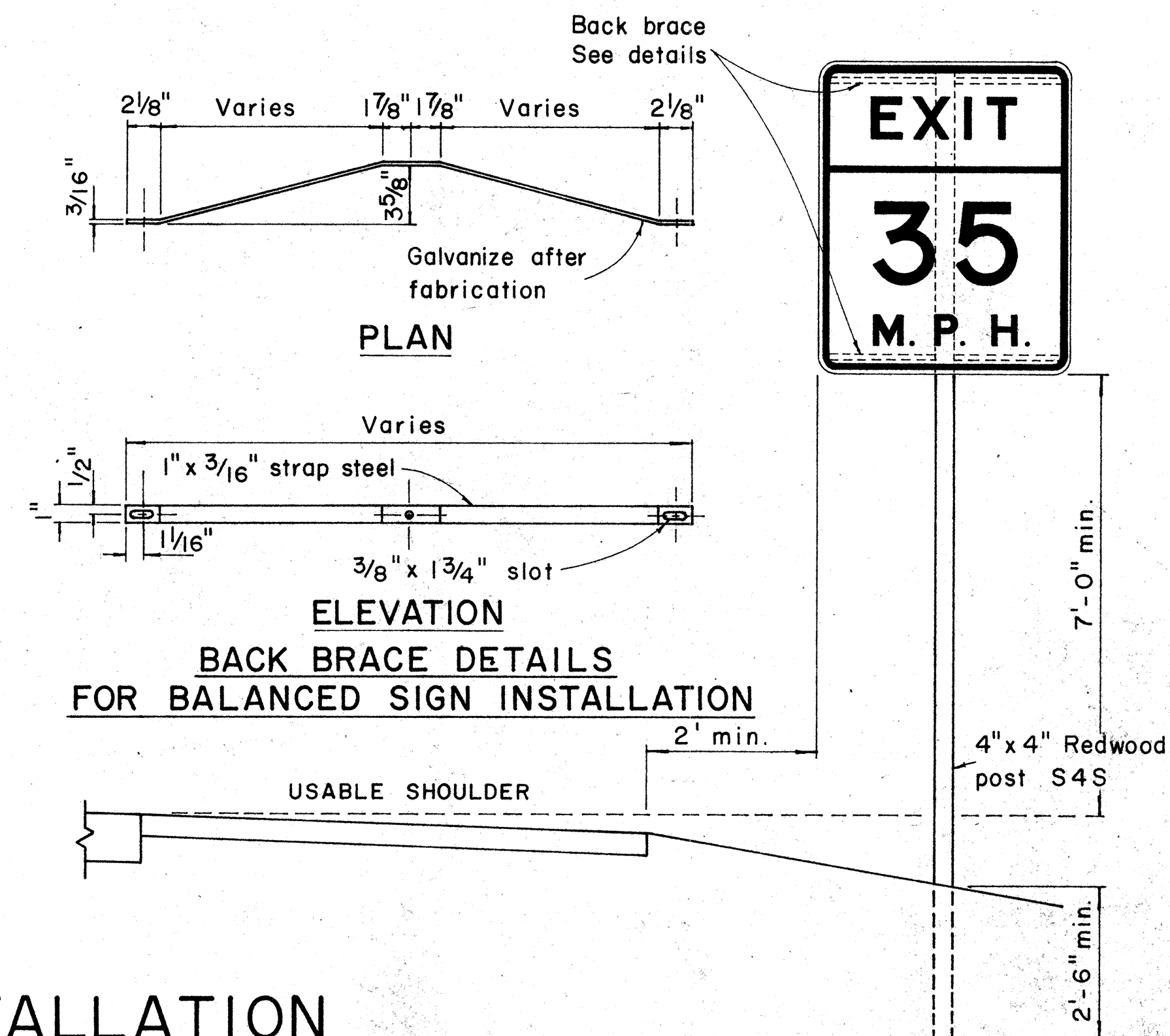
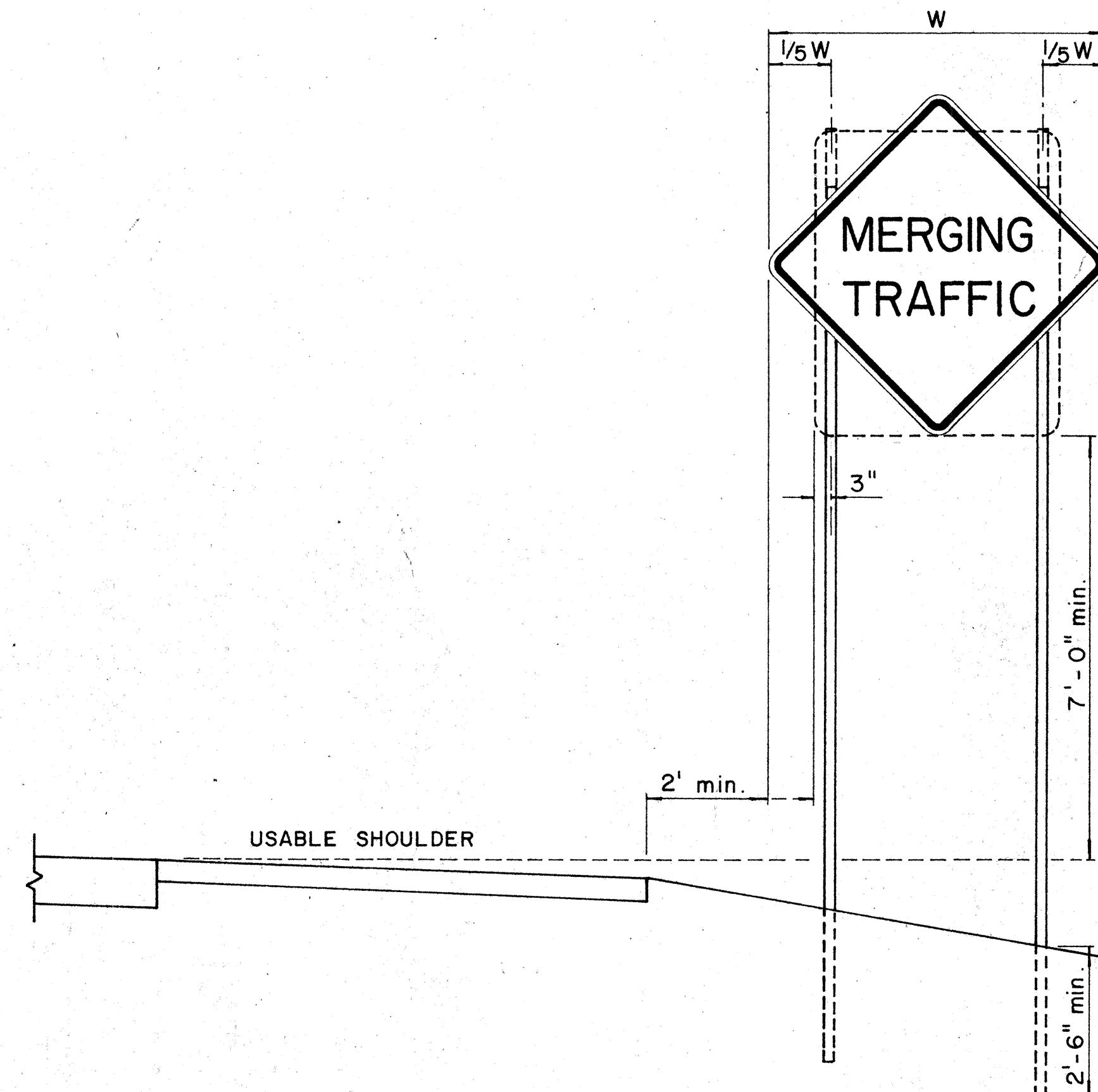
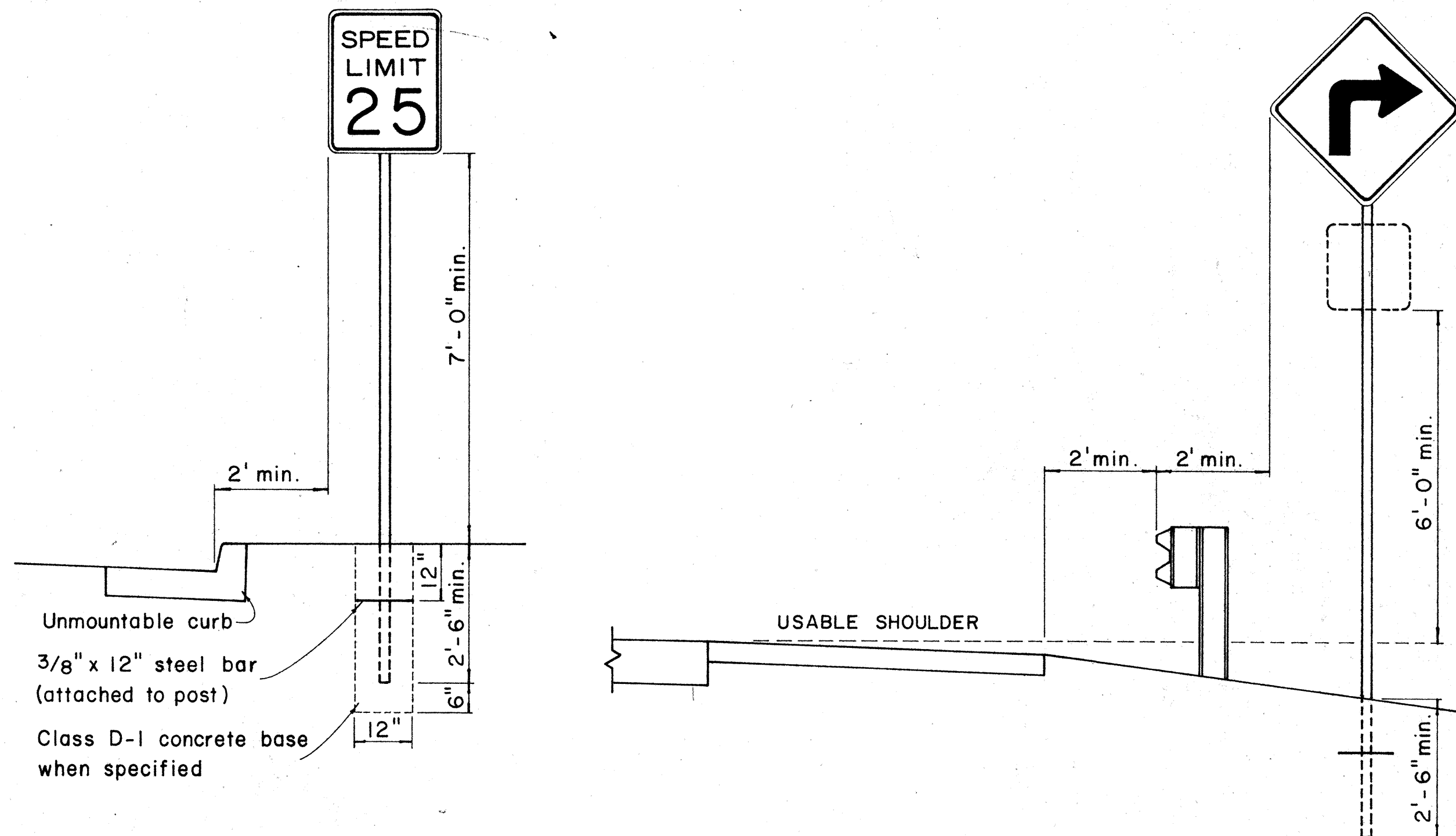
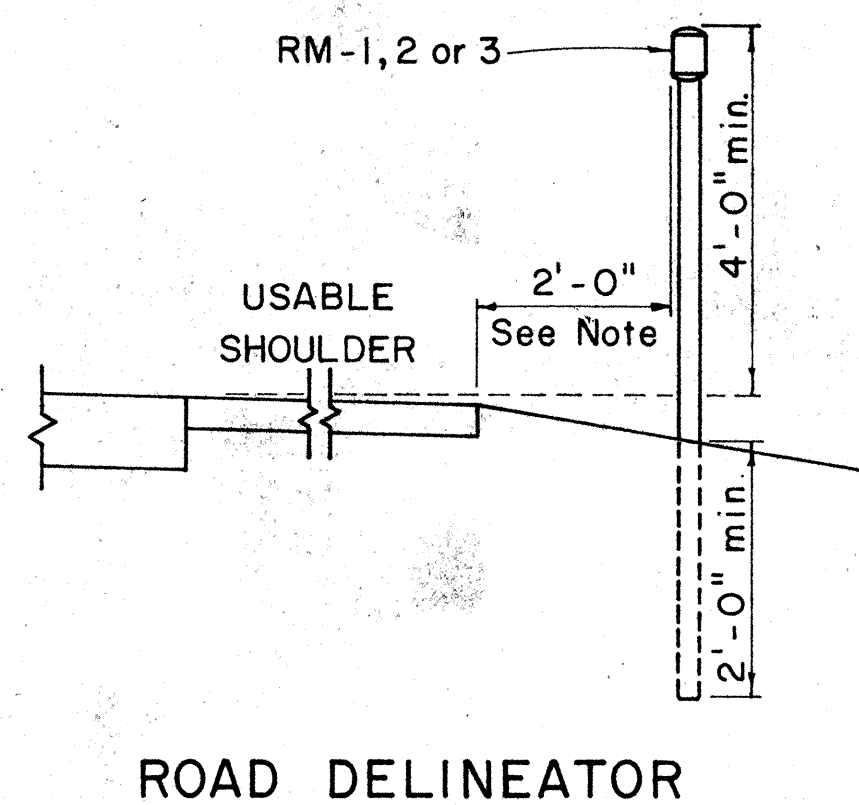


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	17	26

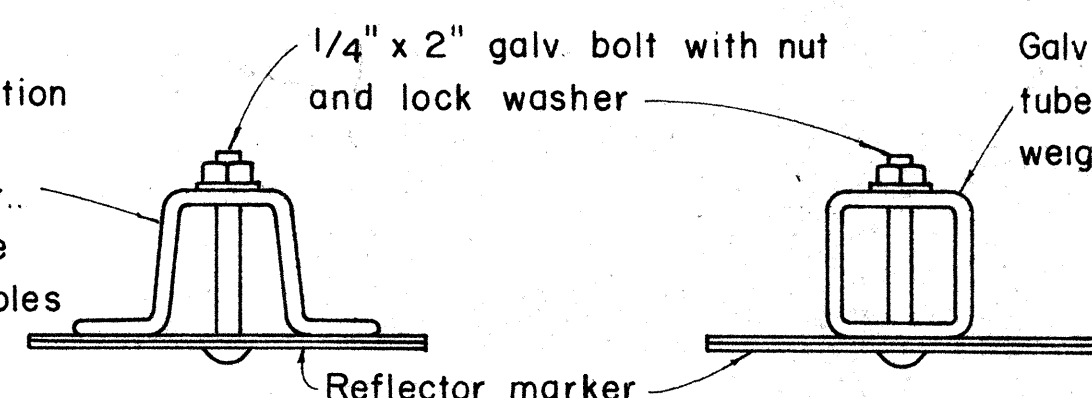


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION

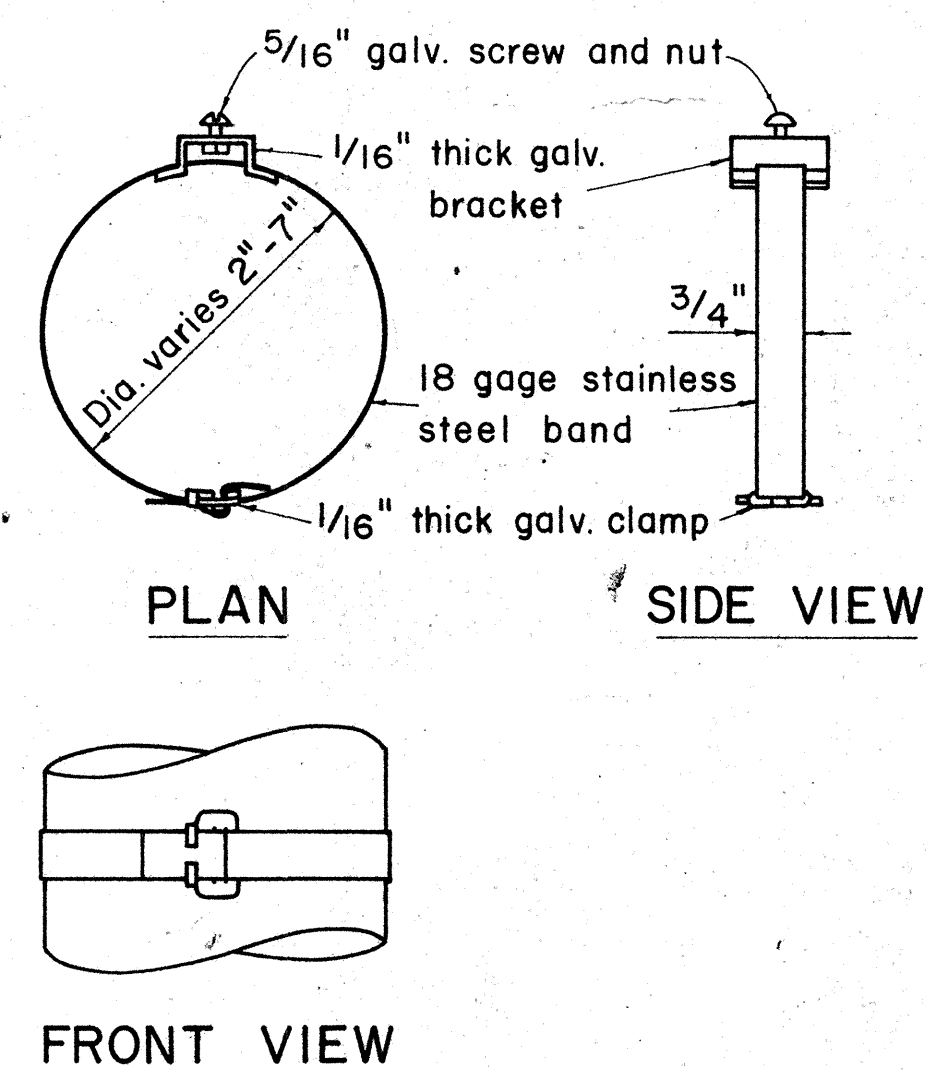


Galv. flanged channel 1/8" x 3 1/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft. shall have a single row of 3/8" holes centered in the web at 1" o.c.

TYPICAL SECTION OF ROAD DELINEATOR



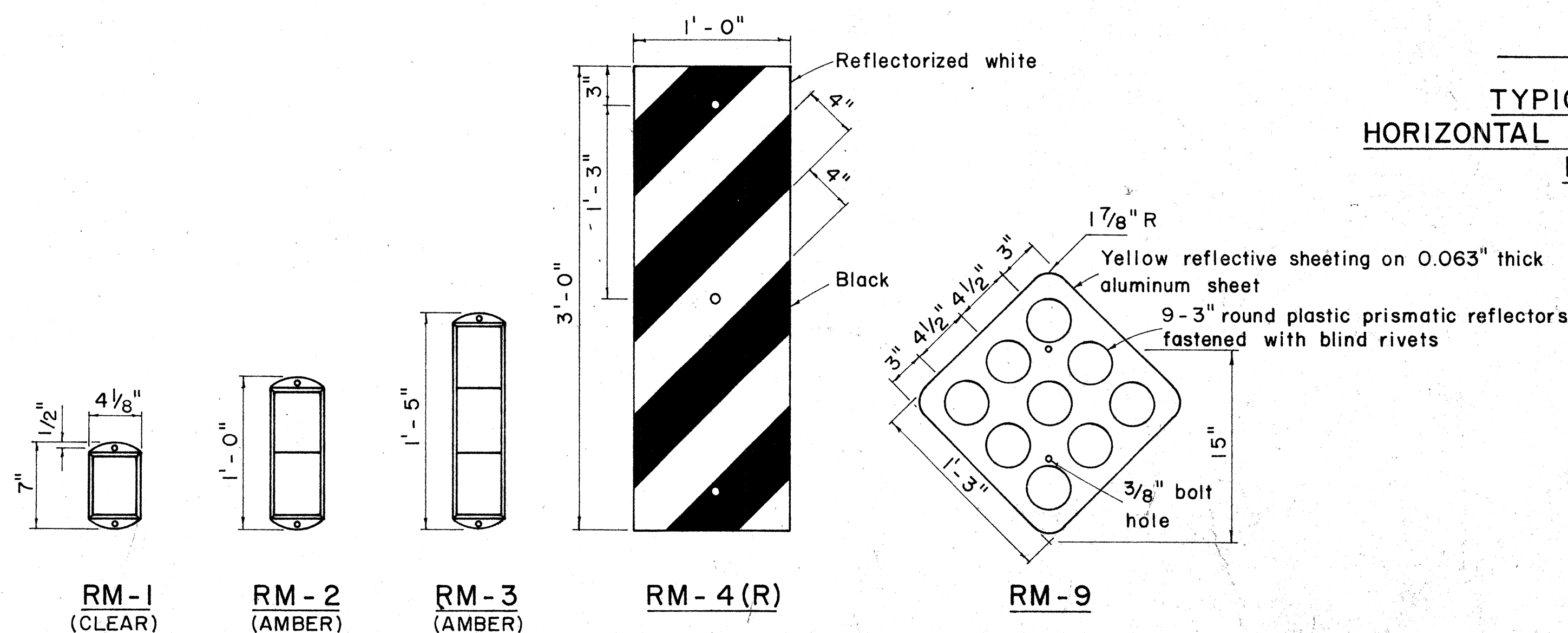
TYPICAL DETAIL HORIZONTAL REFLECTOR MARKER RM-3H



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

GENERAL NOTES:

- Sign posts shall be 2" galv. standard pipe or 2" x 2" galv. sq. tube post.
- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two 2" galv. standard pipe or two 2" x 2" galv. sq. tube post or 4" x 4" redwood post S4S.
- Signs shall be attached to post with 5/16" galv. bolts with nuts and 7/8" x 0.06 stainless steel washers with neoprene rubber gasket.
- Sign posts shall extend 3 1/2" above sign where required for City and County street name signs.
- Reflector markers RM-1, 2, 3 shall be glass sphere reflector markers with 4" x 5" reflector units (as shown) or plastic prismatic reflector markers with 3" diameter reflector units.
- Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
- (R) or (L) indicates right or left and shall be as shown on the plans.

