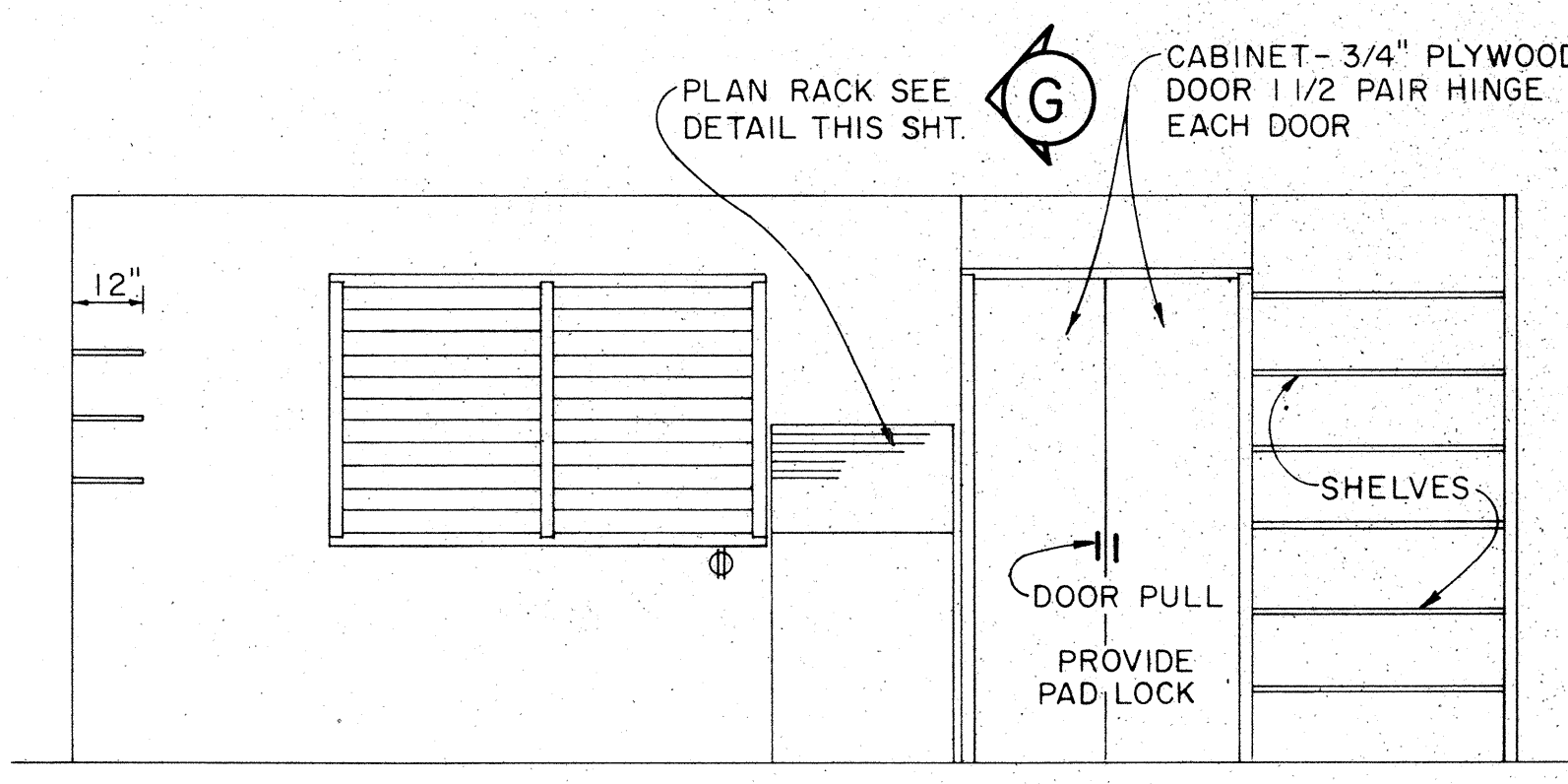
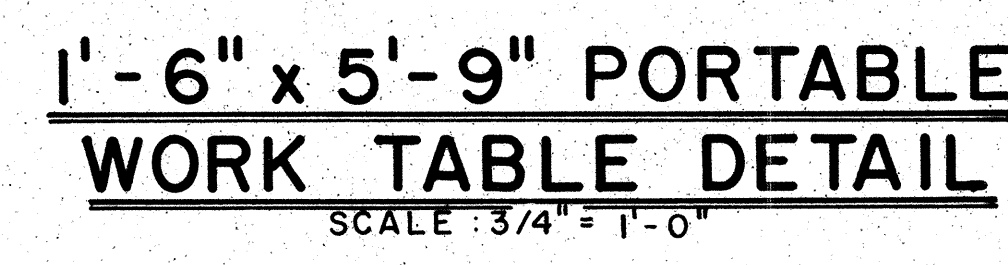
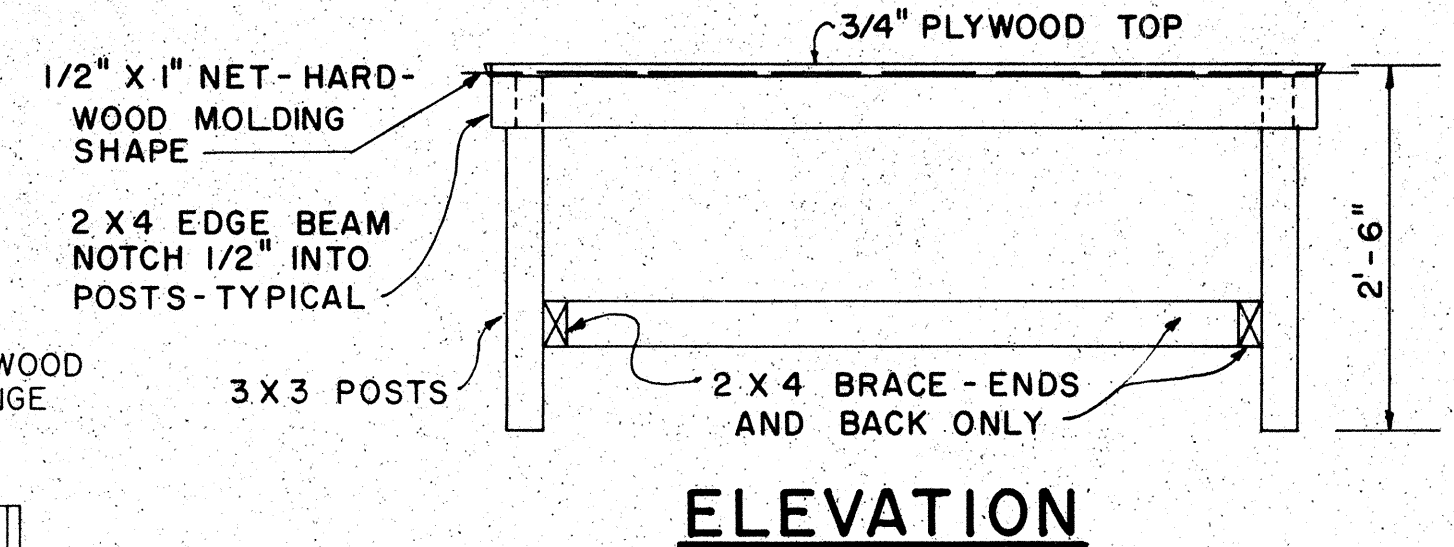
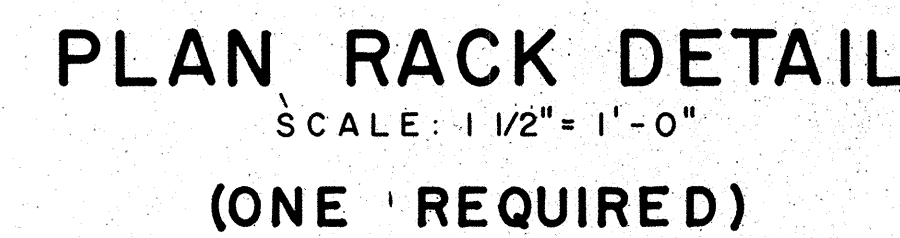
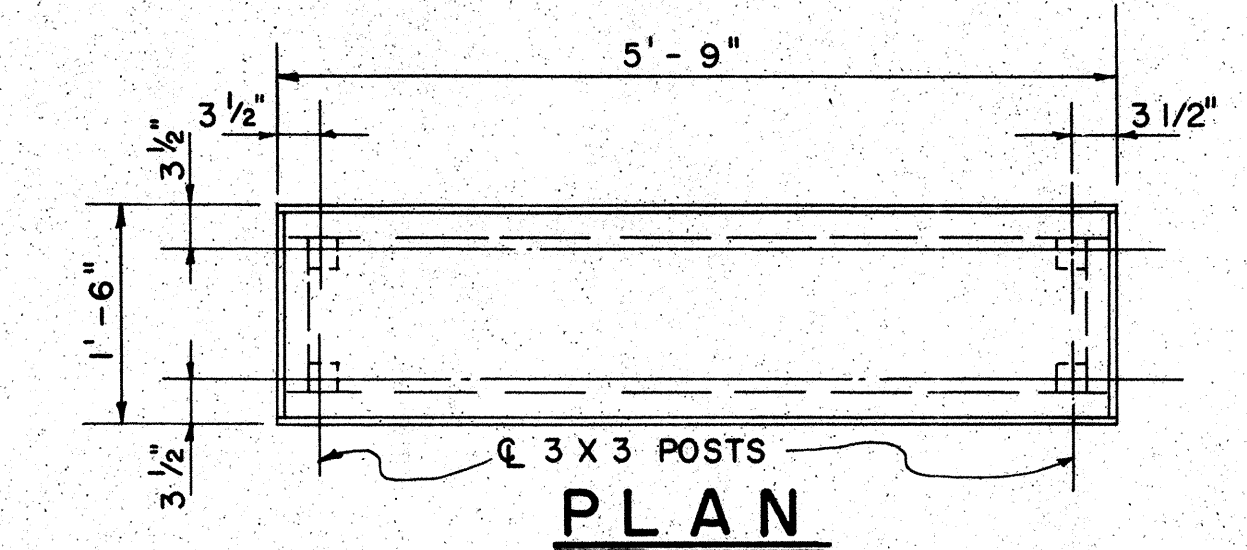
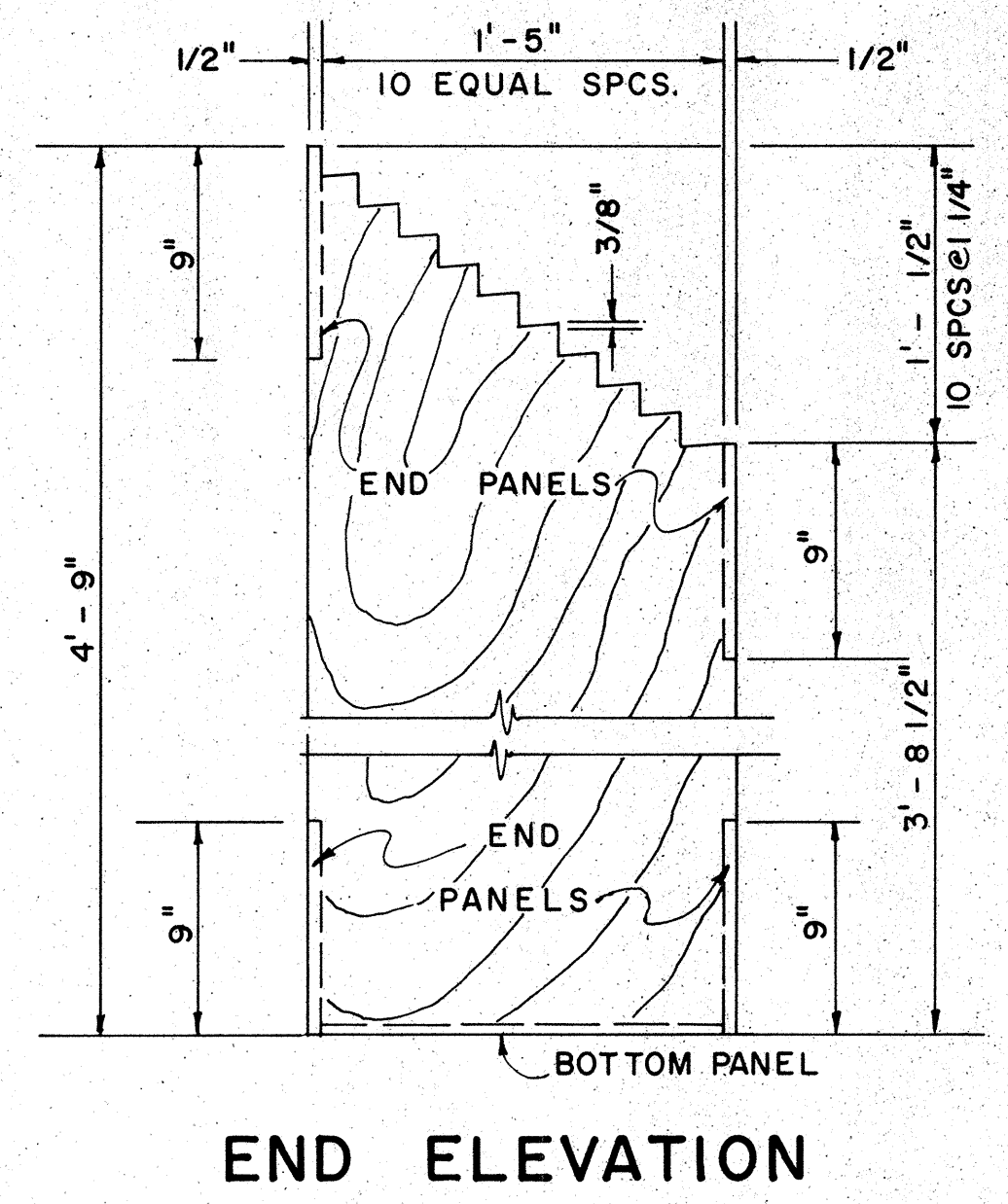
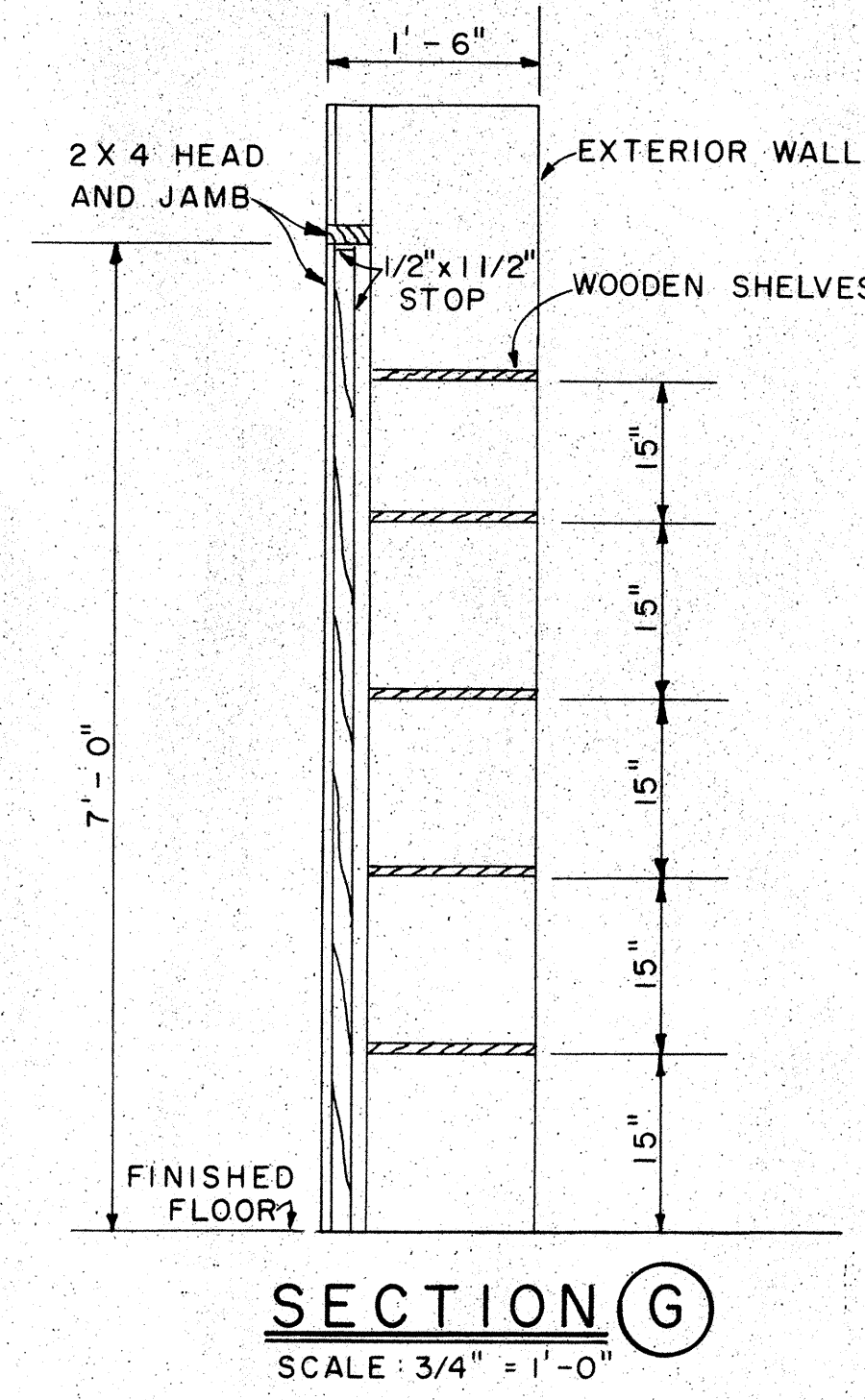
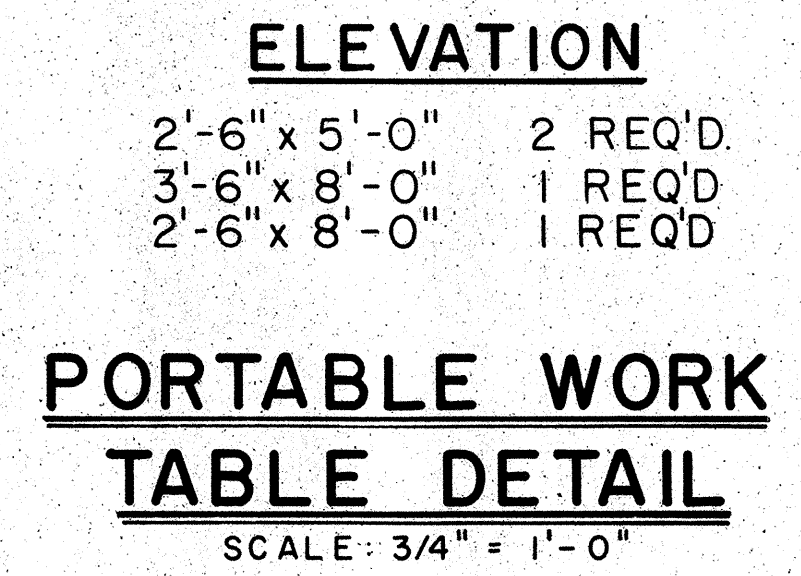
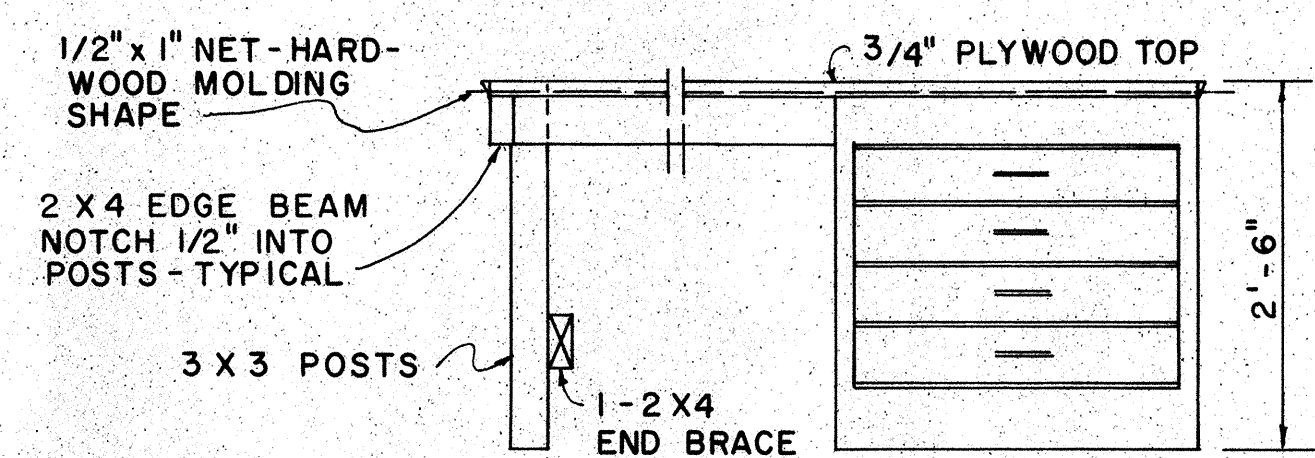
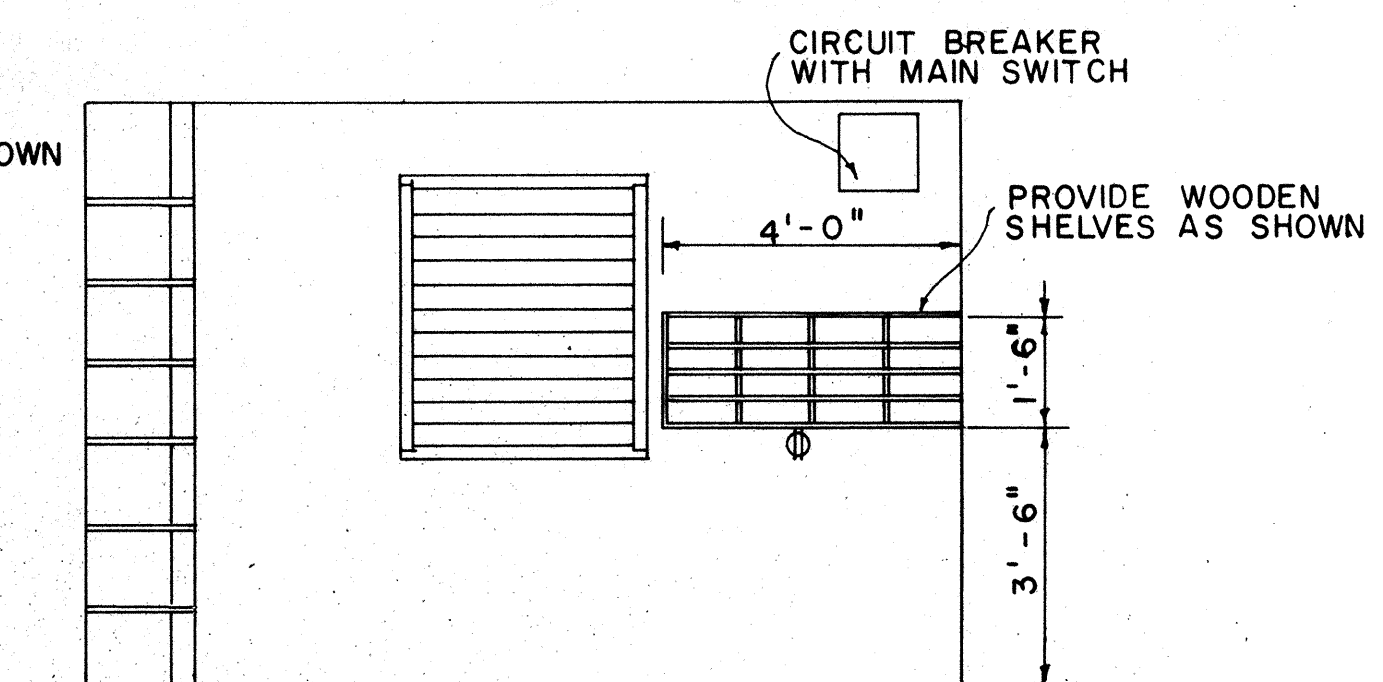
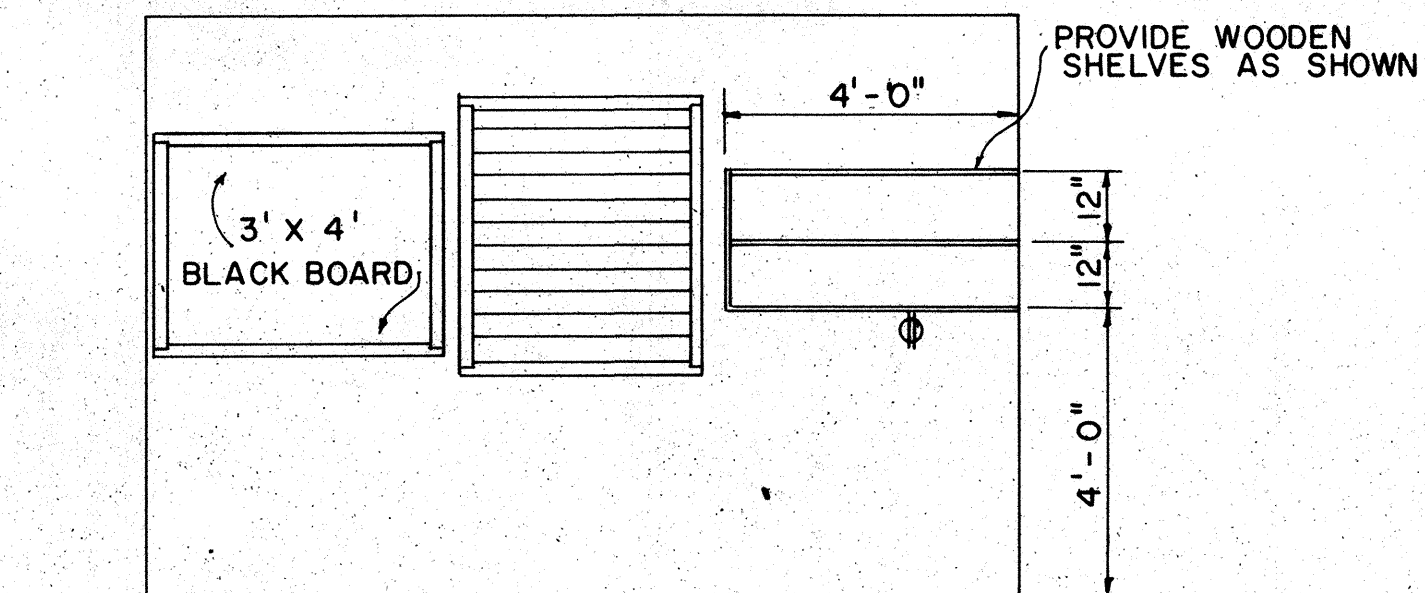
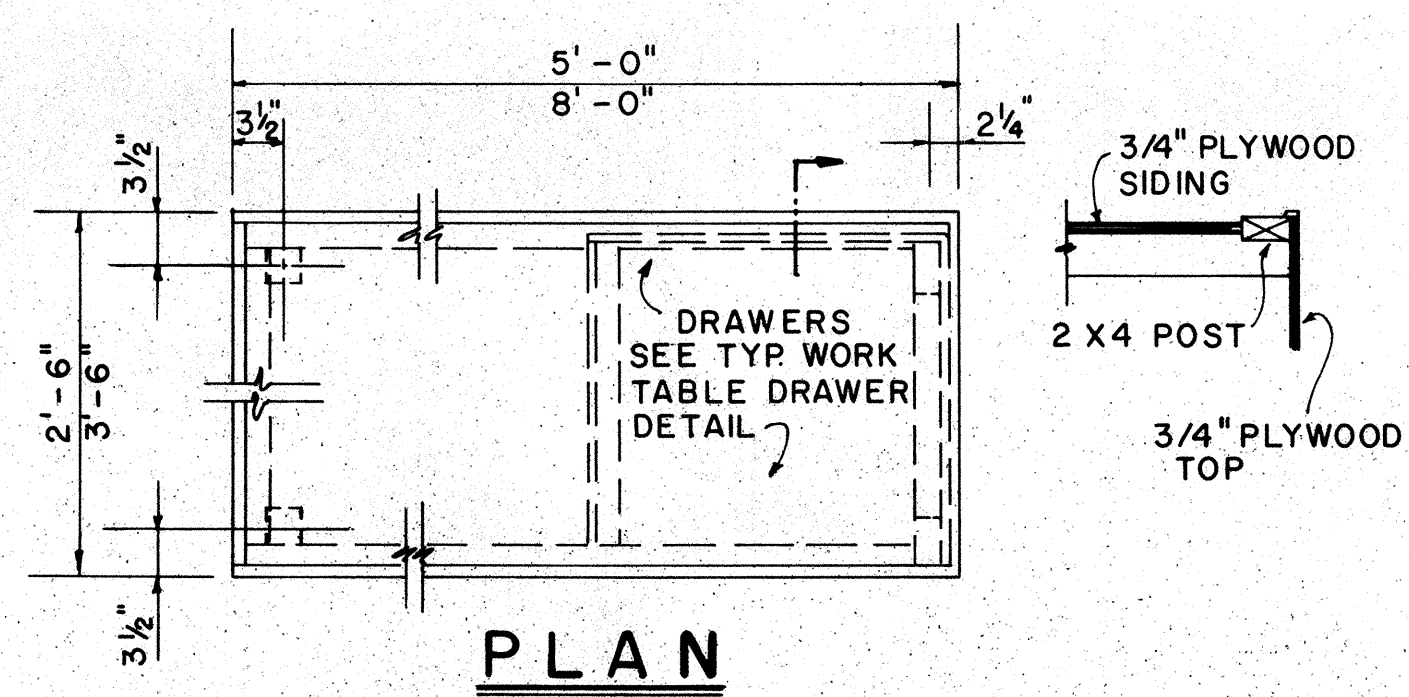
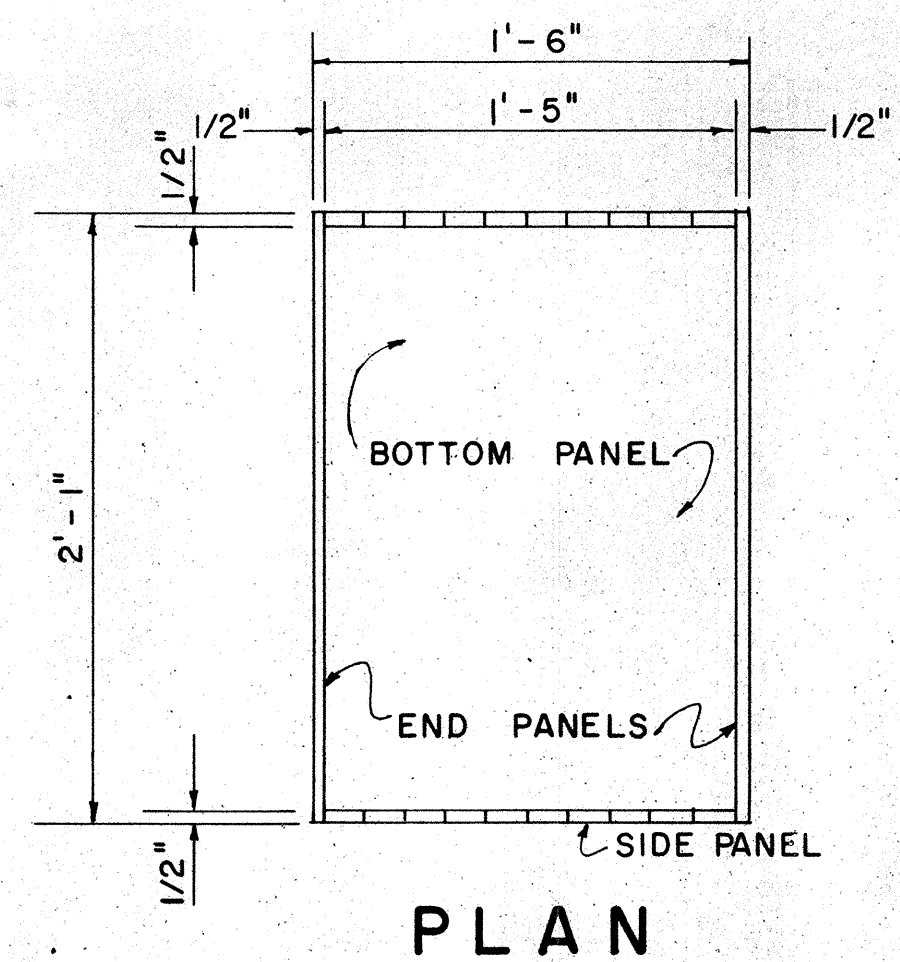


STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	19 BC-01-71	1973	27	51



APPROVAL RECOMMENDED: McHizawa 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED: Walter D. Sabido 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

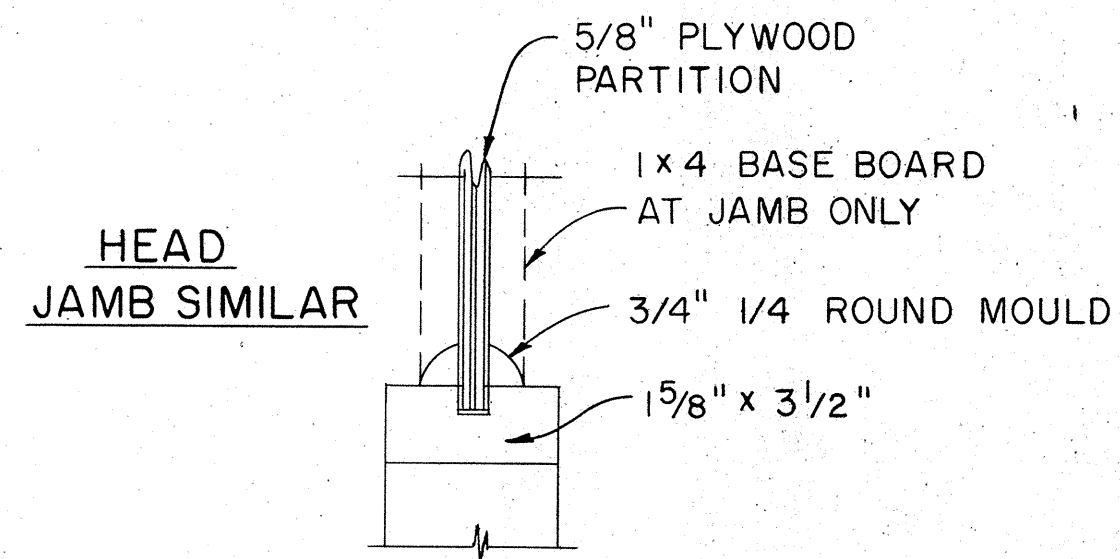
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

FIELD OFFICE

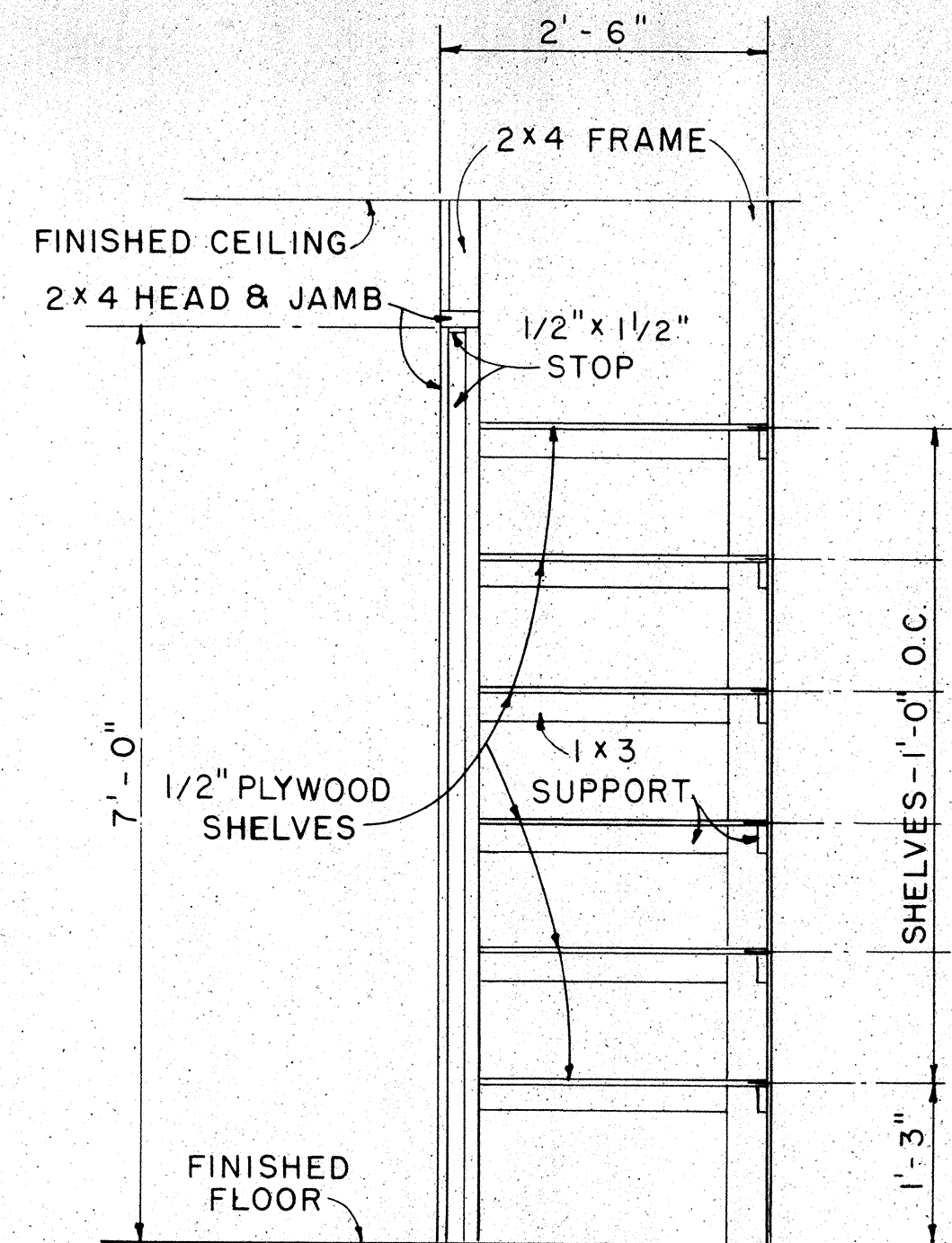
Scale : As Noted

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	19BC-01-71	1973	29	51



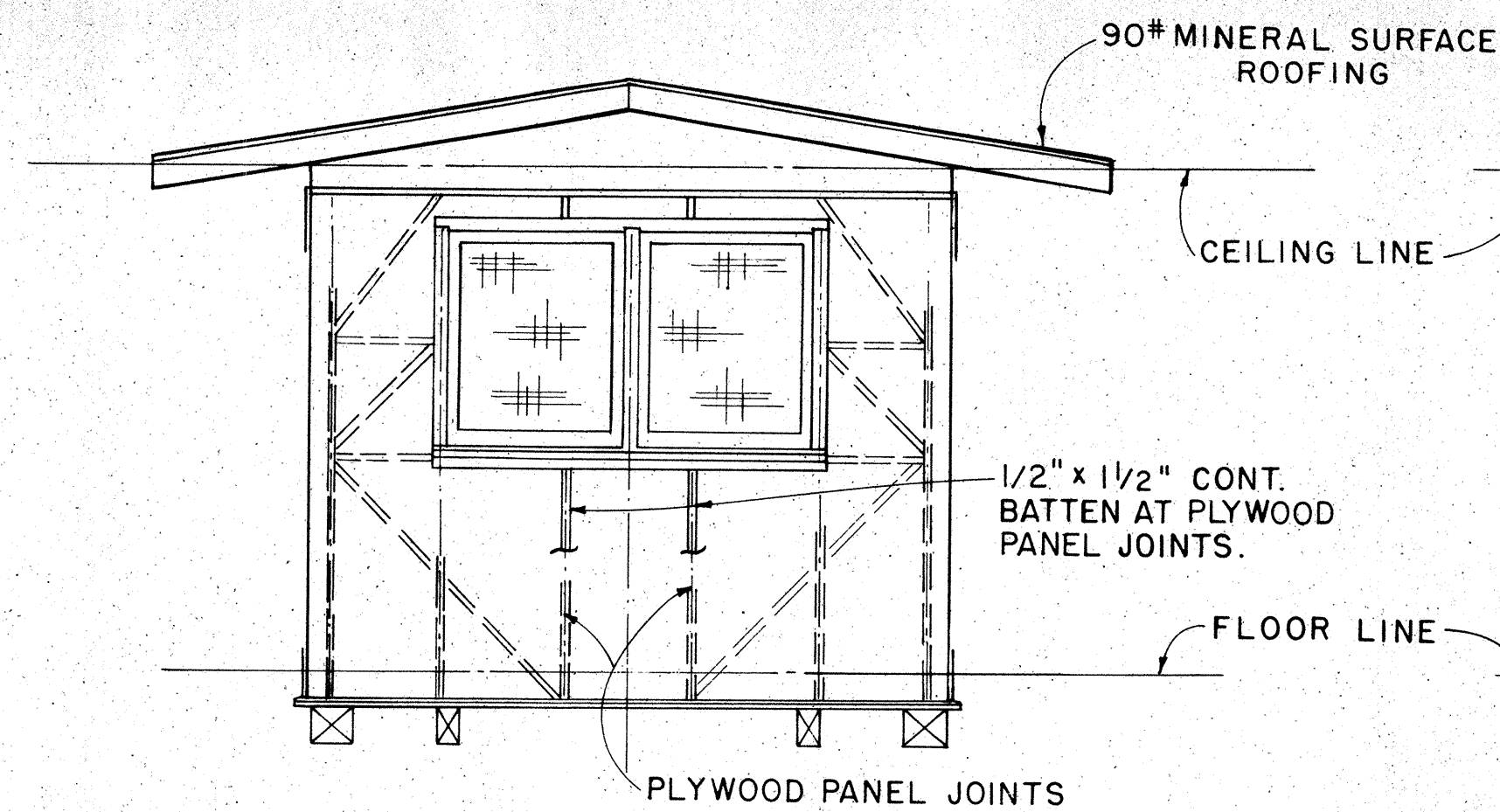
CASEMENT DETAIL

SCALE: 3" = 1'-0"



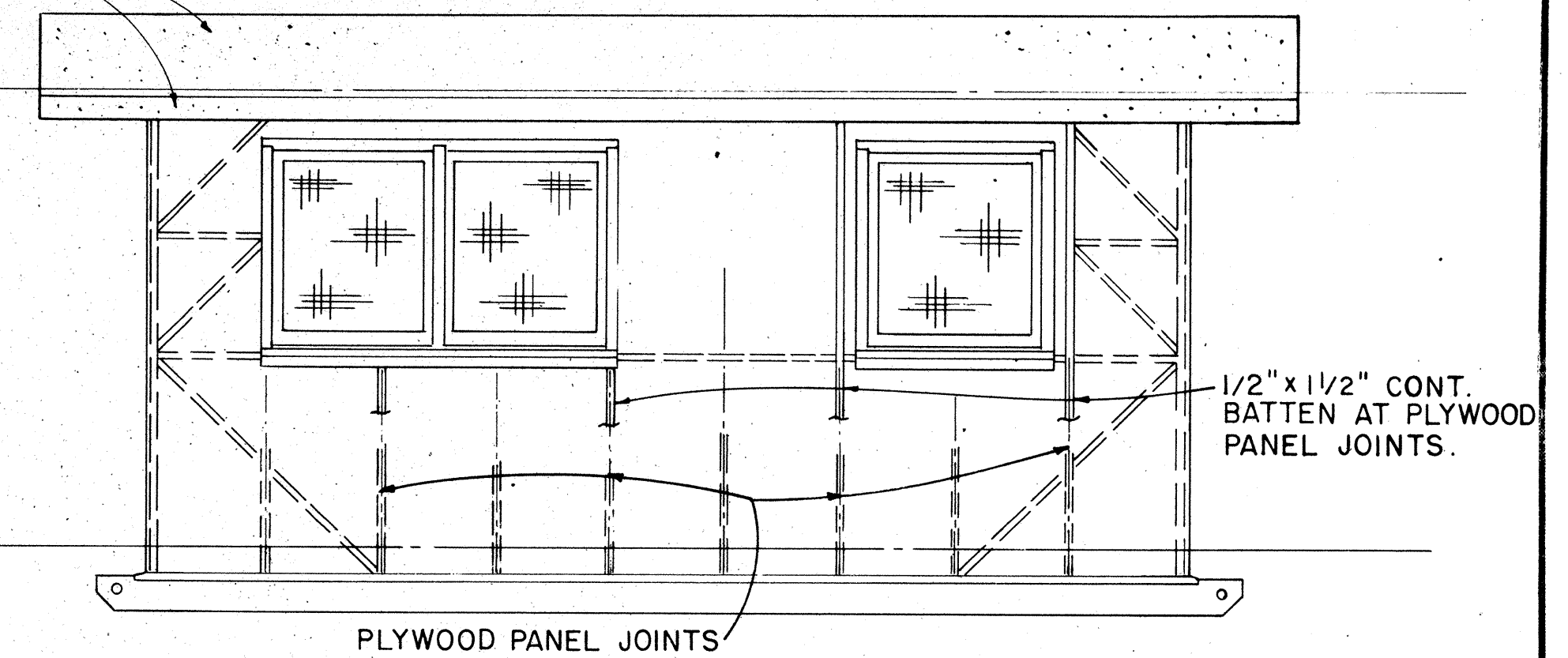
CABINET DETAIL

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



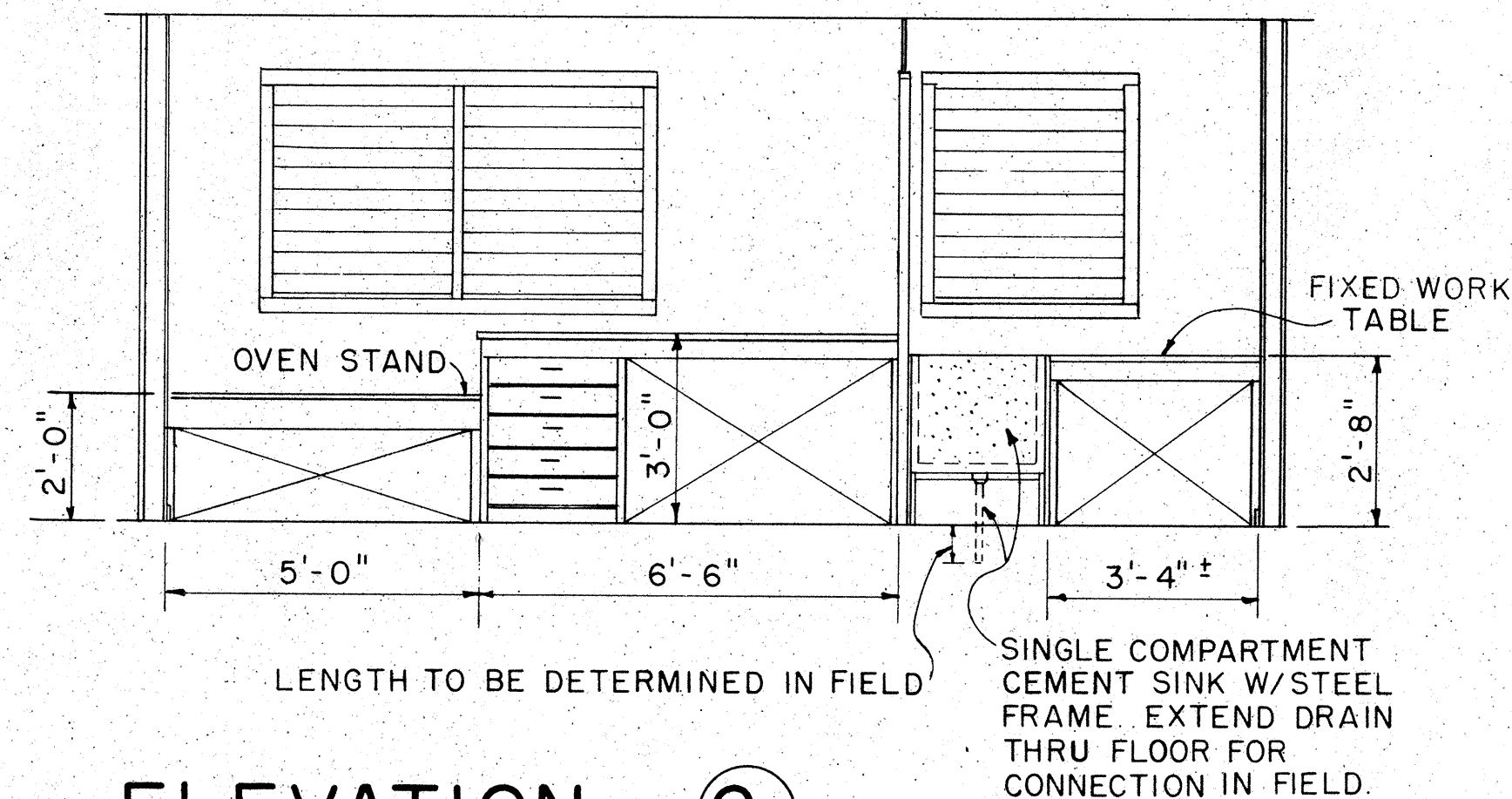
ELEVATION D

SCALE: 3/8" = 1'-0"



