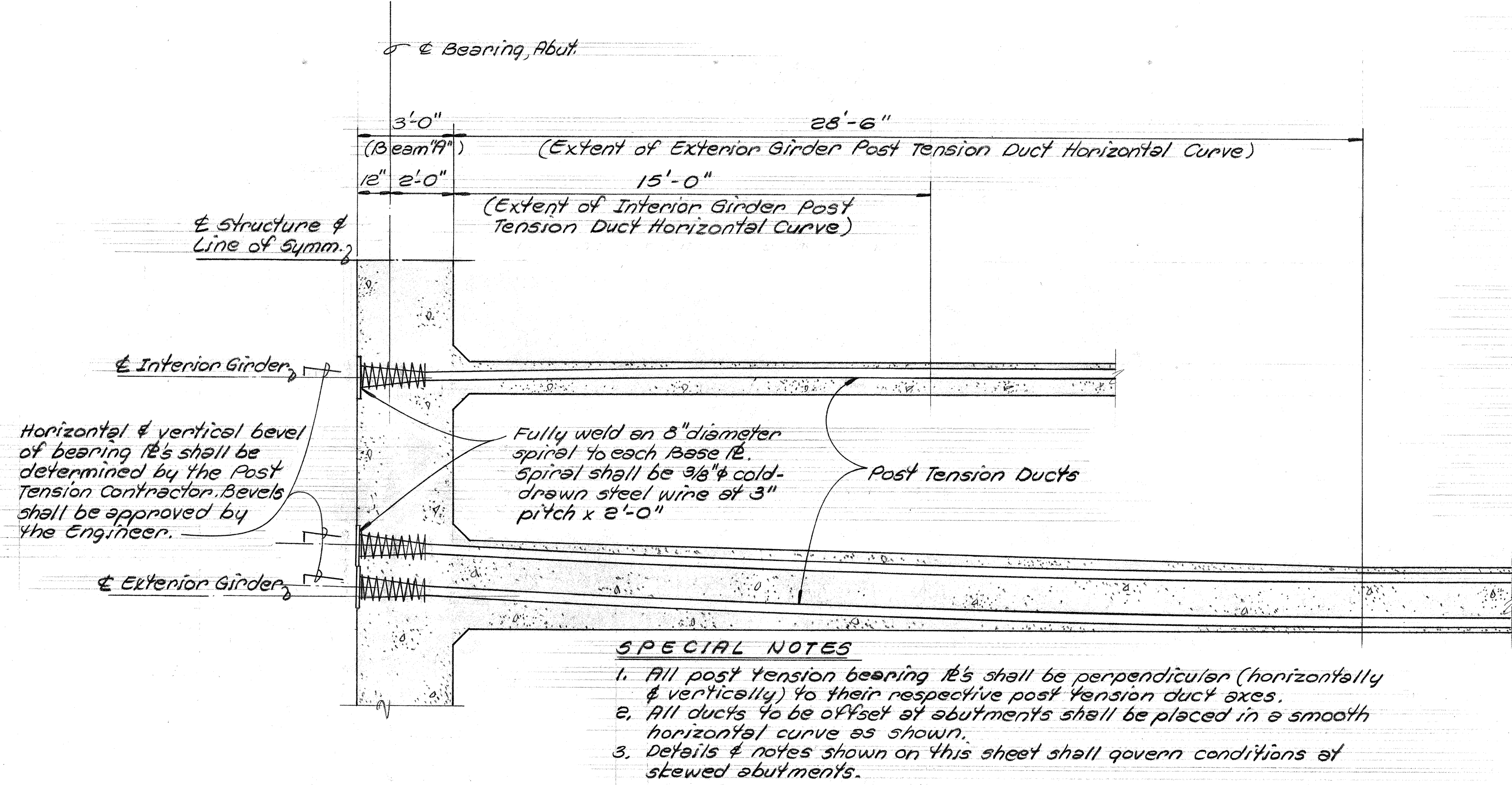


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(73):15	1974	297	369



SPECIAL NOTES

1. All post tension bearing IRs shall be perpendicular (horizontally & vertically) to their respective post tension duct axes.
2. All ducts to be offset at abutments shall be placed in a smooth horizontal curve as shown.
3. Details & notes shown on this sheet shall govern conditions at skewed abutments.

PLAN - POST TENSION DUCT LAYOUT IN EXTERIOR & INTERIOR GIRDER

3/8" = 1'-0"

TYPICAL POST TENSION NOTES

1. See specifications for other post tension requirements.
2. All ducts shall be securely anchored at all times during construction to prevent any damage. Contractor shall exercise the maximum amount of care during placement of ducts, reinforcing & concrete in order to protect the ducts from damage.
3. 1/2" & 270K strands shall be used for post tensioning.
4. All strands are to be placed after the concrete is poured & the following criterion is met:
The last concrete placed must have attained a compressive strength equal to 4,000 p.s.i. & a minimum of 14 days must have elapsed since its placement.
5. All prestressing steel shall be tensioned by means of hydraulic jacks so that the force in the prestressing steel shall not be less than the value shown on the plans. The force in the prestressing steel shall be considered as the smaller of the two values as determined by the measured elongation and the gage pressure.
6. All ducts shall be cleaned out before placing strands.
7. Strands shall be end anchored at an equivalent "anchor set" of 1/2".
8. Post tensioning sequence shall be as follows:
a) All lower-most ducts in each girder shall be completely tensioned in the same day.
b) A minimum of 30% of the remaining ducts above the lower most ducts in each girder shall be completely tensioned in the same day.
c) The remaining ducts in each girder shall be completely tensioned.
9. After all post tension operations & testing, if required, are completed, all ducts shall be grouted in accordance with the specifications.
10. After grouting is completed, the anchorage assembly shall be reinforced & protected as shown above.

POST TENSION DESIGN NOTES

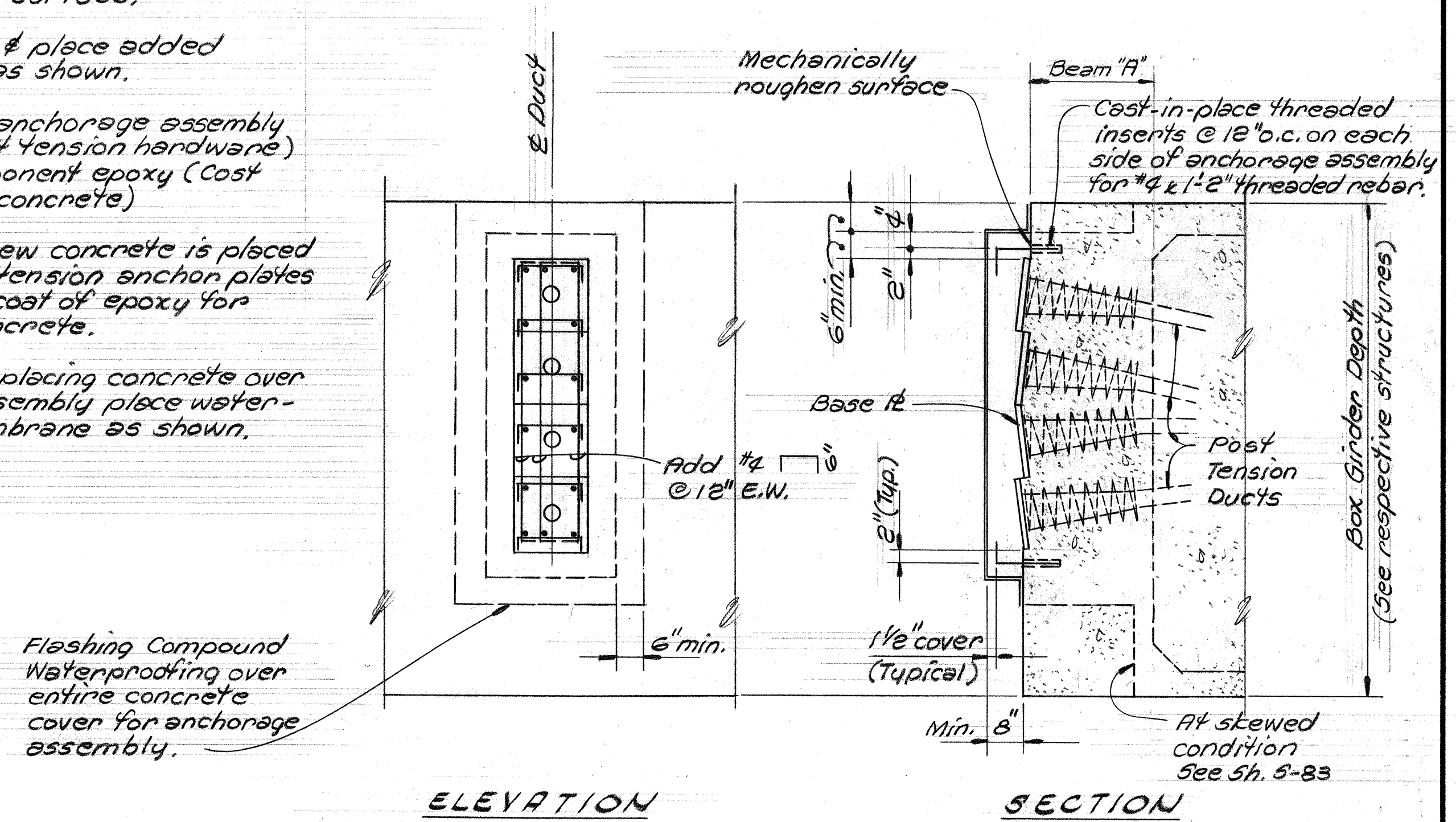
1. Design is based on $K = 0.002$ (friction wobble coefficient) & $M = 0.25$ (curvature friction coefficient)
2. Jacking stress for all strands shall be 70% of ultimate.
3. Minimum concrete compressive strength at 28 days for the concrete box girder shall be 5,000 p.s.i.

SPECIAL NOTES:

1. Contractor shall take steps necessary to allow Superstructure to contract during tensioning operations. During tensioning operations the box girder soffit forms will be subject to the same compressive force as the concrete box girder unless compressible joints &/or bond breakers are provided to relieve this force.
2. No tensioning or grouting shall be performed in the absence of the Engineer.
3. Friction test shall be conducted prior to final tensioning of strands to verify assumed friction loss. Payment to be incidental to post tensioning operation of the structures.

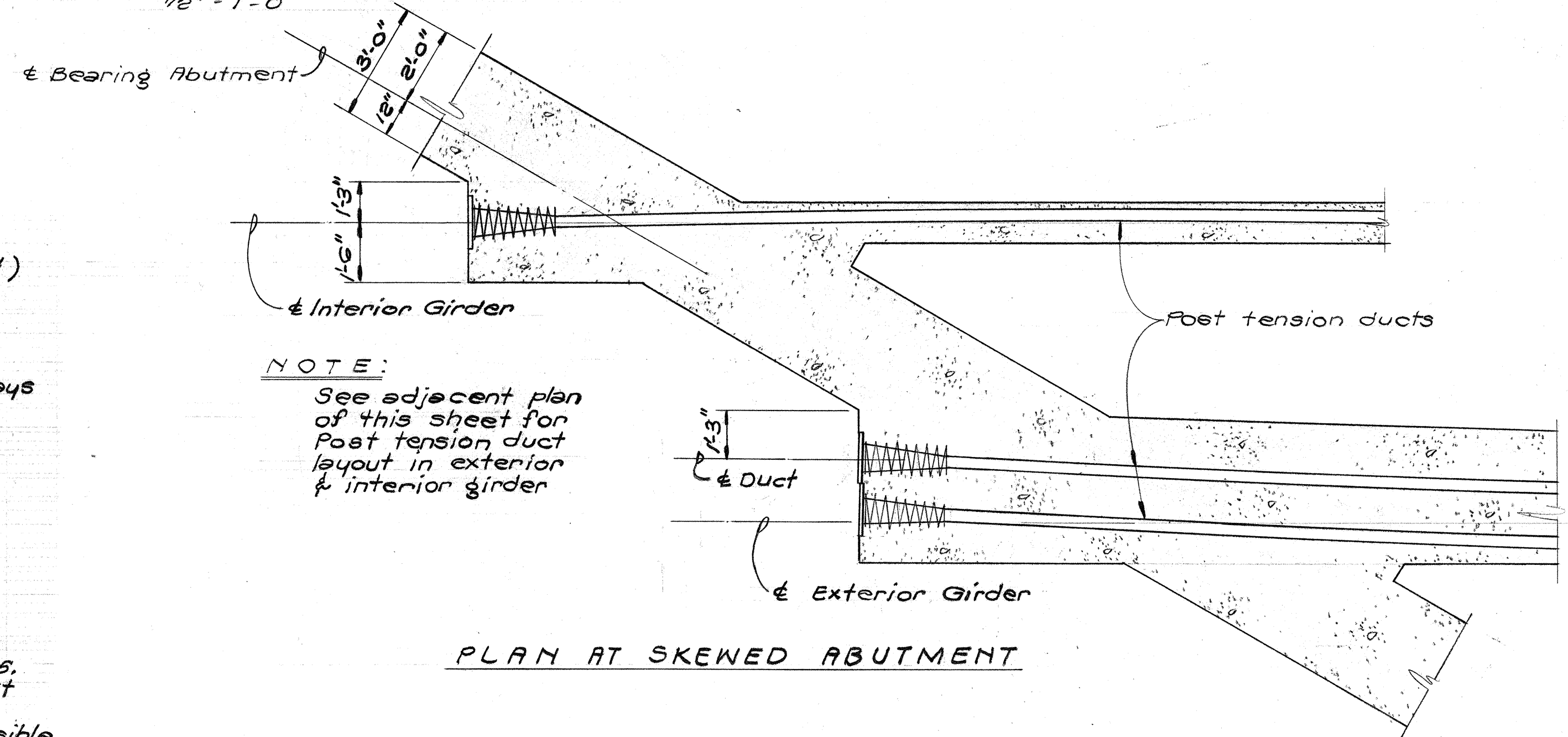
ANCHORAGE ASSEMBLY PROTECTION NOTES

1. After all post tension work is completed, clean hardware as required in order to provide good bonding surface.
2. Bend dowels & place added reinforcing as shown.
3. Paint entire anchorage assembly (including post tension hardware) with two component epoxy (Cost incidental to concrete)
4. Just before new concrete is placed against post tension anchor plates apply a new coat of epoxy for bond with concrete.
5. 7 days after placing concrete over anchorage assembly place water-proofing membrane as shown.



POST TENSION DUCT ANCHORAGE GROUTING DETAILS

1/2" = 1'-0"



PLAN AT SKEWED ABUTMENT

POST TENSION DUCT LAYOUT IN EXTERIOR & INTERIOR GIRDER

3/8" = 1'-0"

SHIMAZU SHIMABUKURO & FUKUDA, INC.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

REGISTERED PROFESSIONAL ENGINEER
No. 1150
HAWAII, U.S.A.

REGISTERED PROFESSIONAL ENGINEER
No. 2974
HAWAII, U.S.A.

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAIL
POST TENSION DUCT LAYOUT,
DETAILS & NOTES AT BEAM "A"

PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-H-1(73):15

Scale: As Shown Date: DEC. 7, 1973

SHEET No. 3-81 OF 106 SHEETS

BEARING ABUTMENT

BEAM "A"

3'-0" (12" 2'-0")

3-#6 closed stirr. @ 4" each side of post tension duct anchors

Post-tension duct anchorage assembly. See Sh. 5-81

Interior Girder

Beam "A" cont, horiz. reinf. See beam section below.

2-#6 closed stirr. @ 4" each side of post tension duct anchors

Post tension duct anchorage assembly. See Sh. 5-81

Exterior Girder & of Duct

6-#6 @ 5" o.c. closed stirr.

12" fillet (Typ.)

#5 @ bend point of ea. horiz. bar.

Girder stirrups - See respective structures

Girder cont. horiz. reinf. See respective structures

Add 2-#5 x 10'-0" horiz. between girder cont. horiz. reinf. (Typ.)

Post tension ducts

NOTE: See Sh. 5-83 for details at skewed abutments

Add #5 @ every other stirrup @ each cont. horiz. bar for extent of duct curve. See Sh. 5-81 for extent of duct curve.

#5 @ bend of ea. horiz. bar.

Add 2-#5 x 10'-0" horiz. between girder cont. horiz. reinf. (Typ.)

Girder cont. horiz. reinf. See respective structures

Girder stirrups - See respective structures

Post tension ducts

Slab

Drop Constr. Jt. to bottom of fillet at supports as shown.

Constr. Jt.

Post tension duct

2"

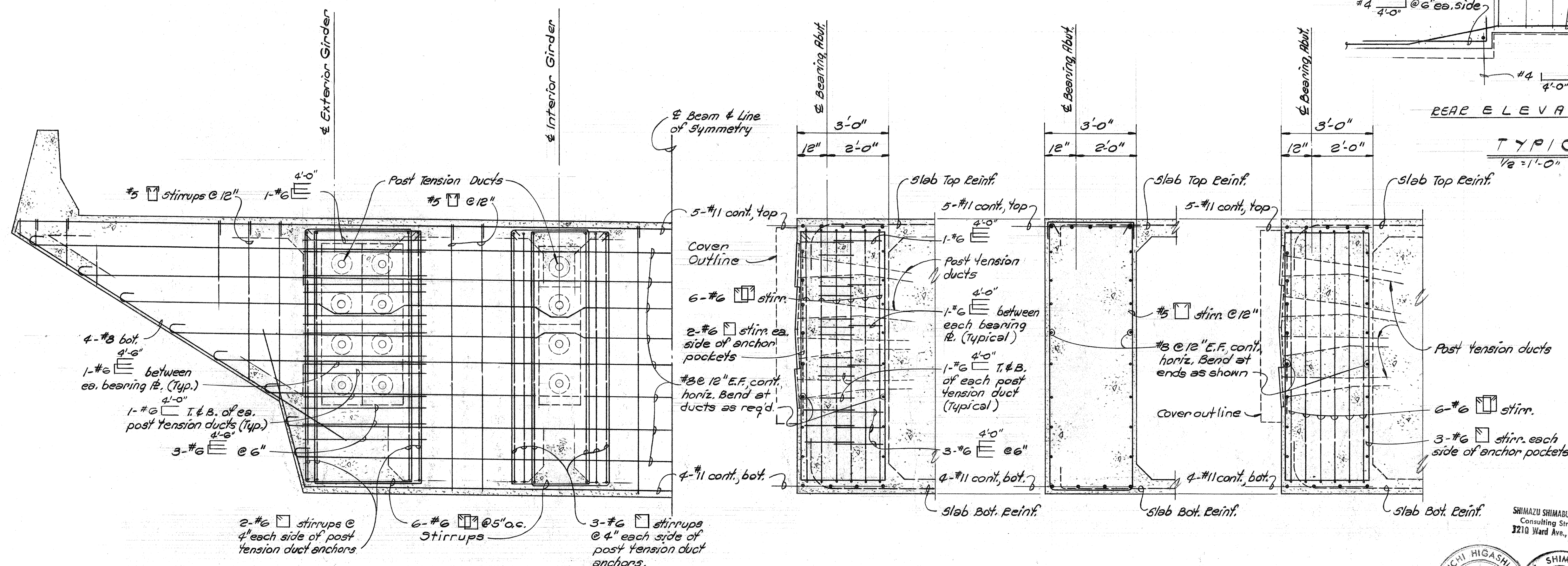
2"

2"

2" min. d. from joint to top of duct.

6" fillet

NOTE:
For details not shown
see Standard Detail Sheets

$$112'' = 1' - 0''$$


TYPICAL CONDITION @ CREEP BLOCK
1/2" = 1'-0"

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

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HIGHWAYS DIVISION

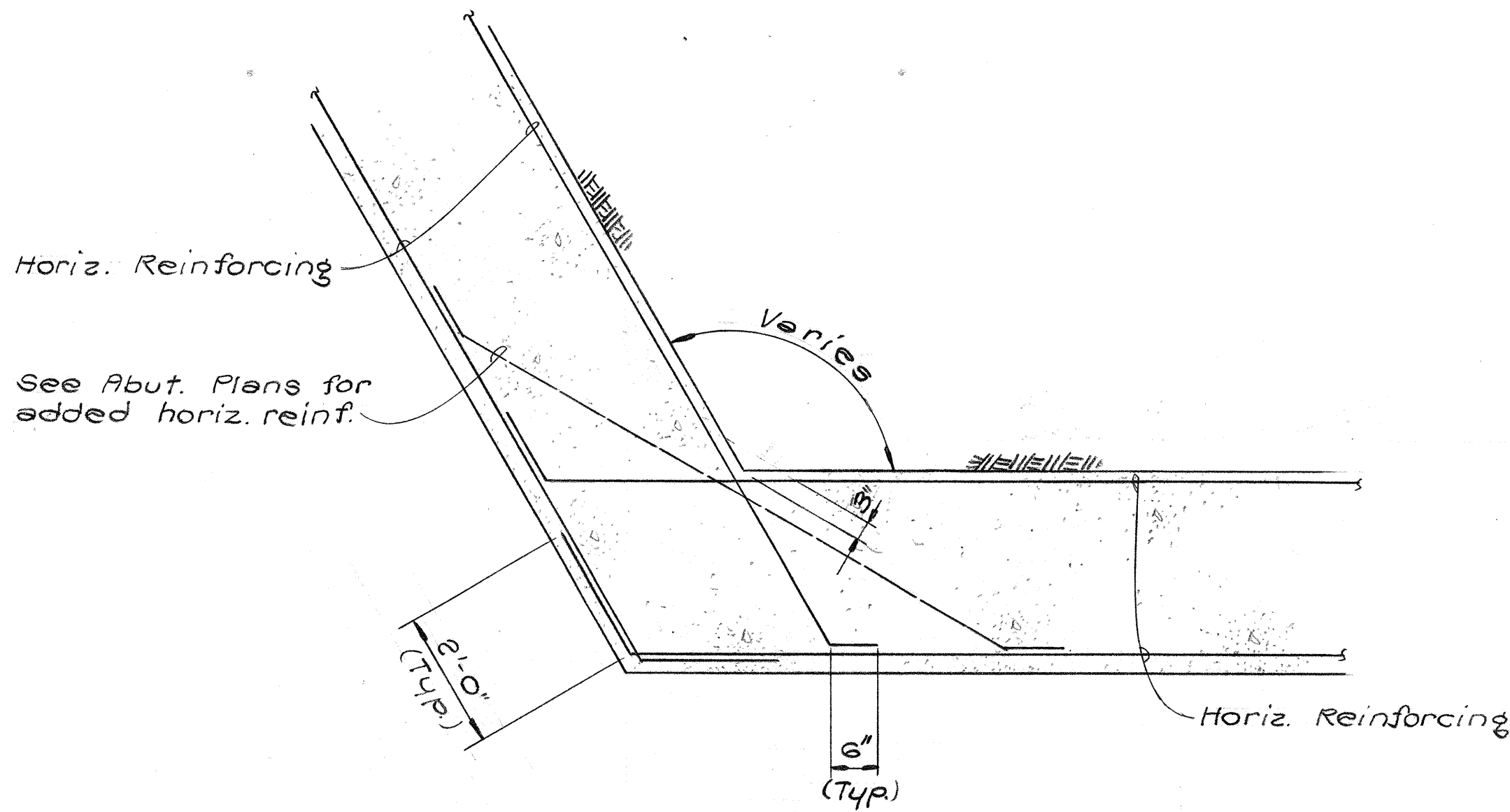
TYPICAL DETAIL
REINFORCING DETAILS FOR
BEAM "A" & GIRDERS

PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-HI-1 (73):15

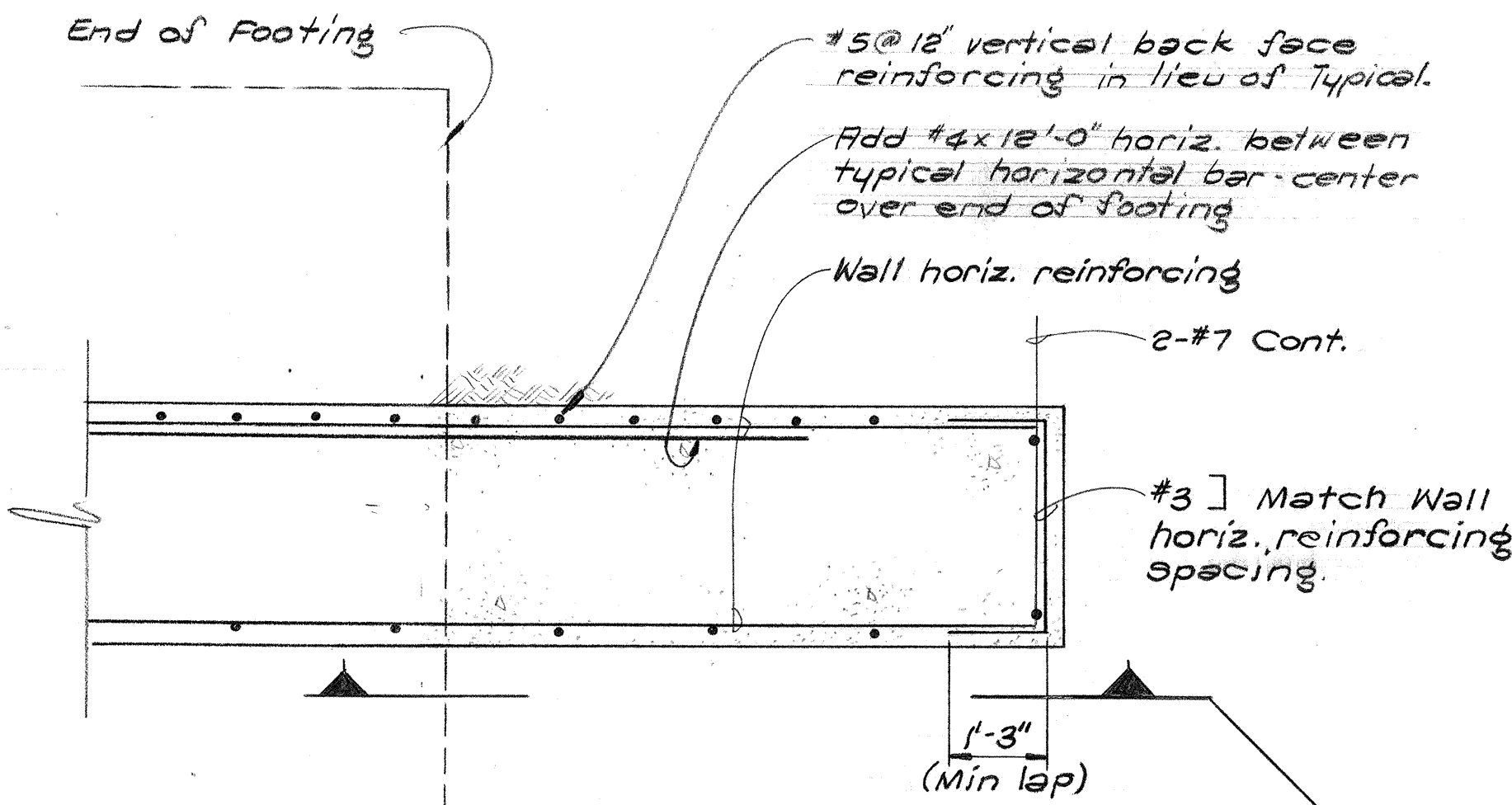
Scale: As Shown Date: DEC. 7, 1973

SHEET No. 5-22 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	300	369



PLAN AT CORNERS



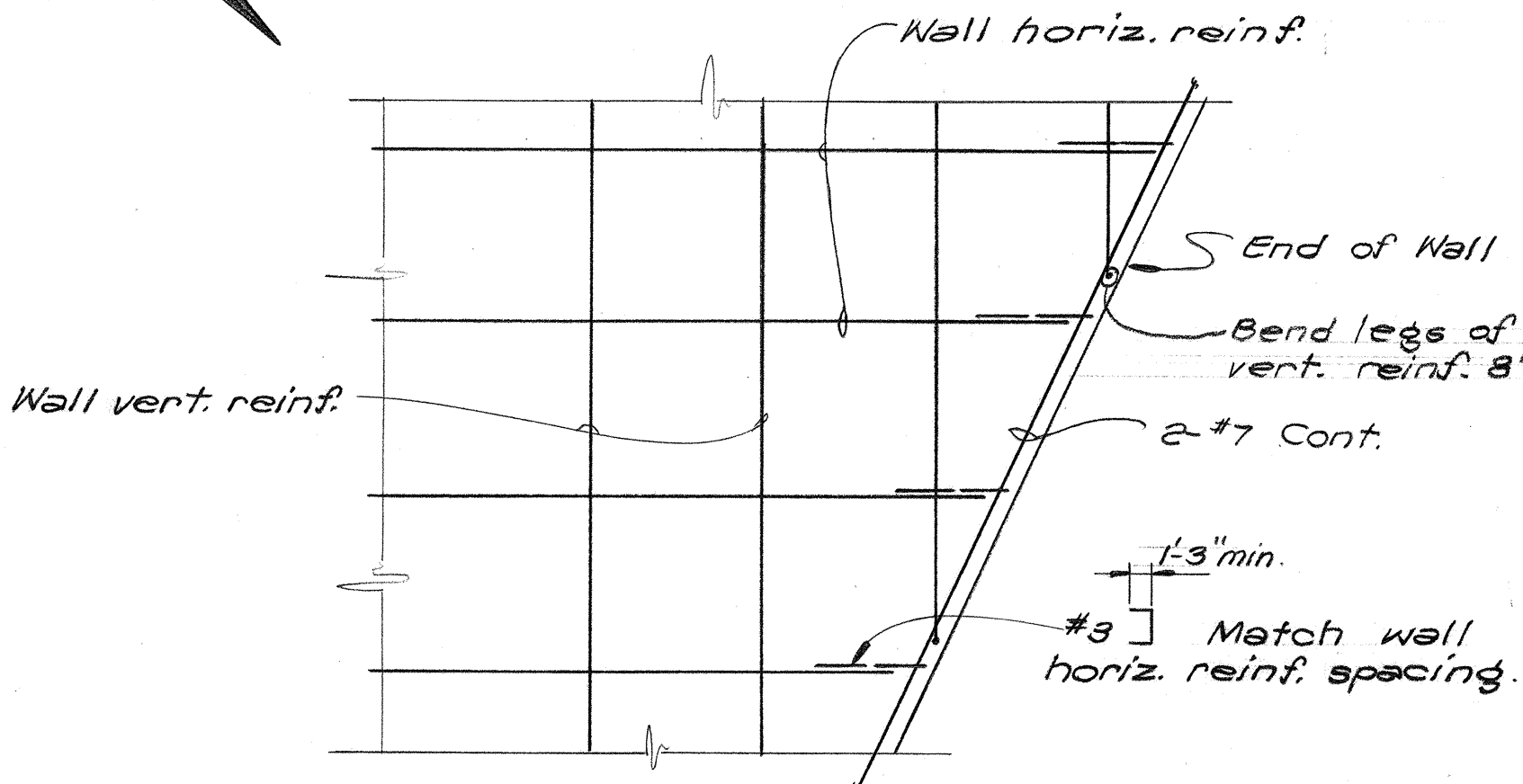
PLAN AT CANTILEVER ENDS

TYPICAL WALL REINFORCING DETAILS

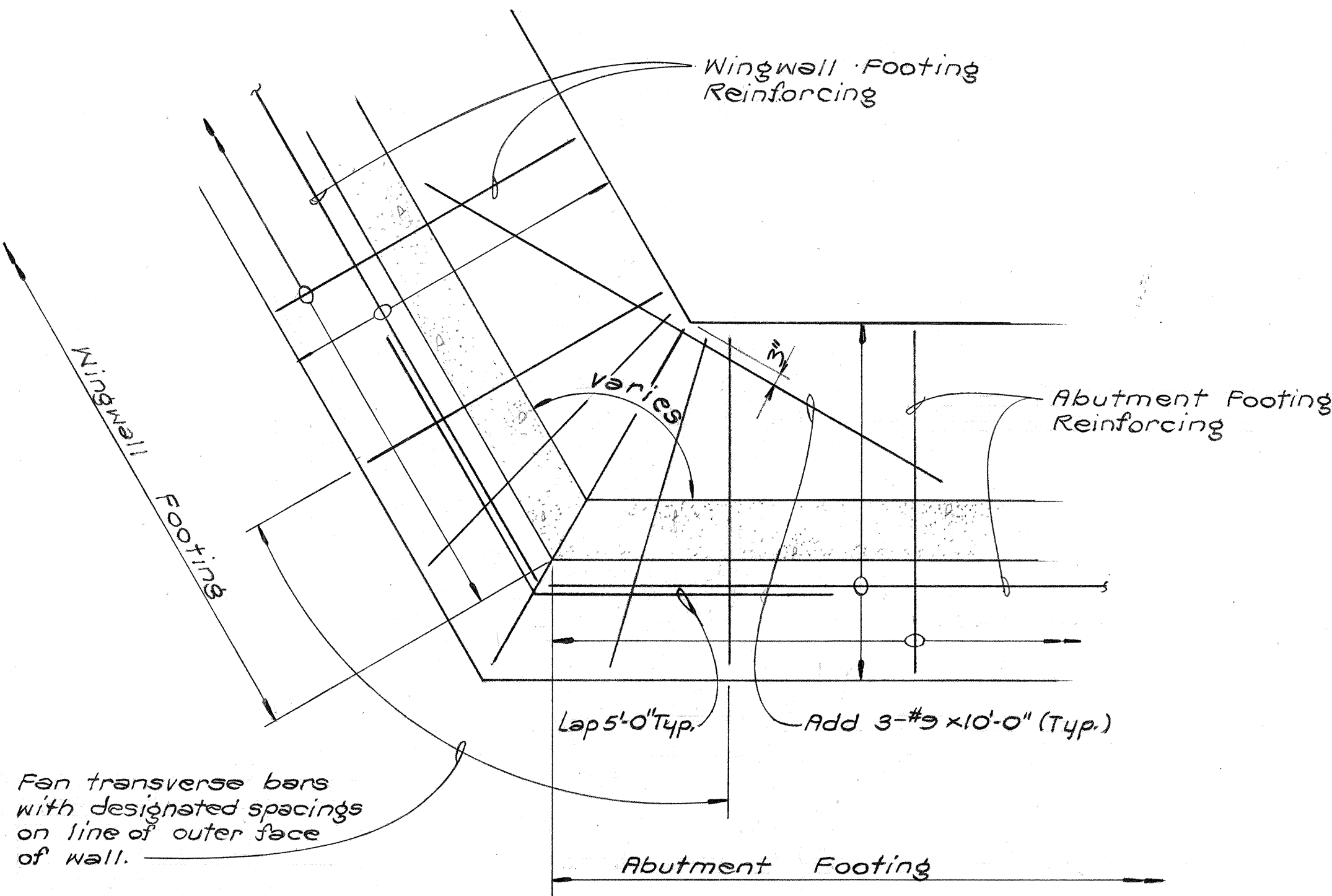
Scale: 1/2"=1'-0"

WALL & FOOTING NOTES

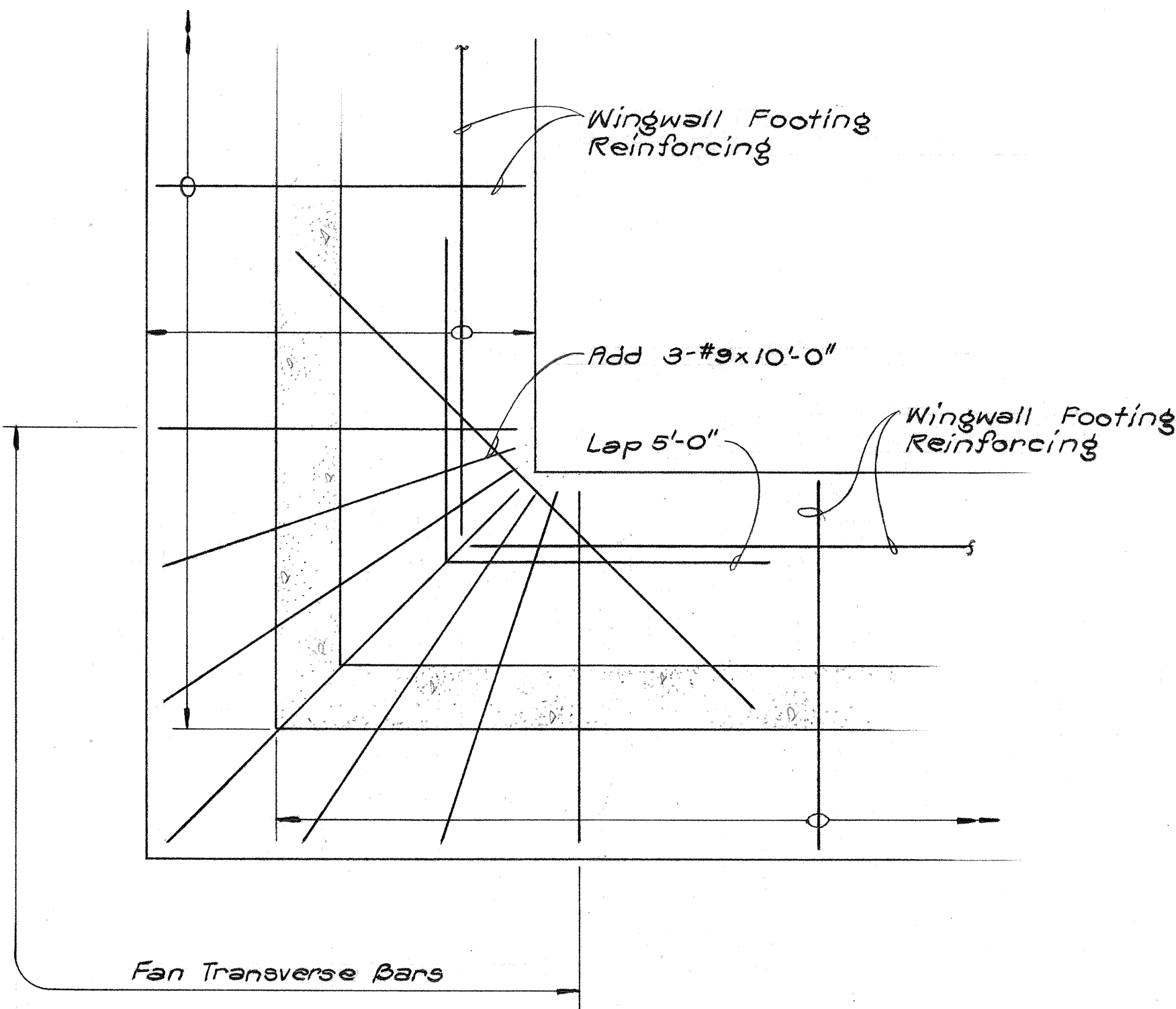
- Concrete for all footings shall be poured against neat excavations.
- All footings shall be embedded 1'-0" (minimum) into competent tuff.
- Bottom of footings shall be to elevations shown in these plans unless minimum embedment into competent tuff is not attainable - in which case the Engineer shall be notified of this situation.
- Concrete walls may be poured full height, provided pour windows 6'-0" o.c., E.W. are utilized for placing concrete.
- Minimum 28 day concrete strengths for walls & footings shall be - 3000 p.s.i.
- Reinforcing steel shall conform to A.S.T.M. A615, Grade 60.



