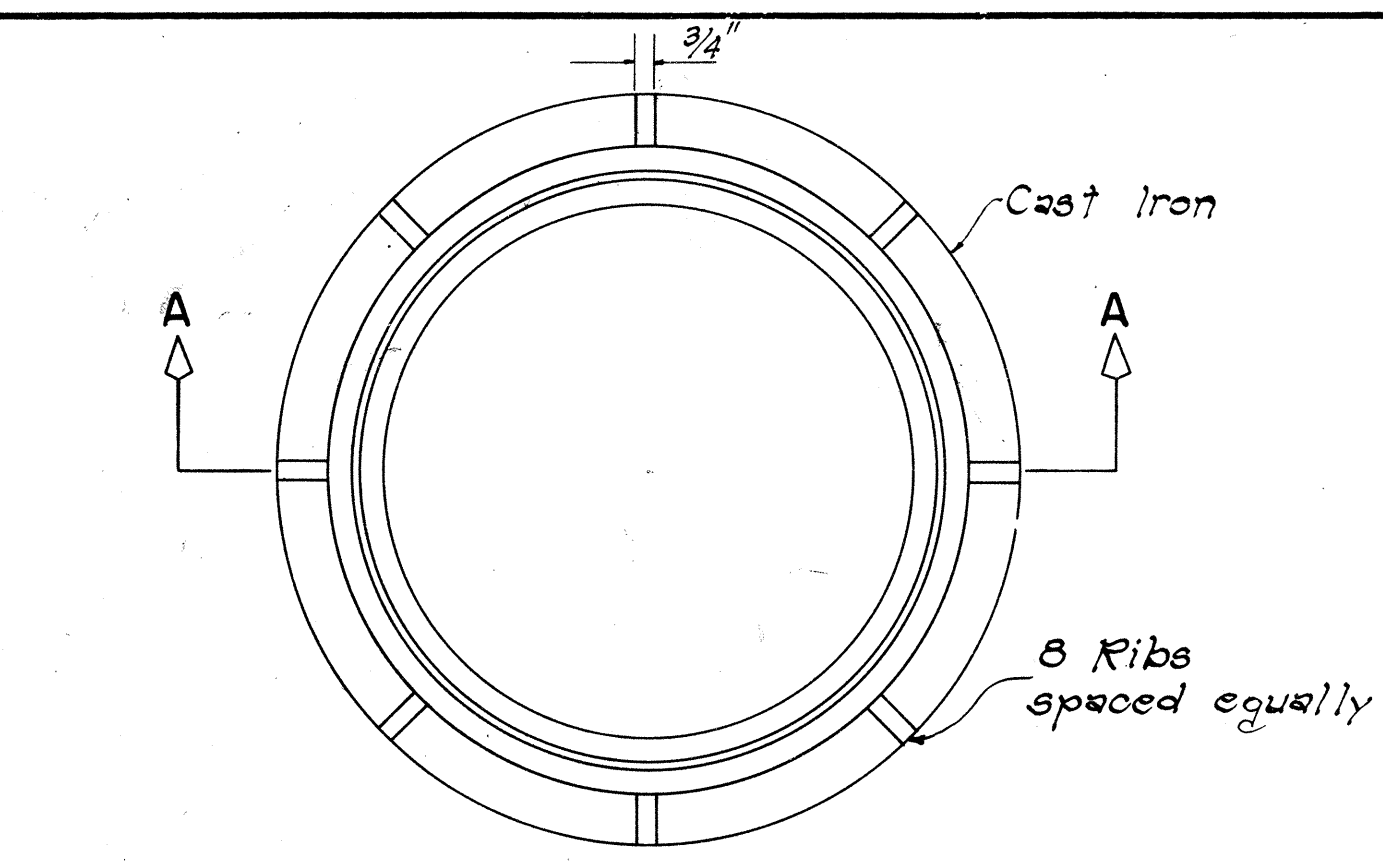
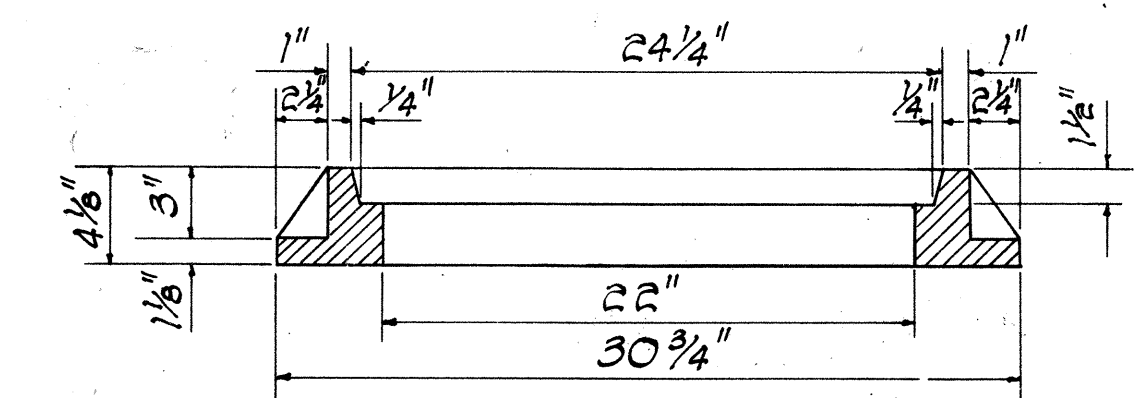


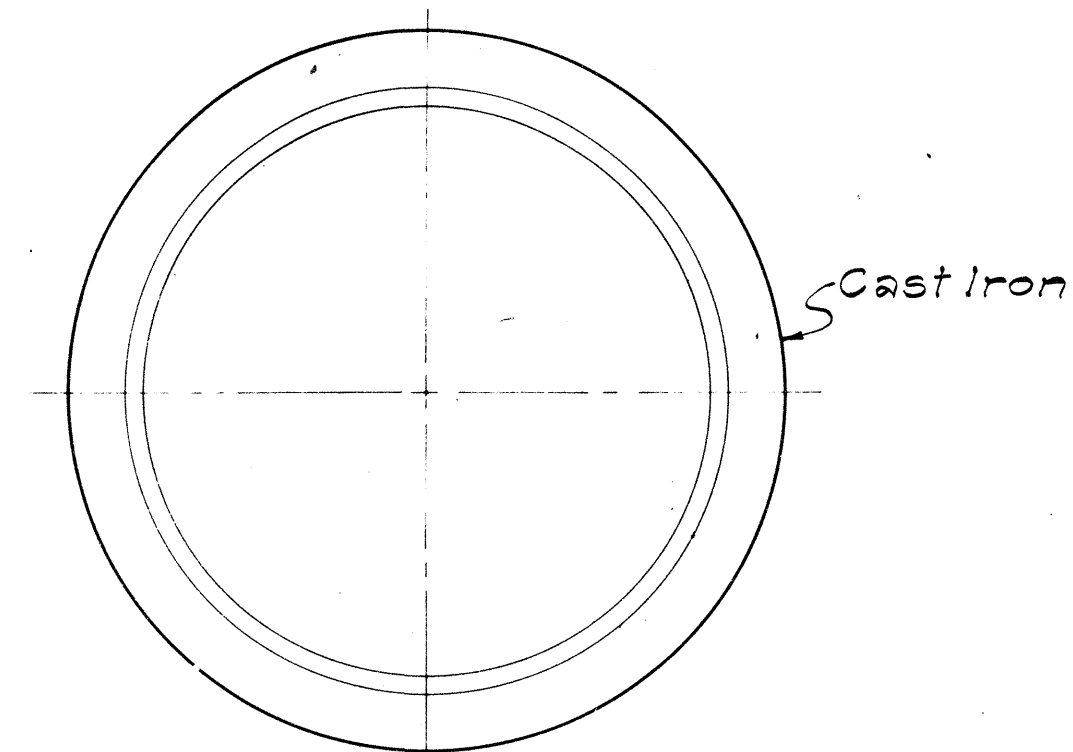
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-01-78	1977	4	11



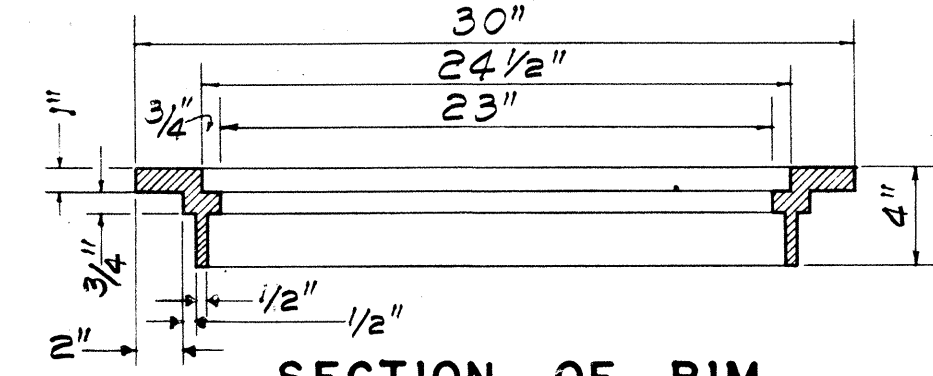
PLAN



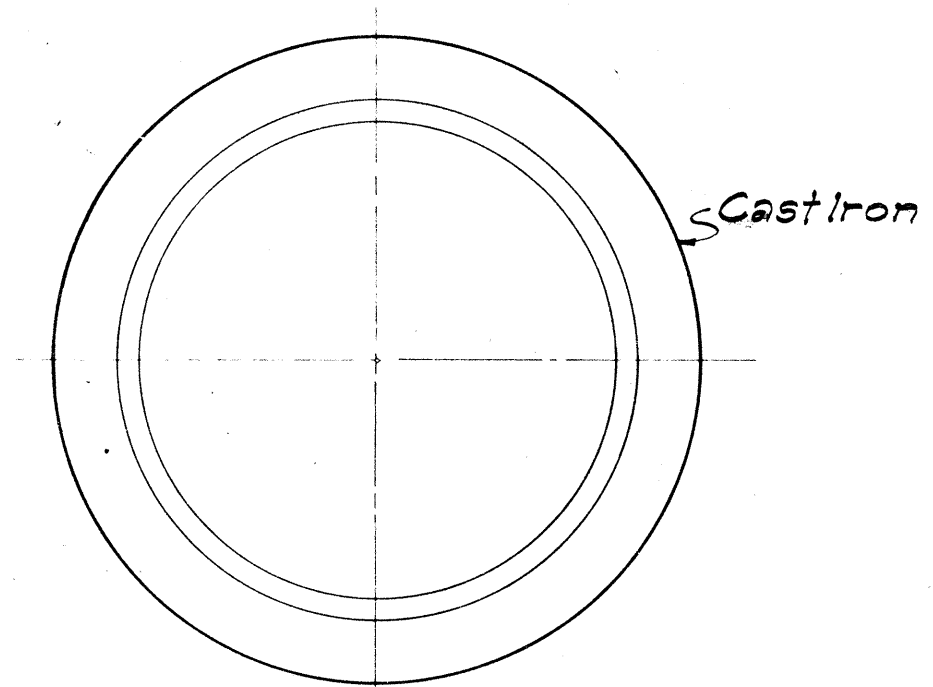
SECTION A-A



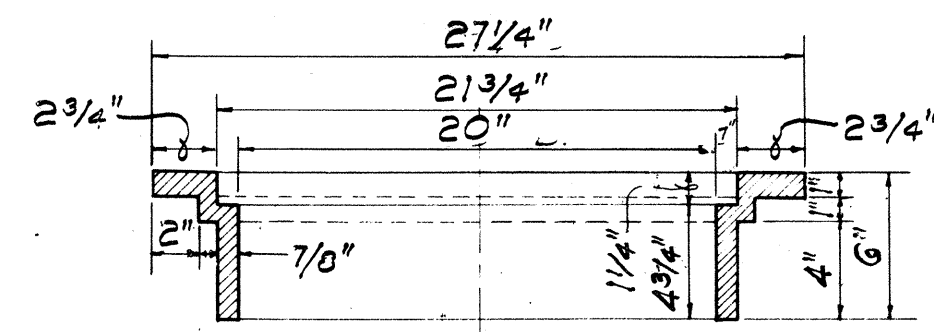
PLAN OF RIM



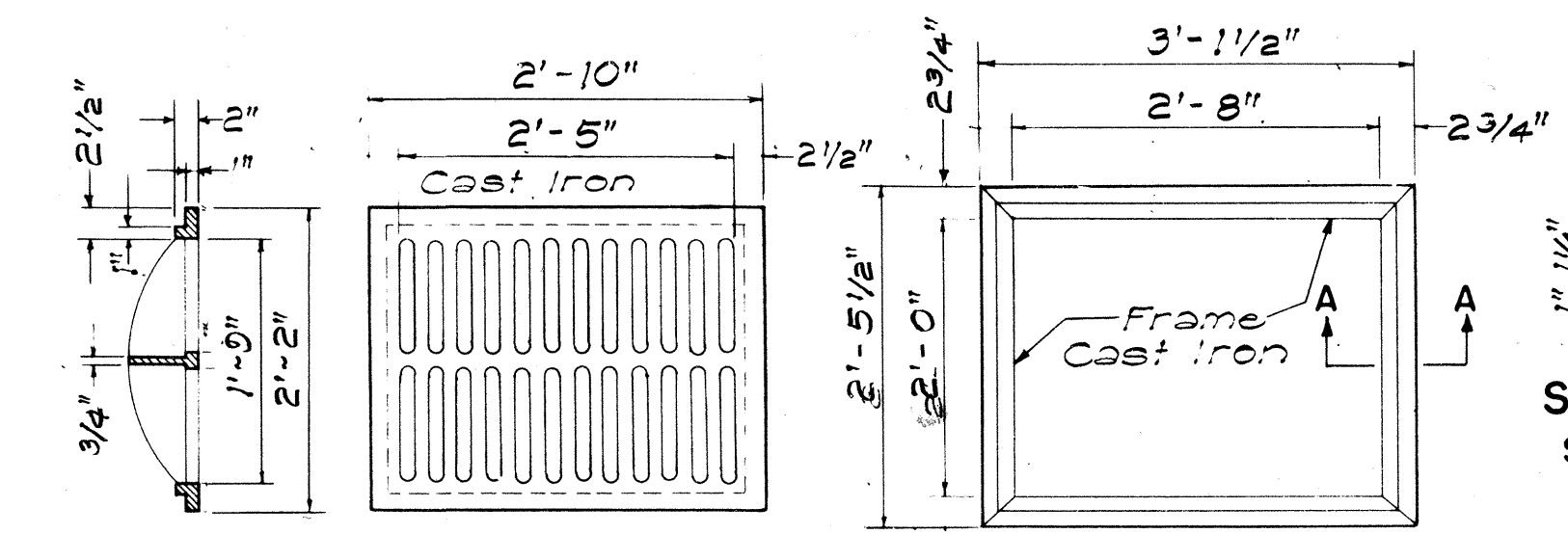
SECTION OF RIM



PLAN OF RIM



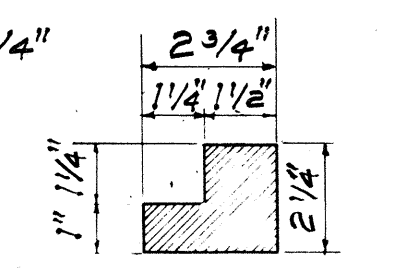
SECTION OF RIM



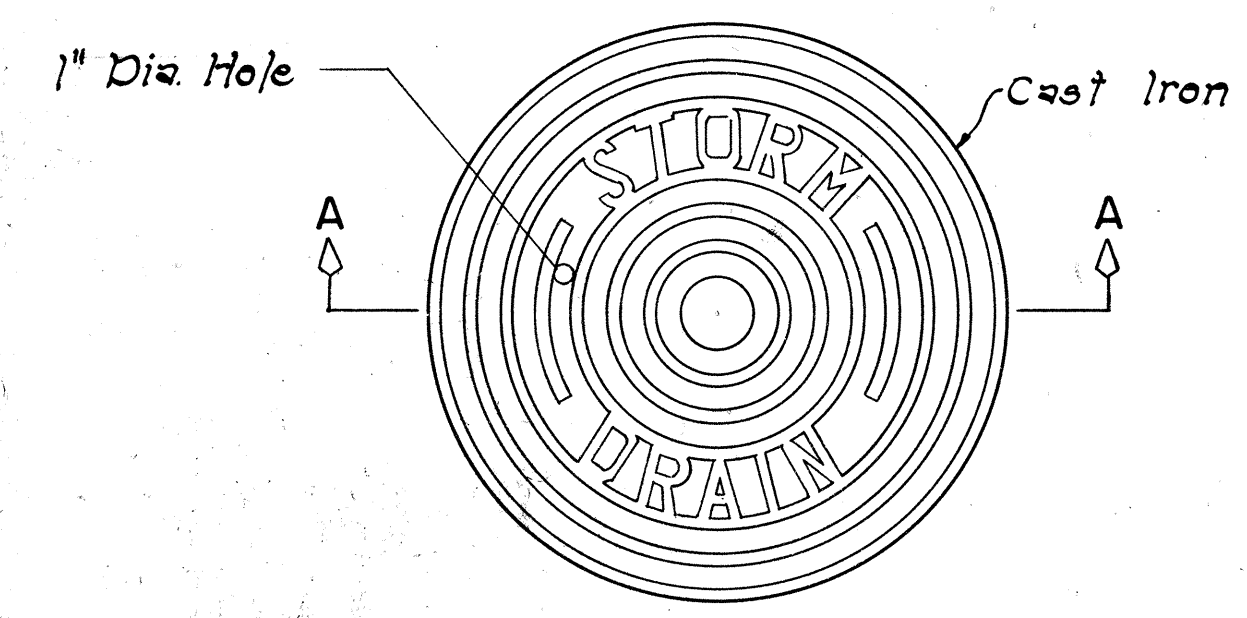
SECTION TOP VIEW TOP VIEW

TYPE C C.I. FRAME AND GRATE

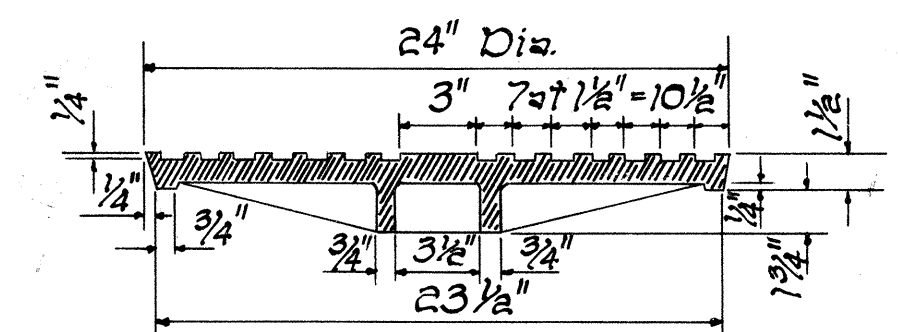
SCALE: 3/4" = 1'-0"



