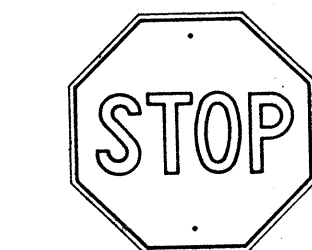


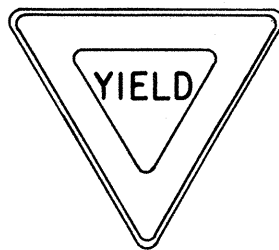
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	50	113



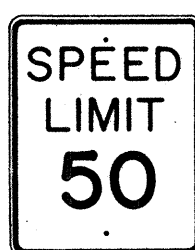
R1-1 30"x 30"
R1-1-A 36"x 36"

4-WAY

R1-3 12"x 6"
R1-3-A 18"x 9"



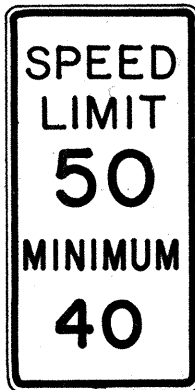
R1-2 36"x36"x36"
R1-2-A 48"x48"x48"



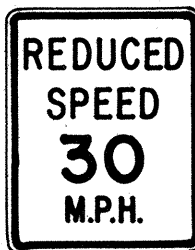
R2-1(50) 24"x 30"
R2-1(50)-A 48"x 60"



R2-2(40) 24"x 24"
R2-2(40)-A 48"x 48"



R2-4a(50/40) 24"x 48"
R2-4a(50/40)-A 48"x 96"



R2-5b(30) 24"x 30"
R2-5b(30)-A 48"x 60"



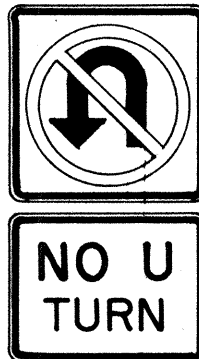
R3-1 24"x24"
24"x18"
R3-1-A 48"x48"
48"x36"



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



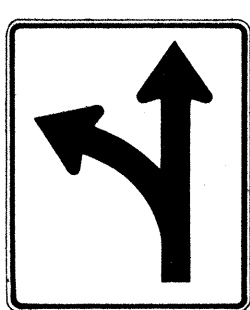
R3-3 24"x 24"
R3-3-A 48"x 48"



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



R3-5(L) 30"x 36"
R3-5(L)-A 48"x 60"



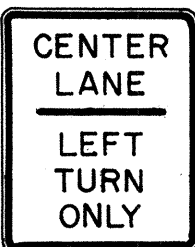
R3-6(L) 30"x 36"
R3-6(L)-A 48"x 60"



R3-7(R) 30"x 30"
R3-7(R)-A 48"x 48"



R3-8(L) 30"x 30"
R3-8(L)-A 36"x 36"
R3-8(L)-B 48"x 48"



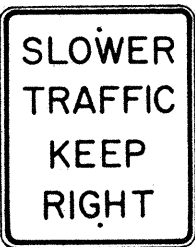
R3-9 24"x 30"



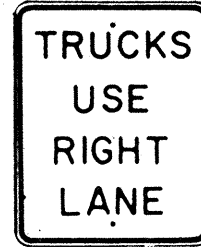
R4-1 24"x 30"



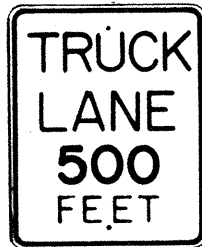
R4-2 24"x 30"



R4-3 24"x 30"
R4-3-A 48"x 60"



R4-5 24"x 30"



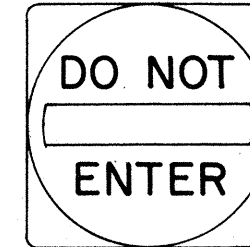
R4-6(500) 24"x 30"



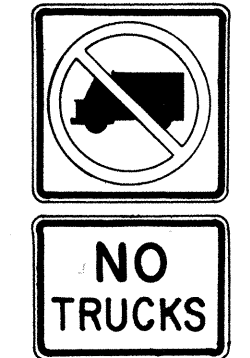
R4-7 24"x30"
24"x18"



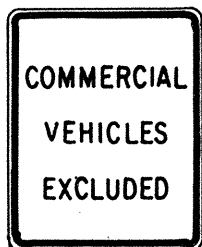
R4-8 24"x30"
24"x18"



R5-1 30"x 30"
R5-1-A 48"x 48"



R5-2 24"x 24"
24"x18"



R5-4 24"x 30"



R5-6 24"x24"
24"x18"



R5-9 36"x 24"



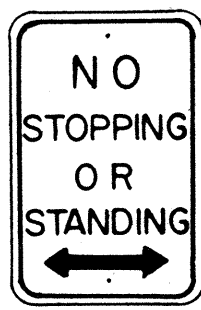
R6-1 (R) 36"x12"



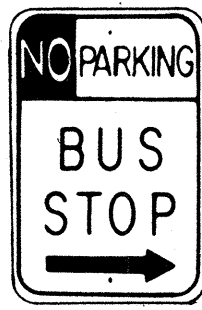
R6-2(R) 18"x24"



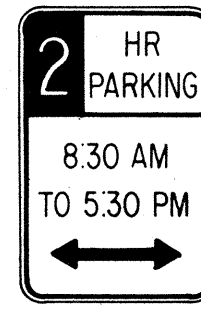
R7-1 12"x 18"
R7-1-A 24"x 30"



R7-4 12"x18"
R7-4-A 24"x 30"



R7-107(R) 12"x 18"



R7-108 12"x 18"



R7-201 12"x 6"
R7-201-A 24"x12"



R8-1 24"x 30"



R8-2 24"x 30"



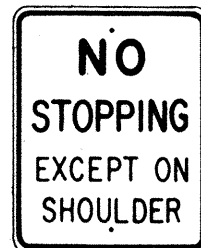
R8-3 24"x 30"



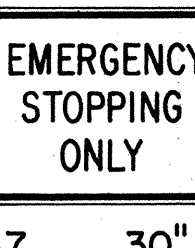
R8-4 30"x 24"
R8-4-A 48"x 36"



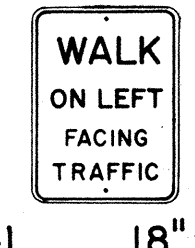
R8-5 24"x 30"



R8-6 24"x 30"



R8-7 30"x 24"
R8-7-A 48"x 36"



R9-1 18"x 24"



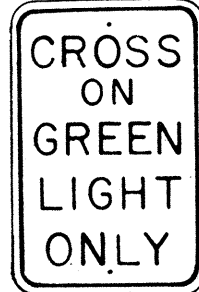
R9-2 12"x 18"



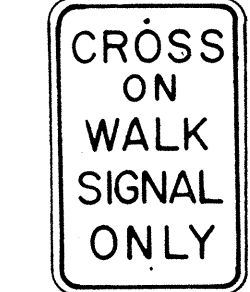
R9-3 12"x 18"



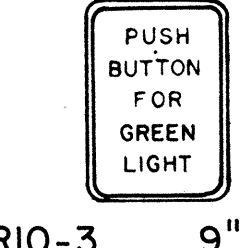
R9-4 18"x 24"



R10-1 12"x 18"



R10-2 12"x 18"



R10-3 9"x 12"



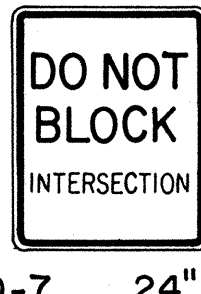
R10-4 9"x 12"



R10-5 24"x 30"



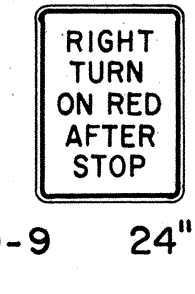
R10-6 24"x 36"



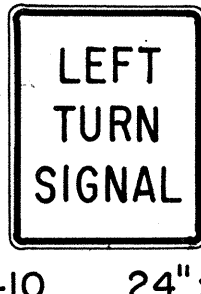
R10-7 24"x 30"



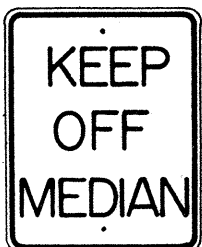
R10-8 24"x 30"



R10-9 24"x 30"



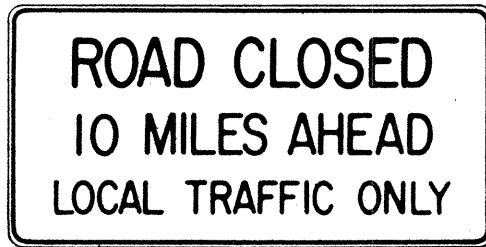
R10-10 24"x 30"



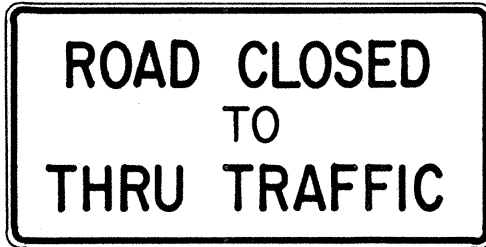
R11-1 24"x 30"



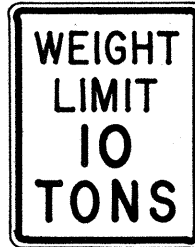
R11-2 48"x 30"



R11-3(10) 60"x 30"



R11-4 60"x 30"



R12-1(10) 24"x 30"

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."
- All regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory 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.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER

3/11/72
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING

3-20-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.C.	3/20/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

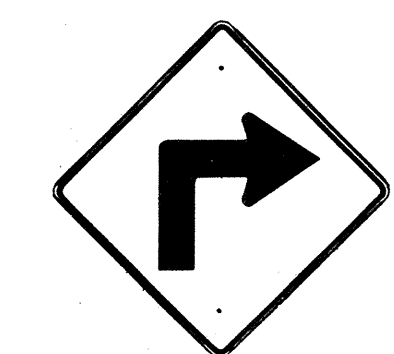
STANDARD DETAILS REGULATORY SIGNS

NOT TO SCALE

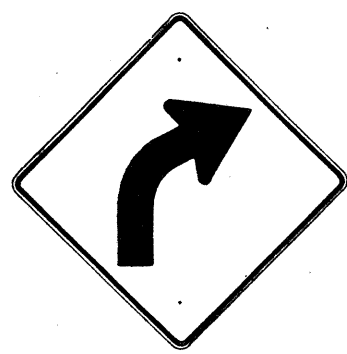
SHEET No. 1 OF 17 SHEETS DT 101

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	*****
DESIGNED BY	*****
QUANTITIES BY	*****
CHECKED BY	*****

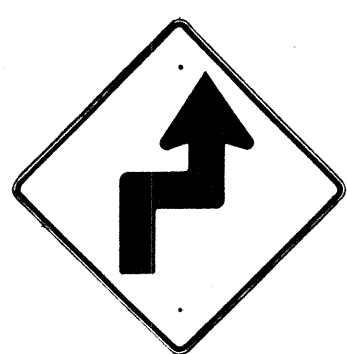
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	51	113



W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



W1-2(R) 30"x30"
W1-2(R)-A 48"x48"



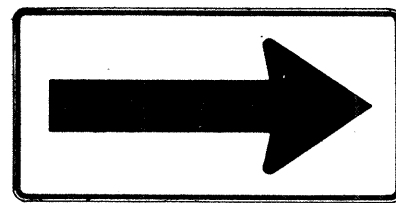
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



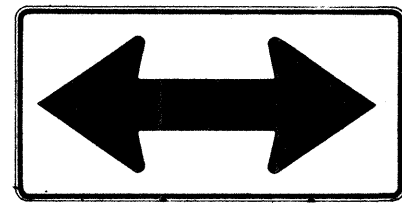
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



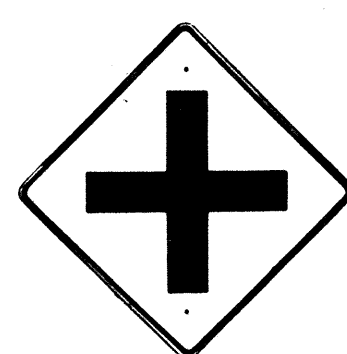
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



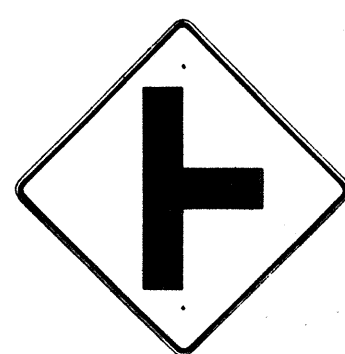
W1-6 48"x24"



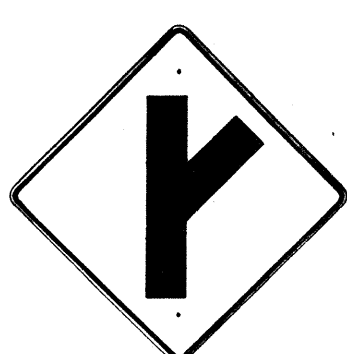
W1-7 48"x24"



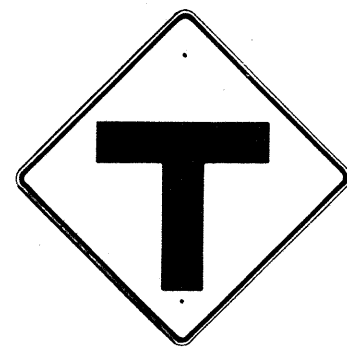
W2-1 30"x30"
W2-1-A 48"x48"



W2-2 30"x30"
W2-2-A 48"x48"



W2-3(R) 30"x30"
W2-3(R)-A 48"x48"



W2-4 30"x30"
W2-4-A 48"x48"



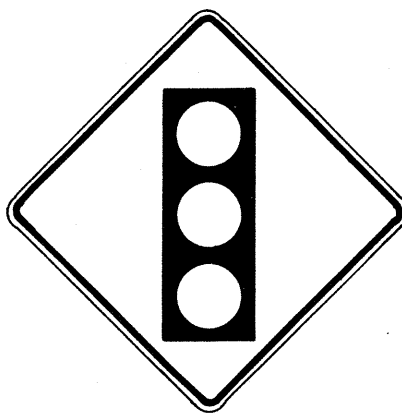
W2-5 30"x30"
W2-5-A 48"x48"



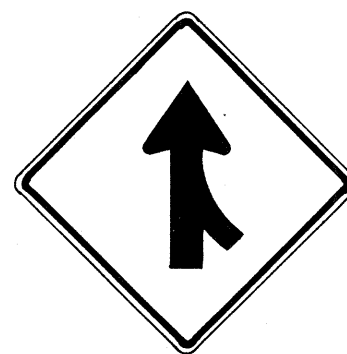
W3-1 30"x30"
W3-1-A 36"x36"



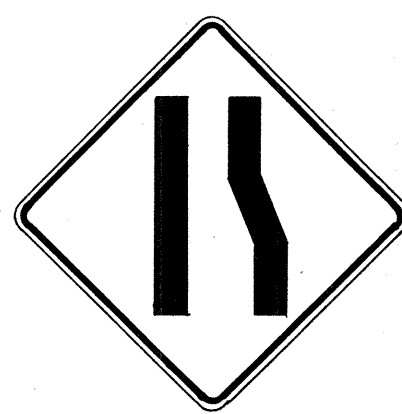
W3-2 30"x30"
W3-2-A 36"x36"



W3-3 36"x36"
24"x18"



W4-1(R) 30"x30"
24"x18"
W4-1(R)-A 48"x48"
24"x18"



W4-2(R) 36"x36"
W4-2(R)-A 48"x48"



W5-1 36"x36"



W5-2 30"x30"
W5-2-A 36"x36"



W5-3 36"x36"



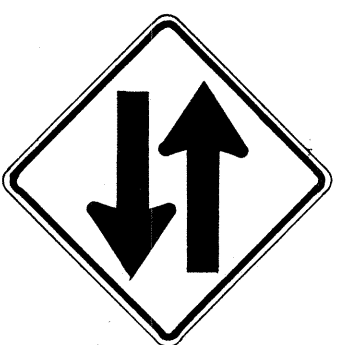
DIVIDED
HIGHWAY

W6-1 36"x36"
24"x18"



DIVIDED
HIGHWAY
ENDS

W6-2 36"x36"
24"x18"



TWO WAY
TRAFFIC

W6-3 30"x30"
24"x18"
W6-3-A 36"x36"
24"x18"
W6-3-B 48"x48"
24"x18"



HILL

W7-1 30"x30"
24"x18"
W7-1-A 36"x36"
24"x18"



W7-2 24"x18"



W8-1 30"x30"
W8-1-A 36"x36"



W8-2 30"x30"
W8-2-A 36"x36"



W8-3 30"x30"
W8-3-A 36"x36"



W8-4 30"x30"
W8-4-A 36"x36"



SLIPPERY
WHEN WET

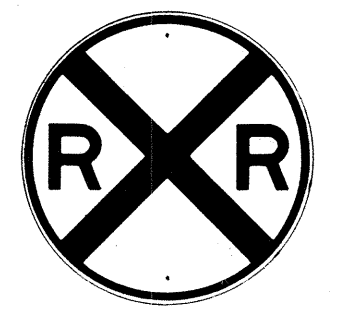
W8-5 30"x30"
24"x18"
W8-5-A 36"x36"
24"x18"



W9-1(R) 30"x30"
W9-1(R)-A 36"x36"
W9-1(R)-B 48"x48"



W9-2(L) 36"x36"
W9-2(L)-A 48"x48"



W10-1 36" Diameter



BIKE
XING

W11-1 30"x30"
24"x18"
W11-1-A 36"x36"
24"x18"



PED
XING

W11-2 30"x30"
24"x18"
W11-2-A 36"x36"
24"x18"



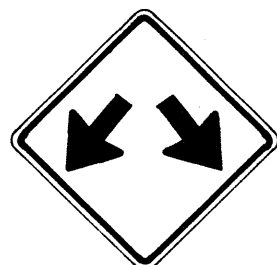
CATTLE
XING

W11-4 30"x30"
24"x18"
W11-4-A 36"x36"
24"x18"



FARM
MACHINERY

W11-5 30"x30"
24"x18"
W11-5-A 36"x36"
24"x18"



W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"

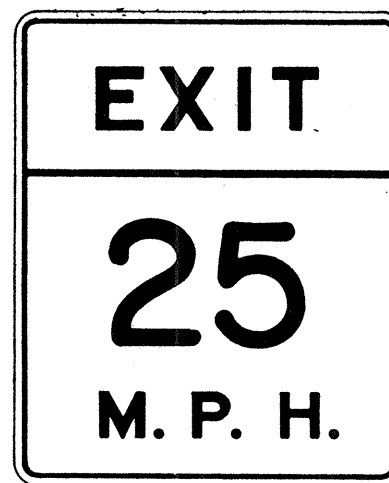


LOW
CLEARANCE

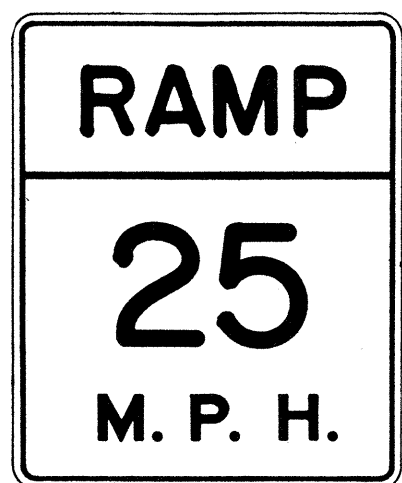
W12-2(12'-6") 36"x36"
24"x18"



W13-1(25) 18"x18"
W13-1(25)-A 24"x24"



W13-2(25) 48"x60"



W13-3(25) 48"x60"



W14-1 30"x30"



W14-3 36"x48"x48"

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."
- All warning signs shall be reflectorized unless otherwise specified.
- All warning signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- Signs prefixed with "CW" on the plans shall indicate orange and black construction signs.

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.C.	3/20/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS WARNING SIGNS

NOT TO SCALE

SHEET No. 2 OF 17 SHEETS DT 102

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	52	113



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"



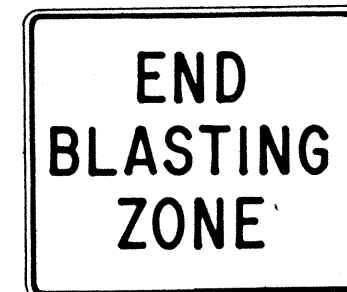
CW21-6 30" x 30"



CW22-1b 48" x 48"



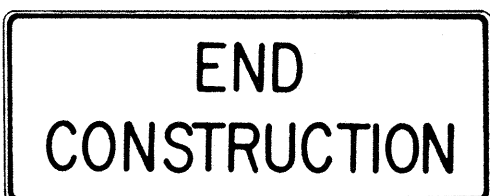
CW22-2 42" x 36"



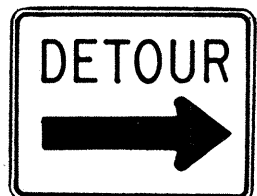
CW22-3 42" x 36"



CG20-1(5) 60" x 36"



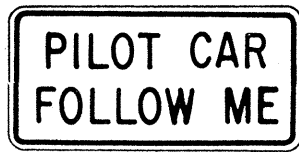
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



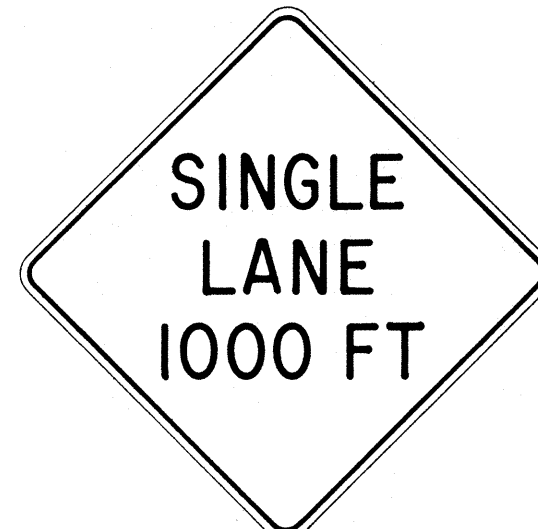
CM4-10(R) 48" x 18"



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."
- All construction signs shall be reflectorized unless otherwise specified.
- 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.

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	HT.	3/23/72

APPROVAL RECOMMENDED:
Evelyn Tanaka 3/21/72
TRAFFIC ENGINEER DATE

APPROVED:
Shirley Salsich 3/23/72
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 3 OF 17 SHEETS DT 104

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

GENERAL NOTES

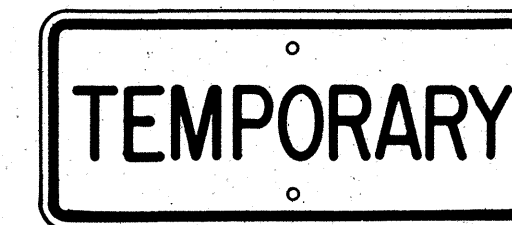
- The shape, color, dimensions, symbols, wording, lettering and reflectorizing of all signs shall be in accordance with the "Manual on Uniform Traffic Control Devices for Streets and Highways," dated June 1961 and the BPR manual "Standard Highway Signs," dated September 1961, unless otherwise specified.
- All letters and figures shall conform to the manual "Standard Alphabets for Highway Signs," Dept. of Commerce, Bureau of Public Roads, 1966
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise specified.
- All markers shall have a black legend on a white background unless otherwise specified.
- Sign message of Cardinal Direction Marker (M6-1) shall be denoted by the following suffixes:
M6-1-N : NORTH
M6-1-E : EAST
M6-1-S : SOUTH
M6-1-W : WEST
- Auxiliary markers denoted with the suffix "I": (M4-1-I) shall have a white legend on a blue background.
- Cardinal Direction Marker (M6-1) with suffix I (3) shall have a white legend on a blue background and shall be 30" x 15" in size.
- For M1-3 and M1-4 signs, number in () indicates route number and shall be as shown on the plan.

APPROVAL RECOMMENDED:

Eishi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:

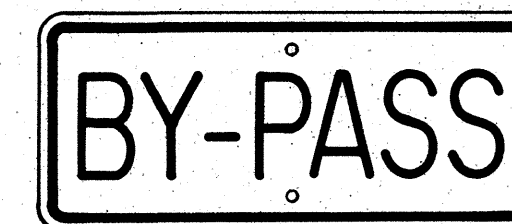
John S. Sato 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE



M5-1
21" x 9"



M5-2
21" x 9"



M5-3
21" x 9"



M5-4
21" x 9"



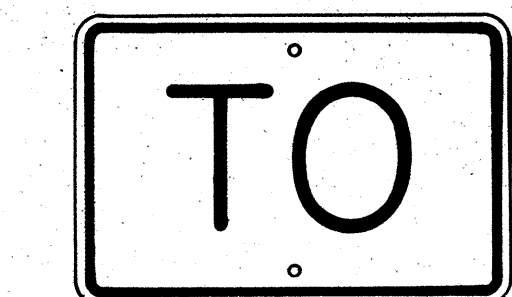
M5-5
21" x 9"



M5-6
21" x 9"



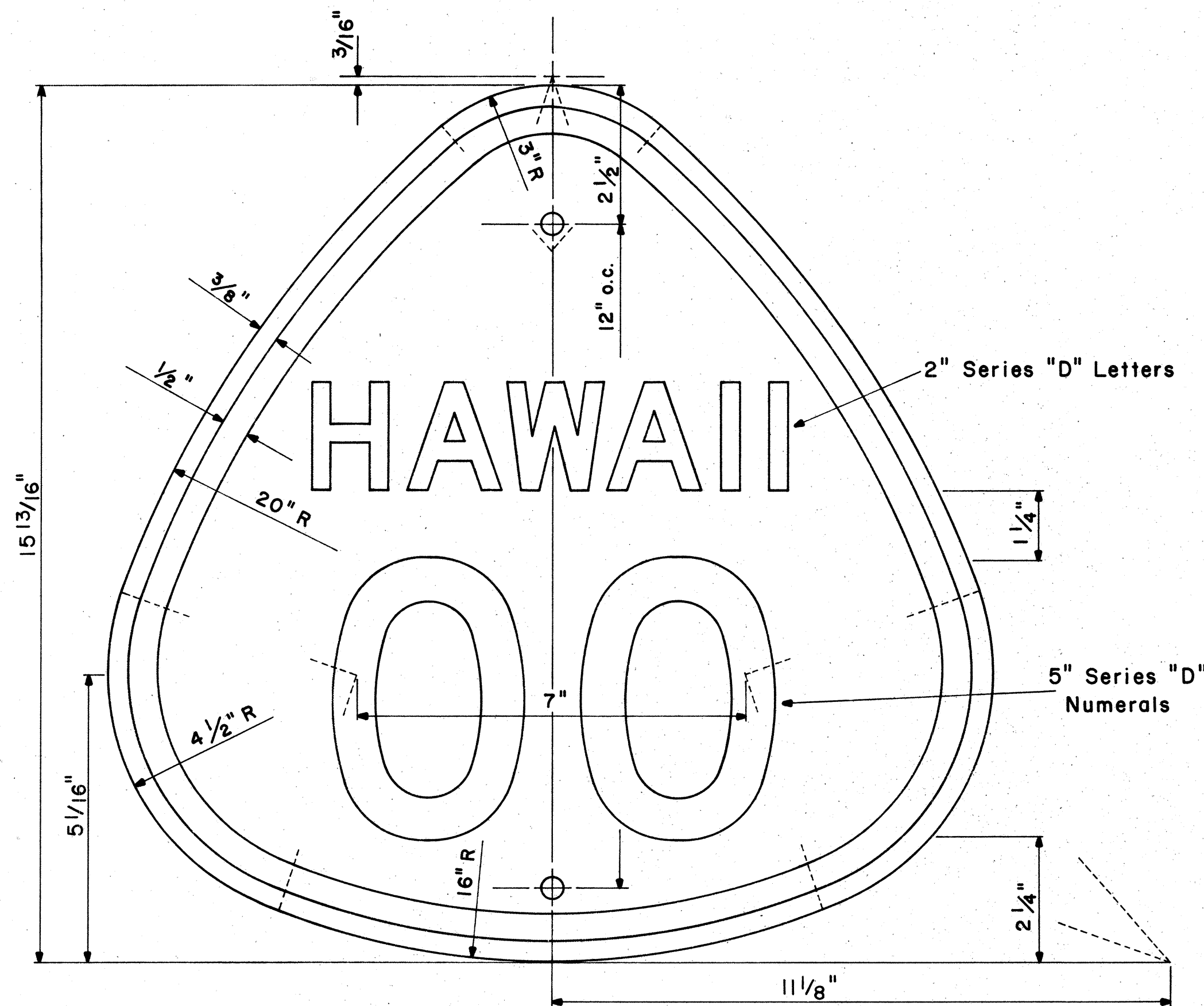
M6-1-N
21" x 9"
(See Note 6)



M7-1
18" x 12"

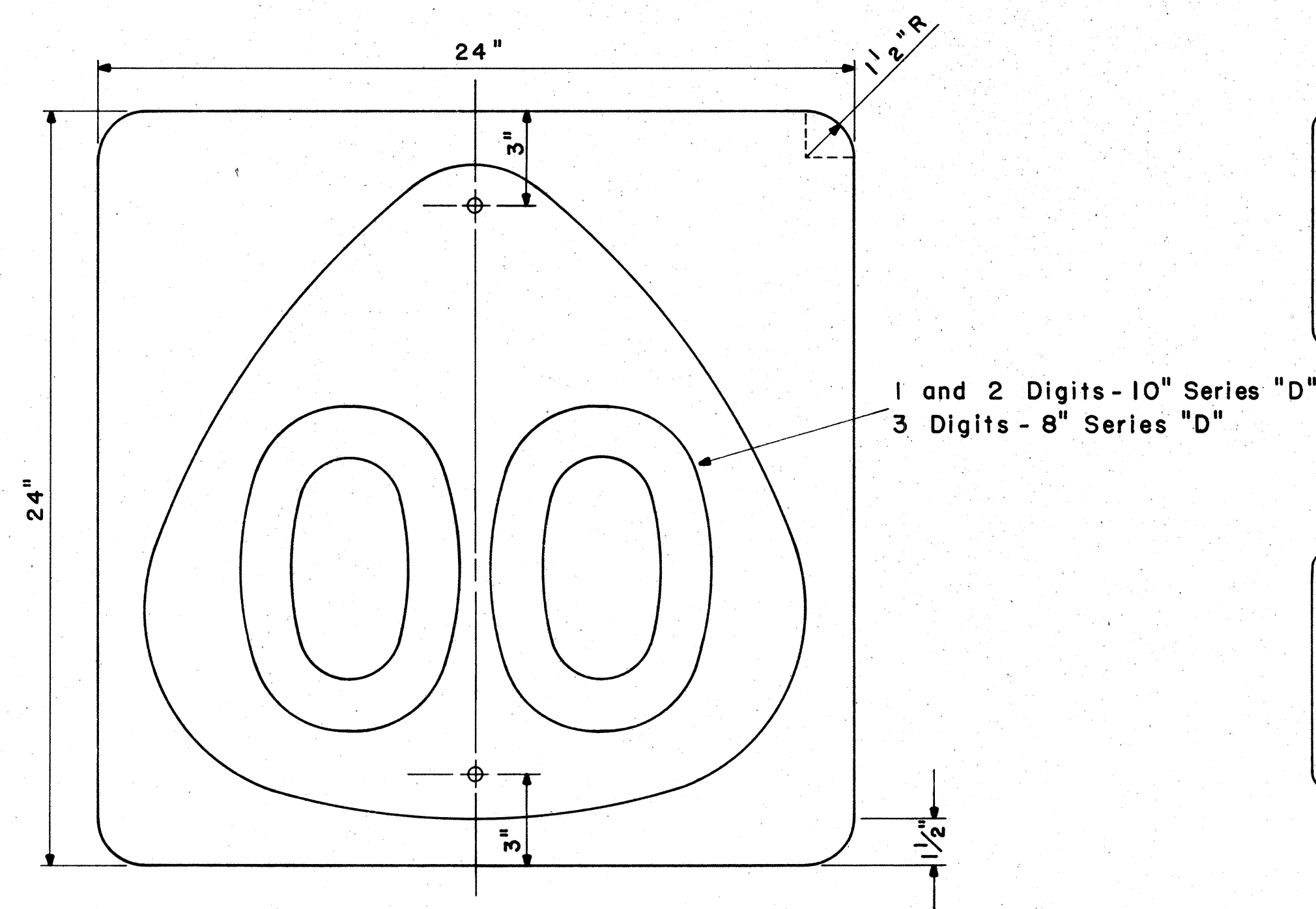
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STANDARD DETAILS STATE ROUTE MARKERS AND AUXILIARY MARKERS Scale: As Noted SHEET No 4 OF 17 SHEETS DT105



STATE ROUTE MARKER
M1-3(00)

Scale: $\frac{1}{2}$ " = 1"

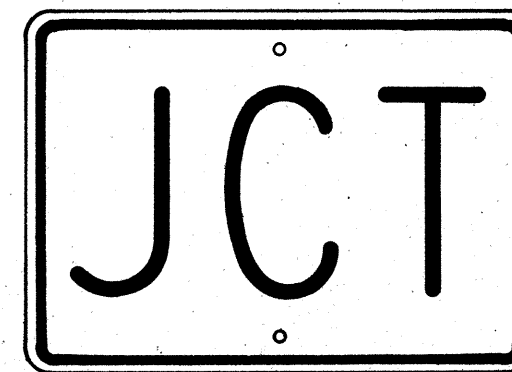


STATE ROUTE MARKER
M1-4(00)

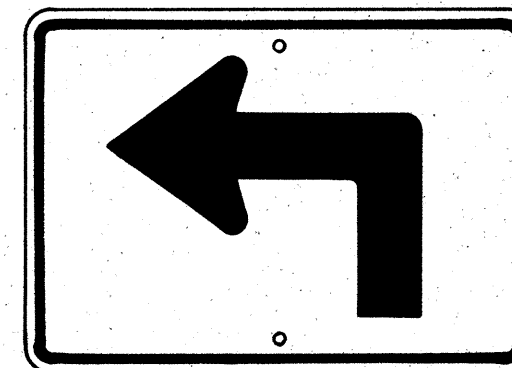
Scale: $\frac{1}{4}$ " = 1"

NOTE:

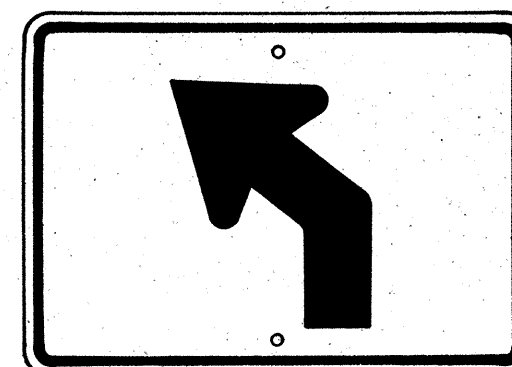
Multiply all dimensions of State Route Marker M1-3 by 1.3 for the dimensions of the shield for M1-4.