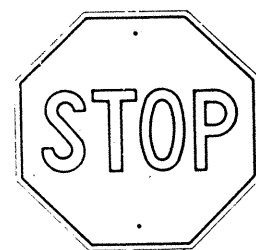


REFLECTOR MARKERS

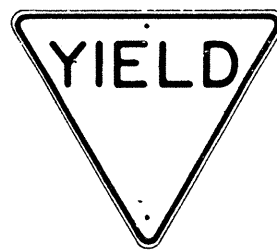
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAILS MISCELLANEOUS SIGN DETAILS	
Not to scale	March, 1968
SHEET NO. 1 OF 10 SHEETS	

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

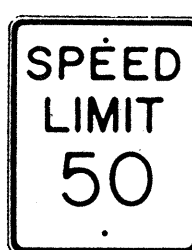
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	18	26



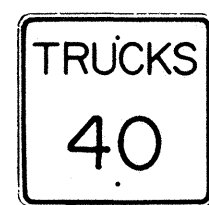
R1-1 30"x 30"



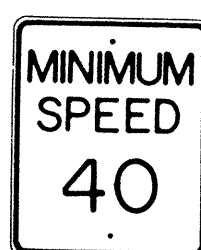
R1-2 36"x 36"x 36"
R1-2-E 48"x 48"x 48"
R1-2-I 60"x 60"x 60"



R2-1(50) 24"x 30"
R2-1(50)-E 36"x 48"
R2-1(50)-I 48"x 60"



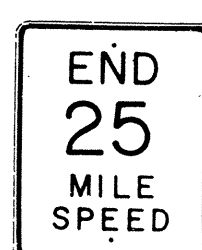
R2-2(40) 24"x 24"
R2-2(40)-E 36"x 36"
R2-2(40)-I 48"x 48"



R2-4(40) 24"x 30"
R2-4(40)-E 36"x 48"
R2-4(40)-I 48"x 60"



R2-5 24"x 30"
R2-5-E 36"x 48"
R2-5-I 48"x 60"



R2-6(25) 24"x 30"
R2-6(25)-E 36"x 48"
R2-6(25)-I 48"x 60"



R2-7 24"x 30"
R2-7-E 36"x 48"
R2-7-I 48"x 60"



R3-1 24"x 30"
R3-1-E 36"x 48"



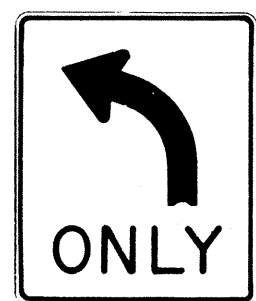
R3-2 24"x 30"
R3-2-E 36"x 48"



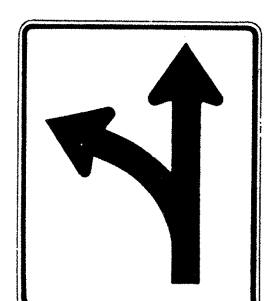
R3-3 24"x 24"



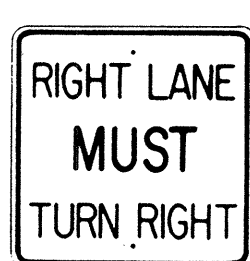
R3-4 24"x 30"
R3-4-E 36"x 48"
R3-4-I 48"x 60"



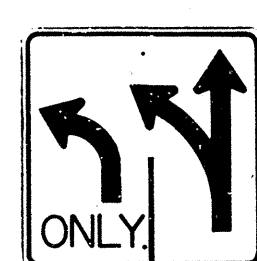
R3-5(L) 30"x 36"



R3-6(L) 30"x 36"



R3-7(R) 30"x 30"



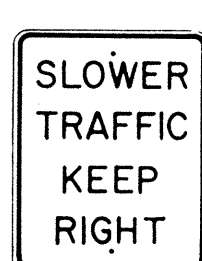
R3-8(L) 30"x 30"



R4-1 24"x 30"



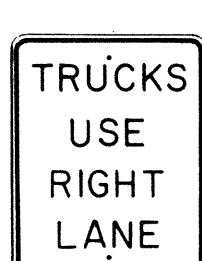
R4-2 24"x 30"



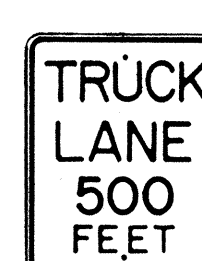
R4-3 24"x 30"
R4-3-E 36"x 48"
R4-3-I 48"x 60"



R4-4 24"x 30"
R4-4-E 36"x 48"
R4-4-I 48"x 60"



R4-5 24"x 30"
R4-5-E 36"x 48"



R4-6 24"x 30"
R4-6-E 36"x 48"



R4-7(R) 24"x 30"
R4-7(R)-E 36"x 48"



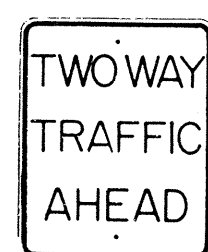
R5-1 24"x 24"



R6-1(R) 36"x 12"



R6-2(R) 18"x 24"



R6-3 24"x 30"



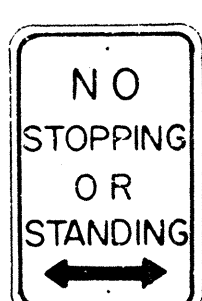
R6-4 24"x 30"



R6-5 24"x 30"



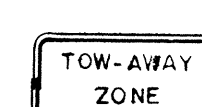
R7-1 12"x 18"



R7-4 12"x 18"
R7-4-E 24"x 30"



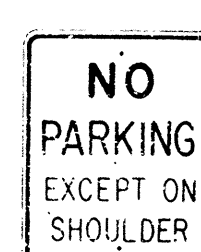
R7-107(R) 12"x 18"



R7-201 12"x 6"



R8-1 24"x 30"
R8-1-E 36"x 48"
R8-1-I 48"x 60"



R8-2 24"x 30"
R8-2-E 36"x 48"



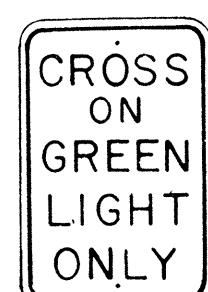
R8-3 24"x 30"
R8-3-E 36"x 48"



R8-4 24"x 30"
R8-4-E 36"x 48"
R8-4-I 48"x 36"



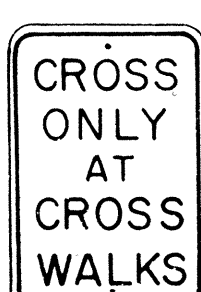
R9-1 18"x 24"



R9-2 12"x 18"



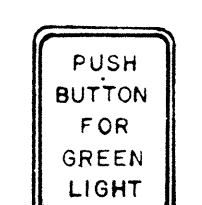
R9-3 12"x 18"



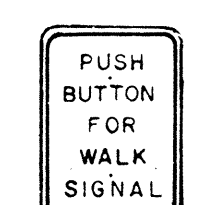
R9-4 12"x 18"



R9-5 12"x 18"



R9-6 9"x 12"



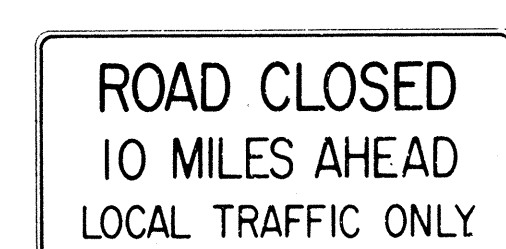
R9-7 9"x 12"



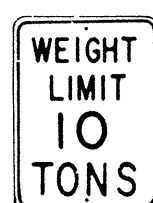
R10-1 24"x 30"
R10-1-E 36"x 48"
R10-1-I 48"x 60"



R10-2 48"x 30"



R10-3(10) 60"x 30"



R10-4(10) 18"x 24"

NOTE:

1. The shape, color, dimensions, symbols, wording, lettering and reflectorization of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June 1961 and the BPR manual "Standard Highway Signs," dated September 1961 unless otherwise specified.
2. All regulatory signs shall be reflectorized unless otherwise specified.
3. All regulatory signs shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise noted.
4. The suffix "E" denotes Expressway signs and "I" denotes Interstate signs.
5. For R2 signs, number in () indicates speed and shall be as shown on the plans.
6. (R) or (L) indicates right or left and shall be as shown on the plans.
7. For R10-4 sign, number in () indicates weight and shall be as shown on the plan.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
REGULATORY SIGNS

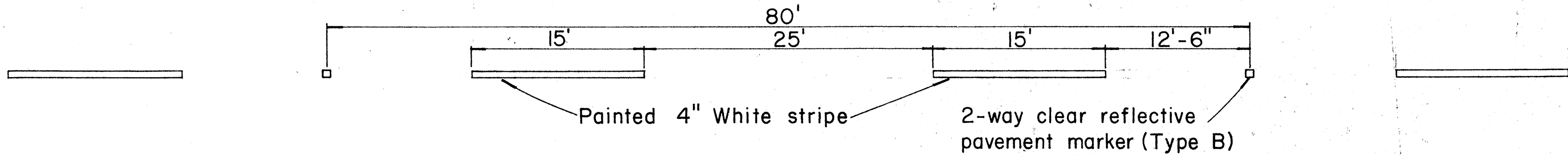
NOT TO SCALE

SHEET No. 2 OF 10 SHEETS DT 101

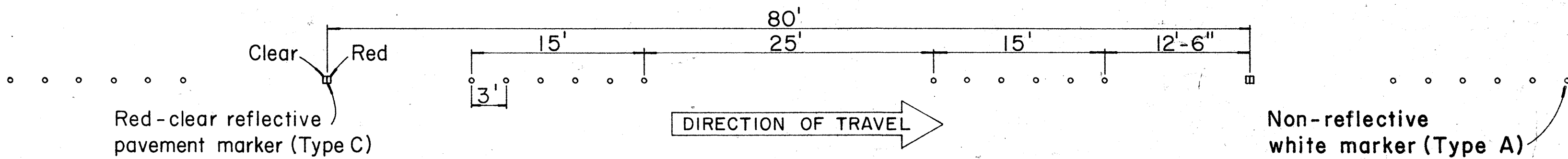
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	" "
No.	DESIGNED BY	" "
	QUANTITIES BY	" "
	CHECKED BY	" "

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	17	26

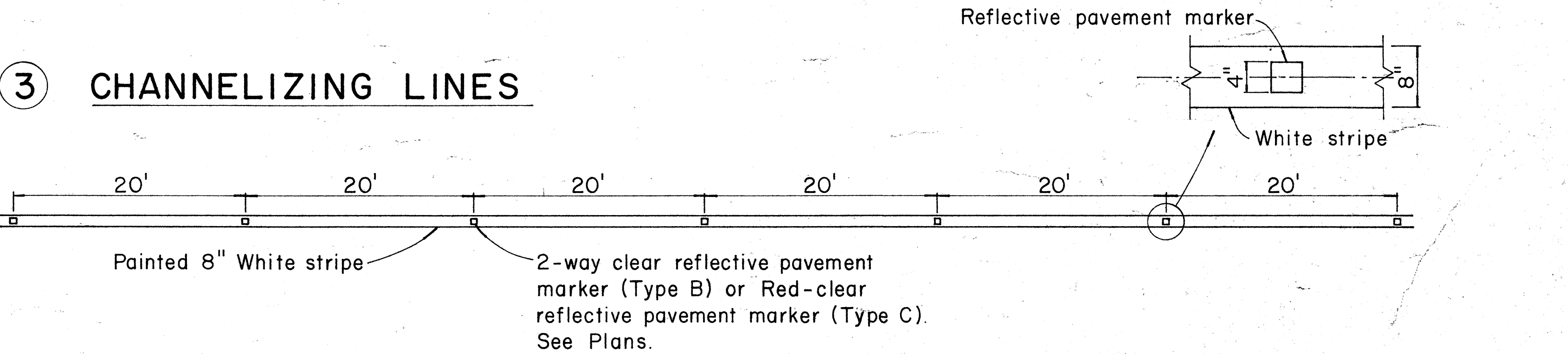
1 CENTER LINES ON TWO - LANE RURAL ROADS AND CITY STREETS



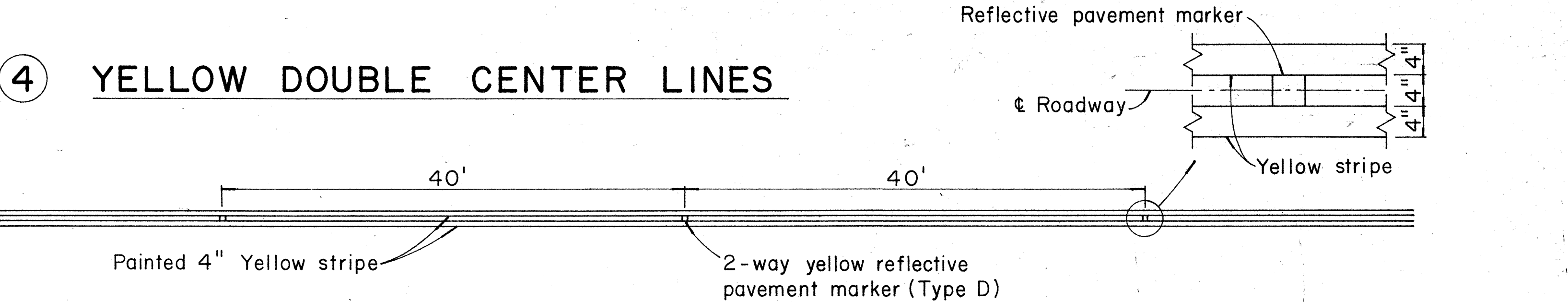
2 LANE LINES



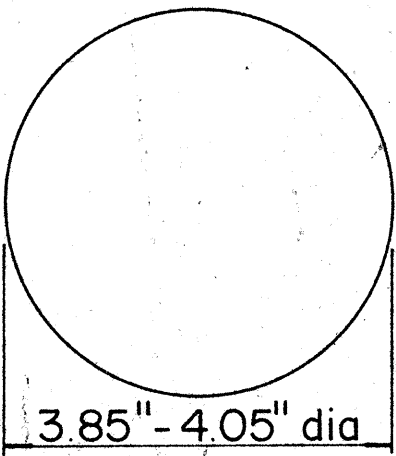
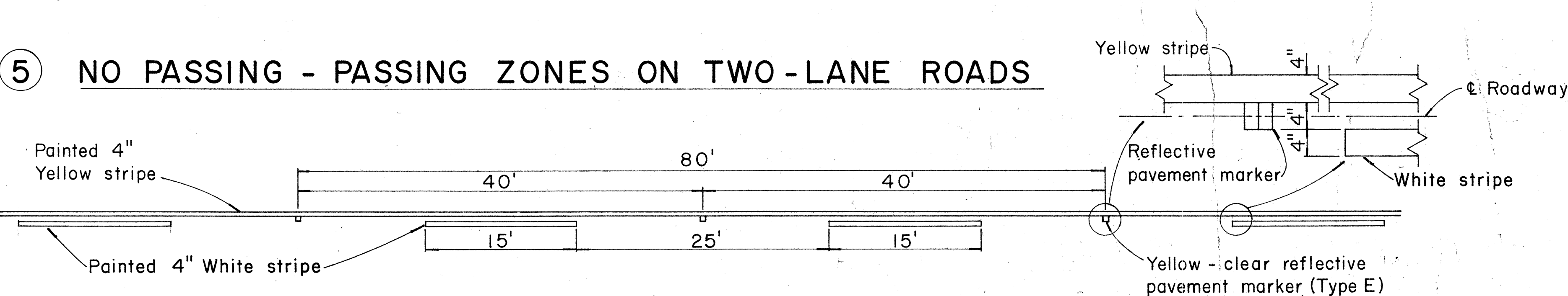
3 CHANNELIZING LINES



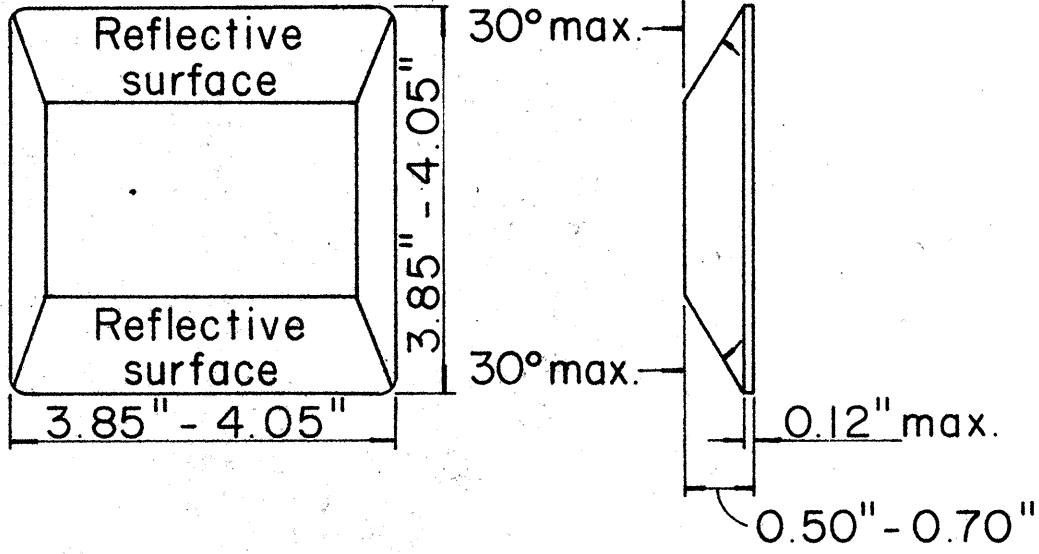
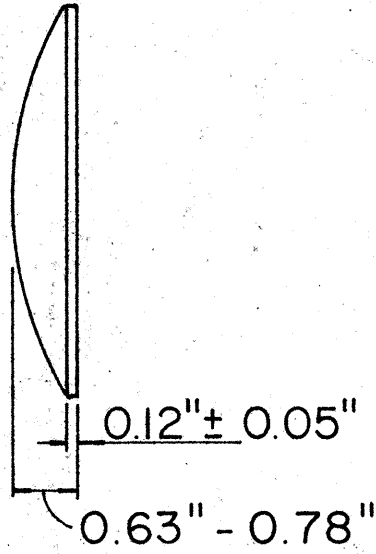
4 YELLOW DOUBLE CENTER LINES



5 NO PASSING - PASSING ZONES ON TWO-LANE ROADS

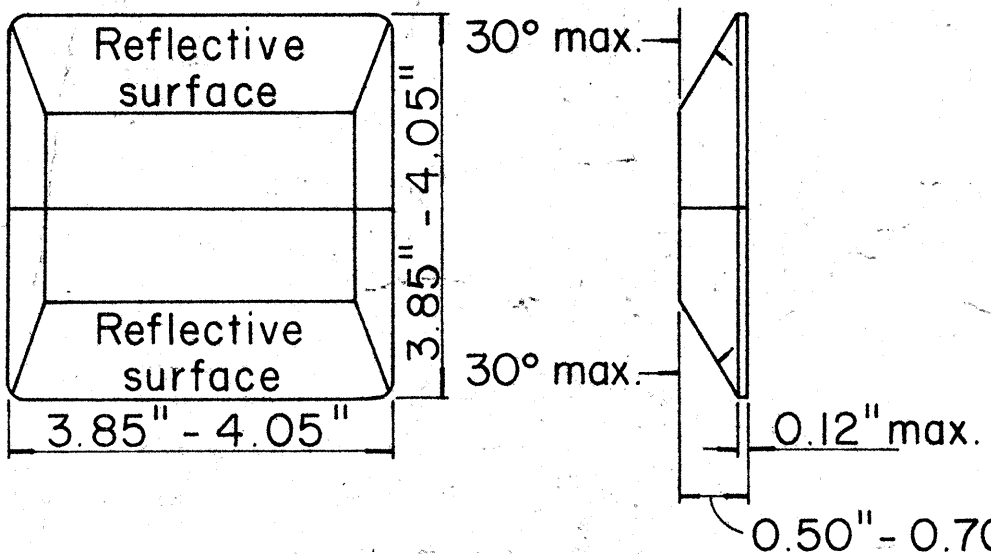


TYPE A
Non-reflective white marker



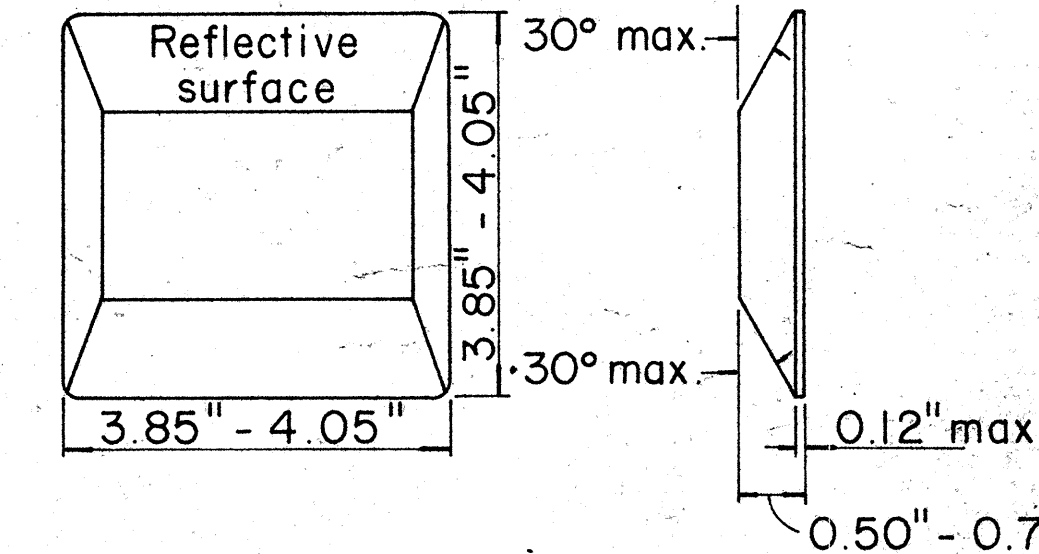
TYPE B
2-way clear reflective surface

TYPE D
2-way yellow reflective surface



TYPE C
Red-clear reflective surface

TYPE E
Yellow-clear reflective surface



TYPE H
One-way yellow reflective surface

TYPE G
One-way clear reflective surface

NOTE:
Painted stripes to be done by State forces

REVISED: Aug. 26, 1968

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

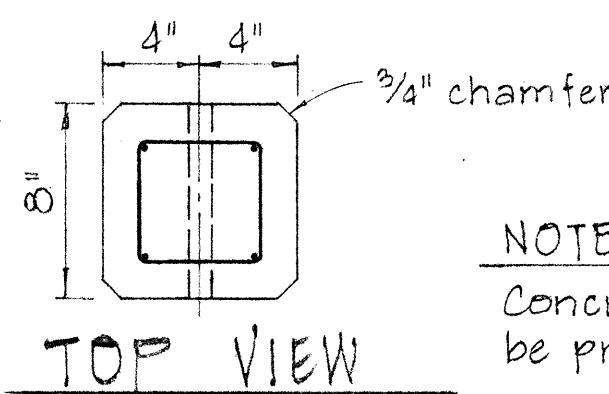
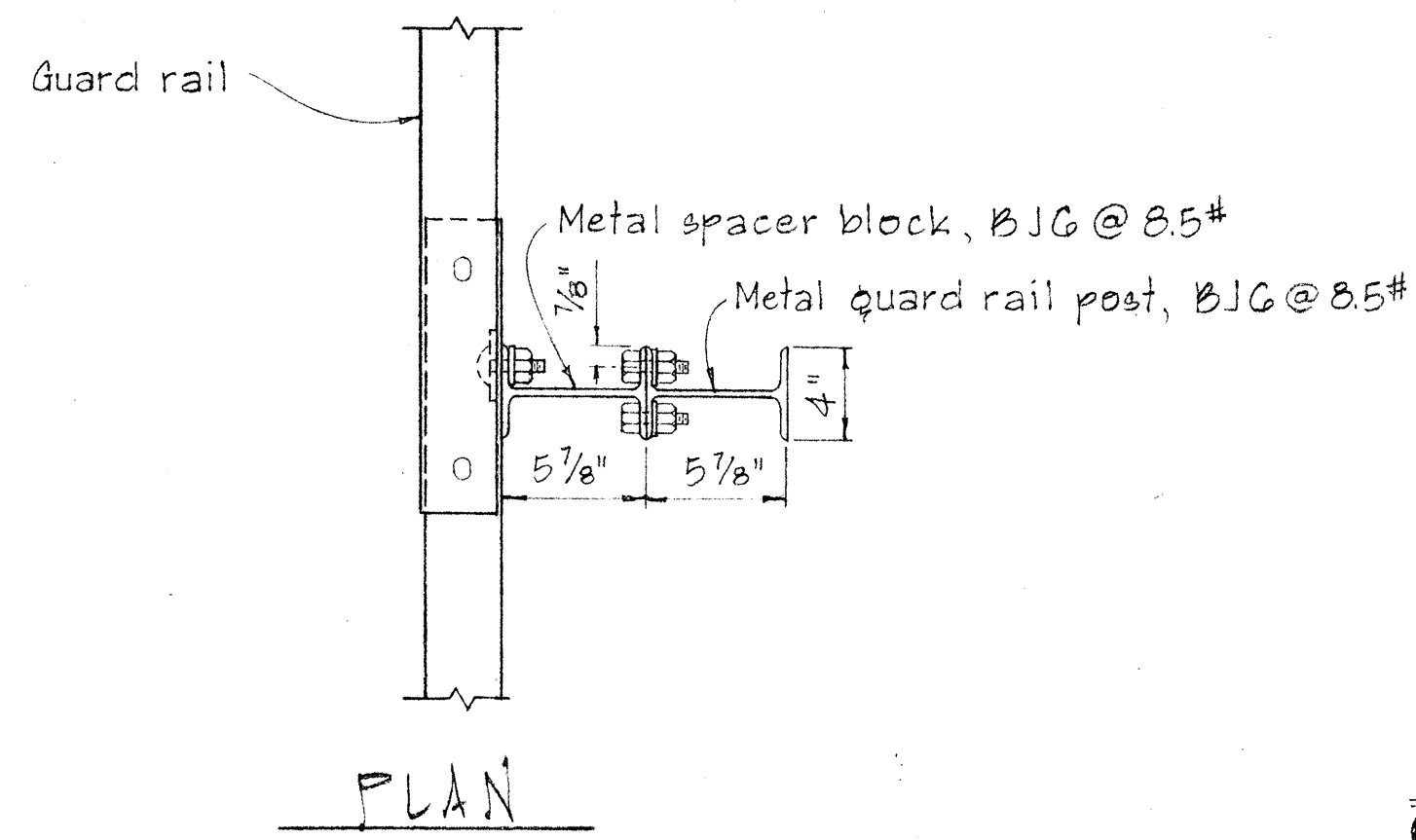
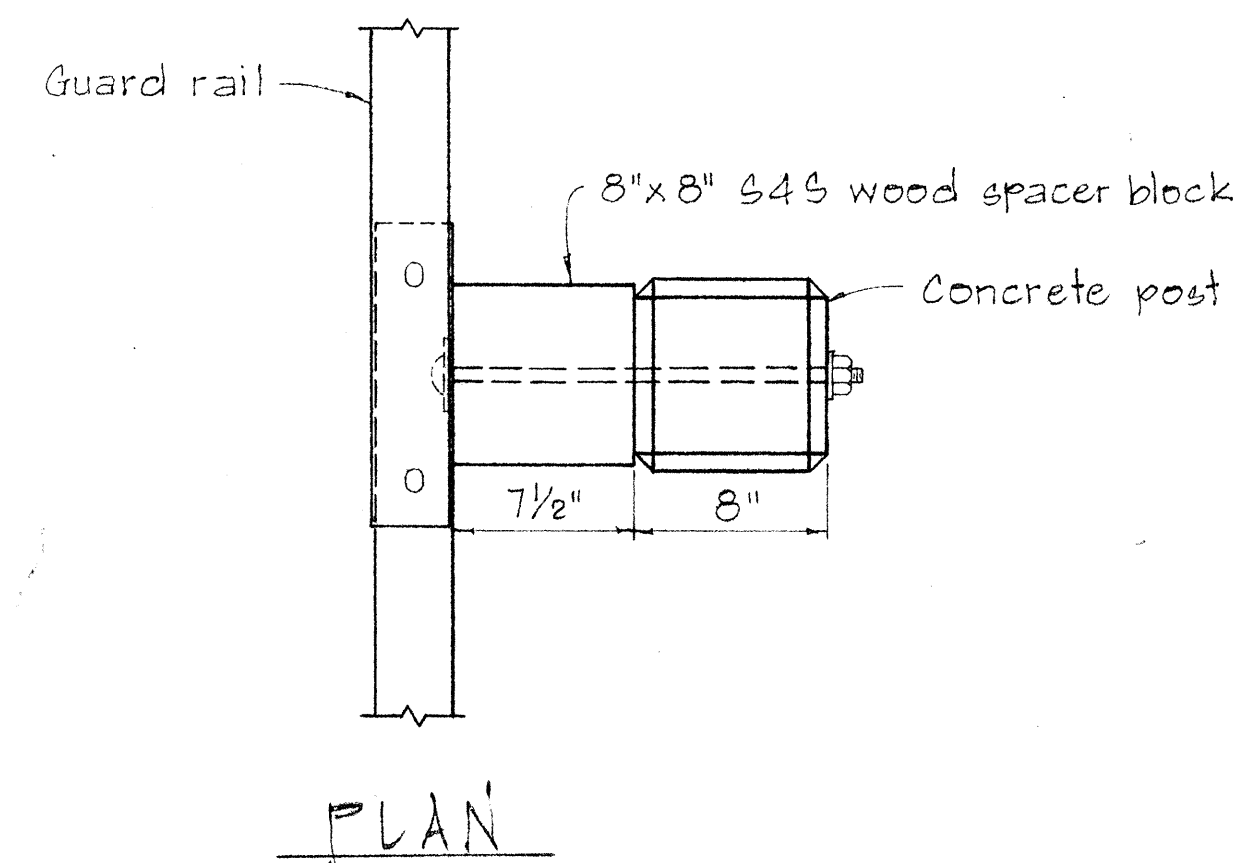
STANDARD DETAILS
RAISED PAVEMENT MARKERS

