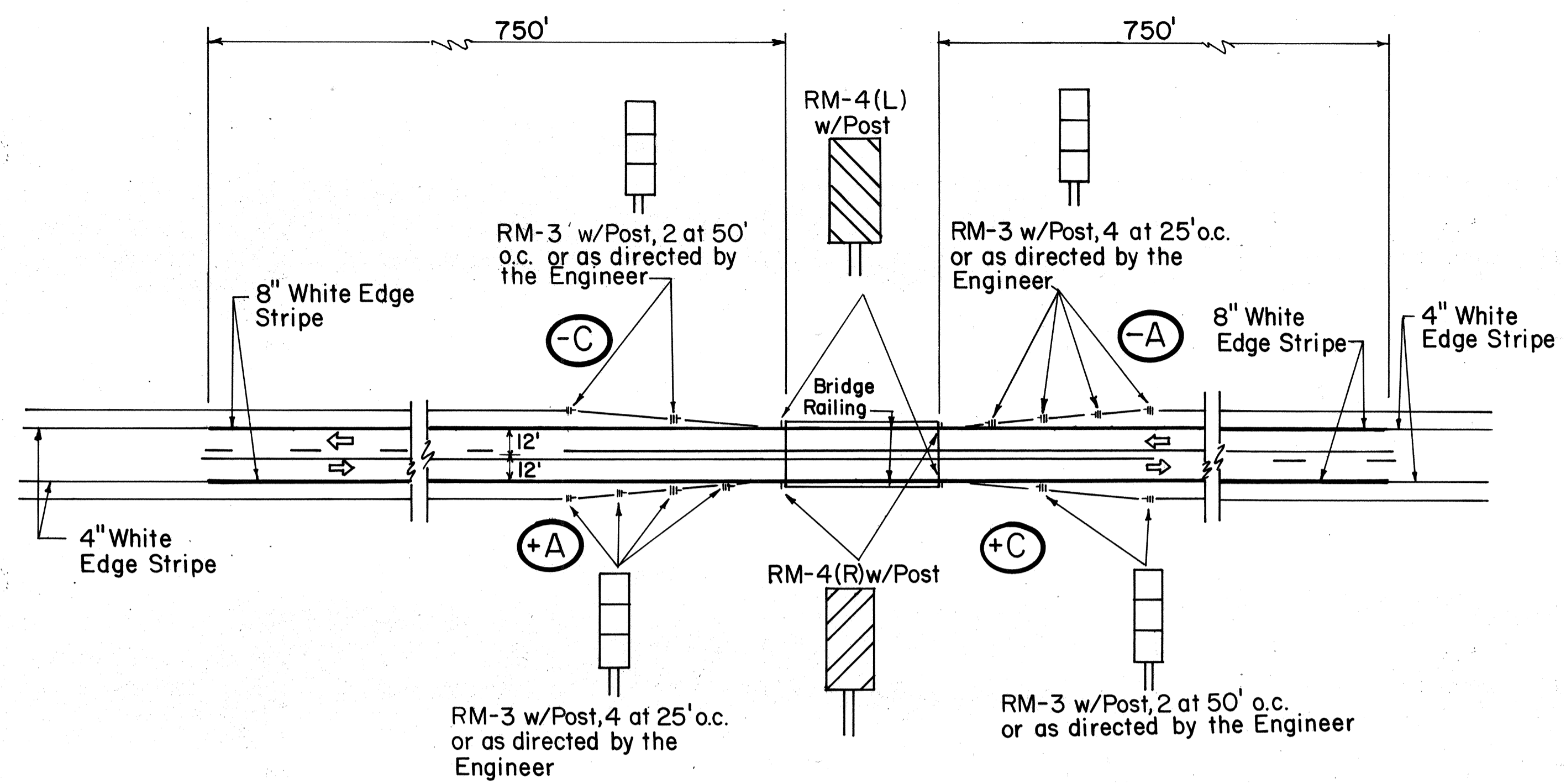
MISCELLANEOUS SIGN DETAIL  
FARRINGTON HIGHWAY RESURFACING

PROJECT NO. 23A-01-86M  
PROJECT NO. 23B-01-86M

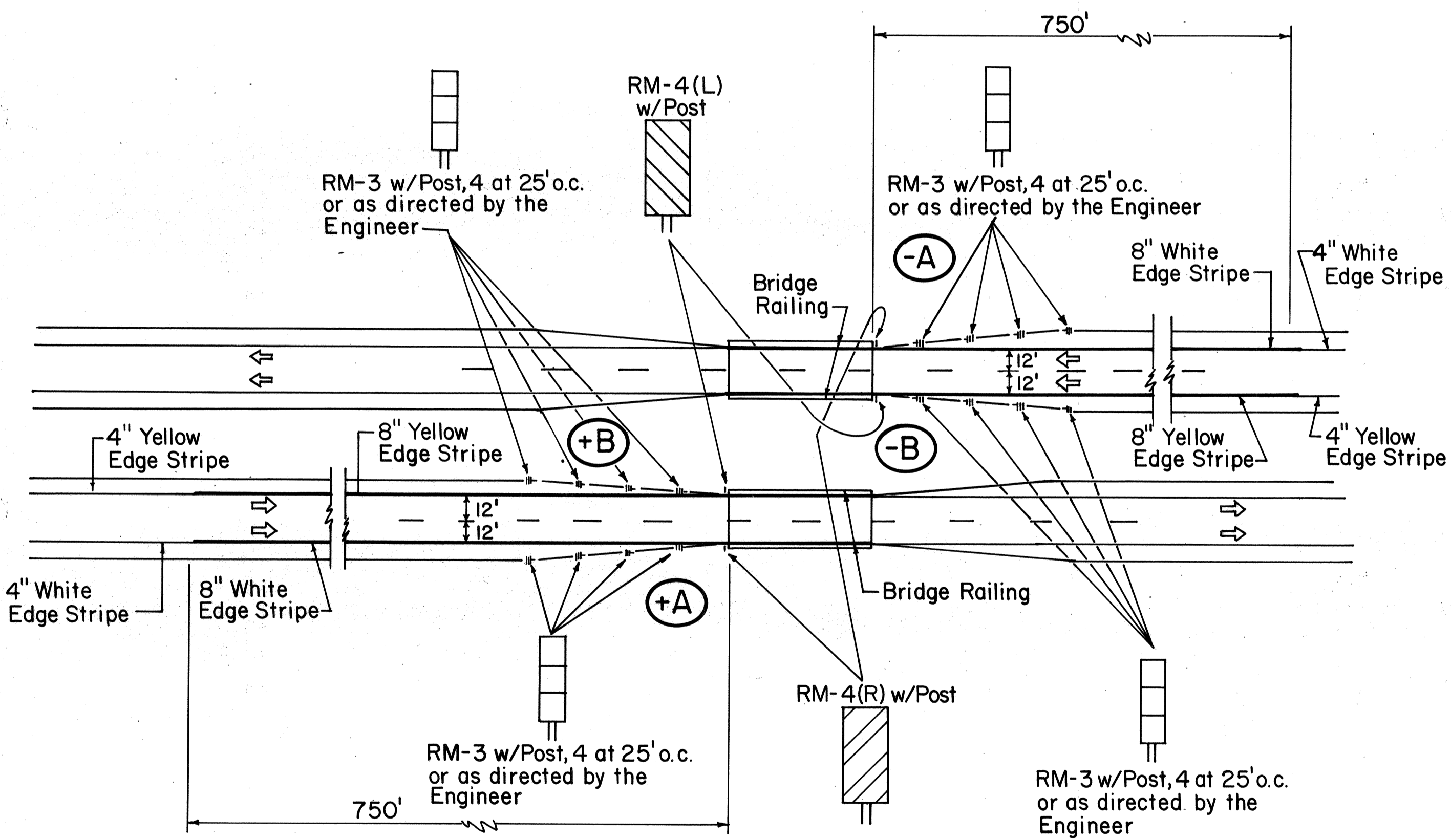
Scale: As Shown Date: \_\_\_\_\_

**SHEET No. 2 OF 23 SHEETS**

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	038-01-86M	1986	30	52

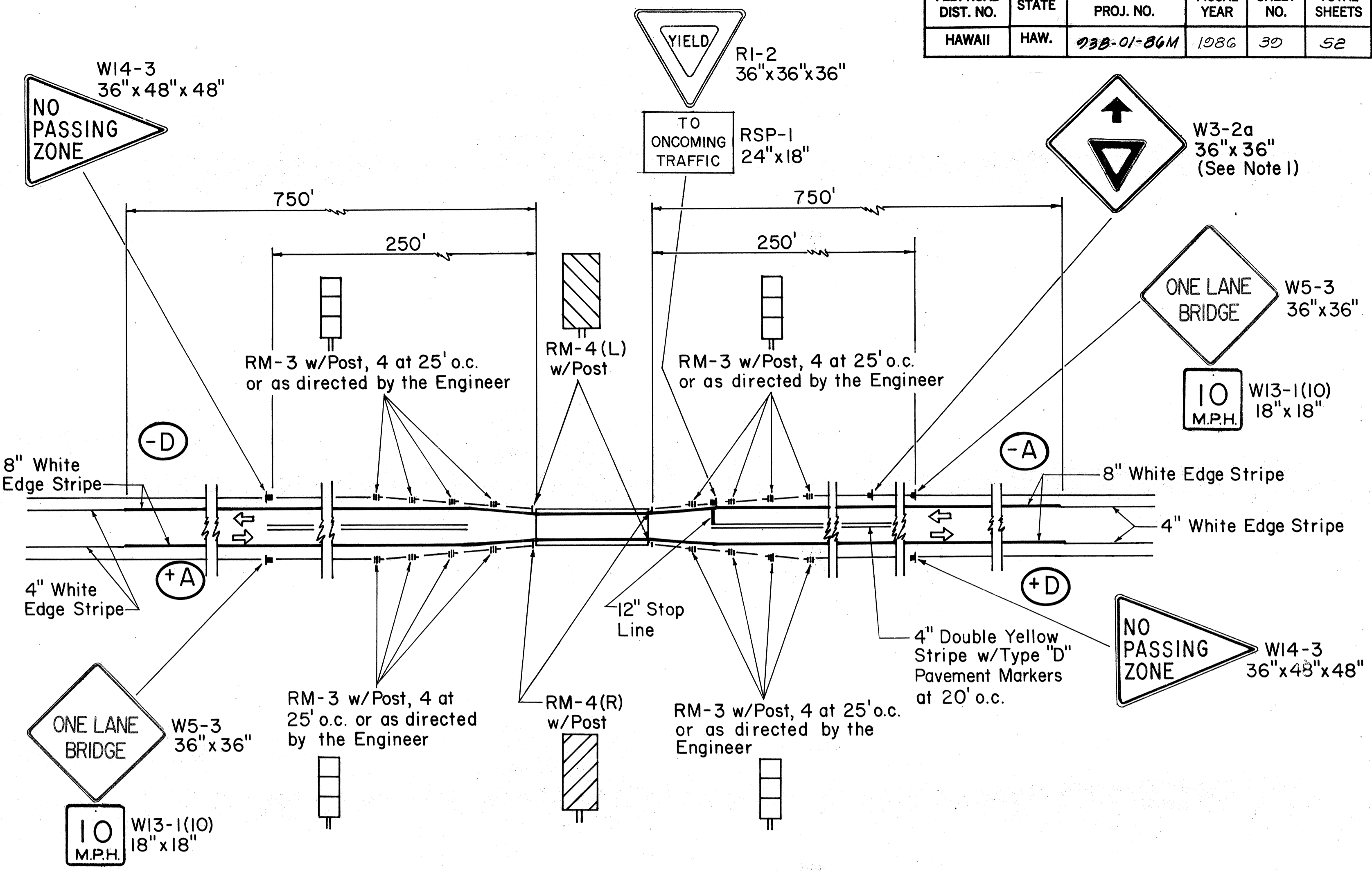


UNDIVIDED HIGHWAY



DIVIDED HIGHWAY

TYPICAL NARROW BRIDGE DELINEATION



TYPICAL ONE LANE BRIDGE DELINEATION

NOTES:

1. YIELD AHEAD sign (W3-2a) shall be installed only on approaches to a YIELD sign (RI-2) that is not visible for a sufficient distance to permit a driver to bring his vehicle to a stop at the YIELD sign. Final location will be determined in the field by the Engineer.
2. Stop line and YIELD signs shall be installed on the approach that has the longer or better sight distance. Final location will be determined in the field by the Engineer.
3. Signs shall be spaced a minimum of 125 feet apart in the same direction of traffic.

LEGEND

- ⇒ Direction of traffic
- + Increasing Log Miles
- Decreasing Log Miles
- +A Type of reflector marker treatment

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

**TYPICAL DELINEATION AND  
PAVEMENT MARKINGS AT BRIDGES**

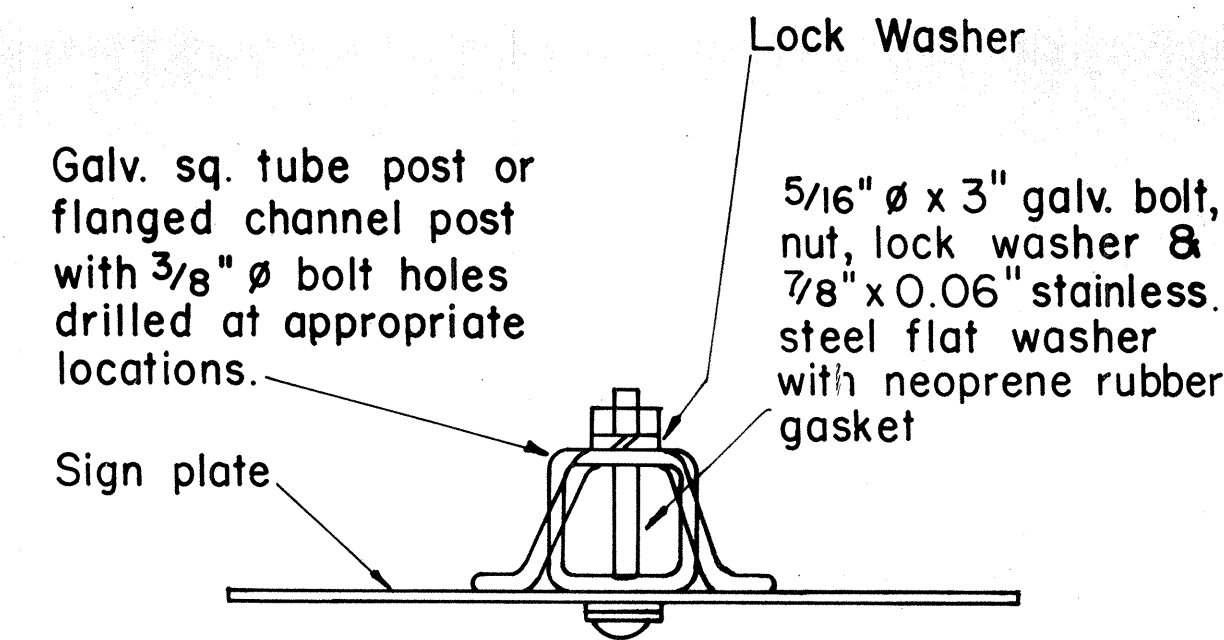
Scale: N.T.S.

SHEET No. 10 OF 23 SHEETS

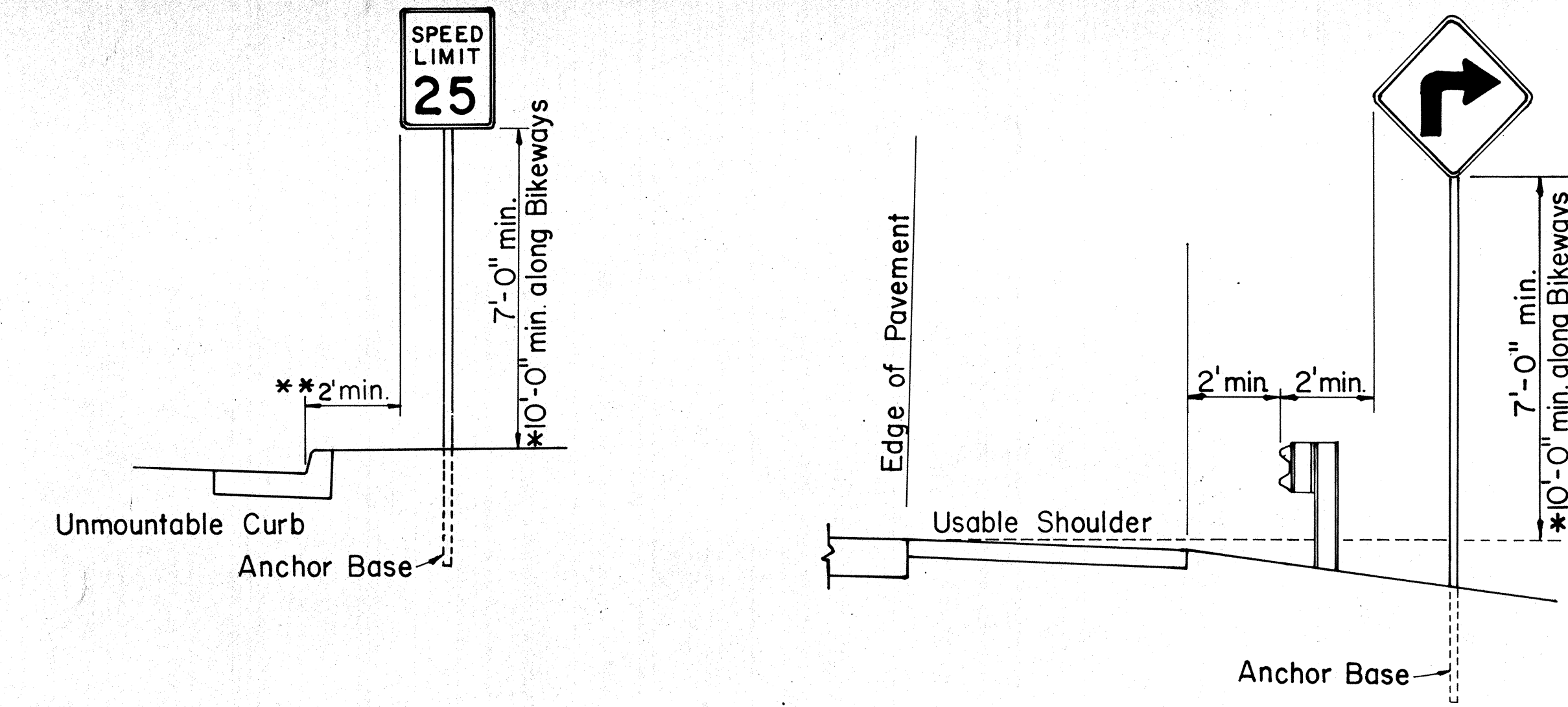
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-86M 03B-01-86M	1986	40	52

**GENERAL NOTES**

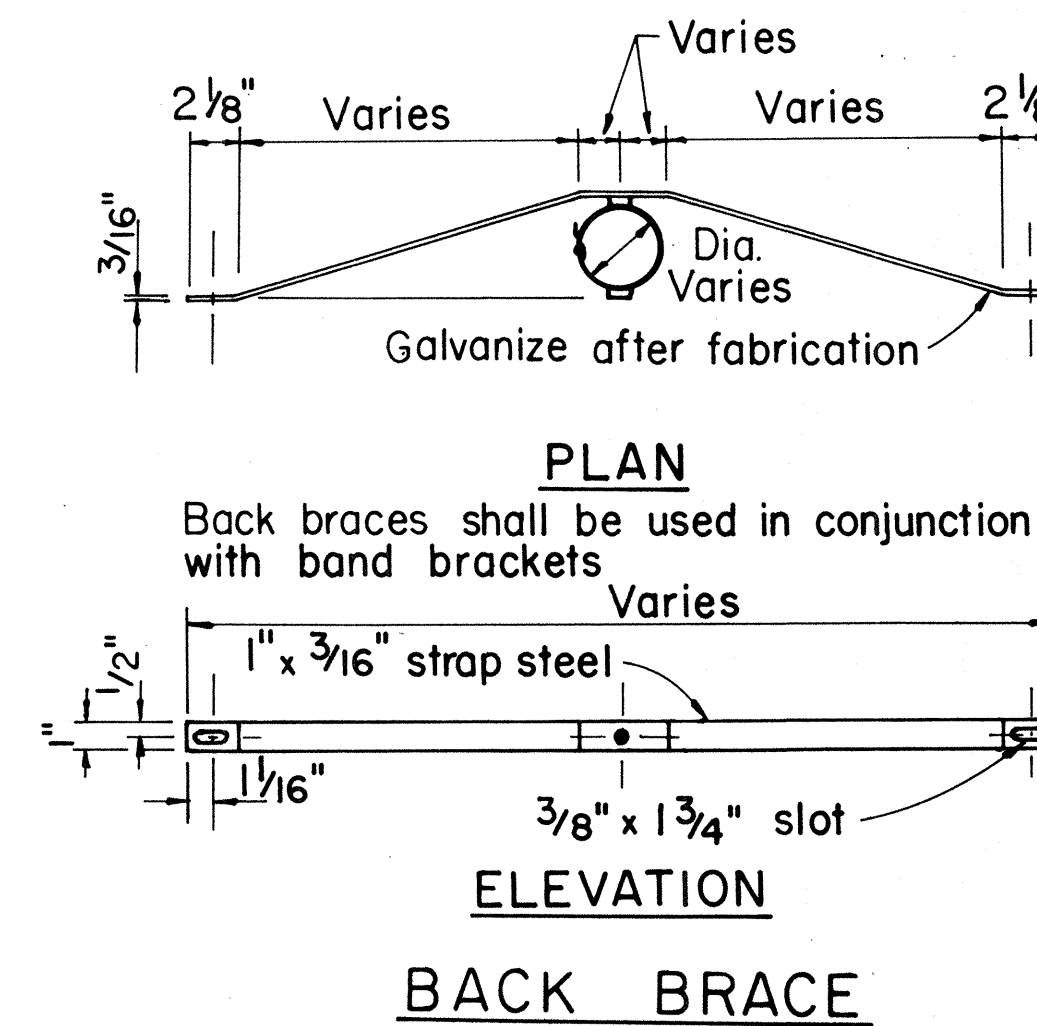
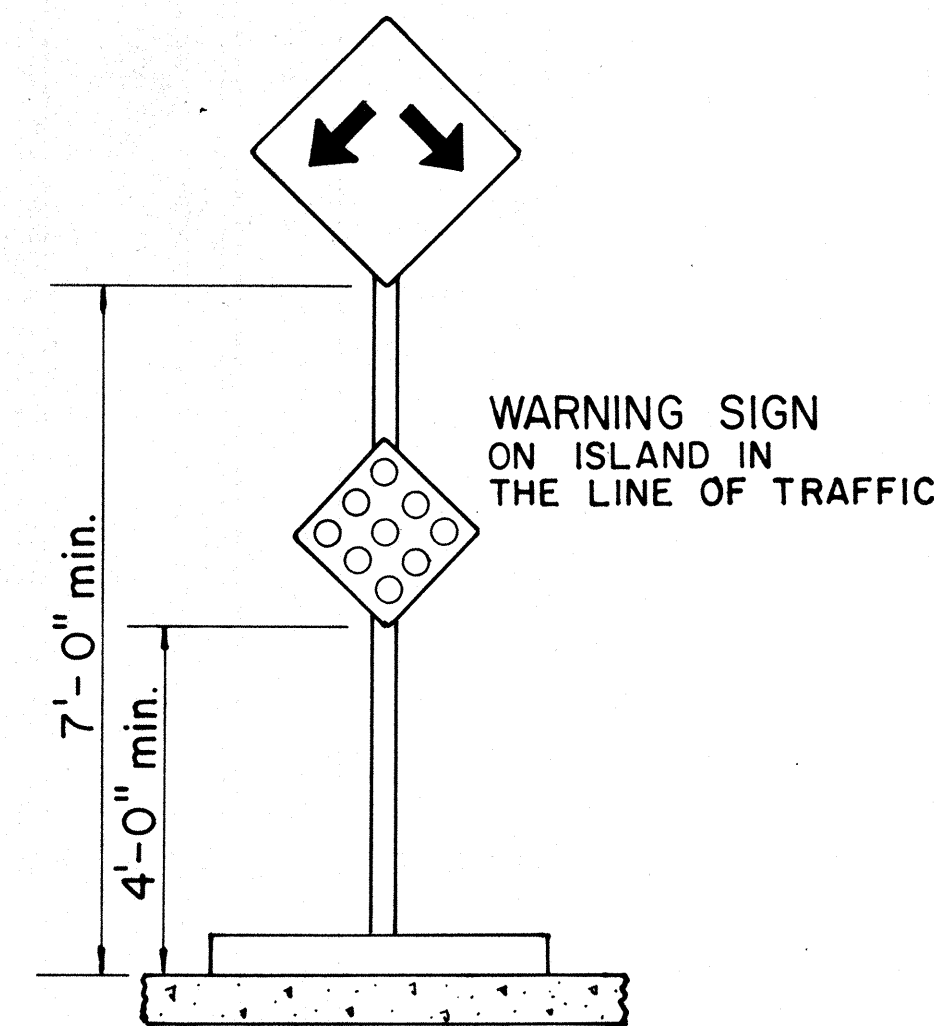
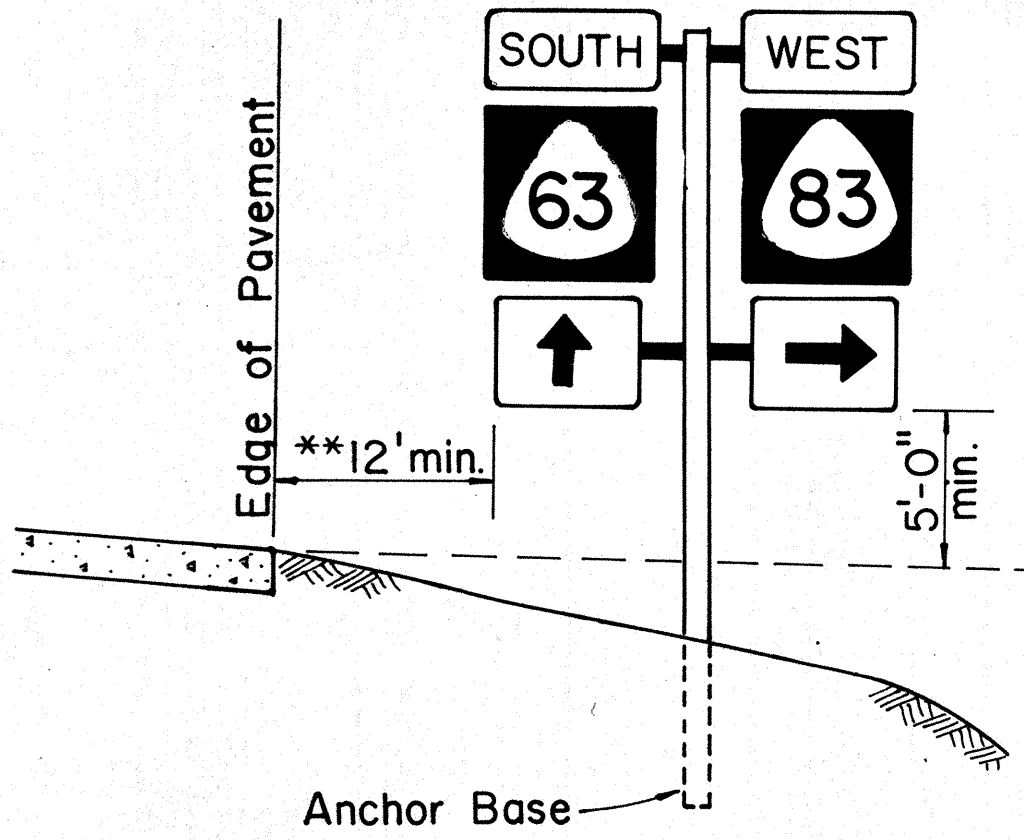
- Signs shall be placed in conformance with positions shown and described in the "Manual on Uniform Traffic Control Devices for Streets and Highways", 1978, Part II, Section 2A-21, as amended, and as supplemented herein.
- Sign 48" and wider or larger than 10 sq. ft. in area shall be mounted on two or 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 3/2" 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.