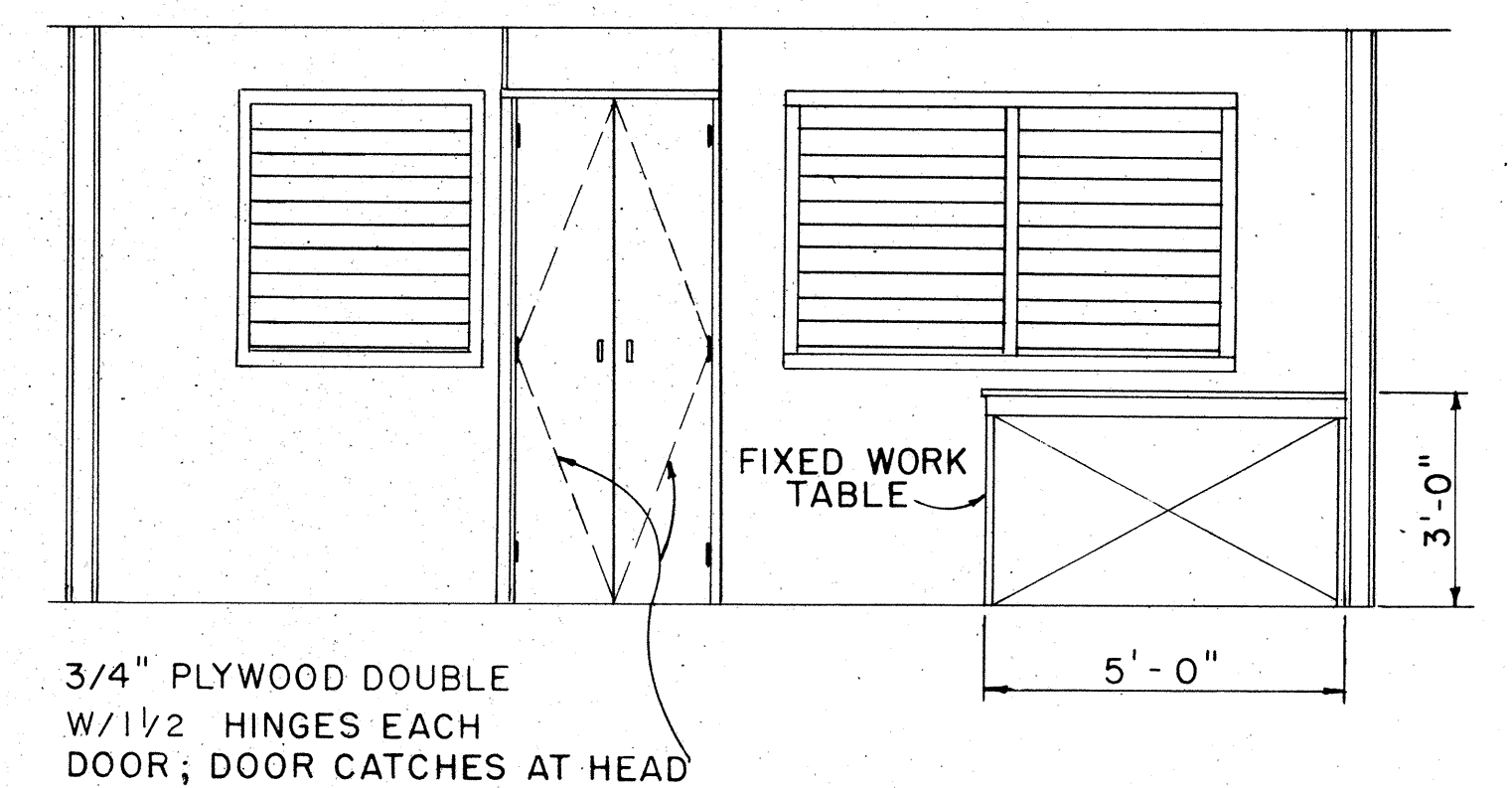
ELEVATION C

SCALE: 3/8" = 1'-0"



ELEVATION C1

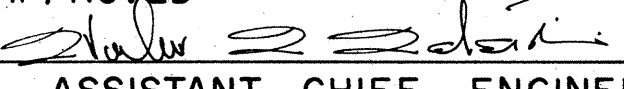
SCALE: 3/8" = 1'-0"



ELEVATION A1

SCALE: 3/8" = 1'-0"

APPROVAL RECOMMENDED:
 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:
 12-10-59
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

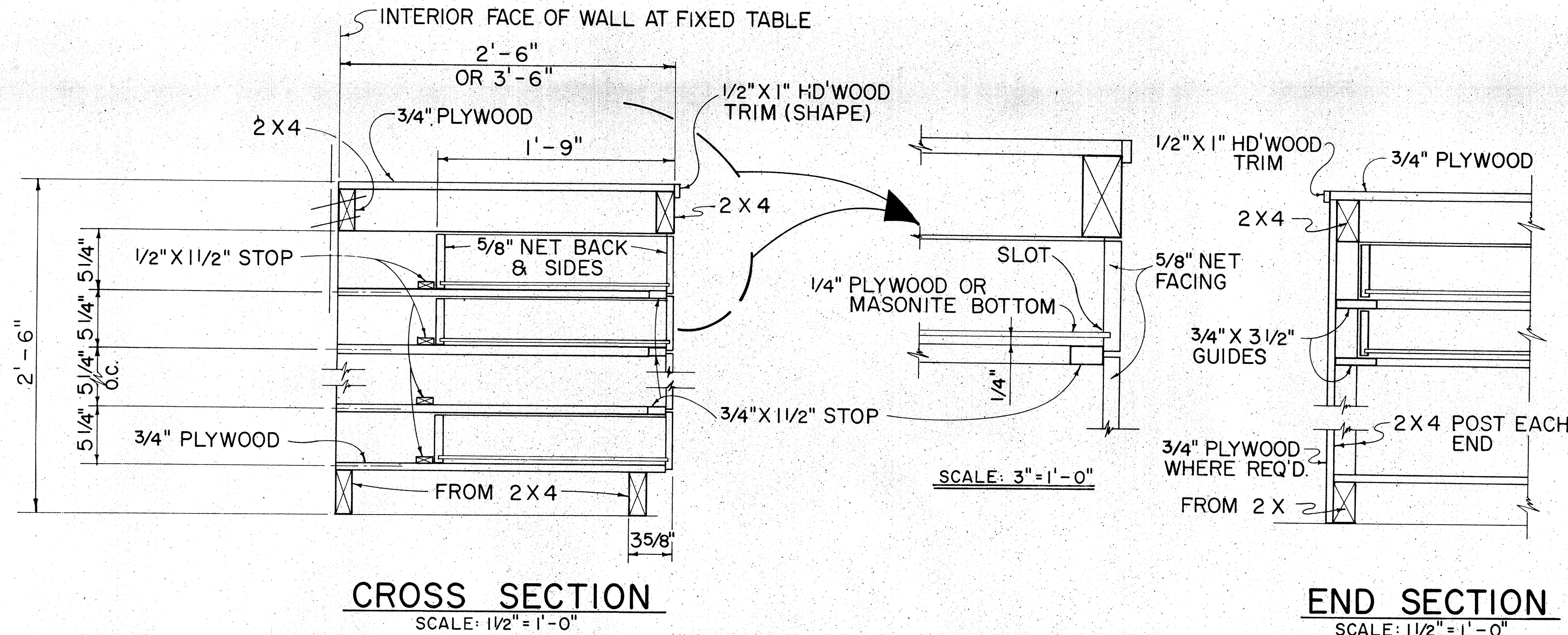
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROJECT SITE LABORATORY

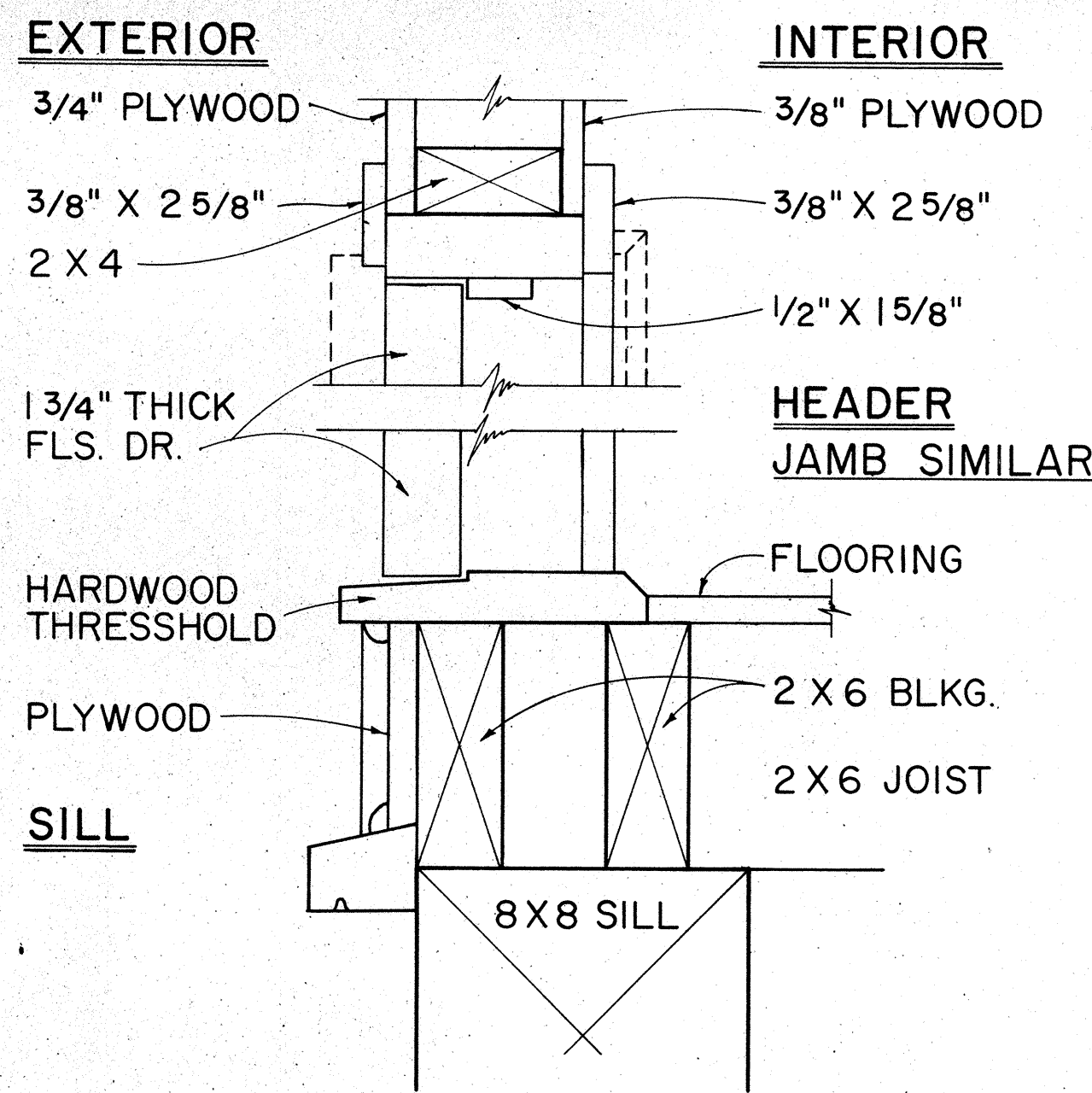
Scale: As Noted

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

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	108C-01-71	1973	30	51

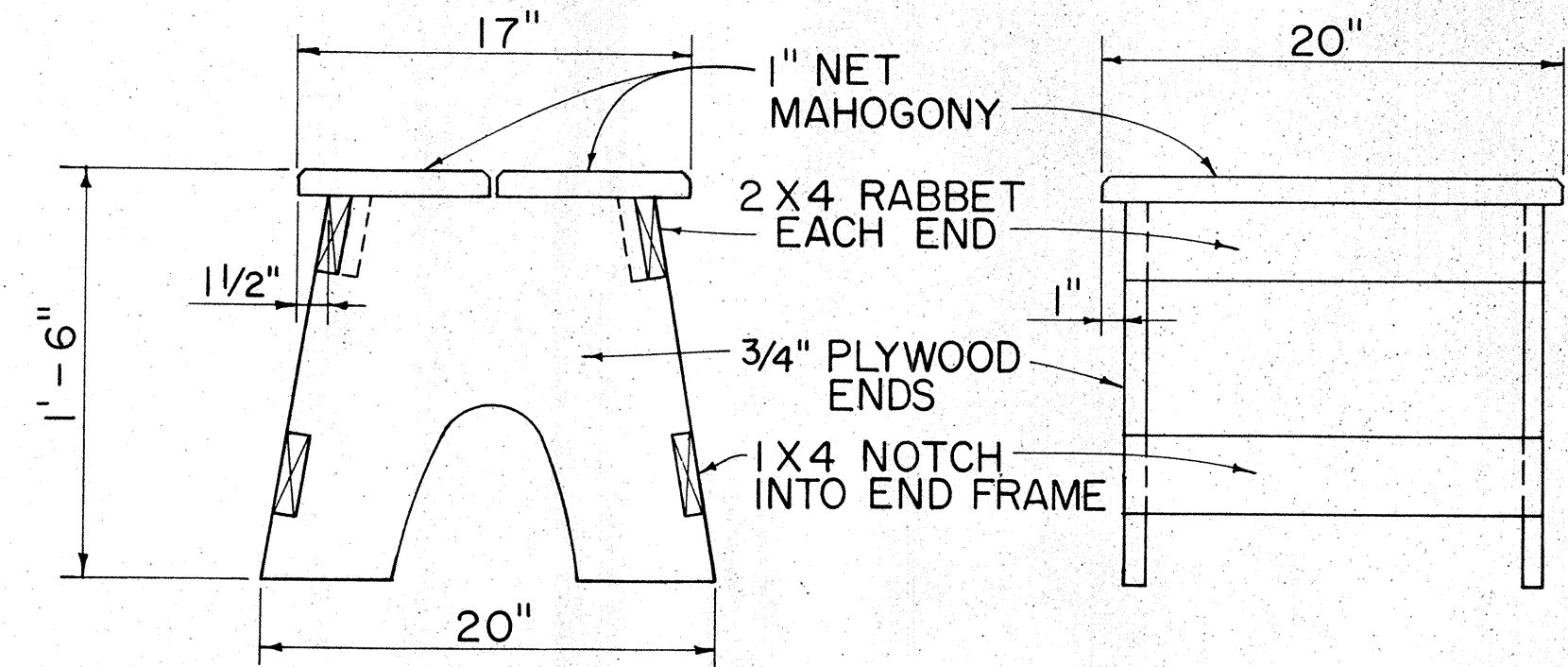


TYPICAL WORK TABLE DRAWER DETAIL

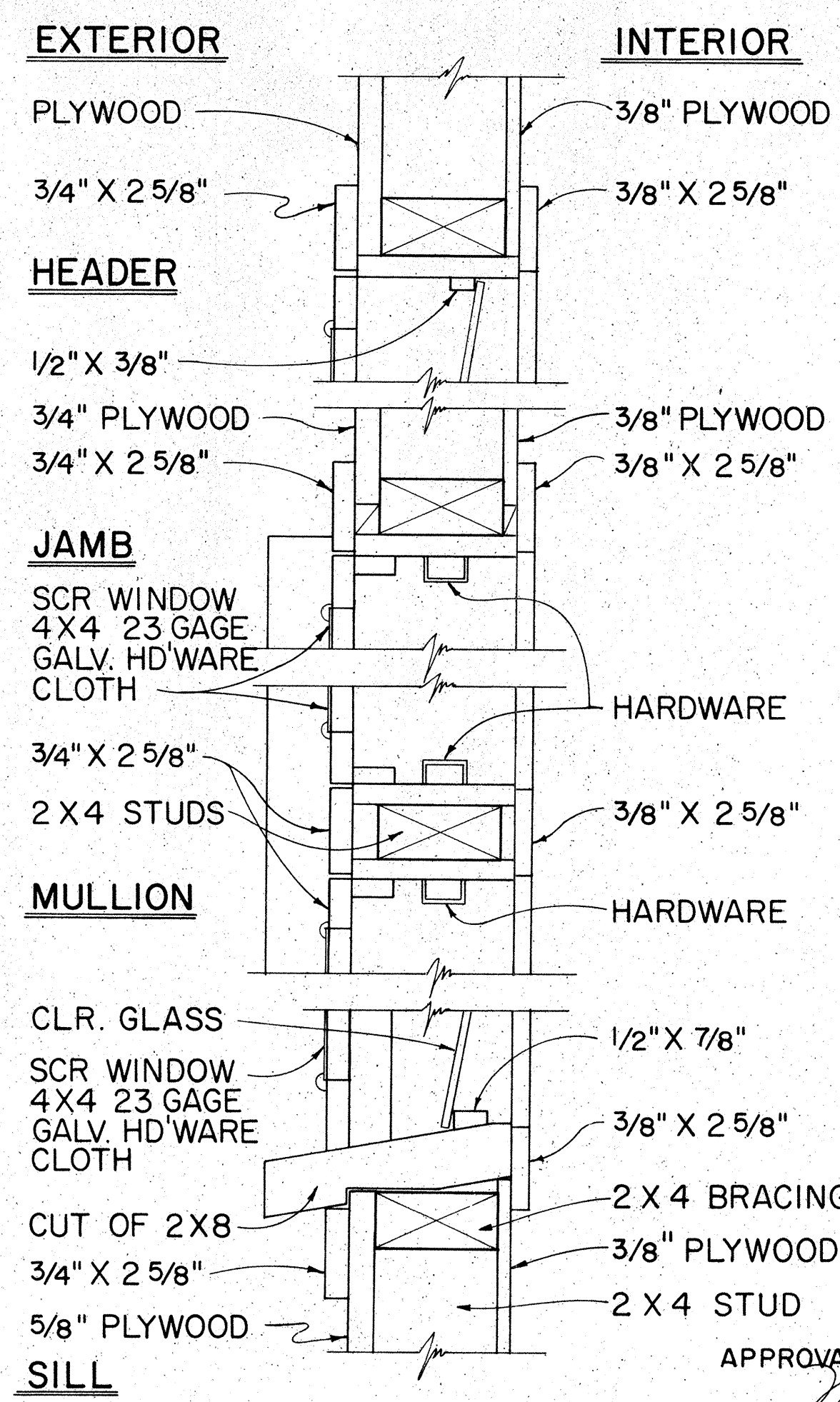


TYP. SWING OUT DOOR

TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL



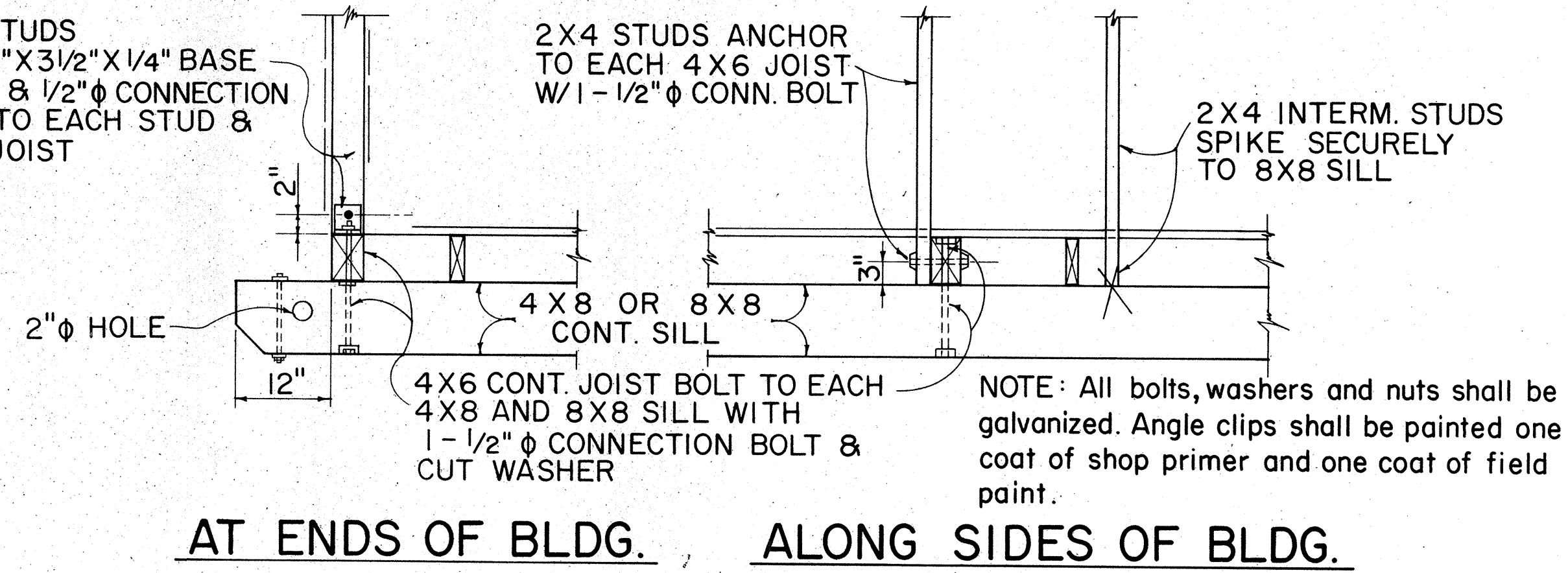
NOTE: CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH THE FIELD OFFICE OR PROJECT SITE LABORATORY WITH STOOLS OTHER THAN THE TYPE SHOWN IN THE DETAIL.



TYPICAL DETAIL JALOUSIES WINDOWS
SCALE: 3/4" = 1'-0"

APPROVAL RECOMMENDED:
M. H. H. H.
HIGHWAY DESIGN ENGINEER
12-4-69
DATE

APPROVED:
M. H. H. H.
ASSISTANT CHIEF, ENGINEERING
12-10-69
DATE



TYPICAL 2 X 4 STUD & 4 X 6 FLOOR JOIST BASE CONNECTION DETAILS

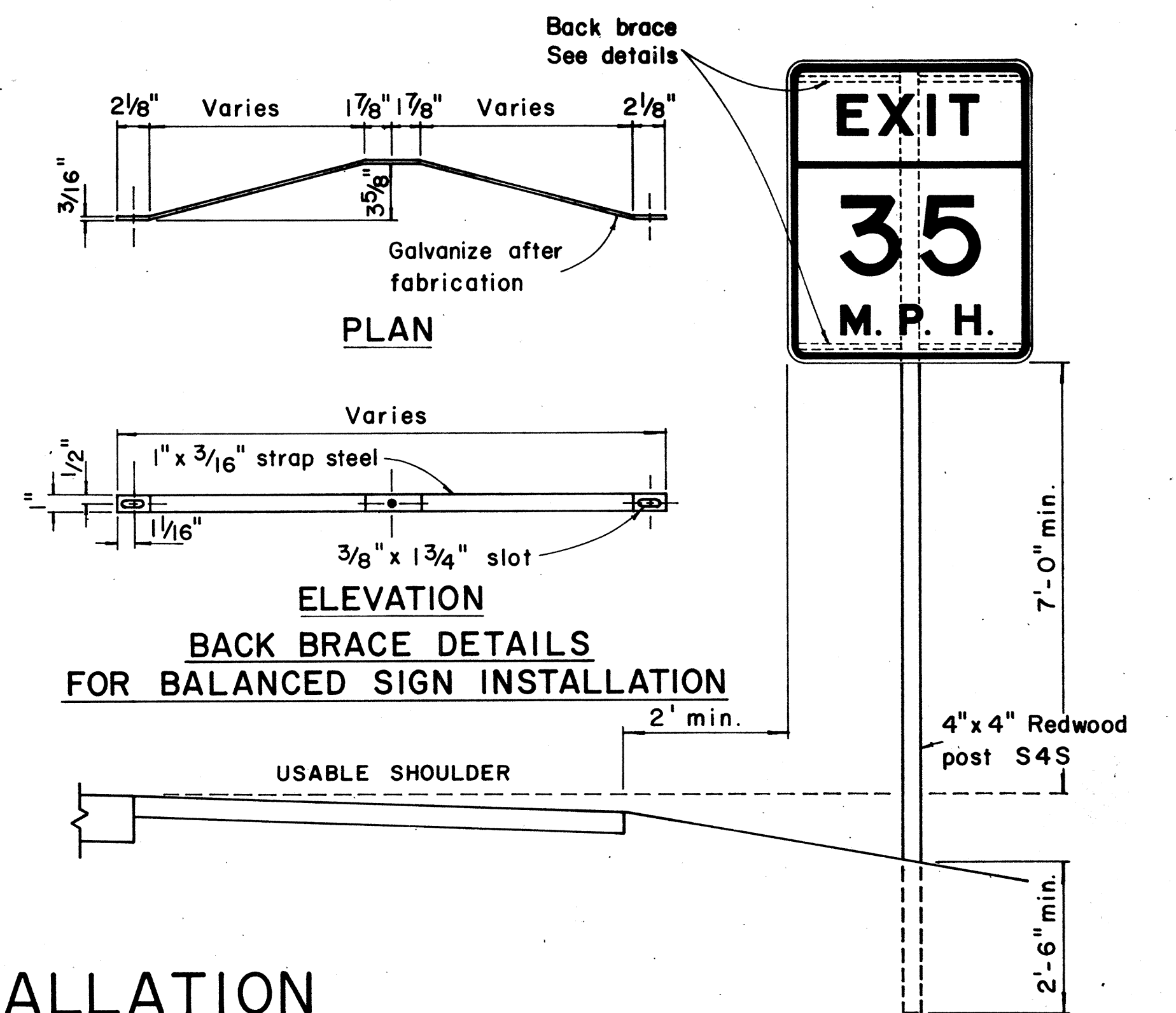
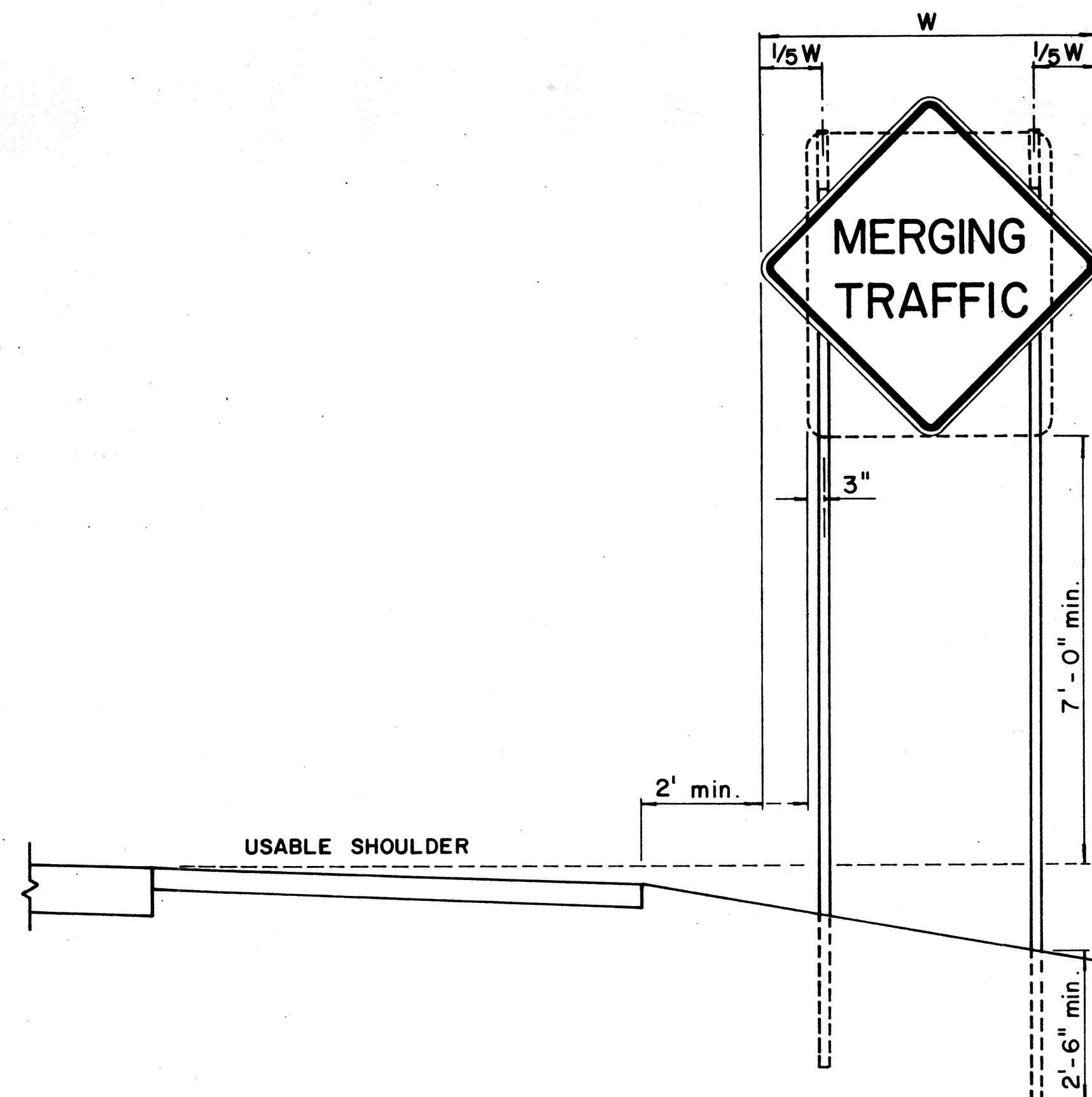
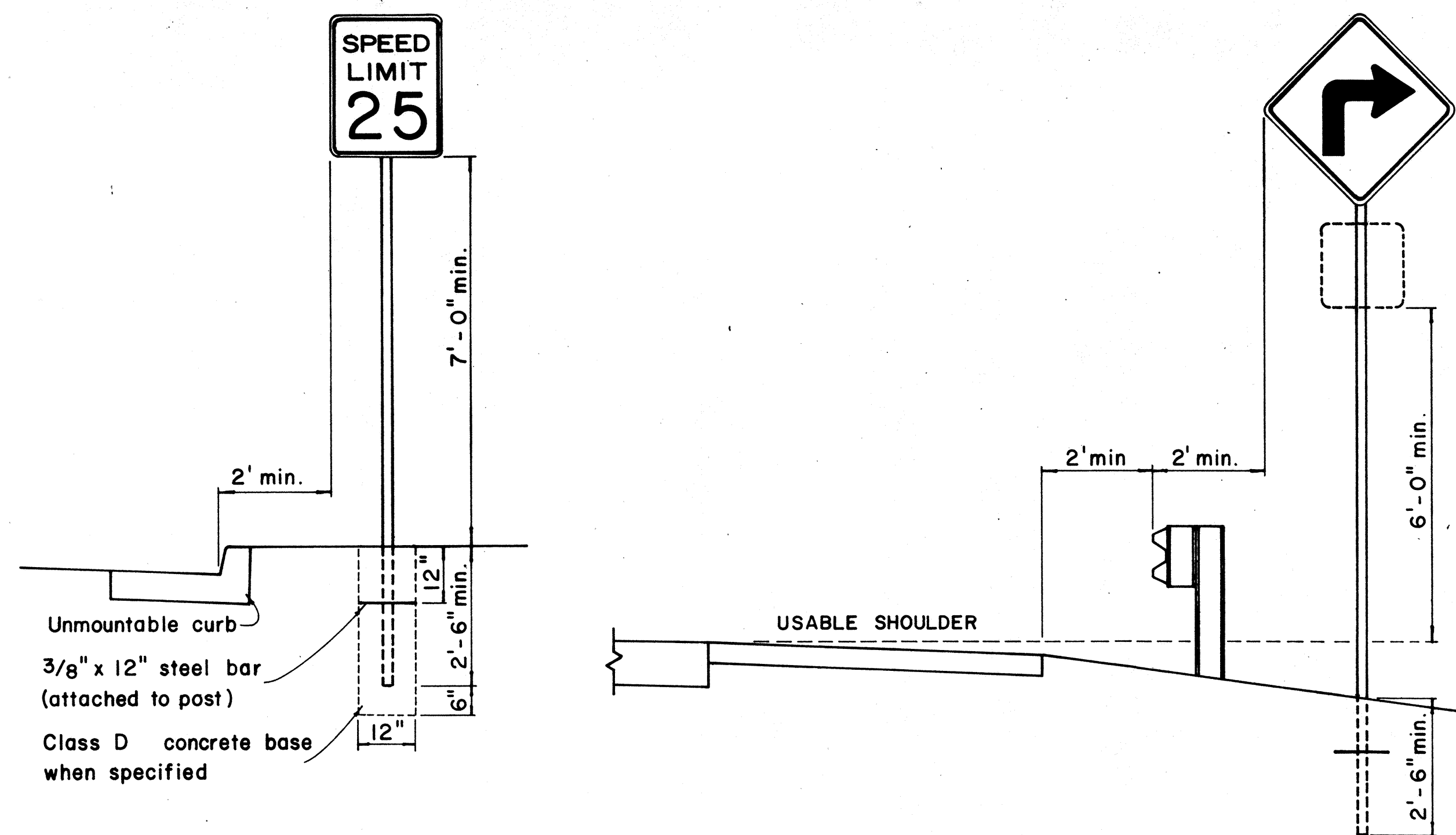
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

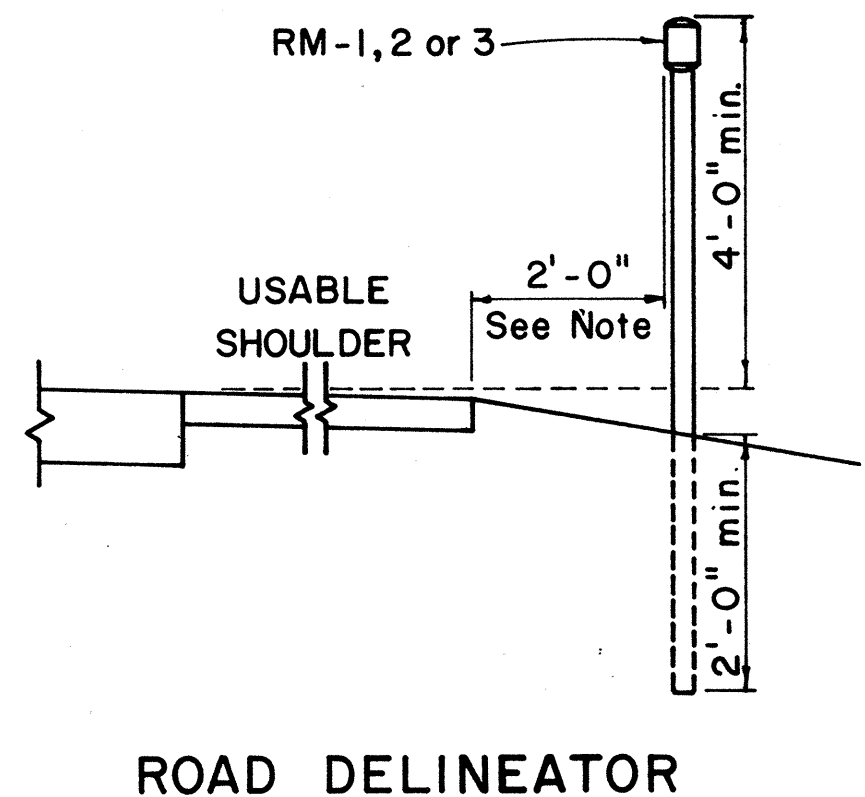
FIELD OFFICE
&
PROJECT SITE LABORATORY

Scale: As Noted

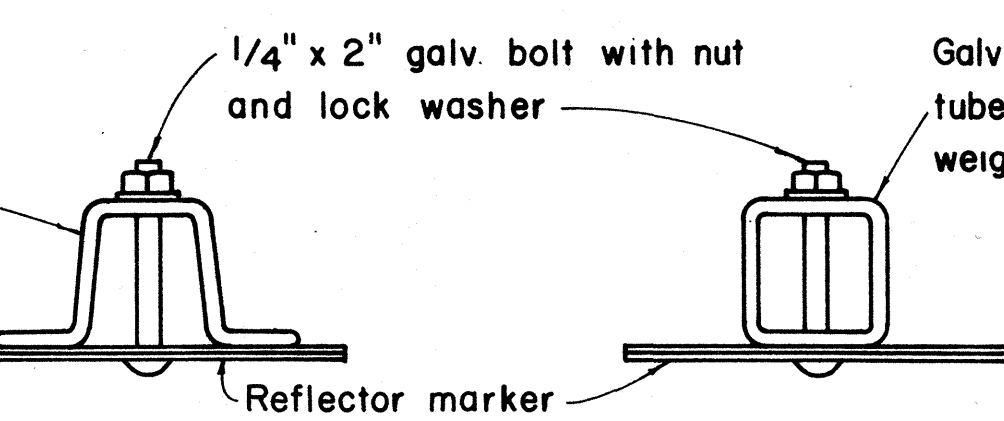
STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	193C-0171	1973	31	51



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.

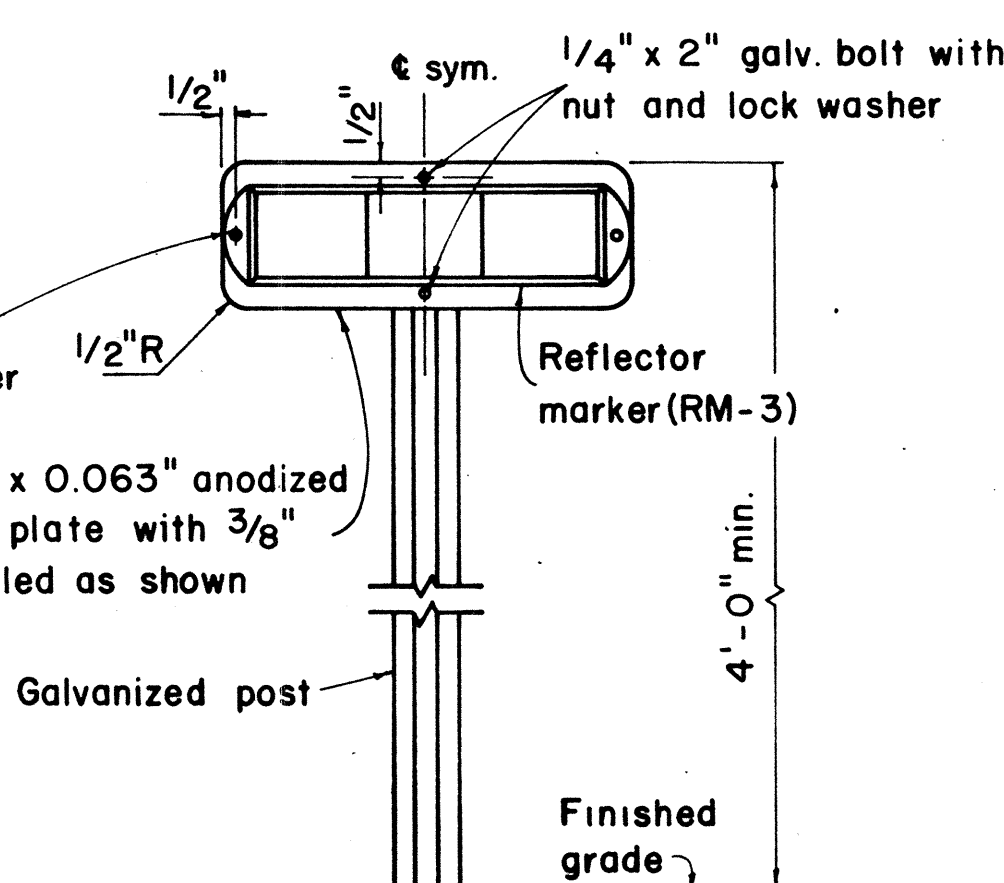


TYPICAL SECTION OF ROAD DELINEATOR

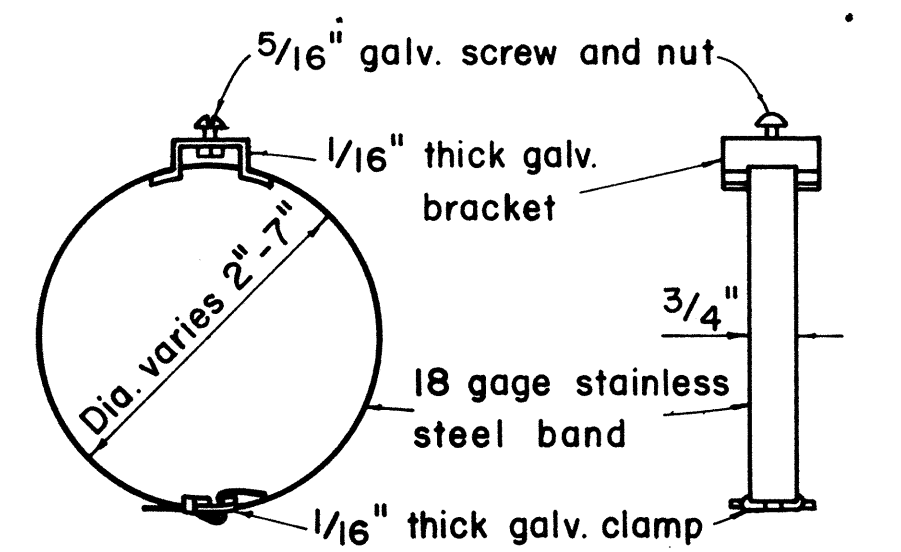
Galv 1 1/2" x 1 1/2" square
tube post with a minimum
weight of 1.7 lbs per ft

1/4" x 1/2" galv.
bolt with nut
and lock washer

1'-5" x 6" x 0.063" anodized
aluminum plate with 3/8"
holes drilled as shown

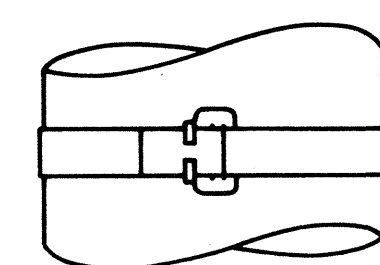


TYPICAL DETAIL
HORIZONTAL REFLECTOR MARKER
RM-3H



PLAN

SIDE VIEW



FRONT VIEW

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.

