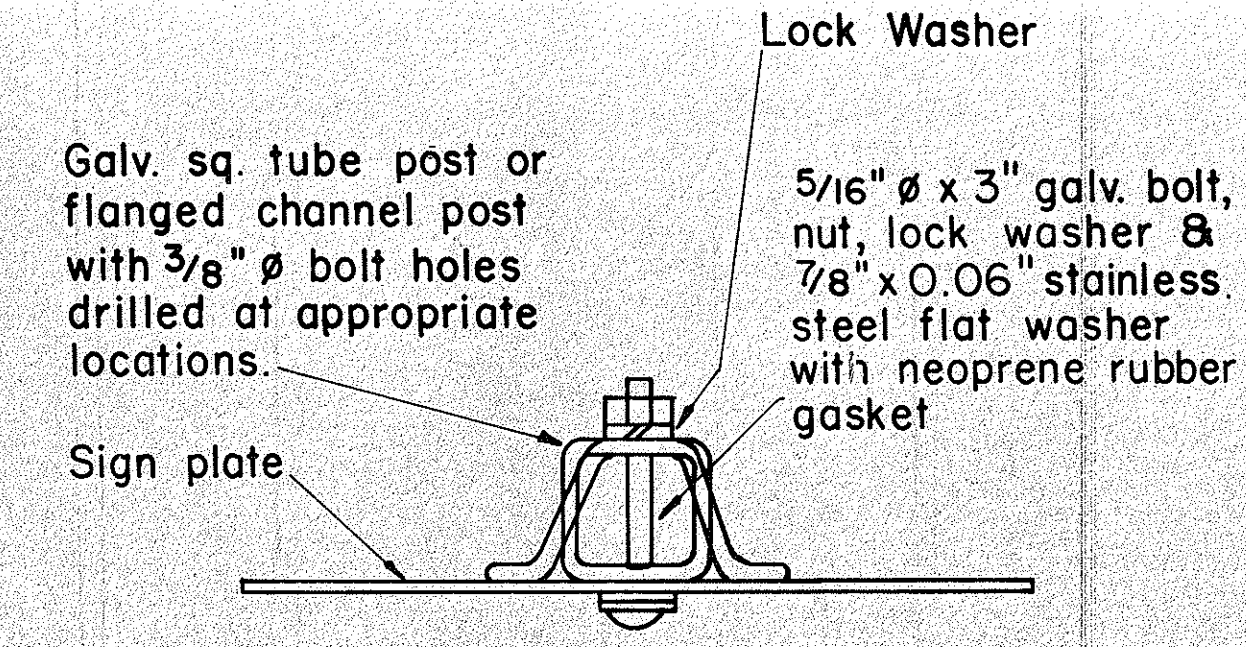


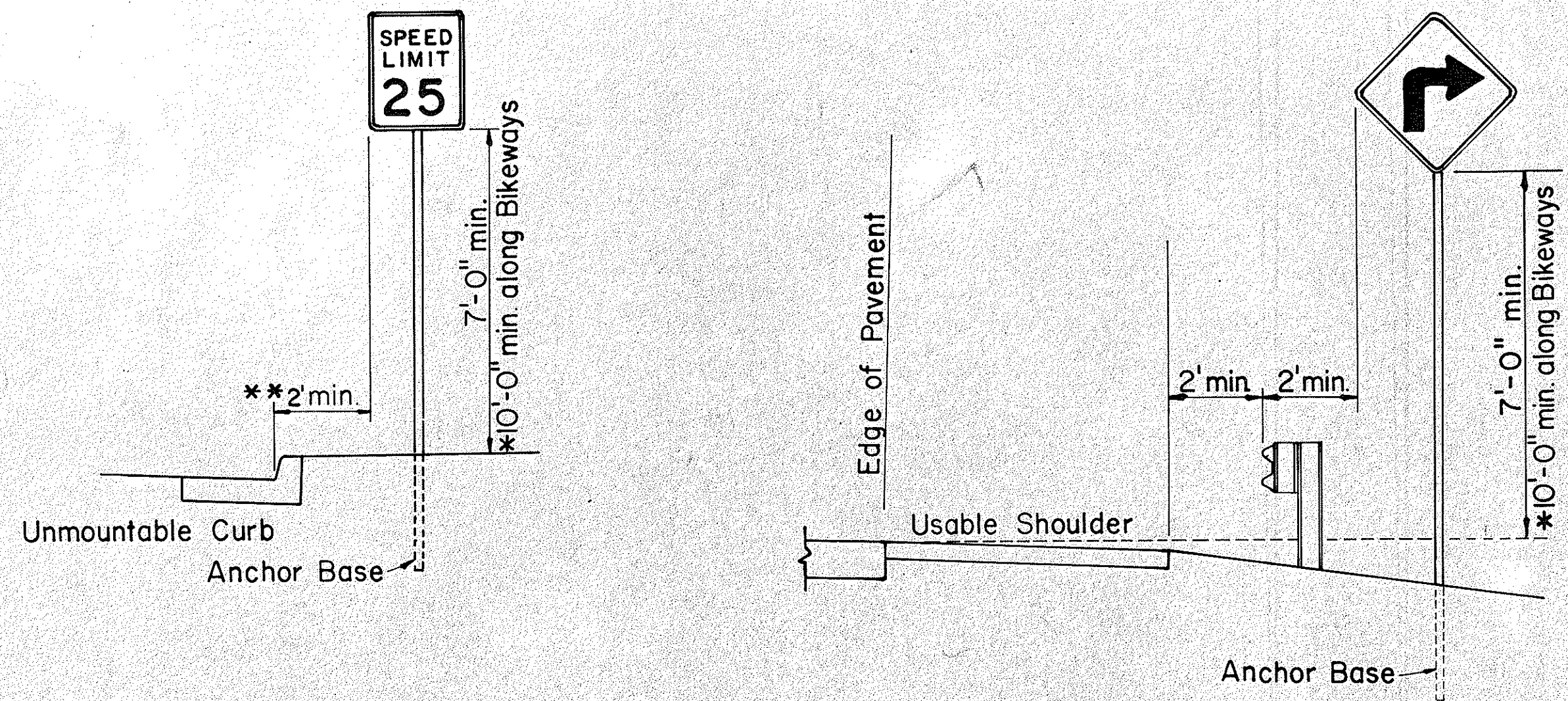
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300(25)	1986	7	17

**GENERAL NOTES**

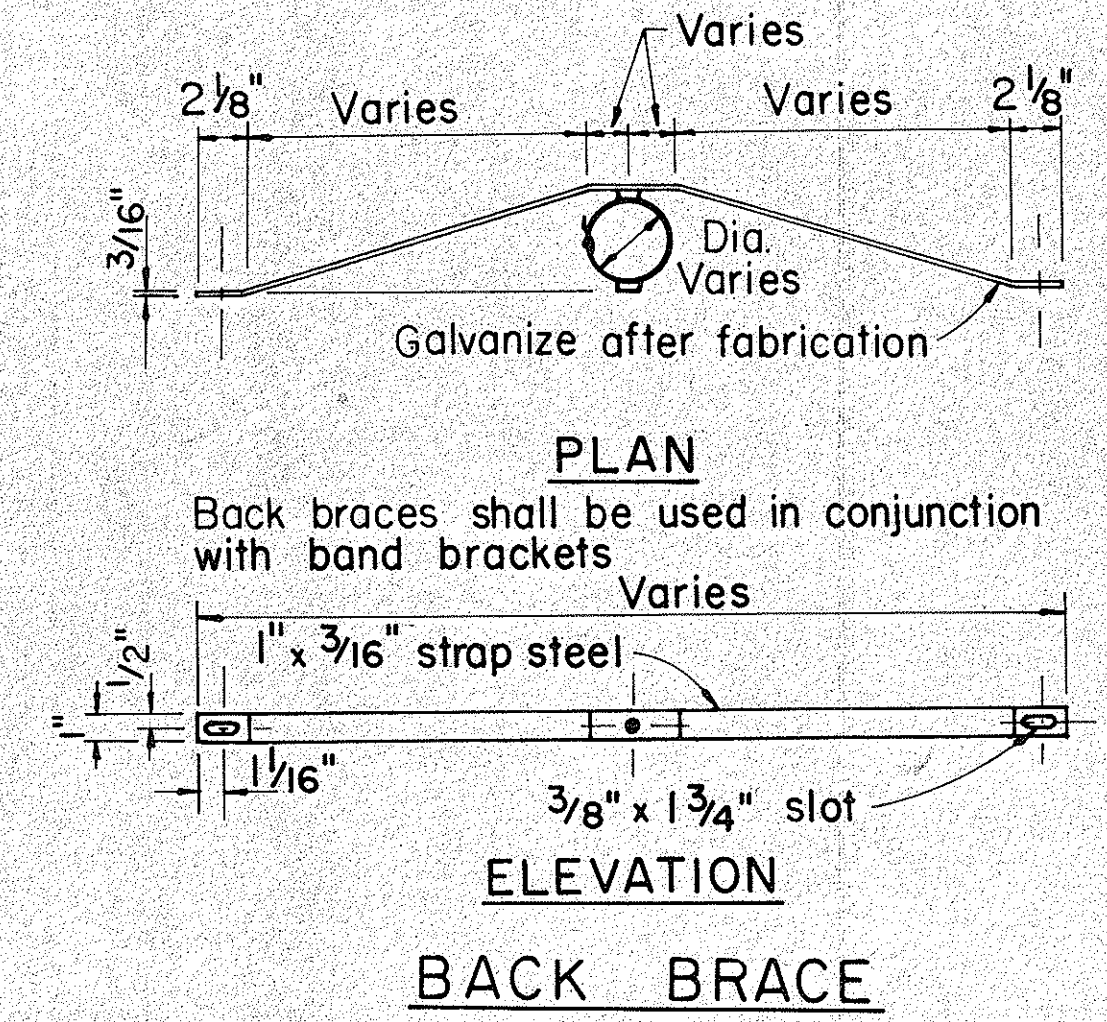
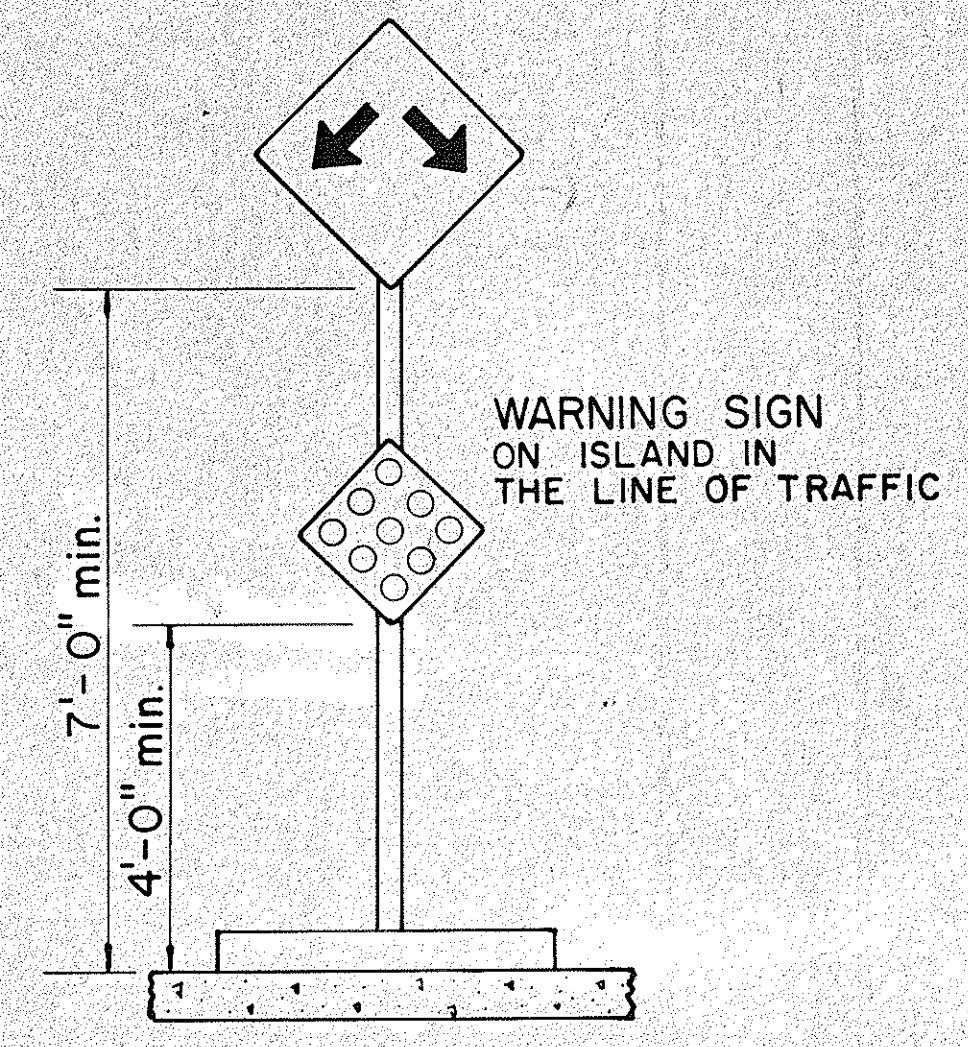
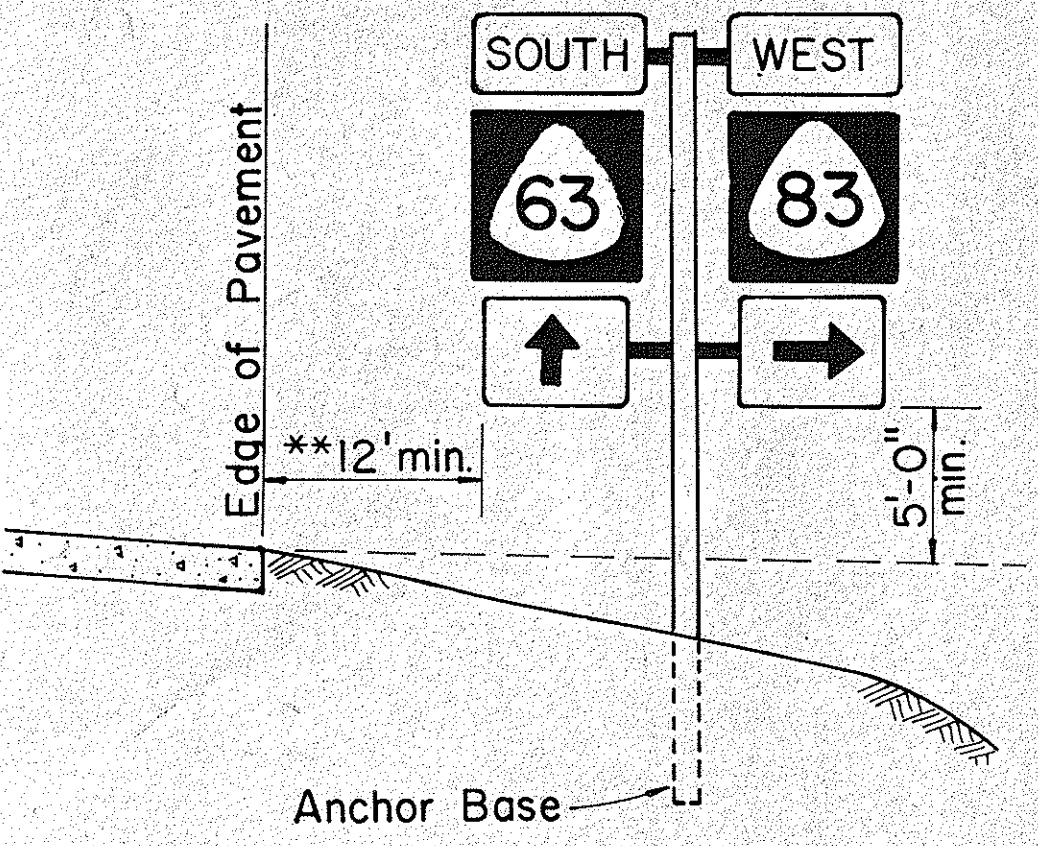
- Signs shall be placed in conformance with positions shown and described in the "Manual on Uniform Traffic Control Devices for Streets and Highways", 1978, Part II, Section 2A-21, as amended, and as supplemented herein.
- Sign 48" and wider or larger than 10 sq. ft. in area shall be mounted on two or more sign posts except as noted below.
- Signs 48" and wider or larger than 10 sq. ft. in area may be mounted on objects other than sign posts (i.e. on highway lighting poles) as follows:
  - Signs 48" and wider but less than 10 sq. ft. in area shall be mounted with a minimum of two sets of band bracket and back braces.
  - Signs larger than 10 sq. ft. and less than 28 sq. ft. in area shall be mounted with a minimum of two sets of band brackets and back braces.
  - Signs larger than 28 sq. ft. in area shall be mounted with a minimum of three sets of band bracket and back braces.
- All parking restriction signs with arrows shall be mounted 45° to the line of traffic flow.
- Sign posts shall extend 3 1/2" above each sign, where required, for attachment of City and County street name signs.
- (R) or (L) indicates right or left and shown on the plans.
- \* 7 See plans for special details of signs along bikeways.
- \* \* 8 The minimum lateral distances shown are guidelines and shall be exceeded whenever possible. The Contractor shall place signs at the maximum practical lateral distance from the edge of the traveled way up to 30 feet and shall utilize protected locations whenever possible. Final locations of all signs shall be approved by the Engineer.
- 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.
- Anchor bases shall be installed for all signpost installations, unless otherwise shown or directed. See sheets DT 100A and DT 100B.



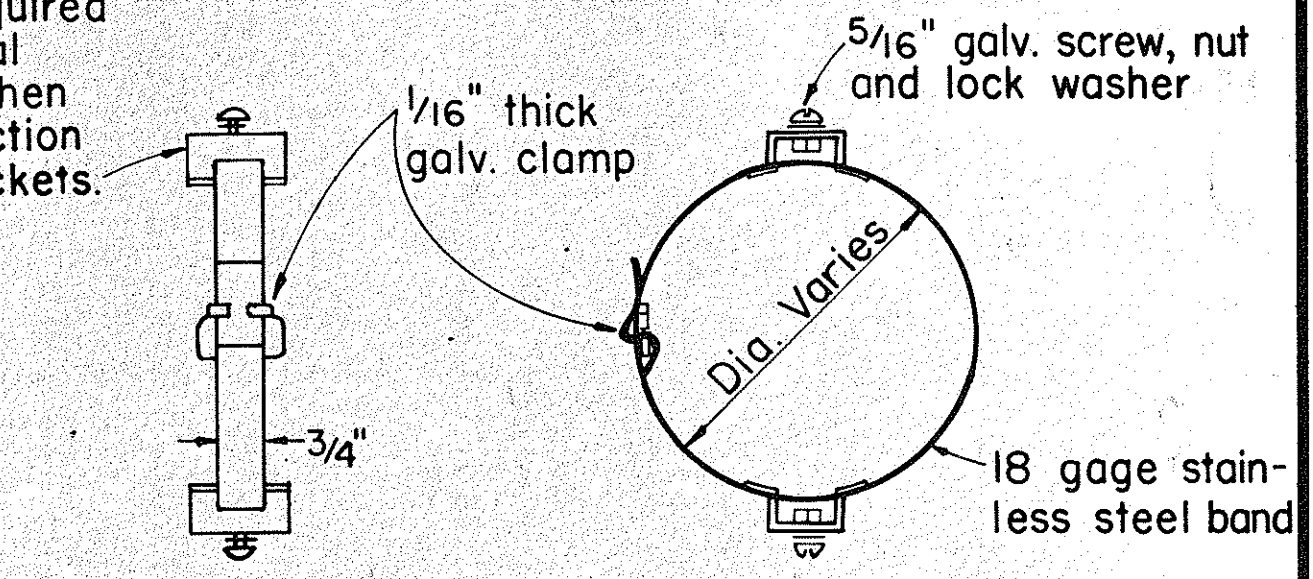
**GALVANIZED SQUARE TUBE OR FLANGED CHANNEL POST**



**ROADSIDE ASSEMBLY RURAL DISTRICT**



Additional. Required for bidirectional mounting or when used in conjunction with band brackets.



**BAND BRACKET**

APPROVAL RECOMMENDED:  
*Eiichi Tanaka* 10/14/83  
 TRAFFIC ENGINEER DATE

APPROVED:  
*D. Fujiyama* 10-18-83  
 ASSISTANT CHIEF, ENGINEERING DATE

**TYPICAL MOUNTING DETAILS**

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 100 approved 11/15/77	<i>[Signature]</i>	10-18-83

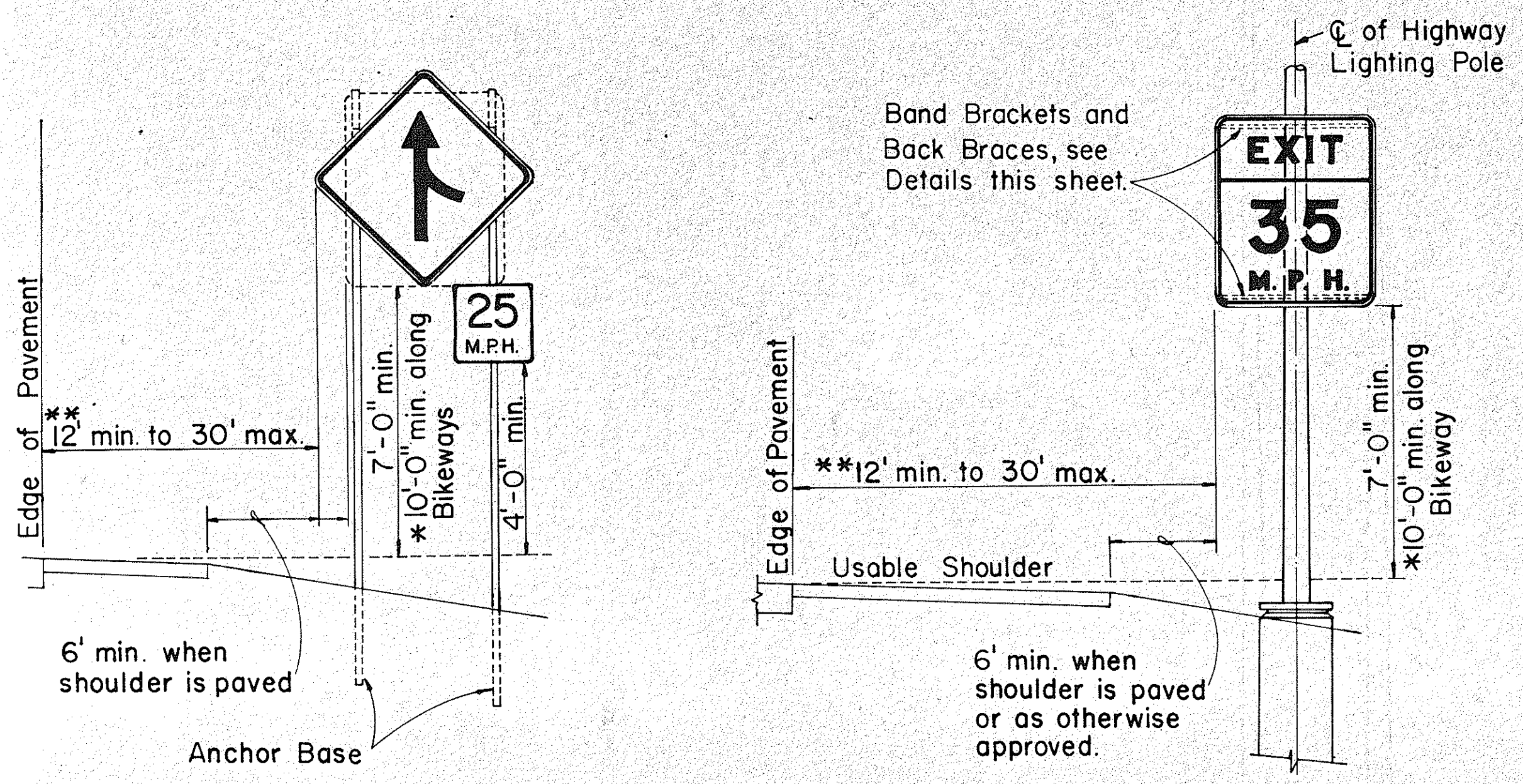
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**STANDARD DETAILS**

**MISCELLANEOUS SIGN DETAILS**

Not to Scale: Oct. 1983

SHEET No. 1 OF 11 SHEETS DT 100



**HEIGHT AND LATERAL LOCATION OF SIGNS TYPICAL INSTALLATION**

SURVEY PLOTTED BY	DATE
DRAWN 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.	HES-300 (25)	1980	8	17

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

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

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

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

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

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

NO RIGHT TURN  
R3-1 24" x 24"  
24" x 18"  
R3-1-A 48" x 48"  
48" x 36"

NO LEFT TURN  
R3-2 24" x 24"  
24" x 18"  
R3-2-A 48" x 48"  
48" x 36"

NO TURNS  
R3-3 24" x 24"  
R3-3-A 48" x 48"

NO U TURN  
R3-4 24" x 24"  
24" x 18"  
R3-4-A 48" x 48"  
48" x 36"

ONLY  
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"

RIGHT LANE MUST TURN RIGHT  
R3-7(R) 30" x 30"  
R3-7(R)-A 48" x 48"

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

CENTER LANE LEFT TURN ONLY  
R3-9 24" x 30"

DO NOT PASS  
R4-1 24" x 30"  
R4-1-A 48" x 60"

PASS WITH CARE  
R4-2 24" x 30"  
R4-2-A 48" x 60"

SLOWER TRAFFIC KEEP RIGHT  
R4-3 24" x 30"  
R4-3-A 48" x 60"

TRUCKS USE RIGHT LANE  
R4-5 24" x 30"  
R4-5-A 48" x 60"

TRUCK LANE 500 FEET  
R4-6(500) 24" x 30"  
R4-6(500)-A 48" x 60"

KEEP RIGHT  
R4-7 24" x 30"  
24" x 18"  
R4-7-A 48" x 60"

KEEP LEFT  
R4-8 24" x 30"  
24" x 18"  
R4-8-A 48" x 60"

DO NOT ENTER  
R5-1 30" x 30"  
R5-1-A 48" x 48"

NO TRUCKS  
R5-2 24" x 24"  
24" x 18"

COMMERCIAL VEHICLES EXCLUDED  
R5-4 24" x 30"  
R5-4-A 48" x 60"

NO BICYCLES  
R5-6 24" x 24"  
24" x 18"

WRONG WAY  
R5-9 36" x 24"

ONE WAY  
R6-1(R) 36" x 12"

ONE WAY  
R6-2(R) 18" x 24"

NO PARKING ANY TIME  
R7-1 12" x 18"  
R7-1-A 24" x 30"

NO STOPPING OR STANDING  
R7-4 12" x 18"  
R7-4-A 24" x 30"

NO PARKING BUS STOP  
R7-107(R) 12" x 18"

2 HR PARKING  
8:30 AM TO 5:30 PM  
R7-108 12" x 18"

TOW-AWAY ZONE  
R7-201 12" x 6"  
R7-201-A 24" x 12"

NO PARKING ON PAVEMENT  
R8-1 24" x 30"  
R8-1-A 48" x 60"

NO PARKING EXCEPT ON SHOULDER  
R8-2 24" x 30"  
R8-2-A 48" x 60"

NO PARKING  
R8-3 24" x 30"  
R8-3-A 48" x 48"

EMERGENCY PARKING ONLY  
R8-4 30" x 24"  
R8-4-A 48" x 36"

NO STOPPING ON PAVEMENT  
R8-5 24" x 30"  
R8-5-A 48" x 60"

NO STOPPING EXCEPT ON SHOULDER  
R8-6 24" x 30"  
R8-6-A 48" x 60"

EMERGENCY STOPPING ONLY  
R8-7 30" x 24"  
R8-7-A 48" x 36"

WALK ON LEFT FACING TRAFFIC  
R9-1 18" x 24"

CROSS ONLY AT CROSS WALKS  
R9-2 12" x 18"

NO PEDESTRIAN CROSSING  
R9-3 12" x 18"

NO HITCHHIKING  
R9-4 18" x 24"

CROSS ON GREEN LIGHT ONLY  
R10-1 12" x 18"

CROSS ON WALK SIGNAL ONLY  
R10-2 12" x 18"

PUSH BUTTON FOR GREEN LIGHT  
R10-3 9" x 12"

PUSH BUTTON FOR WALK SIGNAL  
R10-4 9" x 12"

LEFT ON ARROW ONLY  
R10-5 24" x 30"

STOP HERE ON RED  
R10-6 24" x 36"

DO NOT BLOCK INTERSECTION  
R10-7 24" x 30"

USE LANE WITH GREEN ARROW  
R10-8 24" x 30"

RIGHT TURN ON RED AFTER STOP  
R10-9 24" x 30"

LEFT TURN SIGNAL  
R10-10 24" x 30"

KEEP OFF MEDIAN  
R11-1 24" x 30"

ROAD CLOSED  
R11-2 48" x 30"

ROAD CLOSED 10 MILES AHEAD LOCAL TRAFFIC ONLY  
R11-3(10) 60" x 30"

ROAD CLOSED THRU TRAFFIC  
R11-4 60" x 30"

WEIGHT LIMIT 10 TONS  
R12-1(10) 24" x 30"

### GENERAL NOTES

- Sign details shall conform to the latest editions of FHWA publications "Manual on Uniform Traffic Control Devices for Streets and Highways," "Standard Alphabets for Highway Signs," 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.
- Numerals in ( ) indicates numerals to be inserted for sign message. (R) or (L) indicates right or left.
- All signs shall be erected without educational plaques unless called for in the plans.

