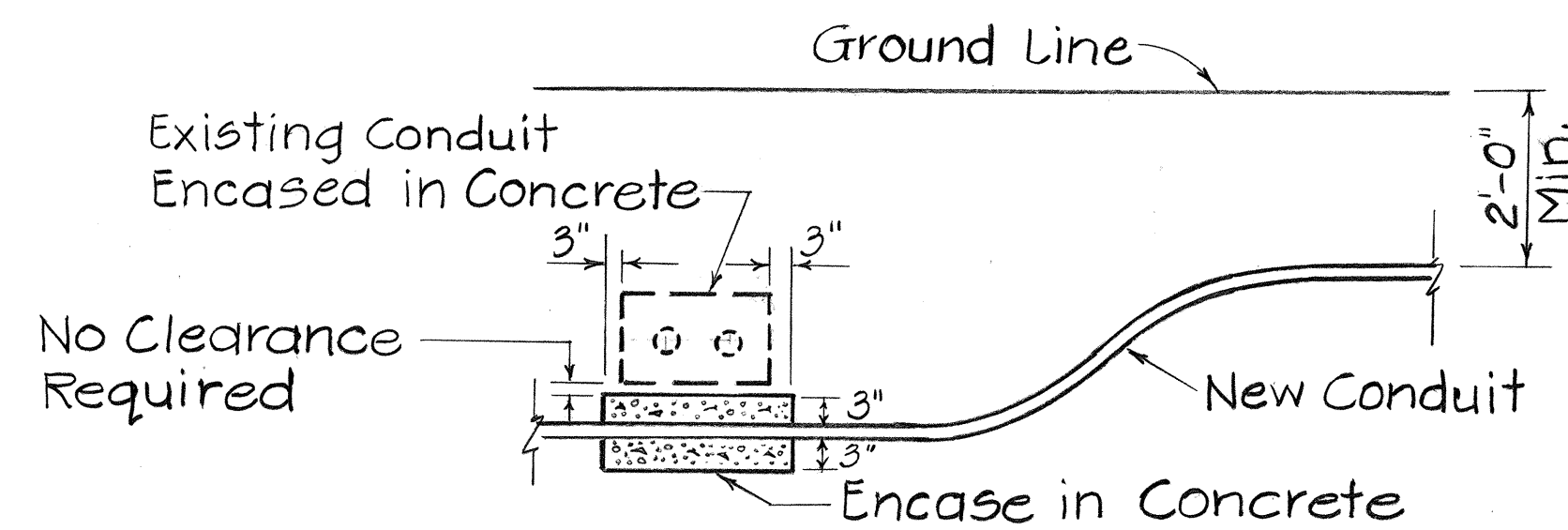


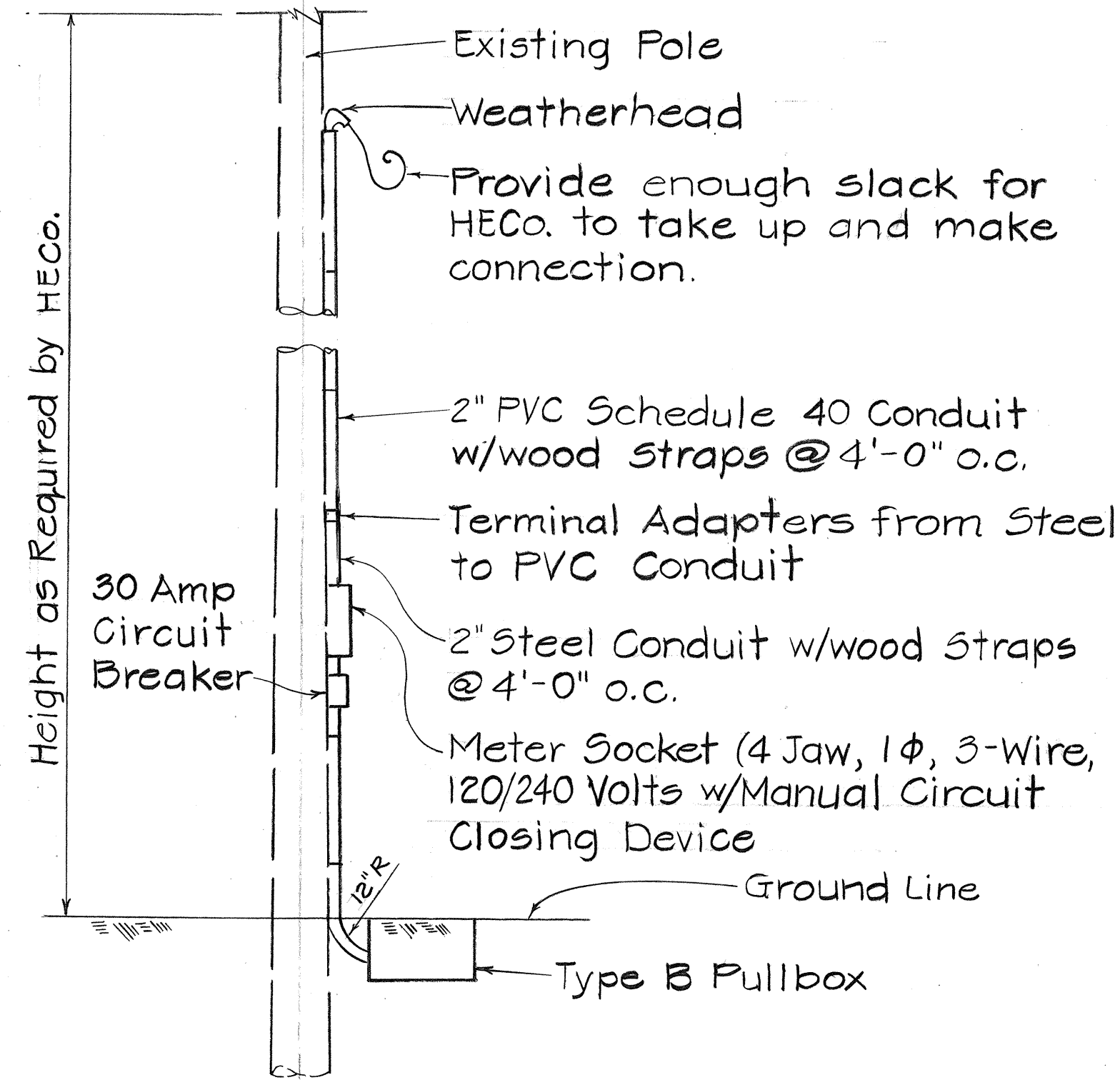
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-03-79	1980	5	15

NOTE:
EXCEPT AS NOTED, COVER DETAILS SHALL CONFORM TO TYPE "B" PULLBOX COVER SEE SHT. DT 14

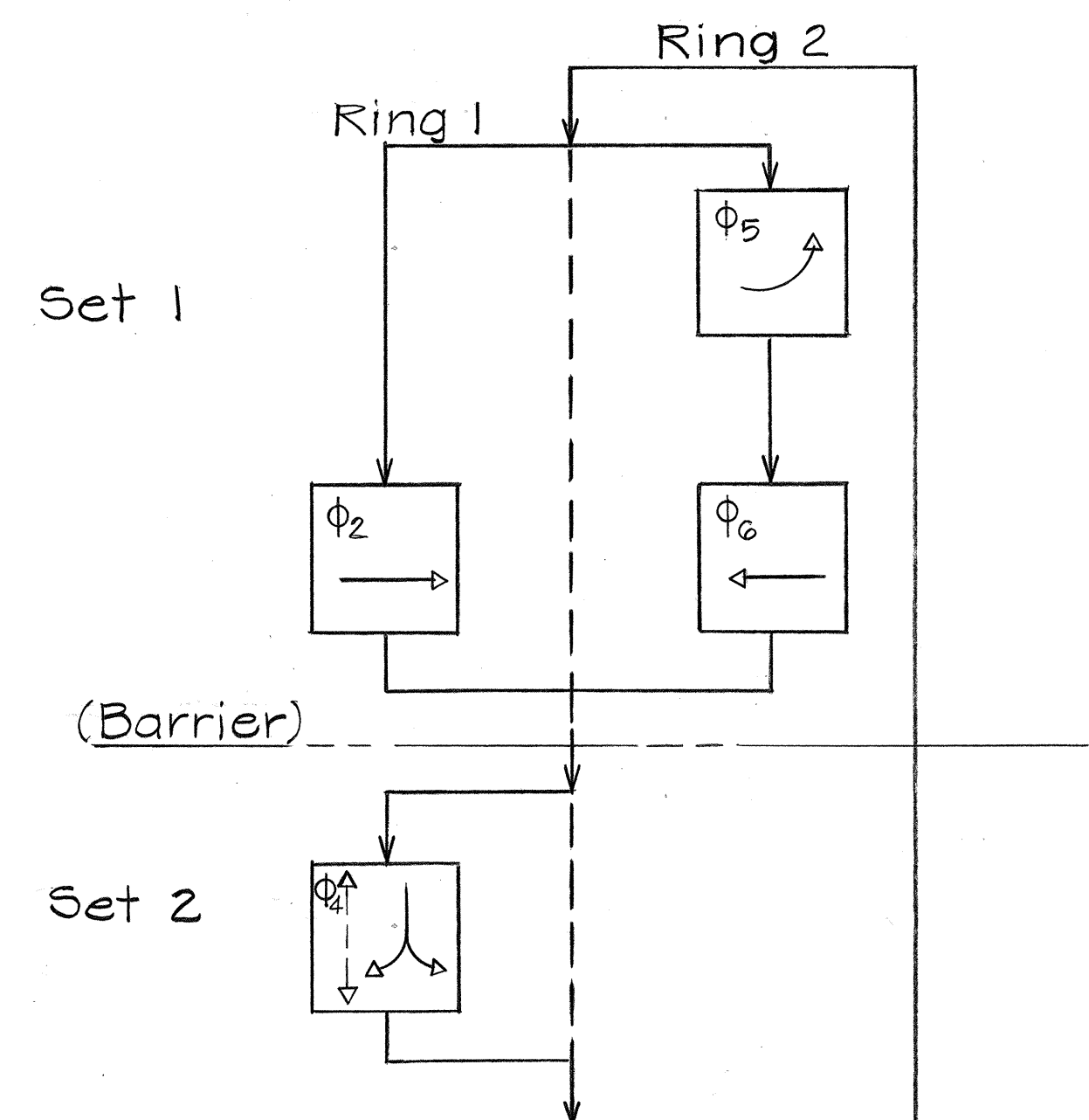


CONDUIT BY-PASS DETAIL
NOT TO SCALE

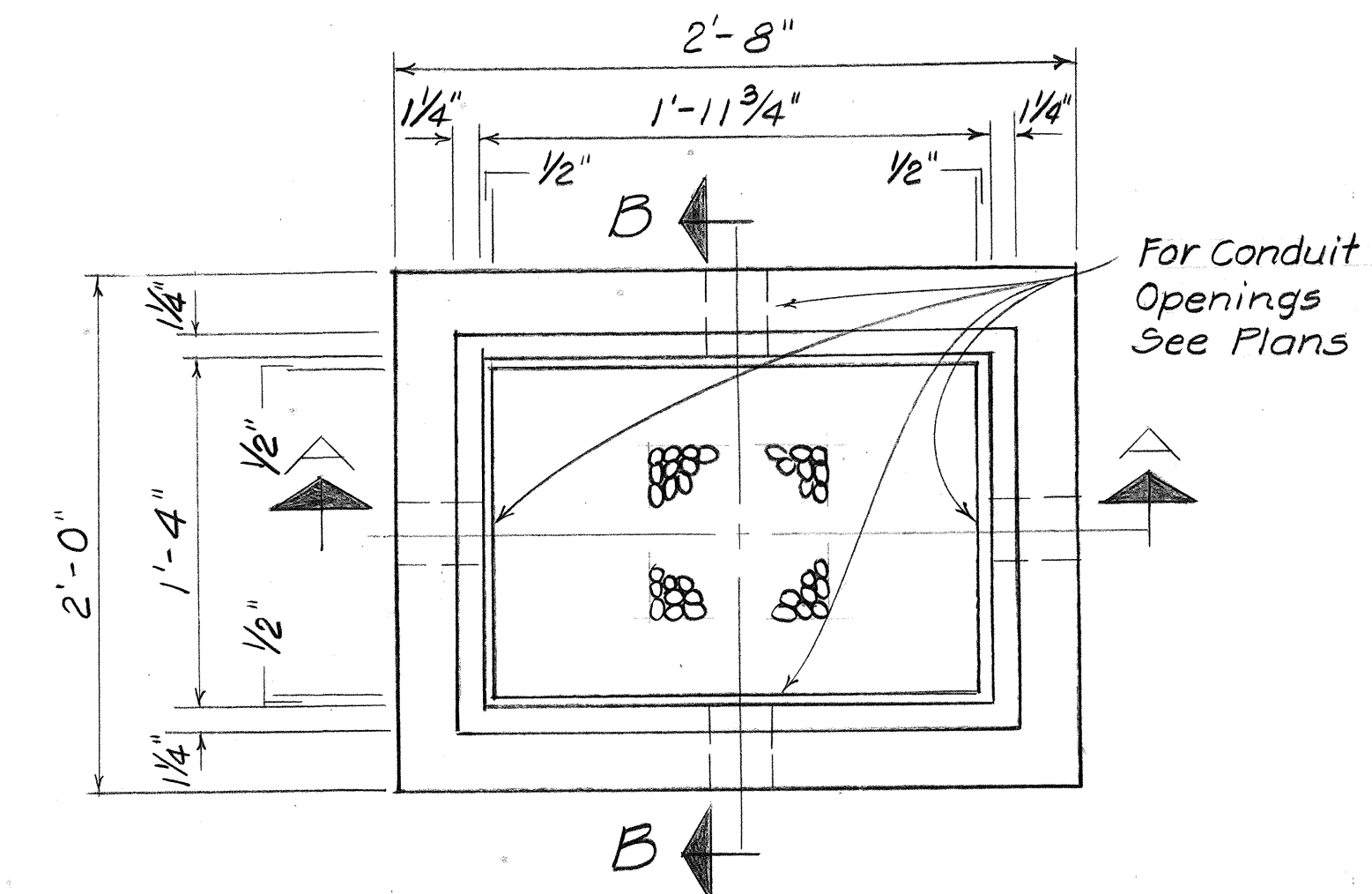
NOTE:
See Note No. 8 of General Notes on Plan Sheet No. 2.



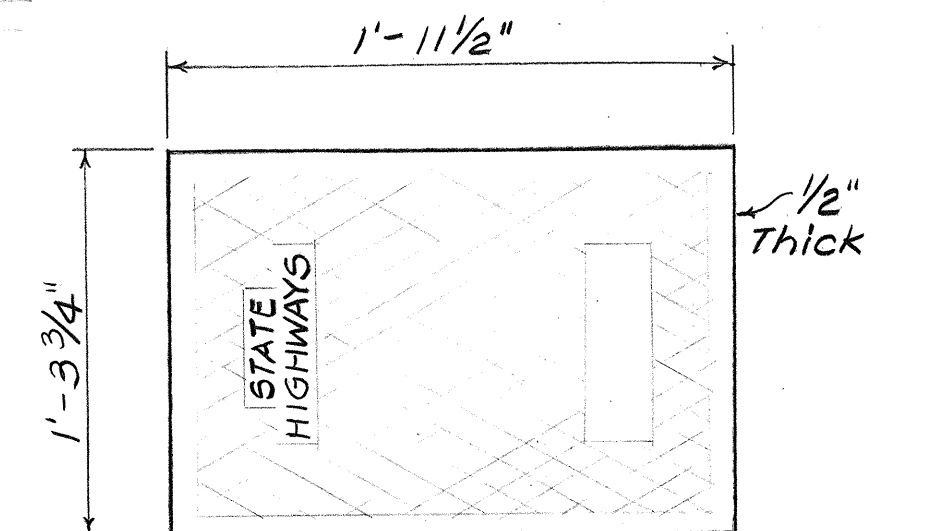
J.P. #205
SERVICE POLE DETAIL
NOT TO SCALE



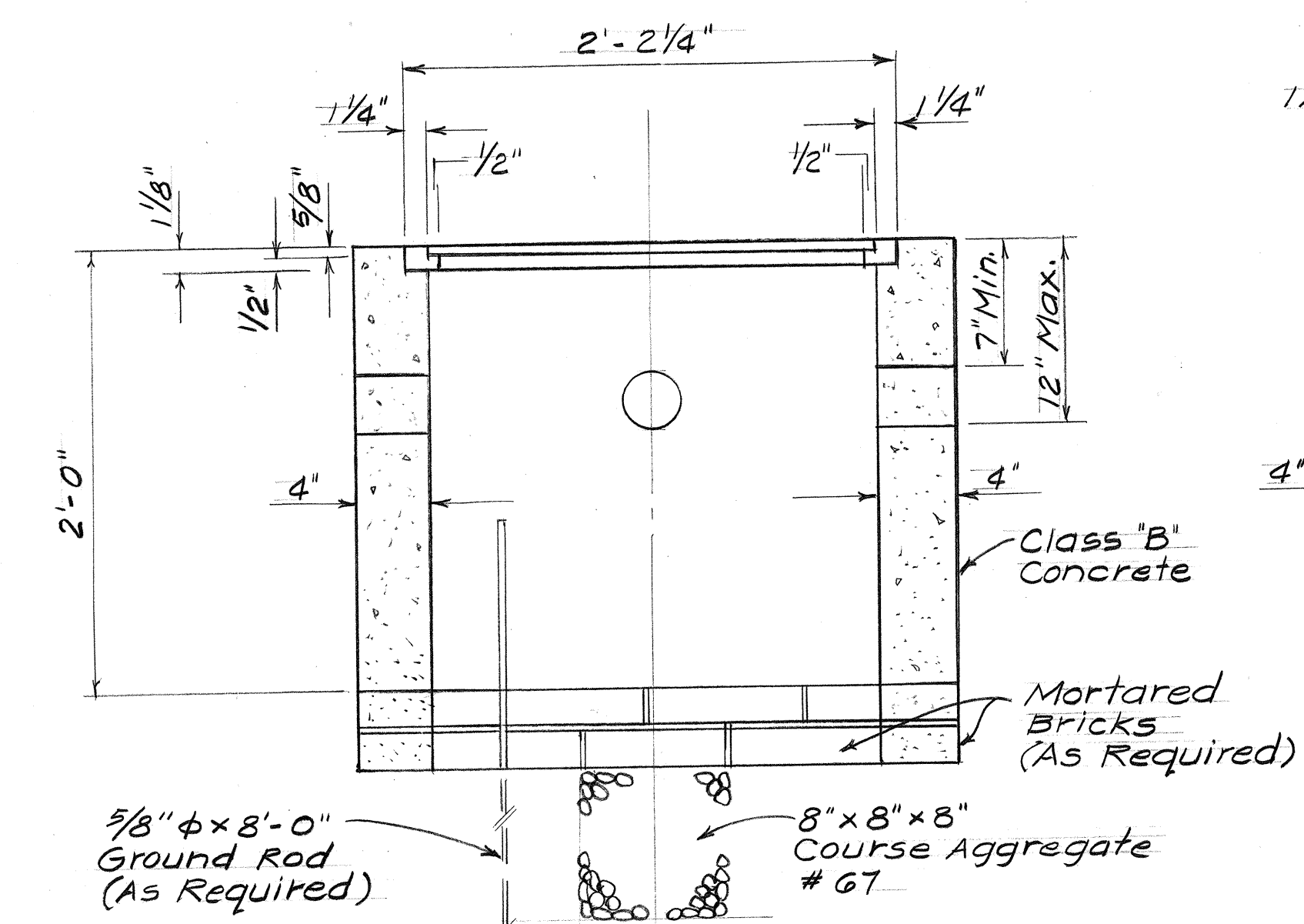
PHASING DIAGRAM



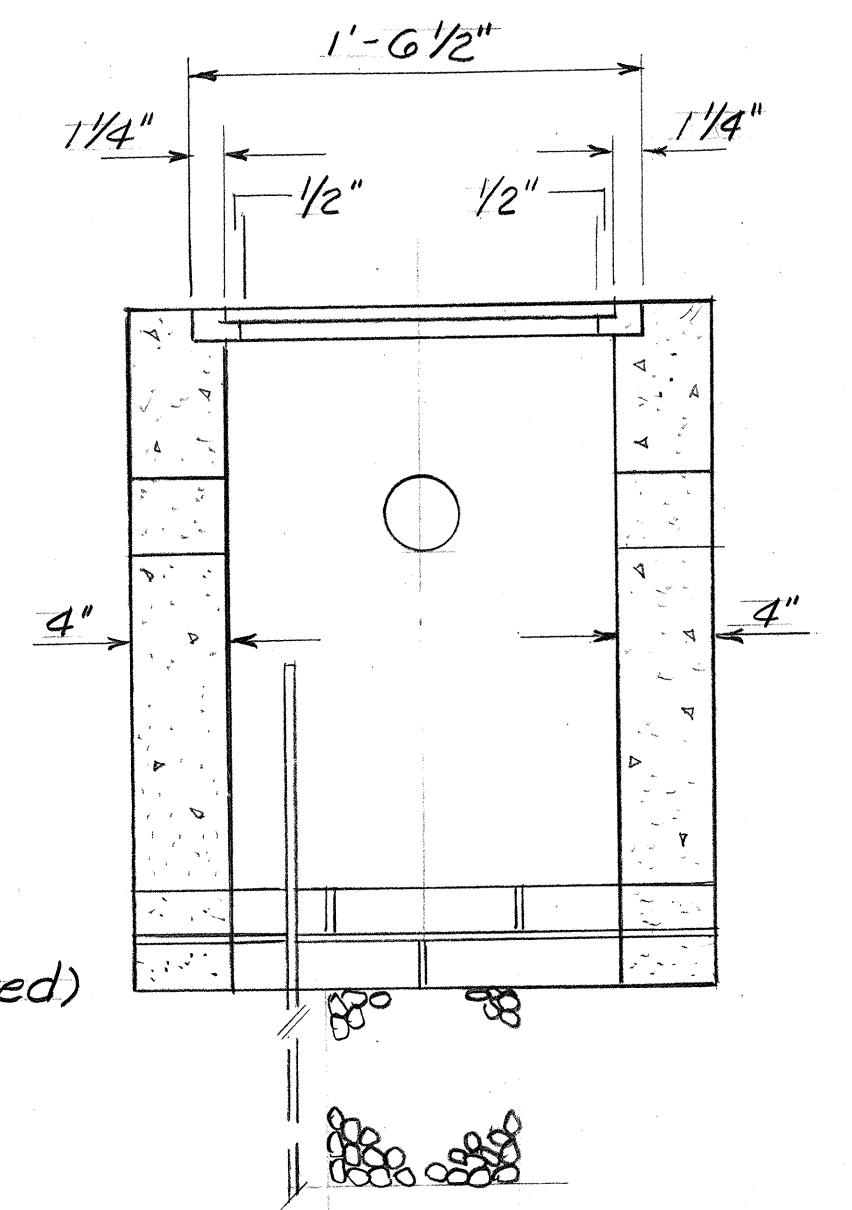
PLAN



PLAN OF COVER



SECTION "A-A"

