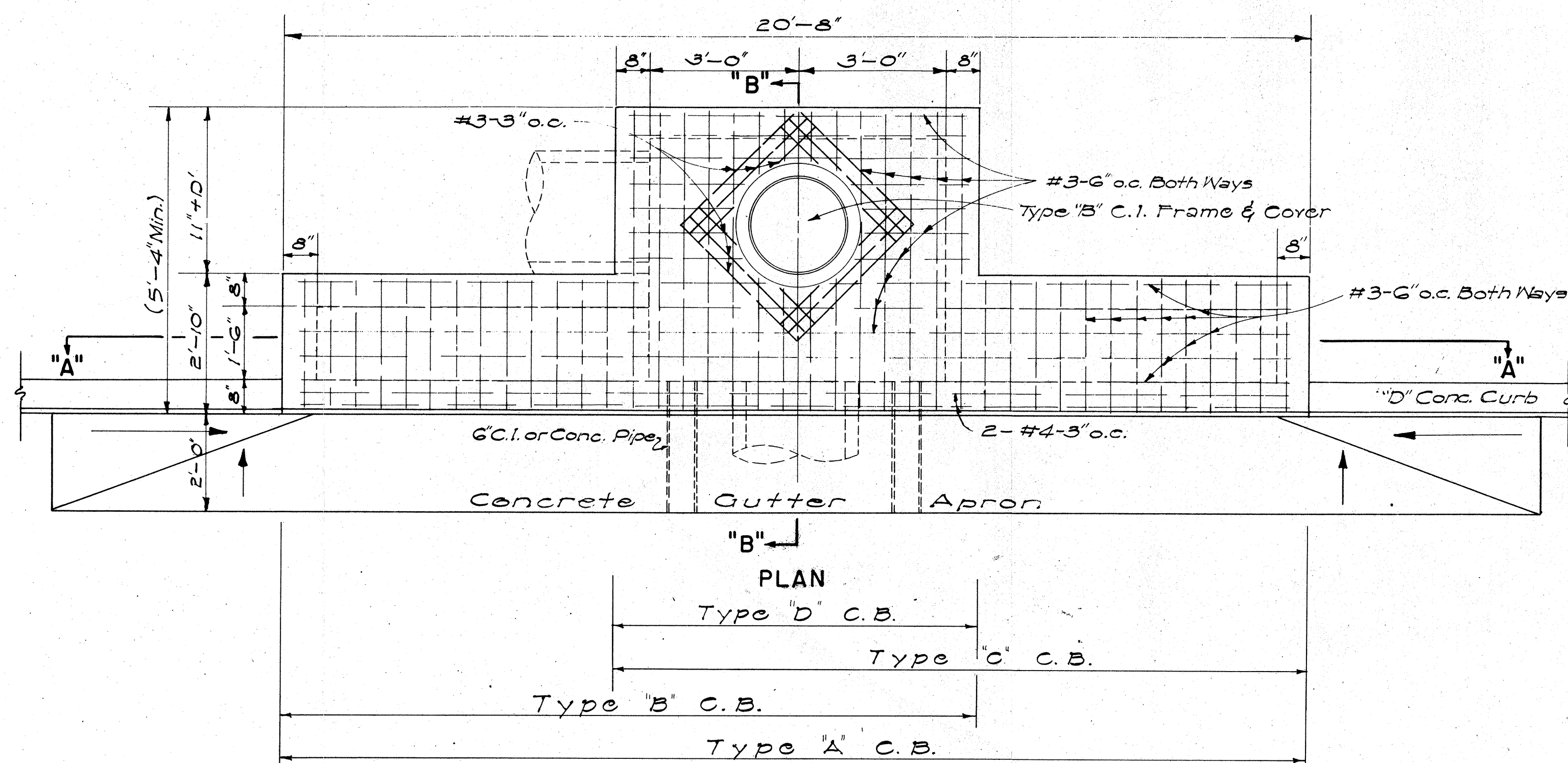
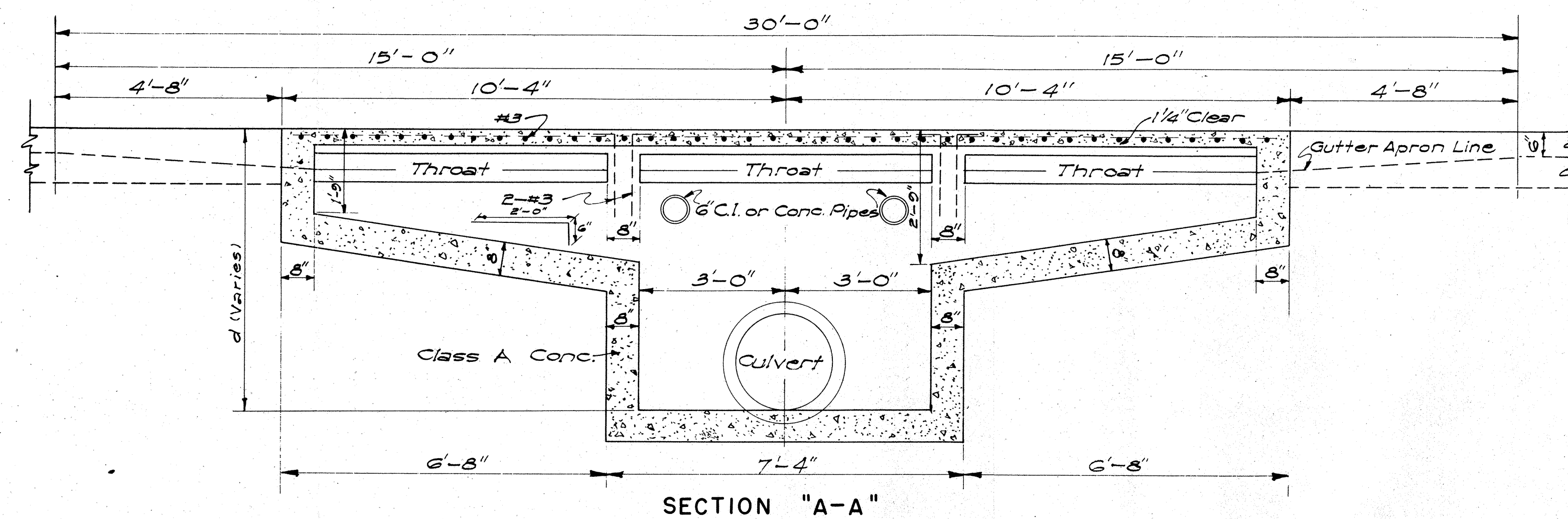


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



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

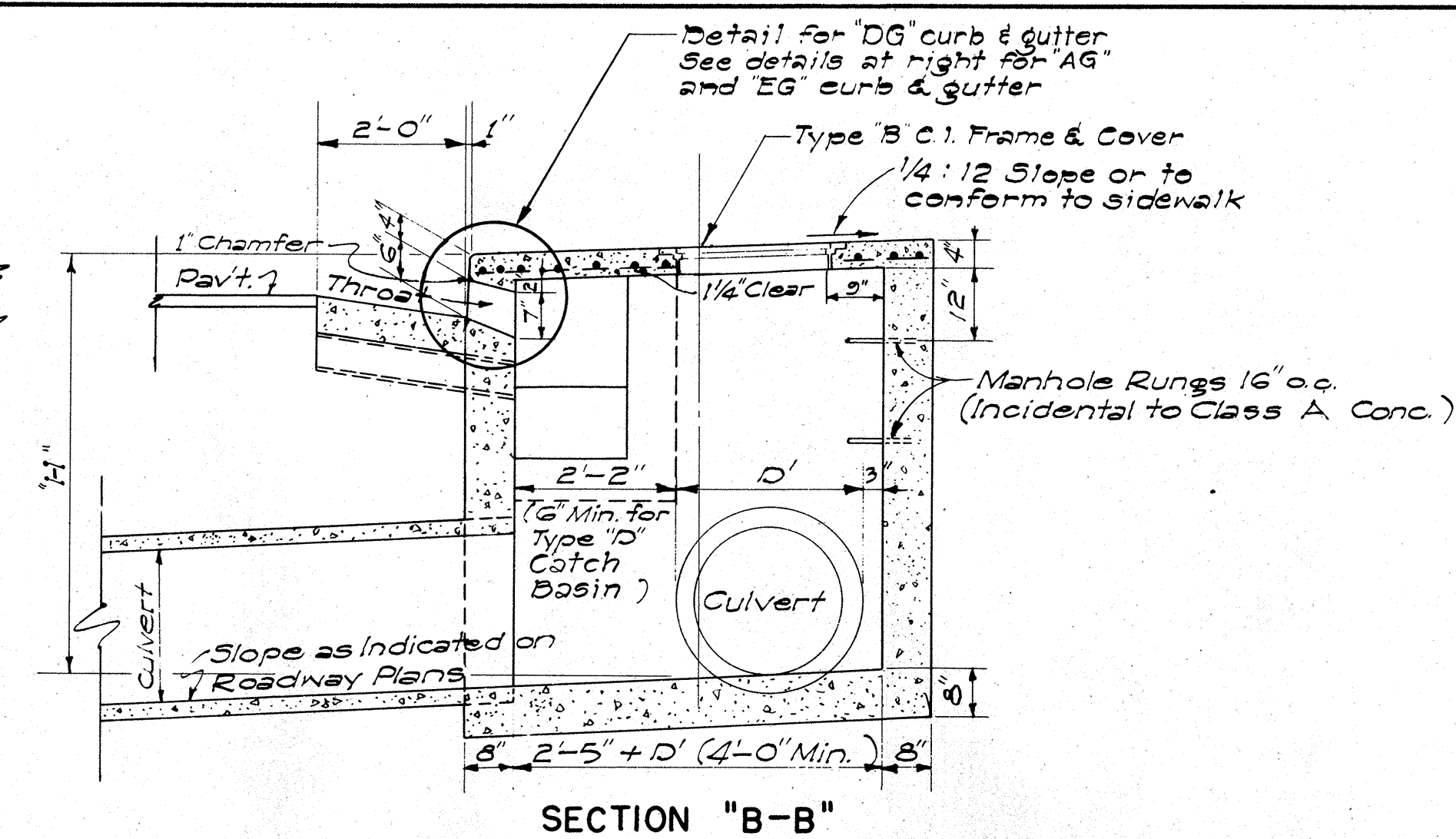
SCALE: 1/2" = 1'-0"

GENERAL NOTES

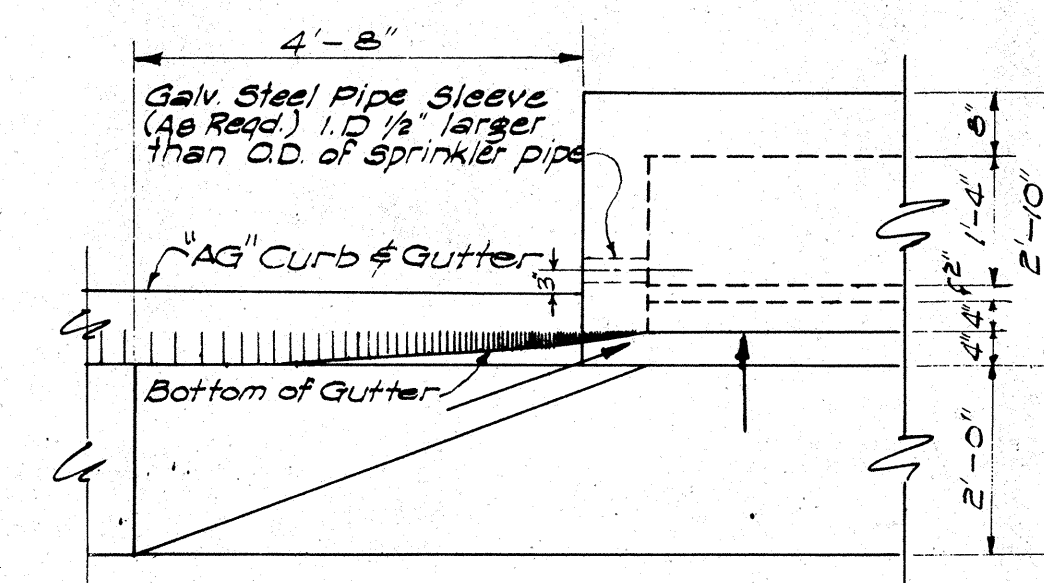
- Quantities based on d = 5.75' and D = 30".
- Quantities do not include concrete for gutter apron.
- The Contractor shall install two 6" Cast Iron or Concrete Pipes as incidental to Class A Concrete for Construction Drainage. The Engineer shall determine the exact location in the field.
- Culvert shall 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 (16" o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (12 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.
"B"	6.0 c.y.	21.5 c.y.	108 lb.
"C"	6.0 c.y.	21.5 c.y.	108 lb.
"D"	4.0 c.y.	16.5 c.y.	77 lb.

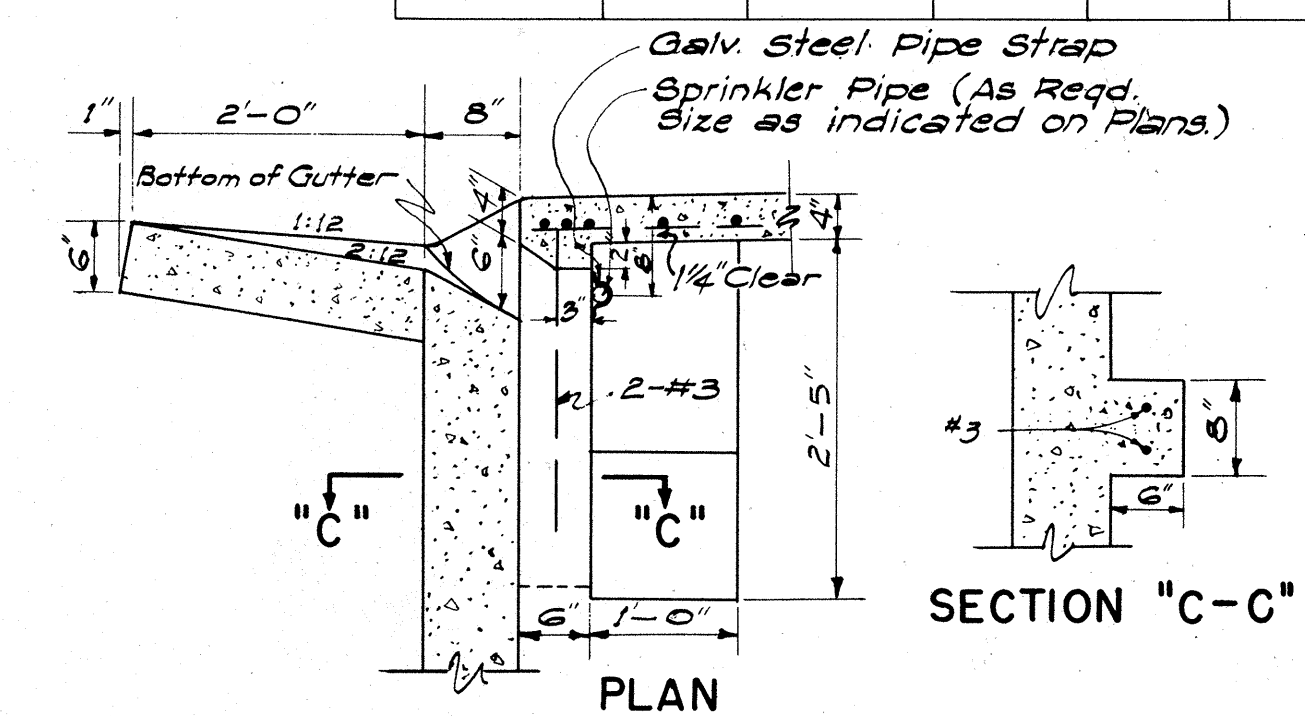


DETAIL OF CATCH BASIN WITH "EG" CURB & GUTTER



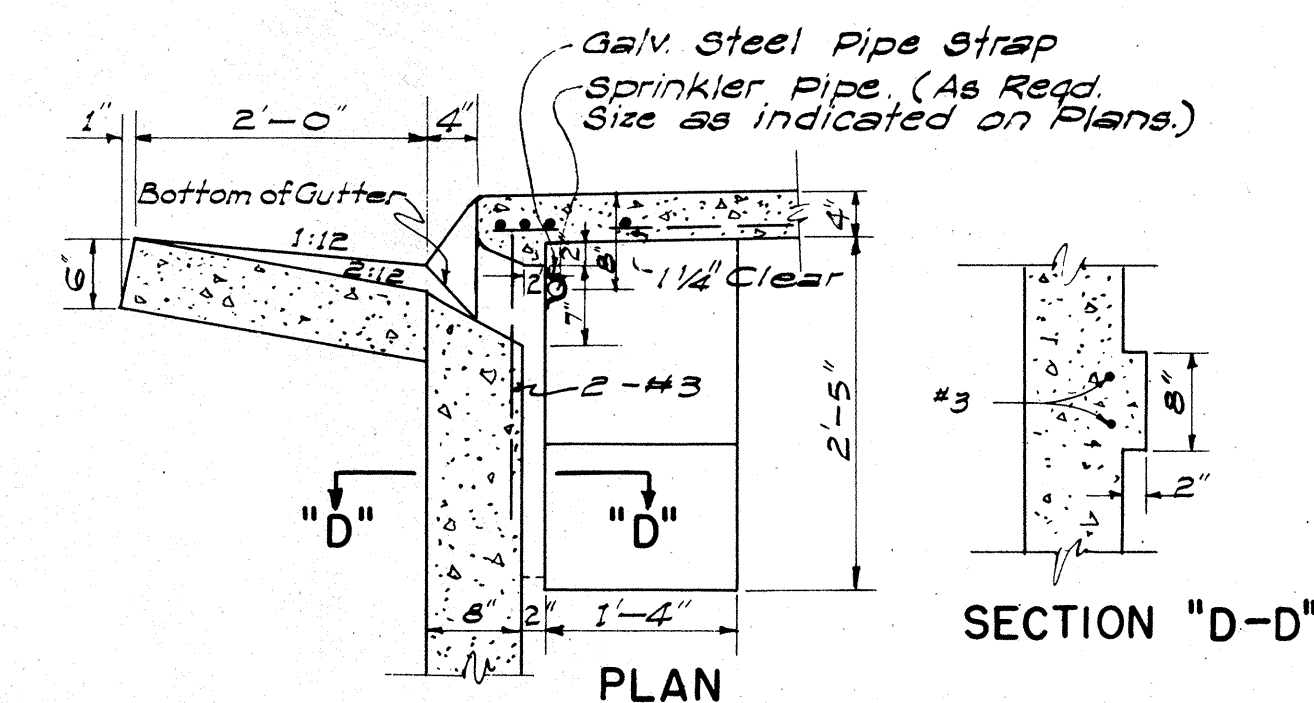
DETAIL OF CATCH BASIN WITH "AG" CURB & GUTTER

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



THROAT DETAIL FOR "EG" CURB & GUTTER

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



THROAT DETAIL FOR "AG" CURB & GUTTER

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

APPROVAL RECOMMENDED:

HYDRAULIC DESIGN ENGINEER

12-17-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-17-69
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CATCH BASINS

Scale: As Noted

Date: July, 1969

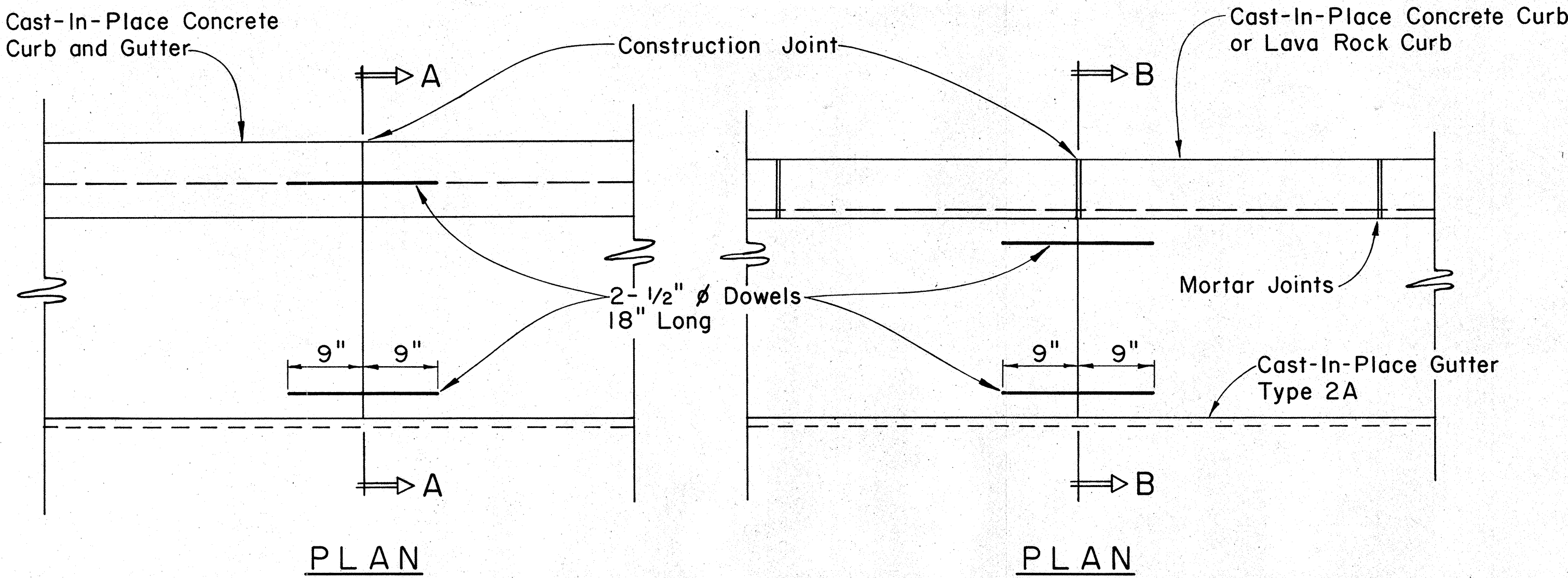
SHEET NO. 16 OF 40 SHEETS

DH. 1

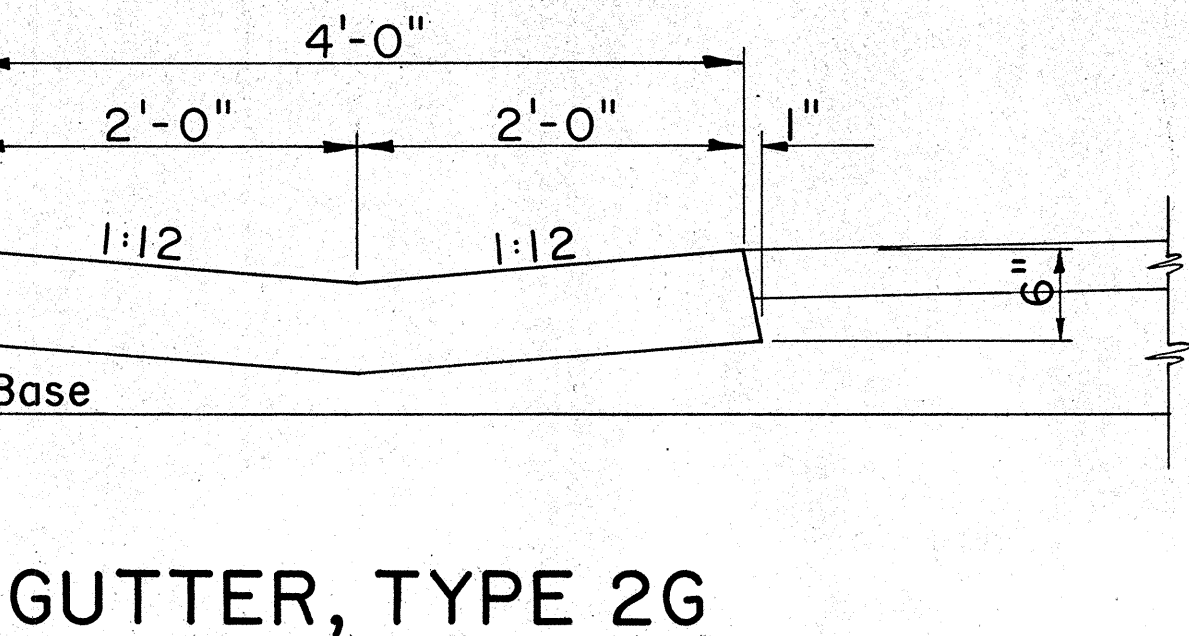
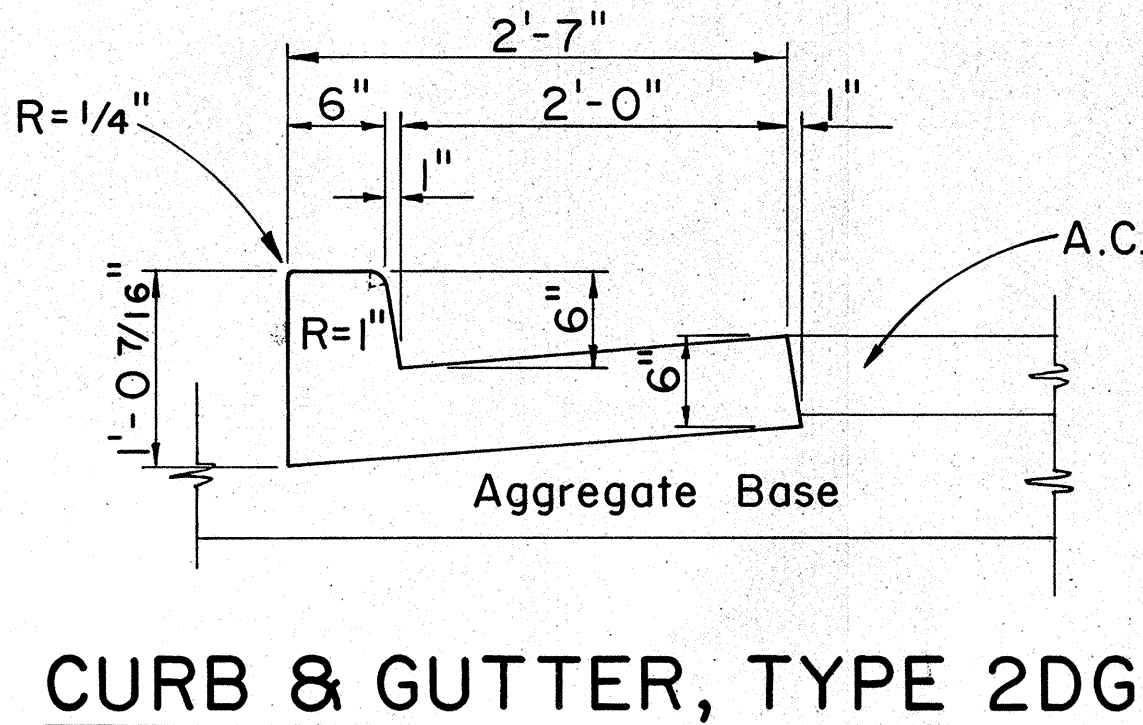
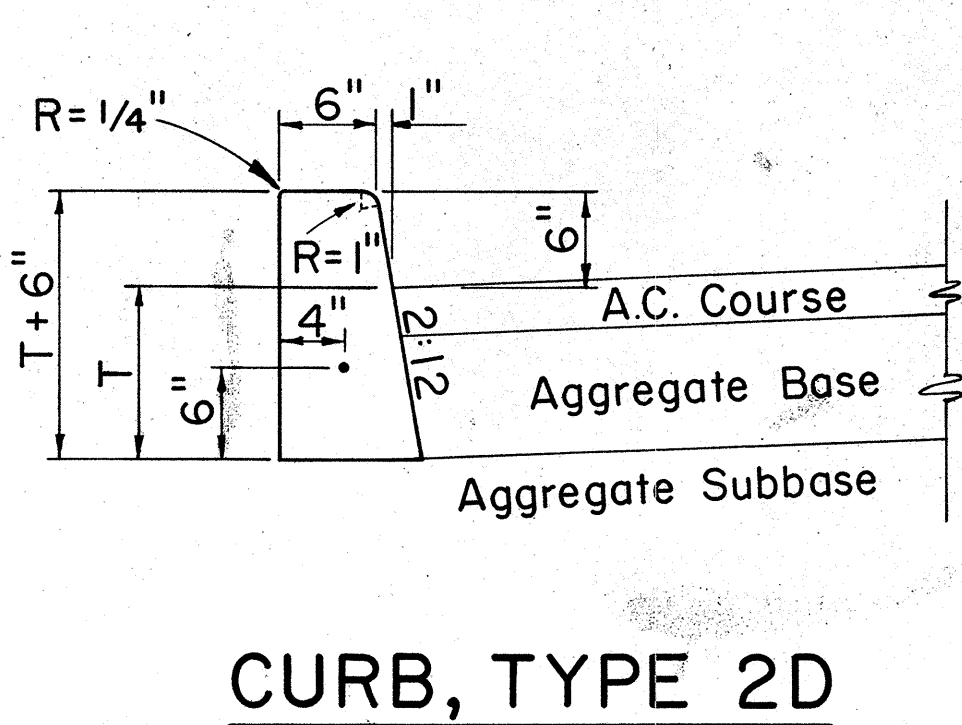
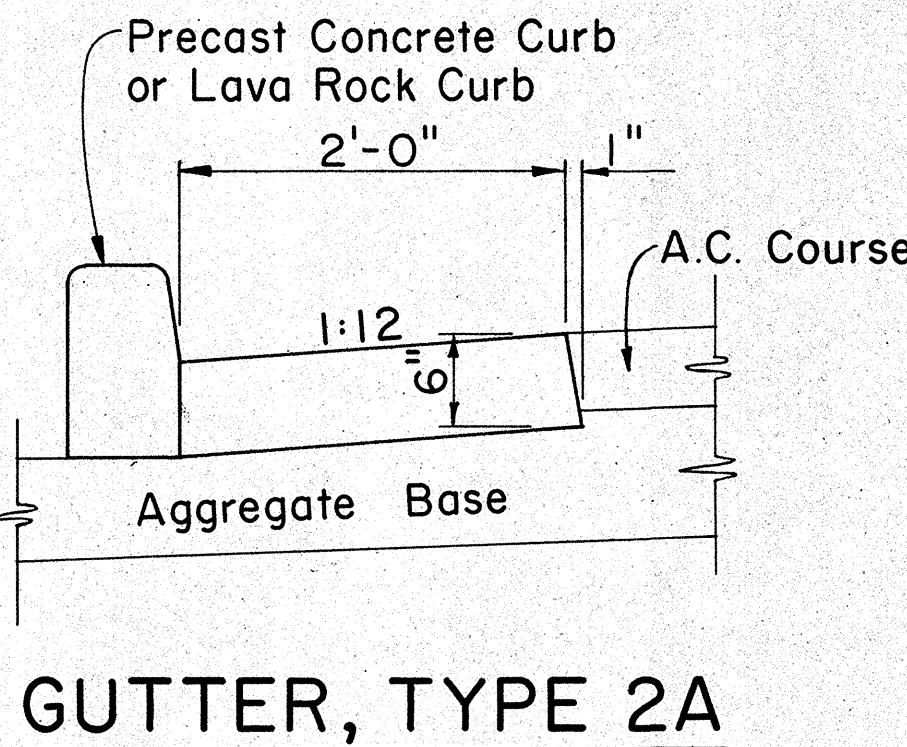
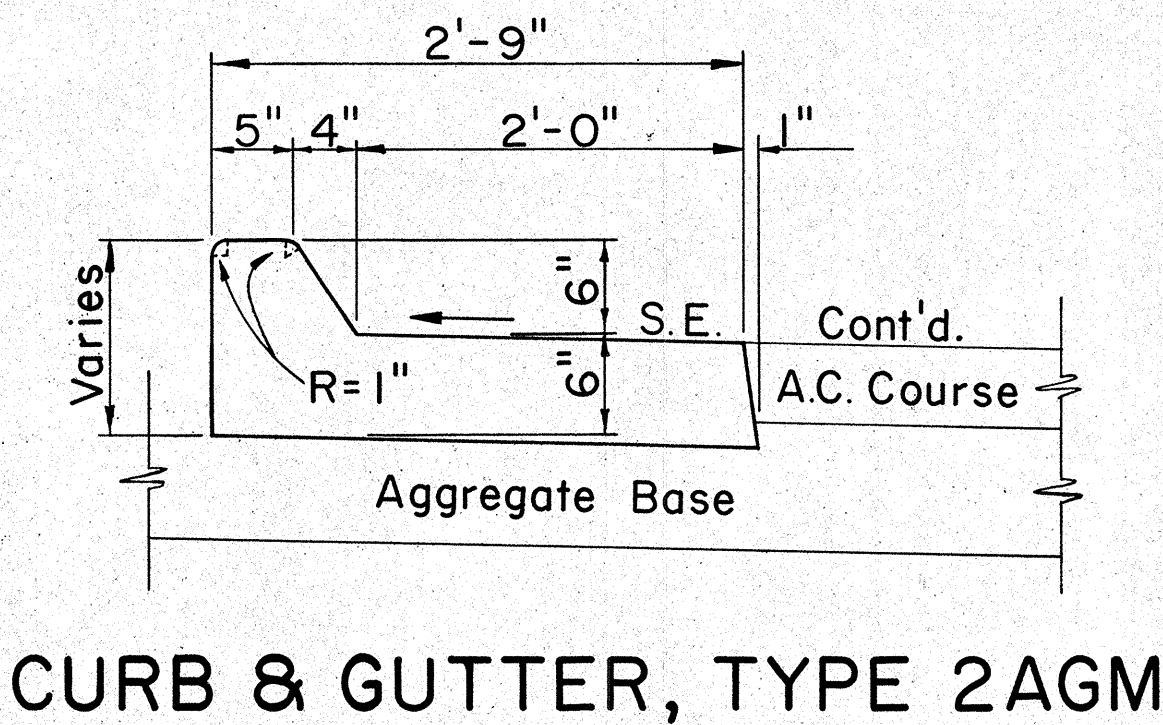
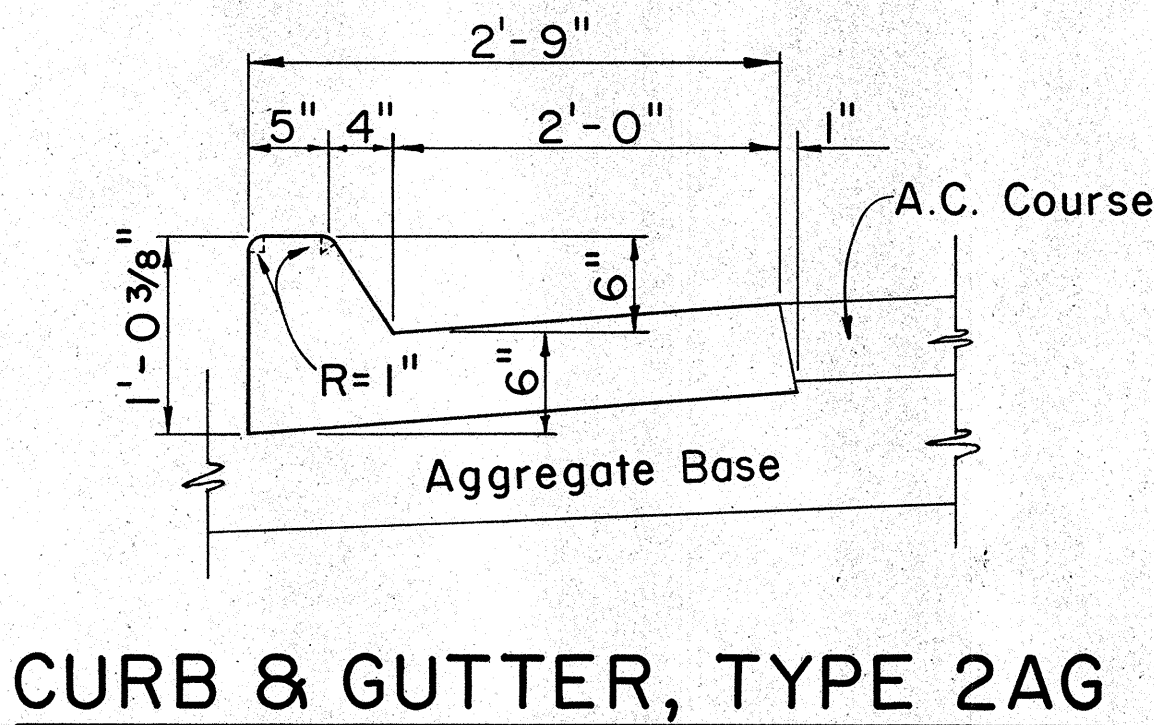
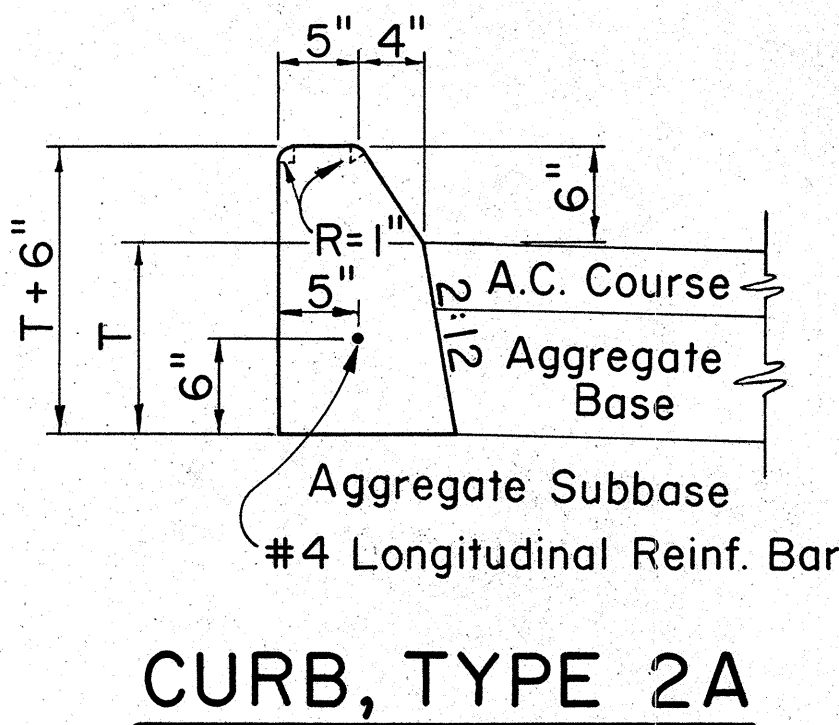
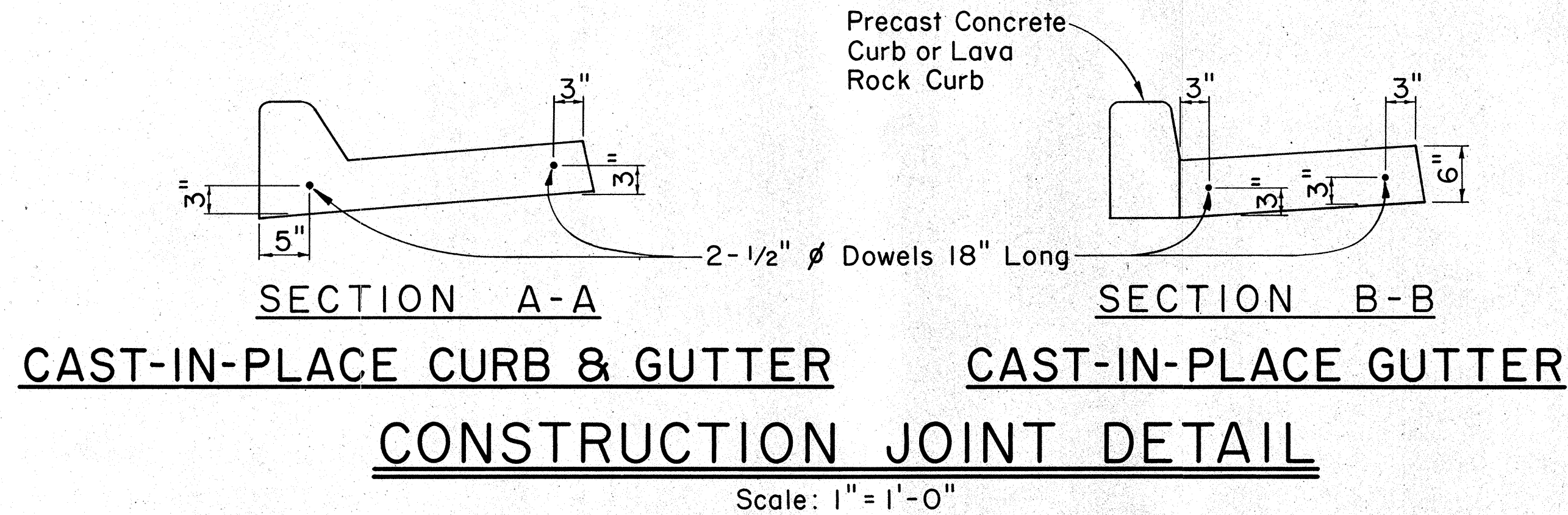
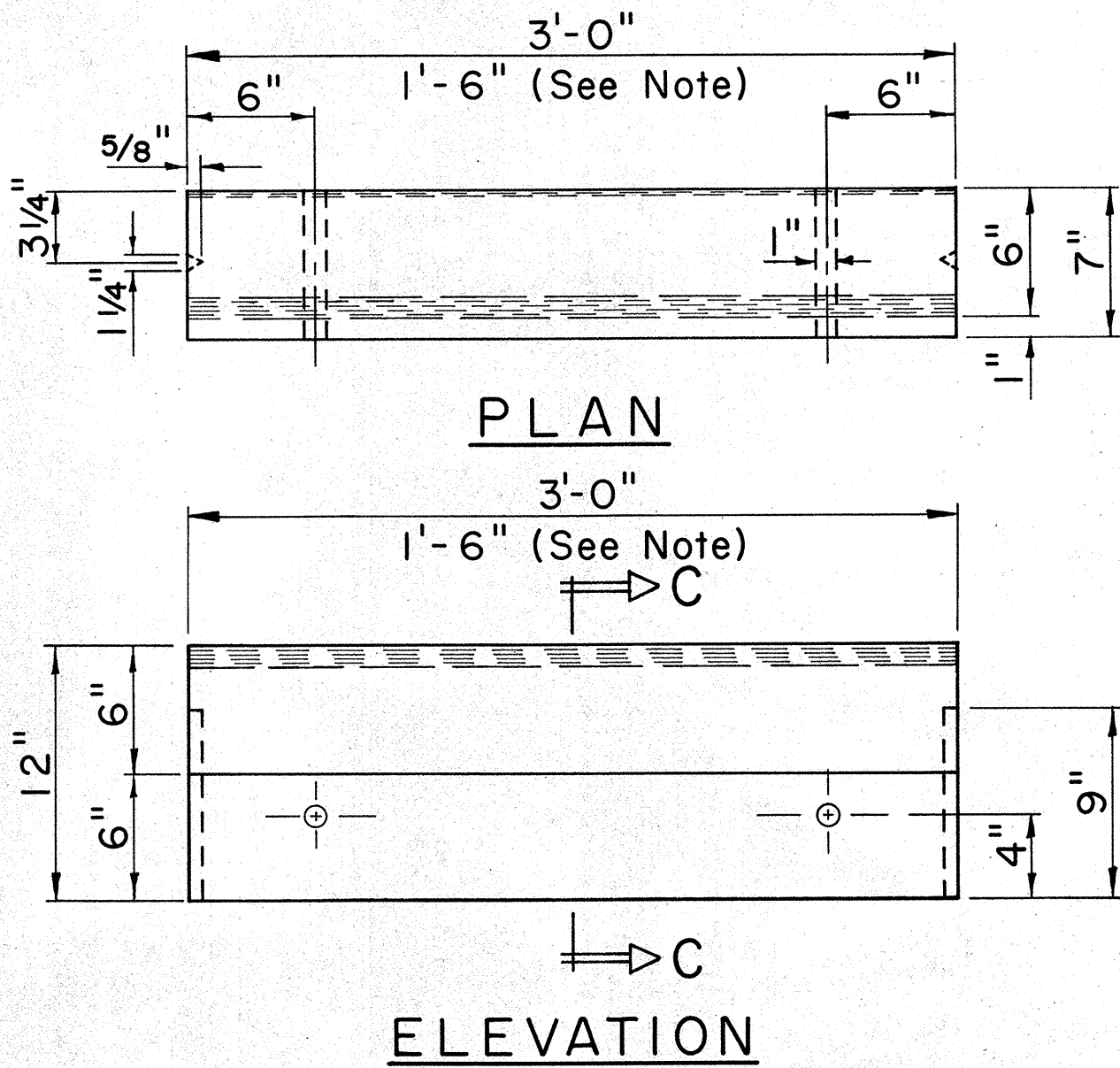
JOB NO. 40 CL-12