APPROVAL RECOMMENDED:  
Euski Tanaka  
TRAFFIC ENGINEER  
3/17/72  
DATE

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

NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT 101 Approved 12-30-69	HT	3/20/72
2	Revised General Note 1	HT	10/12/74
3	Added General Note 5	HT	8/21/79
4	Revised Signs and General Note 1	E.T.	9/18/85

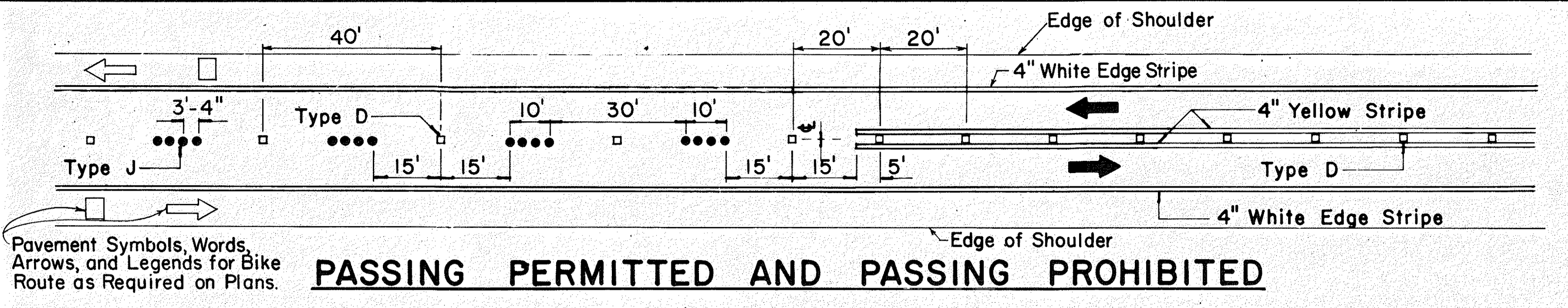
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**REGULATORY SIGNS**

NOT TO SCALE  
SHEET No. 8 OF 17 SHEETS DT 101

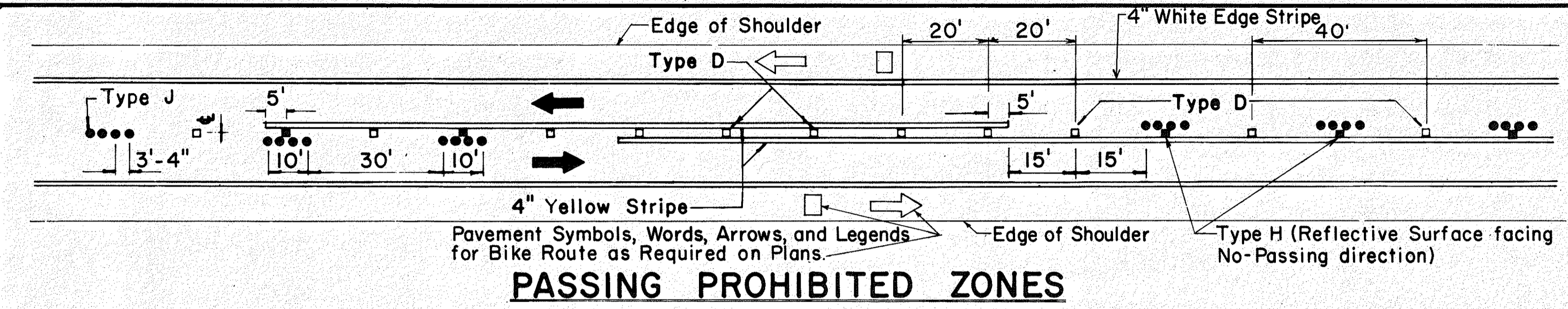
DATE	*****
SURVEY PLOTTED BY	*****
DRAWN BY	*****
TRACED BY	*****
QUANTITIES BY	*****
CHECKED BY	*****
ORIGINAL PLAN	*****
NOTE BOOK	*****
No.	*****

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300 (25)	1980	9	17



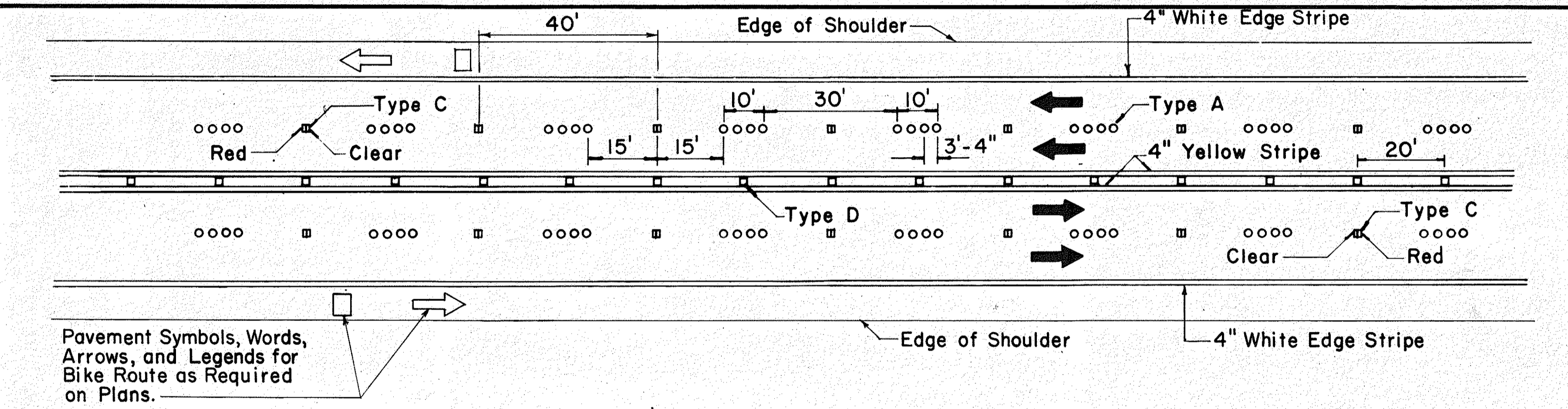
Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

**PASSING PERMITTED AND PASSING PROHIBITED**

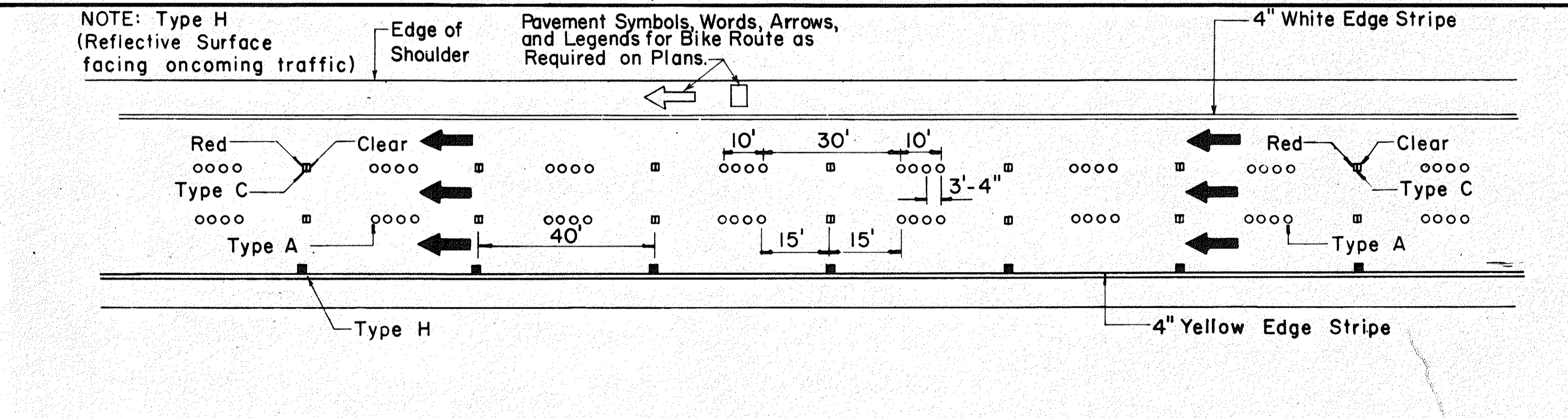


Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

**PASSING PROHIBITED ZONES**

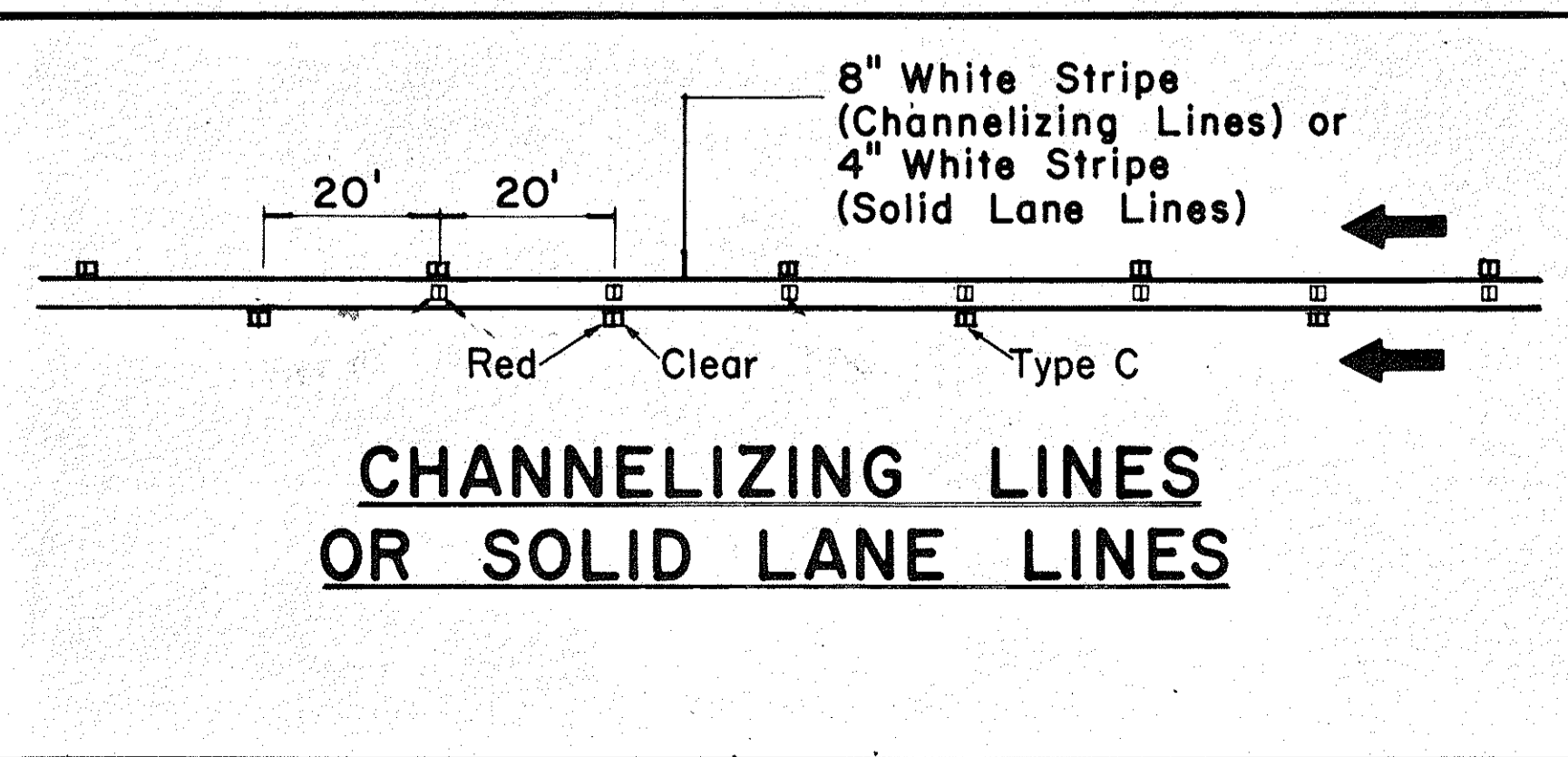


Pavement Symbols, Words, Arrows, and Legends for Bike Route as Required on Plans.

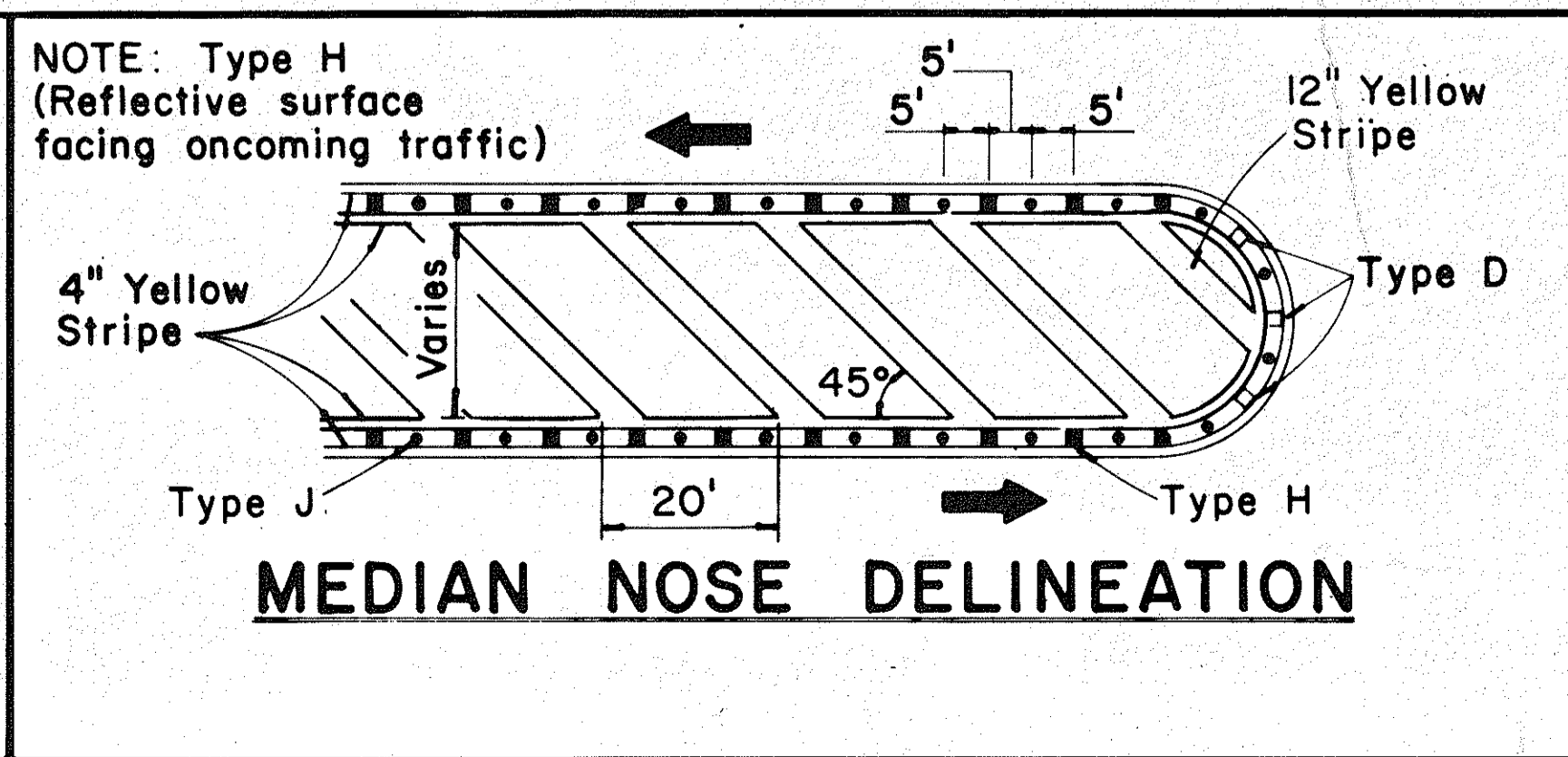


NOTE: Type H (Reflective Surface facing oncoming traffic)

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



**CHANNELIZING LINES OR SOLID LANE LINES**



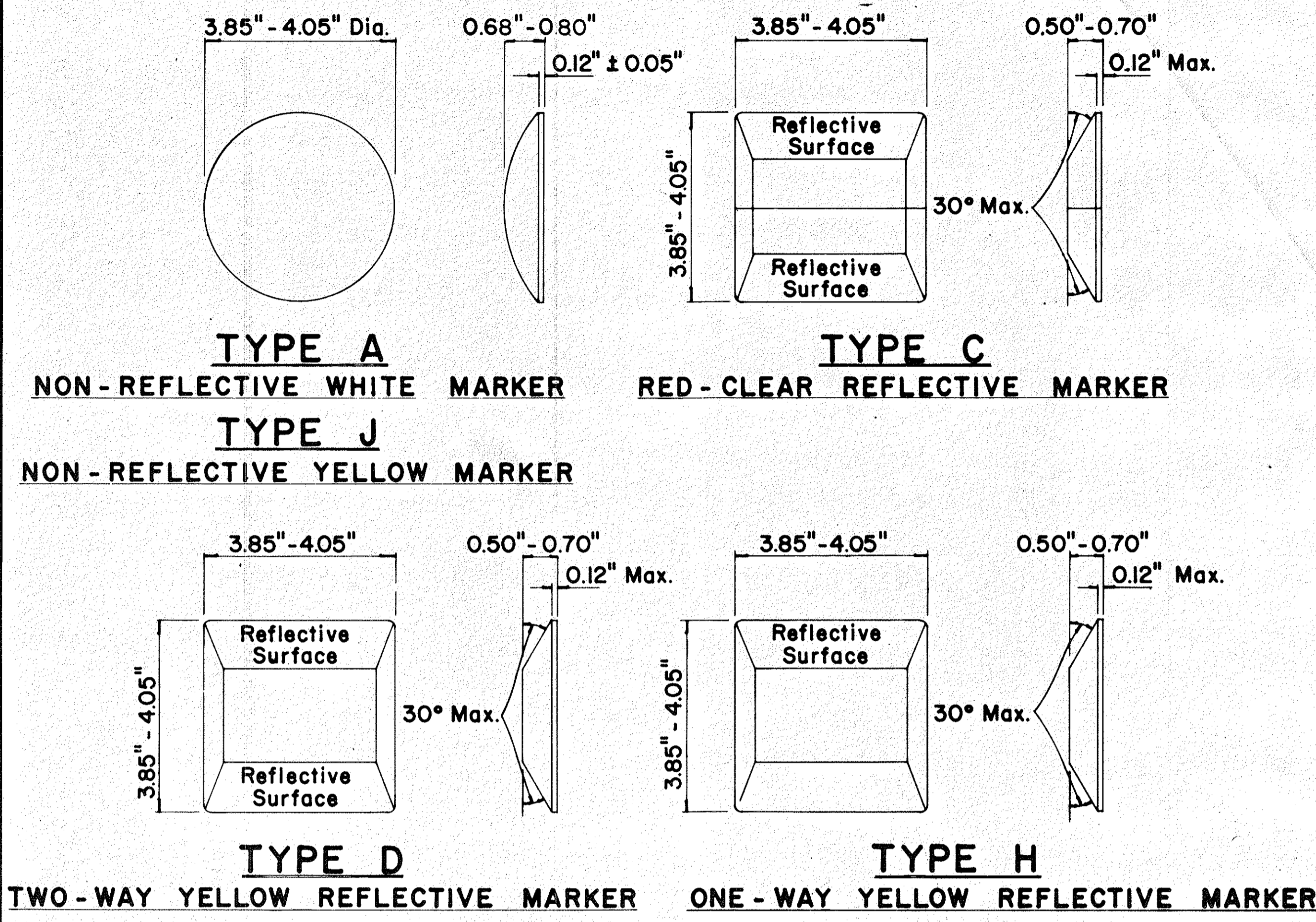
NOTE: Type H (Reflective surface facing oncoming traffic)

TWO - LANE

MULTI - LANE

DIVIDED HIGHWAY AND FREEWAY

MISCELLANEOUS



**GENERAL NOTES**

1. 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.
3. Edge lines shall not be continued through intersections and shall not be broken for driveways unless otherwise shown or directed.

**LEGEND**

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

APPROVAL RECOMMENDED:  
*Erich Tanaka* 7/21/78  
 TRAFFIC ENGINEER DATE

APPROVED:  
*Herbert J. Sakai* 1/24/78  
 ASSISTANT CHIEF, ENGINEERING DATE

No.	REVISION	APPROVED BY	DATE
1	Supersedes DT 300 approved 11/18/71.	H.T.	7/24/78
2	Delete Type A Markers from Bike Route Delineation.	H.T.	10/15/79
3	Added General Note 3. Revised left edge stripe.	H.T.	9-28-83
4	Revised Channelizing Lines or Solid Lane Lines.	E.T.	9/18/85

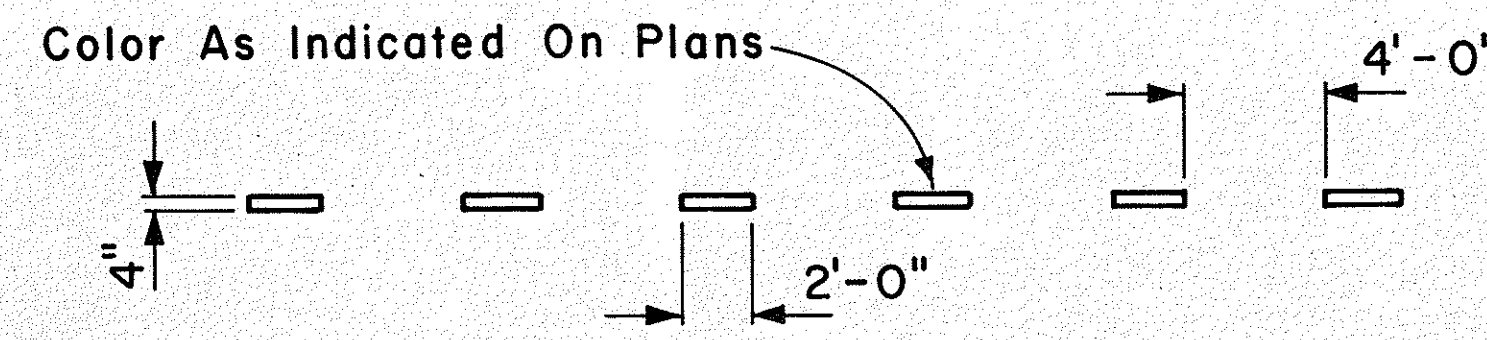
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

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

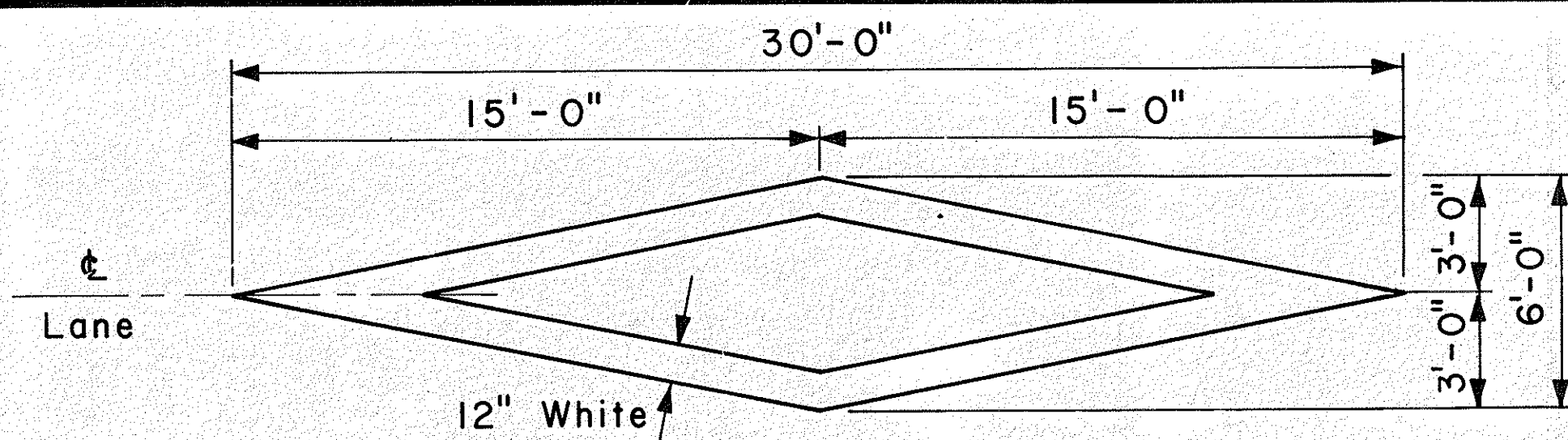
Not to Scale July 1978  
 SHEET No. 3 OF 11 SHEETS DT 300

SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 PLAN CHECKED BY: \_\_\_\_\_  
 ORIGINAL PLAN DESIGNED BY: \_\_\_\_\_  
 NOTE BOOK QUANTITIES BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HEP-300 (22)	1986	10	17



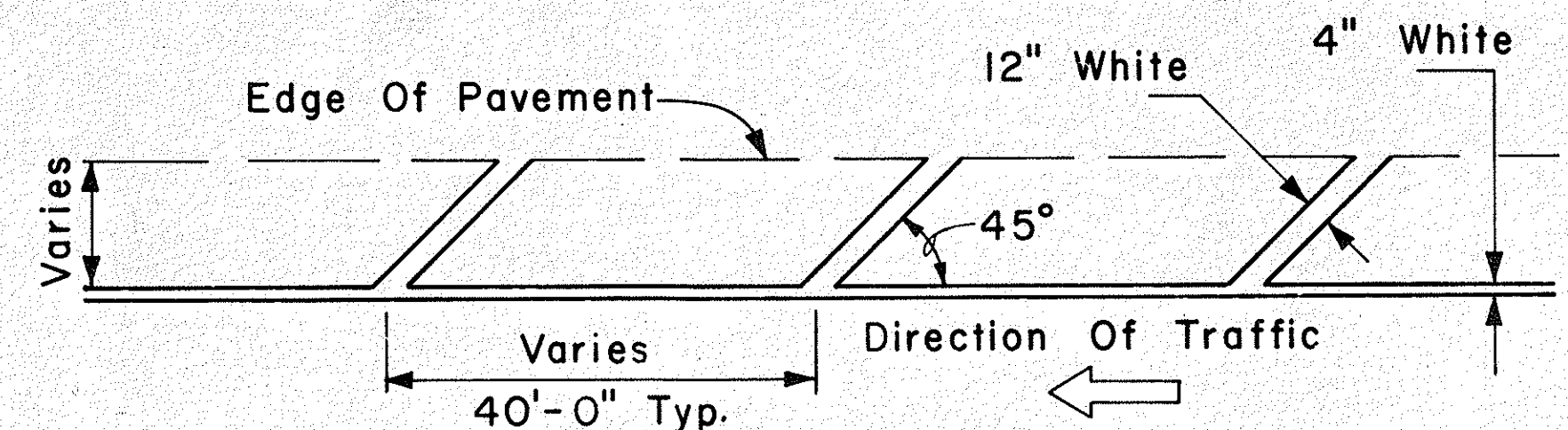
**4" GUIDE LINE**



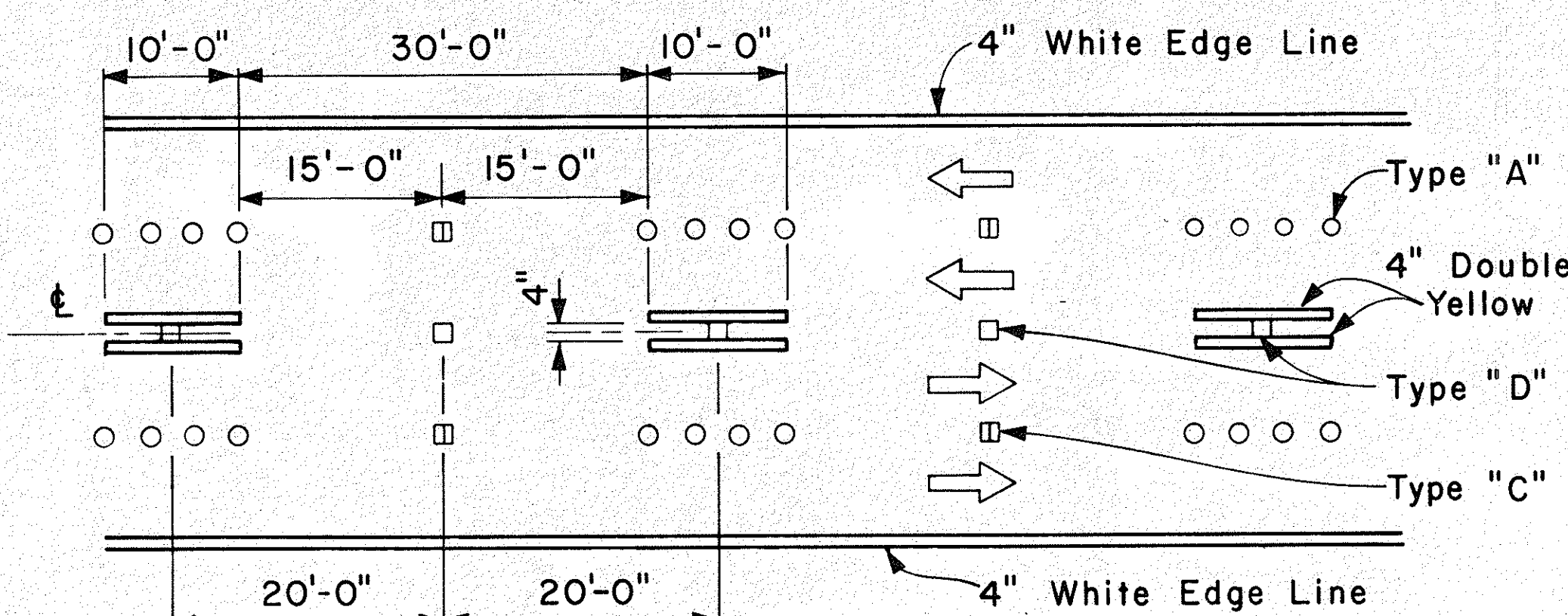
**PAVEMENT DIAMOND**

**GENERAL NOTES:**

1. 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.
2. 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.
3. For additional pavement marking details, see sheet DT 300.