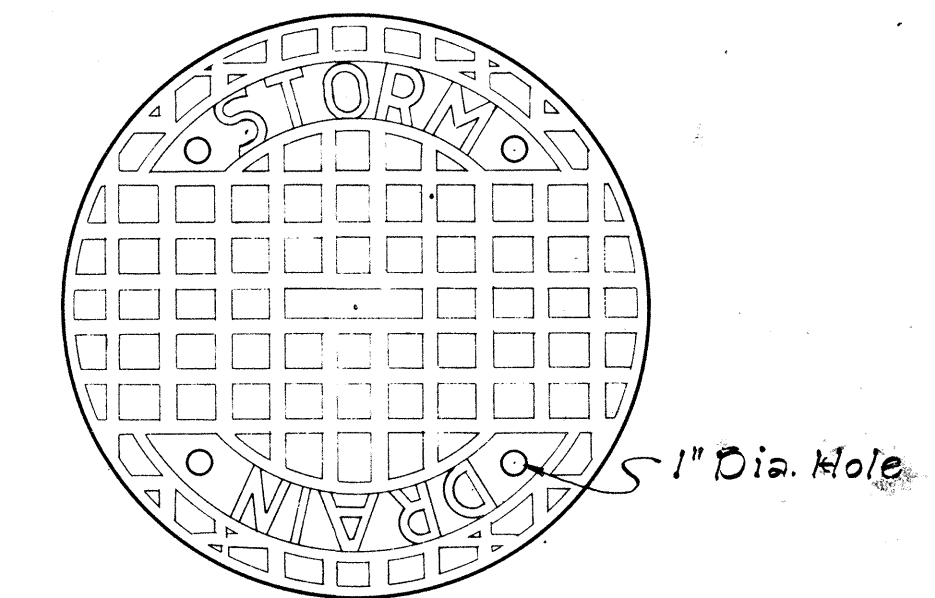
SECTION "A-A"
SCALE 3/4" = 1'-0"



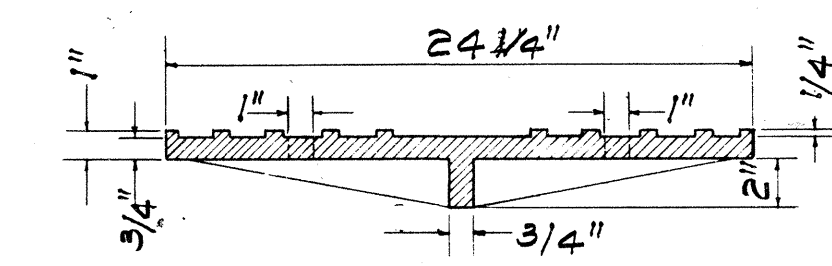
PLAN



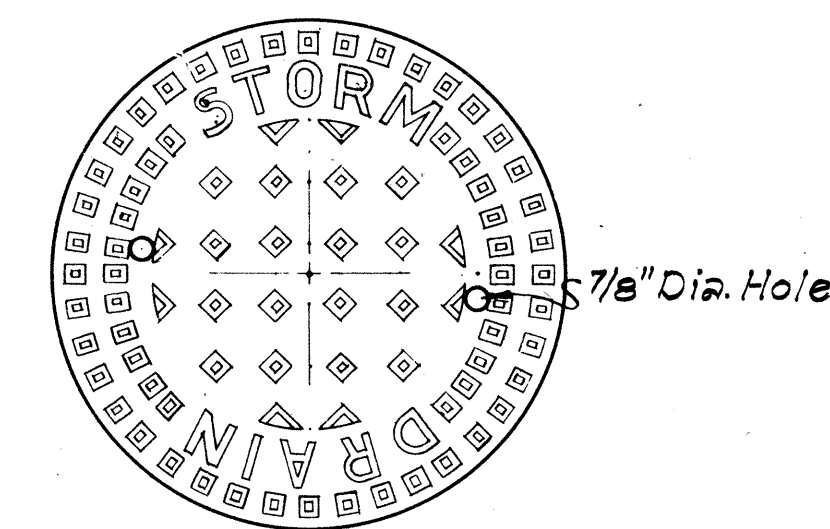
SECTION A-A



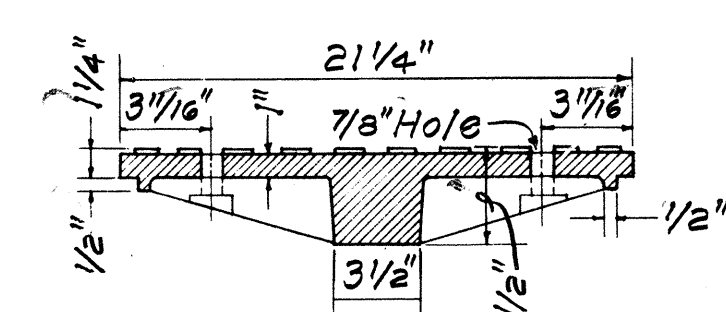
TOP VIEW OF COVER



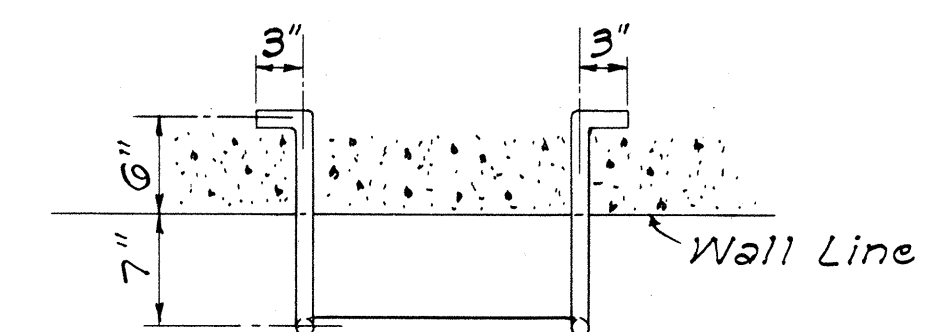
SECTION



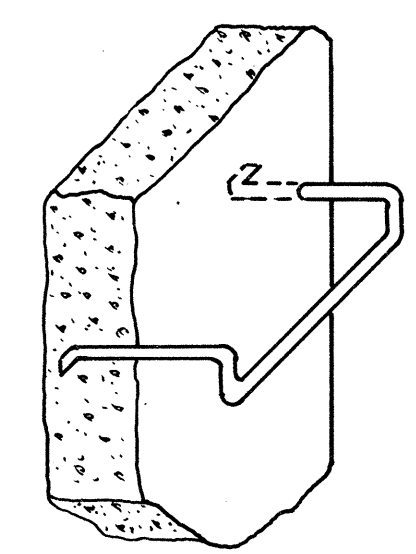
TOP VIEW OF COVER



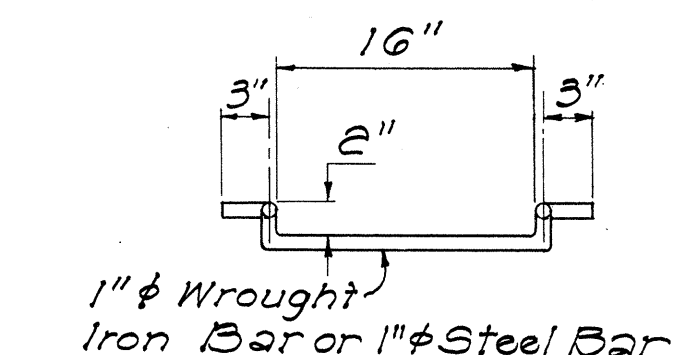
SECTION



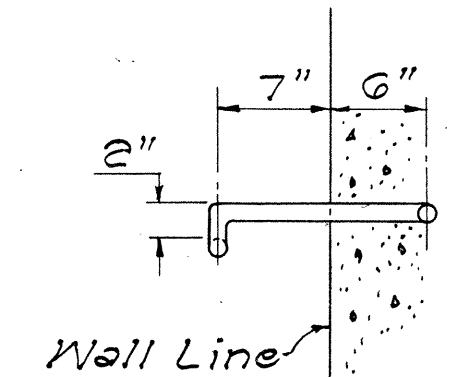
P L A N



PICTORIAL VIEW
NOT TO SCALE



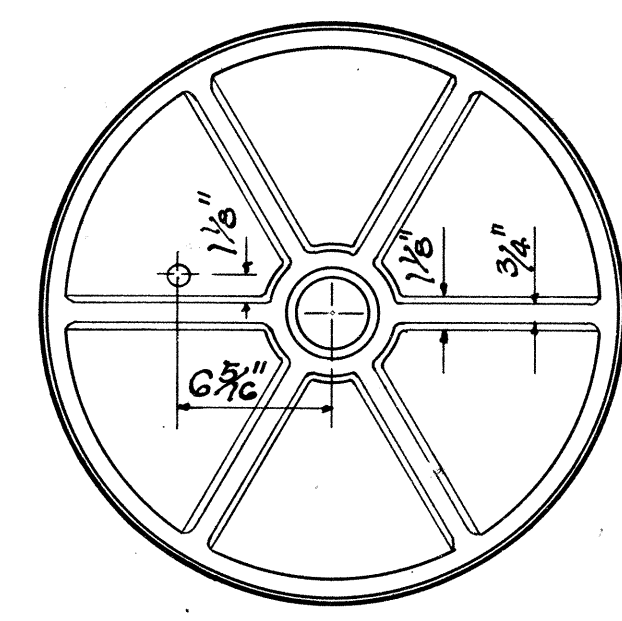
FRONT VIEW



SIDE VIEW

DETAILS OF MANHOLE RUNG

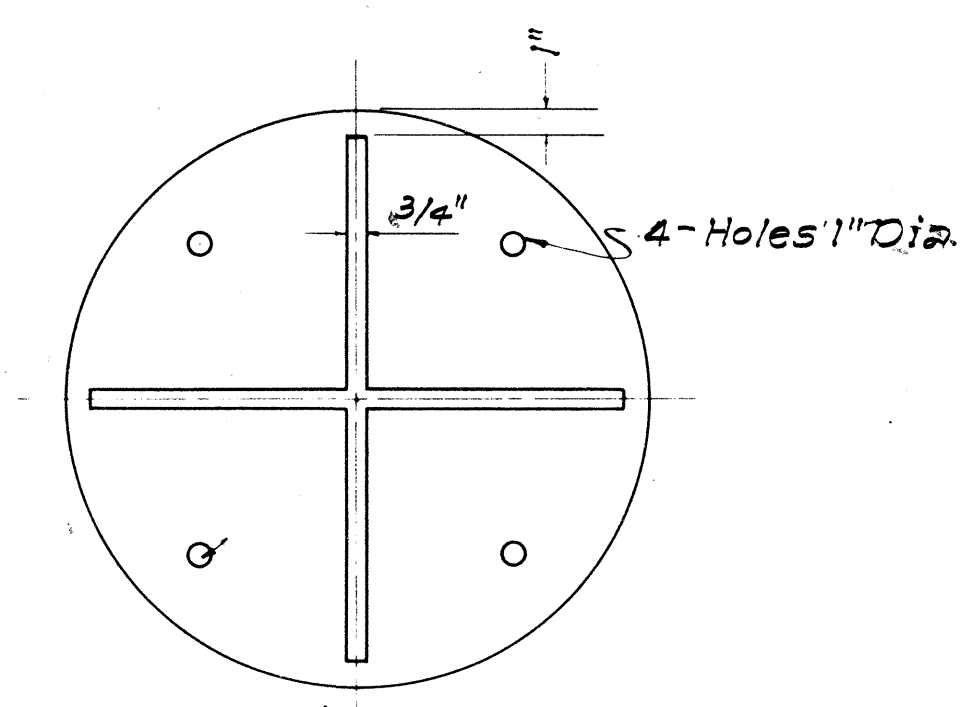
SCALE: 1" = 1'-0"



BOTTOM VIEW OF COVER

DETAILS OF TYPE "P"
CAST IRON FRAME AND COVER

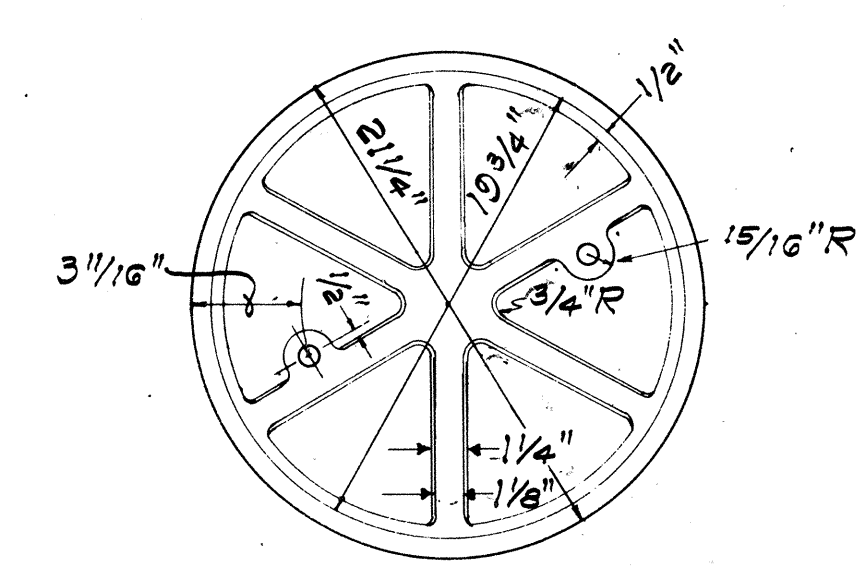
SCALE: 1-1/2" = 1'-0"



BOTTOM VIEW OF COVER

DETAILS OF TYPE "B"
CAST IRON FRAME AND COVER

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



BOTTOM VIEW OF COVER

DETAILS OF TYPE "A"
CAST IRON FRAME AND COVER

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

NO.	REVISION	APPROVED BY	DATE
1.	Detail of Type "P" Cast Iron Frame and Cover	H.T.	1-6-71
2.	Details of Manhole Rungs to conform to OSHA.	H.T.	1-21-75
3.	Option for Manhole Rungs	H.T.	1-18-76

APPROVAL RECOMMENDED:		
HYDRAULIC DESIGN ENGINEER	<i>P. Paganis</i>	12-17-69 DATE
APPROVED:		
ASSISTANT CHIEF, ENGINEERING	<i>John J. Delaney</i>	12-17-69 DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
CATCH BASIN AND
MANHOLE CASTINGS

