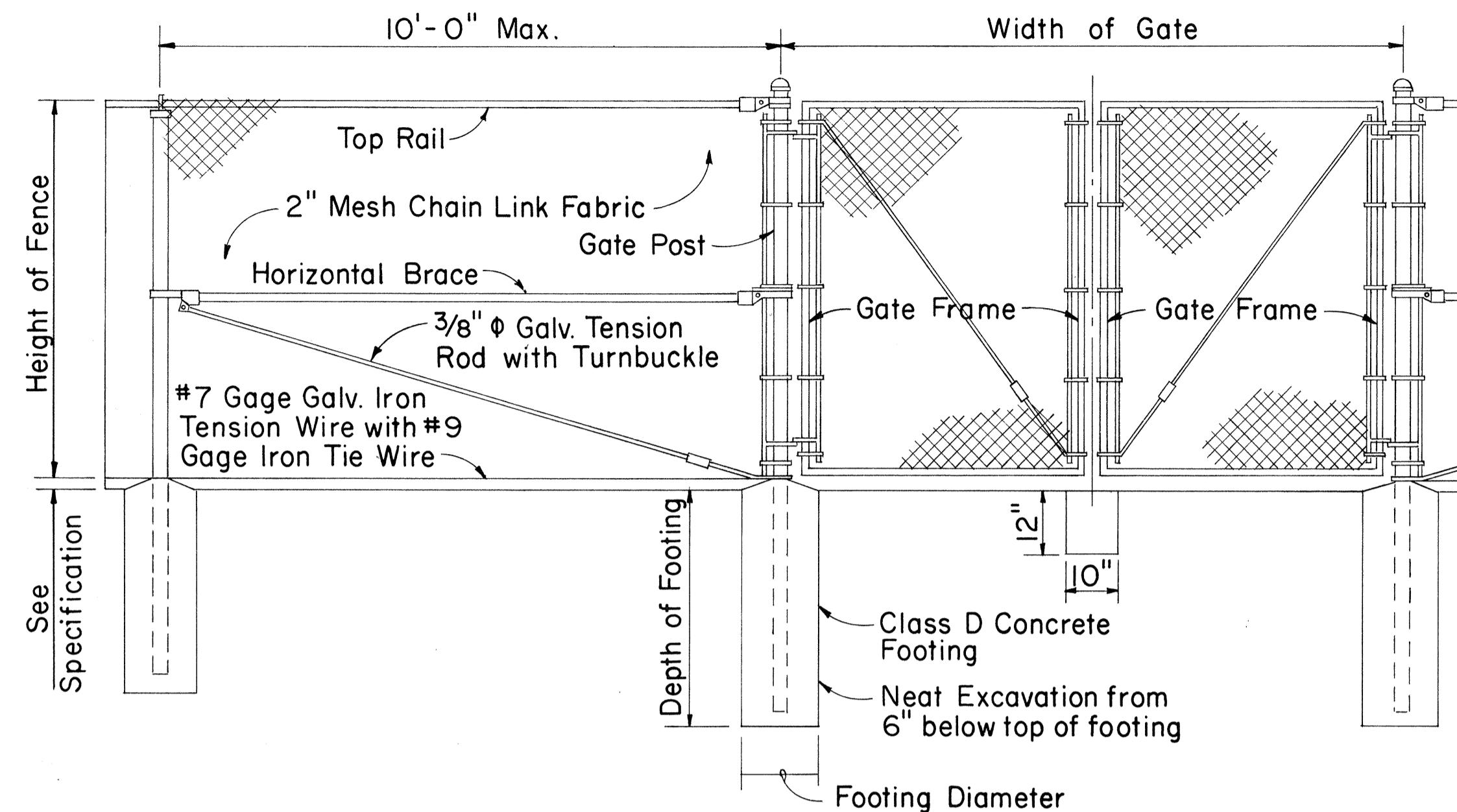


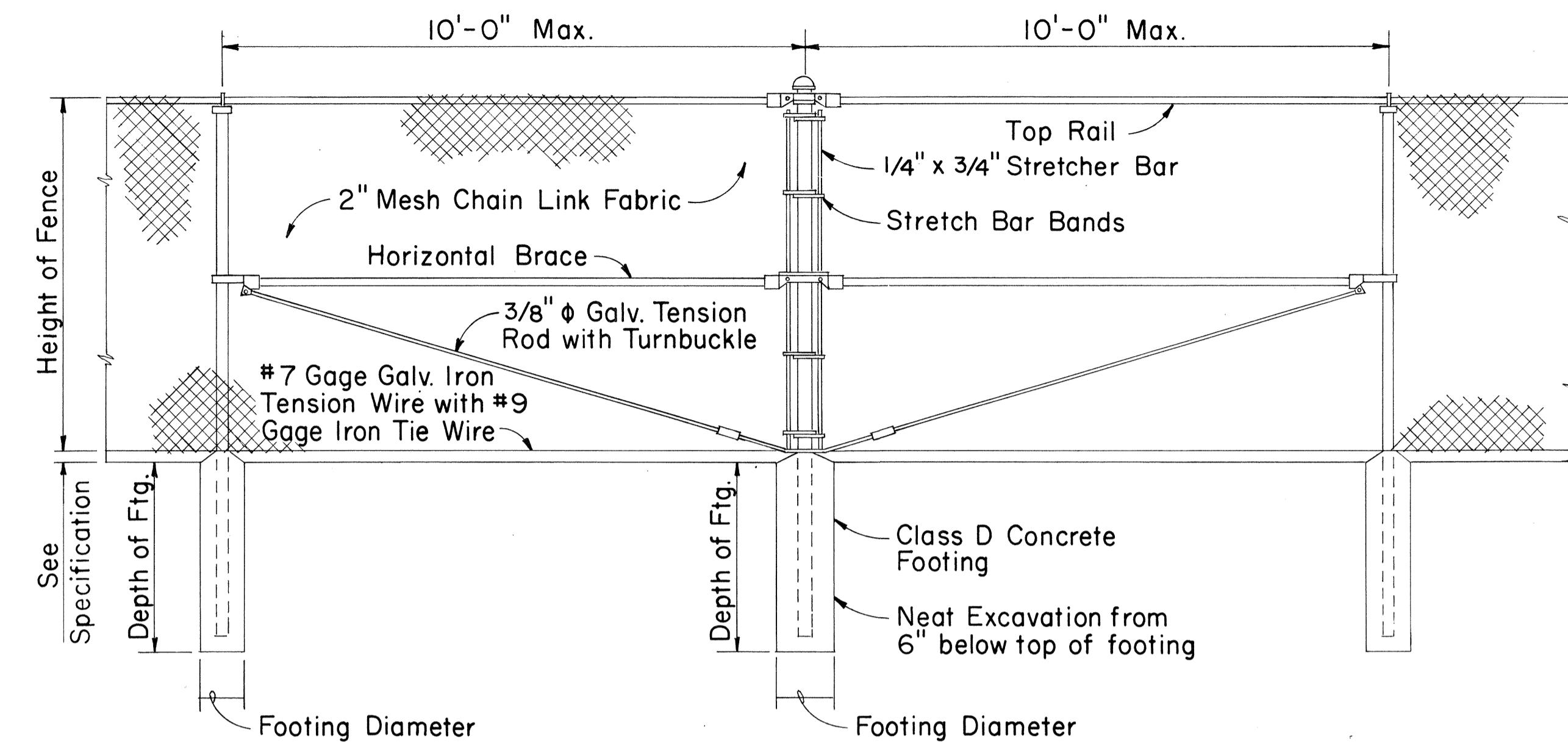
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156):16	1979	43	236



LINE POST

GATE POST

GATE POST



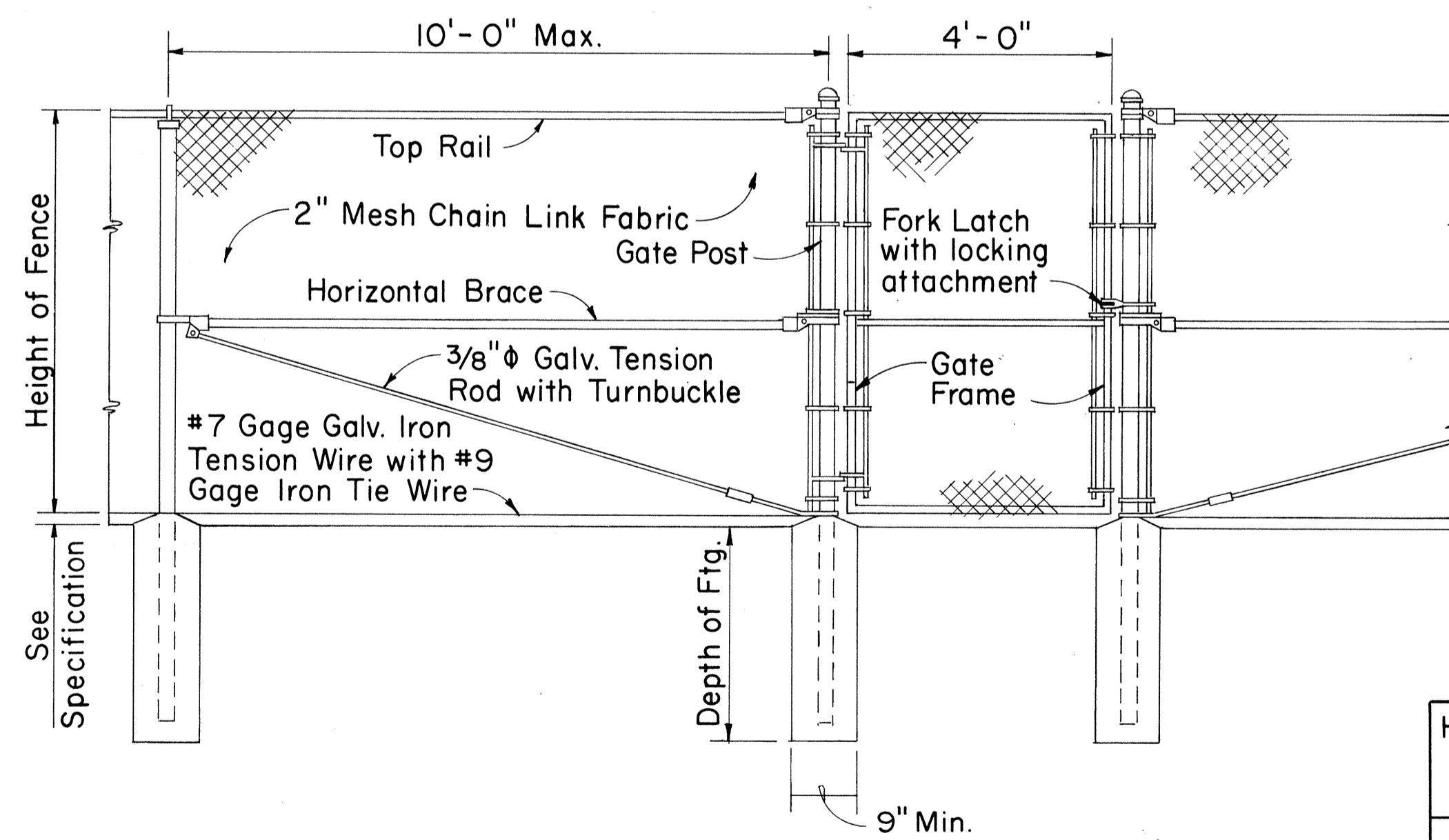
LINE POST

PULL POST

LINE POST

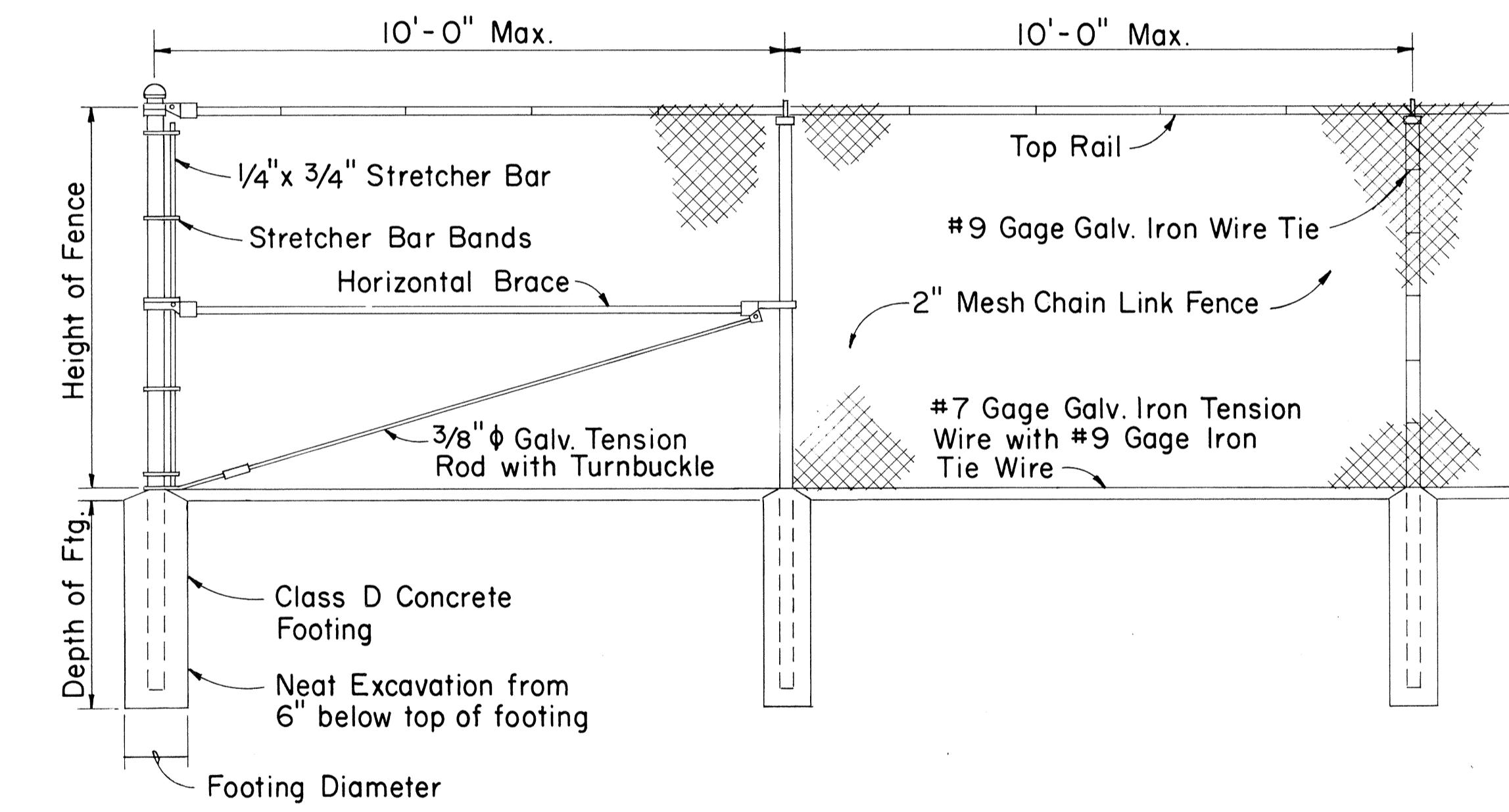
TYPICAL SECTION  
(WITH CONCRETE FOOTING)DETAIL OF CHAIN LINK GATE

- NOTE: 1. Gate fork latch and lock, flush plate and anchor, and plunger shall be installed with Gates, and shall be considered as incidental to Chain Link Fence Gate.  
2. Gate frames shall be mitered and welded at corners.  
3. Fence detail not shown shall be in accordance with the Standard Specifications.



LINE POST

GATE POST GATE POST

DETAIL OF 4 FT. CHAIN LINK GATE

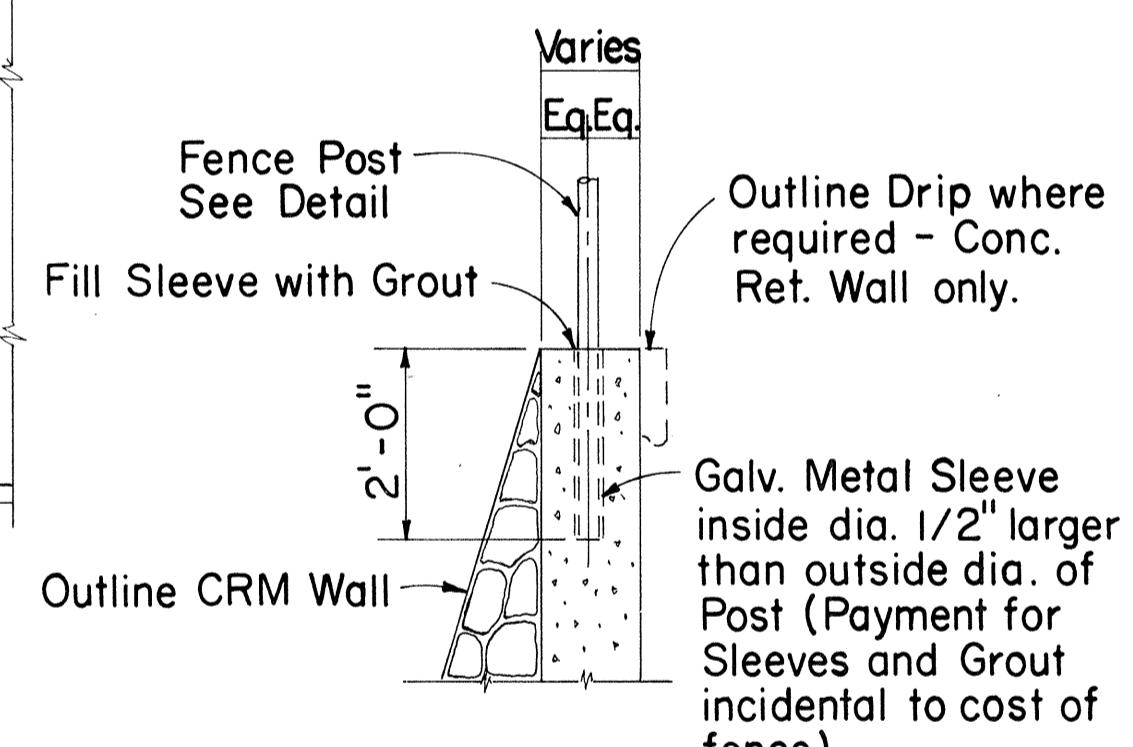
END POST

LINE POST

LINE POST

CHAIN LINK FENCE DETAILS

Height of Fence	Minimum Depth of Footing		Minimum Footing Diameter	
	Line Post	Corner, Pull, End and Gate Posts	Line Post	Corner, Pull and End Posts
3'	2'-0"	2'-6"	8"	8"
4'	2'-6"	2'-6"	8"	8"
5'	3'-0"	3'-0"	8"	8"
6'	3'-0"	3'-0"	8"	9"

TYPICAL SECTION  
(ON CRM & CONC. RET. WALL)

APPROVAL RECOMMENDED:  
*M. J. Brown*  
HIGHWAY DESIGN ENGINEER

12-4-69  
DATE

APPROVED:  
*J. S. Bland*  
ASSISTANT CHIEF, ENGINEERING

10-10-69  
DATE

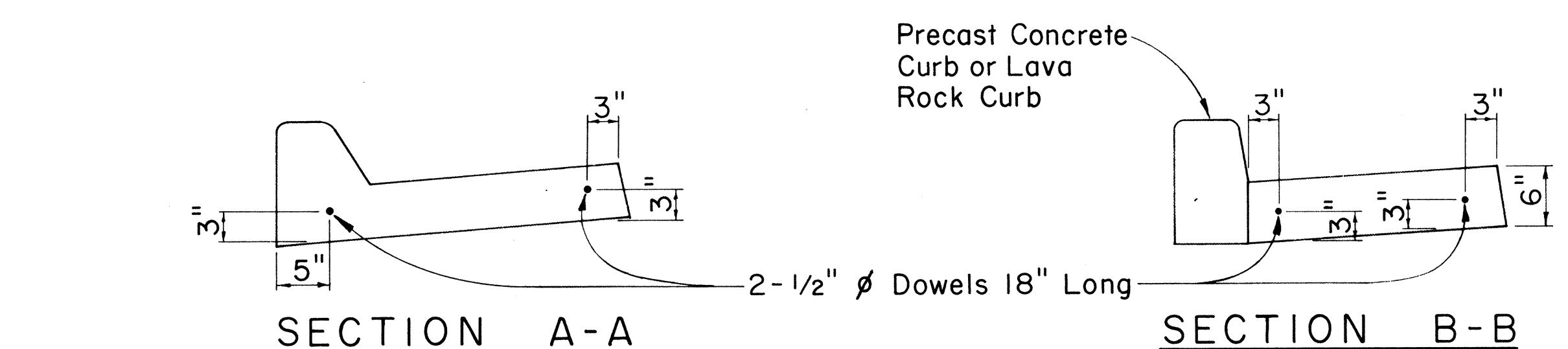
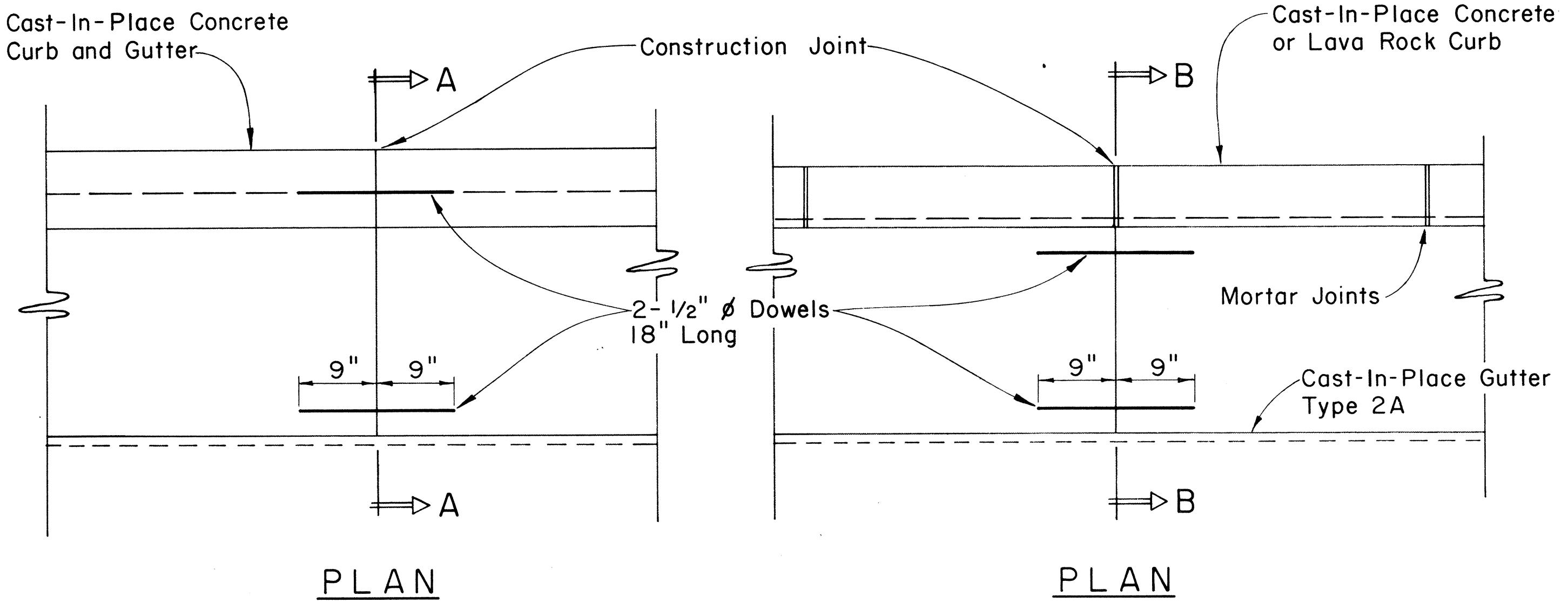
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILSCHAIN LINK FENCE  
(WITH TOPRAIL)

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

SHEET No. OF SHEETS DD 607.1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(156)16	1979	44	236

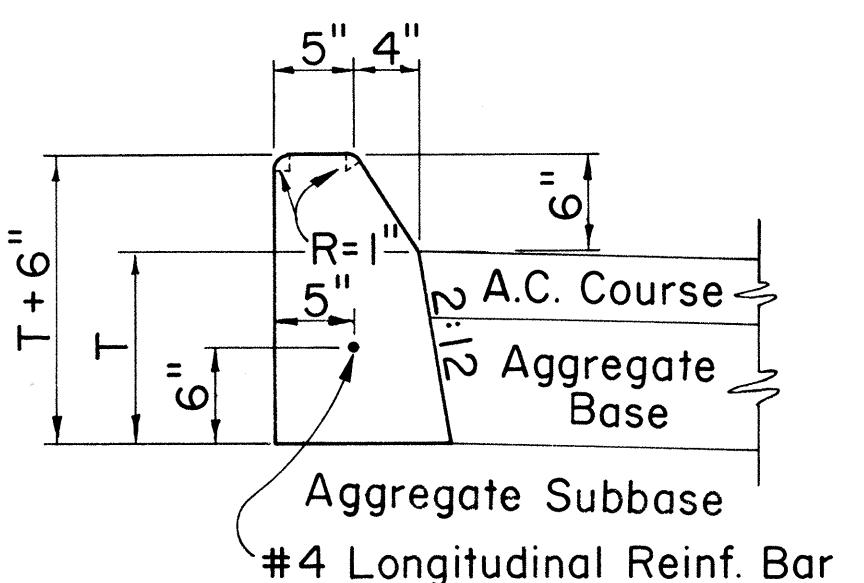


CAST-IN-PLACE CURB & GUTTER

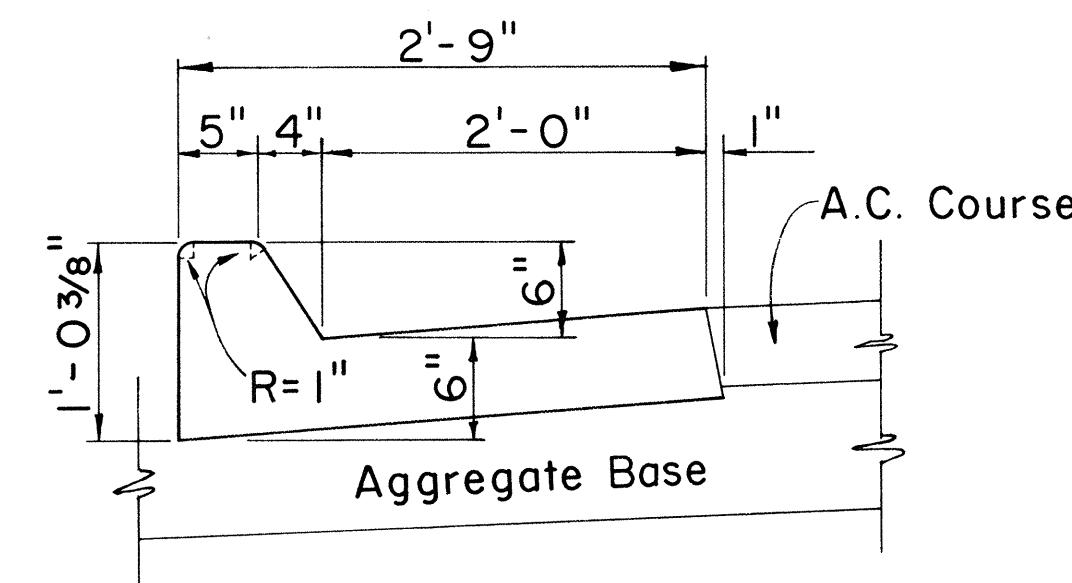
CAST-IN-PLACE GUTTER

CONSTRUCTION JOINT DETAIL

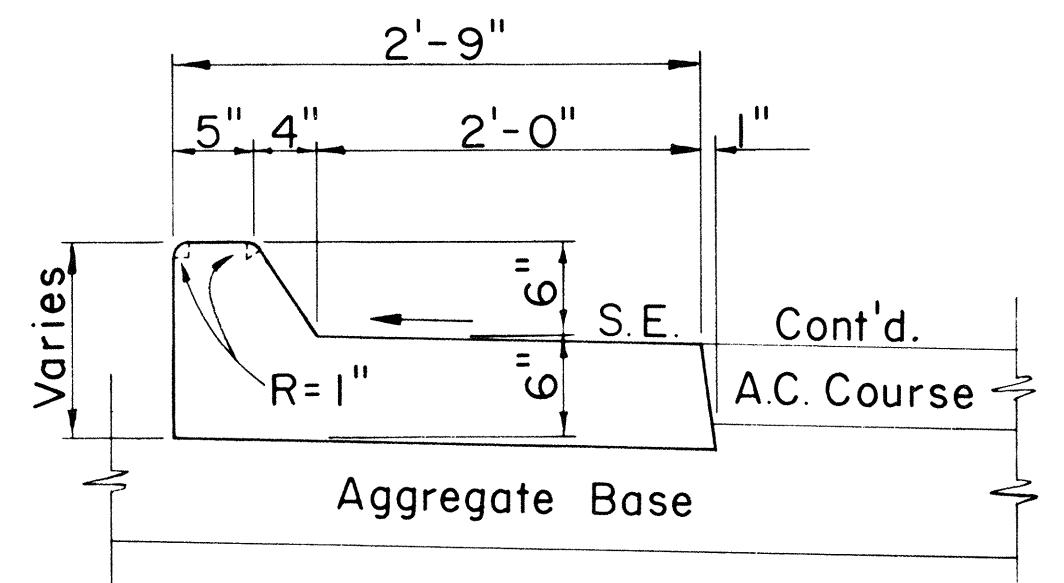
Scale: 1" = 1'-0"



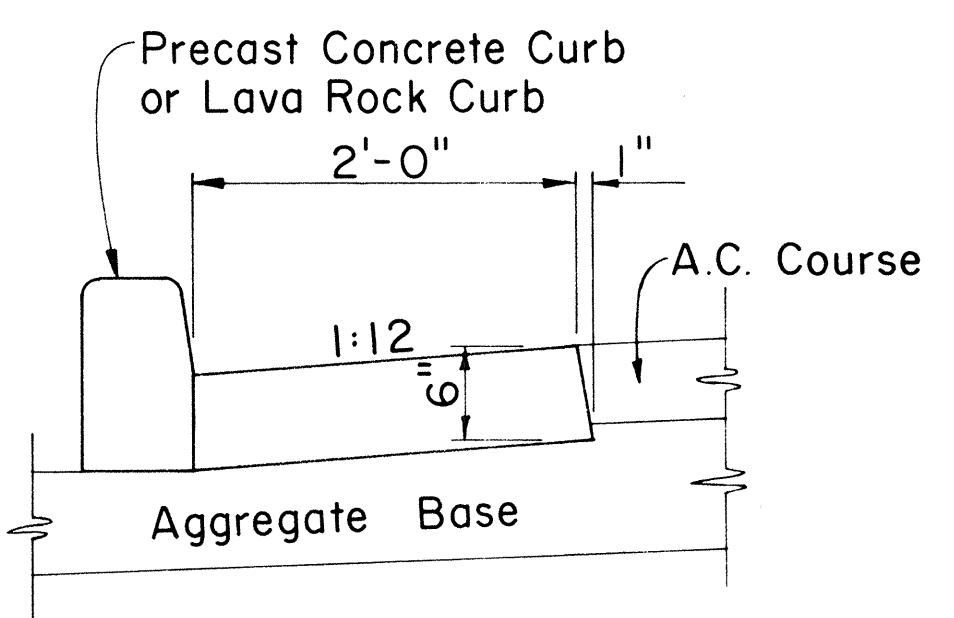
CURB, TYPE 2A



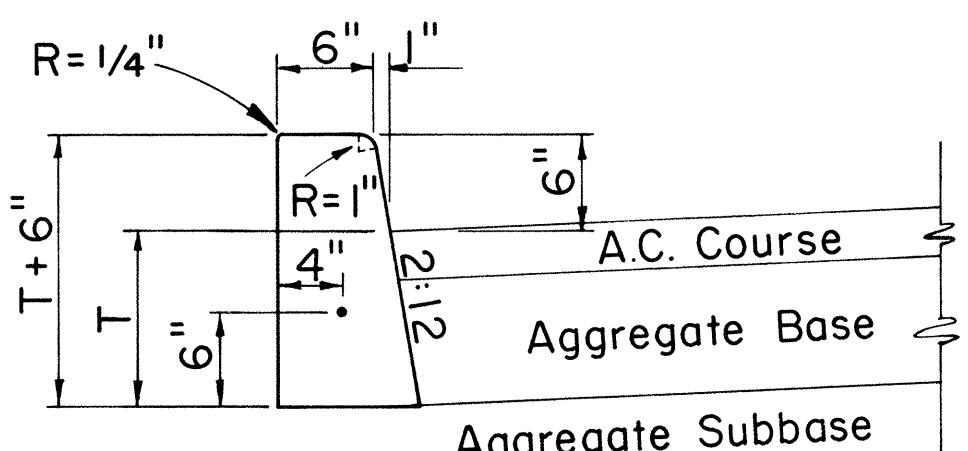
CURB & GUTTER, TYPE 2AG



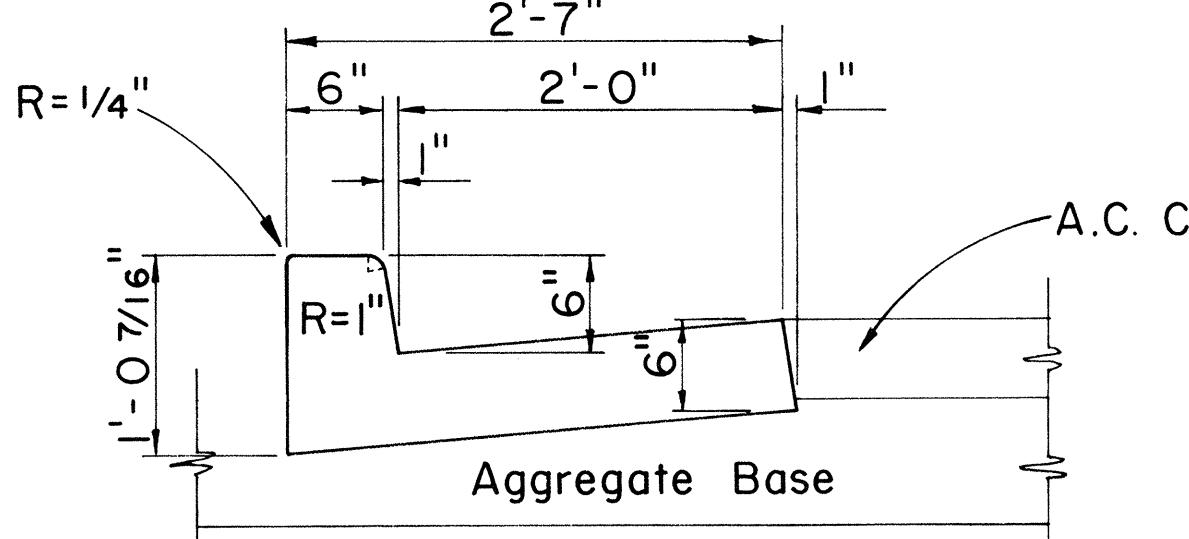
CURB & GUTTER, TYPE 2AGM



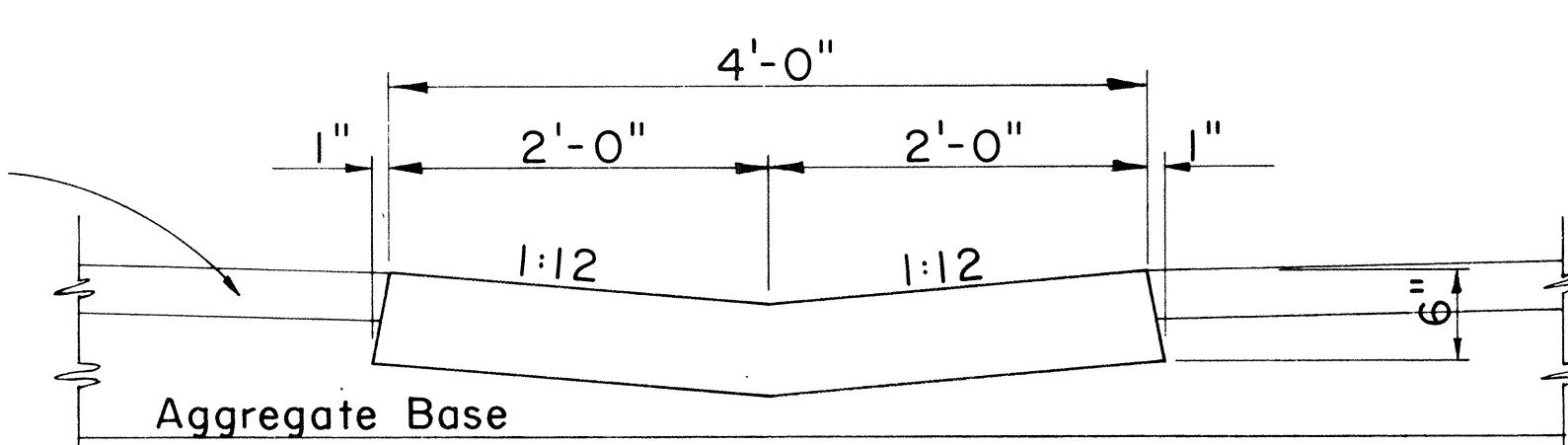
GUTTER, TYPE 2A



CURB, TYPE 2D



CURB & GUTTER, TYPE 2DG



GUTTER, TYPE 2G

CAST-IN-PLACE CONCRETE CURBS AND/OR GUTTERS

Scale: 1" = 1'-0"

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:  
*M. Hirose*  
HIGHWAY DESIGN ENGINEER

DATE  
1/2-4-69

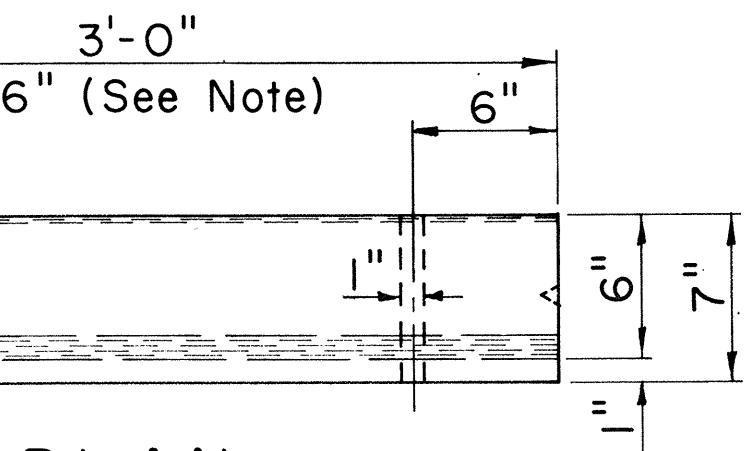
APPROVED:  
*B. S. S. S.*  
ASSISTANT CHIEF, ENGINEERING

DATE  
12-10-59

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
STANDARD DETAILS  
TYPICAL DETAILS OF CURB  
AND/OR GUTTERS

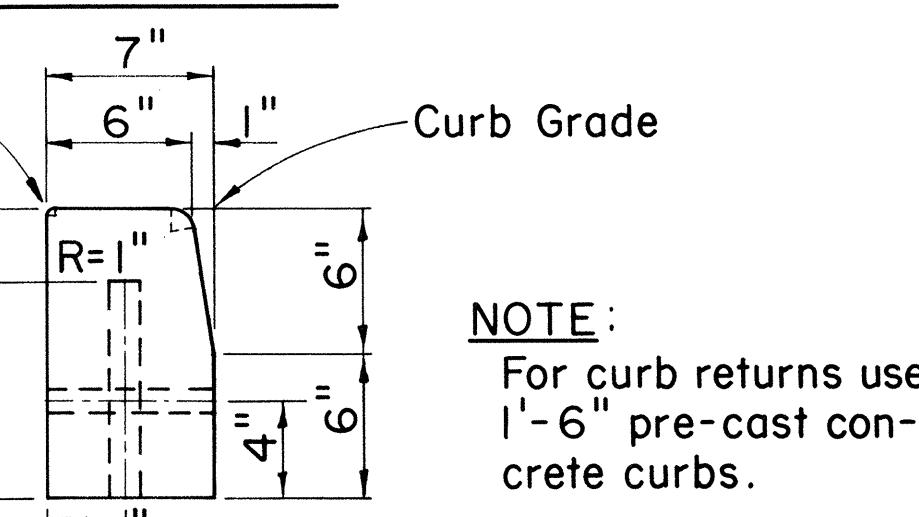
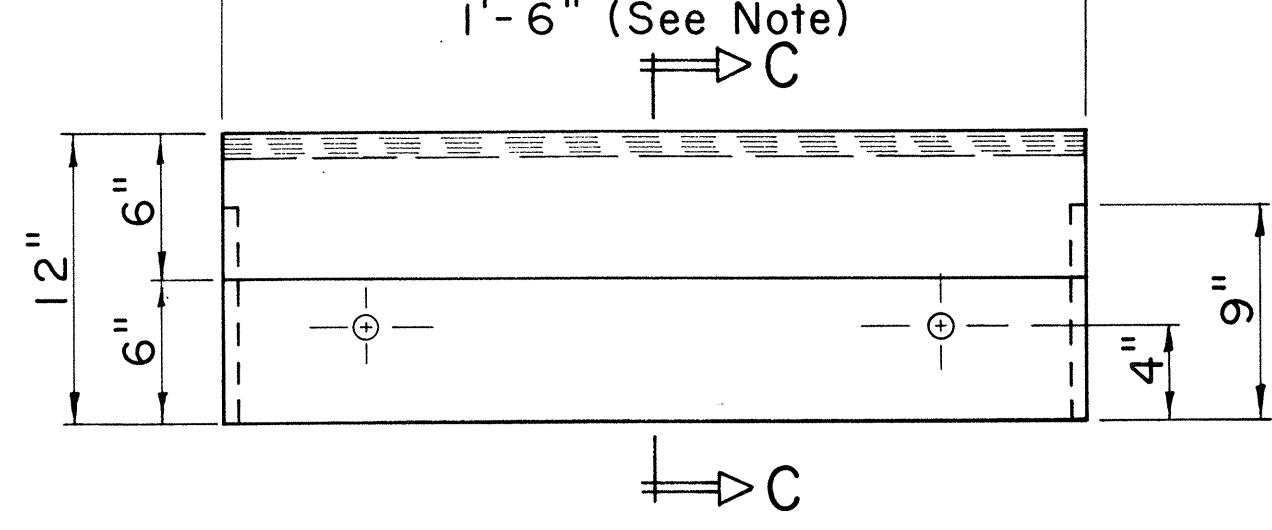
Scale: As Shown

SHEET No. OF SHEETS DD 609.1



CURB, TYPE 6  
BITUMINOUS CURB

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



SECTION C-C

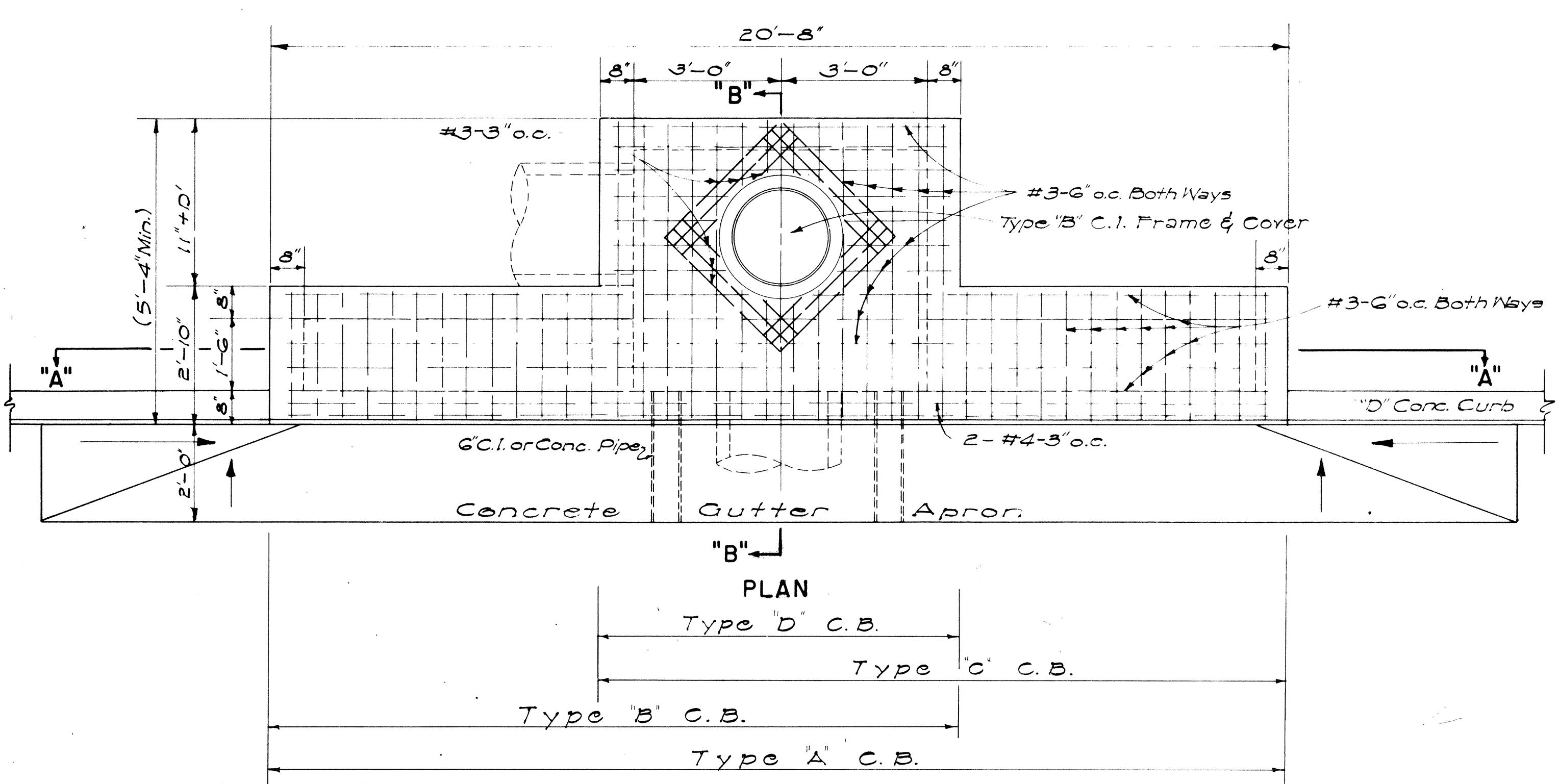
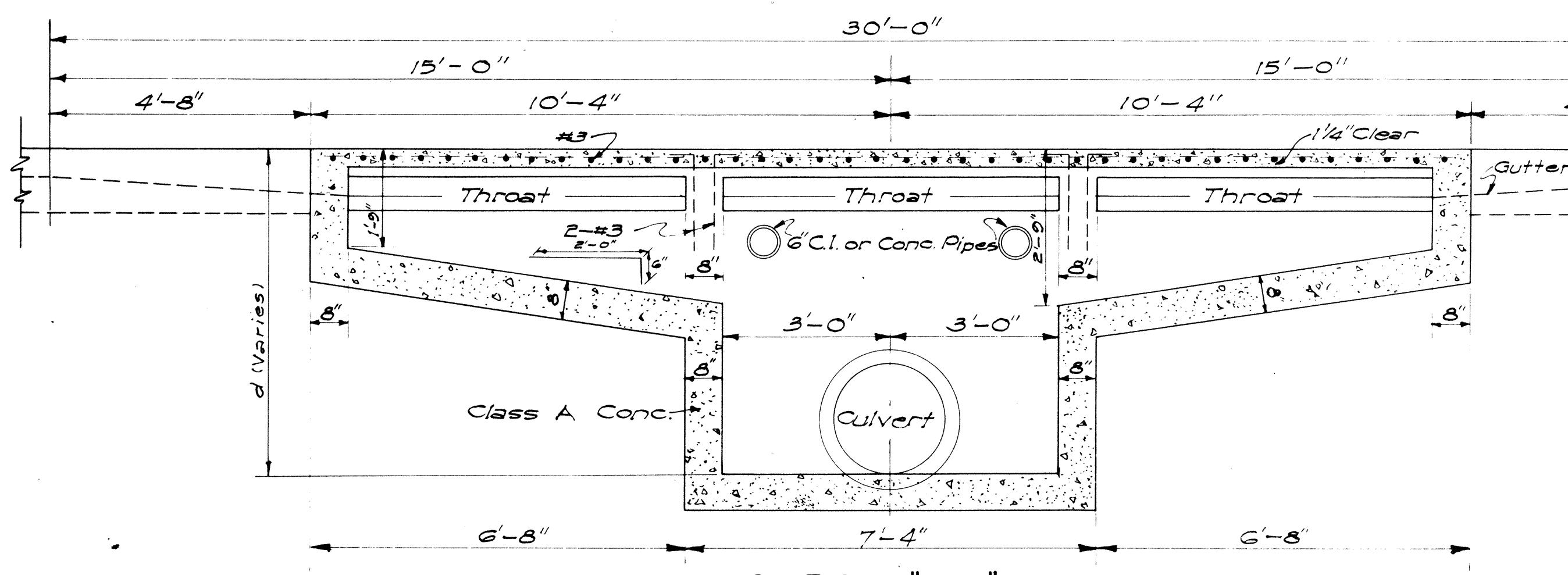
CURB, TYPE 3D

PRE-CAST CONC. CURB

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

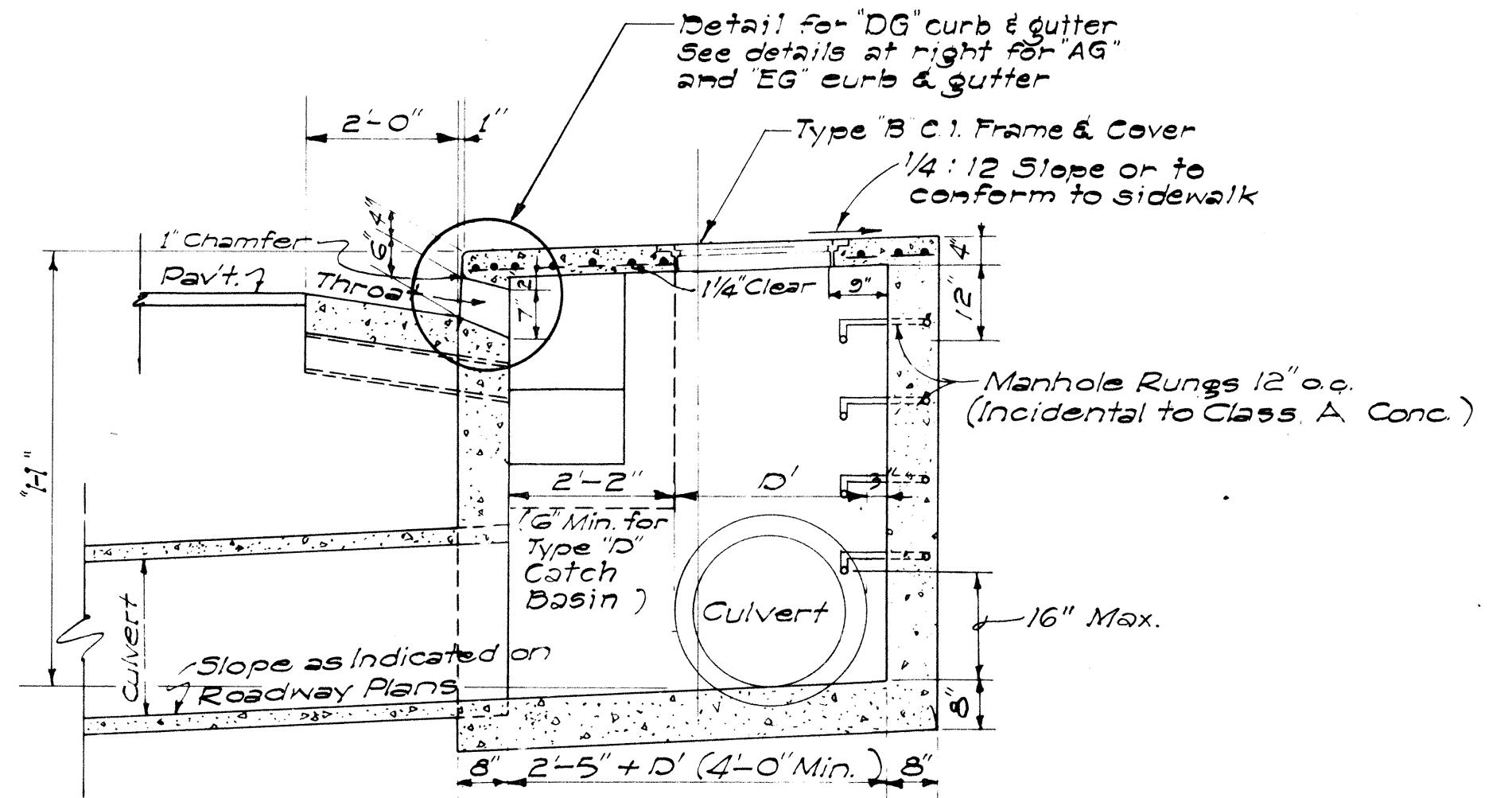
2/17/50

FED ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI(156)16	1979	45	236



DETAILS OF TYPES "A", "B", "C" AND "D" CATCH BASINS

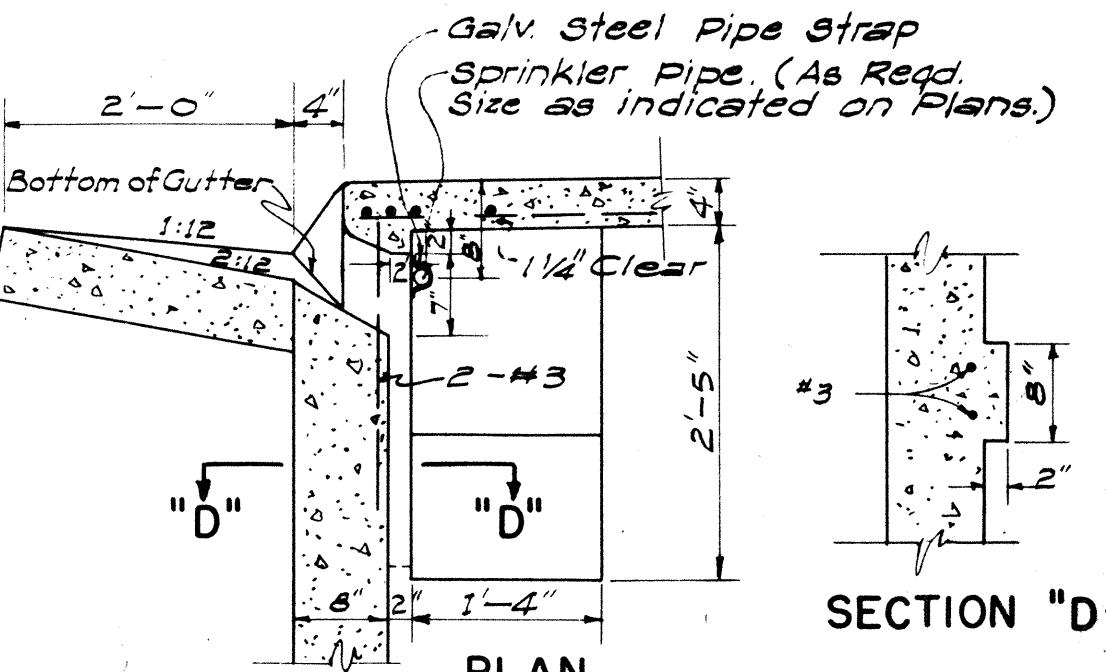
SCALE: 1/2" = 1'-0"



SECTION "C-C"

## THROAT DETAIL FOR "EG" CURB &amp; GUTTER

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



## THROAT DETAIL FOR "AG" CURB &amp; GUTTER

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

## DETAIL OF CATCH BASIN WITH "EG" CURB &amp; GUTTER

## DETAIL OF CATCH BASIN WITH "AG" CURB &amp; GUTTER

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

## GENERAL NOTES

- Quantities based on  $d = 5.75'$  and  $D' = 30'$ .
- Quantities do not include concrete for Gutter Apron.
- The Contractor shall install two 6" Cast Iron or Concrete Pipes as incidental to Class A Concrete for Construction Drainage. The Engineer shall determine the exact location in the field.
- Culvert shall leave C.B. from any position and any direction indicated by plans or ordered by the Engineer. Culvert may both enter and leave C.B. so that C.B. will also act as Manhole.
- The Contractor shall install Galvanized Steel Pipe Sleeves and Straps as incidental to Sprinkler System.
- The type of curb and/or gutter (Type 1, 2, 3, etc.) shall conform to the type specified on the roadway plans.
- Manhole Rungs (12 o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (16 inches from the bottom) is required if "H" is 4 feet 6 inches or less. Type "B" Cast Iron Frame and Cover and Manhole Rungs may be placed at any location as ordered by the Engineer.

## ESTIMATED QUANTITIES

TYPE	Class A Conc	Struct. Exc.	Reinf Steel	Gutter Length
"A"	7.5 c.y.	24.7 c.y.	145 lb.	30'-0"
"B"	6.0 c.y.	21.5 c.y.	108 lb.	23'-4"
"C"	6.0 c.y.	21.5 c.y.	108 lb.	23'-4"
"D"	4.9 c.y.	16.5 c.y.	77 lb.	16'-8"

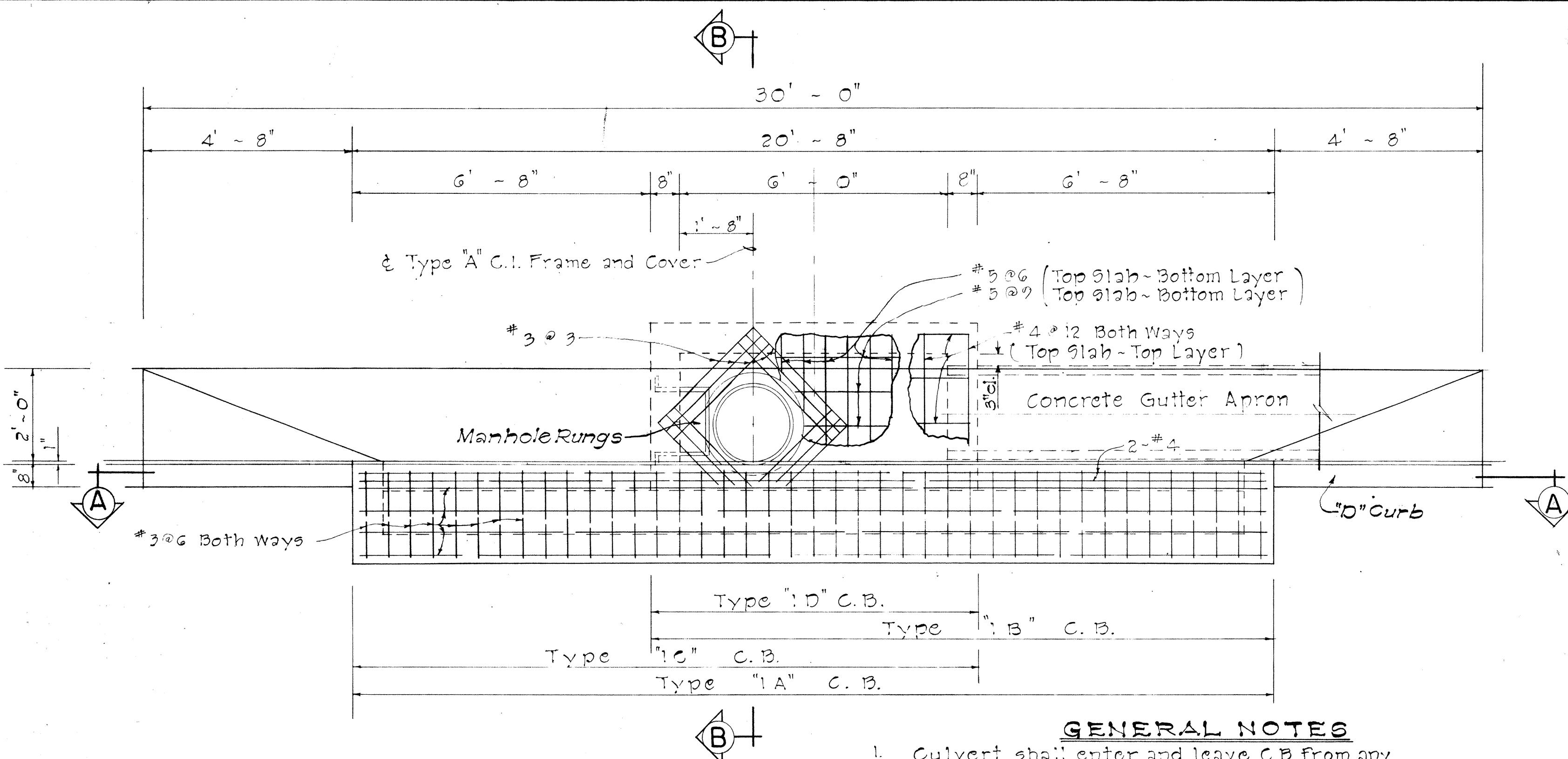
ORIGINAL PLAN	PLotted BY
DRAWN BY	Designated BY
NOTE BOOK	Traced BY
QUANTITY BY	Checked BY
No.	

APPROVAL RECOMMENDED:  
By J. Baker  
HYDRAULIC DESIGN ENGINEERDATE  
12-17-69APPROVED:  
By John J. Baker  
ASSISTANT CHIEF, ENGINEERINGDATE  
12-17-69STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
STANDARD DETAILS

## CATCH BASINS

Scale: As Noted  
SHEET NO. OF SHEETS DH 1  
45

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	I-HI-1(156)16	1979	46	236

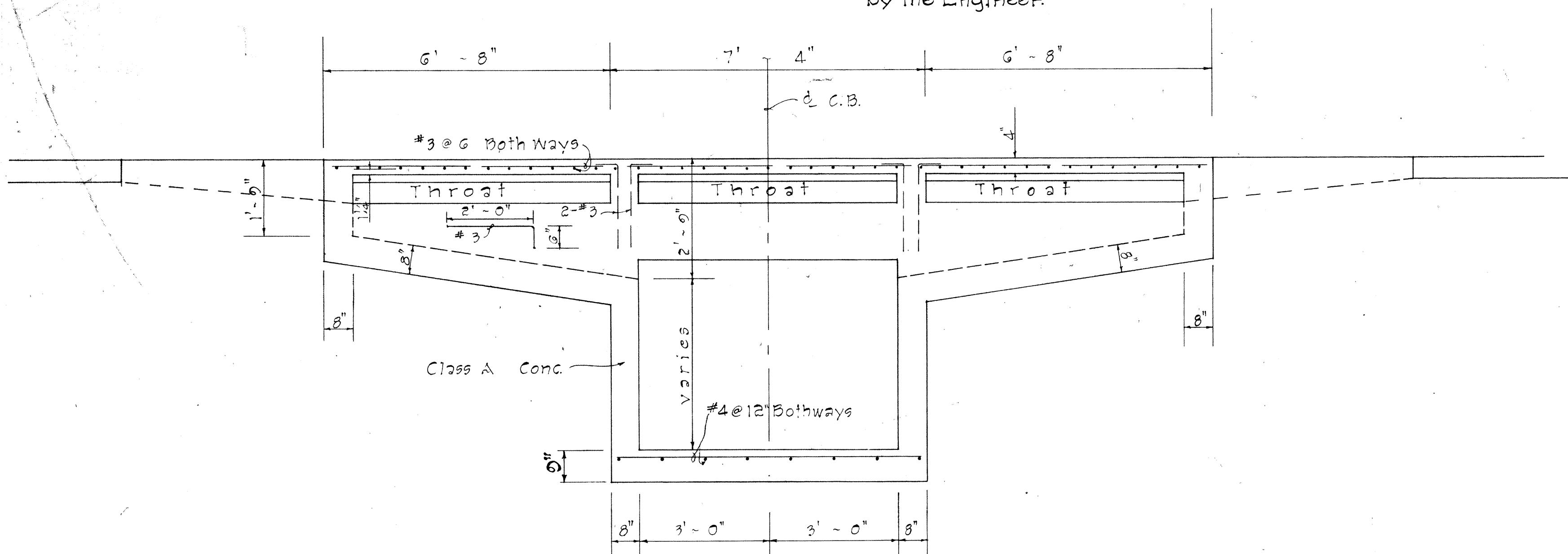


### PLAN

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

### GENERAL NOTES

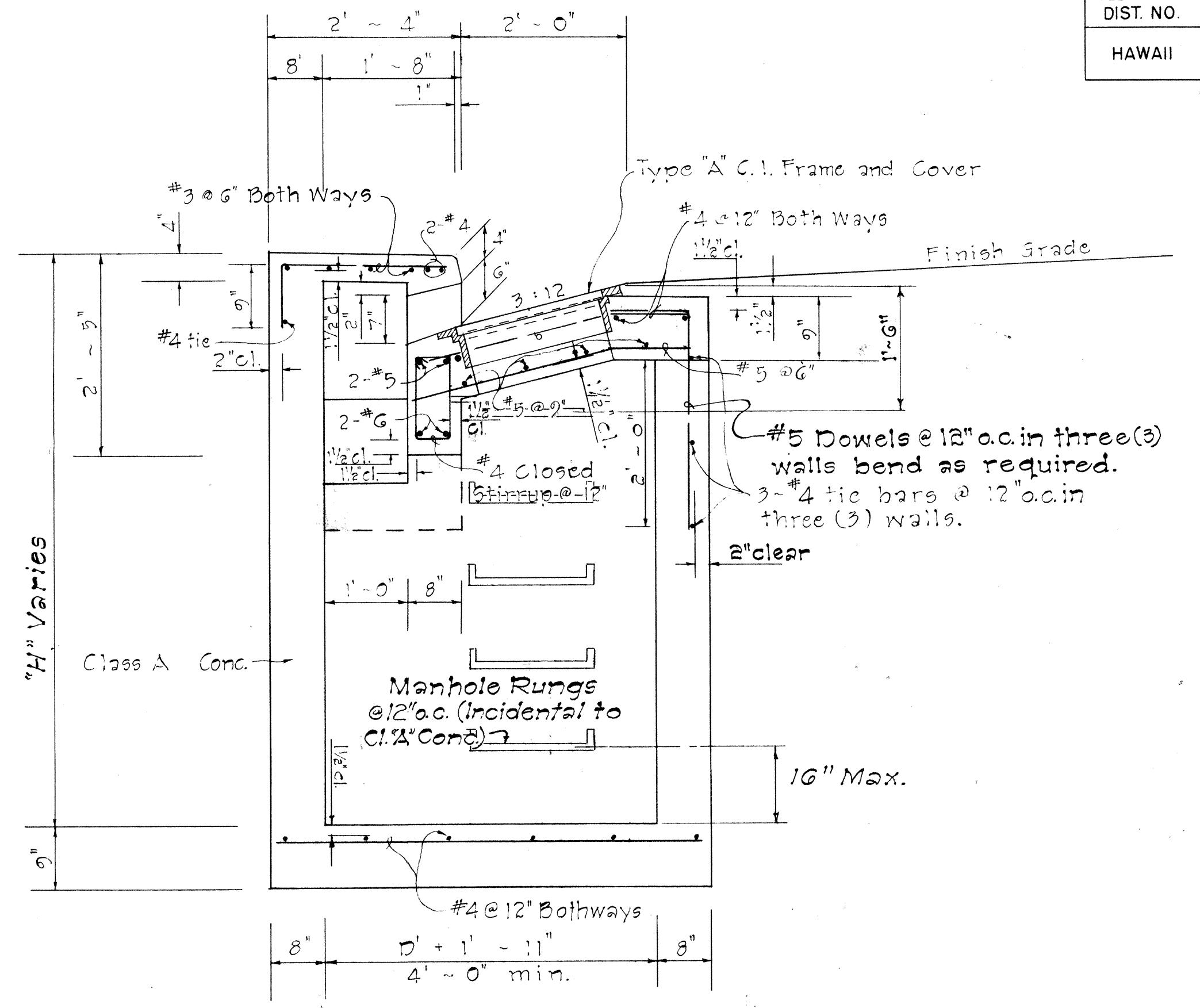
1. Culvert shall enter and leave C.B. from any position and in the direction indicated by the plans or ordered by the Engineer.
2. D' shall be the maximum outside dimension of the culvert at the C.B. wall.
3. The type of curb and/or gutter (Type 1, 2, 3, etc.) shall conform to the type specified on the roadway plans.
4. Manhole Rungs (12" o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (16 inches from the bottom) is required if "H" is 4 feet 6 inches or less. Type "A" C.I. Frame & Cover and Manhole Rungs may be placed at any location as ordered by the Engineer.