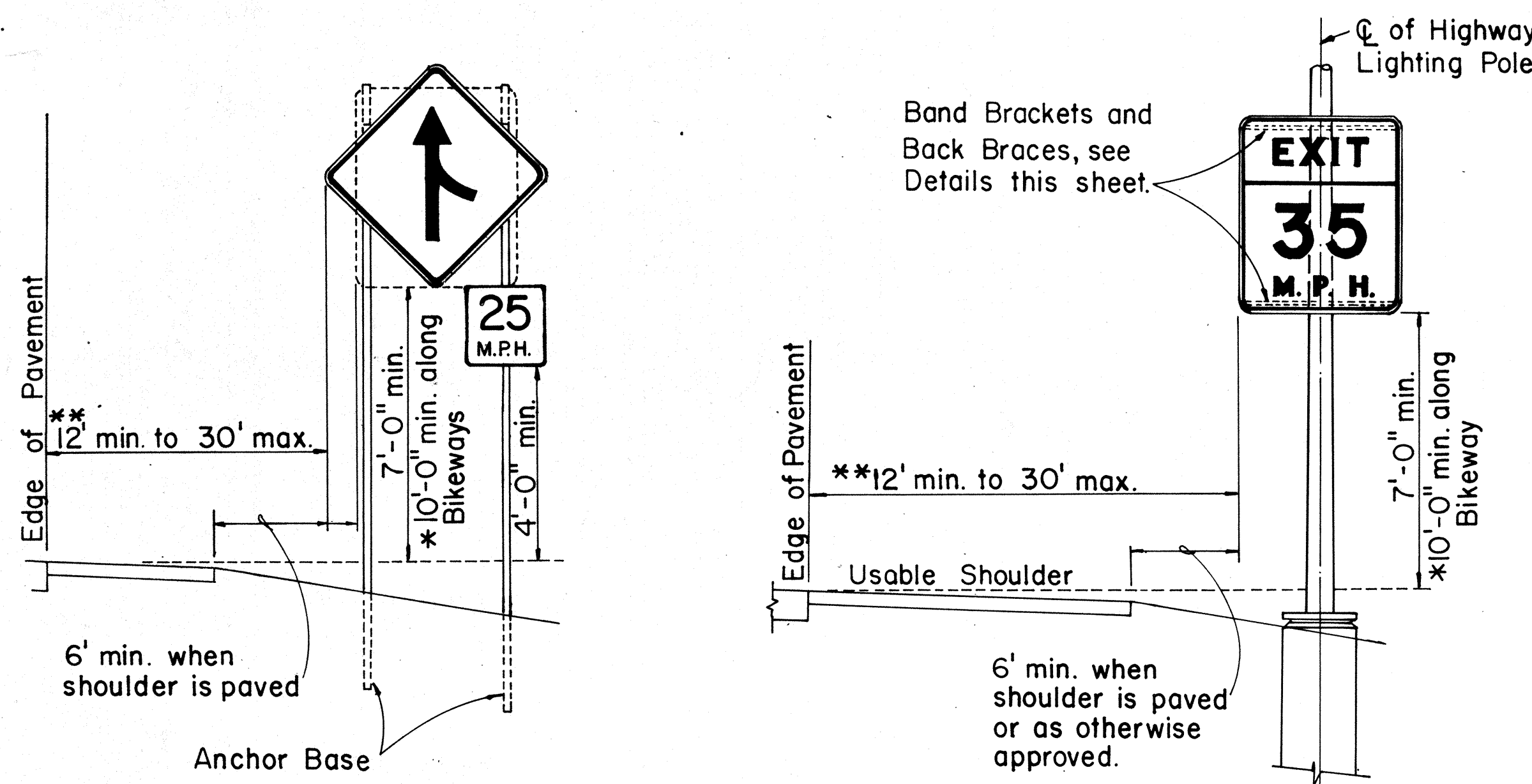
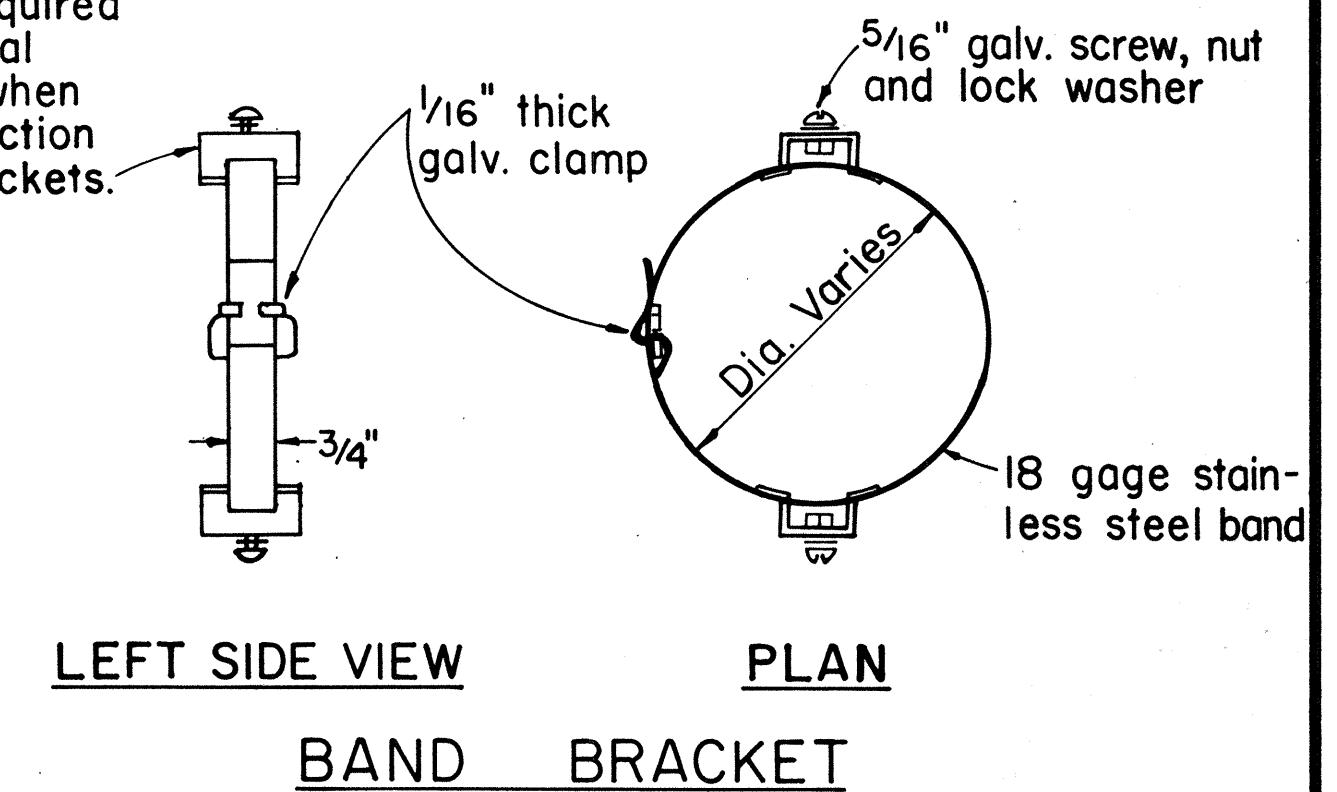
**GALVANIZED SQUARE TUBE OR FLANGED CHANNEL POST**



**ROADSIDE ASSEMBLY RURAL DISTRICT**



Additional. Required for bidirectional mounting or when used in conjunction with band brackets.



**TYPICAL MOUNTING DETAILS**

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 100 approved 11/15/77	[Signature]	10-18-83

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

APPROVED:  
*P. Fujiyama* 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. 11 OF 23 SHEETS DT 100

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

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-01-86M 93B-01-86M	1986	41	52

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* 9/21/82  
TRAFFIC ENGINEER DATE

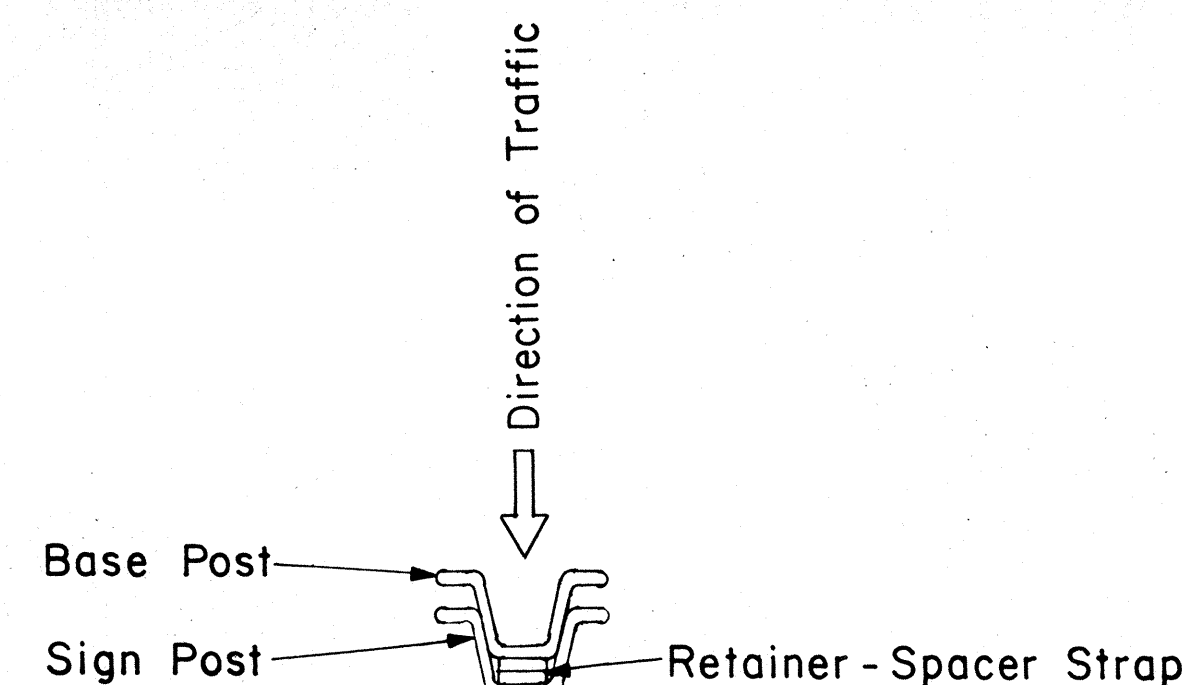
APPROVED:

*Hubert Salsichis* 9/22/82  
ASSISTANT CHIEF, ENGINEERING DATE

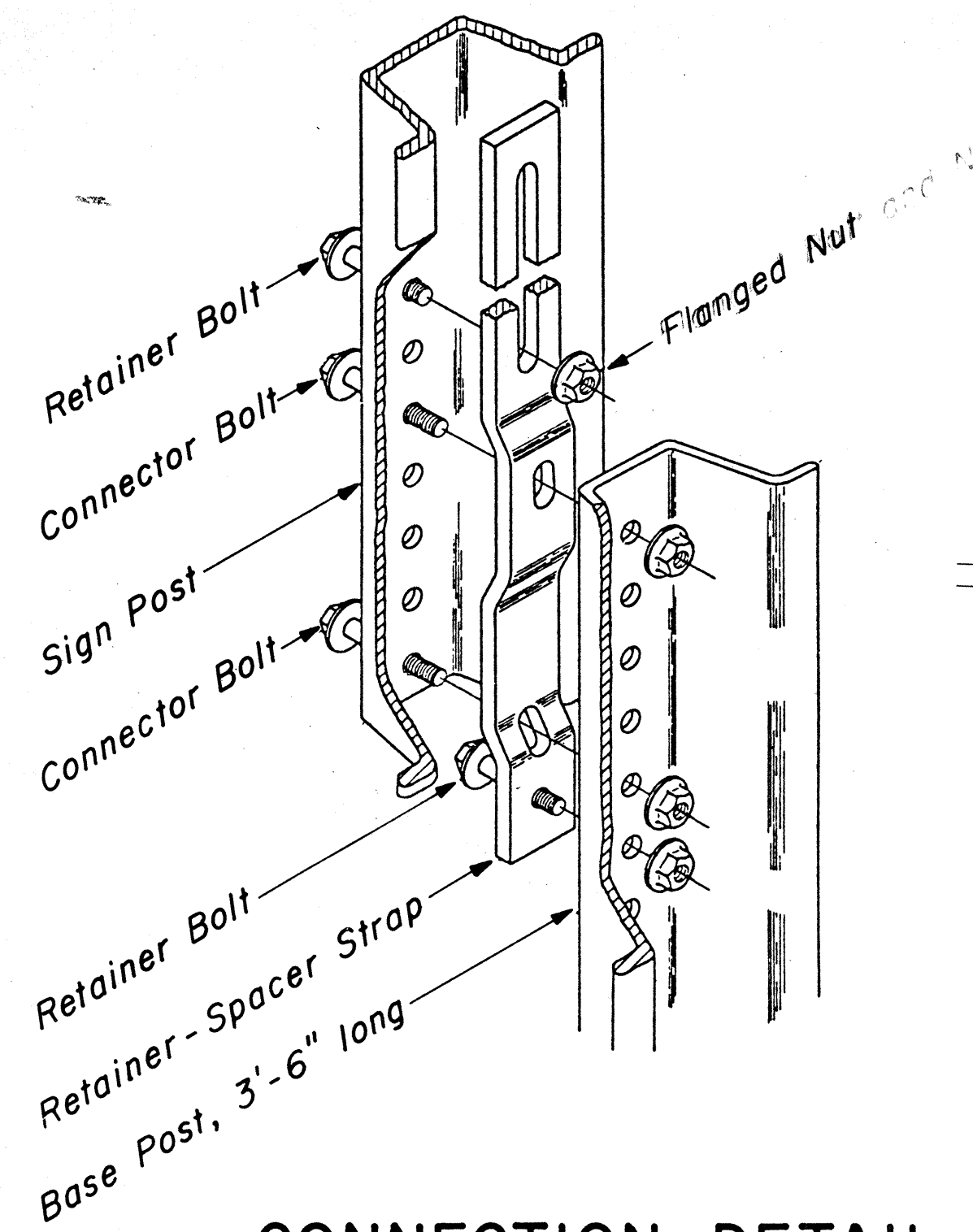
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STANDARD DETAILS**  
**GALVANIZED FLANGED CHANNEL**  
**SIGN POST MOUNTING**

Scale: As Shown Date: Sept. 1982

SHEET No. 12 OF 23 SHEETS DT 100A

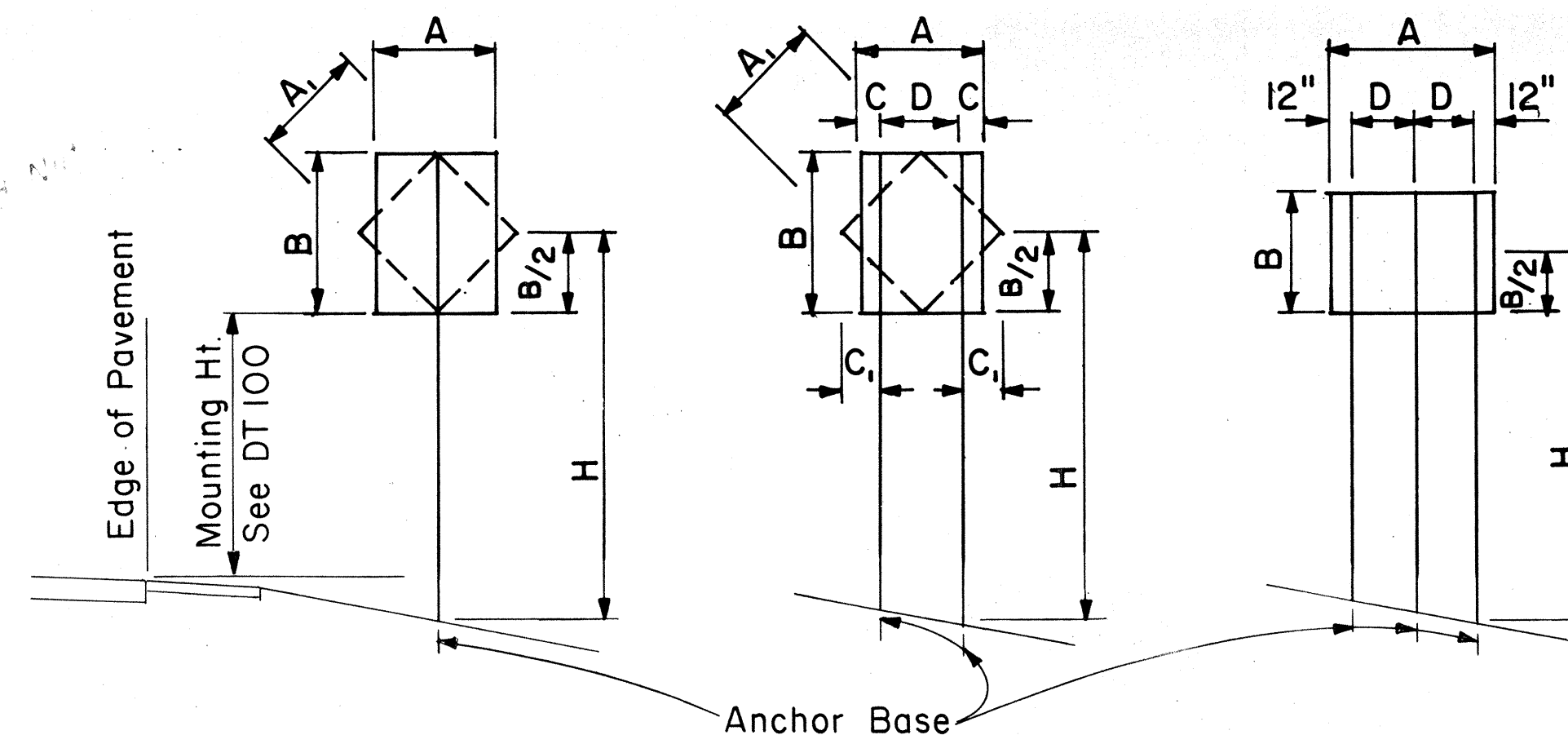


TOP VIEW



CONNECTION DETAIL

Not to Scale



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

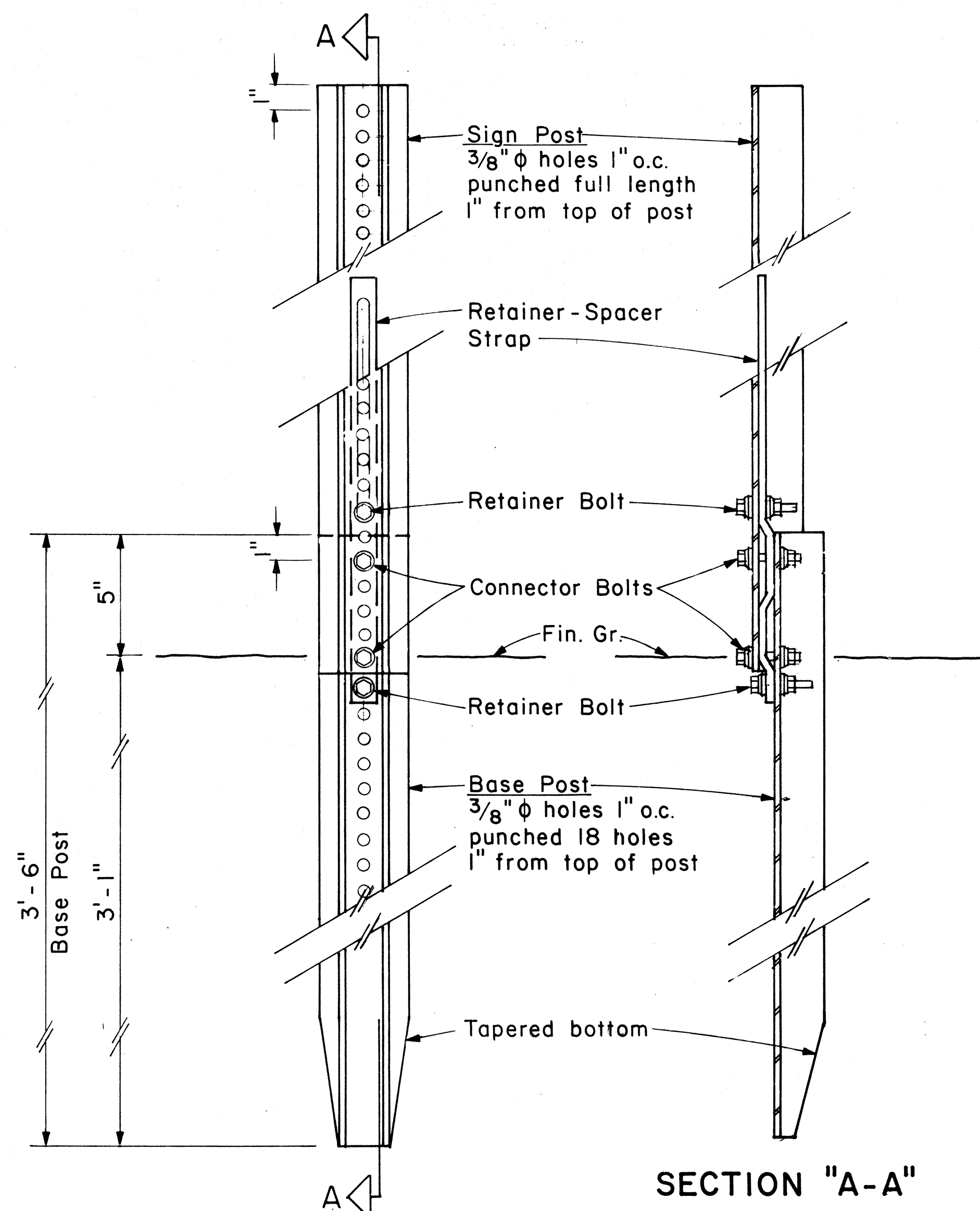
Post Size	A x B x H (Factor)	H = Ground Level to Midpoint (ft.)						A x B (Area, sq. ft.)
		7	8	9	10	11	12	
2.50 lbs./ft.	124	17.71	15.50	13.77	12.40	11.27	10.33	
4.00 lbs./ft.	241	34.43	30.13	26.78	24.10	21.91	20.08	