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



CURB, TYPE 6
BITUMINOUS CURB
 Scale: 1 1/2" = 1'-0"



CAST-IN-PLACE CONCRETE CURBS AND/OR GUTTERS
 Scale: 1" = 1'-0"

CURB, TYPE 3D
PRE-CAST CONC. CURB
 Scale: 1 1/2" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

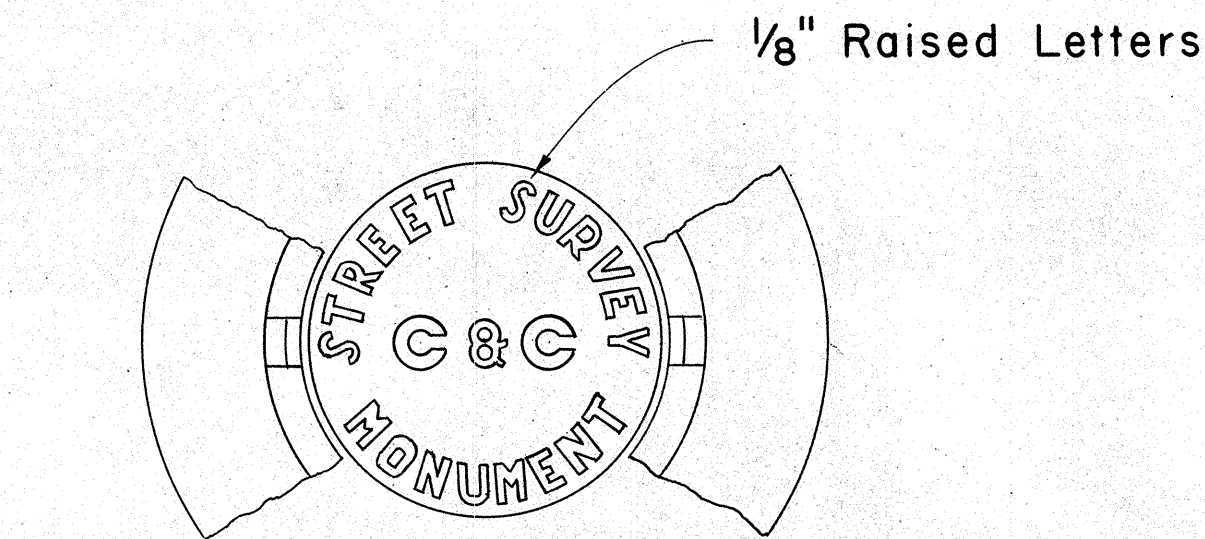
STANDARD DETAILS
TYPICAL DETAILS OF CURB
AND/OR GUTTERS

Scale: As Shown

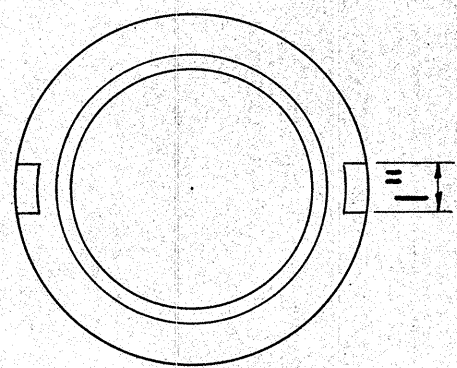
SHEET No. 0-18 OF 40 SHEETS DD 609.1

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

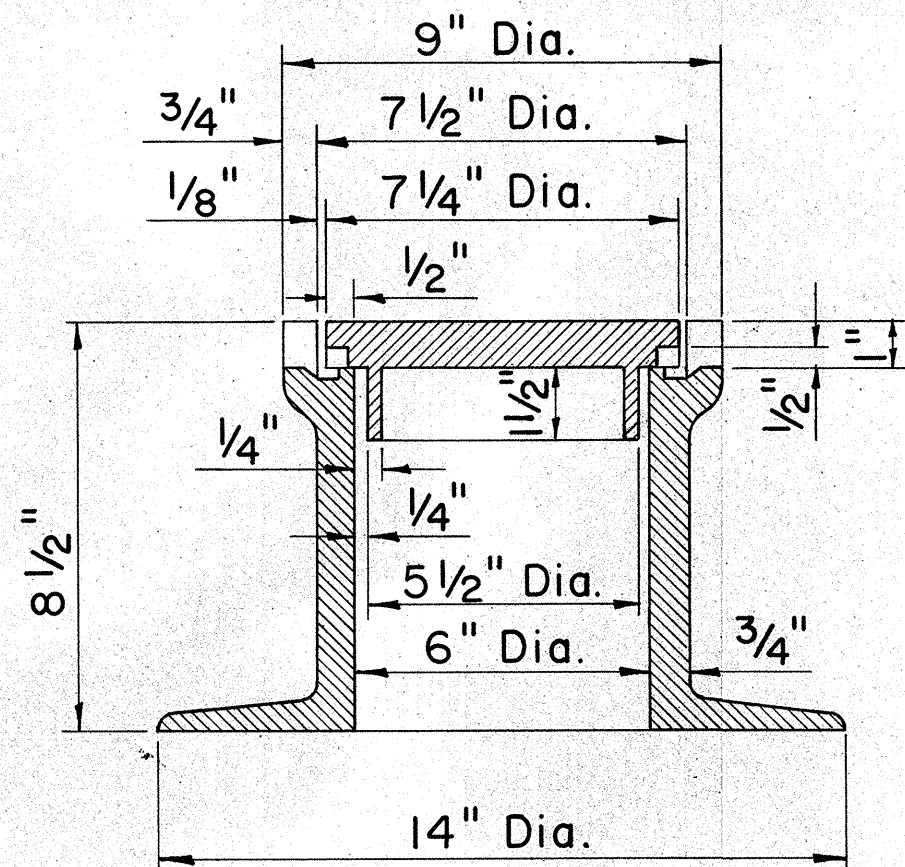
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



TOP VIEW OF COVER
AND PORTION OF FRAME



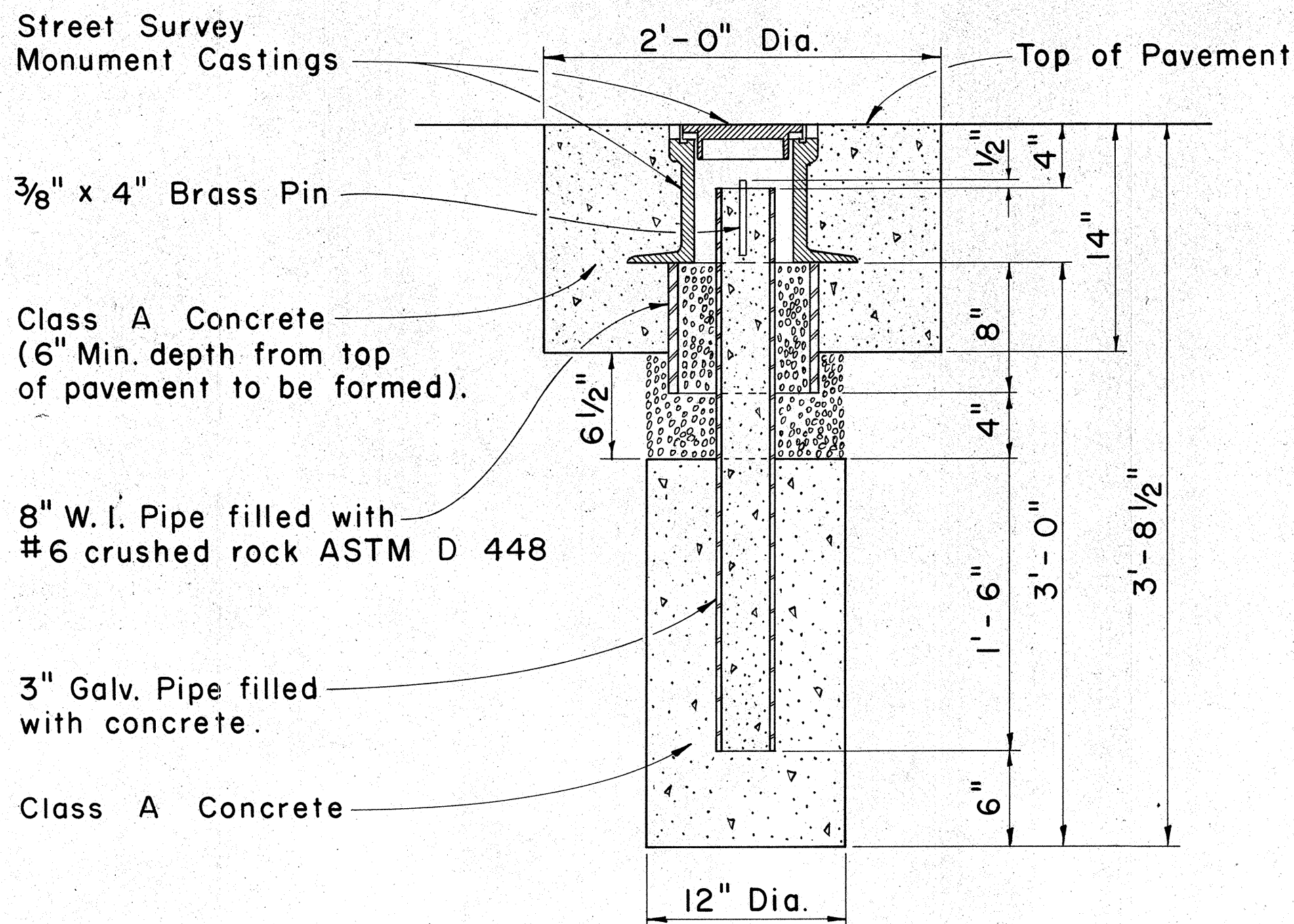
BOTTOM OF COVER



SECTIONAL VIEW OF
FRAME AND COVER

STREET SURVEY MONUMENT CASTINGS

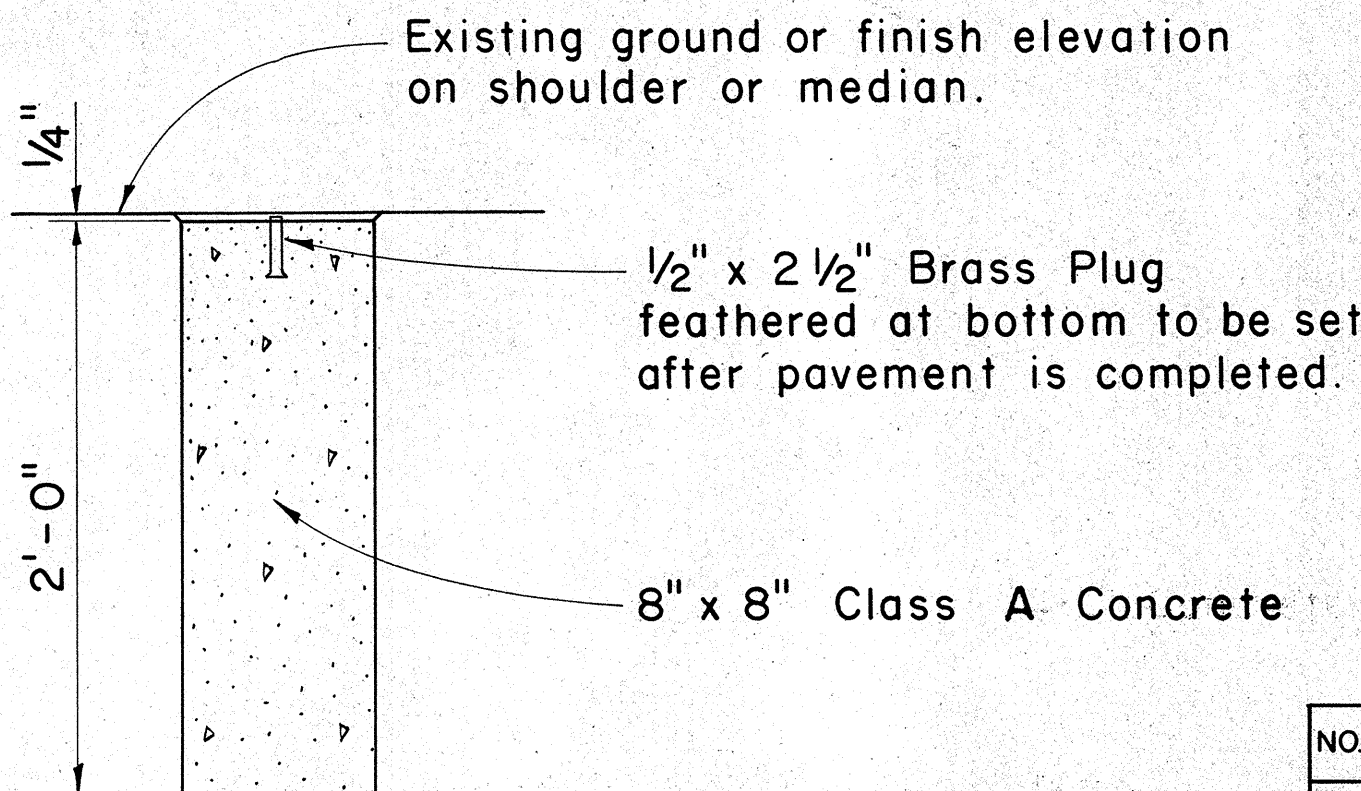
Scale: 3" = 1'-0"



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

STREET SURVEY MONUMENT

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



DETAIL FOR CENTERLINE AND REFERENCE SURVEY MONUMENT

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

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

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

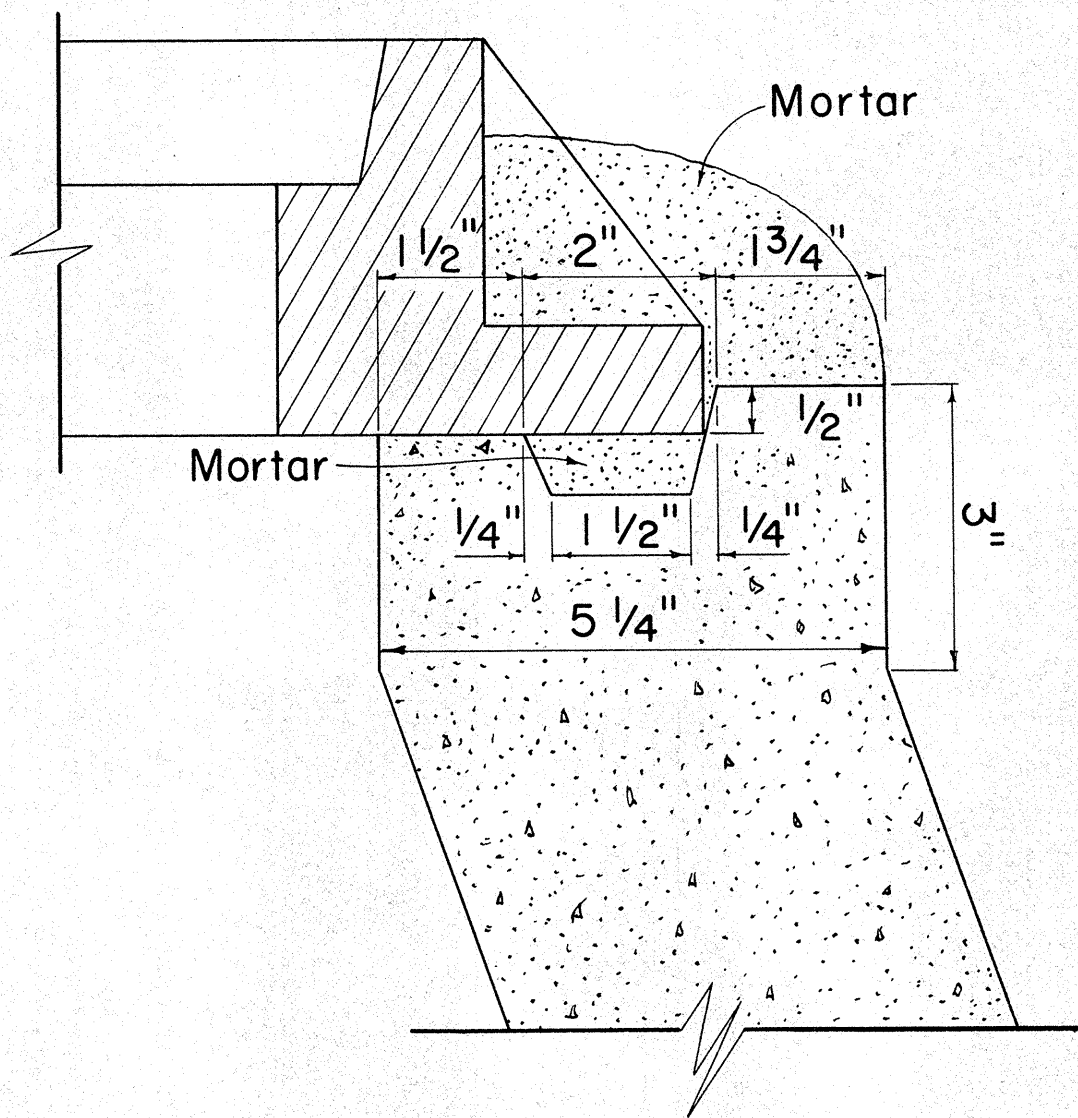
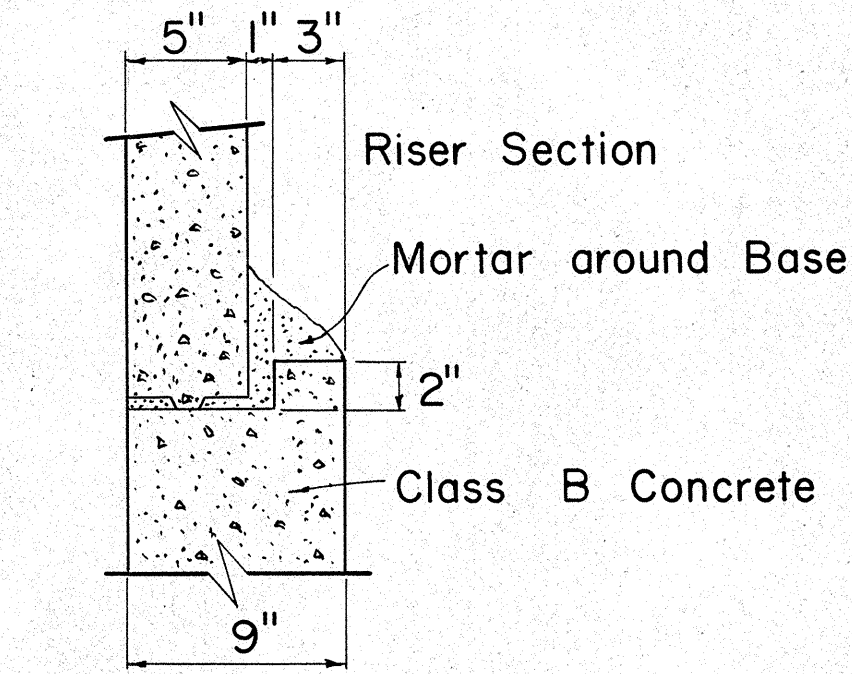
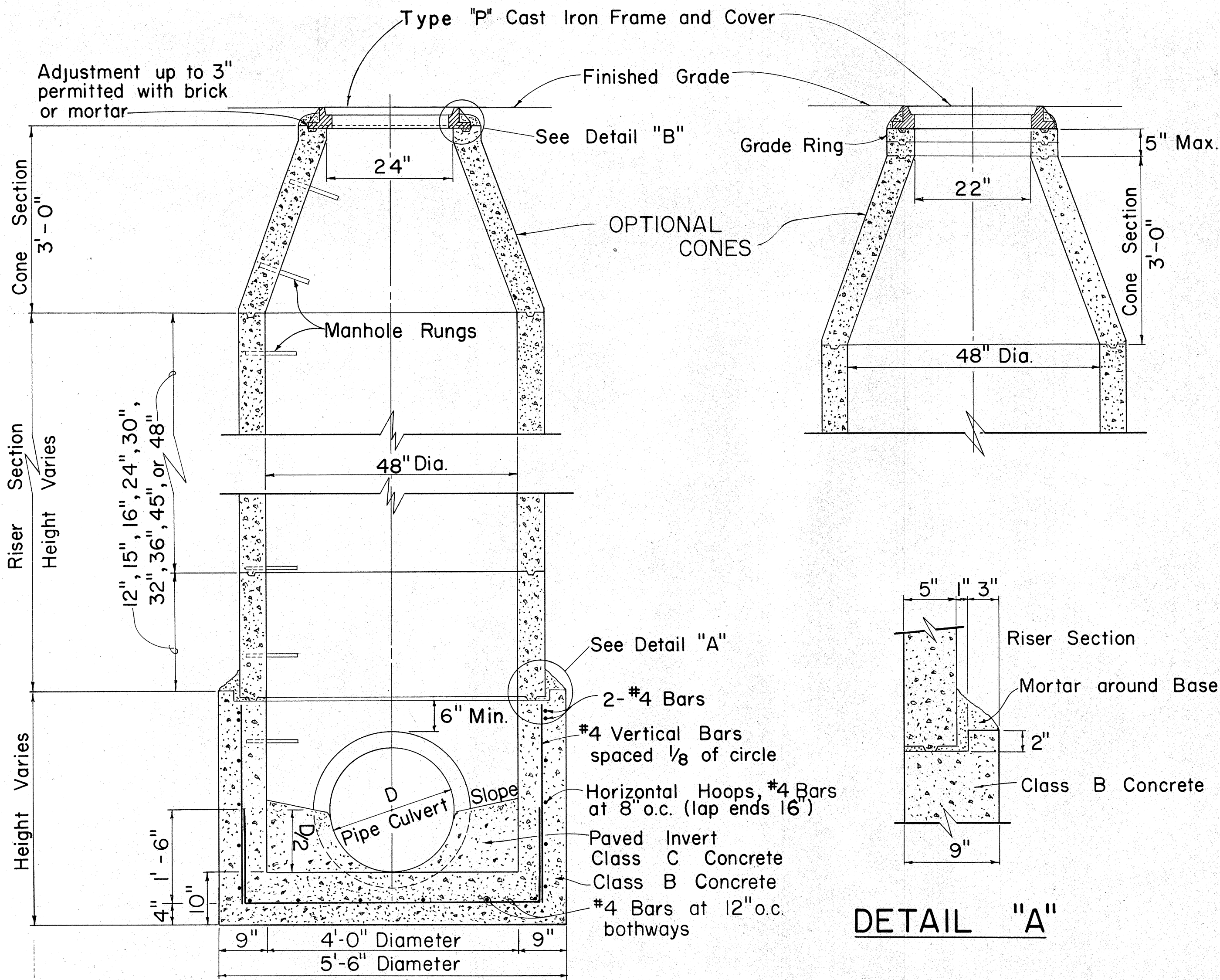
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CENTERLINE, REFERENCE SURVEY
AND C & C STREET SURVEY
MONUMENTS

Scale: As Shown
SHEET No. 019 OF 40 SHEETS DD 613.1

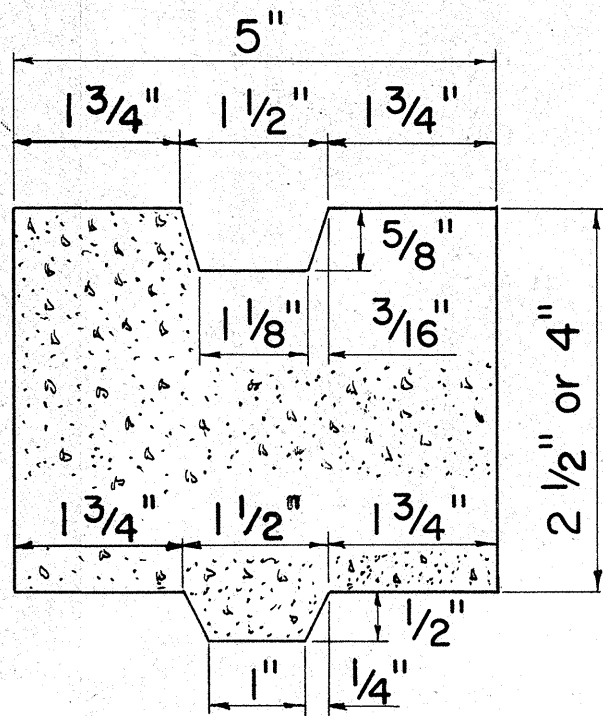
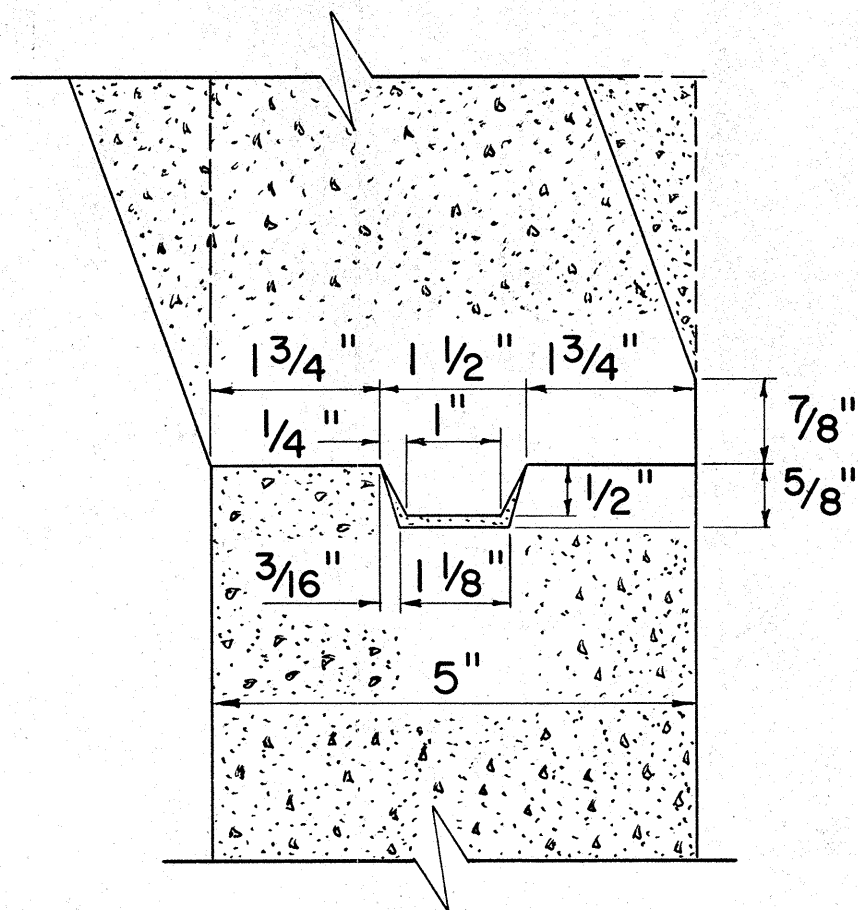
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



GENERAL NOTES

- Manhole Rungs to be placed at 15" or 16" o.c. (Manhole Rungs incidental to Class B Concrete.) For detail of M.H. rungs see sheet DH-6
- Select appropriate combination of risers and grade rings for required height.
- All joints to be grouted as set.
- The precast sections shall be constructed in accordance with the details shown on the plans and to the requirements of ASTM C 478
- Manufacturers may submit to the Engineer for approval, prior to manufacturing, designs other than those shown on this sheet.
- Reinforcing steel for precast sections shall be placed in accordance with the requirements of ASTM C 478
- All Class C Concrete to be incidental to Class B Concrete.