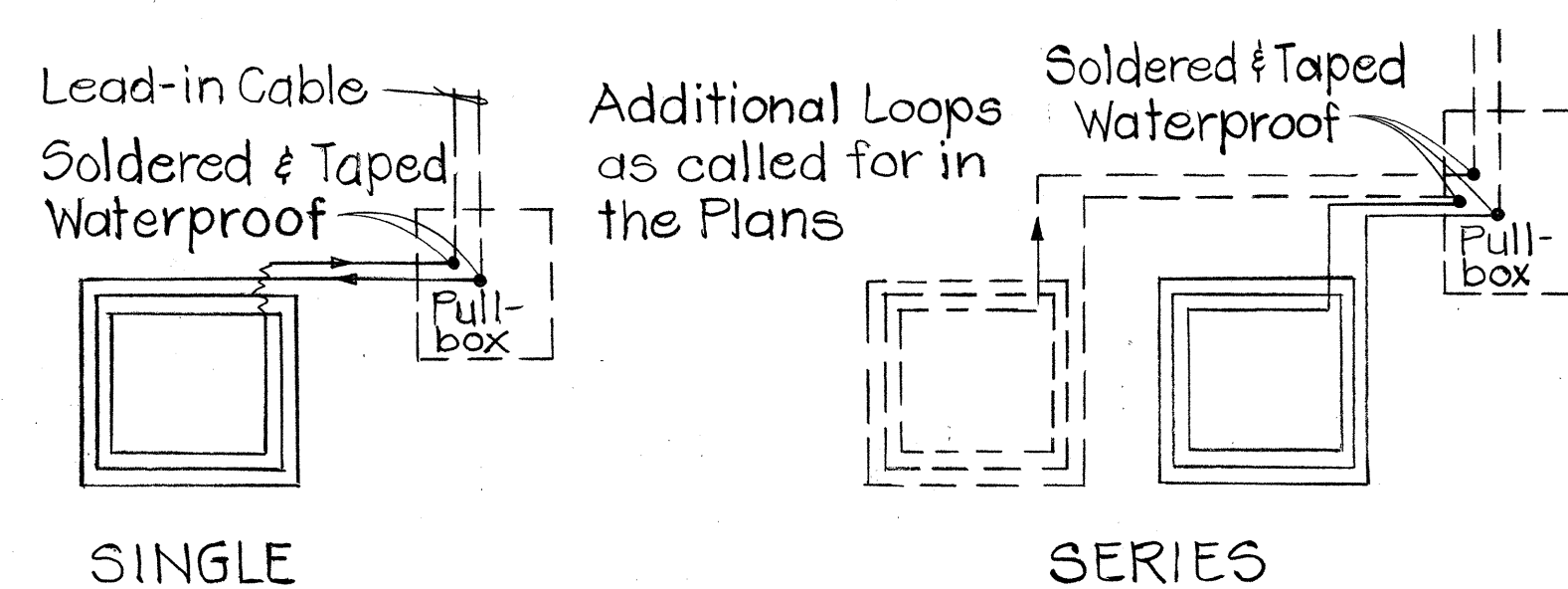


SECTION "B-B"

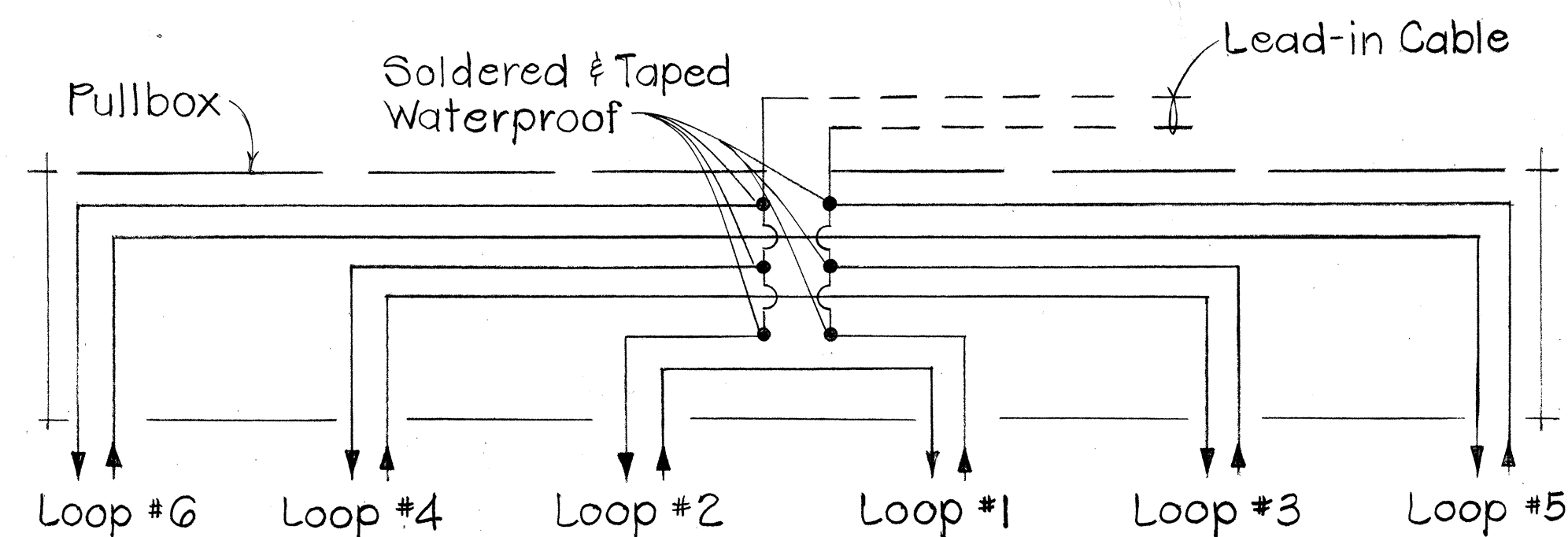
TYPE "D" PULLBOX
SCALE: 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
MISCELLANEOUS DETAILS
FARRINGTON HWY.
AT MAILILILI RD.
PROJ. NO. 93A-03-79
SCALE: AS SHOWN DEC. 1978
SHEET NO. 5 OF 15 SHEETS

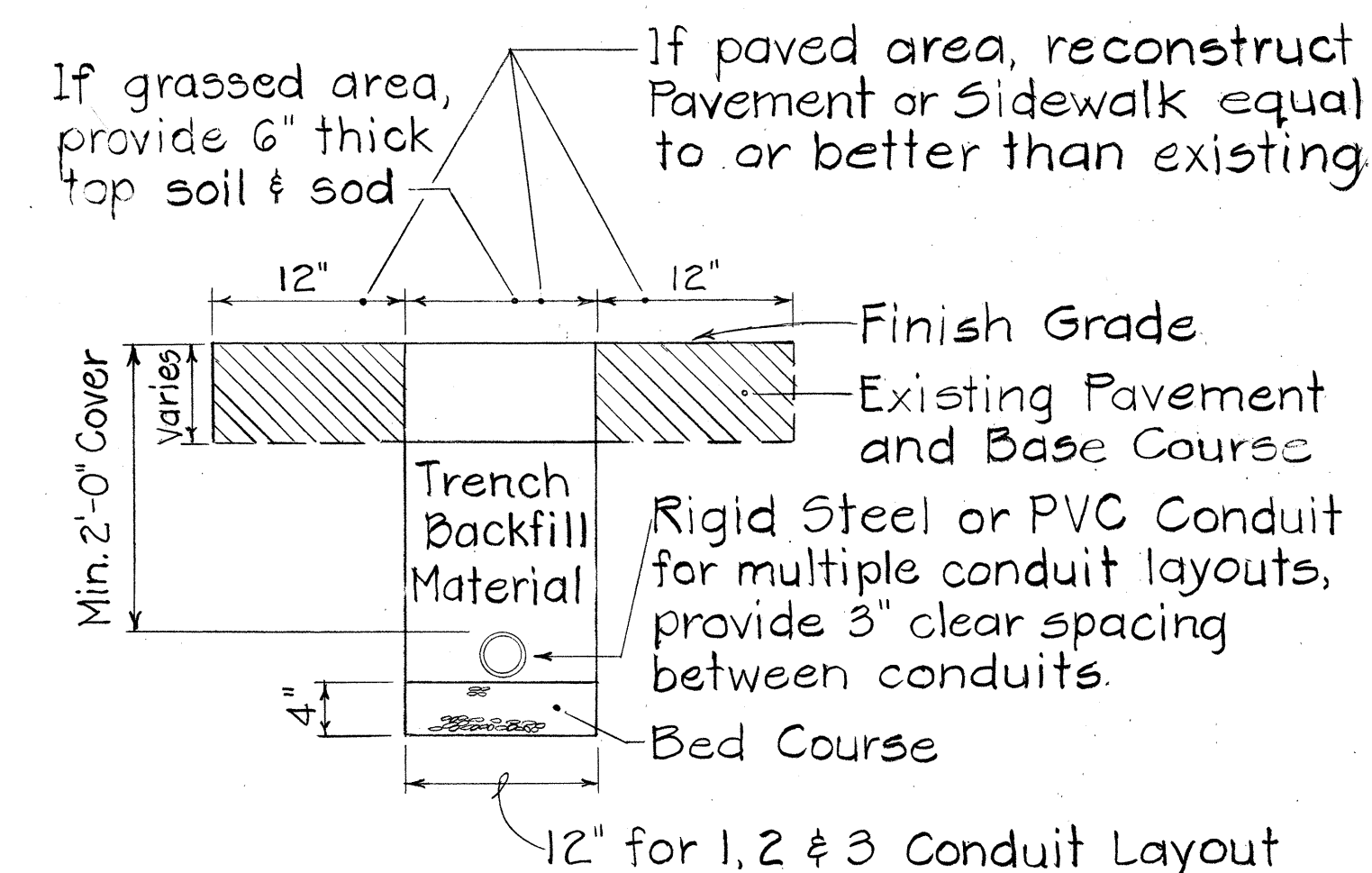
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	03A-03-79	1980	6	15



TYPICAL LOOP CONFIGURATIONS



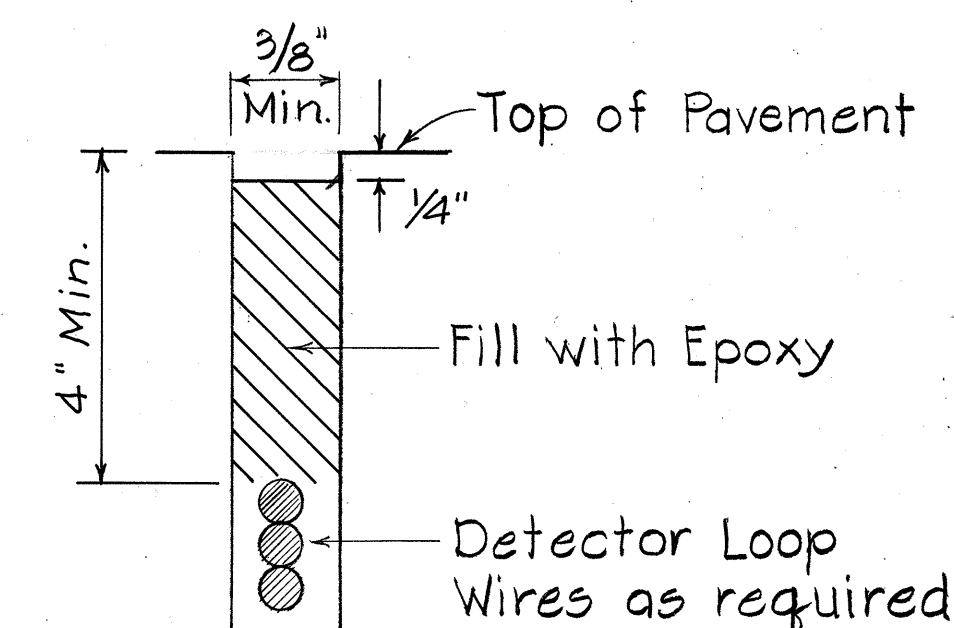
TYPICAL SERIES - PARALLEL LOOP CONNECTION



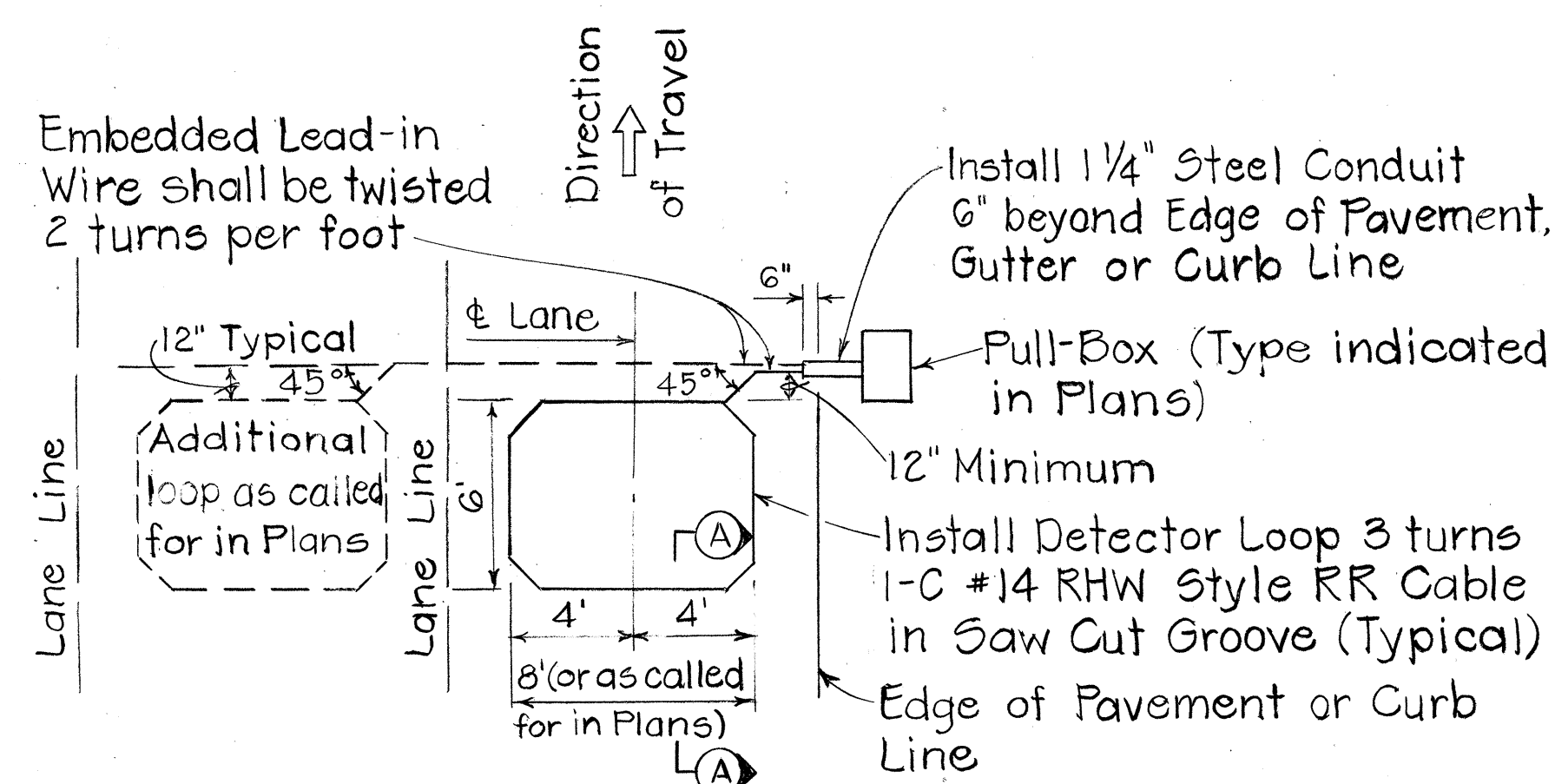
TYPICAL TRENCH SECTION
FOR CONDUIT

NOTE:

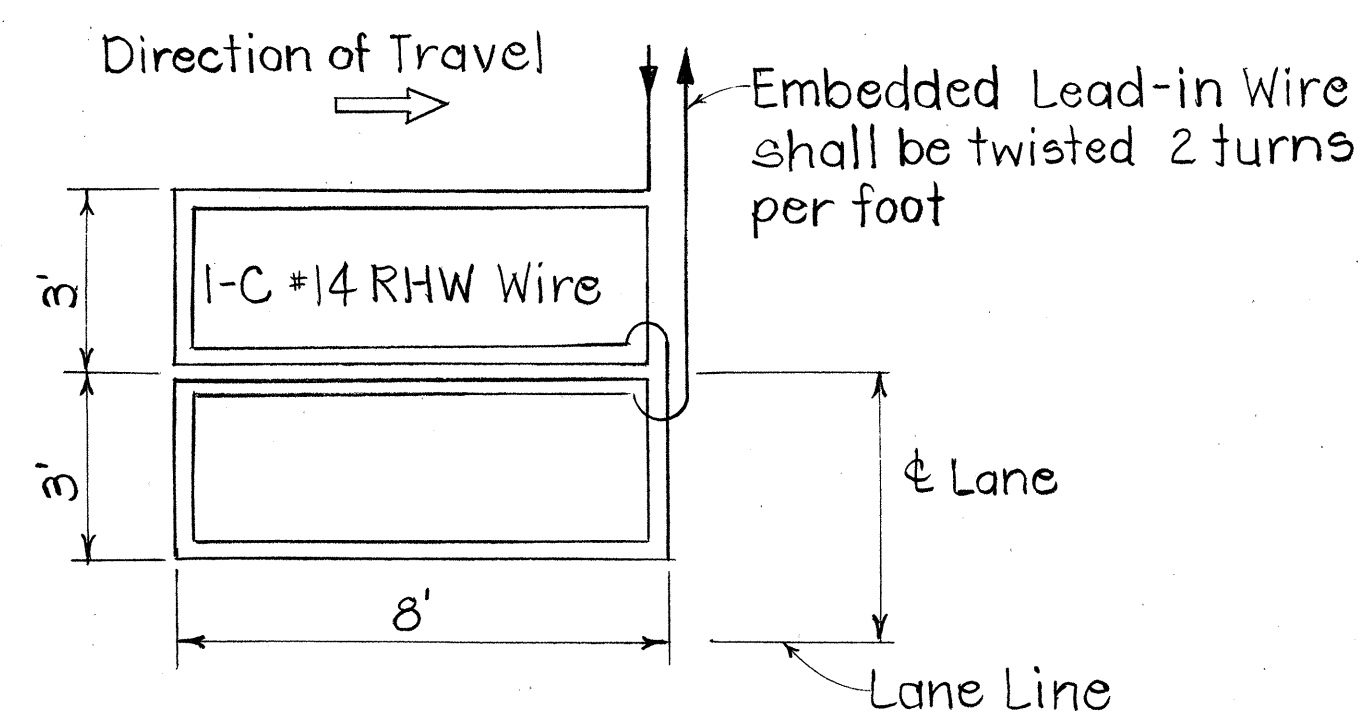
1. All conduits under roadways shall be steel or PVC schedule 80. All other conduits shall be steel or PVC schedule 40.