#### 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

NO.	REVISION	APPROVED BY	DATE

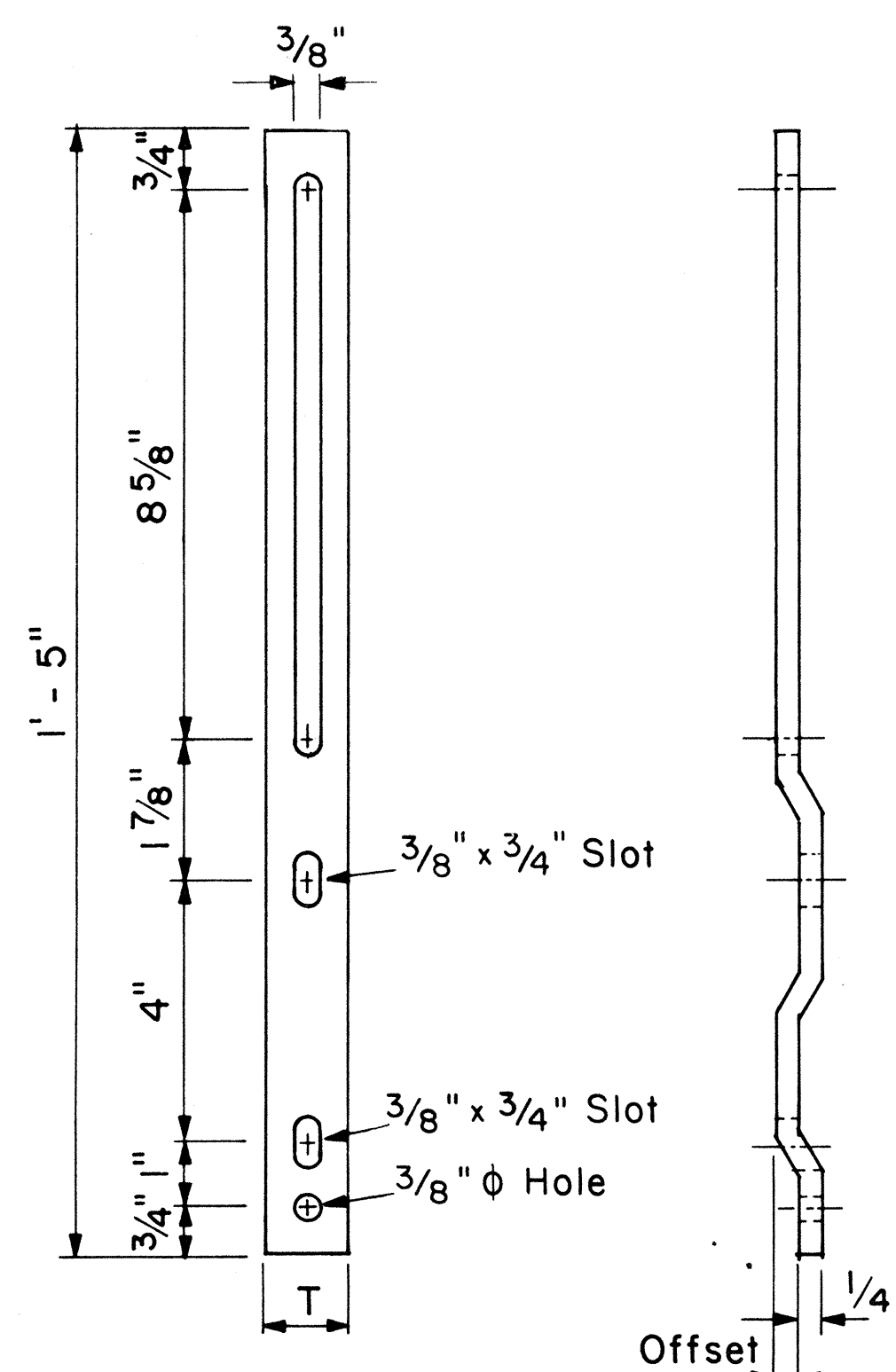


SECTION "A-A"

BACK VIEW

### ANCHOR BASE DETAIL

Scale: 3" = 1'-0"



### 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"

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

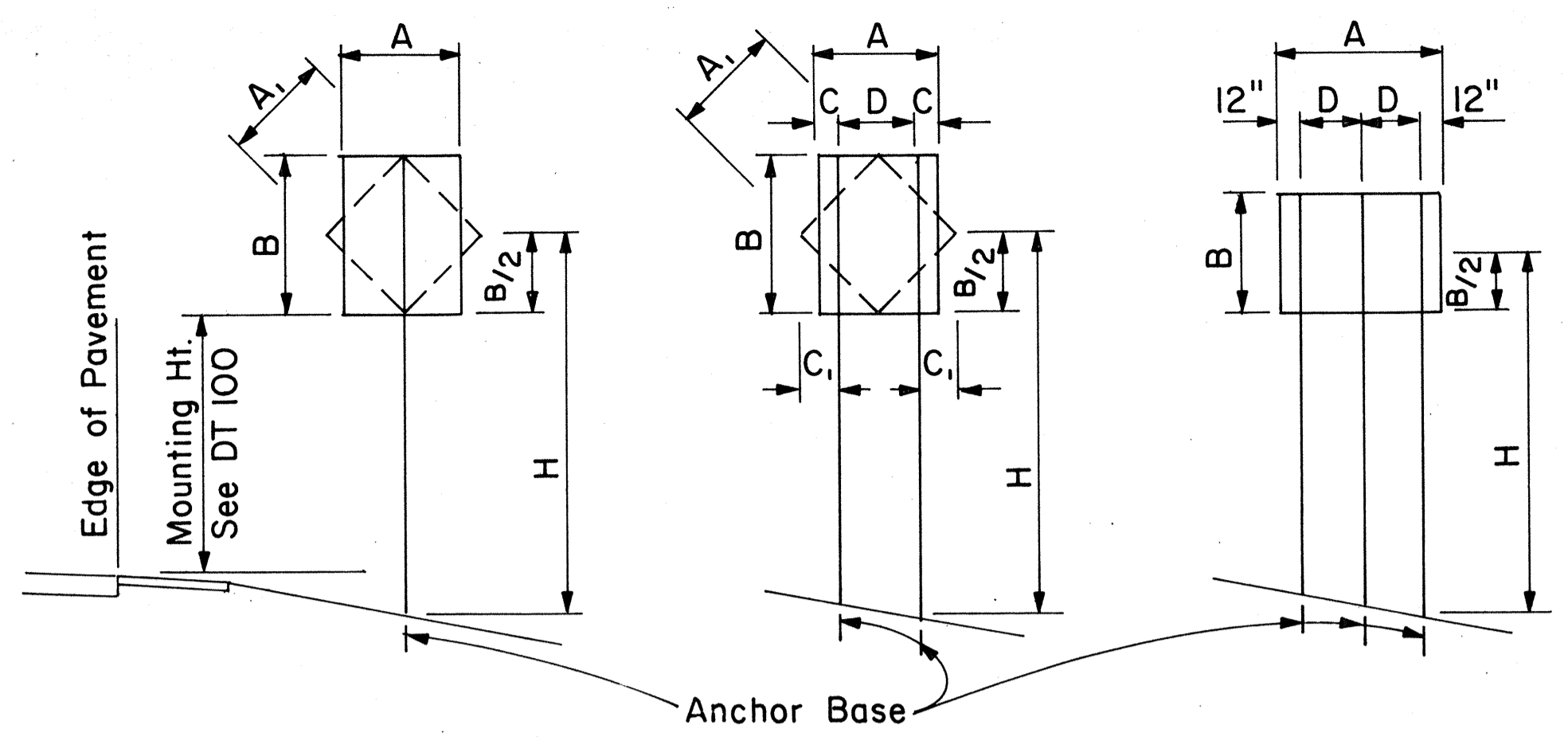
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-BGM 03B-01-BGM	1986	4E	5E

### 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 7/16" φ 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,  
 $Maximum\ sign\ area\ (A \times B) = \frac{Factor}{H}$

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.



**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

NO.	REVISION	APPROVED BY	DATE

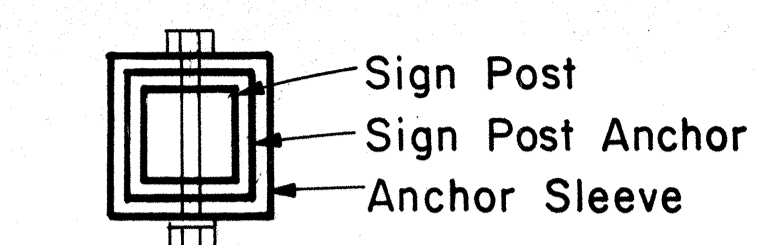
APPROVAL RECOMMENDED:  
*Eishi Tanaka* 9/2/82  
 TRAFFIC ENGINEER DATE

APPROVED:  
*Herbert S. Ishii* 9/22/82  
 ASSISTANT CHIEF, ENGINEERING DATE

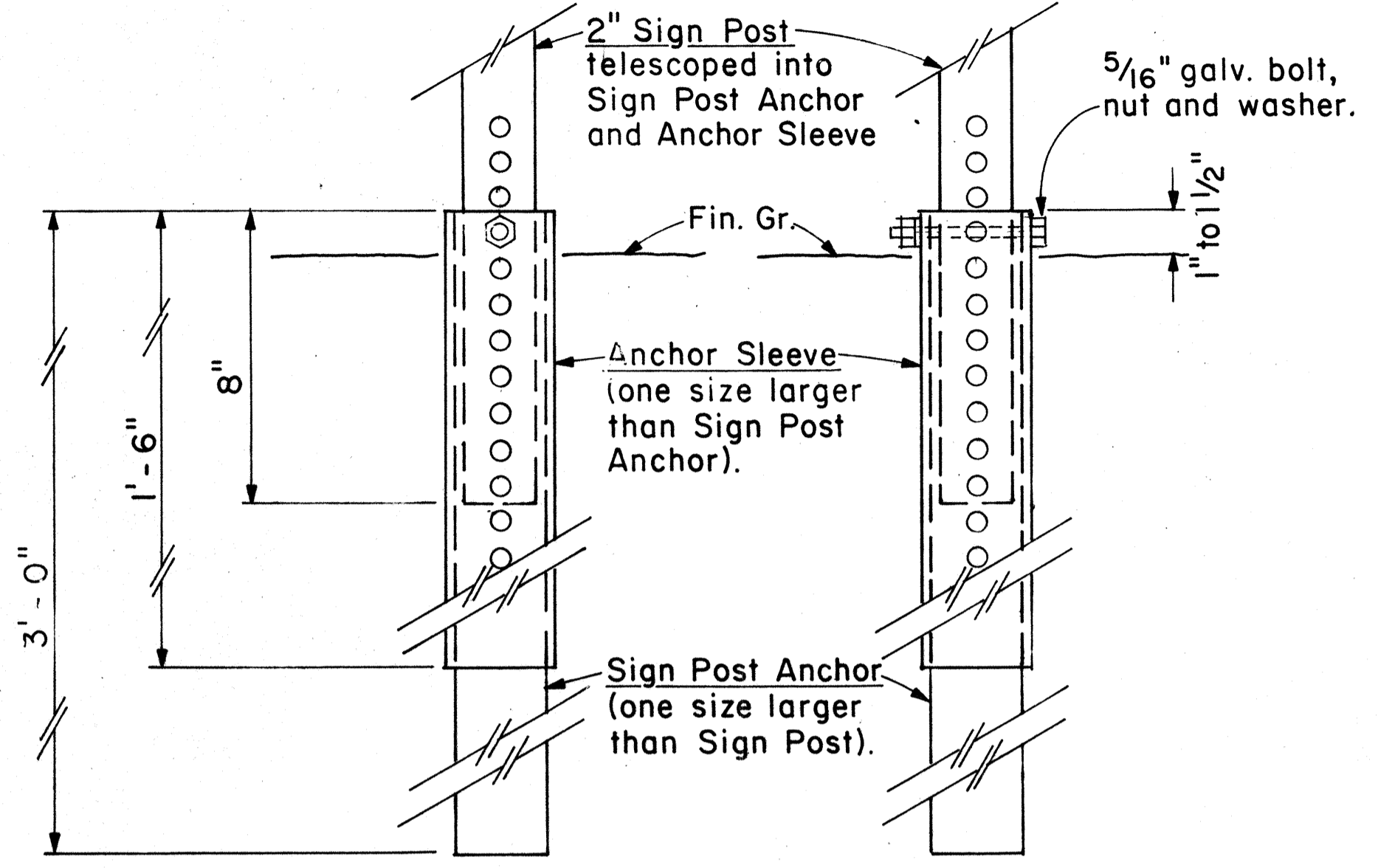
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

STANDARD DETAILS  
 GALVANIZED SQUARE TUBE  
 SIGN POST MOUNTING

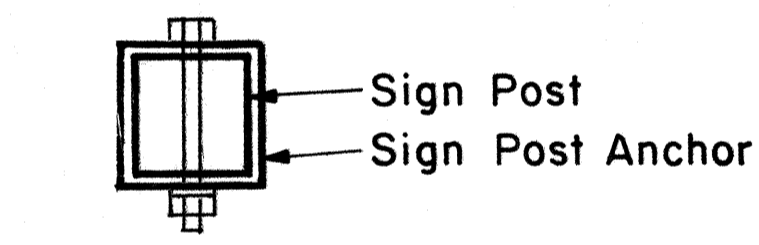
Scale: As Shown Date: Sept. 1982  
 SHEET NO. 13 OF 23 SHEETS DT100B



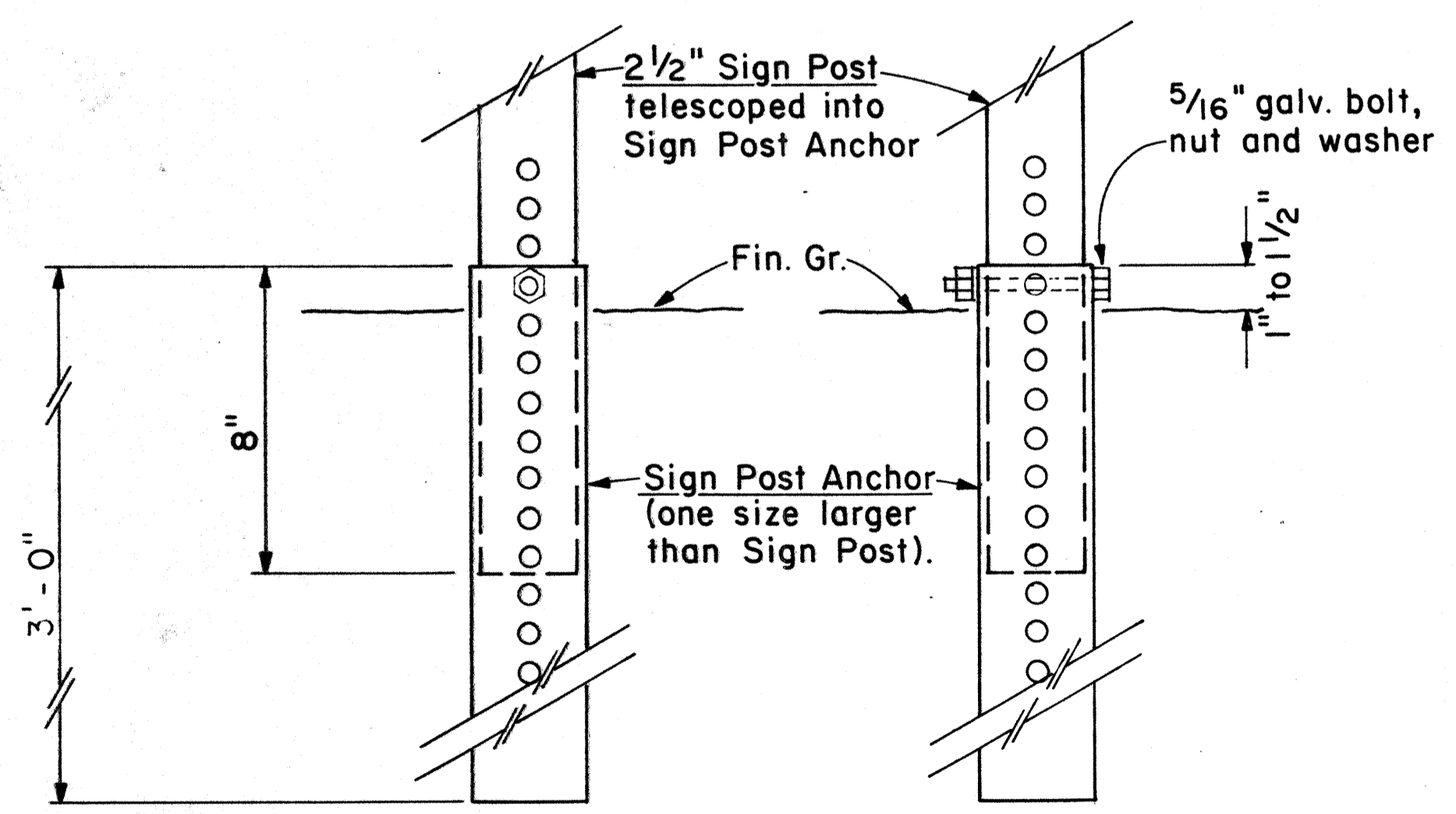
TOP VIEW



BACK VIEW SIDE VIEW  
**2" SIGN POST INSTALLATION**



TOP VIEW



BACK VIEW SIDE VIEW  
**2 1/2" SIGN POST INSTALLATION**

### ANCHOR BASE DETAIL

Scale: 3" = 1'-0"

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-86M 03B-01-86M	1986	43	52

**GENERAL NOTES**

1. Sign details shall conform to the latest editions of FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," "Standard Alphabets for Highway Signs," and "Standard Highway Signs," 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:  
*Hubert Datsun* 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.	10/16/74
3	Added General Note 5	H.T.	6/9/79
4	Revised Signs and General Note 1	E.T.	9/18/82

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

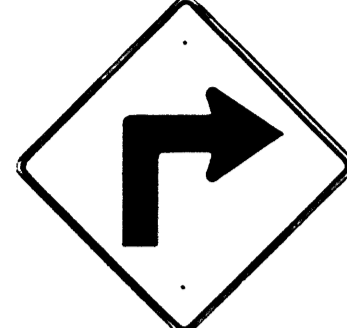
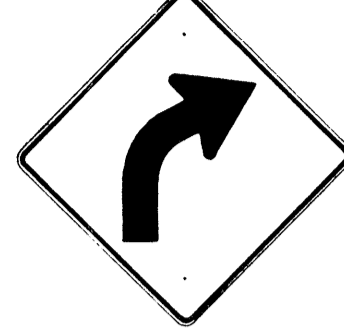
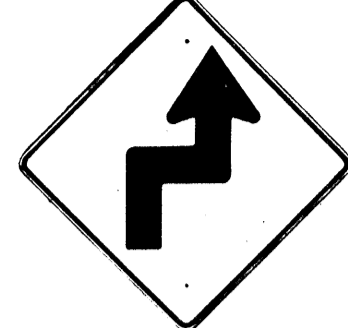
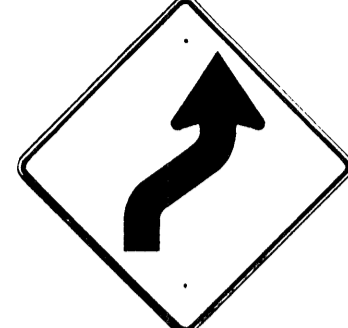
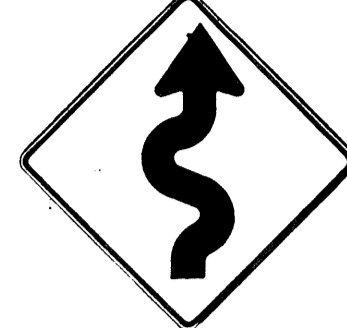
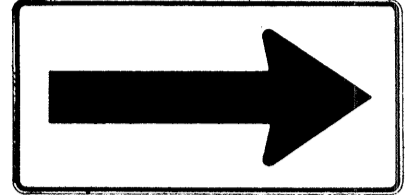
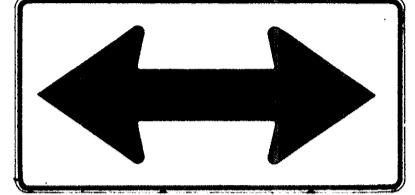
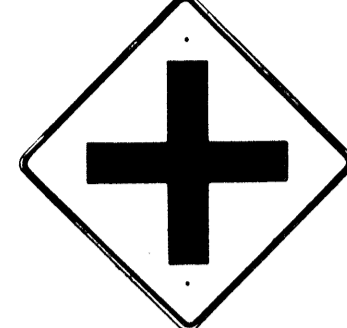
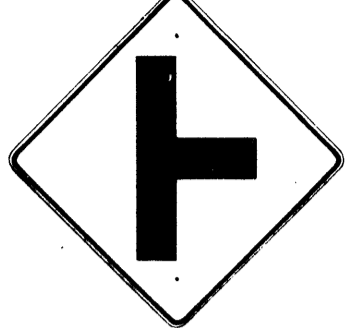
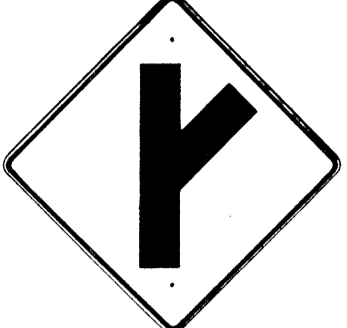
**STANDARD DETAILS  
 REGULATORY SIGNS**