APPROVAL RECOMMENDED:
Euchi Tanaka 12/22/69
TRAFFIC ENGINEER DATE

APPROVED:
[Signature] 12-20-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

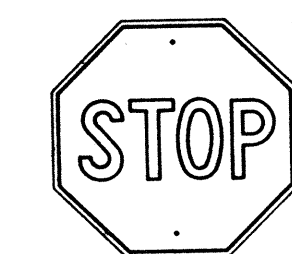
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

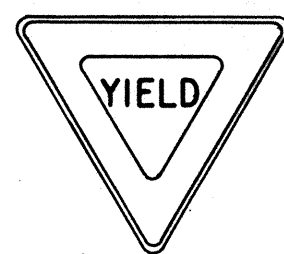
Not to scale March, 1968

SHEET No. 1 OF 19 SHEETS DT 100

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	19BC-0171	1973	32	51



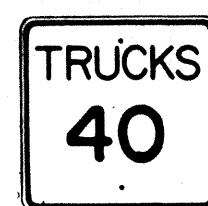
R1-1 30"x30"
R1-1-A 36"x36"
4-WAY
R1-3 12"x6"
R1-3-A 18"x9"



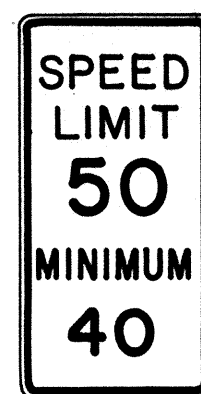
R1-2 36"x36"x36"
R1-2-A 48"x48"x48"



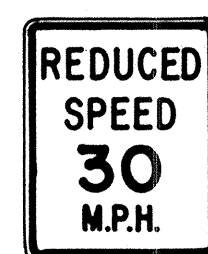
R2-1(50) 24"x30"
R2-1(50)-A 48"x60"



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



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



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



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



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



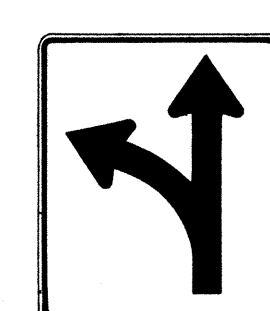
R3-3 24"x24"
R3-3-A 48"x48"



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



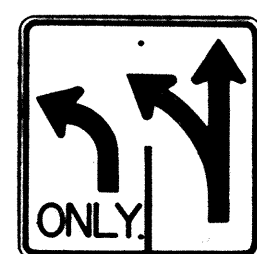
R3-5(L) 30"x36"
R3-5(L)-A 48"x60"



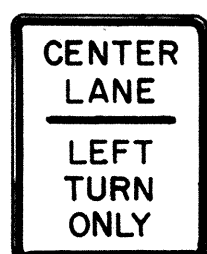
R3-6(L) 30"x36"
R3-6(L)-A 48"x60"



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



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



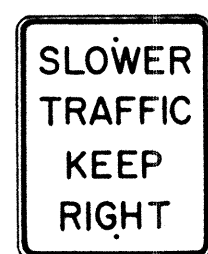
R3-9 24"x30"



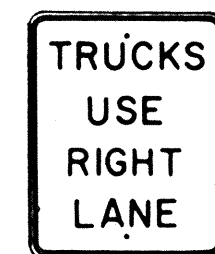
R4-1 24"x30"



R4-2 24"x30"



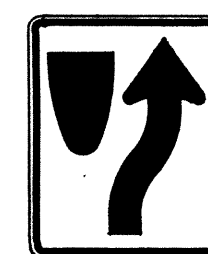
R4-3 24"x30"
R4-3-A 48"x60"



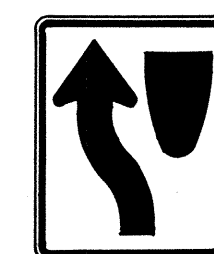
R4-5 24"x30"



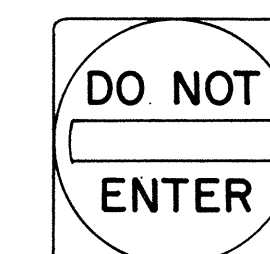
R4-6(500) 24"x30"



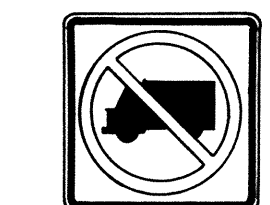
R4-7 24"x30"
24"x18"



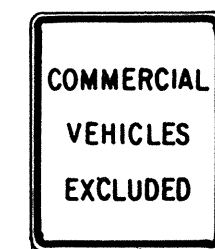
R4-8 24"x30"
24"x18"



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



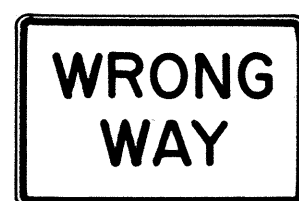
R5-2 24"x24"
24"x18"



R5-4 24"x30"



R5-6 24"x24"
24"x18"



R5-9 36"x24"



R6-1 (R) 36"x12"



R6-2(R) 18"x24"



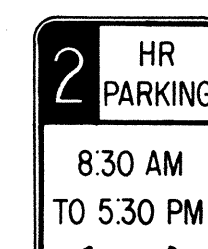
R7-1 12"x18"
R7-1-A 24"x30"



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



R7-107(R) 12"x18"



R7-108 12"x18"



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



R8-1 24"x30"



R8-2 24"x30"



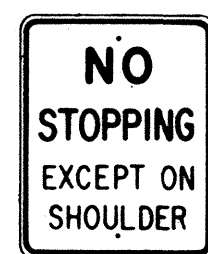
R8-3 24"x30"



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



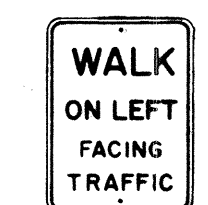
R8-5 24"x30"



R8-6 24"x30"



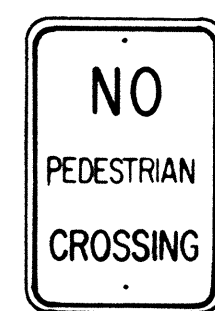
R8-7 30"x24"
R8-7-A 48"x36"



R9-1 18"x24"



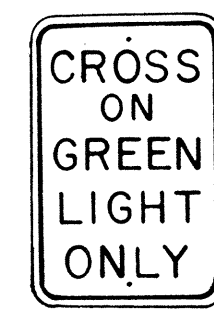
R9-2 12"x18"



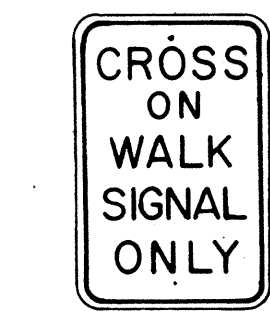
R9-3 12"x18"



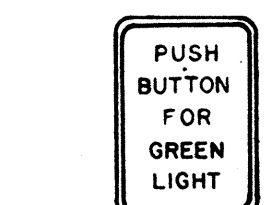
R9-4 18"x24"



R10-1 12"x18"



R10-2 12"x18"



R10-3 9"x12"



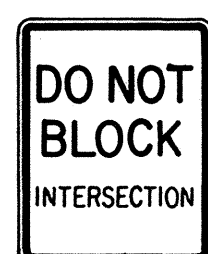
R10-4 9"x12"



R10-5 24"x30"



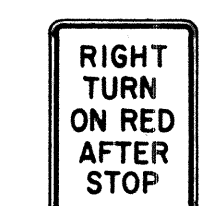
R10-6 24"x36"



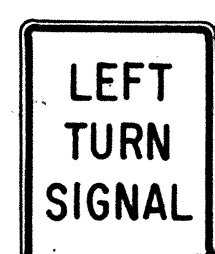
R10-7 24"x30"



R10-8 24"x30"



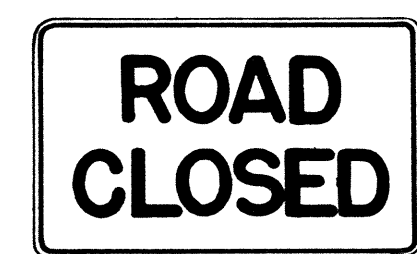
R10-9 24"x30"



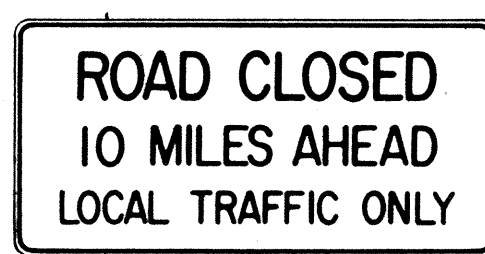
R10-10 24"x30"



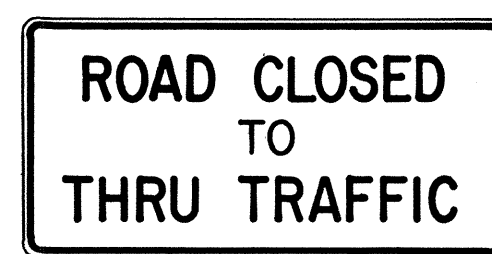
R11-1 24"x30"



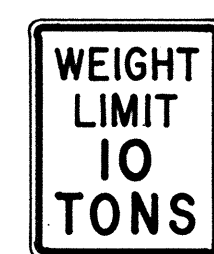
R11-2 48"x30"



R11-3(10) 60"x30"



R11-4 60"x30"



R12-1(10) 24"x30"

GENERAL NOTES

- 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:
Eishi Tanaka 3/17/72
TRAFFIC ENGINEER DATE

APPROVED:
Robert J. ... 3-20-72
ASSISTANT CHIEF, ENGINEERING DATE

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

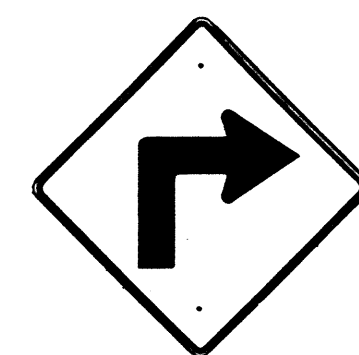
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS REGULATORY SIGNS

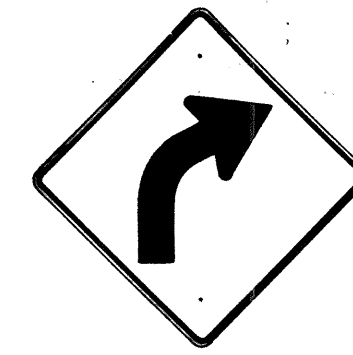
NOT TO SCALE

SHEET No. 2 OF 19 SHEETS DT 101

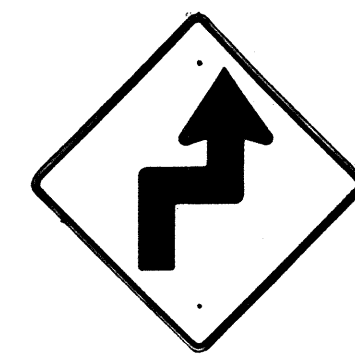
STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	193C-0171	1973	33	51



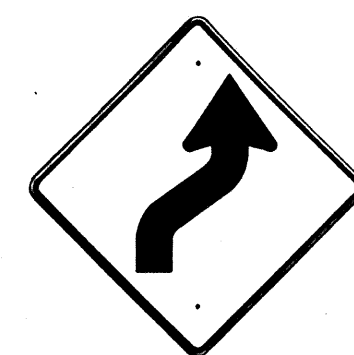
W1-1(R) 30"x30"
W1-1(R)-A 48"x48"



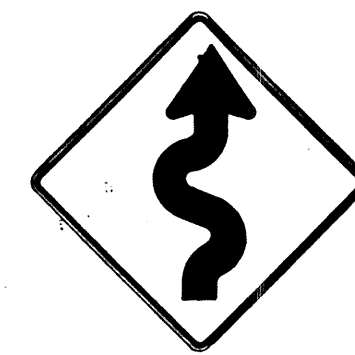
W1-2(R) 30"x30"
W1-2(R)-A 48"x48"



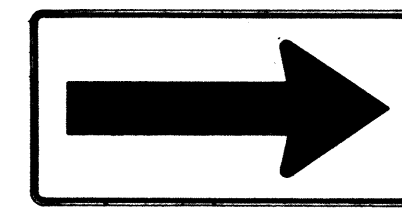
W1-3(R) 30"x30"
W1-3(R)-A 48"x48"



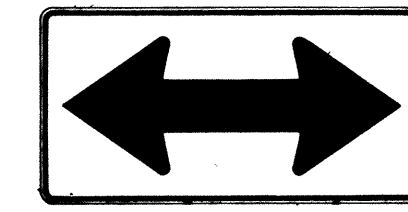
W1-4(R) 30"x30"
W1-4(R)-A 48"x48"



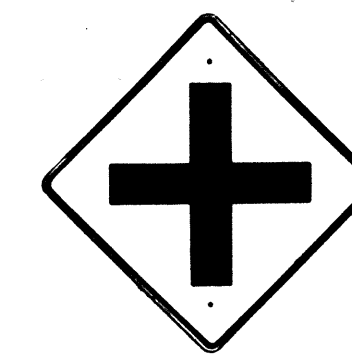
W1-5(R) 30"x30"
W1-5(R)-A 48"x48"



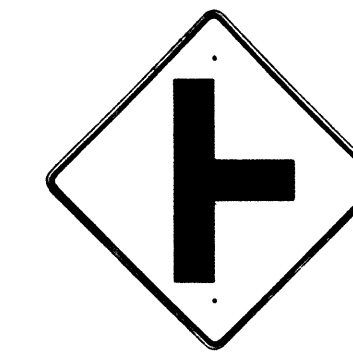
W1-6 48"x24"



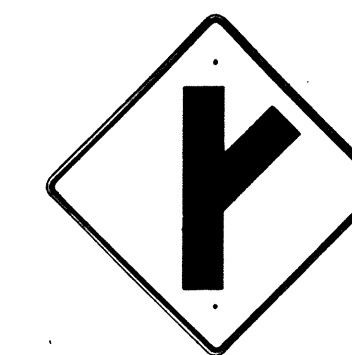
W1-7 48"x24"



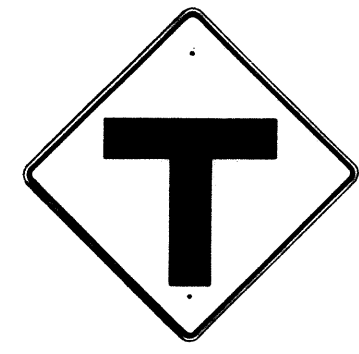
W2-1 30"x30"
W2-1-A 48"x48"



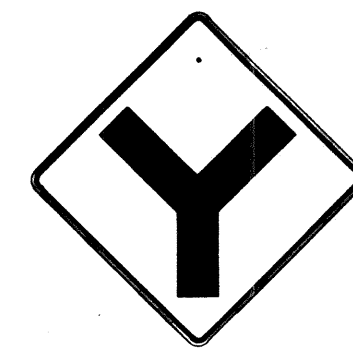
W2-2 30"x30"
W2-2-A 48"x48"



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



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



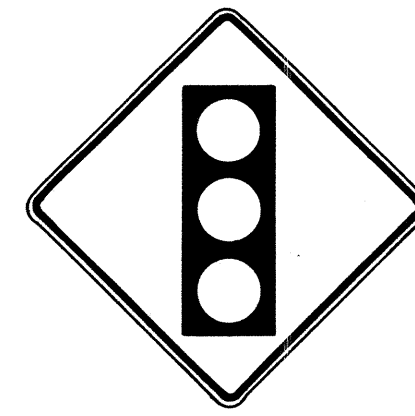
W2-5 30"x30"
W2-5-A 48"x48"



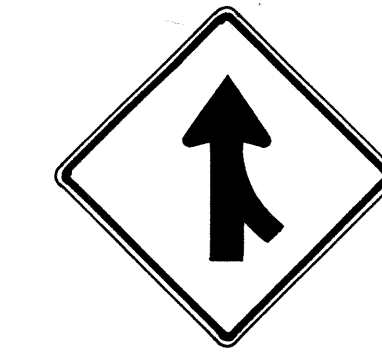
W3-1 30"x30"
W3-1-A 36"x36"



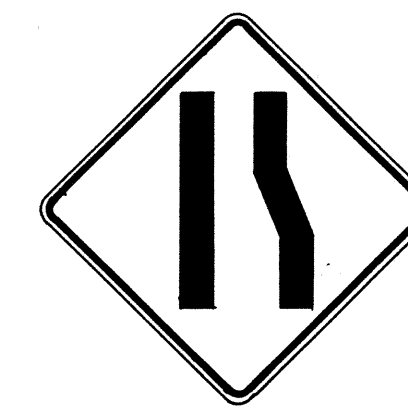
W3-2 30"x30"
W3-2-A 36"x36"



SIGNAL
AHEAD
W3-3 36"x36"
24"x18"



MERGE
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"



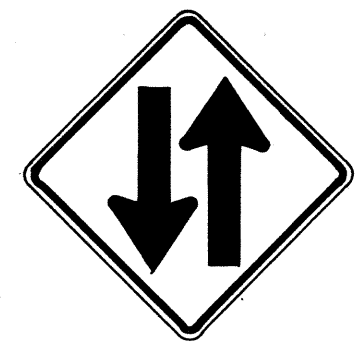
W5-3 36"x36"



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"



USE LOW
GEAR
W7-2 24"x18"



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



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



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



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



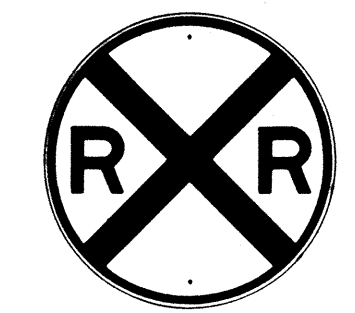
SLIPPERY
WHEN WET
W8-5 30"x30"
24"x18"
W8-5-A 36"x36"
24"x18"



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



LANE ENDS
MERGE
LEFT
W9-2(L) 36"x36"
W9-2(L)-A 48"x48"



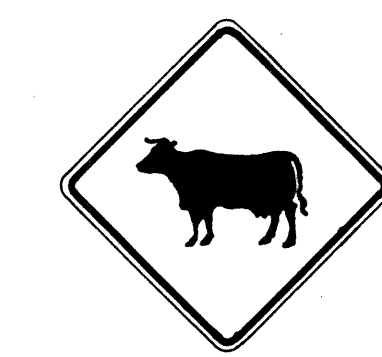
W10-1 36" Diameter



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



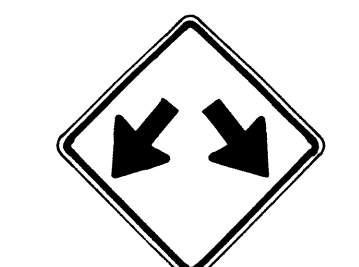
PED
XING
W11-2 30"x30"
24"x18"
W11-2-A 36"x36"
24"x18"



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"



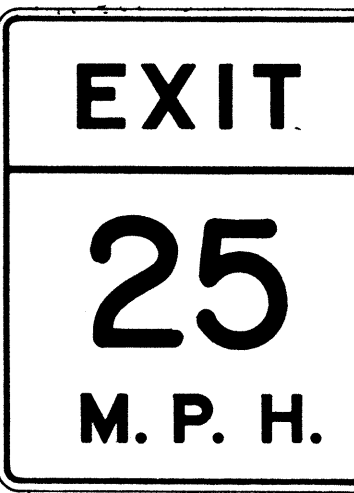
W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"



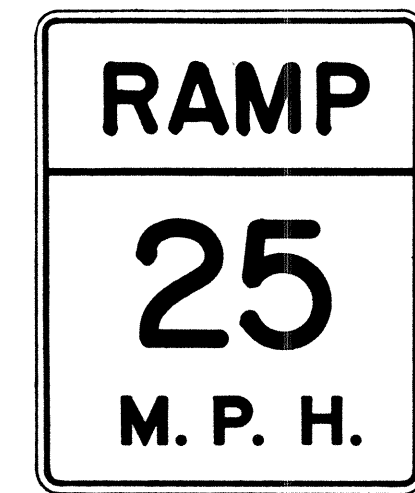
LOW
CLEARANCE
W12-2(12'-6") 36"x36"
24"x18"



25
M.P.H.
W13-1(25) 18"x18"
W13-1(25)-A 24"x24"



EXIT
25
M. P. H.
W13-2(25) 48"x60"



RAMP
25
M. P. H.
W13-3(25) 48"x60"



DEAD
END
W14-1 30"x30"



NO
PASSING
ZONE
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:
Eishi Tanaka
TRAFFIC ENGINEER

3/17/72
DATE

APPROVED:
Walter Belsie
ASSISTANT CHIEF, ENGINEERING

3-20-72
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.T.	3/20/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
WARNING SIGNS

NOT TO SCALE

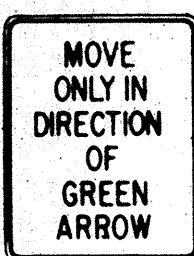
SHEET No. 3 OF 19 SHEETS DT 102

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	198C-01-71	1973	34	51



4" Series C

R16-124" x 30"



3" Series C

R16-224" x 30"



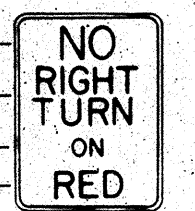
4" Series D

3" Series D

2" Series D

3" Series D

R16-318" x 24"



3" Series C

4" Series E

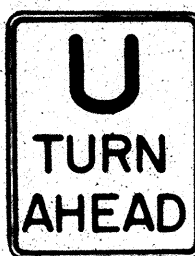
R16-418" x 24"



3" Series C

4" Series E

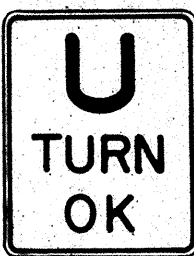
R16-536" x 42"



8" Series F

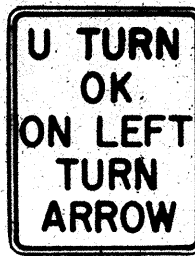
5" Series D

R16-624" x 30"



3" Series D

R16-724" x 30"



3" Series D

R16-824" x 30"



4" Series C

W15-124" x 24"



4" Series C

W15-224" x 24"



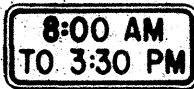
S1-136" x 36"



S2-136" x 36"



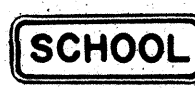
S3-130" x 30"



S4-124" x 10"



S4-224" x 10"



S4-324" x 8"



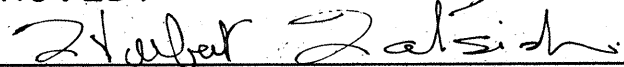
S4-424" x 10"

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 and warning signs shall be reflectorized unless otherwise specified.
- All regulatory and 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.

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER
3/17/12
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING
2-20-12
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 103 Approved 12-30-69	N.C.	3/20/12

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS
REGULATORY & WARNING SIGNS

NOT TO SCALE

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

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	198C-01-71	1973	35	51



CW20-1a 48" x 48"



CW20-2d 48" x 48"



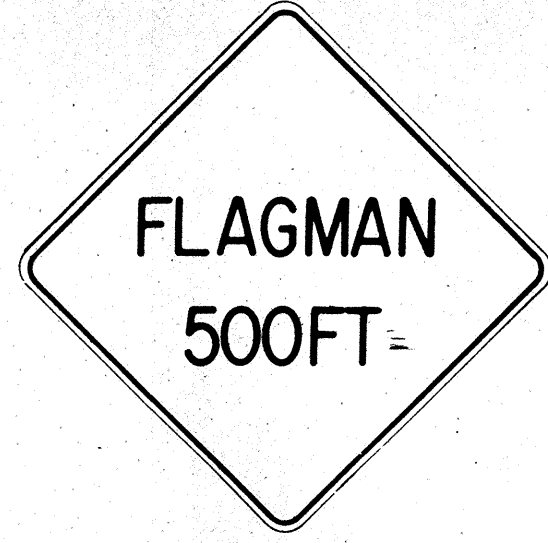
CW20-3b 48" x 48"



CW20-4d 48" x 48"



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



CW20-7c 48" x 48"



CW21-1 30" x 30"



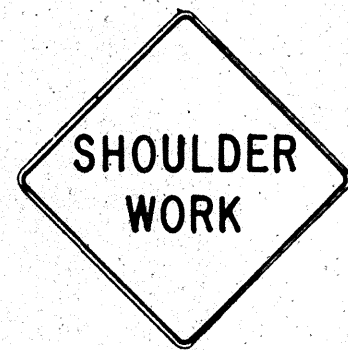
CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



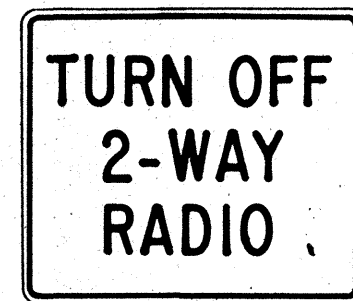
CW21-5 30" x 30"



CW21-6 30" x 30"



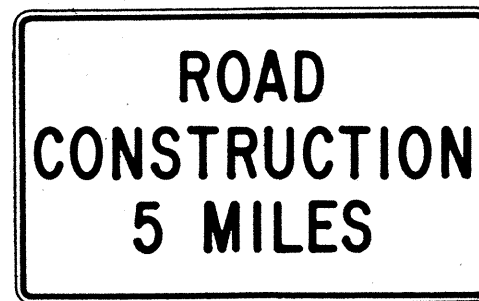
CW22-1b 48" x 48"



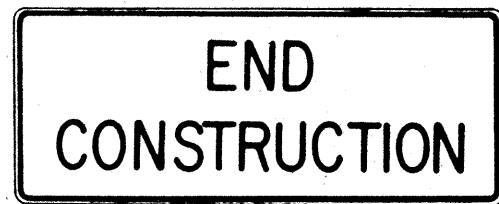
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



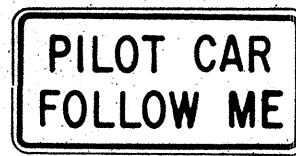
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



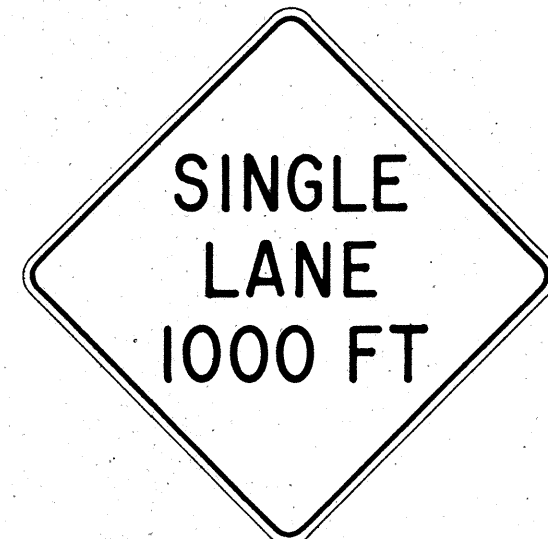
CM4-10(R) 48" x 18"



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 $\frac{3}{8}$ " 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	HC	3/23/72

APPROVAL RECOMMENDED:

Erich Tanaka
TRAFFIC ENGINEER

3/21/72
DATE

APPROVED:

Andrew Sakai
ASSISTANT CHIEF, ENGINEERING

3/23/72
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

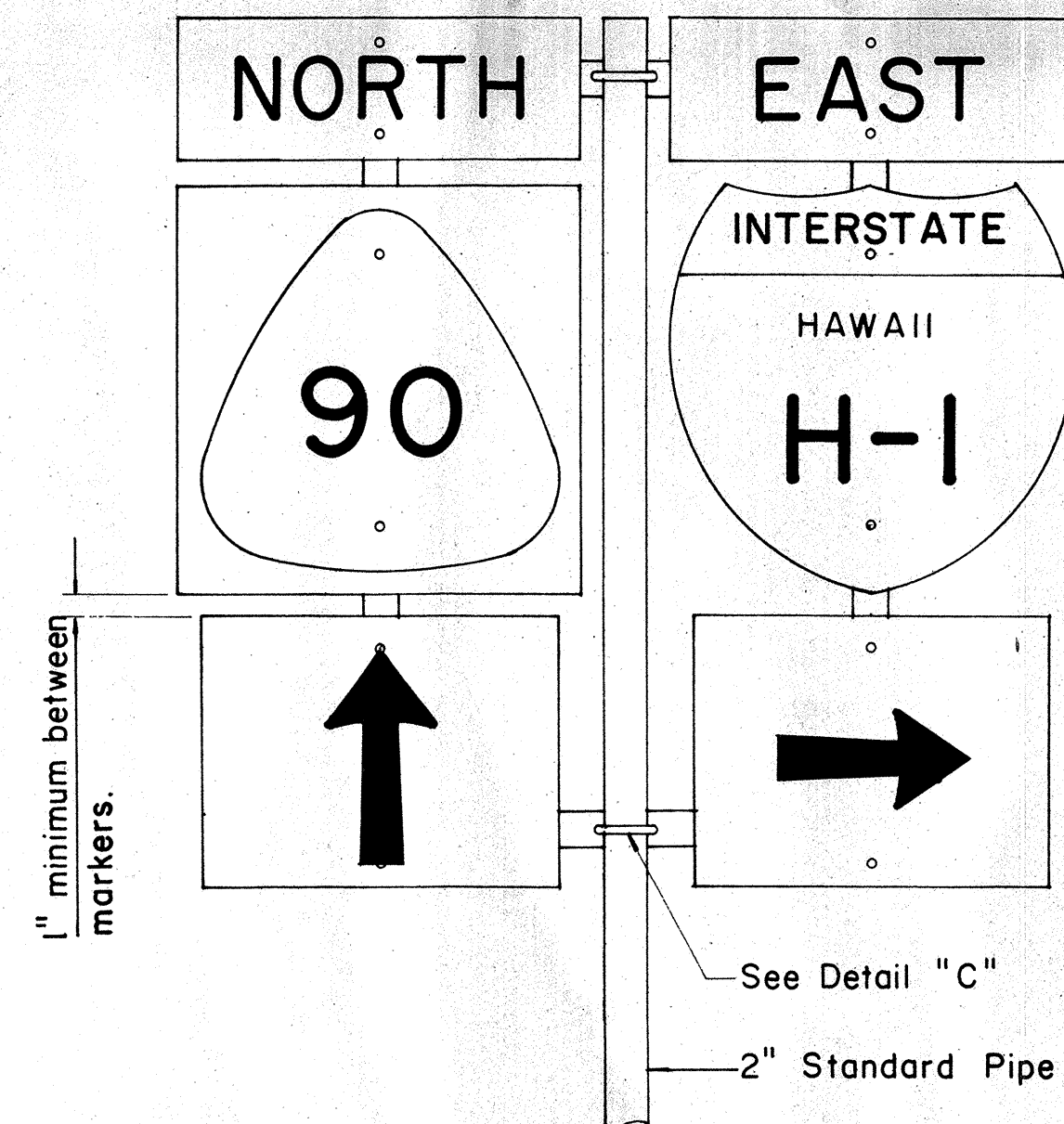
STANDARD DETAILS
CONSTRUCTION SIGNS

NOT TO SCALE

SHEET No. 5 OF 19 SHEETS DT 104

DESIGNED BY	DATE
CHECKED BY	
IN CHARGE	
NOTED BY	
REVISIONS	
1	
2	
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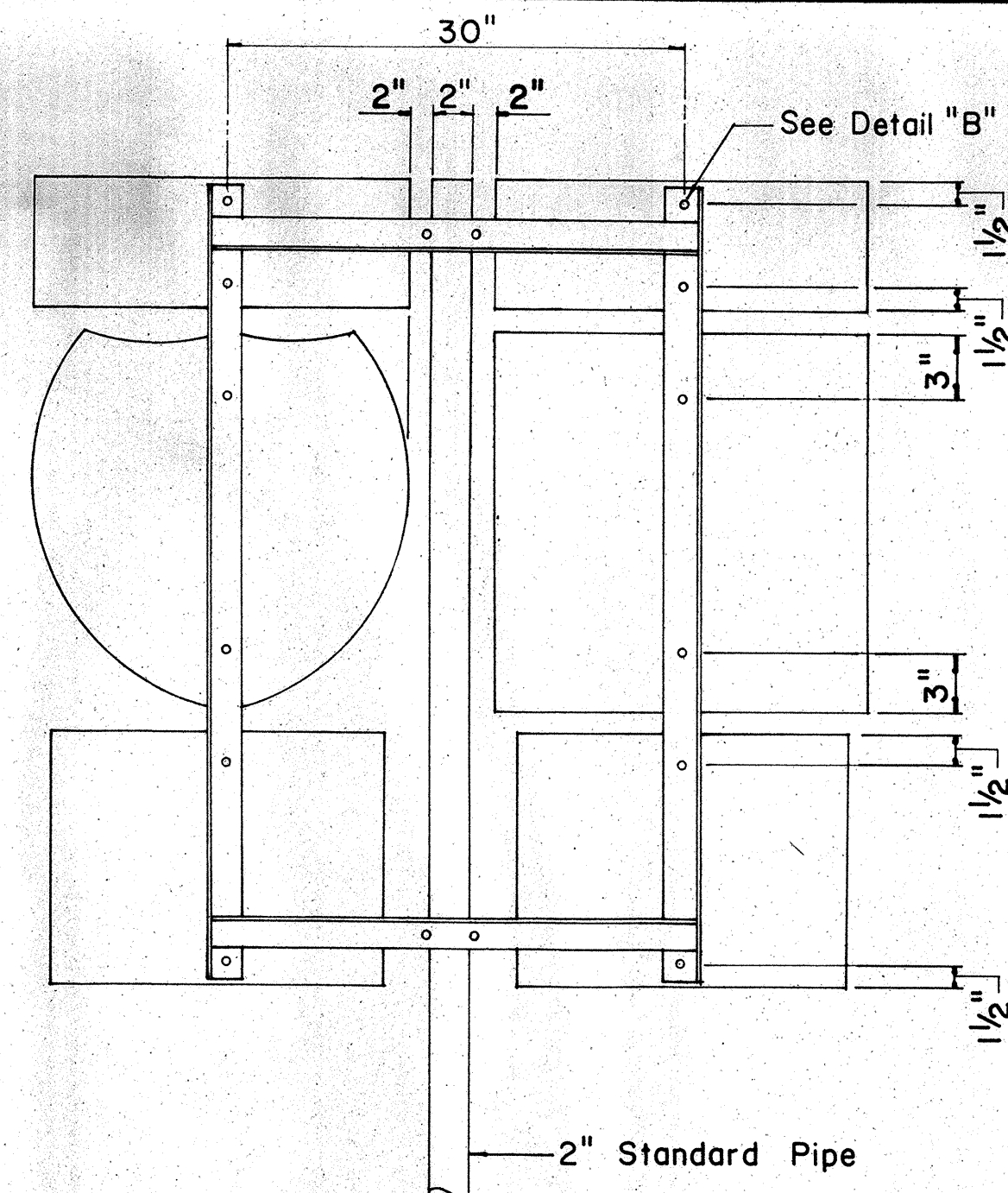
STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	198C-01-71	1973	36	51



FRONT ELEVATION

TYPE "B" ASSEMBLY

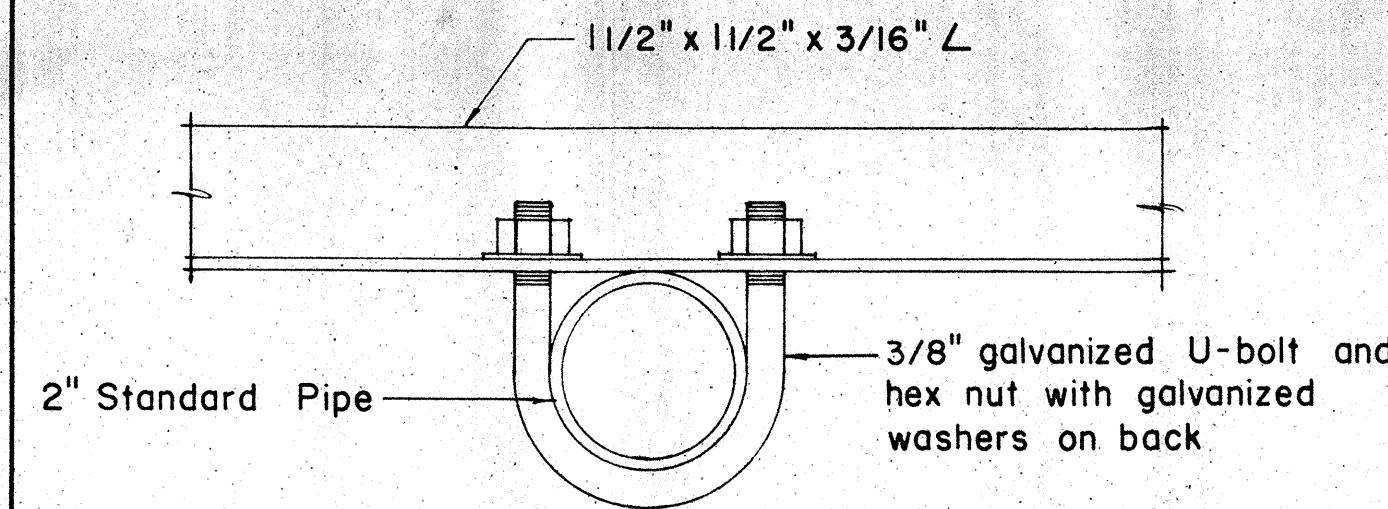
Not to Scale



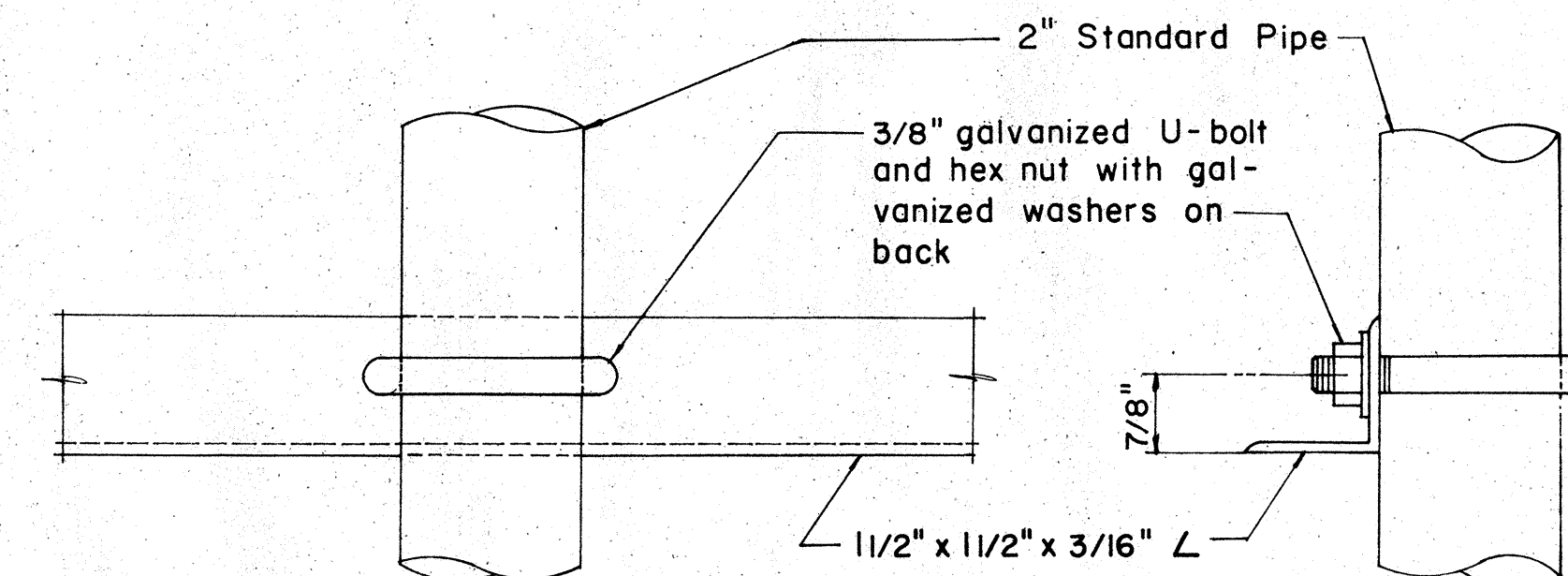
REAR ELEVATION

NOTE:

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



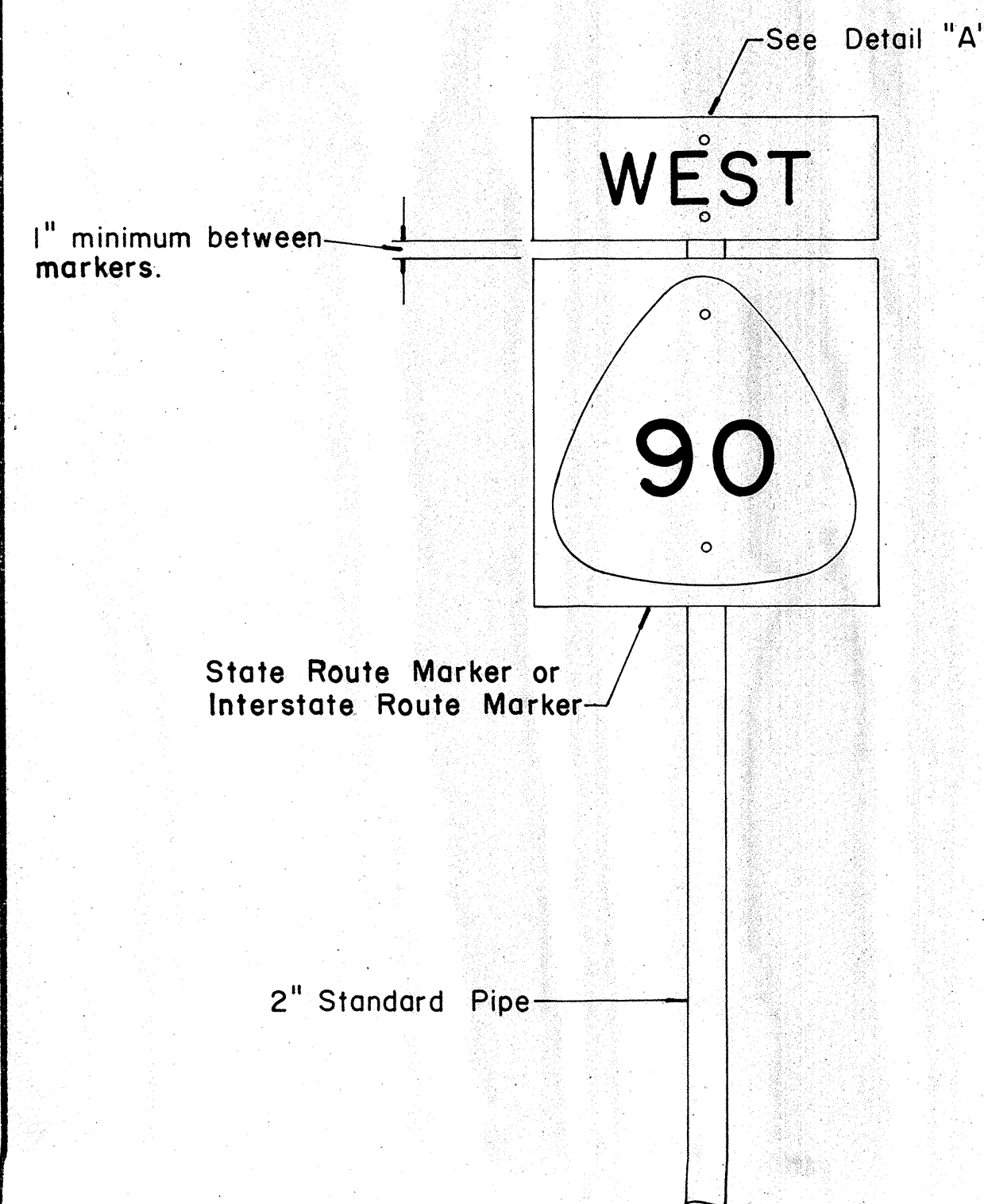
PLAN



FRONT ELEVATION

SIDE ELEVATION

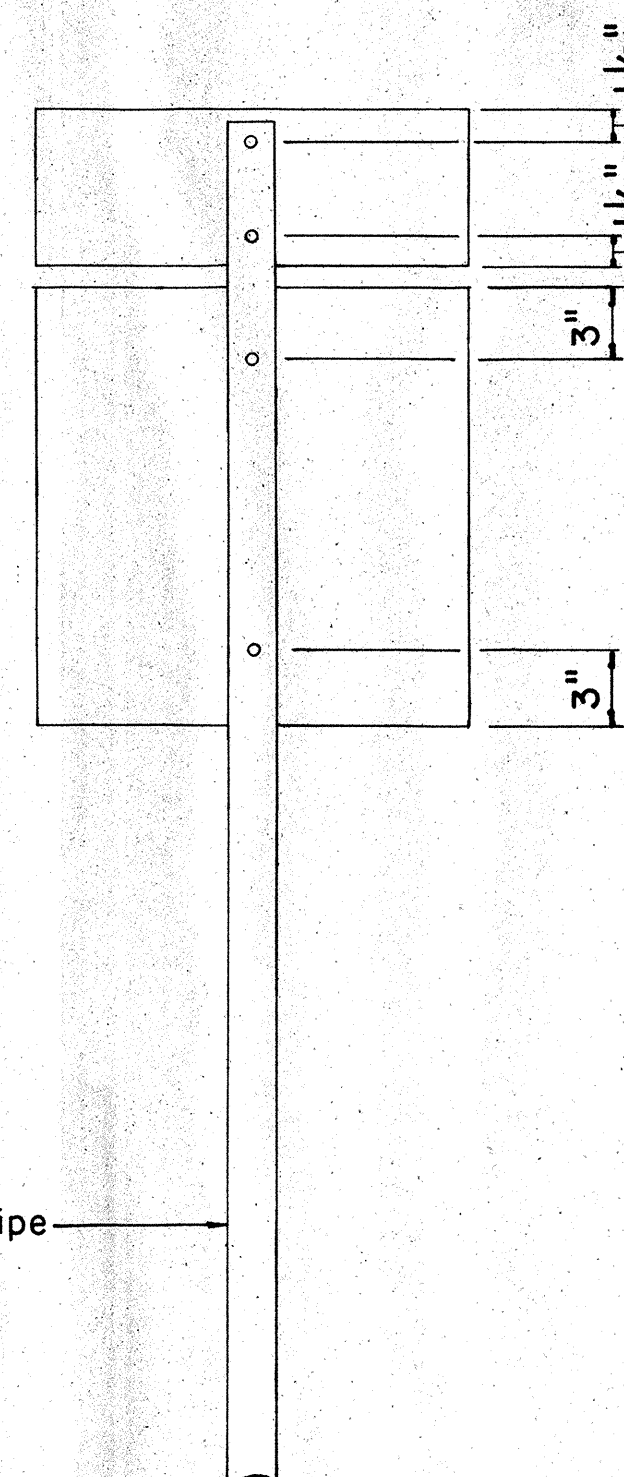
DETAIL "C"