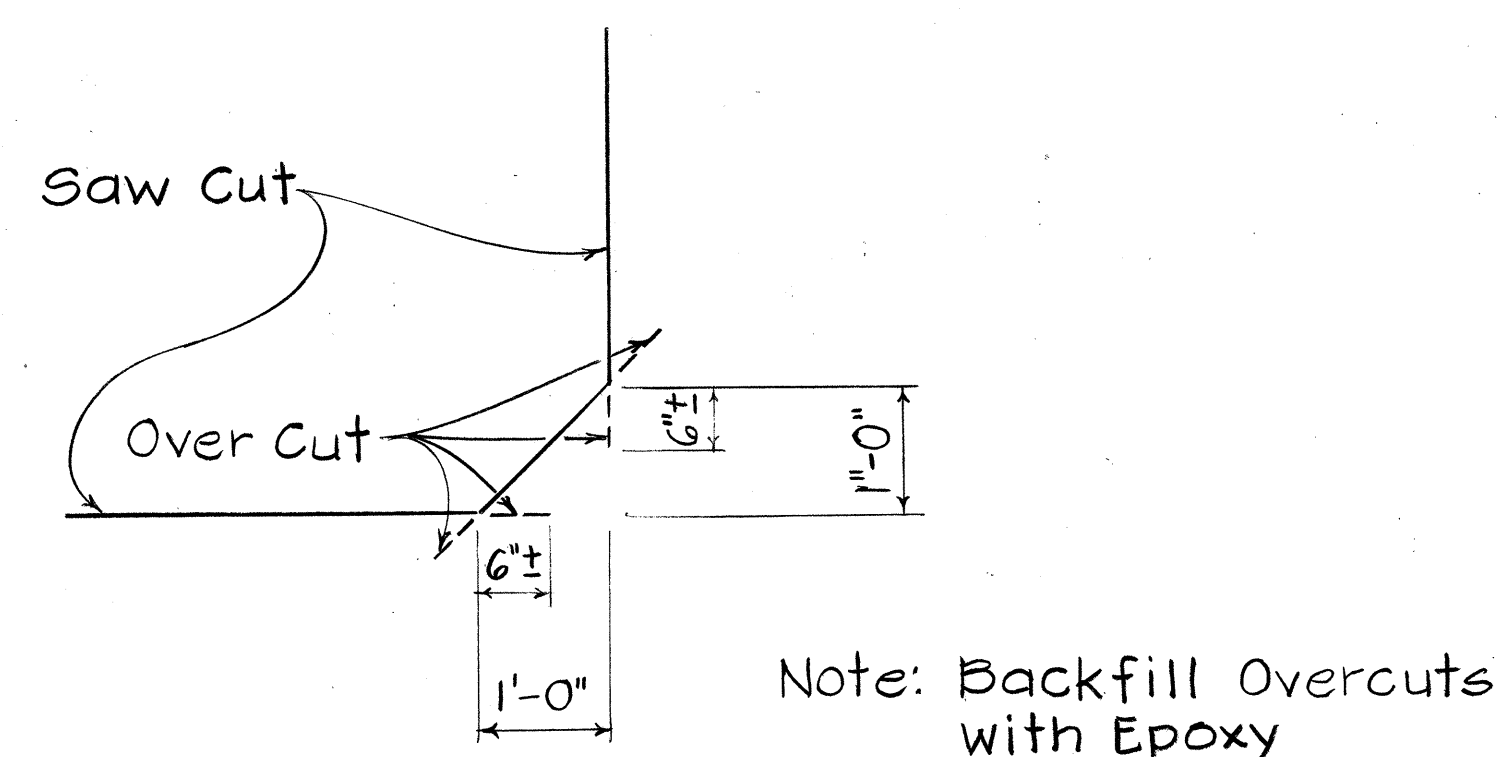
DETECTOR LOOP SAW-CUT
SECTION A-A (TYPICAL)



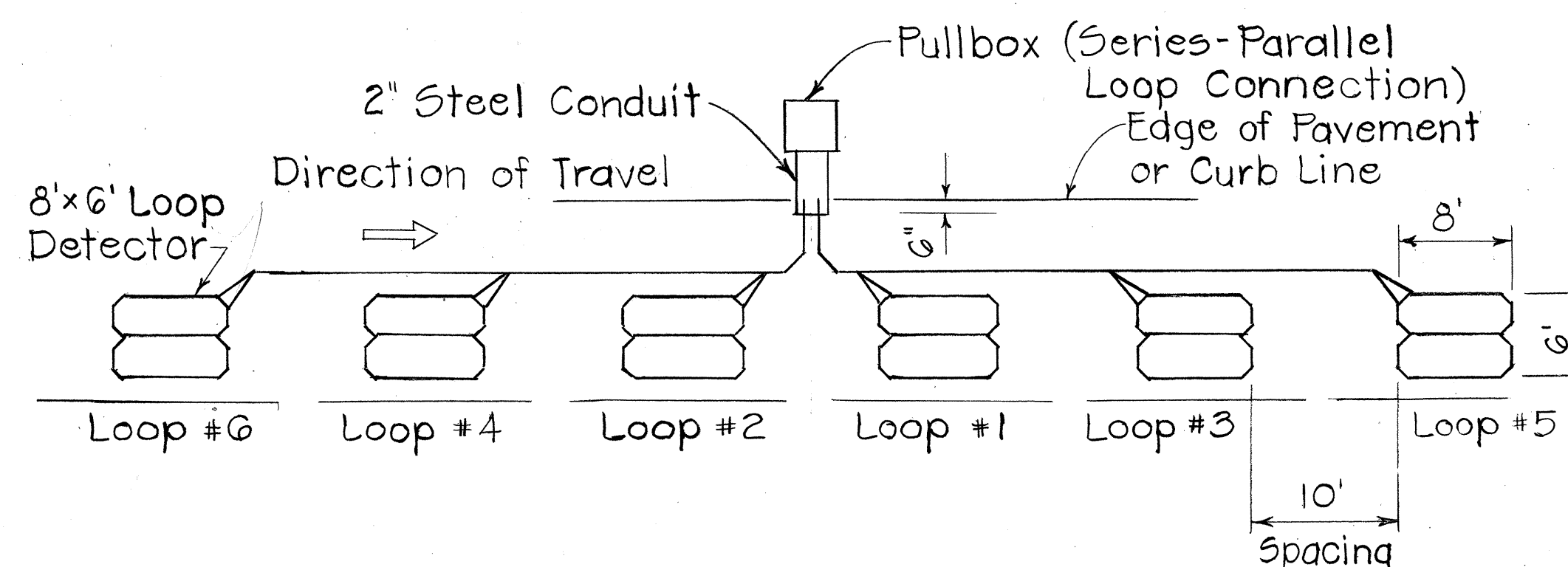
PLAN-THRU LANE LOOP LAYOUT



TYPICAL WIRING FOR 8'x6' LOOP DETECTOR



DETAIL OF SAW CUT AT CORNERS



PLAN-LEFT TURN LANE LOOP LAYOUT

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAILS
VEHICLE LOOP DETECTORS
& MISCELLANEOUS DETAILS

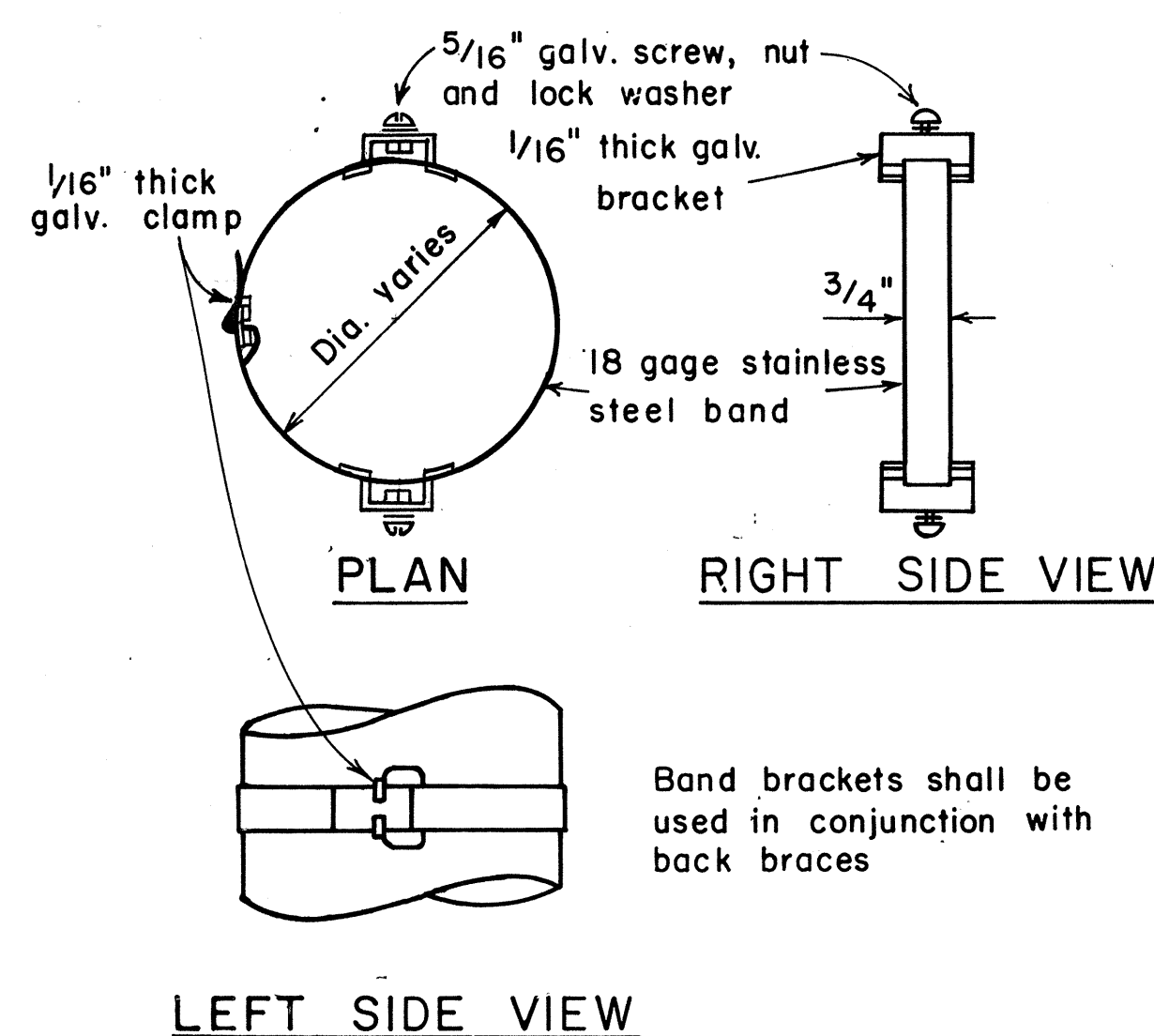
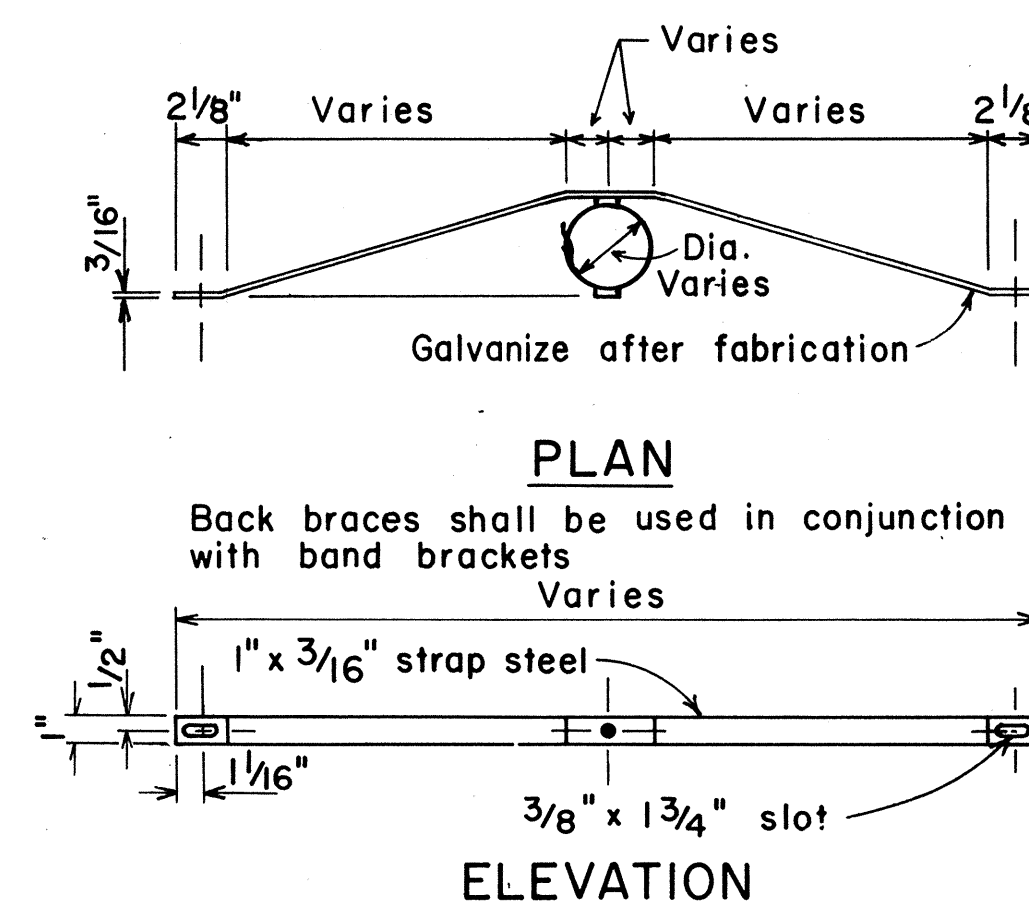
Project No. 93A-03-79
Not to Scale August 1978
SHEET NO. 6 OF 15 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	234-03-79	1980	7	15

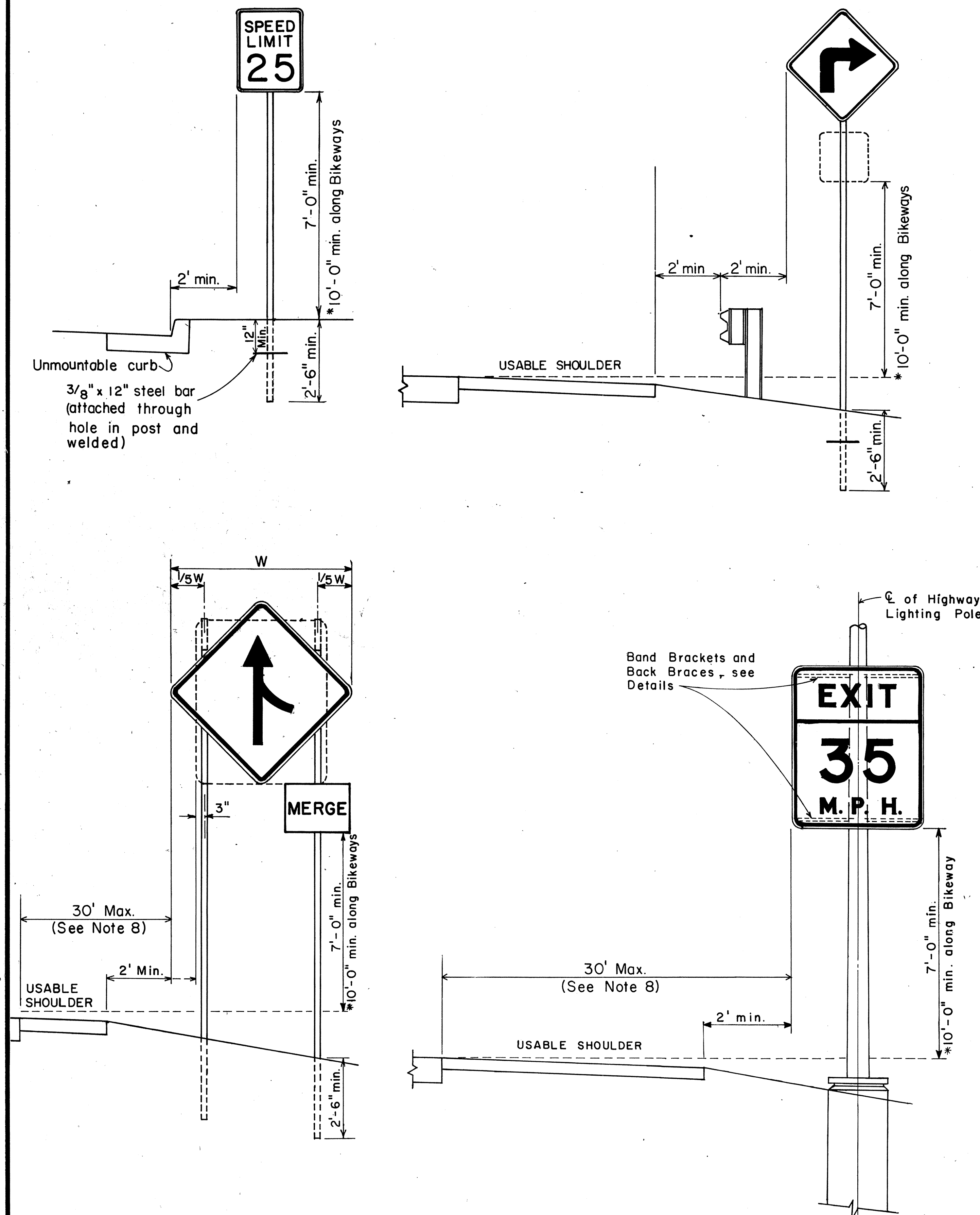
GENERAL NOTES

- Signs 48" and wider or larger than 10 sq. ft. in area shall be mounted on two sign posts.
- All signs larger than 10 sq. ft. in area or 48" inches and wider, and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least two sets of band brackets and back braces.
- All signs 28 sq. ft. in area or larger and mounted on other than two posts supports (i.e., on highway lighting poles) shall have at least three sets of band brackets and back braces.
- 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.
- (R) or (L) indicates right or left and shall be as shown on the plans.
- See plans for special details.
- When clear roadside recovery areas are provided, Signs shall be placed as far from the edge of traveled way as possible up to a maximum of 30 feet. When possible they shall be placed in protected locations.
- Signs in medians shall be placed at midpoint of median up to a maximum distance of 30 feet from the edge of traveled way. When appropriate, signs for opposing directions shall be placed back to back.