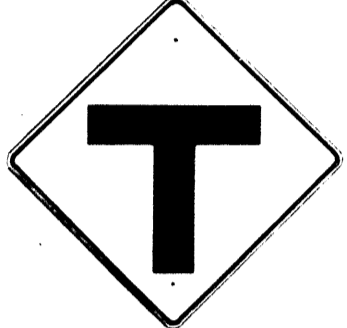
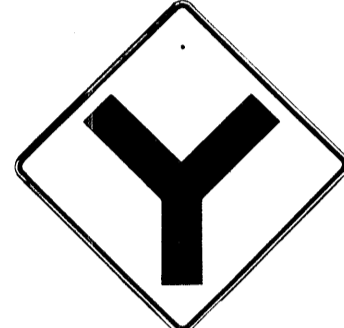


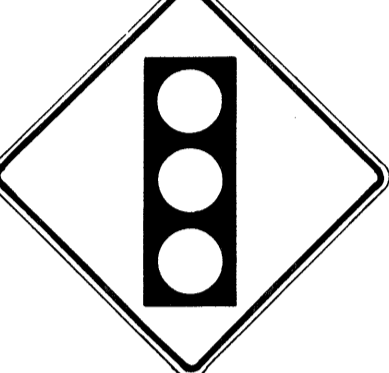

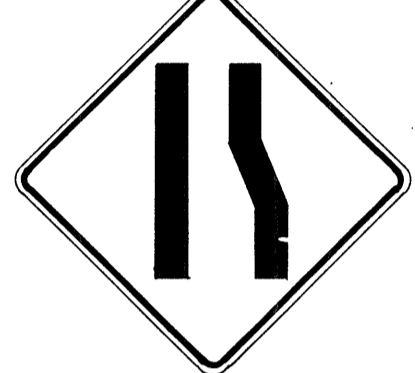



NOT TO SCALE











SHEET No. 14 OF 23 SHEETS DT 101








DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NO.	_____

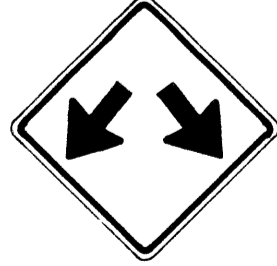


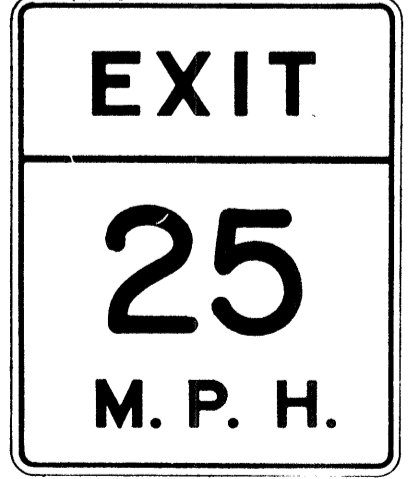
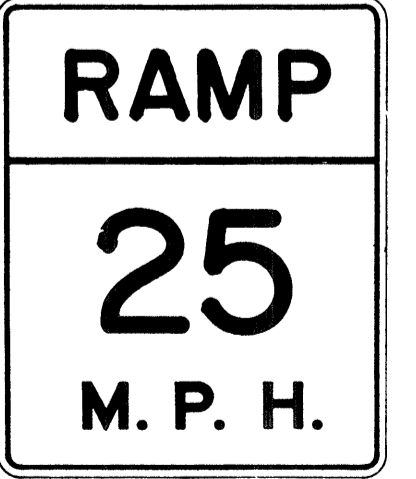


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII*	HAW.	93A-01-26M 93B-01-26M	1986	44	52

 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"
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 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" W5-1-A 48"x48"	 W5-2 30"x30" W5-2-A 36"x36"	 W5-3 36"x36" W5-3-A 48"x48"
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 W6-1 36"x36" 24"x18" W6-1-A 48"x48" 24"x18"	 W6-2 36"x36" 24"x18" W6-2-A 48"x48" 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 48"x48" 24"x18"	 W7-2 24"x18"	 W8-1 30"x30" W8-1-A 36"x36" W8-1-B 48"x48"	 W8-2 30"x30" W8-2-A 36"x36" W8-2-B 48"x48"	 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" W11-1-B 48"x48"	 W11A-2 30"x30" 24"x18" W11A-2-A 36"x36" 24"x18" W11A-2-B 48"x48" 24"x18"	 W11-4 30"x30" 24"x18" W11-4-A 36"x36" 24"x18" W11-4-B 48"x48" 24"x18"	 W11-5 30"x30" 24"x18" W11-5-A 36"x36" 24"x18" W11-5-B 48"x48"
--	---	--	--	--	---	--

 W12-1 24"x24" W12-1-A 36"x36" W12-1-B 48"x48"	 W12-2(12'-6") 36"x36" 24"x18" W12-2(12'-6")-A 48"x48"	 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" W14-1-A 36"x36"	 W14-3 36"x48"x48" W14-3-A 48"x64"x64"
--	--	---	--	--	---	---

**GENERAL NOTES**

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

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

APPROVED:  
*John D. Smith* 3-20-72  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.C.	3/20/72
2	Revised General Note 1	H.C.	10/16/72
3	Revised General Note 5	M.H.	9-16-75
4	Revised General Note 5	H.C.	9-14-76
5	Added Note 1	H.C.	11-7-77
6	Revised Signs & General Note 1	E.T.	9/18/85

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

NOT TO SCALE

SHEET No. 15 OF 23 SHEETS DT 102

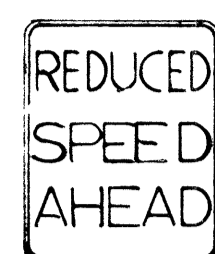
SURVEY PLOTTED BY \_\_\_\_\_ DATE \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
 NOTE BOOK NO. \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-06M 03B-01-06M	1986	45	52

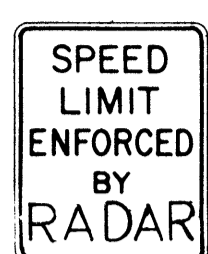
General Notes

- 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"

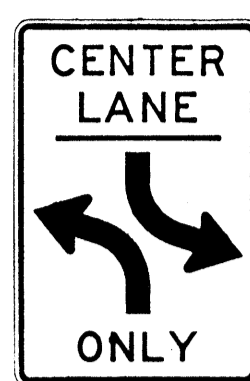


R2-5a 24" x 30"  
R2-5a-A 48" x 60"

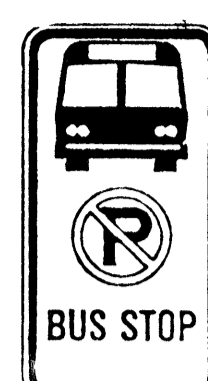


R2-10 24" x 30"

4" Series D  
- 4" Series C  
- 3" Series D  
- 5" Series C



R3-9b 24" x 36"



R7-107 12" x 24"



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



ANY TIME - 4" Series C  
- 1 1/2"

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



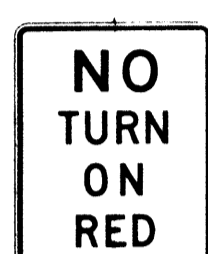
R9-3a 18" x 18"  
18" x 12"  
R9-3a-A 24" x 24"  
24" x 18"



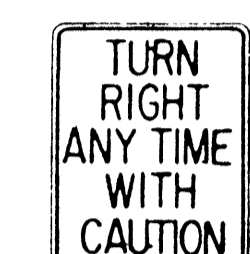
R9-3b(R) 18" x 12"



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



R10-11a 24" x 30"



R16-1 24" x 30"

4" Series C

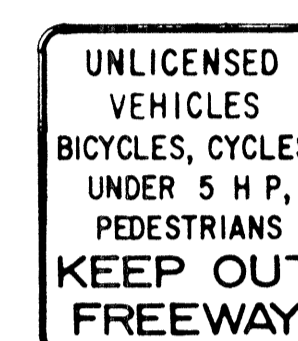


R16-3 18" x 24"

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

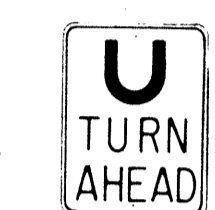


R16-4 18" x 24"



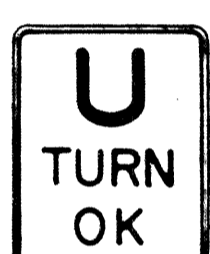
R16-5 36" x 42"

3" Series C  
4" Series E



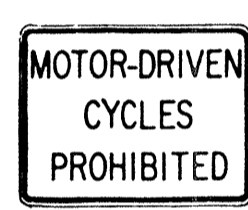
R16-6 24" x 30"

- 8" Series F  
- 5" Series D



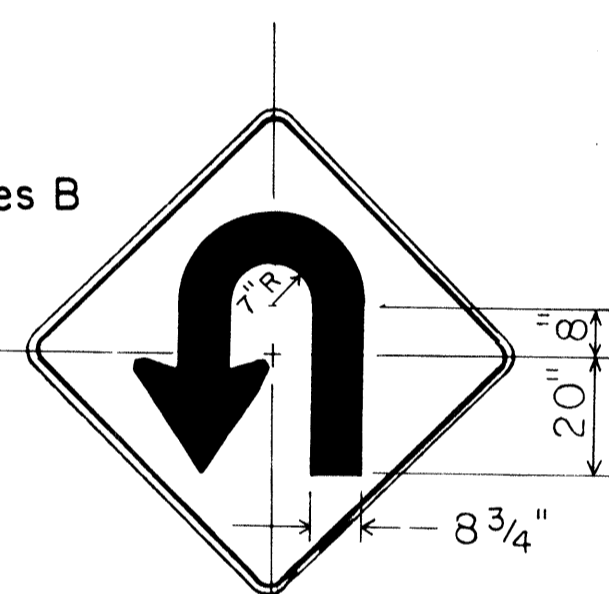
R16-7 24" x 30"

8" Series F  
5" Series D

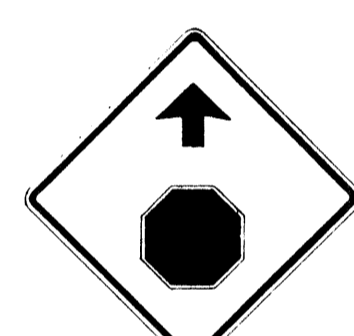


R5-8 30" x 24"

4" Series B

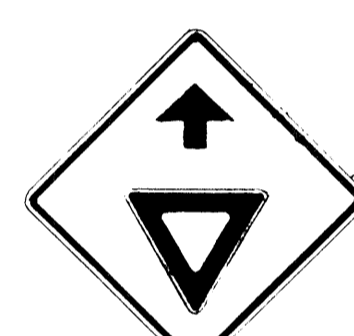


W17-1(L) 60" x 60"



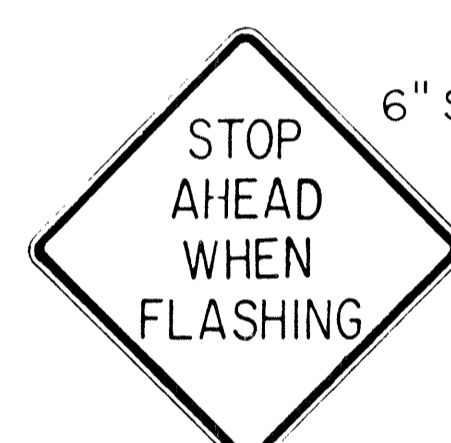
W3-1a 36" x 36"  
24" x 18"

W3-1a-A 48" x 48"  
24" x 18"



W3-2a 36" x 36"  
24" x 18"

W3-2a-A 48" x 48"  
24" x 18"

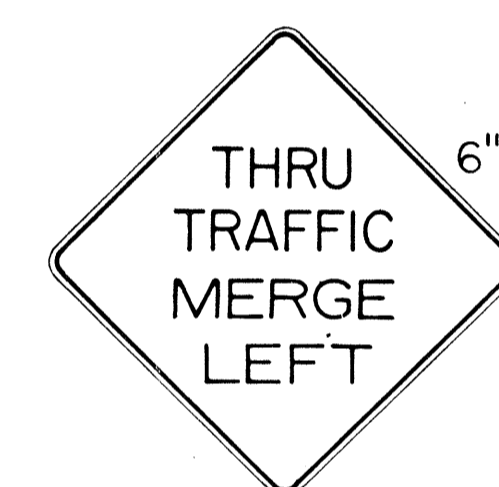


W3-4 48" x 48"

6" Series C

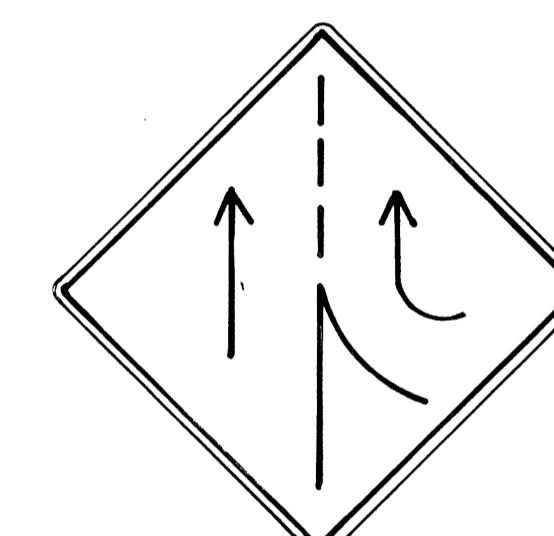


W8-6 30" x 30"  
W8-6-A 36" x 36"  
W8-6-B 48" x 48"



W9-3(L) 48" x 48"

6" Series E



W4-3 36" x 36"  
W4-3-A 48" x 48"



W11-7 36" x 36"  
24" x 18"

W11-7-A 48" x 48"  
24" x 18"



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"



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



W15-1 24" x 24"

- 4" Series C -

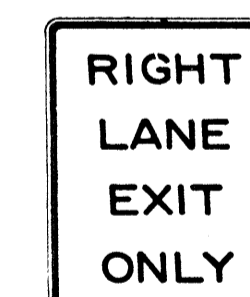


W15-2 24" x 24"



CW16-1(1/2) 60" x 60"

8" Series E



W18-1 48" x 60"

8" Series E

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

APPROVED:  
*Robert S. Dakeishi* 5/3/78  
ASSISTANT CHIEF, ENGINEERING DATE

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



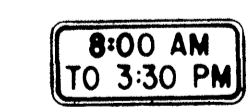
SI-1 36" x 36"  
SI-1-A 48" x 48"



S2-1 36" x 36"  
S2-1-A 48" x 48"



S3-1 30" x 30"  
S3-1-A 36" x 36"



S4-1 24" x 10"



S4-2 24" x 10"



S4-3 24" x 8"

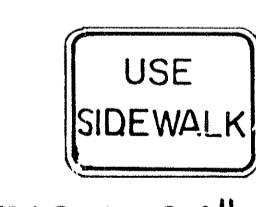


S4-4 24" x 10"



CW23-4 48" x 48"

7" Series D



R18-1 24" x 18"

4" Series C

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 103 approved 3/20/72	H.T.	5/5/78
2	Added General Note 6	H.T.	11/9/78
3	Revised Signs and added Sign W4-3	E.T.	9/18/86

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**

MISCELLANEOUS SIGNS

NOT TO SCALE DATE: MAY, 1978  
SHEET No. 16 OF 23 SHEETS DT 103

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-01-86N 93B-01-86M	1986	46	52



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 36" x 36"  
24" x 18"  
CW20-7c-A 48" x 48"  
24" x 18"



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"



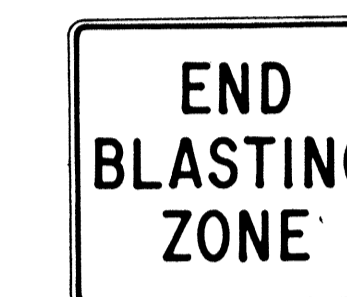
CW21-6 30" x 30"



CW22-1b 48" x 48"



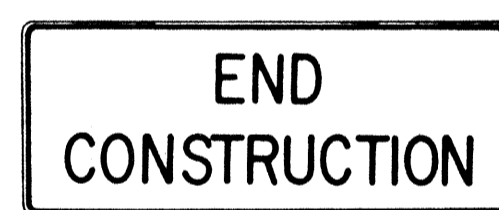
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



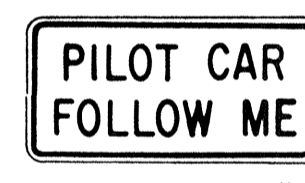
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



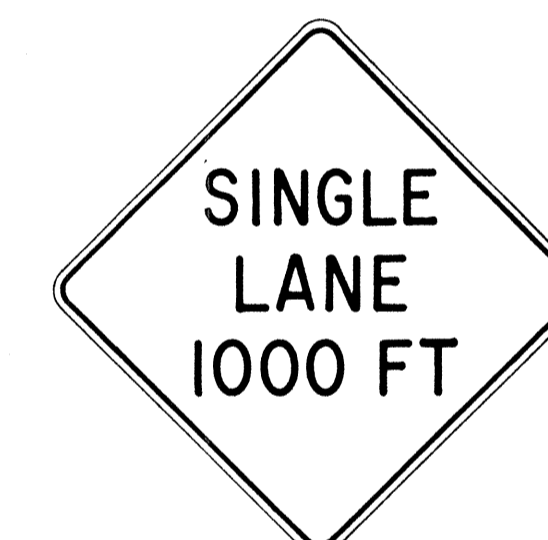
CM4-10(R) 48" x 18"



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 latest editions of FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," "Standard Alphabets for Highway Signs," and "Standard Highway Signs," 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:  
*Evelyn Tanaka* 3/21/72  
TRAFFIC ENGINEER DATE

APPROVED:  
*Richard S. ...* 2/23/72  
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	M.H.	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	H.T.	7-14-76
5	Revised General Note 1 and sign CW20-7c	E.T.	9/18/85

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

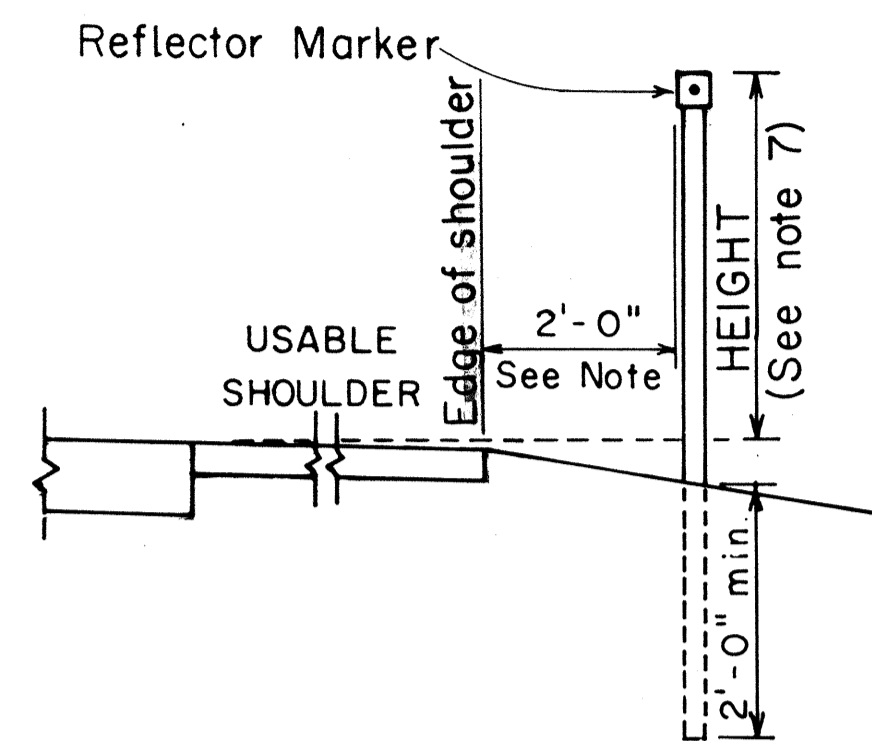
NOT TO SCALE

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

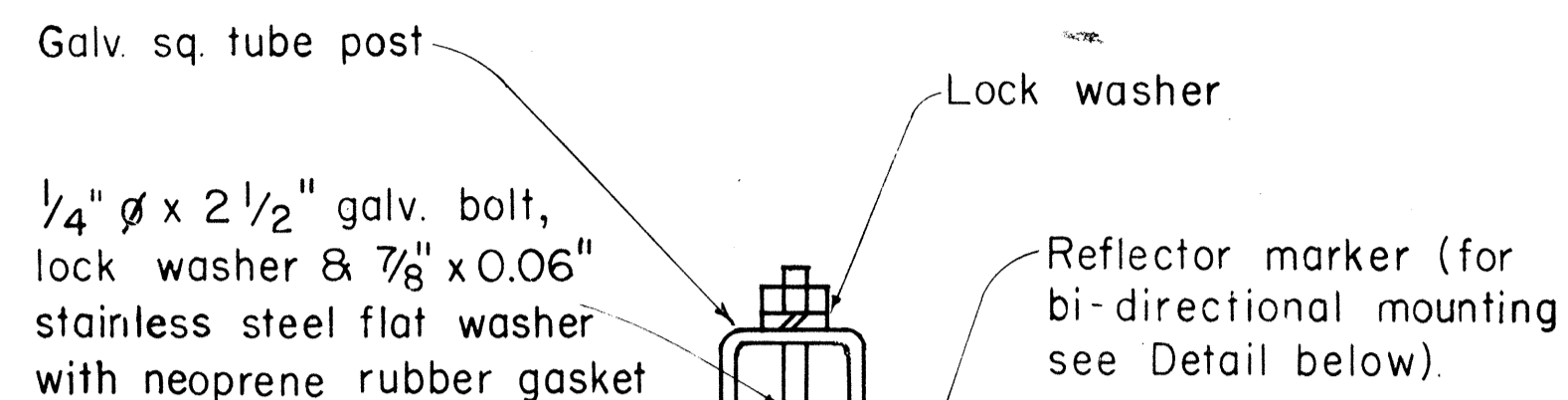
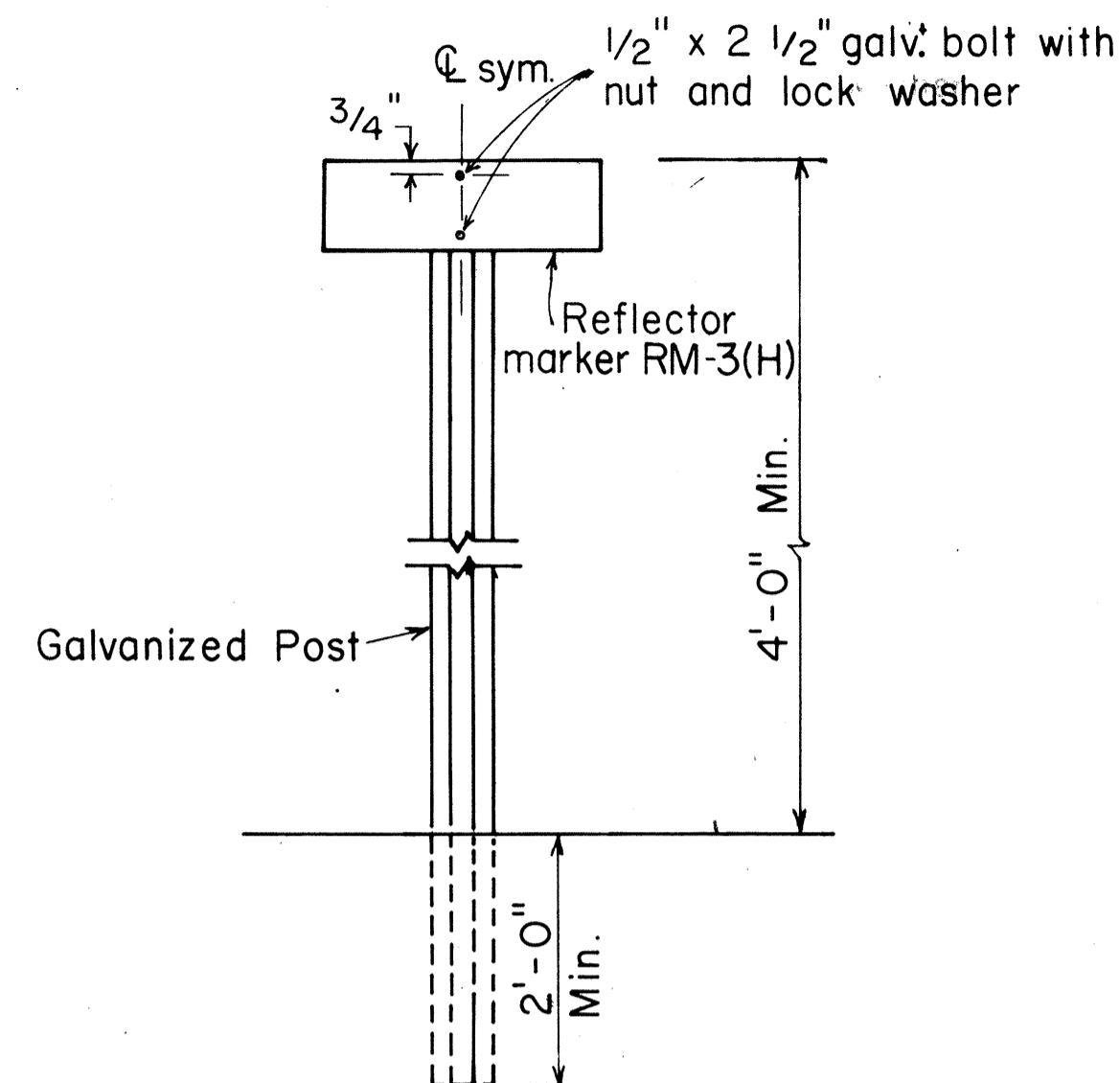
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-86M 02B-01-86M	1986	47	52