### SECTION "A-A"

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

### DETAILS OF TYPE "IA", "IB", "IC" AND "ID" CATCH BASIN



### SECTION "B-B"

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

APPROVAL RECOMMENDED:  
R. Takano  
HYDRAULIC DESIGN ENGINEER

DATE  
12-17-69

APPROVED:  
H. S. S. [Signature]  
ASSISTANT CHIEF, ENGINEERING

DATE  
12-11-69

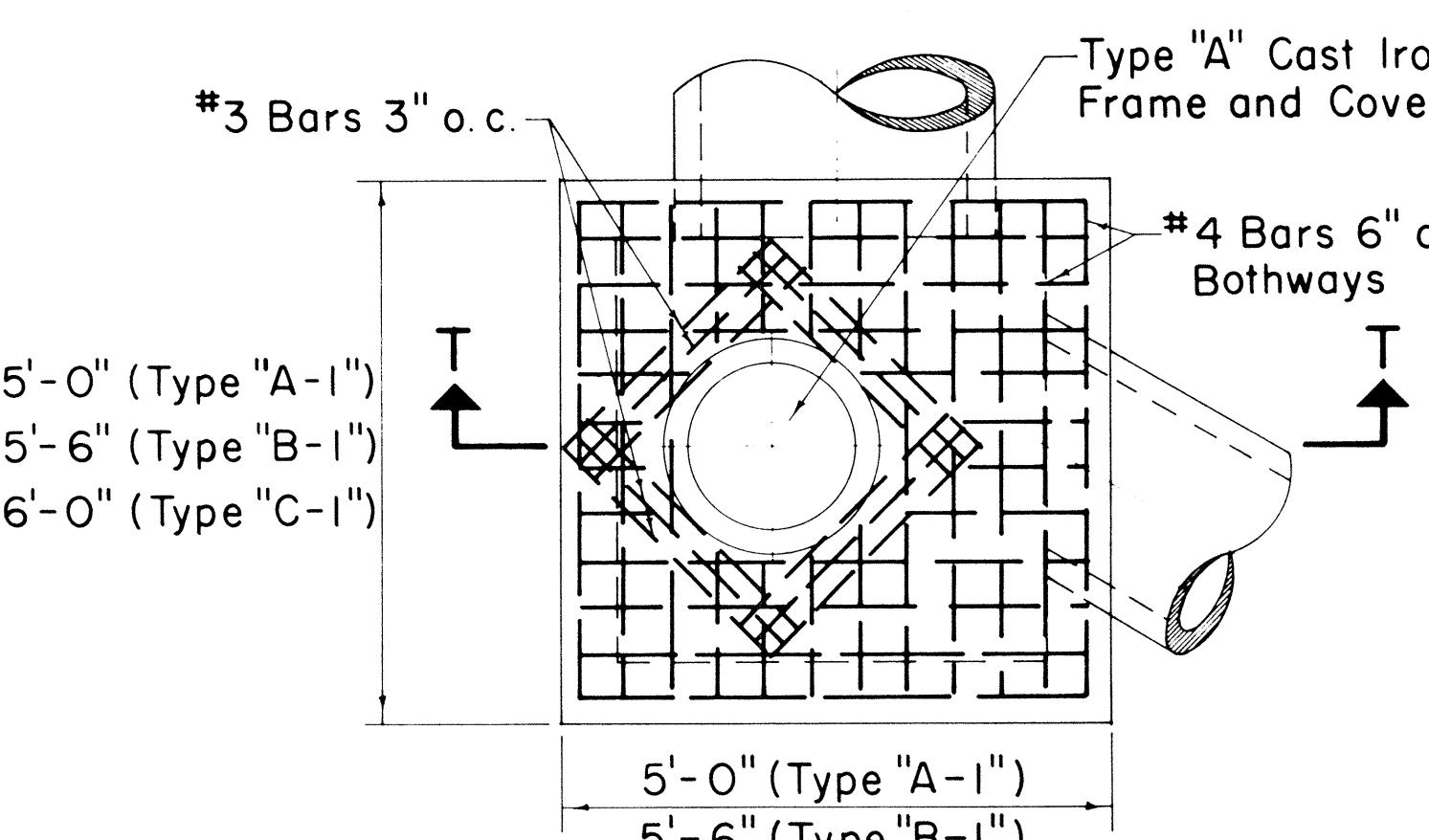
NO.	REVISION	APPROVED BY	DATE
1	Spacing on Manhole Rungs to conform to OSHA.	HT	1-21-15

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

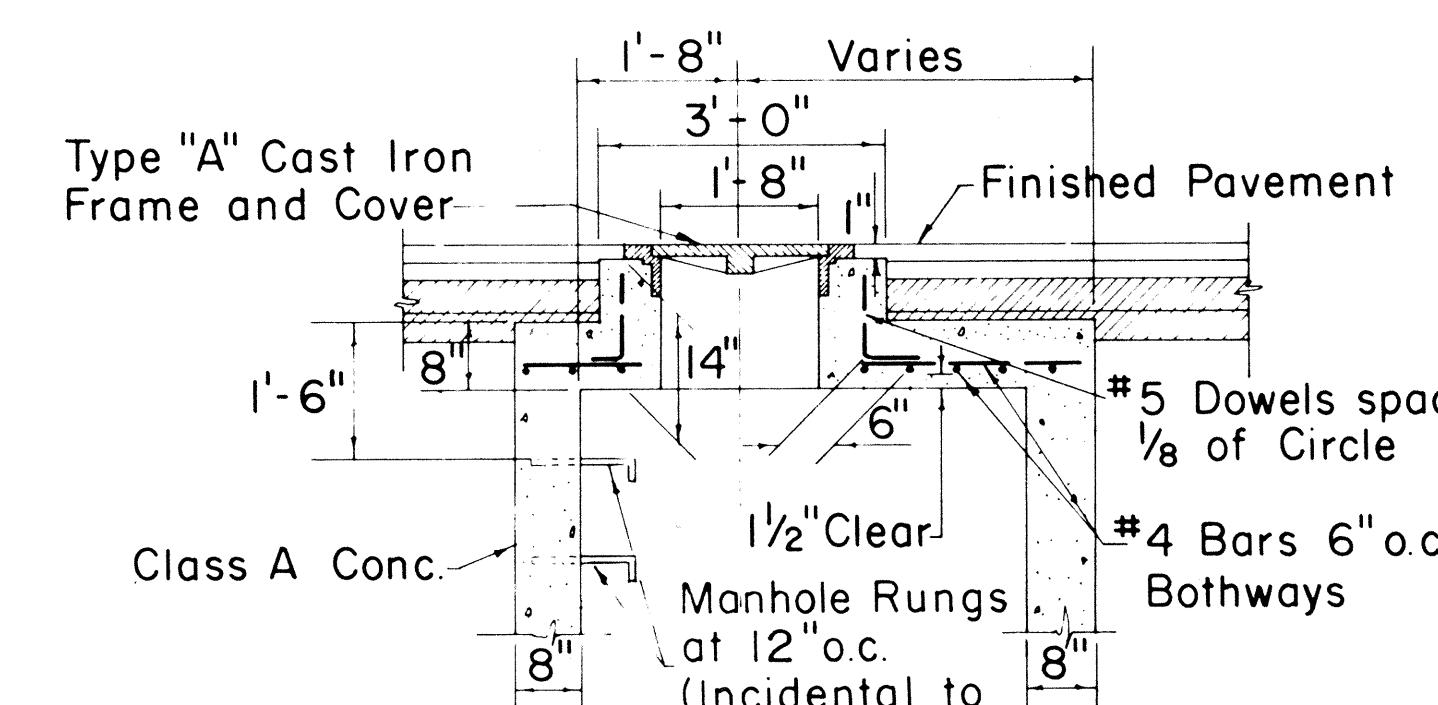
STANDARD DETAILS  
TYPE "IA", "IB", "IC", AND "ID"  
CATCH BASINS

Scale: As Noted Date: July, 1969

SHEET No. OF SHEETS DH 3



PLA



Note:  
Bottom detail similar to  
Type "A", "B", & "C".

**TYPE "A-I", "B-I", & "C-I"**

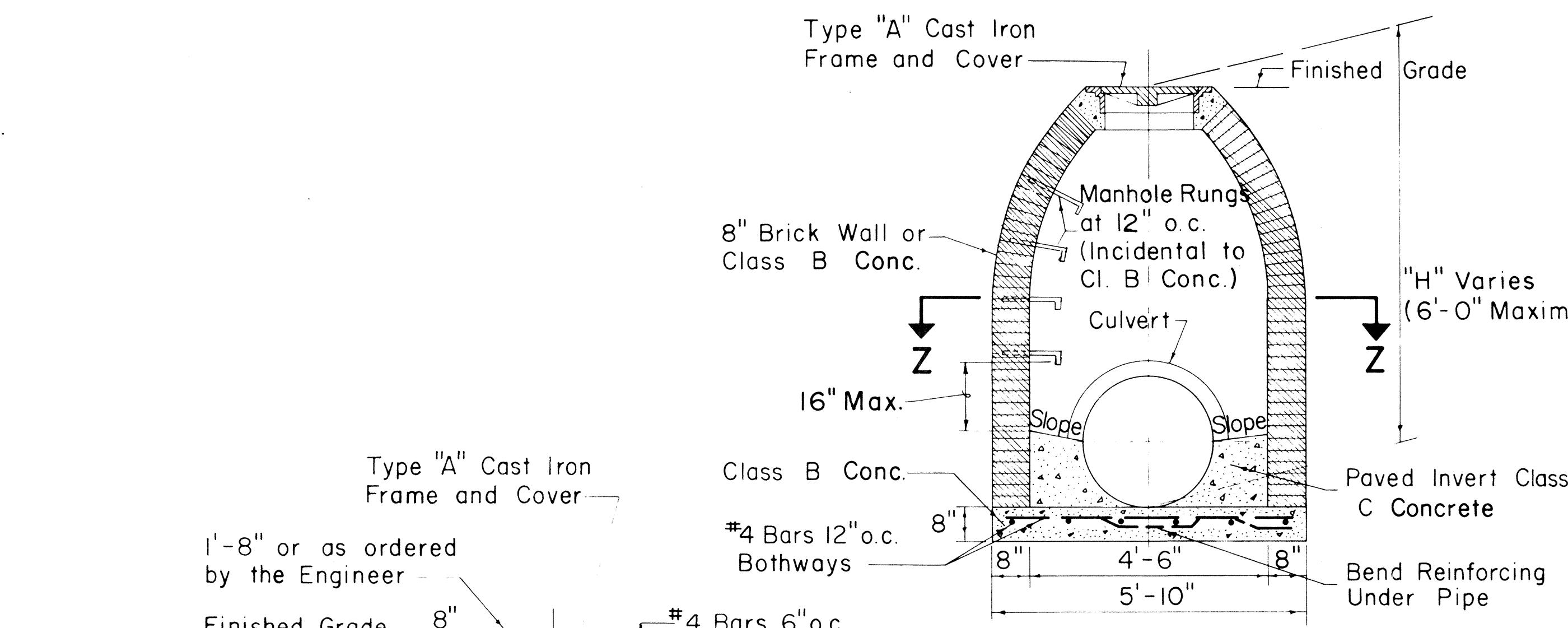
**STORM DRAIN MANHOLE**

**TOP DETAIL UNDER PAVEMENT**

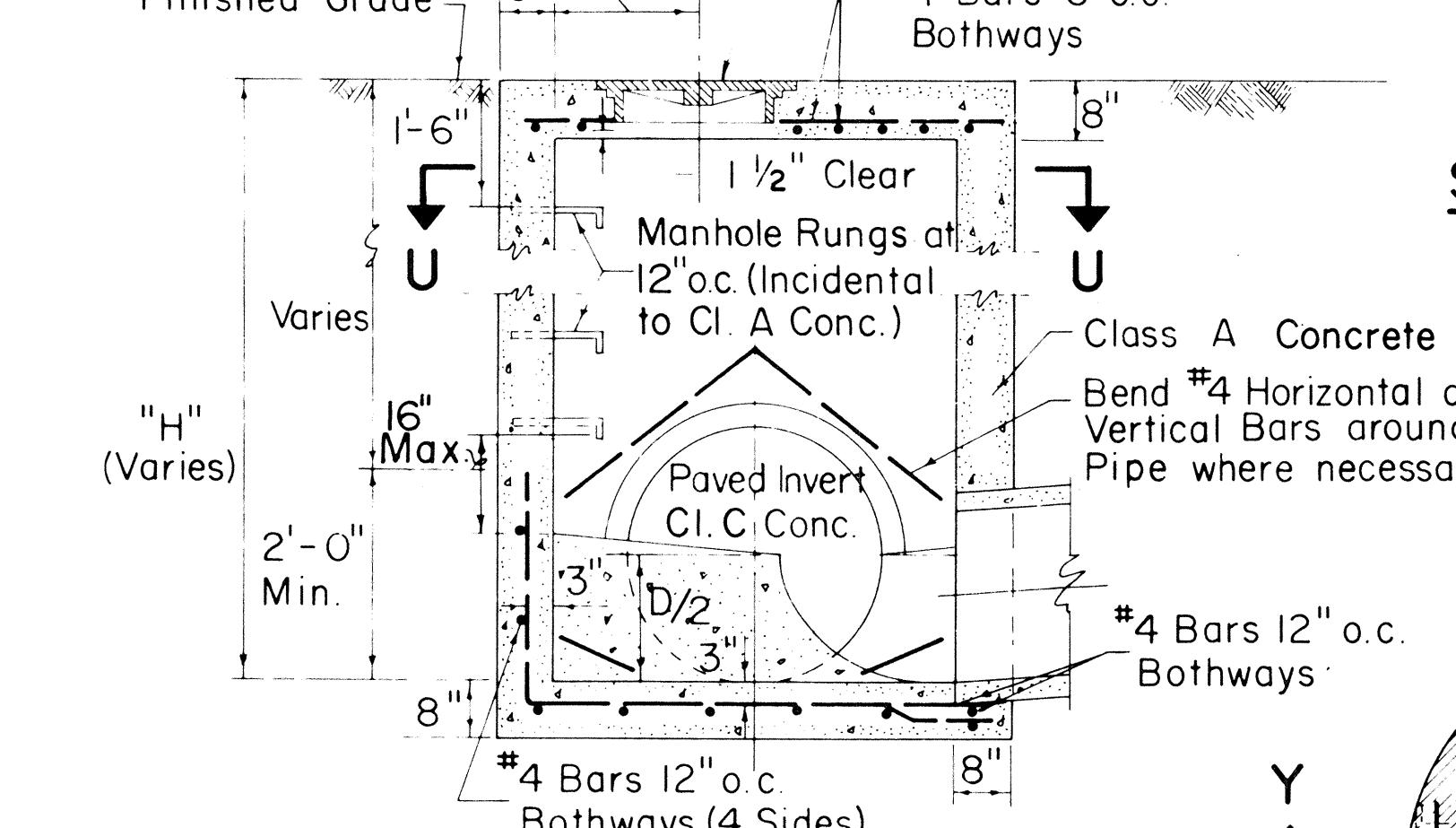
Scale:  $\frac{1}{2}'' = 1'-0''$

## GENERAL NOTES

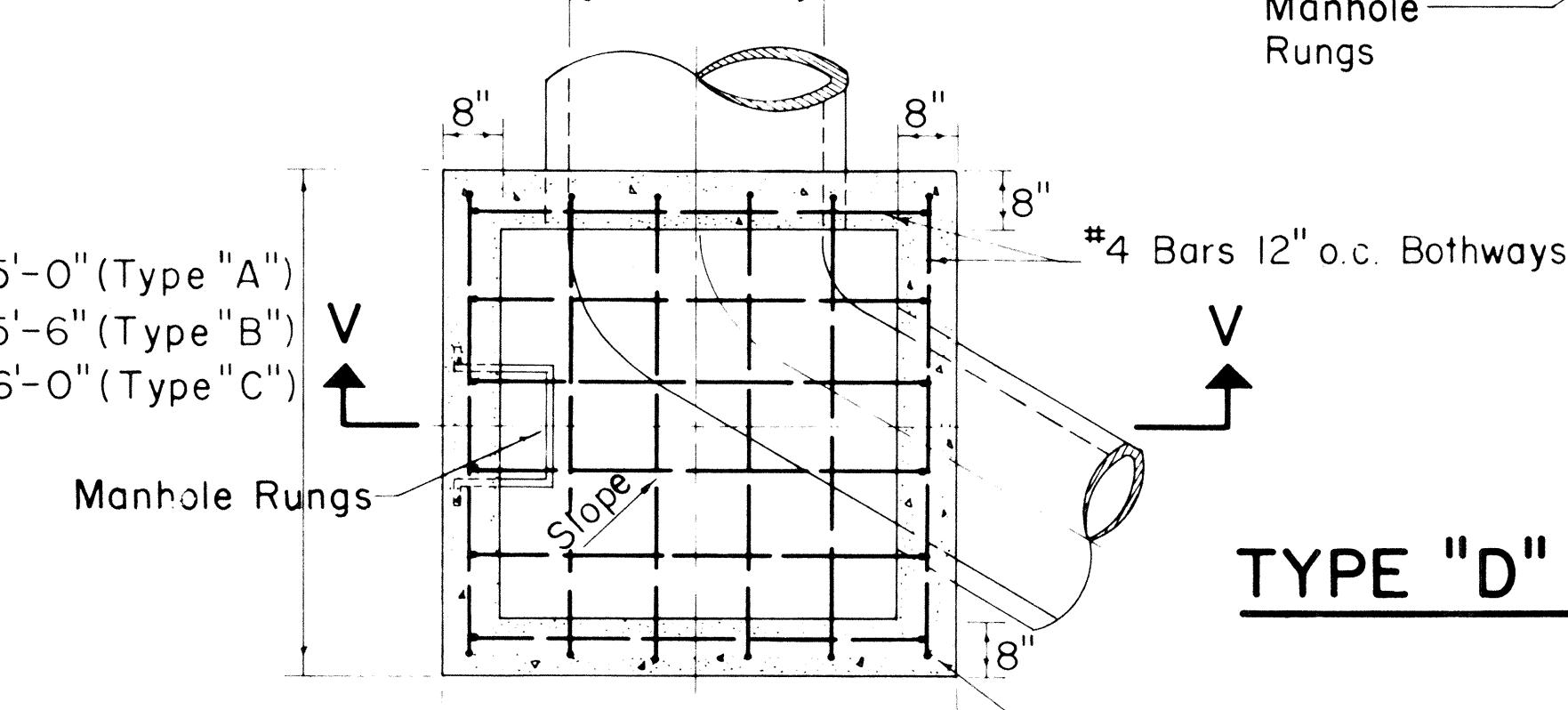
- I. Culvert shall enter and leave S.D.M.H. from any position and in the direction indicated by the plans or ordered by the Engineer.
  2. Manhole Rungs (12" o.c.) are required when "H" is greater than 4'-6". Only one rung (16" from the bottom) is required if "H" is 4'-6" or less. Type "A" C.I. Frame and Cover and Manhole Rungs may be placed at any location as ordered by the Engineer.



## SECTION Y-Y



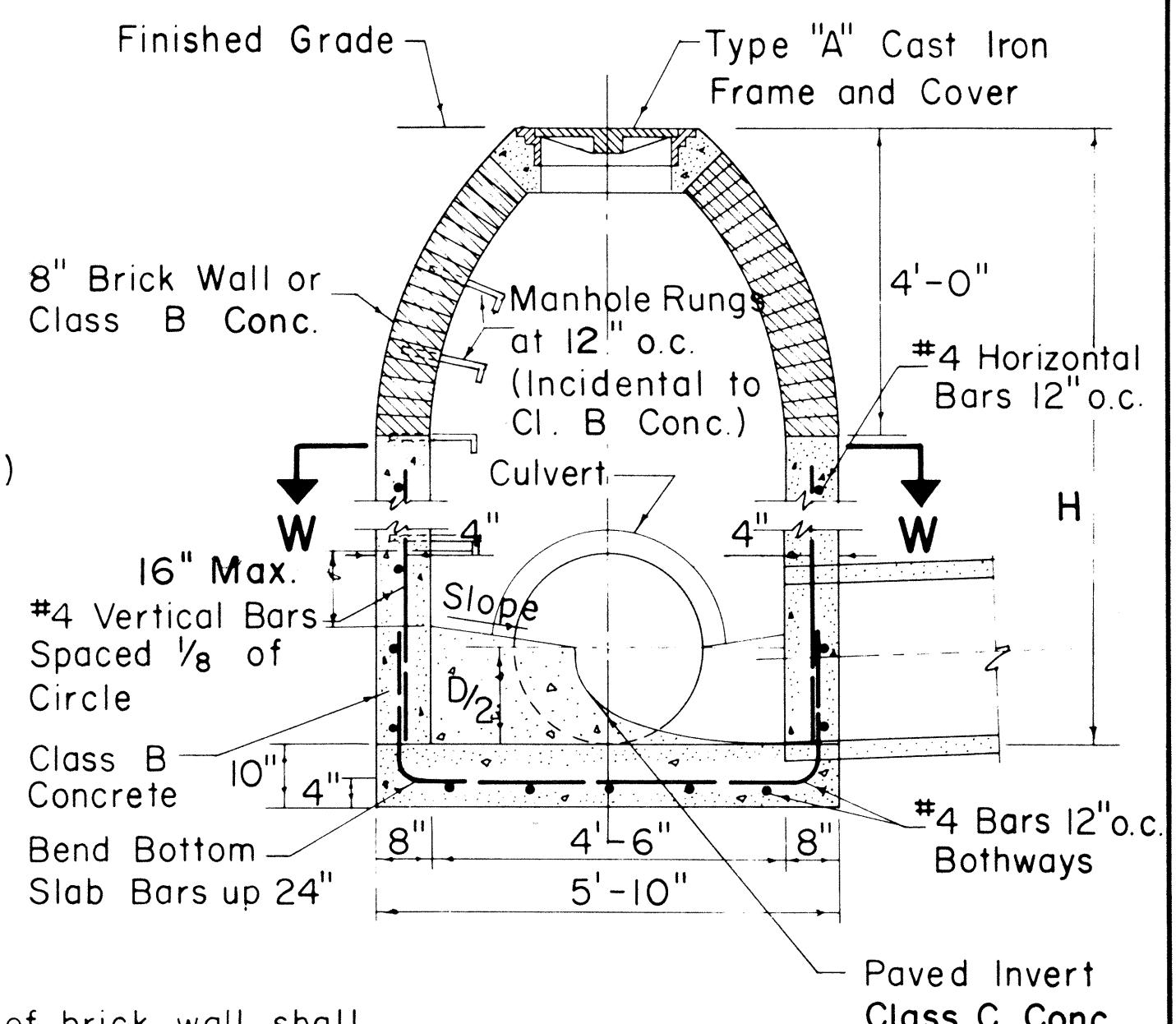
## SECTION V-V



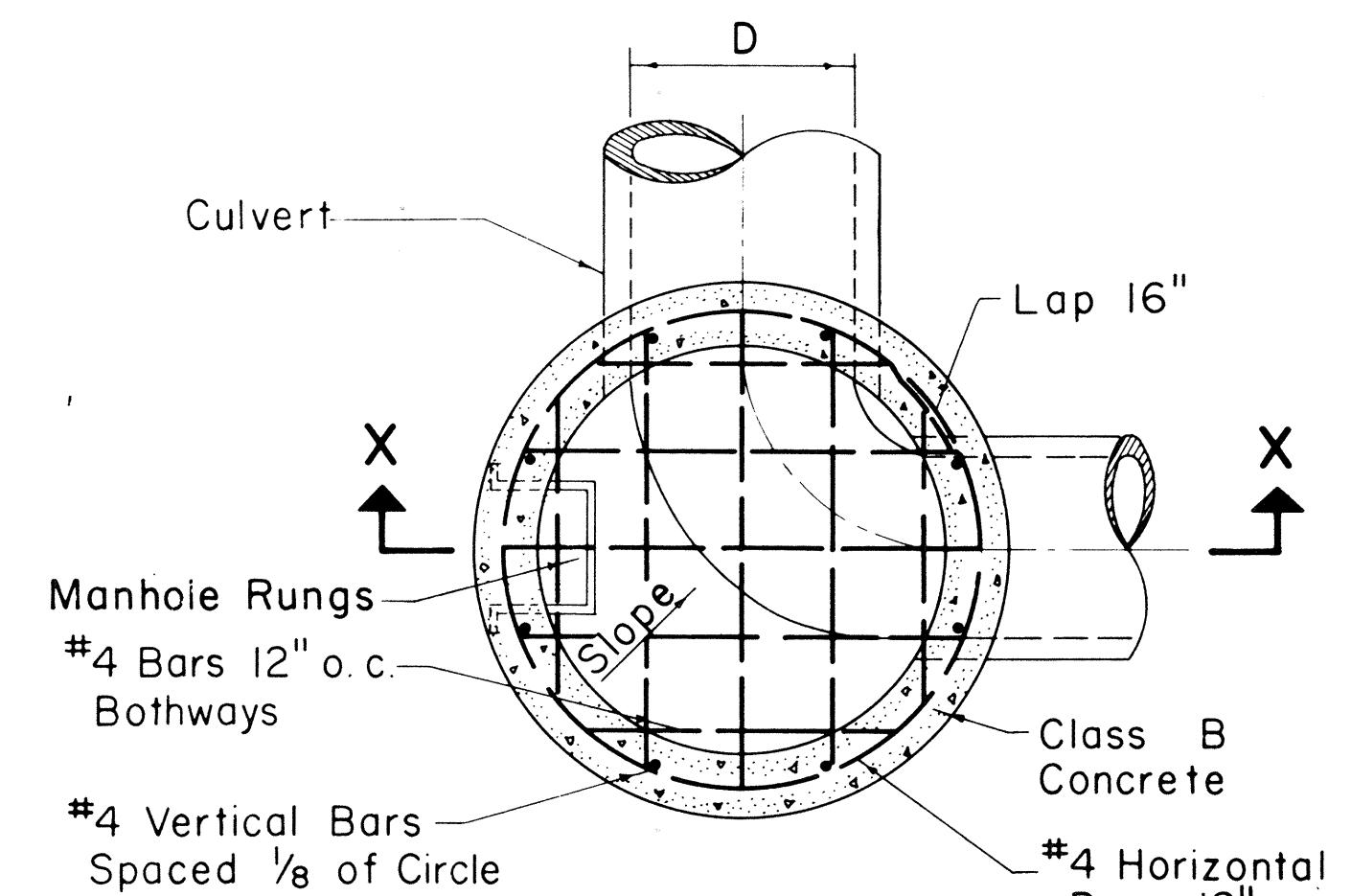
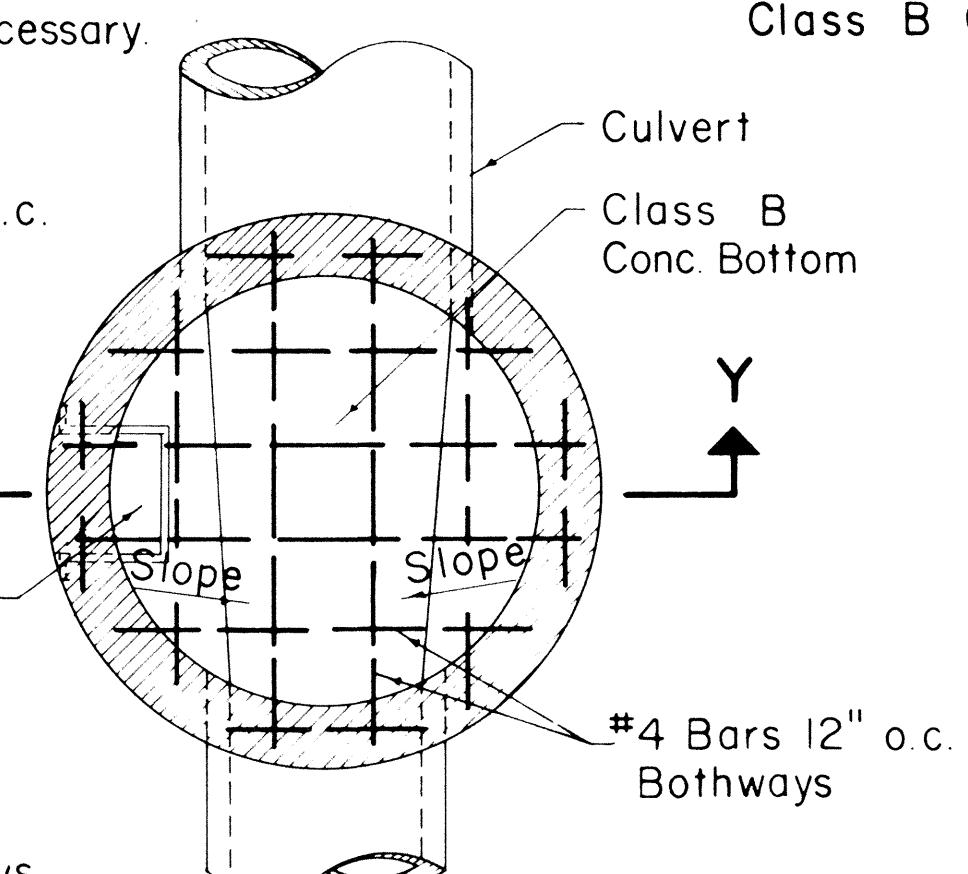
## SECTION Z-Z

# TYPE "D" STORM DRAIN MANHOLE

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



## SECTION X-X



## SECTION W-W

# TYPE "E" STORM DRAIN MANHOLE

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

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

69  
E  
C9

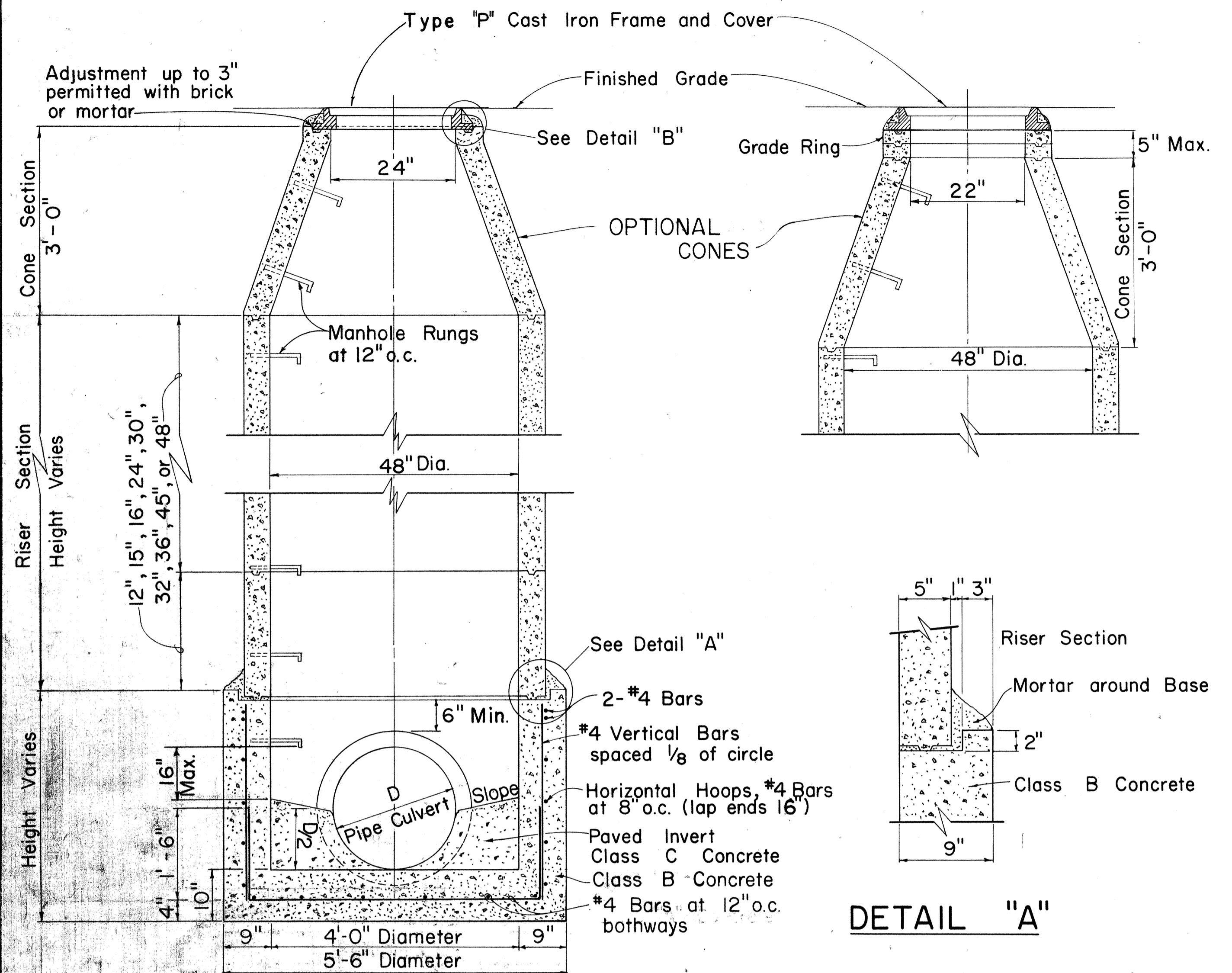
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**

**STORM DRAIN MANHOLES**

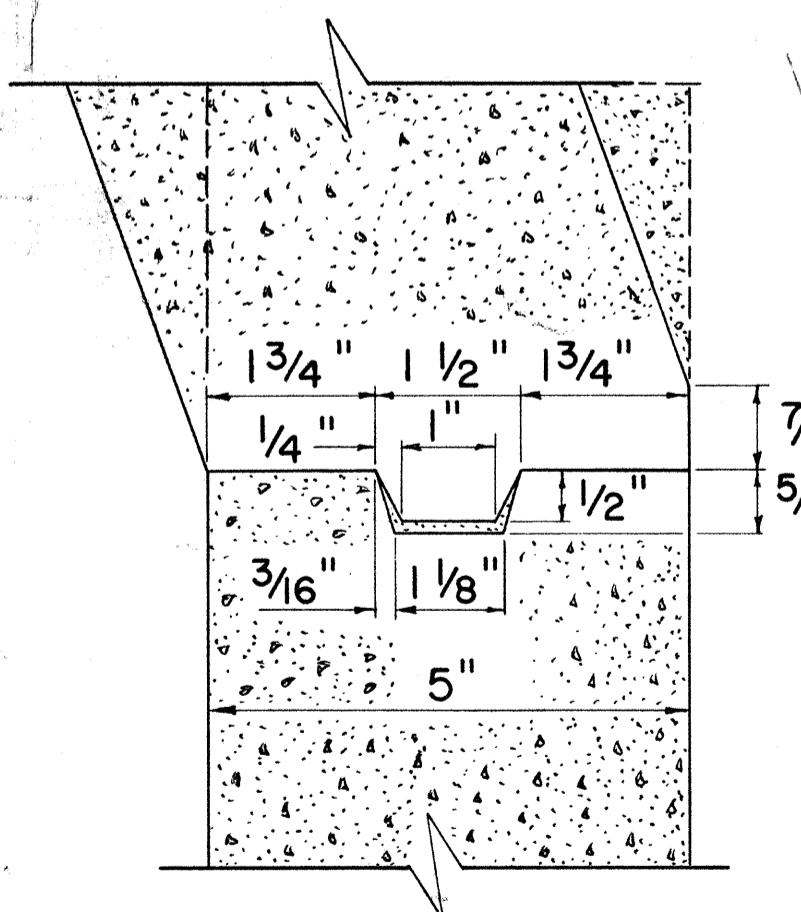
Scales: As Noted      Date: July , 1969

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(56)16	1979	48	236



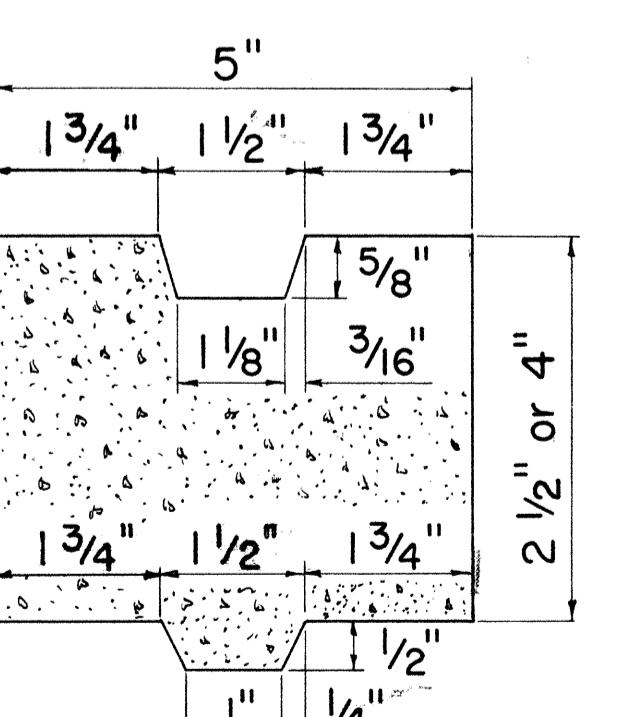
**TYPICAL SECTIONS PRECAST CONCRETE MANHOLE**

Not to Scale



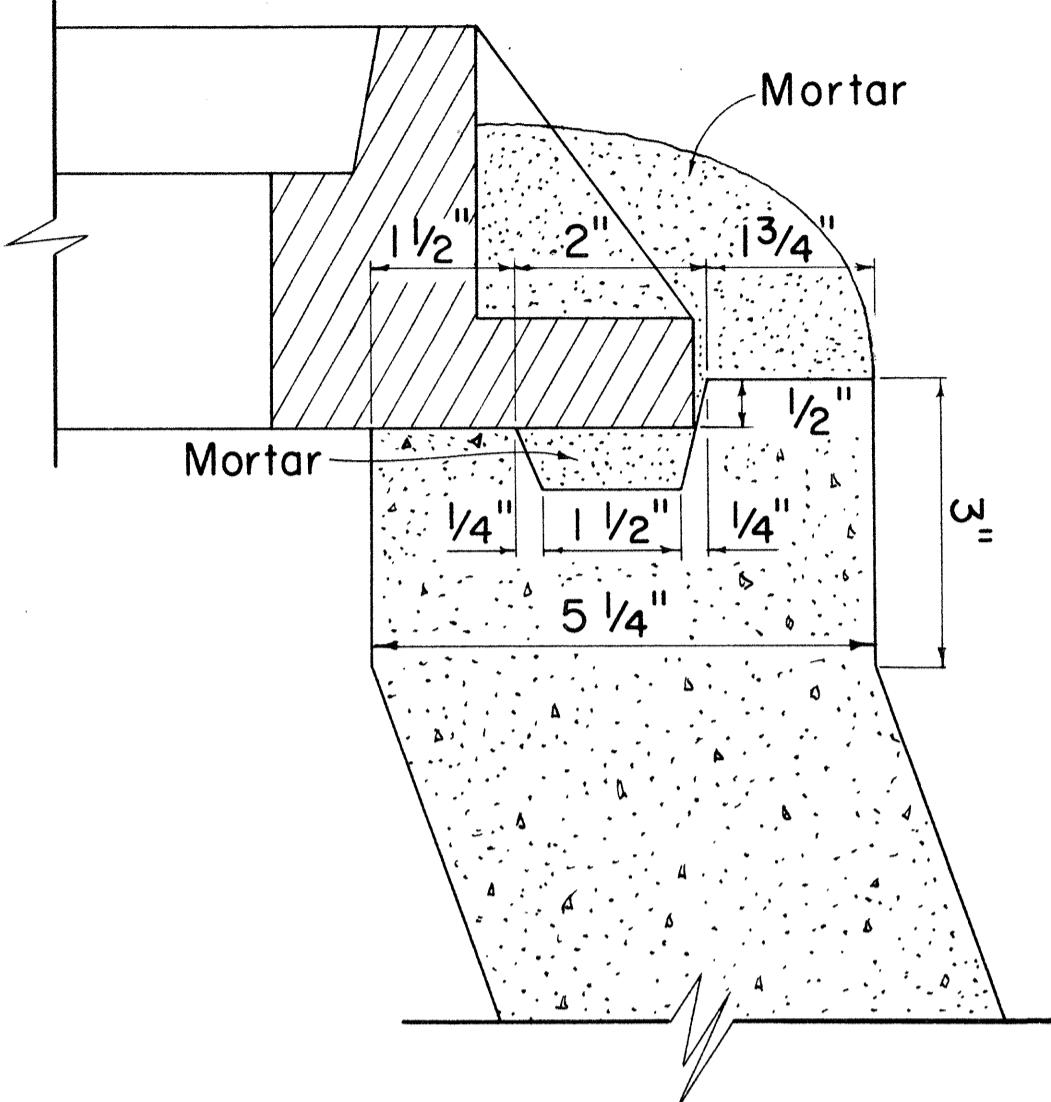
**DETAIL FOR RISER JOINTS**

Not to Scale



**GRADE RING DETAIL**

Not to Scale

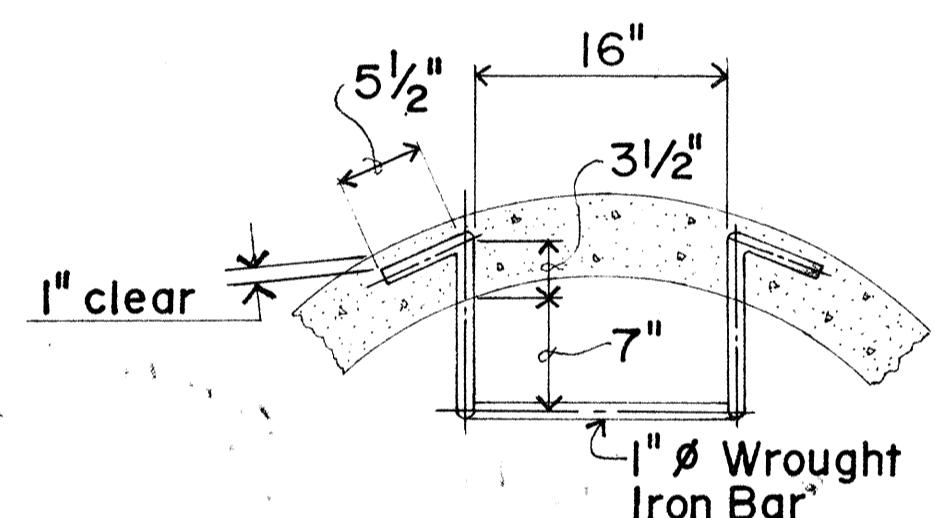


## **GENERAL NOTES**

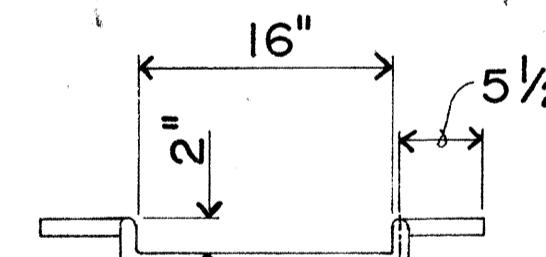
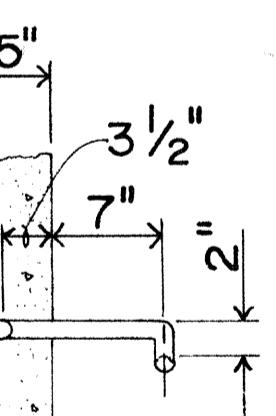
1. Manhole Rungs to be placed at 12" o.c. (Manhole Rungs incidental to Class B Concrete)
2. Select appropriate combination of risers and grade rings for required height.
3. All joints to be grouted as set.
4. The precast sections shall be constructed in accordance with the details shown on the plans and to the requirements of ASTM C 478
5. Manufacturers may submit to the Engineer for approval, prior to manufacturing, designs other than those shown on this sheet.
6. Reinforcing steel for precast sections shall be placed in accordance with the requirements of ASTM C 478
7. All Class C Concrete to be incidental to Class B Concrete.

### **DETAIL "B"**

Not to Scale



### **PLAN VIEW**



### **DETAIL OF MANHOLE RUNGS**

Not to Scale

APPROVAL RECOMMENDED:

*G. Nakano*  
HYDRAULIC DESIGN ENGINEER

2-2-71  
DATE

APPROVED:

*C. S. Sakai*  
ASSISTANT CHIEF, ENGINEERING

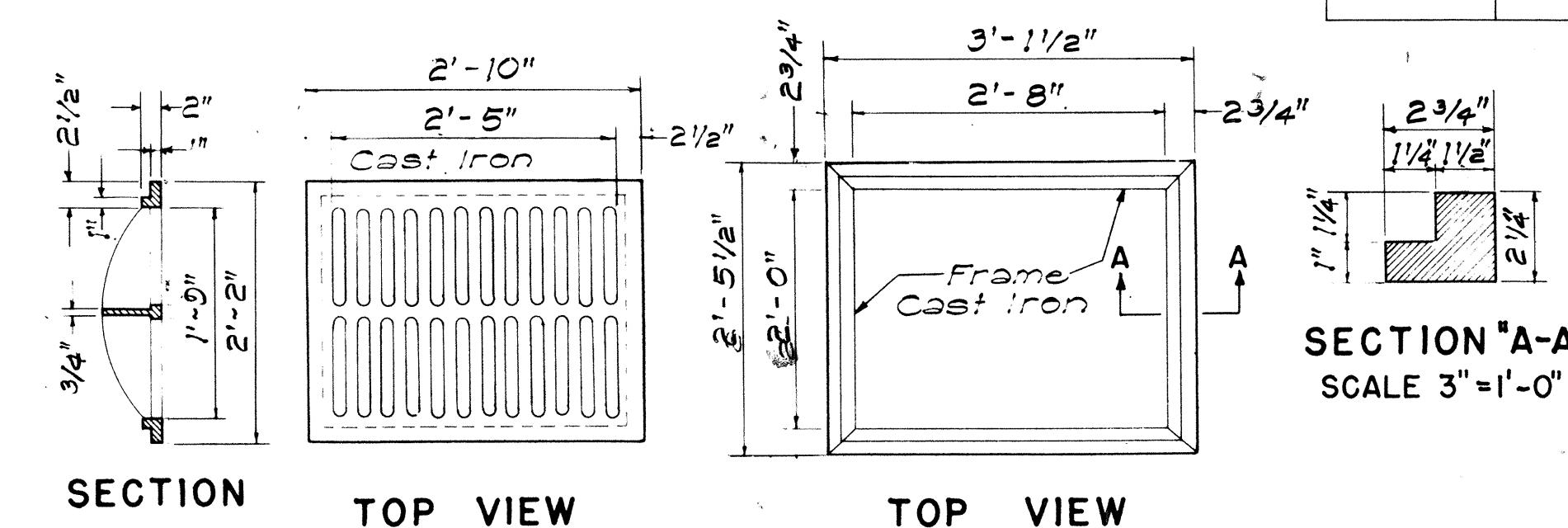
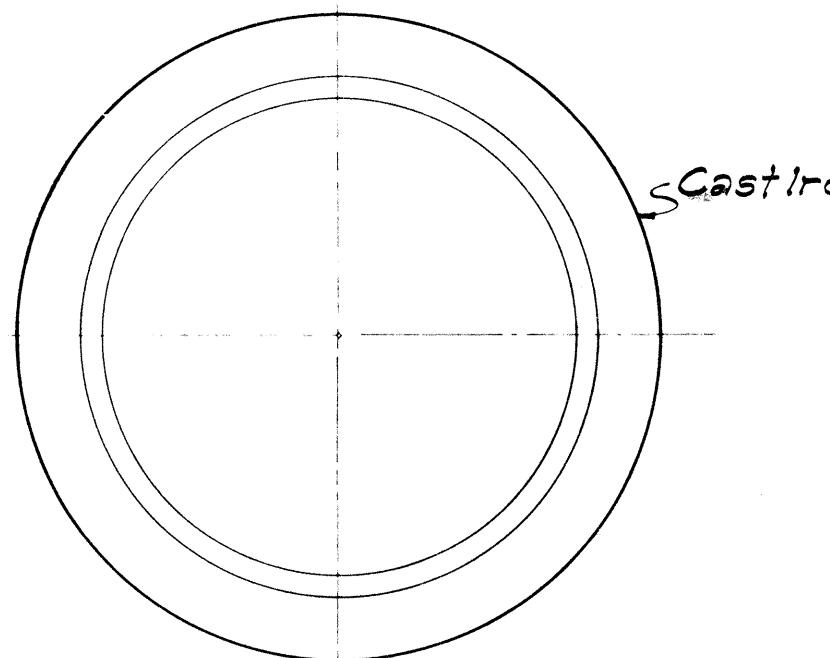
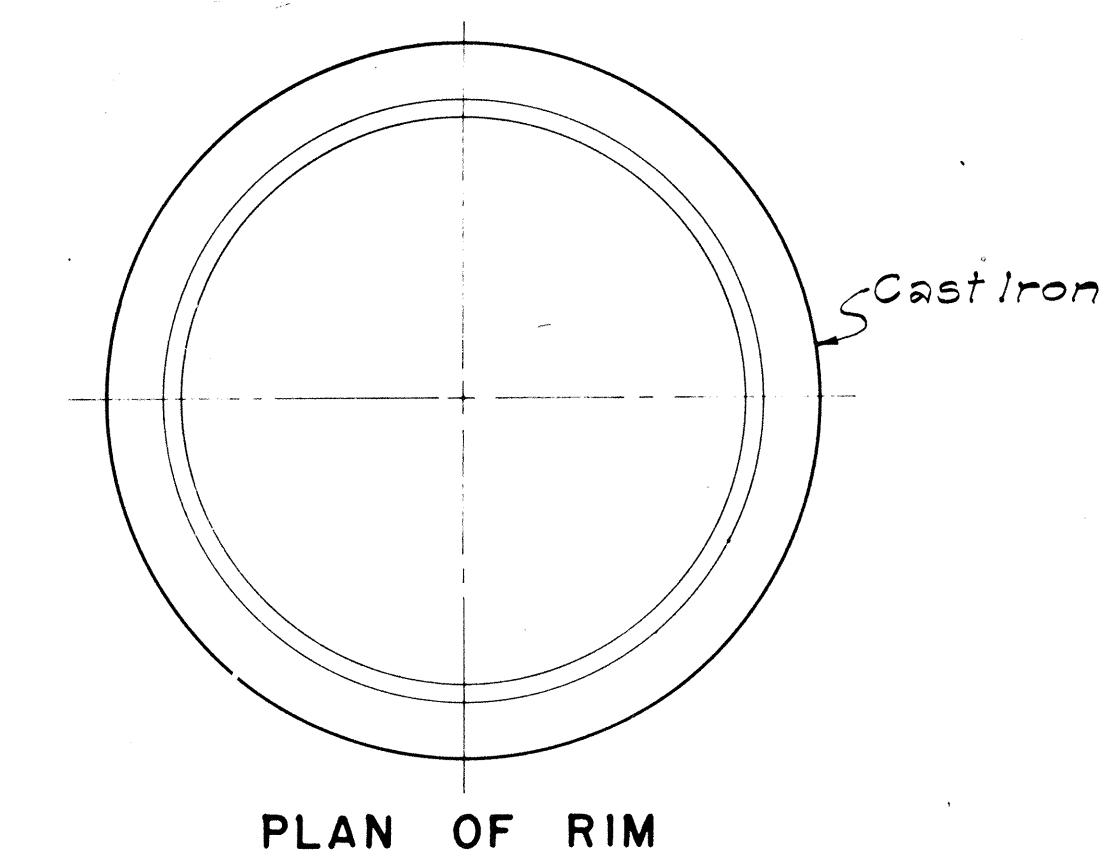
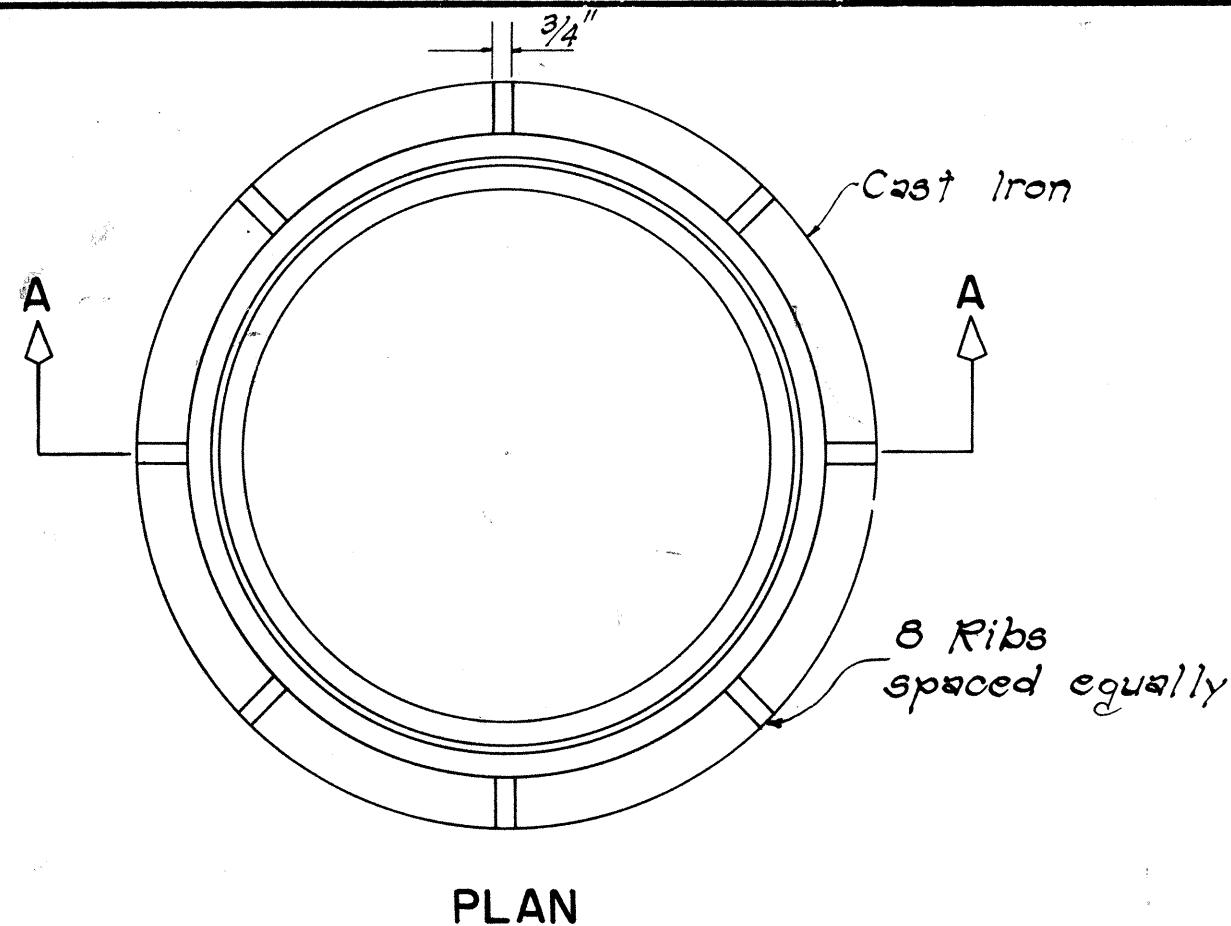
2-25-71  
DATE

NO.	REVISION	APPROVED BY	DATE
1	Spacing and details of Manhole Rungs to conform to OSHA	H.T.	1/28/70

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STANDARD DETAILS**  
**PRECAST CONCRETE**  
**STORM DRAIN MANHOLES**

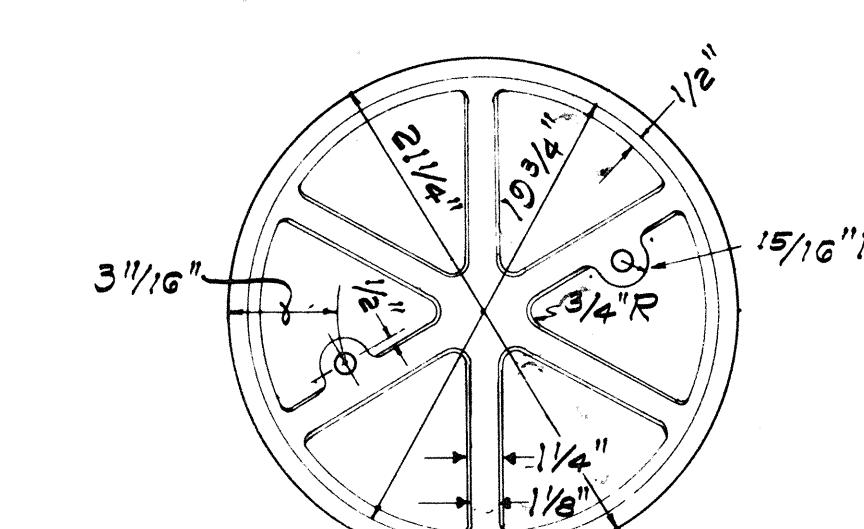
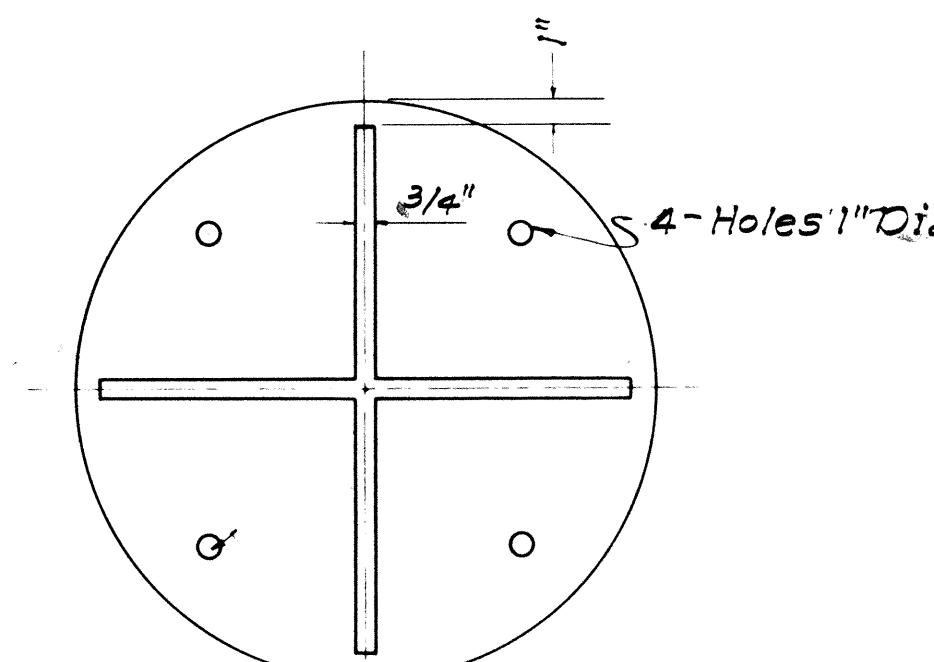
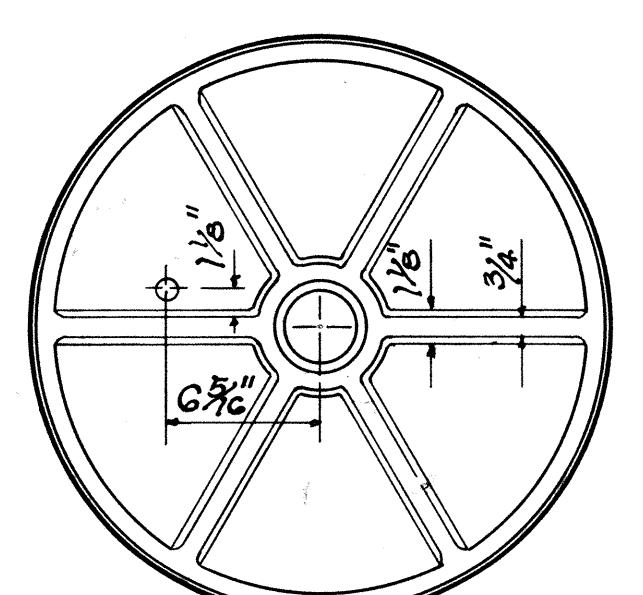
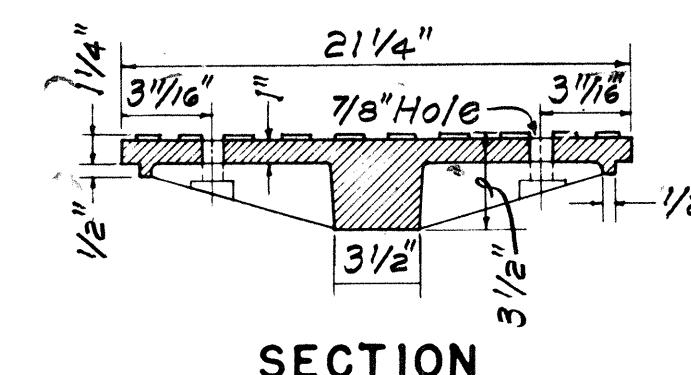
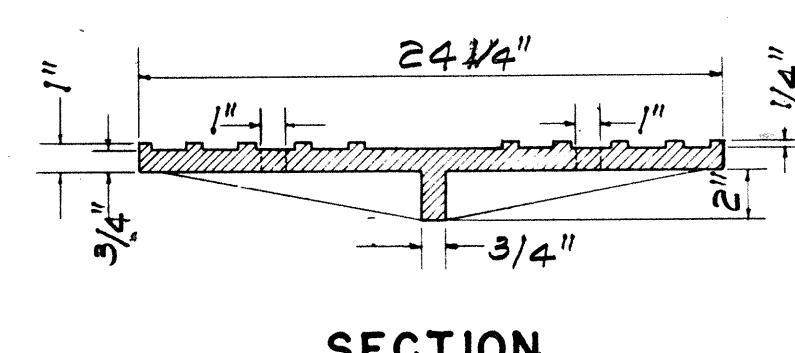
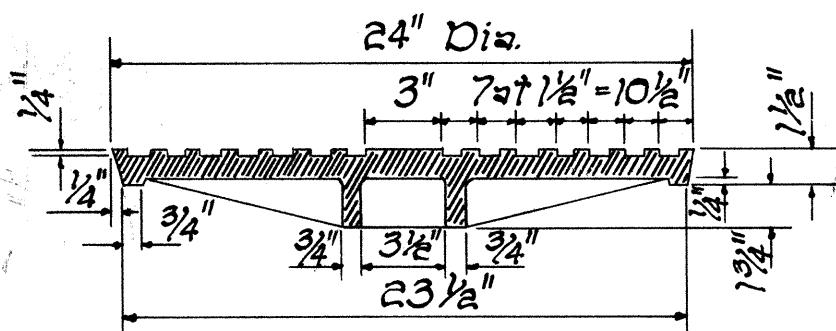
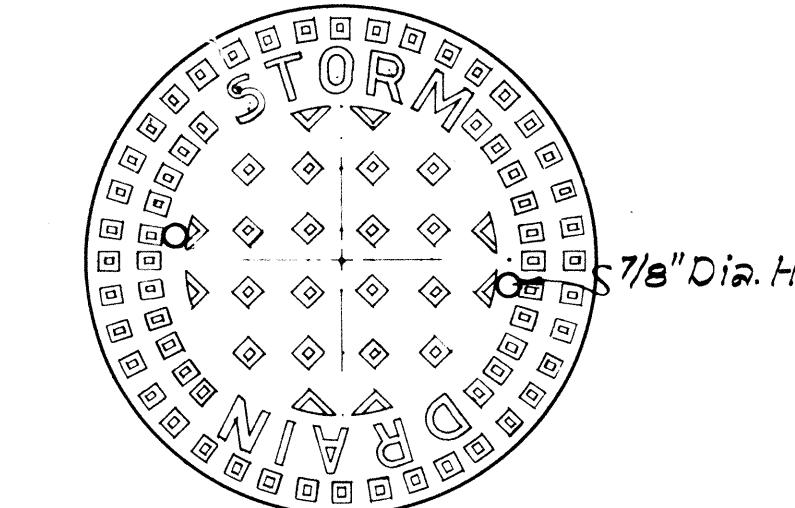
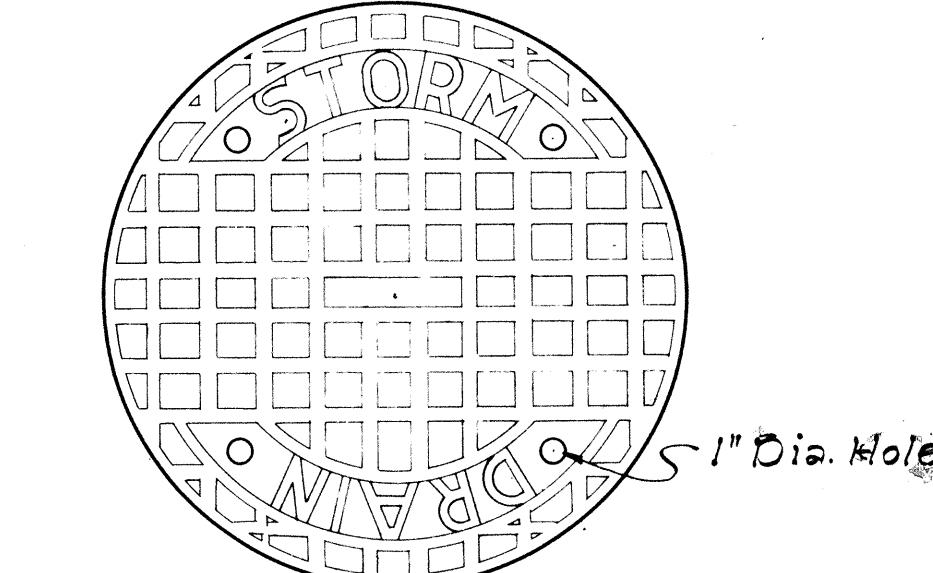
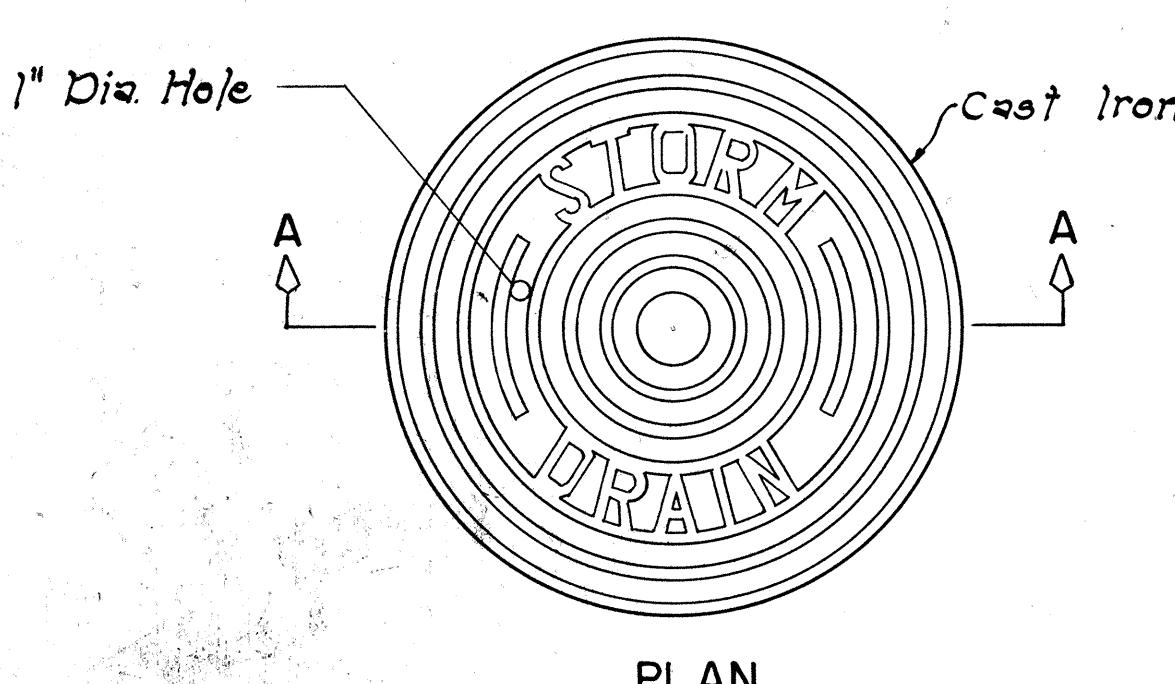
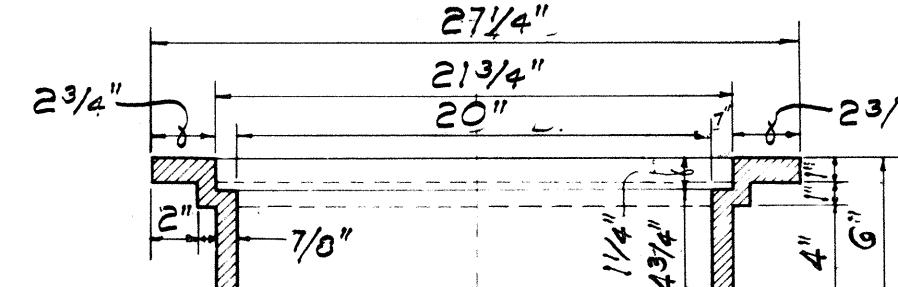
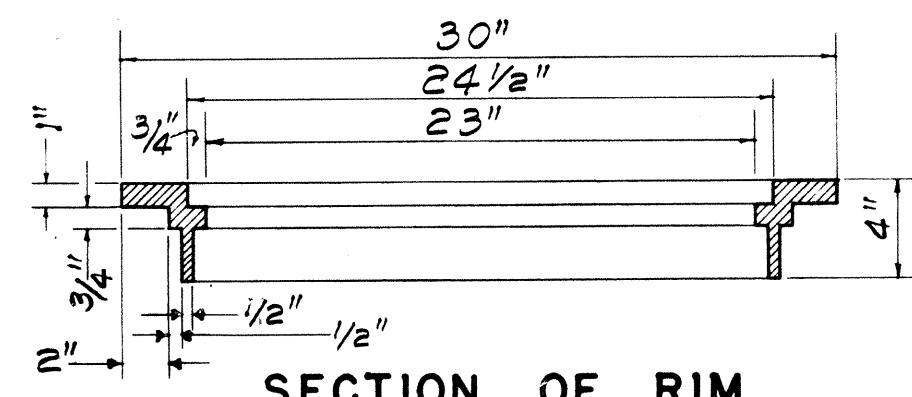
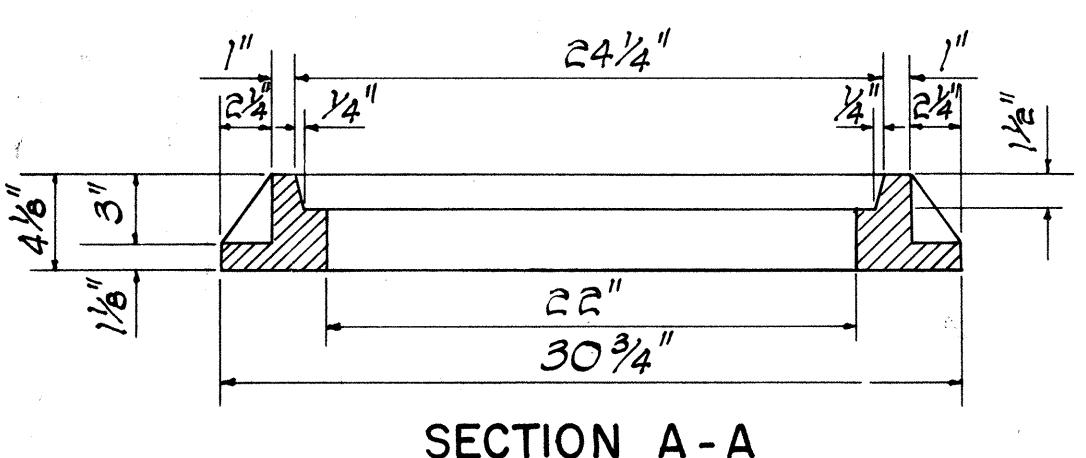
Not to Scale Date: Nov., 1970  
SHEET No. OF SHEETS DH 5A