ELEVATION



PLAN - ABUTMENT & WINGWALL CORNER FOOTING REINF.

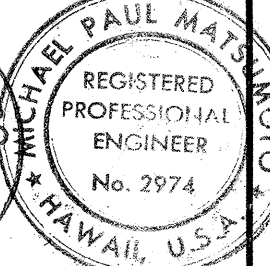
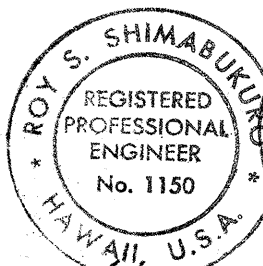


PLAN - WINGWALL CORNER FOOTING REINF.

ABUTMENT WALL & FOOTING DETAILS

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

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Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814



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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

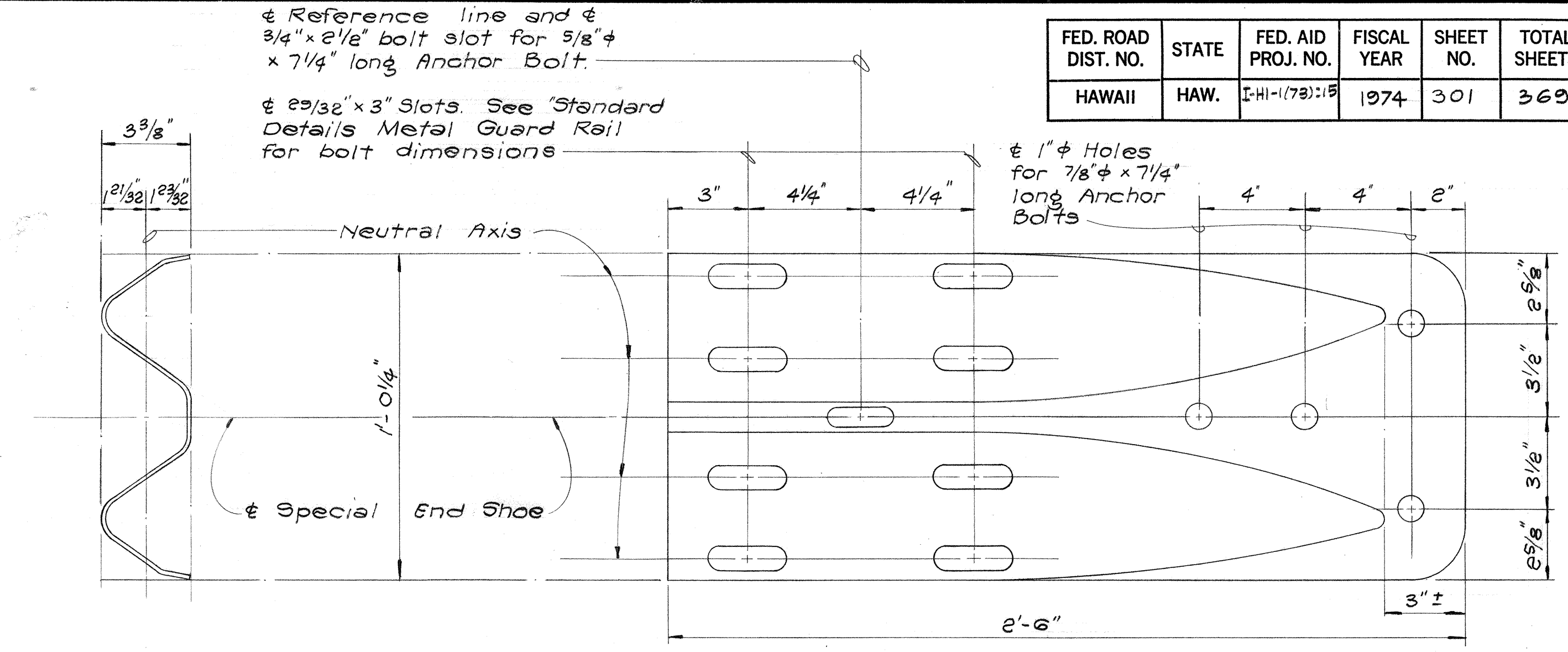
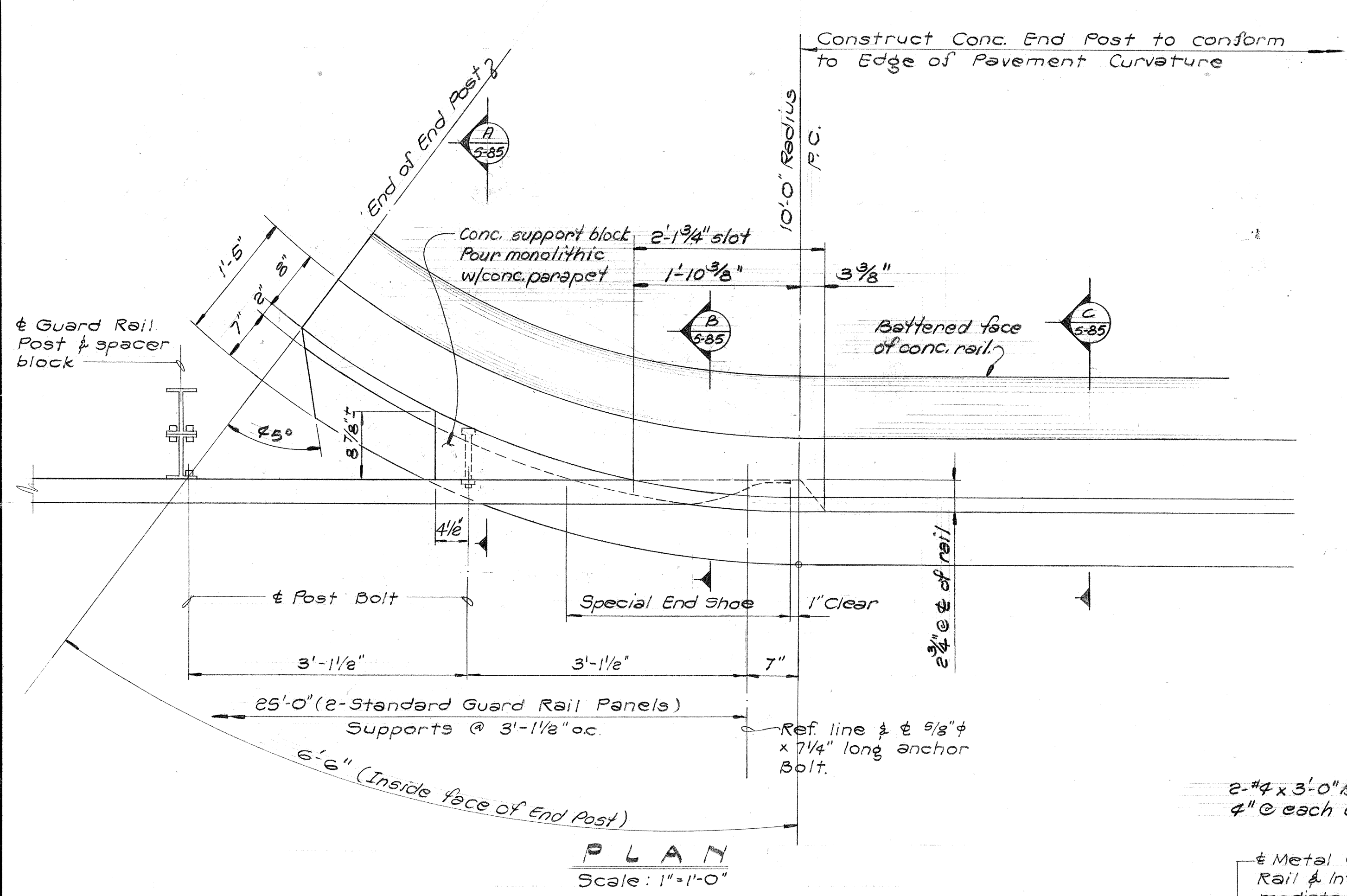
TYPICAL DETAIL TYPICAL WALL AND FOOTING REINFORCEMENT DETAILS

PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-HI-1(73)15

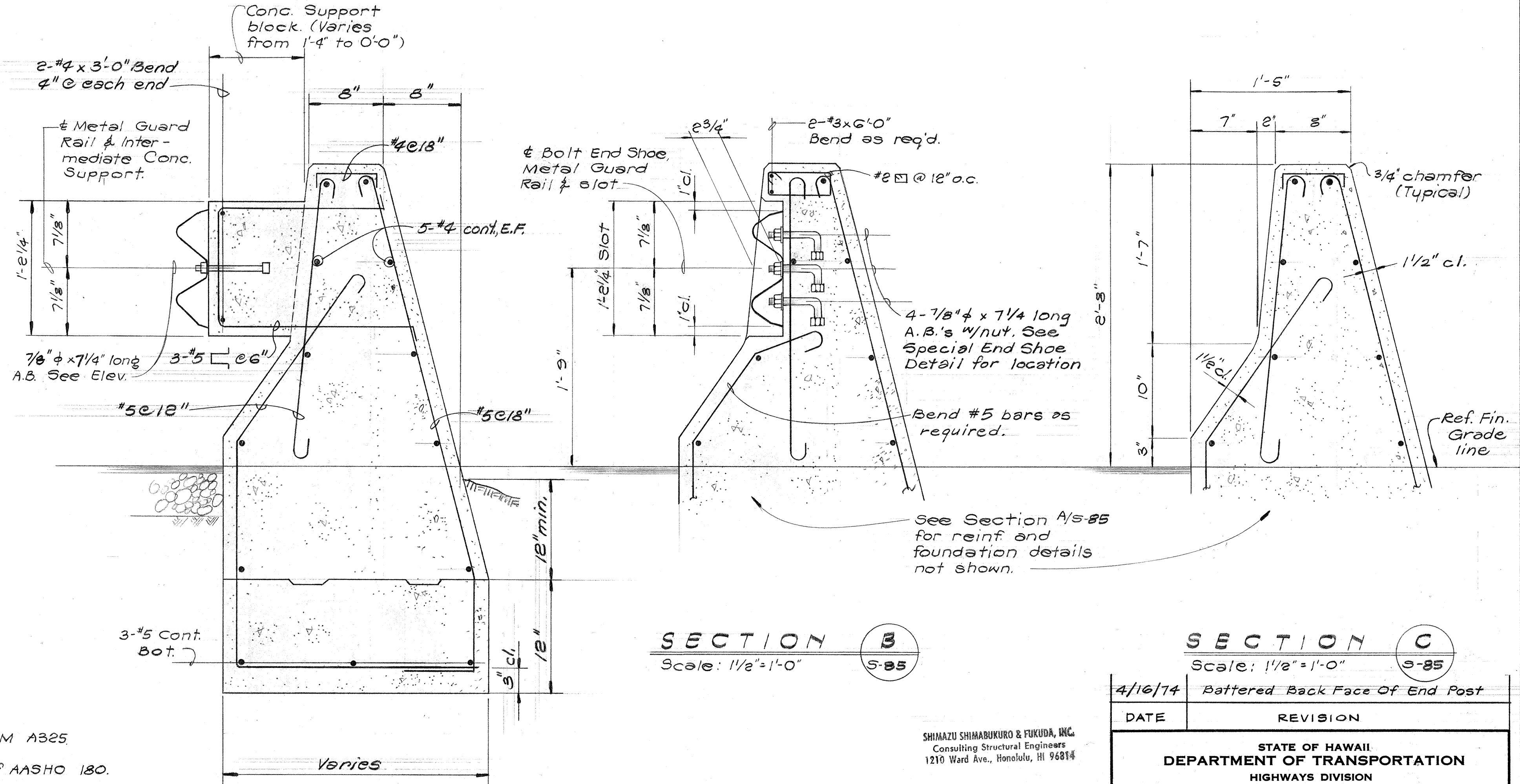
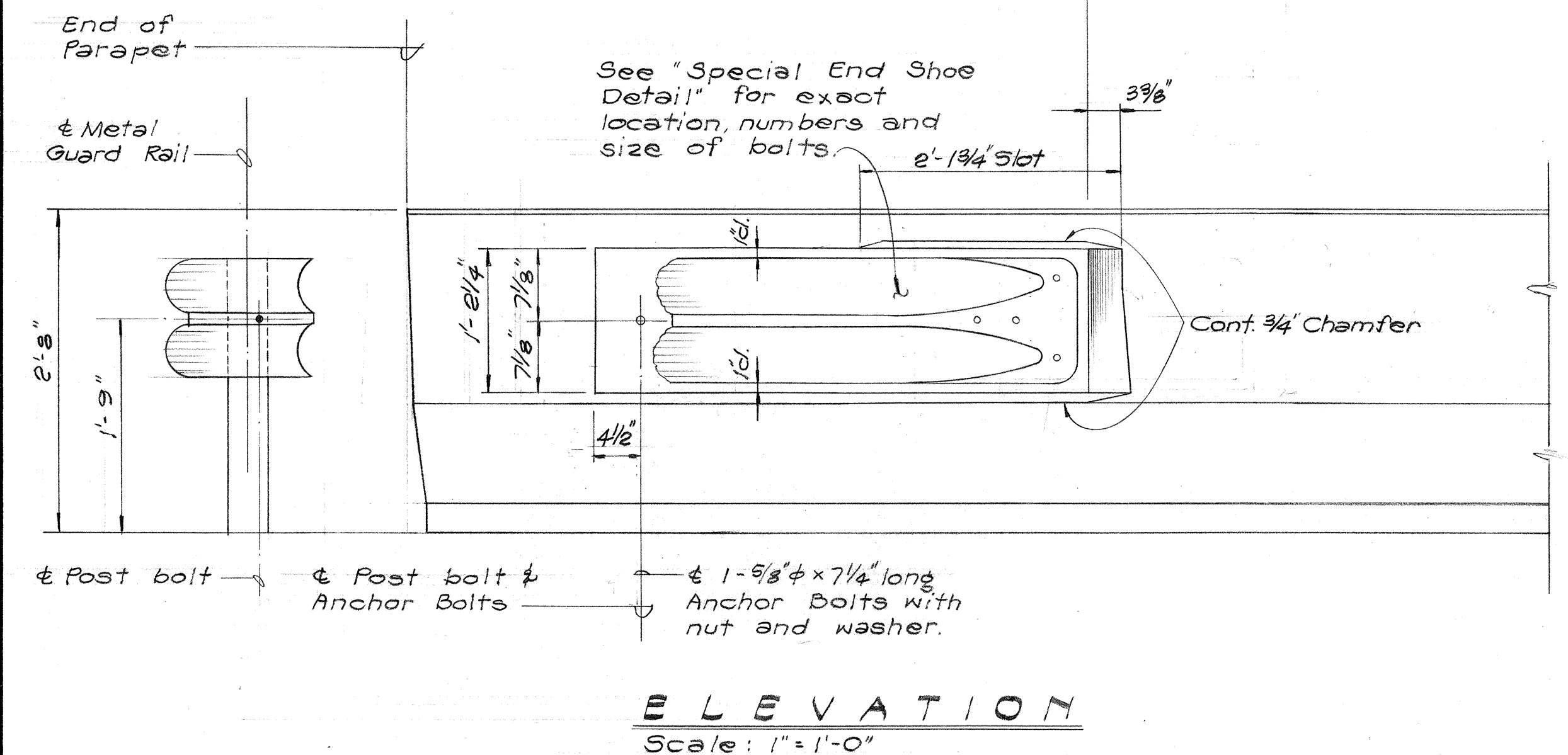
Scale: As Shown Date: DEC. 7, 1973

SHEET NO. 284 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	301	369

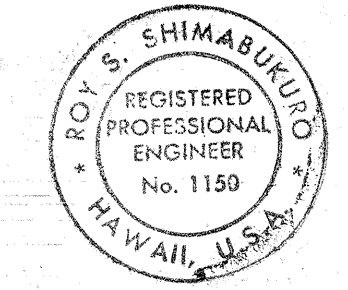


SECTION ELEVATION
SPECIAL END SHOE DETAILS
Scale: 3"=1'-0"



- NOTES:
- All Anchor Bolts shall be High Strength bolts conforming to the requirements of ASTM A325.
 - All Shoe assembly, including anchor bolts, nuts and washers shall be galvanized.
 - Special End Shoe shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO 180.
 - First 25'-0" of guard rail adjoining "Special End Shoe" shall be galvanized steel.
 - Anchor Bolt length given from under bolt head.

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Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814



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DATE: 4/16/74
REVISION: Battered Back Face Of End Post

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

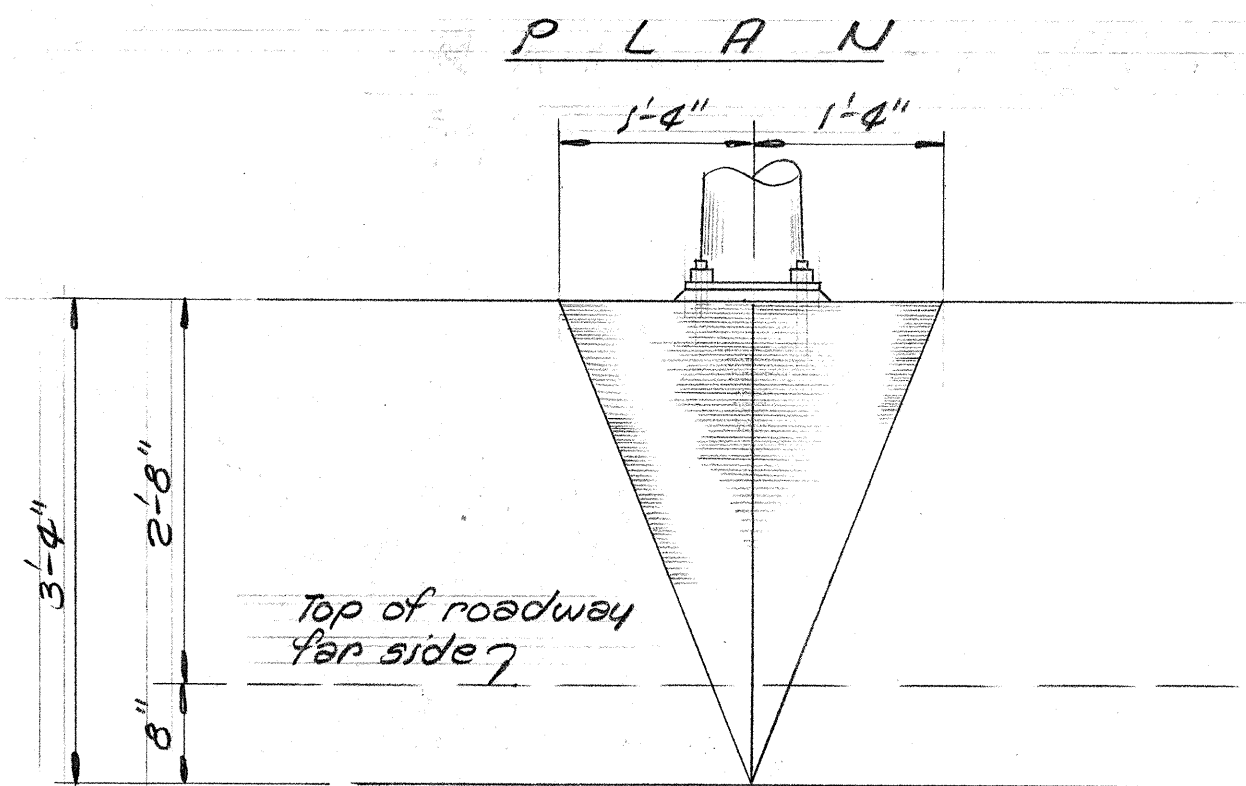
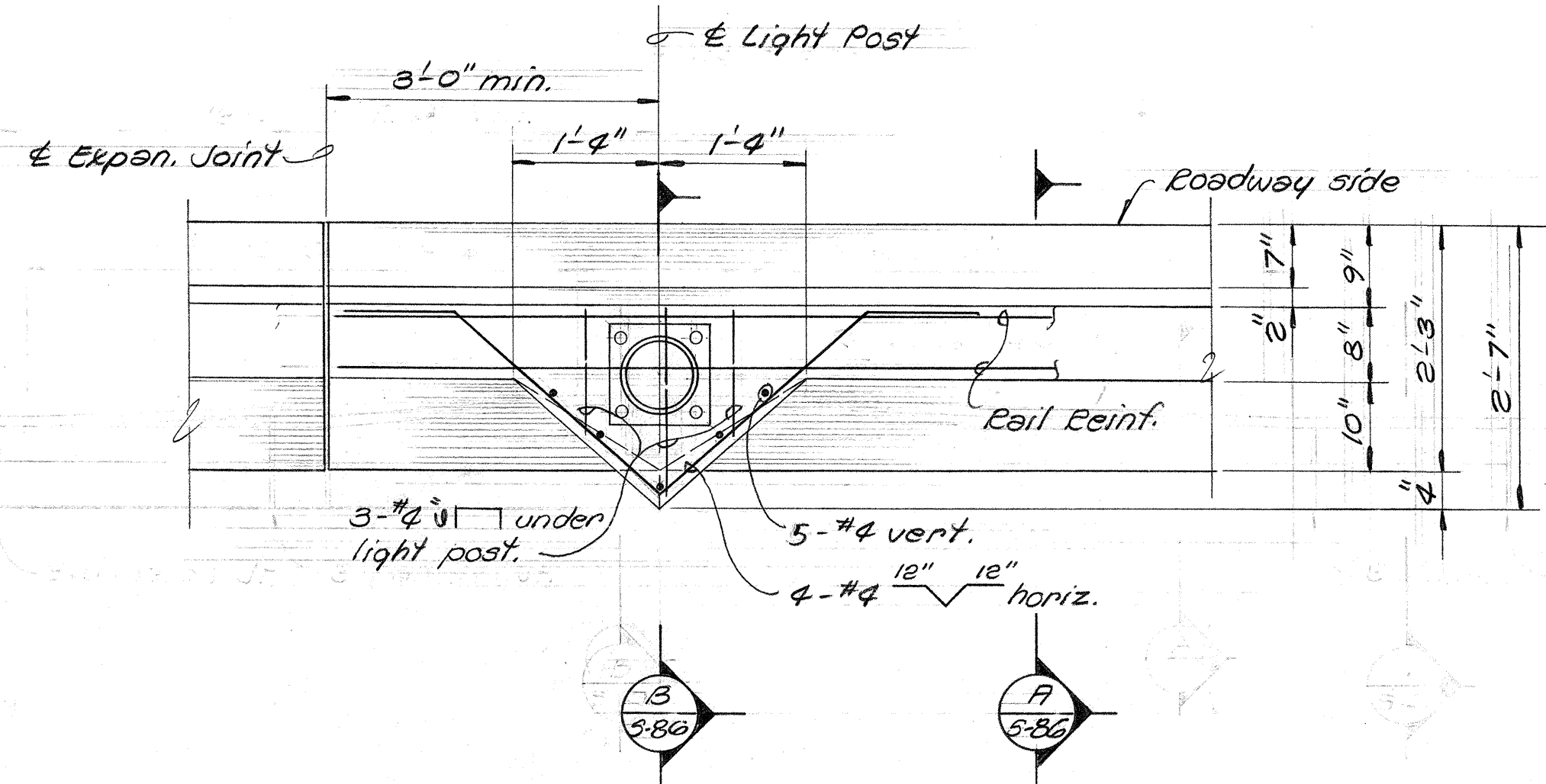
TYPICAL DETAIL
END POST DETAILS

PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-HI-1(73):15

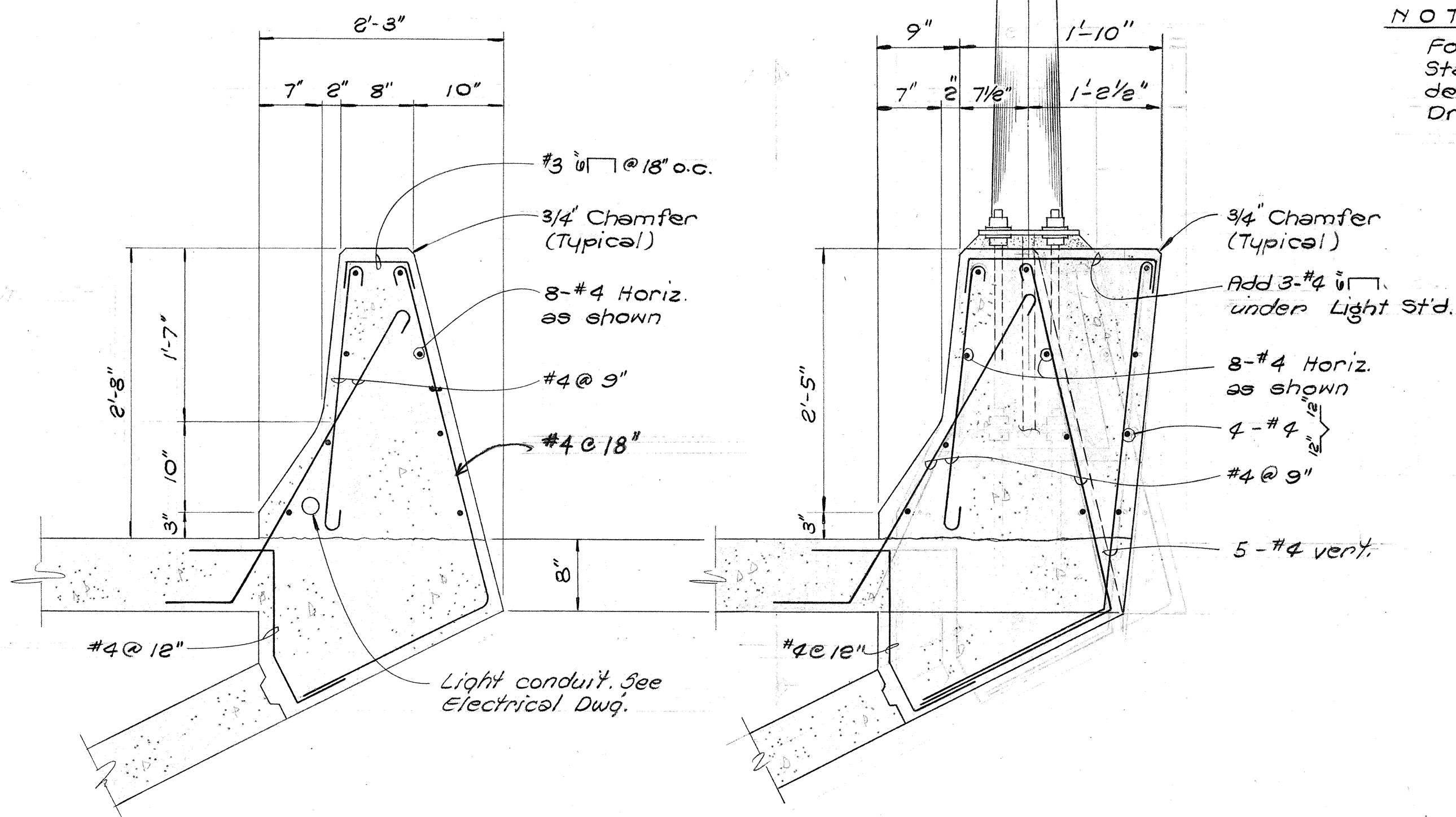
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SHEET NO. 385 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(78)15	1974	302	369



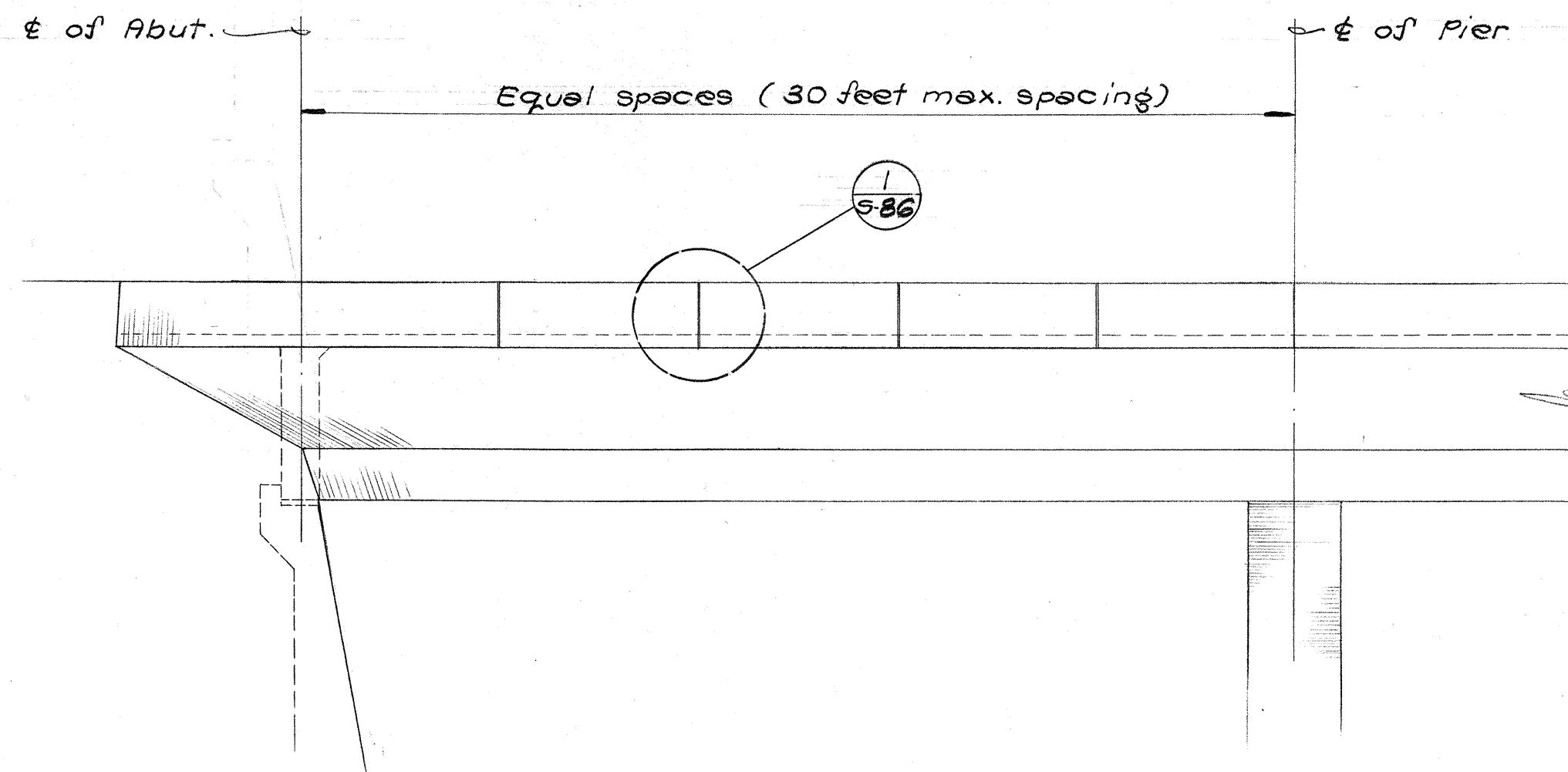
ELEVATION
CONC. RAIL AT LIGHT STANDARD
 3/4" = 1'-0"



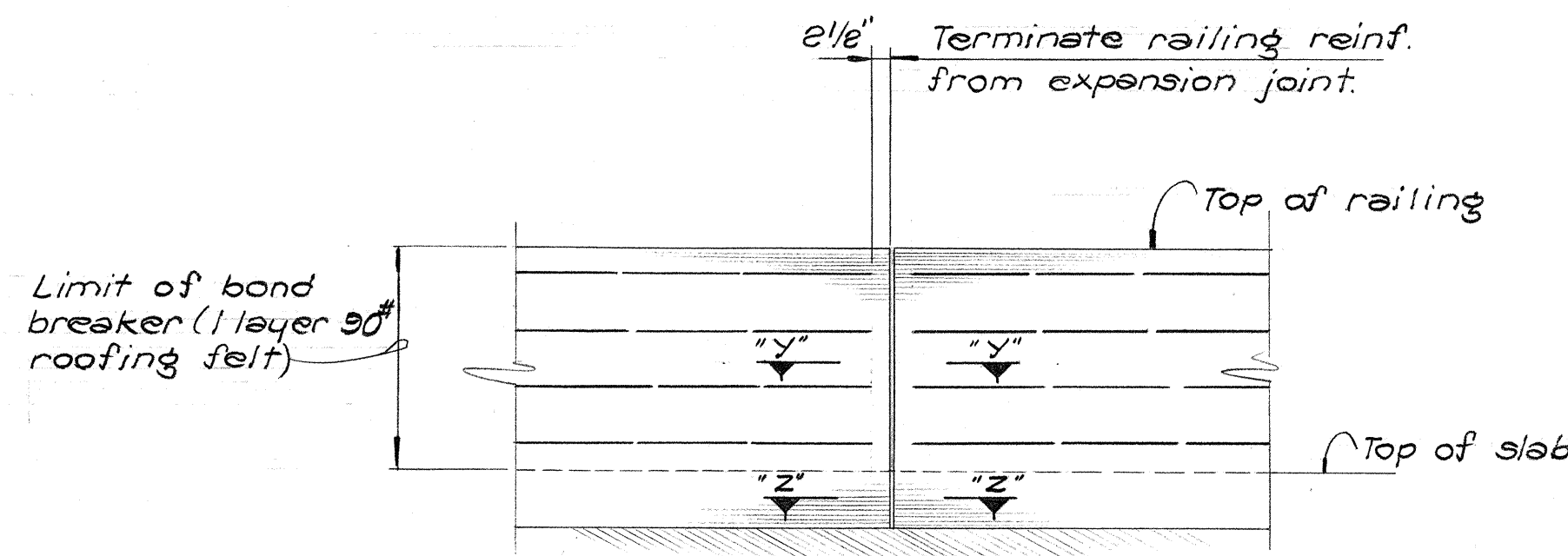
Note: Reference C.C.O. #12
 Revision applicable to Structure Nos. 4, 6 and 7.