Not to Scale

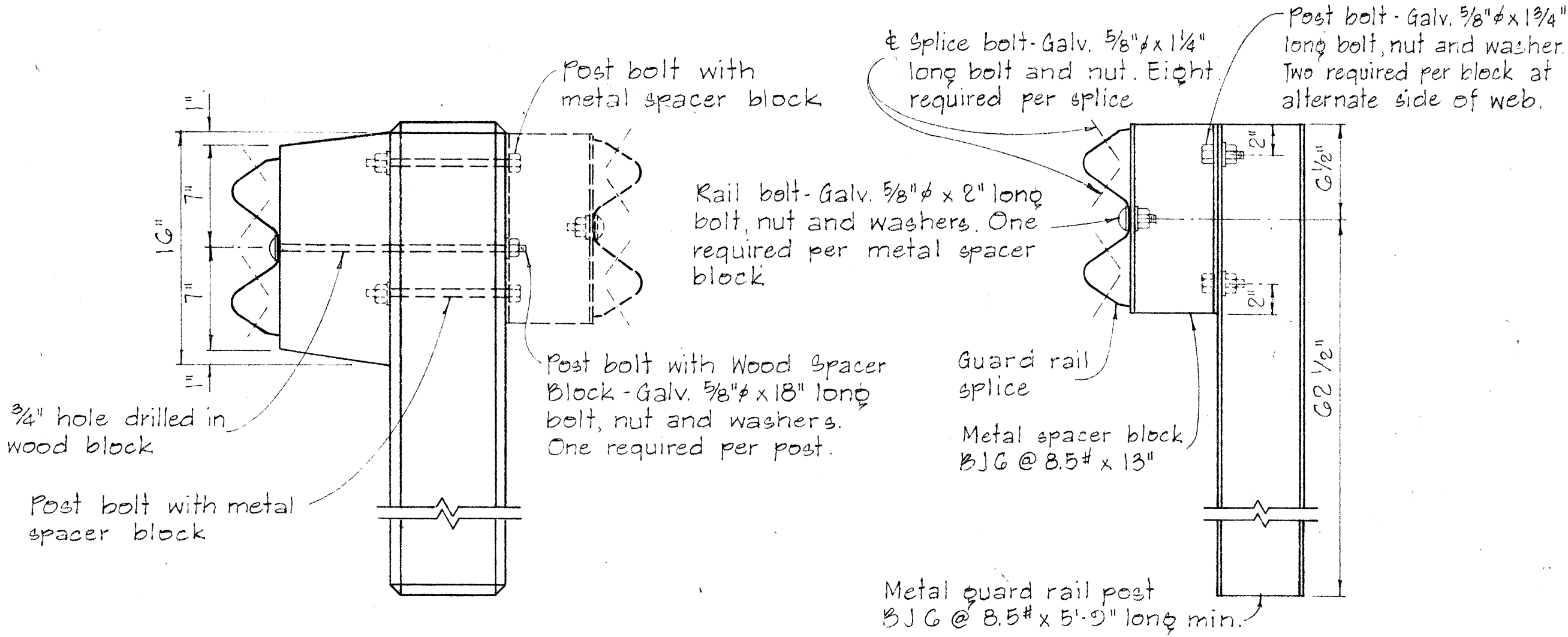
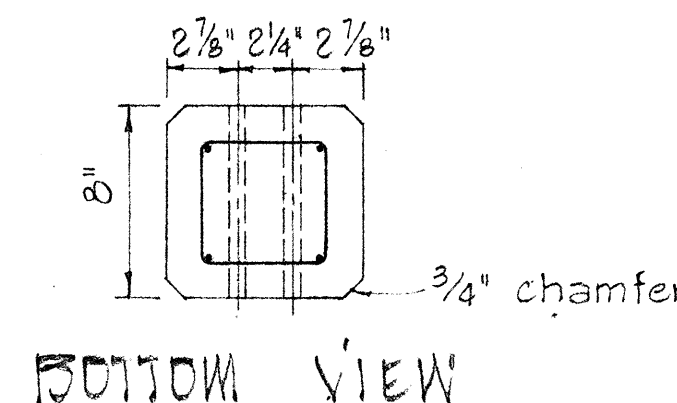
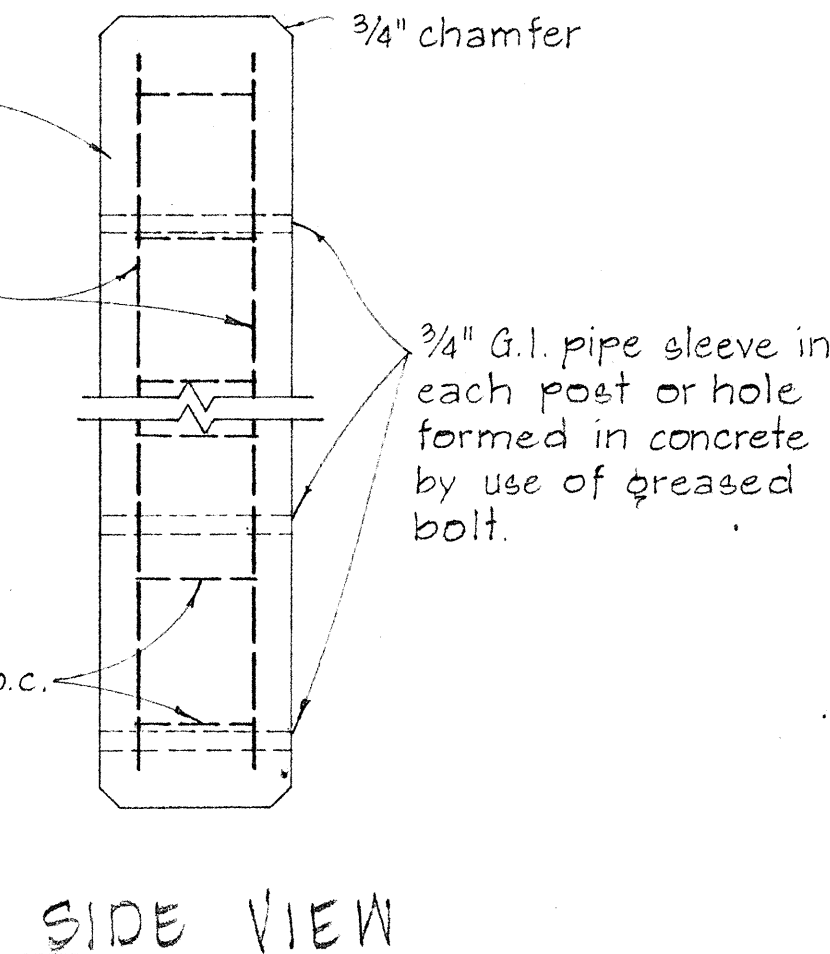
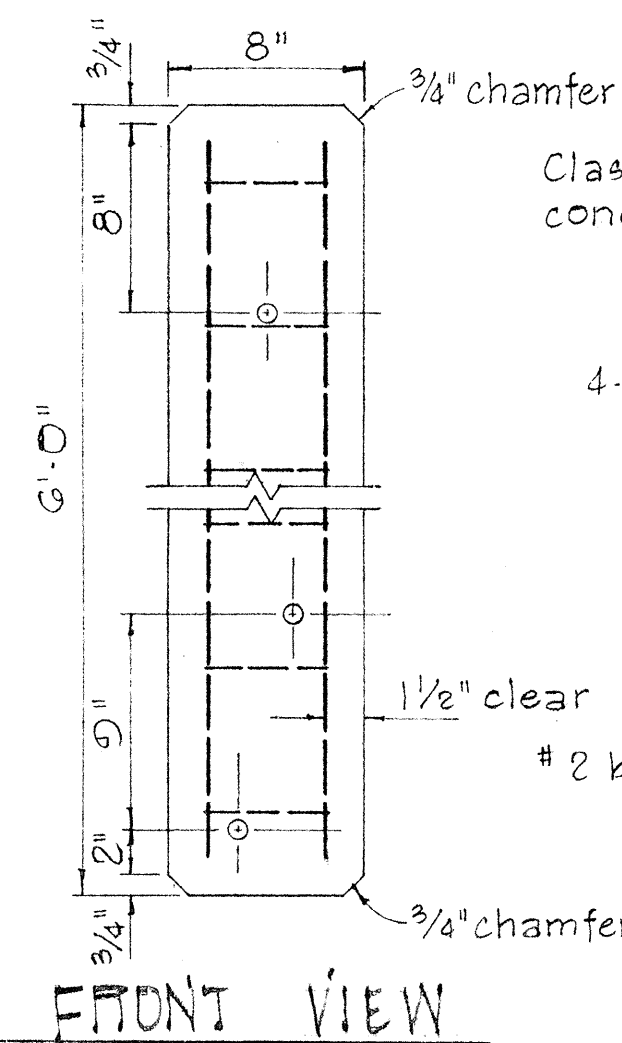
SHEET No. 3 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	20	26

REVISED: 12-11-68
REVISED: 2-26-69

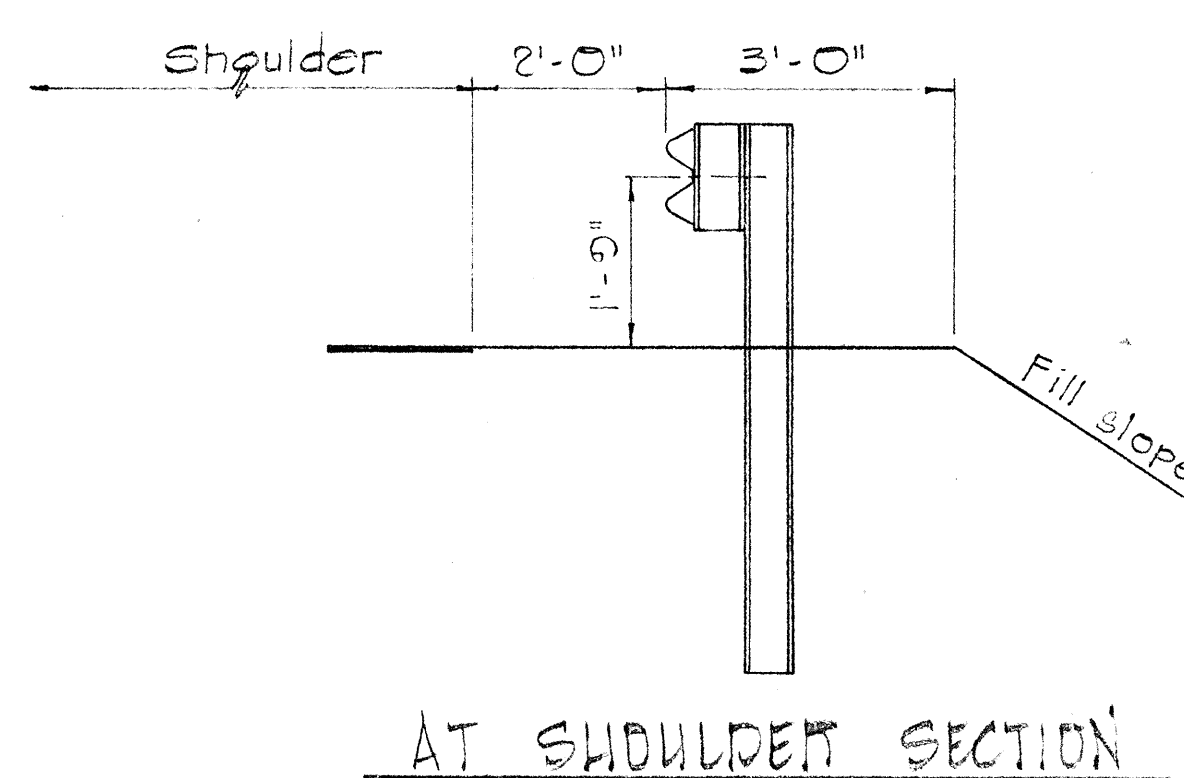
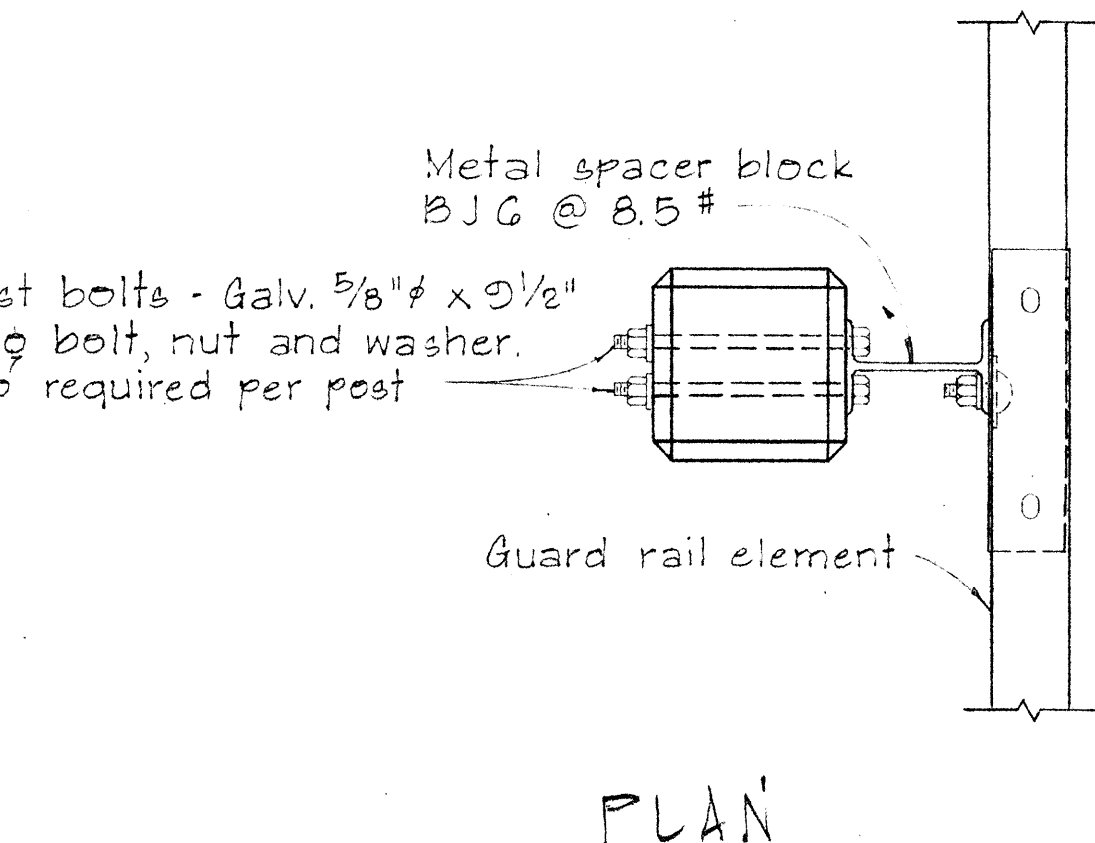


NOTE:
Concrete post shall be precast



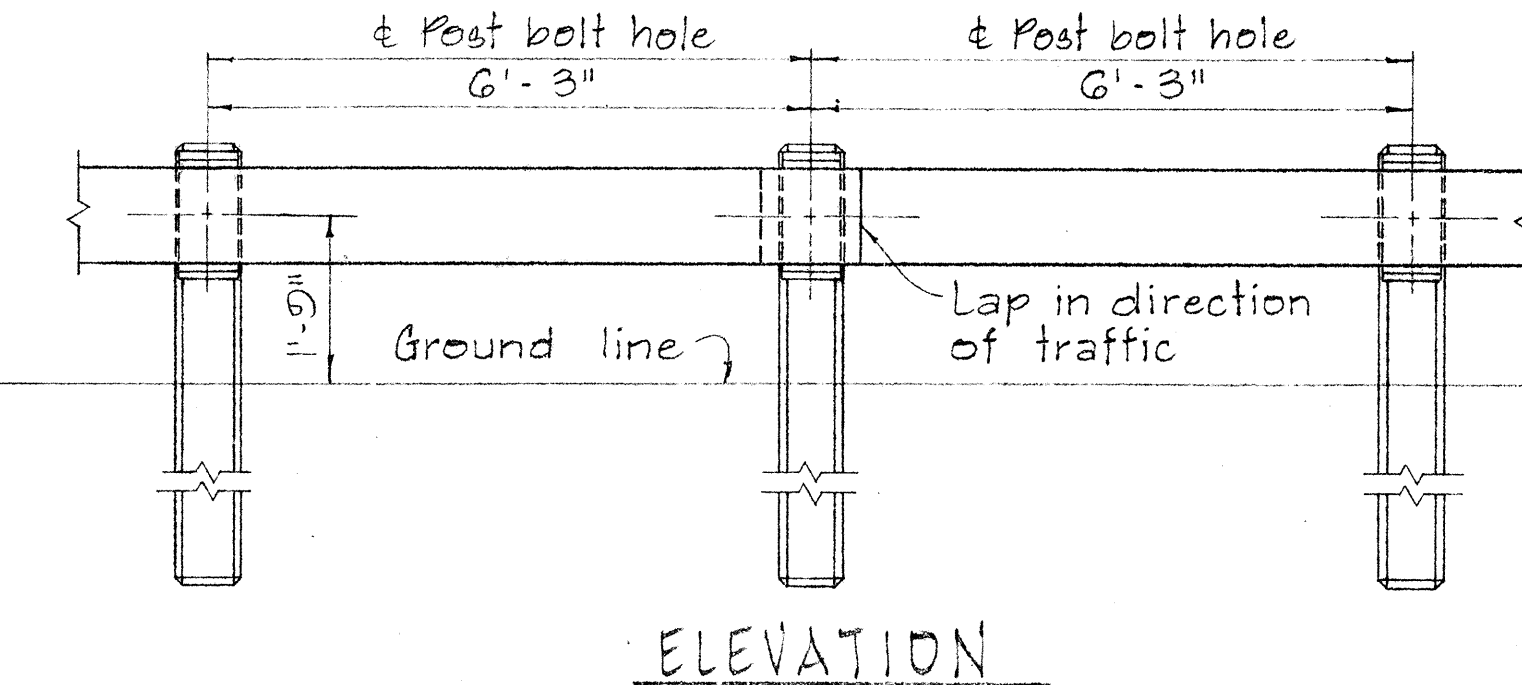
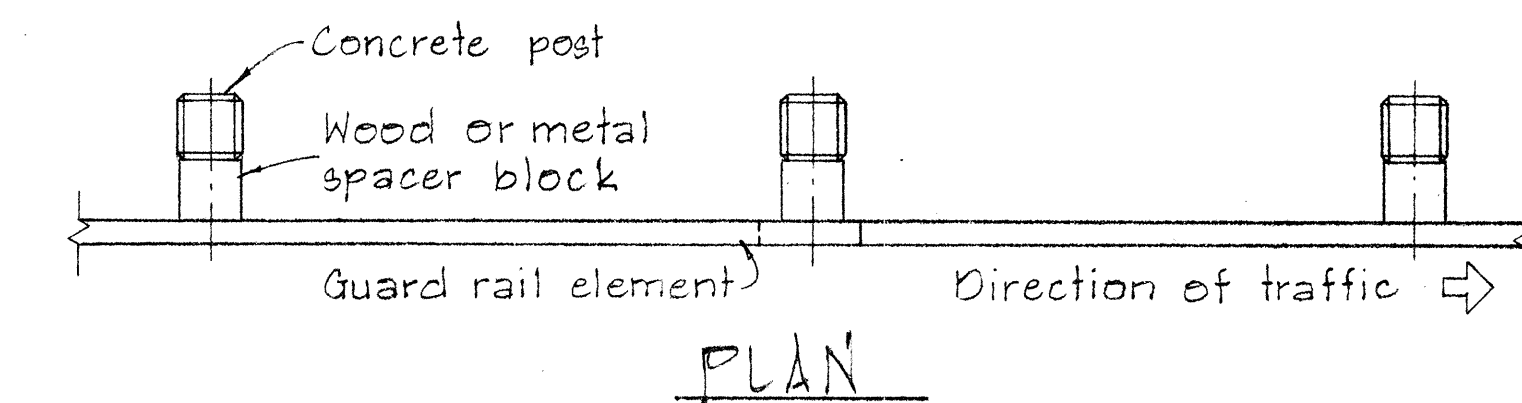
SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

DETAIL OF CONCRETE POST
SCALE: 1 1/2" = 1'-0"

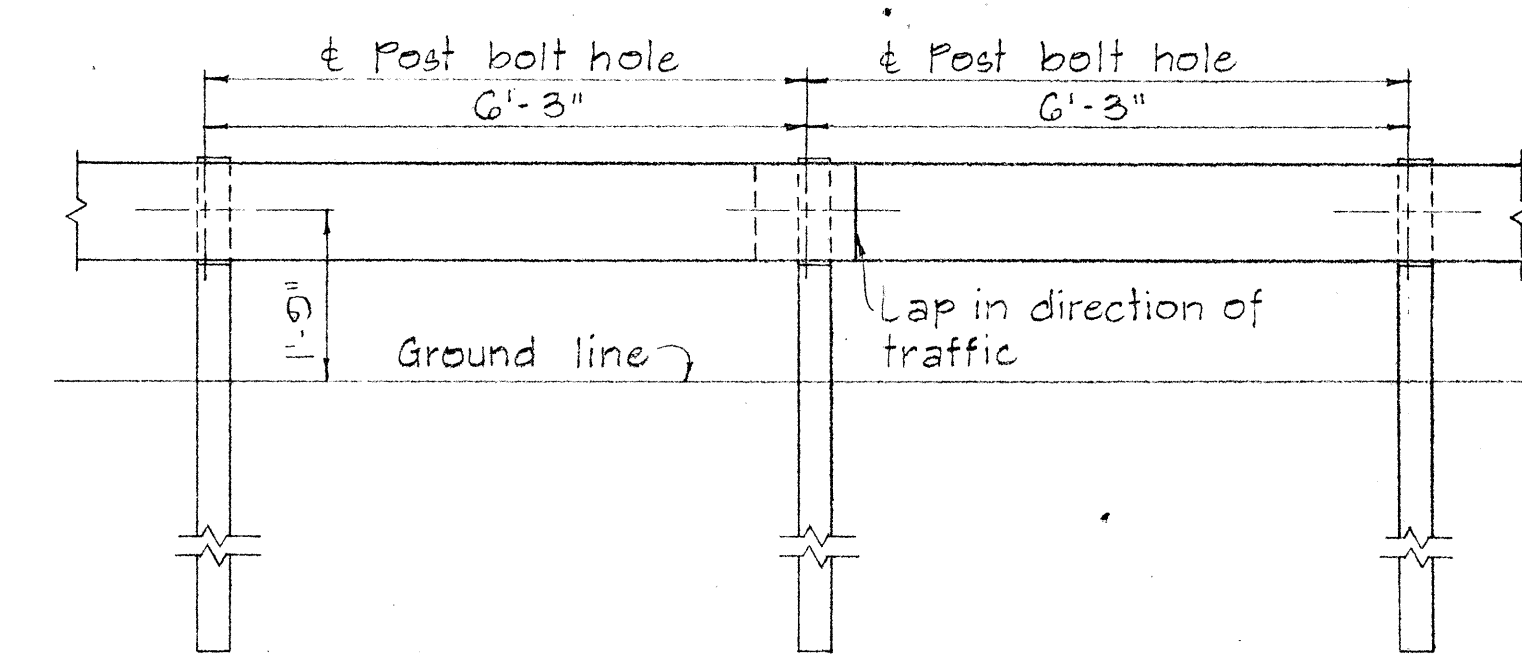
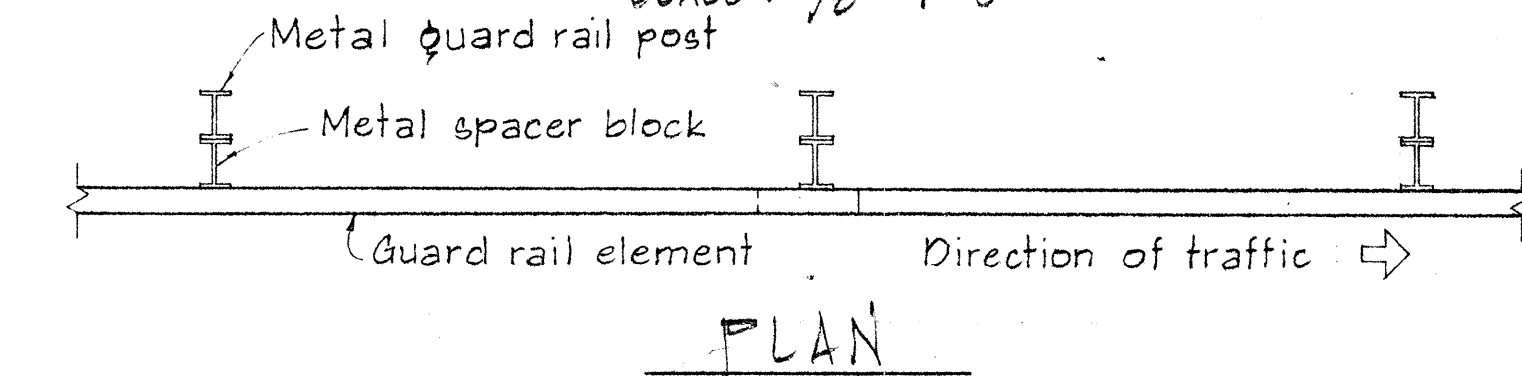