FED ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(56)-16	1979	49	236



TYPE C C.I. FRAME AND GRATE

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



DETAILS OF TYPE "P"

CAST IRON FRAME AND COVER

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

DETAILS OF TYPE "B"

CAST IRON FRAME AND COVER

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

DETAILS OF TYPE "A"

CAST IRON FRAME AND COVER

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

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.	1-18-76

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION			
STANDARD DETAILS CATCH BASIN AND MANHOLE CASTINGS			
Scale: As Noted			
SHEET No. OF SHEETS DH 6			

APPROVAL RECOMMENDED:  
*R. Takao*  
HYDRAULIC DESIGN ENGINEER

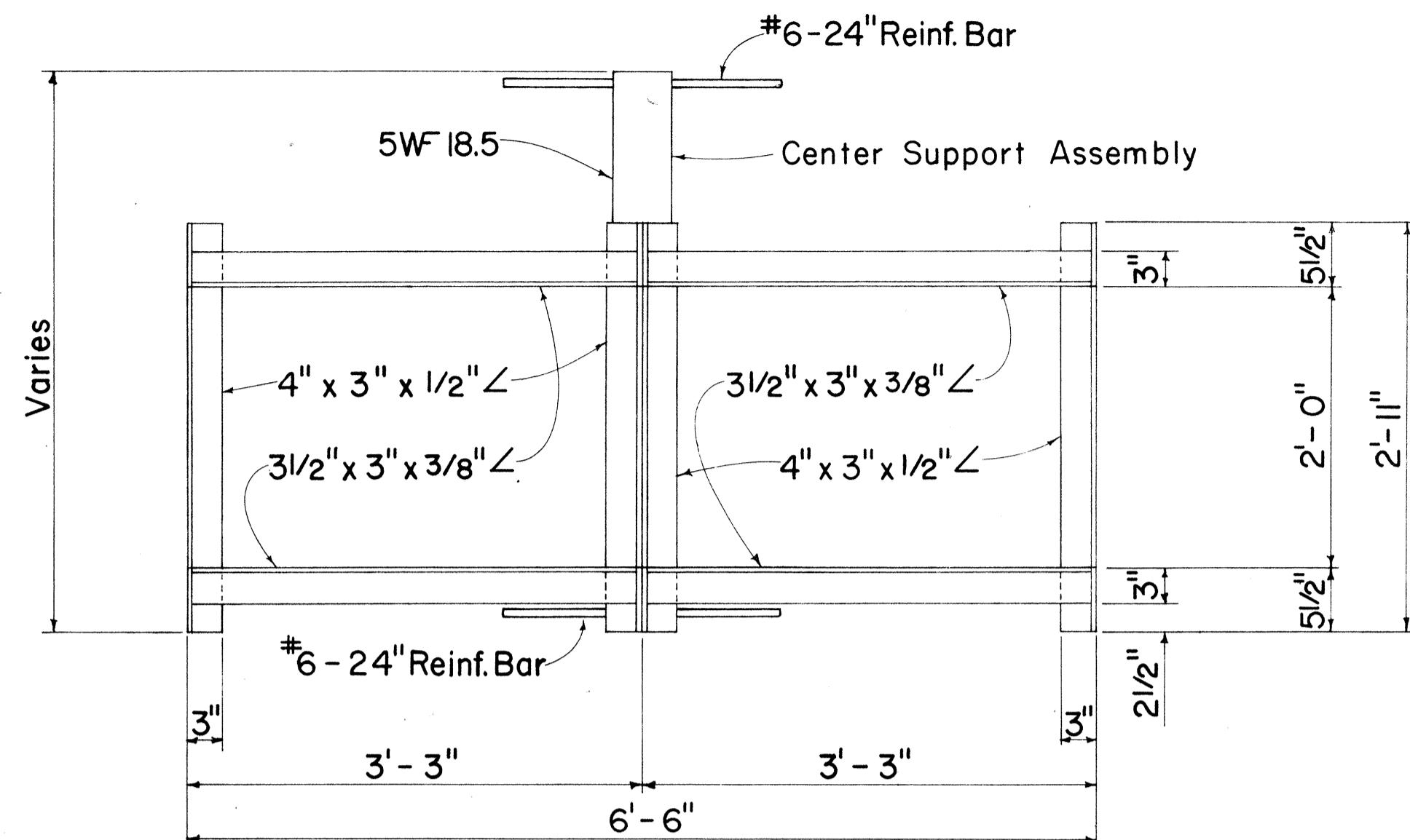
12-17-69  
DATE

APPROVED:  
*R. Takao*  
ASSISTANT CHIEF, ENGINEERING

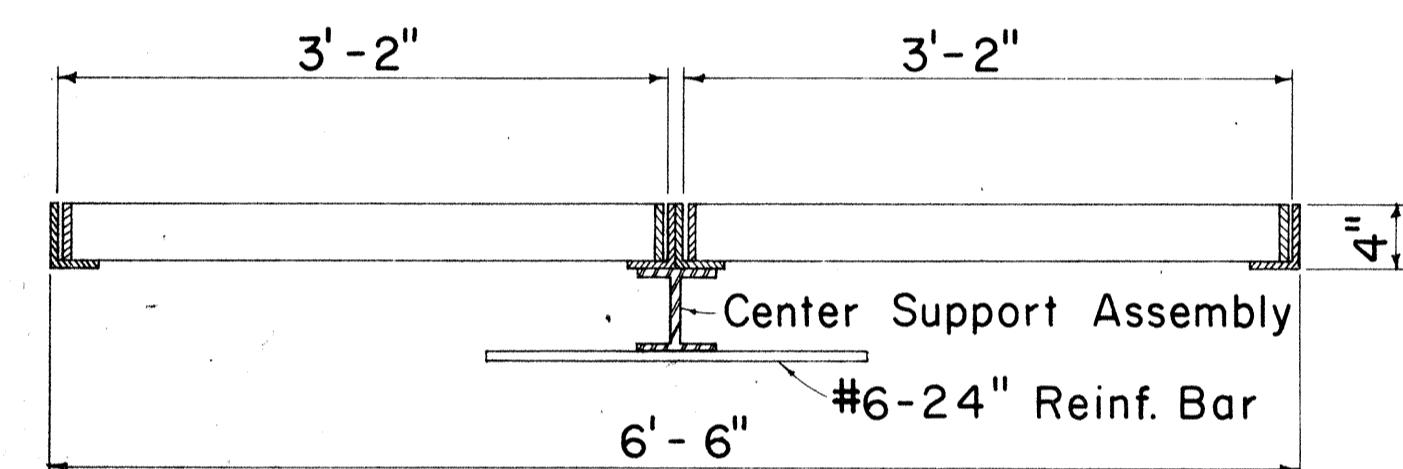
12-17-69  
DATE

TRACING CLOTH 224  
CO. INC.  
DATE: July, 1969  
SHEET NO. OF SHEETS DH 6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(50)46	1979	50	236



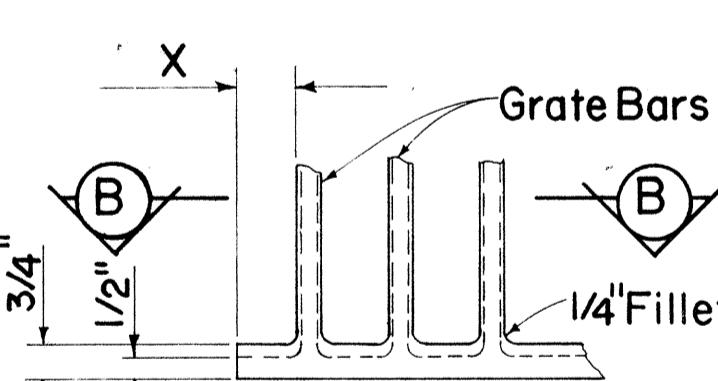
PLAN  
(Two or More Grates)



LONGITUDINAL SECTION  
(Thru Frame & Grate)

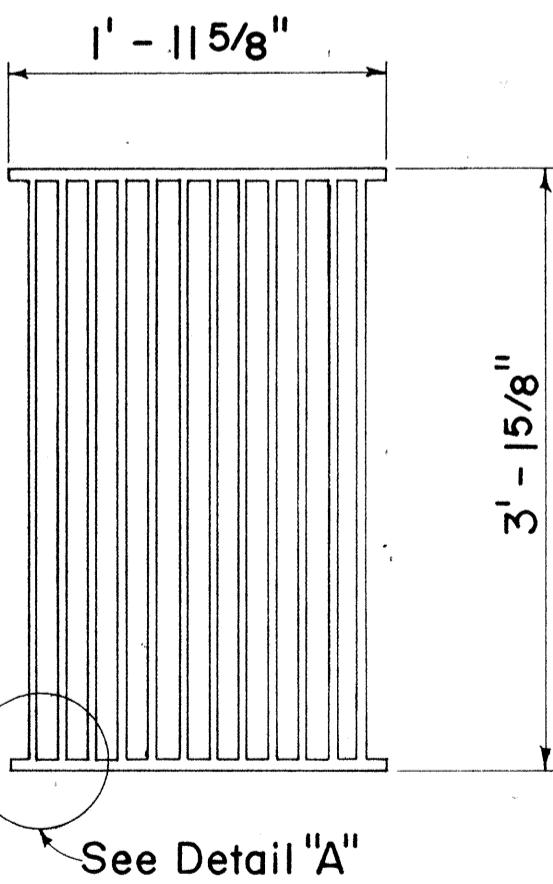
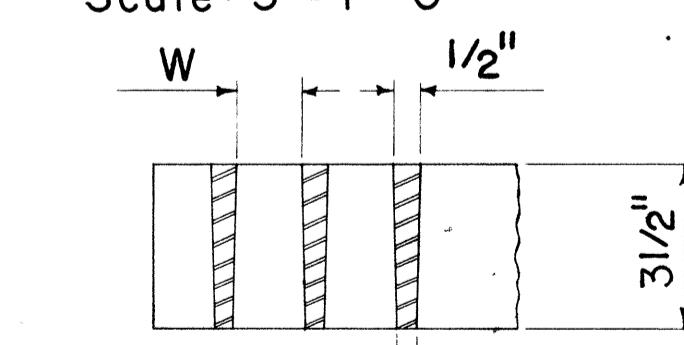
FRAME DETAILS

Scale: 1" = 1' - 0"



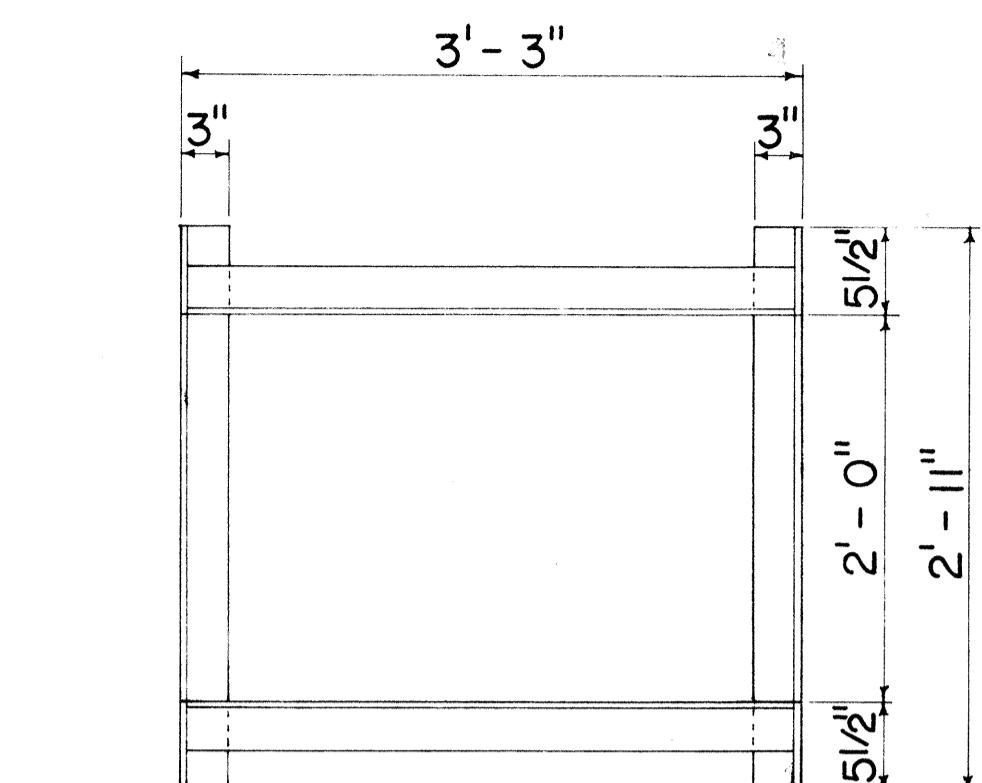
DETAIL "A"

Scale: 3" = 1' - 0"

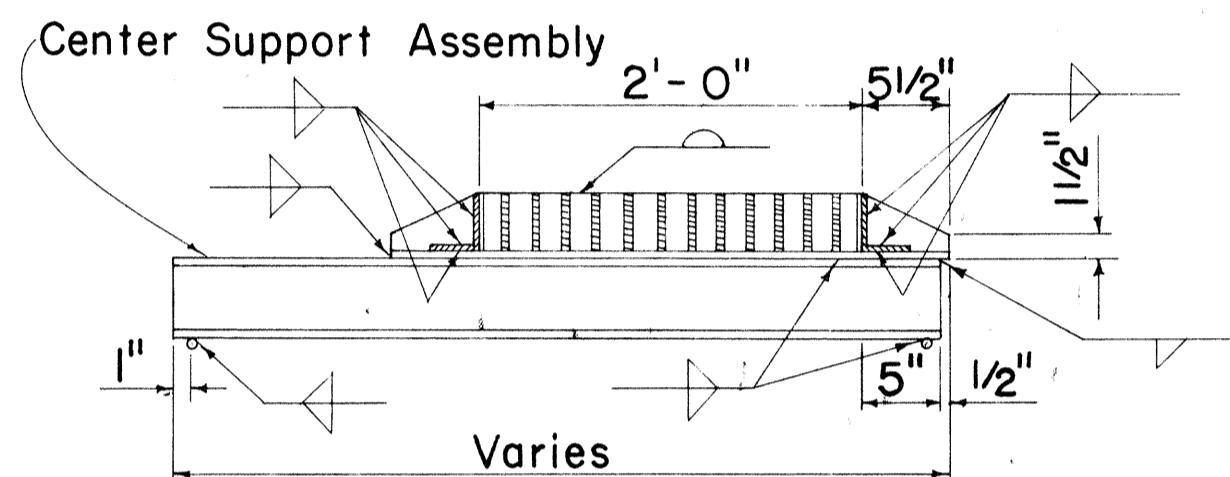


PLAN  
Scale: 1" = 1' - 0"

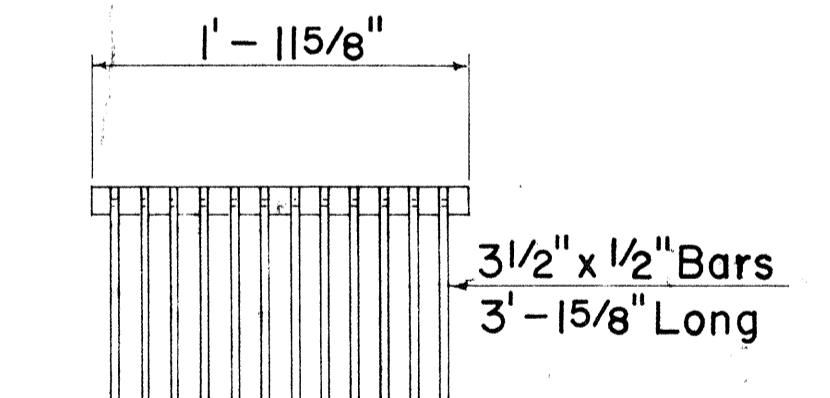
ALTERNATIVE CAST MALLEABLE IRON  
OR CAST STEEL GRATE



PLAN  
(Single Grate)

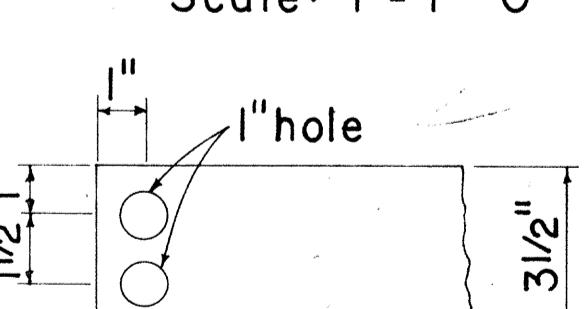


CROSS SECTION  
(Thru Frame & Grate)



CAST END BLOCK

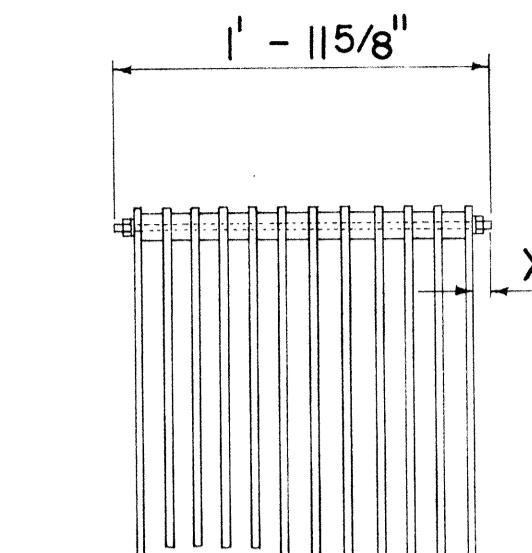
Scale: 1" = 1' - 0"



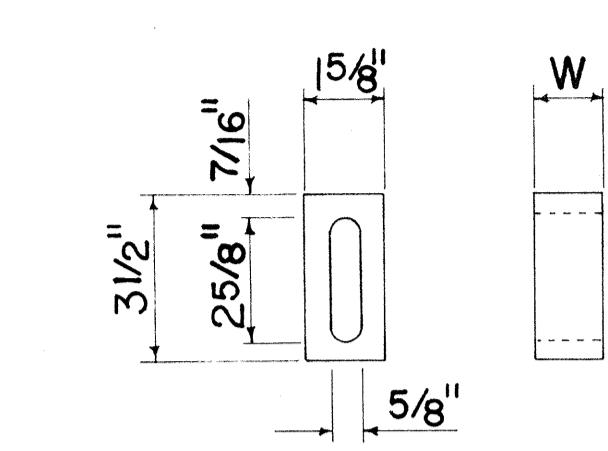
END OF BAR

Scale: 3" = 1' - 0"

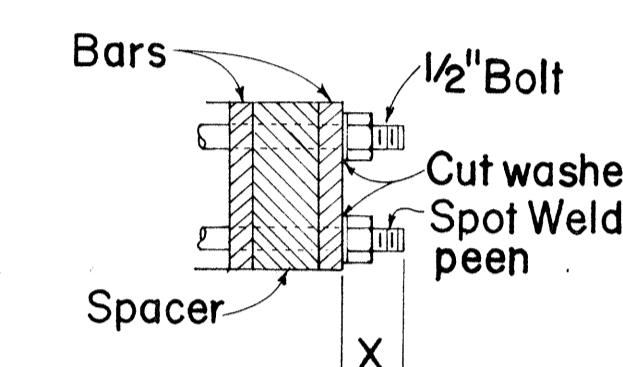
ALTERNATIVE CAST MALLEABLE IRON  
OR CAST STEEL END BLOCK GRATE



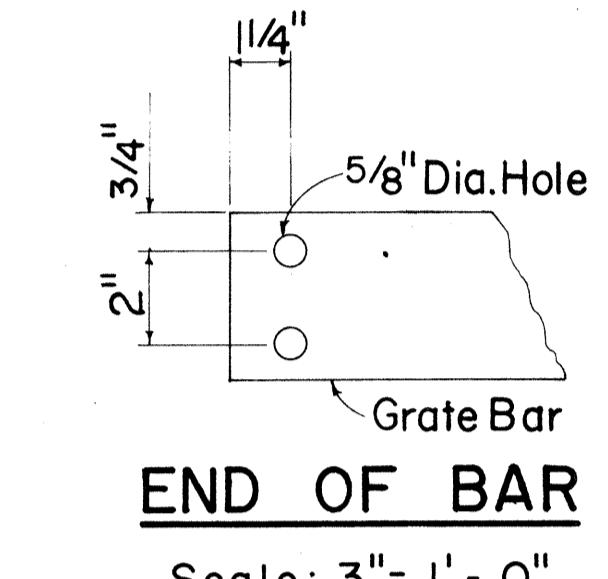
BOLTED END BLOCK  
Scale: 1" = 1' - 0"



BAR SPACER  
Scale: 3" = 1' - 0"

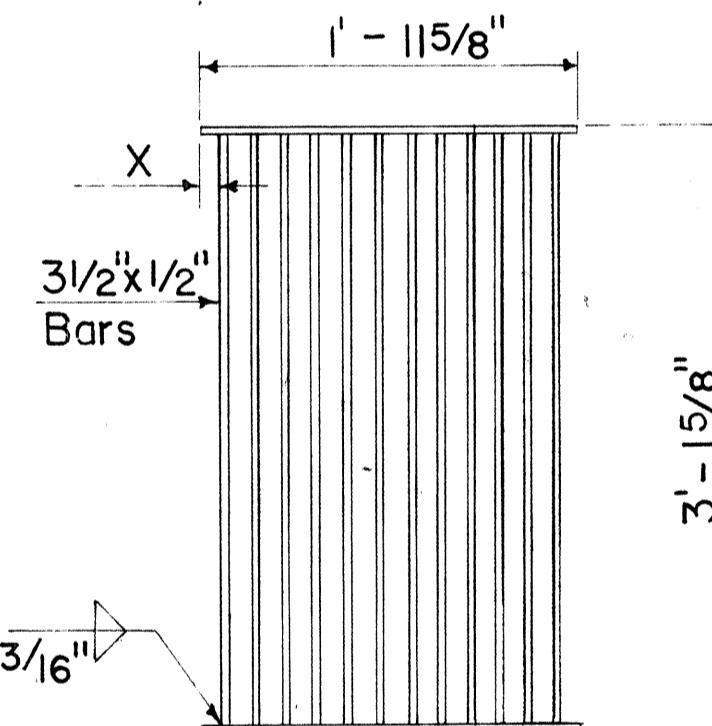


BOLTING DETAIL  
Scale: 3" = 1' - 0"



END OF BAR  
Scale: 3" = 1' - 0"

ALTERNATIVE BOLTED GRATE

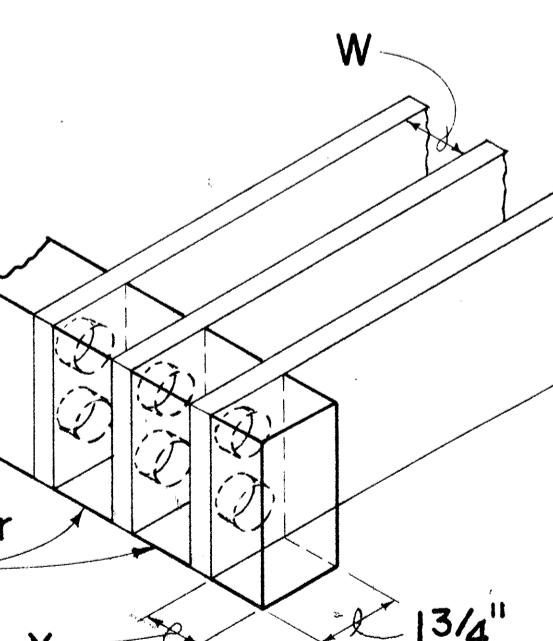


SECTION

PLAN

ALTERNATIVE WELDED GRATE

Scale: 1" = 1' - 0"



NO.	REVISION	APPROVED BY	DATE

GENERAL NOTES

- Contractor has the option of using cast malleable iron, cast steel, welded, bolted, cast malleable iron end block or cast steel end block grate.
- Grates and Frames shall be hot dip galvanized after fabrication, see specifications.
- All welds  $3/8"$  unless otherwise noted.
- Center support assembly shall be used when two or more grates are specified. Incidental to Types A-9 or A-12 Frame and Grates.
- Refer to "Grate Bar Spacing Table" for Types A-9 and A-12 Grate dimensions.
- The various materials shall conform to the specifications of ASTM as listed in the following tabulation and the Std. Specifications.

Material      ASTM Designation

Structural Steel ..... A283, Grade D

Cast Steel ..... A27, Grade 65-35

Malleable Iron Casting ... A47, Gr. No. 35018

GRATE BAR SPACING TABLE

TYPE	NO. BARS	CLEAR BAR SPACING - W	X
A-9	9	2"	1 9/16"
A-12	12	1 3/8"	1 1/4"

NOTE:

- Type A-9 - Use in locations off the roadbed on all types of highways.
- Type A-12 - Use within the roadbed on all types of highways.

APPROVAL RECOMMENDED: *J. Takano* *12-17-69*

HYDRAULIC DESIGN ENGINEER *J. Takano* *DATE*

APPROVED: *J. Takano* *12-17-69*

ASSISTANT CHIEF, ENGINEERING *J. Takano* *DATE*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

STANDARD DETAILS

TYPE A-9 AND A-12  
FRAMES AND GRATES

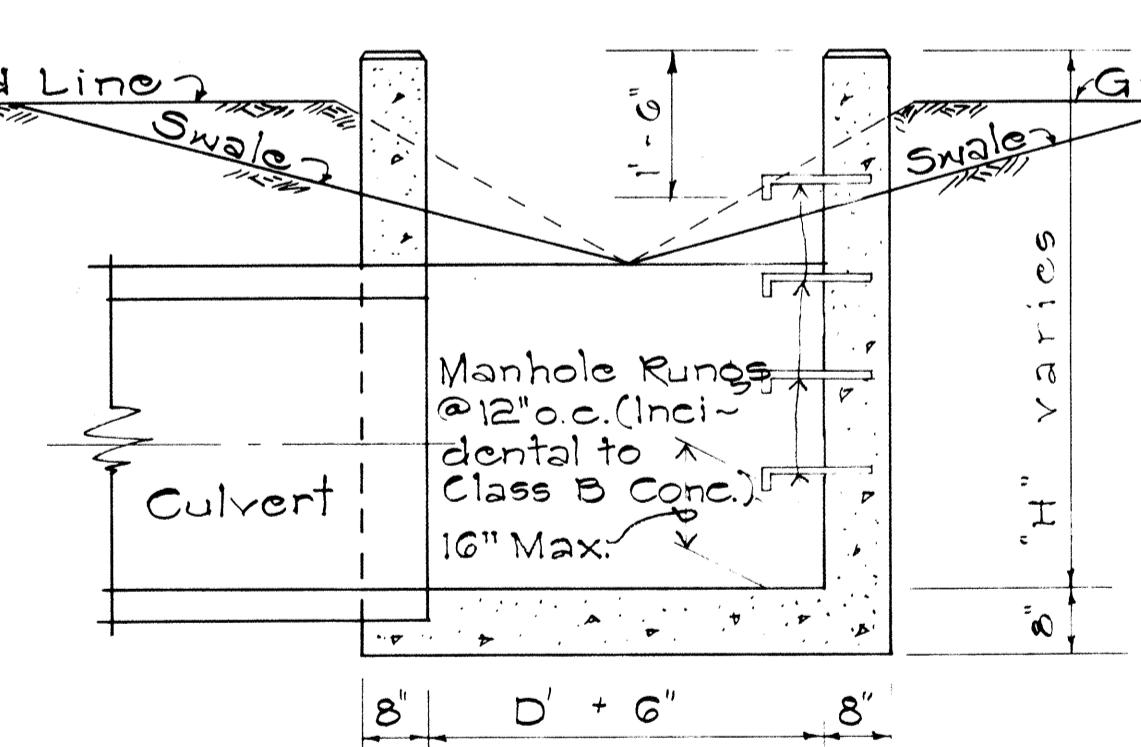
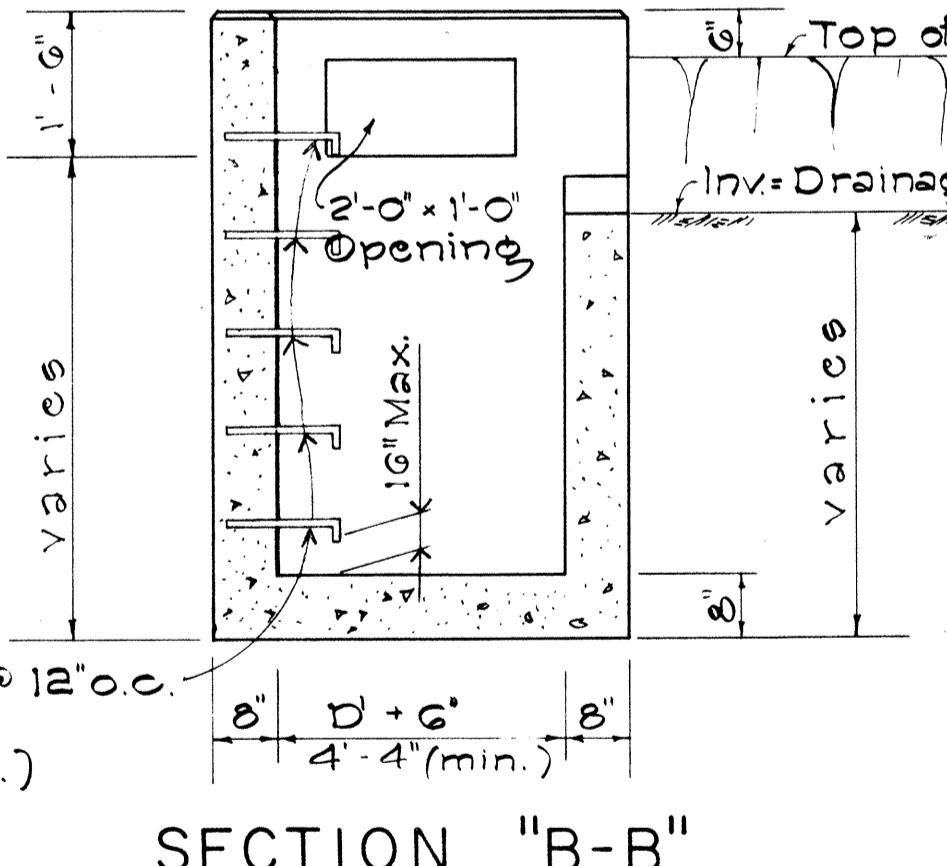
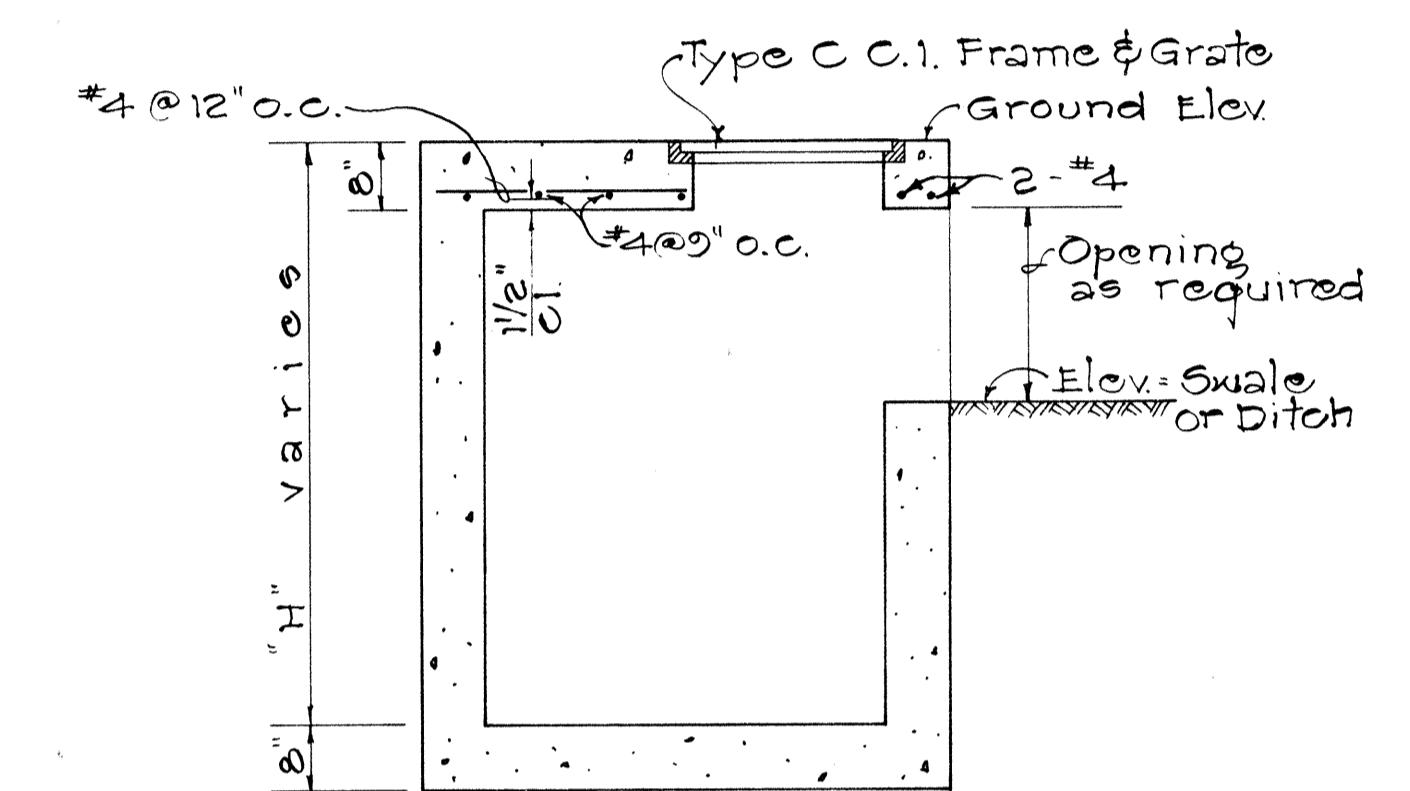
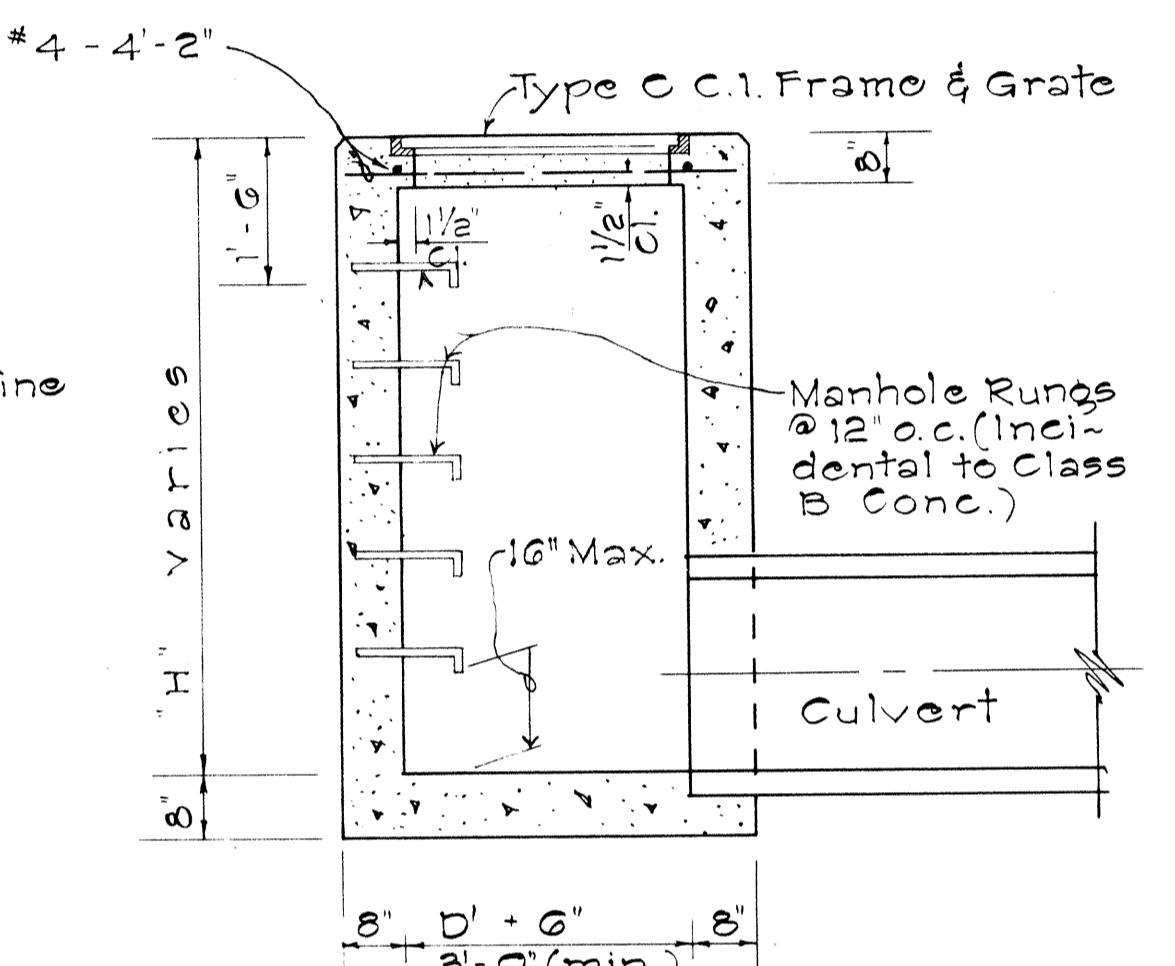
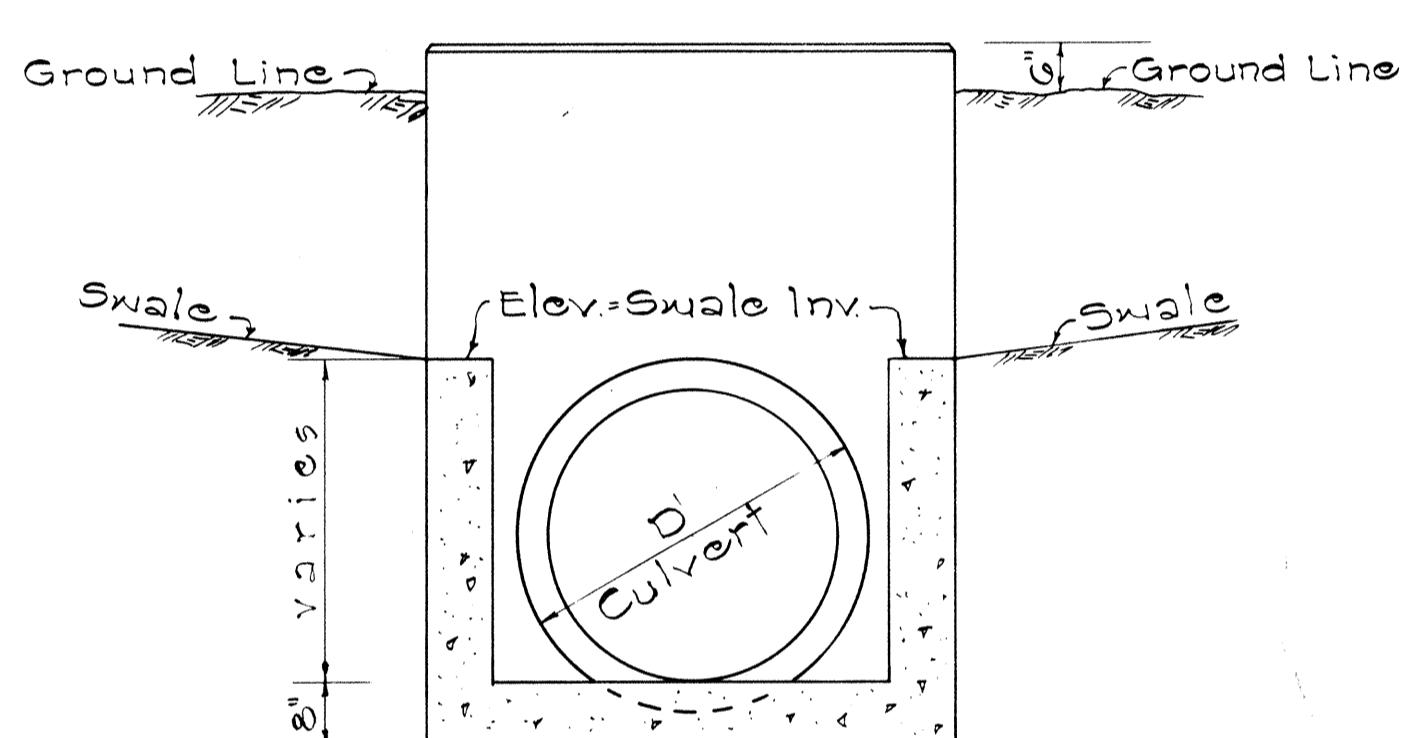
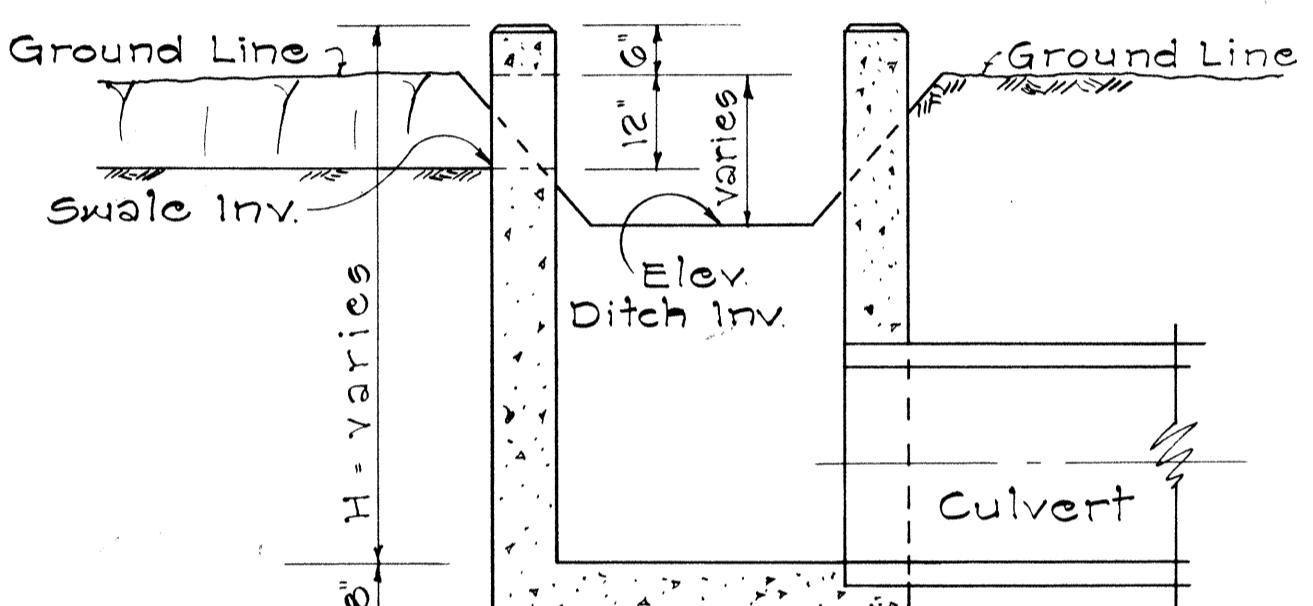
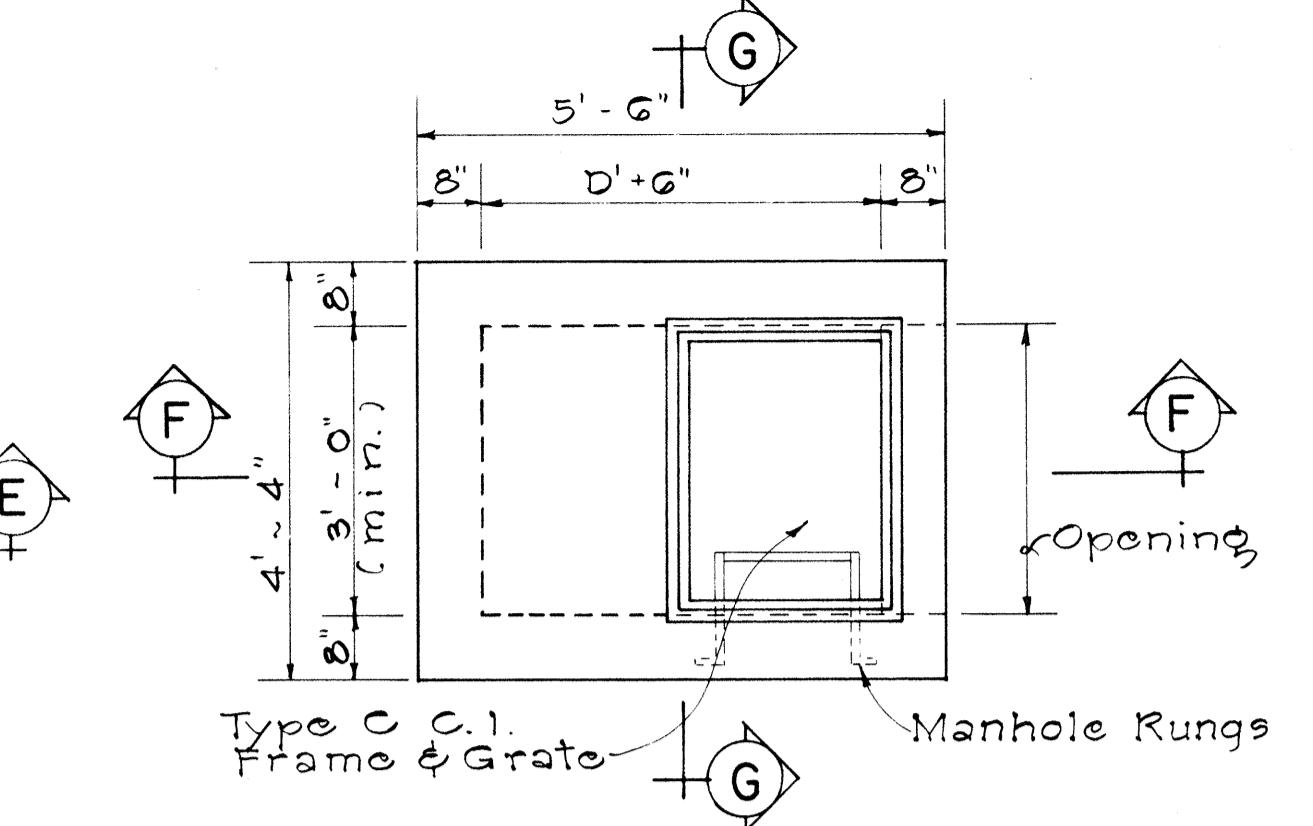
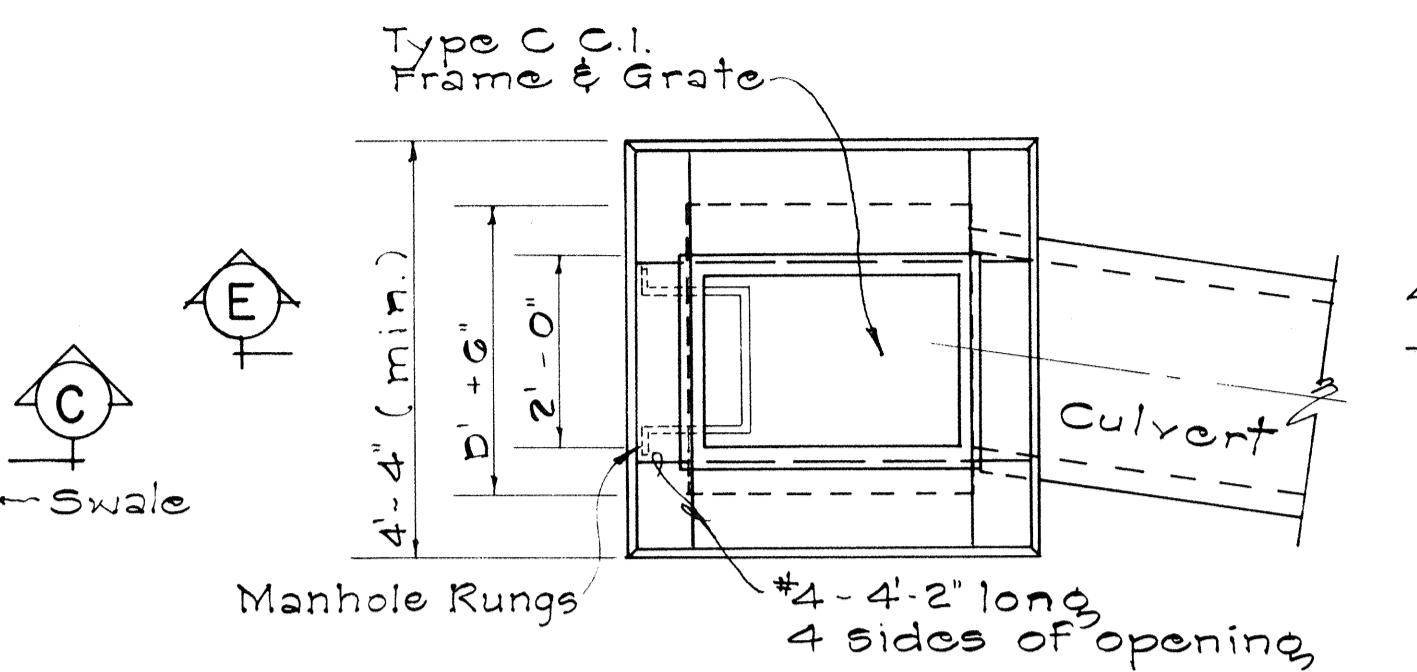
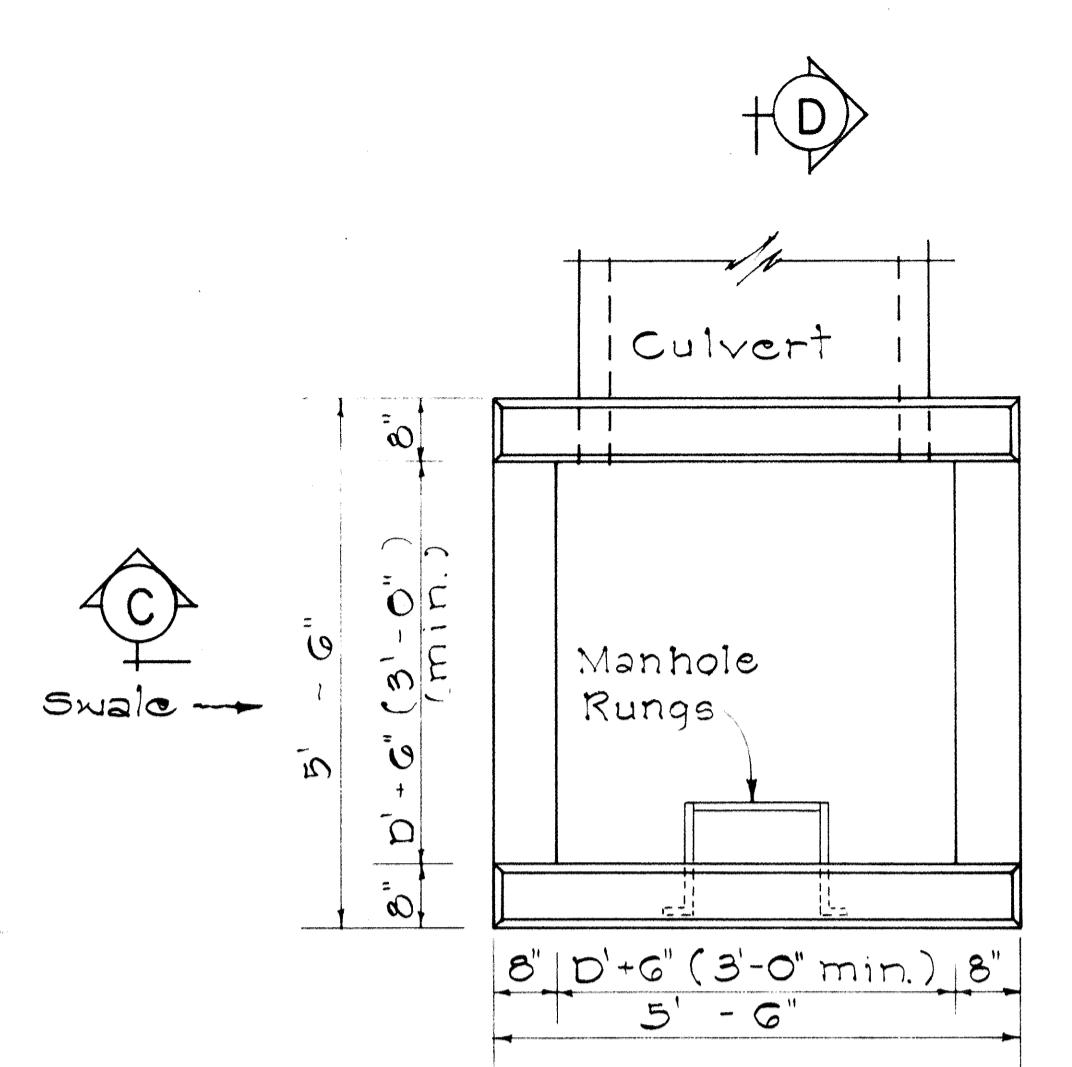
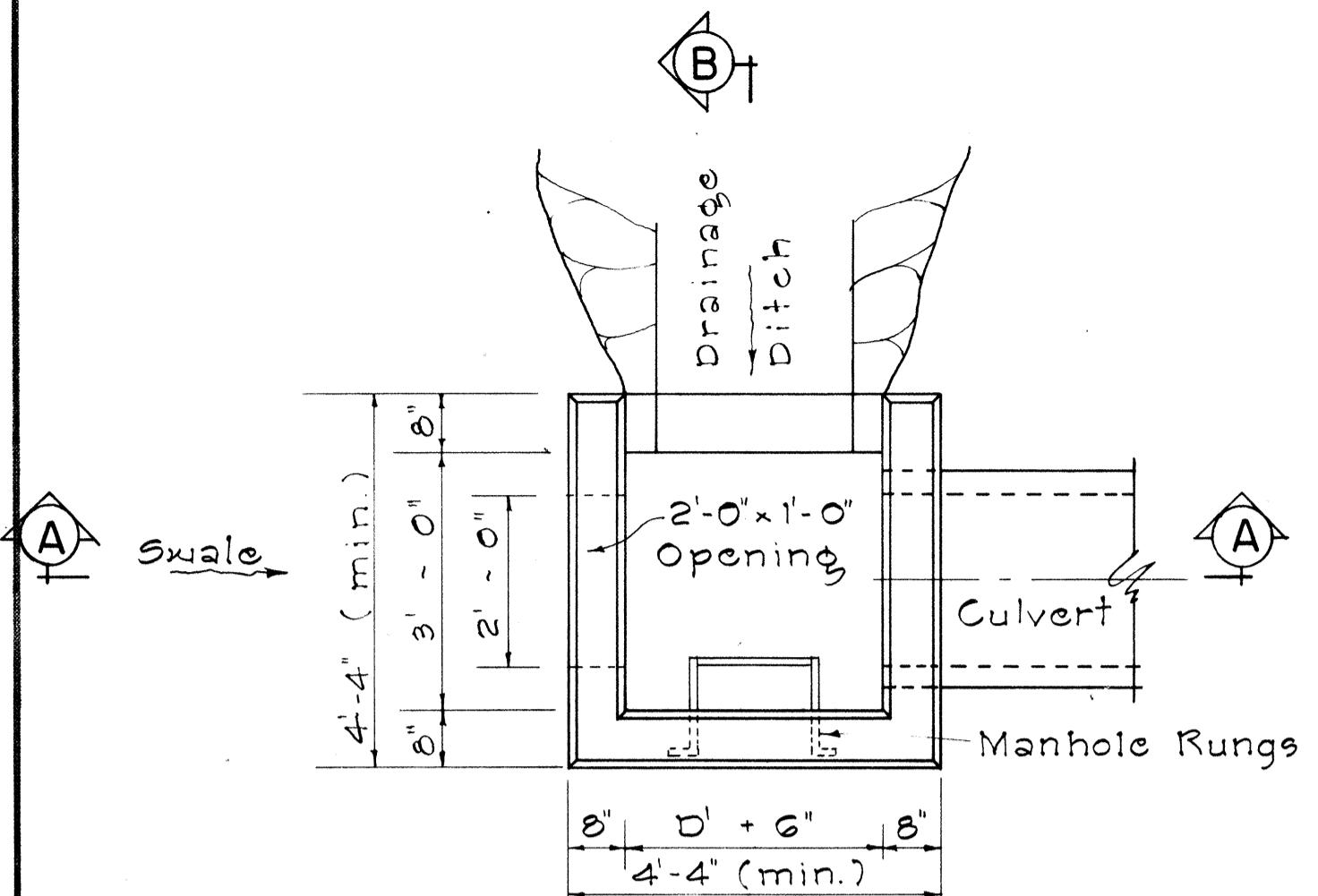
Scales As Noted Date: Aug. 1968