TYPICAL SECTIONS PRECAST CONCRETE MANHOLE
Not to Scale



DETAIL FOR RISER JOINTS
Not to Scale

GRADE RING DETAIL
Not to Scale

APPROVAL RECOMMENDED:
G. Nakano
HYDRAULIC DESIGN ENGINEER
2-2-71
DATE

APPROVED:
A. Sakai
ASSISTANT CHIEF, ENGINEERING
2-25-71
DATE

NO.	REVISION	APPROVED BY	DATE

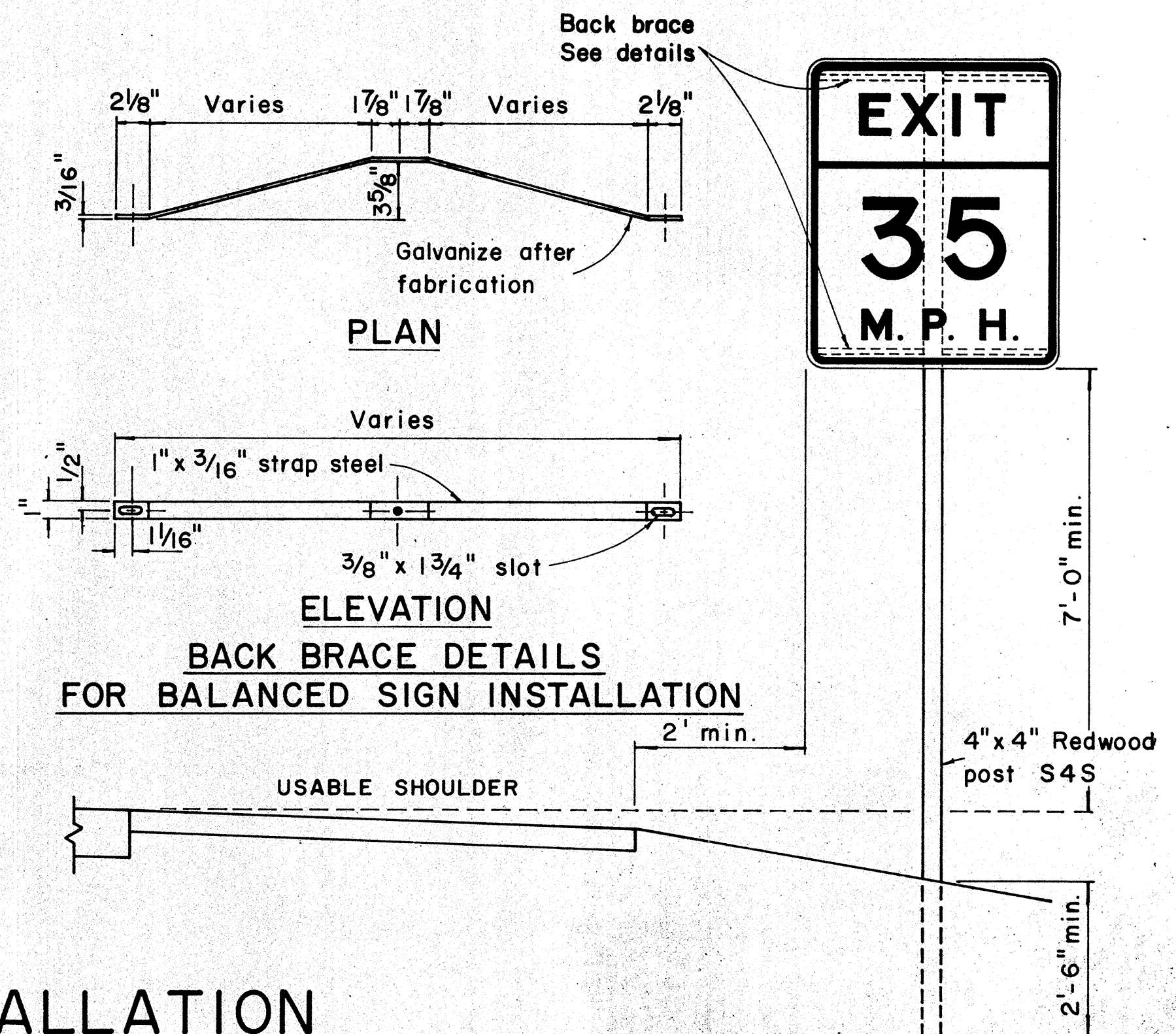
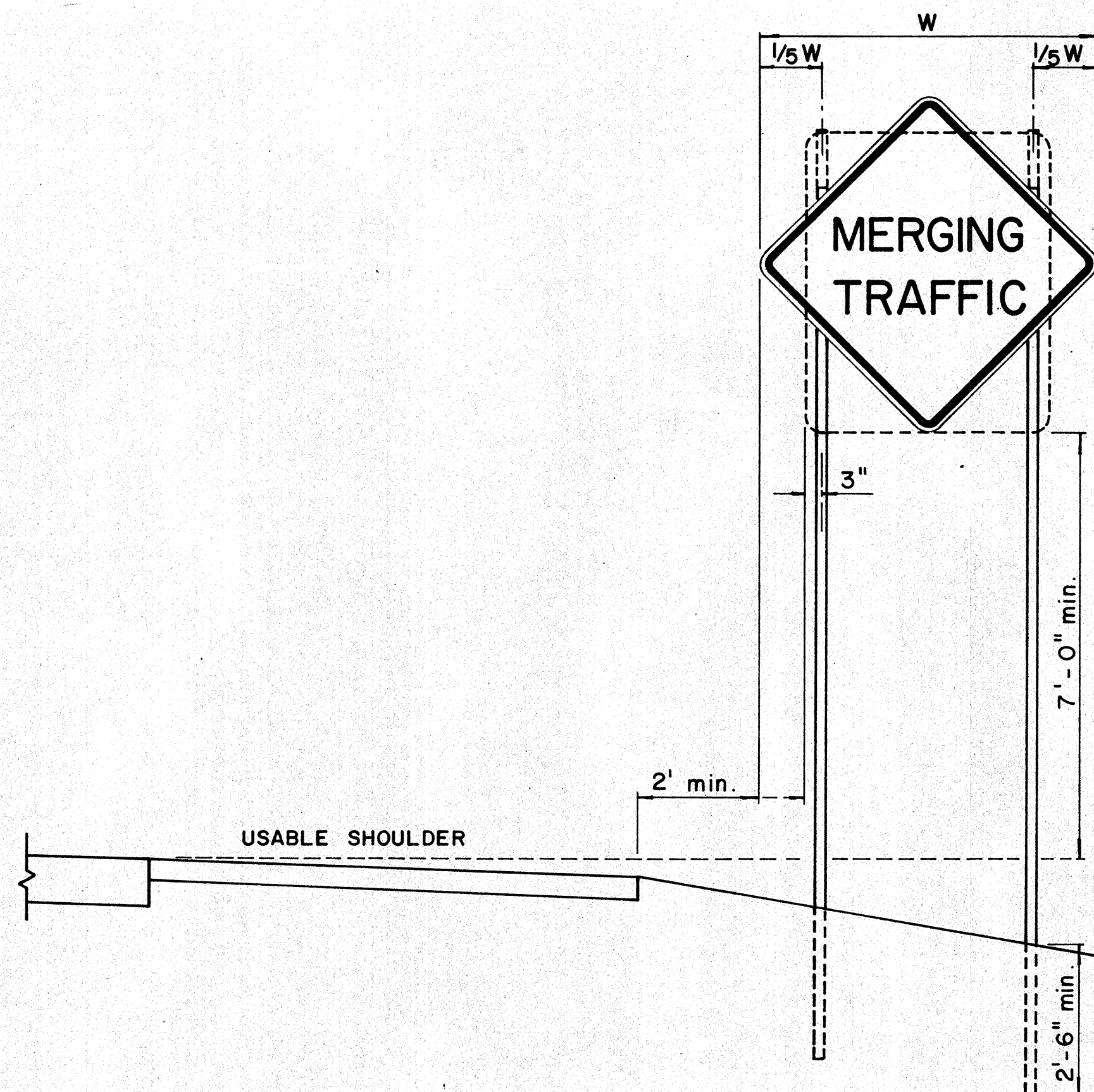
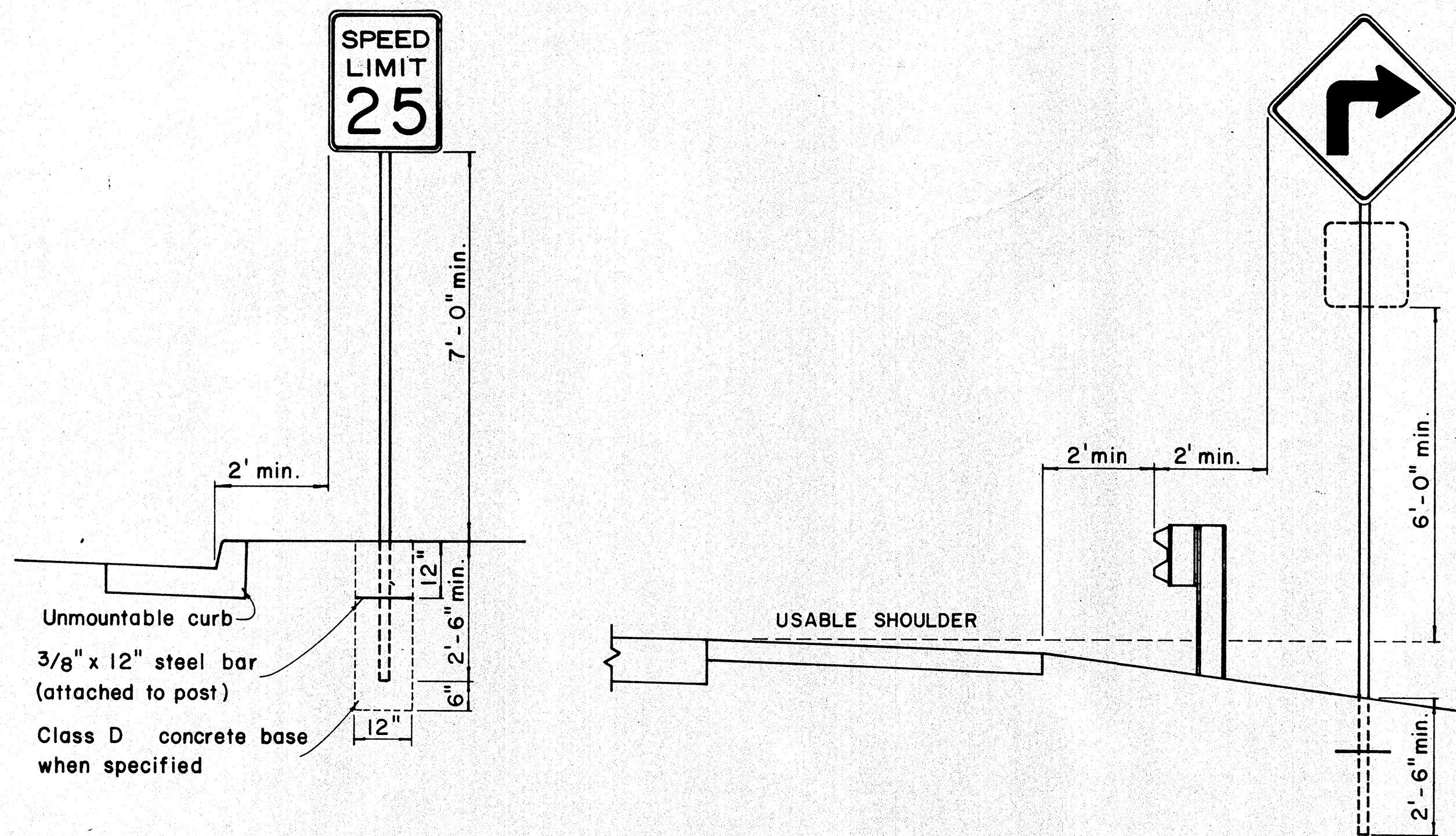
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
PRECAST CONCRETE
STORM DRAIN MANHOLES

Not to Scale
SHEET No. 0-20 OF 40 SHEETS
DH 5A

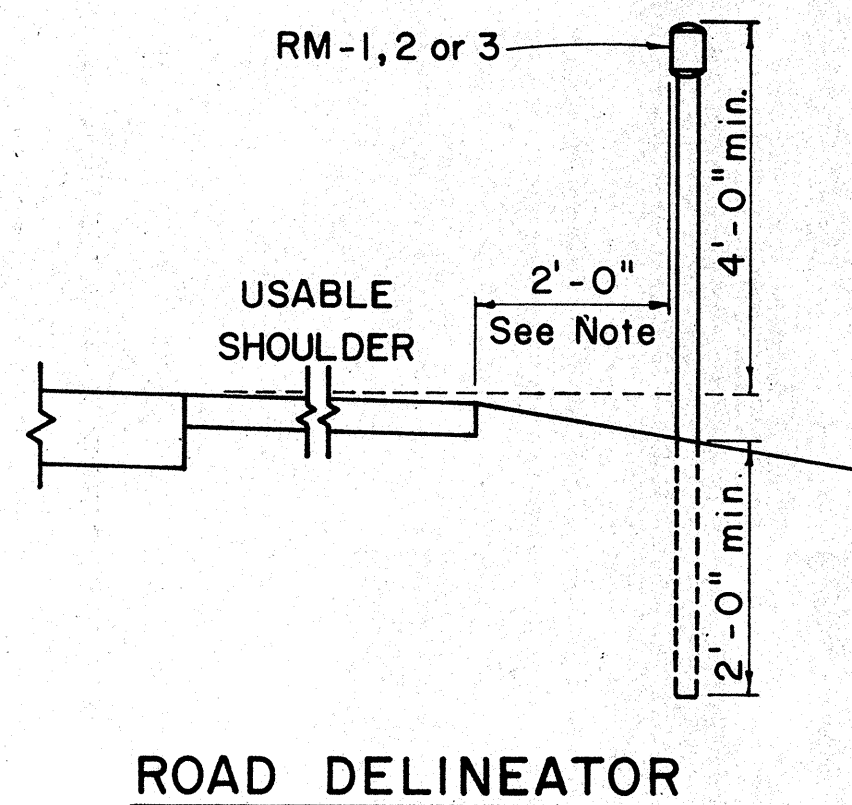
Date: Nov. ,1970

DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				

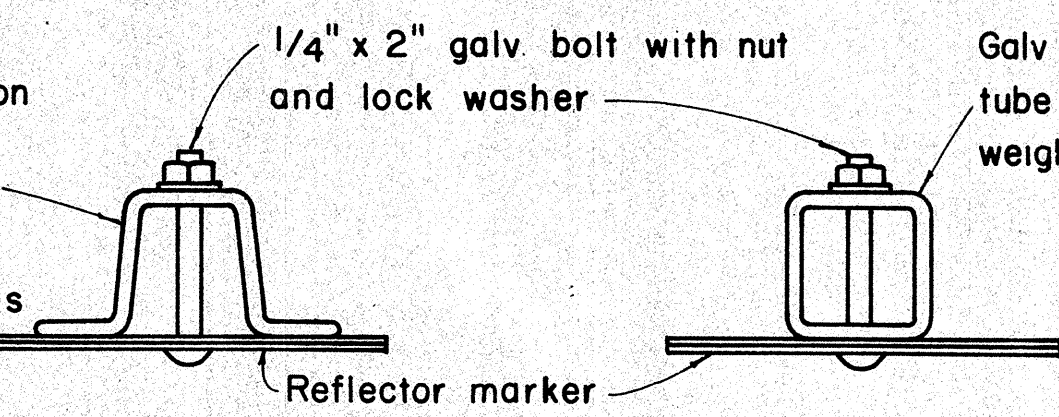


HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATION

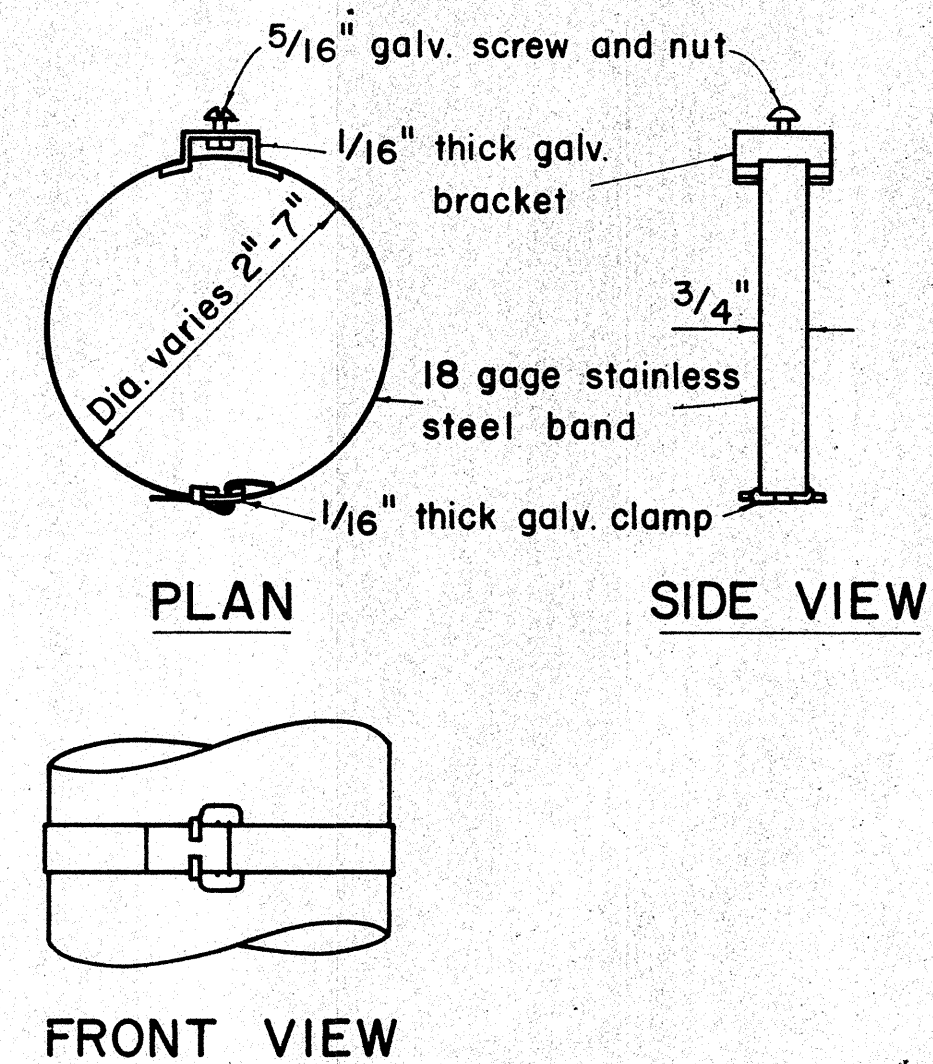


Galv. flanged channel 1/8" x 3 1/16" rolled section post with a minimum weight of 2 lbs. per ft. Upper 2 ft. shall have a single row of 3/8" holes centered in the web at 1" o.c.

TYPICAL SECTION OF ROAD DELINEATOR



TYPICAL DETAIL HORIZONTAL REFLECTOR MARKER RM-3H



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS

GENERAL NOTES:

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

APPROVAL RECOMMENDED:
Traffic Engineer
12/22/69
DATE

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

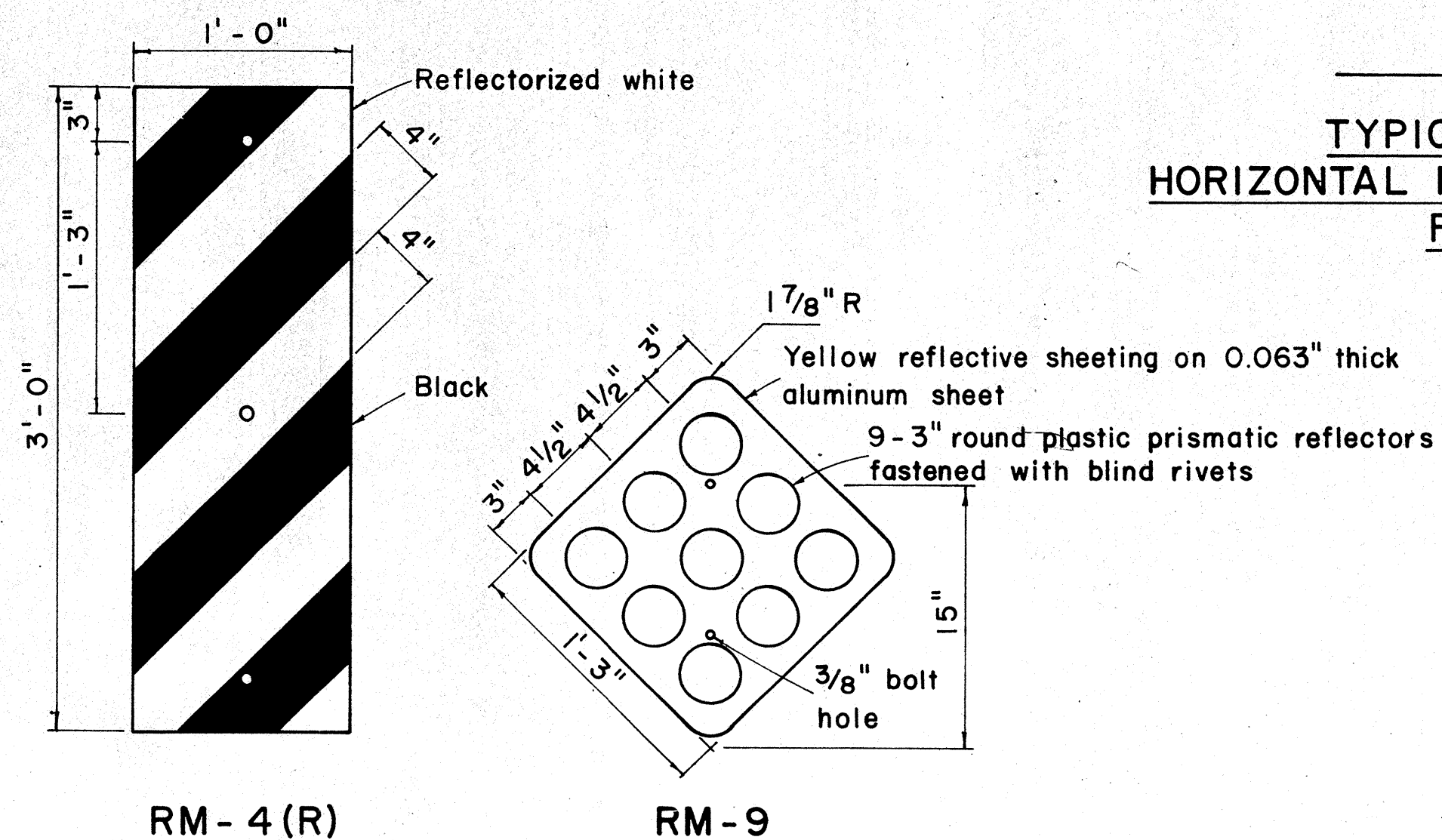
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

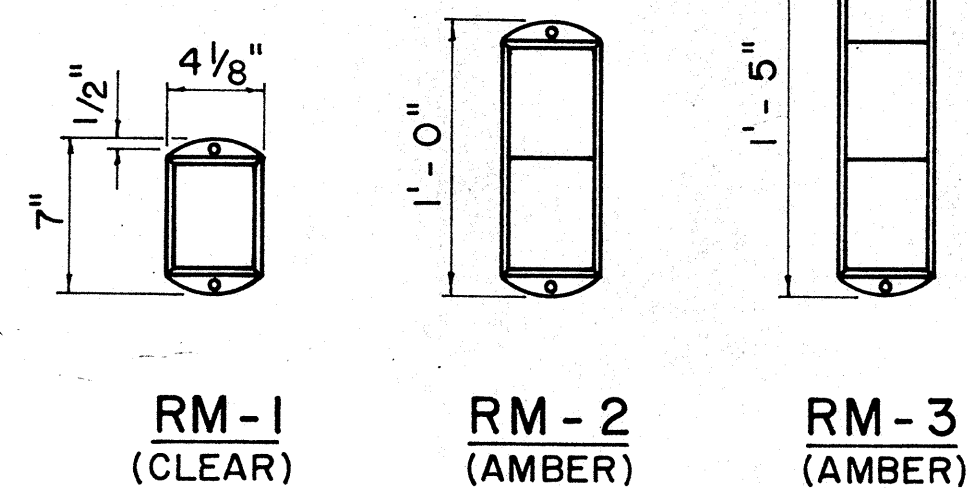
STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

Not to scale March, 1968

SHEET No. C-22 OF 46 SHEETS DT 100

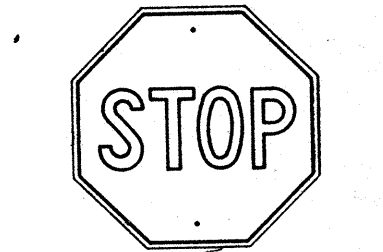


REFLECTOR MARKERS



DATE	REVISION	APPROVED BY	DATE

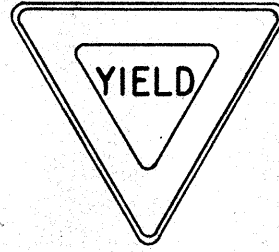
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



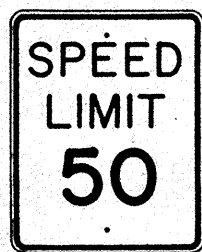
R1-1 30"x 30"
R1-1-A 36"x 36"

4-WAY

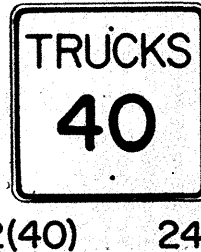
R1-3 12" x 6"
R1-3-A 18" x 9"



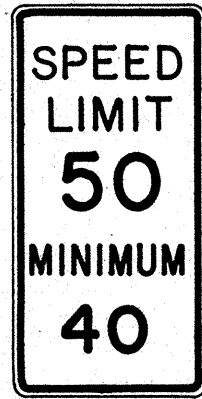
R1-2 36"x36"x36"
R1-2-A 48"x48"x48"



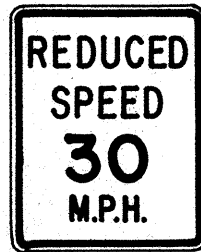
R2-1(50) 24" x 30"
R2-1(50)-A 48"x 60"



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



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



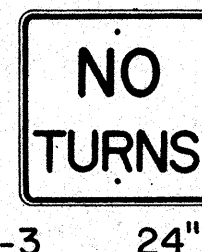
R2-5b(30) 24" x 30"
R2-5b(30)-A 48" x 60"



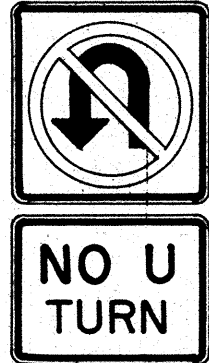
R3-1 24"x24"
24"x18"
R3-1-A 48"x48"
48"x36"



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



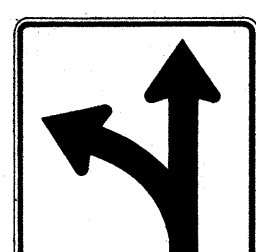
R3-3 24" x 24"
R3-3-A 48" x 48"



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



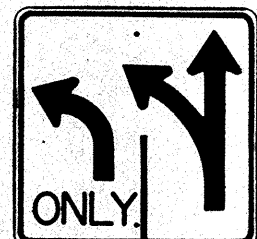
R3-5(L) 30" x 36"
R3-5(L)-A 48" x 60"



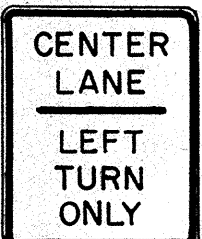
R3-6(L) 30" x 36"
R3-6(L)-A 48" x 60"



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



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



R3-9 24" x 30"



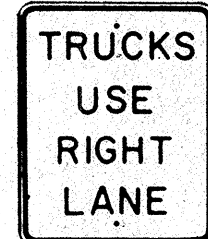
R4-1 24" x 30"



R4-2 24" x 30"



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



R4-5 24" x 30"



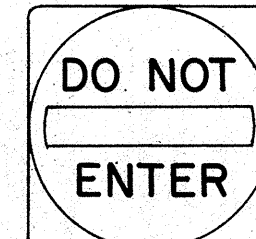
R4-6(500) 24" x 30"



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



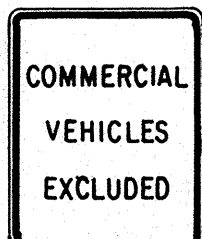
R4-8 24" x 30"
24" x 18"



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



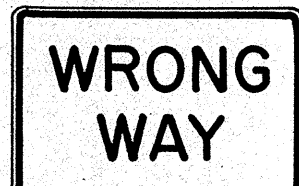
R5-2 24" x 24"
24" x 18"



R5-4 24" x 30"



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



R5-9 36" x 24"



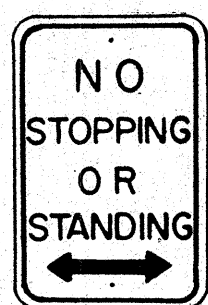
R6-1 (R) 36" x 12"



R6-2(R) 18" x 24"



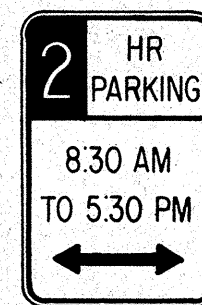
R7-1 12" x 18"
R7-1-A 24" x 30"



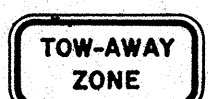
R7-4 12" x 18"
R7-4-A 24" x 30"



R7-107(R) 12" x 18"



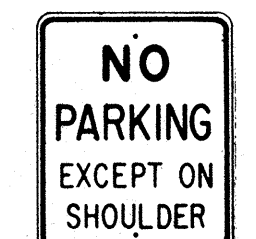
R7-108 12" x 18"



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



R8-1 24" x 30"



R8-2 24" x 30"



R8-3 24" x 30"



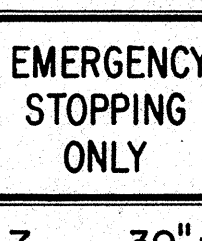
R8-4 30" x 24"
R8-4-A 48" x 36"



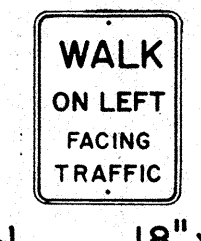
R8-5 24" x 30"



R8-6 24" x 30"



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



R9-1 18" x 24"



R9-2 12" x 18"



R9-3 12" x 18"



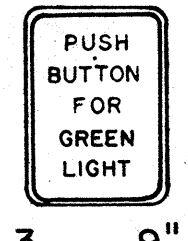
R9-4 18" x 24"



R10-1 12" x 18"



R10-2 12" x 18"



R10-3 9" x 12"



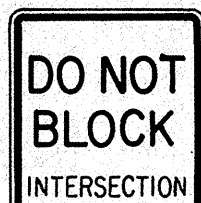
R10-4 9" x 12"



R10-5 24" x 30"



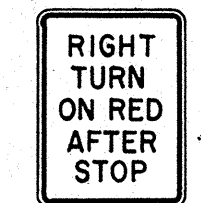
R10-6 24" x 36"



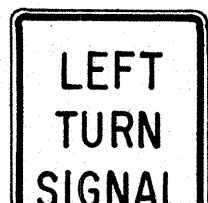
R10-7 24" x 30"



R10-8 24" x 30"



R10-9 24" x 30"



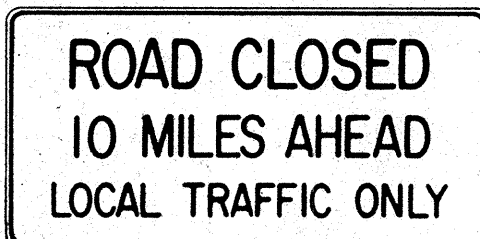
R10-10 24" x 30"



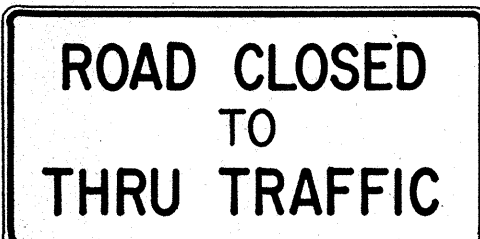
R11-1 24" x 30"



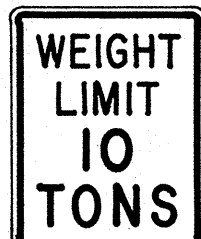
R11-2 48" x 30"



R11-3(10) 60" x 30"



R11-4 60" x 30"



R12-1(10) 24" x 30"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs."
- All regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.

APPROVAL RECOMMENDED:

Eushe Tanaka
TRAFFIC ENGINEER

3/17/72
DATE

APPROVED:

Robert J. J. J.
ASSISTANT CHIEF, ENGINEERING

3-20-72
DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS REGULATORY SIGNS

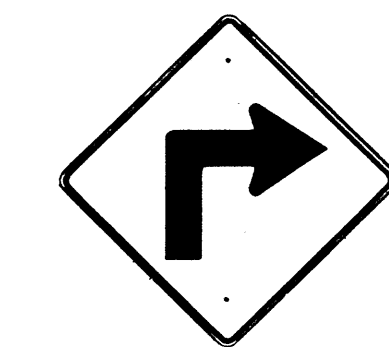
NOT TO SCALE

SHEET No.C-23 OF 46 SHEETS DT 101

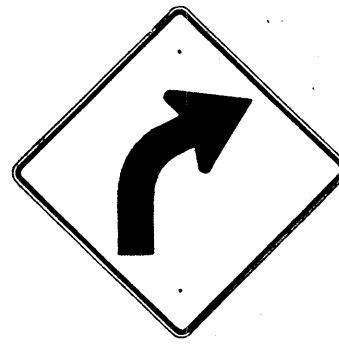
JOB NO. 46-OL-12

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

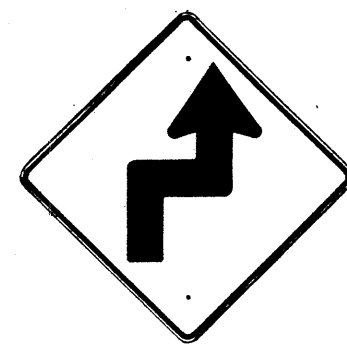
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



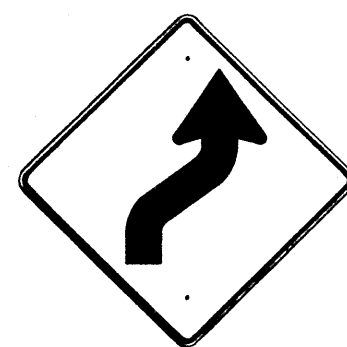
WI-1(R) 30"x30"
WI-1(R)-A 48"x48"



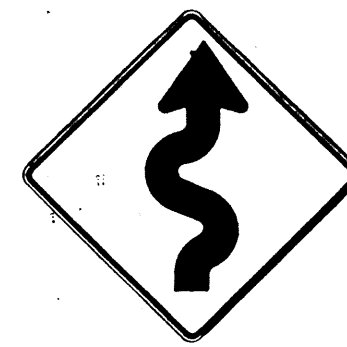
WI-2(R) 30"x30"
WI-2(R)-A 48"x48"



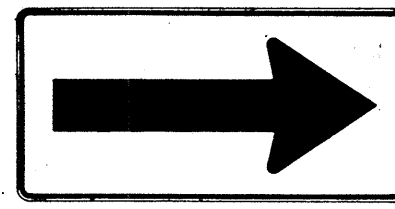
WI-3(R) 30"x30"
WI-3(R)-A 48"x48"



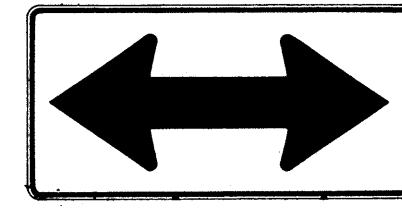
WI-4(R) 30"x30"
WI-4(R)-A 48"x48"



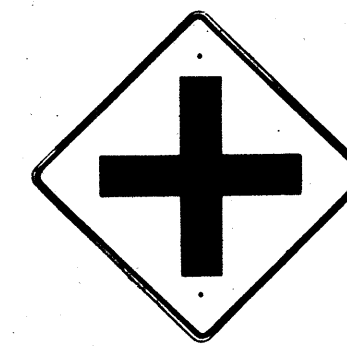
WI-5(R) 30"x30"
WI-5(R)-A 48"x48"



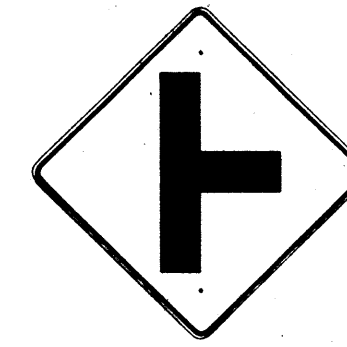
WI-6 48"x24"



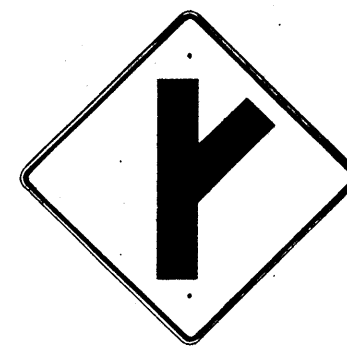
WI-7 48"x24"



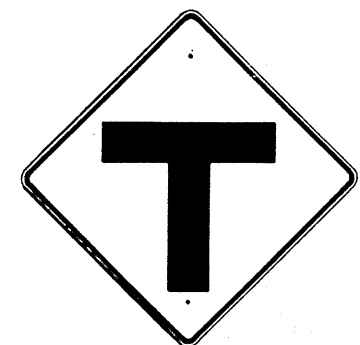
W2-1 30"x30"
W2-1-A 48"x48"



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



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



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



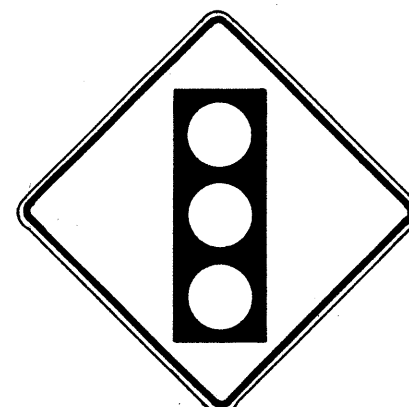
W2-5 30"x30"
W2-5-A 48"x48"



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



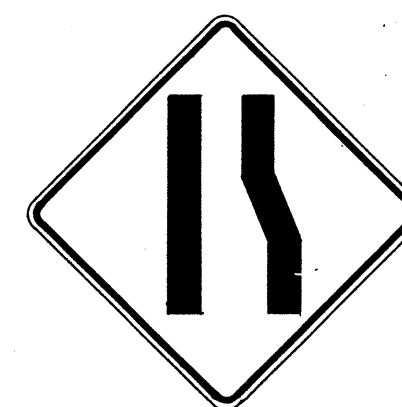
W3-2 30"x30"
W3-2-A 36"x36"



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



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



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



W5-1 36"x36"



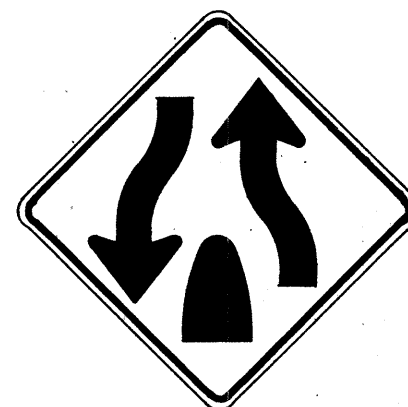
W5-2 30"x30"
W5-2-A 36"x36"



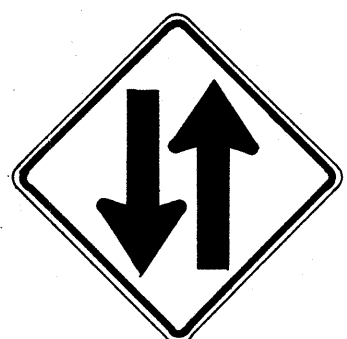
W5-3 36"x36"



DIVIDED
HIGHWAY
W6-1 36"x36"
24"x18"



DIVIDED
HIGHWAY
ENDS
W6-2 36"x36"
24"x18"



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



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



USE LOW
GEAR
W7-2 24"x18"



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



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



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



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



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



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



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



W10-1 36" Diameter



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



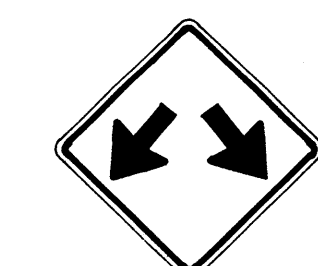
PED
XING
W11-2 30"x30"
24"x18"
W11-2-A 36"x36"
24"x18"



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



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



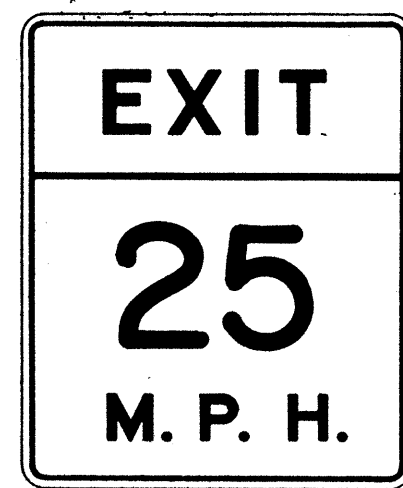
W12-1 24"x24"
W12-1-A 36"x36"
W12-1-B 48"x48"



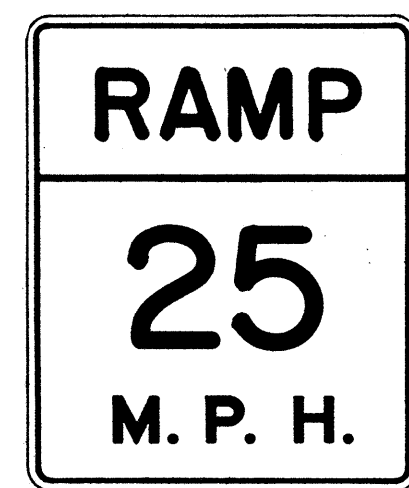
LOW
CLEARANCE
W12-2(12'-6") 36"x36"
24"x18"



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



W13-2(25) 48"x60"



W13-3(25) 48"x60"



W14-1 30"x30"



W14-3 36"x48"x48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs."
- All warning signs shall be reflectorized unless otherwise specified.
- All warning signs shall have 3/8" bolt holes drilled at appropriate locations.
- Numerals in () indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- Signs prefixed with "CW" on the plans shall indicate orange and black construction signs.

