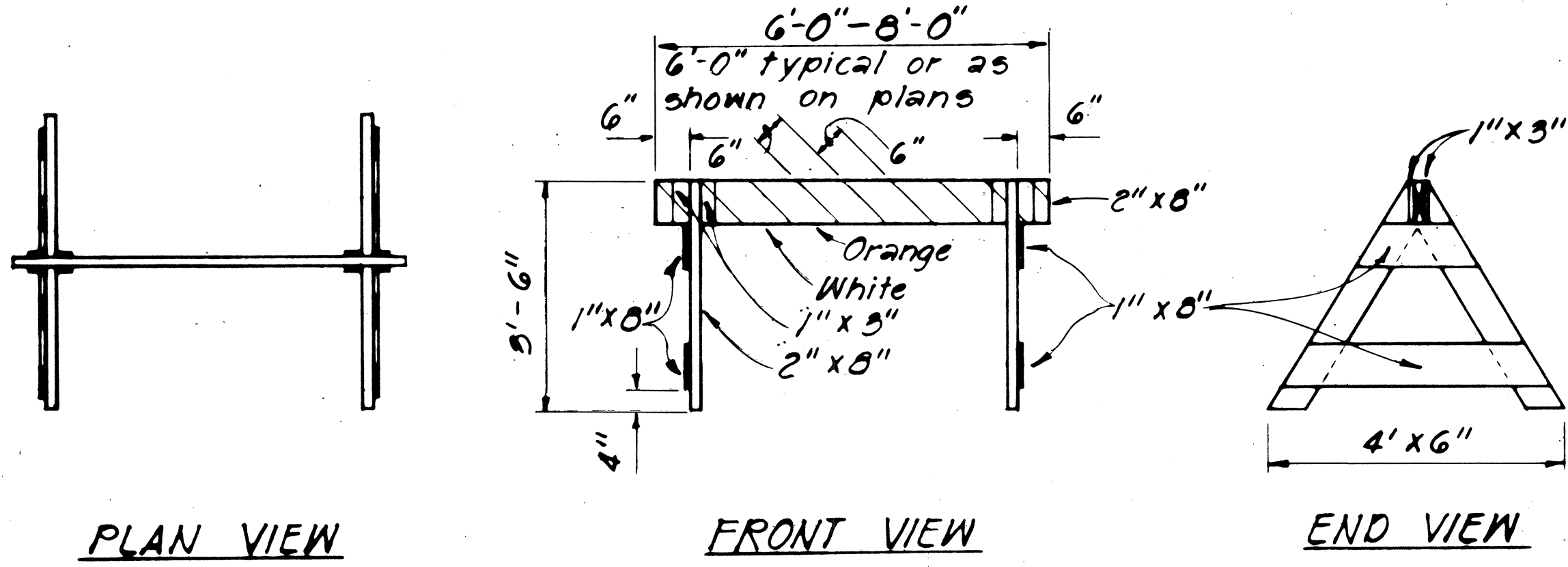
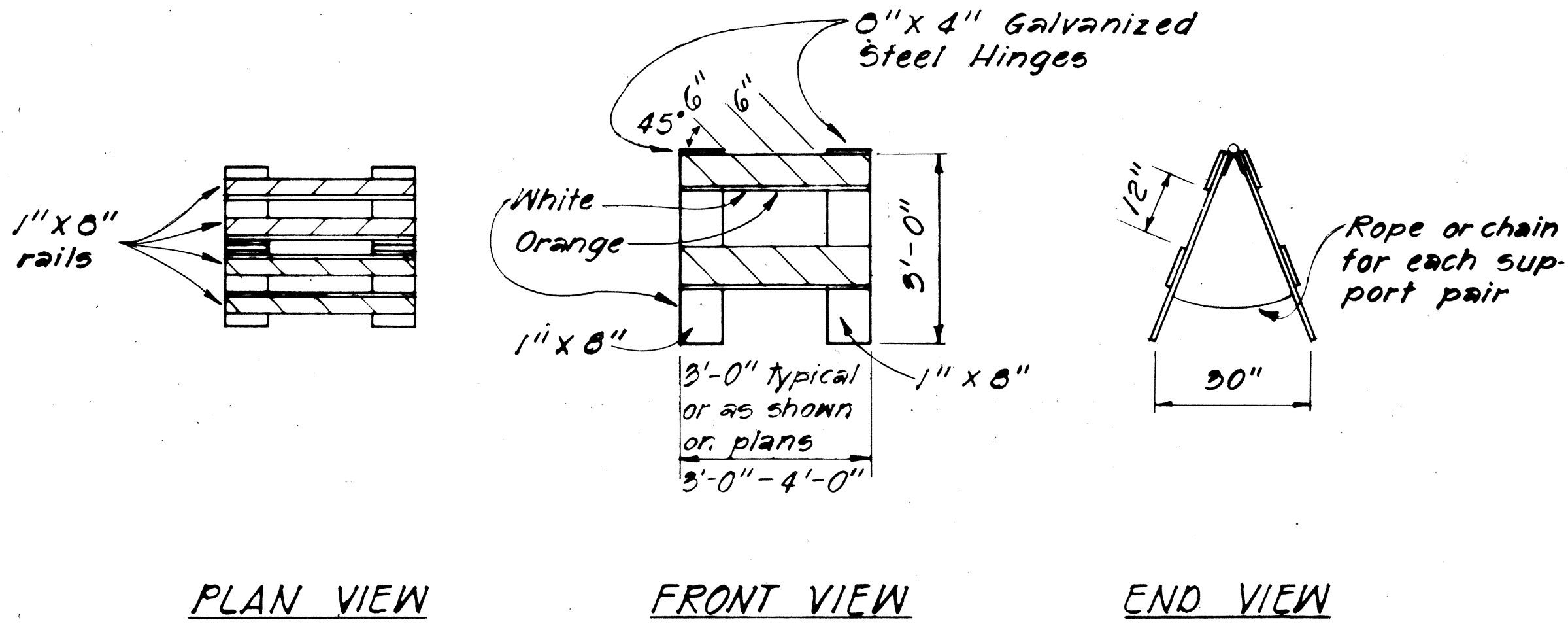


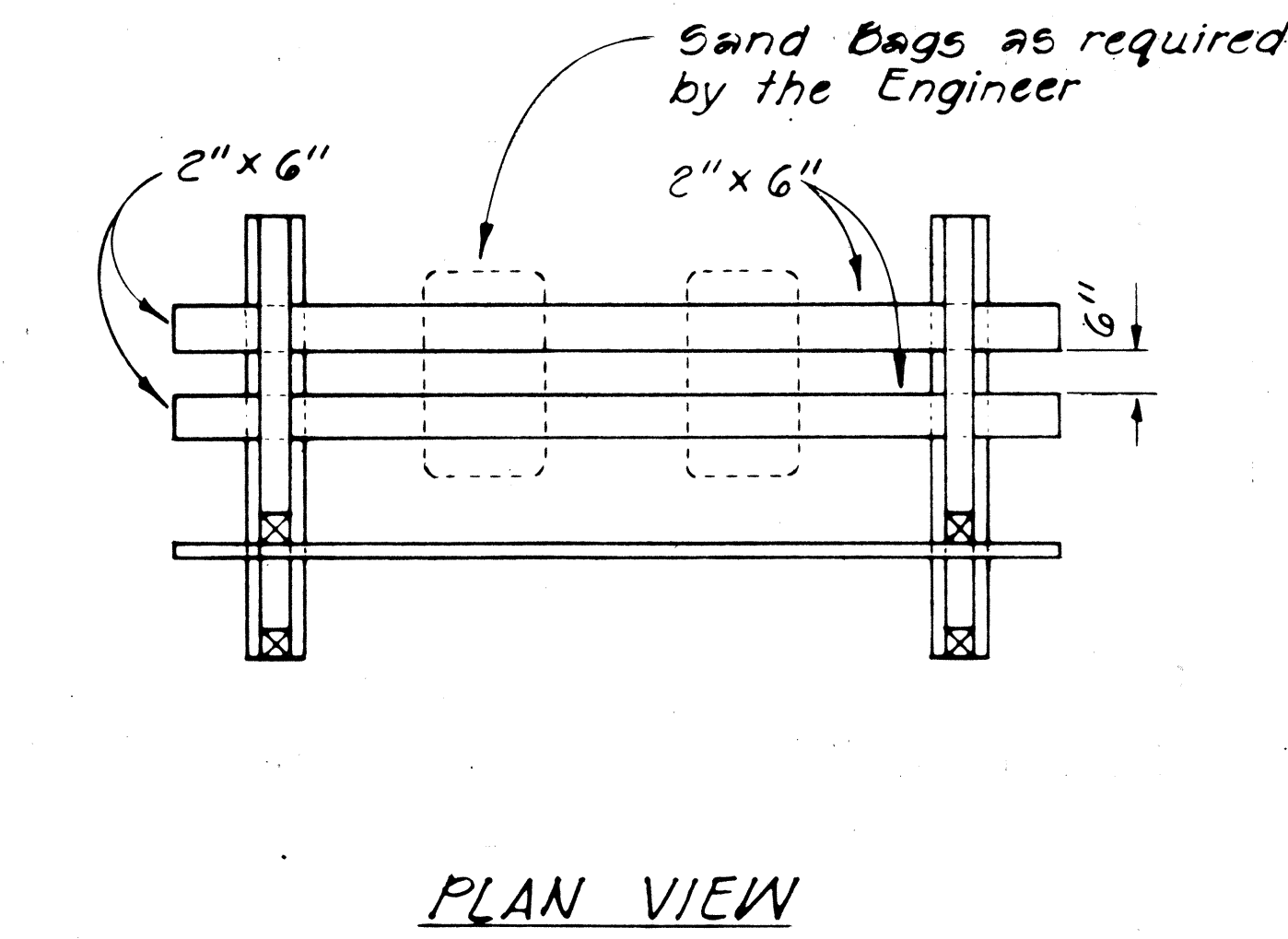
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	194-01-80	1980	5	19



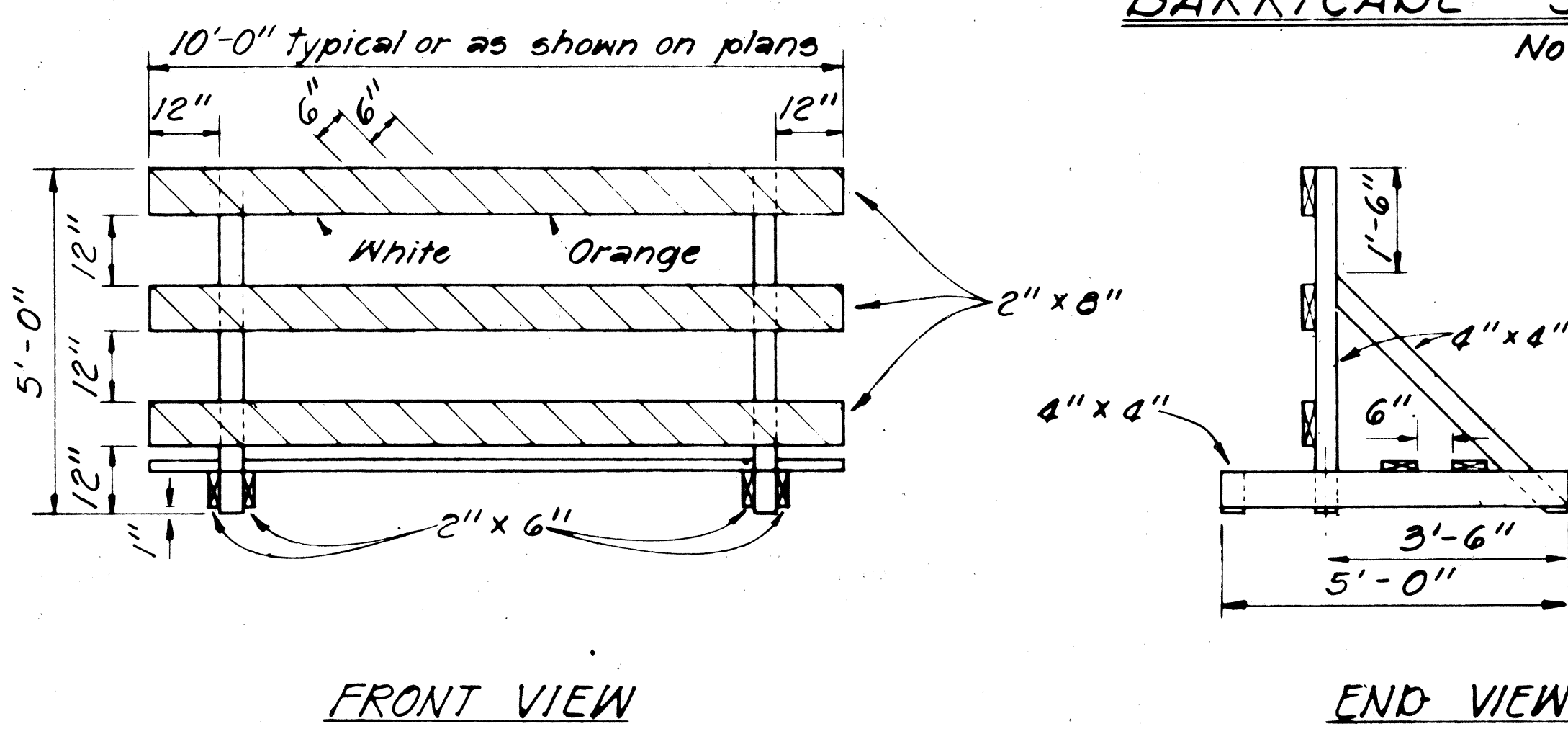
**TYPE I BARRICADE**  
Scale: 1/2" = 1'-0"



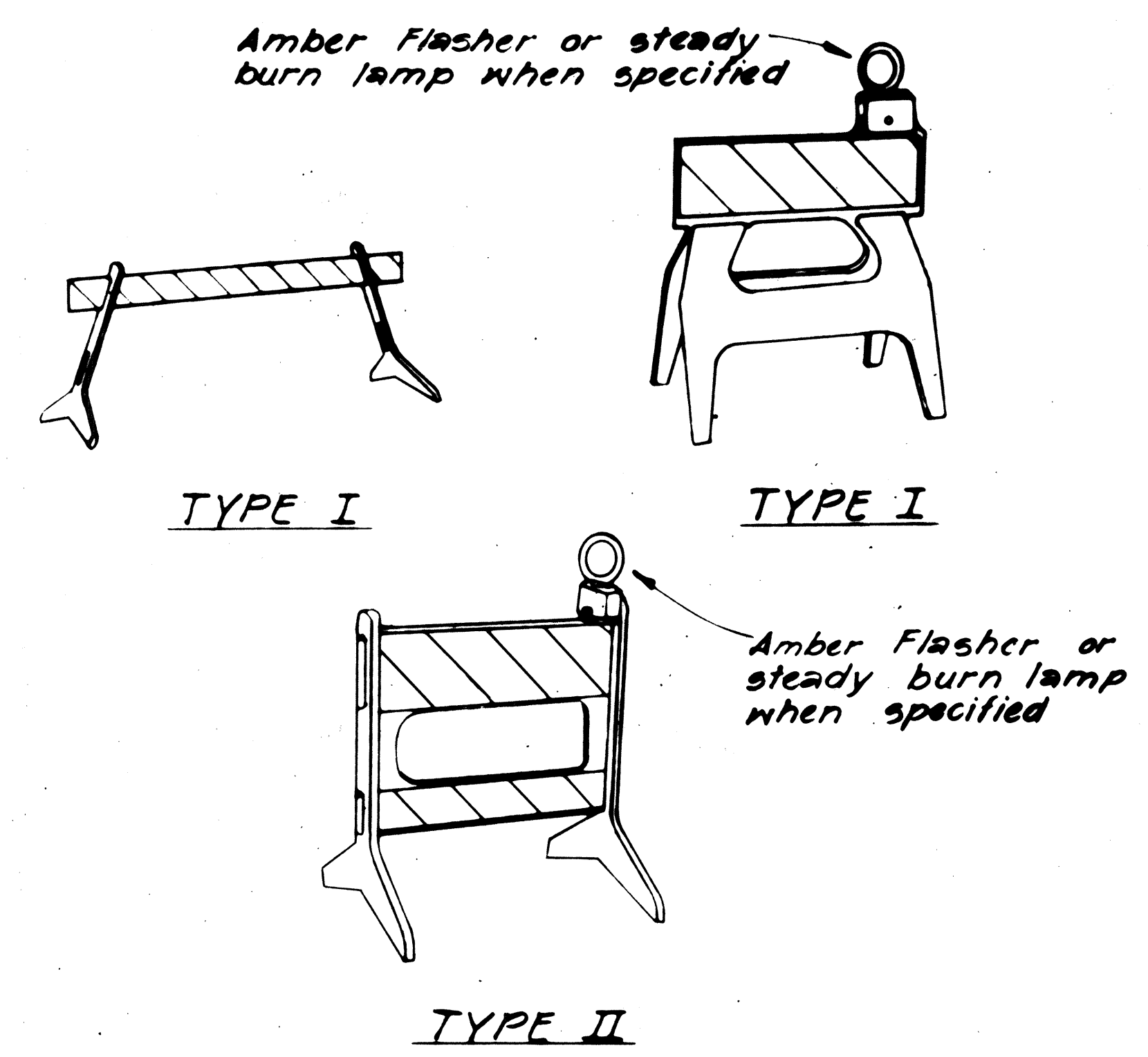
**TYPE II BARRICADE**  
Scale: 1/2" = 1'-0"



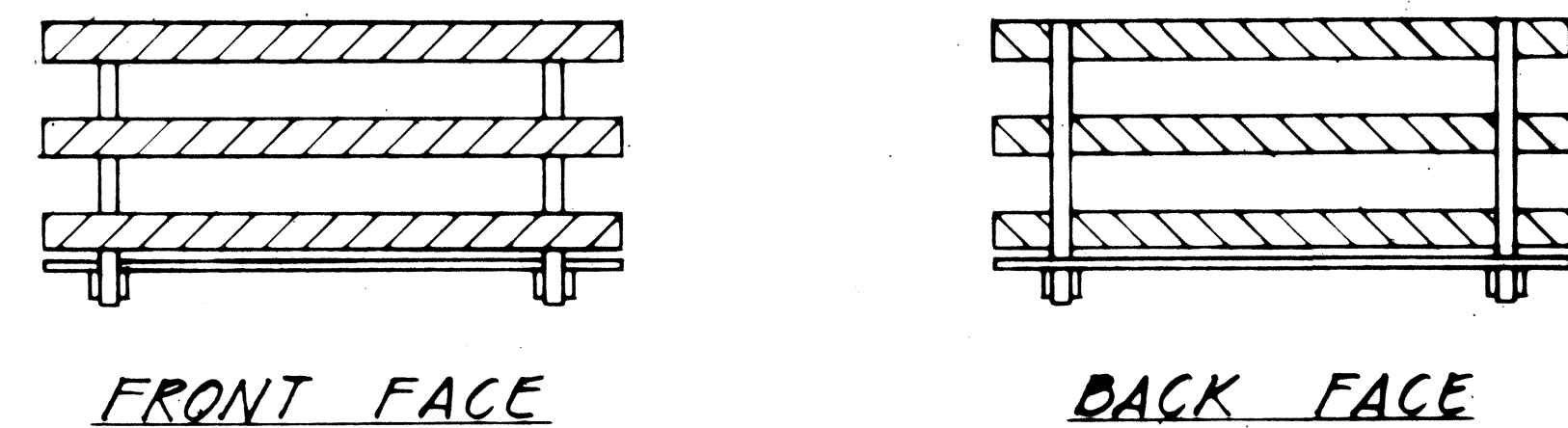
PLAN VIEW



**TYPE III BARRICADE**  
Scale: 1/2" = 1'-0"



**PLASTIC MOLDED BARRICADE OPTIONS \***  
Not to Scale  
\* Shop Drawings must be submitted for approval.



**BARRICADE STRIPING DETAILS**  
Not to Scale

**GENERAL NOTES**

1. The Contractor shall construct, install and maintain the barricades at the locations shown on the Plans or as when called for.
2. The barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property, unless otherwise specified.
3. The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized with reflective sheeting.
4. Both faces of the barricade rails shall be striped. See Striping Detail Arrangement.
5. Contractor may submit alternate designs for approval.
6. Barricade details shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, by the Federal Highway Administration and as amended.
7. If wooden rails are used, 26 ga. galv. steel sheet shall be first tacked on to the rails and then overlayed with reflective sheeting.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

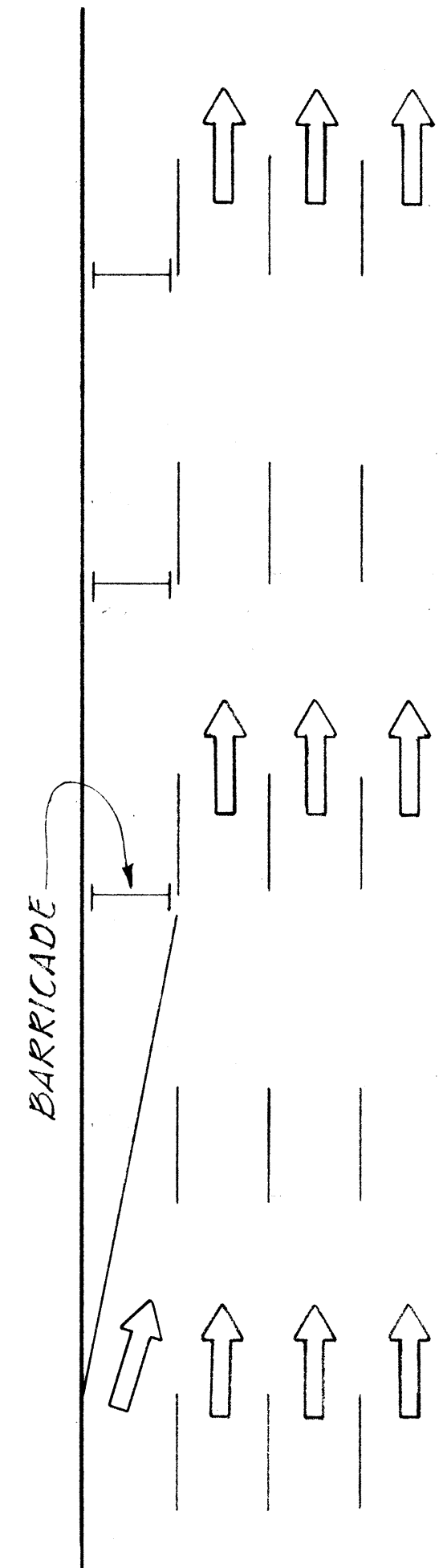
**TYPICAL DETAILS**  
  
**BARRICADES**  
  
SCALE: As Shown  
SHEET NO. 1 OF 14 SHEETS

DATE	10/1/80
DESIGNED BY	...
DRAWN BY	...
CHECKED BY	...
IN CHARGE	...

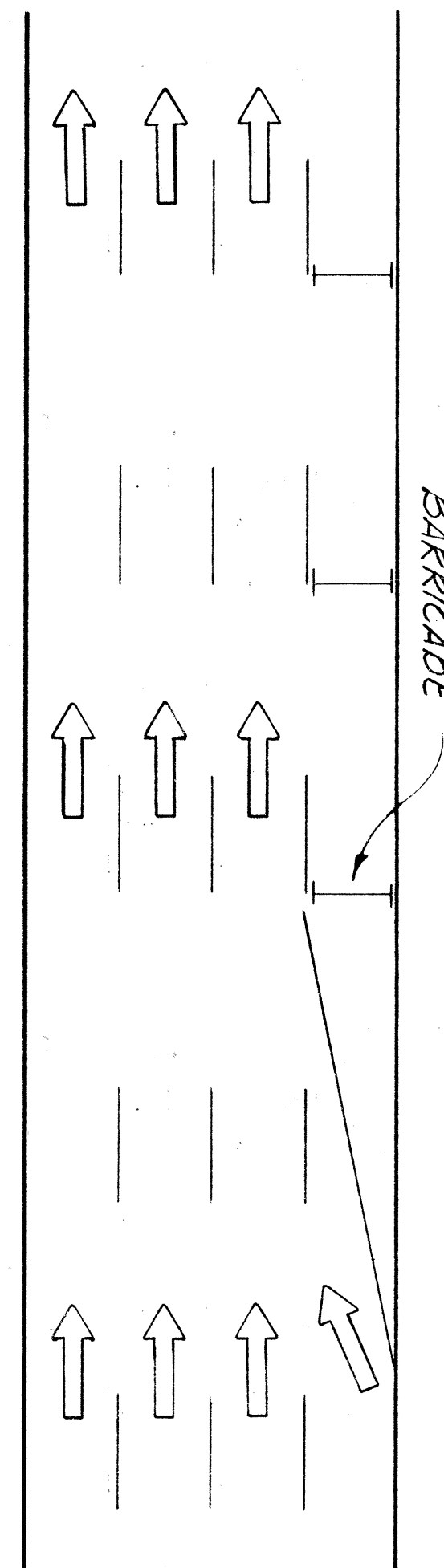
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	194-01-80	1980	6	19

# GENERAL NOTES

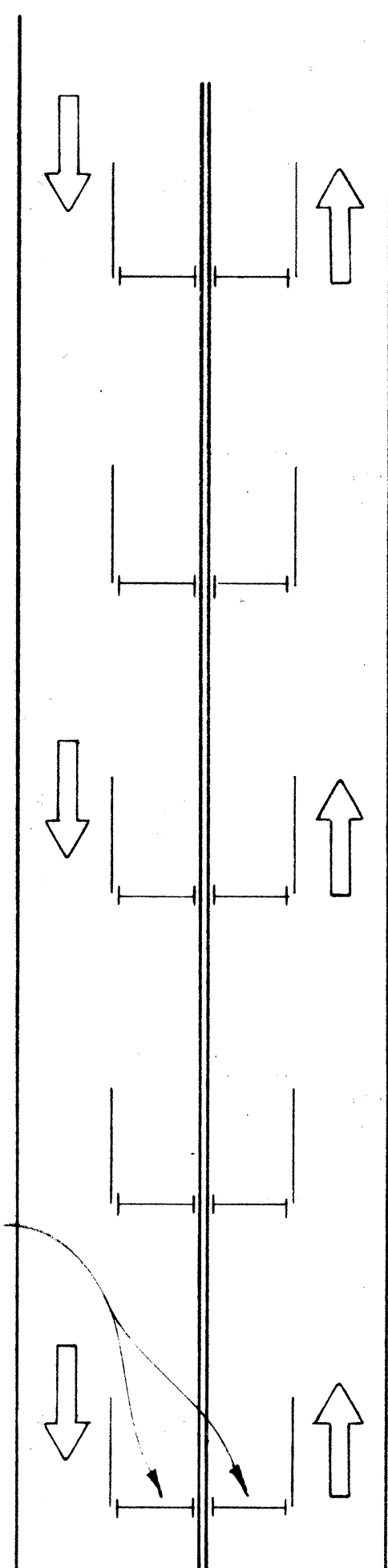
1. Barricade Type, Placement, and Arrangement shall be as shown on the Construction Plans or as when called for.