SHEET NO. OF SHEETS DH-7

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(56)16	1979	51	236

### 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 maybe placed at any location as ordered by the Engineer.



**TYPE "A"**  
**CONCRETE DROP INTAKE**  
Scale: 1/2" = 1'-0"

**TYPE "B"**  
**CONCRETE DROP INTAKE**  
Scale: 1/2" = 1'-0"

### TYPE "C" GRATED CONCRETE DROP INTAKE

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

### TYPE "D" GRATED CONCRETE DROP INTAKE

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

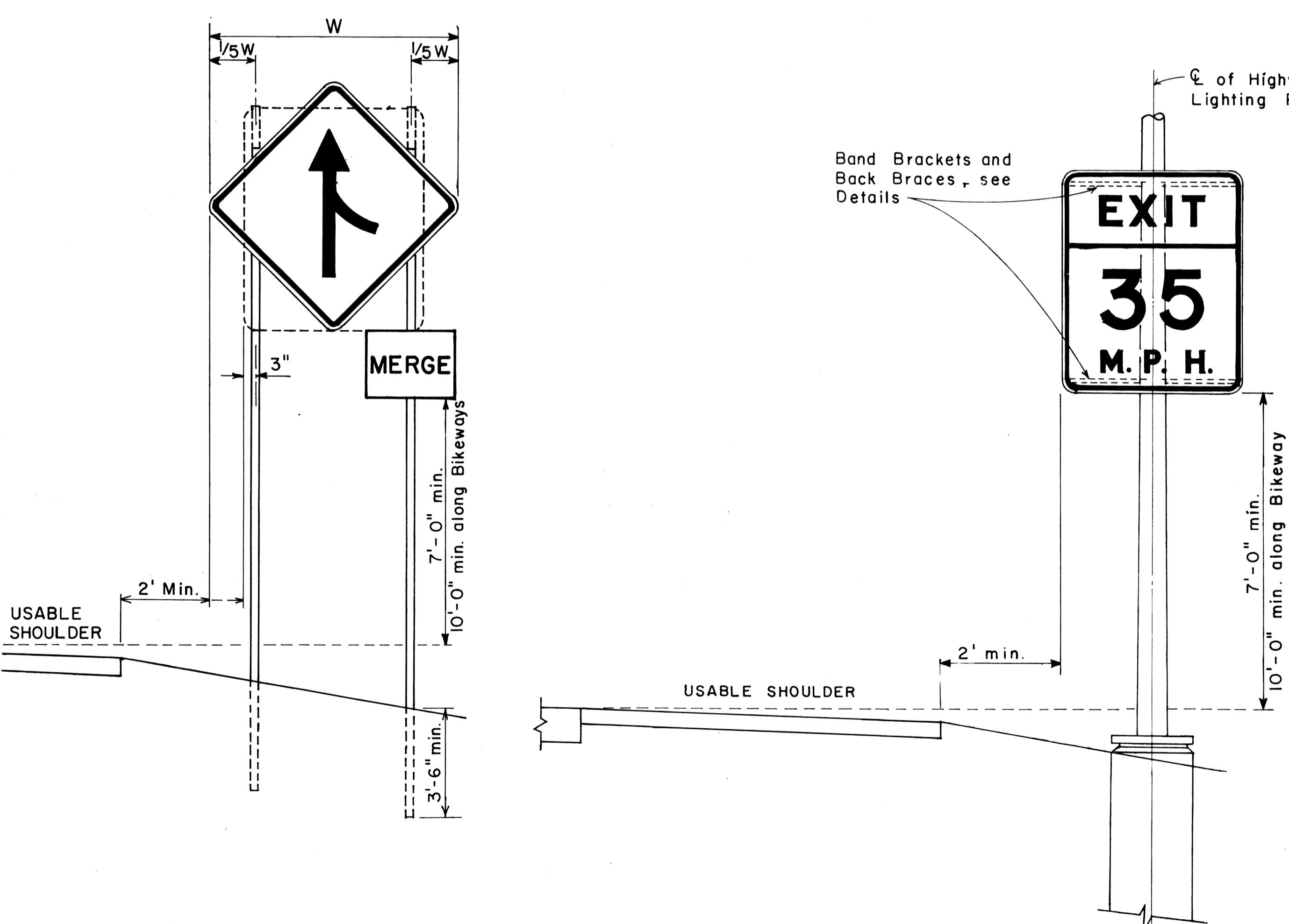
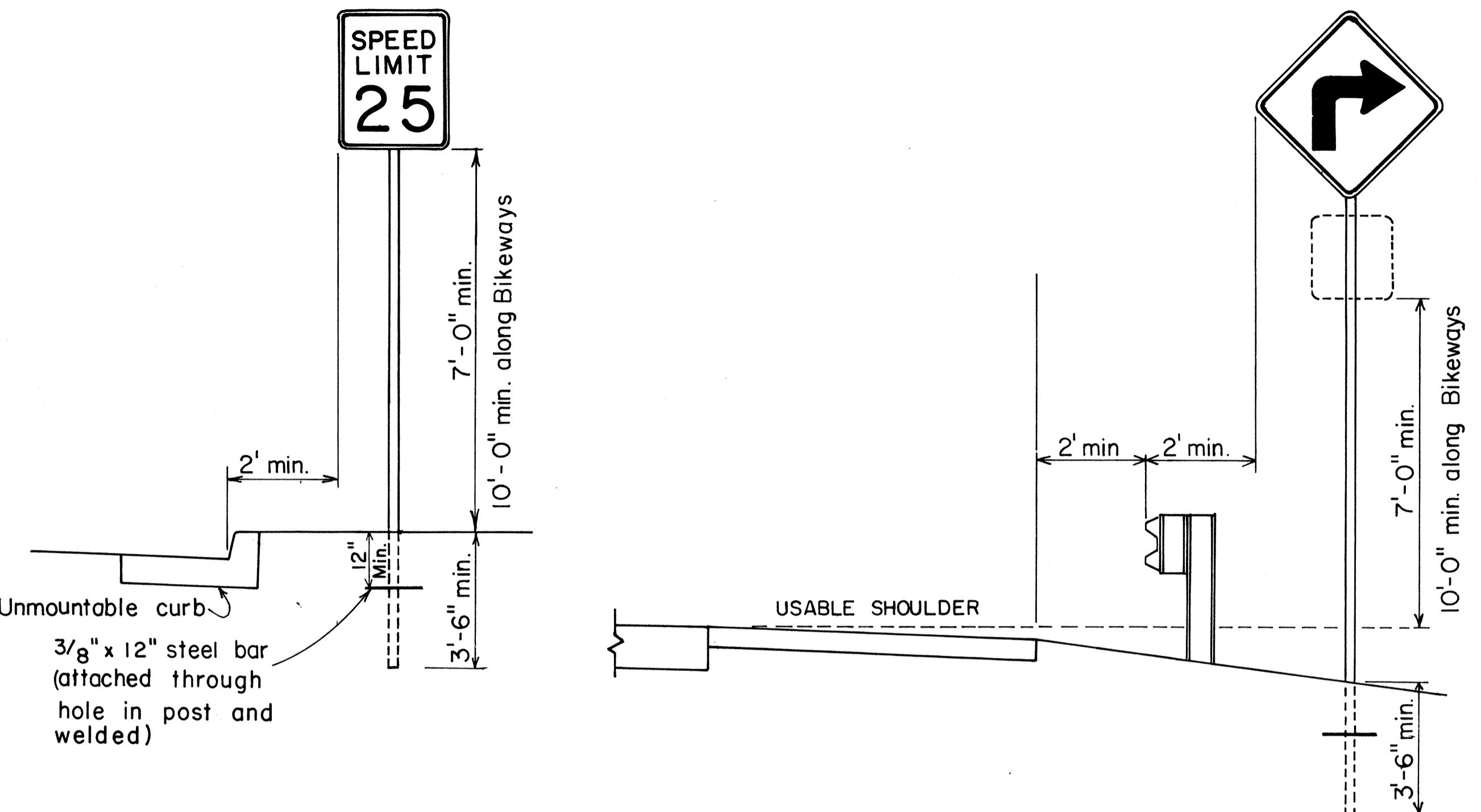
APPROVAL RECOMMENDED:  
B. Nakano  
HYDRAULIC DESIGN ENGINEER  
DATE: 12-17-69

APPROVED:  
R. P. [Signature]  
ASSISTANT CHIEF, ENGINEERING  
DATE: 12-17-69

NO.	REVISION	APPROVED BY	DATE
1	Spacing on Manhole Rungs to conform to OSHA.	H.L.	1-21-15

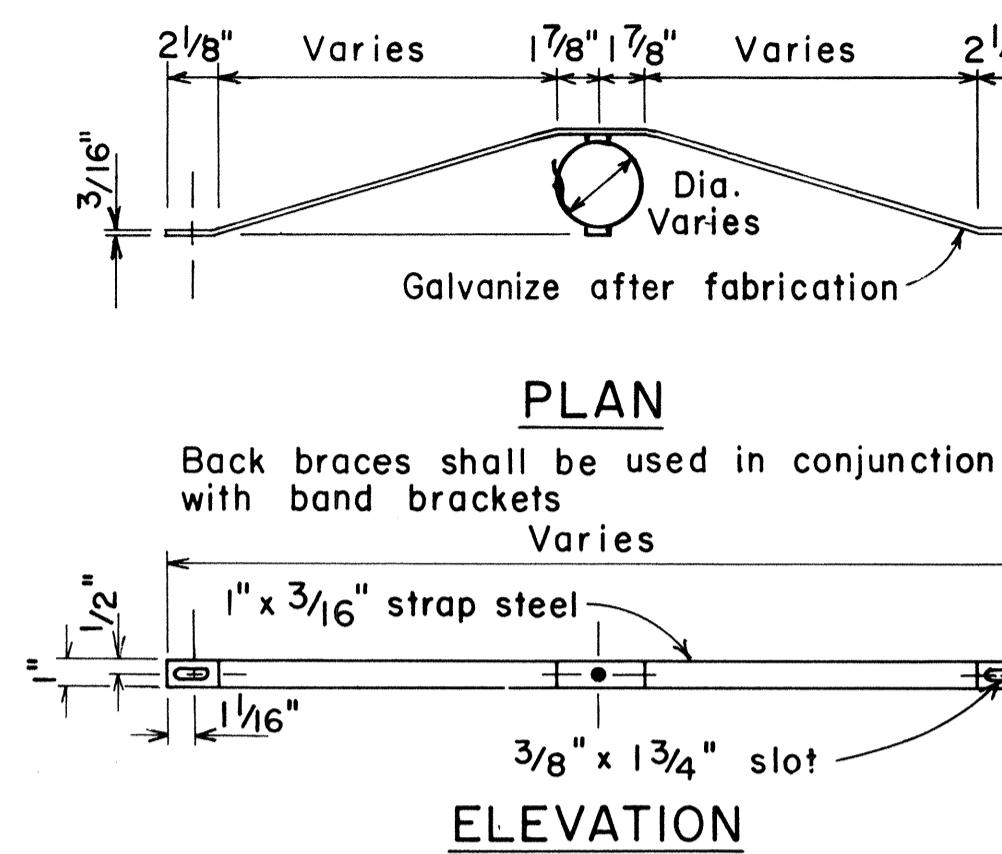
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
STANDARD DETAILS  
TYPE "A", "B", "C", AND "D"  
CONCRETE DROP INTAKE  
Scale: As Noted  
SHEET No. OF SHEETS DH 19  
Date: July, 1969

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHM-156-16	1979	52	236

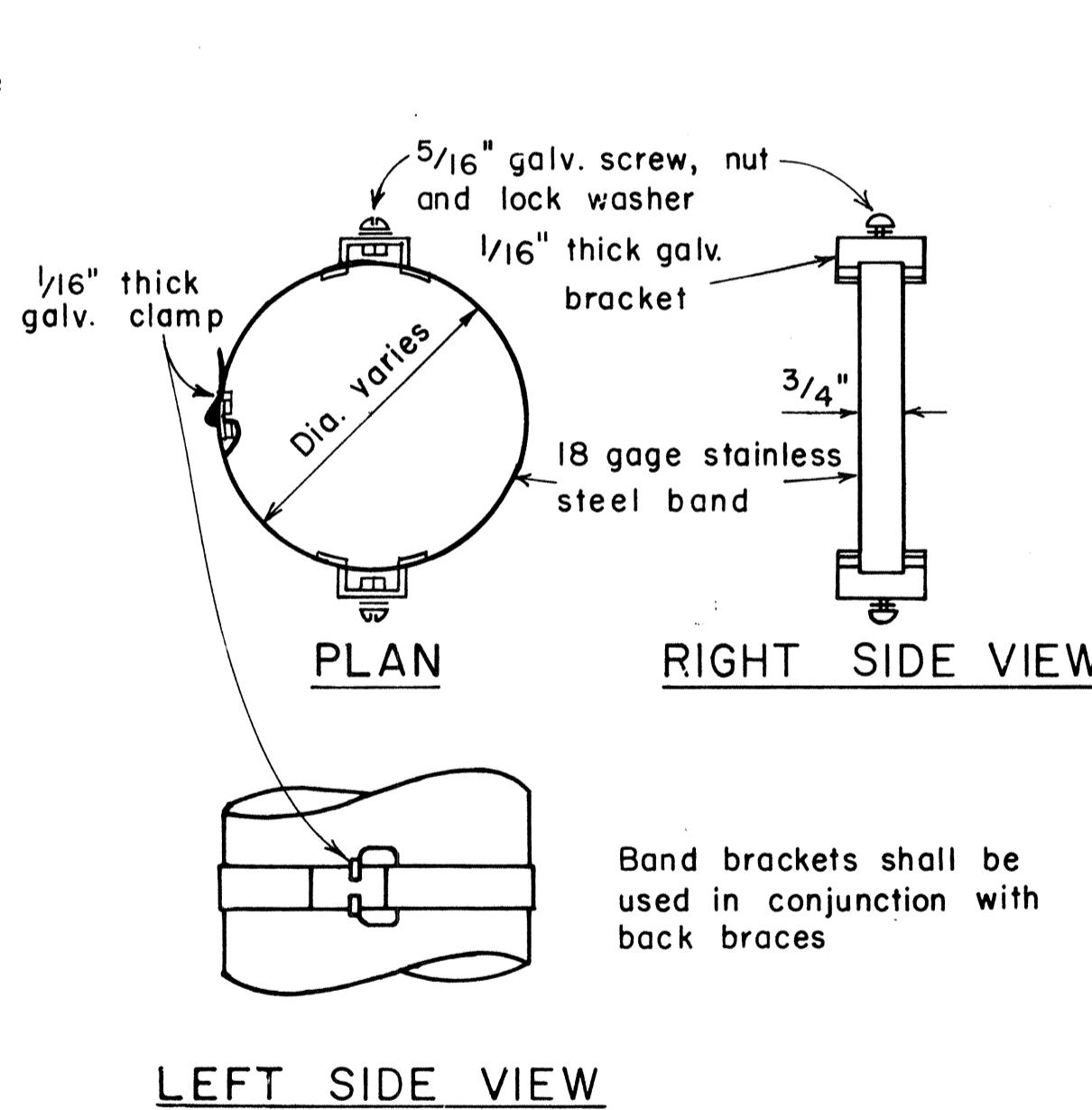


HEIGHT AND LATERAL LOCATION OF SIGNS  
TYPICAL INSTALLATION

ORIGINAL SURVEY PLOTTED BY: DATE:  
SPLACED BY: PLACED BY:  
DESIGNED BY: DESIGNED BY:  
QUANTITIES BY:  
CHECKED BY:



### BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION



LEFT SIDE VIEW

### TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

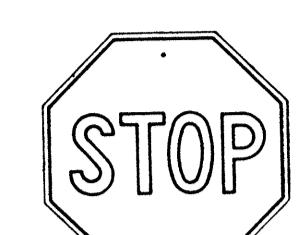
APPROVAL RECOMMENDED:  
*Etsushi Tanaka* DATE: 11/10/77

APPROVED:  
*Robert S. Dadeishi* DATE: 11/15/77  
ASSISTANT CHIEF, ENGINEERING

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION			
<b>STANDARD DETAILS</b>			
MISCELLANEOUS SIGN DETAILS			
Not to scale June, 1977			
SHEET NO. OF SHEETS DT 100			

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156):16	1979	53	236



RI-1 30"x 30"  
RI-1-A 36"x 36"



RI-2 36"x 36"x 36"  
RI-2-A 48"x 48"x 48"



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



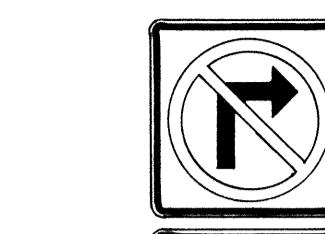
R2-2(40) 24"x 24"  
R2-2(40)-A 48"x 48"



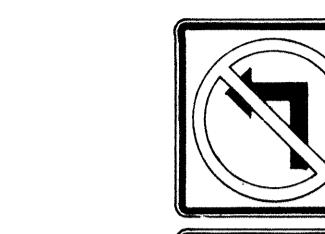
R2-4a(50/40) 24"x 48"  
R2-4a(50/40)-A 48"x 96"



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



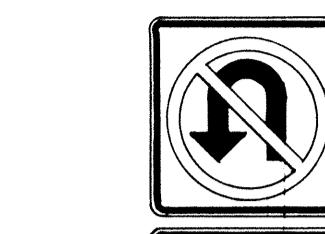
R3-1 24"x 24"  
R3-1-A 24"x 18"



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



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



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



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"

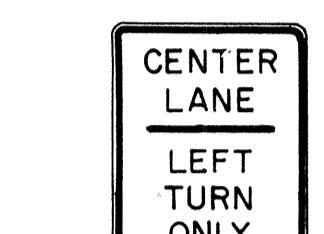
RI-3 12"x 6"  
RI-3-A 18"x 9"



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"



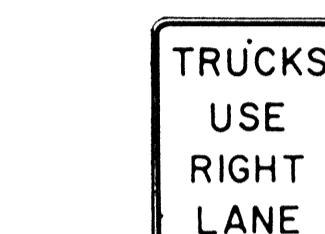
R4-1 24"x 30"



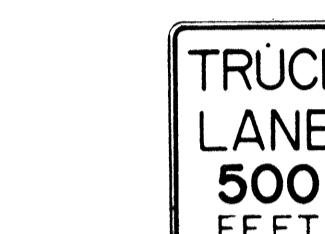
R4-2 24"x 30"



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



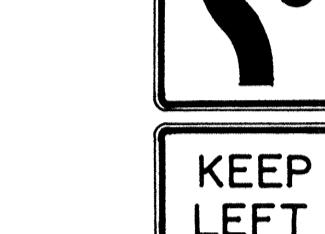
R4-5 24"x 30"



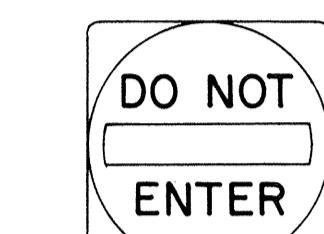
R4-6(500) 24"x 30"



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



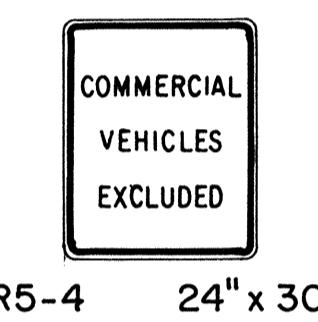
R4-8 24"x 30"  
24"x 18"



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



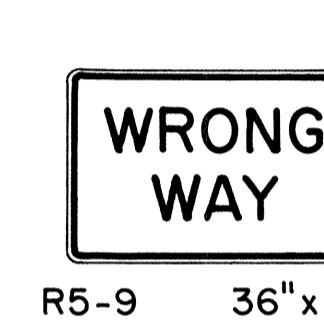
R5-2 24"x 24"  
24"x 18"



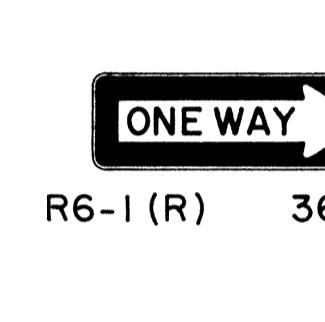
R5-4 24"x 30"



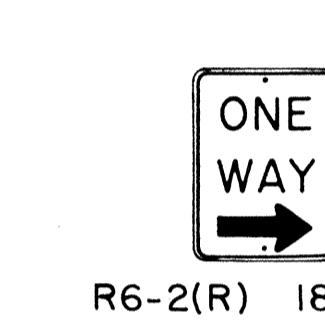
R5-6 24"x 24"  
24"x 18"



R5-9 36"x 24"



R6-1 (R) 36"x 12"



R6-2(R) 18"x 24"



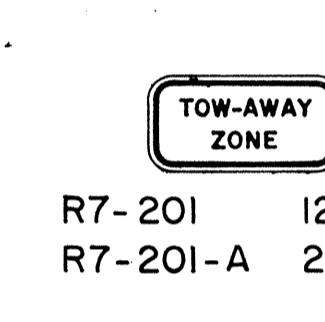
R7-1 12"x 18"  
R7-1-A 24"x 30"



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"



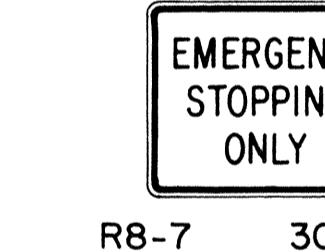
R8-4 30"x 24"  
R8-4-A 48"x 36"



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"



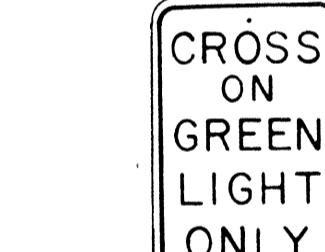
R9-2 12"x 18"



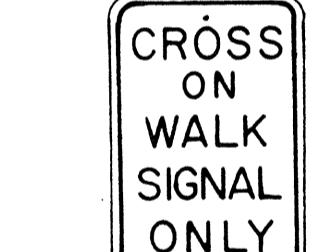
R9-3 12"x 18"



R9-4 18"x 24"



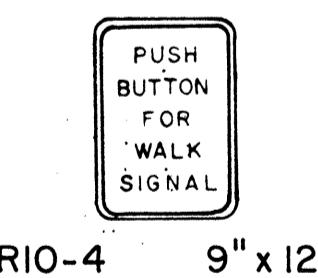
R10-1 12"x 18"



R10-2 12"x 18"



R10-3 9"x 12"



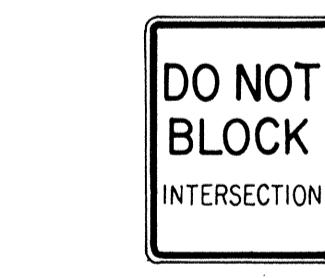
R10-4 9"x 12"



R10-5 24"x 30"



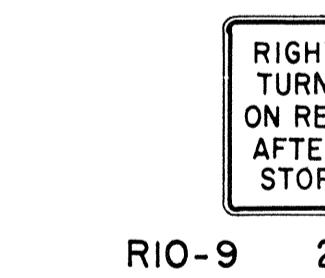
R10-6 24"x 36"



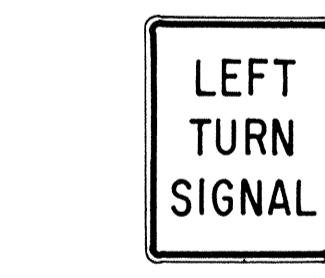
R10-7 24"x 30"



R10-8 24"x 30"



R10-9 24"x 30"



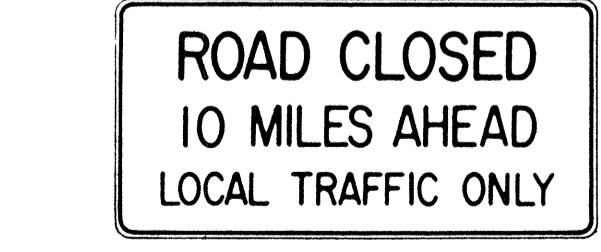
R10-10 24"x 30"



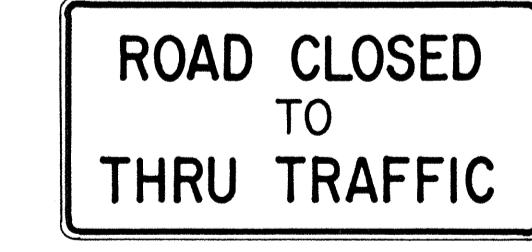
R11-1 24"x 30"



R11-2 48"x 30"



R11-3(10) 60"x 30"



R11-4 60"x 30"



R12-1(10) 24"x 30"

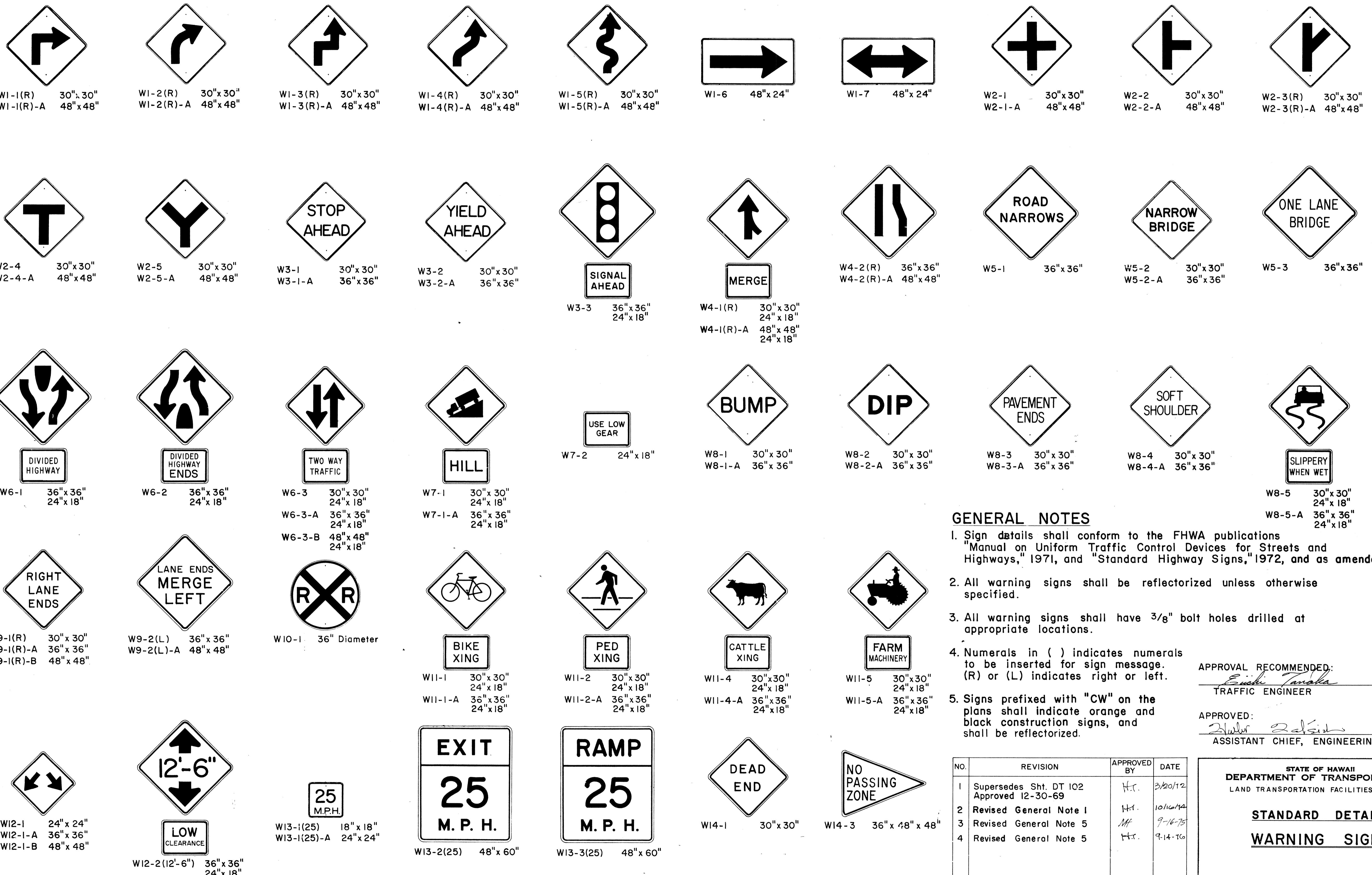
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	H.F.	3/20/72
2	Revised General Note 1.	H.F.	10/16/74 O

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION			
STANDARD DETAILS			
REGULATORY SIGNS			
NOT TO SCALE			
SHEET No. OF SHEETS DT 101			

53

ORIGINAL PLAN SURVEY PLOTTED BY:   
DESIGNED BY:   
QUANTITIES BY:   
CHECKED BY:

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	I-HI-1(156)16	1979	54	236



#### 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 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, and shall be reflectorized.

APPROVAL RECOMMENDED:  
*Eduardo Tanaka*  
TRAFFIC ENGINEER

DATE  
3/17/72

APPROVED:  
*Robert D. Kish*  
ASSISTANT CHIEF, ENGINEERING

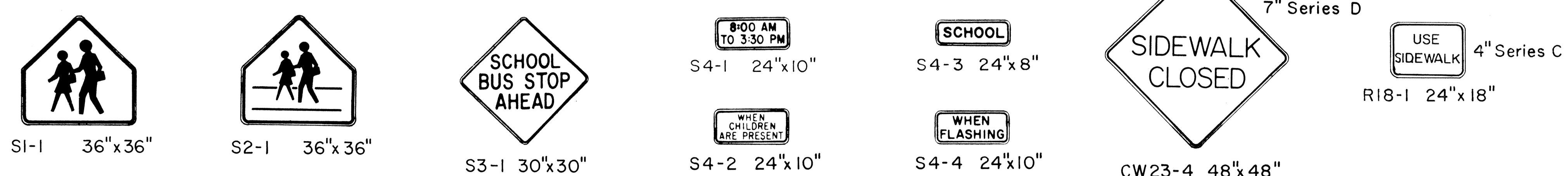
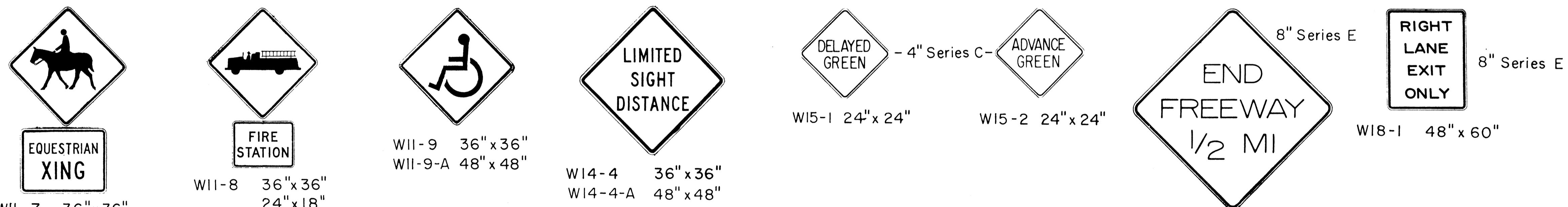
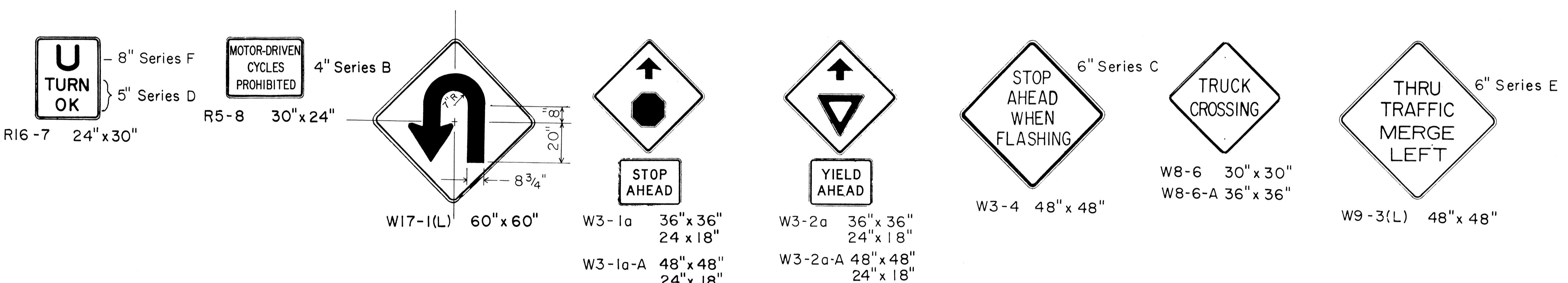
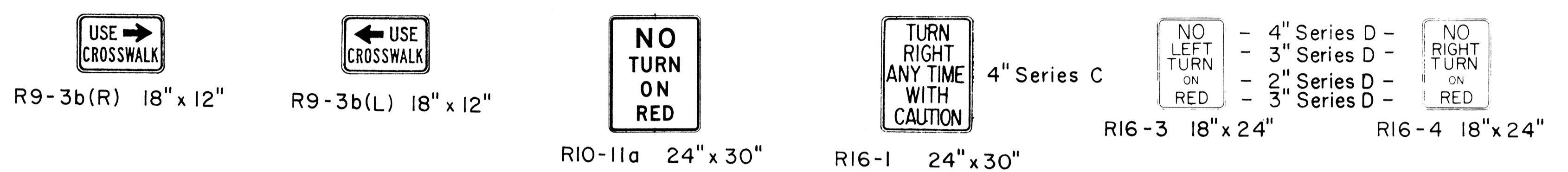
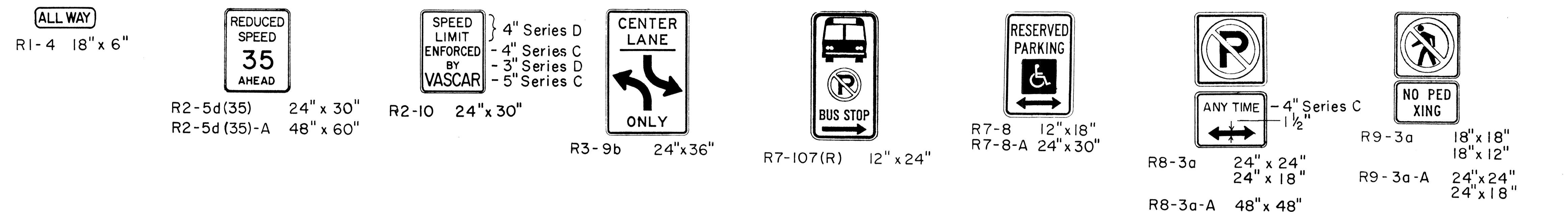
DATE  
3-20-72

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS  
WARNING SIGNS

NOT TO SCALE  
SHEET No. OF SHEETS DT 102

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-(156)-16	1979	55	236



#### General Notes

- Sign details shall conform to the latest editions of the following FHWA publications:
  - "Standard Alphabets for Highway Signs," and as amended.
  - "Standard Highway Signs," and as amended,
  - "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended,
- All signs shall be reflectorized with reflective sheeting, unless otherwise specified.
- All signs shall have  $\frac{3}{8}$ " bolt holes drilled at appropriate locations.
- Numerals in ( ) indicate 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, and shall be reflectorized with reflective sheeting.

APPROVAL RECOMMENDED:  
*Eduardo Tanaka*  
TRAFFIC ENGINEER  
DATE: 5/2/78

APPROVED:  
*Ronald Z. Dateishi*  
ASSISTANT CHIEF, ENGINEERING  
DATE: 5/3/78

NO.	REVISION	APPROVED BY	DATE
	Supersedes Sh. DT103 approved 3/20/72	H.F.	5/3/78
NOT TO SCALE DATE: MAY, 1978			
SHEET NO. OF SHEETS DT 103			

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS**  
MISCELLANEOUS SIGNS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-(156)16	1979	56	236



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"



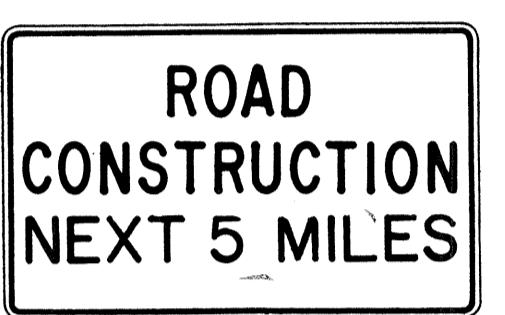
CW22-1b 48" x 48"



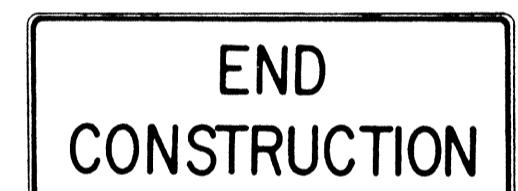
CW22-2 42" x 36"



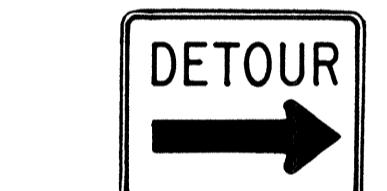
CW22-3 42" x 36"



CG 20-1(5) 60" x 36"



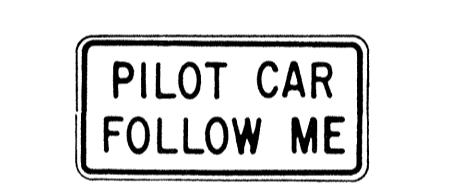
CG 20-2 60" x 24"



CM4-9(R) 30" x 24"



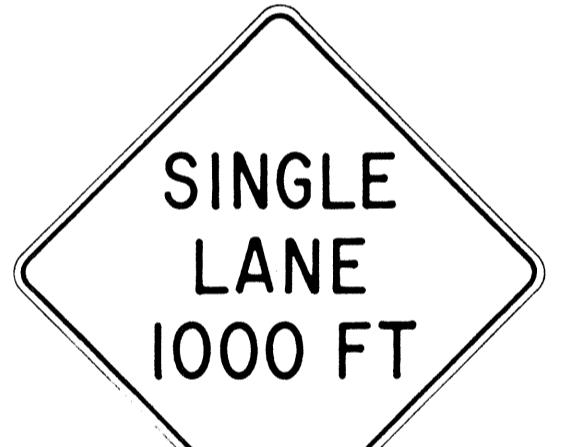
CM4-10(R) 48" x 18"



CG 20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

#### GENERAL NOTES

1. 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.
2. All construction signs shall be reflectorized.
3. All construction signs shall have  $\frac{3}{8}$ " bolt holes drilled at appropriate locations.
4. Numerals in ( ) indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
5. 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:  
*Eduardo Lanaka*  
TRAFFIC ENGINEER

3/21/72  
DATE

APPROVED:  
*John C. Salish*  
ASSISTANT CHIEF, ENGINEERING

3/23/72  
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 104 Approved 12-30-69	HT.	3/23/72
2	Revised General Note 1	HT.	10/16/74
3	Revised General Note 2	HT.	9-16-75
4	Revised General Note 2 and sign CG20-1(5)	HT.	9-14-76

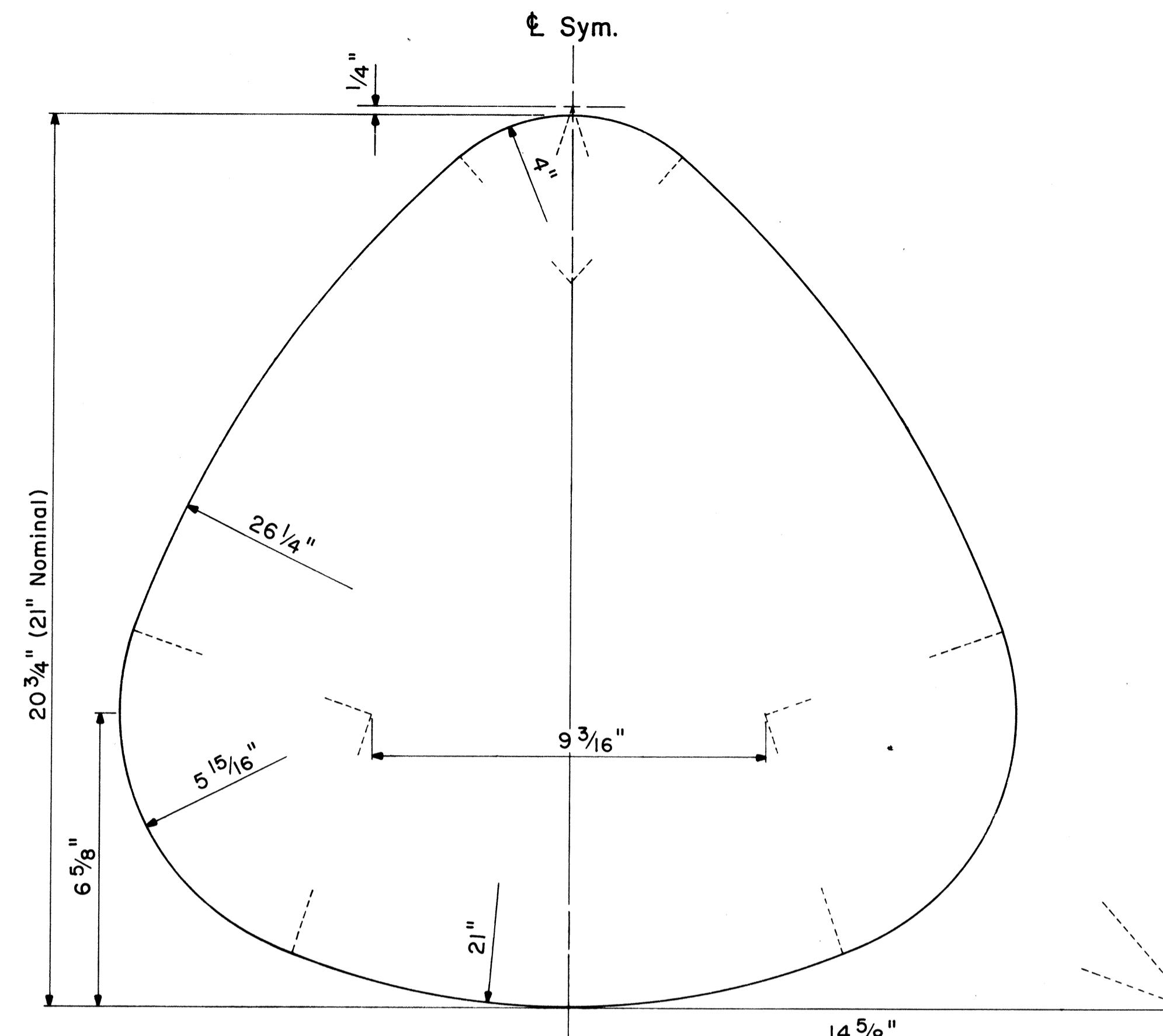
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

#### STANDARD DETAILS

#### CONSTRUCTION SIGNS

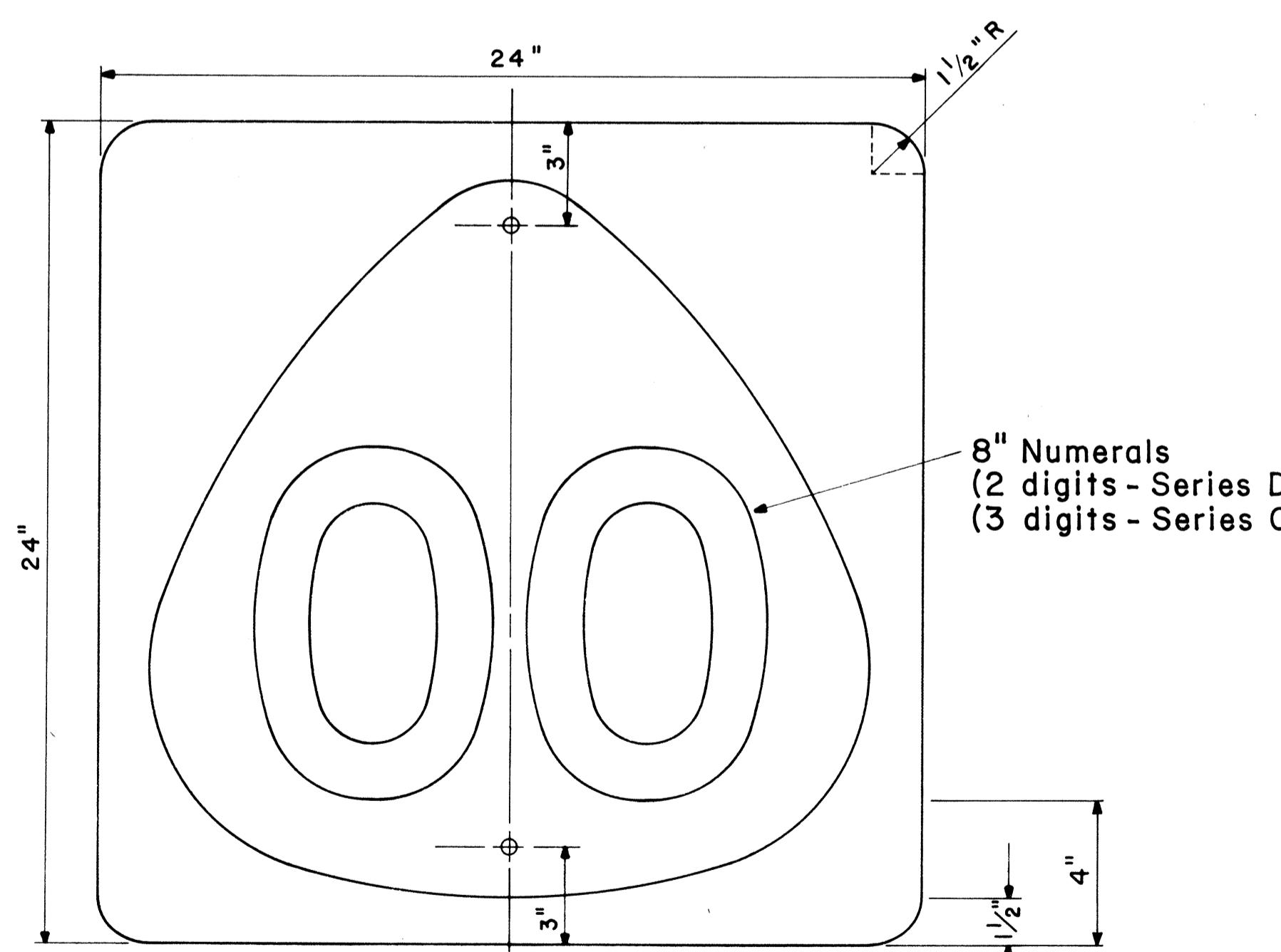
NOT TO SCALE  
SHEET No. OF SHEETS DT 104

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)-16	1979	57	236



STATE ROUTE MARKER DETAIL

Not to Scale

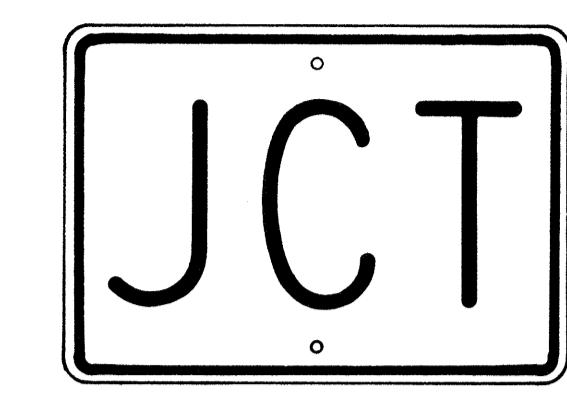


STATE ROUTE MARKER

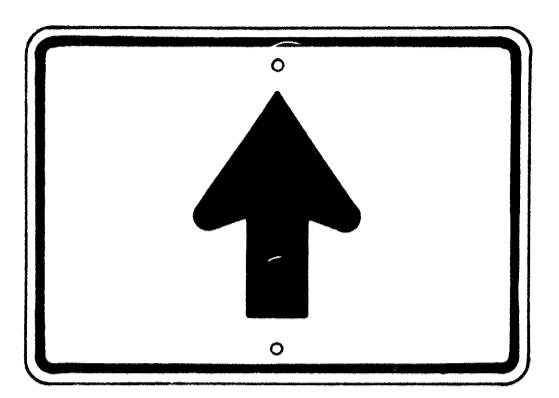
MI-6 (00) 24" x 24"

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

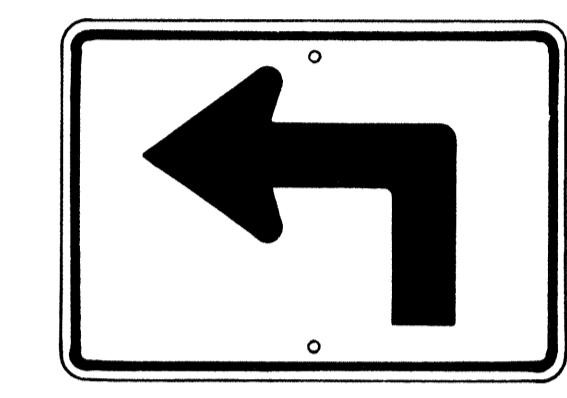
ORIGINAL PLAN	SURVEY PLOTTED BY
DRAWN BY	REARED BY
NOTE BOOK	QUANTITIES BY
No. _____	CHECKED BY



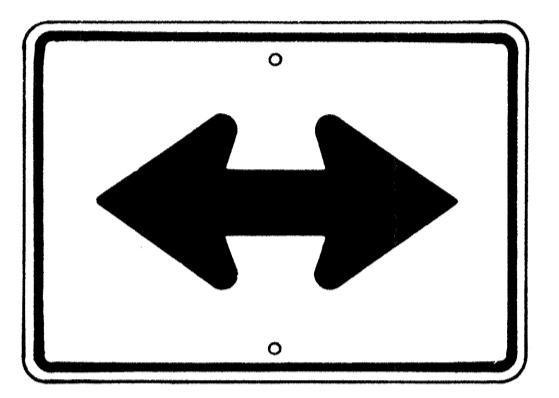
M2-1 21" x 15"



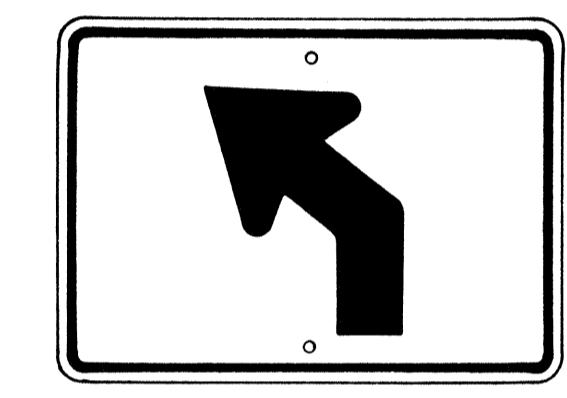
M6-3 21" x 15"



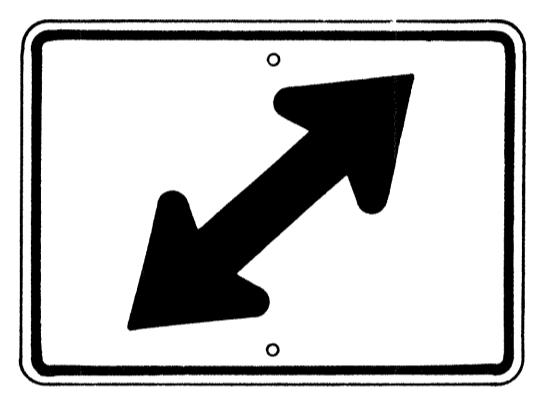
M5-1(L) 21" x 15"



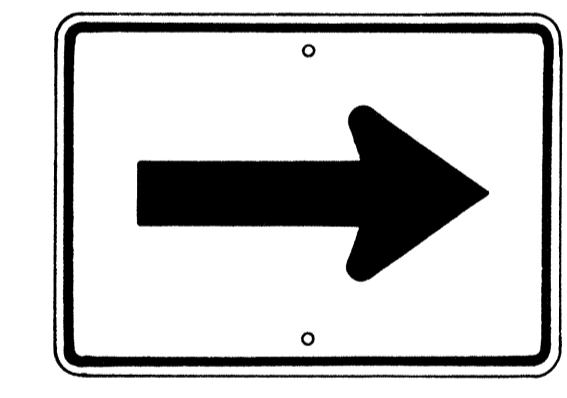
M6-4 21" x 15"



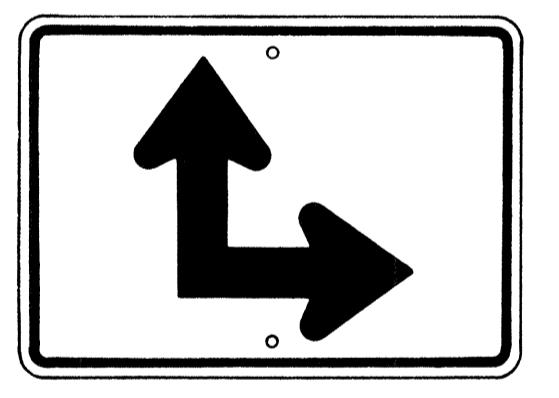
M5-2(L) 21" x 15"



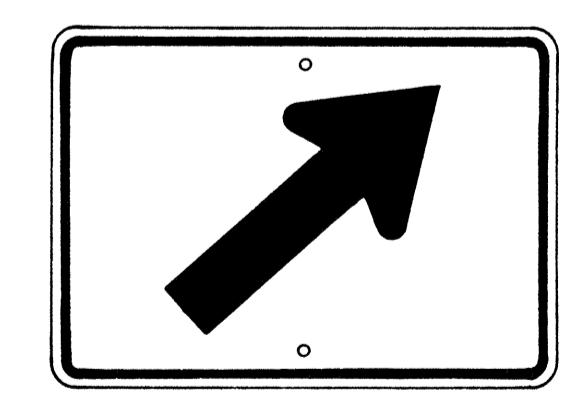
M6-5(R) 21" x 15"



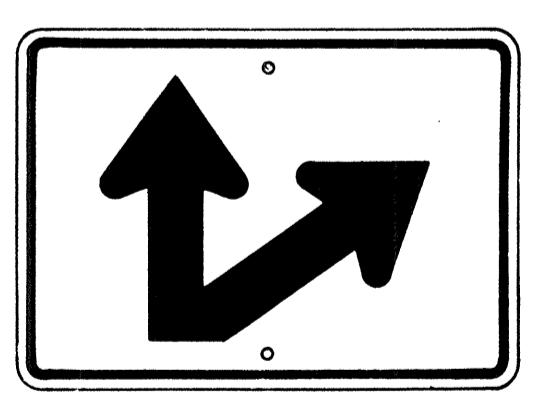
M6-1 21" x 15"



M6-6(R) 21" x 15"



M6-2(R) 21" x 15"



M6-7(R) 21" x 15"

### AUXILIARY MARKERS

Not to Scale



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



M4-1 24" x 12"



M4-2 24" x 12"



M4-3 24" x 12"



M4-5 24" x 12"



M4-6 24" x 12"



M4-7 24" x 12"



M4-8 24" x 12"

### GENERAL NOTES

- Marker details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, "Standard Alphabets for Highway Signs," 1966, and "Standard Highway Signs," 1972, and as amended.
- All markers shall be reflectorized unless otherwise specified.
- All markers shall have  $\frac{3}{8}$ " bolt holes drilled at appropriate locations.
- Numerals in ( ) indicates numerals to be inserted for marker message. (R) or (L) indicates right or left.
- Sign message of Cardinal Direction Marker (M3 series) shall be denoted by the following:  
M3-1 : NORTH  
M3-2 : EAST  
M3-3 : SOUTH  
M3-4 : WEST
- Markers prefixed with "IM" on the plans shall have a white legend on a blue background.

APPROVAL RECOMMENDED:

*Etsushi Tanaka*  
TRAFFIC ENGINEER

6/6/72  
DATE

APPROVED:

*John S. Ozaidie*  
ASSISTANT CHIEF, ENGINEERING

C-1-12  
DATE

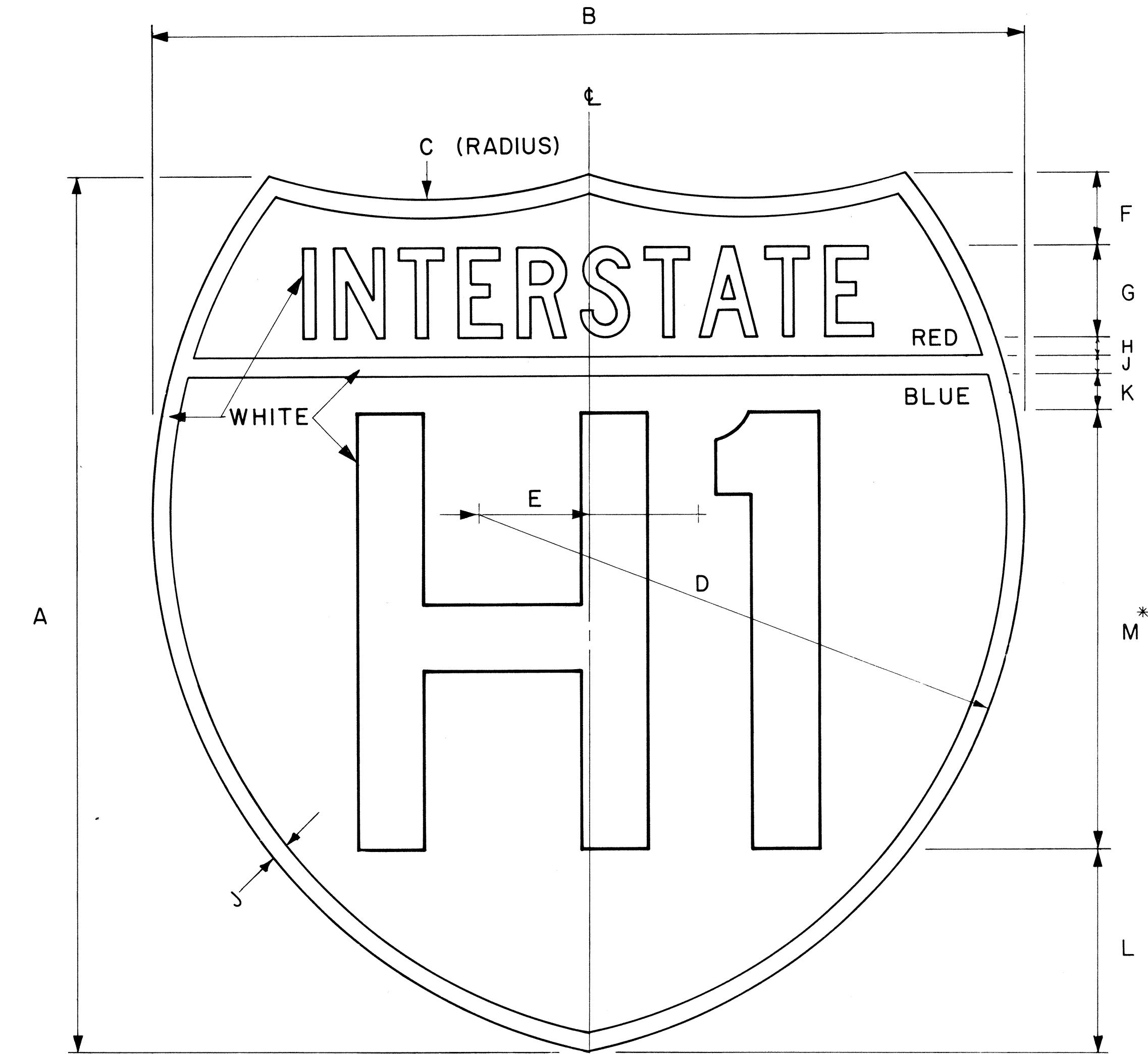
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sh. DT 105 Approved 12-30-69	H.C.	6/1/72
2	Revised General Note I	H.C.	10/16/14

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

### STANDARD DETAILS STATE ROUTE MARKER AND AUXILIARY MARKERS

Scale: As Shown  
SHEET NO. OF SHEETS DT 105

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)16	1979	58	236



INTERSTATE ROUTE MARKER  
IM-I( )

Scale:  $\frac{3}{8}$ " = 1"

SURVEY PLOTTED BY \_\_\_\_\_  
 DRAWN BY \_\_\_\_\_  
 TRACED BY \_\_\_\_\_  
 DESIGNED BY \_\_\_\_\_  
 QUANTITIES BY \_\_\_\_\_  
 CHECKED BY \_\_\_\_\_  
  
 ORIGINAL PLAN  
 NOTE BOOK No. \_\_\_\_\_

INTERSTATE ROUTE MARKER SCHEDULE (INCHES)												
SIZE ( )	A	B	C	D	E	F	G	H	J	K	L	M
1	2 4	2 4	1 5	1 5	3	2	2 1/2C	1/2	1/2	1	5 1/2	12D
2	3 6	3 6	2 2 1/2	2 2 1/2	4 1/2	3	3 3/4C	3/4	3/4	1 1/2	8 1/4	18D
3	4 8	4 8	3 0	3 0	6	4	5C	1	1	2	11	24D

\* If letters and numerals cannot be accommodated within available space, Series C letters may be used.

### GENERAL NOTES

1. Interstate route marker details shall conform to the latest FHWA publications:
  - a. "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
  - b. "Standard Alphabets for Highway Signs," and as amended.
  - c. "Standard Highway Signs," and as amended.
2. All Interstate route markers shall be reflectorized with reflective sheeting.
3. All Interstate route markers shall have  $\frac{3}{8}$ " bolt holes drilled at appropriate locations unless otherwise specified.
4. The Interstate route marker shall be a cut-out shield in a red, white and blue design as shown on the plans.

