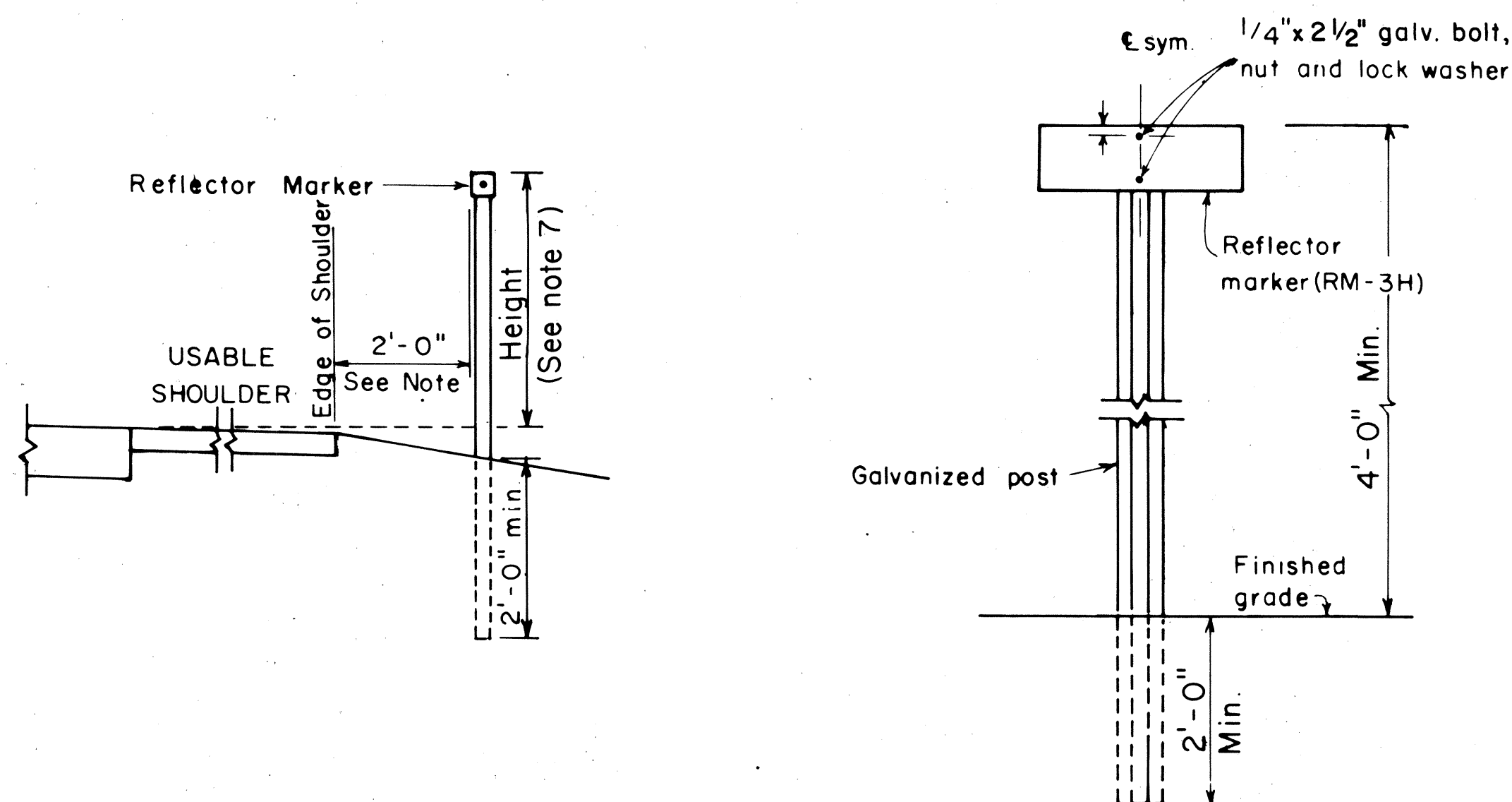
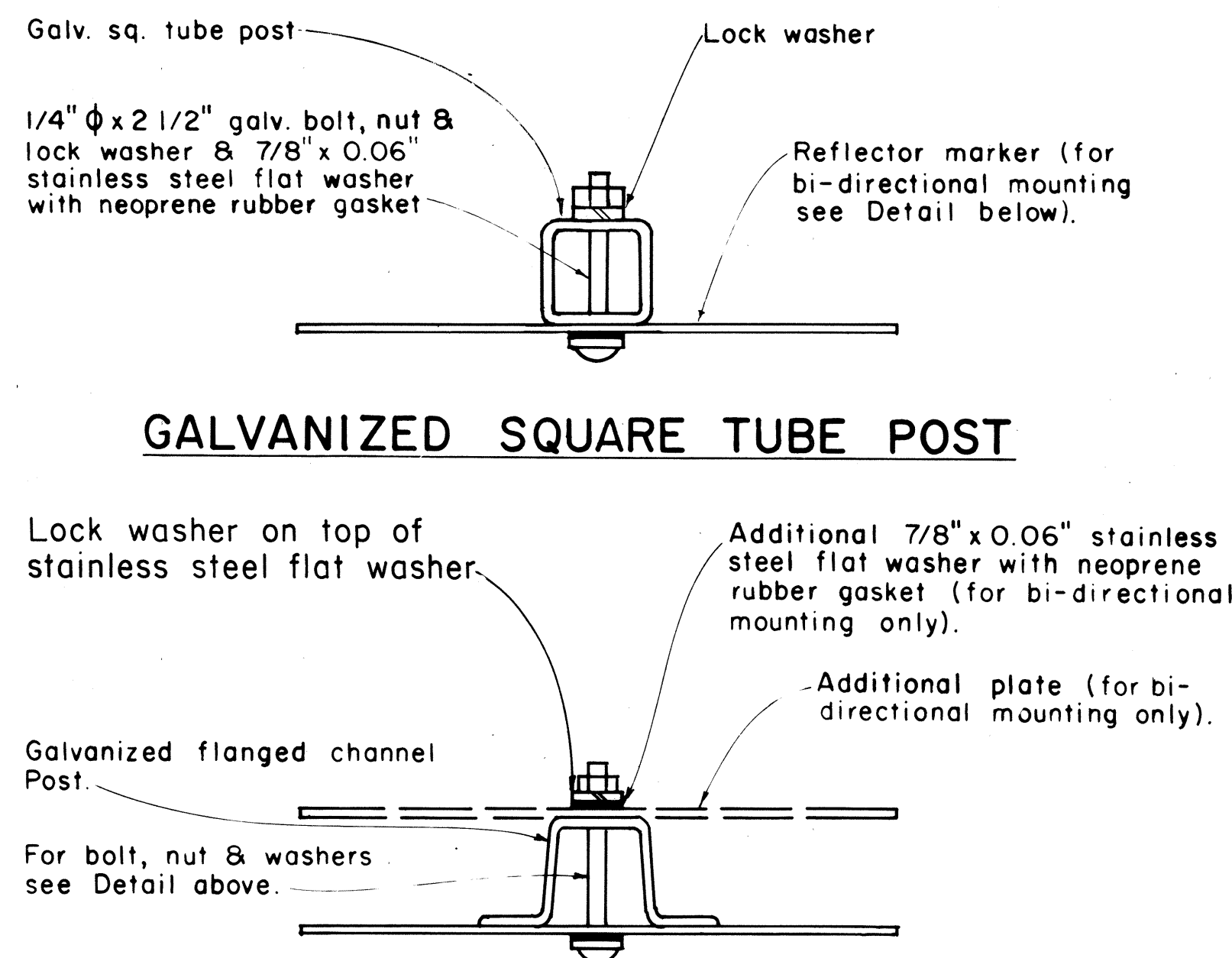


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	8	18



REFLECTOR MARKER MOUNTING DETAIL

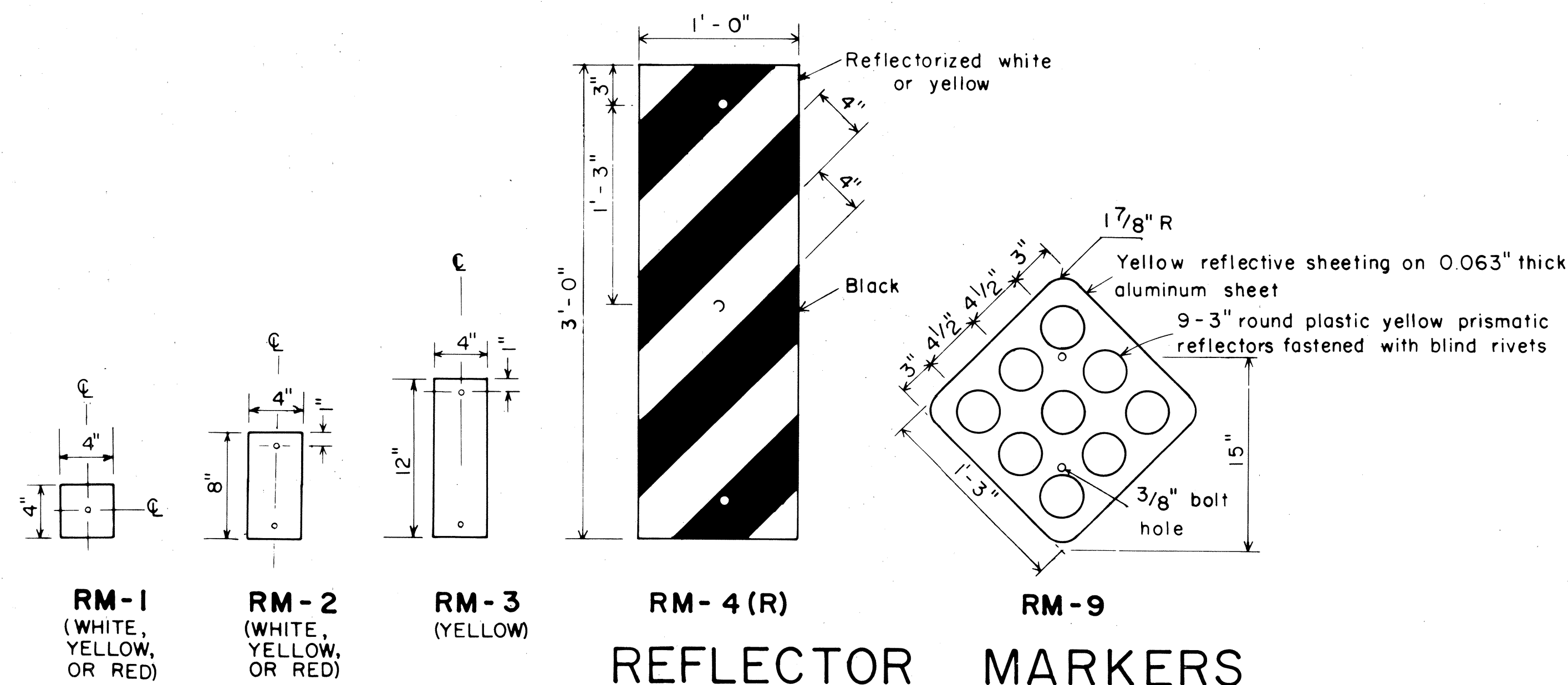


GALVANIZED SQUARE TUBE POST

GALVANIZED FLANGED CHANNEL POST

GENERAL NOTES:

1. Clearance markers (RM-3, RM-4) shall be installed with the inner 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. "H" indicates horizontal mounting of reflector marker.
4. 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.
5. For reflector marker RM-9, reflective sheeting material may be used as an alternate.
6. For RM-4, the stripes shall slope downward at an angle of 45° toward the side of the obstruction that traffic is to pass.
7. Height = 4'-0" min. for RM-1, RM-2, RM-3 and RM-9. Height = 5'-6" min. for RM-4.
8. Final locations of reflector markers shall be approved by the Engineer.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
MISCELLANEOUS REFLECTOR MARKERS

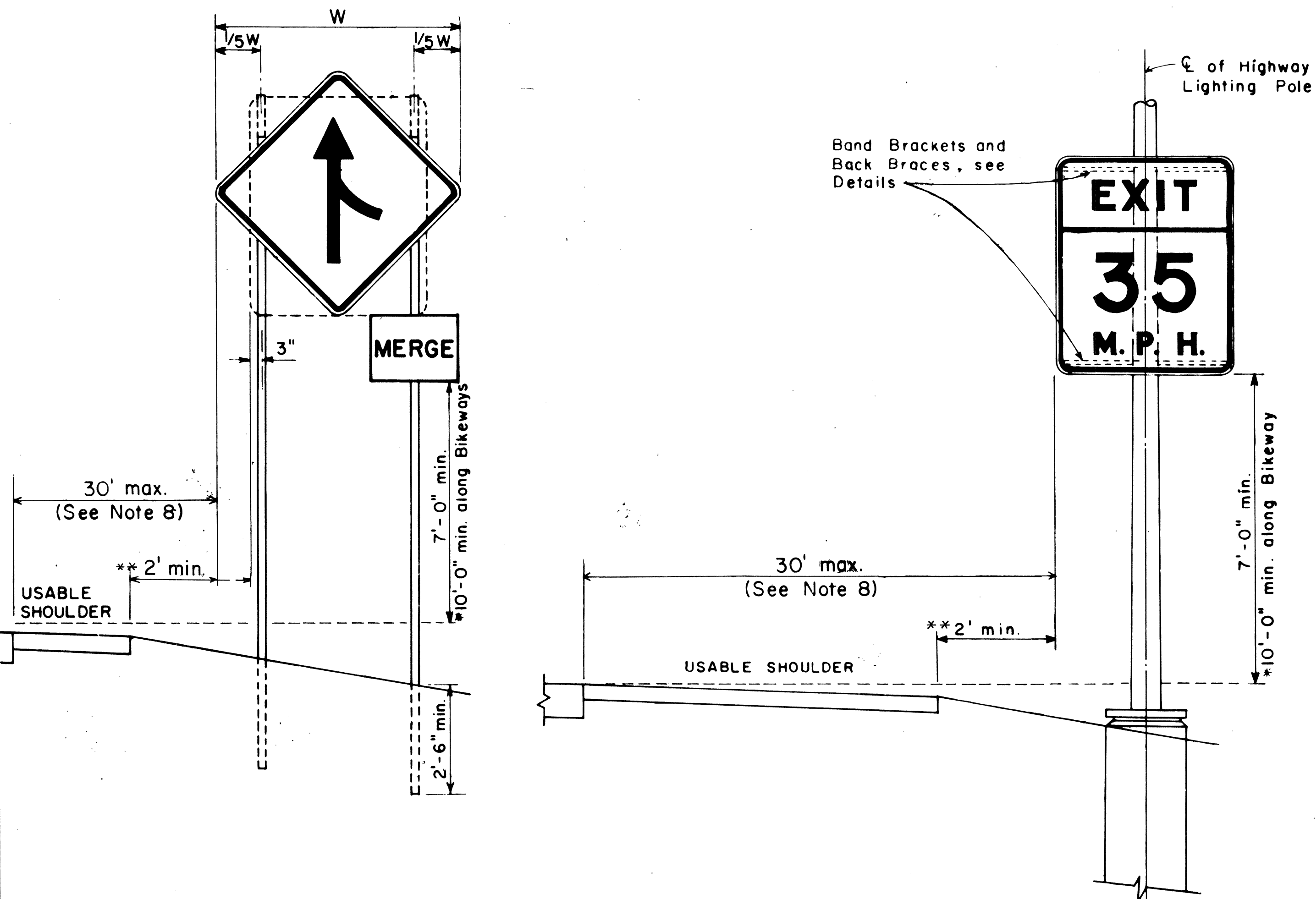
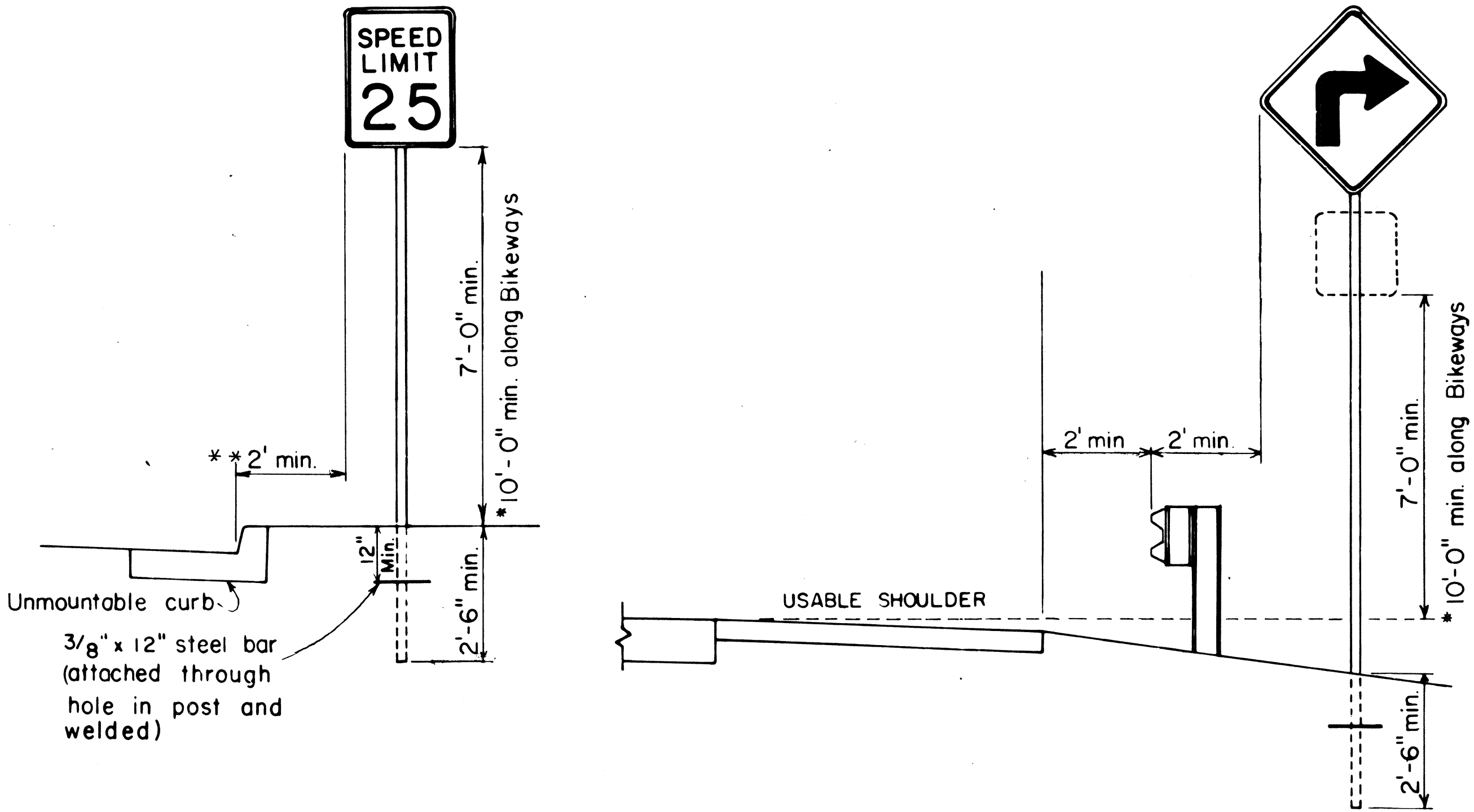
Not to scale
SHEET No. 1 OF 11 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

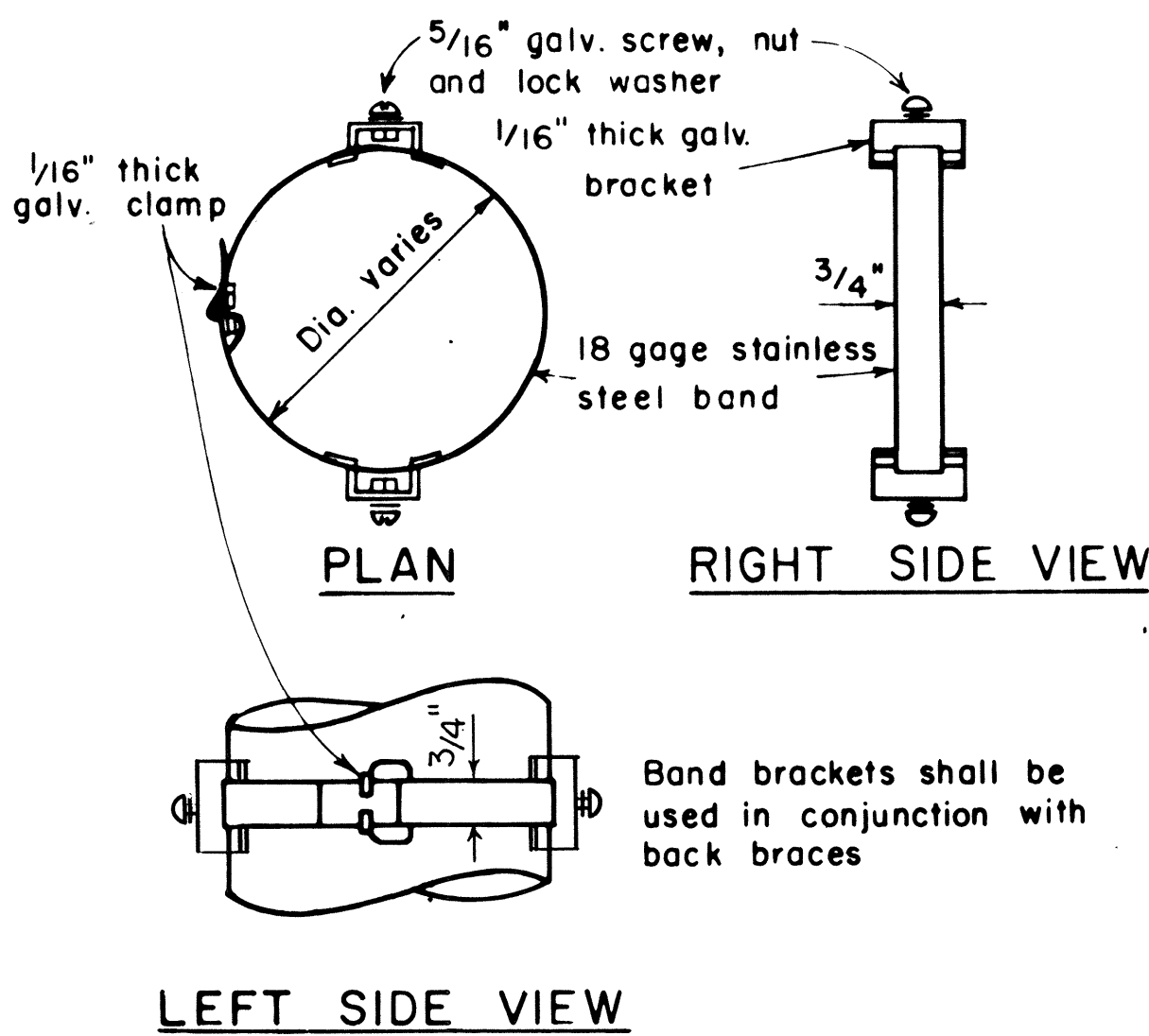
GENERAL NOTES

-
- The drawing consists of two views of a back brace:
- PLAN View (Top):** Shows a top-down perspective of the brace. It features a central circular hole with a diameter labeled "Dia. Varies". The brace has a total length of 2 1/8" at each end, with the central section labeled "Varies". The thickness of the brace is 3/16". A note indicates "Galvanize after fabrication".
 - ELEVATION View (Bottom):** Shows a side view of the brace. It is made of "1" x 3/16" strap steel". The total length is labeled "Varies". The thickness is 1/2". The end view shows a "3/8" x 1 3/4" slot". The distance from the end to the first hole is 1 1/16".

BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION

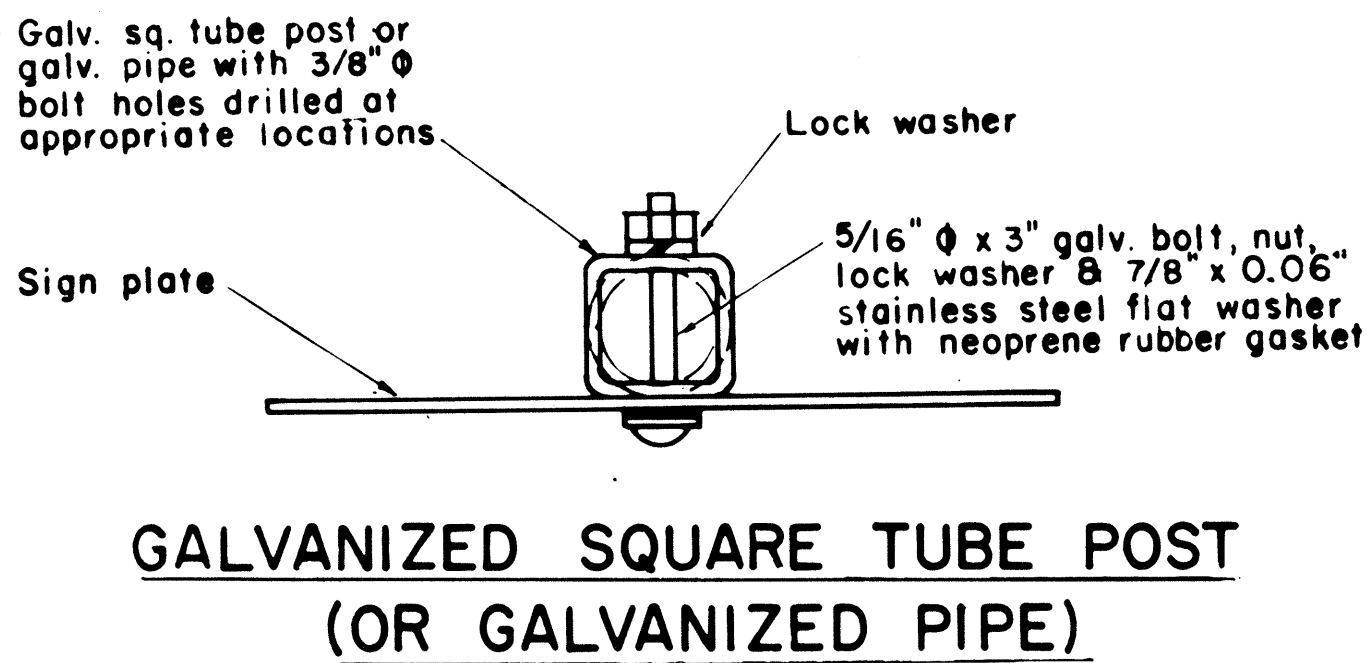


HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION



BAND BRACKET

TYPICAL MOUNTING DETAILS



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale

June, 1977

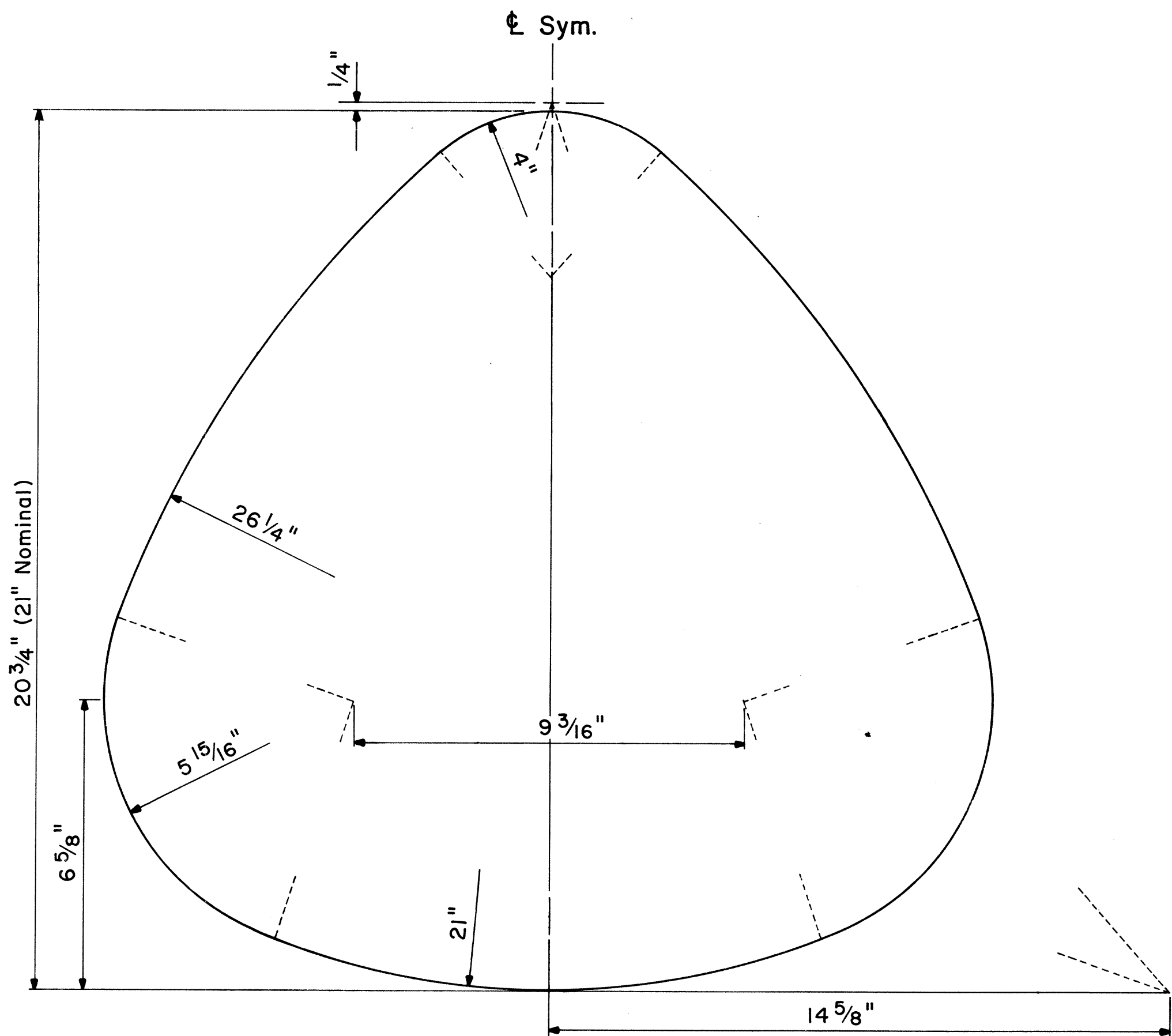
SHEET No. 2 OF 11 SHEETS DT 100

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	11	18

GENERAL NOTES

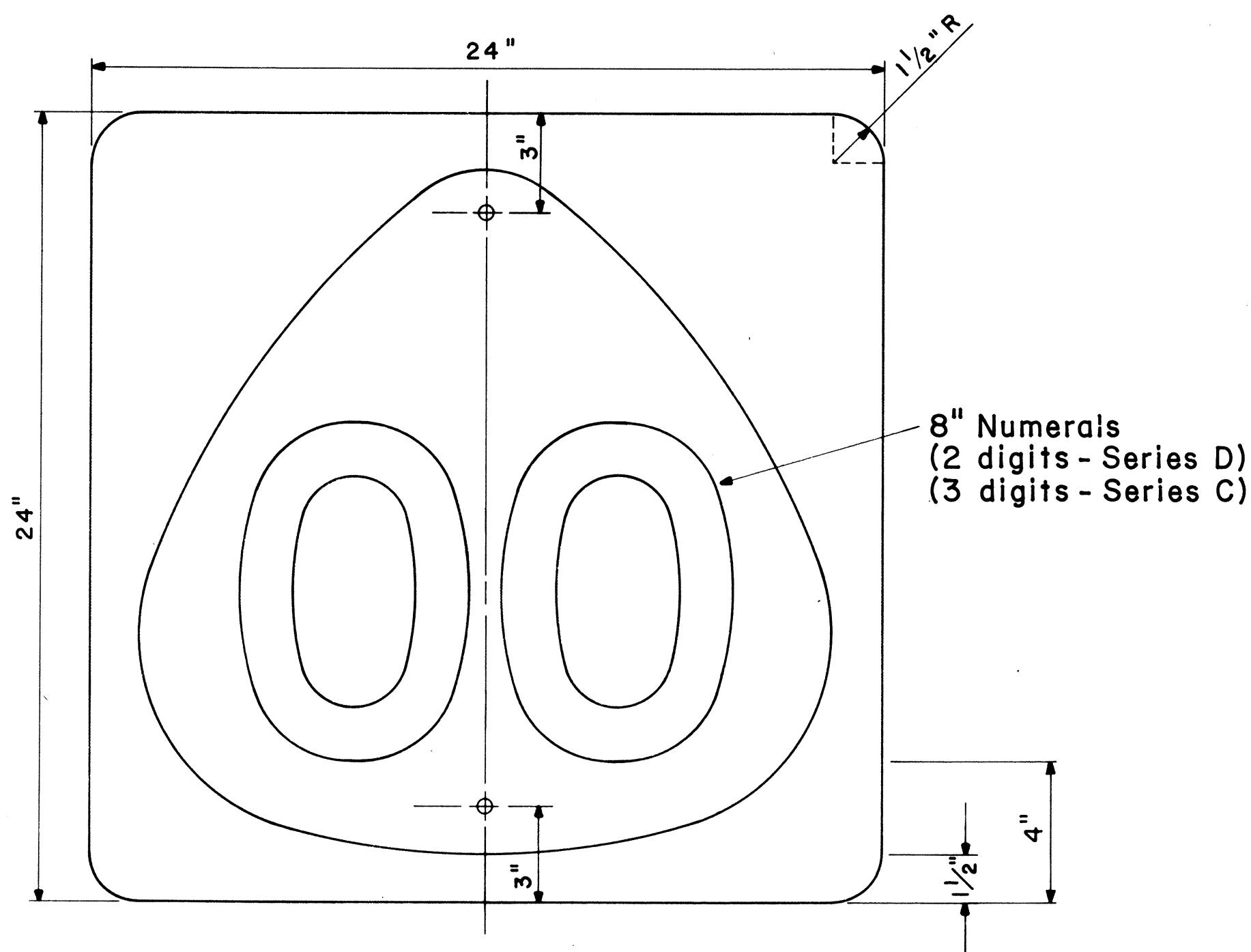
- Marker details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, "Standard Alphabets for Highway Signs," 1966, and "Standard Highway Signs," 1972, and as amended.
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for marker message. (R) or (L) indicates right or left.
- Sign message of Cardinal Direction Marker (M3 series) shall be denoted by the following:

M3-1 : NORTH
 M3-2 : EAST
 M3-3 : SOUTH
 M3-4 : WEST
- Markers prefixed with "IM" on the plans shall have a white legend on a blue background.



STATE ROUTE MARKER DETAIL

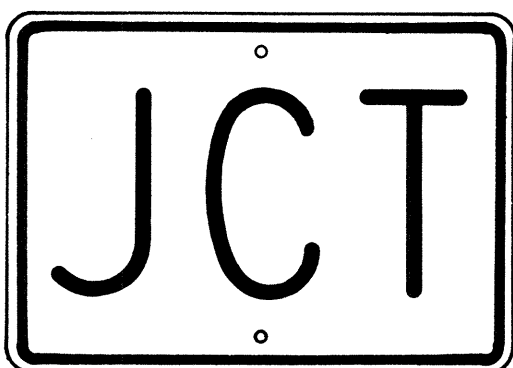
Not to Scale



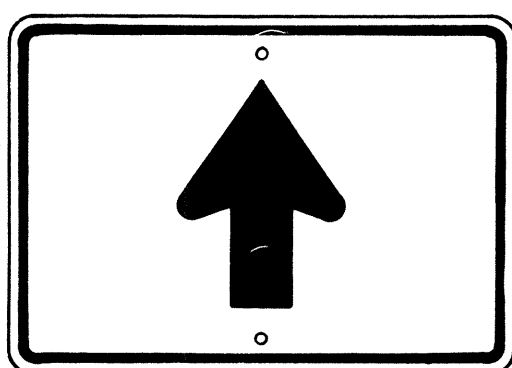
STATE ROUTE MARKER

M1-6 (00) 24" x 24"

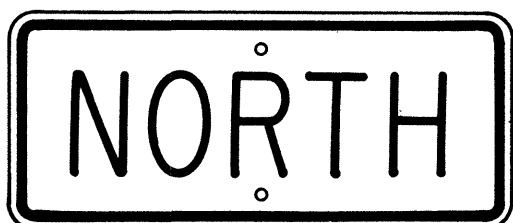
Scale: 1/4" = 1"



M2-1 21" x 15"



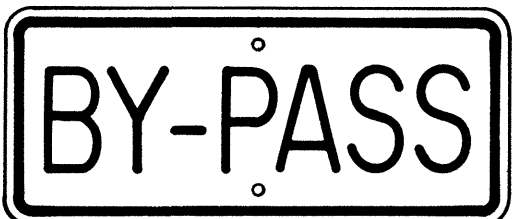
M6-3 21" x 15"



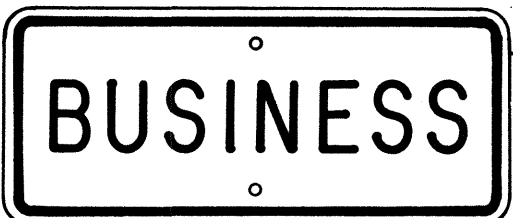
M3-1 24" x 12"
M3-1-A 36" x 18"



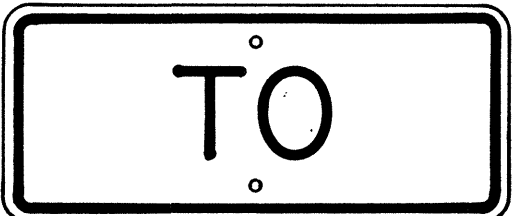
M4-1 24" x 12"



M4-2 24" x 12"



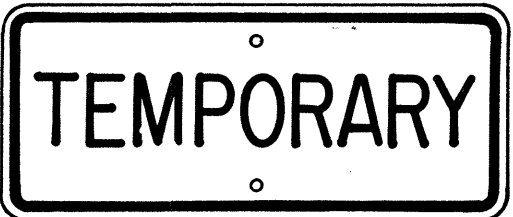
M4-3 24" x 12"



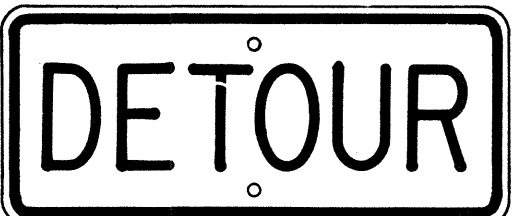
M4-5 24" x 12"



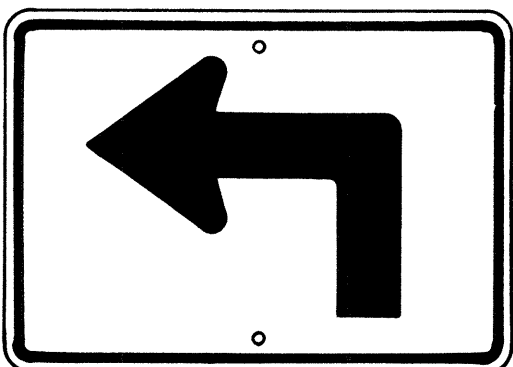
M4-6 24" x 12"



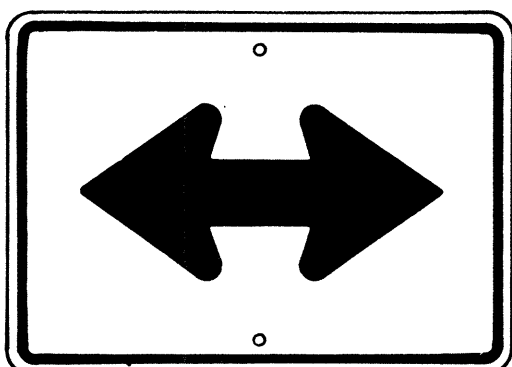
M4-7 24" x 12"



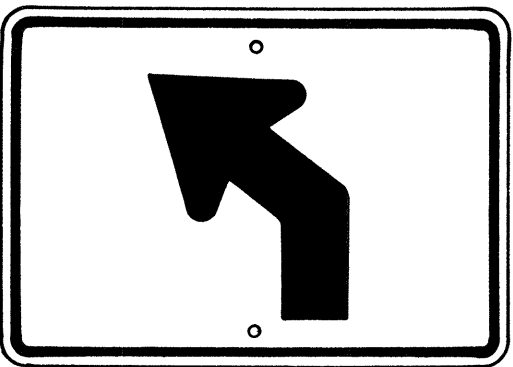
M4-8 24" x 12"



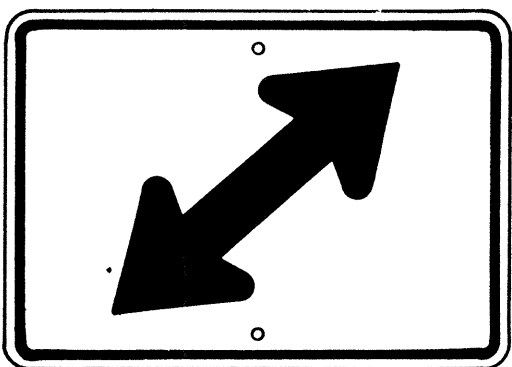
M5-1(L) 21" x 15"



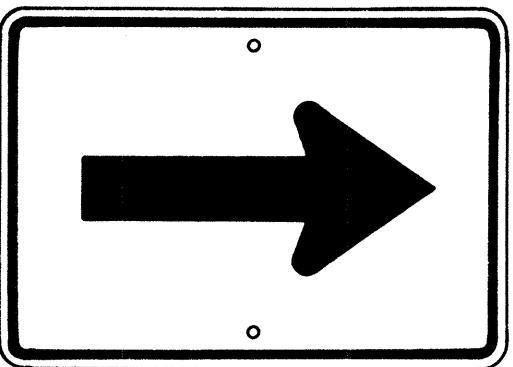
M6-4 21" x 15"



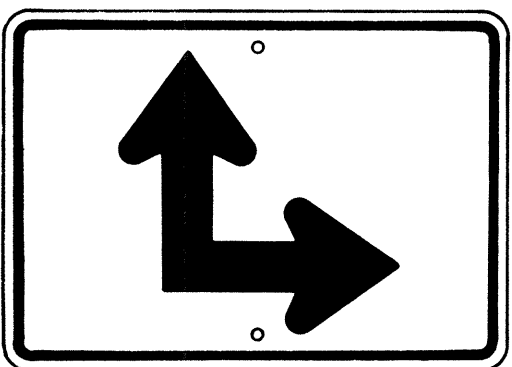
M5-2(L) 21" x 15"



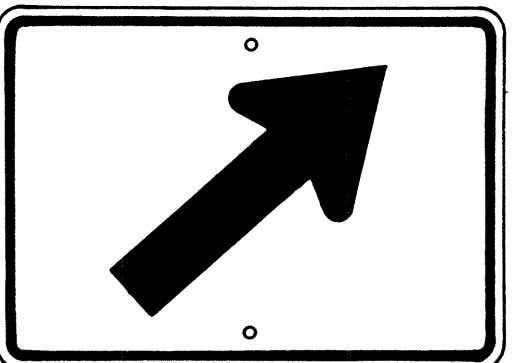
M6-5(R) 21" x 15"



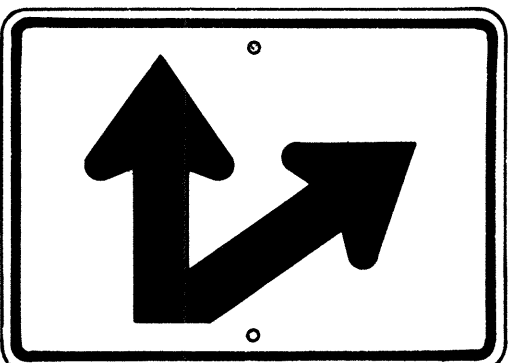
M6-1 21" x 15"



M6-6(R) 21" x 15"



M6-2(R) 21" x 15"



M6-7(R) 21" x 15"

AUXILIARY MARKERS

Not to Scale

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

APPROVAL RECOMMENDED:
Erich Tanaka 6/6/72
 TRAFFIC ENGINEER DATE

APPROVED:
Alvin S. Salsbery 6-1-72
 ASSISTANT CHIEF, ENGINEERING DATE

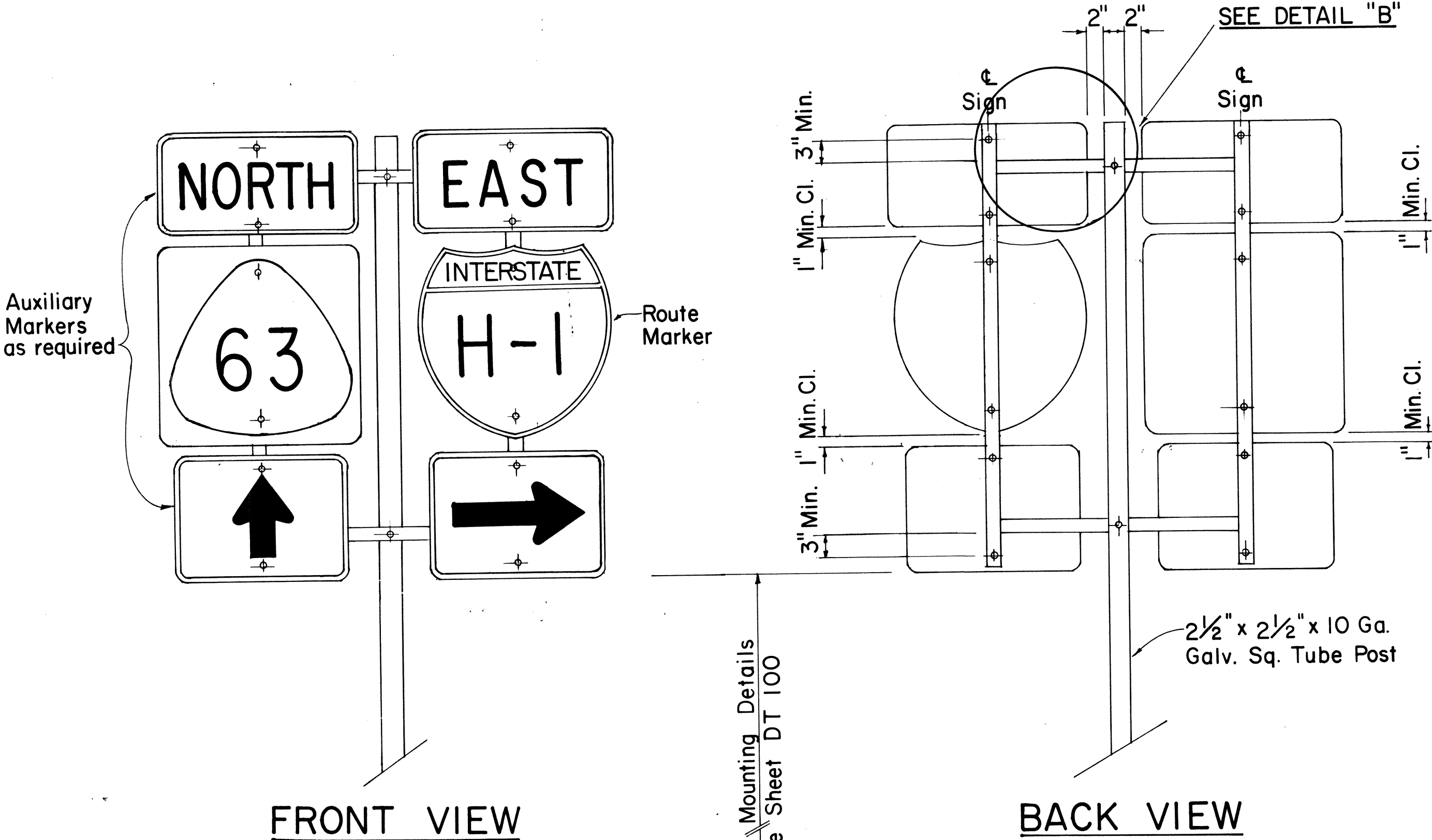
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS
 STATE ROUTE MARKER
 AND AUXILIARY MARKERS

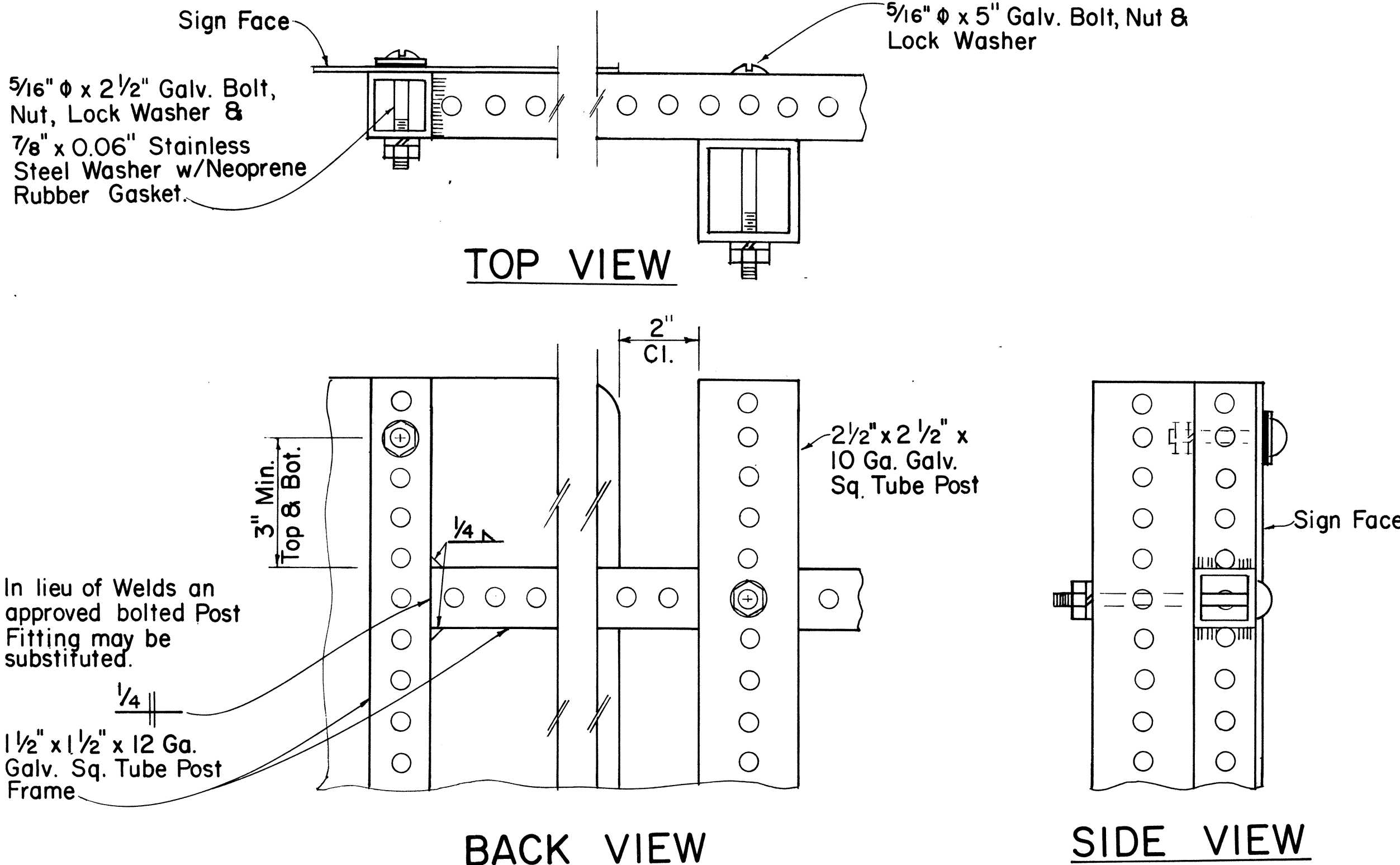
Scale: As Shown
 SHEET No 4 OF 11 SHEETS DT105

ORIGINAL	DATE
PLAN	
DESIGNED BY	
CHECKED BY	
NOTED BY	
NO.	