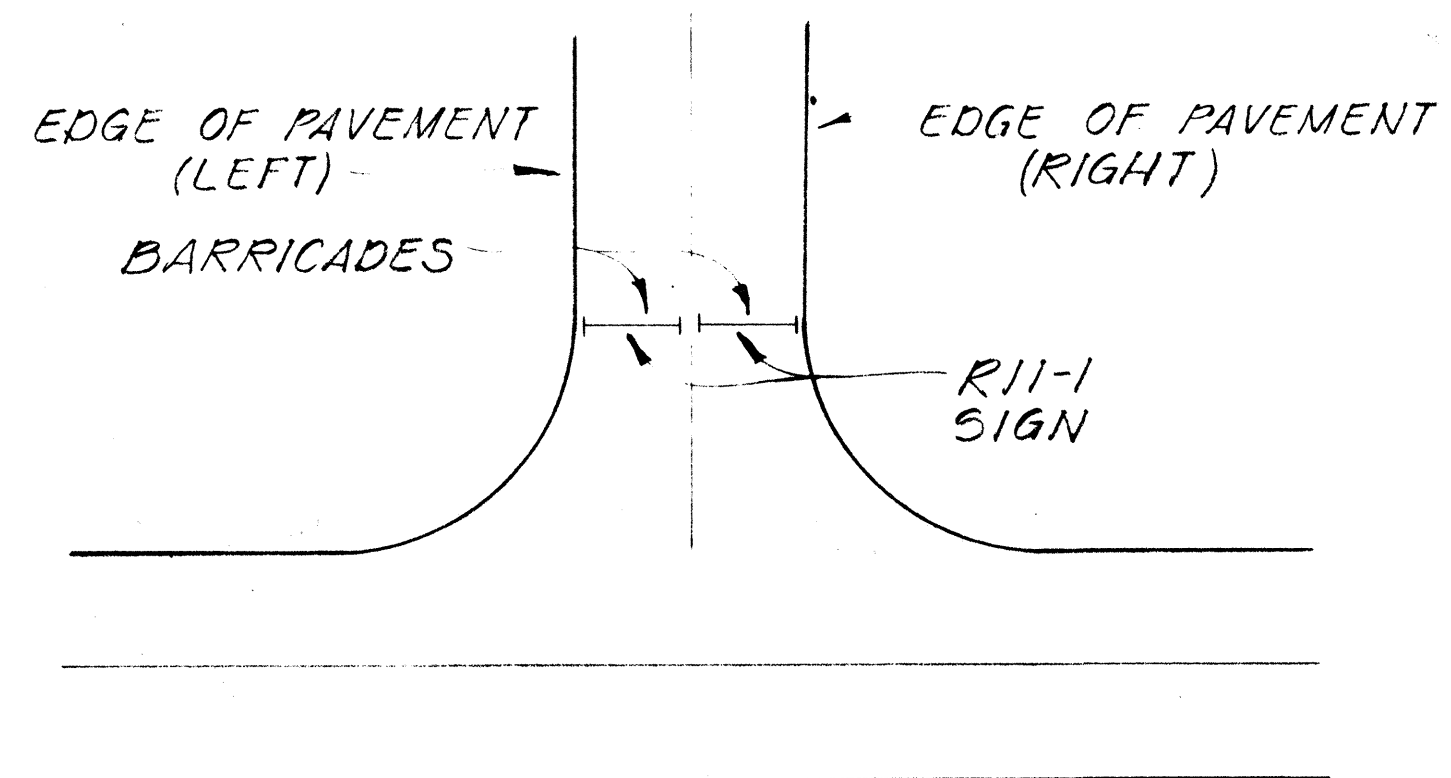
ROADWAY DELINEATION TO THE RIGHT  
NOT TO SCALE



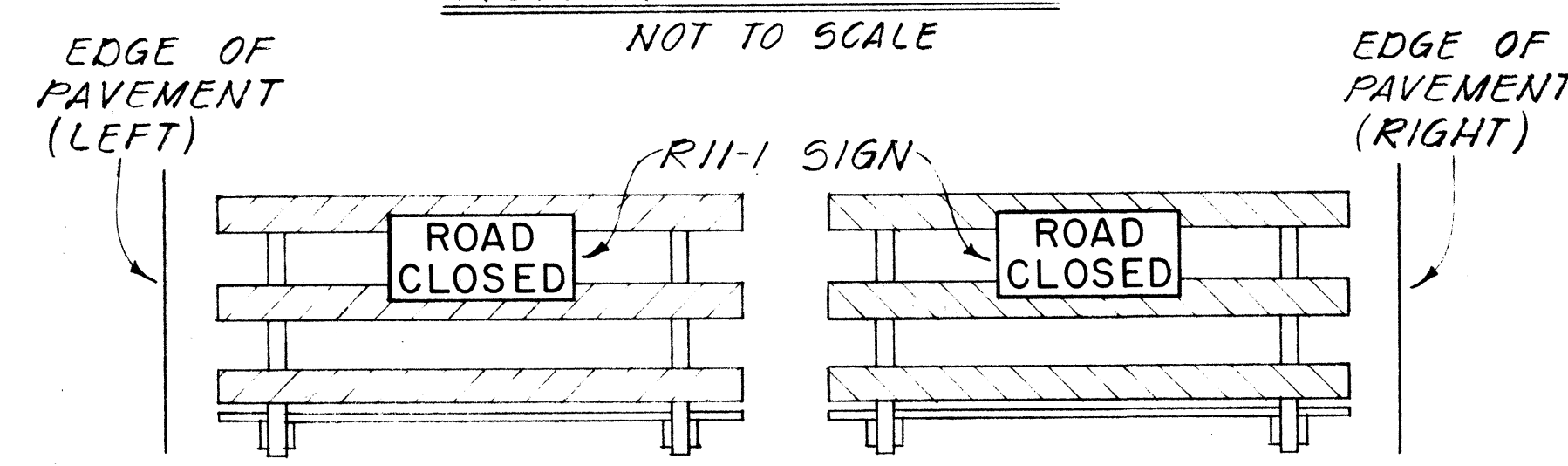
ROADWAY DELINEATION TO THE LEFT  
NOT TO SCALE



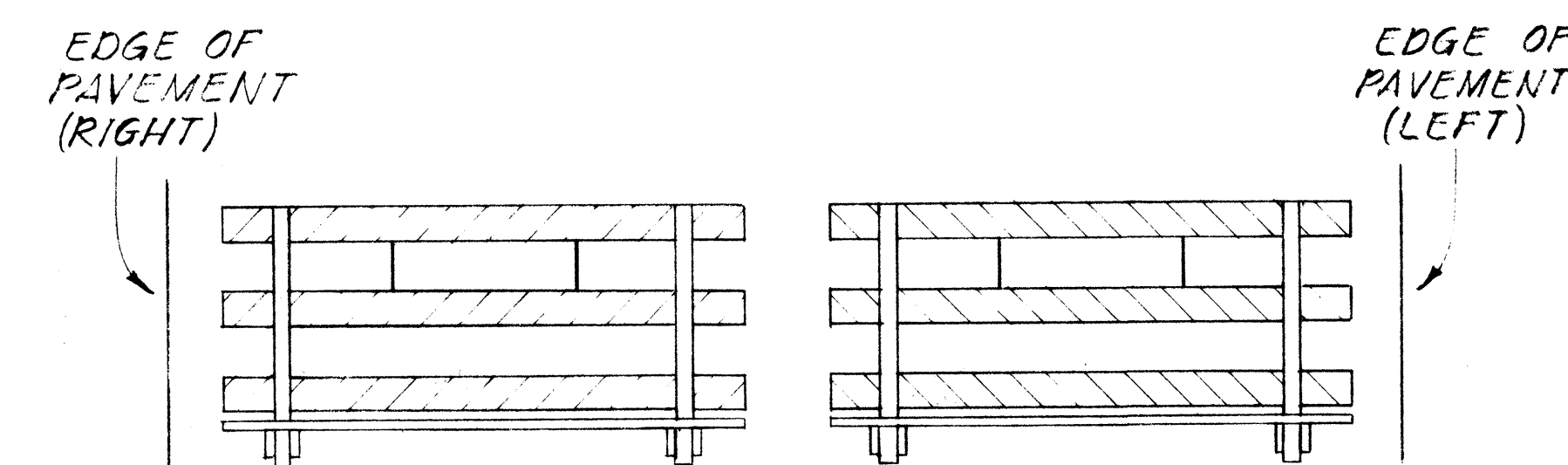
ROADWAY DELINEATION FOR 2-WAY TRAFFIC  
NOT TO SCALE



ROADWAY CLOSED  
NOT TO SCALE

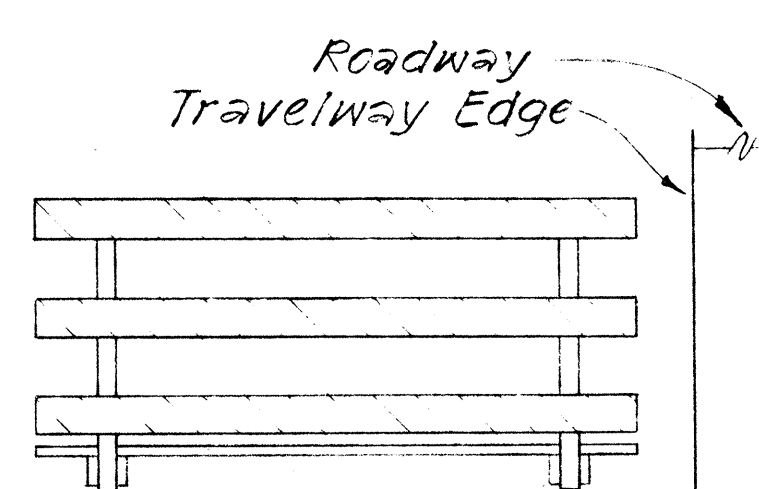


FRONT VIEW

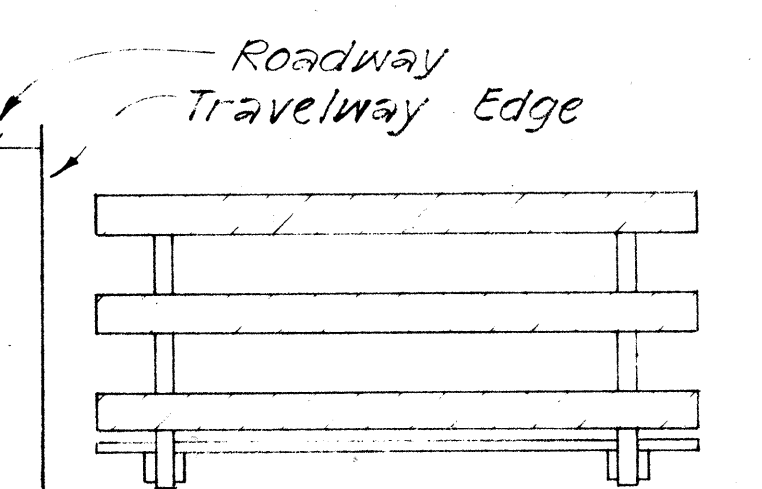


BACK VIEW

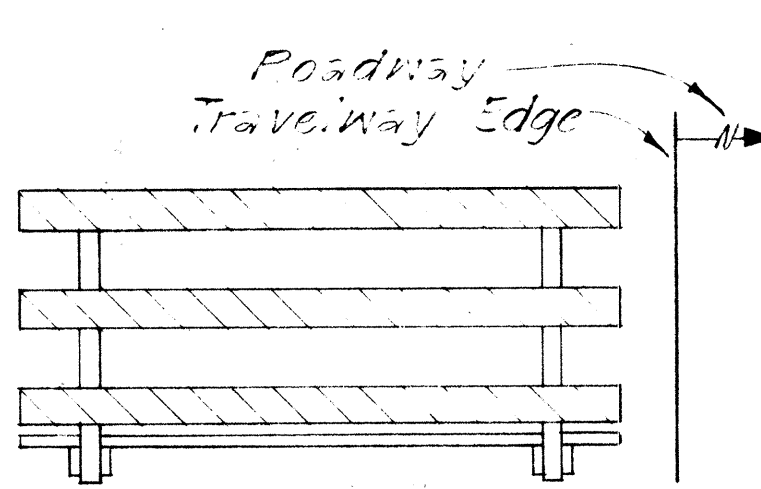
BARRICADE STRIPING ARRANGEMENT  
NOT TO SCALE



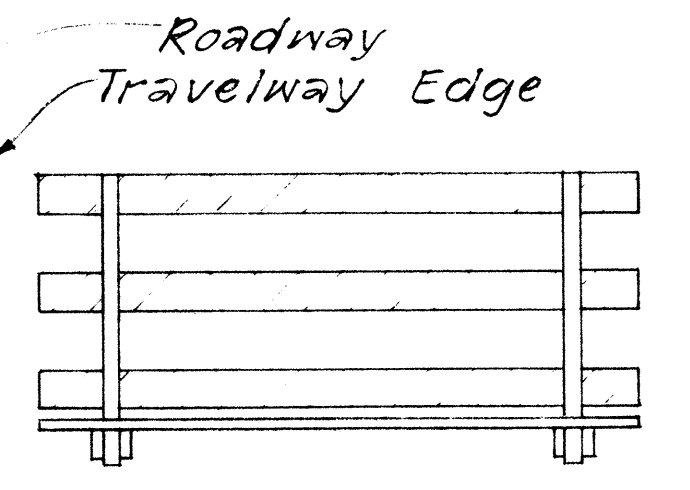
FRONT VIEW



FRONT VIEW

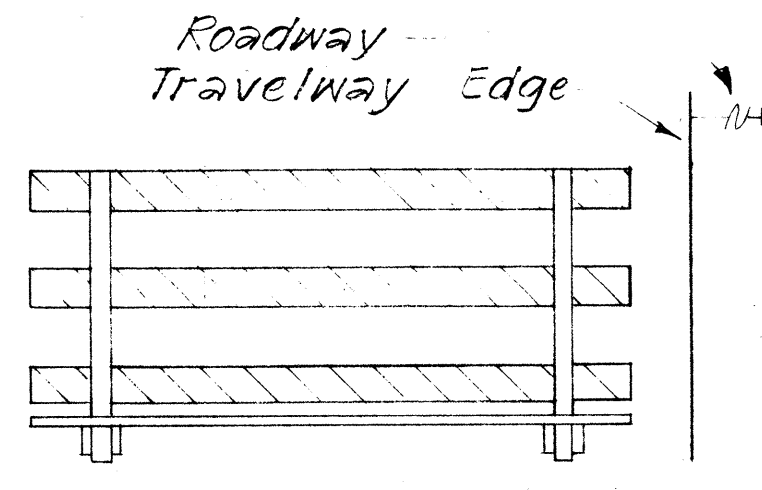


FRONT VIEW



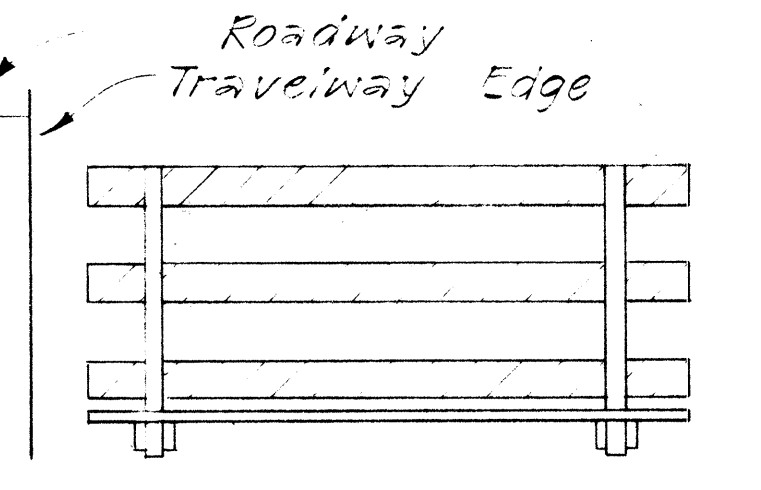
BACK VIEW

BARRICADE STRIPING ARRANGEMENT  
NOT TO SCALE



BACK VIEW

BARRICADE STRIPING ARRANGEMENT  
NOT TO SCALE



BACK VIEW

BARRICADE STRIPING ARRANGEMENT  
NOT TO SCALE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

TYPICAL DETAILS

BARRICADE STRIPING DETAILS

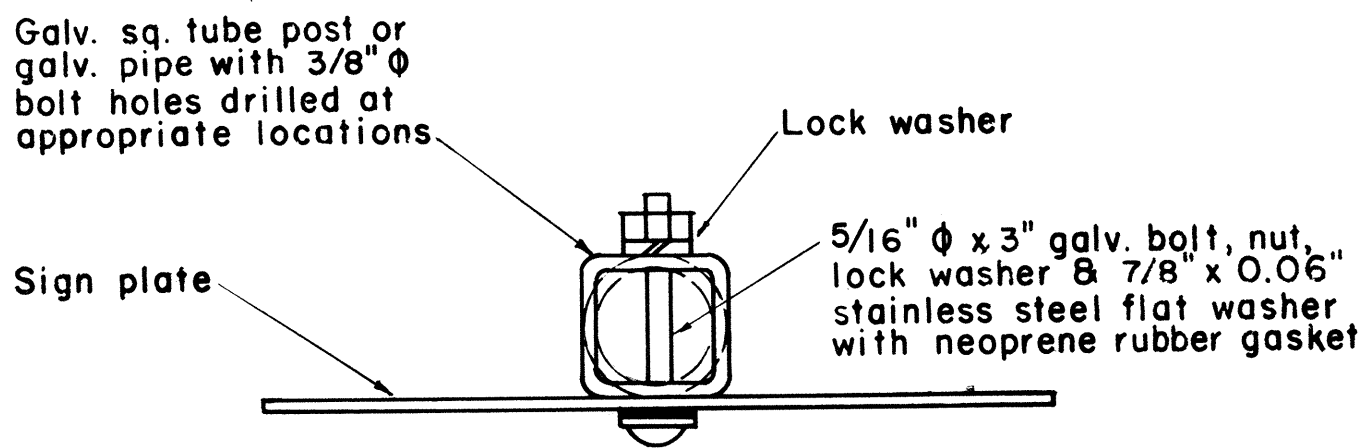
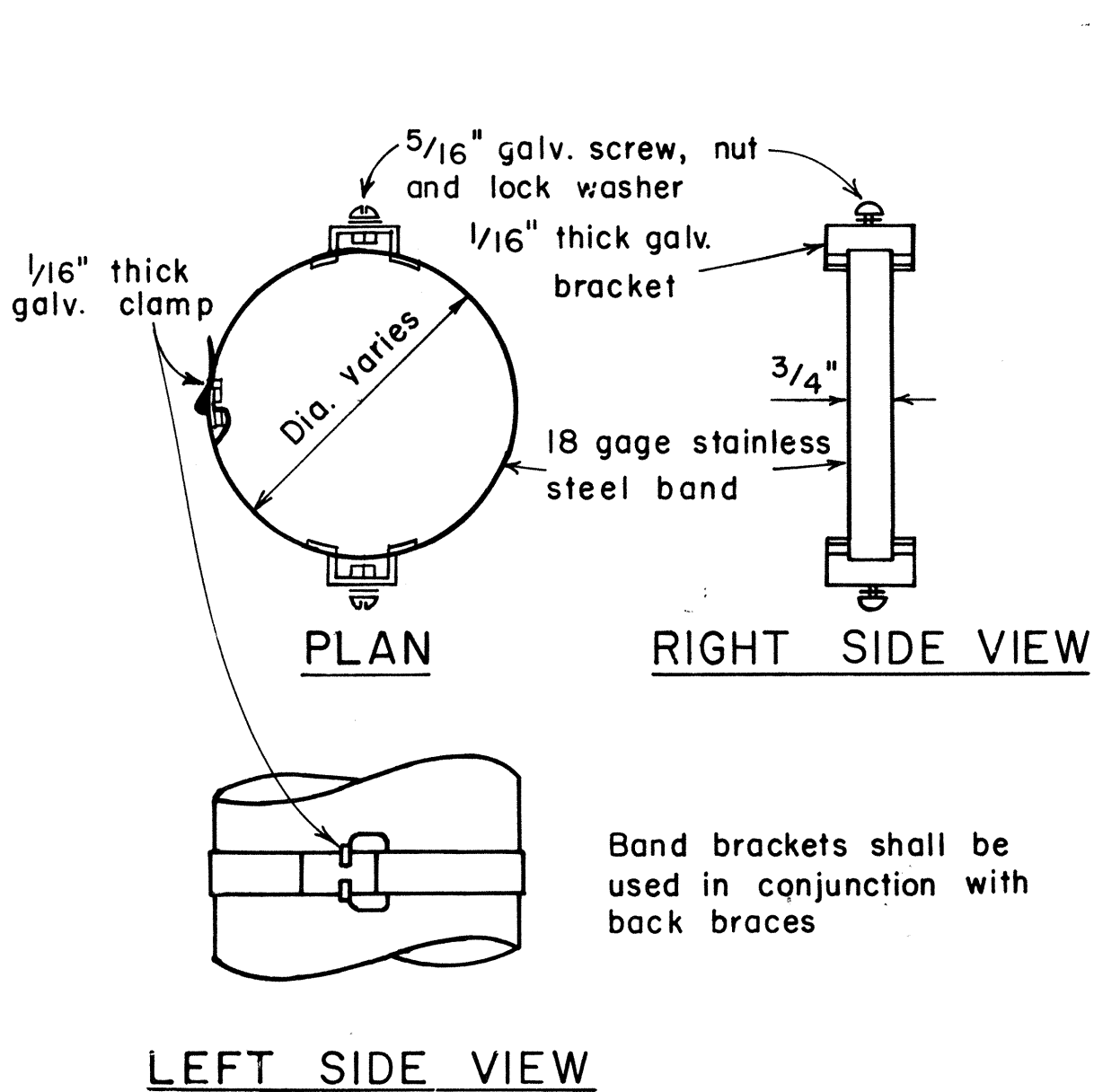
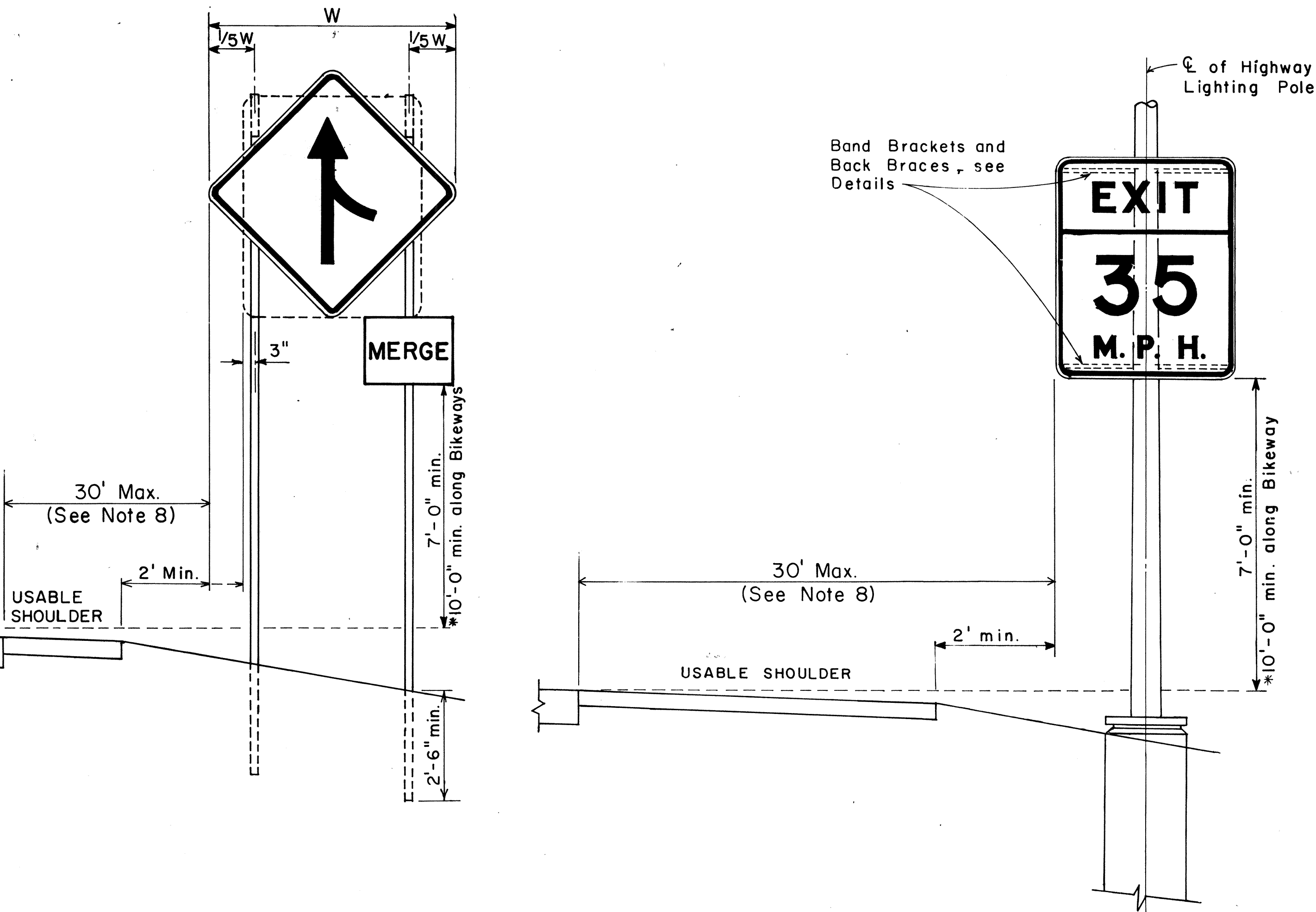
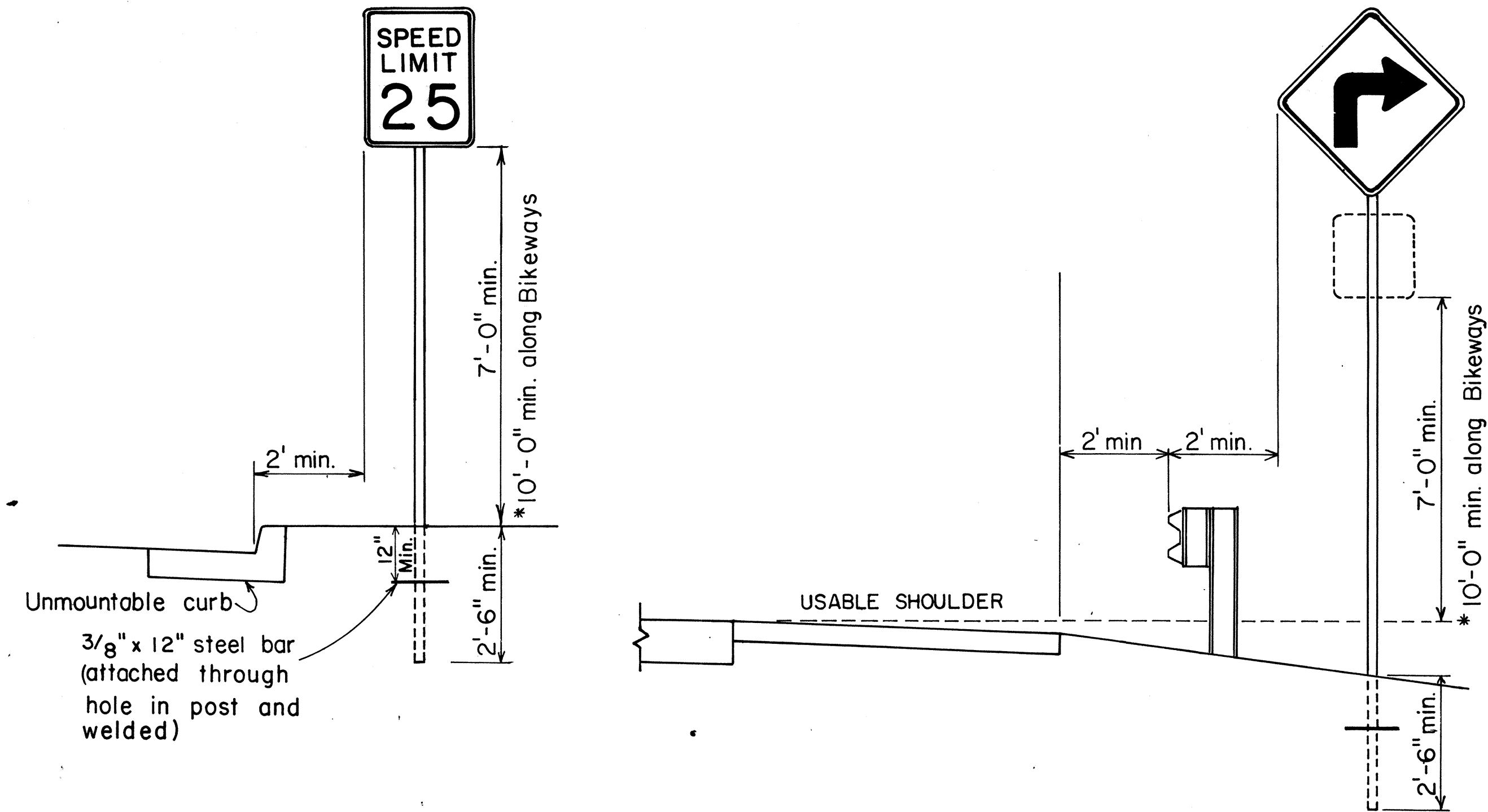
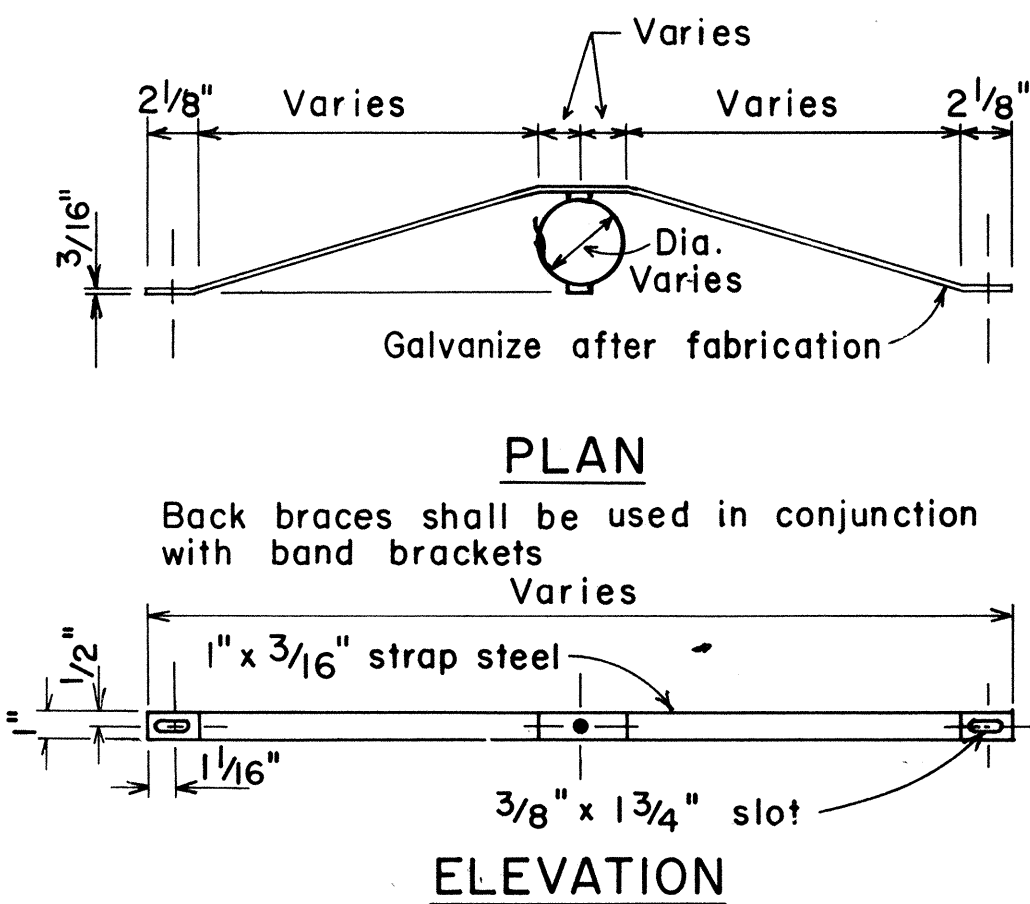


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19H-01-80	1980	7	19

### GENERAL NOTES

- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two sign posts.
- All signs larger than 10 sq. ft. in area or 48" inches and wider, and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least two sets of band brackets and back braces.
- All signs 28 sq. ft. in area or larger and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least three sets of band brackets 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 sign where required for City and County street name signs.
- (R) or (L) indicates right or left and shall be as shown on the plans.
- See plans for special details.
- When clear roadside recovery areas are provided, Signs shall be placed as far from the edge of traveled way as possible up to a maximum of 30 feet. When possible they shall be placed in protected locations.
- 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.

### BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION



### BAND BRACKET TYPICAL MOUNTING DETAILS NOT TO SCALE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77
2	Revised depth of signpost	H.T.	8/31/79
3	Added Notes No. 8 & No. 9	H.T.	8/18/79
4	Revised Gen. Note #4 & Mounting Details	H.T.	4/23/80

APPROVAL RECOMMENDED:  
*Erich Tanaka*  
TRAFFIC ENGINEER  
11/10/77  
DATE

APPROVED:  
*Harbert S. Nakai*  
ASSISTANT CHIEF, ENGINEERING  
11/15/77  
DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### STANDARD DETAILS MISCELLANEOUS SIGN DETAILS

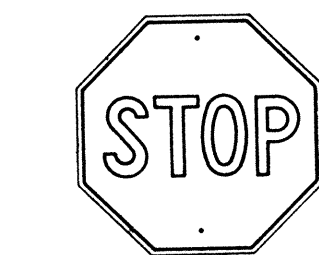
Not to scale  
June, 1977

SHEET No. 3 OF 14 SHEETS DT 100

### HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION

DATE	11/15/77
SURVEY PLOTTED BY	H.T.
DRAWN BY	H.T.
DESIGNED BY	H.T.
NOTED BY	H.T.
CHECKED BY	H.T.
ORIGINAL PLAN	No.
NOTE BOOK	No.