SECTION A
 1" = 1'-0"

SECTION B
 1" = 1'-0"



RAIL ELEVATION SHOWING EXPANSION JOINT SPACING
 N.T.S.



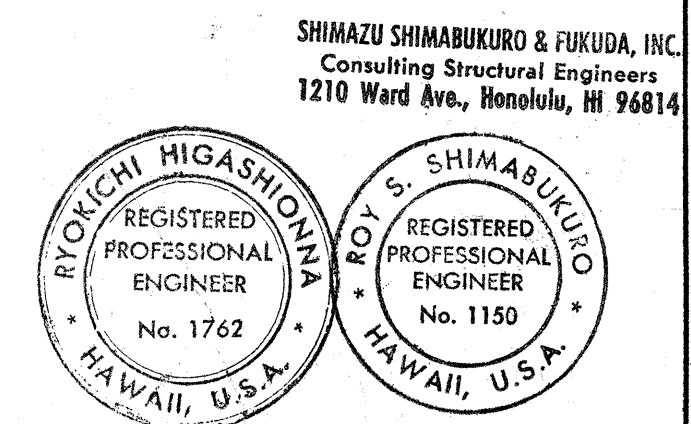
DETAIL 1
 1/2" = 1'-0"



SECTION "Y-Y"
 N.T.S.

SECTION "Z-Z"
 N.T.S.

TYPICAL CONCRETE RAILING DETAILS



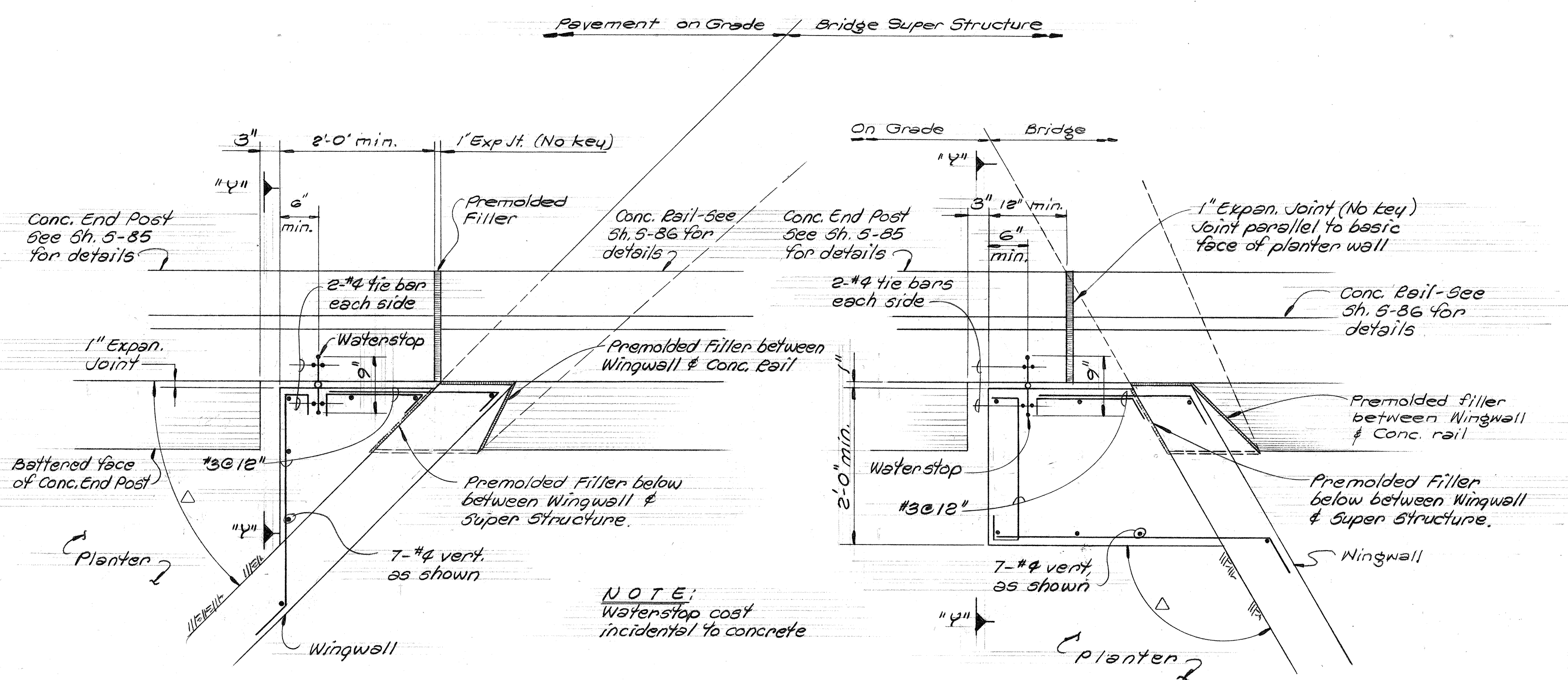
STATE OF HAWAII
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 HIGHWAYS DIVISION

TYPICAL DETAIL
 CONCRETE RAILING DETAIL

PEARL HARBOR INTERCHANGE
 F.A.I. Proj. No. I-HI-1(78)15

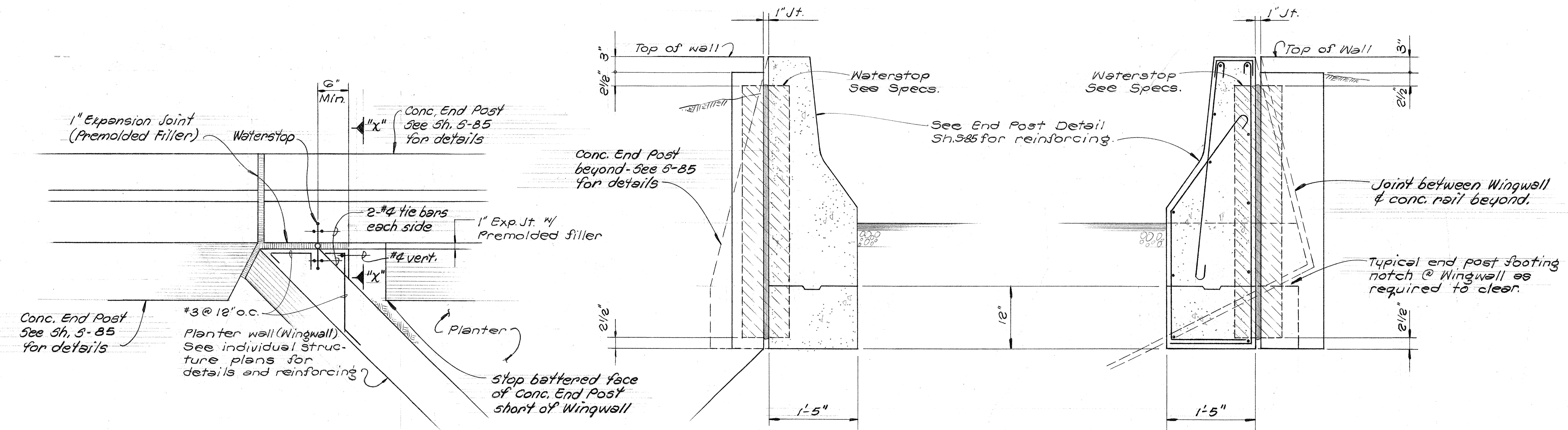
Scale: As Shown Date: DEC. 7, 1973
 SHEET No. 586 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73):15	1974	304	369



PLAN FOR ANGLE (Δ) LESS OR EQUAL TO 90°

PLAN FOR ANGLE (Δ) GREATER THAN 90°



PLAN AT END OF WINGWALL

SECTION "X"-X

SECTION "Y"-Y

WINGWALL & END POST CONNECTION DETAILS
Scale: 1"=1'-0"

4/16/74 BATTERED OUTSIDE FACE OF END POST

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL DETAIL
WINGWALL TO END POST
CONNECTION DETAIL

PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-HI-1(73):15

Scale: As Shown Date: DEC. 7, 1973
SHEET NO. 5-87 OF 106 SHEETS

SHIMAZU SHIMABUKURO & FUKUDA, INC.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

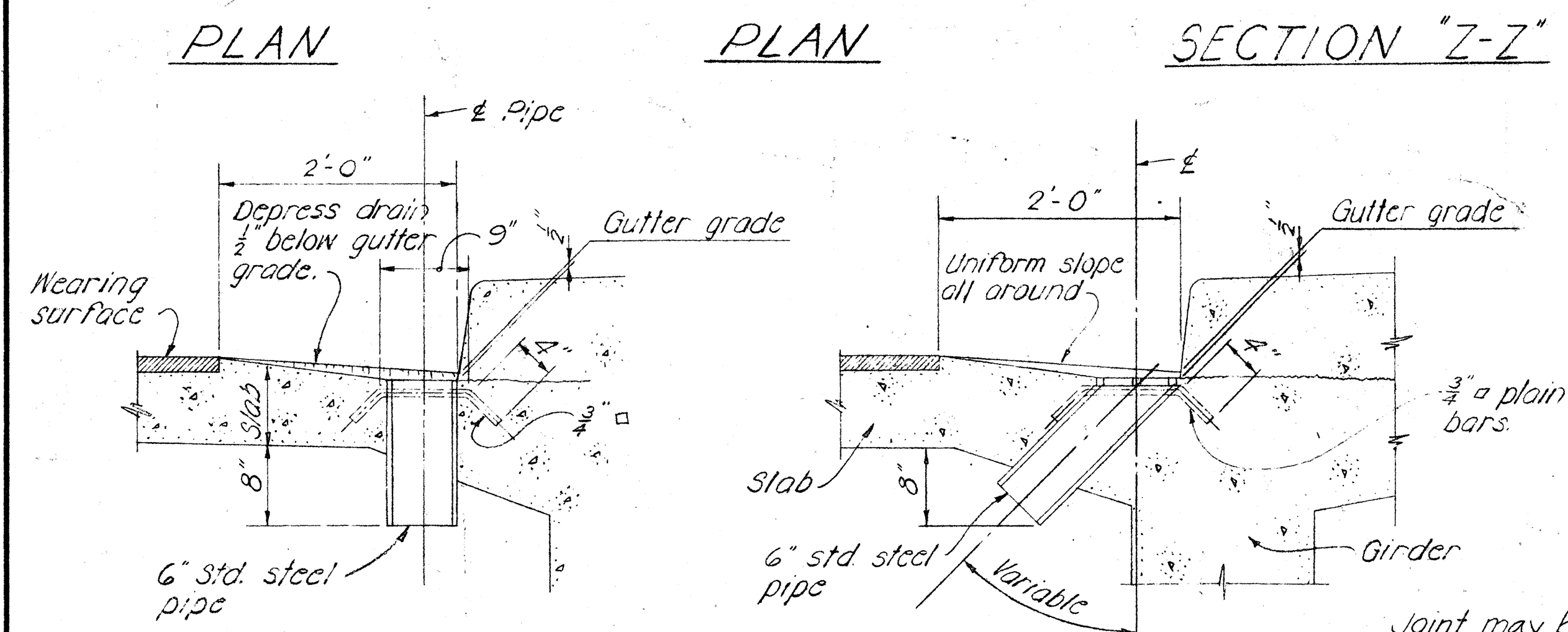
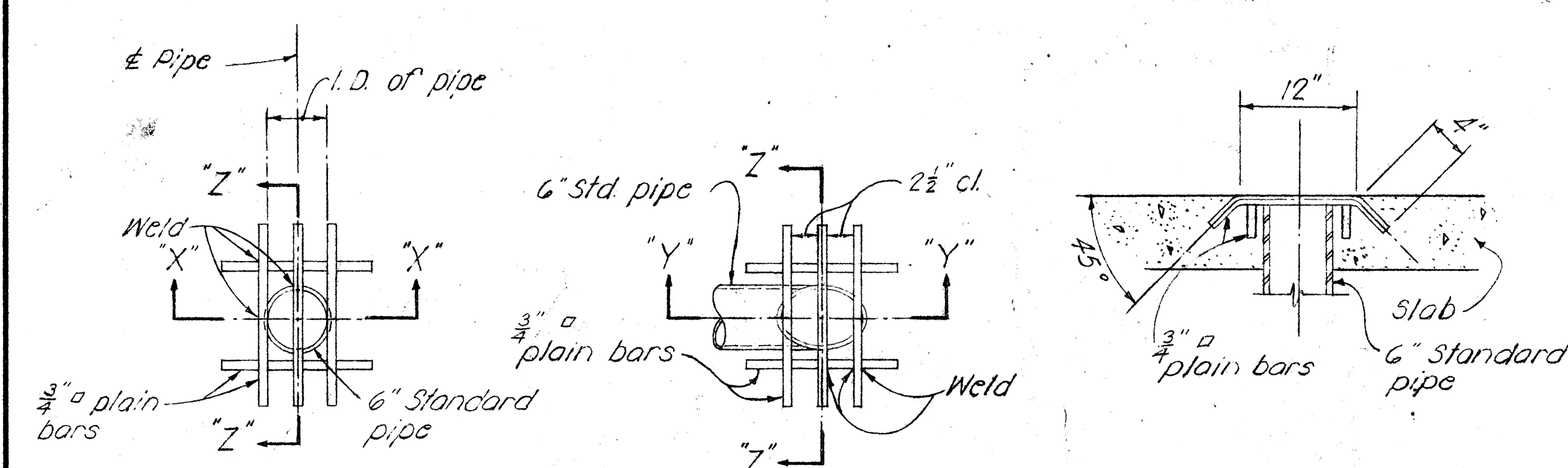
REGISTERED PROFESSIONAL ENGINEER
No. 1150
HAWAII, U.S.A.

REGISTERED PROFESSIONAL ENGINEER
No. 2974
HAWAII, U.S.A.

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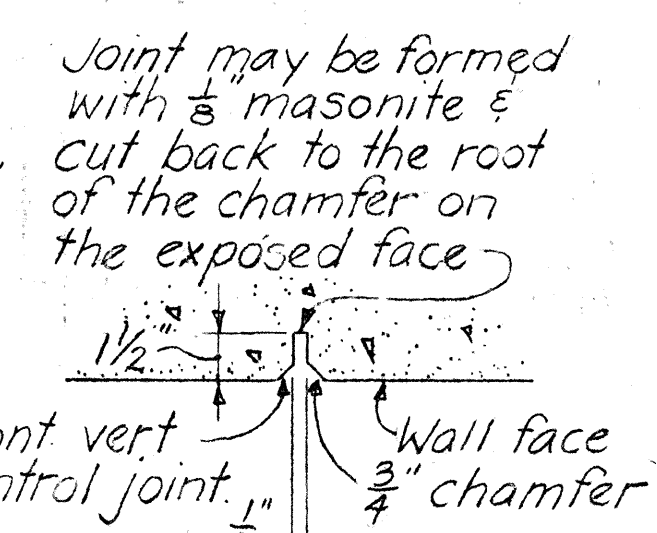
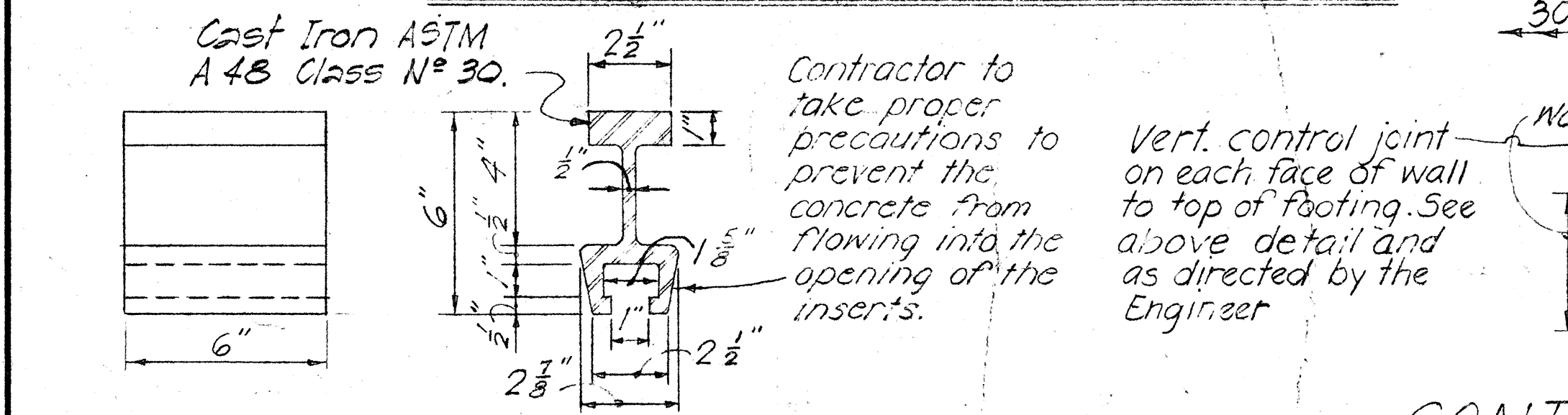
GENERAL NOTES

- All concrete shall be Class A unless otherwise noted.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1 1/2" For stirrups of beams & pier caps.
 - 2" For ties of columns.
 - 2" For formed walls.
 - 3" For footings.
- Minimum spacing between parallel bars shall be 2 1/2 times the diameter of bars, but in no case shall the clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate.
- All dimensions relating to reinforcing are to centers of bars unless otherwise noted.
- Reinforcing bars shall be securely tied at all intersections & lap splices & shall be held in place during pouring to maintain their proper locations as shown on plans.
- Vertical column bars shall be arranged in such a manner as to miss pier cap bars above as directed by the Engineer.
- Except as otherwise noted on drawings, all exterior corners & re-entrant angles in concrete work shall be chamfered 3/4" x 3/4".
- Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top of concrete seats shall be finished with a steel trowel to a smooth level surface at the elevation shown on the plans.
- Elastomeric Pads: Bottom of bridge bearing pads shall be secured against displacement with adhesives approved by the Engineer. Pads shall be incidental to concrete and will not be paid for separately.
- Forms for all exposed surfaces of separation structures and surfaces of retaining walls visible from a traveled way or from a populated area shall be plywood except that metal forms may be permitted provided a surface finish satisfactory to the Engineer can be obtained and the use of such forms is approved in writing by the Engineer. Forms for round columns shall be made of materials that will give a smooth finish and true dimensions as given in the plans. Forms for prestressed concrete members shall be either metal or plywood.
- Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.
- The contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation or driving of piles.
- Standard Detail Drawings refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.



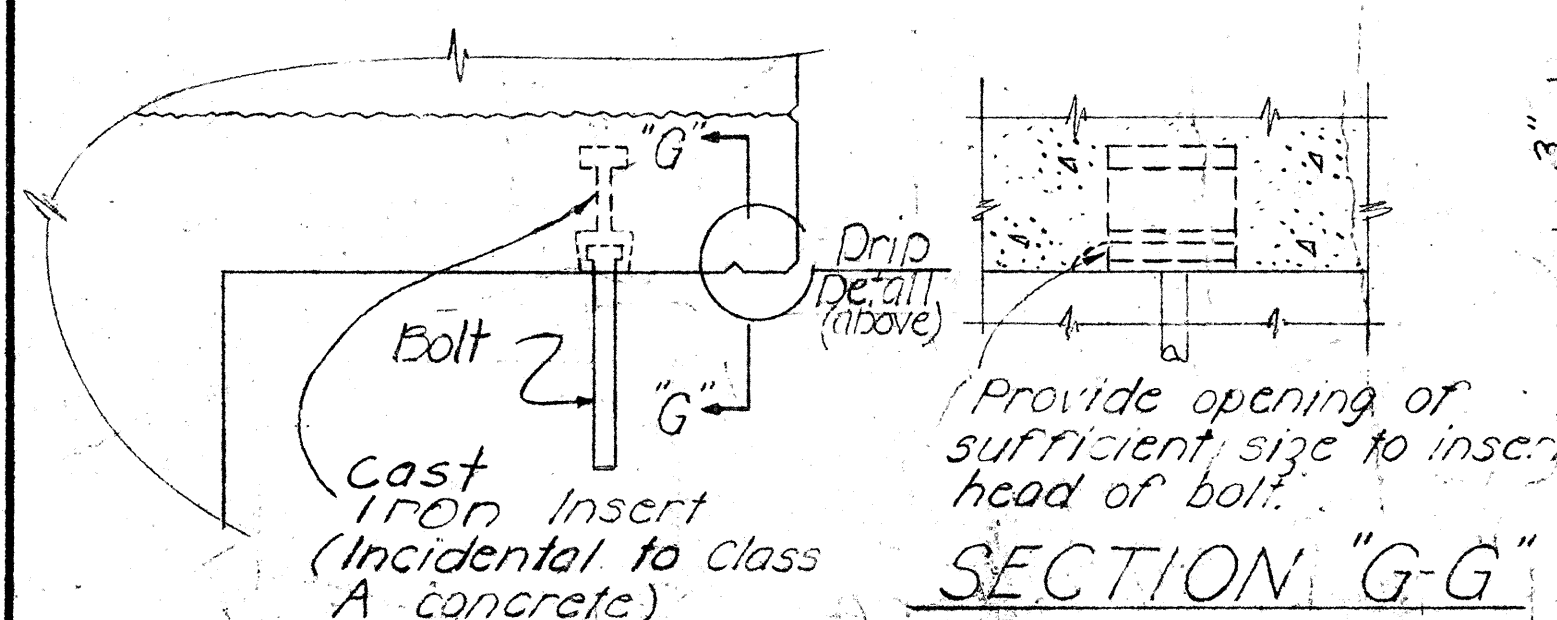
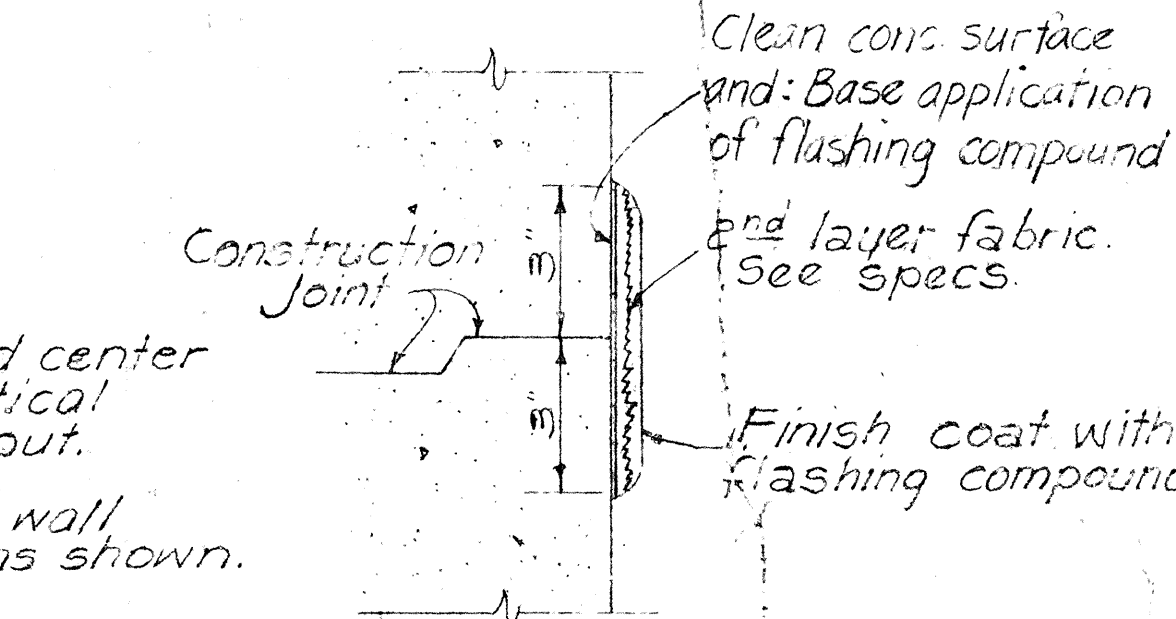
NOTE: Metal drains shall be considered incidental to Class A Concrete in both concrete and steel bridges and will not be paid for separately. Assembly of grillage and pipe shall be hot-dip galvanized after all welding is completed.

TYPICAL DRAINAGE DETAILS



CONTROL JOINT DETAILS

TYP FLASHING COMPOUND WATERPROOFING DETAIL

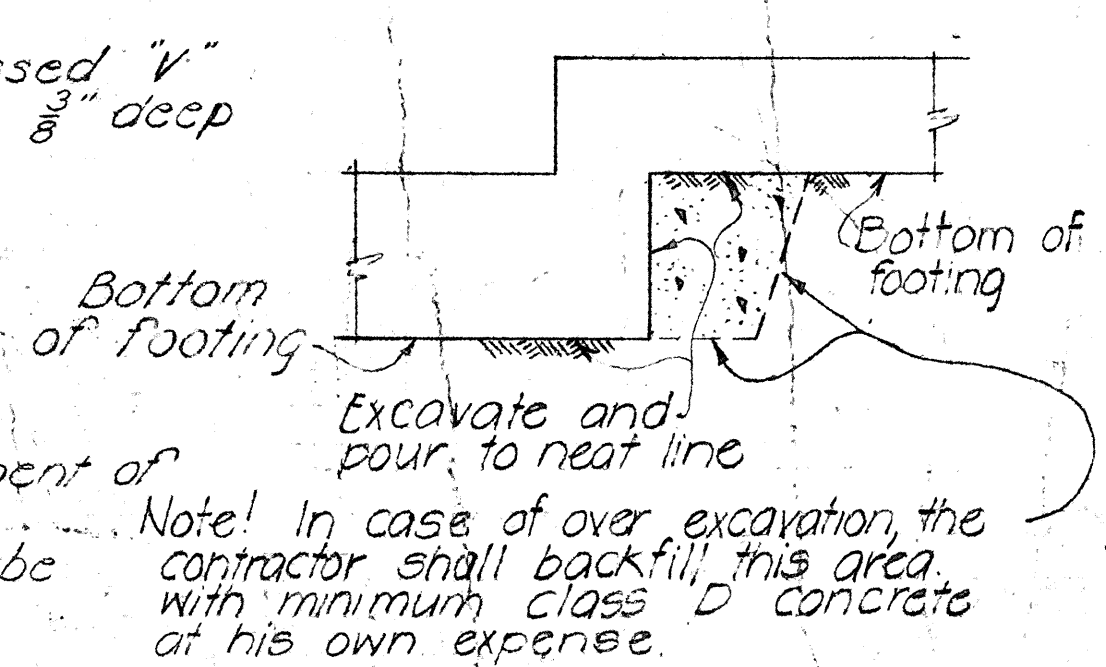


NAME **DATE**

Use correct name of bridge Date of Year built

NOTE: Refer to corresponding detail drawings for placement of such names & dates at end post. Exact details & spacing of letters & figures shall be as directed by the Engineer. See Note #12.

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST

APPROVAL RECOMMENDED:
 Paul T. Lamashita
 BRIDGE DESIGN ENGINEER 1-23-76
 DATE

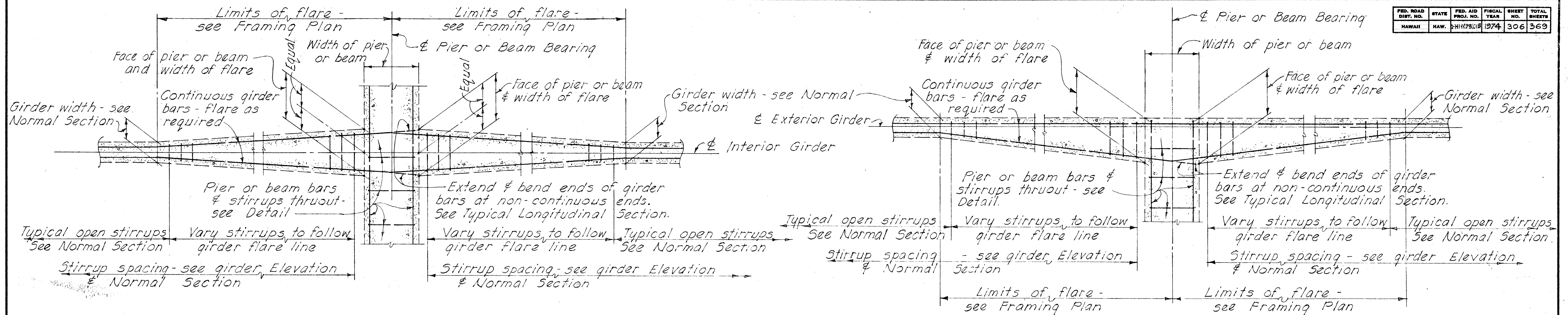
APPROVED:
 Paul T. Lamashita
 ASSISTANT CHIEF, ENGINEERING 1-28-76
 DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

STANDARD DETAILS
NOTES AND MISCELLANEOUS
DETAILS

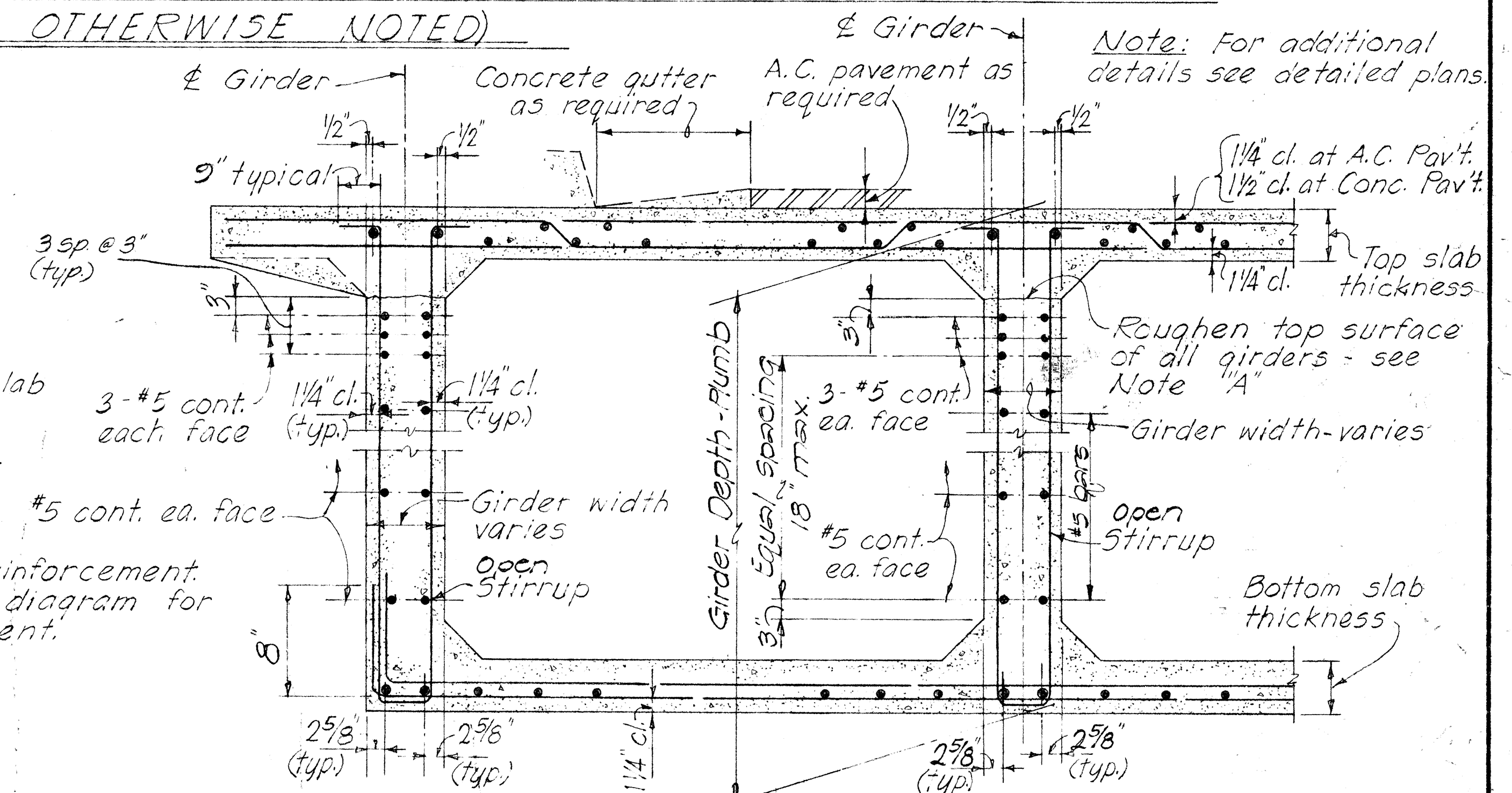
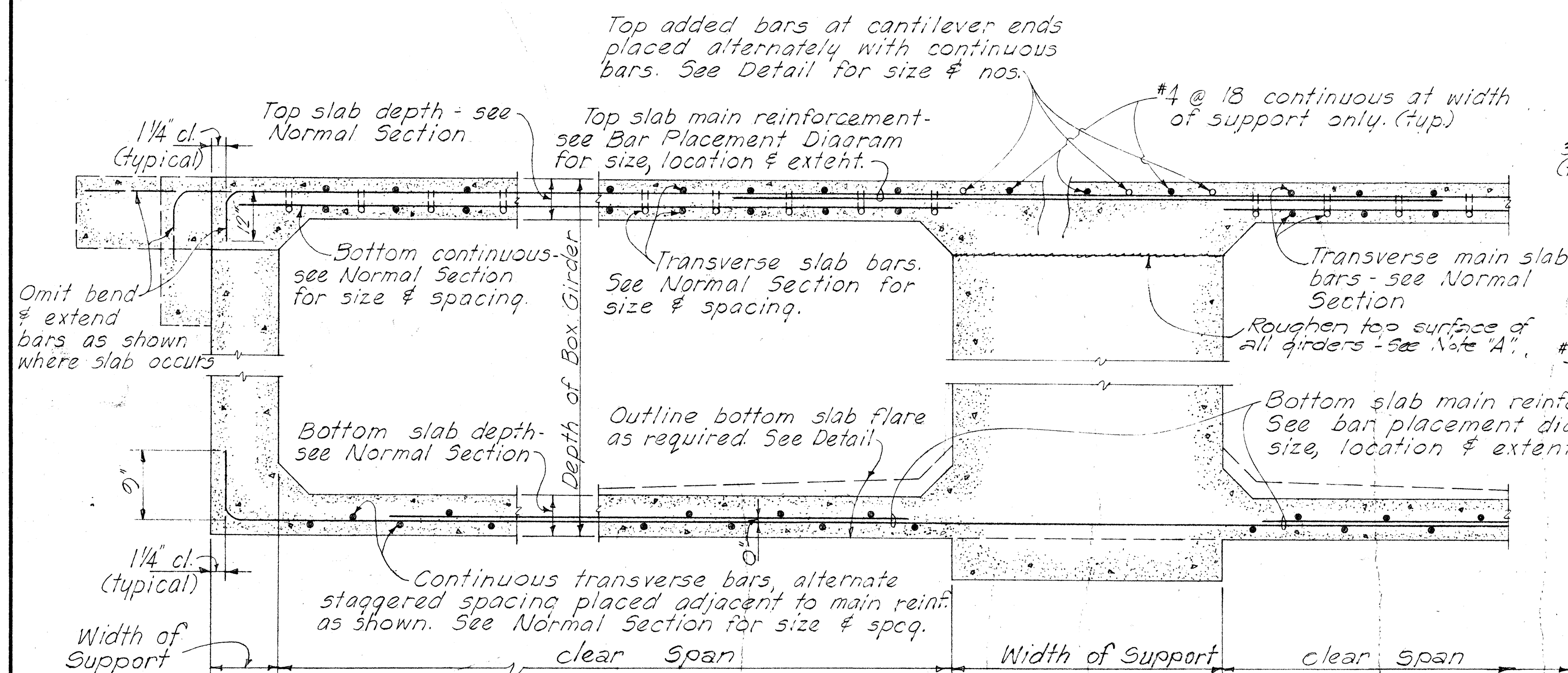
Date: October 1969
 SHEET No. 304 OF 106 SHEETS DB-100



INTERIOR GIRDER

EXTERIOR GIRDER

TYPICAL DETAILS OF GIRDER FLARE AT NORMAL OR RADIAL SUPPORTS - CONTINUOUS ENDS AS SHOWN (NON-CONTINUOUS ENDS SIMILAR EXCEPT AS OTHERWISE NOTED)



EXTERIOR GIRDER

INTERIOR GIRDER

TYPICAL NORMAL BOX GIRDER SECTION

AT NON-CONTINUOUS END

AT CONTINUOUS SUPPORT

TYPICAL LONGITUDINAL DECK SECTION ALONG GIRDER AT NORMAL OR RADIAL SUPPORTS

Note "A" The entire surface of the joint shall be thoroughly cleaned of surface laitance, curing compound, and other material foreign to the concrete and clean aggregate be exposed by abrasive blast cleaning after the curing period or immediately before placing concrete at the joint.