BACK BRACE DETAILS FOR BALANCED SIGN INSTALLATION



TYPICAL BAND BRACKET FOR MOUNTING TRAFFIC SIGNS



HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION

APPROVAL RECOMMENDED:
Erich Tanaka 11/10/77
 TRAFFIC ENGINEER DATE

APPROVED:
Herbert A. Sakai 11/15/77
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77
2	Revised depth of signpost	H.T.	5/31/79
3	Added Notes No. 8 & No. 9	H.T.	5/12/79

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

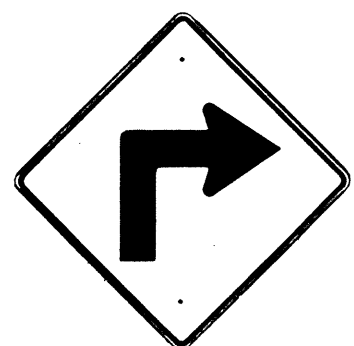
STANDARD DETAILS
 MISCELLANEOUS SIGN DETAILS

Not to scale June, 1977

SHEET NO. 7 OF 15 SHEETS DT 100

DATE	11/10/77
DESIGNED BY	H.T.
CHECKED BY	H.T.
QUANTITIES BY	H.T.
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NOTE BOOK	H.T.
ORIGINAL PLAN	H.T.
SURVEY PLOTTED BY	H.T.
DRAWN BY	H.T.
TRACED BY	H.T.
DESIGNED BY	H.T.
CHECKED BY	H.T.
QUANTITIES BY	H.T.
NOTE BOOK	H.T.
ORIGINAL PLAN	H.T.
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CHECKED BY	H.T.
QUANTITIES BY	H.T.
NOTE BOOK	H.T.
ORIGINAL PLAN	H.T.

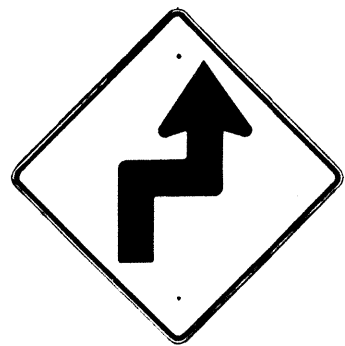
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII *	HAW.	93A-03-79	1980	8	15



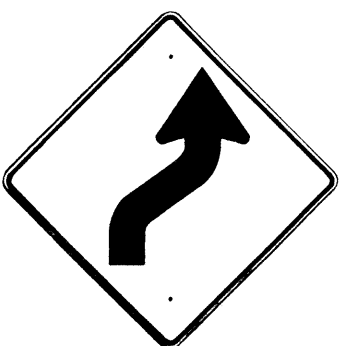
W1-1(R) 30"x 30"
W1-1(R)-A 48"x 48"



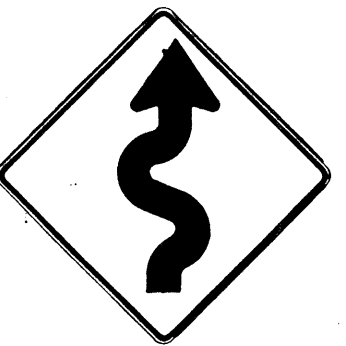
W1-2(R) 30"x 30"
W1-2(R)-A 48"x 48"



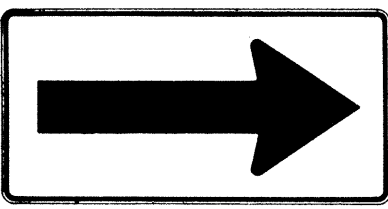
W1-3(R) 30"x 30"
W1-3(R)-A 48"x 48"



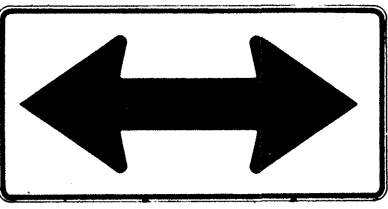
W1-4(R) 30"x 30"
W1-4(R)-A 48"x 48"



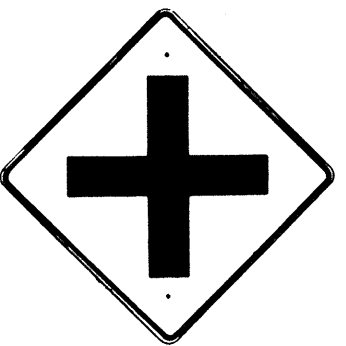
W1-5(R) 30"x 30"
W1-5(R)-A 48"x 48"



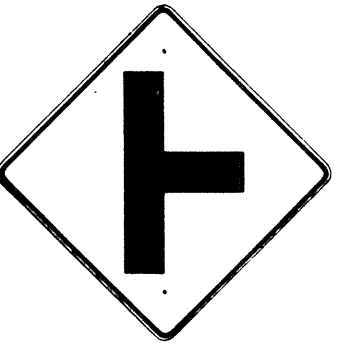
W1-6 48"x 24"



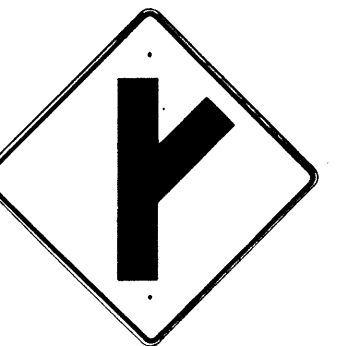
W1-7 48"x 24"



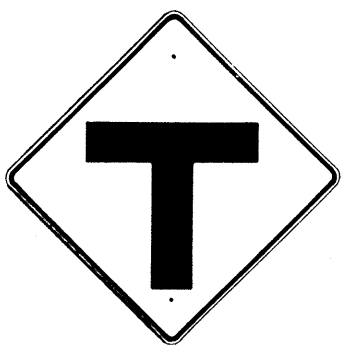
W2-1 30"x 30"
W2-1-A 48"x 48"



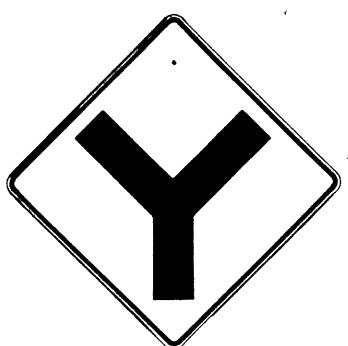
W2-2 30"x 30"
W2-2-A 48"x 48"



W2-3(R) 30"x 30"
W2-3(R)-A 48"x 48"



W2-4 30"x 30"
W2-4-A 48"x 48"



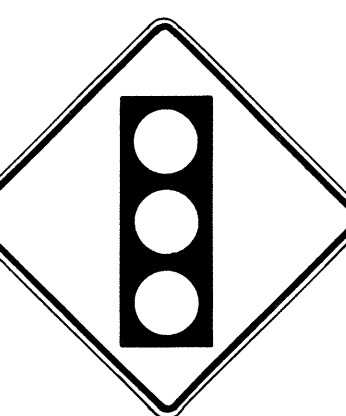
W2-5 30"x 30"
W2-5-A 48"x 48"



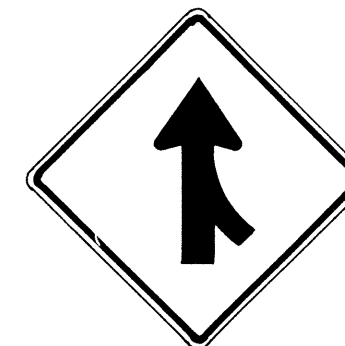
W3-1 30"x 30"
W3-1-A 36"x 36"



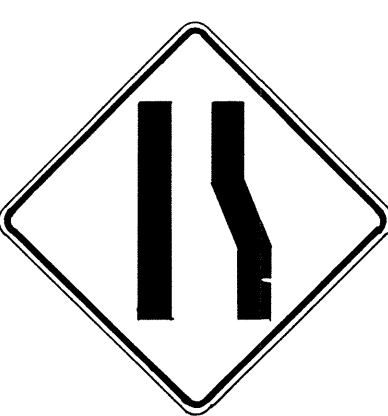
W3-2 30"x 30"
W3-2-A 36"x 36"



W3-3 36"x 36"
24"x 18"



W4-1(R) 30"x 30"
24"x 18"
W4-1(R)-A 48"x 48"
24"x 18"



W4-2(R) 36"x 36"
W4-2(R)-A 48"x 48"



W5-1 36"x 36"



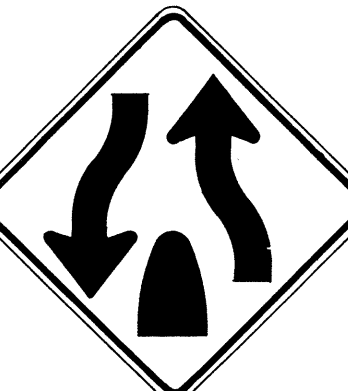
W5-2 30"x 30"
W5-2-A 36"x 36"



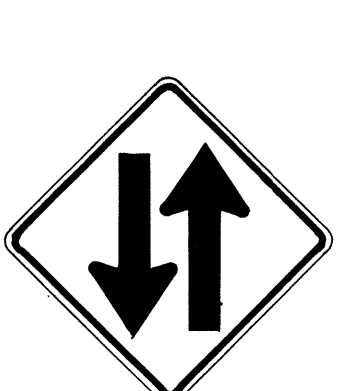
W5-3 36"x 36"



W6-1 36"x 36"
24"x 18"



W6-2 36"x 36"
24"x 18"



W6-3 30"x 30"
24"x 18"
W6-3-A 36"x 36"
24"x 18"
W6-3-B 48"x 48"
24"x 18"



W7-1 30"x 30"
24"x 18"
W7-1-A 36"x 36"
24"x 18"



W7-2 24"x 18"



W8-1 30"x 30"
W8-1-A 36"x 36"



W8-2 30"x 30"
W8-2-A 36"x 36"



W8-3 30"x 30"
W8-3-A 36"x 36"



W8-4 30"x 30"
W8-4-A 36"x 36"



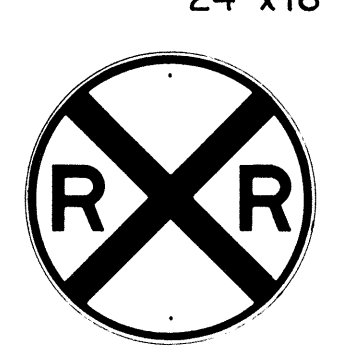
W8-5 30"x 30"
24"x 18"
W8-5-A 36"x 36"
24"x 18"



W9-1(R) 30"x 30"
W9-1(R)-A 36"x 36"
W9-1(R)-B 48"x 48"



W9-2(L) 36"x 36"
W9-2(L)-A 48"x 48"



W10-1 36" Diameter



W11-1 30"x 30"
24"x 18"
W11-1-A 36"x 36"
24"x 18"



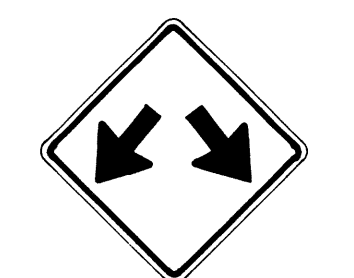
W11-2 30"x 30"
24"x 18"
W11-2-A 36"x 36"
24"x 18"



W11-4 30"x 30"
24"x 18"
W11-4-A 36"x 36"
24"x 18"



W11-5 30"x 30"
24"x 18"
W11-5-A 36"x 36"
24"x 18"



W12-1 24"x 24"
W12-1-A 36"x 36"
W12-1-B 48"x 48"



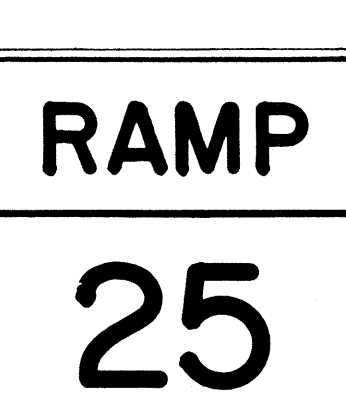
W12-2(12'-6") 36"x 36"
24"x 18"



W13-1(25) 18"x 18"
W13-1(25)-A 24"x 24"



W13-2(25) 48"x 60"



W13-3(25) 48"x 60"



W14-1 30"x 30"



W14-3 36"x 48" x 48"

GENERAL NOTES

- Sign details shall conform to the FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," 1971, and "Standard Highway Signs," 1972, and as amended.
- All 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:
Enrique Tanaka 3/17/72
TRAFFIC ENGINEER DATE

APPROVED:
Walter Zalsin 3-20-72
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 102 Approved 12-30-69	H.C.	3/20/72
2	Revised General Note 1	H.C.	10/16/74
3	Revised General Note 5	Mt	9-16-75
4	Revised General Note 5	H.C.	9-14-76
5	Added Note 1	H.C.	11-9-77

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
WARNING SIGNS

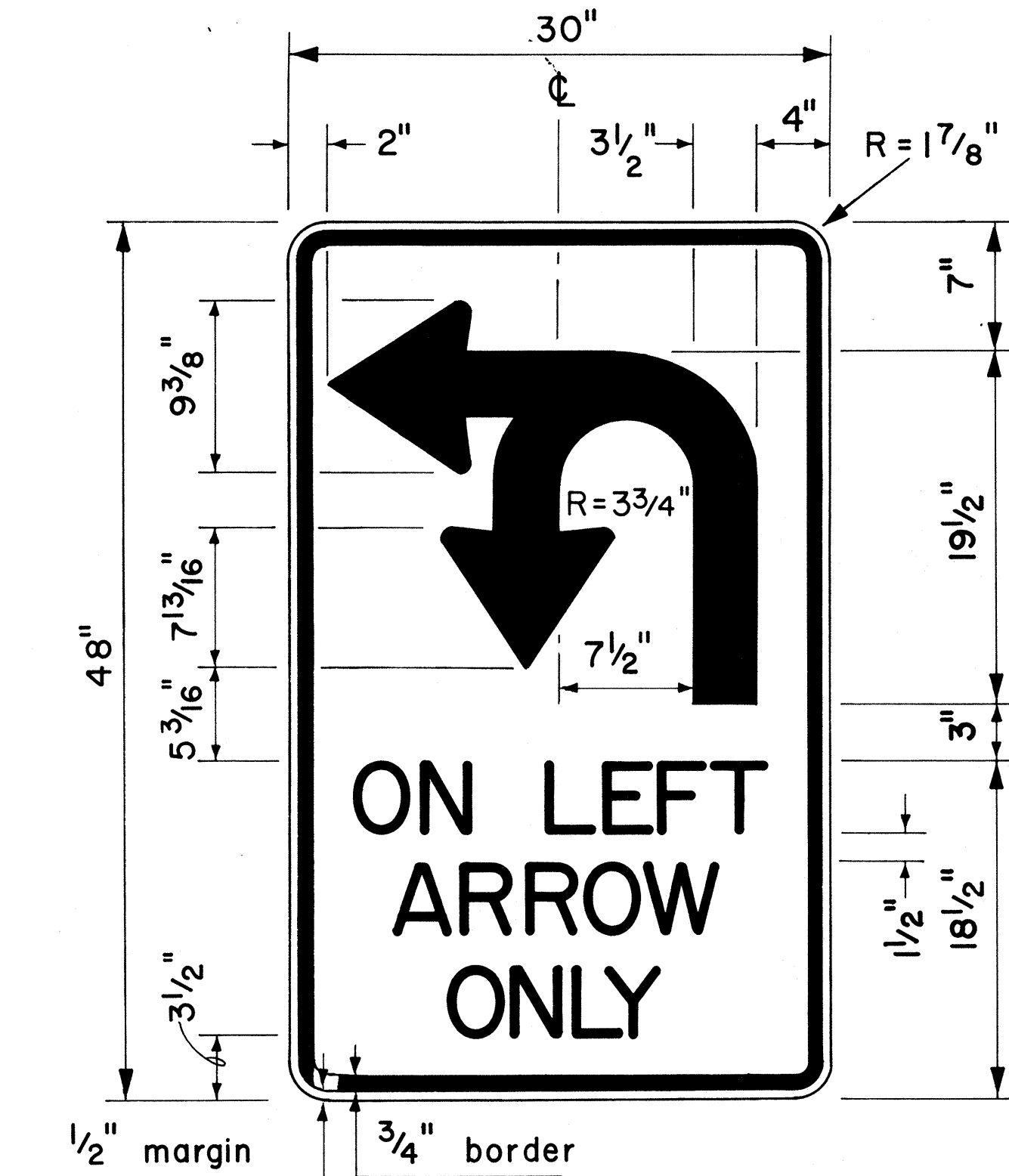
NOT TO SCALE
SHEET No. 8 OF 15 SHEETS DT 102

SURVEY PLANNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
DATE	

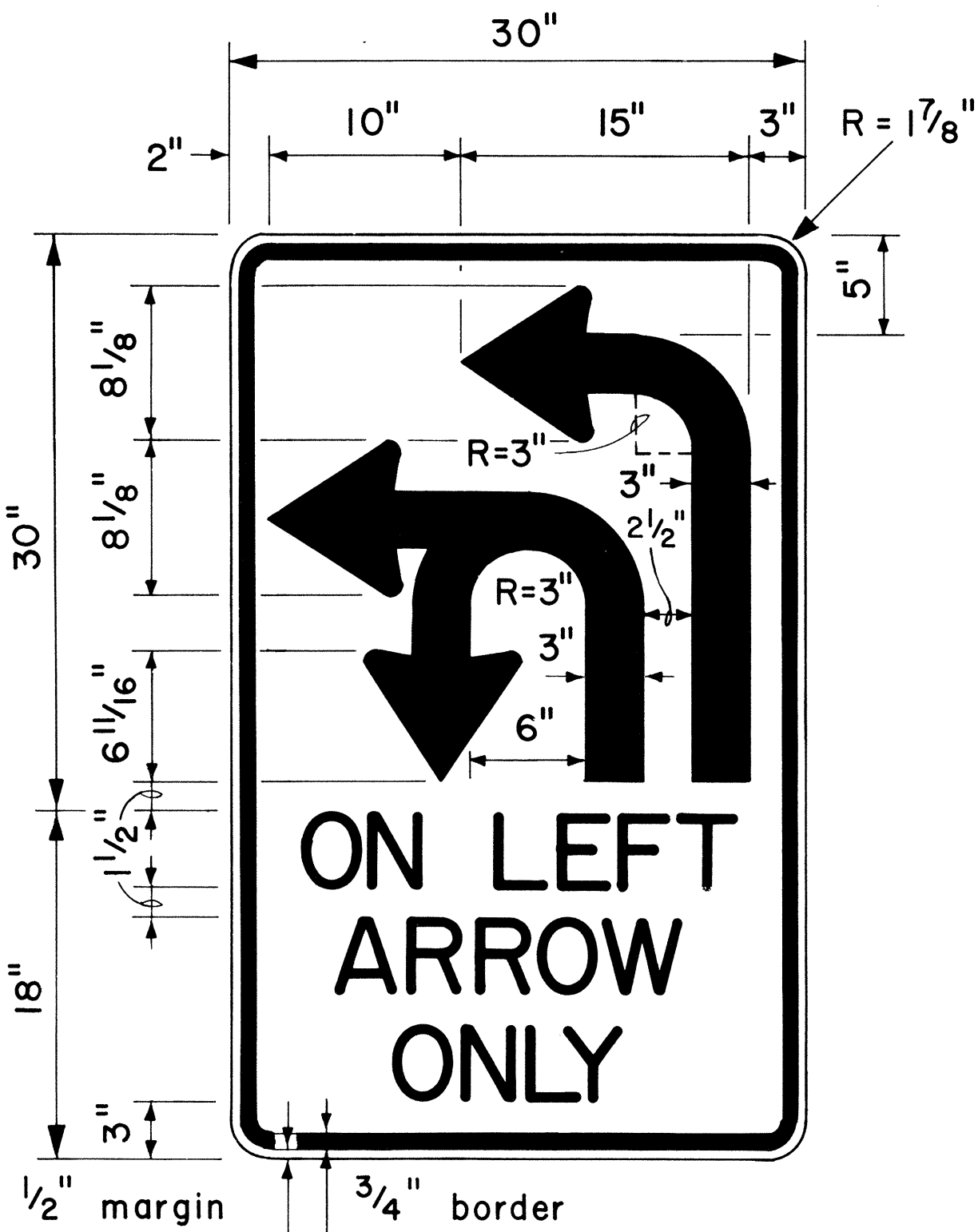
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-03-70	1980	9	15