SINGLE METAL GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

TYPICAL METAL GUARD RAIL DETAIL
SCALE: 1 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"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN NOV. 1968

SHEET No. 4 OF 10 SHEETS DT 500

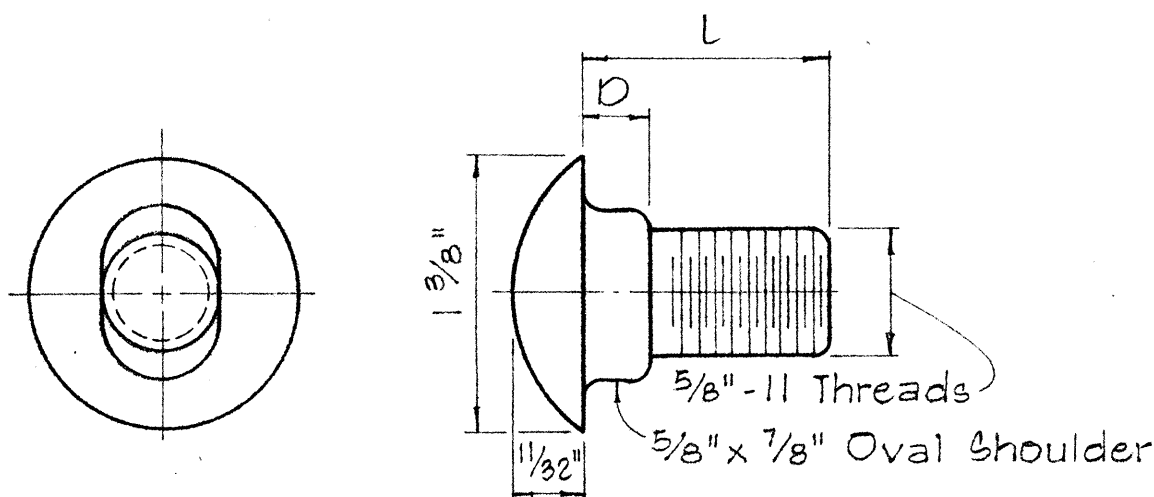
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
APPROVED BY	
NOTED BY	
REVISIONS	
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	21	26

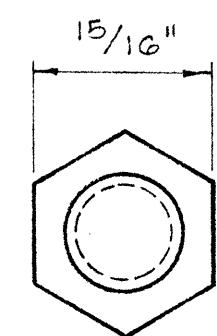
Revised: Dec. 11, 1968



TYPE A BOLT

SPlice RAIL AND POST BOLTS

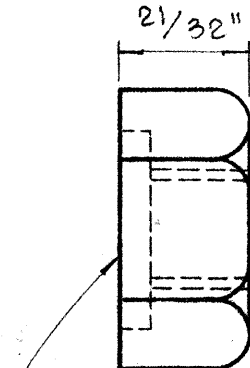
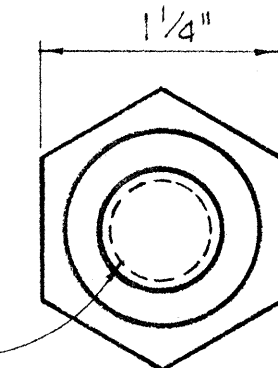
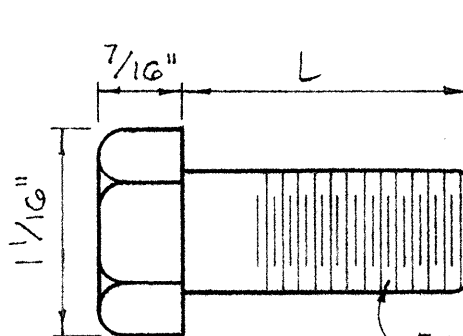
Scale: Full Size



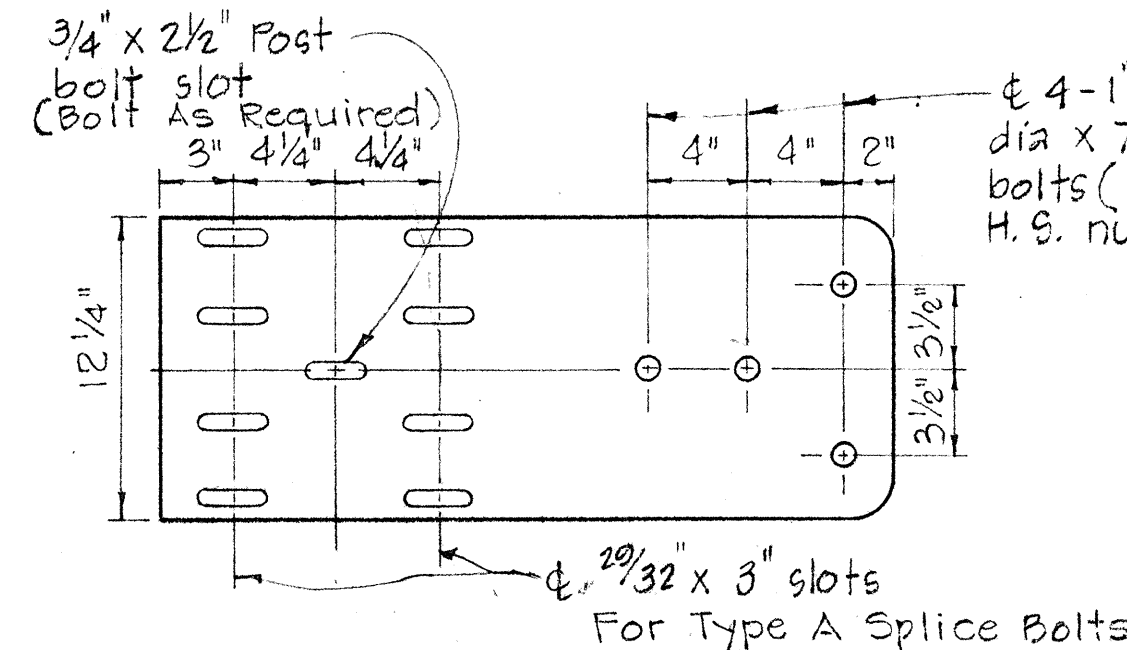
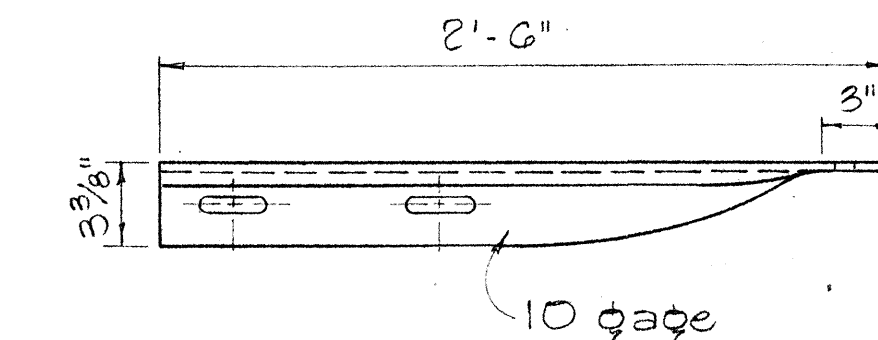
TYPE B BOLT

HEXAGON NUT

Scale: Full Size

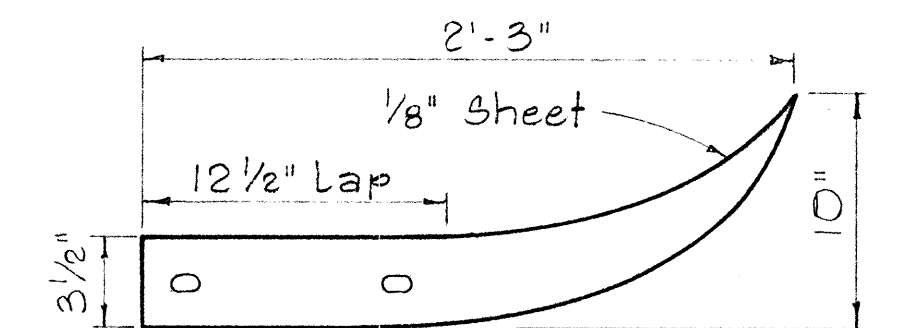


5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only. Plain nut for Type B Bolt.



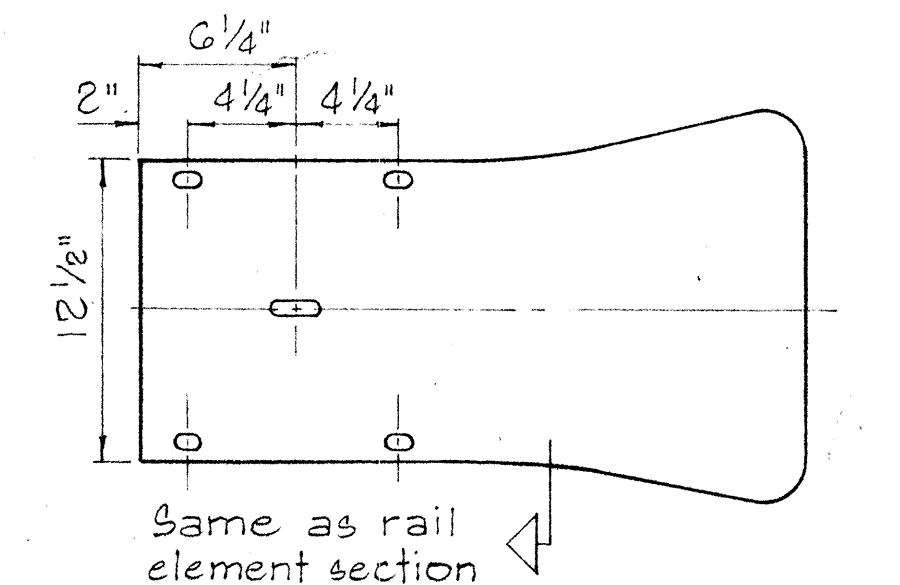
SPECIAL END SHOE

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

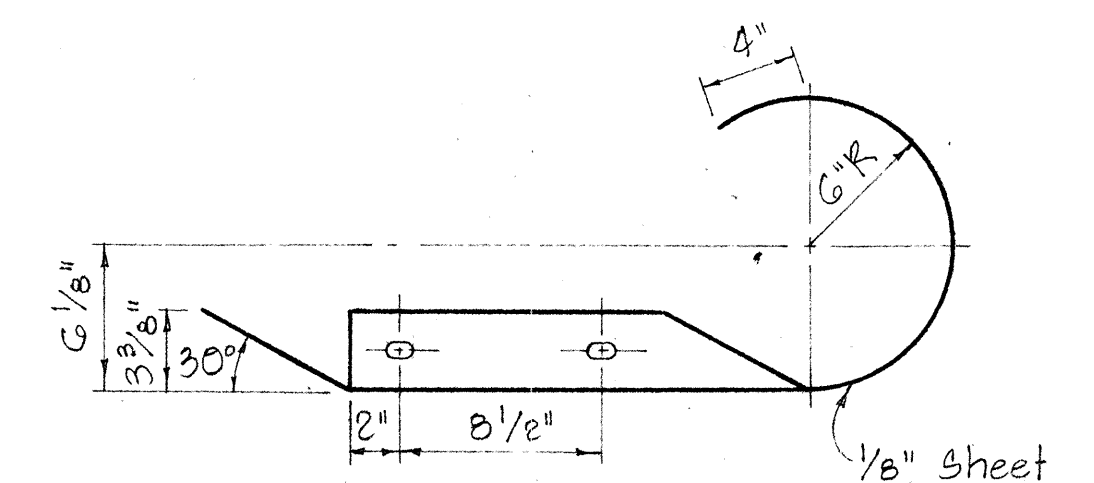


FLARED END

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

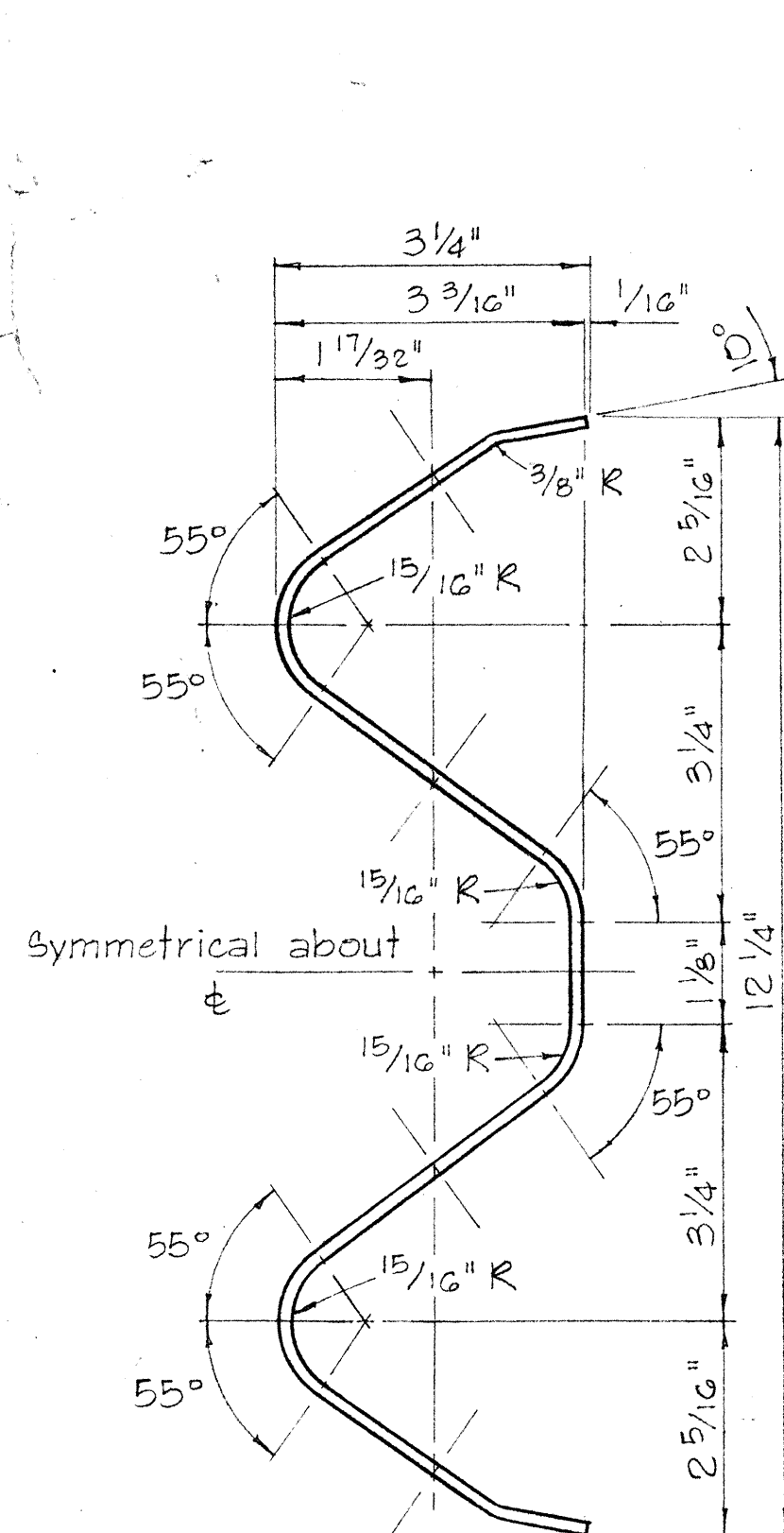
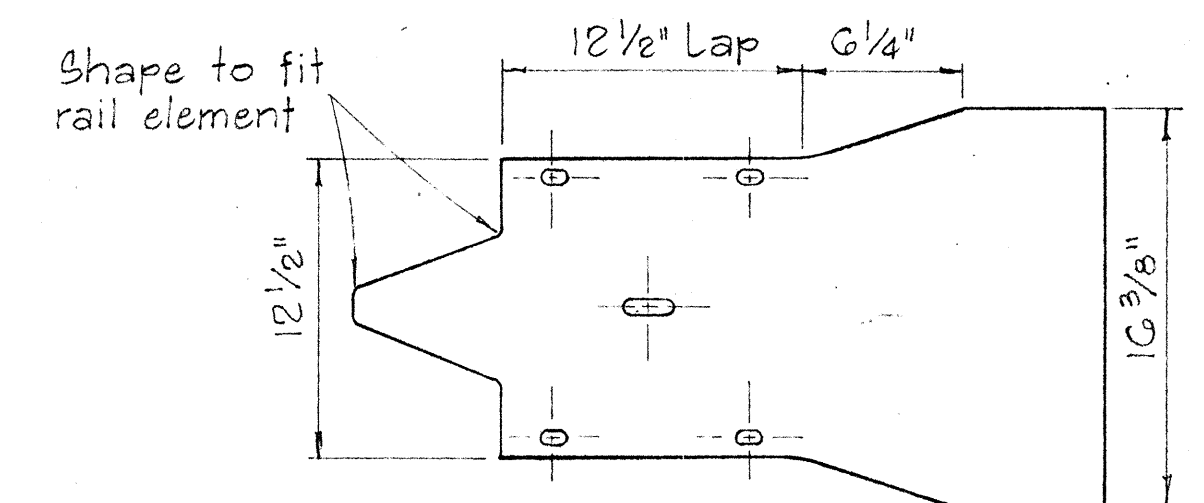


Same as rail element section



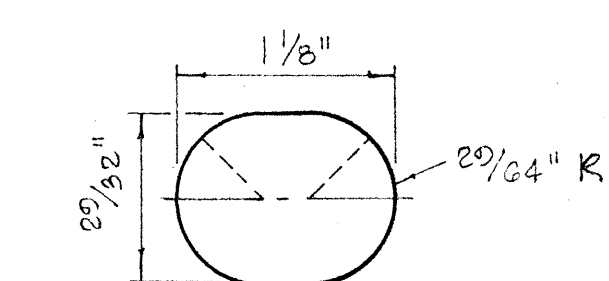
CURVED END

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



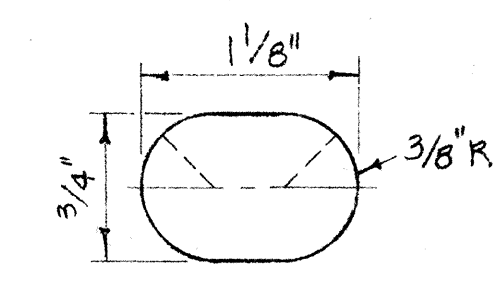
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

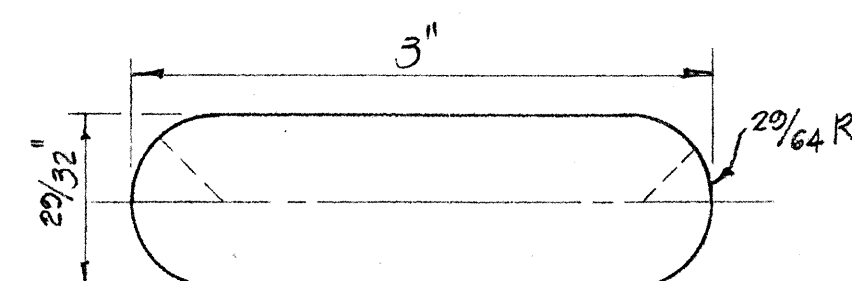


SPlice BOLT SLOT

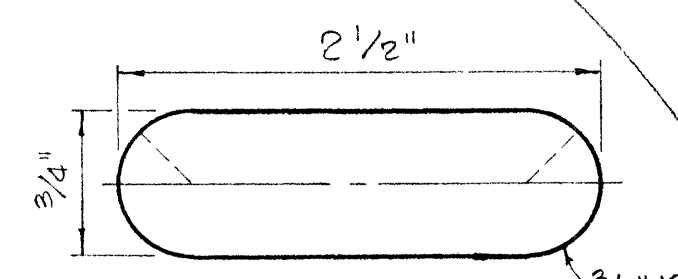
Scale: Full Size



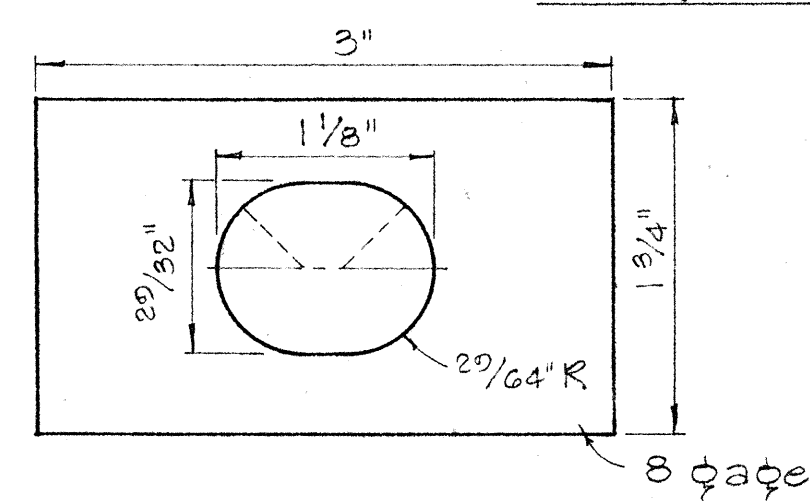
SPlice BOLT SLOT FOR ALL ENDS



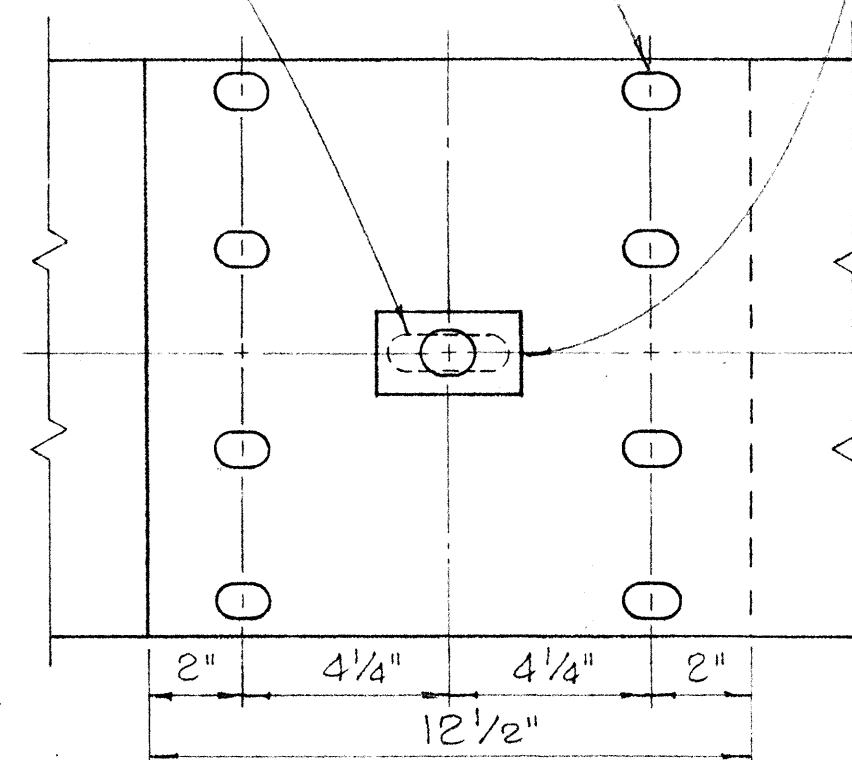
SPlice BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER

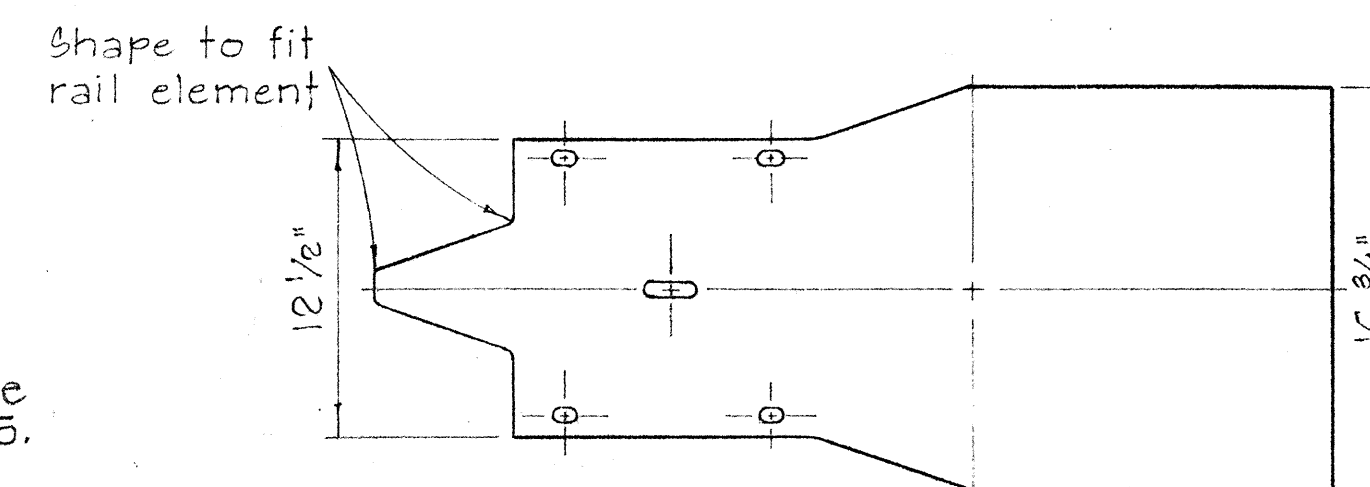


RAIL SPlice

Scale: 3" = 1'-0"

NOTES:

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



MEDIAN END

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

MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	25 3/4"	14 1/8"
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"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

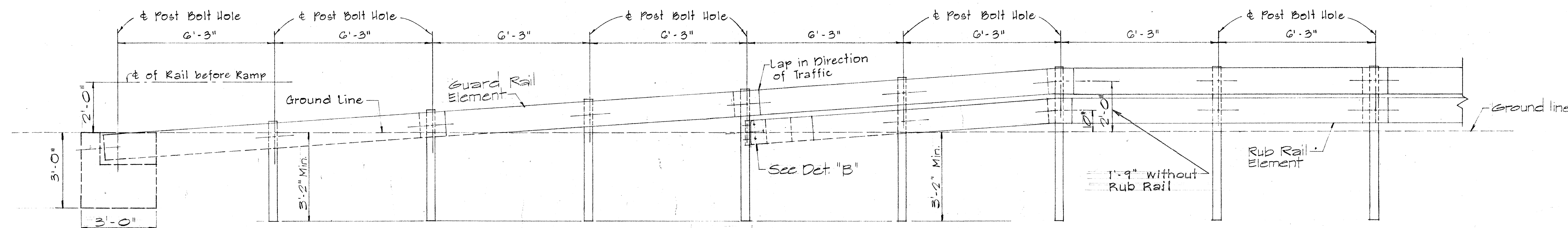
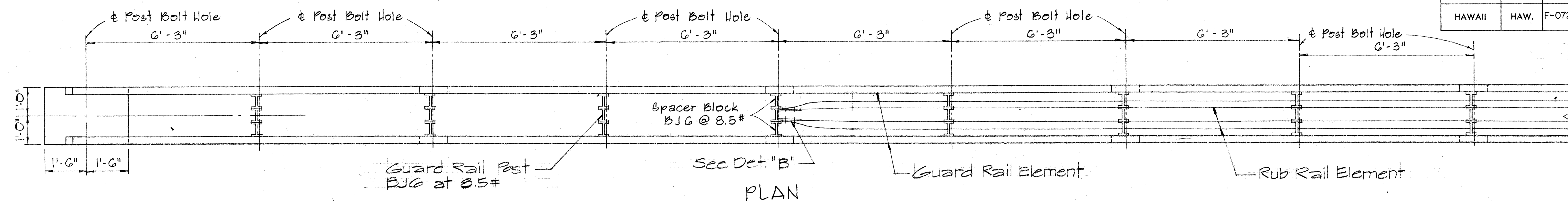
STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted

August, 1968

SHEET No. 5 OF 10 SHEETS DT 501

REVISED: 12-11-68
REVISED: 2-24-69

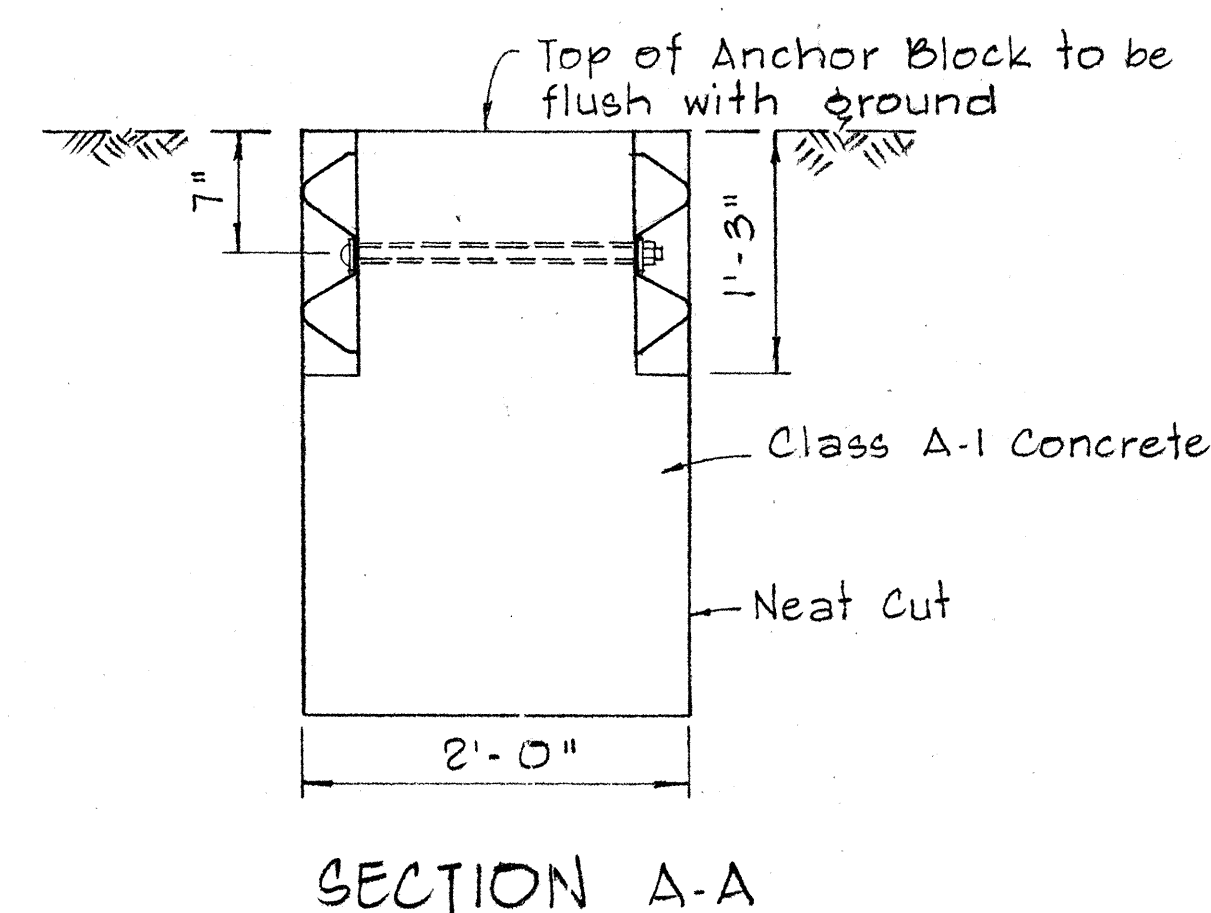
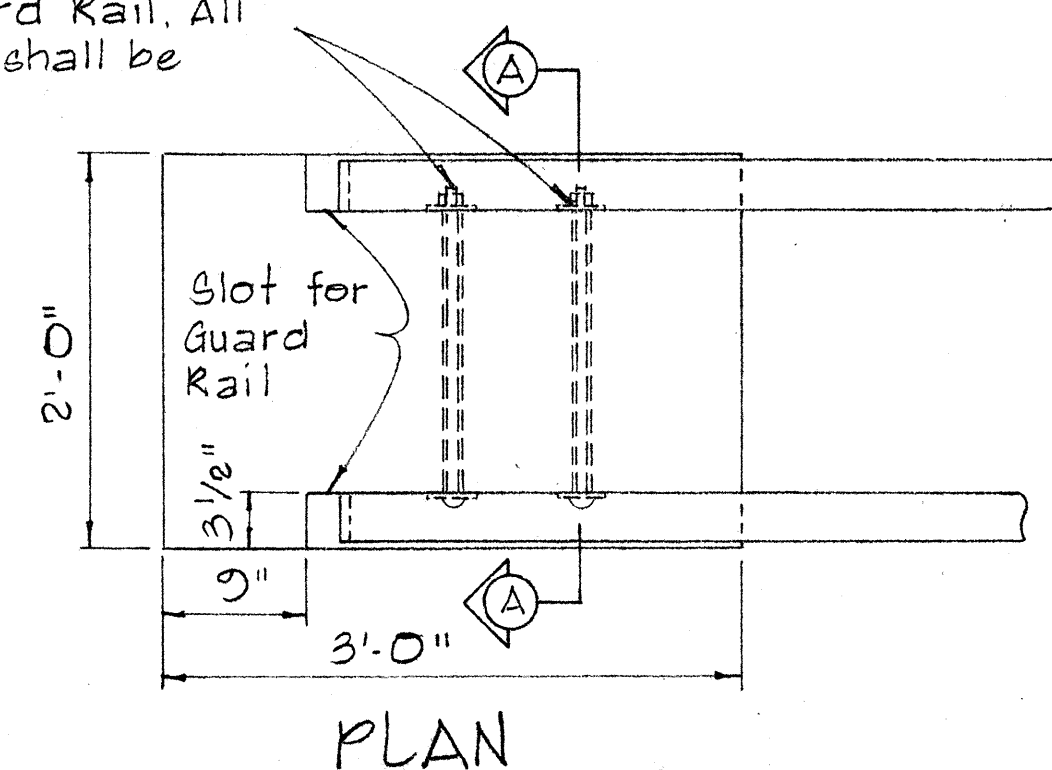


ELEVATION

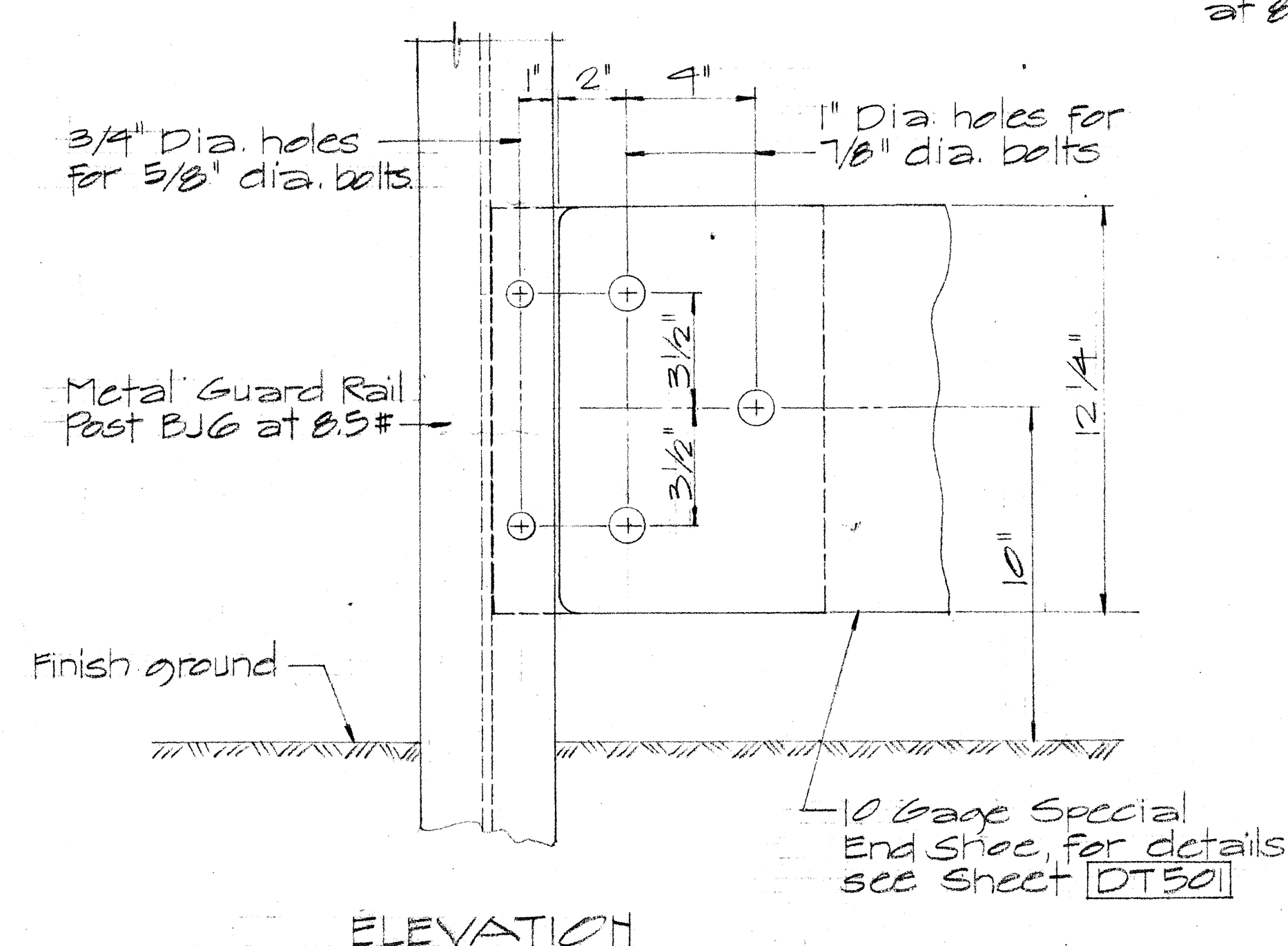
STRAIGHT APPROACH - RAMP END ANCHORAGE (MEDIAN)

Scale: $\frac{1}{2}'' = 1'-0''$

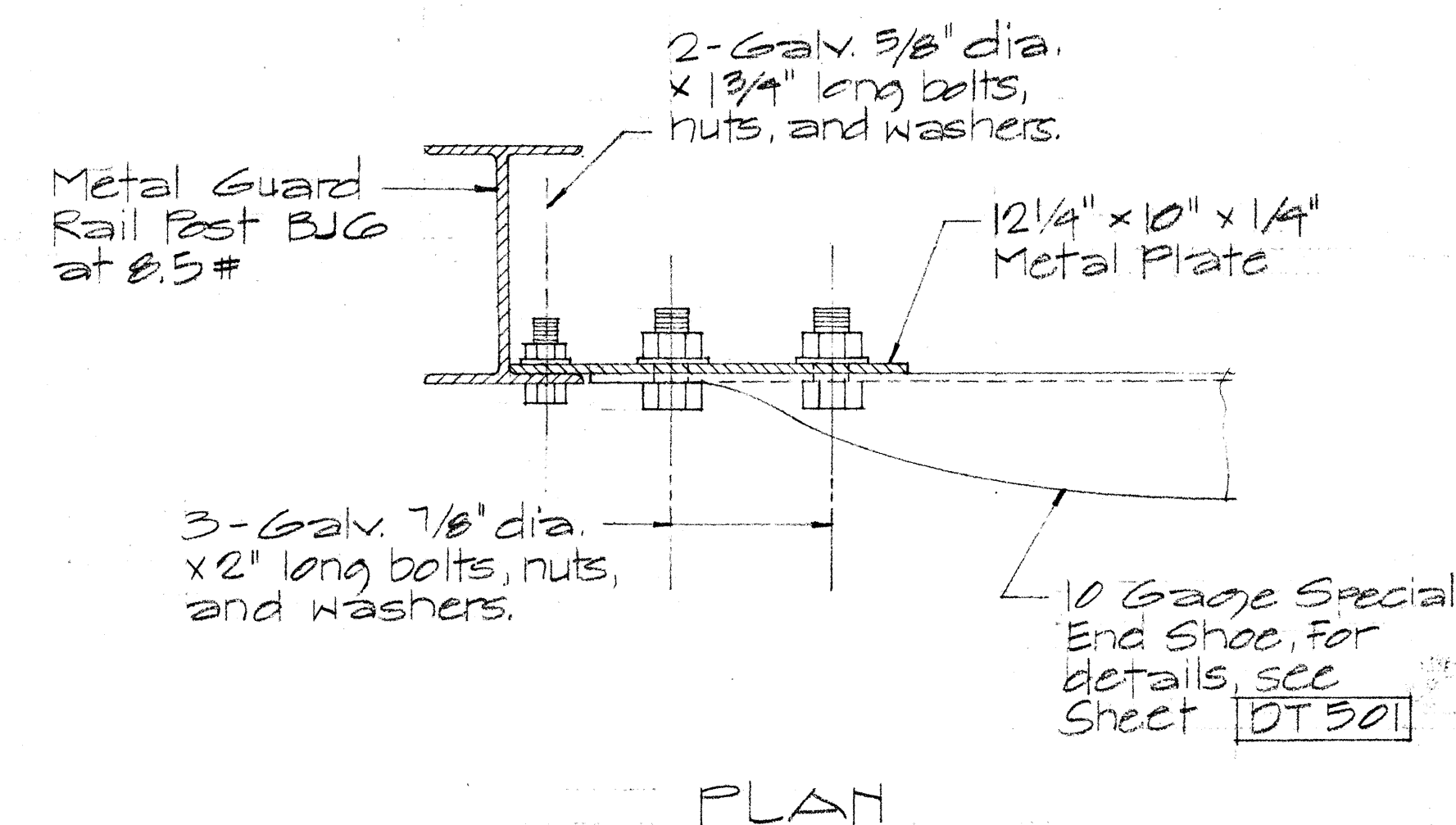
5/8" Bolts with 3/4" G. I. Pipe
Sleeve in each hole. Incidental
to Metal Guard Rail. All
Metal Pieces shall be
Galvanized.



NOTE: Concrete, Excavation, and Miscellaneous Appurtenances necessary to anchor the Guard Rail Ends, Shall be incidental to the Metal Guard Rail.



NOTE:
1. All Shoe Assembly, including anchor bolts, nuts, and washers, shall be galvanized.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL
GUARD RAIL
RAMP END ANCHORAGE

Scale: as Noted

August, 1968

SHEET No. 6 OF 10 SHEETS PT 502

ELEVATION
CONCRETE ANCHOR BLOCK FOR RAMP END

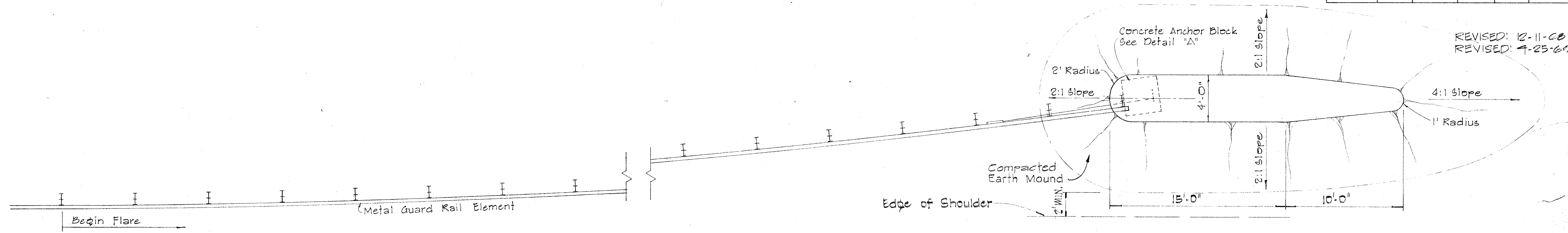
Scale: 1" = 1'-0"

ELEVATION

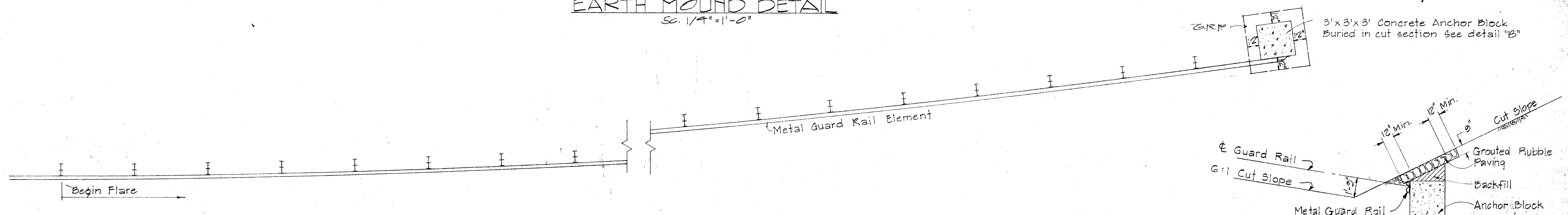
DETAIL "B"
SC 3" = 1'-0"

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	23	26

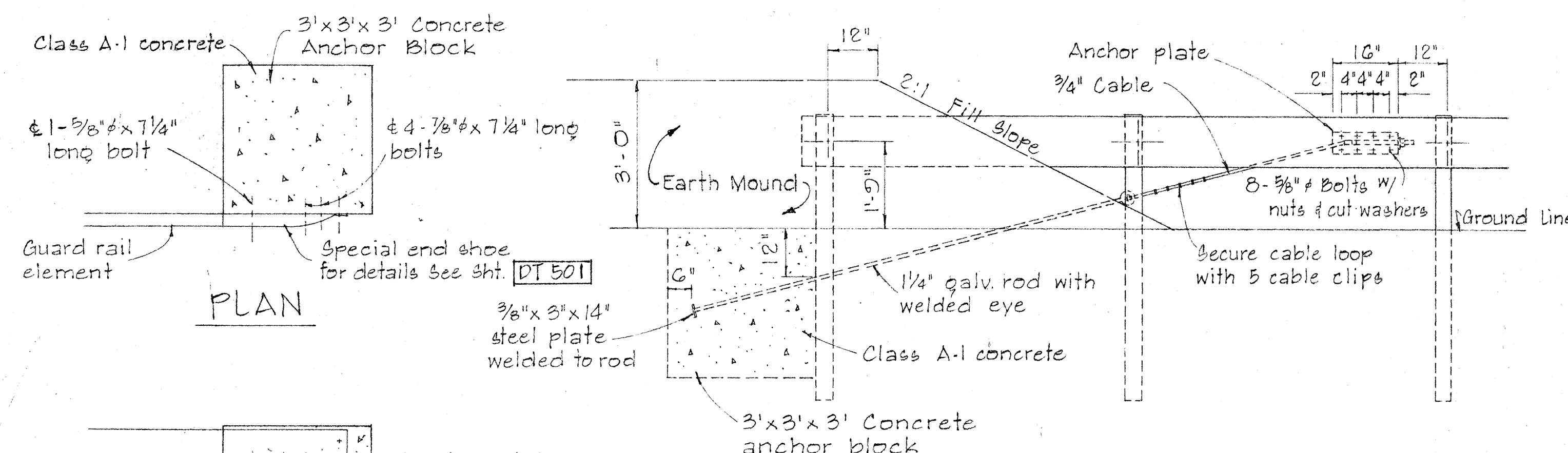


EARTH MOUND DETAIL
Scale: 1/4" = 1'-0"