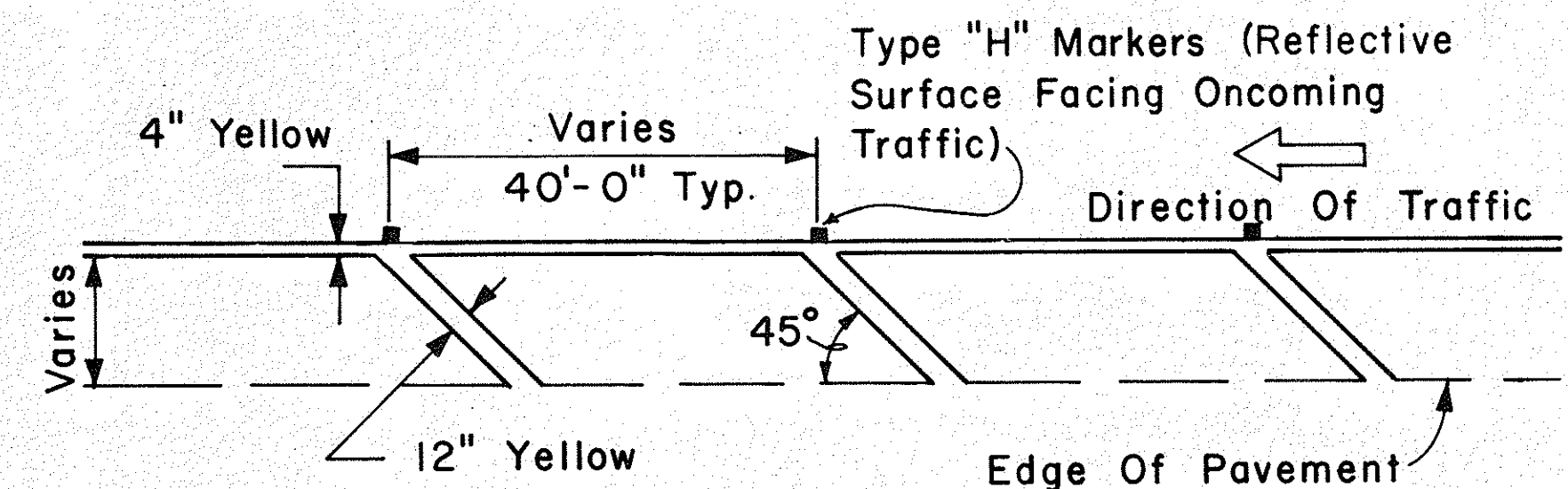


**TRANSVERSE RIGHT SHOULDER MARKING**

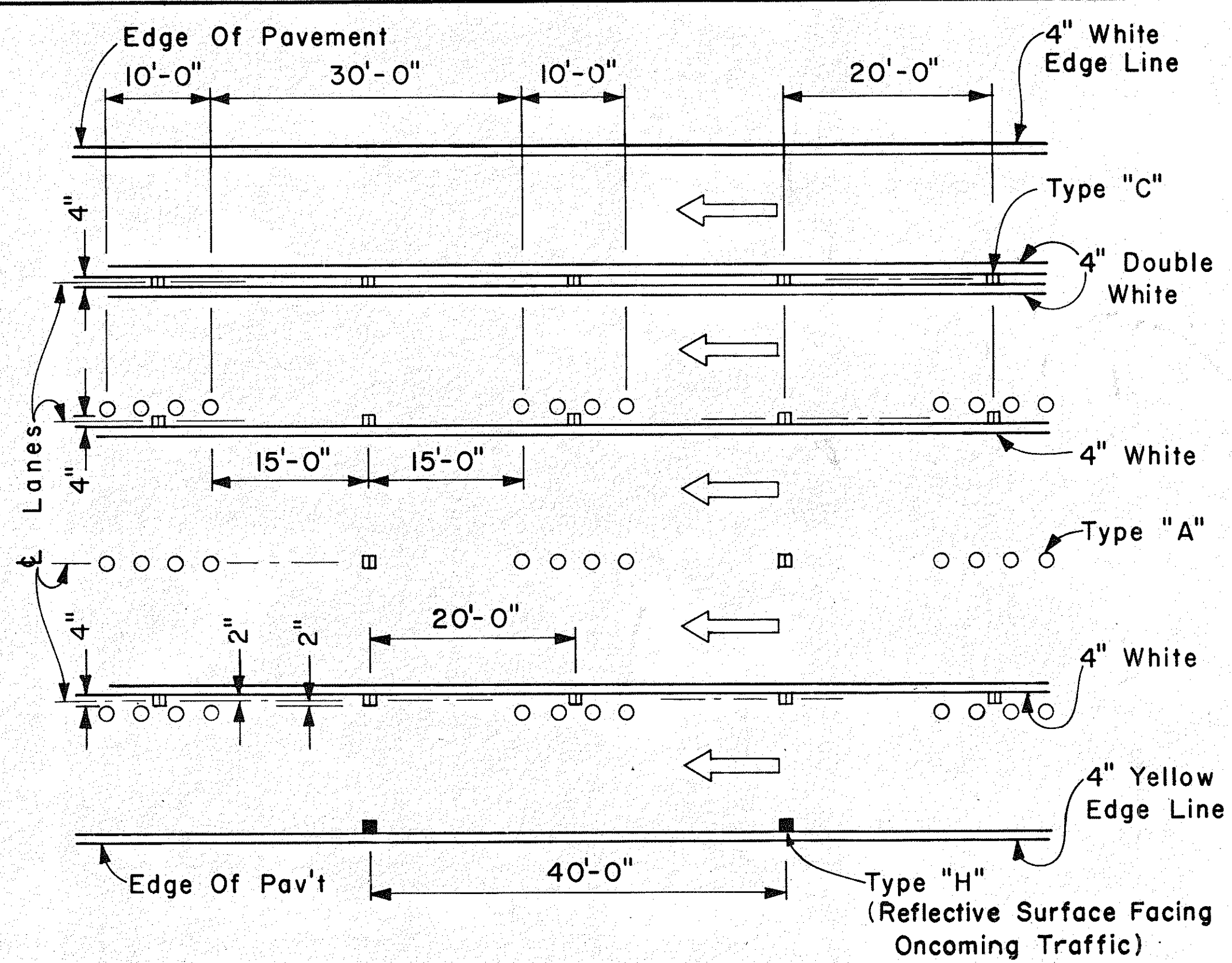


**MULTI-LANE REVERSIBLE LANES**

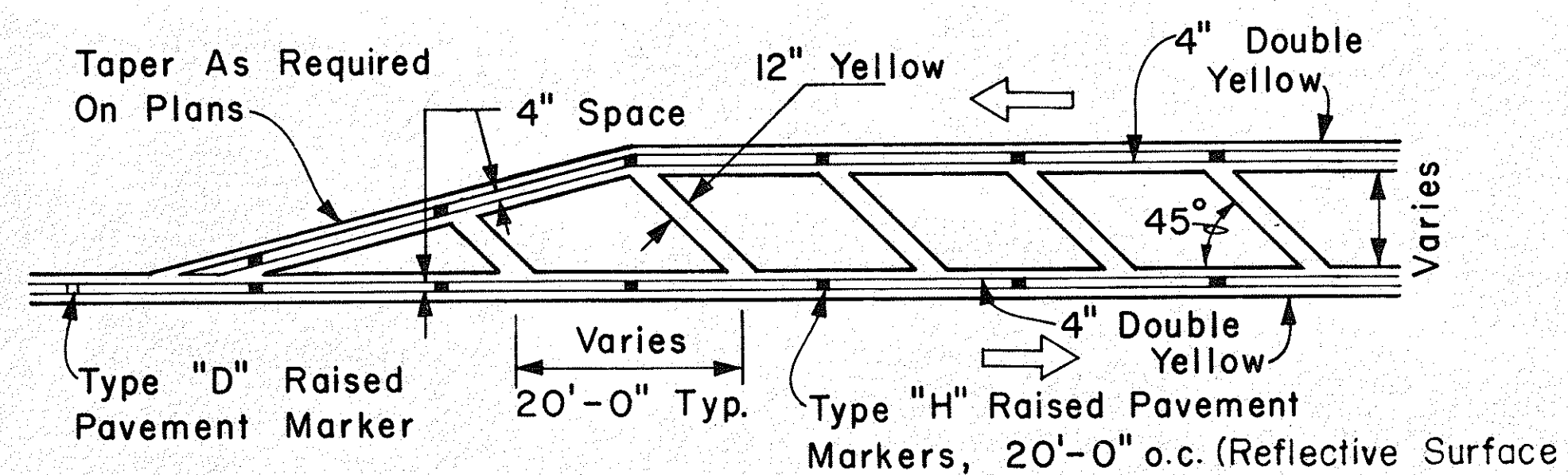
NOTE: Traffic Cone Usage Required.



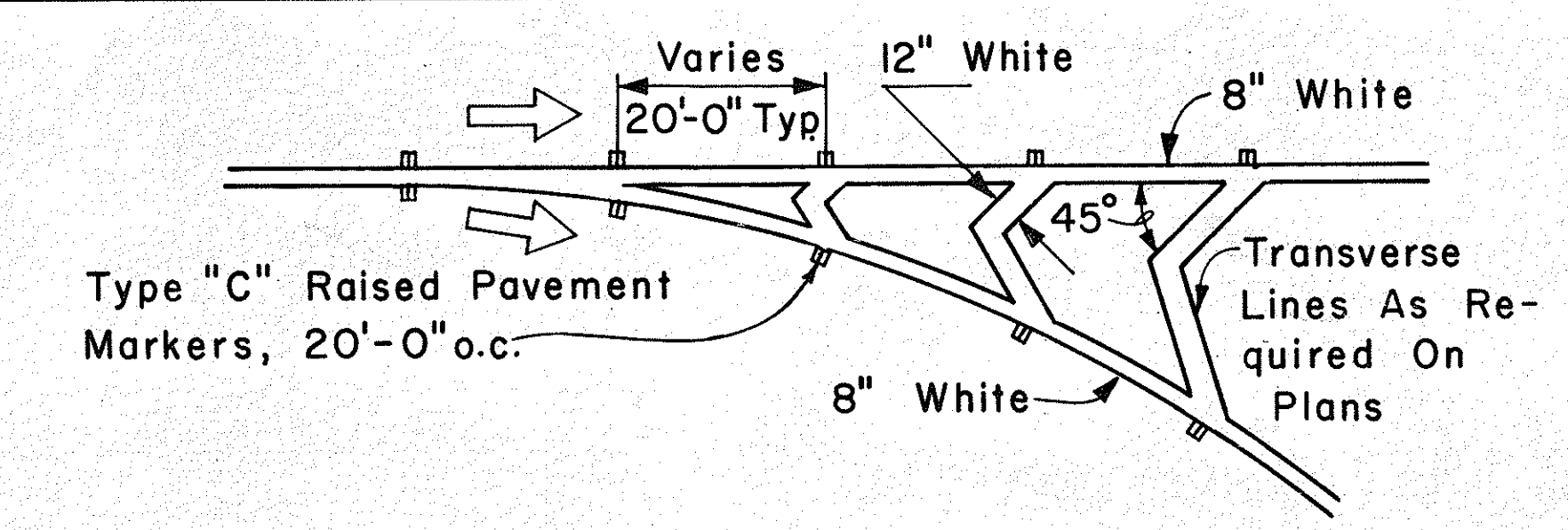
**TRANSVERSE LEFT SHOULDER MARKING**



**MULTI-LANE LANE CHANGE RESTRICTION ZONES**



**TRANSVERSE MEDIAN MARKING**



**CHANNELIZING ISLAND**

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

APPROVED:  
*Harbert S. Zalskiw* 5/2/78  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised Transverse left Shoulder Marking, Channelizing Island & Lane Change Restriction Zones.	E.T.	9/12/85

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

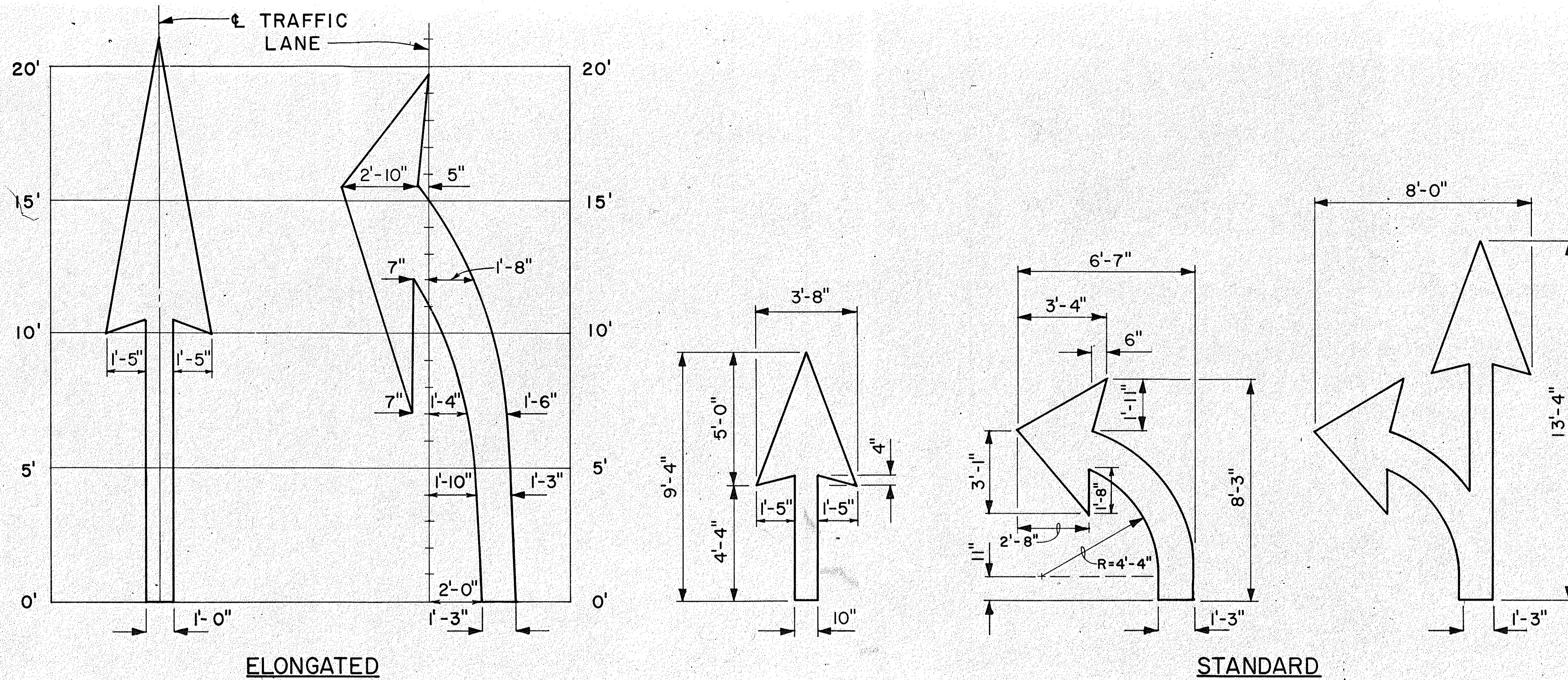
**STANDARD DETAILS**

MISCELLANEOUS  
 PAVEMENT MARKINGS

Scale: Not to Scale Date: April, 1978  
 SHEET NO. 4 OF 11 SHEETS DT 302

DATE: \_\_\_\_\_  
 SURVEY PLOTTED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 ORIGINAL PLAN: \_\_\_\_\_  
 NOTE BOOK: \_\_\_\_\_  
 QUANTITIES BY: \_\_\_\_\_  
 No. \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300(25)	1986	11	17

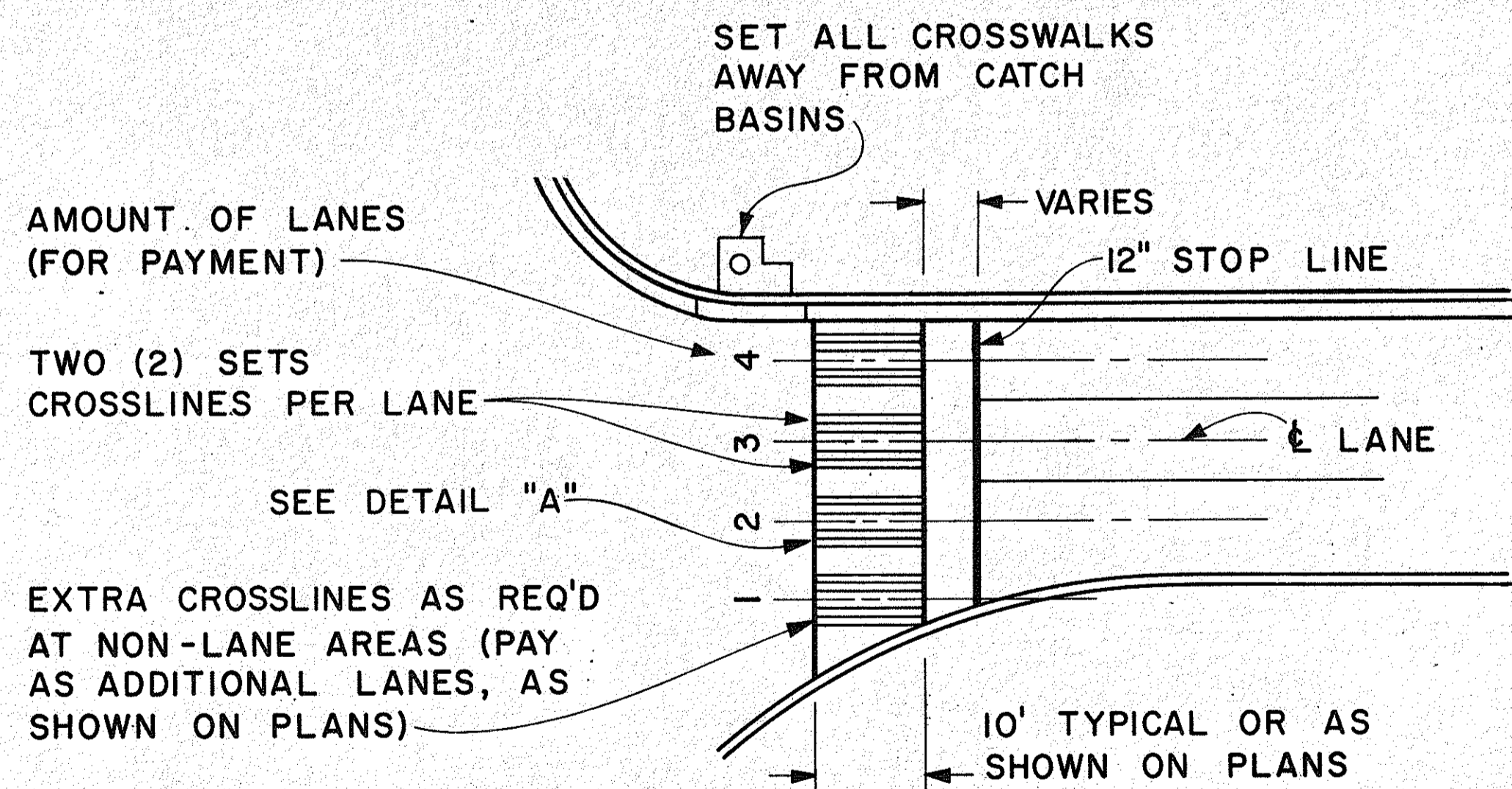


**PAVEMENT ARROWS**

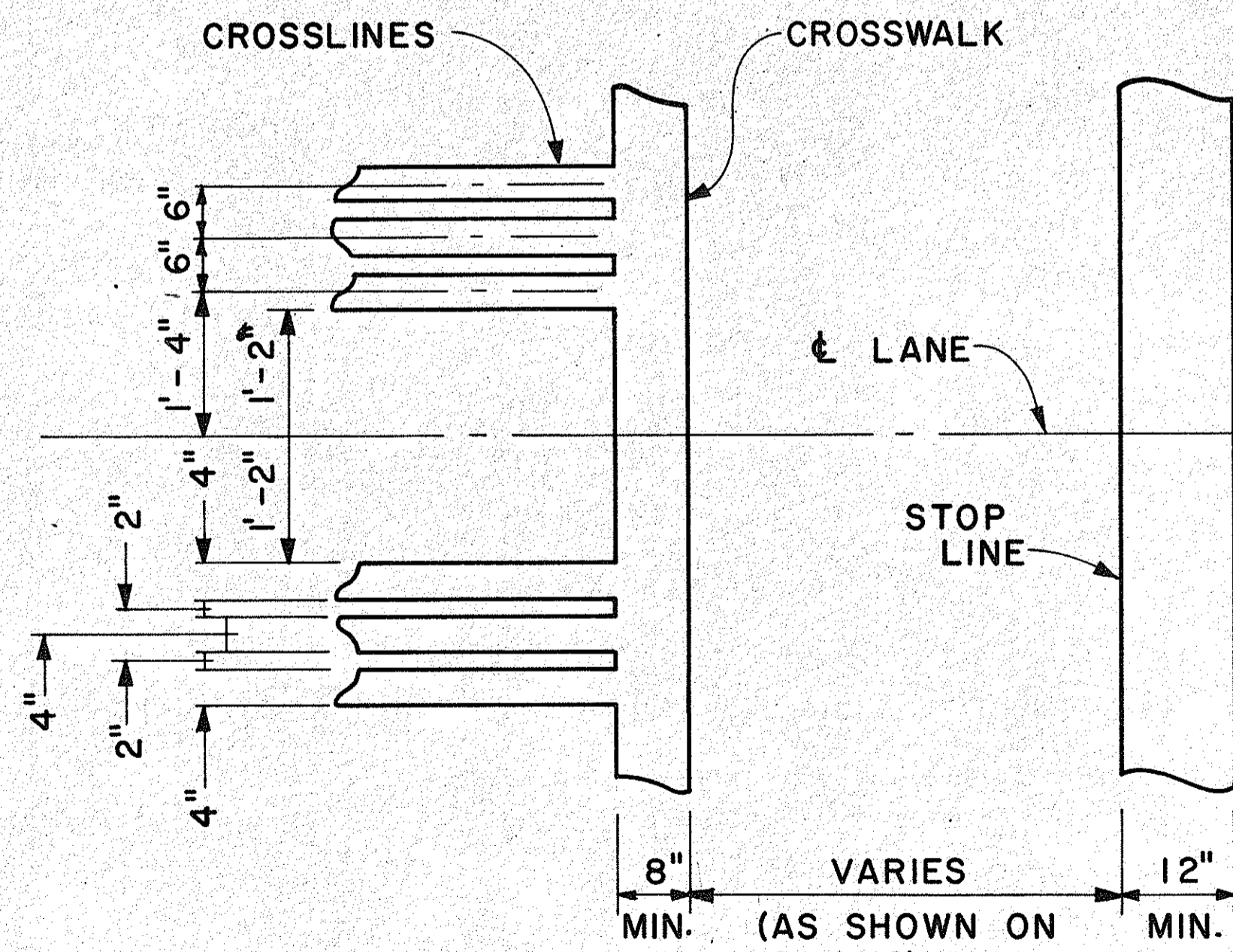
Scale: 3/8" = 1'

**GENERAL NOTES:**

1. 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.
2. 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.
3. For additional pavement marking details, see sheet DT 300.