APPROVAL RECOMMENDED:

*Euchi Tanaka*  
TRAFFIC ENGINEER      4/17/78  
DATE

APPROVED:

*Herbert S. Radish*  
ASSISTANT CHIEF, ENGINEERING      4/18/78  
DATE

NO.	REVISION	APPROVED BY	DATE
1	Replaces DT106 Approved 12/30/69.	HR.	4-18-78

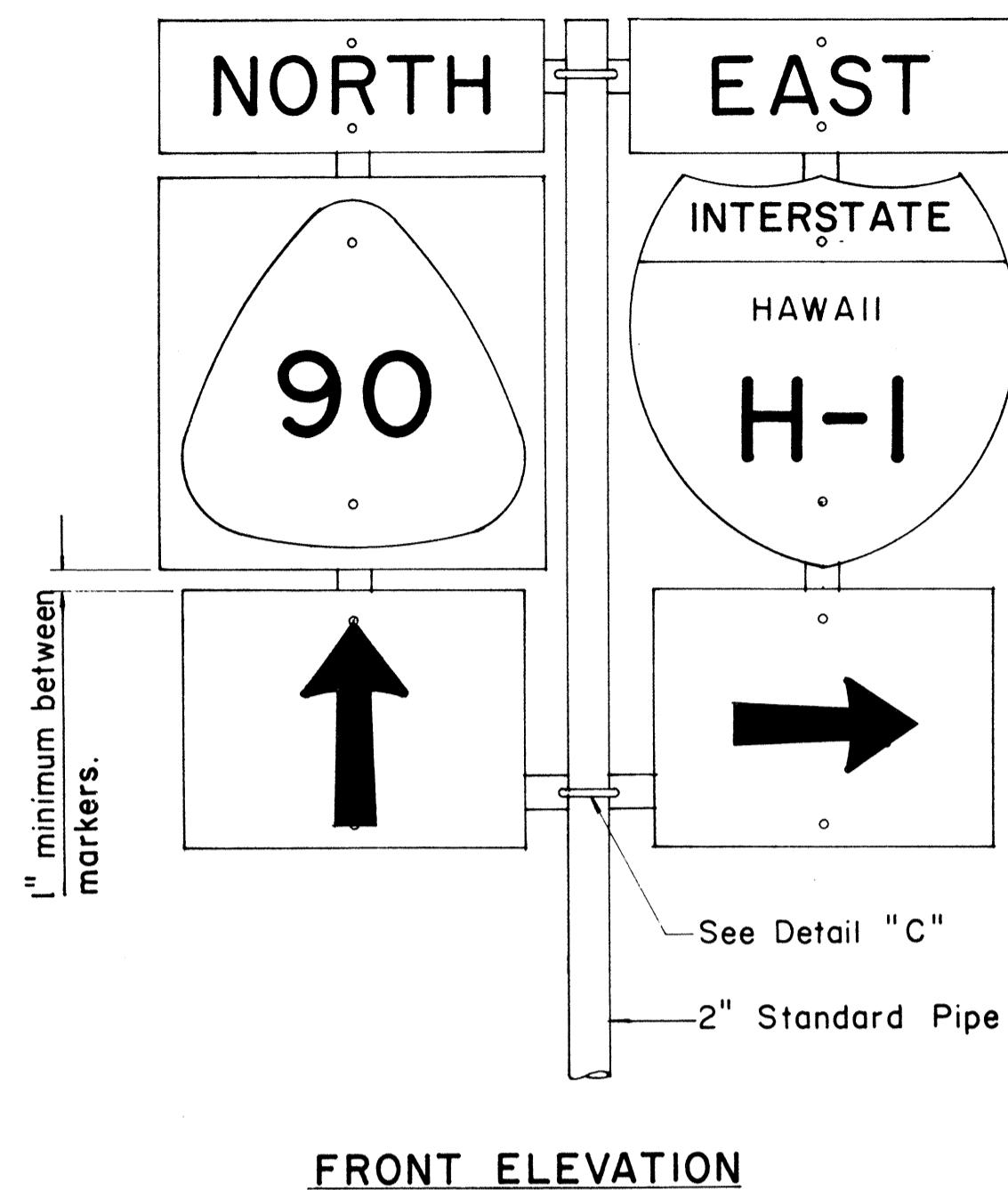
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

### STANDARD DETAILS

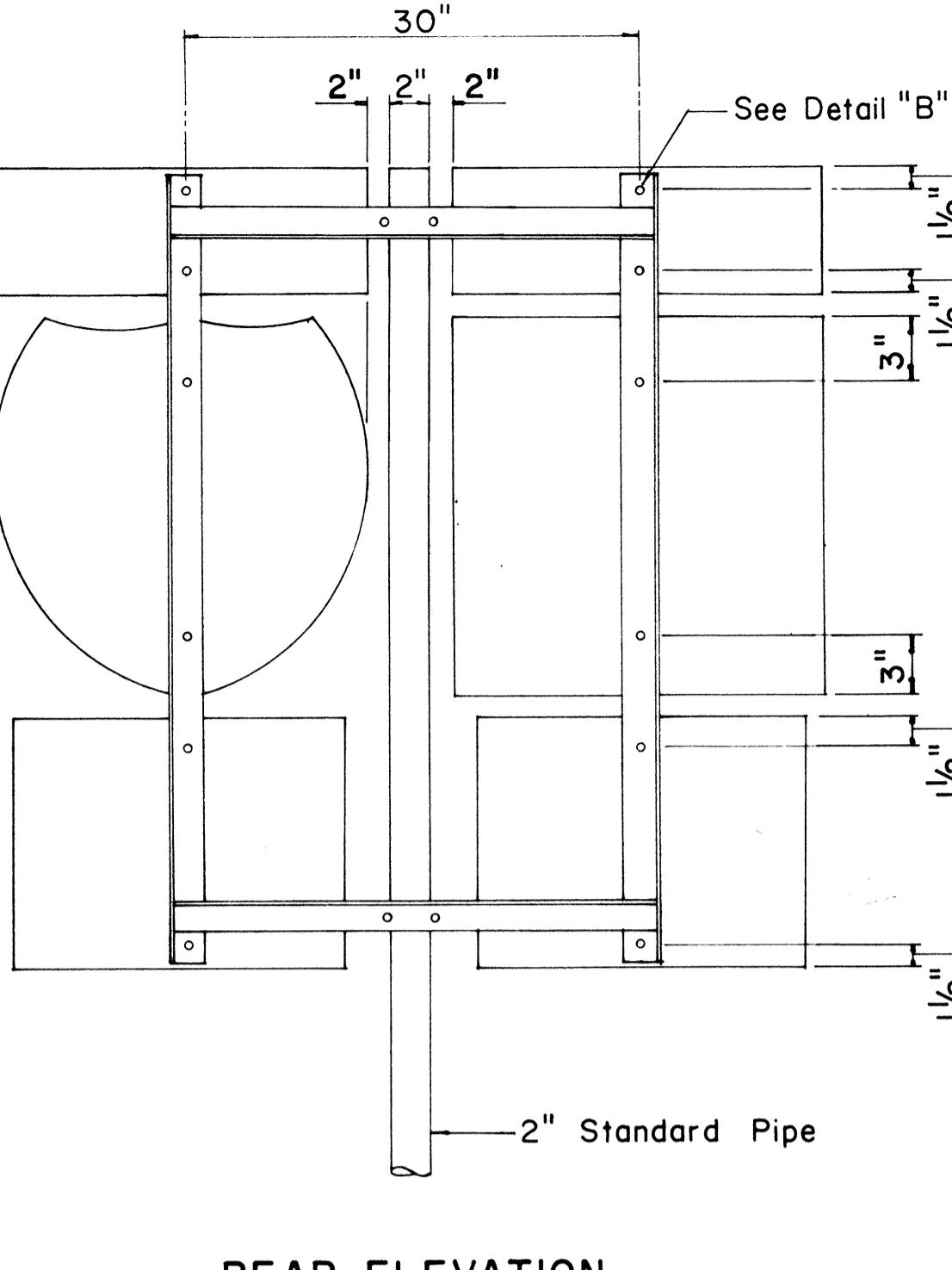
#### INTERSTATE ROUTE MARKER

Scale:  $\frac{3}{8}$ " = 1"      Date: January, 1978  
SHEET NO. OF SHEETS DT106

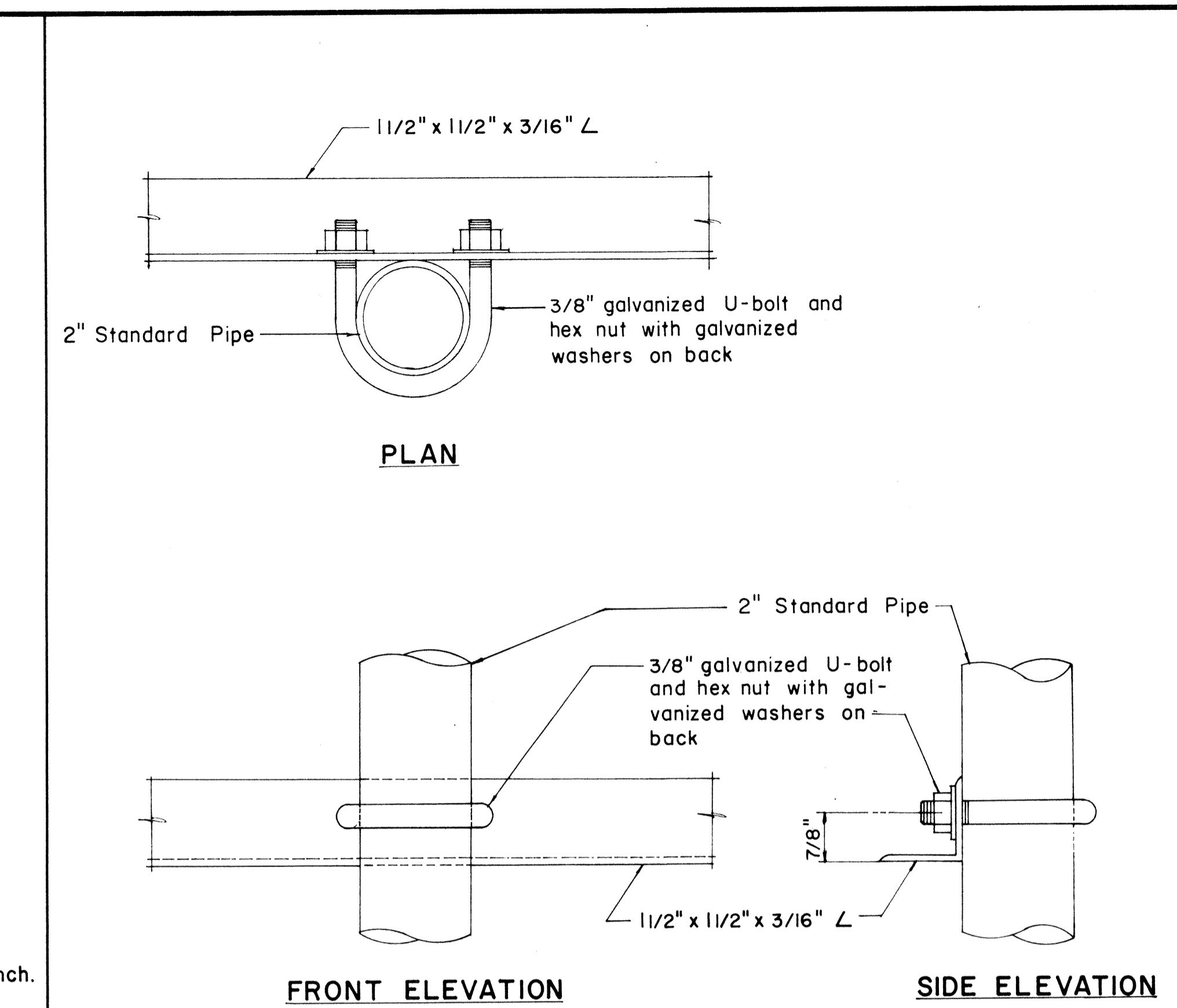
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)-16	1979	59	236



**TYPE "B" ASSEMBLY**  
Not to Scale

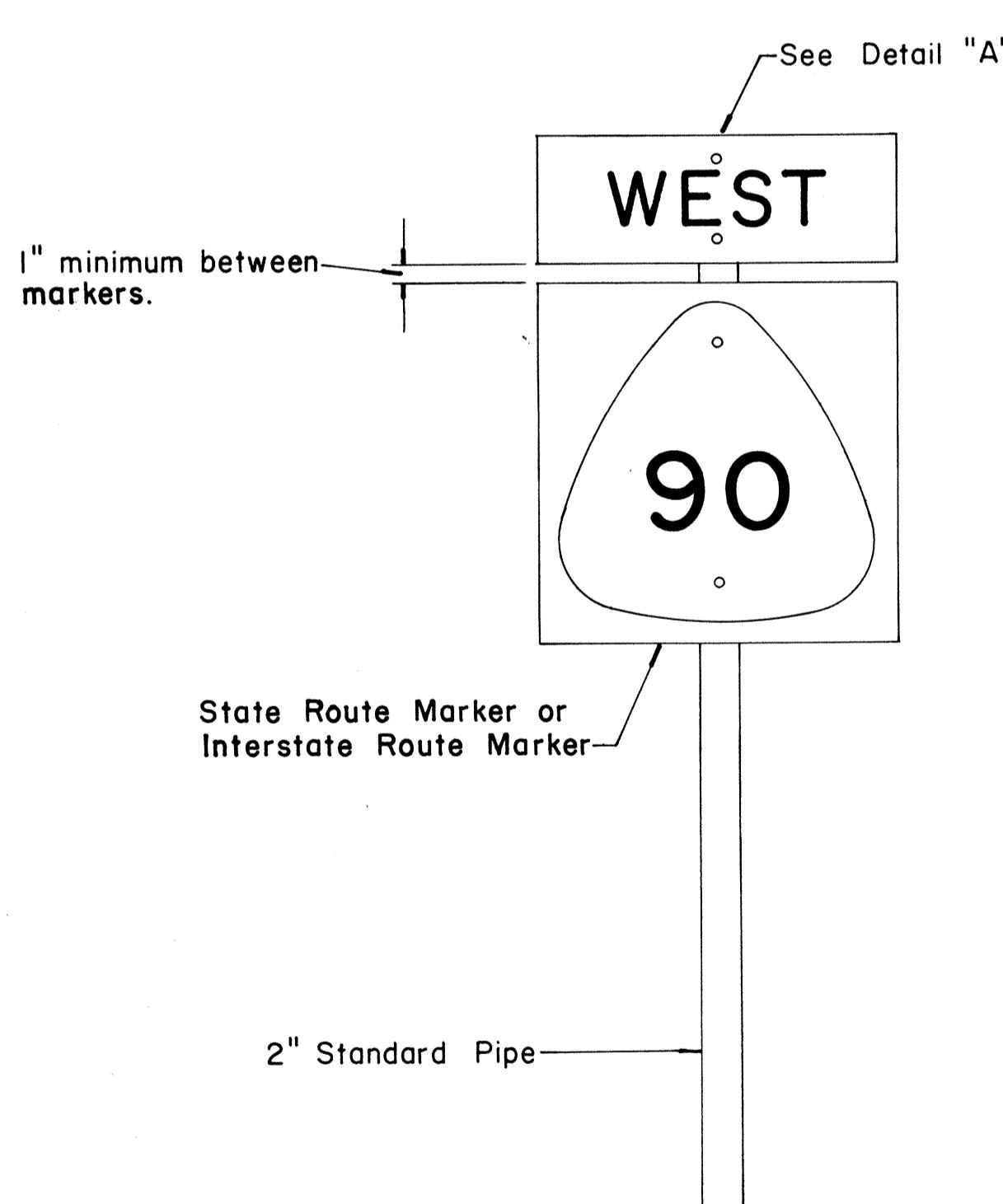


**REAR ELEVATION**

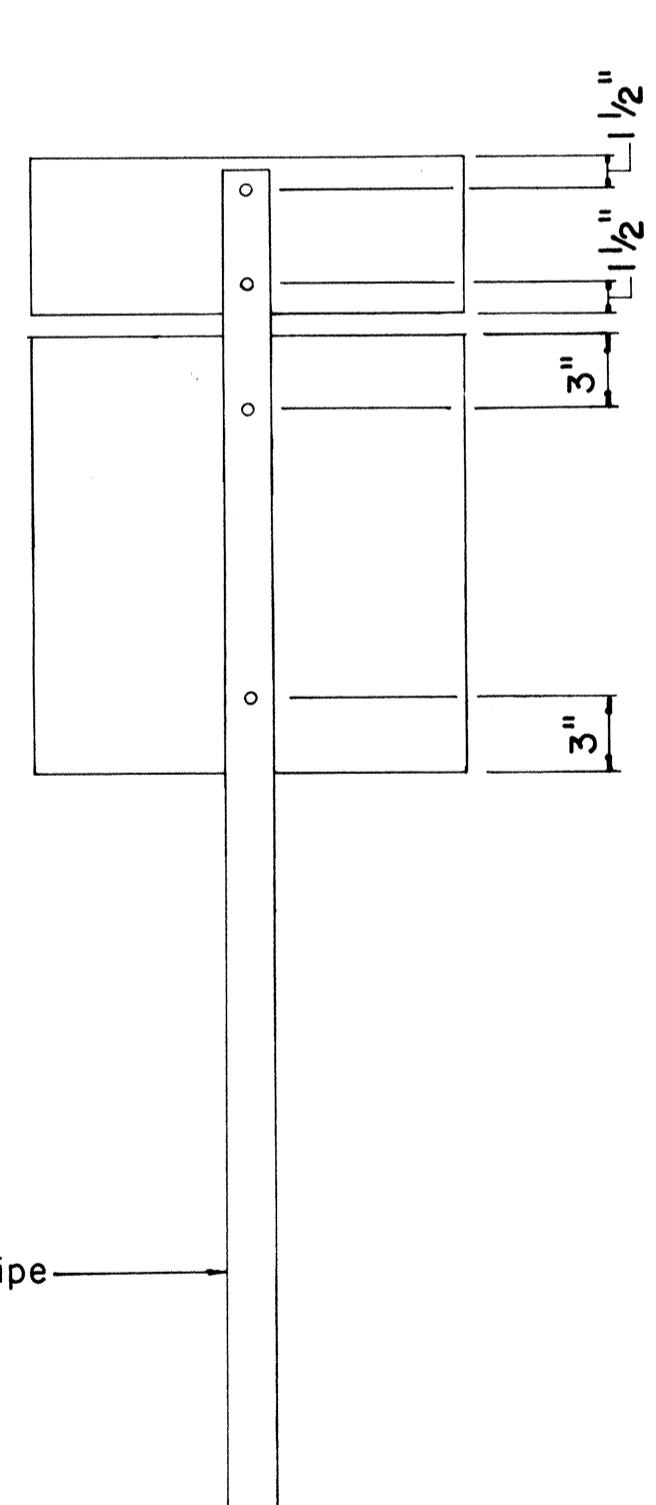


**DETAIL "C"**

**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.



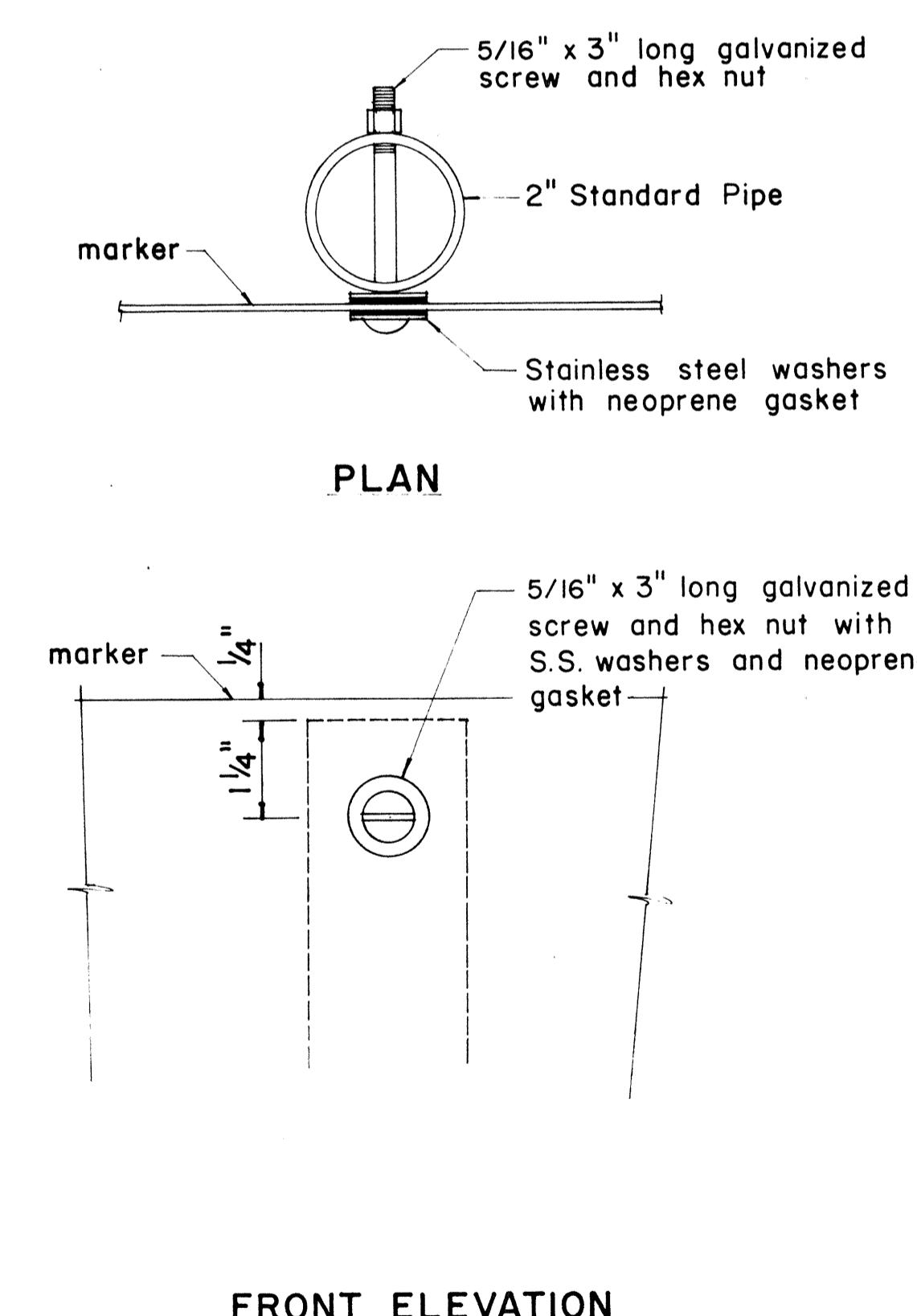
**FRONT ELEVATION**



**REAR ELEVATION**

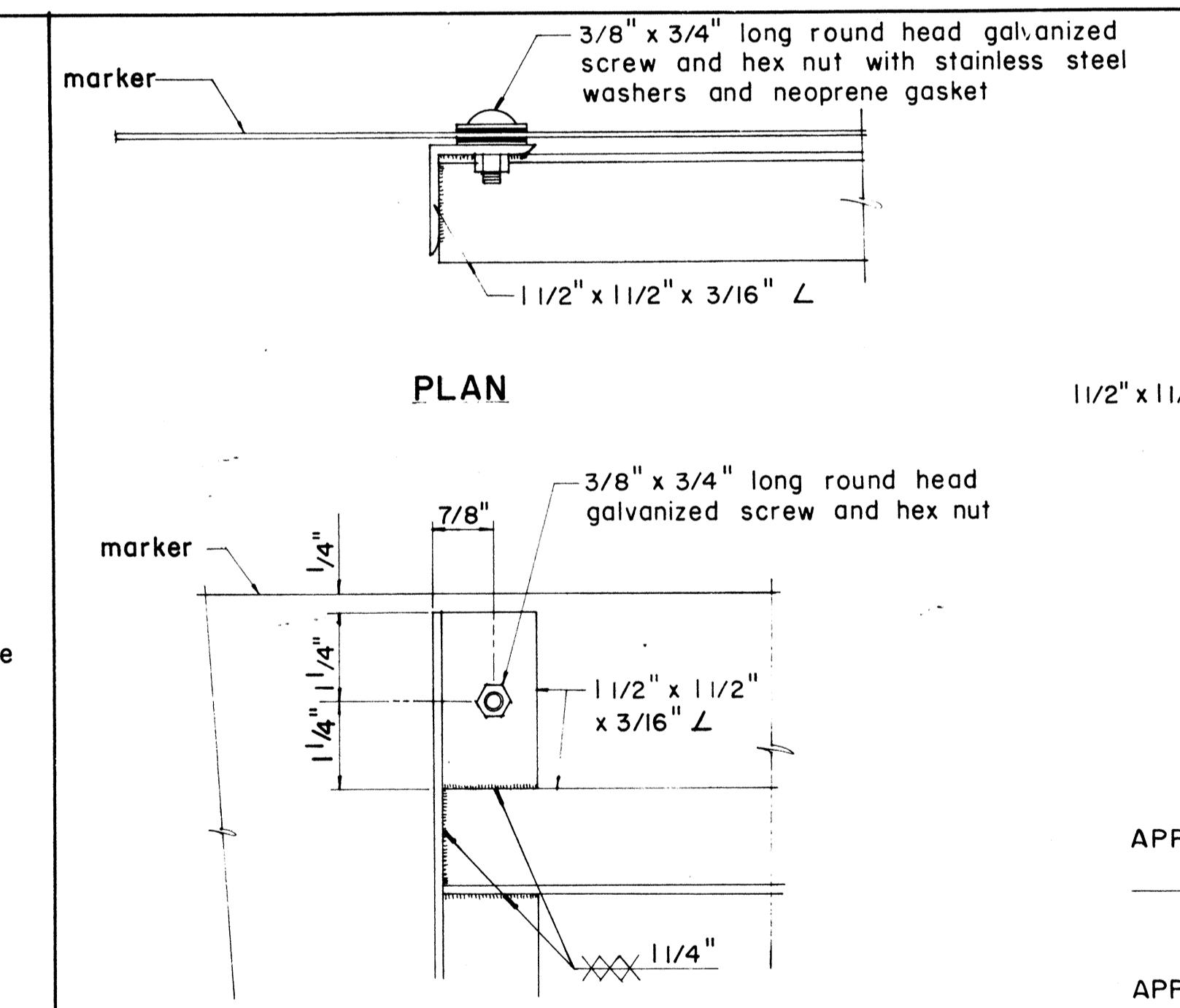
**TYPE "A" ASSEMBLY**  
Not to Scale

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



**FRONT ELEVATION**

**DETAIL "A"**



**DETAIL "B"**

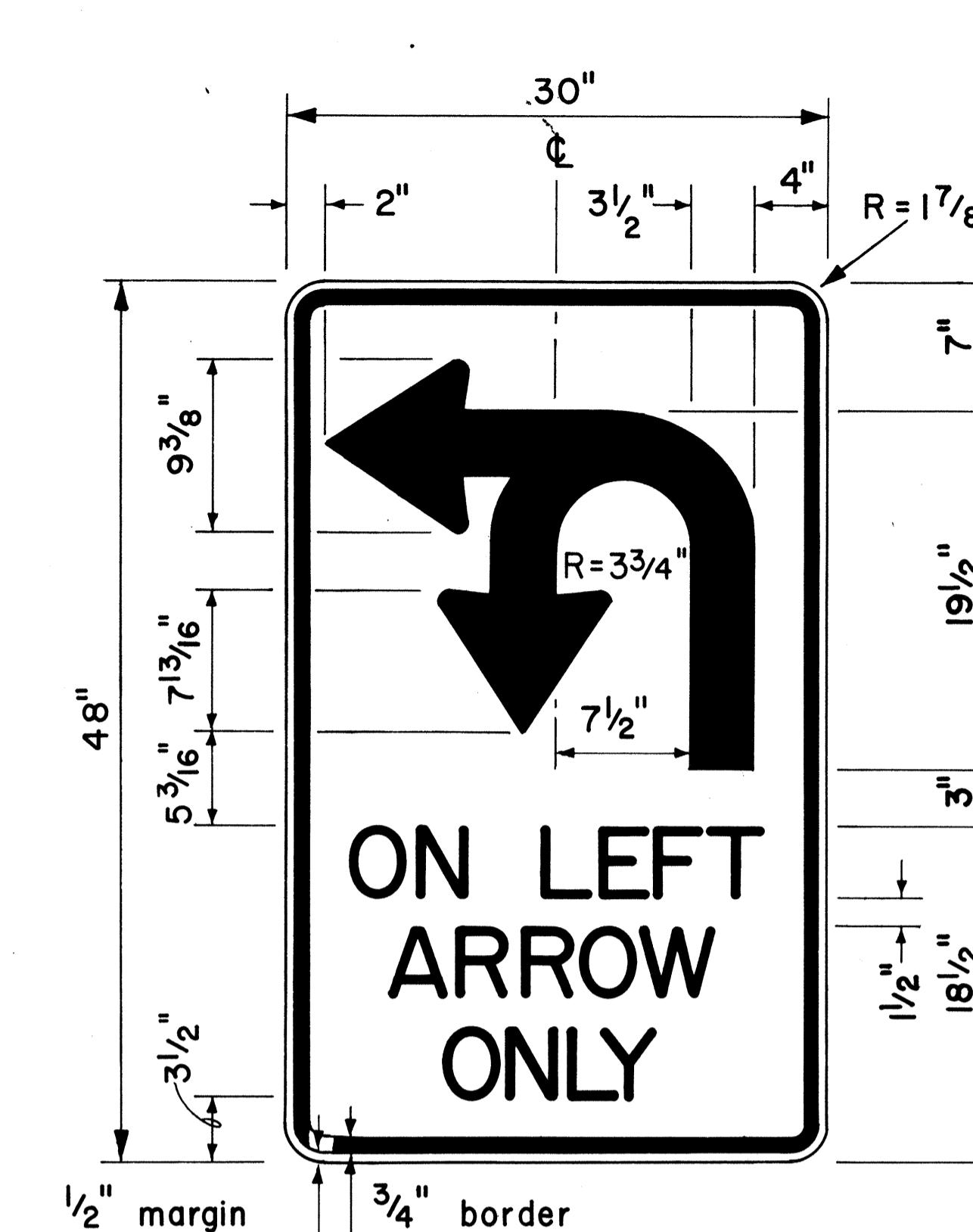
APPROVAL RECOMMENDED:  
*Etsushi Tanaka*  
TRAFFIC ENGINEER  
DATE *12/29/69*

APPROVED:  
*John C. Parker*  
ASSISTANT CHIEF, ENGINEERING  
DATE *12-30-69*

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION			
STANDARD DETAILS			
ROUTE MARKER ASSEMBLIES			
Scale: As Shown			
SHEET No. OF SHEETS DT 107			

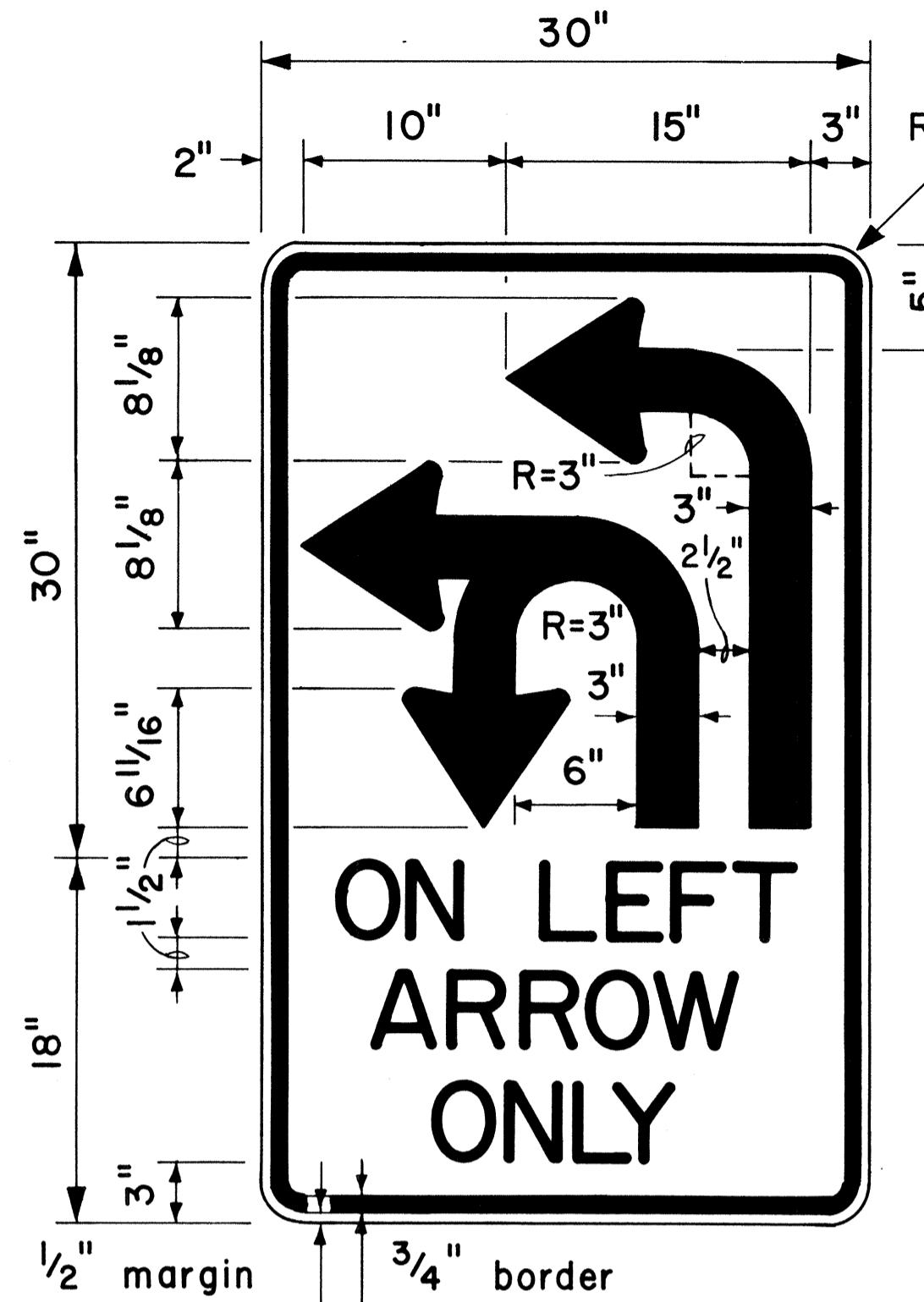


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(56)-16	1979	61	236



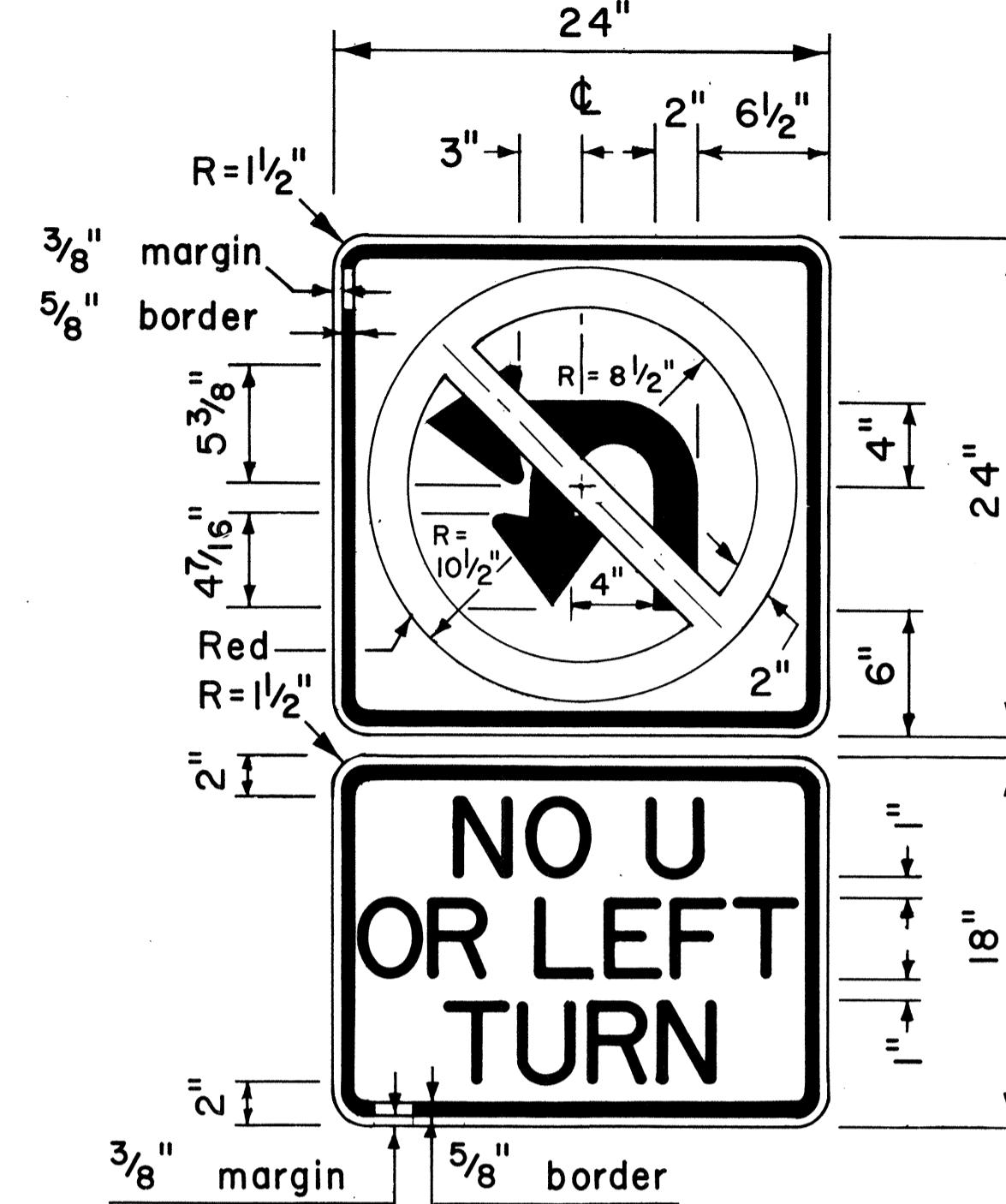
4" Series D Letters

R17-1



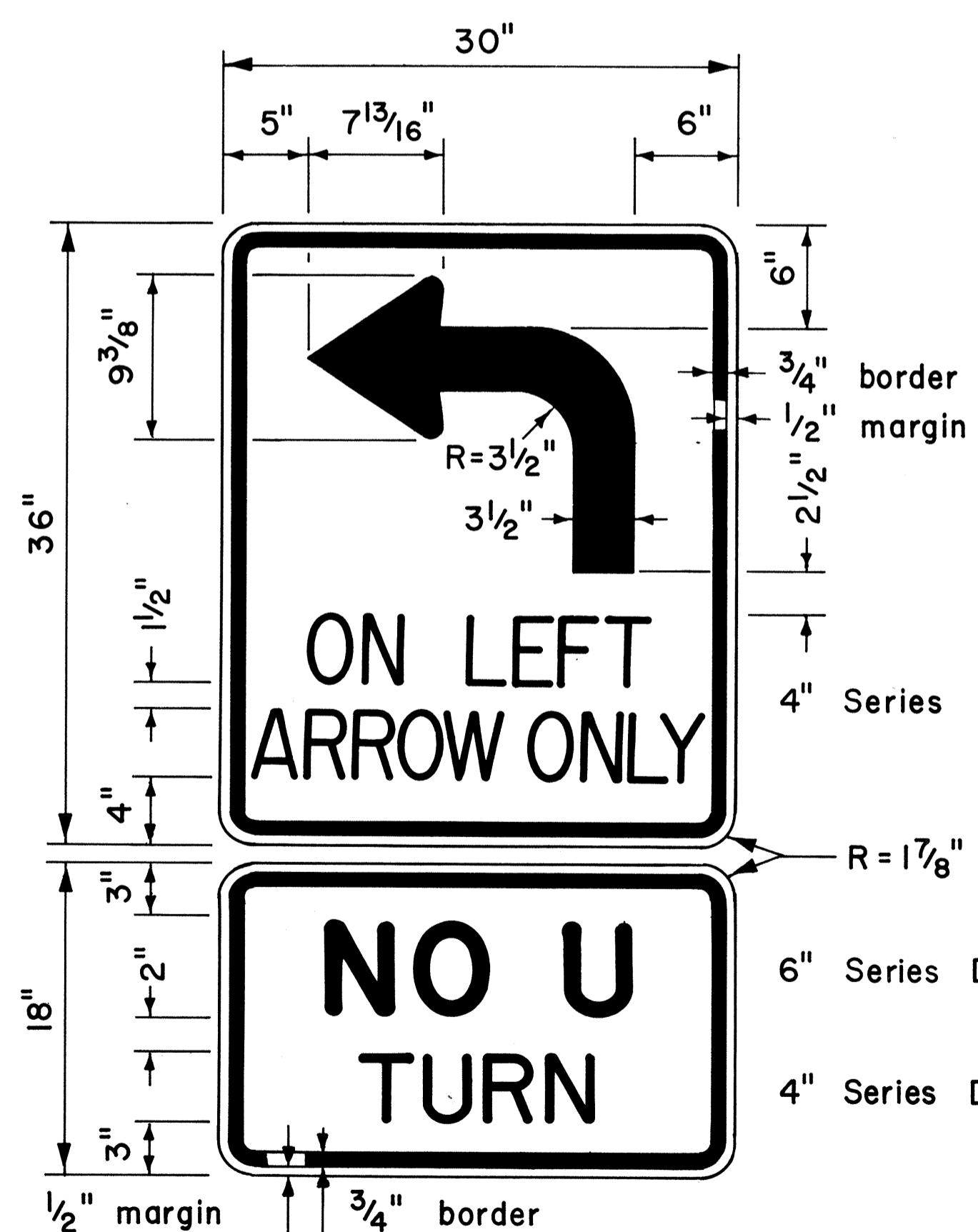
4" Series D Letters

R17-2



4" Series D Letters

R3-4b



4" Series C Letters

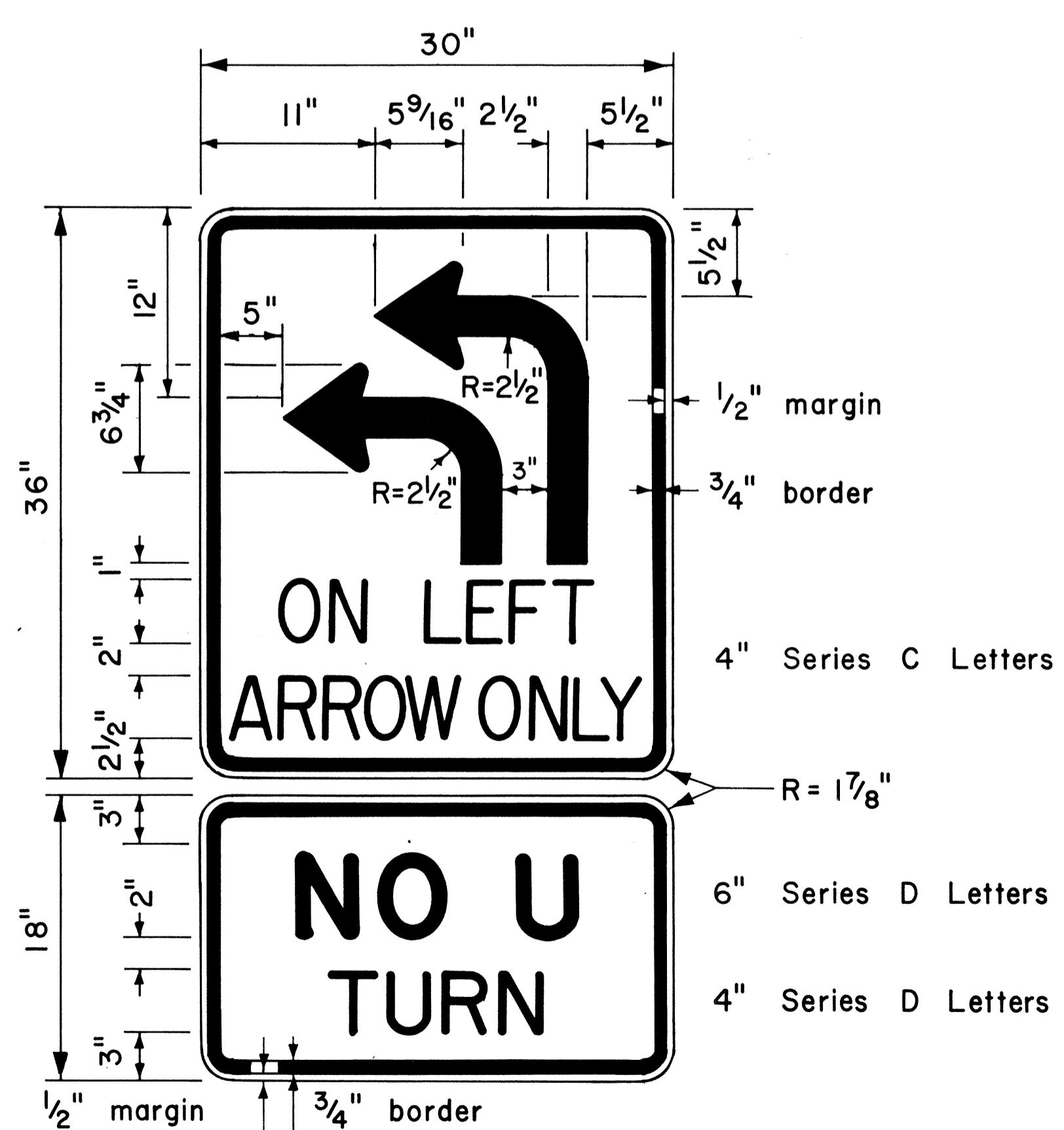
R = 1 7/8"

6" Series D Letters

4" Series D Letters

NO U  
TURN

R17-3



4" Series C Letters

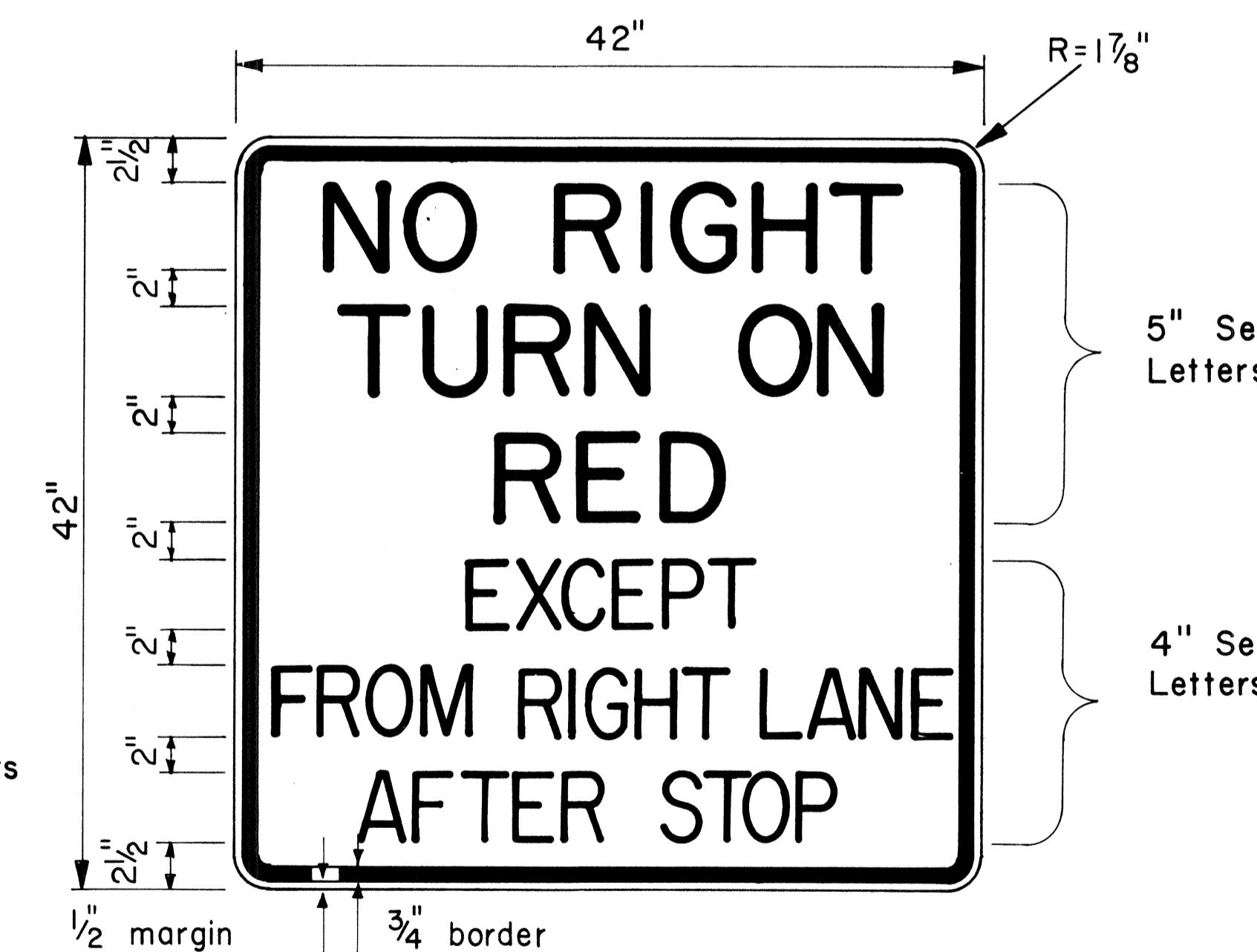
R = 1 7/8"

6" Series D Letters

4" Series D Letters

NO U  
TURN

R17-4



RIO-1d

APPROVAL RECOMMENDED:  
*Etsushi Tanaka*  
TRAFFIC ENGINEER  
DATE: 8/16/77

APPROVED:

*Herbier Zaleishi*  
ASSISTANT CHIEF, ENGINEERING  
DATE: 8/16/77

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS

MISCELLANEOUS

INTERSECTION SIGNS

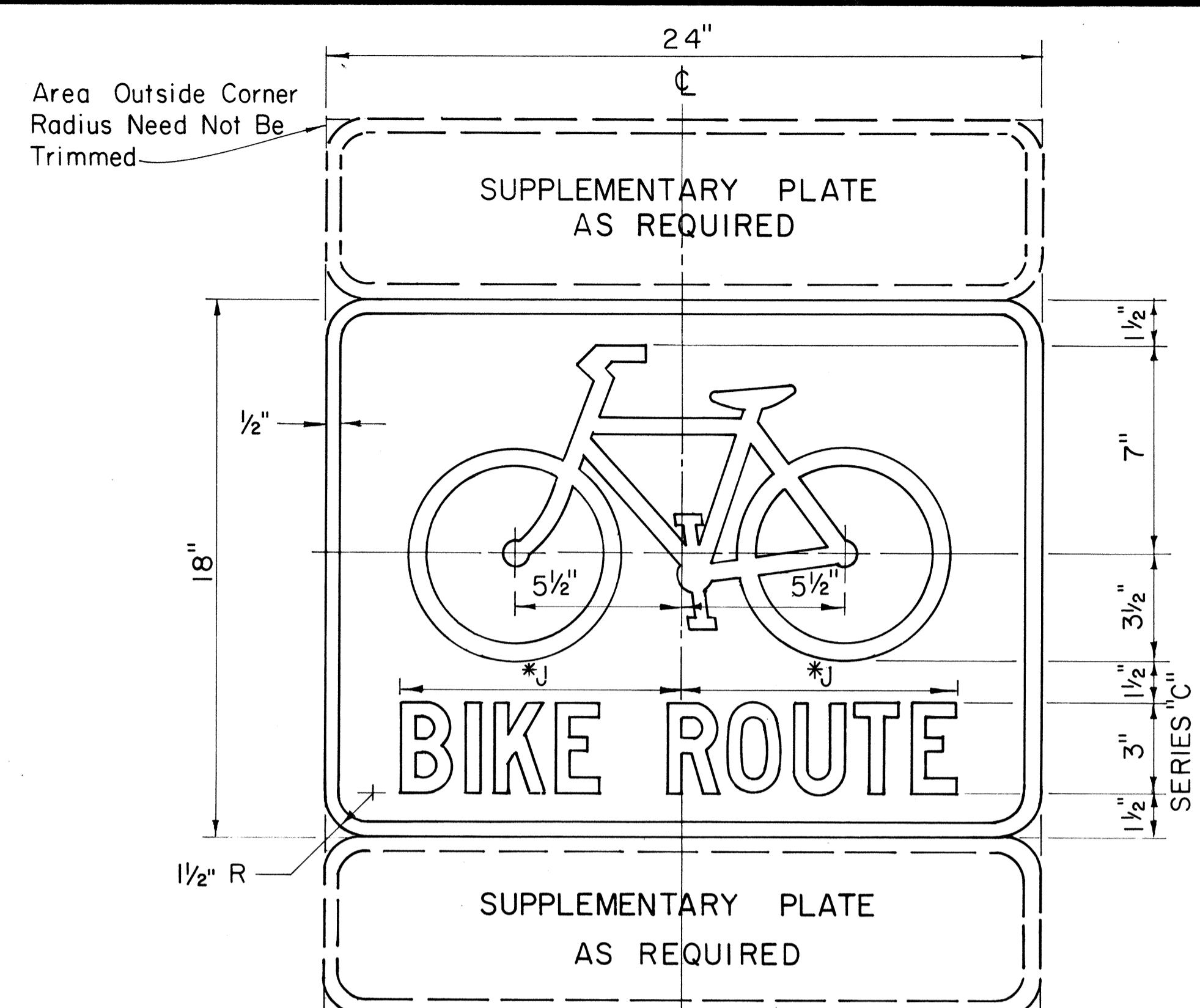
Scale: 1 1/2" = 1'-0" Date: Aug., 1977

SHEET NO. OF SHEETS DT 112

GENERAL NOTES

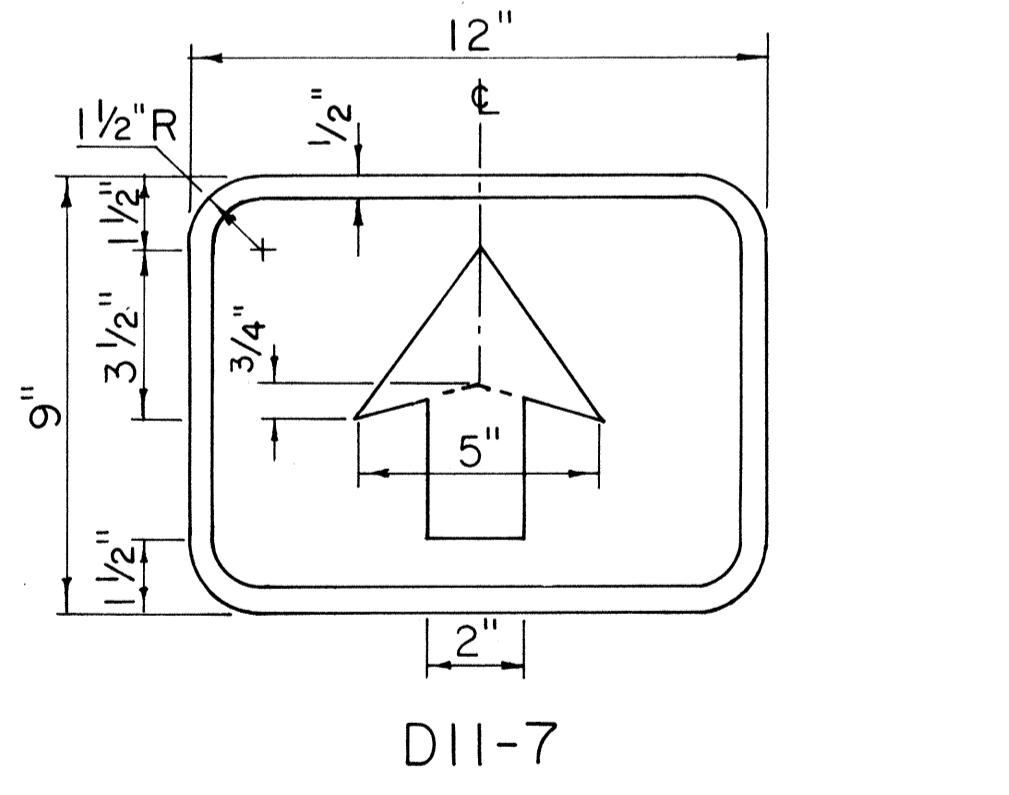
- Sign details shall conform to the latest editions of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways," and "Standard Highway Signs," and as amended.
- All regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH(156)16	1979	62	236

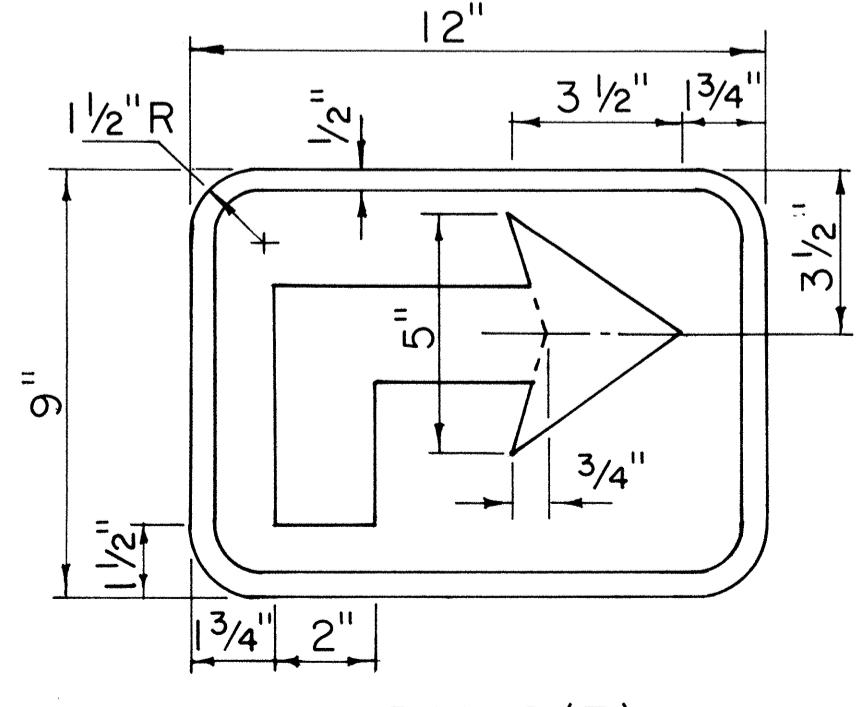


BIKE ROUTE SIGN

Scale: 3" = 1'-0"



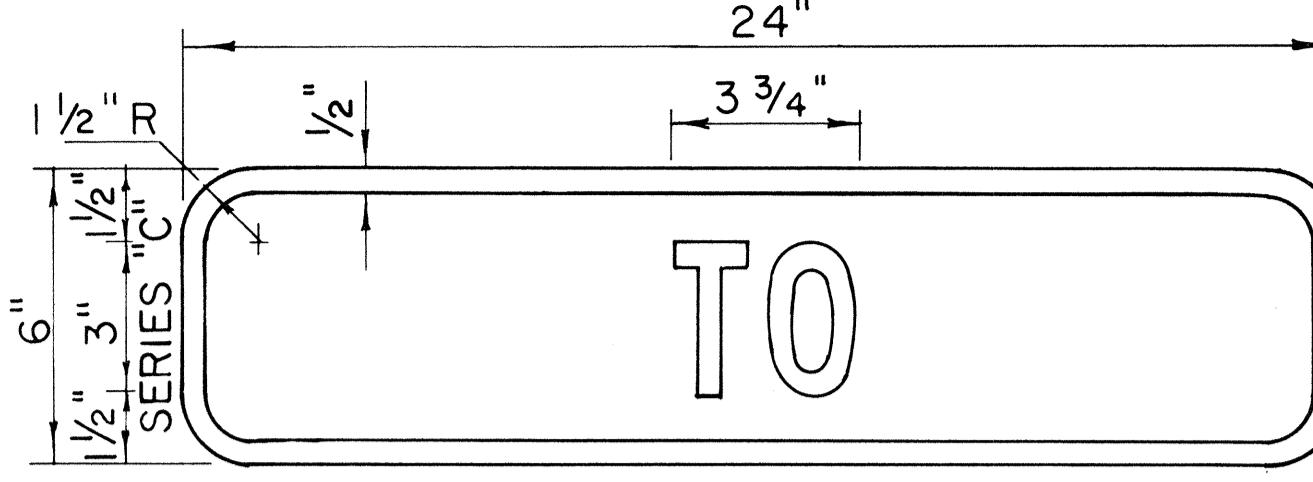
DII-7



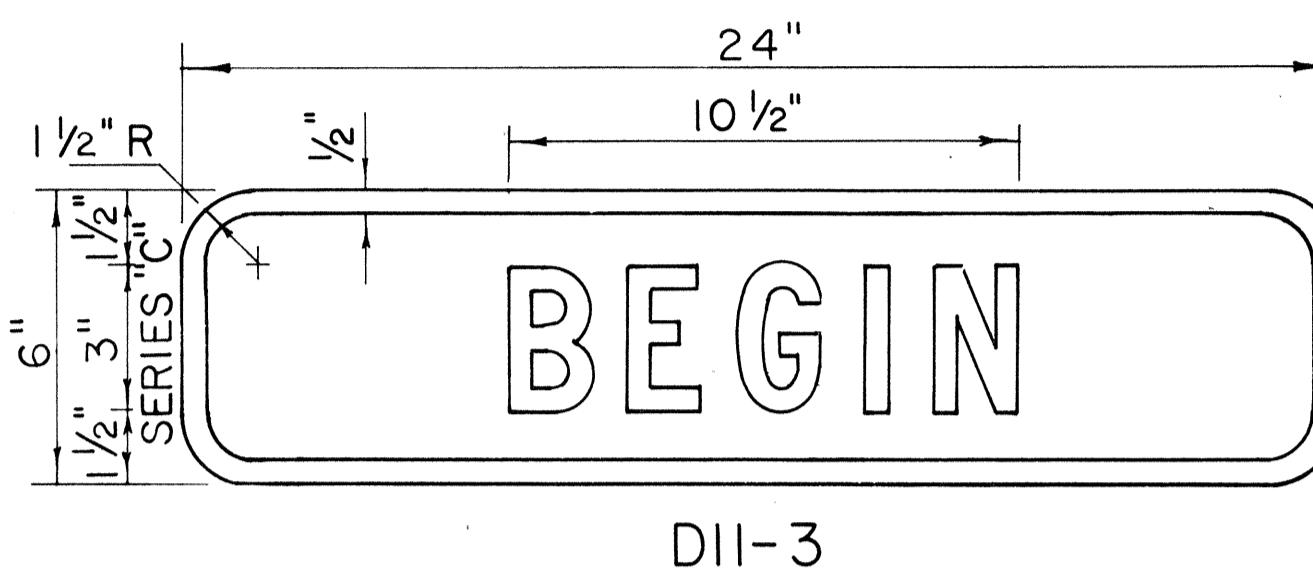
DII-8(R)

TYPICAL INSTALLATION

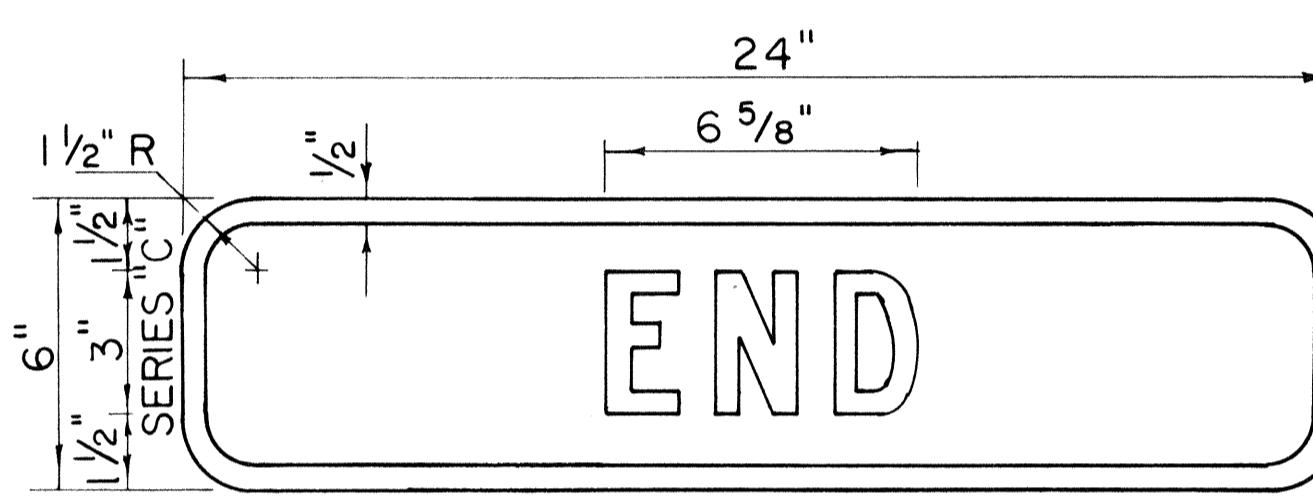
Scale: 3/8" = 1'-0"



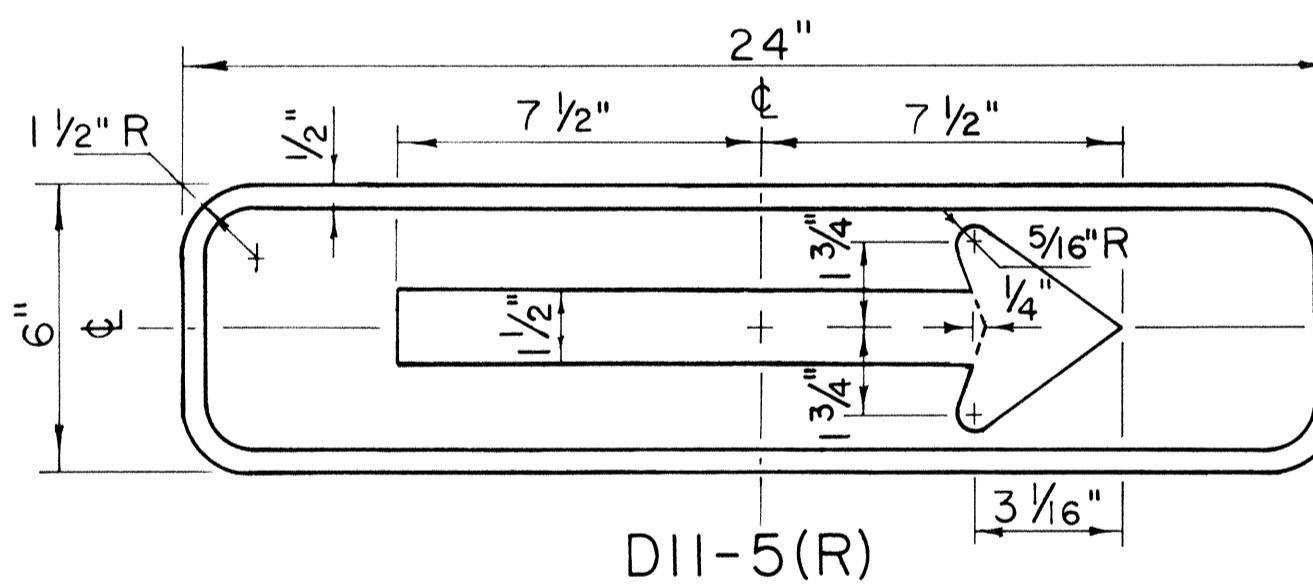
DII-2



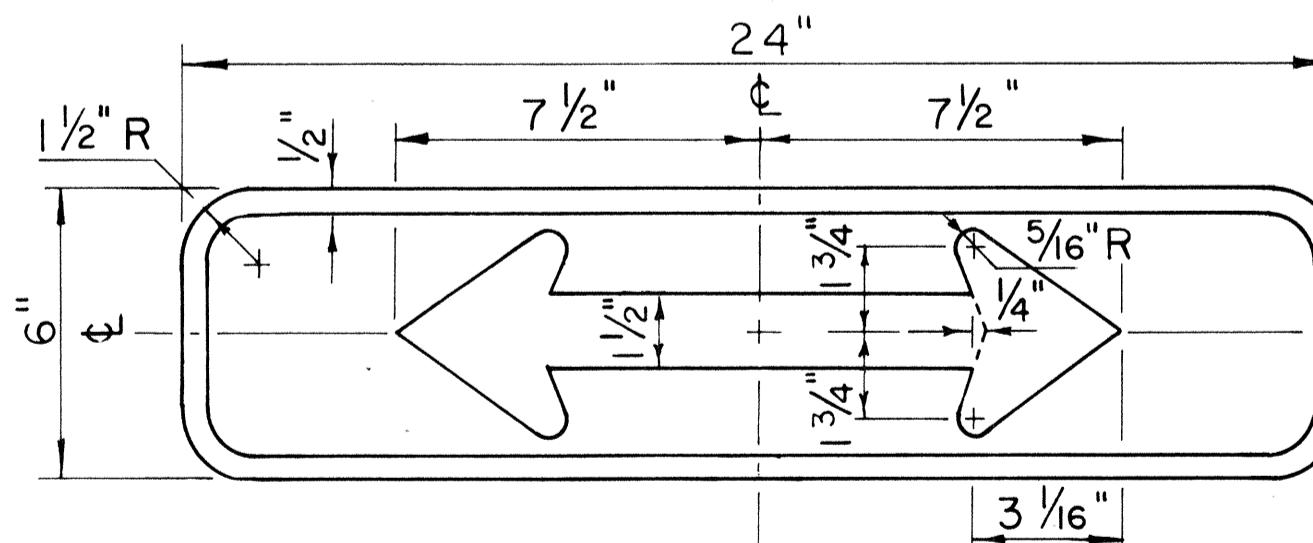
DII-3



DII-4



DII-5(R)



DII-6

SUPPLEMENTARY PLATES

Scale: 3" = 1'-0"

## GENERAL NOTES

### BIKE ROUTE SIGN & SUPPLEMENTARY PLATES

1. Sign details shall conform to the latest edition of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways", "Standard Highway Signs" and "Standard Alphabets for Highway Signs" and as amended.
2. Legend and borders shall be white (reflectorized) on a green (reflectorized) background.
3. Drill 3/8"  $\phi$  bolt holes (for mounting) at appropriate locations.
4. When Supplementary Plates (DII-2 to DII-6 only) are required with Bike Route Sign (DII-1 or Alternate), the Sign Assembly shall be mounted on a single metal plate (24" x 24" or 24" x 30") and shall be arranged as shown on the plans.
5. Alternate sign messages shall be denoted by the following:  
 DII-1a: Bike Lane  
 DII-1b: Bike Path  
 DII-1c: Bikeway

Dimension "J" varies. Visually center Alternate message.

Scale: As Shown

June 1977

SHEET NO. OF SHEETS DT114

62

APPROVAL RECOMMENDED:  
 TRAFFIC ENGINEER  
 DATE

APPROVED:  
 ASSISTANT CHIEF, ENGINEERING  
 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS**  
BIKE ROUTE SIGN  
& SUPPLEMENTARY PLATES

Scale: As Shown

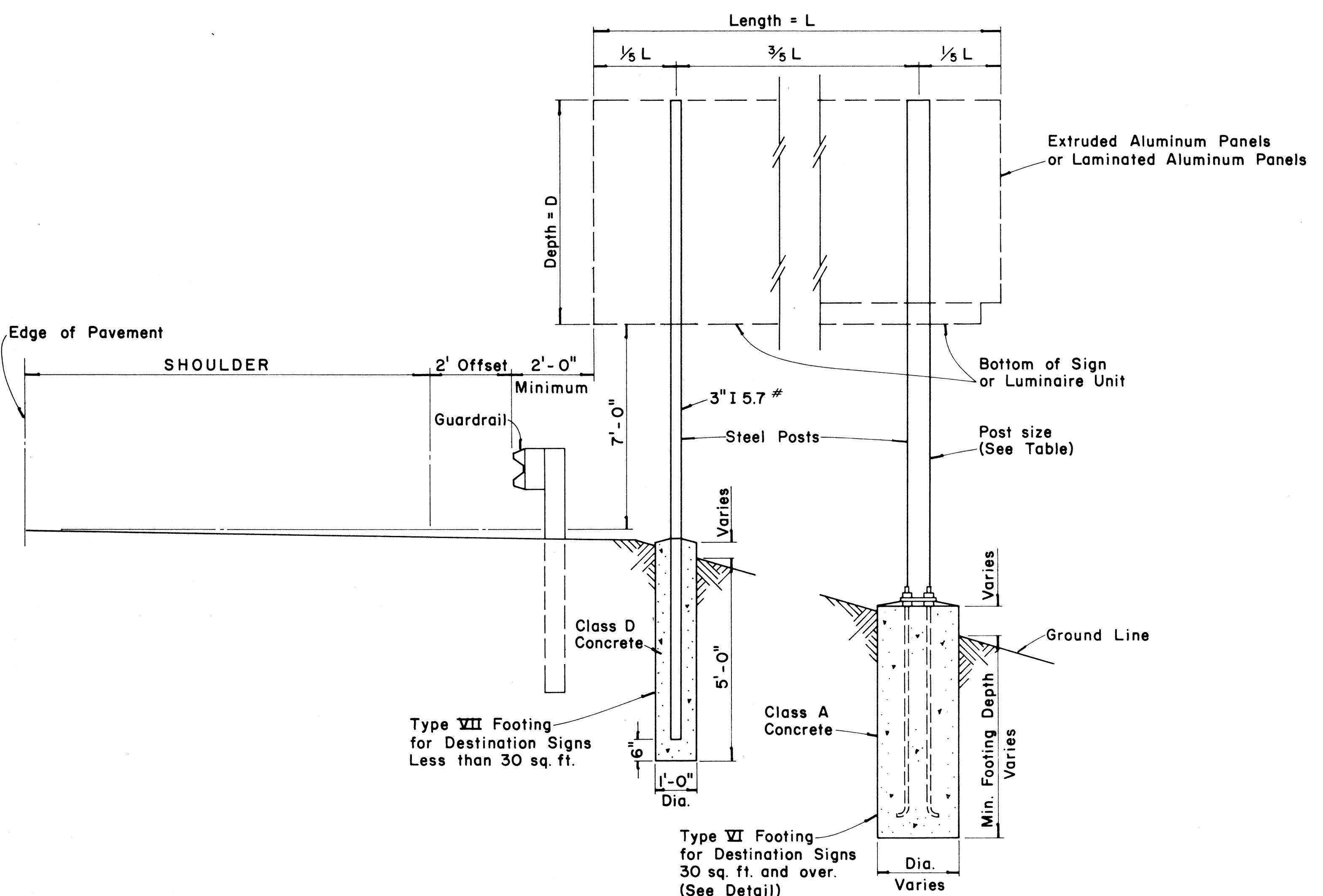
June 1977

SHEET NO. OF SHEETS DT114

62

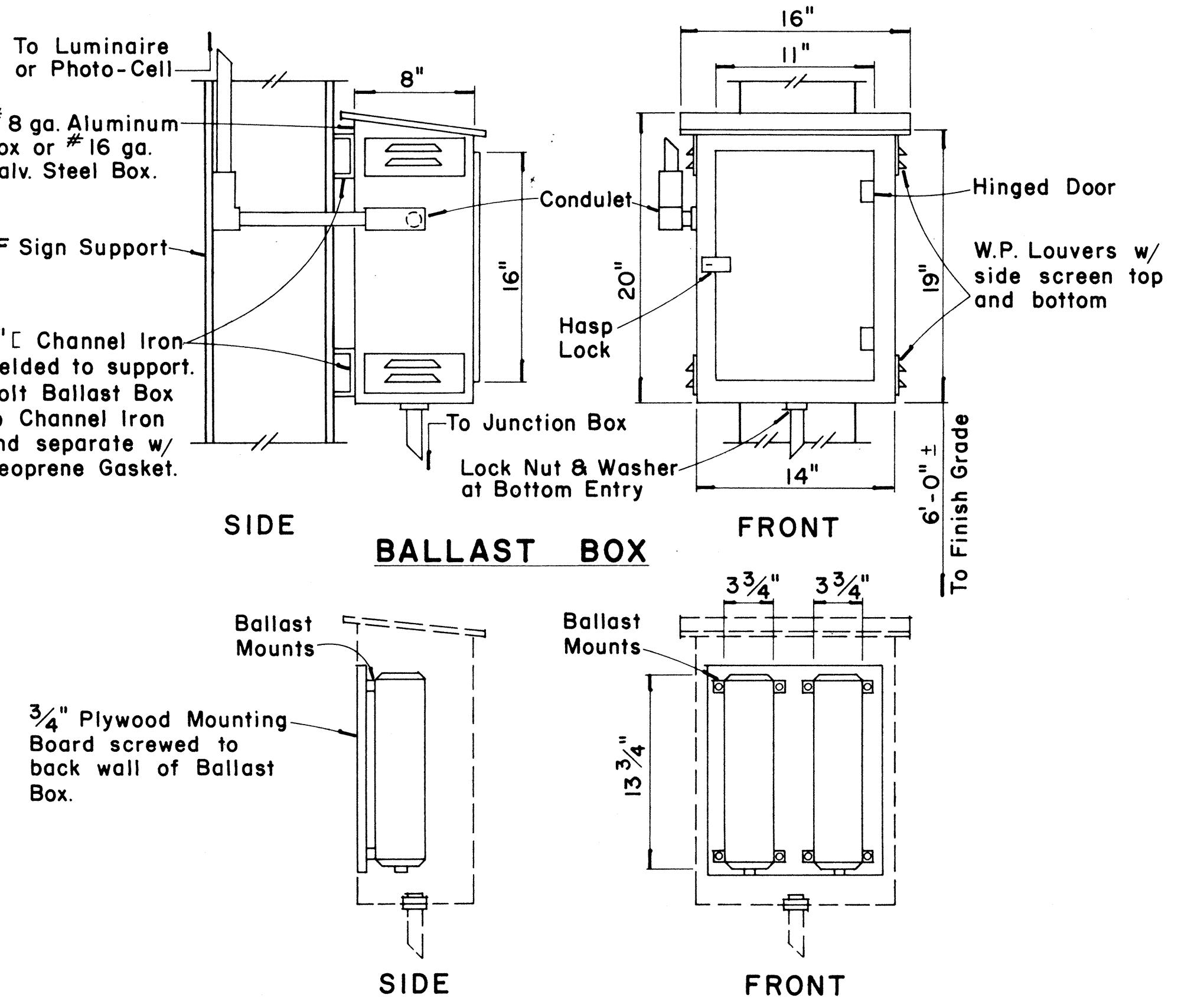
\* For moment calculations only. Post shall be from top of foundation to top of sign.  
\*\* For fills with side slopes flatter than 4:1, Minimum Footing Depth shall be 4½ feet.

