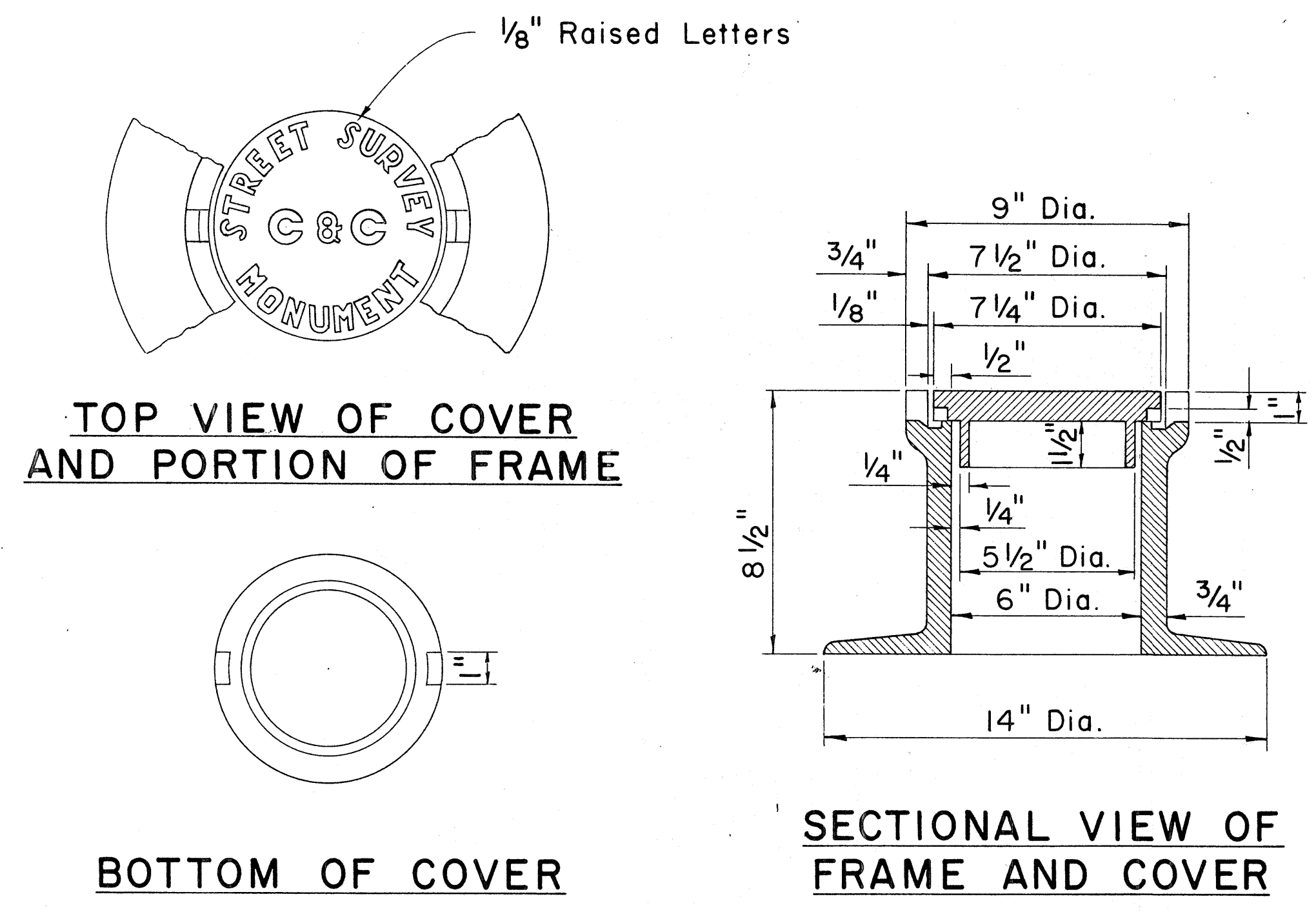
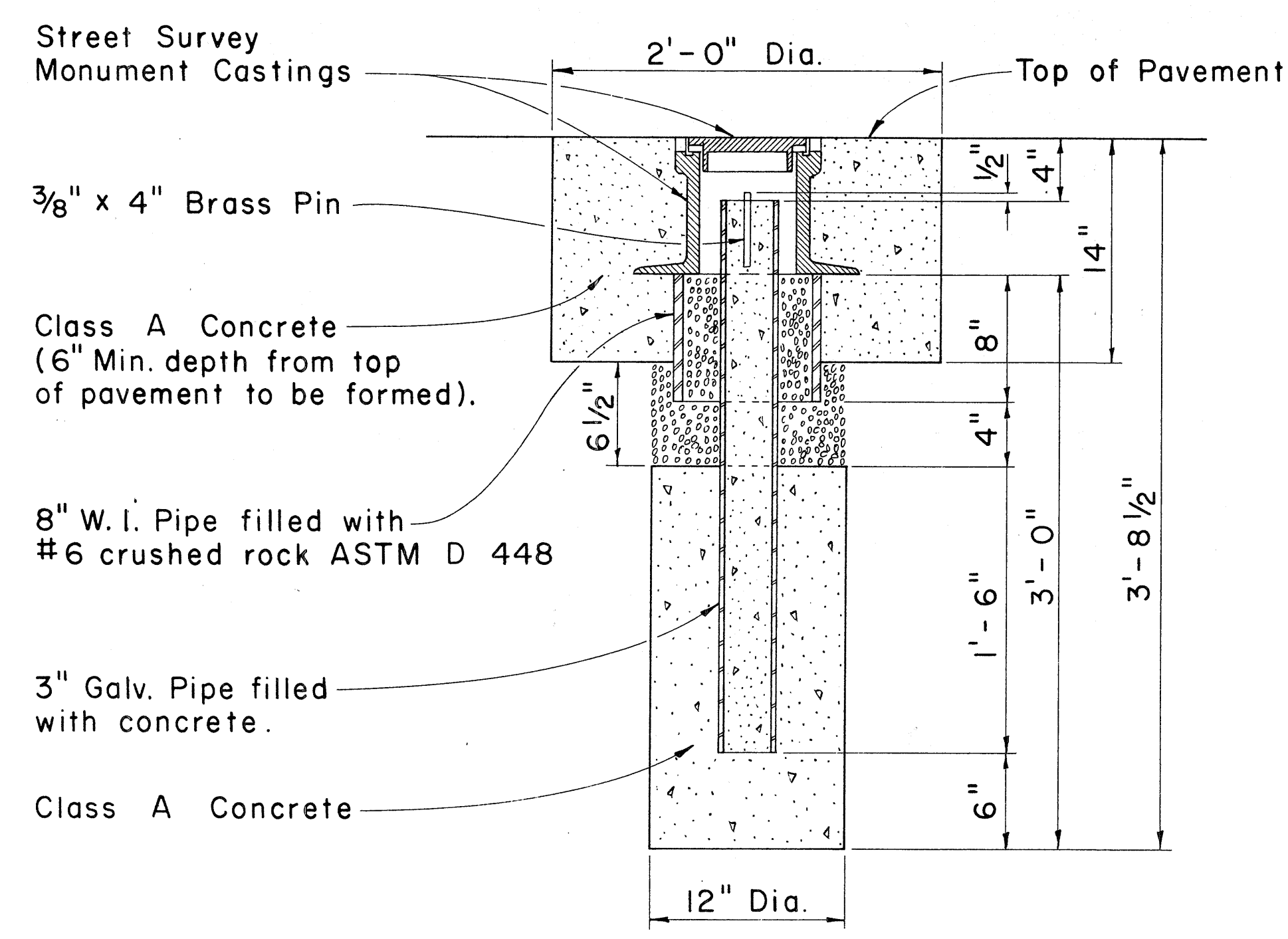


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	32	55

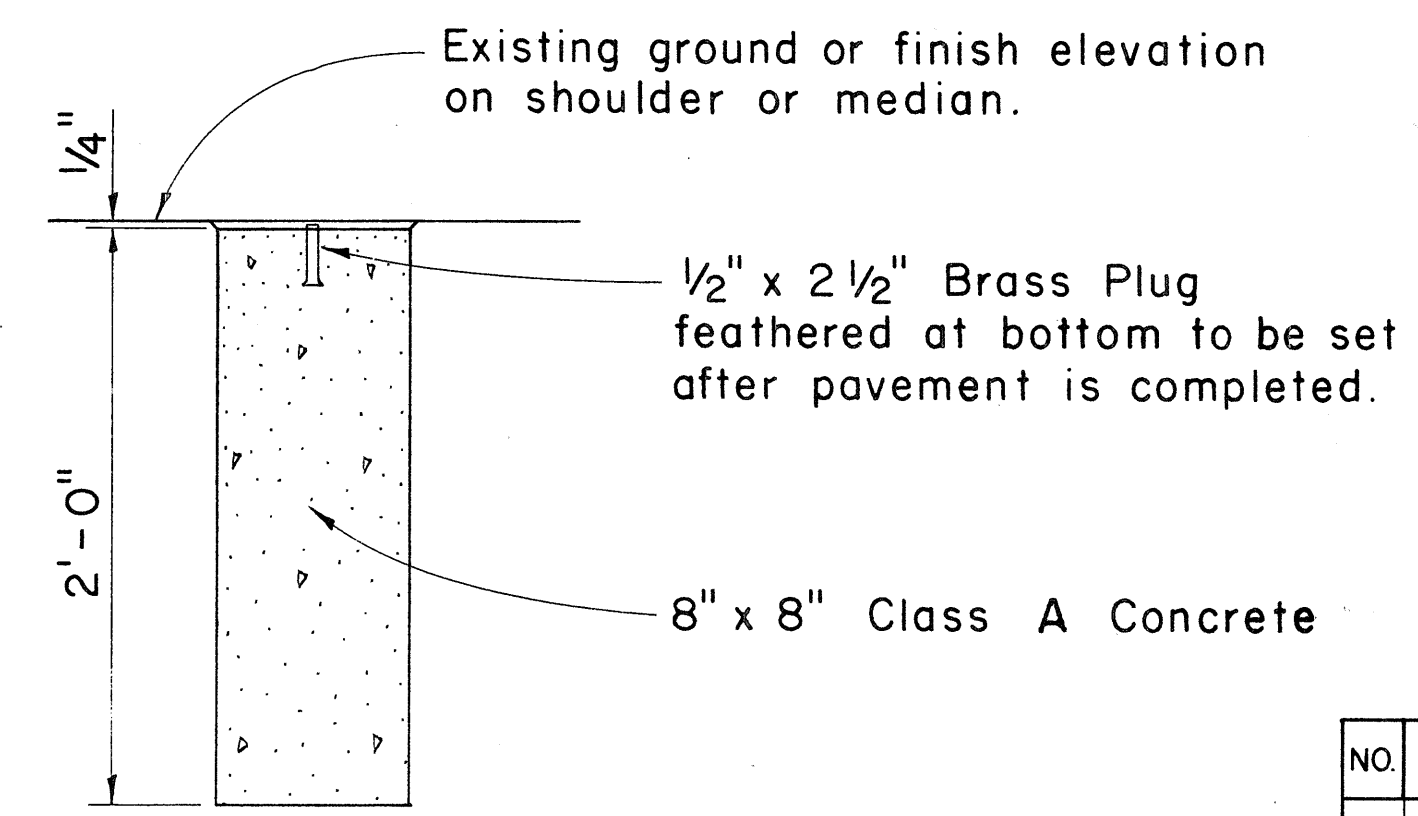


STREET SURVEY MONUMENT CASTINGS
Scale: 3" = 1'-0"



NOTE:
Where the excavation extends into solid rock the depth may be decreased if approved by the Engineer.

STREET SURVEY MONUMENT
Scale: 1 1/2" = 1' - 0"



**DETAIL FOR
C AND REFERENCE
SURVEY MONUMENT**
Scale: 1 1/2" = 1' - 0"

APPROVAL RECOMMENDED:
[Signature] 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:
[Signature] 12-10-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

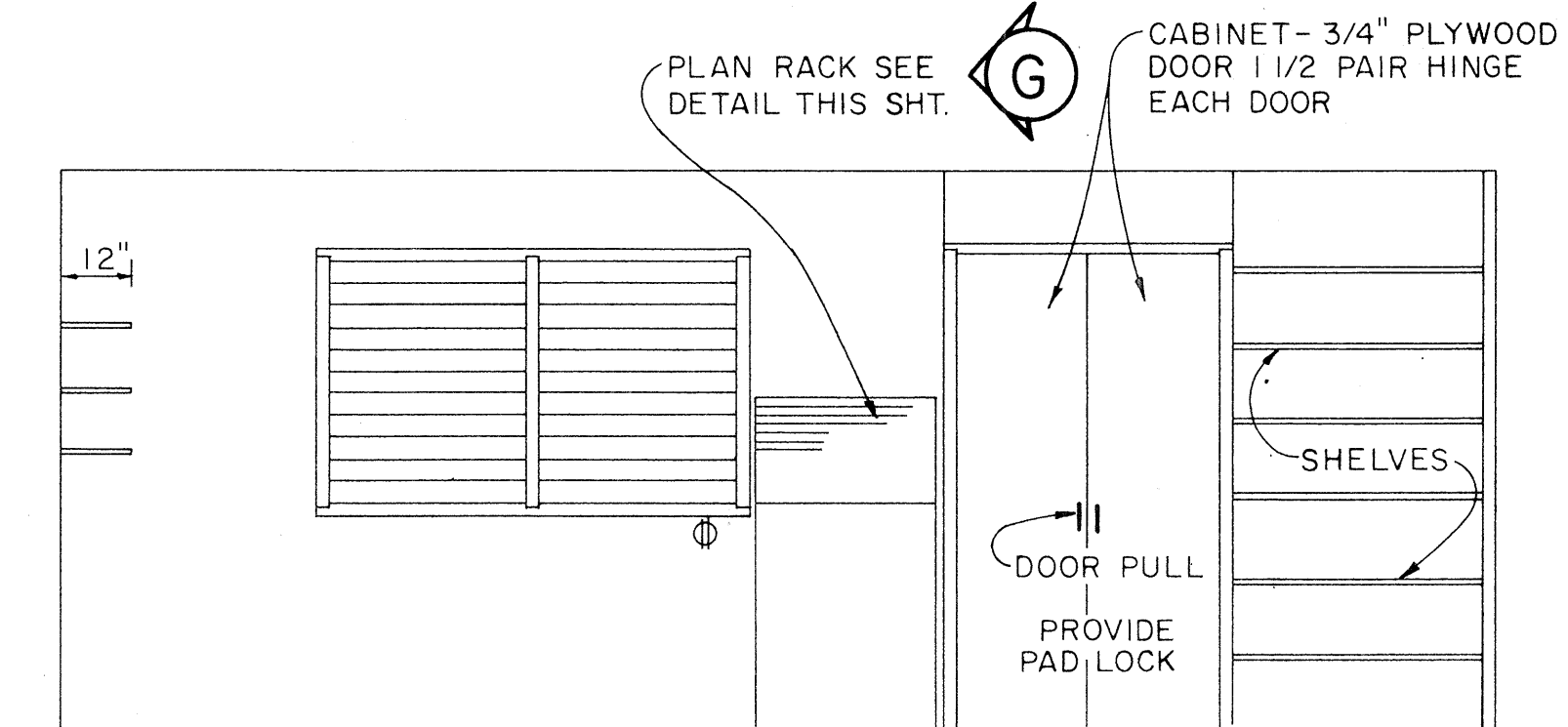
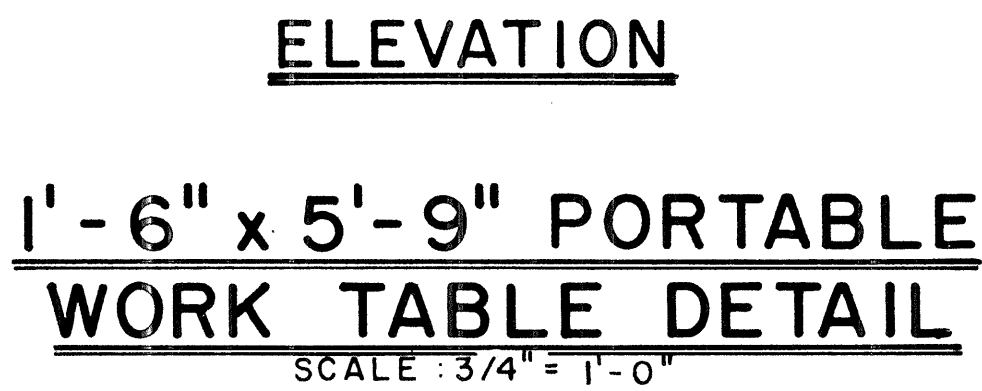
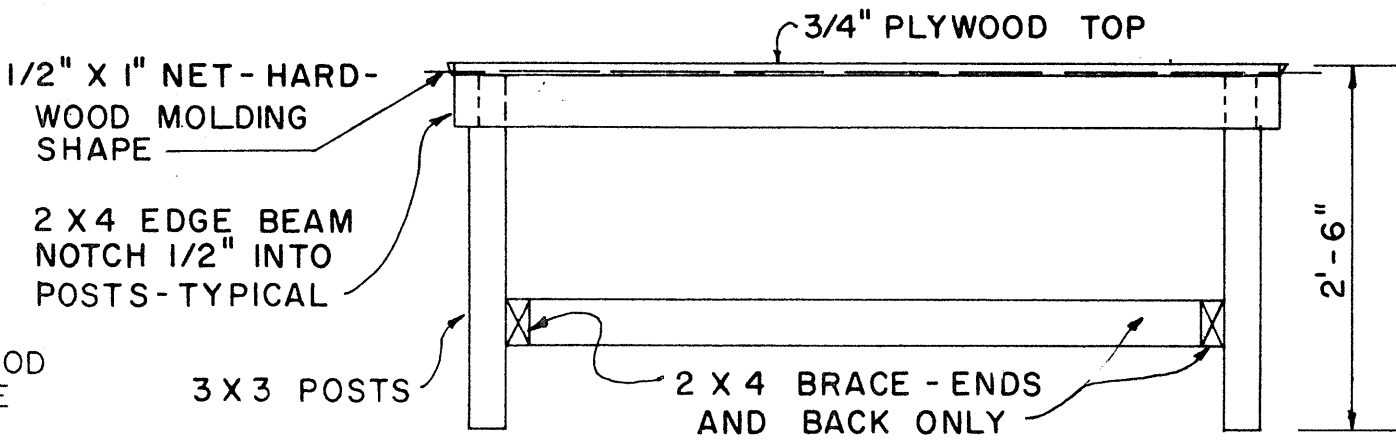
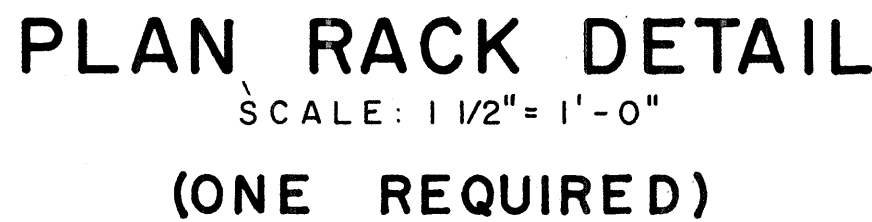
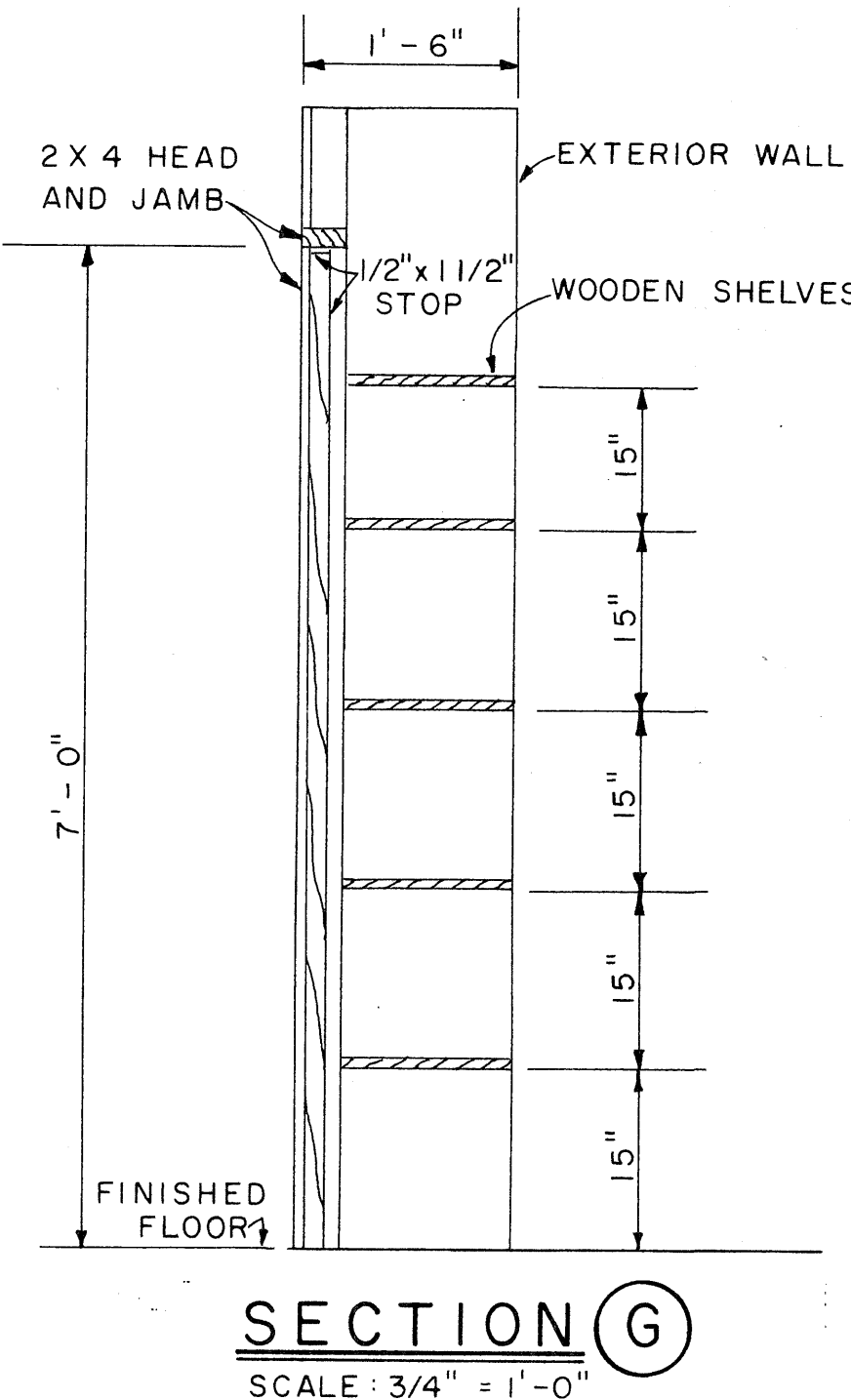
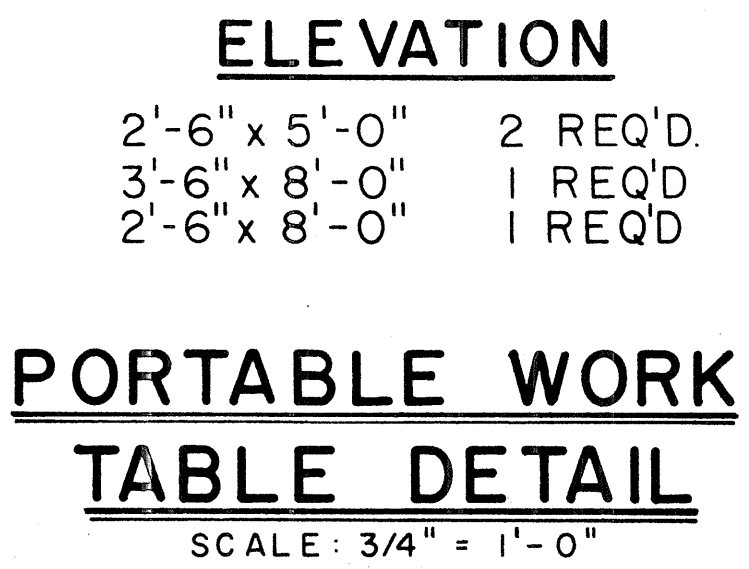
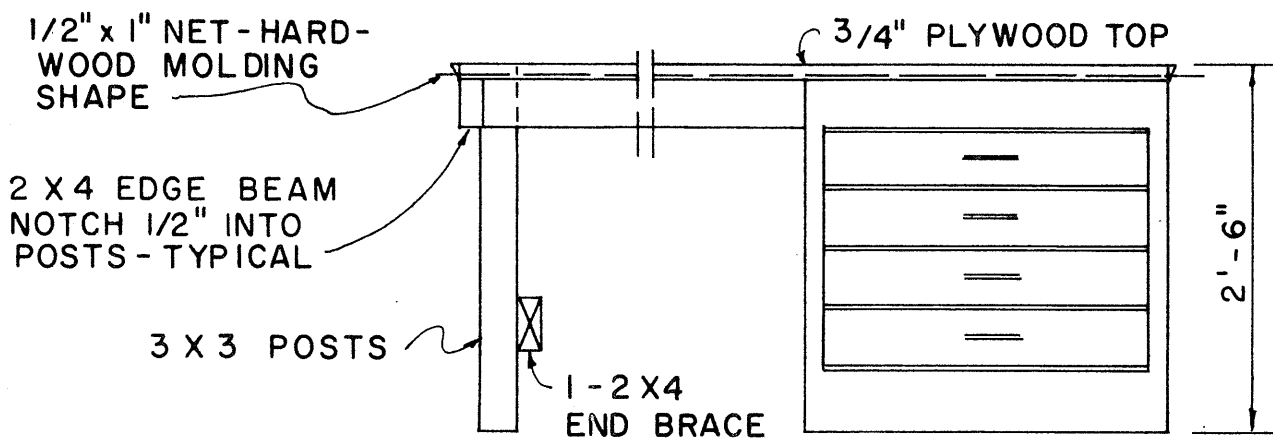
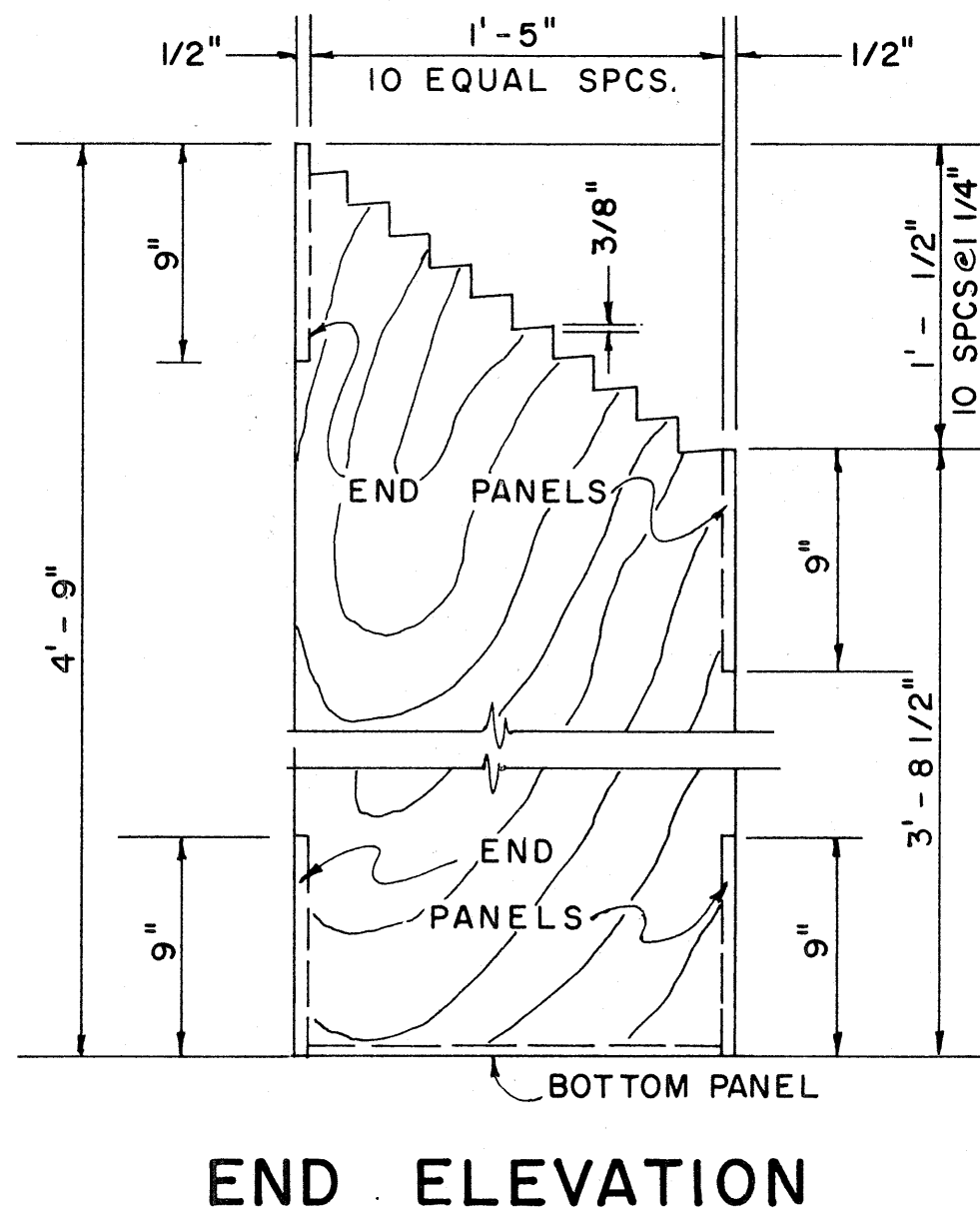
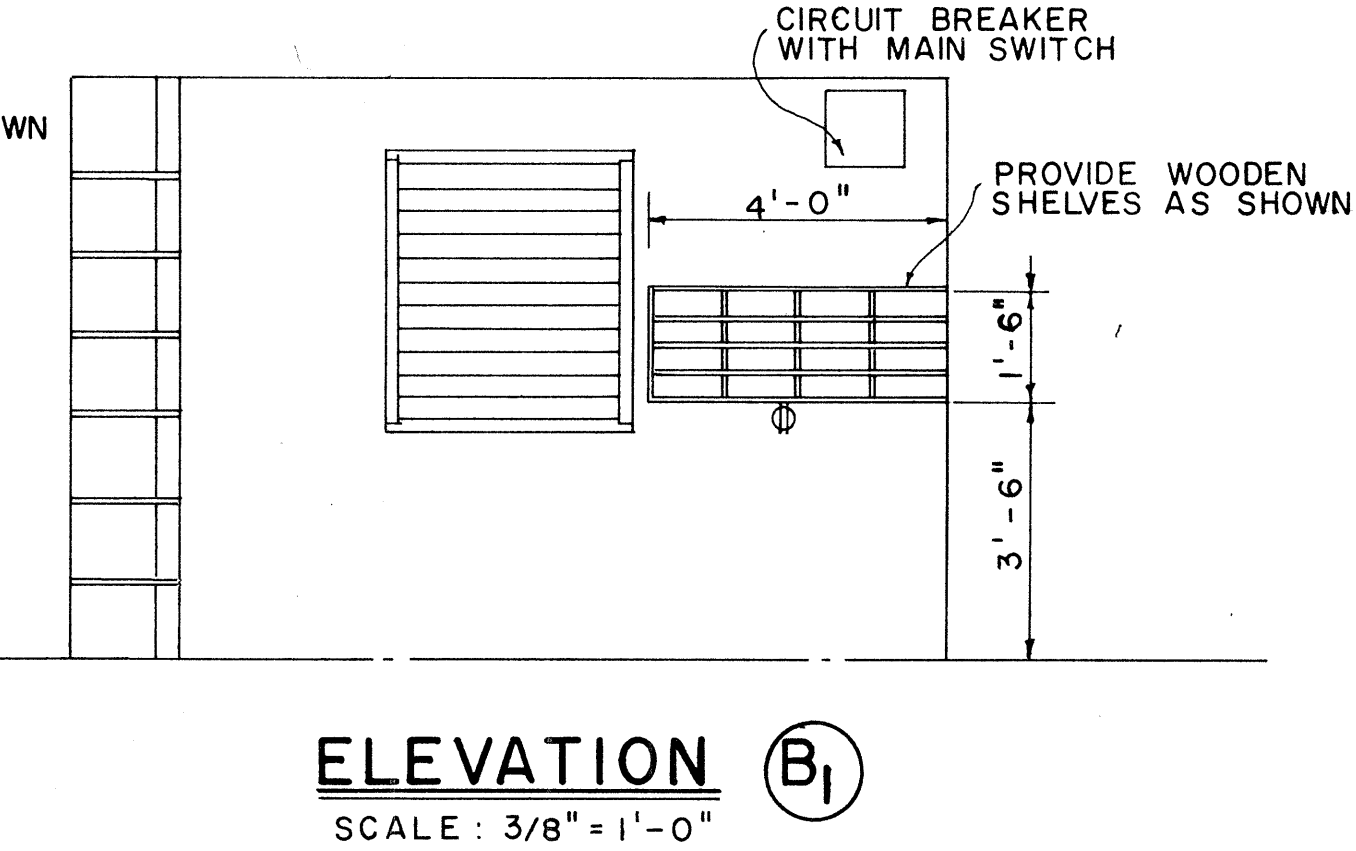
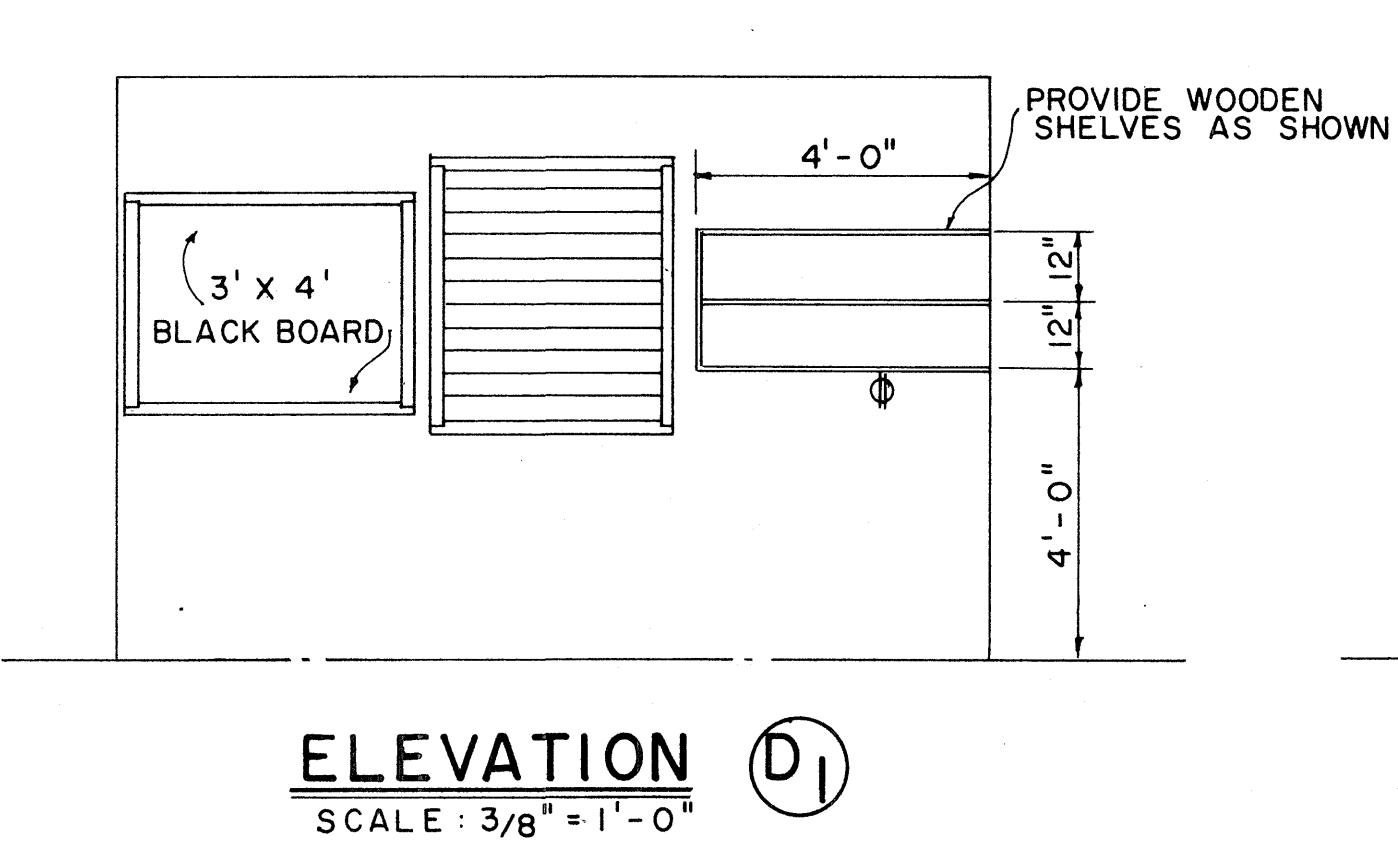
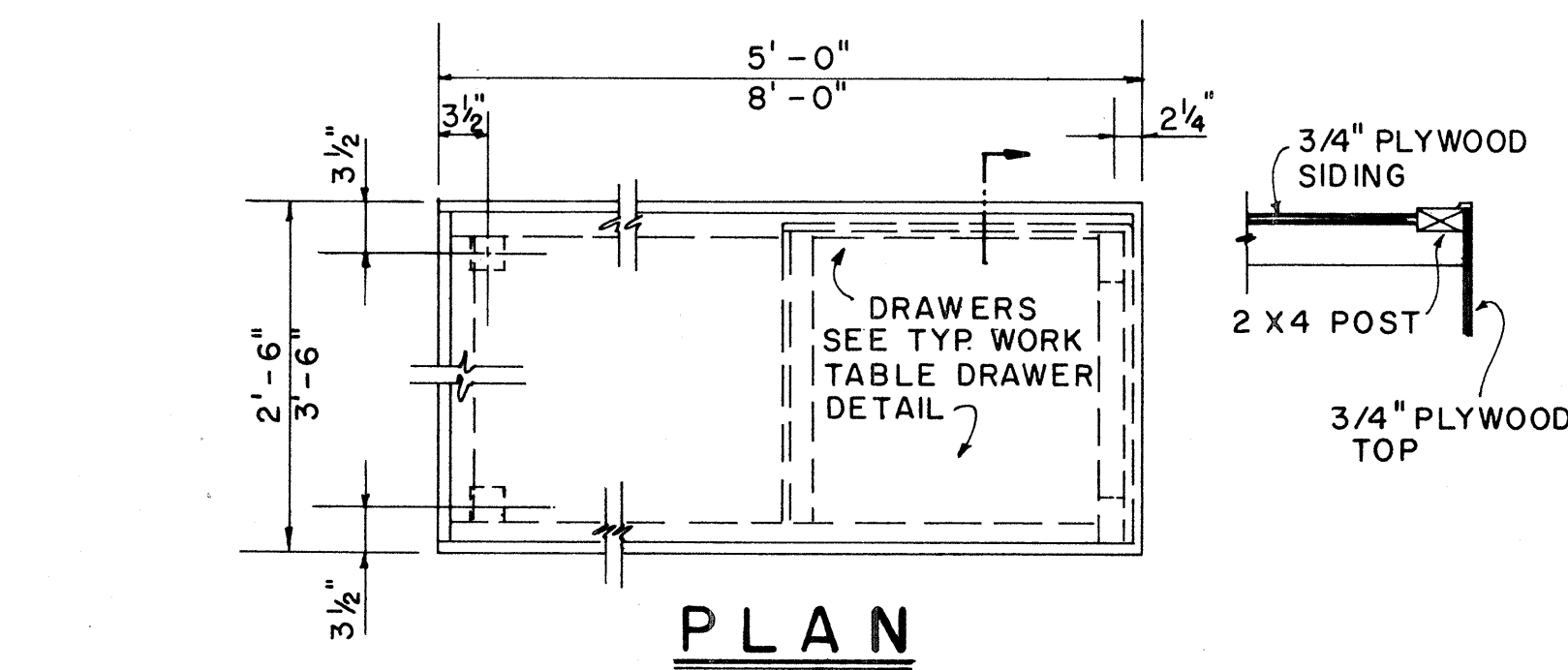
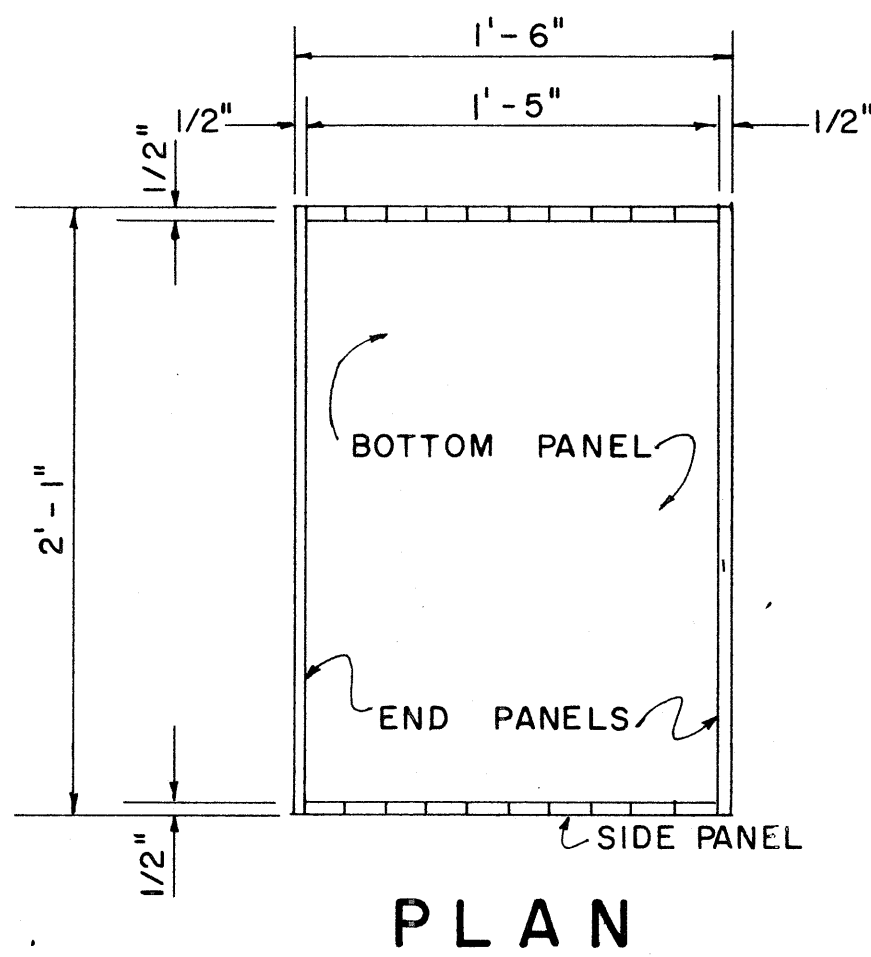
STANDARD DETAILS

**CENTERLINE, REFERENCE SURVEY
AND C & C STREET SURVEY
MONUMENTS**

Scale: As Shown

SHEET No. 1 OF 24 SHEETS DD 613.1

FED. ROAD DIST. NO.	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	1977	34	55



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

APPROVED:
ASSISTANT CHIEF, ENGINEERING
12-10-69
DATE

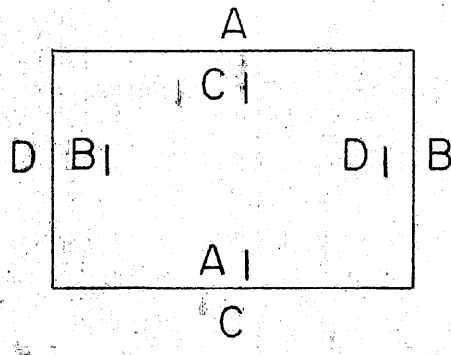
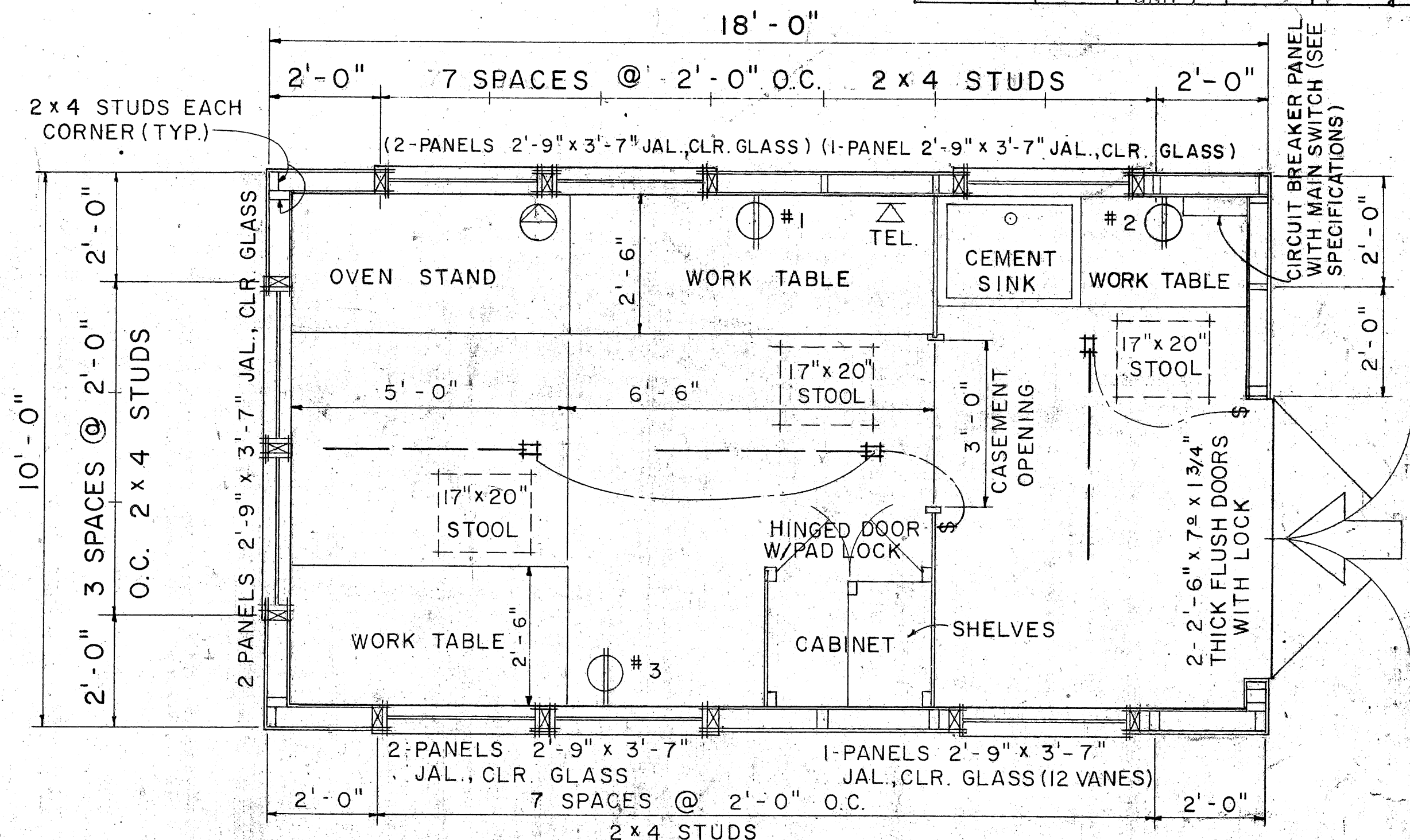
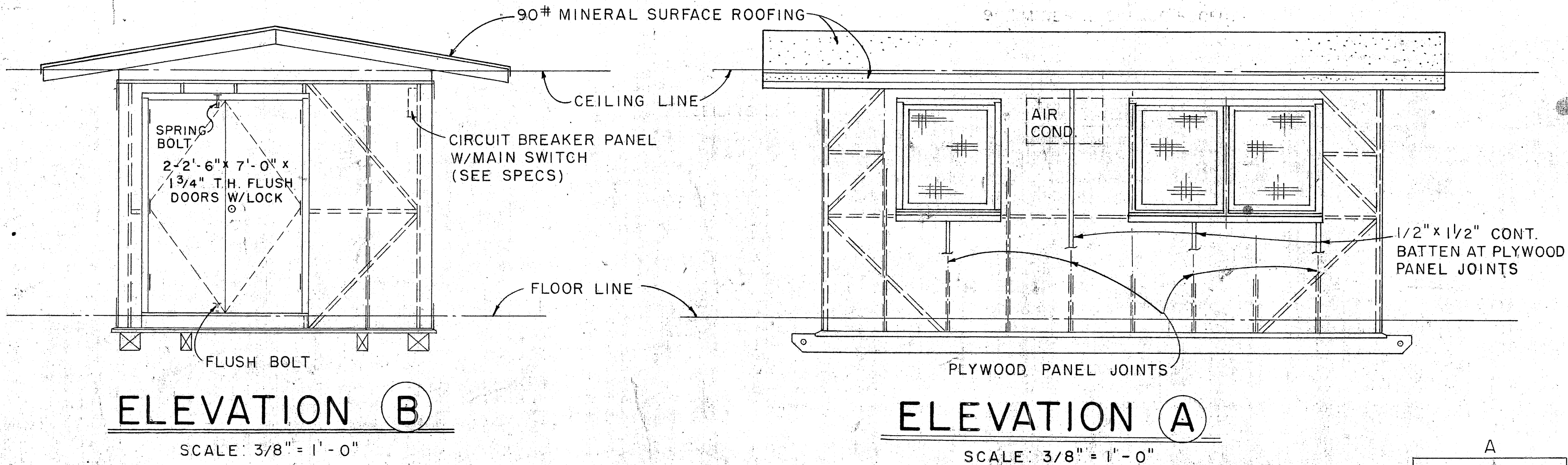
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