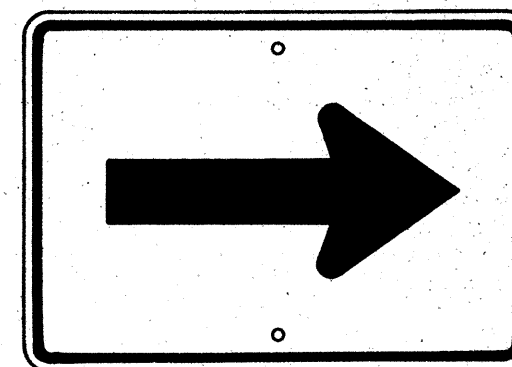
M2-1
21" x 15"



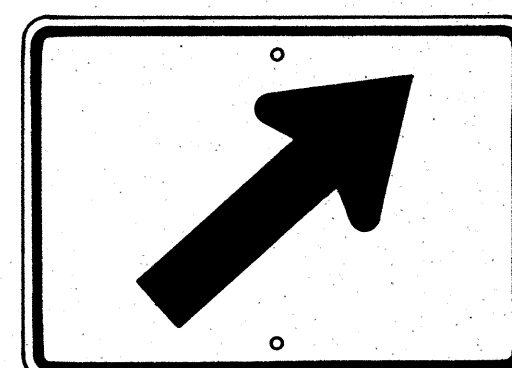
M3-1-L
* M3-1-R
21" x 15"



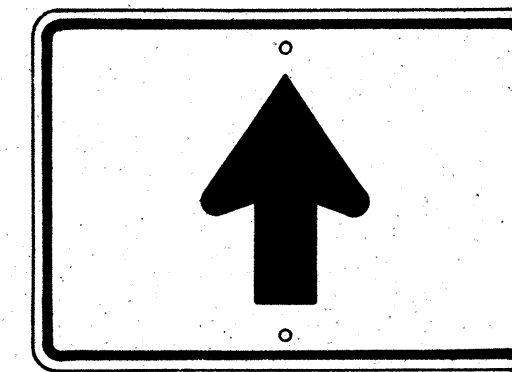
M3-2-L
* M3-2-R
21" x 15"



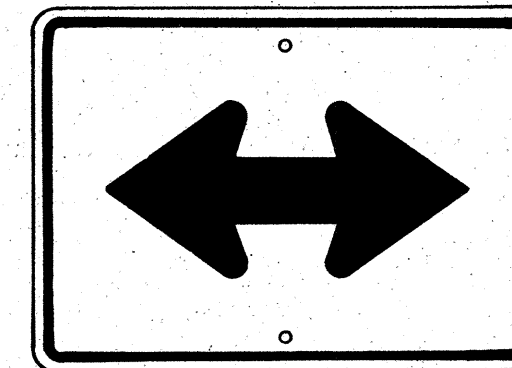
M4-1
21" x 15"



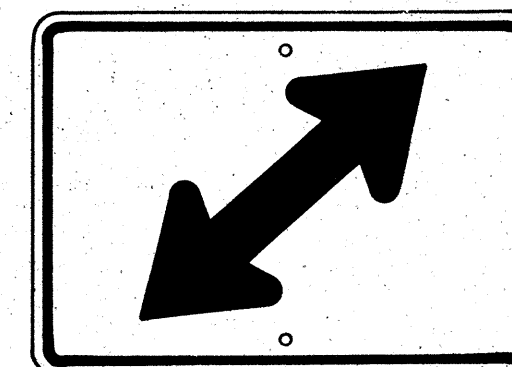
M4-2-R
* M4-2-L
21" x 15"



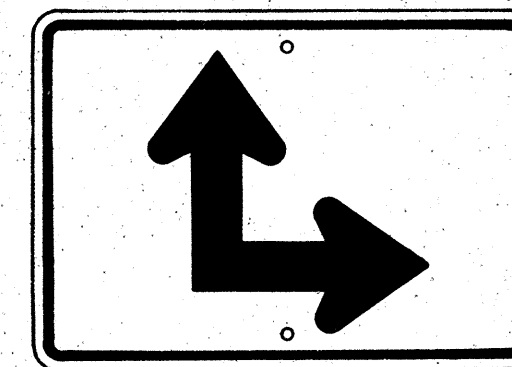
M4-3
21" x 15"



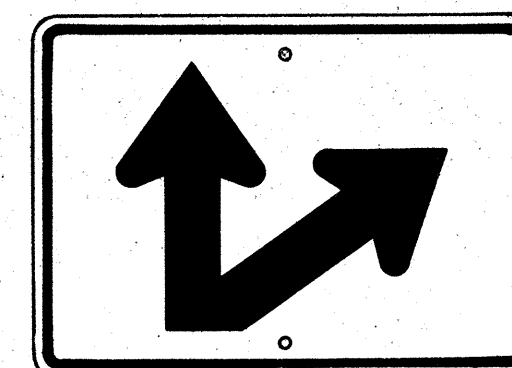
M4-4
21" x 15"



M4-5-R
* M4-5-L
21" x 15"



M4-6-R
* M4-6-L
21" x 15"



M4-7-R
* M4-7-L
21" x 15"

AUXILIARY MARKERS

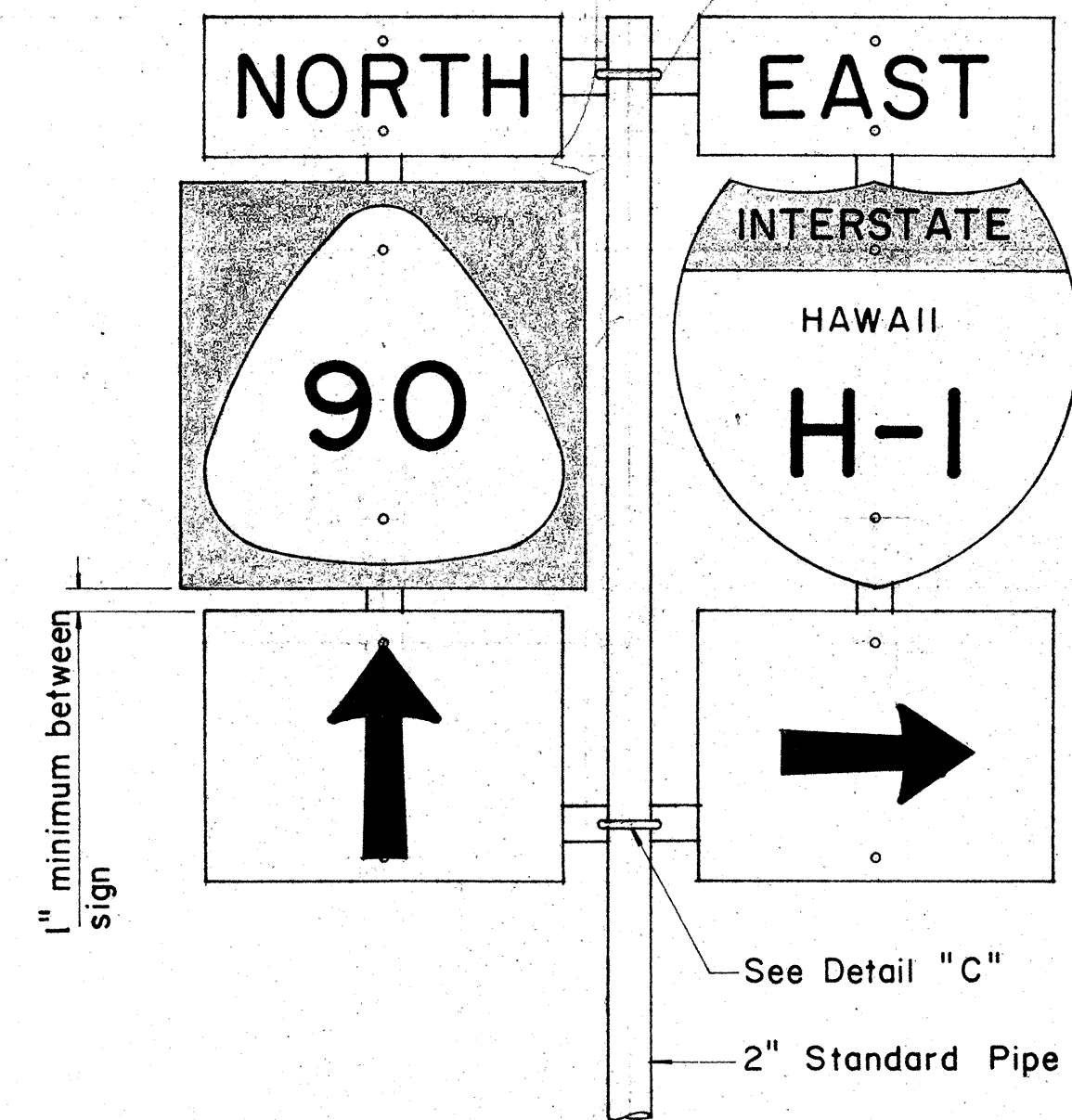
Scale: $\frac{1}{8}$ " = 1"

* NOTE:

Signs shall be similar but opposite in direction.

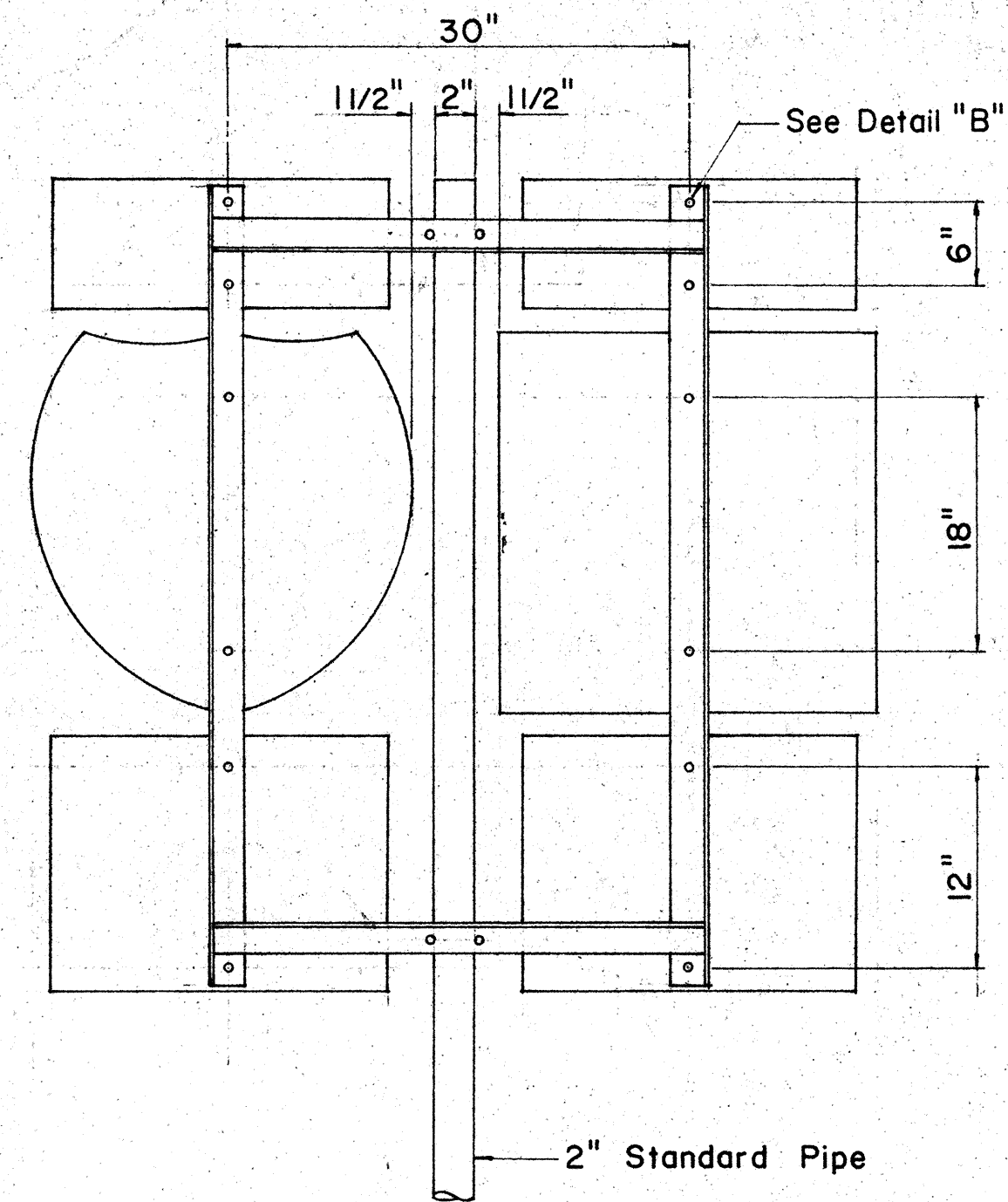
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	54	113



FRONT ELEVATION

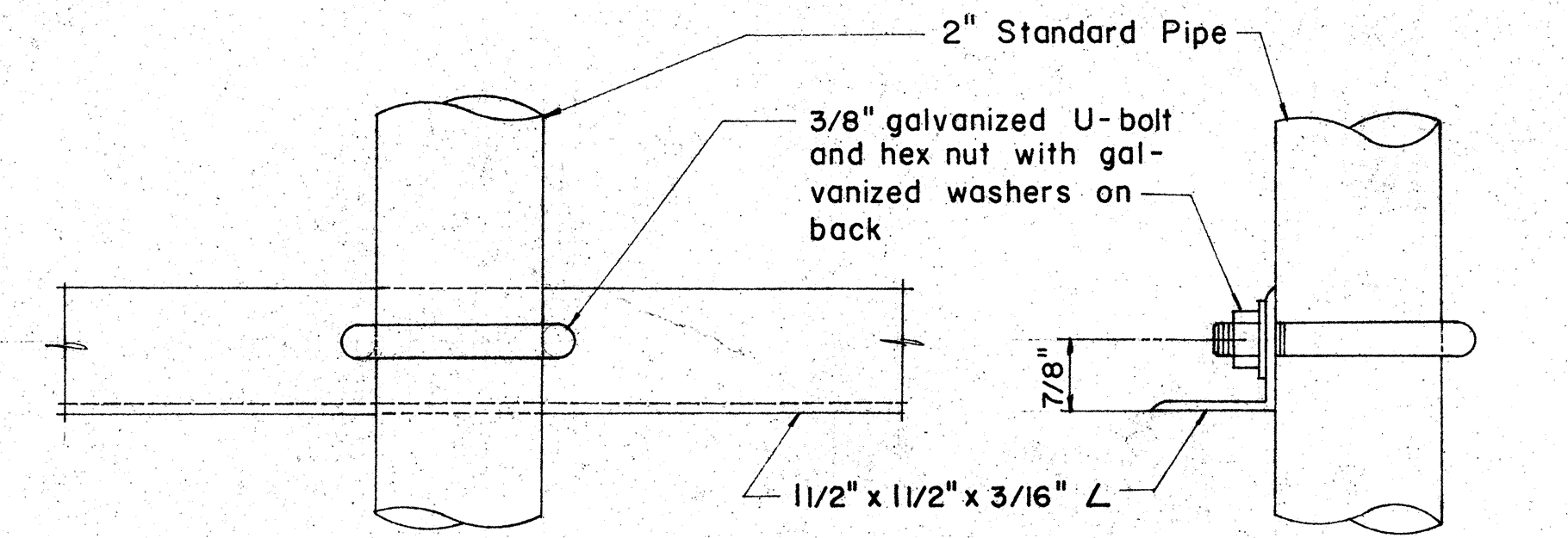
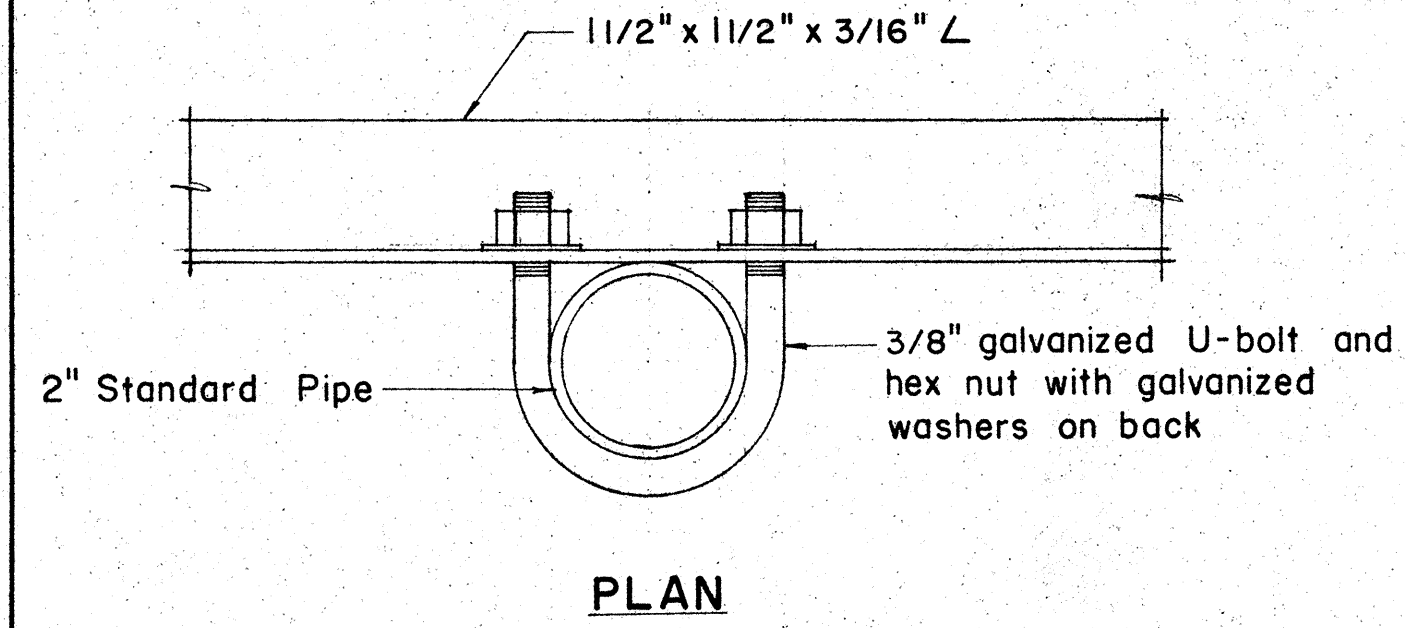
TYPE "B" ASSEMBLY



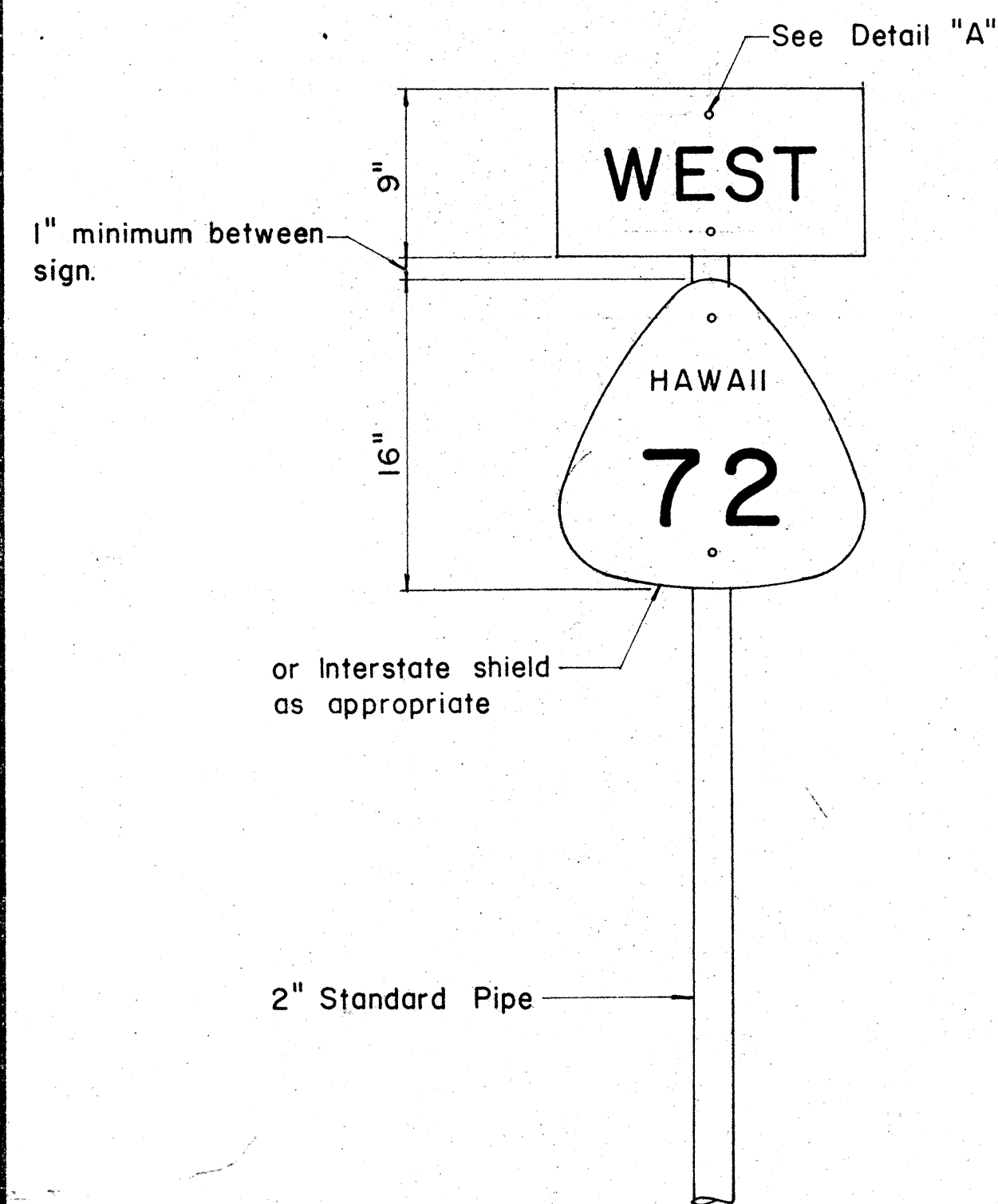
REAR ELEVATION

NOTE:

- Minimum clearance between signs shall be one inch. (Larger clearances shall be in multiples of one inch.)
- Pipe post for Type "A" & Type "B" Assembly shall be 2" Standard Pipe.

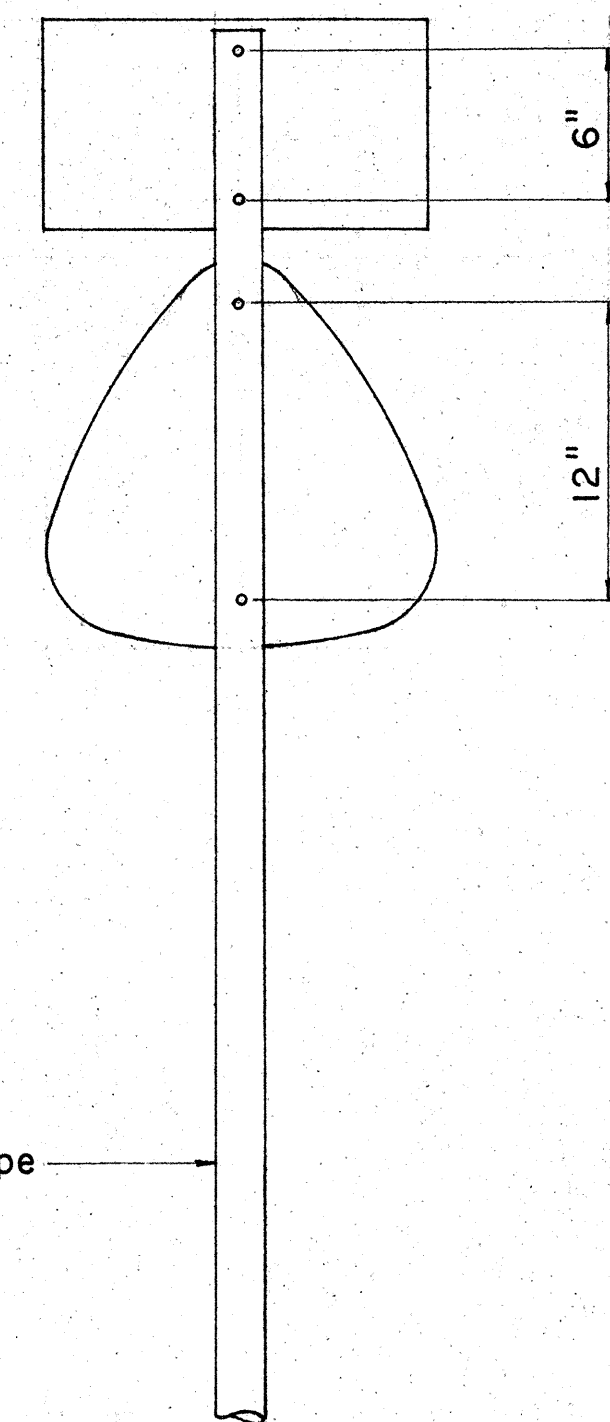


DETAIL "C"



FRONT ELEVATION

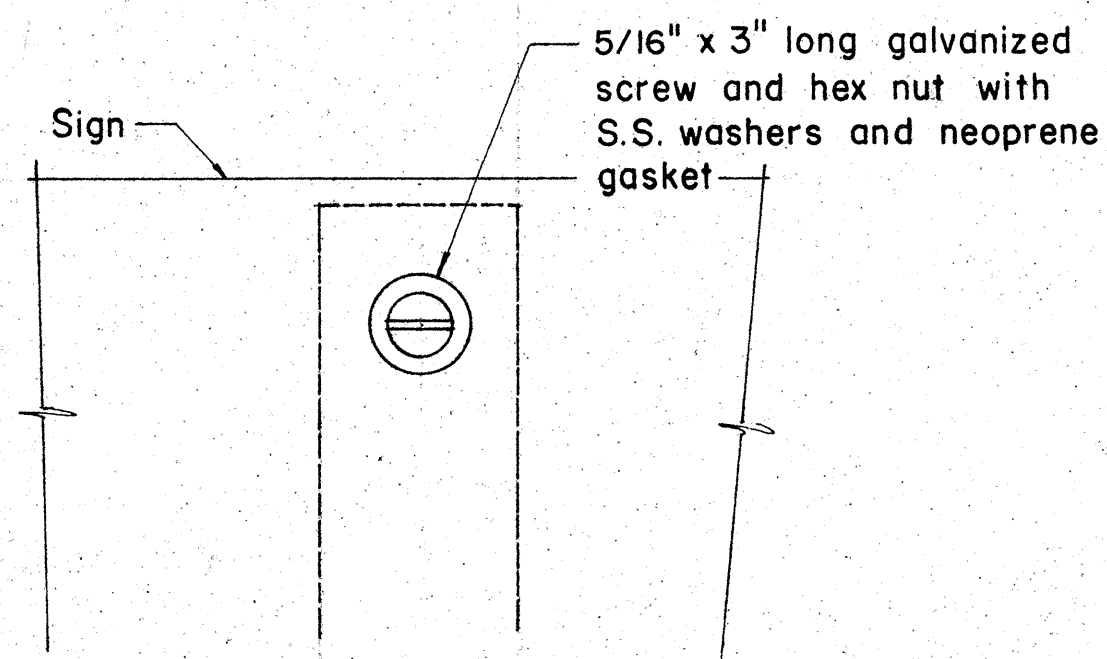
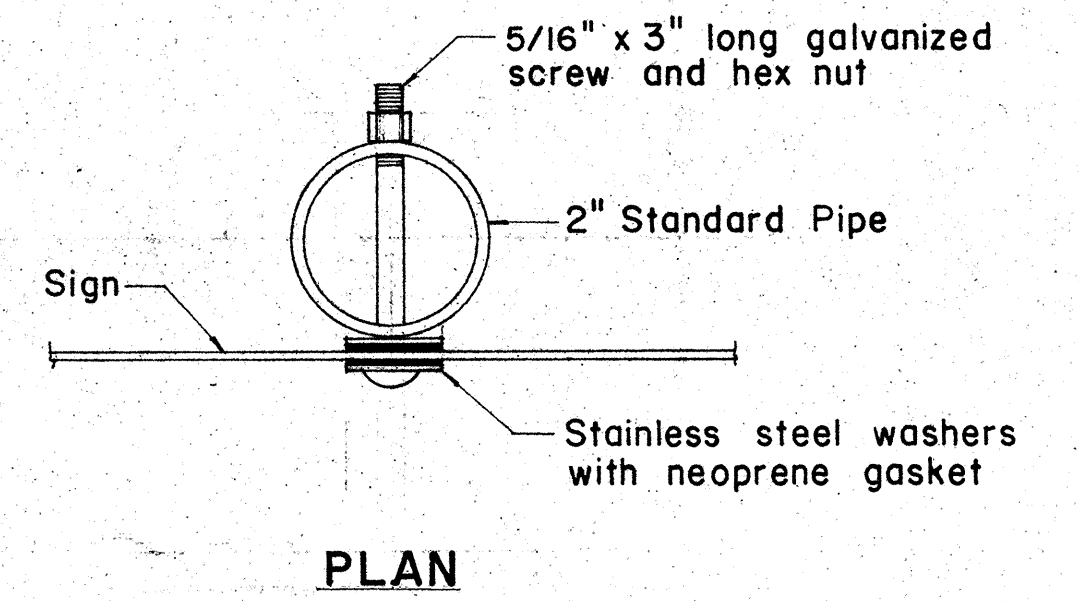
TYPE "A" ASSEMBLY



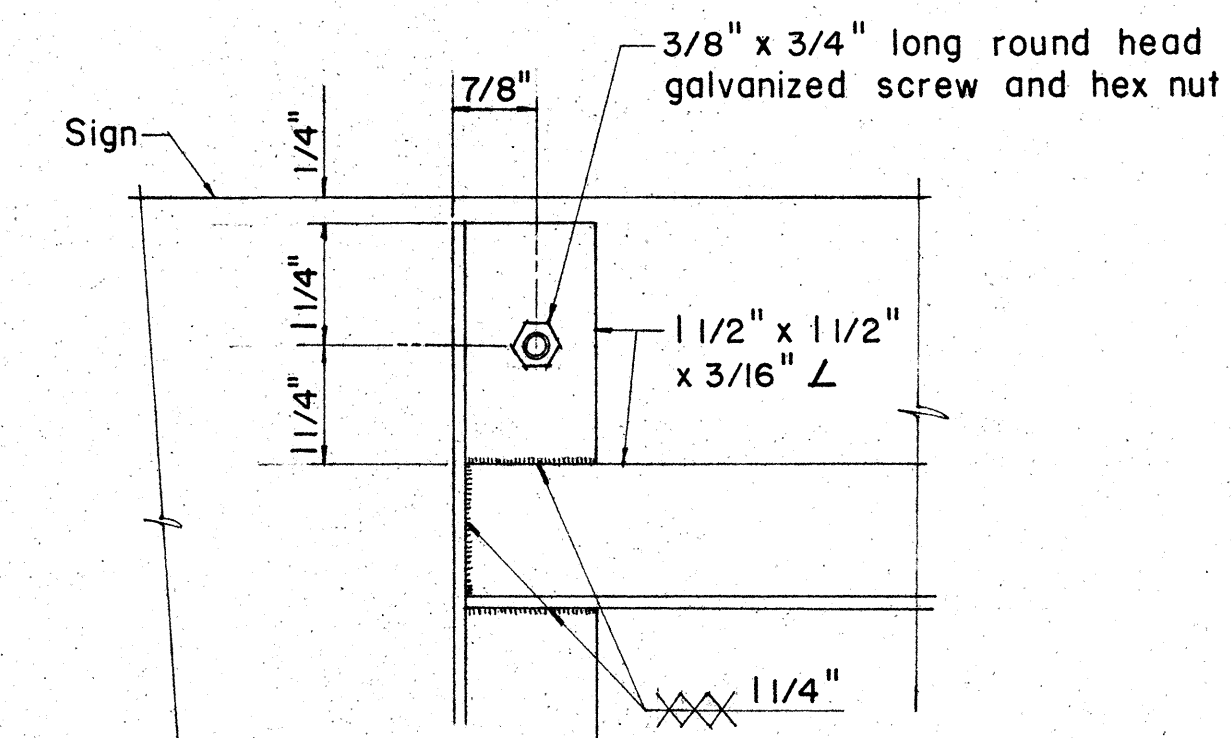
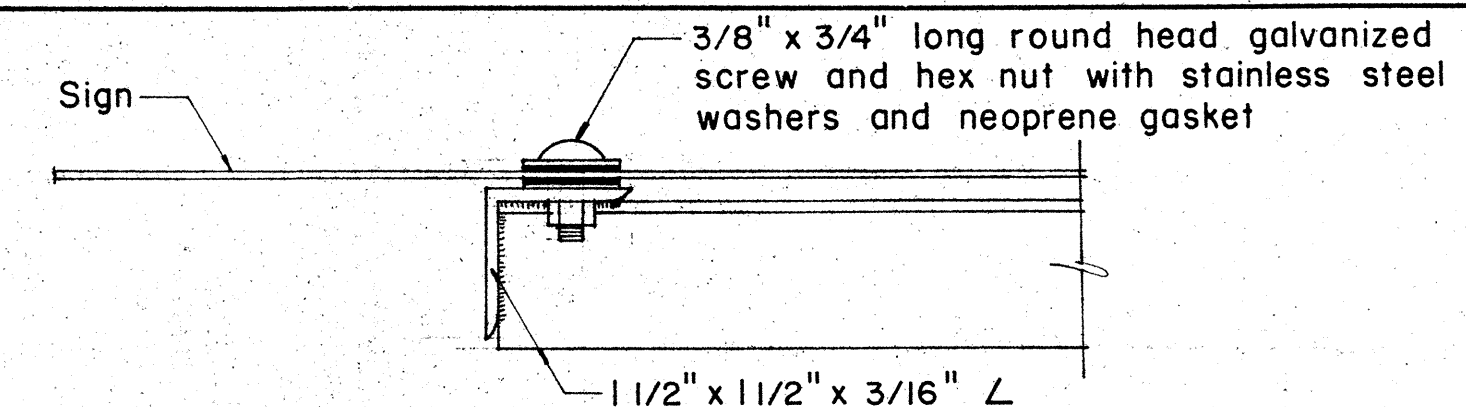
REAR ELEVATION

NOTE:

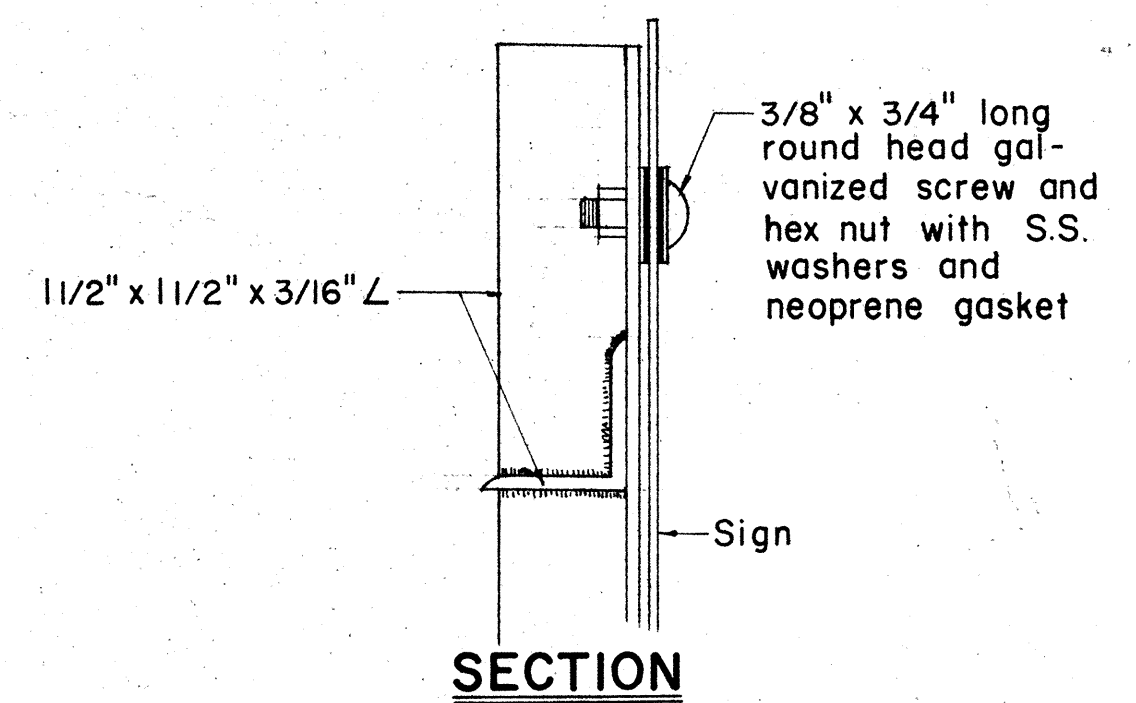
For height and lateral location of Route Marker Assembly, see plan sheet DT 100.