GENERAL NOTES

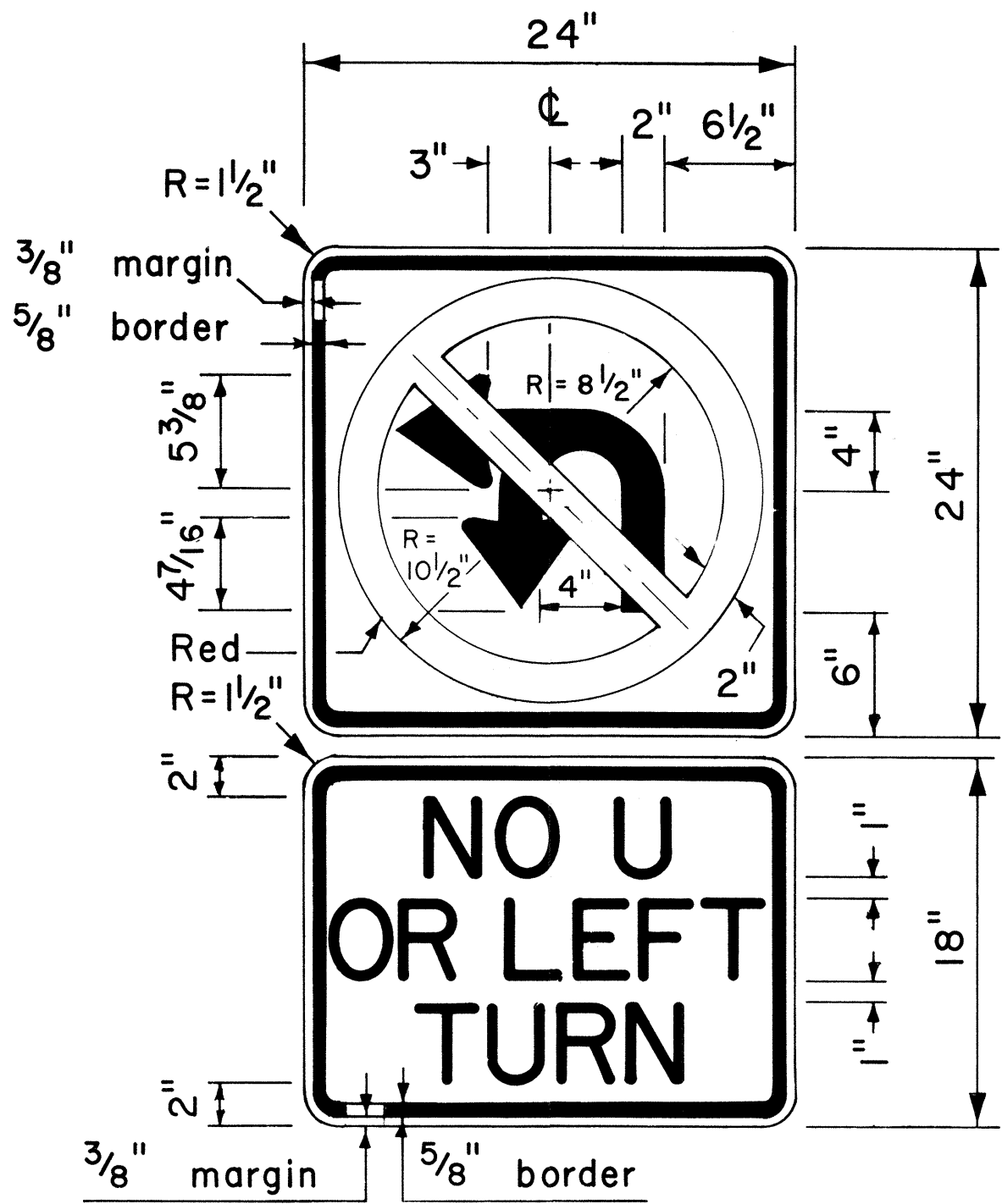
- Sign details shall conform to the latest editions of the following FHWA publications: "Manual on Uniform Traffic Control Devices for Streets and Highways," and "Standard Highway Signs," and as amended.
- All regulatory signs shall be reflectorized unless otherwise specified.
- All regulatory signs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



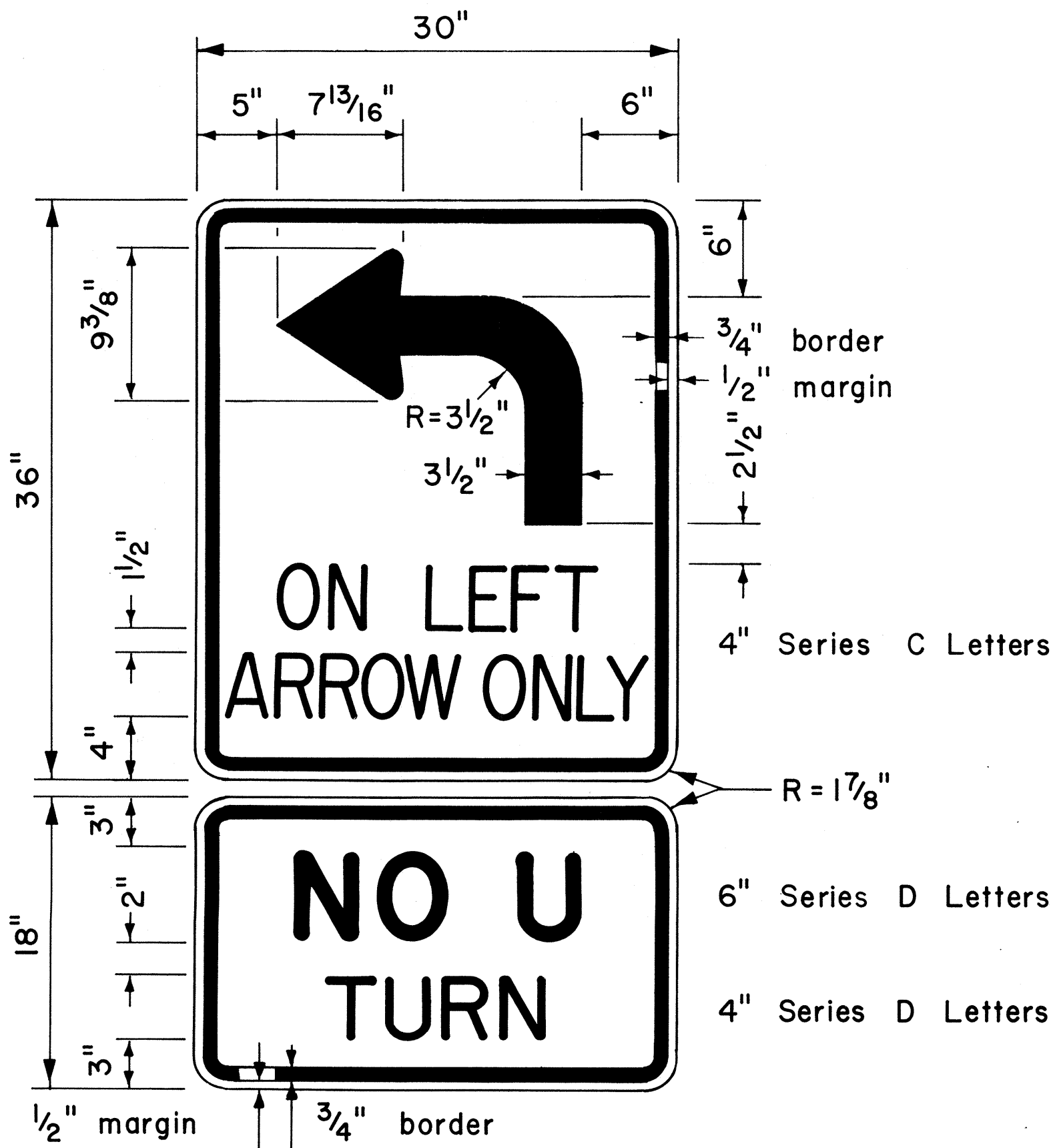
4" Series D Letters
R17-1



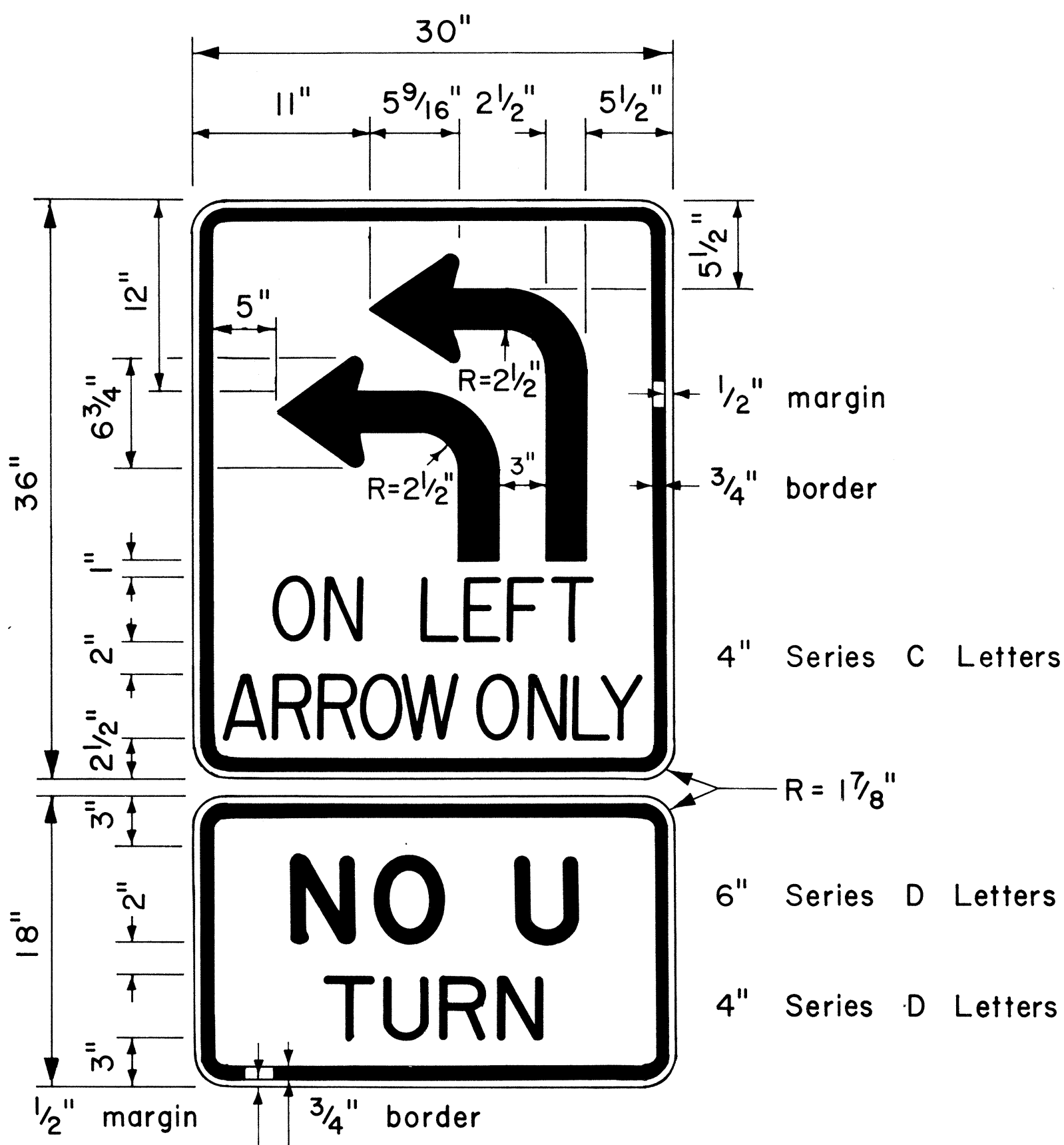
4" Series D Letters
R17-2



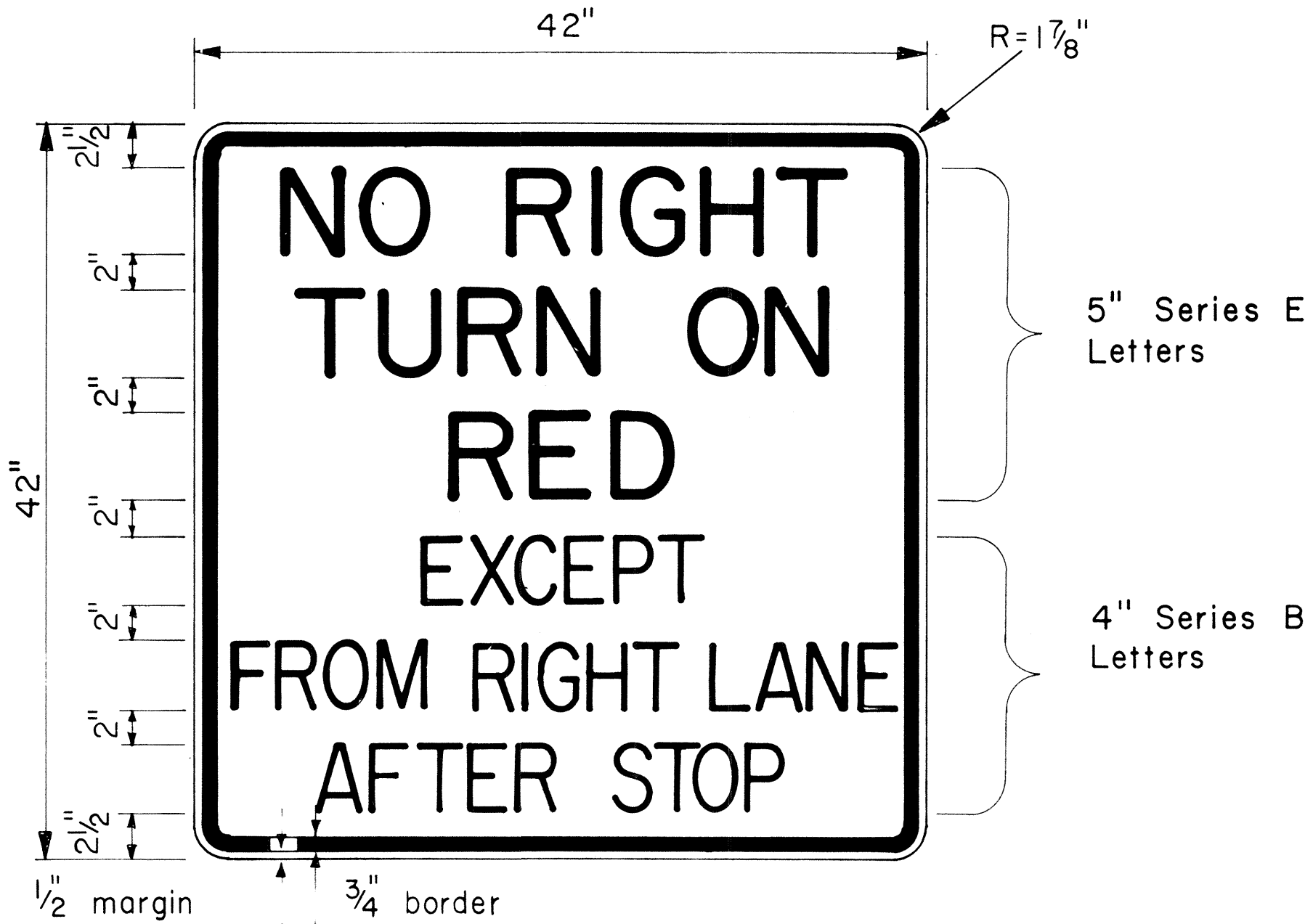
4" Series D Letters
R3-4b



R17-3



R17-4



R10-11d

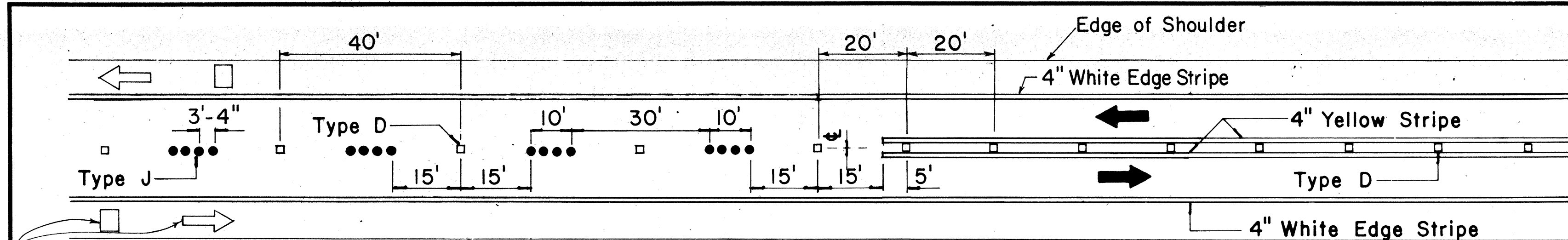
NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Eishi Tanaka 8/1/77
 TRAFFIC ENGINEER DATE
 APPROVED:
Harvey Zaleski 8/16/77
 ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
MISCELLANEOUS
INTERSECTION SIGNS
 Scale: 1/2" = 1'-0" Date: Aug., 1977
 SHEET NO. 9 OF 15 SHEETS DT 112

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

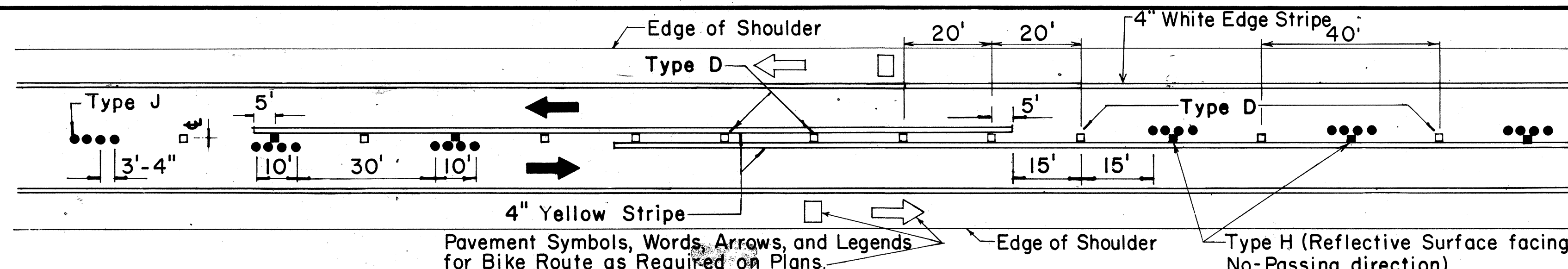
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	73A-03-79	1980	10	15



Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

PASSING PERMITTED AND PASSING PROHIBITED

TWO - LANE



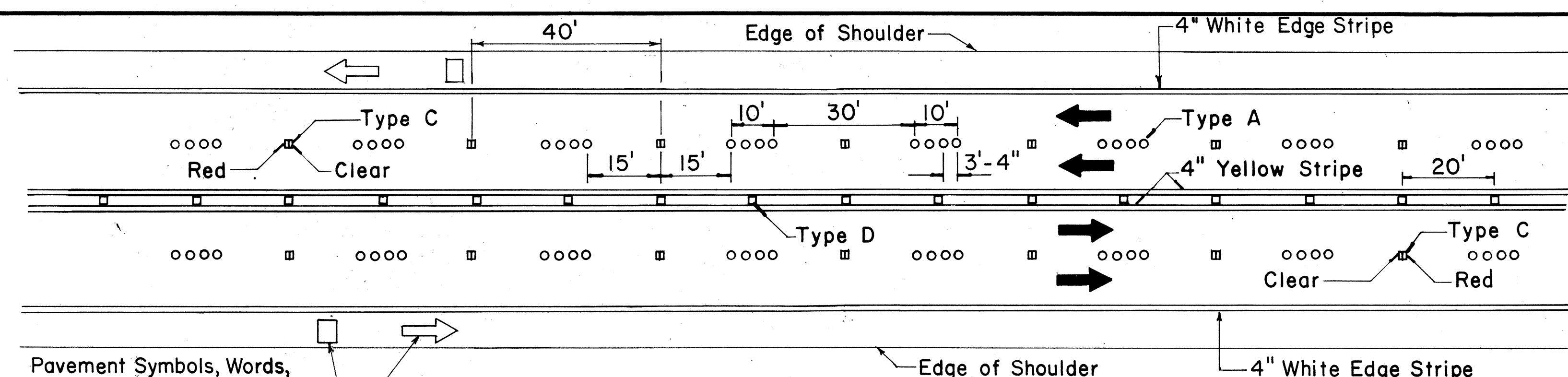
Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