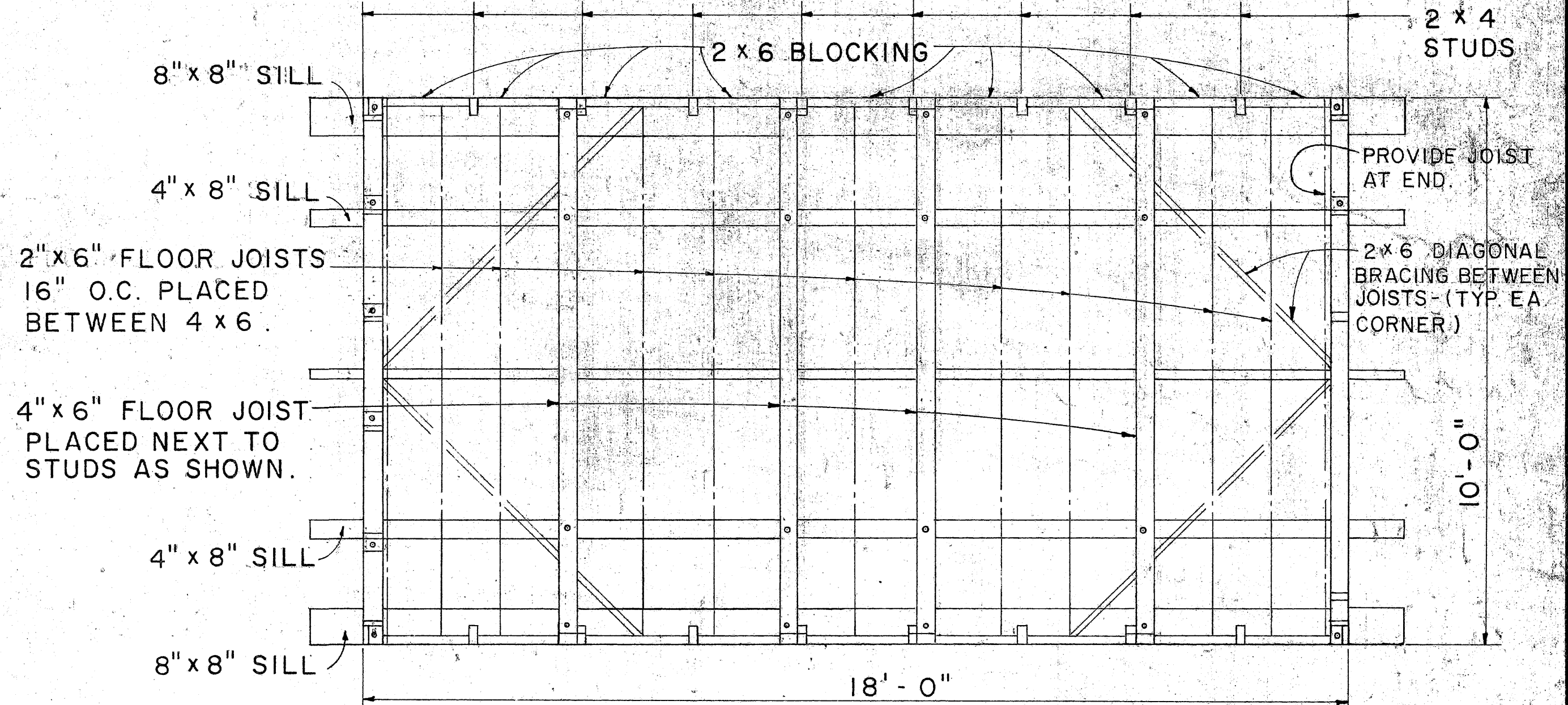
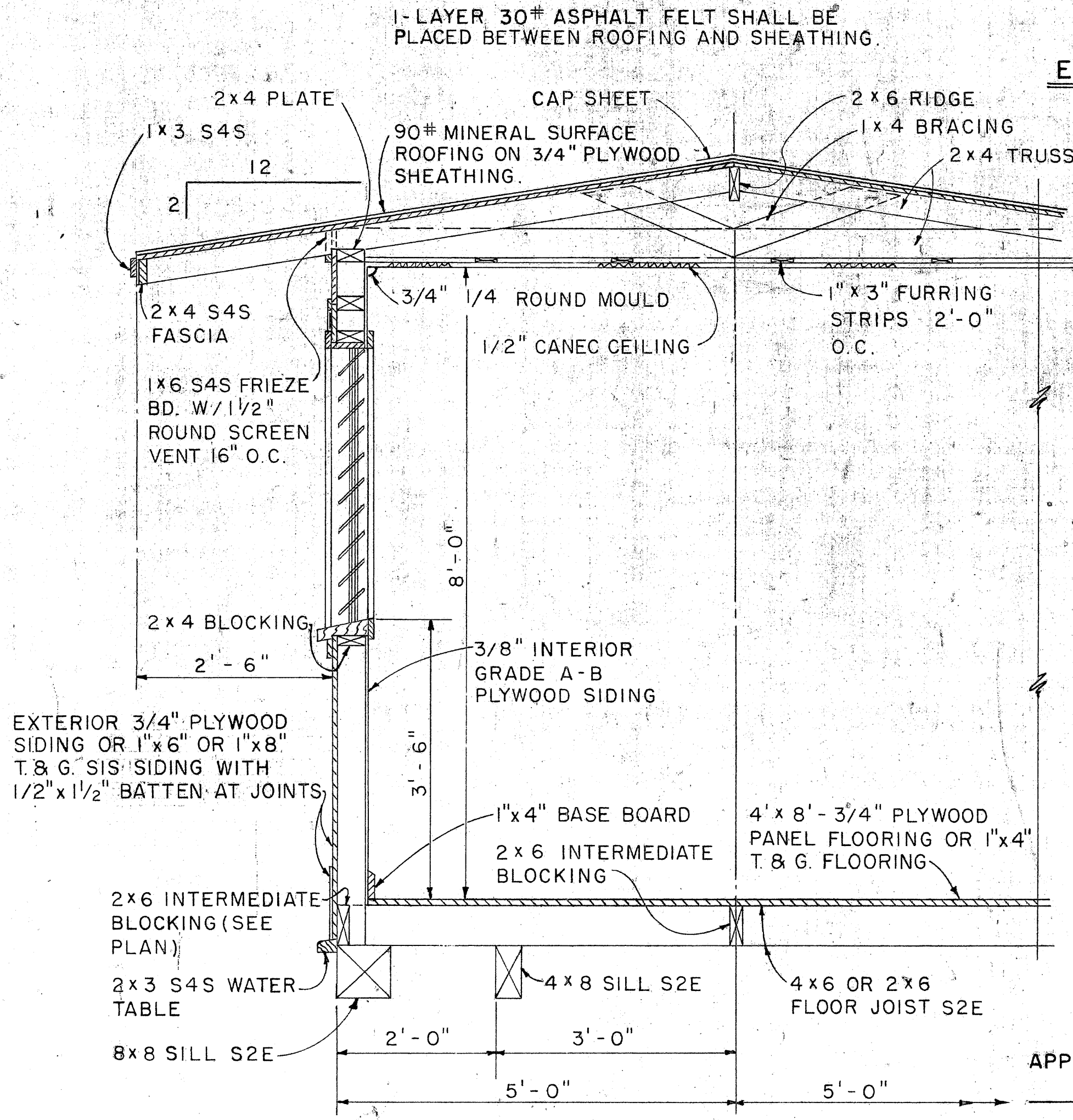
FIELD OFFICE

Scale: As Noted

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	35	55



EXTERIOR & INTERIOR KEY



NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROJECT SITE LABORATORY

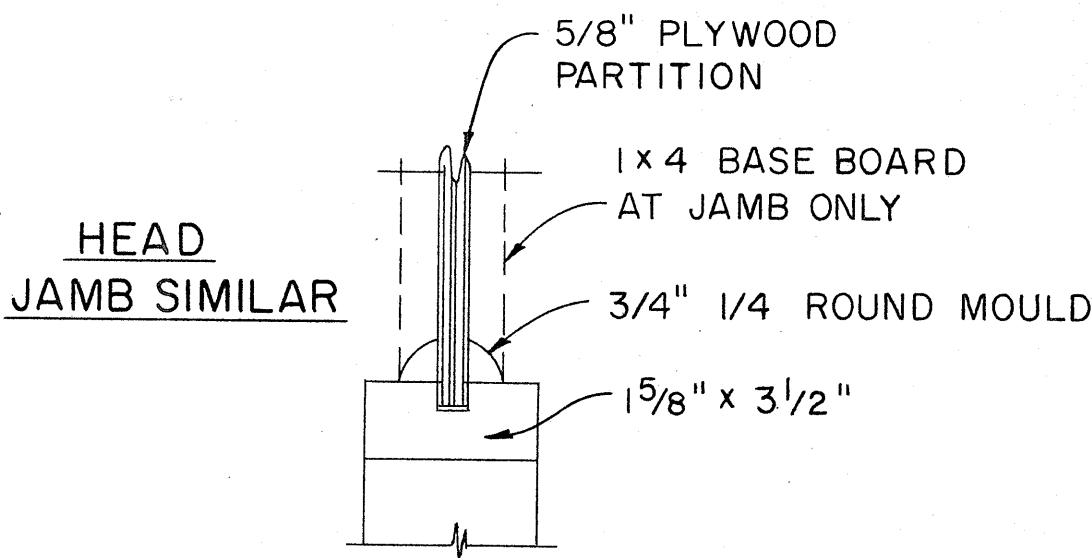
Scale: As Noted

APPROVAL RECOMMENDED:
[Signature]
HIGHWAY DESIGN ENGINEER 12-4-69 DATE

APPROVED:
[Signature]
ASSISTANT CHIEF, ENGINEERING 12-10-69 DATE

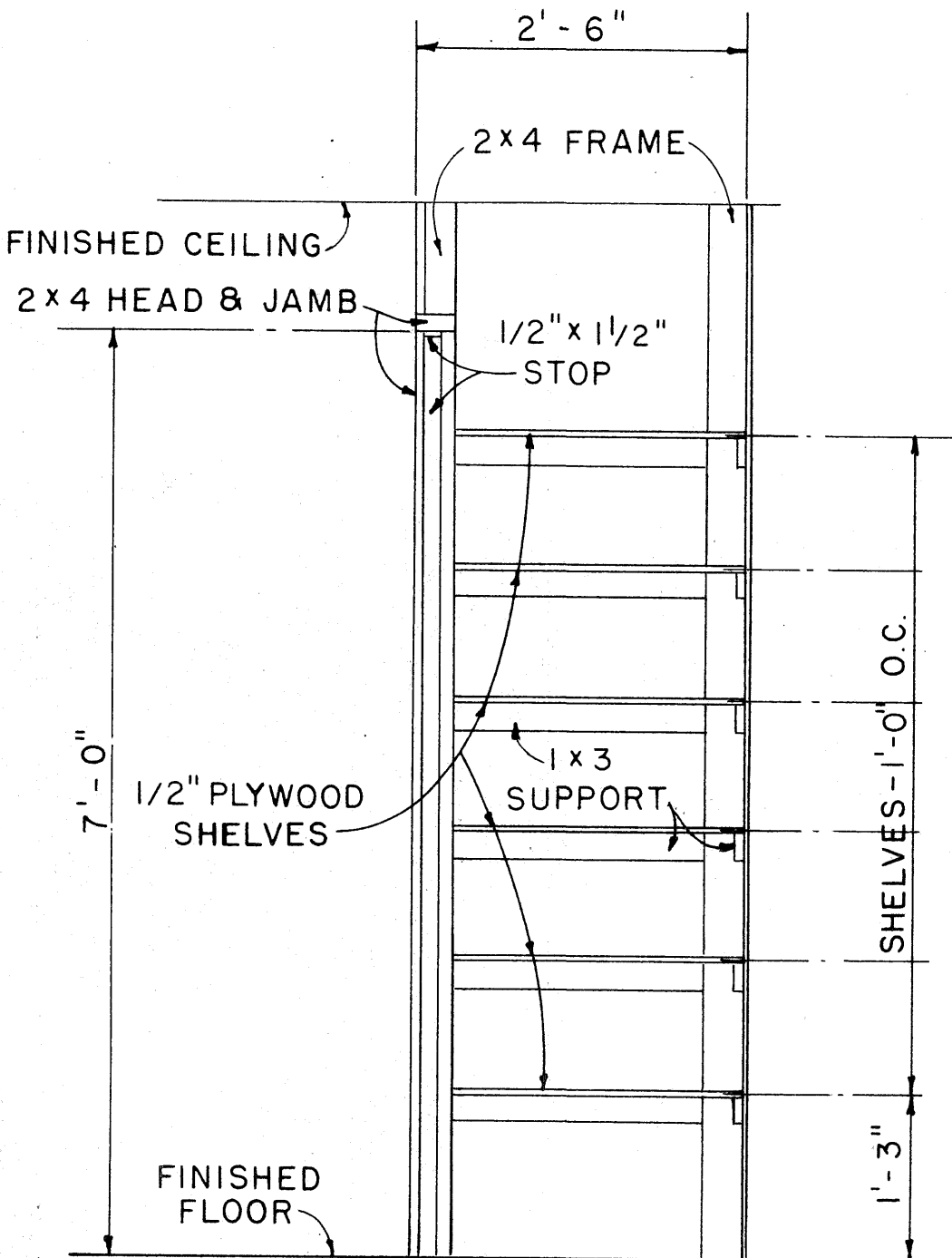
NOTE:
ALL 3/4" PLYWOOD SHALL BE EXTERIOR GRADE A-C OR BETTER.

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	36	55



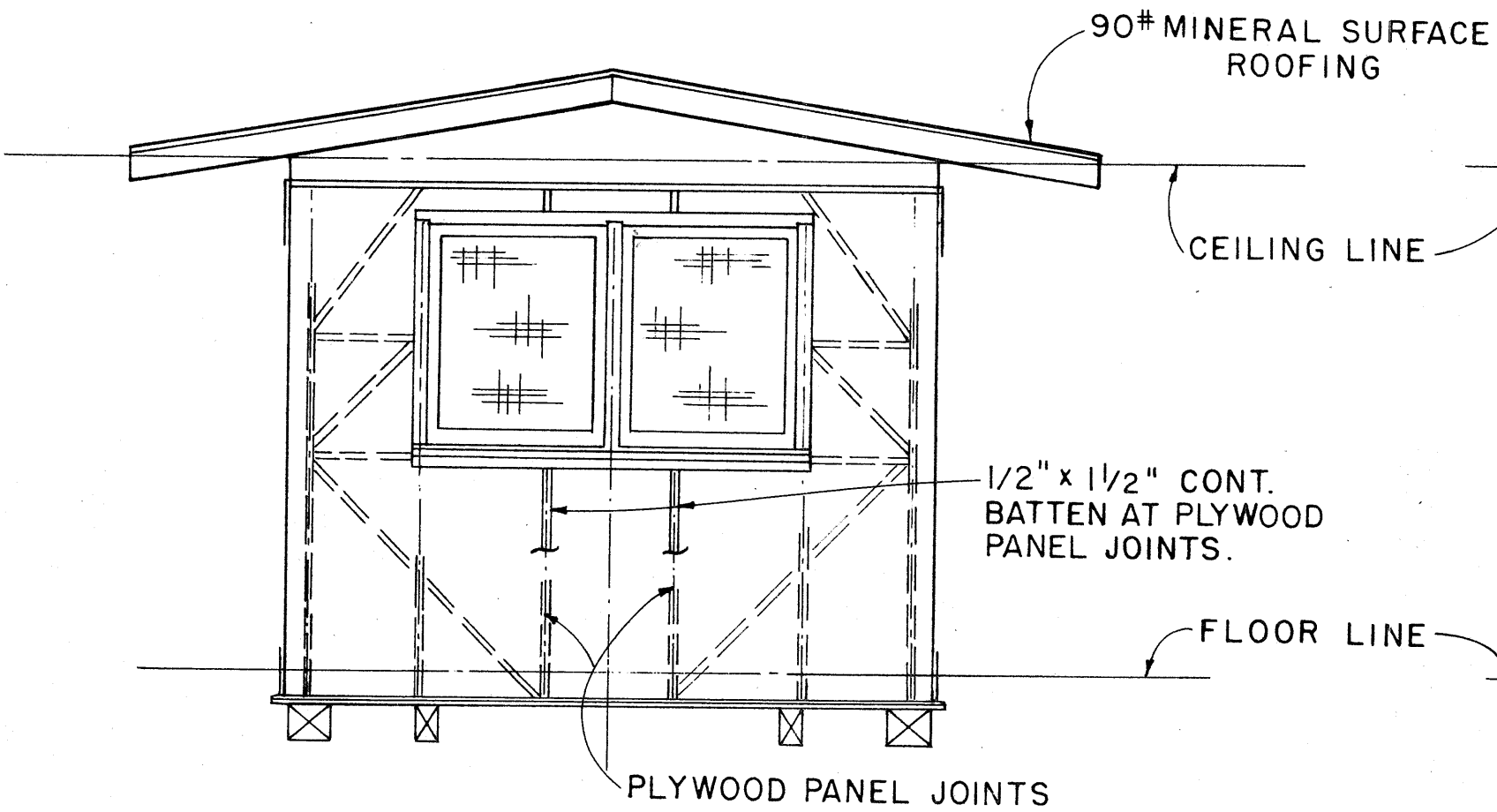
CASEMENT DETAIL

SCALE: 3" = 1'-0"



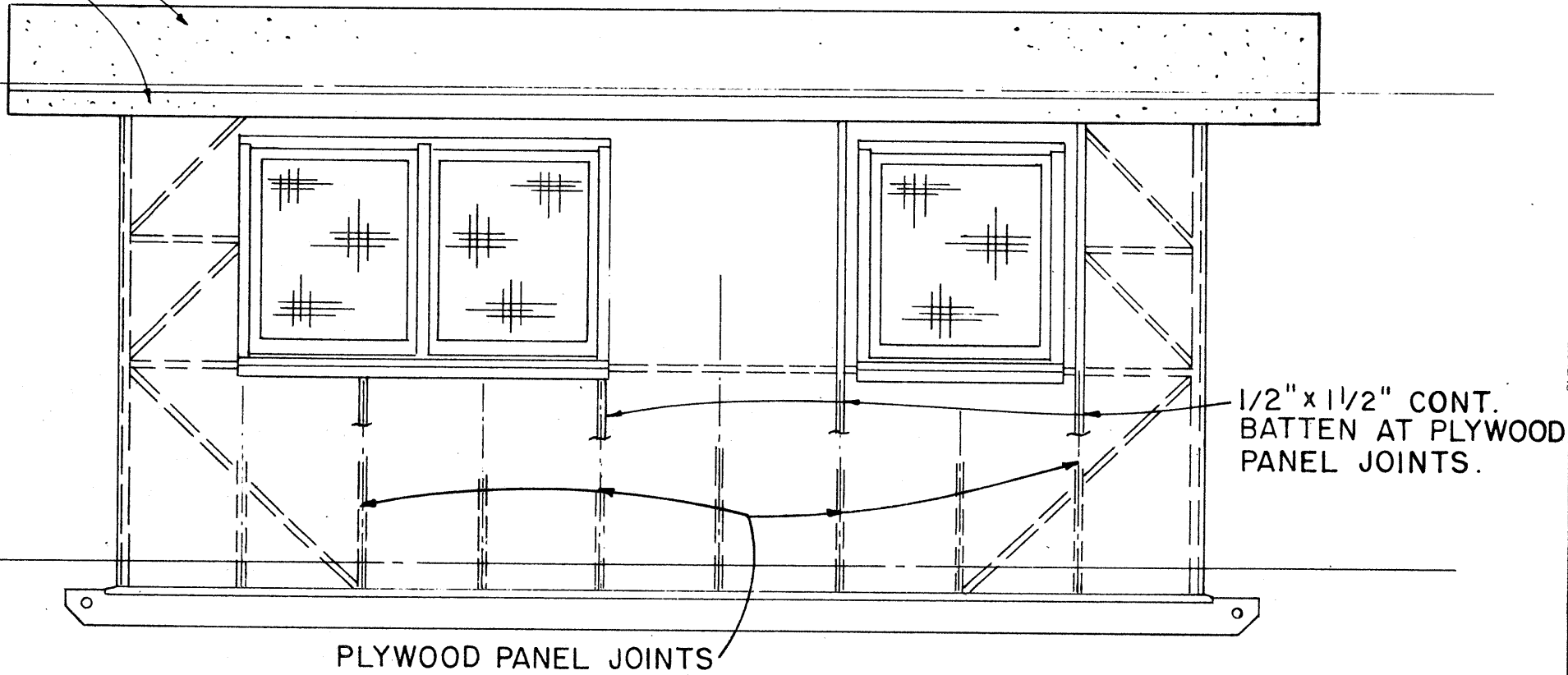
CABINET DETAIL

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



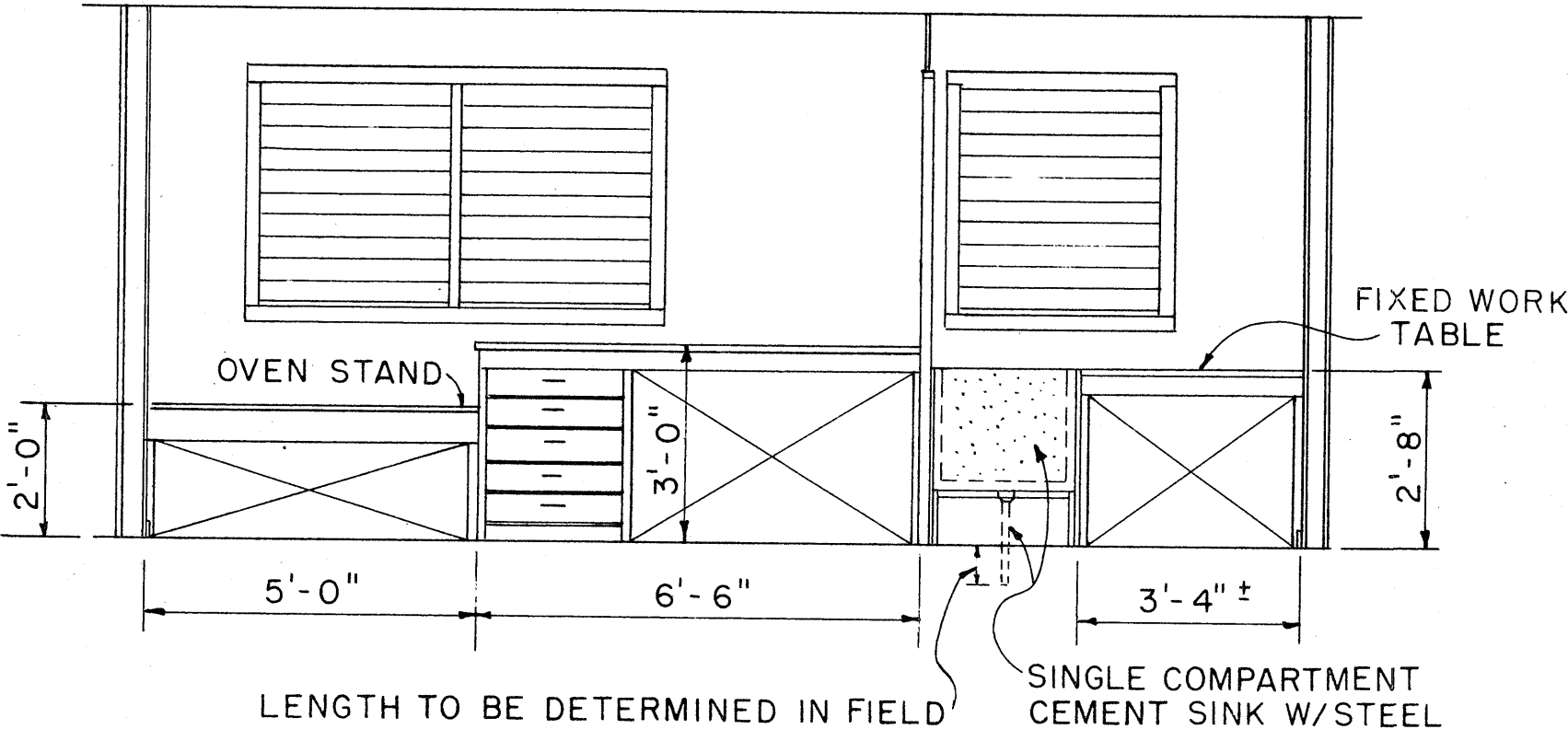
ELEVATION D

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



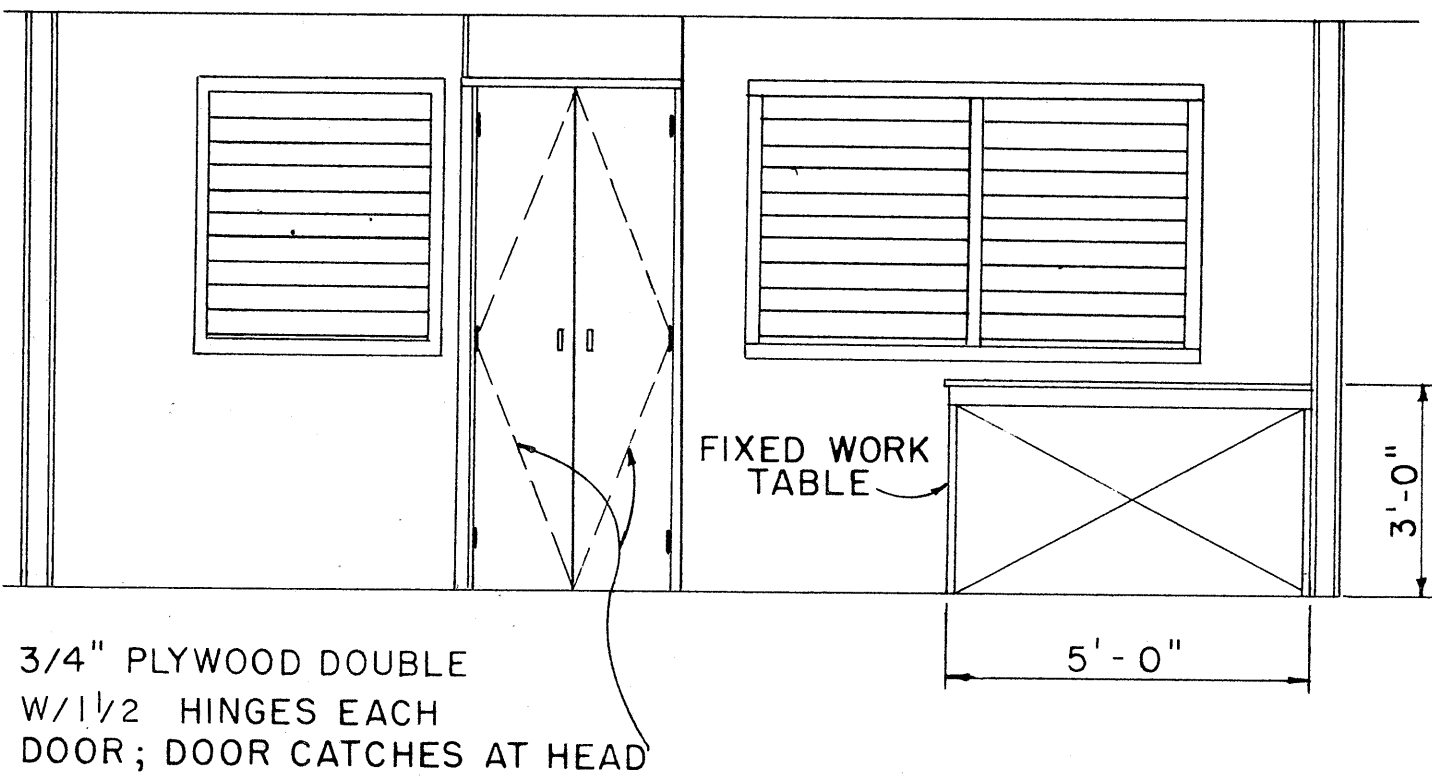
ELEVATION C

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



ELEVATION C1

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



ELEVATION A1

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

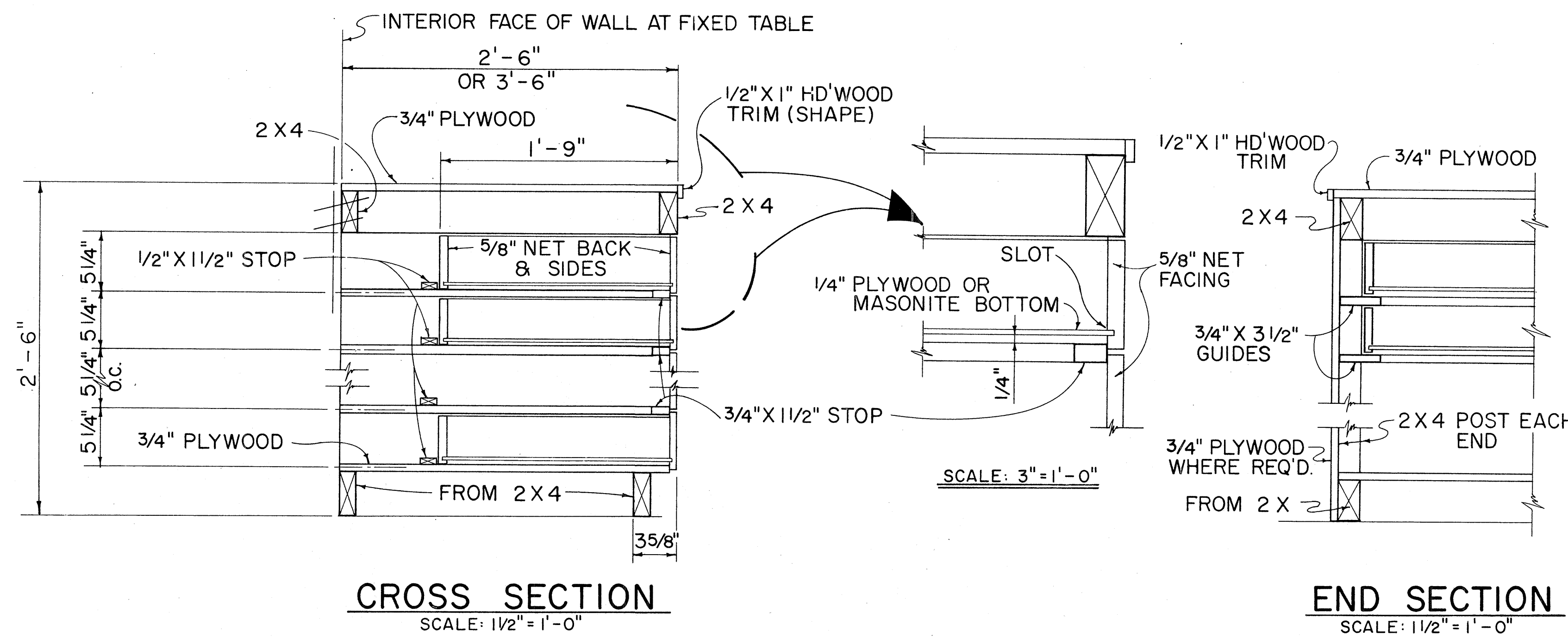
APPROVAL RECOMMENDED:
[Signature] 12-4-69
HIGHWAY DESIGN ENGINEER DATE

APPROVED:
[Signature] 12-10-59
ASSISTANT CHIEF, ENGINEERING DATE

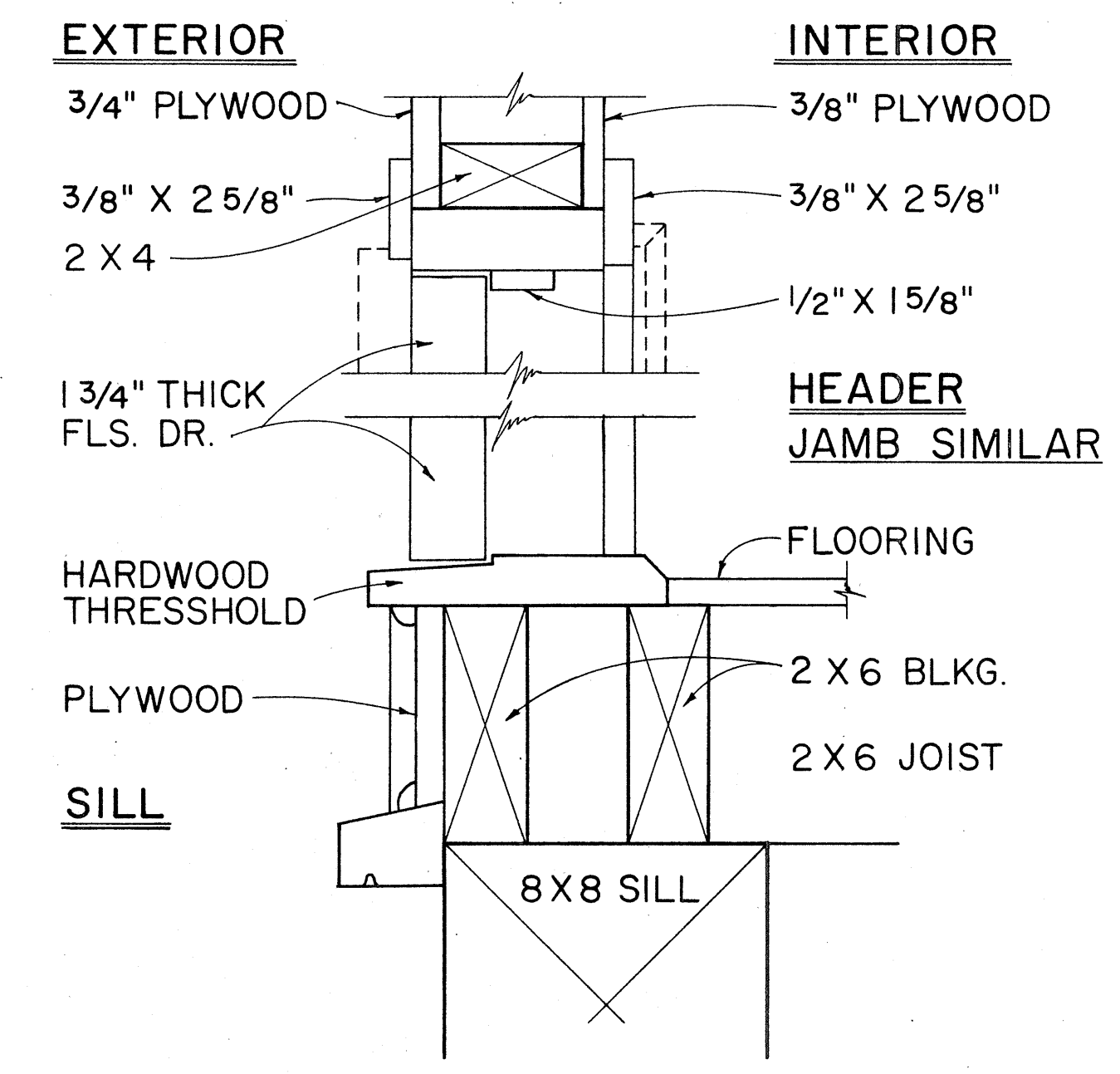
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PROJECT SITE LABORATORY

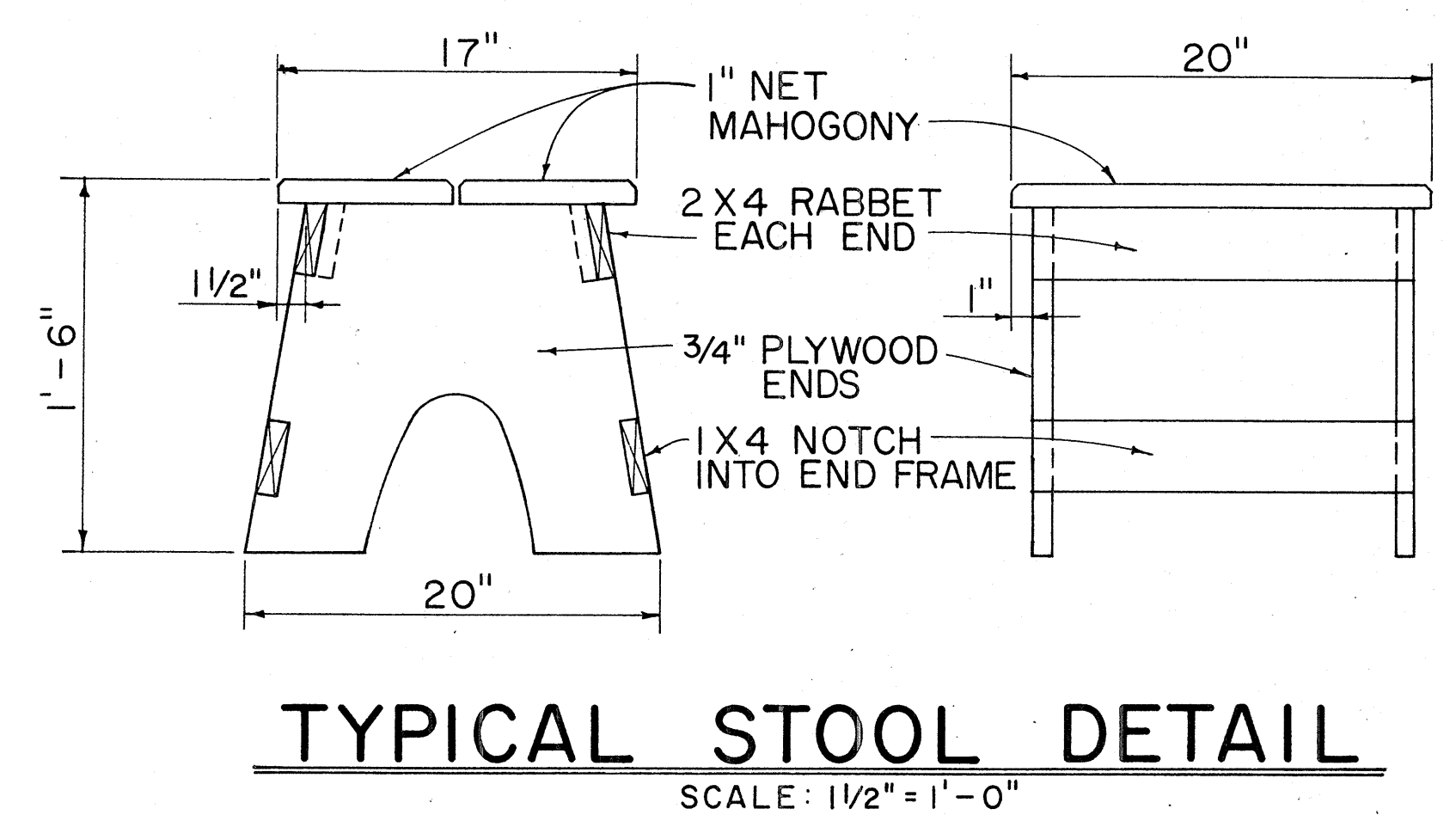


TYPICAL WORK TABLE DRAWER DETAIL

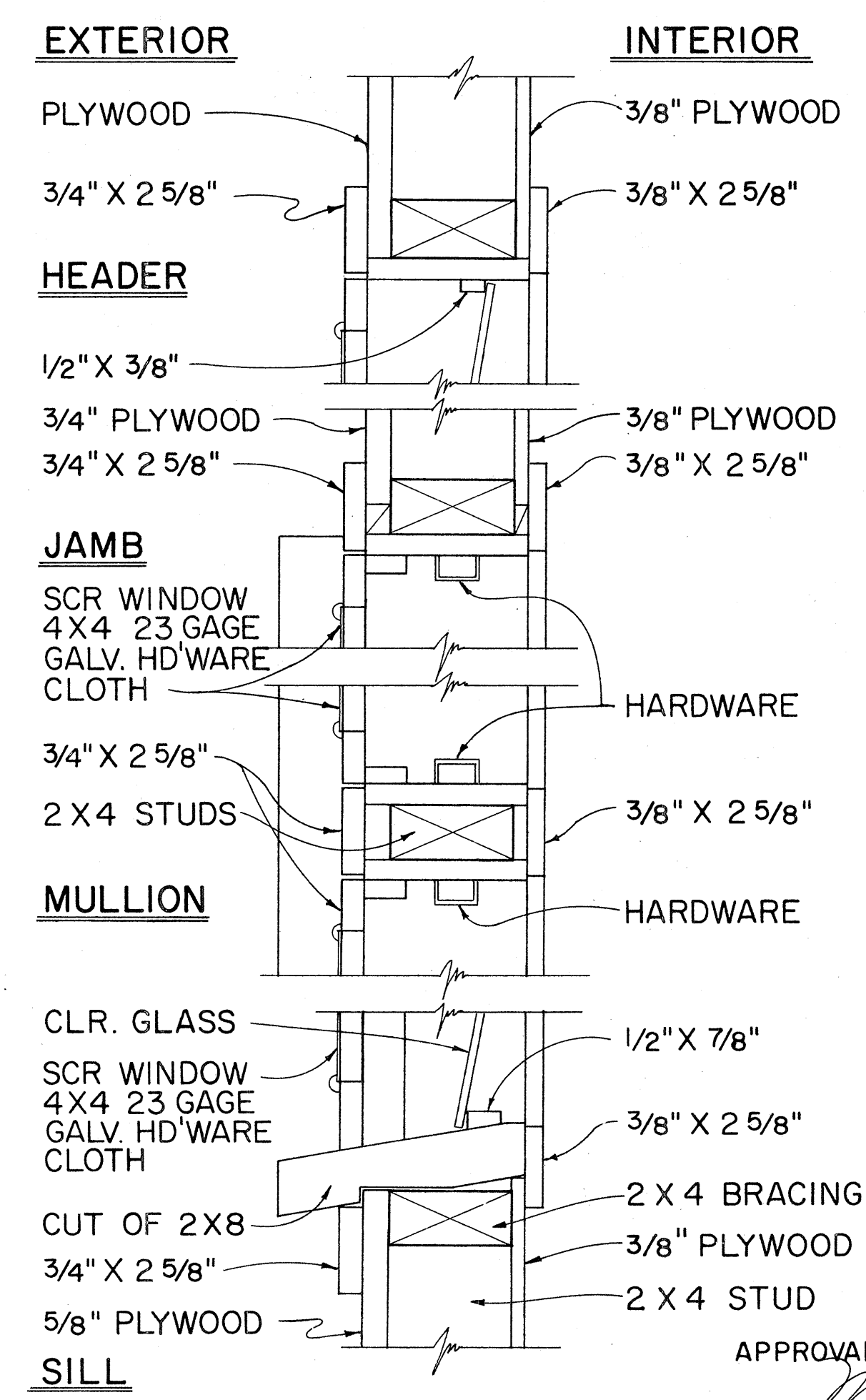


TYP. SWING OUT DOOR

TYPICAL SINGLE OR DOUBLE EXTERIOR DOOR DETAIL



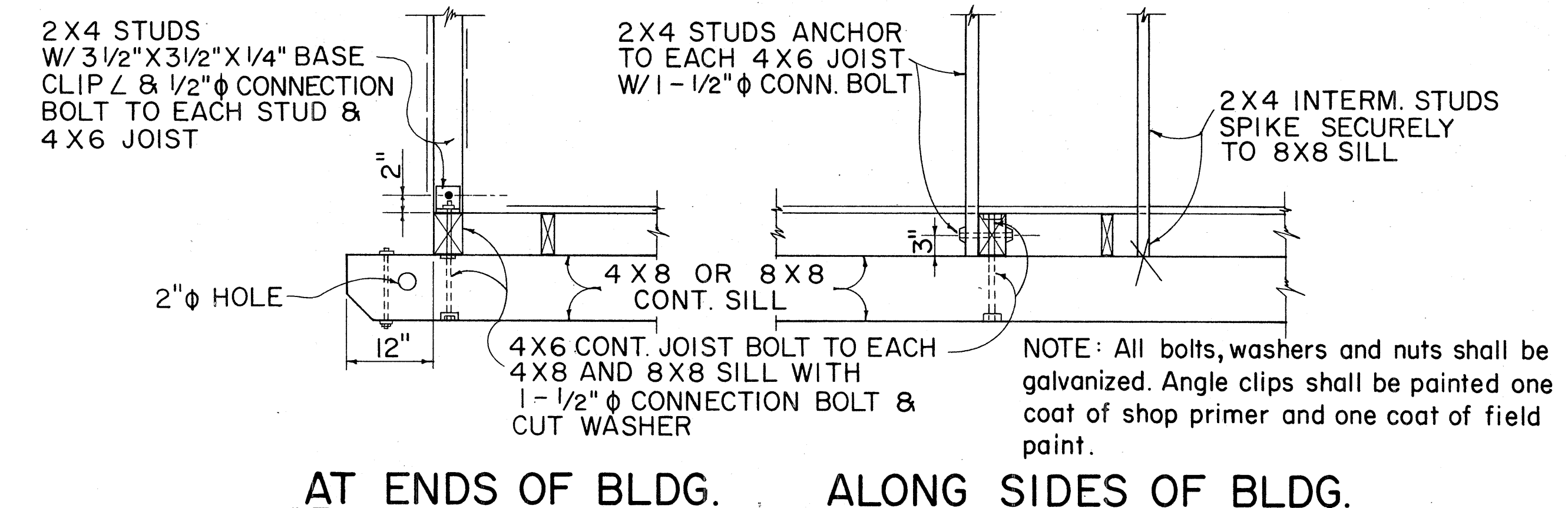
NOTE: CONTRACTOR MAY WITH THE APPROVAL OF THE ENGINEER FURNISH THE FIELD OFFICE OR PROJECT SITE LABORATORY WITH STOOLS OTHER THAN THE TYPE SHOWN IN THE DETAIL.