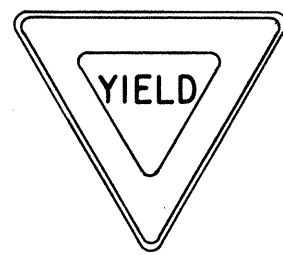
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	13-01-80	1980	8	13



R1-1 30"x30"  
R1-1-A 36"x36"

4-WAY

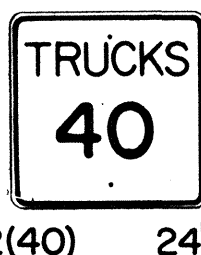
R1-3 12"x6"  
R1-3-A 18"x9"



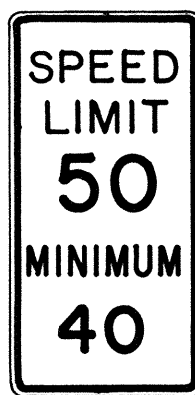
R1-2 36"x36"x36"  
R1-2-A 48"x48"x48"



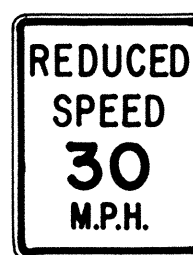
R2-1(50) 24"x30"  
R2-1(50)-A 48"x60"



R2-2(40) 24"x24"  
R2-2(40)-A 48"x48"



R2-4a(50/40) 24"x48"  
R2-4a(50/40)-A 48"x96"



R2-5b(30) 24"x30"  
R2-5b(30)-A 48"x60"



R3-1 24"x24"  
24"x18"  
R3-1-A 48"x48"  
48"x36"



R3-2 24"x24"  
24"x18"  
R3-2-A 48"x48"  
48"x36"



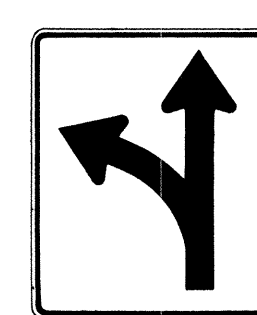
R3-3 24"x24"  
R3-3-A 48"x48"



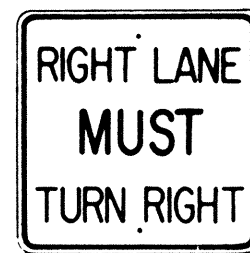
R3-4 24"x24"  
24"x18"  
R3-4-A 48"x48"  
48"x36"



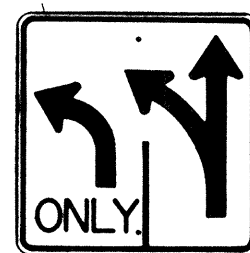
R3-5(L) 30"x36"  
R3-5(L)-A 48"x60"



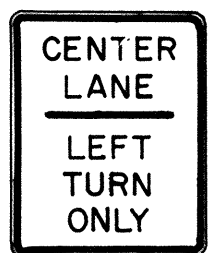
R3-6(L) 30"x36"  
R3-6(L)-A 48"x60"



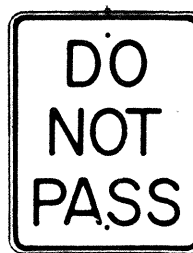
R3-7(R) 30"x30"  
R3-7(R)-A 48"x48"



R3-8(L) 30"x30"  
R3-8(L)-A 36"x36"  
R3-8(L)-B 48"x48"



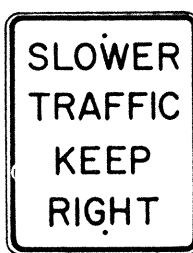
R3-9 24"x30"



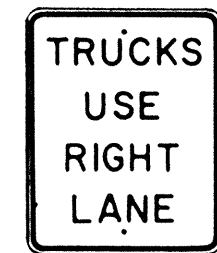
R4-1 24"x30"



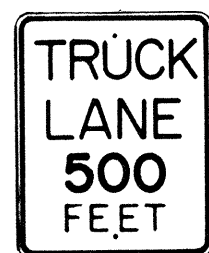
R4-2 24"x30"



R4-3 24"x30"  
R4-3-A 48"x60"



R4-5 24"x30"



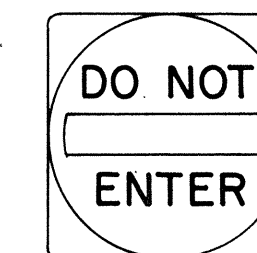
R4-6(500) 24"x30"



R4-7 24"x30"  
24"x18"



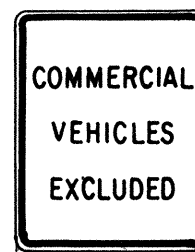
R4-8 24"x30"  
24"x18"



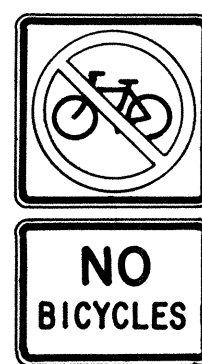
R5-1 30"x30"  
R5-1-A 48"x48"



R5-2 24"x24"  
24"x18"



R5-4 24"x30"



R5-6 24"x24"  
24"x18"



R5-9 36"x24"



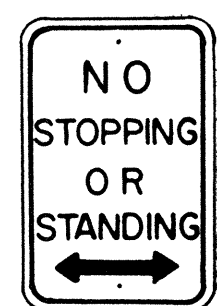
R6-1(R) 36"x12"



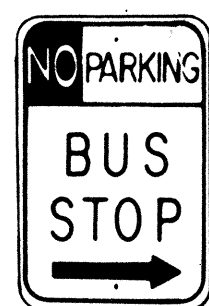
R6-2(R) 18"x24"



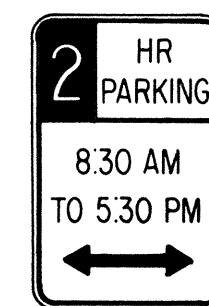
R7-1 12"x18"  
R7-1-A 24"x30"



R7-4 12"x18"  
R7-4-A 24"x30"



R7-107(R) 12"x18"



R7-108 12"x18"



R7-201 12"x6"  
R7-201-A 24"x12"



R8-1 24"x30"



R8-2 24"x30"



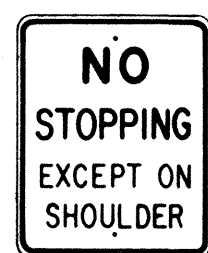
R8-3 24"x30"



R8-4 30"x24"  
R8-4-A 48"x36"



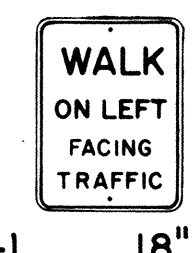
R8-5 24"x30"



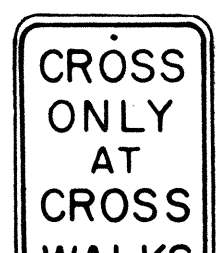
R8-6 24"x30"



R8-7 30"x24"  
R8-7-A 48"x36"



R9-1 18"x24"



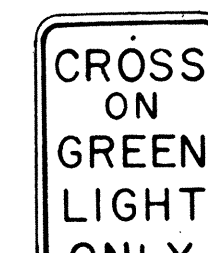
R9-2 12"x18"



R9-3 12"x18"



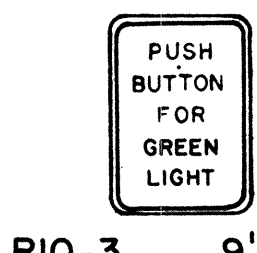
R9-4 18"x24"



R10-1 12"x18"



R10-2 12"x18"



R10-3 9"x12"



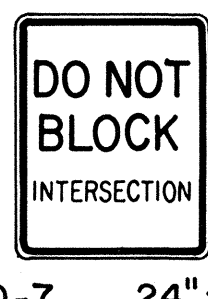
R10-4 9"x12"



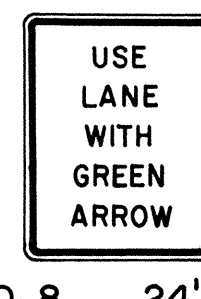
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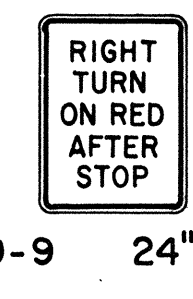
R10-6 24"x36"



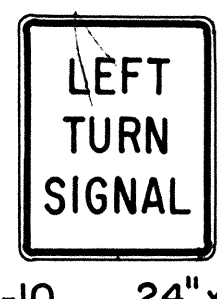
R10-7 24"x30"



R10-8 24"x30"



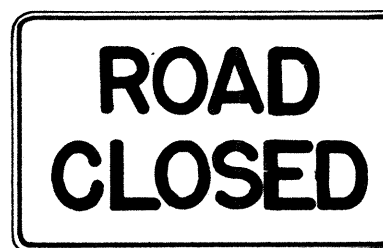
R10-9 24"x30"



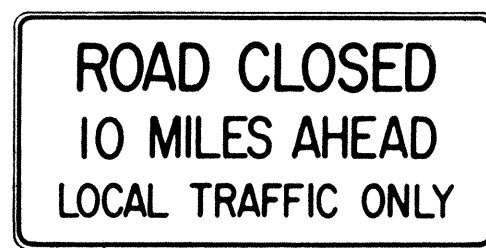
R10-10 24"x30"



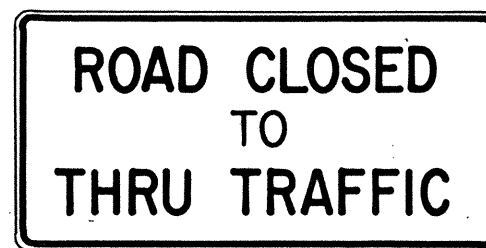
R11-1 24"x30"



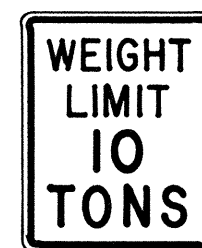
R11-2 48"x30"



R11-3(10) 60"x30"



R11-4 60"x30"



R12-1(10) 24"x30"

## GENERAL NOTES

1. Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.

2. All regulatory signs shall be reflectorized unless otherwise specified.

3. All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.

4. Numerals in ( ) indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

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

APPROVAL RECOMMENDED:

*Erich Tanaka*  
TRAFFIC ENGINEER

3/11/72  
DATE

APPROVED:

*Robert Zelen*  
ASSISTANT CHIEF, ENGINEERING

2-20-72  
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.T.	3/20/72
2	Revised General Note 1.	H.T.	10/10/74
3	Added General Note 5	H.T.	6/9/79

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

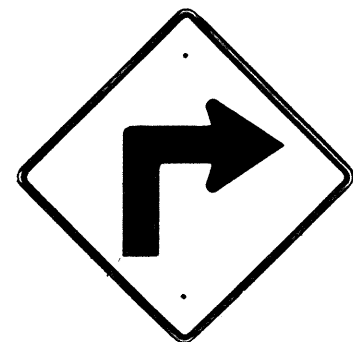
## STANDARD DETAILS REGULATORY SIGNS

NOT TO SCALE

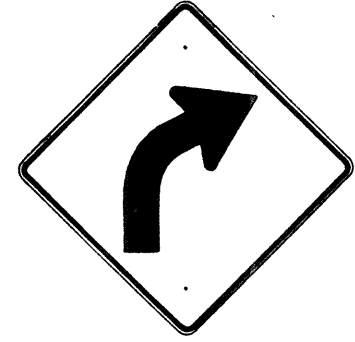
SHEET No. 4 OF 14 SHEETS DT 101



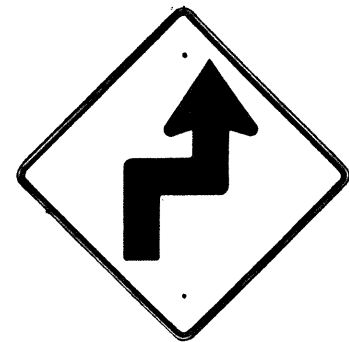
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	13H-01-80	1980	9	19



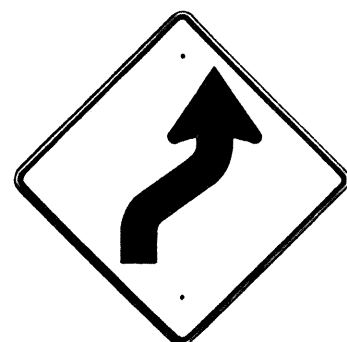
W1-1(R) 30"x 30"  
W1-1(R)-A 48"x 48"



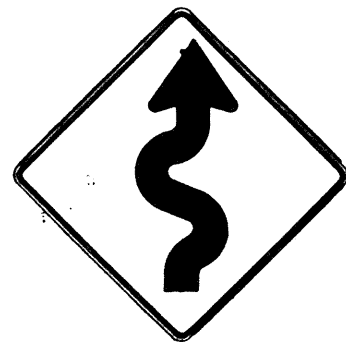
W1-2(R) 30"x 30"  
W1-2(R)-A 48"x 48"



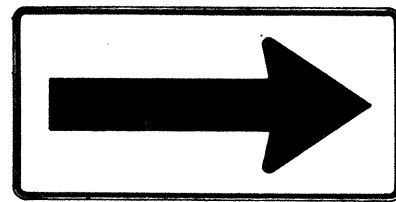
W1-3(R) 30"x 30"  
W1-3(R)-A 48"x 48"



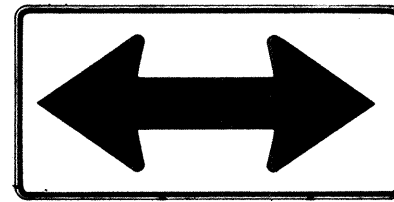
W1-4(R) 30"x 30"  
W1-4(R)-A 48"x 48"



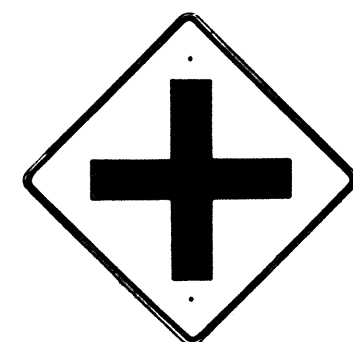
W1-5(R) 30"x 30"  
W1-5(R)-A 48"x 48"



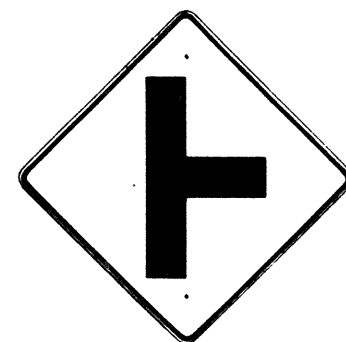
W1-6 48"x 24"



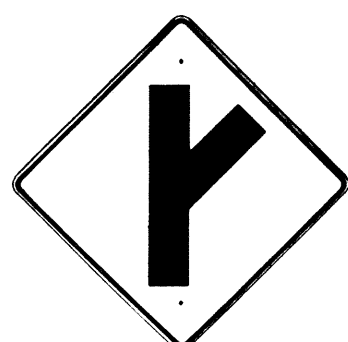
W1-7 48"x 24"



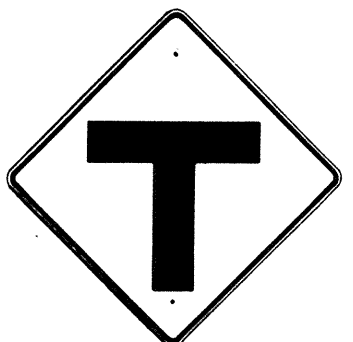
W2-1 30"x 30"  
W2-1-A 48"x 48"



W2-2 30"x 30"  
W2-2-A 48"x 48"



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



W2-4 30"x 30"  
W2-4-A 48"x 48"



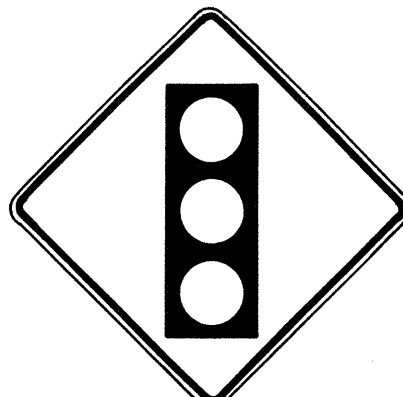
W2-5 30"x 30"  
W2-5-A 48"x 48"



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



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



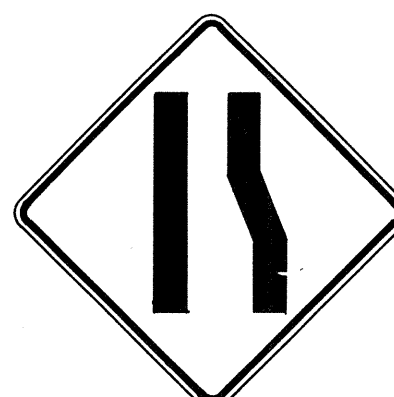
SIGNAL  
AHEAD

W3-3 36"x 36"  
24"x 18"



MERGE

W4-1(R) 30"x 30"  
24"x 18"  
W4-1(R)-A 48"x 48"  
24"x 18"



W4-2(R) 36"x 36"  
W4-2(R)-A 48"x 48"



W5-1 36"x 36"



W5-2 30"x 30"  
W5-2-A 36"x 36"



W5-3 36"x 36"



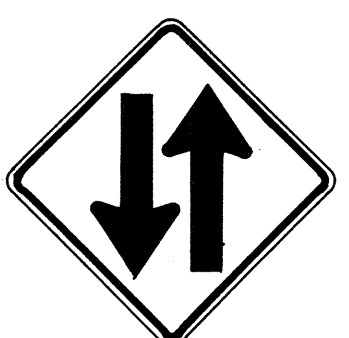
DIVIDED  
HIGHWAY

W6-1 36"x 36"  
24"x 18"



DIVIDED  
HIGHWAY  
ENDS

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



TWO WAY  
TRAFFIC

W6-3 30"x 30"  
24"x 18"  
W6-3-A 36"x 36"  
24"x 18"  
W6-3-B 48"x 48"  
24"x 18"



HILL

W7-1 30"x 30"  
24"x 18"  
W7-1-A 36"x 36"  
24"x 18"



W7-2 24"x 18"



W8-1 30"x 30"  
W8-1-A 36"x 36"



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



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



W8-4 30"x 30"  
W8-4-A 36"x 36"



SLIPPERY  
WHEN WET

W8-5 30"x 30"  
24"x 18"  
W8-5-A 36"x 36"  
24"x 18"



W9-1(R) 30"x 30"  
W9-1(R)-A 36"x 36"  
W9-1(R)-B 48"x 48"



W9-2(L) 36"x 36"  
W9-2(L)-A 48"x 48"



W10-1 36" Diameter



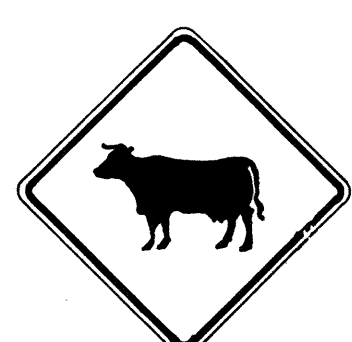
BIKE  
XING

W11-1 30"x 30"  
24"x 18"  
W11-1-A 36"x 36"  
24"x 18"



PED  
XING

W11-2 30"x 30"  
24"x 18"  
W11-2-A 36"x 36"  
24"x 18"



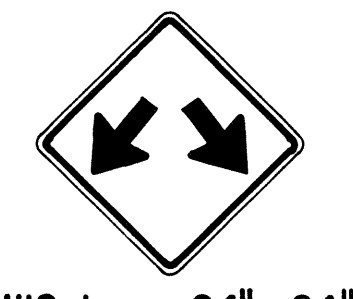
CATTLE  
XING

W11-4 30"x 30"  
24"x 18"  
W11-4-A 36"x 36"  
24"x 18"



FARM  
MACHINERY

W11-5 30"x 30"  
24"x 18"  
W11-5-A 36"x 36"  
24"x 18"



W12-1 24"x 24"  
W12-1-A 36"x 36"  
W12-1-B 48"x 48"

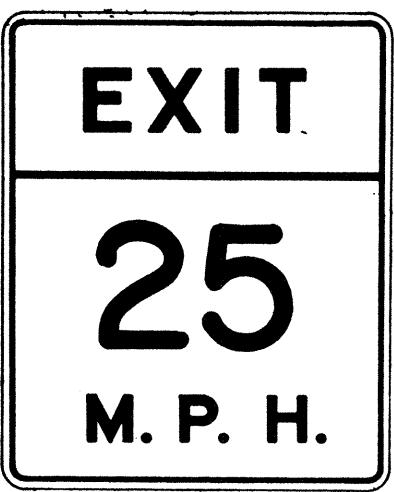


LOW  
CLEARANCE

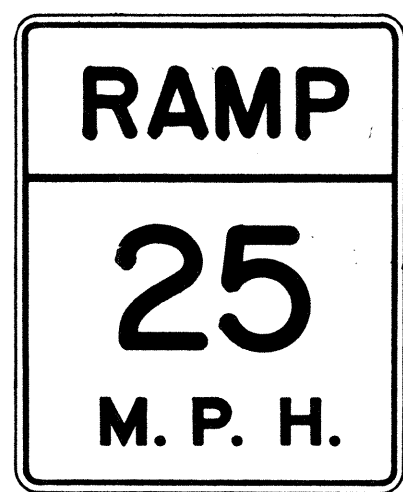
W12-2(12'-6") 36"x 36"  
24"x 18"



W13-1(25) 18"x 18"  
W13-1(25)-A 24"x 24"



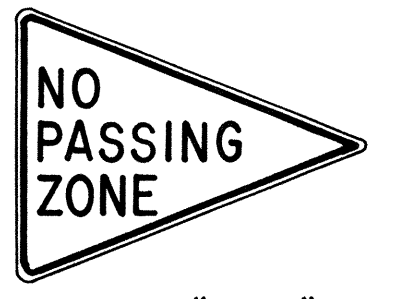
W13-2(25) 48"x 60"



W13-3(25) 48"x 60"



W14-1 30"x 30"



W14-3 36"x 48" x 48"

### GENERAL NOTES

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

APPROVAL RECOMMENDED:  
TRAFFIC ENGINEER

3/17/72  
DATE

APPROVED:  
ASSISTANT CHIEF, ENGINEERING

3-20-72  
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.T.	3/20/72
2	Revised General Note 1	H.T.	10/16/74
3	Revised General Note 5	MA	9-16-75
4	Revised General Note 5	H.T.	9-14-76
5	Added Note 1	H.T.	11-7-79

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION
<b>STANDARD DETAILS</b> <b>WARNING SIGNS</b>
NOT TO SCALE

SHEET No. 5 OF 14 SHEETS DT 102

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19H-01-80	1980	10	19

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.

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

ALL WAY  
R1-4 18"x 6"

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

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

CENTER LANE  
ONLY  
R3-9b 24"x36"

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

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

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

NO PED XING  
R9-3a 18"x18"  
18"x12"  
R9-3a-A 24"x24"  
24"x18"

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

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

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

TURN RIGHT ANY TIME WITH CAUTION  
4" Series C  
R16-1 24"x30"

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

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

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

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

U TURN OK  
- 8" Series F  
- 5" Series D  
R16-7 24"x30"

MOTOR-DRIVEN CYCLES PROHIBITED  
4" Series B  
R5-8 30"x24"

W17-1(L) 60"x 60"

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

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

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

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

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

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

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

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

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

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

ADVANCE GREEN  
W15-2 24" x 24"

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

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

SI-1 36"x 36"

S2-1 36"x 36"

SCHOOL BUS STOP AHEAD  
S3-1 30"x30"

8:00 AM TO 3:30 PM  
S4-1 24"x10"

WHEN CHILDREN ARE PRESENT

S4-2 24"x10"

SCHOOL  
S4-3 24"x8"

WHEN FLASHING

S4-4 24"x10"

SIDEWALK CLOSED  
7" Series D  
CW23-4 48"x48"

USE SIDEWALK  
4" Series C  
R18-1 24"x18"

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht.DT103 approved 3/20/72	H.I.	5/3/78
2	Added General Note 6	H.I.	11/9/79

APPROVAL RECOMMENDED:  
*Etschi Tanaka* 5/3/78  
TRAFFIC ENGINEER DATE

APPROVED:  
*Harbert Z. Zakeishu* 5/3/78  
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS
MISCELLANEOUS SIGNS
NOT TO SCALE DATE: MAY, 1978
SHEET No. 6 OF 14 SHEETS.DT 103



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19H-01-80	1980	11	19



CW20-1a 48" x 48"



CW20-2d 48" x 48"



CW20-3b 48" x 48"



CW20-4d 48" x 48"



CW20-5d(L) 48" x 48"



CW20-7c 48" x 48"



CW21-1 30" x 30"



CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



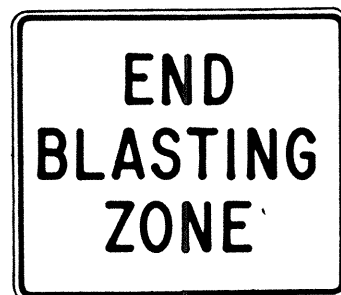
CW21-6 30" x 30"



CW22-1b 48" x 48"



CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



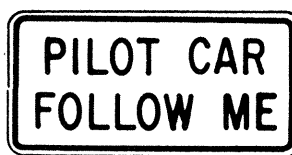
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



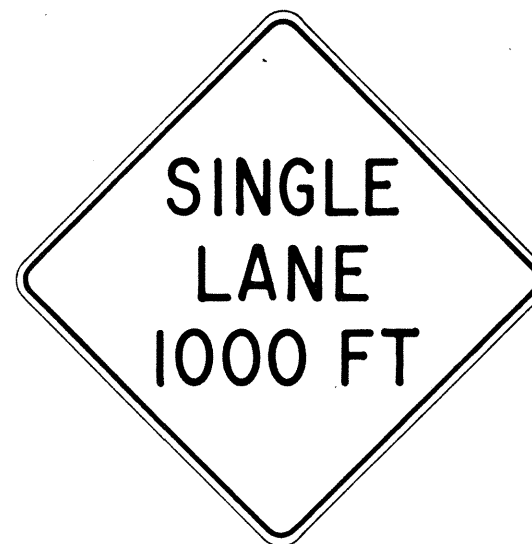
CM4-10(R) 48" x 18"



CG20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

### GENERAL NOTES

- 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.
- All construction signs shall be reflectorized.
- All construction 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.
- For "CW" series signs, suffixes a, b, c and d are as follows:  
a-1500 FT, b-1000 FT,  
c-500 FT and d-AHEAD.

APPROVAL RECOMMENDED:

*Erich Tanaka*  
TRAFFIC ENGINEER

3/21/72  
DATE

APPROVED:

*Shirley Salsich*  
ASSISTANT CHIEF, ENGINEERING

2/23/72  
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.	9-14-76

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

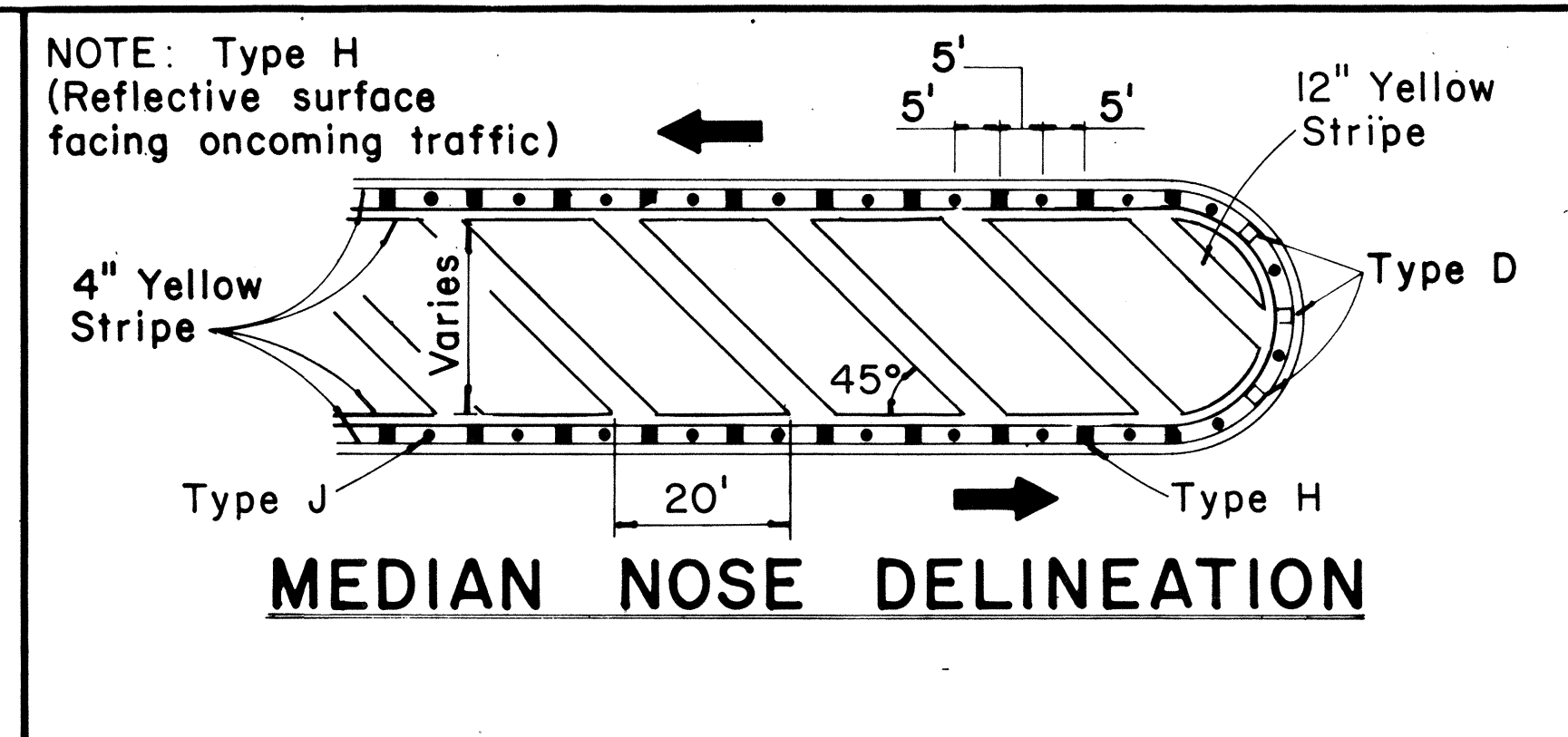
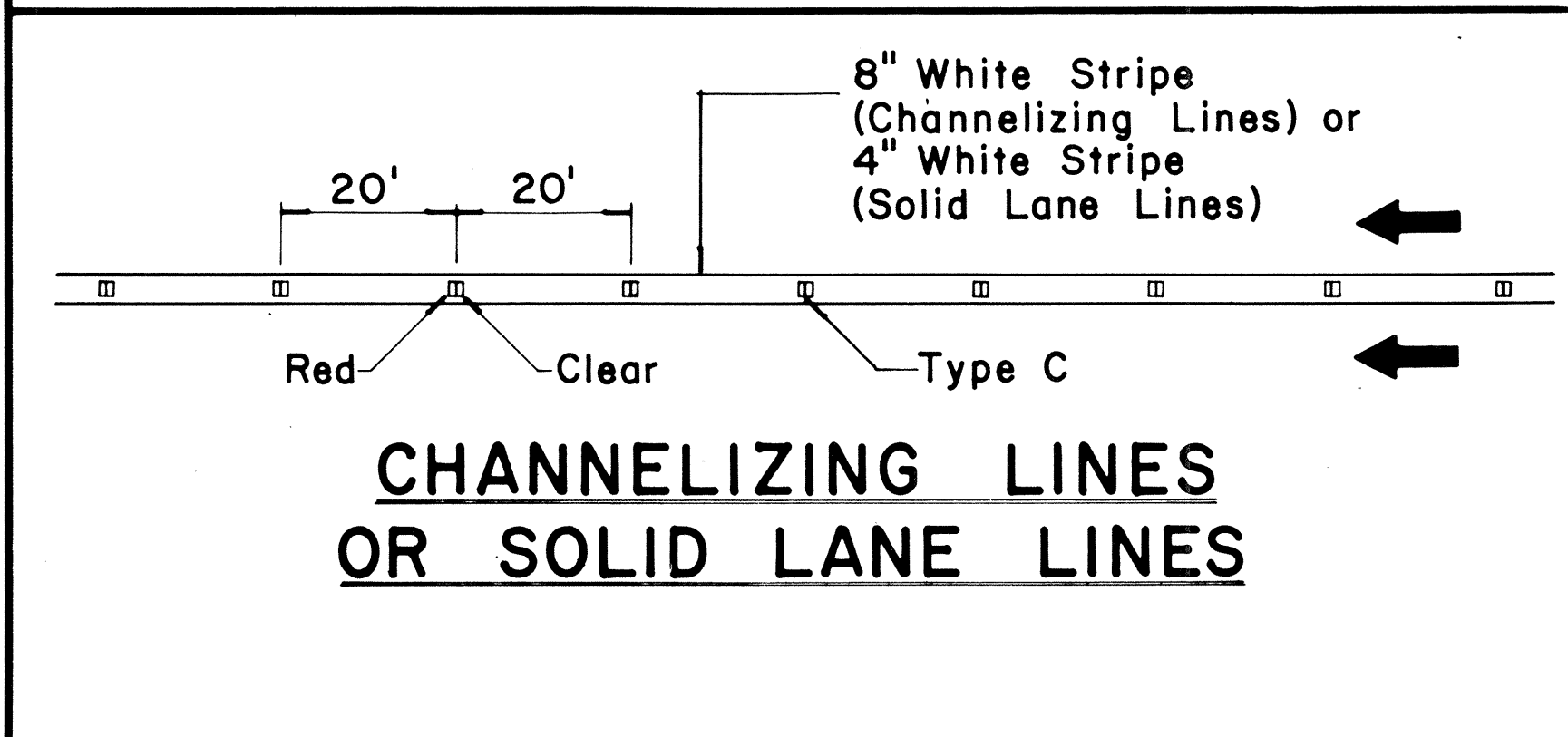
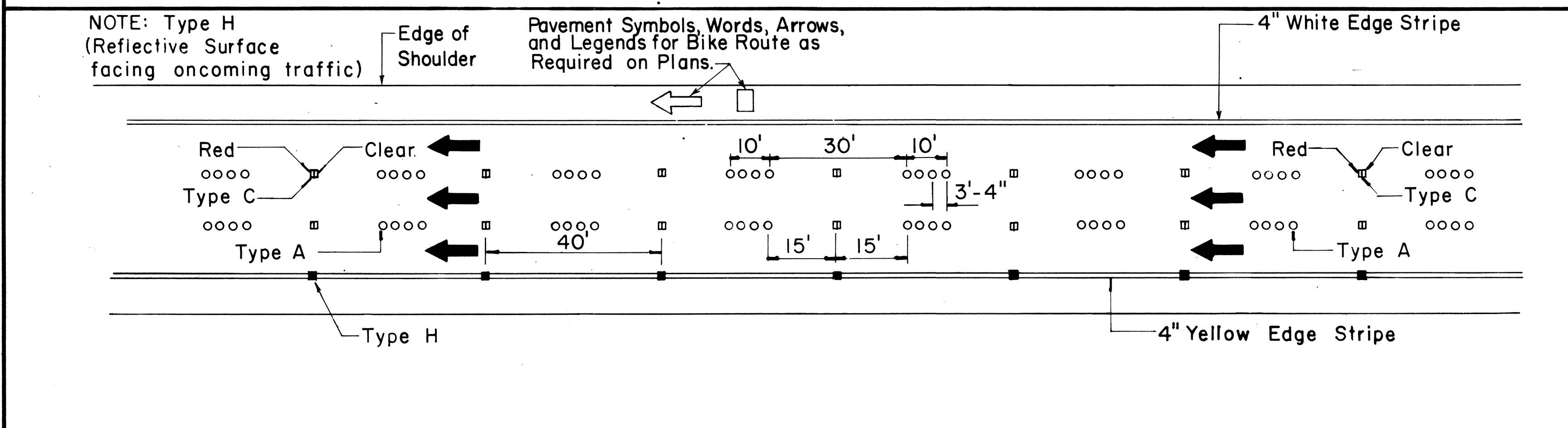
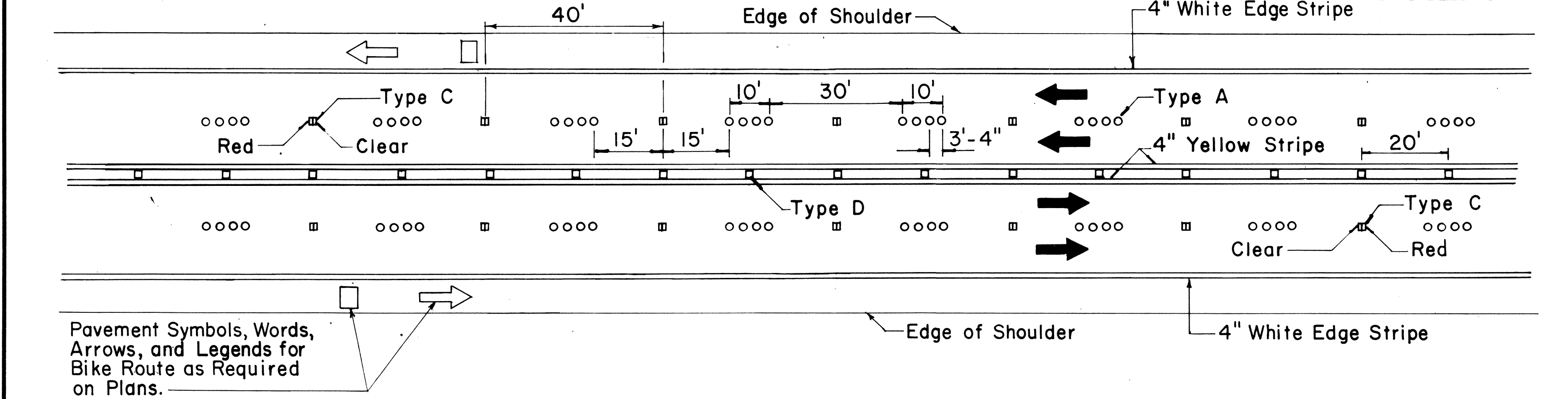
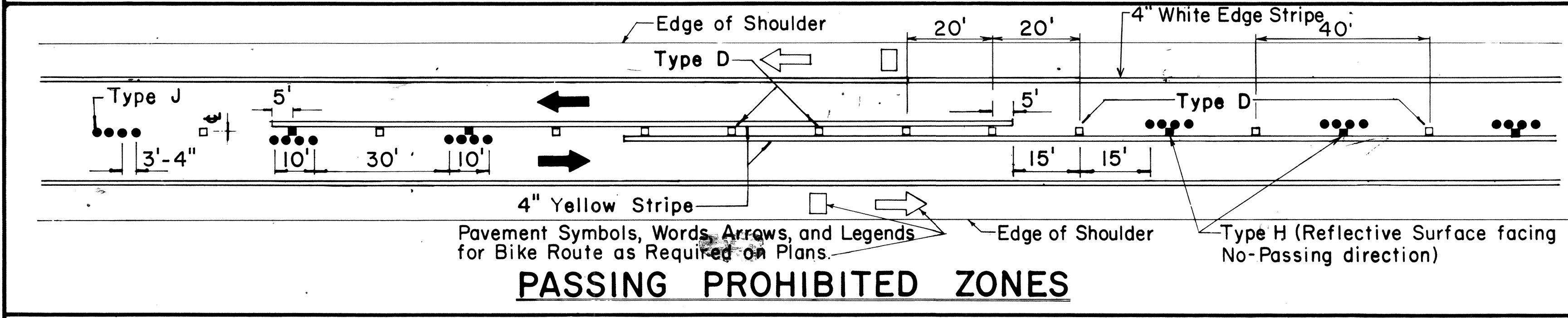
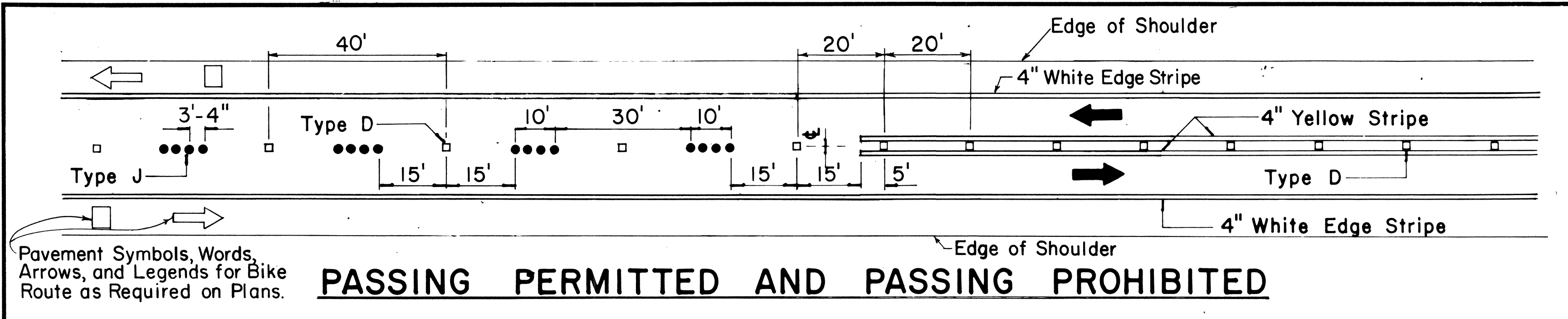
### STANDARD DETAILS CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 7 OF 14 SHEETS DT 104

DESIGNED BY	DATE
CHECKED BY	
QUANTITIES BY	
NOTE BOOK	
PLAN	
ORIGINAL	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19H-01-80	1980	12	19

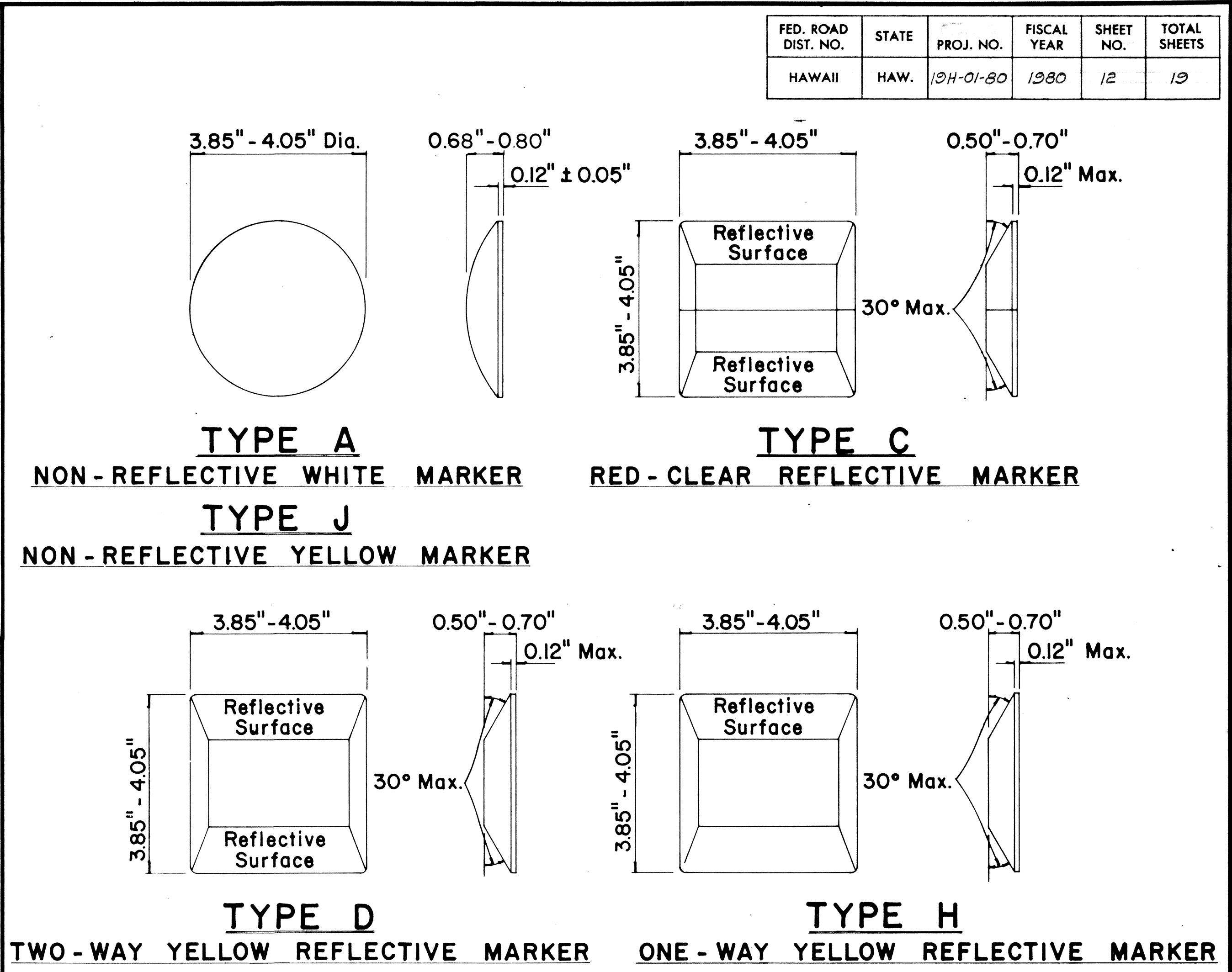


TWO - LANE

MULTI - LANE

DIVIDED HIGHWAY AND FREEWAY

MISCELLANEOUS



- GENERAL NOTES**
- Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
  - 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.

- LEGEND**
- Type A
  - ◻ Type C
  - ◻ Type D
  - Type H
  - Type J

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

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

No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.T.	7/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.T.	10/15/79

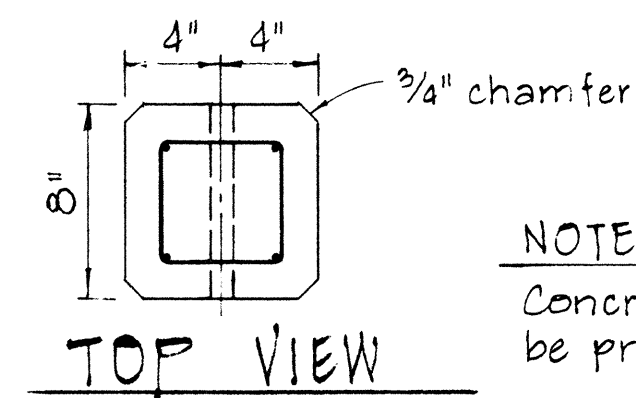
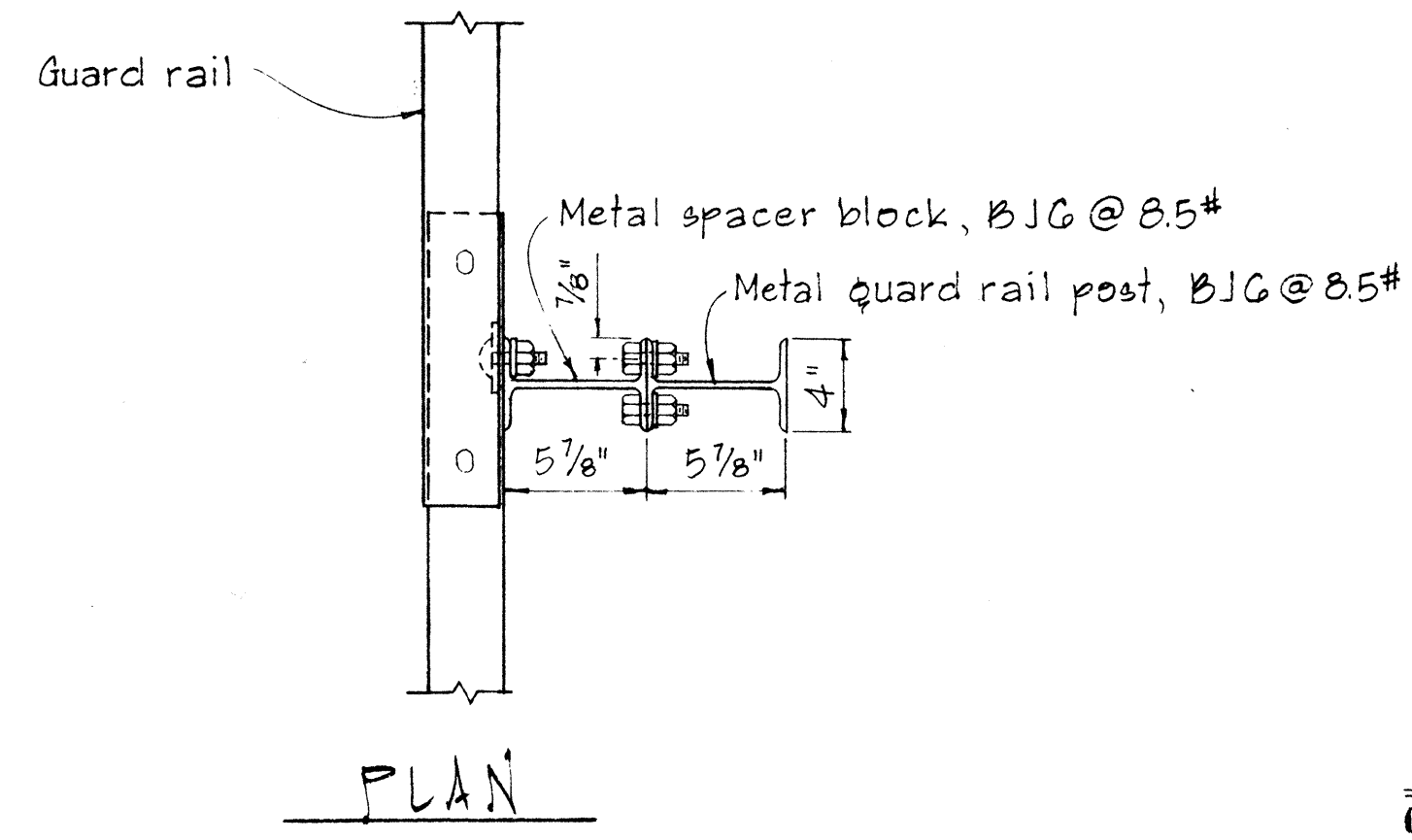
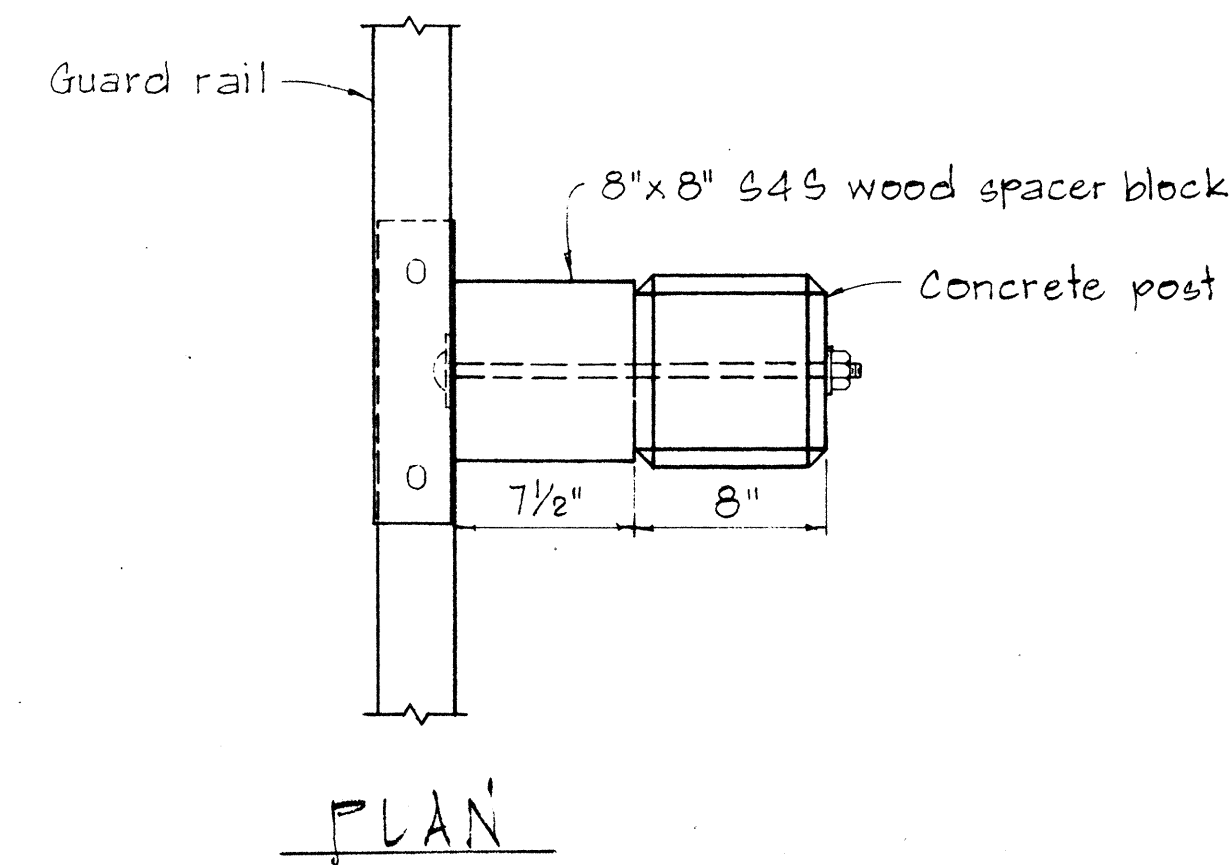
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

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

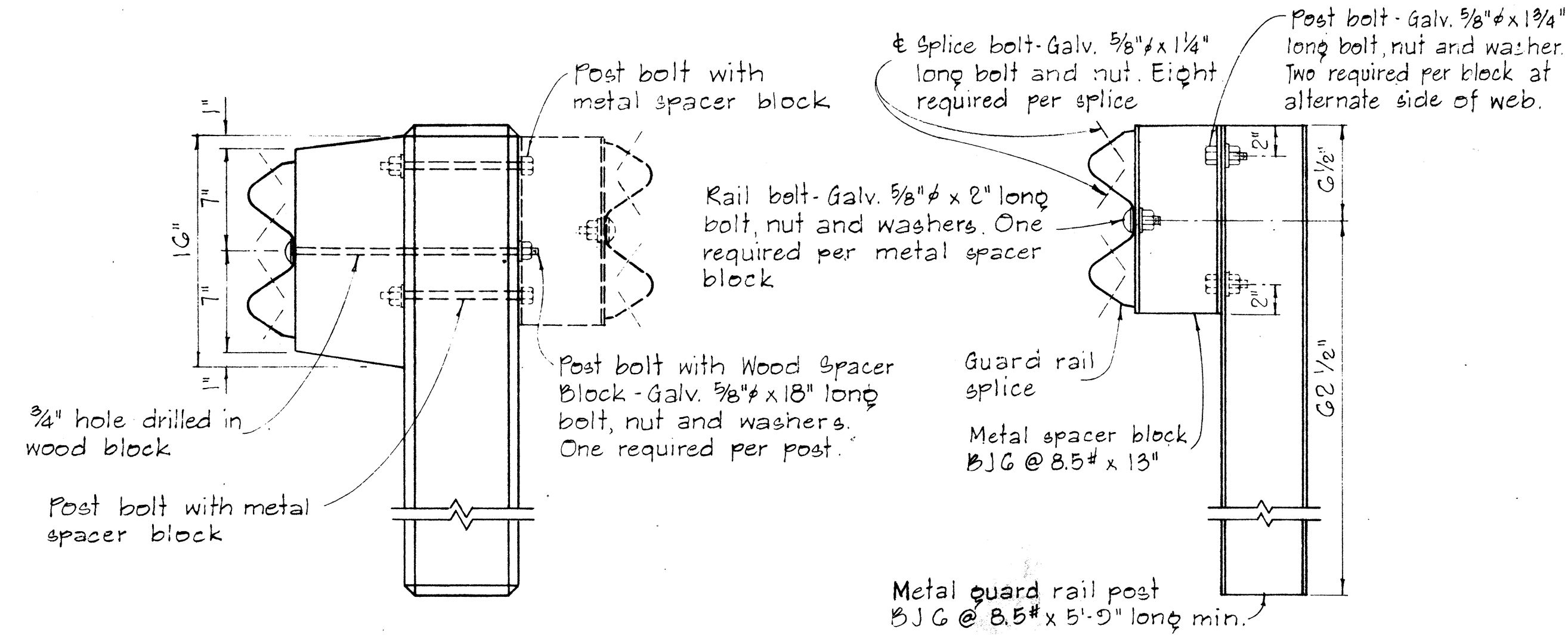
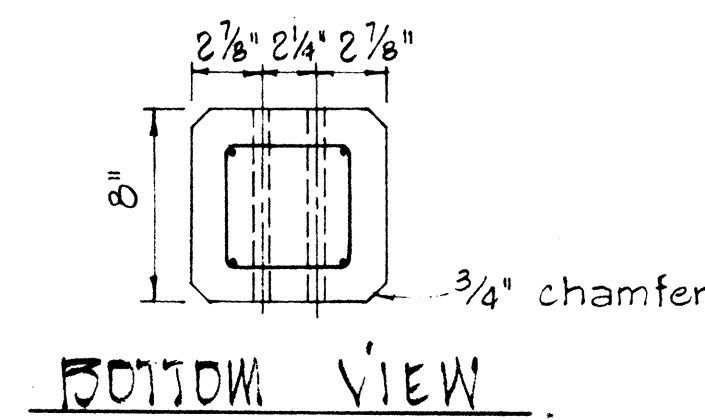
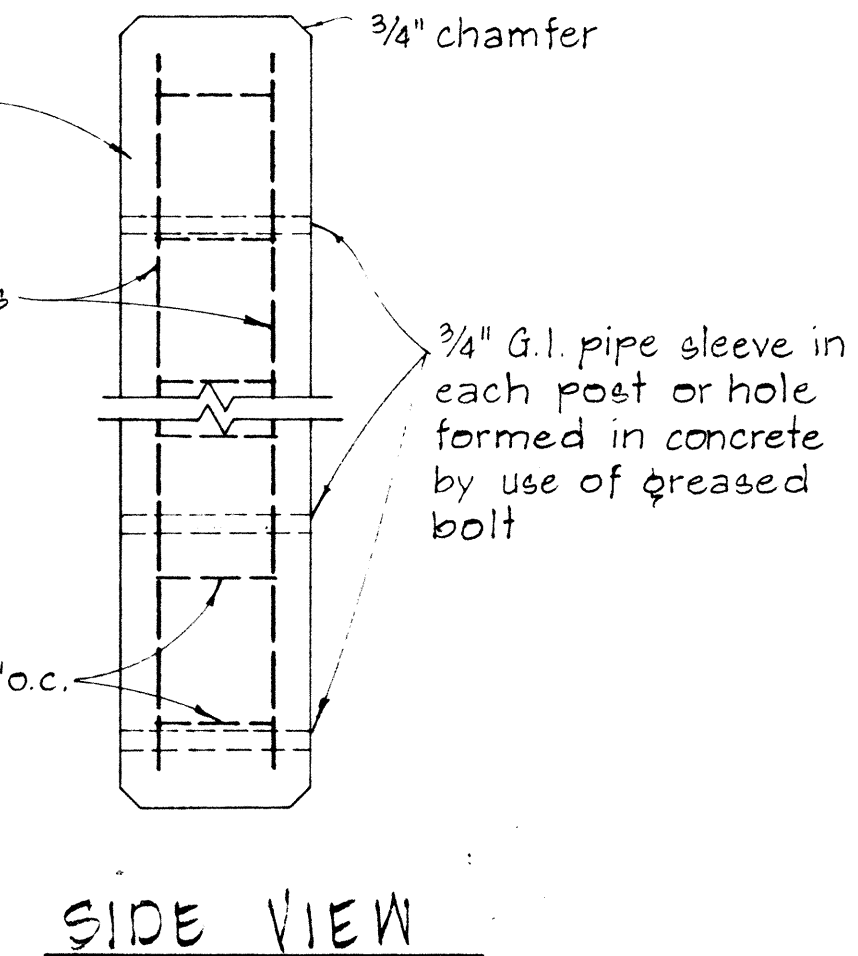
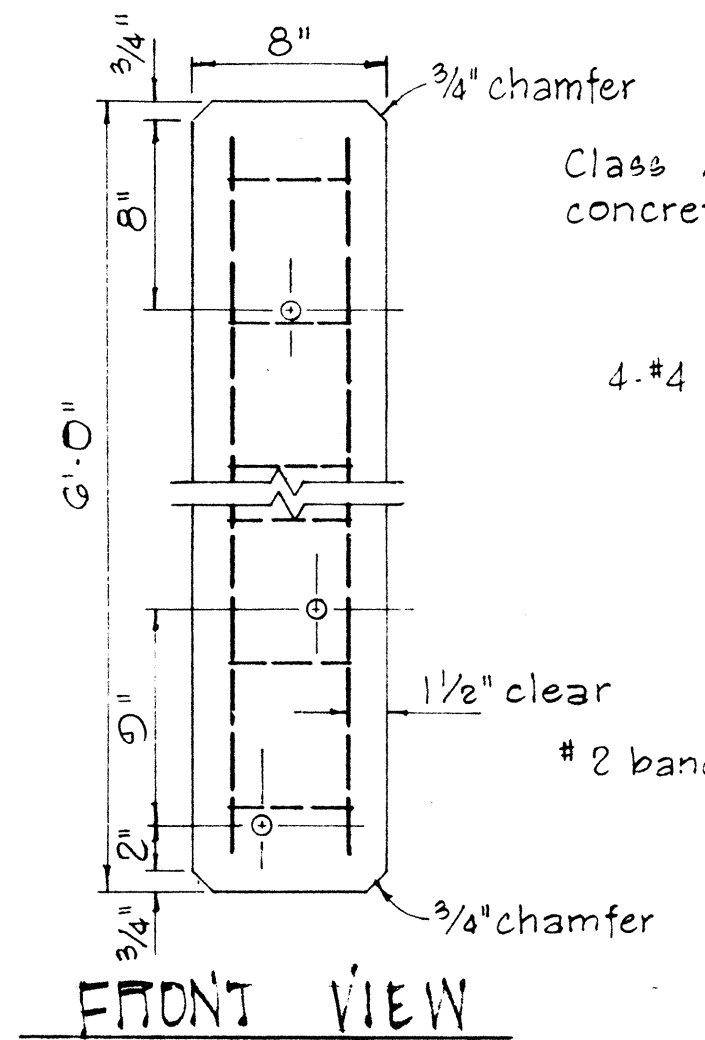
Not to Scale July 1978  
SHEET No. 8 OF 14 SHEETS DT 300