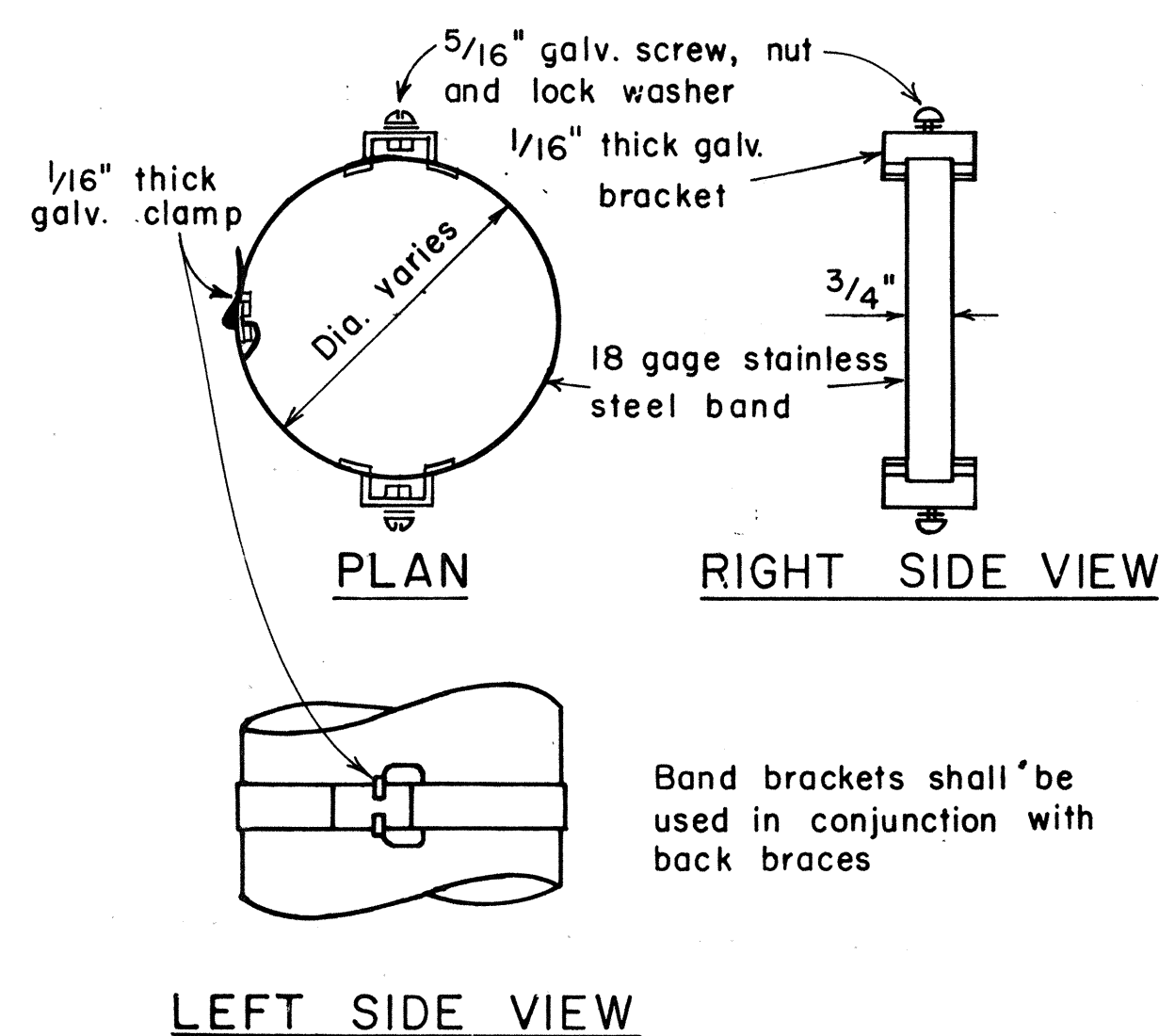
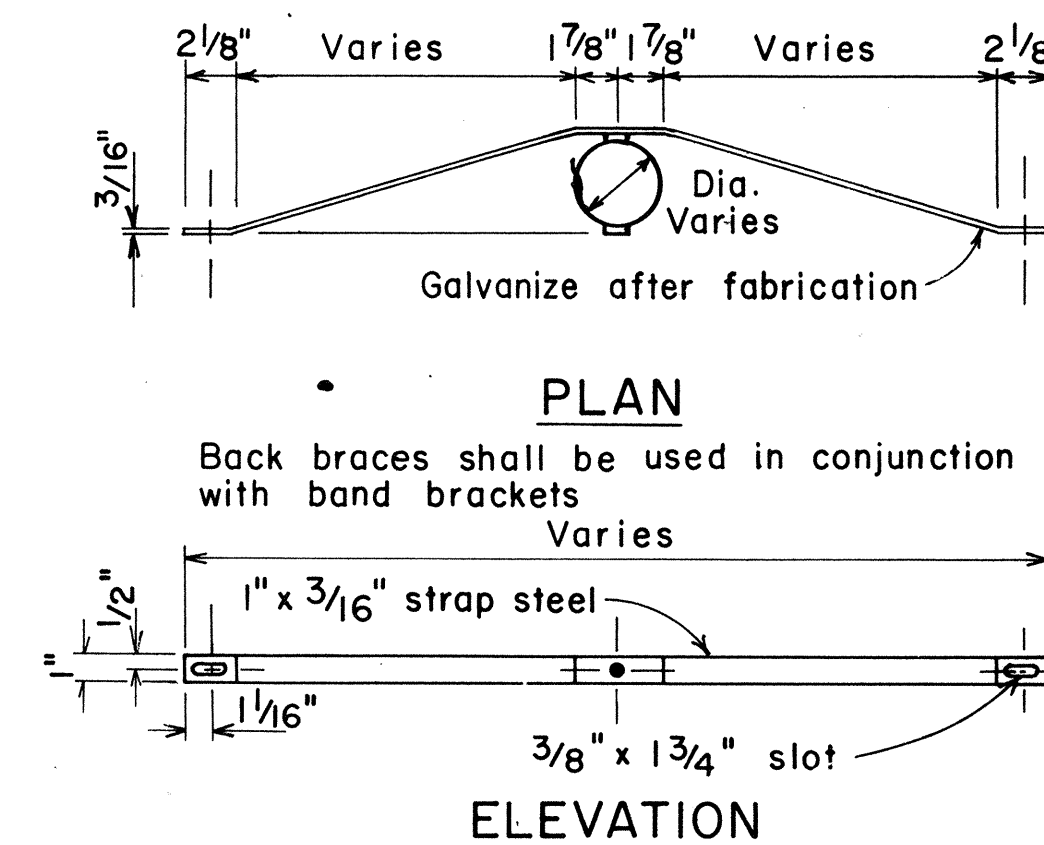
Scale: As Noted Date: July, 1969
SHEET NO. 1 OF 7 SHEETS DH 6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-0178	1979	5	11

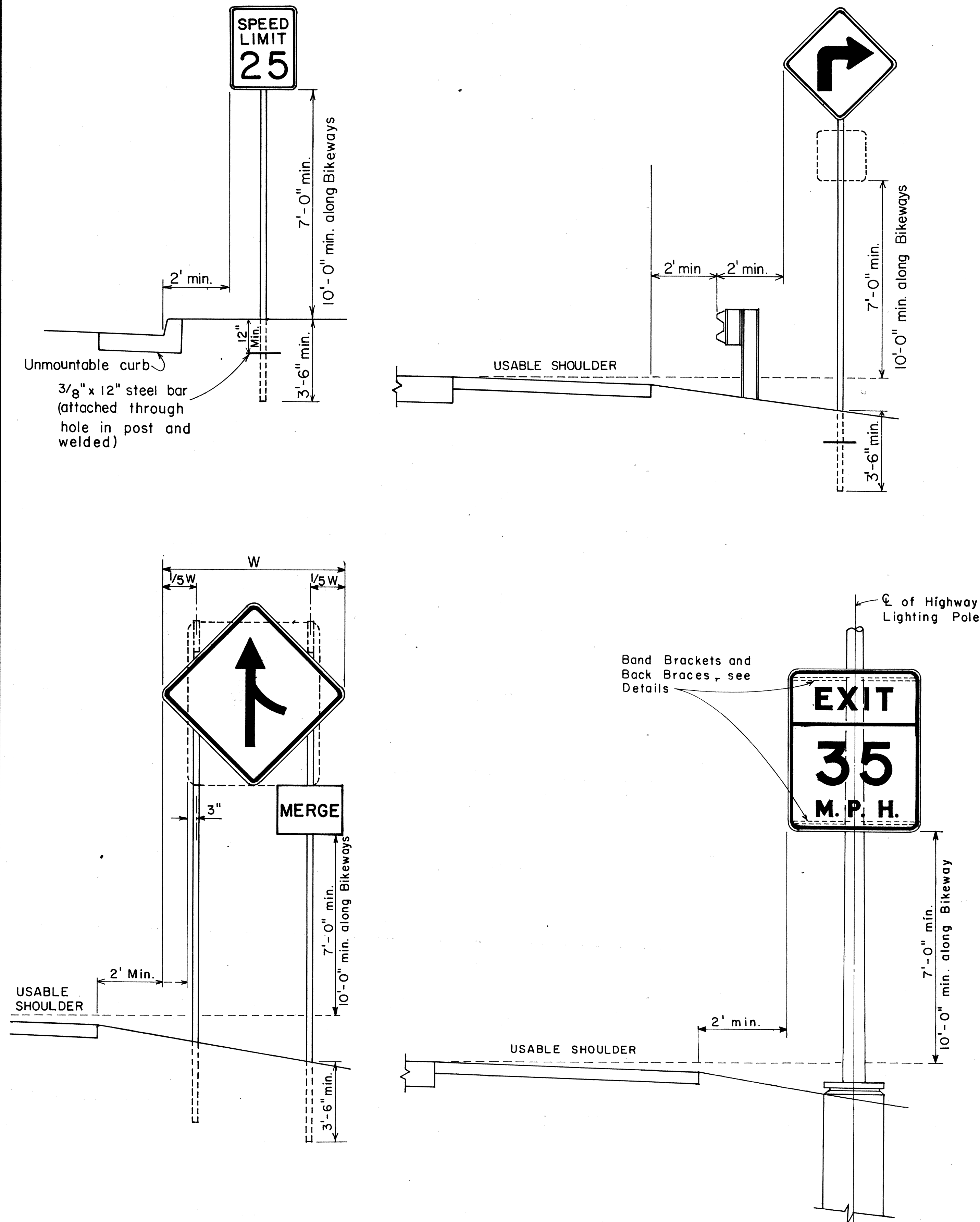
GENERAL NOTES

- 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.

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 S. Sakai 11/15/77
ASSISTANT CHIEF, ENGINEERING DATE

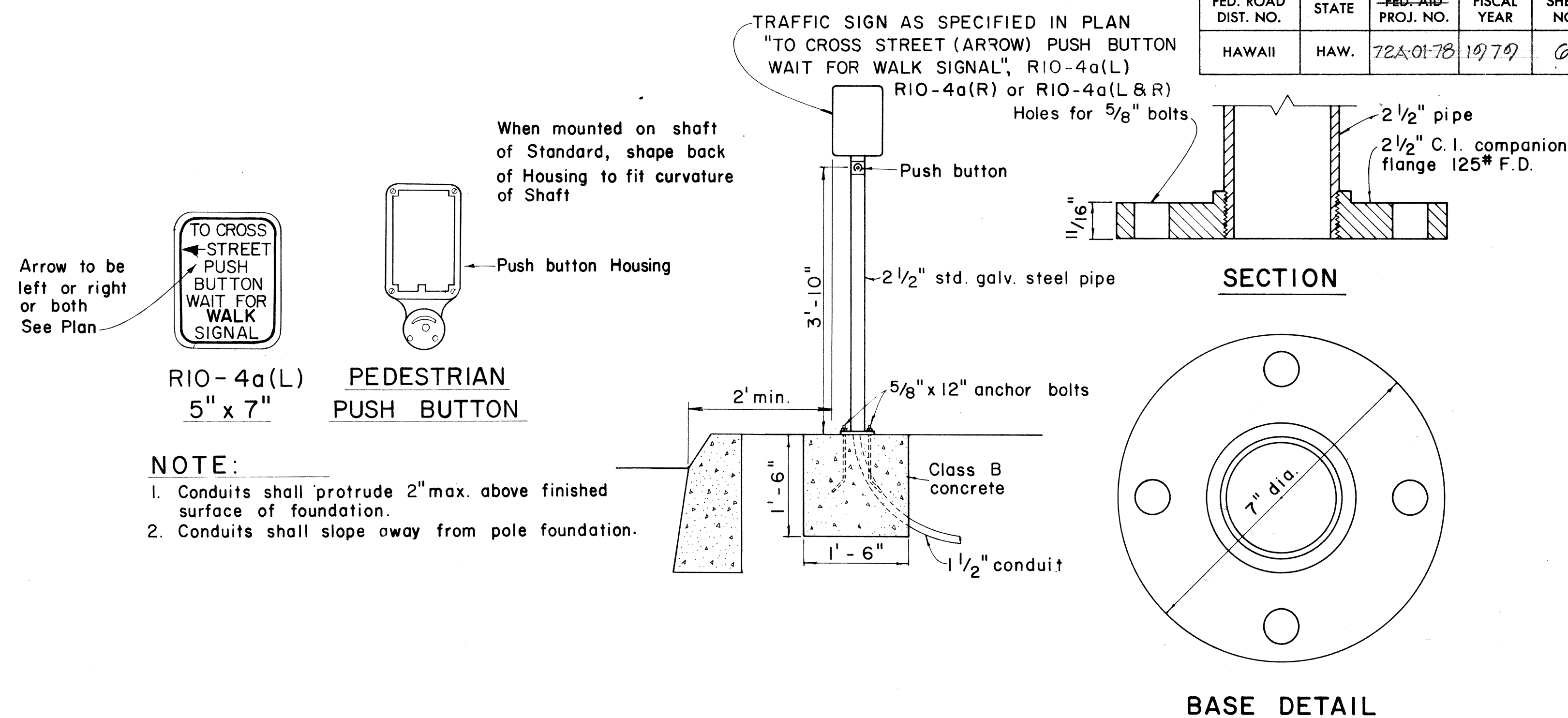
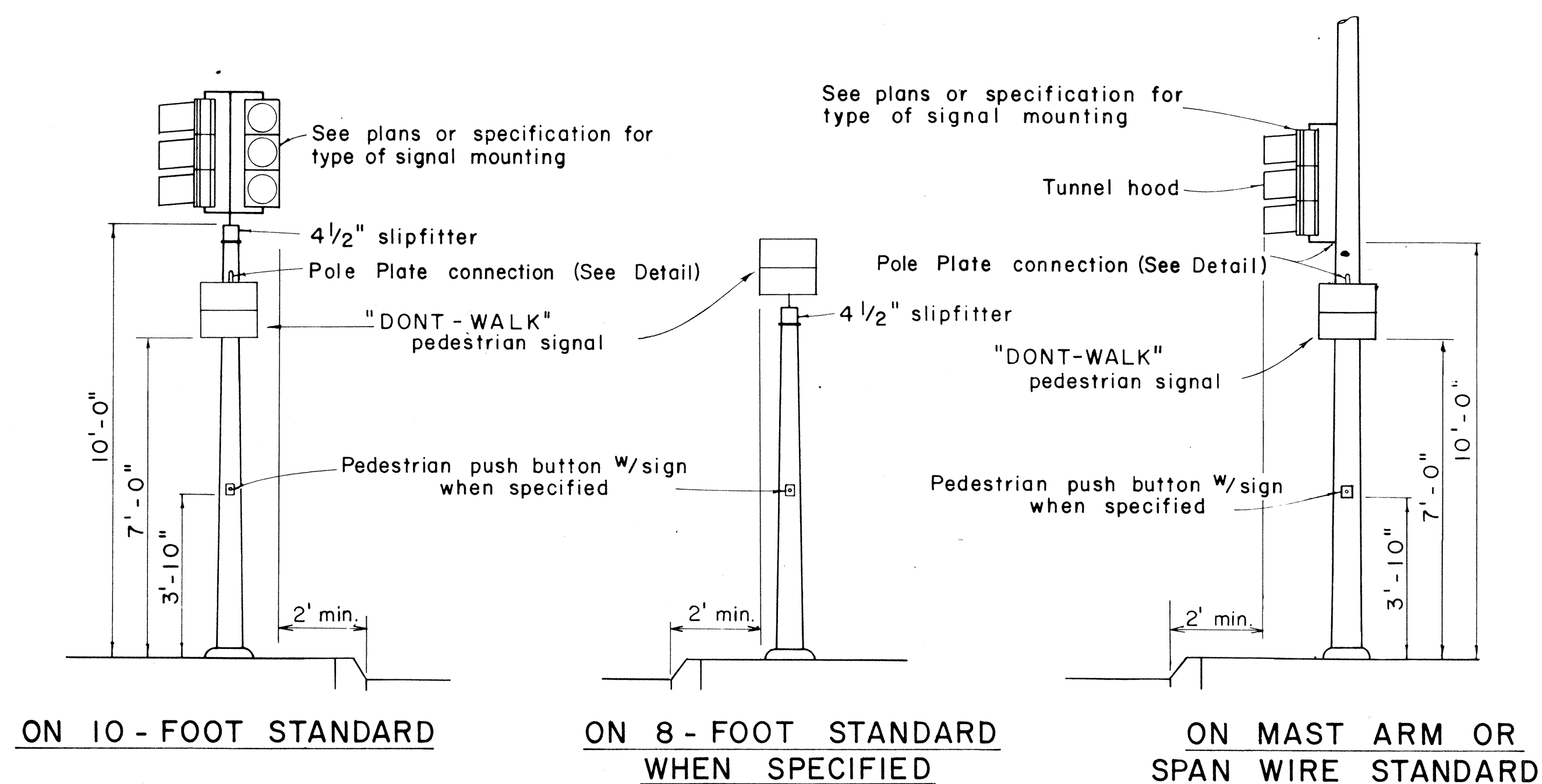
NO.	REVISION	APPROVED BY	DATE
1	Supersedes Sht. DT-100 approved 12/30/69	H.T.	11/15/77