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER

3/17/72
DATE

APPROVED:
ASSISTANT CHIEF, ENGINEERING

3-20-72
DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS WARNING SIGNS

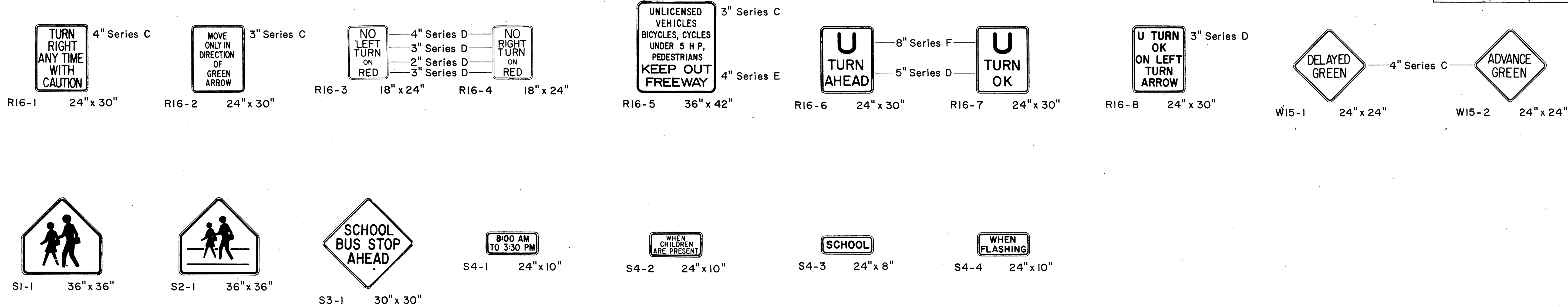
NOT TO SCALE

SHEET No.C-24OF 40 SHEETS DT 102

JOB NO. 46-OL-12

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



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."
2. All regulatory and warning signs shall be reflectorized unless otherwise specified.
3. All regulatory and warning signs shall have 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.

APPROVAL RECOMMENDED: Erich Tanaka 3/17/12
TRAFFIC ENGINEER DATE

APPROVED: Shirley Zalside 2-20-12
ASSISTANT CHIEF, ENGINEERING DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
MISCELLANEOUS
REGULATORY & WARNING SIGNS

NOT TO SCALE

SHEET No.C-25 OF 40 SHEETS DT 103

JOB NO. 46-OL-12

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



CW20-1a 48" x 48"



CW20-2d 48" x 48"



CW20-3b 48" x 48"



CW20-4d 48" x 48"



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



CW20-7c 48" x 48"



CW21-1 30" x 30"



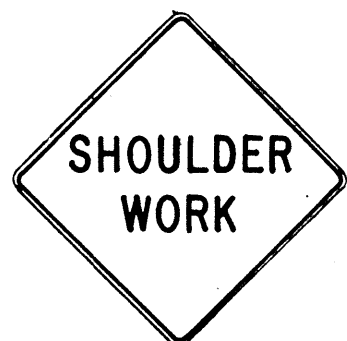
CW21-2 30" x 30"



CW21-3 36" x 36"



CW21-4 36" x 36"



CW21-5 30" x 30"



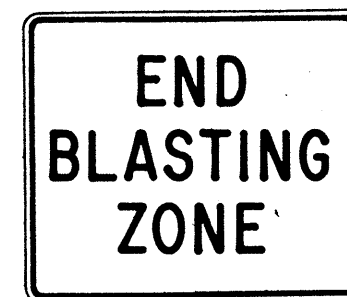
CW21-6 30" x 30"



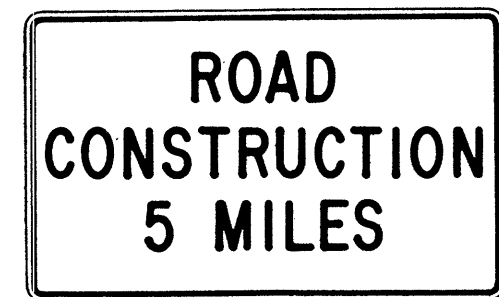
CW22-1b 48" x 48"



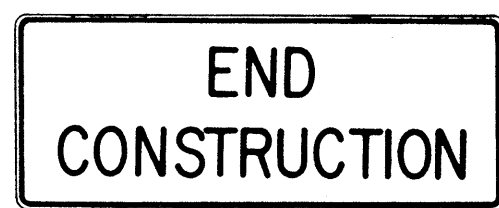
CW22-2 42" x 36"



CW22-3 42" x 36"



CG20-1(5) 60" x 36"



CG20-2 60" x 24"



CM4-9(R) 30" x 24"



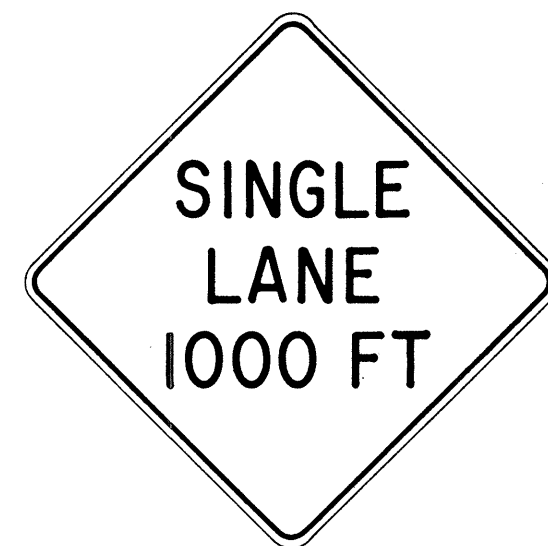
CM4-10(R) 48" x 18"



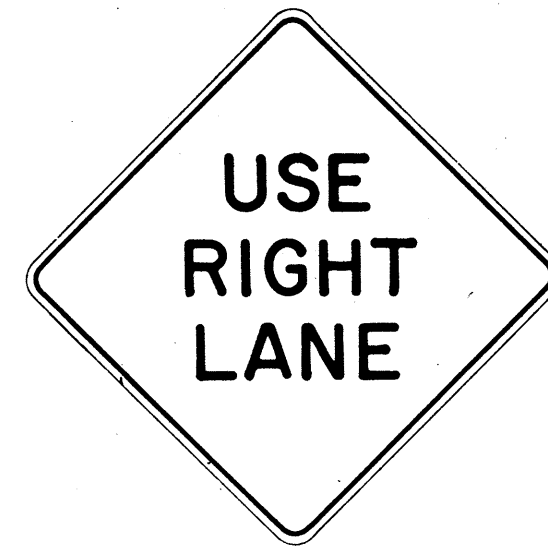
CG20-4 36" x 18"



CW23-1 36" x 36"



CW23-2b 48" x 48"



CW23-3(R) 48" x 48"

GENERAL NOTES

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

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

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS CONSTRUCTION SIGNS

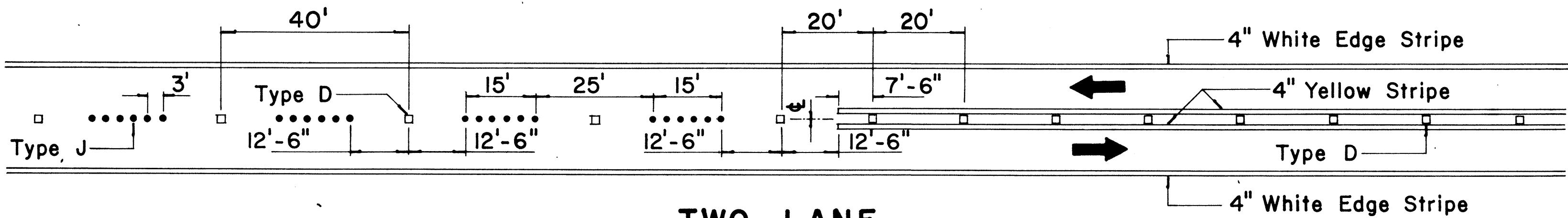
NOT TO SCALE

SHEET No.C-26OF 46 SHEETS DT 104

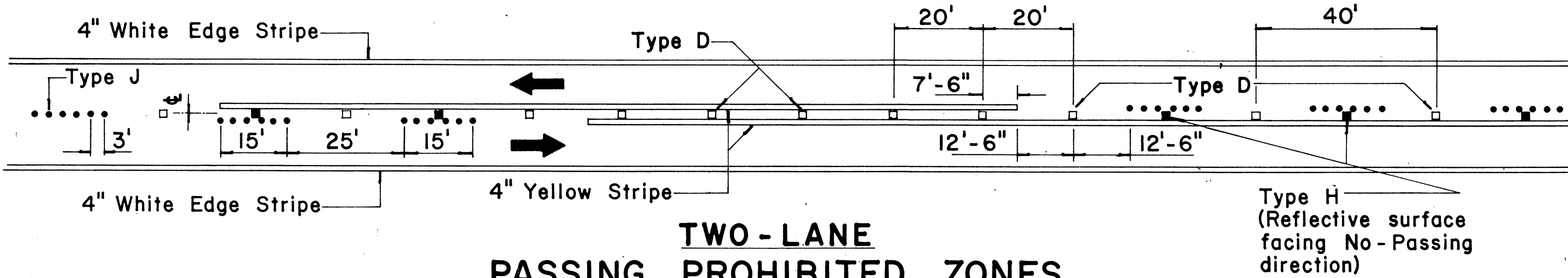
JOB NO. 46-0L-12

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

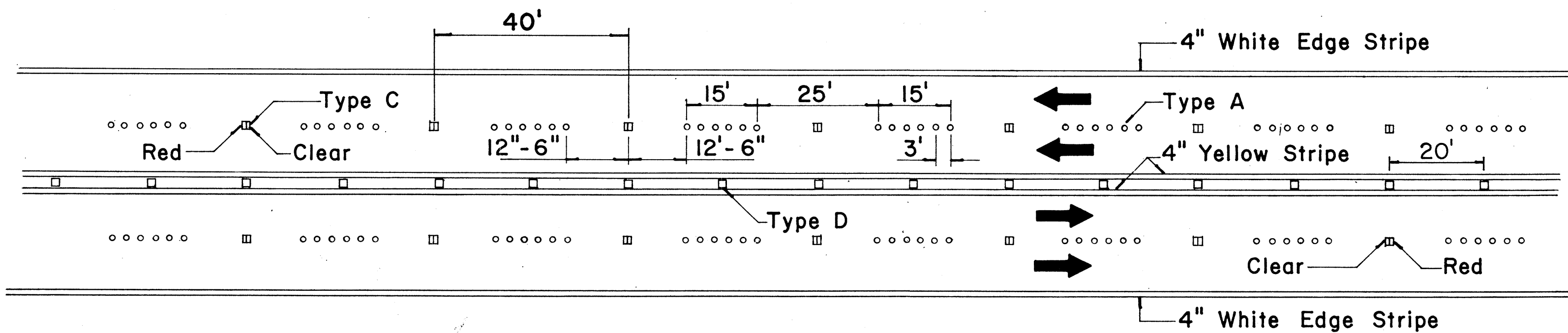
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



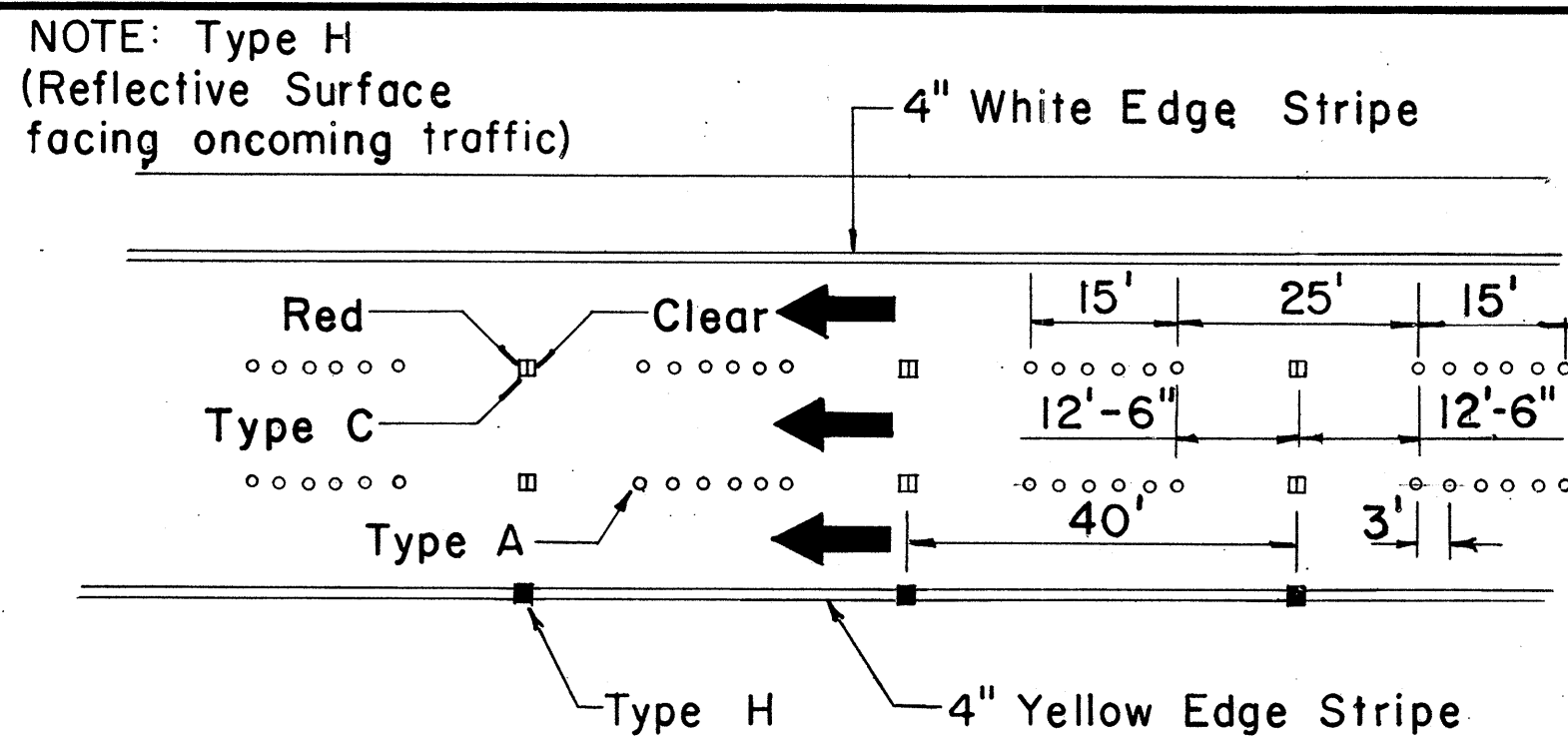
**TWO-LANE
PASSING PERMITTED AND PASSING PROHIBITED**



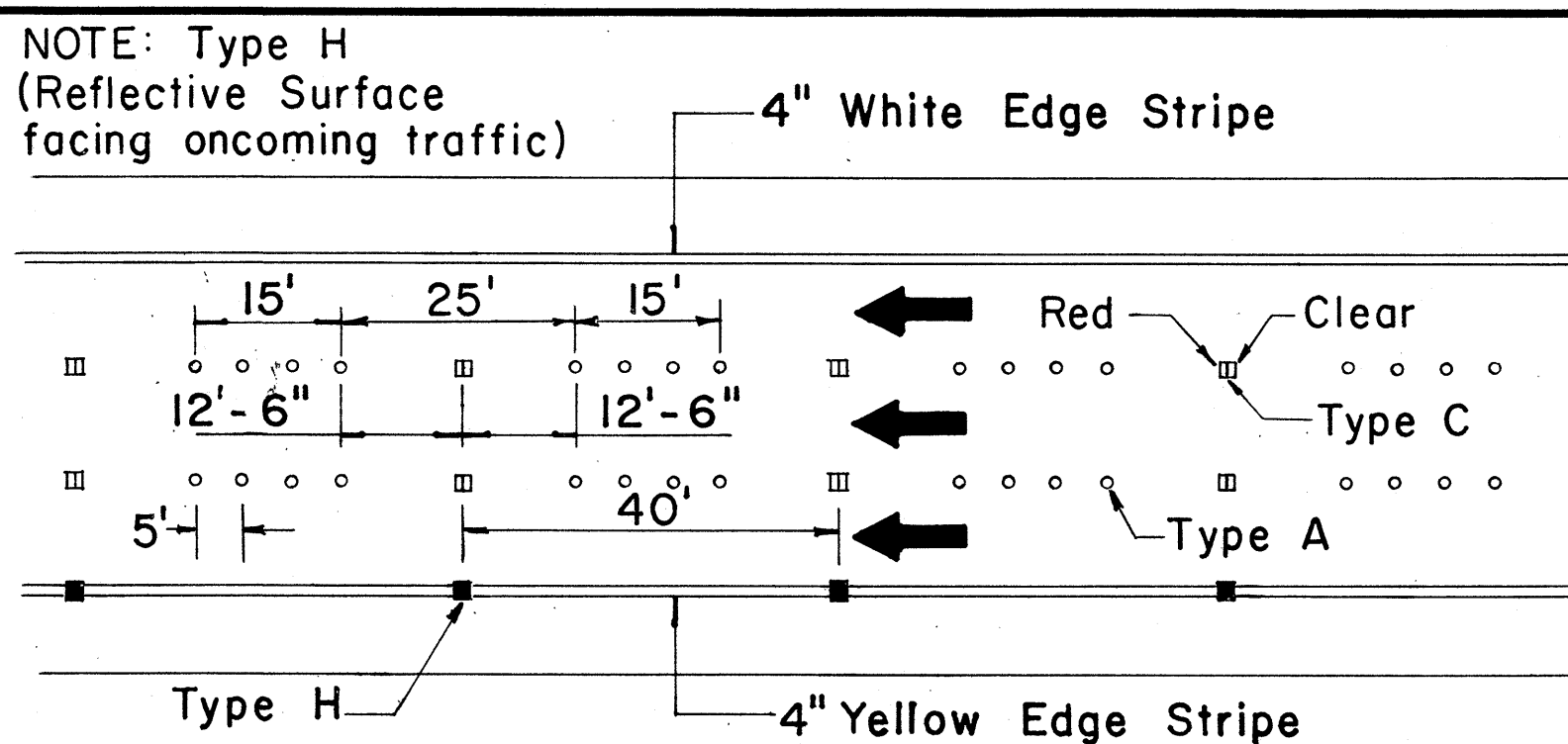
**TWO-LANE
PASSING PROHIBITED ZONES**



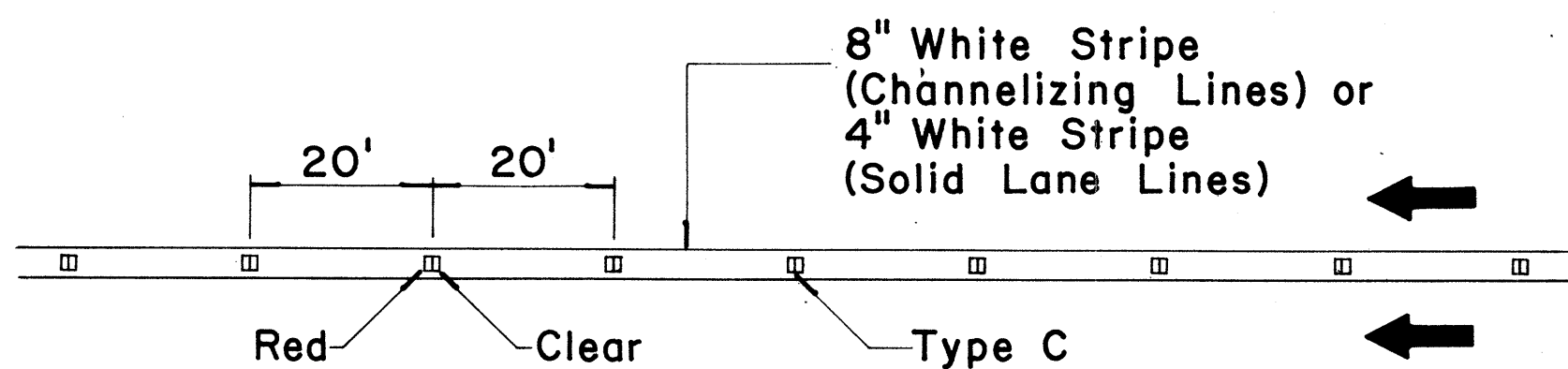
**MULTI-LANE
LANE LINES AND CENTER LINE**



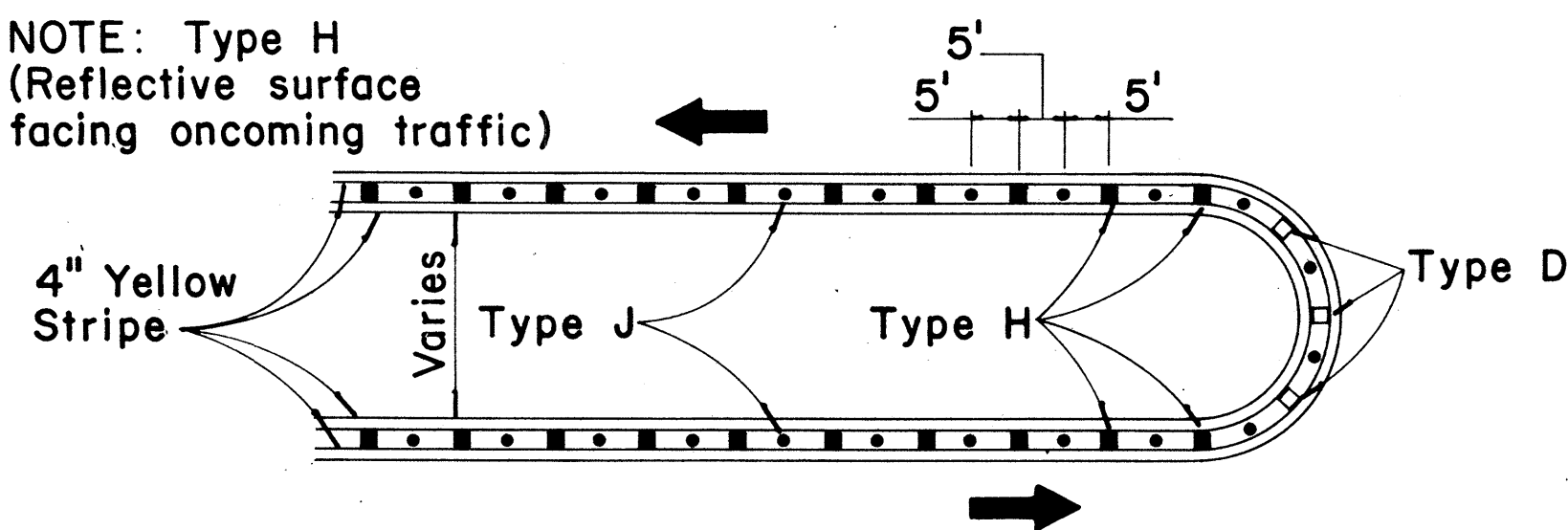
DIVIDED HIGHWAY LANE LINES



FREEWAY LANE LINES



**CHANNELIZING LINES
OR SOLID LANE LINES**



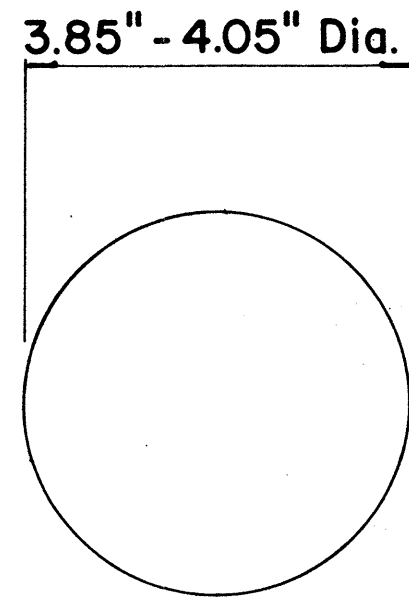
MEDIAN NOSE DELINEATION

TWO - LANE

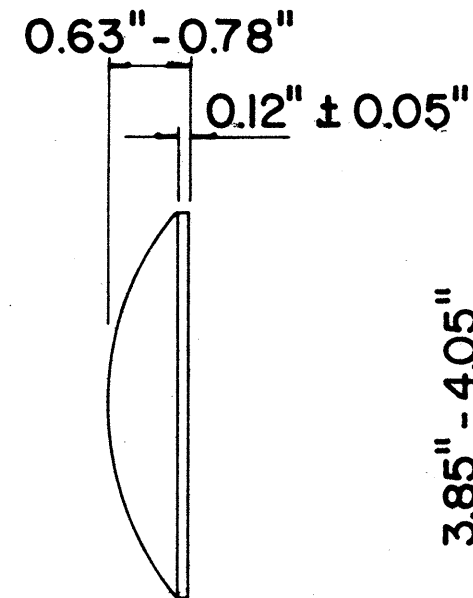
MULTI - LANE

**DIVIDED HIGHWAY
AND
FREEWAY**

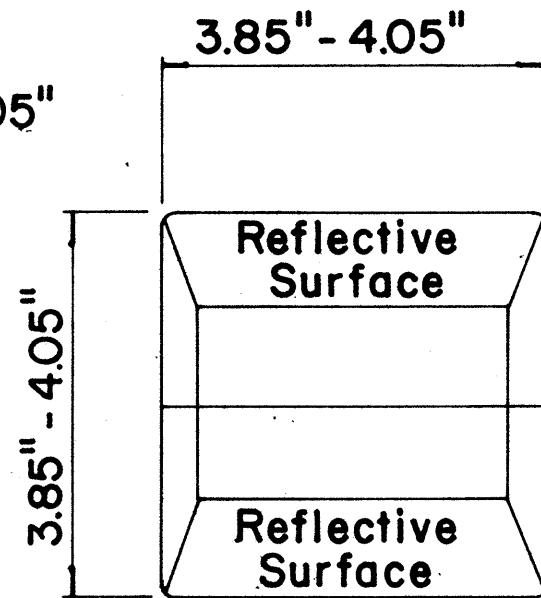
MISCELLANEOUS



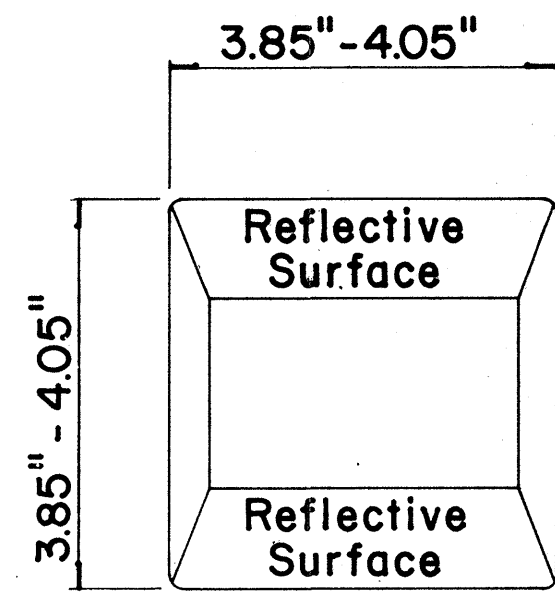
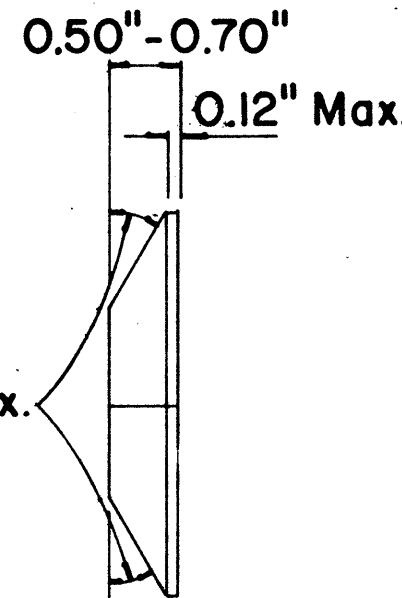
**TYPE A
NON-REFLECTIVE WHITE MARKER**



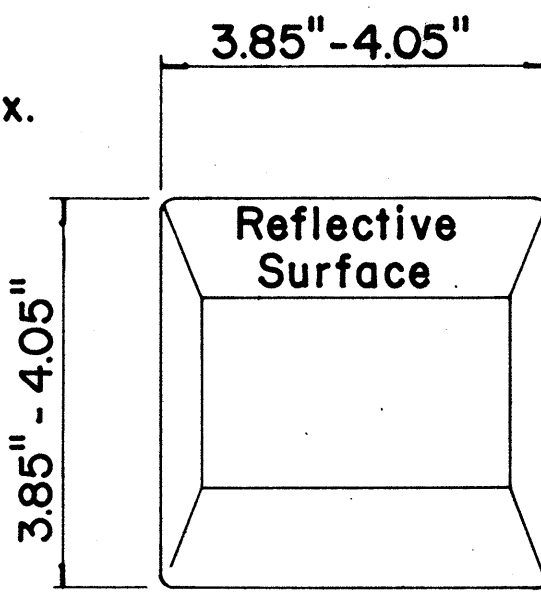
**TYPE J
NON-REFLECTIVE YELLOW MARKER**



**TYPE C
RED-CLEAR REFLECTIVE MARKER**



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



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

GENERAL NOTES

1. Painted stripes to be done by Contractor unless otherwise specified.

LEGEND

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

APPROVAL RECOMMENDED:

E. J. Tanaka
TRAFFIC ENGINEER

11/18/71
DATE

APPROVED:

Walter Z. Zisch
ASSISTANT CHIEF, ENGINEERING

11/18/71
DATE

No.	REVISION	APPROVED BY	DATE
1	Add reflector marker in each line gap.	H.C.	10-27-72
2	Revised General Notes.	H.C.	10-27-72
3	Change 4" white edge stripe to 4" solid yellow edge stripe to left edge of a travel path and Add Type H Reflector Marker	H.C.	5-22-74

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**STANDARD DETAILS
RAISED PAVEMENT MARKERS**

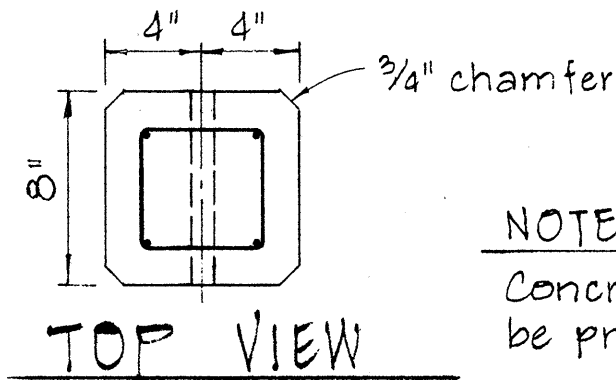
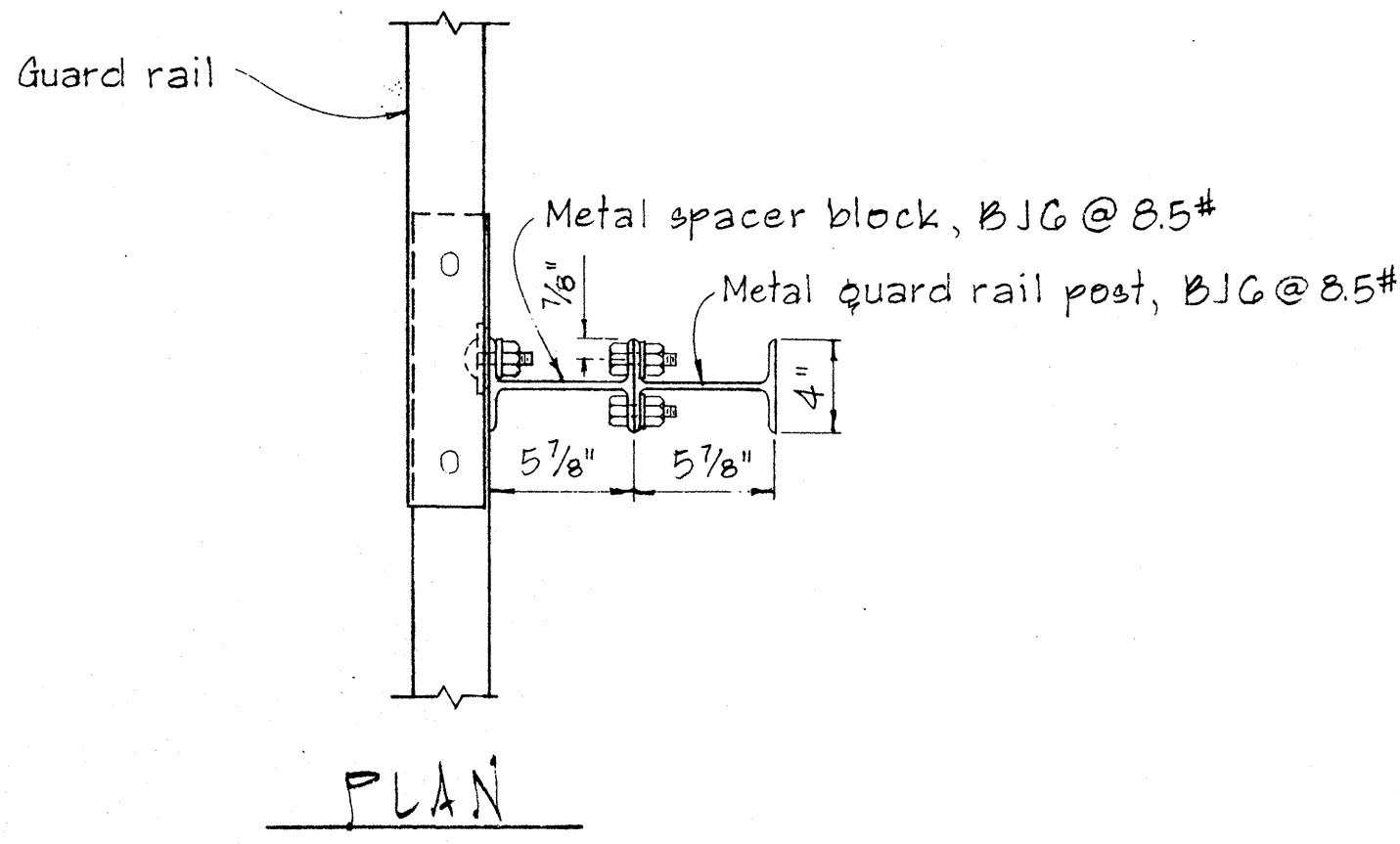
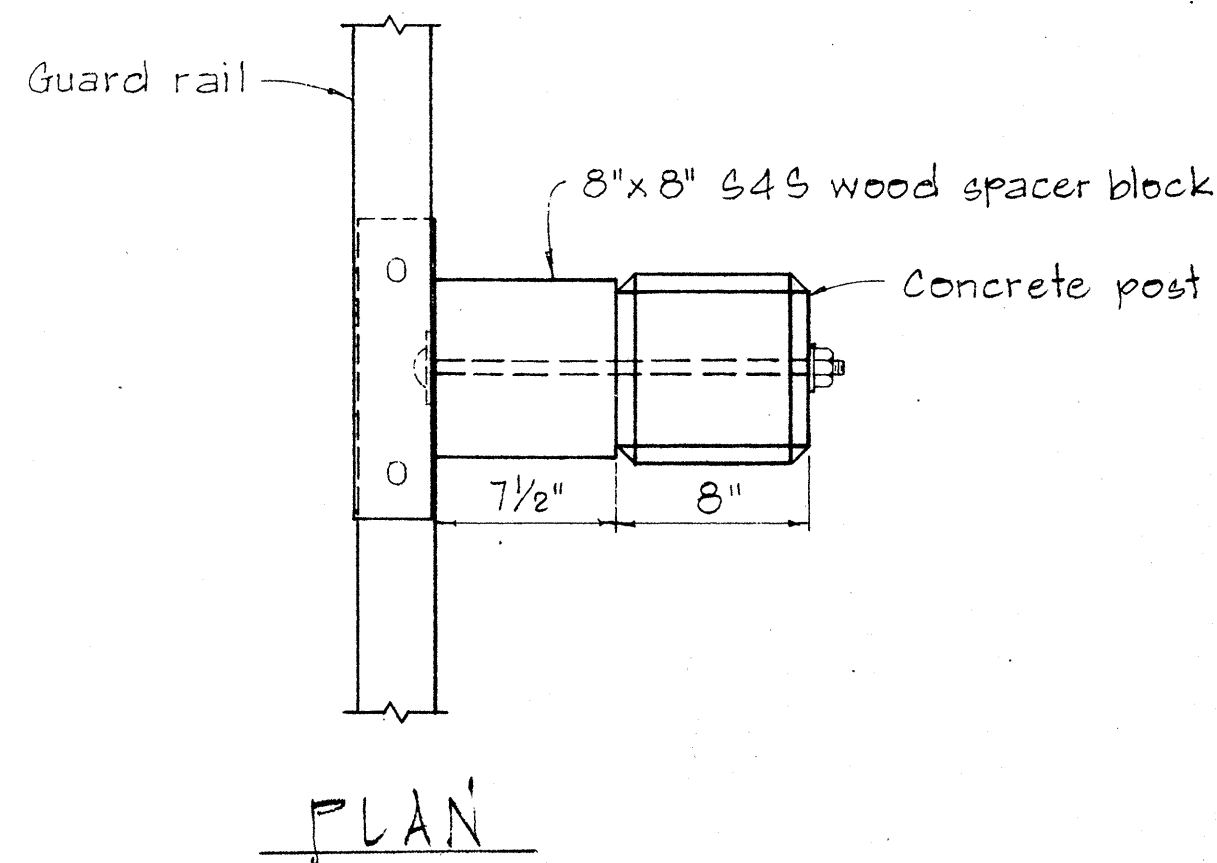
Not to Scale October 1971