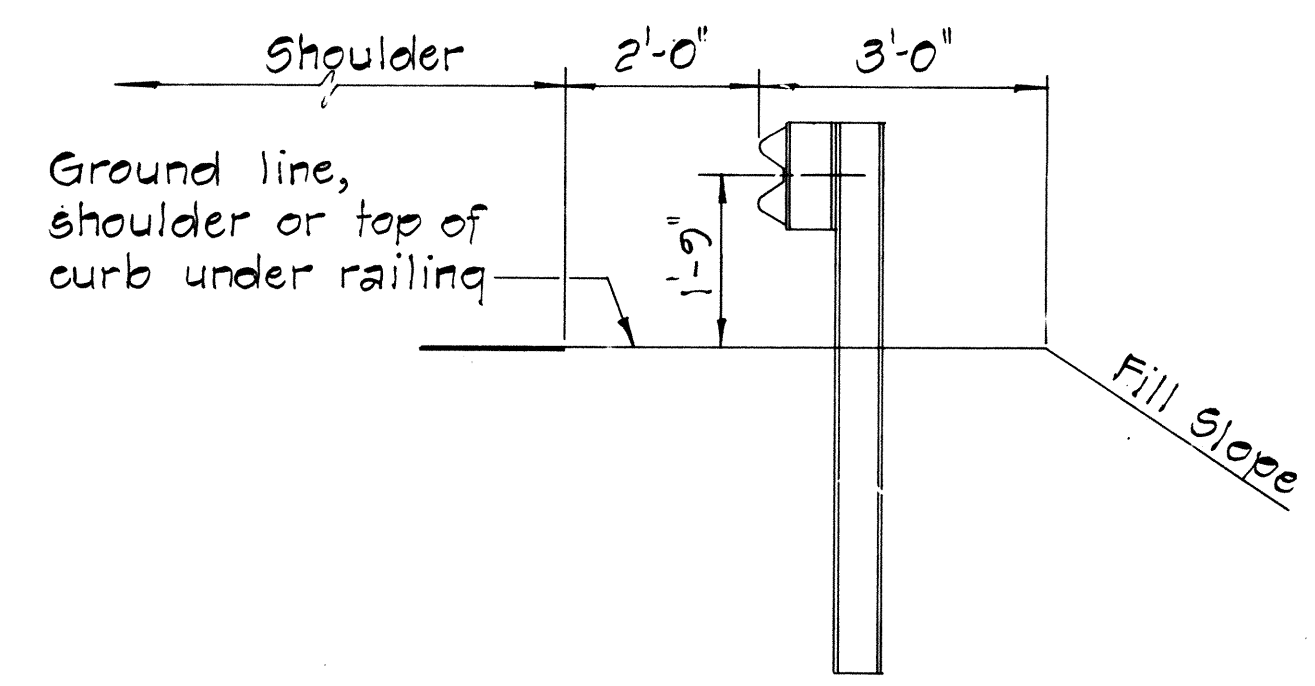
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	194-01-80	1980	13	19



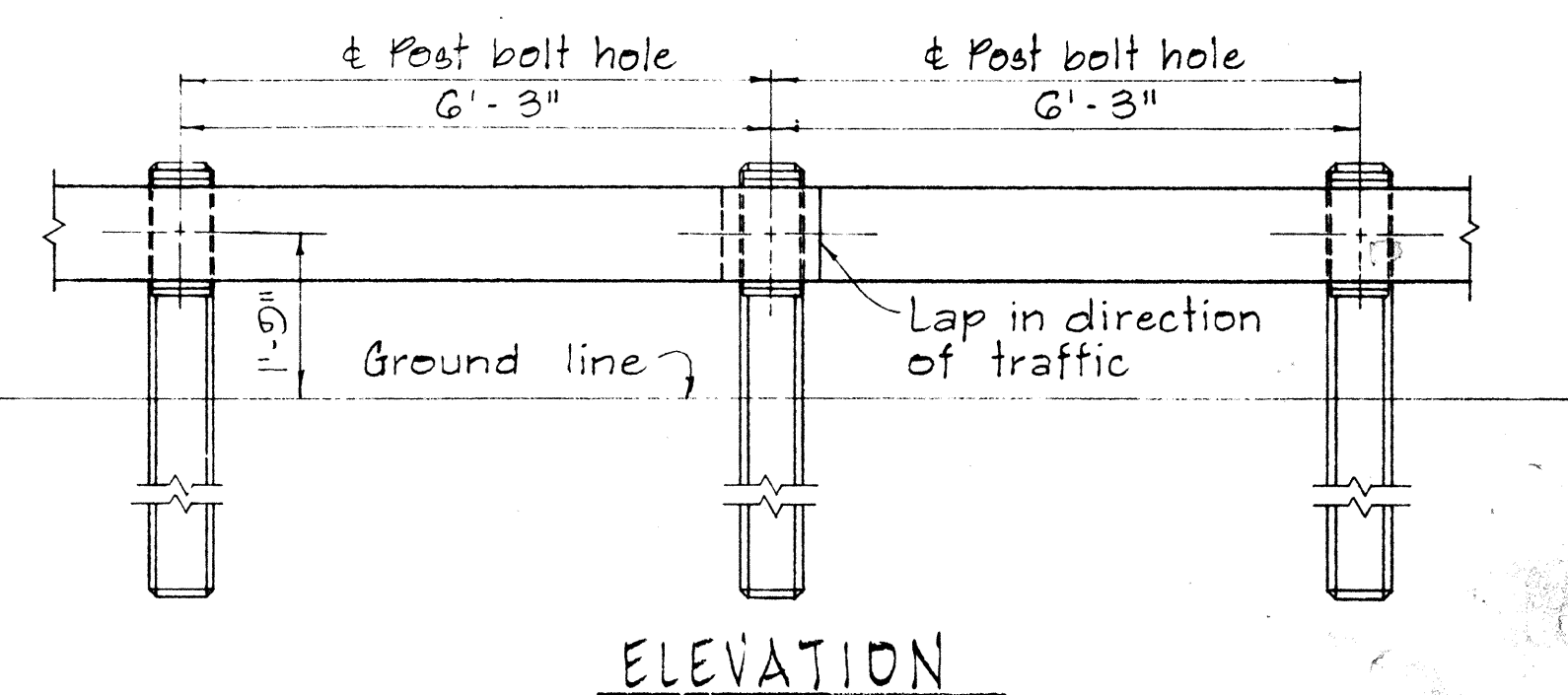
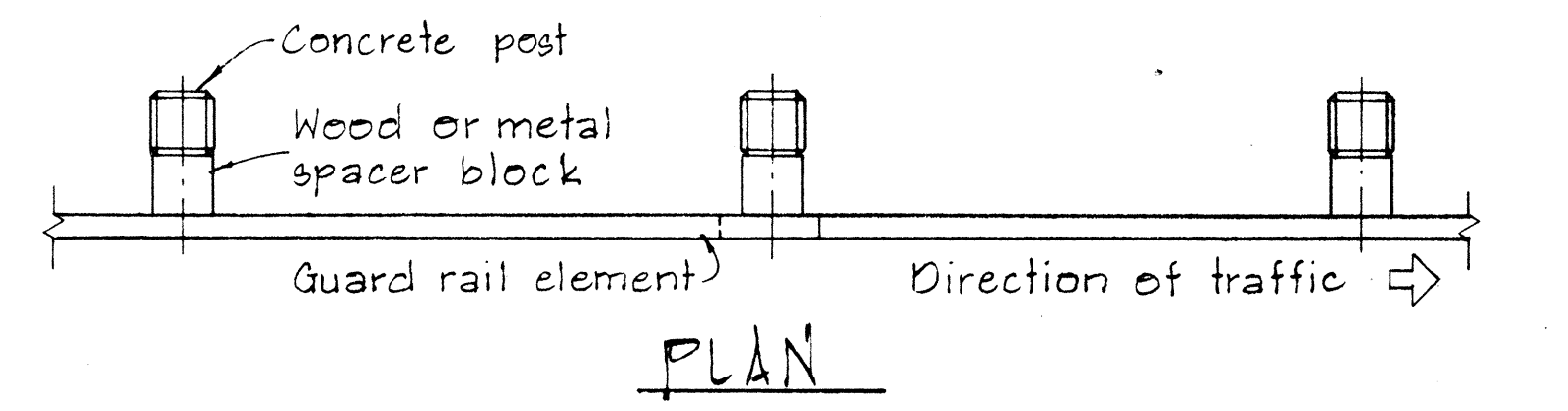
NOTE:  
Concrete post shall be precast



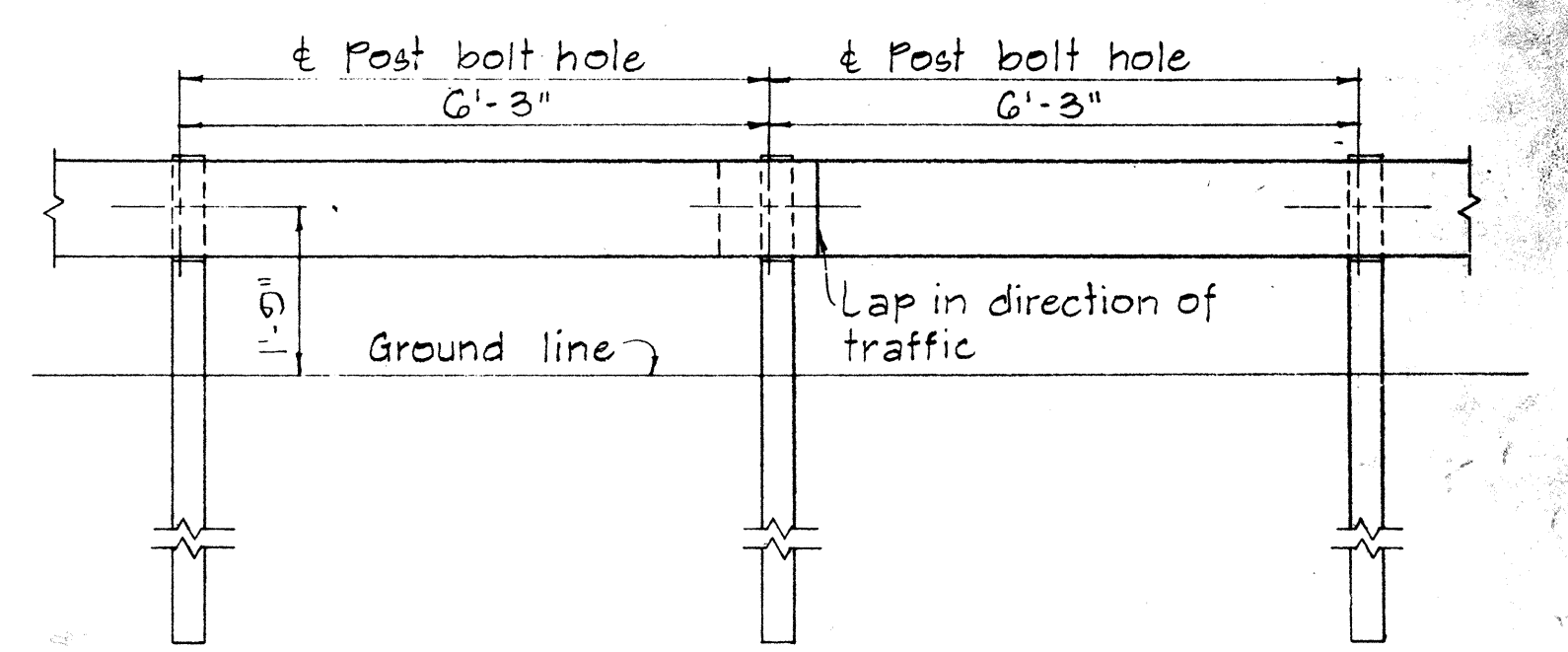
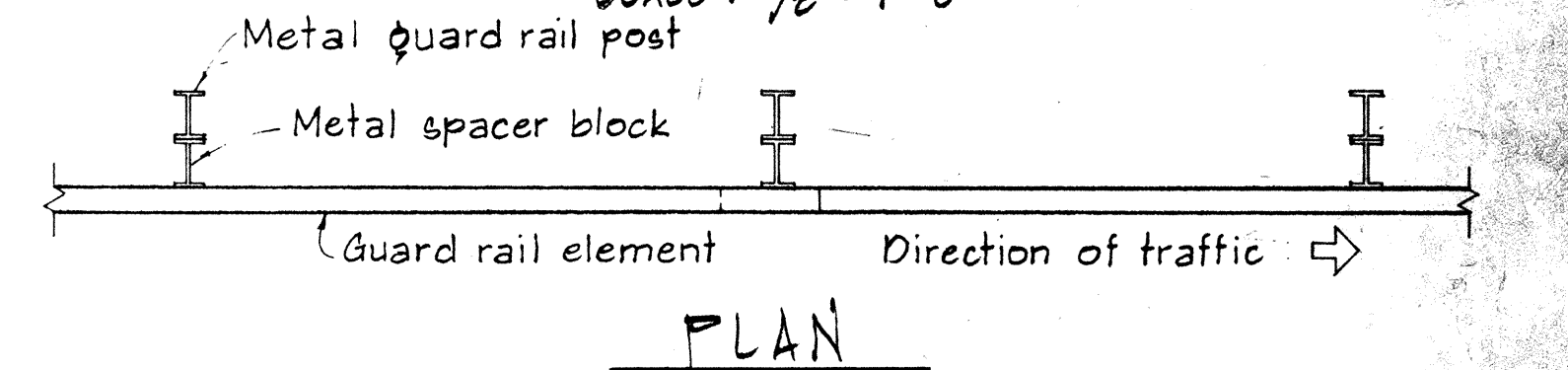
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK  
SCALE: 1 1/2" = 1'-0"



TYPICAL METAL GUARD RAIL DETAIL  
SCALE: 1/2" = 1'-0"



METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK  
SCALE: 1/2" = 1'-0"



METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK  
SCALE: 1/2" = 1'-0"

SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK  
SCALE: 1 1/2" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

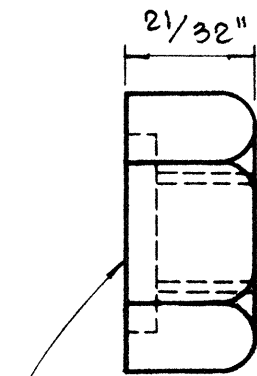
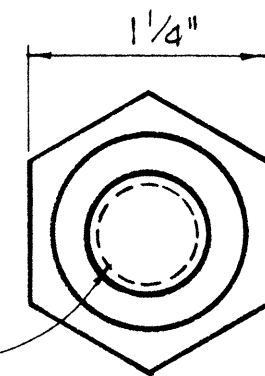
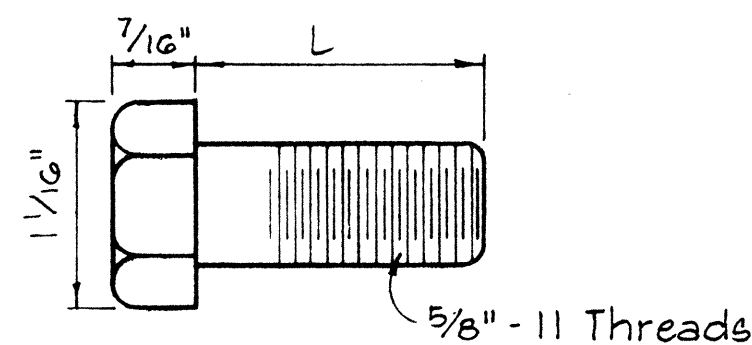
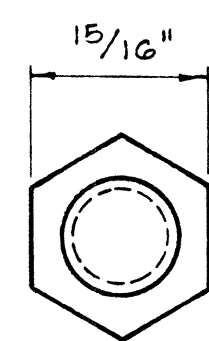
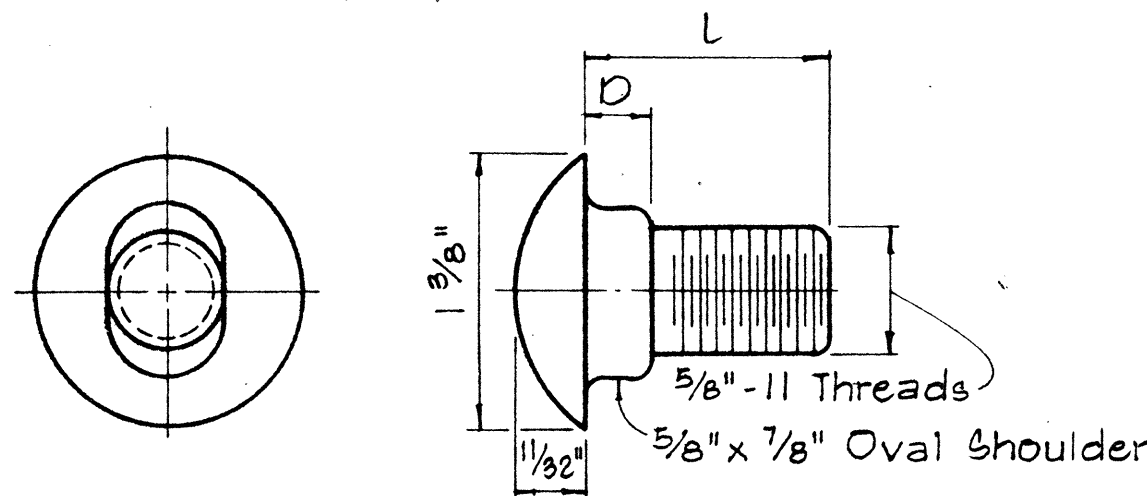
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
STANDARD DETAILS  
METAL GUARD RAIL  
SCALE: AS SHOWN  
NOV. 1968  
SHEET No. 9 OF 14 SHEETS DT 500

DATE	
SURVEY PLATTED BY	
DRAWN 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.	19H-01-80	1980	14	19

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

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



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

TYPE A BOLT

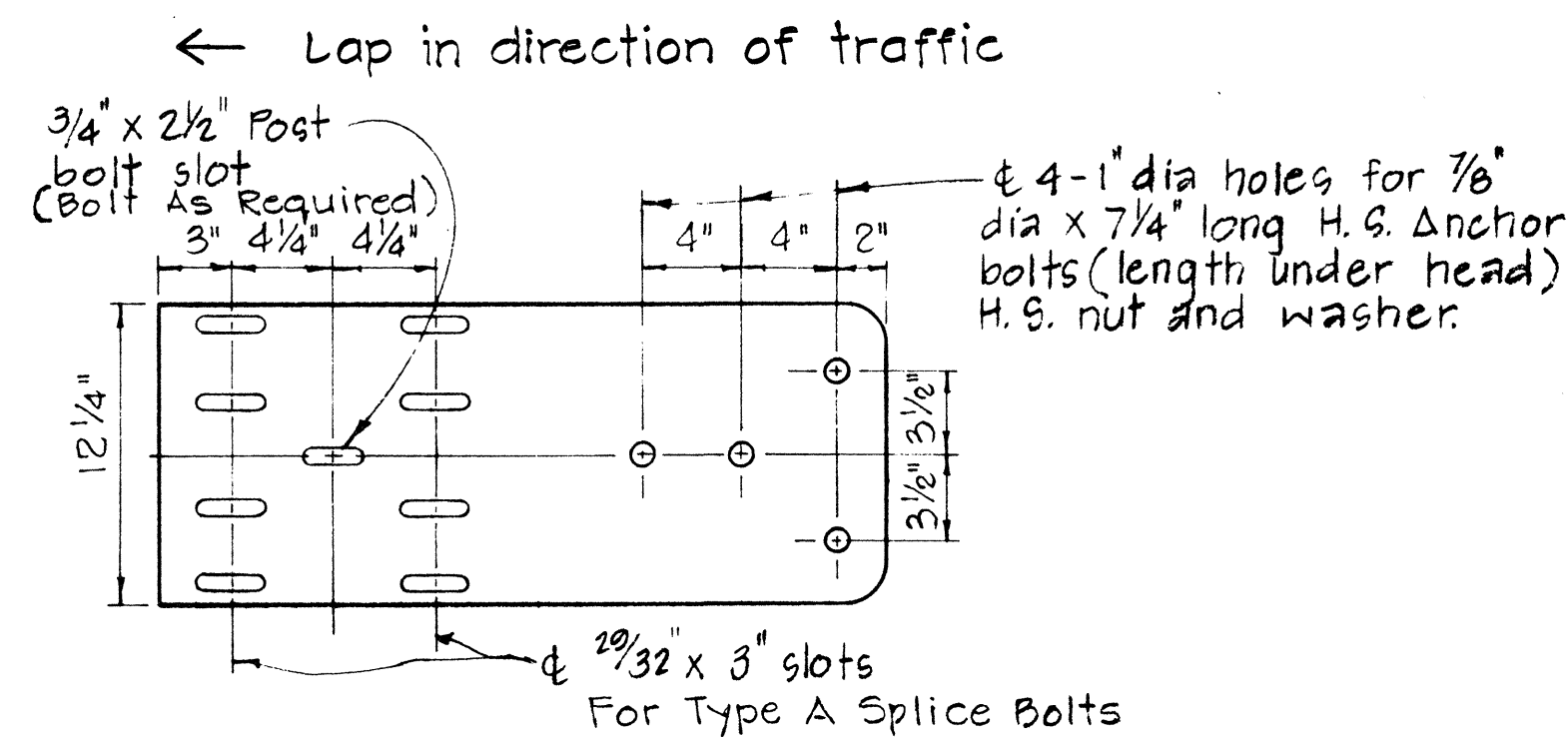
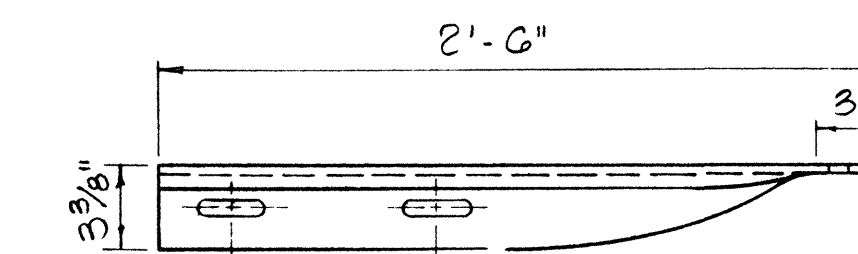
TYPE B BOLT

## SPUCE RAIL AND POST BOLTS

Scale: Full Size

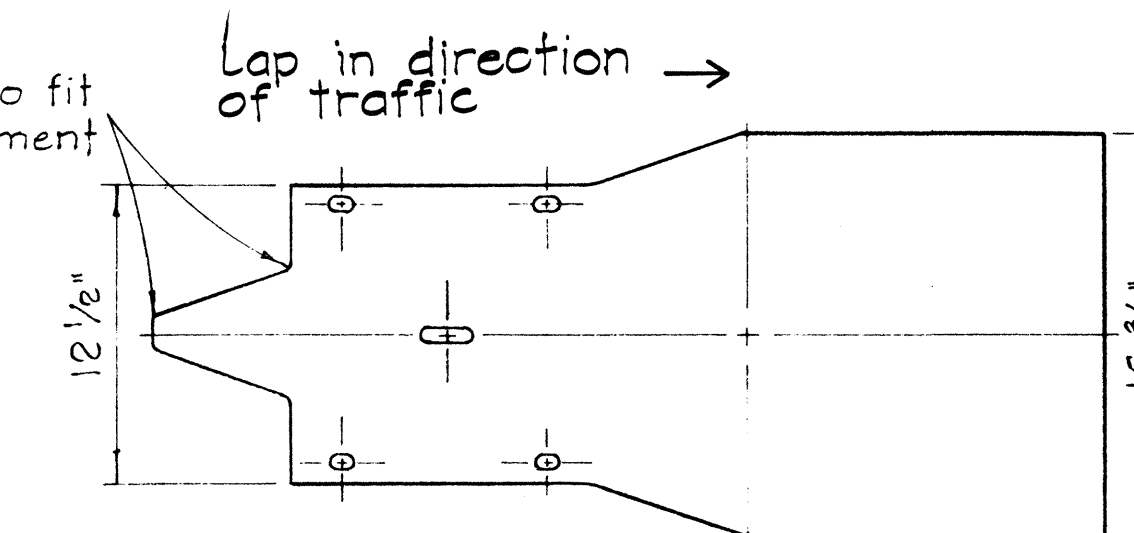
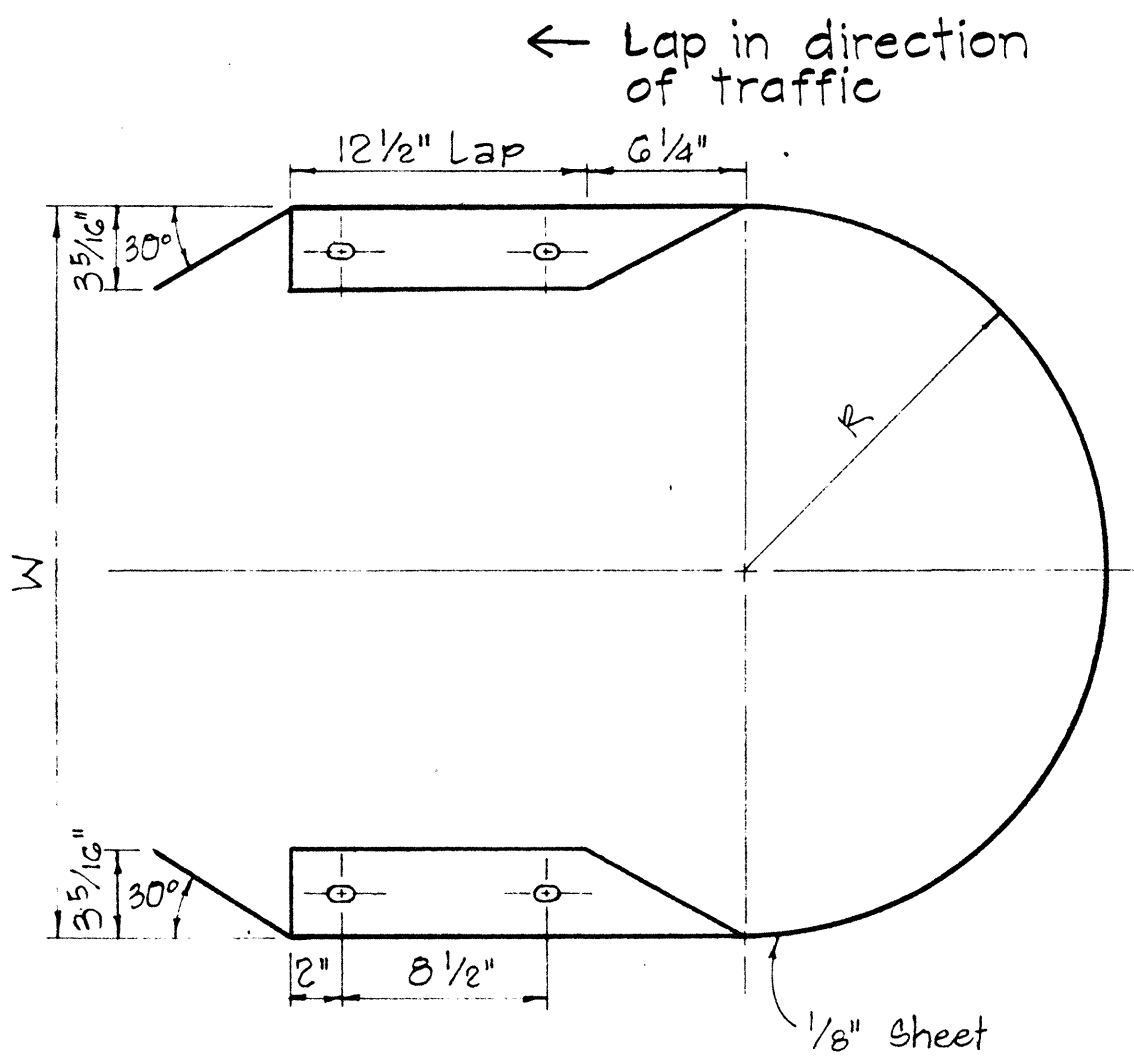
## HEXAGON NUT

Scale: Full Size



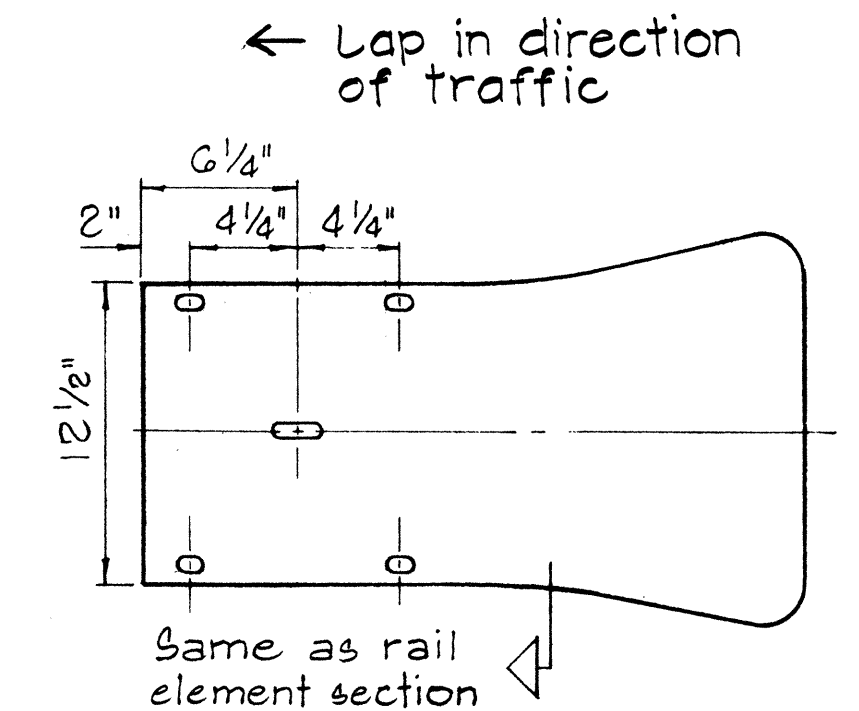
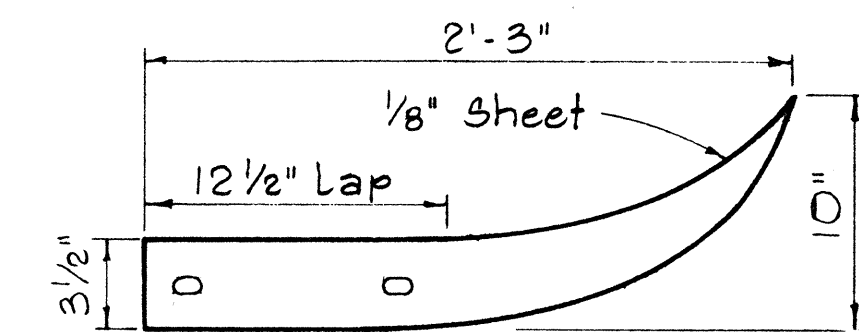
SPECIAL END SHOE