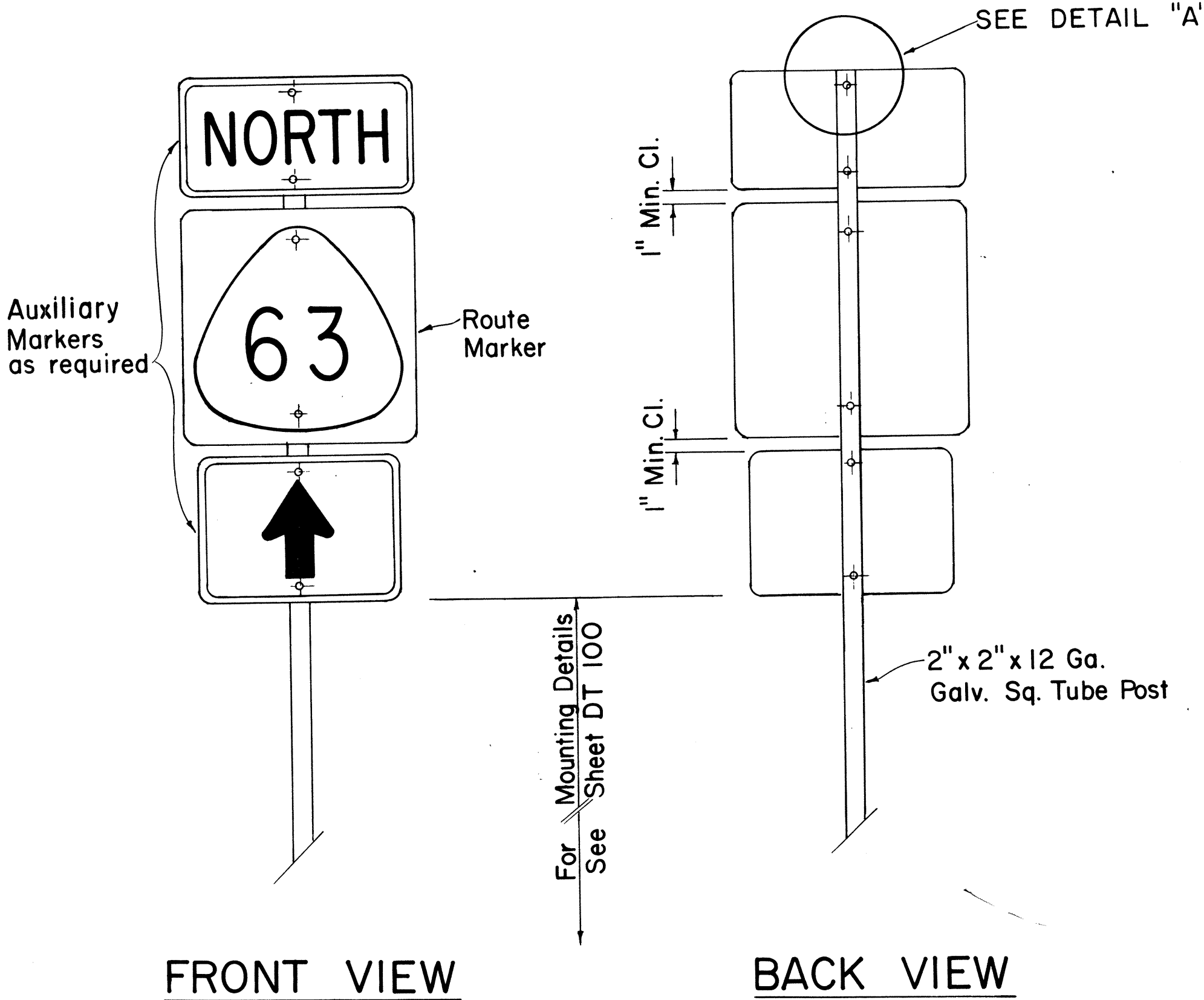
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	Hwy-M-03-82	1982	12	18



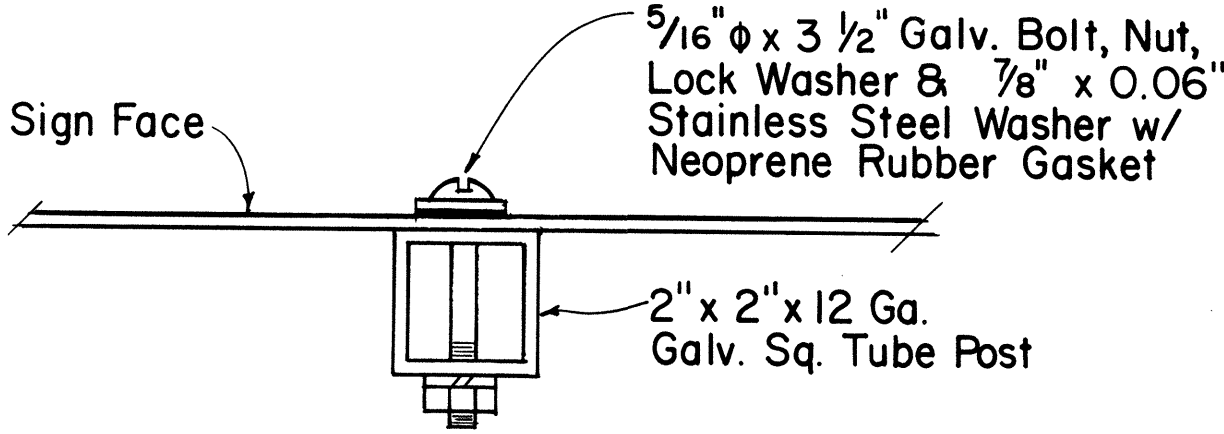
TYPE "B" ASSEMBLY
SCALE: 1" = 1'-0"



DETAIL "B"
SCALE: 3/8" = 1"



TYPE "A" ASSEMBLY
SCALE: 1" = 1'-0"



DETAIL "A"
SCALE: 3/8" = 1"

APPROVAL RECOMMENDED:
Eiichi Tanaka 7/31/80
TRAFFIC ENGINEER DATE
APPROVED:
Harbor Zafishi 7/31/80
ASSISTANT CHIEF, ENGINEERING DATE

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

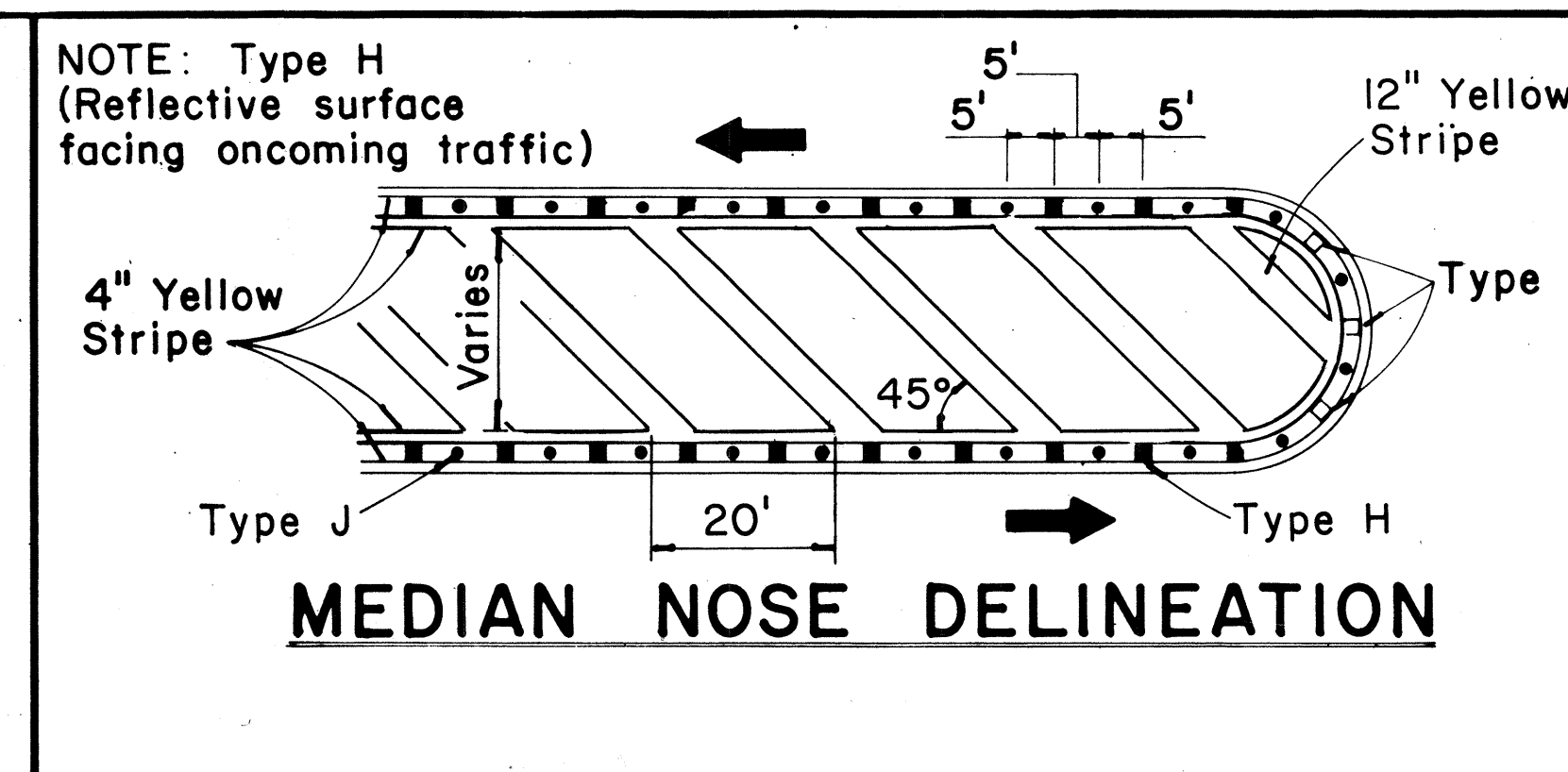
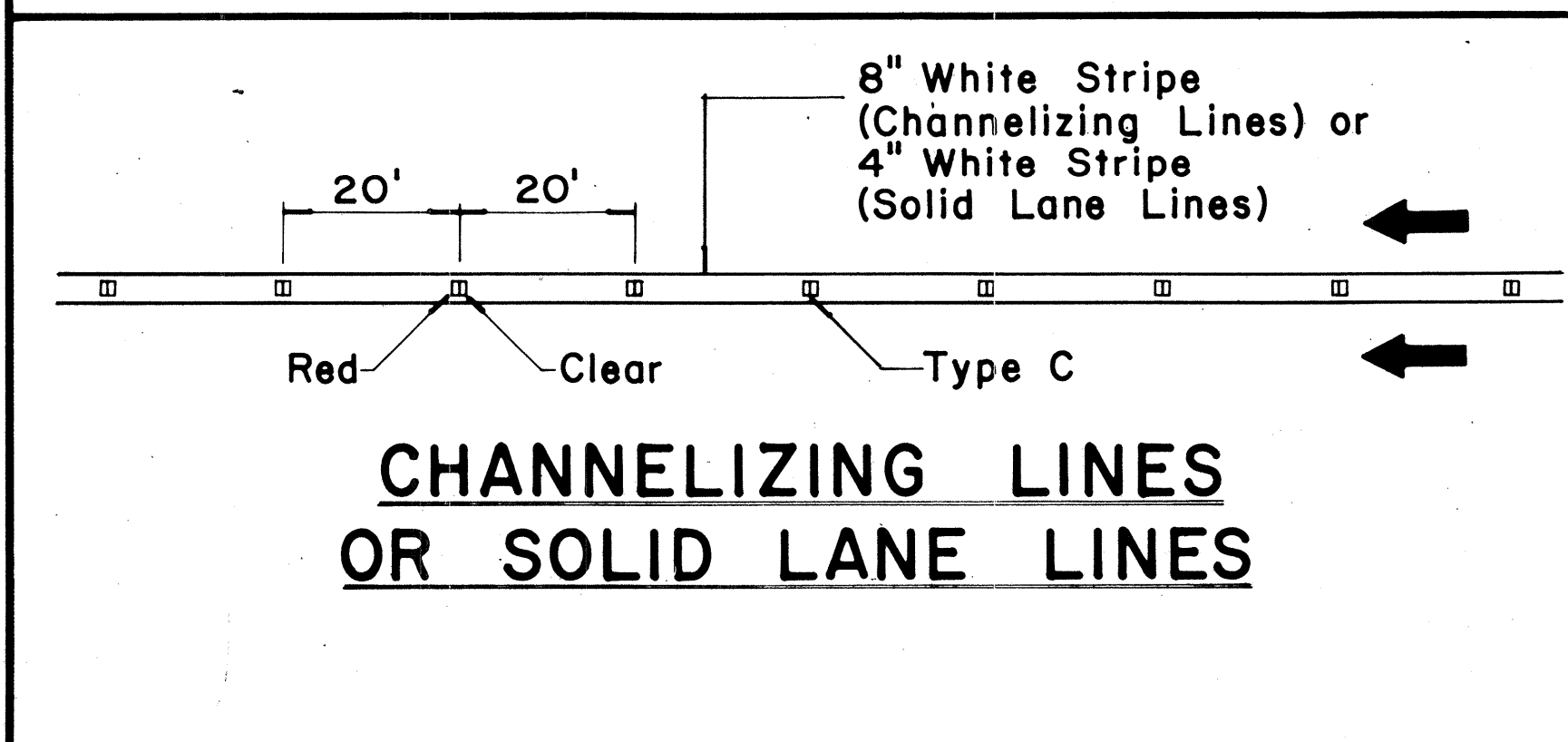
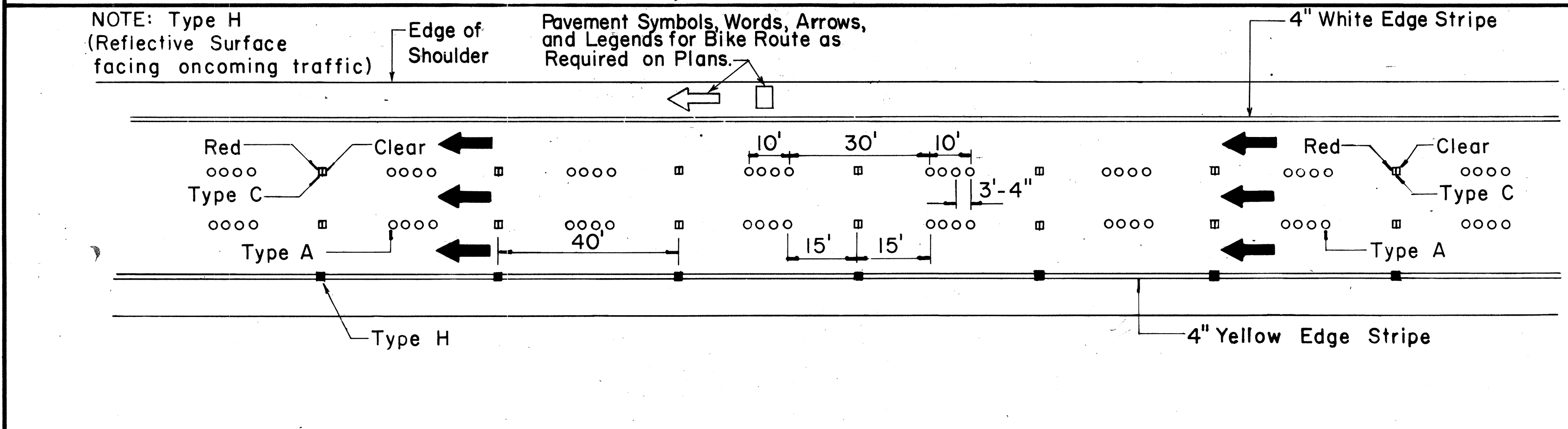
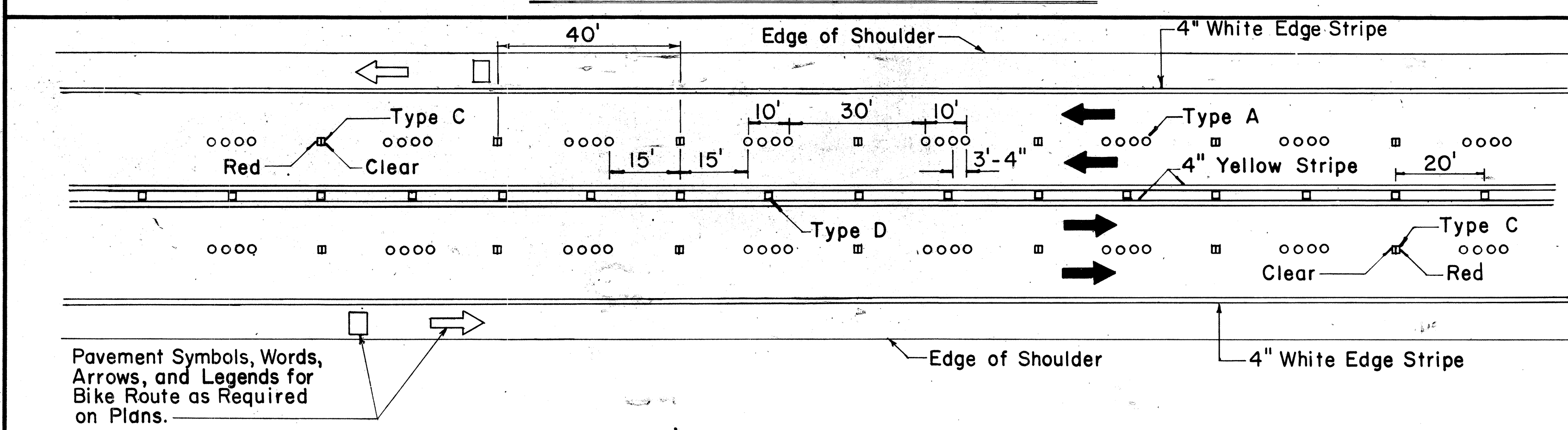
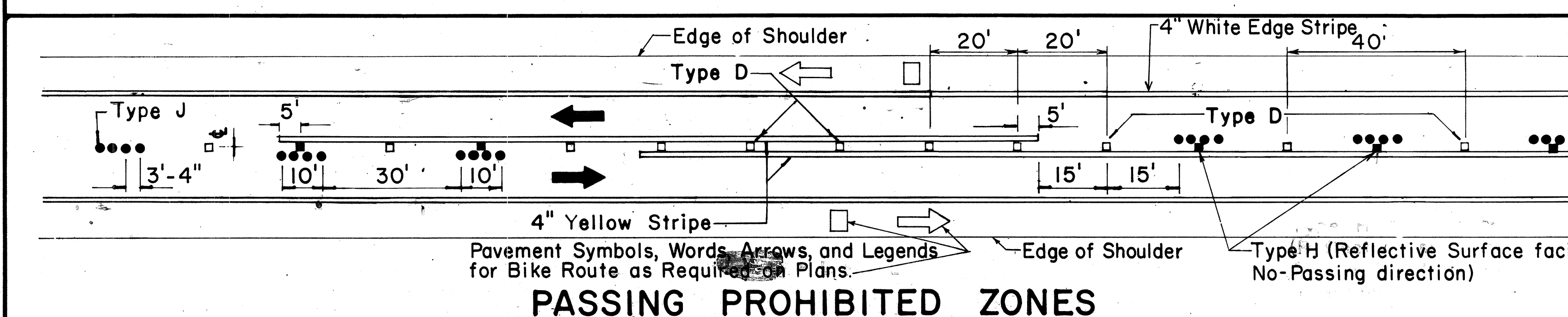
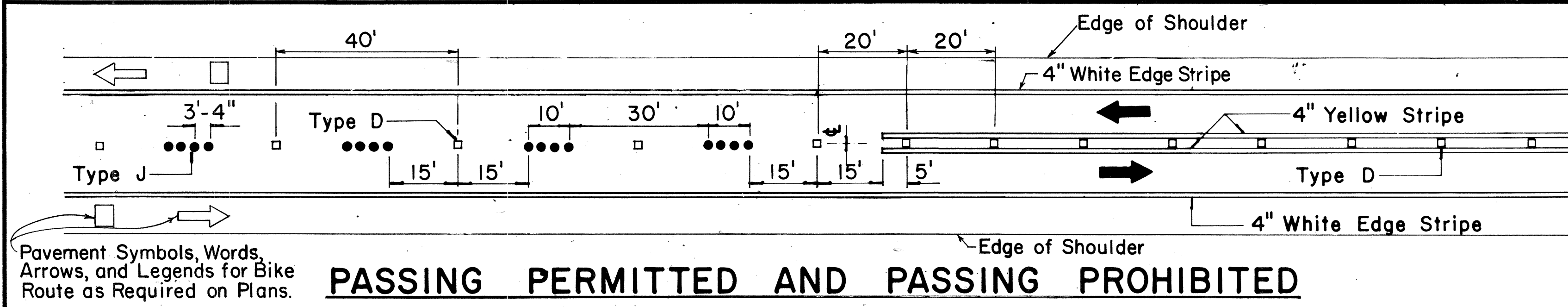
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
ROUTE MARKER
ASSEMBLIES

SCALE: AS SHOWN
SHEET NO. 5 OF 11 SHEETS DT 107

SURVEY PLOTTED BY	DATE
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.	HWY-M-03-82	1982	13	18