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED
Paul T. Yamashita
BRIDGE DESIGN ENGINEER

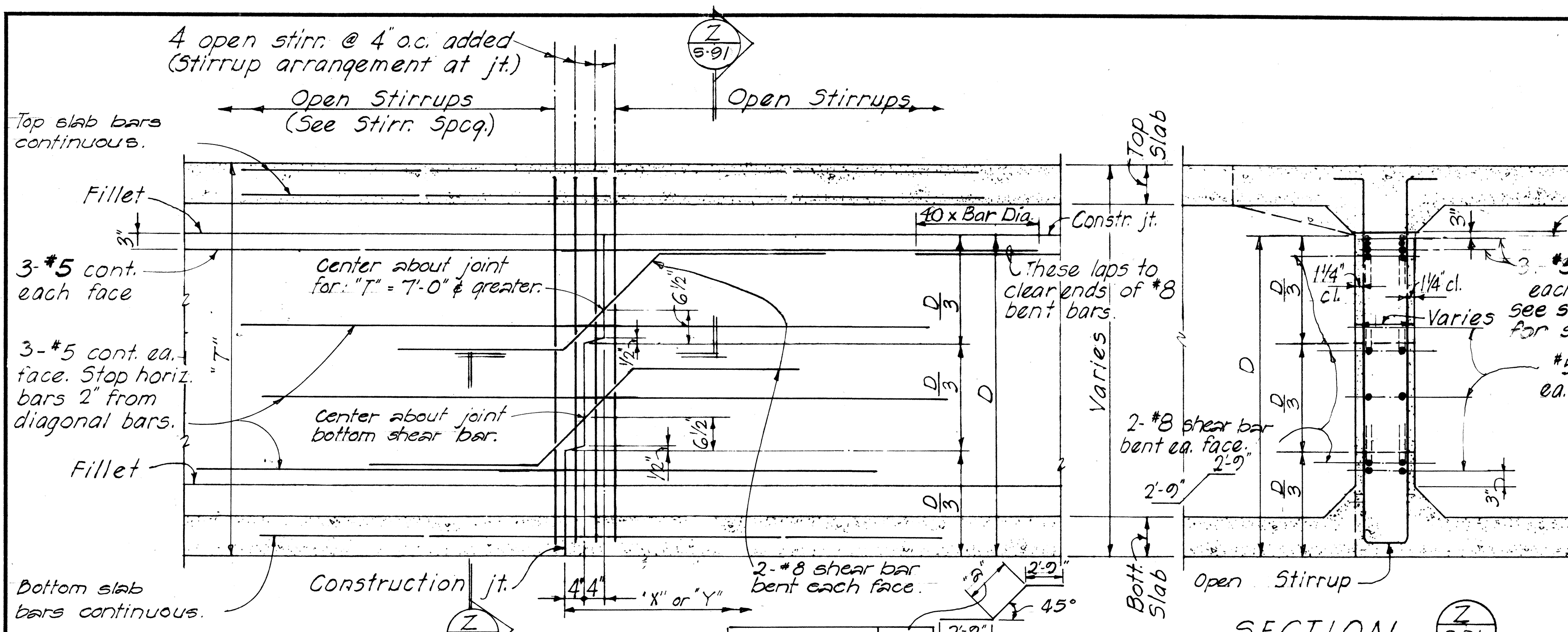
1-23-70
DATE

APPROVED
Paul T. Yamashita
FOR ASSISTANT CHIEF, ENGINEERING

1-28-70
DATE

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION STANDARD DETAILS CONCRETE BOX GIRDER

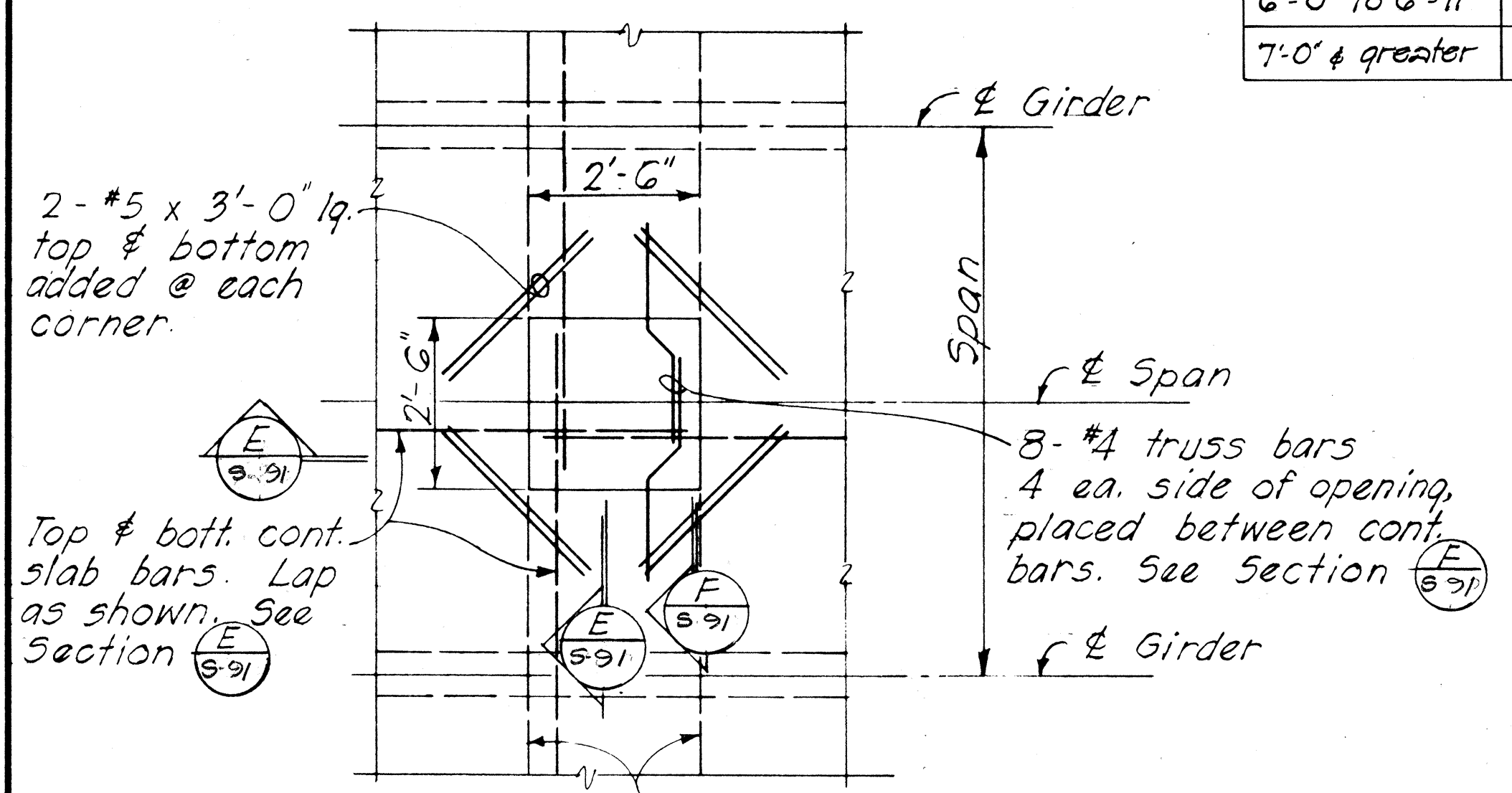
Date



GIRDER STEM CONSTRUCTION JOINT

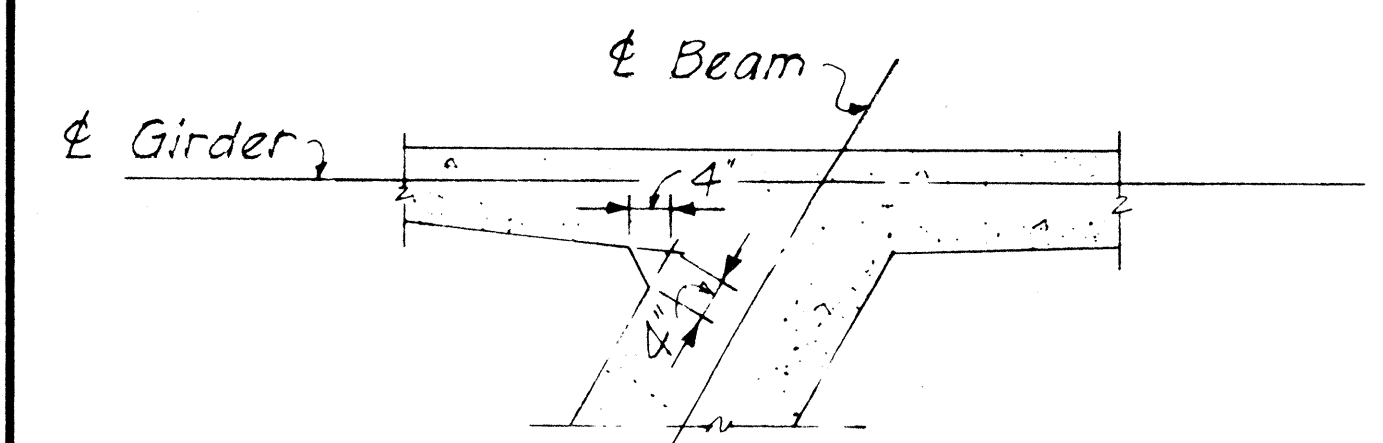
Depth "T"	"2"
4'-11" & smaller	1'-0"
5'-0" to 5'-11"	2'-0"
6'-0" to 6'-11"	2'-3"
7'-0" & greater	3'-0"

NOTE: D = Depth of girder stem to bott. of slab.



Note: Final location of opening shall be determined by the Engineer

PART PLAN - DECK SHOWING FORM REMOVAL OPENING



TYPICAL DETAIL OF VERTICAL CHAMFER AT ACUTE INTERSECTION OF SKEWED CONCRETE MEMBER

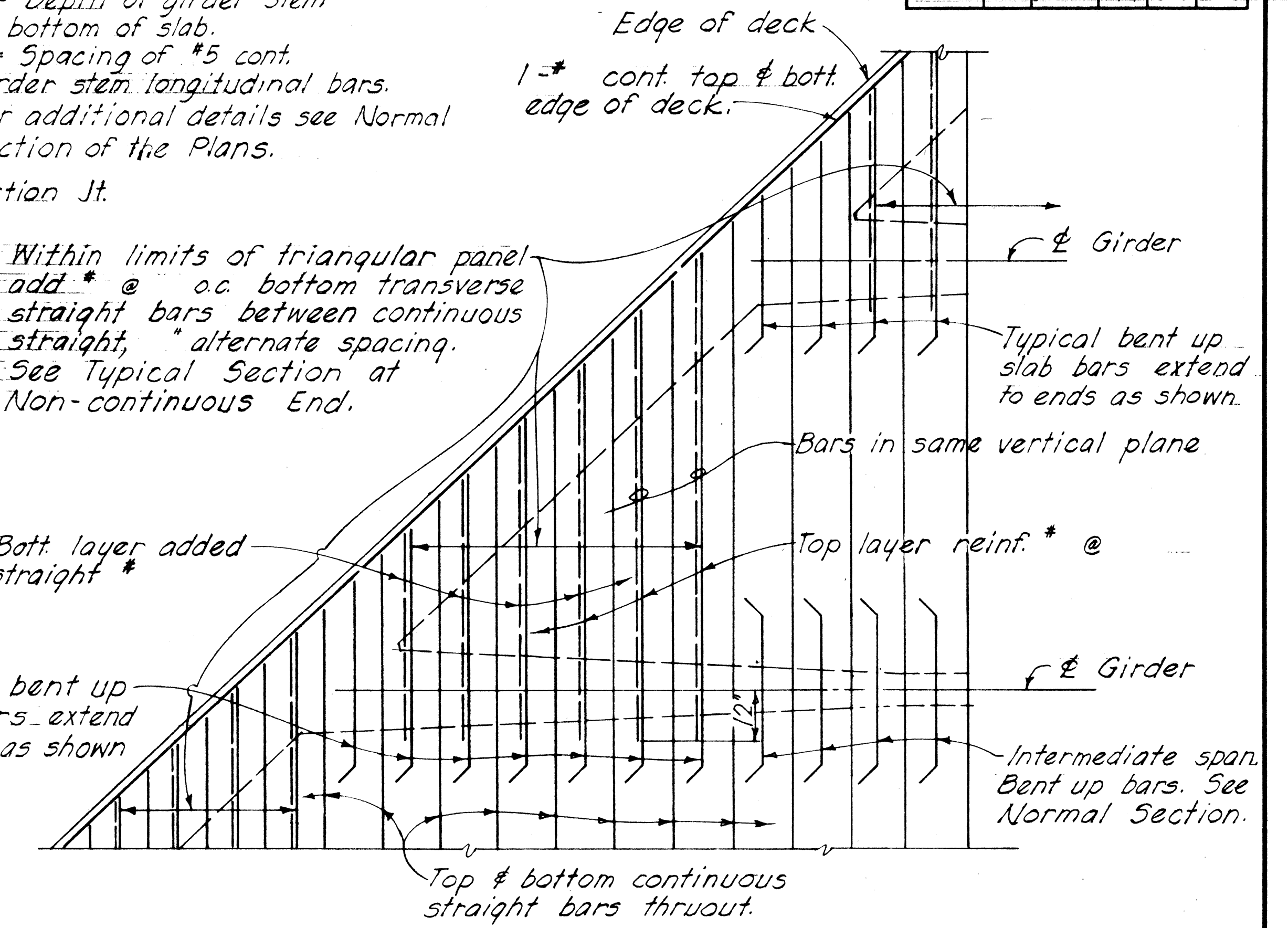
NOTE:

D = Depth of girder stem to bottom of slab.
 S = Spacing of #5 cont. girder stem longitudinal bars.
 For additional details see Normal Section of the Plans.

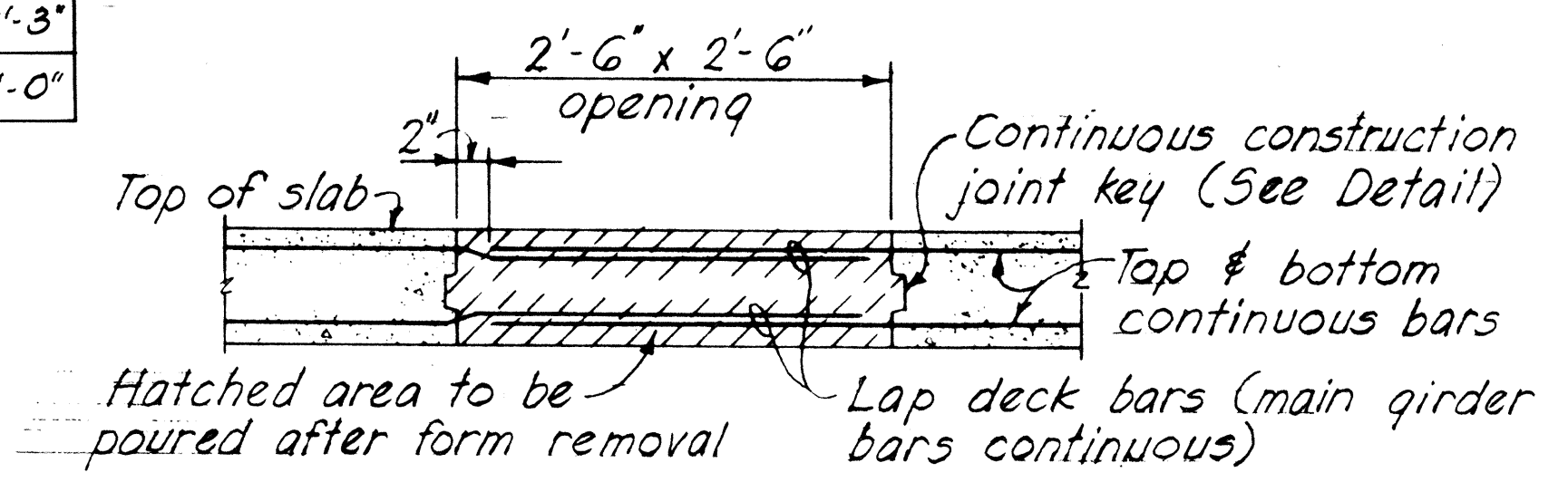
Within limits of triangular panel add # @ o.c. bottom transverse straight bars between continuous straight, alternate spacing. See Typical Section at Non-continuous End.

Bott. layer added straight #

Typical bent up slab bars extend to ends as shown

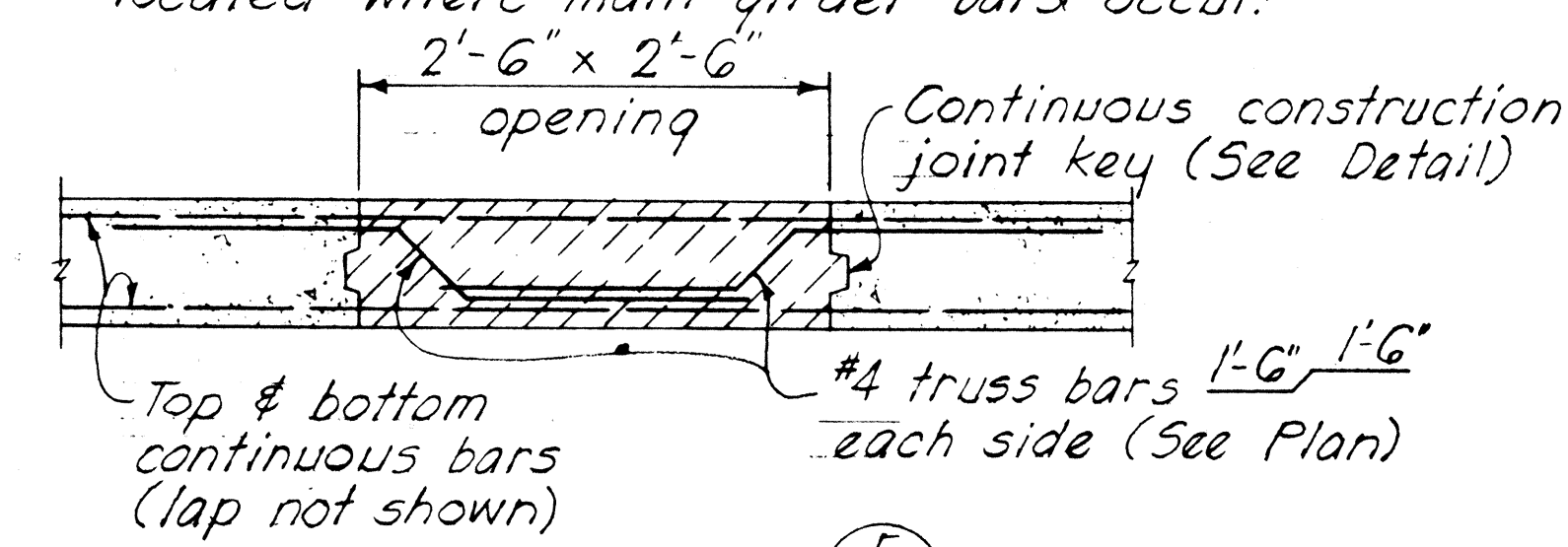


PART PLAN - TYPICAL ARRANGEMENT OF TOP SLAB REINFORCEMENT AT SKEWED ENDS



SECTION E 591

Note: Form removal opening at top slab shall not be located where main girder bars occur.



SECTION F 591

APPROVAL RECOMMENDED: Paul T. Yamashita 1-23-70
 BRIDGE DESIGN ENGINEER DATE

APPROVED: Paul T. Yamashita 1-28-70
 For ASSISTANT CHIEF, ENGINEERING DATE

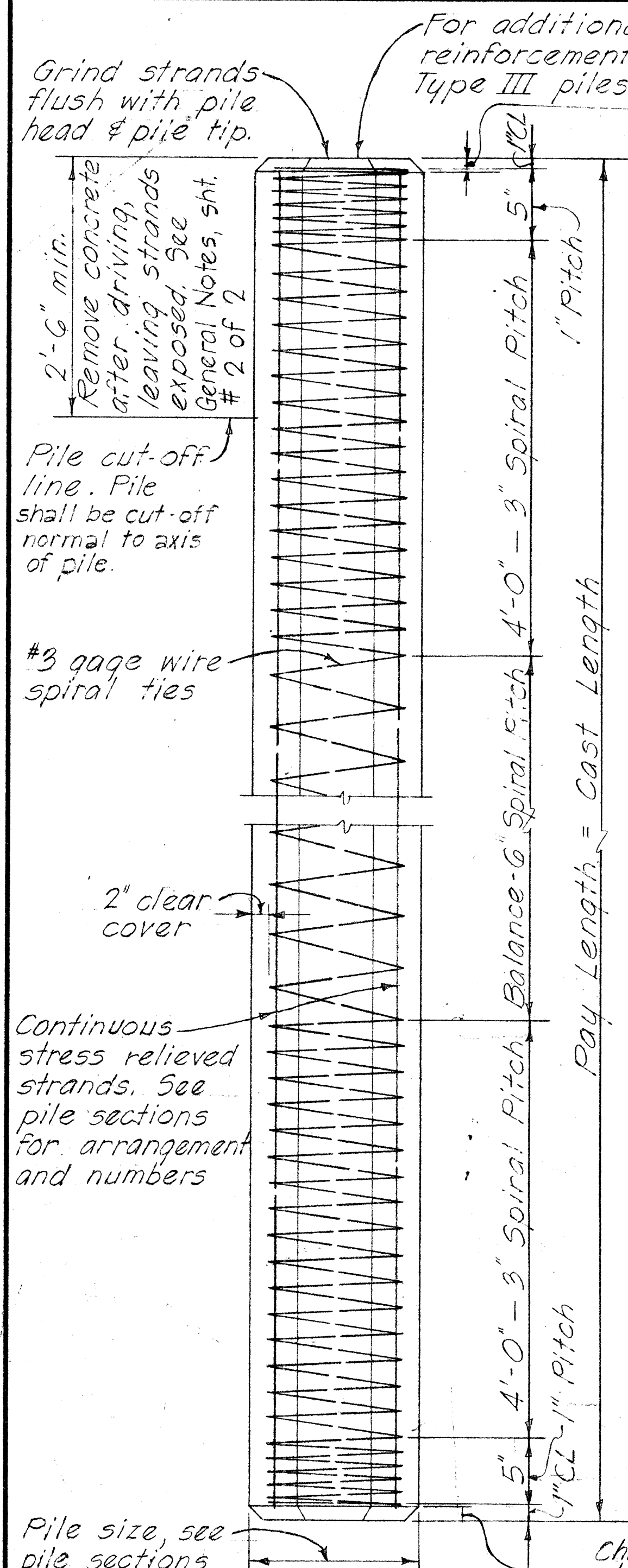
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

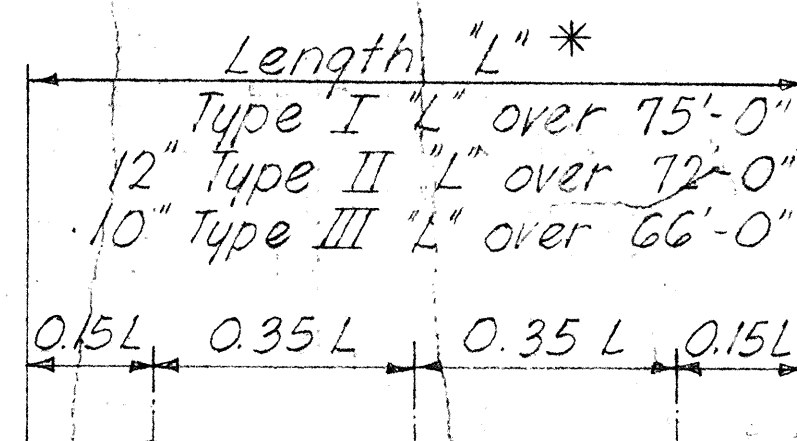
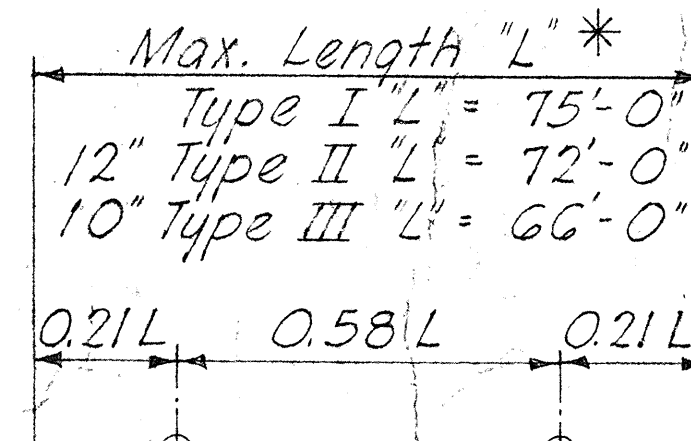
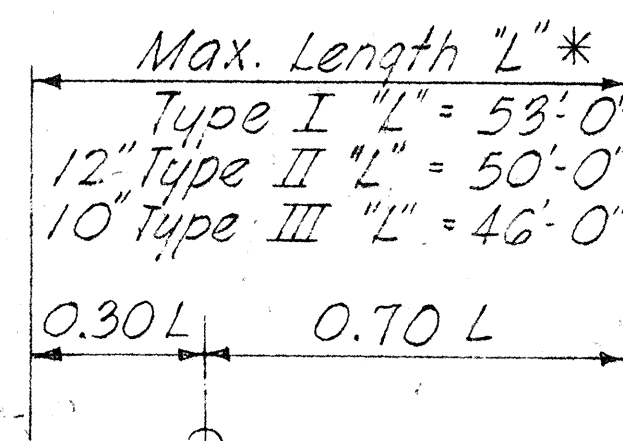
STANDARD DETAILS
CONCRETE BOX GIRDER

SCALE AS NOTED DATE: _____

SHEET No. 591 OF 106 SHEETS DB-101-3



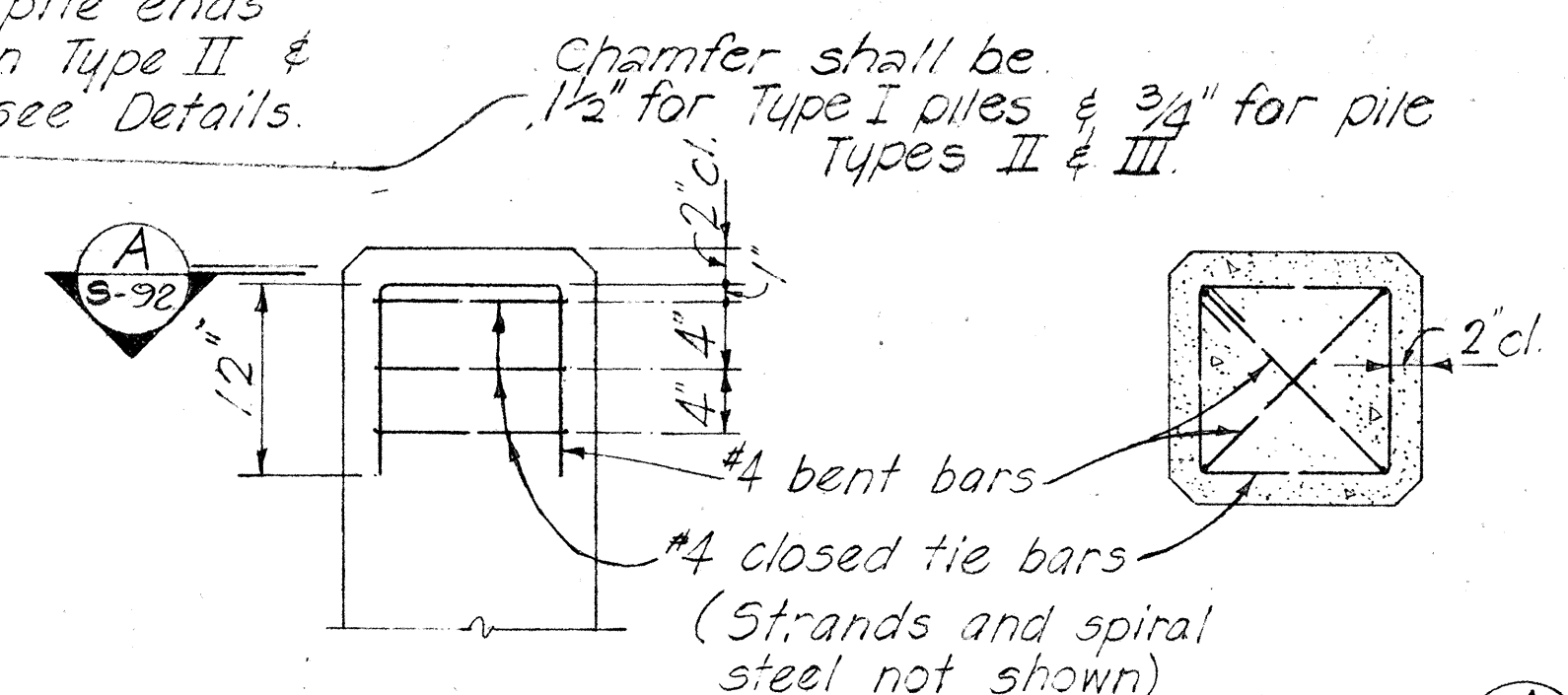
TYPICAL PILE DETAIL



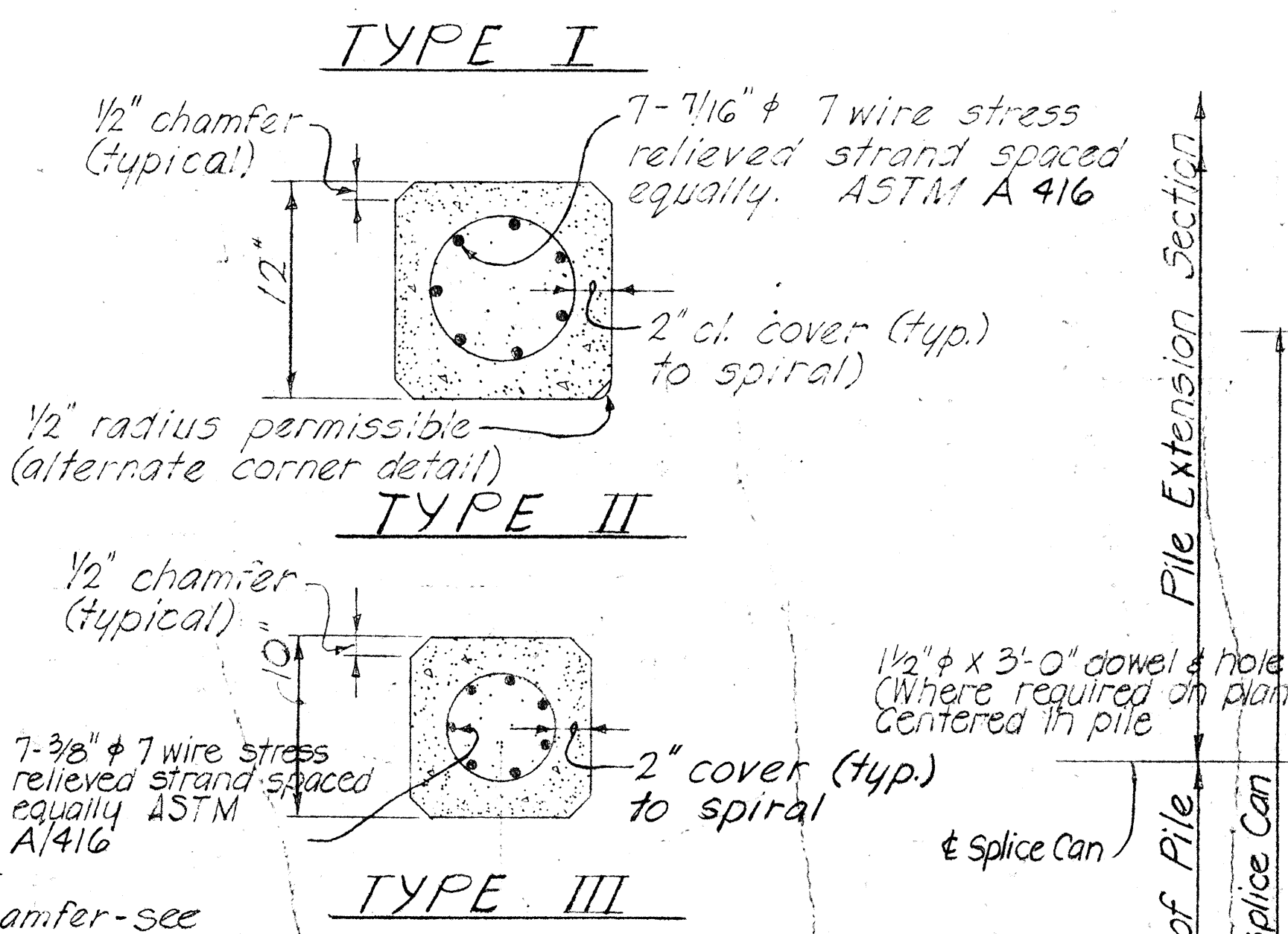
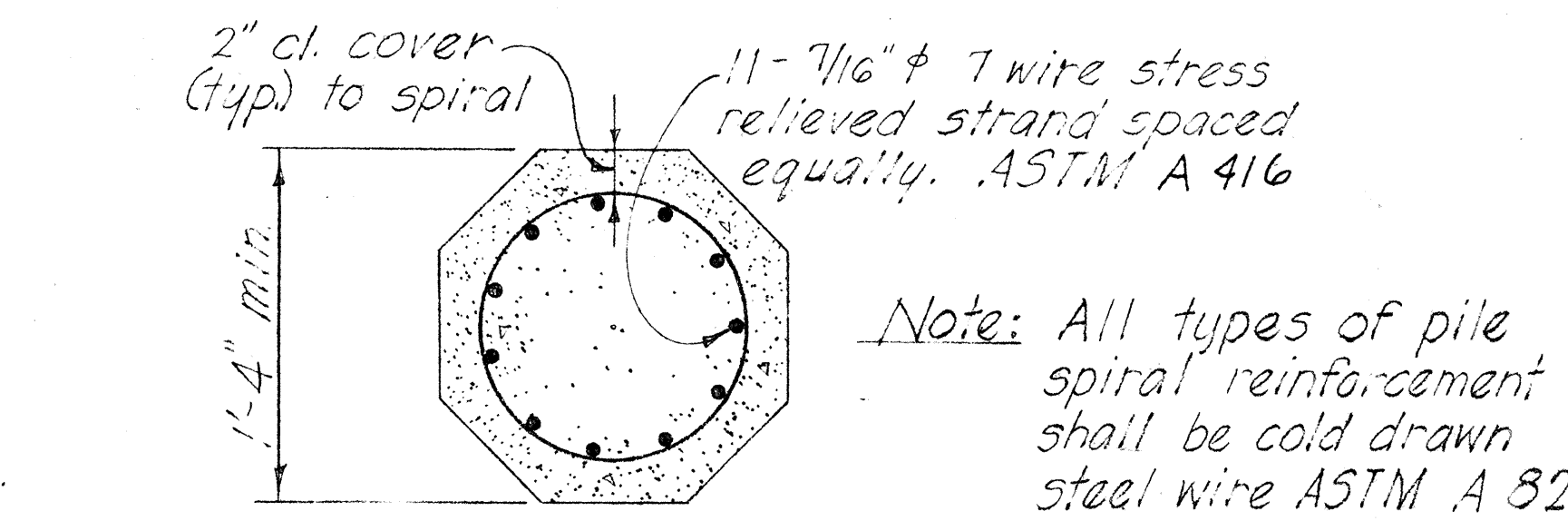
* The length "L" is the distance end to end of pile.

1 POINT PICK-UP 2 POINT PICK-UP 3 POINT PICK-UP

NOTE: Unless special lifting devices are attached for pick-up points, pick-up points shall be plainly marked on all piles after removal of the forms and all lifting shall be done at these points. The use of special embedded or attached lifting devices, the employment of other pick-up points or any other method of pick-up shall be subject to approval by the Engineer.