PASSING PROHIBITED ZONES

TYPE A
NON-REFLECTIVE WHITE MARKER

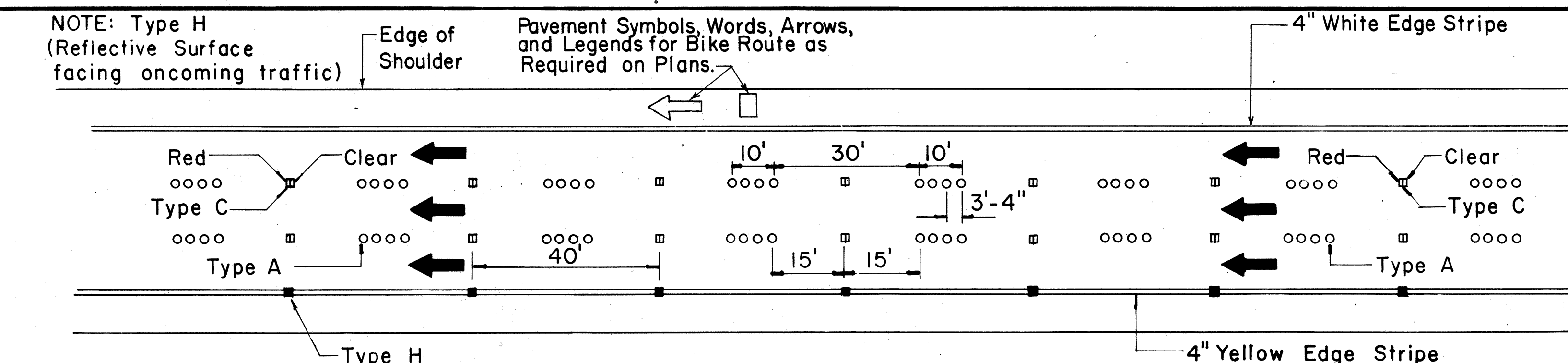
TYPE C
RED-CLEAR REFLECTIVE MARKER

TYPE J
NON-REFLECTIVE YELLOW MARKER



Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

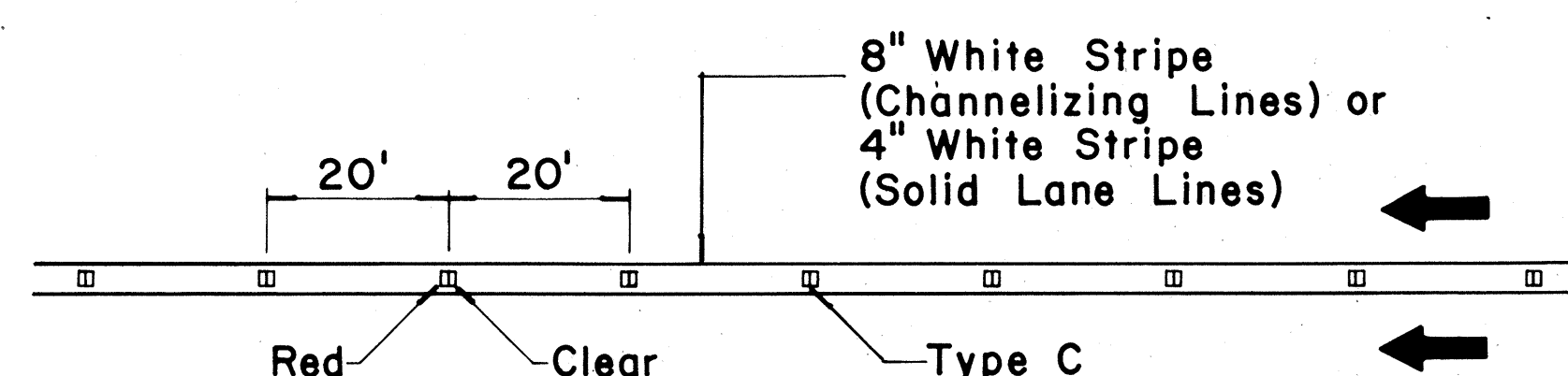
MULTI - LANE



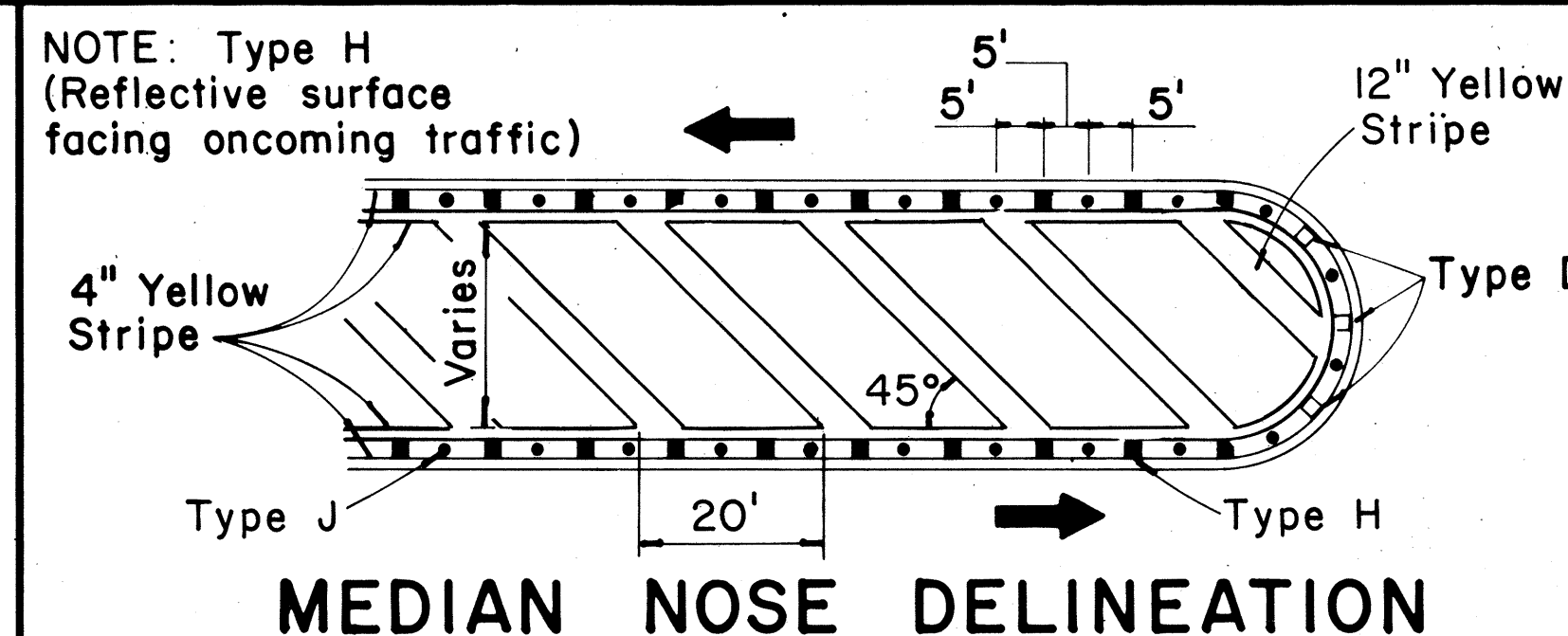
NOTE: Type H (Reflective Surface facing oncoming traffic)

Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

DIVIDED HIGHWAY AND FREEWAY



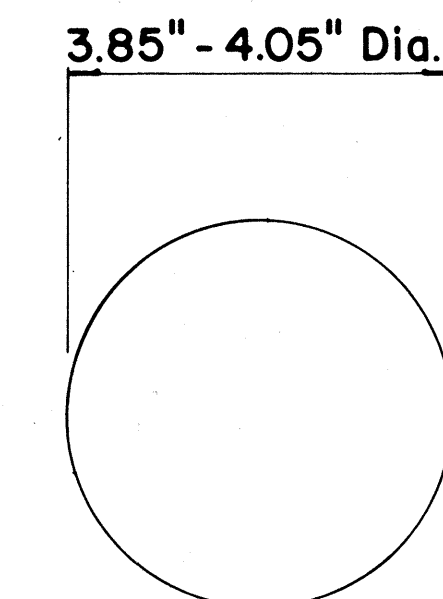
CHANNELIZING LINES OR SOLID LANE LINES



NOTE: Type H (Reflective surface facing oncoming traffic)

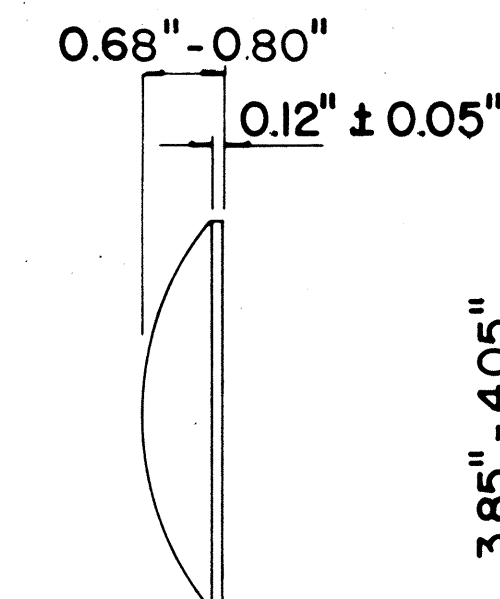
MEDIAN NOSE DELINEATION

MISCELLANEOUS



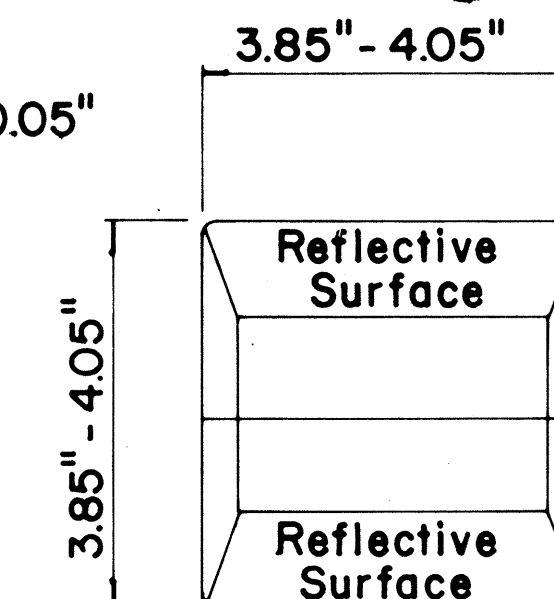
TYPE A

NON-REFLECTIVE WHITE MARKER



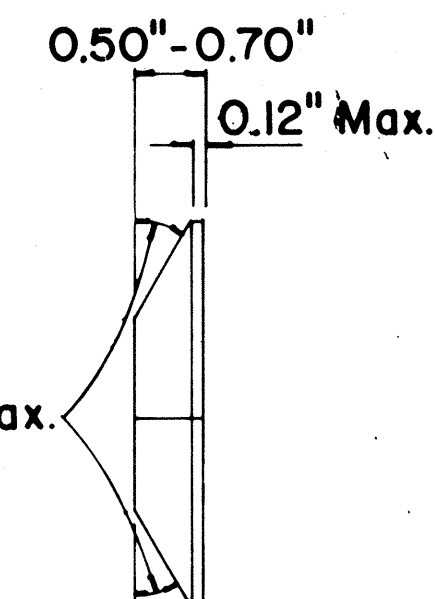
TYPE J

NON-REFLECTIVE YELLOW MARKER



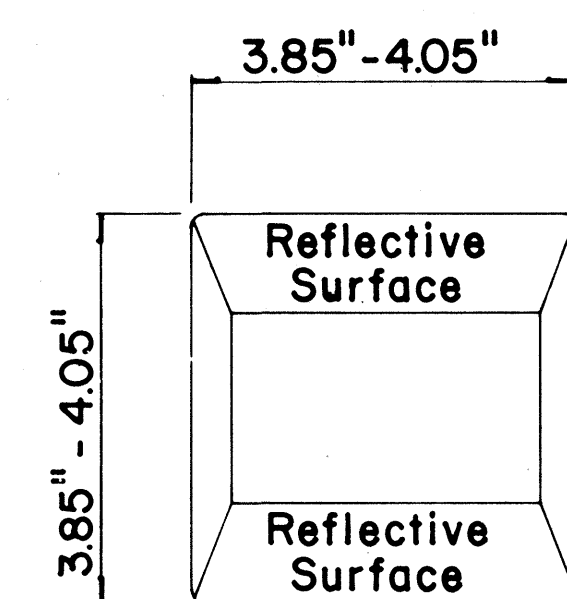
TYPE C

RED-CLEAR REFLECTIVE MARKER



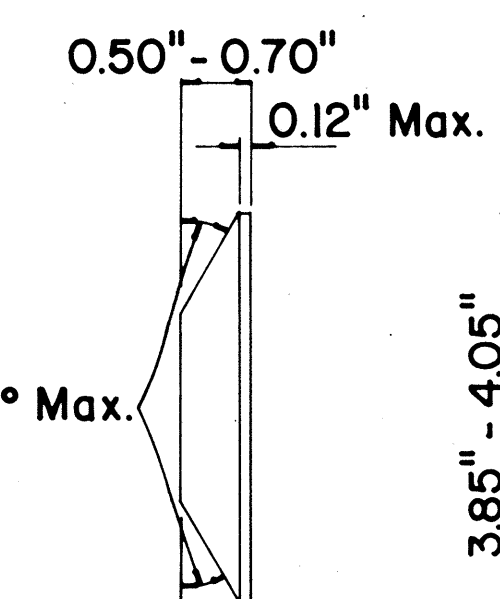
TYPE D

NON-REFLECTIVE YELLOW MARKER



TYPE D

TWO-WAY YELLOW REFLECTIVE MARKER



TYPE H

ONE-WAY YELLOW REFLECTIVE MARKER

GENERAL NOTES

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

LEGEND

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

APPROVAL RECOMMENDED:

Erich Tanaka 7/21/78
TRAFFIC ENGINEER DATE

APPROVED:

Robert J. Zaleski 1/24/78
ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.C.	1/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.C.	10/15/79

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS RAISED PAVEMENT MARKERS AND STRIPING

Not to Scale July 1978

SHEET No. 10 OF 15 SHEETS DT 300

DATE
SURVEY PLOTTED BY
DRAWN BY
DESIGNED BY
NOTED BY
CHECKED BY
No.

Color As Indicated On Plans

4''

2'-0''

4'-0''

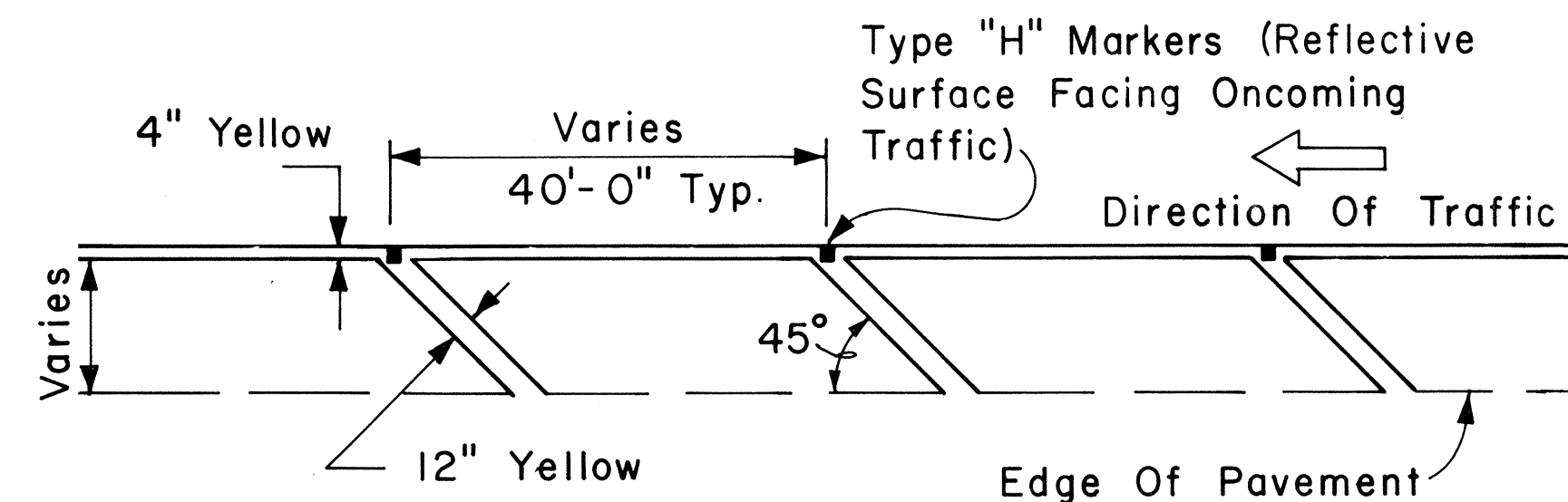
4'-0''

Diagram of a diamond-shaped traffic sign with a 12" White border. The sign is 30'-0" wide and 3'-0" high. The dimensions are divided into two 15'-0" sections. The sign is labeled "Lane" on the left and "3'-0" 6'-0"

Diagram illustrating the cross-section of a road shoulder and pavement edge. The diagram shows a 45-degree slope (45°) leading to a 12" White shoulder and a 4" White pavement edge. The horizontal distance from the edge of the pavement to the edge of the shoulder is labeled "Varies". The horizontal distance from the edge of the pavement to the edge of the road is labeled "40'-0" Typ.". The "Direction Of Traffic" is indicated by an arrow pointing right.

[illegible]

MULTI-LANE REVERSIBLE LANES



The diagram illustrates the transverse median marking with the following details:

- Type "D" Raised Pavement Marker:** Shown as a tapered marker on the left side.
- Type "H" Raised Pavement Markers:** Shown as rectangular markers on the right side, with a typical spacing of 20'-0" o.c.
- Dimensions and Spacing:**
 - 4" Space between markers.
 - 12" Yellow width for the central section.
 - 4" Double Yellow lines.
 - 45° angle for the taper.
 - Varies (indicated for the width of the double yellow lines and the overall taper).
- Labels:**
 - Taper As Required On Plans
 - 4" Space
 - 12" Yellow
 - 4" Double Yellow
 - 45°
 - Varies
 - Type "D" Raised Pavement Marker
 - Varies 20'-0" Typ.
 - Type "H" Raised Pavement Markers, 20'-0" o.c. (Reflective Surface Facing Oncoming Traffic)
 - 4" Double Yellow

The diagram illustrates a four-lane highway cross-section with the following markings and dimensions:

- Top Section (Shoulder and Edge Line):**
 - Edge Of Pavement to first vertical line: 10'-0"
 - First vertical line to second vertical line: 30'-0"
 - Second vertical line to third vertical line: 10'-0"
 - Third vertical line to 4" White Edge Line: 20'-0"
- Second Section (Lane Markings):**
 - 4" Double White line (left side)
 - 4" White line (right side)
 - Distance between vertical lines: 15'-0" and 15'-0"
- Third Section (Lane Markings):**
 - Type "A" markings (circles)
 - Distance between vertical lines: 20'-0"
- Bottom Section (Edge Line and Reflective Surface):**
 - 4" White line (left side)
 - 4" Yellow Edge Line (right side)
 - Type "H" (Reflective Surface Facing Oncoming Traffic)
 - Distance between vertical lines: 40'-0"

Diagram illustrating the dimensions and components of a Type "C" Raised Pavement Marker:

- The marker is a triangular shape with a base of 20'-0" (Typical).
- The marker is 12" White.
- The marker is 8" White.
- The marker is 45°.
- The marker is Transverse Lines As Required On Plans.
- The marker is Type "C" Raised Pavement Markers, 20'-0" o.c.