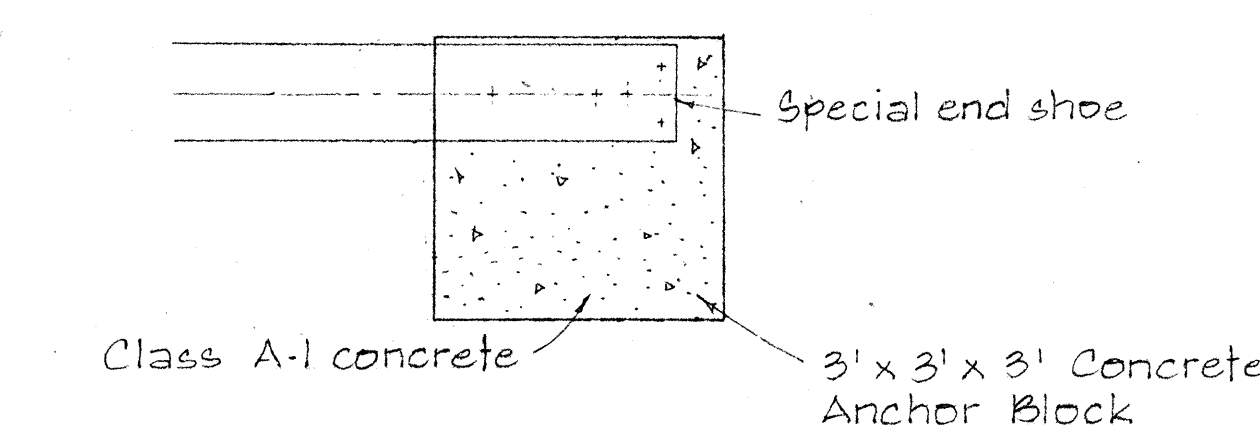


ANCHOR BLOCK IN CUT SECTION
Scale: 1/4" = 1'-0"

DETAIL "B"
Not to Scale



PLAN

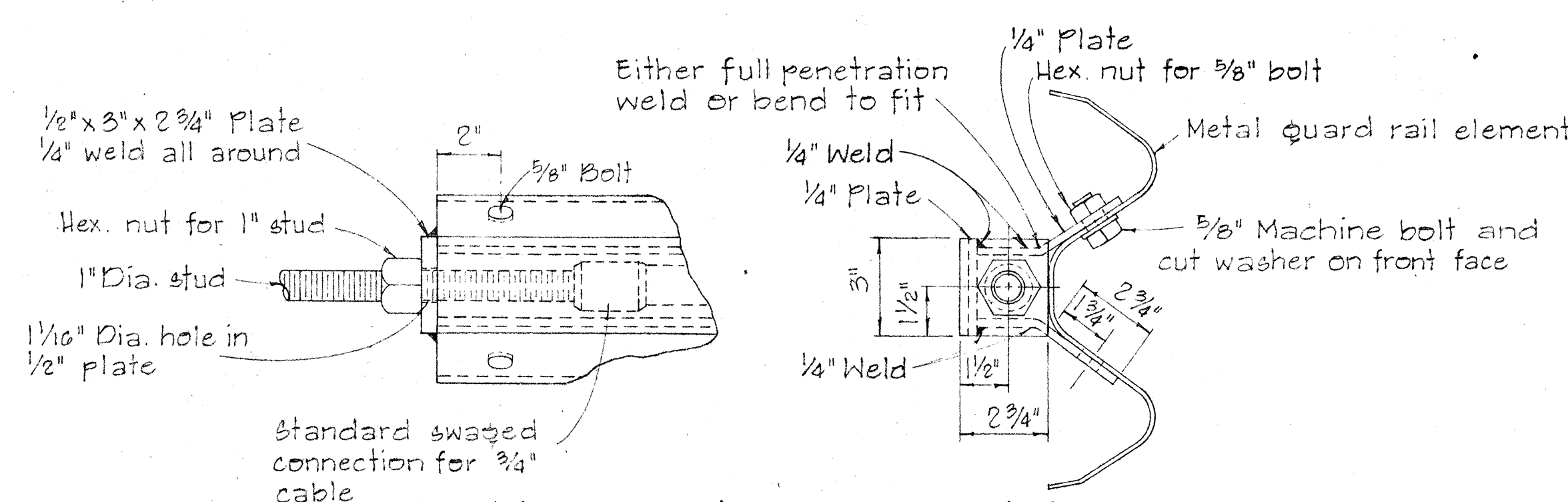


ELEVATION

ANCHOR BLOCK DETAIL
Scale: 1/2" = 1'-0"

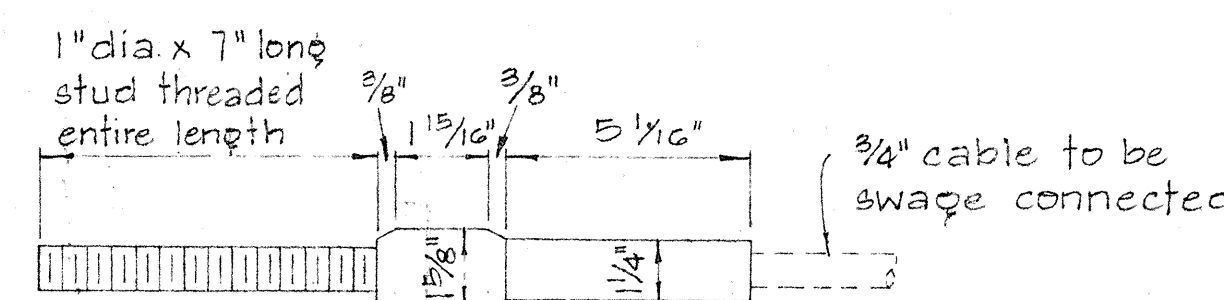
NOTE:

- Galvanized Anchor Rod, Metal Guard Rail and Post buried in ground shall be covered with coat of coal tar enamel.
- 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.



ANCHOR PLATE DETAILS

Scale: 1" = 3"



STANDARD SWAGED FITTING AND STUD

Scale: 1" = 3"

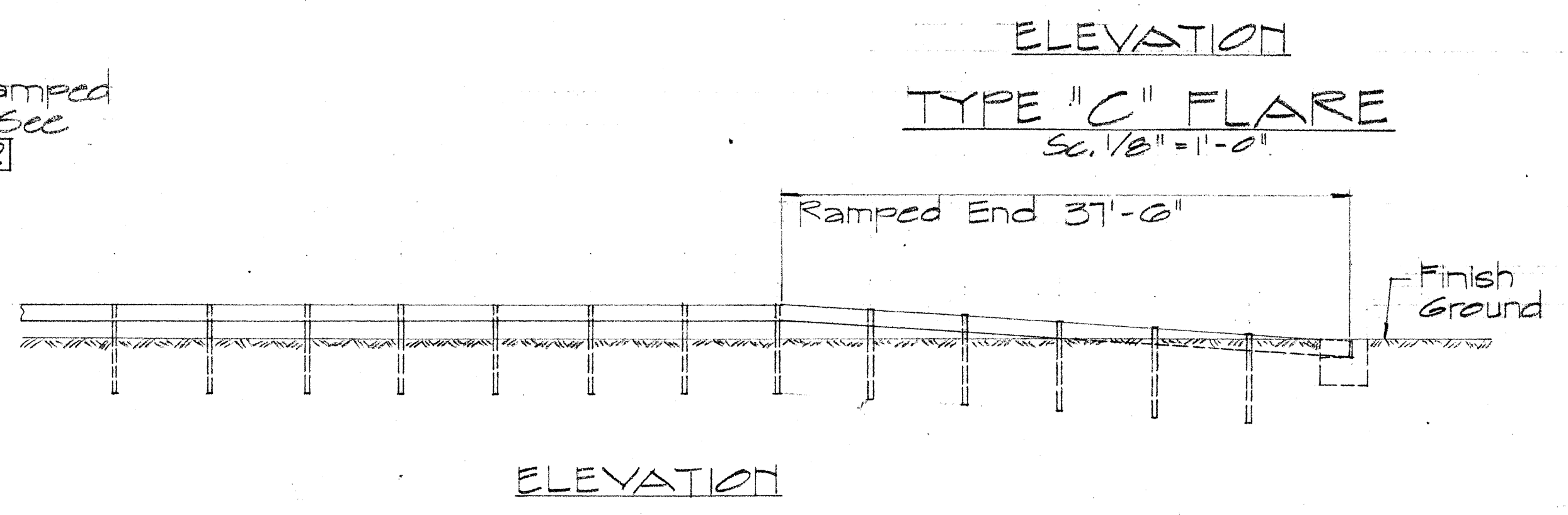
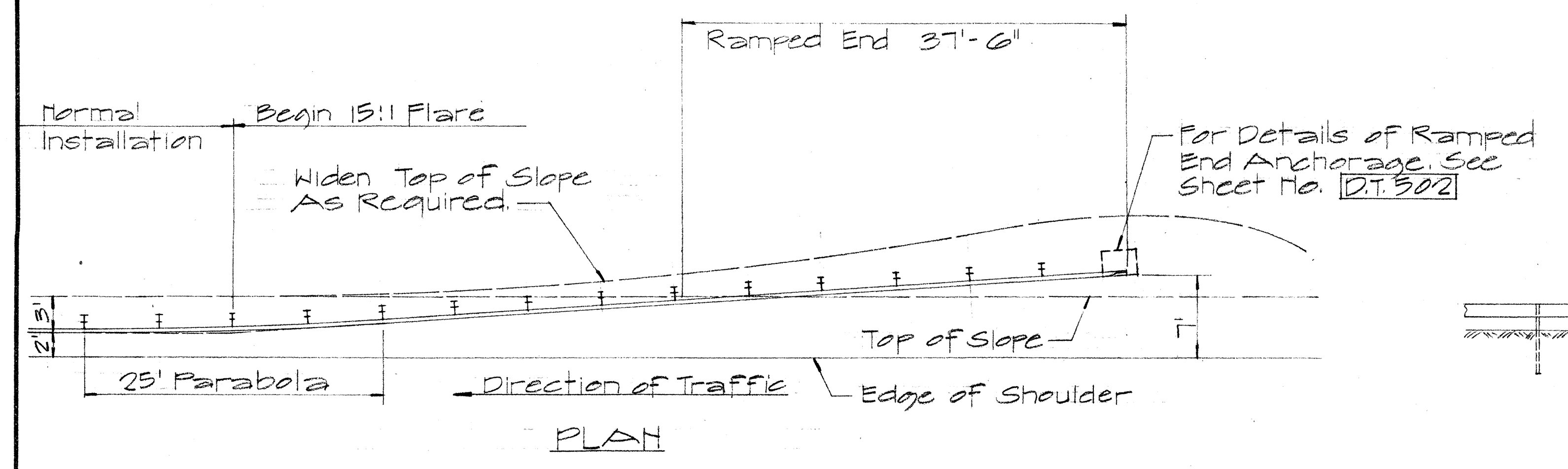
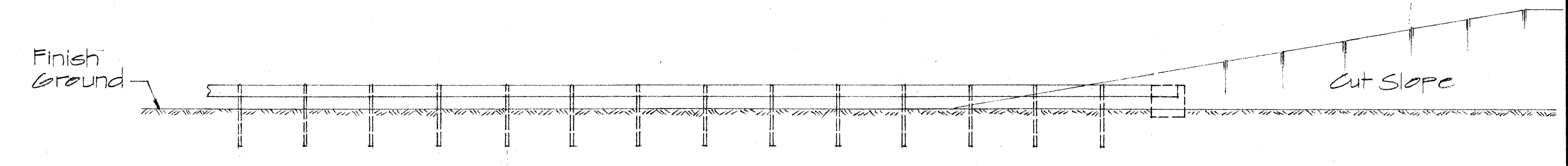
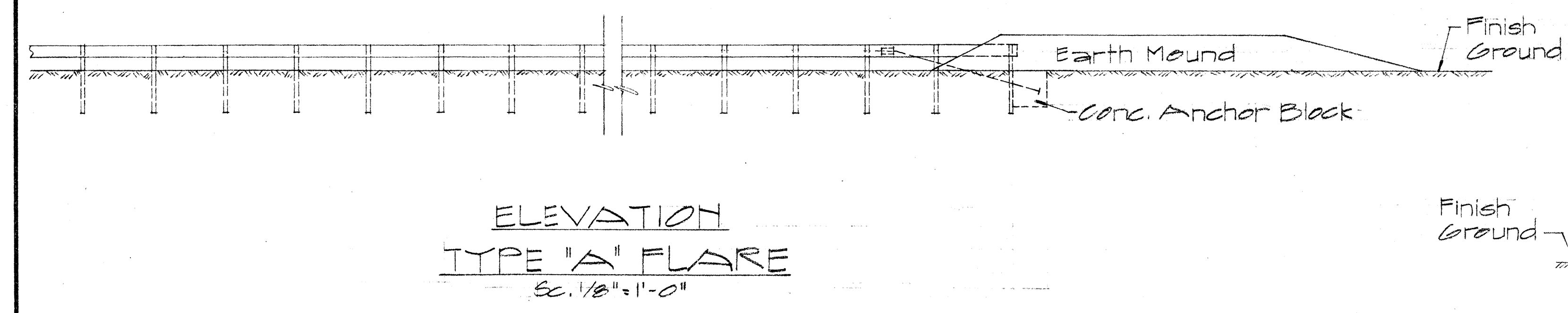
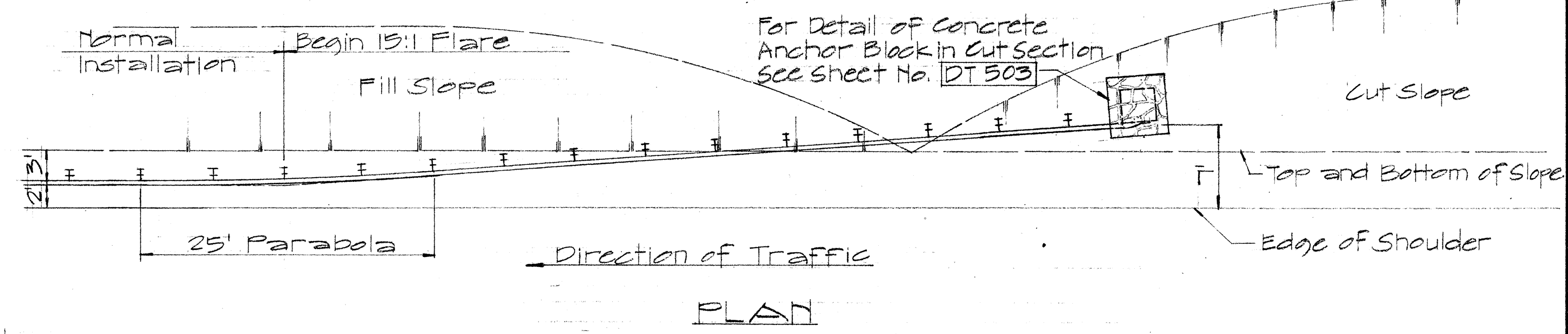
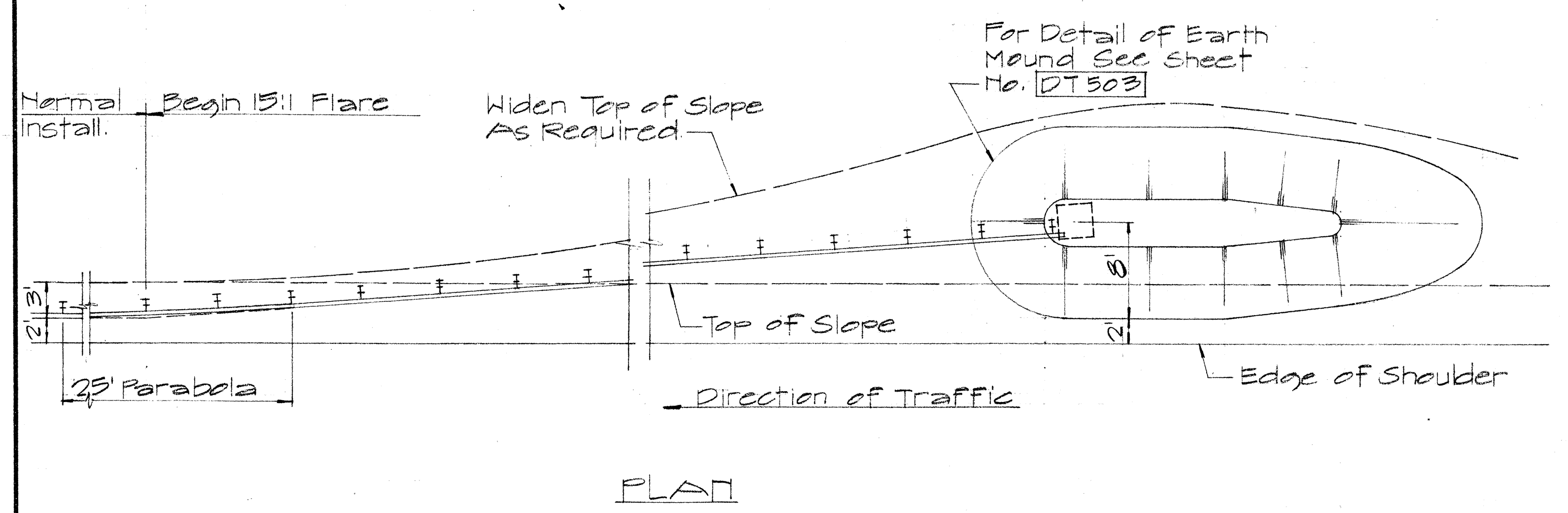
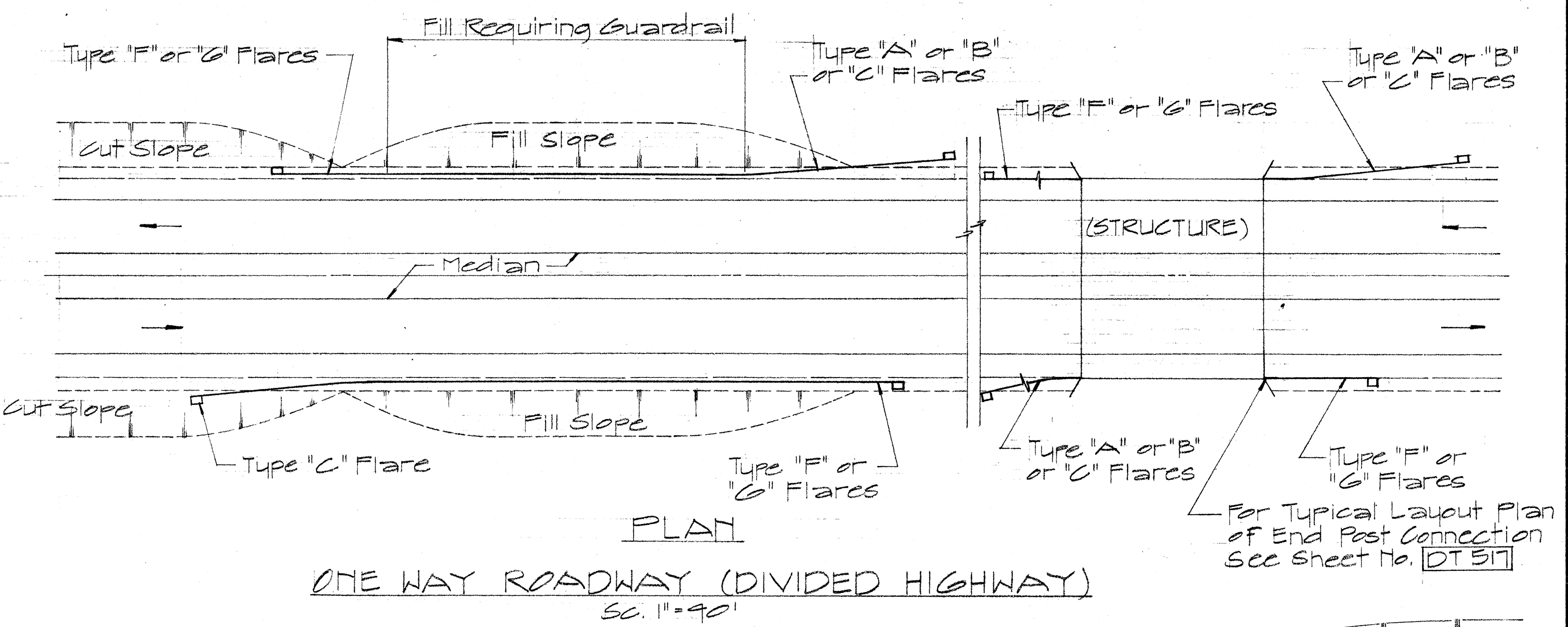
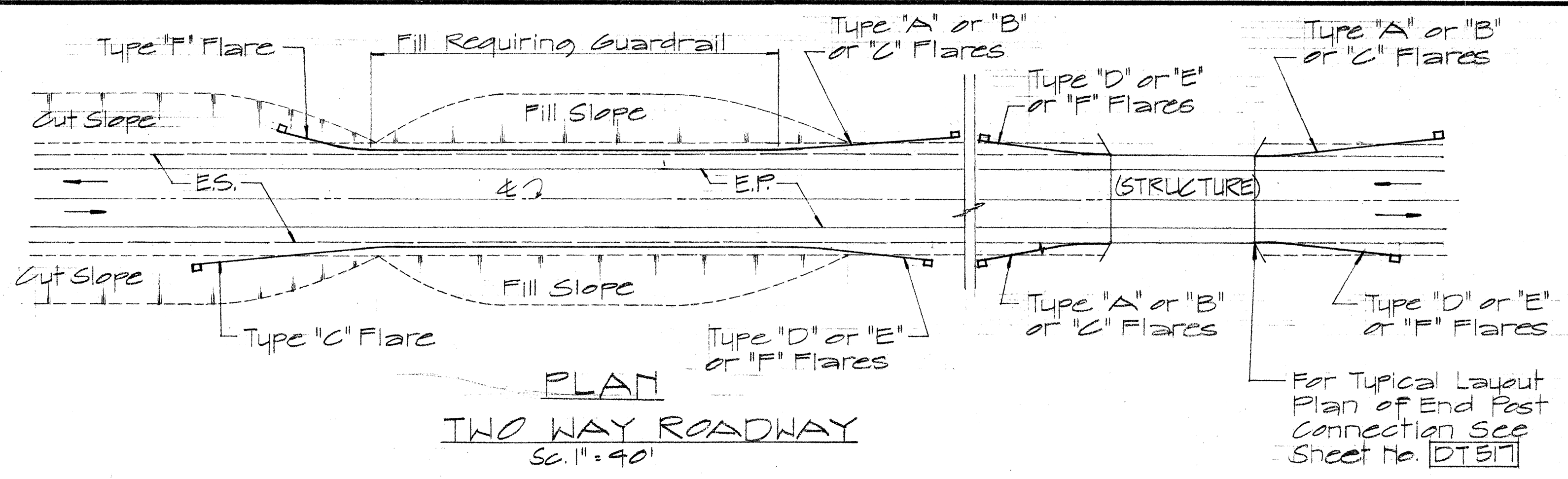
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DET.

Scale: As Shown
Nov. 1968
SHEET No. 7 OF 10 SHEETS DT 503

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	24	26

NOTE:
Metal guard rail connection to structures requires End Post Connection. See structure plans.