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
MISCELLANEOUS SIGN DETAILS

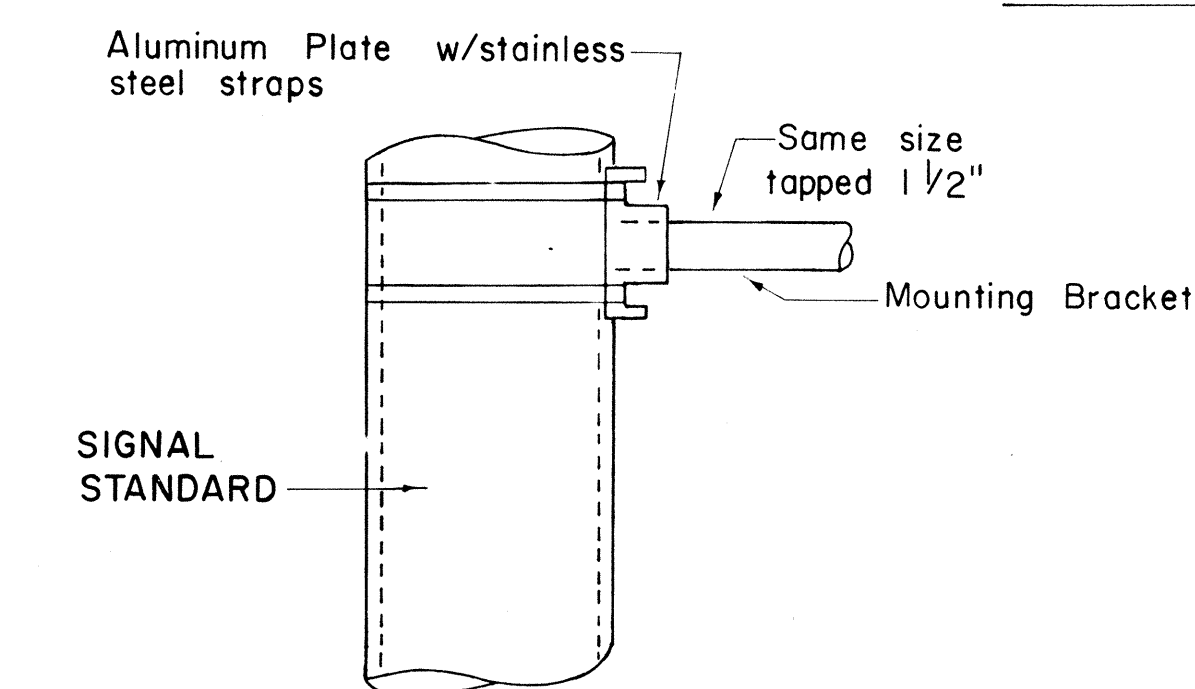
Not to scale June, 1977

SHEET NO. 2 OF 7 SHEETS DT 100

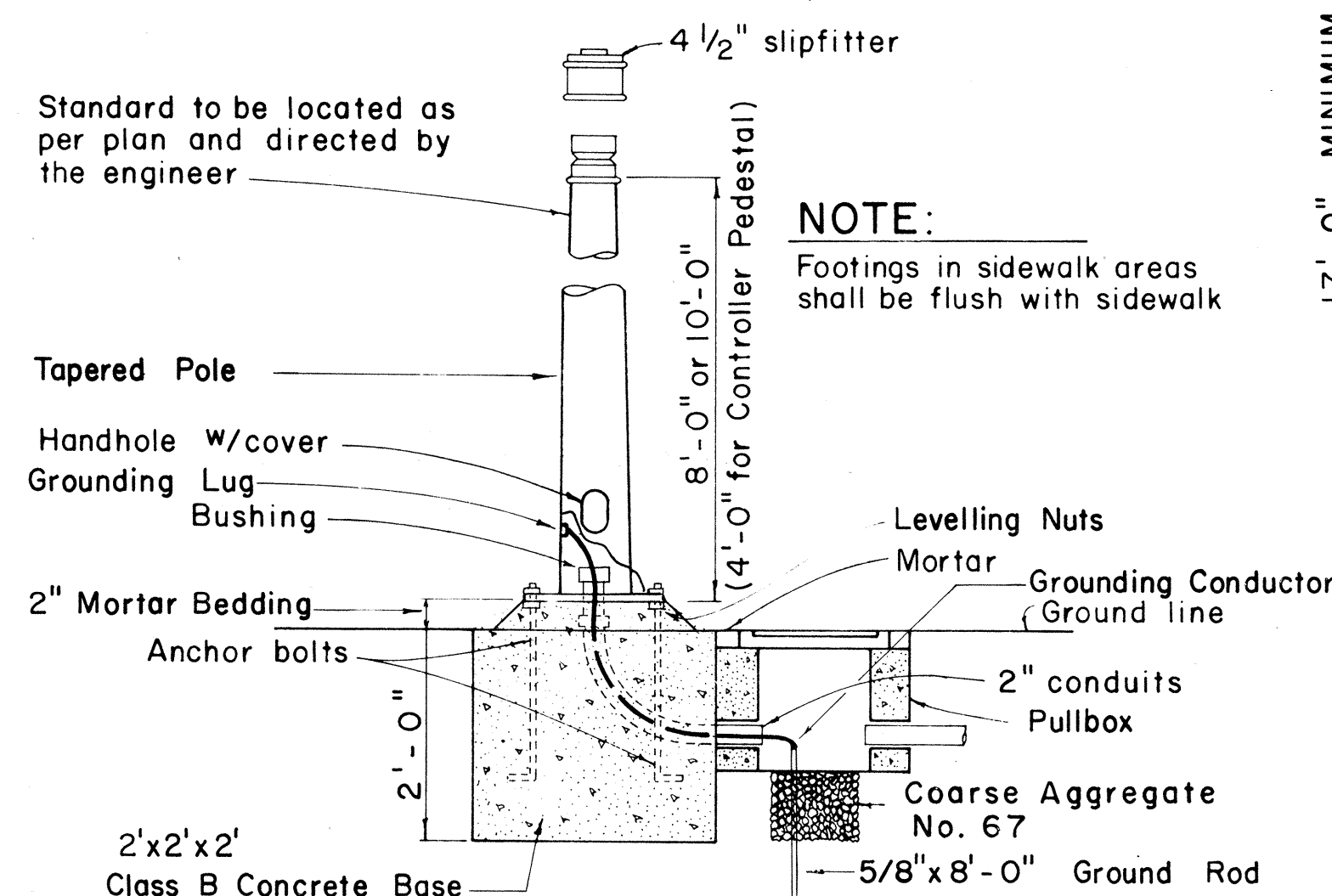
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-01-78	1979	6	11



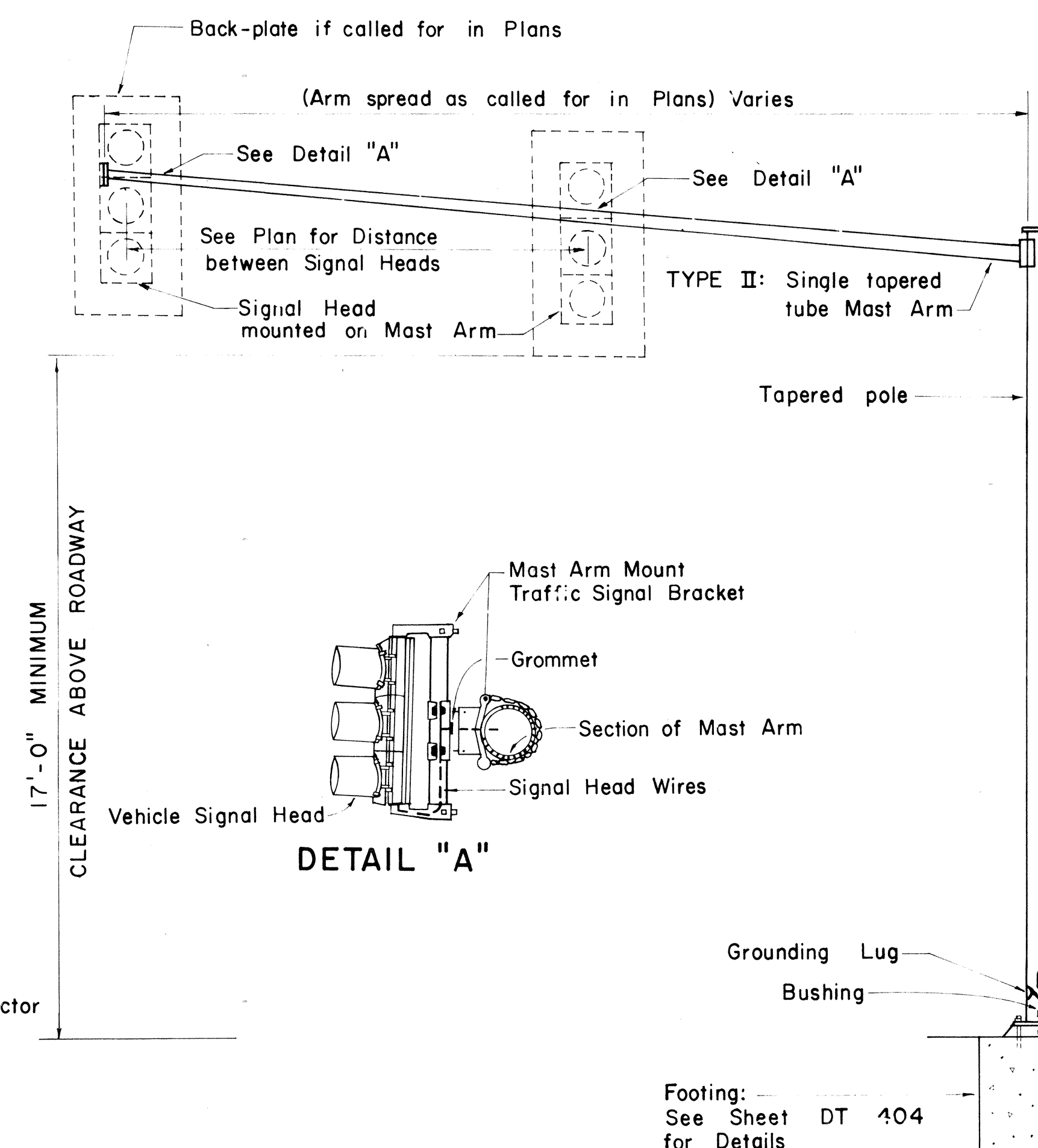
TYPICAL EQUIPMENT MOUNTINGS



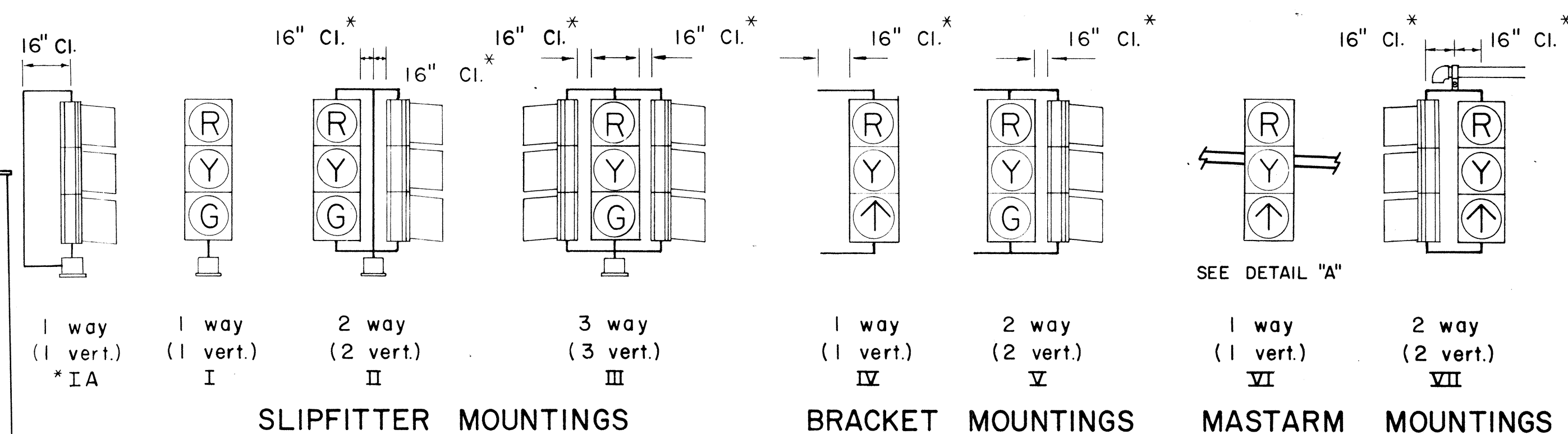
DETAIL OF POLE PLATE CONNECTIONS



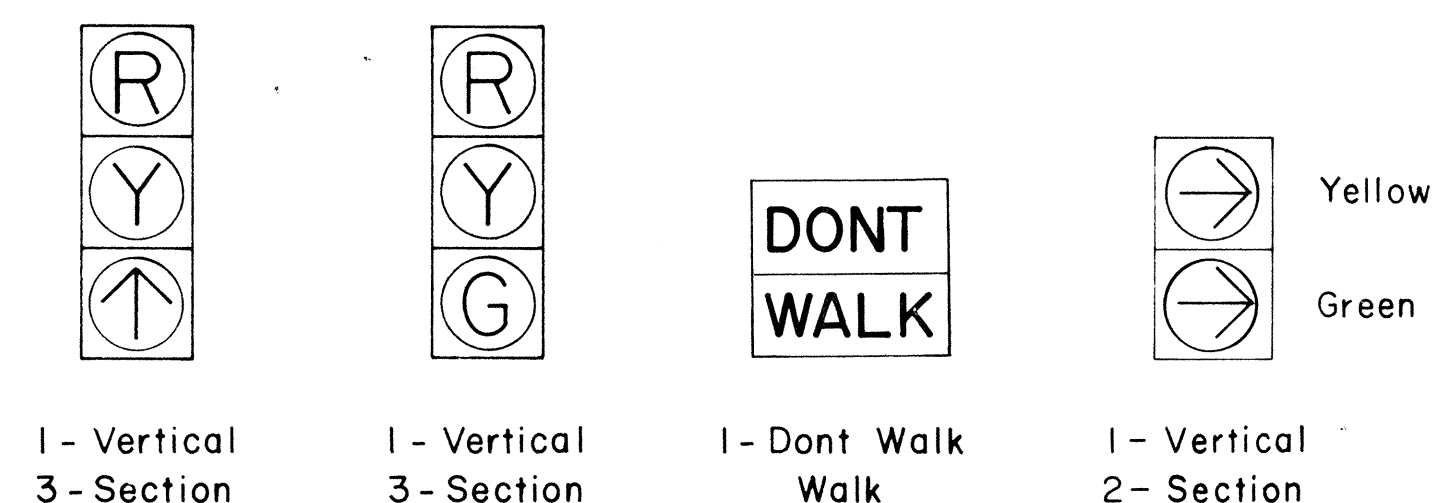
TYPE I SIGNAL STANDARD
OR CONTROLLER PEDESTAL
AND FOOTING



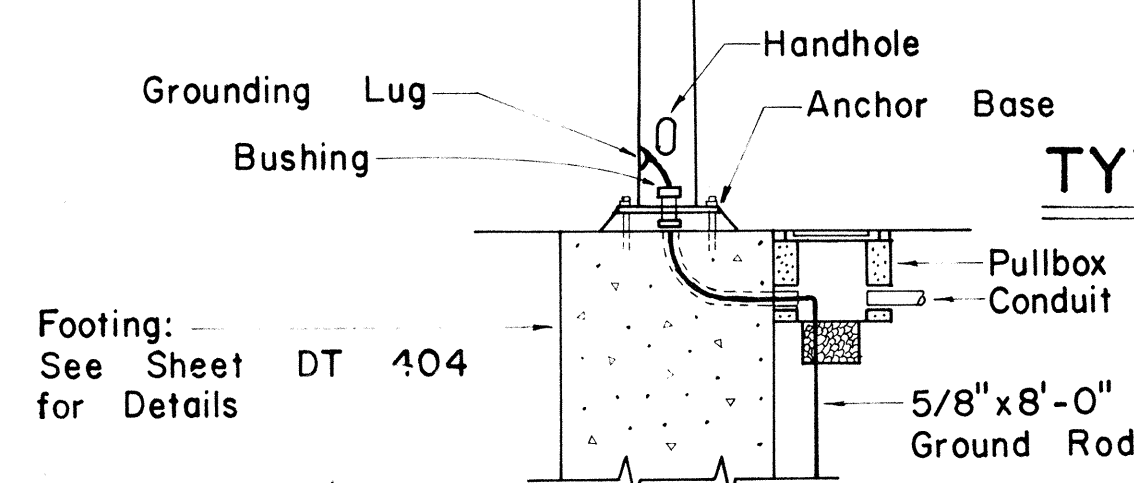
TYPE II MAST ARM AND STANDARD



TYPICAL VEHICULAR AND PEDESTRIAN SIGNAL MOUNTINGS



TYPICAL SIGNAL ARRANGEMENTS



NO.	REVISION	APPROVED BY	DATE
1	Revise code nos. for Pedestrian Push Button signs.	H.T.	3/12/23
2	Revise Details of Traffic and Pedestrian Signals, Standards and Pedestrian Push Button and Signs.	H.T.	3/5/24
3	Revise signal indications.	H.T.	9/22/24
4	Remove Note No. 3 & Revise clearance and dimension.	H.T.	9/19/24

APPROVAL RECOMMENDED:

Eiichi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

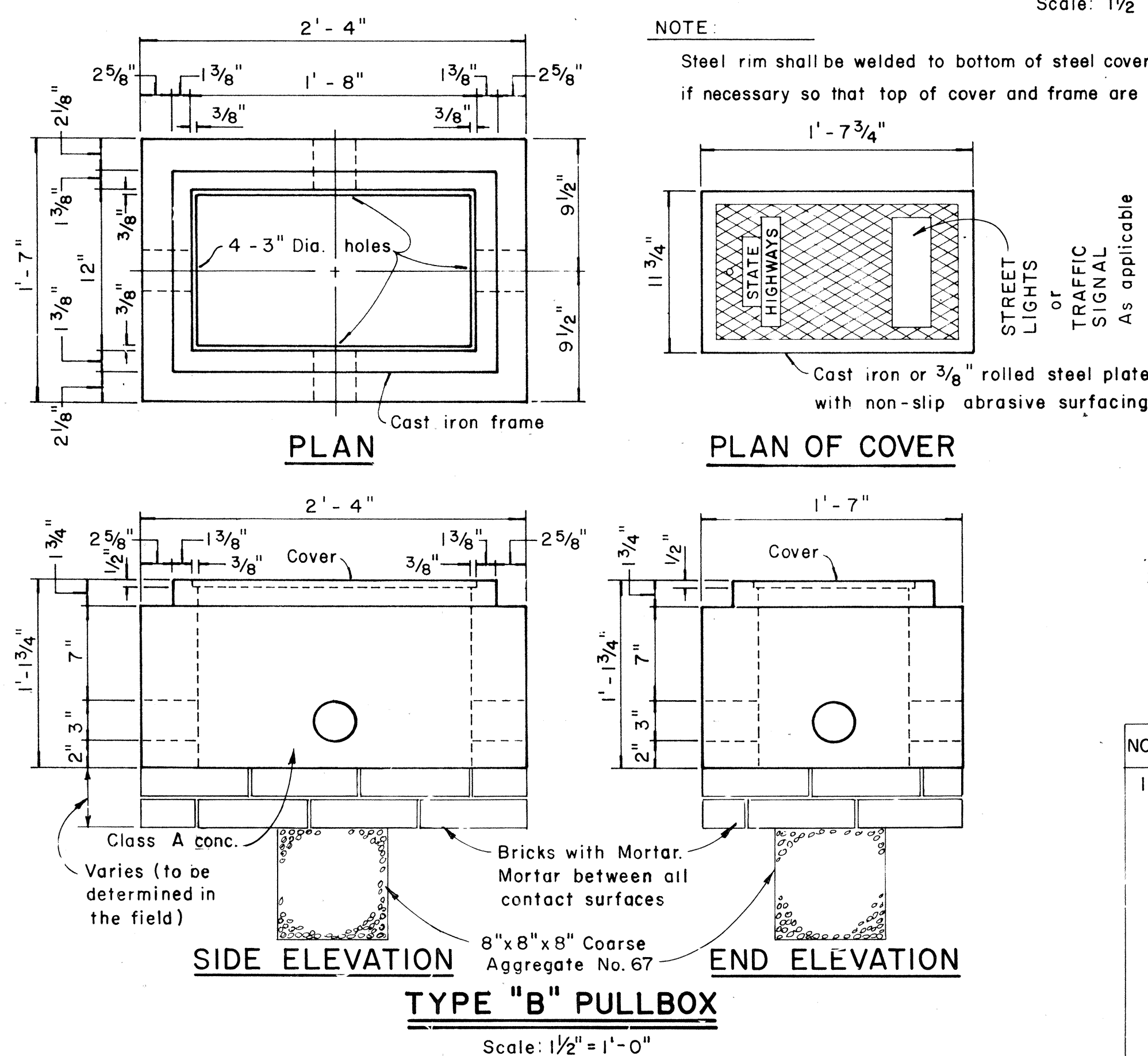
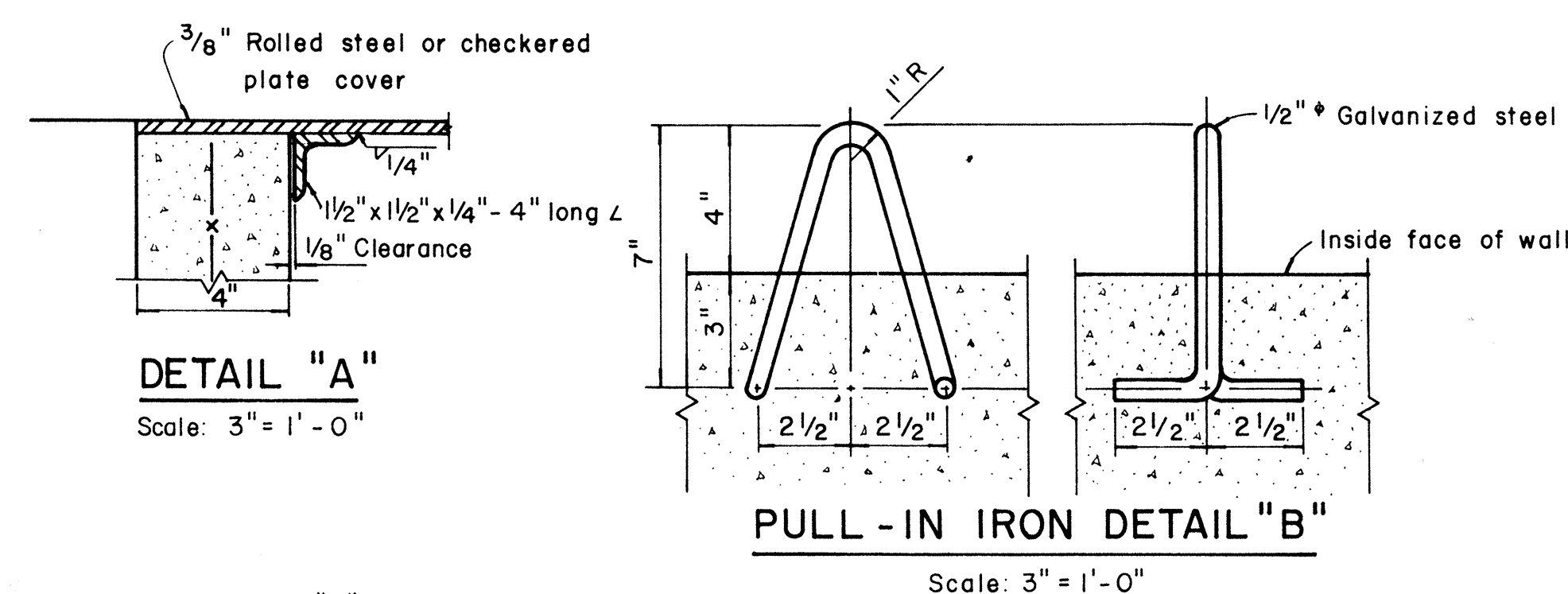
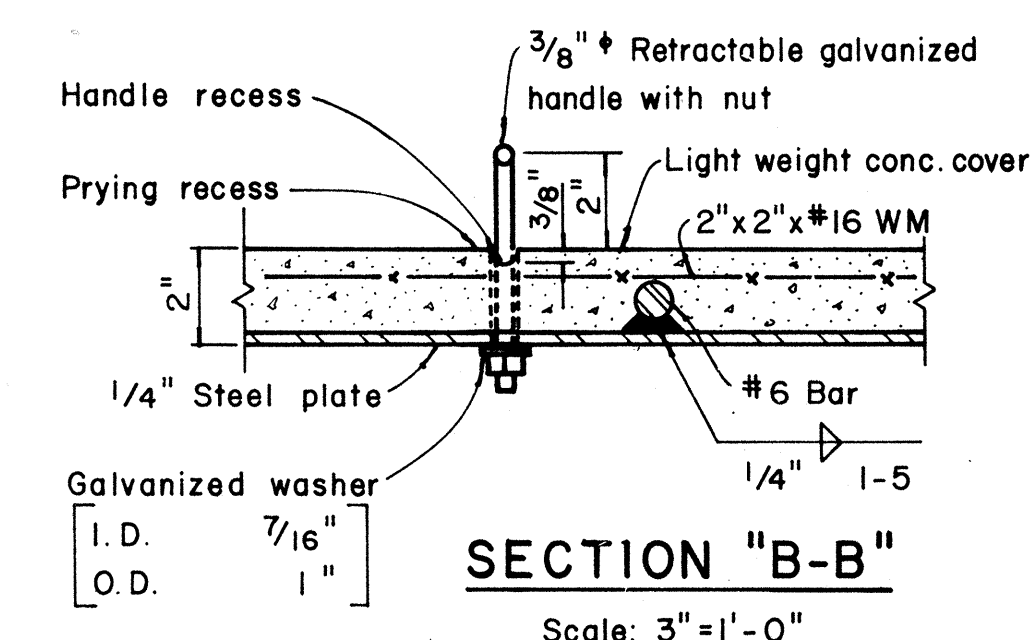
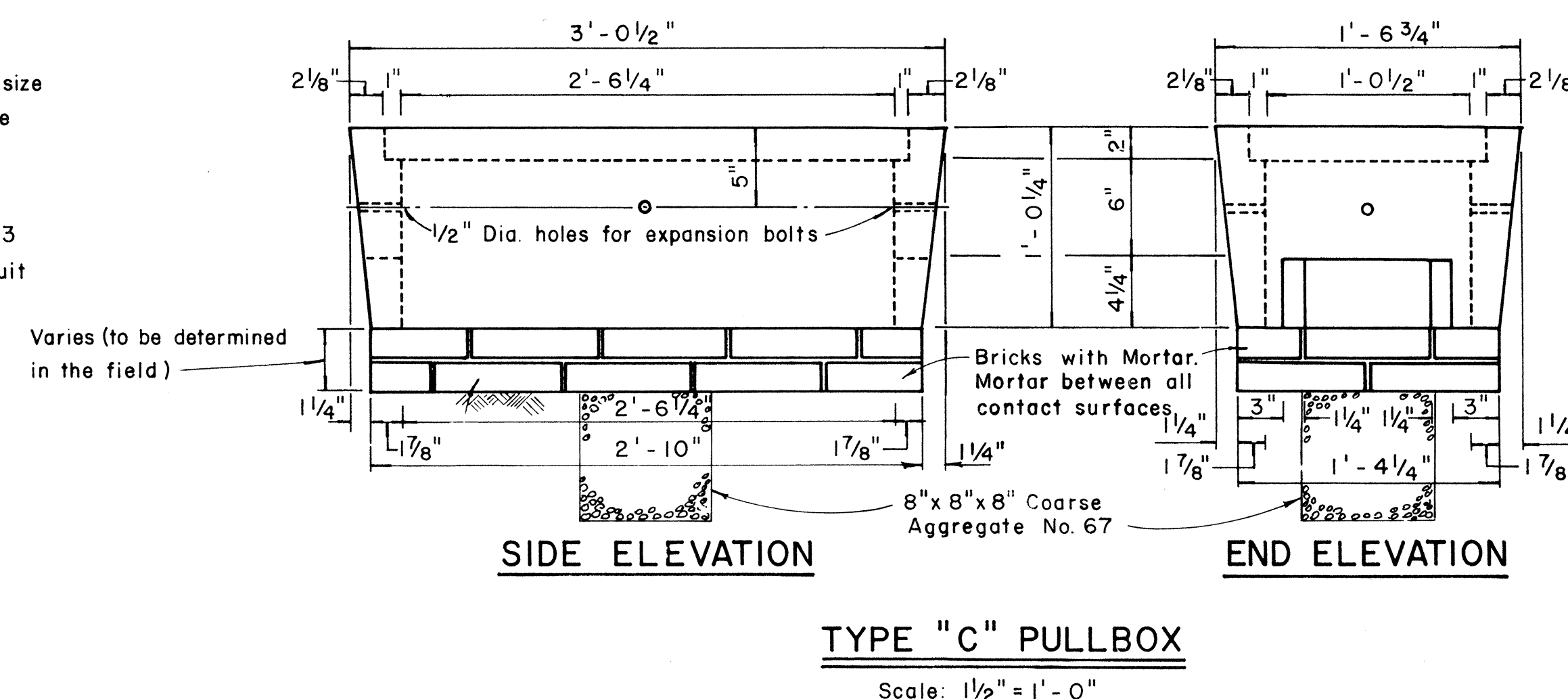
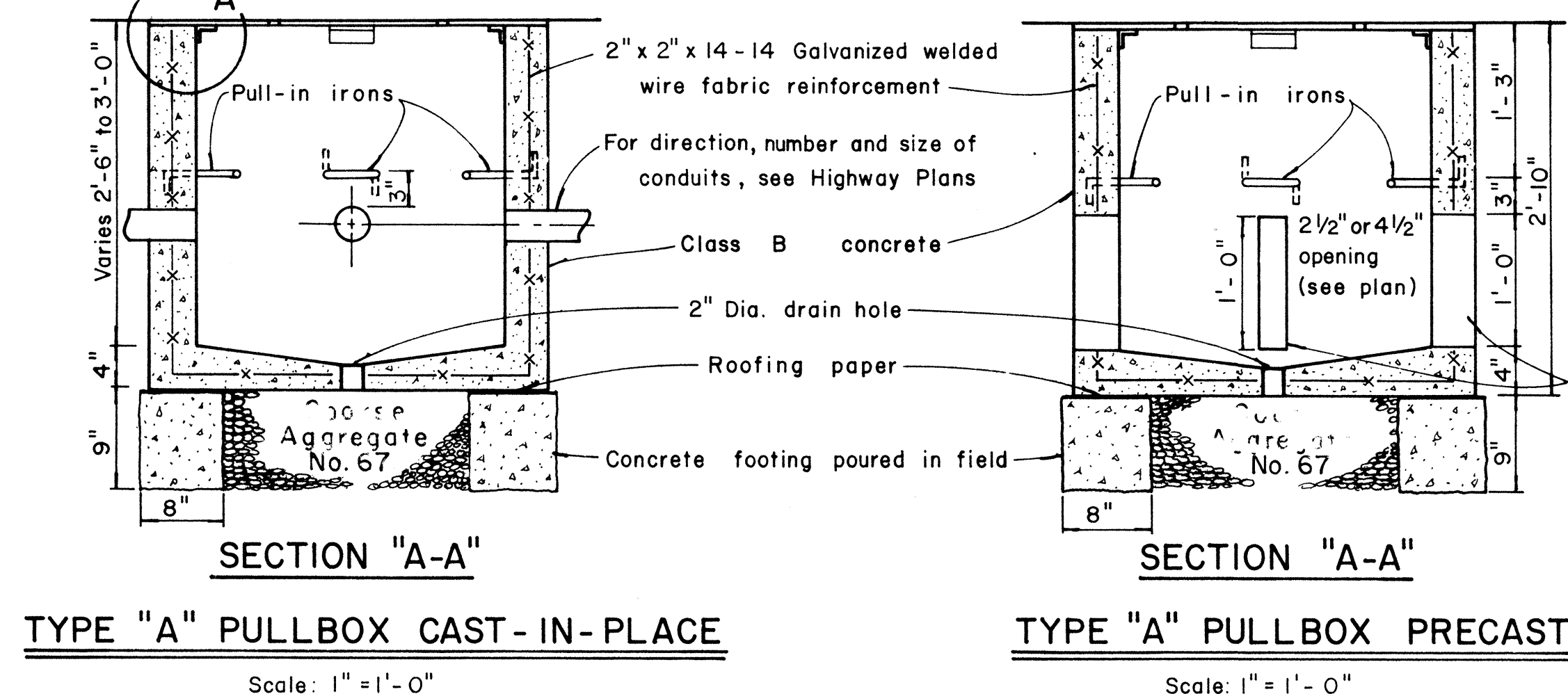
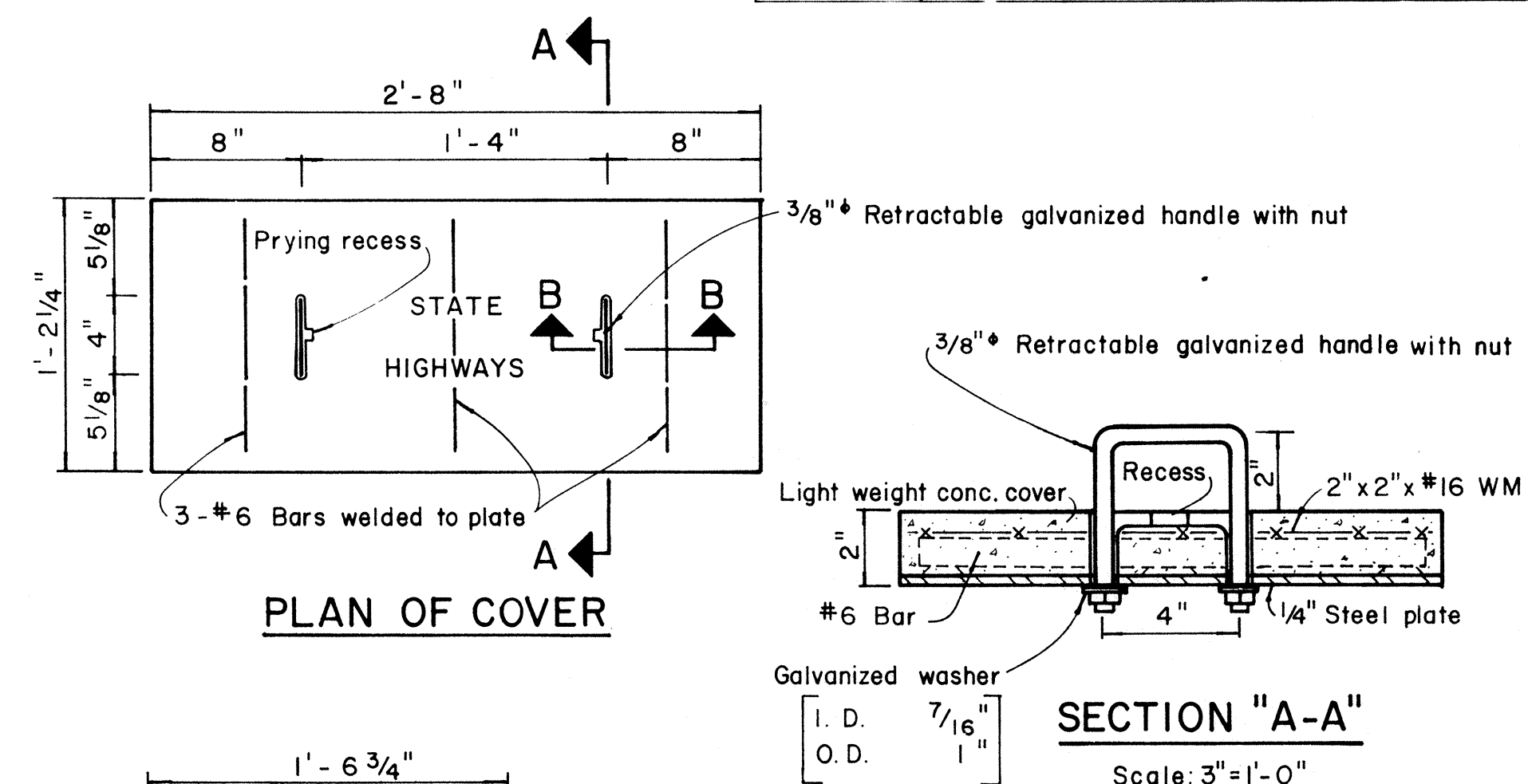
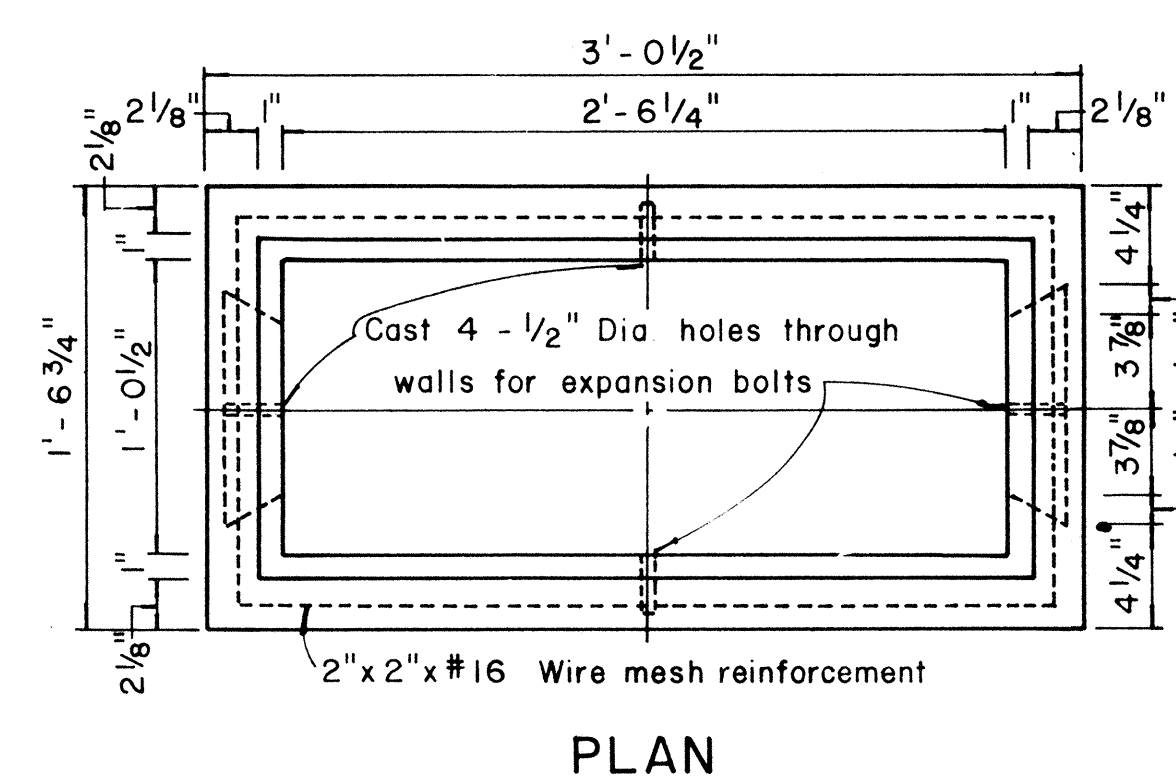
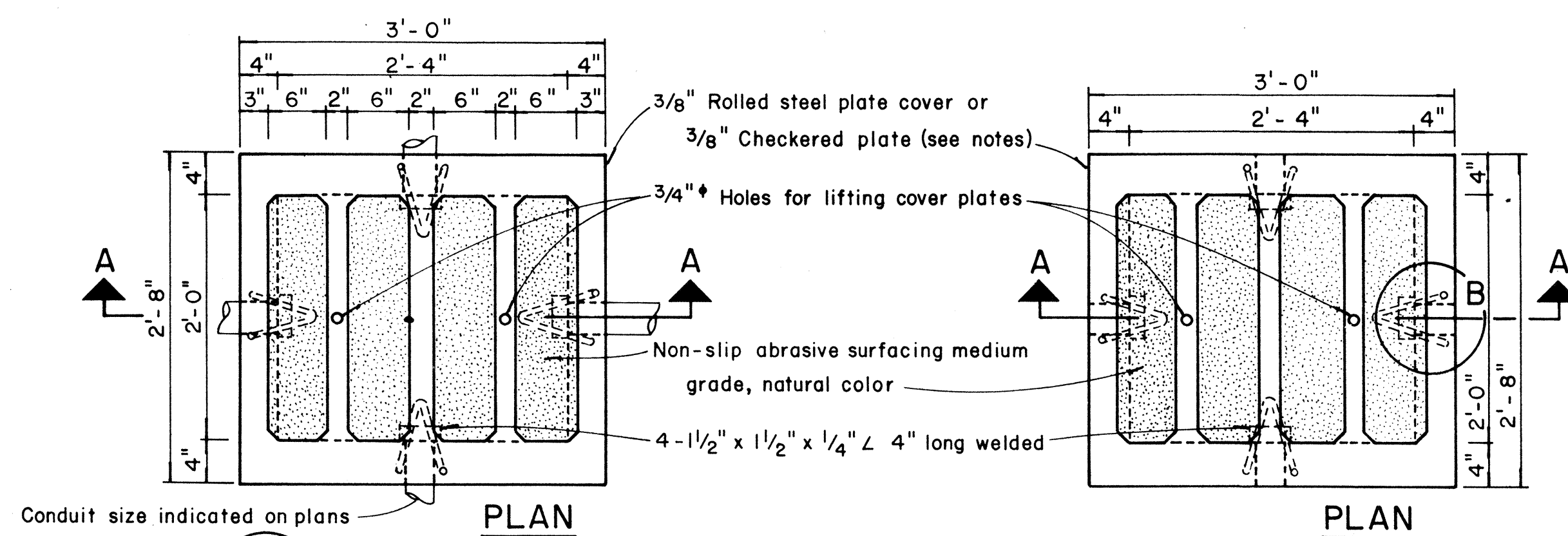
Shahid Ali 12/30/09
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
TRAFFIC SIGNAL SYSTEM
MISCELLANEOUS DETAILS