APPROVAL RECOMMENDED: Enichi Tanaka 5/2/78
TRAFFIC ENGINEER DATE

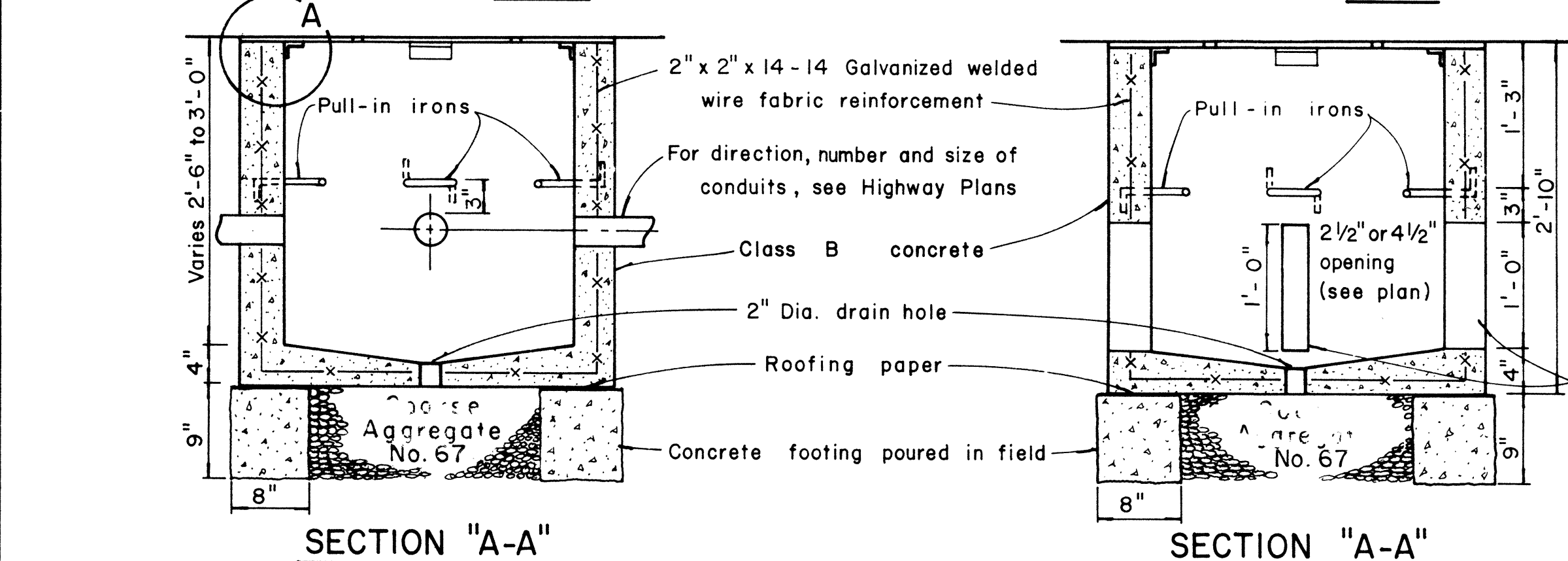
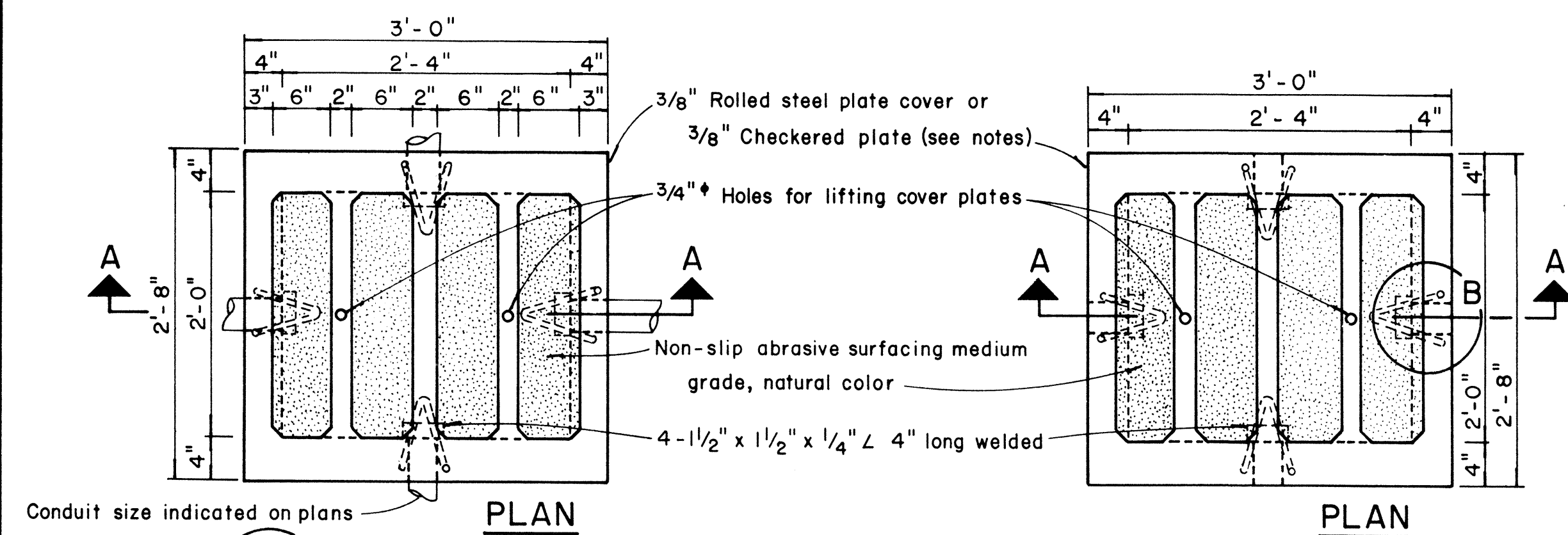
APPROVED: Herbert Z. Zafetski 5/3/18
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HAWAIIAN HIGHWAYS DIVISION
STANDARD DETAILS
MISCELLANEOUS
PAVEMENT MARKINGS

Scale: Not to Scale Date: April, 1978

SHEET No. 1 OF 5 SHEETS DT 302

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-03-79	1980	14	15

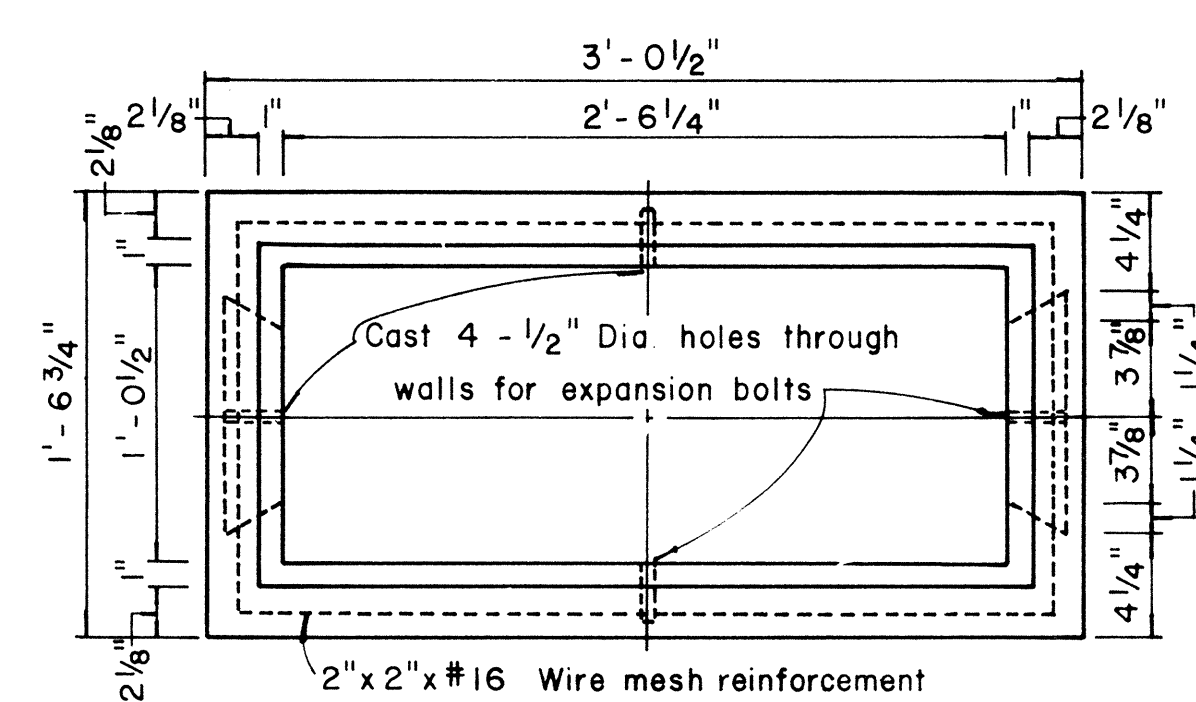


TYPE "A" PULLBOX CAST-IN-PLACE

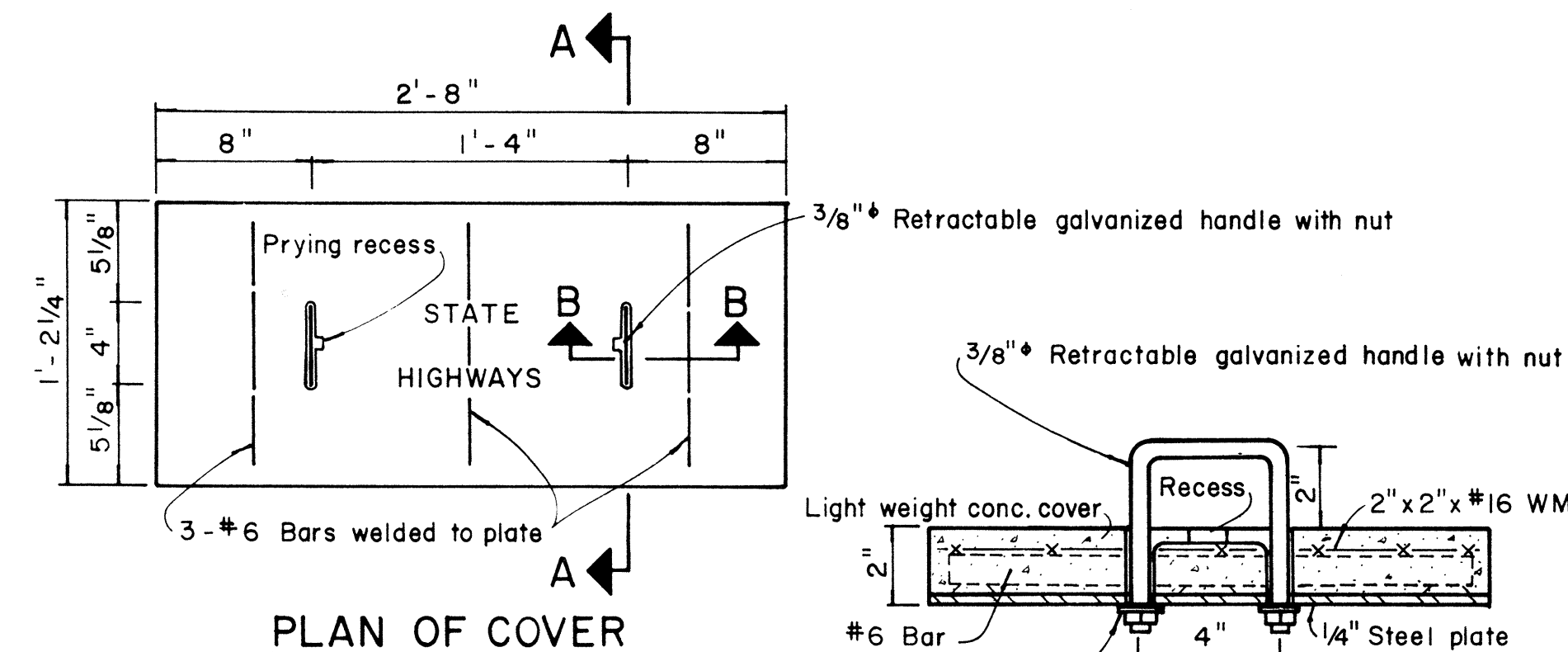
Scale: 1" = 1'-0"

TYPE "A" PULLBOX PRECAST

Scale: 1" = 1' - 0"

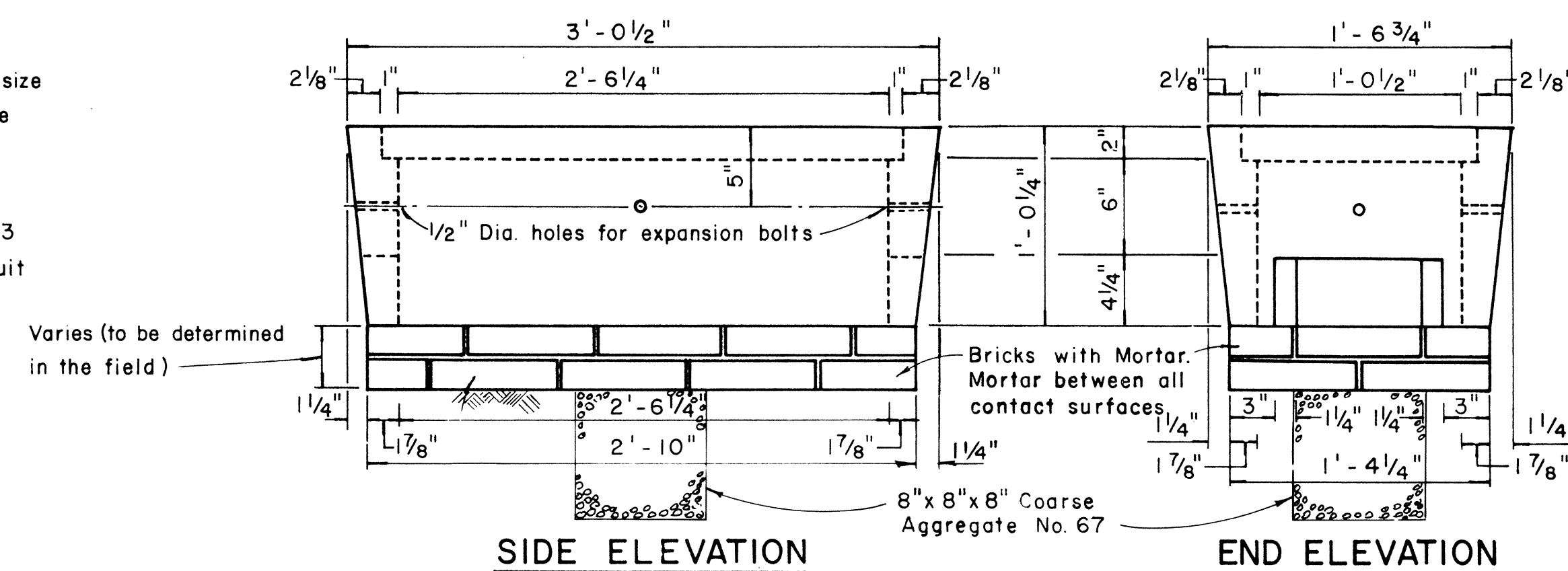


PLAN



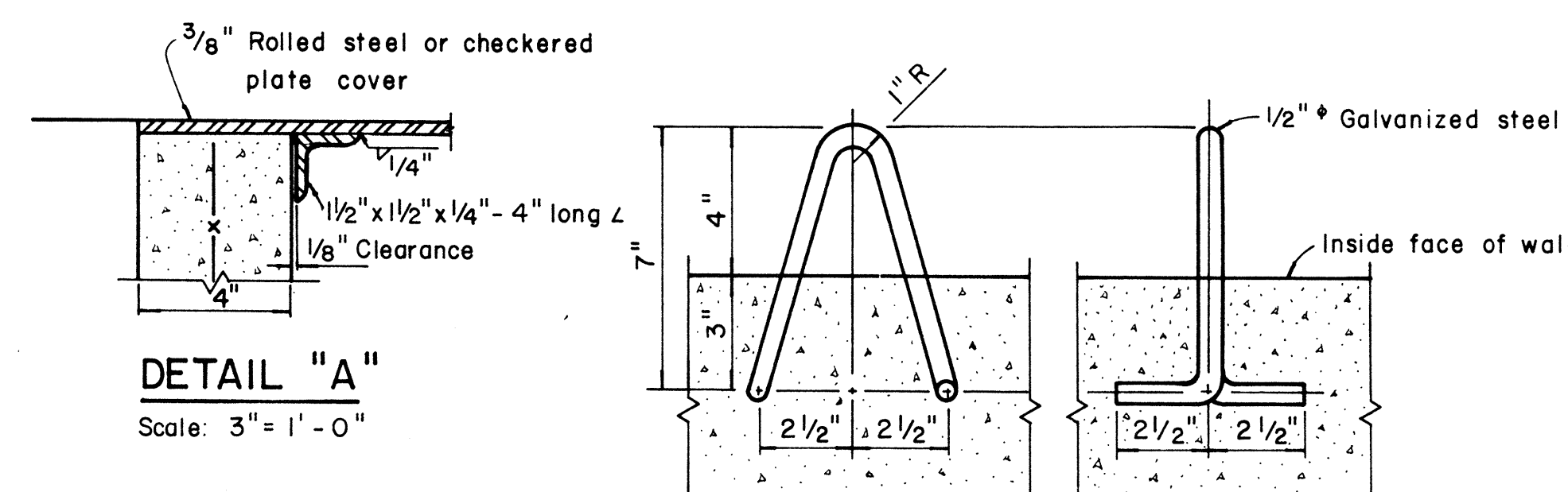
SECTION "A-A"

Scg|e: 3'' = 1'-0''



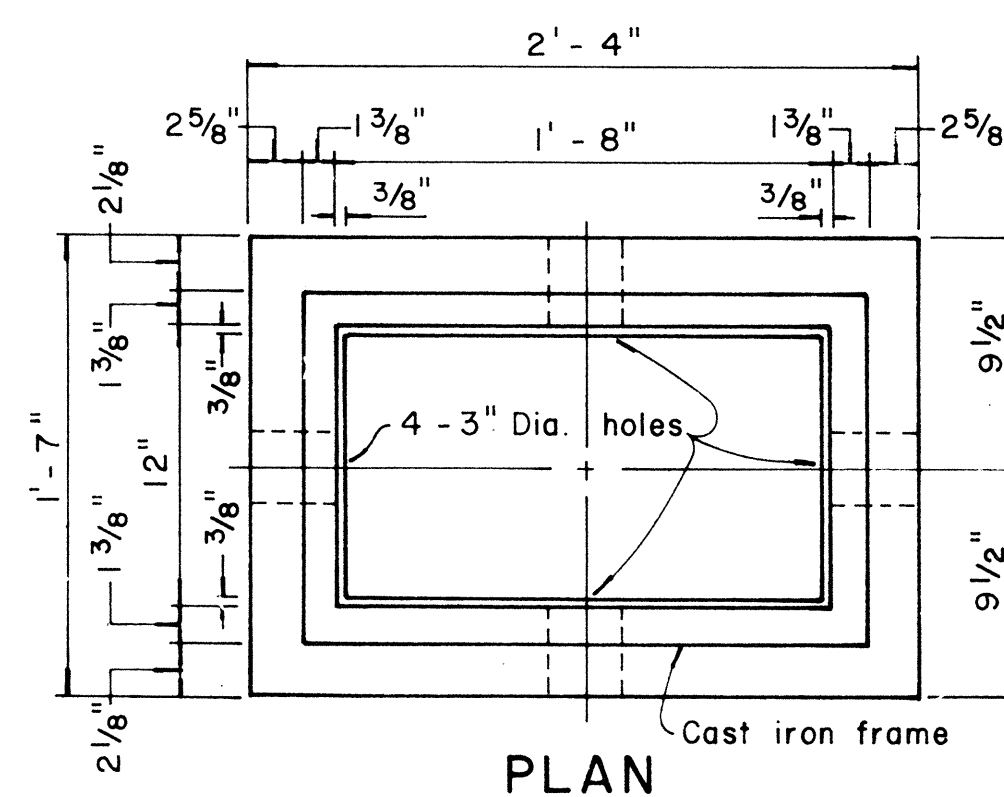
TYPE "C" PULLBOX

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

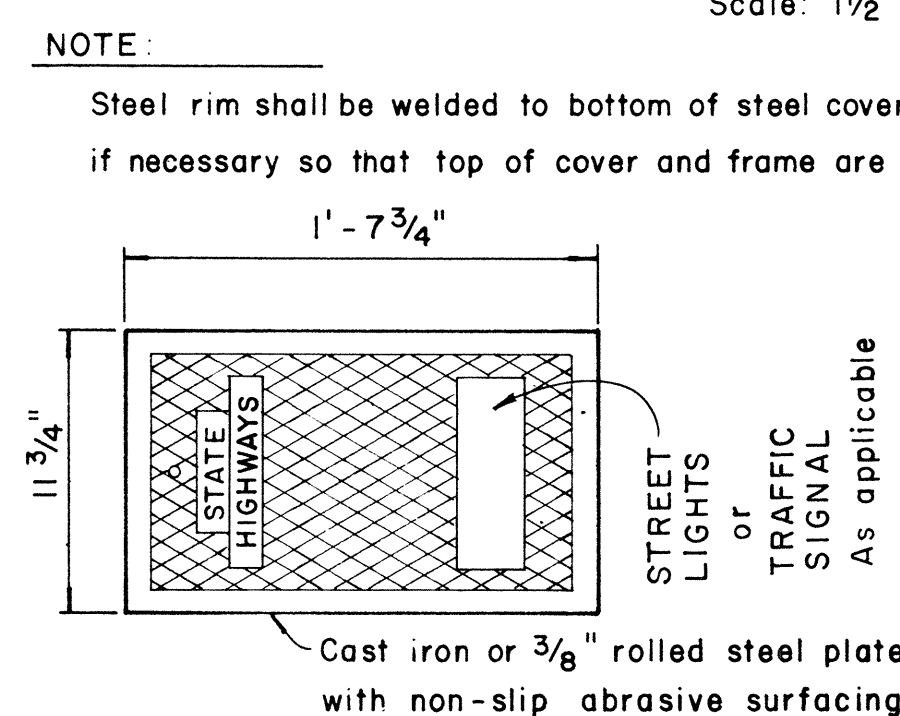


PULL-IN IRON DETAIL "B"