**PLAN**



**DETAIL "A"**

**CROSSWALK & STOP LINE**

Scale: Not to Scale

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

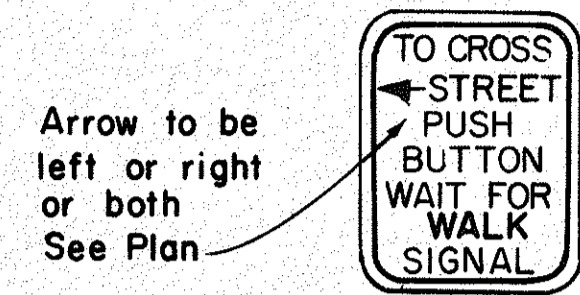
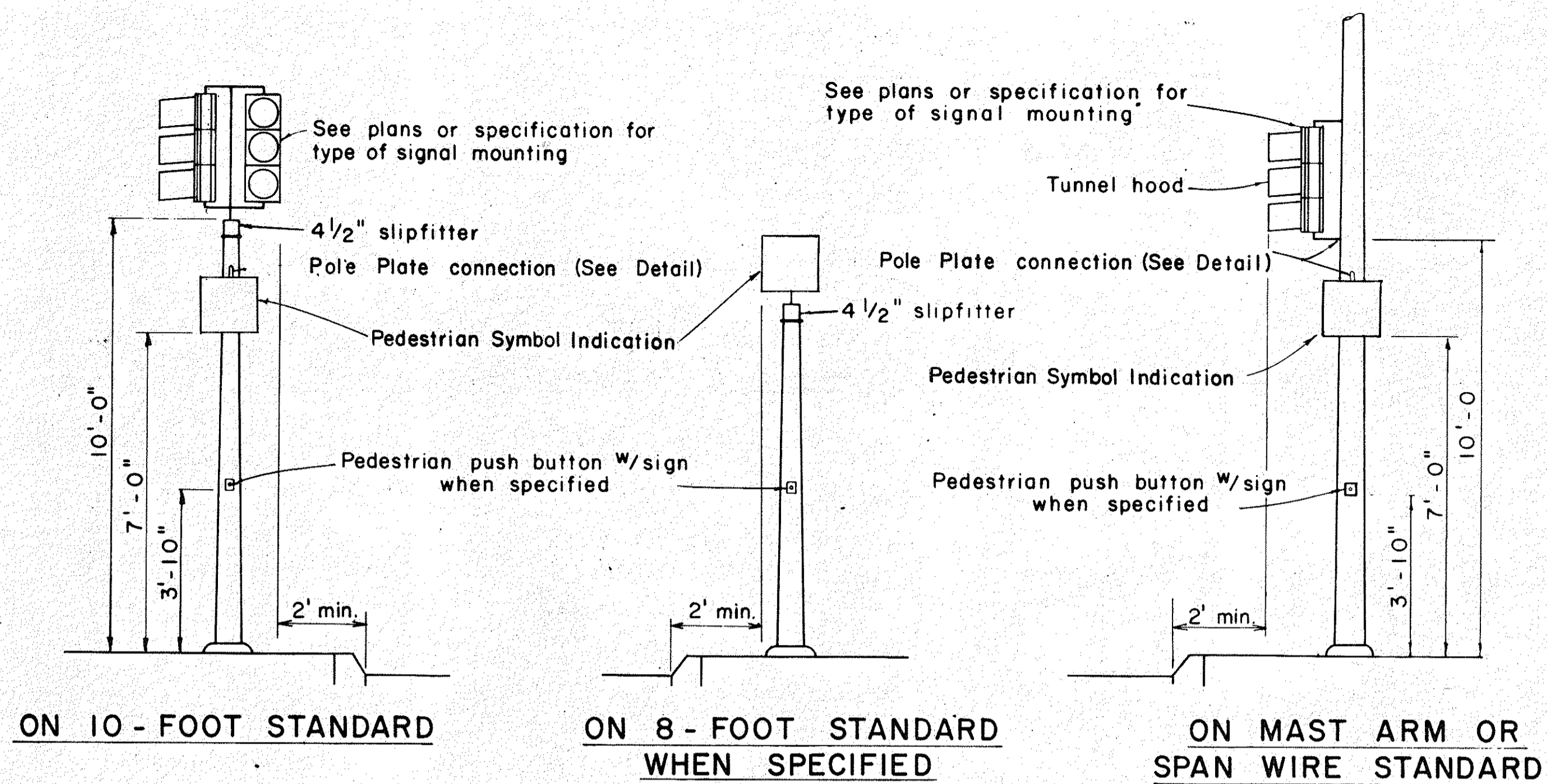
APPROVAL RECOMMENDED:  
*Eiichi Tanaka* 5/2/78  
 TRAFFIC ENGINEER DATE

APPROVED:  
*Hubert S. Sakai* 5/2/78  
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

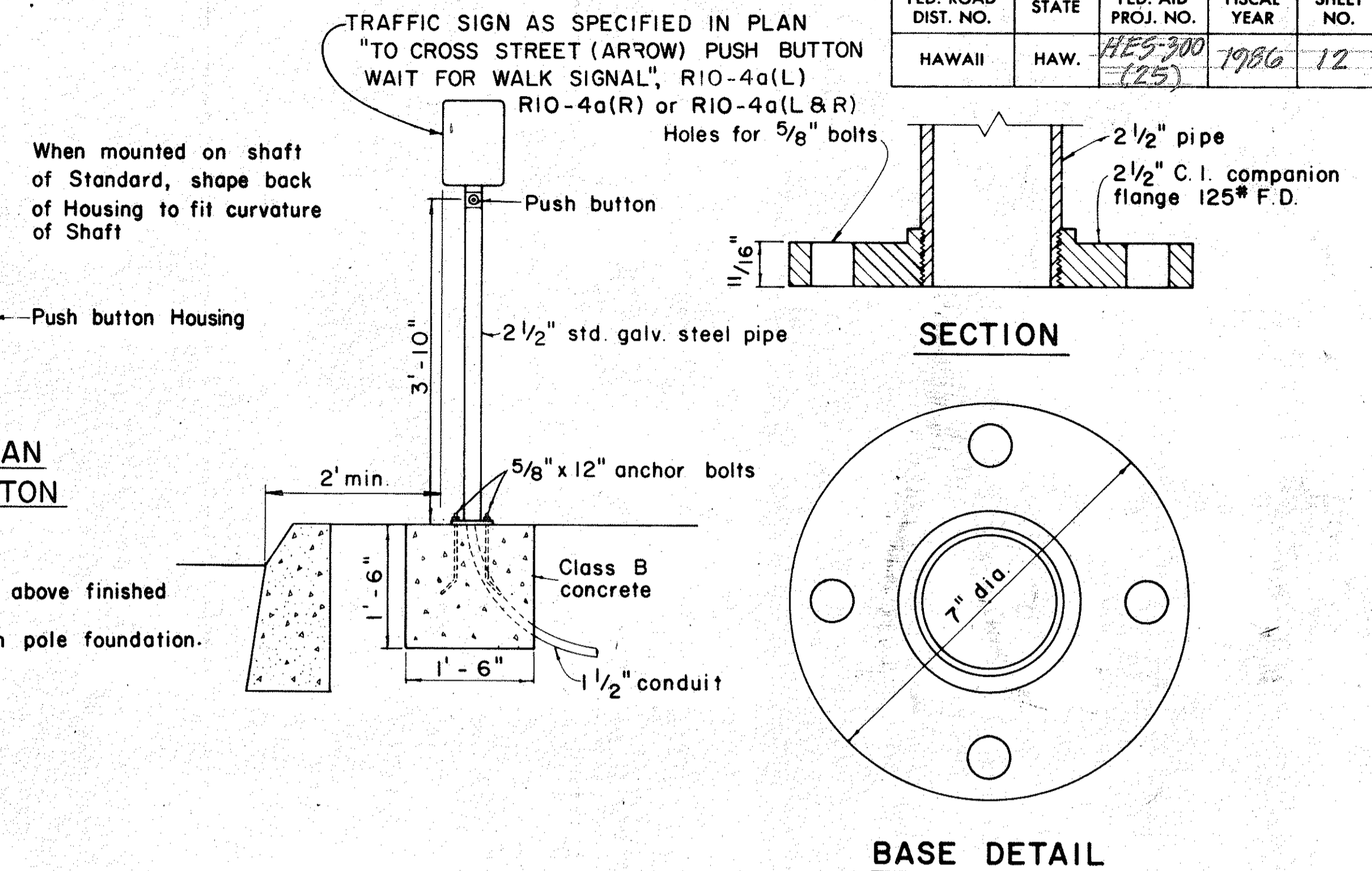
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 LAND TRANSPORTATION FACILITIES DIVISION  
**STANDARD DETAILS**  
 MISCELLANEOUS  
 PAVEMENT MARKINGS  
 Scale: As Shown Date: March, 1978  
 SHEET NO. 5 OF 11 SHEETS DT 306

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HEP-300 (225)	1986	12	17



RIO-4a(L)  
5" x 7" PEDESTRIAN PUSH BUTTON

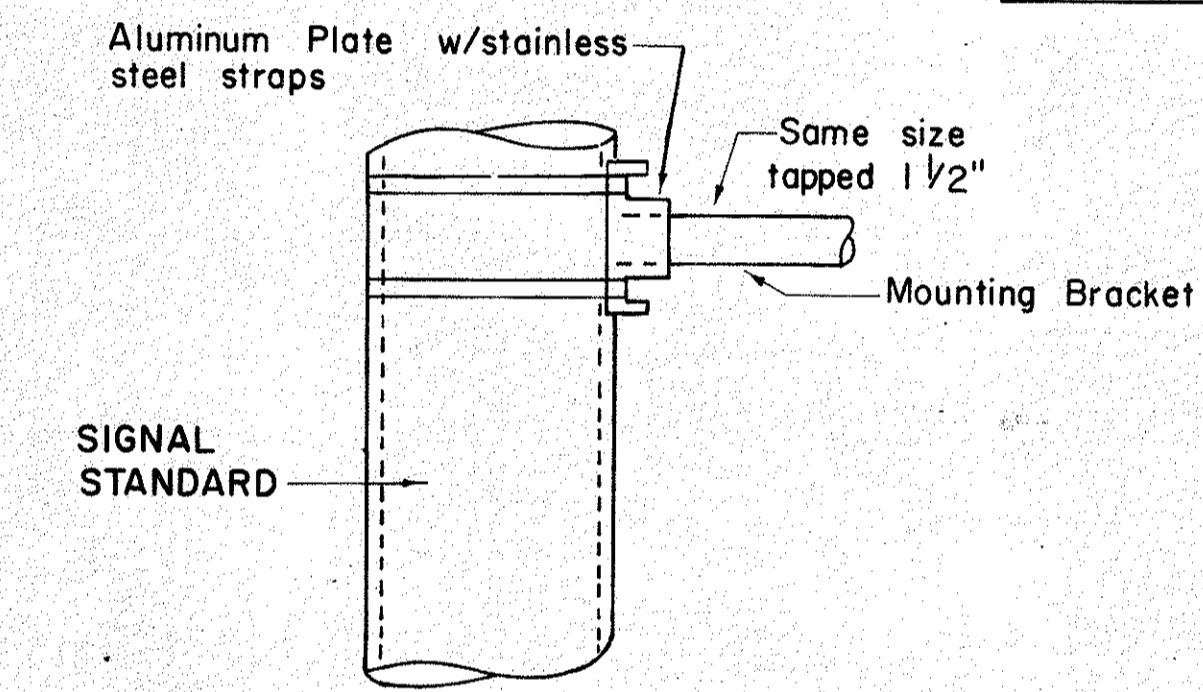
NOTE:  
1. Conduits shall protrude 2" max. above finished surface of foundation.  
2. Conduits shall slope away from pole foundation.



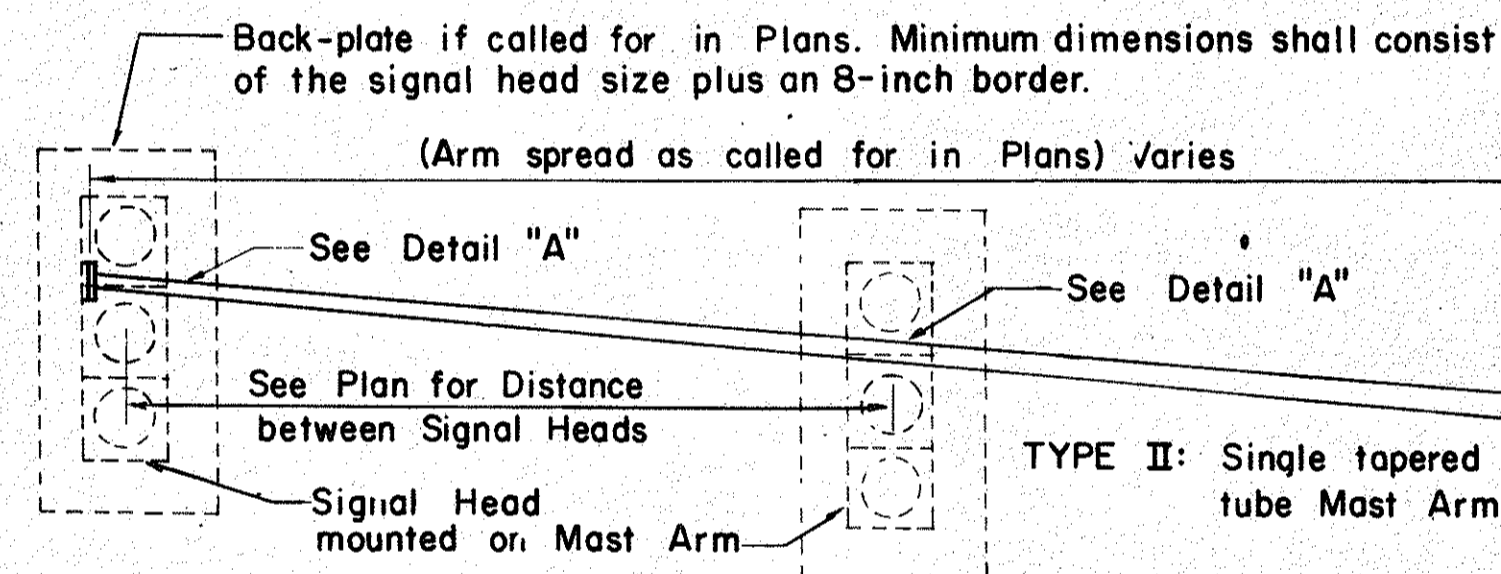
BASE DETAIL

TYPICAL EQUIPMENT MOUNTINGS

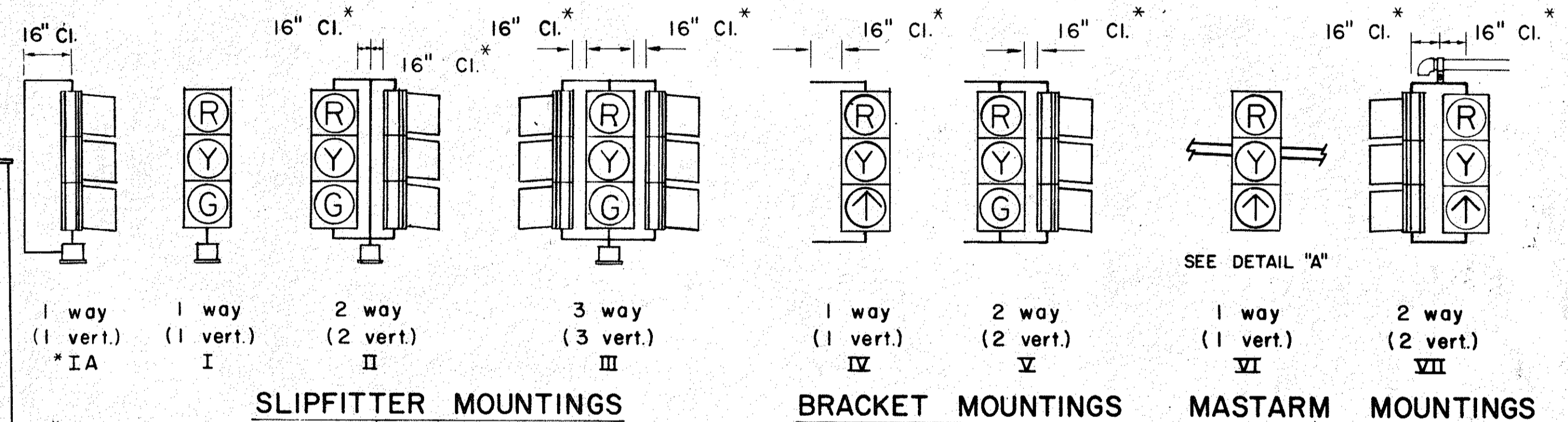
PEDESTRIAN PUSH BUTTON POST AND FOOTING



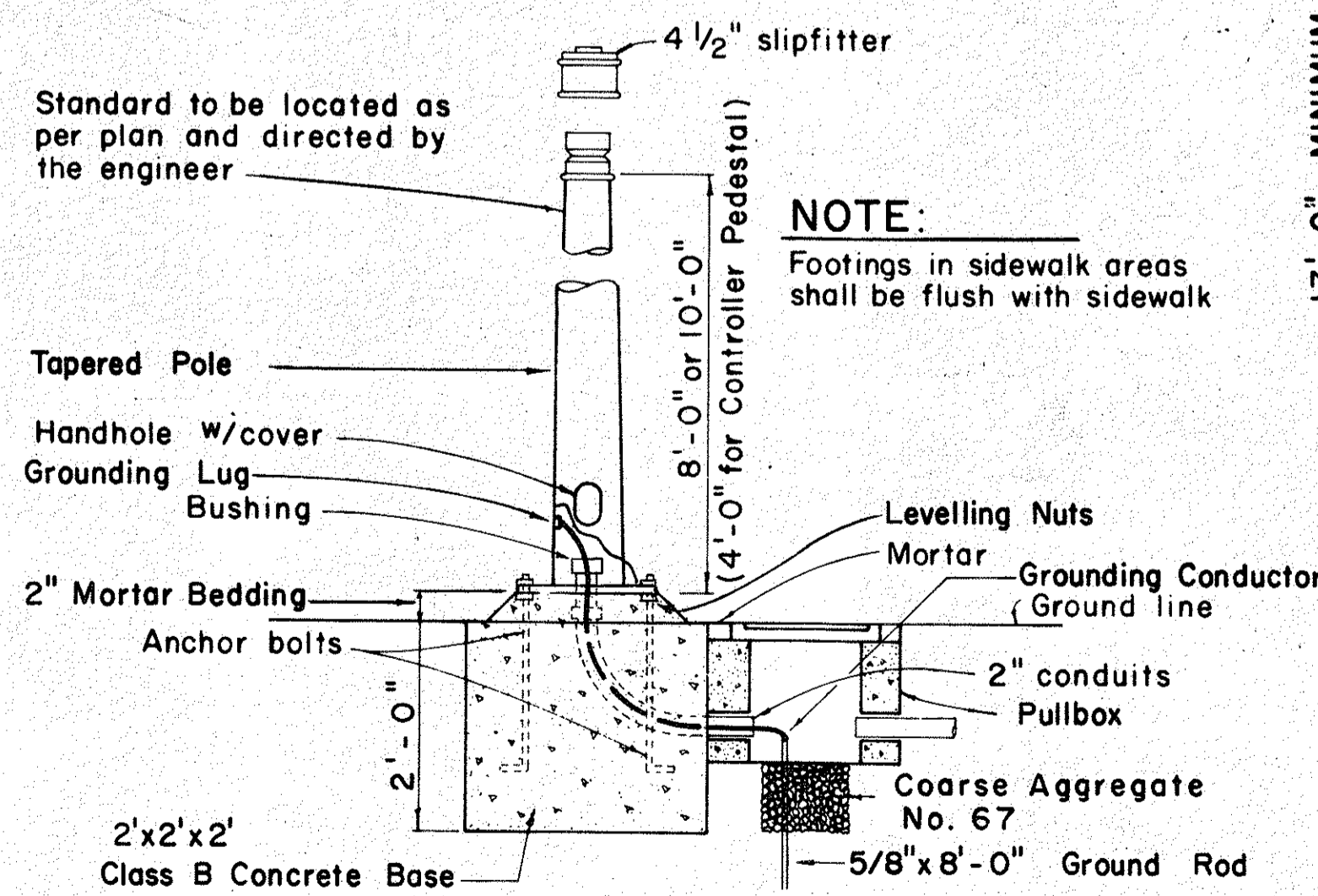
DETAIL OF POLE PLATE CONNECTIONS



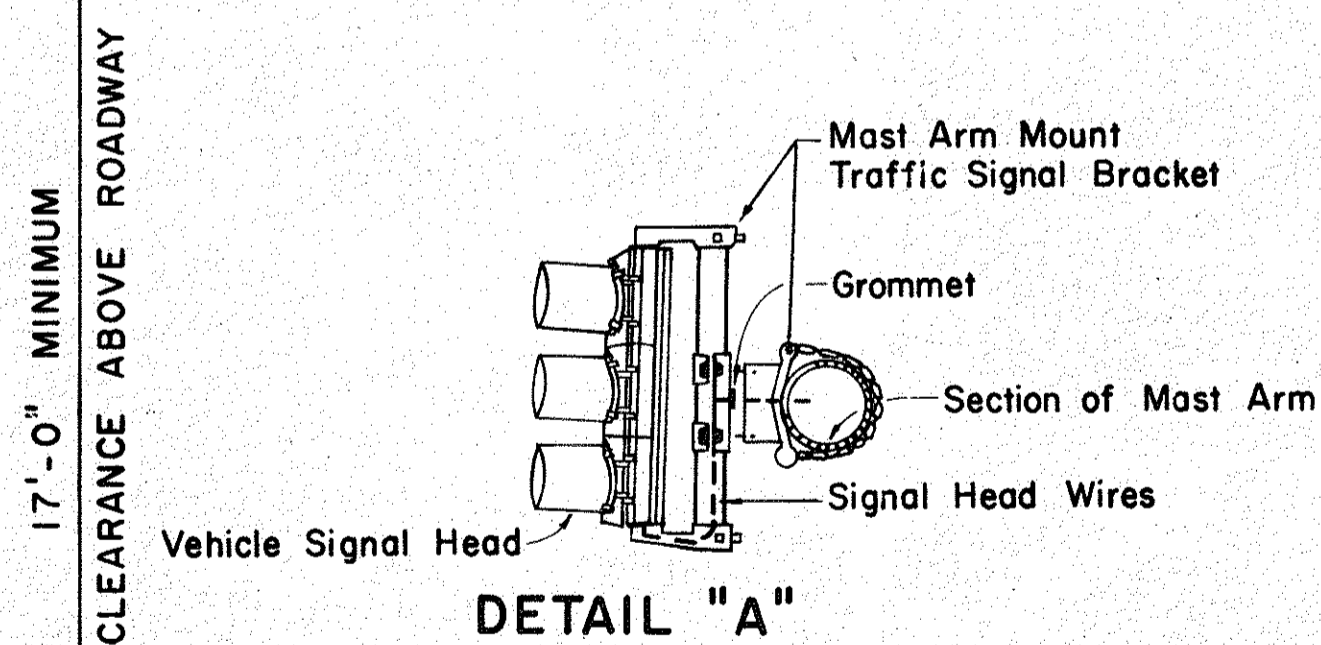
TYPE II: Single tapered tube Mast Arm



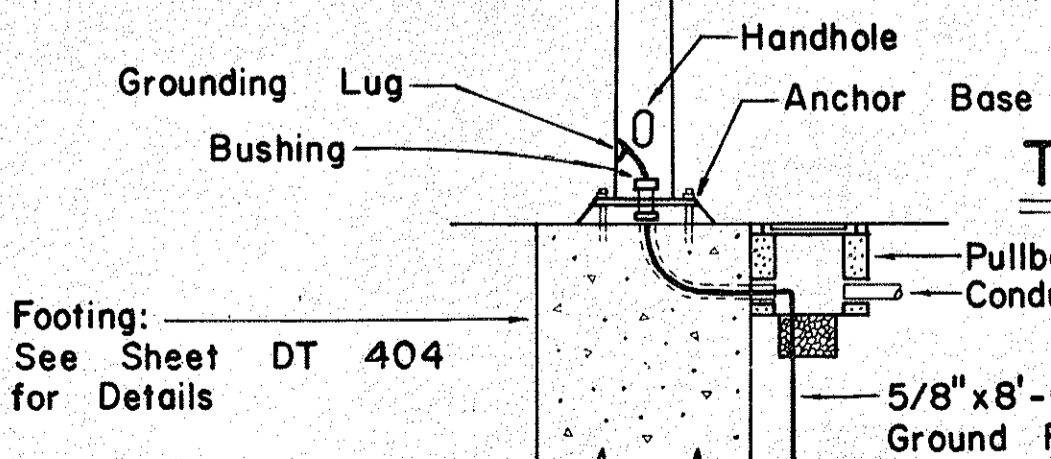
TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL ARRANGEMENTS



TYPE I SIGNAL STANDARD OR CONTROLLER PEDESTAL AND FOOTING



DETAIL "A"



TYPICAL SIGNAL ARRANGEMENTS

NO.	REVISION	APPROVED BY	DATE
7	Deleted word "Lunar" from Symbol (Man)	E.T.	9/10/85

NO.	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	H.T.	3/23/82
2	Revise Details of Traffic and Pedestrian Signals, Standards and Pedestrian Push Button and Signs.	H.T.	3/5/82
3	Revise signal indications.	H.T.	9/22/86
4	Remove Note No. 3 & Revise clearance and dimension.	H.T.	9/19/88
5	Revise Ped. Signal Indication	H.T.	2/6/80
6	Added note for back-plate dimensions.	H.T.	2-28-83