SHEET No. C-27 OF 40 SHEETS DT 300

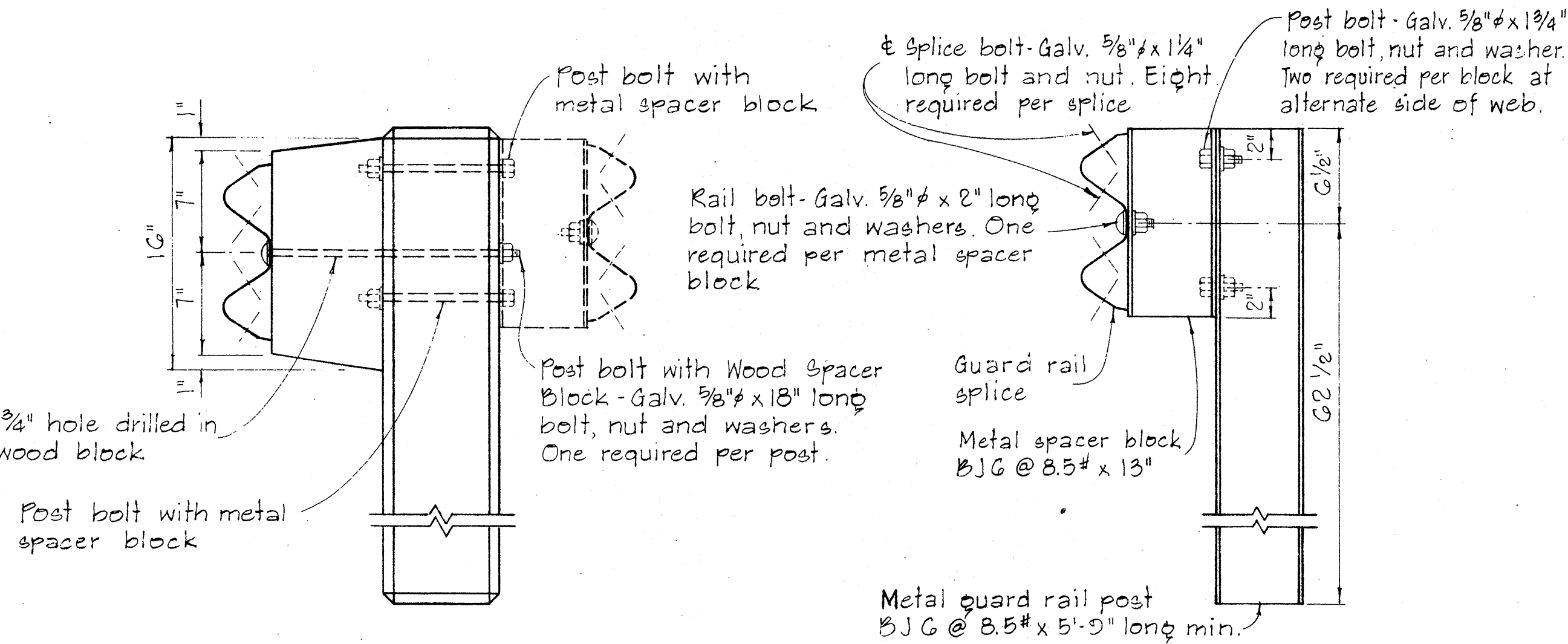
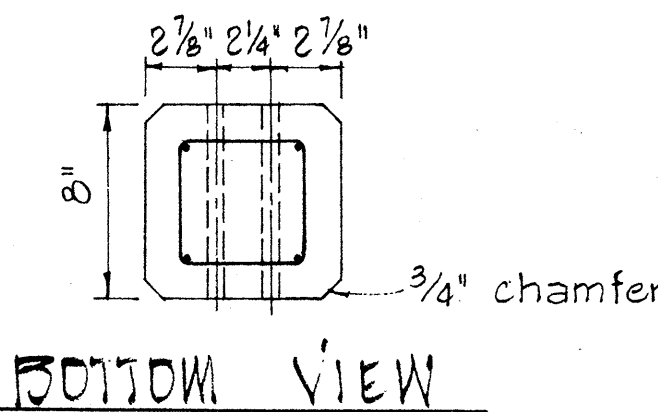
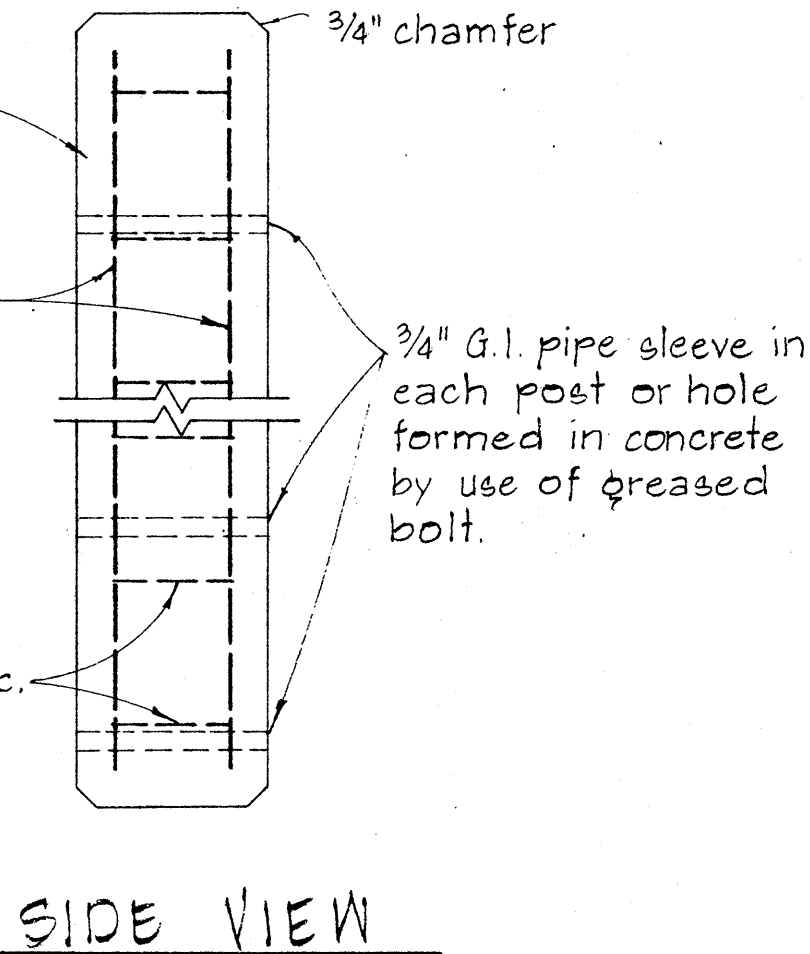
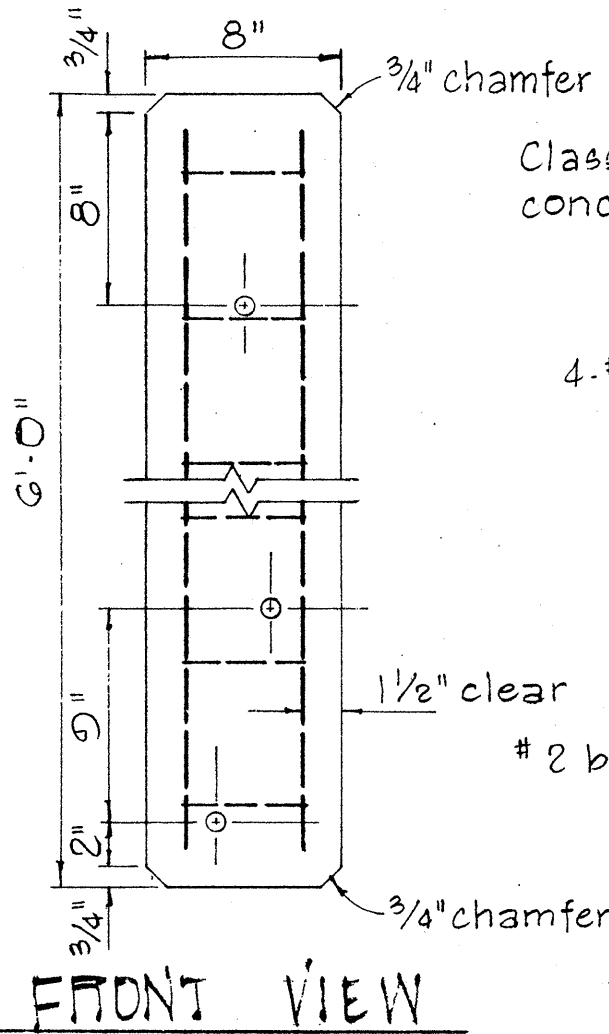
JOB NO. 46-OL-12

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

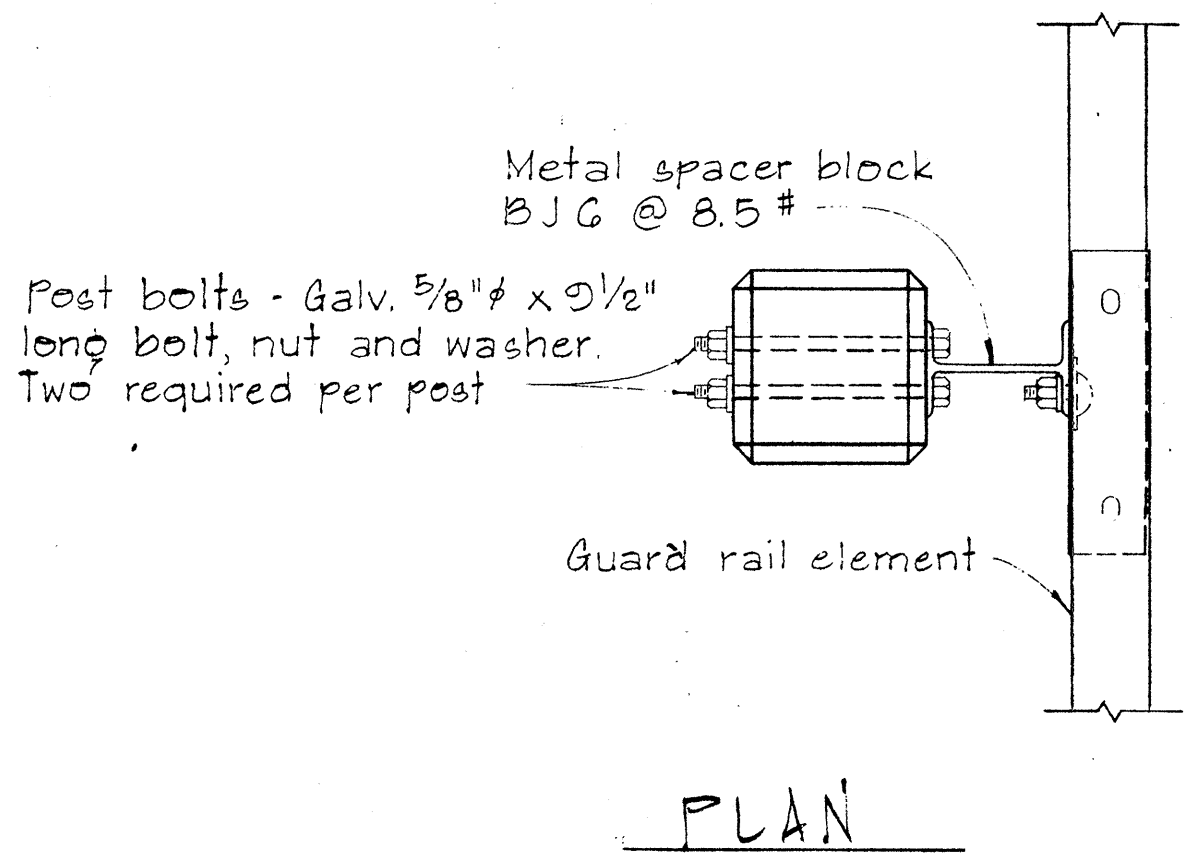
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



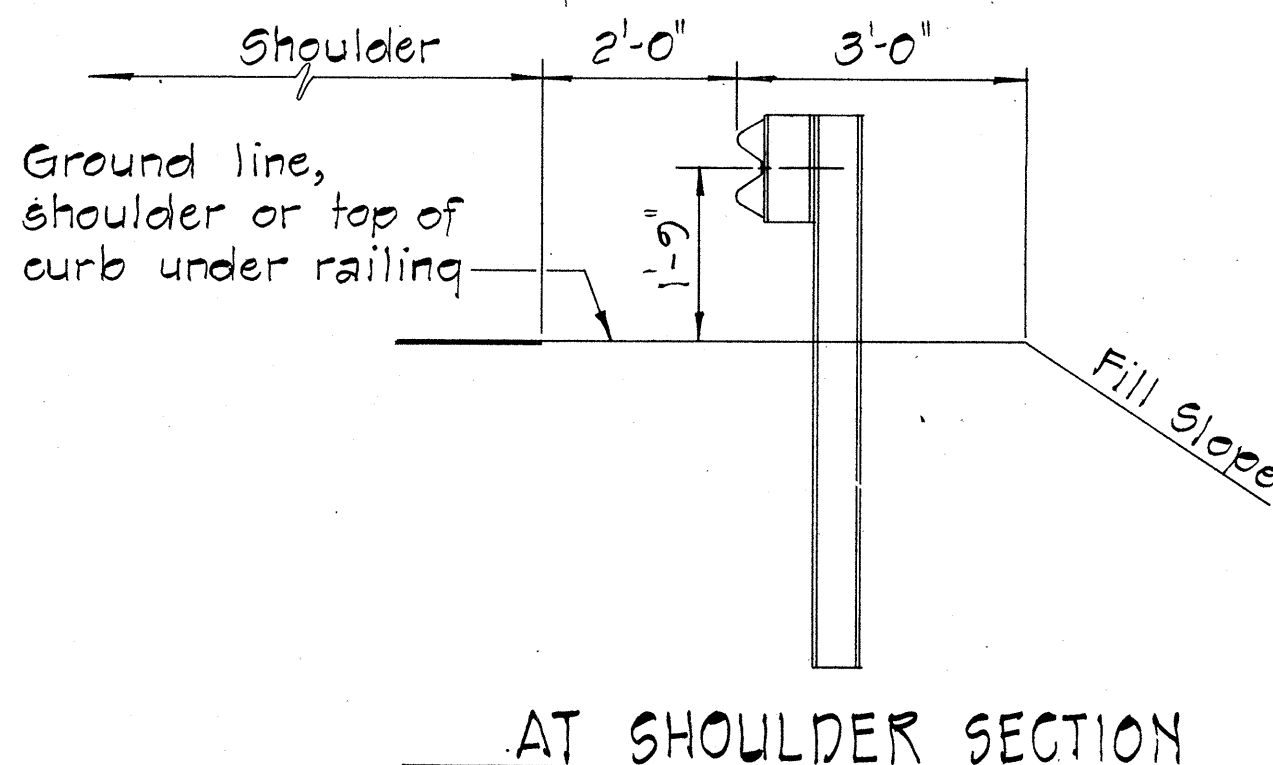
NOTE:
Concrete post shall be precast



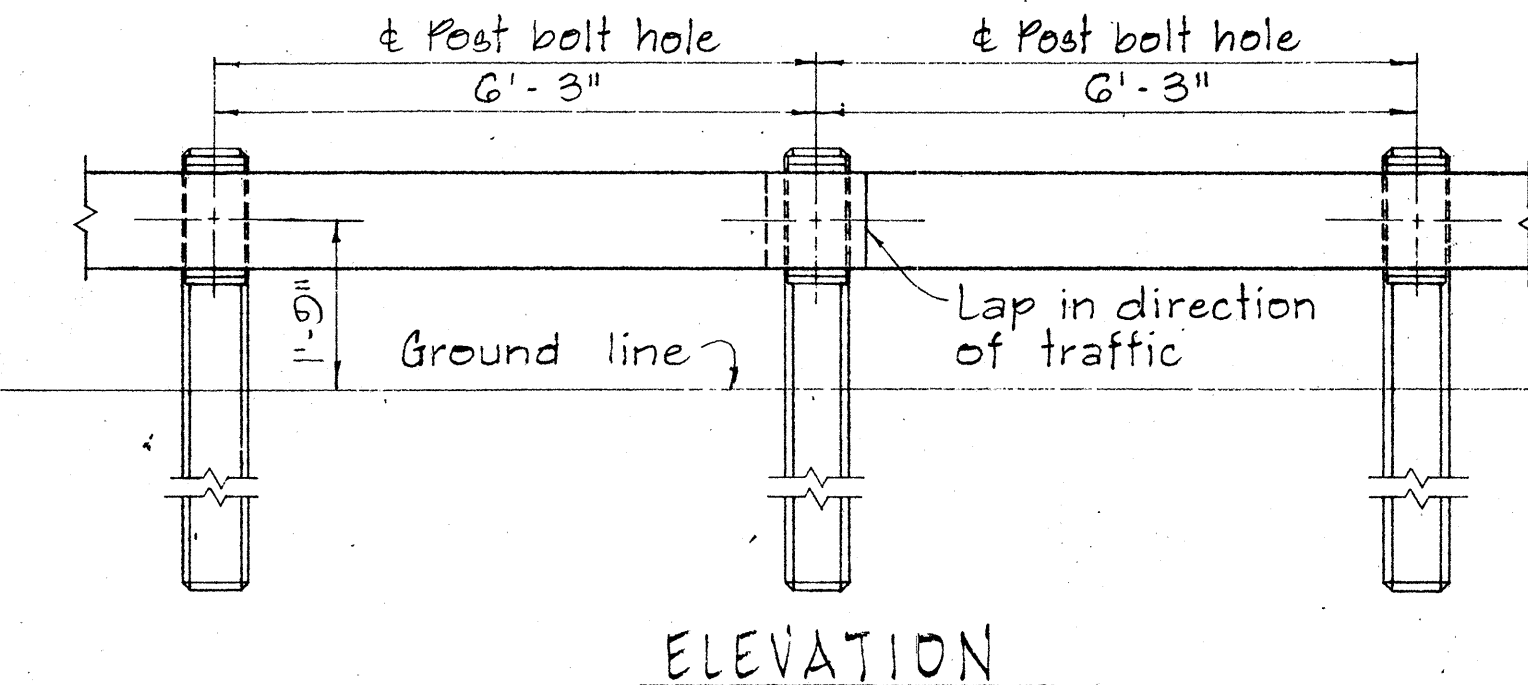
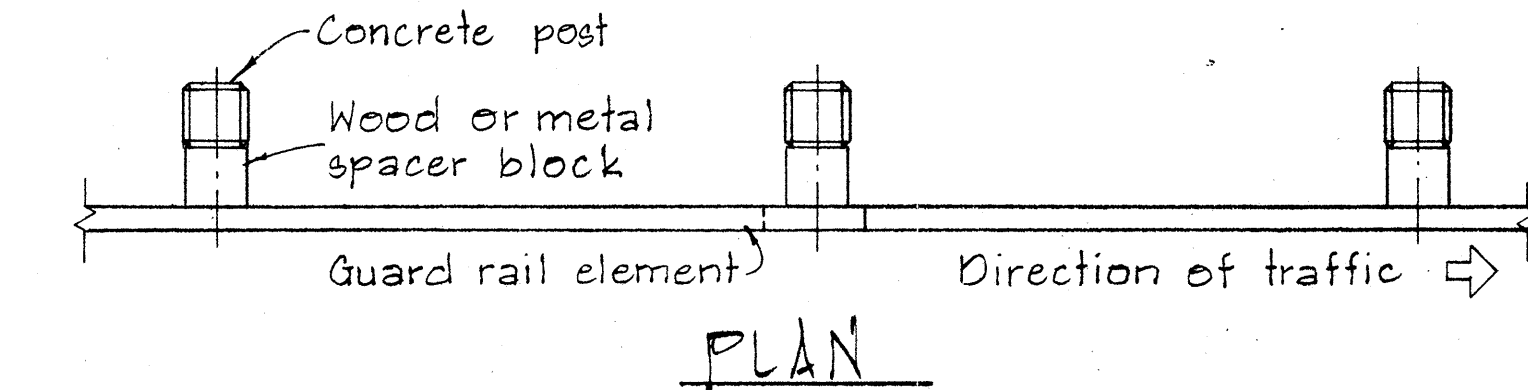
SINGLE METAL GUARD RAIL ON METAL POST
WITH METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



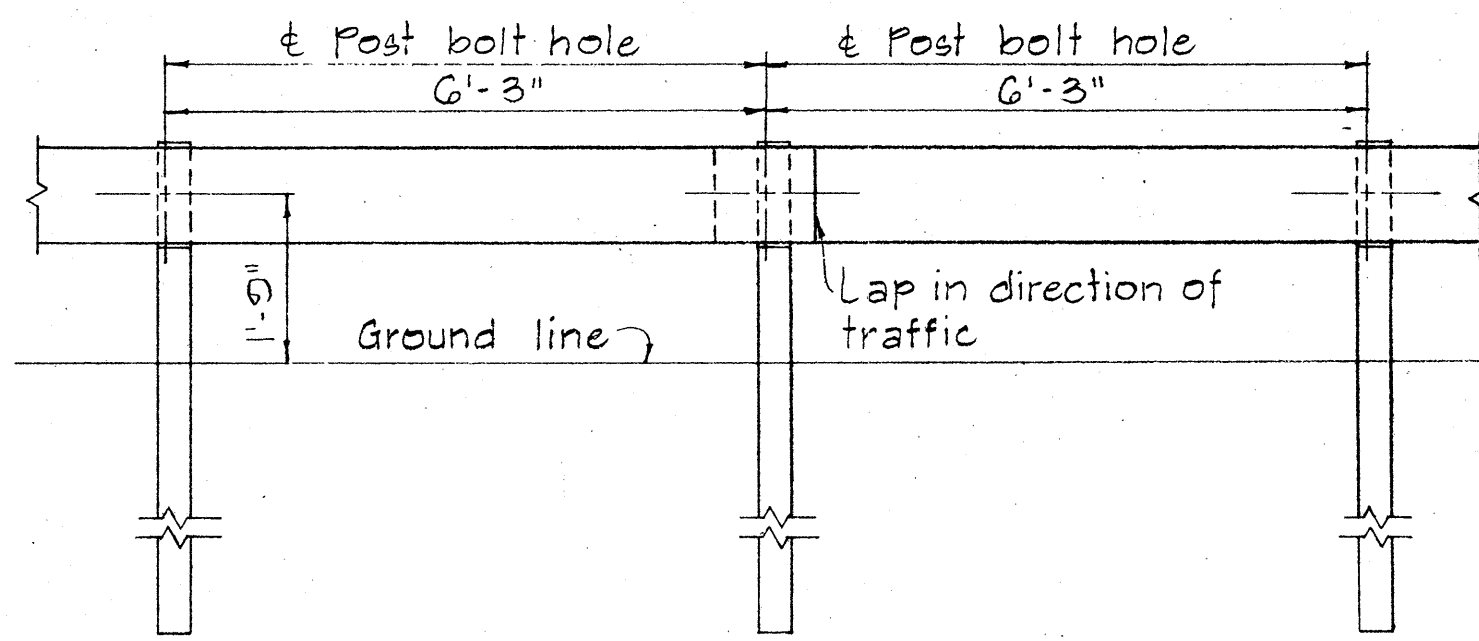
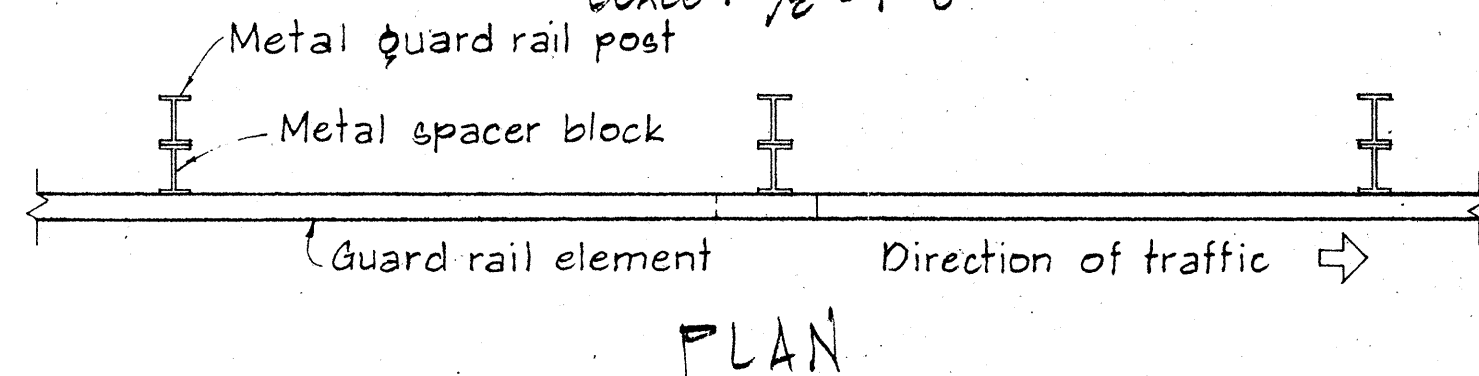
SINGLE METAL GUARD RAIL ON PRECAST
CONCRETE POST WITH WOOD OR METAL SPACER BLOCK
SCALE: 1 1/2" = 1'-0"



TYPICAL METAL GUARD
RAIL DETAIL
SCALE: 1/2" = 1'-0"



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



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

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Eusebio Tanaka
TRAFFIC ENGINEER
12/23/62
DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

SCALE: AS SHOWN NOV. 1968

SHEET No. C-28 OF 46 SHEETS DT 500

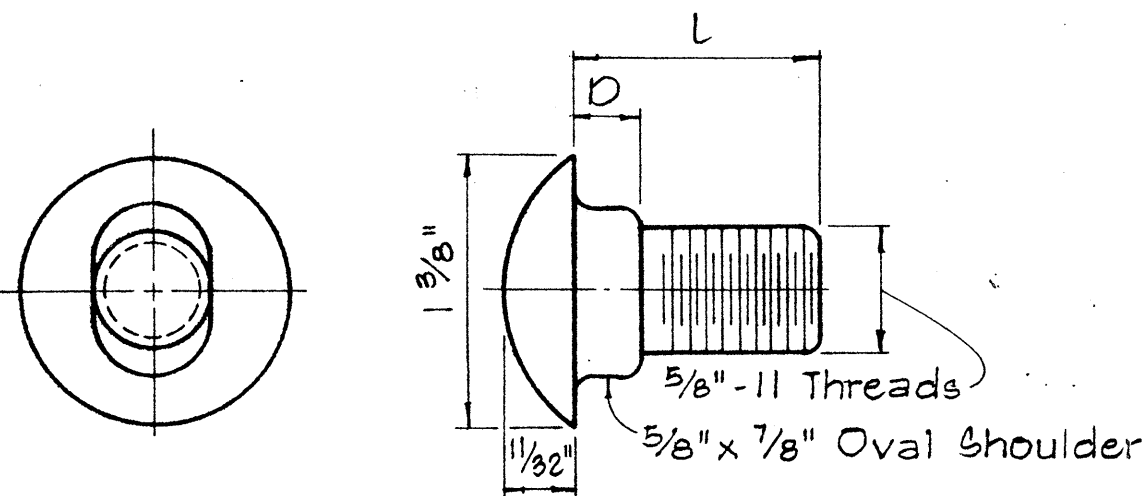
JOB NO. 46-OL-12

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

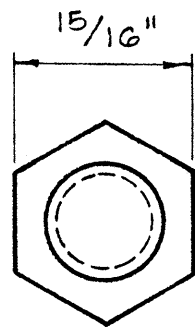
BOLT DIMENSIONS		
TYPE A BOLT		
Splice Bolt	D	L
Post Bolt for Conc. Post w/ Double Wood Blocks	5/16"	1 1/4"
Post Bolt for Conc. Post w/ Single Wood Block	3/32"	24"
Rail Bolt for Metal Block	3/32"	18"
	3/32"	2"

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

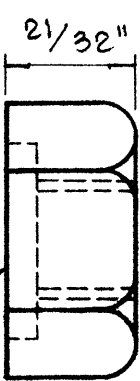
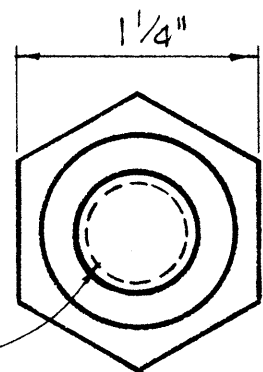
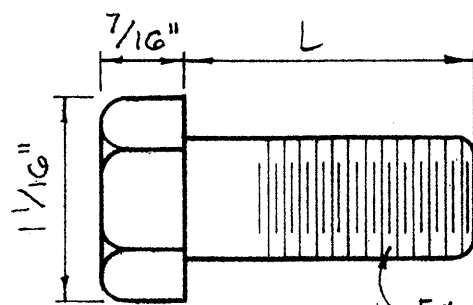
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



TYPE A BOLT

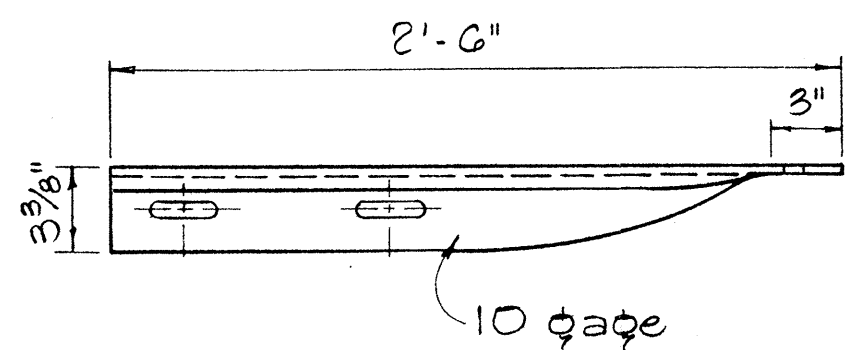


TYPE B BOLT



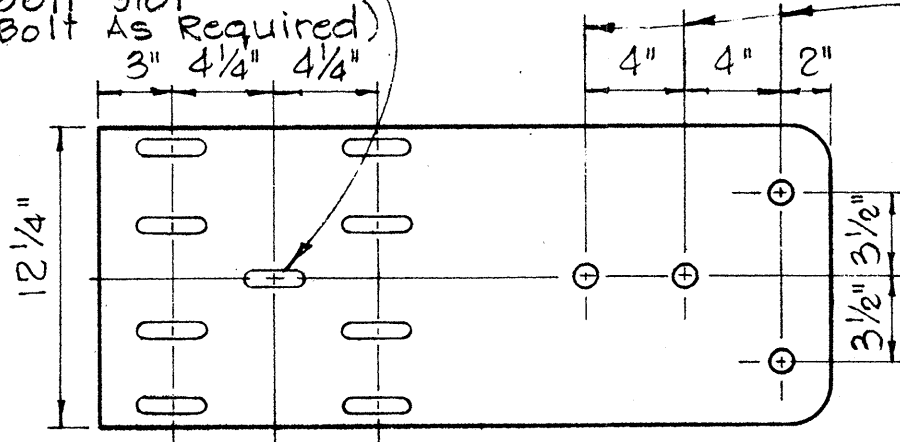
5/32" Deep x 1 5/16" Dia. C' Bore for Type A Bolt only.
Plain nut for Type B Bolt.

HEXAGON NUT



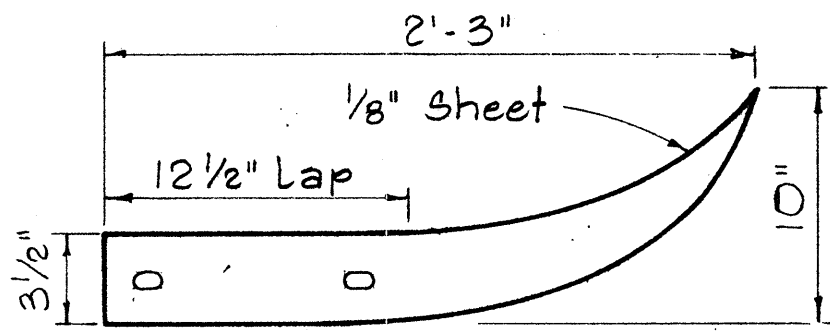
3/4" x 2 1/2" Post
bolt slot
As Required
3" 4 1/4" 4 1/4"

4-1" dia holes for 7/8" dia x 7 1/4" long H.S. Anchor bolts (length under head)
H.S. nut and washer.