DETAIL "A"



DETAIL "B"



APPROVAL RECOMMENDED:

Eugene Tanaka 12/29/69

TRAFFIC ENGINEER DATE

APPROVED:

John J. Sabel 12-30-69

ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

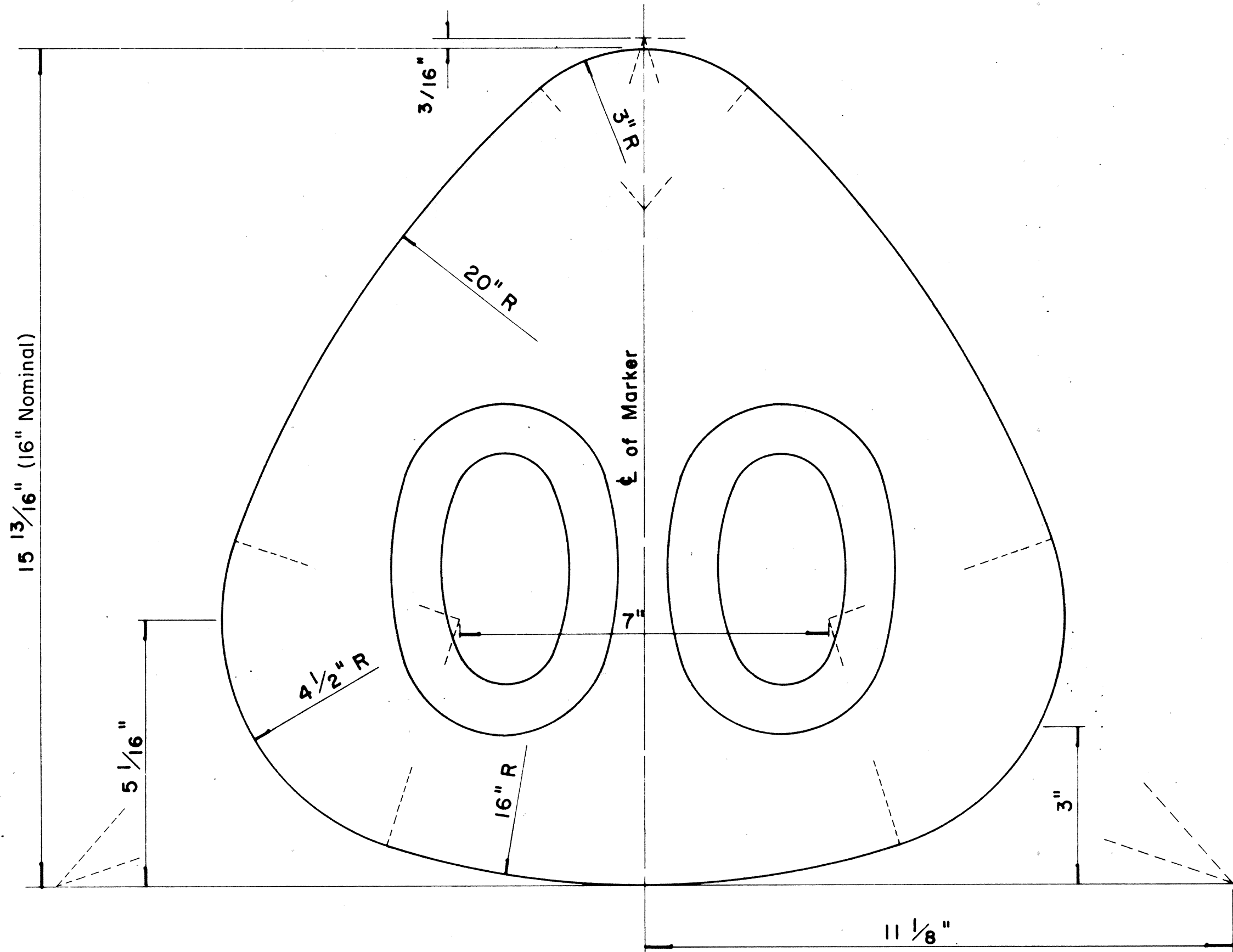
DETAILS
OF
ROUTE MARKER ASSEMBLY

SHEET No. 5 OF 17 SHEETS DT 107

ORIGINAL	SURVEYED BY	DATE
PLAN	DESIGNED BY	
NOTE BOOK	QUANTITIES BY	
	CHECKED BY	

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

MARKER SIZE	MULTIPLY DIMENSIONS BY	NUMERAL SIZE
		2 Digit - Series D 3 Digit - Series C
16"	1	6"
21"	1.3	8"
32"	2.0	12"
42"	2.63	16"



STATE ROUTE MARKER FOR GUIDE SIGNS

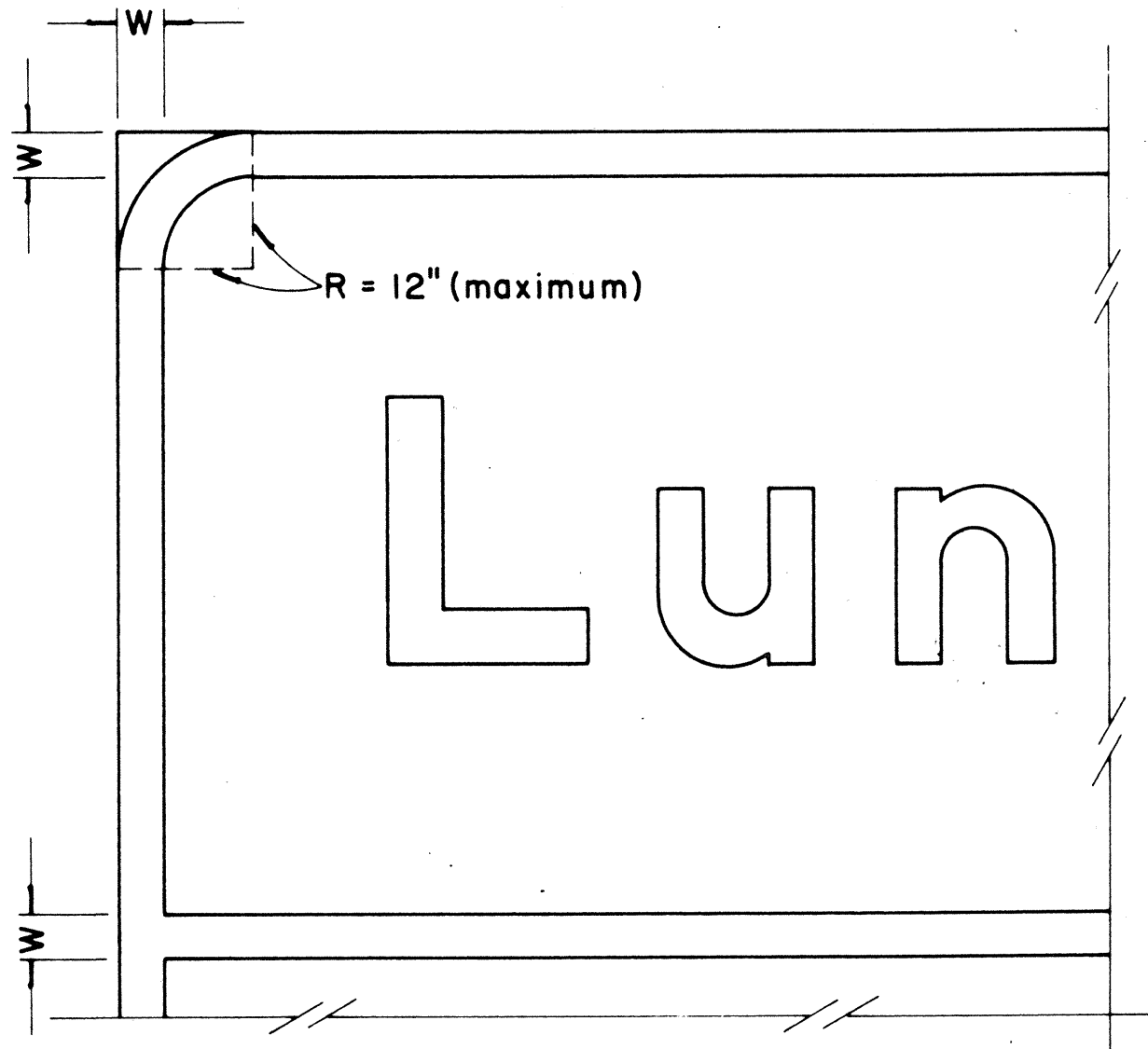
Scale: Half Size

NOTE:

- State Route Markers on Guide signs shall have black numerals on a white reflectorized background mounted on a flat aluminum cut-out.
- Numerals shall conform to the FHWA publication "Standard Alphabets for Highway Signs," 1966.
- Cut-outs shall be fastened on sign panel with aluminum blind rivets. See Standard Specifications.
- * The 16" State Route Marker shall be used only with the Construction Identification sign.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	ADD.56	113

RADI FOR SIGNS		
Least Dimension of Sign	W	R
2' - 0" to 4' - 6"	2"	3"
4' - 9" to 5' - 6"	2"	6"
5' - 9" to 7' - 6"	2"	9"
7' - 9" and greater	2"	12"



BORDER DETAIL FOR GUIDE SIGNS

Not to Scale

NOTE:

- Area outside corner radius need not be trimmed.
- All borders shall be embossed cut-outs, white and reflectorized.
- All Guide signs shall have borders.

APPROVAL RECOMMENDED:

Eishi Tanaka 4/11/72
TRAFFIC ENGINEER DATE

APPROVED:

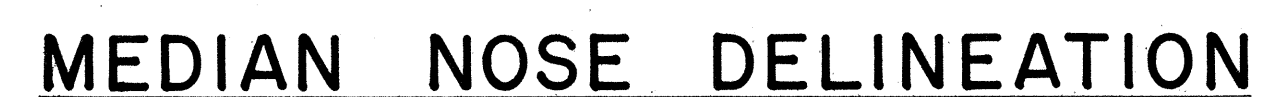
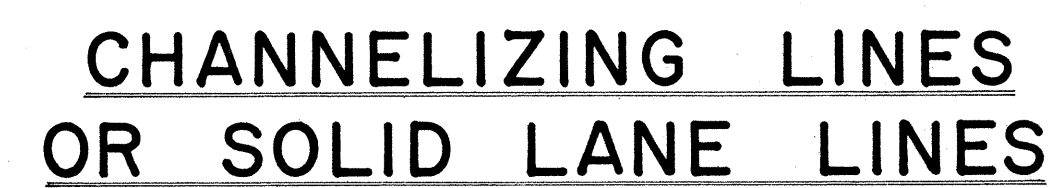
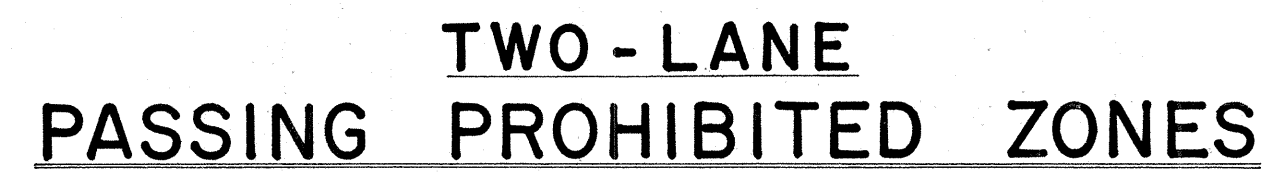
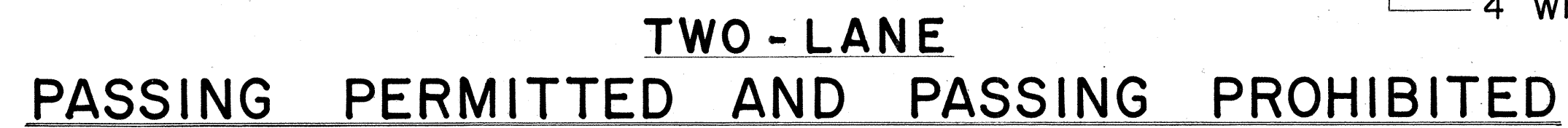
Walter Z. Salsinski 4/12/72
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 209 Approved 12-30-69	H.C.	4/12/72

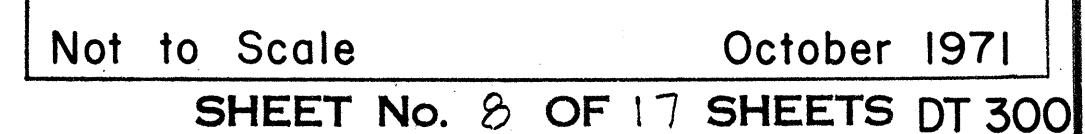
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAILS STATE ROUTE MARKER AND BORDER DETAIL FOR GUIDE SIGNS	
Scale: As Shown	
SHEET No. 7 OF 17 SHEETS DT 209	

ADD. 56
APP. 56

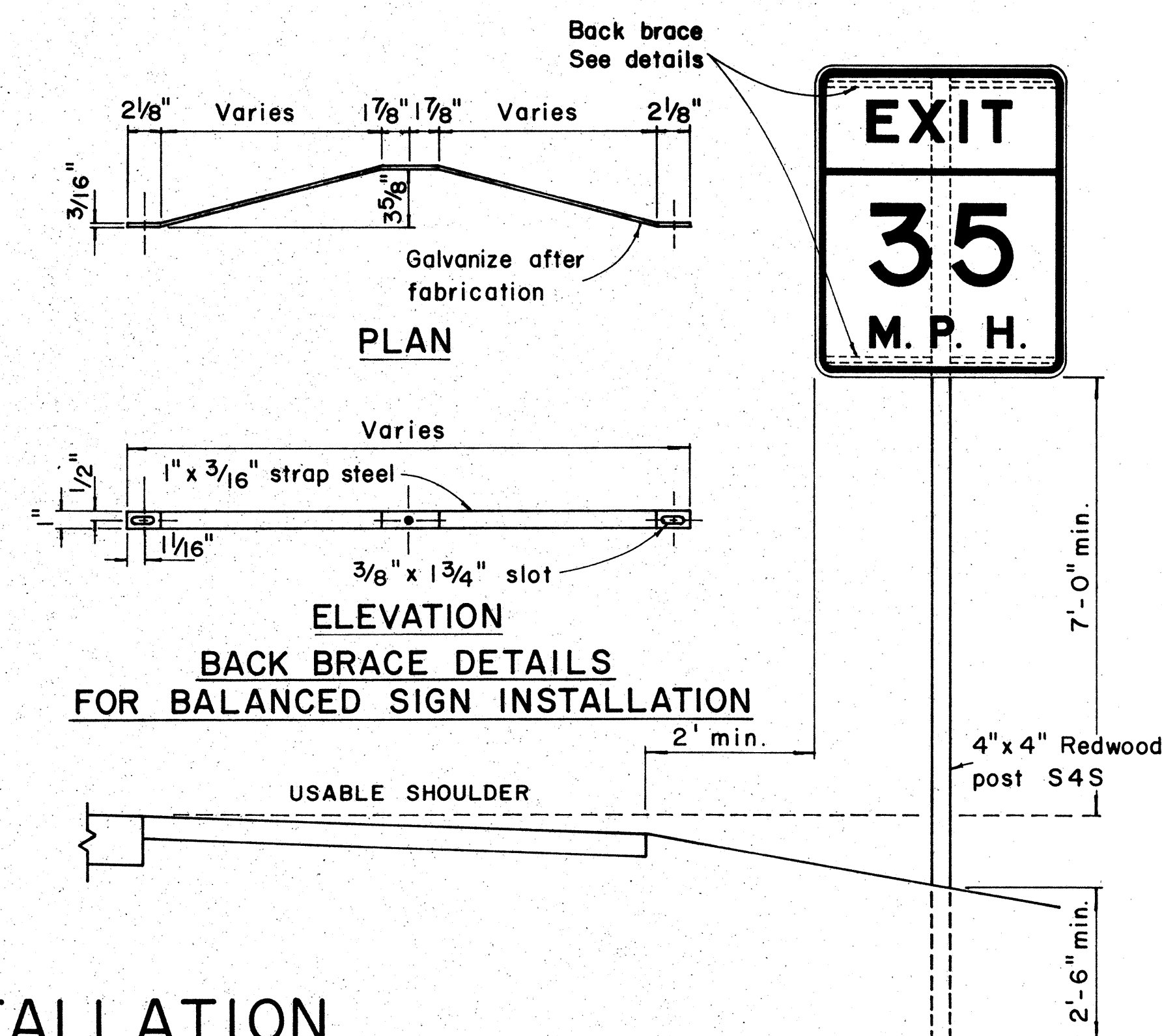
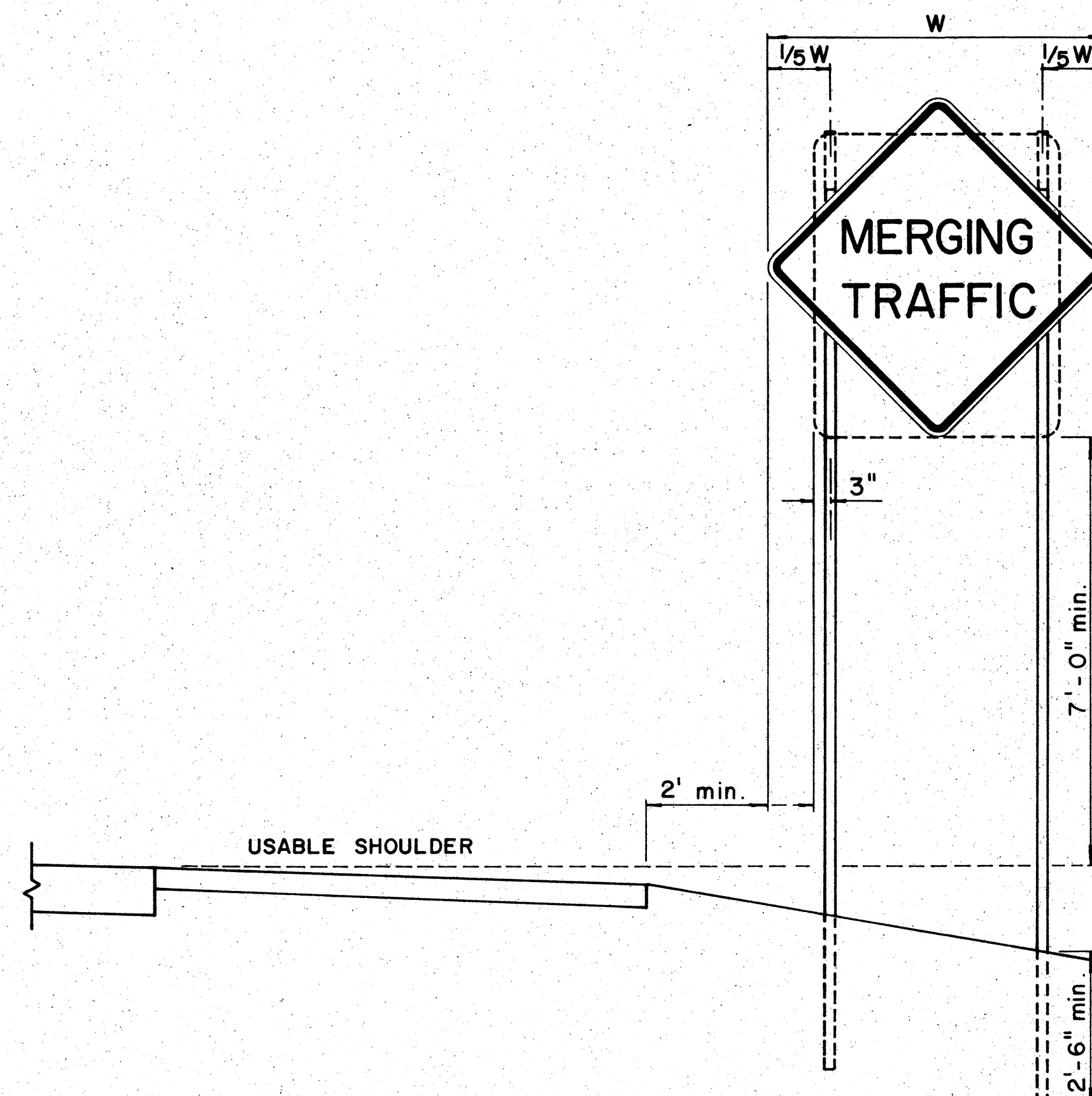
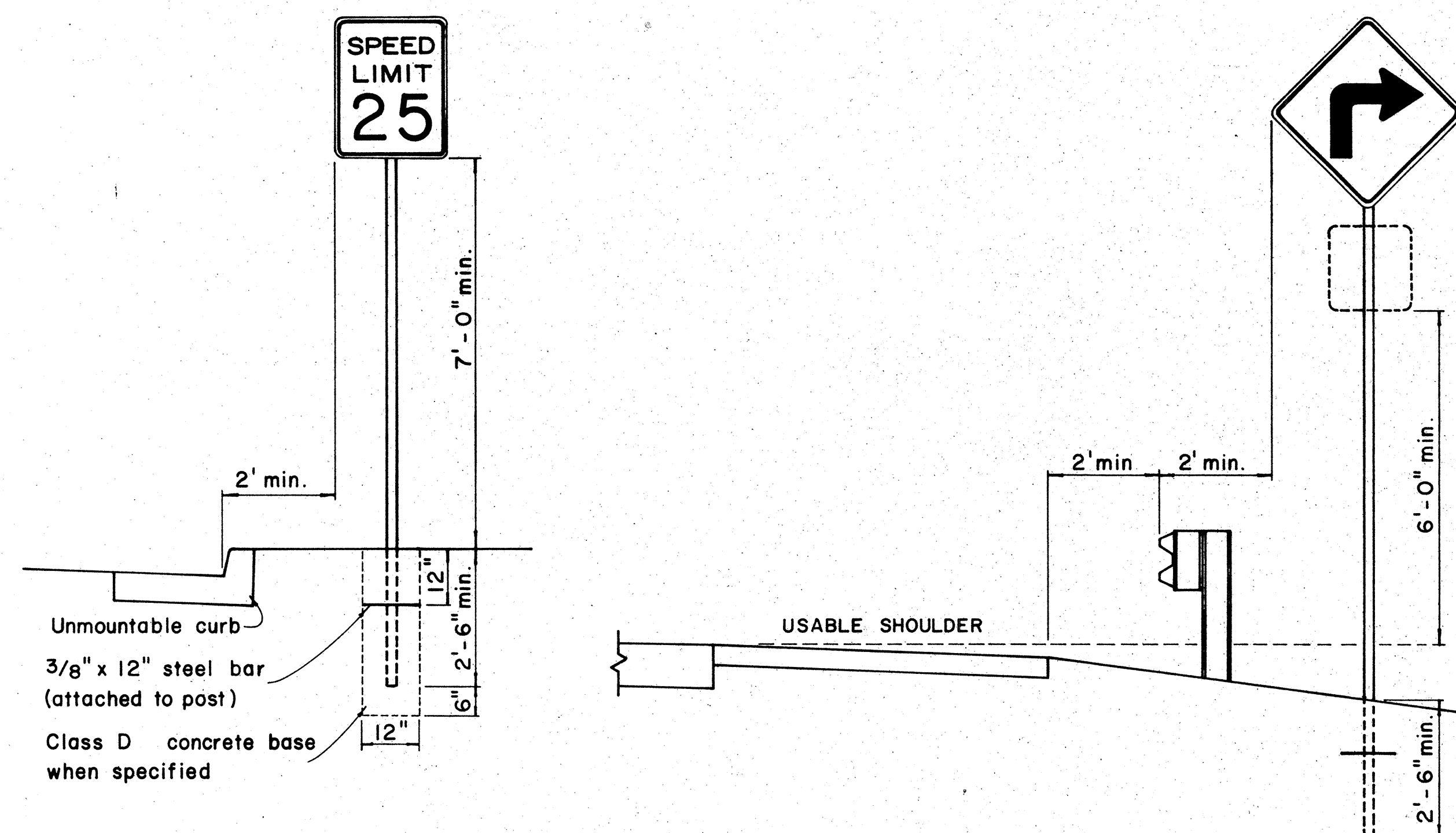
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"



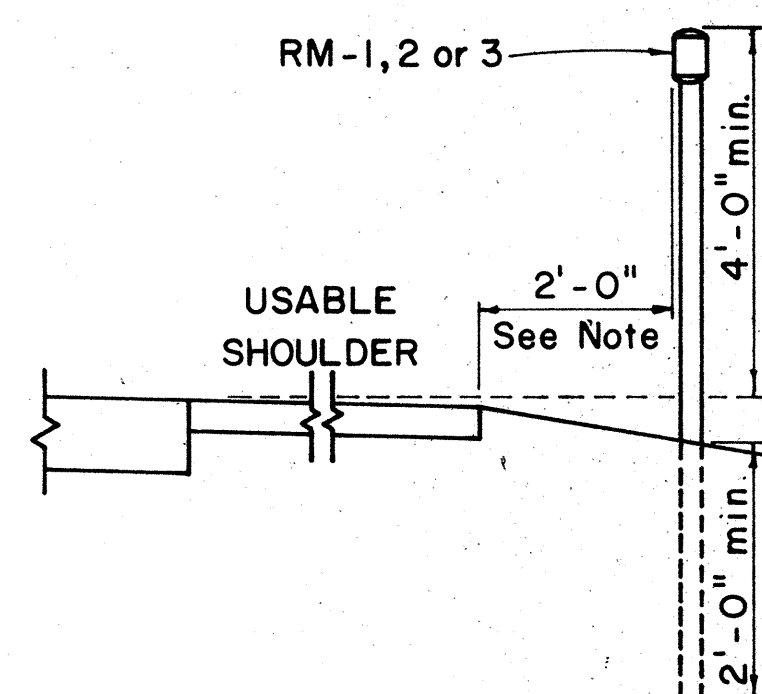
MISCELLANEOUS



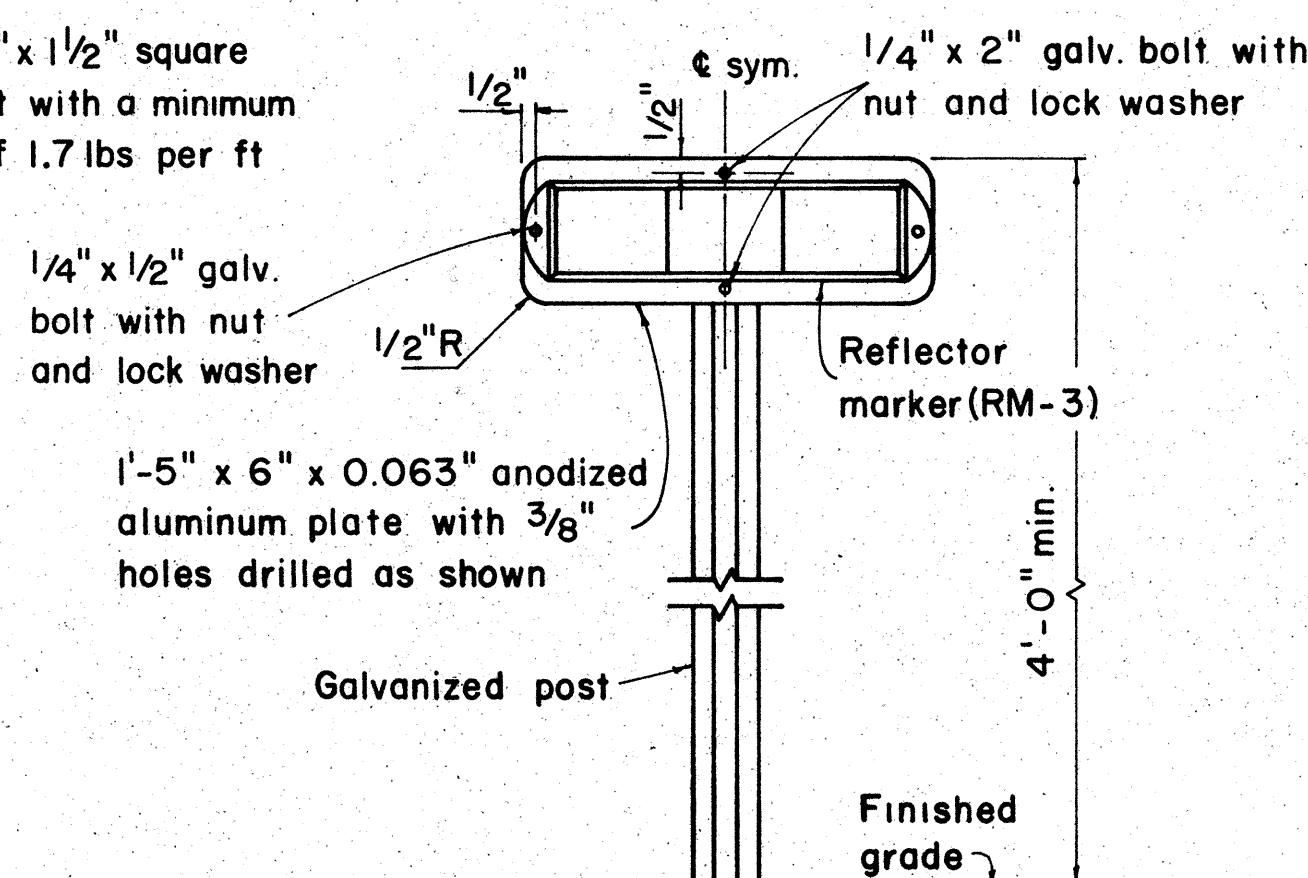
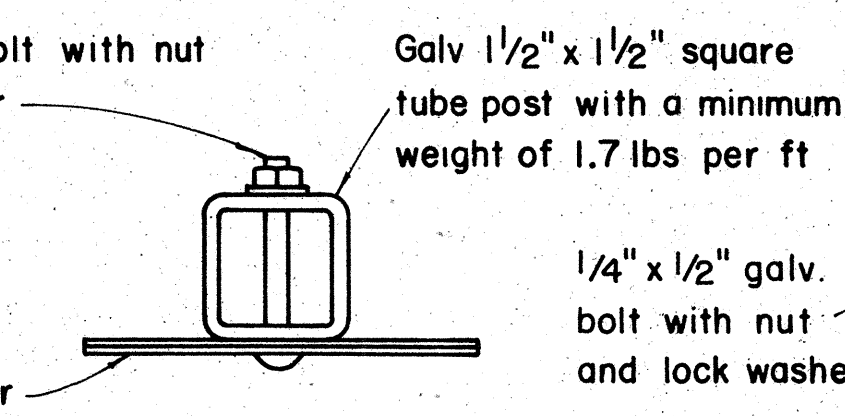
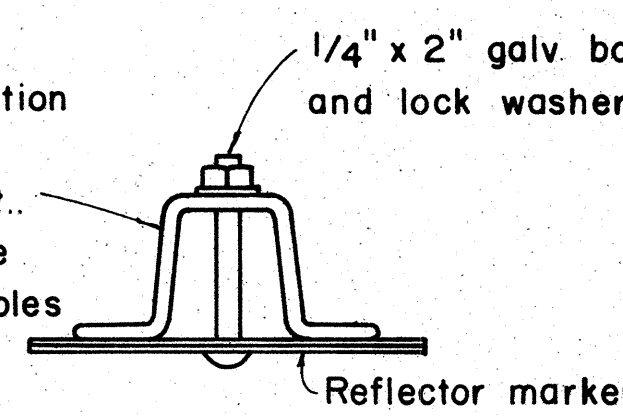
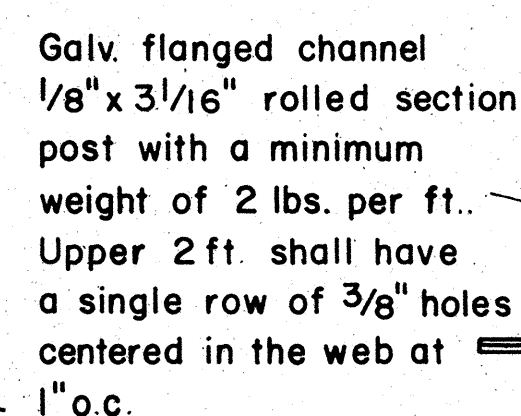
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	58	113



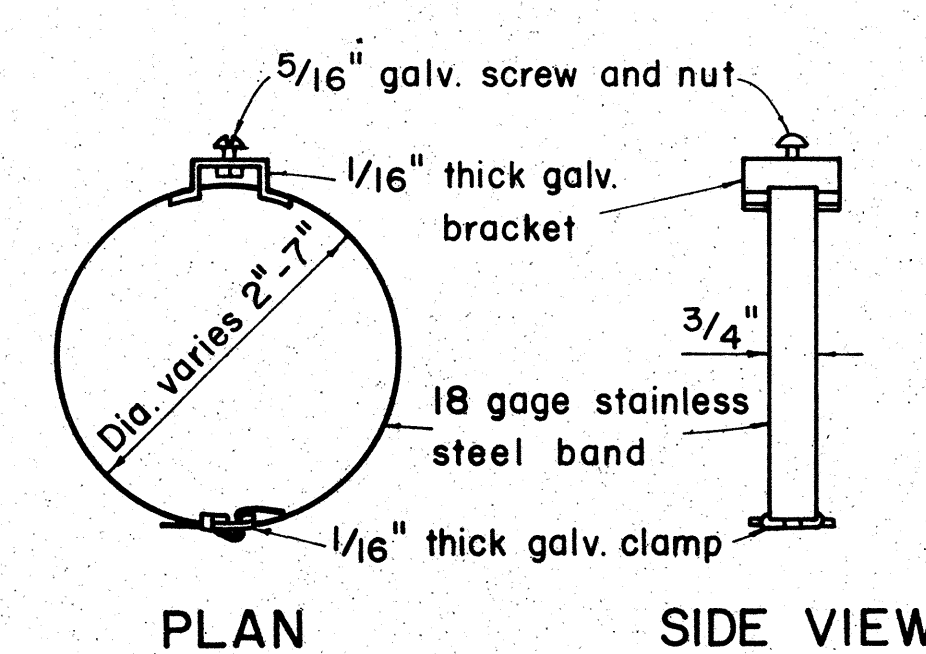
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION



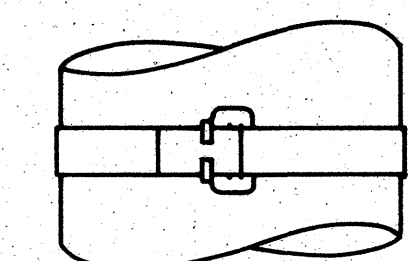
ROAD DELINEATOR



TYPICAL DETAIL
HORIZONTAL REFLECTOR MARKER
RM - 3H



FRONT VIEW



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

- GENERAL NOTES:

1. Sign posts shall be 2" galv. standard pipe or 2" x 2" galv. sq. tube post.
2. 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.
3. 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.
4. Sign posts shall extend 3 1/2" above sign where required for City and County street name signs.
5. 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.
6. Clearance markers (RM-3, RM-4) shall be installed with the edge of the marker in line with the inner edge of the obstruction.
7. (R) or (L) indicates right or left and shall be as shown on the plans.