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



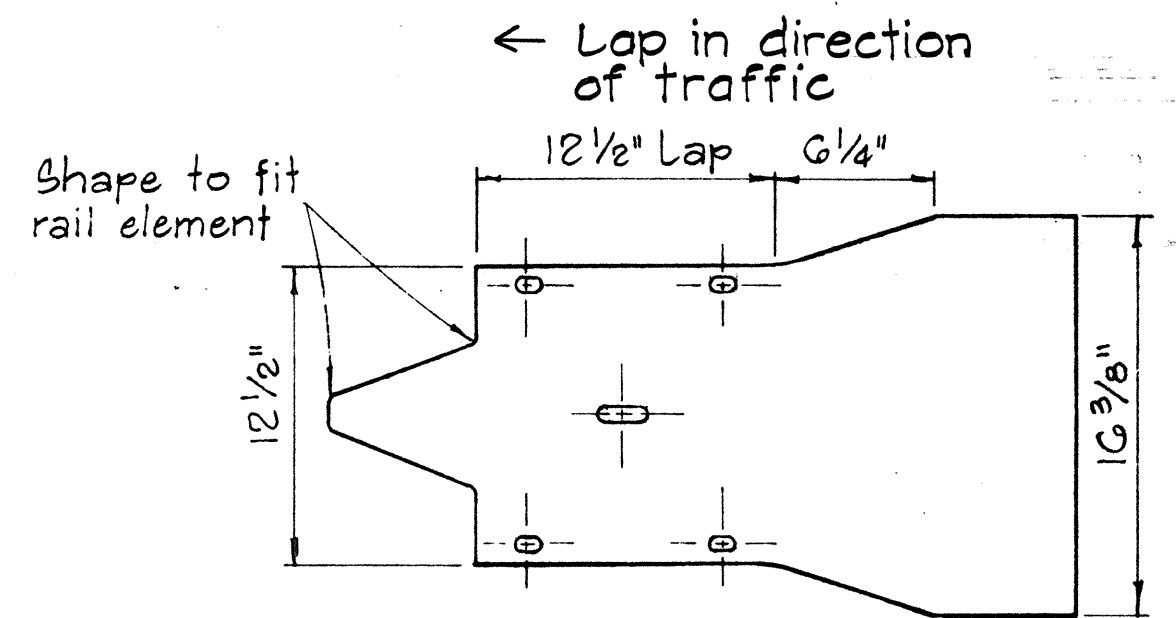
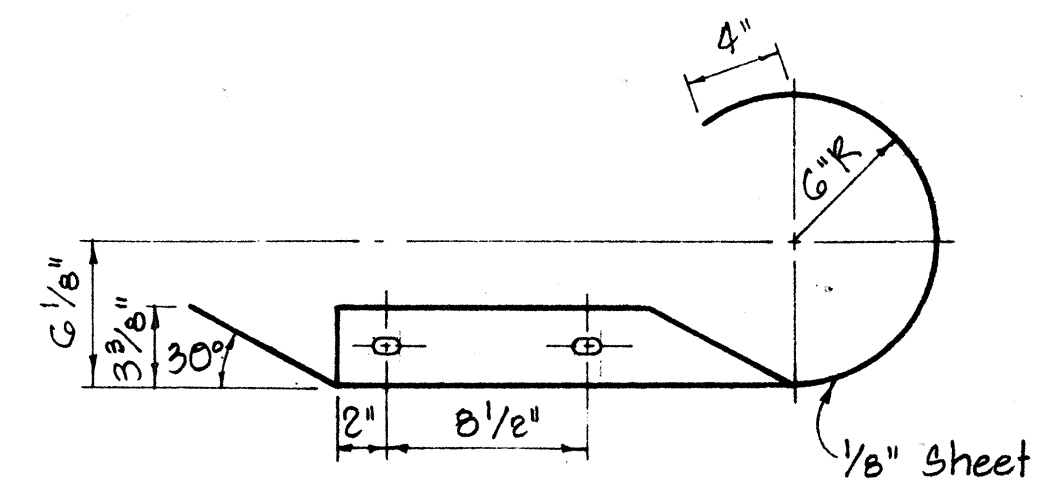
MEDIAN END

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



FLARED END

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



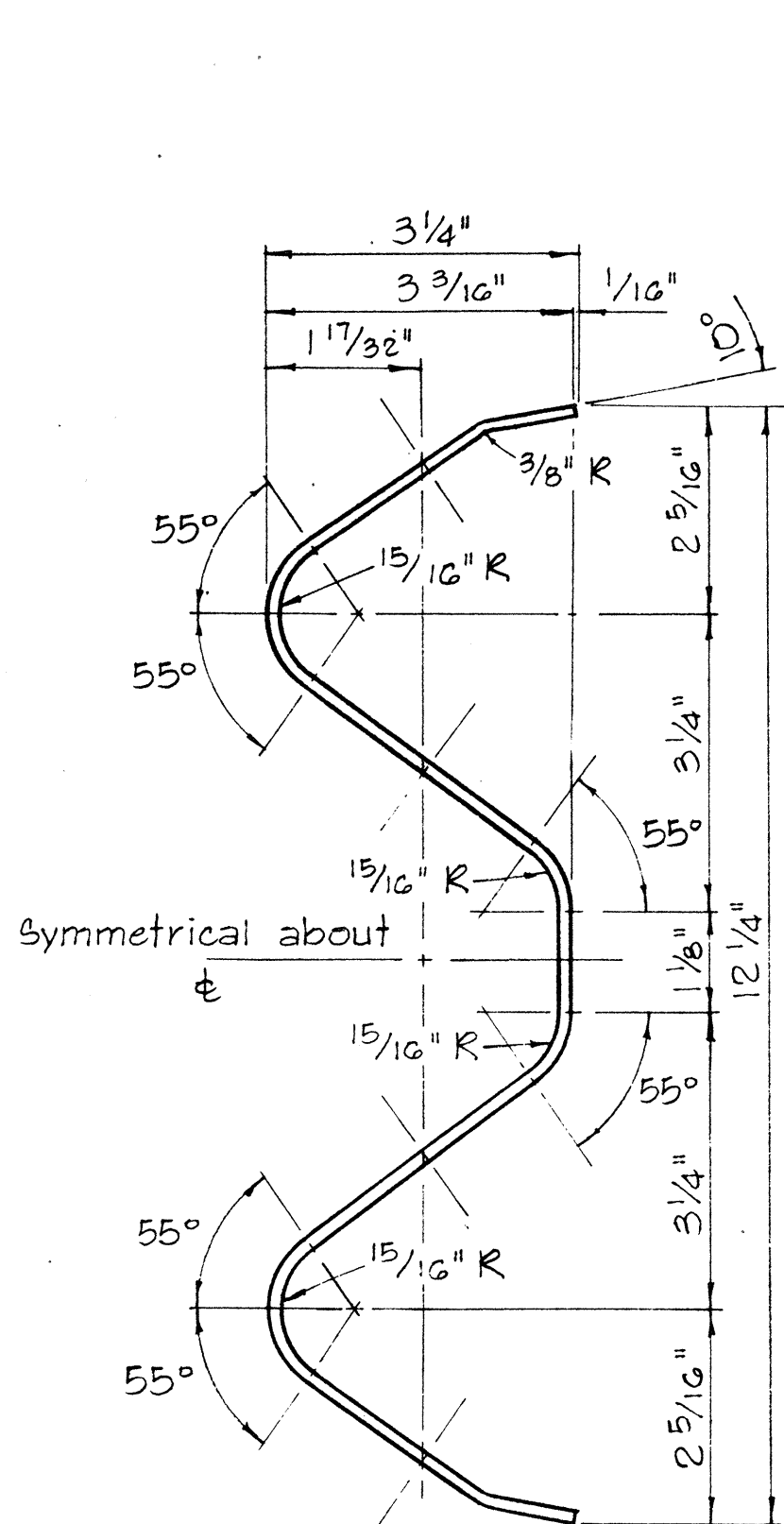
CURVED END

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

APPROVAL RECOMMENDED:  
TRAFFIC ENGINEER  
APPROVED:  
ASSISTANT CHIEF, ENGINEERING

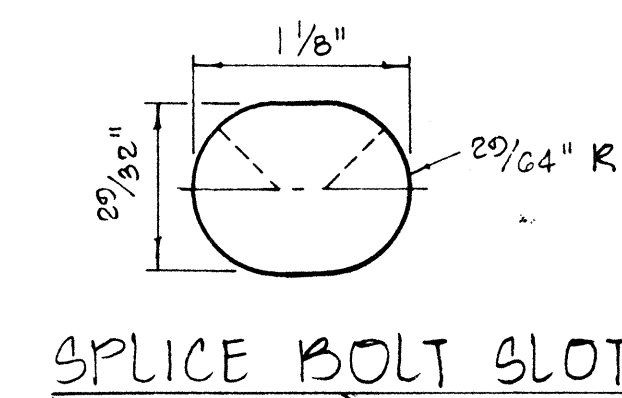
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
STANDARD DETAILS  
METAL GUARD RAIL

Scale: As Noted  
August, 1968  
SHEET No. 10 OF 14 SHEETS DT 501



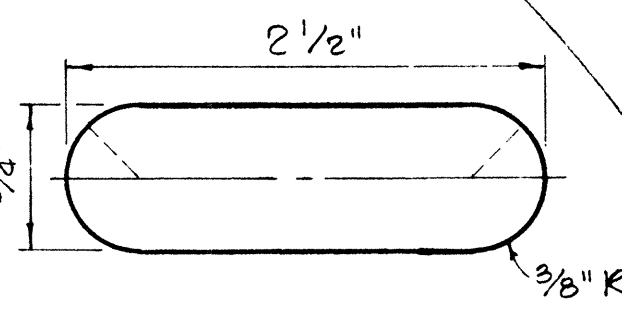
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

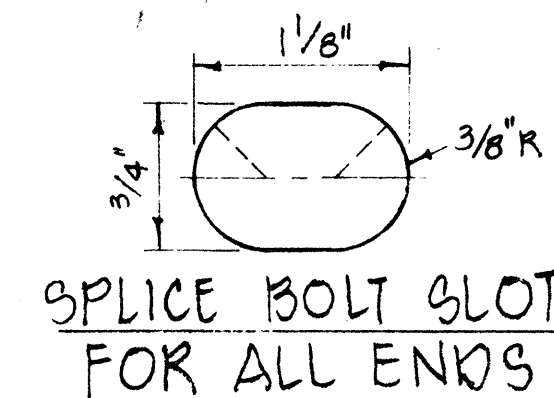


SPUCE BOLT SLOT

Scale: Full Size

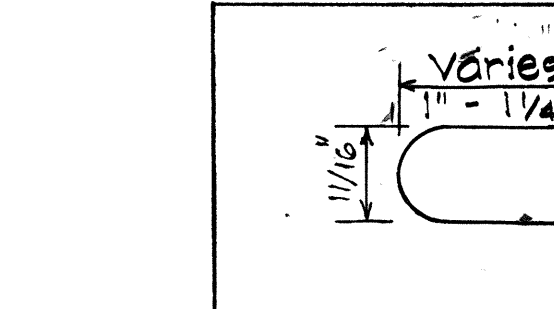


POST BOLT SLOT



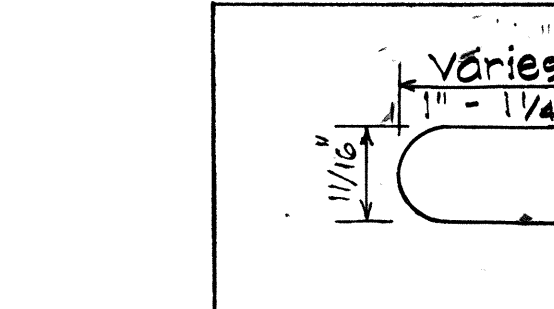
SPUCE BOLT SLOT FOR ALL ENDS

Scale: Full Size



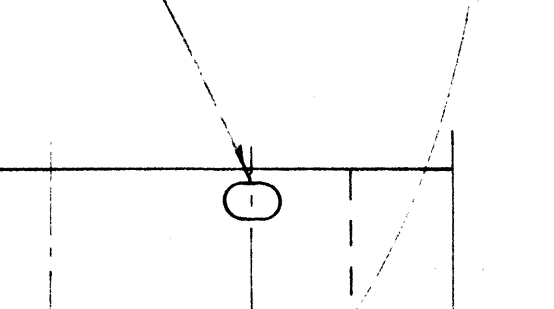
SPUCE BOLT SLOT FOR SPECIAL END SHOE

Scale: Full Size



RAIL WASHER

Scale: Full Size



RAIL SPLICE

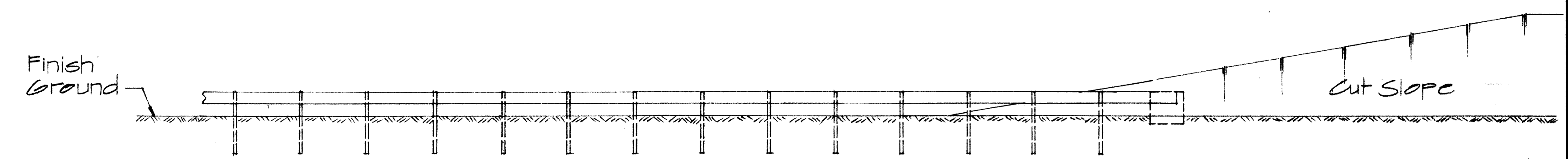
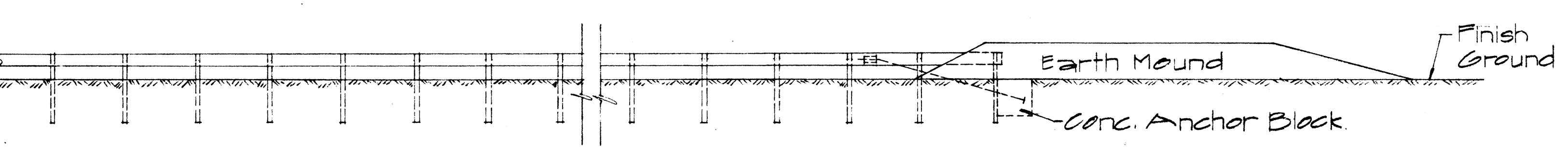
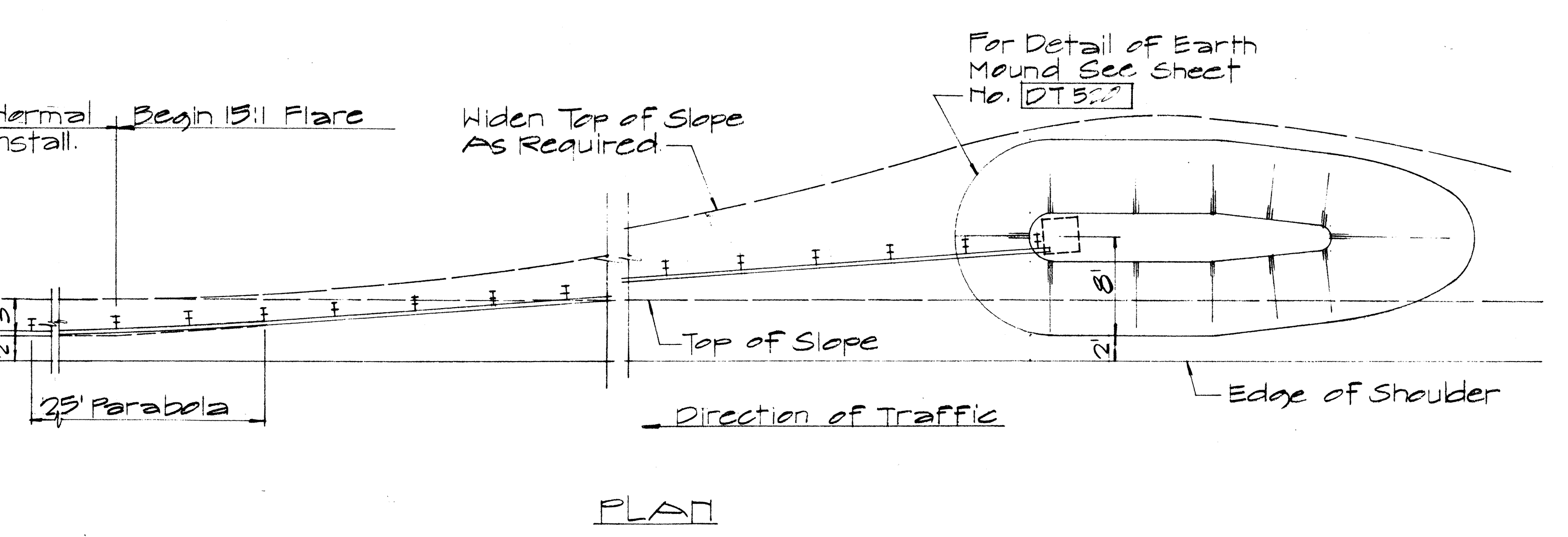
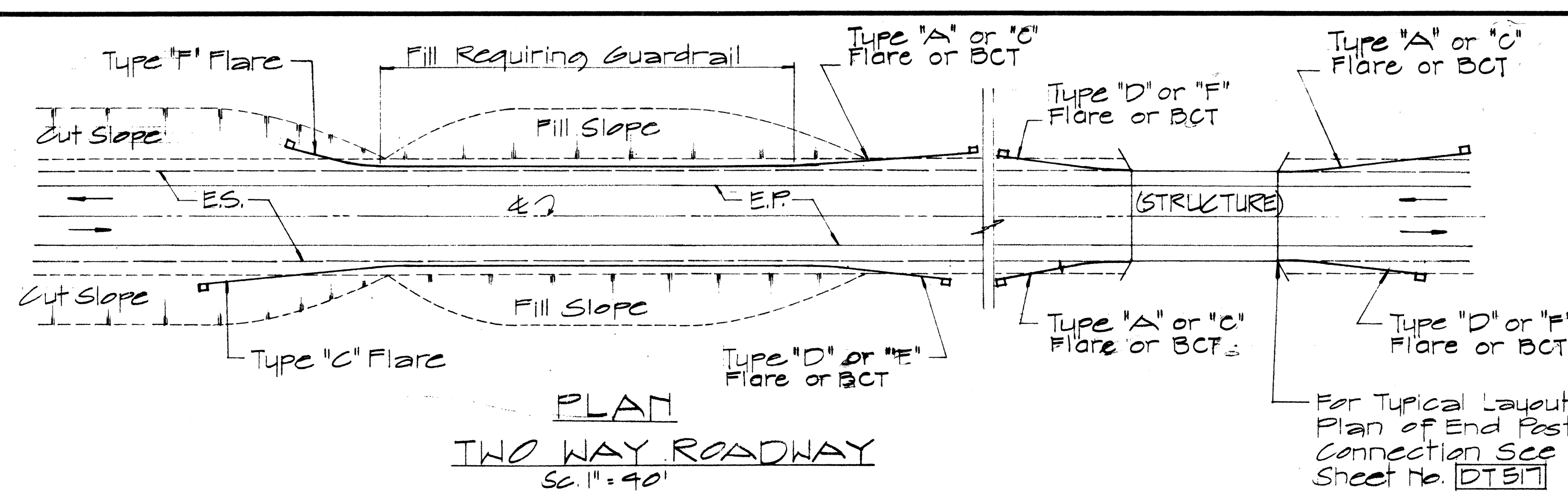
Scale: 3" = 1'-0"

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

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

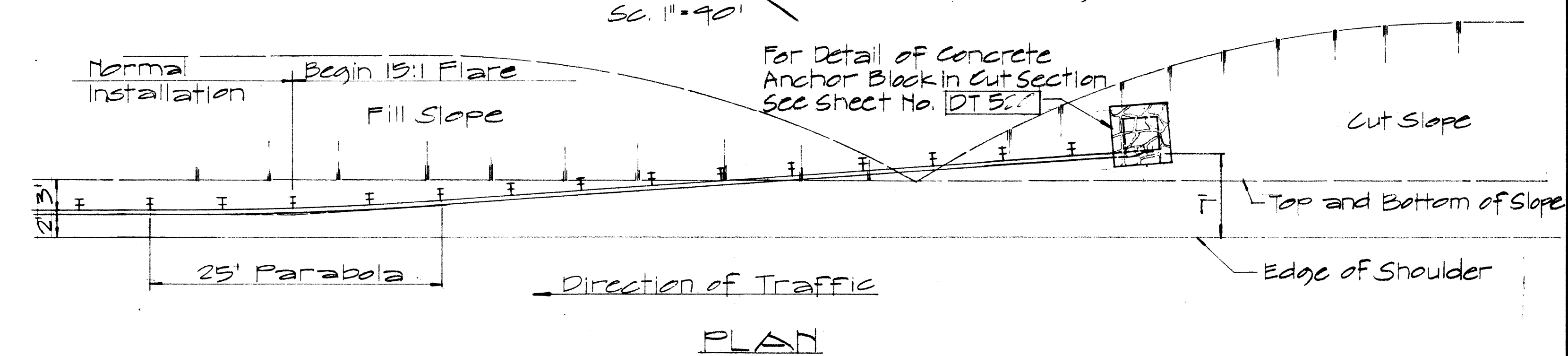
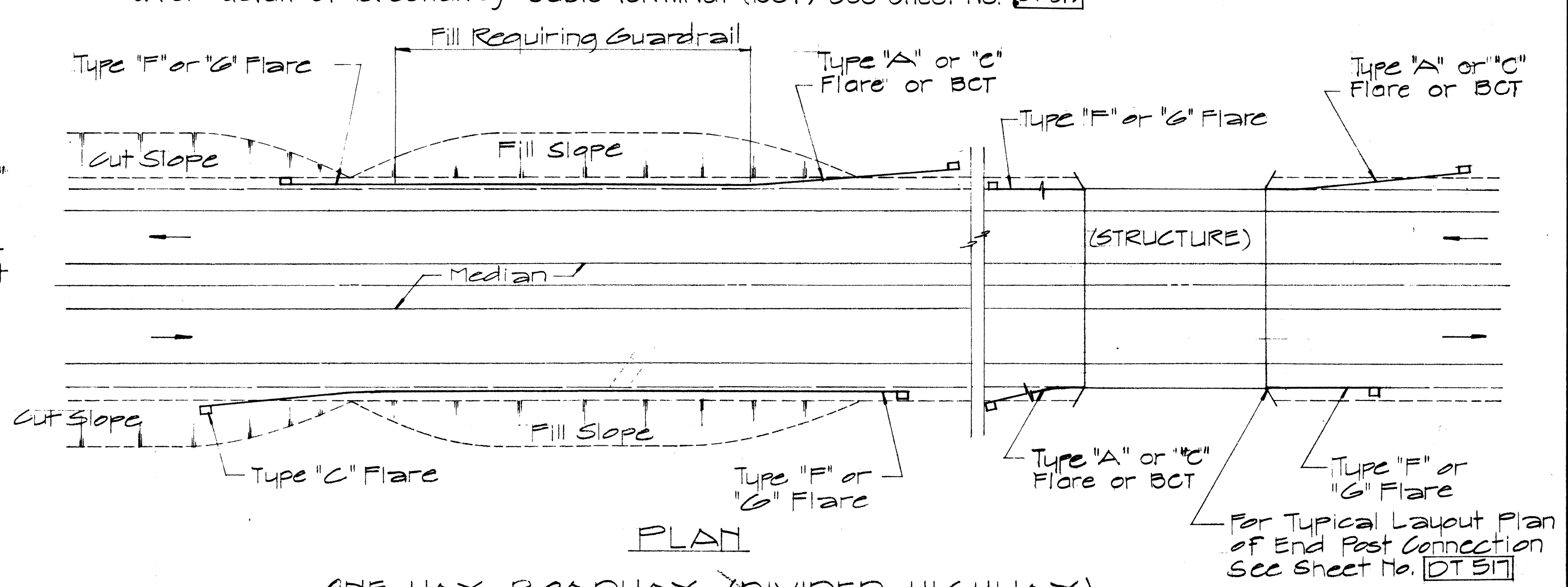
NO	REVISION	APPROVED BY	DATE
1	Revised Hole Size for Rectangular Rail Washer	H.R.	8/16/77





NOTE:  
 1. Metal guard rail connection to structures requires End Post Connection. See structure Plans.  
 2. For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19H-01-80	1980	15	19



ELEVATION  
 TYPE C FLARE  
 Scale: 1/8" = 1'-0"

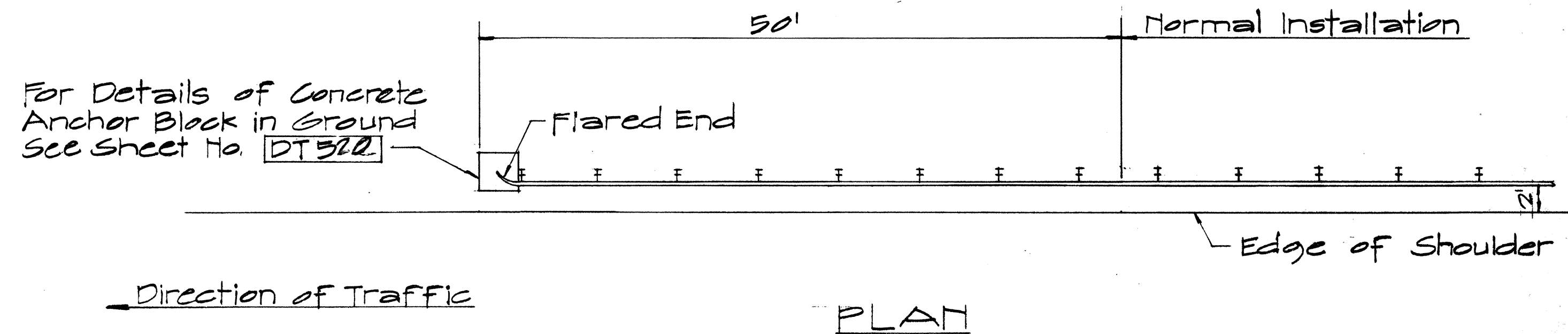
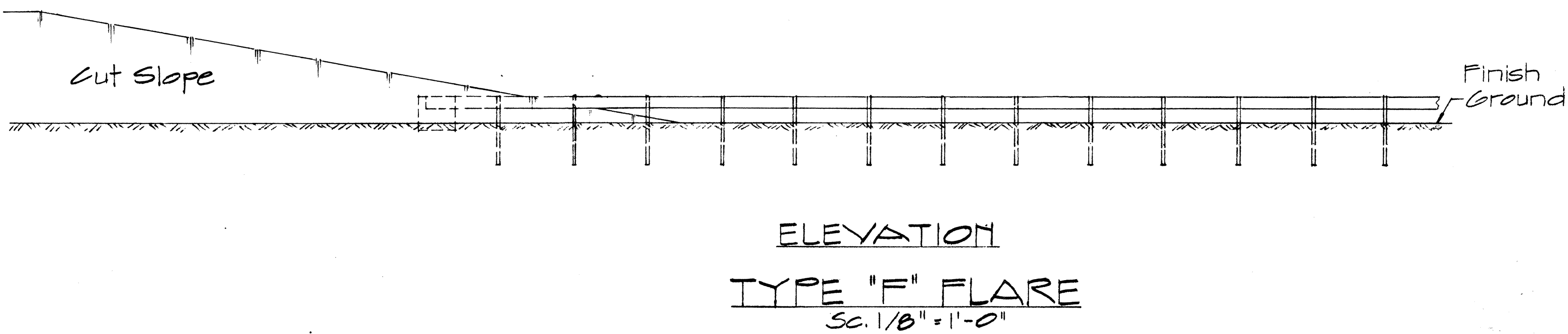
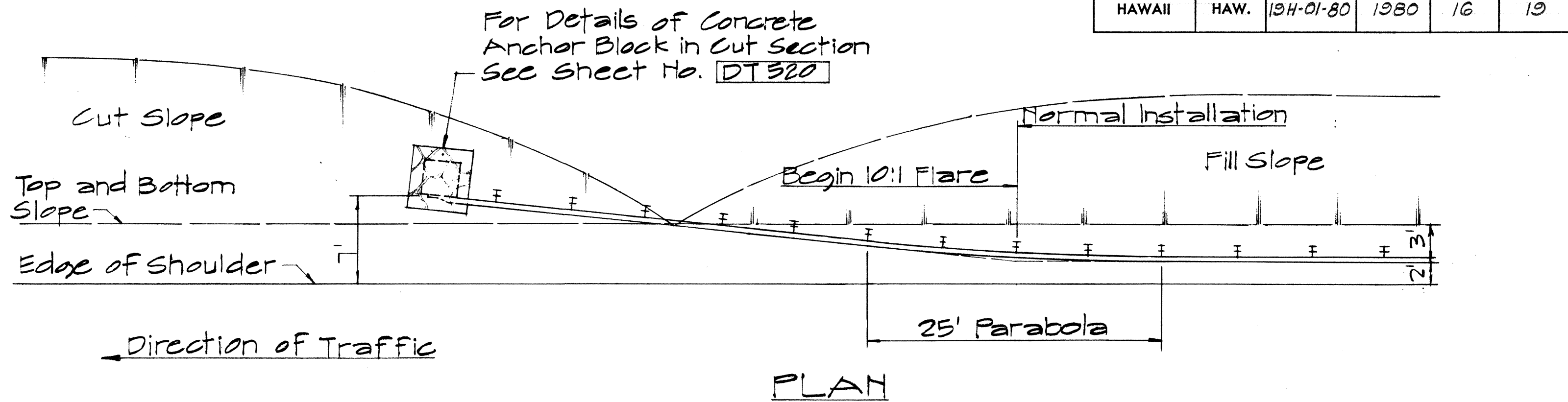
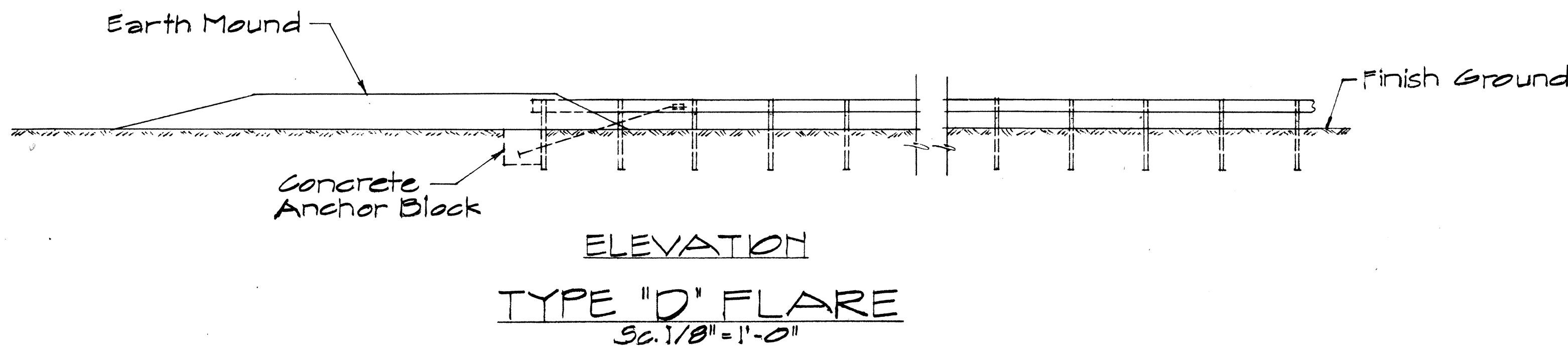
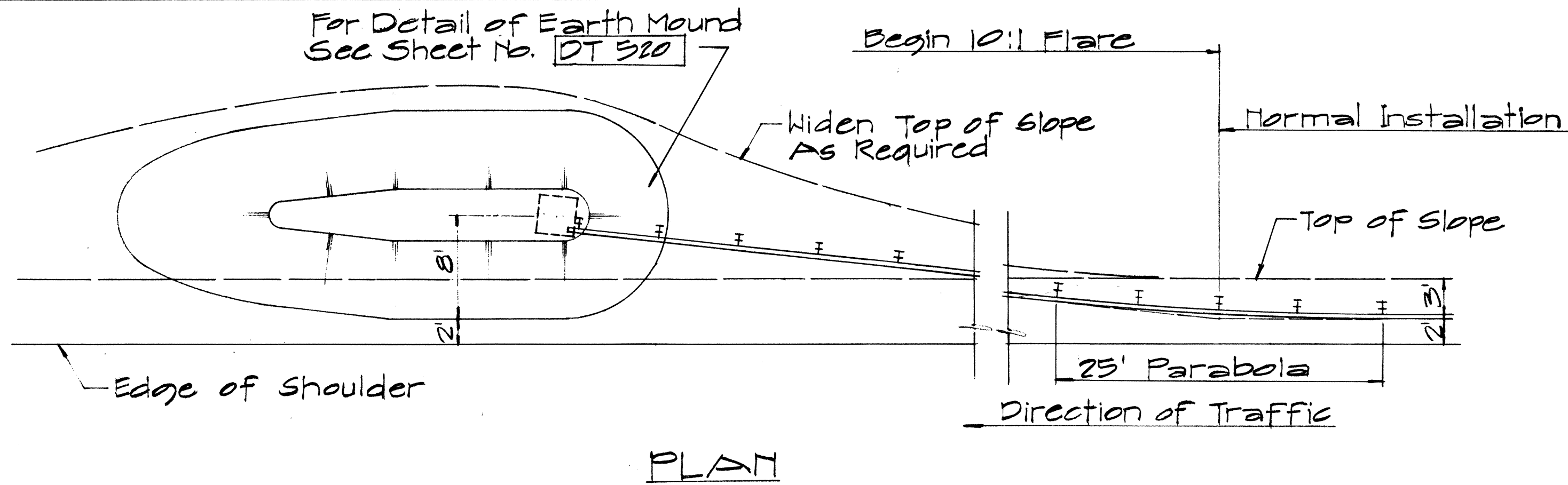
NO.	REVISION	APPROVED BY	DATE
1	Delete Type "B" Flare and Type "E" Flare	H.T.	6/15/80