Not to Scale

SHEET No. 3 OF 7 SHEETS DT 400

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-0178	1979	7	11



NOTE:

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

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:
Enoch T. Naka
 TRAFFIC ENGINEER
 DATE 10/1/69

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
STANDARD DETAILS
PULLBOXES

Scale as noted Date

SHEET No. 4 OF 7 SHEETS DT 401

The diagram illustrates two methods of connecting a pull-box to a cable:

- SINGLE:** A 'Lead-in Cable' is connected to a 'Pull-box' using a 'Soldered & Taped Waterproof' joint.
- SERIES:** 'Additional Loops as called for in the Plans' are added to the connection, which is then 'Soldered & Taped Waterproof' to a 'Pull-box'.

The diagram illustrates a typical series parallel loop connection for fire alarm devices. A lead-in cable enters from the top left, passes through a pull-box (soldered and taped waterproof), and then branches out to connect to six square fire alarm devices arranged in a row. The direction of travel is indicated by an arrow pointing right. The spacing between the devices is 6 feet, and the total length of the loop is 9 feet. The diagram is labeled "TYPICAL SERIES PARALLEL LOOP CONNECTION" and "No Scale".

Diagram illustrating a two-lane highway cross-section. The total width is 50'. Each lane is 12' wide. There are 3' of shoulder on each side. The diagram shows a cross-section with a centerline and two lanes. The total width is 50 feet. Each lane is 12 feet wide. There are 3 feet of shoulder on each side. The diagram shows a cross-section with a centerline and two lanes. The total width is 50 feet. Each lane is 12 feet wide. There are 3 feet of shoulder on each side.

Technical drawing illustrating the cross-section of a trench for conduit installation, showing the relationship between the trench, backfill, and existing pavement.

Labels and Dimensions:

- Topsoil/Sod:** If grassed area provide 6" thick top soil & sod.
- Pavement/Sidewalk:** If paved area, reconstruct Pavement or Sidewalk equal to or better than existing.
- Finish Grade:** Indicated by a line with a dot.
- Existing Pavement and Base Course:** Shaded area on the right side of the trench.
- Trench Backfill Material:** The material filling the trench.
- Rigid Steel or PVC conduit for multiple conduit layouts, provide 3" clear spacing between conduits:** A circular conduit is shown within the trench.
- Bed Course:** A layer of material directly beneath the conduit, labeled "compact bed course".
- Dimensions:**
 - 12":** Horizontal distance from the trench edge to the center of the conduit.
 - 12":** Horizontal distance from the center of the conduit to the trench edge.
 - Varies:** Vertical dimension of the trench depth.
 - Min. 2'-0" Cover:** Minimum vertical clearance above the conduit.
 - 4":** Vertical dimension of the bed course.
 - 12" for 1, 2 & 3 conduit layouts:** Horizontal distance from the trench edge to the center of the conduit.

NOTE :

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

Embedded Lead-in Wire shall be twisted 2 turns per foot

Direction of Travel

12" Typical

45°

Additional loop as called for in Plans

Lane line

6"

45°

6"

1 1/4" steel conduit 6" beyond edge of pavement, Gutter or curb line

Pull-box (Type indicated in Plans)

12" Min.

Install Detector loop 3 turns I-C #14 RHW style RR cable in saw cut groove (Typical)

Edge of pavement or curb line

4'

4'

8' (or as called for in Plans)

Top of Pavement

3/8" Min.

2" Min.

Fill with Epoxy

Detector Loop Wires as required

PLAN - MULTIPLE LOOP LAYOUT

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

SECTION A-A (TYPICAL)

No Scale

Diagram illustrating the cross-section of a pavement repair area. The repair is a vertical slot with a minimum width of $\frac{3}{8}$ " and a minimum height of 2" Min. The top of the pavement is indicated. The slot is filled with epoxy. Detector loop wires are shown at the bottom of the slot, labeled "Detector Loop Wires as required".

NO.	REVISION	APPROVED BY	DATE
1	Add dimensions to Loop Configurations	H.T.	9-22

APPROVAL RECOMMENDED:
Etsuki Tanaka 3/4/90
TRAFFIC ENGINEER DATE

APPROVED :
Hubert B. Ralston 3-5-90
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

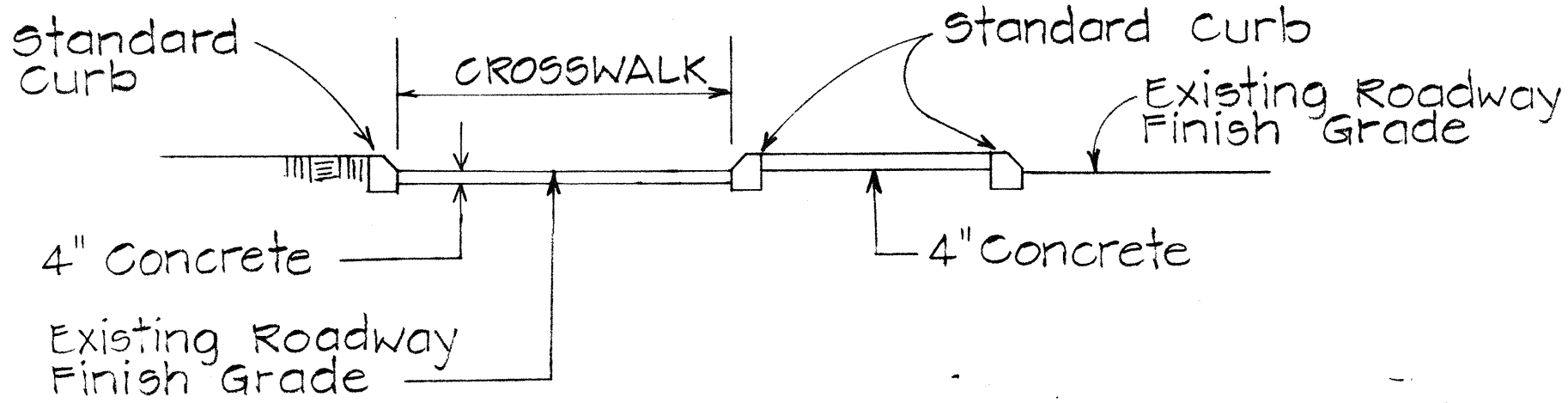
TRAFFIC SIGNAL SYSTEM

MISCELLANEOUS DETAILS

Scale : As Noted

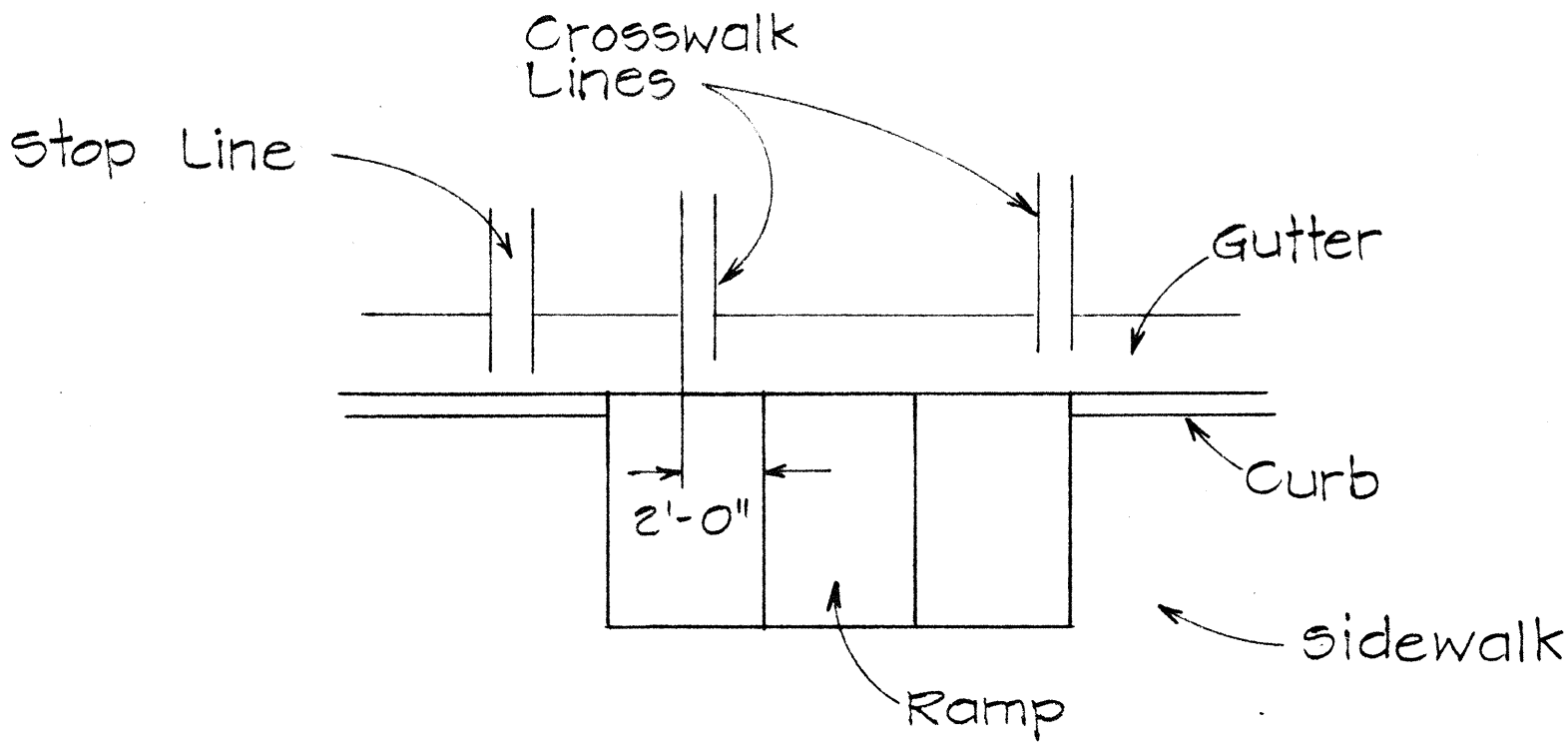
SHEET No. 5 OF 7 SHEETS DT 405

FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-01-78	1979	9	11

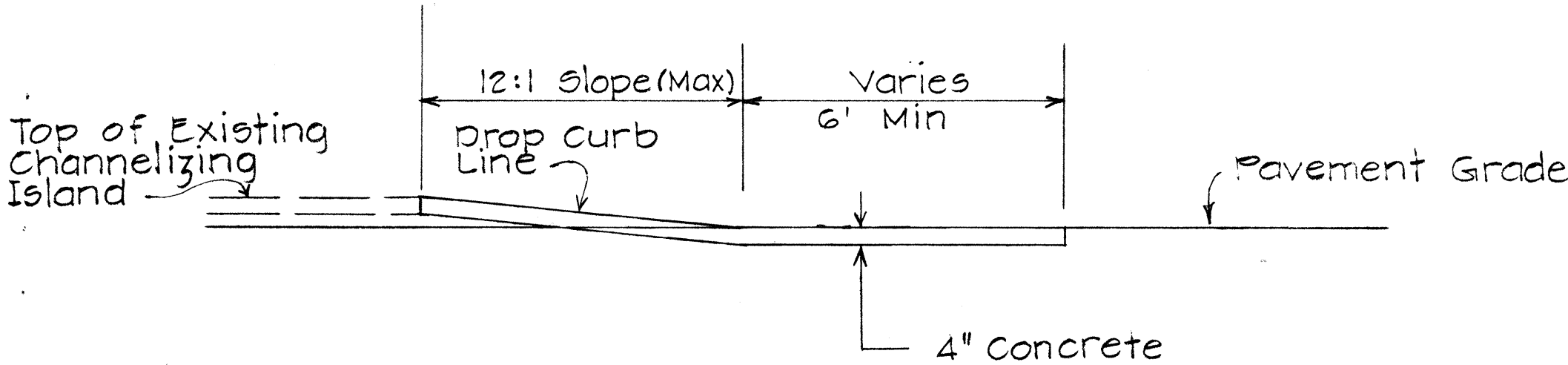


SECTION "A-A"
Use at Median Nose Crossings
Scale: 1"=5'

For Additional Details, See Type "C" Wheel Chair Ramp



TYPICAL INSTALLATION
AT CROSSWALKS
Scale: 1"=5'