TYPE "B" FLARE
Sc. 1/8" = 1'-0"

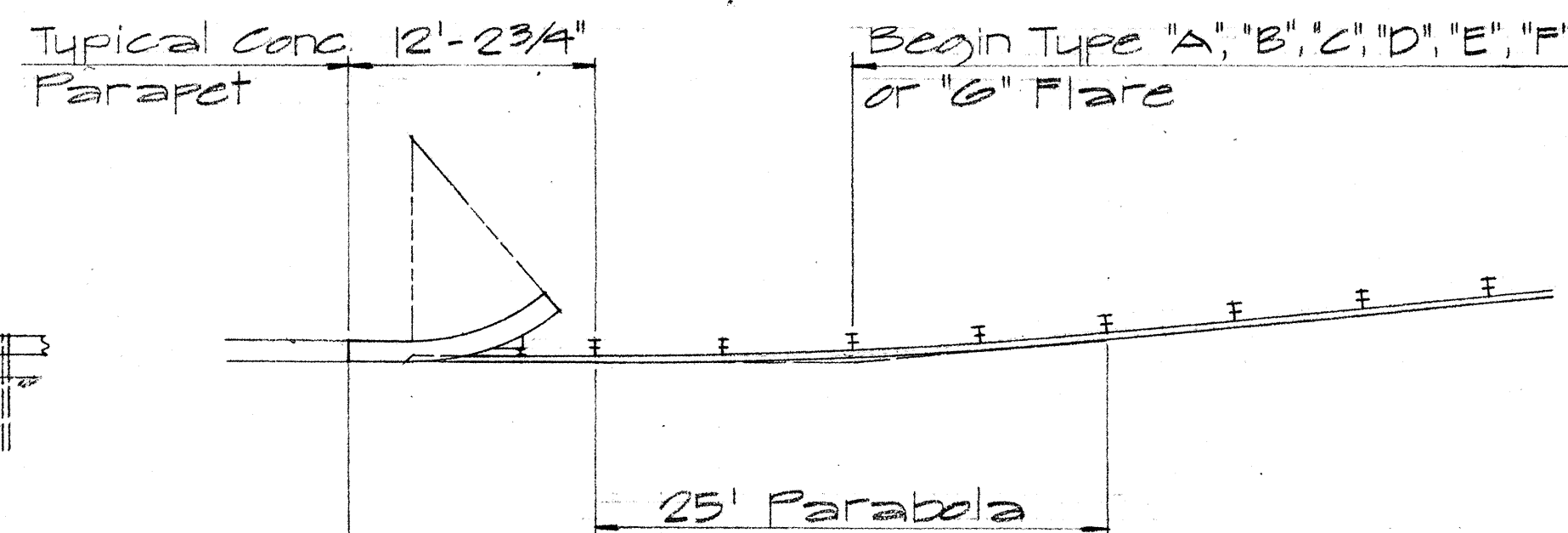
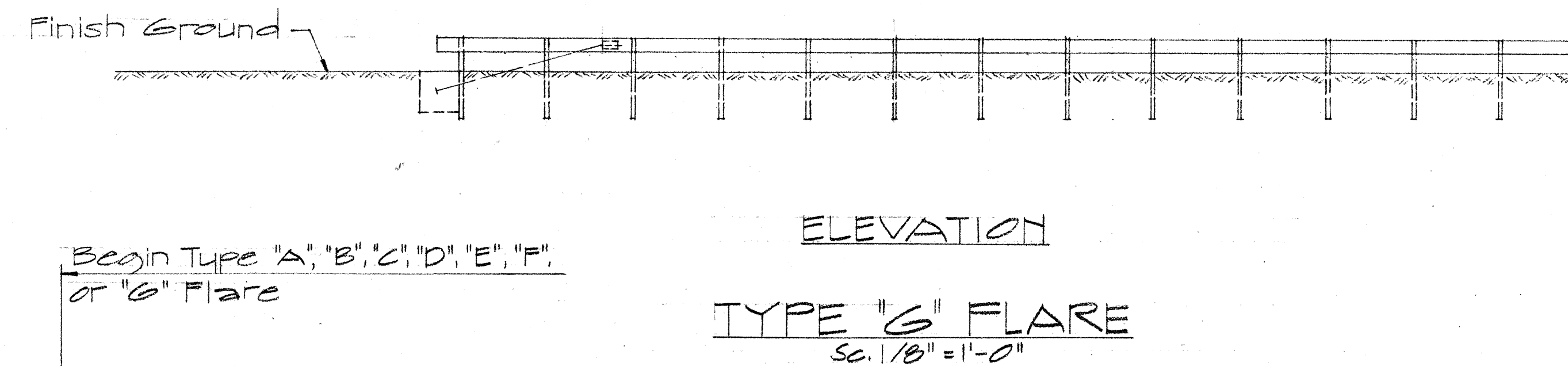
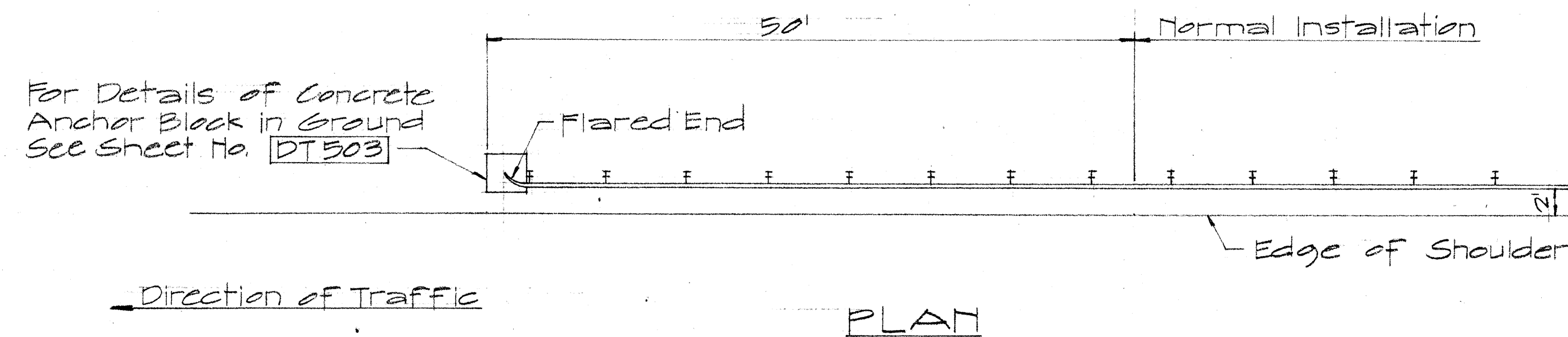
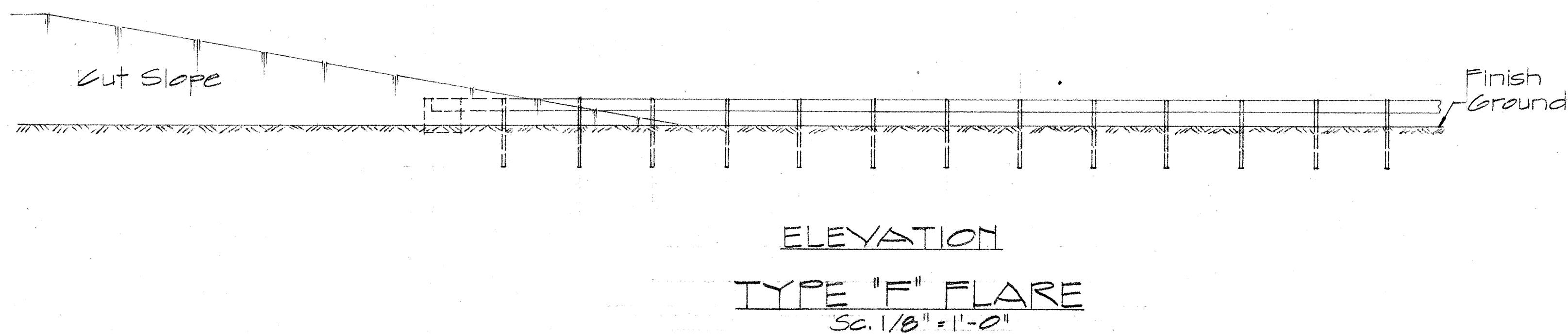
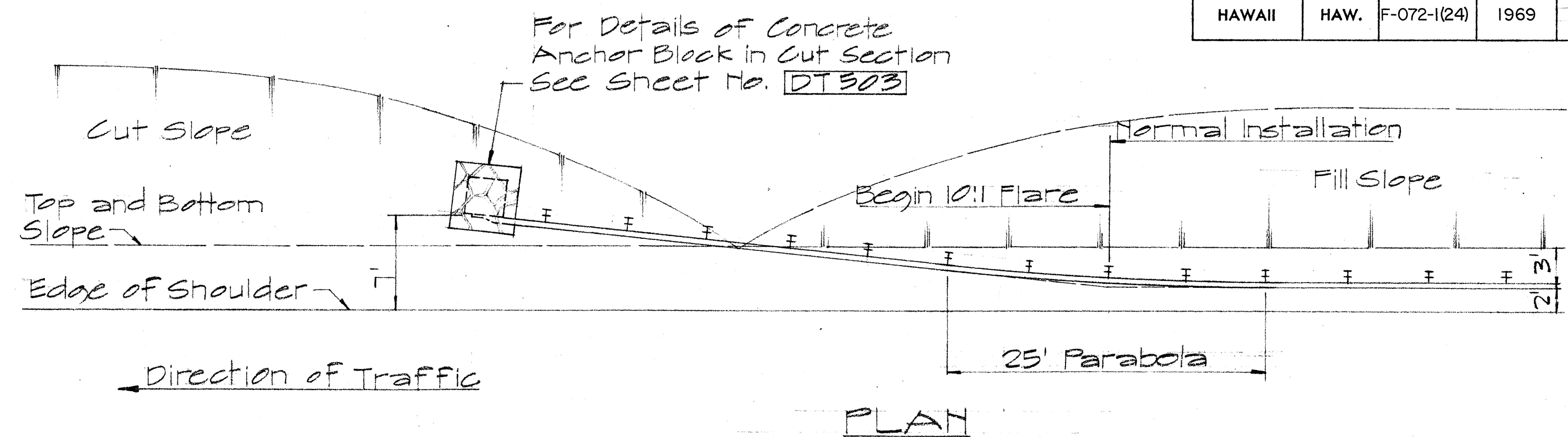
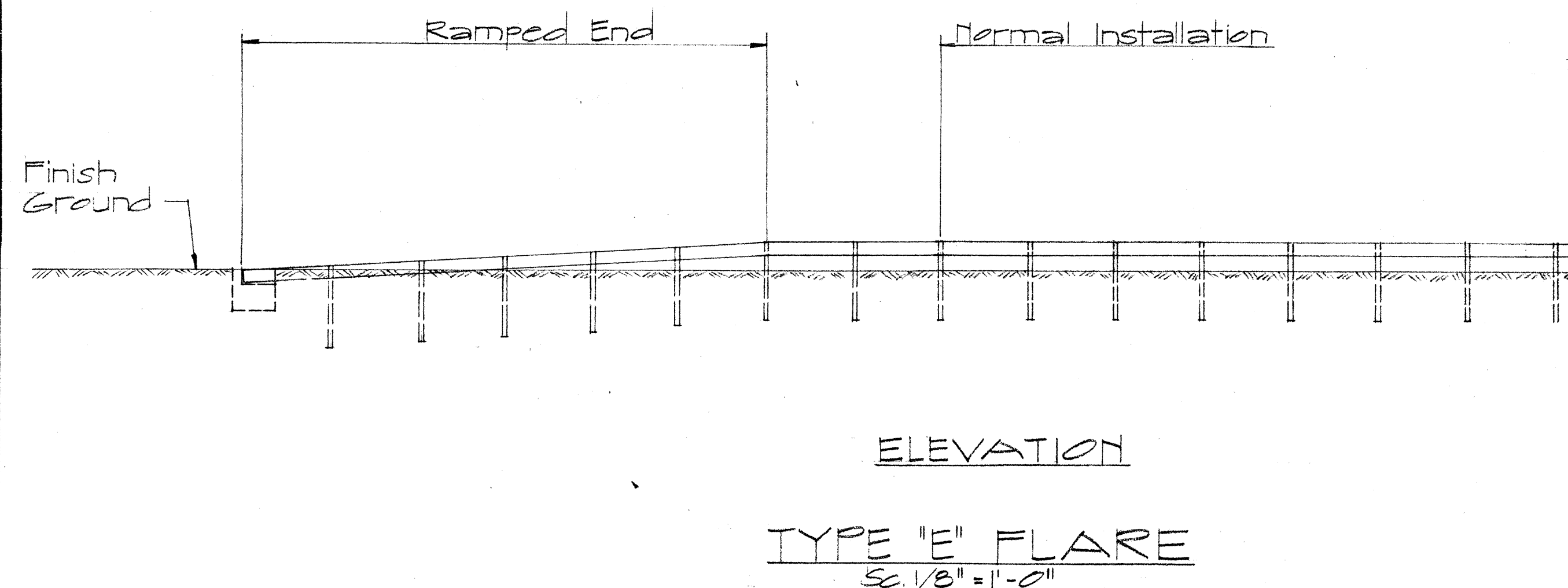
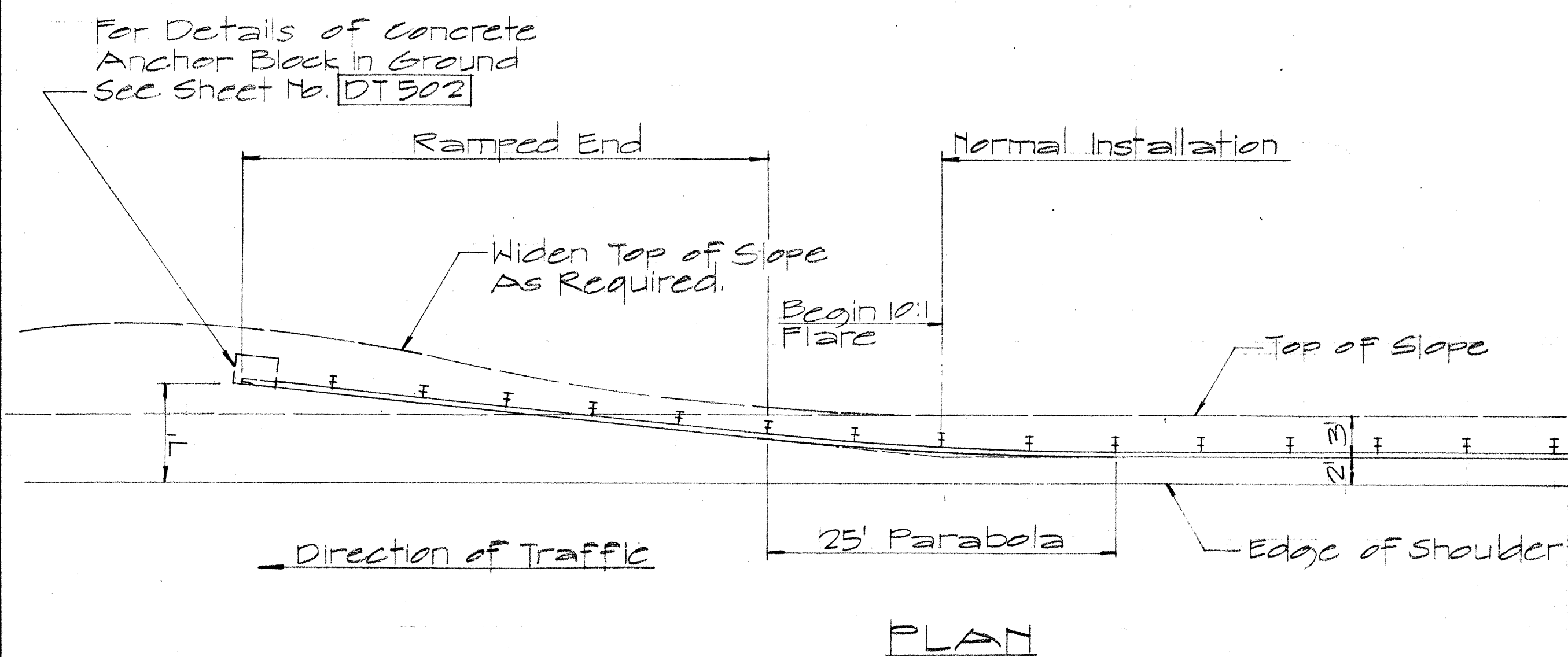
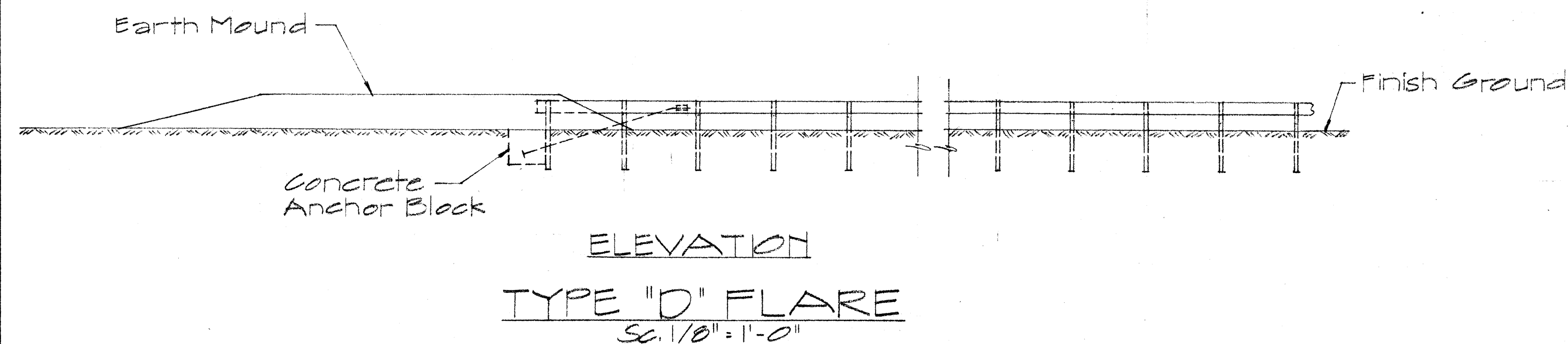
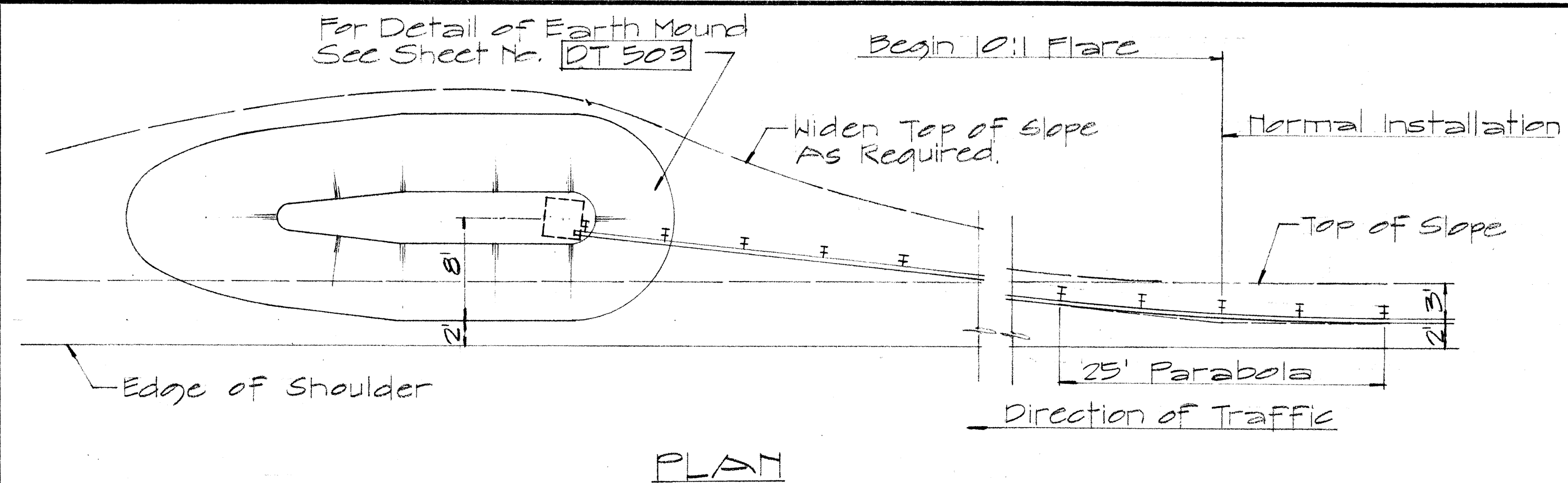
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

Sc. As Noted April 1969
SHEET No. 8 OF 10 SHEETS DT 516

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	25	26



TYPICAL LAYOUT PLAN OF END POST CONNECTION

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

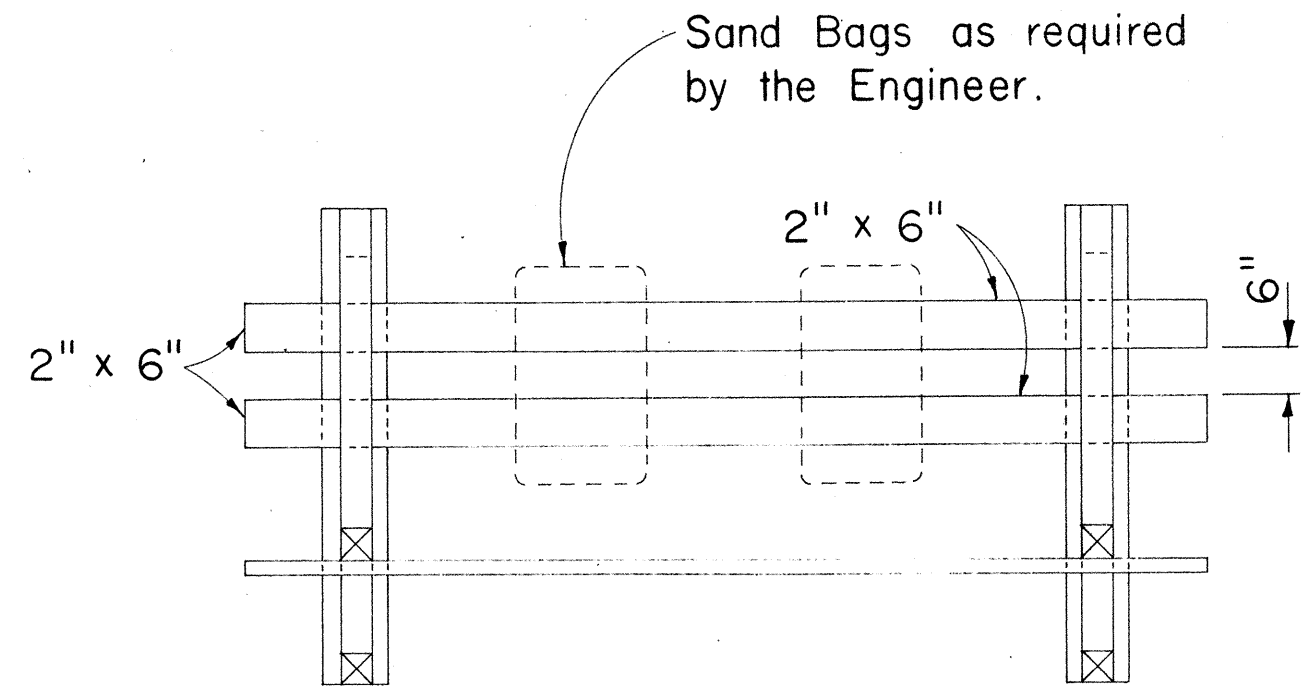
STANDARD DETAILS
OF TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Sc. As Noted April 1969

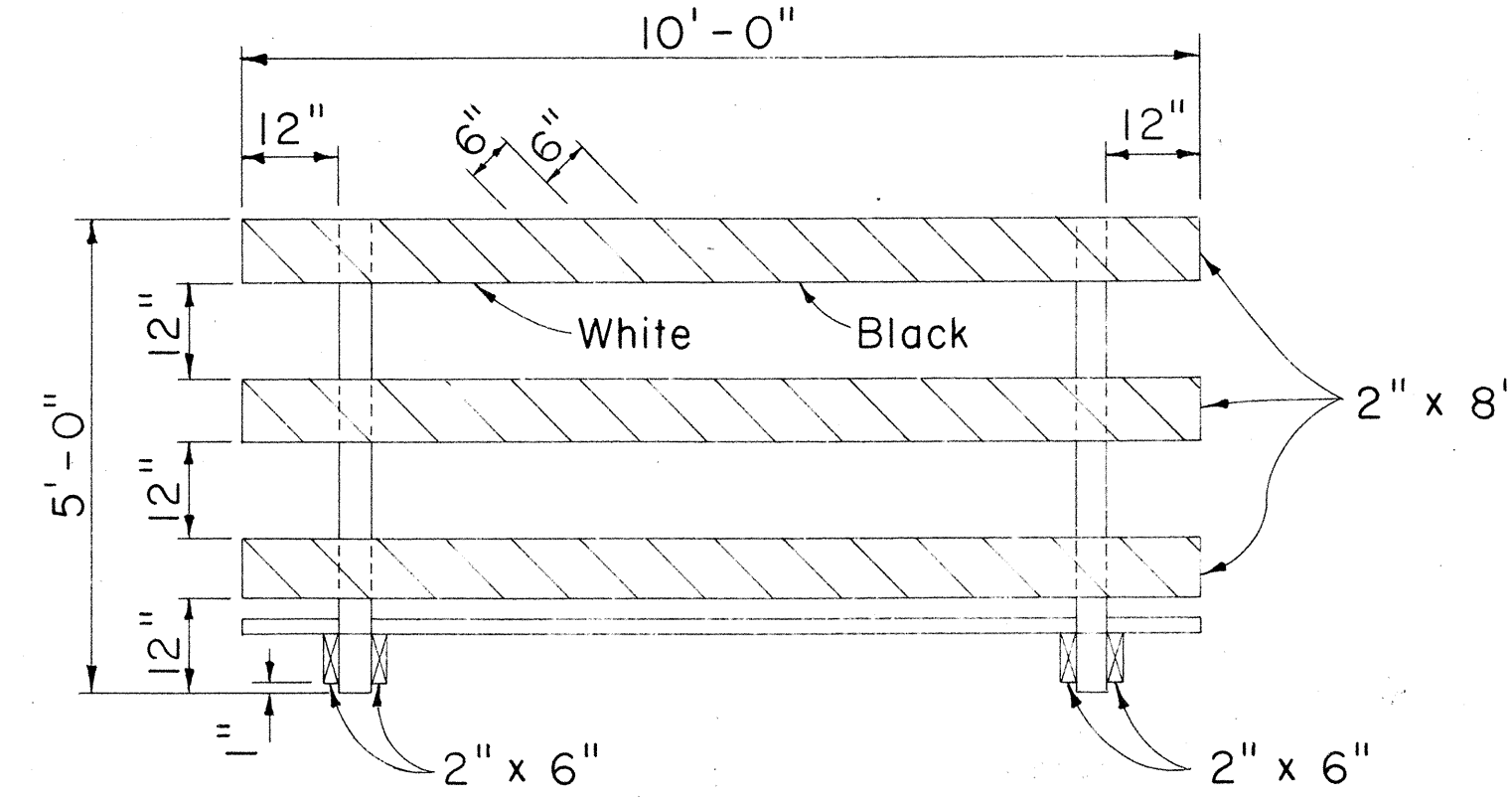
SHEET No. 9 OF 10 SHEETS DT 517

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
NO.	