Scale: 3" = 1'-0"



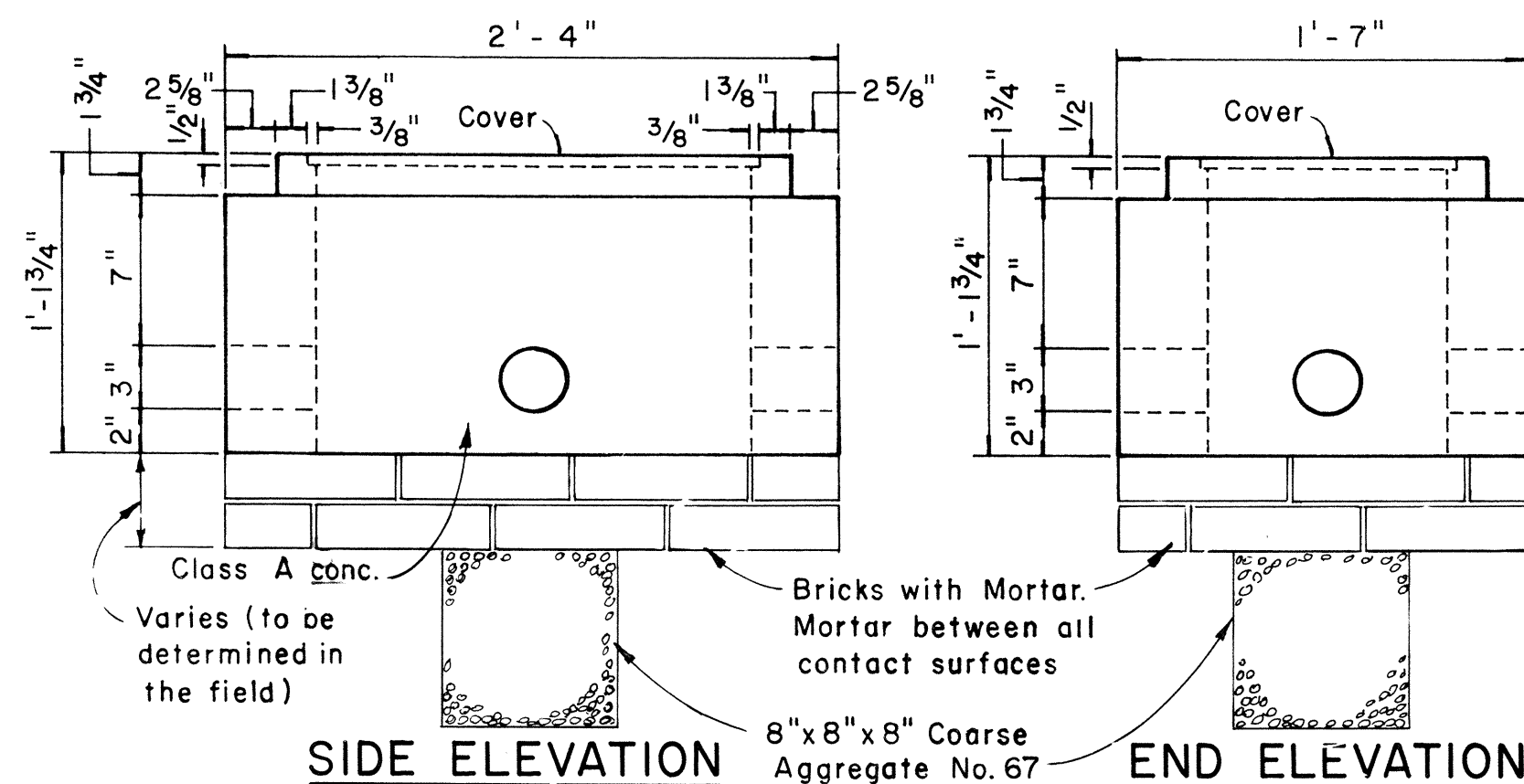
PLAN



PLAN OF COVER

NOTE:

Steel rim shall be welded to bottom of steel cover
if necessary so that top of cover and frame are flush



SIDE ELEVATION

TYPE "B" PULLBOX

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

- NOTES: (FOR TYPE "A" PULLBOX)

1. $\frac{3}{8}$ " Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
2. $\frac{3}{8}$ " Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
3. Pull irons shall be placed opposite each conduit slot.
4. Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
5. Each pullbox shall have a pair of pull irons opposite each other for lifting purposes.

APPROVAL RECOMMENDED:

TRAFFIC ENGINEER

12/69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised Type B & C Pullbox details	H.T.	3-5-

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

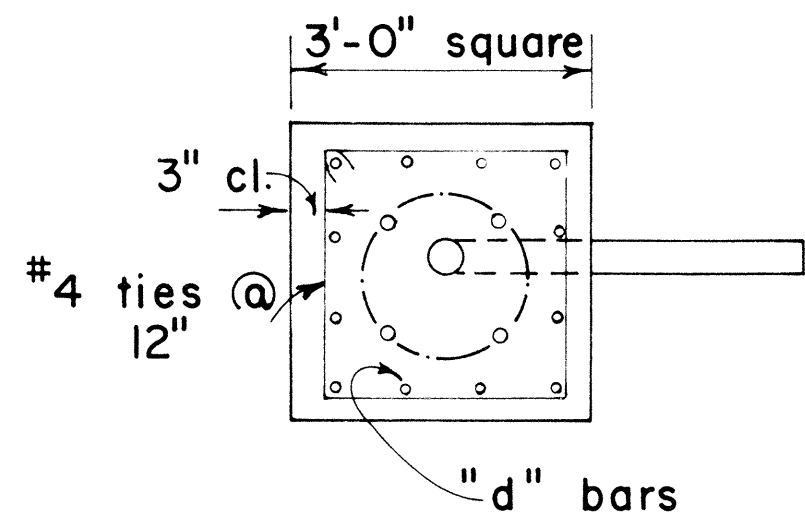
PULLBOXES

Scale as noted

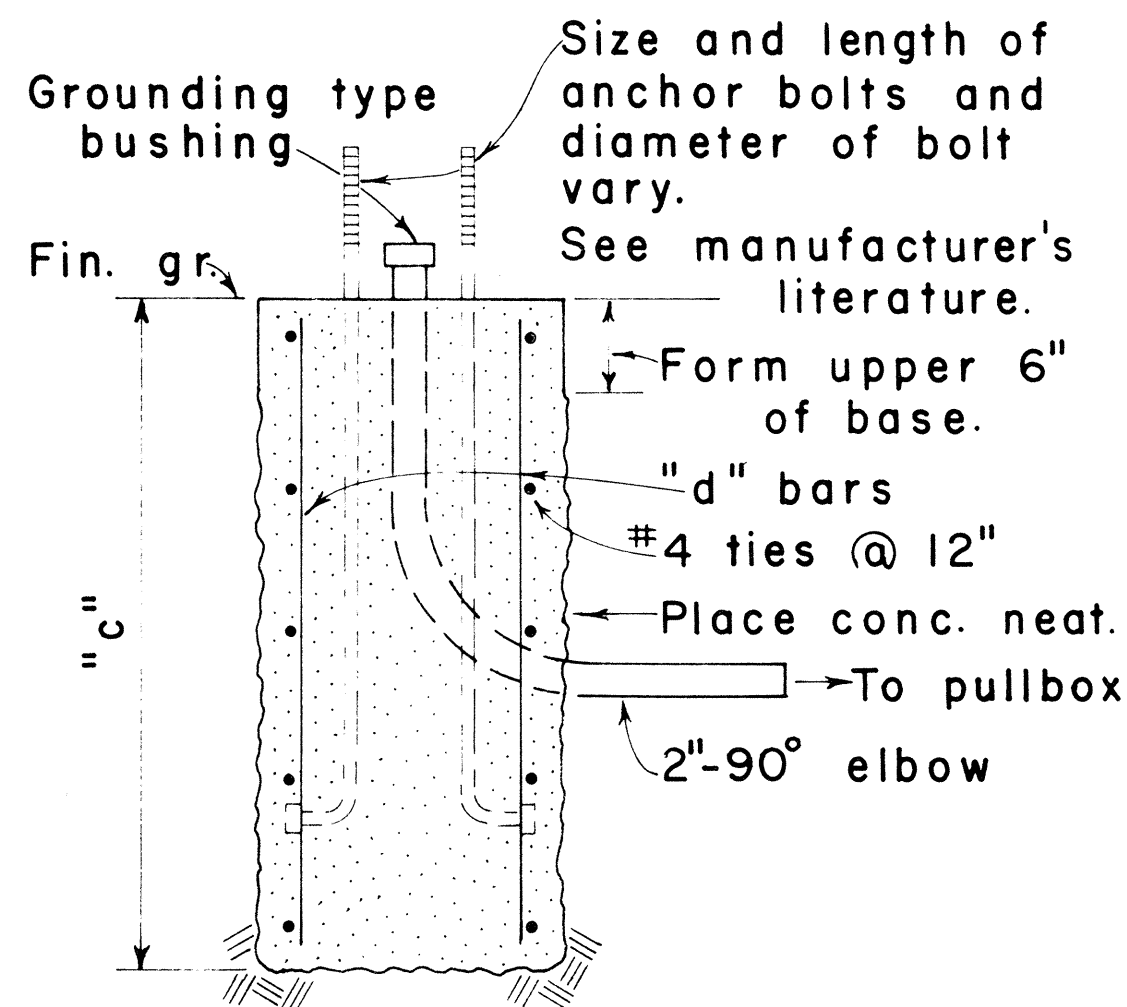
Date _____

SHEET No. 4 OF 5 SHEETS DT 401

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-03-79	1980	15	15



PLAN - SECTION

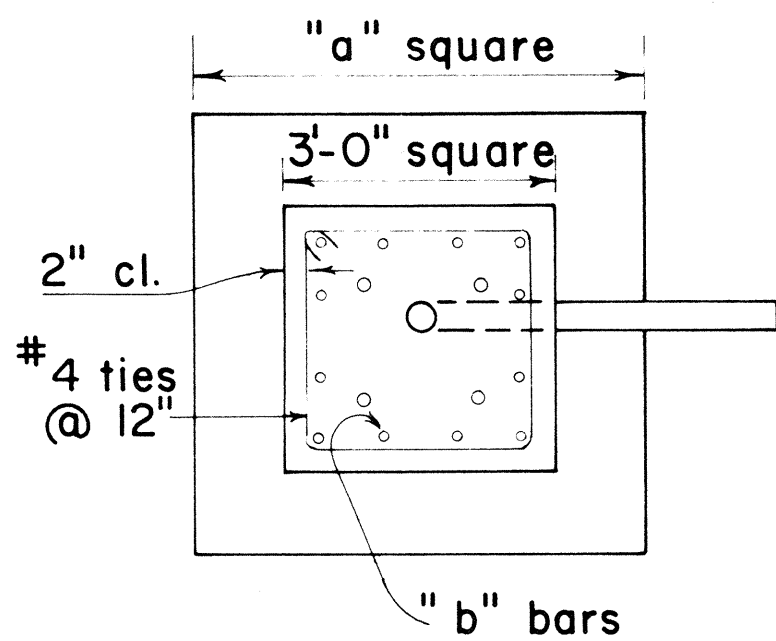


NOTE:
Concrete shall be Class B.

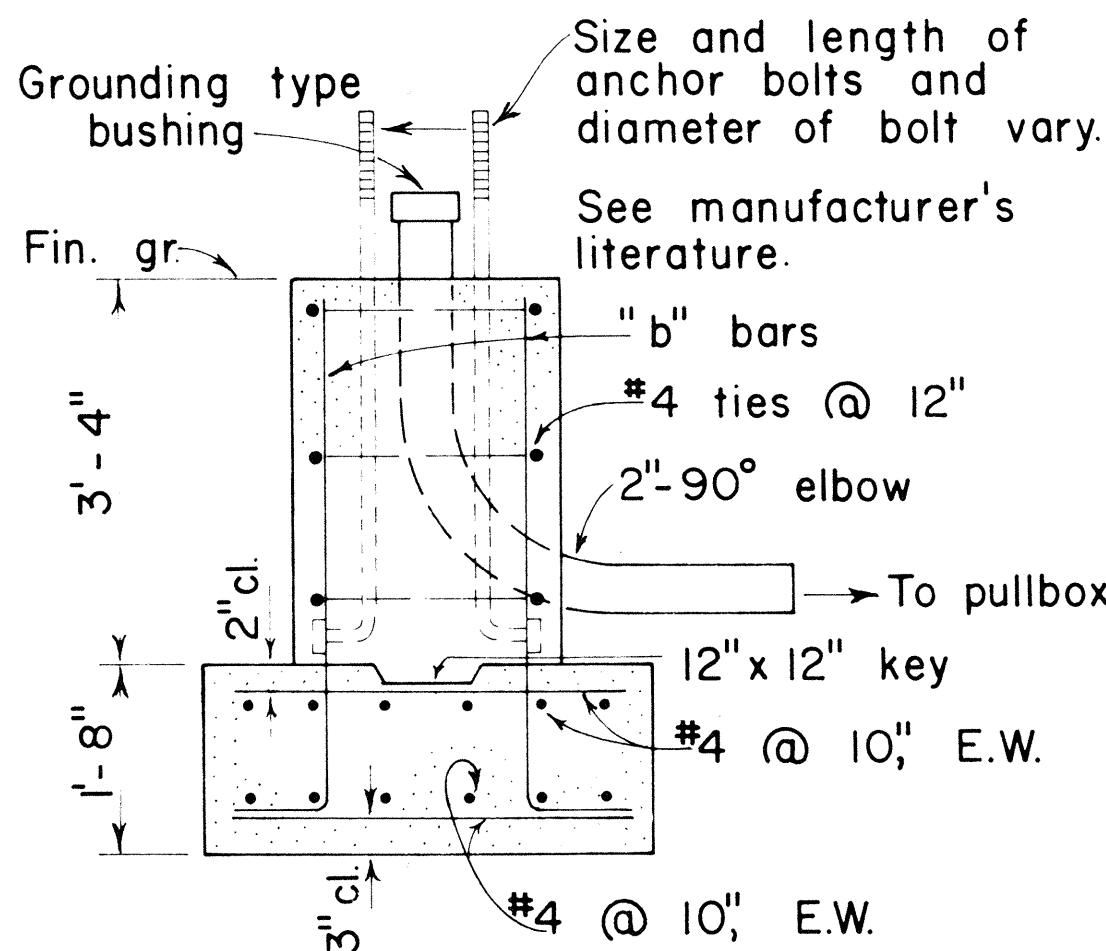
SECTION

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



PLAN - SECTION

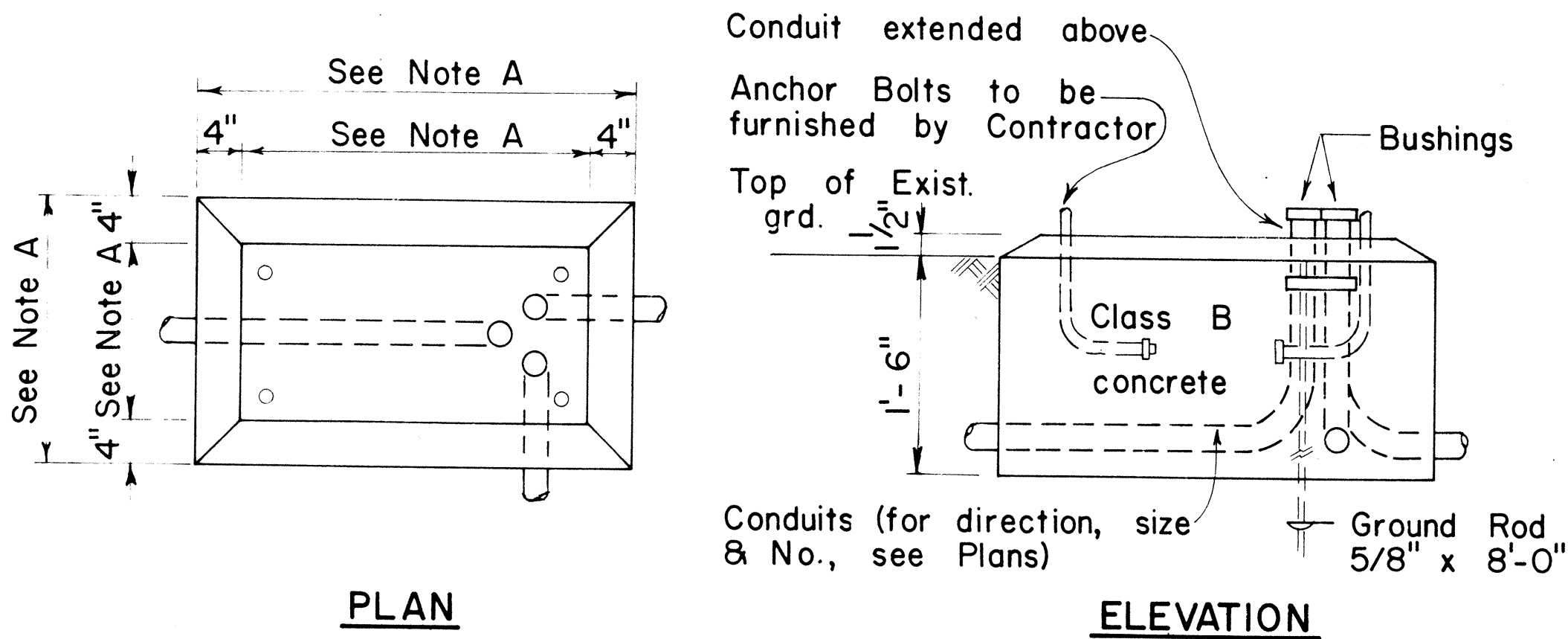


NOTE:
Concrete shall be Class B.

SECTION

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

TYPE IIA



PLAN
CONCRETE BASE FOR CONTROLLER CABINET

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

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

APPROVED:
Harold R. Rasmussen 3-5-76
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS

Not to Scale

SHEET NO. 15 OF 15 SHEETS DT404

ORIGINAL PLAN	DATE
DESIGNED BY	
NOTED BOOK	
CHECKED BY	
No.	

FOOTING FOR MAST ARM STANDARD