APPROVAL RECOMMENDED:

Eiichi Tanaka 12/29/6
TRAFFIC ENGINEER DATE

APPROVED:

Assistant Chief Engineering 12-30-6
DATE

NO.	REVISION	APPROVED BY	DATE

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

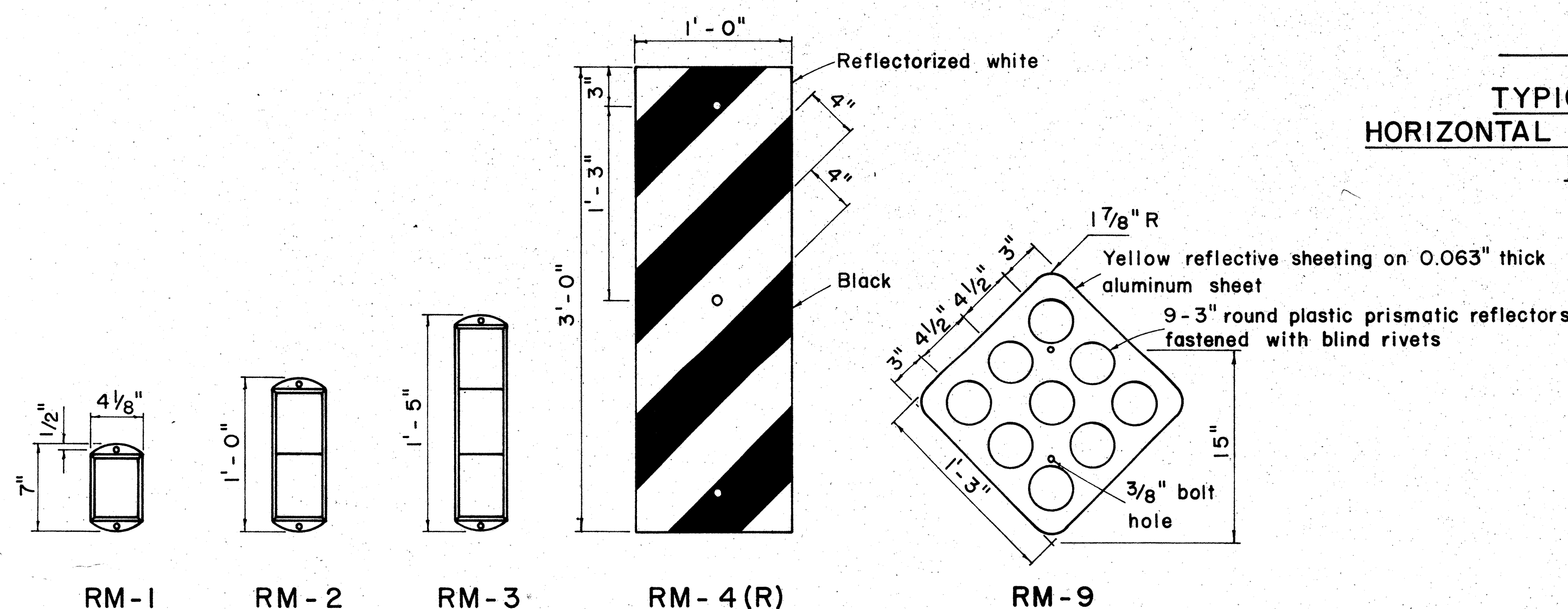
STANDARD DETAILS

MISCELLANEOUS SIGN DETAILS

Not to scale

March, 1968

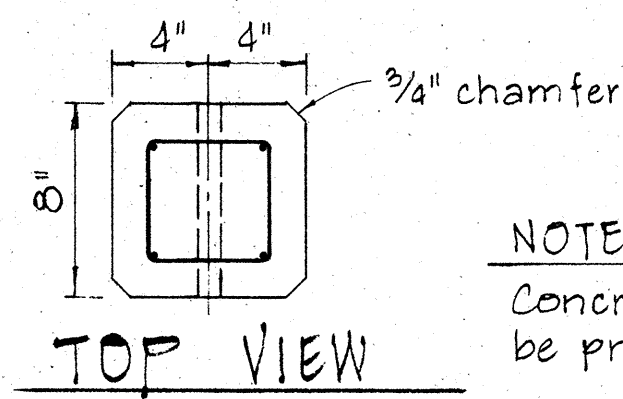
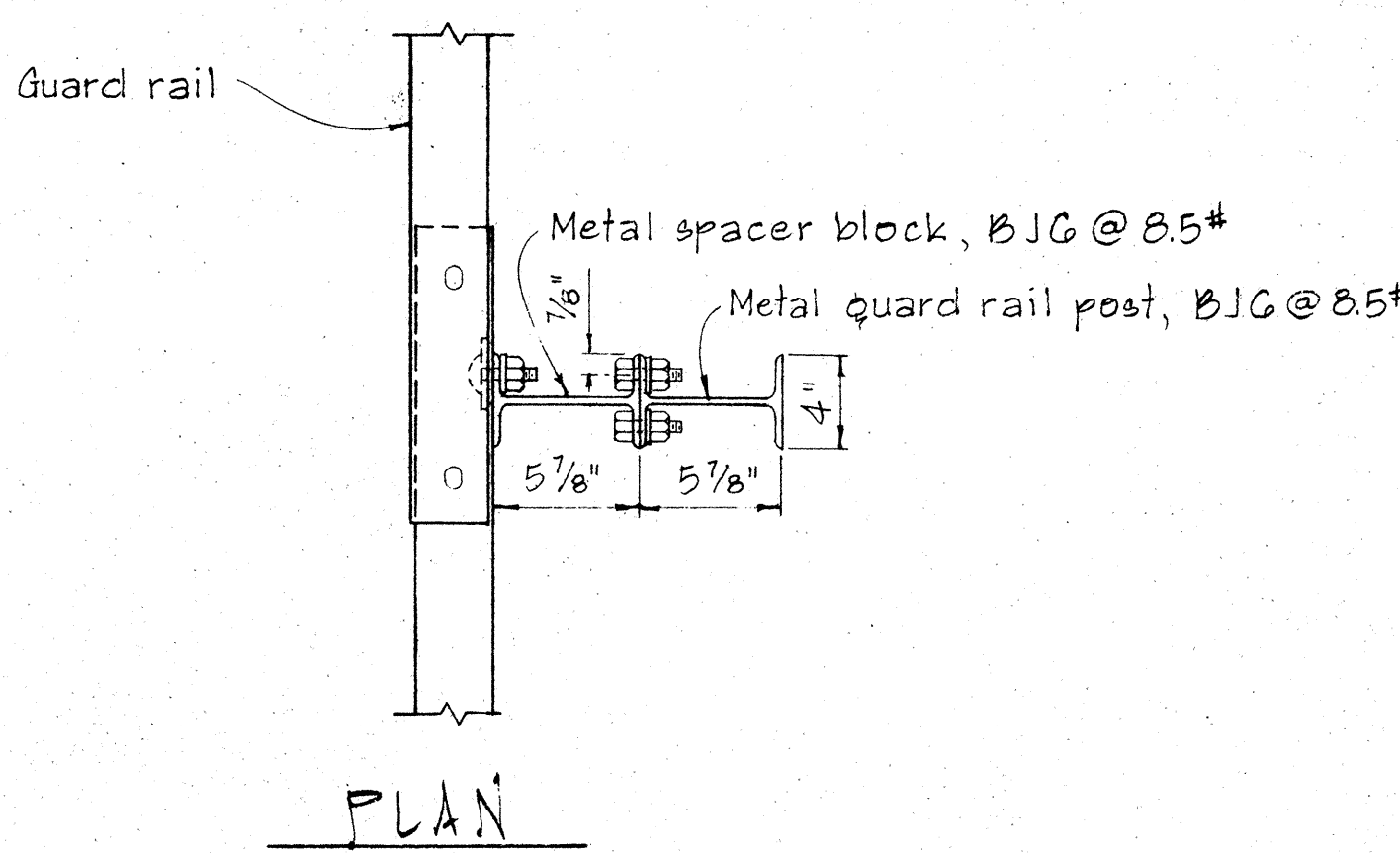
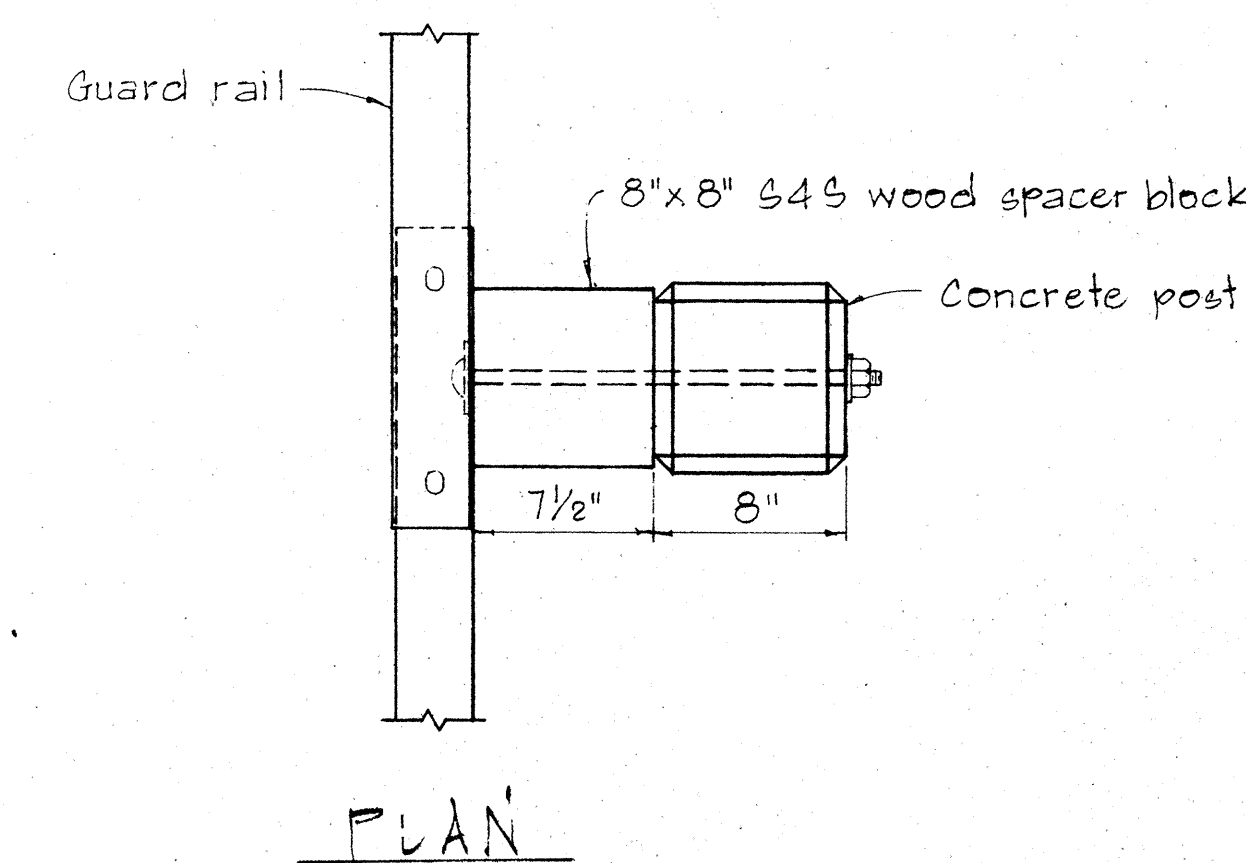
SHEET No. 9 OF 17 SHEETS DT 100



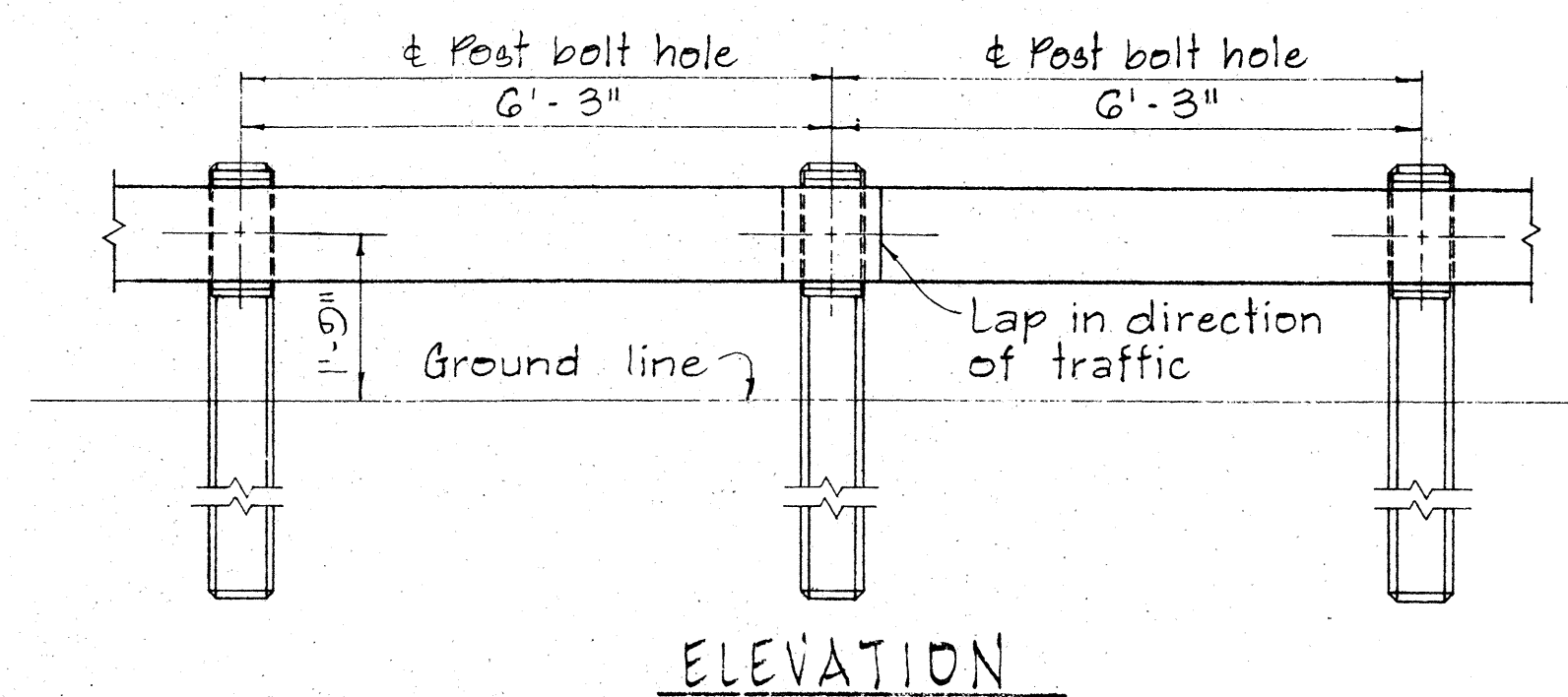
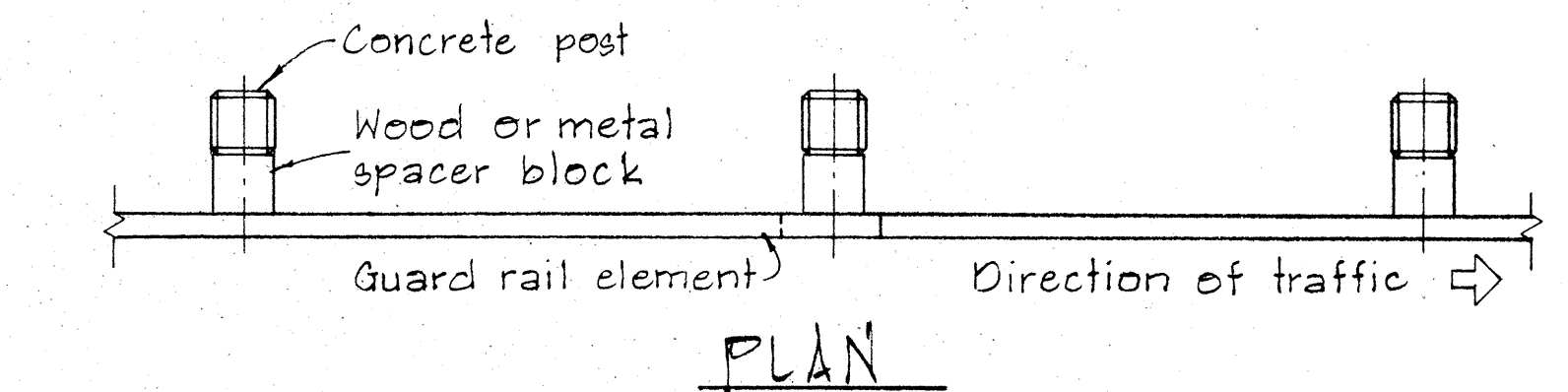
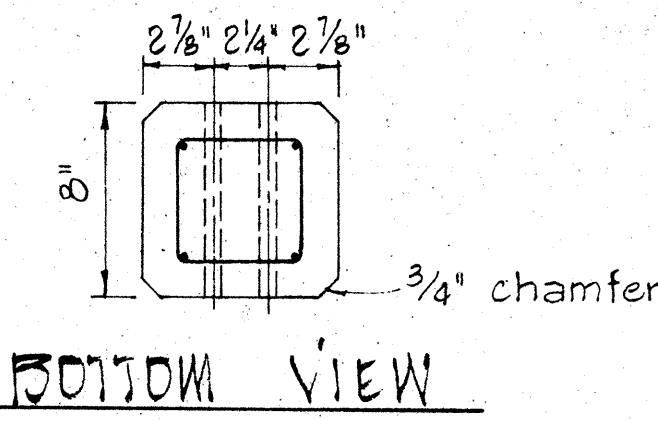
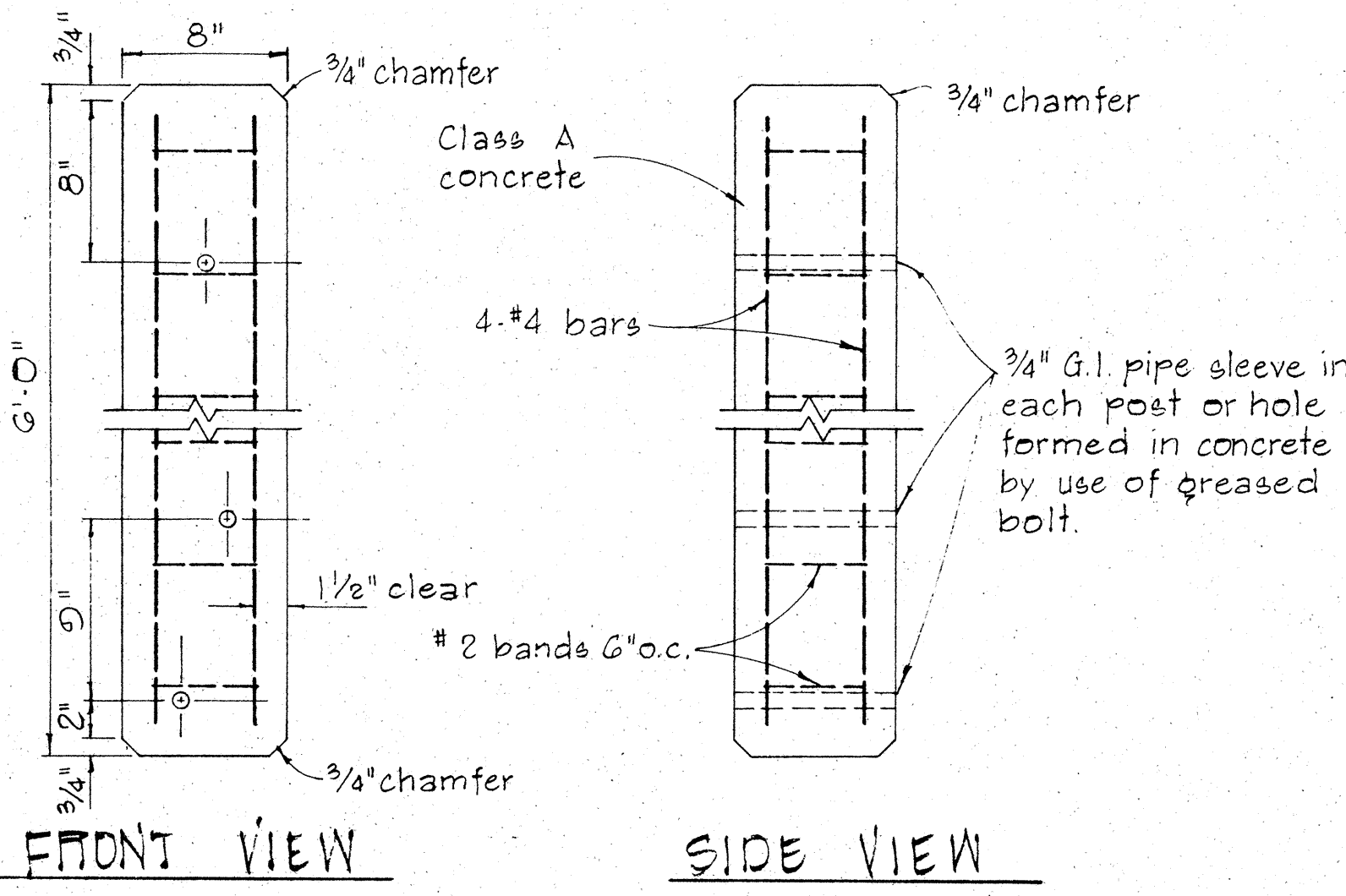
REFLECTOR MARKERS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-117	1972	59	113

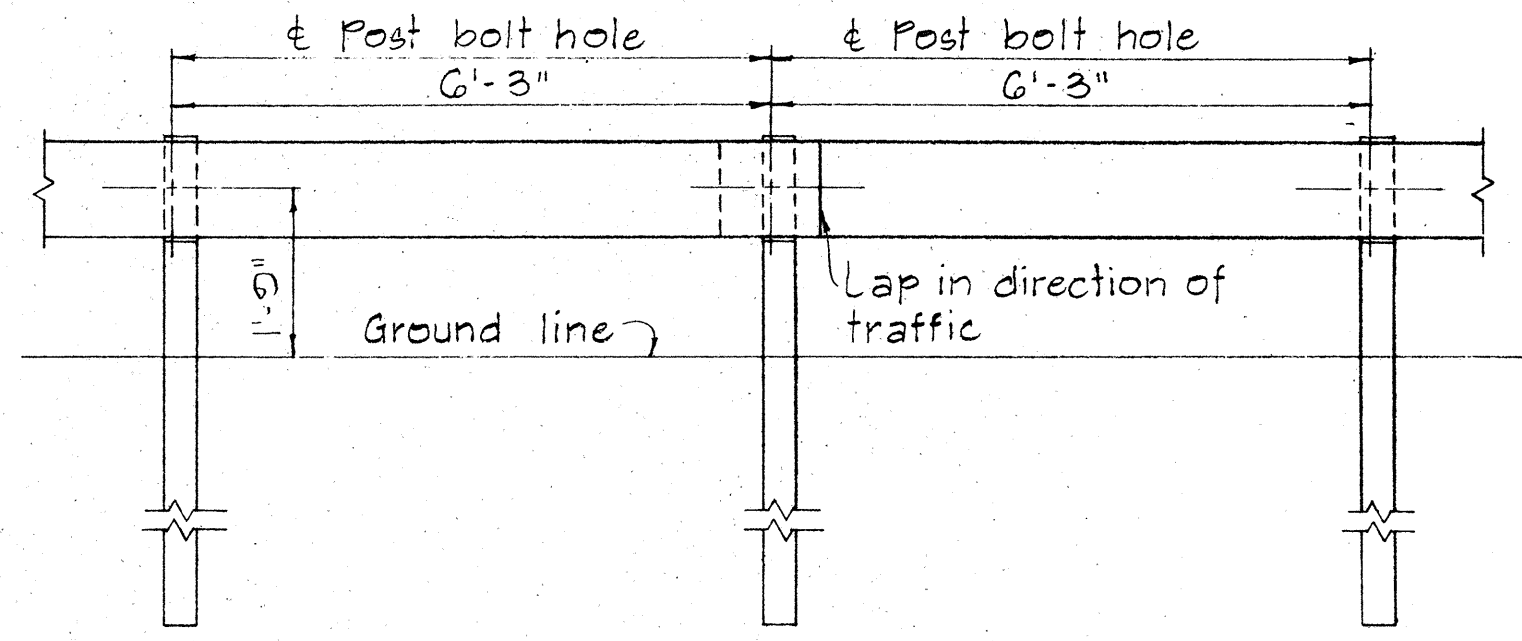
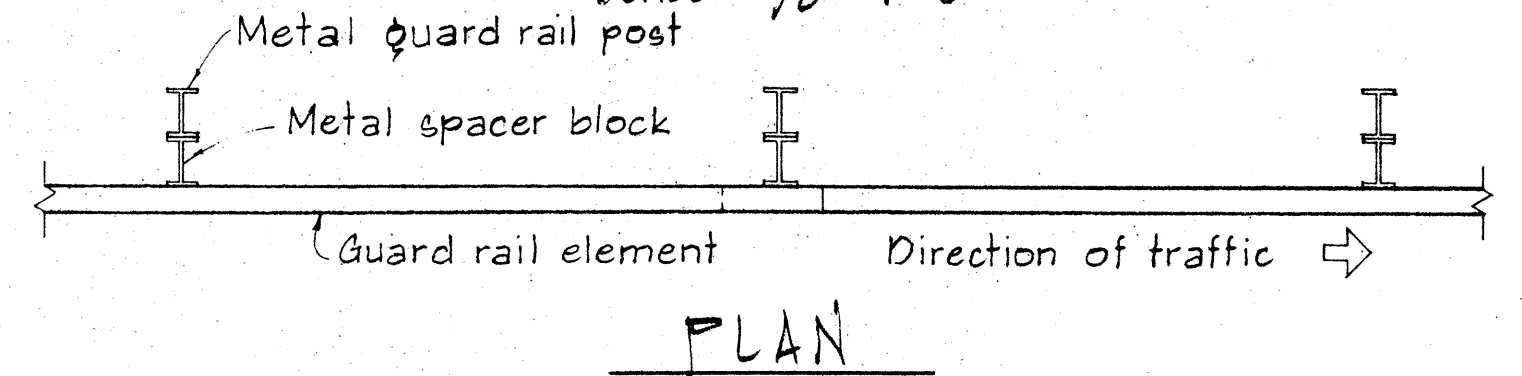


NOTE:
Concrete post shall be precast



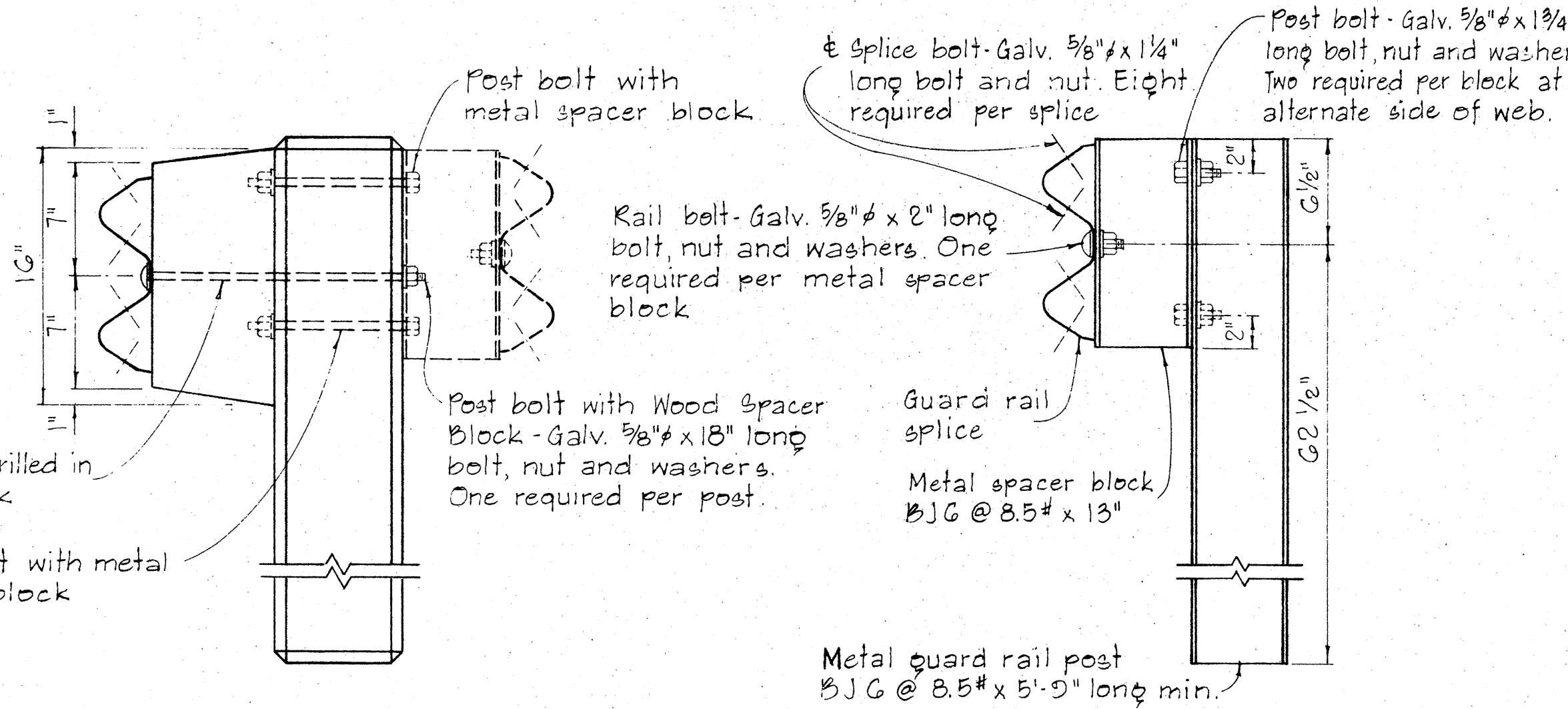
METAL GUARD RAIL ON CONCRETE POST WITH WOOD OR METAL SPACER BLOCK.