APPROVAL RECOMMENDED:  
*Eichi Tanaka*  
TRAFFIC ENGINEER  
DATE: 12/29/89

*John S. J. J.*  
ASSISTANT CHIEF, ENGINEERING  
DATE: 12/29/89

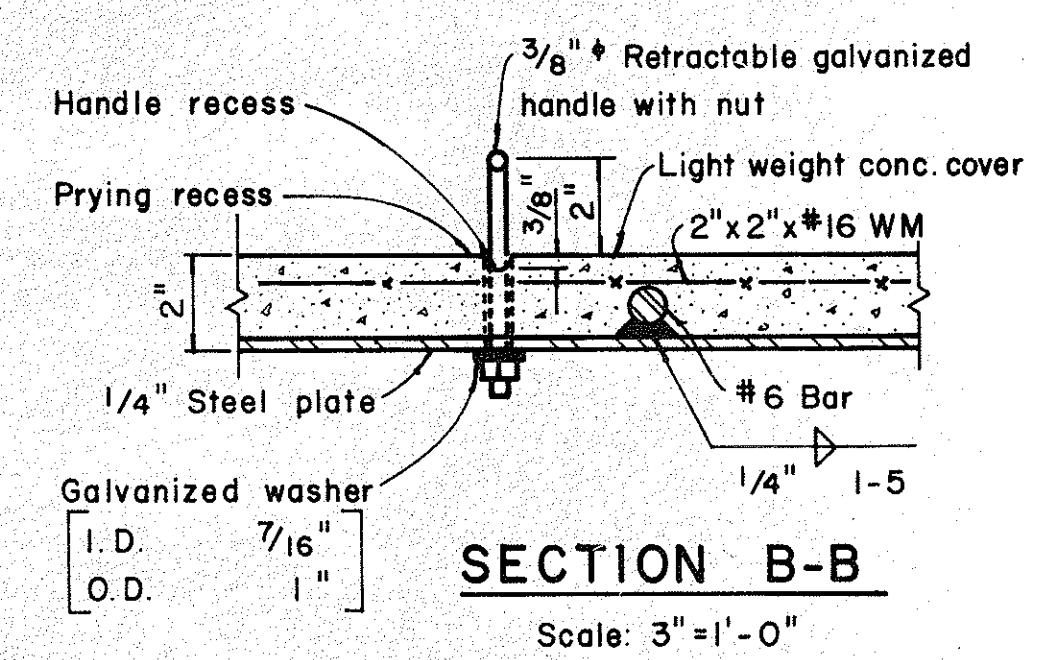
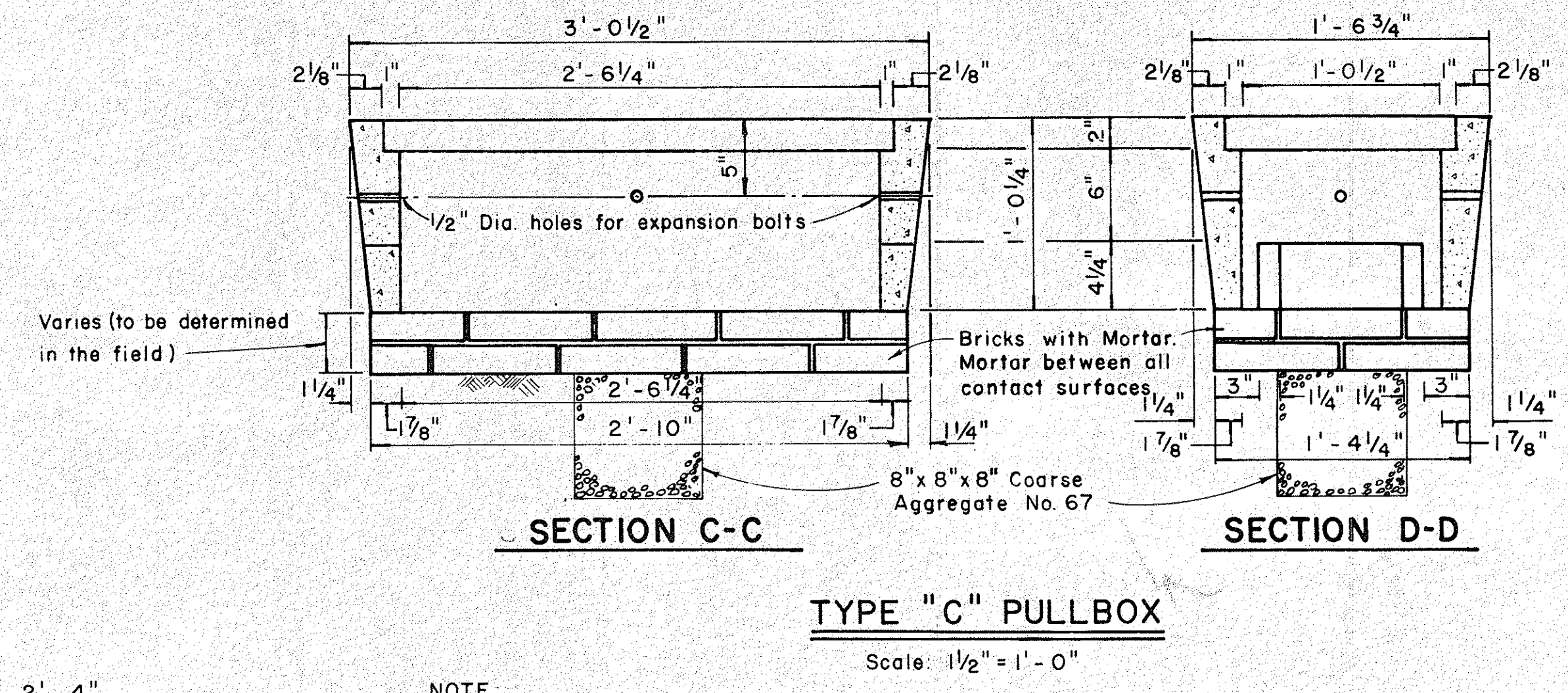
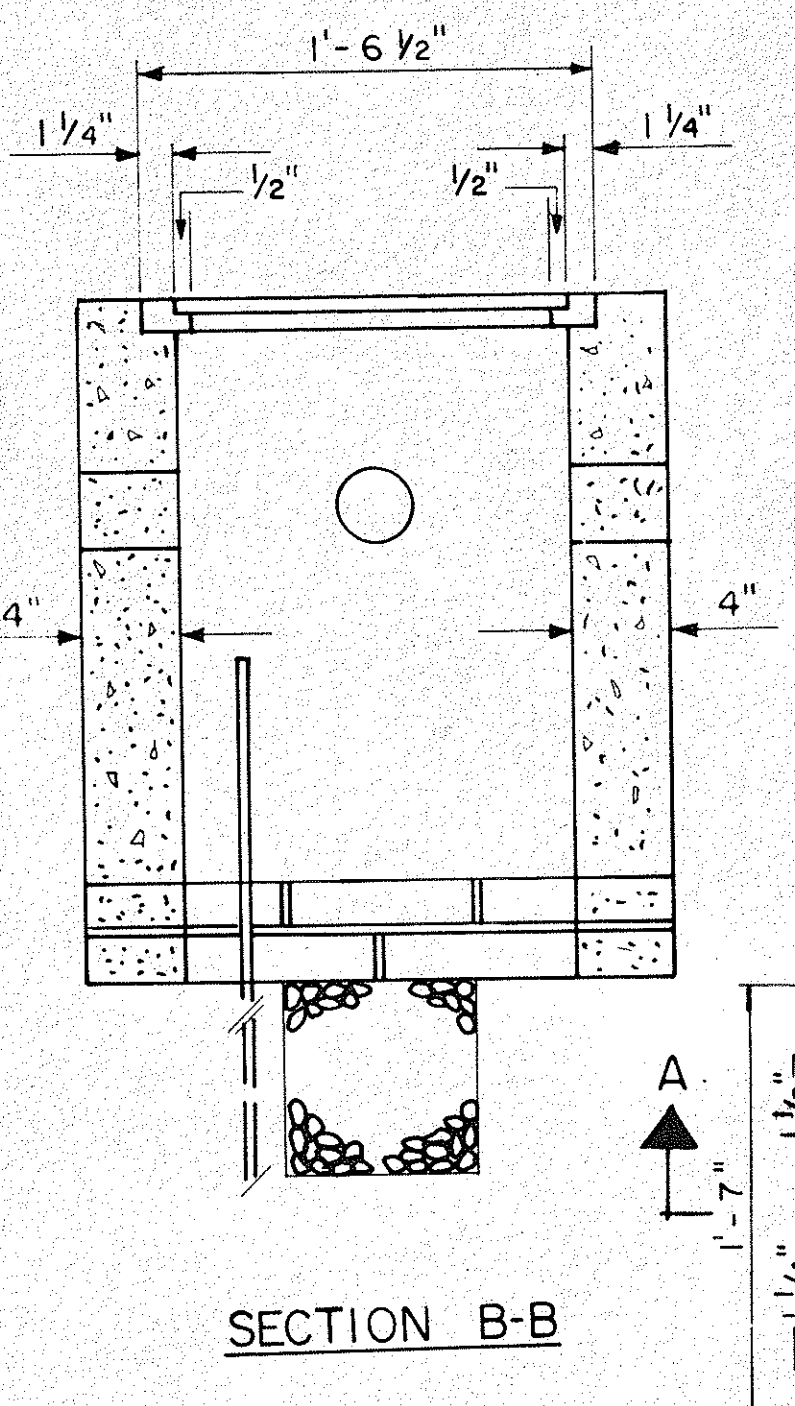
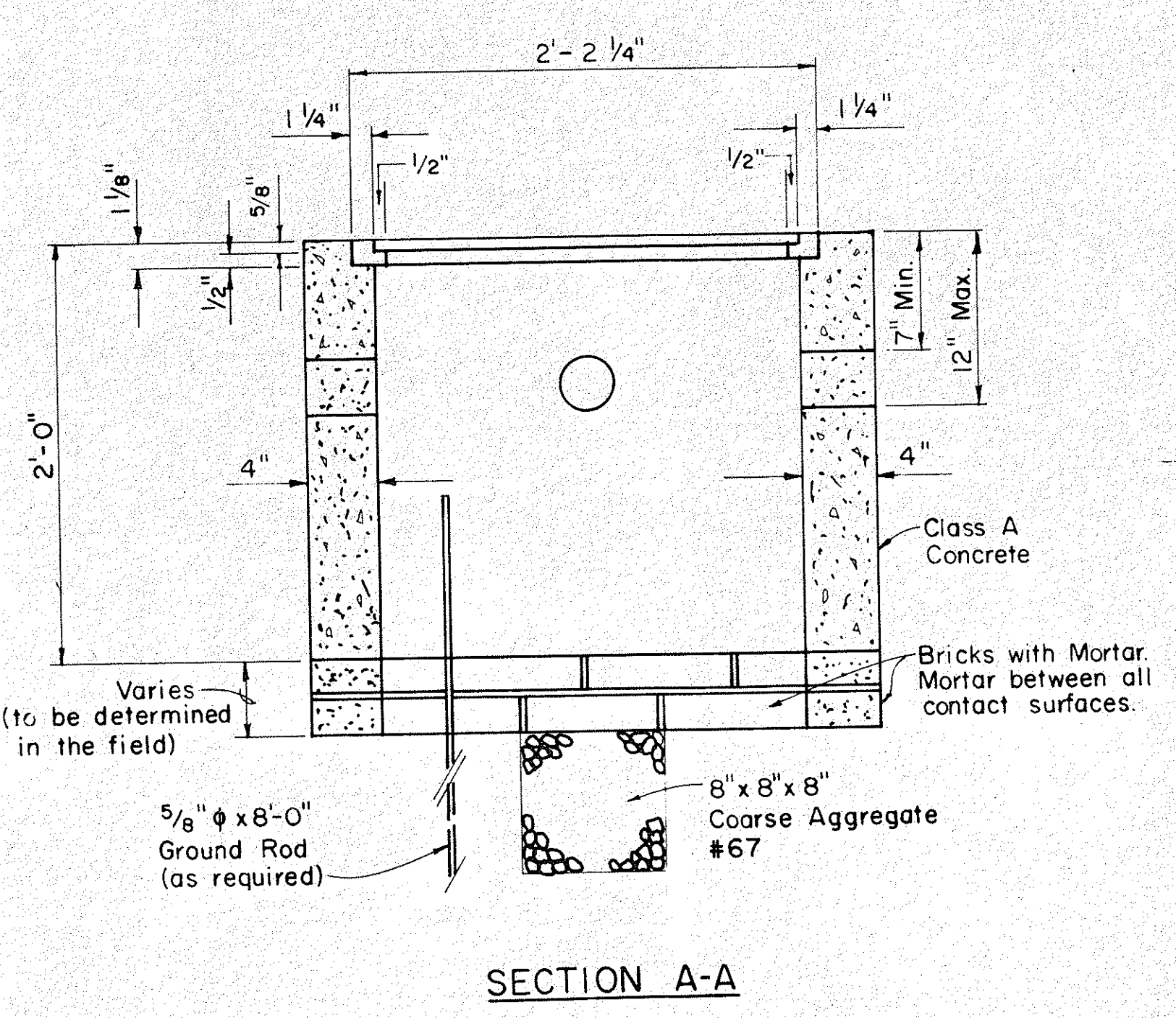
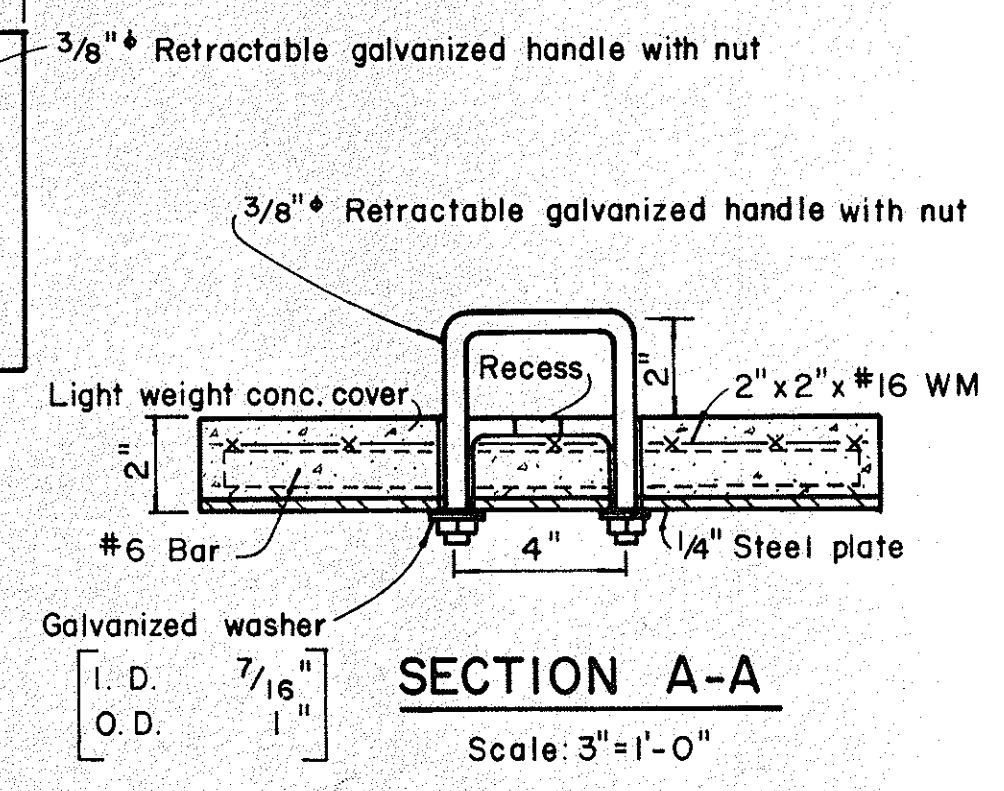
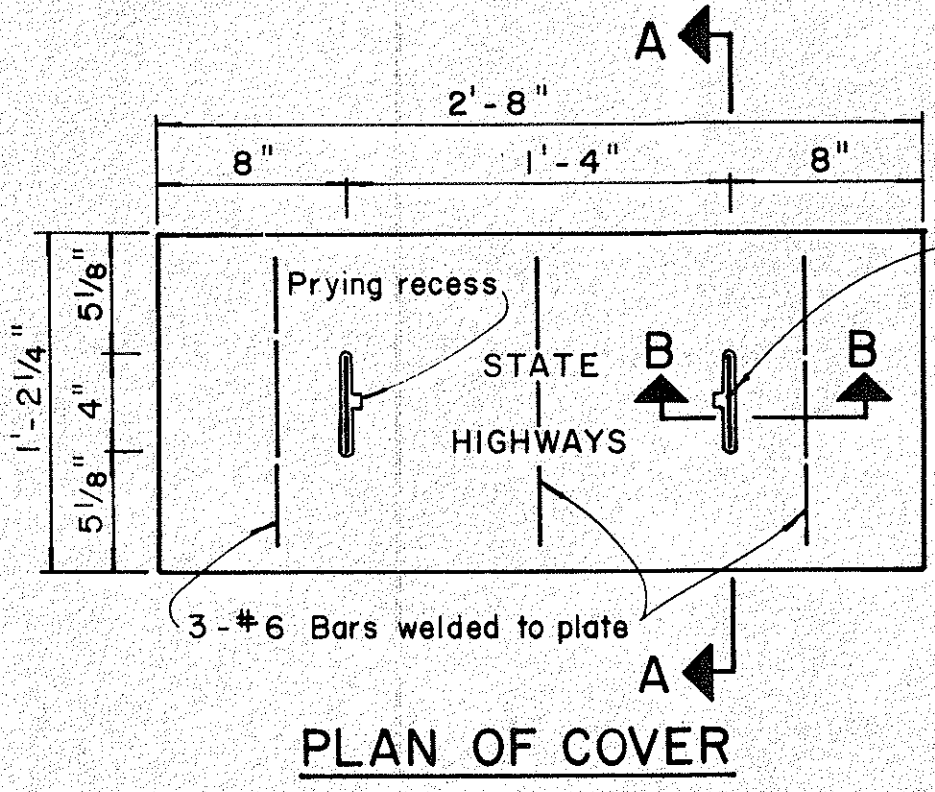
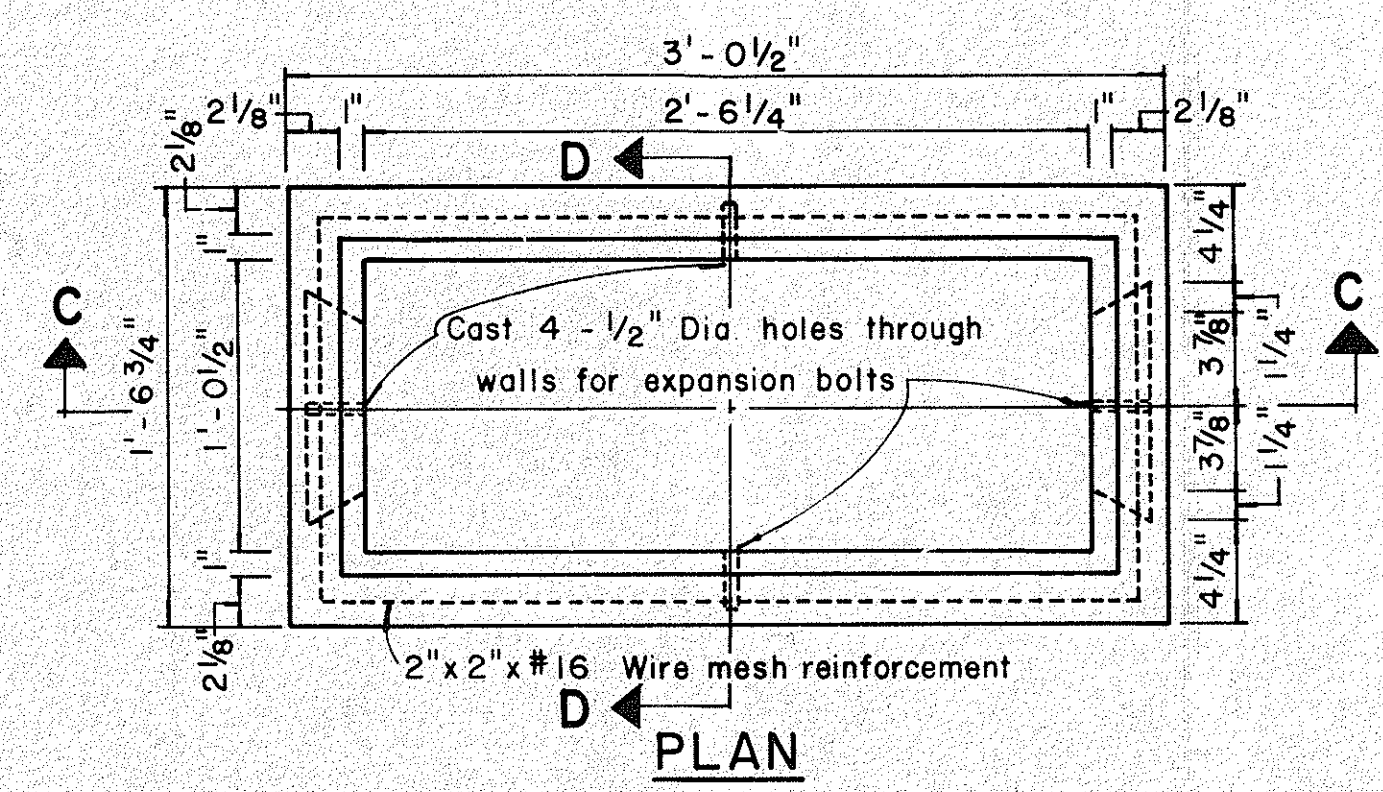
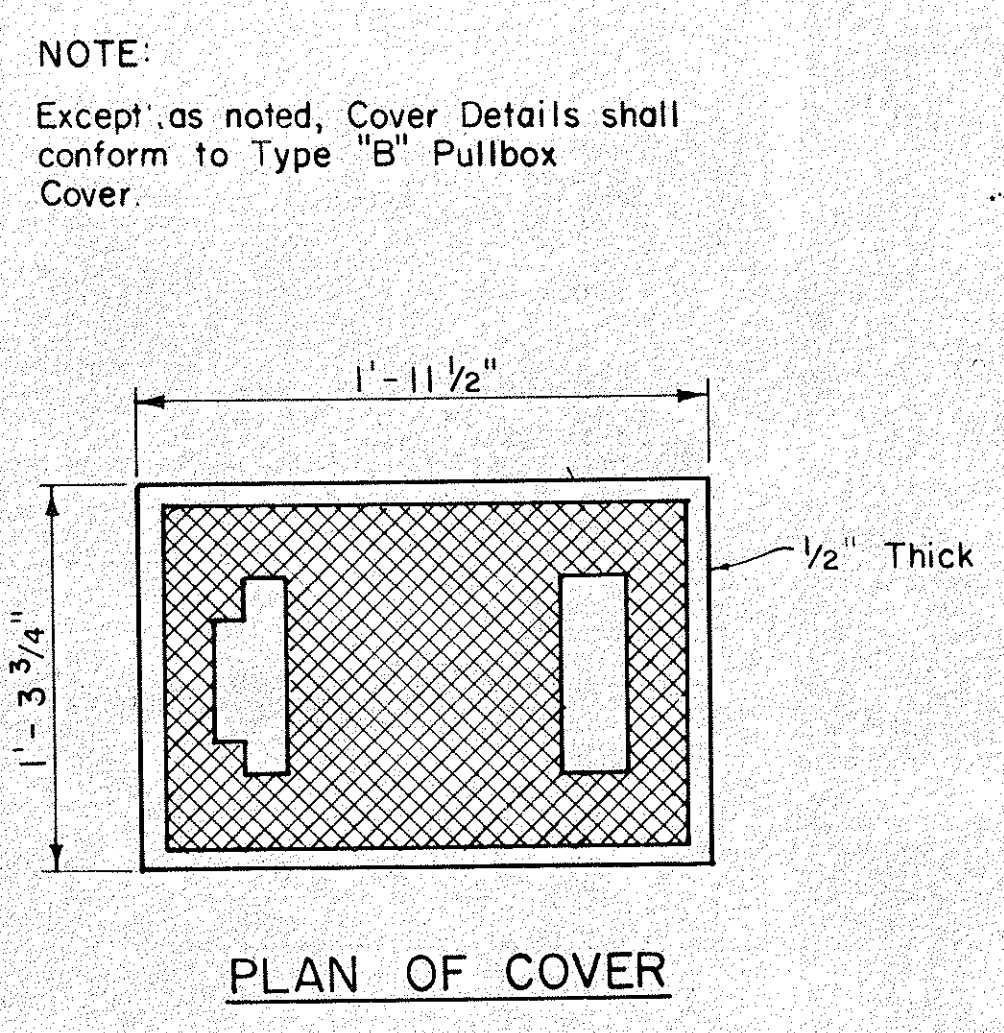
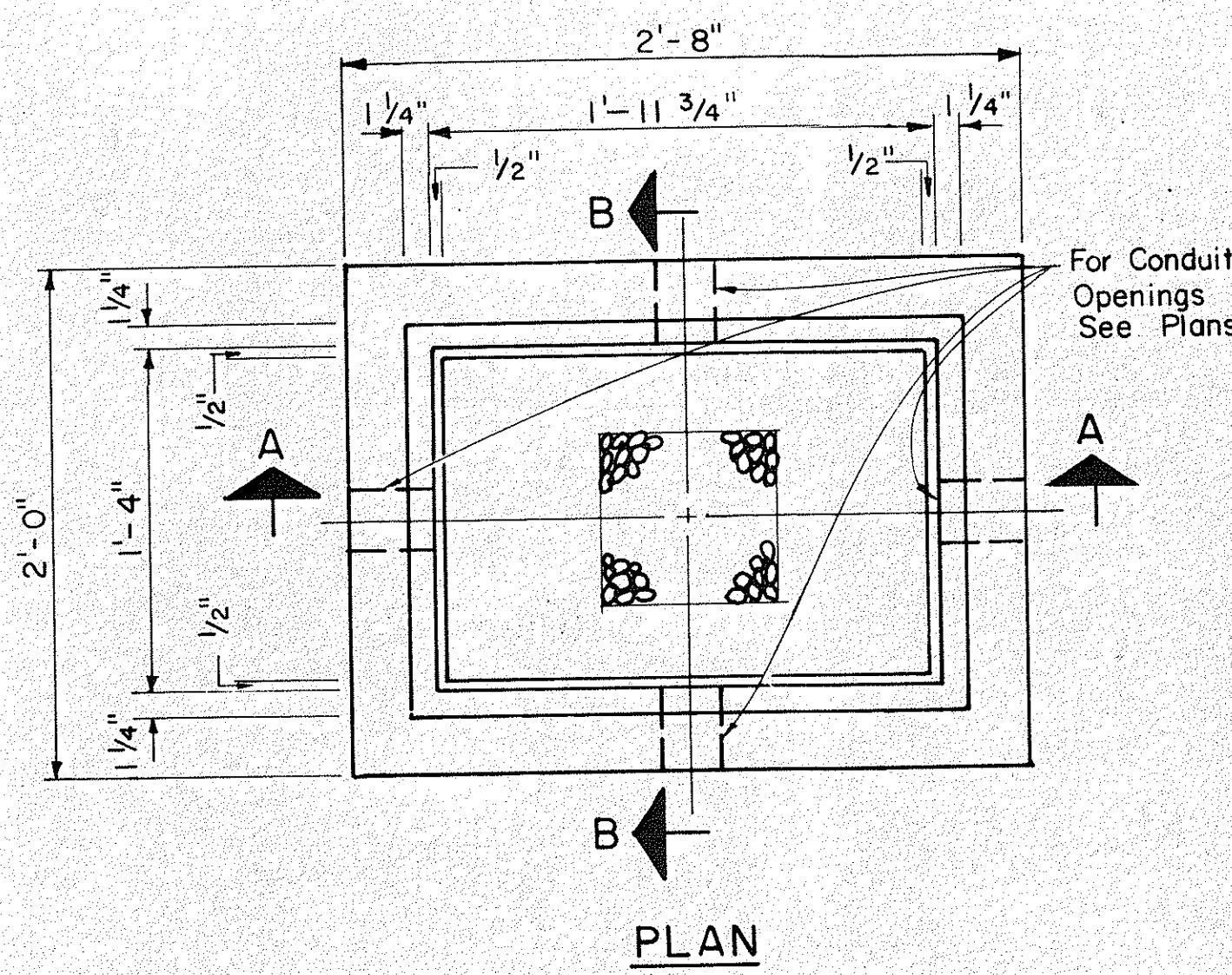
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TRAFFIC SIGNAL SYSTEM**  
MISCELLANEOUS DETAILS