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

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

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



TYPICAL 2X4 STUD & 4X6 FLOOR JOIST BASE CONNECTION DETAILS

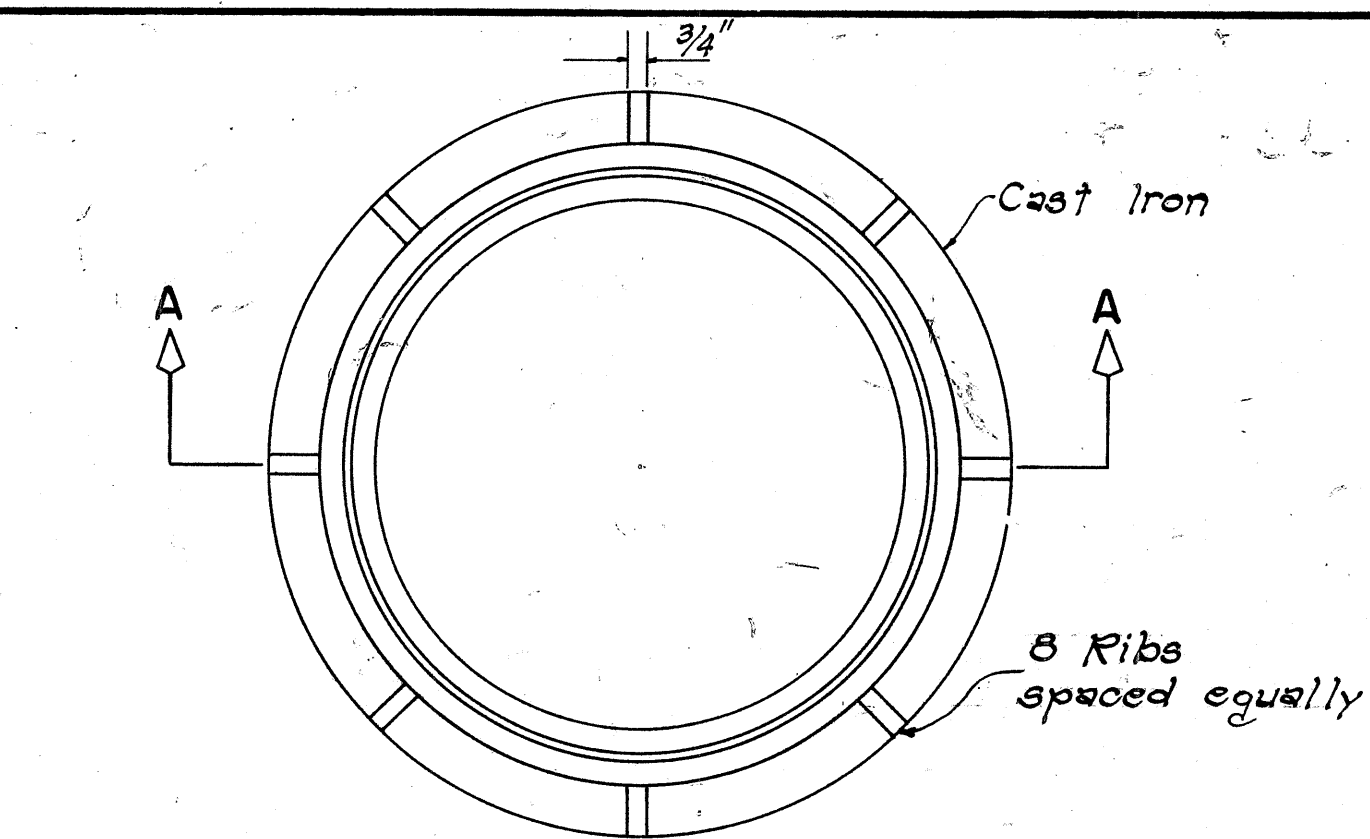
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

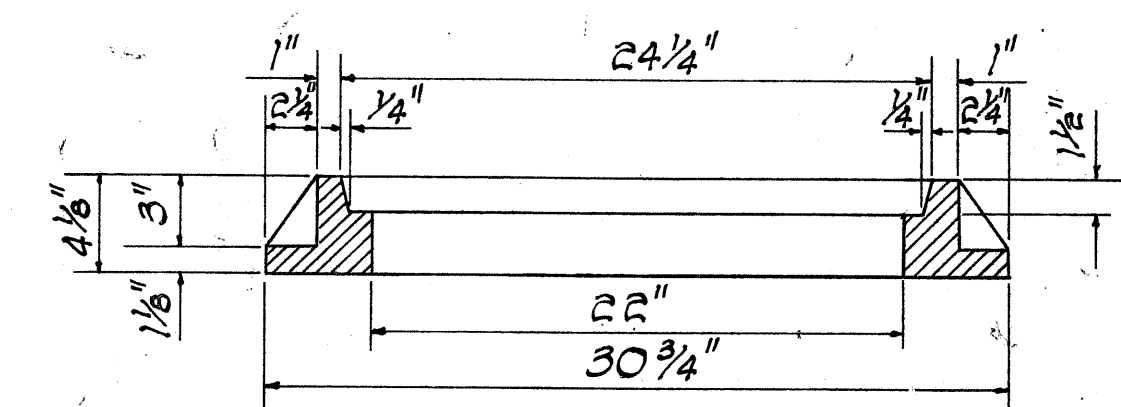
FIELD OFFICE
&
PROJECT SITE LABORATORY

Scale: As Noted

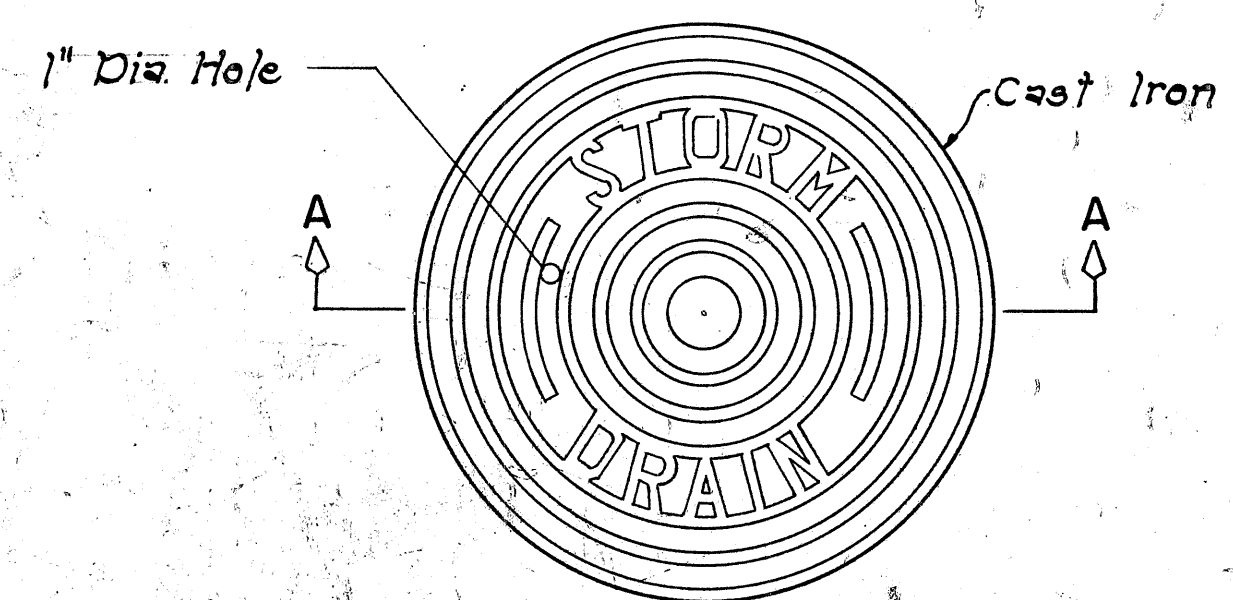
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	38	55



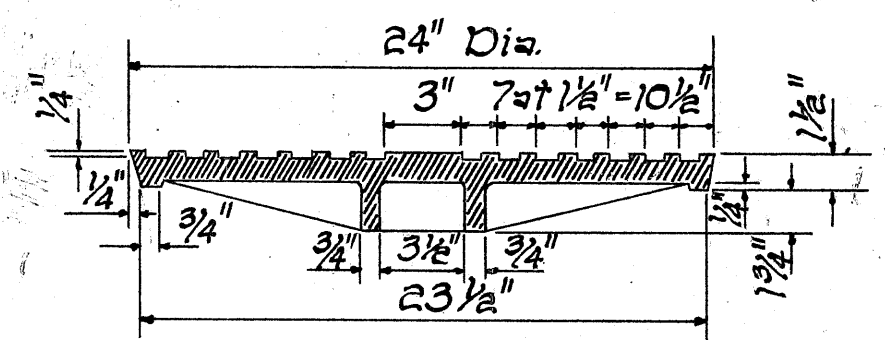
PLAN



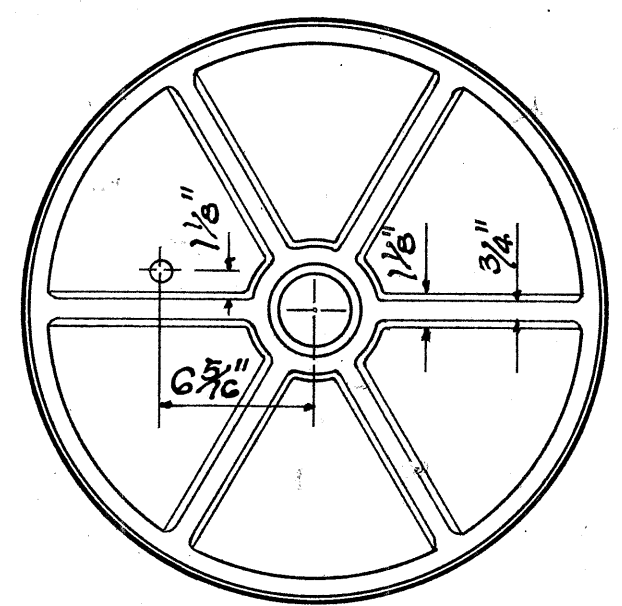
SECTION A-A



PLAN



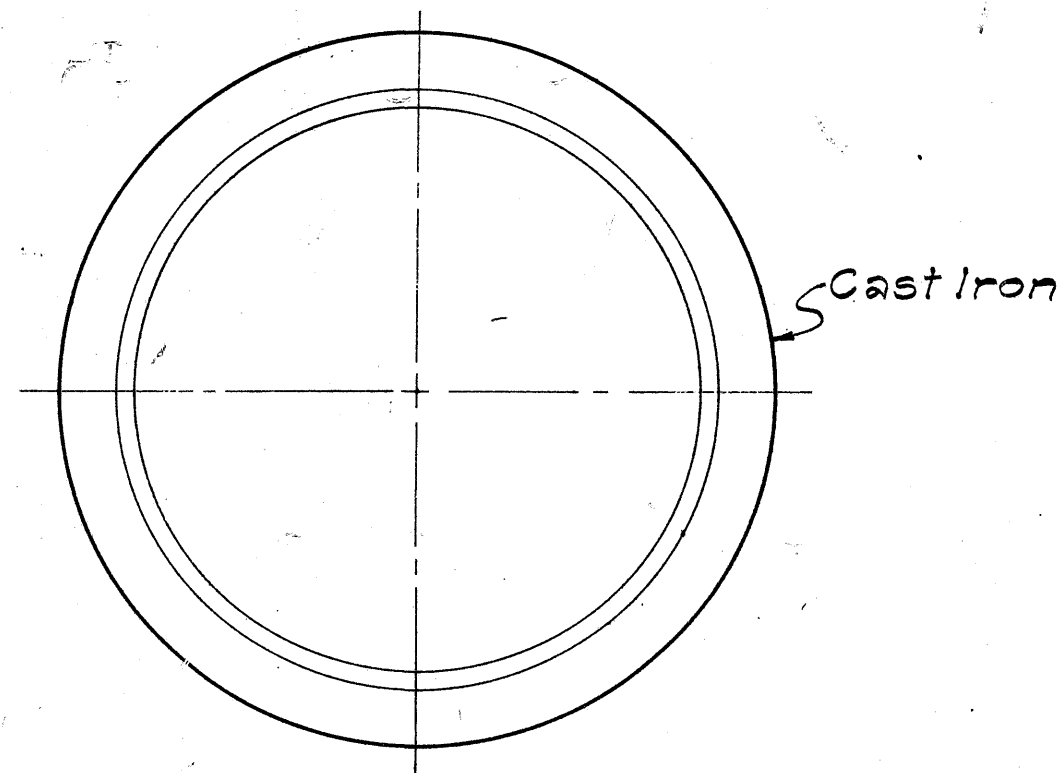
SECTION A-A



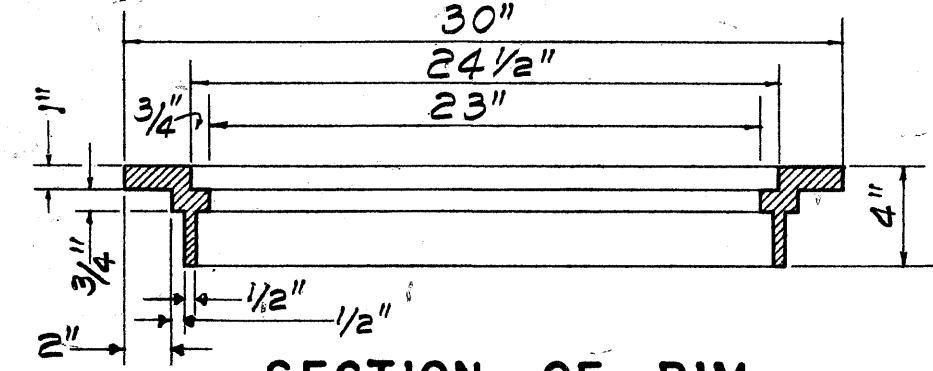
BOTTOM VIEW OF COVER

DETAILS OF TYPE "P"
CAST IRON FRAME AND COVER

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



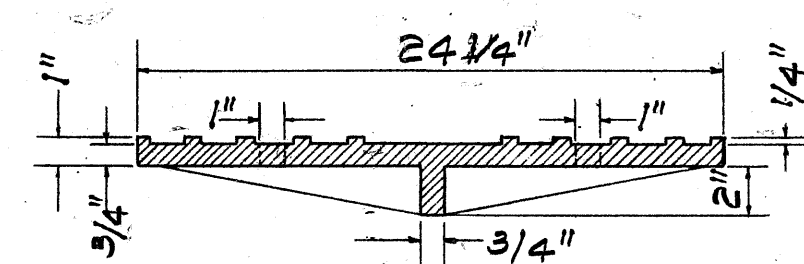
PLAN OF RIM



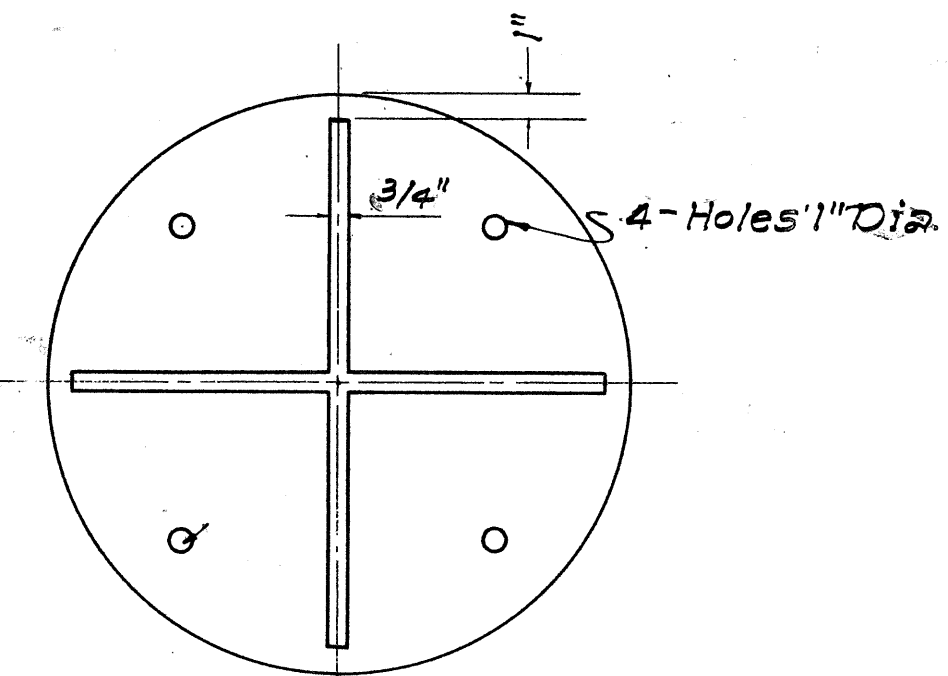
SECTION OF RIM



TOP VIEW OF COVER



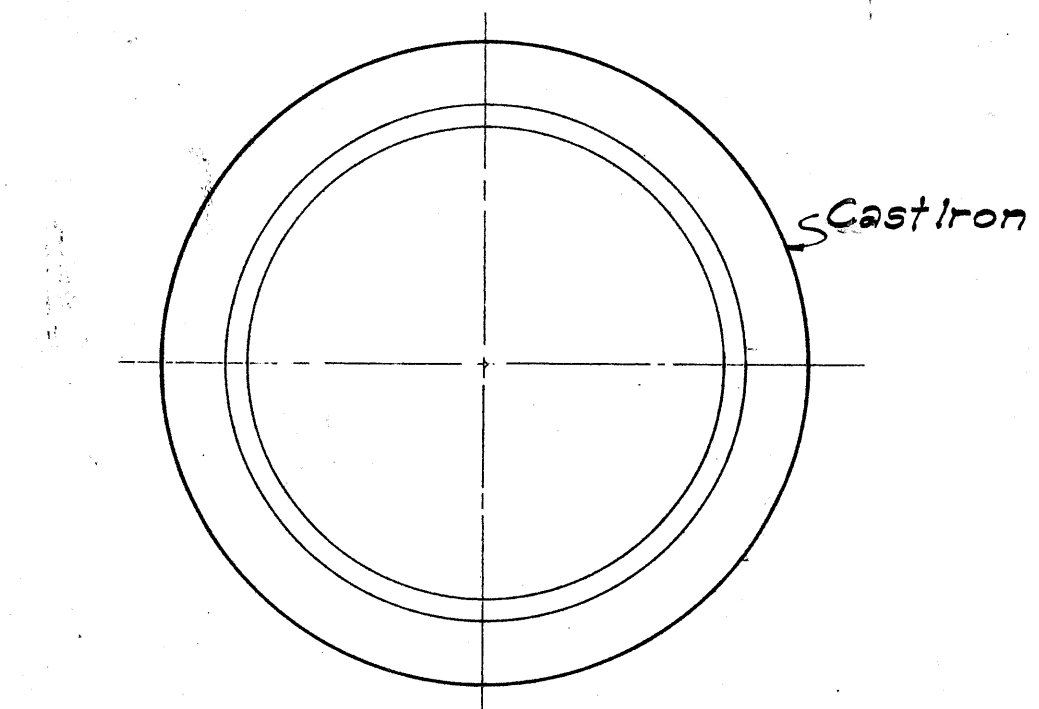
SECTION



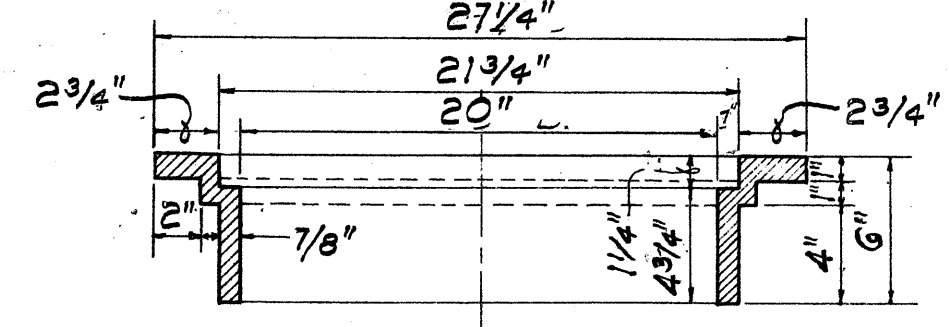
BOTTOM VIEW OF COVER

DETAILS OF TYPE "B"
CAST IRON FRAME AND COVER

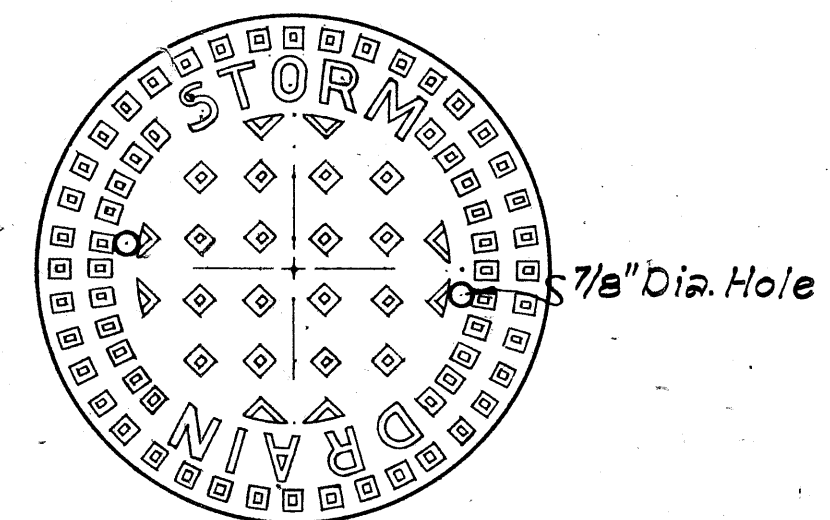
SCALE: 1-1/2" = 1'-0"



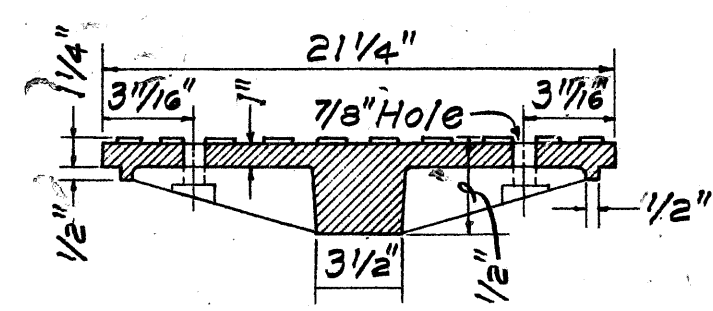
PLAN OF RIM



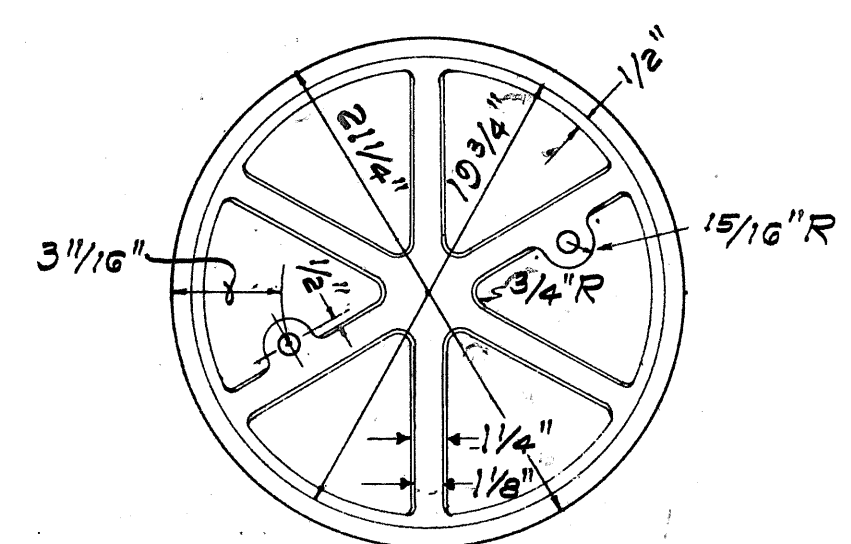
SECTION OF RIM



TOP VIEW OF COVER



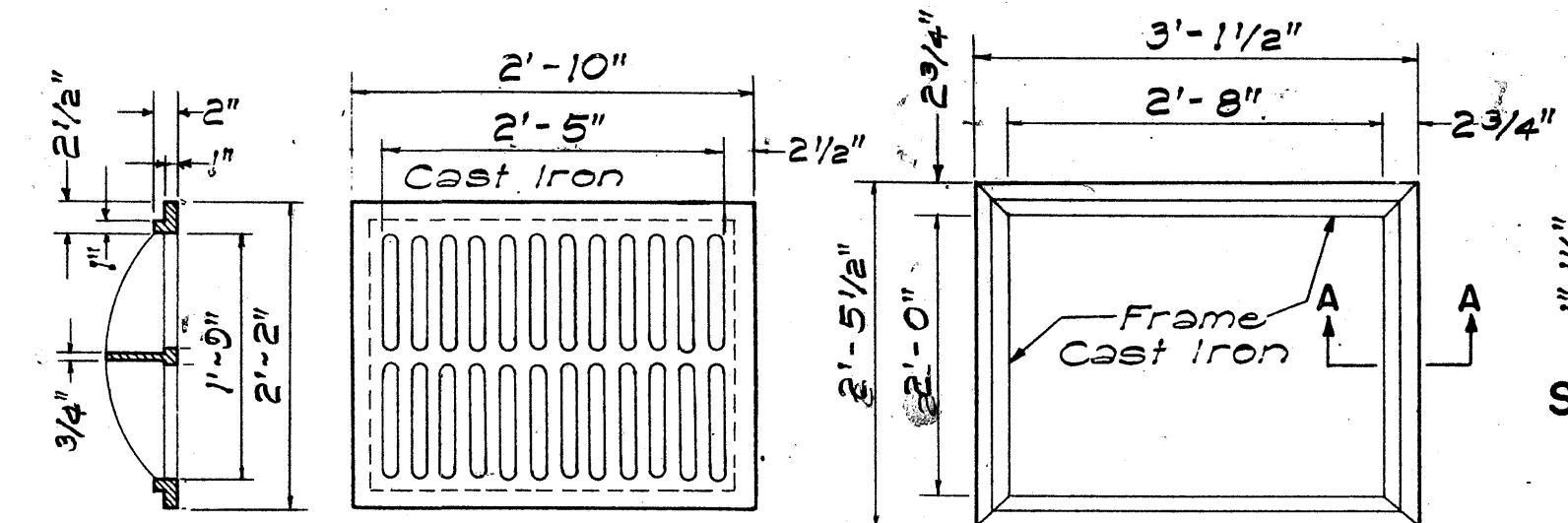
SECTION



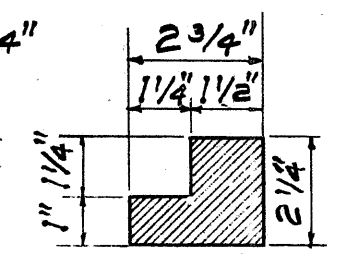
BOTTOM VIEW OF COVER

DETAILS OF TYPE "A"
CAST IRON FRAME AND COVER

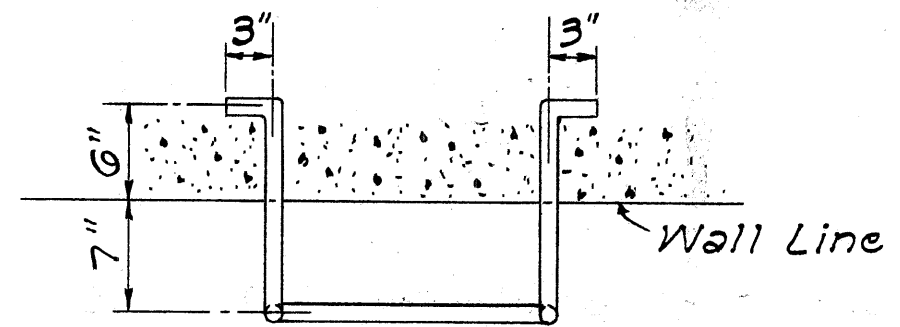
SCALE: 1-1/2" = 1'-0"



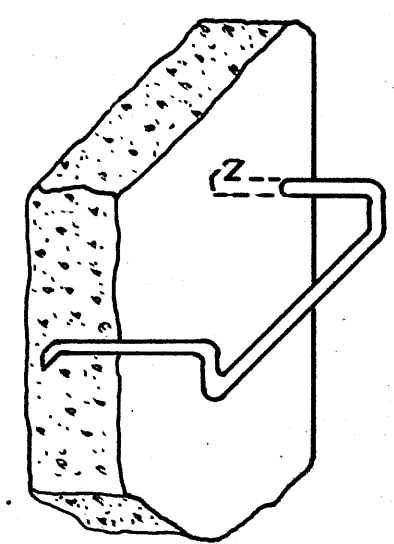
SECTION TOP VIEW TOP VIEW
TYPE C C.I. FRAME AND GRATE
SCALE: 3/4" = 1'-0"



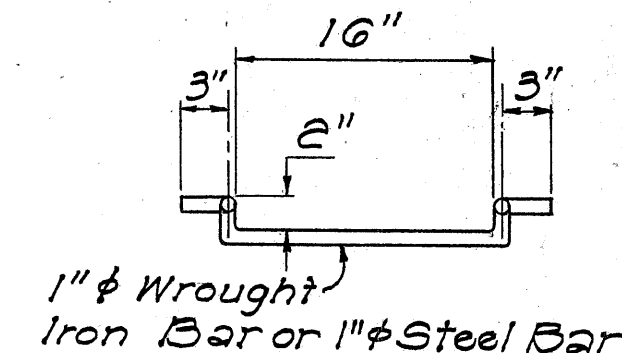
SECTION "A-A"
SCALE 3" = 1'-0"



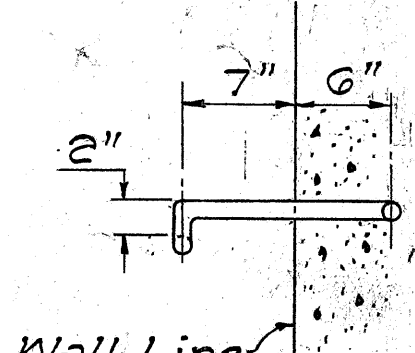
P L A N



PICTORIAL VIEW
NOT TO SCALE



FRONT VIEW



SIDE VIEW

DETAILS OF MANHOLE RUNG
SCALE: 1" = 1'-0"

APPROVAL RECOMMENDED:
G. Takano 12-17-69
HYDRAULIC DESIGN ENGINEER DATE

APPROVED:
John J. Zolner 12-17-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1.	Detail of Type "P" Cast Iron Frame and Cover	H.T.	1-6-71
2.	Details of Manhole Rungs to conform to OSHA.	H.T.	1-21-75
3.	Option for Manhole Rungs	H.T.	1-13-76

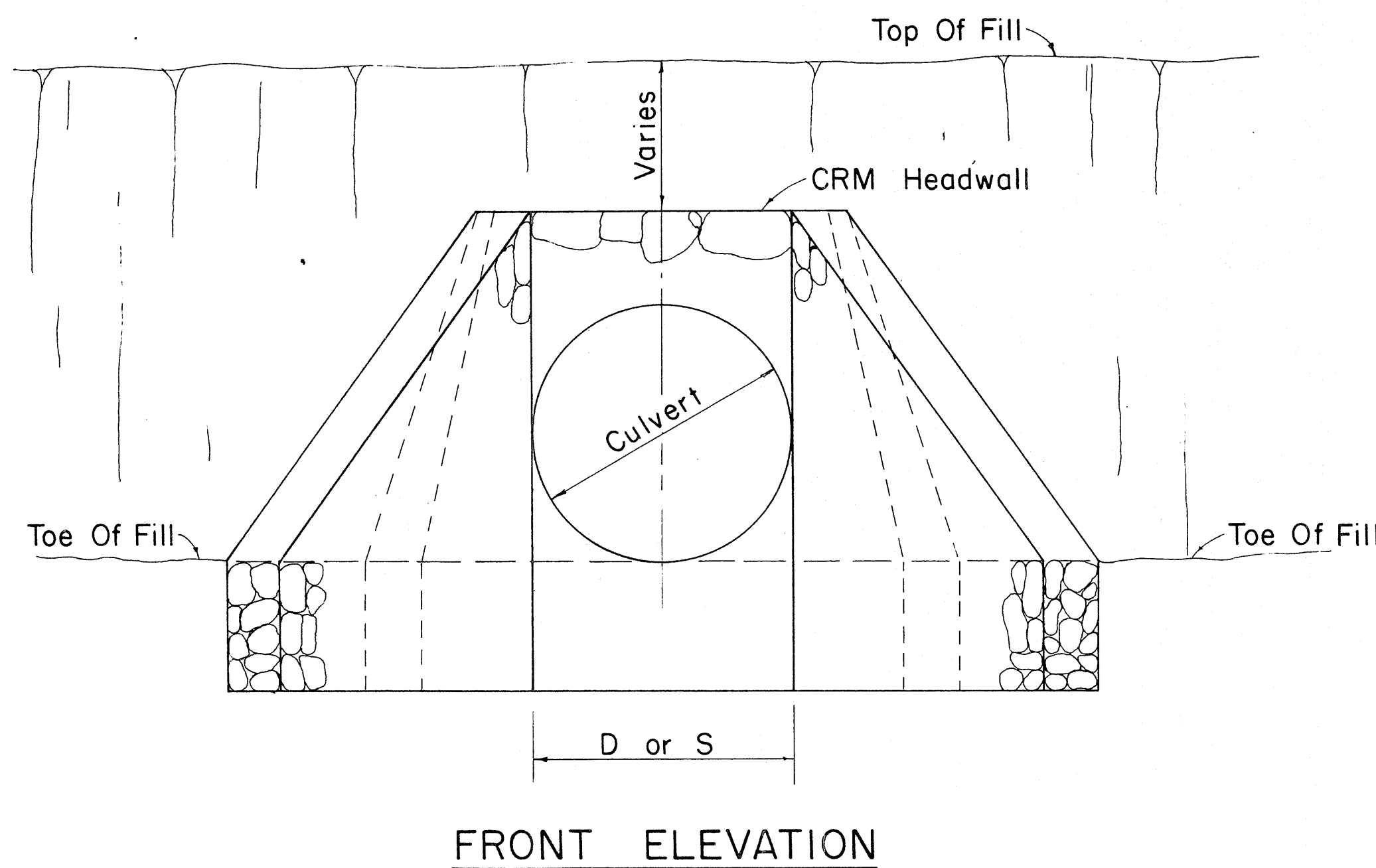
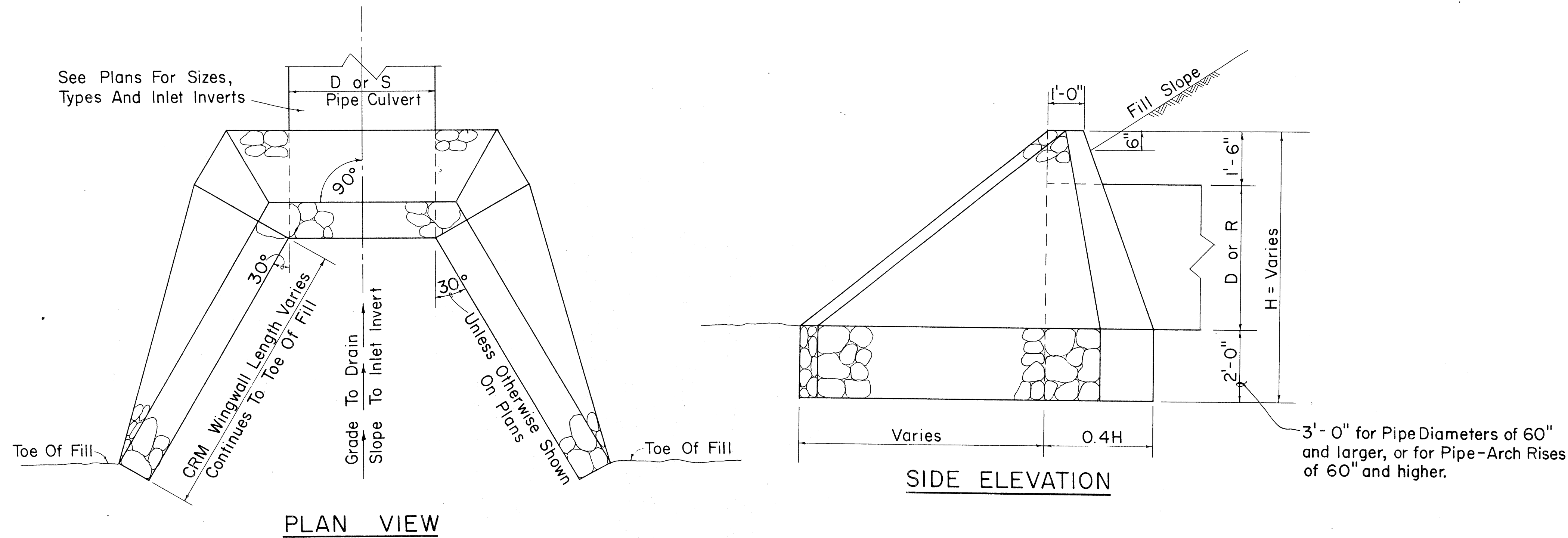
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CATCH BASIN AND
MANHOLE CASTINGS

Scale: As Noted Date: July, 1969
SHEET NO 7 OF 24 SHEETS DH 6

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

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	40	55



NOTE:

D = Diameter of Pipe Culvert

R = Rise of Pipe-Arch Culvert

S = Span of Pipe-Arch Culvert

DETAILS OF CRM INLET STRUCTURE Scale: 1/2" = 1'-0"

APPROVAL RECOMMENDED:

[Signature] 12-17-69
HYDRAULIC DESIGN ENGINEER DATE

APPROVED:

[Signature] 12-17-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CRM INLET STRUCTURE

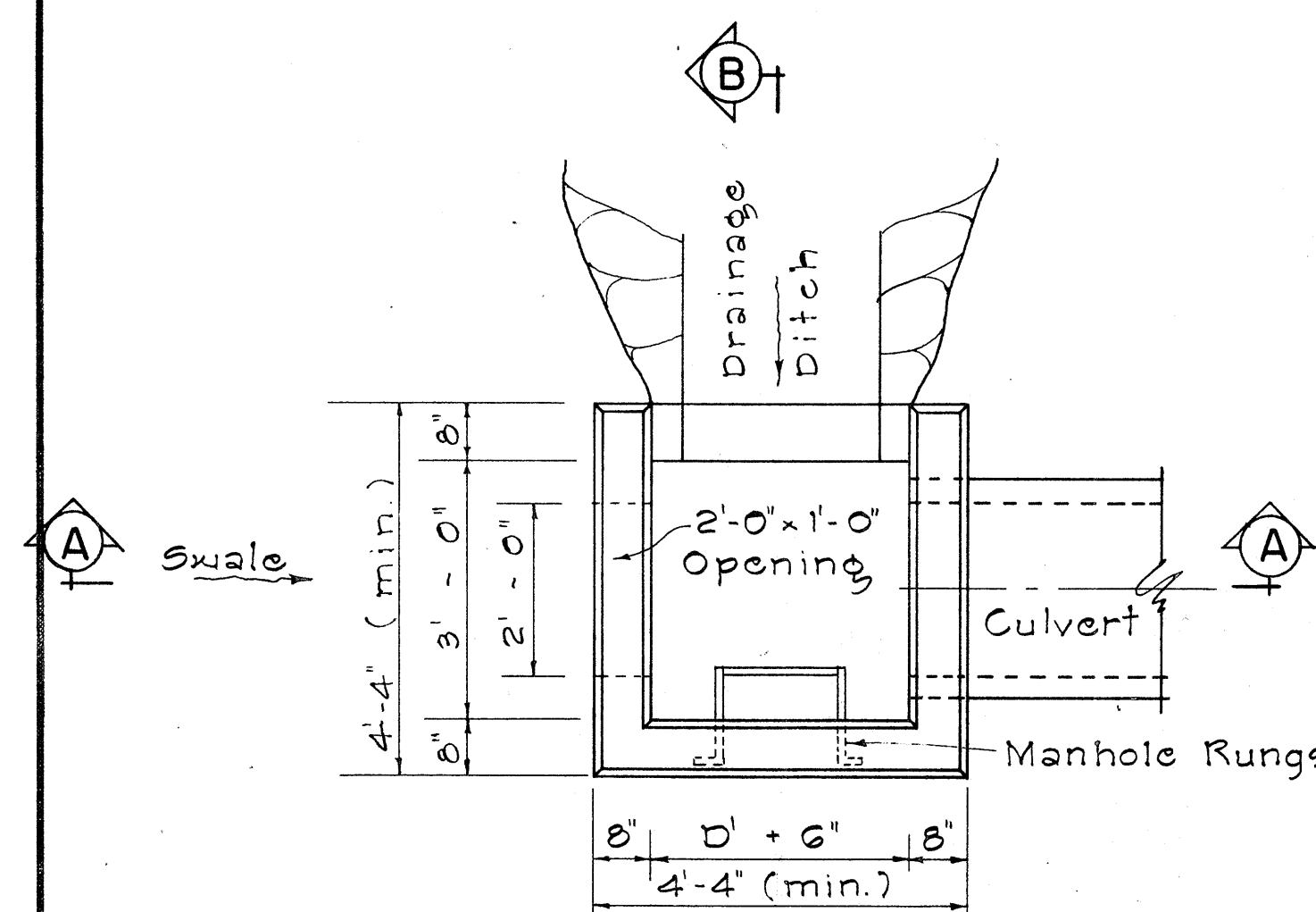
Scale: As Noted
Date: July, 1969
SHEET No. 9 OF 24 SHEETS DH 16

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

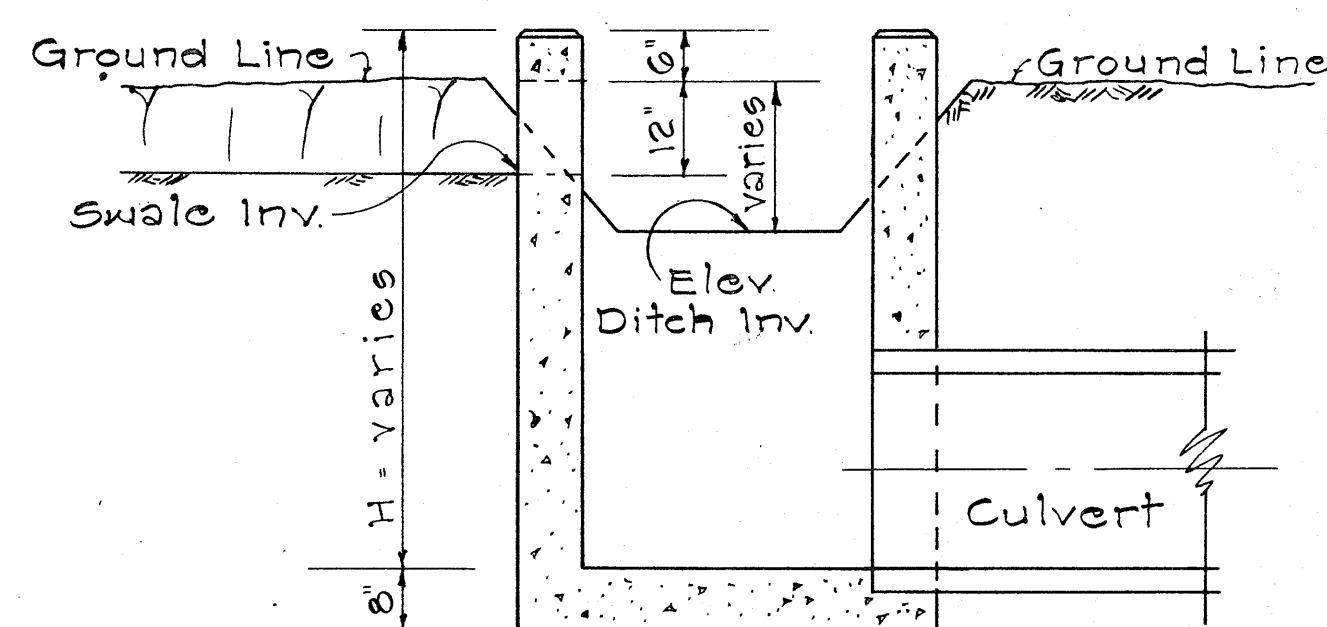
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	41	55

GENERAL NOTES

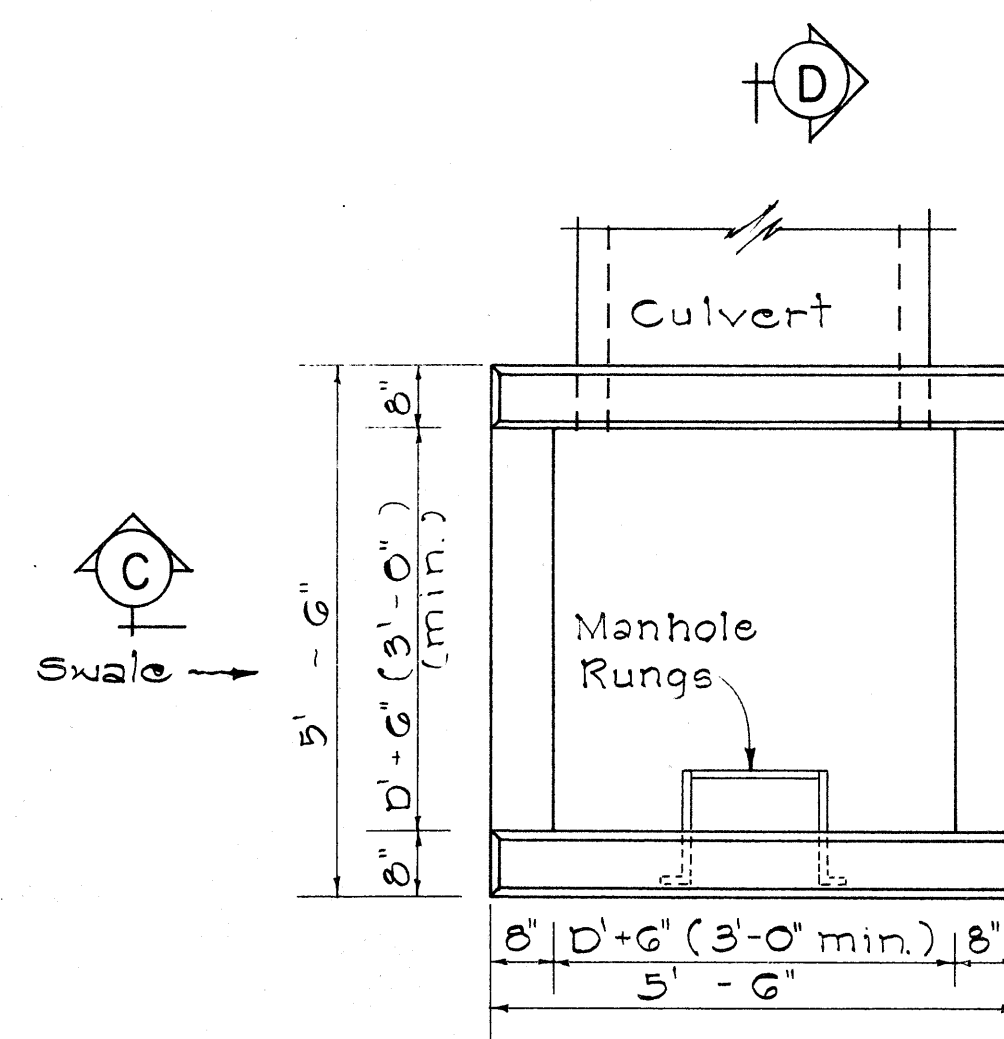
- All concrete shall be Class "B" unless otherwise noted.
- Exposed edges of all drainage structures shall be chamfered one inch.
- Culvert shall enter and leave Drop Intake from any position and in the direction indicated by the plans or ordered by the Engineer.
- Manhole Rungs (12" o.c.) are req'd. when "H" is greater than 4'-6". Only one rung (16 inches from the bottom) is required if "H" is 4'-6" or less. Manhole Rungs may be placed at any location as ordered by the Engineer.