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



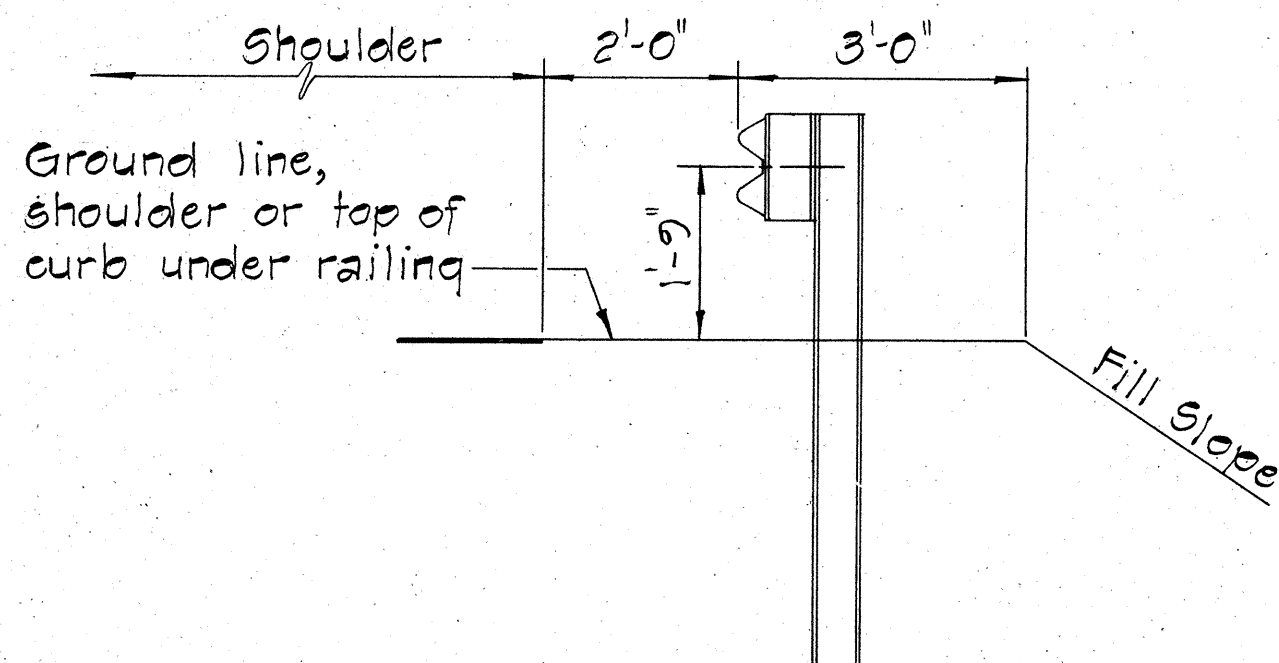
METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

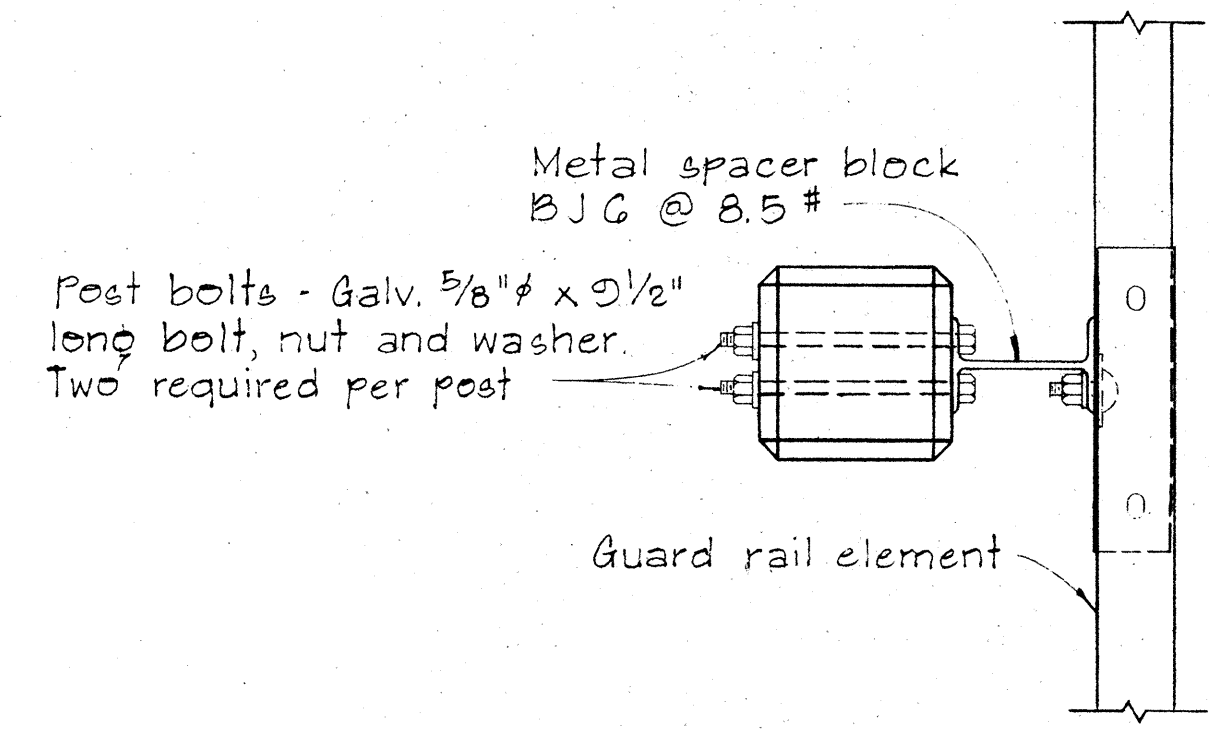
SCALE: 1 1/2" = 1'-0"



AT SHOULDER SECTION

TYPICAL METAL GUARD RAIL DETAIL

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"

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

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

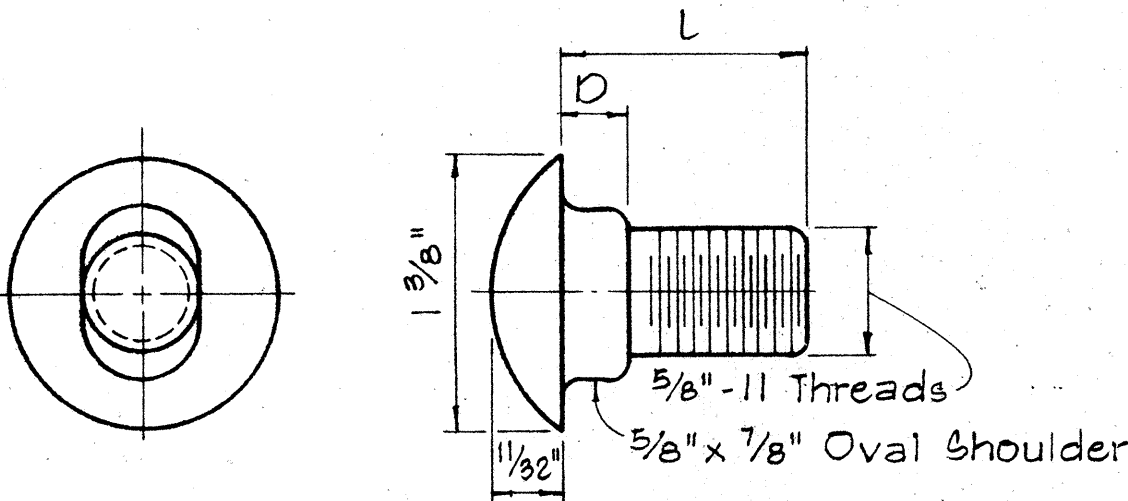
STANDARD DETAILS
METAL GUARD RAIL
SCALE: AS SHOWN
NOV. 1968

SHEET No. 10 OF 17 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-(17)	1972	60	113

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"

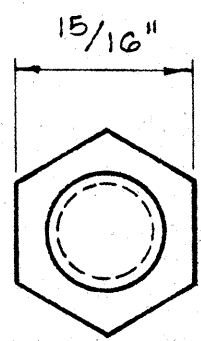
BOLT DIMENSIONS		
TYPE B BOLT		
		L
Post Bolt for Conc. Post w/ Metal Blocks		2 1/2"
Post Bolt for Metal Post w/ Metal Block		1 3/4"



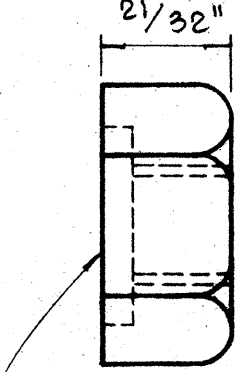
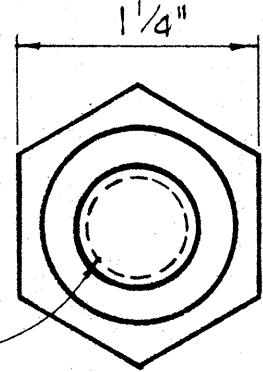
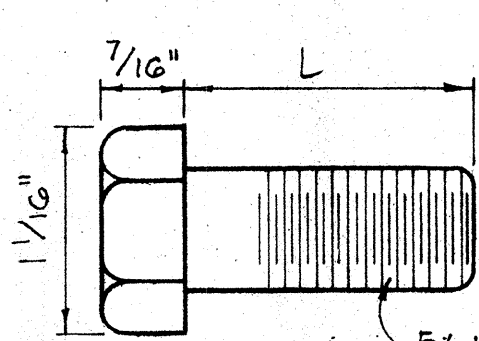
TYPE A BOLT

SPLICE RAIL AND POST BOLTS

Scale: Full Size



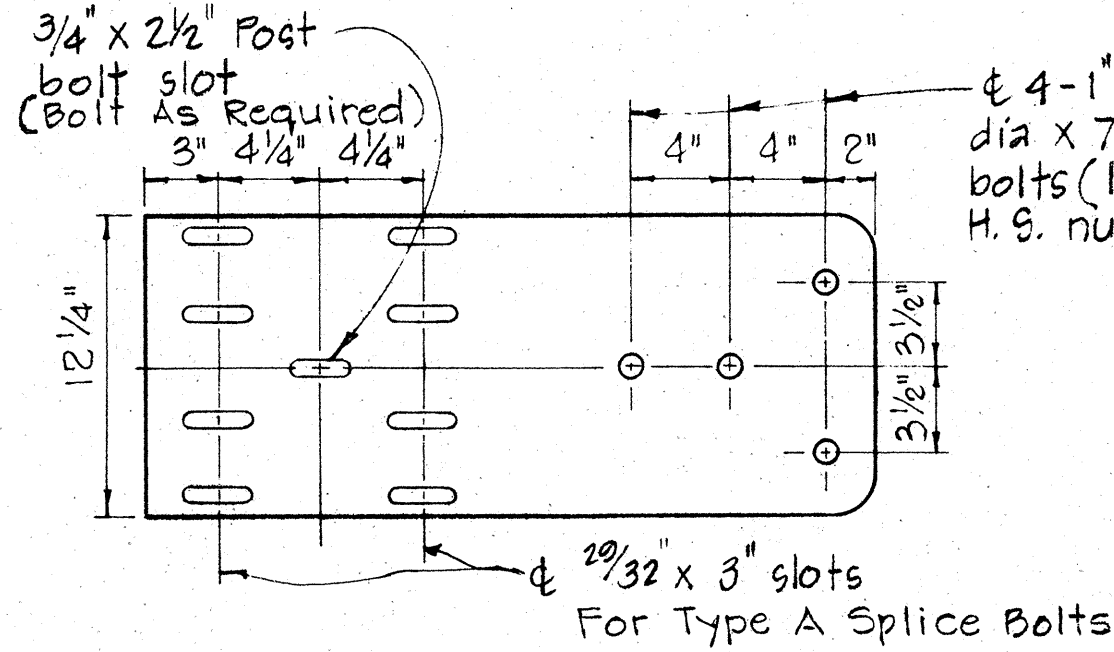
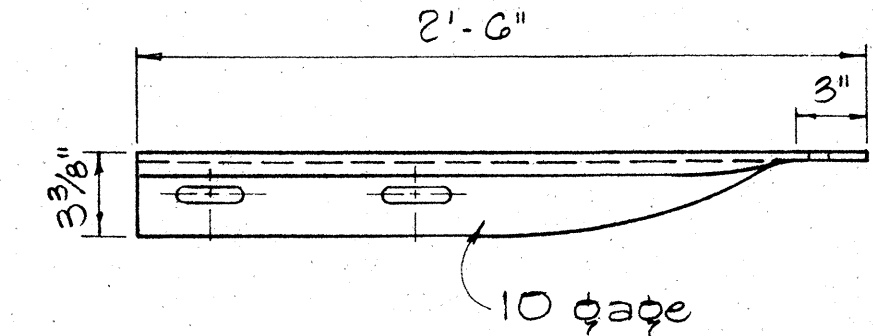
TYPE B BOLT



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

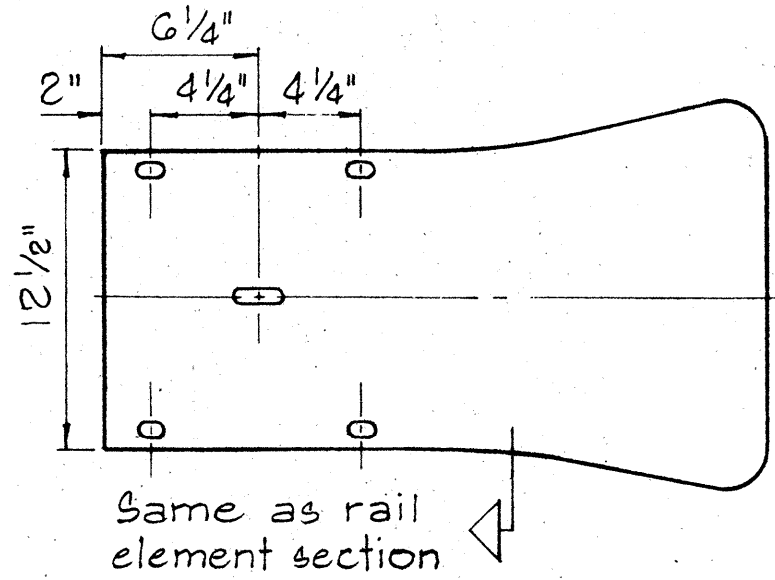
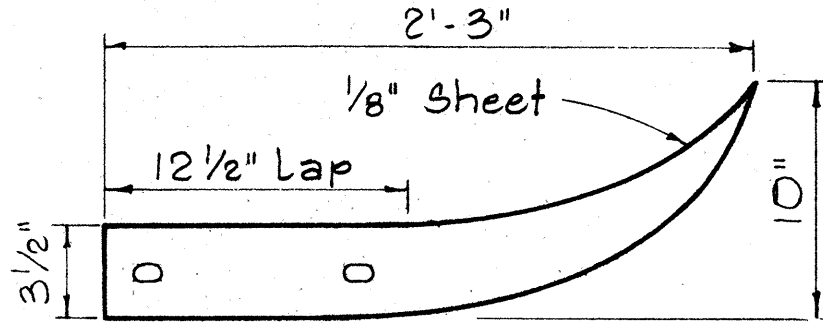
HEXAGON NUT

Scale: Full Size



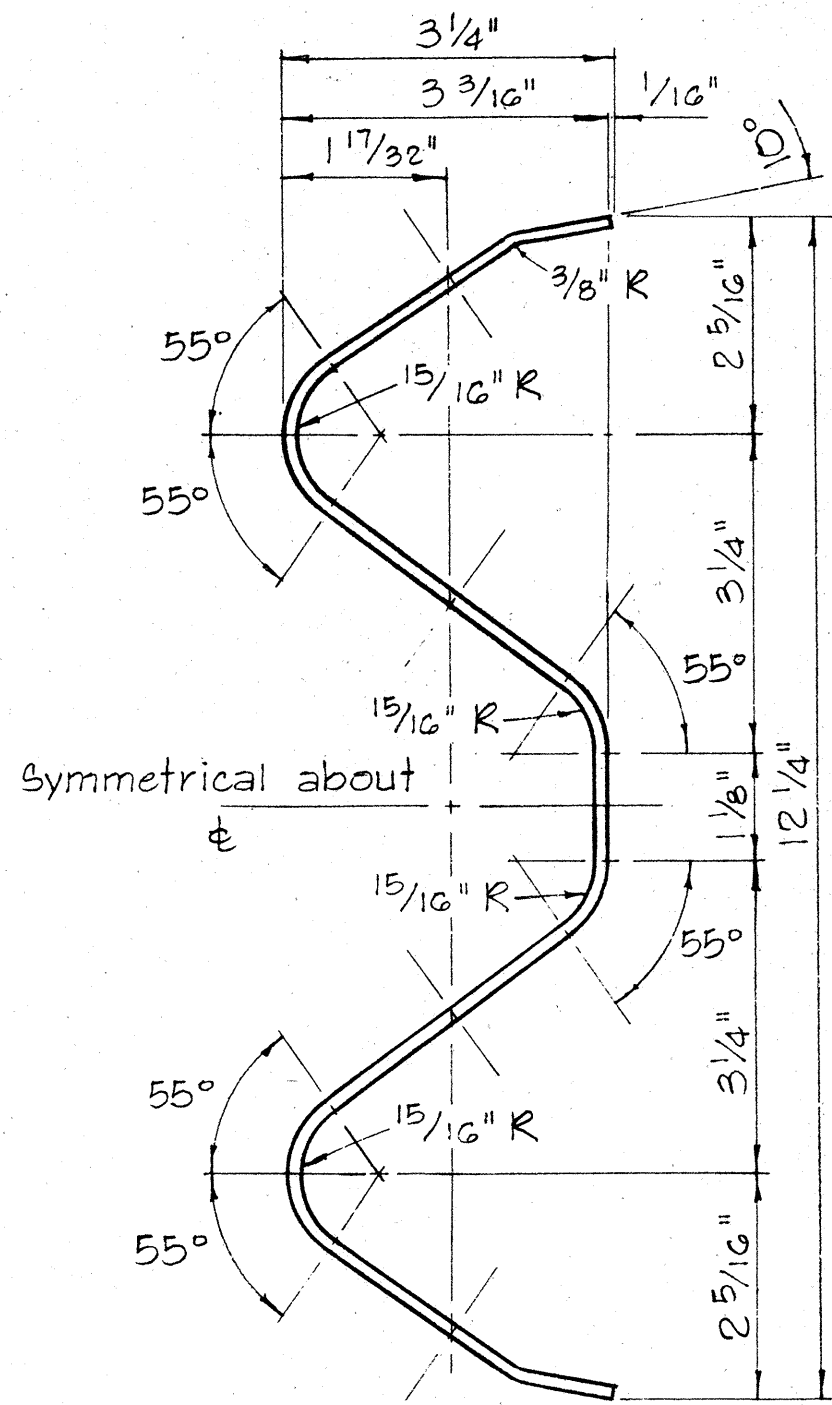
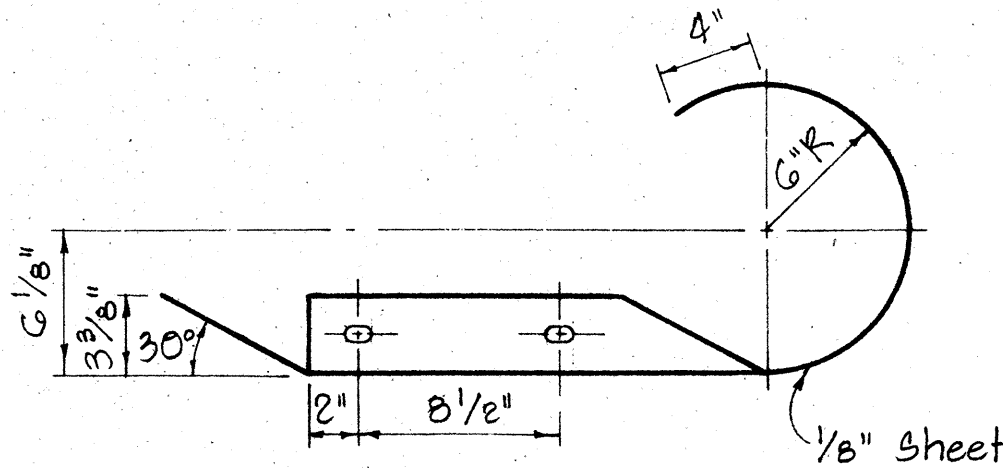
SPECIAL END SHOE

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



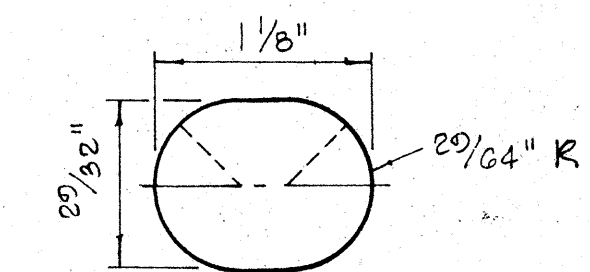
FLARED END

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



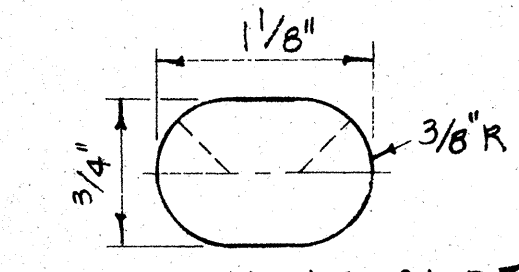
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

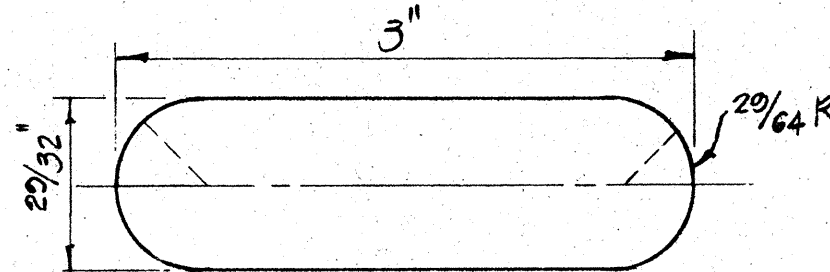


SPLICE BOLT SLOT

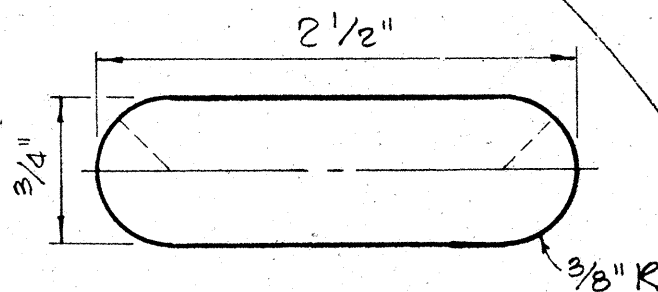
Scale: Full Size



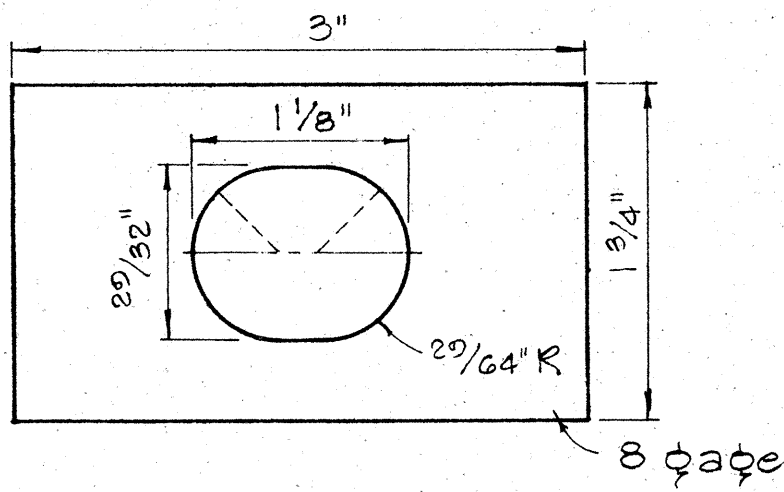
SPLICE BOLT SLOT FOR ALL ENDS



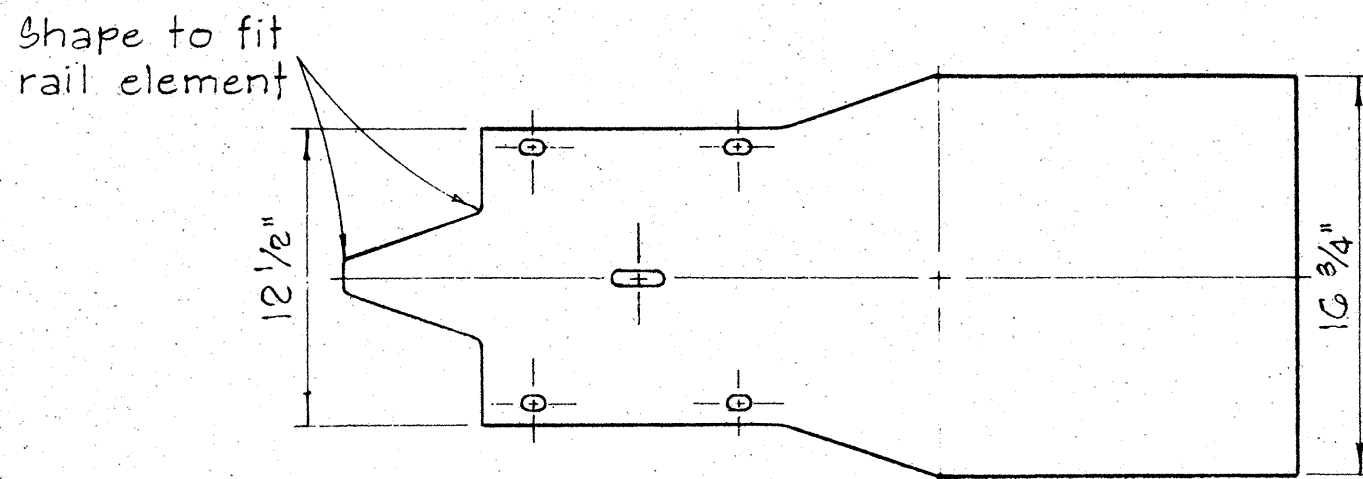
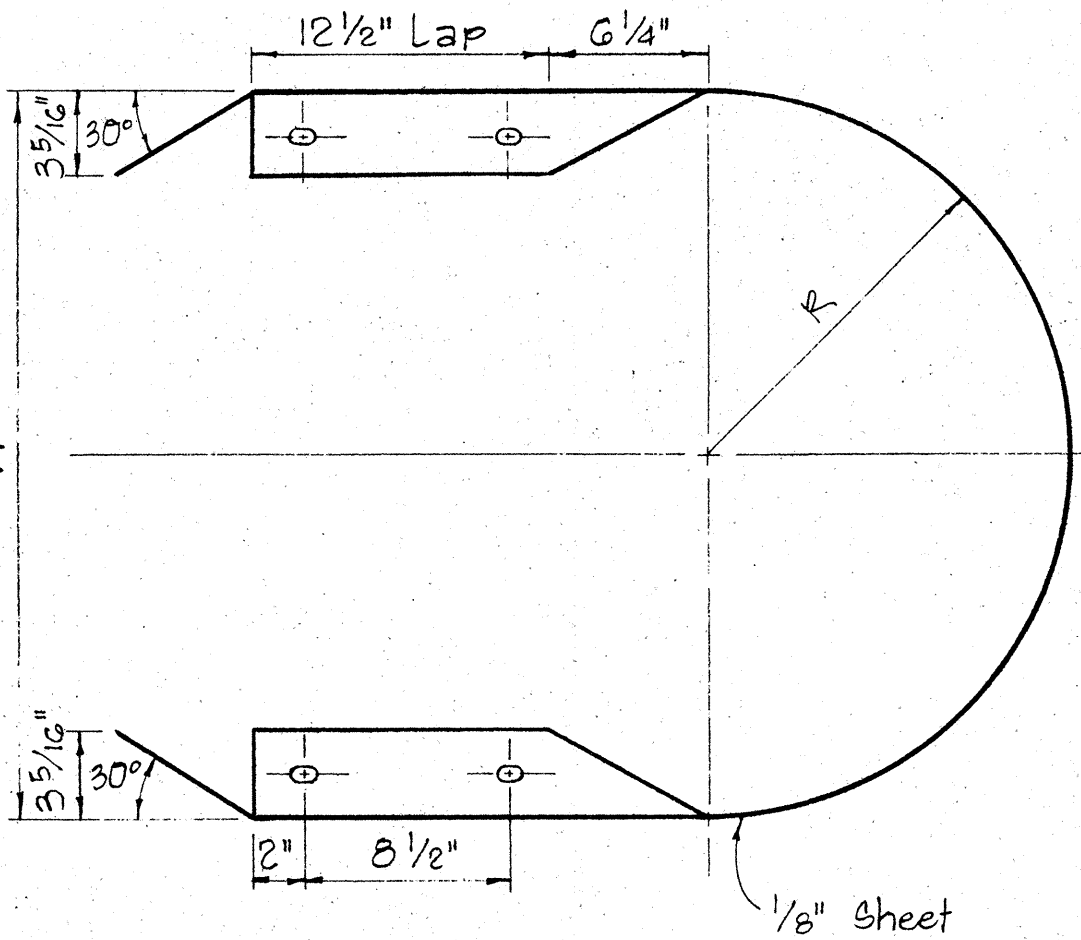
SPLICE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER



MEDIAN END

Scale: 1 1/2" = 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

CURVED END

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

APPROVAL RECOMMENDED:

Eishi Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

APPROVED:

William J. J. J.
ASSISTANT CHIEF, ENGINEERING

12-30-69
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL GUARD RAIL

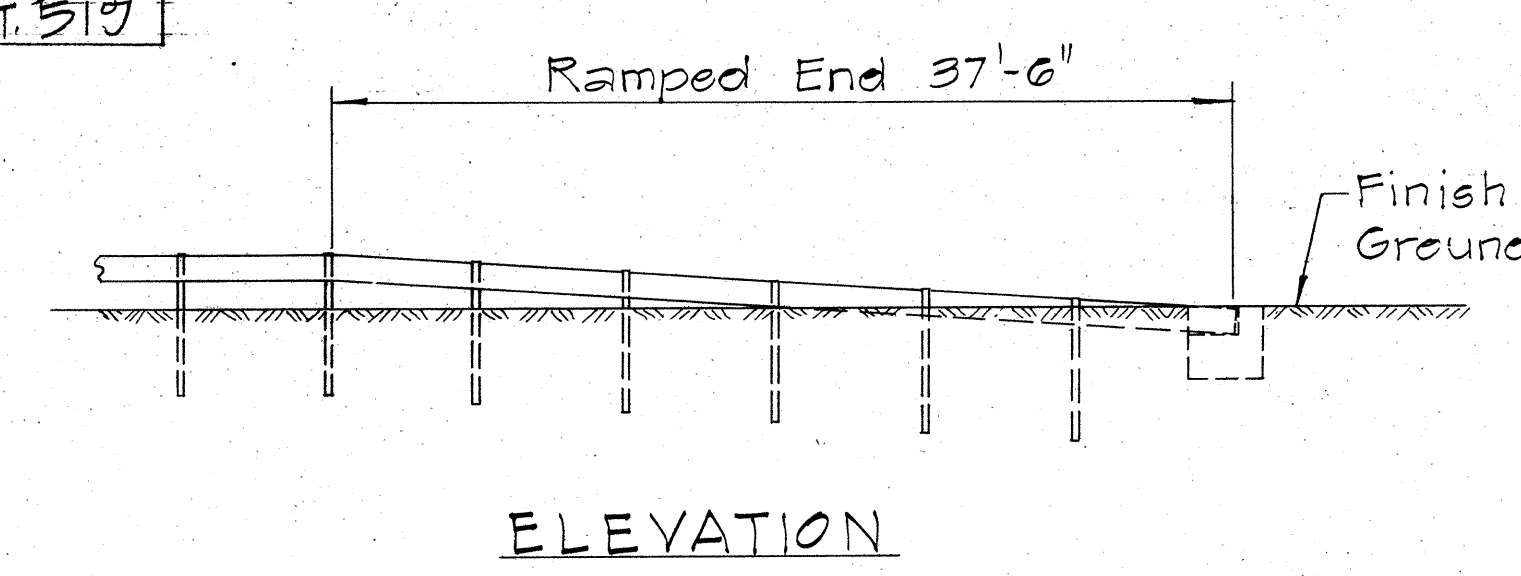
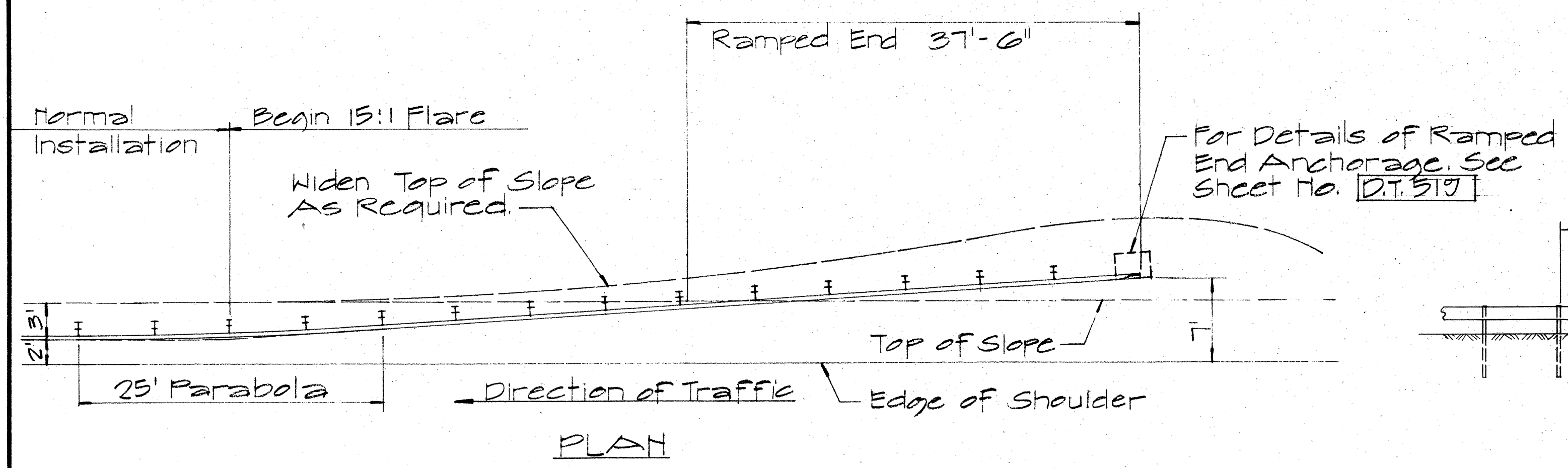
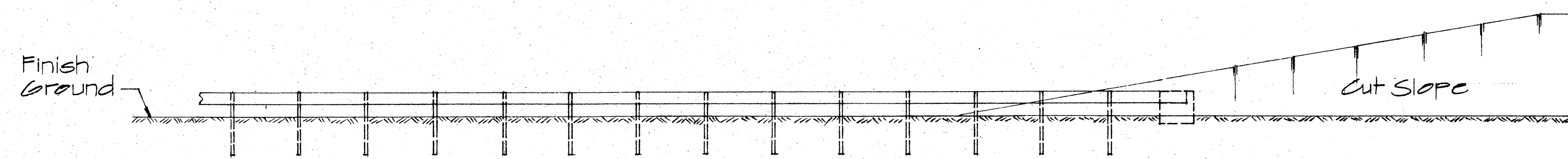
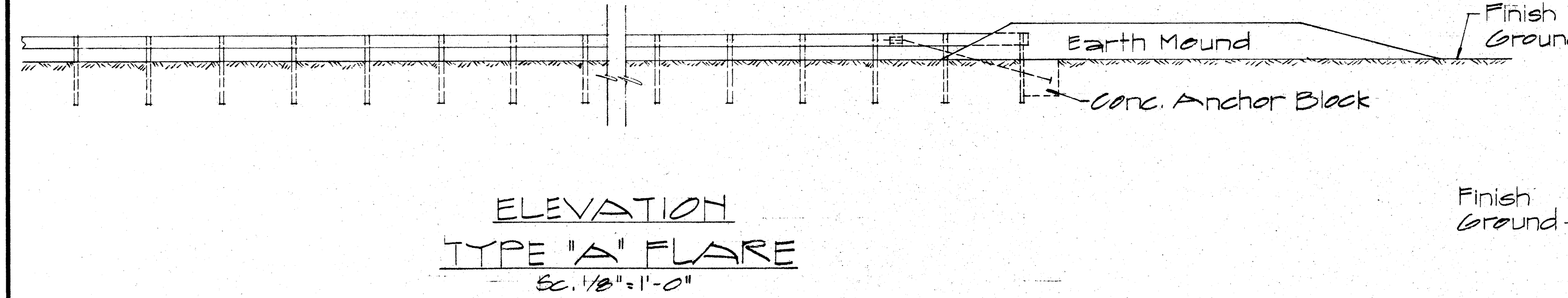
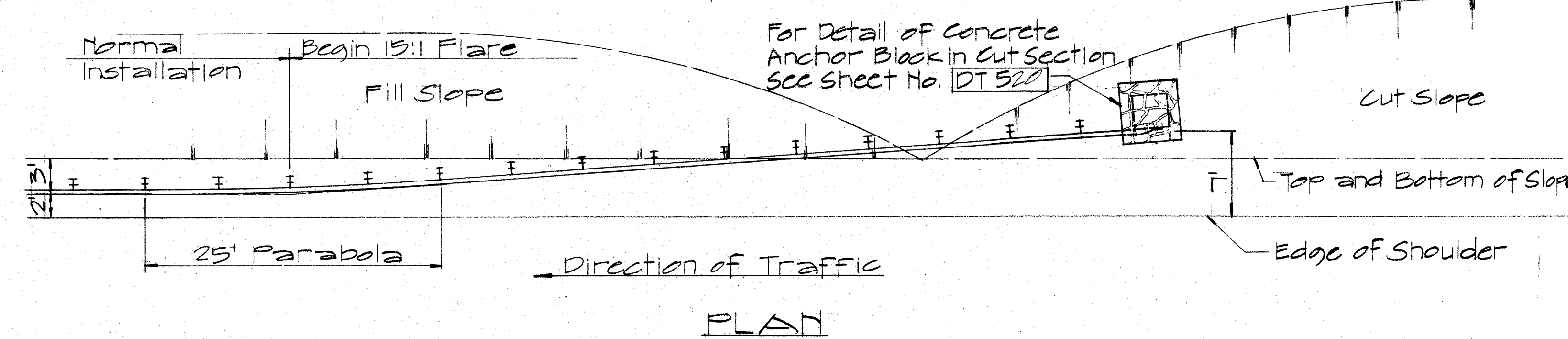
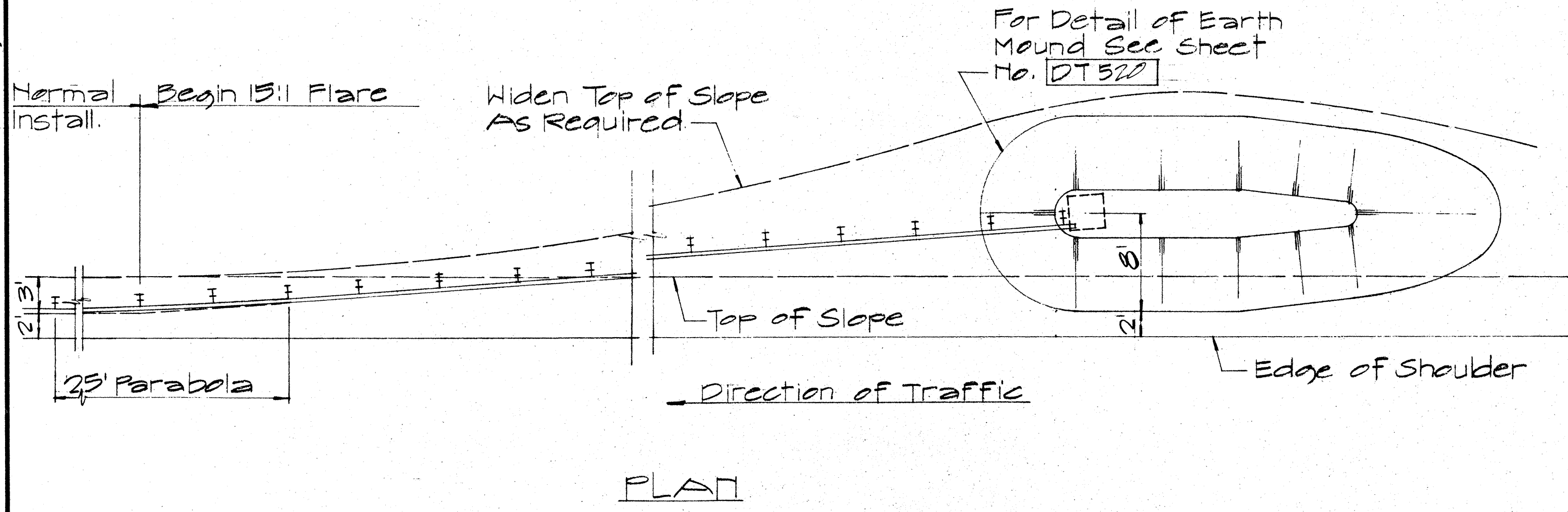
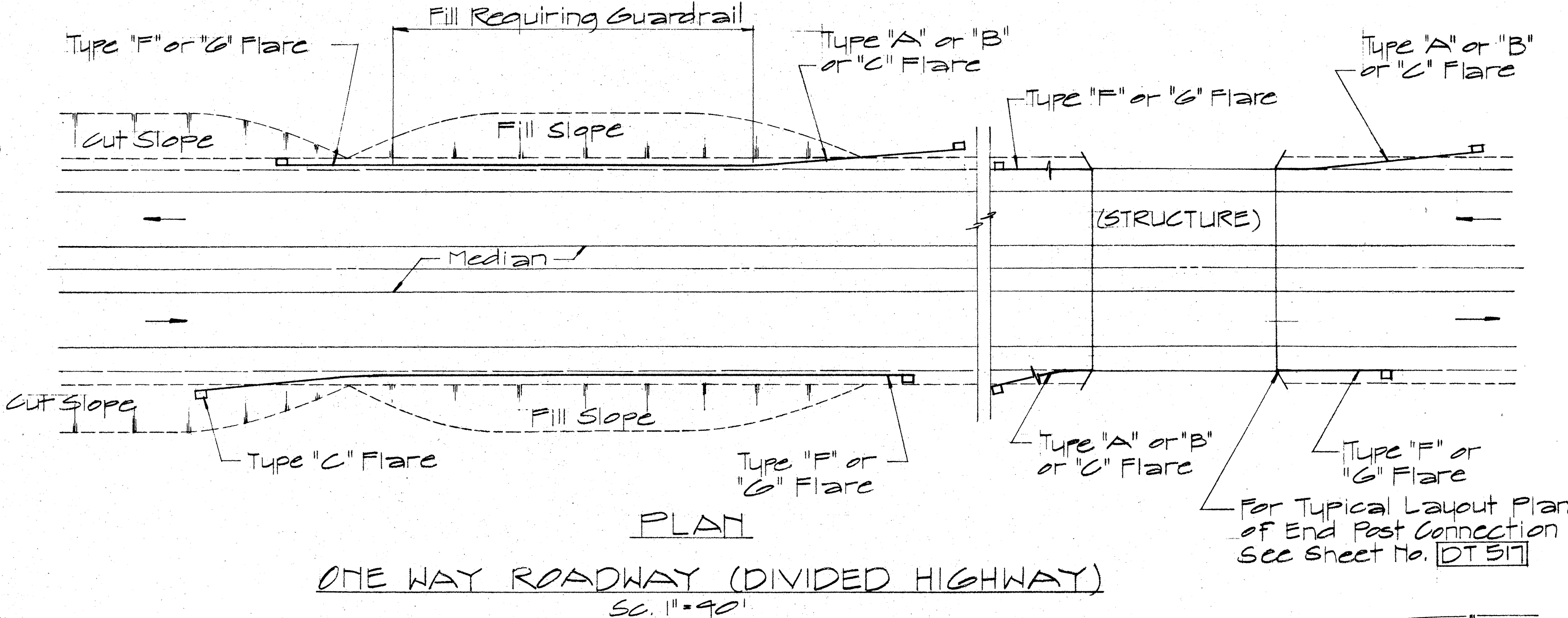
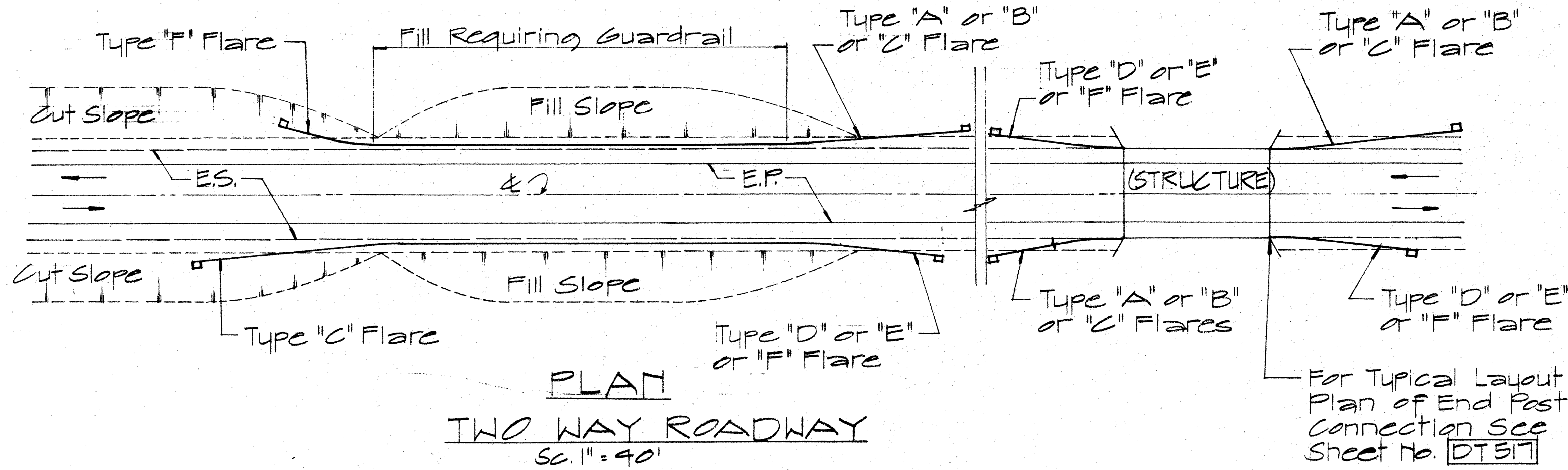
Scale: As Noted