Not to Scale  
SHEET No. 6 OF 11 SHEETS DT 400

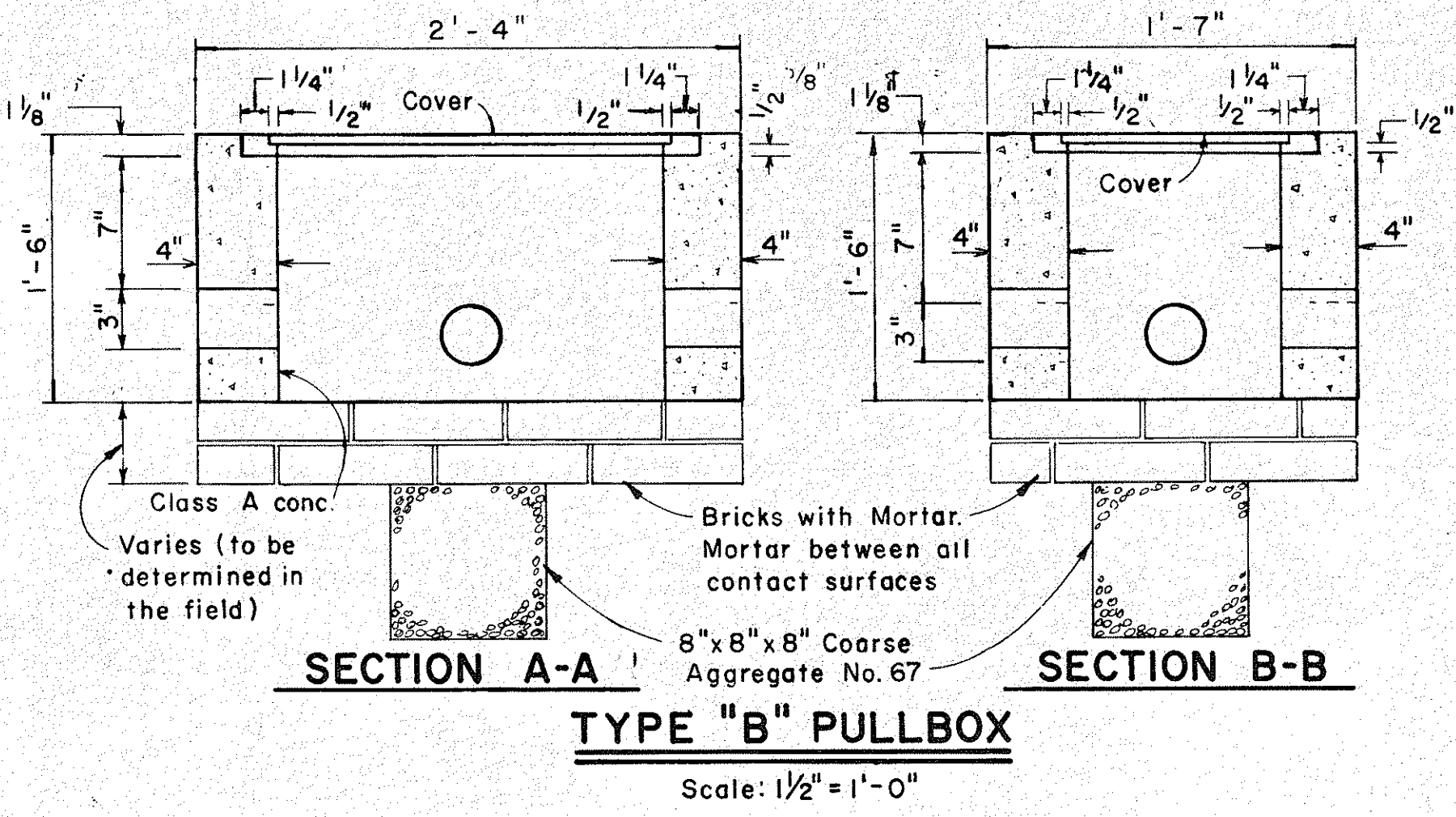
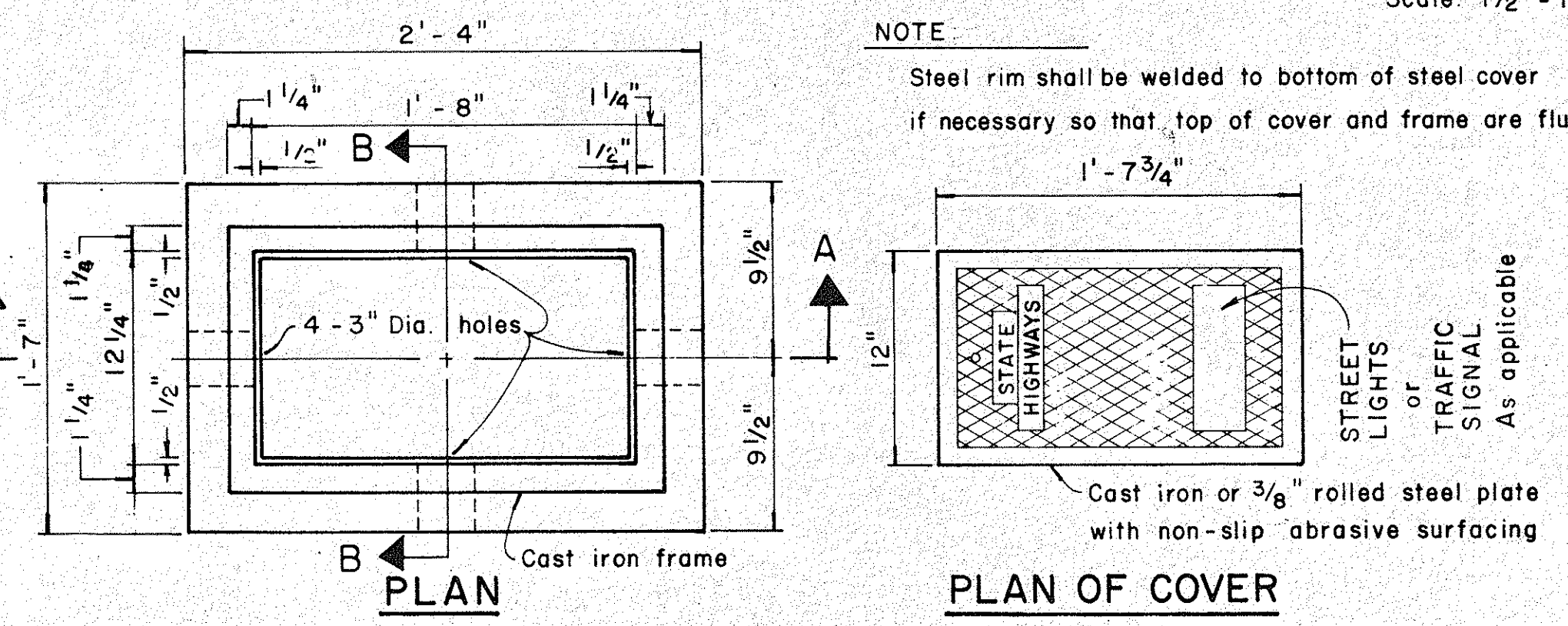
DRAWING NO. 1000H CLEARPRINT  
 DATE: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_  
 NO. \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300(25)	1986	13	17



TYPE "A" PULLBOX  
Scale: 1/2" = 1'-0"

TYPE "C" PULLBOX  
Scale: 1 1/2" = 1'-0"



TYPE "B" PULLBOX  
Scale: 1/2" = 1'-0"

APPROVAL RECOMMENDED:  
*[Signature]*  
TRAFFIC ENGINEER  
DATE: 12/29/82

APPROVED:  
*[Signature]*  
ASSISTANT CHIEF, ENGINEERING  
DATE: 12-30-82

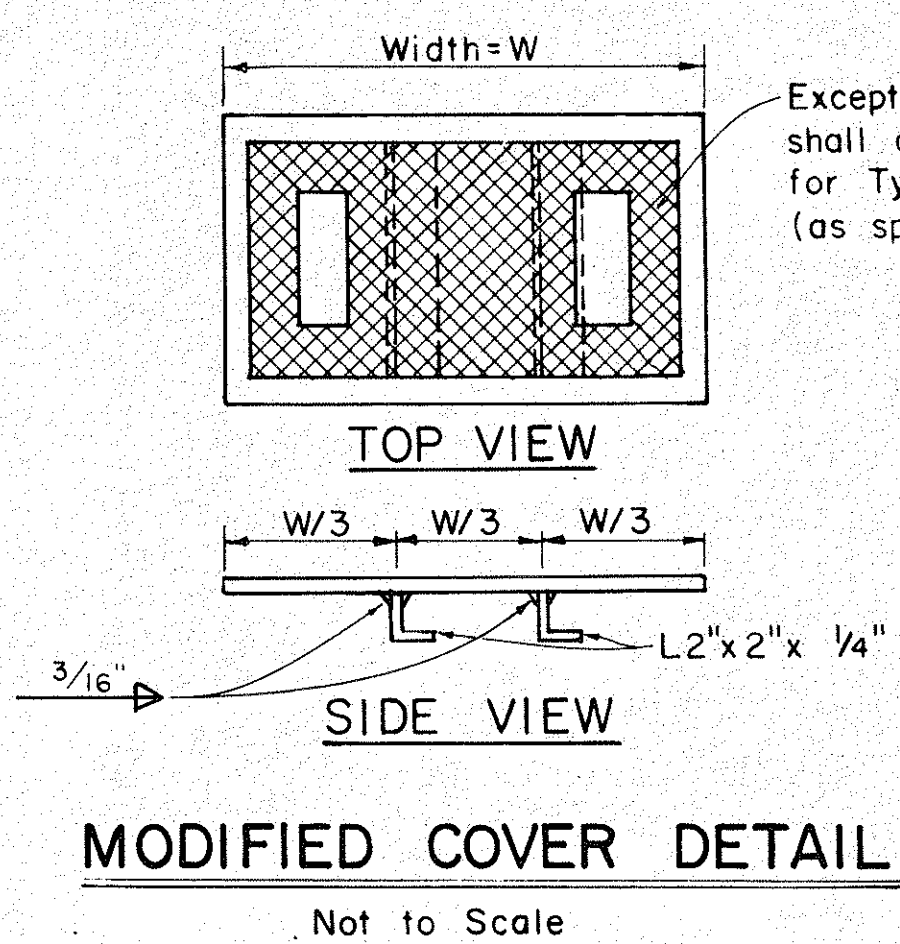
NO.	REVISION	APPROVED BY	DATE
1	Revised Type B & C Pullbox details	H.T.	8-5-76
2	Revised Type "A" Pullbox & Added Modified Cover.	H.T.	1-31-80
3	Revised Type B & C Pullbox details.	[Signature]	2-1-83

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

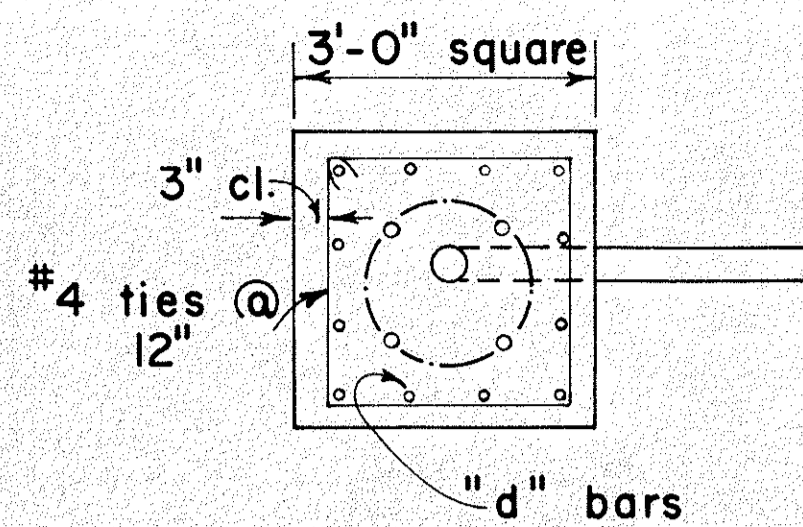
**STANDARD DETAILS**  
**PULLBOXES**

Scale as noted Date  
SHEET No. 7 OF 11 SHEETS DT 401

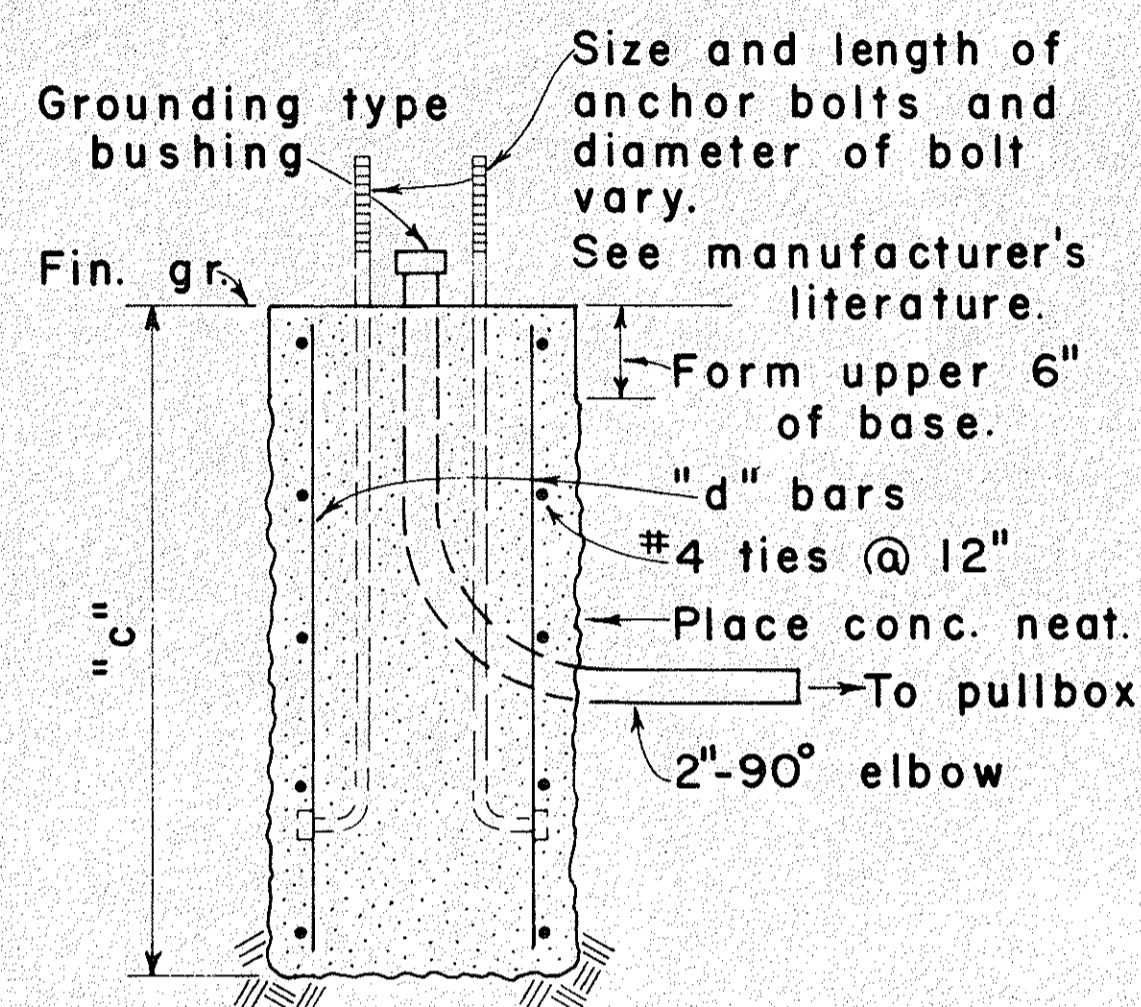
DATE  
DRAWN BY  
CHECKED BY  
ORIGINAL PLAN  
FRAMED BY  
NOTE BOOK  
QUANTITIES BY  
DESIGNED BY  
CHECKED BY



MODIFIED COVER DETAIL  
Not to Scale



PLAN - SECTION



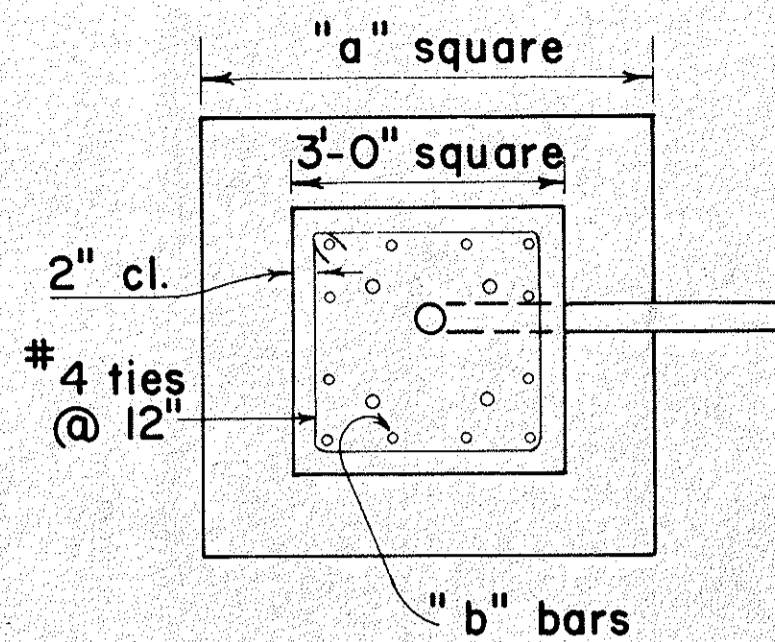
NOTE:

Concrete shall be Class B.

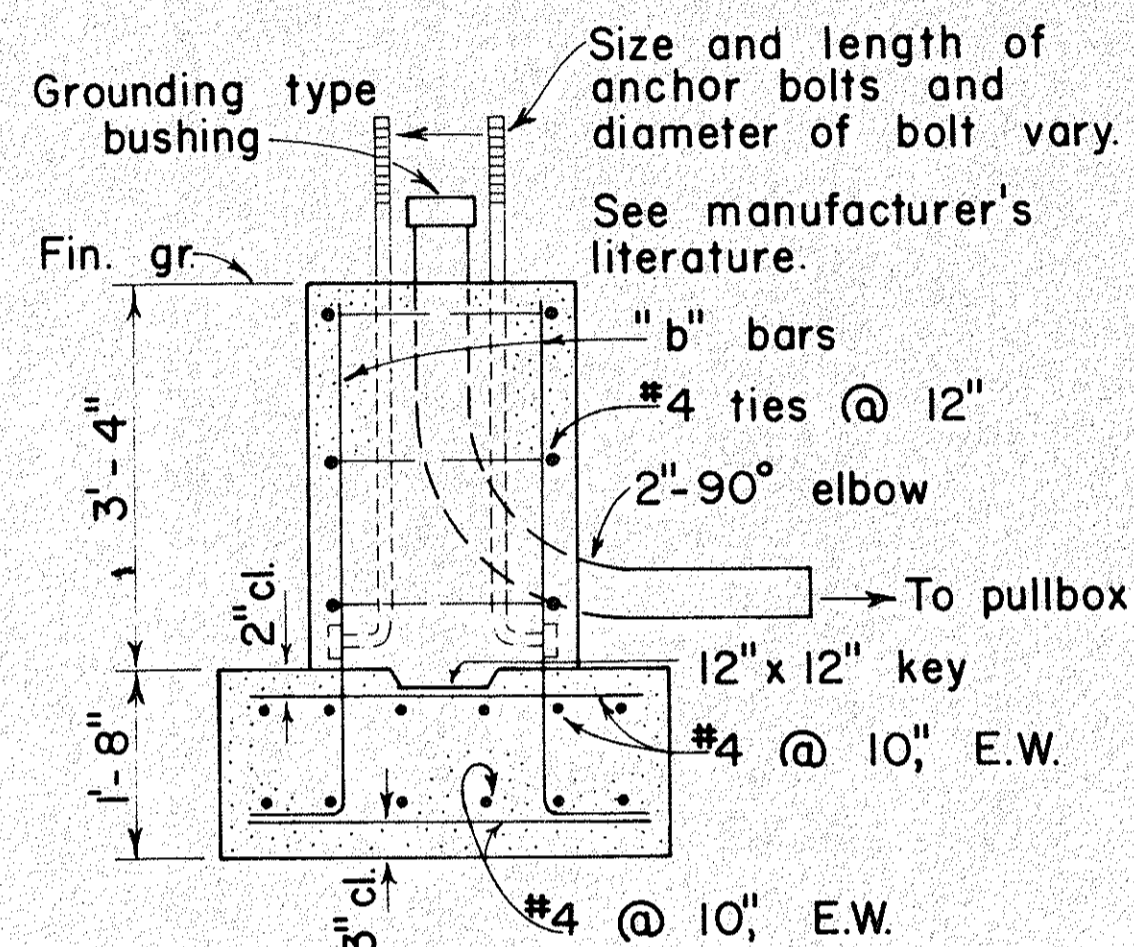
SECTION

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:

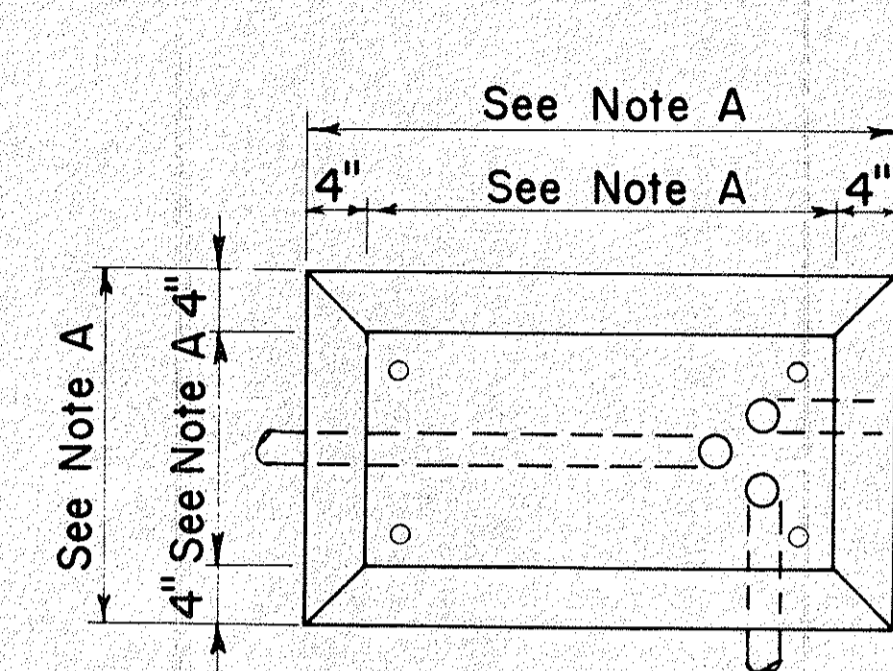
Concrete shall be Class B.

SECTION

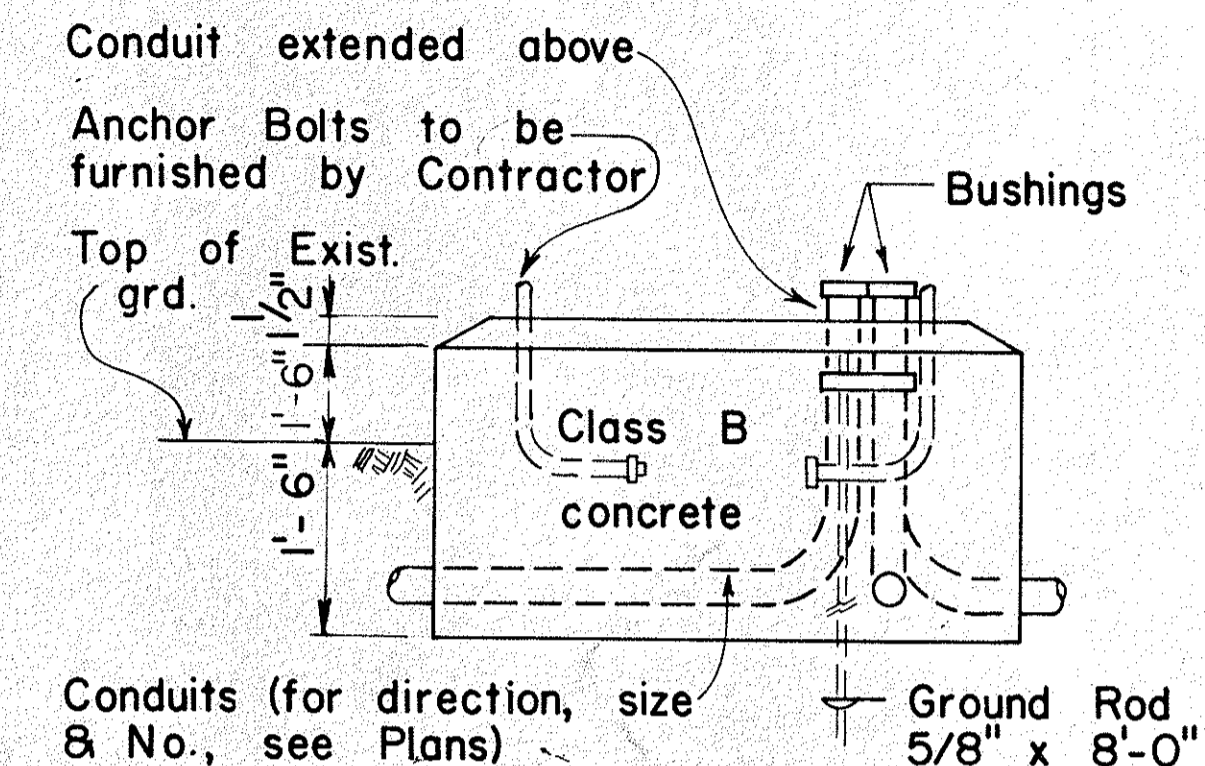
MAST ARM LENGTH	"a"	"b" BARS
16' - 18'	5' - 0"	12 - #6
20'	5' - 6"	12 - #6
25'	6' - 0"	12 - #6
30'	6' - 6"	12 - #8
35'	6' - 6"	12 - #8
40'	7' - 0"	12 - #8

TYPE IIA

FOOTING FOR MAST ARM STANDARD



PLAN



ELEVATION

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.