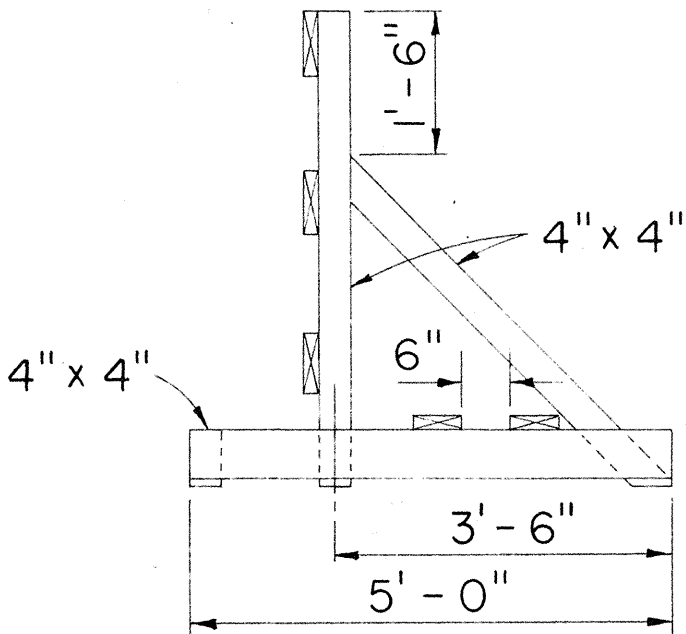
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-072-1(24)	1969	26	26



PLAN VIEW

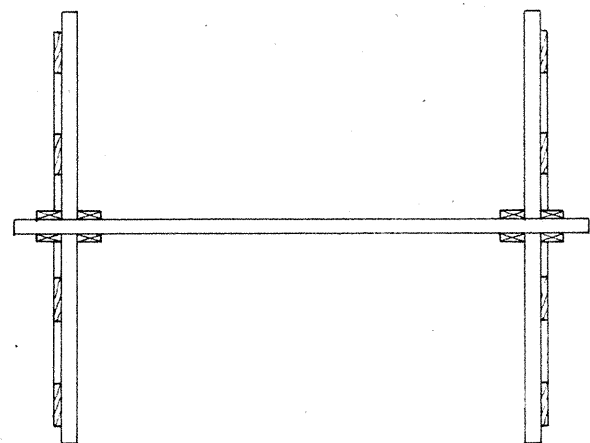


FRONT VIEW

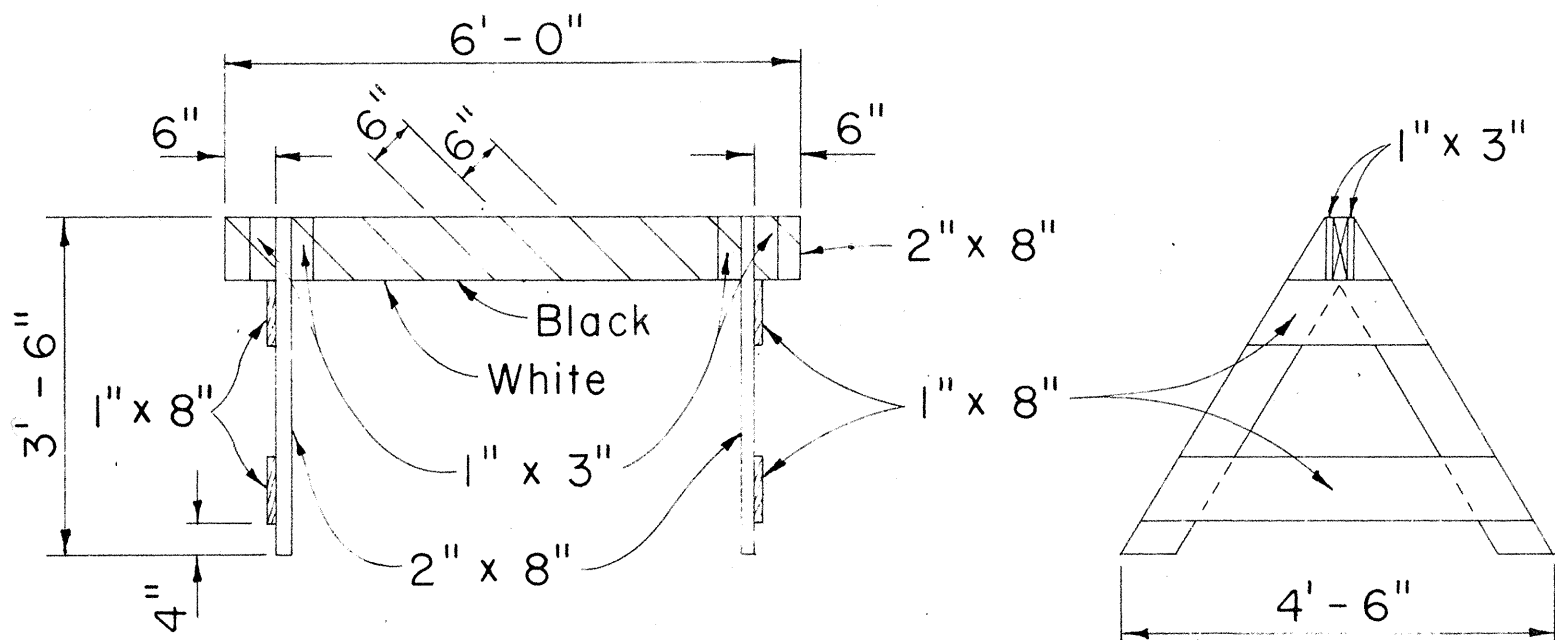


END VIEW

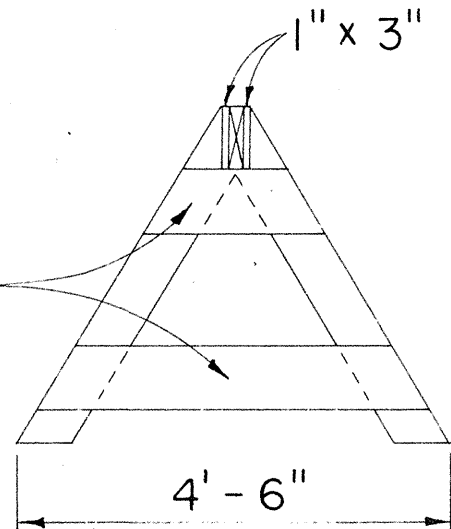
CLASS I BARRICADE
Scale: 1/2" = 1'-0"



PLAN VIEW



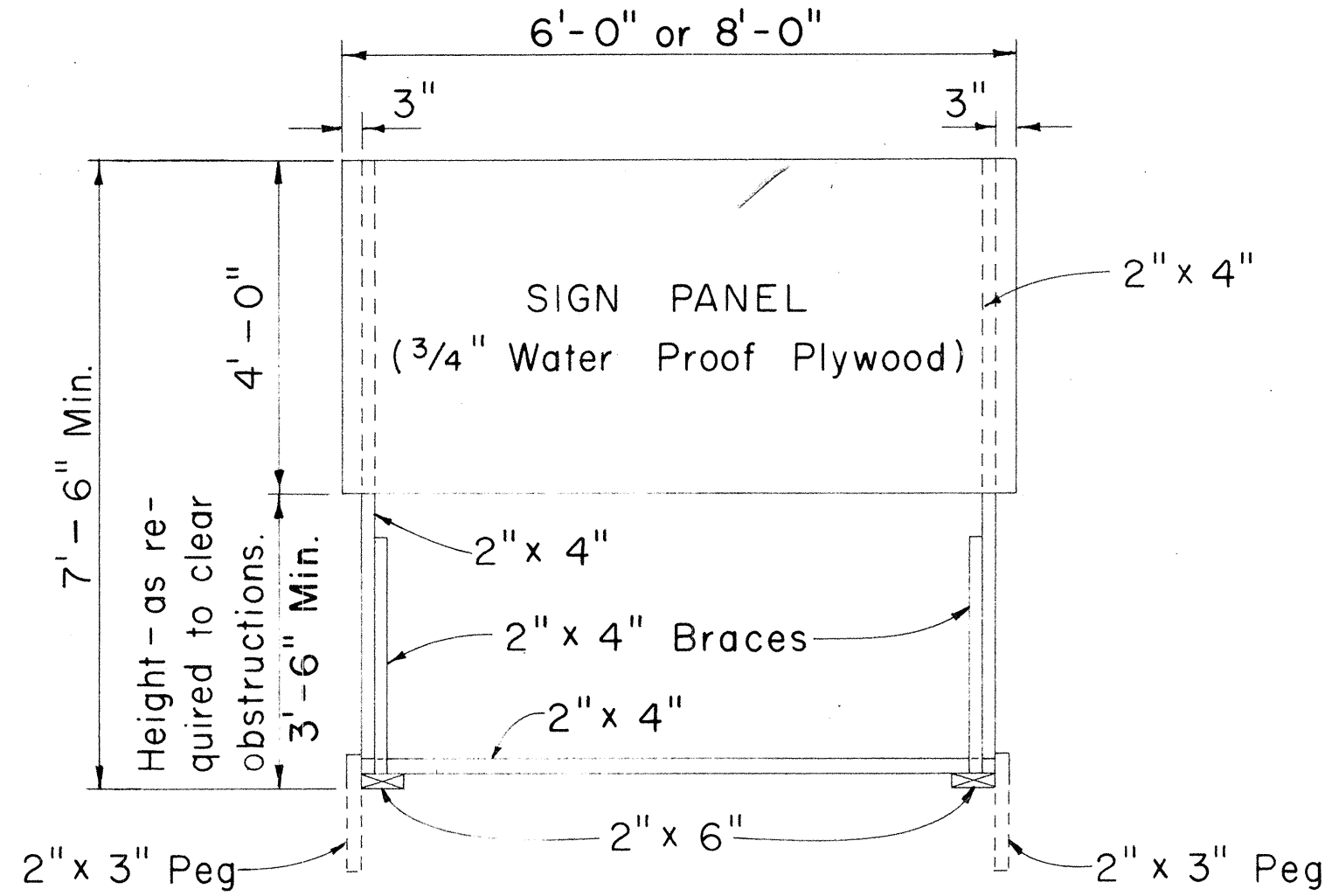
FRONT VIEW



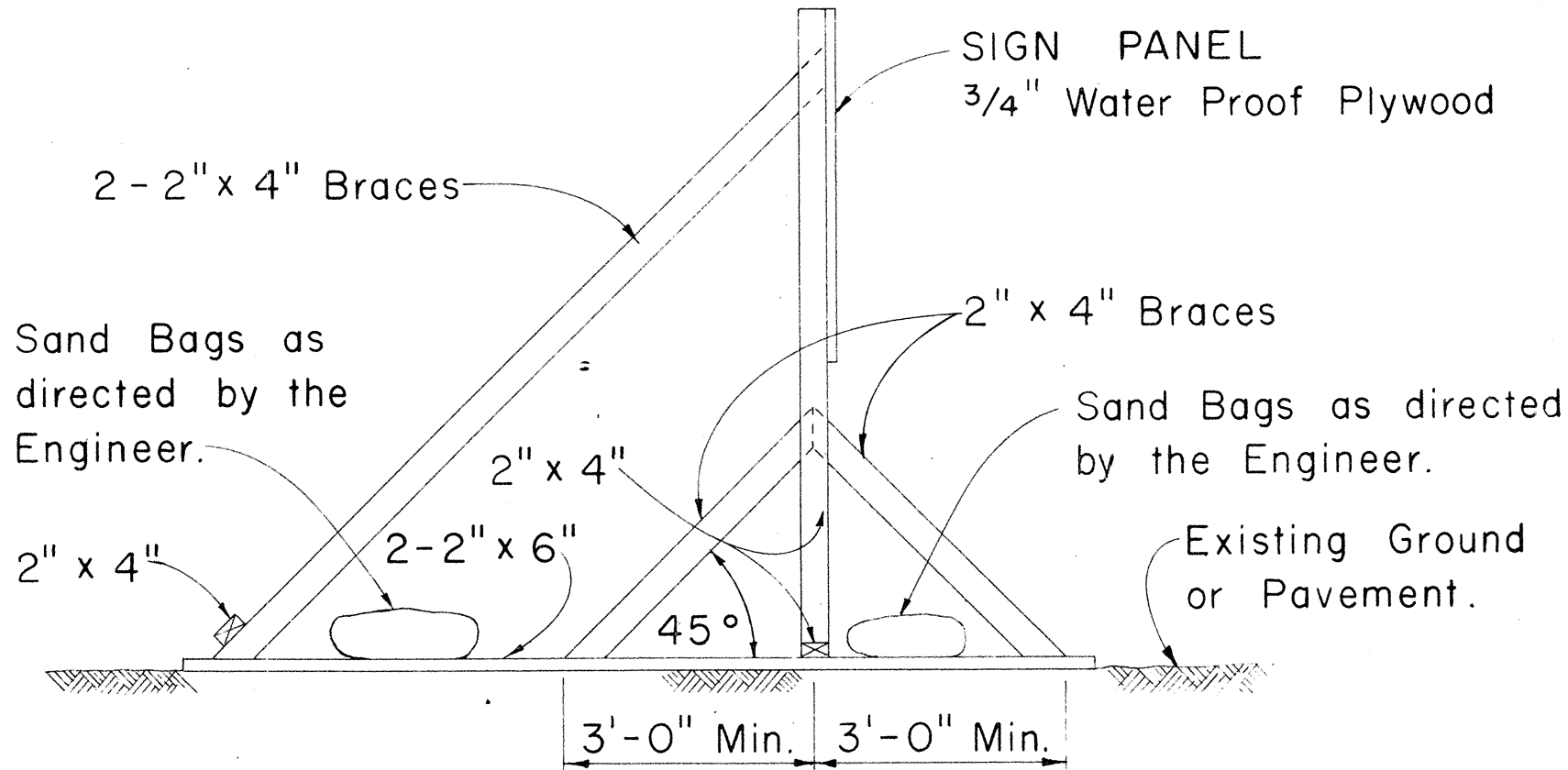
END VIEW

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

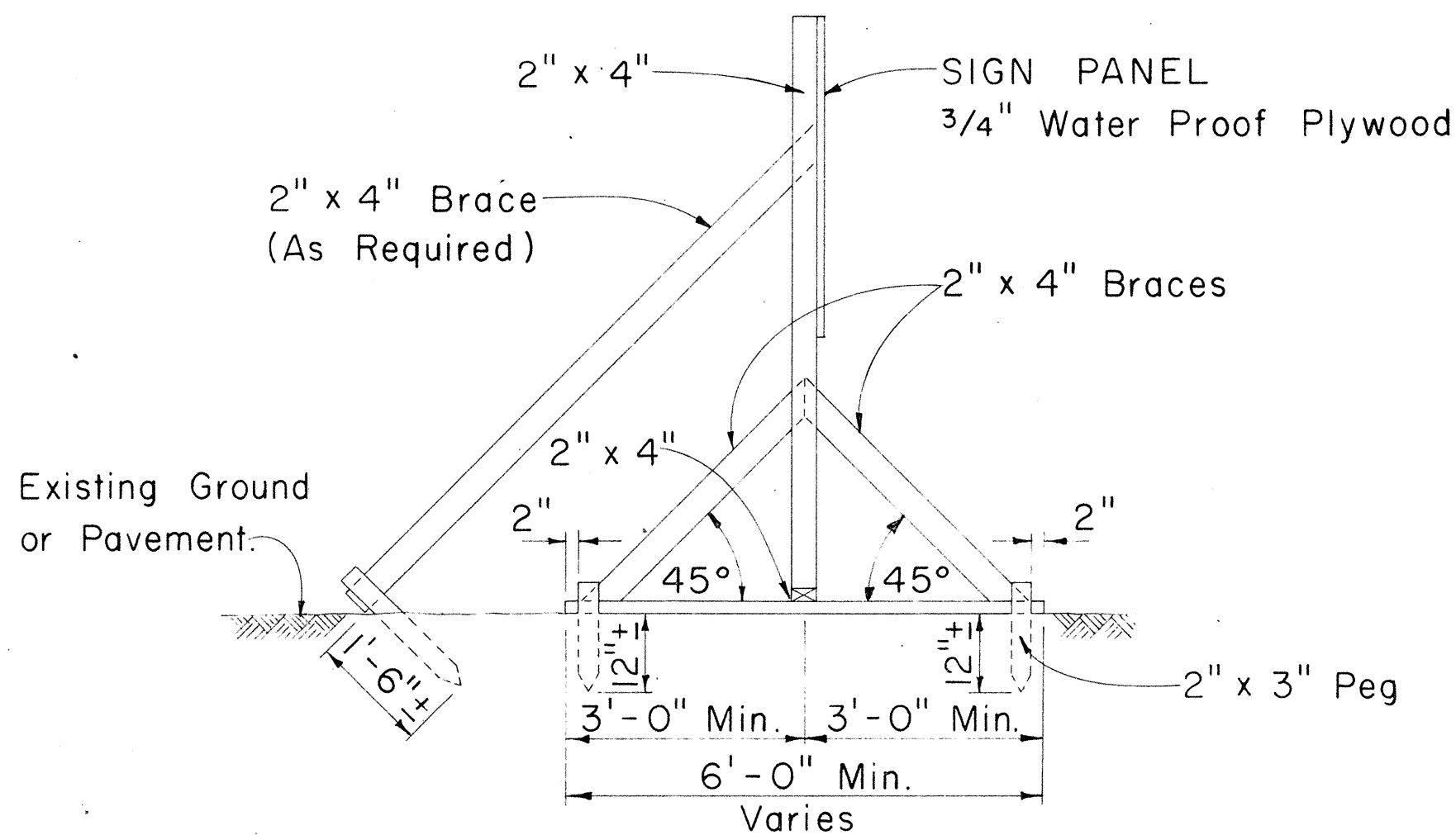
- GENERAL NOTES**
- The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
 - The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.



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

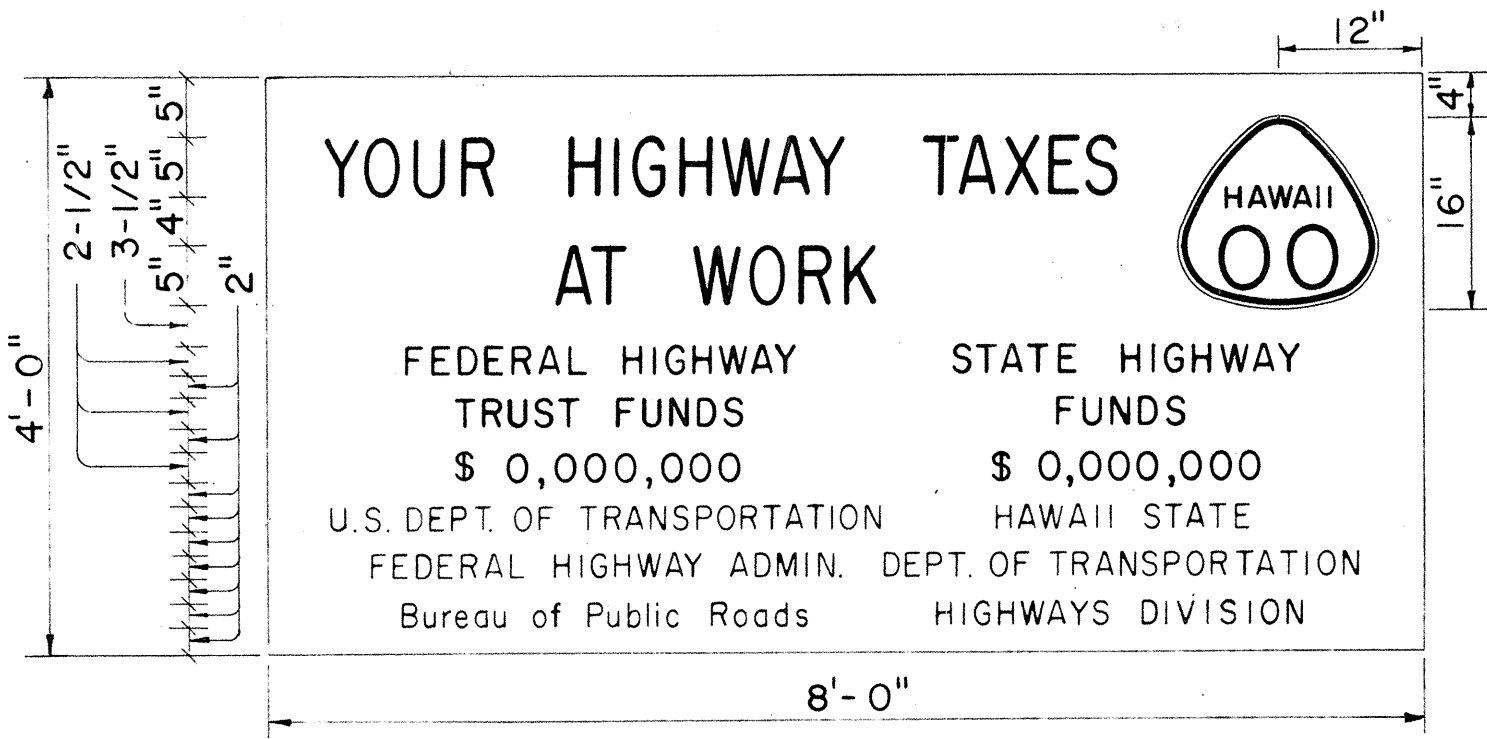


SIDE VIEW
(SIGN FRAME WEIGHTED DOWN)
Scale: 1/2" = 1'-0"

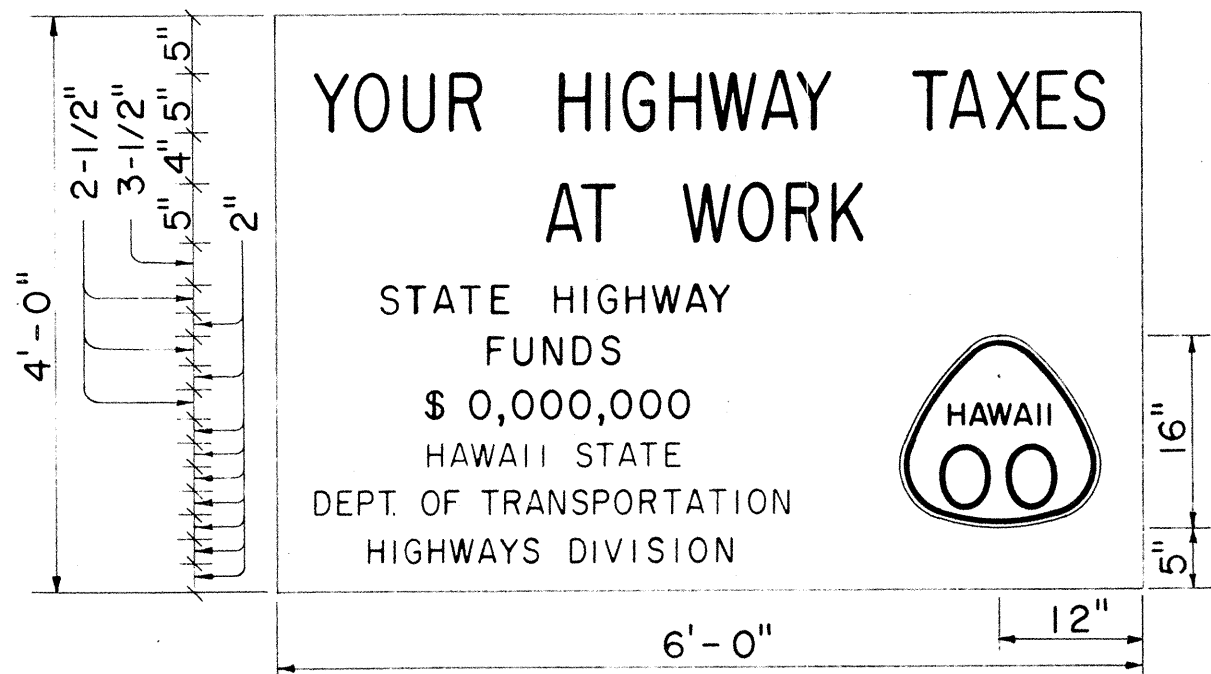


SIDE VIEW
(SIGN FRAME ANCHORED IN GROUND)
Scale: 1/2" = 1'-0"

CONSTRUCTION IDENTIFICATION SIGN
Scale: As Shown



SIGN PANEL
PRIMARY AND SECONDARY SYSTEMS
Scale: 3/4" = 1'-0"



SIGN PANEL
NON-FEDERAL AID PROJECT
Scale: 3/4" = 1'-0"

- GENERAL NOTES**
- The sign legend shall be black on white background.
 - The Contractor shall construct, install and maintain the project signs at the locations shown on the plans and as ordered by the Engineer.
 - Letters shall be Series "C" of the sizes shown on the plan and shall conform with the "Standard Alphabet for Highway Signs", Bureau of Public Roads, 1966
 - The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES

Scale: As Shown Date:
SHEET No. 10 OF 10 SHEETS