August, 1968

SHEET No. 11 OF 17 SHEETS DT 501

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	61	113

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



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

NO.	REVISION	APPROVED BY	DATE

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

APPROVED:
John B. Deleh 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

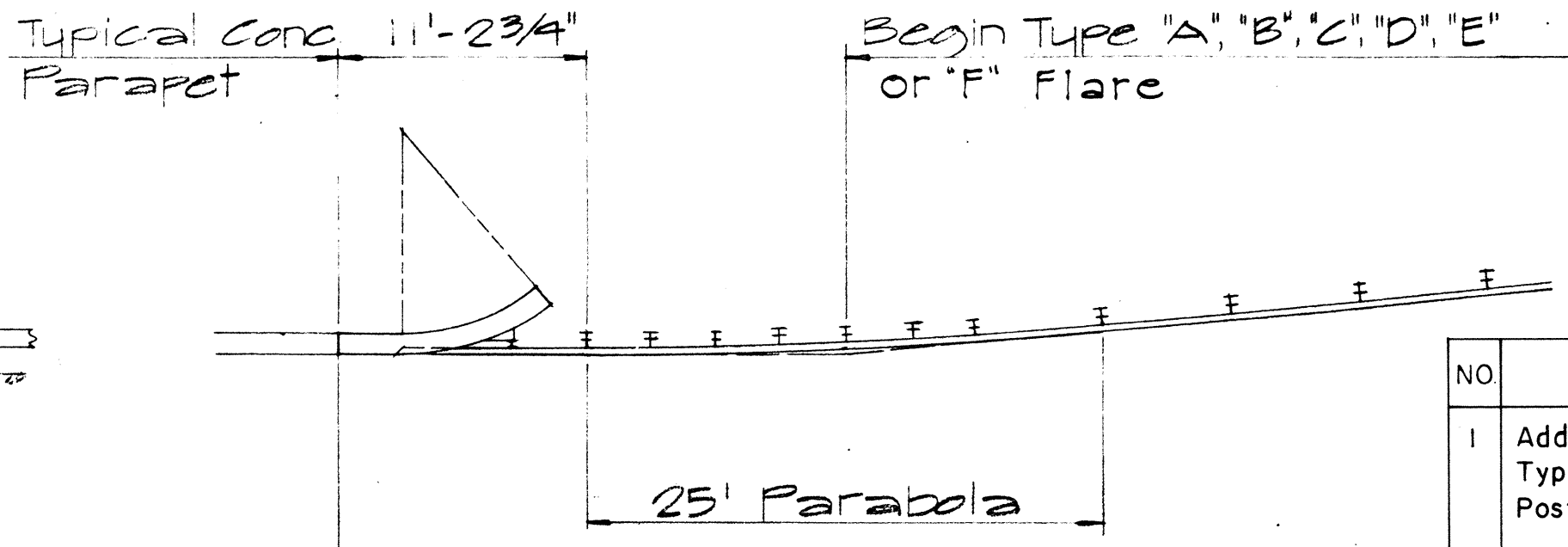
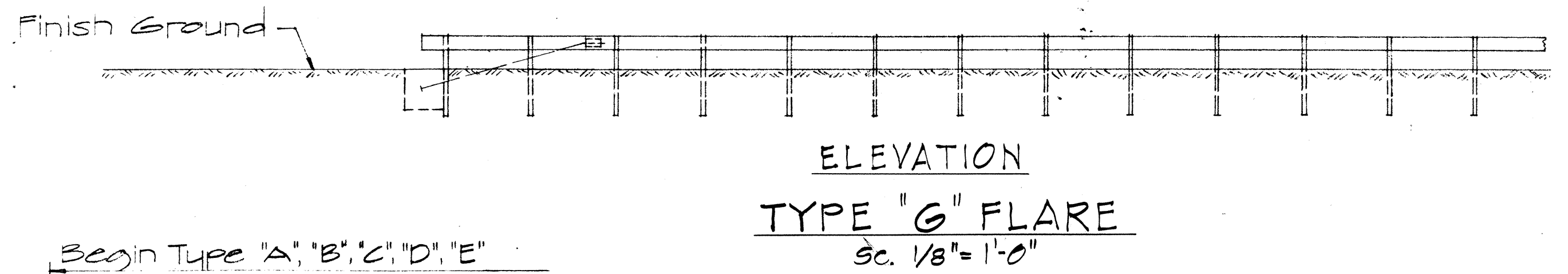
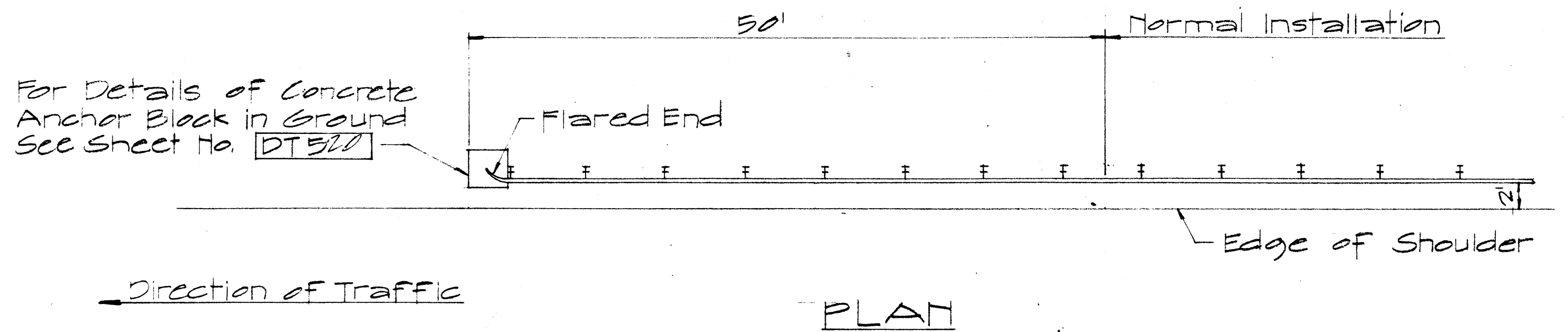
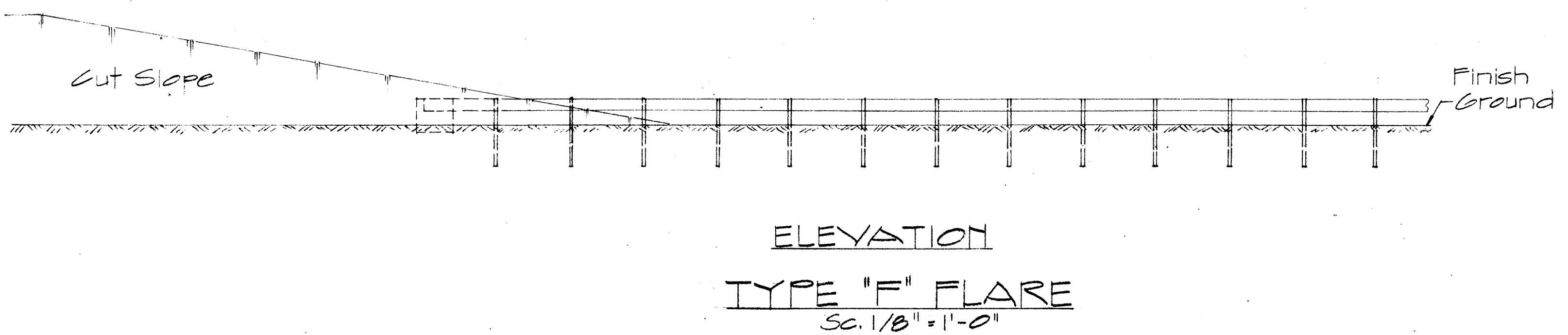
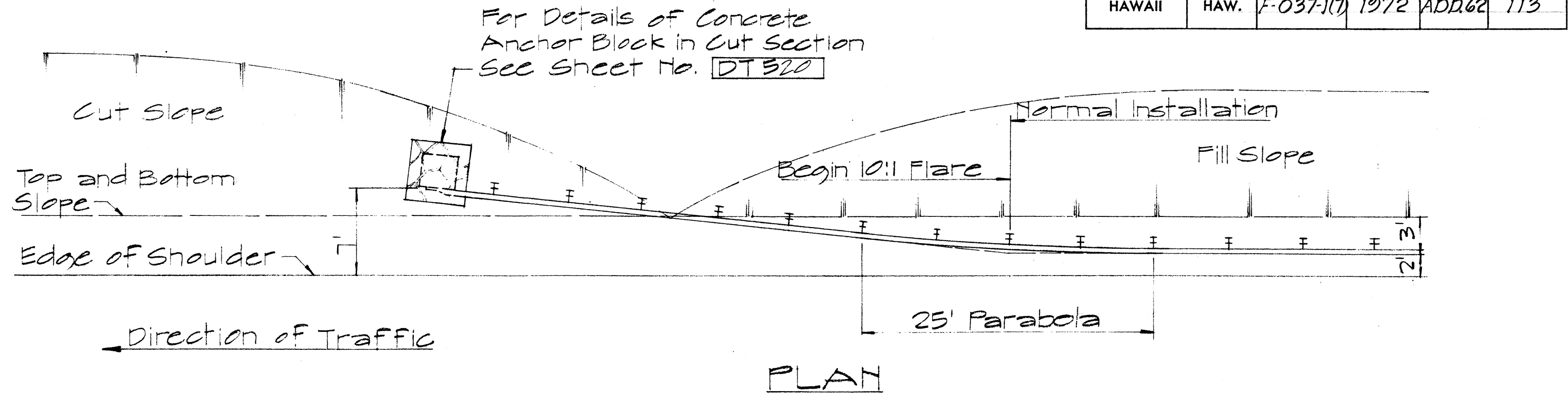
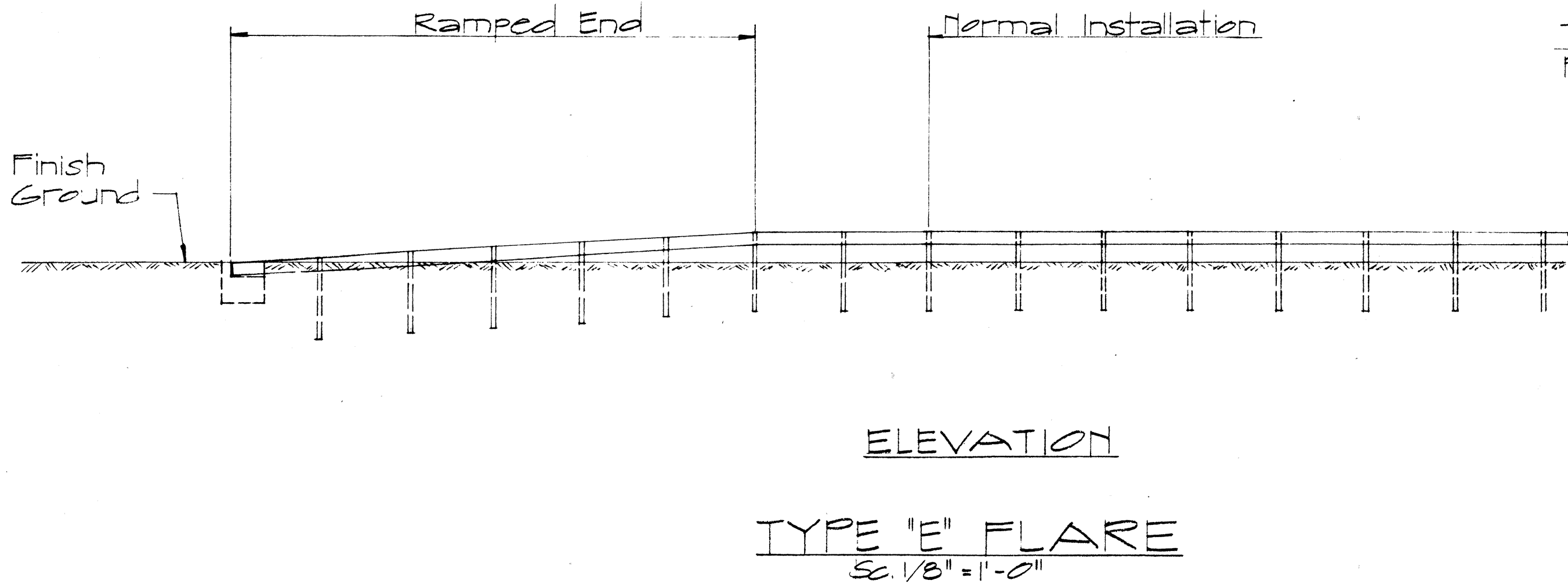
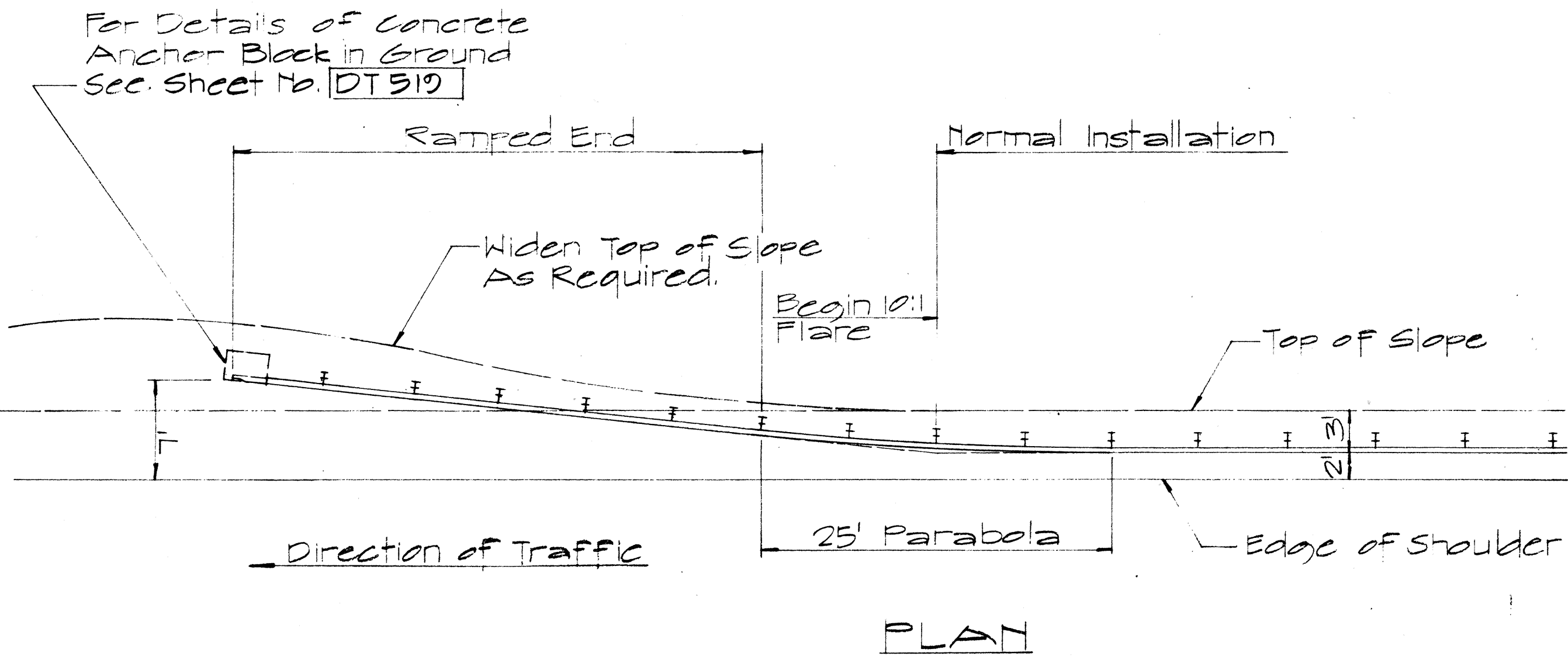
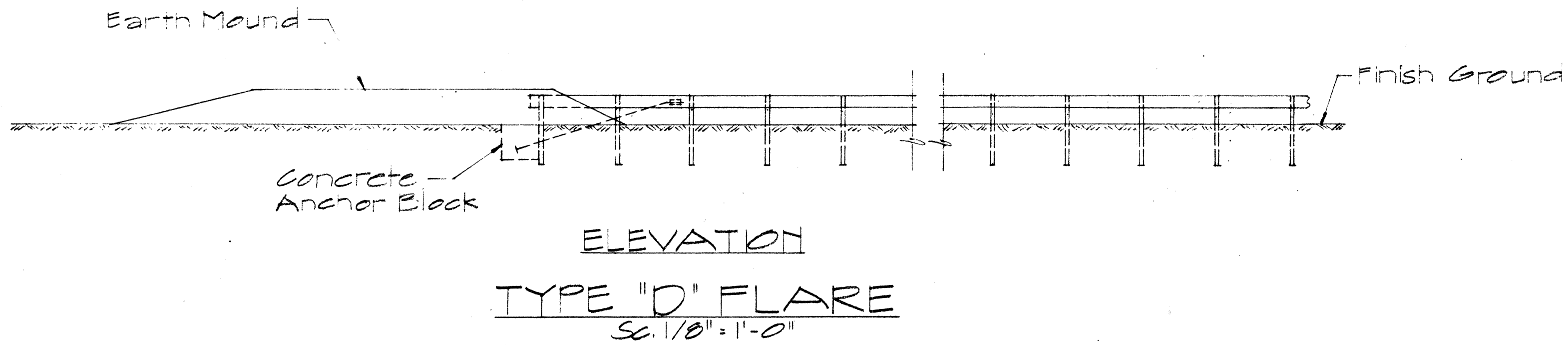
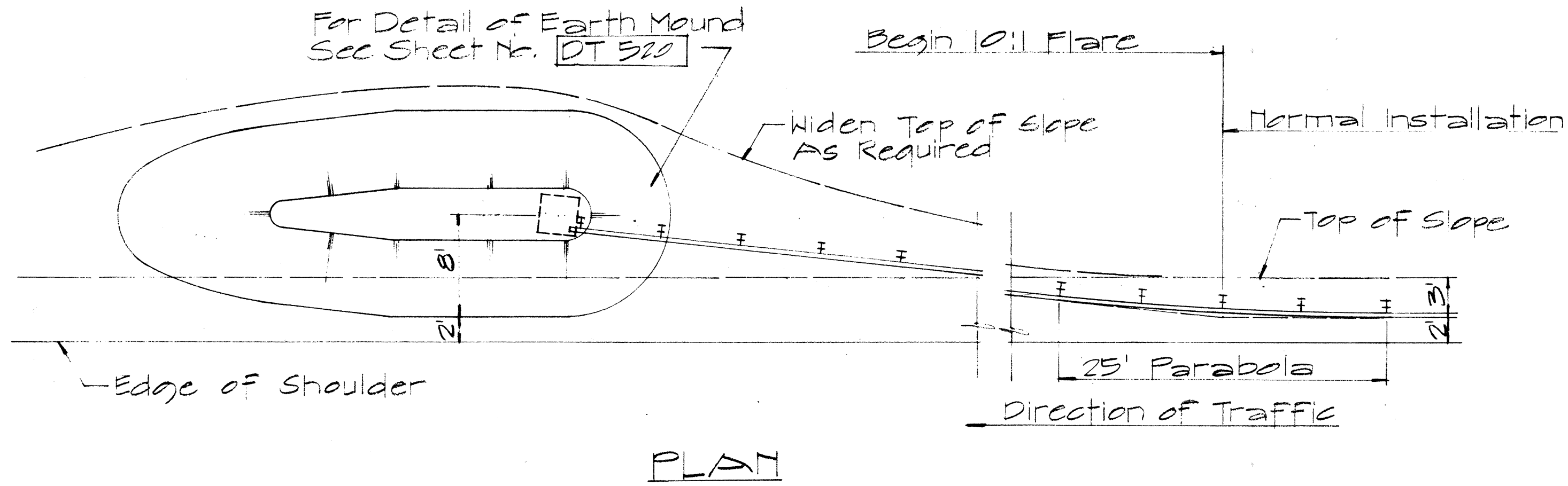
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

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

Sc. As Noted April 1969
SHEET No. 12 OF 17 SHEETS DT 516

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
DESIGNED BY: _____
CHECKED BY: _____
ORIGINAL PLAN: _____
NOTE BOOK: _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	ADR 62	113



TYPICAL LAYOUT PLAN OF END POST CONNECTION

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

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

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

NO	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.T.	4-12-72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

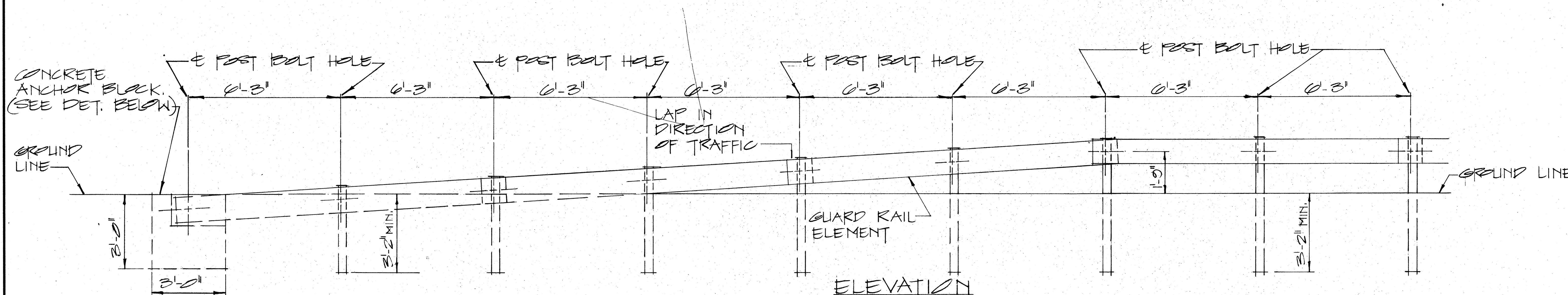
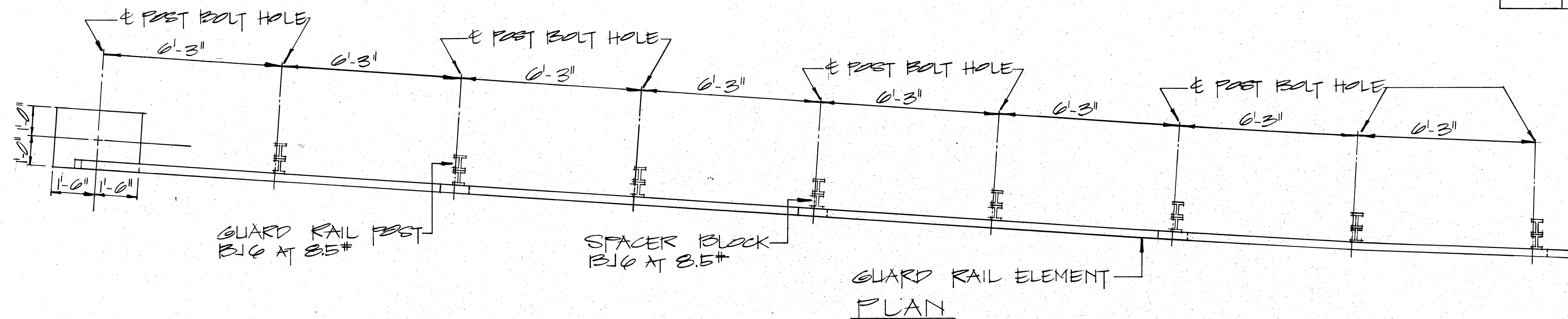
STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

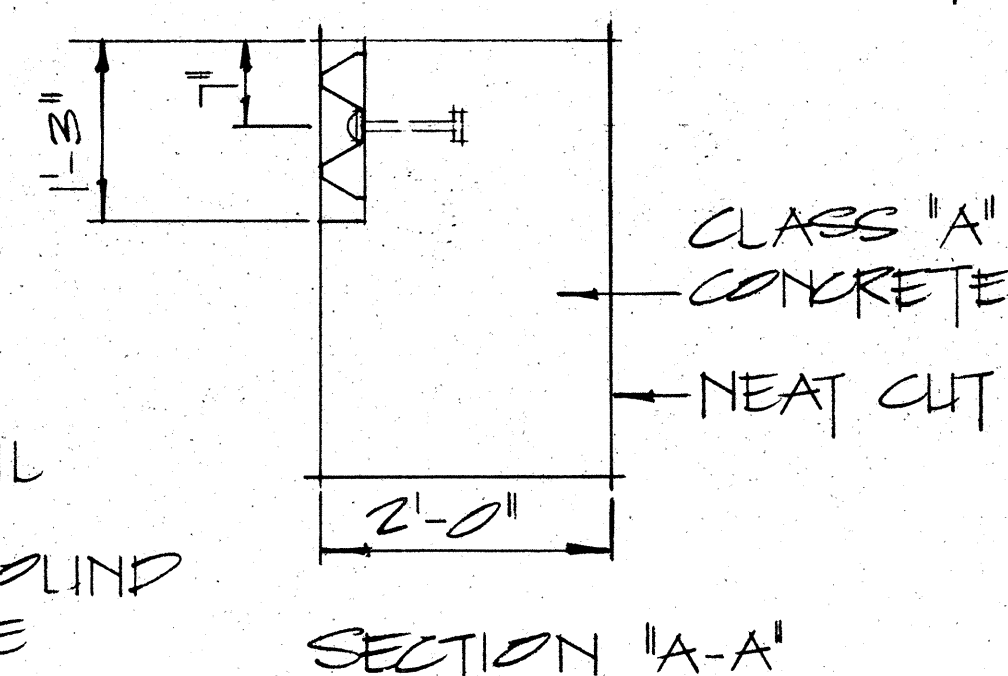
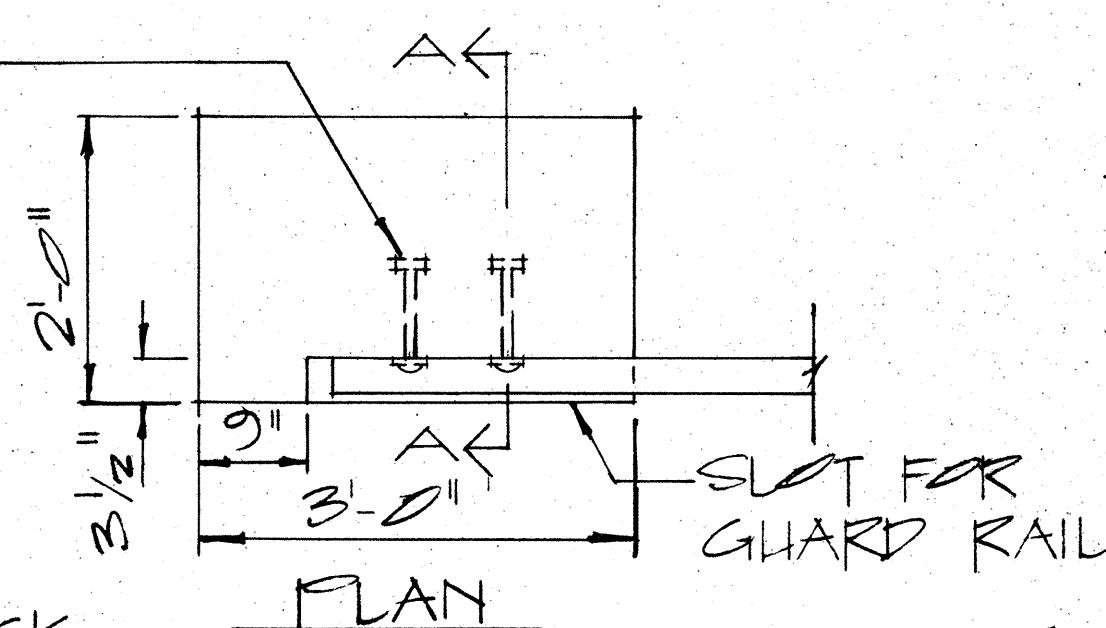
SHEET No. 13 OF 17 SHEETS DT 517

ADD. 62

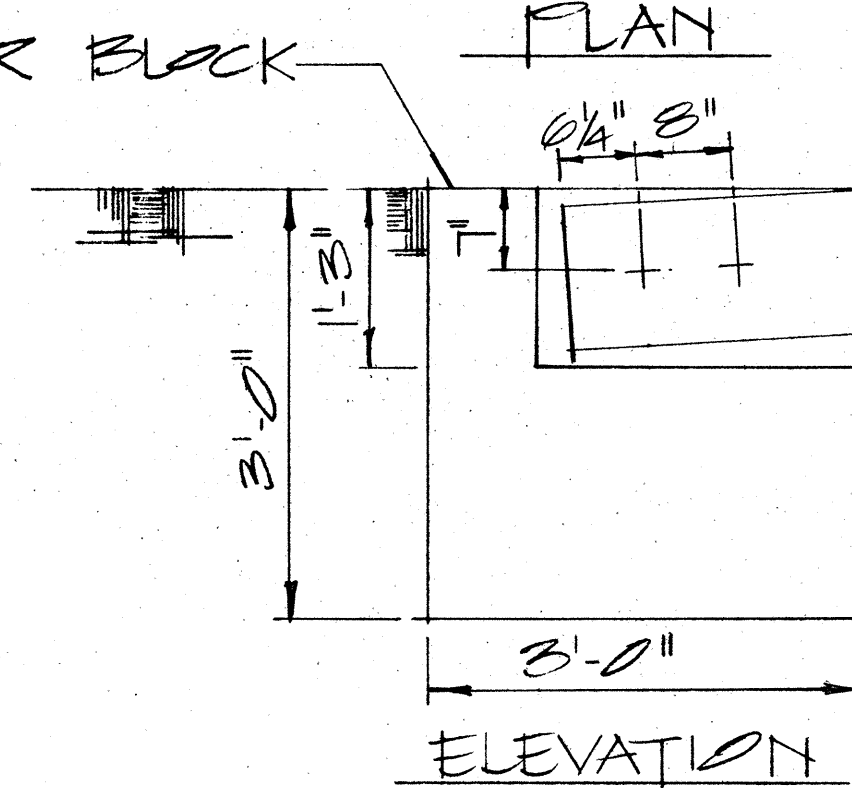
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	63	113



2-5/8" x 7/4" LONG BOLTS W/ NUTS & WASHERS INCIDENTAL TO METAL GUARD RAIL. ALL METAL PIECES SHALL BE GALVANIZED.