APPROVAL RECOMMENDED:

*Erich Tanaka* 3/4/86  
TRAFFIC ENGINEER DATE

APPROVED:

*Robert R. Ruzicki* 2-5-86  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Revised Cabinet Base Design	<i>[Signature]</i>	1-31-85

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
LAND TRANSPORTATION FACILITIES DIVISION

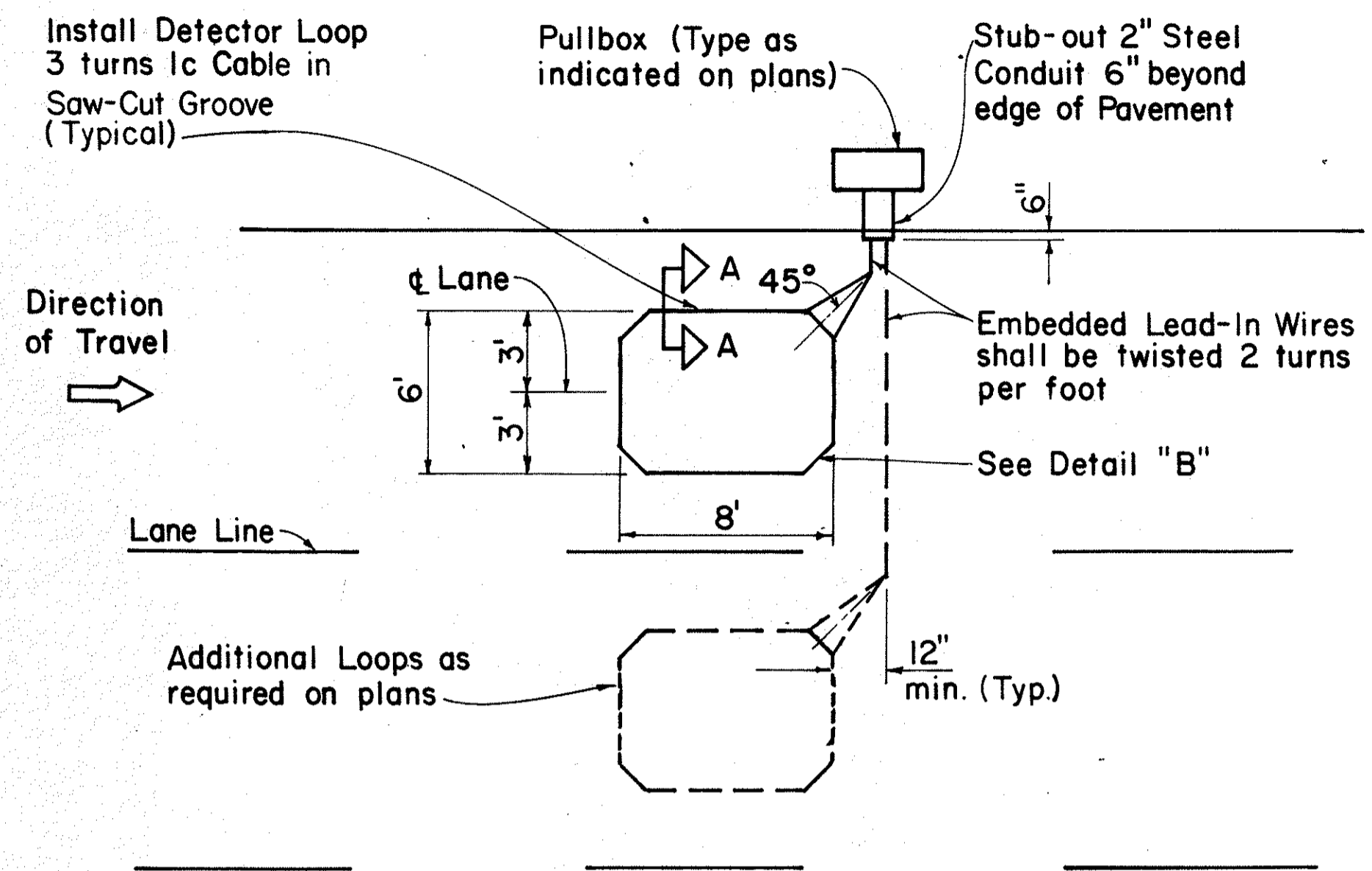
**TRAFFIC SIGNAL SYSTEM  
MISCELLANEOUS DETAILS**

Not to Scale

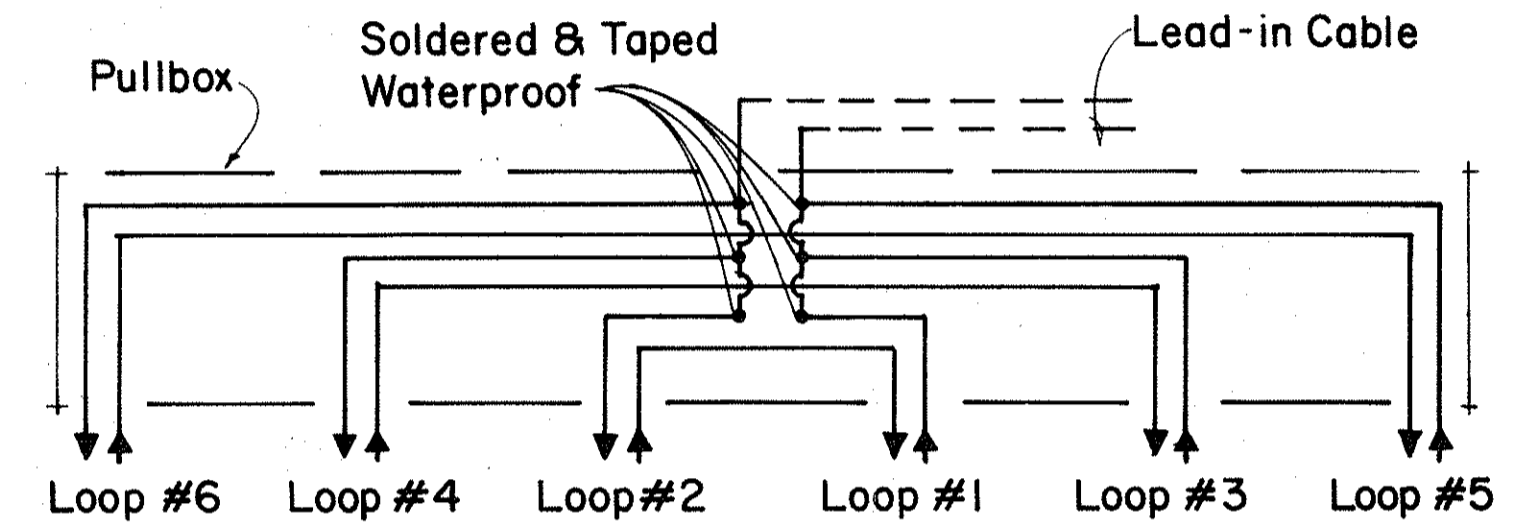
ORIGINAL PLAN  
DATE: \_\_\_\_\_  
DRAWN BY: \_\_\_\_\_  
DESIGNED BY: \_\_\_\_\_  
CHECKED BY: \_\_\_\_\_  
No. \_\_\_\_\_



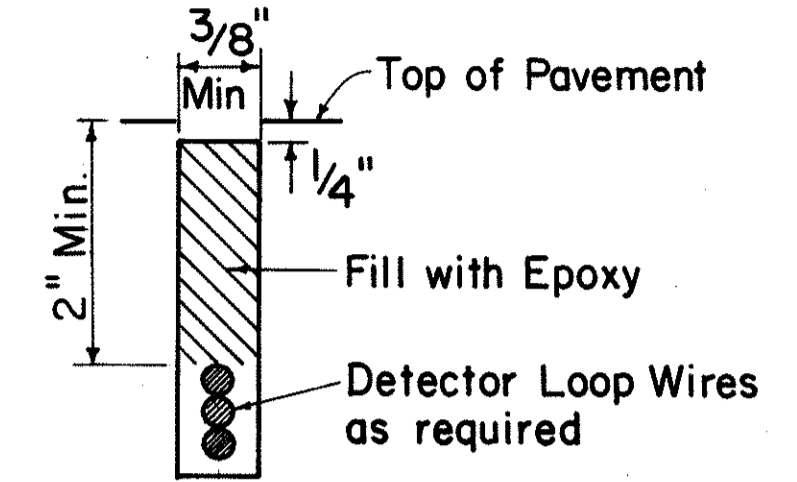
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300 (25)	1985	15	17



**SINGLE LOOP LAYOUT**

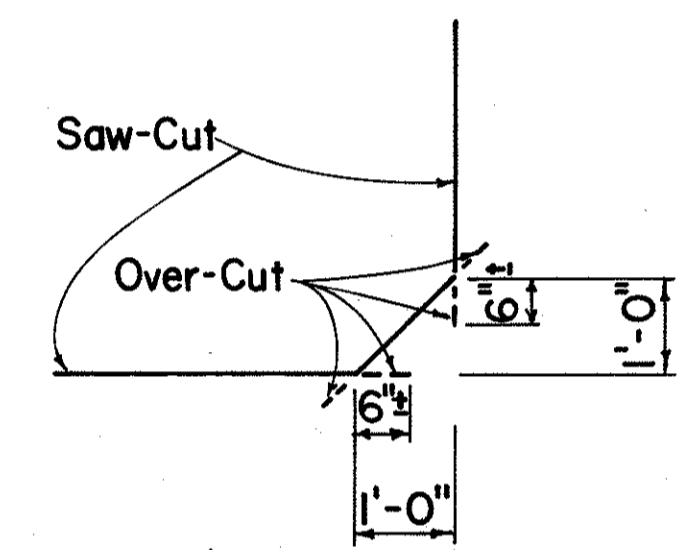


**TYPICAL SERIES-PARALLEL LOOP CONNECTION**

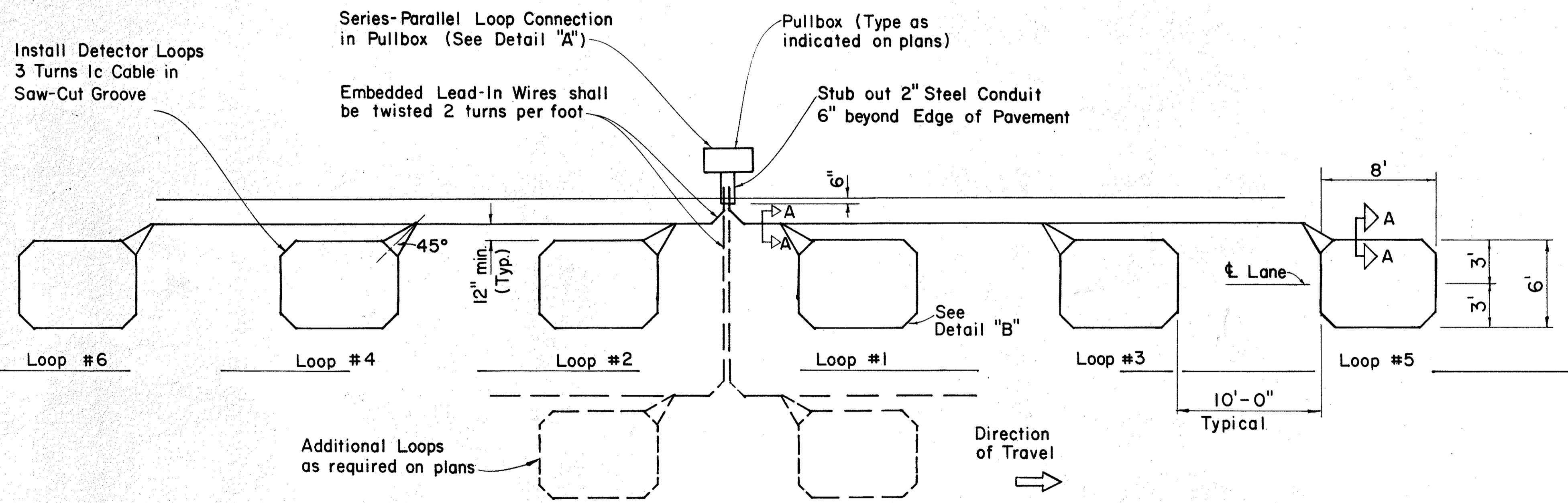


**DETECTOR LOOP SAW-CUT SECTION A-A (TYPICAL)**

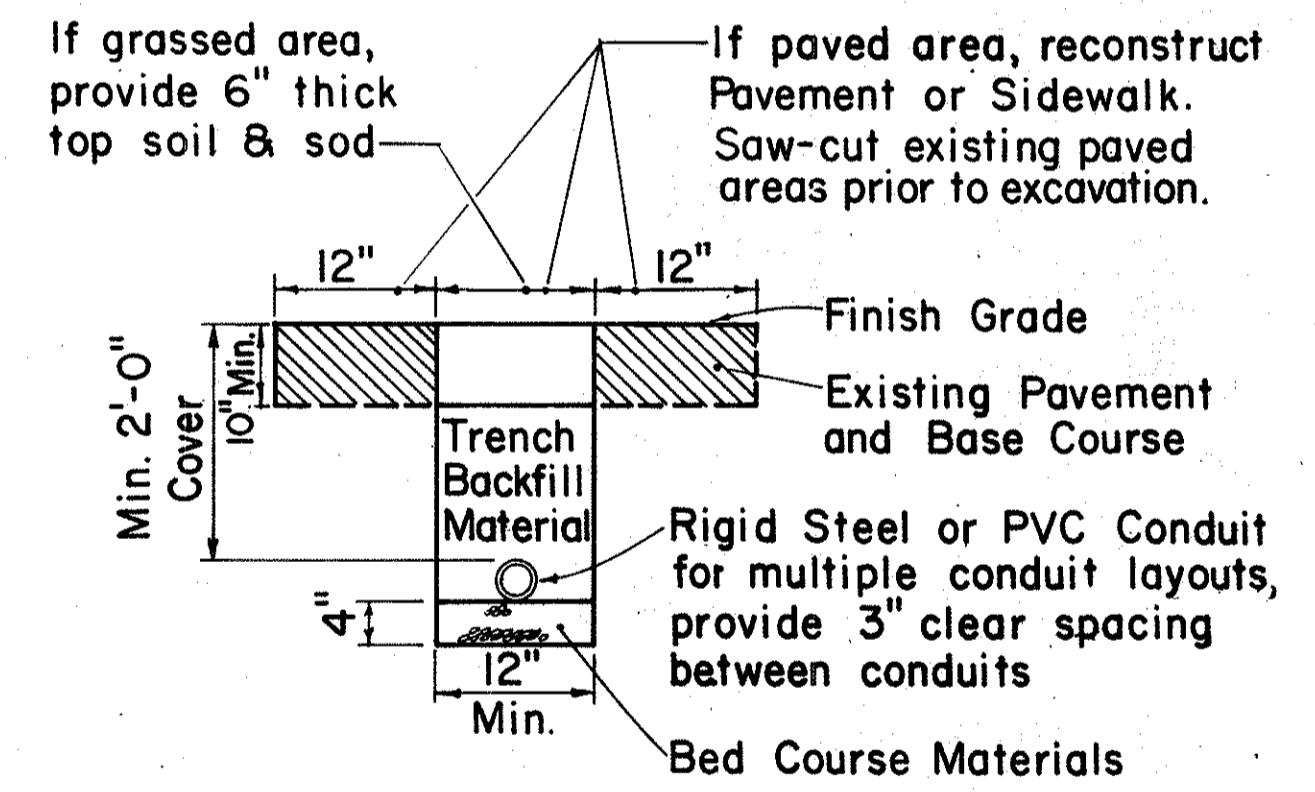
Note: Back-Fill Over-Cuts with Epoxy



**DETAIL "B" SAW-CUT AT CORNERS**



**MULTIPLE LOOP LAYOUT**



**TYPICAL TRENCH SECTION FOR CONDUIT**

NOTE:  
1. All conduits under roadways shall be steel or PVC schedule 80.

APPROVAL RECOMMENDED:  
*Erich Tanaka* 9/26/80  
TRAFFIC ENGINEER DATE

APPROVED:  
*Arthur Sakai* 9/30/80  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Replaces Sht. DT 405 dated 3/5/76	H.T.	9/30/80
2	Revised Section A-A	H.T.	5/15/81
3	Revised Loop Design & Deleted Wiring Diagram	H.T.	2-4-85
4	Revised Typical Section for conduit and note Deleted #14 from Loop Layout	H.T.	9/18/85

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**

**LOOP DETECTORS**

Not to Scale

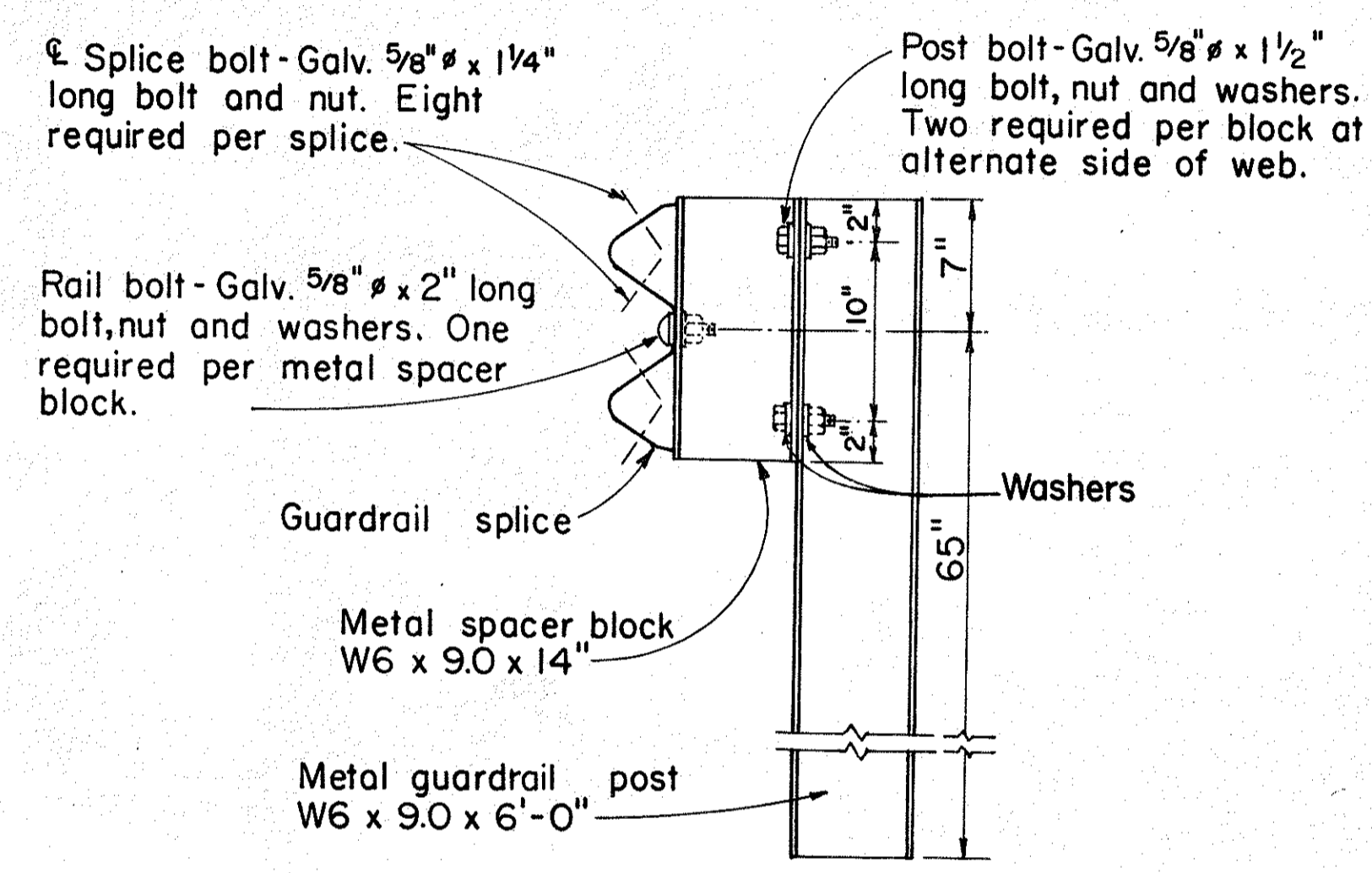
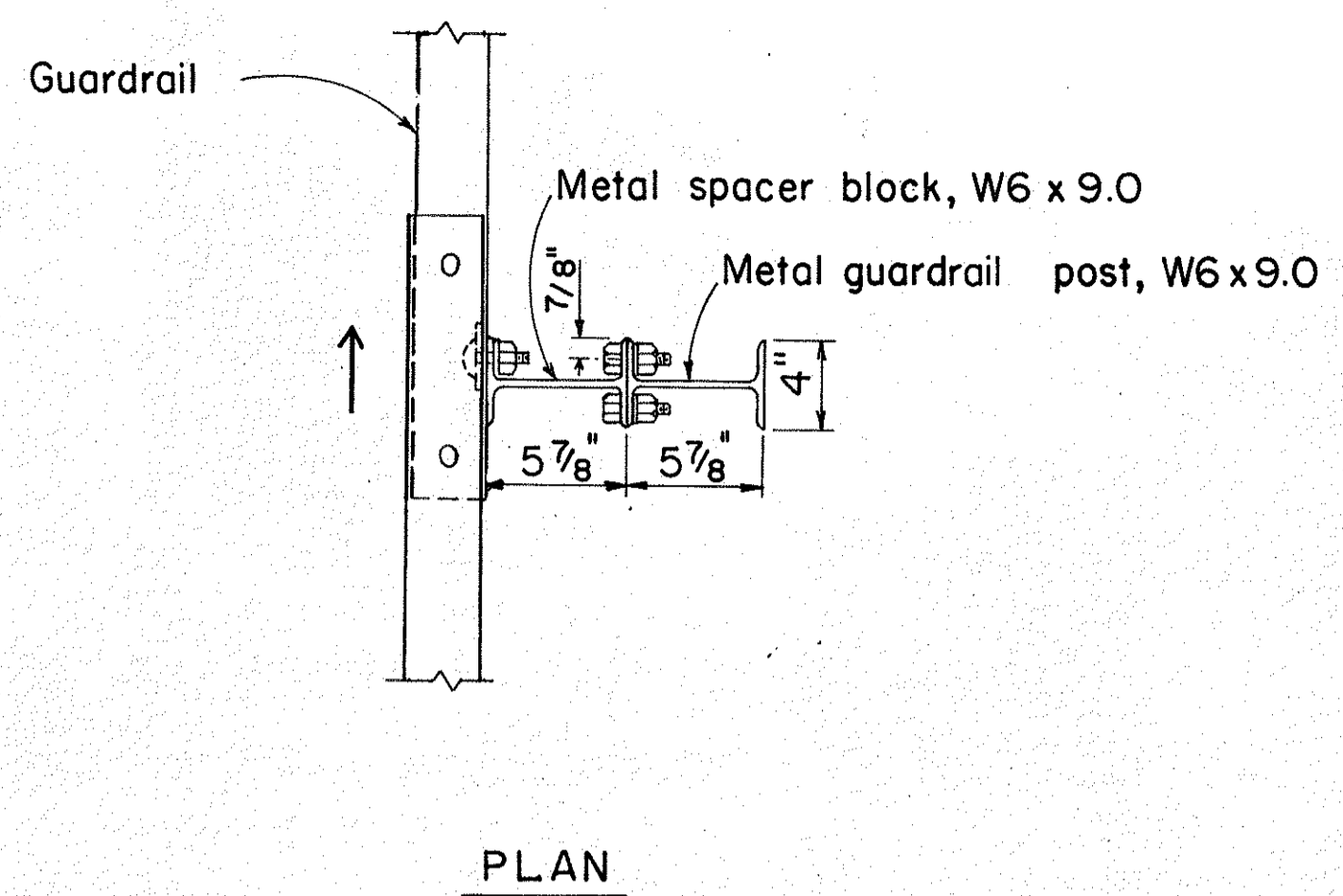
SHEET No. 9 OF 11 SHEETS DT 405

DATE \_\_\_\_\_  
SURVEY PLOTTED BY \_\_\_\_\_  
DRAWN BY \_\_\_\_\_  
TRACED BY \_\_\_\_\_  
NOTE BOOK \_\_\_\_\_  
QUANTITIES BY \_\_\_\_\_  
CHECKED BY \_\_\_\_\_

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300(25)	1986	16	17

**GENERAL NOTES**

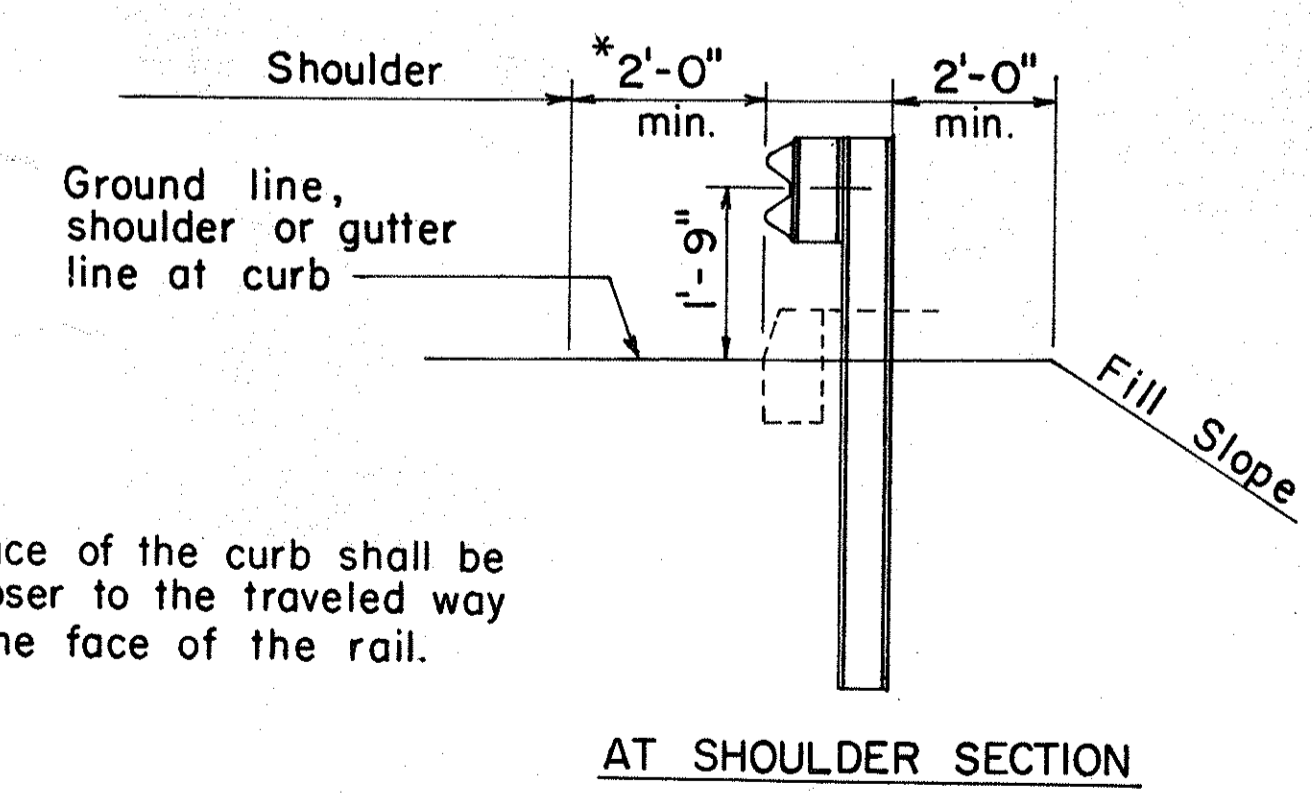
- Both of the alternate type posts may be used on any one project however, only one type of post shall be used in any single run of guardrail.
- All hardware, posts and blocks shall be galvanized. No punching, drilling or cutting will be permitted after galvanizing.
- Connection details for bent plate post and block shall be similar to the details shown for structural shape post, and block.
- Where conditions require, special post lengths in increments of 6 inches may be specified.
- For details of rail elements, bolts and nuts, see sheet DT 50I.
- All fasteners, posts, blocks and rail elements shall conform to the latest edition and amendments of "A Guide to Standardized Highway Barrier Rail Hardware", a report prepared and approved by the AASHTO-AGC-ARTBA Joint Cooperative Committee.