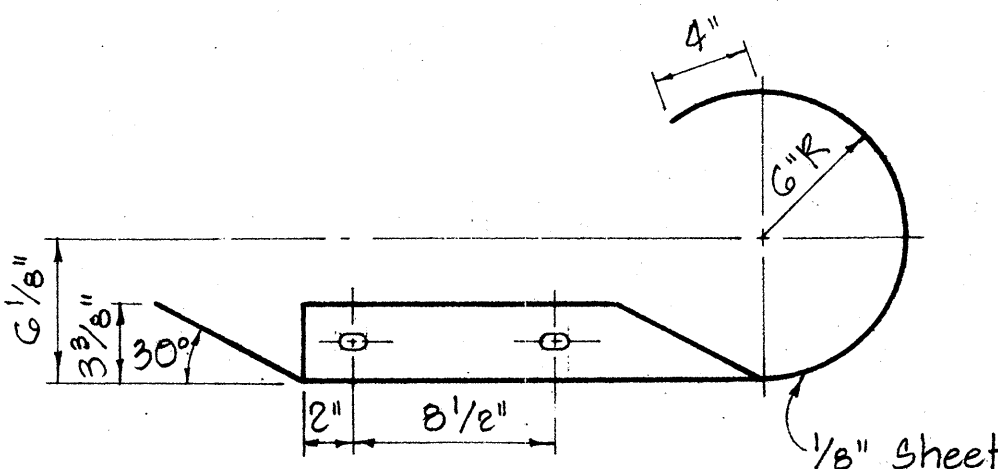
SPECIAL END SHOE

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



FLARED END

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



CURVED END

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

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12/29/69
DATE

12-30-69
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL GUARD RAIL

Scale: As Noted August, 1968

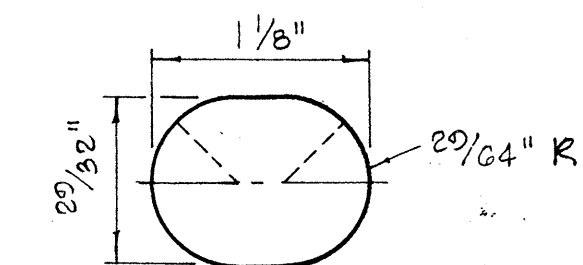
SHEET No.C-29OF 46 SHEETS DT 501

JOB NO. 46-OL-12

SPlice RAIL AND POST BOLTS

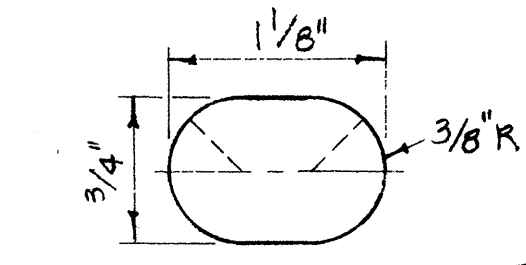
Scale: Full Size

Scale: Full Size

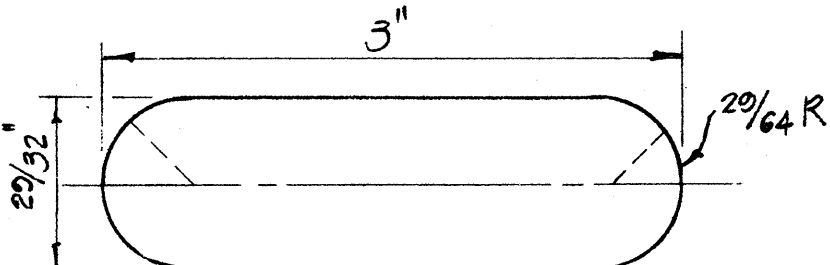


SPlice BOLT SLOT

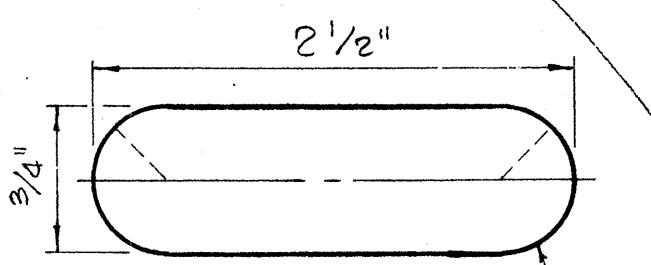
Scale: Full Size



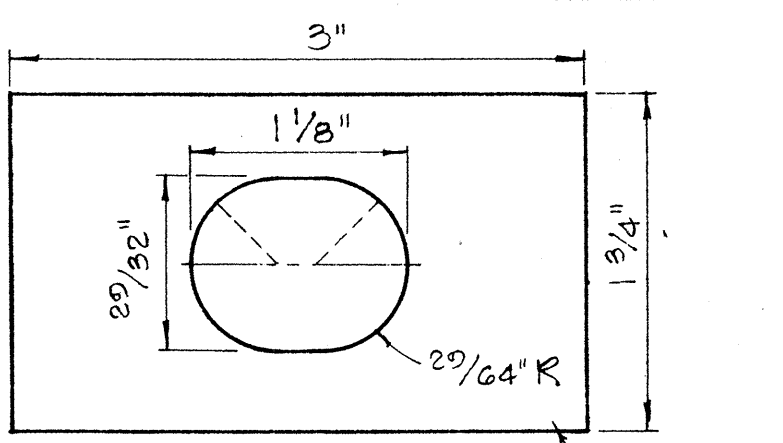
SPlice BOLT SLOT
FOR ALL ENDS



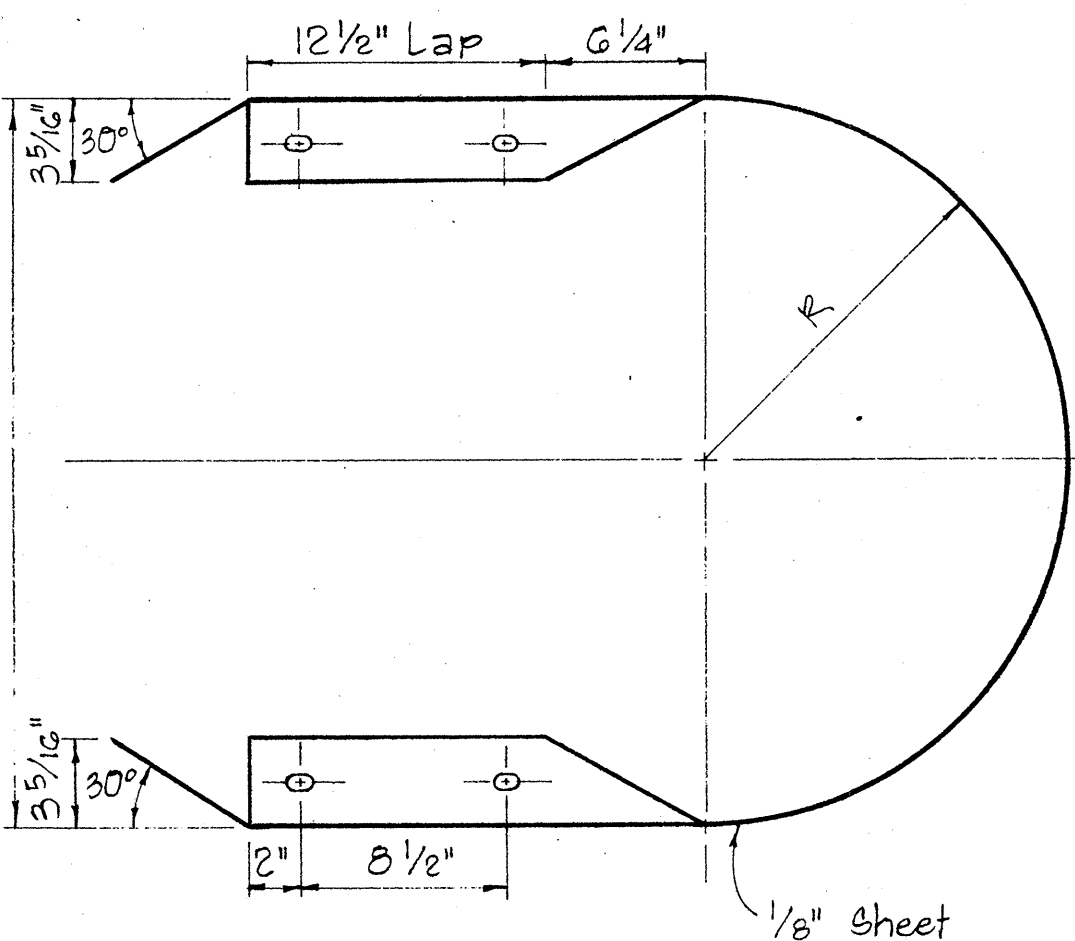
SPlice BOLT SLOT
FOR SPECIAL END SHOE



POST BOLT SLOT



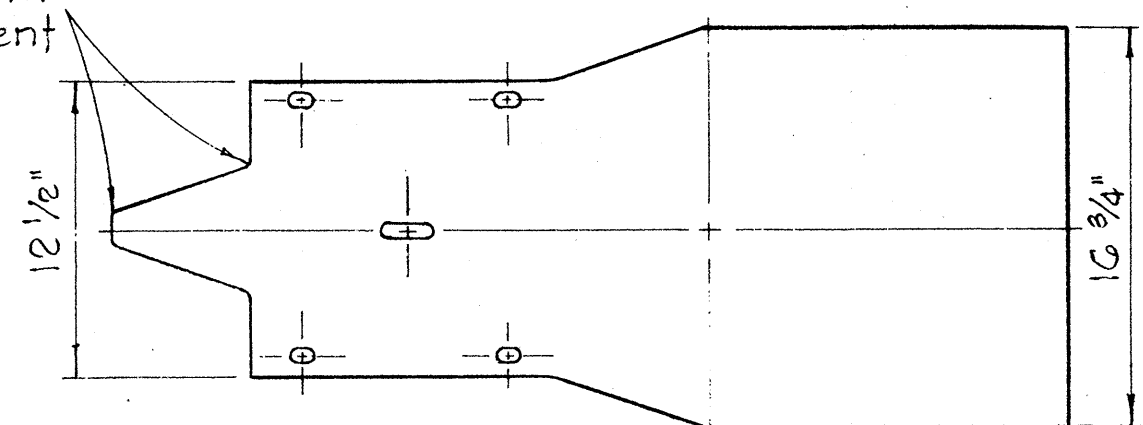
RAIL WASHER



MEDIAN END

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

Shape to fit
rail element



NOTES:

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

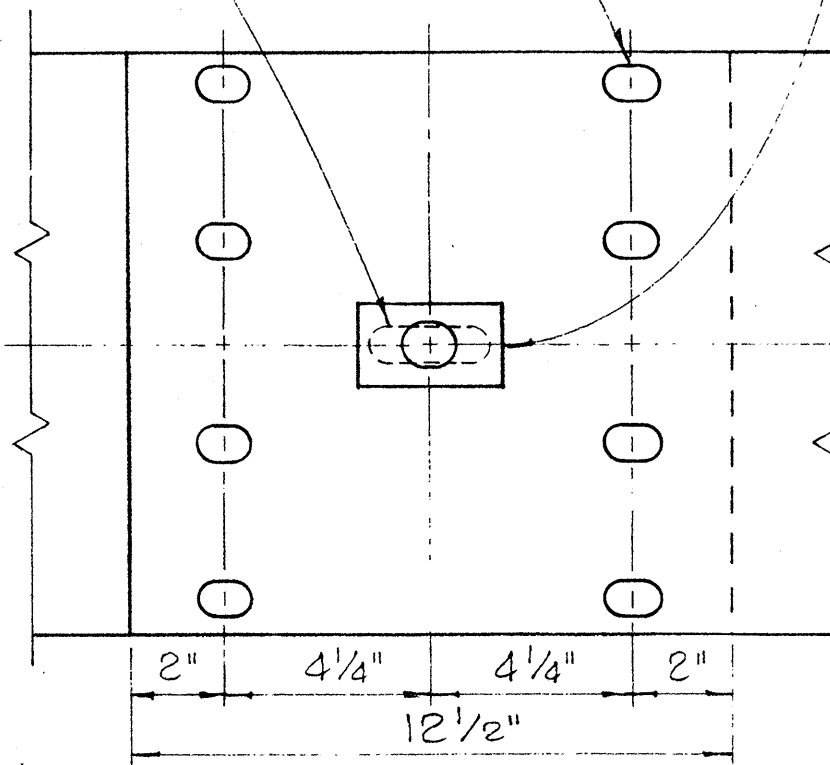
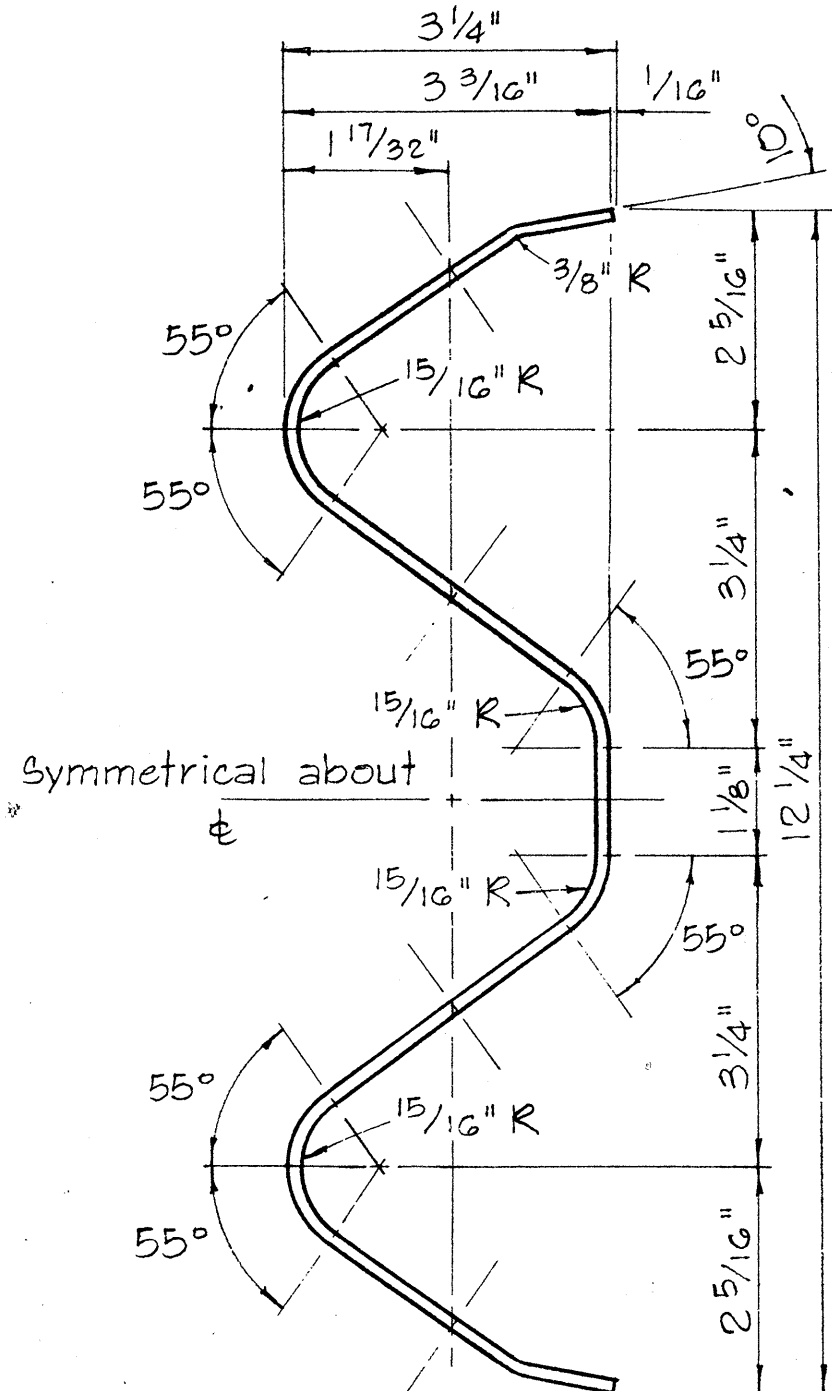
MEDIAN END DIMENSIONS

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

NO.	REVISION	APPROVED BY	DATE

RAIL ELEMENT SECTION

Scale: 6" = 1'-0"

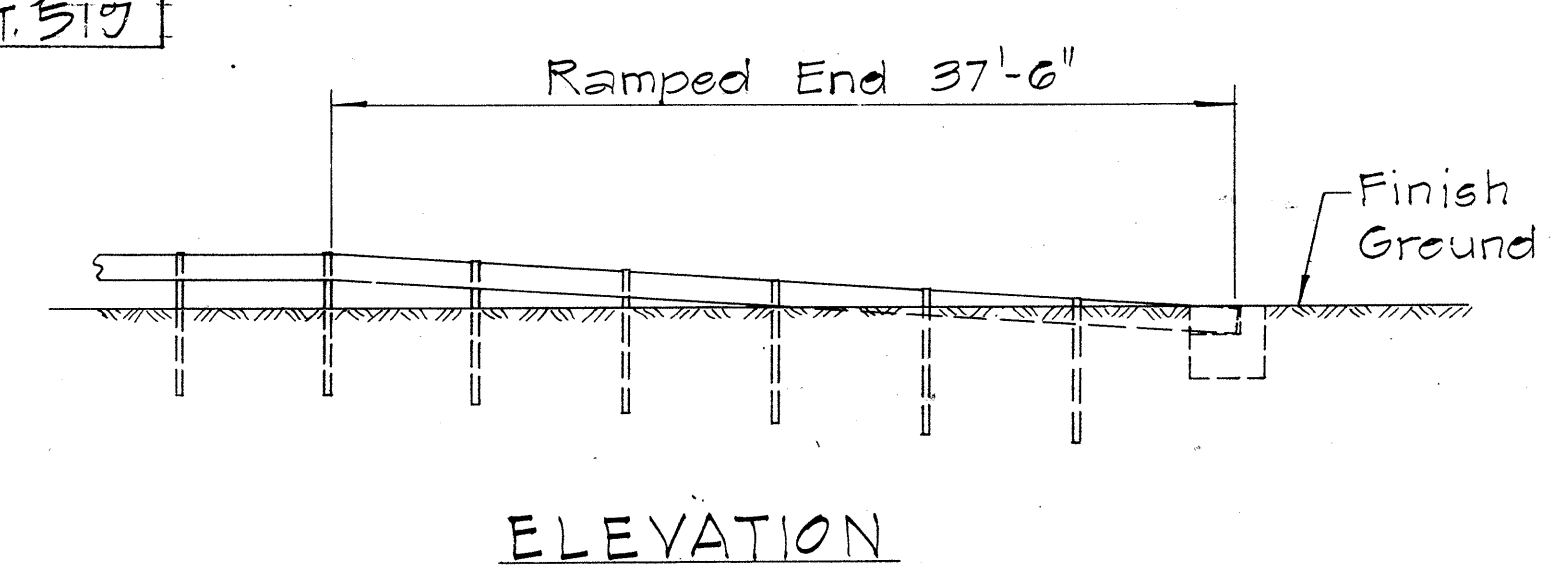
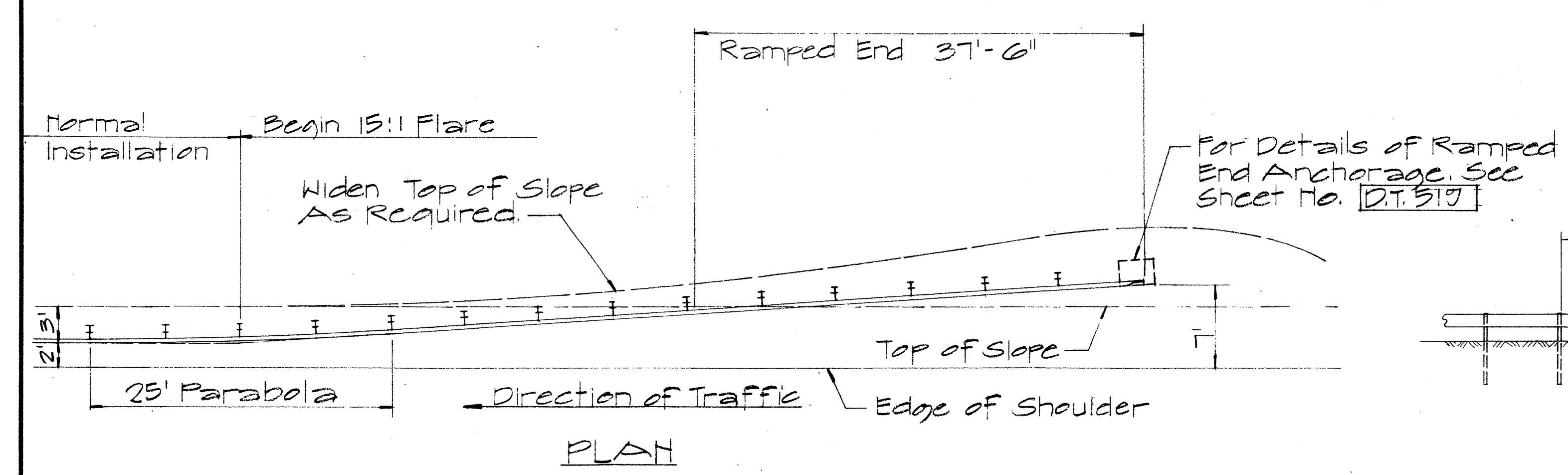
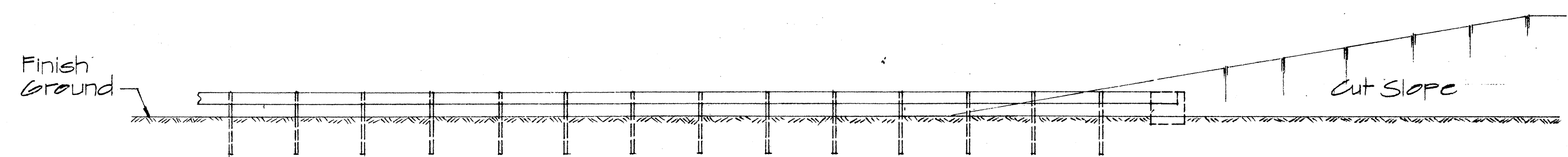
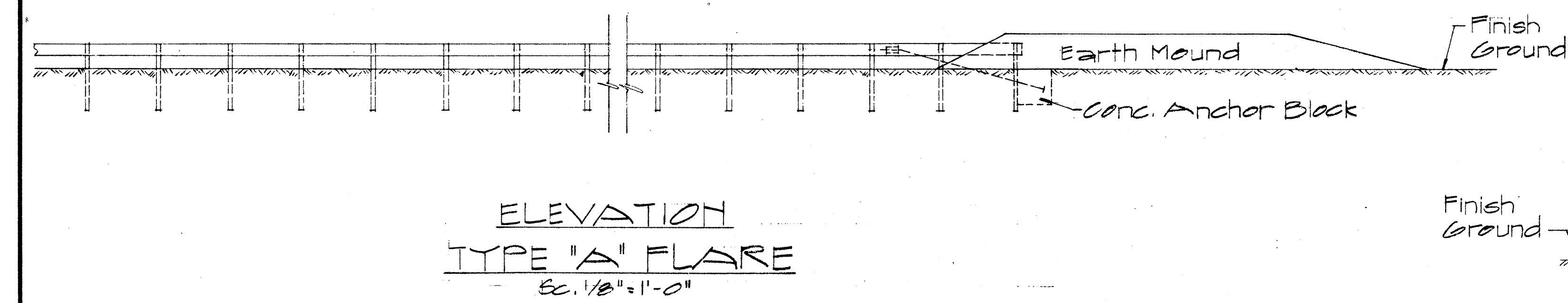
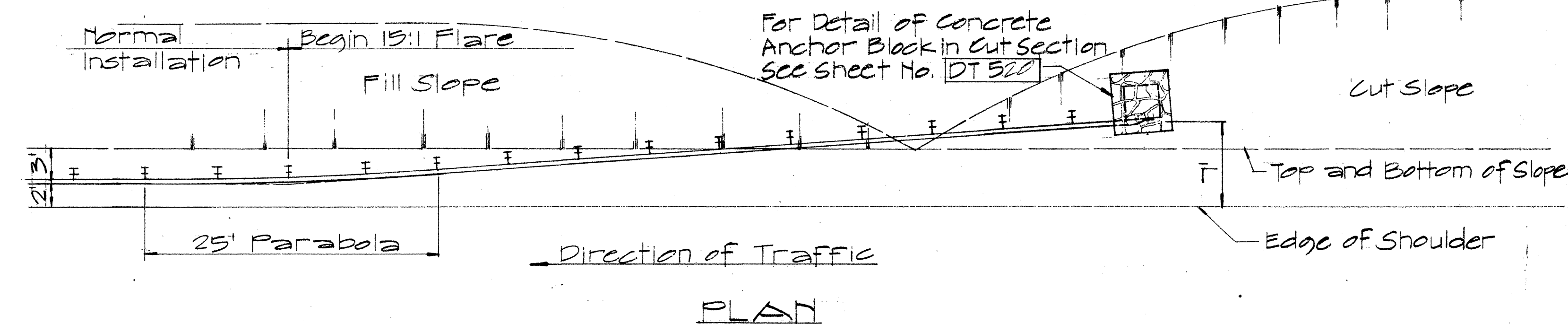
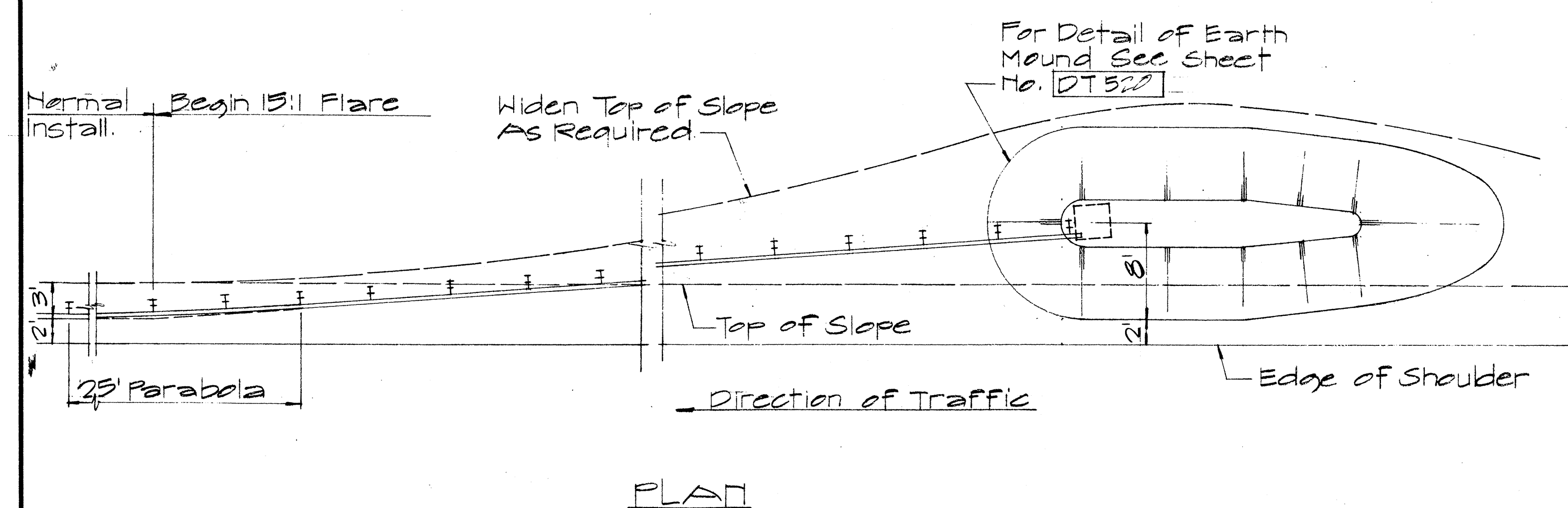
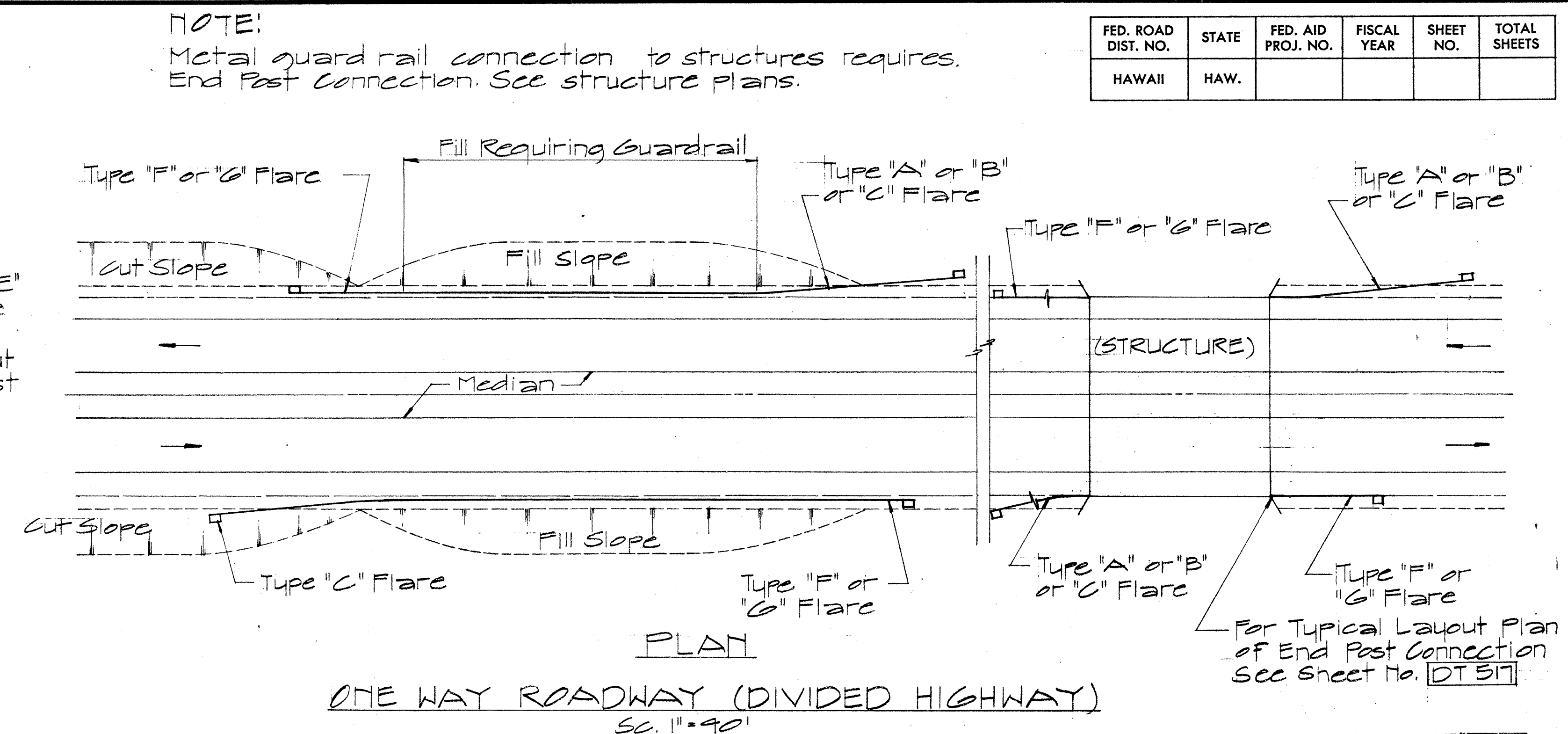
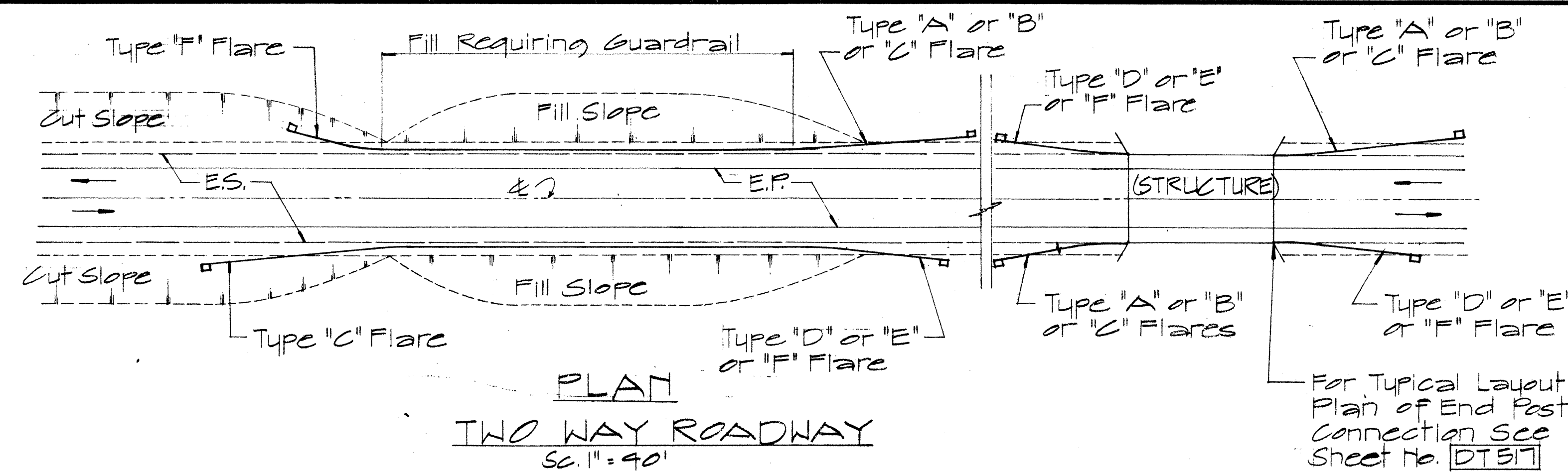


RAIL SPlice

Scale: 3" = 1'-0"

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



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

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
TRAFFIC ENGINEER
12/29/63
DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