TOP OF ANCHOR BLOCK TO BE FLUSH W/ GROUND.



NOTE: CONCRETE, EXCAVATION AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS, SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.

CONCRETE ANCHOR BLOCK
SCALE: 3/4" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

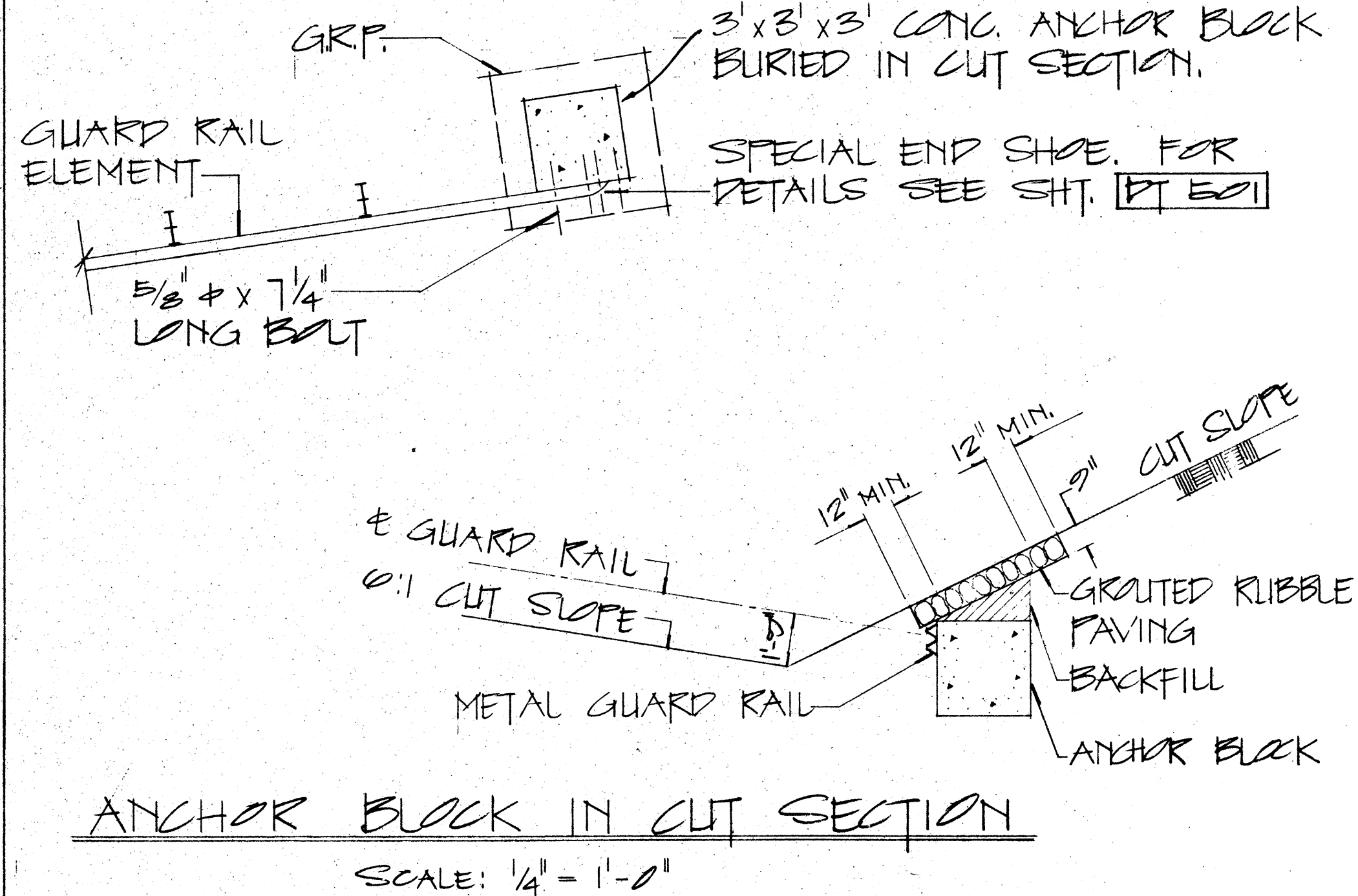
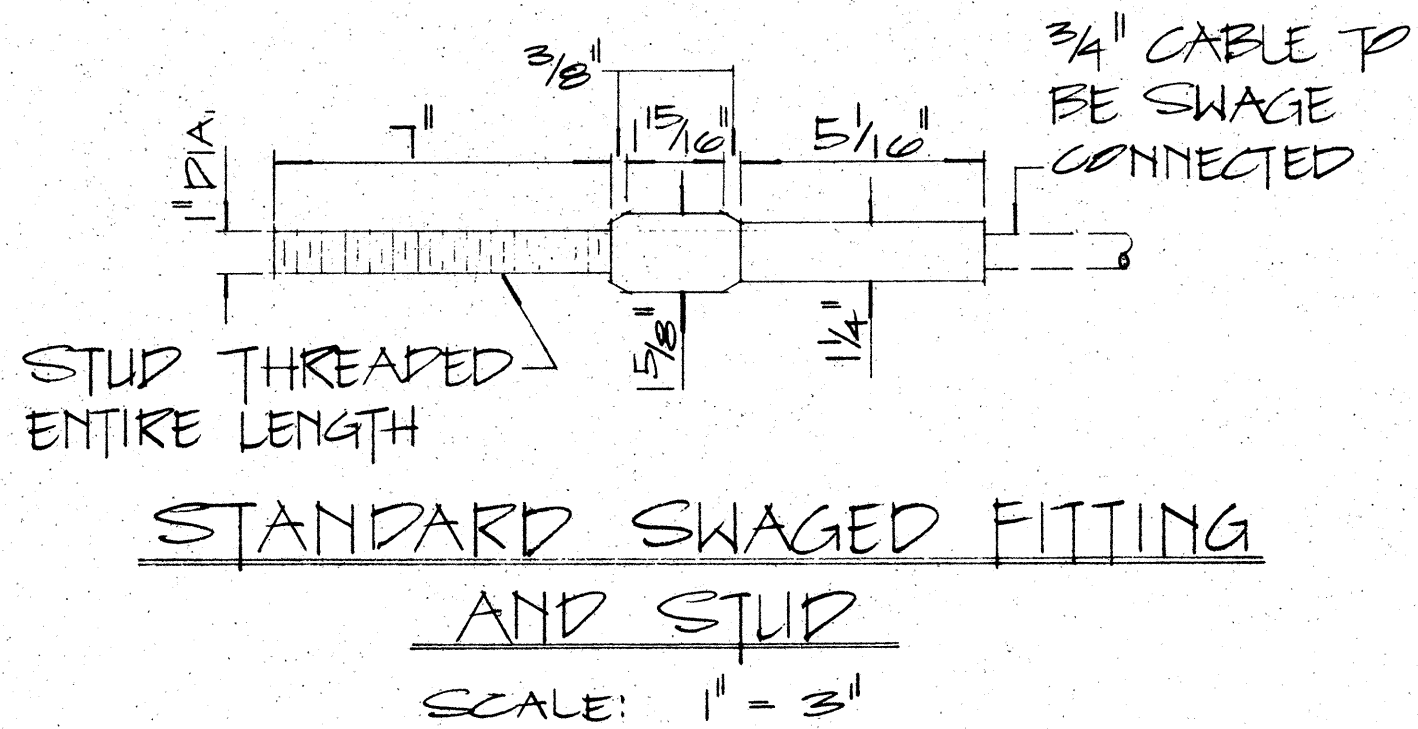
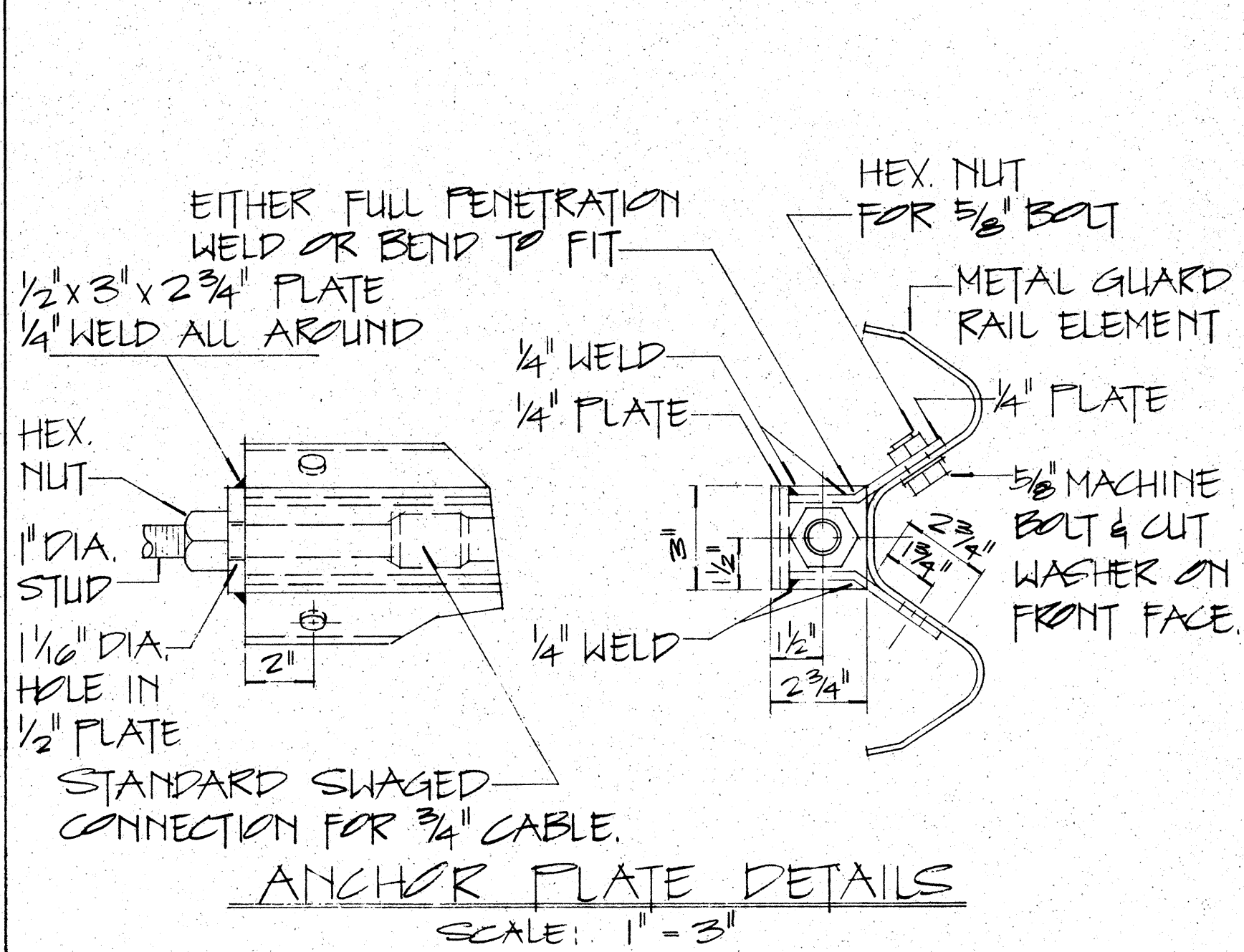
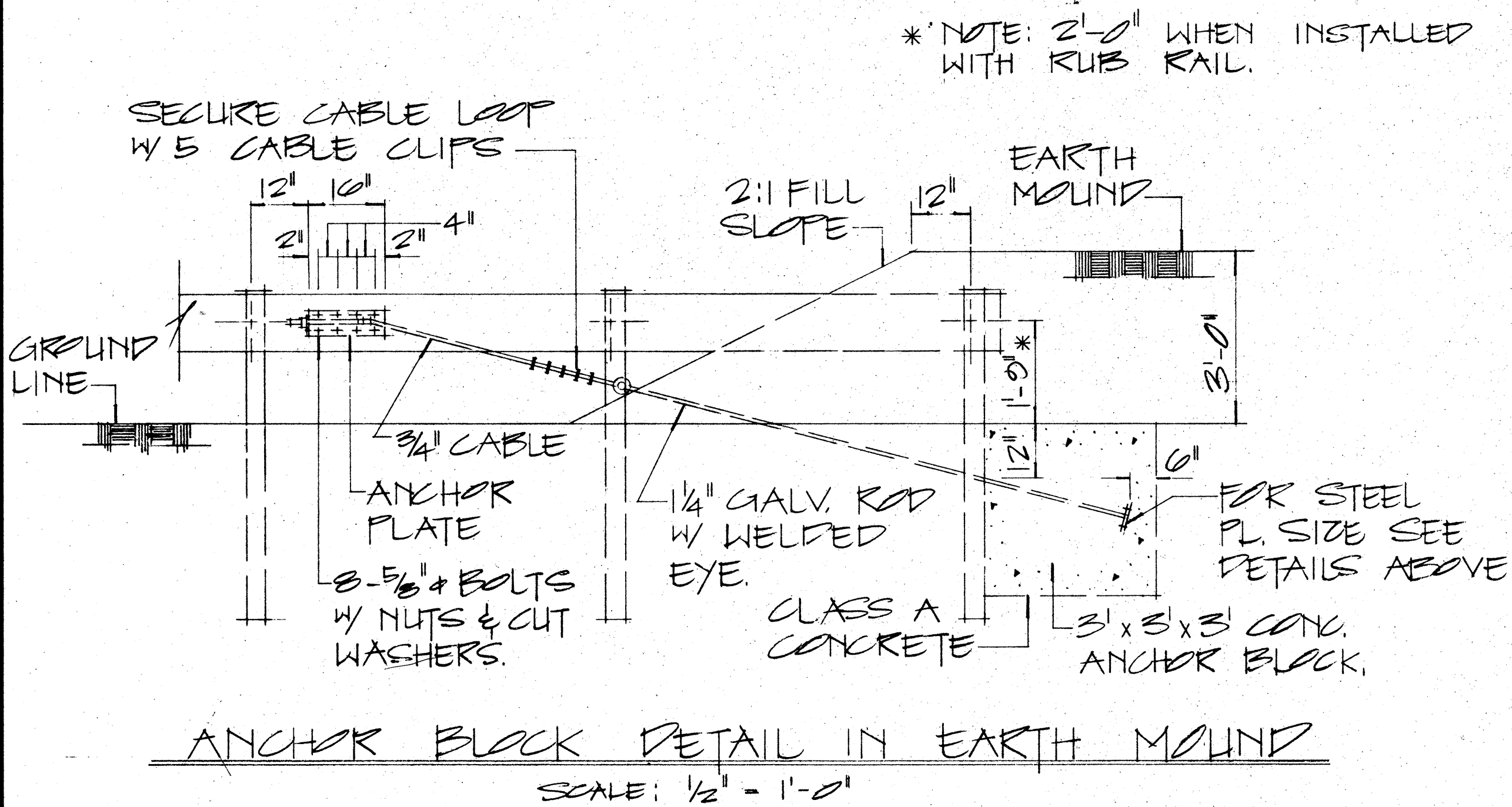
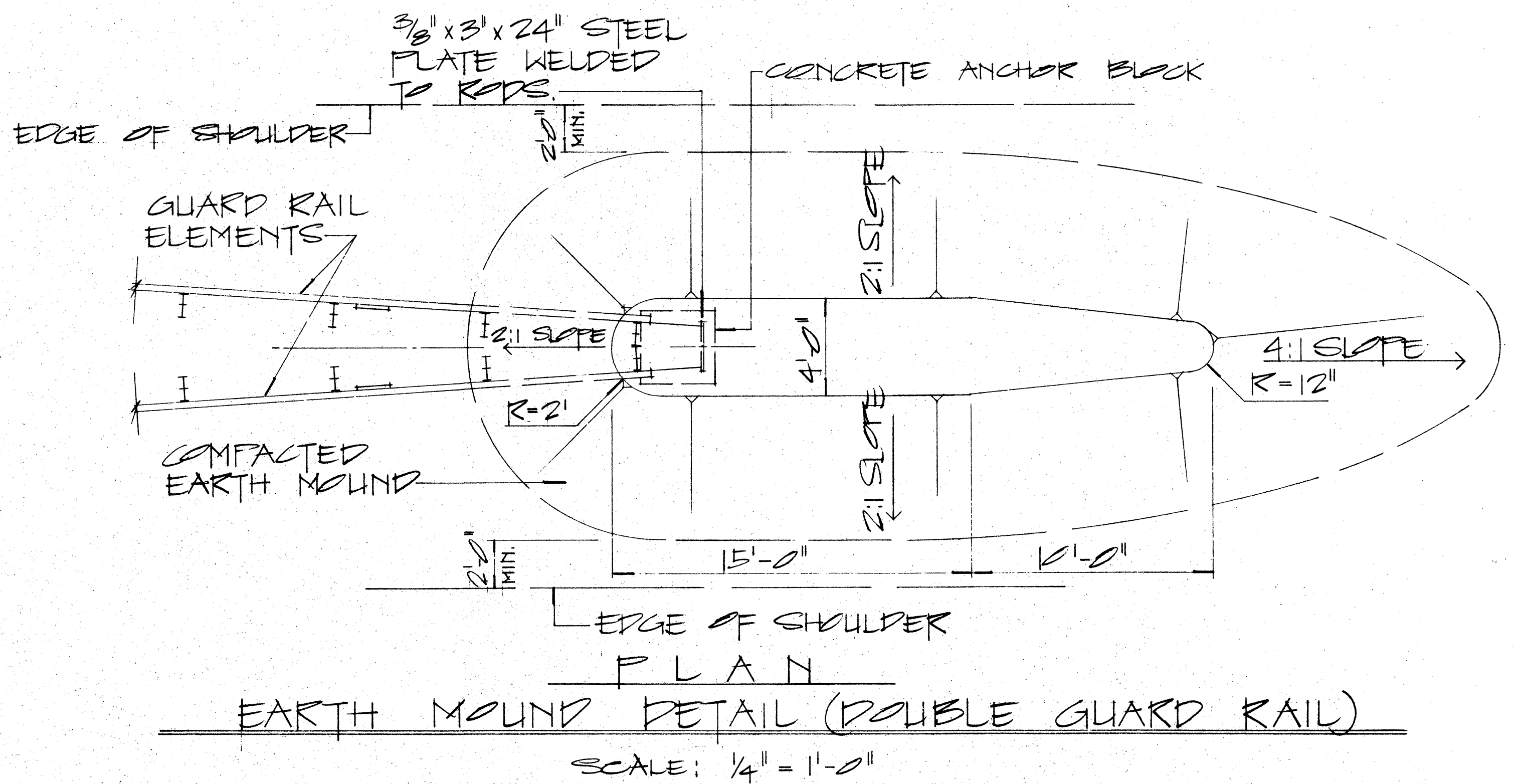
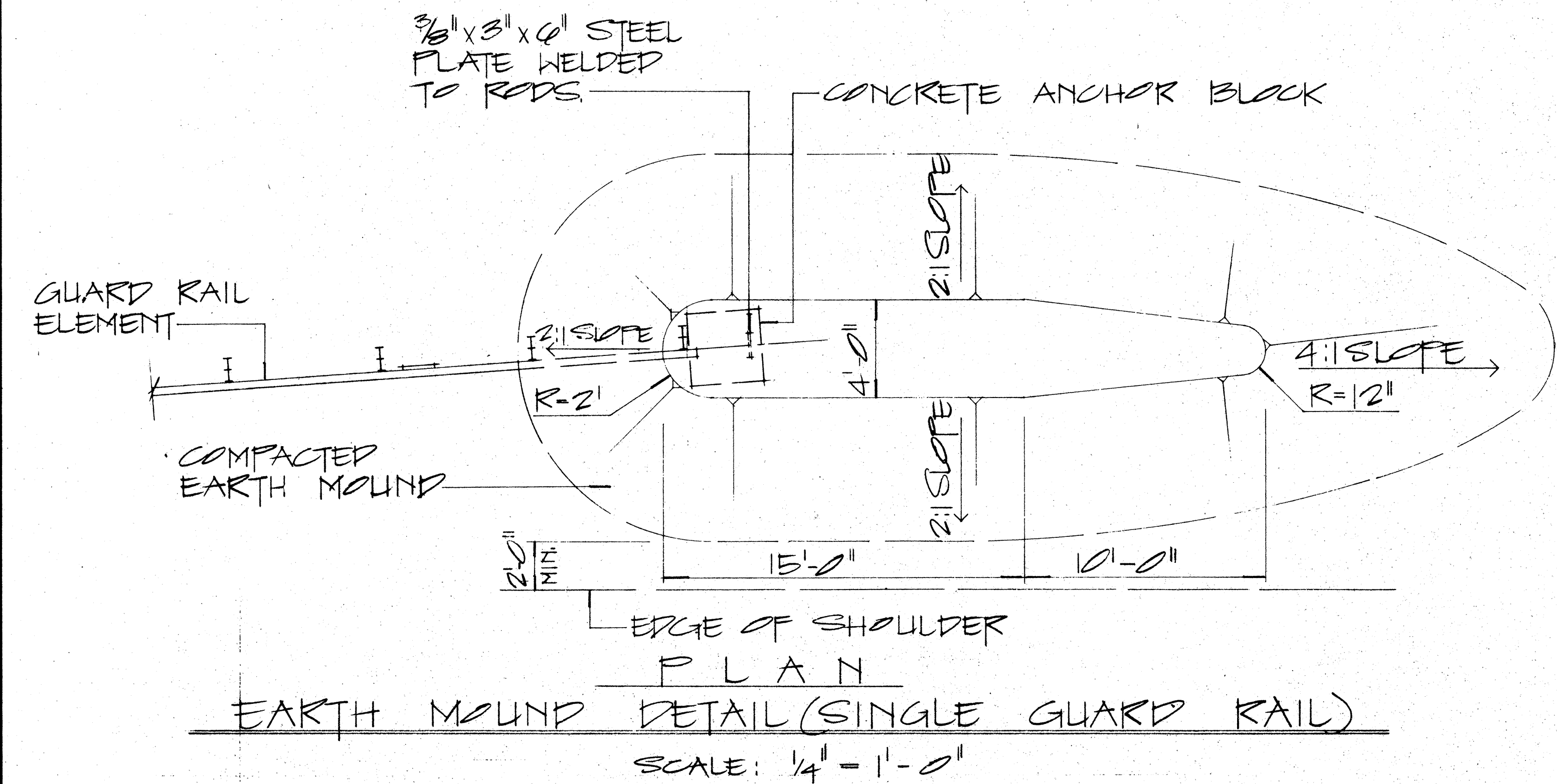
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
GUARD RAIL, TYPE 3
RAMP END ANCHORAGE

SCALE: AS SHOWN

SHEET No. 14 OF 17 SHEETS DT510

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	64	113



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

APPROVED: *[Signature]* 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DETAILS

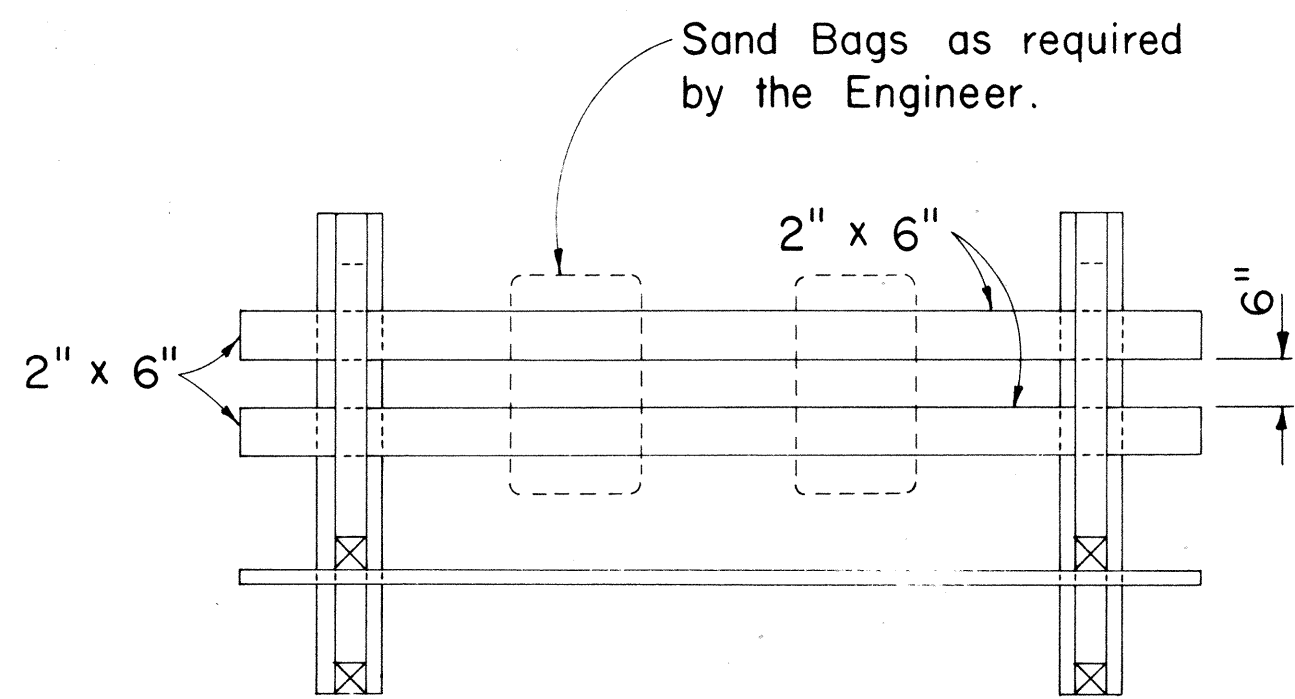
SCALE: AS SHOWN OCT 1969

SHEET No. 15 OF 17 SHEETS PT 520

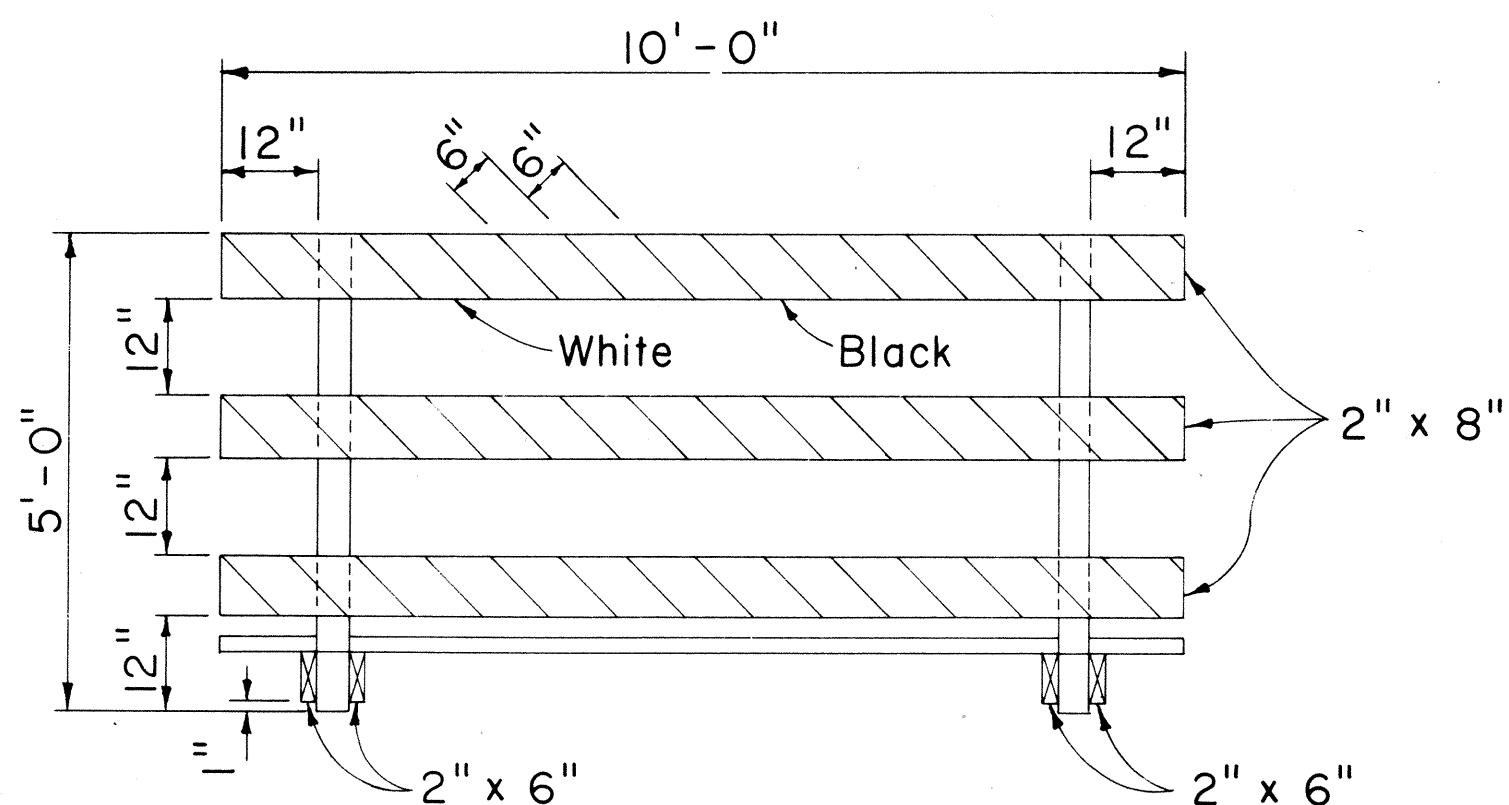
DATE	
SURVEY PLOTTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	

- NOTE:
1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND POST 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.