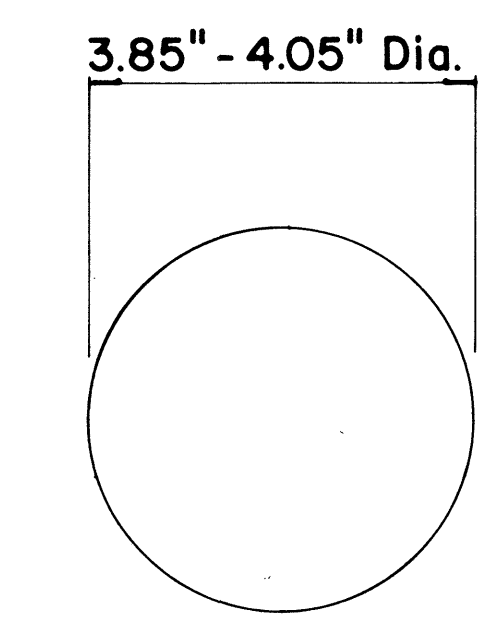


TWO - LANE

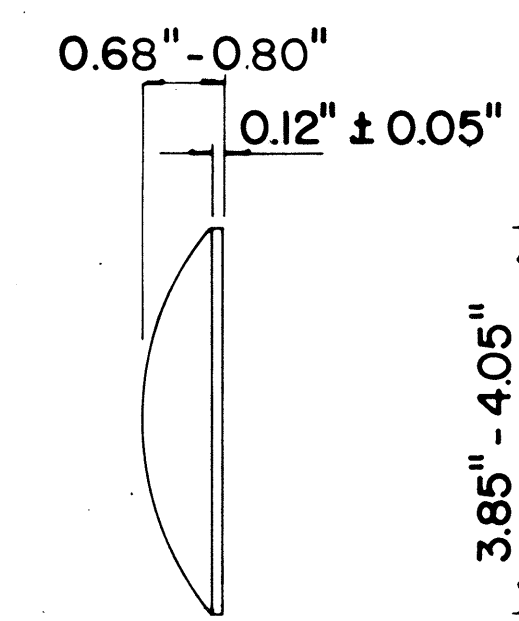
MULTI - LANE

DIVIDED HIGHWAY AND FREEWAY

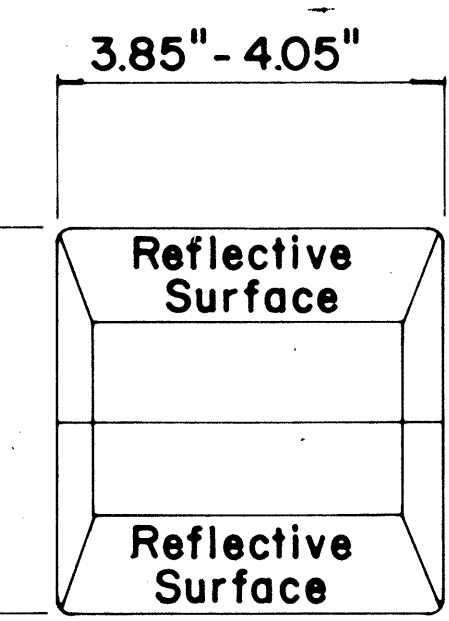
MISCELLANEOUS



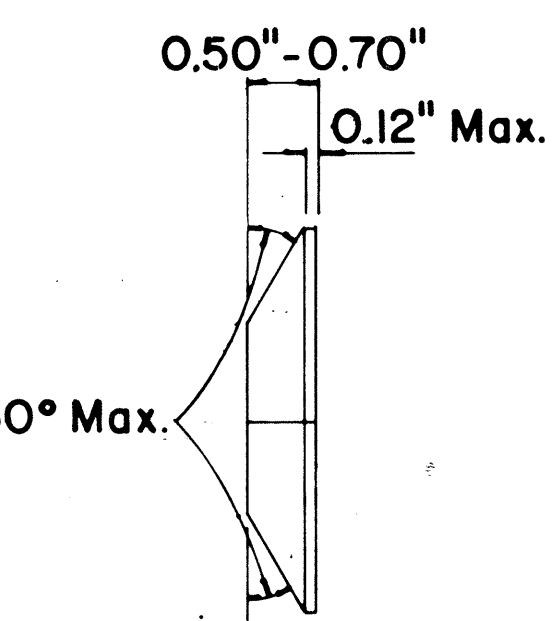
TYPE A
NON-REFLECTIVE WHITE MARKER



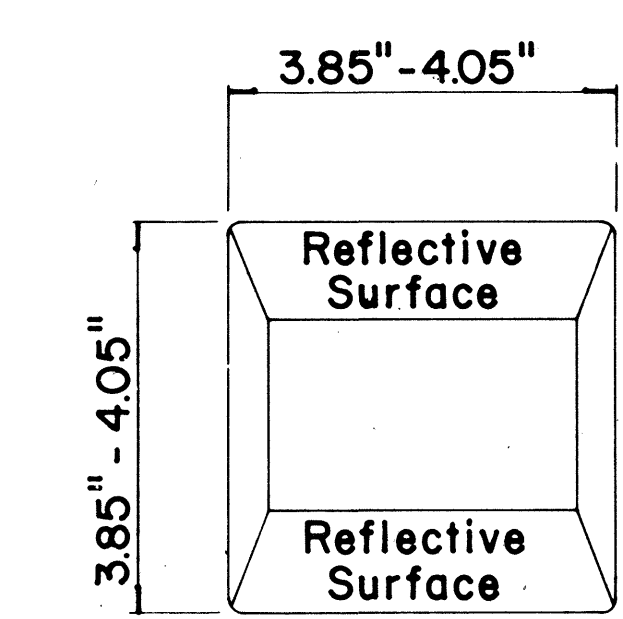
TYPE J
NON-REFLECTIVE YELLOW MARKER



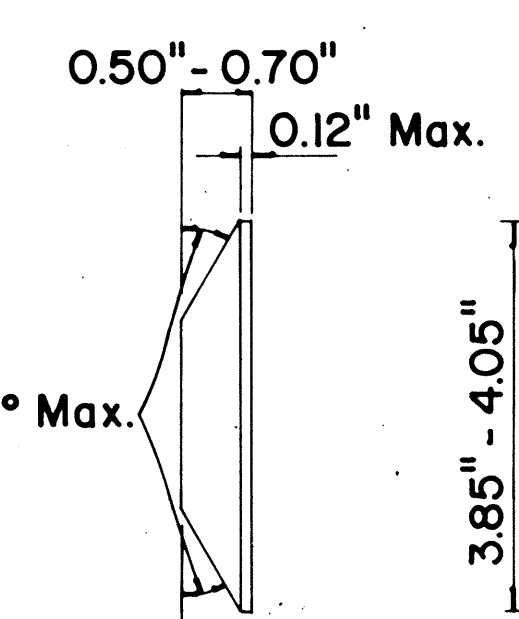
TYPE C
RED-CLEAR REFLECTIVE MARKER



TYPE H
ONE-WAY YELLOW REFLECTIVE MARKER



TYPE D
TWO-WAY YELLOW REFLECTIVE MARKER



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:
Erick Tanaka 7/21/78
TRAFFIC ENGINEER DATE

APPROVED:
Herbert S. Zalewski 1/24/78
ASSISTANT CHIEF, ENGINEERING DATE

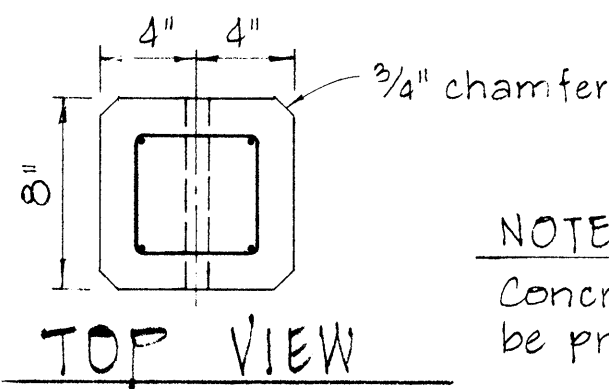
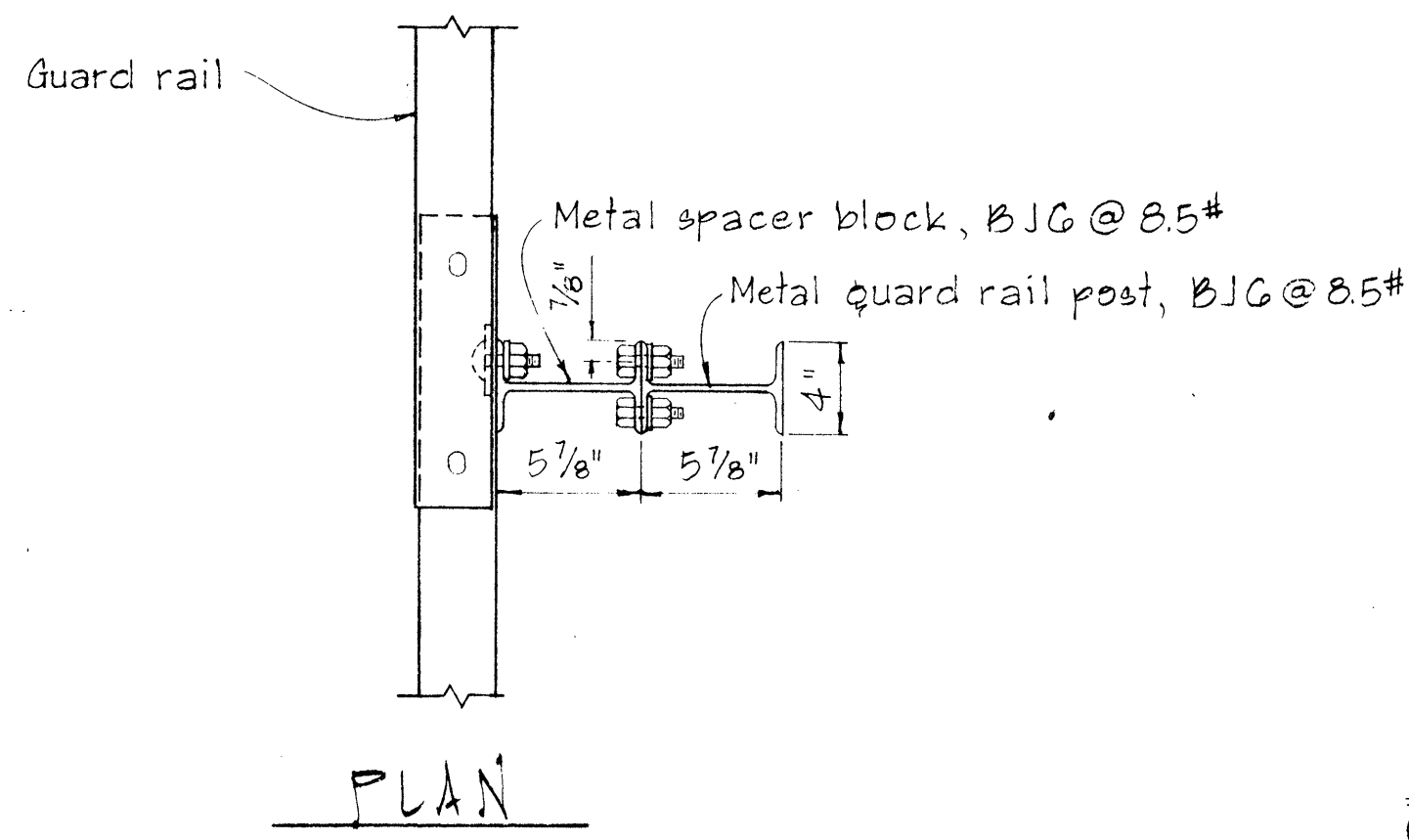
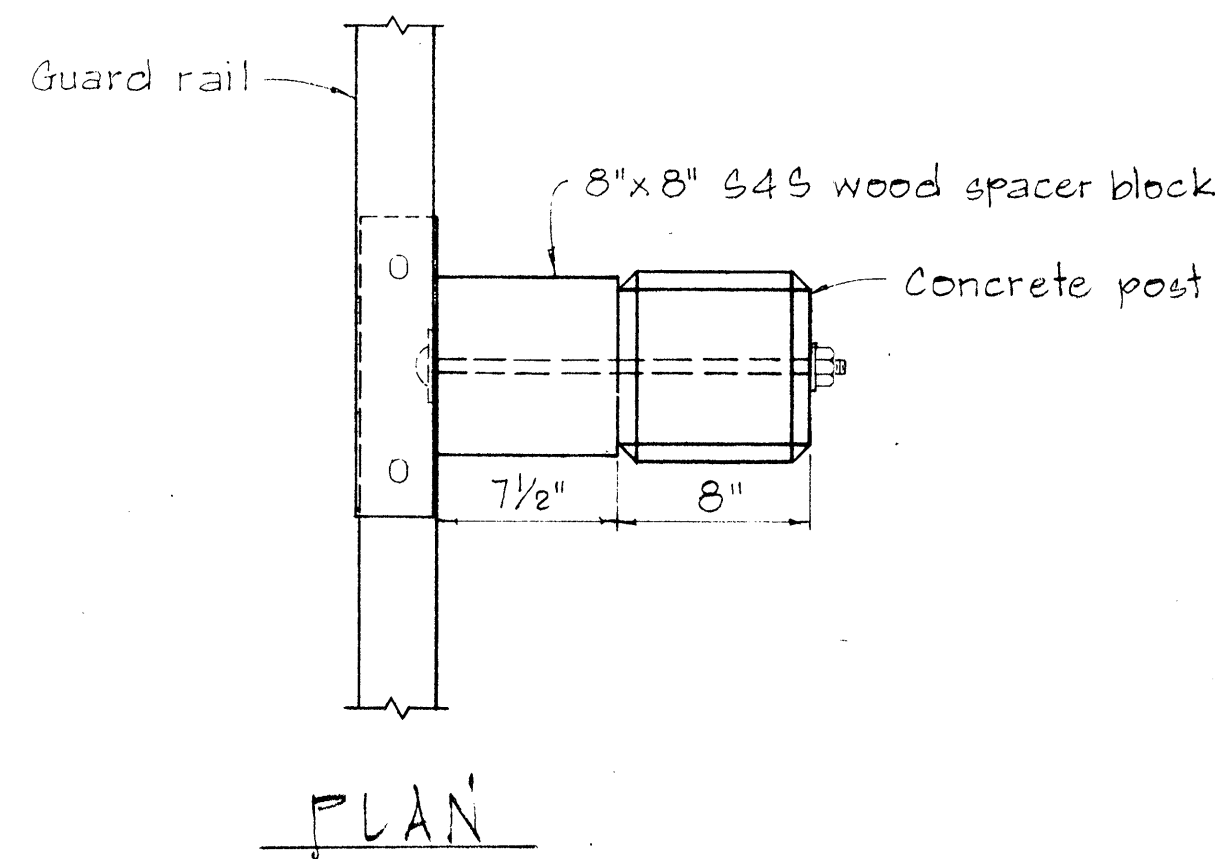
No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.T.	1/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.T.	10/15/79

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

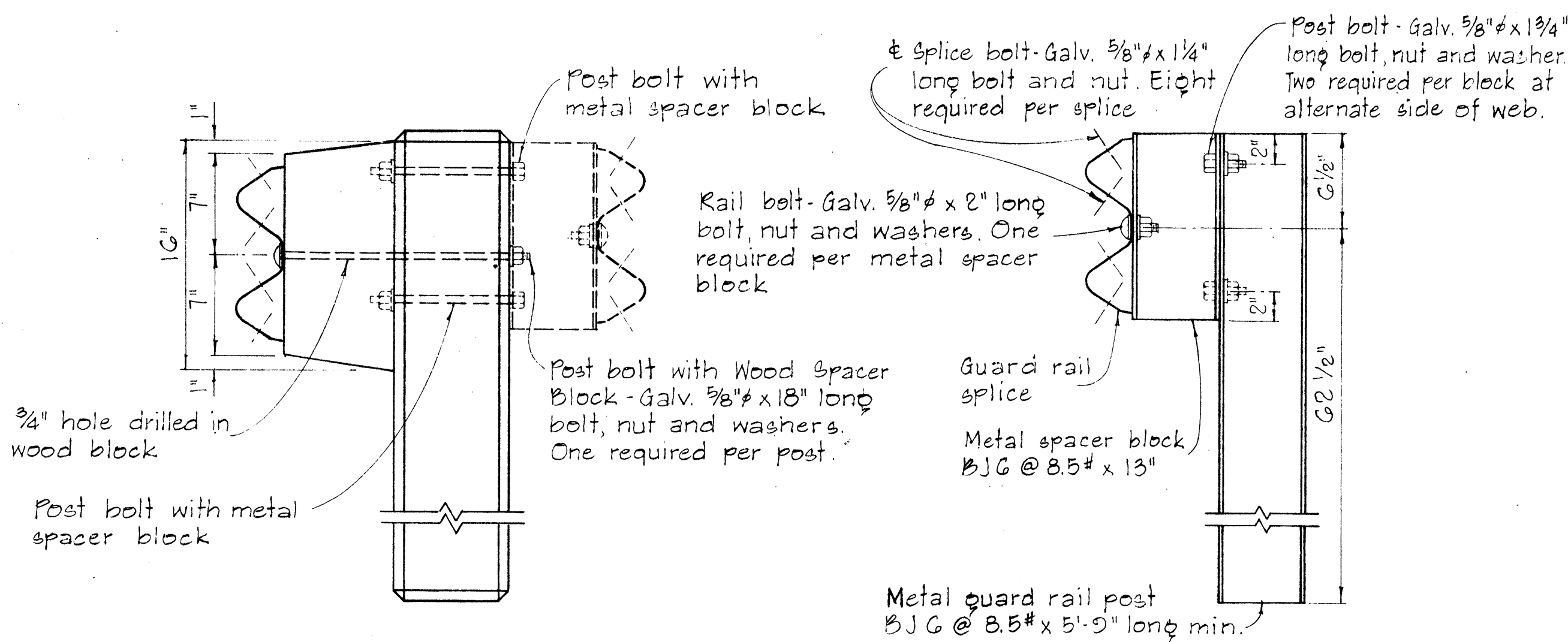
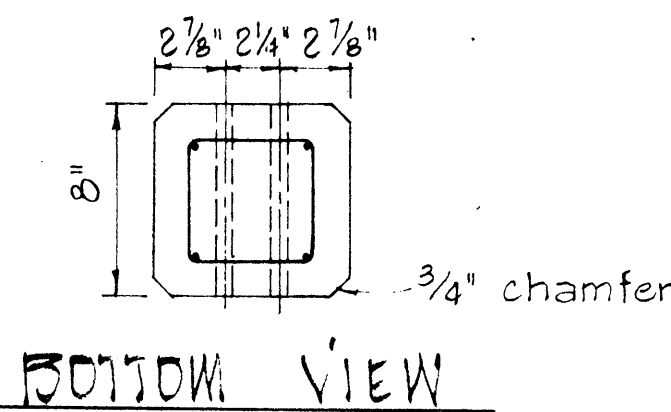
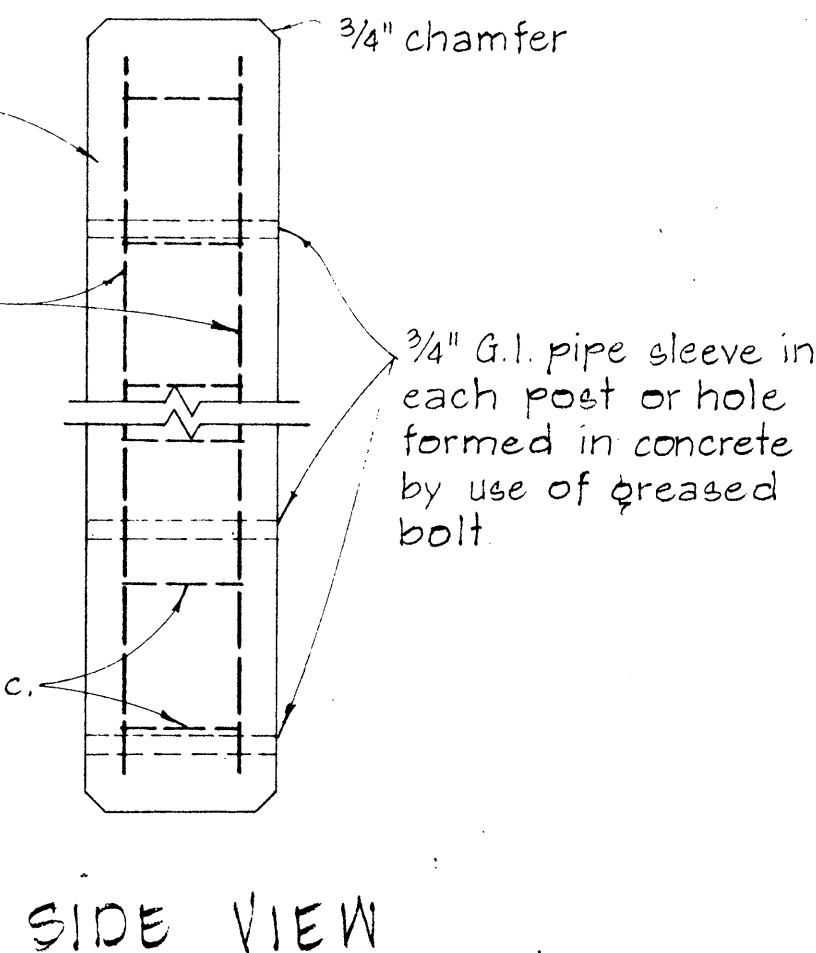
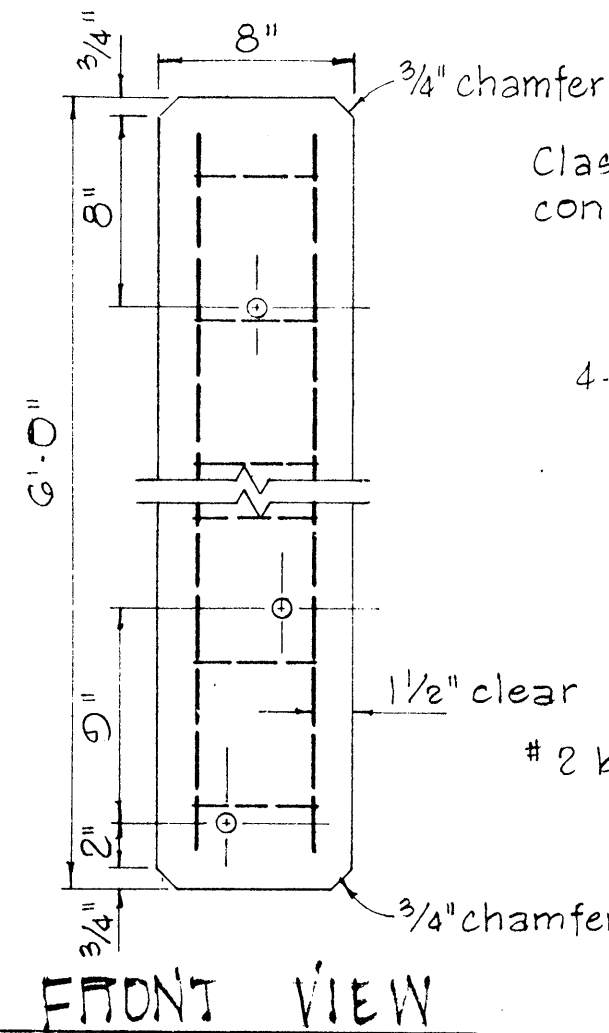
STANDARD DETAILS
RAISED PAVEMENT MARKERS AND STRIPING

Not to Scale July 1978
SHEET No. 6 OF 11 SHEETS DT 300

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	14	18

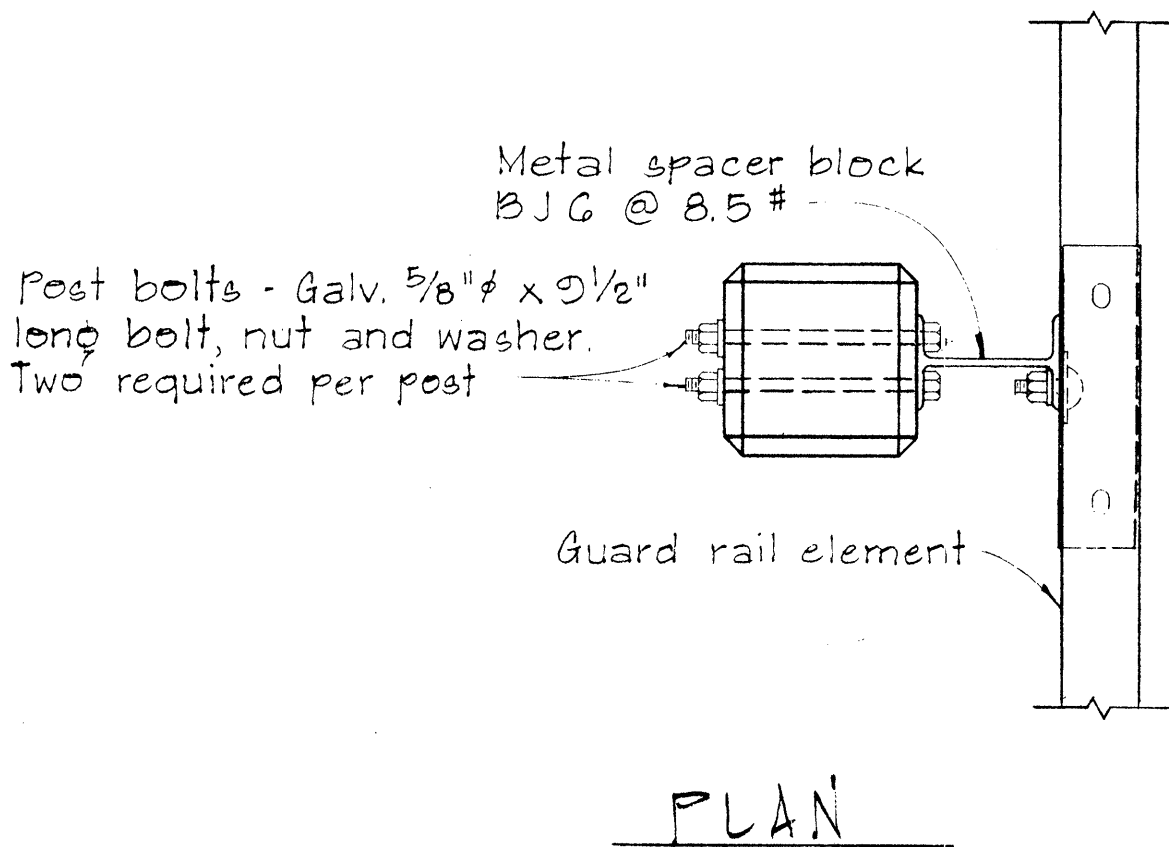


NOTE:
Concrete post shall be precast



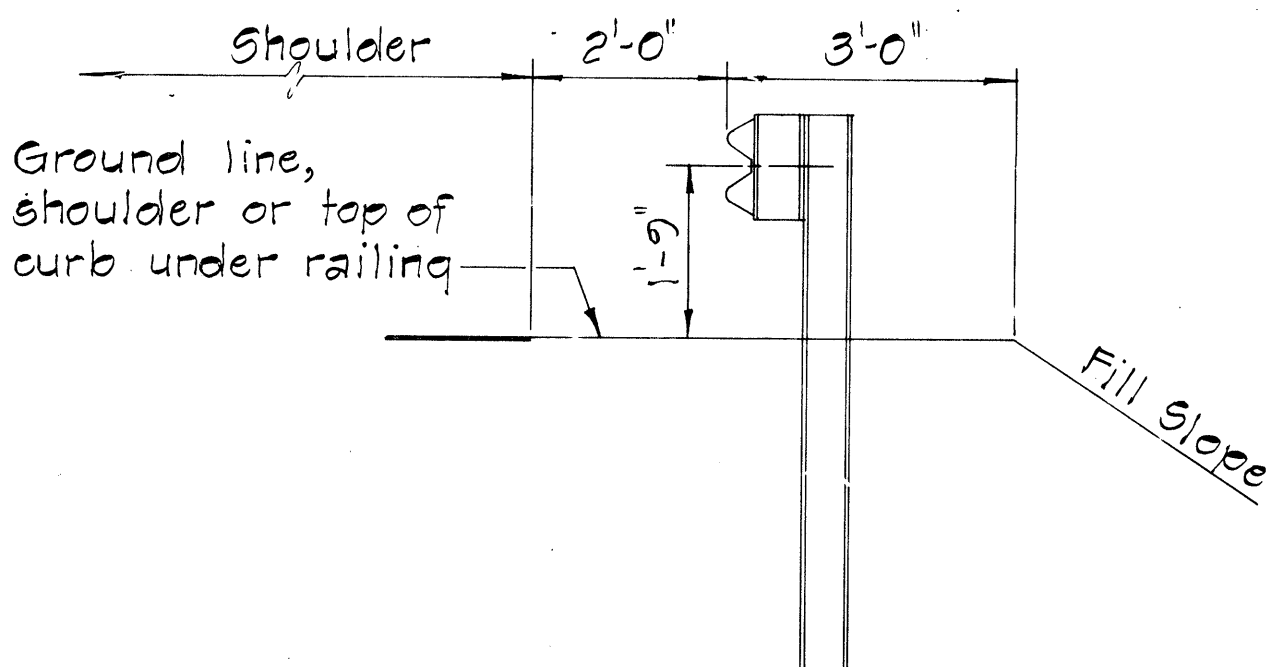
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