**GENERAL NOTES:**

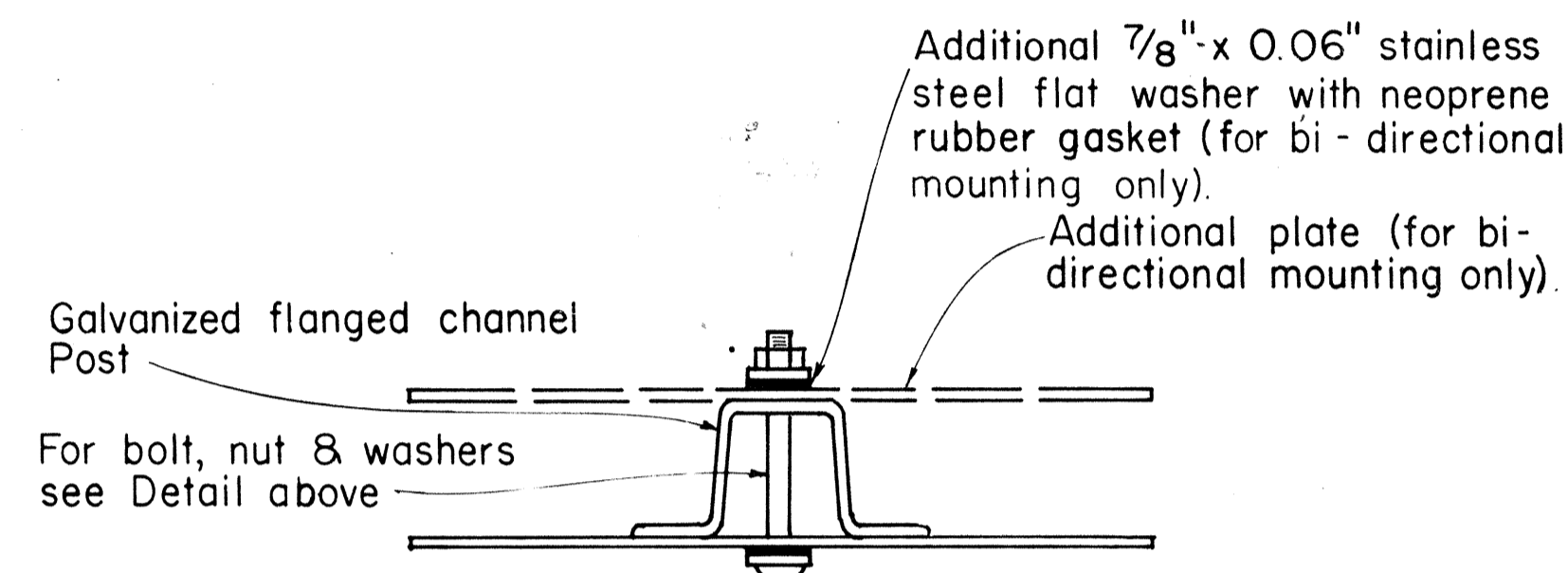
1. Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
2. (R) or (L) indicates right or left and shall be as shown on the plans.
3. Reflector markers RM-1 and RM-2 shall be:
  - a) Yellow if placed along the left edge of divided 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**

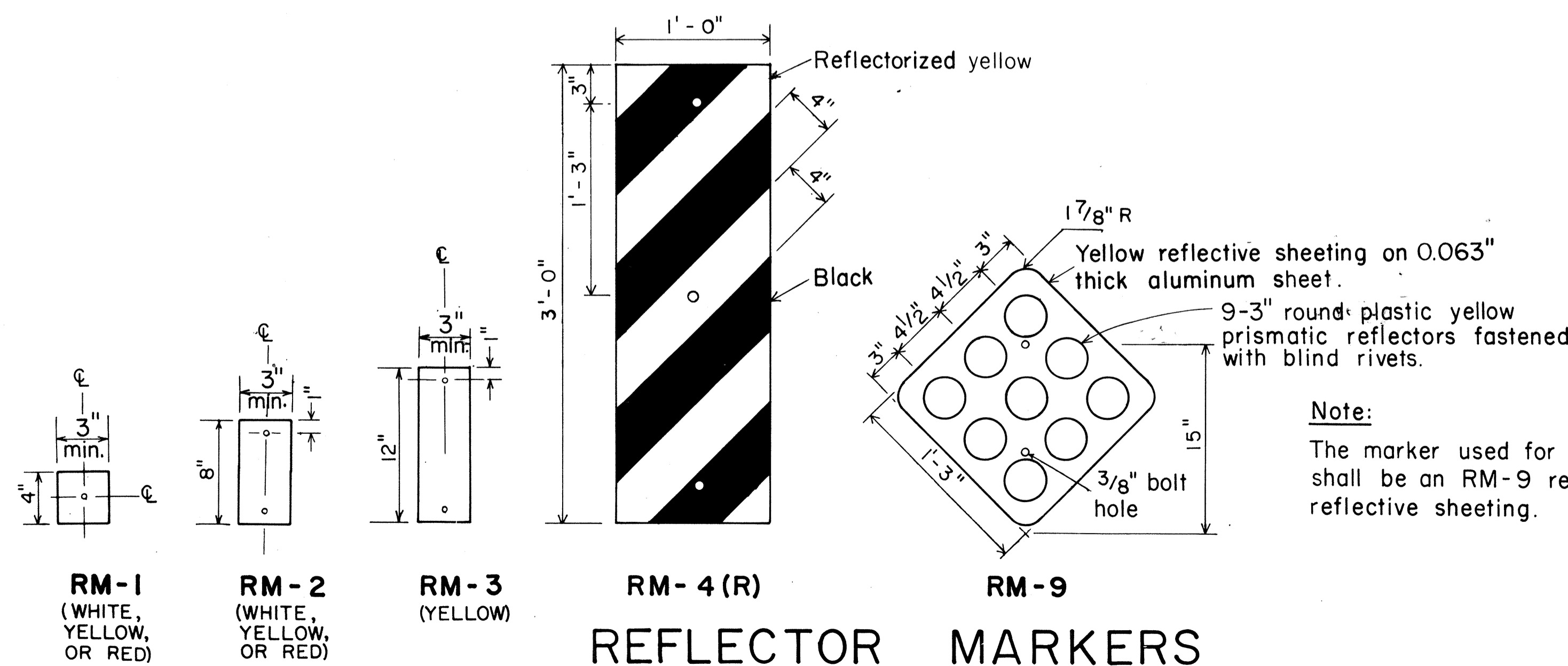


**GALVANIZED SQUARE TUBE POST**



**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.

APPROVAL RECOMMENDED:  
*Etschi Tanaka* 11/1/77  
TRAFFIC ENGINEER DATE

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

NO.	REVISION	APPROVED BY	DATE
1	Revised Mounting Details	H.H.	4/23/80
2	Revised General Notes, Mounting Details and Reflector Markers.	H.H.	7-28-83
3	Eliminated White for RM-4	H.H.	1-30-85

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**

MISCELLANEOUS REFLECTOR MARKERS

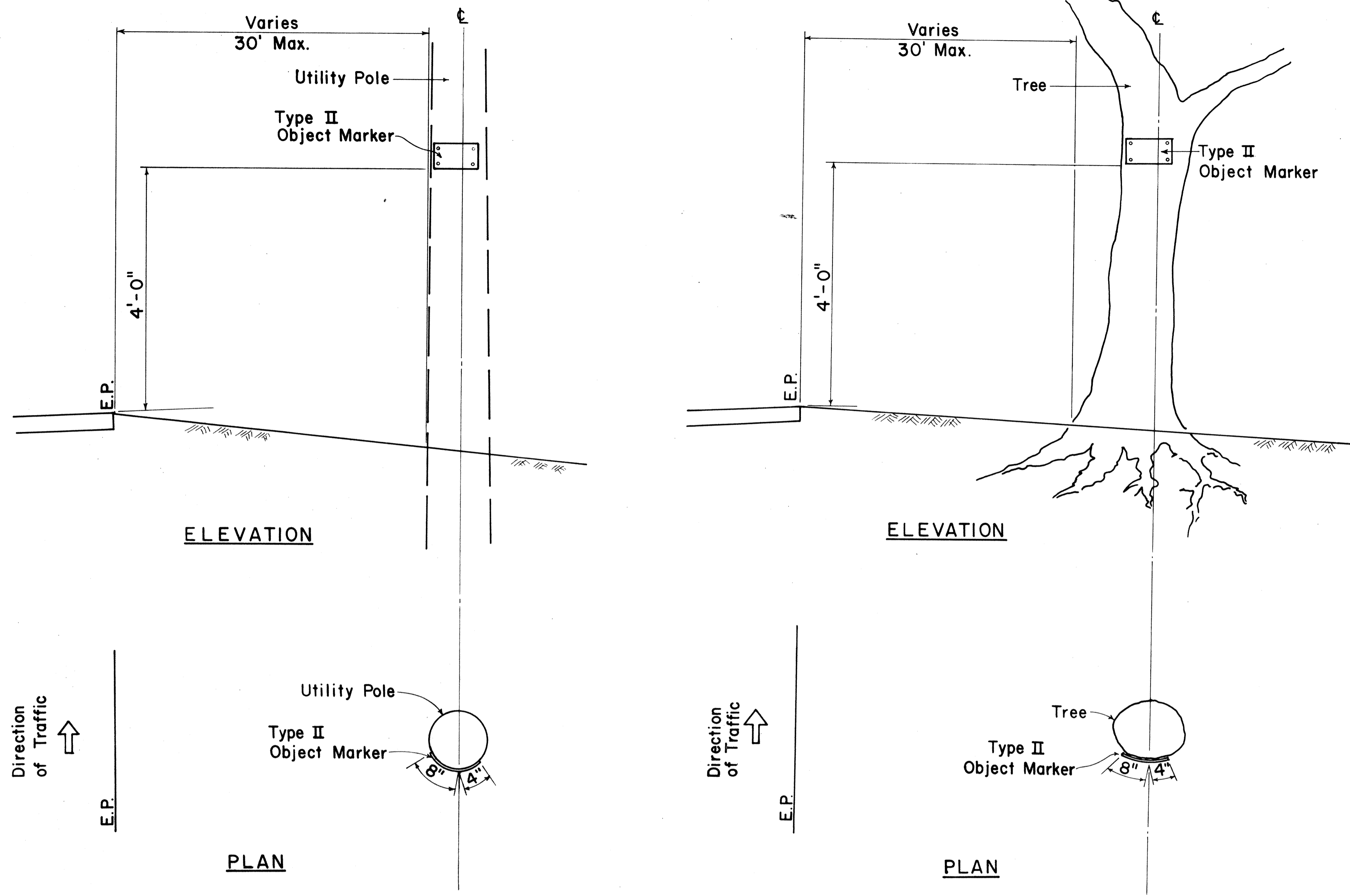
Not to scale June, 1977

SHEET NO. 18 OF 23 SHEETS DT 110

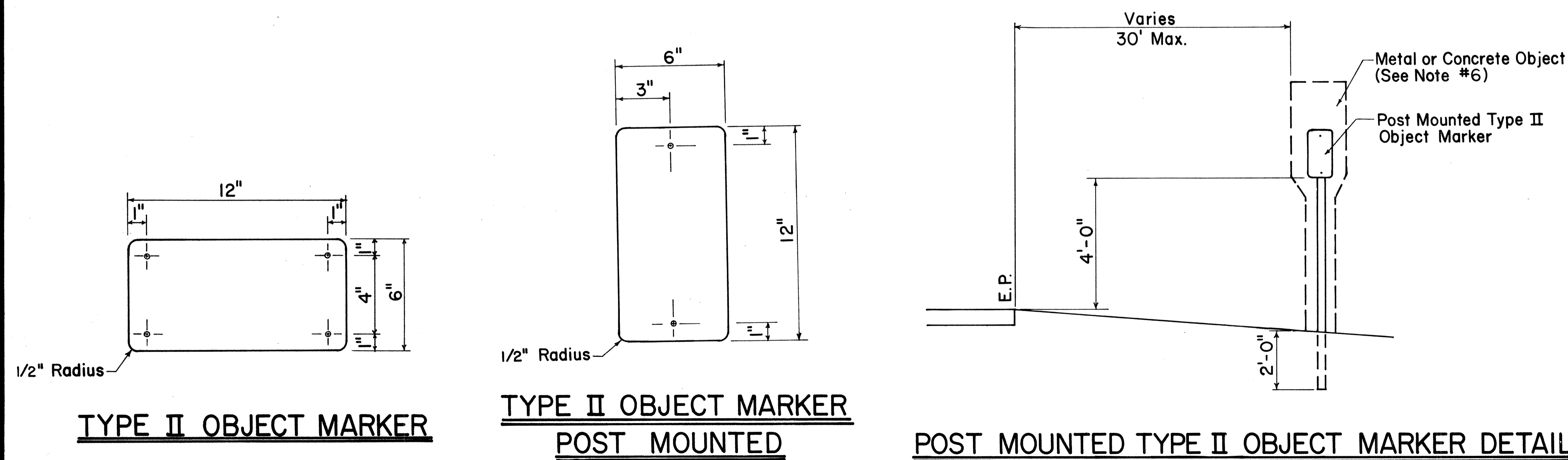
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-06M 03B-01-06M	1986	48	52

### GENERAL NOTES

- All objects (utility poles or trees) that are within the State highway right of way and within 30 feet of the roadway edge of pavement shall be marked as directed by the Engineer.
- The Contractor shall prepare the mounting surface of each object as directed by the Engineer and place the Type II Object Marker as shown on this plan.
- Type II Object Markers shall be mounted on utility poles and trees with 1 3/4" galv. roofing nails (4 ea.).
- Branches of trees which obscure the object markers shall be trimmed. (Payment shall be incidental to Type II Object Markers as shown in the proposal).
- Type II Object Markers for utility poles and trees, etc., shall be made of amber reflective sheeting material overlaid on 0.020" aluminum sheeting.
- Objects such as concrete posts, concrete or rock walls and boxes, metal posts (greater than 2" in diameter), or metal boxes shall be marked with post mounted object markers. Post mounted Type II Object Markers shall conform to the following requirements:
  - It shall consist of amber reflective sheeting material overlaid on 0.063" thick sheet aluminum backing of the dimensions shown on the plans.
  - It shall be mounted on either metal posts or flexible delineator posts with 1/4" x 2" galv. bolts, nuts and washers. Metal posts shall be galvanized and shall be either 1 1/2" x 1 1/2", 12 gage square tube posts or 1.12 lbs. per ft. flanged channel posts.



### TYPICAL TYPE II OBJECT MARKER MOUNTING DETAIL



APPROVAL RECOMMENDED:  
*Eishi Tanaka* 3/30/83  
 TRAFFIC ENGINEER DATE

APPROVED:  
*S. Fujiyama* 3-31-83  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

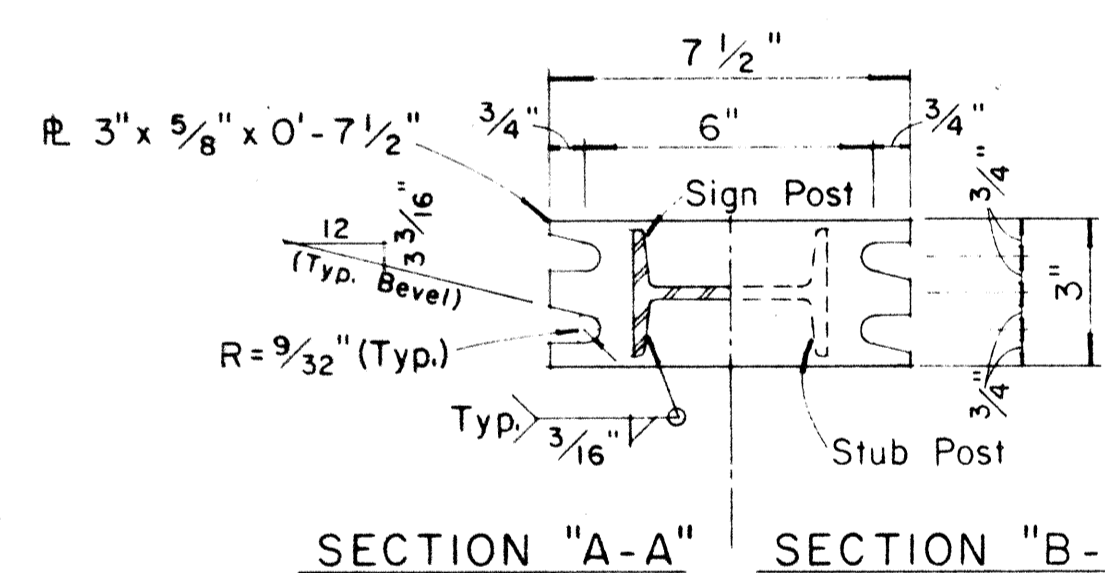
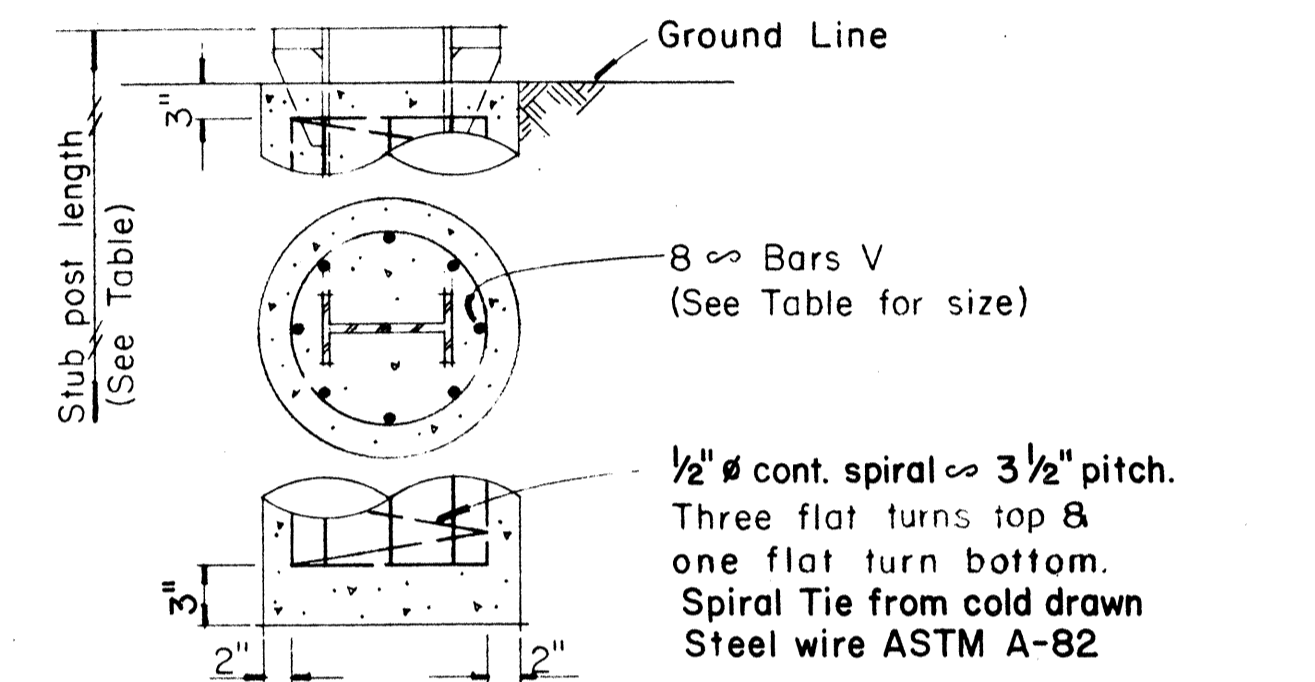
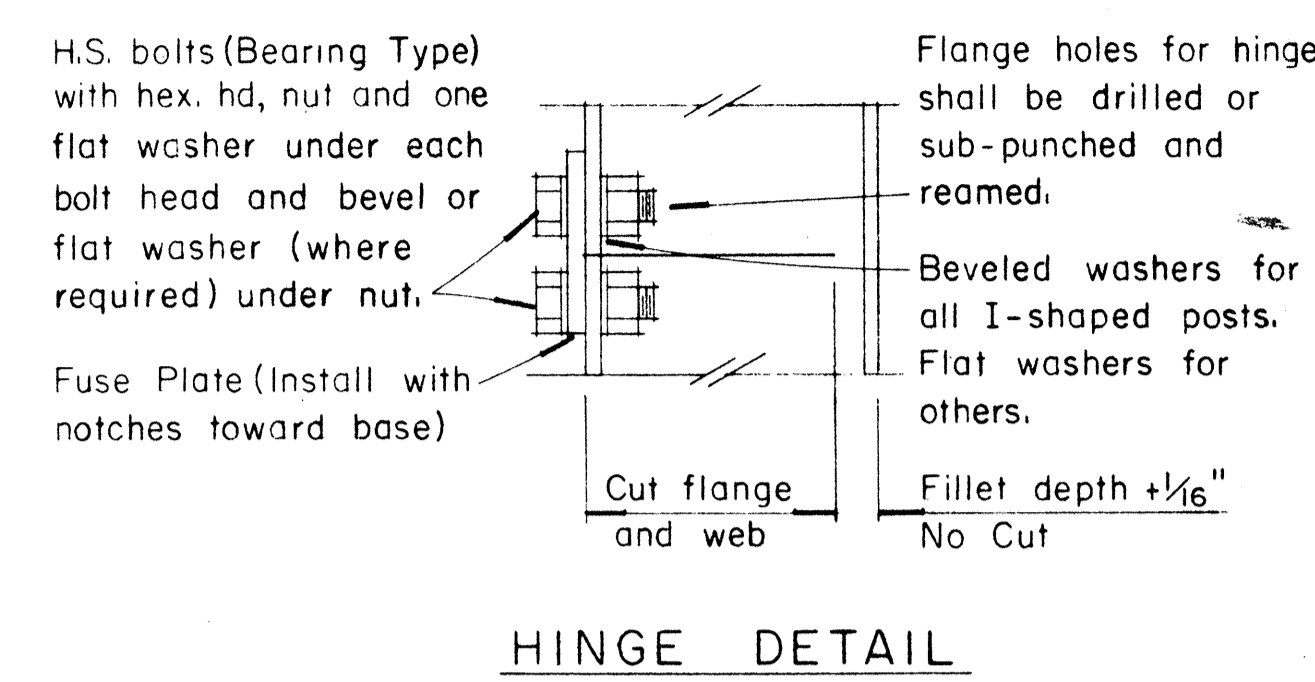
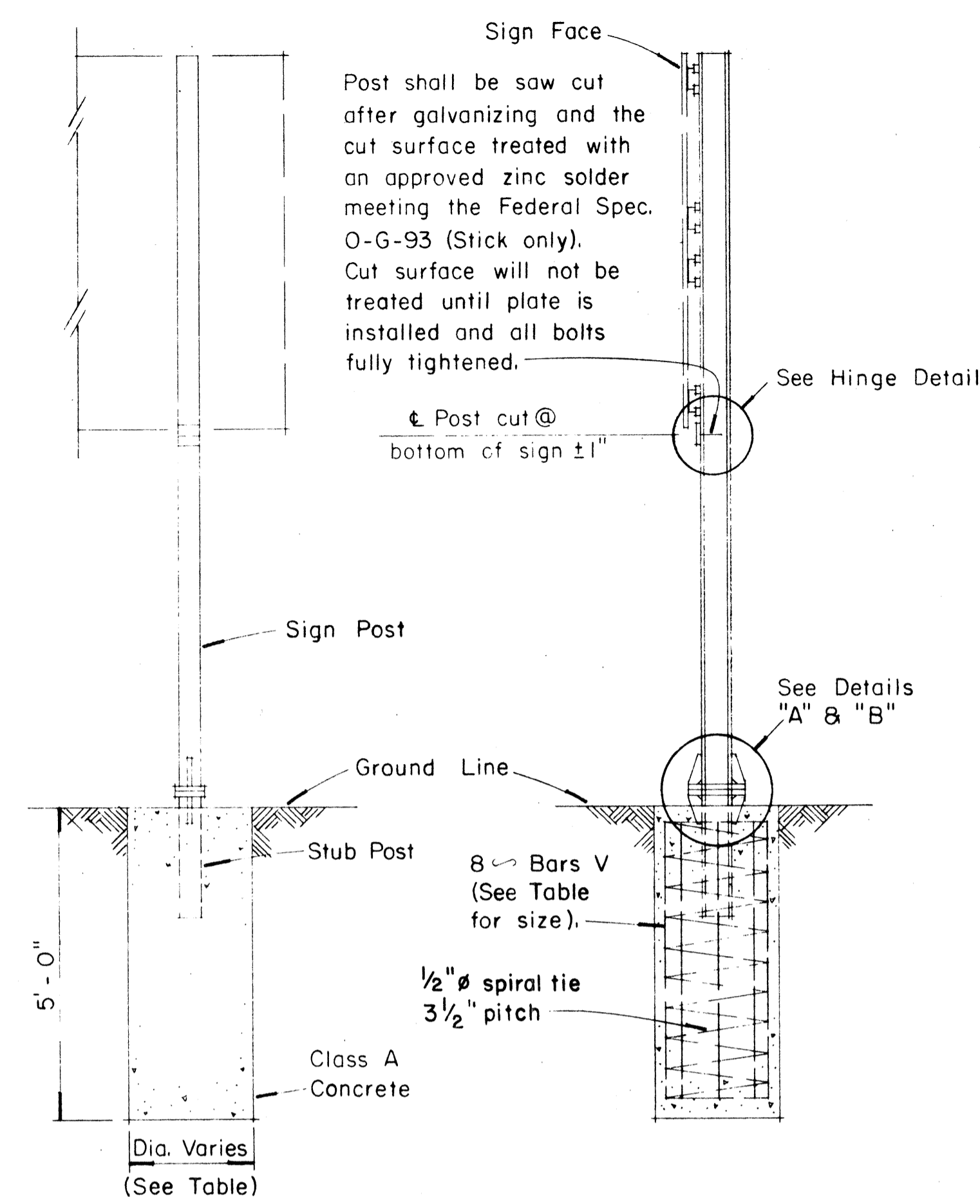
**STANDARD DETAILS**  
 TYPE II OBJECT MARKERS