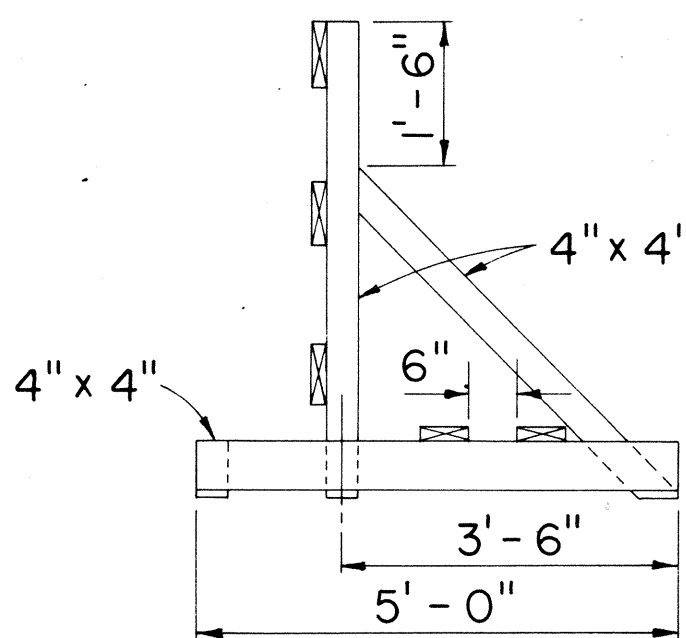
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	ADD 65	113



PLAN VIEW



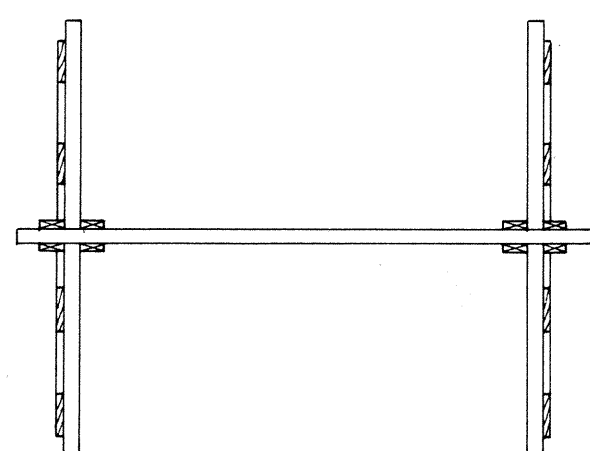
FRONT VIEW



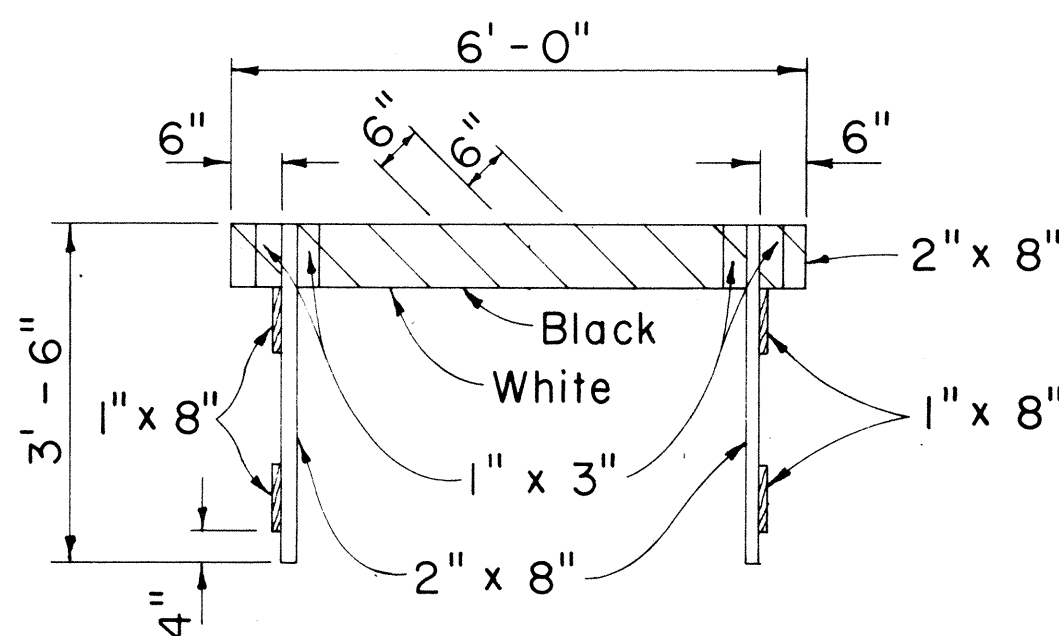
END VIEW

CLASS I BARRICADE

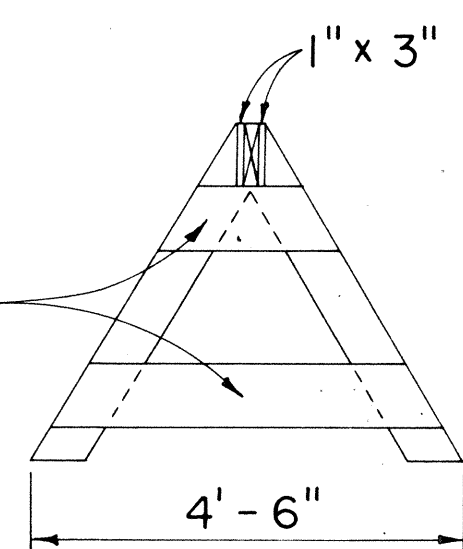
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW



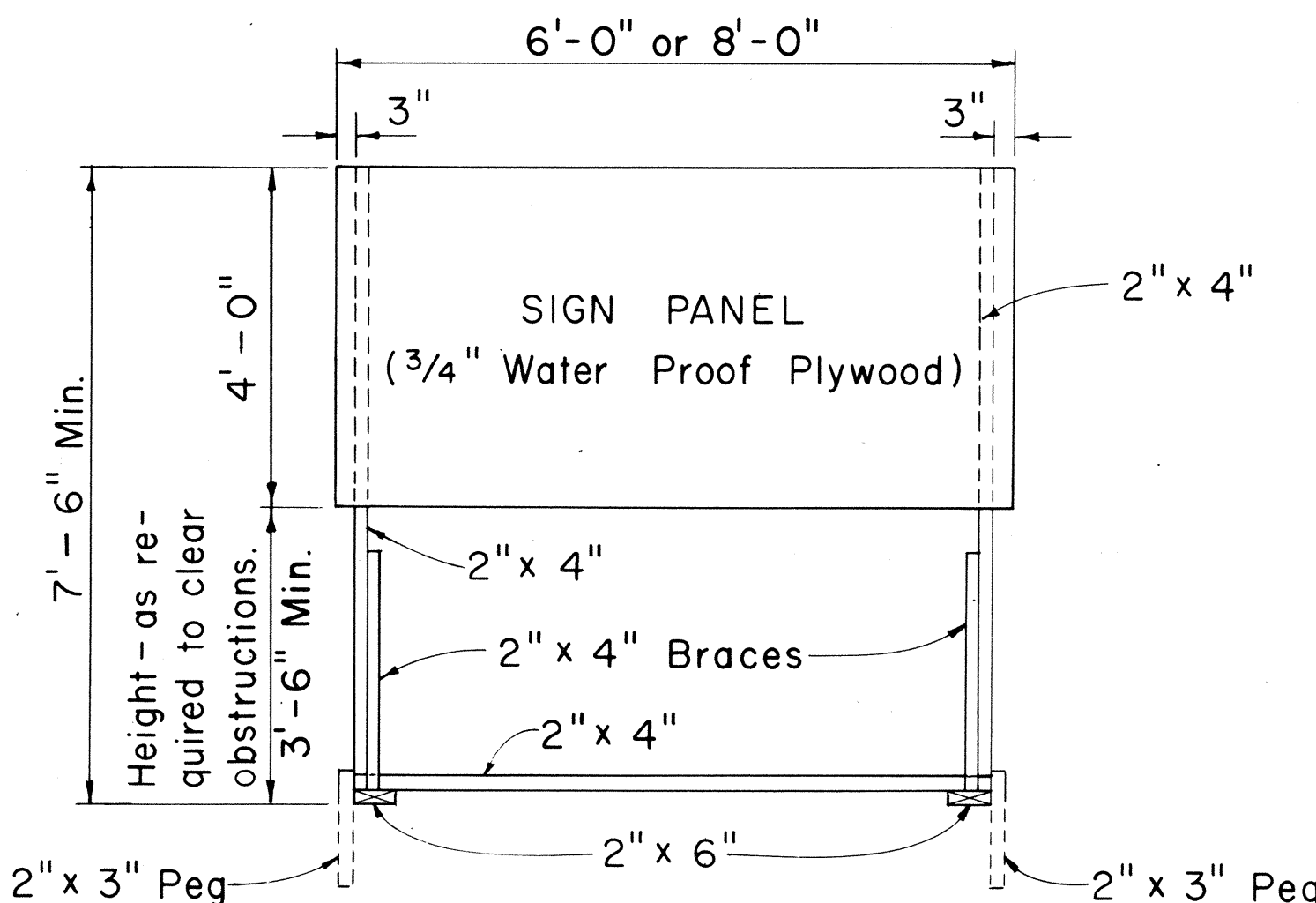
END VIEW

CLASS II BARRICADE

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

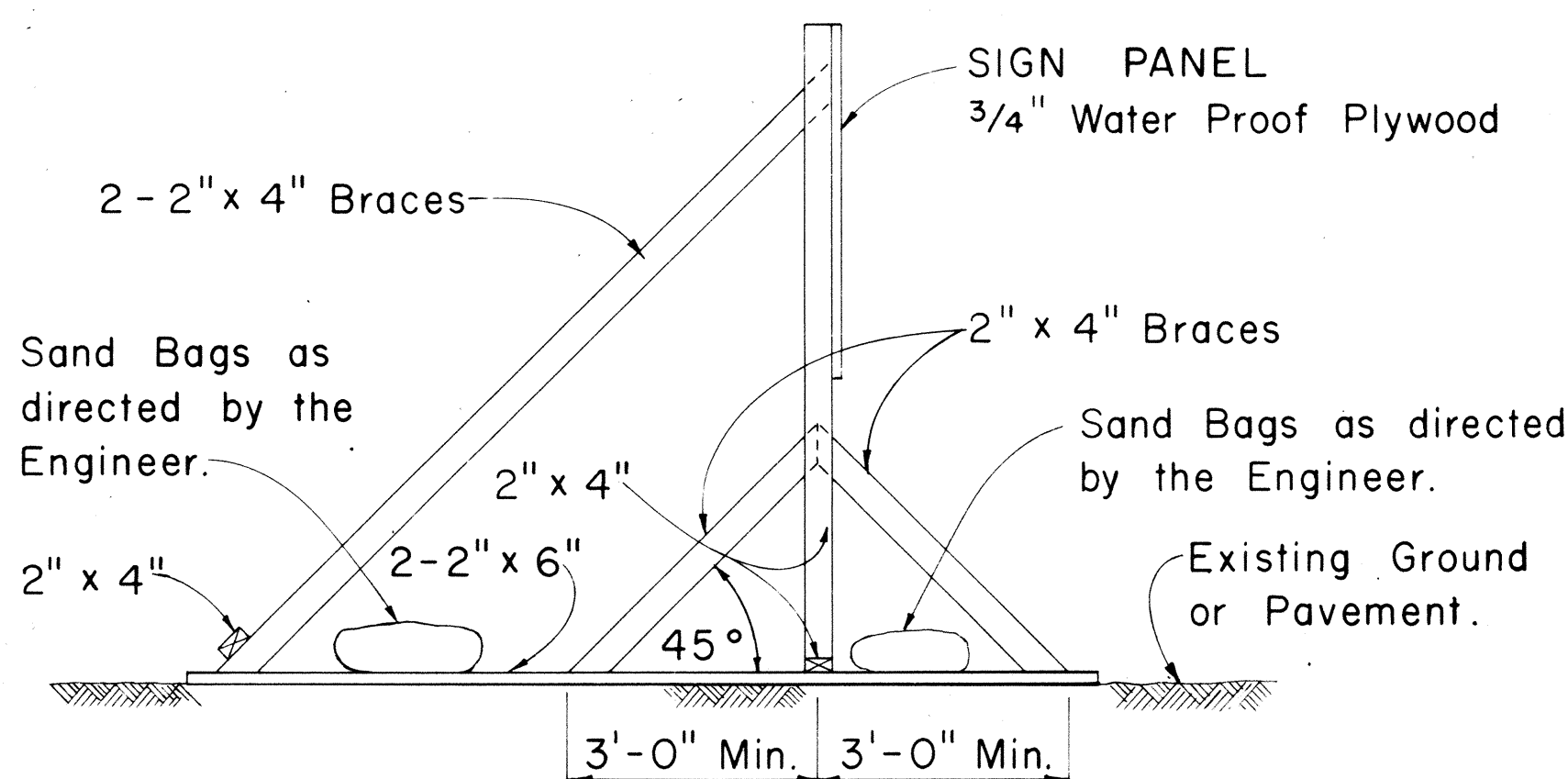
GENERAL NOTES

1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
2. 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.
3. The black and white stripes shall slant downward toward the side on which traffic is to pass.



FRONT VIEW

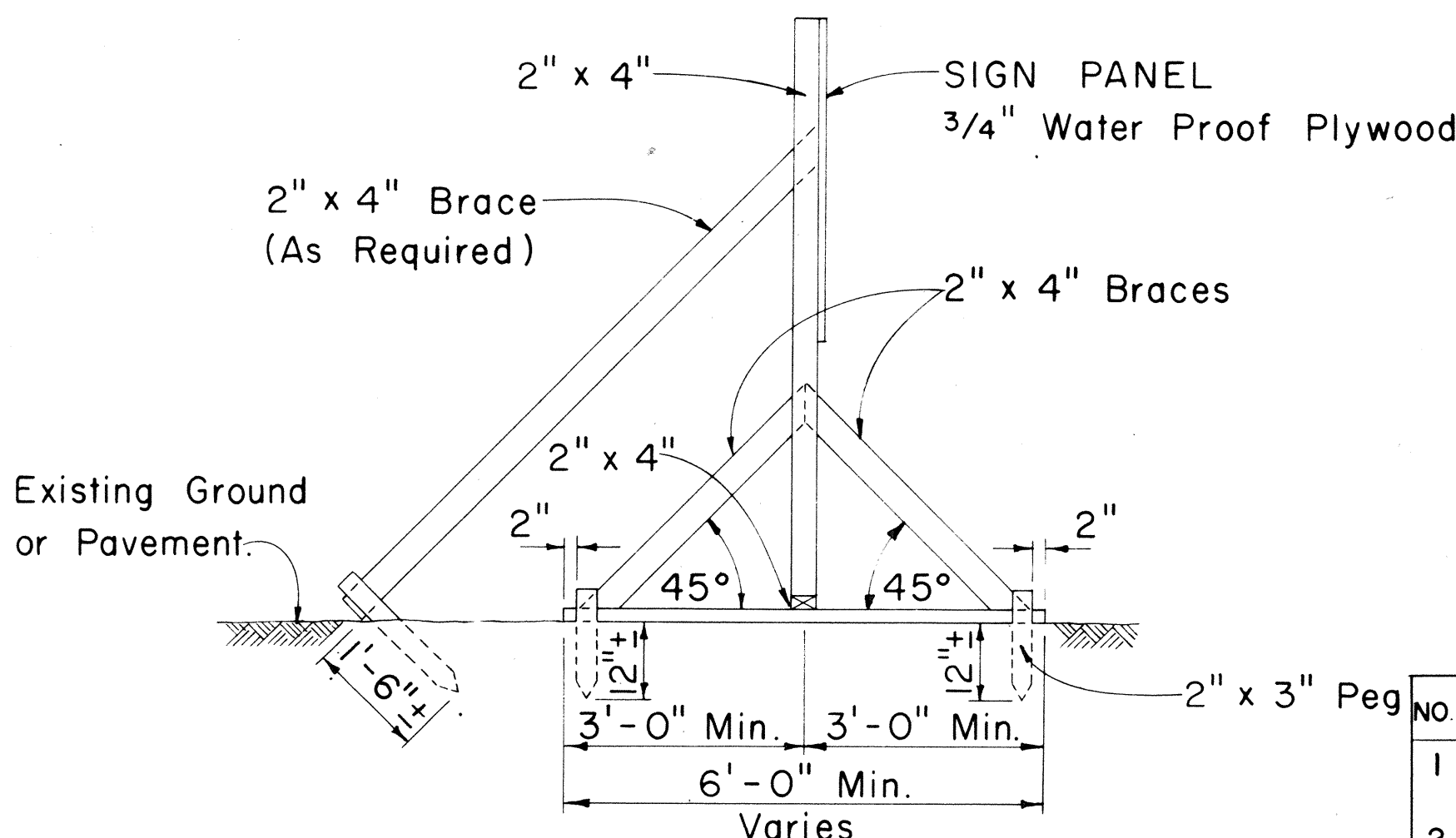
Scale: 1/2" = 1'-0"



SIDE VIEW

(SIGN FRAME WEIGHTED DOWN)

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



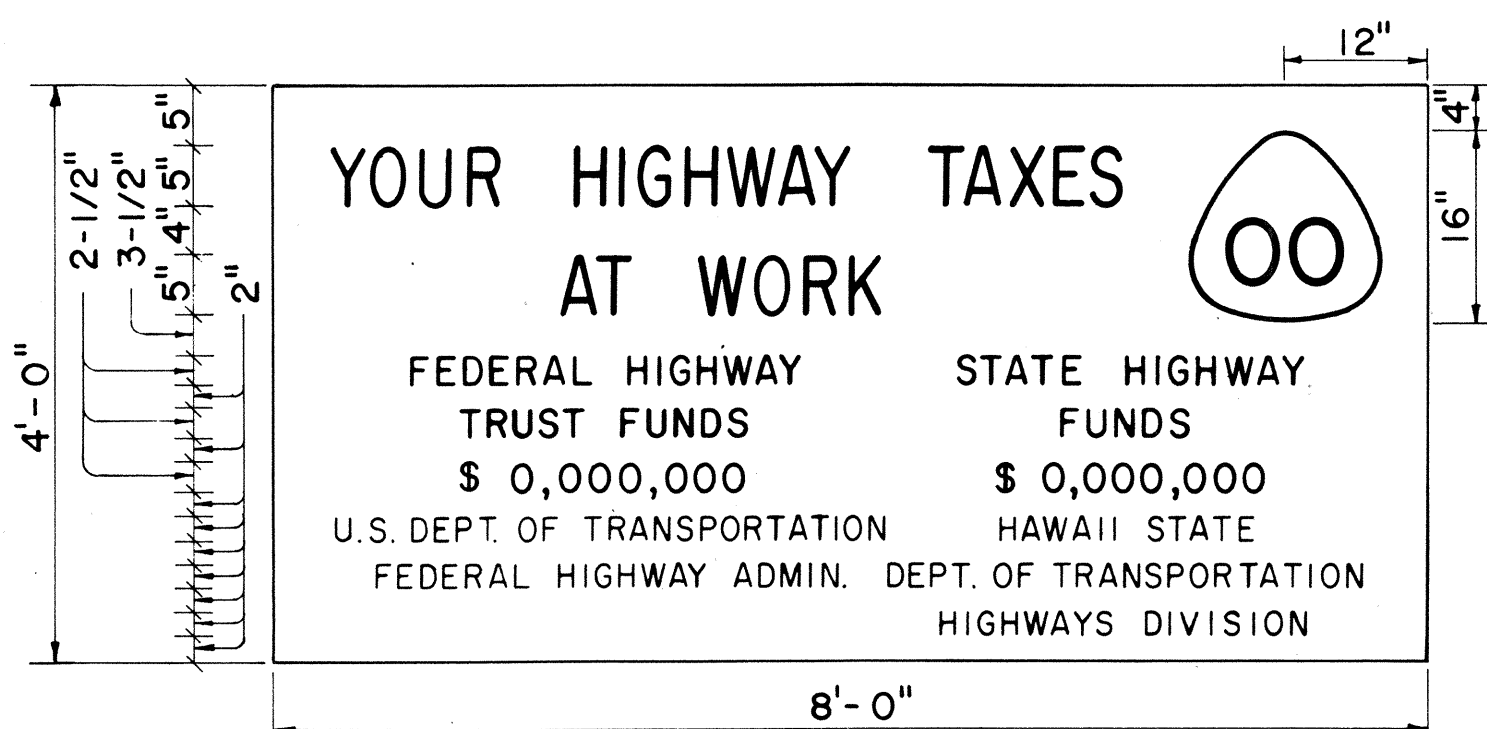
SIDE VIEW

(SIGN FRAME ANCHORED IN GROUND)

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

CONSTRUCTION IDENTIFICATION SIGN

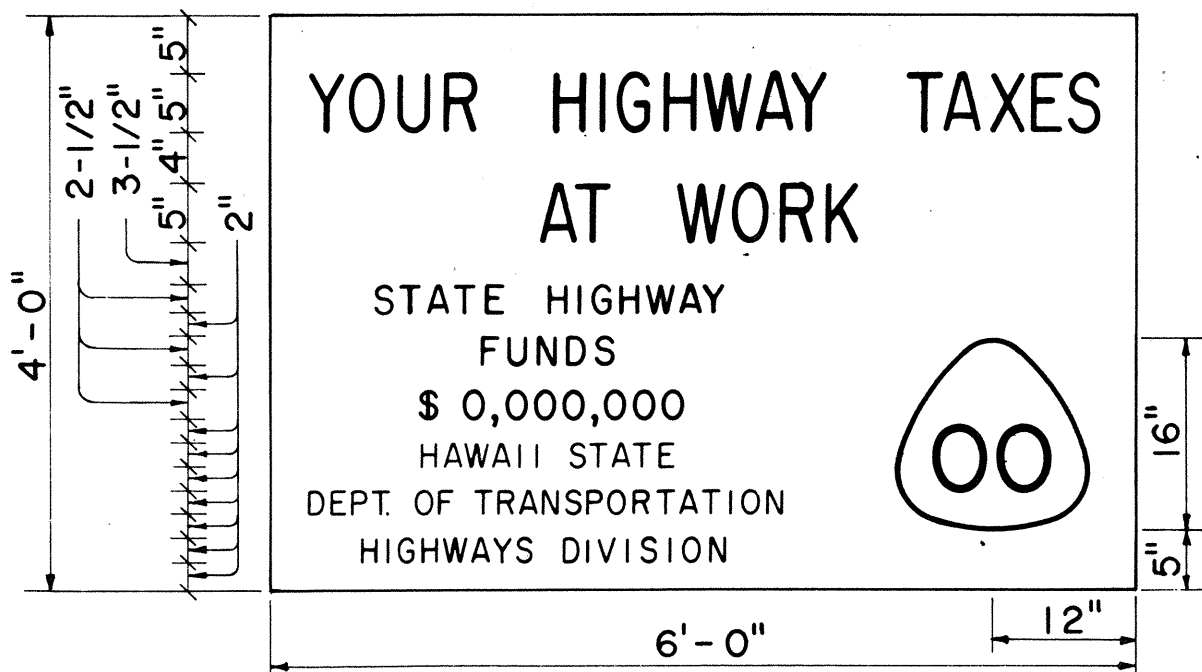
Scale: As Shown



SIGN PANEL

PRIMARY AND SECONDARY SYSTEMS

Scale: 3/4" = 1'-0"



SIGN PANEL

NON-FEDERAL AID PROJECT

Scale: 3/4" = 1'-0"

GENERAL NOTES

1. The sign legend shall be black on white background.
2. The Contractor shall construct, install and maintain the project signs at the locations shown on the plans and as ordered by the Engineer.
3. Letters shall be Series "C" of the sizes shown on the plan and shall conform to the FHWA publication "Standard Alphabets for Highway Signs," 1966.
4. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.
5. For State Route Marker detail, see sht. DT 209. Include 1/2 inch black border around edge of marker.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
APPROVED:
ASSISTANT CHIEF, ENGINEERING

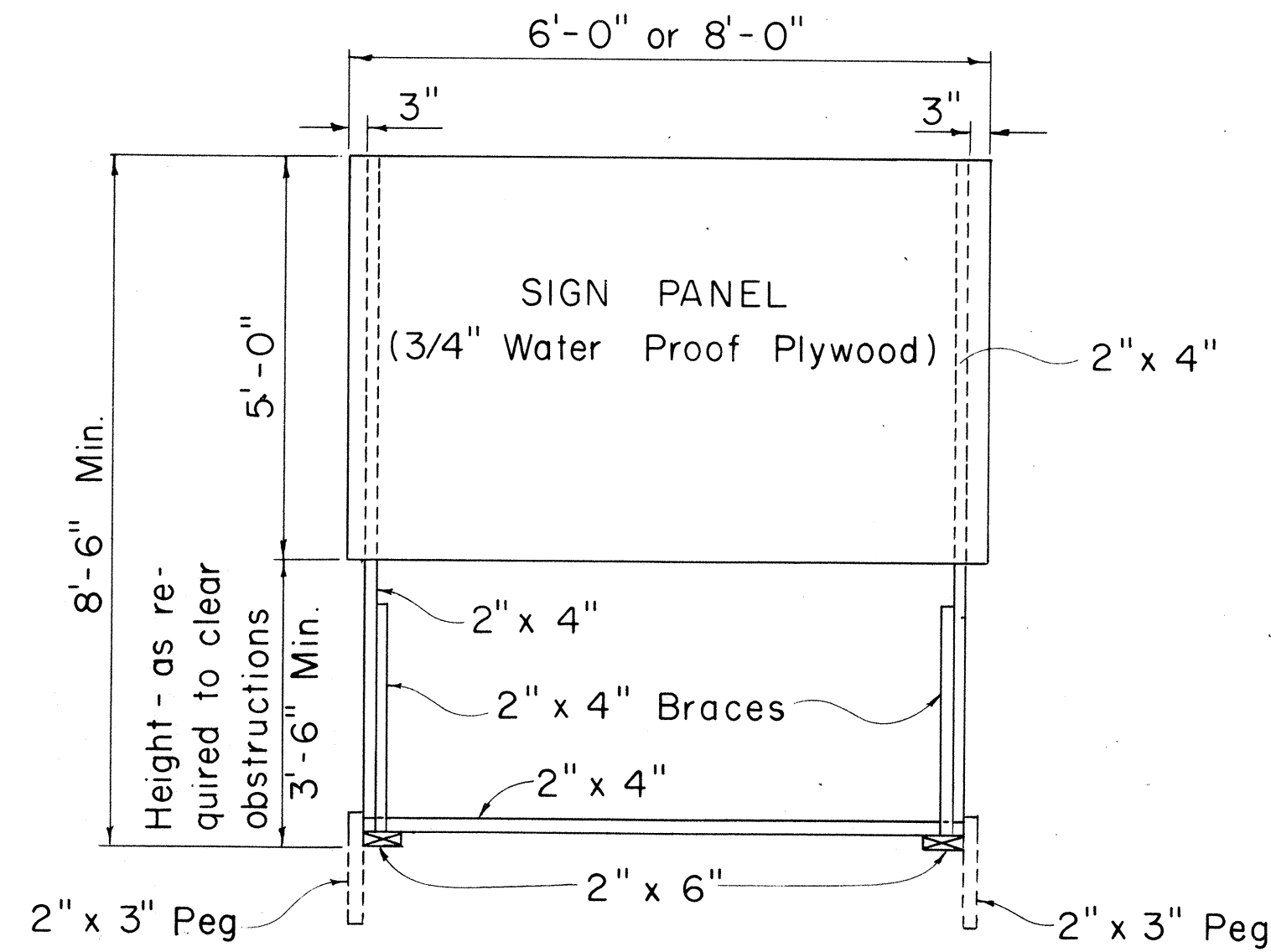
NO	REVISION	APPROVED BY	DATE
1	Delete "Bureau of Public Roads"	H.C.	9-29-70
2	Add Note No. 3 for Barricades	H.C.	5-4-71
3	Revise Route Marker	H.C.	4-12-72

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STANDARD DETAILS CONSTRUCTION IDENTIFICATION SIGN AND WOOD BARRICADES Scale: As Shown

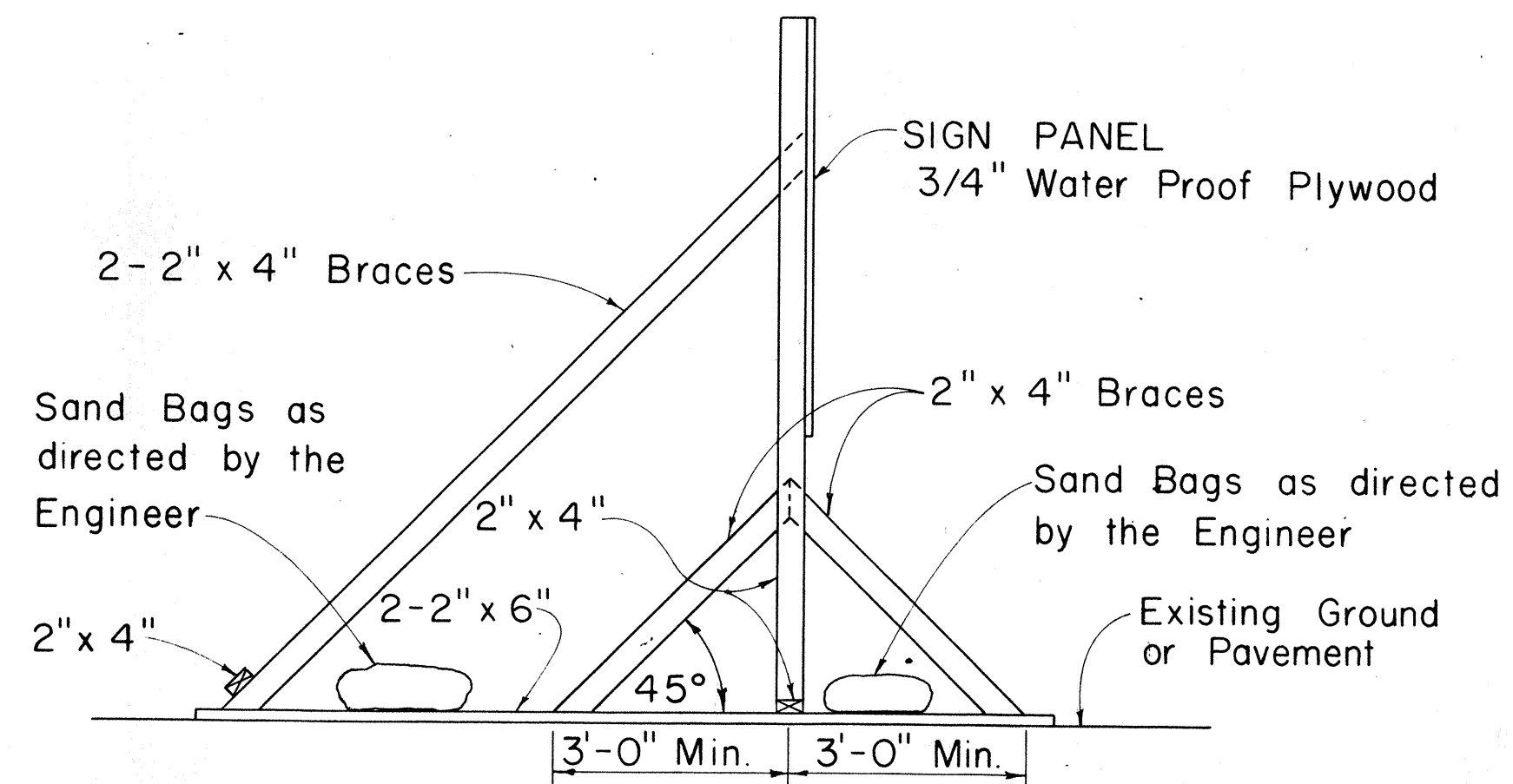
SHEET No. 16 OF 17 SHEETS DT 801

ADD. 65

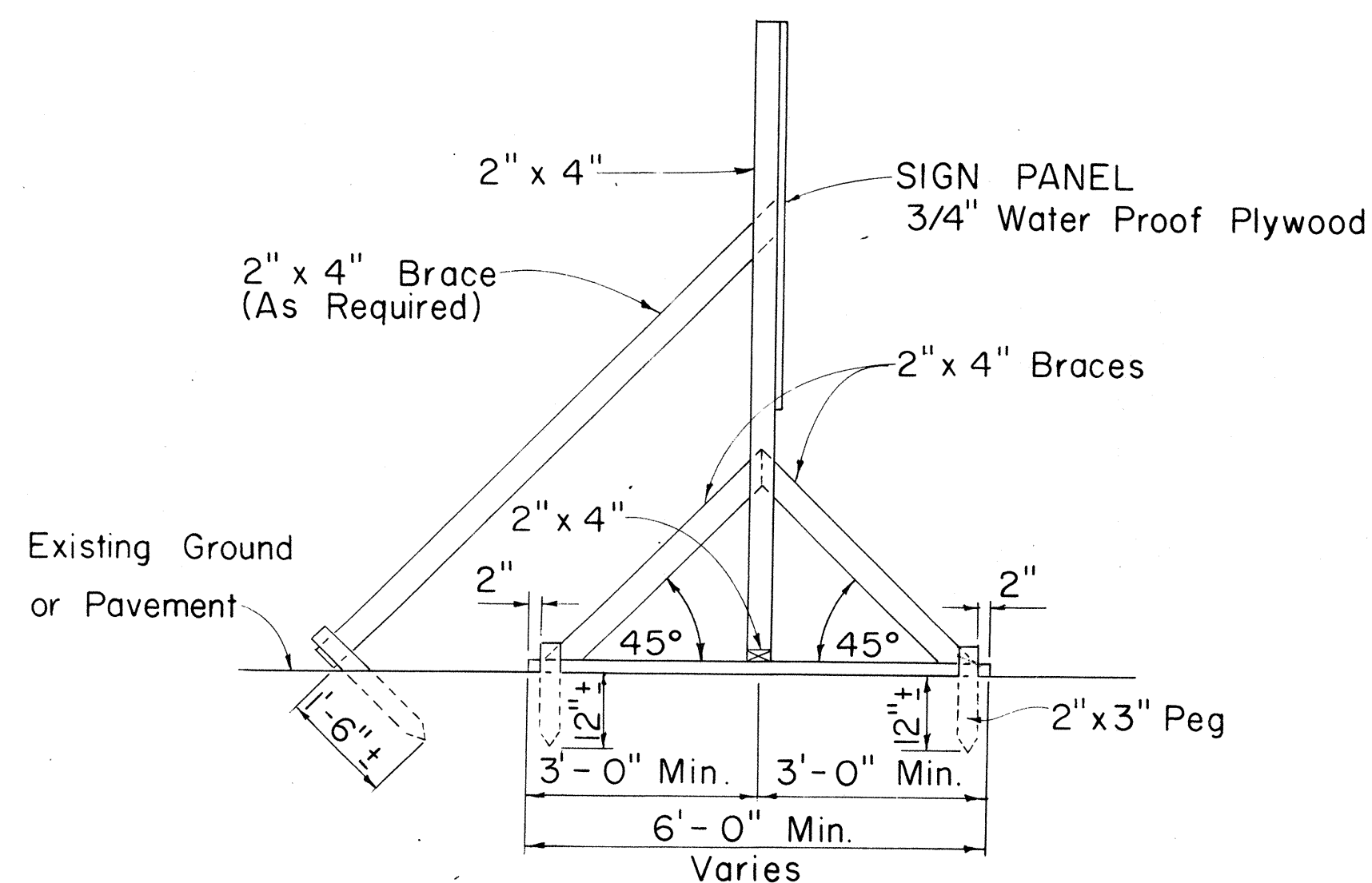
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	66	113



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

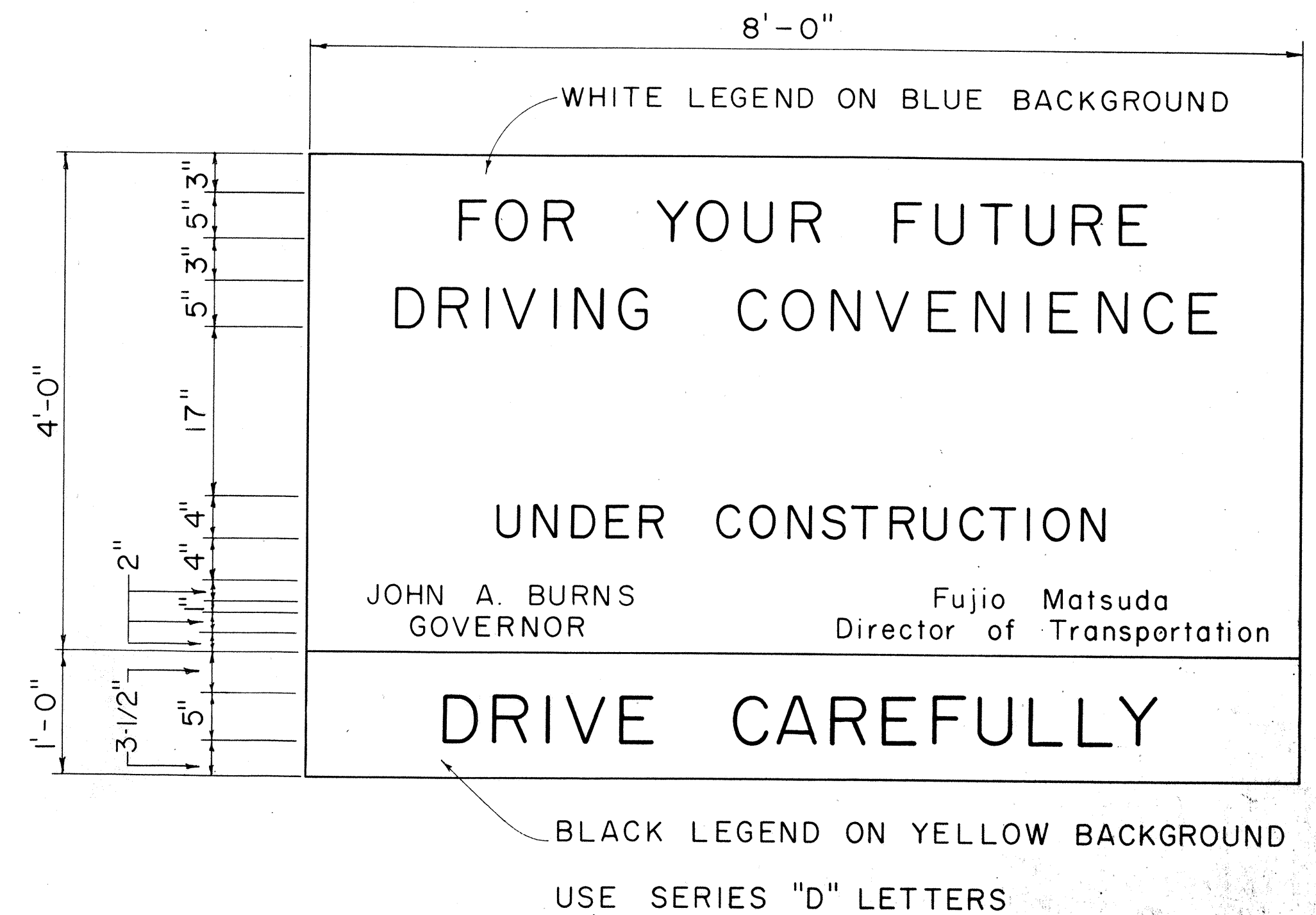


SIDE VIEW
(SIGN SUPPORT AND FRAME WEIGHTED DOWN)
Scale: 1/2" = 1'-0"



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

SIGN SUPPORT AND FRAME
Scale: As Shown



GENERAL NOTES

1. The sign panels will be constructed by the State and will be available for pick up by the Contractor from the State Highway Maintenance Yard.
2. The Contractor shall construct the sign supports and frames and install the sign panels at the locations shown on the plans and as ordered by the Engineer.
3. At the end of construction the Contractor shall remove the sign panels and return it to the State Highway Maintenance Yard. Sign supports and frames shall be removed and cleared from the project site.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS

PROJECT INFORMATION SIGN

Scale: As Shown

SHEET No. 17 OF 17 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
APPROVED BY	
NOTED BY	
REVISIONS	
NO.	