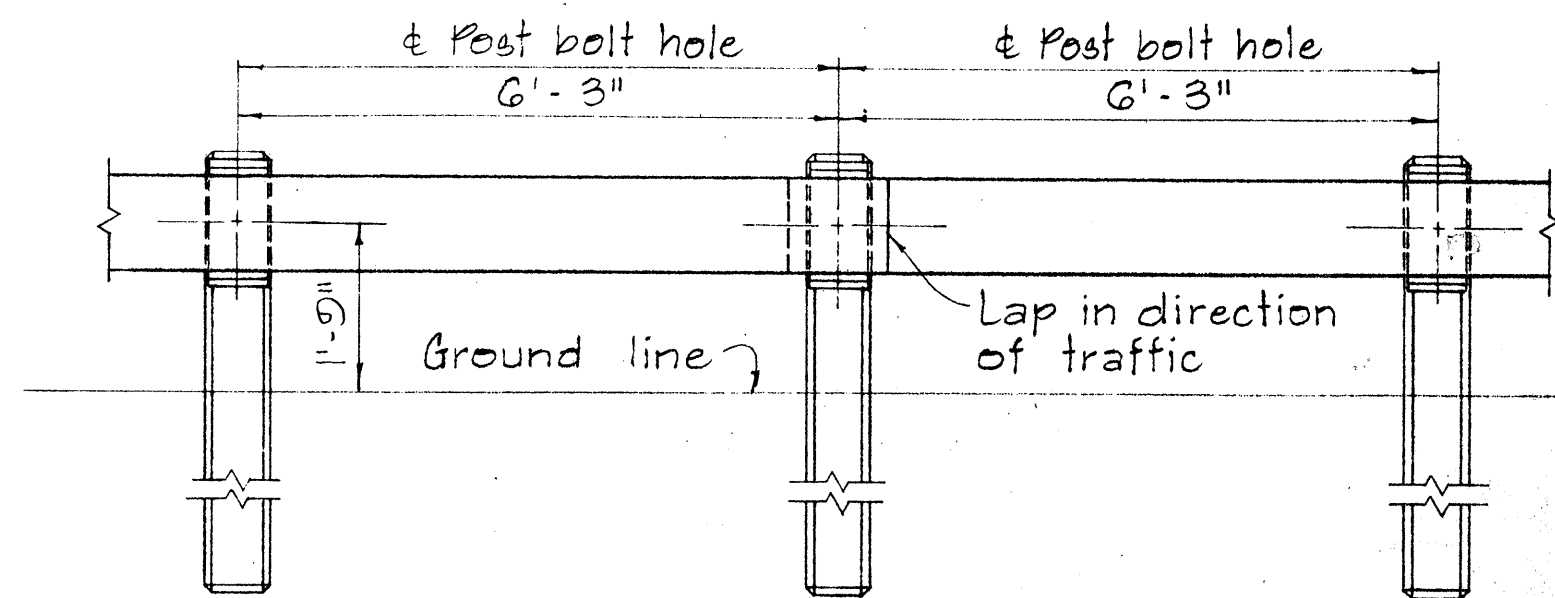
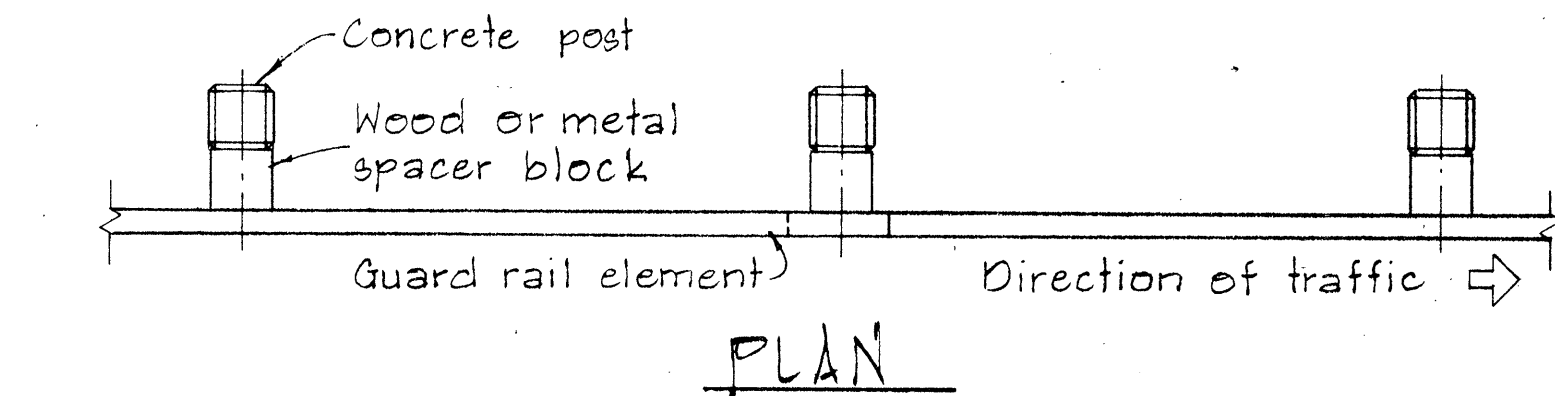
SCALE: 1 1/2" = 1'-0"



AT SHOULDER SECTION

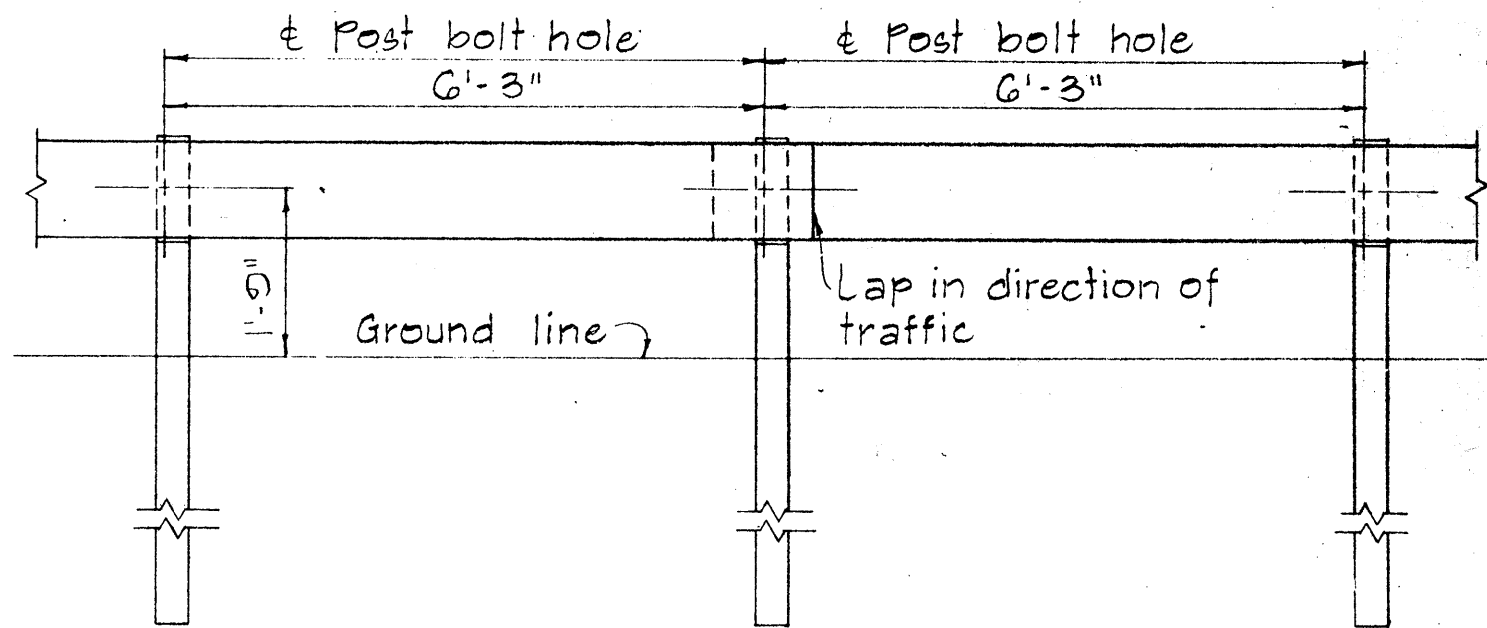
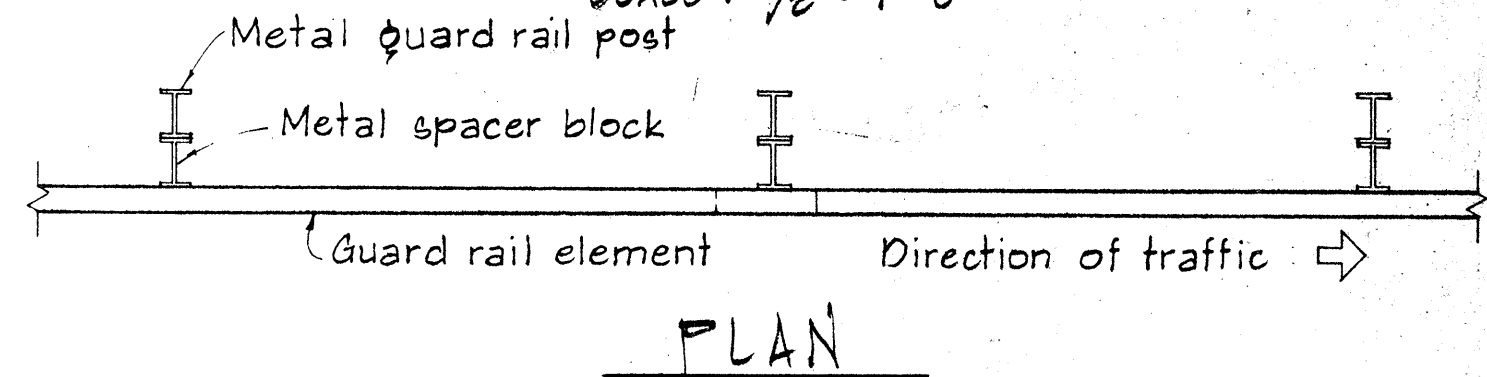
TYPICAL METAL GUARD RAIL DETAIL

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"

APPROVAL RECOMMENDED:
Charles Tanaka
TRAFFIC ENGINEER
12/29/62
DATE

APPROVED:
Hubert J. Delaney
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL

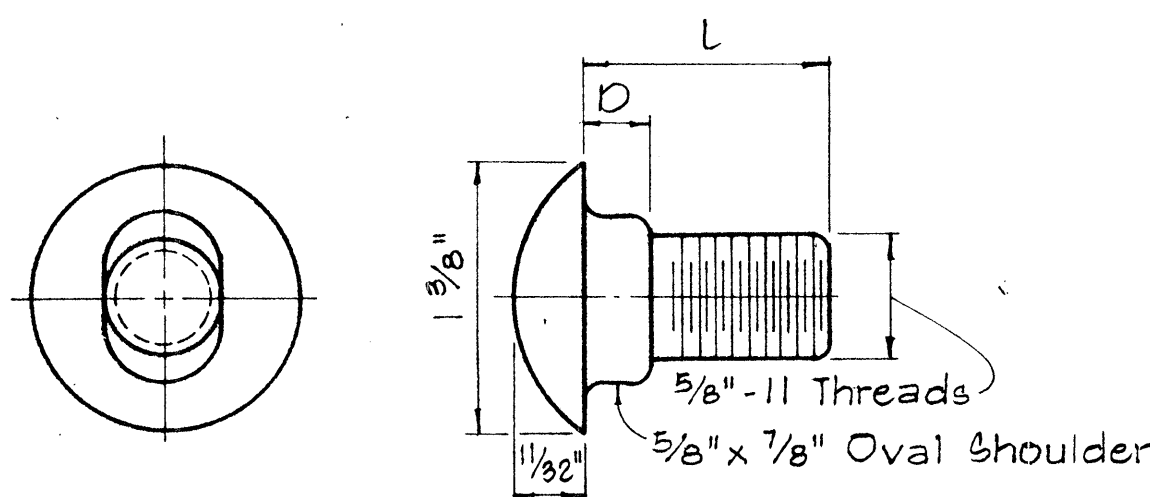
SCALE: AS SHOWN NOV. 1968

SHEET No. 7 OF 11 SHEETS DT 500

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		
	D	L
Post Bolt for Conc. Post w/ Metal Blocks	5/16"	2 1/2"
Post Bolt for Metal Post w/ Metal Block	1 3/4"	

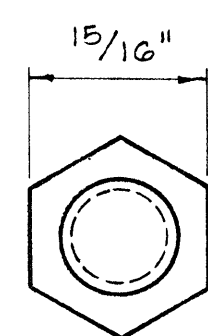
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	15	18



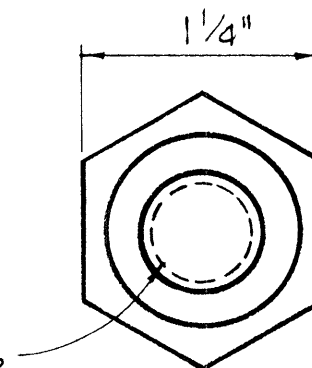
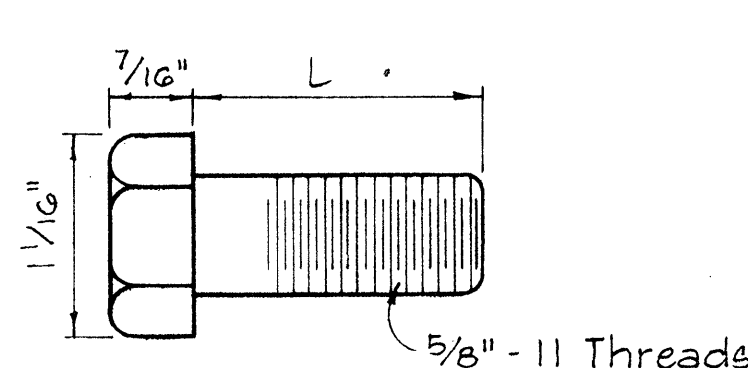
TYPE A BOLT

SPUCE RAIL AND POST BOLTS

Scale: Full Size

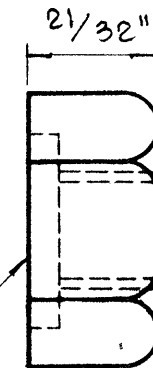


TYPE B BOLT

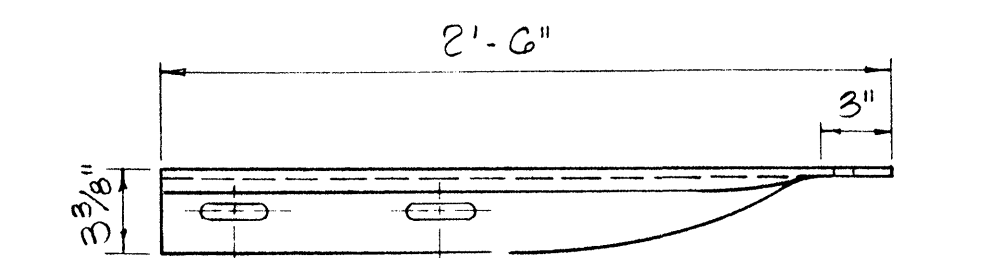


HEXAGON NUT

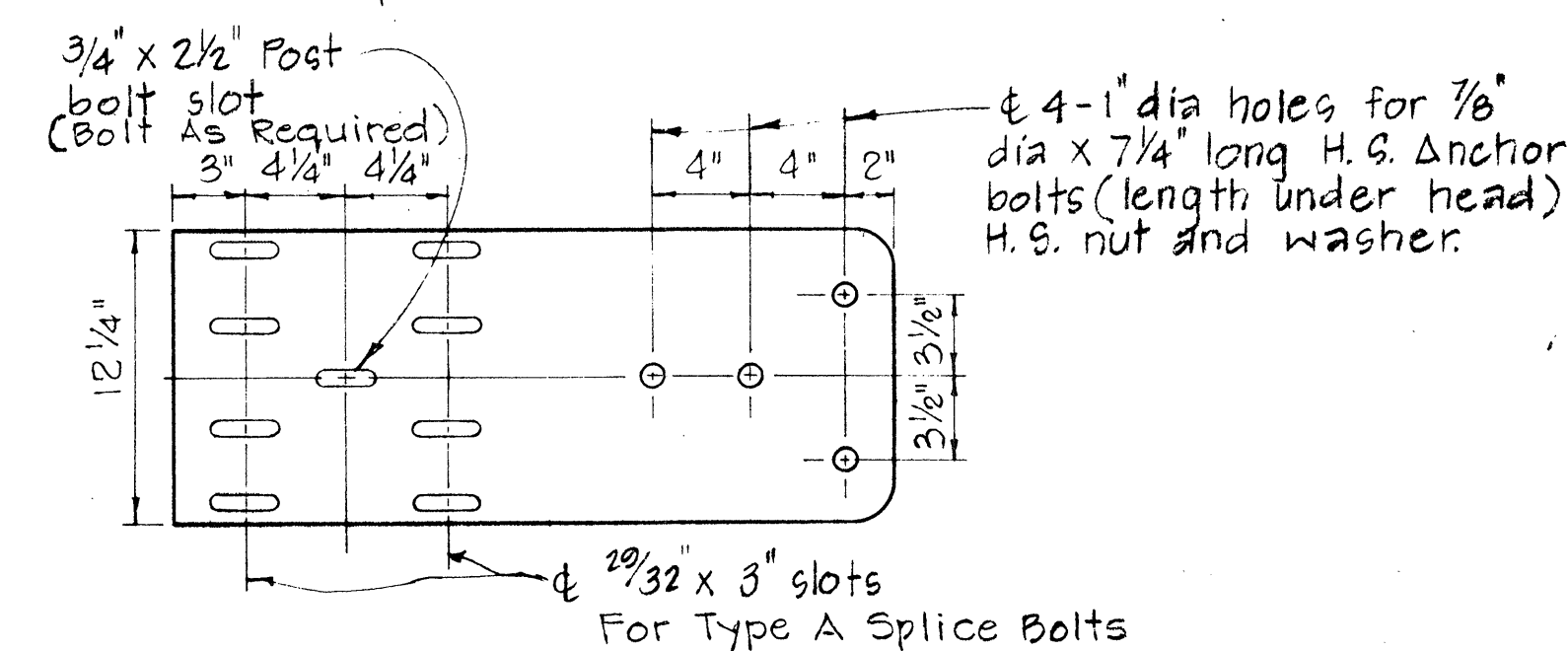
Scale: Full Size



5/32" Deep x 15/16" Dia. C' Bore for Type A Bolt only. Plain nut for Type B Bolt.