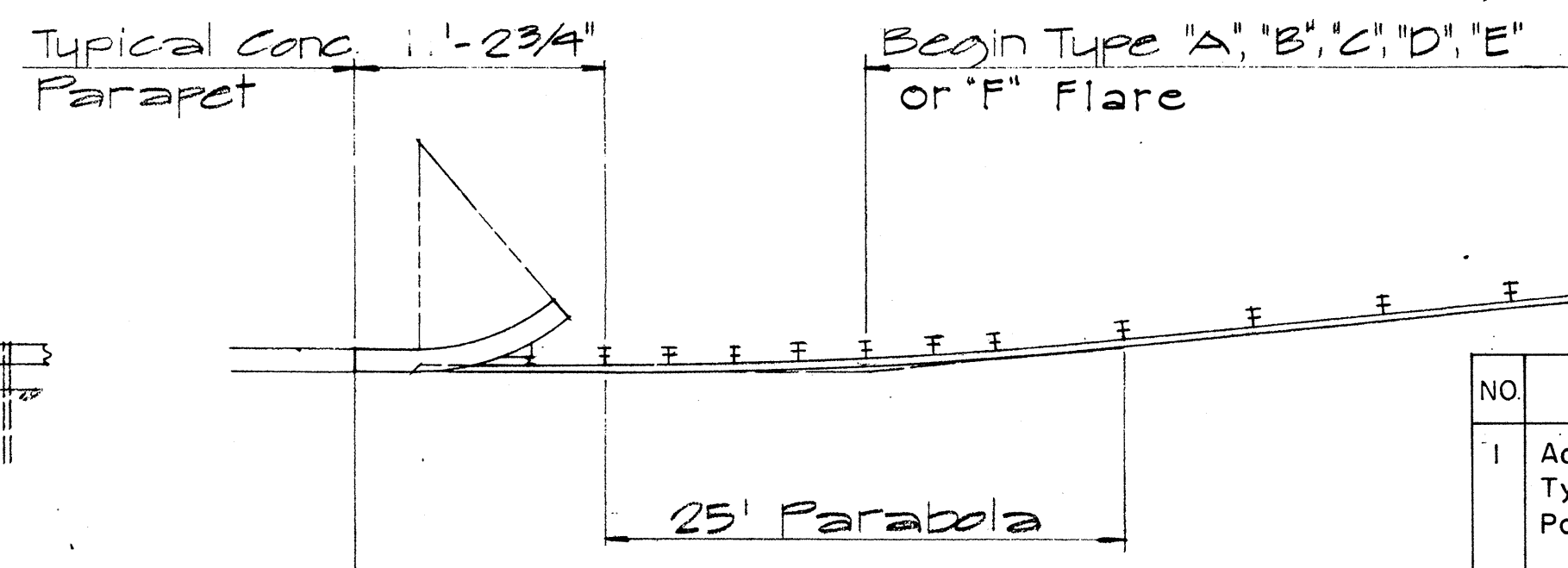
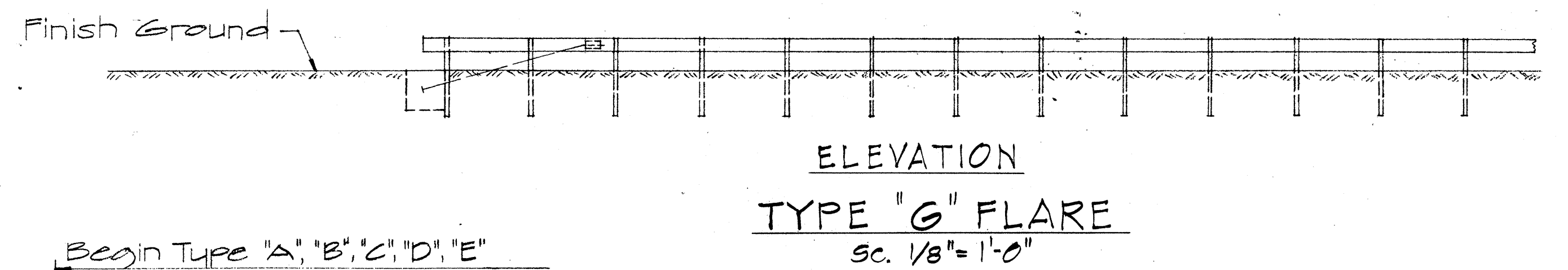
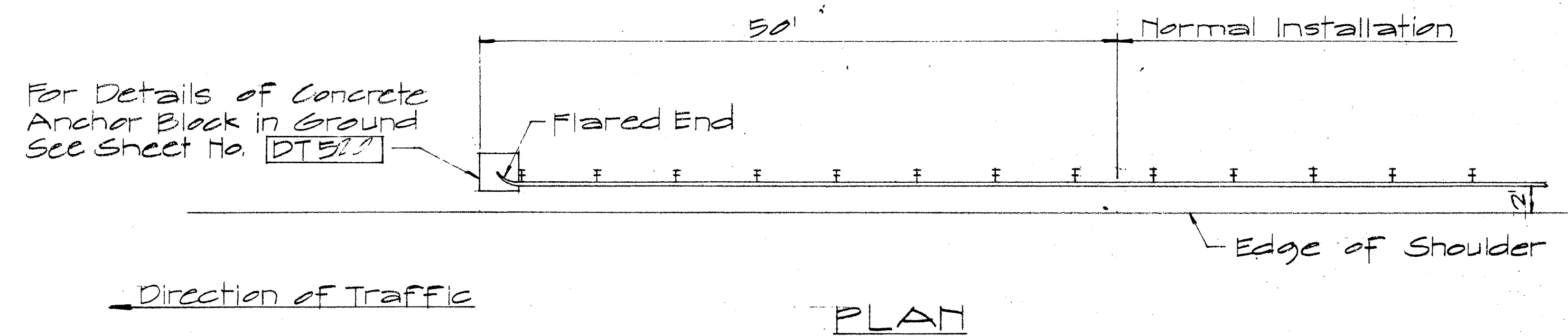
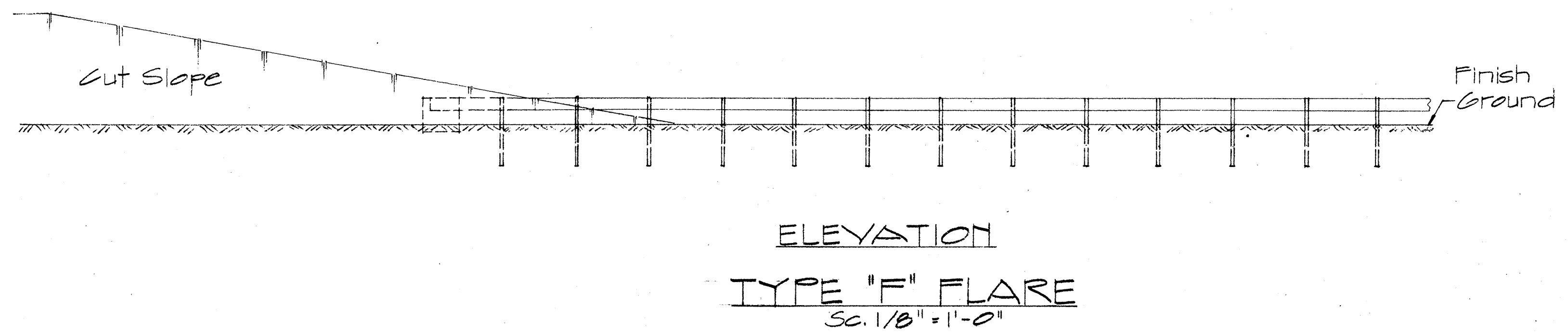
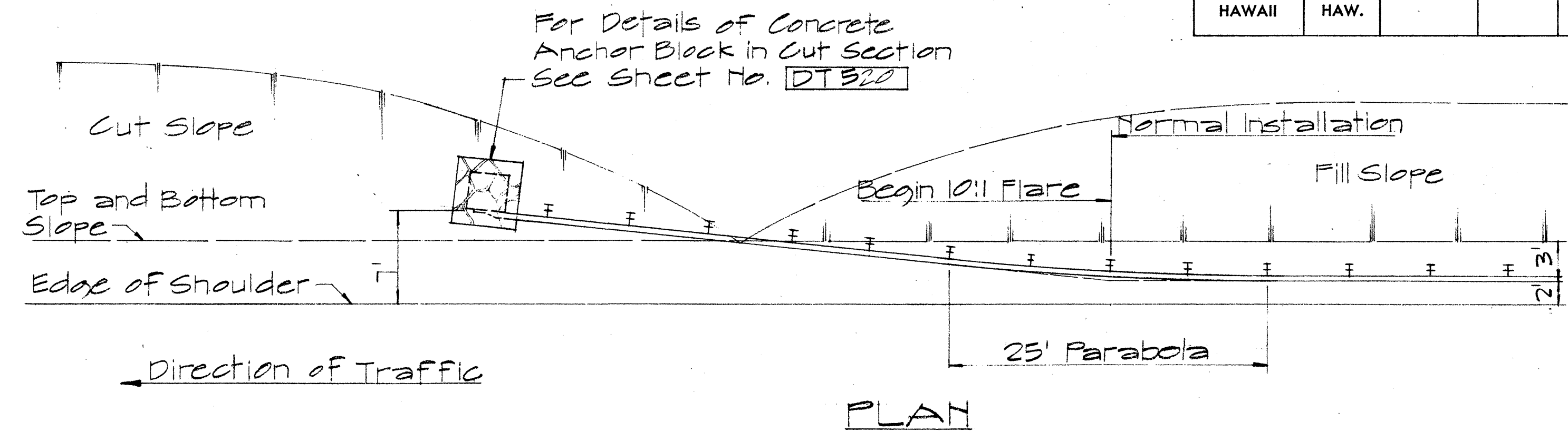
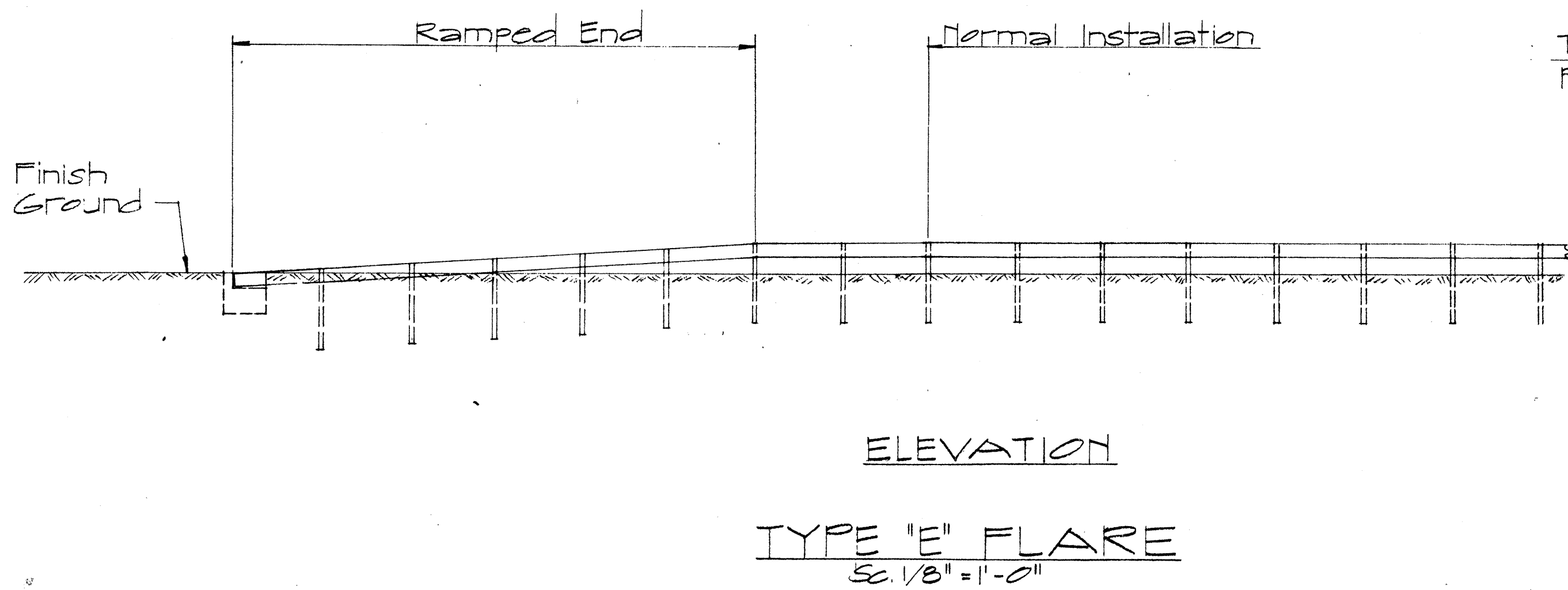
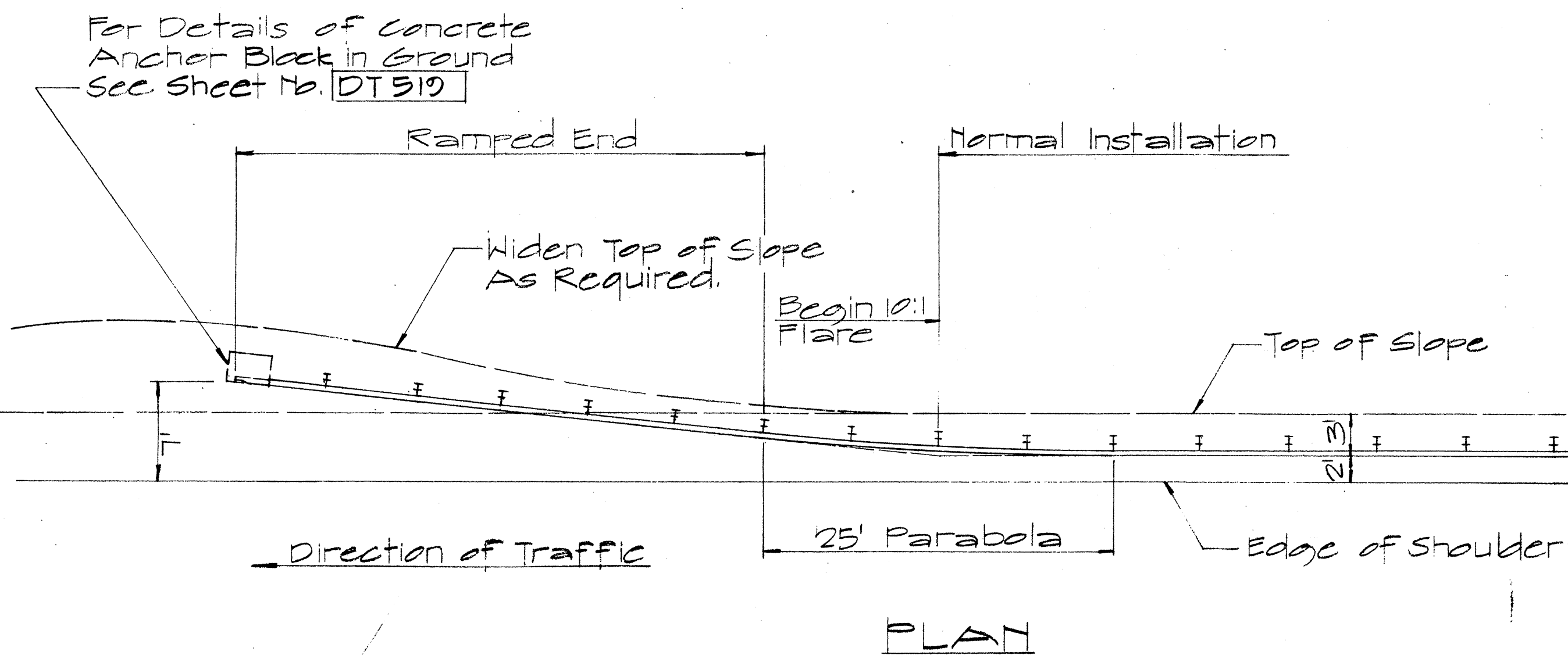
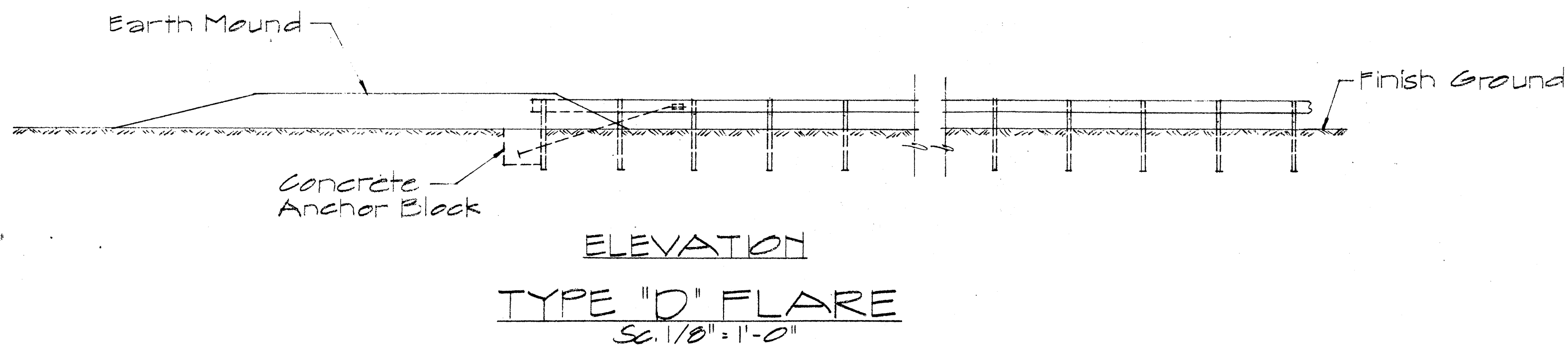
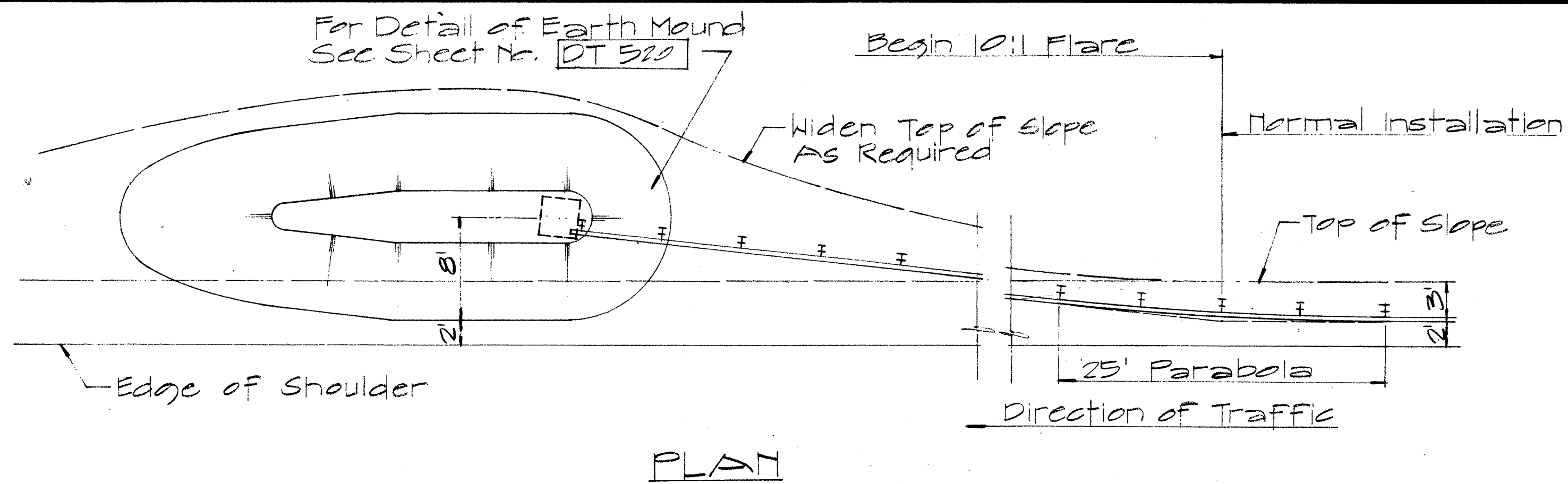
**STANDARD DETAILS
OF APPROACH END
FLARE - ONE & TWO
WAY ROADWAY**

Sc. As Noted April 1969

SHEET No. C-30 OF 46 SHEETS DT 516

DATE: _____
SURVEY PLOTTED BY: _____
DRAWN BY: _____
CHECKED BY: _____
DESIGNED BY: _____
NOTE BOOK No. _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



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

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

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

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

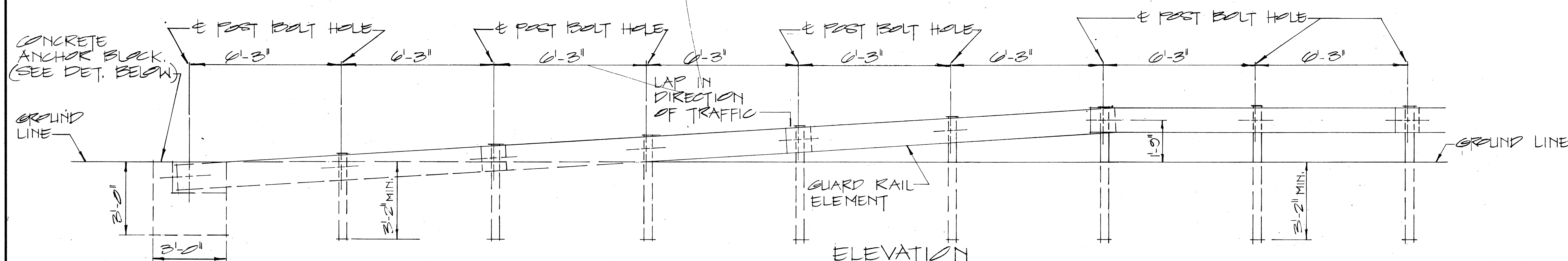
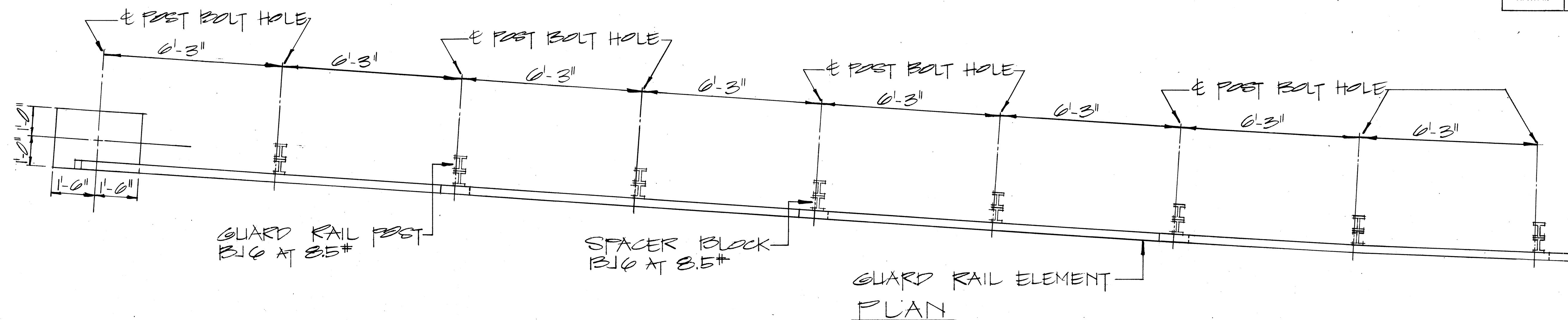
STANDARD DETAILS
 TRAILING END
 FLARE - ONE & TWO
 WAY ROADWAY

Scale: As Noted April 1969

SHEET No. C-31 OF 46 SHEETS DT 517

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

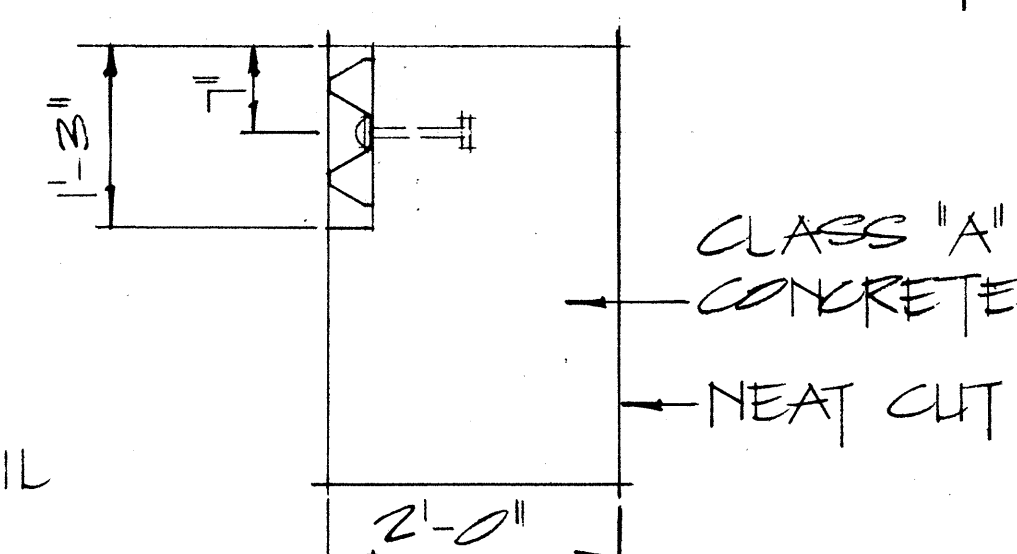
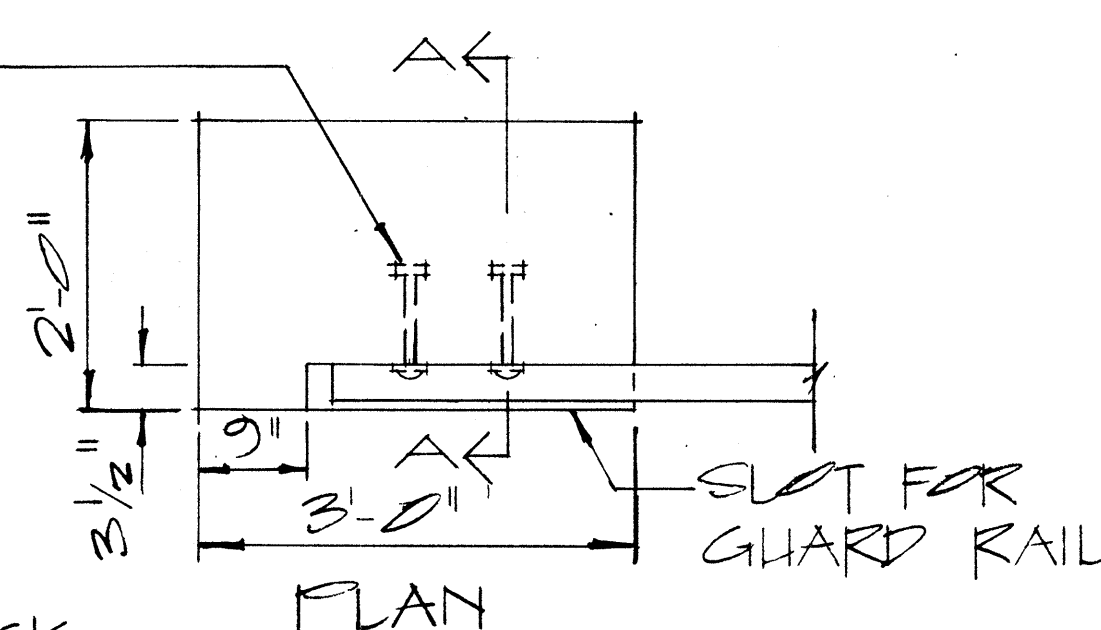
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



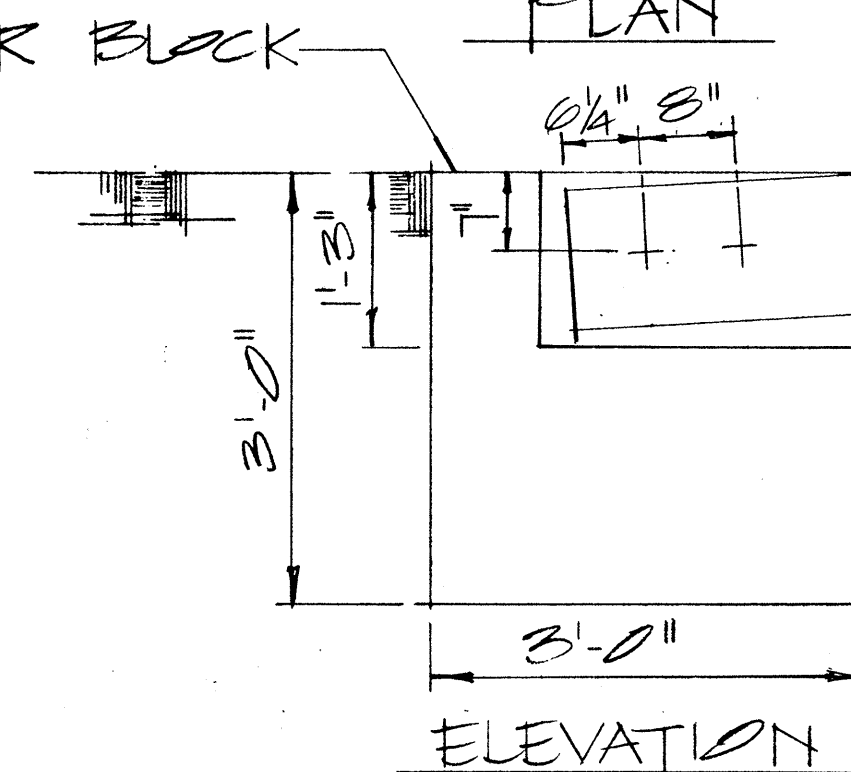
RAMP END ANCHORAGE

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

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



TOP OF ANCHOR BLOCK TO BE FLUSH W/ GROUND.



GROUND LINE

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

CONCRETE ANCHOR BLOCK

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

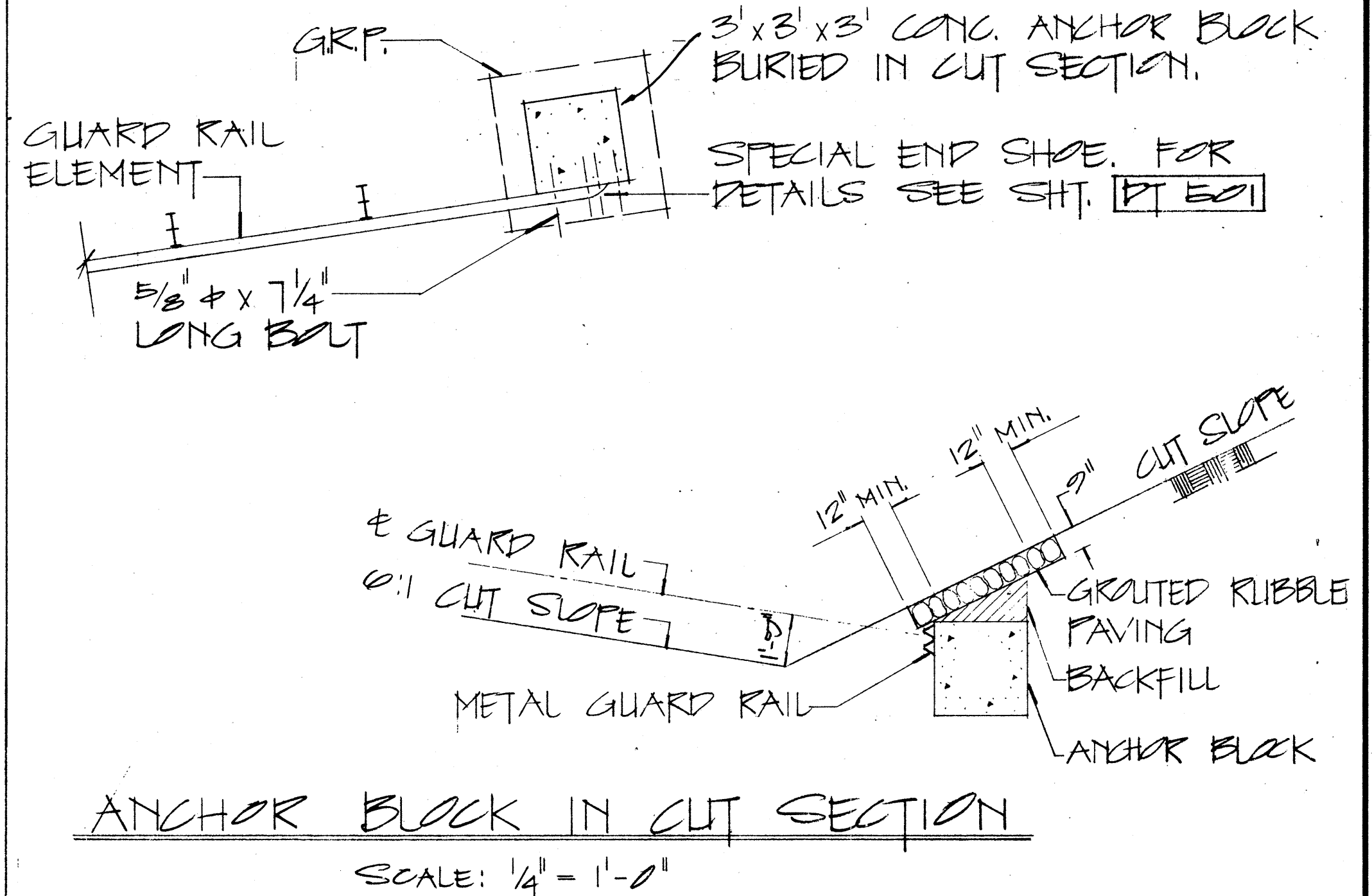
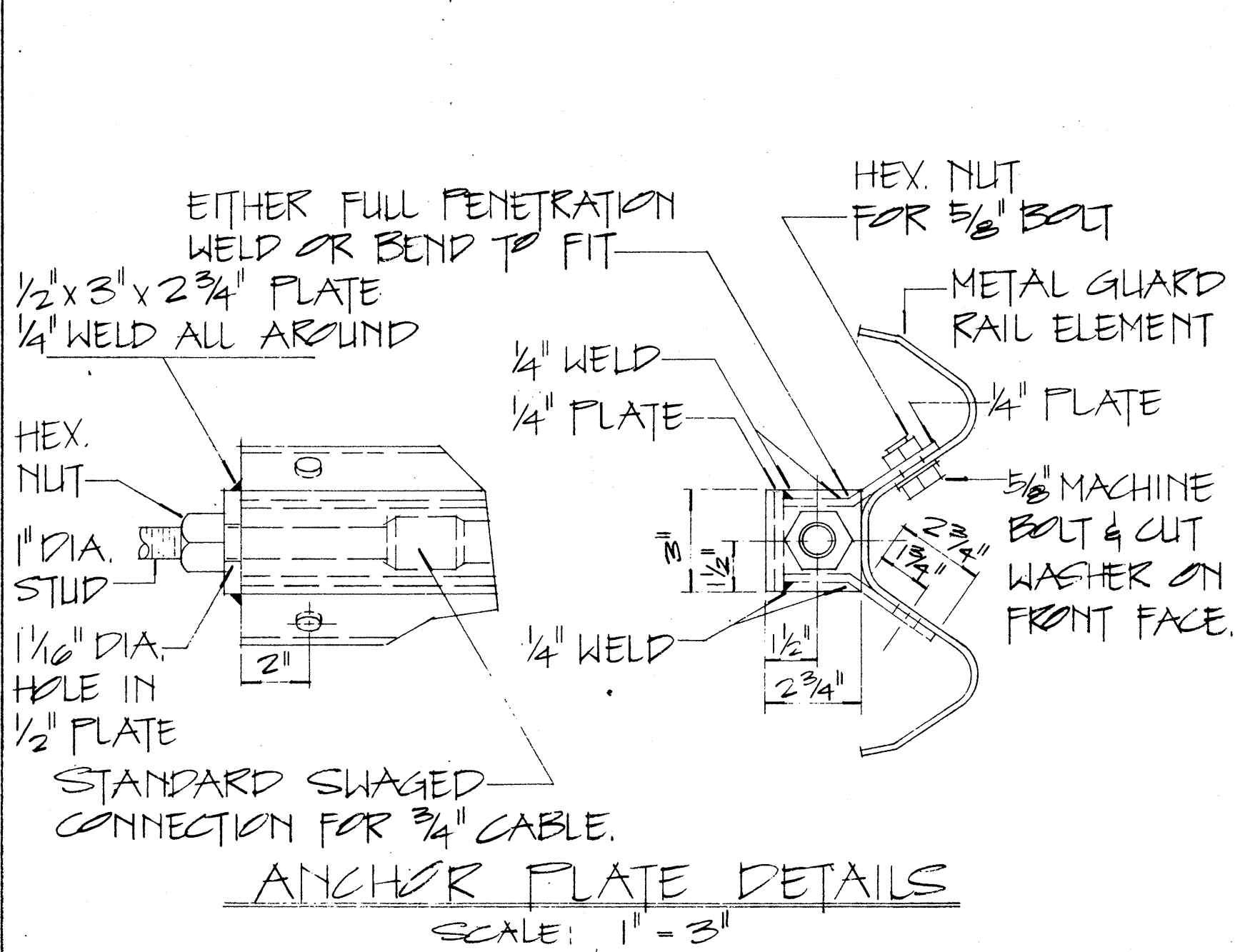
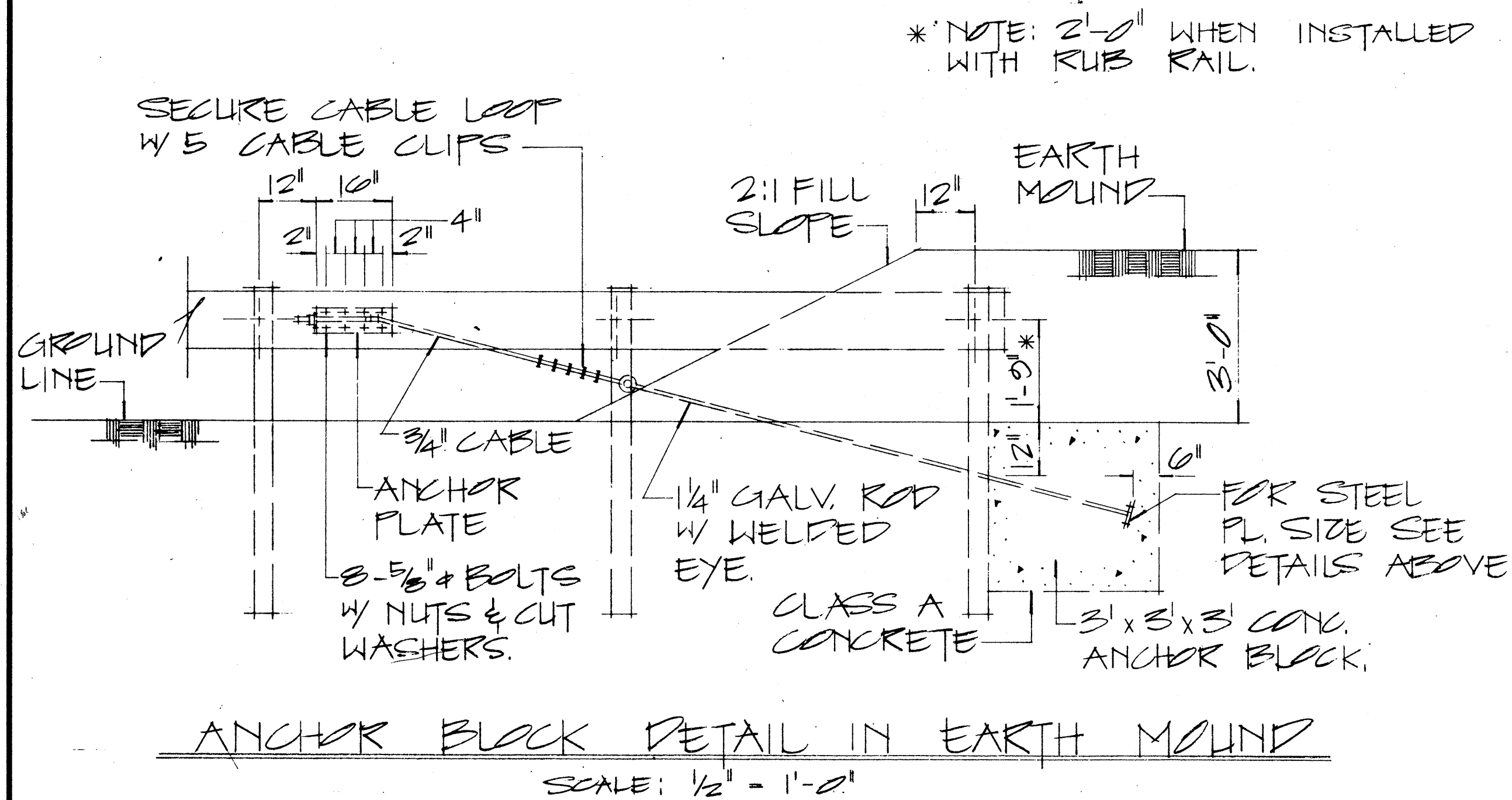
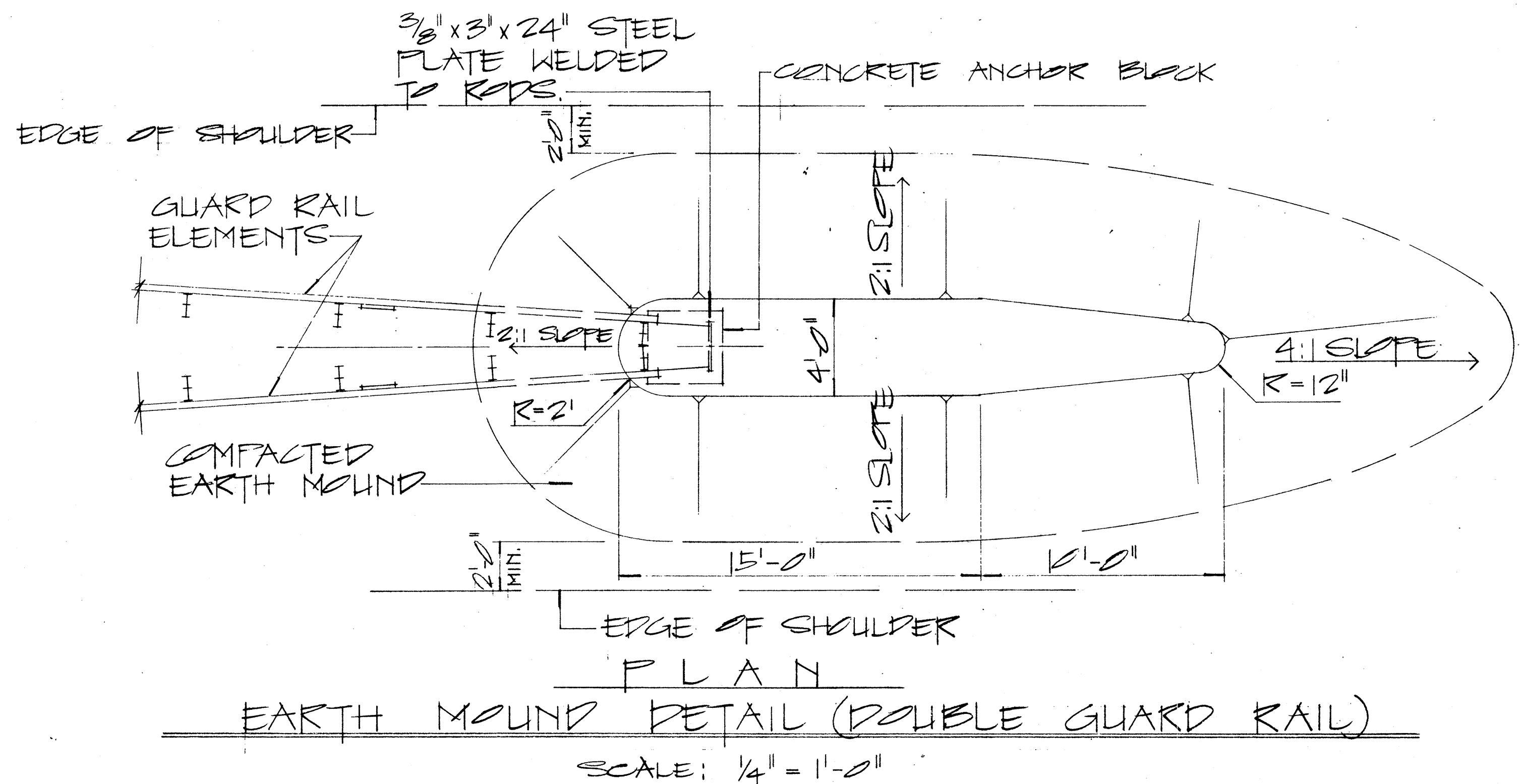
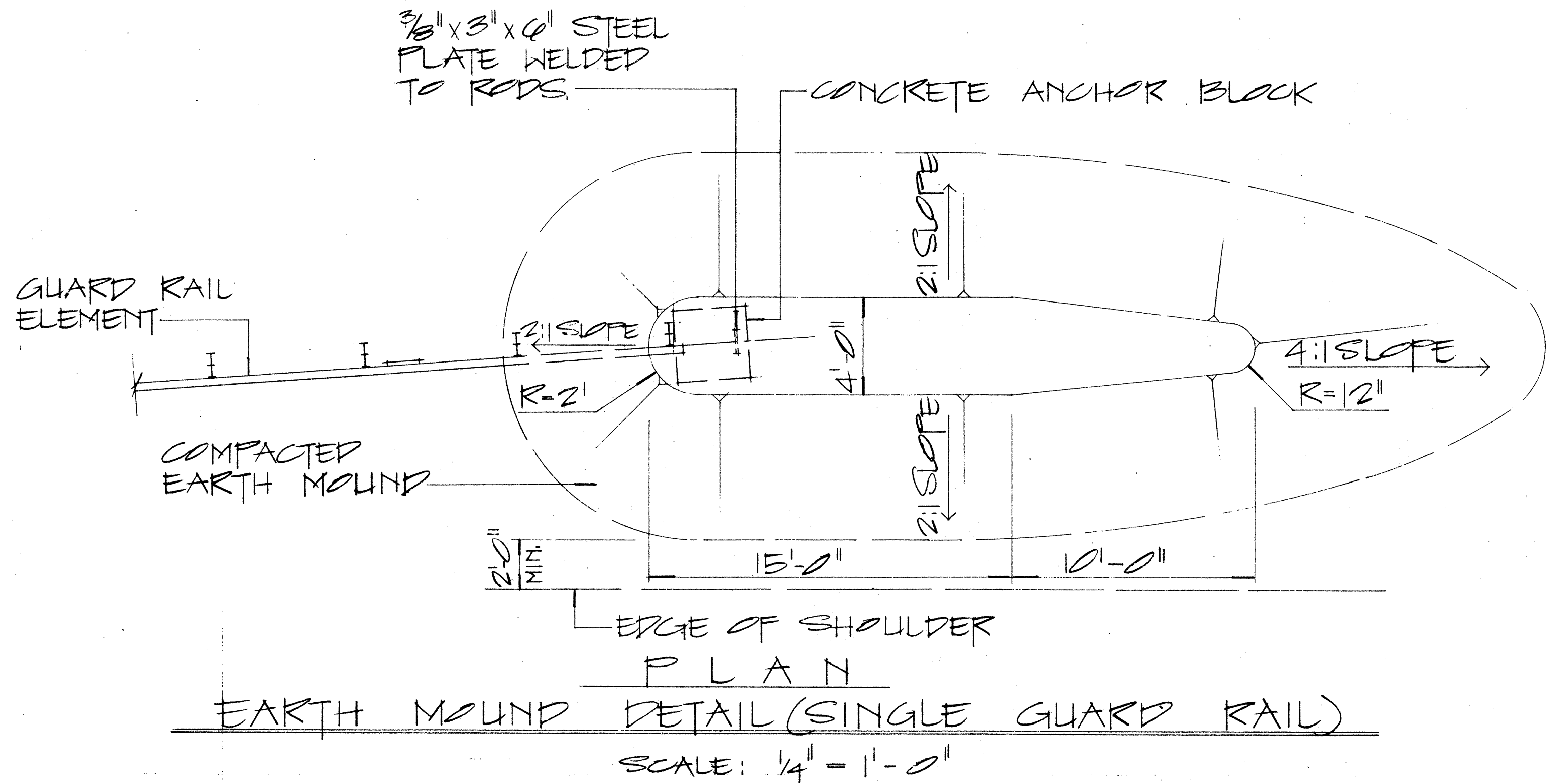
APPROVAL RECOMMENDED:
Erich Tanaka
TRAFFIC ENGINEER
12/23/69
DATE