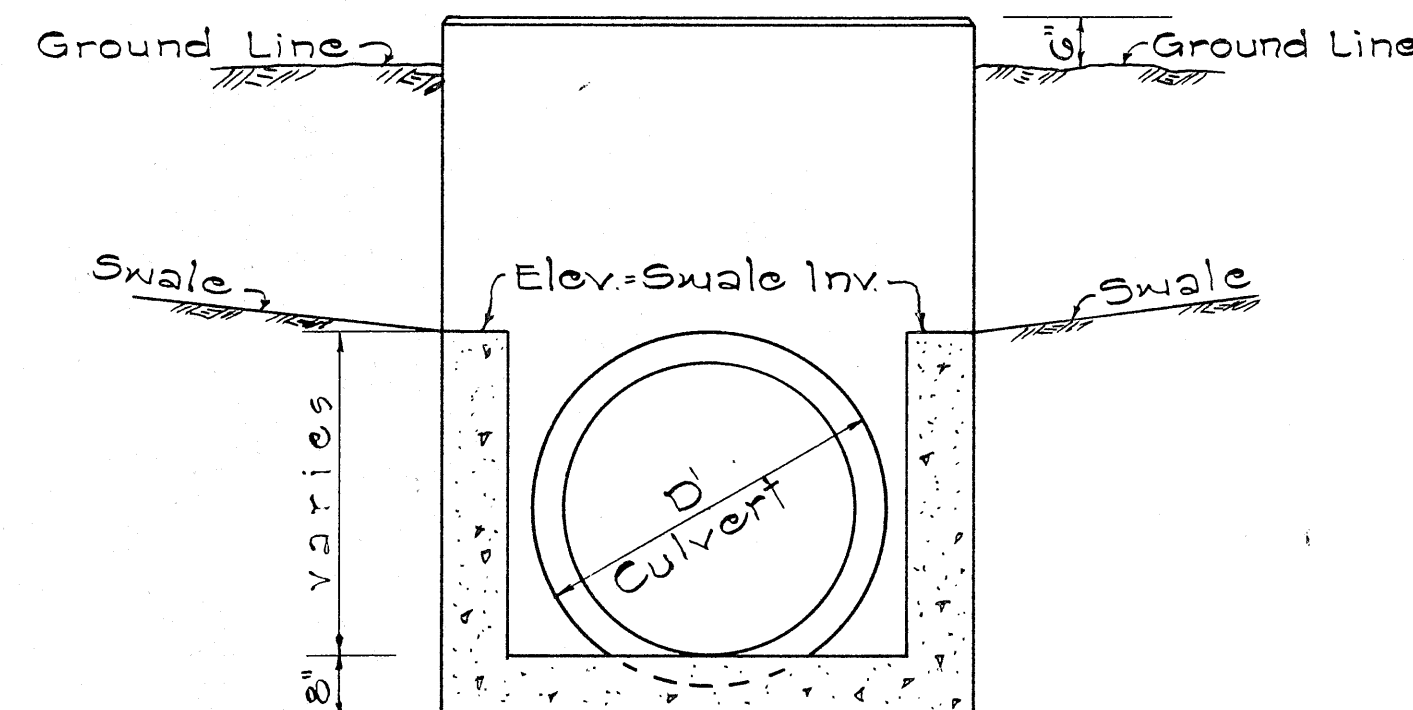
PLAN



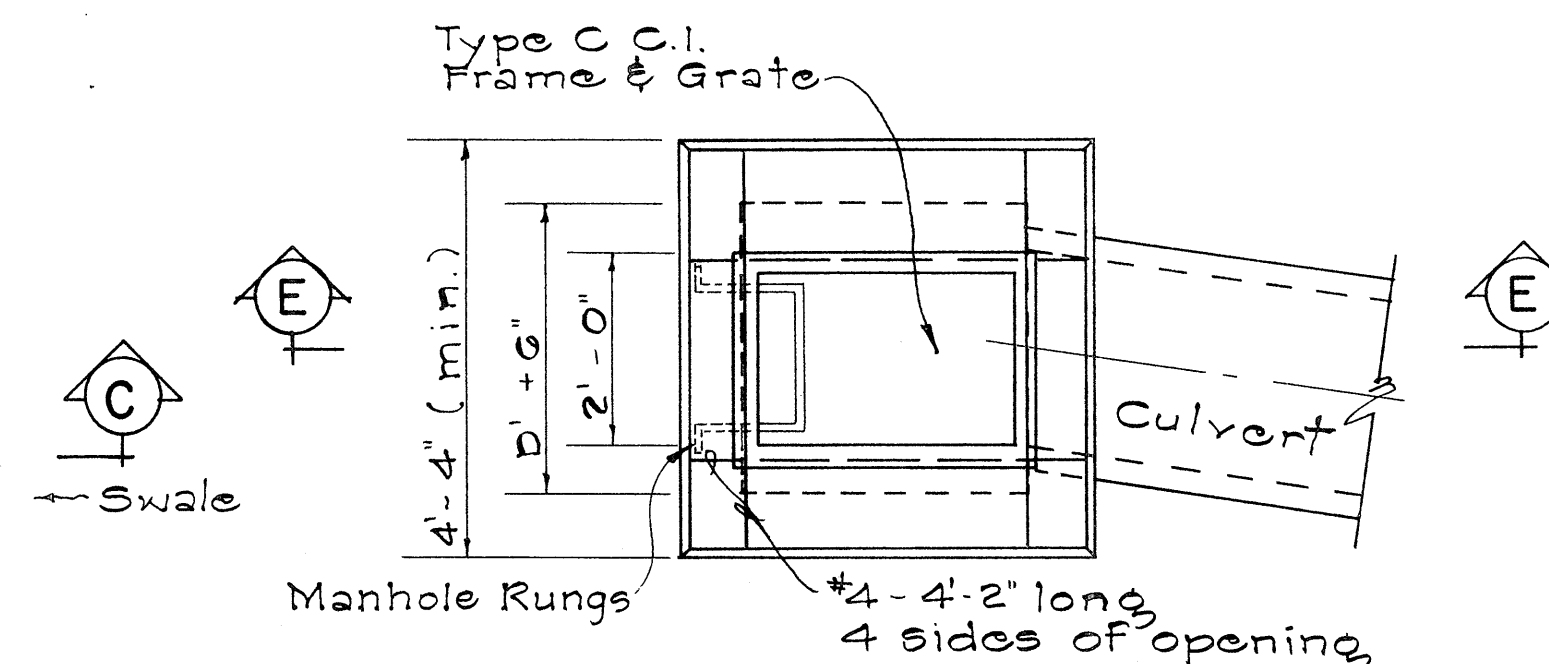
SECTION "A-A"



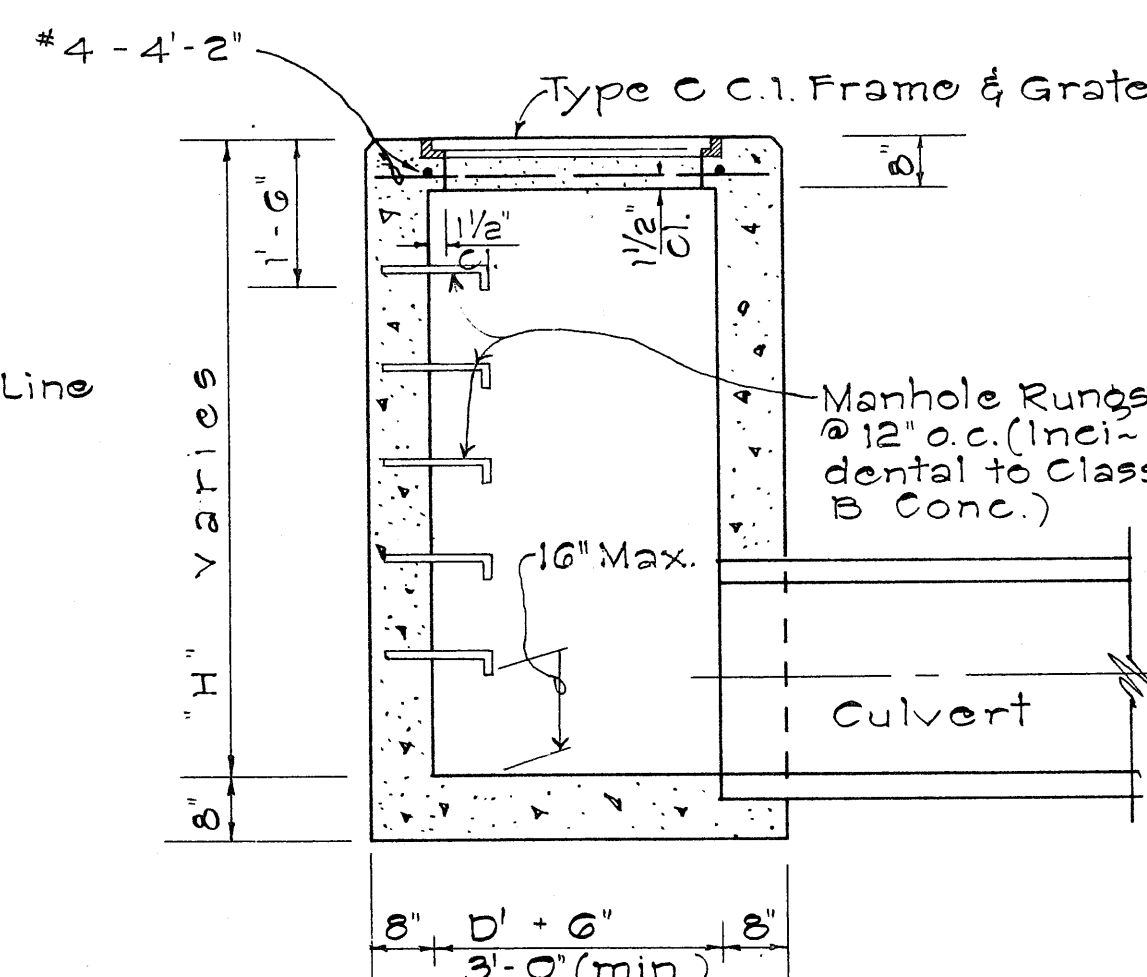
PLAN



SECTION "C-C"



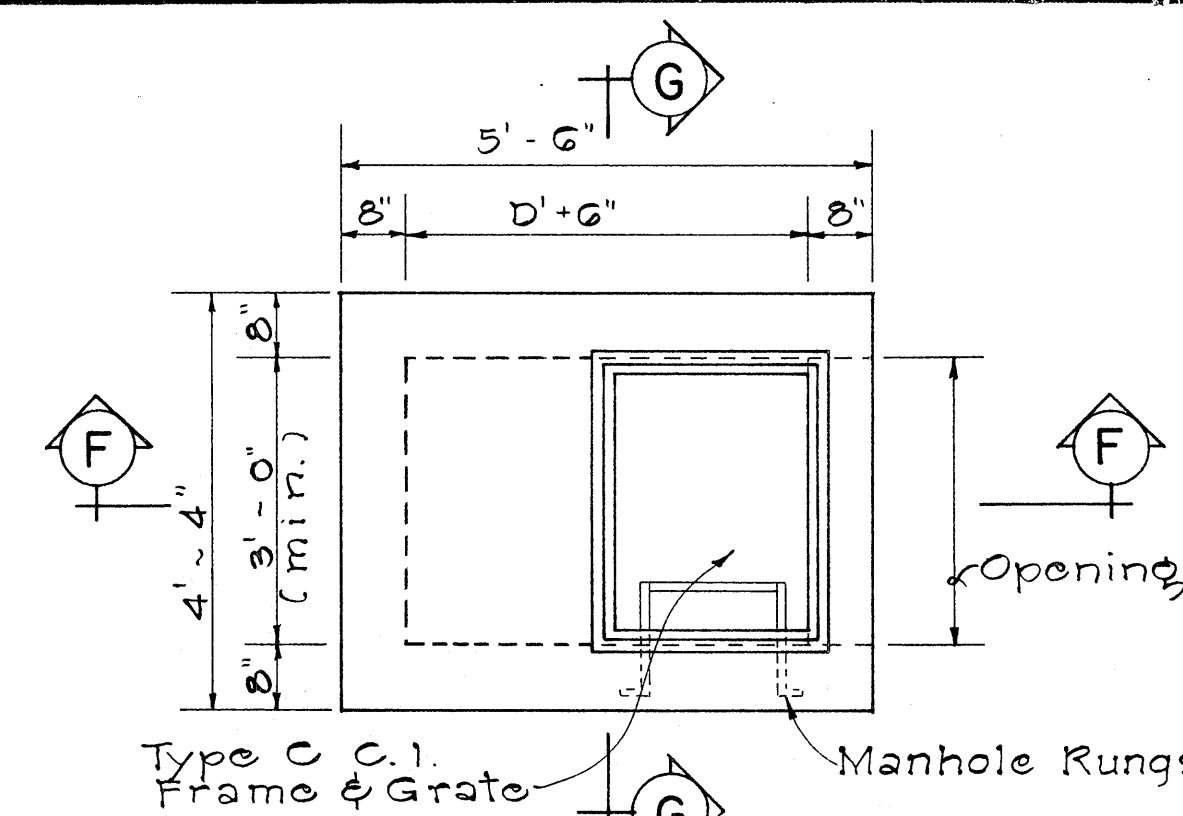
PLAN



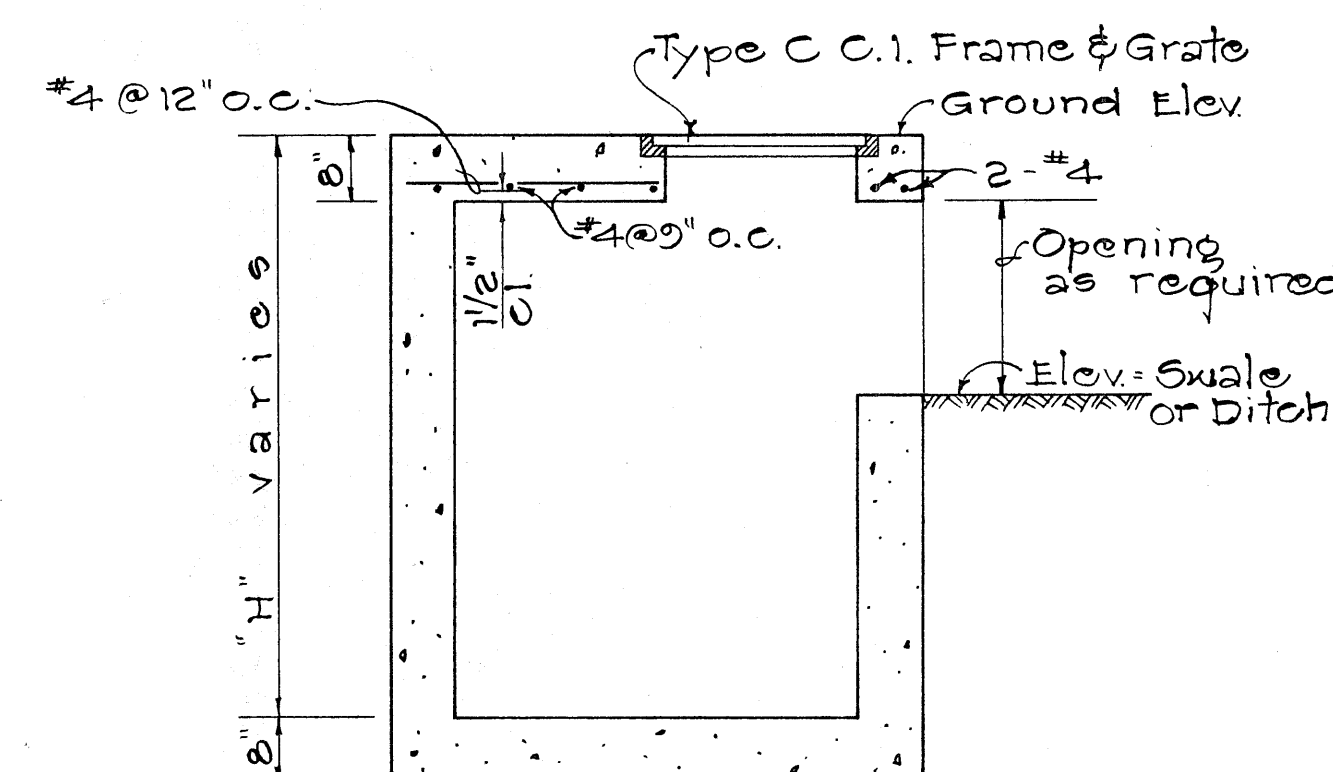
SECTION "E-E"

TYPE "C" GRATED CONCRETE DROP INTAKE

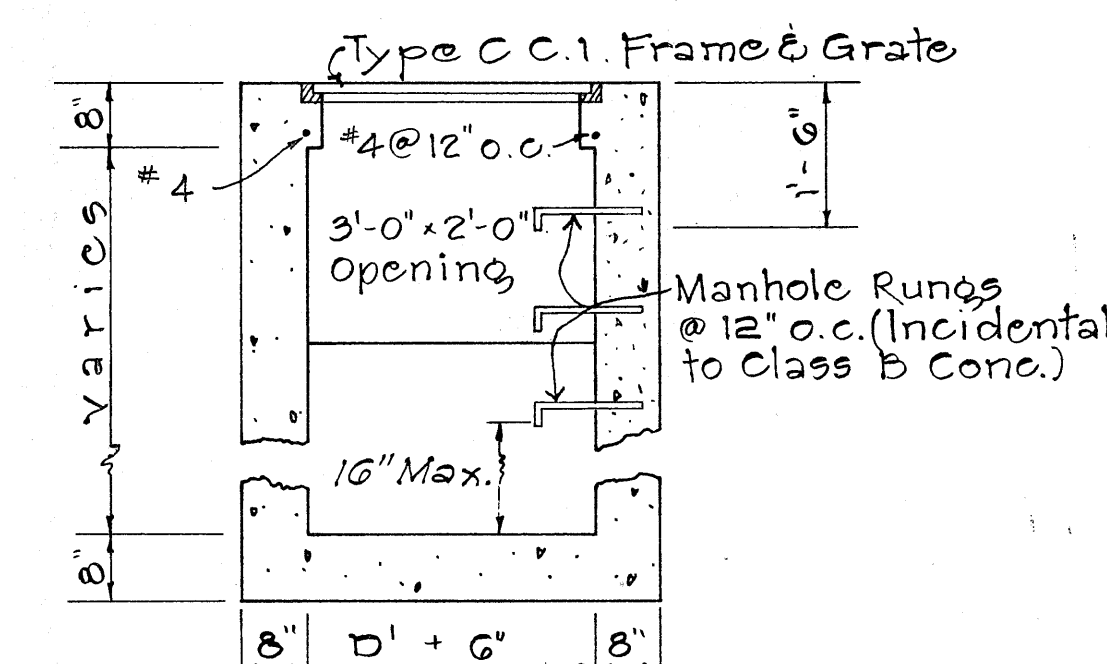
Scale: 1/2" = 1'-0"



PLAN



SECTION "F-F"



SECTION "G-G"

TYPE "D" GRATED CONCRETE DROP INTAKE

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

APPROVAL RECOMMENDED:

HYDRAULIC DESIGN ENGINEER

12-17-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-17-69
DATE

NO.	REVISION	APPROVED BY	DATE
1	Spacing on Manhole Rungs to conform to OSHA.	H.C.	1-21-75

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
TYPE "A", "B", "C", AND "D"
CONCRETE DROP INTAKE

Scale: As Noted Date: July, 1969

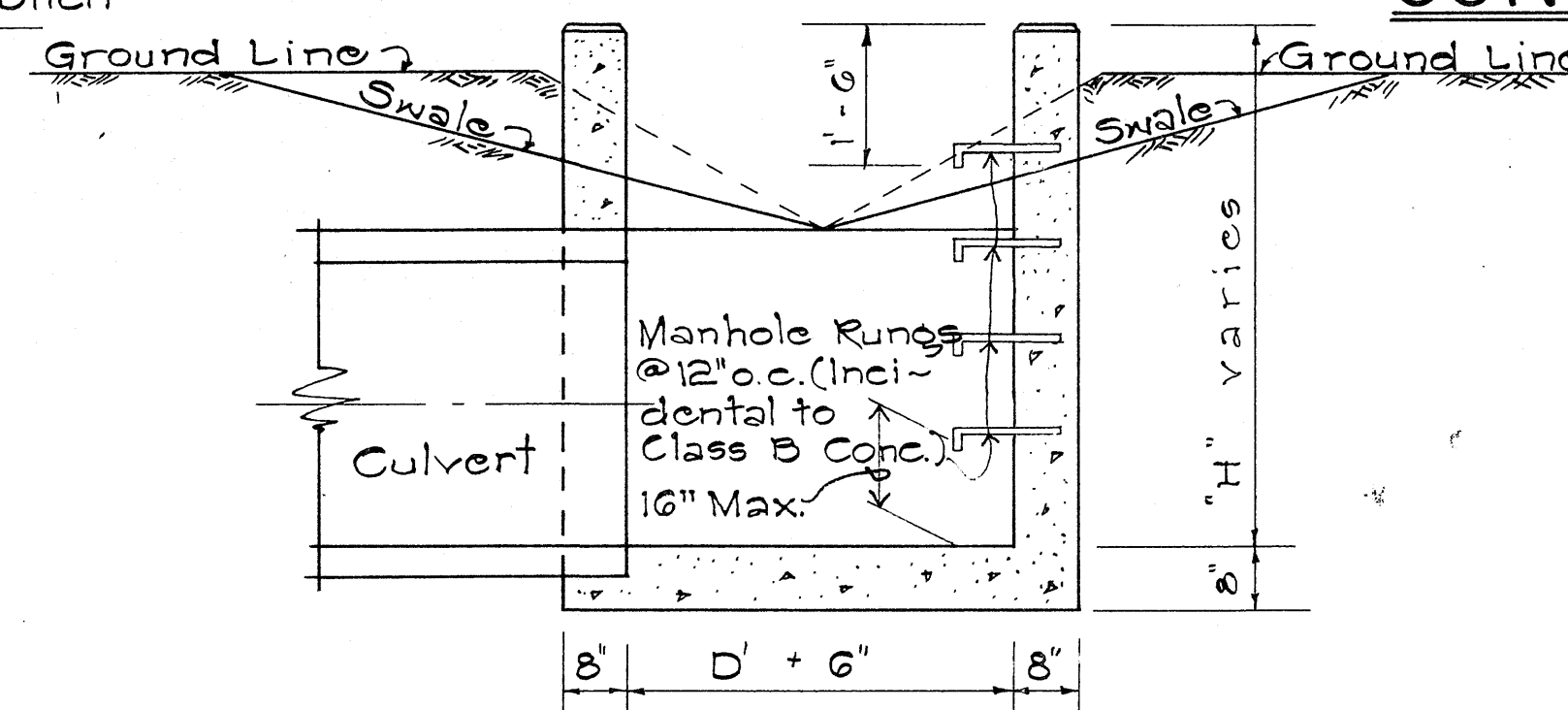
SHEET No. 10 OF 24 SHEETS DH19

Manhole Rungs @ 12" o.c.
(Incidental to Class B Conc.)

SECTION "B-B"

TYPE "A" CONCRETE DROP INTAKE

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



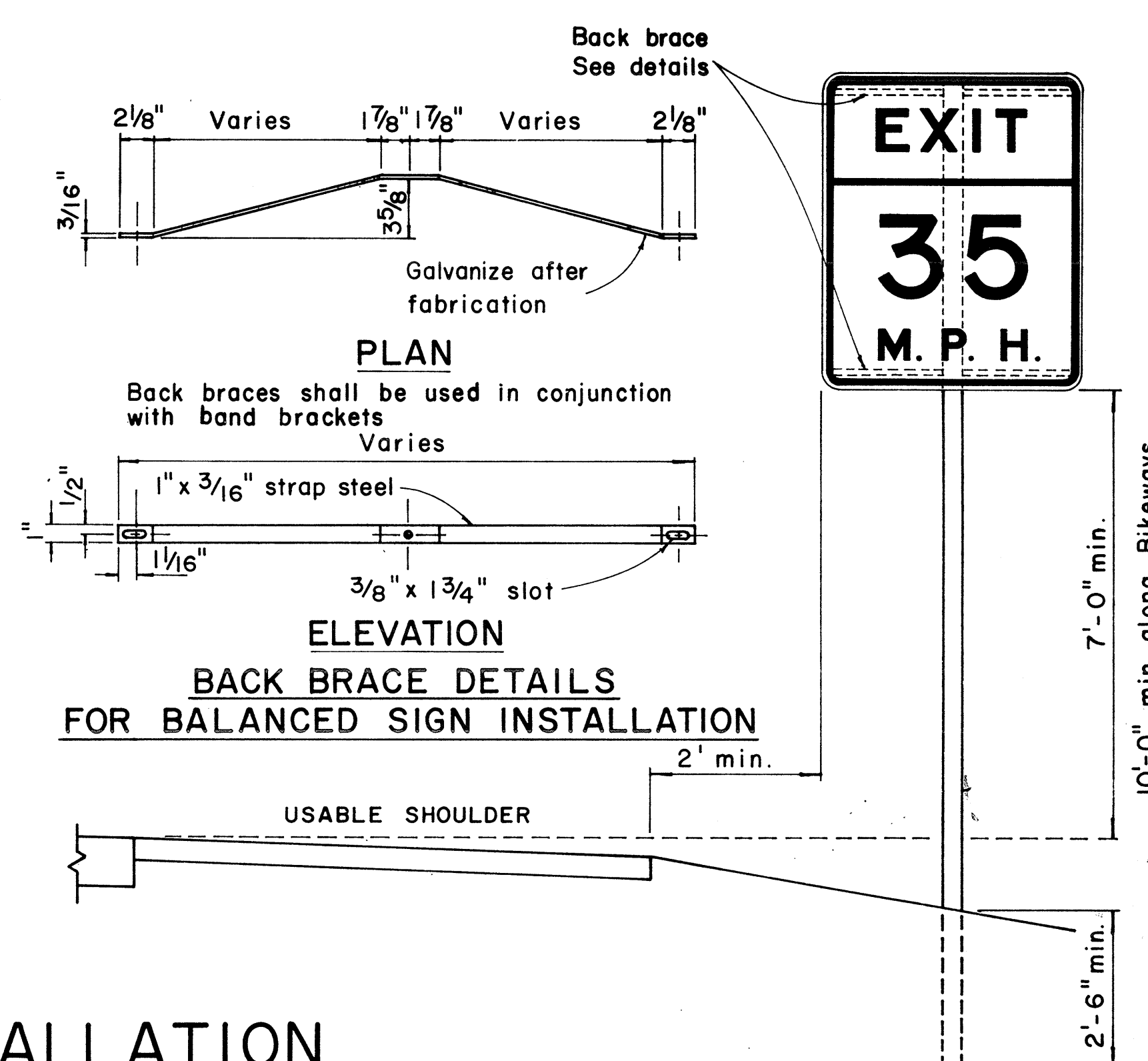
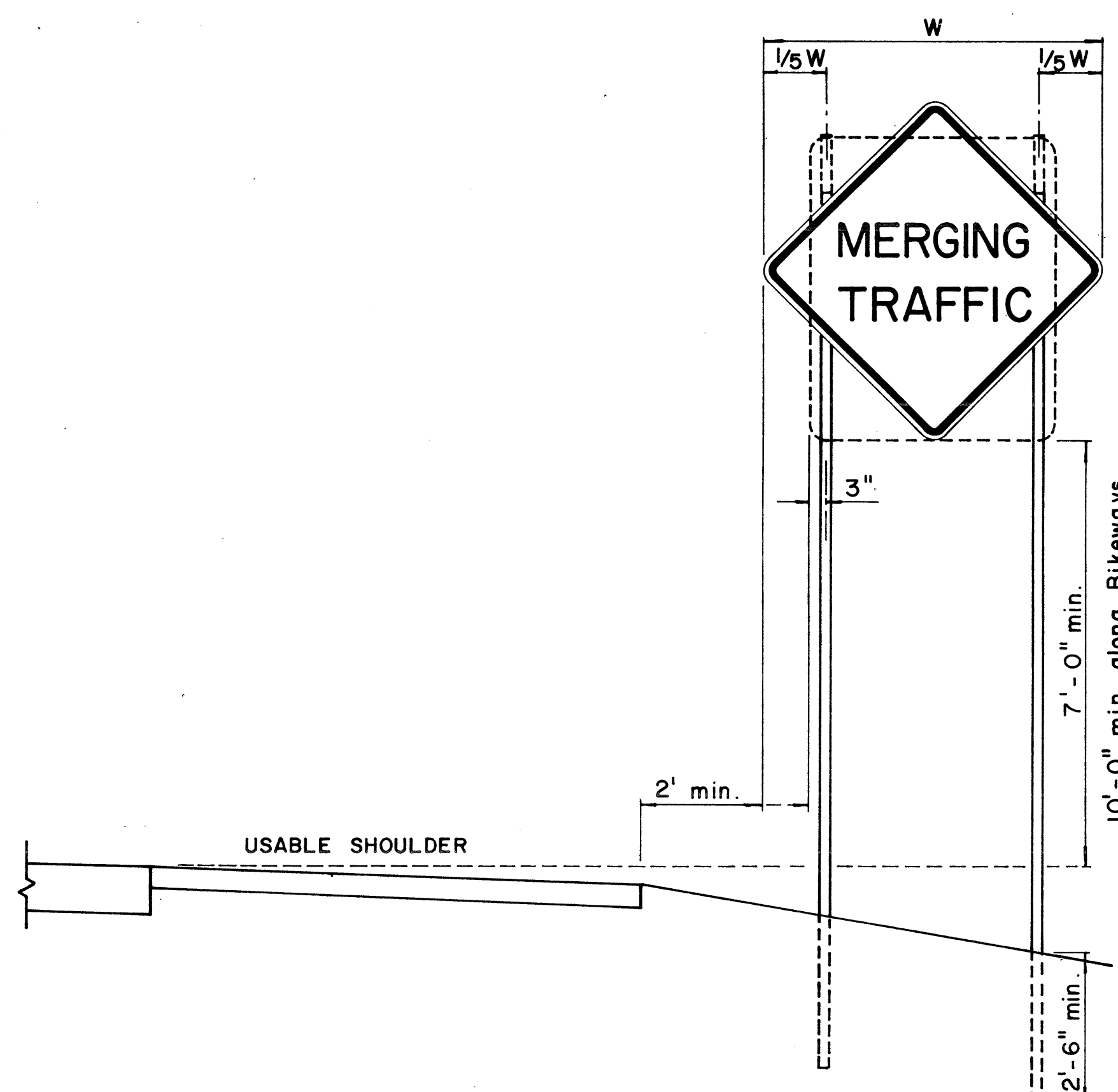
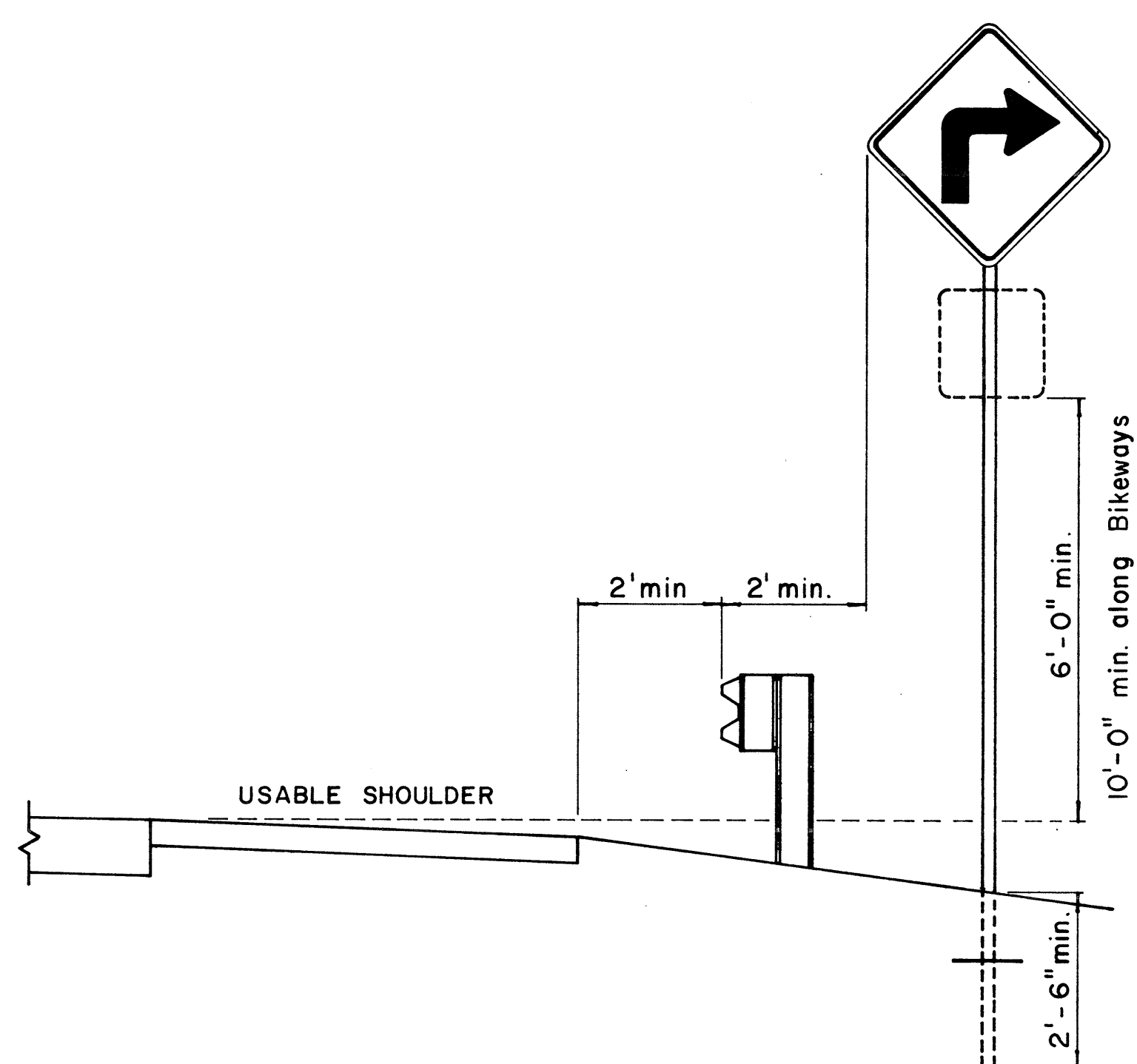
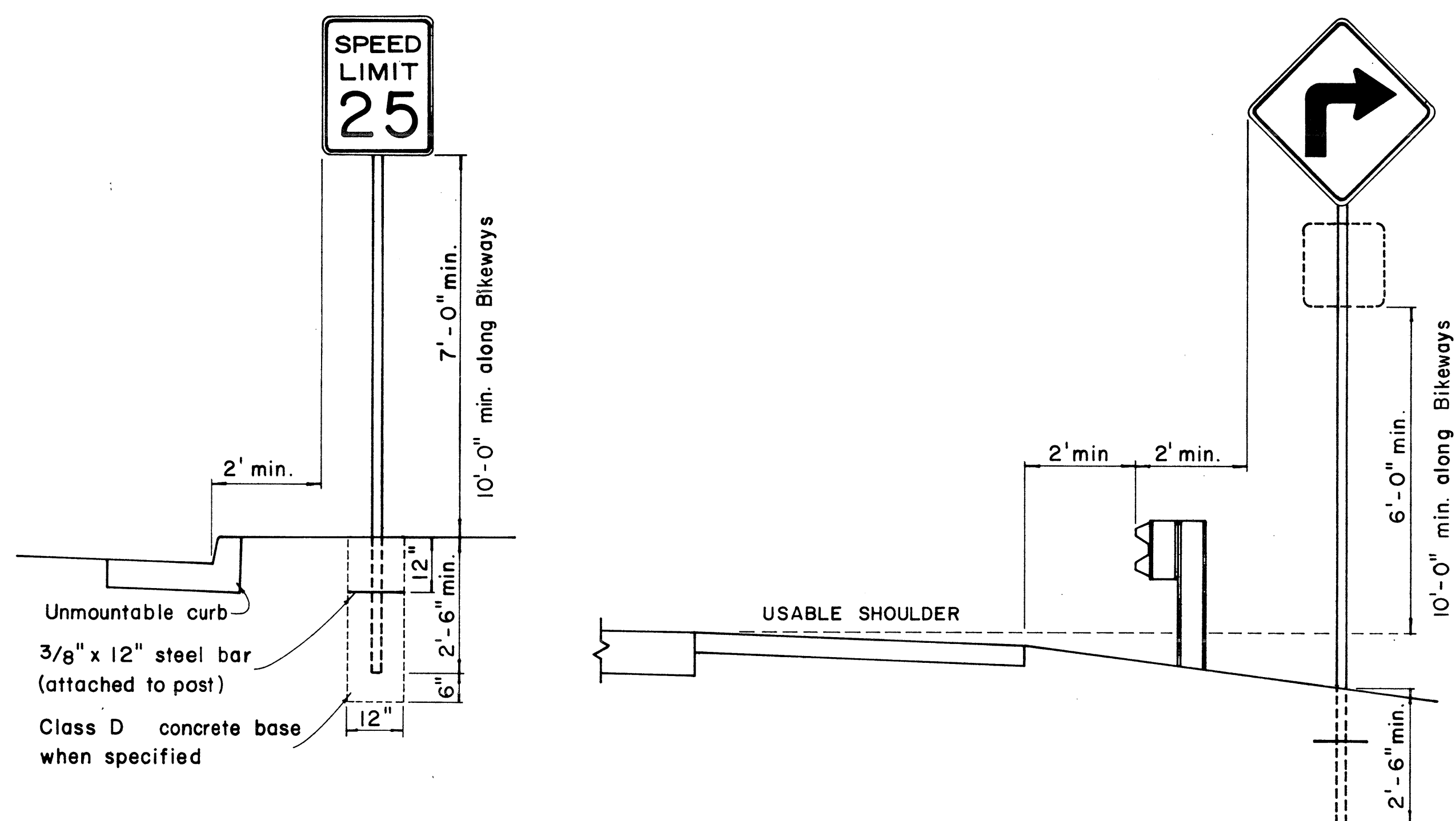
SECTION "D-D"

TYPE "B" CONCRETE DROP INTAKE

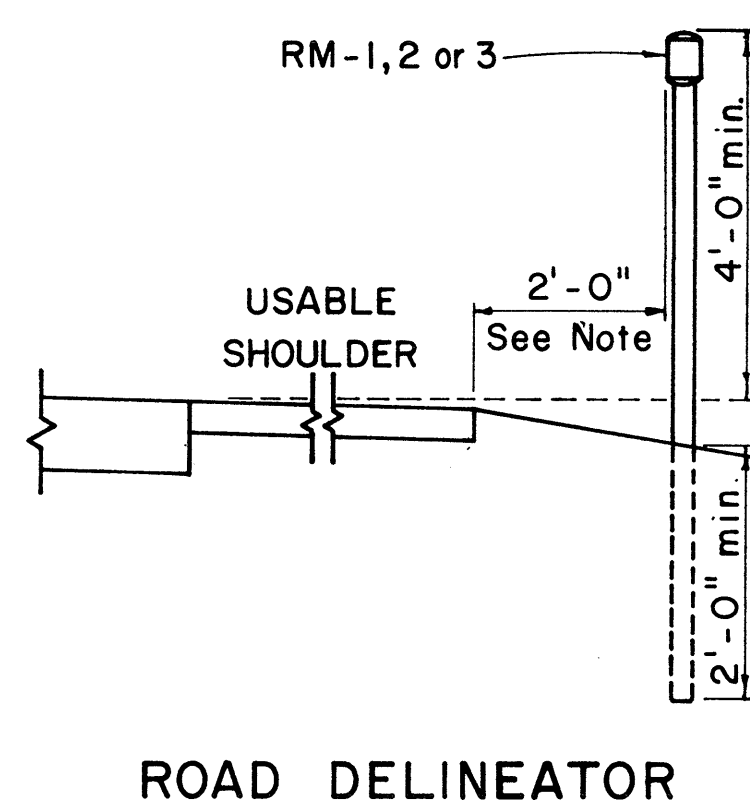
Scale: 1/2" = 1'-0"

SURVEY PLOTTED BY	DATE
DESIGNED 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.	24-0A-01-71 UNIT 1	1977	42	55

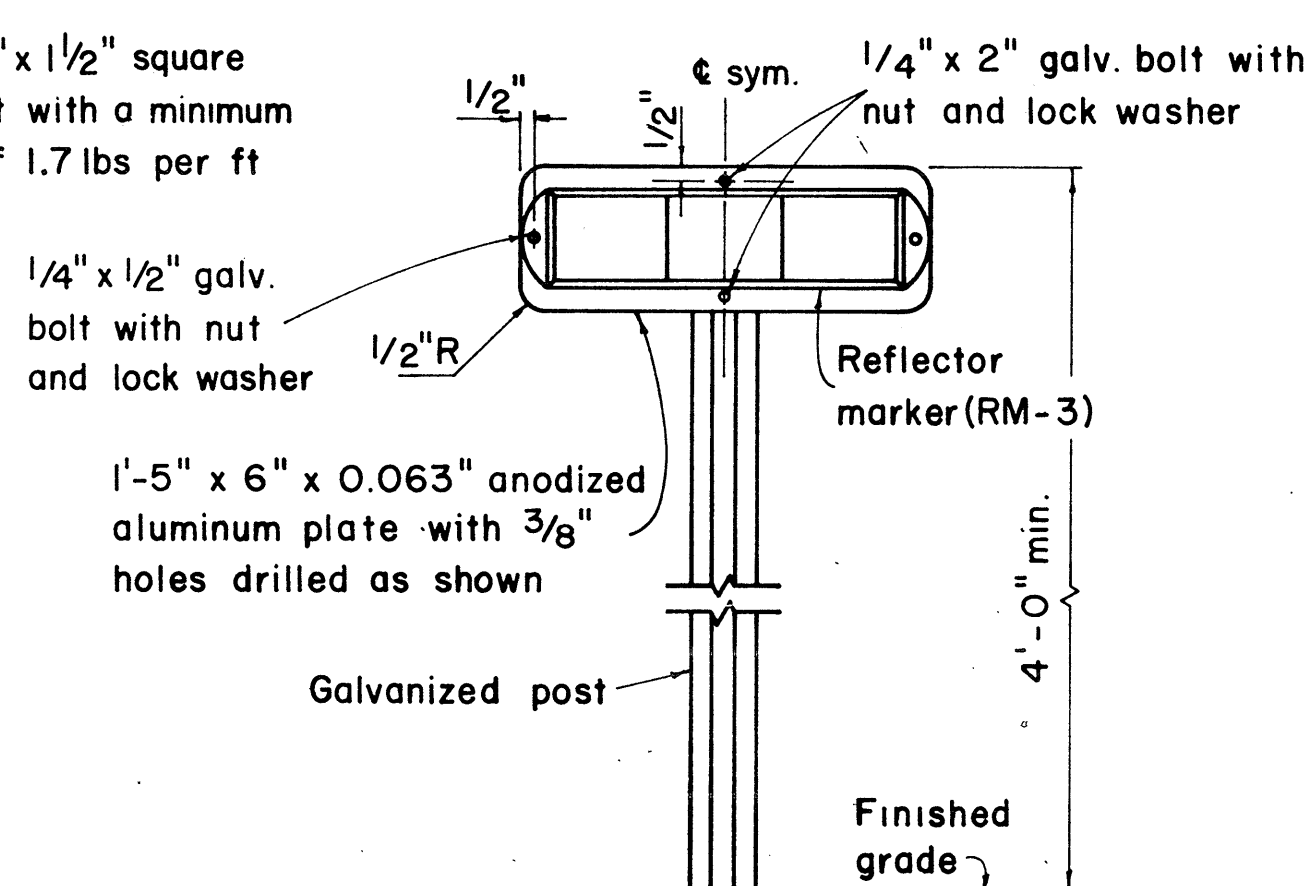


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION

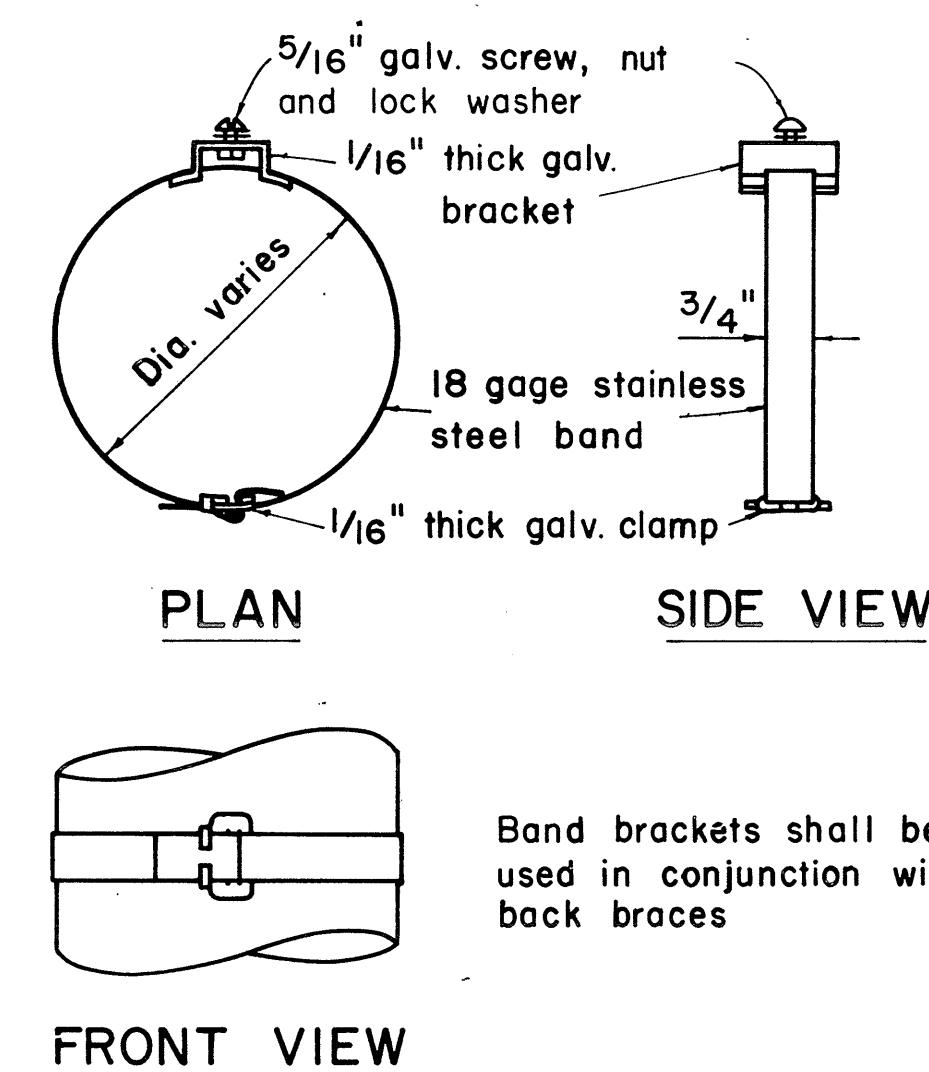


Galv. flanged channel
1/8" x 3/16" rolled section
post with a minimum
weight of 2 lbs. per ft.
Upper 2 ft. shall have
a single row of 3/8" holes
centered in the web at
1" o.c.

TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL
HORIZONTAL REFLECTOR MARKER
RM-3H



TYPICAL BAND BRACKET FOR
MOUNTING TRAFFIC SIGNS

GENERAL NOTES:

- Sign posts shall be 2" galv. standard pipe or 2" x 2" galv. sq. tube post.
- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two 2" galv. standard pipe or two 2" x 2" galv. sq. tube post.
- 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:
Traffic Engineer
DATE 12/22/69

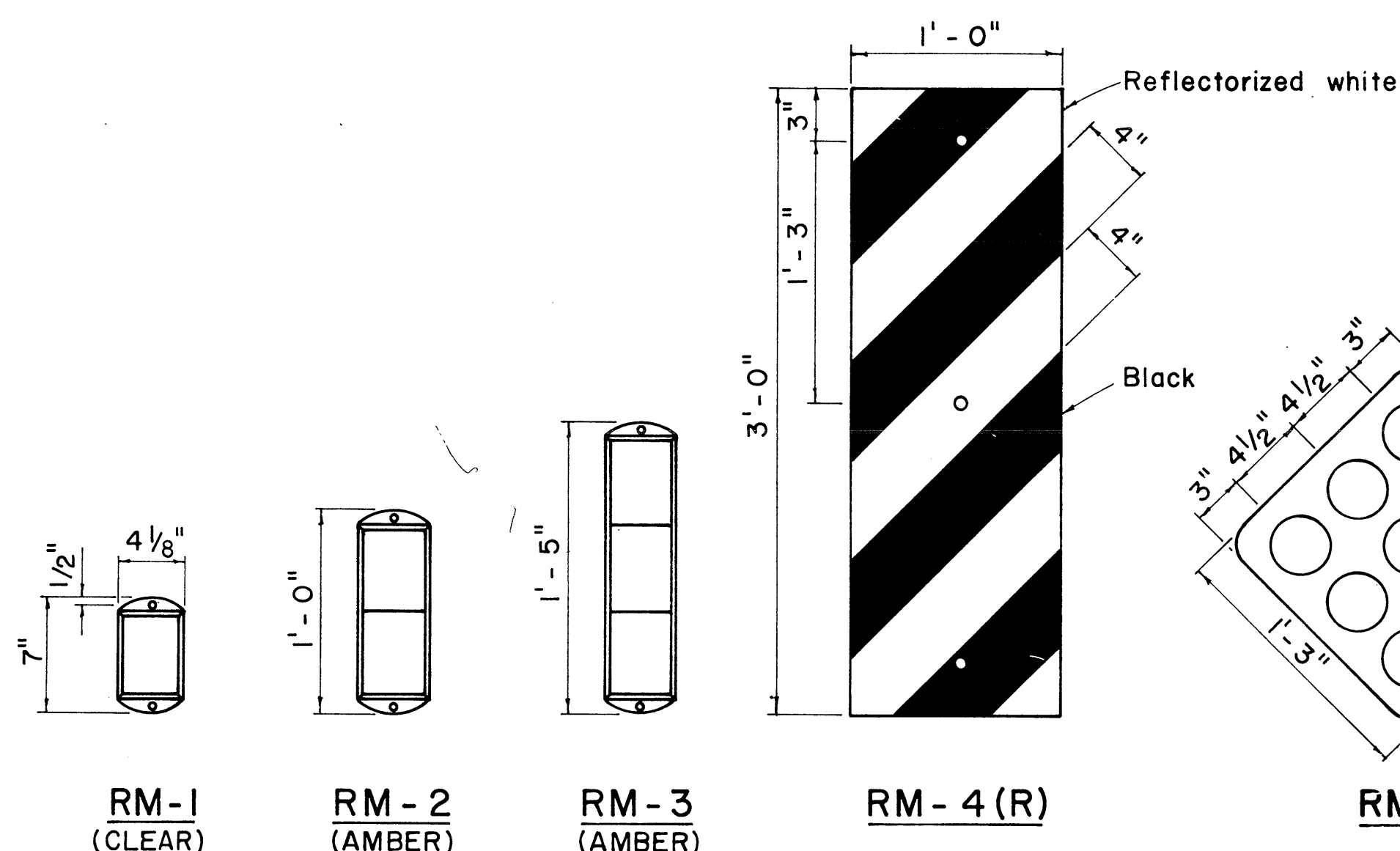
APPROVED:
Assistant Chief, Engineering
DATE 12-20-69

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

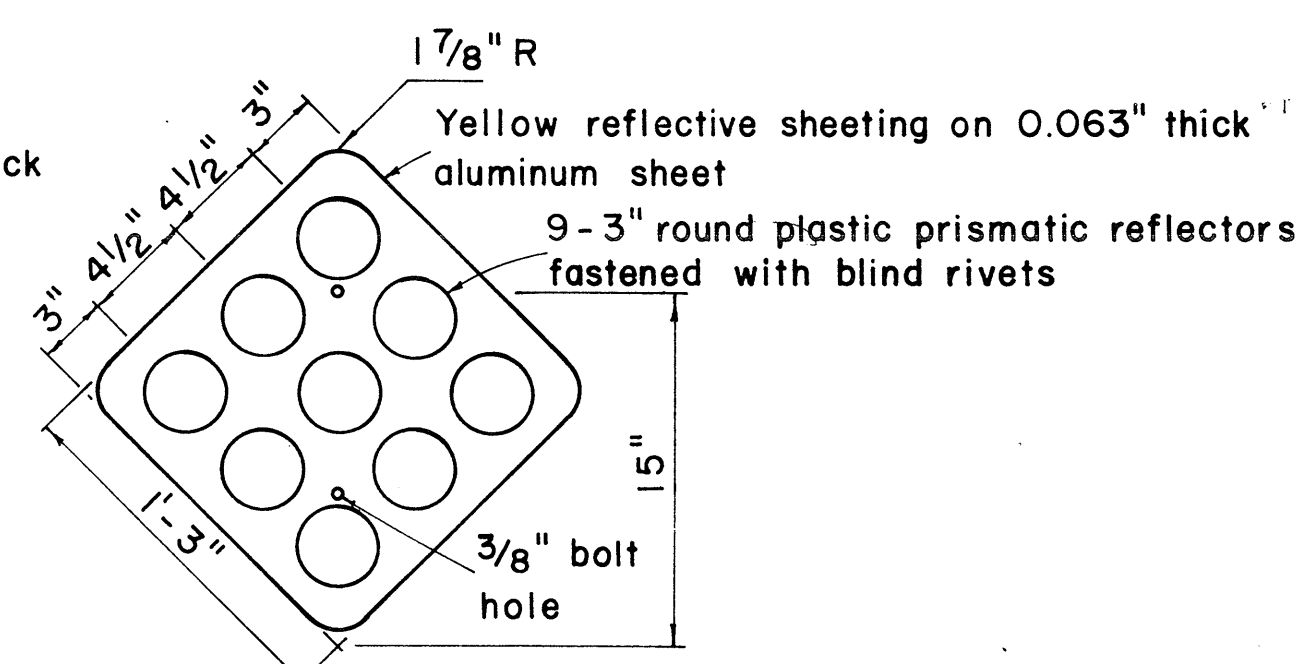
STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

SHEET No. 11 OF 24 SHEETS DT 100

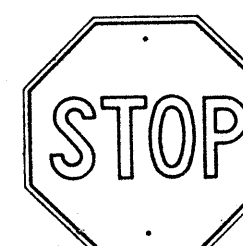


REFLECTOR MARKERS

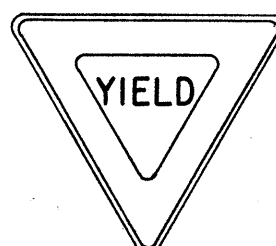


DATE	REVISION
12/22/69	1
12/20/69	2
12/14/69	3
12/14/69	4
12/14/69	5
12/14/69	6
12/14/69	7
12/14/69	8
12/14/69	9
12/14/69	10
12/14/69	11
12/14/69	12
12/14/69	13
12/14/69	14
12/14/69	15
12/14/69	16
12/14/69	17
12/14/69	18
12/14/69	19
12/14/69	20
12/14/69	21
12/14/69	22
12/14/69	23
12/14/69	24

FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	43	55



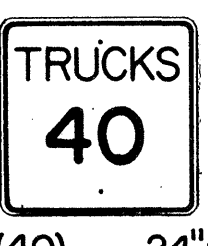
R1-1 30" x 30"
R1-1-A 36" x 36"
4-WAY
R1-3 12" x 6"
R1-3-A 18" x 9"



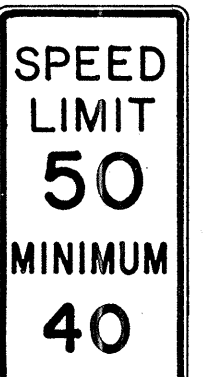
R1-2 36" x 36" x 36"
R1-2-A 48" x 48" x 48"



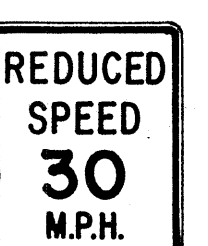
R2-1(50) 24" x 30"
R2-1(50)-A 48" x 60"



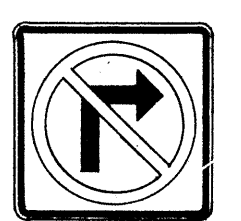
R2-2(40) 24" x 24"
R2-2(40)-A 48" x 48"