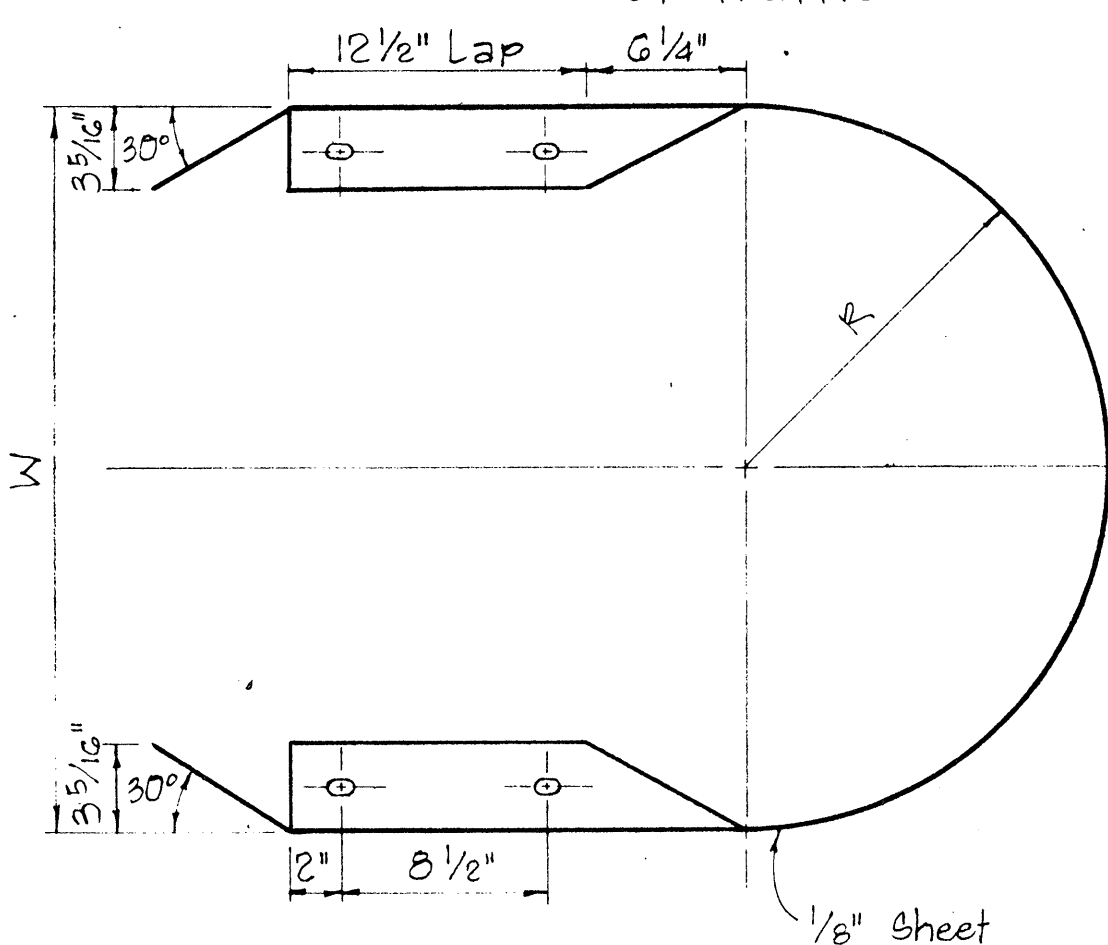
Lap in direction of traffic



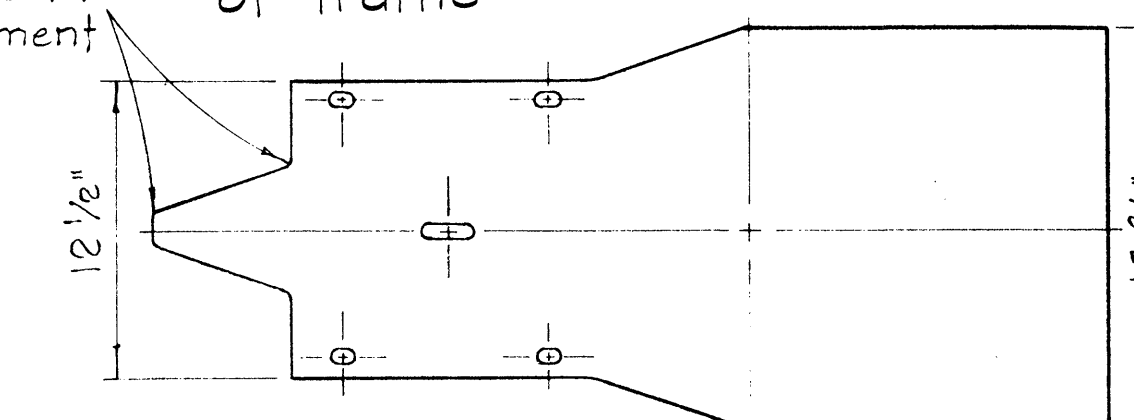
SPECIAL END SHOE

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

Lap in direction of traffic

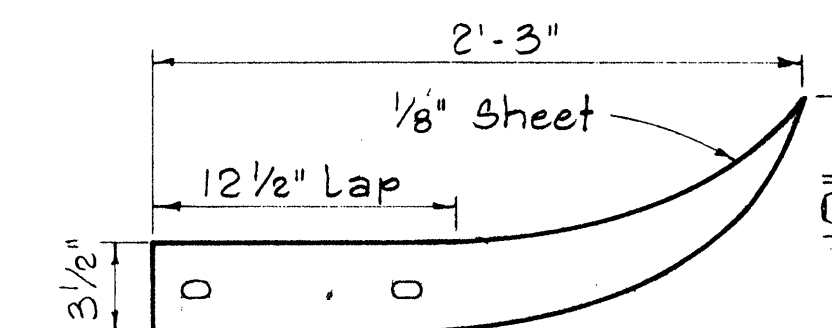


Shape to fit rail element
Lap in direction of traffic

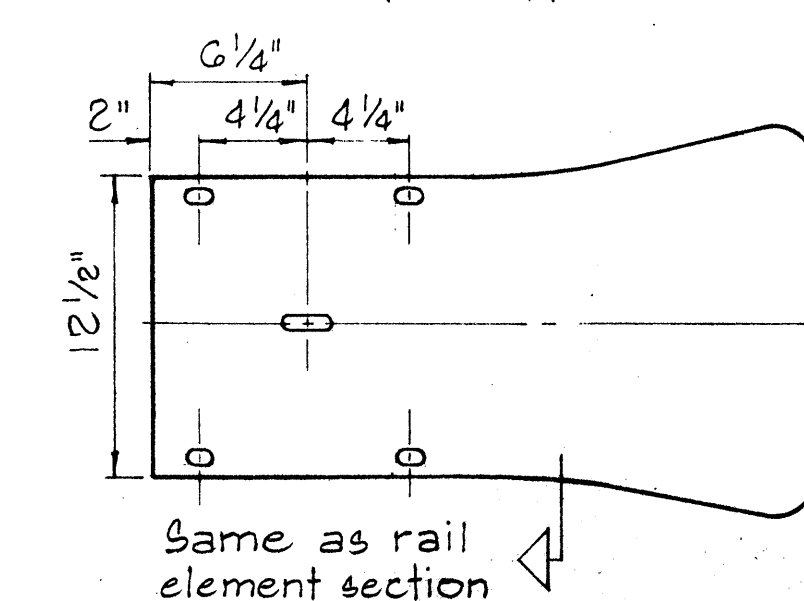


MEDIAN END

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



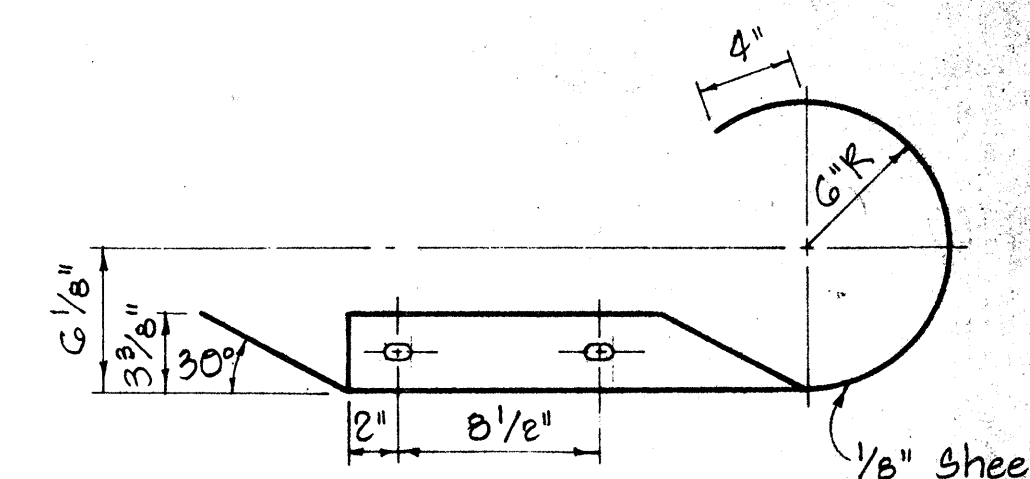
Lap in direction of traffic



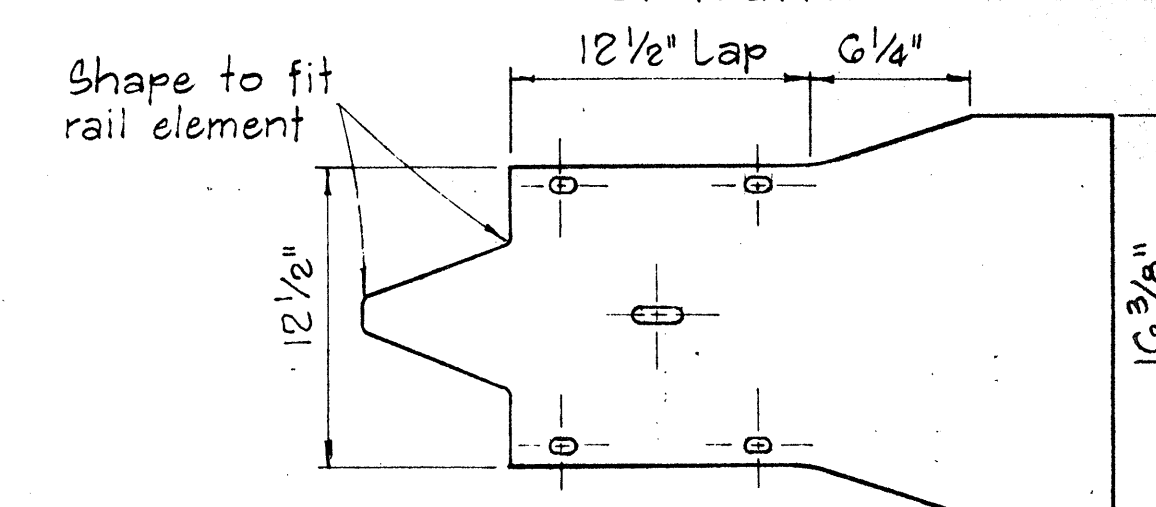
Same as rail element section

FLARED END

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



Lap in direction of traffic



Shape to fit rail element

CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12/29/69
DATE

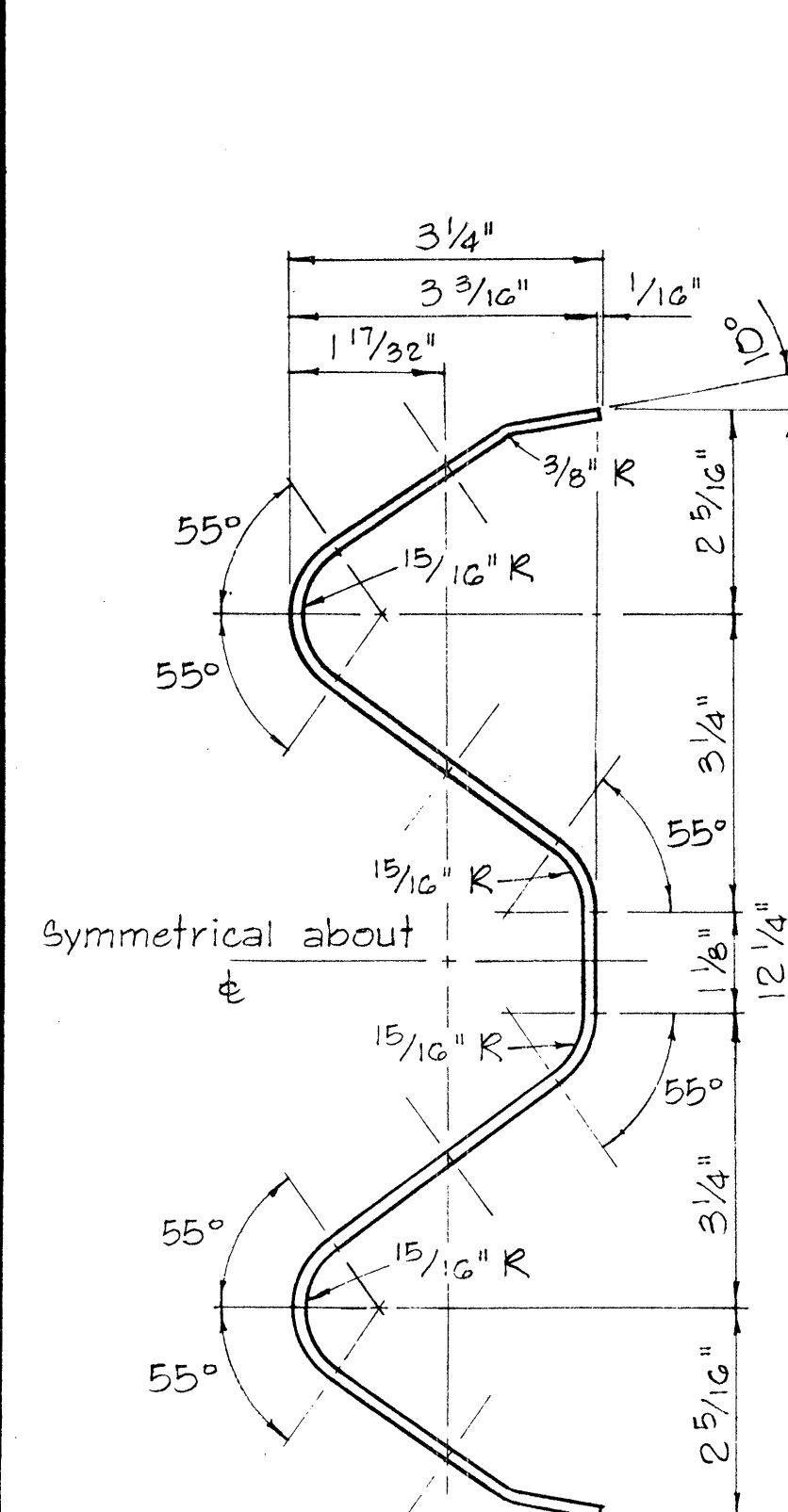
12-30-69
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

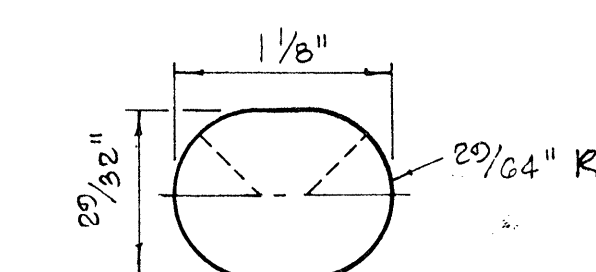
Scale: As Noted August, 1968

SHEET No. 8 OF 11 SHEETS DT 501



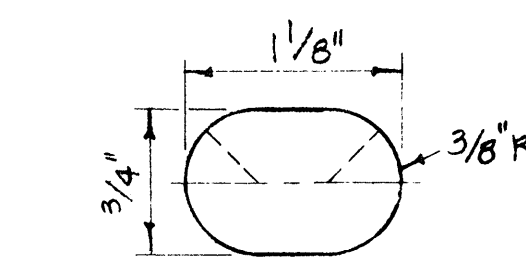
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

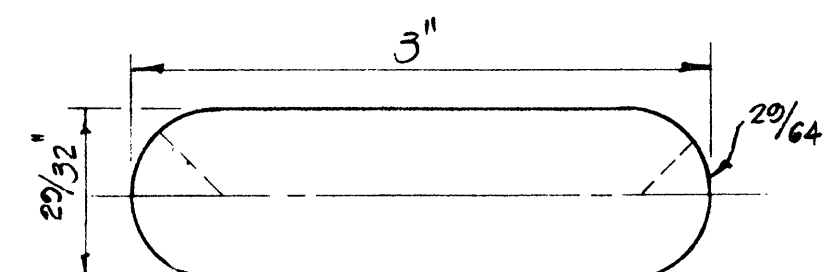


SPUCE BOLT SLOT FOR ALL ENDS

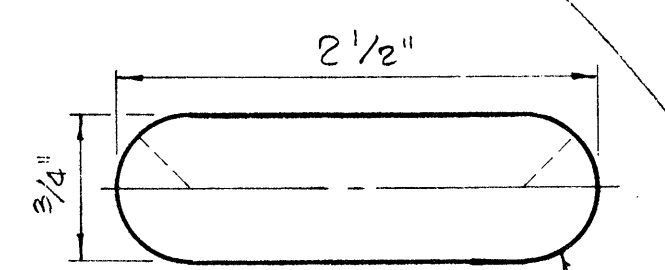
Scale: Full Size



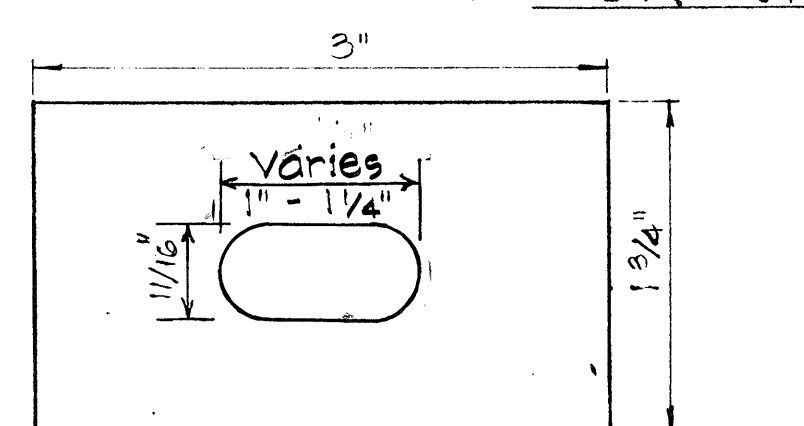
SPUCE BOLT SLOT FOR SPECIAL END SHOE



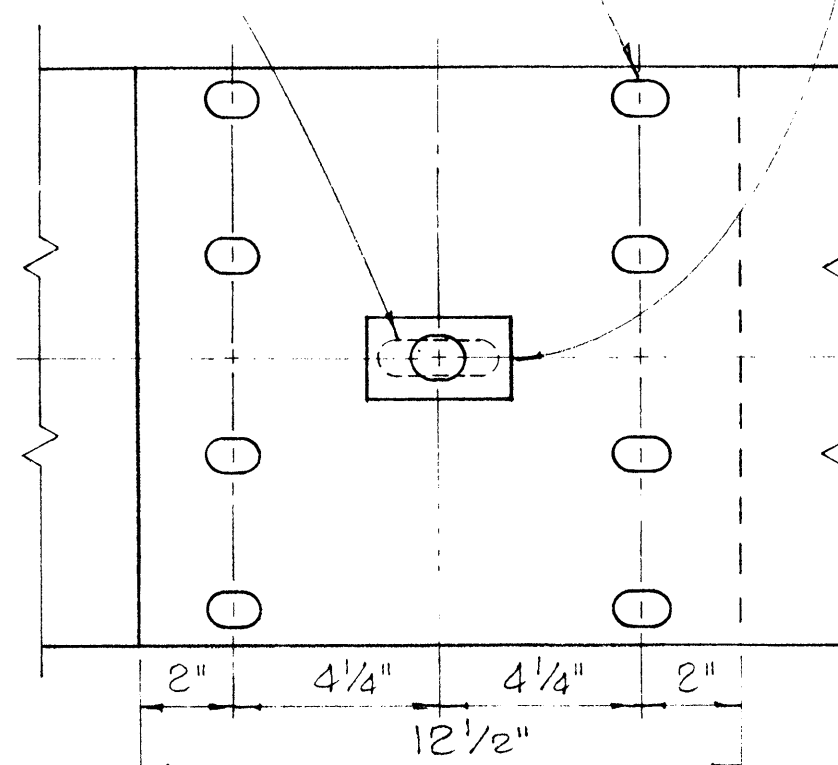
SPUCE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER



RAIL SPUCE

Scale: 3" = 1'-0"

NOTES:

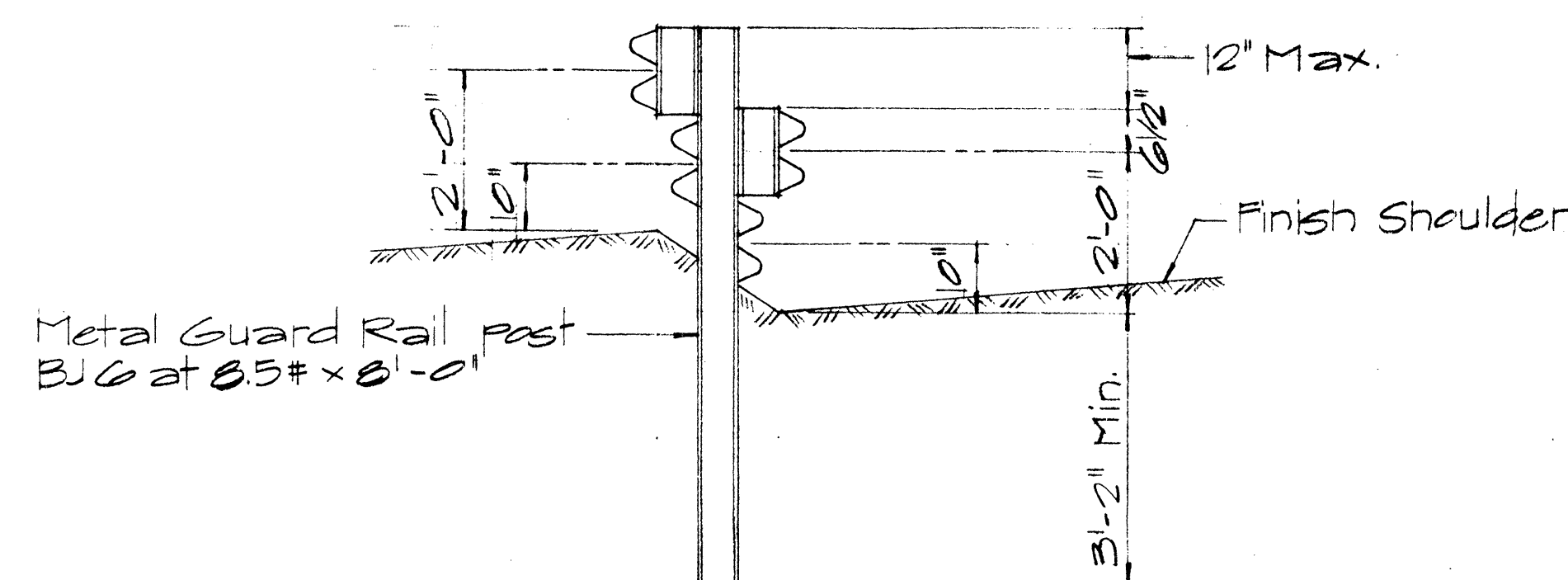
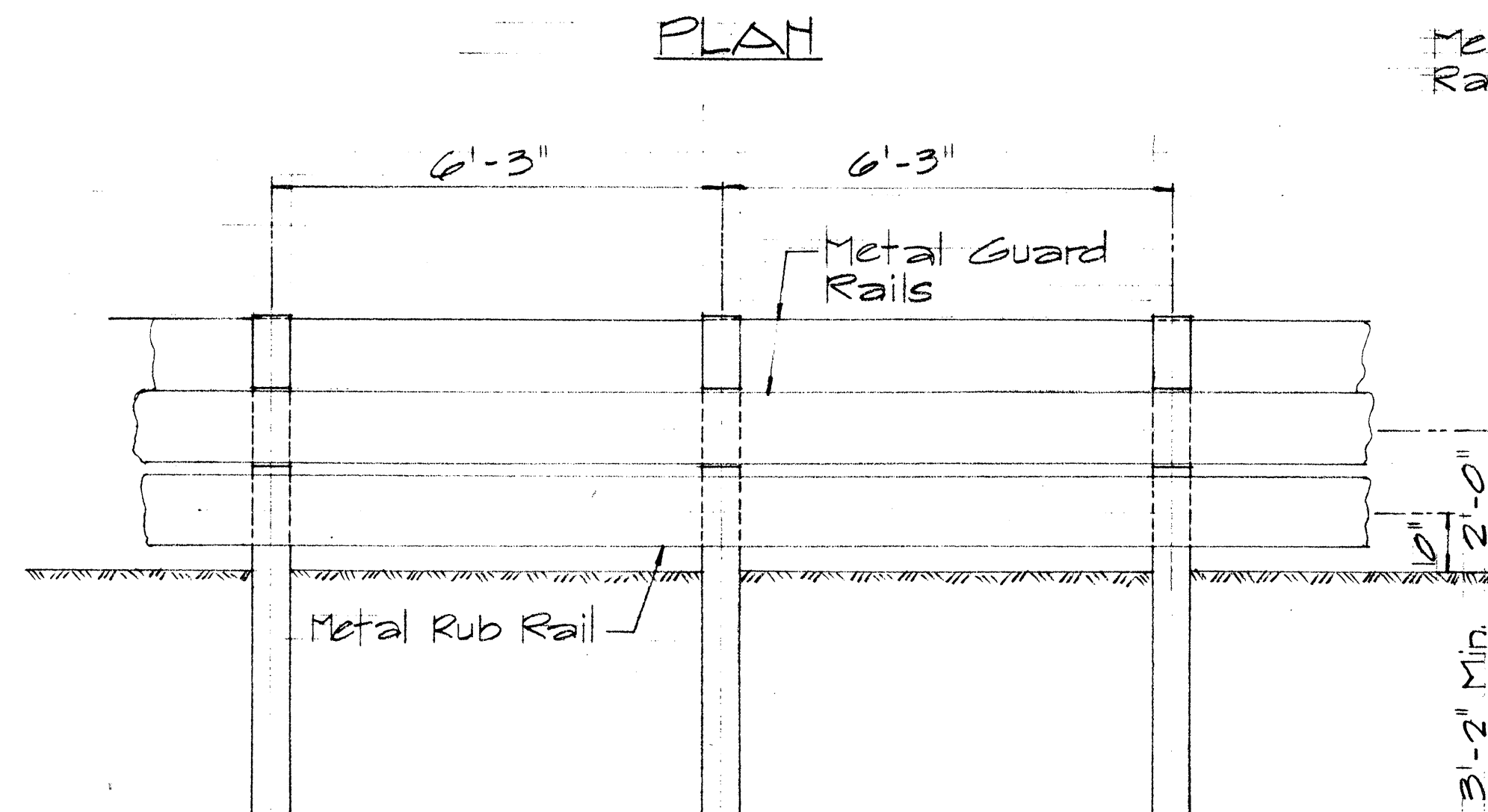
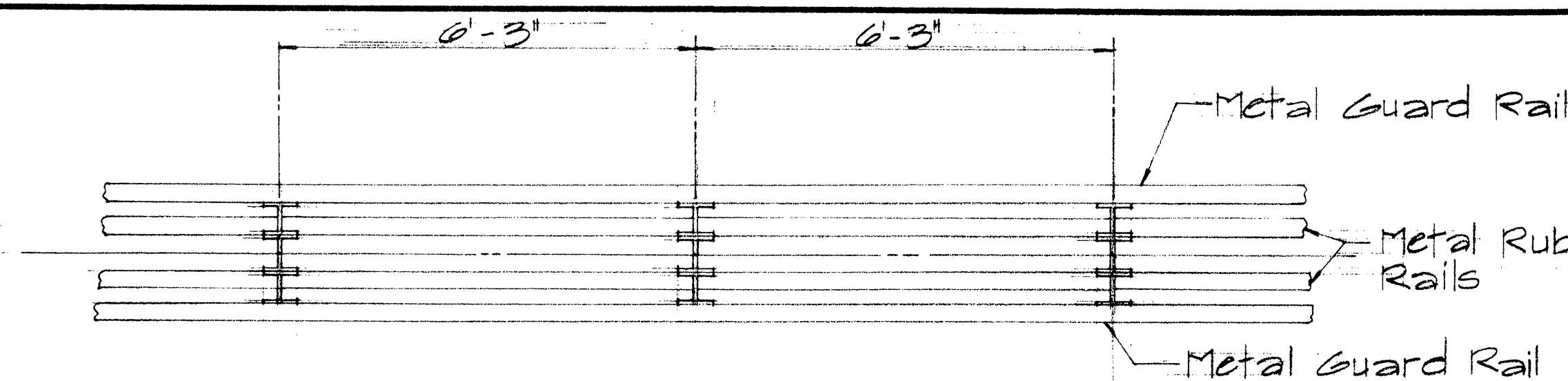
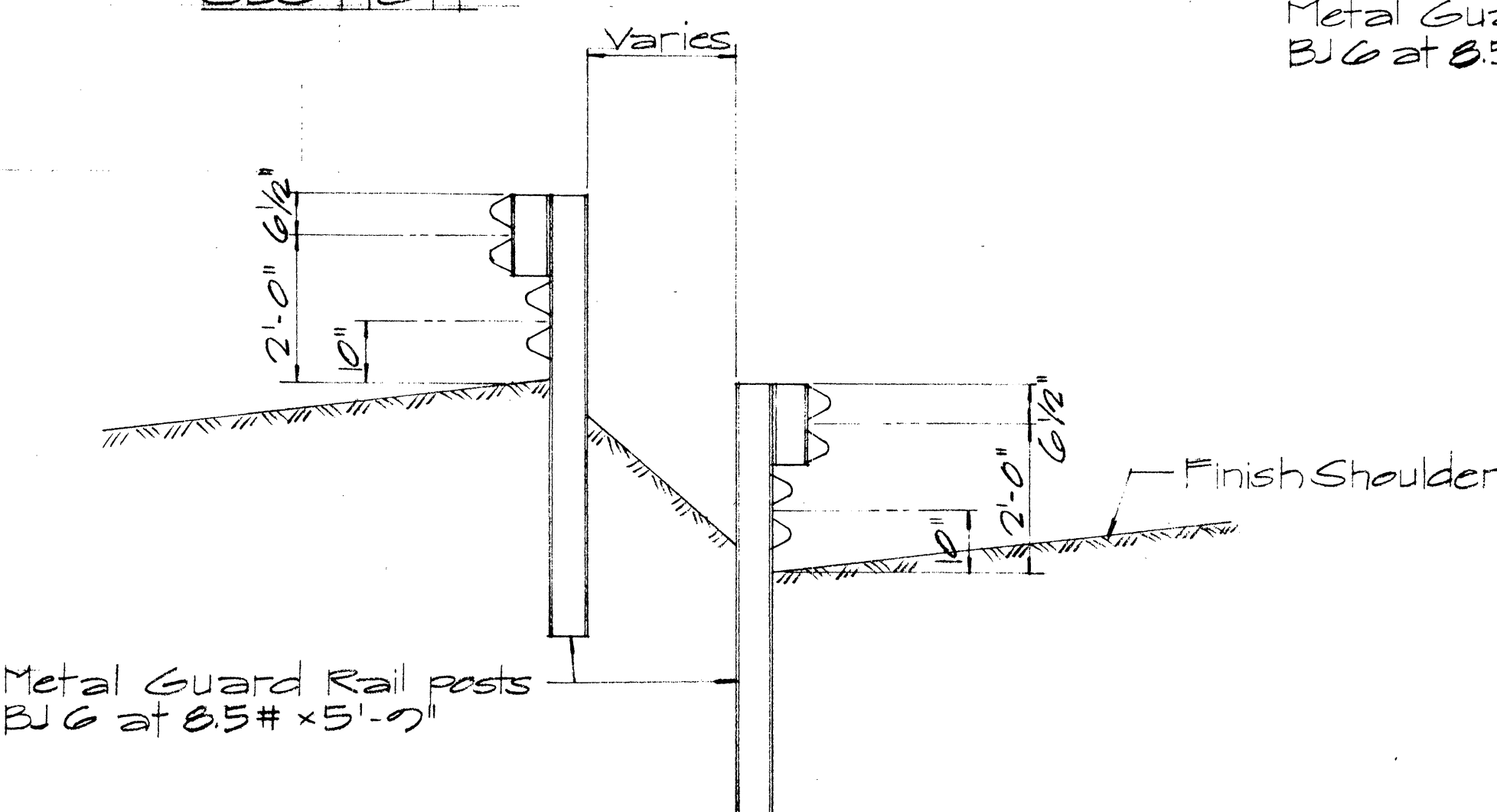
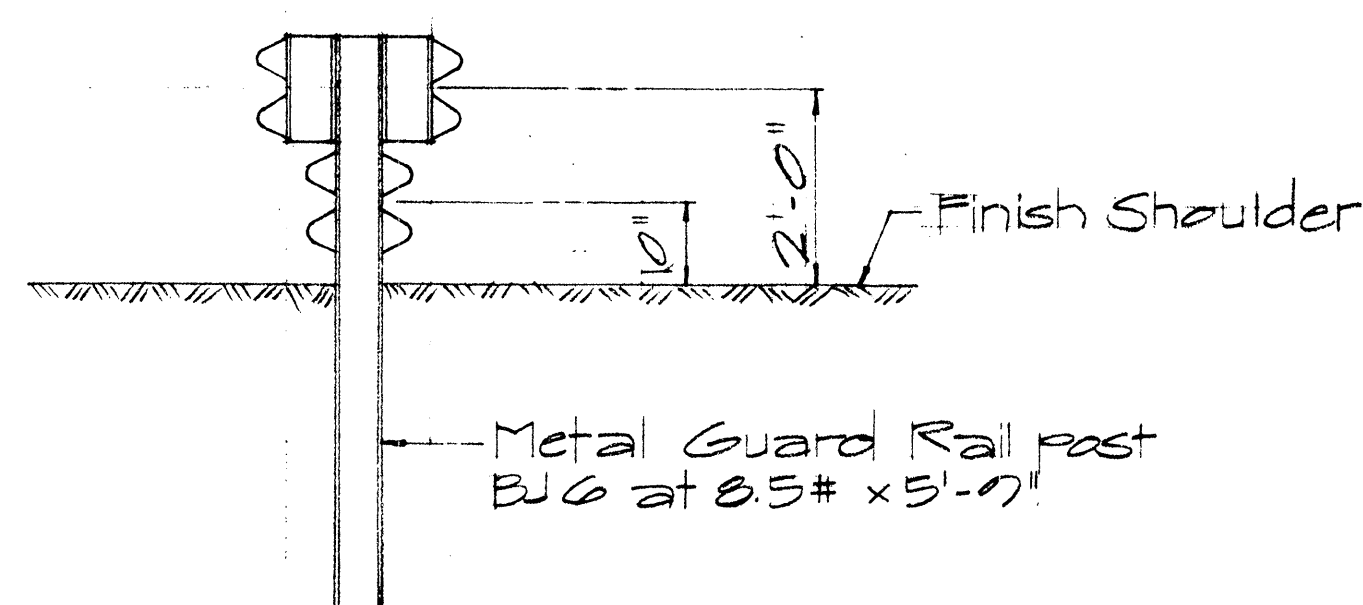
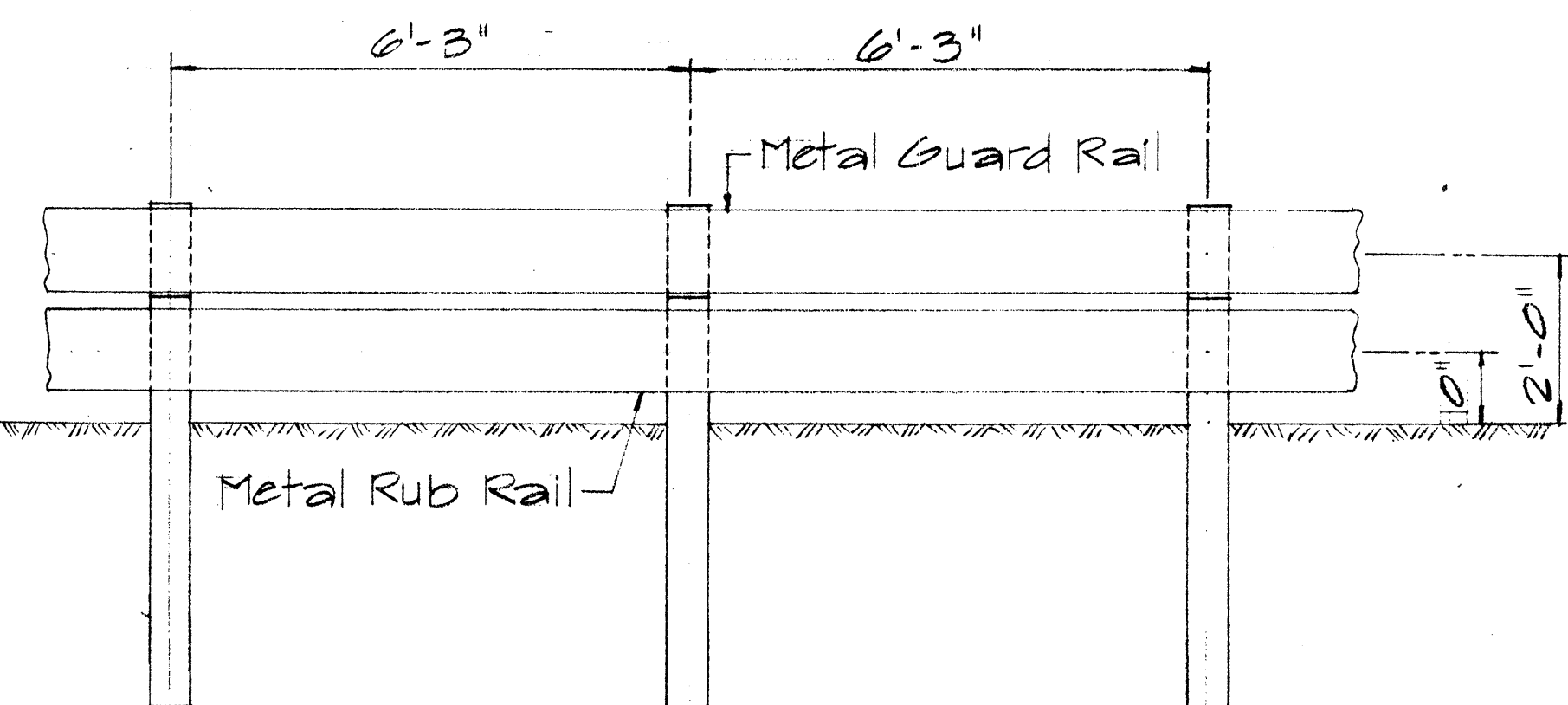
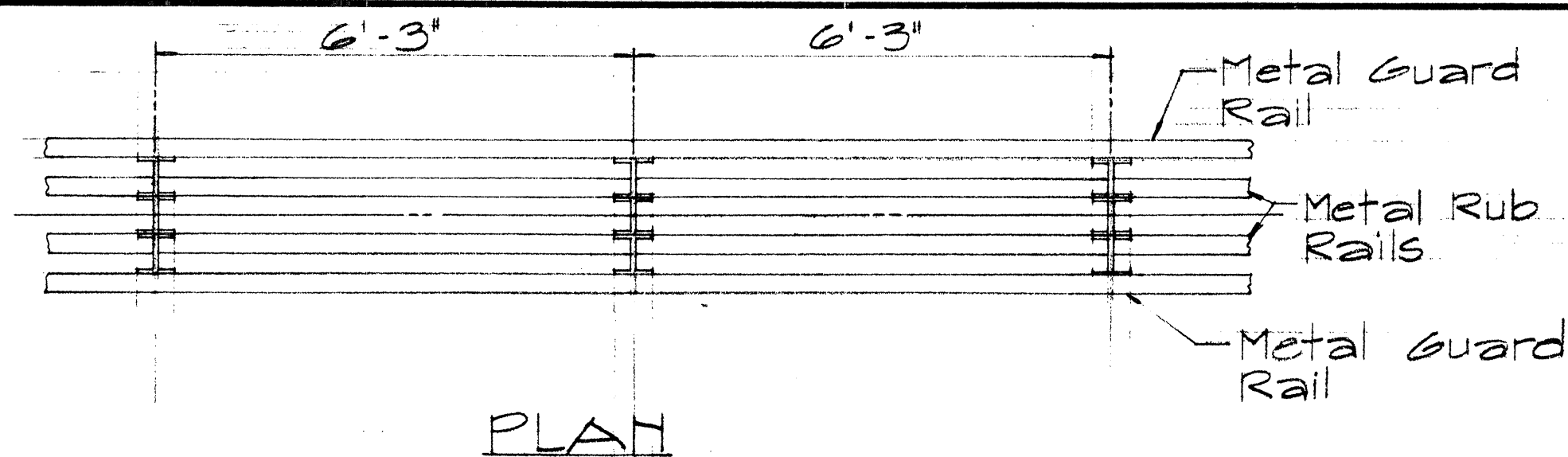
- H.S. Bolts shall conform to the requirements of ASTM A 325.
- Special End Shoe shall be fabricated from 10 Gage steel conforming to the requirements of AASHO 180.