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

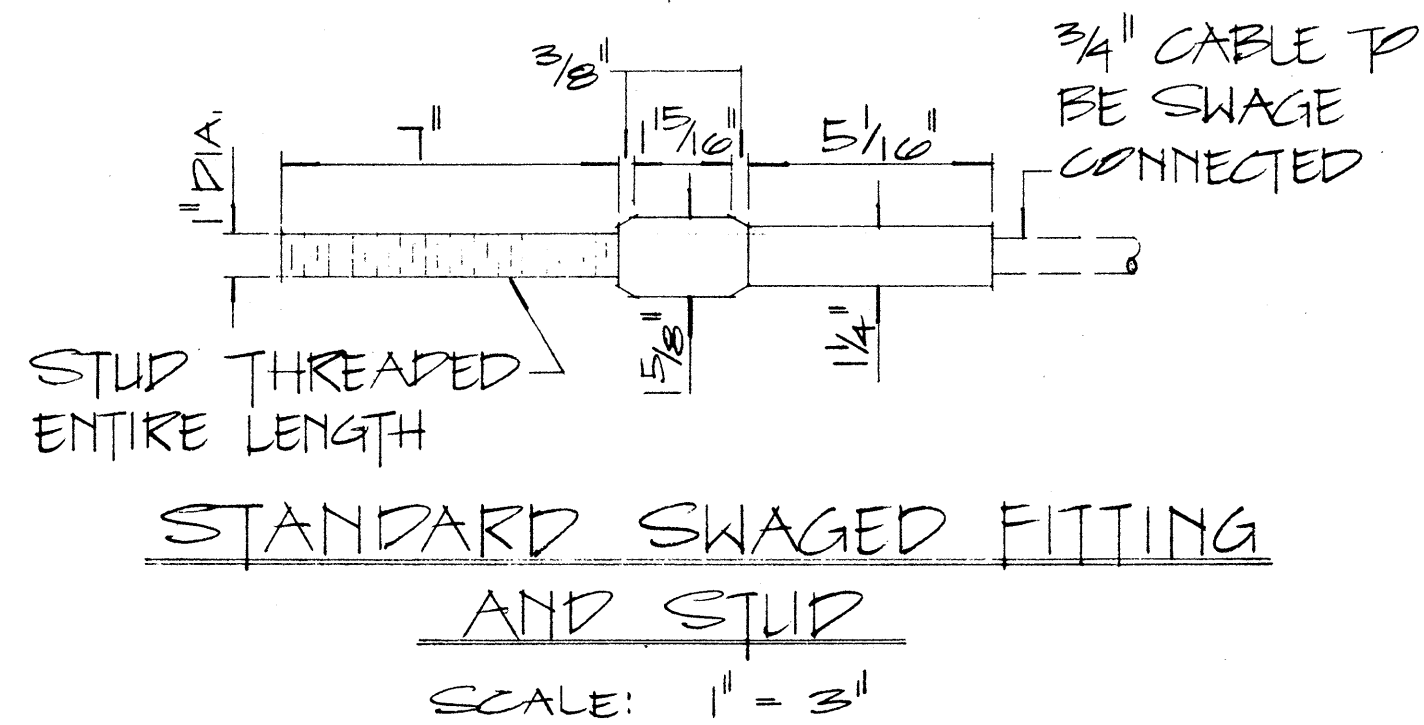
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
STANDARD DETAILS
GUARD RAIL, TYPE 3
RAMP END ANCHORAGE
SCALE: AS SHOWN
SHEET No. C-32 OF 46 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



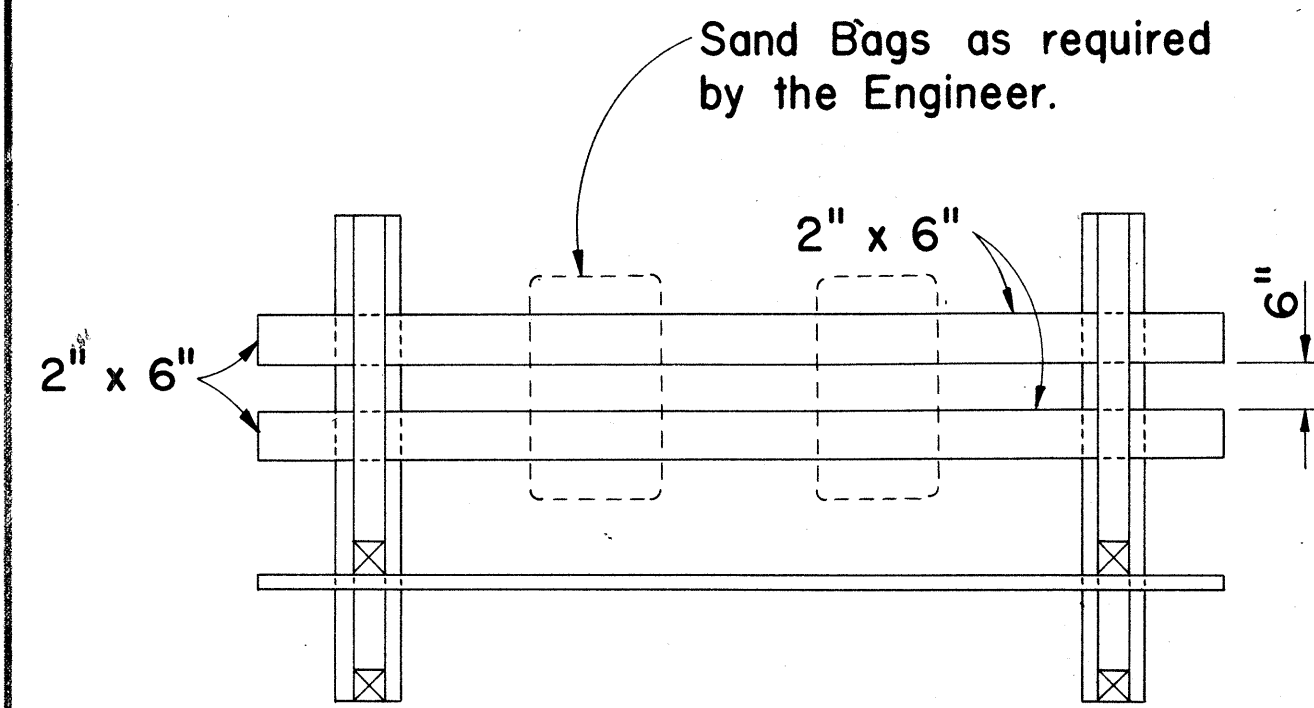
- NOTE:**
1. GALVANIZED ANCHOR ROD, METAL GUARD RAIL AND FAST BURIED IN GROUND SHALL BE COVERED WITH A MIN. 20-MIL THICKNESS OF COAL TAR ENAMEL CONFORMING TO AWWA STANDARD: C 203
 2. CONCRETE, GRP., EXCAVATION, EARTH MOUND, ANCHOR RODS AND MISCELLANEOUS APPURTENANCES NECESSARY TO ANCHOR THE GUARD RAIL ENDS SHALL BE INCIDENTAL TO THE METAL GUARD RAIL.



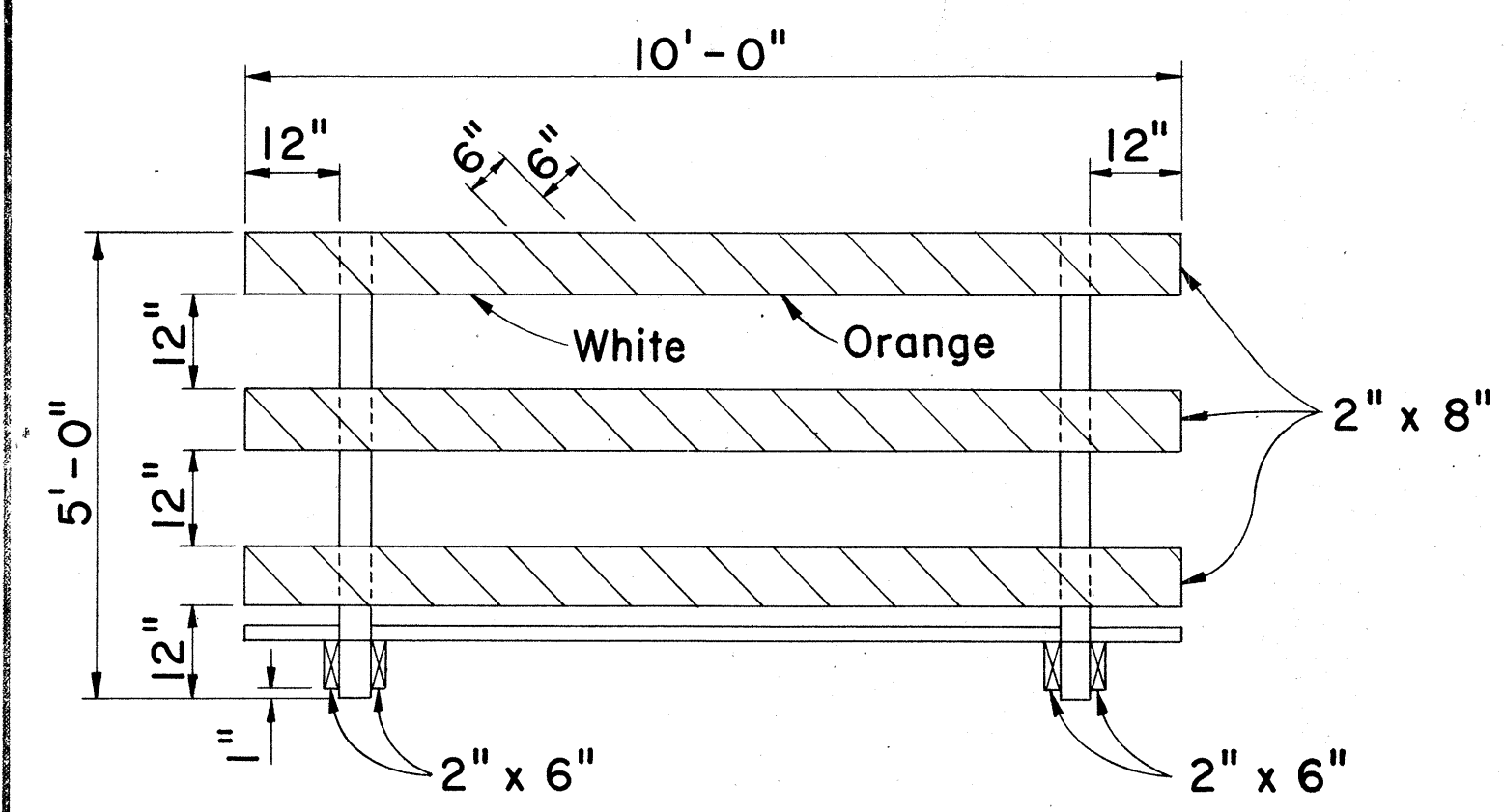
APPROVAL RECOMMENDED:		12/29/62	
TRAFFIC ENGINEER		DATE	
APPROVED:		12-30-62	
ASSISTANT CHIEF, ENGINEERING		DATE	
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAILS EARTH MOUND AND ANCHOR BLOCK DETAILS	
SCALE: AS SHOWN OCT 1960	
SHEET No. C-33 OF 46 SHEETS	

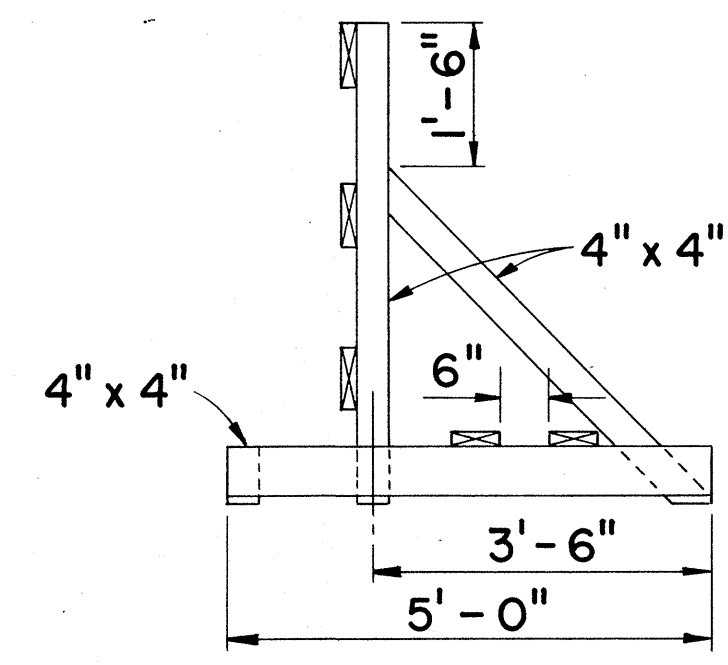
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.				



PLAN VIEW

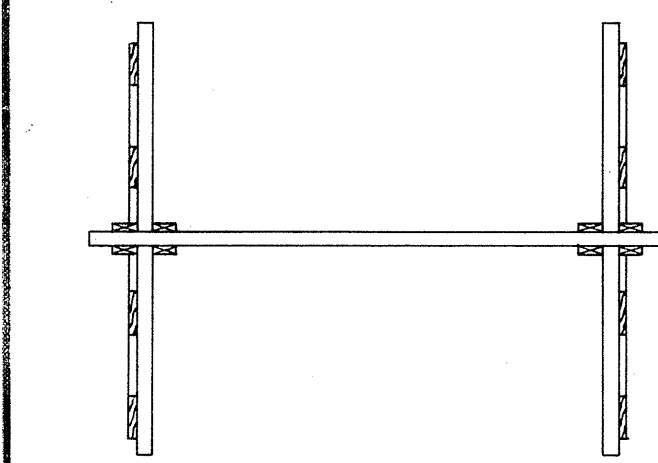


FRONT VIEW

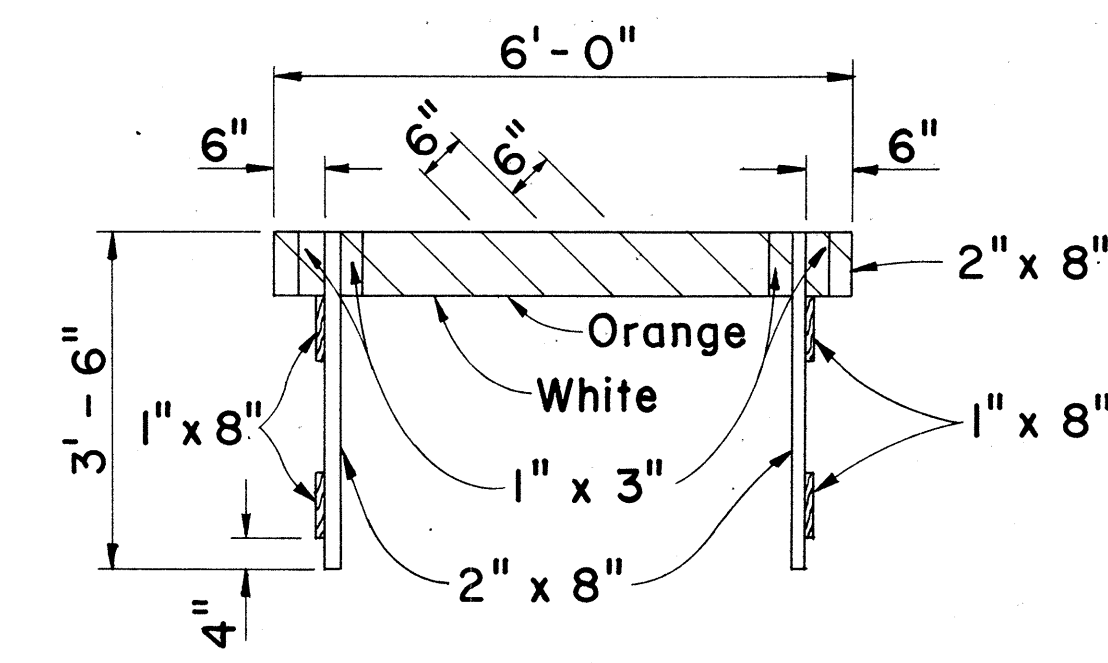


END VIEW

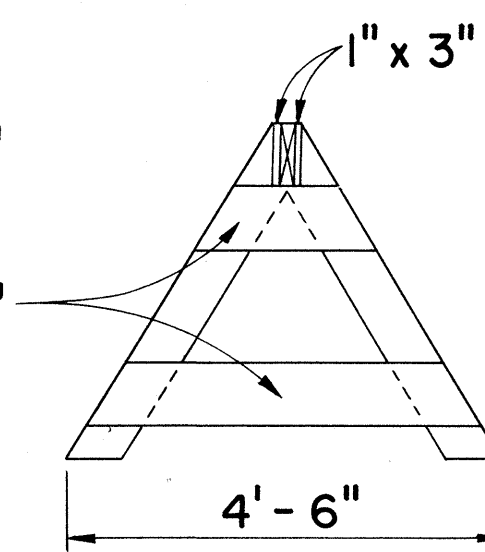
CLASS I BARRICADE
Scale: 1/2" = 1'-0"



PLAN VIEW



FRONT VIEW

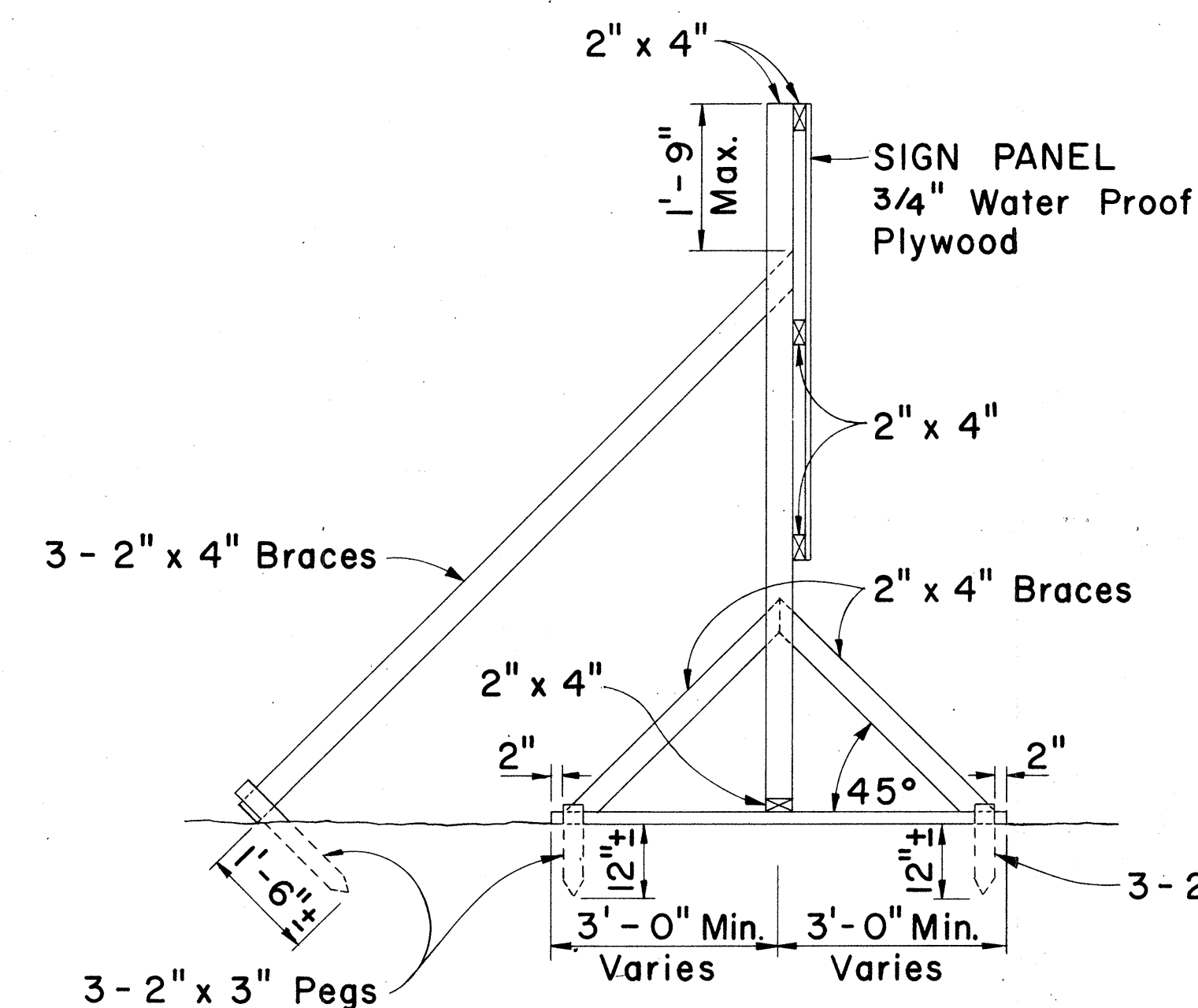


END VIEW

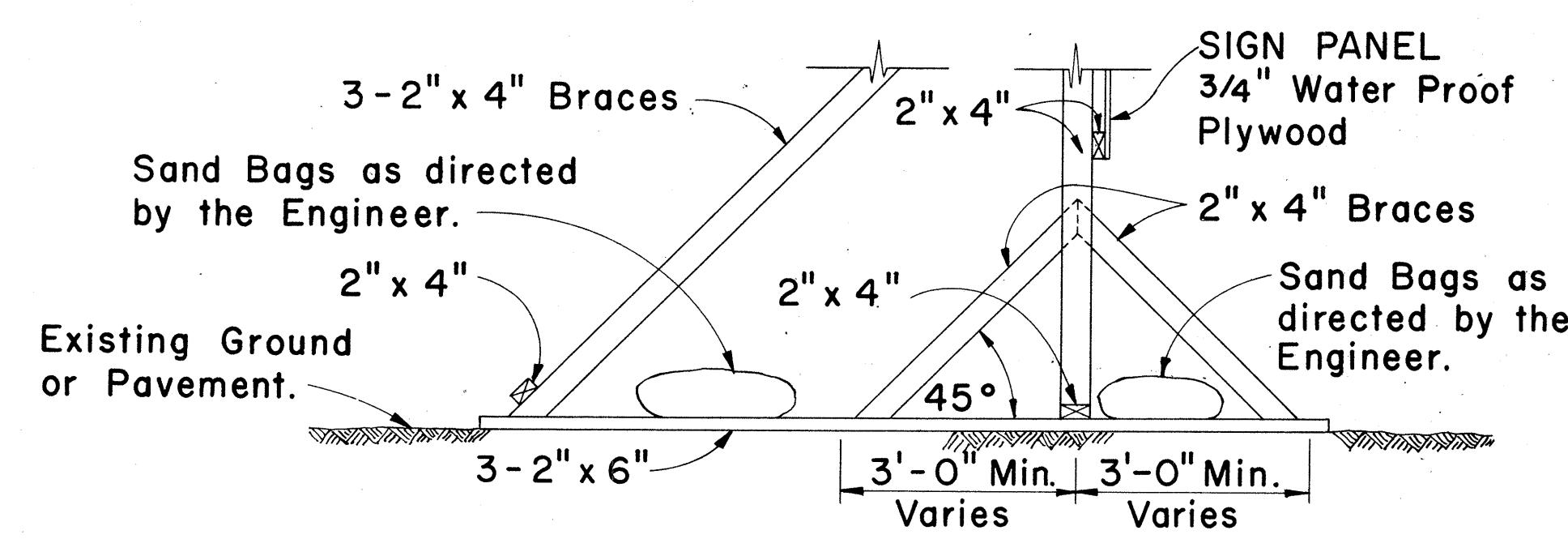
CLASS II BARRICADE
Scale: 1/2" = 1'-0"

GENERAL NOTES

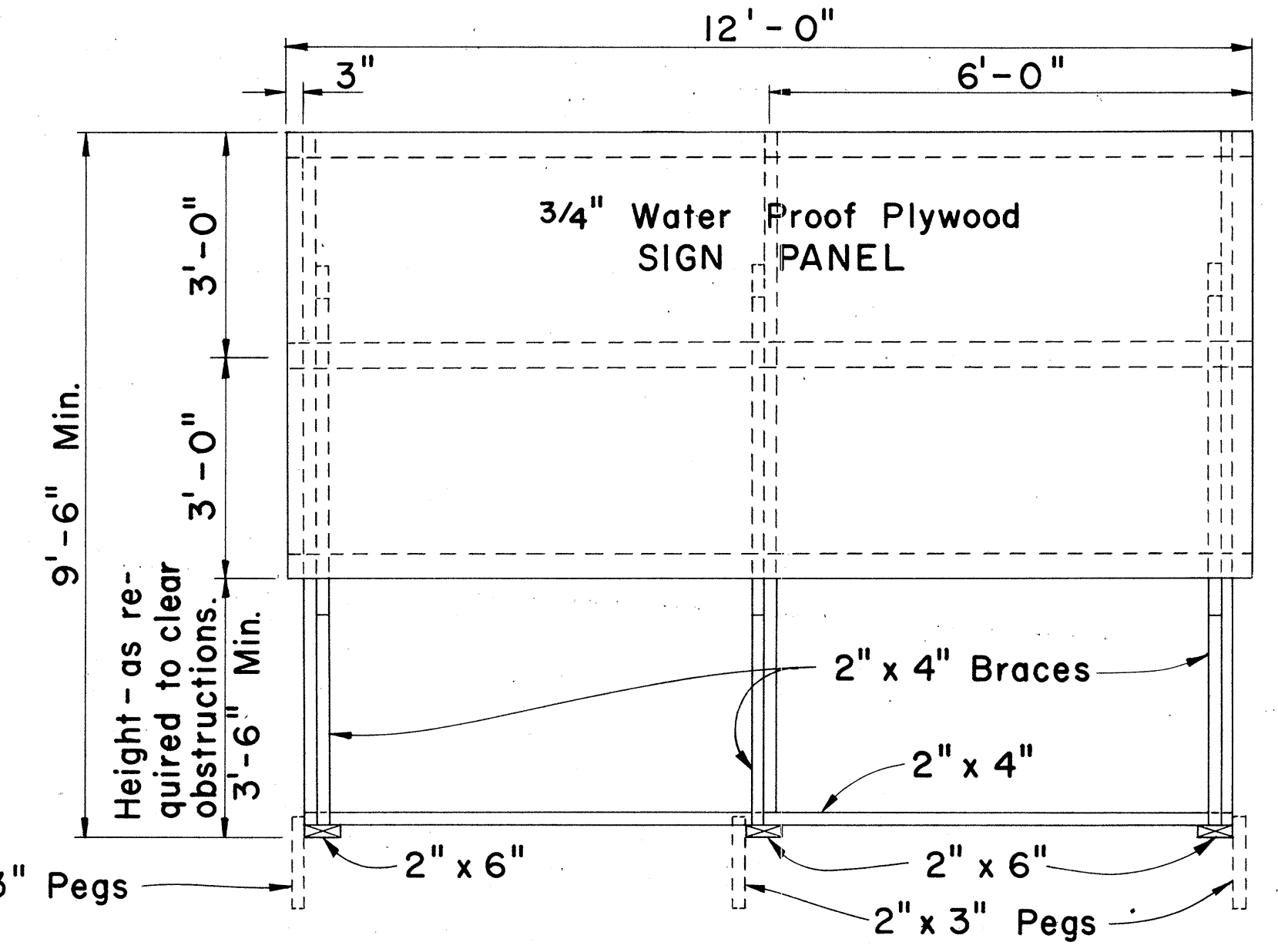
1. The Contractor shall construct, install and maintain the wood barricades at the locations shown on the Plans.
2. The permanent wood barricades shall be left in place or relocated upon completion of the project as ordered by the Engineer and are to become State property.
3. The orange and white stripes shall slant downward toward the side on which traffic is to pass and shall be reflectorized.



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



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



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

GENERAL NOTES

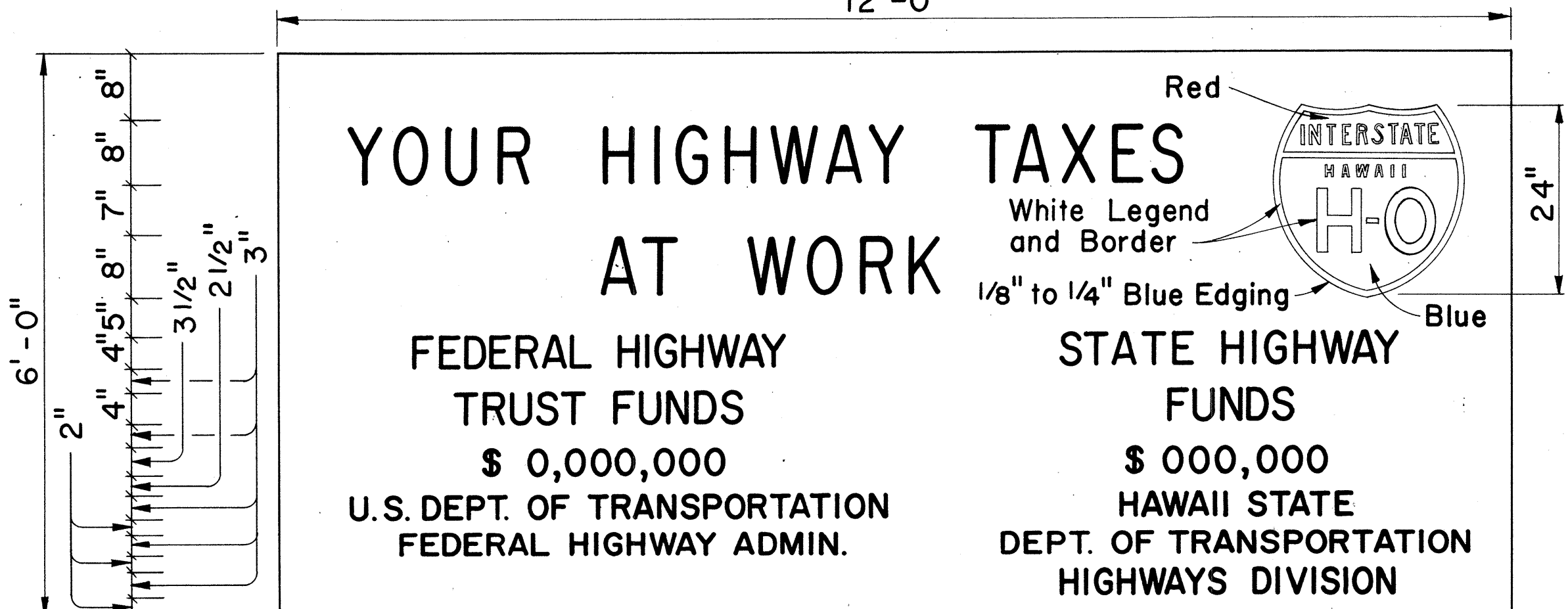
1. The sign legend shall be black on white background except for the Interstate Route marker which shall be as shown on the plan.
2. The Contractor shall construct, install and maintain the project signs at the locations shown on the Plans and as ordered by the Engineer.
3. Letters shall be Series "C" of the sizes shown on the Plan and shall conform with the "Standard Alphabet for Highway Signs", Bureau of Public Roads, 1966.
4. The Contractor shall fill in the proper numerals in place of ciphers as ordered by the Engineer.

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

APPROVED:
Shirley S. S. S. 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
TYPICAL DETAILS
CONSTRUCTION IDENTIFICATION SIGN
AND
WOOD BARRICADES
SCALE: As Shown DATE:
SHEET No. C-34 OF 46 SHEETS DT 800



SIGN PANEL
Scale: 3/4" = 1'-0"
INTERSTATE SYSTEM
CONSTRUCTION IDENTIFICATION SIGN
Scale: As Shown

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