DATA TABLE FOR TYPE VI FOOTING																	
POST SIZE	MAXIMUM SIGN AREA	POST HEIGHT TOP OF FOUNDATION TO CENTER OF SIGN *	DIMENSIONS										ANCHOR BOLT DIA.	MINIMUM FOOTING DEPTH CUT	FILL**		
			H	J	K	M	N	O	P	S	T	U	V				
8 J10	50 sq. ft.	14'	14"	5"	24"	17½"	1½"	6"	1¼"	9"	6"	10"	2"	1"	1½" Ø	4½'	4½'
8 WF24	90 sq. ft.	21'															5'
8 WF35	190 sq. ft.	15'	16½"	6¾"	30"	20"	1¾"	6"	1¾"	11½"	6½"	10"	1¾"	1"	1¼" Ø	6'	7'
IOW45	190 sq. ft.	25'															
IOW45	200 sq. ft.	25'															
I2WF50	230 sq. ft.	25'															
I2WF50	250 sq. ft.	23'															



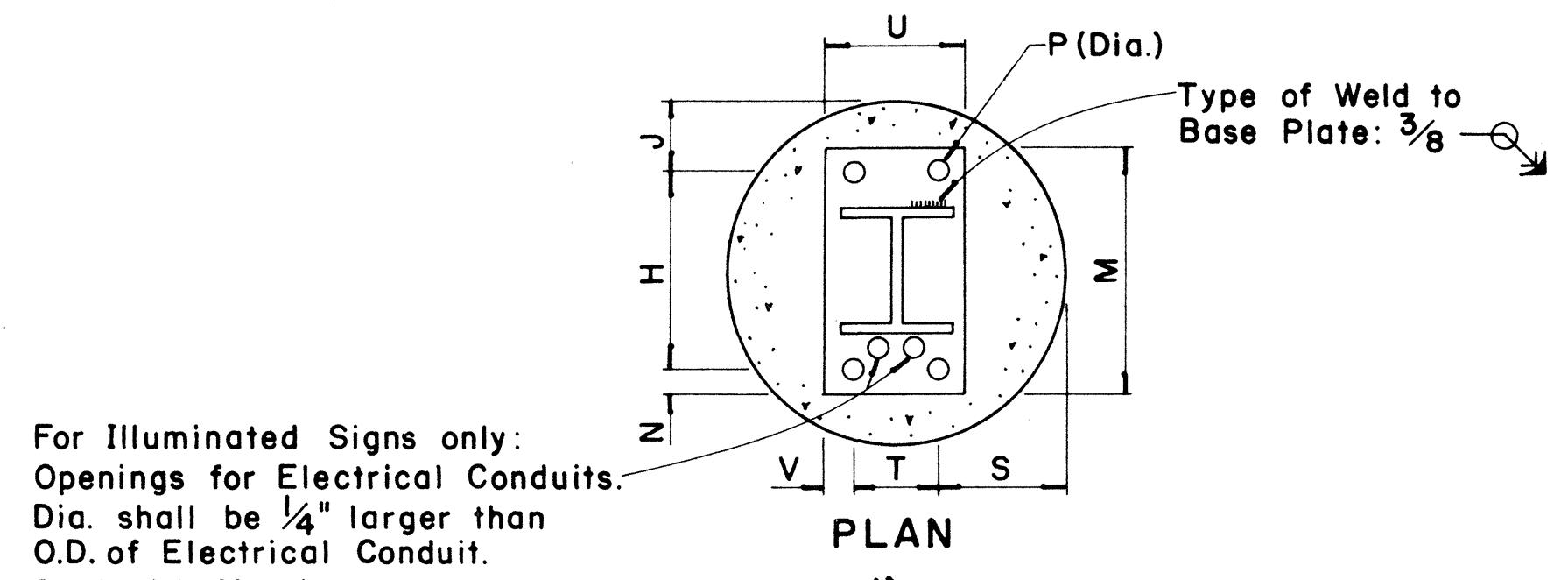
TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN

Not to Scale

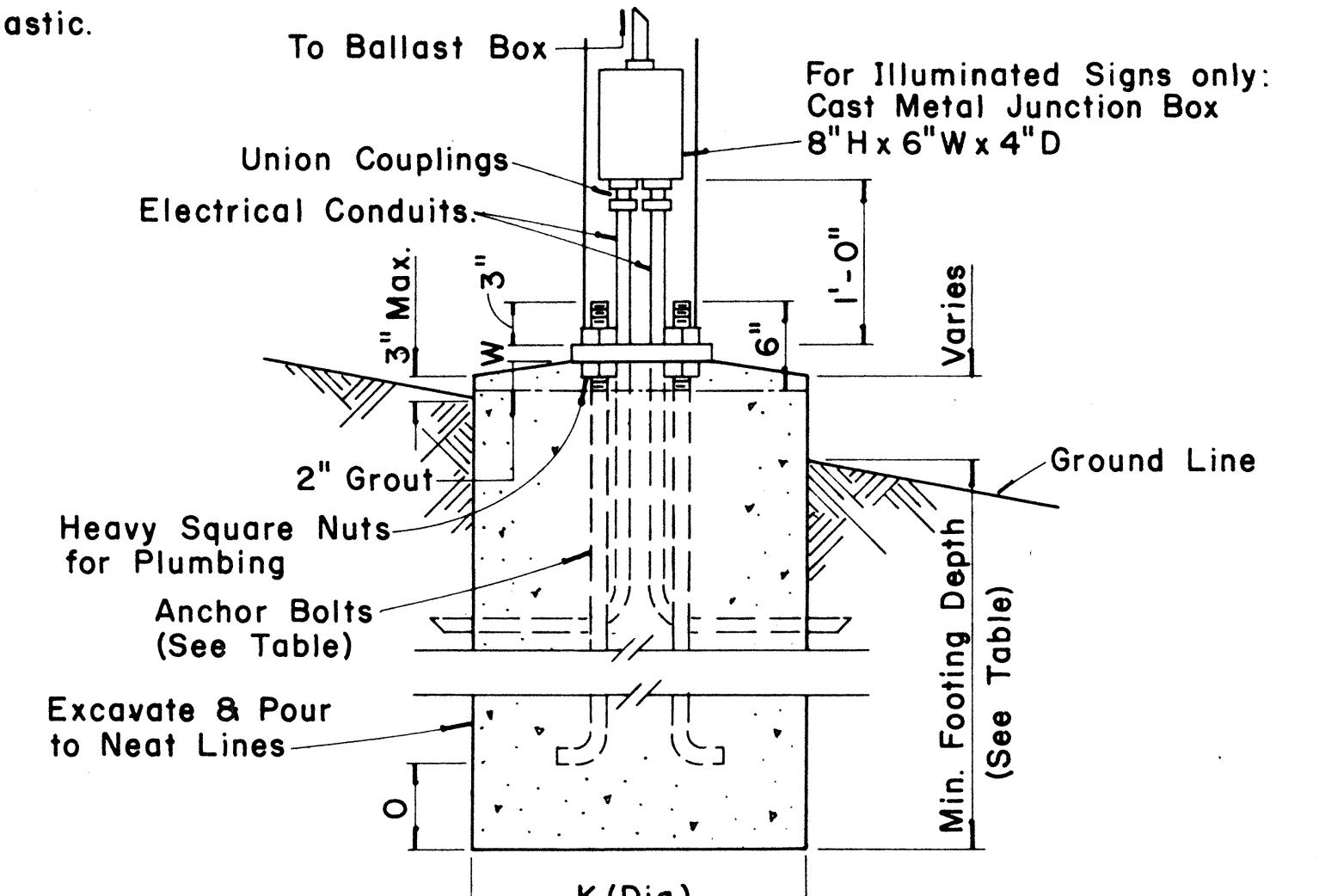


### WEATHERPROOF BALLAST BOX

Scale : 1½" = 1'- 0"



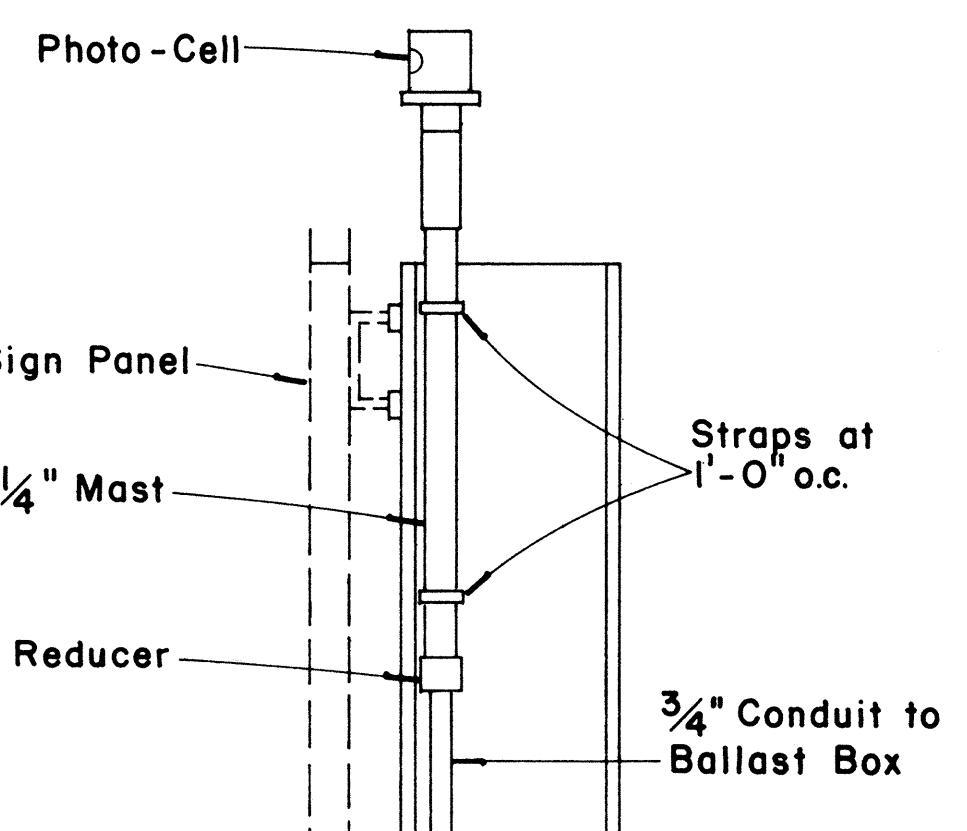
For Illuminated Signs only:  
Openings for Electrical Conduits.  
Dia. shall be 1/4" larger than  
O.D. of Electrical Conduit.  
Seal with Mastic.



### TYPE VI FOOTING

Scale : 1" = 1'- 0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	HEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)16	1979	63	236



### PHOTO-CELL DETAIL

Scale : 1½" = 1'- 0"

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

APPROVED:  
*John S. Balz*  
ASSISTANT CHIEF, ENGINEERING  
DATE 12-30-69

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION  
STANDARD DETAILS  
DESTINATION & GROUND MOUNTED  
EXPRESSWAY SIGNS

Scale: As Shown  
SHEET No. OF SHEETS DT 203

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	HEET NO.	TOTAL SHEETS
HAWAII	HAW.	HHI(156)16	1979	64	236

(OVERHEAD SIGNS)  
SUPPORT SPACING TABLE

PANEL THICK.	LENGTH OF SIGN A	NO. OF SUPPORTS	OVERHANG B	SUPPORT SPACING C or C <sub>1</sub>
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"
1"	15'-6"	3	24"	69"
1"	16'-0"	3	24"	72"
1"	16'-6"	3	24"	75"
1"	17'-0"	3	24"	78"
1"	17'-6"	3	24"	81"
1"	18'-0"	3	24"	84"
1"	18'-6"	3	27"	84"
1"	19'-0"	3	27"	87"
1"	19'-6"	3	27"	90"
1"	20'-0"	3	30"	90"
1"	20'-6"	3	30"	93"
1"	21'-0"	3	30"	96"
1"	21'-6"	3	33"	96"
1"	22'-0"	3	36"	96"
1"	22'-6"	3	36"	99"
1"	23'-0"	3	36"	102"
1"	23'-6"	3	36"	105"
1"	24'-0"	3	36"	108"

APPROVAL RECOMMENDED:

*Etsushi Tanaka*  
TRAFFIC ENGINEER

12-29-69  
DATE

APPROVED:

*John S. Sodah*  
ASSISTANT CHIEF, ENGINEERING

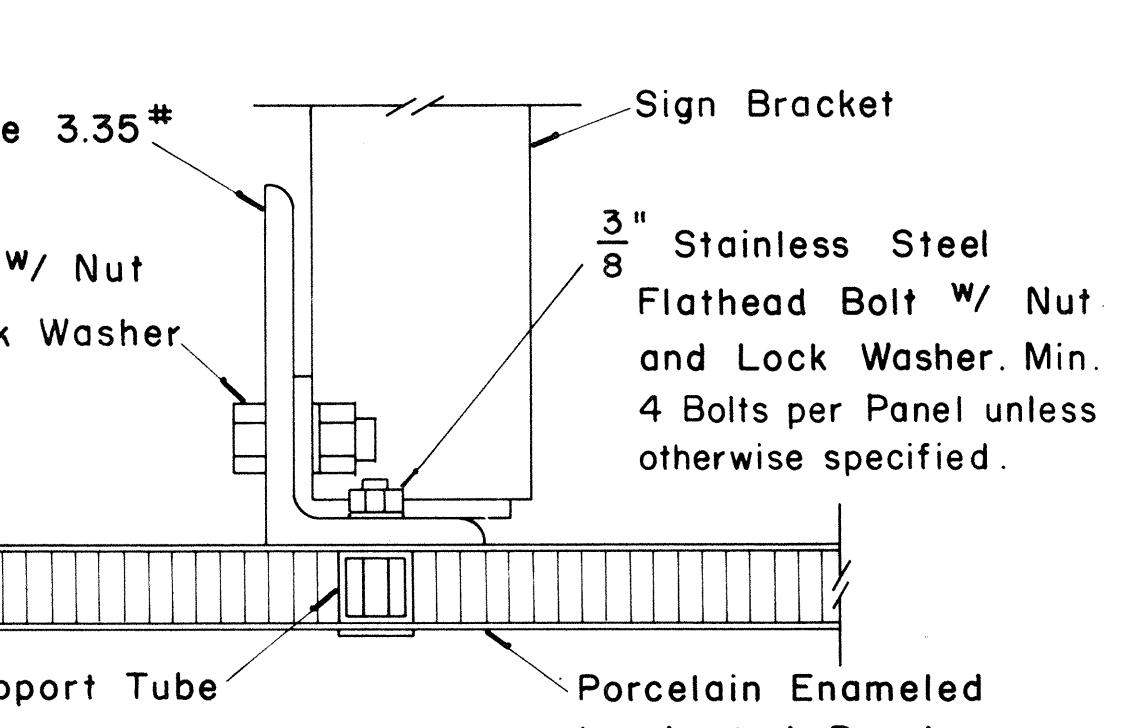
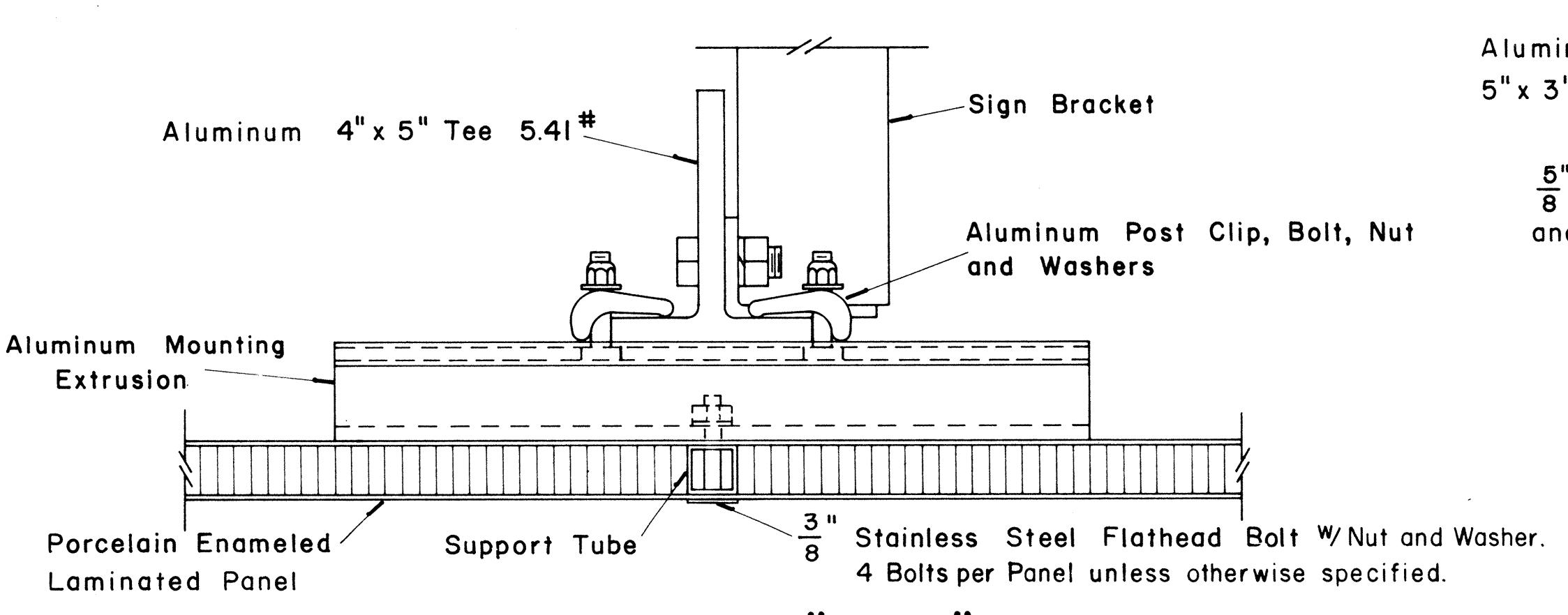
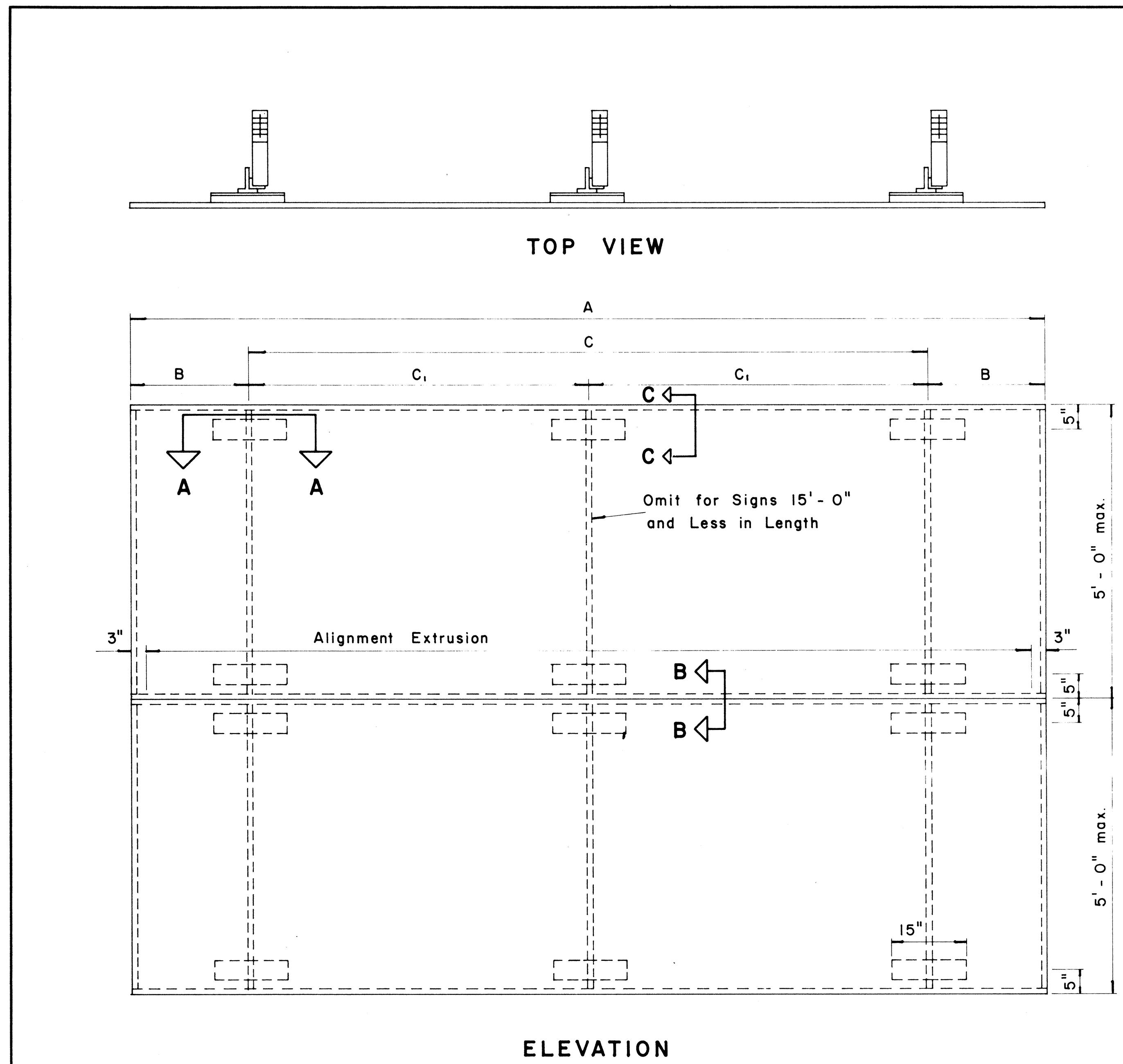
12-30-69  
DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

STANDARD DETAILS  
LAMINATED ALUMINUM  
SIGN PANELS  
(OVERHEAD)

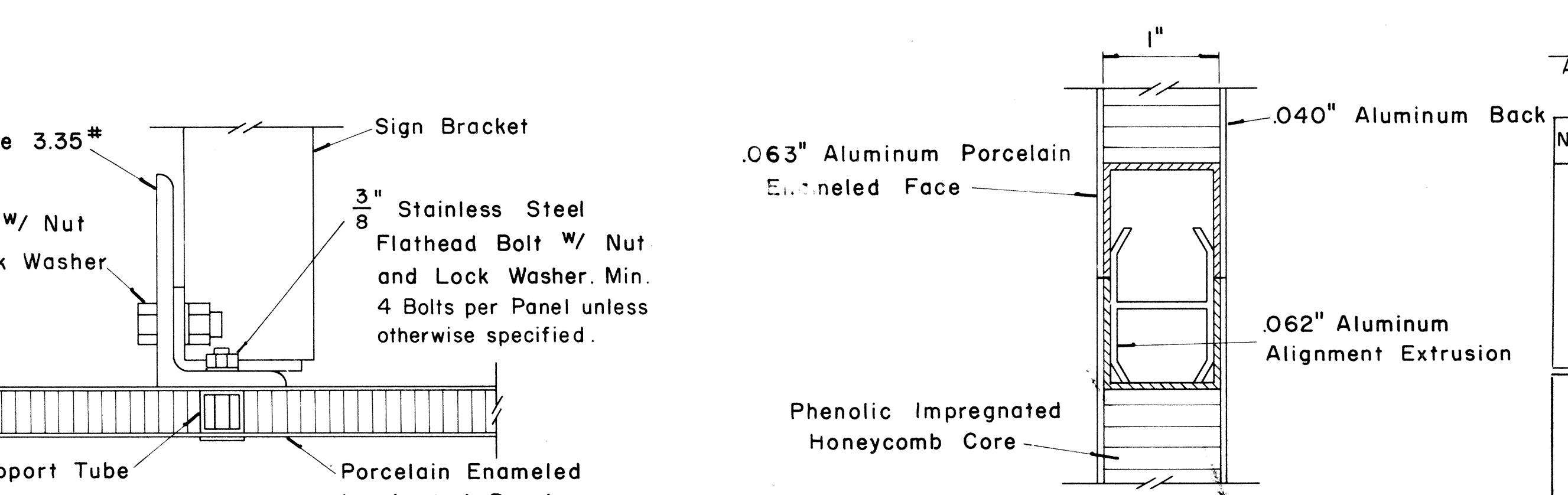
Scale: As Shown  
SHEET No. OF SHEETS DT 205



SECTION "A-A"  
(Alternate)

Scale:  $\frac{3}{8}$ " = 1"

SECTION "B-B"  
FULL SCALE

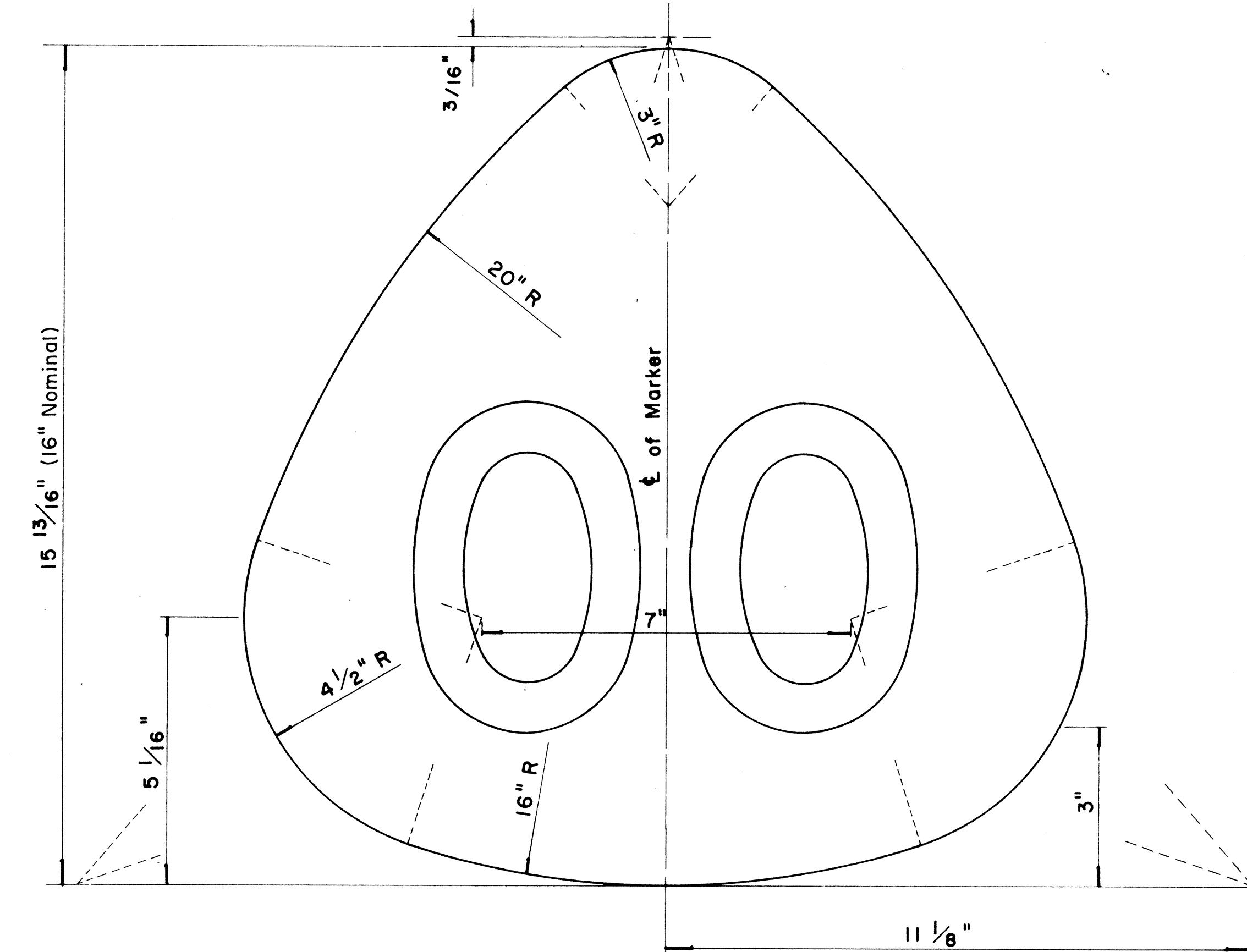


CLOSURE DETAIL  
SECTION "B-B"

FULL SCALE

ORIGINAL PLAN	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES AV.	
CHECKED BY	
No.	

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



### STATE ROUTE MARKER FOR GUIDE SIGNS

Scale: Half Size

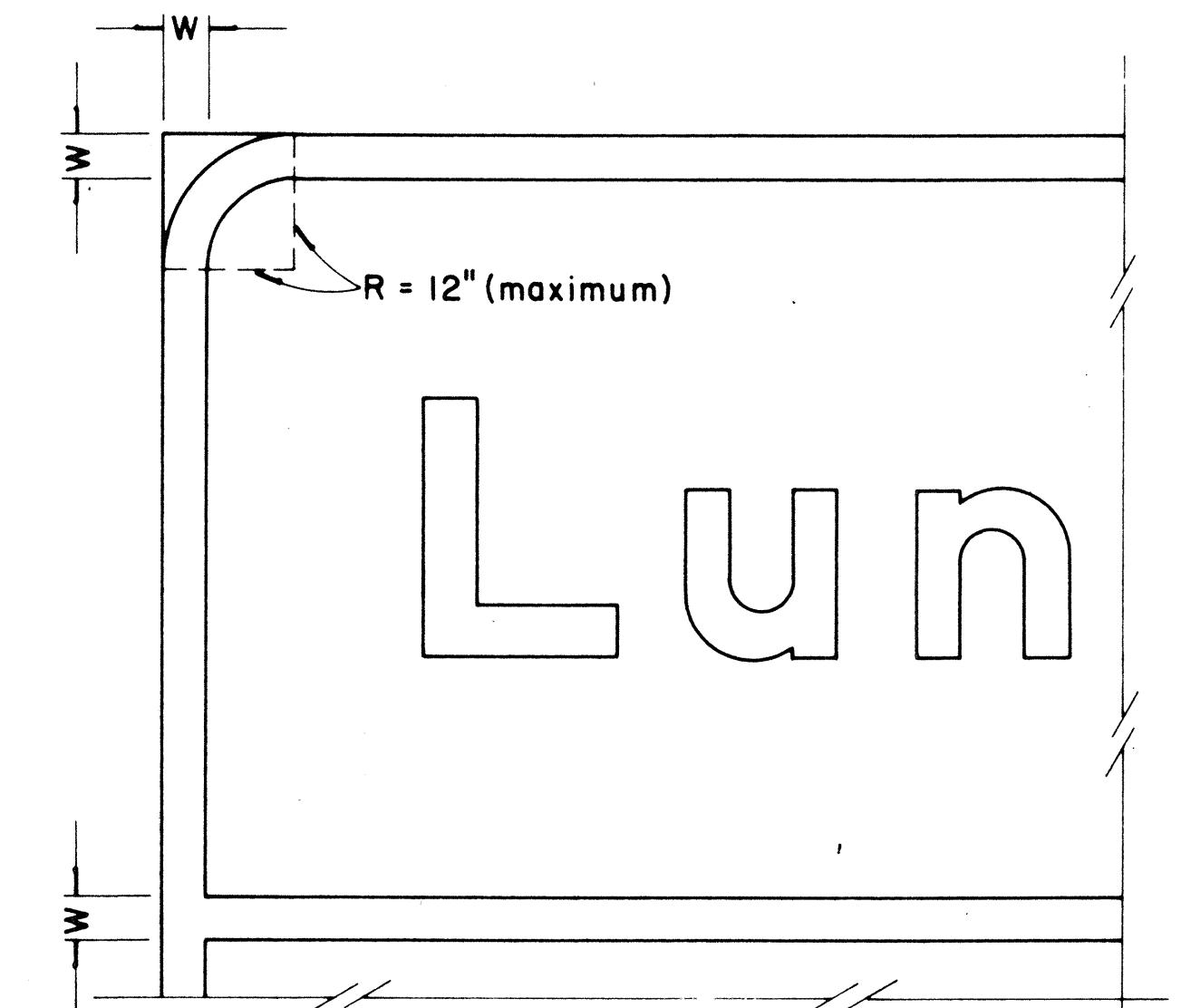
#### NOTE:

- 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.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156)-16	1979	65	236

### 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 white reflectorized cut-outs.
- All Guide signs shall have borders.

APPROVAL RECOMMENDED:

*Etsushi Tanaka*  
TRAFFIC ENGINEER

4/11/72  
DATE

APPROVED:

*John Z. Salaschi*  
ASSISTANT CHIEF, ENGINEERING

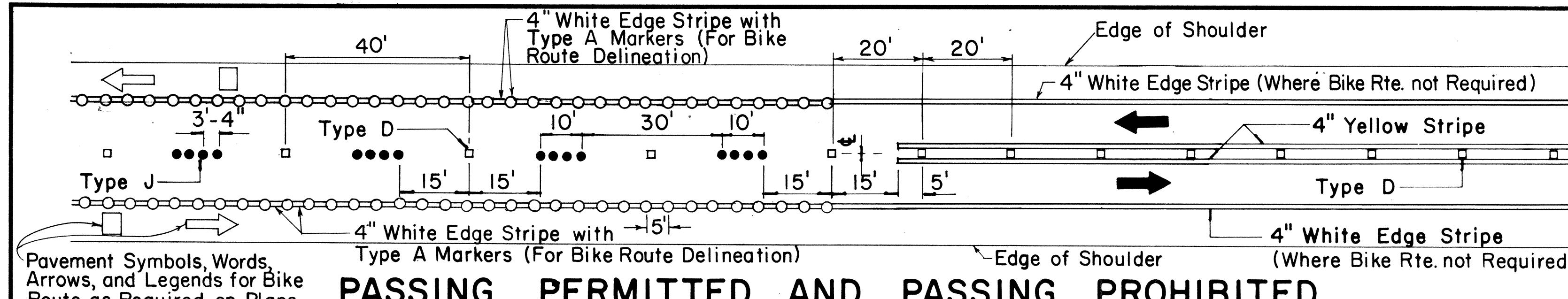
4/12/72  
DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 209 Approved 12-30-69	H.T.	4/12/72
2	Revised Notes and Schedules	H.T.	9-14-70

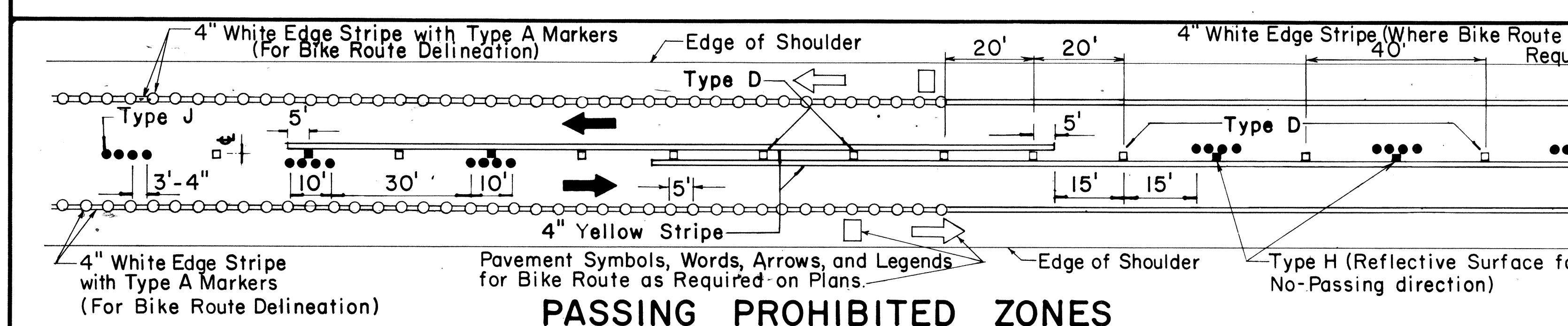
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION <b>STANDARD DETAILS</b>			
<b>STATE ROUTE MARKER AND BORDER DETAIL FOR GUIDE SIGNS</b>			

Scale: As Shown  
SHEET No. OF SHEETS DT 209

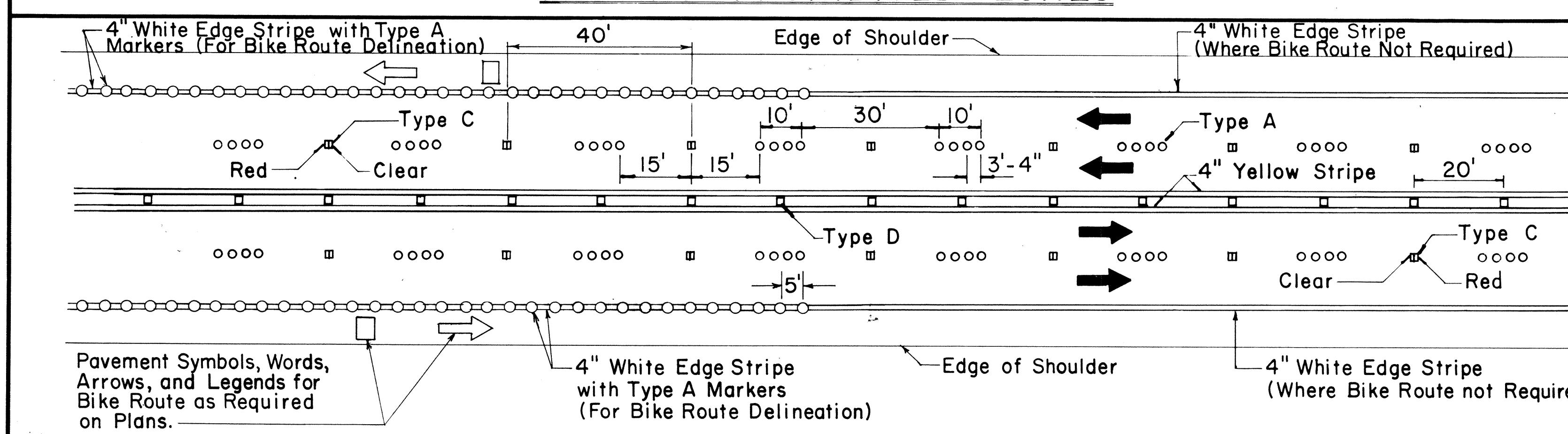
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-156-16	1979	66	236



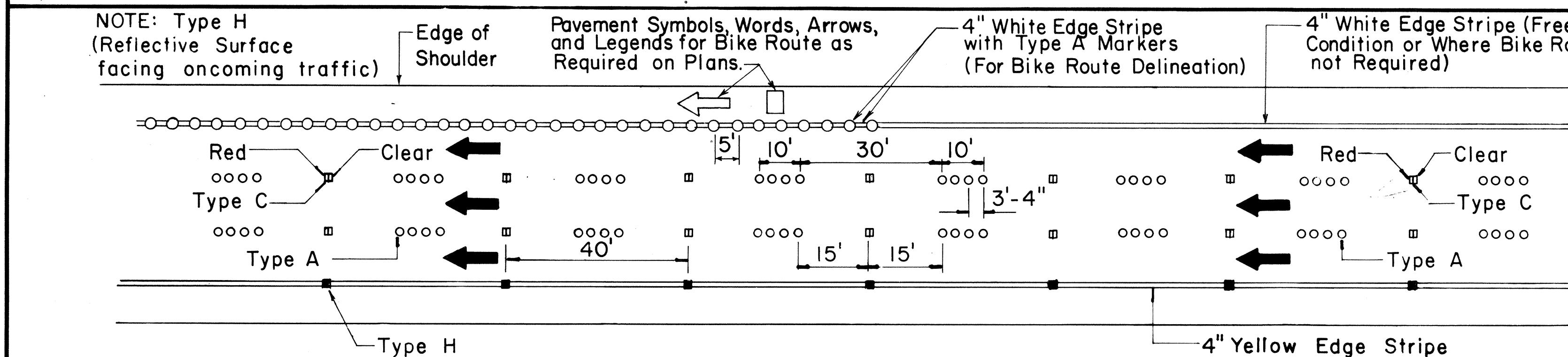
TWO - LANE



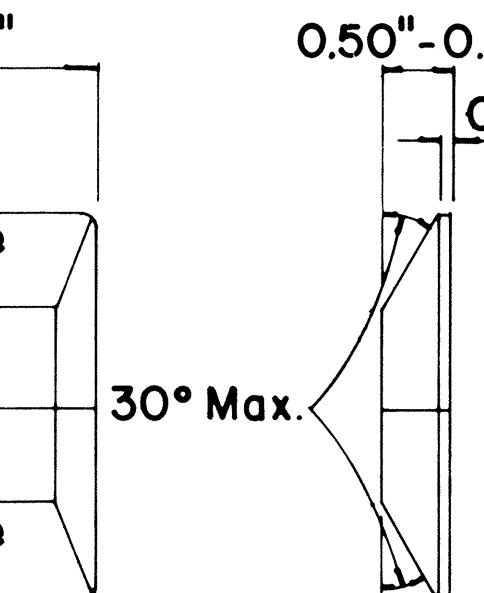
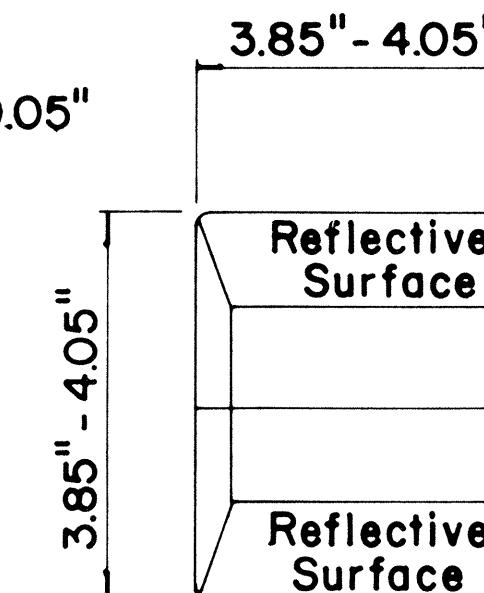
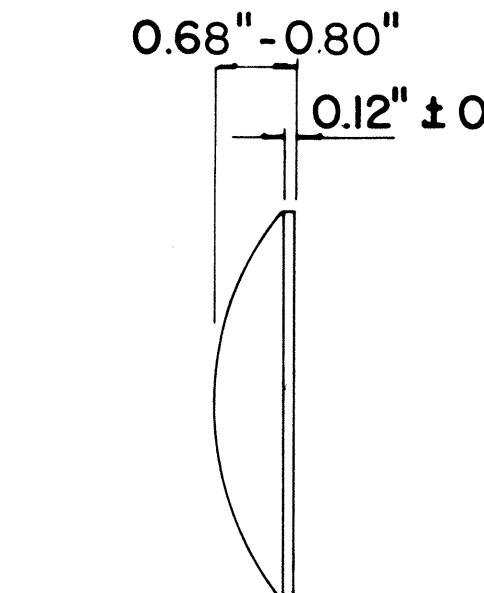
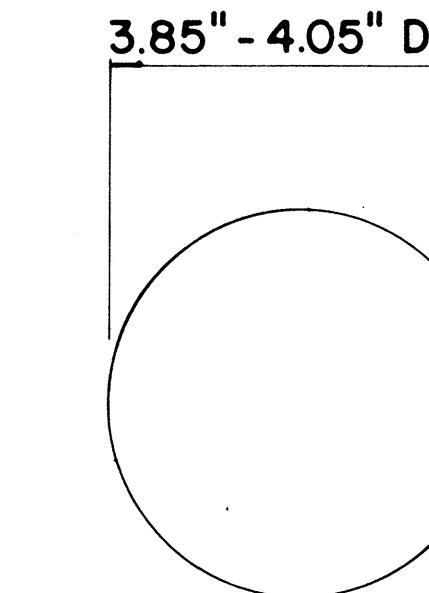
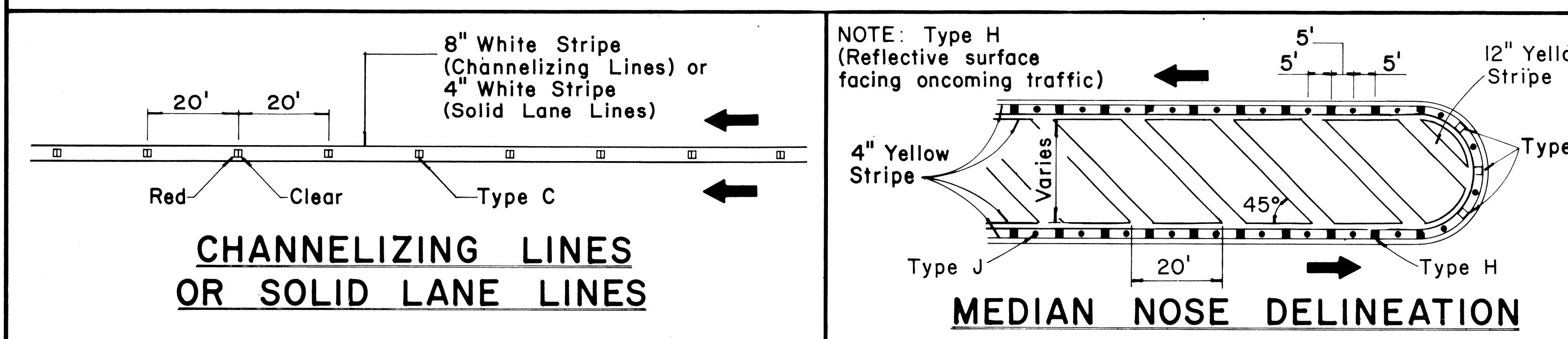
MULTI - LANE



DIVIDED HIGHWAY AND FREEWAY

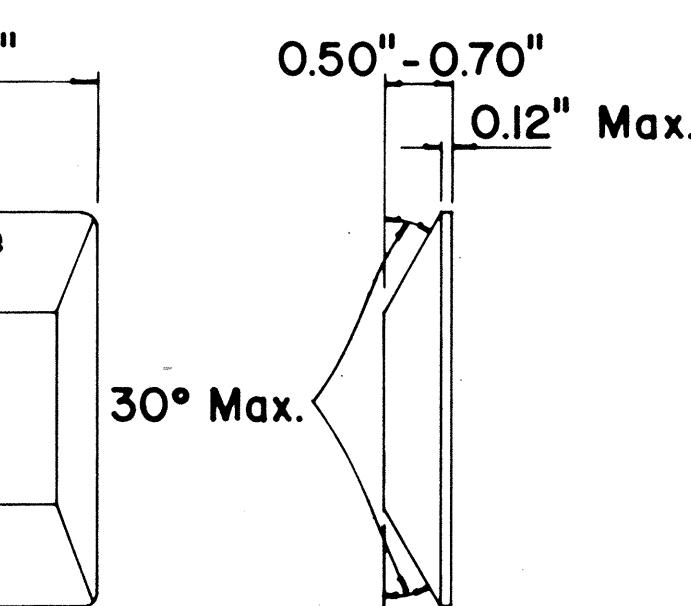
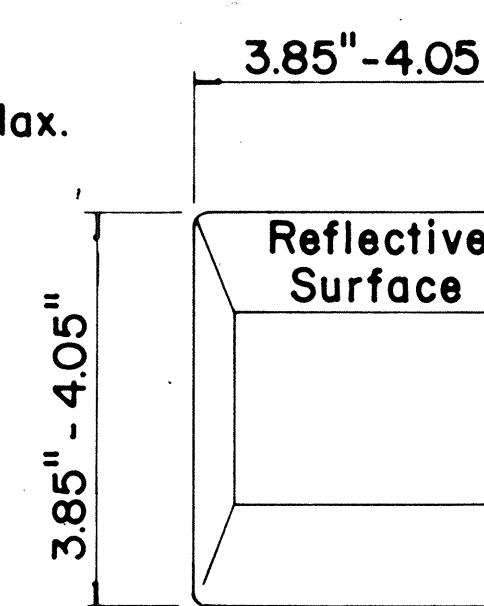
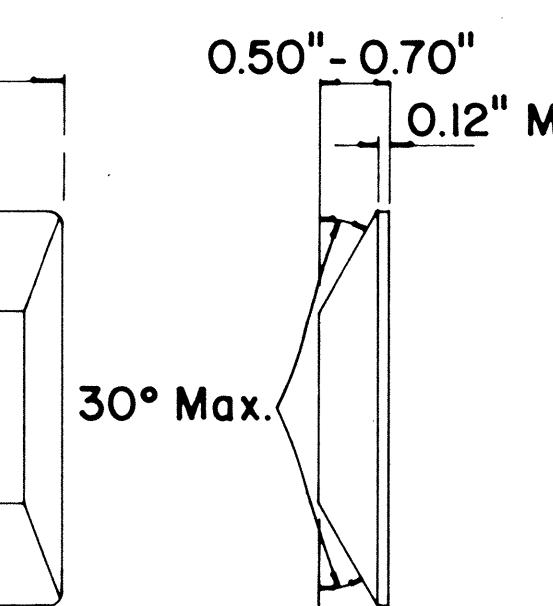
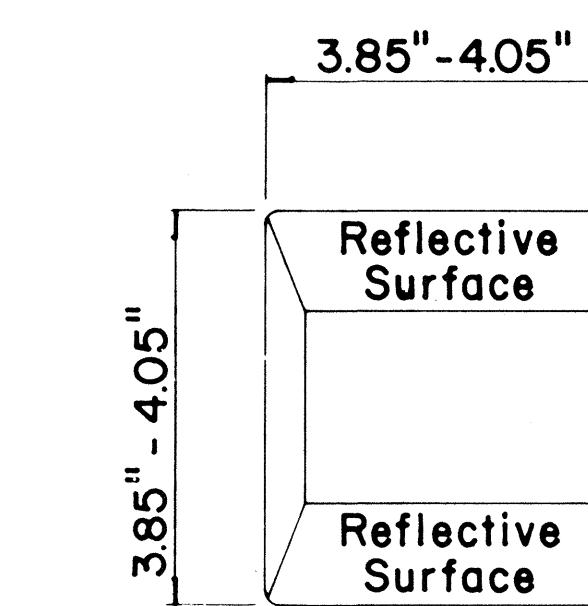


MISCELLANEOUS



**TYPE A**  
**NON-REFLECTIVE WHITE MARKER**

**TYPE J**  
**NON-REFLECTIVE YELLOW MARKER**



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

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

### GENERAL NOTES

- I. Pavement marking and striping shall conform to the latest "Manual on Uniform Traffic Control Devices for Streets and Highways," and as amended.
2. 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  
Eduardo Tanaka  
TRAFFIC ENGINEER

7/21/78  
DATE

APPROVED:  
Heriberto J. De León  
ASSISTANT CHIEF, ENGINEERING  
1/24/78  
DATE

No.	REVISION	APPROVED BY	DATE
1	Supercedes DT 300 approved 11/18/71.	Hf.	1/24/78

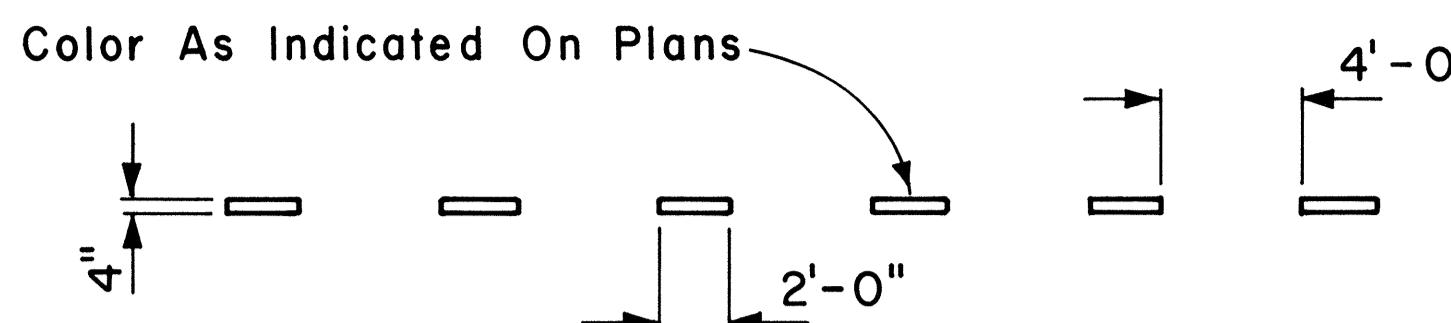
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

**STANDARD DETAILS**  
**RAISED PAVEMENT MARKERS AND STRIPING**

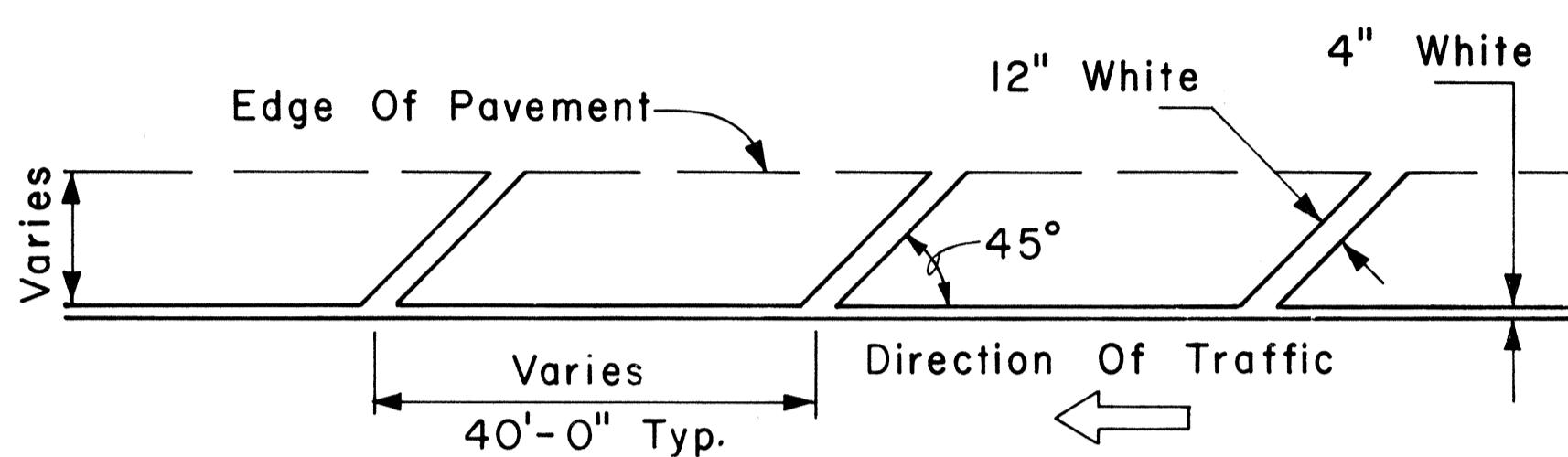
Not to Scale July 1978

SHEET No. OF SHEETS DT 300

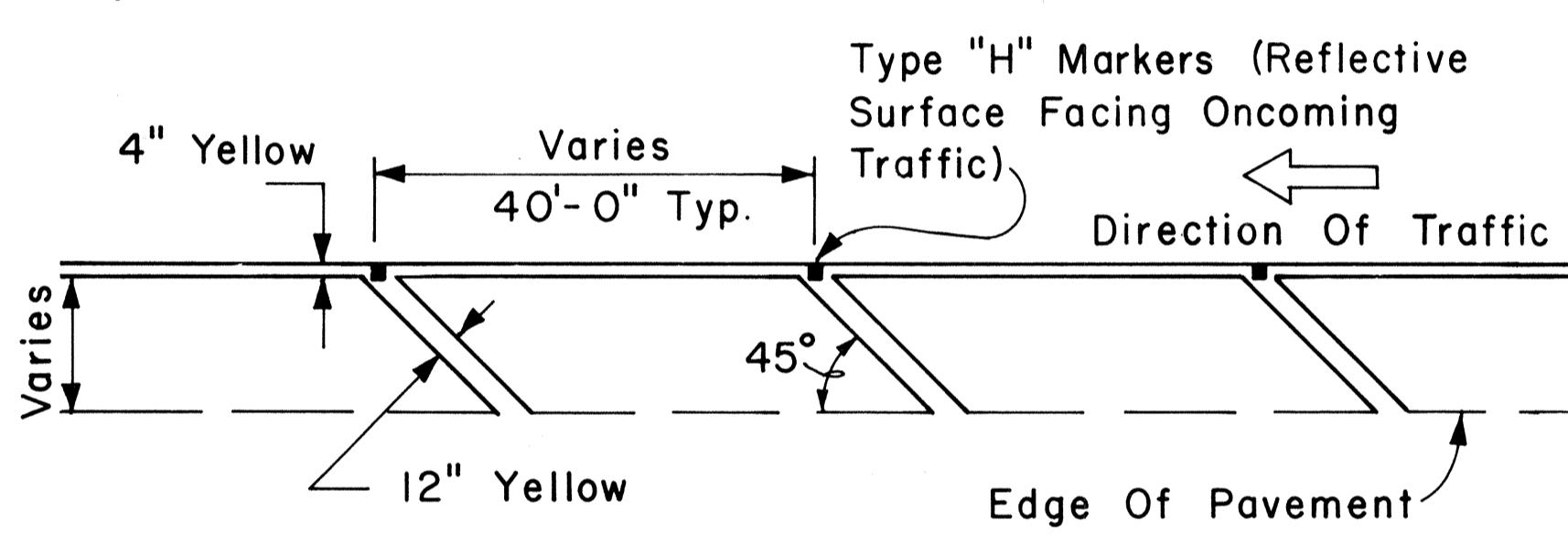
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HH-156-16	1979	67	236



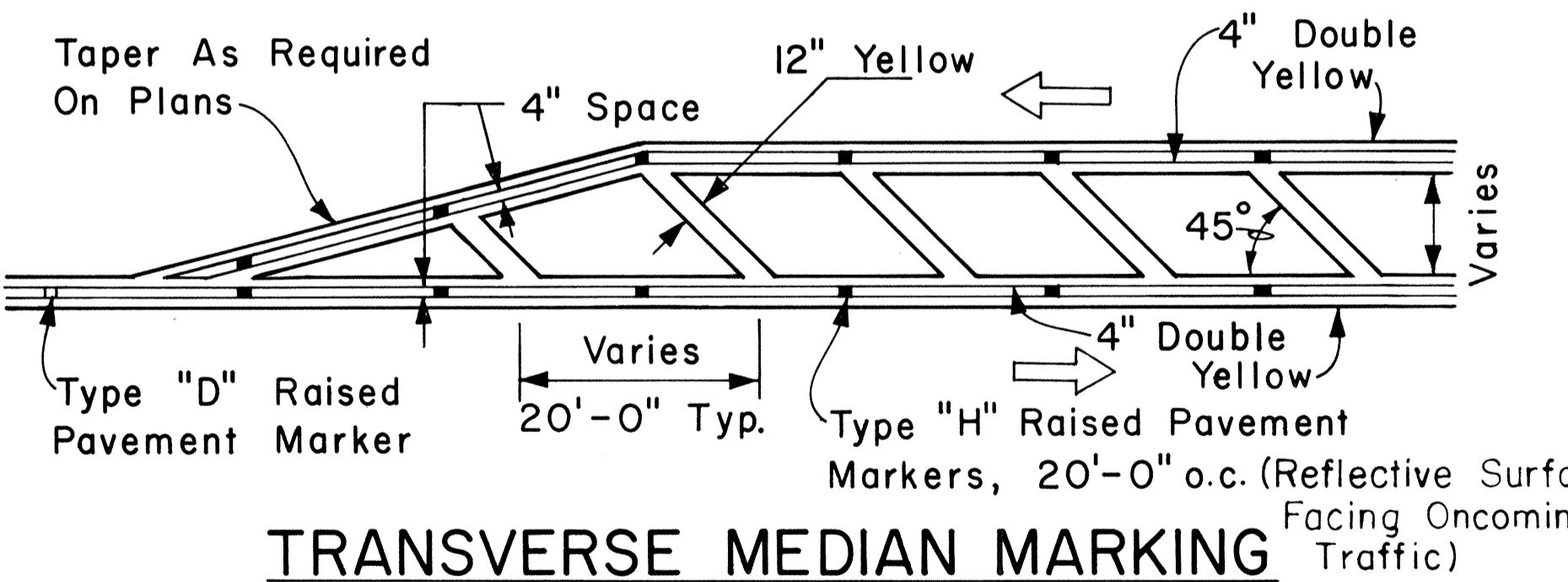
#### 4" GUIDE LINE



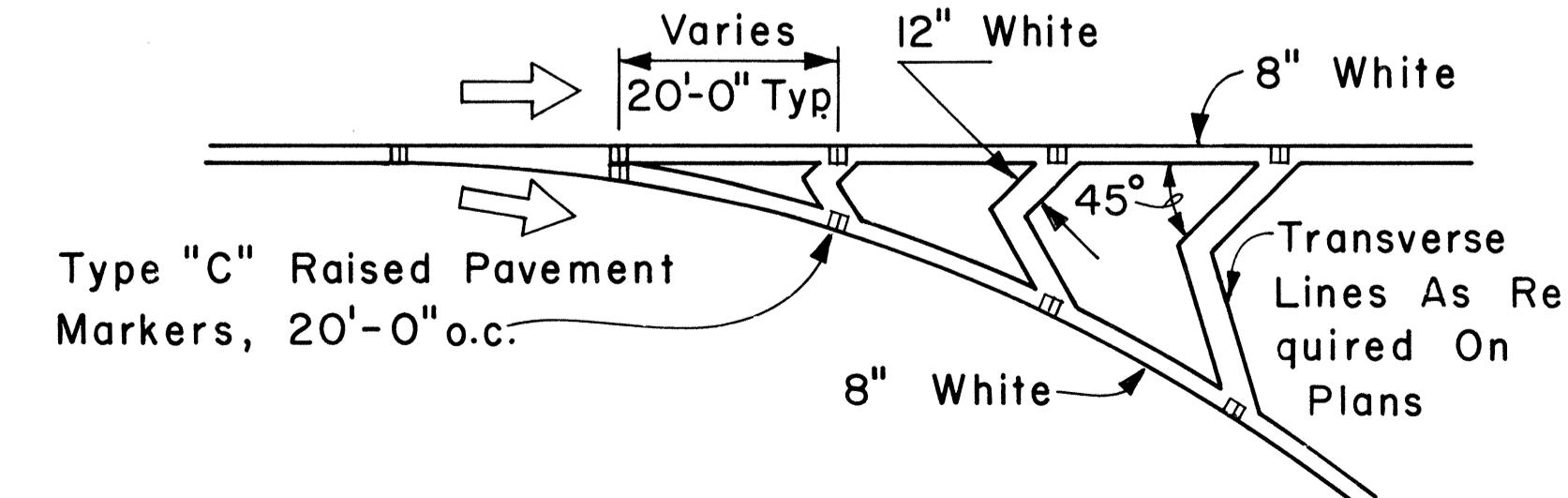
#### TRANSVERSE RIGHT SHOULDER MARKING



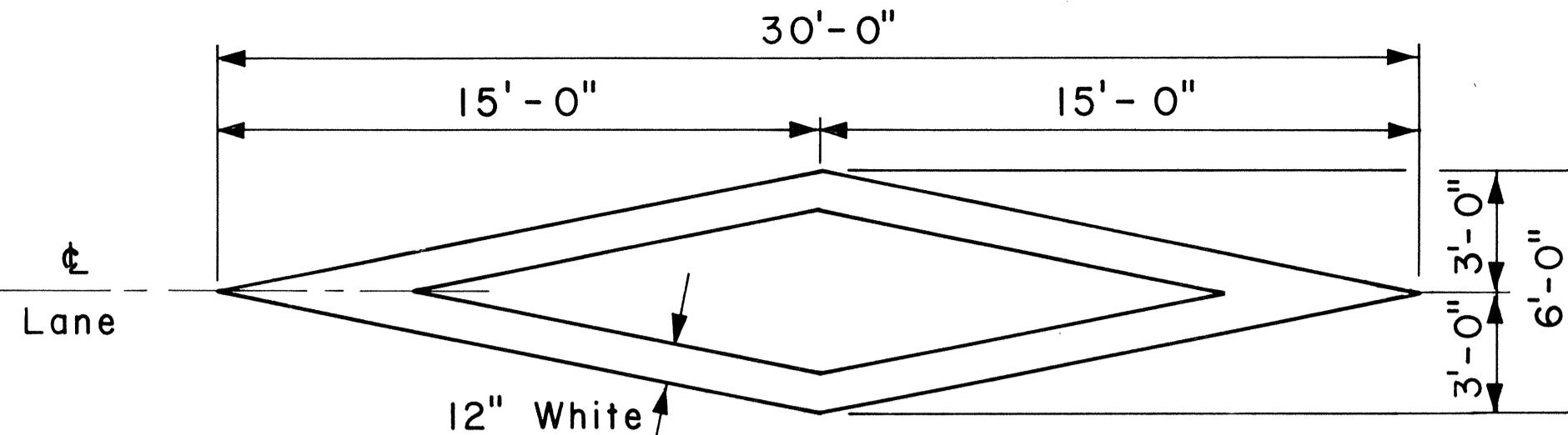
#### TRANSVERSE LEFT SHOULDER MARKING



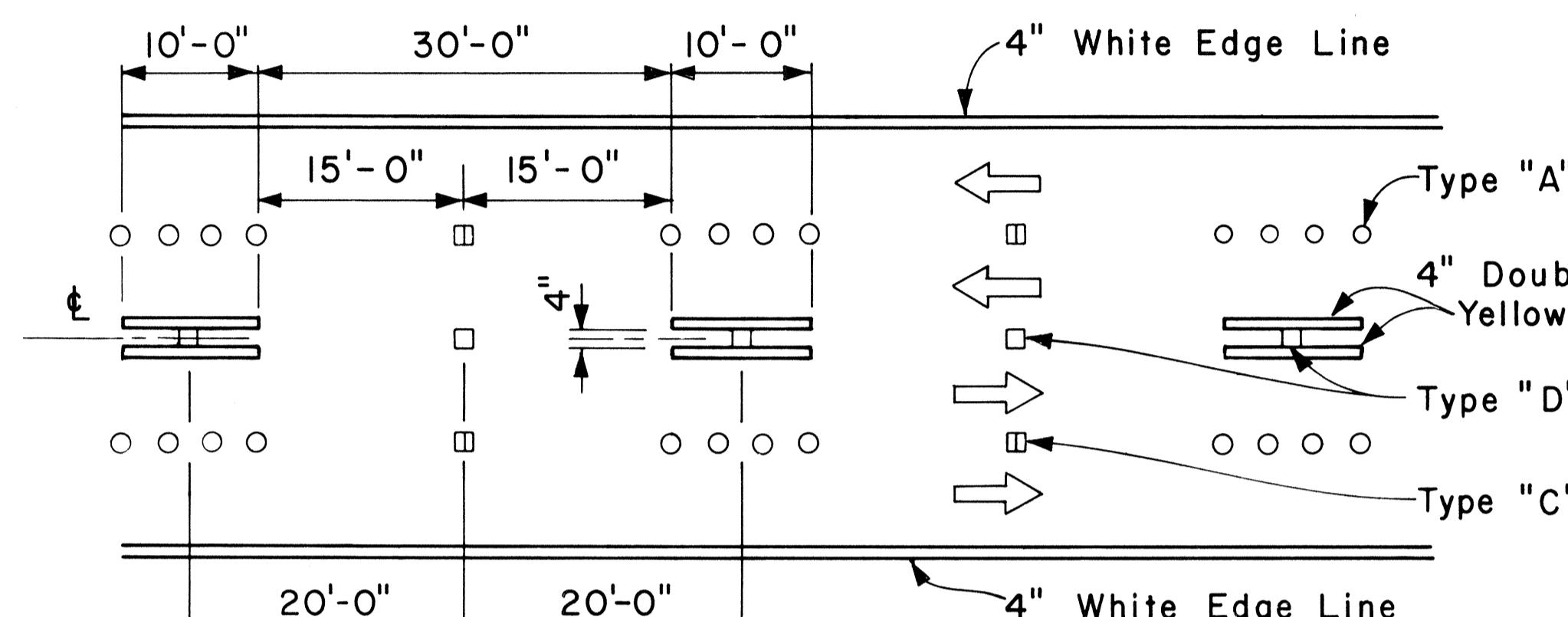
#### TRANSVERSE MEDIAN MARKING



#### CHANNELIZING ISLAND

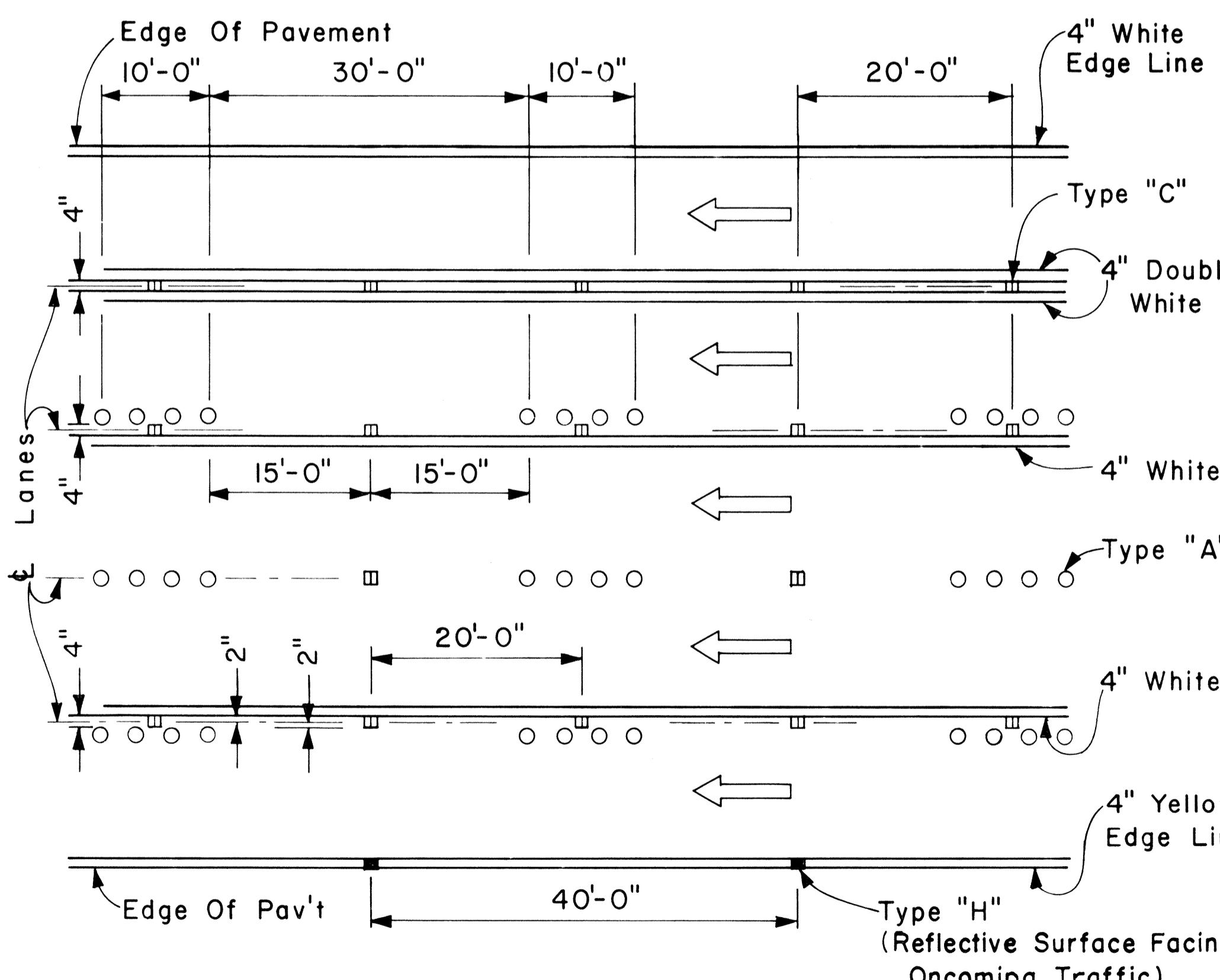


#### PAVEMENT DIAMOND



NOTE: Traffic Cone Usage Required.