FRONT ELEVATION

TYPE "A" ASSEMBLY

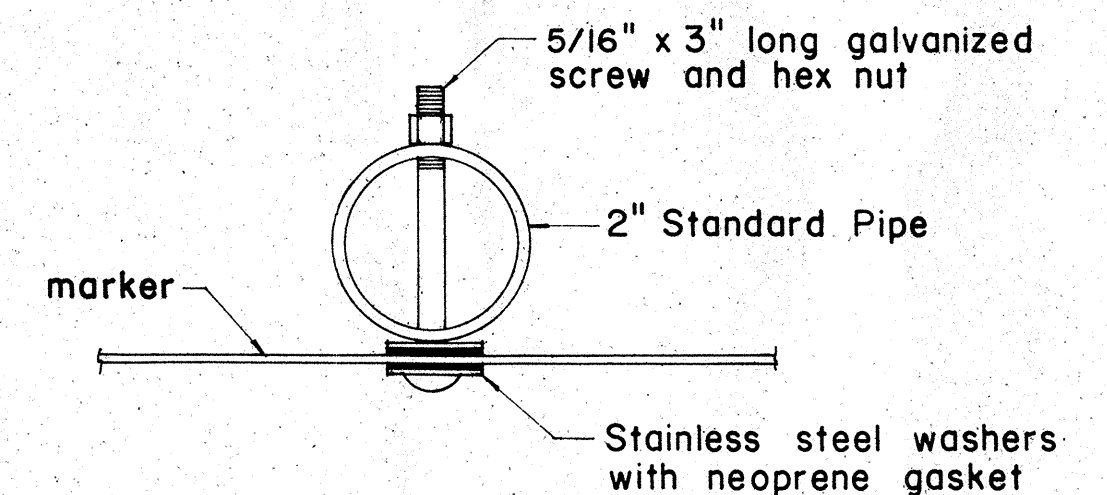
Not to Scale



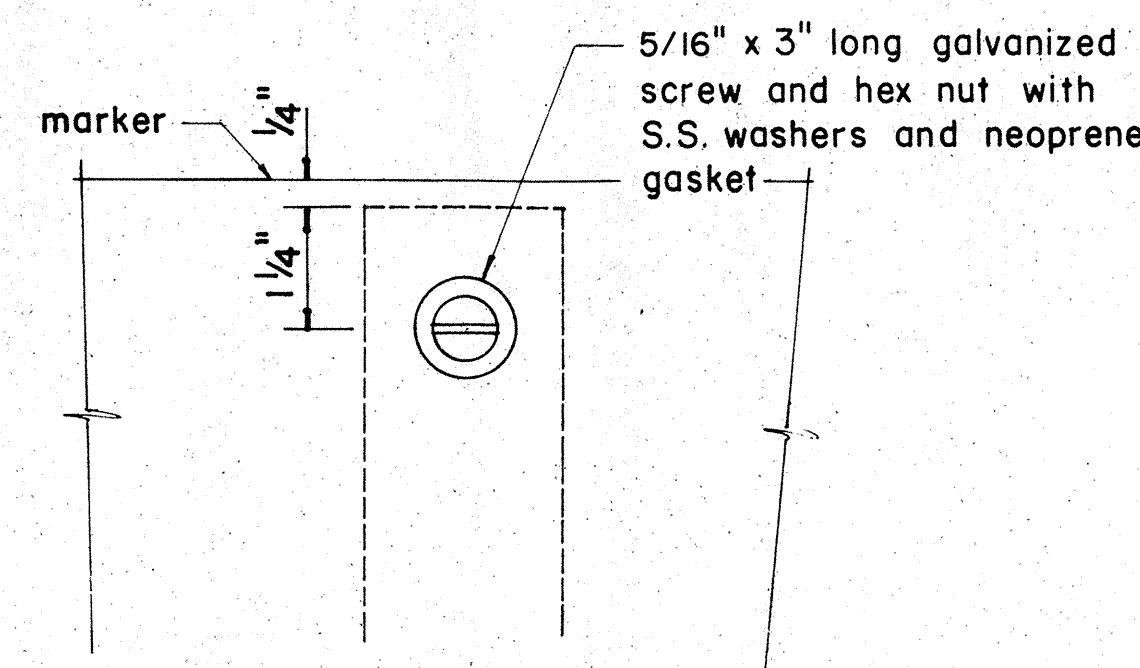
REAR ELEVATION

NOTE:

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

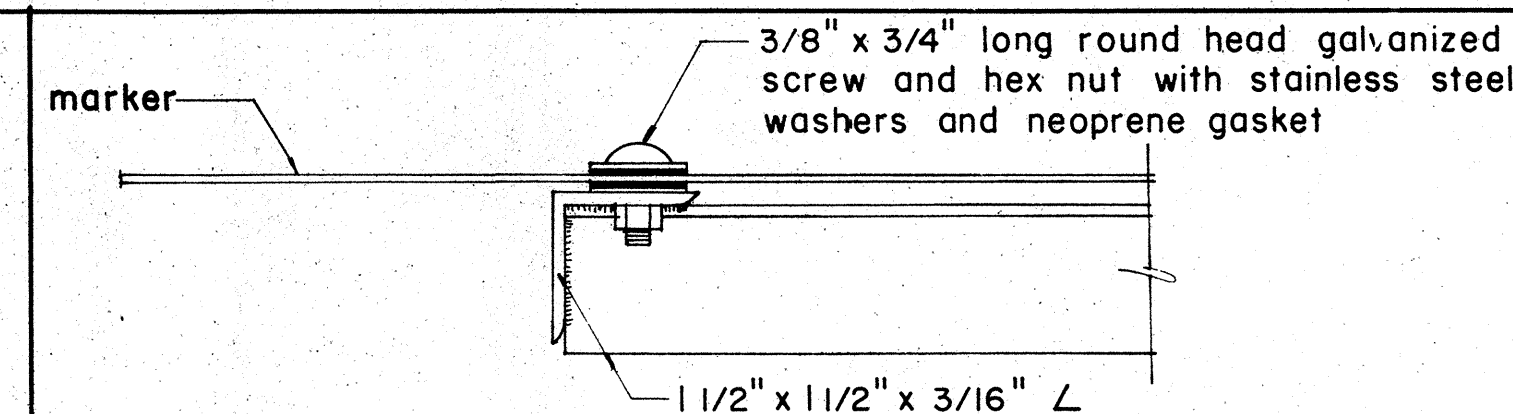


PLAN

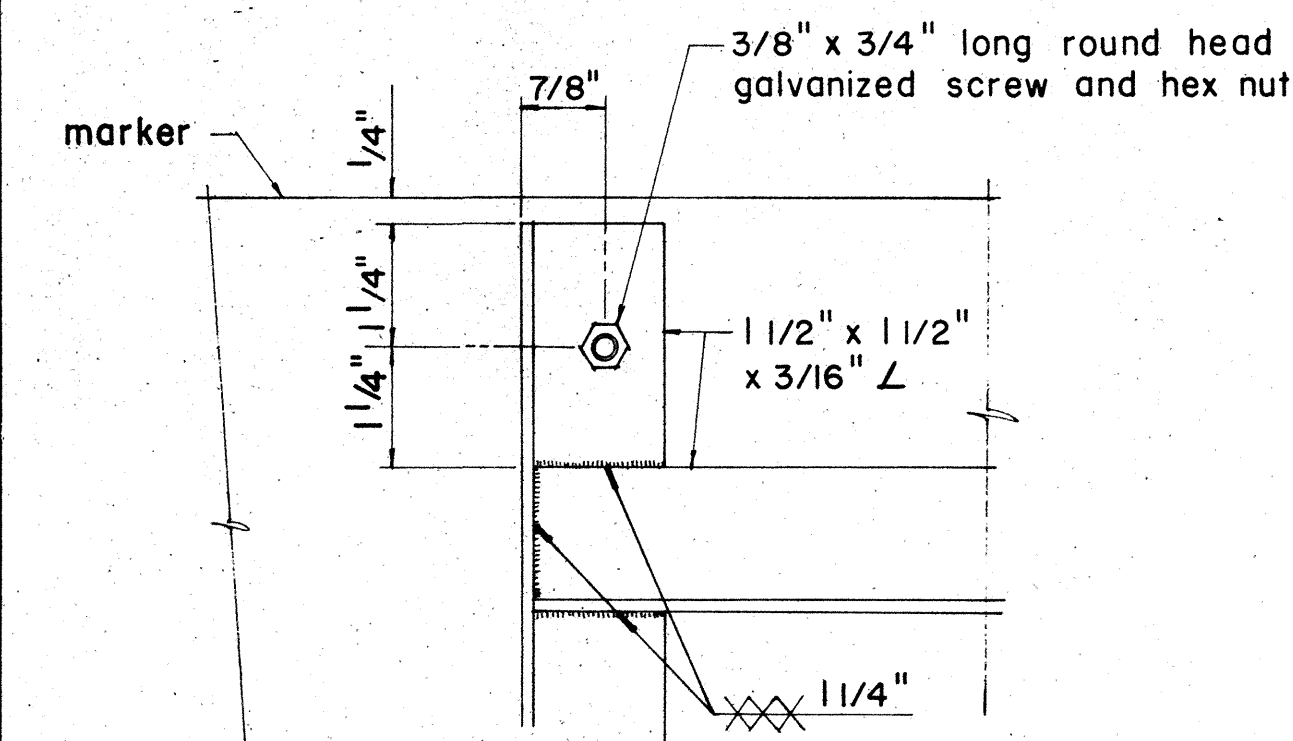


FRONT ELEVATION

DETAIL "A"



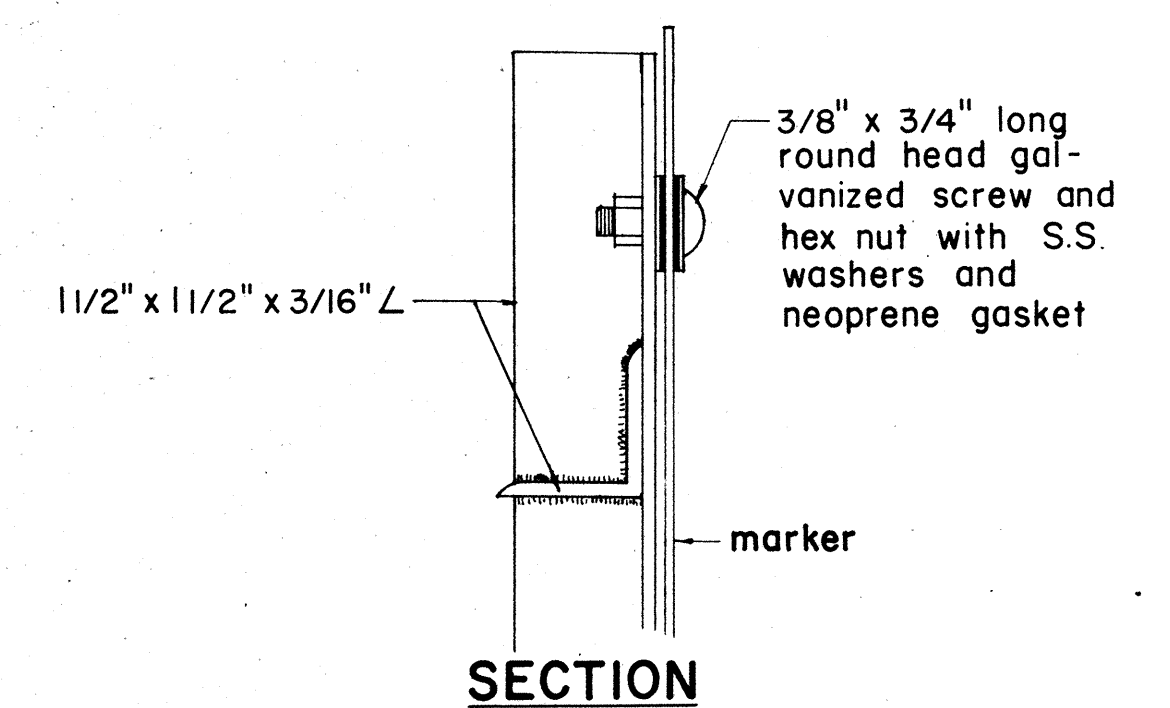
PLAN



ELEVATION

DETAIL "B"

NO.	REVISION	APPROVED BY	DATE
1	Revisions to Route Marker Assemblies.	H.T.	6/1/72



SECTION

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

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

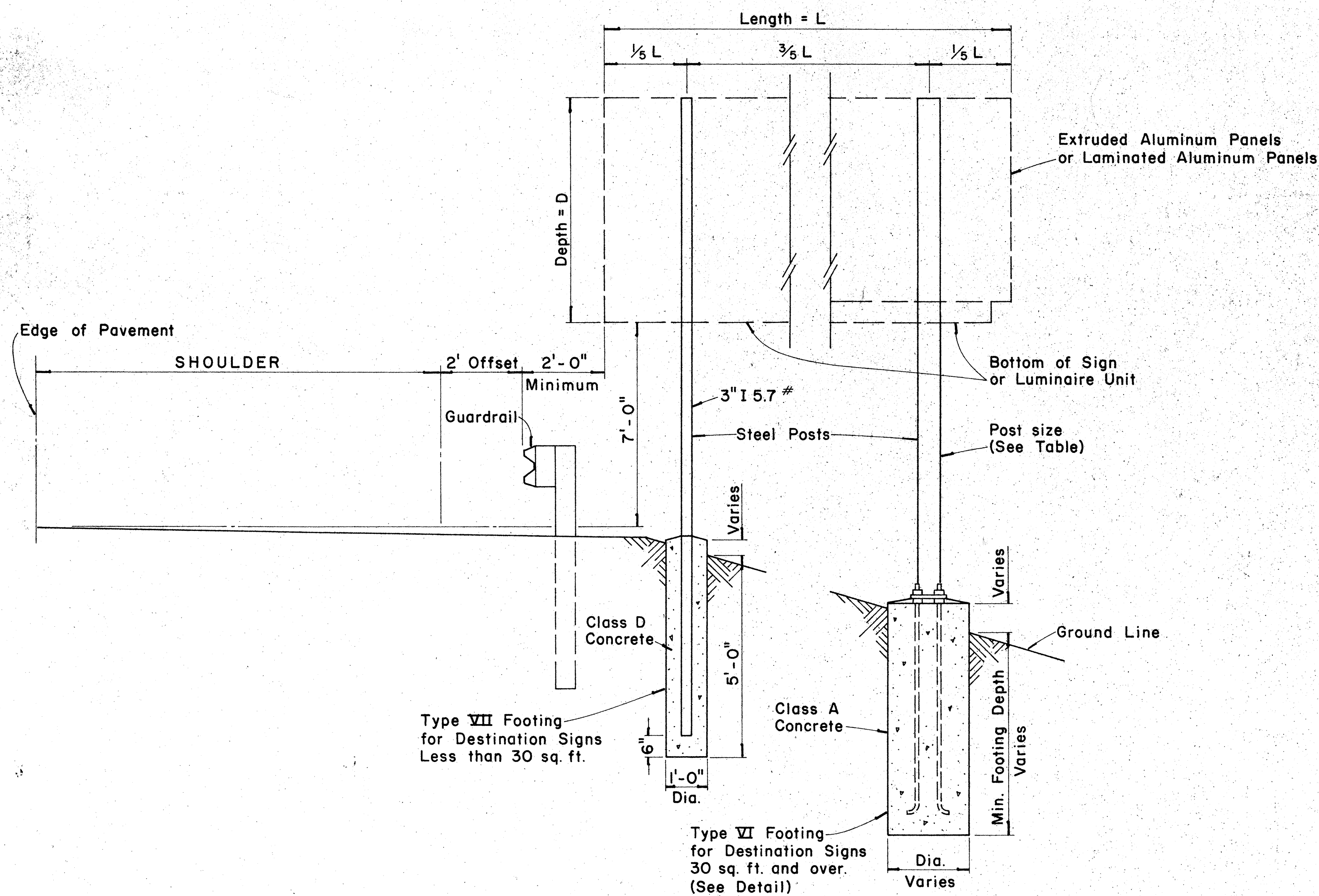
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
 ROUTE MARKER ASSEMBLIES

Scale: As Shown

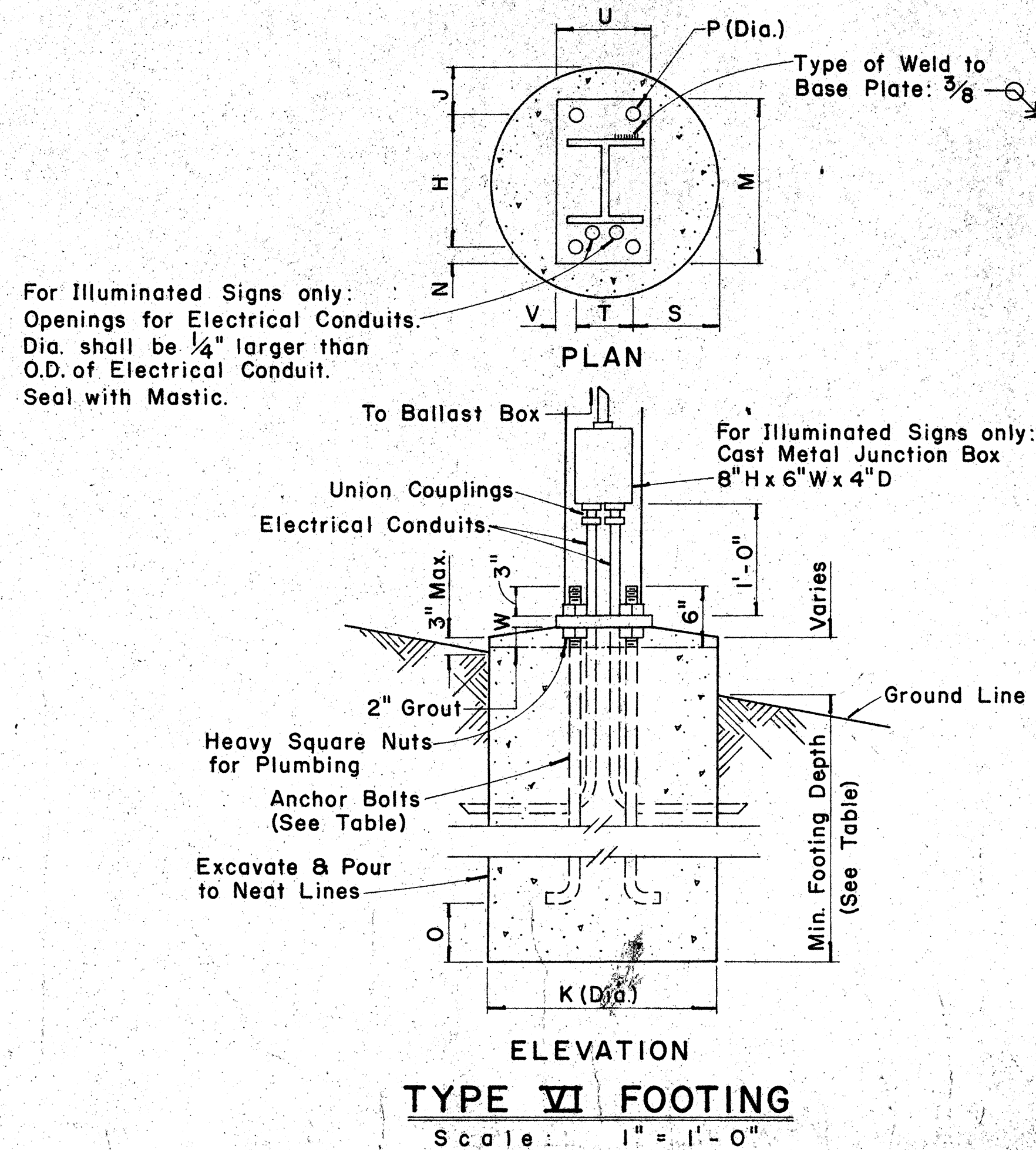
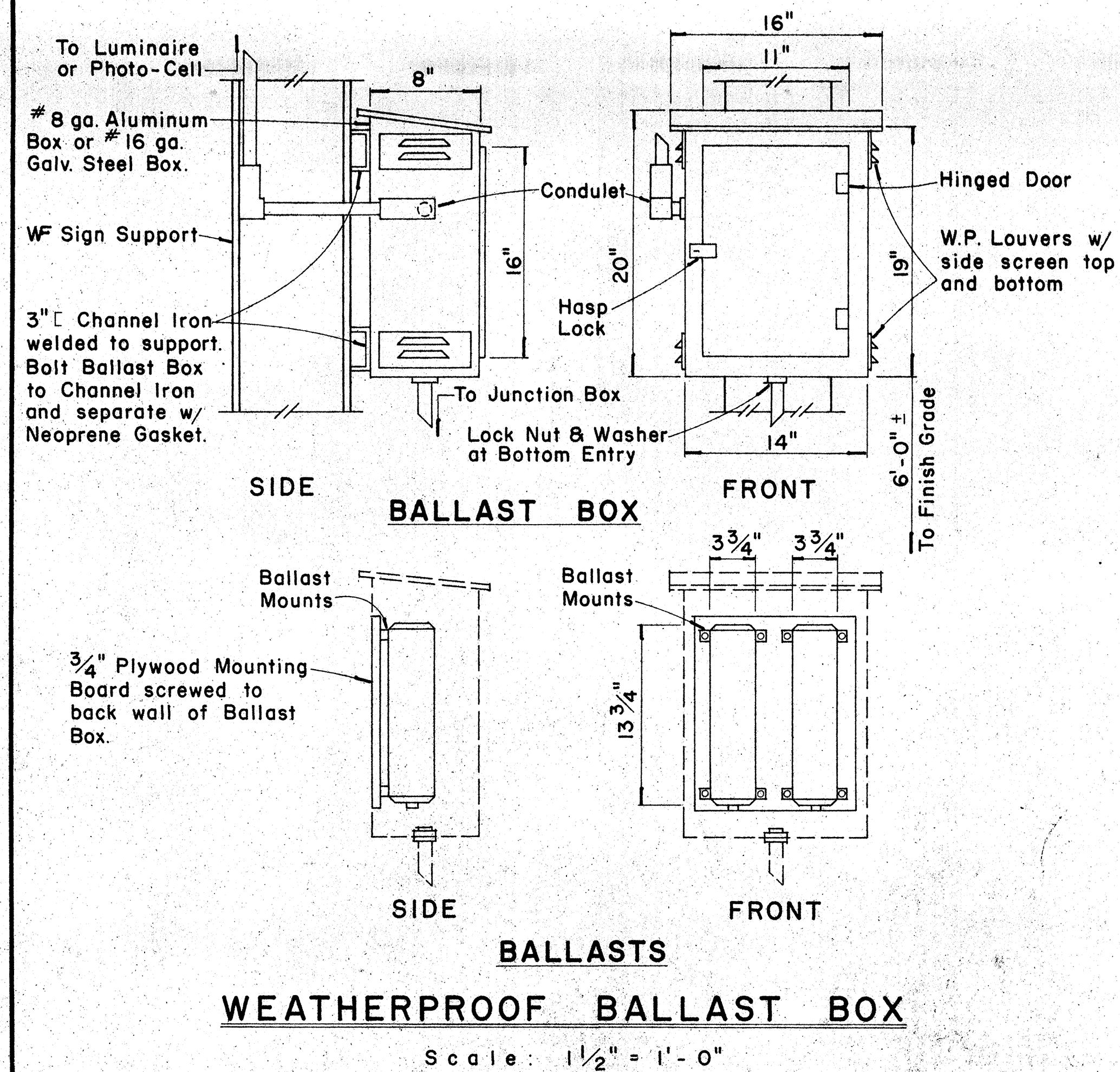
SHEET No. 6 OF 19 SHEETS DT 107

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

[illegible]

TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN

Not to Scale



STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	19BC-01-71	1973	37	51

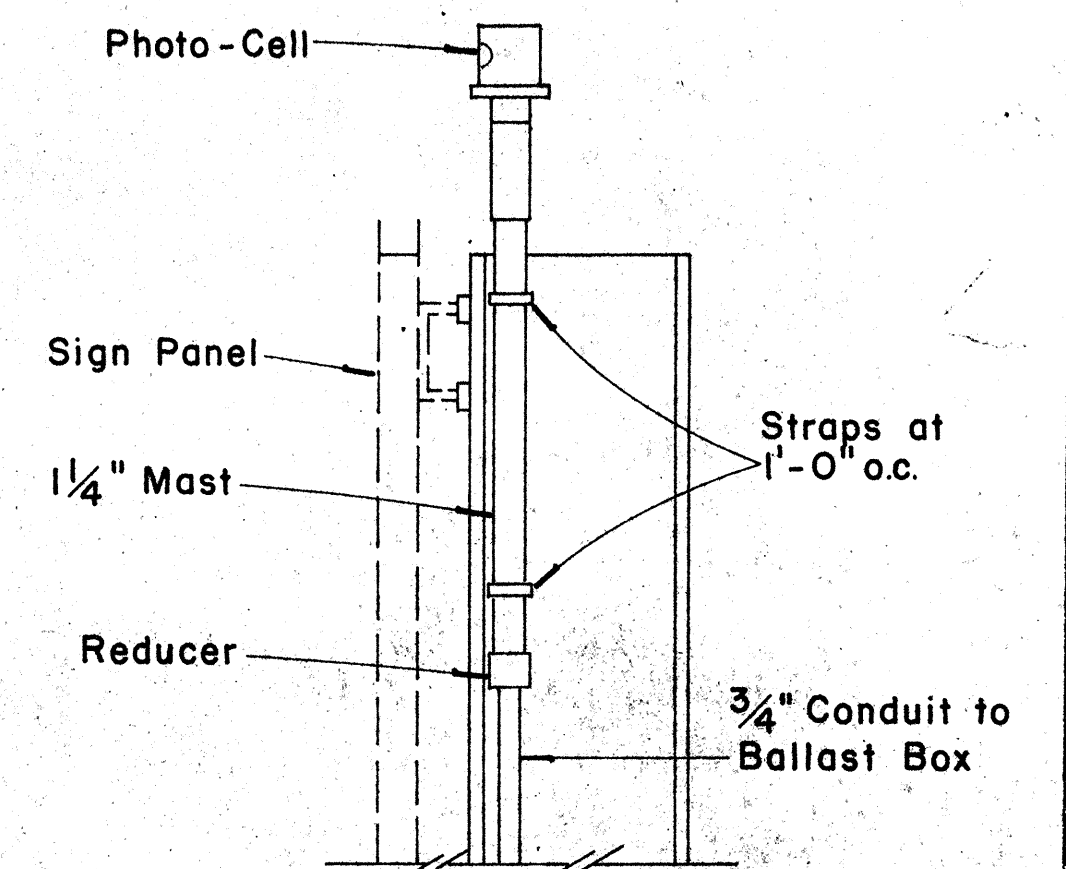


PHOTO-CELL DETAIL

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

APPROVAL RECOMMENDED:

Euchi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:

Amul S. Zaidi 12-20-09
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

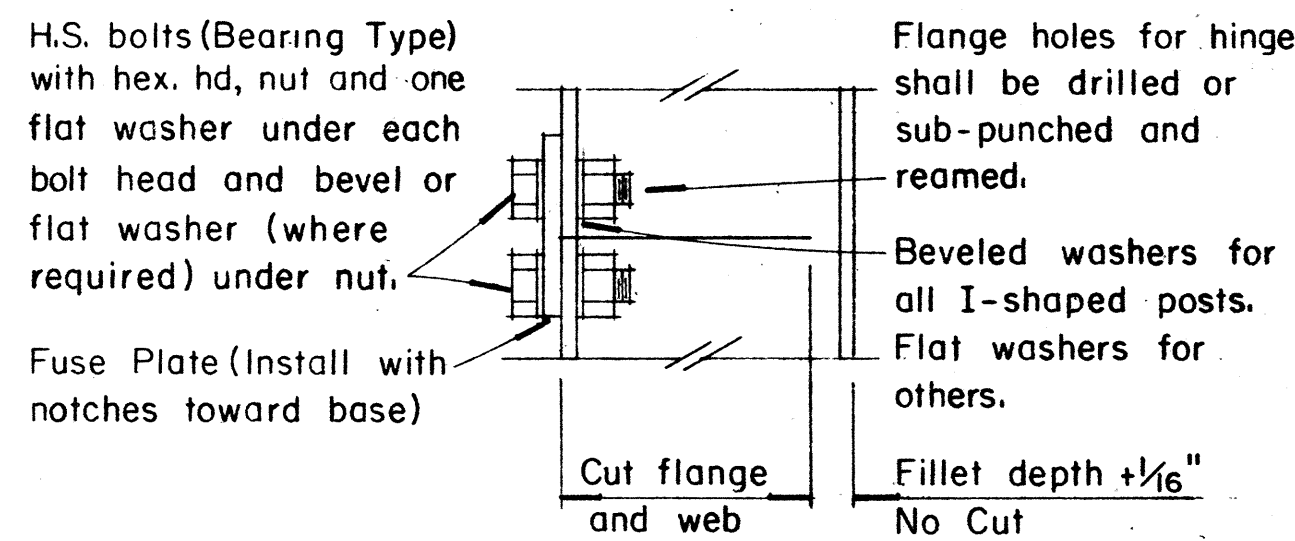
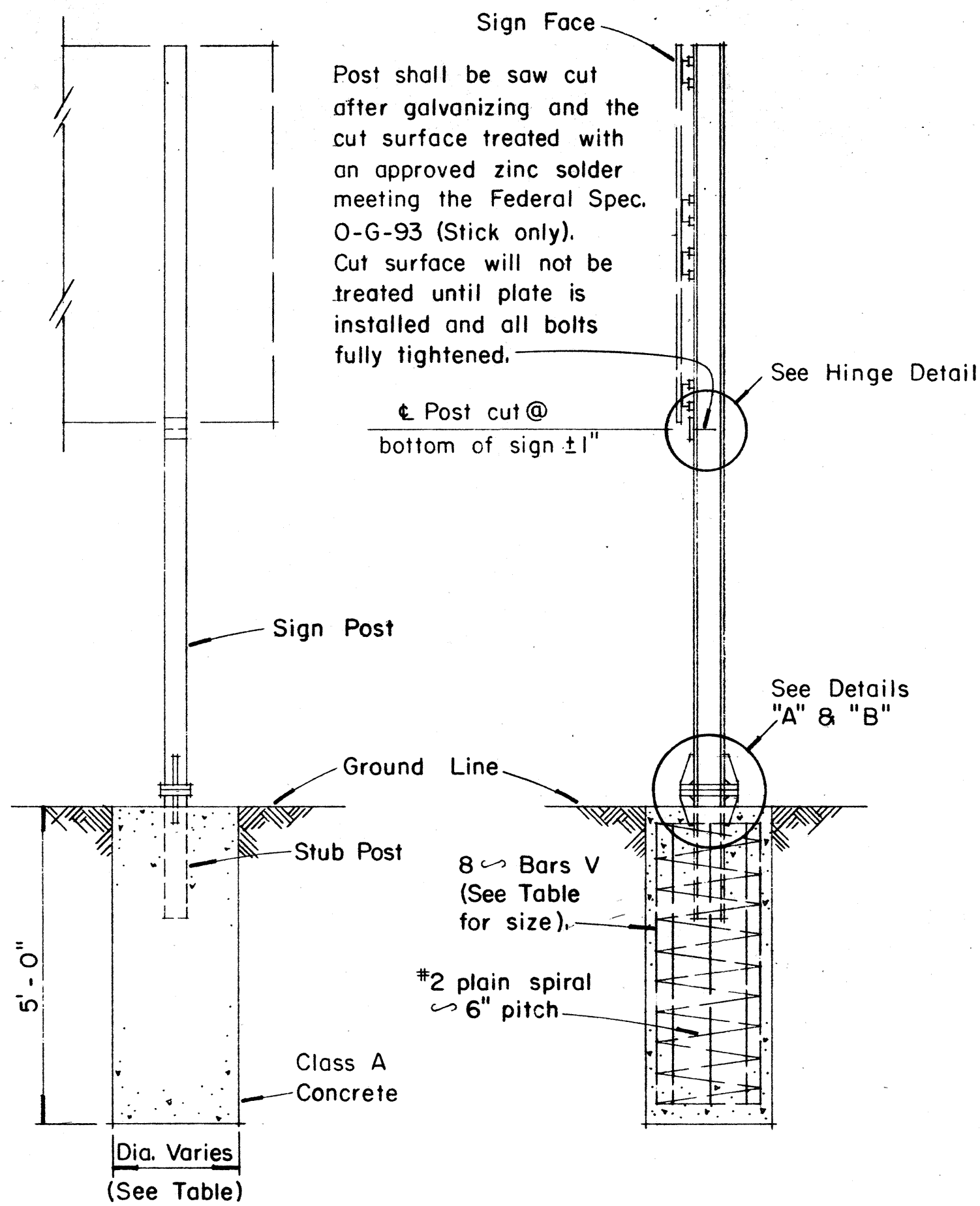
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS DESTINATION & GROUND MOUNTED EXPRESSWAY SIGNS

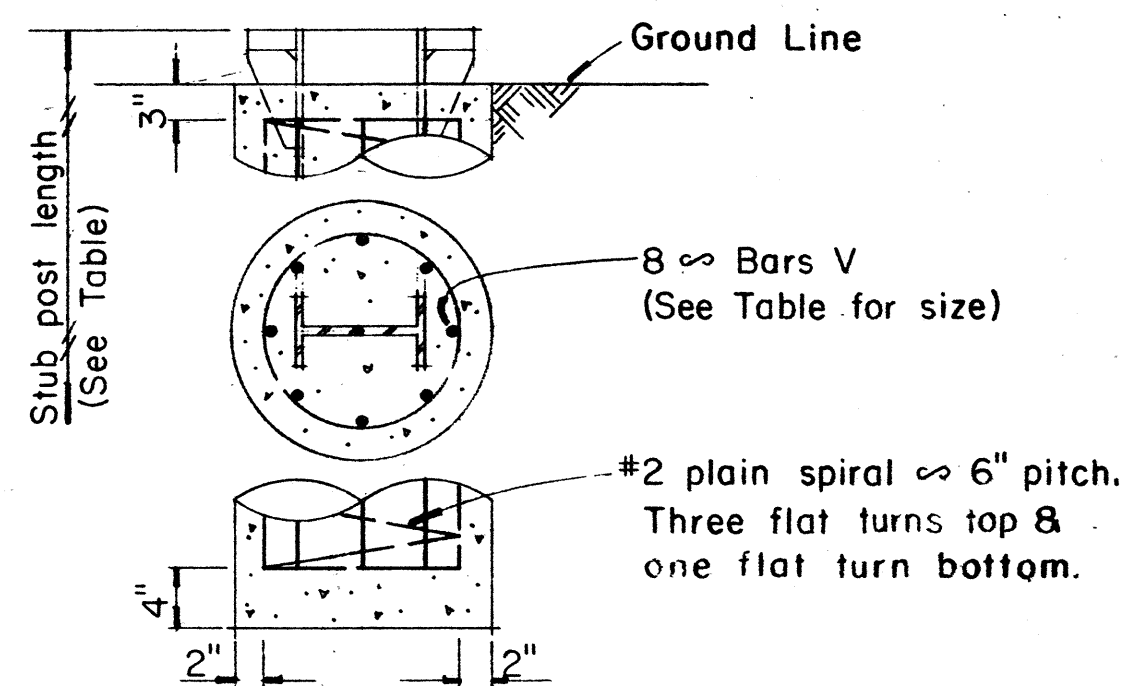
Scale: As Shown

SHEET No. 7 OF 19 SHEETS DT 203

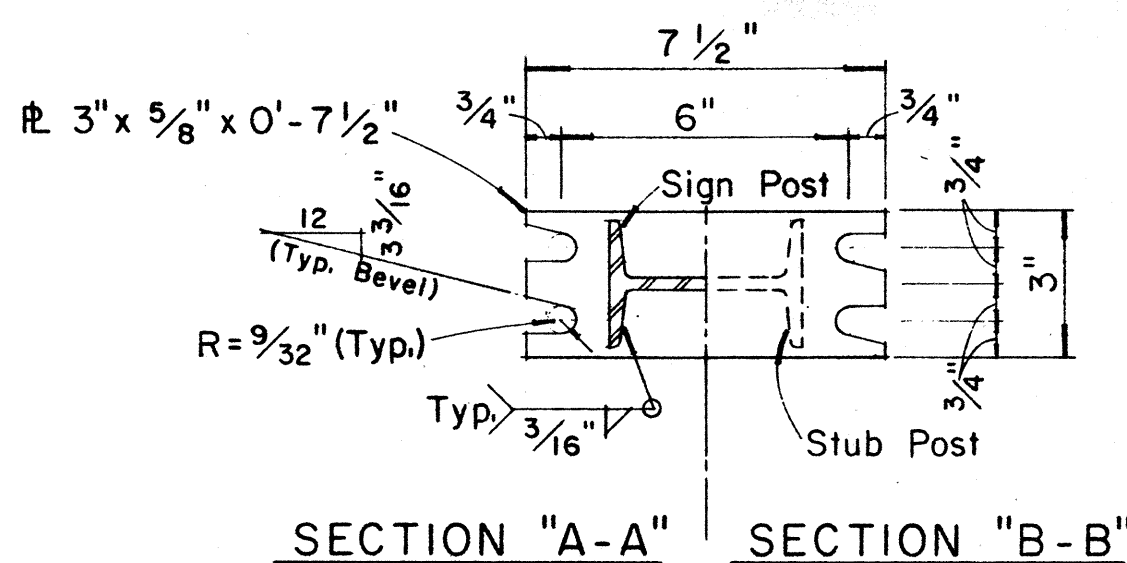
BASE CONNECTION DATA TABLE											FUSE PLATE DATA TABLE											FOUNDATION DATA			
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse Pl.	Stub Length	Stub Projection	Footing Diameter	Bars V Size
6 B 8.5	5/8" ϕ x 2 3/4" Torque = 450"*	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2"	1.09#	2'-0"	3"	2'-0"	#5
6 B 12											3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1/16"	3/8"	5/8"	1.60#	2'-0"	3"	2'-0"	#5
6 B 15.5											4 1/2"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	13/16"	1/2"	3/4"	3.75#	2'-6"	3"	2'-0"	#6
8 W 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	13/16"	1/2"	3/4"	3.27#	2'-6"	3"	2'-0"	#7
8 W 20	3/4" ϕ x 3 1/2" Torque = 750"*	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	1 3/32"	4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	15/16"	9/16"	7/8"	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 W 21											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8"	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 W 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8"	4.79#	3'-0"	2 1/2"	2'-0"	#10
12 W 27											5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	15/16"	9/16"	7/8"	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200"*	SEE DETAIL "A"									3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7	Torque = 200"*										3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2"	0.64#	1'-6"	3 1/2"	1'-6"	#5



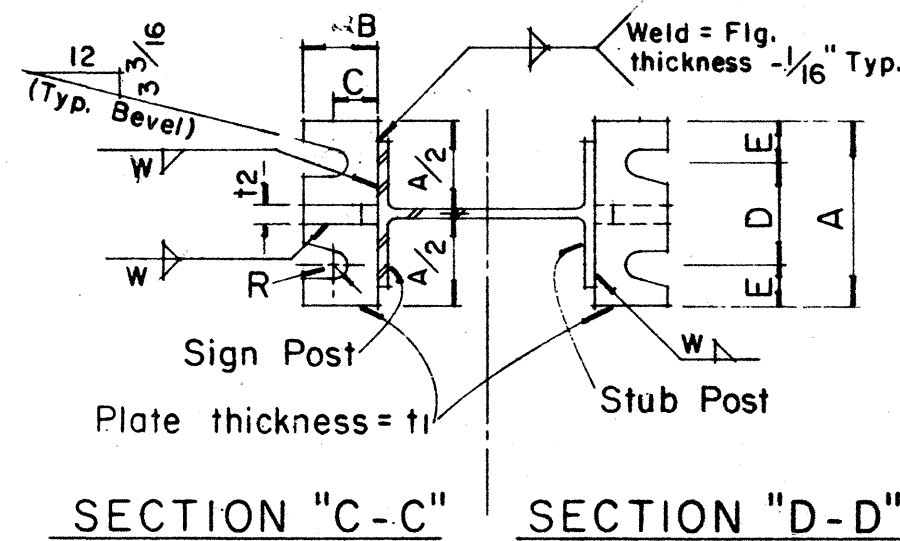
HINGE DETAIL



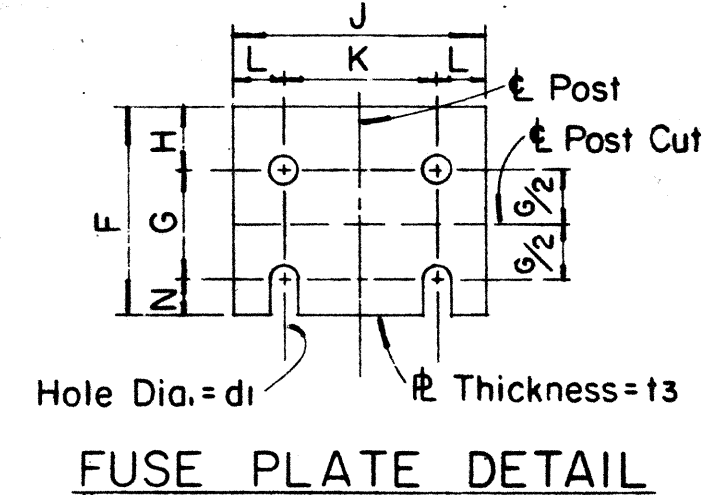
FOUNDATION DETAIL



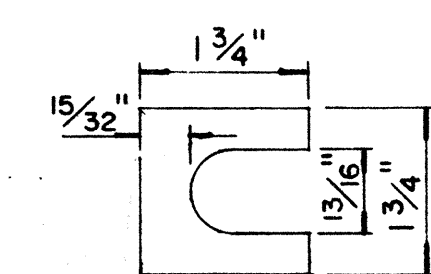
NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



STIFFENER PLATE DETAIL



FUSE PLATE DETAIL



SHIM DETAIL

Furnish 2 ϕ .012" $\pm$ thick and 2 ϕ .032" $\pm$ thick shims per post. Shims shall be fabricated from brass shim stock or strip conforming to A.S.T.M. - B 36.

GENERAL NOTES

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

Bolt Size	Min. Tension	Bolt Size	Min. Tension
1/2" ϕ	12050 Lbs.	3/4" ϕ	28400 Lbs.
5/8" ϕ	19200 Lbs.	7/8" ϕ	36050 Lbs.