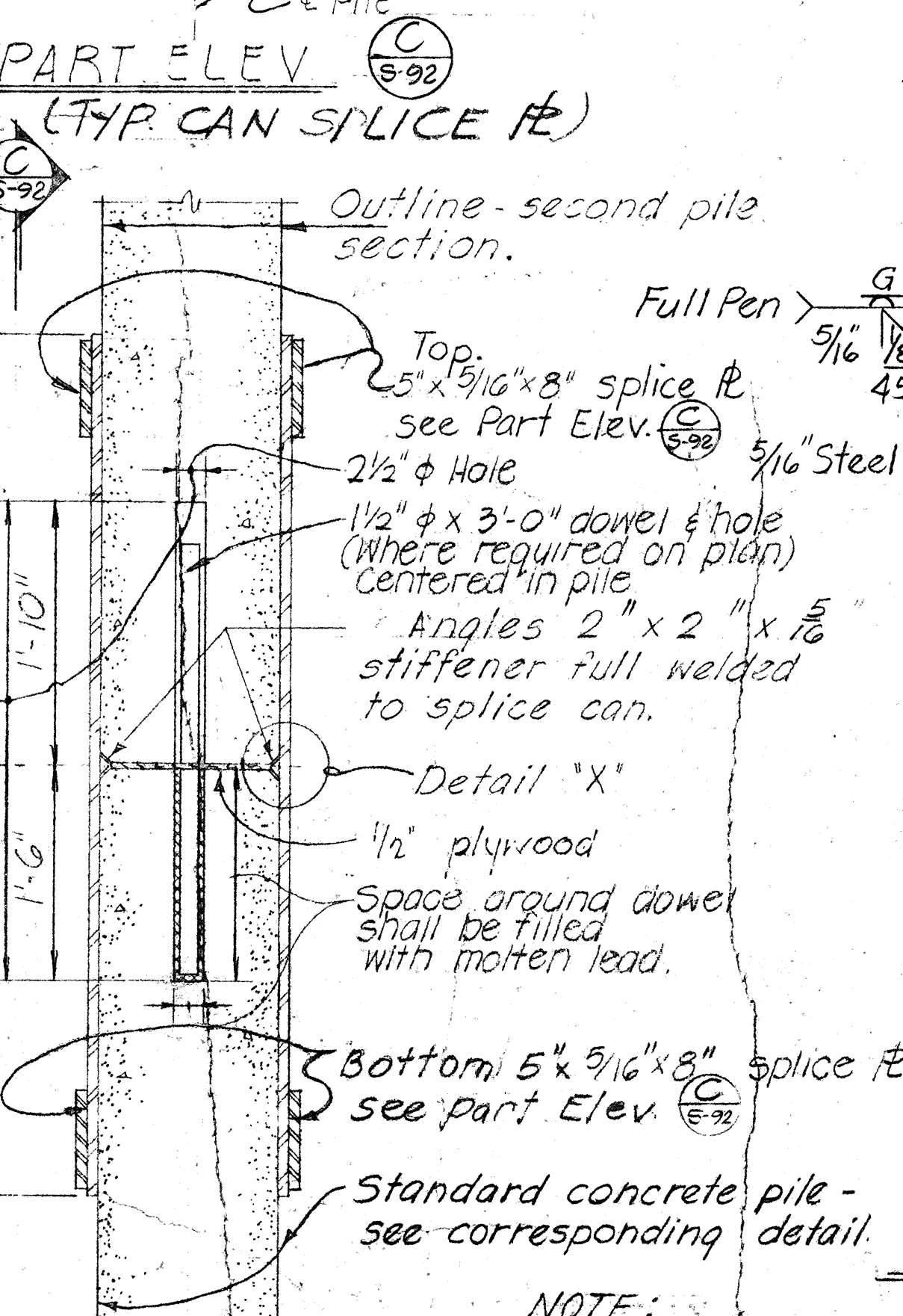
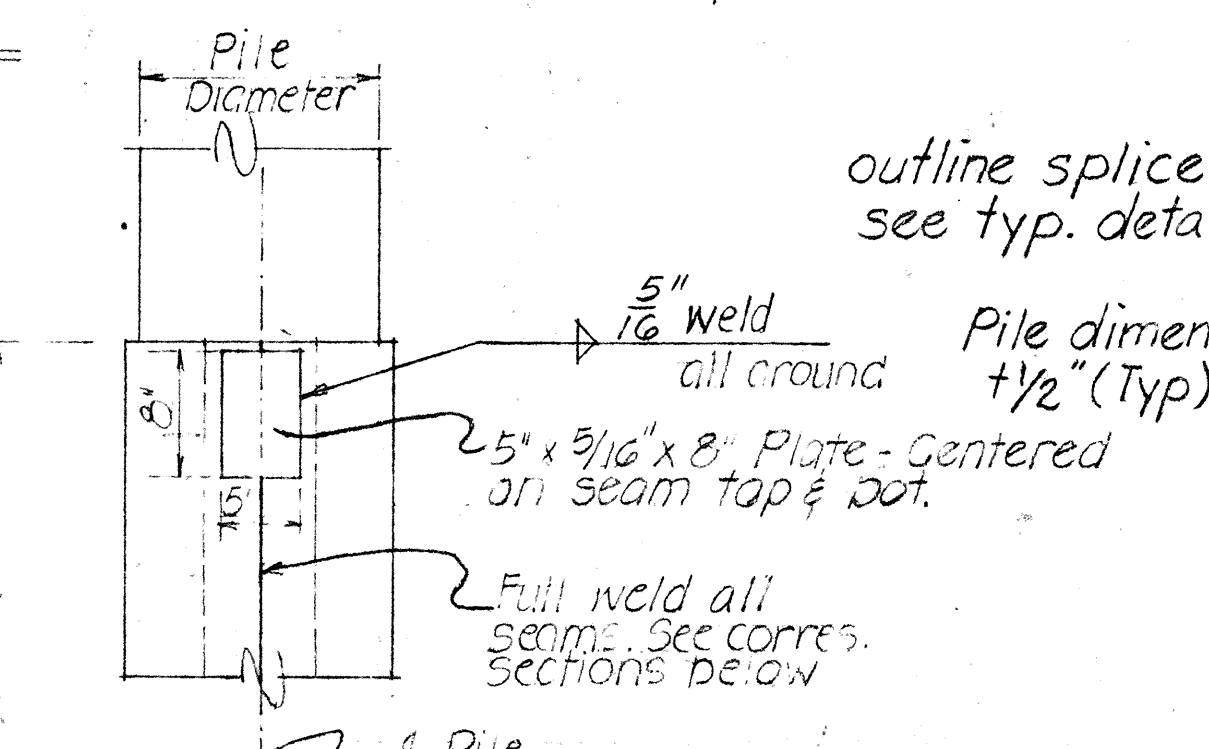


PART ELEVATION SECTION A-5-92 TYPICAL ADDED REINFORCEMENT PILE ENDS - TYPE II & III ONLY



TYPICAL SECTIONS THRU PILES

NOTE: Concrete in pile build-ups without driving shall be Class A Concrete. Concrete in pile build-ups with driving shall have a minimum compressive cylinder strength f'_c of 5000 p.s.i. at 28 days. Build-ups may be driven if the specimen of concrete from which the piles were poured develops a strength of at least 3500 p.s.i. but not earlier than 7 days.



NOTE: 1. Splice detail shown above shall not be used except for pile length in excess of 100'-0" long. 2. Structural steel for splice can shall be ASTM A36.

SECTION B-5-92 TYPICAL PILE SPICE DETAILS (FOR PRESTRESSED CONCRETE PILES WHEN CAST IN TWO OR MORE SECTIONS)

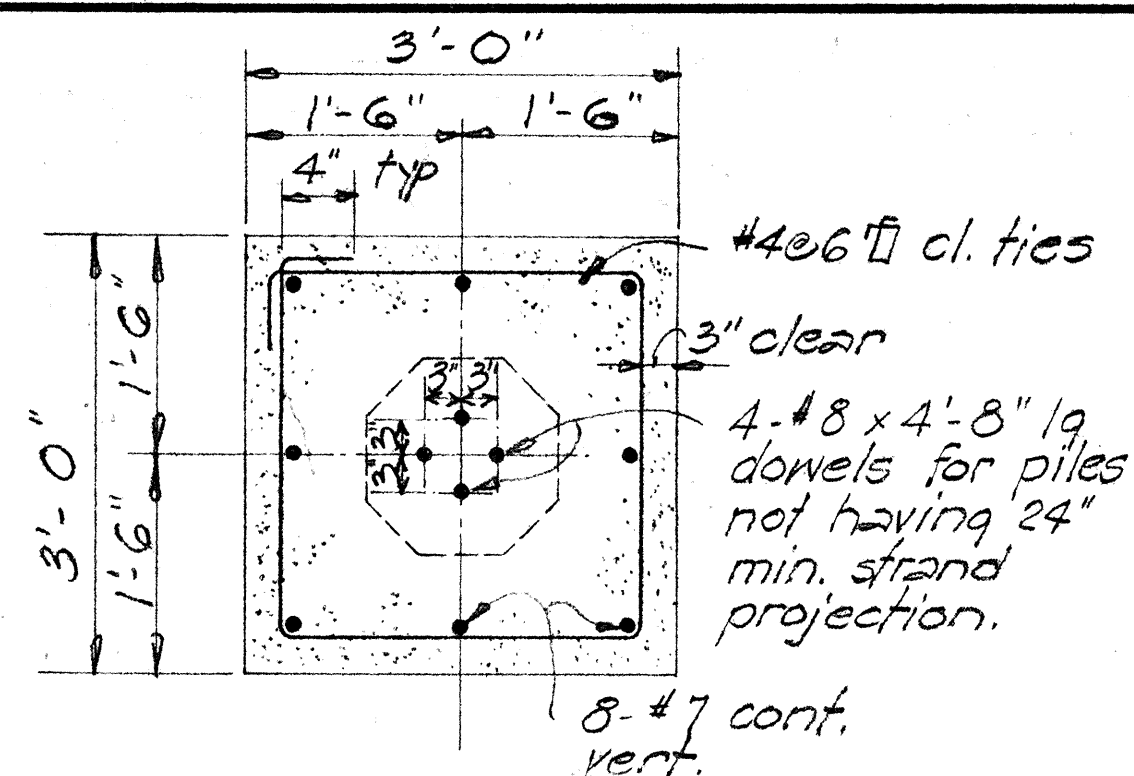
NOTE: All welding shall conform to the Specifications for "Welded Highway and Railway Bridges" of the American Welding Society.

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED: Paul T. Yamashita 1-23-76
BRIDGE DESIGN ENGINEER DATE
APPROVED: Paul T. Yamashita 1-28-76
ASSISTANT CHIEF, ENGINEERING DATE

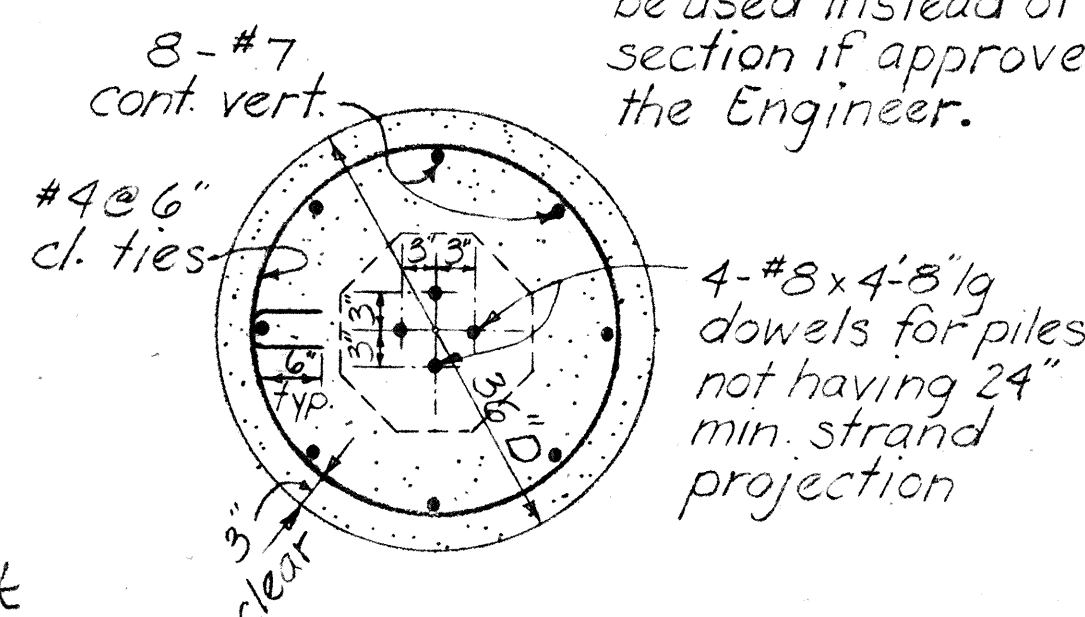
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
PRESTRESSED CONCRETE PILES
Date: _____

2-6" min. unless otherwise directed by the Engineer. Remove concrete after driving, leaving reinf. exposed

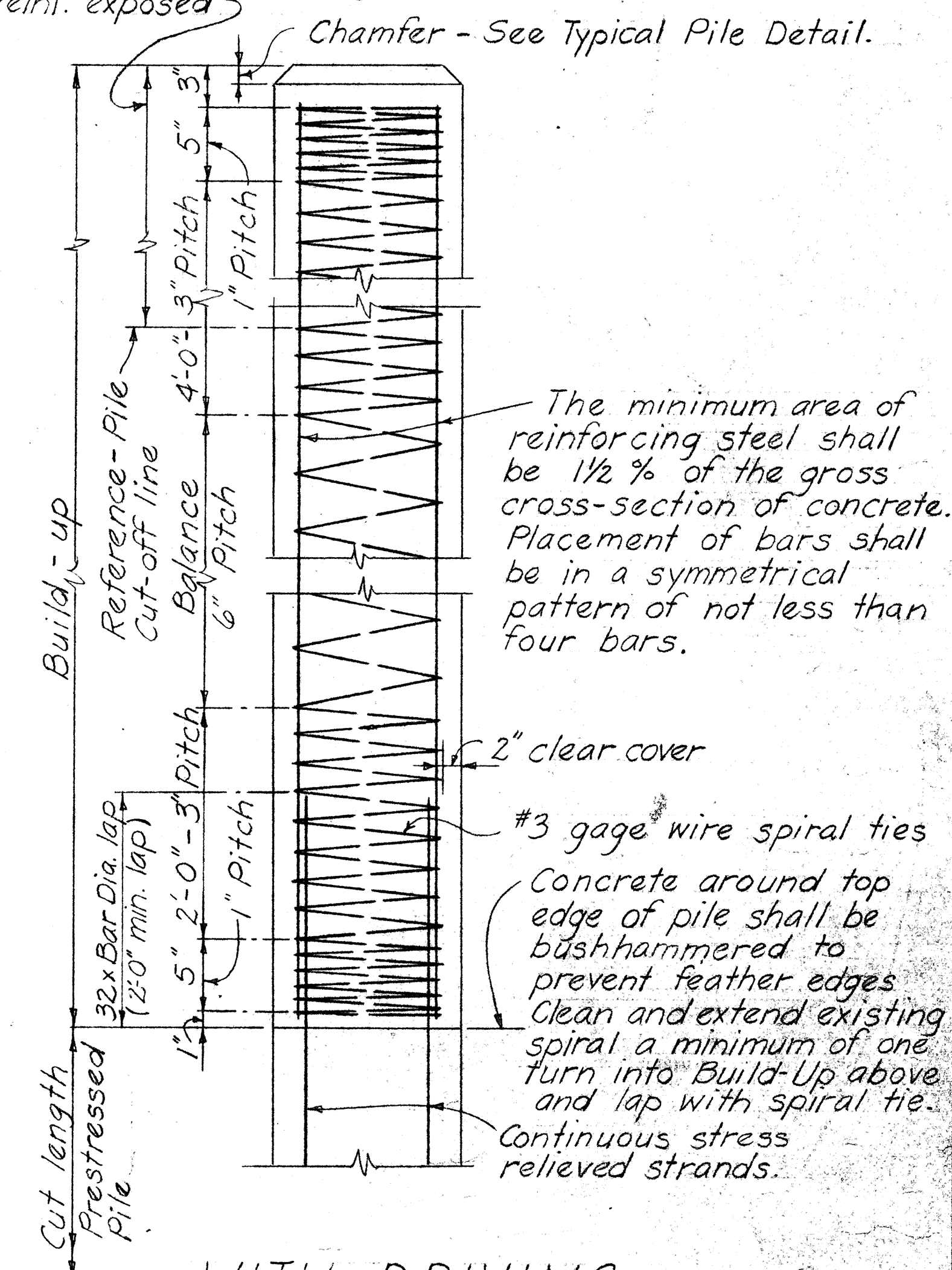


Note:

Circular section may be used instead of square section if approved by the Engineer.



CIRCULAR BUILD-UP
SECTION



WITH DRIVING
TYPICAL PILE BUILD-UP DETAIL

Notes:

Selection of pile build-up type without driving to be determined by the Engineer. When height of depressed portion of footing (H) exceeds 4', the depressed section shall be poured separately from the main body of the footing.

Depressed portion of footing may be omitted for pile heads embedded at least 4' into footing provided at least 90% of the piles in each footing have the minimum embedment into footing as shown in contract plans.

WITHOUT DRIVING

TYPICAL PILE BUILD-UP DETAILS

GENERAL NOTES.

1. Work of cutting off prestressed conc. piles or concrete build-ups shall be performed in such a manner as to avoid spalling or damaging the pile below cut-off. In case of such damage, the pile shall be replaced or repaired by the Contractor at his expense as directed by the Engineer.

2. Portion of pile embedded into footing shall be of sound concrete. Damaged portions shall be removed and pile cut-off elevation lowered as required by the Engineer.

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Paul T. Yamashita 1-23-70
BRIDGE DESIGN ENGINEER DATE

APPROVED Paul T. Yamasaki 1-28-7
For ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

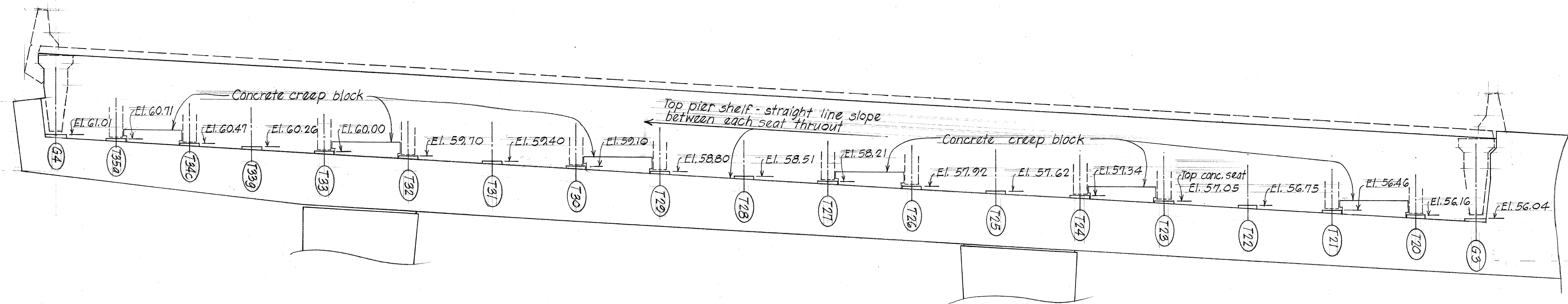
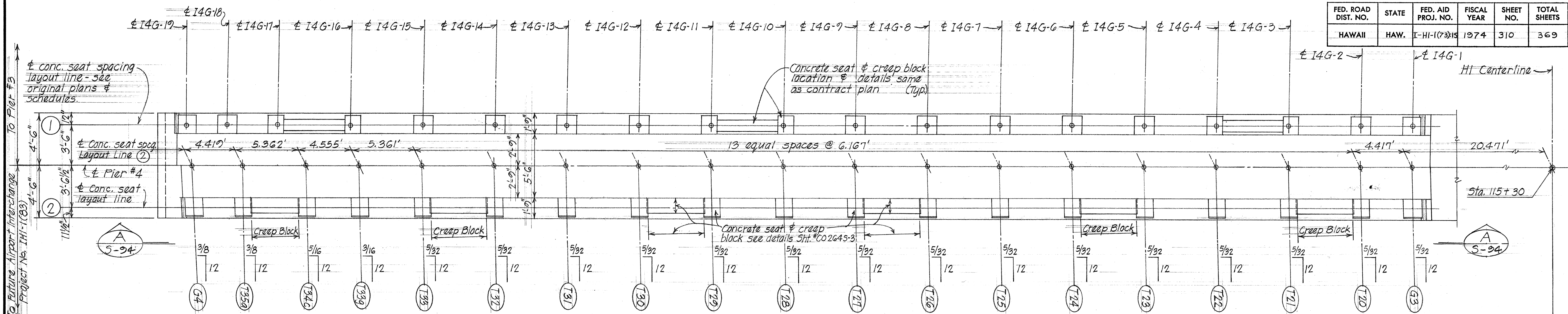
PRESTRESSED CONCRETE PILES

Date: Oct. 1968

SHEET No. 93 OF 106 SHEETS DB-300-2

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

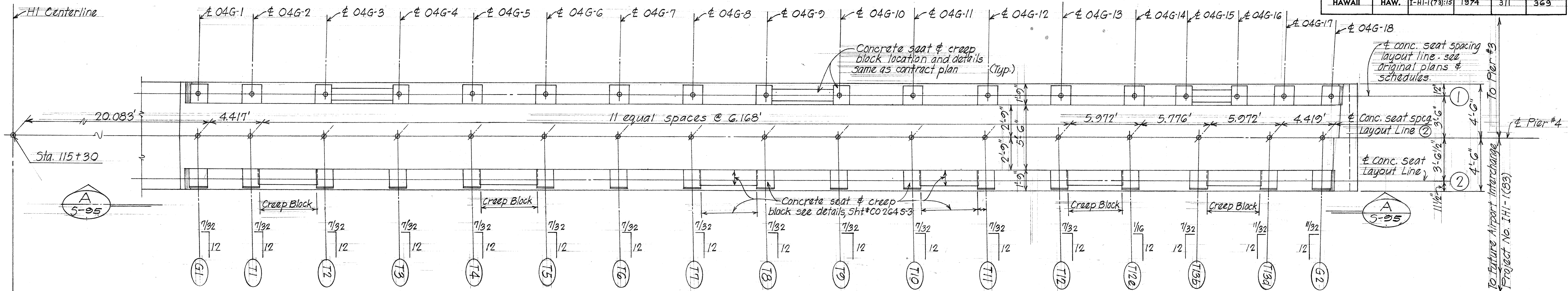
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	310	369



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STRUCTURE #8
PIER #4 - INBOUND
ADDITIONAL PIER & CONCRETE SEAT
LOCATION & DETAILS
PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(73)15
Scale: As Shown Date: Mar. 15, 1974
SHEET No. S-94 OF 106 SHEETS

DATE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	
NO.	

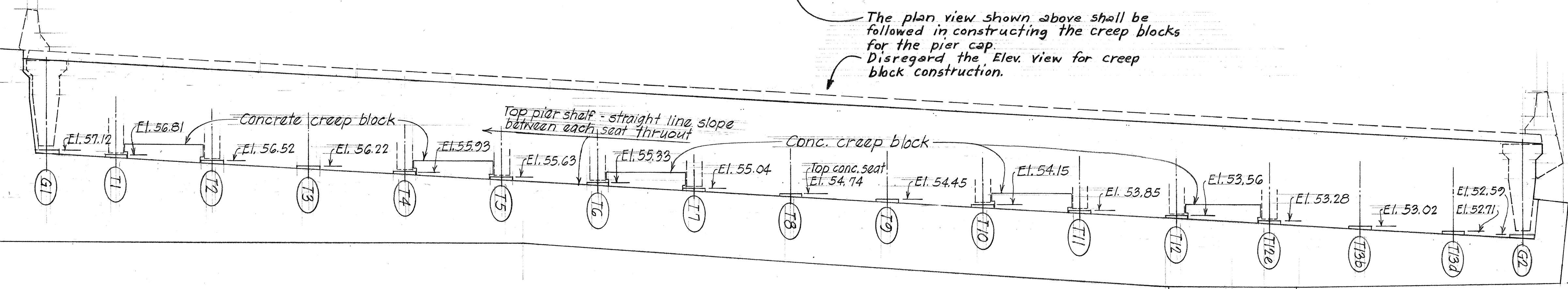
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HI-(73)-15	1974	311	369



PLAN-PIER #4 CAP HI OUTBOUND- SHOWING CONCRETE SEAT LOCATIONS ALONG LINE ②
Scale: 1/4" = 1'-0"

FIELD DIRECTIVE March 9, 1976

The plan view shown above shall be followed in constructing the creep blocks for the pier cap. Disregard the Elev. view for creep block construction.



ELEVATION A 5-35
Scale: 1/4" = 1'-0"

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

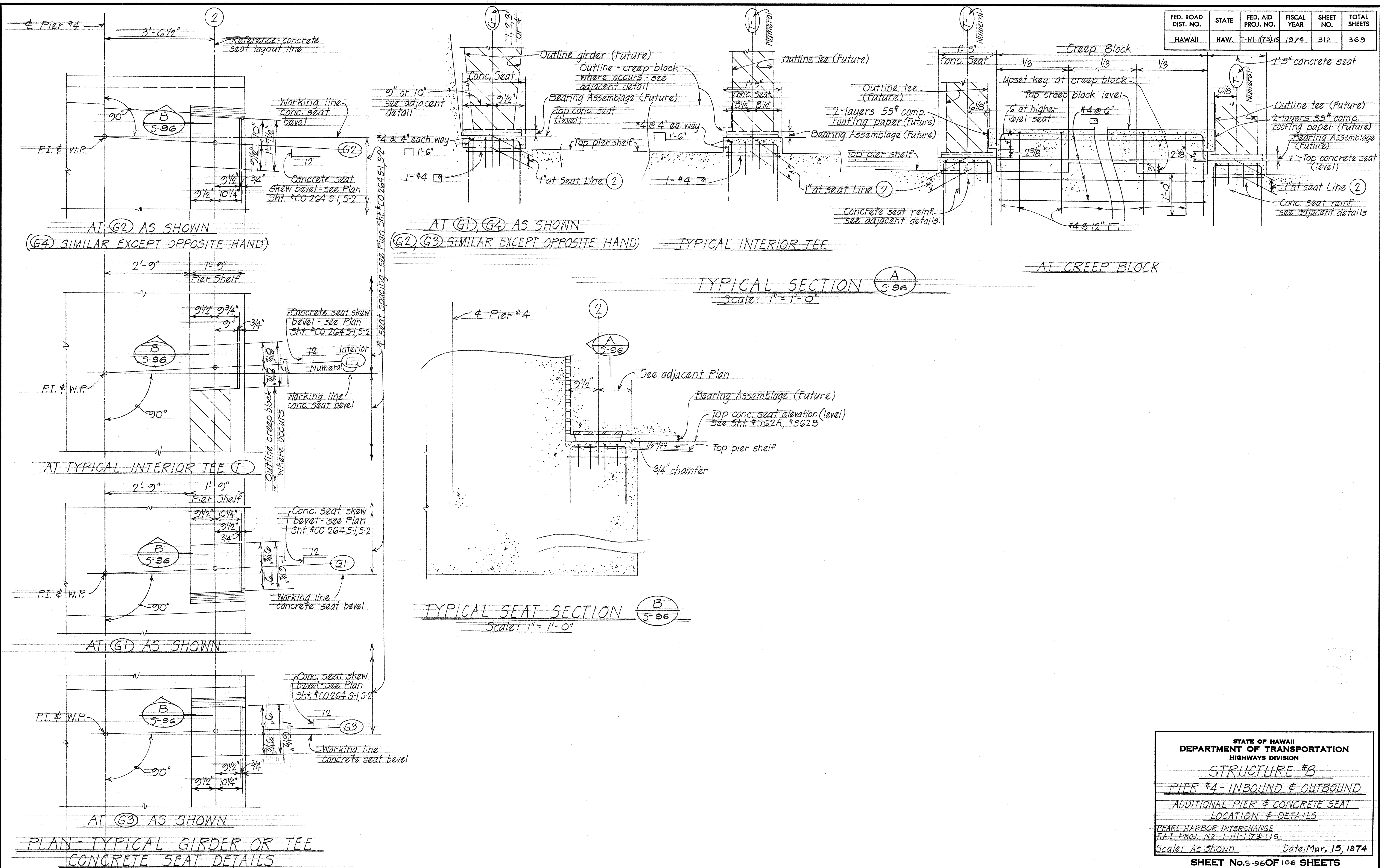
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURE #8
PIER #4 - OUTBOUND
ADDITIONAL PIER & CONCRETE SEAT
LOCATION & DETAILS

PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. 1-HI-(73)-15
Scale: As Shown Date: Mar. 15, 1974

SHEET No. 5-35 OF 106 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(73)15	1974	312	369