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"

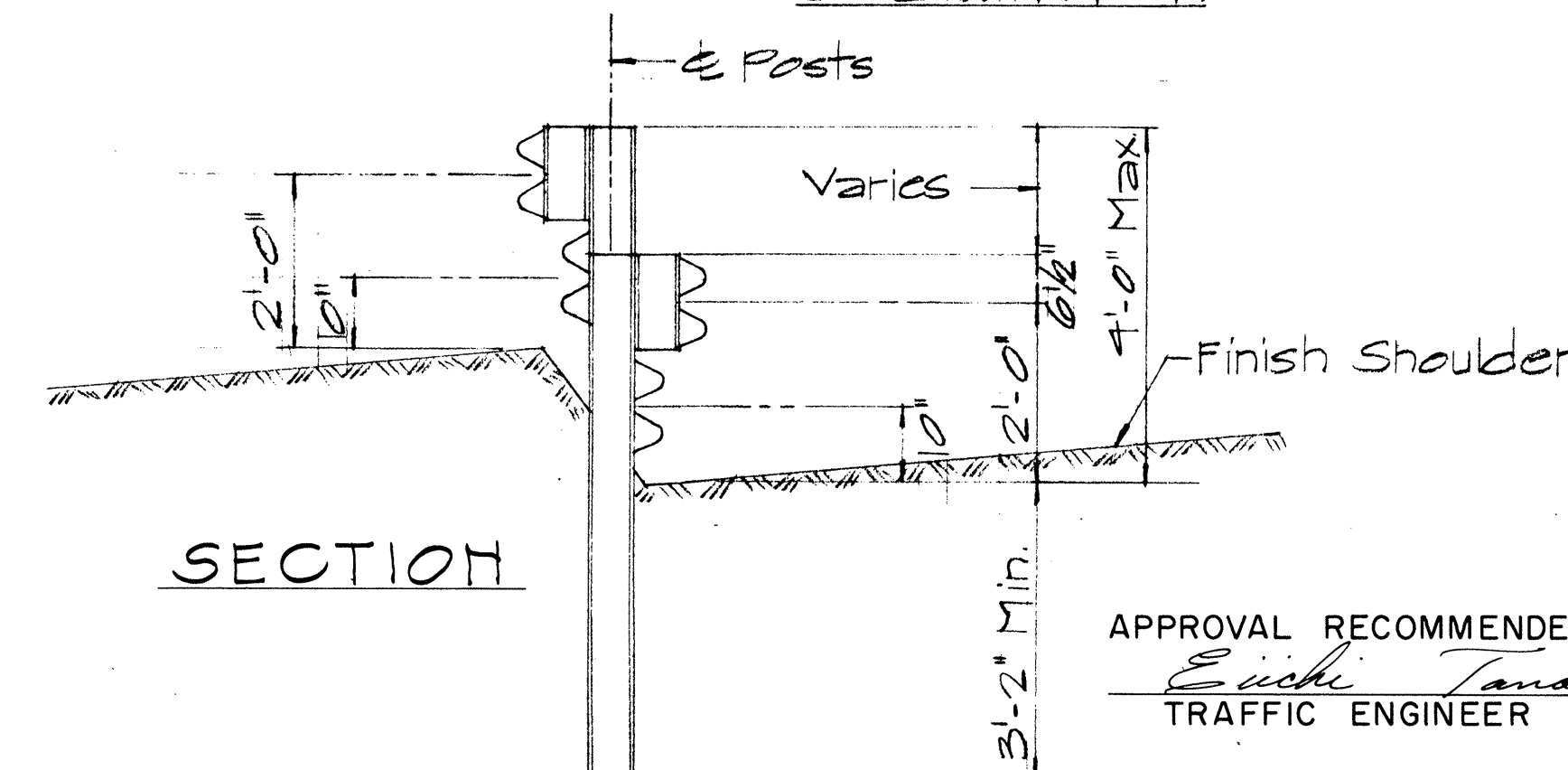
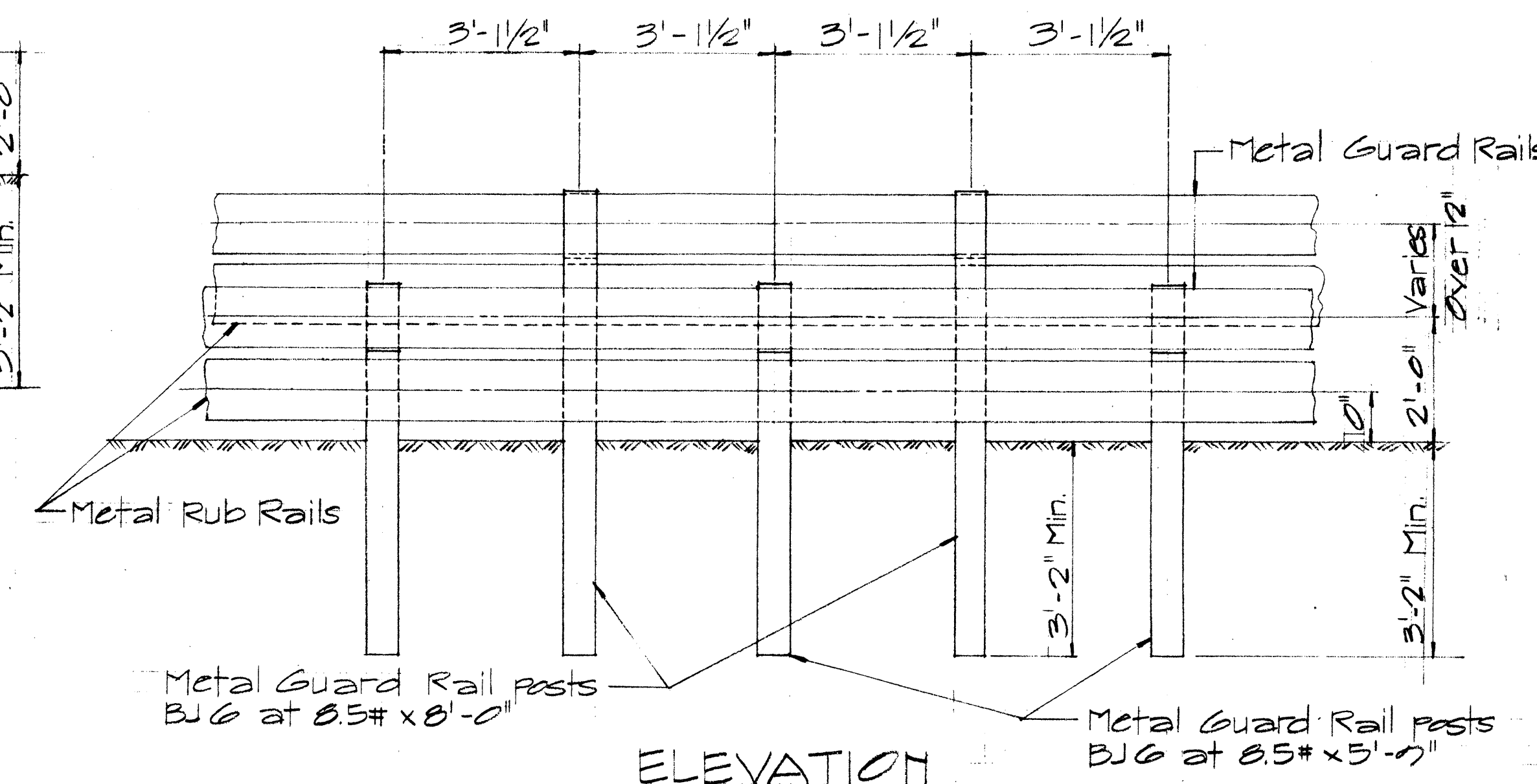
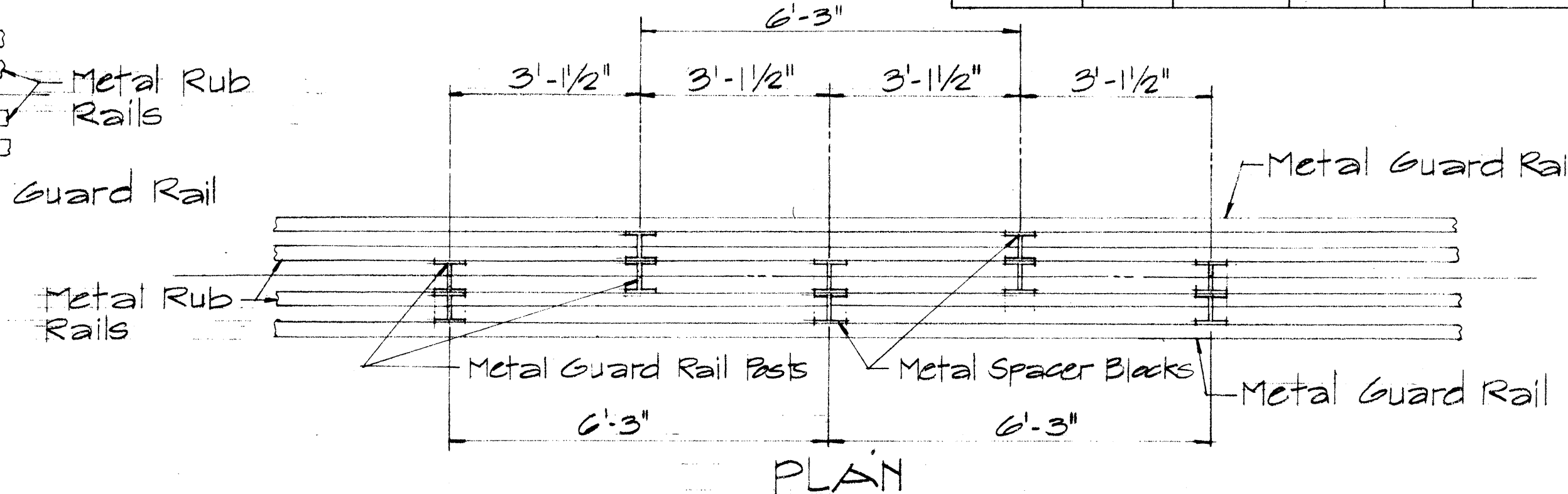
NO.	REVISION	APPROVED BY	DATE
1	Revised Hole Size for Rectangular Rail Washer	H.T.	8/10/77

DATE	
DESIGNED BY	
CHECKED BY	
QUANTITIES BY	
NOTE BOOK	
PLAN	
ORIGINAL	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	16	18



TYPICAL SAW TOOTH INSTALLATION
Sc. 1/2" = 1'-0"



TYPICAL STAGGERED INSTALLATION
Sc. 1/2" = 1'-0"