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

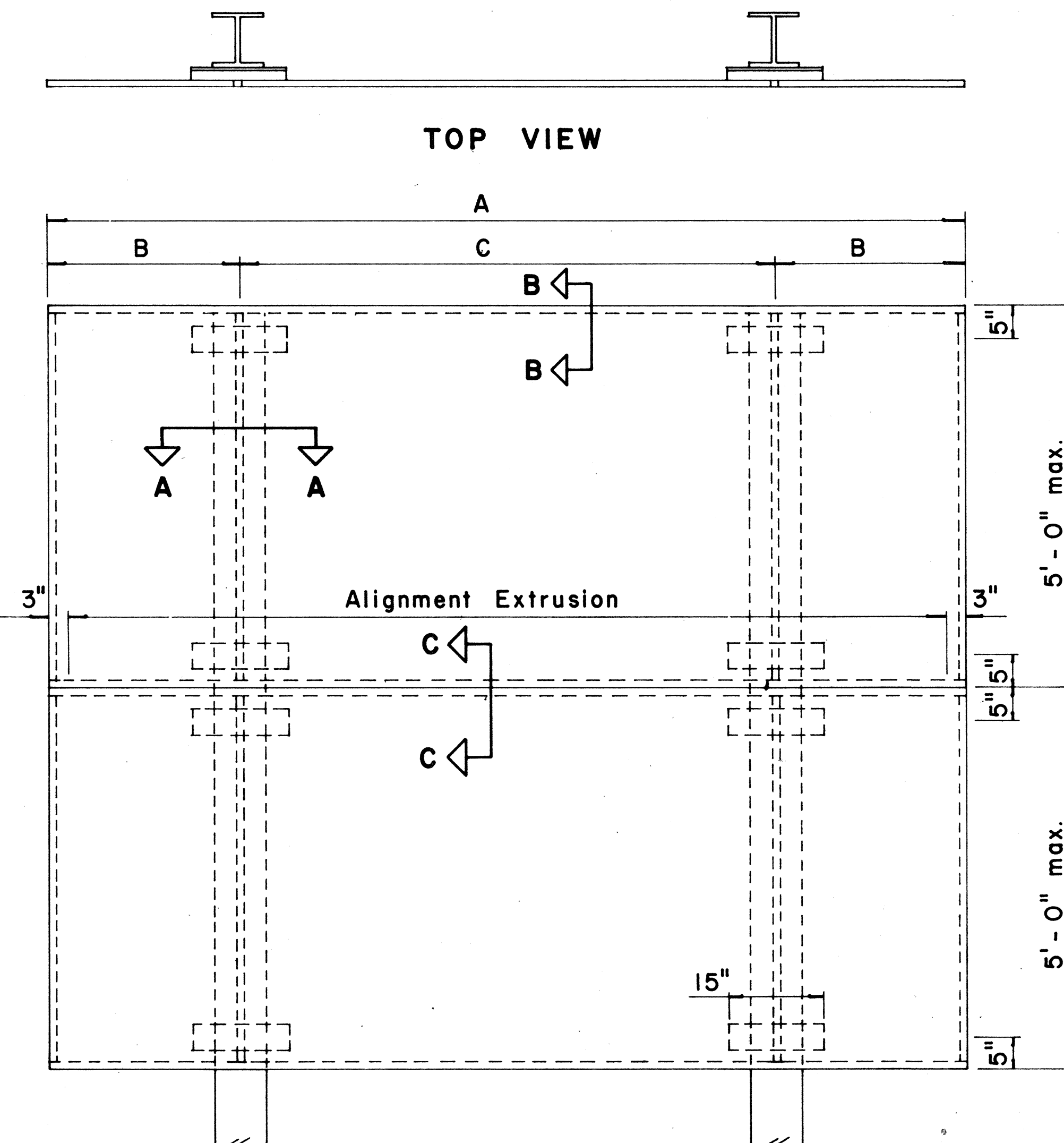
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS

Not to Scale
SHEET No. 8 OF 19 SHEETS DT204

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	198C01-71	1973	39	51

(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

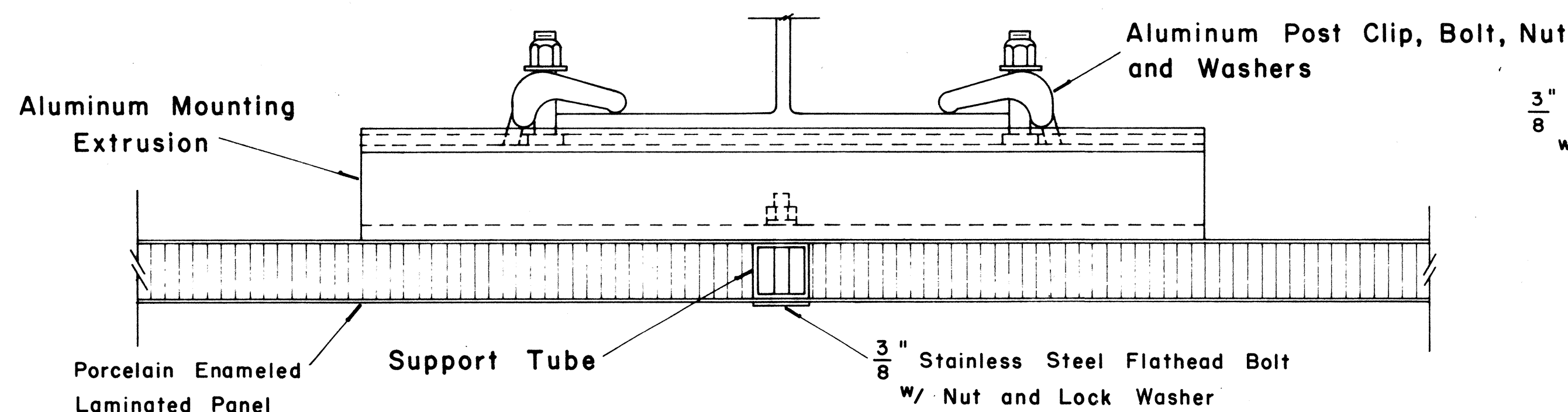
PANEL THICK.	LENGTH OF SIGN	NO. OF SUPPORTS	OVERHANG	SUPPORT SPACING
A	B	C		
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"	84"
1"	11'-6"	2	27"	84"
1"	12'-0"	2	30"	84"
1"	12'-6"	2	30"	90"
1"	13'-0"	2	30"	96"
1"	13'-6"	2	30"	102"
1"	14'-0"	2	30"	108"
1"	14'-6"	2	36"	102"
1"	15'-0"	2	36"	108"
2.5"	15'-6"	2	36"	114"
2.5"	16'-0"	2	39"	114"
2.5"	16'-6"	2	39"	120"
2.5"	17'-0"	2	39"	126"
2.5"	17'-6"	2	42"	126"
2.5"	18'-0"	2	42"	132"
2.5"	18'-6"	2	45"	132"
2.5"	19'-0"	2	45"	138"
2.5"	19'-6"	2	45"	144"
2.5"	20'-0"	2	48"	144"
2.5"	20'-6"	2	48"	150"
2.5"	21'-0"	2	51"	150"
2.5"	21'-6"	2	51"	156"
2.5"	22'-0"	2	51"	162"
2.5"	22'-6"	2	54"	162"
2.5"	23'-0"	2	54"	168"
2.5"	23'-6"	2	54"	174"
2.5"	24'-0"	2	57"	174"



ELEVATION

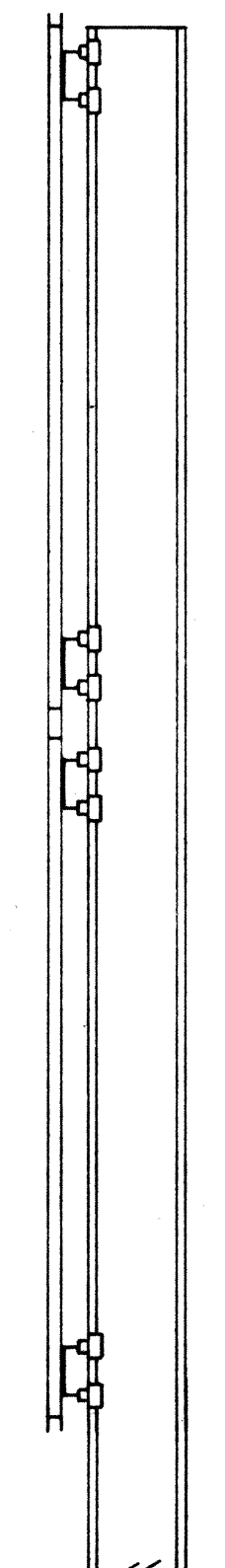
TYPICAL SIGN ASSEMBLY

Scale: $\frac{3}{4}$ " = 1' - 0"

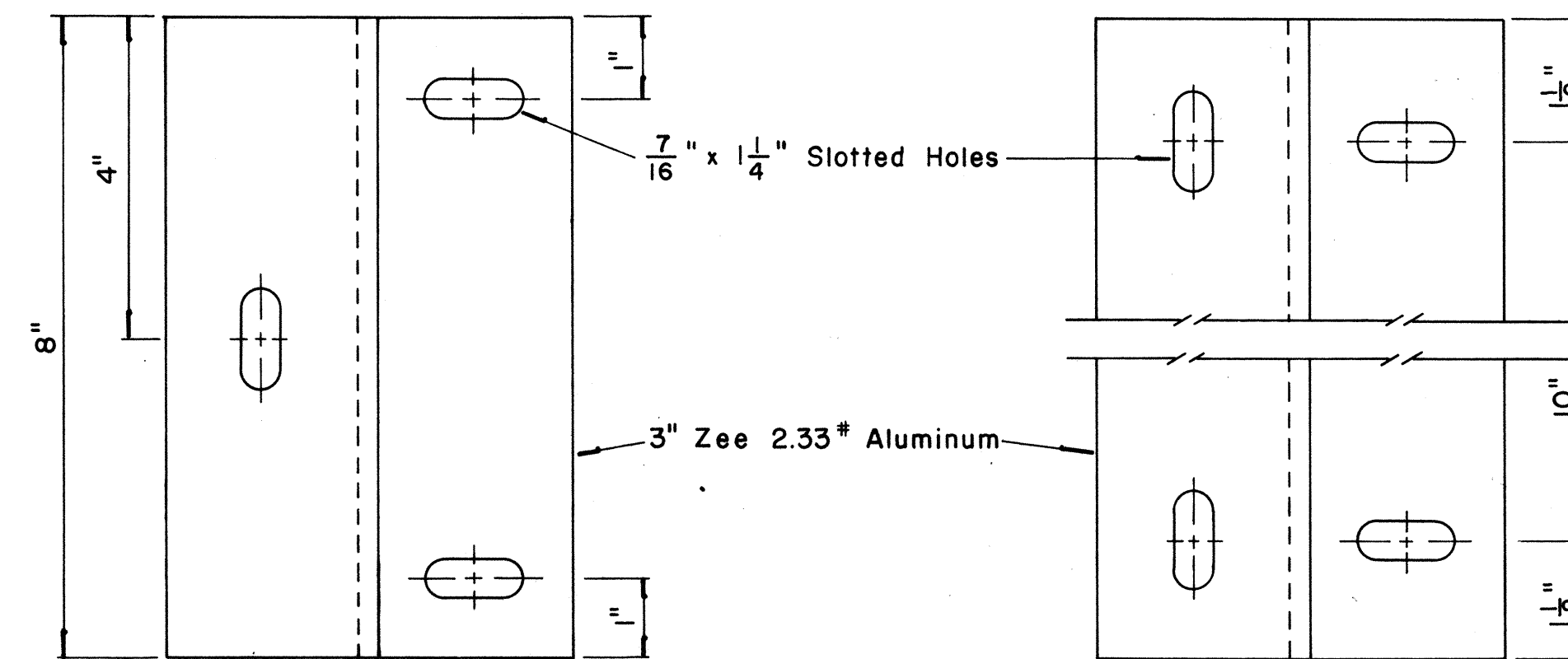


SECTION "A - A"

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



SIDE VIEW

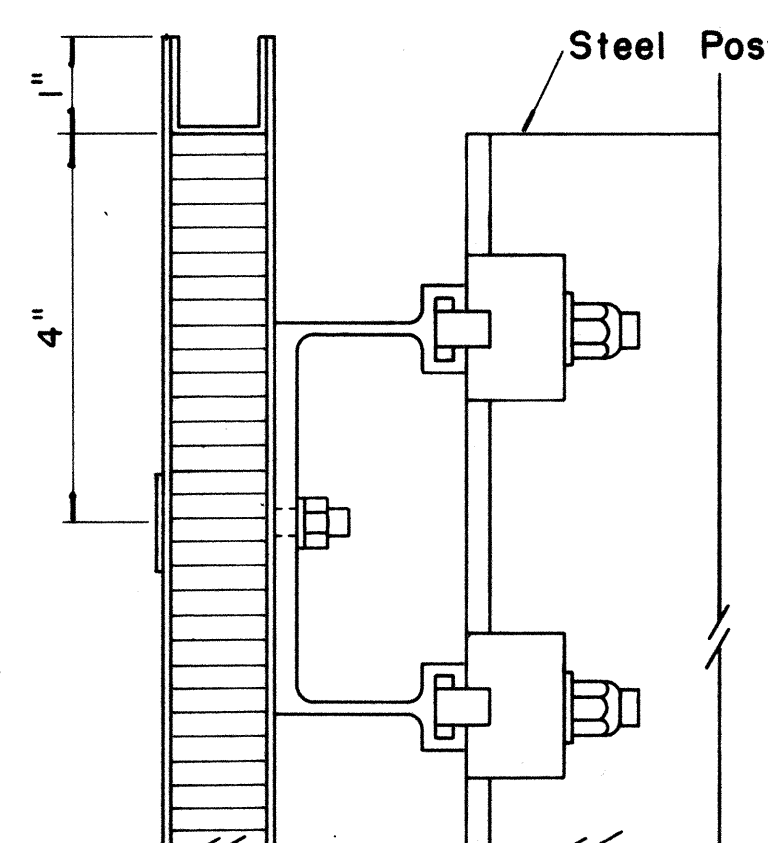


END MOUNTING

INTERMEDIATE MOUNTING

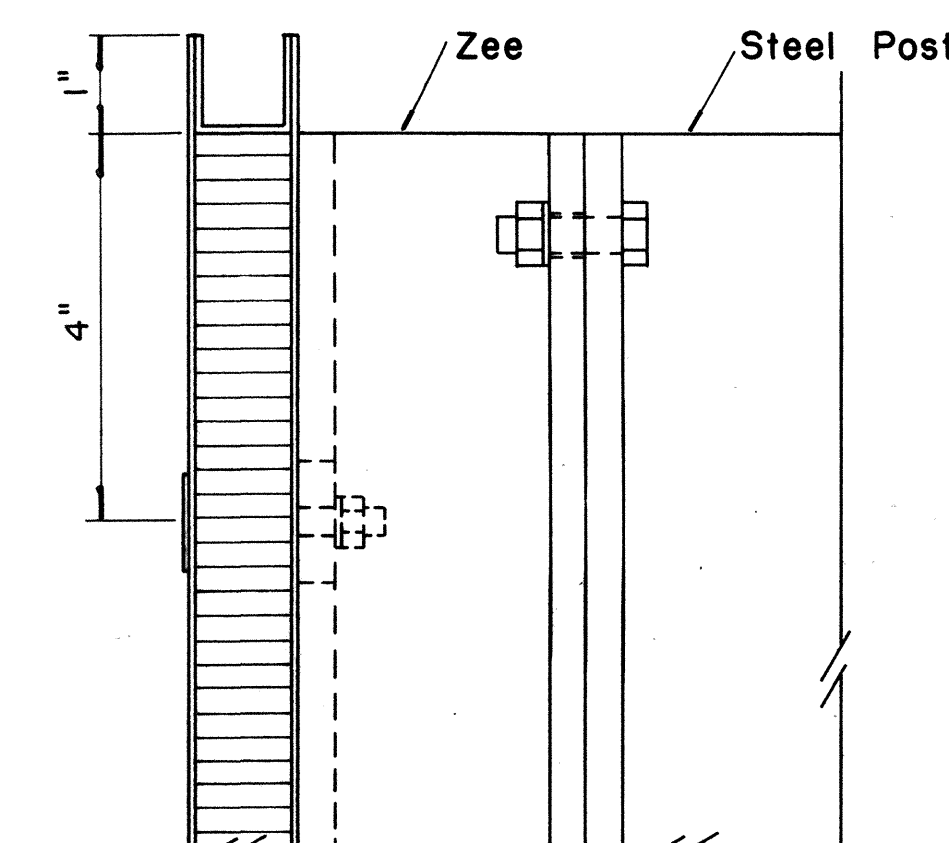
ZEE MOUNTING DETAILS

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



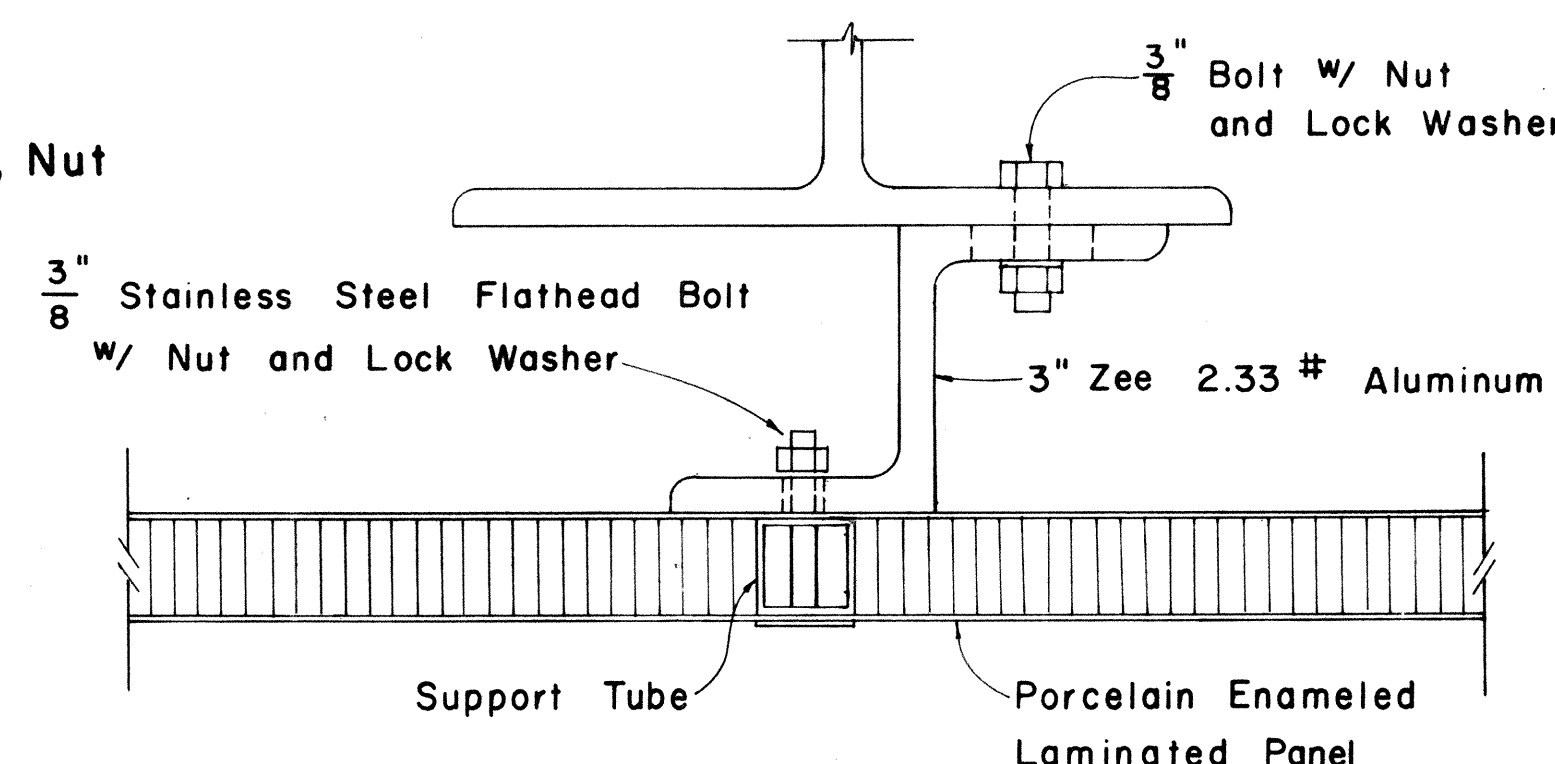
SECTION "B - B"

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



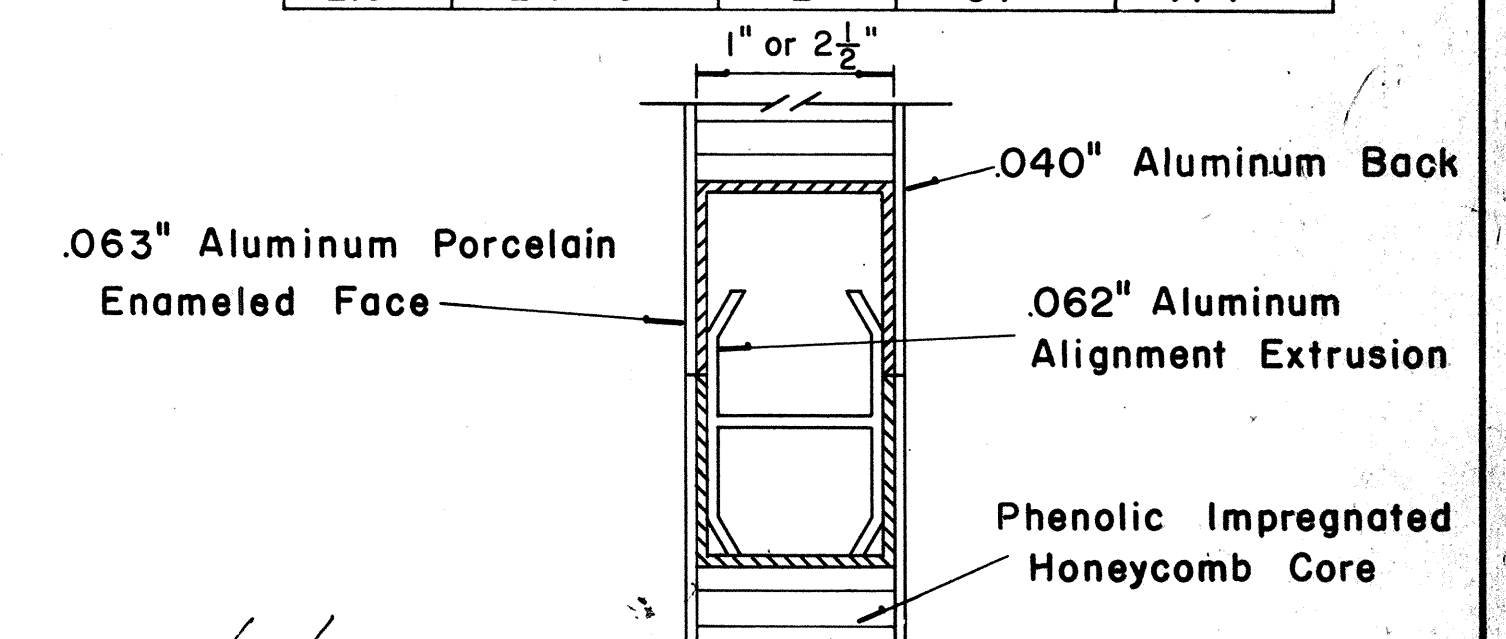
SECTION "B - B" (Alternate)

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



SECTION "A - A" (Alternate)

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



CLOSURE DETAIL
SECTION "C - C"

FULL SCALE

APPROVAL RECOMMENDED:

Eischi Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

APPROVED:

2-2-69
ASSISTANT CHIEF, ENGINEERING

12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

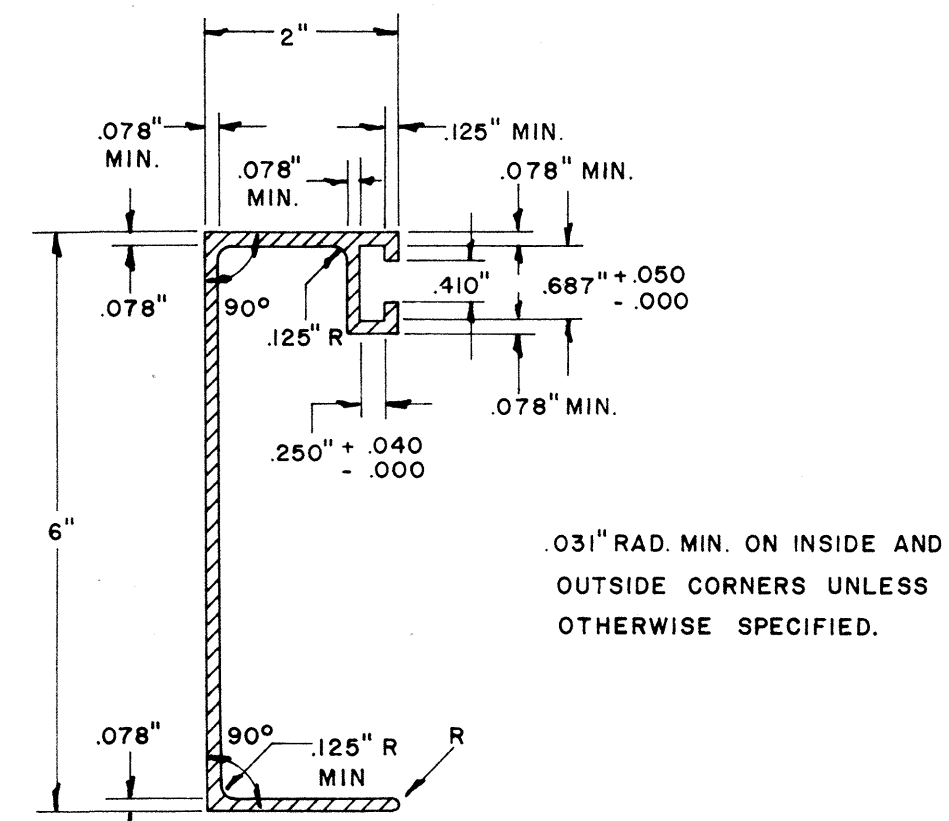
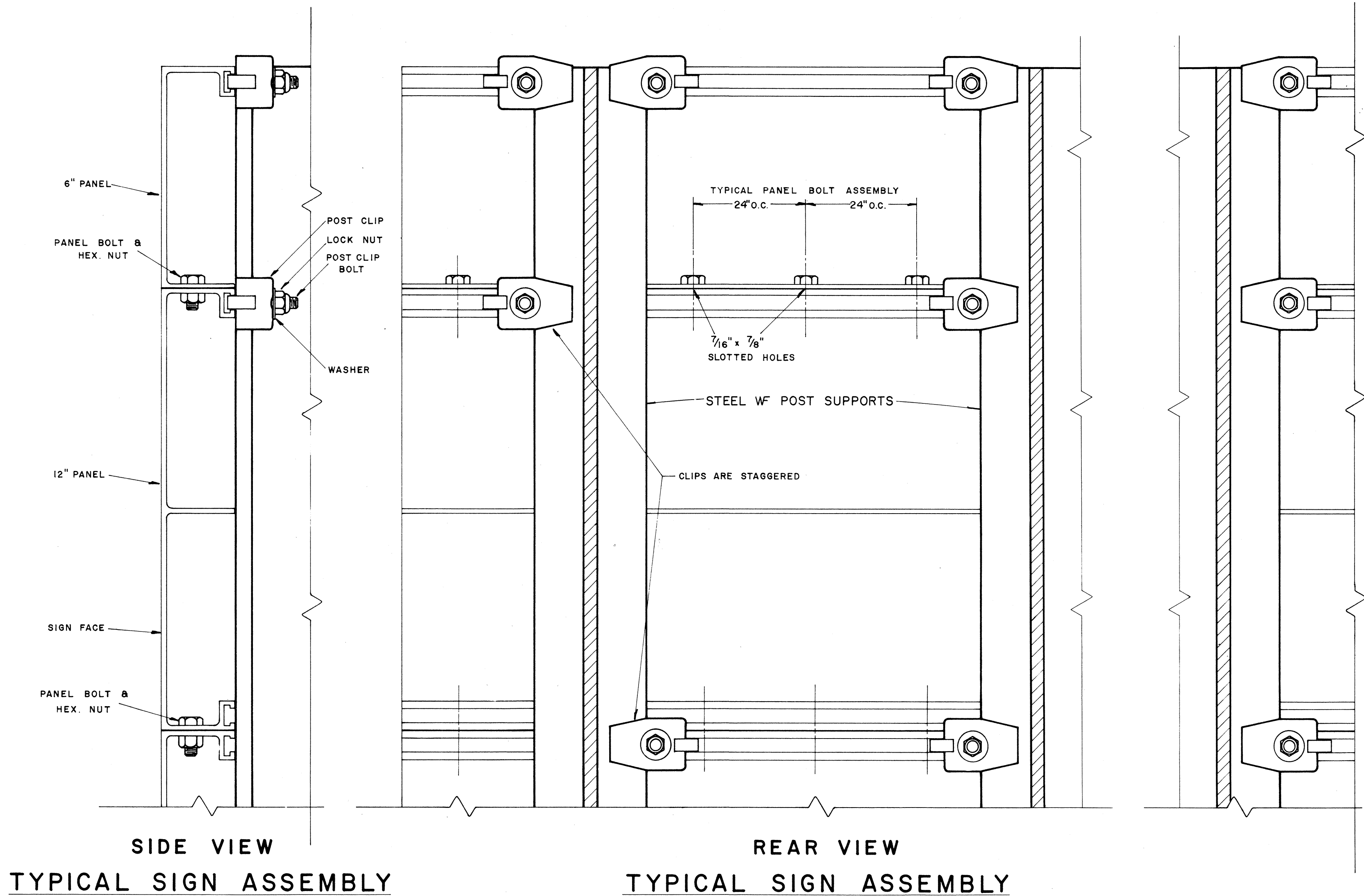
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(GROUND MOUNTED)

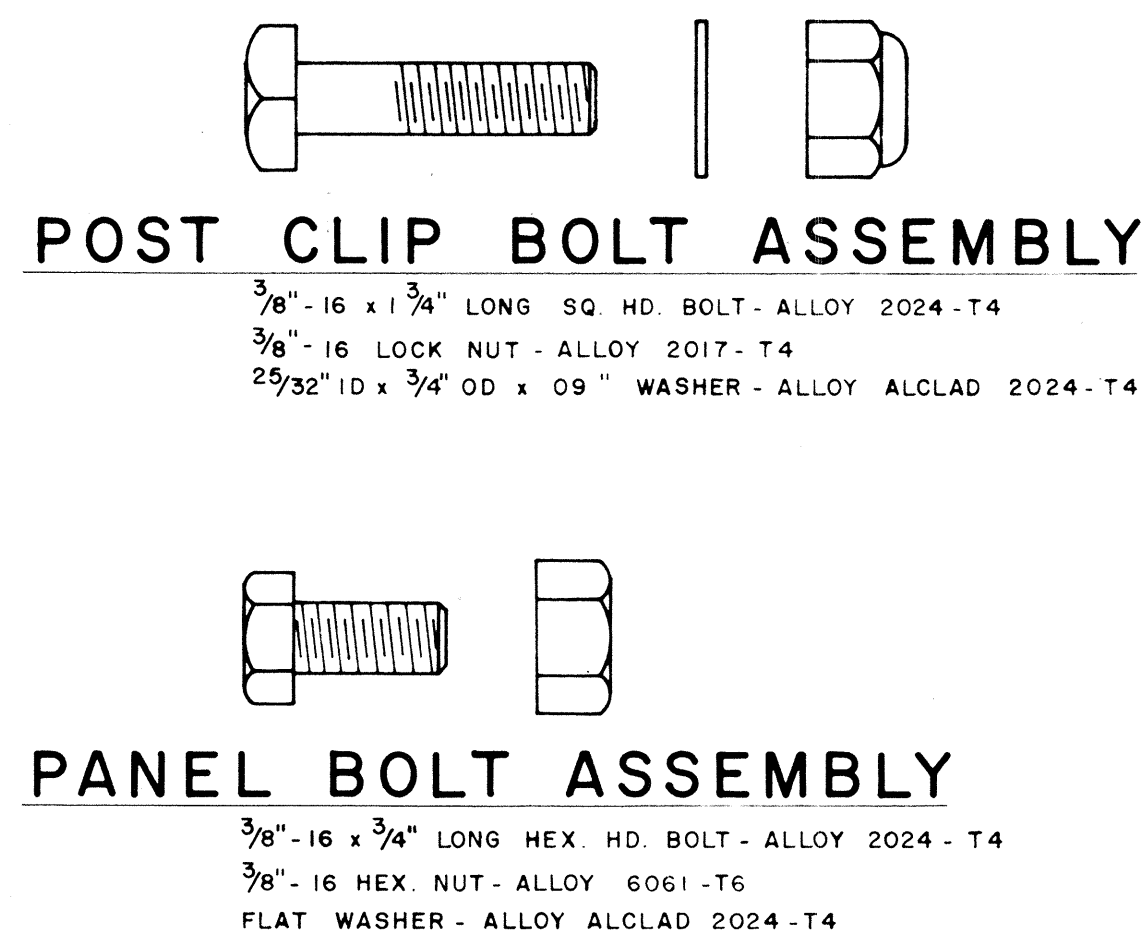
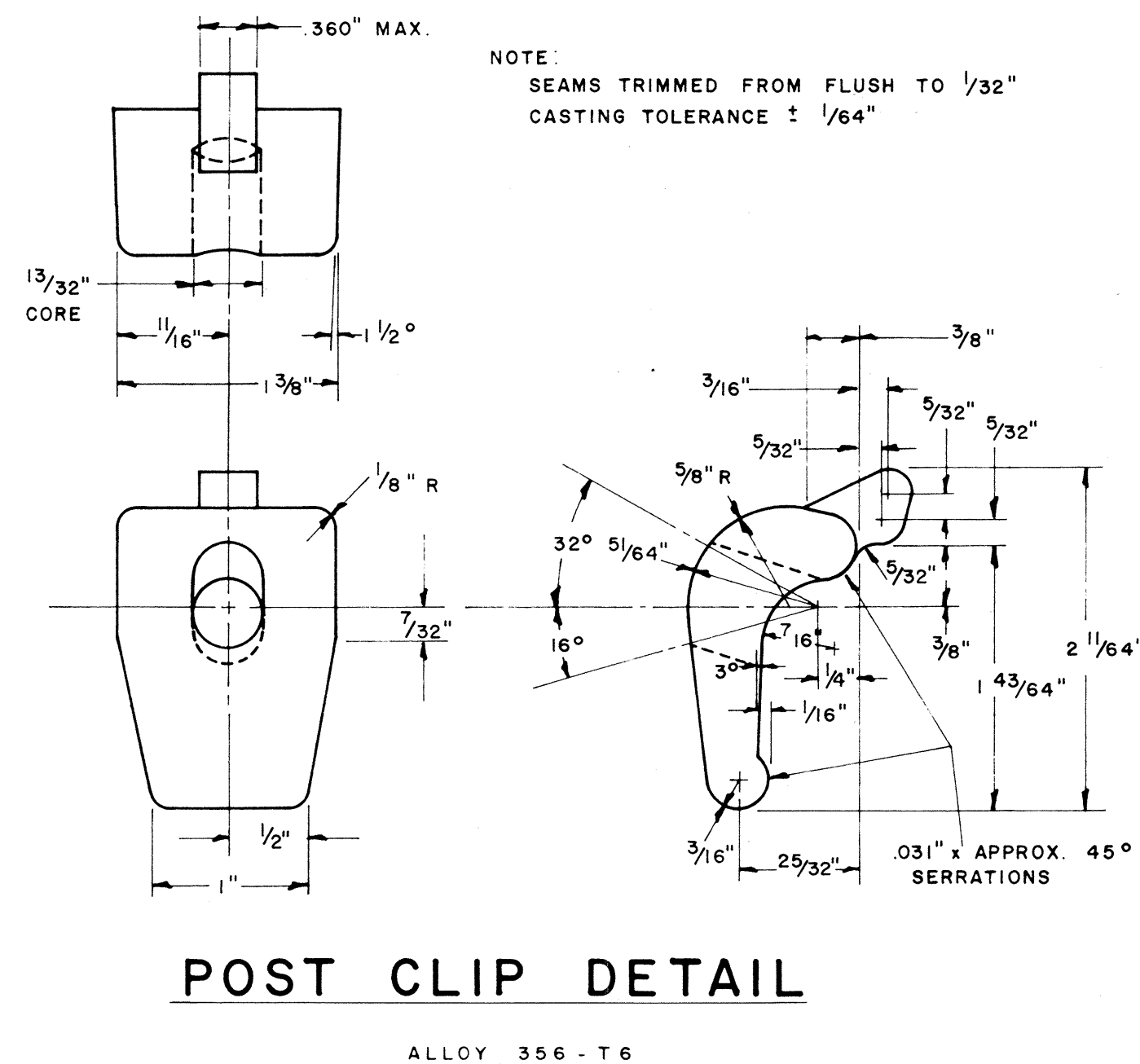
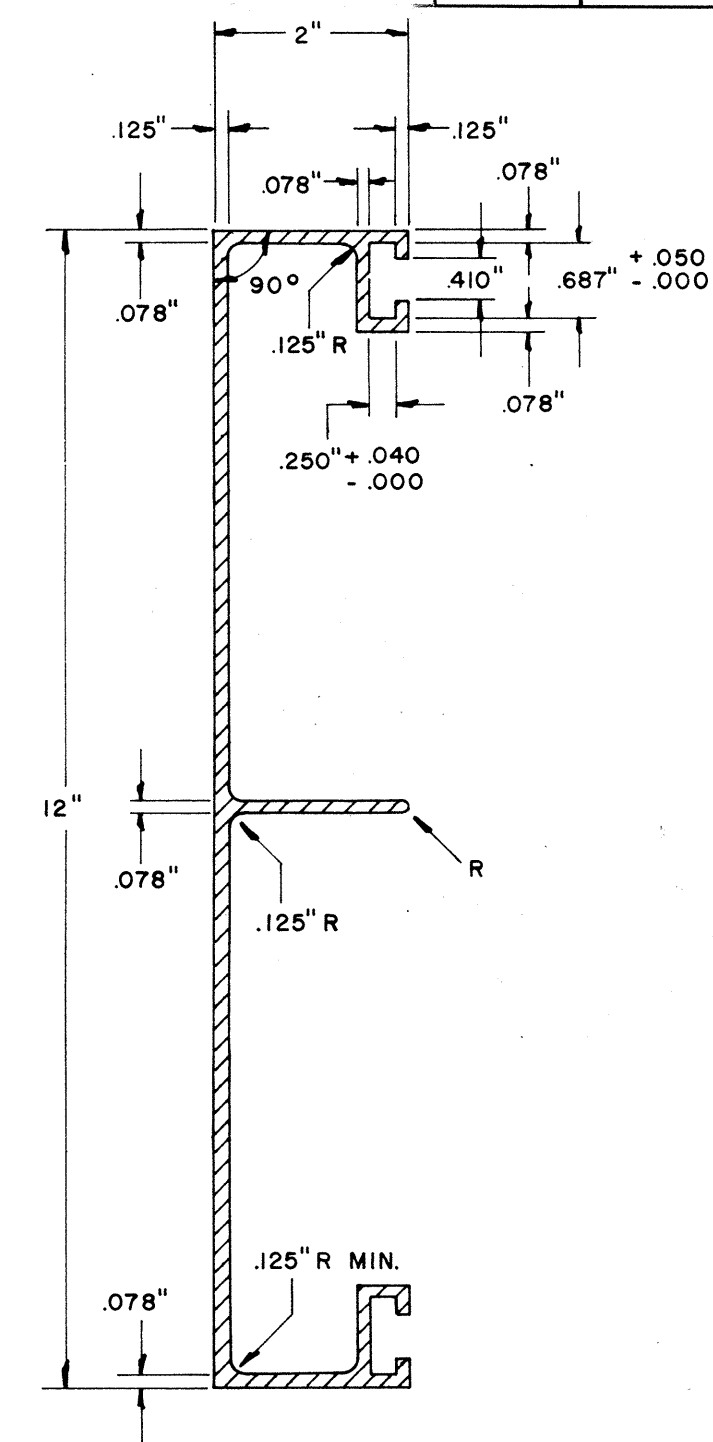
Scale: As Shown

SHEET No. 9 OF 19 SHEETS DT 206

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	19DC-01-71	1973	40	51



SOLID EXTRUDED SIGN PANEL DETAILS



NOTE:
Extruded Aluminum Panels to be used for
Destination Signs with Reflective Sheeting Background

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

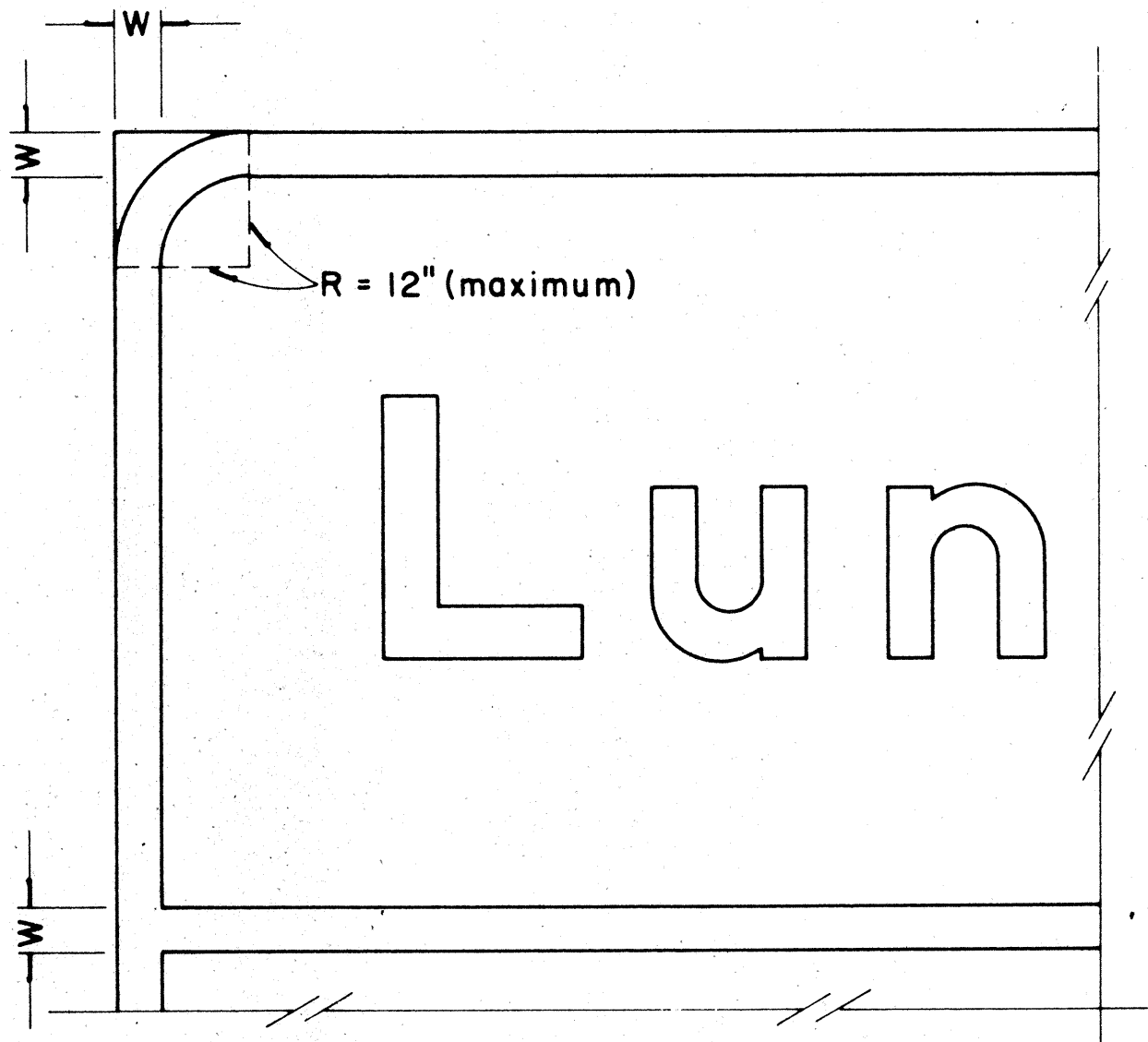
APPROVED:
[Signature] 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STANDARD DETAILS SOLID ALUMINUM EXTRUDED SIGN PANEL AND ACCESSORY DETAILS SCALE:
--

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	108C-01-71	1973	41	51

RADII 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:
Eushe Tanaka 4/11/72
 TRAFFIC ENGINEER DATE
 APPROVED:
Shirley Z. Salsishi 4/12/72
 ASSISTANT CHIEF, ENGINEERING DATE

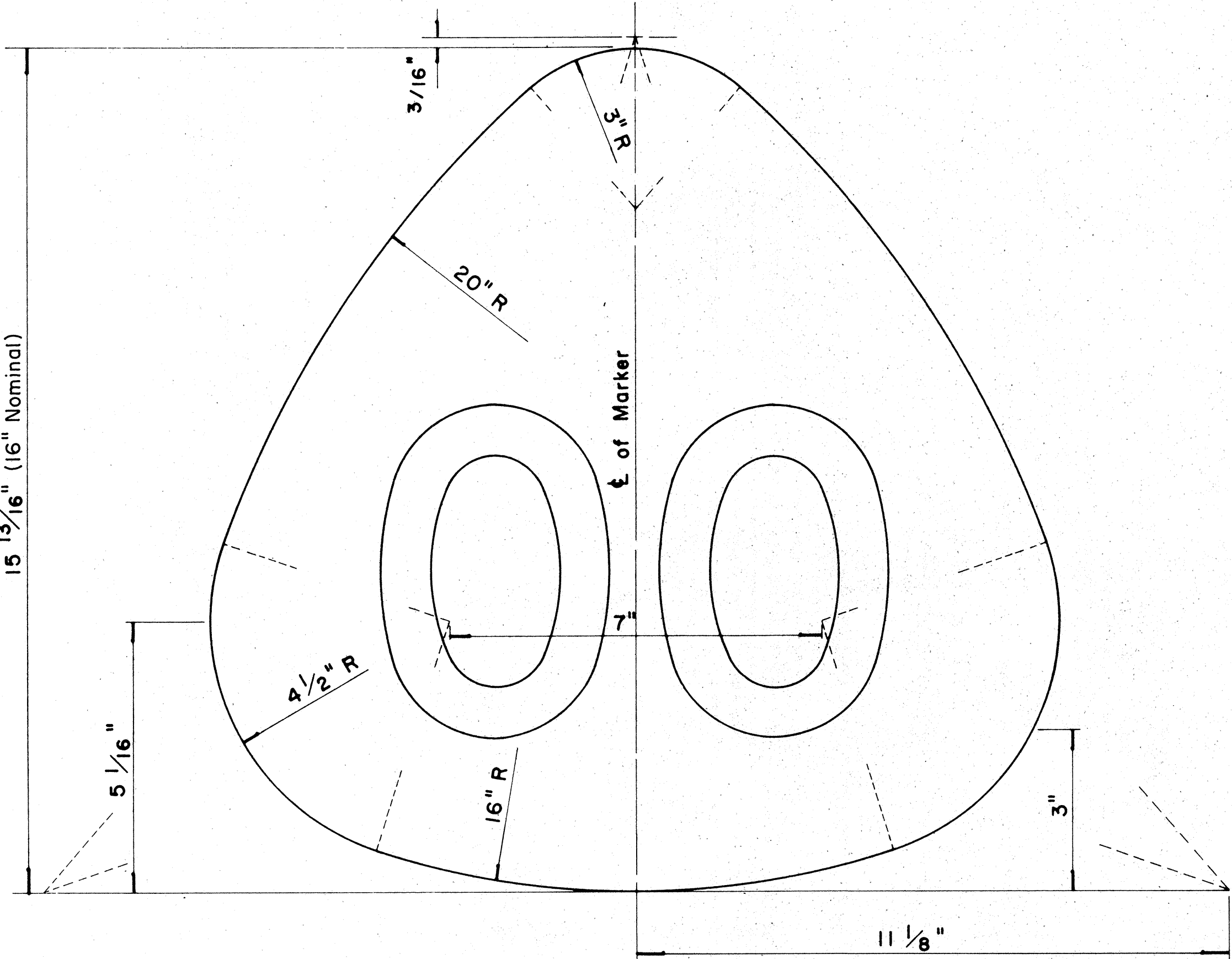
NO	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 209 Approved 12-30-69	N.C.	4/12/72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
STATE ROUTE MARKER
AND BORDER DETAIL
FOR GUIDE SIGNS

Scale: As Shown
SHEET No. 11 OF 19 SHEETS DT 209

MARKER SIZE	MULTIPLY DIMENSIONS BY	NUMERAL SIZE
16"	1	6"
21"	1.3	8"
32"	2.0	12"
42"	2.63	16"



STATE ROUTE MARKER FOR GUIDE SIGNS

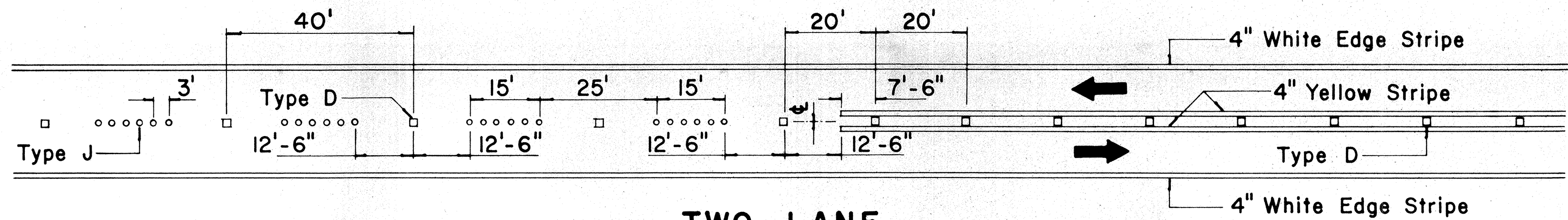
Scale: Half Size

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.