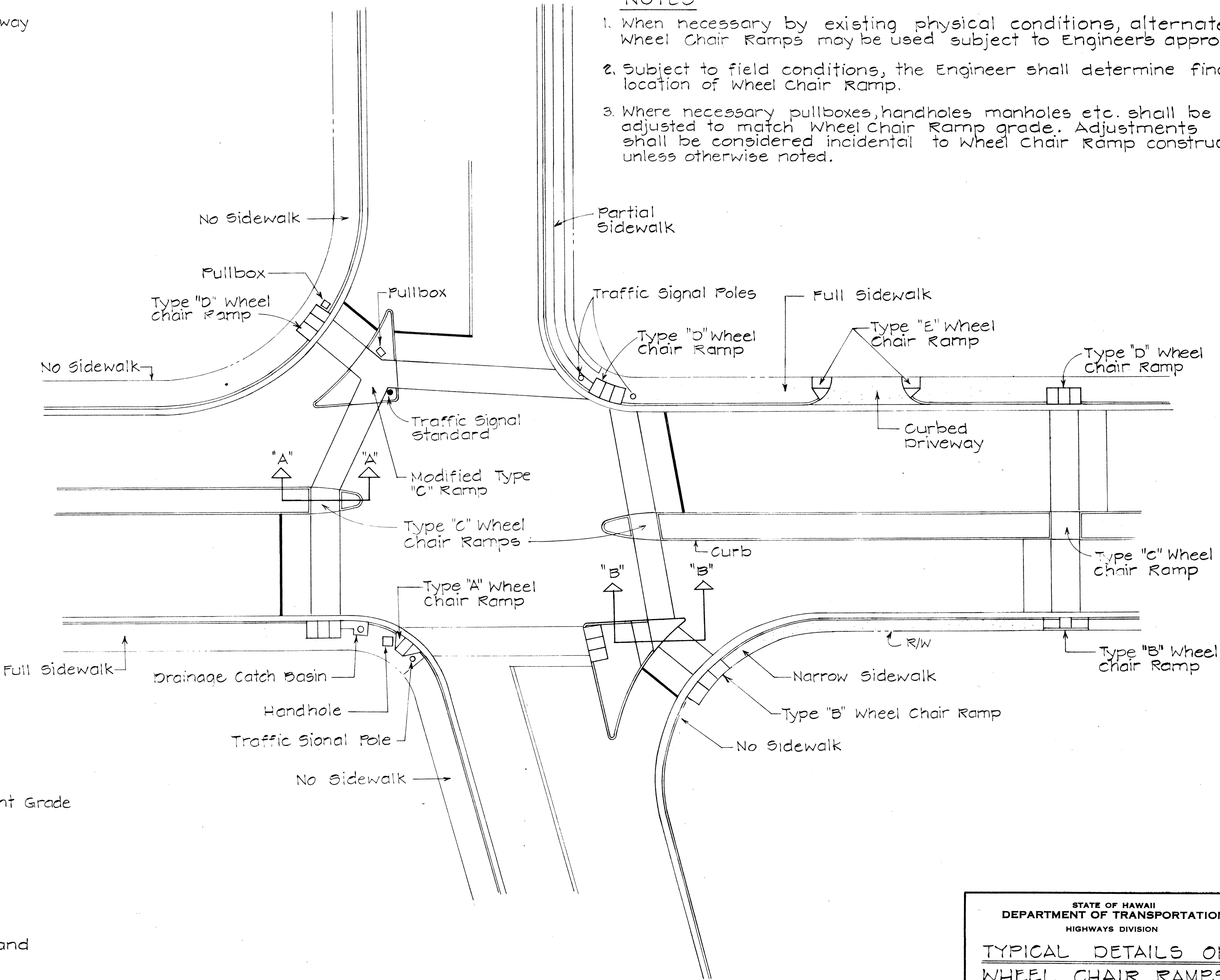


SECTION "B-B"
TYPE "B" MODIFIED WHEEL CHAIR RAMP
Use at Intersection of 2 Crosswalks On Channelizing Island
Scale: 3/8"=1'

For Additional Details See Type "B" Wheelchair Ramp

NOTES

1. When necessary by existing physical conditions, alternate Wheel Chair Ramps may be used subject to Engineers approval.
2. Subject to field conditions, the Engineer shall determine final location of Wheel Chair Ramp.
3. Where necessary pullboxes, handholes manholes etc. shall be adjusted to match Wheel Chair Ramp grade. Adjustments shall be considered incidental to Wheel Chair Ramp construction, unless otherwise noted.



TYPICAL WHEEL CHAIR RAMPS
Scale: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

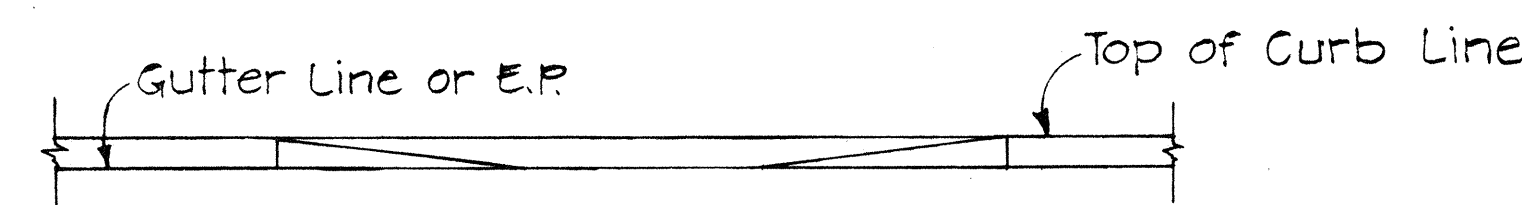
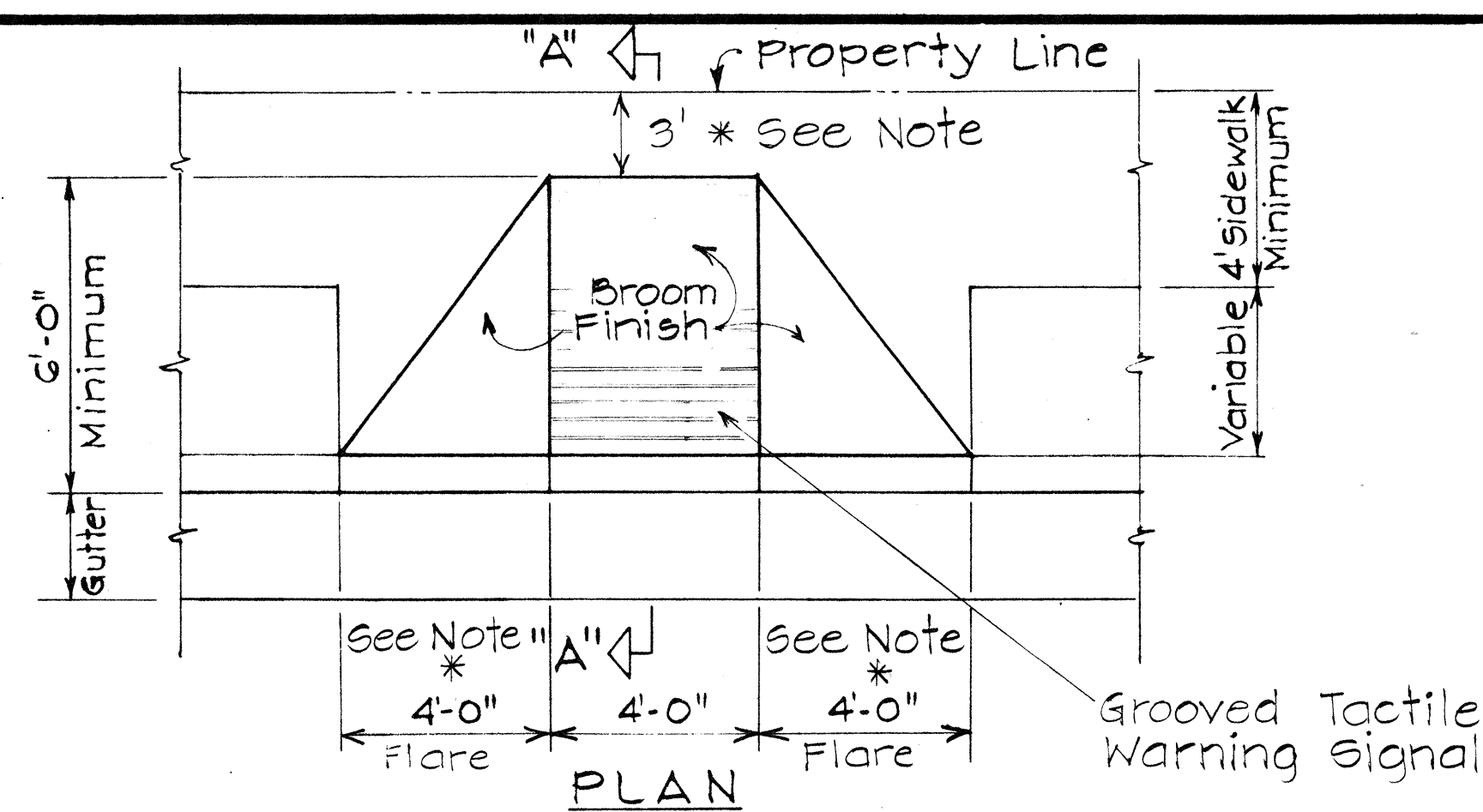
TYPICAL DETAILS OF
WHEEL CHAIR RAMPS

Scale: As Shown
May, 1978

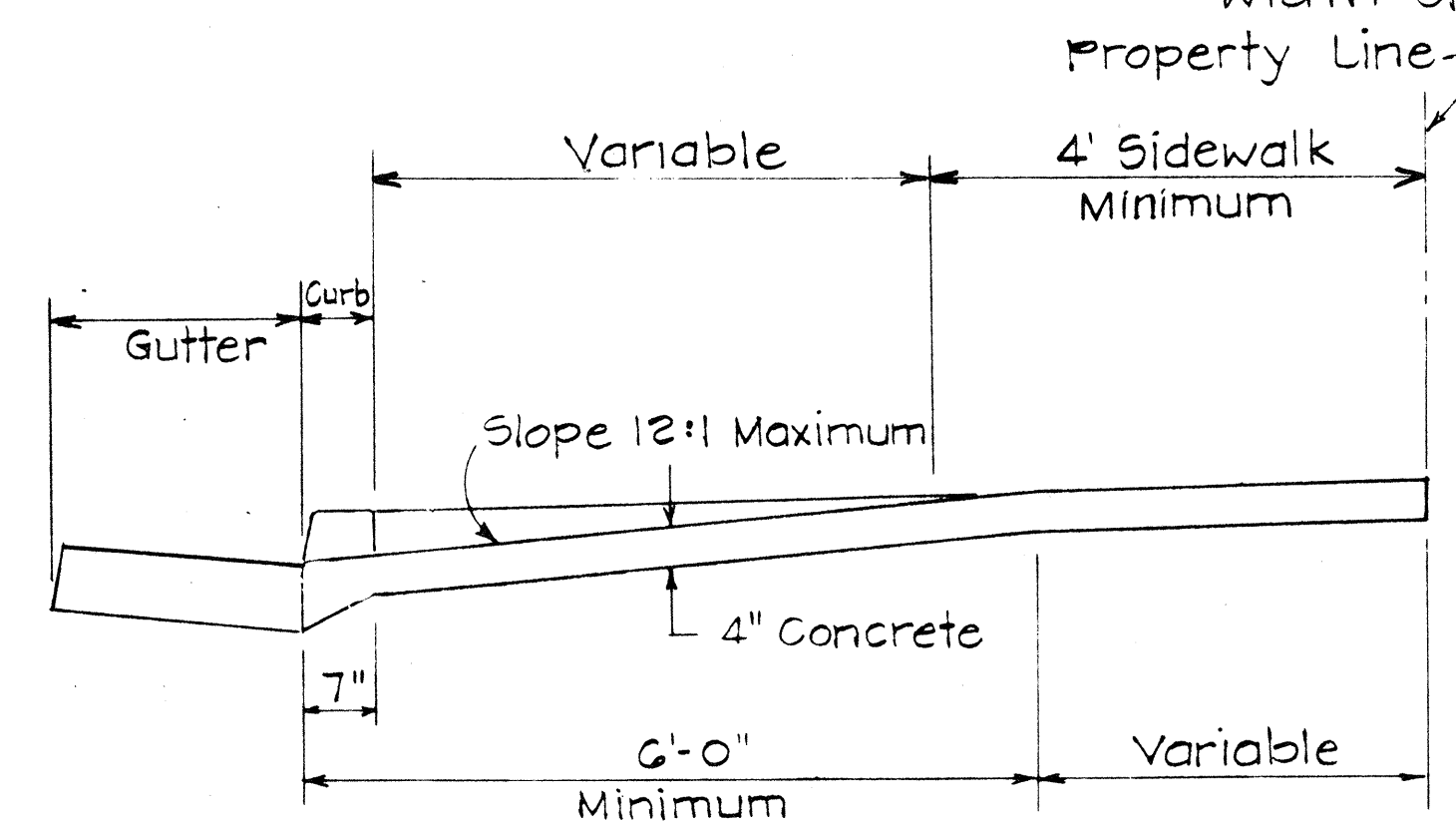
SHEET NO. 6 OF 7 SHEETS

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

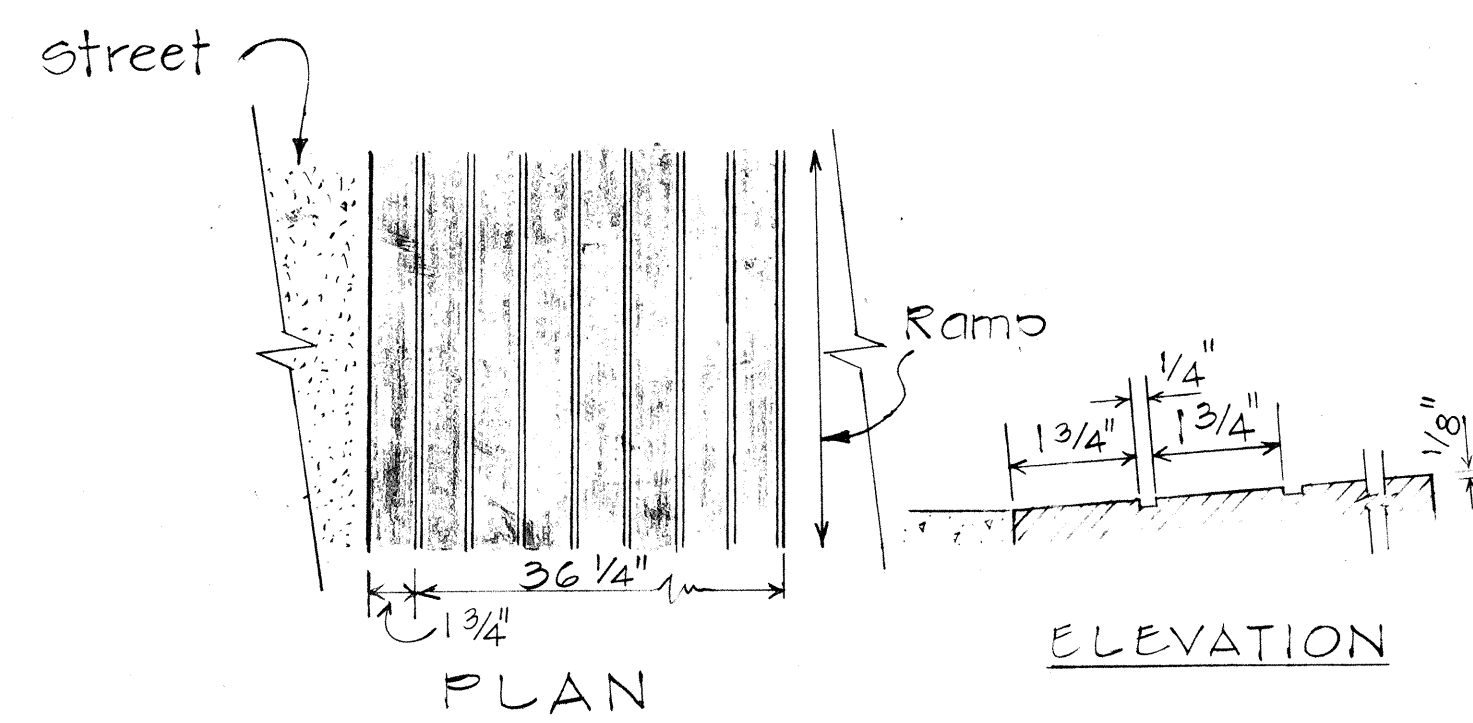
FED. ROAD DIST. NO.	STATE	FED-AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	72A-01-78	1979	10	11



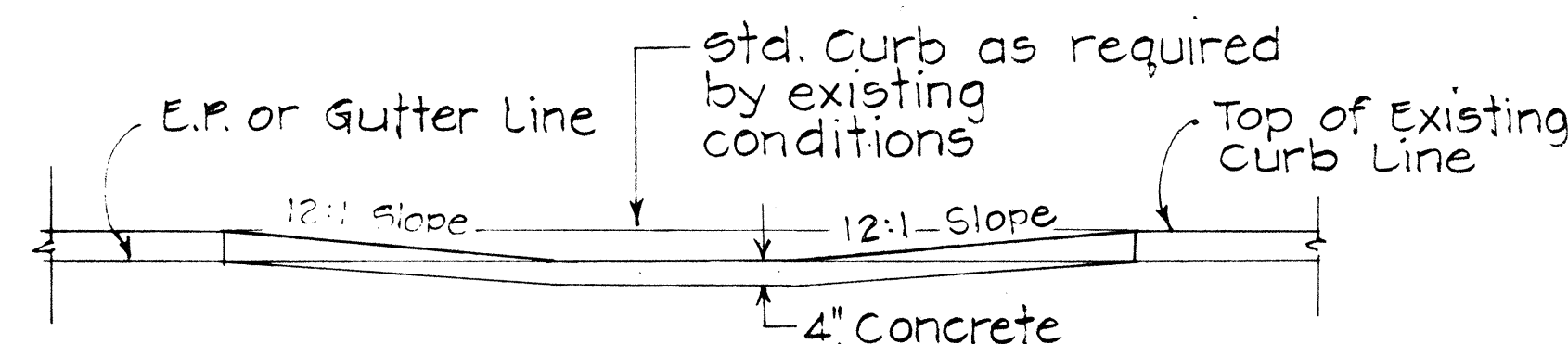
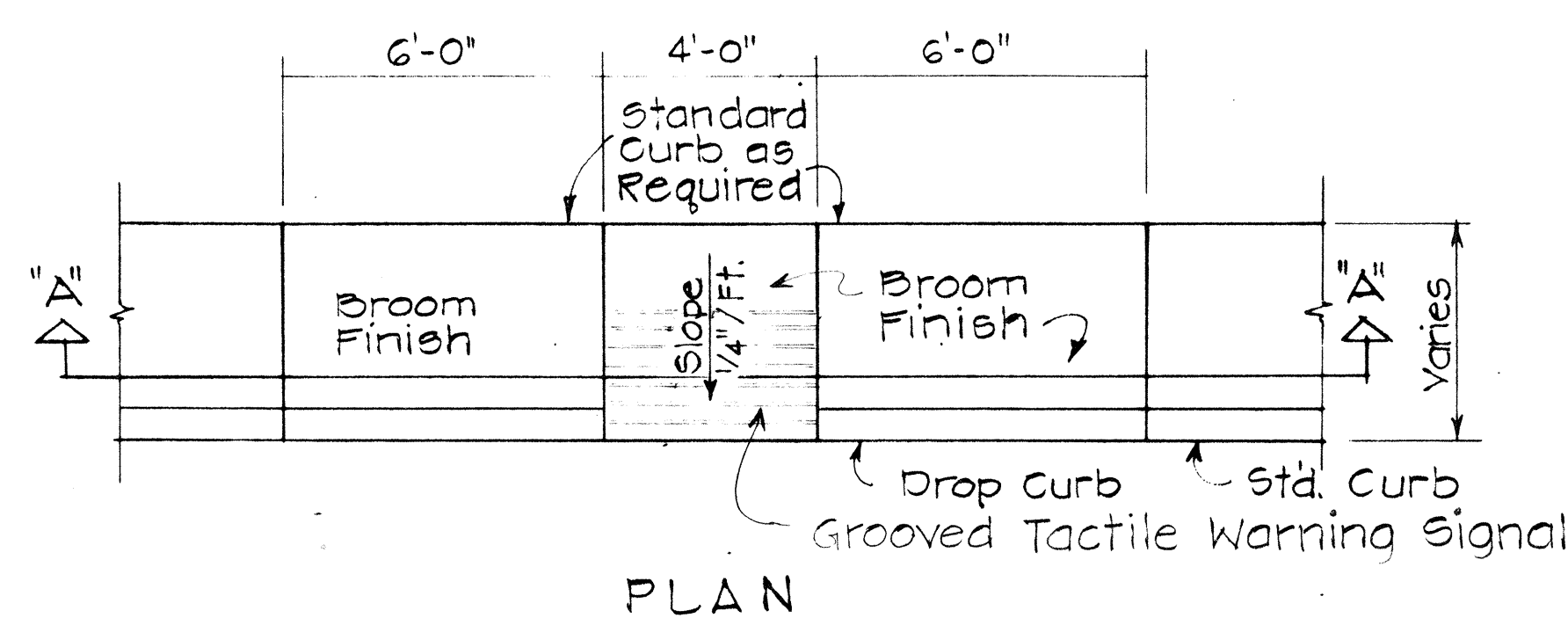
* Where dimension is less than 3', Flare width shall be 3'