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STRUCTURE #8

PIER #4 - INBOUND & OUTBOUND

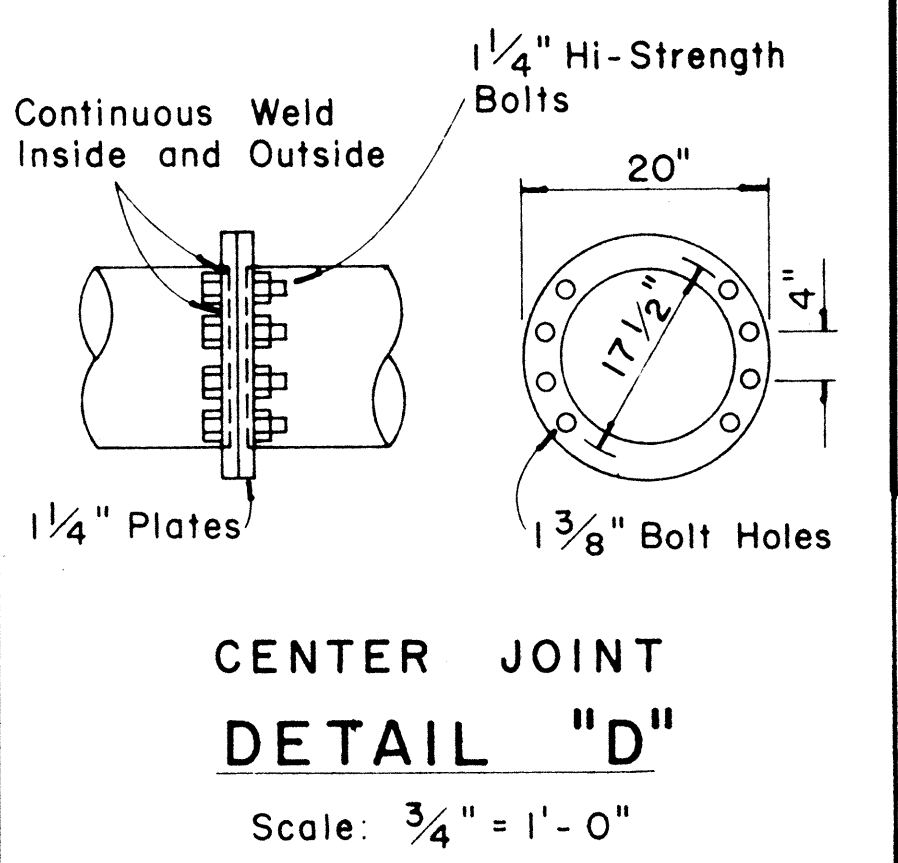
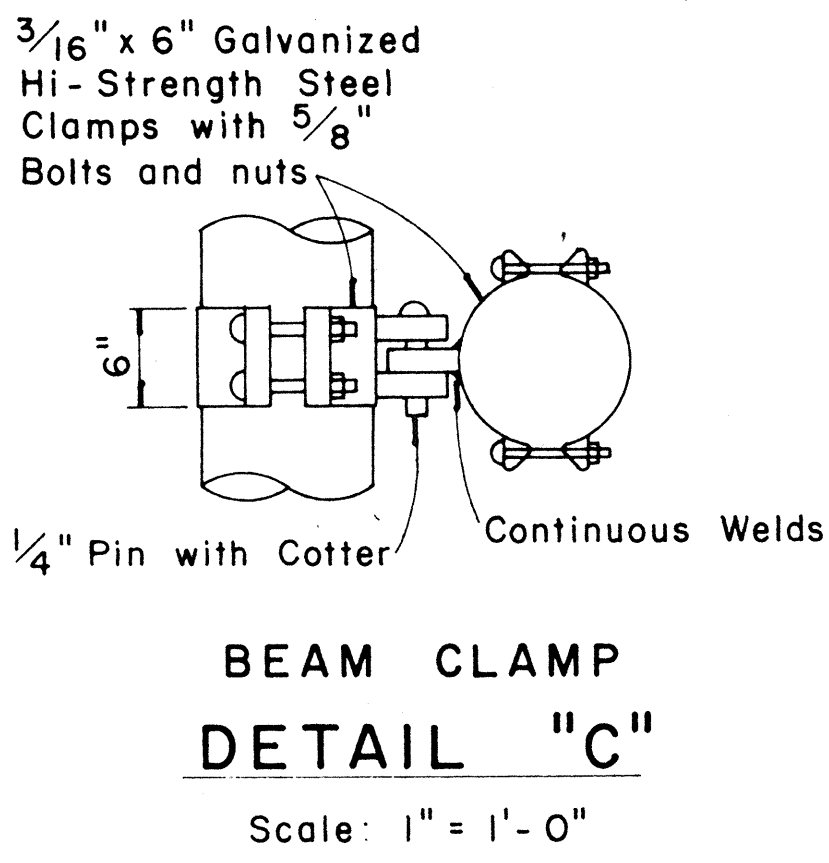
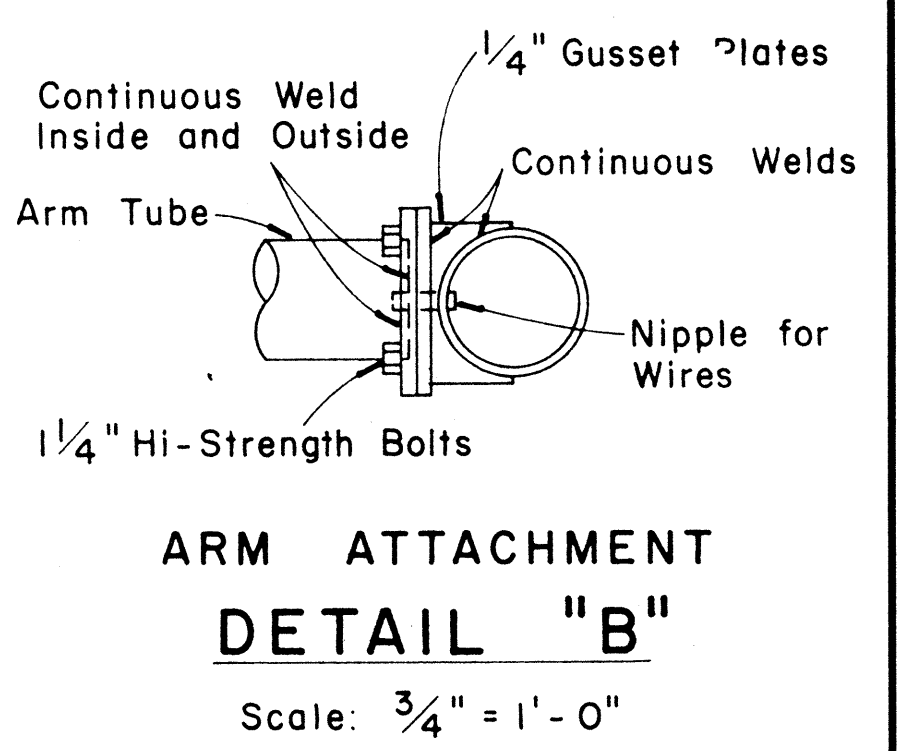
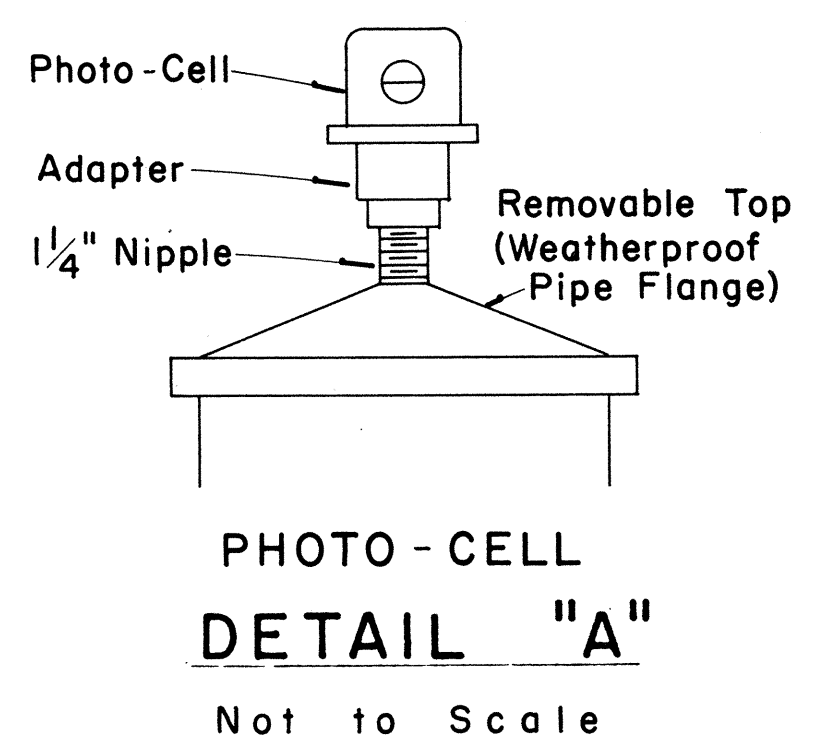
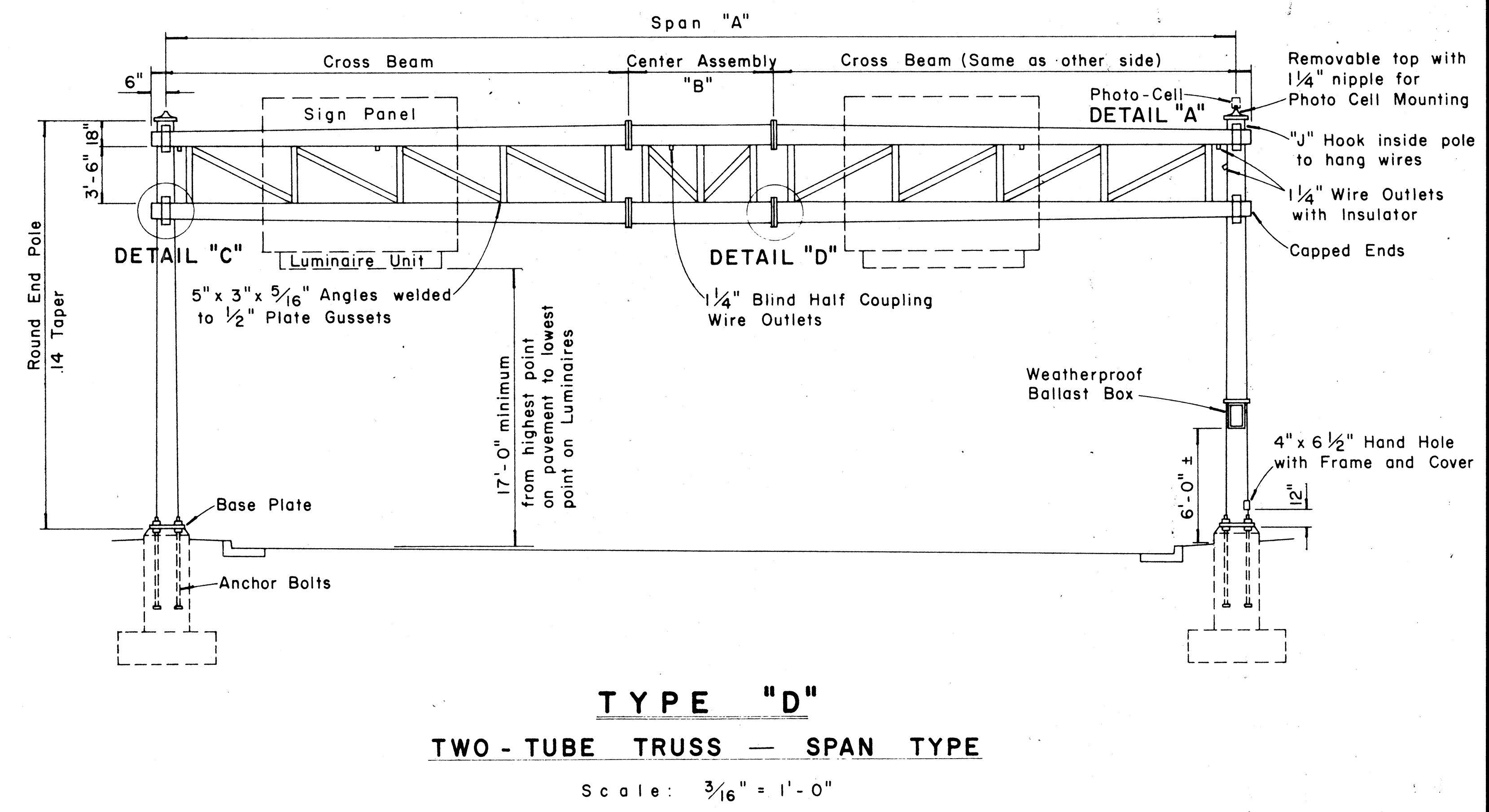
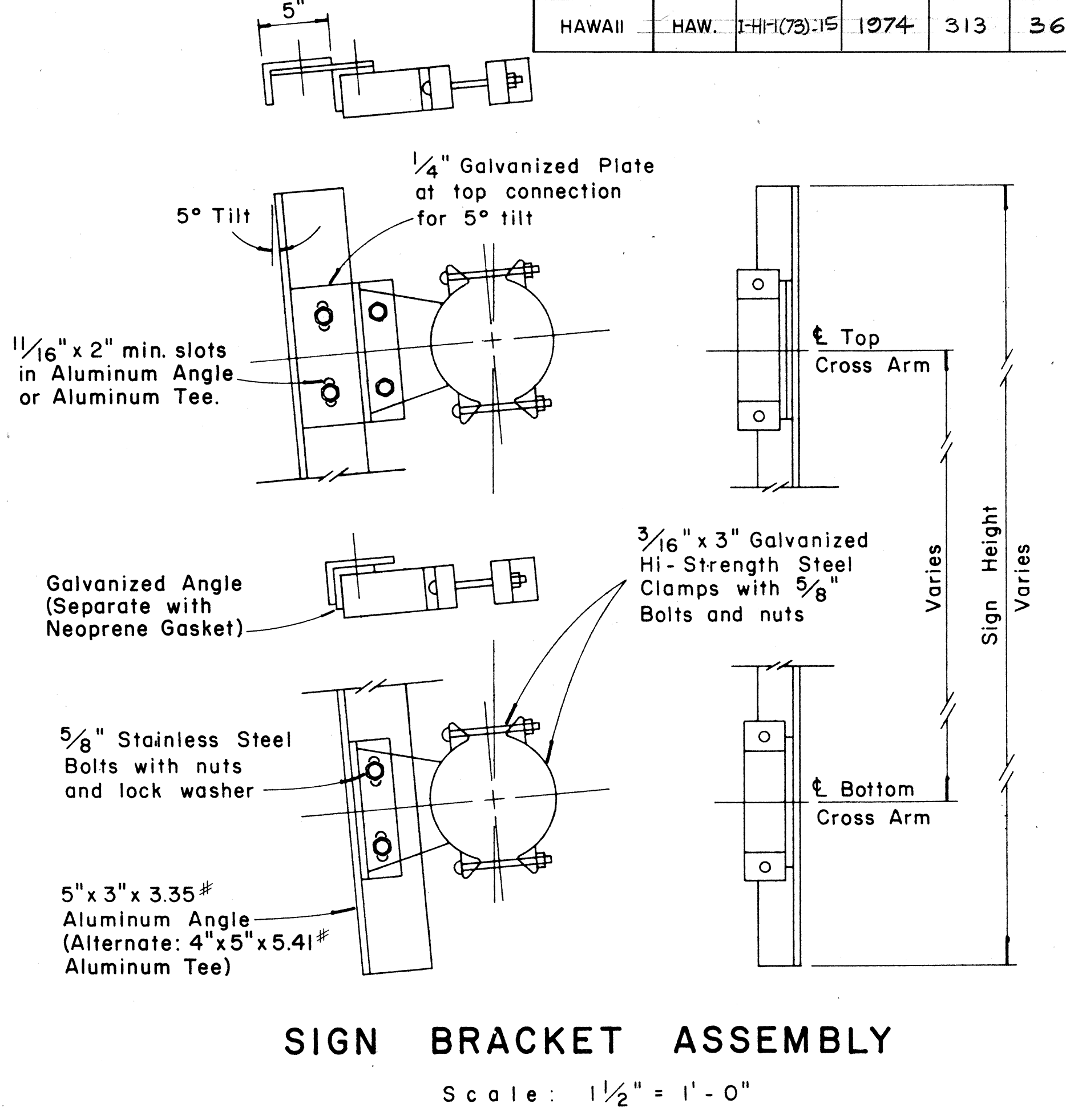
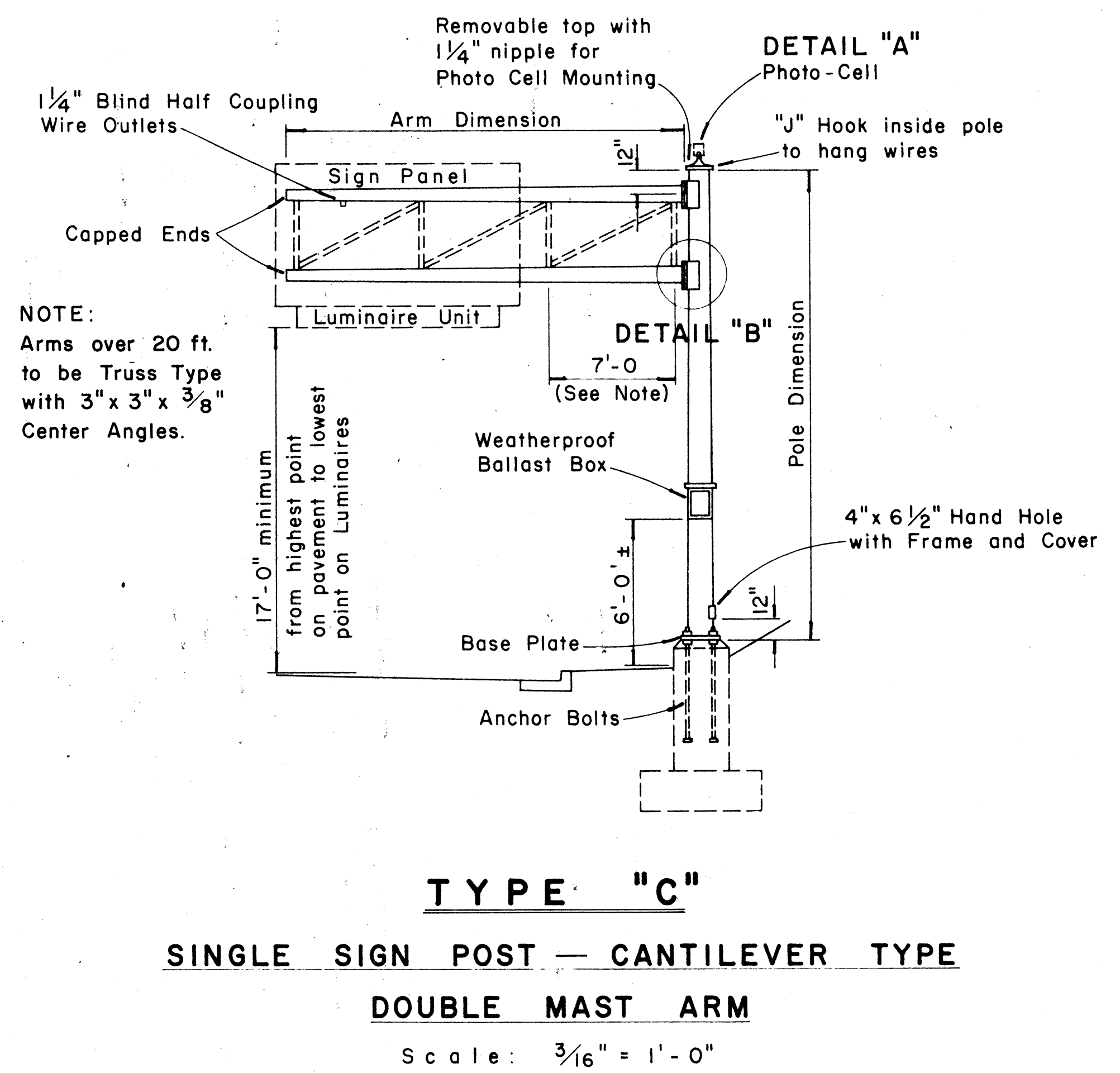
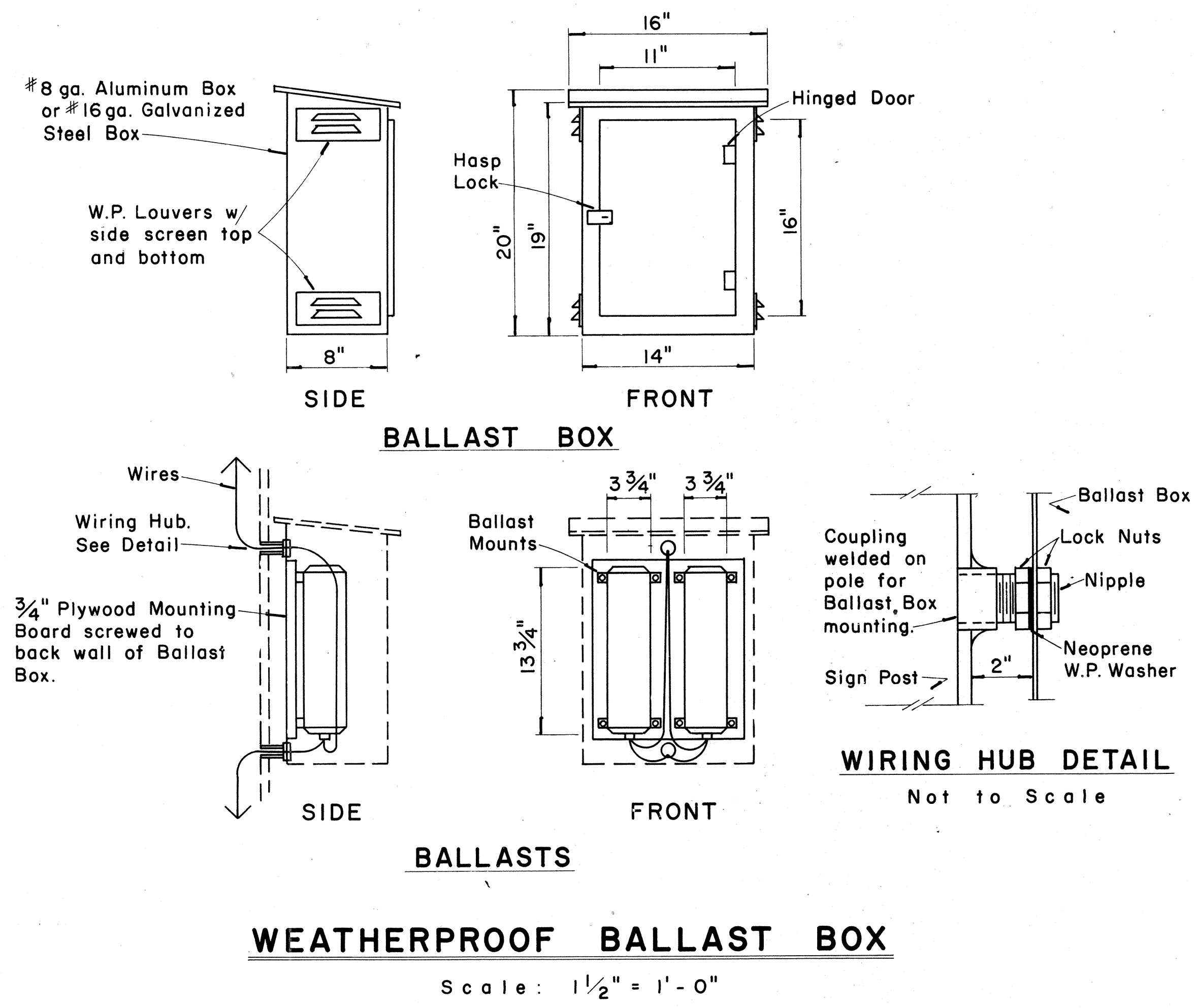
ADDITIONAL PIER & CONCRETE SEAT LOCATION & DETAILS

PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. I-HI-1(73)15
Scale: As Shown Date: Mar. 15, 1974

SHEET No. 3-96 OF 106 SHEETS

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-HH-1(73)-15	1974	313	369



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

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

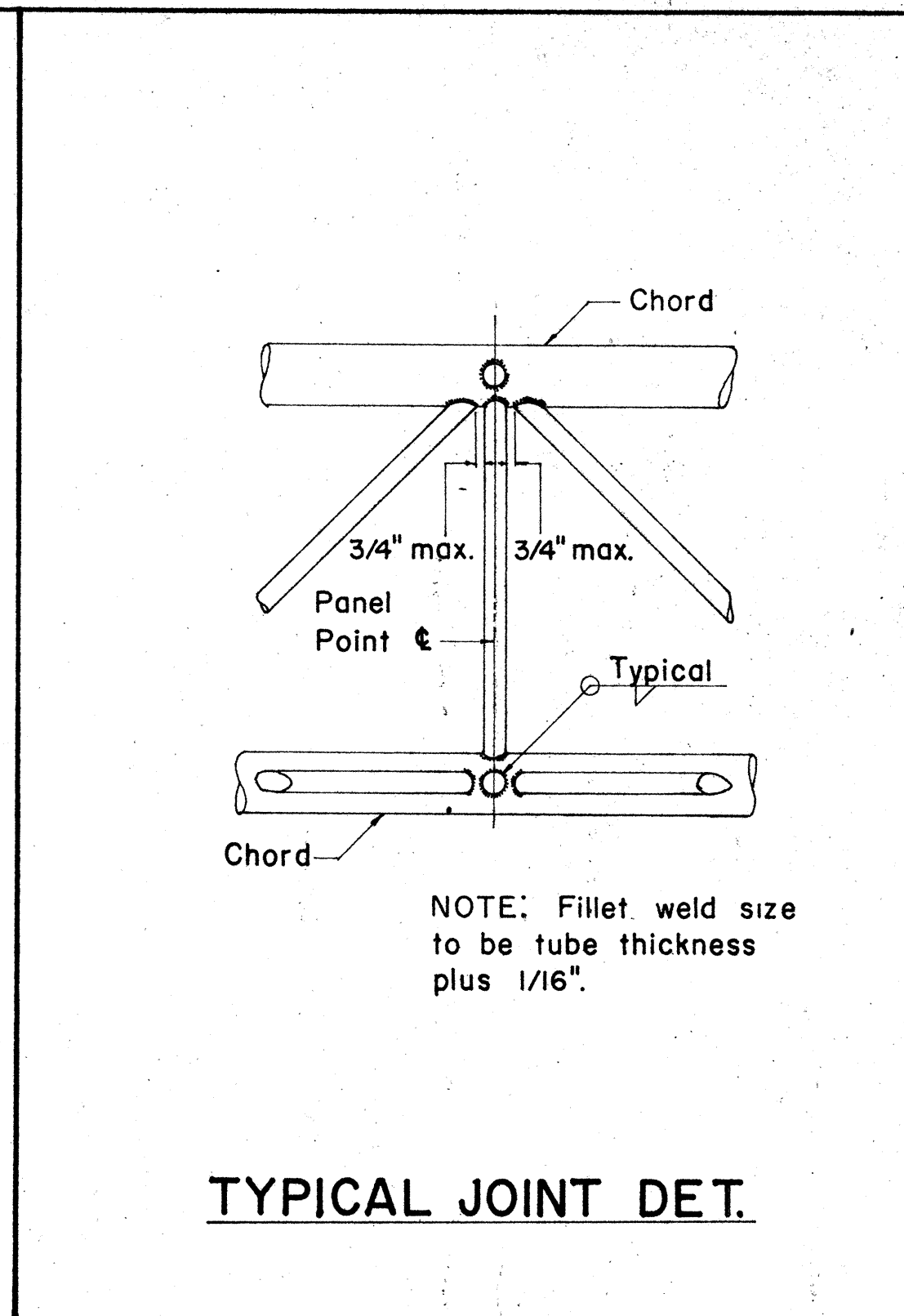
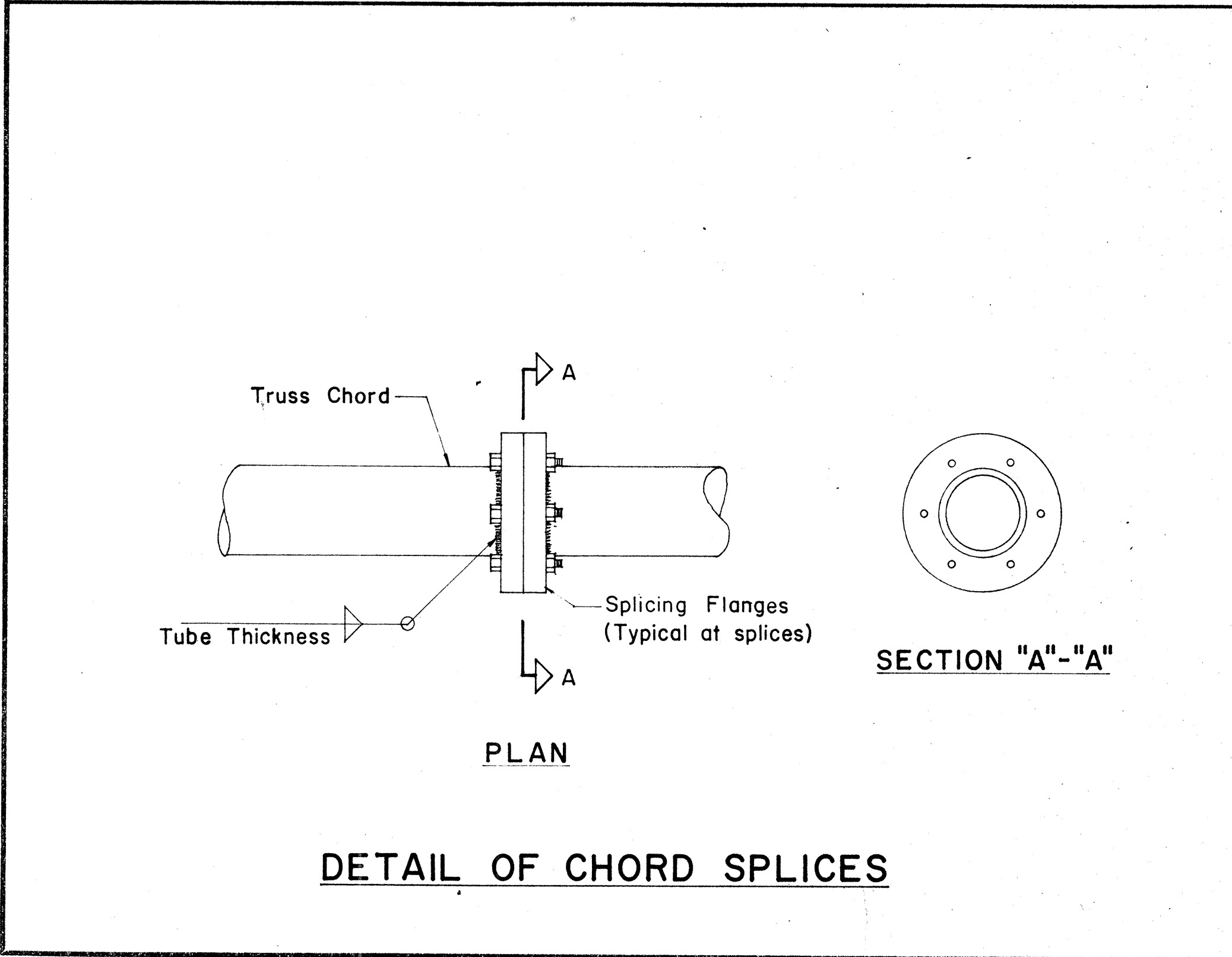
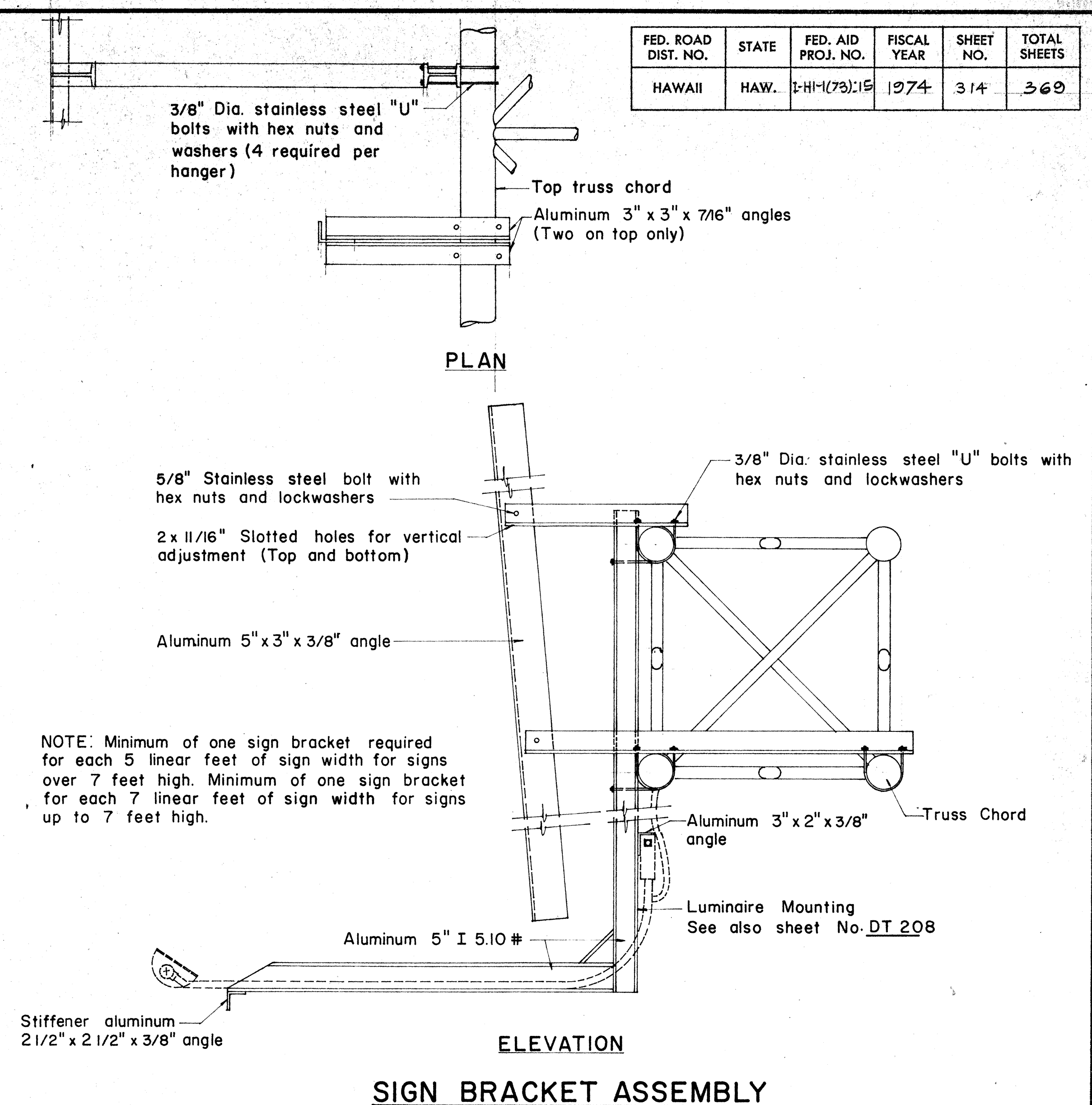
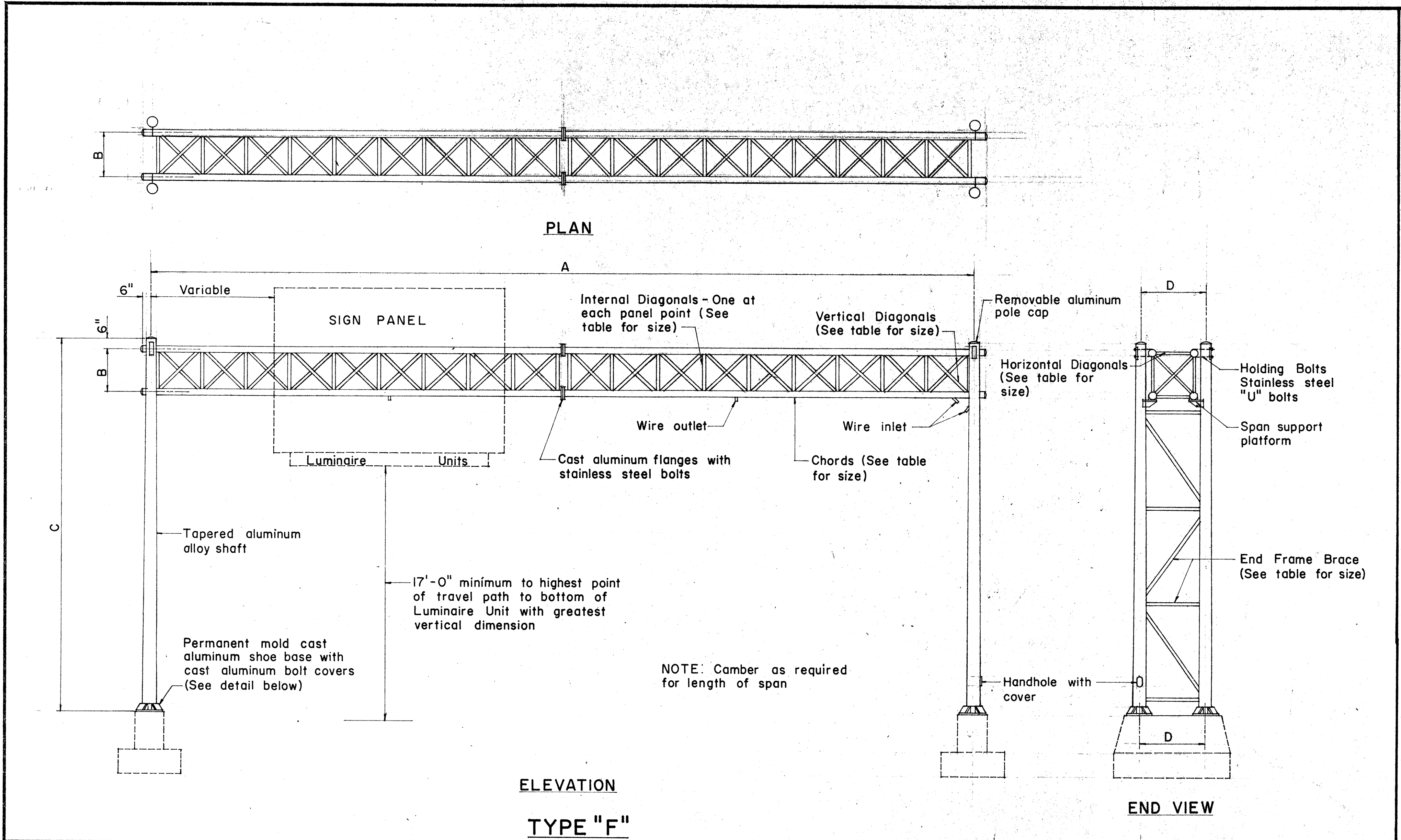
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
OVERHEAD SIGN SUPPORTS

Scale: As Shown

SHEET No. 597 OF 106 SHEETS DT 200



SIGN NO.	A	B	C	D	E	F	SPAN SECTIONS REQ'D.	CHORD SIZE	END FRAME SHAFT SIZE AND TAPER	VERTICAL DIAGONAL SIZE	HORIZONTAL DIAGONAL SIZE	INTERNAL DIAGONAL SIZE	END FRAME BRACE SIZE	BOLT CIRCLE DIA.	ANCHORAGE

DETAIL OF BASE

APPROVAL RECOMMENDED:

Erich Tanaka 12/29/69
TRAFFIC ENGINEER DATE

APPROVED:

John J. Del... 12-30-69
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

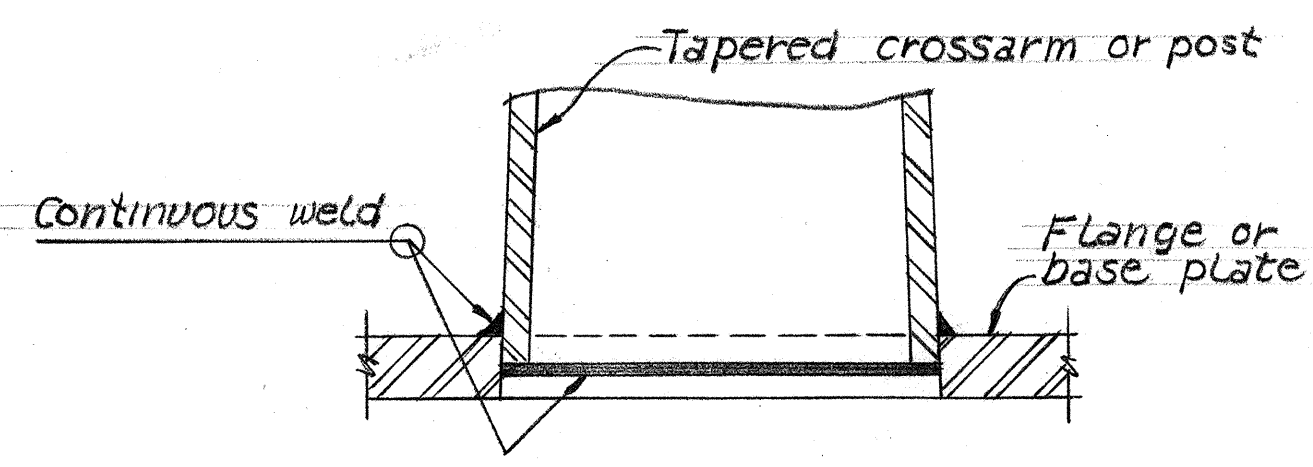
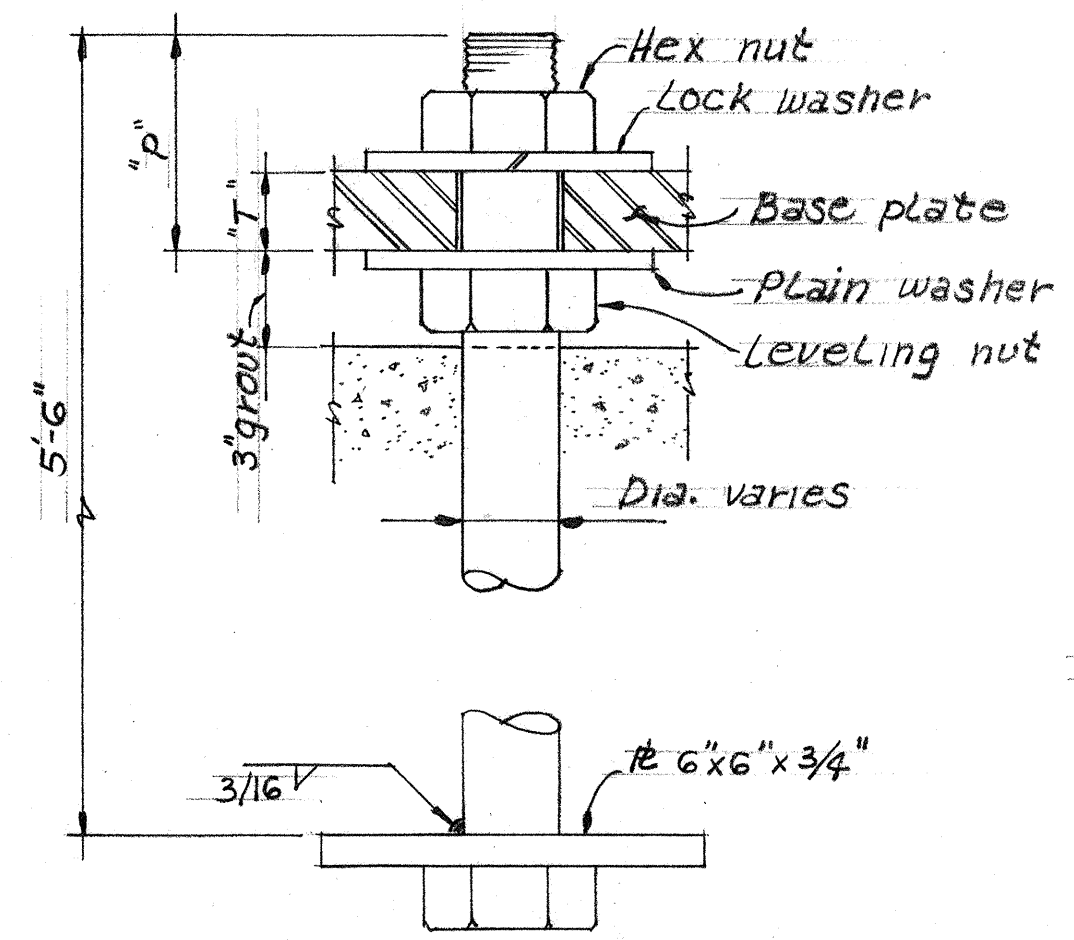
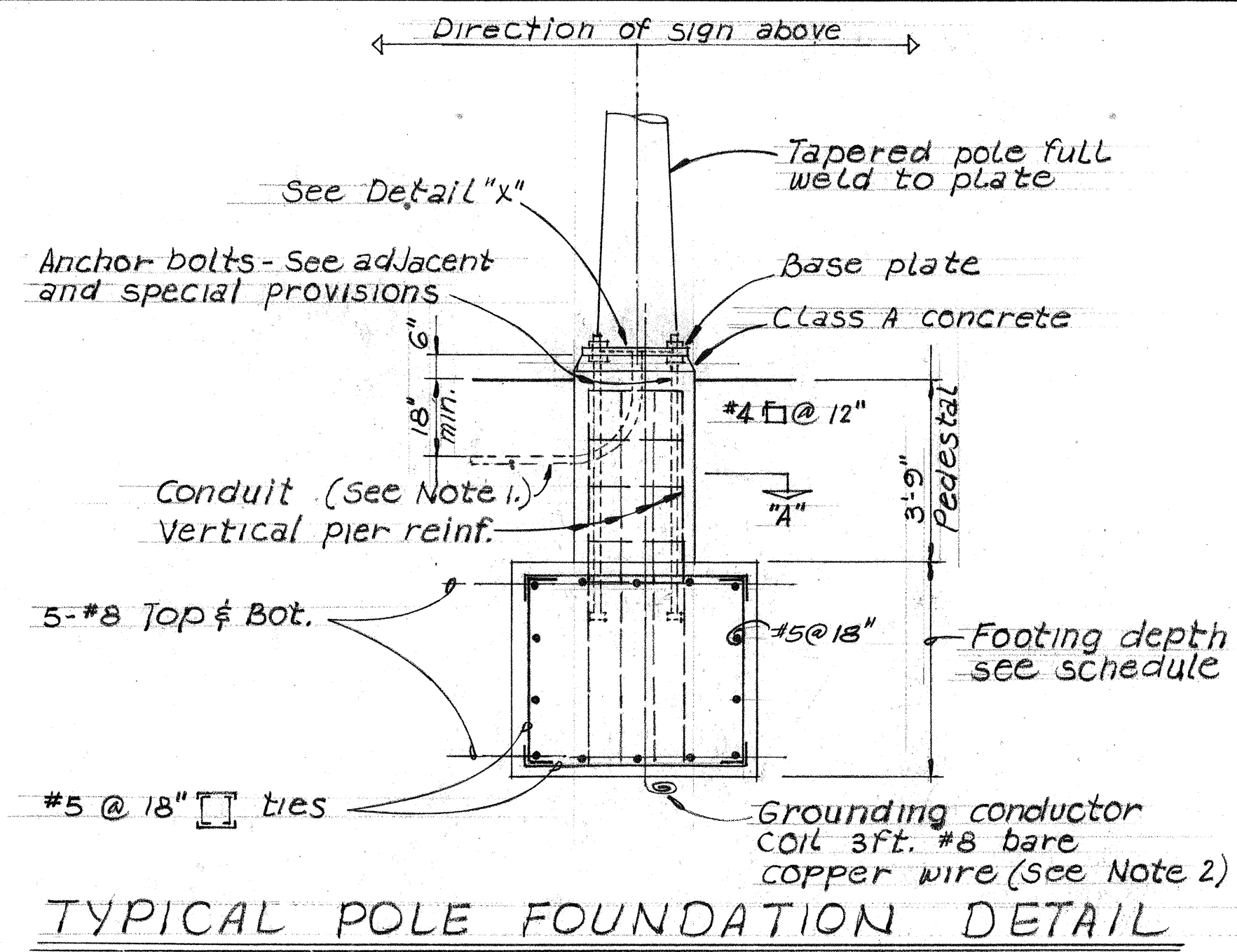
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPE "F"
OVERHEAD SIGN SUPPORT
BOX TRUSS TYPE
ALUMINUM

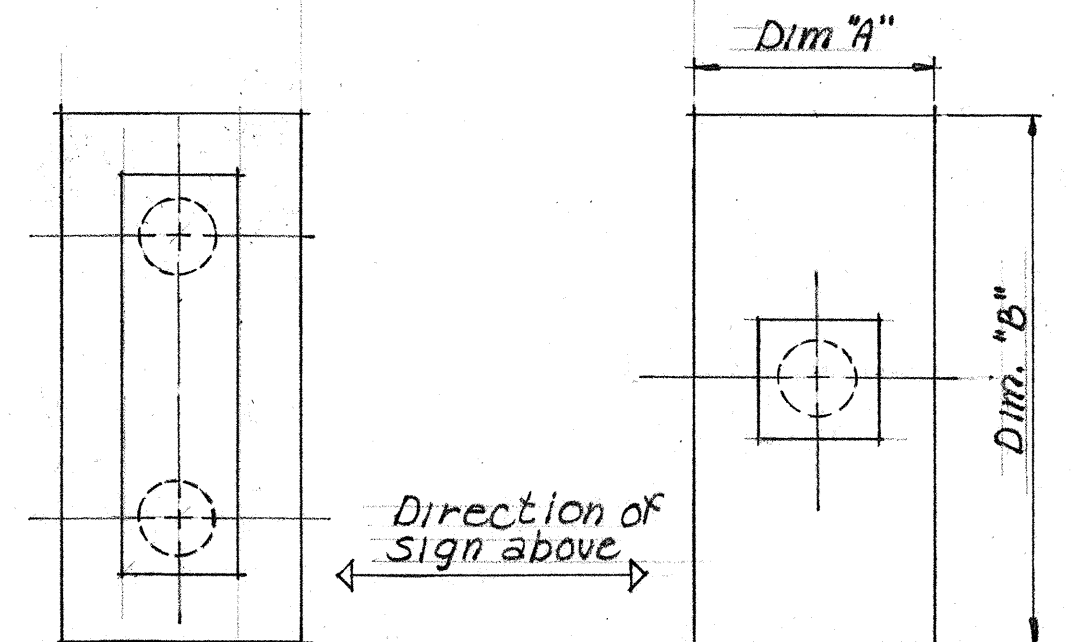
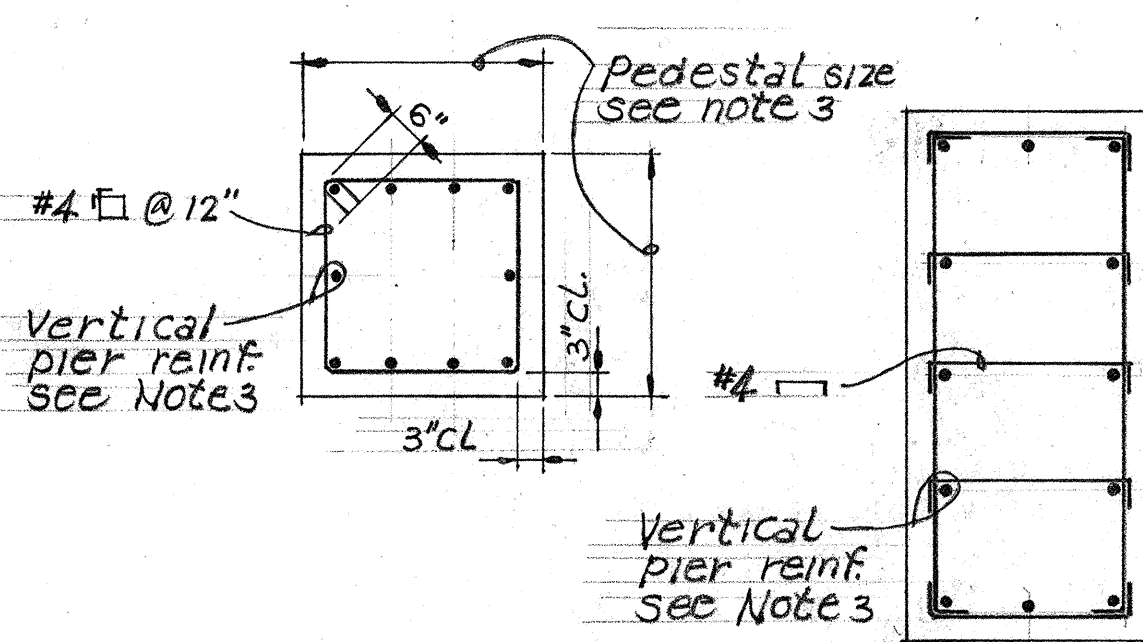
SHEET No. 5-98 OF 106 SHEETS DT 201

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.	1-H1-1(73)15	1974	315	369

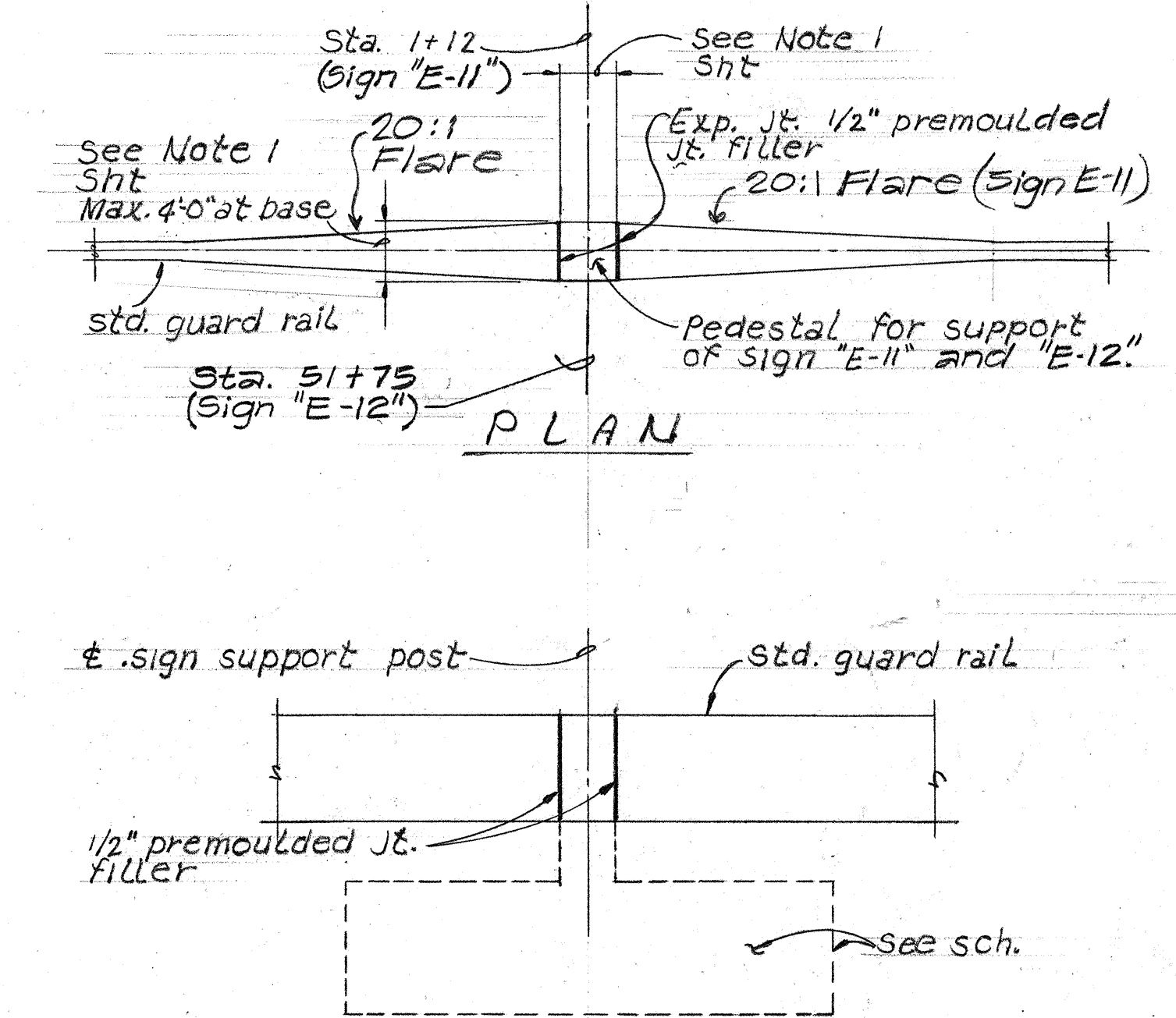
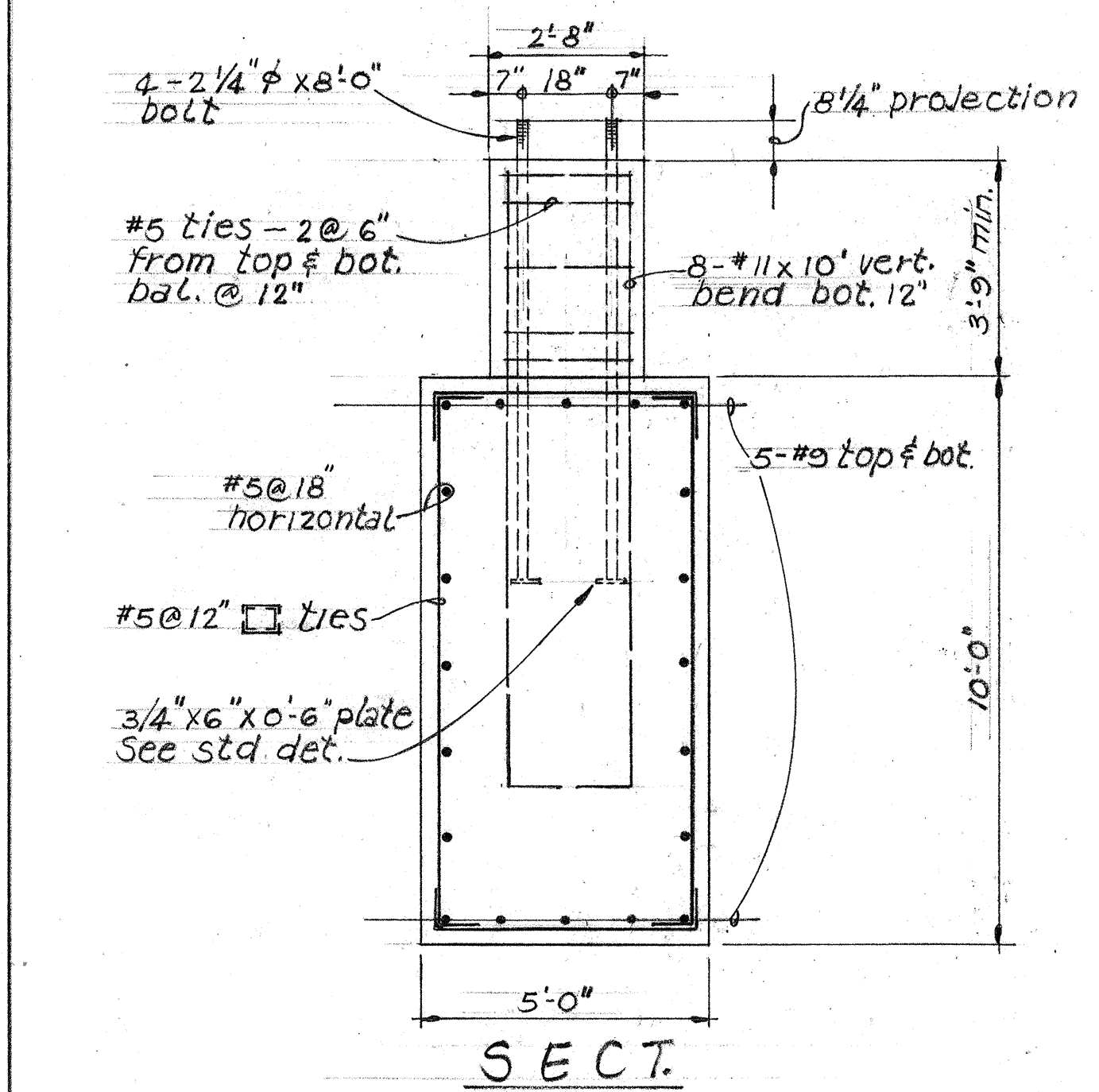
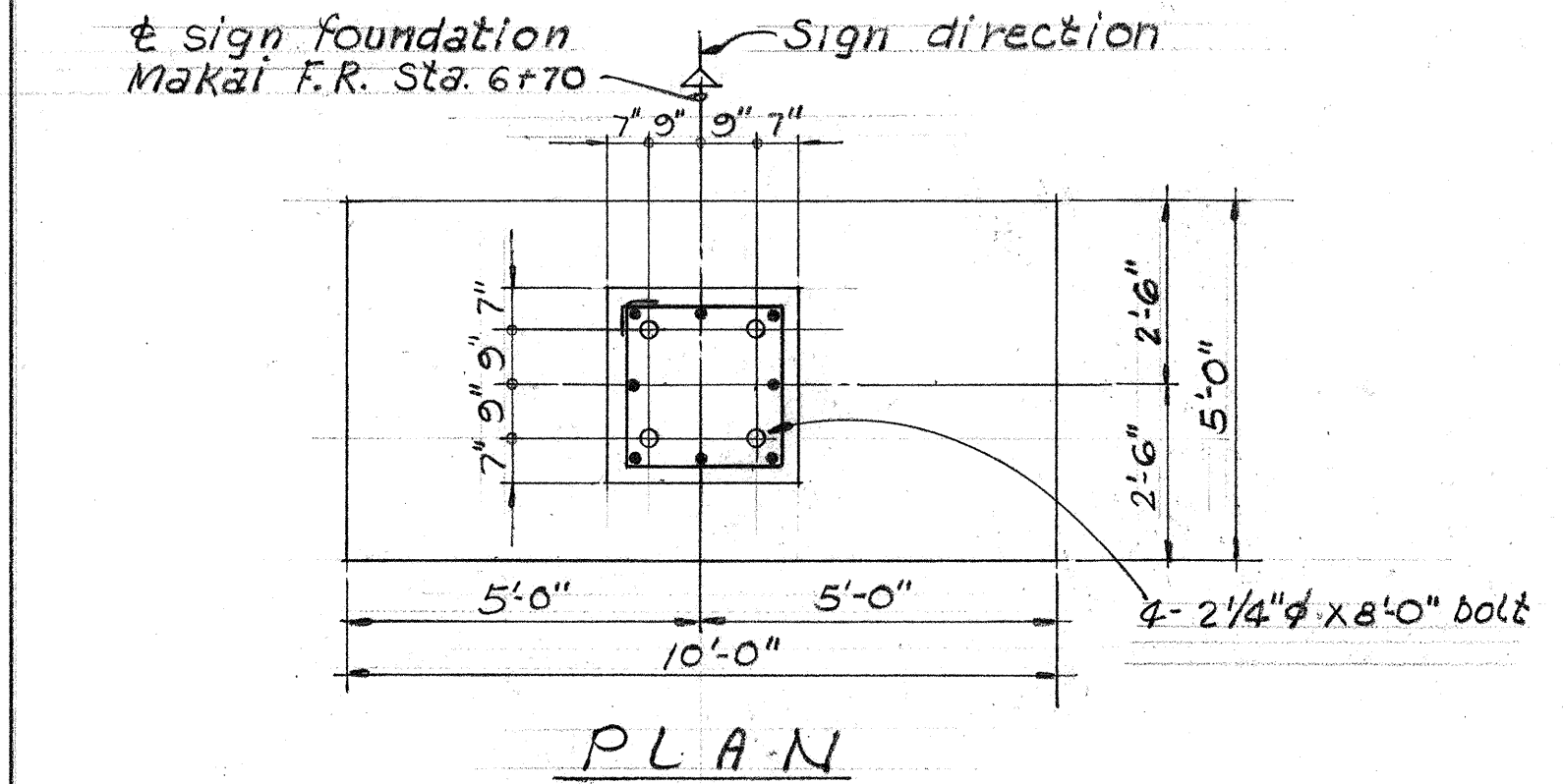


- NOTES:
1. Total number of conduits into pole foundation as indicated on Lighting plans. Conduits shall slope away from pole foundation. Conduit shall stub out 5'-0" min. for direct burial entry.
 2. Grounding conductor shall be bonded to sign support.
 3. Except specified otherwise, contractor shall determine the detail requirements of the pedestal, base plate, and anchor bolts in accord with type of sign support selected.



FOUNDATION SCHEDULE					
Sign	Support Type	Foundation Sch.			Remarks
		A	B	Depth	
E-2	Type "D"	5'	10'	10'-0"	a
3	Type "D" or "F"	5'	12'	5'	-
4	Type "D"	5'	16'	7'-6"	b
7	Type "D" or "F"	5'	10'	7'-6"	c
9	D.O.	5'	10'	7'-6"	-
10	D.O.	5'	10'	6'-6"	-
11	D.O.	5'	14'	5'-6"	d
12	D.O.	6'	15'	6'-6"	d
14	Standard Det.				
15	Type "C"				f
16	Standard Det.				

- a. Light footing & pedestal at median is existing. Right footing see Det. 1/s-99
- b. Left footing is integral with retaining wall- Det. 1/s-100 Right footing by others
- c. Left footing falls along median barrier- Det. 2/s-100
- d. Left footing on median barrier- Det. 2/s-99
- f. Ftg. is existing.



PEDESTAL AT CONC. GUARD RAIL
For sign E-12 see detail sheet* 238 S-1.

SHIMAZU SHIMABUKURO & FUKUDA, INC.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814

MICHAEL PAUL MATSUMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 2974
HAWAII, U.S.A.

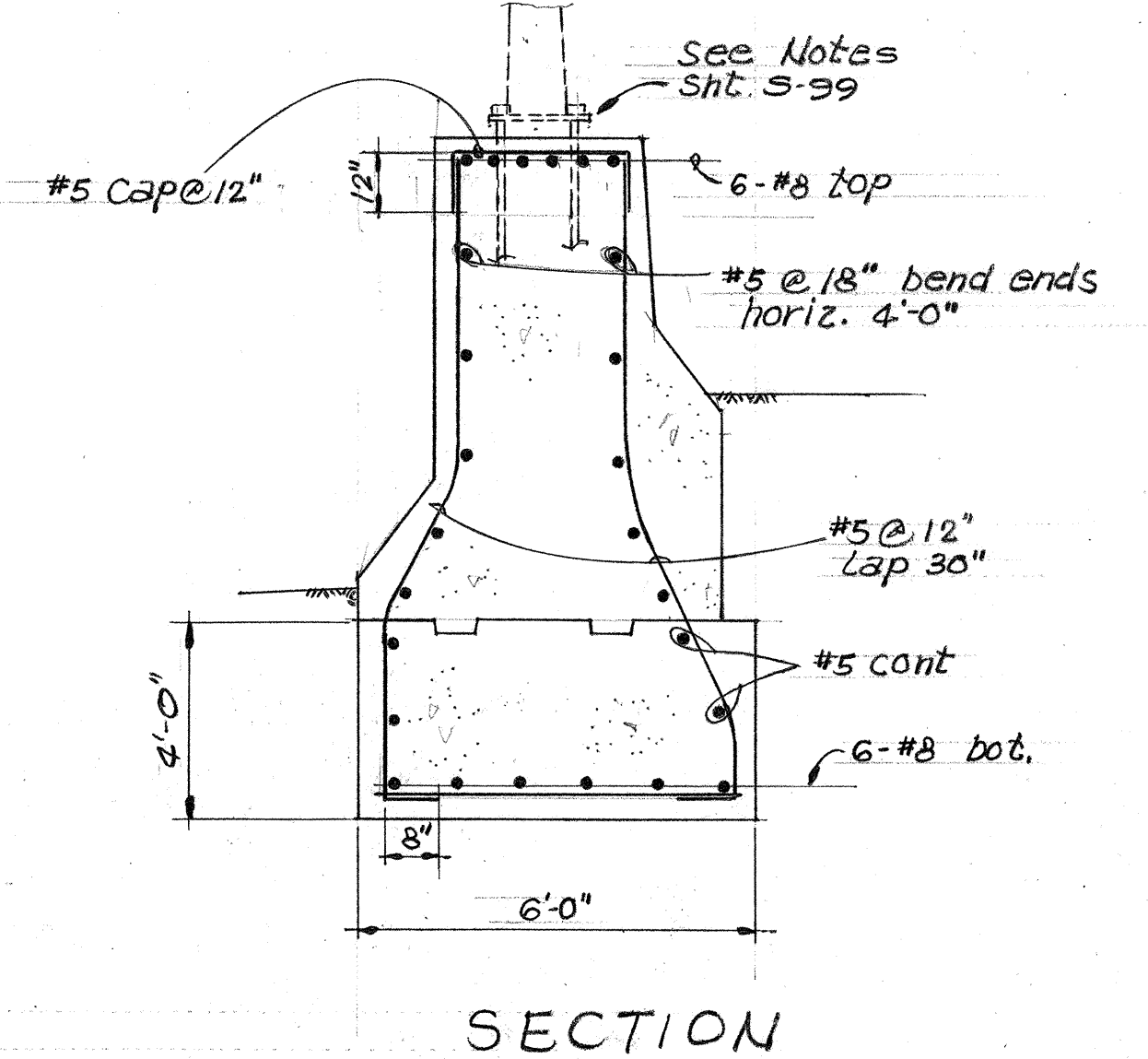
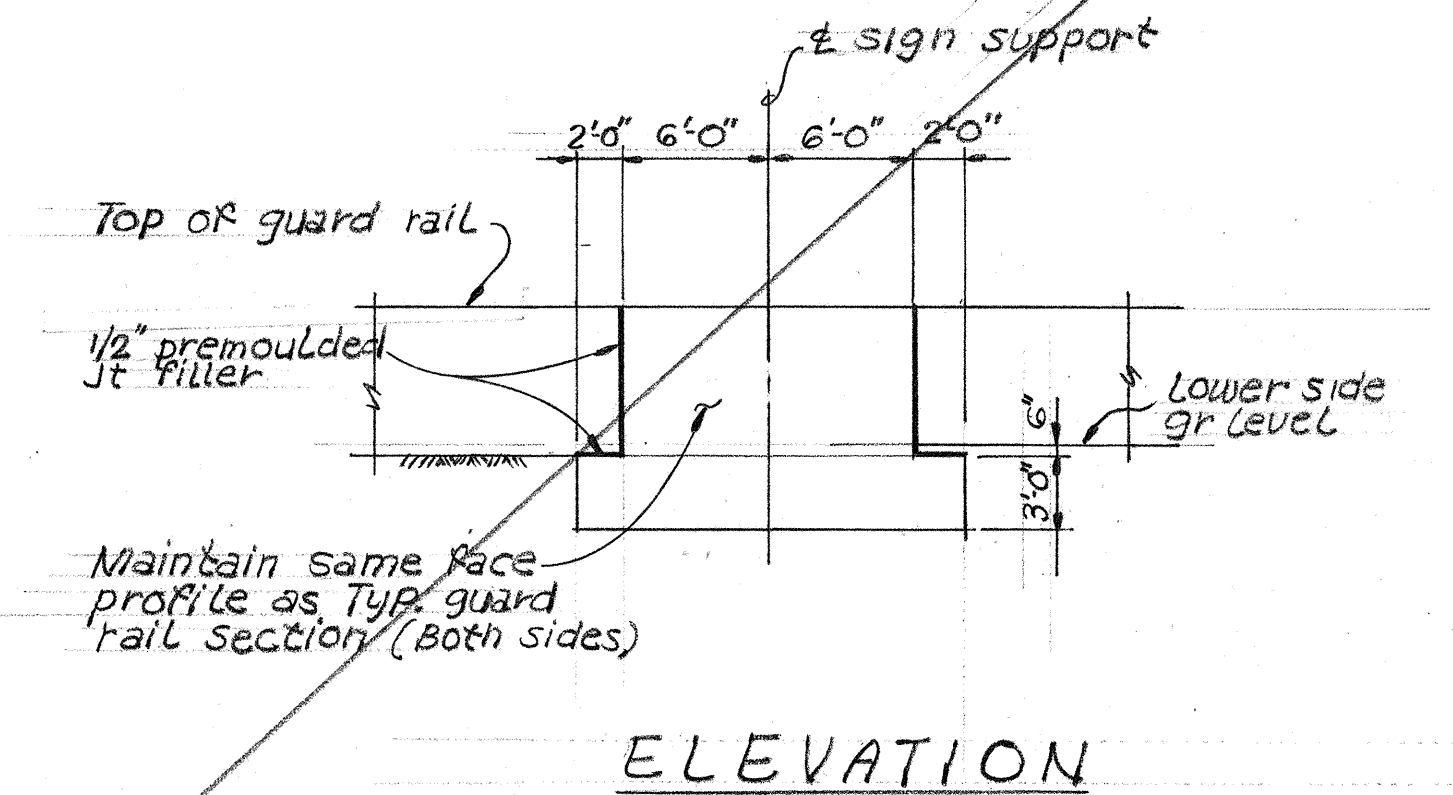
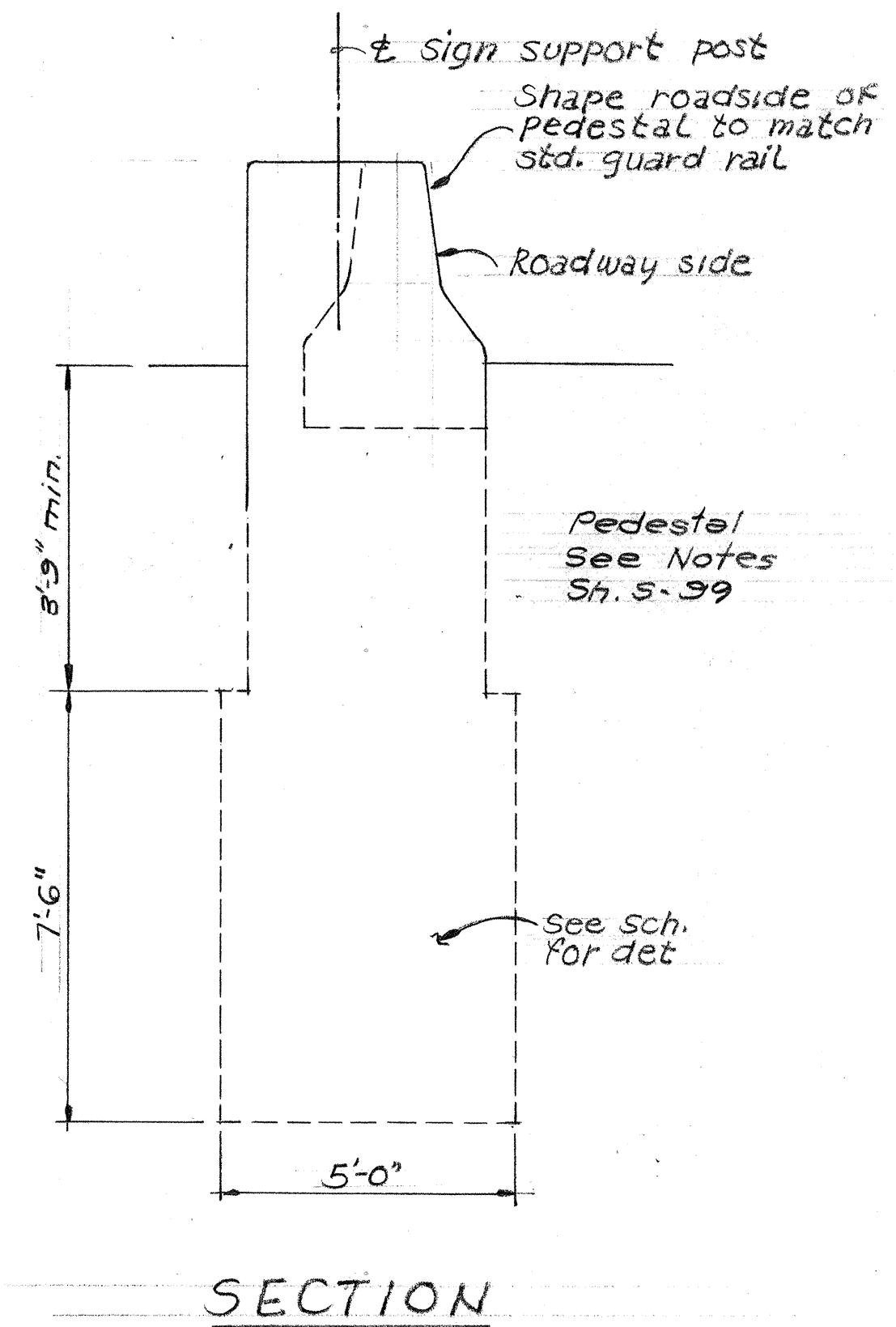
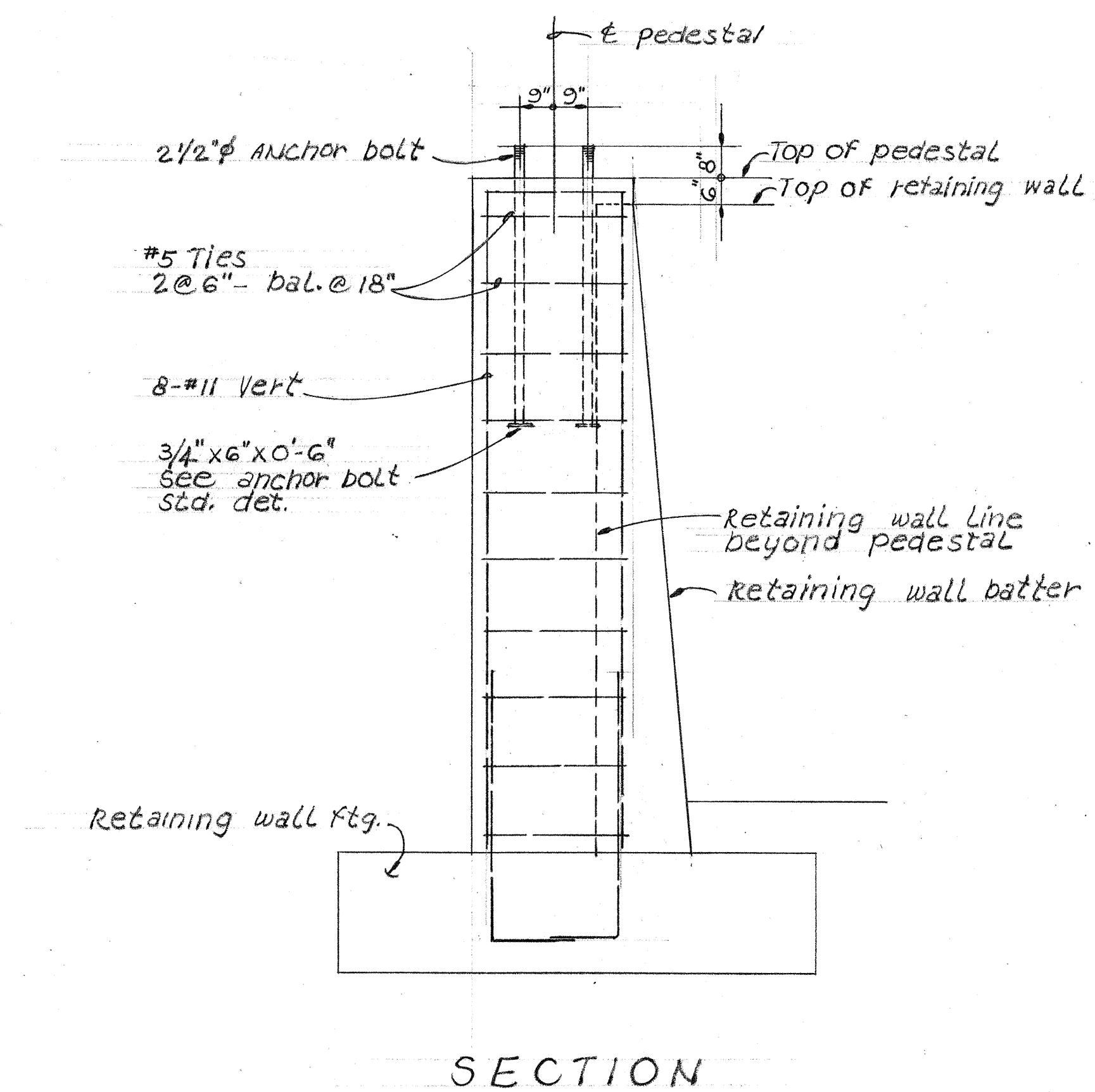
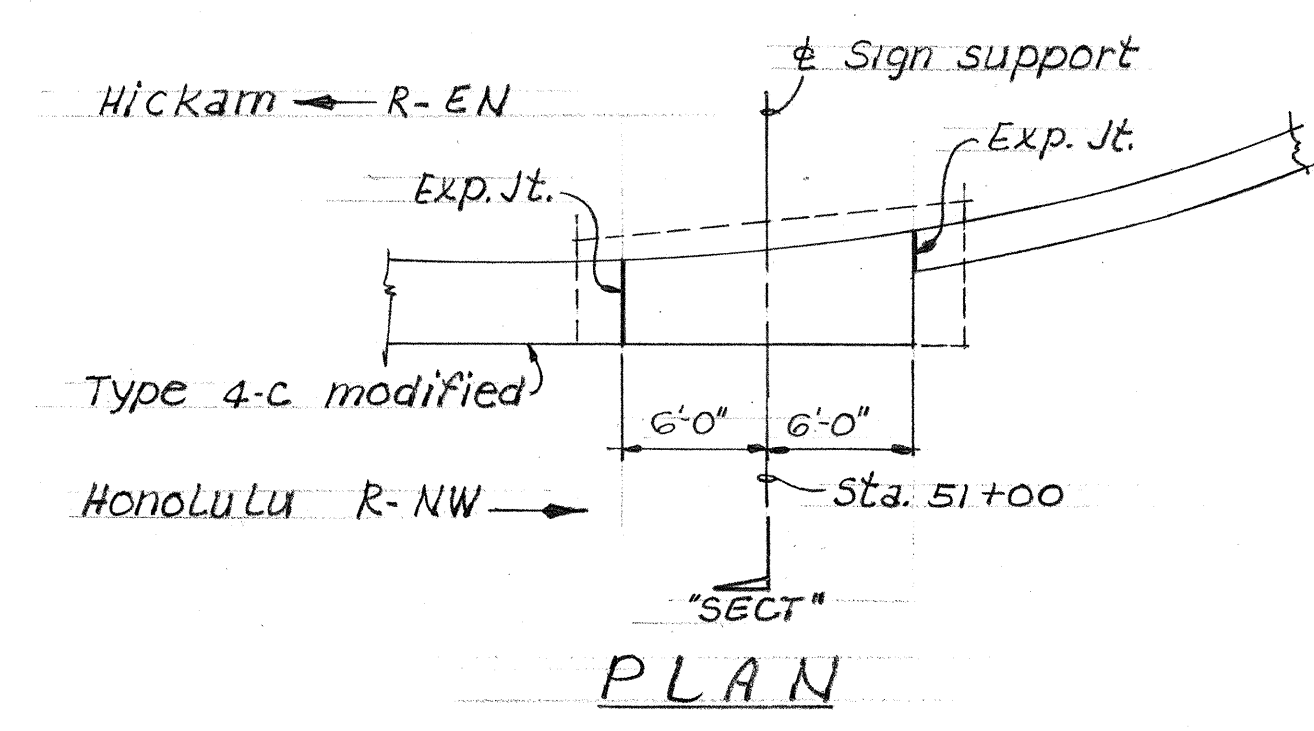
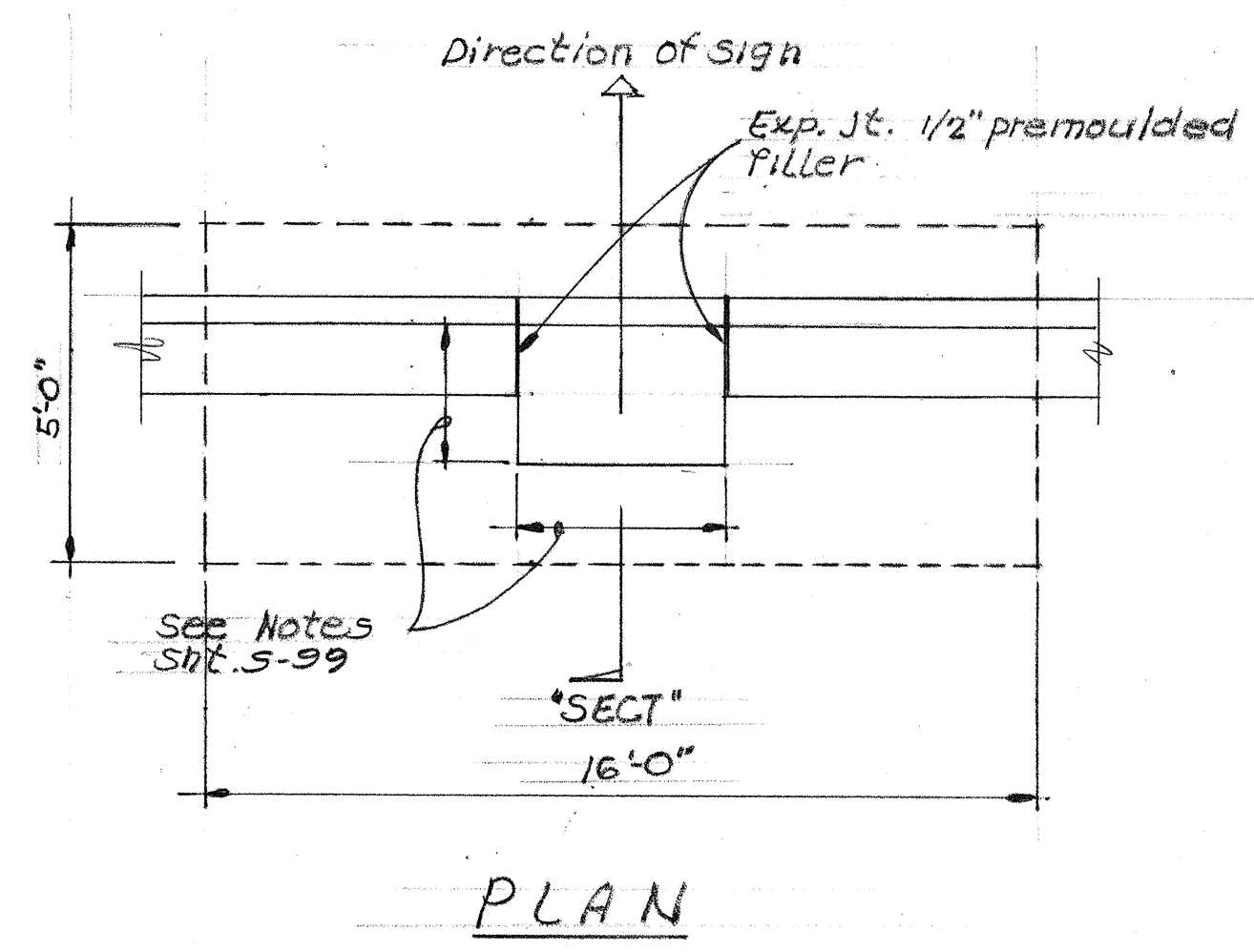
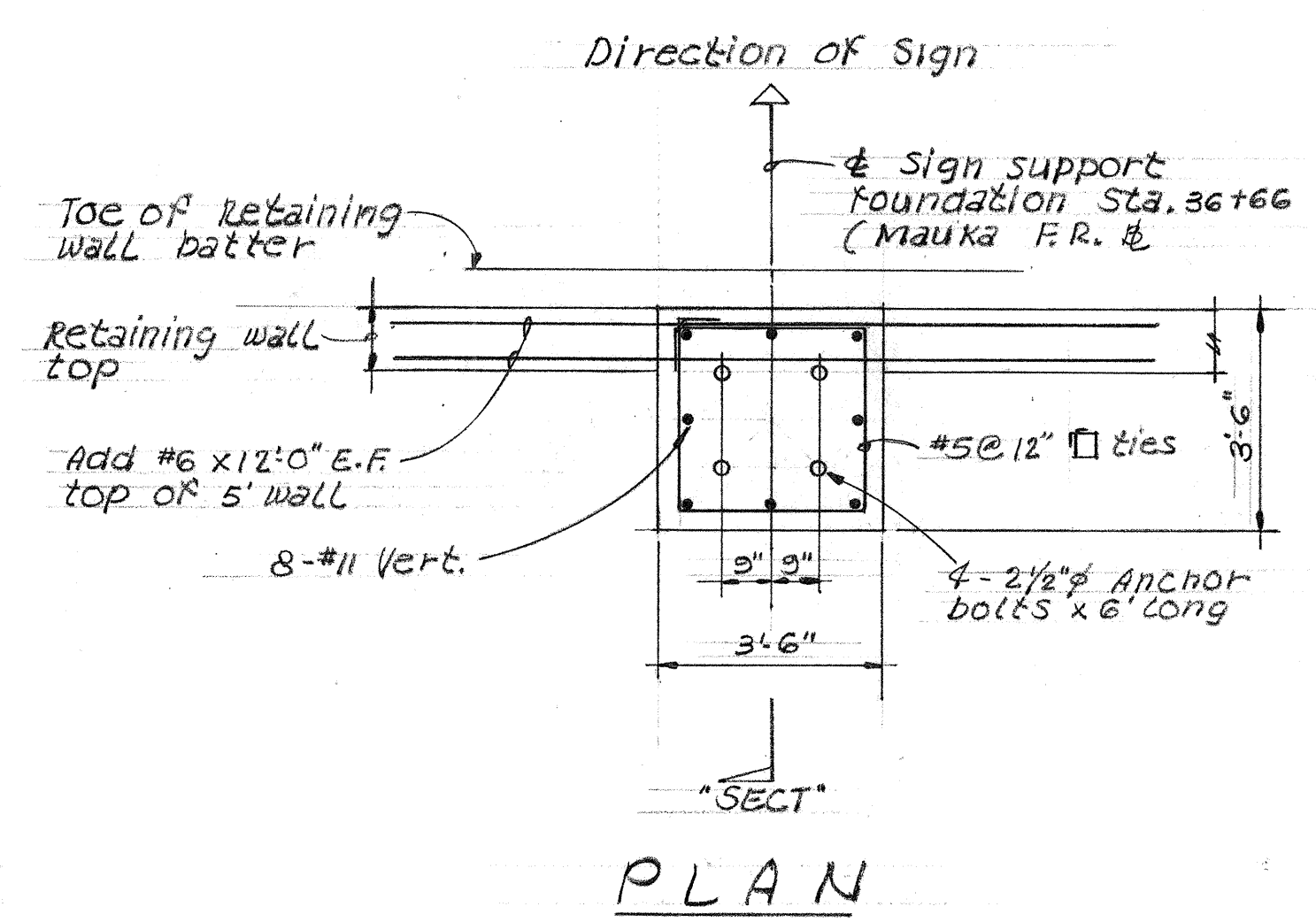
SHIMABUKURO
REGISTERED PROFESSIONAL ENGINEER
No. 1150
HAWAII, U.S.A.