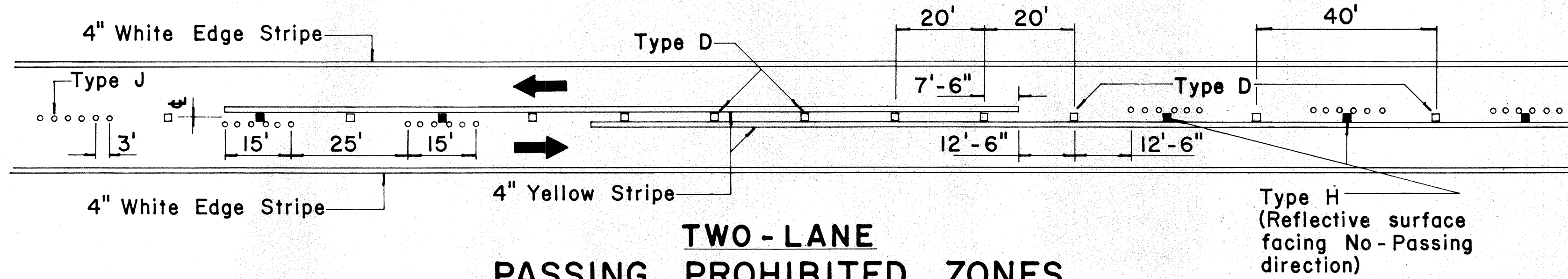
DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
APPROVED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	10BC-01-71	1973	42	51



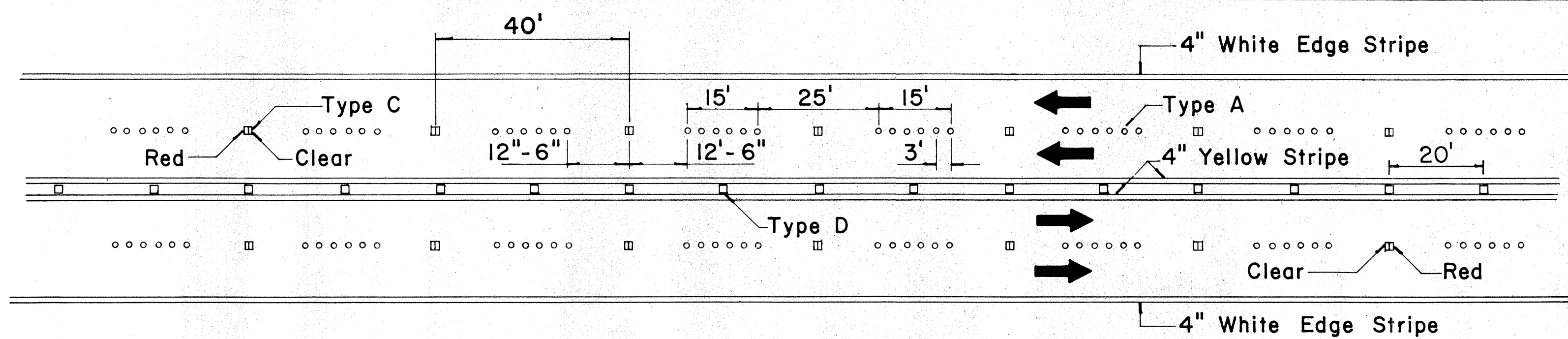
**TWO - LANE
PASSING PERMITTED AND PASSING PROHIBITED**

TWO - LANE



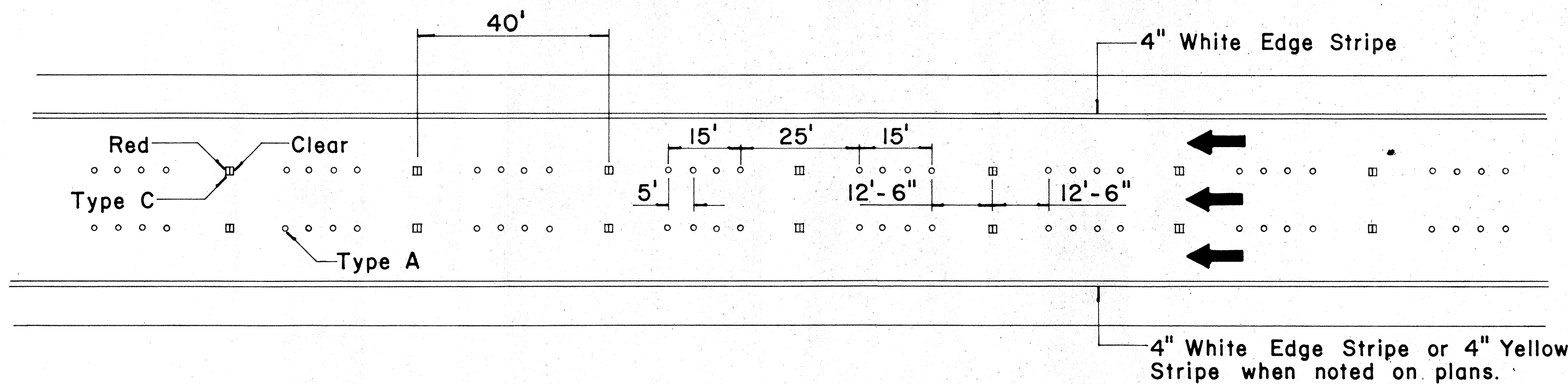
**TWO - LANE
PASSING PROHIBITED ZONES**

MULTI - LANE



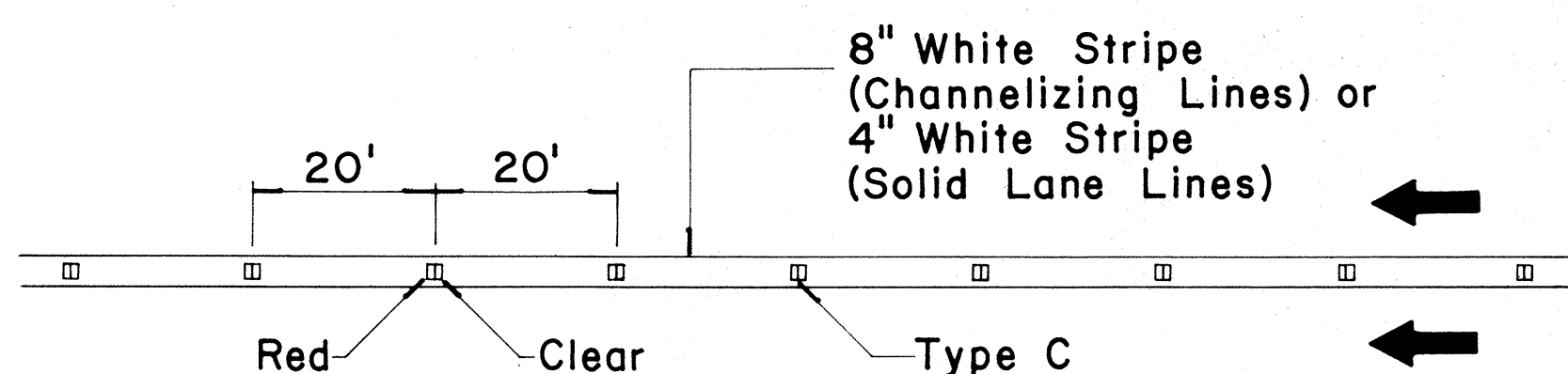
**MULTI - LANE
LANE LINES AND CENTER LINE**

FREEWAY



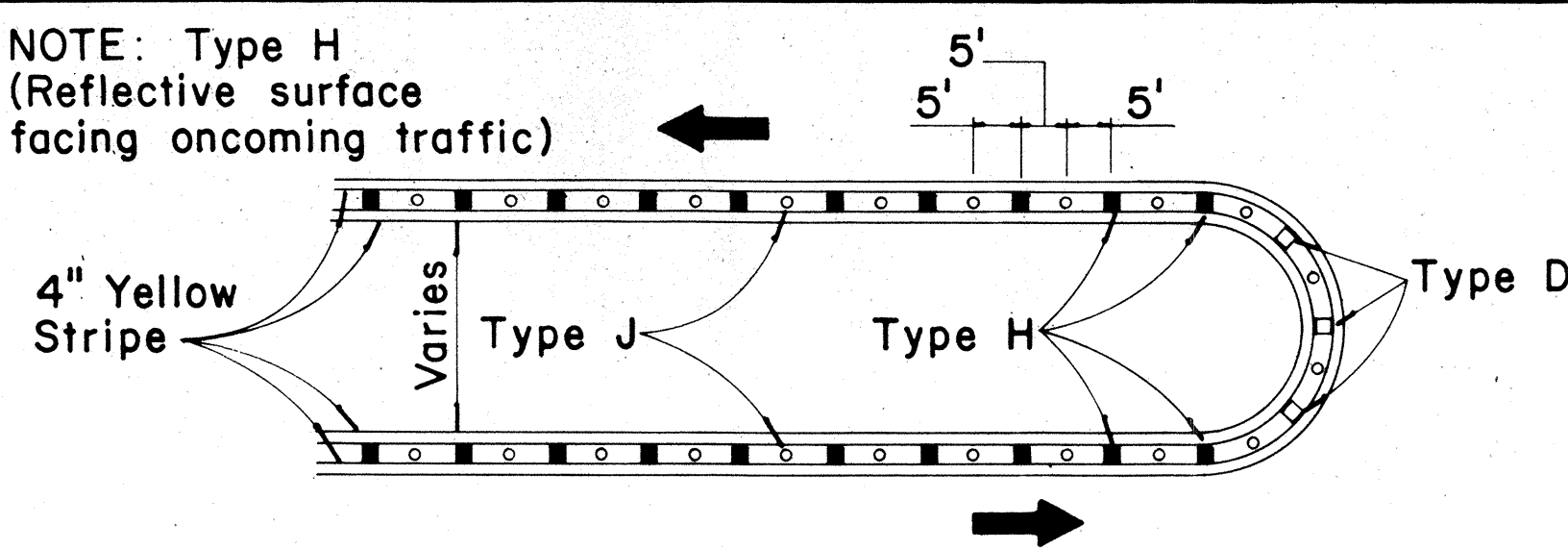
FREEWAY LANE LINES

MISCELLANEOUS

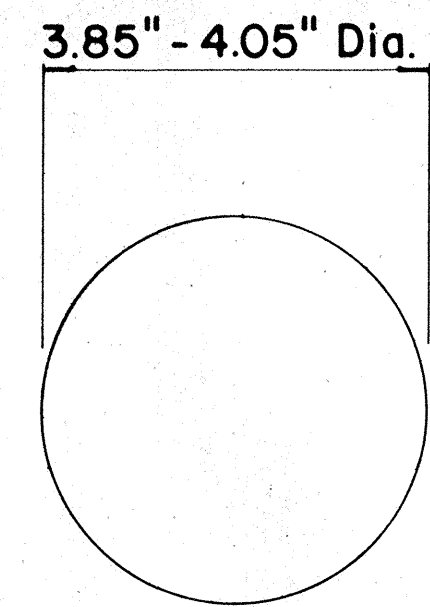


**CHANNELIZING LINES
OR SOLID LANE LINES**

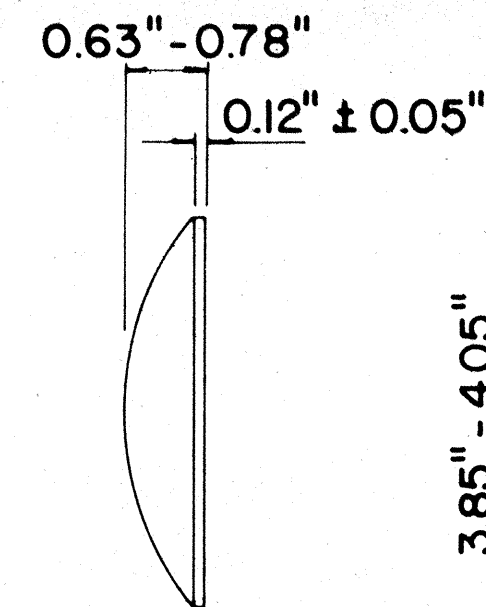
NOTE: Type H
(Reflective surface
facing oncoming traffic)



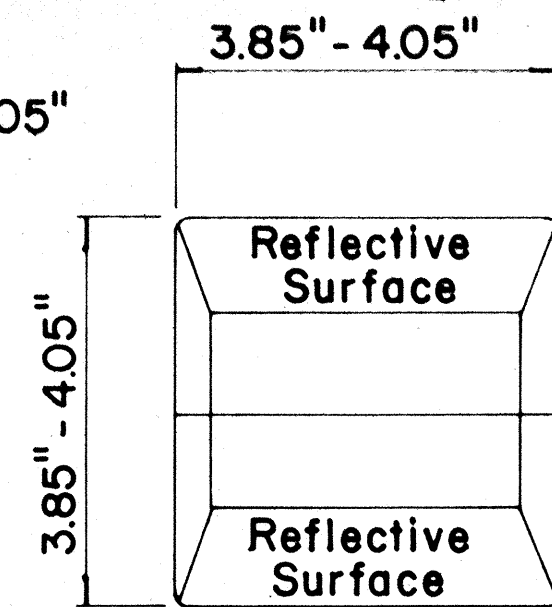
MEDIAN NOSE DELINEATION



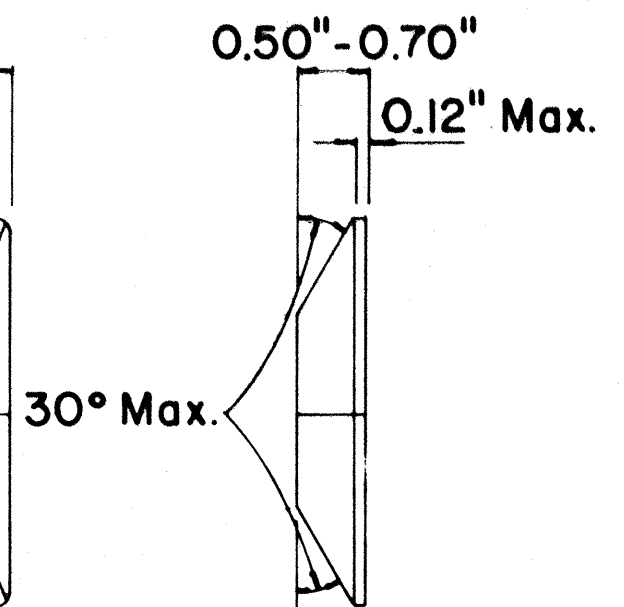
**TYPE A
NON - REFLECTIVE WHITE MARKER**



**TYPE C
RED - CLEAR REFLECTIVE MARKER**



**TYPE J
NON - REFLECTIVE YELLOW MARKER**



**TYPE D
TWO - WAY YELLOW REFLECTIVE MARKER**

**TYPE H
ONE - WAY YELLOW REFLECTIVE MARKER**

GENERAL NOTES

1. Painted stripes to be done by State forces unless otherwise specified.

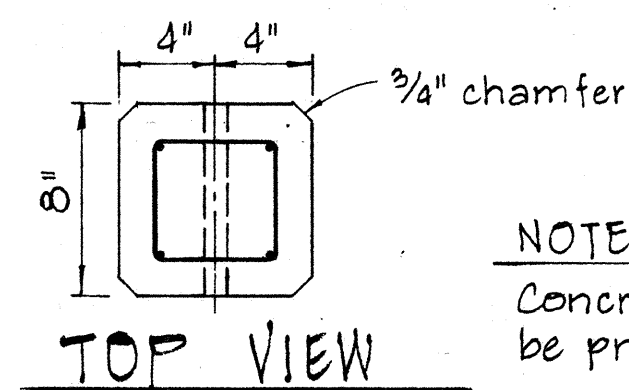
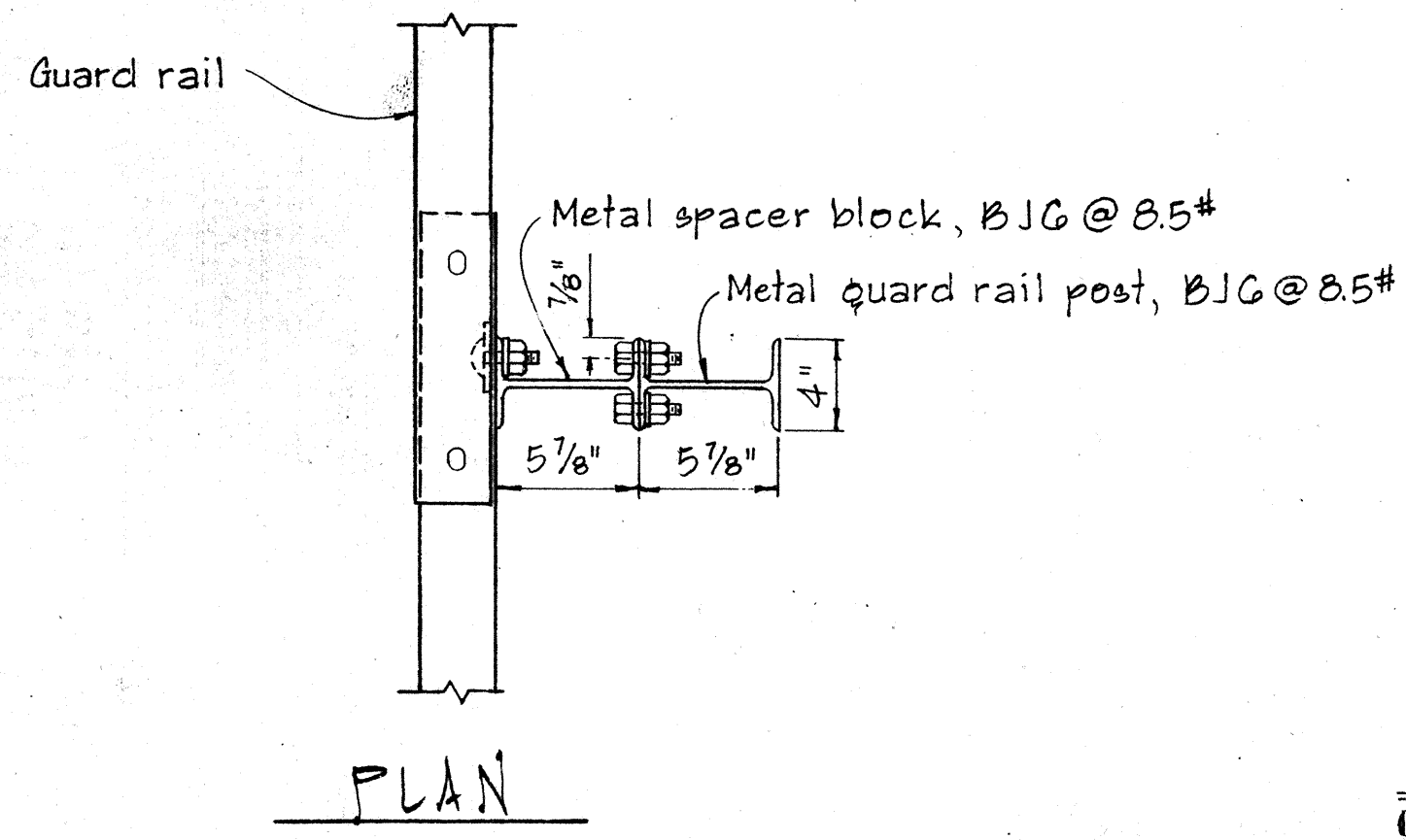
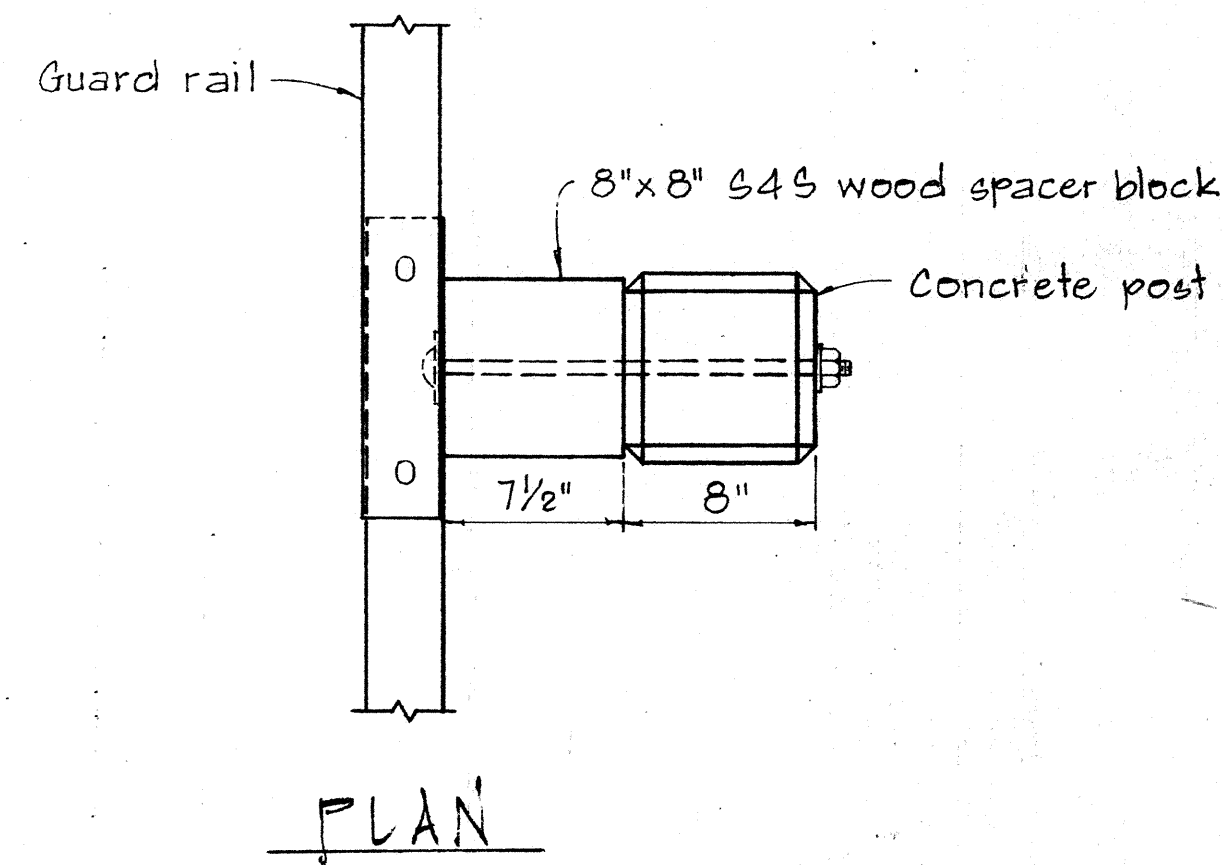
APPROVAL RECOMMENDED:
Erich Tanaka 11/18/71
TRAFFIC ENGINEER DATE

APPROVED:
Blair Zaleski 11/18/71
ASSISTANT CHIEF, ENGINEERING DATE

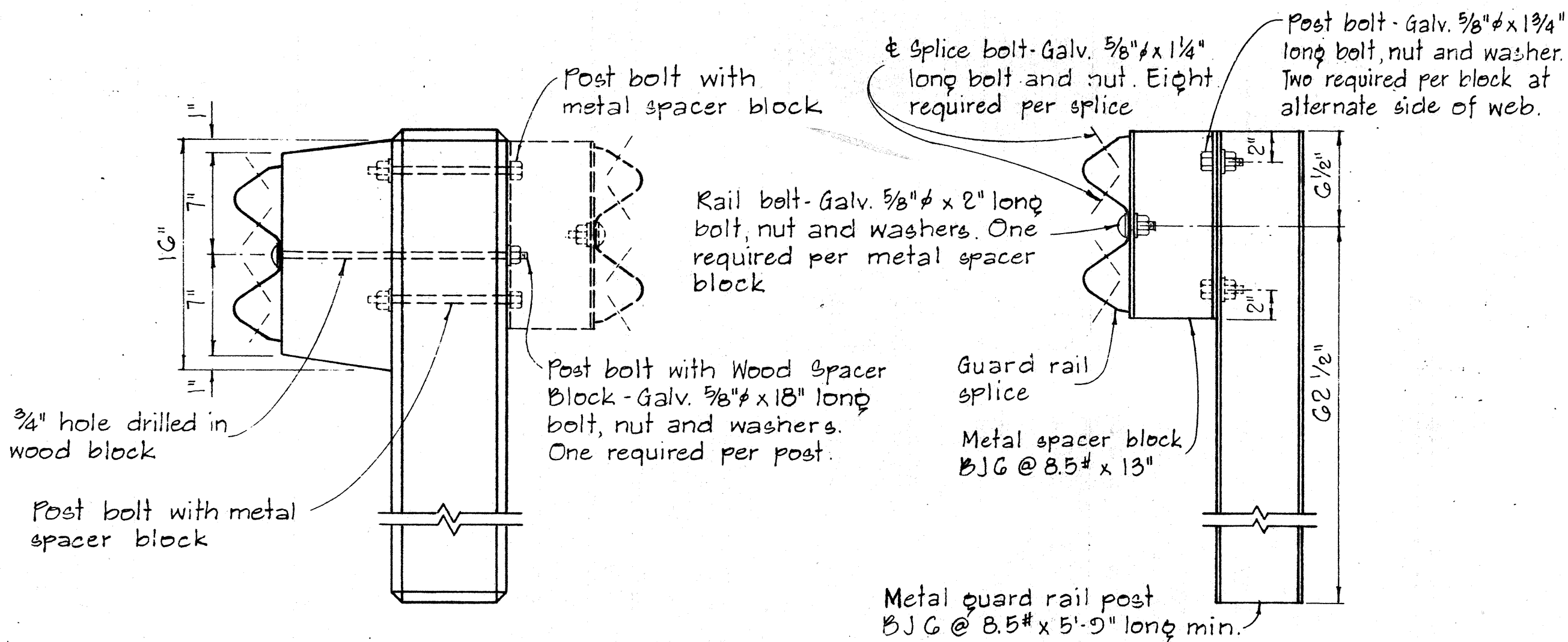
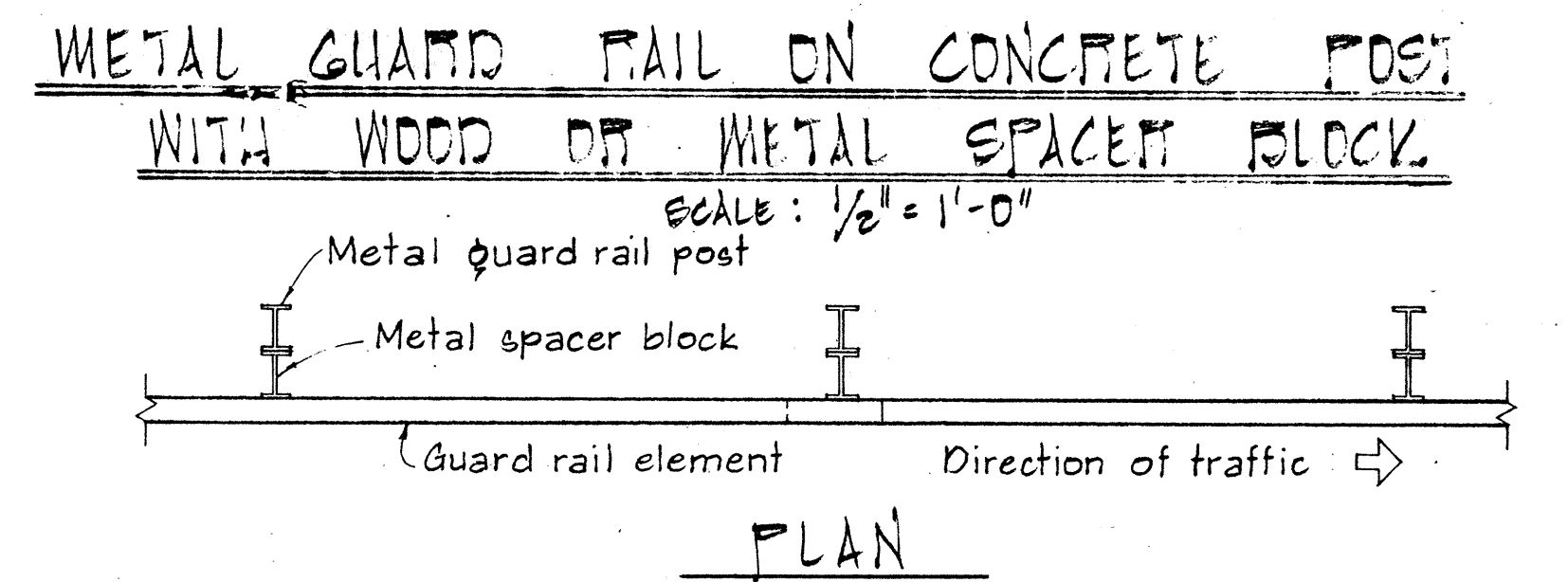
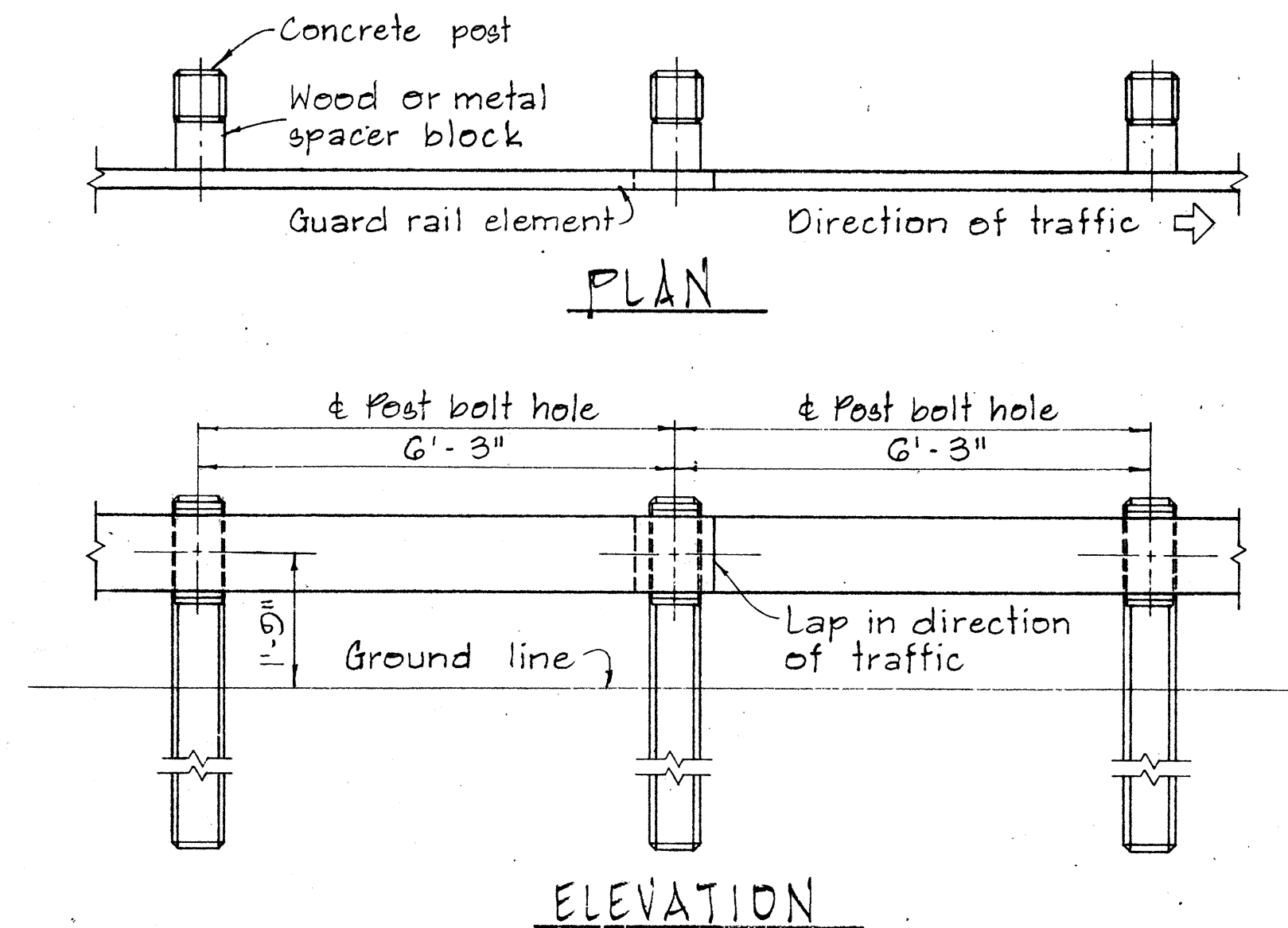
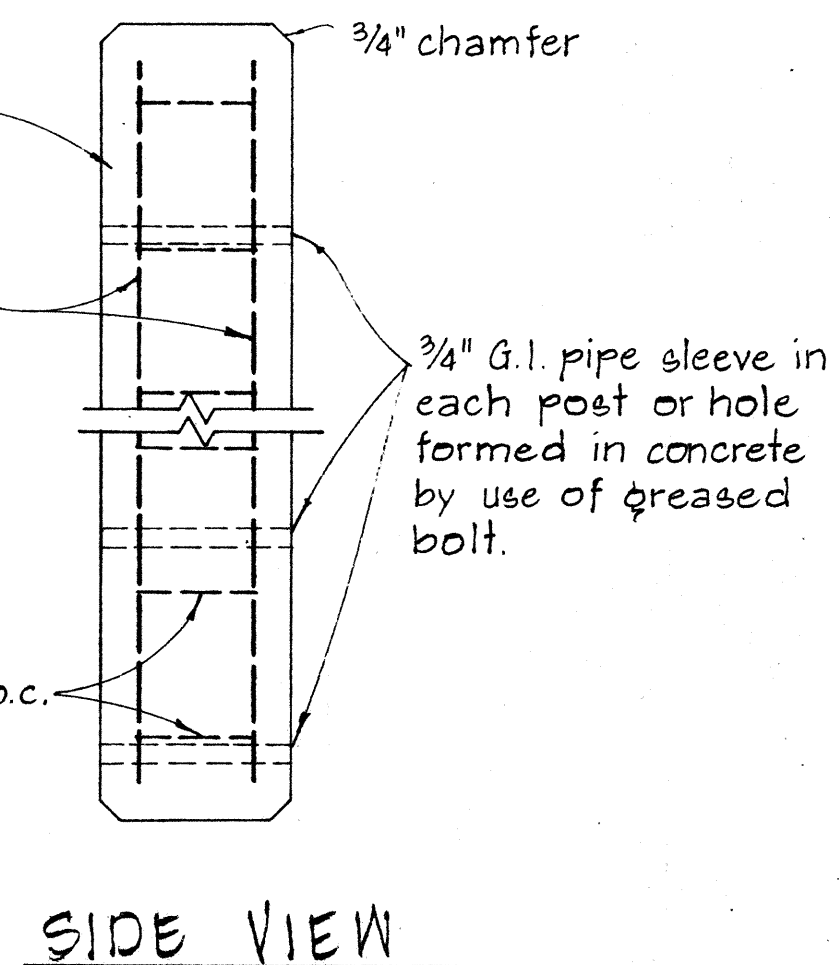
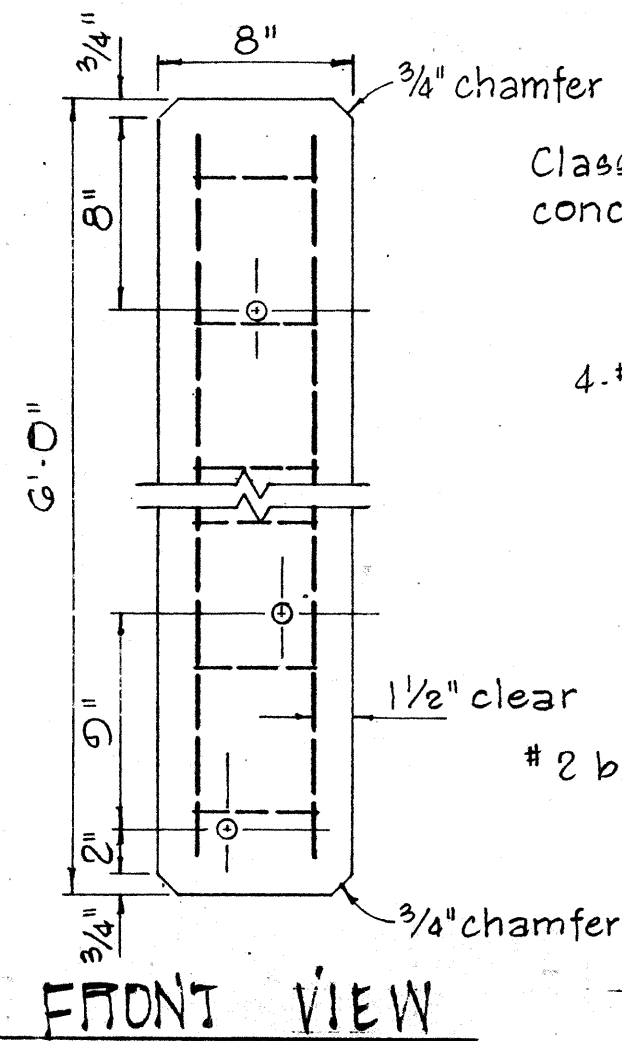
No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.C.	10-21-72
2	Revised General Notes.	H.C.	10-21-72

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
RAISED PAVEMENT MARKERS
Not to Scale October 1971
SHEET No. 12 OF 19 SHEETS DT 300

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	19BC-01-71	1973	43	51

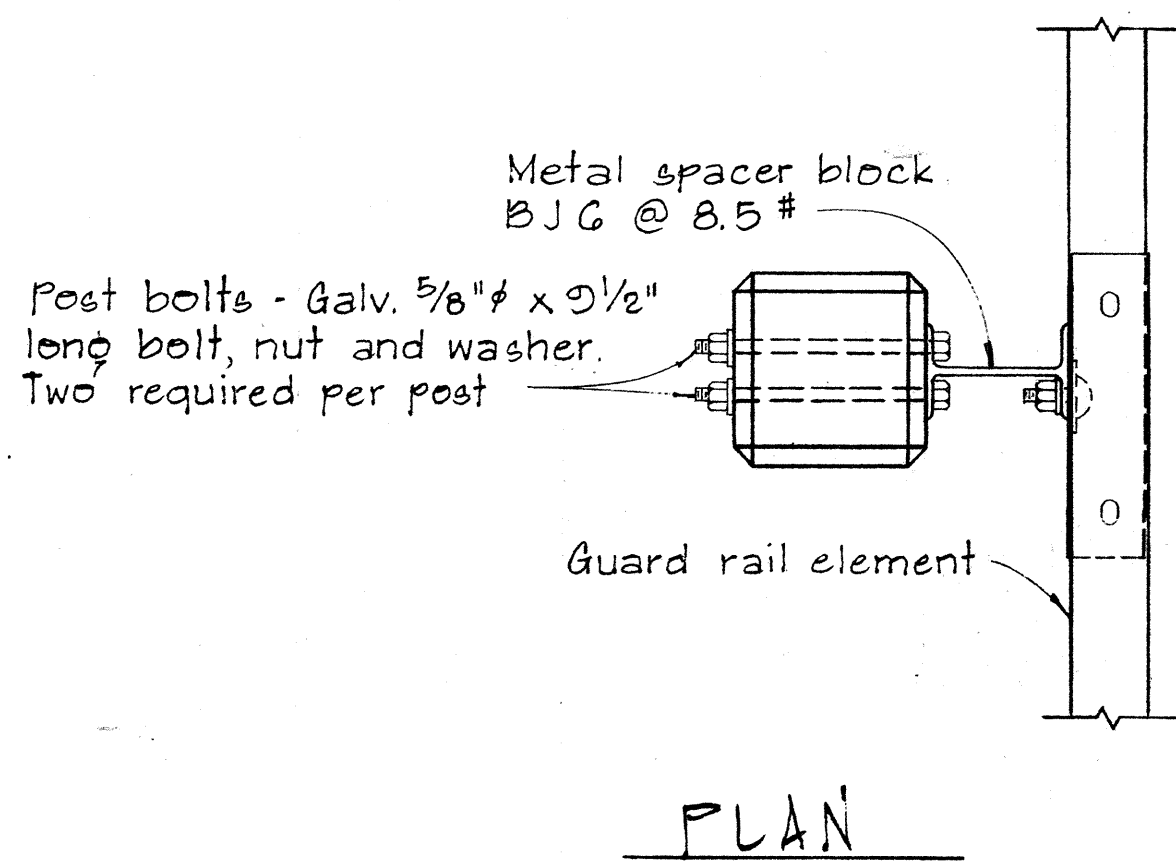


NOTE:
Concrete post shall be precast

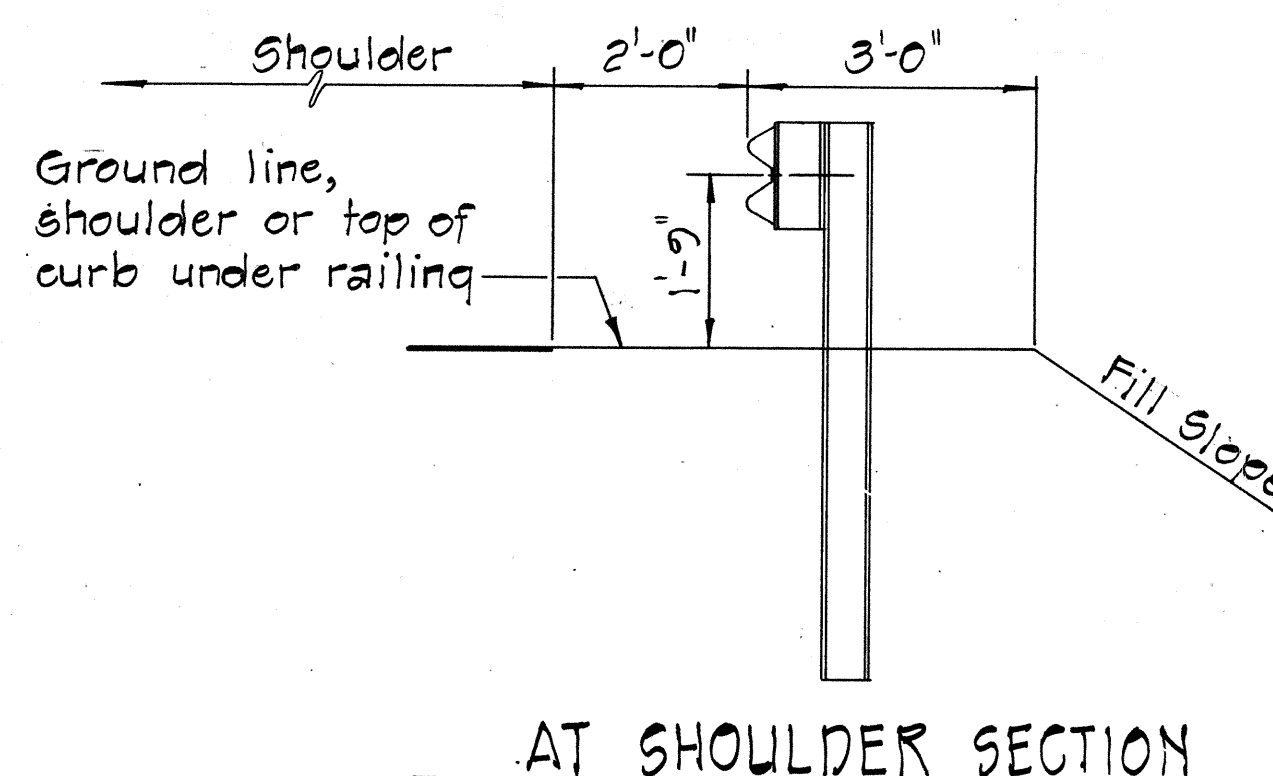


SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"

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: 1/2" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