Scale: Not to scale Date: March 1983  
 SHEET No. 19 OF 23 SHEETS DT III

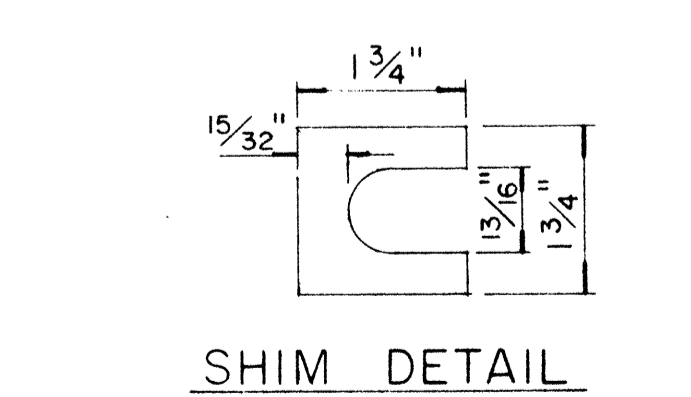
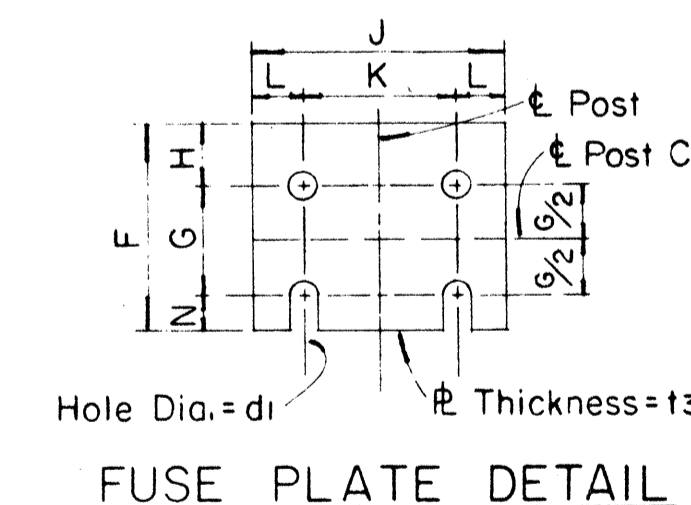
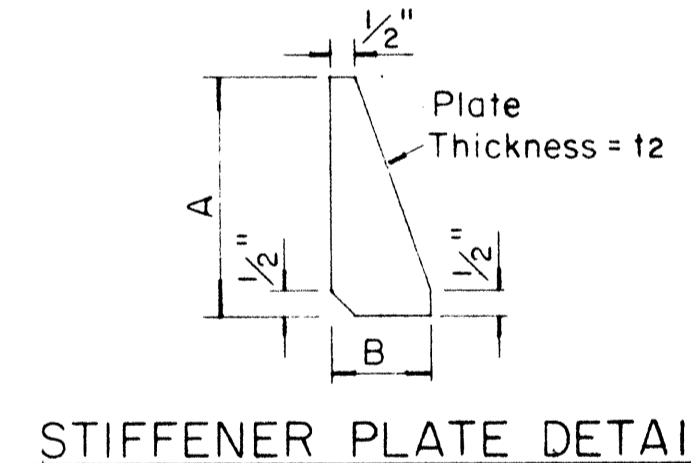
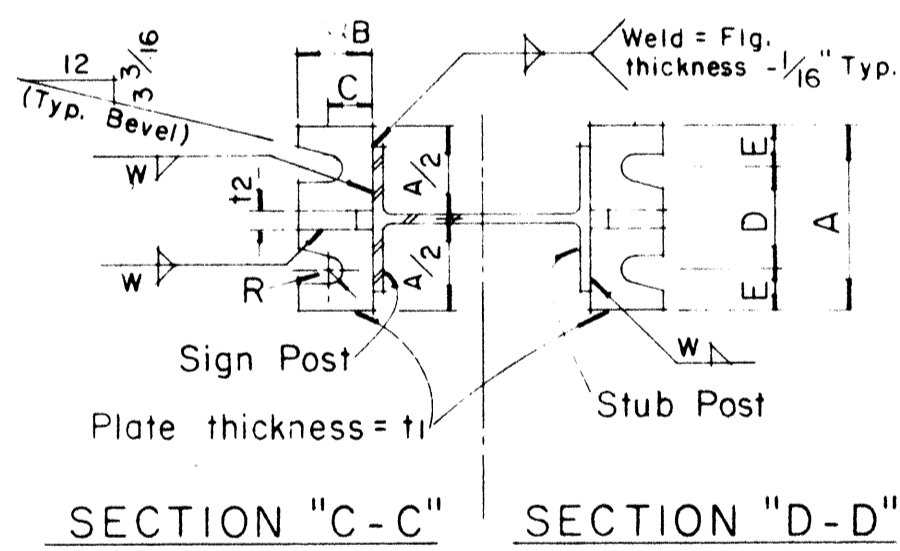
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-86M 03B-01-86M	1986	49	52

Post Size	Bolt Size & Torque	BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE										FOUNDATION DATA			
		A	B	C	D	E	t <sub>1</sub>	t <sub>2</sub>	W	R	F	G	H	J	K	L	N	d <sub>1</sub>	t <sub>3</sub>	Bolt Dia.	Wt. of each Fuse P.	Stub Length	Stub Projection	Footing Diameter	Bars V Size
W6x9	5/8" ϕ x 2 3/4" Torque = 450" #	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	11/32"	3 3/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2" ϕ	1.09 #	2'-0"	3"	2'-0"	#7
W6x12											3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1/16"	3/8"	5/8" ϕ	1.60 #	2'-0"	3"	2'-0"	#7
W6x16											4 1/2"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	13/16"	1/2"	3/4" ϕ	3.75 #	2'-6"	3"	2'-0"	#7
W8x18											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	13/16"	1/2"	3/4" ϕ	3.27 #	2'-6"	3"	2'-0"	#7
W8x21	3/4" ϕ x 3 1/2" Torque = 750" #	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	13/32"	4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	15/16"	9/16"	7/8" ϕ	3.93 #	3'-0"	2 1/2"	2'-0"	#8
W10x22											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8" ϕ	4.75 #	3'-0"	2 1/2"	2'-0"	#9
W10x26											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8" ϕ	4.79 #	3'-0"	2 1/2"	2'-0"	#10
W12x30	1/2" ϕ x 2 1/2" Torque = 200" #	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	SEE DETAIL "A"	5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	15/16"	9/16"	7/8" ϕ	5.42 #	3'-0"	2 1/2"	2'-0"	#11
S3x5.7											3 3/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2" ϕ	0.64 #	1'-6"	3 1/2"	1'-6"	#5
S4x7.7	3 3/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2" ϕ	0.64 #	1'-6"	3 1/2"	1'-6"	#5										



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



GENERAL NOTES

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

Bolt Size	Min. Tension	Bolt Size	Min. Tension
1/2" ϕ	12050 Lbs.	3/4" ϕ	28400 Lbs.
5/8" ϕ	19200 Lbs.	7/8" ϕ	36050 Lbs.
- Supplemental Sign shall not be installed below the Breakaway Hinges.

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

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

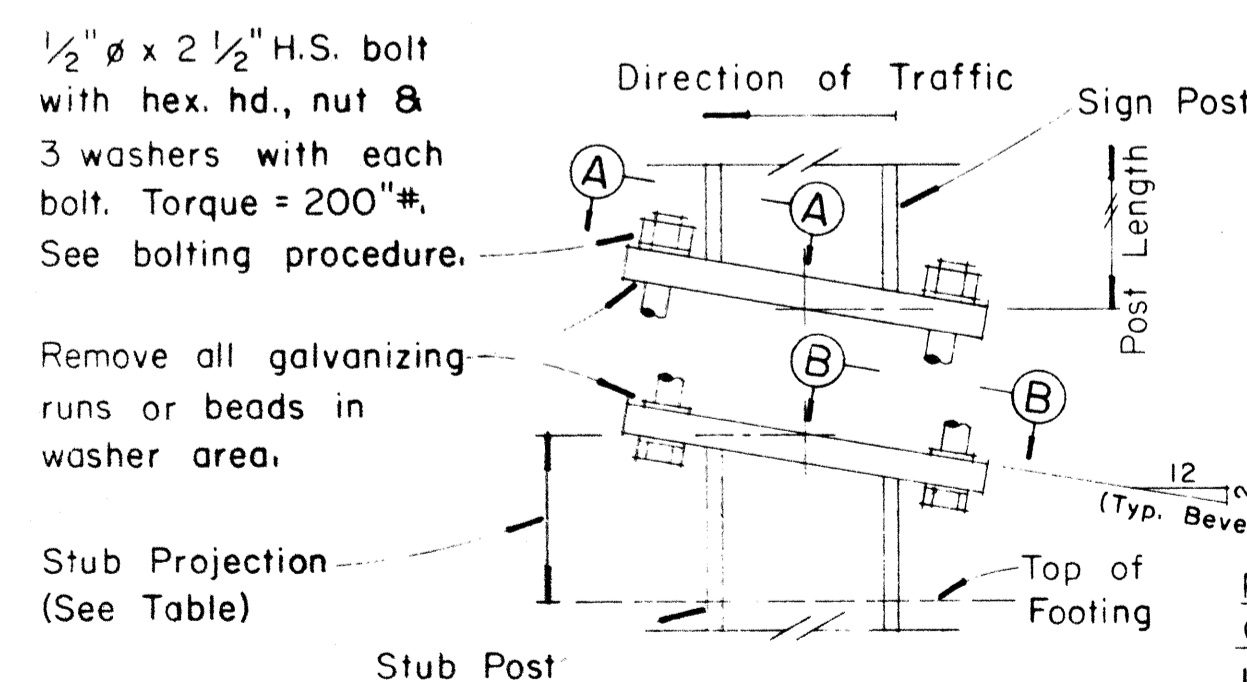
NO.	REVISION	APPROVED BY	DATE
1	Added General Note No. 9	H.T.	6/3/80
2	Revised description of Post Size and Foundation Detail.	JMC	10/21/85

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

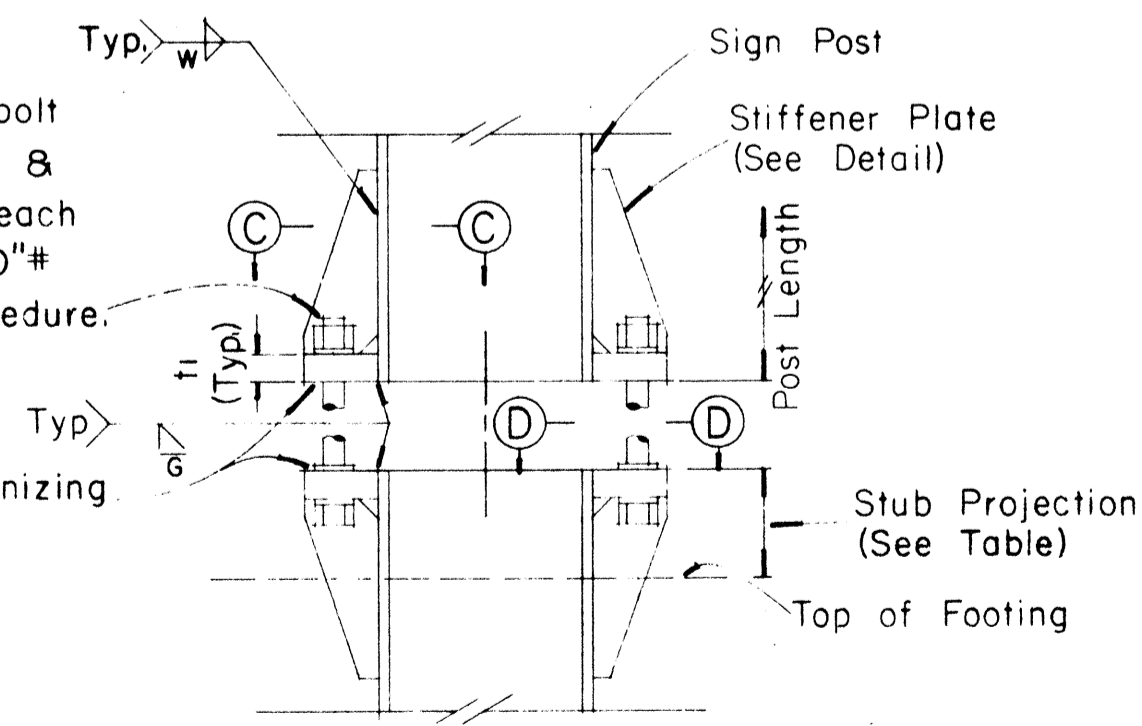
**STANDARD DETAILS**  
**BREAK-AWAY SIGN SUPPORTS**  
**FOR**  
**GROUND MOUNTED GUIDE SIGNS**