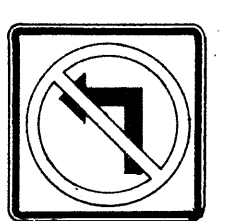
R2-4a(50/40) 24" x 48"
R2-4a(50/40)-A 48" x 96"



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



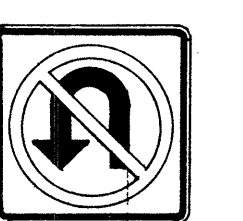
R3-1 24" x 24"
24" x 18"
R3-1-A 48" x 48"
48" x 36"



R3-2 24" x 24"
24" x 18"
R3-2-A 48" x 48"
48" x 36"



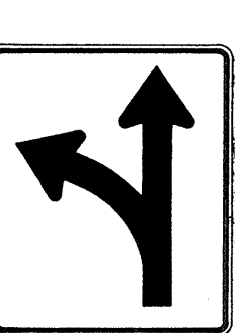
R3-3 24" x 24"
R3-3-A 48" x 48"



R3-4 24" x 24"
24" x 18"
R3-4-A 48" x 48"
48" x 36"



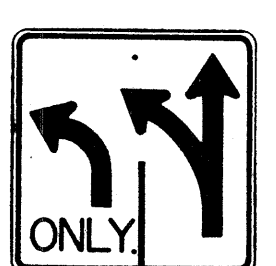
R3-5(L) 30" x 36"
R3-5(L)-A 48" x 60"



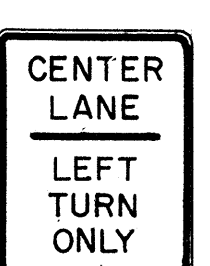
R3-6(L) 30" x 36"
R3-6(L)-A 48" x 60"



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"



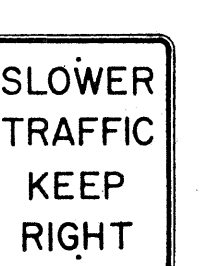
R3-9 24" x 30"



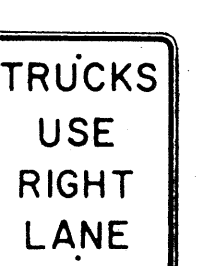
R4-1 24" x 30"



R4-2 24" x 30"



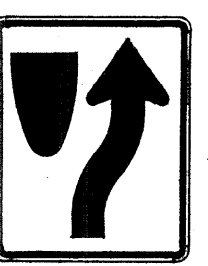
R4-3 24" x 30"
R4-3-A 48" x 60"



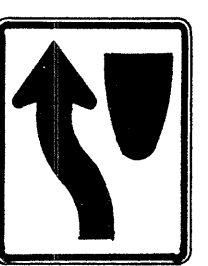
R4-5 24" x 30"



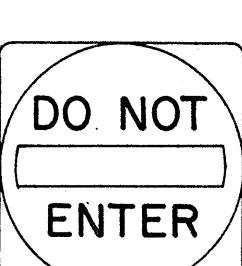
R4-6(500) 24" x 30"



R4-7 24" x 30"
24" x 18"



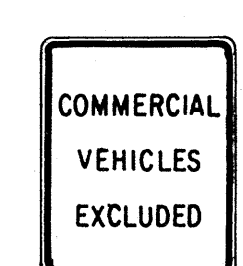
R4-8 24" x 30"
24" x 18"



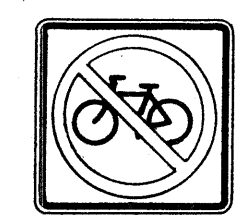
R5-1 30" x 30"
R5-1-A 48" x 48"



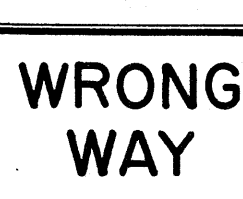
R5-2 24" x 24"
24" x 18"



R5-4 24" x 30"



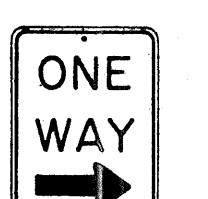
R5-6 24" x 24"
24" x 18"



R5-9 36" x 24"



R6-1(R) 36" x 12"



R6-2(R) 18" x 24"



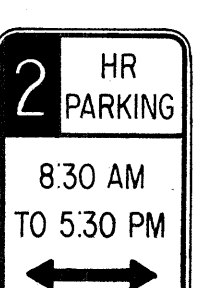
R7-1 12" x 18"
R7-1-A 24" x 30"



R7-4 12" x 18"
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" x 12"



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"



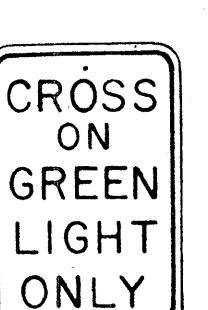
R9-2 12" x 18"



R9-3 12" x 18"



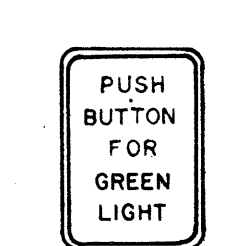
R9-4 18" x 24"



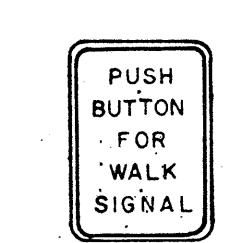
R10-1 12" x 18"



R10-2 12" x 18"



R10-3 9" x 12"



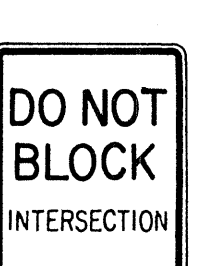
R10-4 9" x 12"



R10-5 24" x 30"



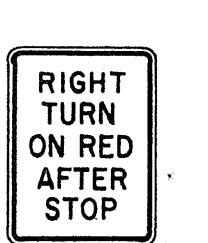
R10-6 24" x 36"



R10-7 24" x 30"



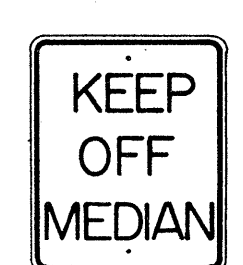
R10-8 24" x 30"



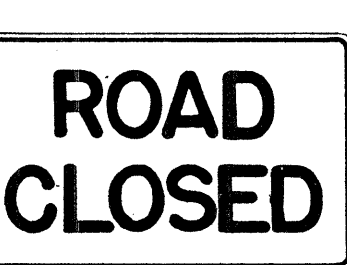
R10-9 24" x 30"



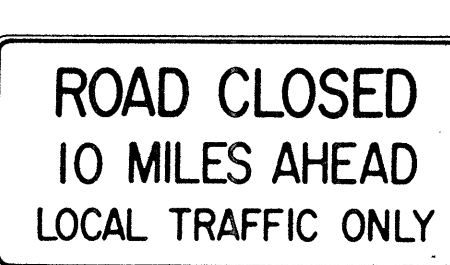
R10-10 24" x 30"



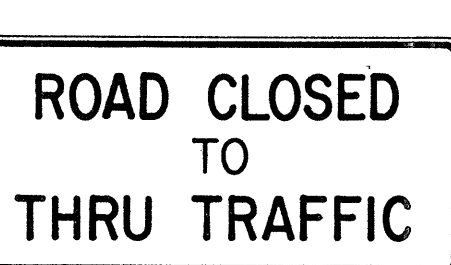
R11-1 24" x 30"



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," 1972, and as amended.
- 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
TRAFFIC ENGINEER 3/17/72
DATE

APPROVED:
Robert Doherty
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
2	Revised General Note 1.	H.C.	10/16/74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
REGULATORY SIGNS

NOT TO SCALE

SHEET No. 12 OF 24 SHEETS DT 101

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	45	55



CW20-1a 48" x 48"



CW20-2d 48" x 48"



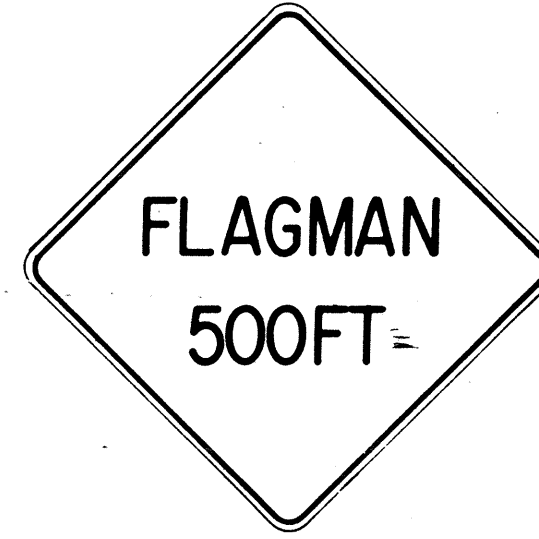
CW20-3b 48" x 48"



CW20-4d 48" x 48"



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



CW20-7c 48" x 48"



CW21-1 30" x 30"



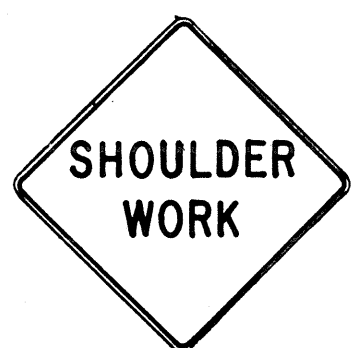
CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



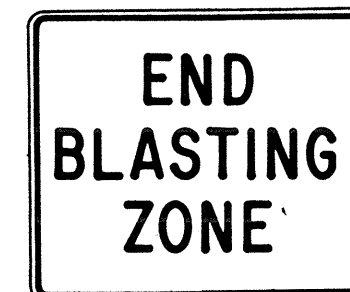
CW21-6 30" x 30"



CW22-1b 48" x 48"



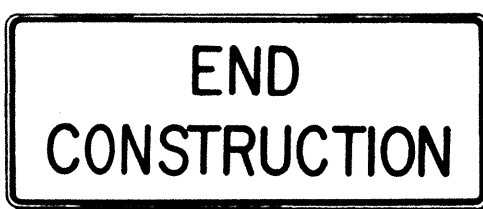
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



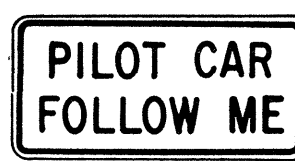
CG20-2 60" x 24"



CM4-9(R) 30" x 24"



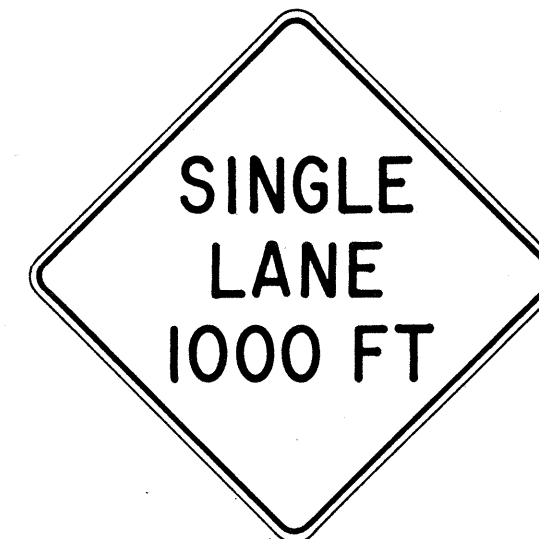
CM4-10(R) 48" x 18"



CG20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All construction signs shall be reflectorized.
- All construction signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- For "CW" series signs, suffixes a,b,c and d are as follows:
a-1500 FT, b-1000 FT, c-500 FT and d-AHEAD.

APPROVAL RECOMMENDED:

Erich Tanaka
TRAFFIC ENGINEER

3/21/12
DATE

APPROVED:

Richard S. Davis
ASSISTANT CHIEF, ENGINEERING

3/23/12
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	H.T.	3/23/12
2	Revised General Note 1	H.T.	10/16/14
3	Revised General Note 2	Mt	7-16-15
4	Revised General Note 2 and sign CG20-1(5)	H.T.	7-14-16

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS CONSTRUCTION SIGNS

NOT TO SCALE

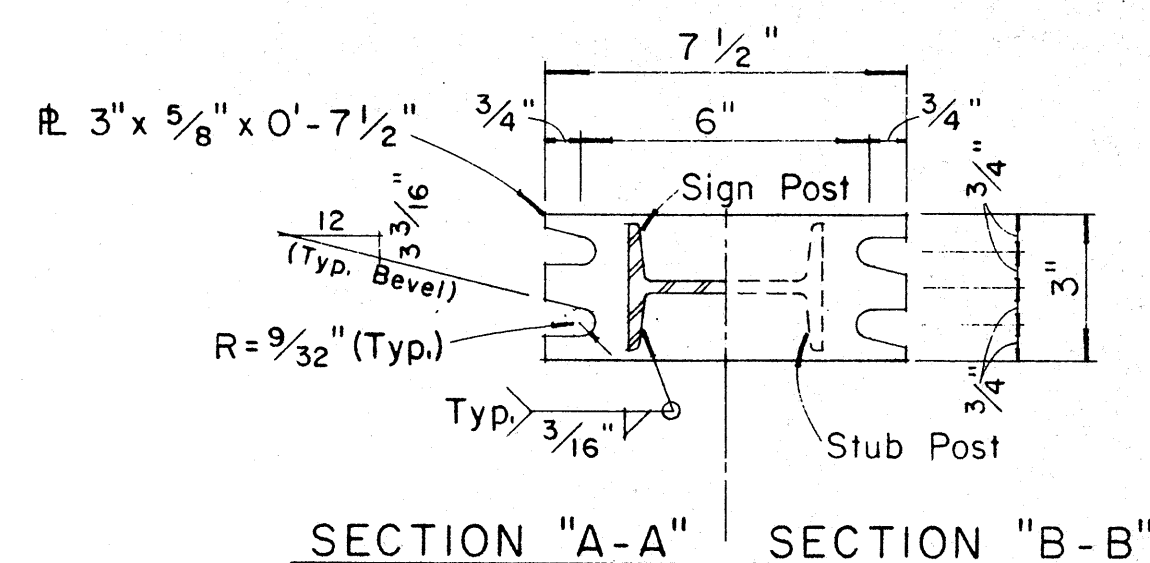
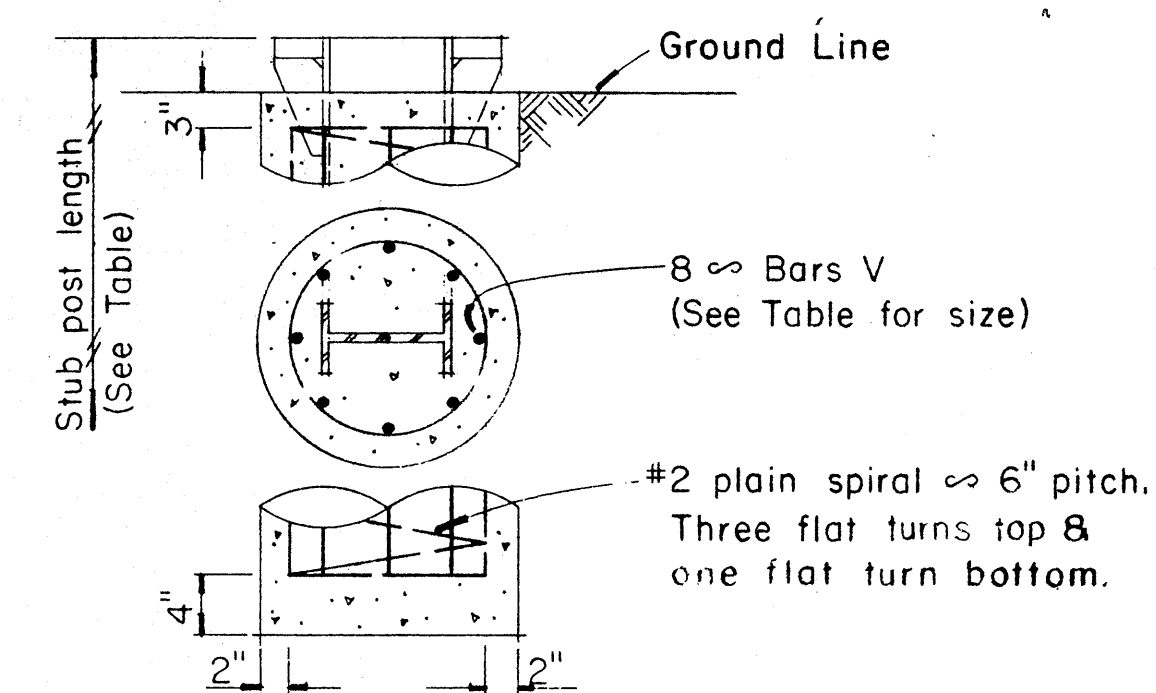
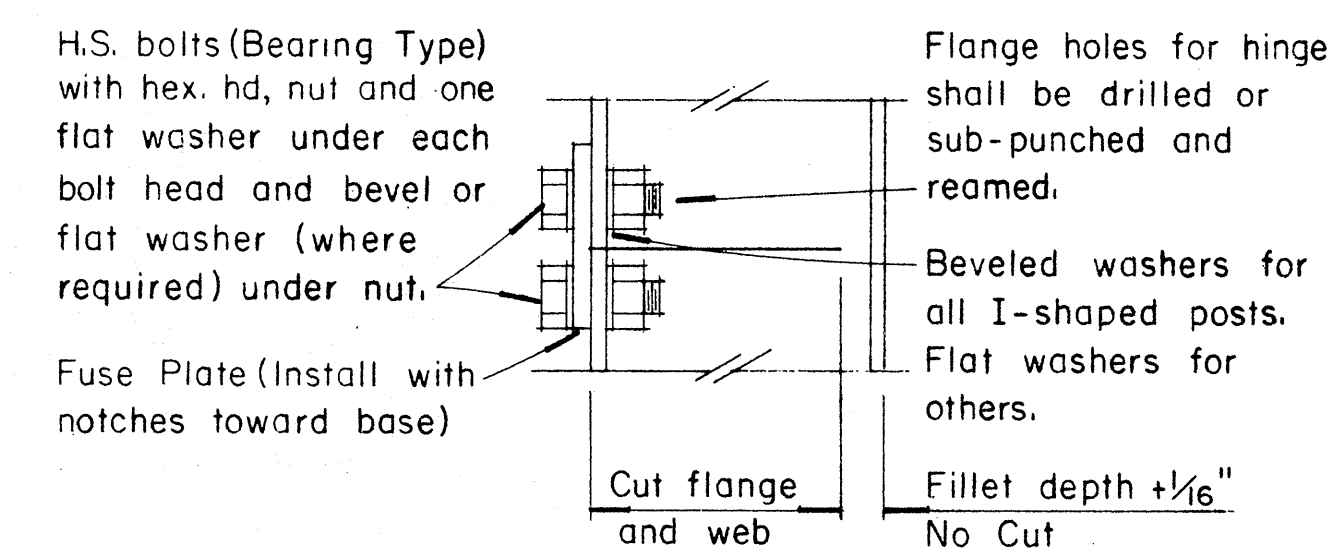
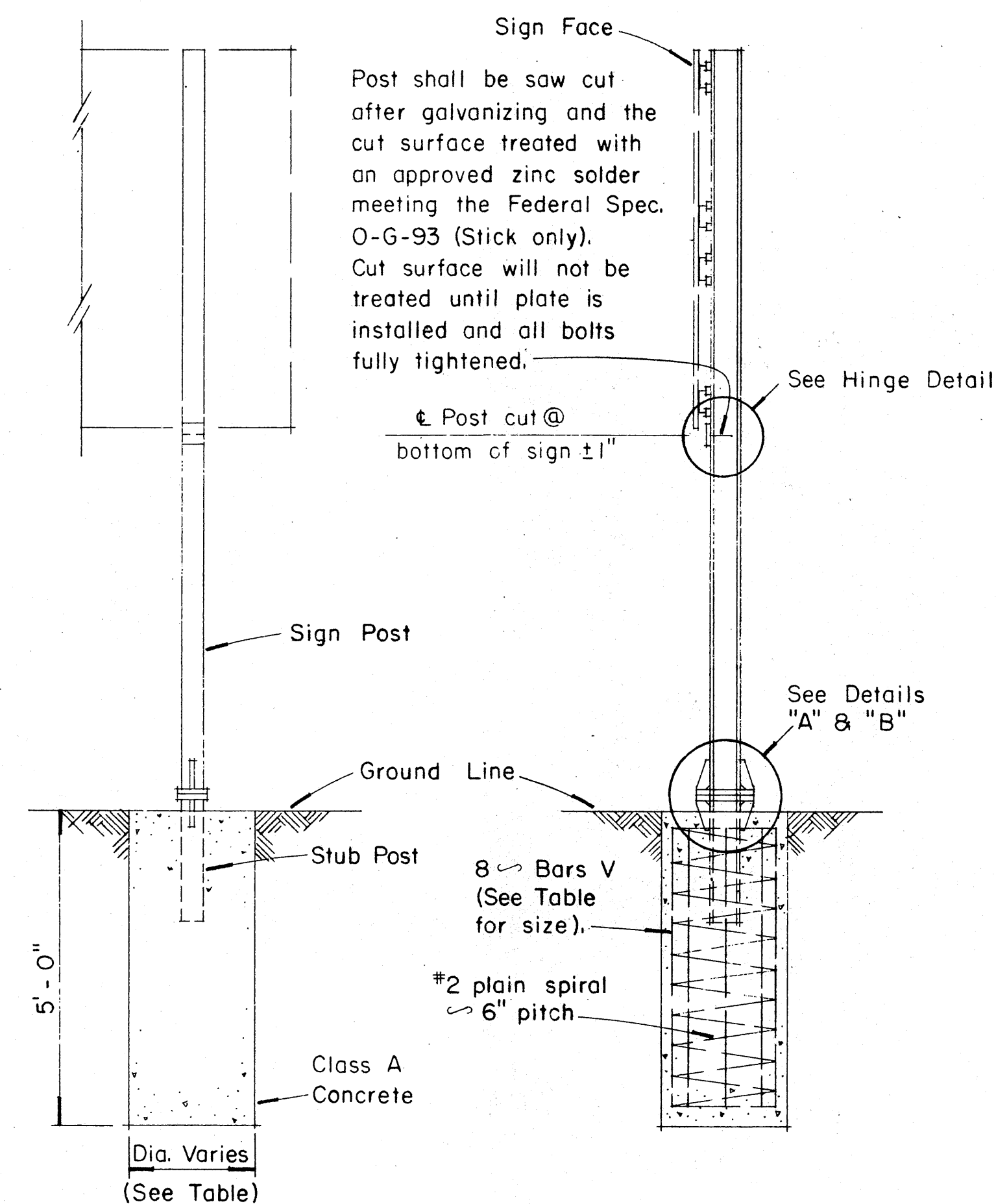
SHEET No. 14 OF 24 SHEETS DT 104

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

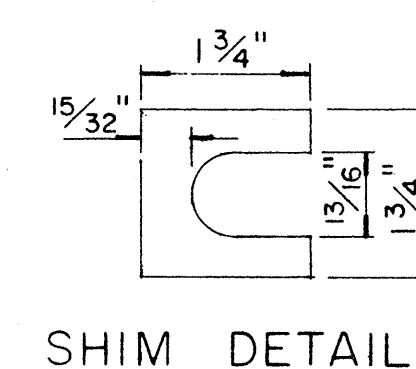
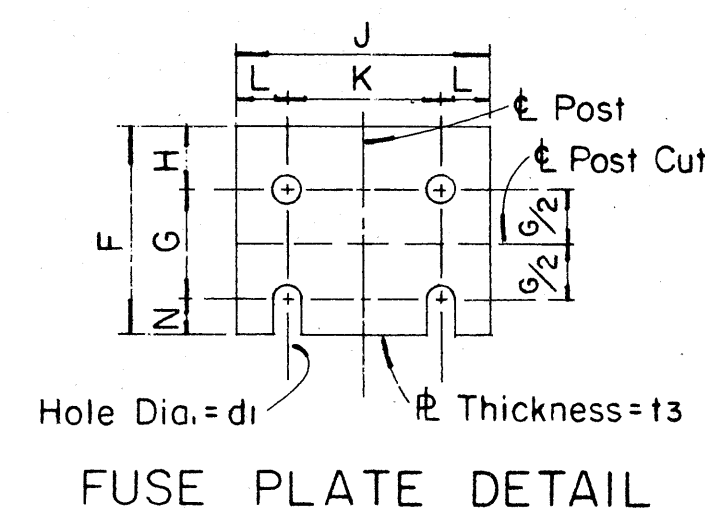
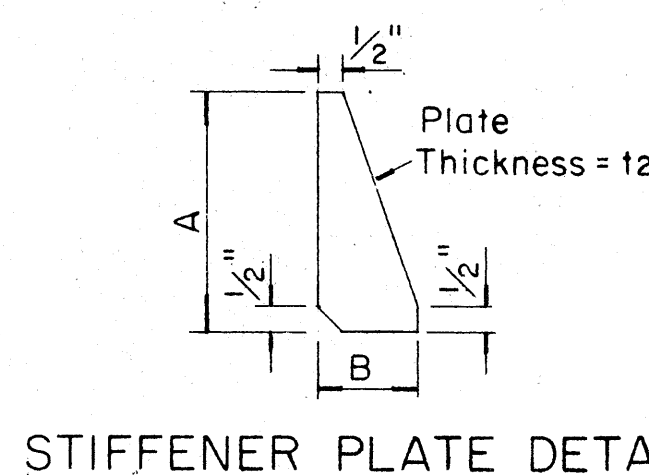
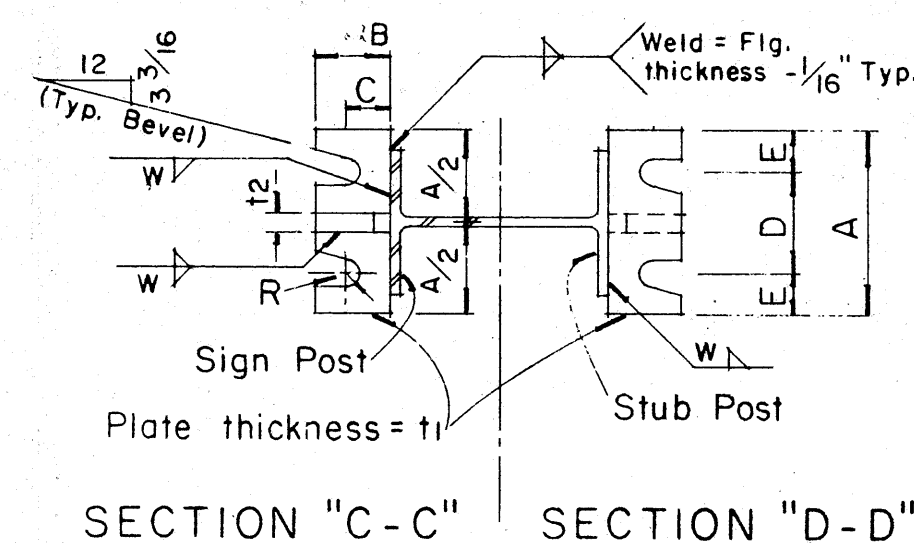
	BASE CONNECTION DATA TABLE											FUSE PLATE DATA TABLE										FOUNDATION DATA			
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse Pl.	Stub Length	Stub Projection	Footing Diameter	Bars \ Size
6 B 8.5	5/8"ø x 2 3/4" Torque = 450#	5"	2"	1 1/4"	2 3/4"	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"ø	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 1/16"	3/8"	5/8"ø	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"	1 3/16"	1/2"	3/4"ø	3.75#	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 3/16"	1/2"	3/4"ø	3.27#	2'-6"	3"	2'-0"	#7
8 WF 20	3/4"ø 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"ø	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 WF 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"ø	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 WF 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"ø	4.79#	3'-0"	2 1/2"	2'-0"	#10
12 WF 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"ø	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2"ø x 2 1/2"	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"ø	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"ø	0.64#	1'-6"	3 1/2"	1'-6"	#5

	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 \ Size
6 B 8.5	5/8"ø 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"ø	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 1/16"	3/8"	5/8"ø	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"	1 3/16"	1/2"	3/4"ø	3.75#	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 3/16"	1/2"	3/4"ø	3.27#	2'-6"	3"	2'-0"	#7
8 WF 20	3/4"ø 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"ø	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 WF 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"ø	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 WF 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"ø	4.79#	3'-0"	2 1/2"	2'-0"	#10
12 WF 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"ø	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2"ø x 2 1/2"	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"ø	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"ø	0.64#	1'-6"	3 1/2"	1'-6"	#5

	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 \ Size
6 B 8.5	5/8"ø 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"ø	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 1/16"	3/8"	5/8"ø	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"	1 3/16"	1/2"	3/4"ø	3.75#	2'-6"	3"	2'-0"	#6
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	1 3/16"	1/2"	3/4"ø	3.27#	2'-6"	3"	2'-0"	#7
8 WF 20	3/4"ø 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"ø	3.93#	3'-0"	2 1/2"	2'-0"	#8
10 WF 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"ø	4.75#	3'-0"	2 1/2"	2'-0"	#9
10 WF 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"ø	4.79#	3'-0"	2 1/2"	2'-0"	#10
12 WF 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"ø	5.42#	3'-0"	2 1/2"	2'-0"	#11
3 I 5.7	1/2"ø x 2 1/2"	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"ø	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"ø	0.64#	1'-6"	3 1/2"	1'-6"	#5



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



GENERAL NOTES

1. Design conforms with AASHTO Specifications for the design and Construction of Structural Supports for Highway Signs.
2. Materials and Fabrication shall conform to the requirements of the Standard Specifications and Special Provisions.
3. 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.
4. 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.
5. 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.
6. Structural steel shall conform with with the requirements of ASTM A 441
7. Galvanizing of all posts shall be projection above concrete plus 6" minimum.
8. 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:

APPROVAL RECOMMENDED:

Eichi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:

Assistant Chief, Engineering 12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

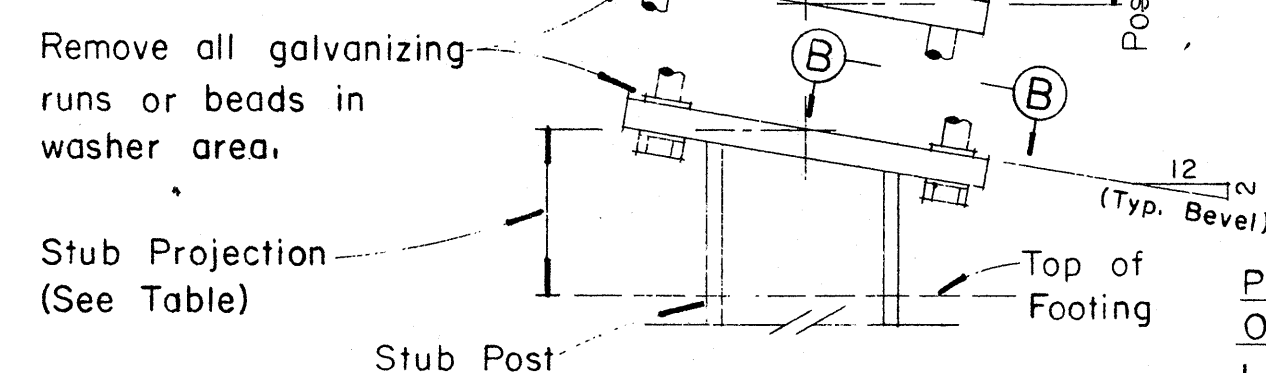
STANDARD DETAILS

BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS

Not to Scale

SHEET No. 15 OF 24 SHEETS DT 204

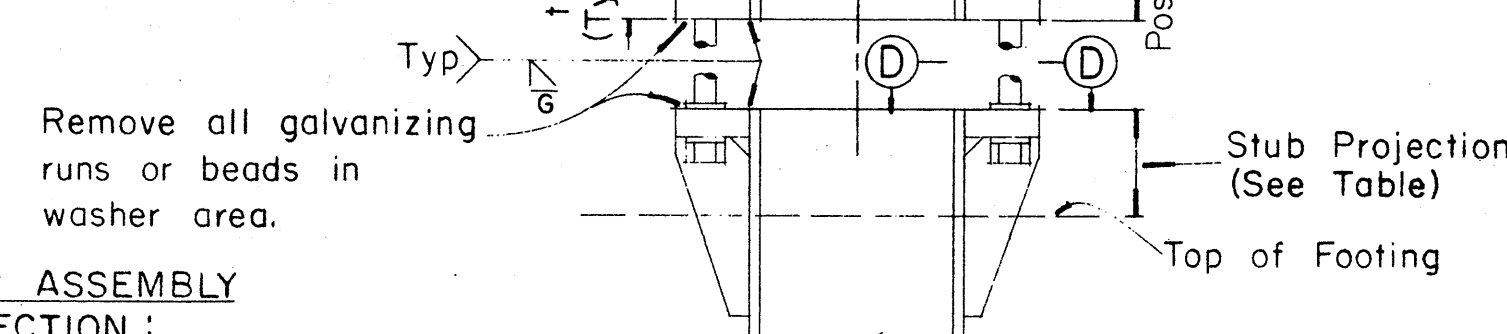
1/2" ϕ x 2 1/2" H.S. bolt
with hex. hd., nut &
3 washers with each
bolt, Torque = 200"#,
See bolting procedure.



PROCEDURE FOR ASSEMBLY
OF BASE CONNECTION :

1. Assemble post to stub with bolts and with one flat washer on each bolt between plates.
2. Shim as required to plumb post.
3. Tighten all bolts the max. possible with 12" to 15" wrench to bed washers & shims and to clean bolt threads then loosen each bolt in turn & retighten bolts in systematic order to prescribed torque. (See Table)
4. Burr threads at junction with nut using a center punch to prevent nut loosening.

$\frac{5}{8}$ " $\varnothing$ x $2 \frac{3}{4}$ " H.S. bolt
with hex. hd., nut &
3 washers with each
bolt. Torque = 450" #
See bolting procedure



DETAIL "B"

SIGN POST & STUB POST

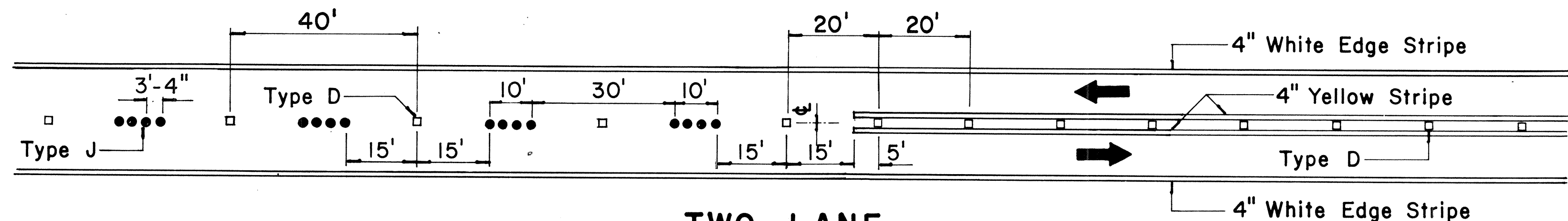
(For W and B Shapes)

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

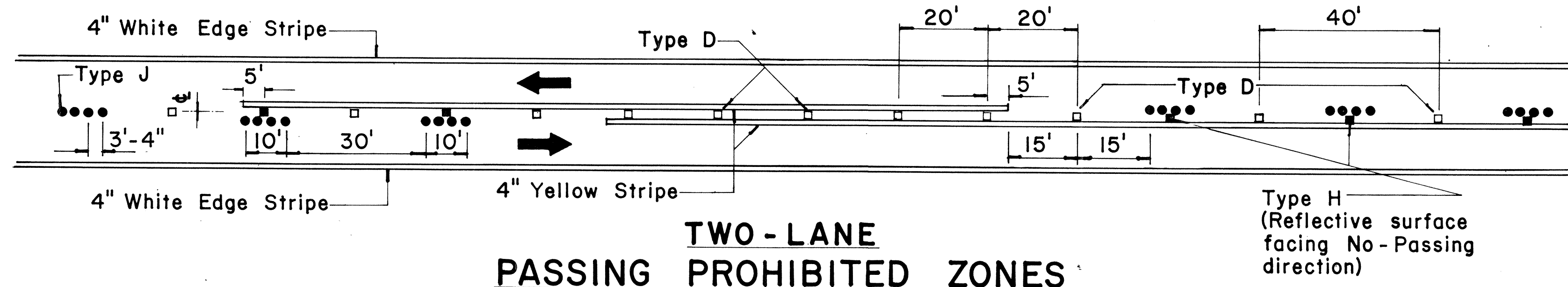
<u>Bolt Size</u>	<u>Min. Tension</u>	<u>Bolt Size</u>	<u>Min. Tension</u>
$\frac{1}{2}$ " ϕ 	12050 Lbs.	$\frac{3}{4}$ " ϕ 	28400 Lbs.
$\frac{5}{8}$ " ϕ 	19200 Lbs.	$\frac{7}{8}$ " ϕ 	36050 Lbs.

<u>Bolt Size</u>	<u>Min. Tension</u>	<u>Bolt Size</u>	<u>Min. Tension</u>
$\frac{1}{2}$ " ϕ 	12050 Lbs.	$\frac{3}{4}$ " ϕ 	28400 Lbs.
$\frac{5}{8}$ " ϕ 	19200 Lbs.	$\frac{7}{8}$ " ϕ 	36050 Lbs.

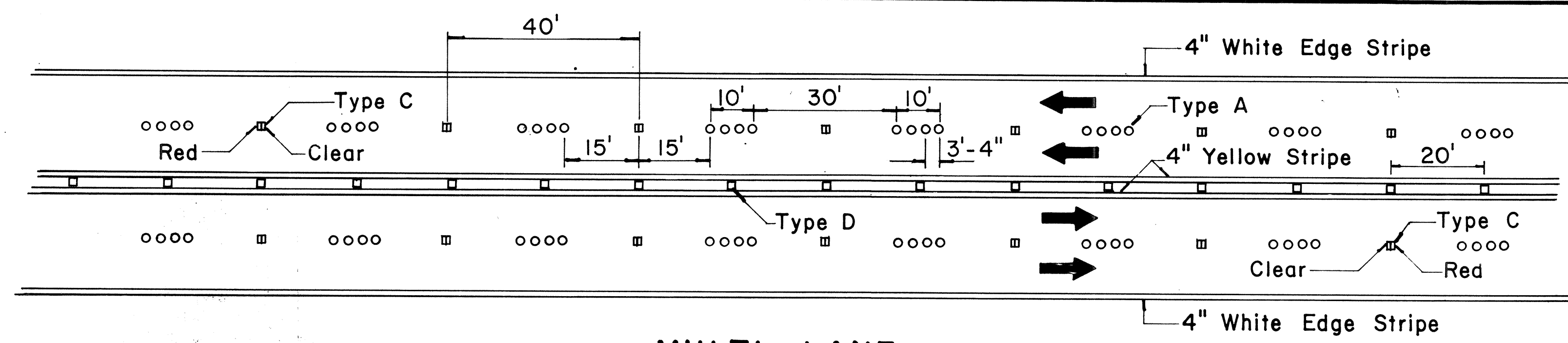
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	47	55



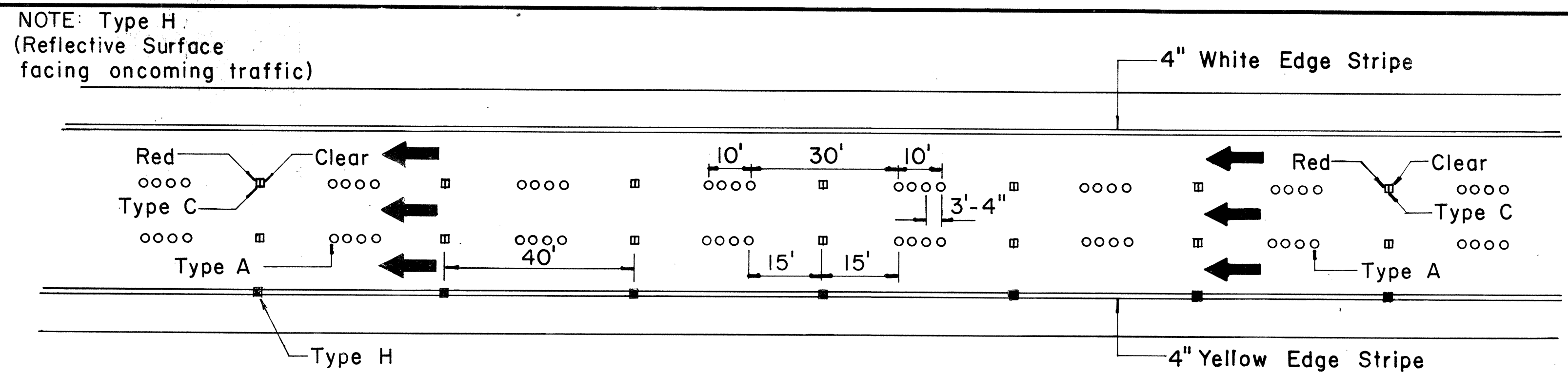
**TWO - LANE
PASSING PERMITTED AND PASSING PROHIBITED**



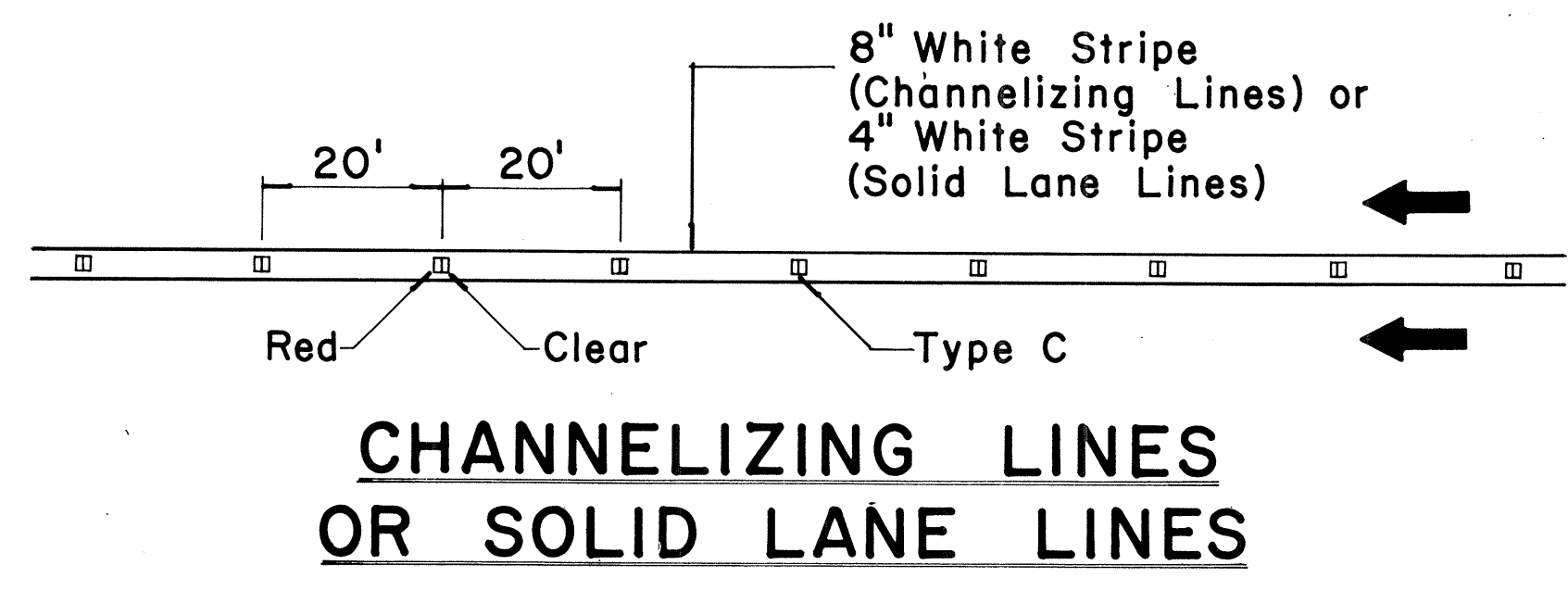
**TWO - LANE
PASSING PROHIBITED ZONES**



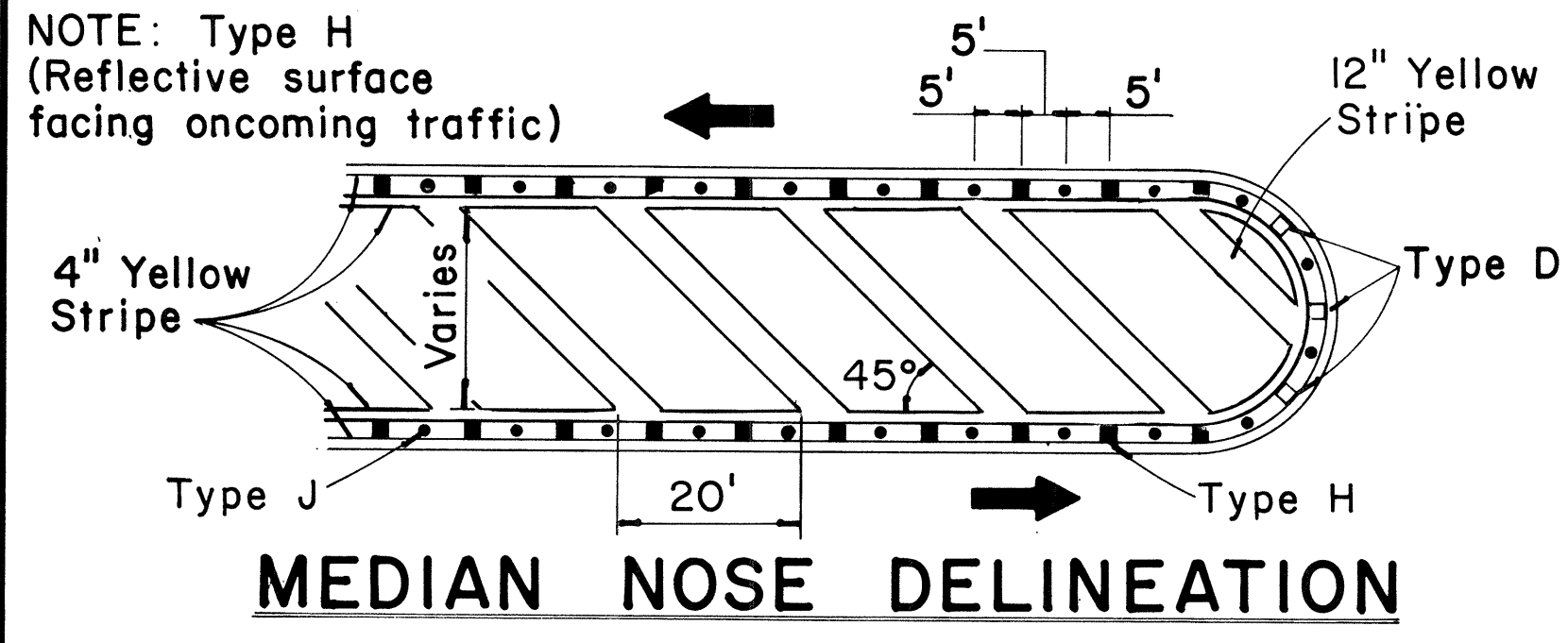
**MULTI - LANE
LANE LINES AND CENTER LINE**



**DIVIDED HIGHWAY
AND
FREEWAY**



**CHANNELIZING LINES
OR SOLID LANE LINES**

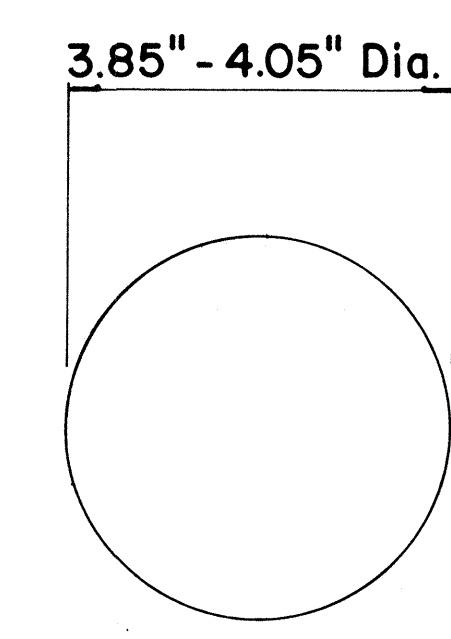


MEDIAN NOSE DELINEATION

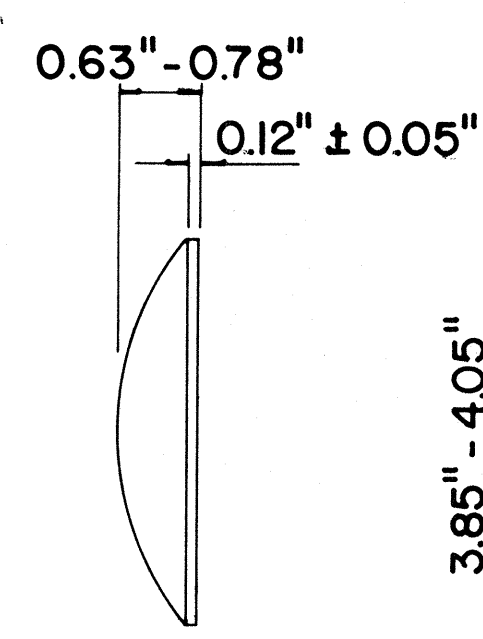
TWO - LANE

MULTI - LANE

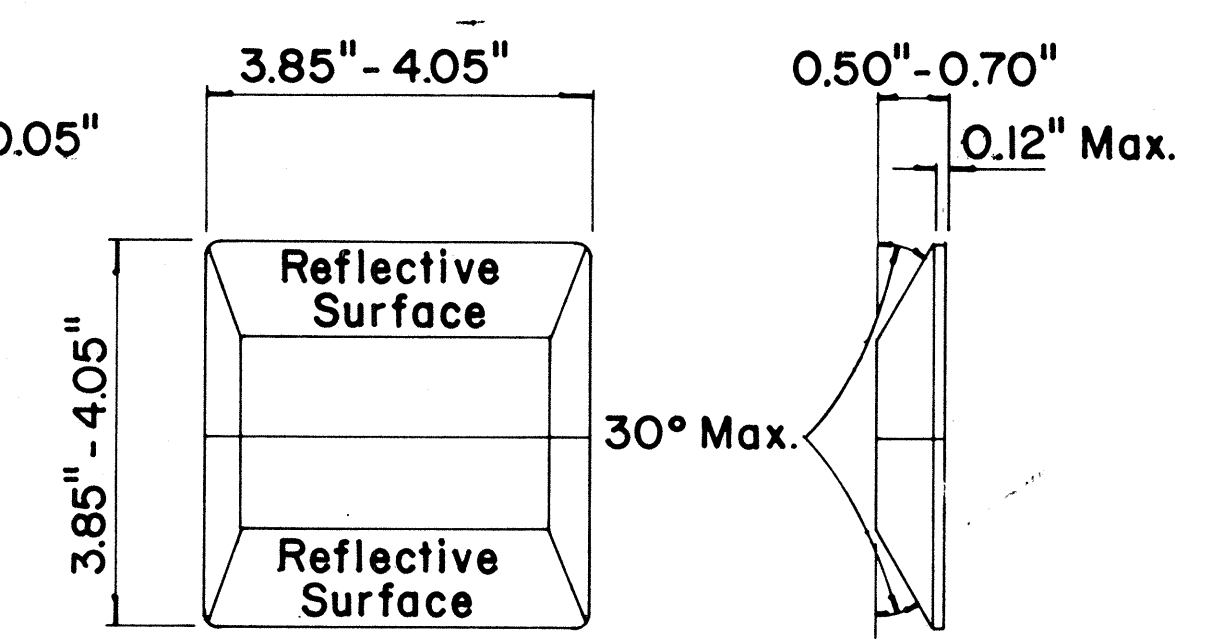
MISCELLANEOUS



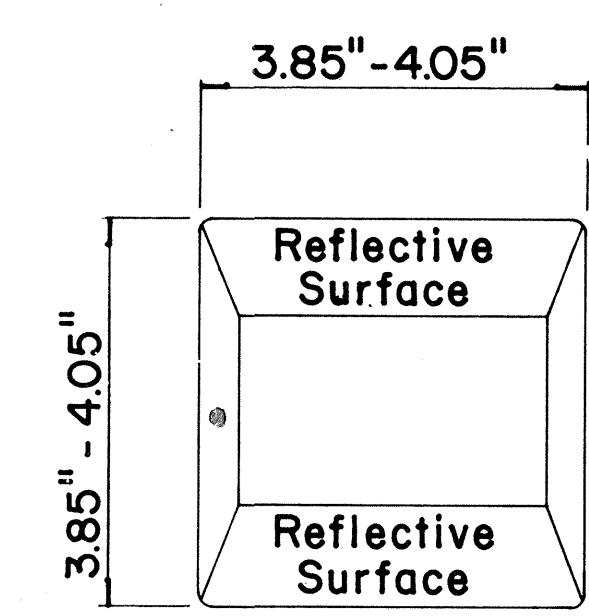
**TYPE A
NON - REFLECTIVE WHITE MARKER**



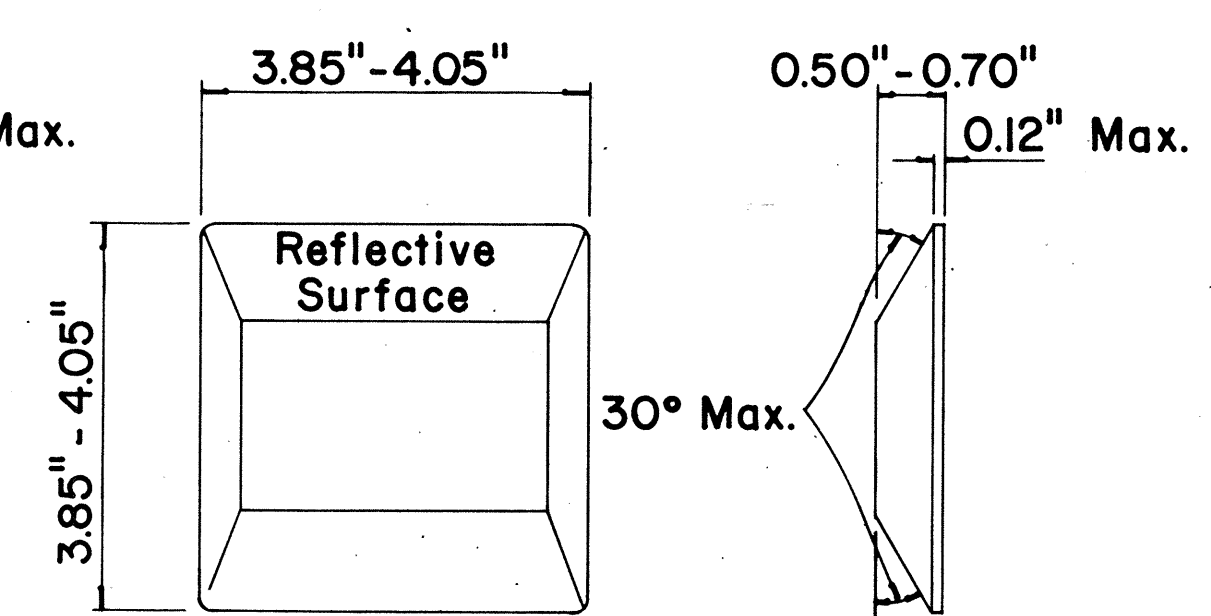
**TYPE J
NON - REFLECTIVE YELLOW MARKER**



**TYPE C
RED - CLEAR REFLECTIVE MARKER**



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



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

GENERAL NOTES

- Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
- Layout and installation of pavement marking and striping shall be done by the Contractor. The Contractor shall check the layouts with the Engineer prior to performing work.