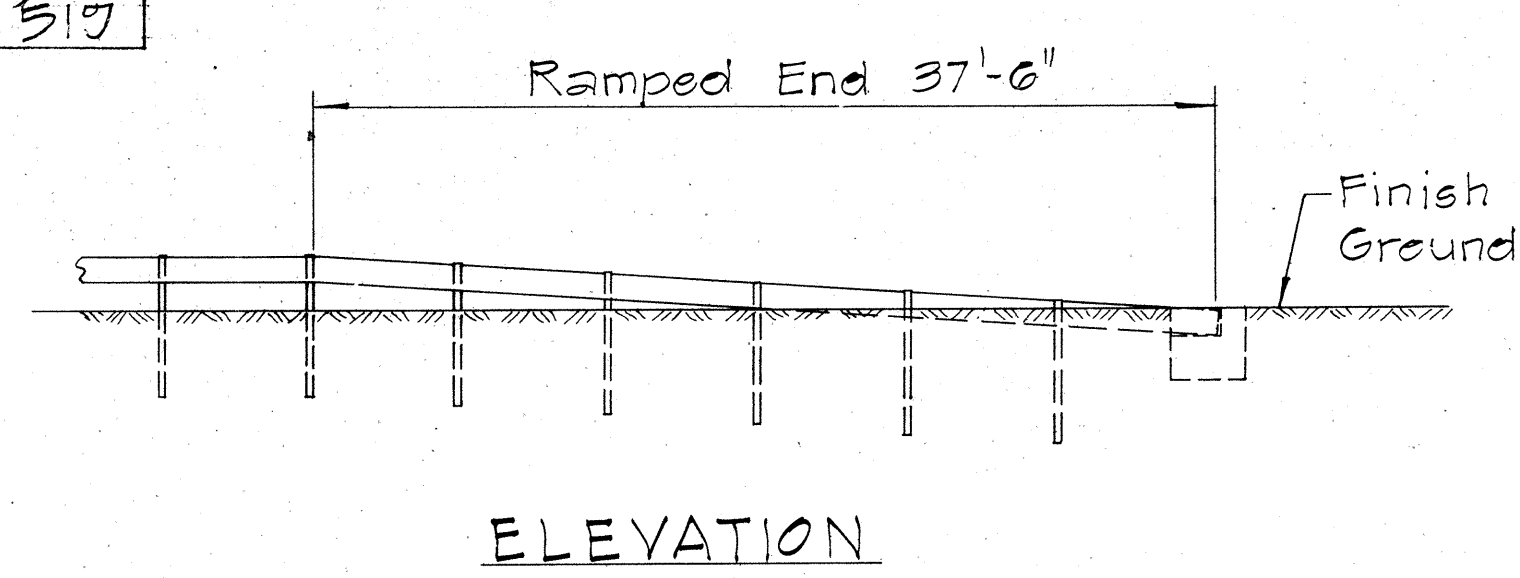
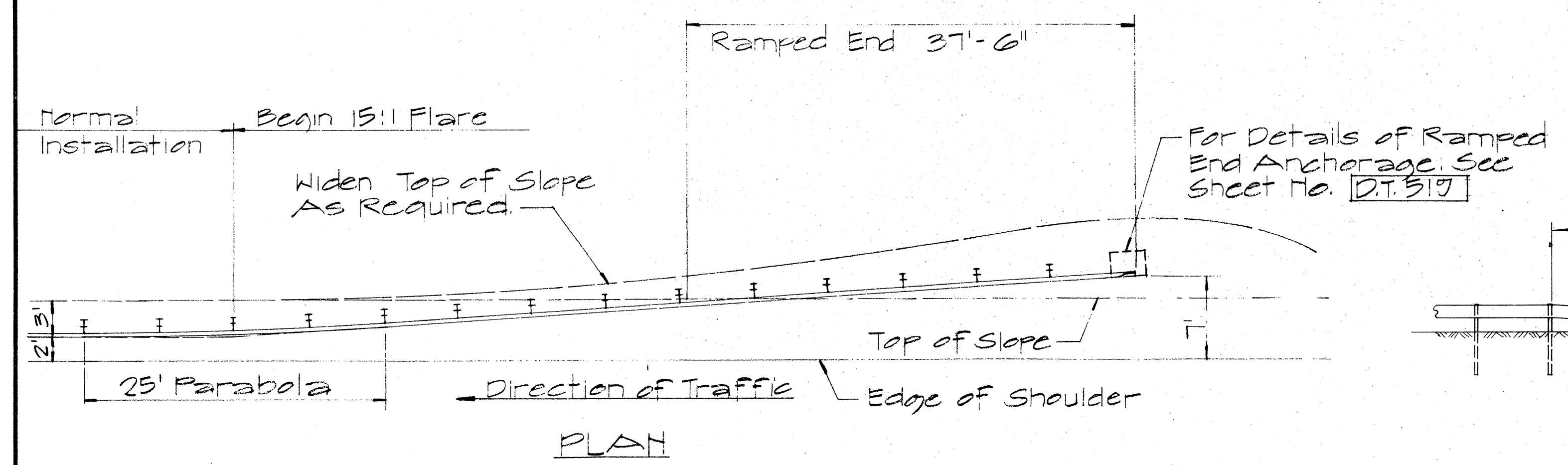
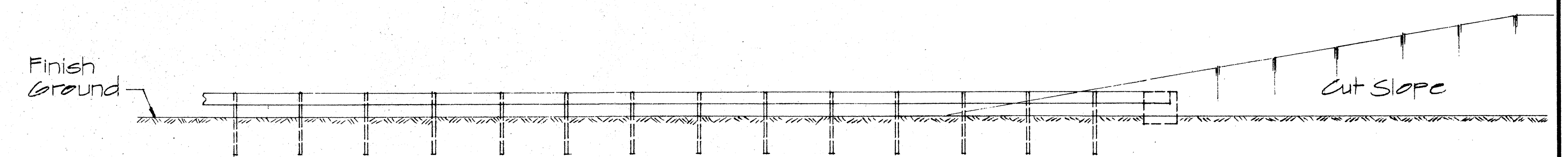
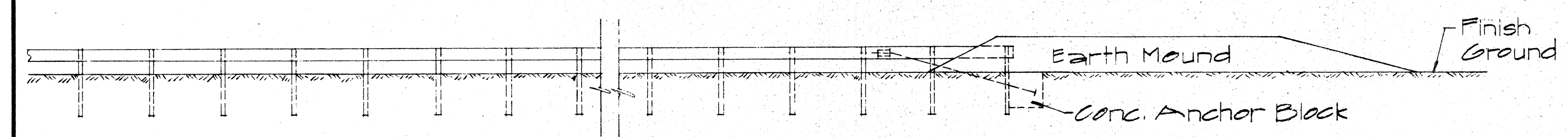
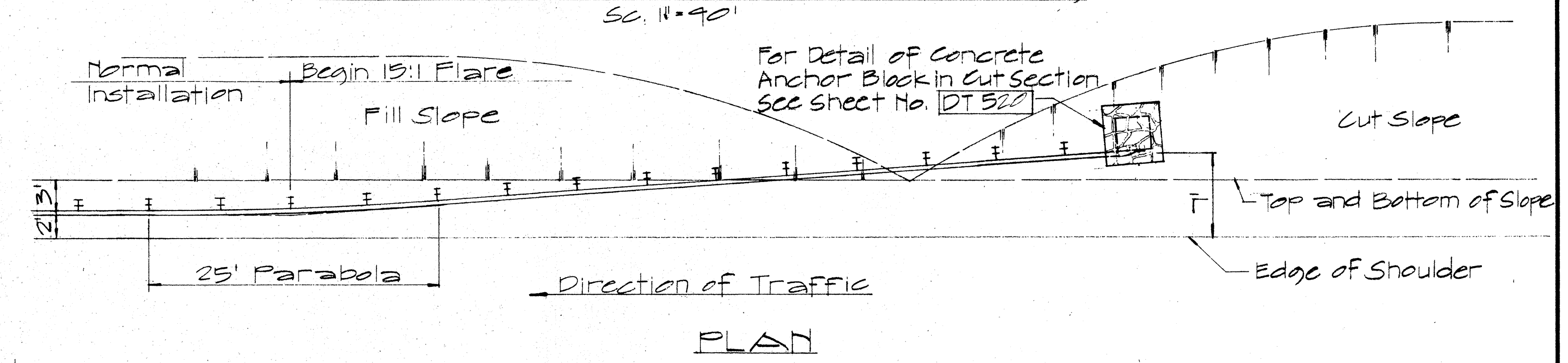
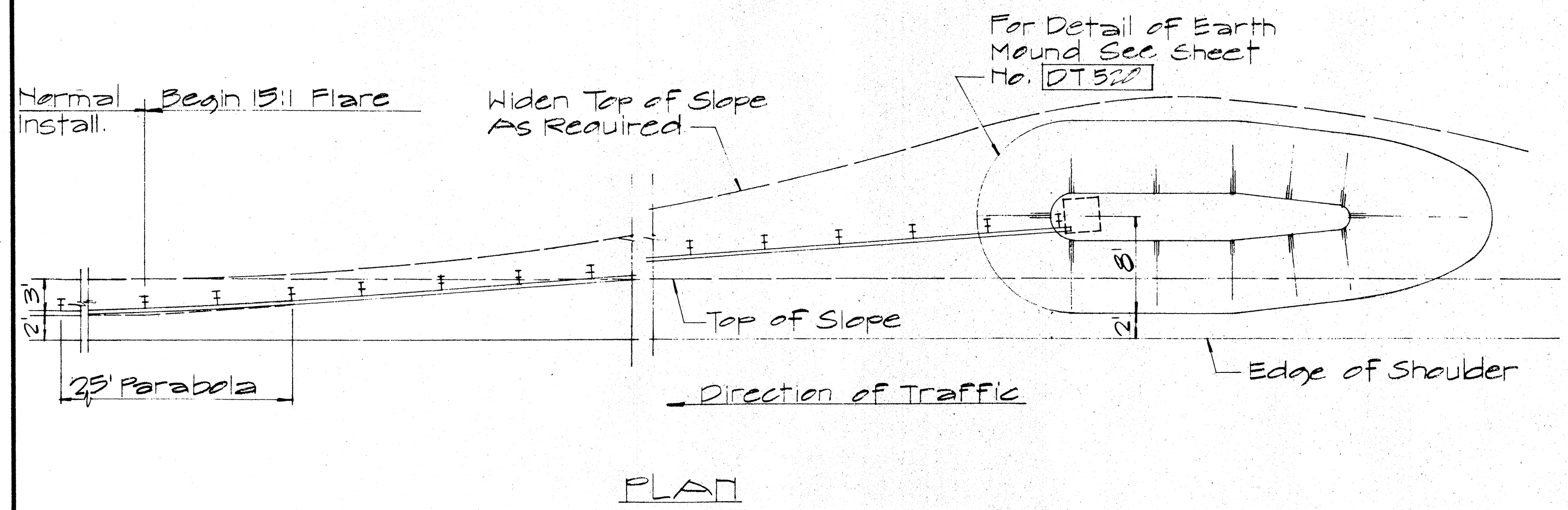
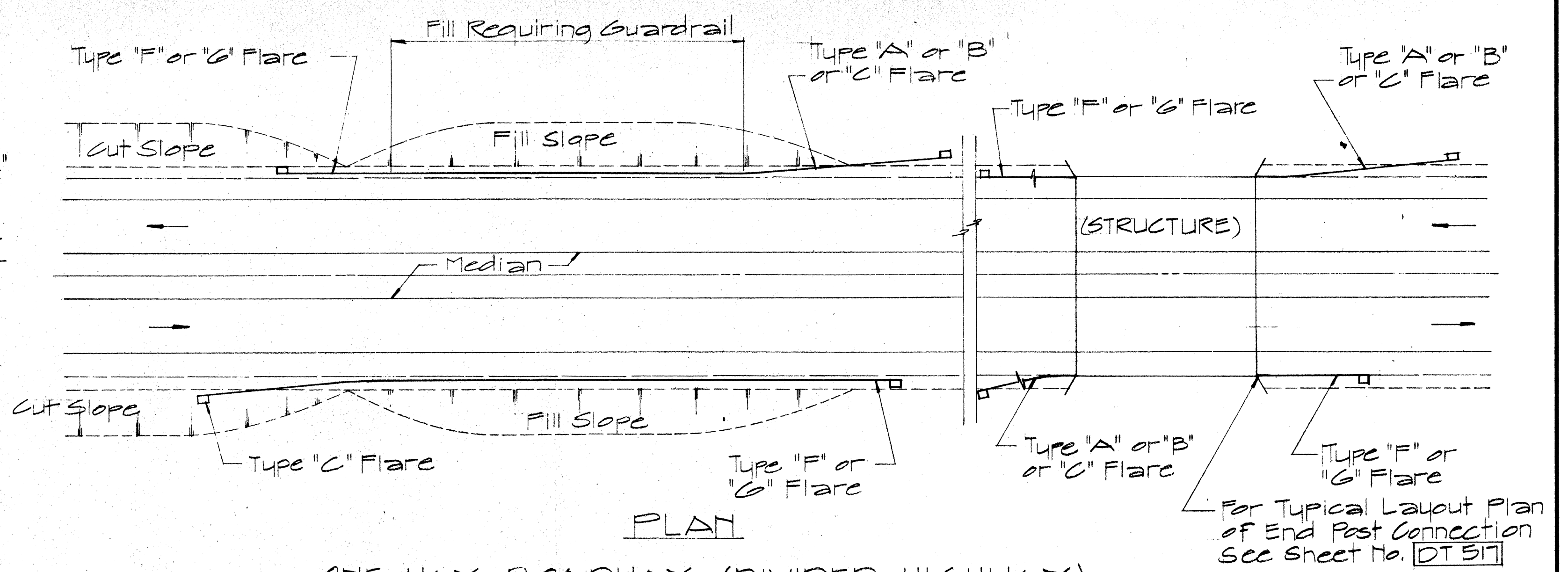
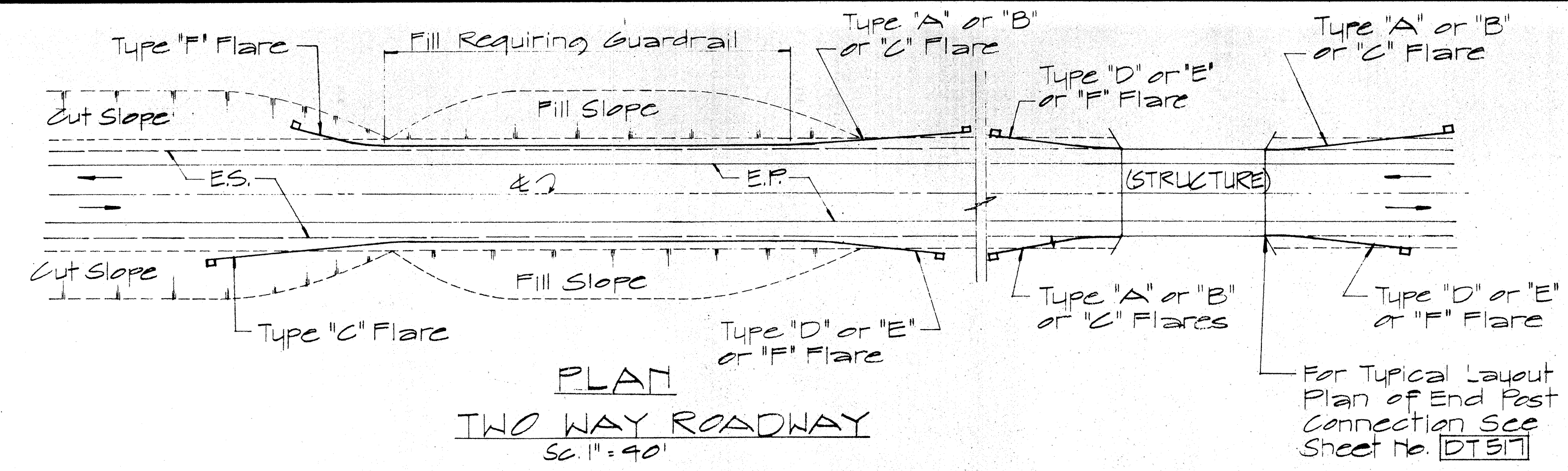
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN
NOV. 1968
SHEET No. 13 OF 19 SHEETS DT 500

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	198C-01-71	1973	45	51

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



APPROVAL RECOMMENDED:
E. I. Tanaka 12/23/69
TRAFFIC ENGINEER DATE

APPROVED:
W. B. [Signature] 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

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

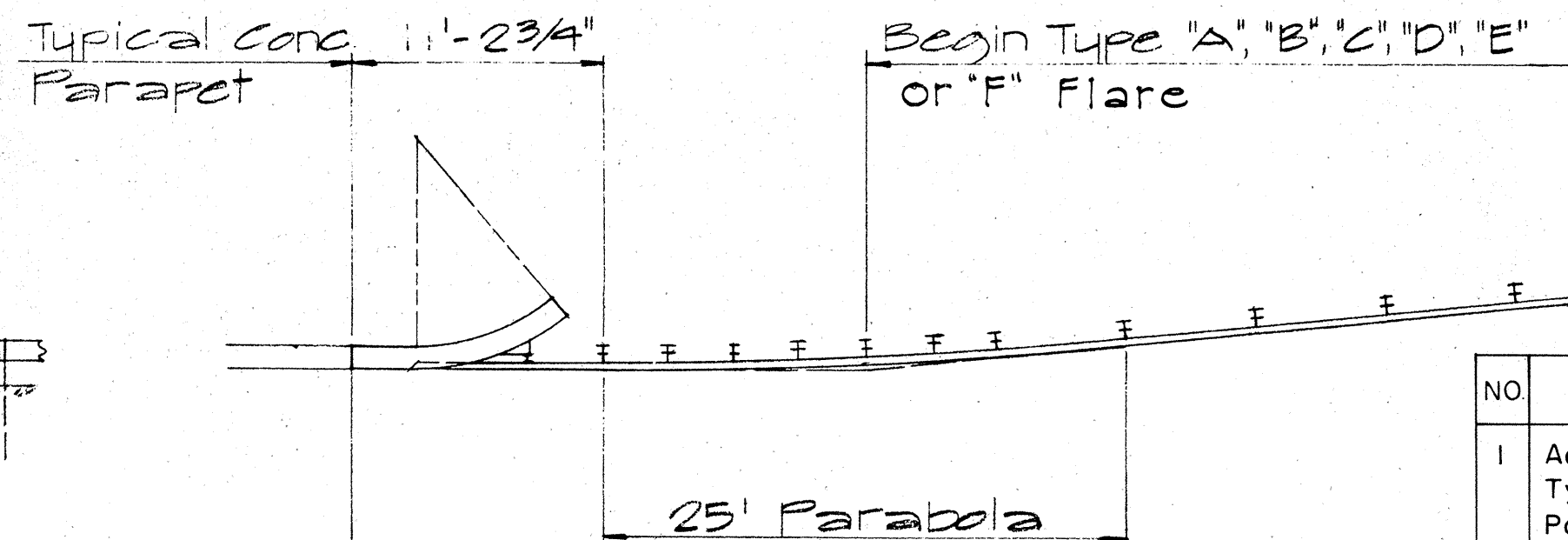
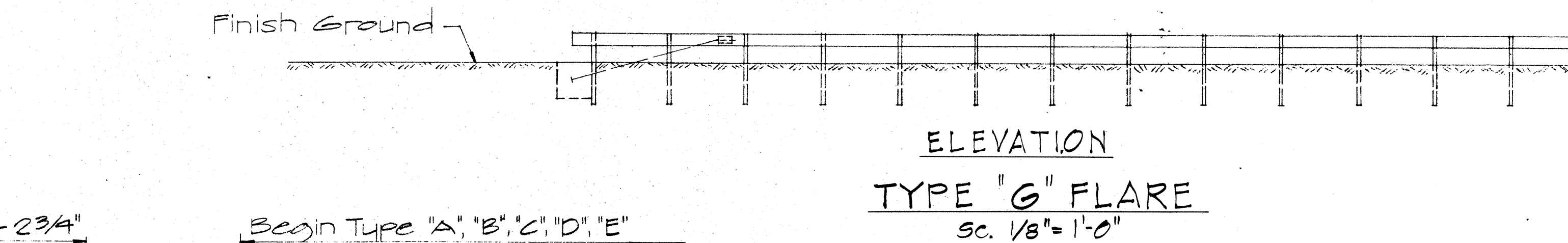
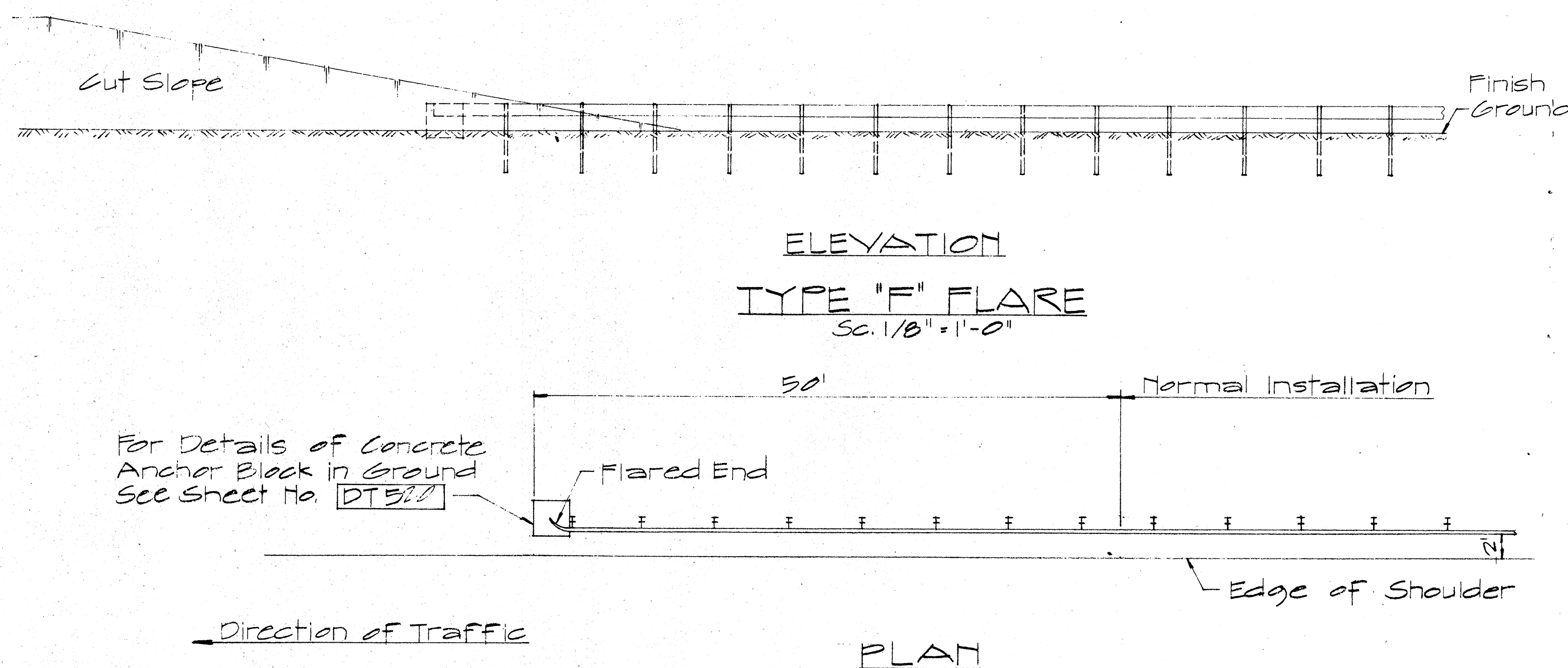
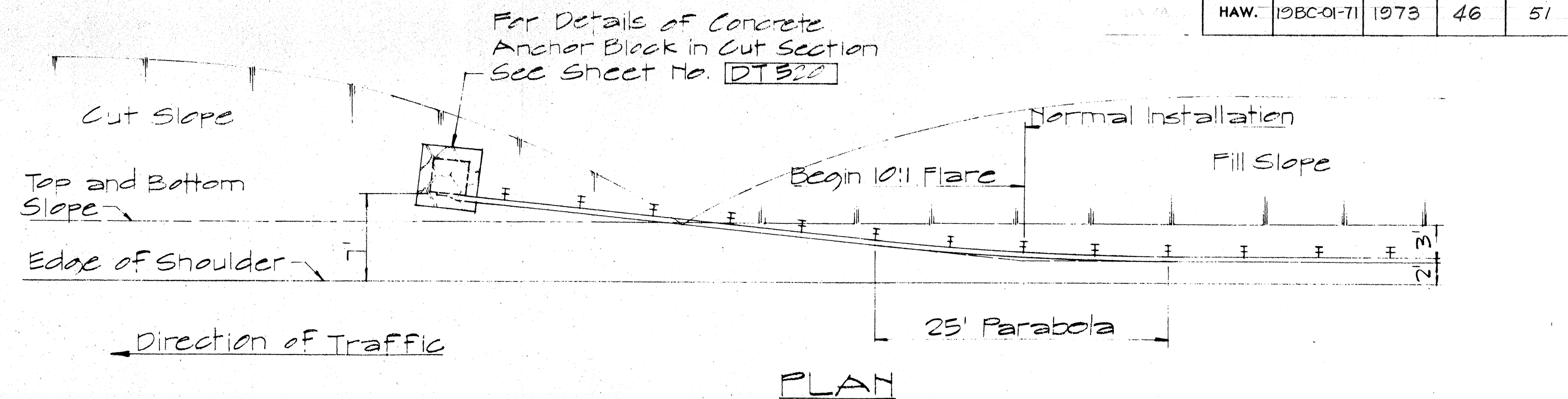
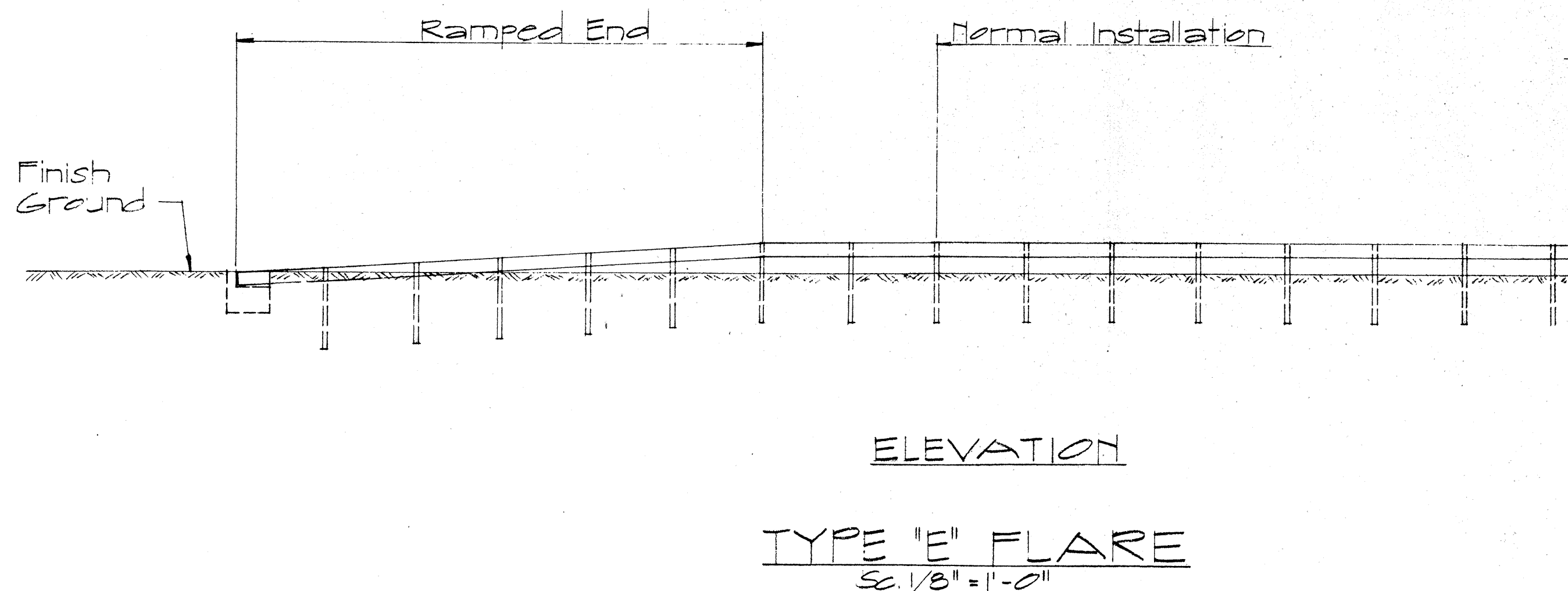
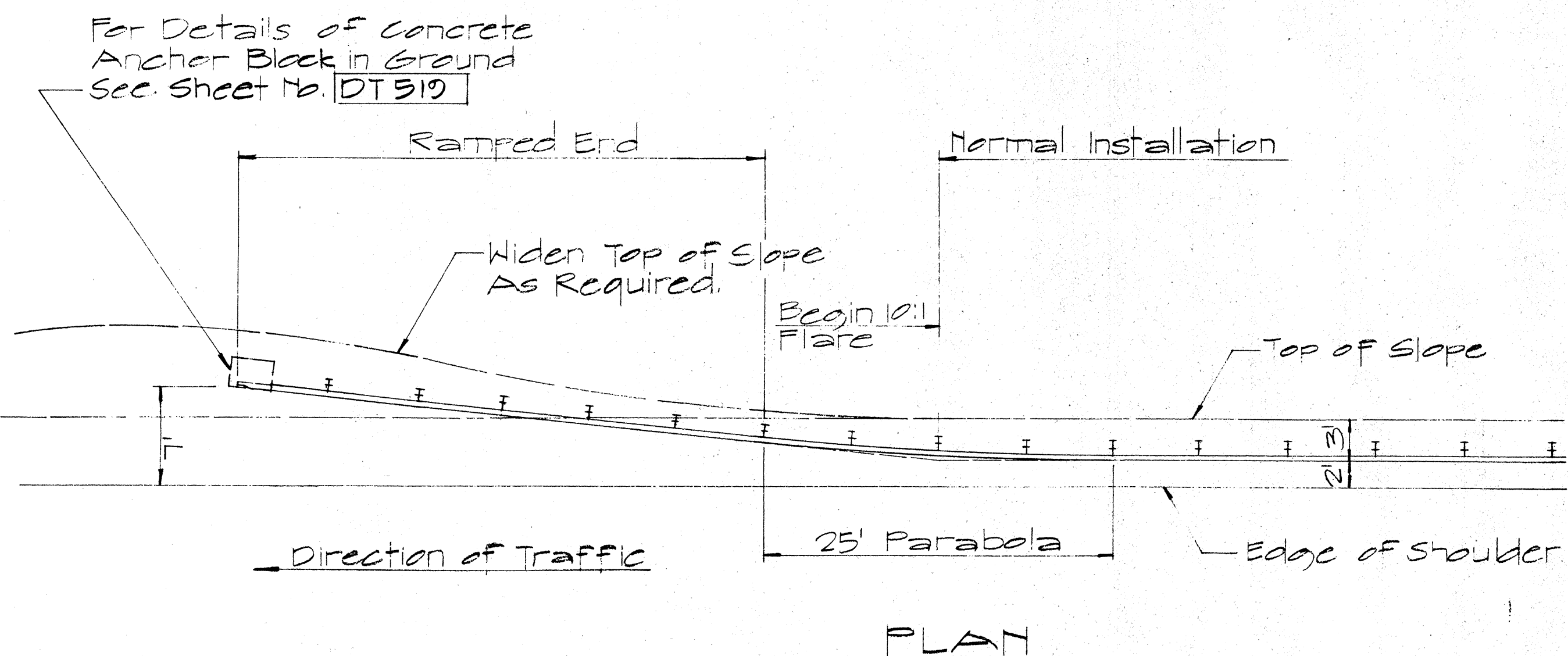
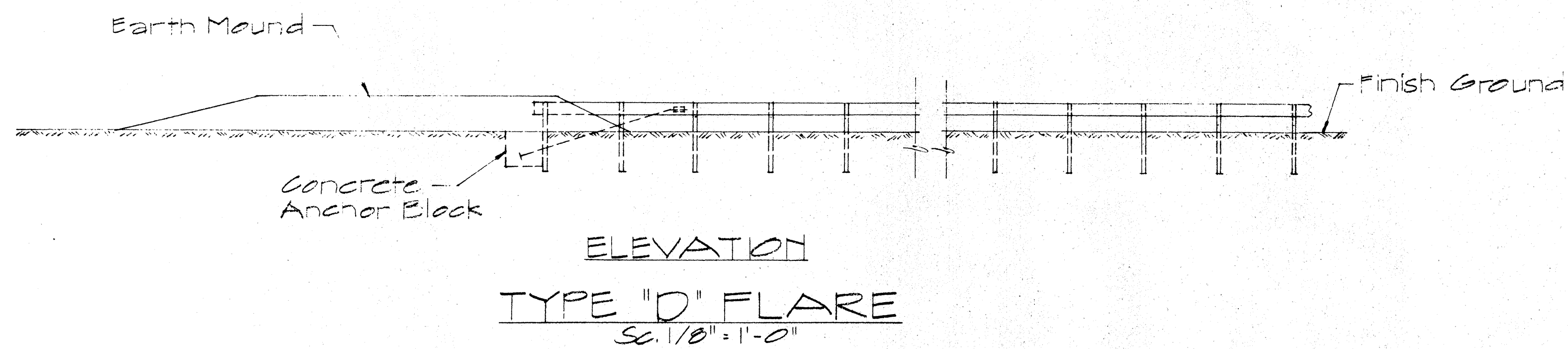
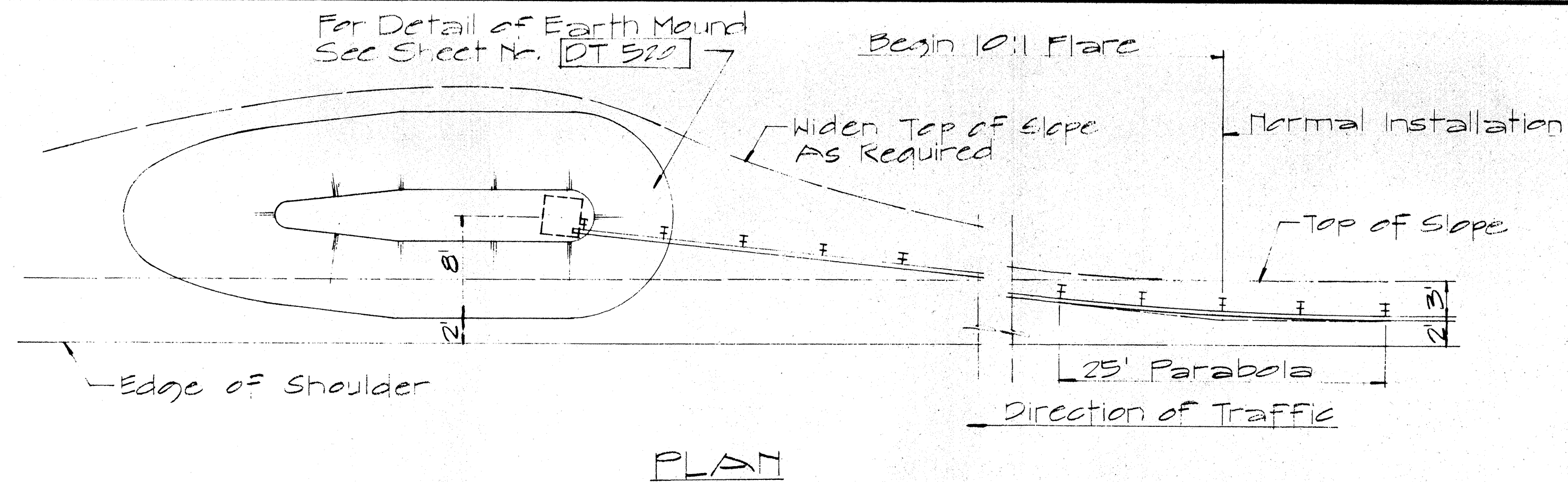
NO.	REVISION	APPROVED BY	DATE

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. 15 OF 19 SHEETS DT 516

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	19BC-01-71	1973	46	51



TYPICAL LAYOUT PLAN OF END POST CONNECTION

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

APPROVAL RECOMMENDED: Erich Tanaka 12/23/69
TRAFFIC ENGINEER DATE

APPROVED: [Signature] 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.C.	4-12-72

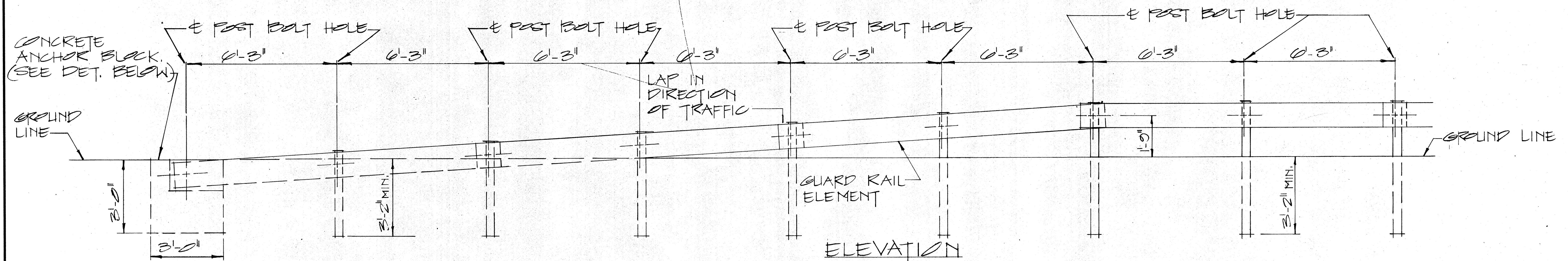
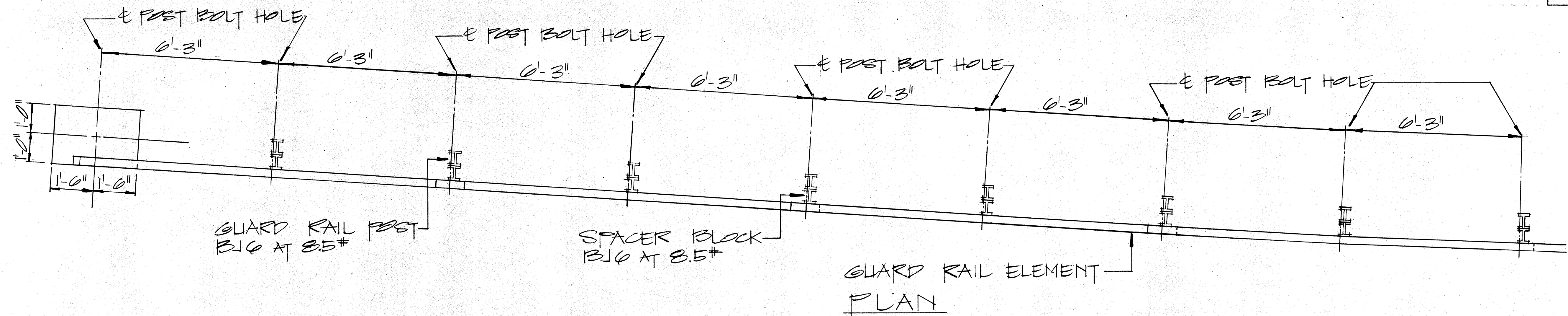
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
TRAILING END
FLARE - ONE & TWO
WAY ROADWAY

Scale: As Noted April 1969

SHEET No. 16 OF 19 SHEETS DT 517

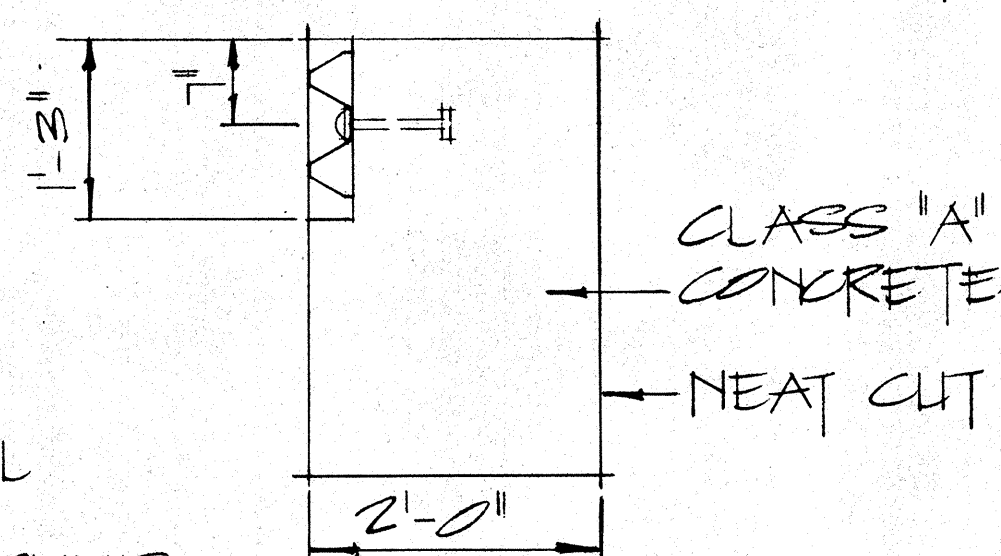
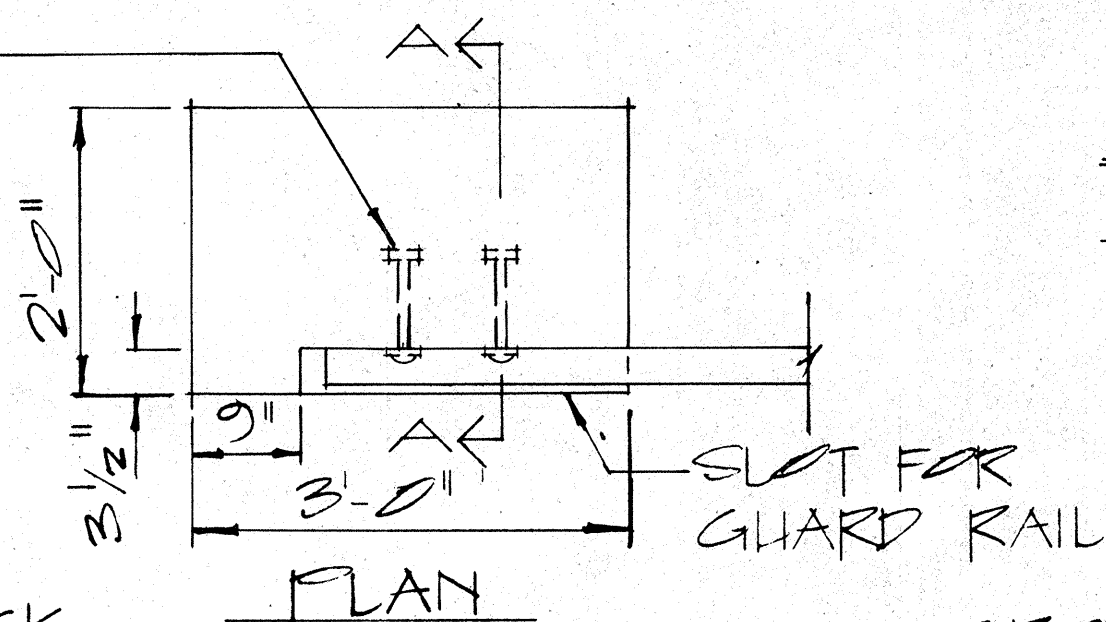
STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	0BC-01-71	1973	47	51