Not to Scale

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

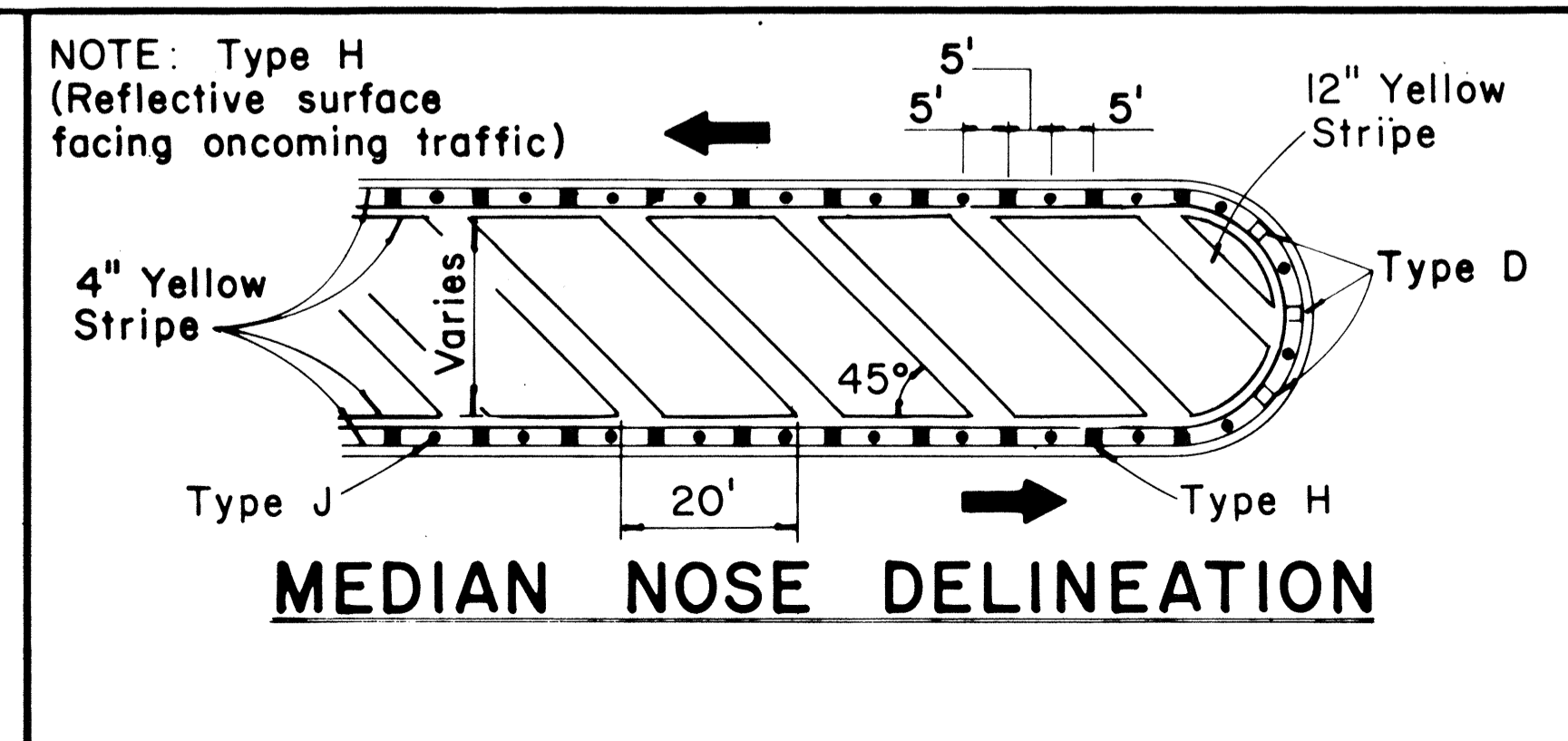
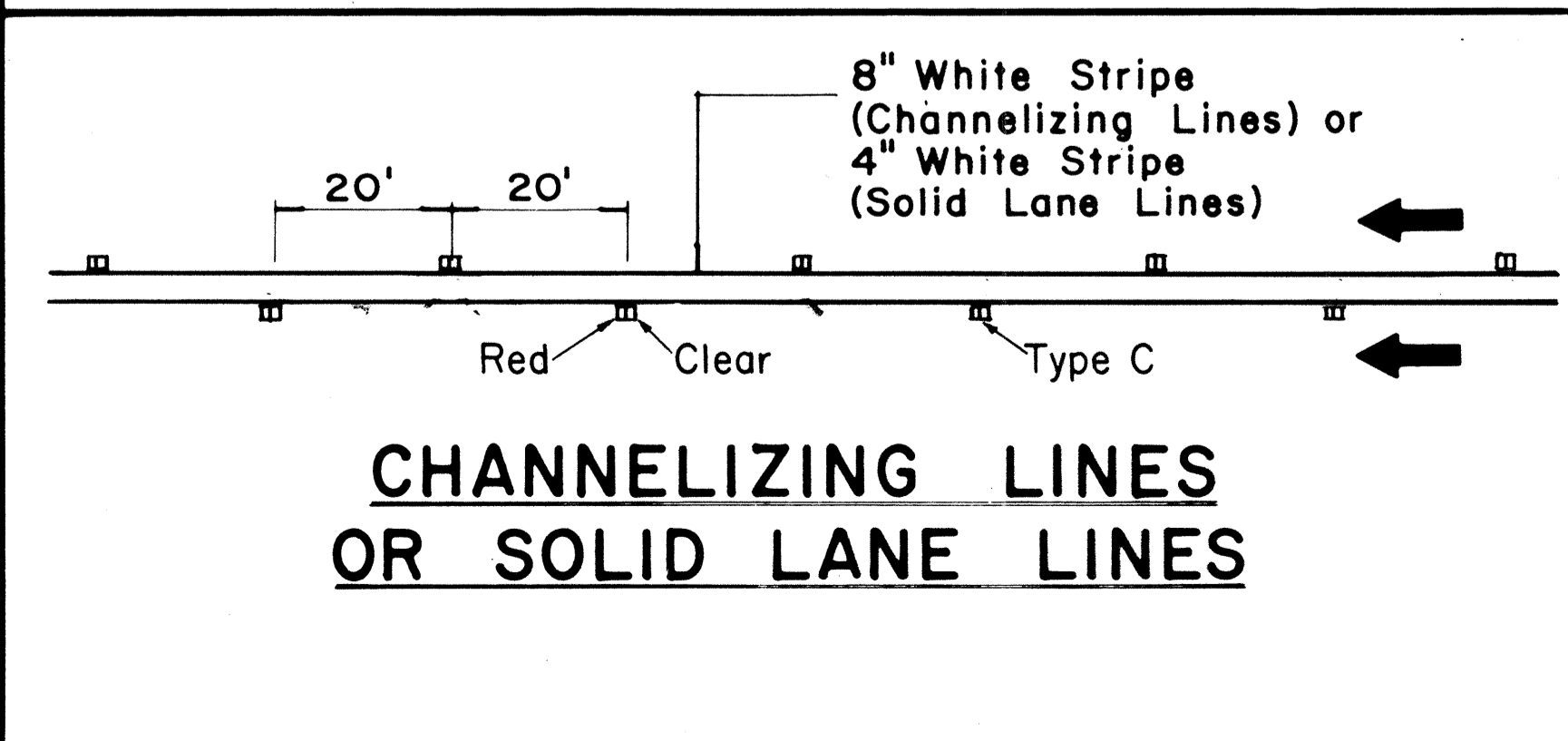
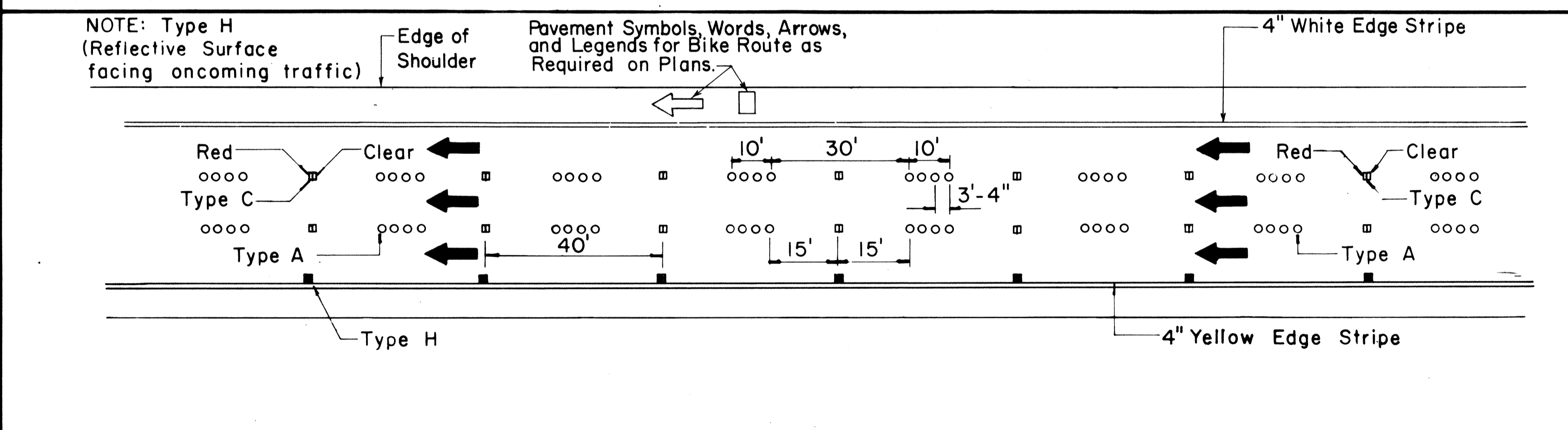
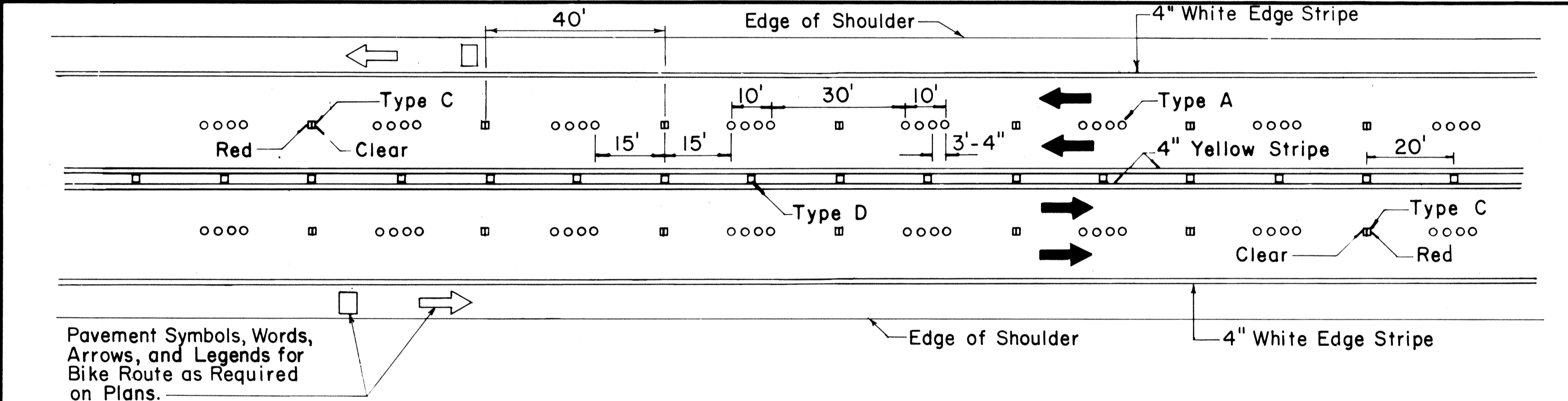
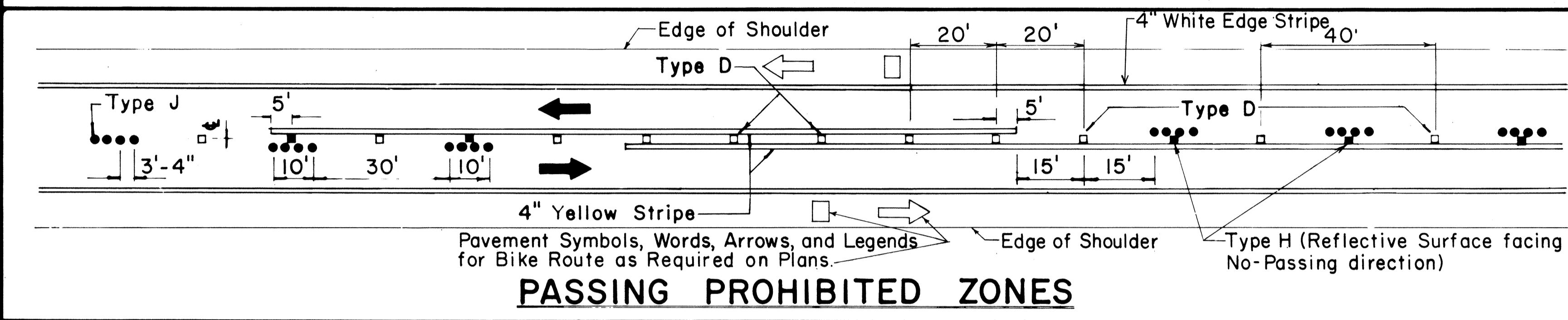
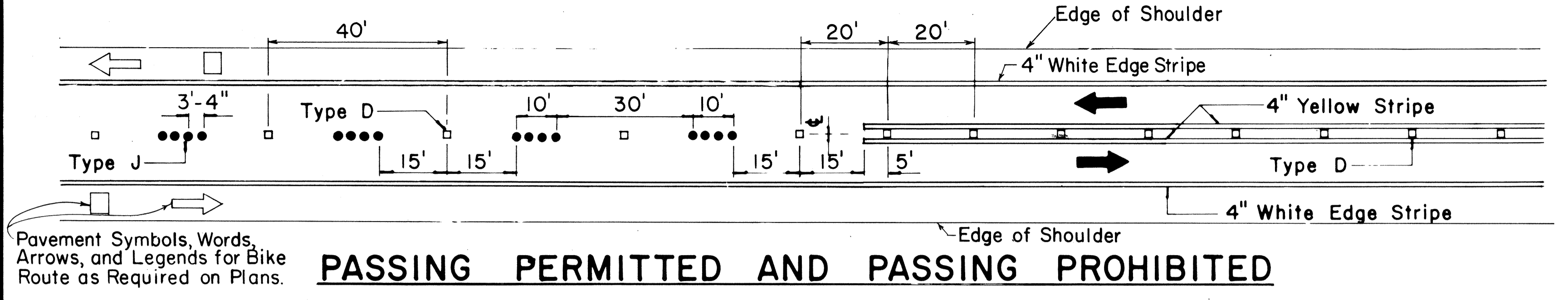


PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:  
1. Assemble post to stub with bolts and with one flat washer on each bolt between plates.  
2. Shim as required to plumb post.  
3. Tighten all bolts the max. possible with 12" to 15" wrench to bed washers & shims and to clean bolt threads then loosen each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



DETAIL "B"  
SIGN POST & STUB POST  
(For Wide Flange Shapes)

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	98A-01-26M 98B-01-86M	1986	50	52

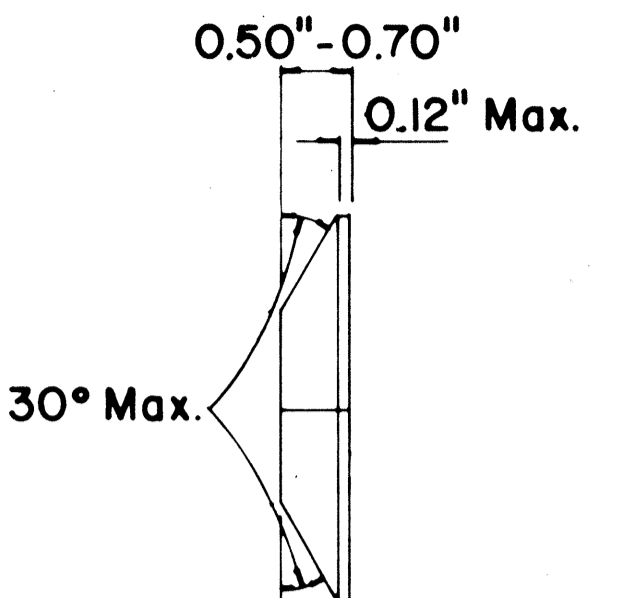
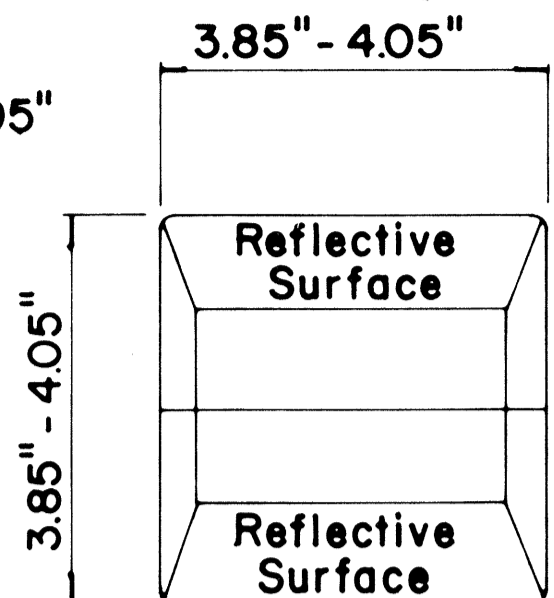
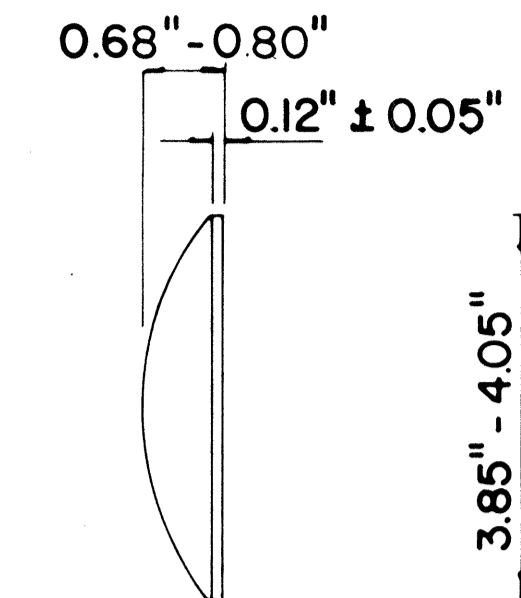
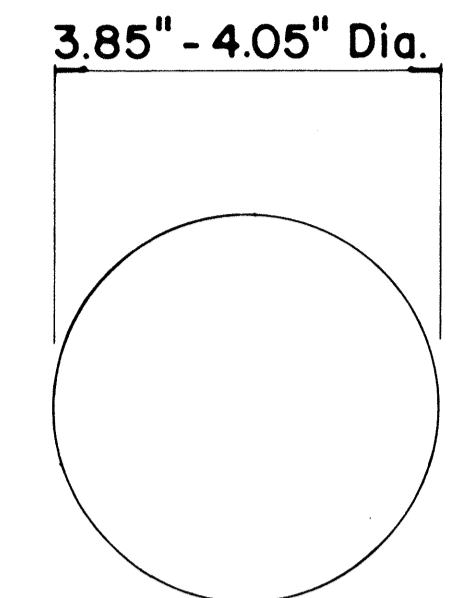


TWO - LANE

MULTI - LANE

DIVIDED HIGHWAY AND FREEWAY

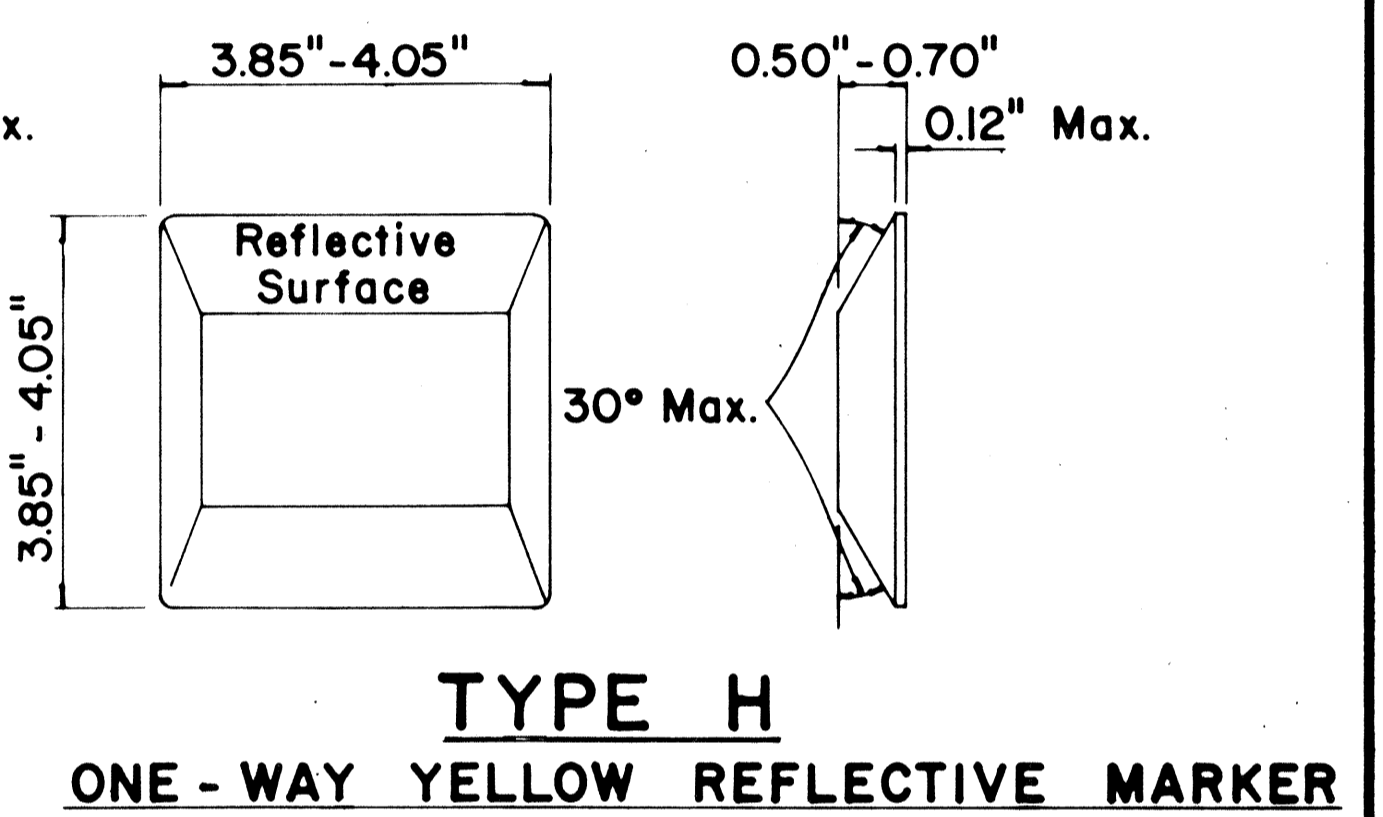
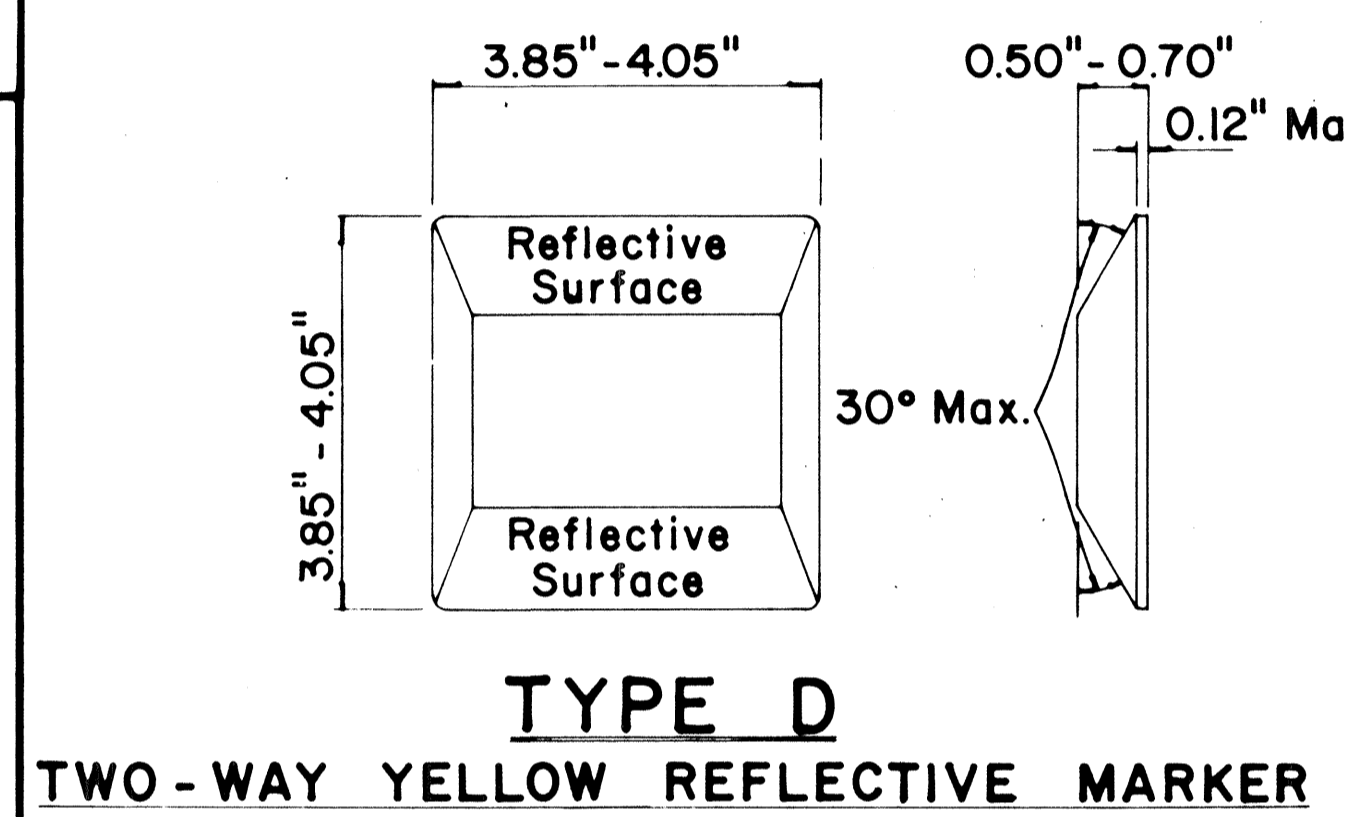
MISCELLANEOUS



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

APPROVED:  
*Robert S. Zakiyah* 1/24/78  
 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
4	Revised Channelizing Lines or Solid Lane Lines.	E.T.	9/18/85

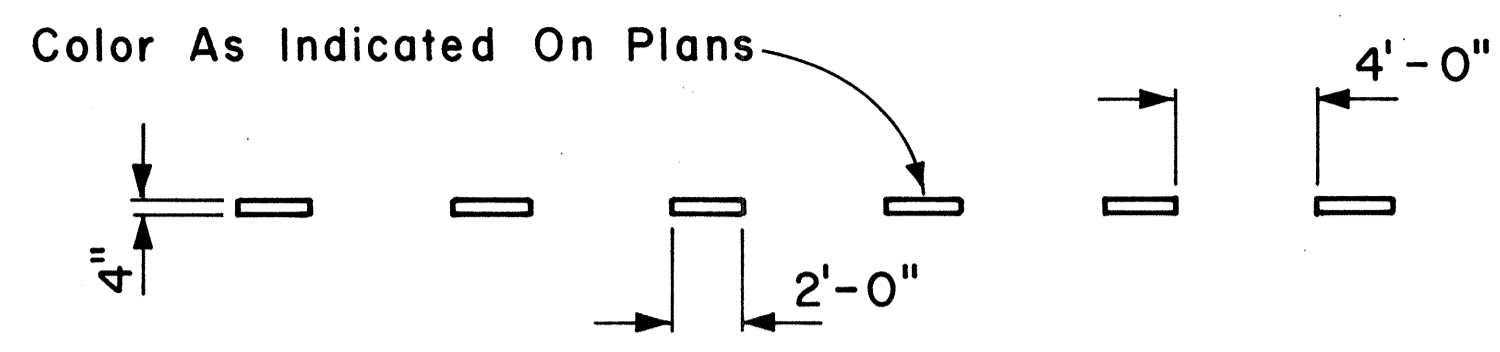
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

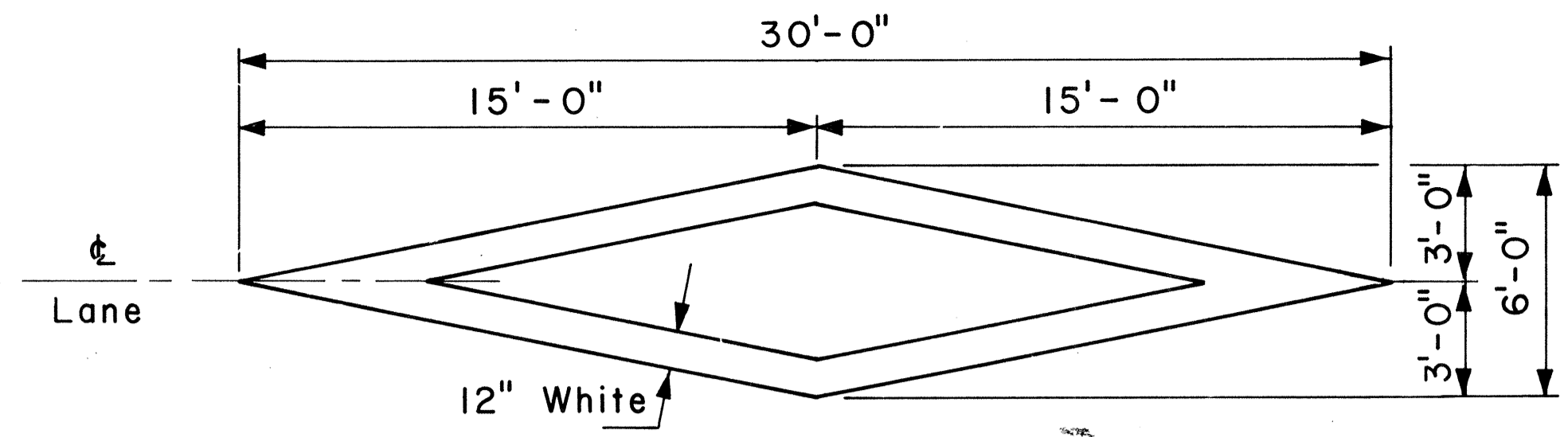
Not to Scale July 1978  
SHEET No. 21 OF 23 SHEETS DT 300

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-01-86M 93B-01-86M	1986	51	52