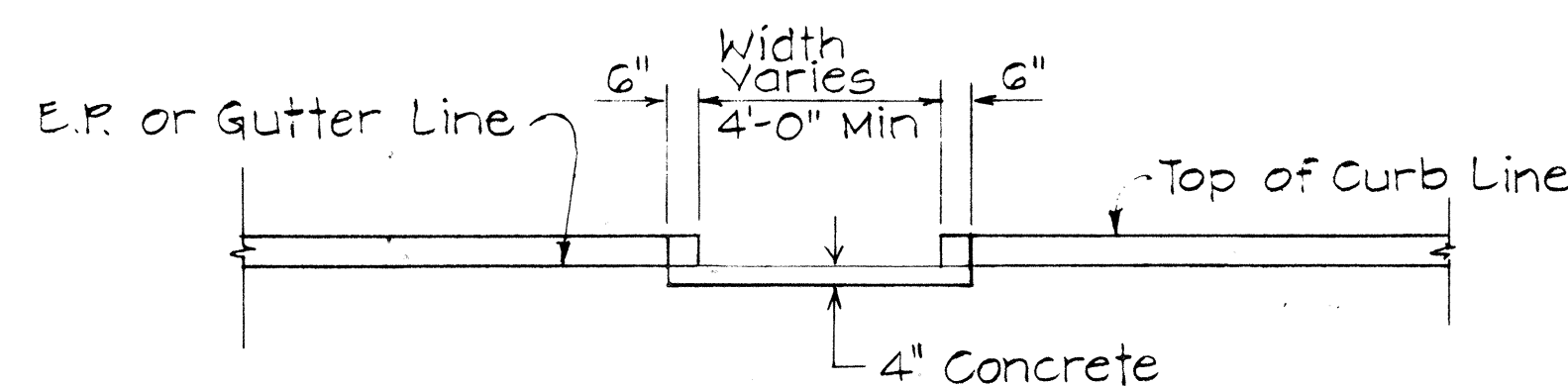
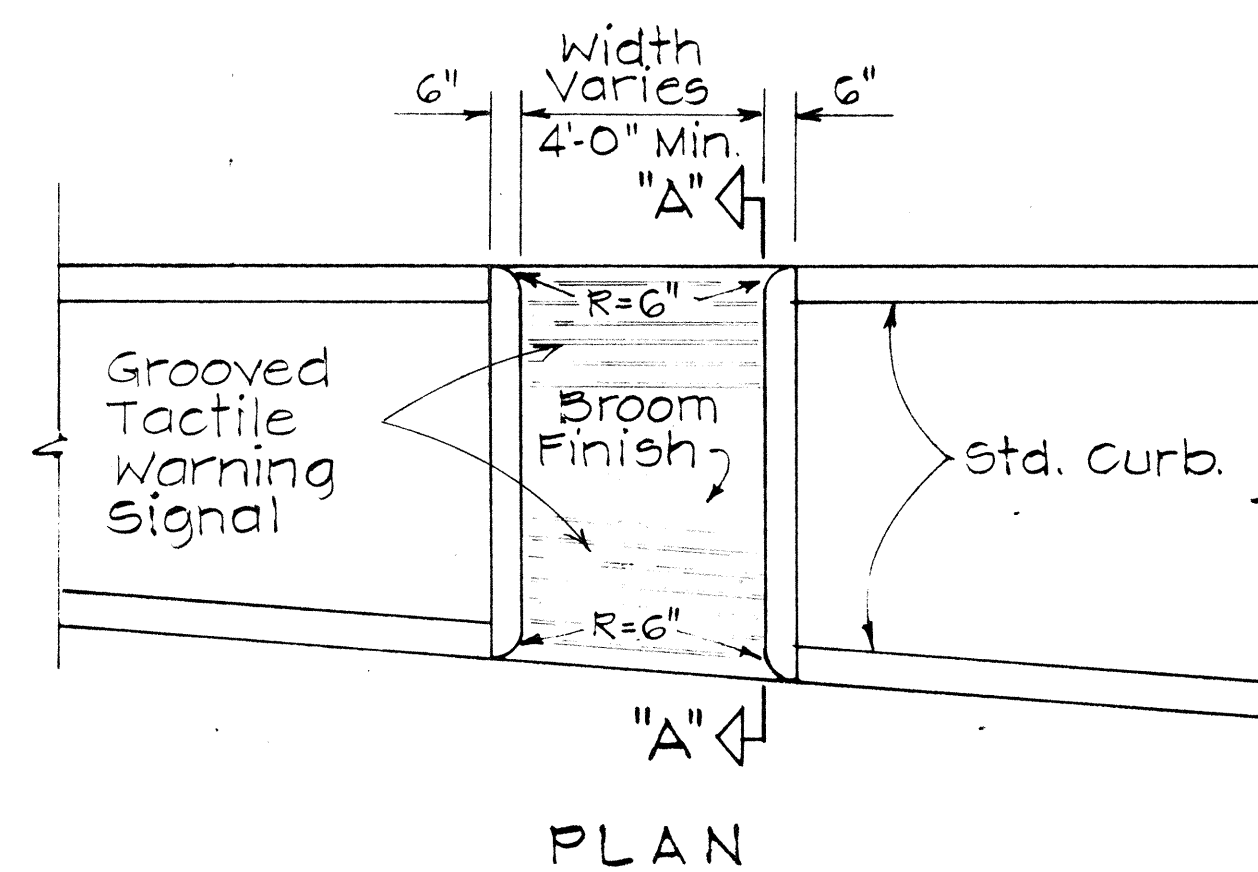
WHEELCHAIR RAMP - TYPE "A"
USE WHERE OBSTRUCTIONS EXIST



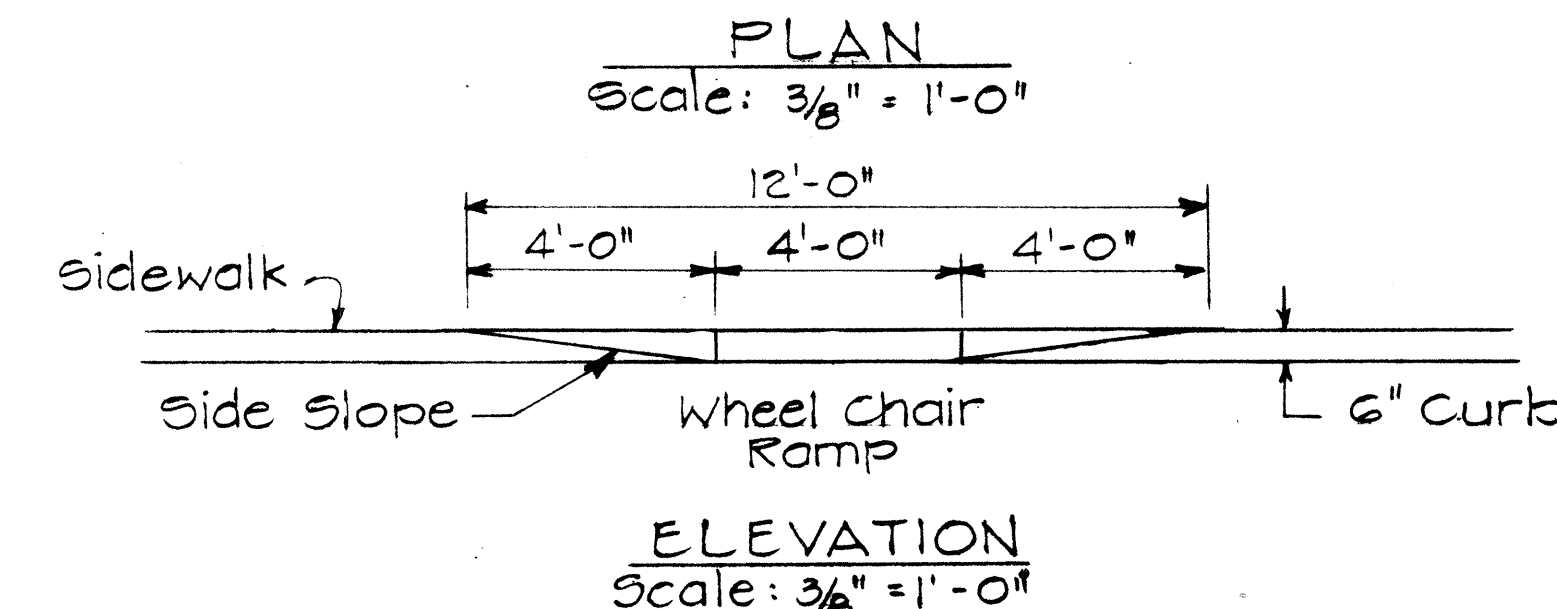
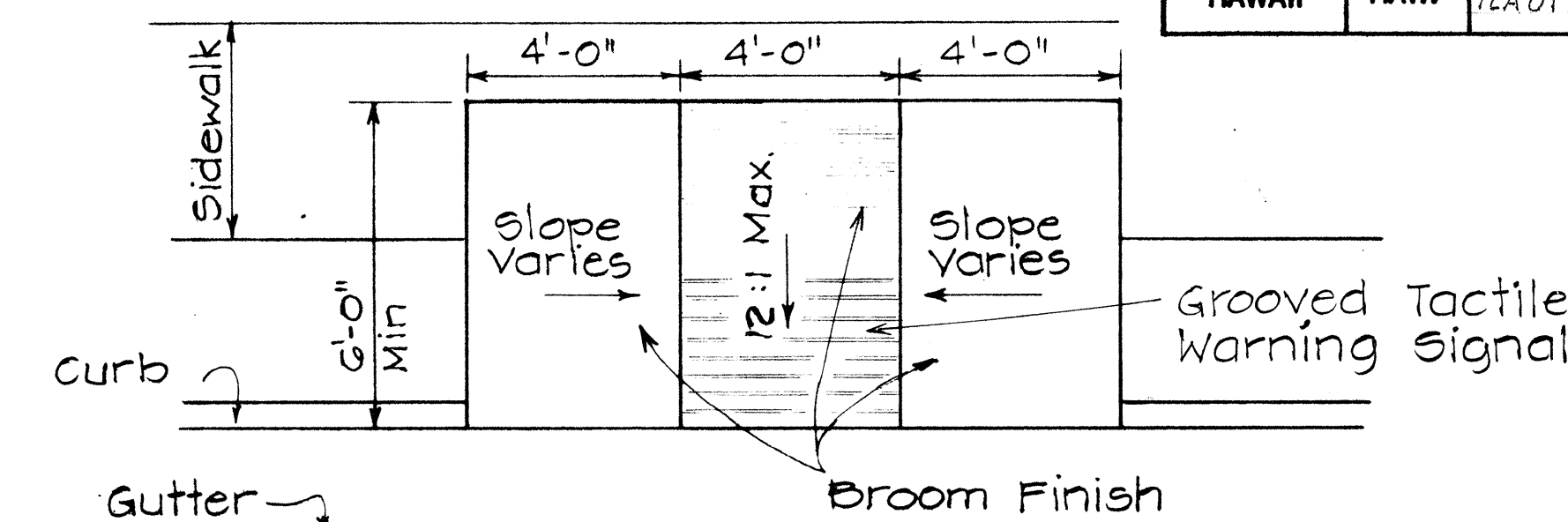
GROOVED TACTILE WARNING SIGNAL



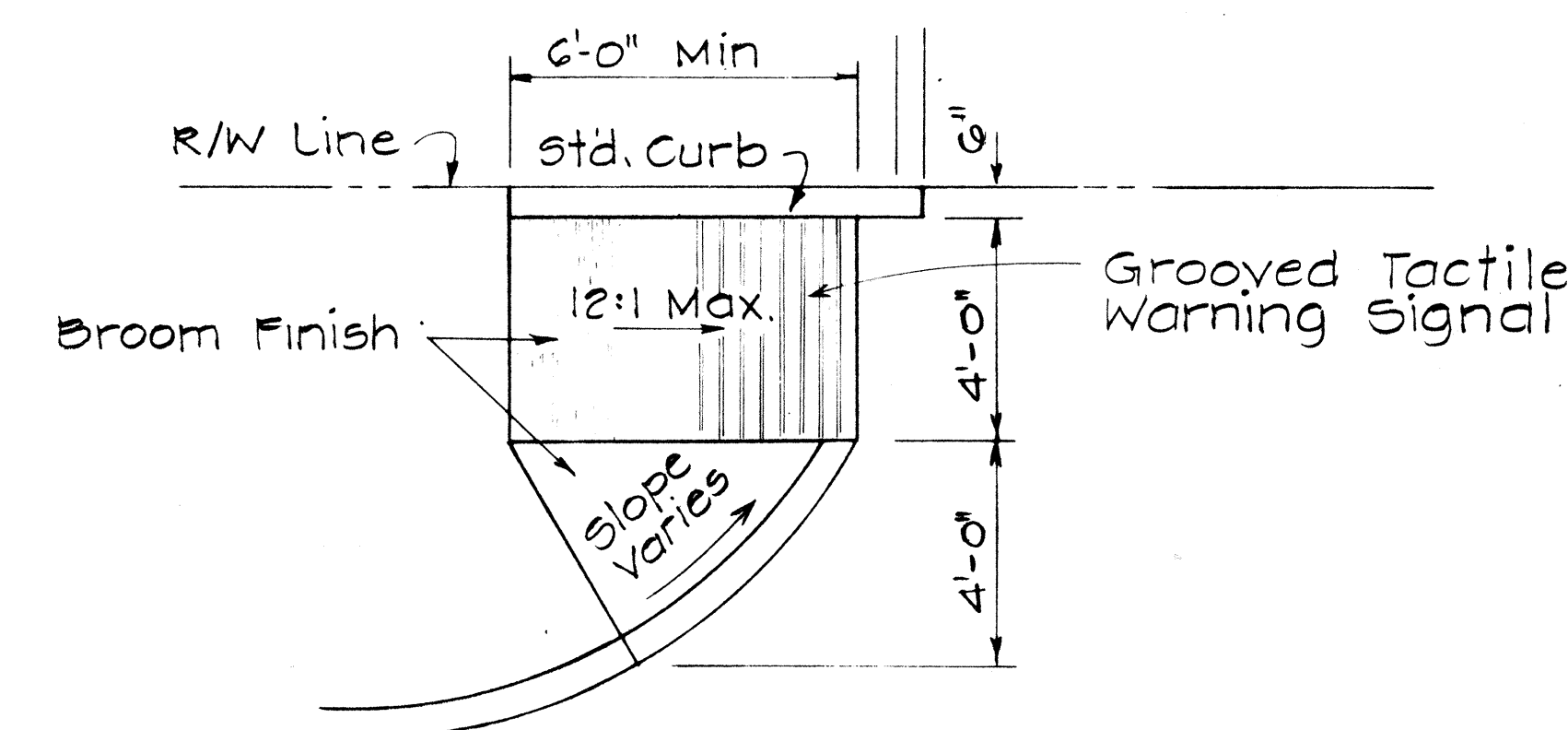
WHEELCHAIR RAMP - TYPE "B"
USE AT SIDEWALKS WITH LESS THAN 6'-0" WIDTH



WHEELCHAIR RAMP - TYPE "C"
USE AT MEDIAN CROSSINGS, ISLANDS



WHEELCHAIR RAMP - TYPE "D"
USE WHEN IDEAL CONDITIONS EXIST



WHEELCHAIR RAMP - TYPE "E"
USE AT CURBED DRIVEWAYS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
**TYPICAL DETAILS OF
WHEEL CHAIR RAMPS**
Scale: As Shown May, 1978
SHEET NO. 7 OF 7 SHEETS

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
QUANTITIES BY	_____
NOTED BY	_____
TRACED BY	_____
DRAWN BY	_____
ORIGINAL PLAN	_____