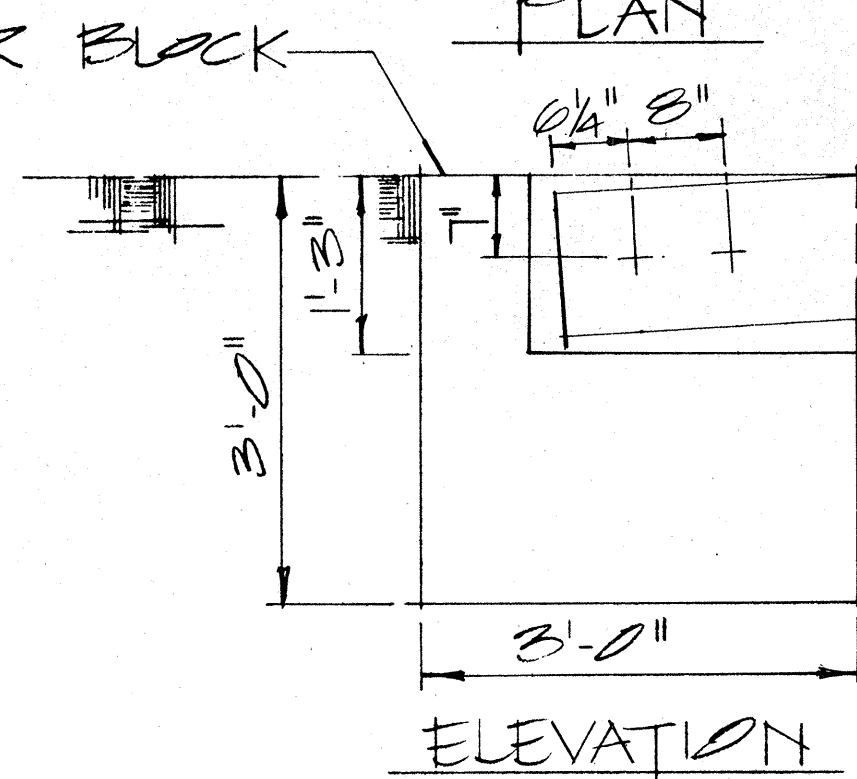
RAMP END ANCHORAGE

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

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: $\frac{3}{4}'' = 1'-0''$

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

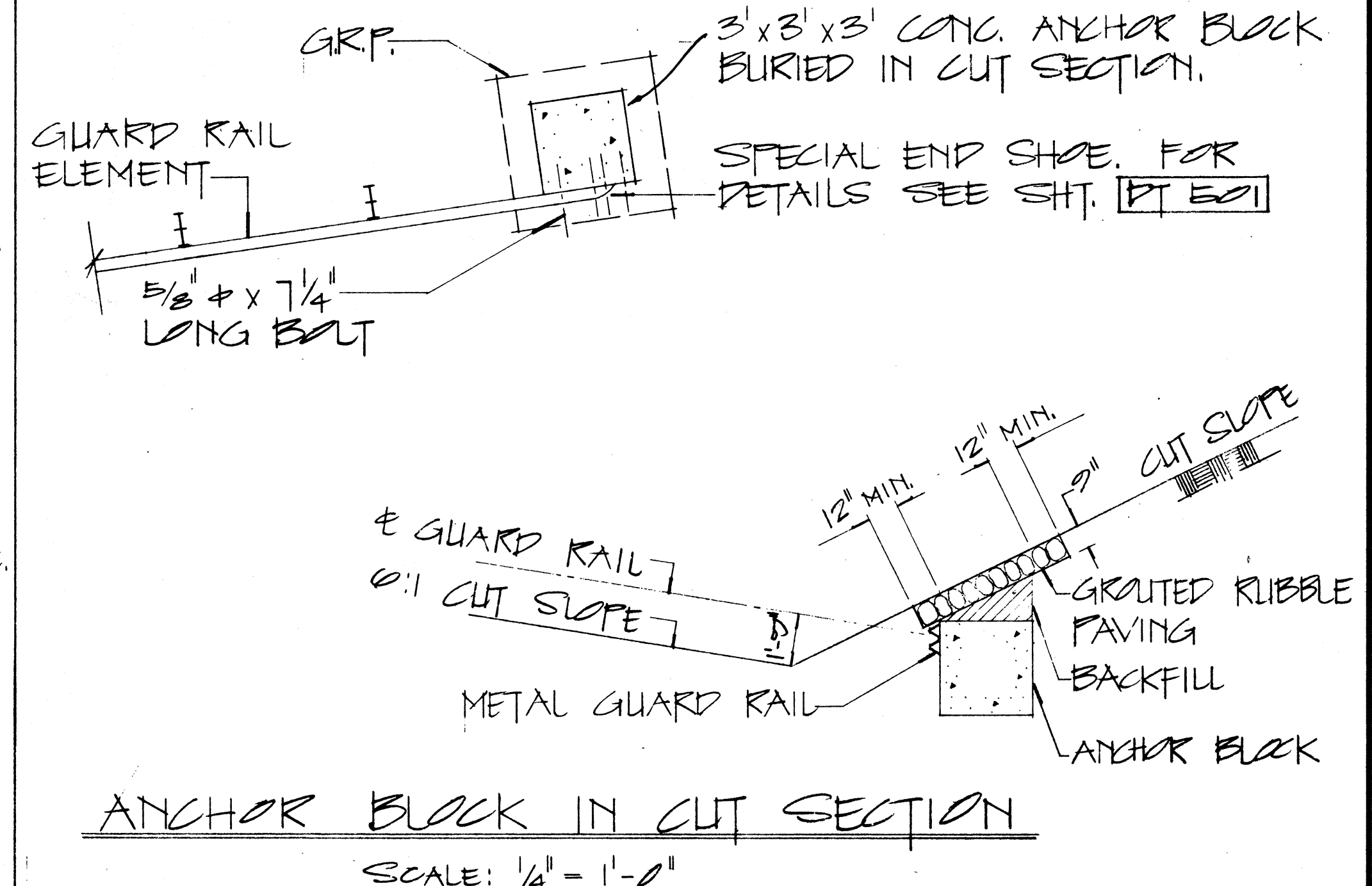
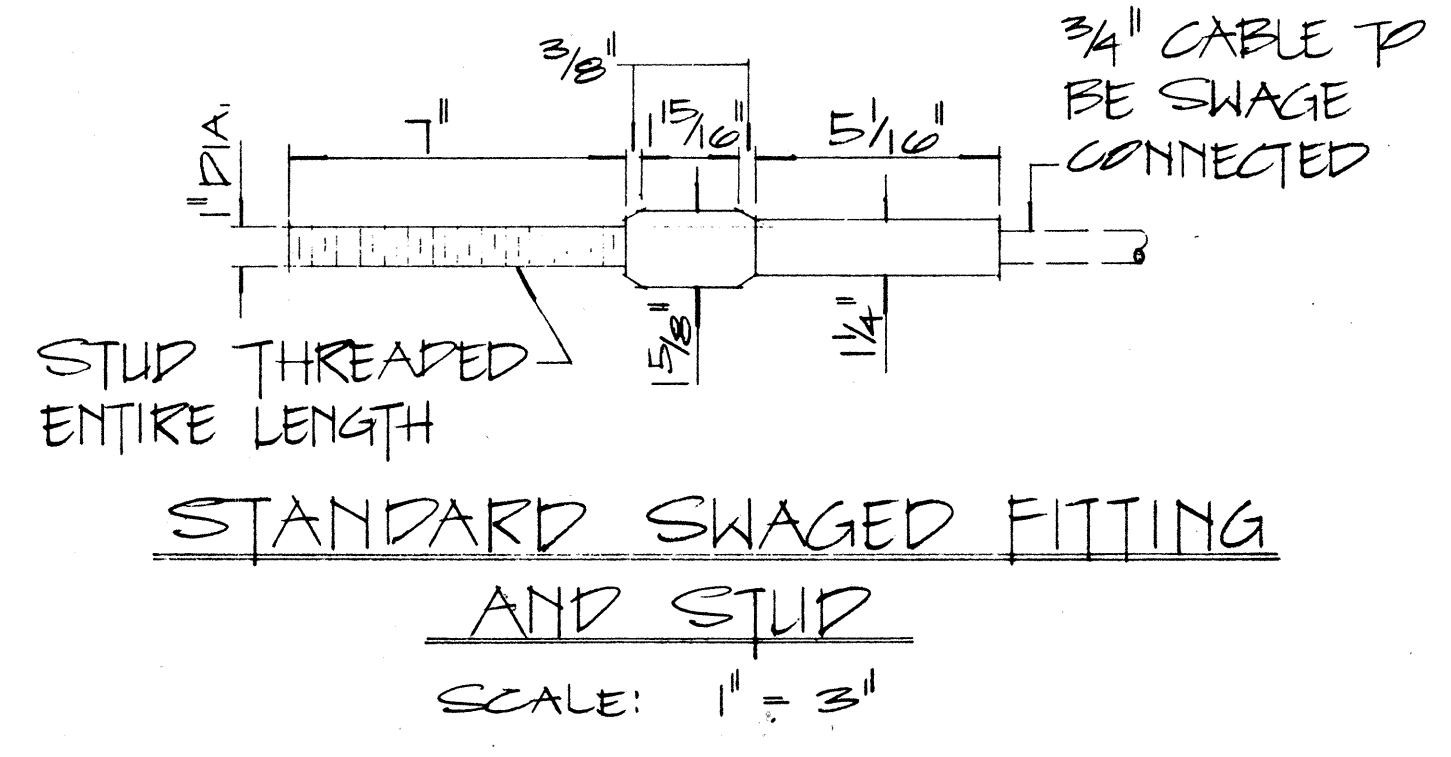
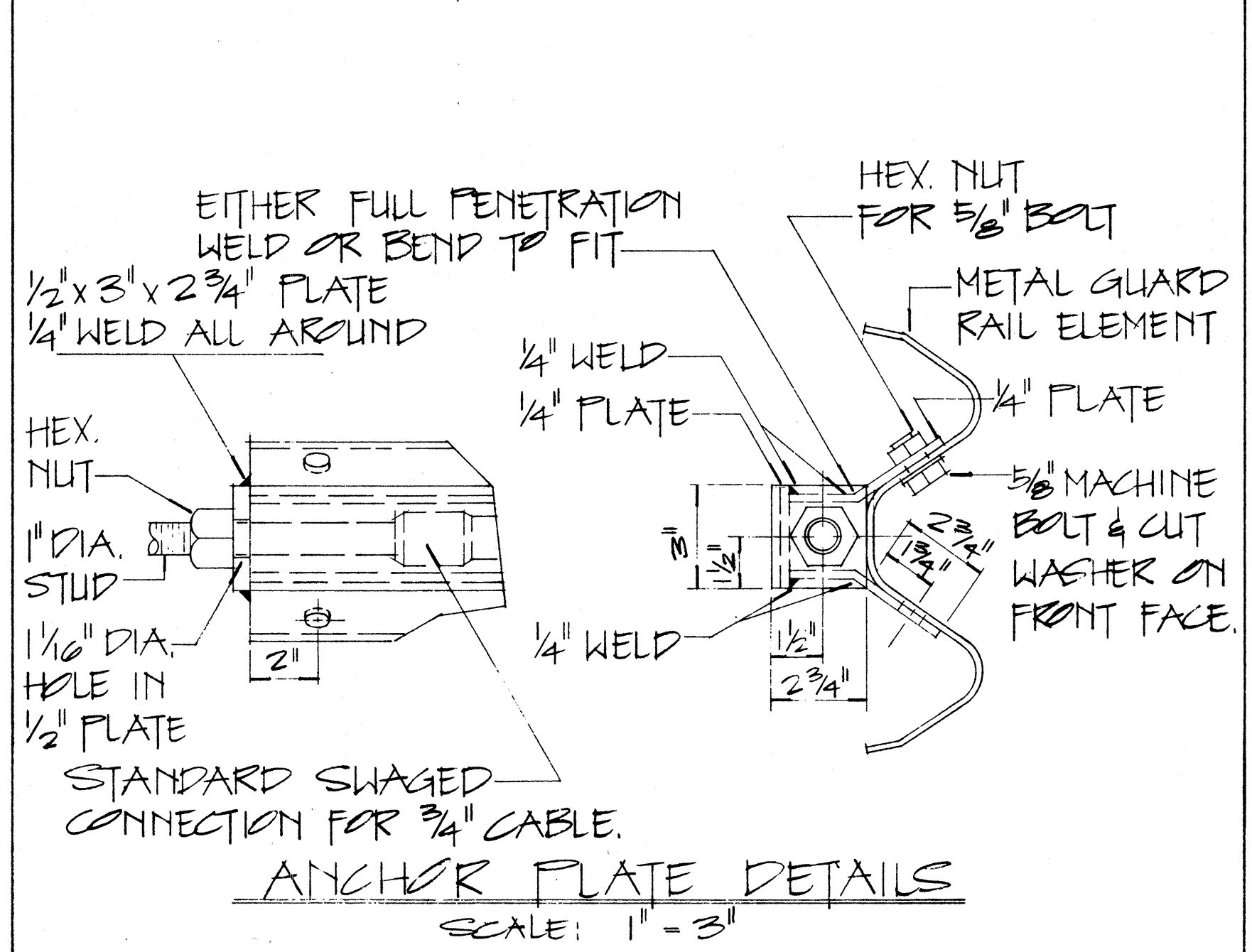
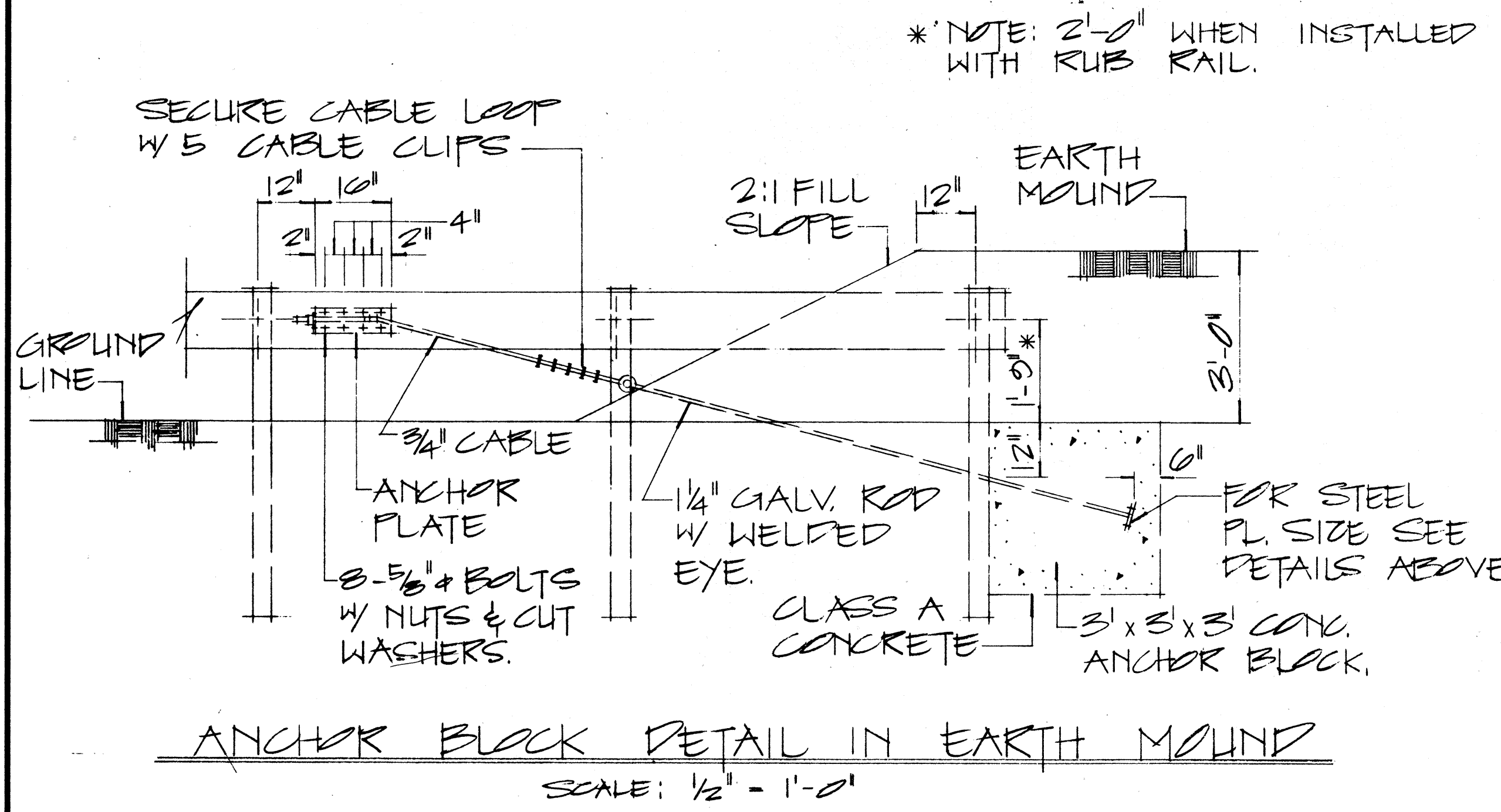
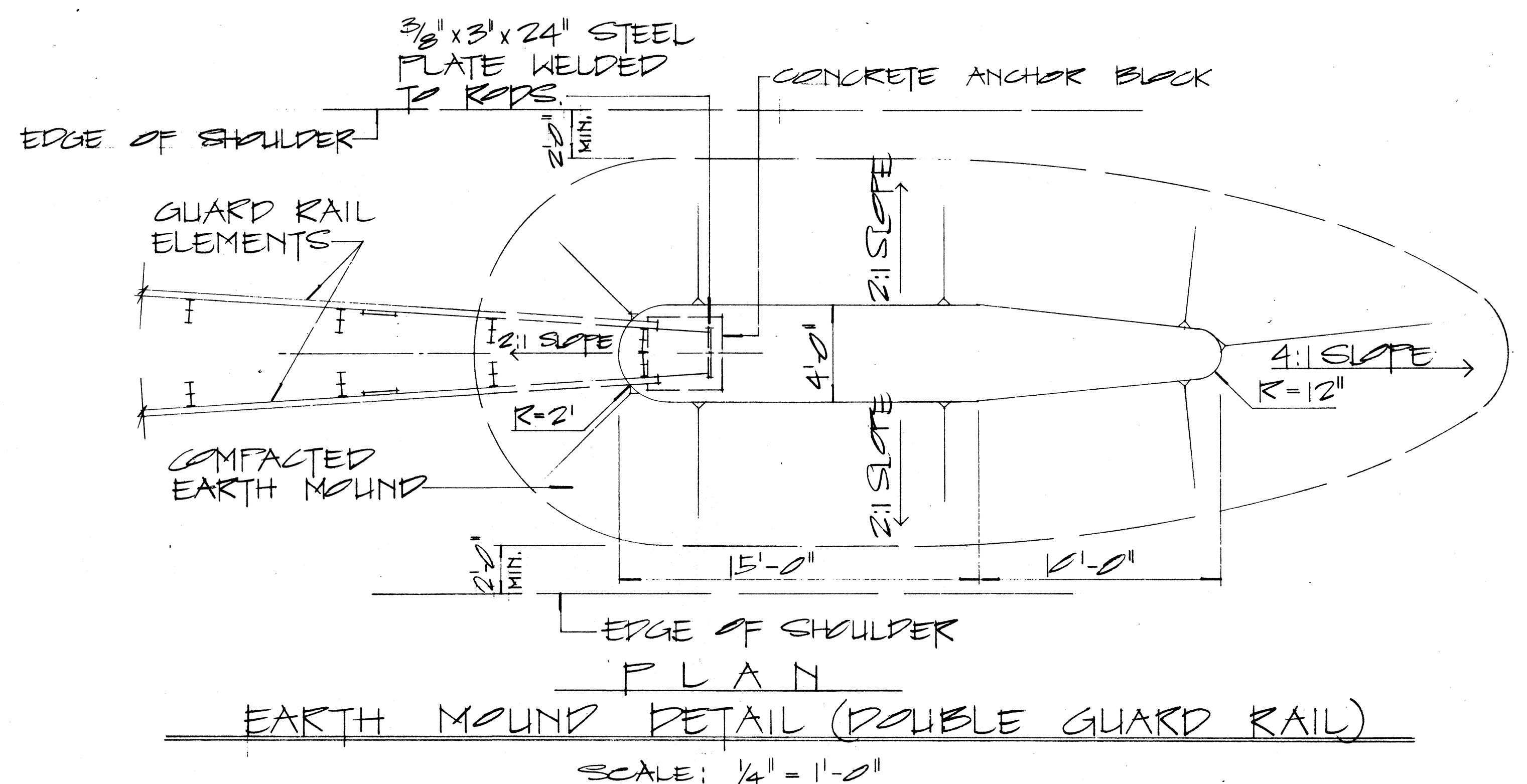
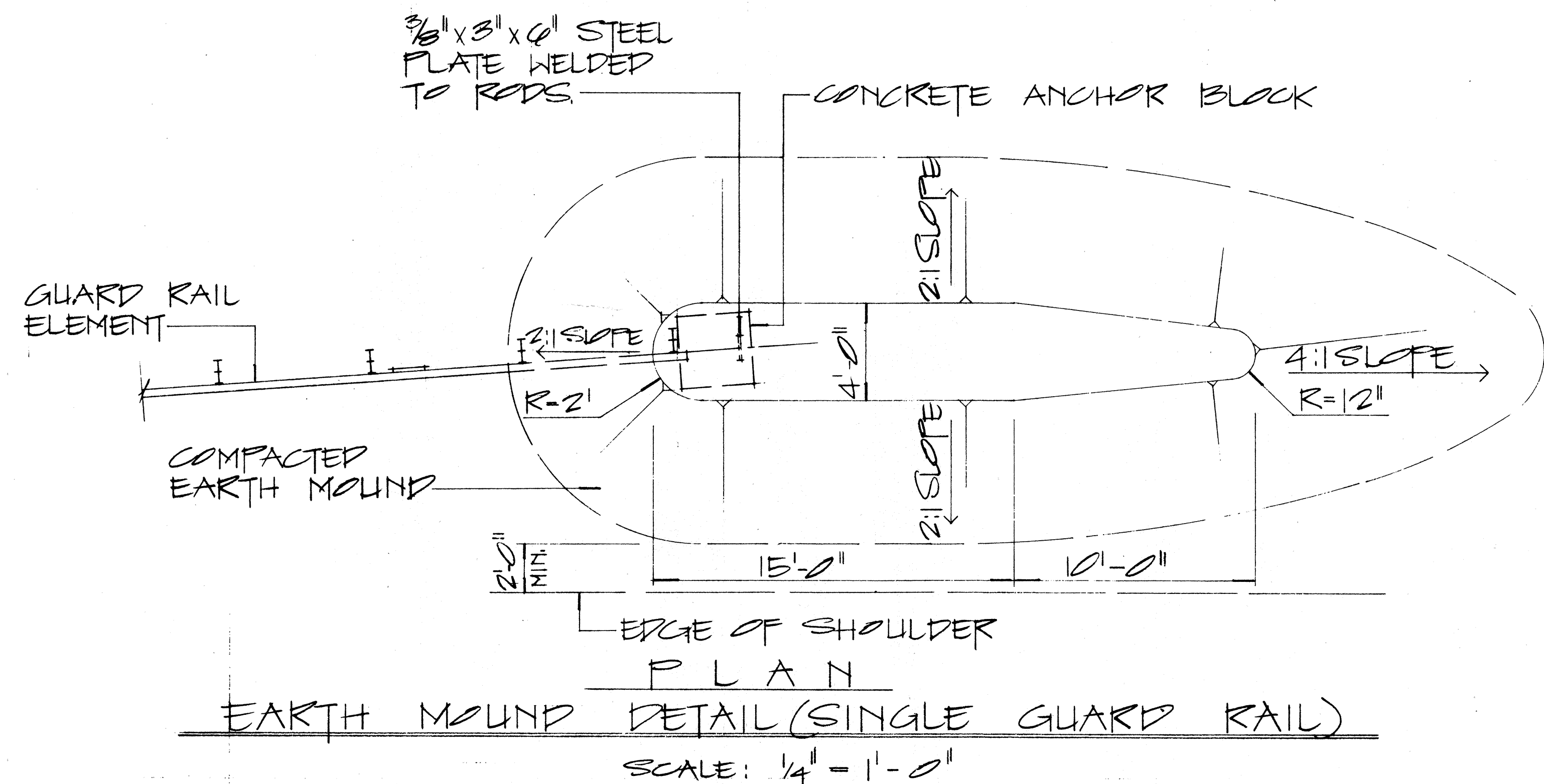
APPROVED:
John J. J. J.
 ASSISTANT CHIEF, ENGINEERING
 12-30-69
 DATE

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. 17 OF 19 SHEETS DT510

STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW.	198C-0171	1973	48	51



APPROVAL RECOMMENDED: *E. Tanaka* 12/22/69 DATE

TRAFFIC ENGINEER

APPROVED: *W. J. J. J.* 12-30-69 DATE

ASSISTANT CHIEF, ENGINEERING

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DETAILS

SCALE: AS SHOWN

SHEET No. 18 OF 19 SHEETS

DATE: _____

DESIGNED BY: _____

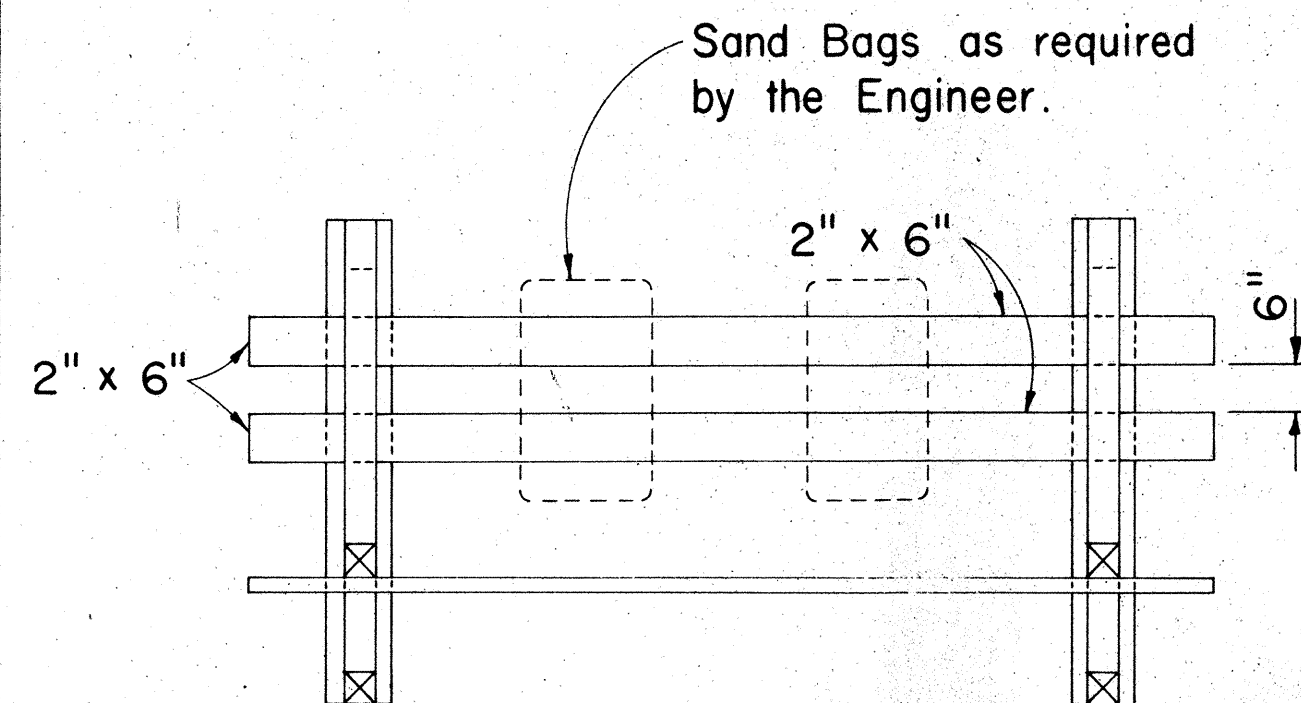
CHECKED BY: _____

NOTED BY: _____

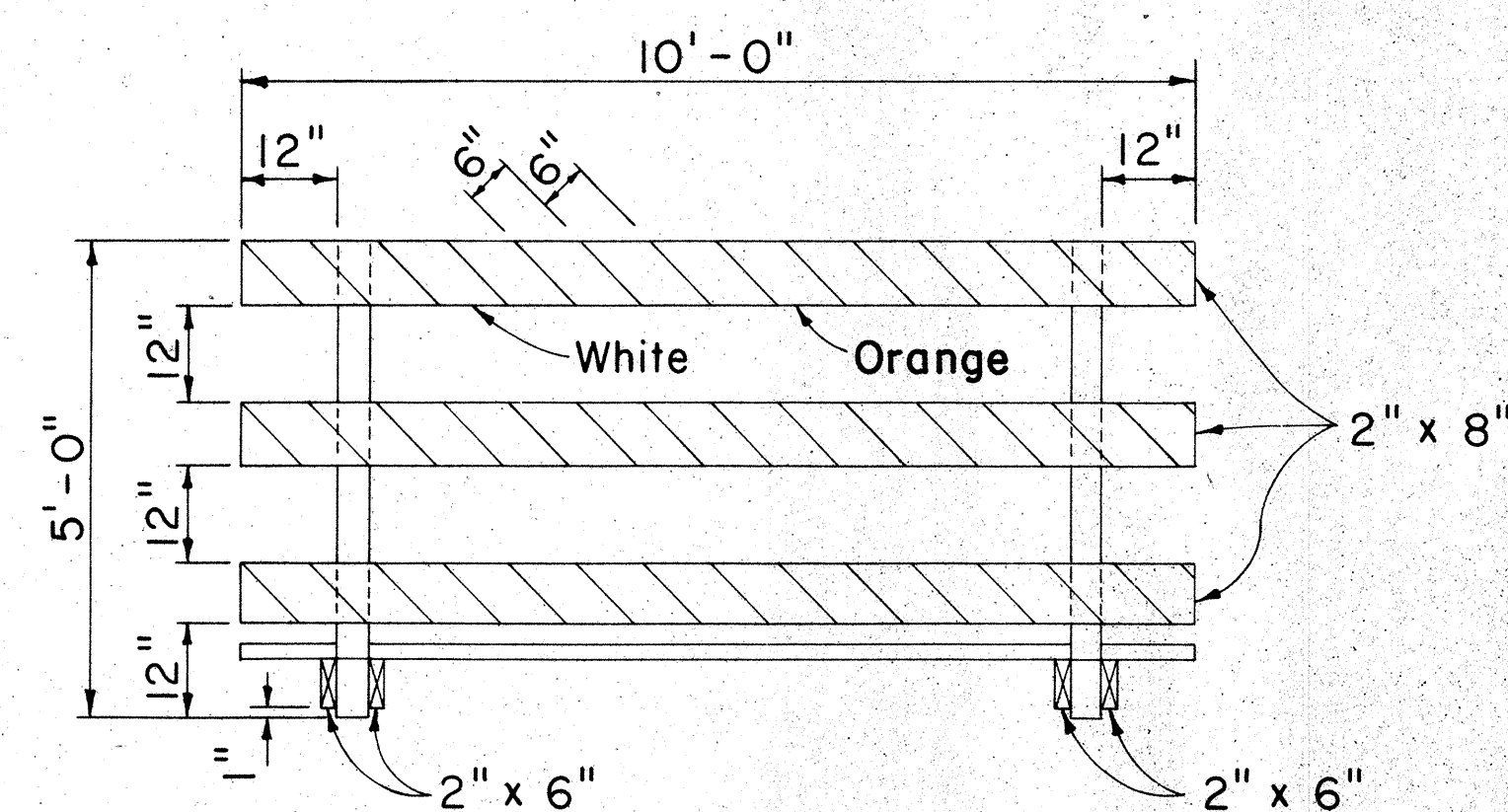
ORIGINAL PLAN

NOTE BOOK

No. _____



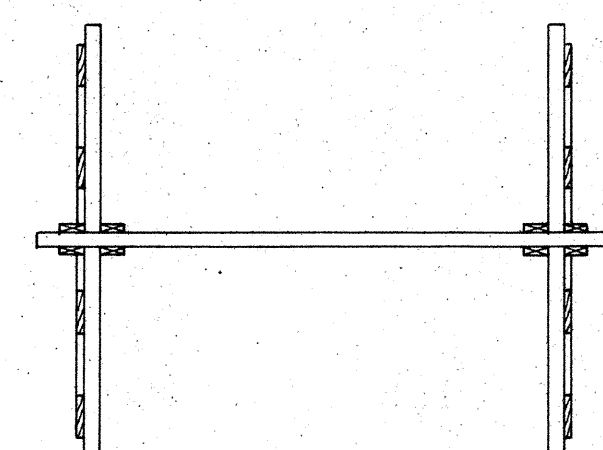
PLAN VIEW



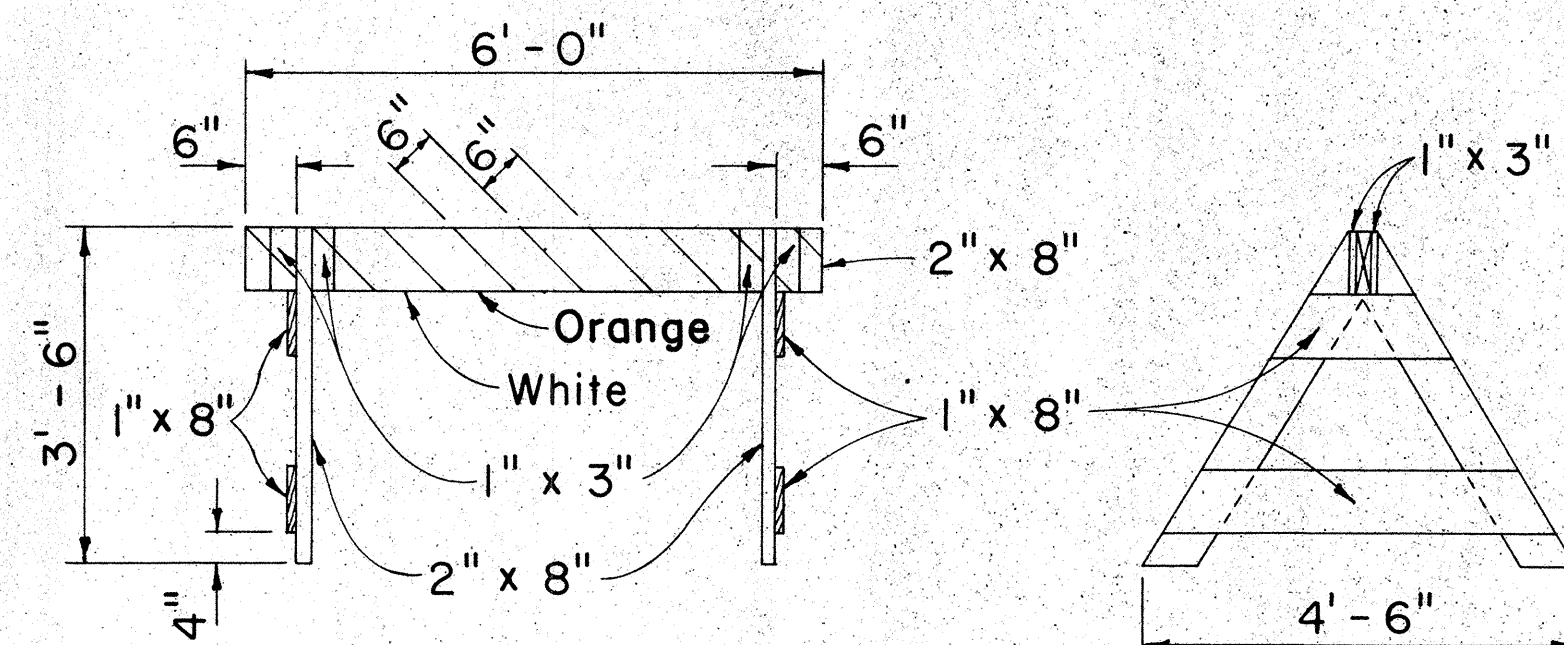
FRONT VIEW

CLASS I BARRICADE

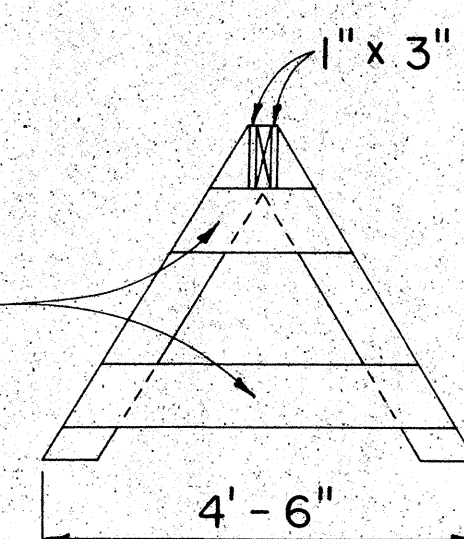
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW



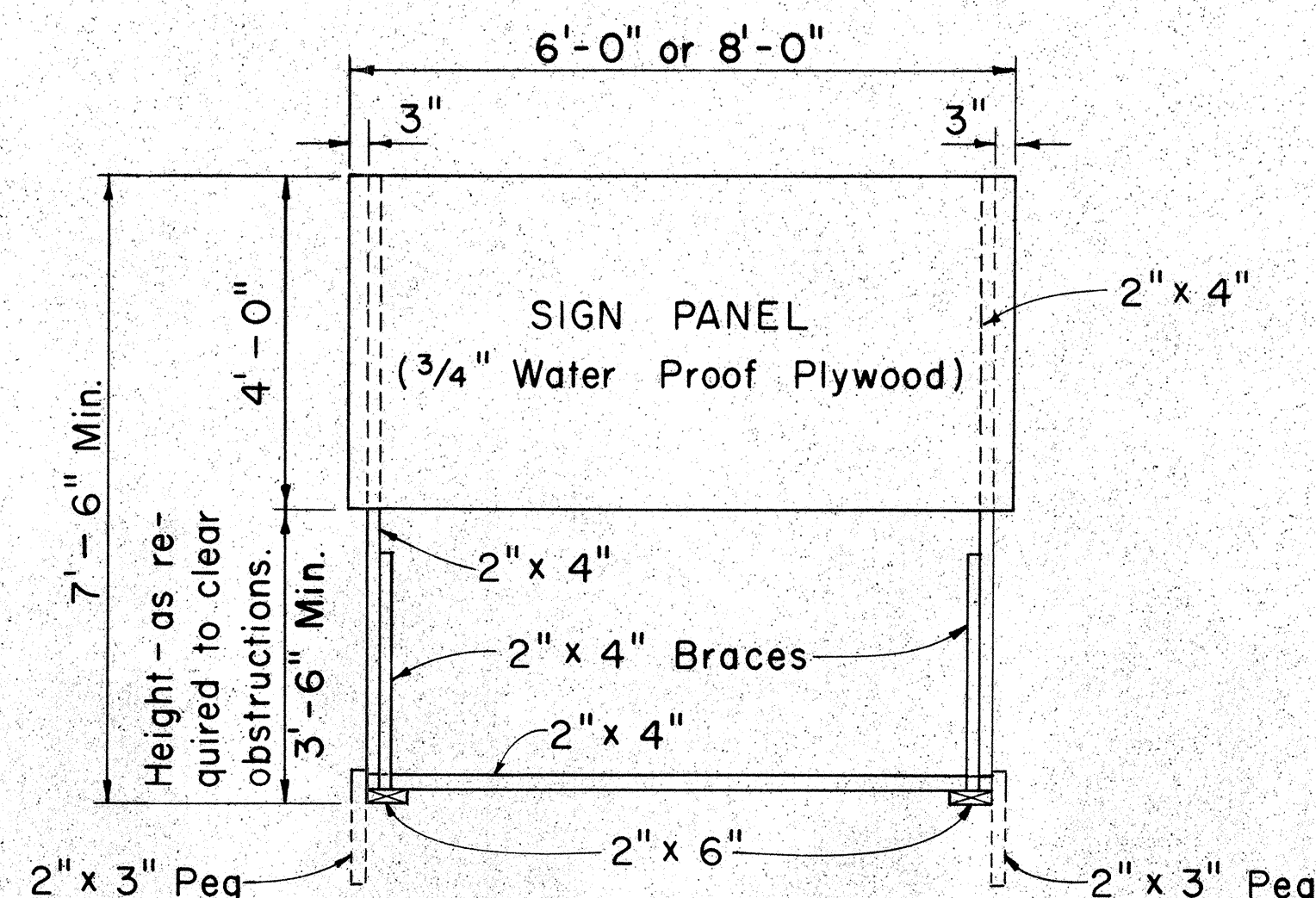
END VIEW

CLASS II BARRICADE

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

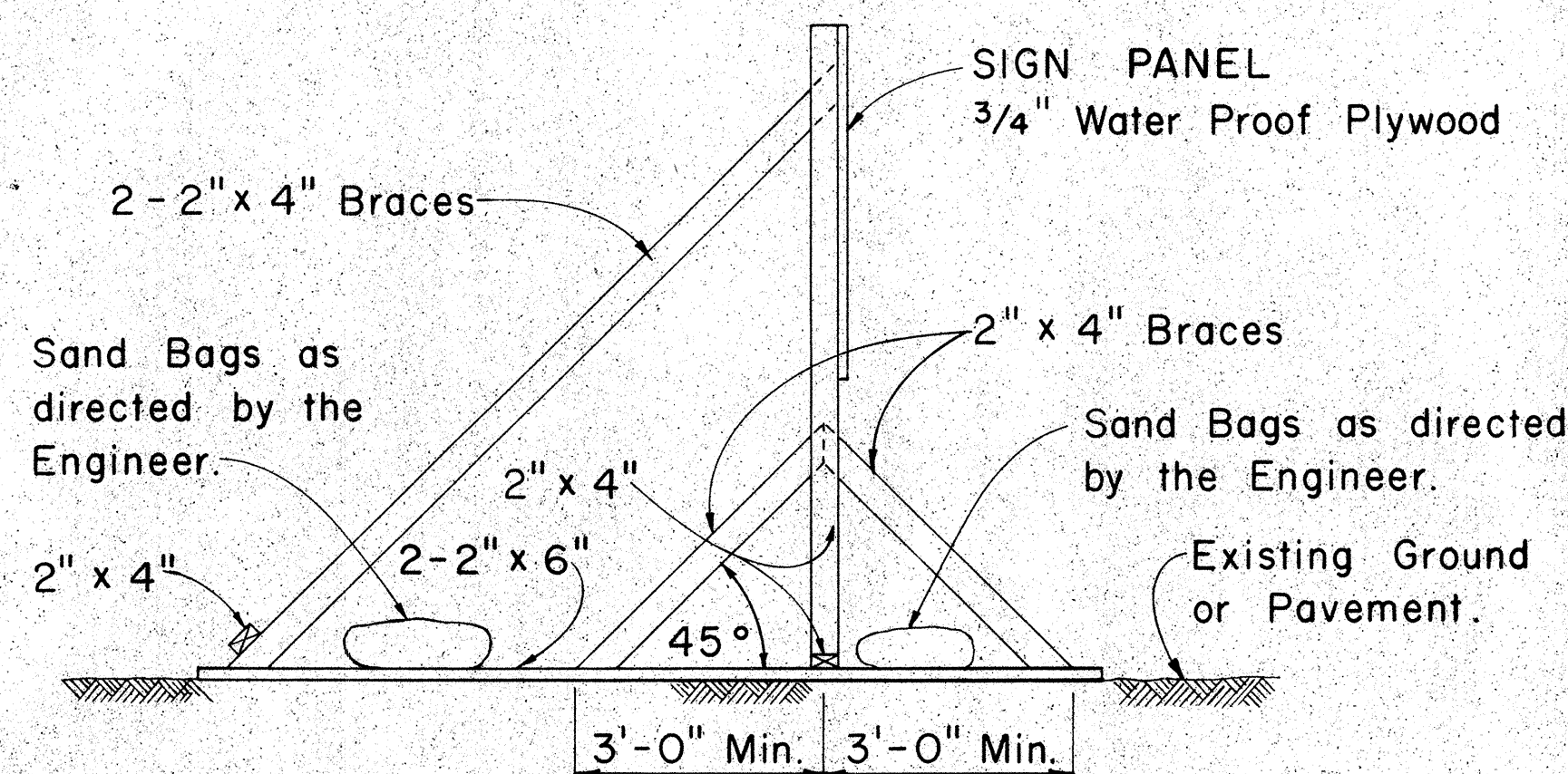
GENERAL NOTES

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 orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized.



FRONT VIEW

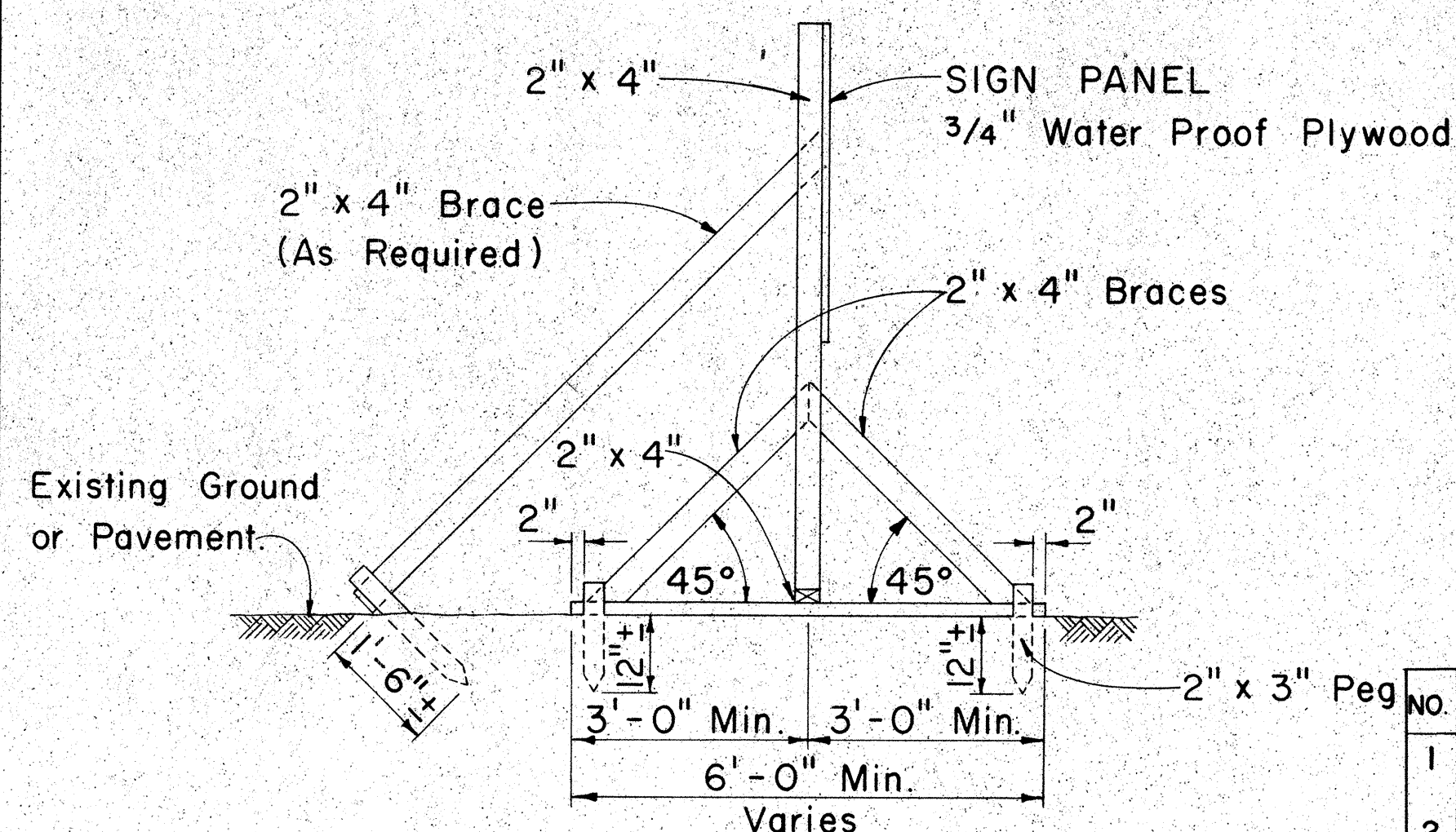
Scale: 1/2" = 1'-0"



SIDE VIEW

(SIGN FRAME WEIGHTED DOWN)

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



SIDE VIEW

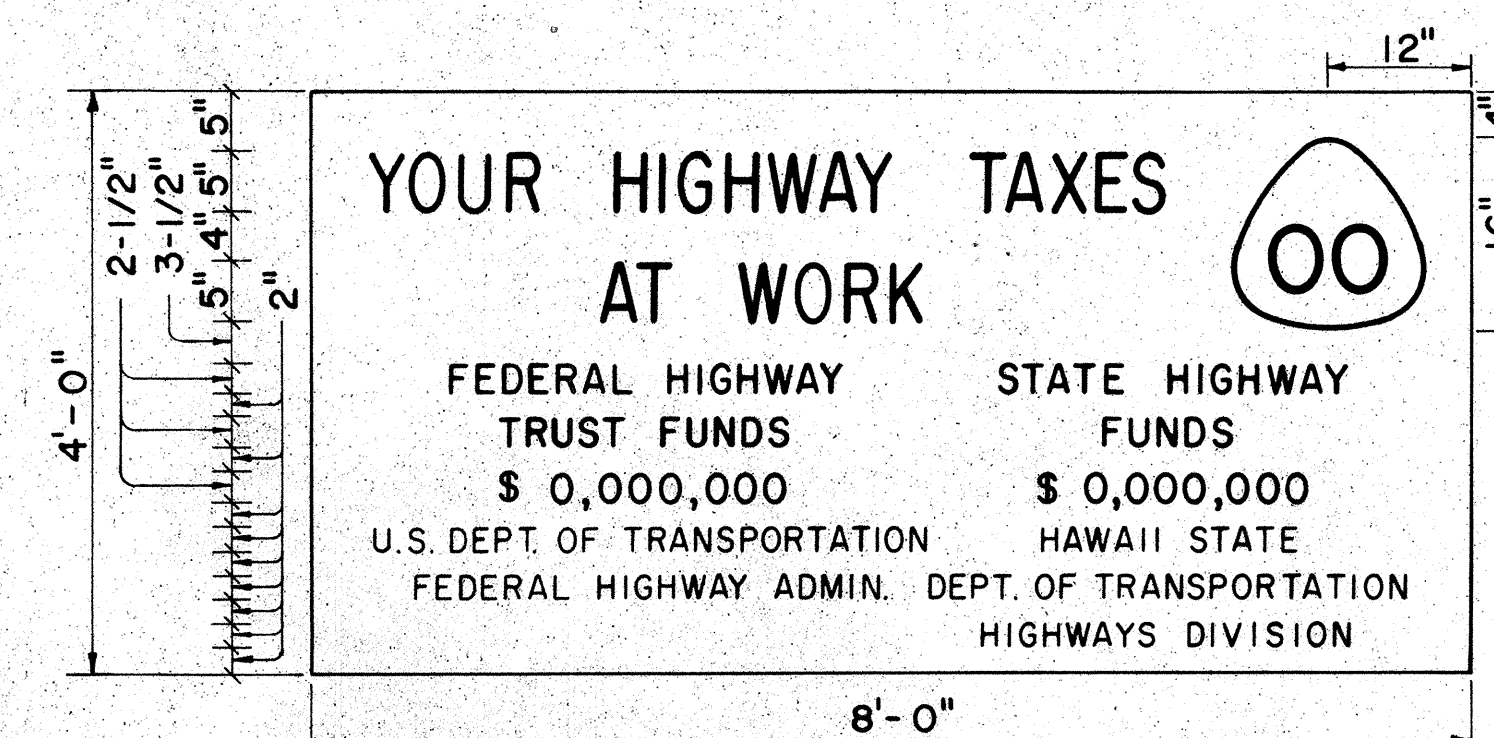
(SIGN FRAME ANCHORED IN GROUND)

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

CONSTRUCTION IDENTIFICATION SIGN

Scale: As Shown

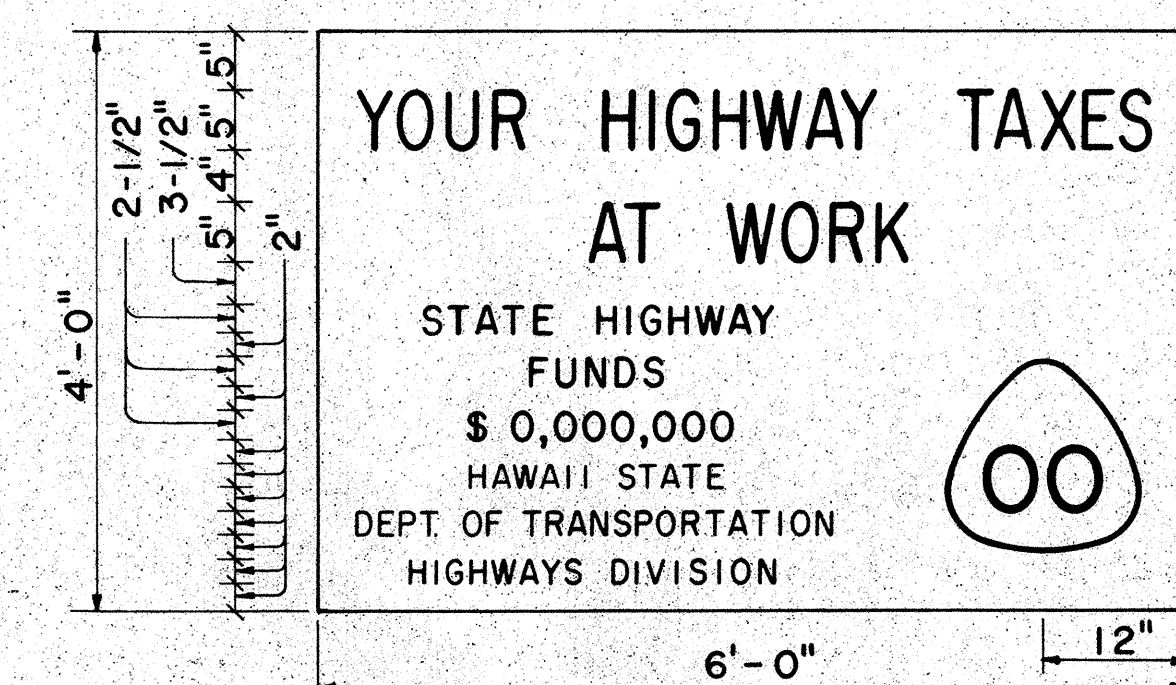
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19BC-01-71	1973	49	51



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" black border around edge of marker.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
12/23/69
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING
12/30/69
DATE

No.	REVISION	APPROVED BY	DATE
1	Delete "Bureau of Public Roads"	H.T.	9-29-70
2	Add Note No.3 for Barricades	H.T.	5-4-71
3	Revise Route Marker	H.T.	4-12-72
4	Revise stripe color for Barricades.	H.T.	10-21-72

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

Scale: As Shown
SHEET No. 19 OF 19 SHEETS DT 801