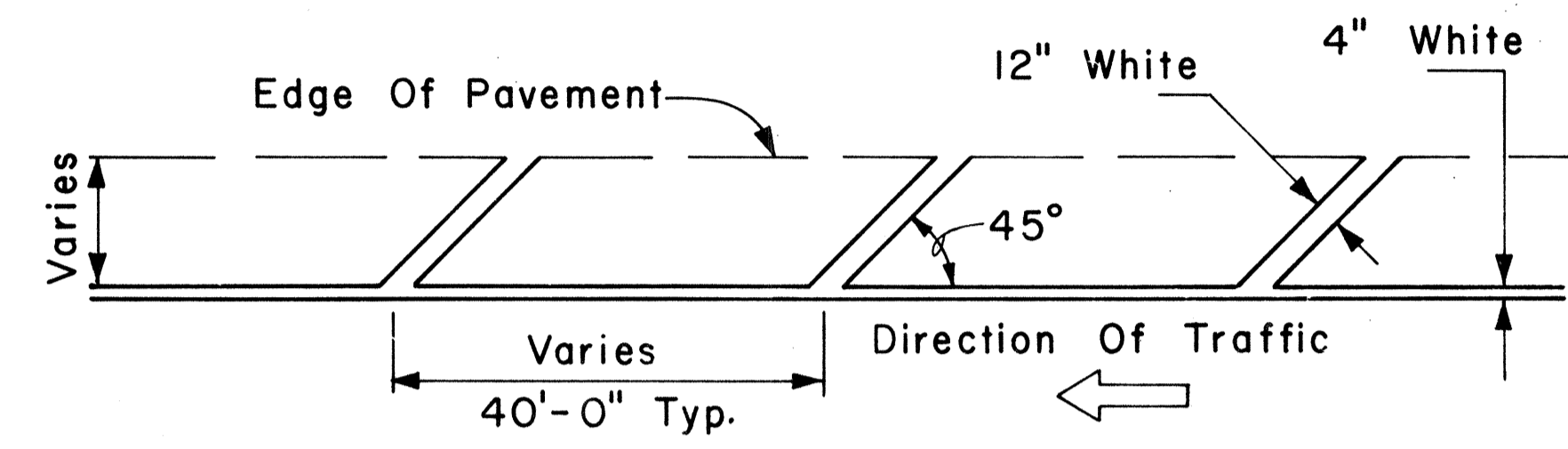
**4" GUIDE LINE**



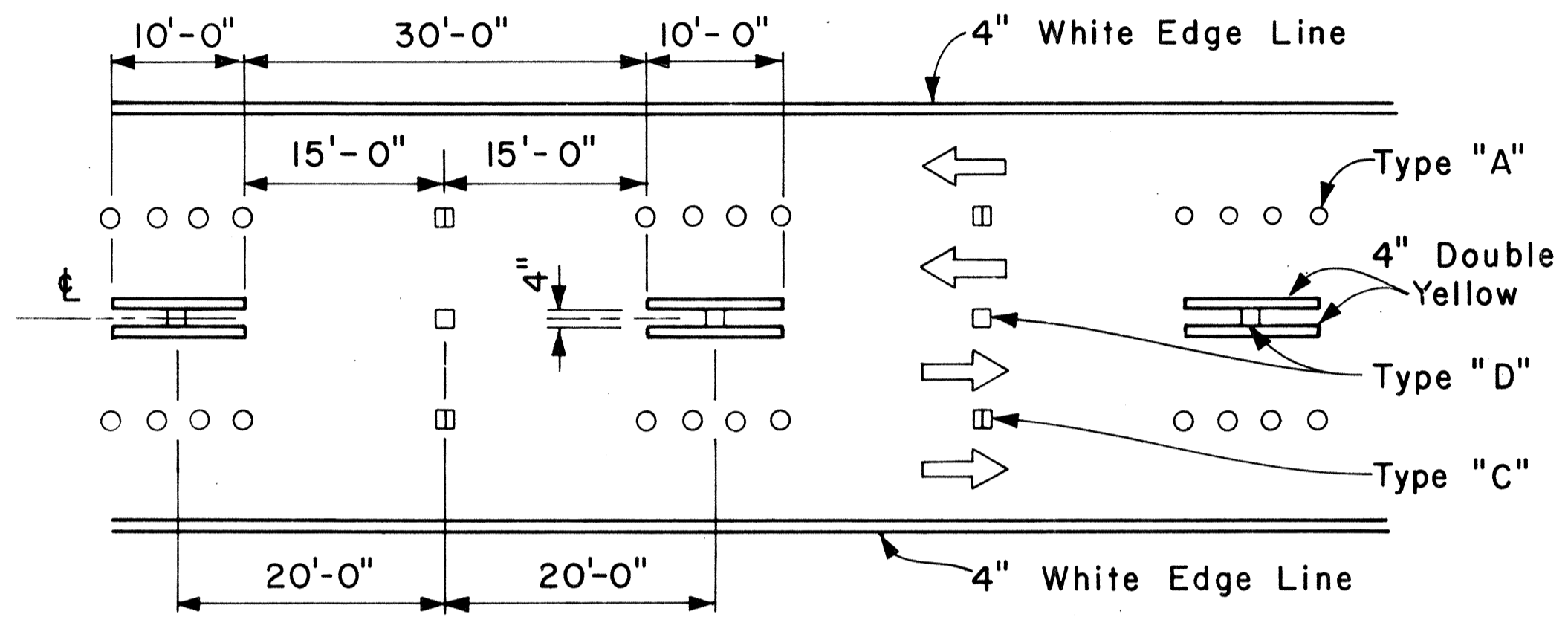
**PAVEMENT DIAMOND**

**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.

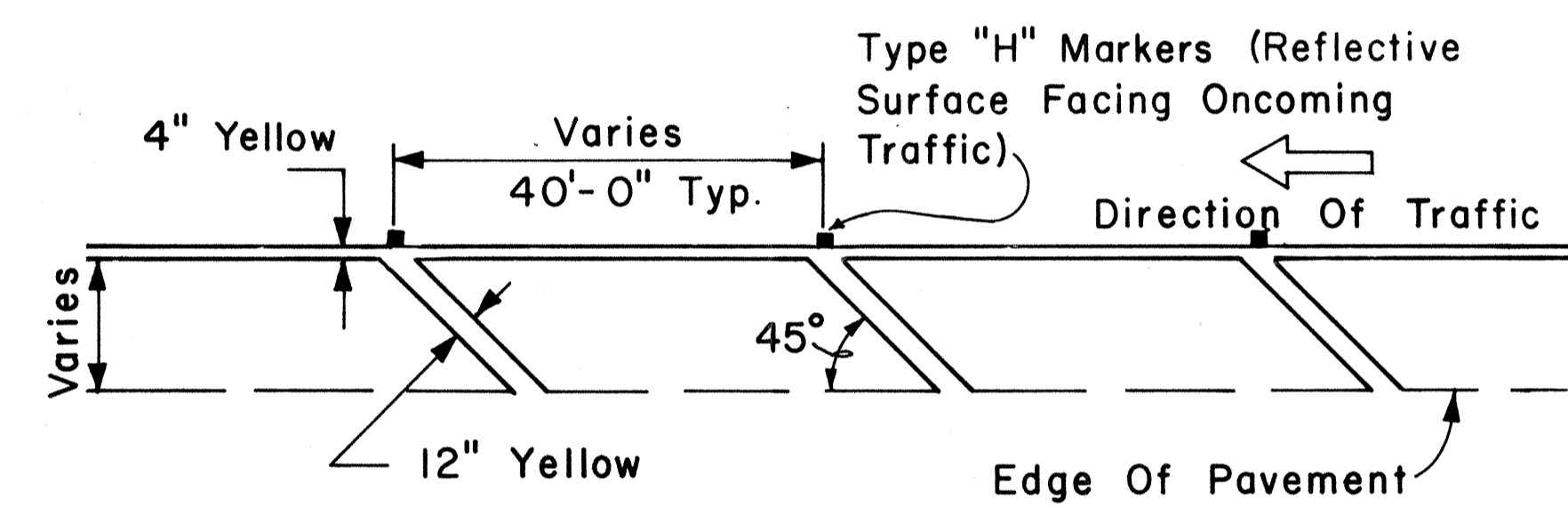


**TRANSVERSE RIGHT SHOULDER MARKING**

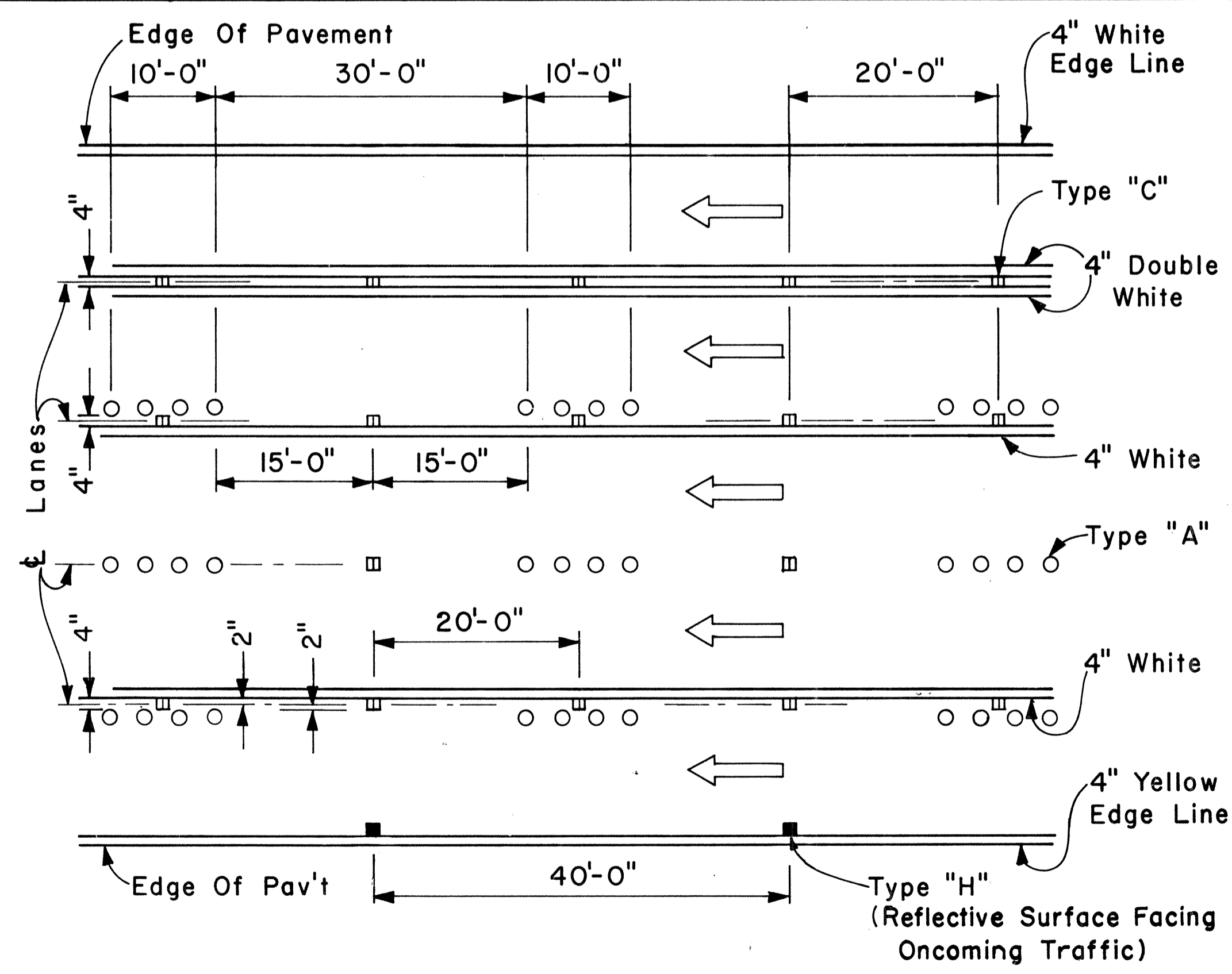


**MULTI-LANE REVERSIBLE LANES**

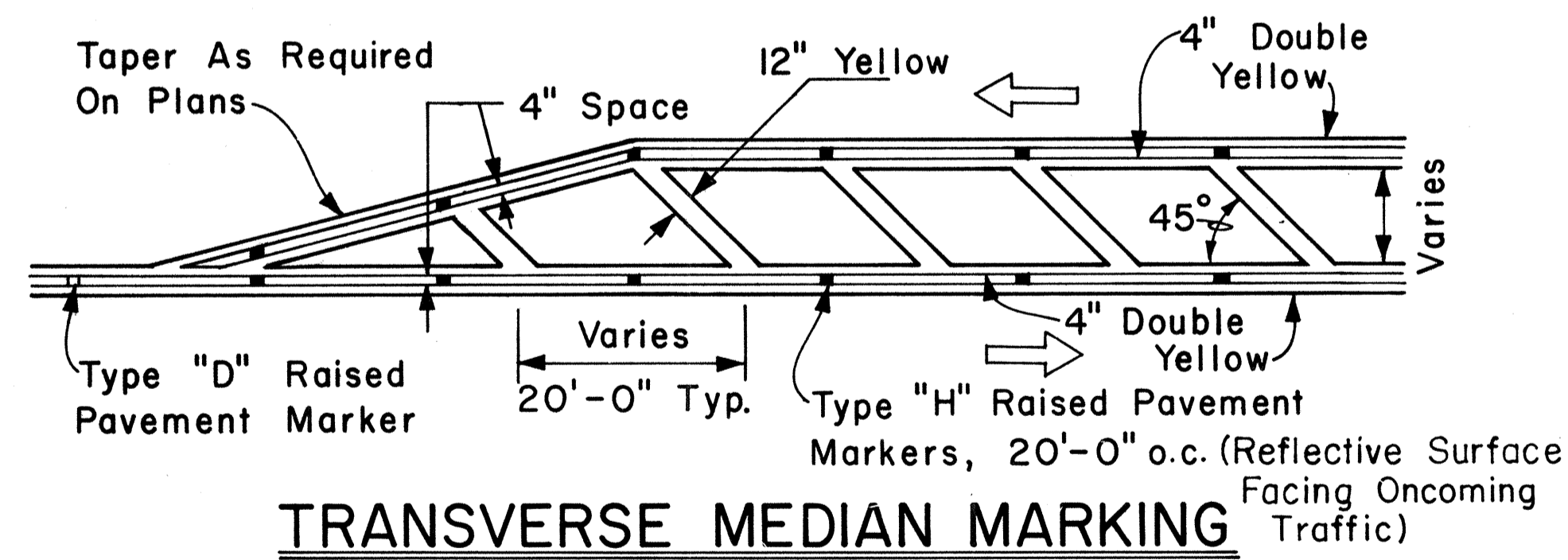
NOTE: Traffic Cone Usage Required.



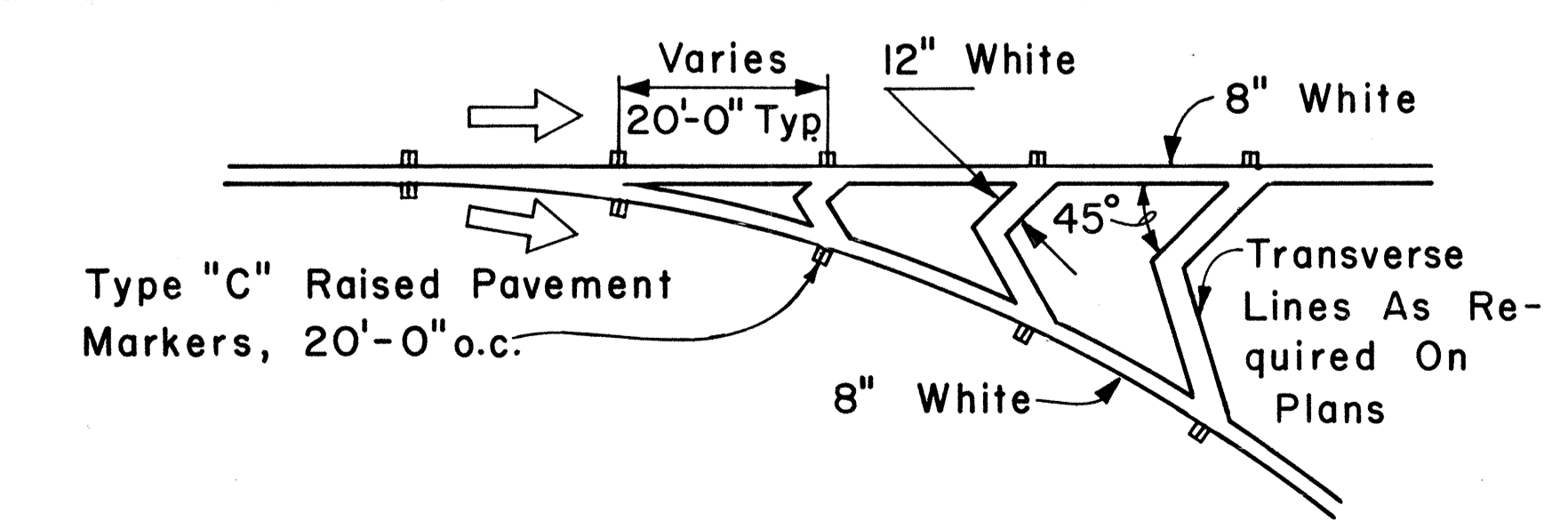
**TRANSVERSE LEFT SHOULDER MARKING**



**MULTI-LANE LANE CHANGE RESTRICTION ZONES**



**TRANSVERSE MEDIAN MARKING**



**CHANNELIZING ISLAND**

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

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

APPROVED:  
*Herbert Z. Zakschis* 5/2/78  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised Transverse left Shoulder Marking, Channelizing Island & Lane Change Restriction Zones.	E.T.	7/10/85

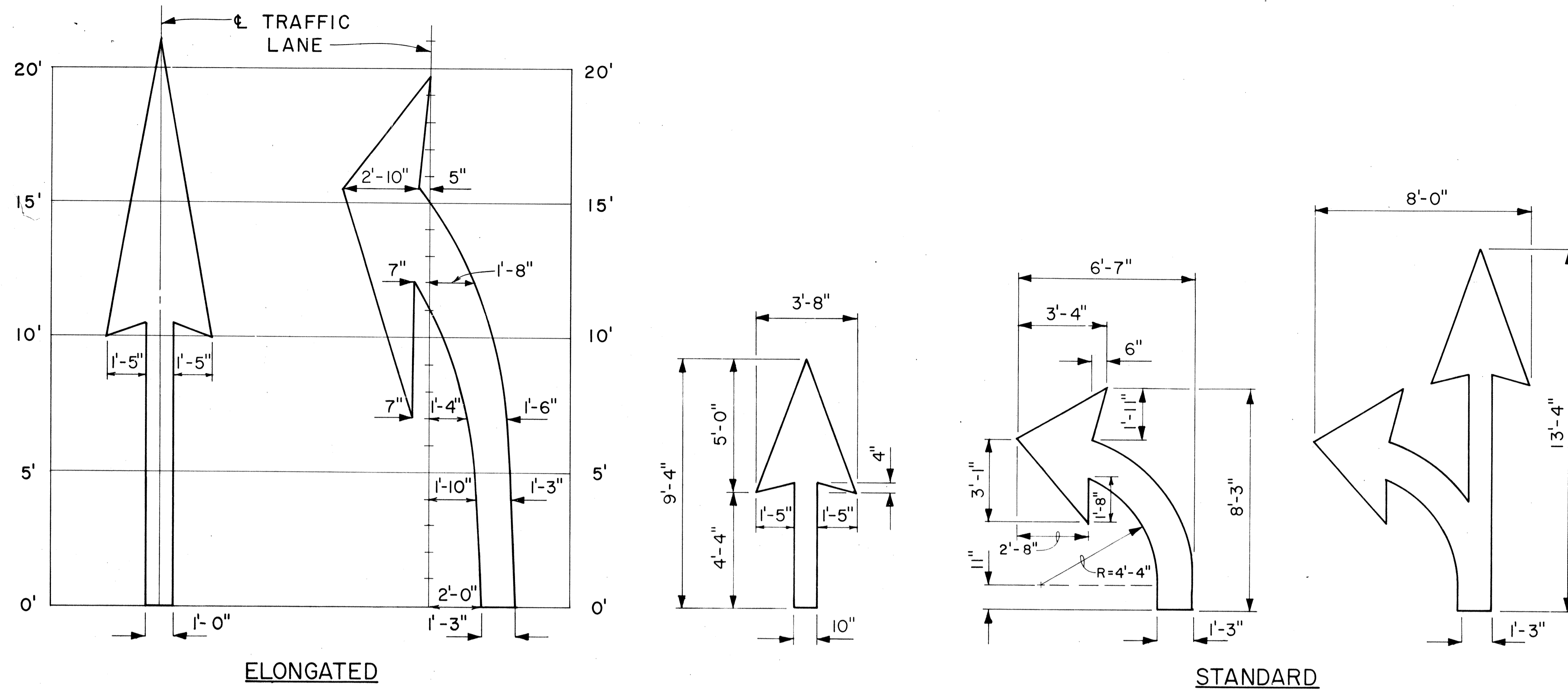
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**

MISCELLANEOUS  
 PAVEMENT MARKINGS

Scale: Not to Scale Date: April, 1978  
 SHEET NO. 22 OF 23 SHEETS DT 302

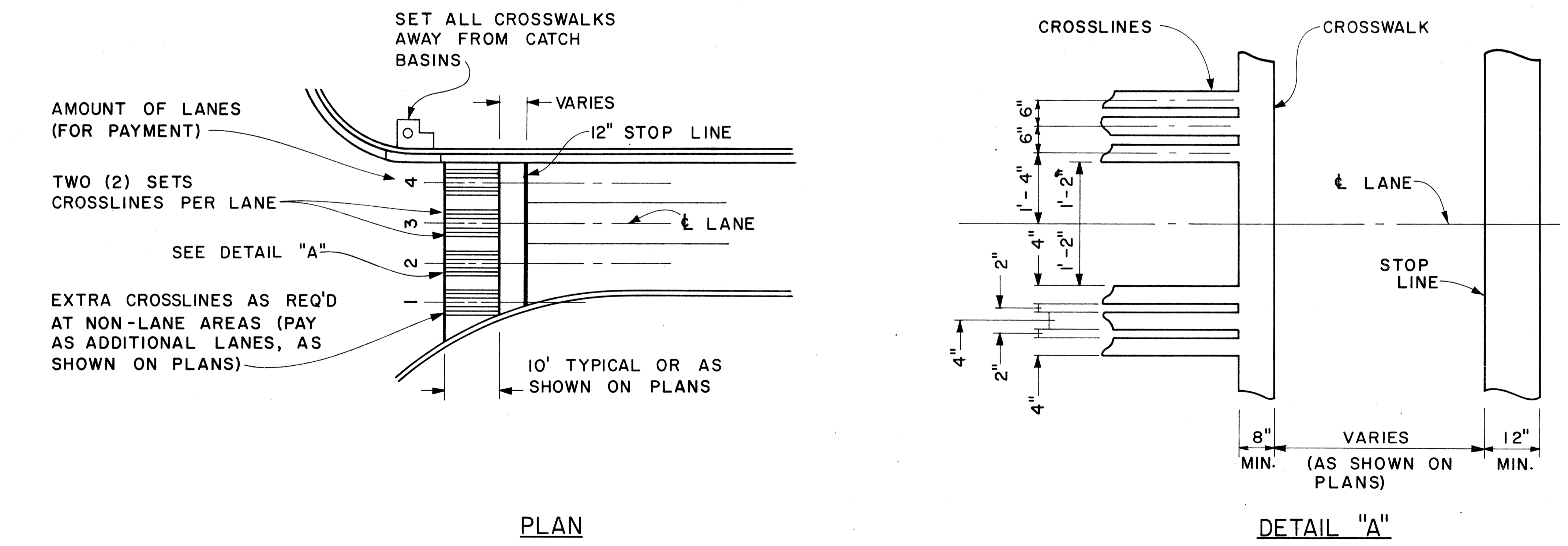
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-01-86M 03B-01-86M	1986	52	52



**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:  
*Eiichi Tanaka* 5/2/78  
TRAFFIC ENGINEER DATE

APPROVED:  
*Harvey S. Zaki* 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: As Shown Date: March, 1978  
SHEET No. 23 OF 23 SHEETS DT 306

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