ELEVATION

**SINGLE METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK**

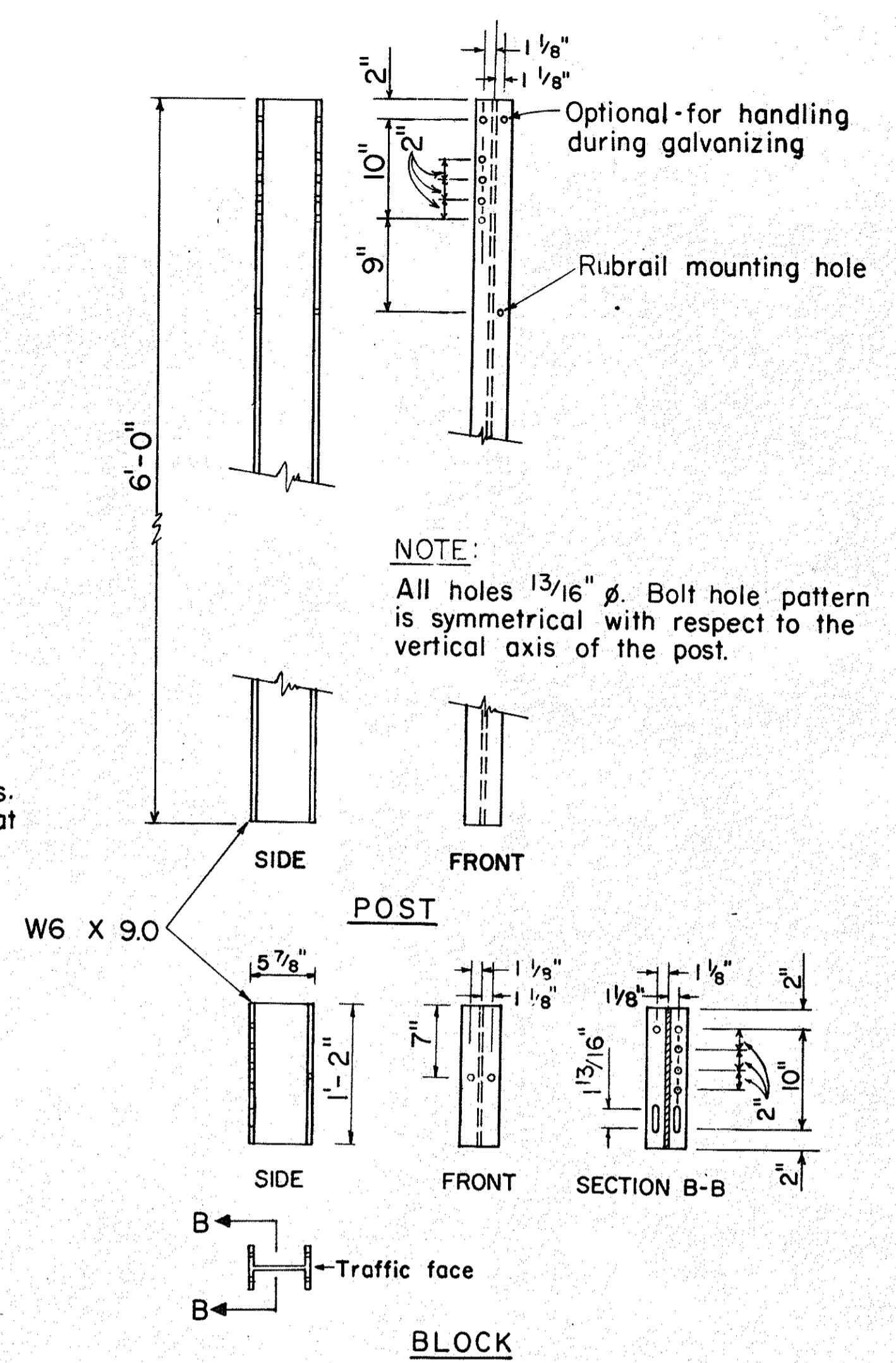
SCALE: 1/2" = 1'-0"



**TYPICAL METAL GUARDRAIL DETAIL**

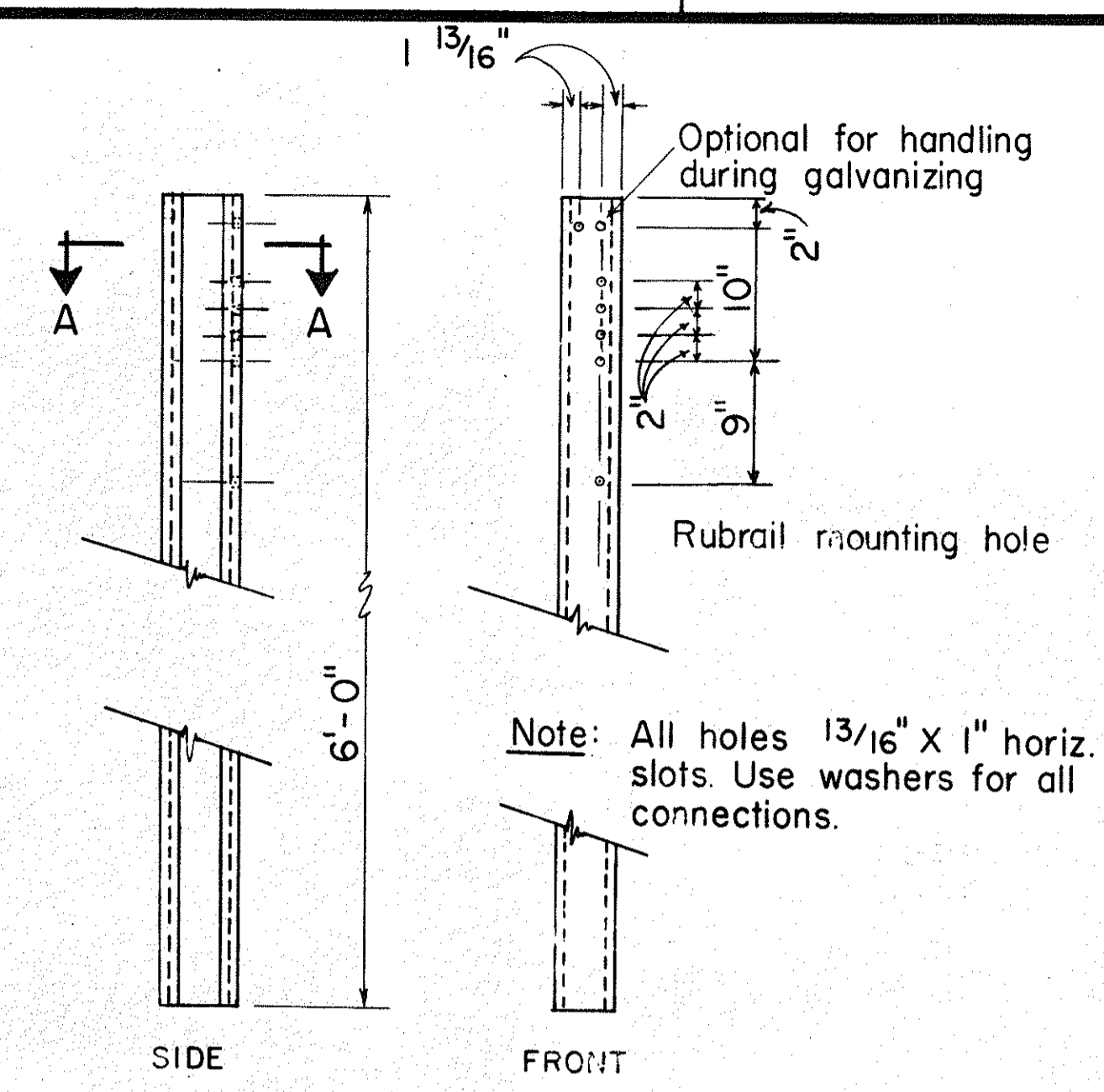
SCALE: 1/2" = 1'-0"

Note:  
The face of the curb shall be no closer to the traveled way than the face of the rail.

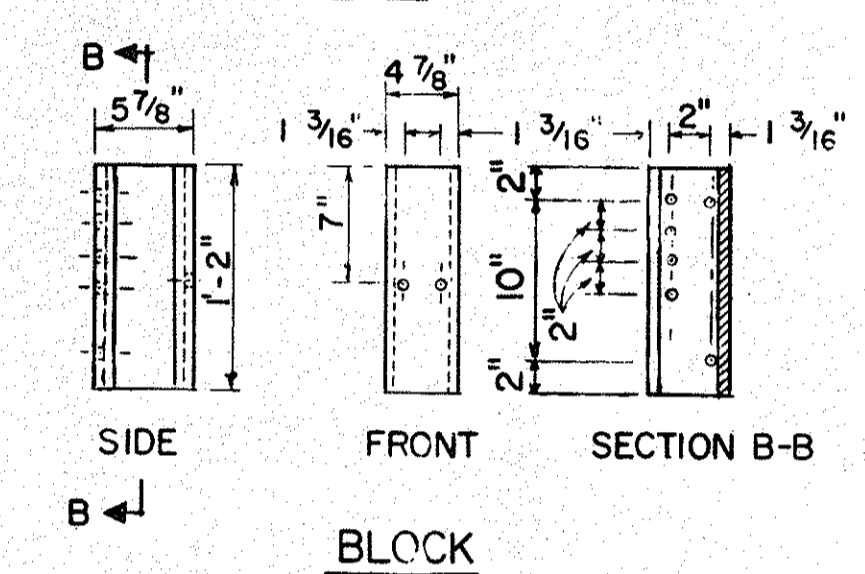


**STRUCTURAL SHAPE POST AND BLOCK**

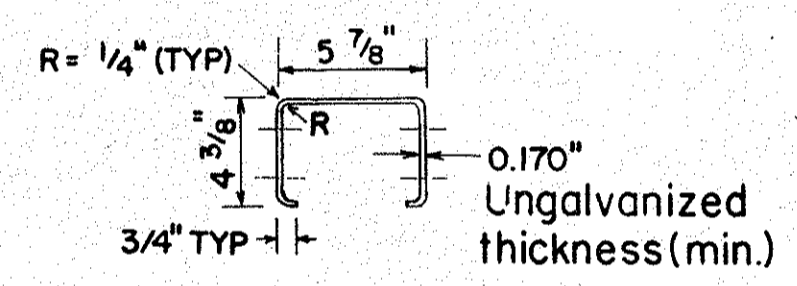
SCALE: 1" = 1'-0"



POST



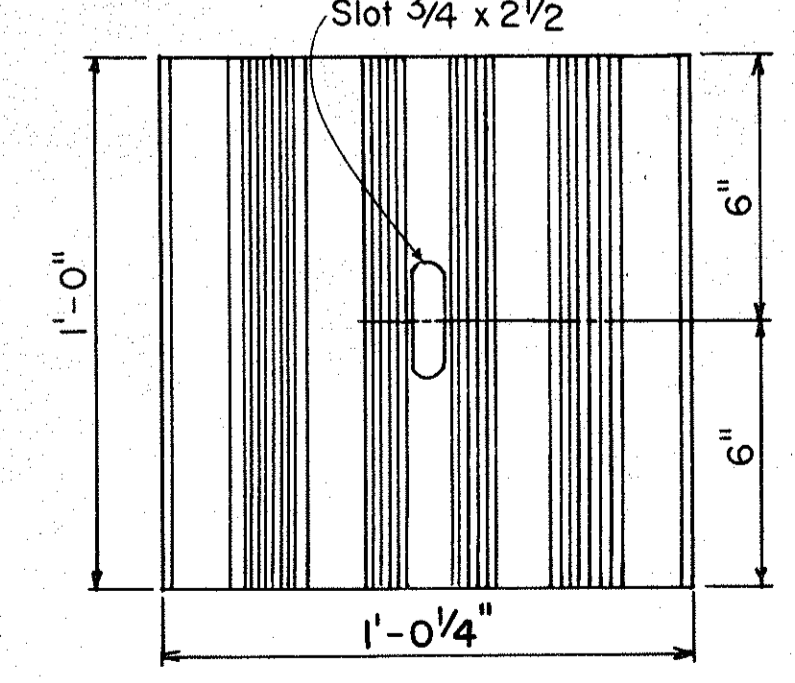
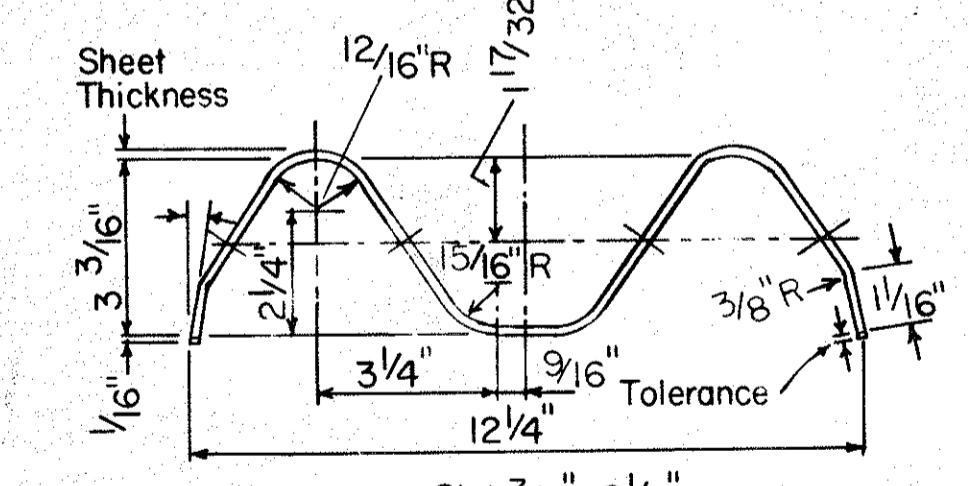
BLOCK



SECTION A-A  
N.T.S.

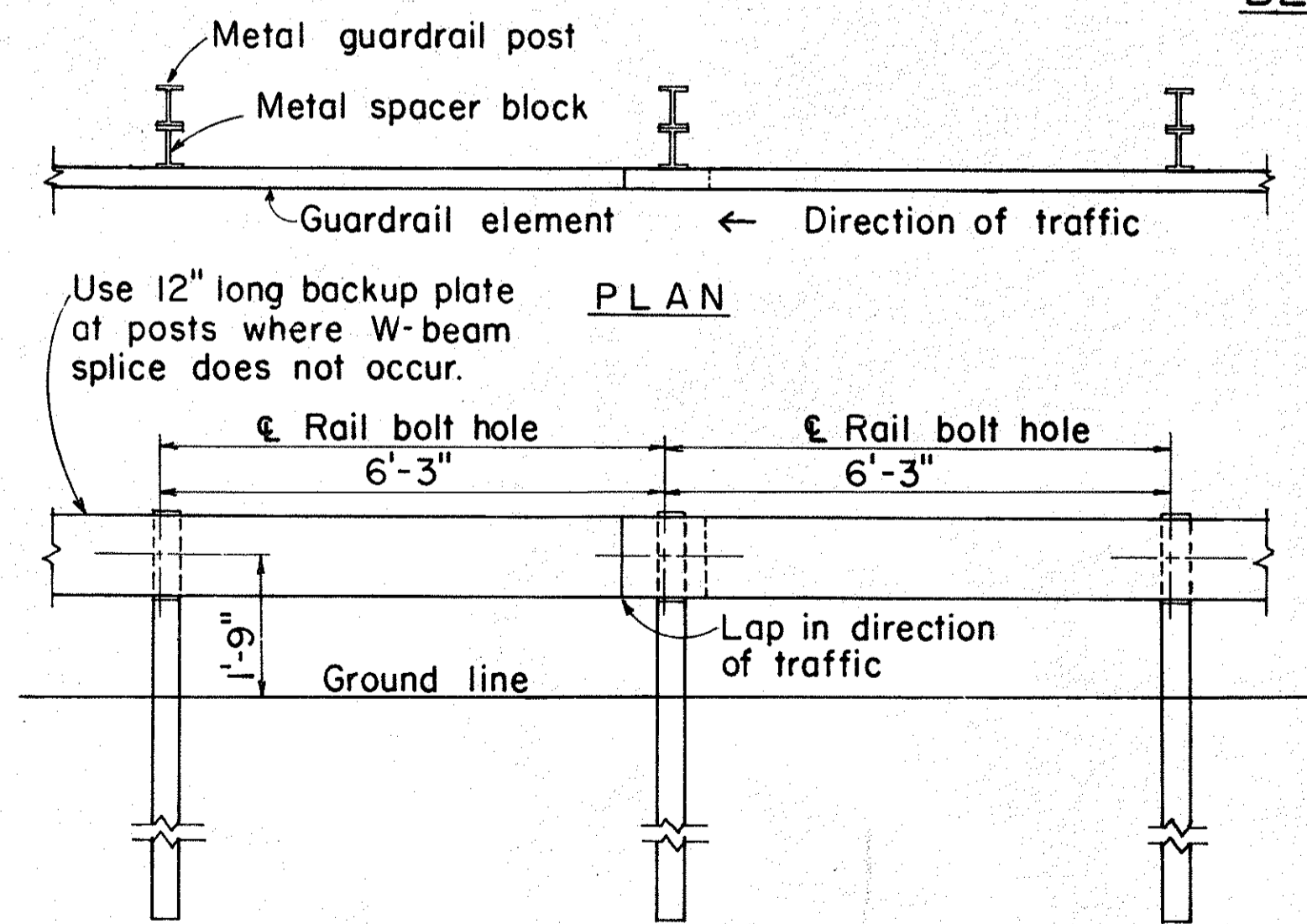
**BENT PLATE POST AND BLOCK**

SCALE: 1" = 1'-0"



**BACK-UP-PLATE**

N.T.S.



**METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK**

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

NO.	REVISION	APPROVED BY	DATE
1	Supersedes sht. DT 500 approved 12/30/69.	H.F.	9/22/82
2	Added General Notes No. 6	J.D.O.	9-28-83
3	Added details for adjusting guardrail height and added Back-up Plate and washer	E.T.	9/18/85

APPROVAL RECOMMENDED:  
*Eiichi Tanaka*  
TRAFFIC ENGINEER  
9/7/82  
DATE

APPROVED:  
*Shuhei Salsishi*  
ASSISTANT CHIEF, ENGINEERING  
9/22/82  
DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

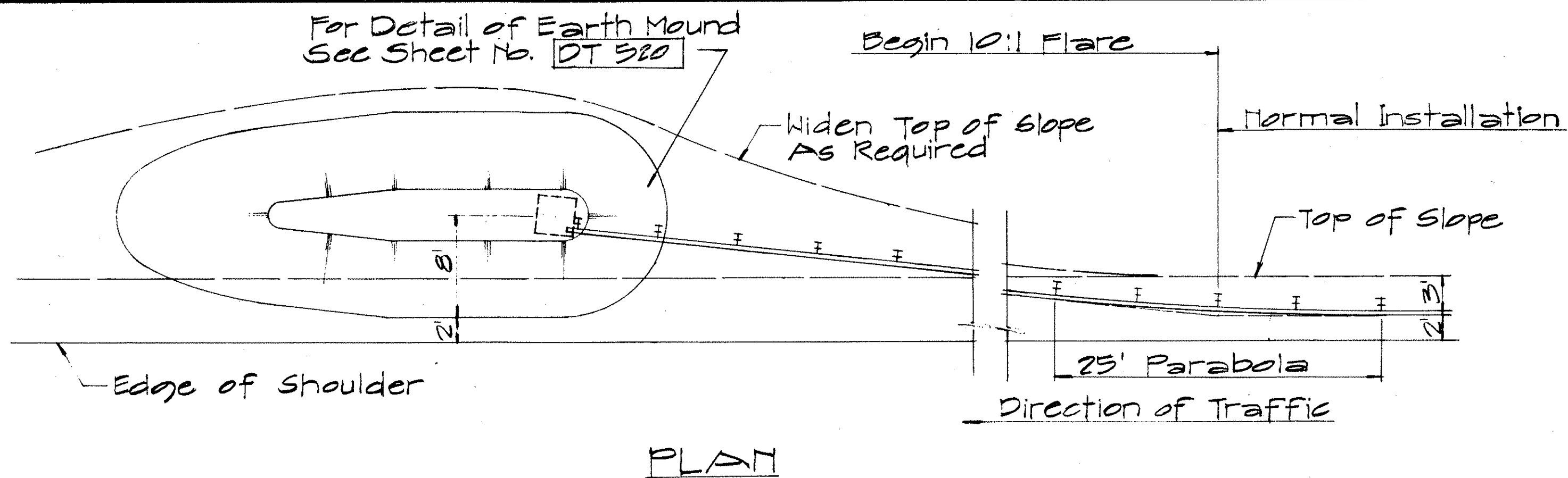
**STANDARD DETAILS**

**METAL GUARDRAIL**

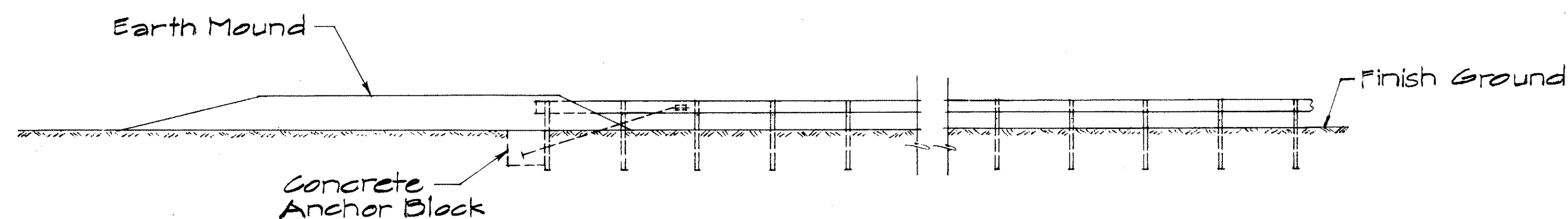
Scale: As Shown July, 1982  
SHEET No. 10 OF 11 SHEETS DT 500

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

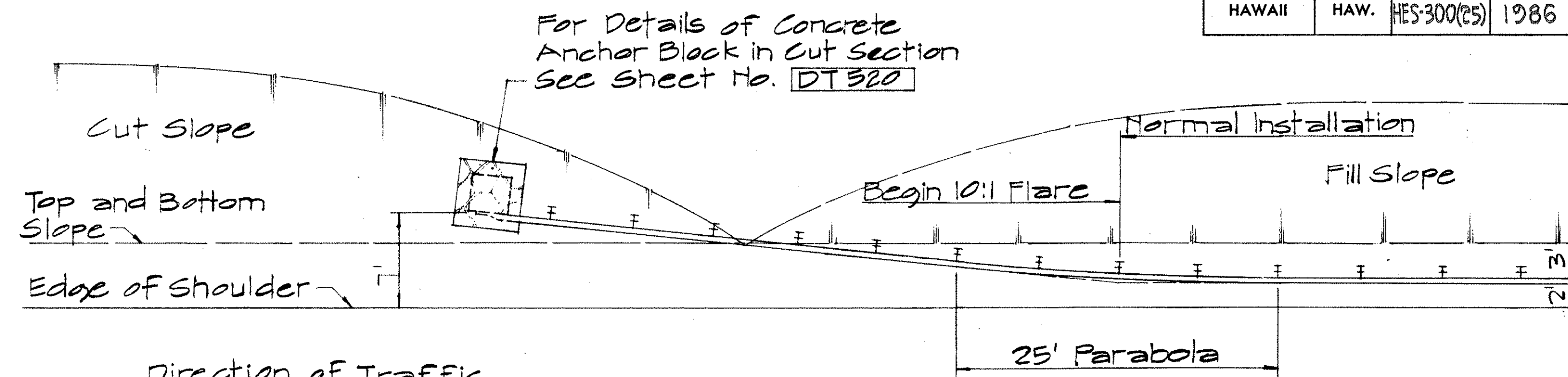
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HES-300(25)	1986	17	17



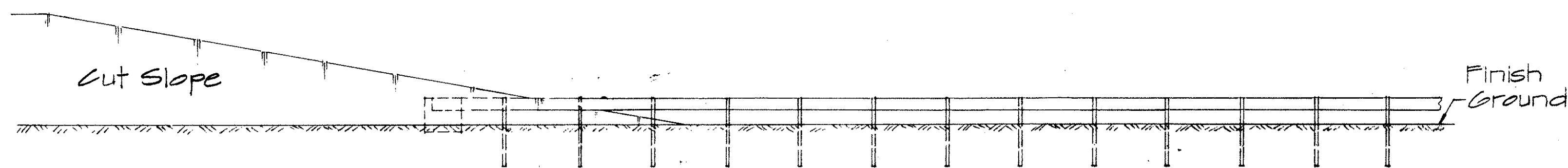
PLAN



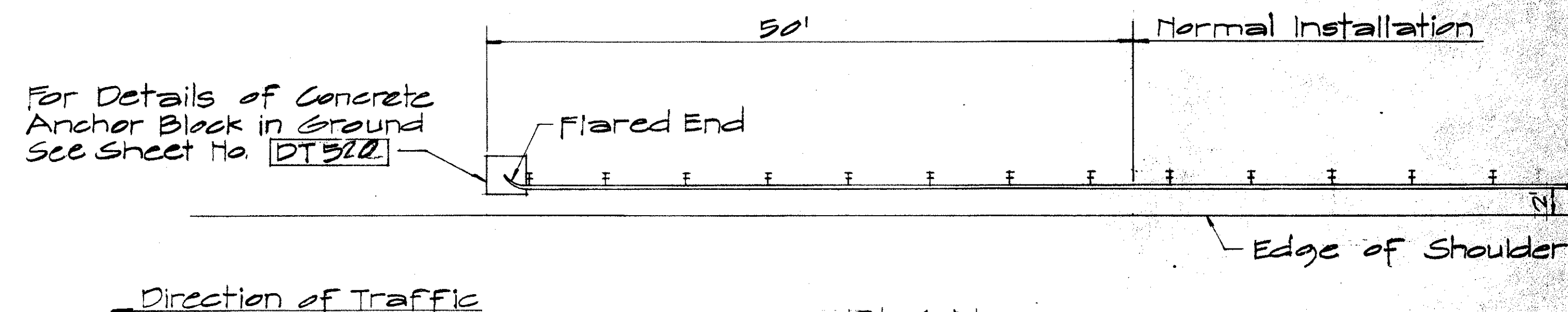
ELEVATION  
TYPE "D" FLARE  
Sc. 1/8" = 1'-0"



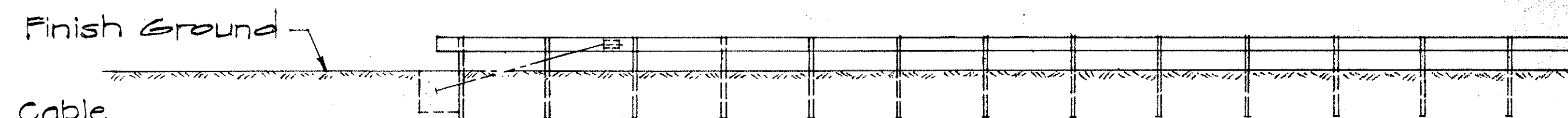
PLAN



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

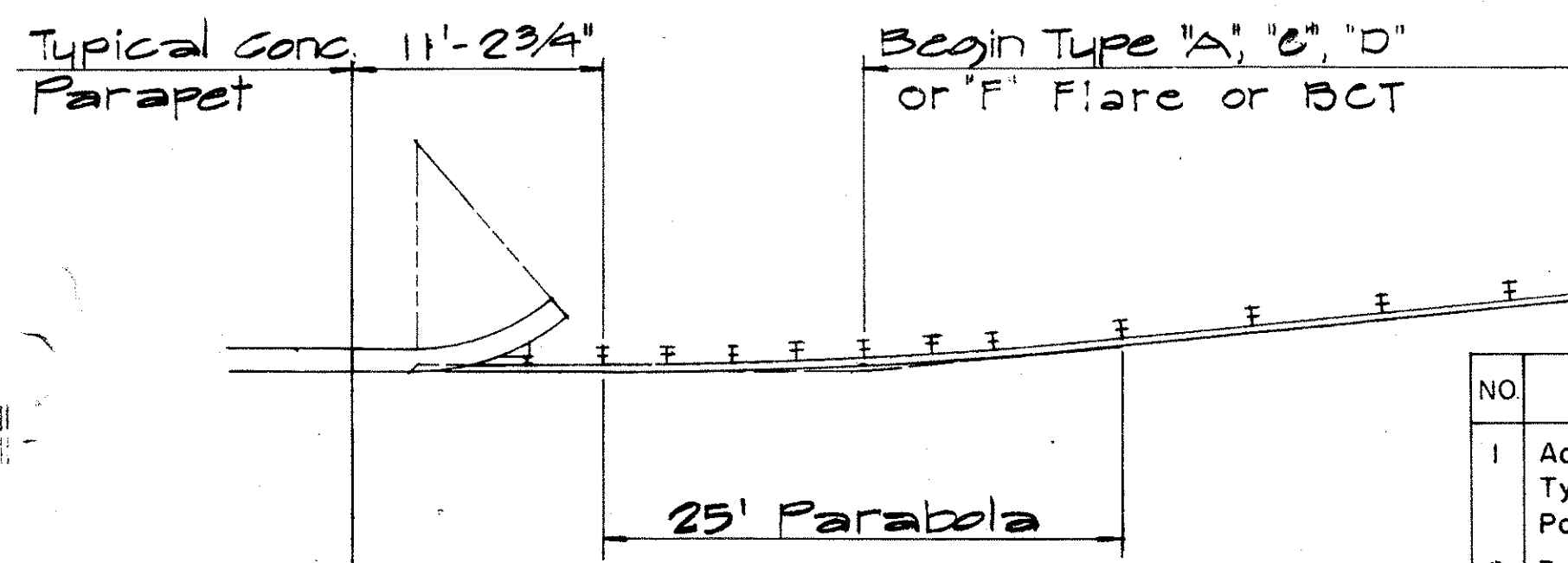


PLAN



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

NOTE:  
For detail of Breakaway Cable Terminal (BCT) See Sheet No. DT 319



TYPICAL LAYOUT PLAN OF END POST CONNECTION  
Sc. 1/8" = 1'-0"

APPROVAL RECOMMENDED:  
*Etsuki Tanaka* 12/29/62  
TRAFFIC ENGINEER DATE

APPROVED:  
*[Signature]* 12-29-62  
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1	Additional Posts Added to Typical Layout Plan Of End Post Connection	H.C.	4-12-72
2	Delete Type "B" Flare and Type "E" Flare	H.C.	6-15-78

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**STANDARD DETAILS**  
**TRAILING END**  
**FLARE - ONE & TWO**  
**WAY ROADWAY**

Scale: As Noted April 1967

SHEET No. 11 OF 11 SHEETS DT 317

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