APPROVAL RECOMMENDED:  
*Erich Tanaka* 12/29/69  
 TRAFFIC ENGINEER DATE  
 APPROVED:  
*W. S. S. S.* 12-30-69  
 ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS  
 OF APPROACH END  
 FLARE - ONE & TWO  
 WAY ROADWAY**  
 Scale As Noted April 1967  
 SHEET No. 11 OF 14 SHEETS DT 516

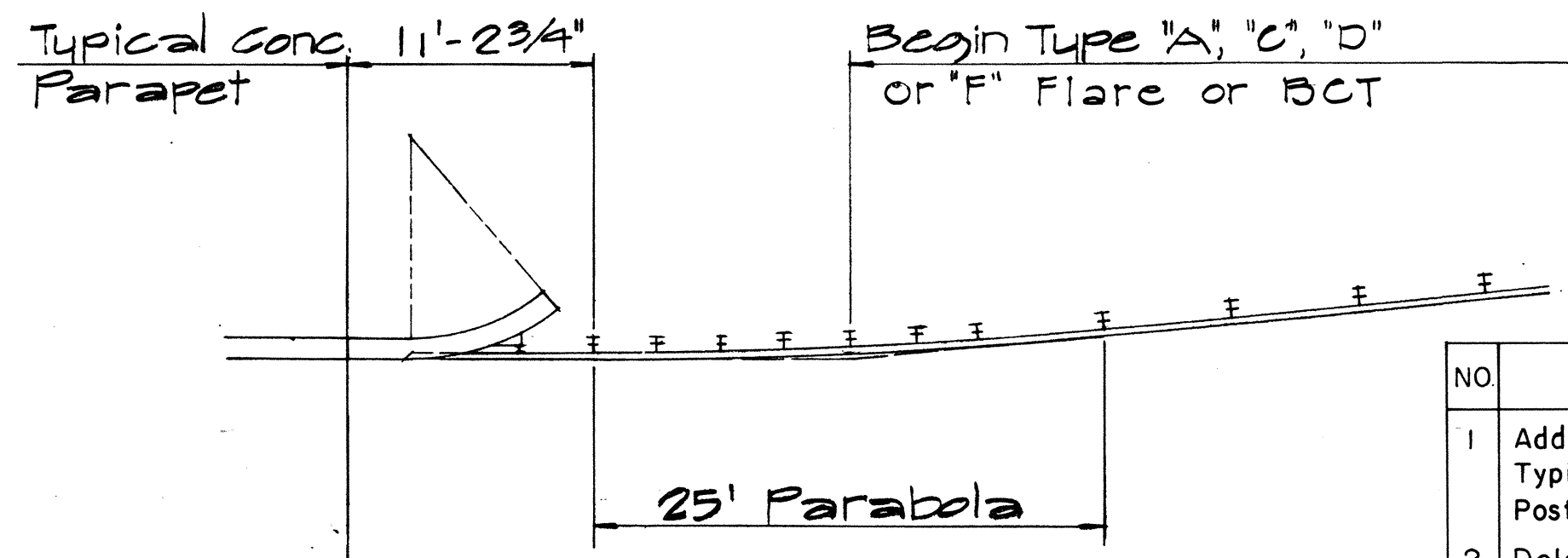
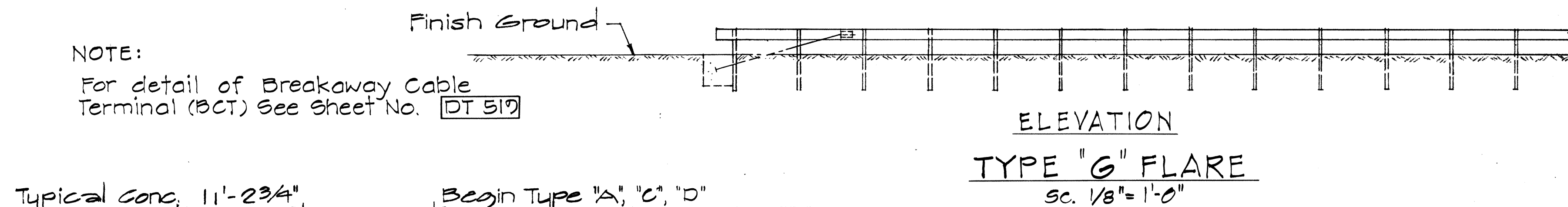
DATE	
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	194-01-80	1980	16	19



NOTE:

For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 519



TYPICAL LAYOUT PLAN OF END POST CONNECTION

Sc. 1/8" = 1'-0"

NO	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-78

APPROVAL RECOMMENDED:

E. J. Tanaka 12/29/69  
TRAFFIC ENGINEER DATE

APPROVED:

W. J. J. J. 12-30-69  
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAILS**  
**TRAILING END**  
**FLARE - ONE & TWO**  
**WAY ROADWAY**

Scale: As Noted April 1969

SHEET No. 12 OF 14 SHEETS DT 517

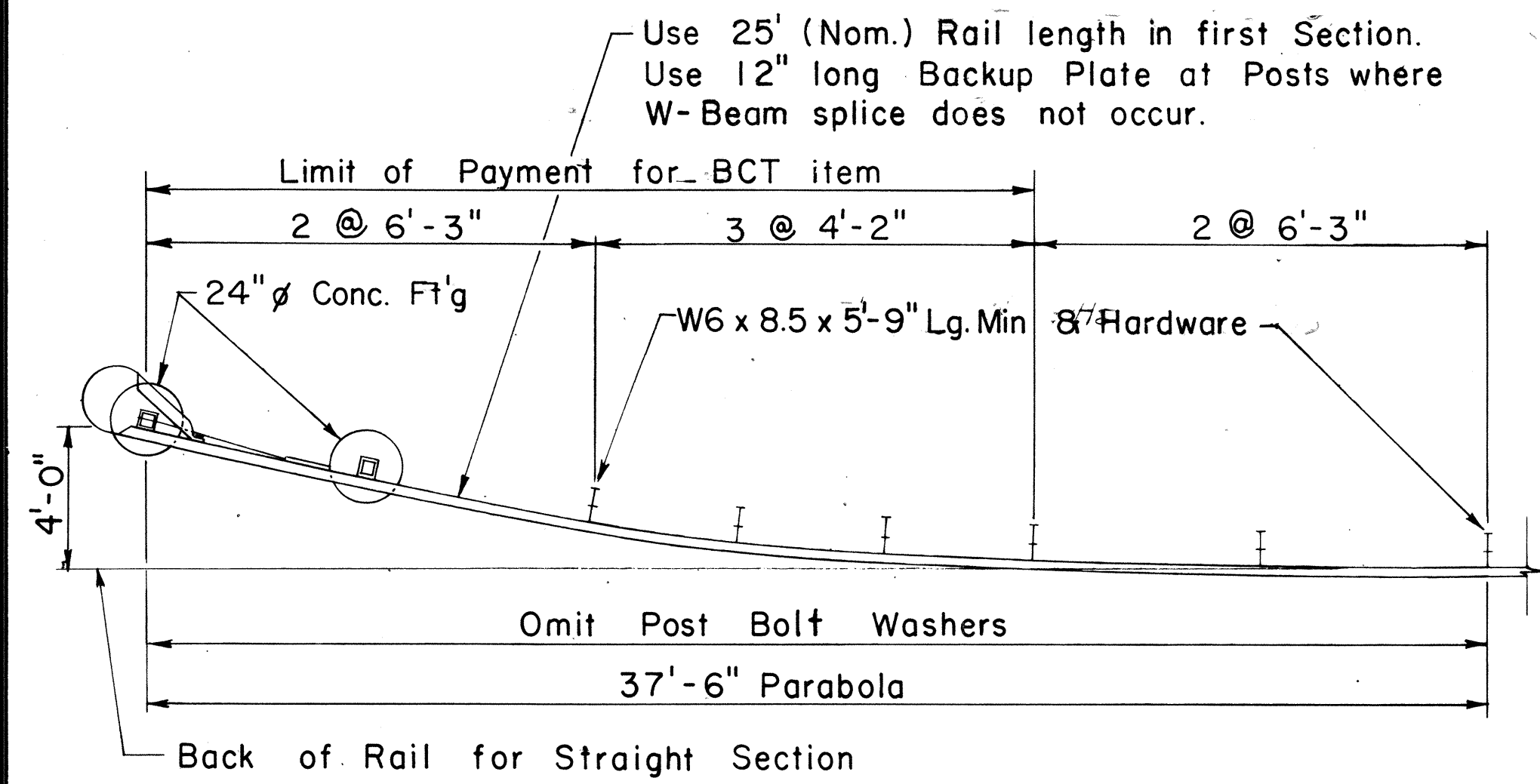
DATE	
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



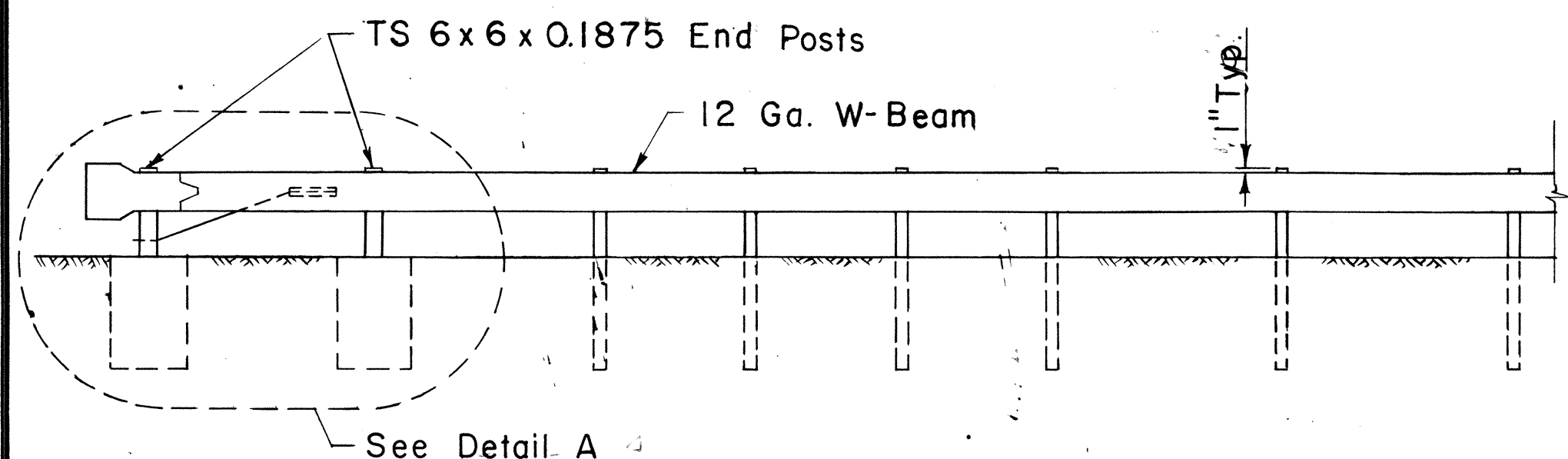
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	194-01-80	1980	17	19

# NOTES:

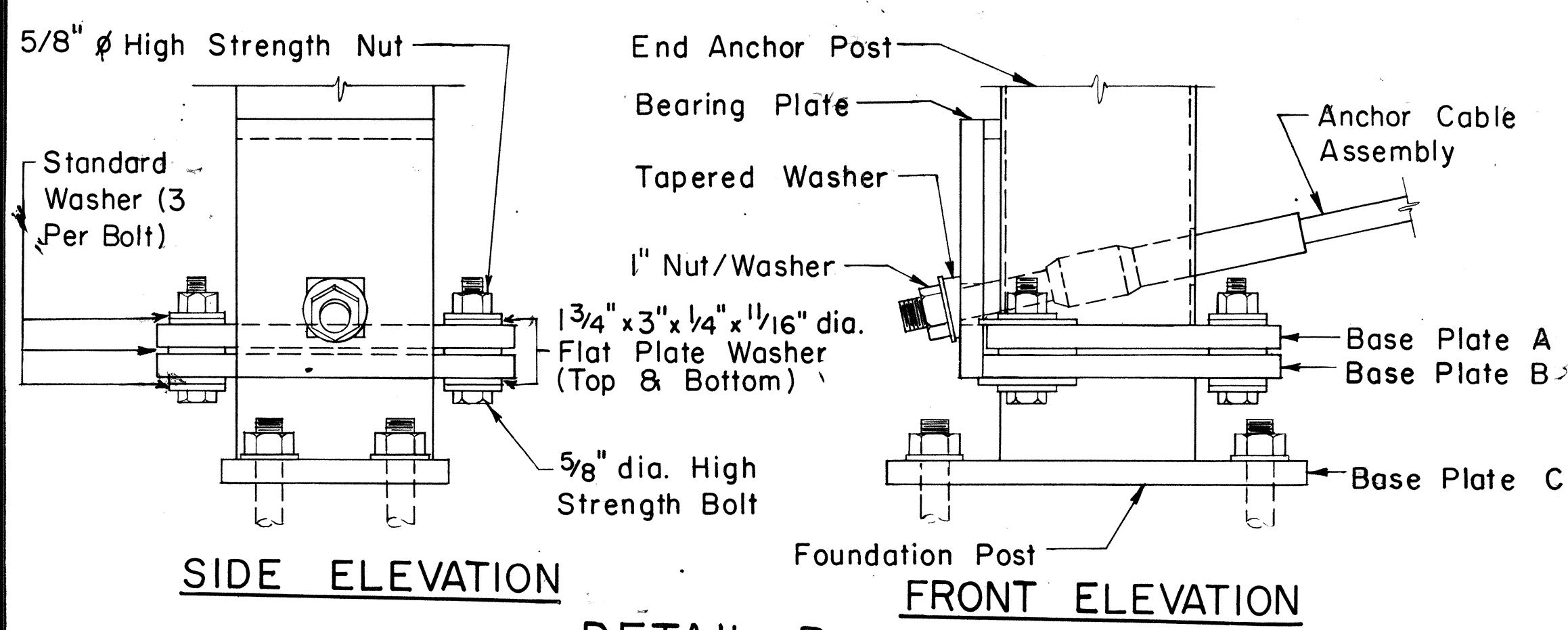
- Anchor Plate and Anchor Cable Assembly (Standard Swaged Fitting and Stud). See Standard Detail Sheet No. DT 520.
- Other Anchor Cable Assemblies may be used. Minimum breaking strength of assembly should be 40,000 lbs.
- Second Terminal Post does not require holes to accommodate Anchor Cable.
- Slip Base Load shall be controlled with a Calibrated Torque Wrench - Torque 155 - 170 ft. lbs.
- Concrete shall be Class A.



**PLAN**  
Scale: 1/4" = 1'-0"

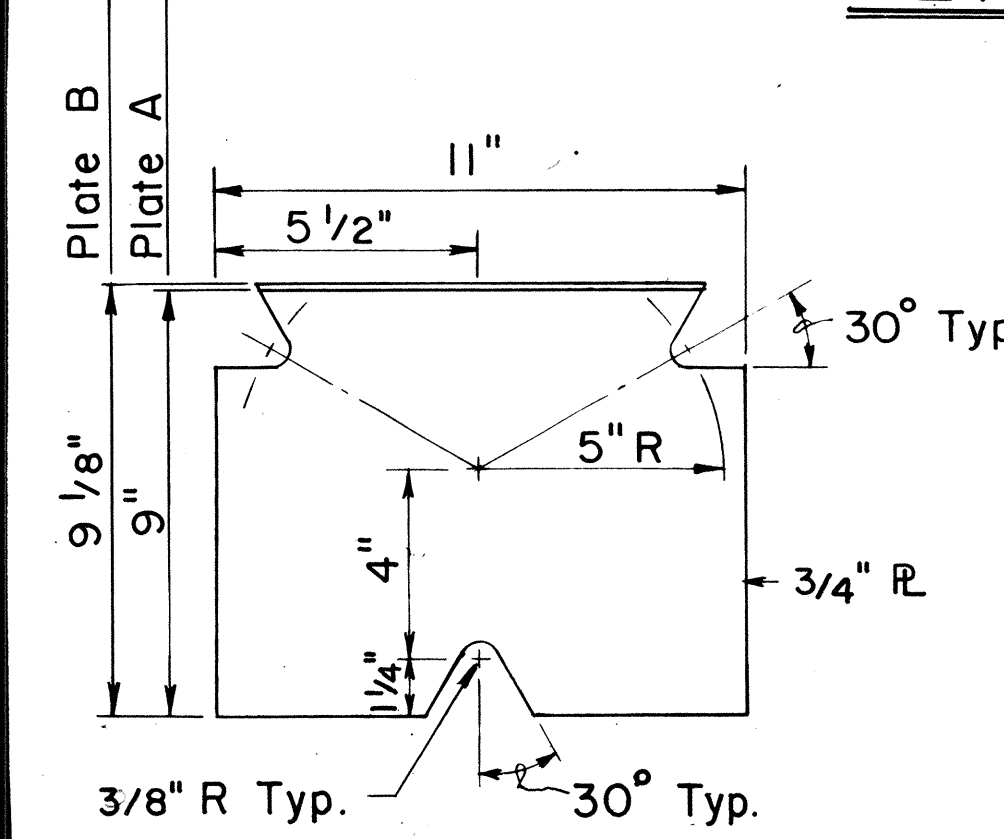


**ELEVATION**  
Scale: 1/4" = 1'-0"

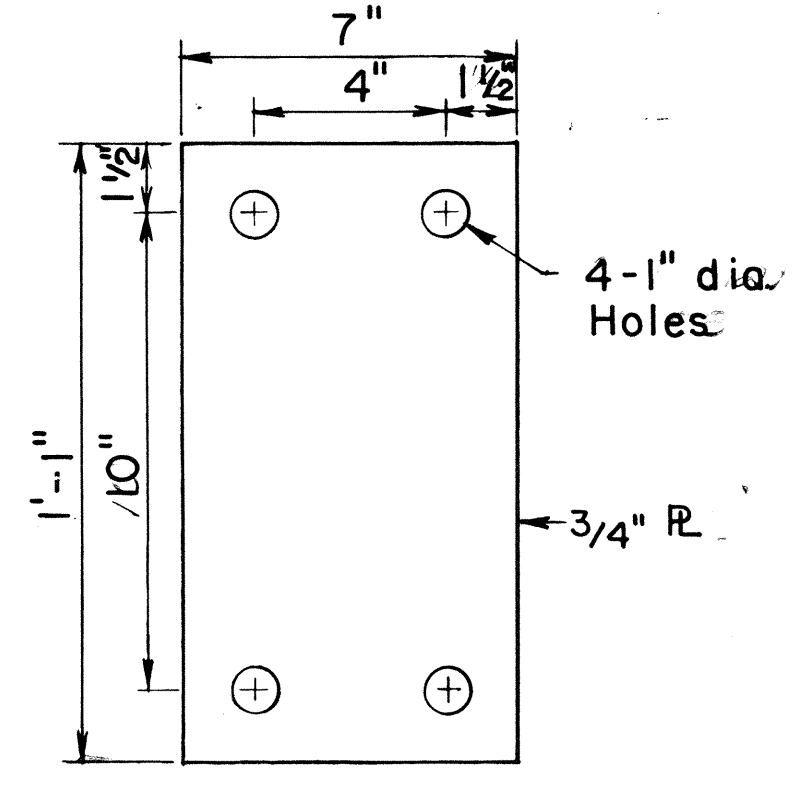


**SIDE ELEVATION**

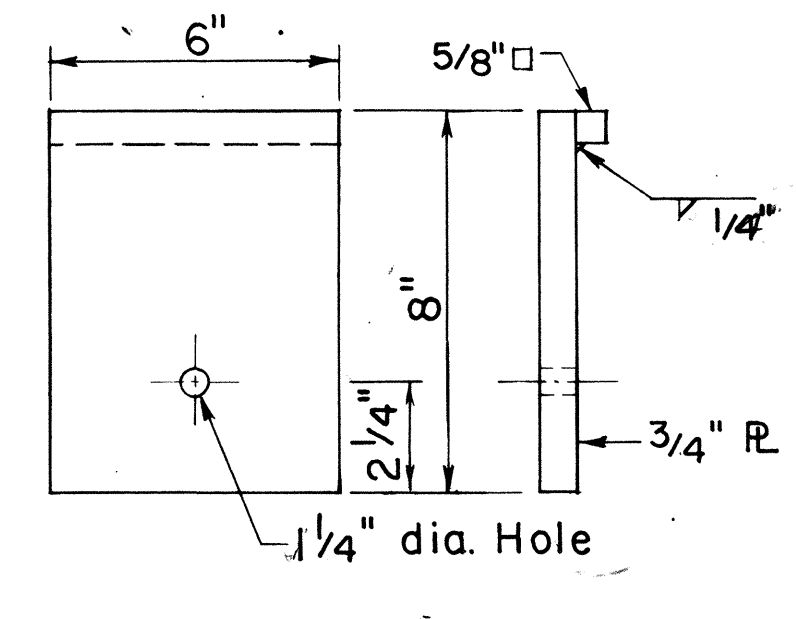
**FRONT ELEVATION**



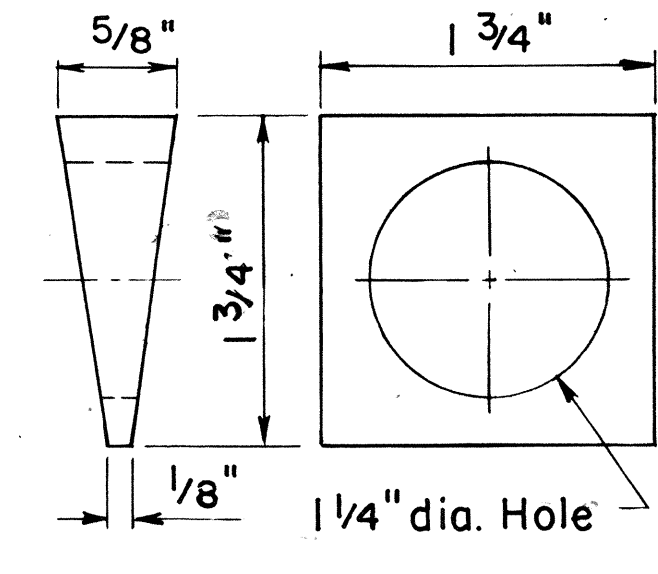
**BASE PLATES A & B**  
Scale: 3" = 1'-0"



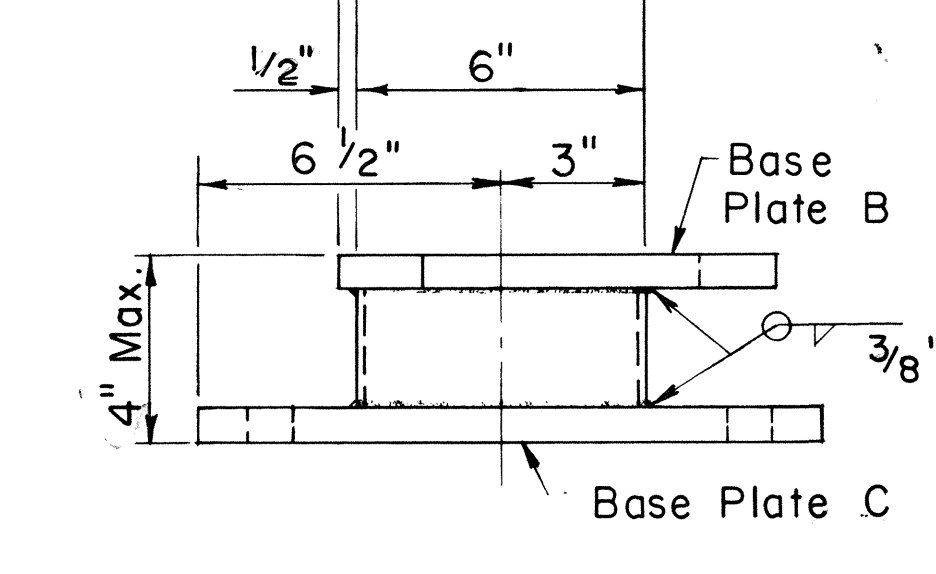
**BASE PLATE C**  
Scale: 3" = 1'-0"



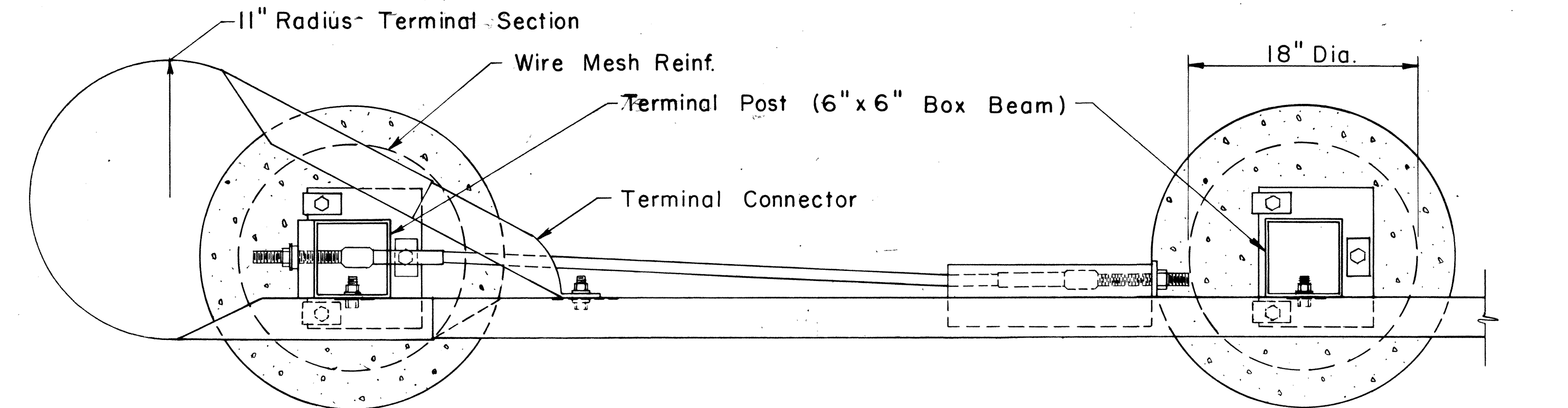
**BEARING PLATE**  
Scale: 3" = 1'-0"



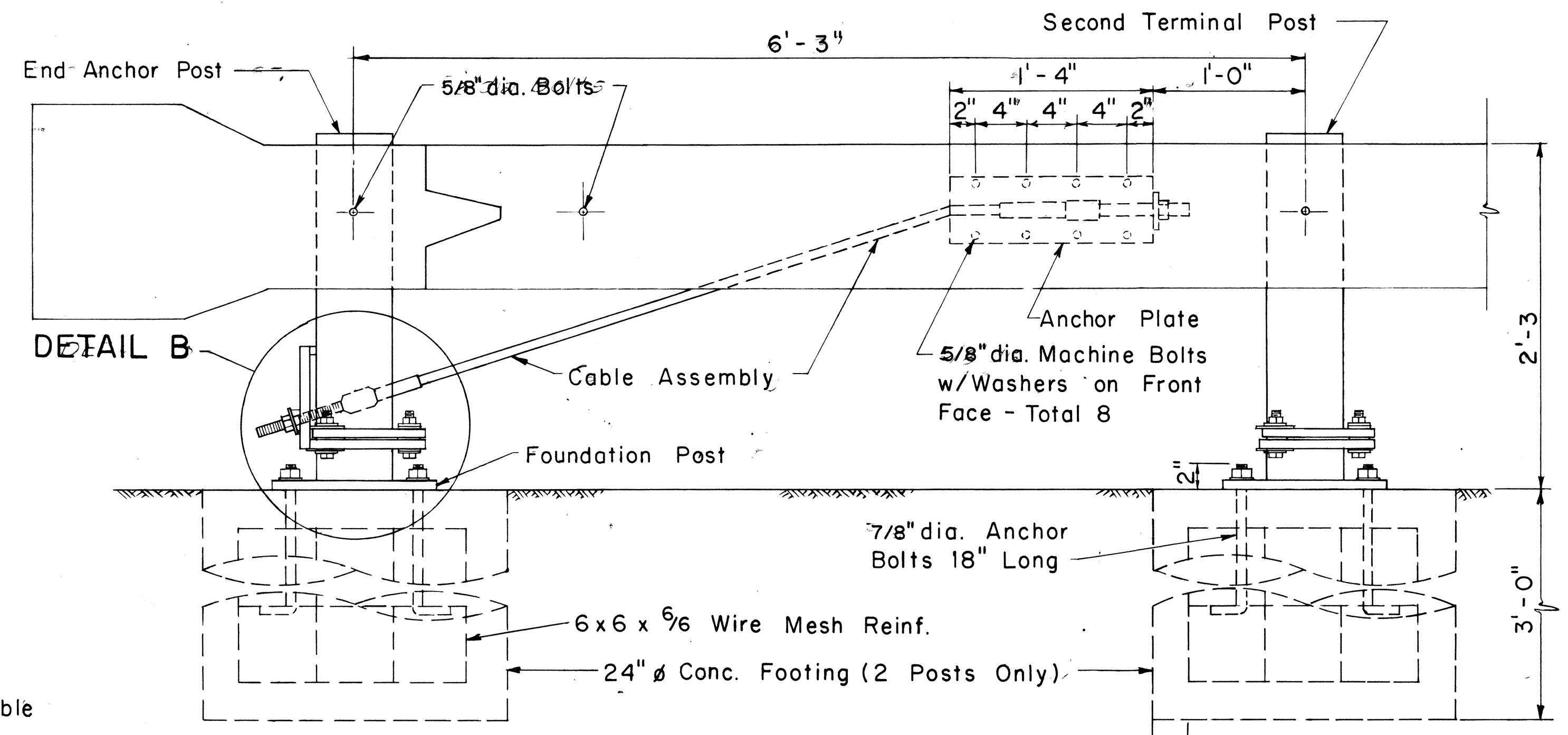
**TAPERED WASHER**  
Scale: Full Size



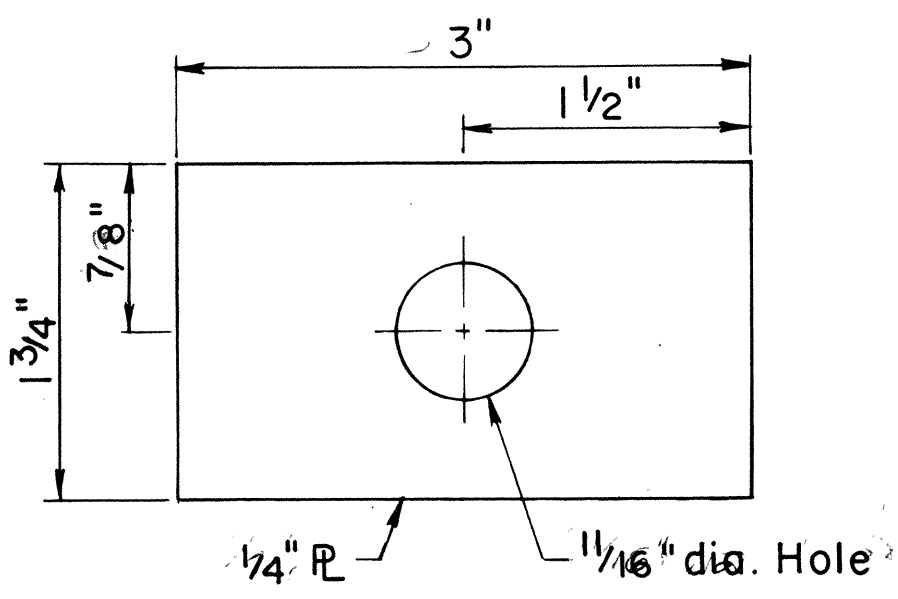
**FOUNDATION POST**  
Scale: 3" = 1'-0"