#### MULTI-LANE REVERSIBLE LANES



#### MULTI-LANE LANE CHANGE RESTRICTION ZONES

#### GENERAL NOTES:

- Pavement marking and striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways," by the FHWA, and as amended.
- Layout of pavement markings and striping shall be done by the Contractor. The Contractor shall check layout of markings and striping with the Engineer prior to performing work.
- For additional pavement marking details, see sheet DT 300.

APPROVAL RECOMMENDED:  
*Etsushi Tanaka*  
TRAFFIC ENGINEER  
DATE: 5/2/78

APPROVED:  
*Robert J. Sakai*  
ASSISTANT CHIEF, ENGINEERING  
DATE: 5/3/78

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

#### STANDARD DETAILS

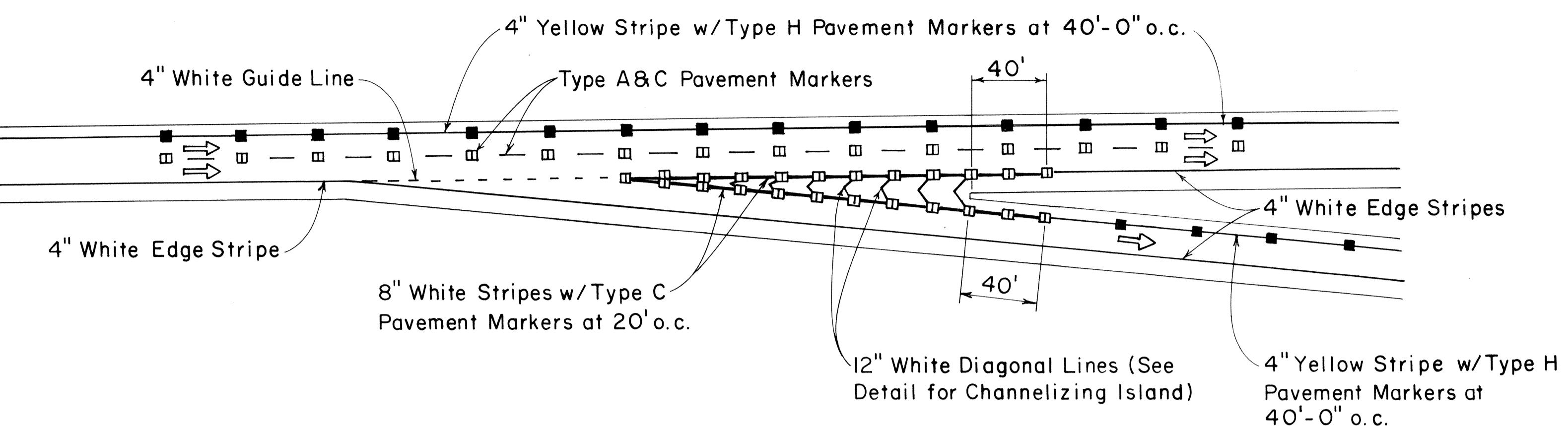
##### MISCELLANEOUS PAVEMENT MARKINGS

Scale: Not to Scale Date: April, 1978  
SHEET NO. OF SHEETS DT 302

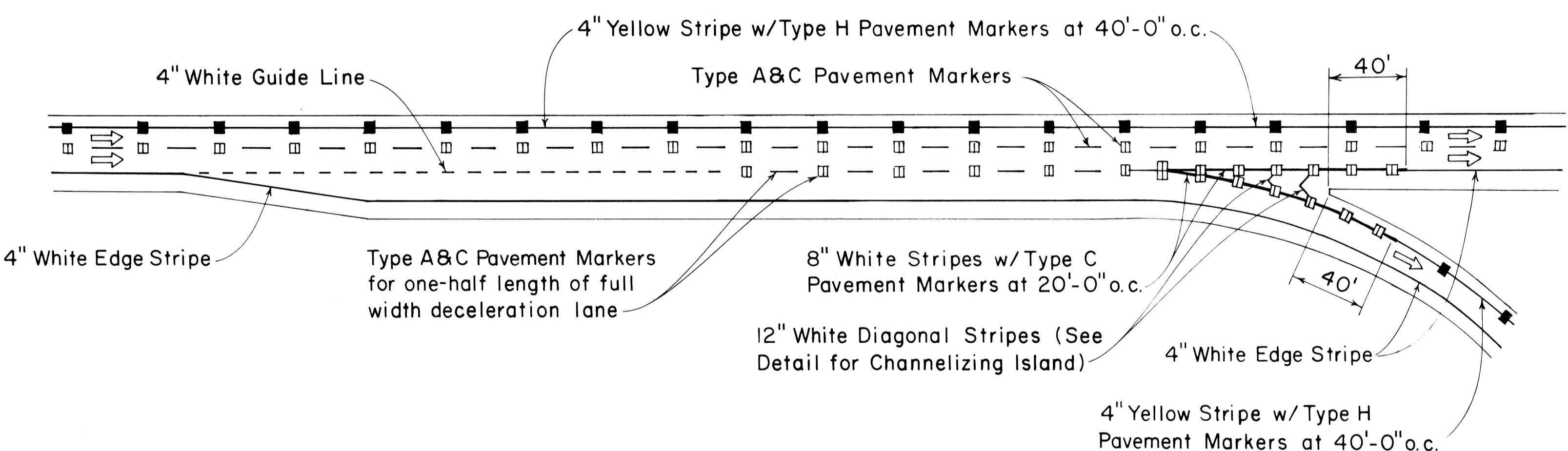
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FH-1(156):16	1979	68	236

## GENERAL NOTES:

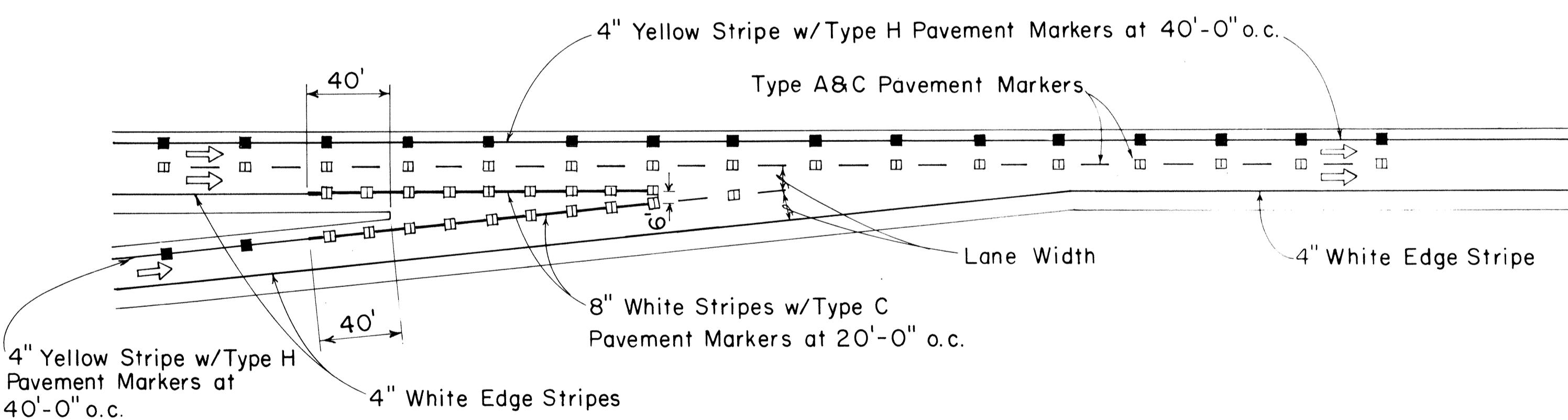
- Pavement Markings and Striping shall conform to the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", by the FHWA, and as amended.
- Layout of Pavement Markings and Striping shall be done by the Contractor. The Contractor shall check layout of markings and striping with the Engineer prior to performing work.
- For additional details, see sheet DT 300.



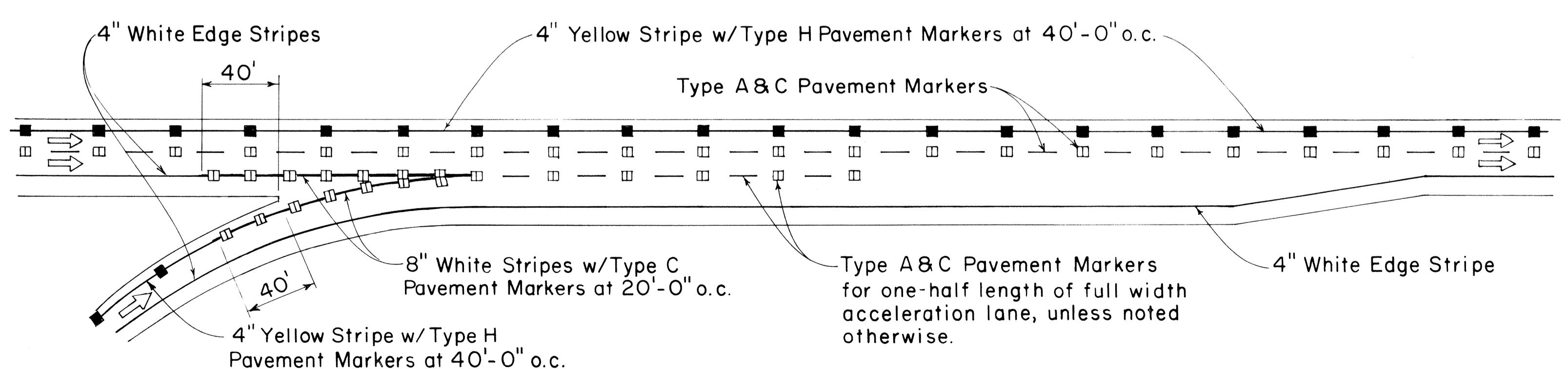
TYPICAL ROADWAY EXIT MARKINGS



PARALLEL DECELERATION LANE



TYPICAL ROADWAY ENTRANCE MARKINGS



PARALLEL ACCELERATION LANE

APPROVAL RECOMMENDED:  
*Eduardo Tanaka*  
TRAFFIC ENGINEER

DATE  
7/21/78

APPROVED:  
*Robert S. Nakashima*  
ASSISTANT CHIEF, ENGINEERING

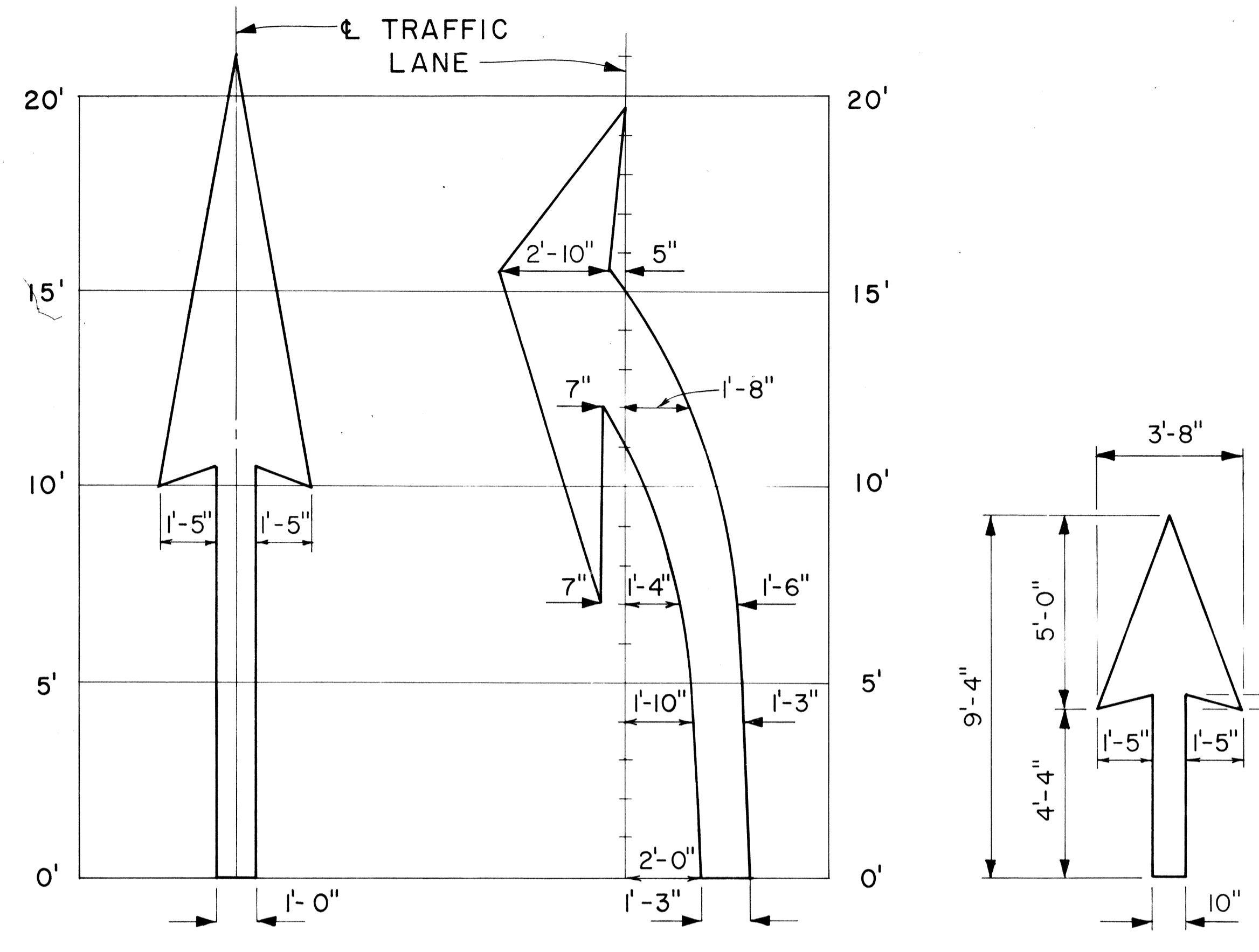
DATE  
7/24/78

NO.	REVISION	APPROVED BY	DATE

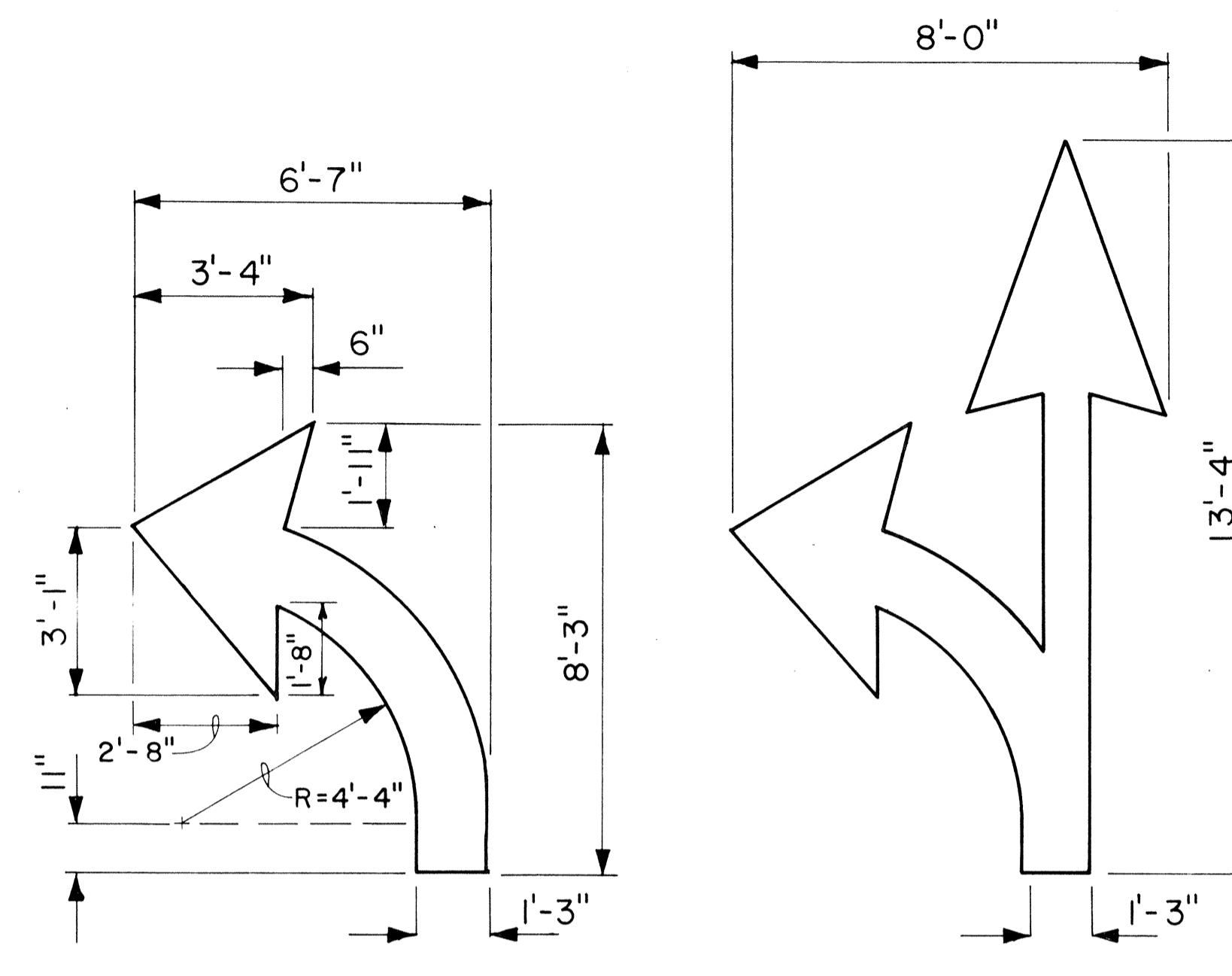
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION			
STANDARD DETAILS			
<u>MISCELLANEOUS PAVEMENT MARKINGS</u>			
Not to Scale			
July 1978			
SHEET NO. OF SHEETS DT 304			

ORIGINAL PLOTTED BY \_\_\_\_\_  
DATE \_\_\_\_\_  
DRAWN BY \_\_\_\_\_  
TRACED BY \_\_\_\_\_  
DESIGNED BY \_\_\_\_\_  
QUANTITY BY \_\_\_\_\_  
CHECKED BY \_\_\_\_\_  
No. \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156):16	1979	69	236



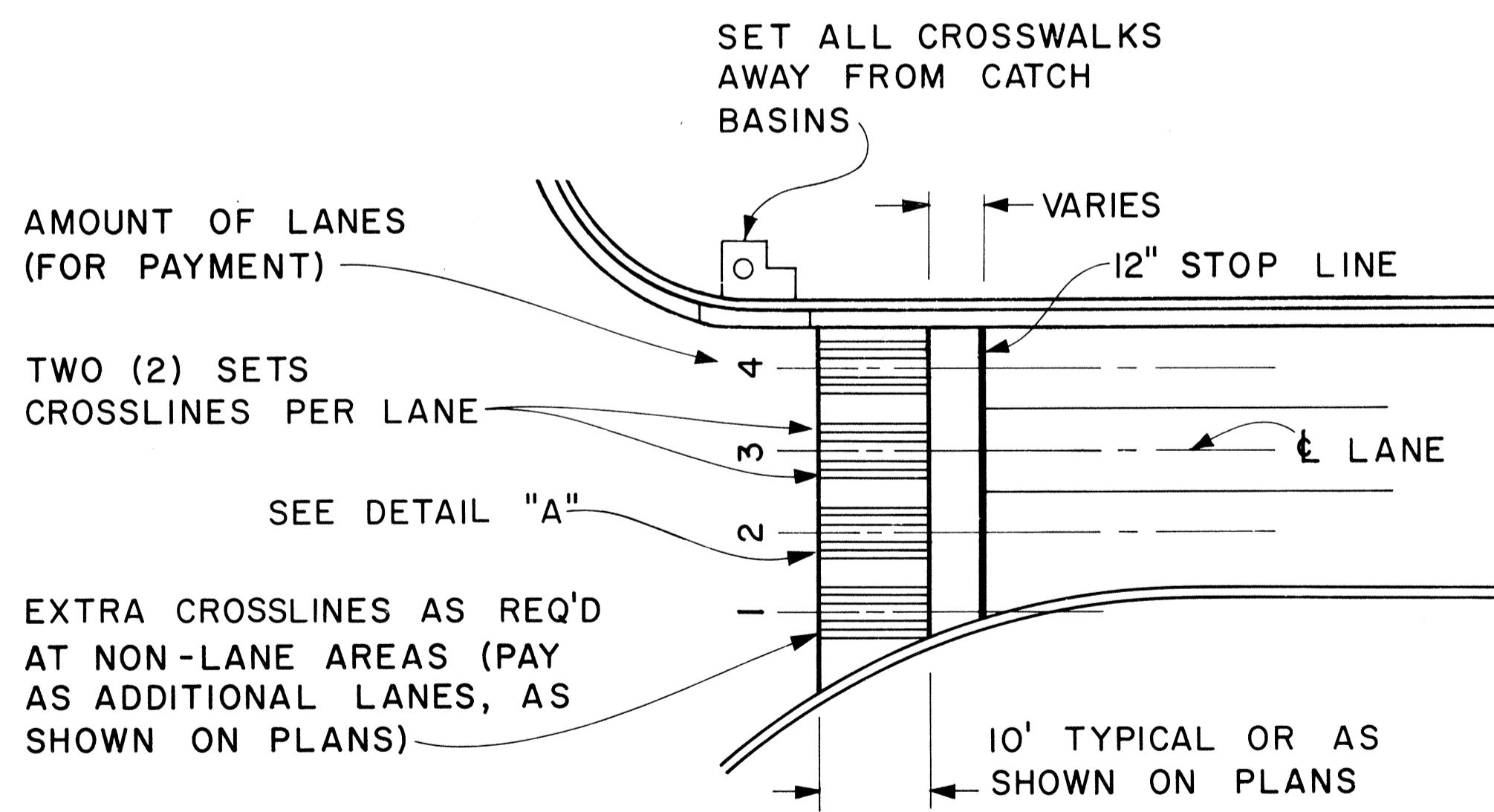
## ELONGATED



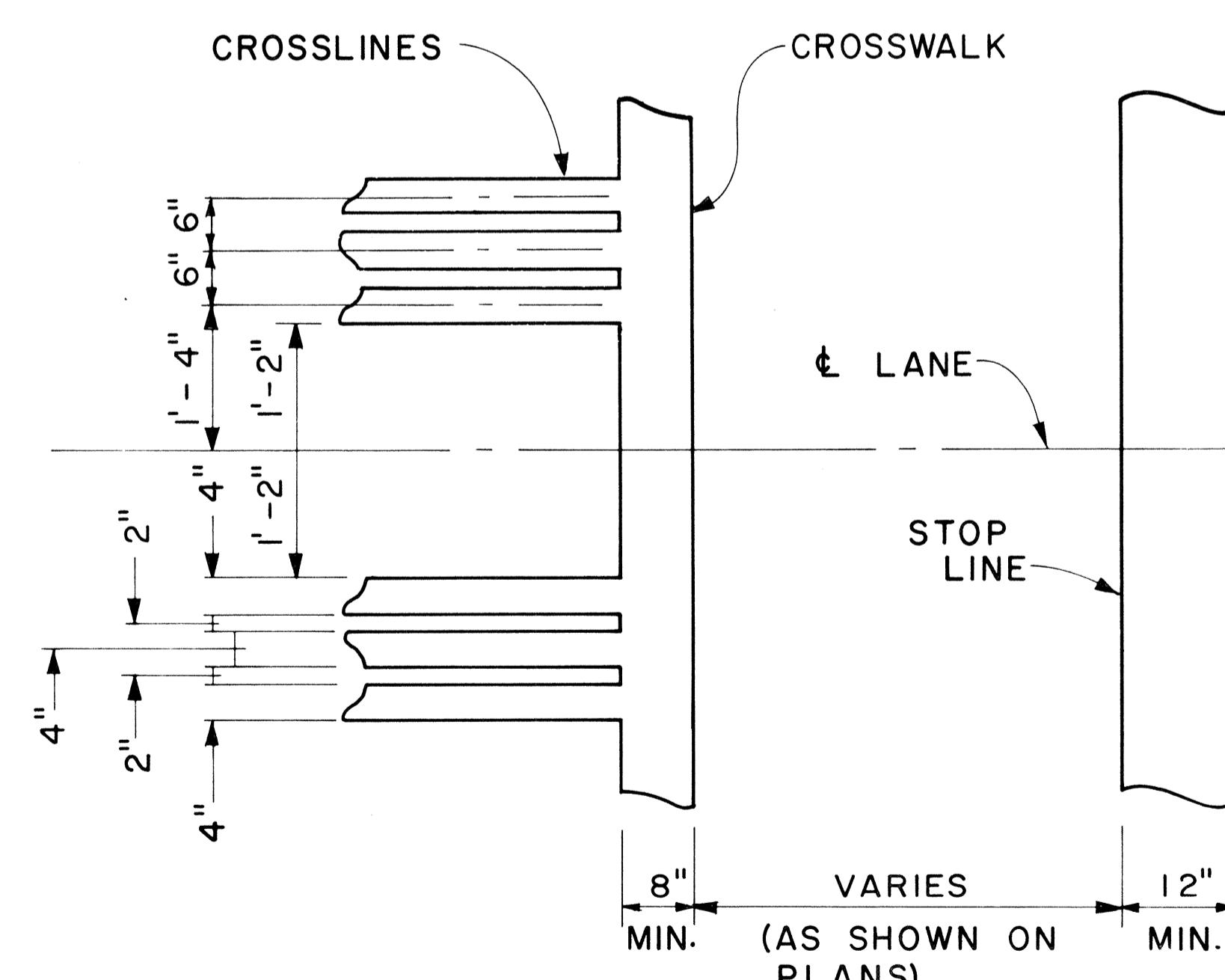
## STANDARD

## PAVEMENT ARROWS

**Scale:** 3/8" =



PLA



DETAIL "A"

NO.	REVISION	APPROVED BY	DATE

VAL RECOMMENDED:  
*Eiichi Tana*  
AFFIC ENGINEER

5/2/78  
DATE

APPROVED:

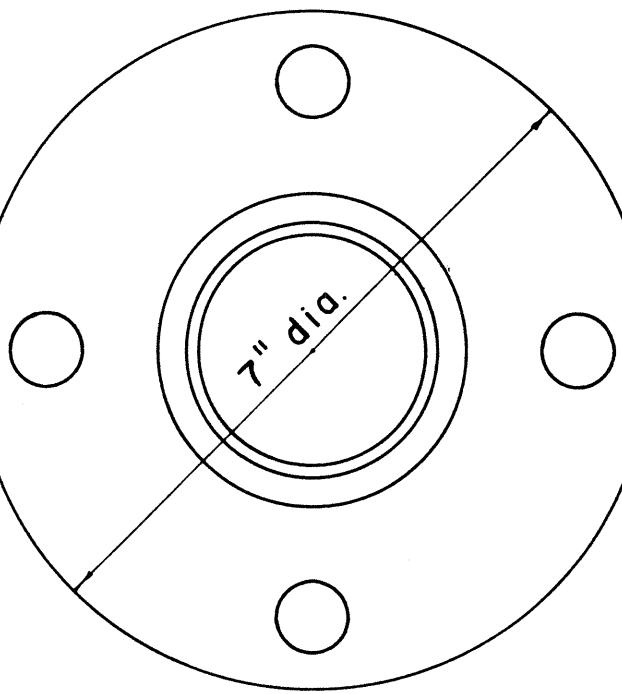
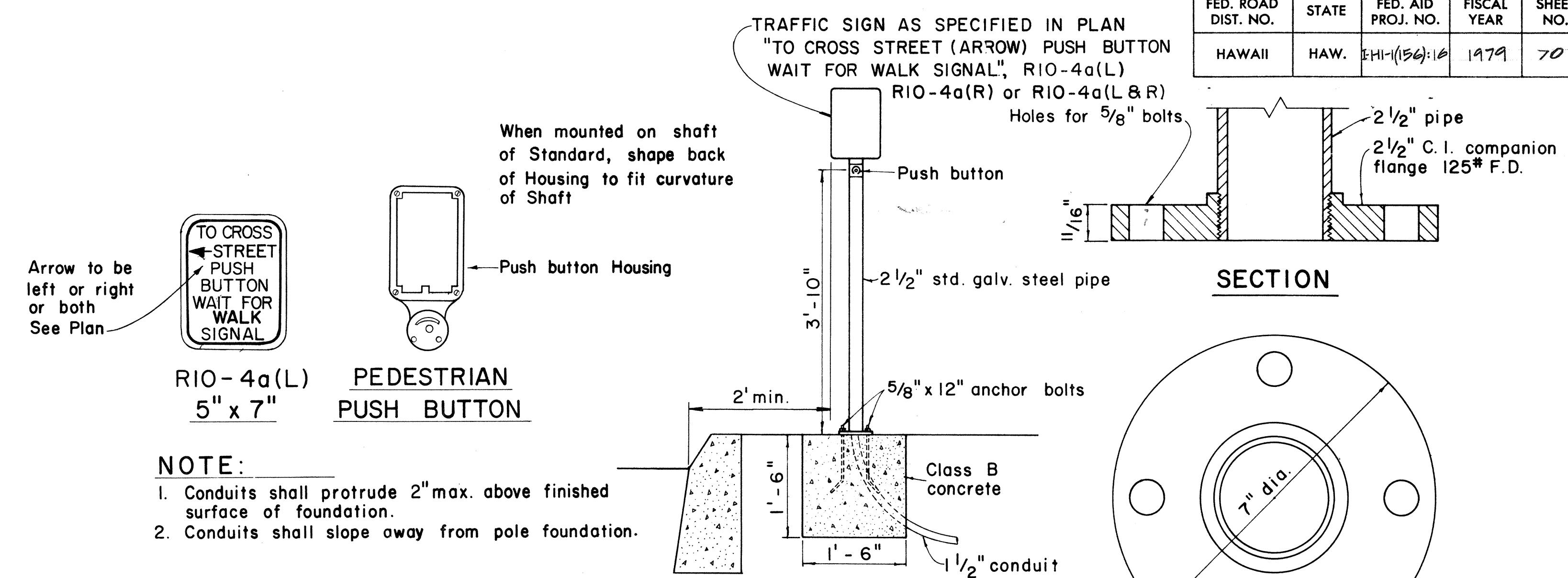
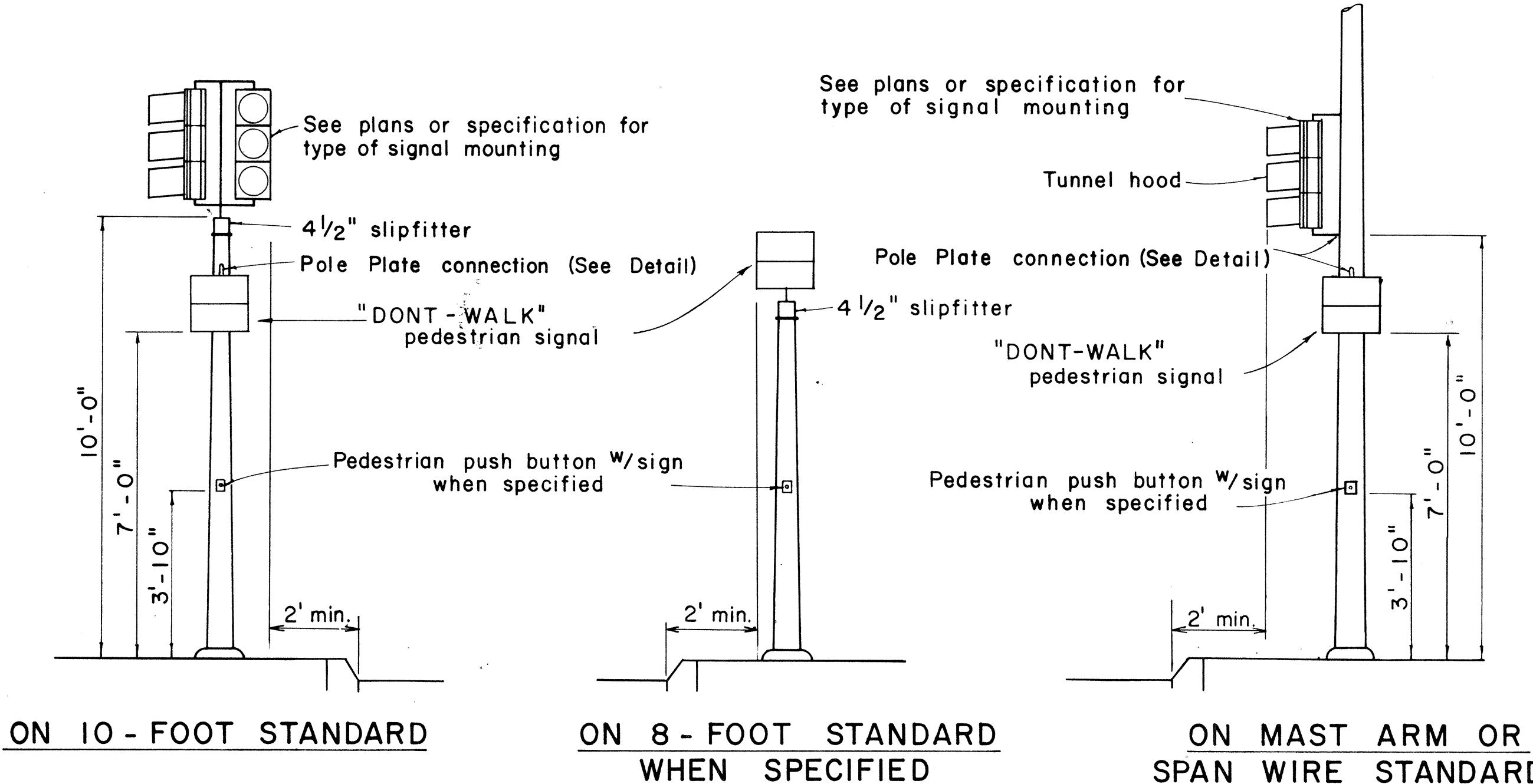
APPROVED: Herbert Z. Zukishi 5/3/18  
ASSISTANT CHIEF, ENGINEERING DATE

**STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION**

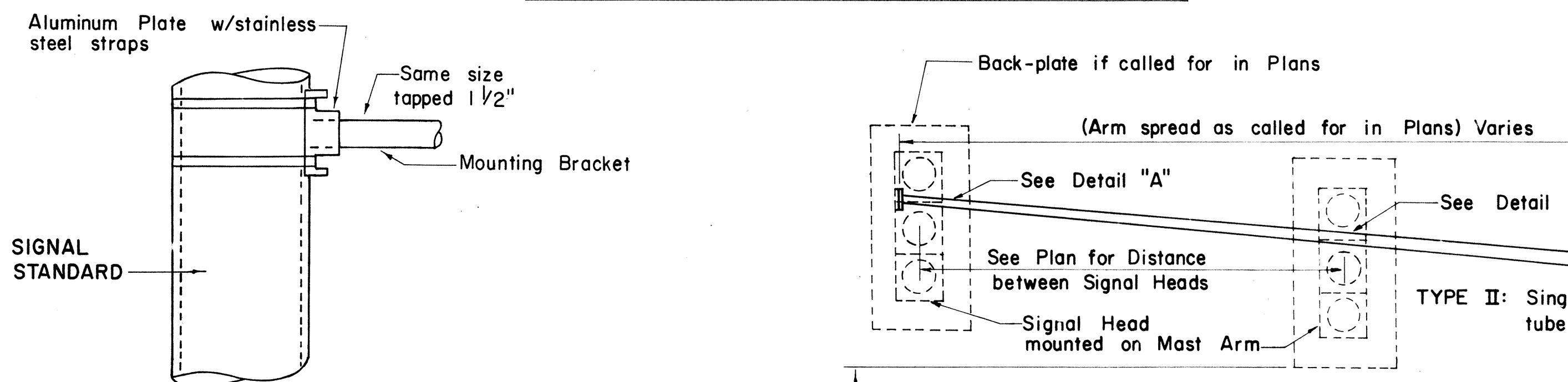
## MISCELLANEOUS

le: As Shown Date: March, 1978  
SHEET NO. 0F SHEETS DT 30

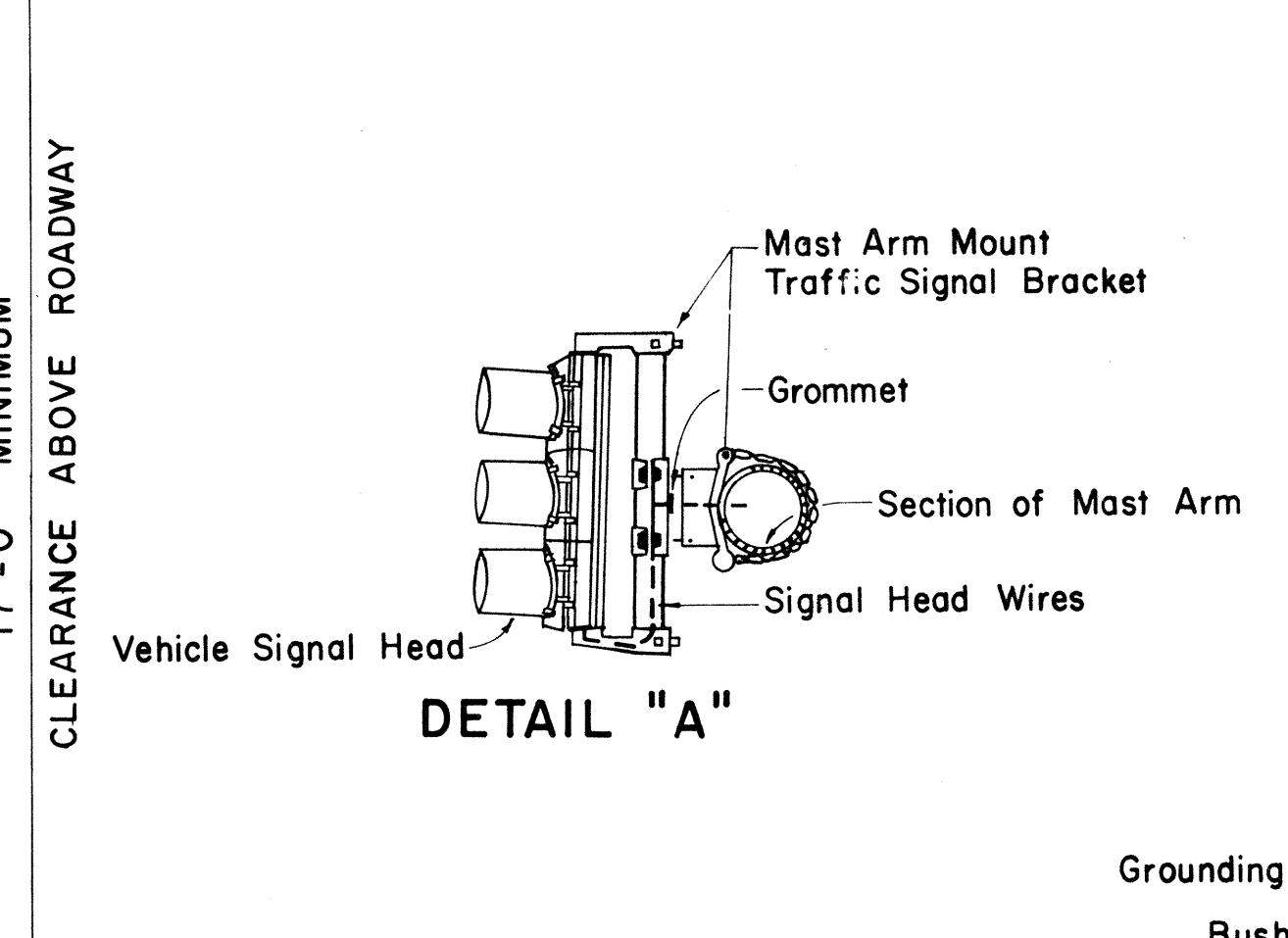
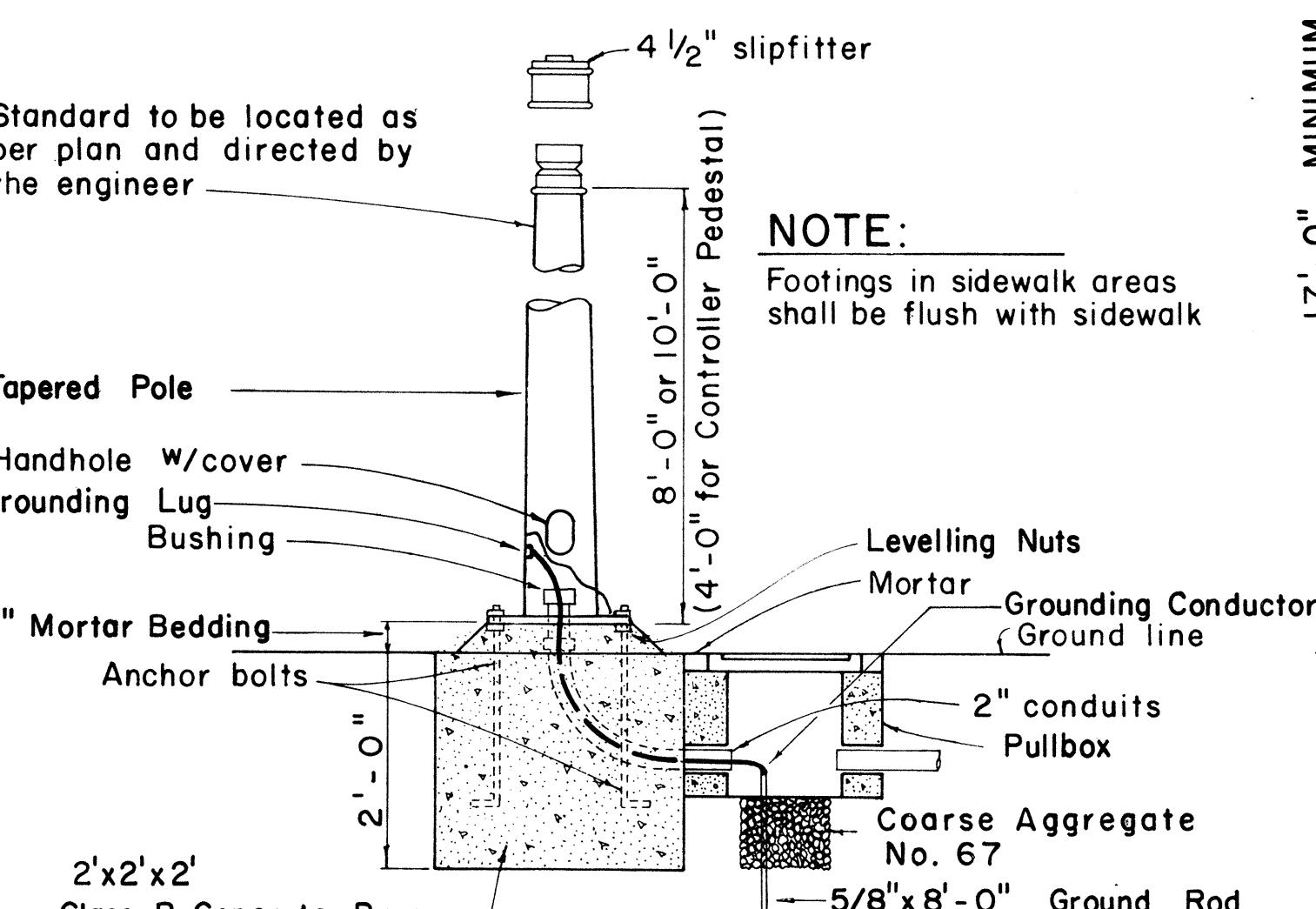
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	EHI-156-16	1979	70	236



### TYPICAL EQUIPMENT MOUNTINGS

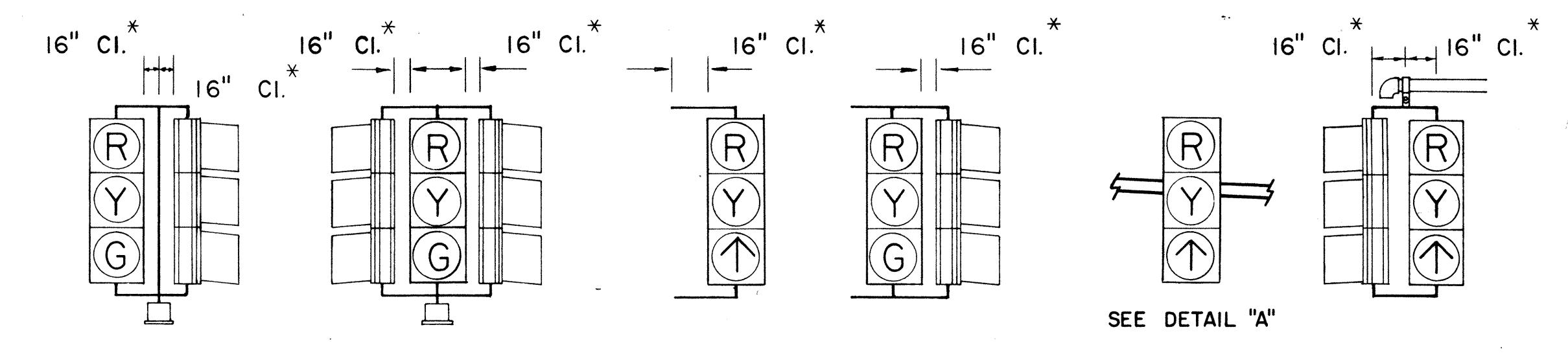


### DETAIL OF POLE PLATE CONNECTIONS



### TYPE II MAST ARM AND STANDARD

### PEDESTRIAN PUSH BUTTON POST AND FOOTING



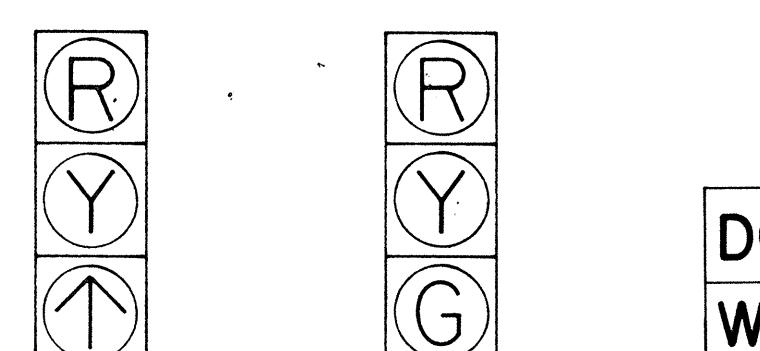
### SLIPFITTER MOUNTINGS

\* Use with Programmed Visibility Signal

### BRACKET MOUNTINGS

### MASTARM MOUNTINGS

### TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL MOUNTINGS



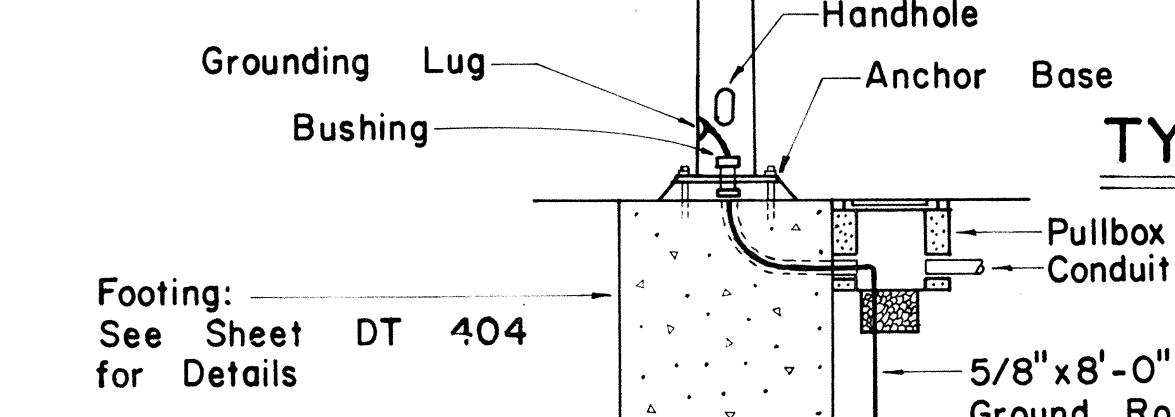
APPROVAL RECOMMENDED:  
*Etsushi Tanaka*  
TRAFFIC ENGINEER

12/29/69  
DATE

ASSISTANT CHIEF, ENGINEERING

12/30/69  
DATE

### TYPICAL SIGNAL ARRANGEMENTS



NO.	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	HT	3/23/72
2	Revise Details of Traffic and Pedestrian Signals, Standards and Pedestrian Push Button and Signs.	HT	3/5/72
3	Revise signal indications.	HT	9/22/74
4	Remove Note No. 3 & Revise clearance and dimension.	HT	9/19/71

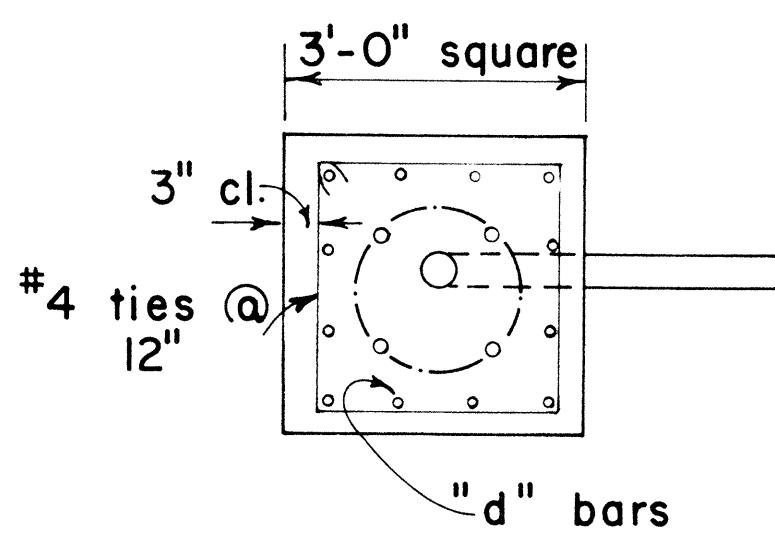
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION LAND TRANSPORTATION FACILITIES DIVISION TRAFFIC SIGNAL SYSTEM MISCELLANEOUS DETAILS			
Not to Scale			

SHEET No. OF SHEETS DT 400

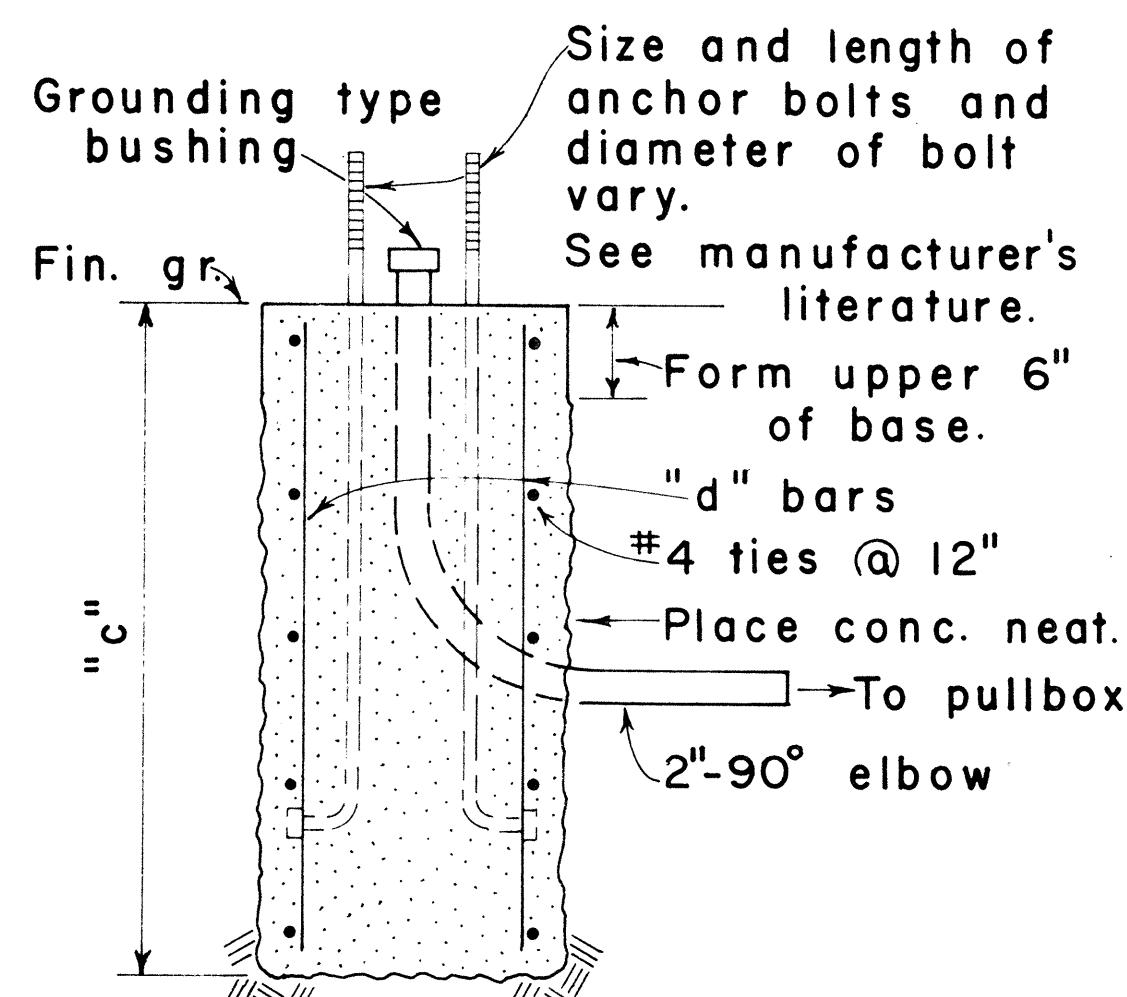
70



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156):16	1979	72	236

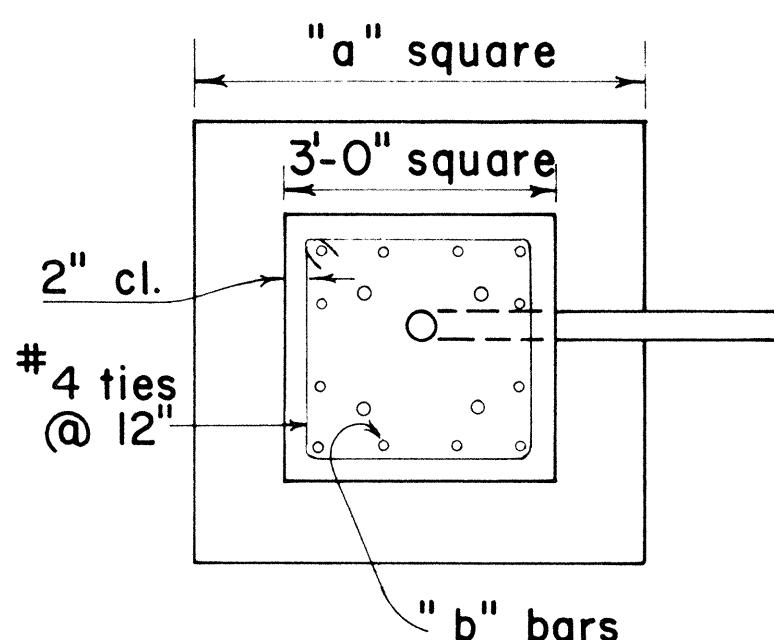


## PLAN - SECTION

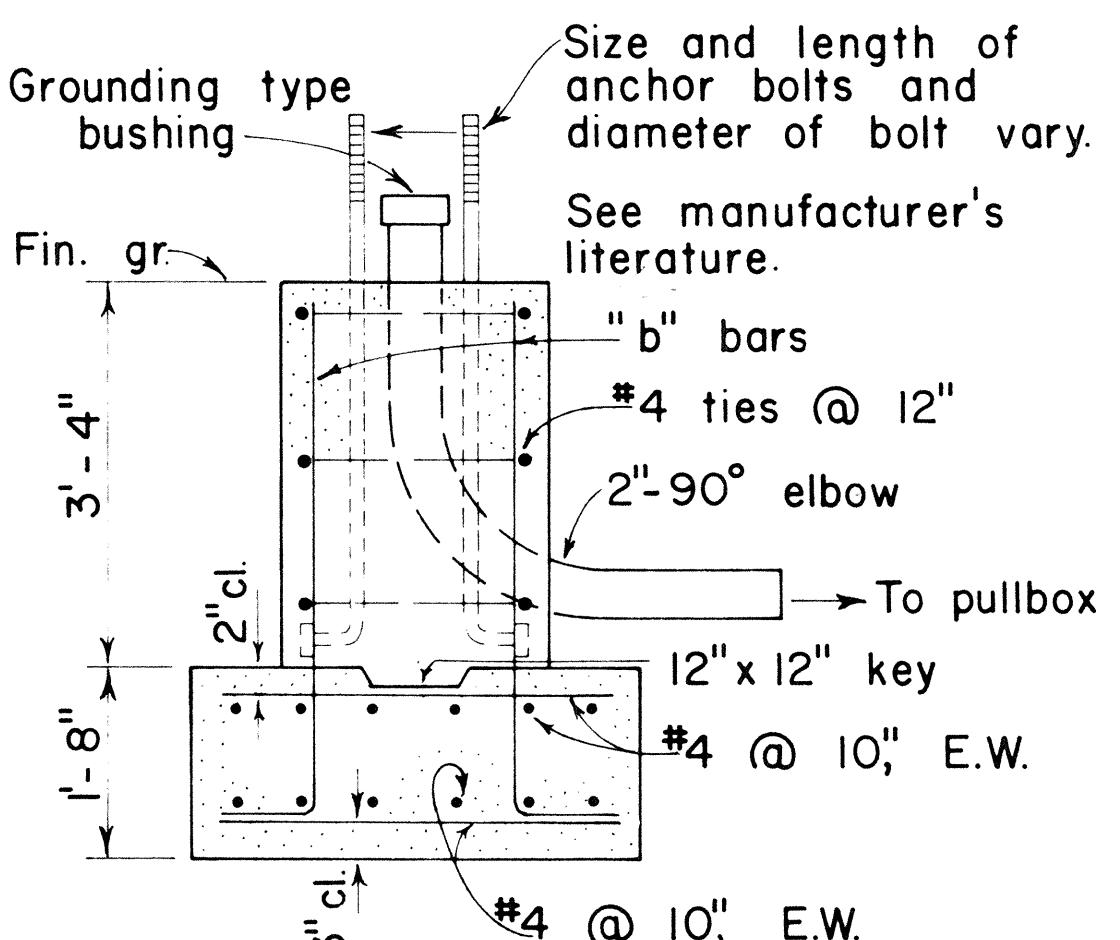


NOT

Concrete shall be Class B.