LEGEND

- Type A
- Type C
- Type D
- Type H
- Type J

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

APPROVED:
Walter Zatech 11/18/71
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.T.	10-21-72
2	Revised General Notes.	H.T.	10-21-72
3	Change 4" white edge stripe to 4" solid yellow edge stripe to left edge of a travel path and Add Type H Reflector Marker.	H.T.	5-22-74
4	Revised details, General Notes & Title Box.	H.T.	1-13-77

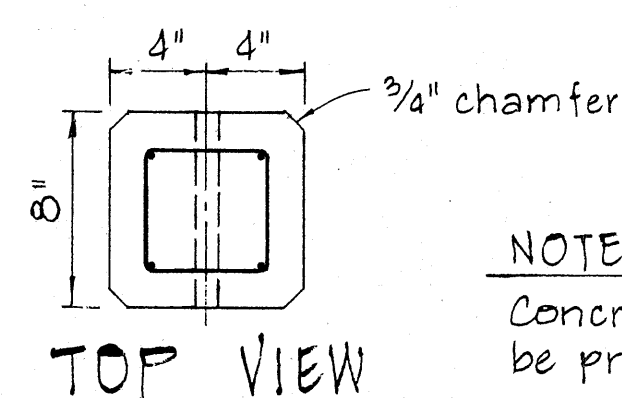
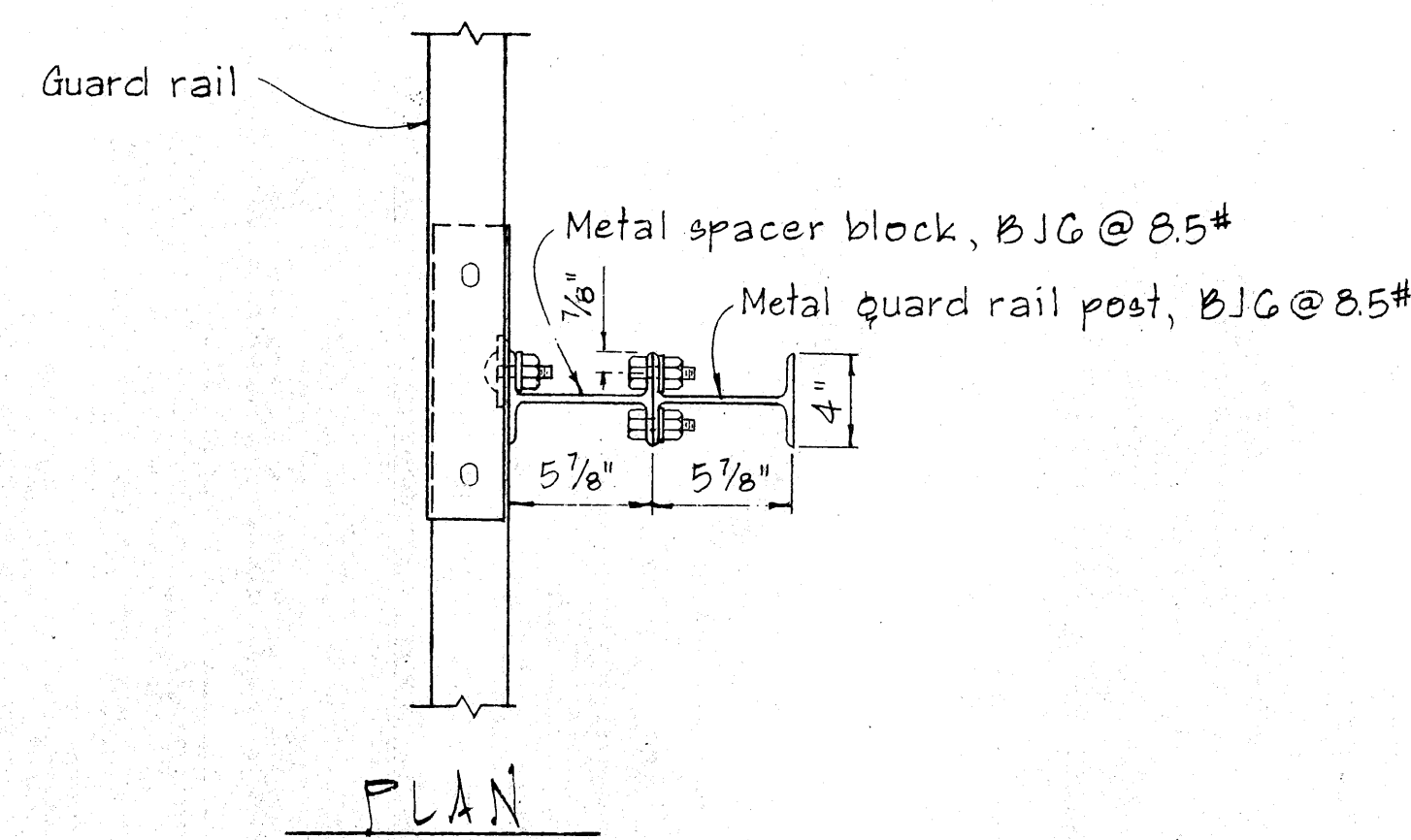
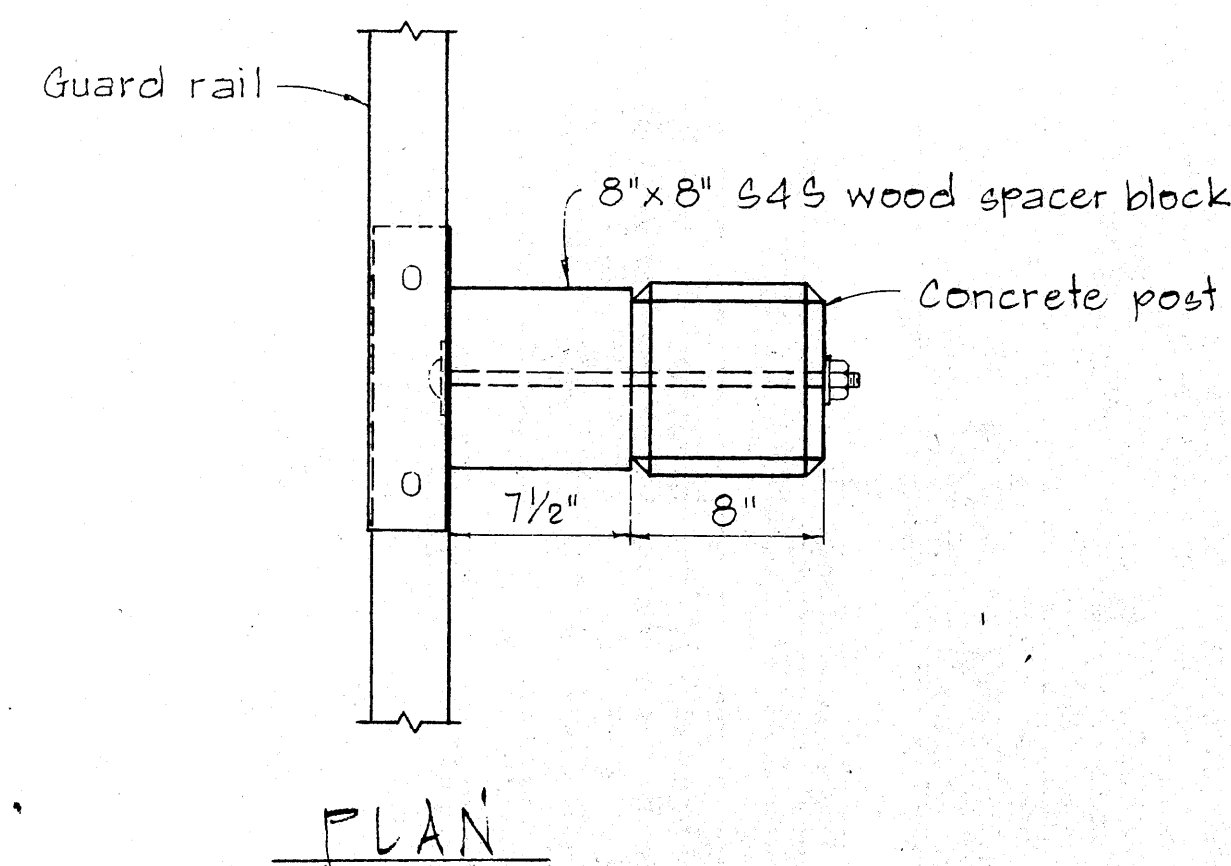
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAILS
RAISED PAVEMENT MARKERS
AND STRIPING**

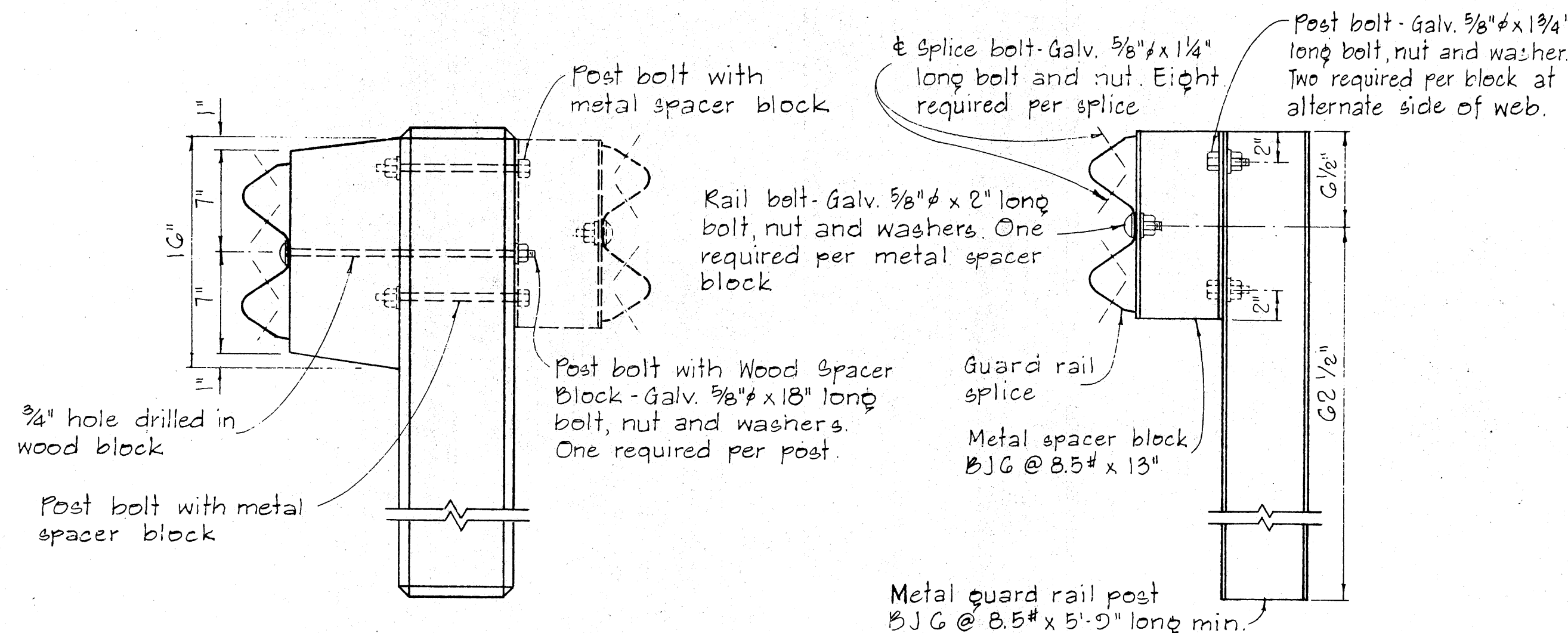
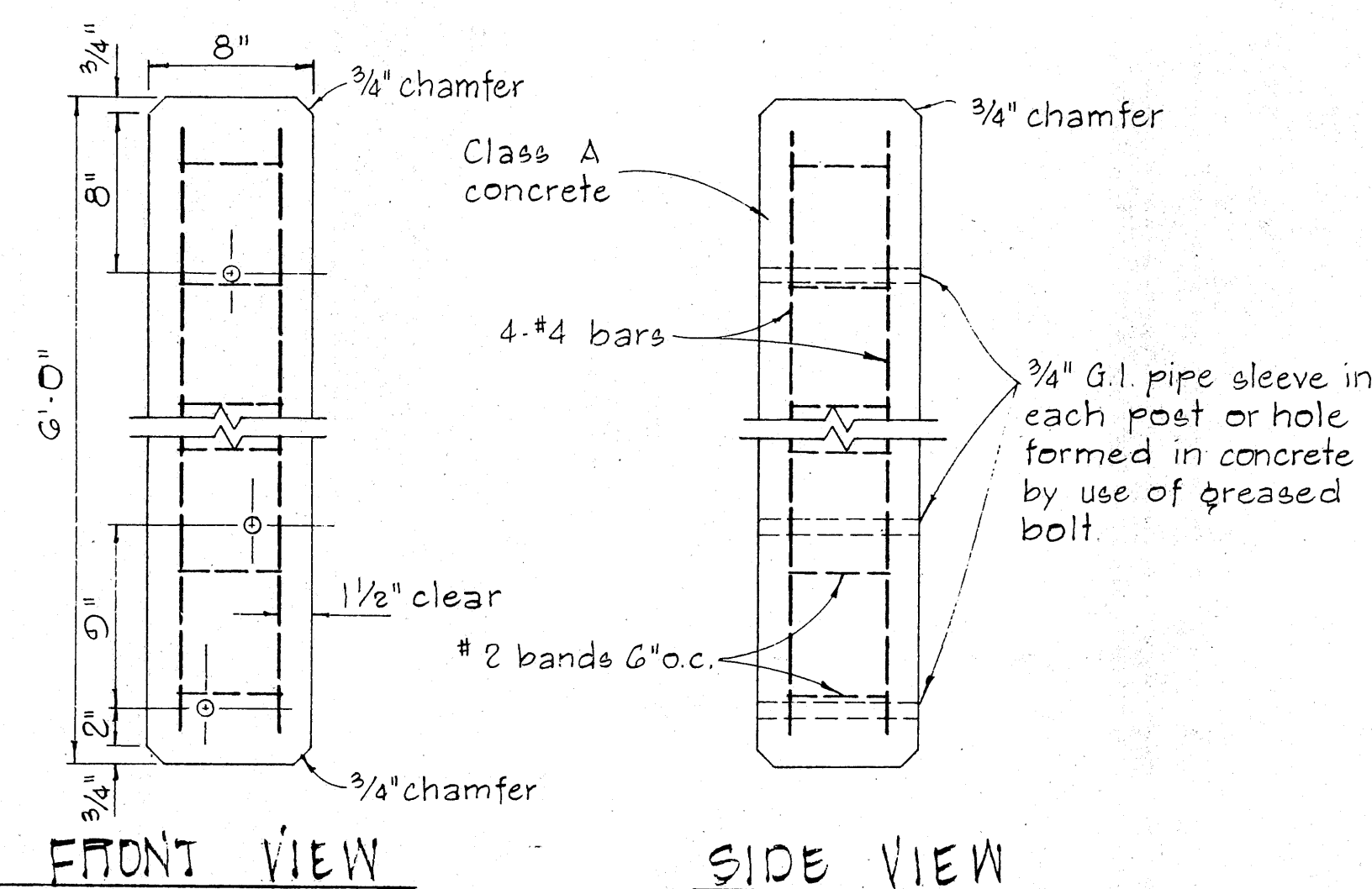
Not to Scale October 1971
SHEET No. 16 OF 24 SHEETS DT 300

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITY BY	
REVISION BY	
REVISION DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71	1977	48	55

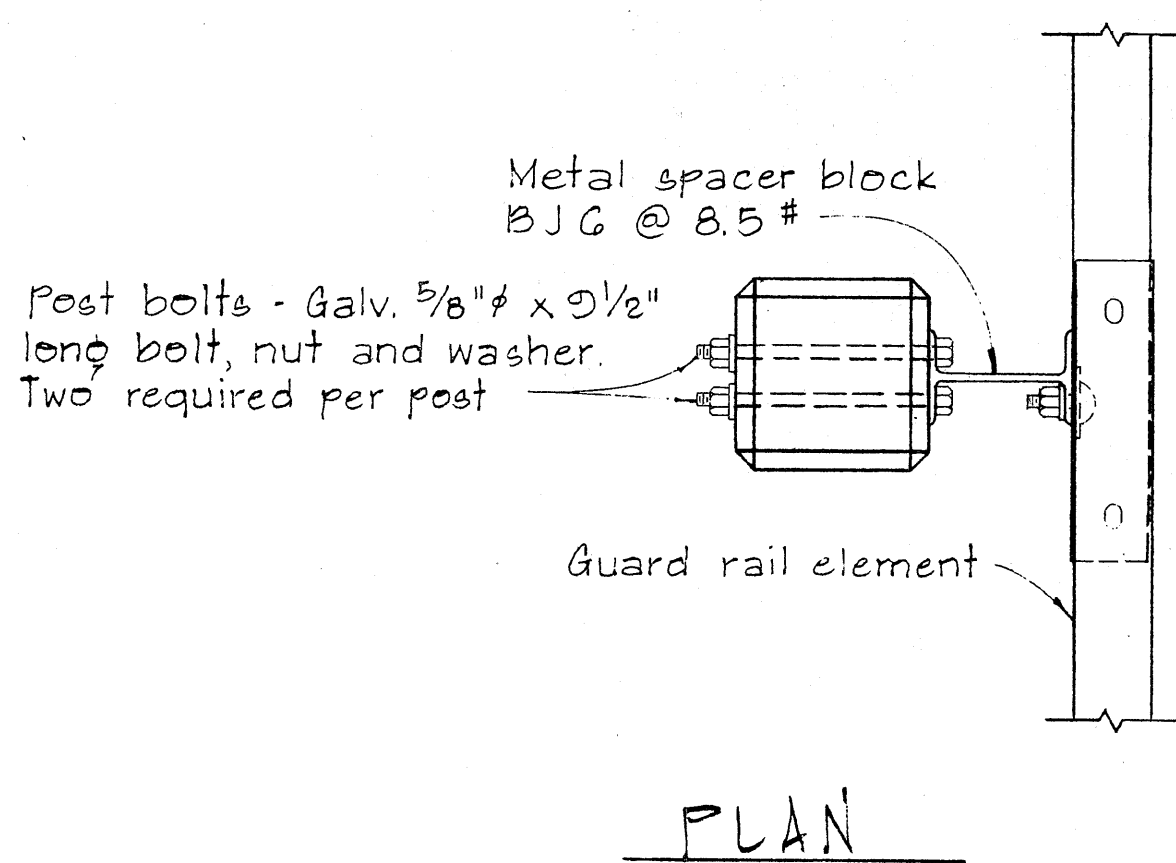


NOTE:
Concrete post shall be precast



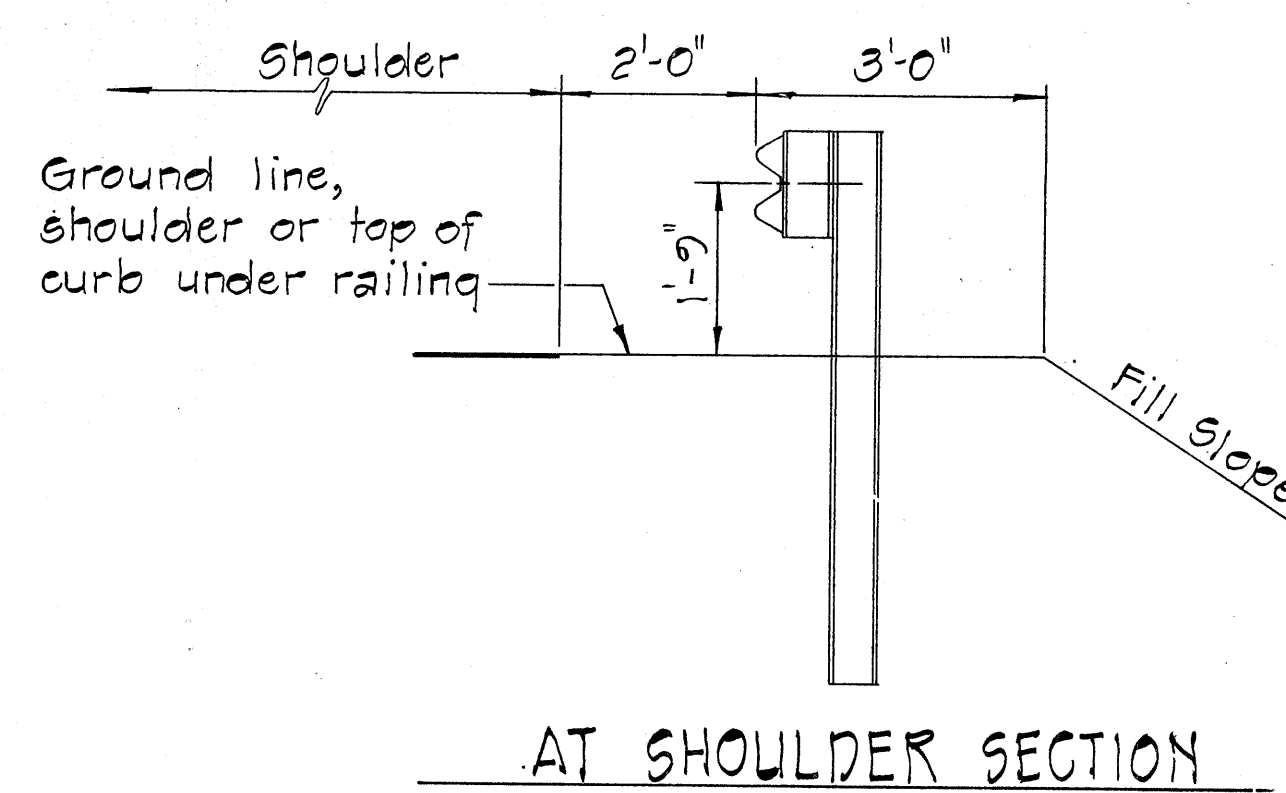
SINGLE METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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



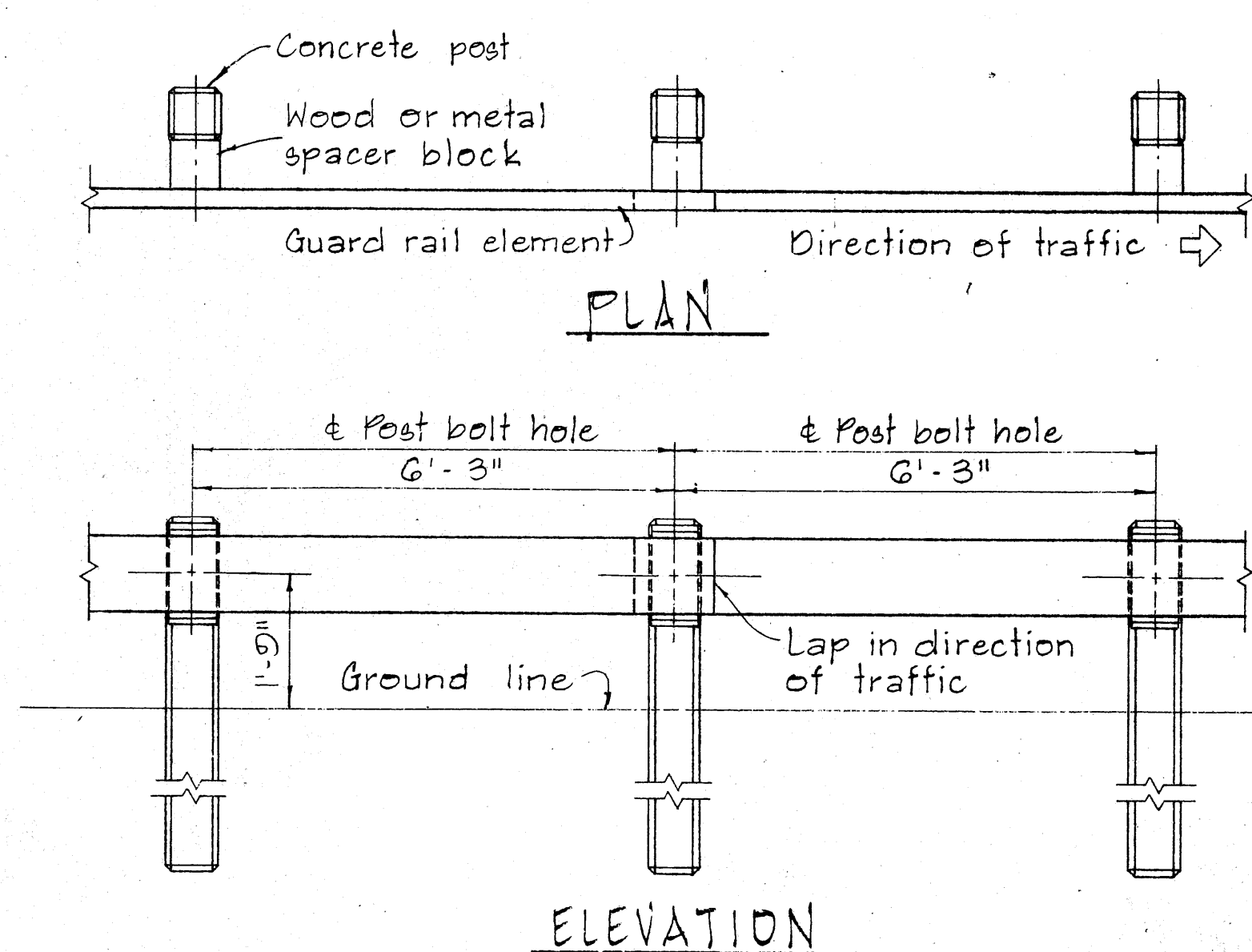
SINGLE METAL GUARD RAIL ON PRECAST CONCRETE POST WITH WOOD OR METAL SPACER BLOCK

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



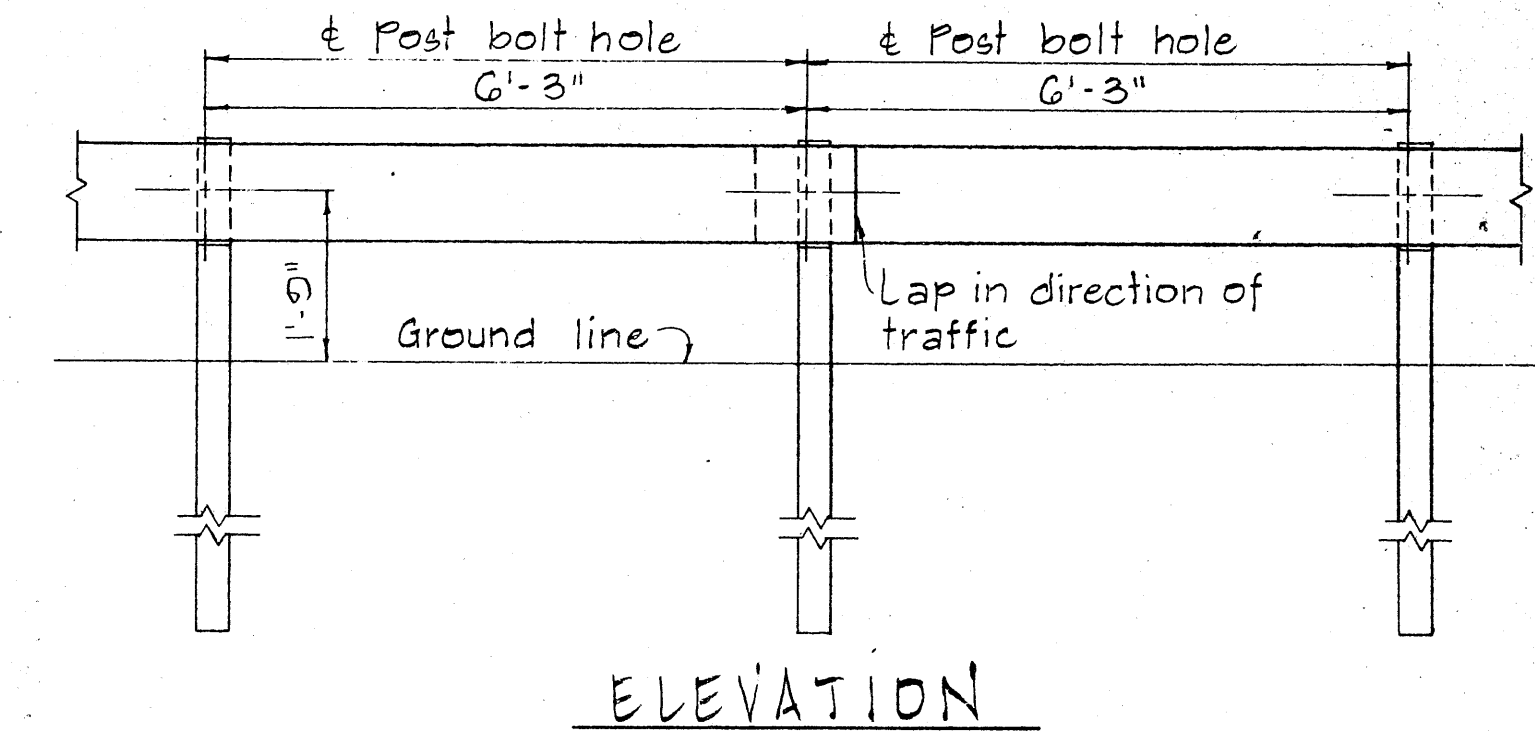
TYPICAL METAL GUARD RAIL DETAIL

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



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

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



METAL GUARD RAIL ON METAL POST WITH METAL SPACER BLOCK

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

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

APPROVED:
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

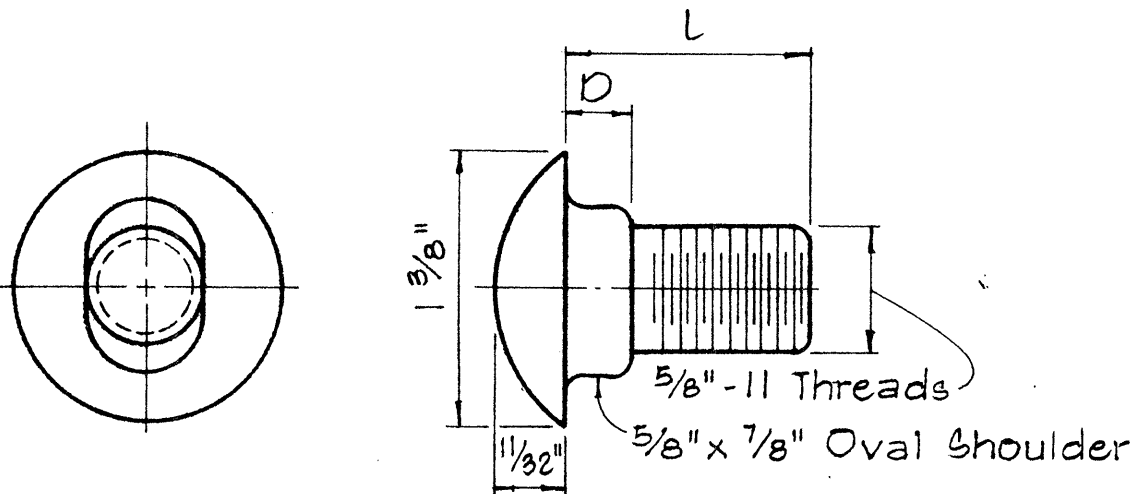
SCALE: AS SHOWN

NOV. 1968

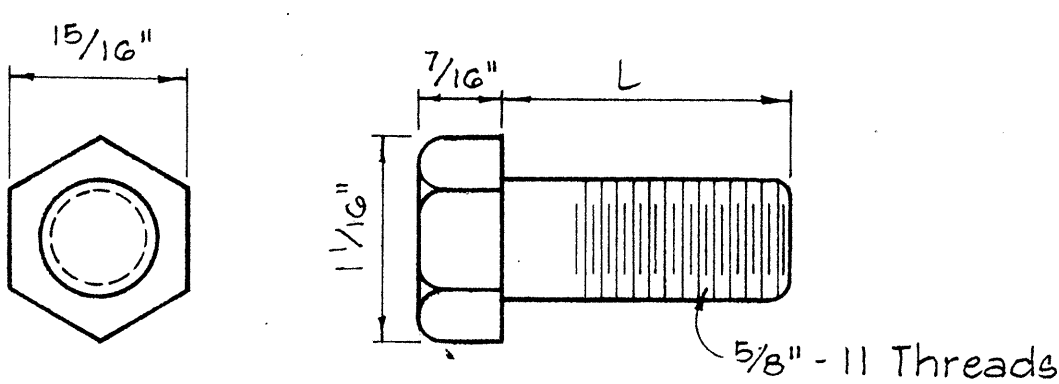
FED. ROAD DIST. NO.	STATE	FED-AID-PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	49	55

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

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



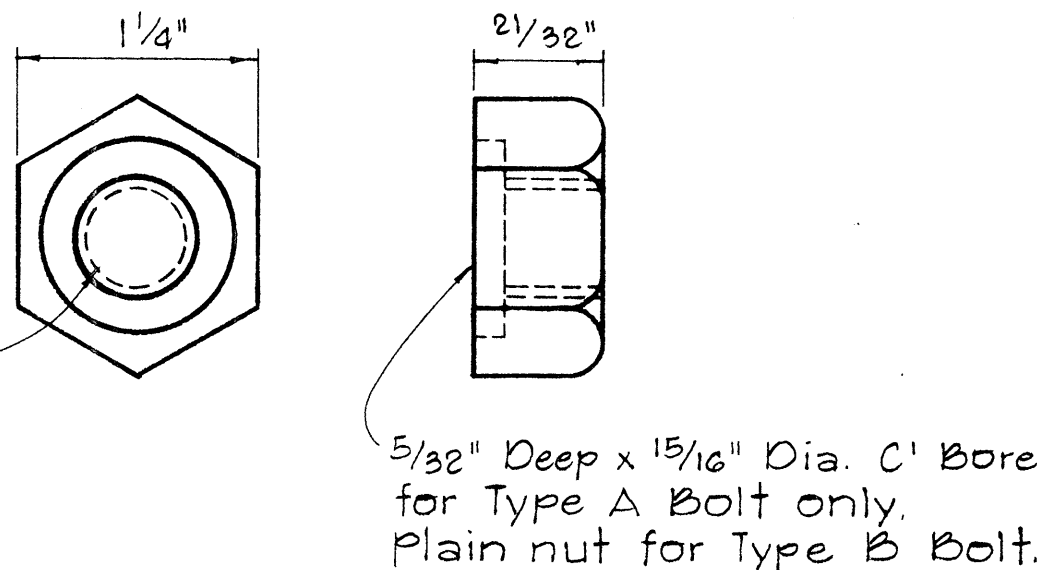
TYPE A BOLT



TYPE B BOLT

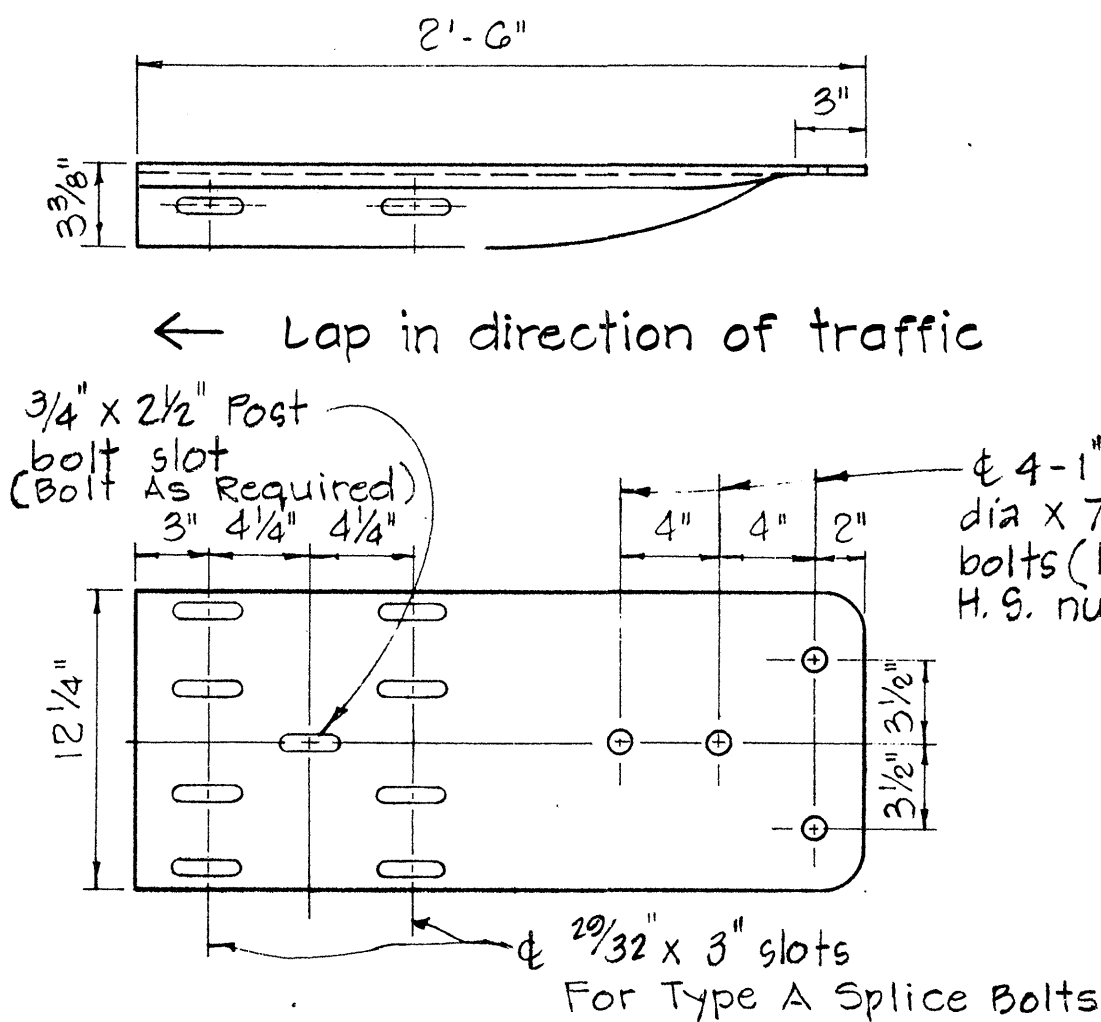
SPUCE RAIL AND POST BOLTS

Scale: Full Size



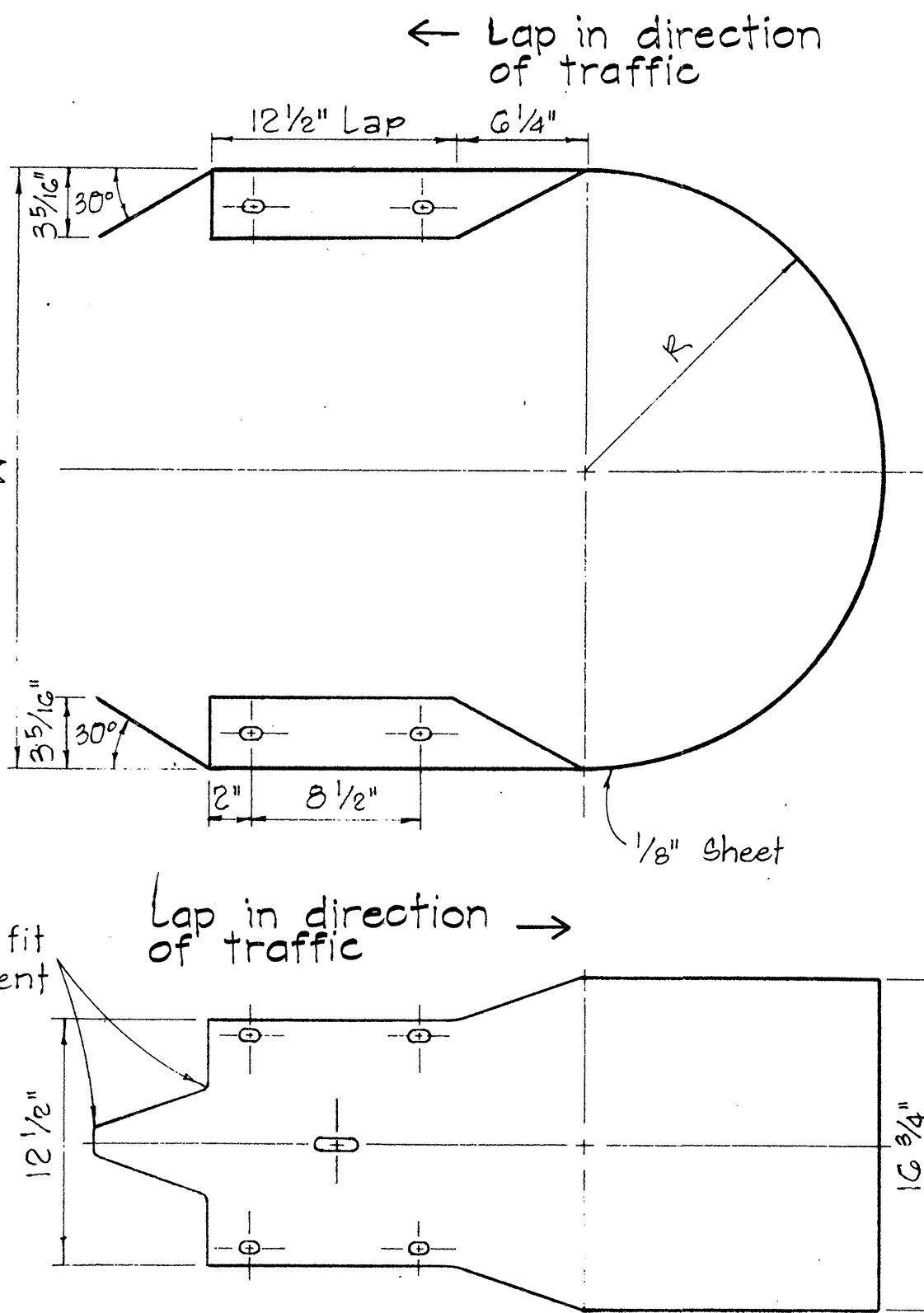
HEXAGON NUT

Scale: Full Size



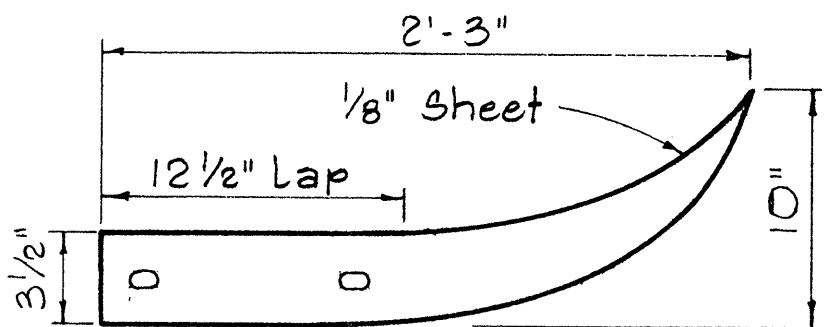
SPECIAL END SHOE

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

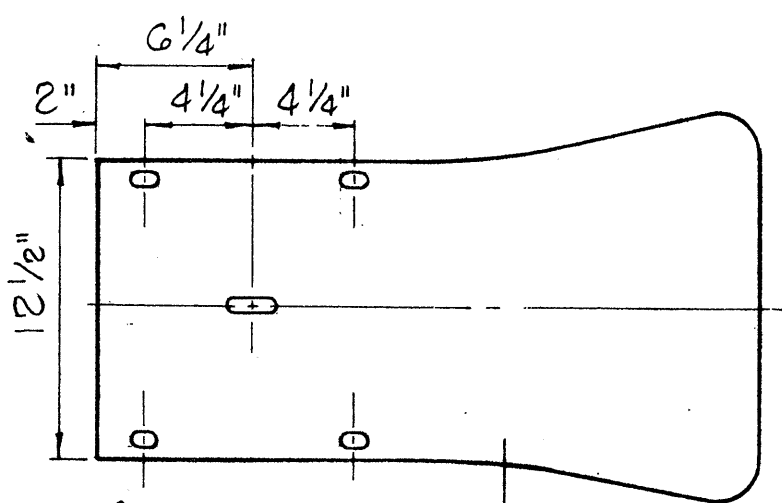


MEDIAN END

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

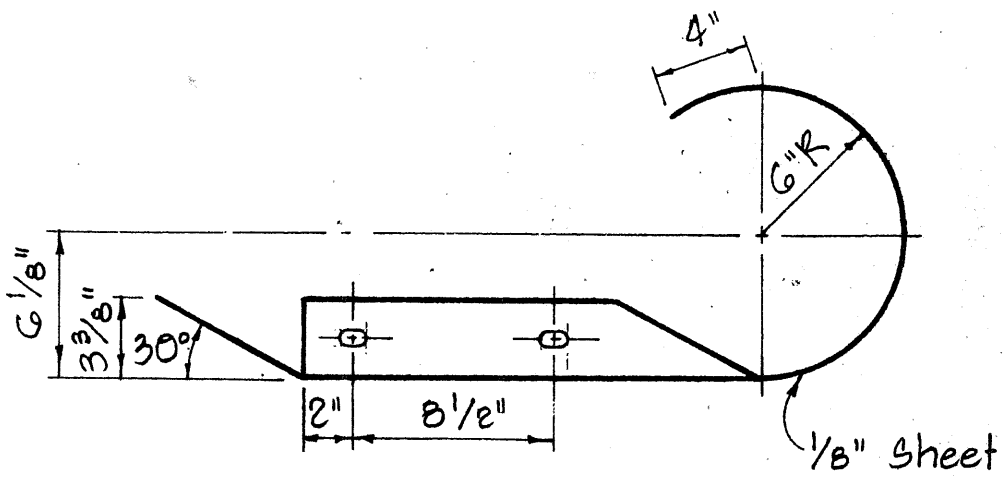


Lap in direction of traffic



FLARED END

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



CURVED END

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

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
APPROVED:
ASSISTANT CHIEF, ENGINEERING

12/29/69
DATE

12-30-69
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS METAL GUARD RAIL

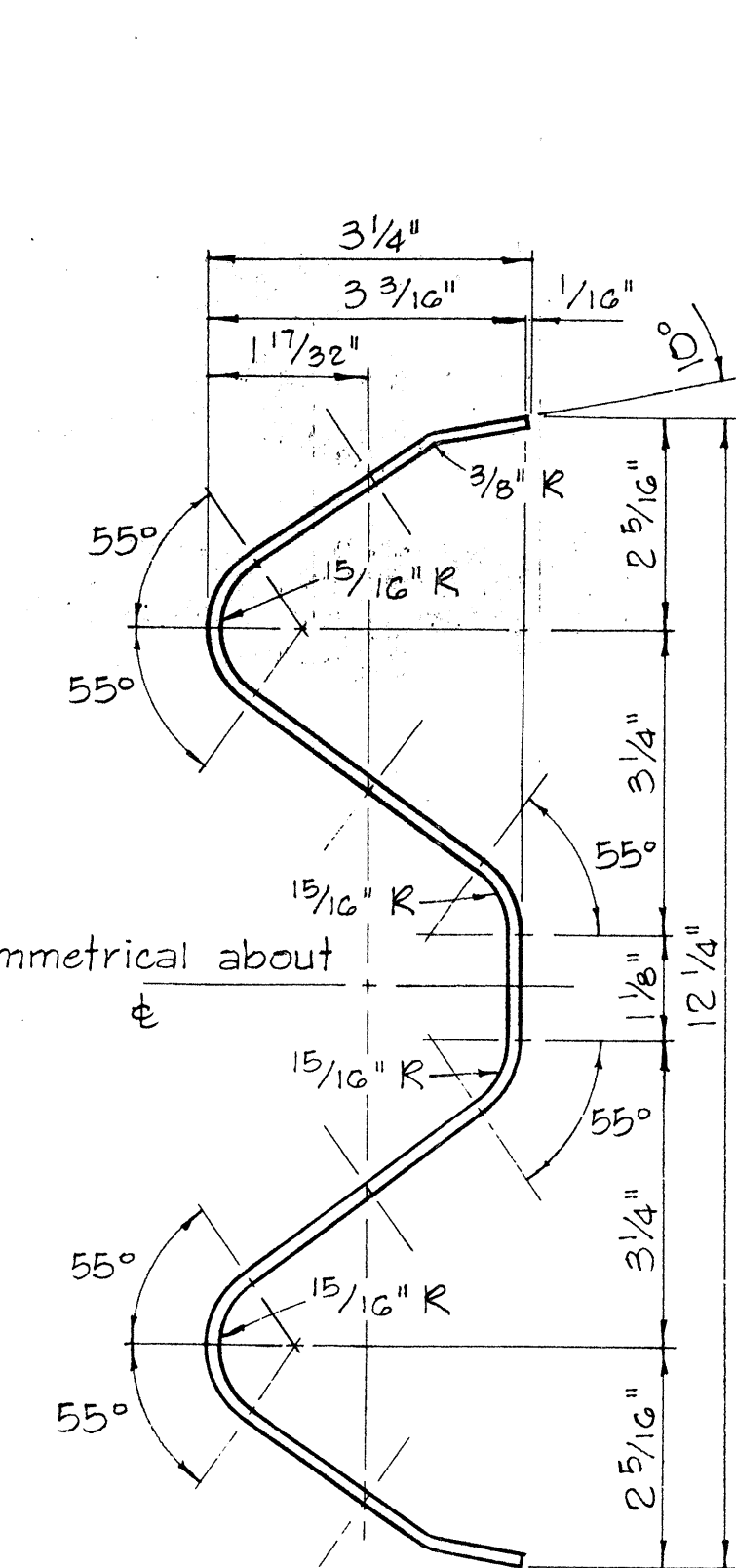
Scale: As Noted August, 1968

SHEET No. 18 OF 24 SHEETS DT 501

- 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 AA6HO 180.