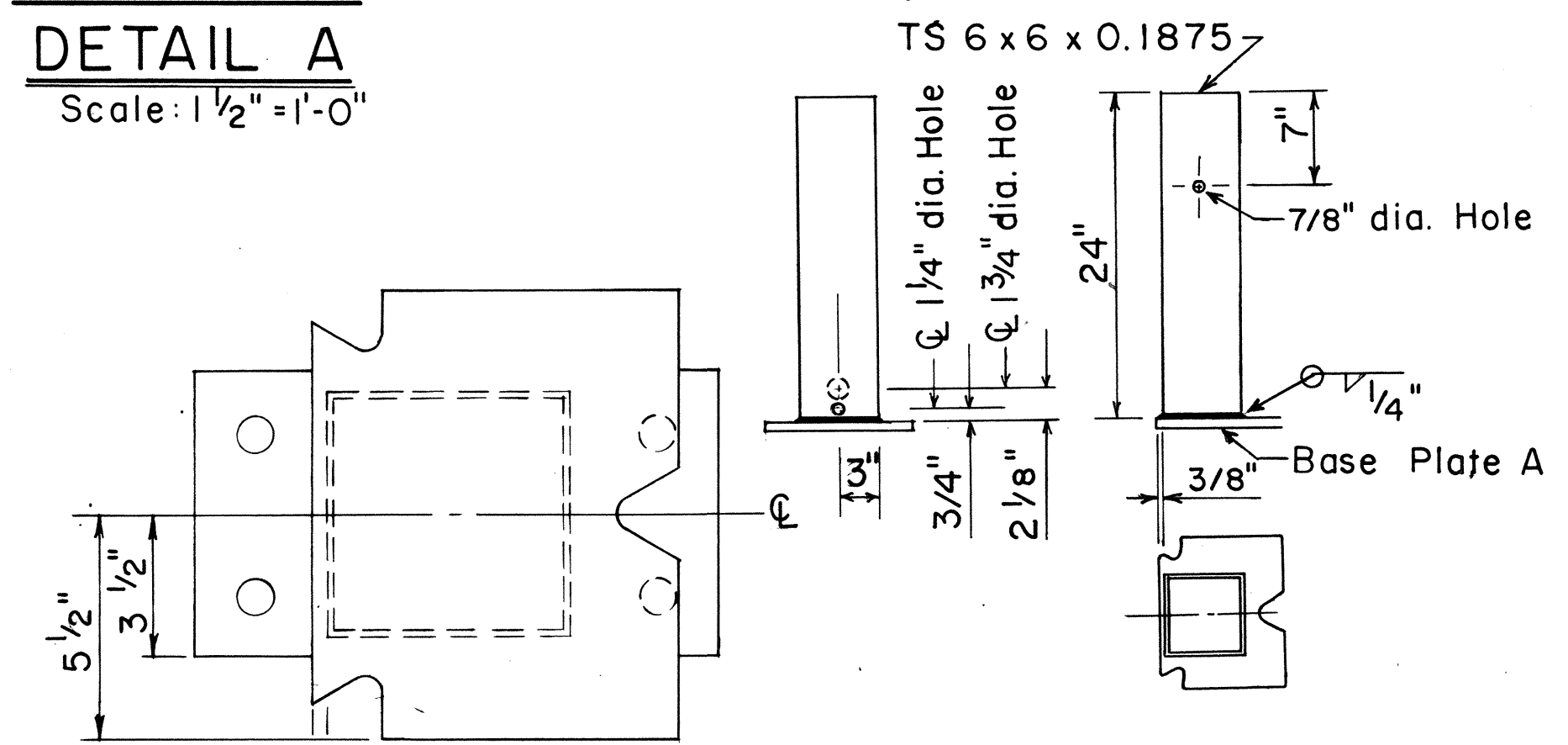
**PLAN**



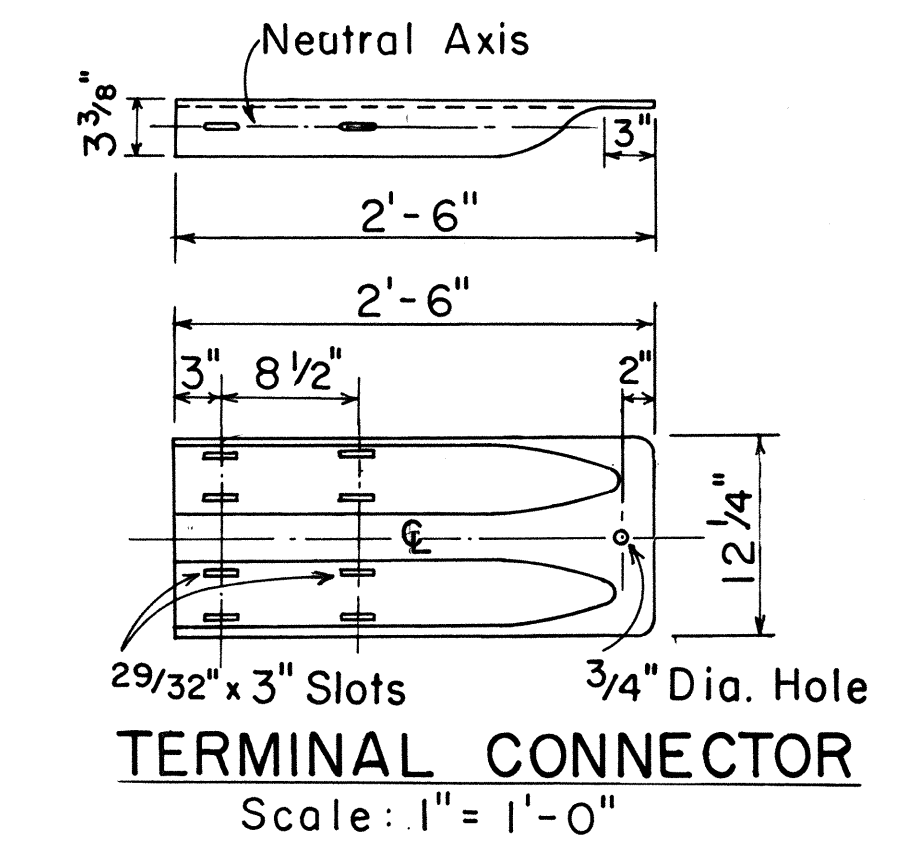
**ELEVATION**  
**DETAIL A**  
Scale: 1 1/2" = 1'-0"



**FLAT PLATE WASHER**  
Scale: Full Size



**TERMINAL POST**  
Scale: 1" = 1'-0"



**TERMINAL CONNECTOR**  
Scale: 1" = 1'-0"

APPROVAL RECOMMENDED:

*Eishi Tanaka* 6/14/78  
TRAFFIC ENGINEER DATE

APPROVED:

*Harbor Zaleisho* 6/15/78  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
	Supersedes Sht. DT 519 Approved 12/30/69	H.T.	6/15/78

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAIL**

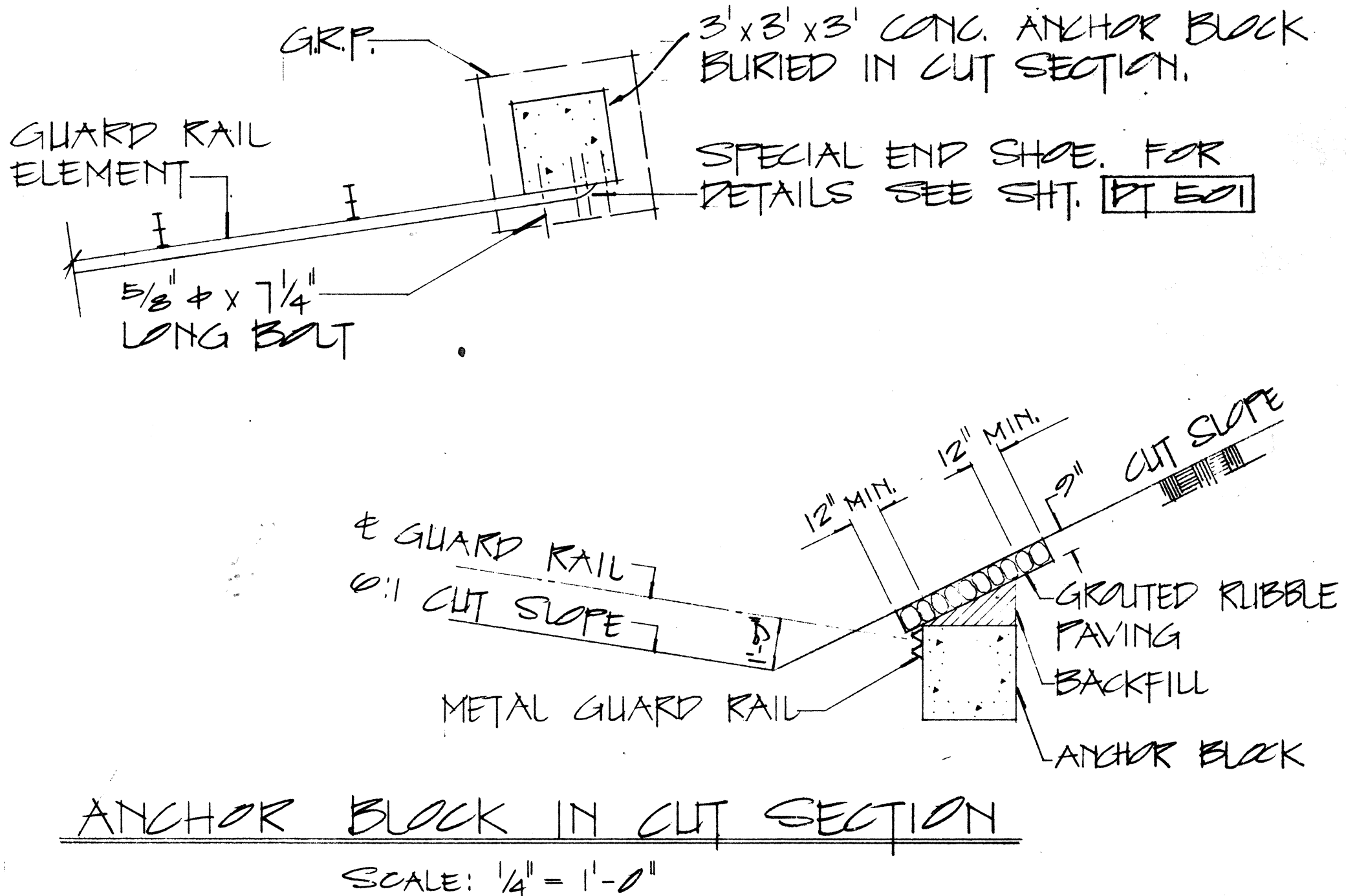
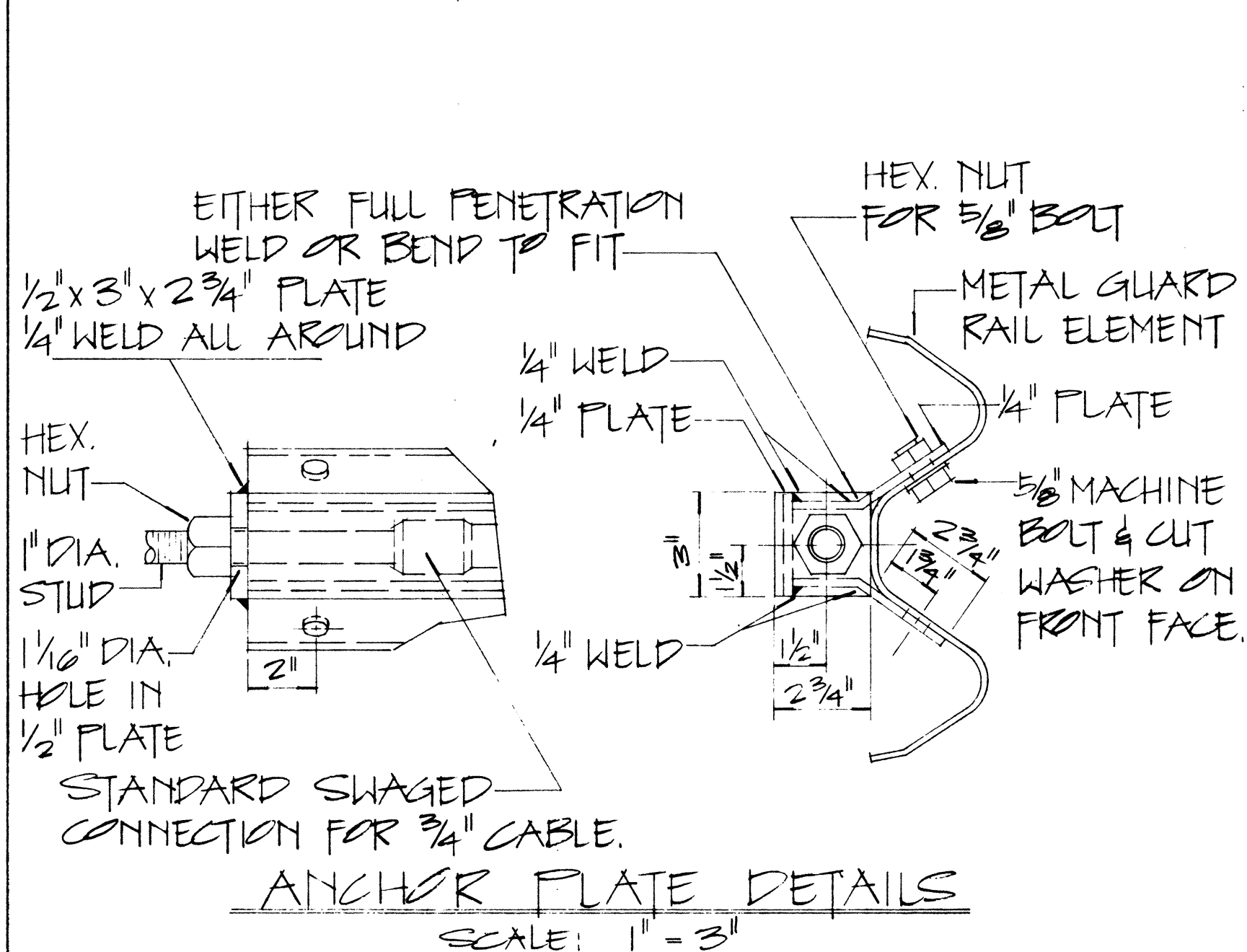
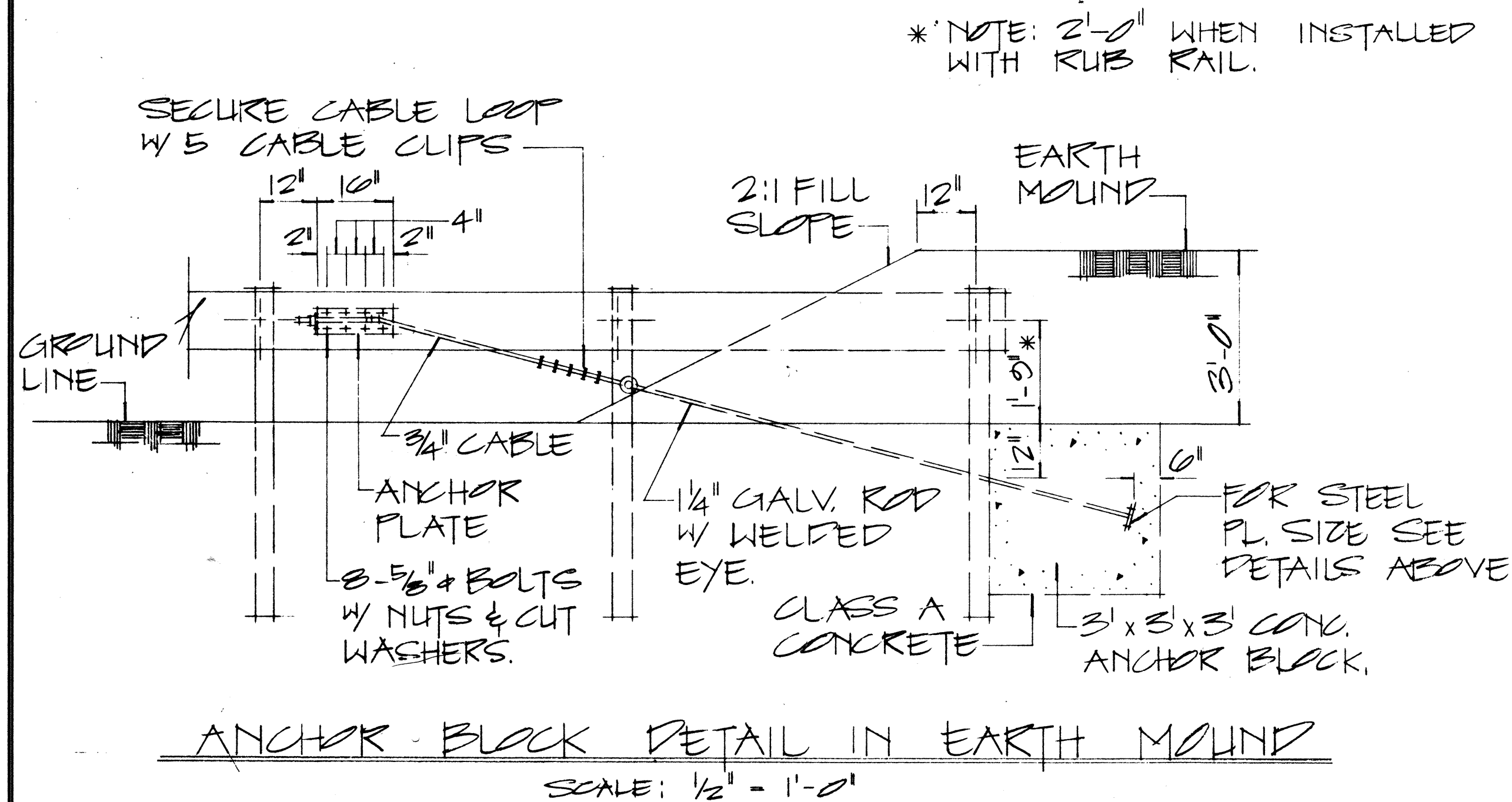
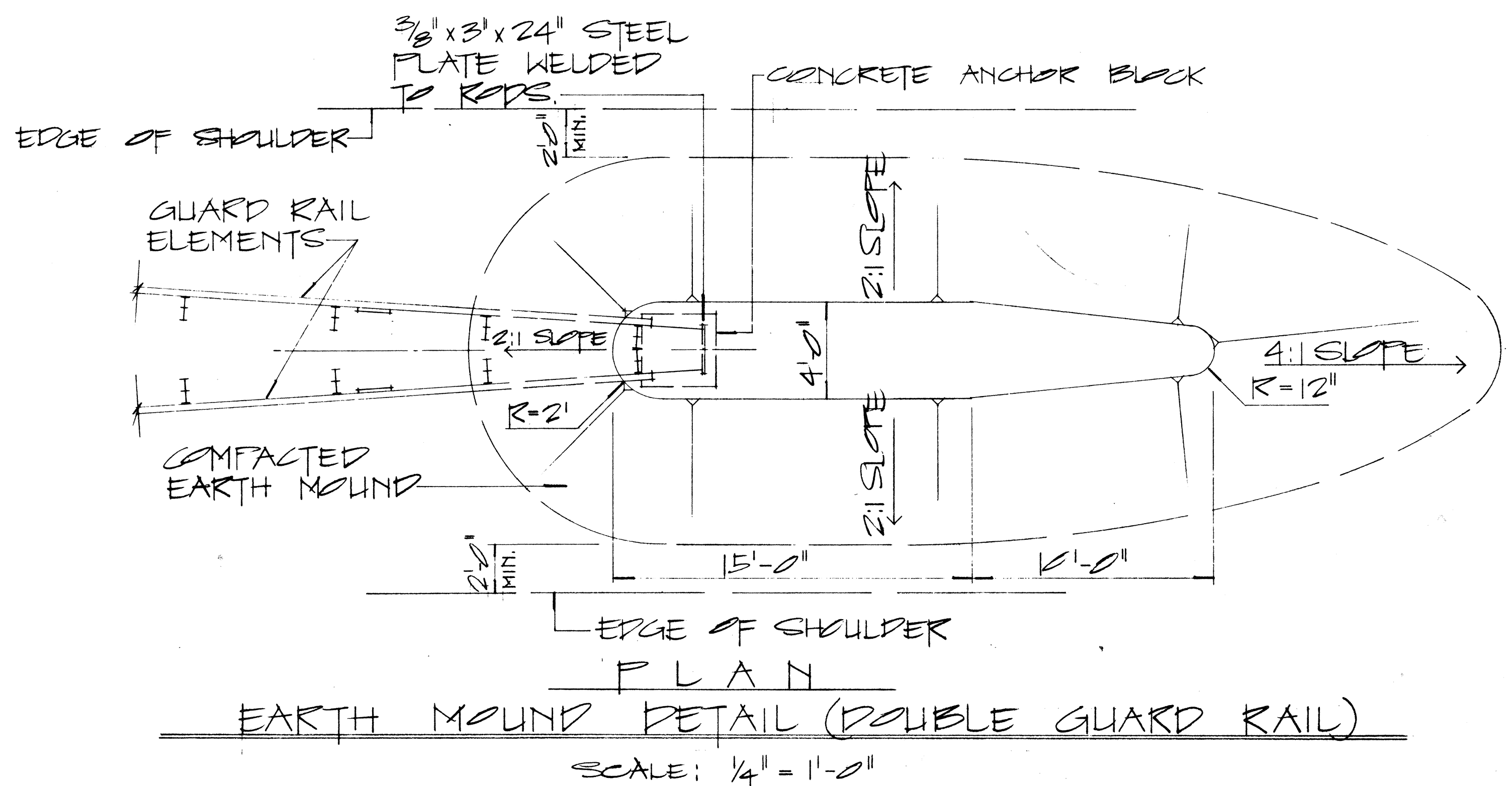
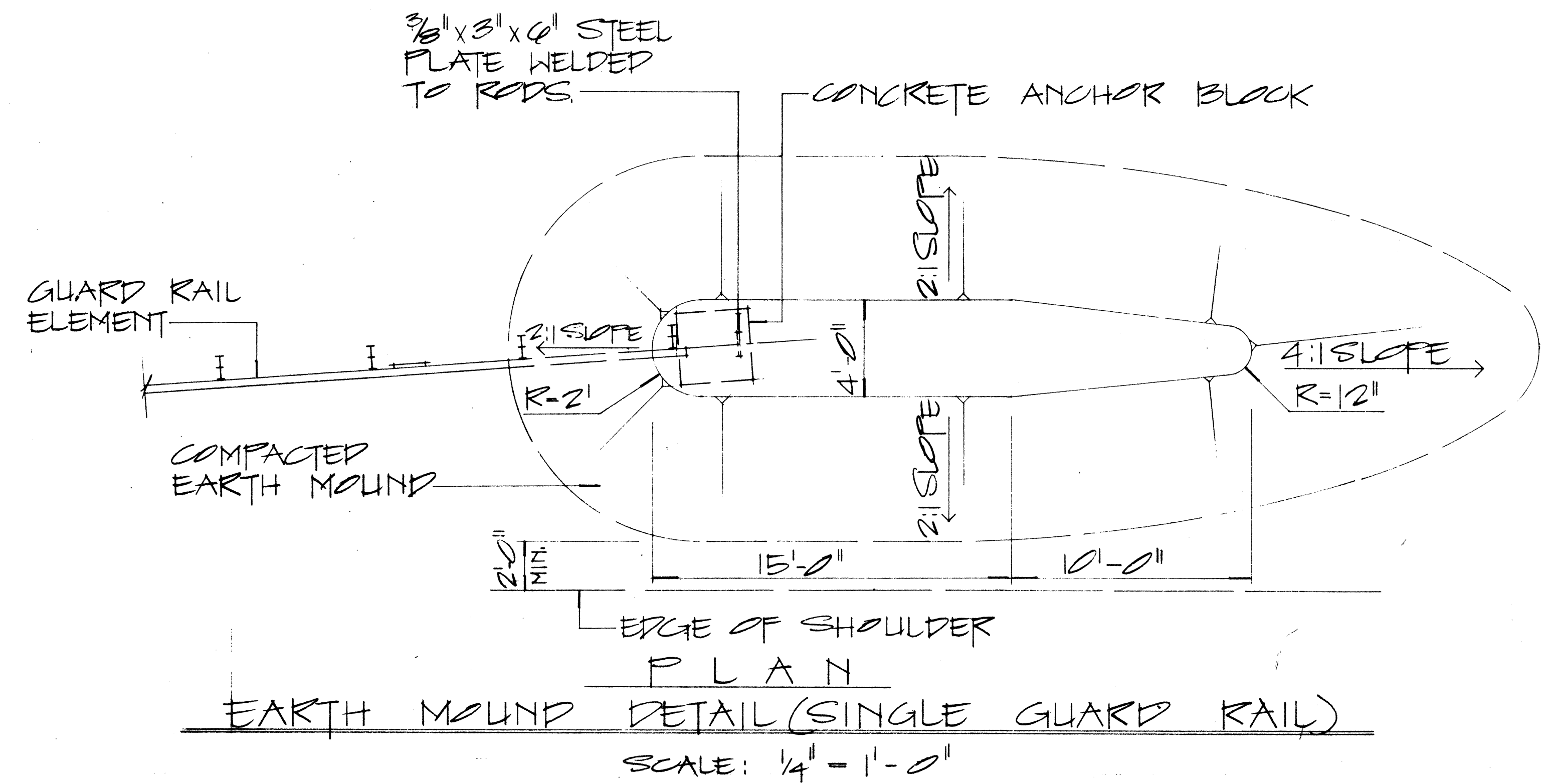
**BREAKAWAY CABLE TERMINAL (BCT)**

Scale: As Shown Date: June 1978

SHEET No. 13 OF 14 SHEETS DT 519

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

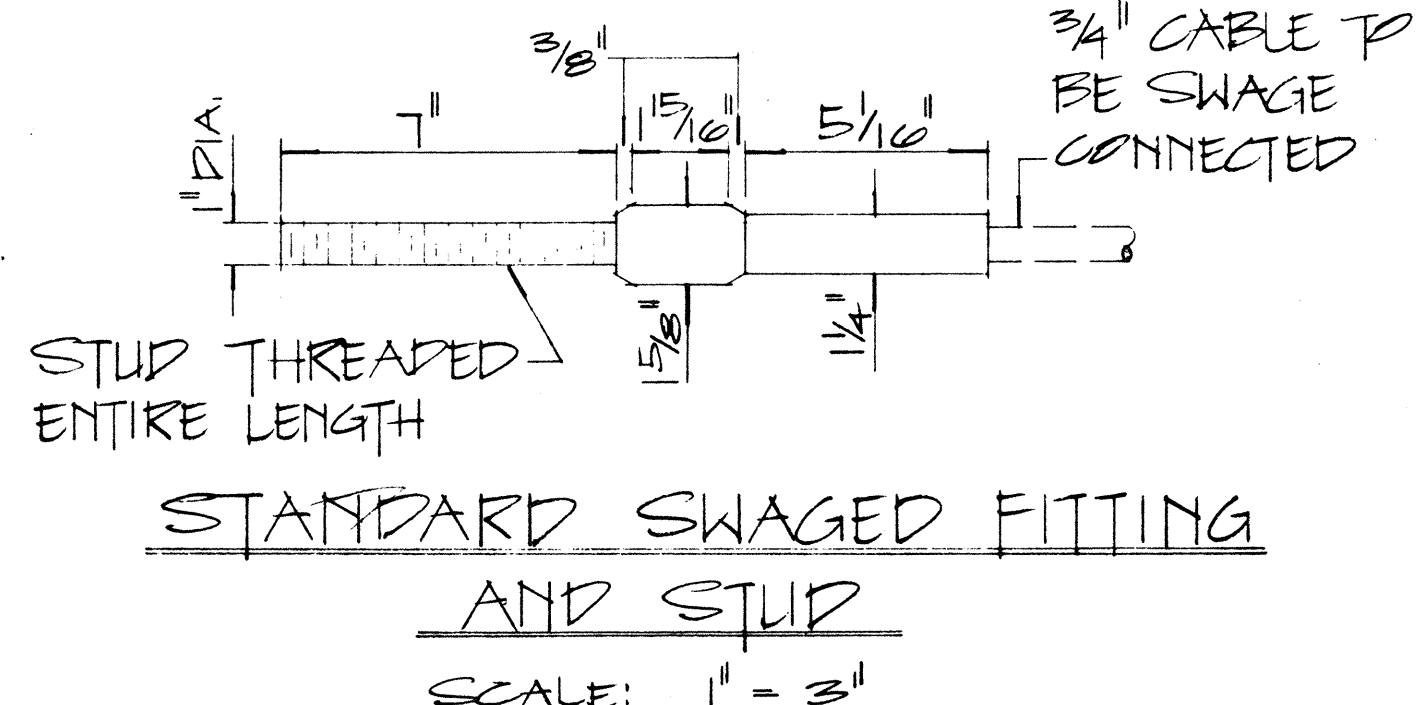
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	124-01-80	1980	18	19



NOTE:

1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND FAST BURIED IN GROUND SHALL BE COVERED WITH A MIN. 20-MIL THICKNESS OF COAL TAR ENAMEL, CONFORMING TO AWWA STANDARD: C 203

2. CONCRETE, GRP, EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.



APPROVAL RECOMMENDED:

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

APPROVED:

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS

EARTH MOUND AND ANCHOR BLOCK DETAILS

SCALE: AS SHOWN OCT 1969

SHEET No. 14 OF 14 SHEETS PT 520

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	