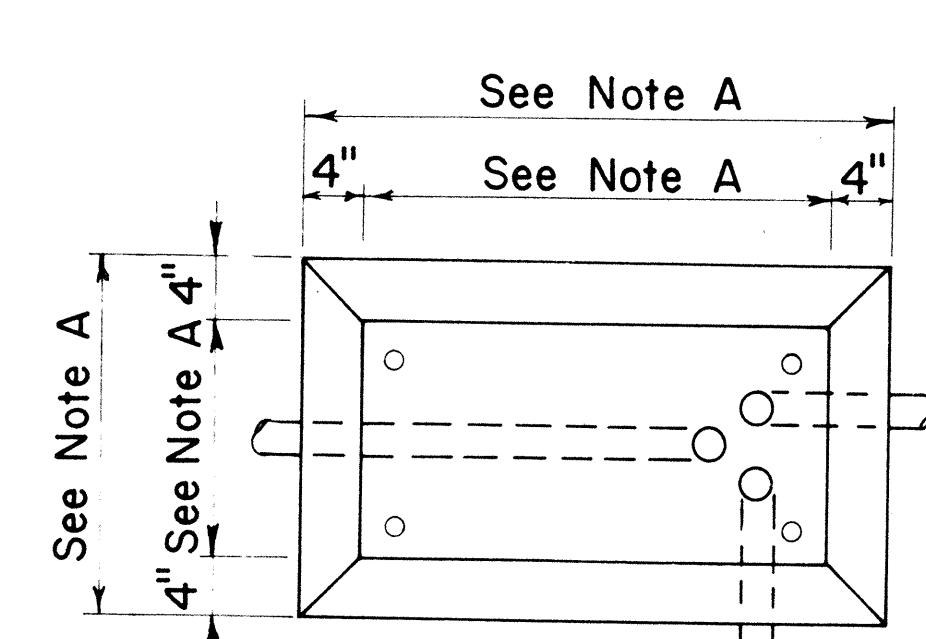


## PLAN – SECTION



**NOTE:**

Concrete shall be Class B

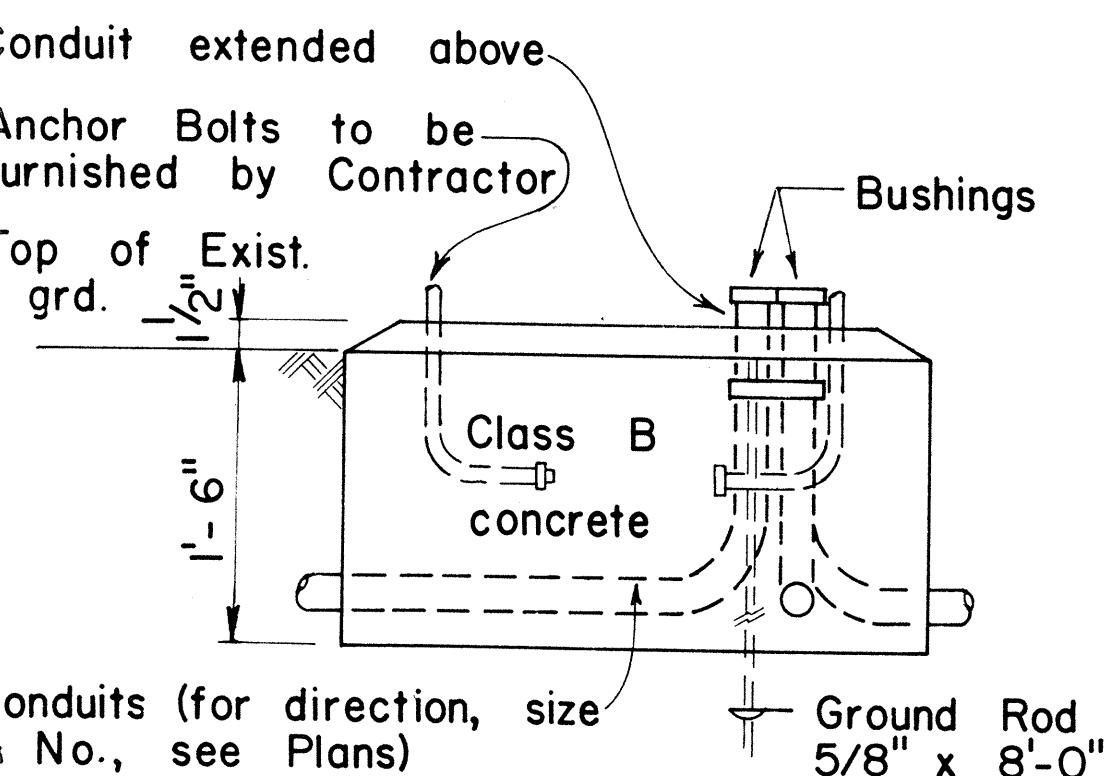


PLAN

## CONCRETE BASE FOR CONTROLLER CABINET

## NOTES:

- A. Dimensions to be determined by the size of the Controller Cabinet to be furnished under this Contract.
  - B. Details of Conduits, Anchor Bolts, etc., are approximate only. Exact details shall be secured by the Contractor from Manufacturer.



## ELEVATION

## **SECTION**

MAST ARM LENGTH	"c"	"d" BARS
16' - 18'	5'-0"	12- #6
20'	5'-6"	12- #6
25'	6'-0"	12- #6
30'	6'-6"	12- #6
35'	7'-0"	12- #8
40'	8'-0"	12- #8

**TYPE II**

TYPE ΠΔ

MAST ARM LENGTH	"a"	"b" BARS
16'-18'	5'-0"	12- #6
20'	5'-6"	12- #6
25'	6'-0"	12- #6
30'	6'-6"	12- #8
35'	6'-6"	12- #8
40'	7'-0"	12- #8

# FOOTING FOR MAST ARM STANDARD

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

APPROVAL RECOMMENDED: Eiichi Tanaka DATE 3/4/76  
TRAFFIC ENGINEER

APPROVED: Herbert Z. Daleski 3-5-76  
ASSISTANT CHIEF ENGINEERING DATE

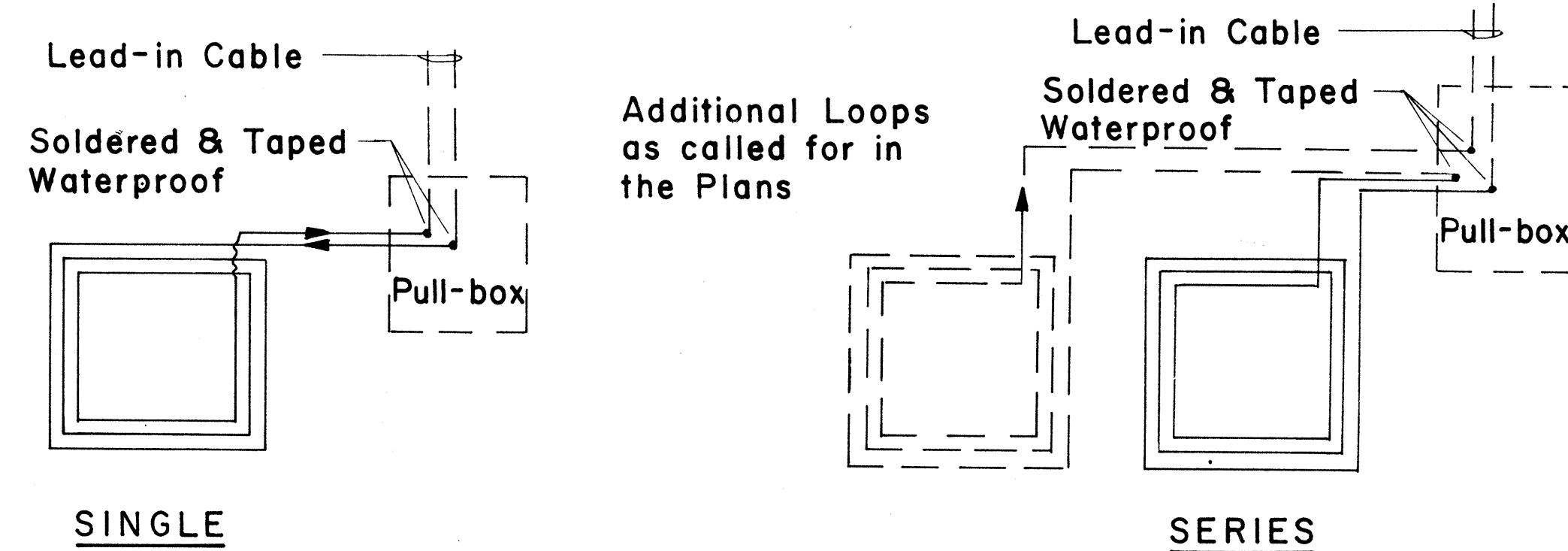
NO.	REVISION	APPROVED BY	DATE

**STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION**

## **TRAFFIC SIGNAL SYSTEM MISCELLANEOUS DETAILS**

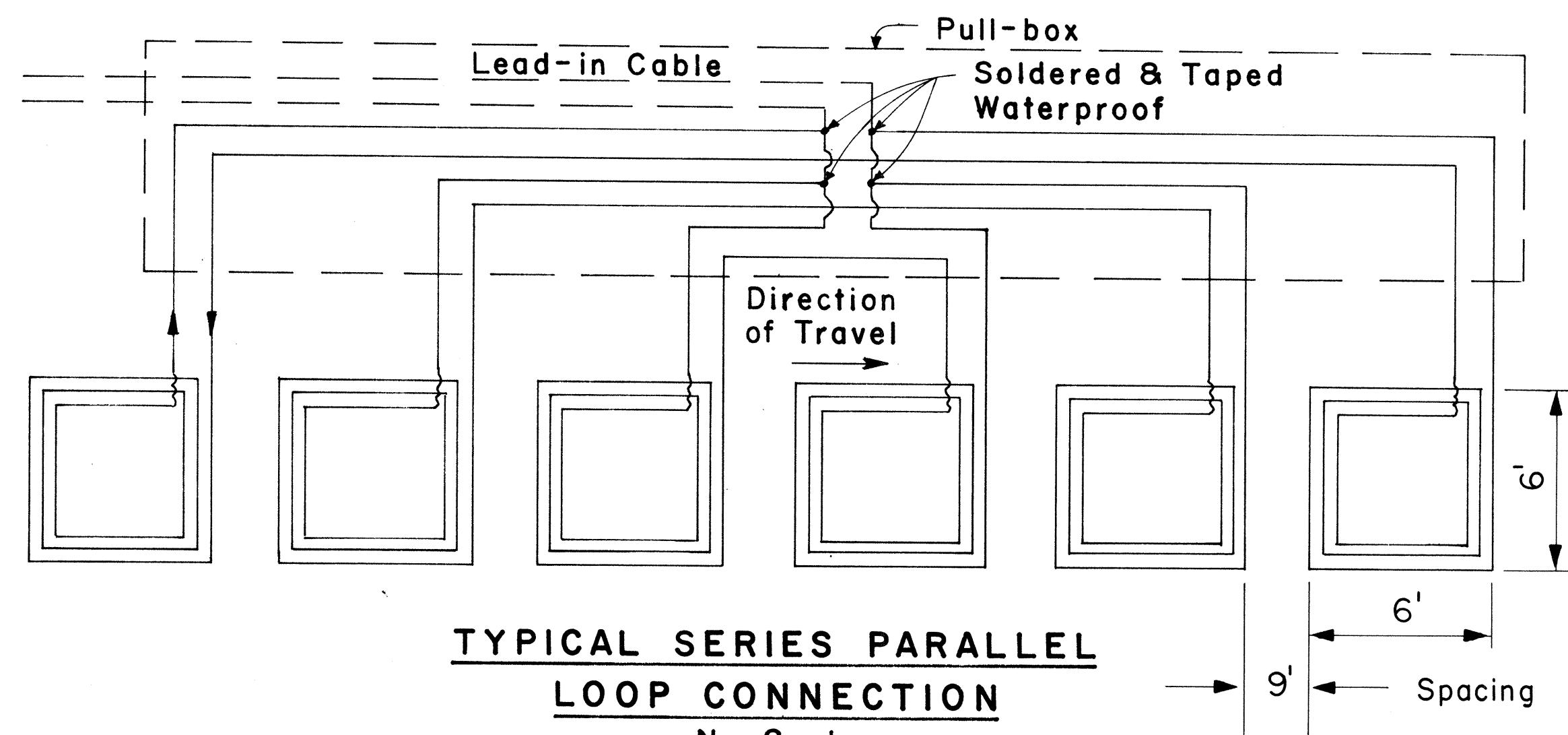
Not to Scale

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(156):16	1979	73	236



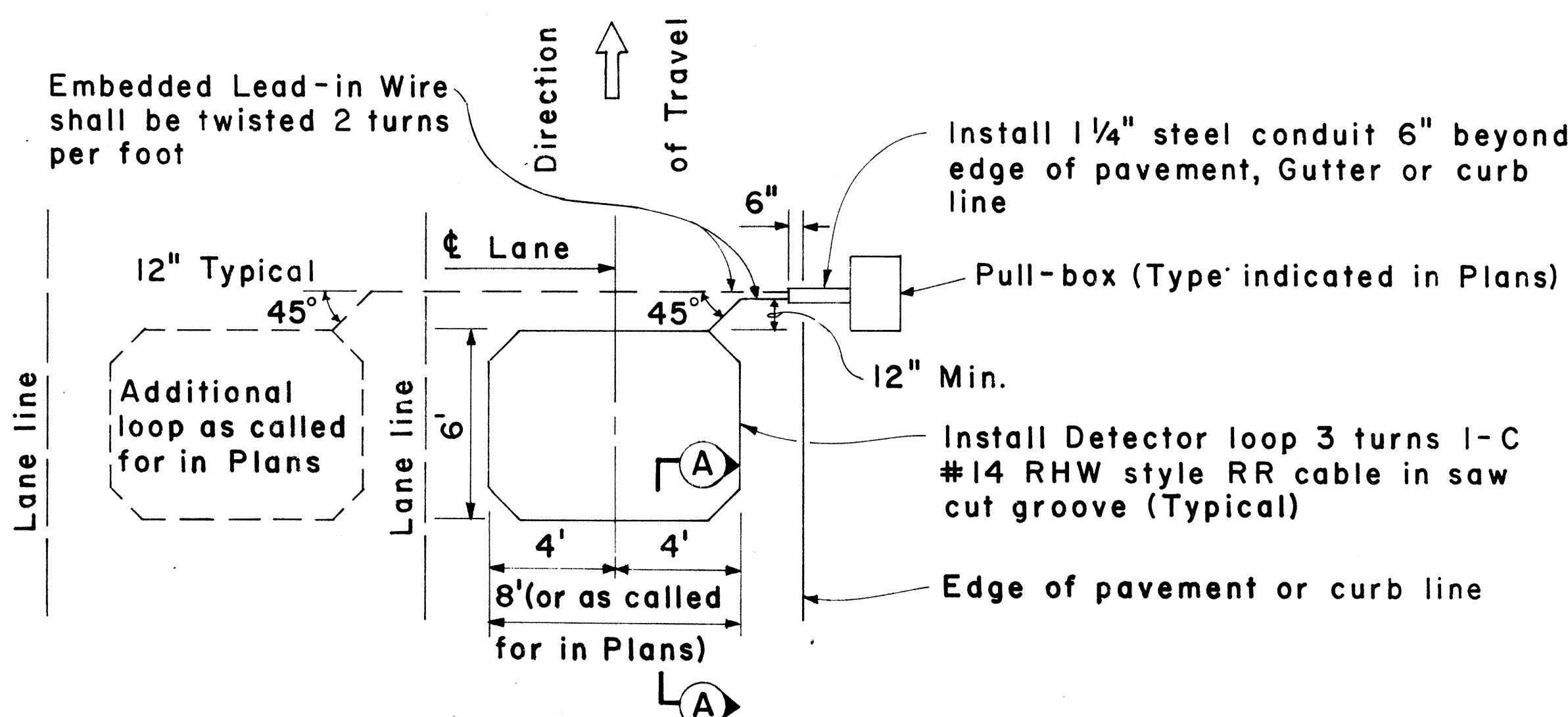
## TYPICAL LOOP CONFIGURATIONS

## No Scal



# TYPICAL SERIES PARALLEL LOOP CONNECTION

### No Scal



# PLAN - MULTIPLE LOOP LAYOUT

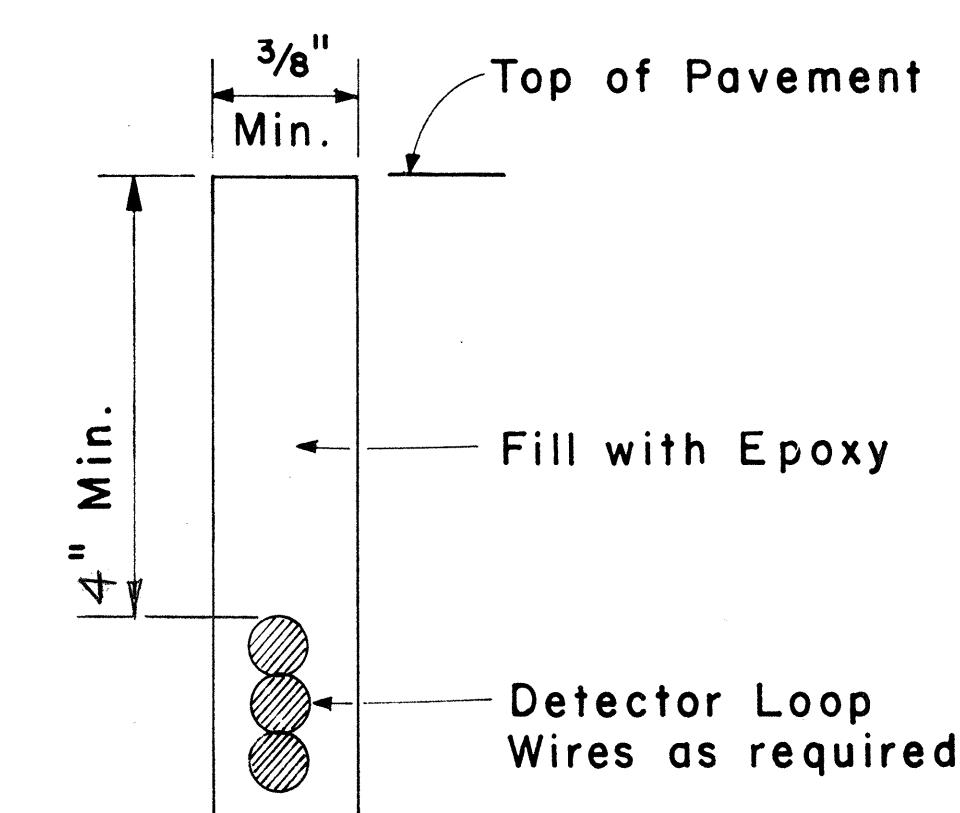
Scale :  $\frac{1}{4}'' = 1' - 0$

## DETECTION LOOP

Scale : As Shown

**Detector Loop Saw-Cut  
SECTION A-A (TYPICAL)**

No Scale



# TYPICAL TRENCH SECTION FOR CONDUIT

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

- I. All conduits under roadways shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.

APPROVAL RECOMMENDED  
*E. C. Tamm*  
TRAFFIC ENGINEER

3-197

ASSISTANT CHIEF ENGINEERING

**STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION**

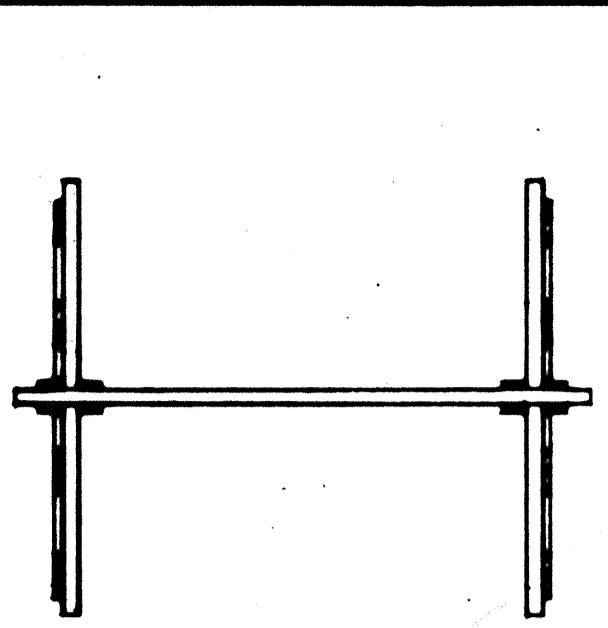
# TRAFFIC SIGNAL SYSTEM

## MISCELLANEOUS DETAILS

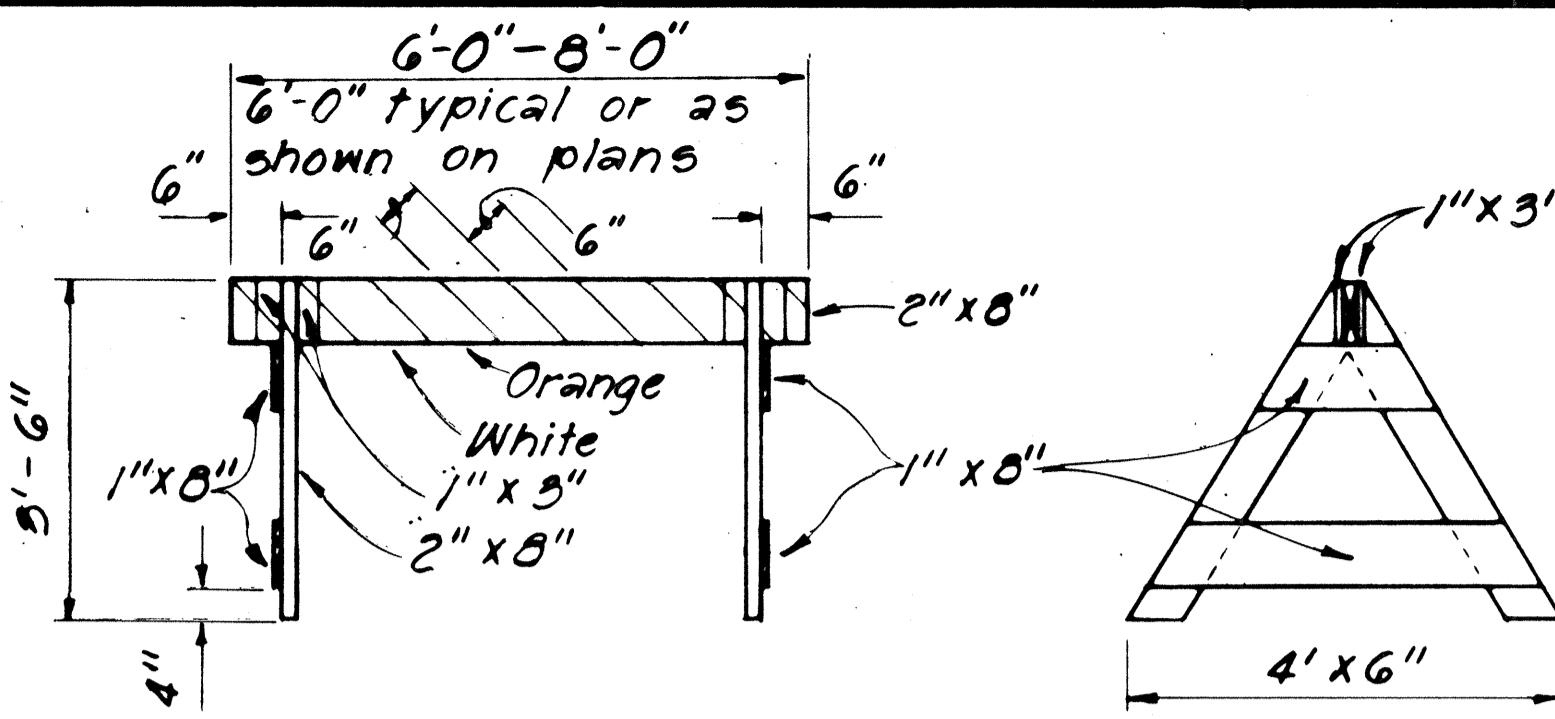
**Scale: As Noted**

SHEET No. OF SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHH(56)16	1979	74	236



PLAN VIEW

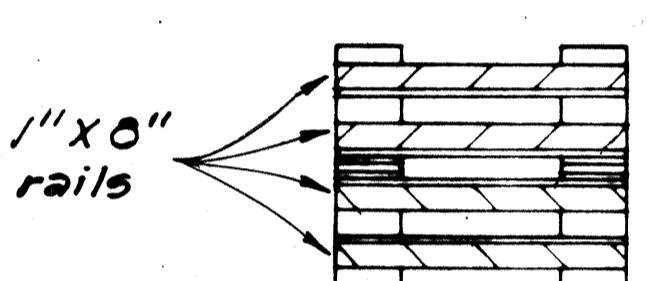


FRONT VIEW

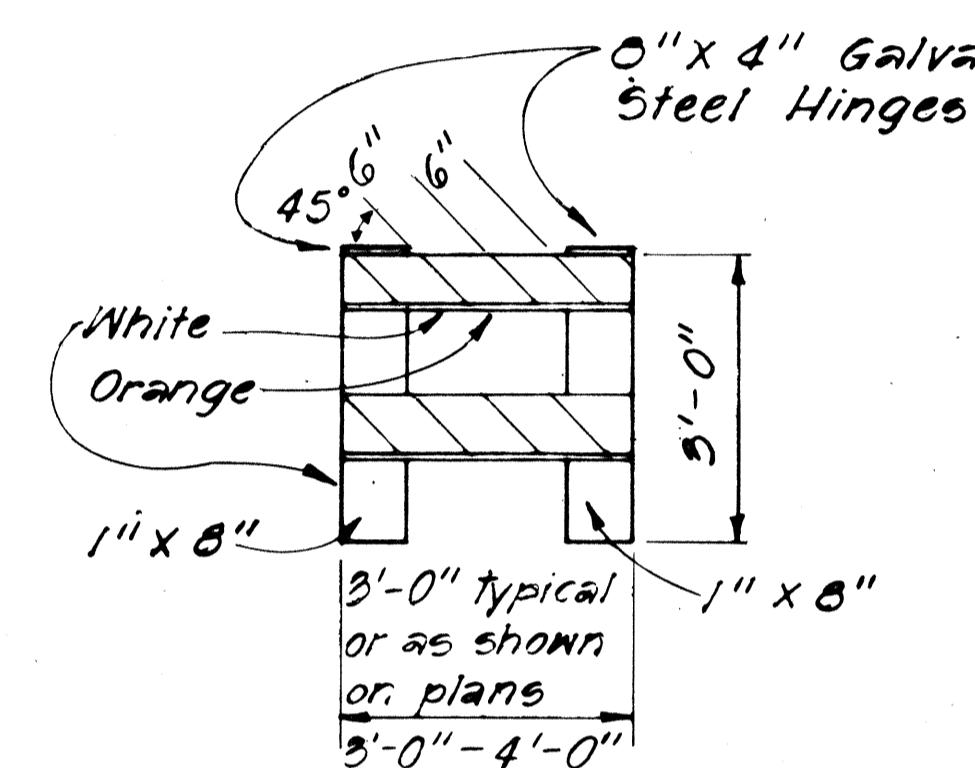
END VIEW

### TYPE I BARRICADE

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



PLAN VIEW

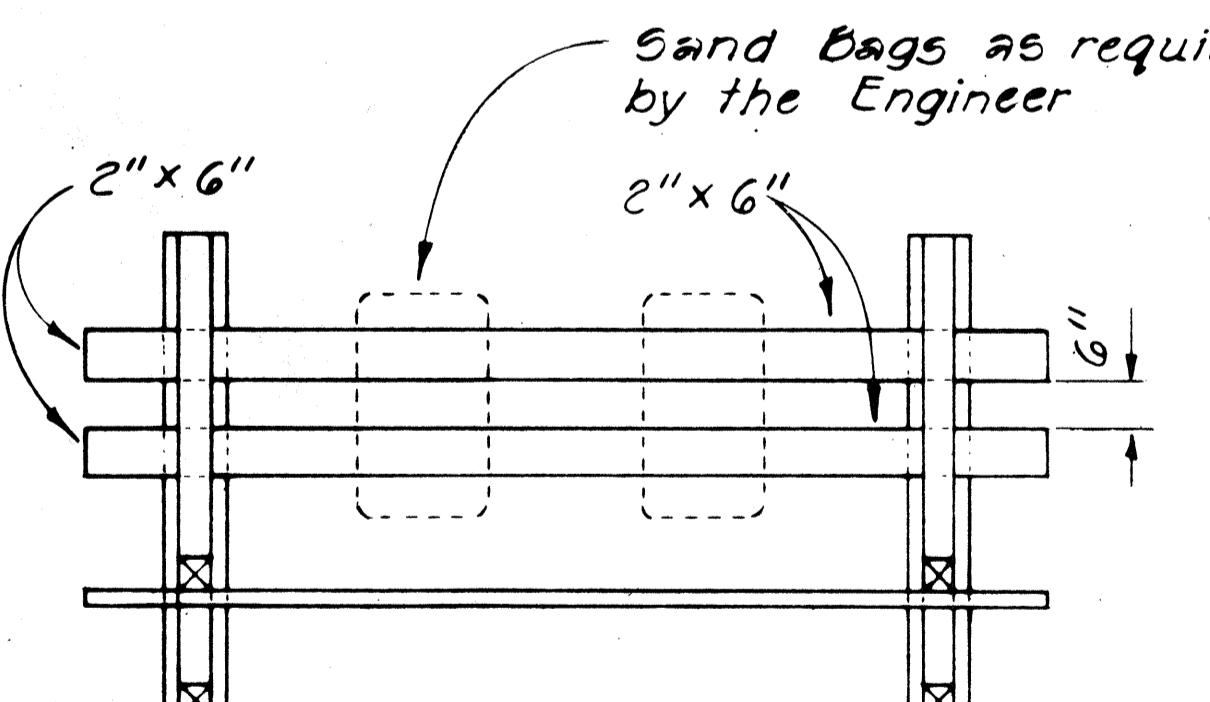


FRONT VIEW

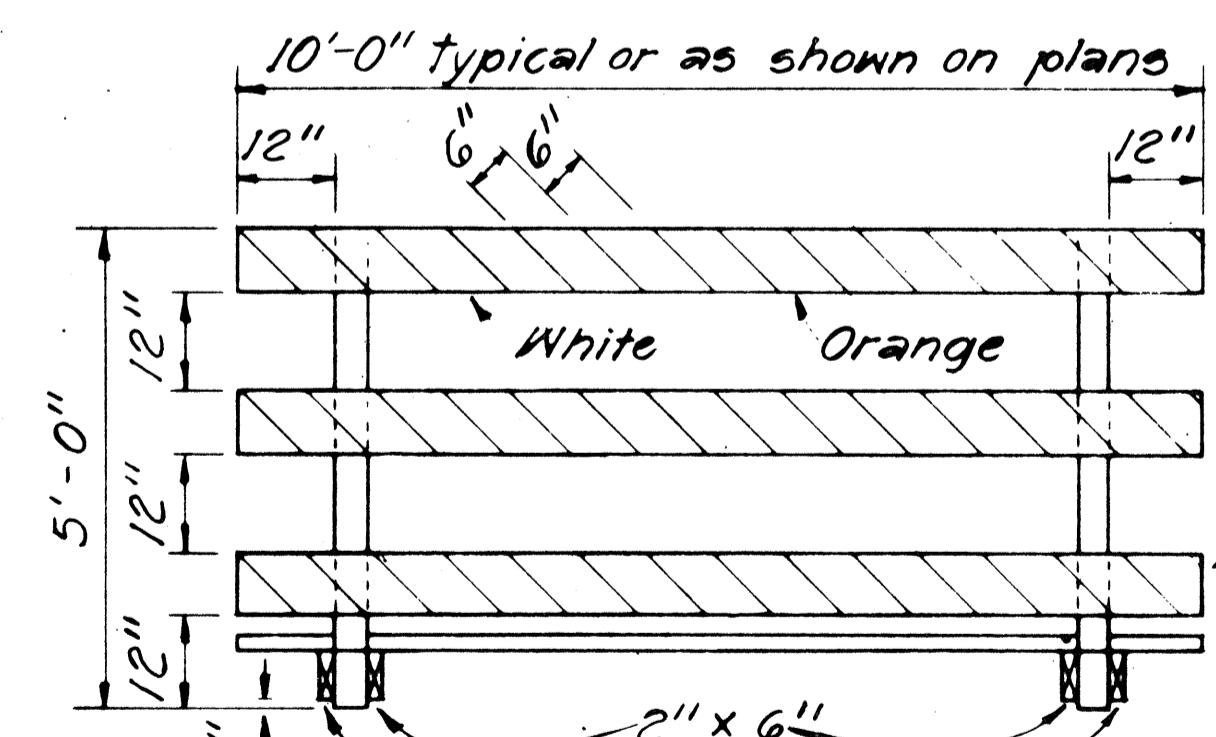
END VIEW

### TYPE II BARRICADE

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



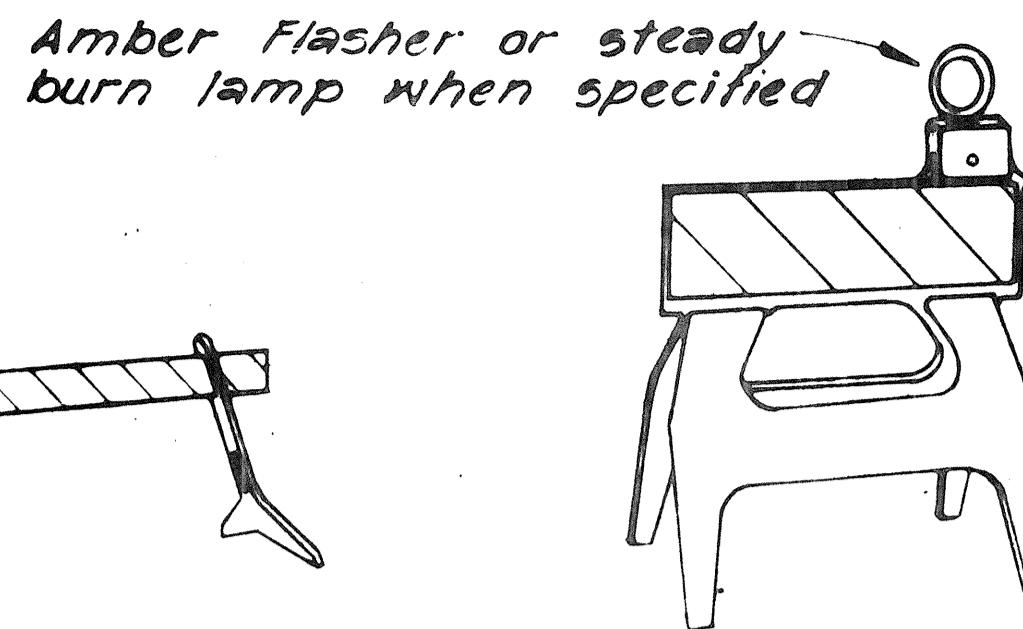
PLAN VIEW



FRONT VIEW

### TYPE III BARRICADE

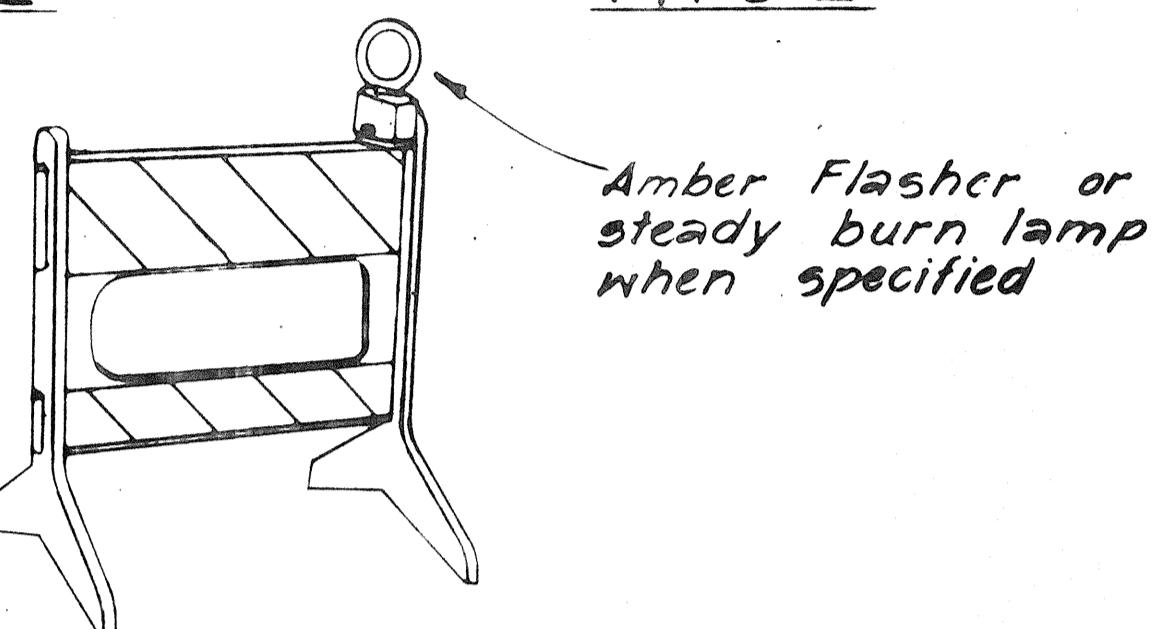
Scale:  $\frac{1}{2}'' = 1'-0''$



Amber Flasher or steady  
burn lamp when specified

TYPE I

TYPE I



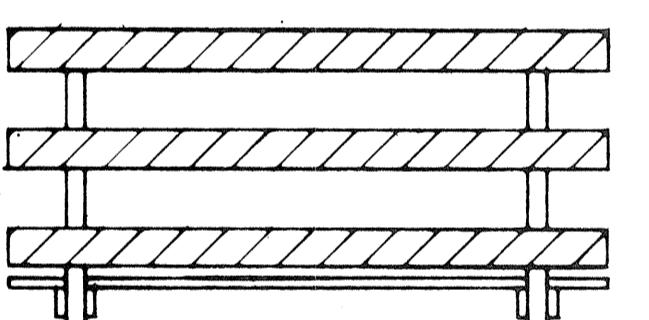
Amber Flasher or  
steady burn lamp  
when specified

TYPE II

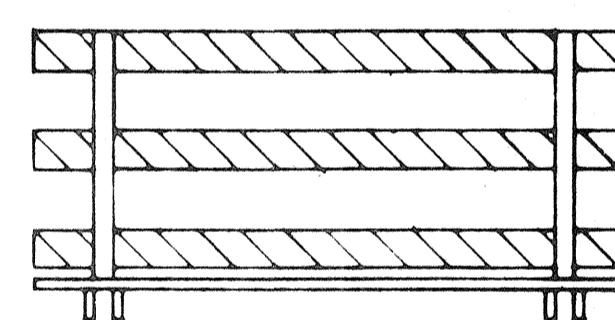
### PLASTIC MOLDED BARRICADE OPTIONS \*

Not to Scale

\* Shop Drawings must be submitted for approval.



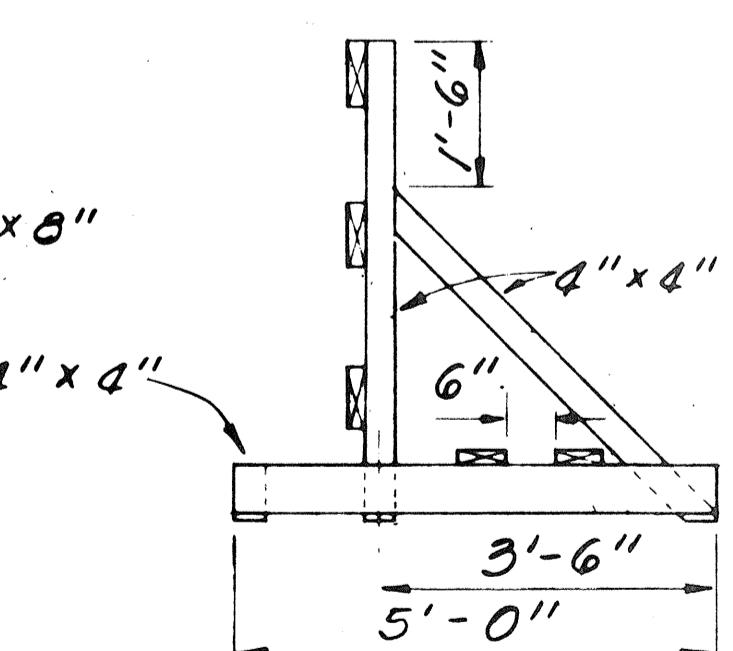
FRONT FACE



BACK FACE

### BARRICADE STRIPING DETAILS

Not to Scale



END VIEW

### GENERAL NOTES

- The Contractor shall construct, install and maintain the barricades at the locations shown on the Plans, or as when called for.
- The barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property, unless otherwise specified.
- The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized with reflective sheeting.
- Both faces of the barricade rails shall be striped. See Striping Detail Arrangement.
- Contractor may submit alternate designs for approval.
- Barricade details shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, by the Federal Highway Administration and as amended.
- If wooden rails are used, 26 ga. galv. steel sheet shall be first tacked on to the rails and then overlayed with reflective sheeting.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### TYPICAL DETAILS

#### BARRICADES

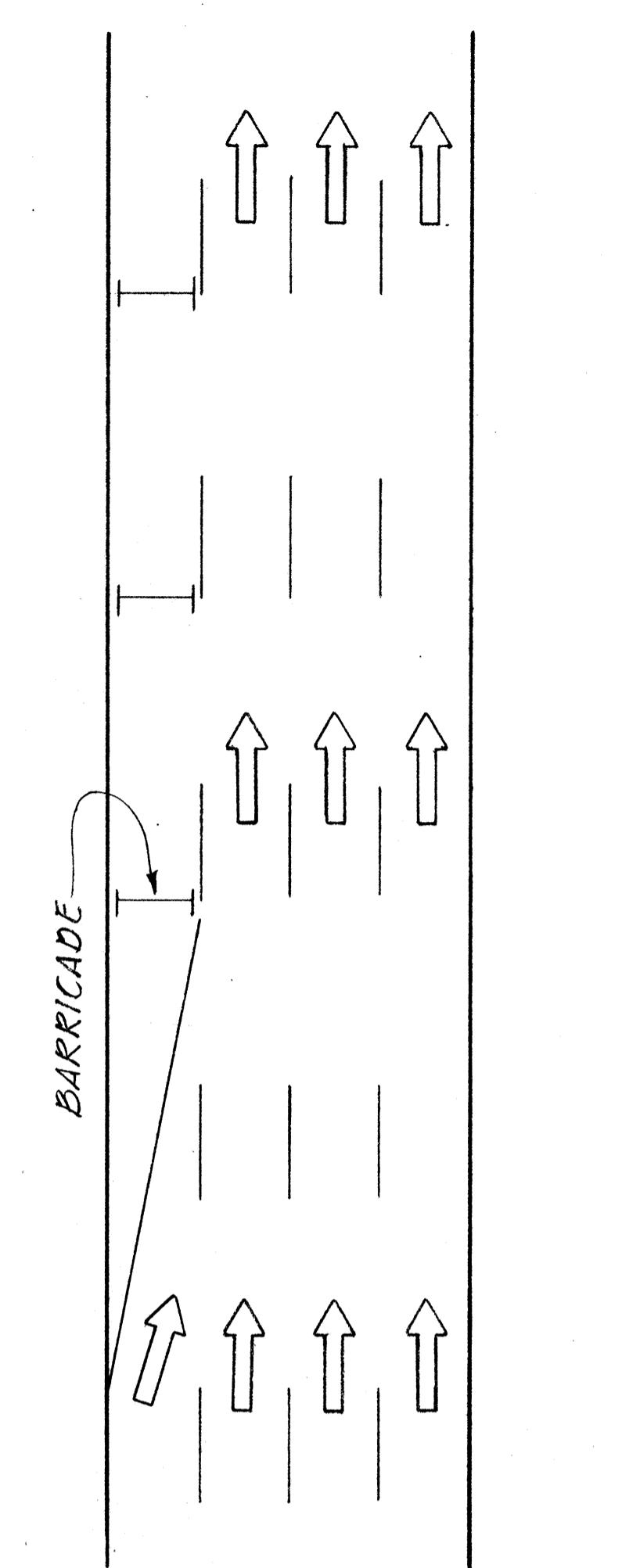
SCALE: As Shown

SHEET NO. OF SHEETS

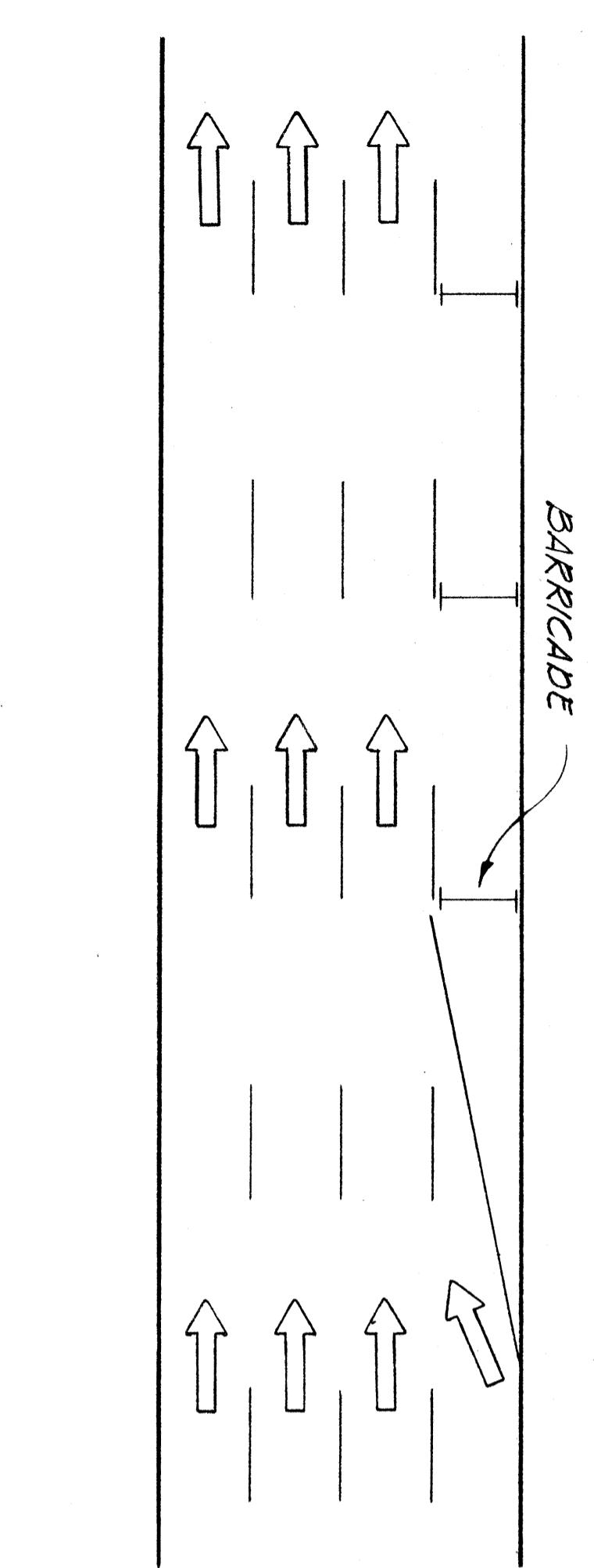
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IHI-1(56)16	1979	75	236

### GENERAL NOTES

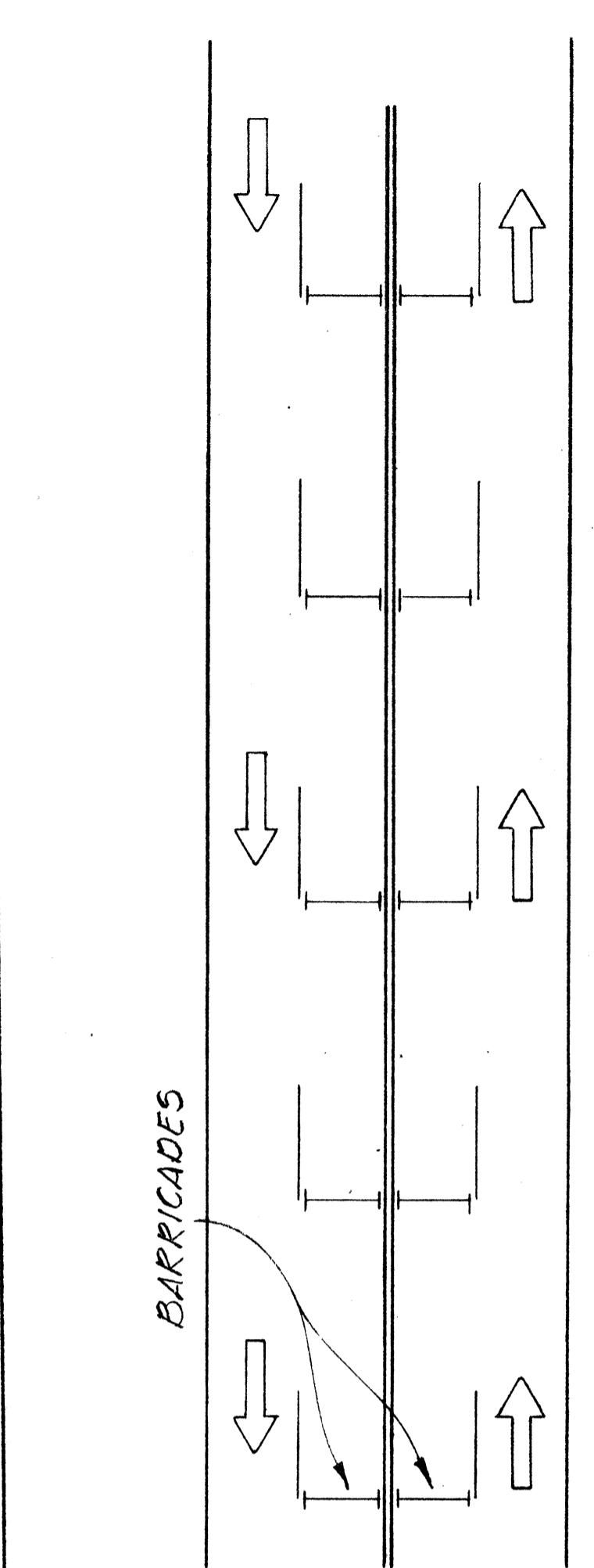
1. Barricade Type, Placement, and Arrangement shall be as shown on the Construction Plans or as when called for.



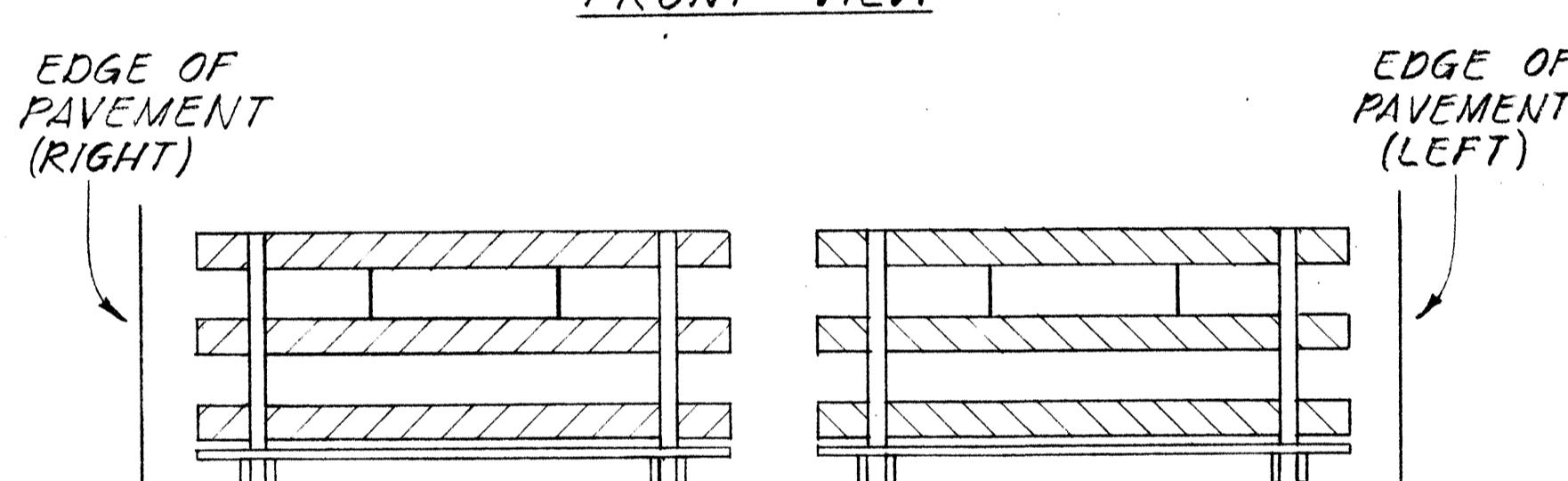
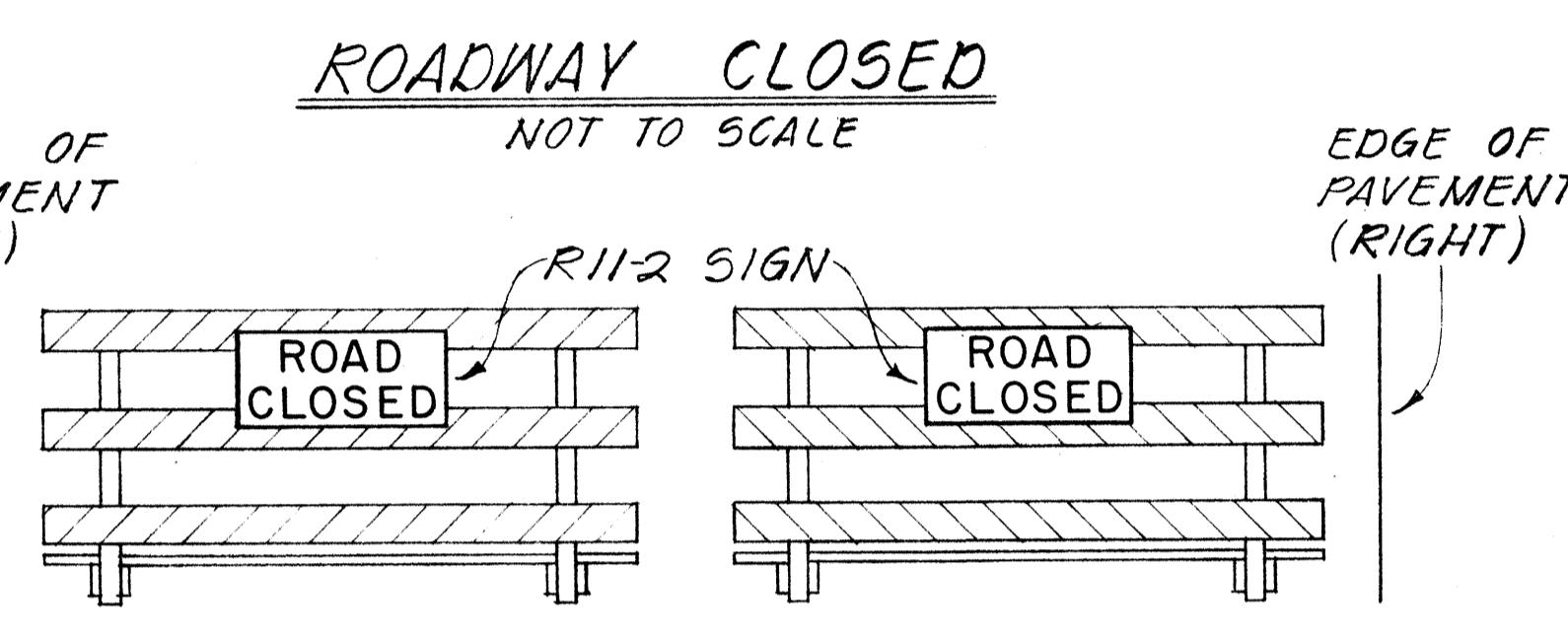
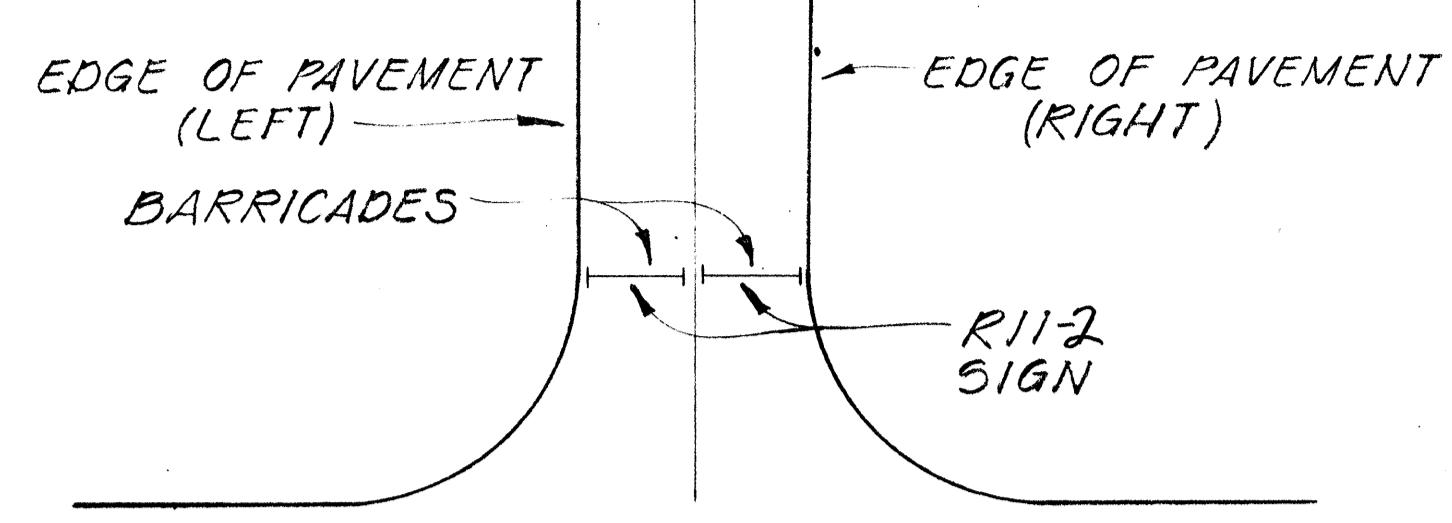
ROADWAY DELINEATION  
TO THE RIGHT  
NOT TO SCALE



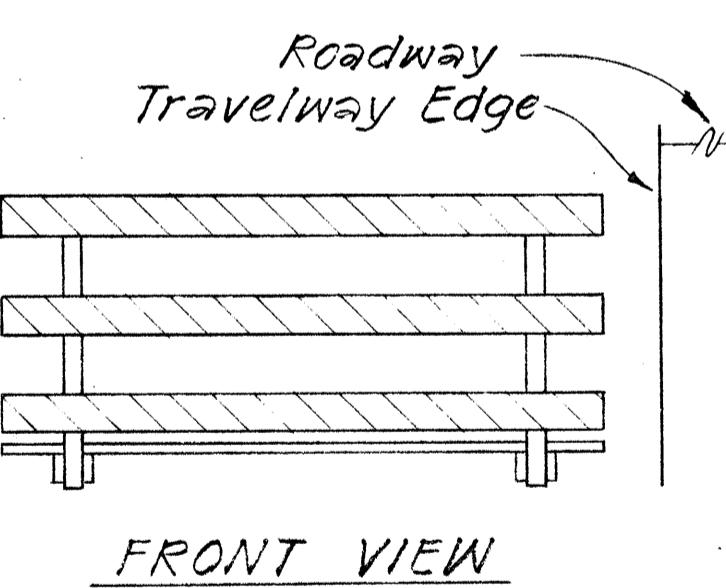
ROADWAY DELINEATION  
TO THE LEFT  
NOT TO SCALE



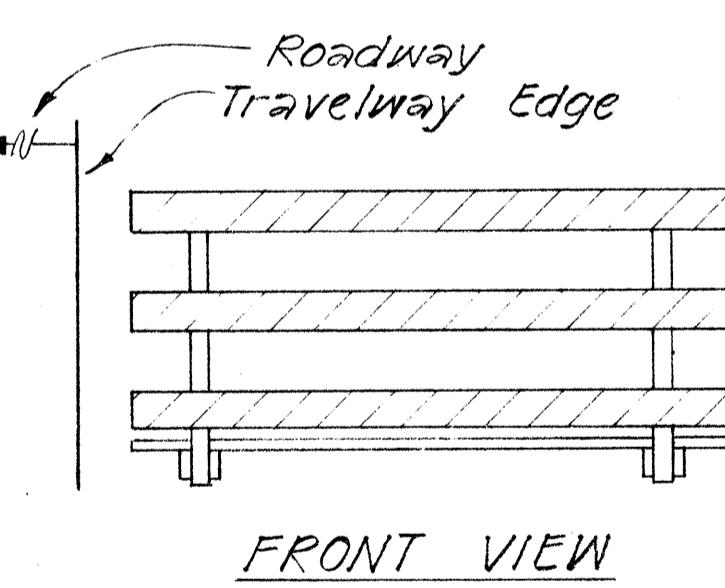
ROADWAY DELINEATION  
FOR 2-WAY TRAFFIC  
NOT TO SCALE



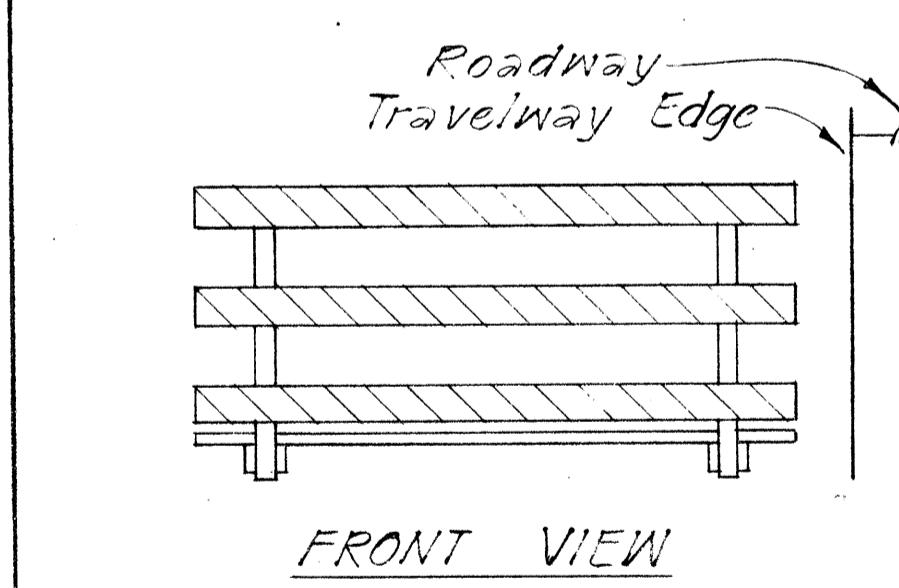
BACK VIEW



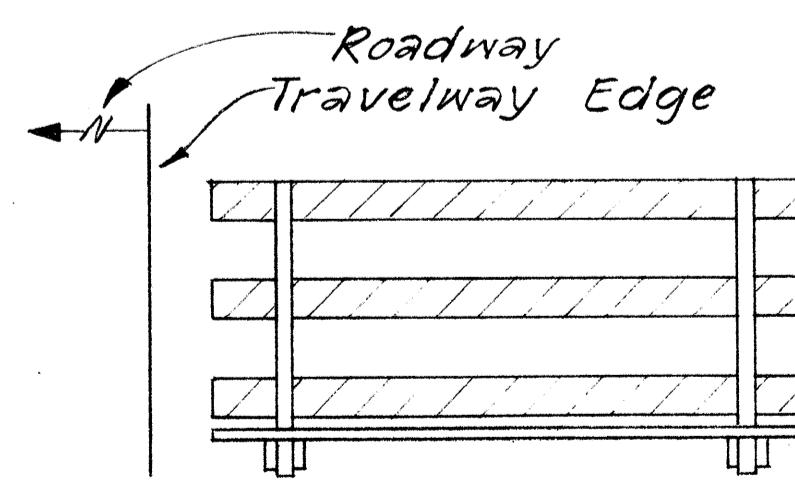
FRONT VIEW



FRONT VIEW

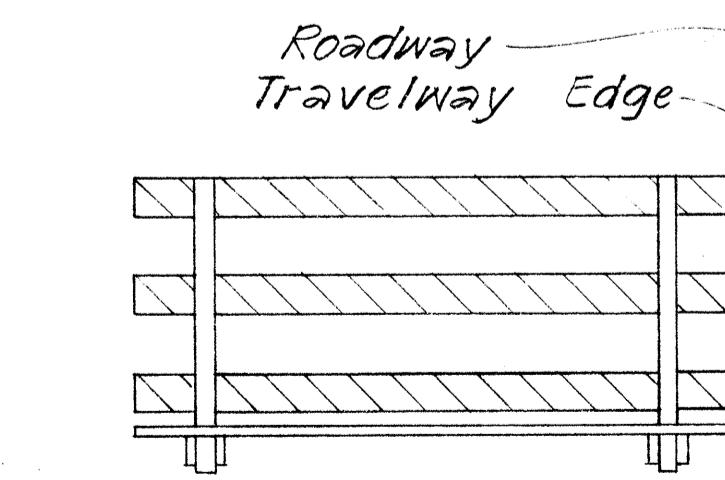


FRONT VIEW



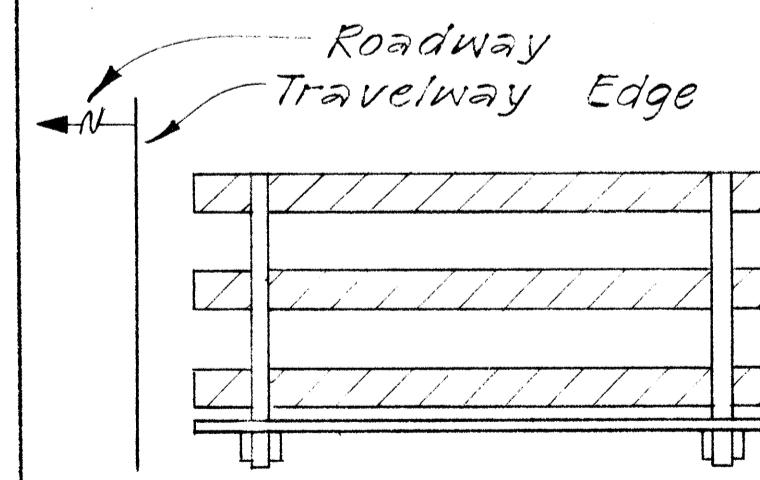
BACK VIEW

BARRICADE STRIPING  
ARRANGEMENT  
NOT TO SCALE



BACK VIEW

BARRICADE STRIPING  
ARRANGEMENT  
NOT TO SCALE



BACK VIEW

BARRICADE STRIPING  
ARRANGEMENT  
NOT TO SCALE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### TYPICAL DETAILS

#### BARRICADE STRIPING DETAILS

SHEET NO. OF SHEETS