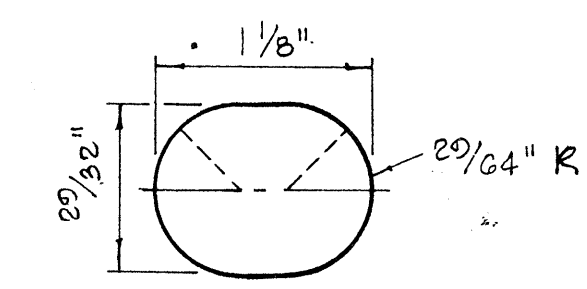
MEDIAN END DIMENSIONS		
TYPE OF POST AND BLOCK	W	R
Double Metal Guard Rail on Concrete Post with Wood Blocks	29 3/4"	14 7/8"
Double Metal Guard Rail on Concrete Post with Metal Blocks (BJG)	26 1/2"	13 1/4"
Double Metal Guard Rail on Metal Post with Metal Blocks (BJG)	24 3/8"	12 3/16"

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



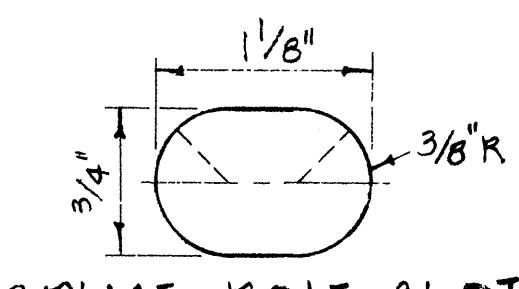
RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

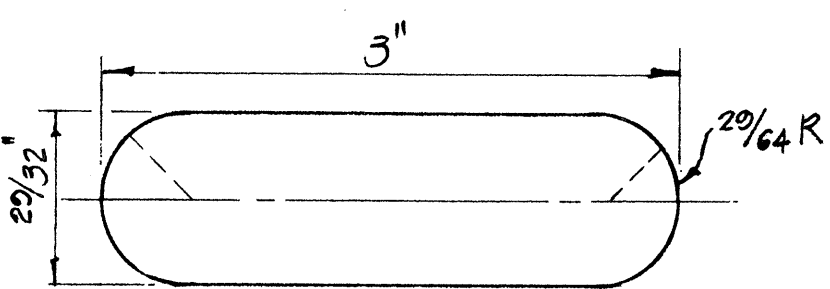


SPUCE BOLT SLOT

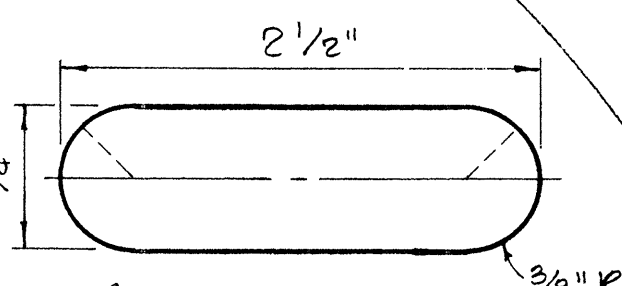
Scale: Full Size



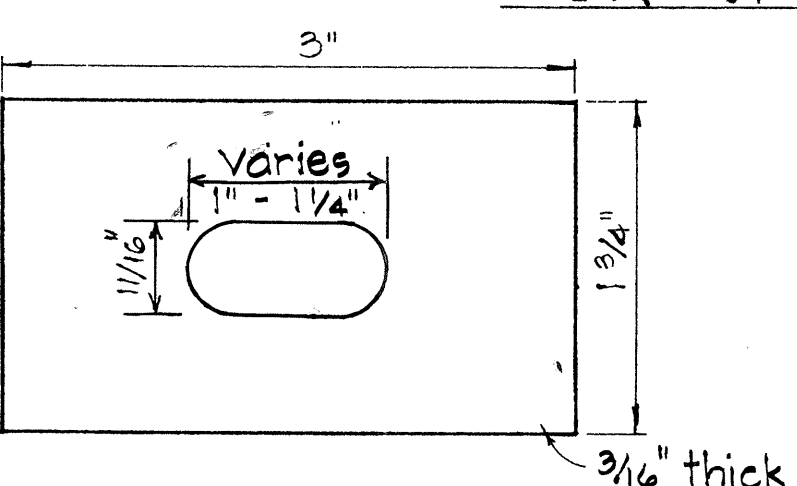
SPUCE BOLT SLOT FOR ALL ENDS



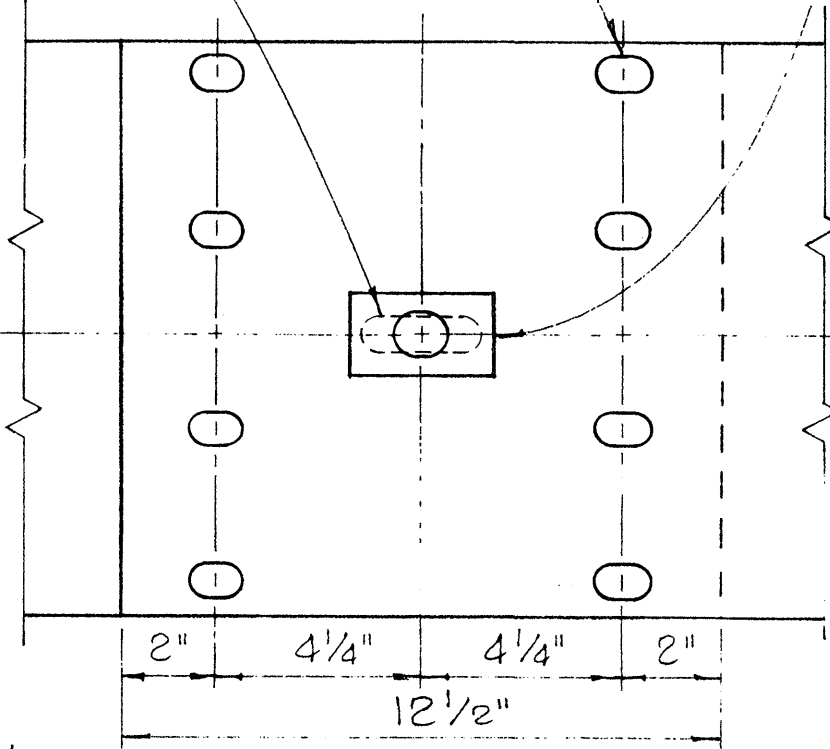
SPUCE BOLT SLOT FOR SPECIAL END SHOE



POST BOLT SLOT



RAIL WASHER

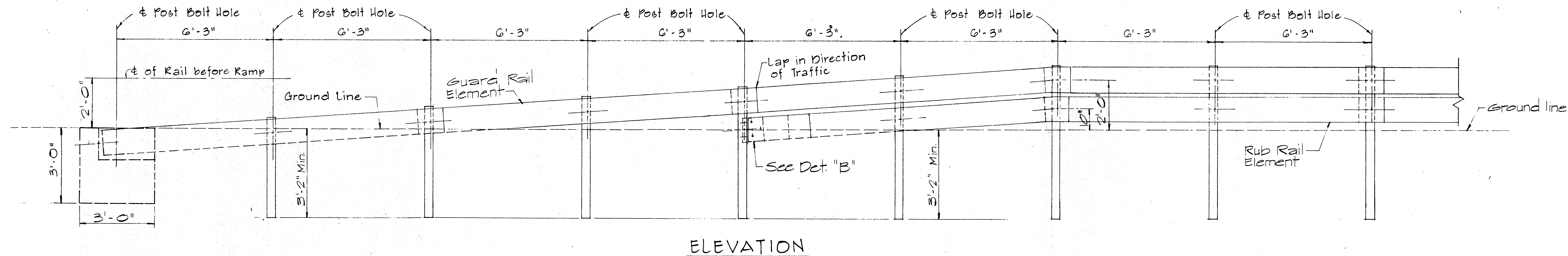
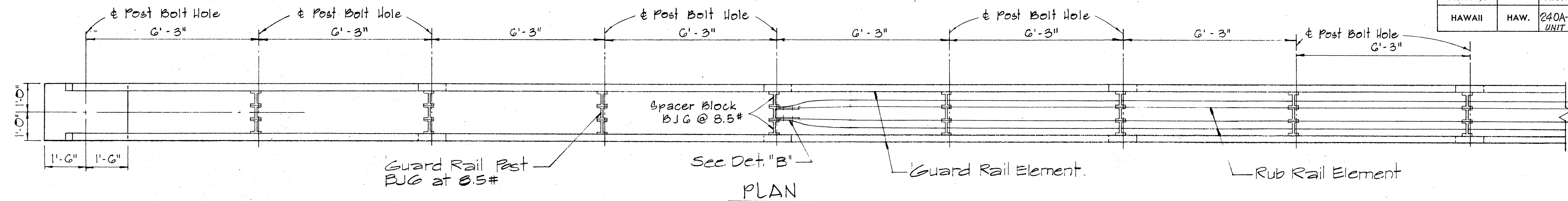


RAIL SPLICE

Scale: 3" = 1'-0"

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

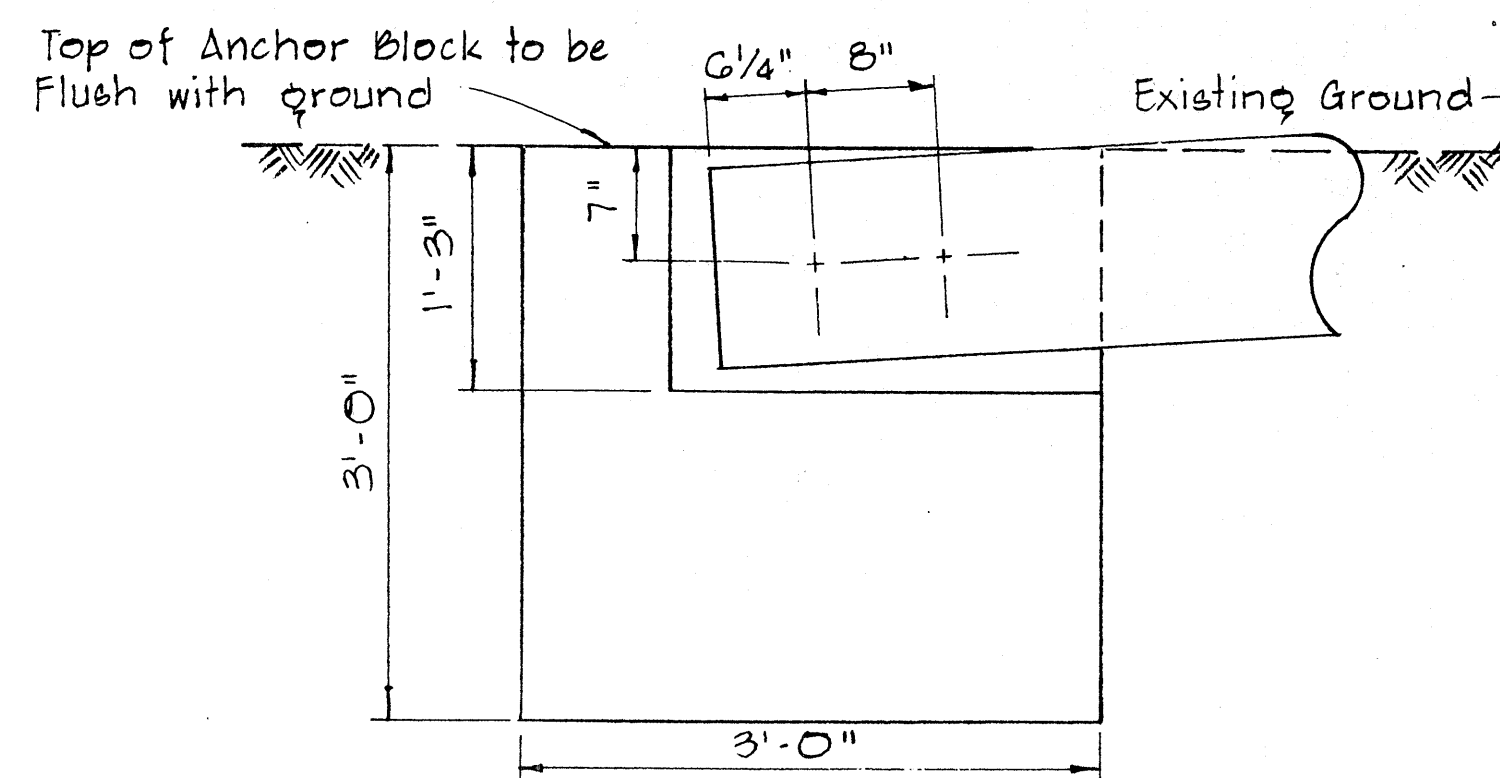
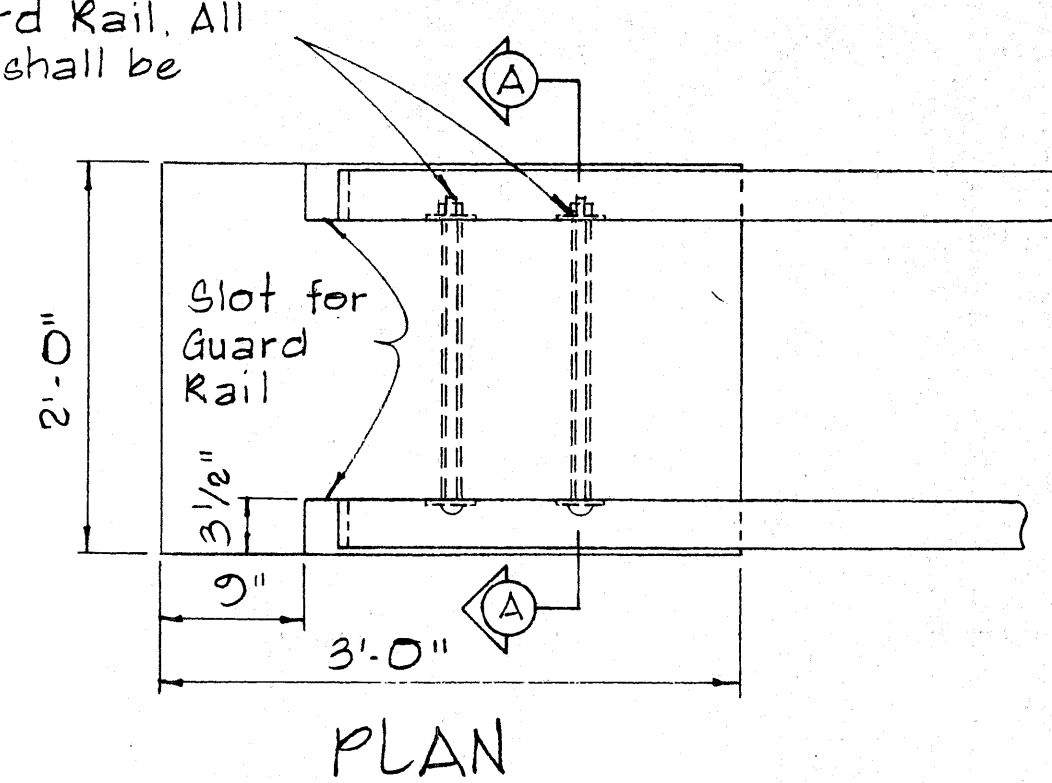
FED. ROAD DIST. NO.	STATE	FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	50	55



STRAIGHT APPROACH - RAMP END ANCHORAGE (MEDIAN)

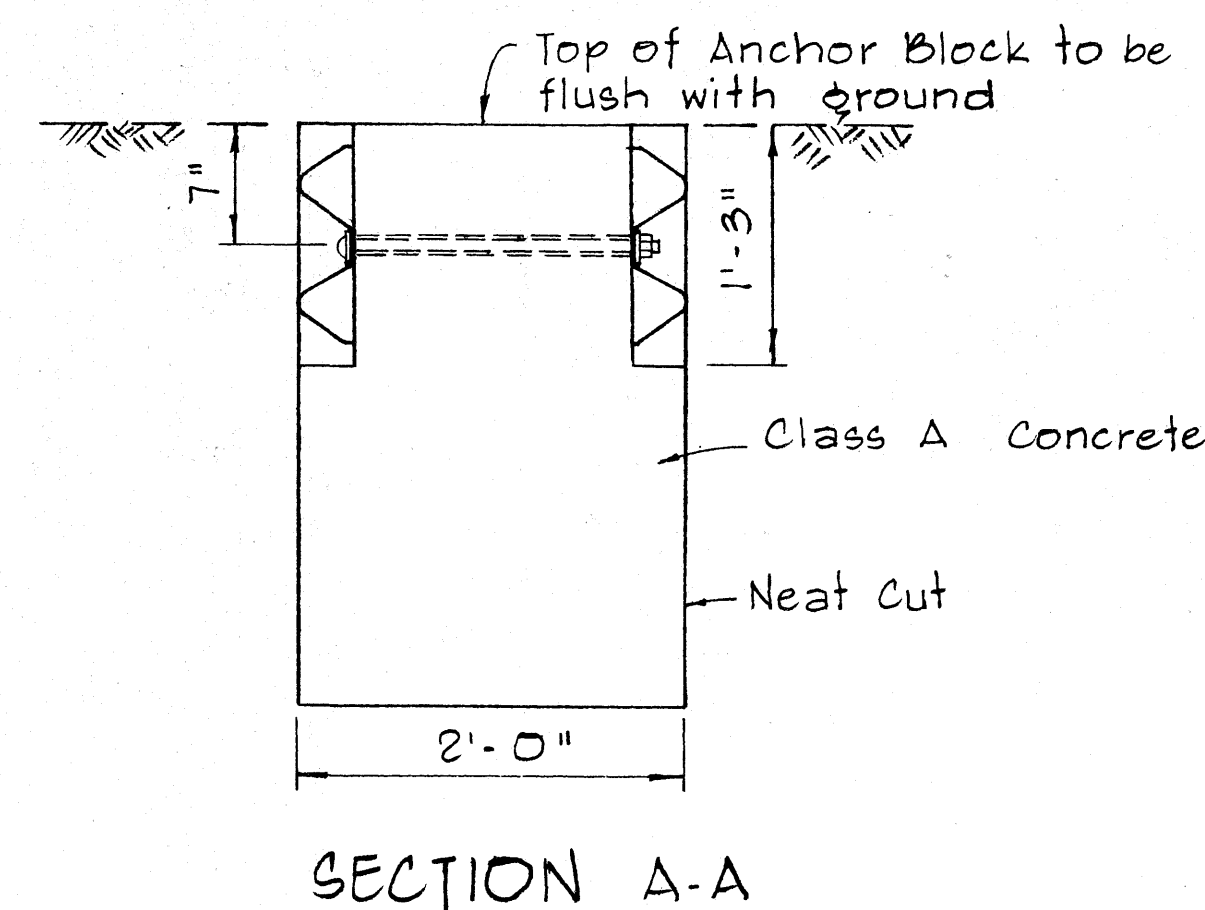
Scale: 1/2" = 1'-0"

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

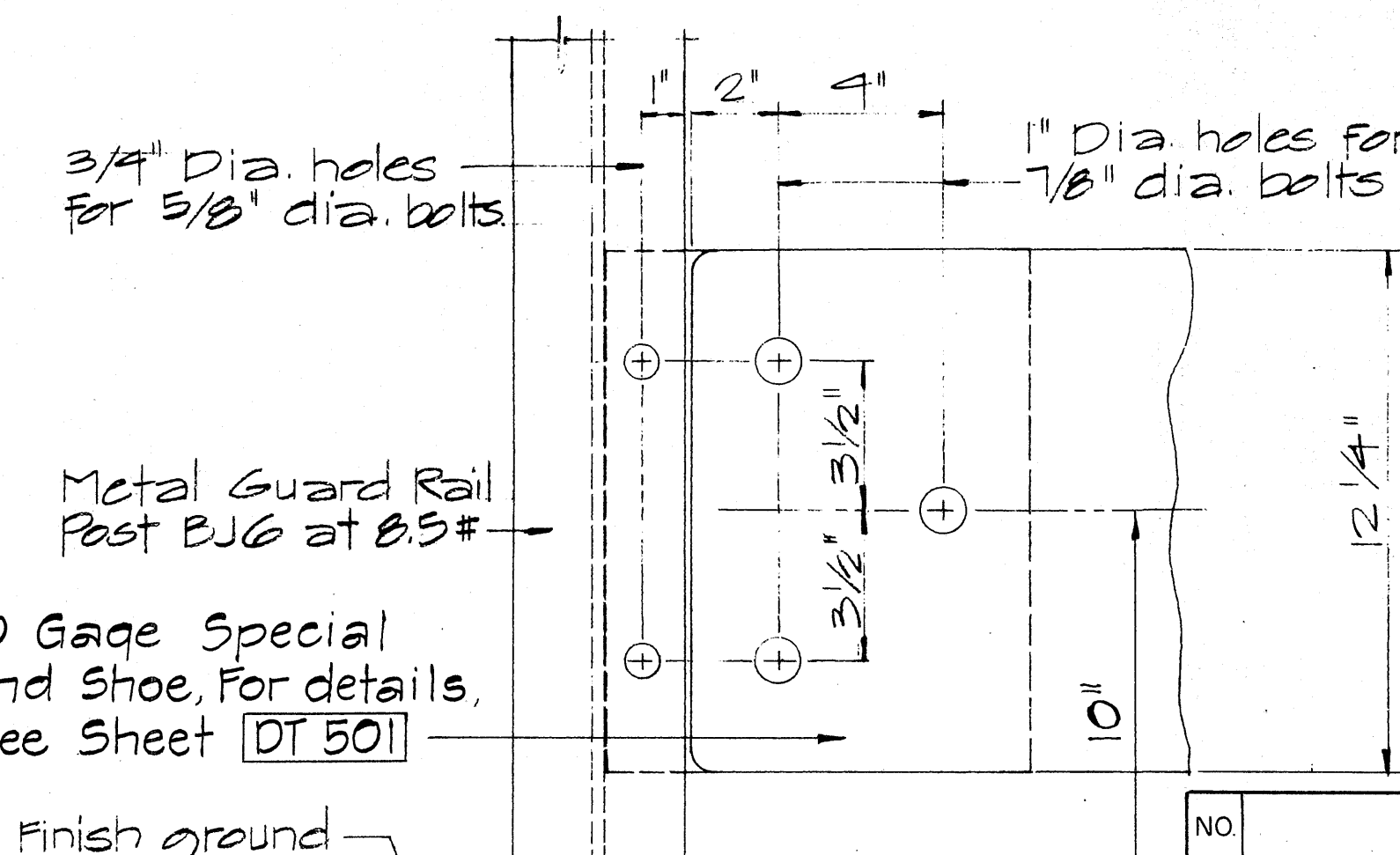


CONCRETE ANCHOR BLOCK FOR RAMP END

Scale: 1" = 1'-0"



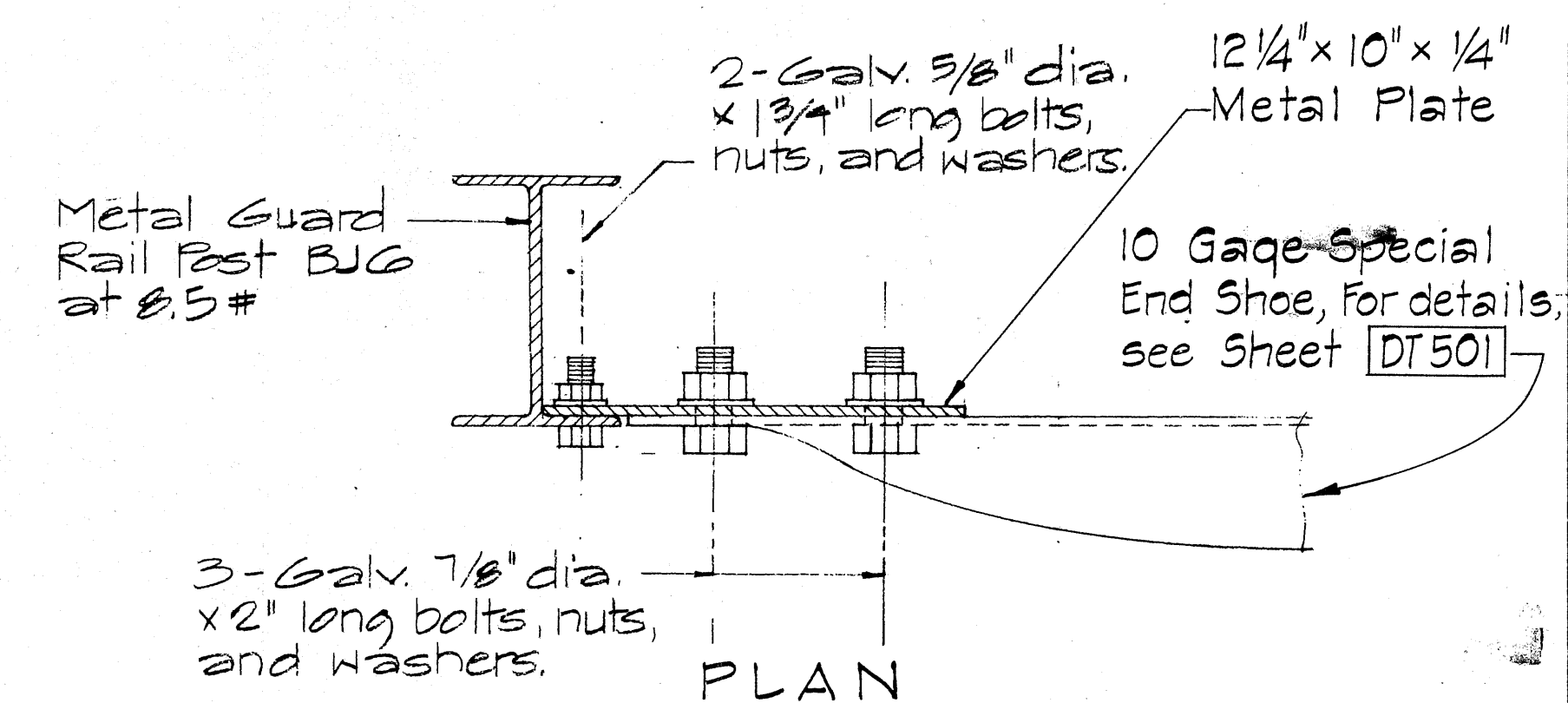
NOTE: Concrete, Excavation, and Miscellaneous Appurtenances necessary to anchor the Guard Rail Ends, shall be incidental to the Metal Guard Rail.



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

DETAIL "B"

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



APPROVAL RECOMMENDED:
TRAFFIC ENGINEER

APPROVED:
ASSISTANT CHIEF, ENGINEERING

NO.	REVISION	APPROVED BY	DATE

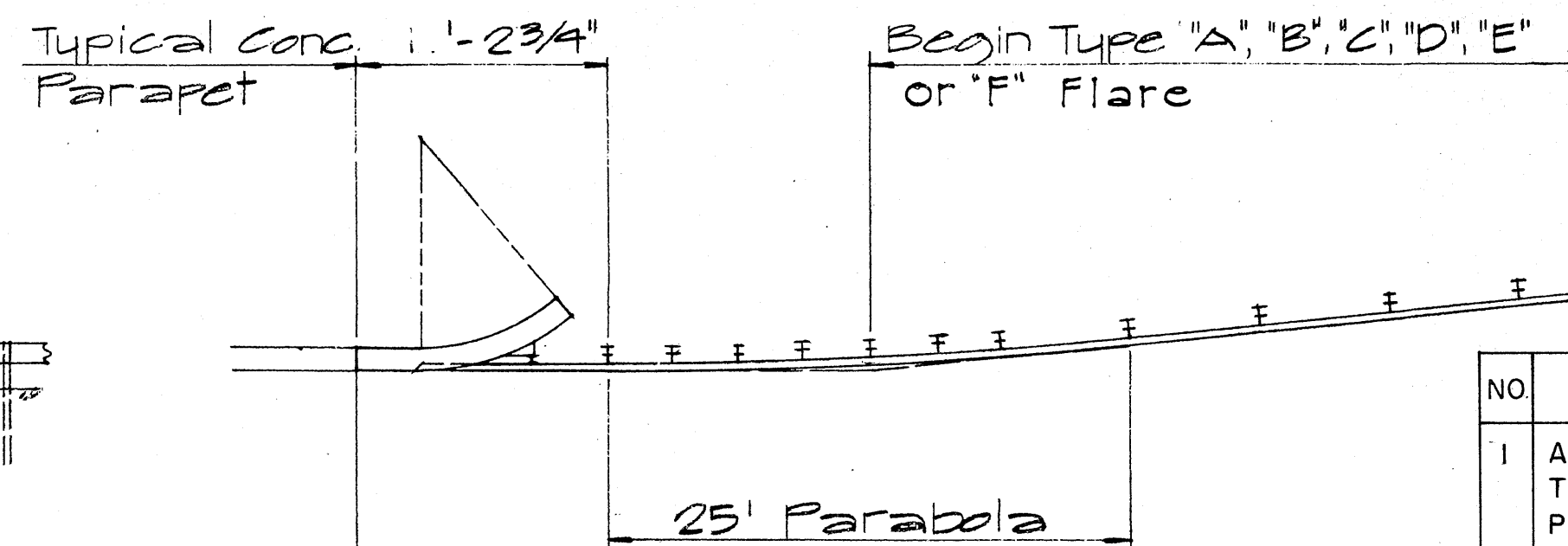
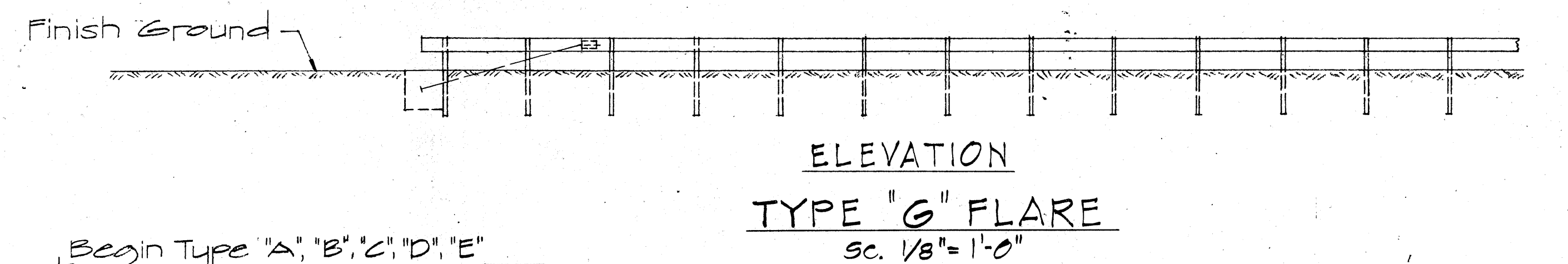
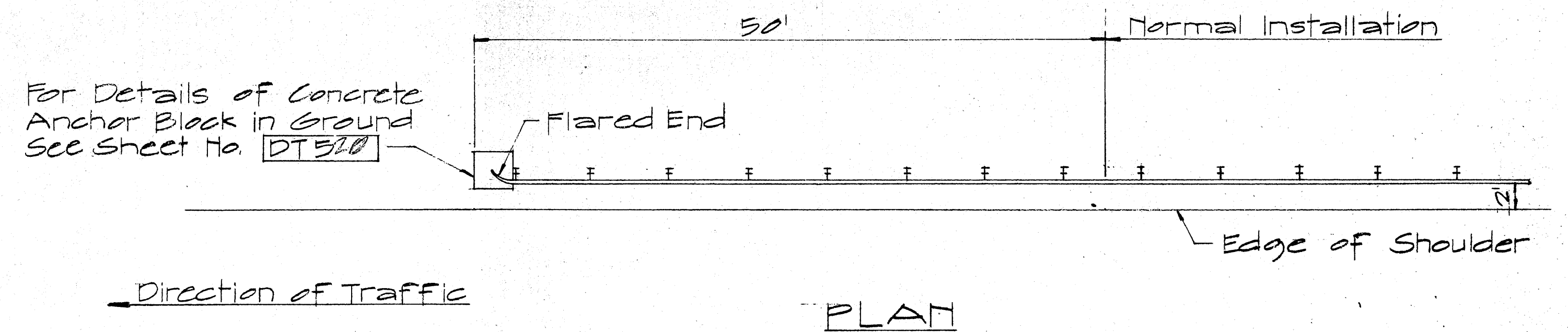
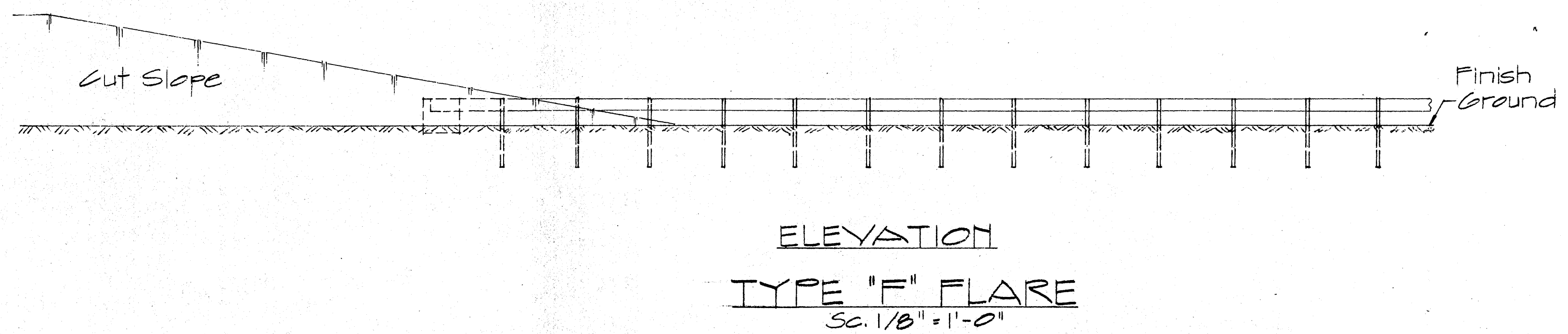
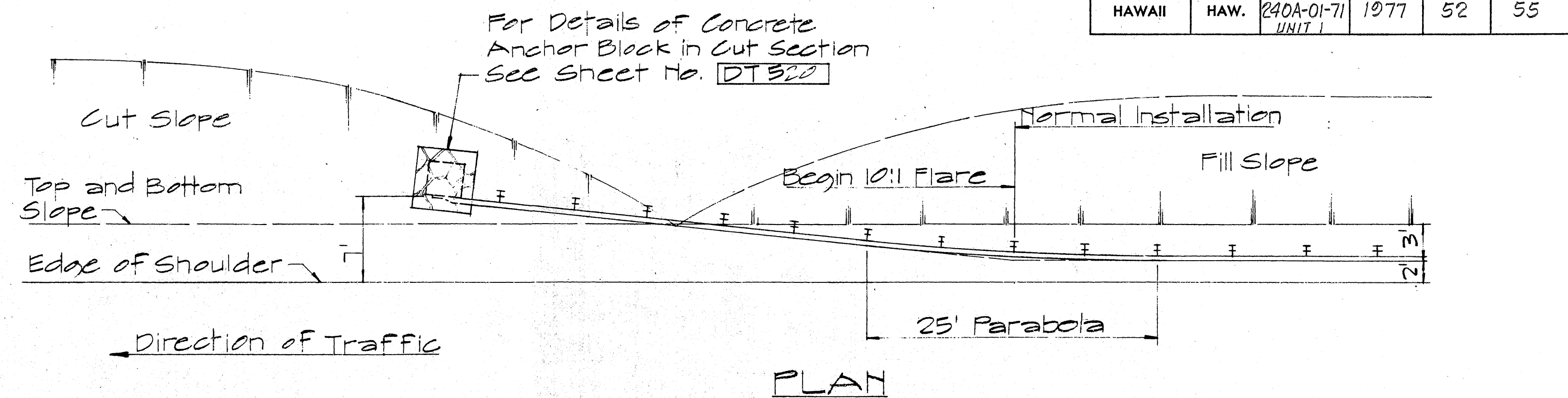
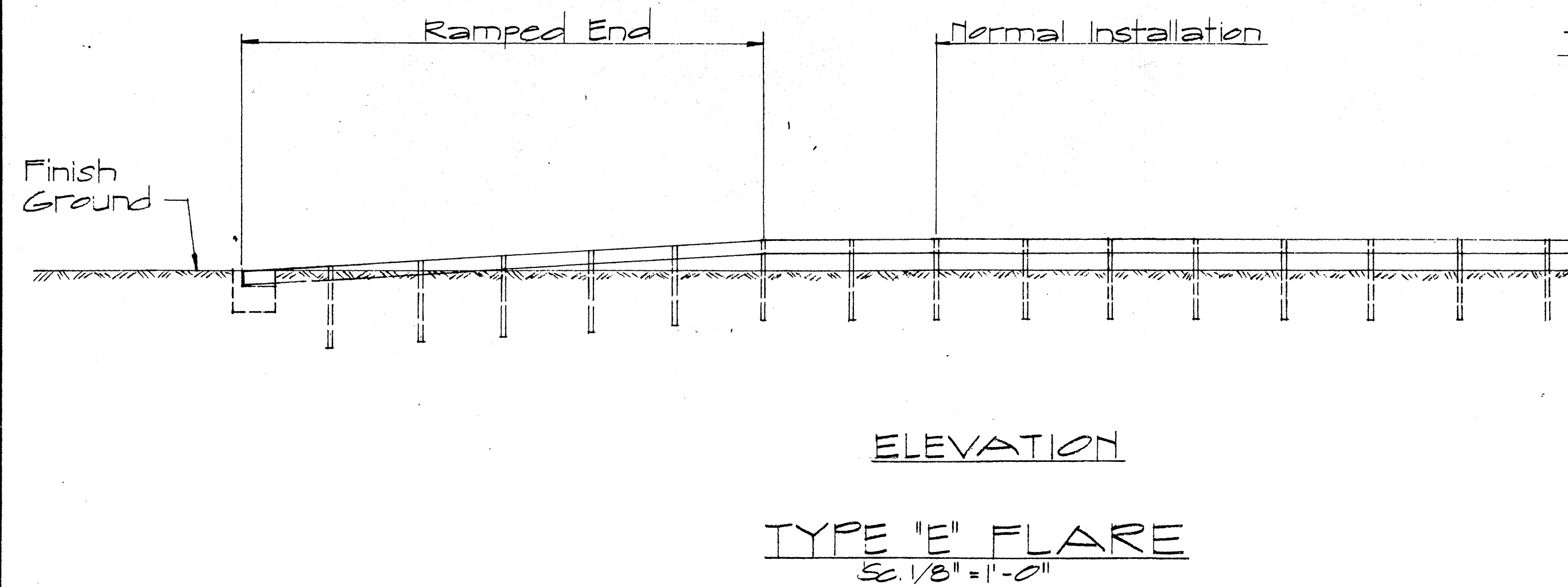
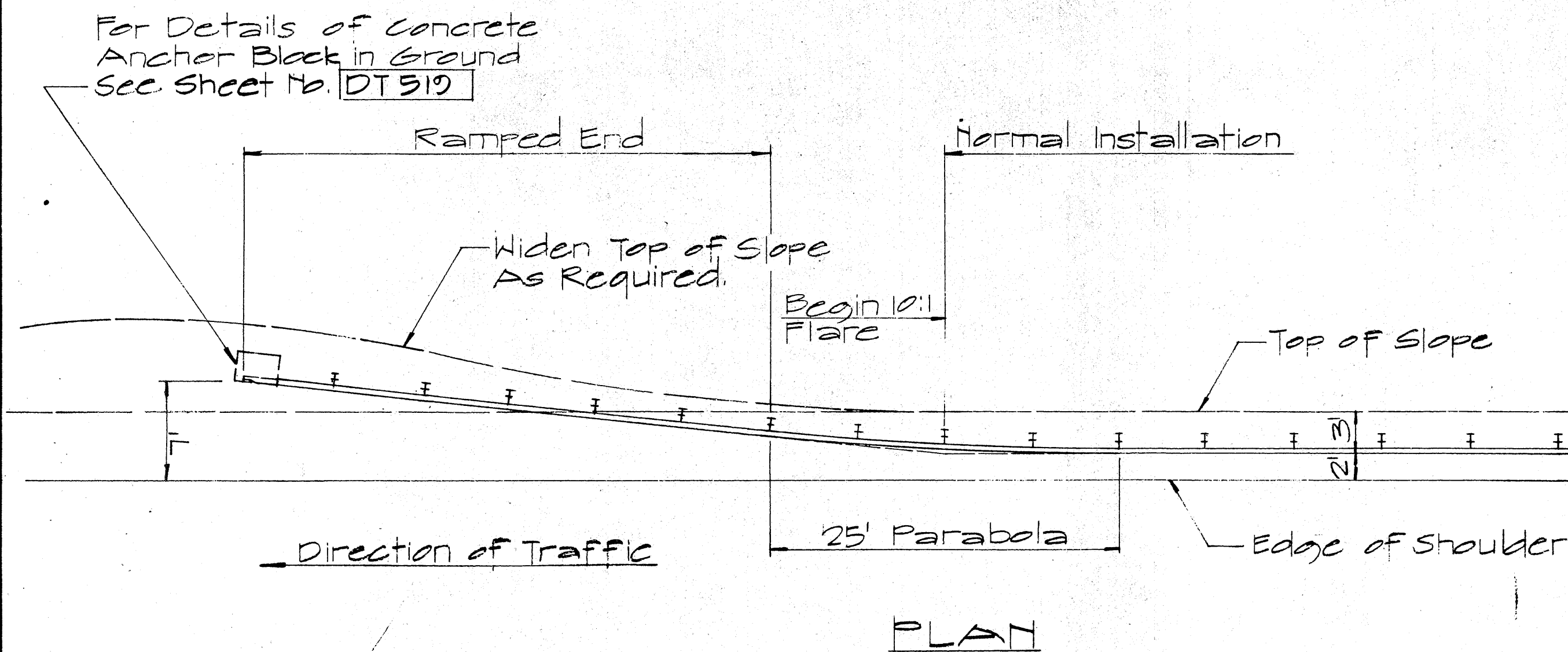
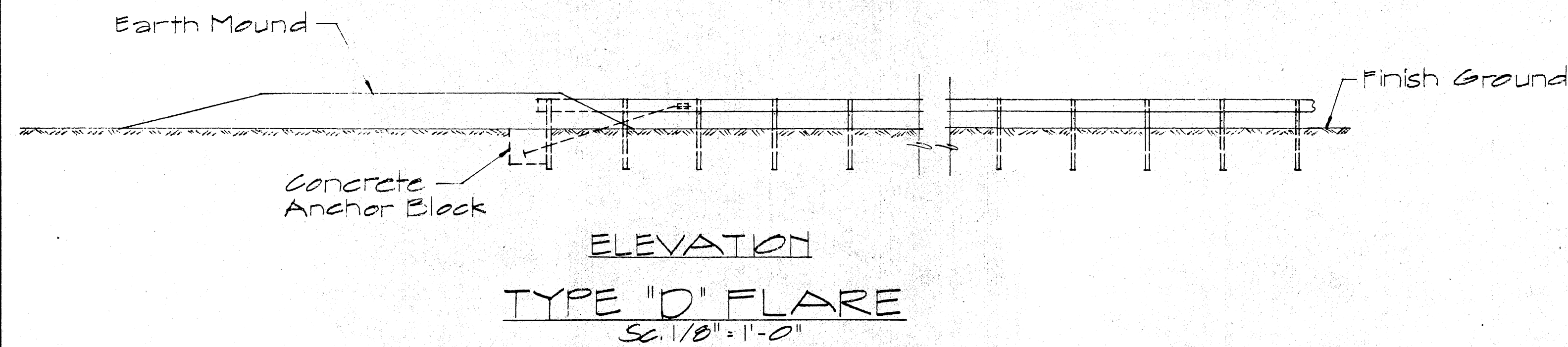
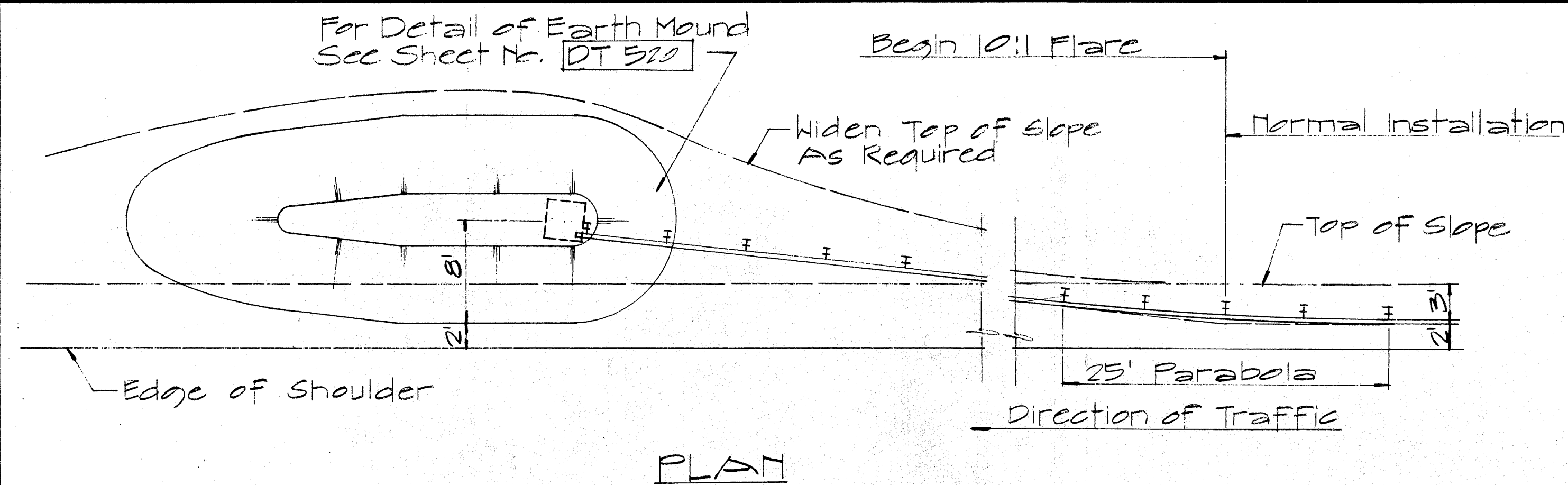
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAIL GUARD RAIL RAMP END ANCHORAGE