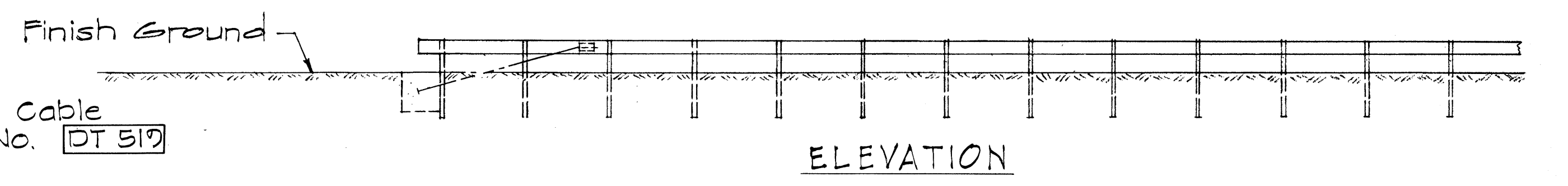
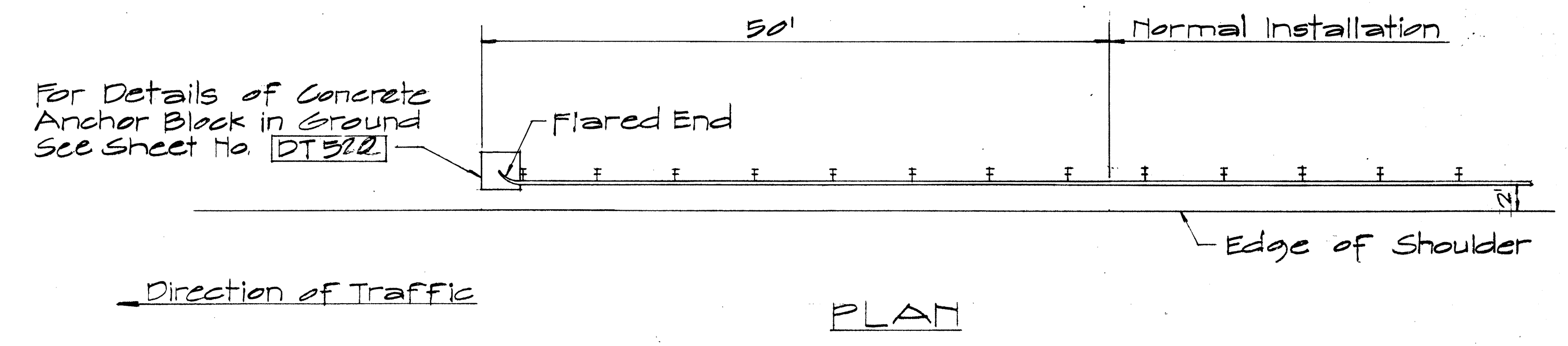
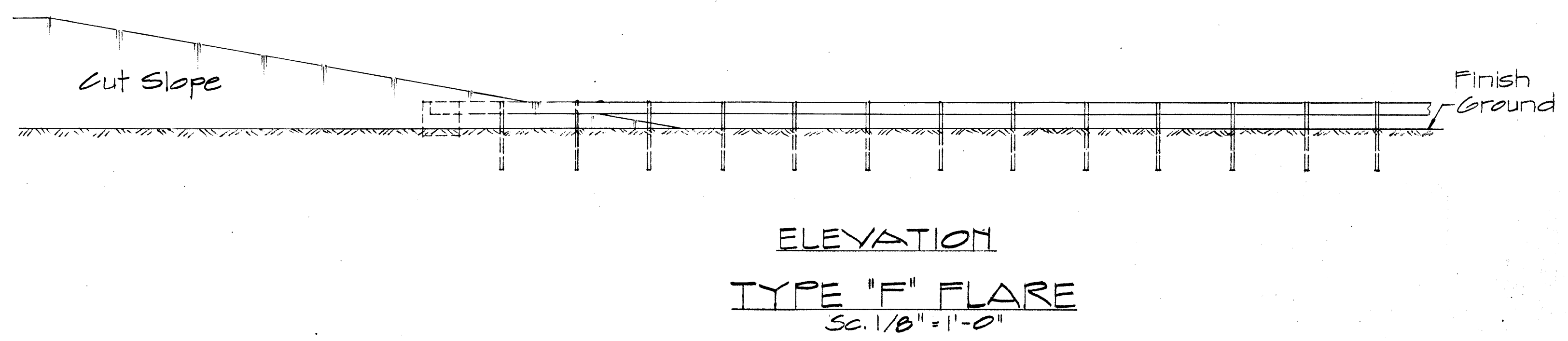
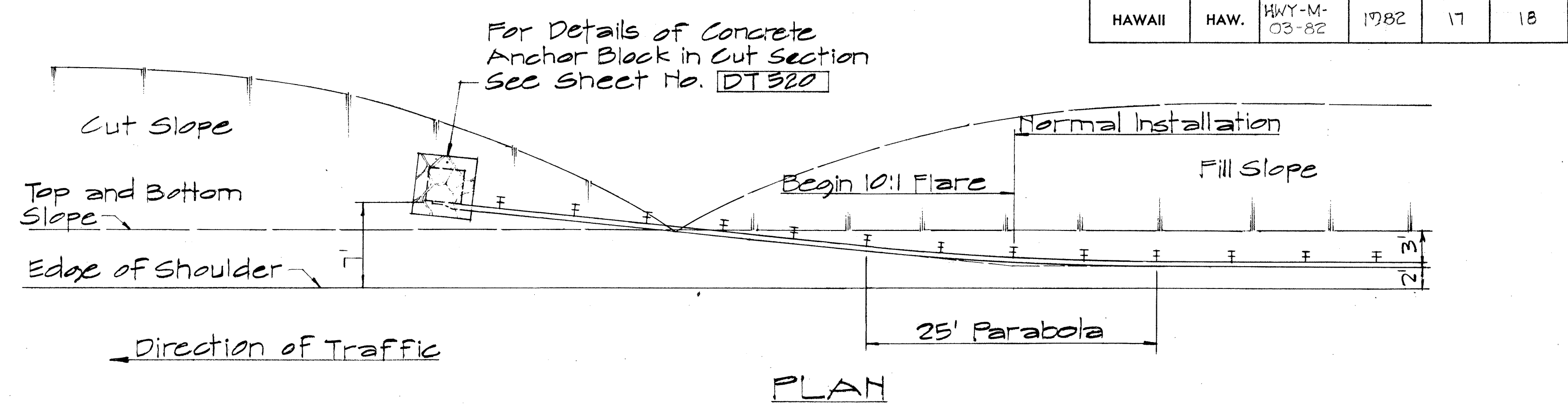
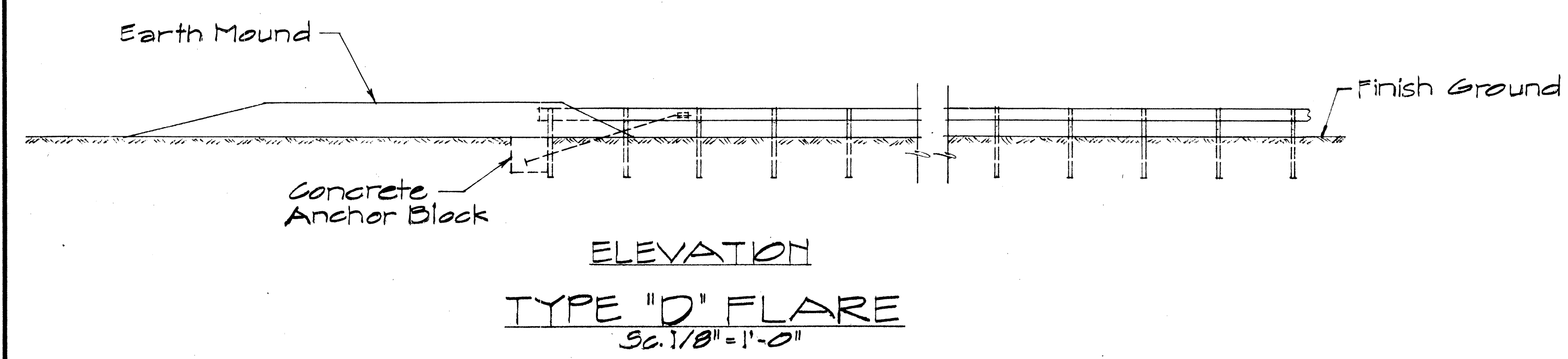
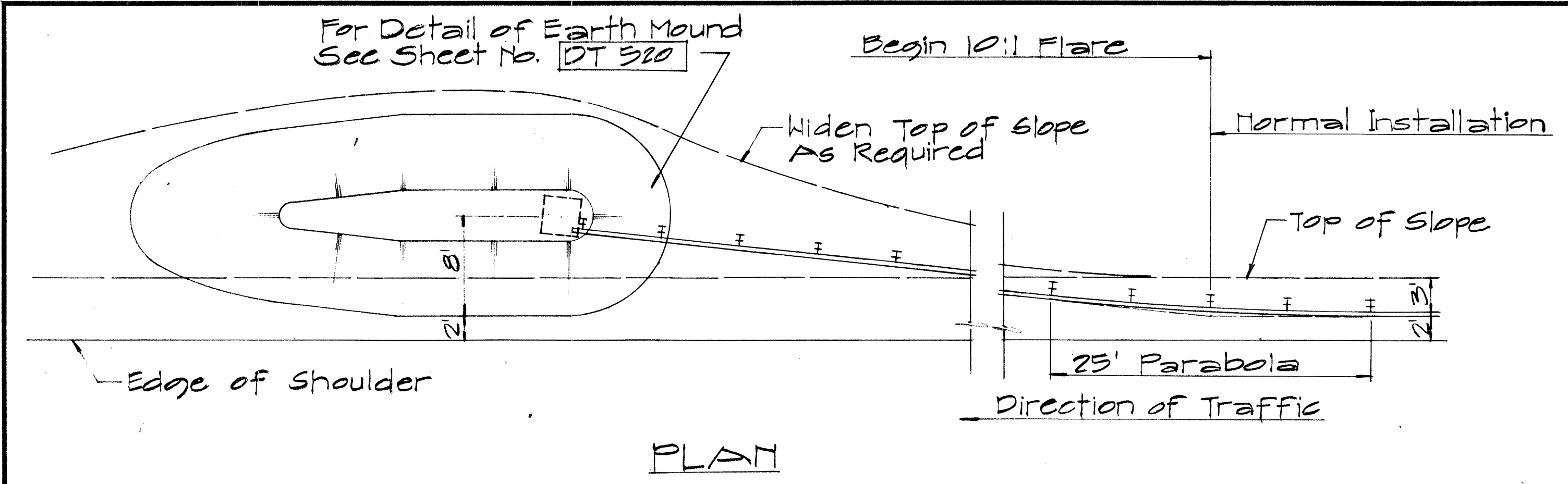
APPROVAL RECOMMENDED:
Eishi Tanaka
TRAFFIC ENGINEER
12/29/69
DATE

APPROVED:
William S. Zolner
ASSISTANT CHIEF, ENGINEERING
12-80-69
DATE

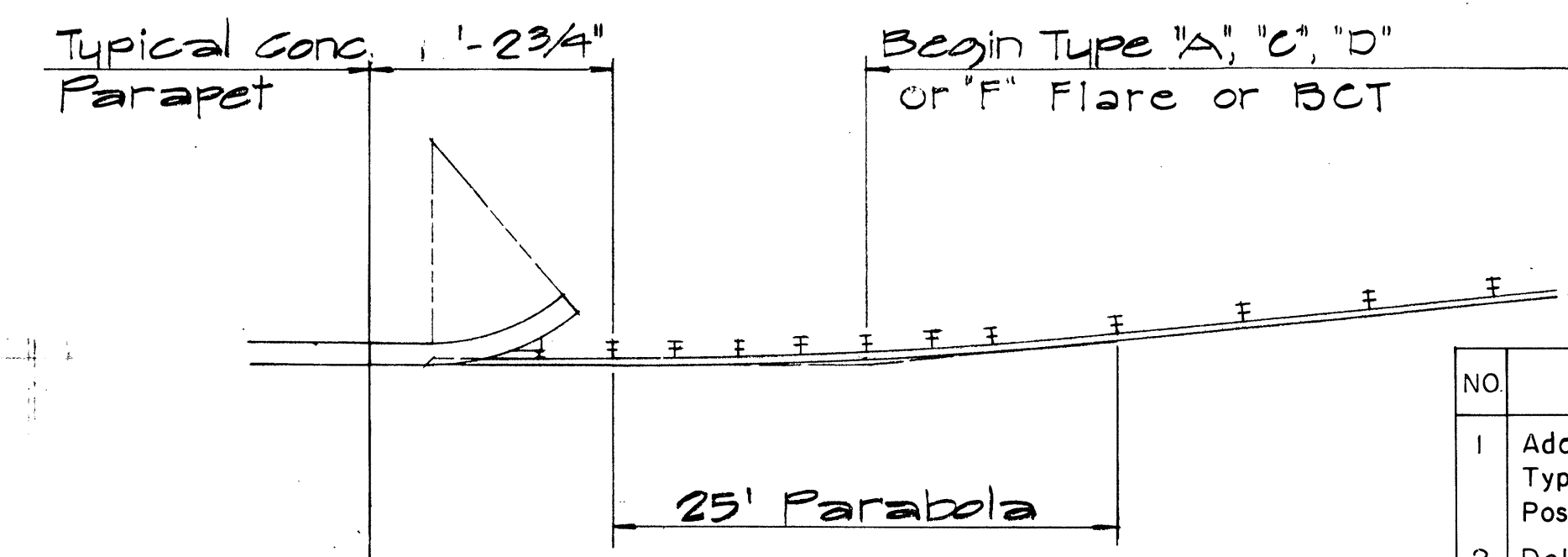
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAIL
METAL GUARD RAIL
WITH RUB RAIL
Scale: 1/2" = 1'-0" Feb. 1970

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	17	18



NOTE:
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 512



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:
Eushe 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
HIGHWAYS DIVISION

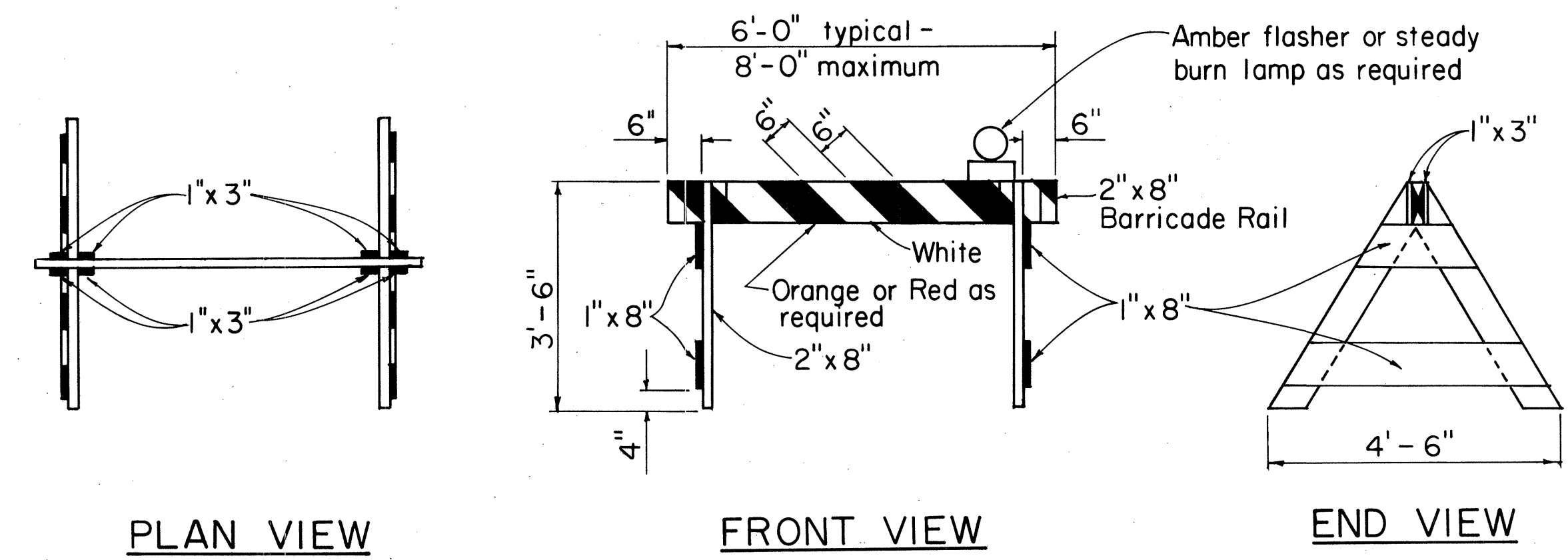
STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

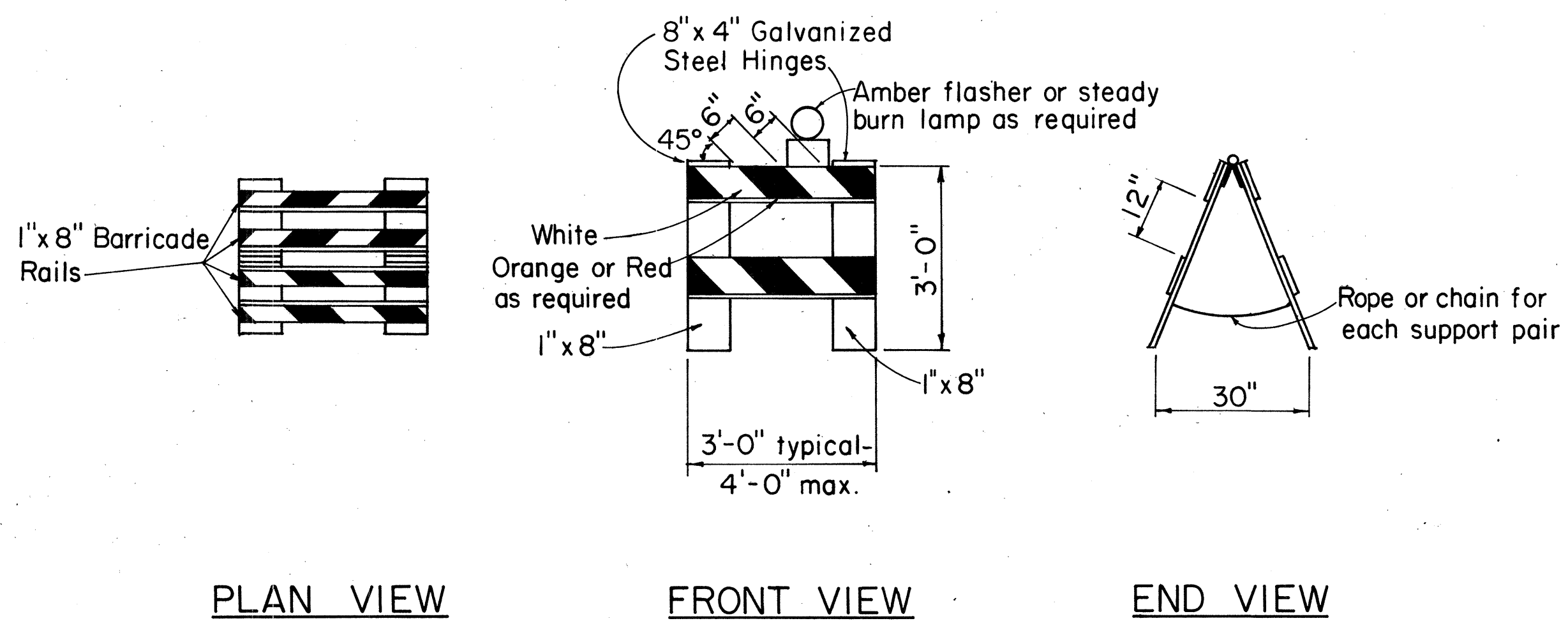
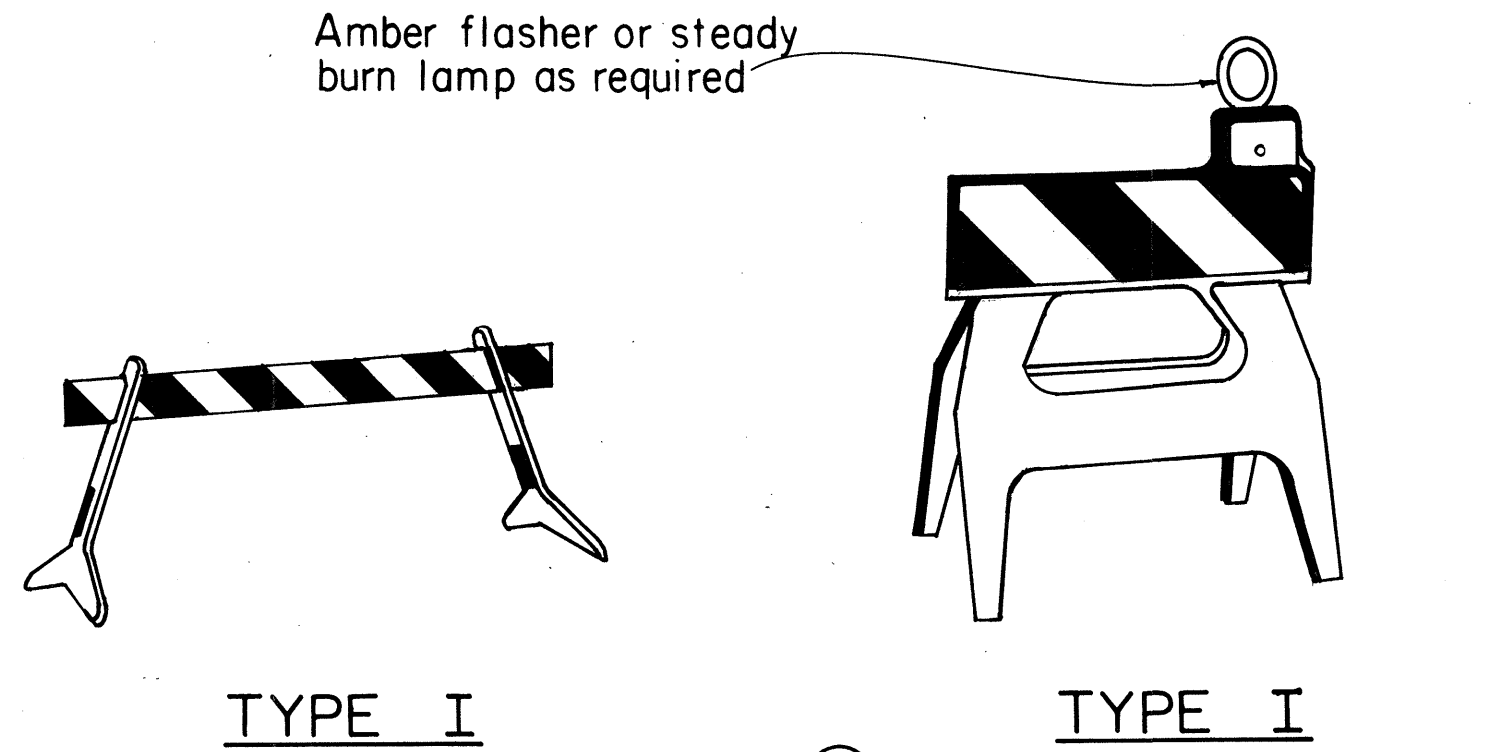
SHEET No. 10 OF 11 SHEETS DT 517

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-M-03-82	1982	18	18



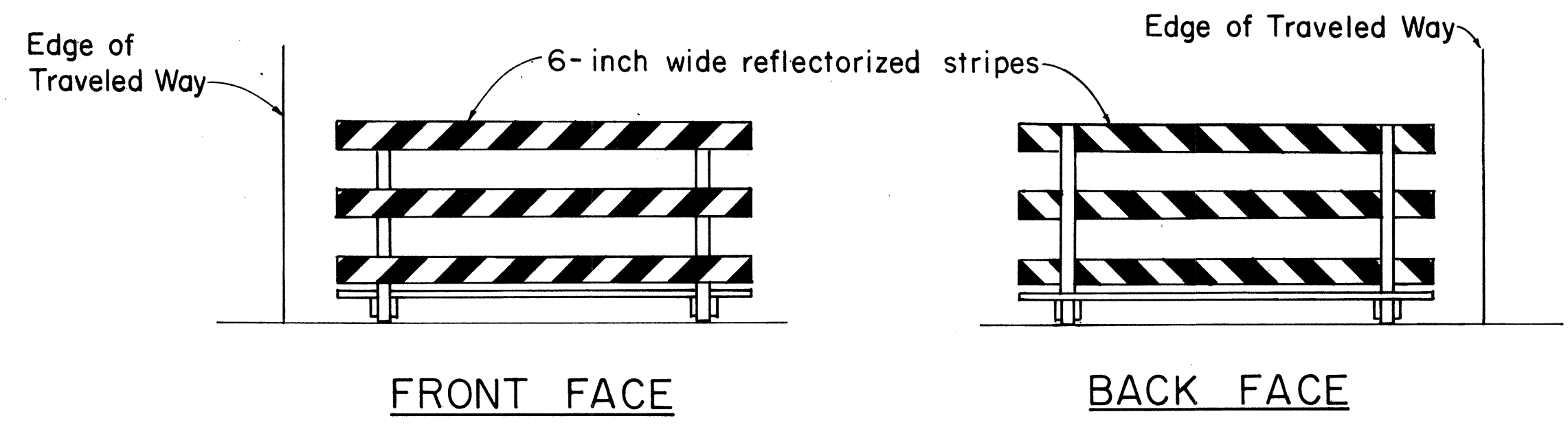
TYPE I BARRICADE
Scale: 1/2" = 1'-0"



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

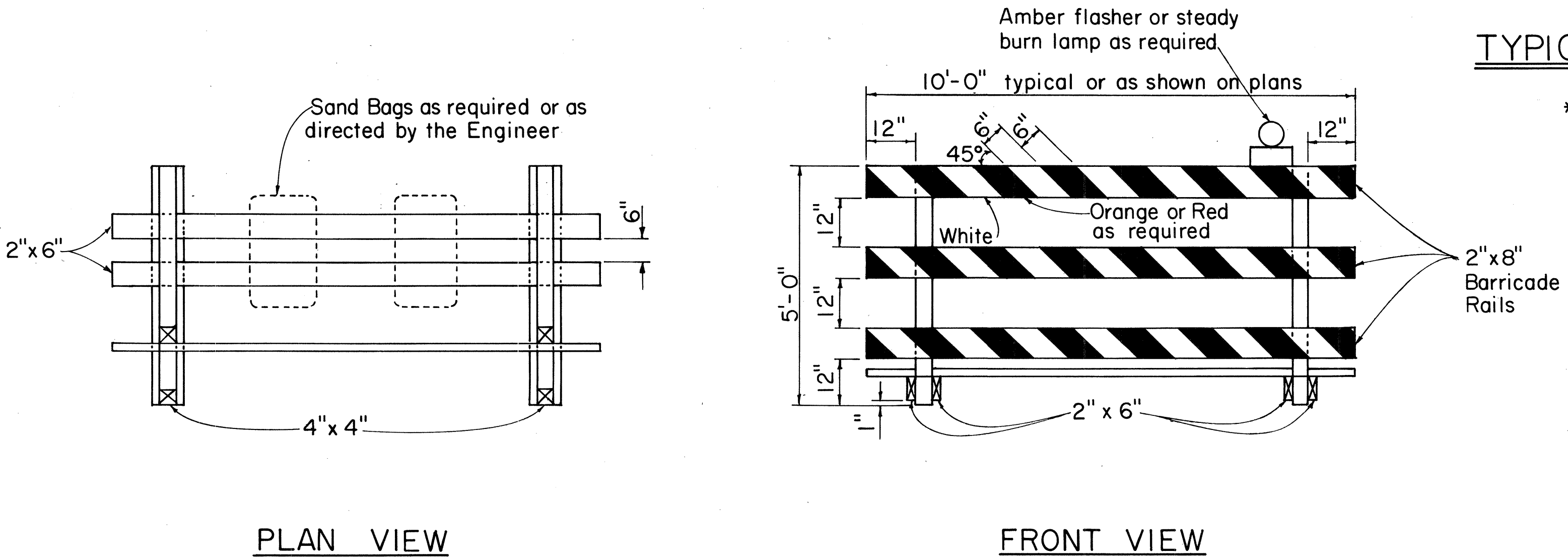
PLASTIC MOLDED BARRICADE OPTIONS*
Not to Scale

* Shop Drawings must be submitted for approval.

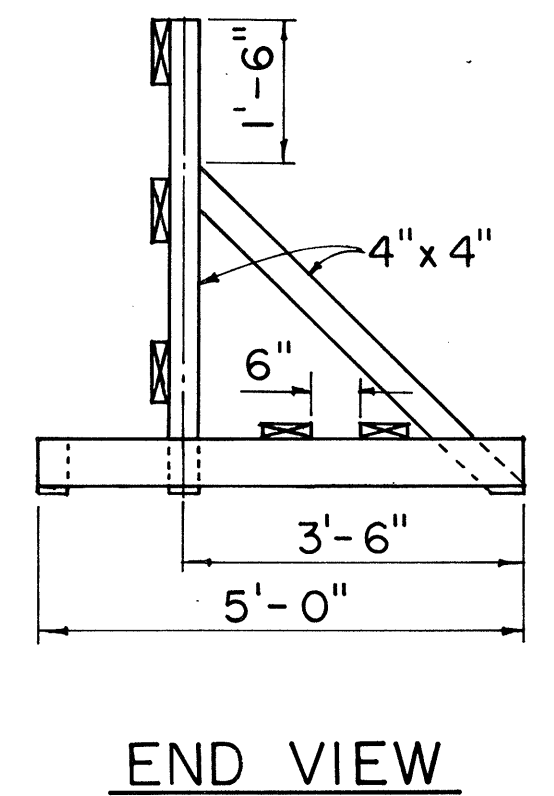


TYPICAL BARRICADE STRIPING DETAILS**
Not to Scale

** Similar for Types I & II



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



APPROVAL RECOMMENDED:
Euchi Tanaka 10/21/81
TRAFFIC ENGINEER DATE

APPROVED:
Robert P. DeFazio 10/23/81
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes DT 800 Approved 12/30/69	H.T.	10/23/81

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
BARRICADES

SCALE: As Shown
SHEET NO. 11 OF 11 SHEETS DT 800

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