Scale: as Noted August, 1968

SHEET No. 19 OF 24 SHEETS DT 502

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	52	55



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

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

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

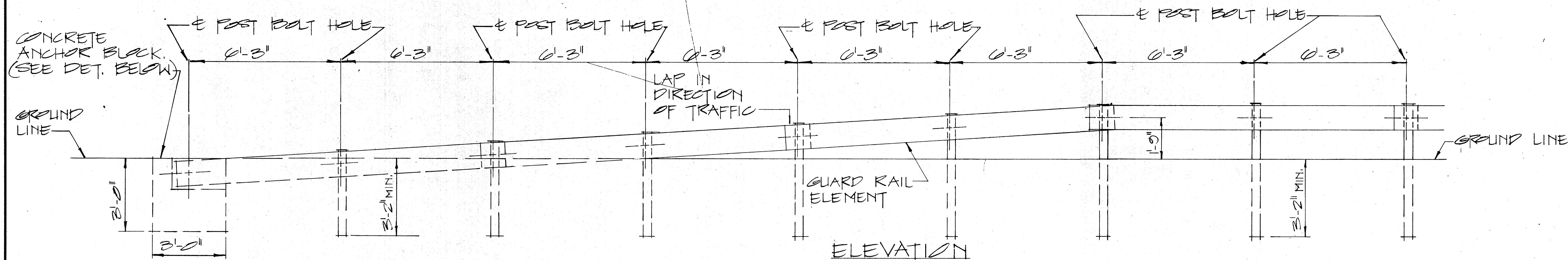
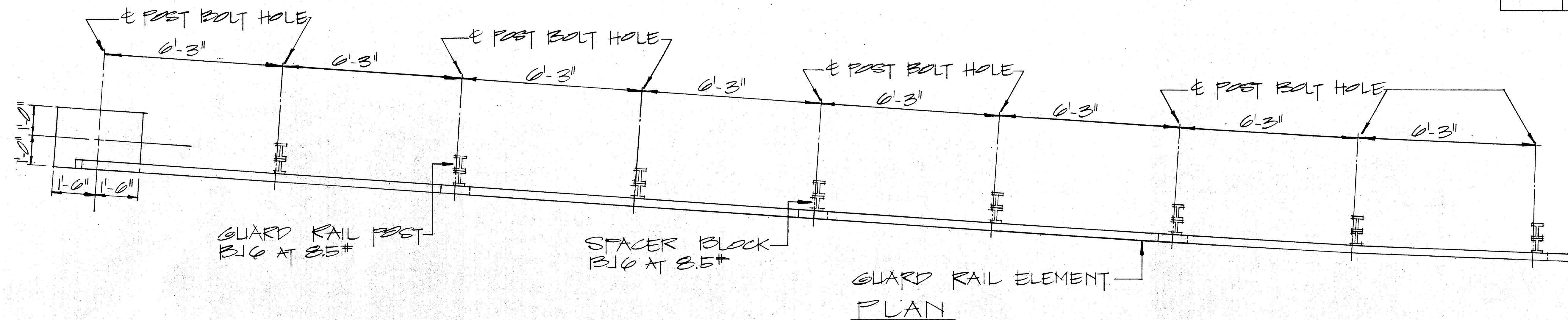
STANDARD DETAILS
 TRAILING END
 FLARE - ONE & TWO
 WAY ROADWAY

Scale: As Noted April 1969

SHEET No. 21 OF 24 SHEETS DT 517

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

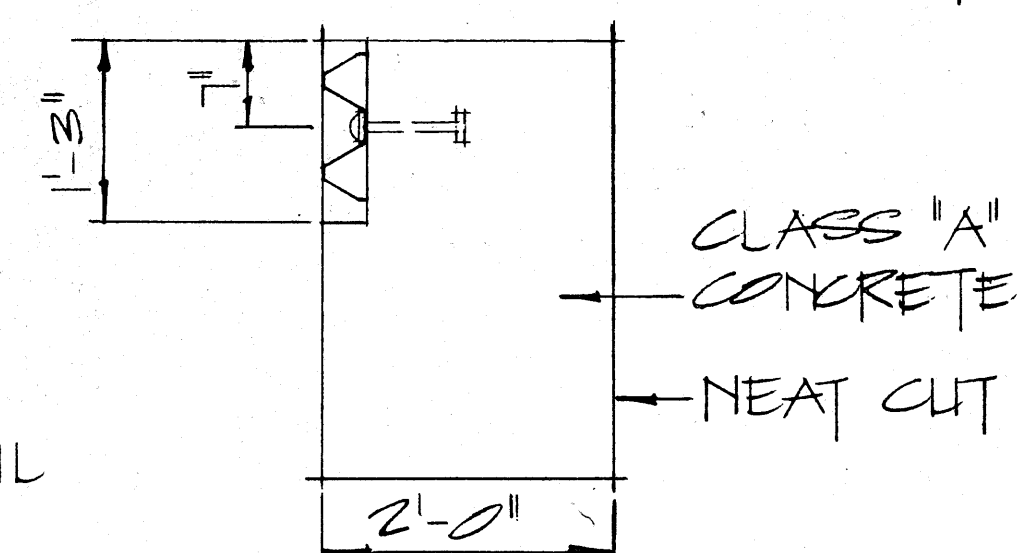
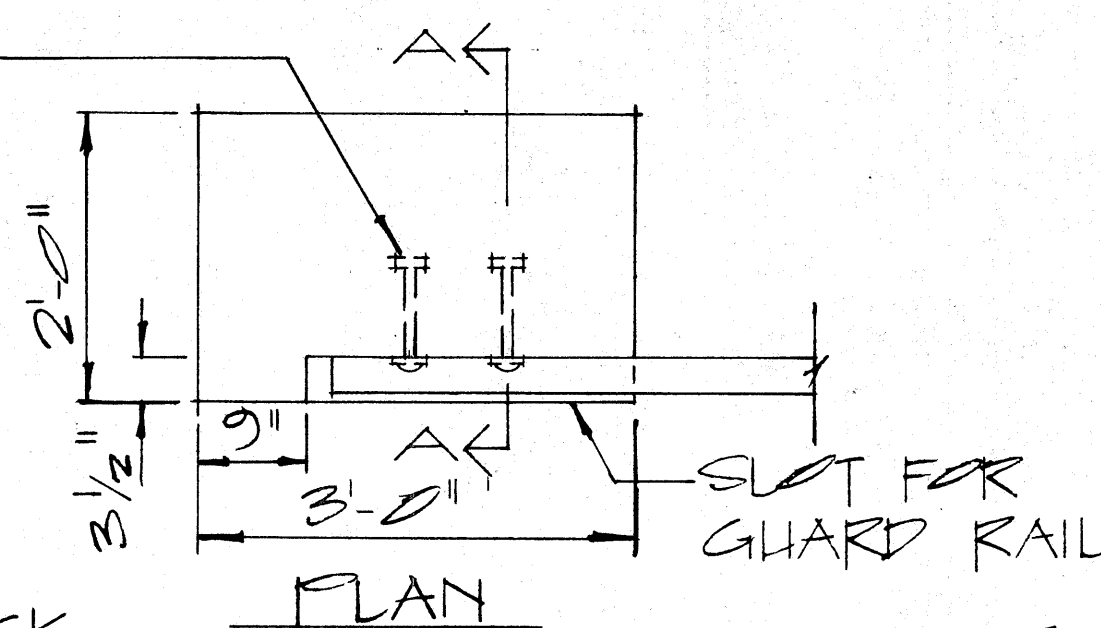
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	53	55



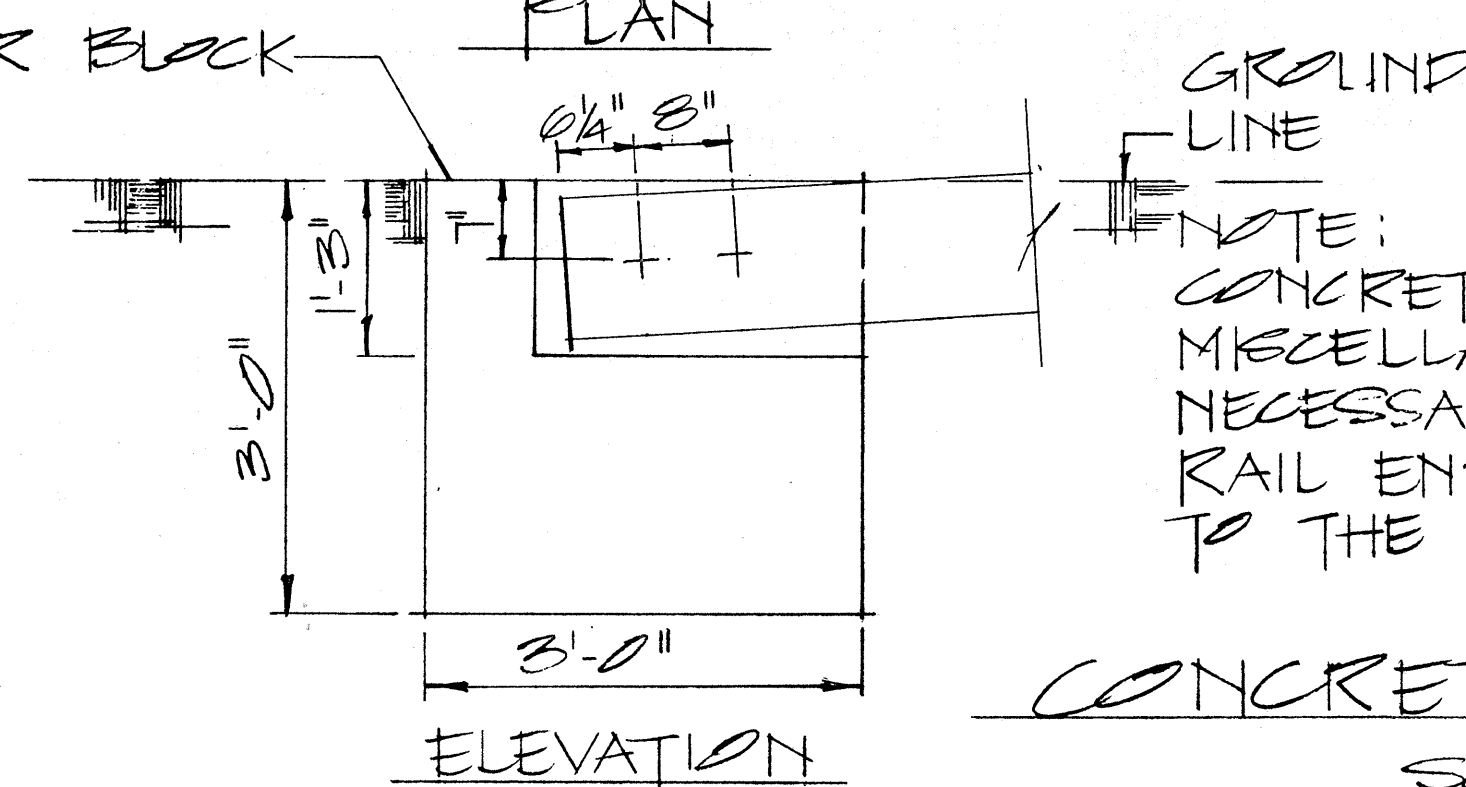
RAMP END ANCHORAGE

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:
Evelyn Tanaka
TRAFFIC ENGINEER
12/23/69
DATE

APPROVED:
22
ASSISTANT CHIEF, ENGINEERING
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

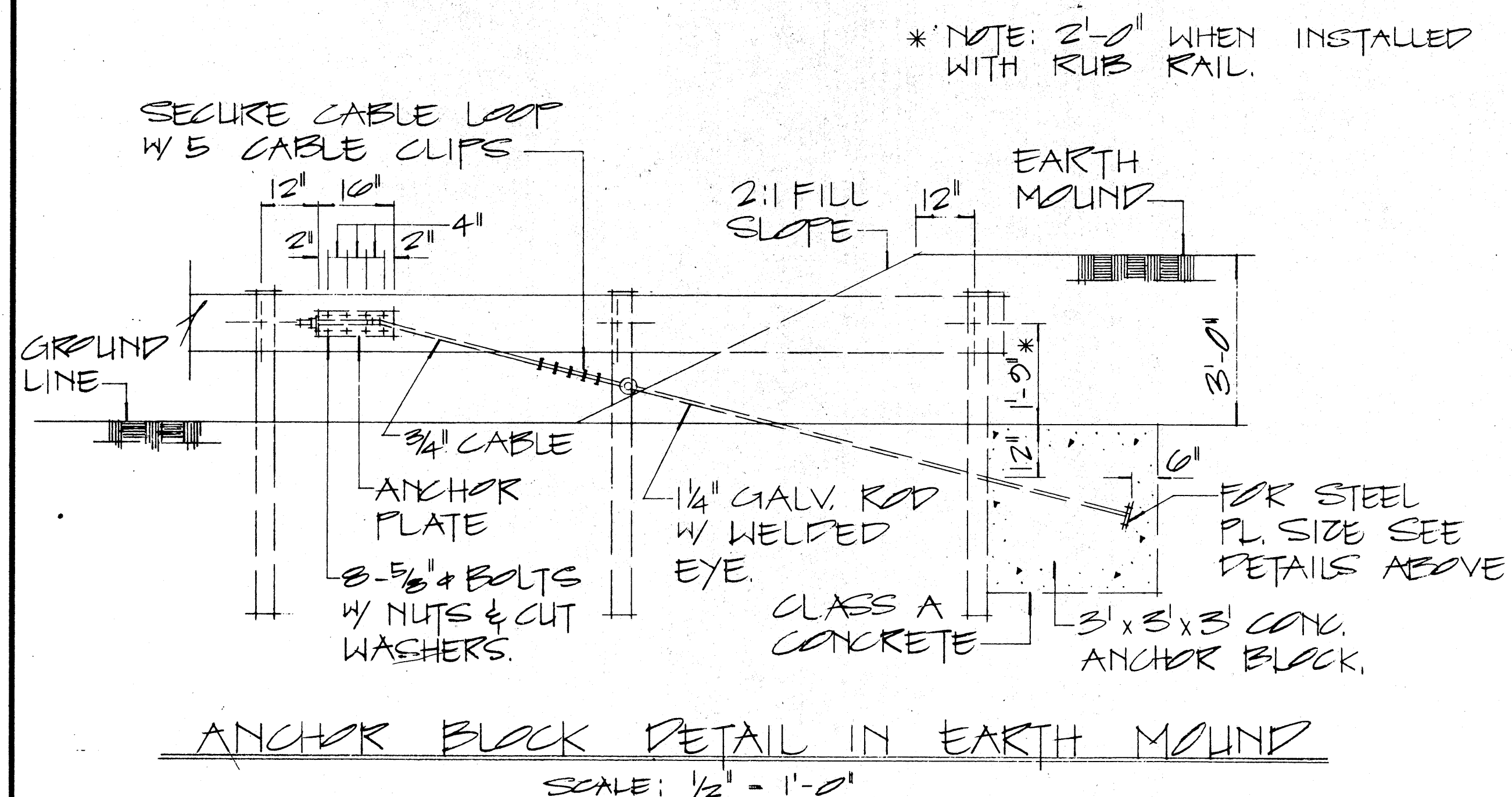
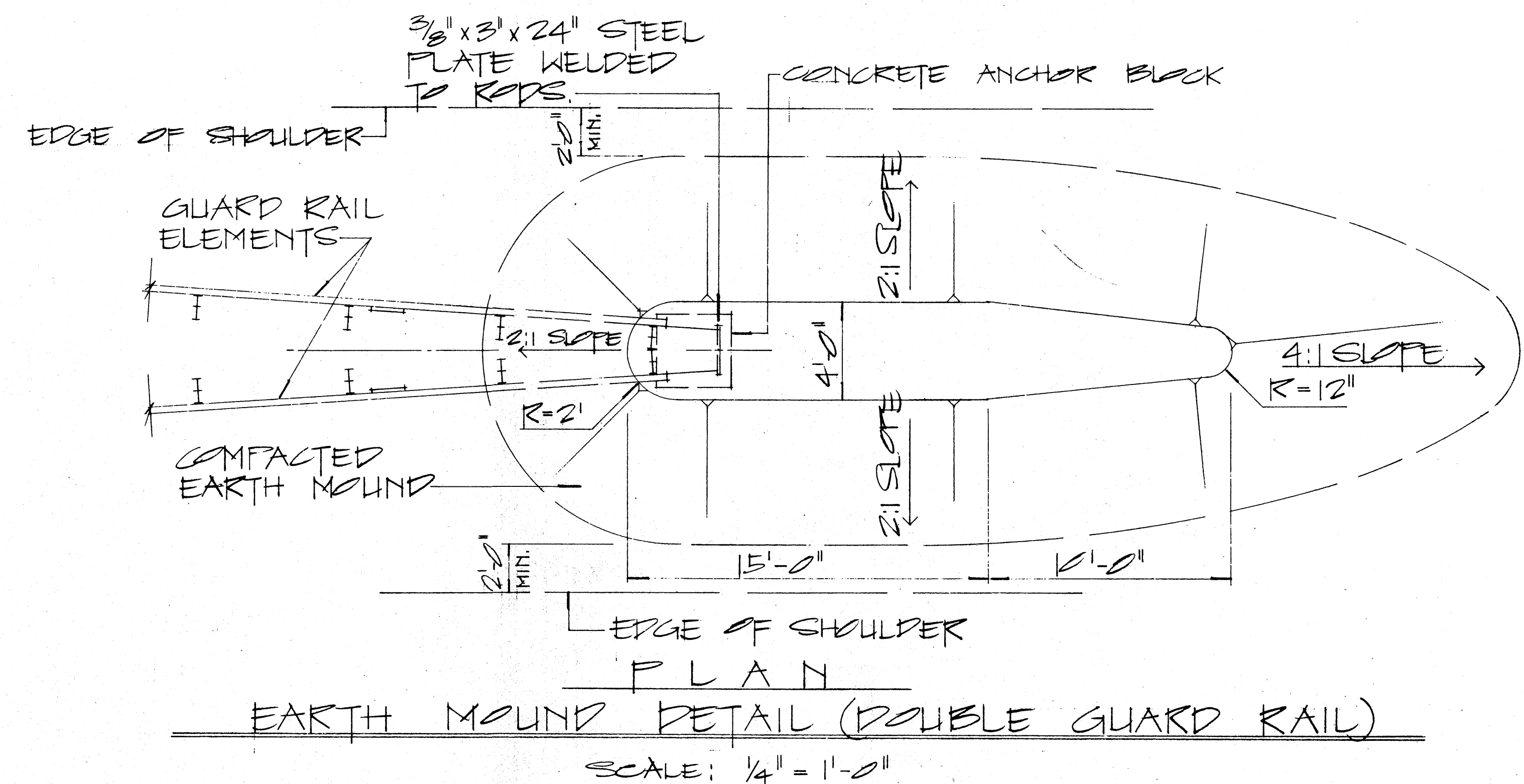
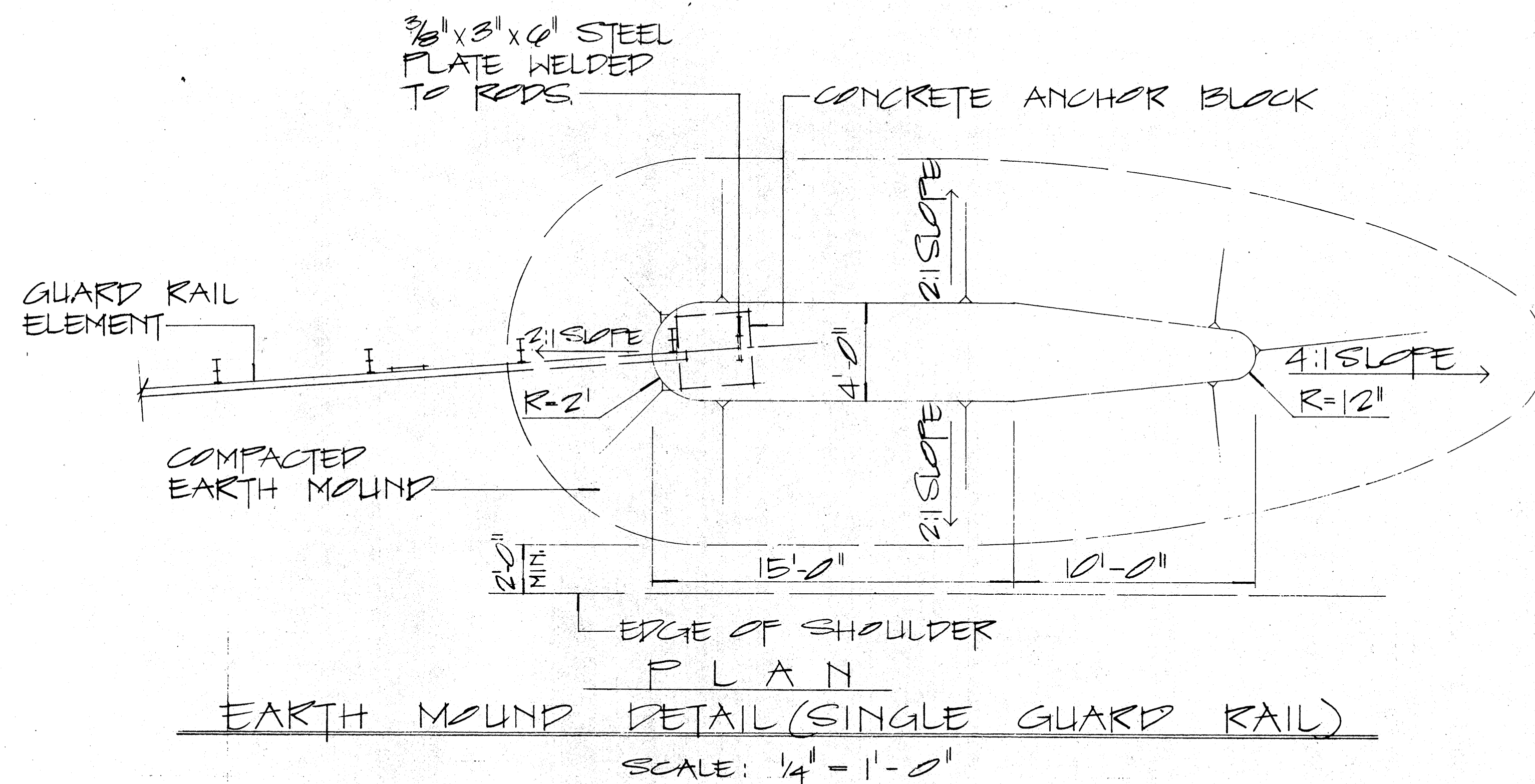
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
GUARD RAIL, TYPE 3
RAMP END ANCHORAGE

SCALE: AS SHOWN

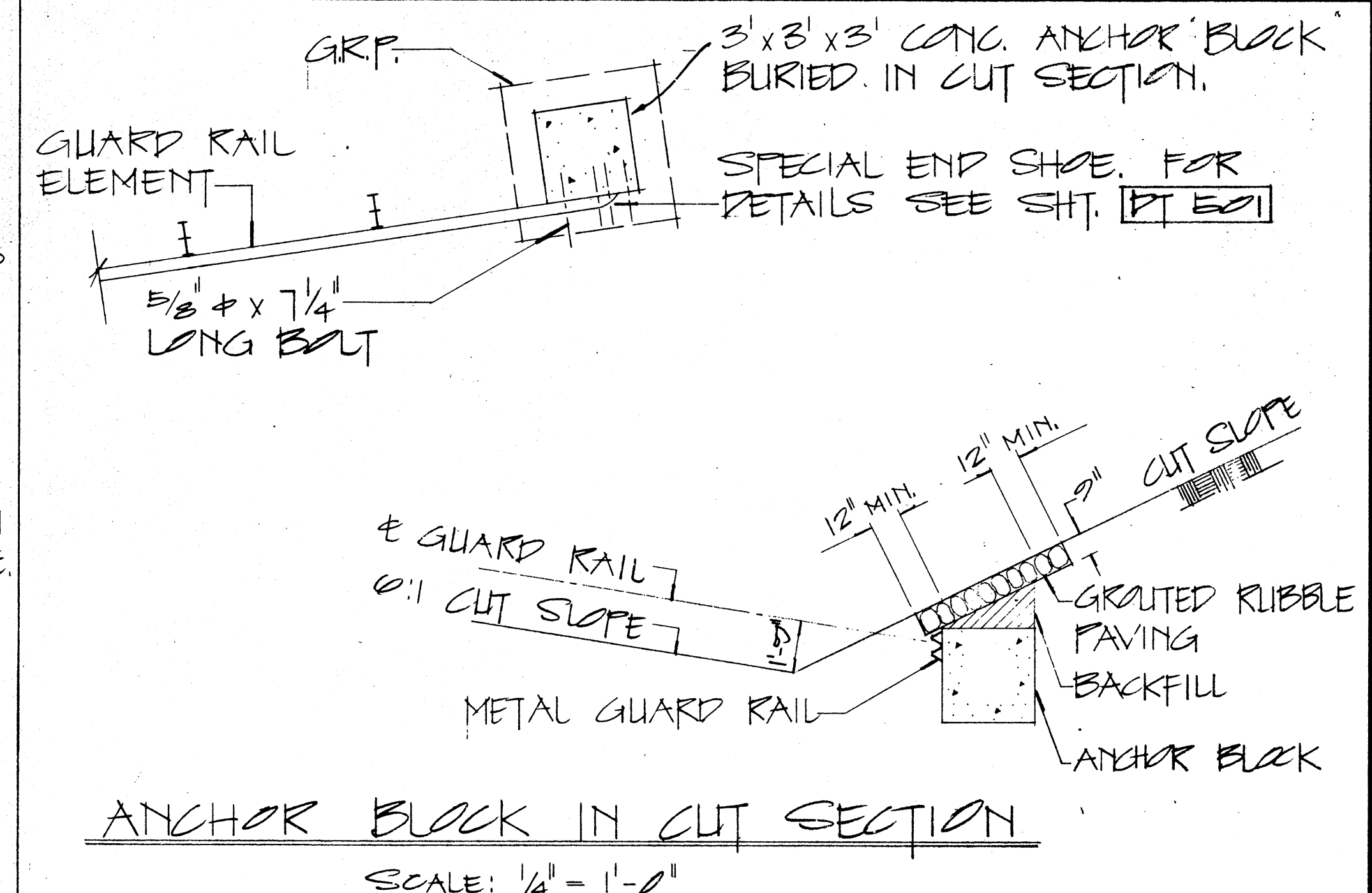
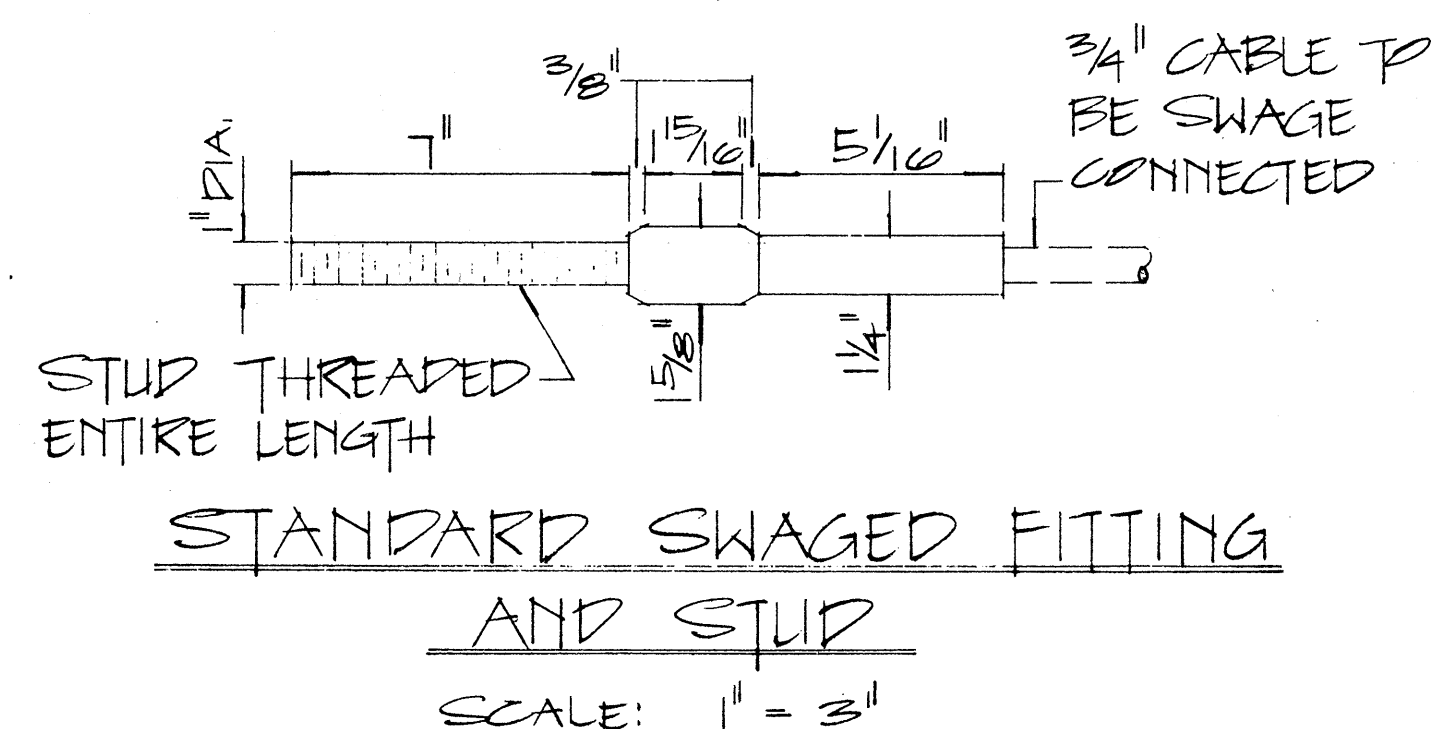
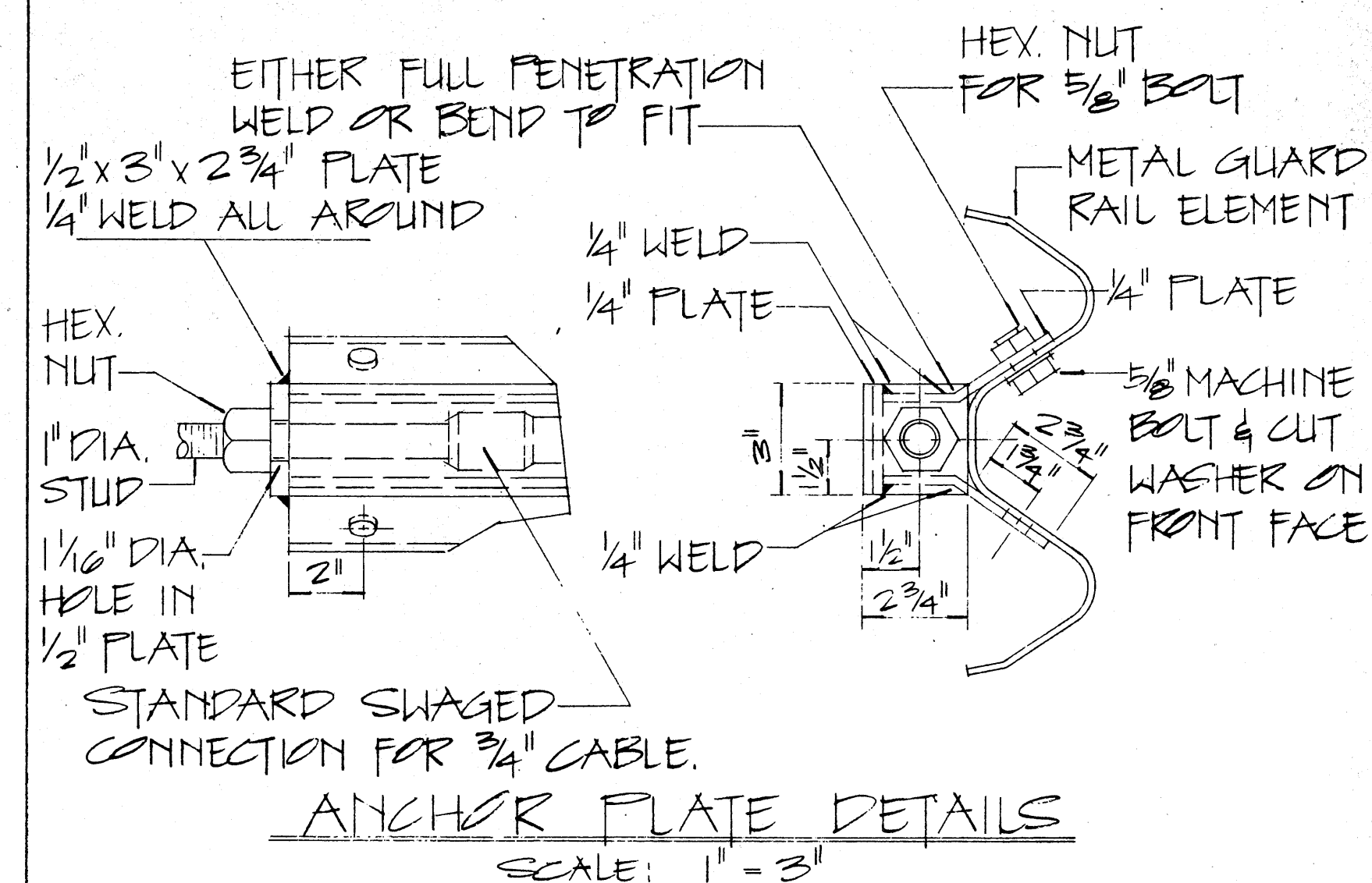
SHEET No. 22 OF 24 SHEETS PT512

FED. ROAD DIST. NO.	STATE	FED. AID FED. PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	54	55



NOTE:

1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND FAST BURIED IN GROUND SHALL BE COVERED WITH a Min. 20-Mil Thickness of Coal TAR ENAMEL. Conforming to AWWA Standard: C 203
2. CONCRETE, GRP, EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.



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

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

NO.	REVISION	APPROVED BY	DATE

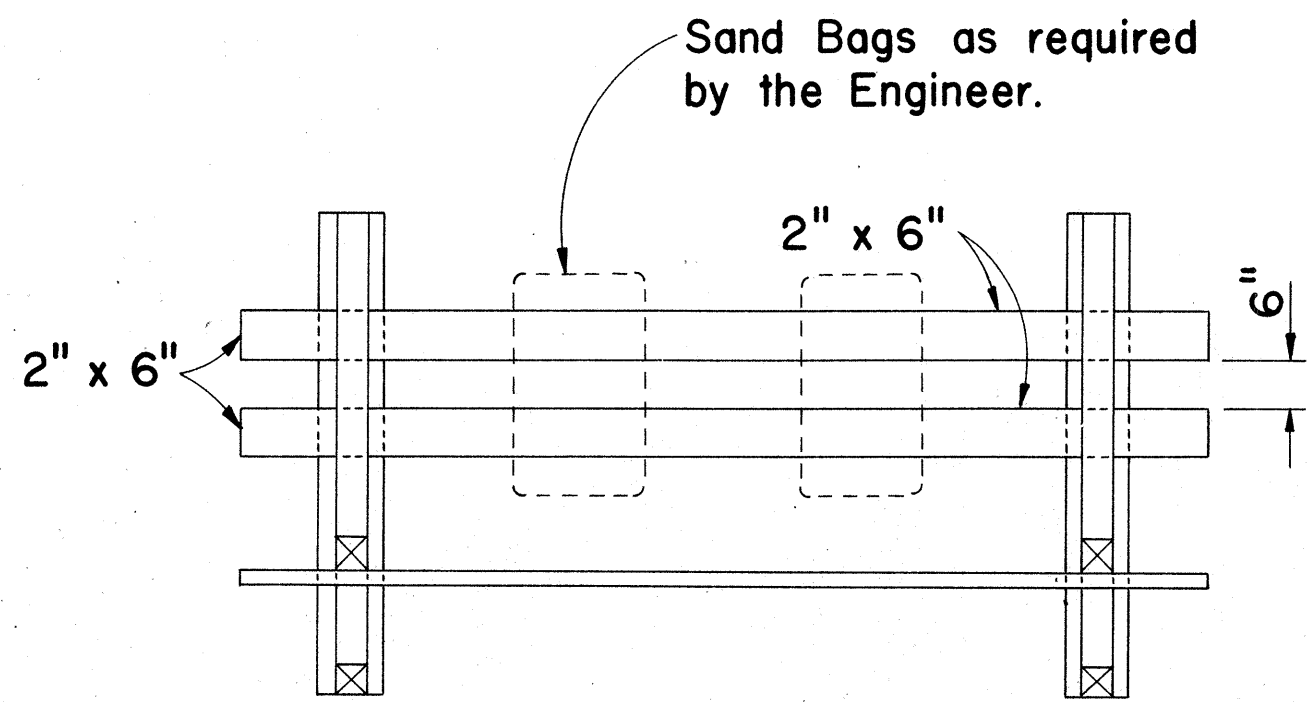
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
EARTH MOUND AND
ANCHOR BLOCK DETAILS

SCALE: AS SHOWN *at 1960*

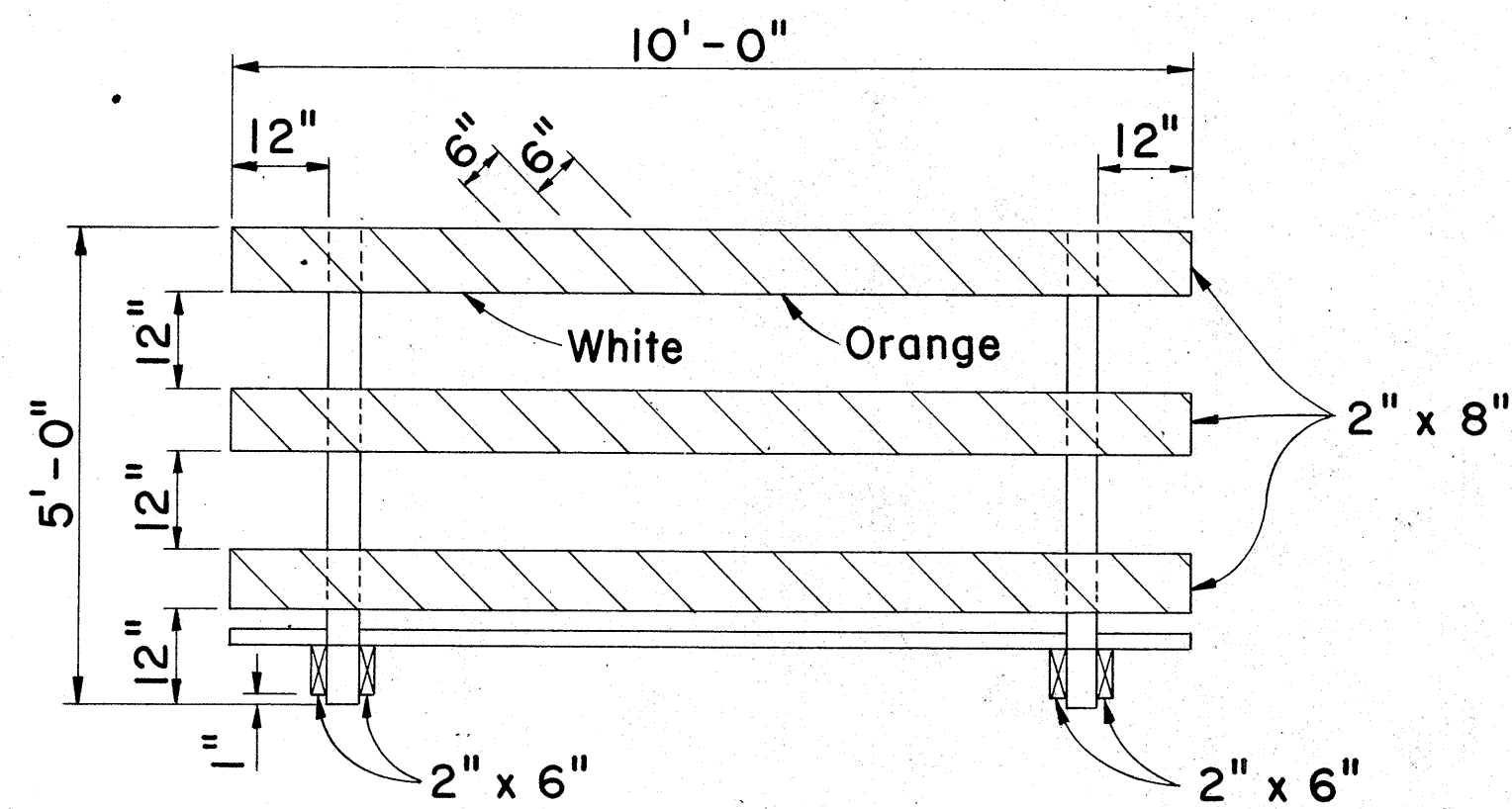
SHEET No. 23 OF 24 SHEETS *DT 520*

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	240A-01-71 UNIT 1	1977	55	55

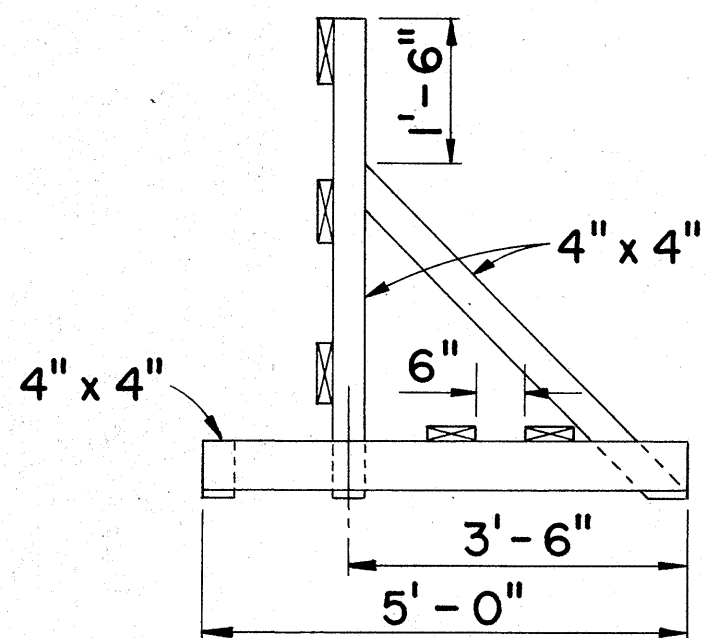


PLAN VIEW

- 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 with high intensity reflective sheeting.



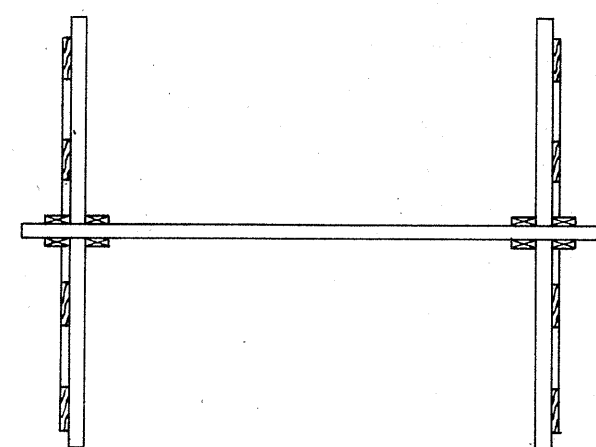
FRONT VIEW



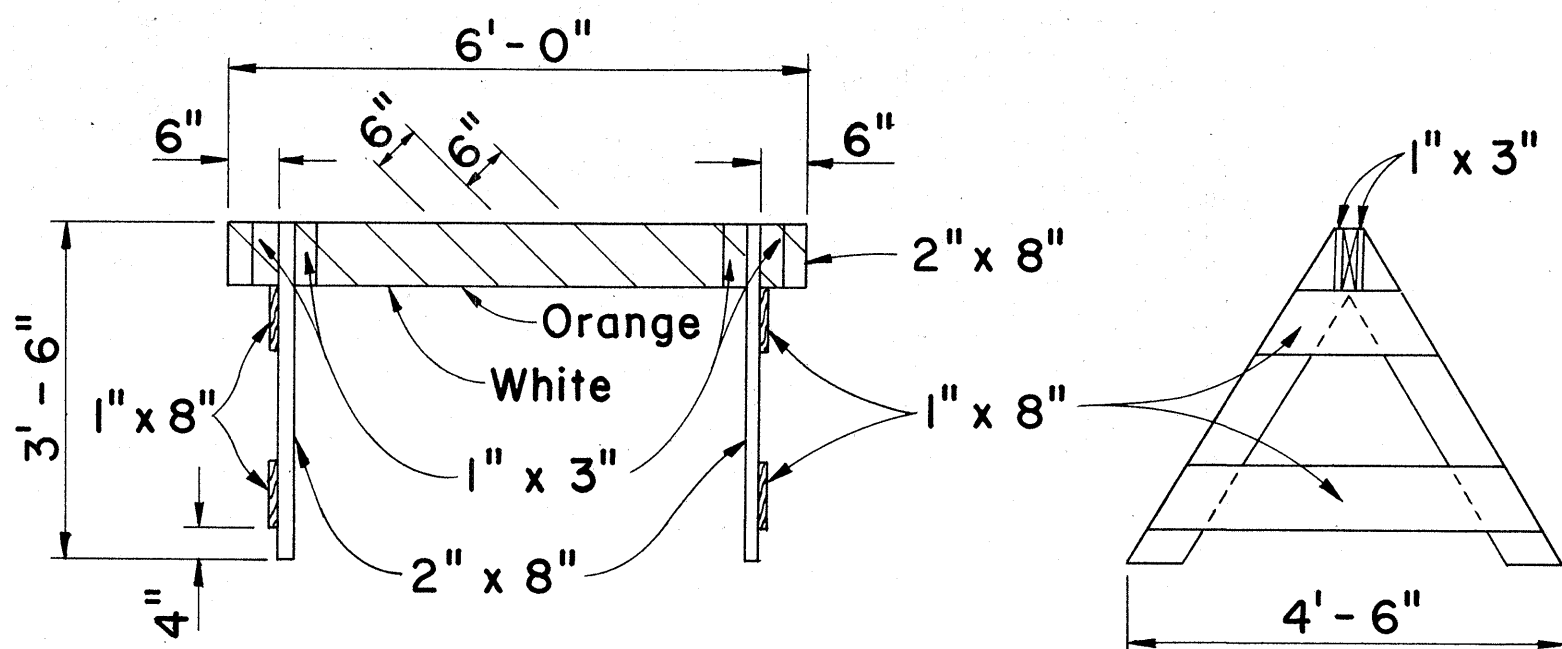
END VIEW

CLASS I BARRICADE

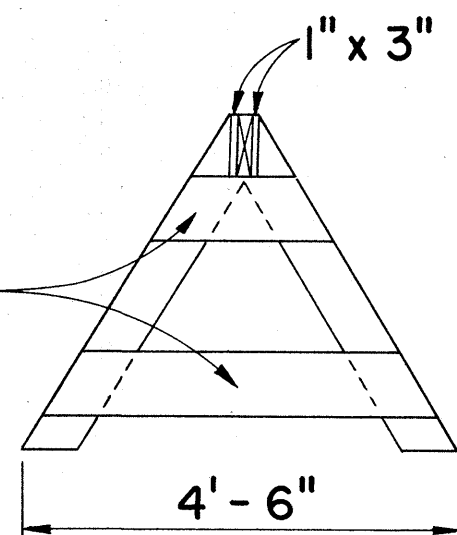
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW



END VIEW

CLASS II BARRICADE

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

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

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

NO.	REVISION	APPROVED BY	DATE
1	Reduce sign width to 12'-0"	H.T.	9-3-10
2	Delete "Bureau of Public Roads"	H.T.	9-29-10
3	Add Note No. 3 for Barricades	H.T.	5-4-11
4	Revise stripe color for Barricades	H.T.	10-21-12

NO.	REVISION	APPROVED BY	DATE
5	Revise General Note 3 for Barricades. Delete details of Construction Identification Sign.	MT	9-16-75

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

SCALE: As Shown DATE:
 SHEET No. 24 OF 24 SHEETS DT 800