DATE	REVISION
9/10/76	DELETED NOTE "e" AND REVISED E-12 REMARK TO "d".
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD SIGN SUPPORT FOUNDATION DETAILS & SCHEDULES	
PEARL HARBOR INTERCHANGE F.A.I. Proj. No. 1-H1-1(73)15	
Scale: As Shown Date: DEC. 7, 1973	
SHEET NO. 3-29 OF 106 SHEETS	

SIGN E-2 FOUNDATION DET. 1
5-99

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-4-1(73)15	1974	316	369



DETAIL 1
N.T.S. 5-100

DETAIL 2
N.T.S. 5-100



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

DATE	9/10/76	DELETED DETAIL	2
DATE		REVISION	

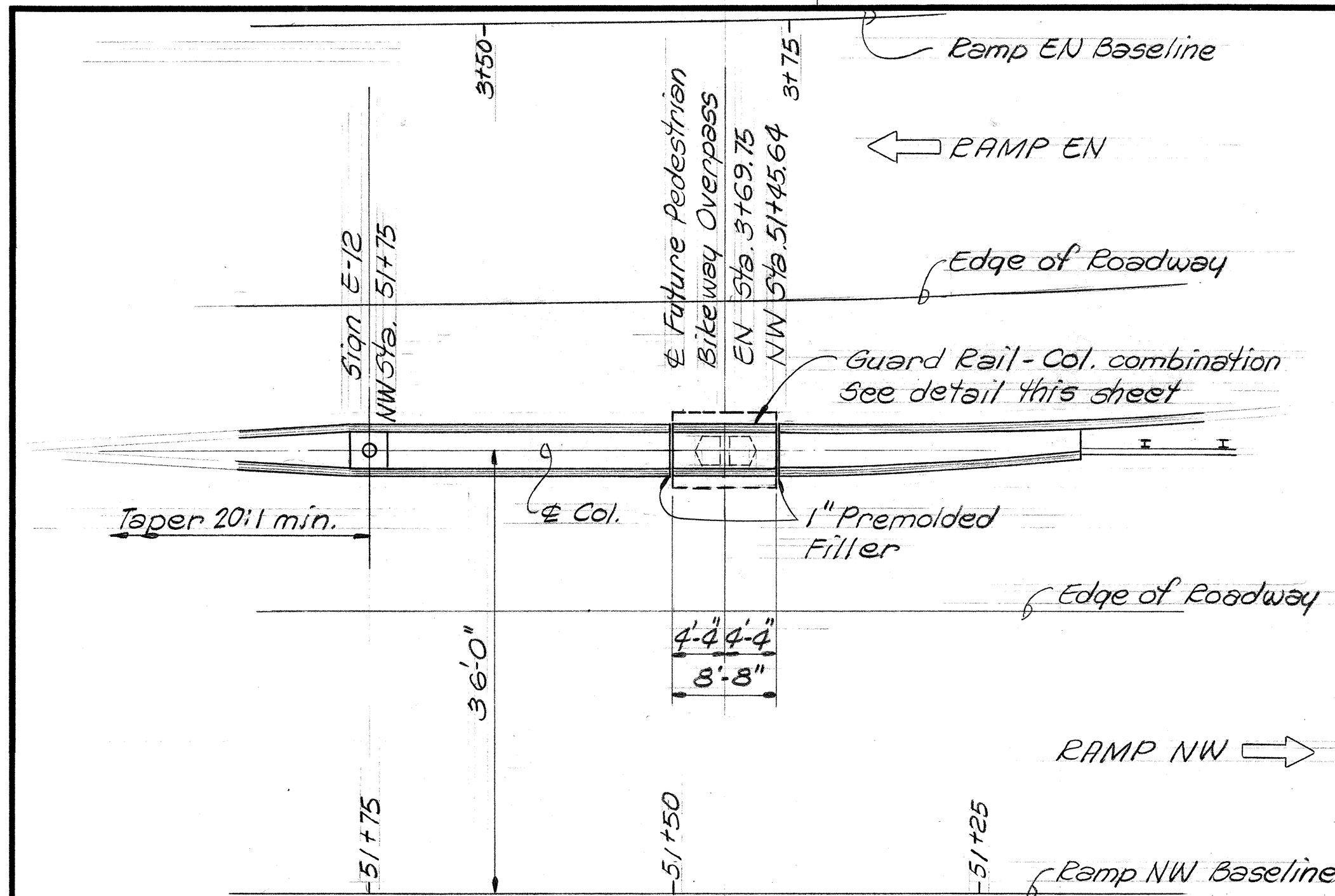
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD SIGN
SUPPORT FOUNDATION
DETAILS

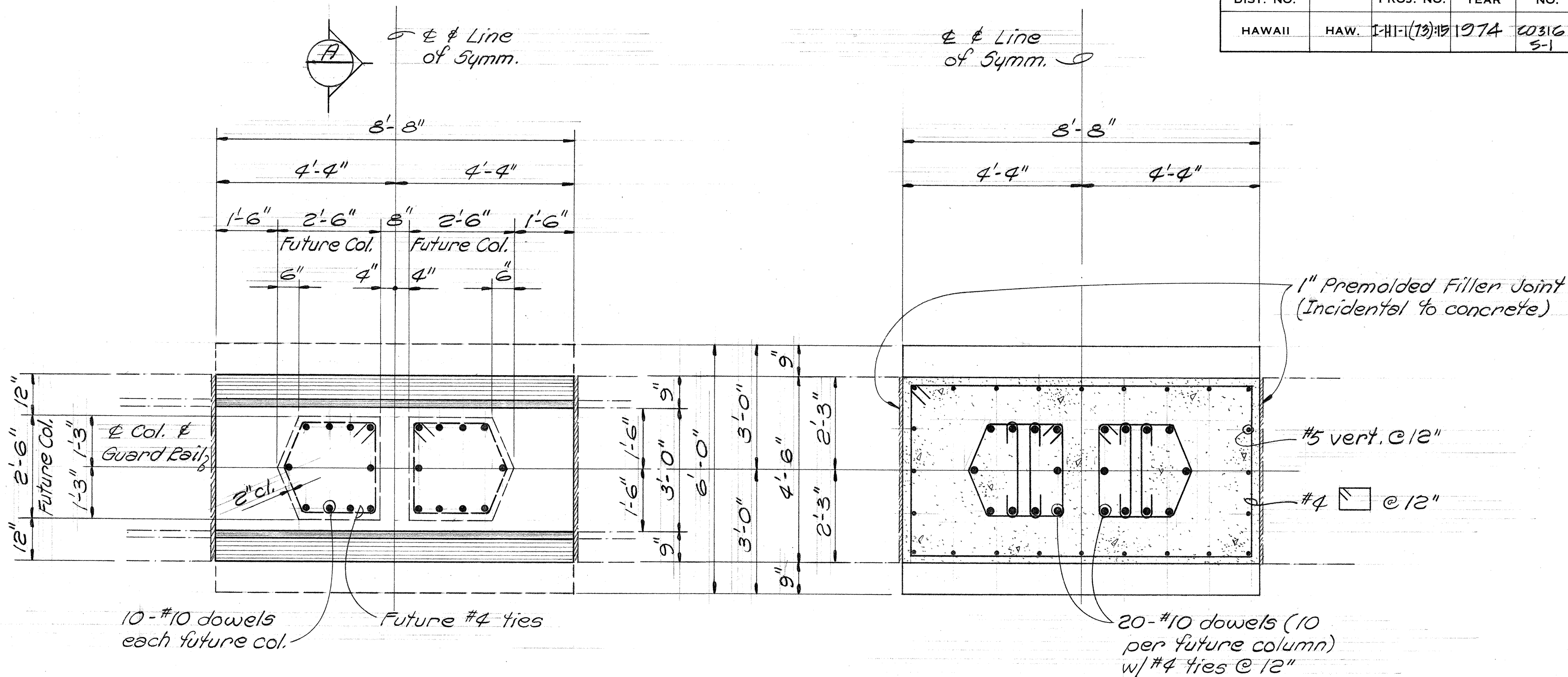
PEARL HARBOR INTERCHANGE
F.A.I. Proj. No. I-HI-1(73)-15

Scale: As Shown Date: DEC. 7, 1973
SHEET NO. 5-100 OF 106 SHEETS

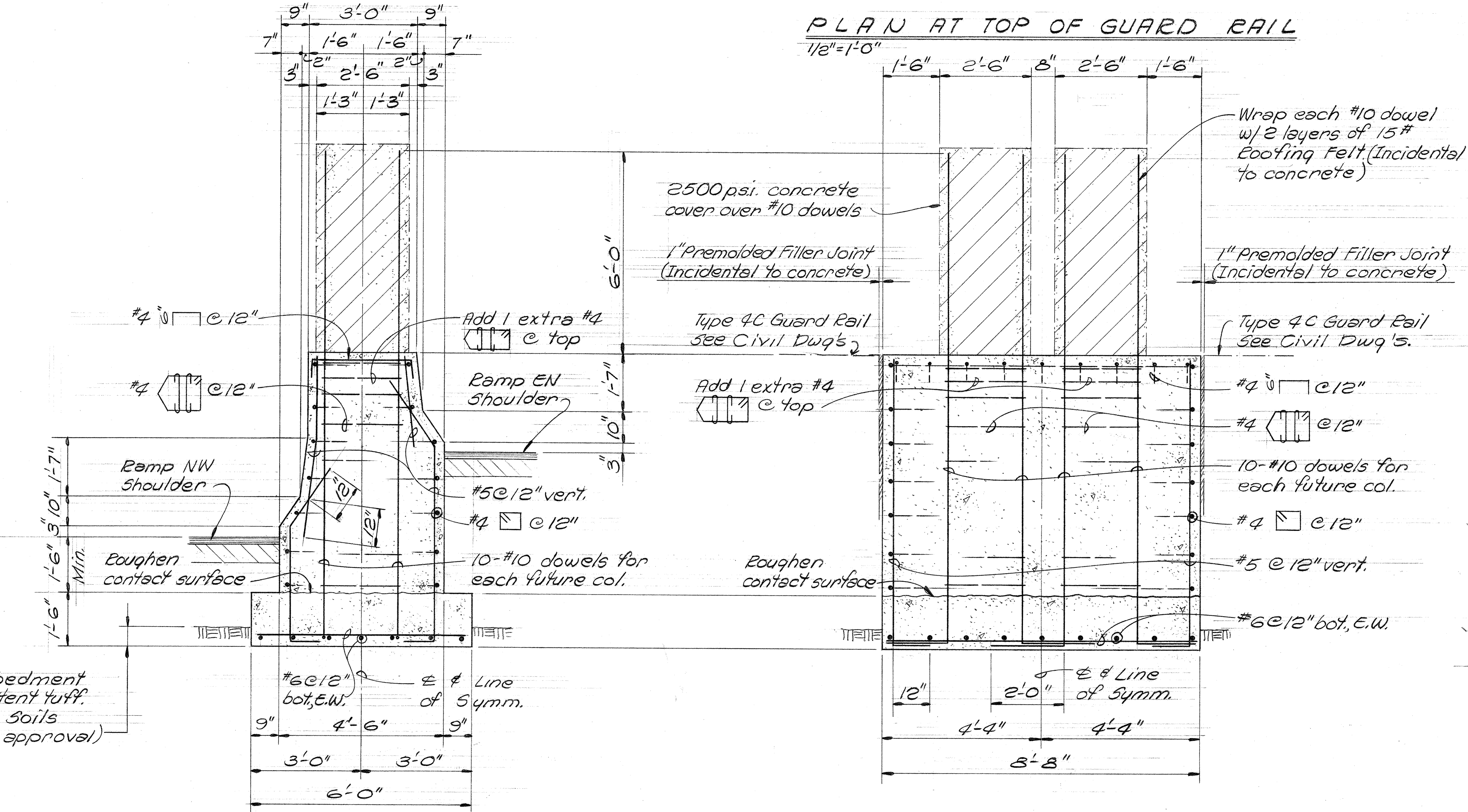
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11-1(73)18	1974	369	369



PARTIAL PLAN
Scale: 1"=10'-0"



FOUNDATION PLAN
1/2"=1'-0"



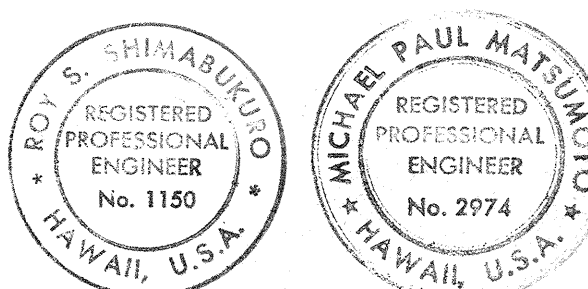
SECTION A
Scale: 1/2"=1'-0"

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

- NOTES**
- All reinforcing shall conform to ASTM A615 Grade 60.
 - Unless shown otherwise minimum 28 day concrete compressive strengths shall be as follows:
 - Footing --- 3,000 p.s.i. (Class A)
 - Guard Rail-Column --- 4,000 p.s.i. (Class E)

QUANTITY ESTIMATES			
ITEM NO.	ITEM	UNIT	QUANTITY
206.60	Structure Excavation for Bridges	C.Y.	11.8
206.65	Structure Backfill for Bridges	C.Y.	5.5
*503.0718	Concrete in footing-Ped O.P.	L.S.	2.90 C.Y.
*503.0703	Concrete in Bridges-guard rail-Col.	L.S.	7.60 C.Y.
*503.201	Class B Concrete other than in Bridges	C.Y.	2.90
*602.019	Reinforcing Steel in Bridges-Ped. O.P.	L.S.	2000 #

*NEW Item
SHIMABUKURO & FUKUDA, INC.
Consulting Structural Engineers
1210 Ward Ave., Honolulu, HI 96814



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARD RAIL-COLUMN COMBINATION
FOR FUTURE PEDESTRIAN-BIKEWAY OVERPASS

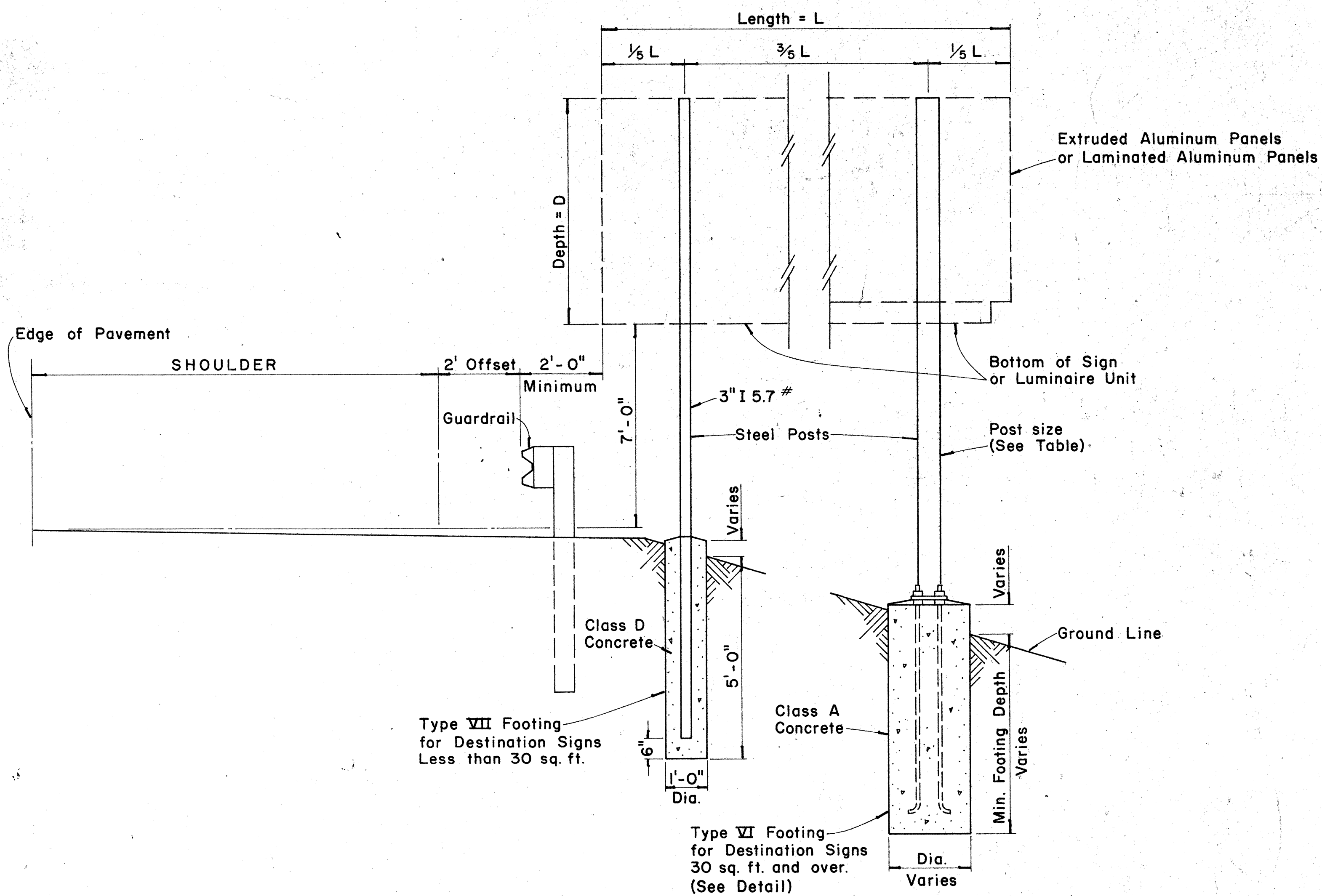
PEARL HARBOR INTERCHANGE
F.A.I. PROJ. NO. 1-H-1(73)15

Scale: As Shown Date: 9/10/76

SHEET NO. OF SHEETS

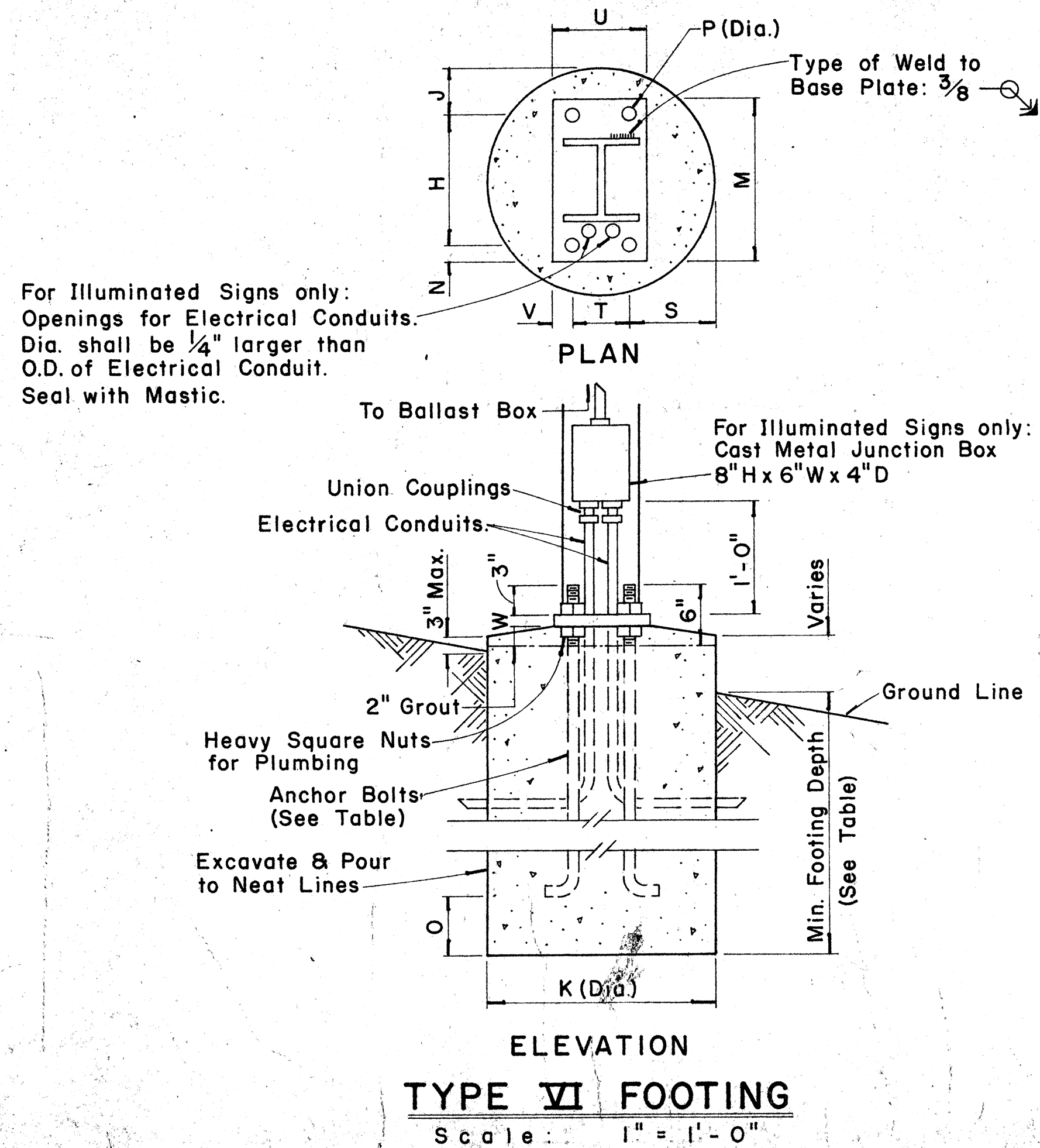
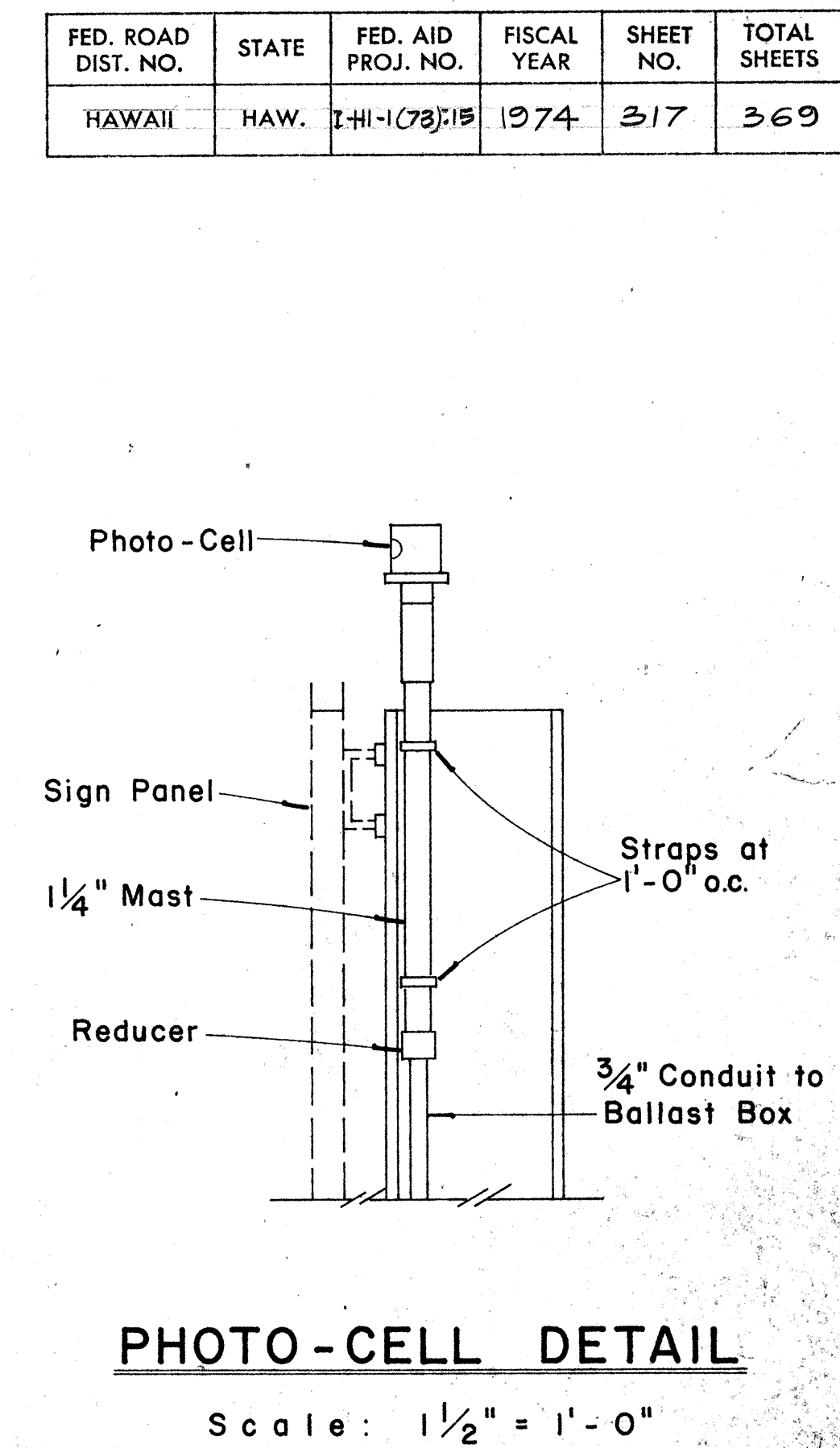
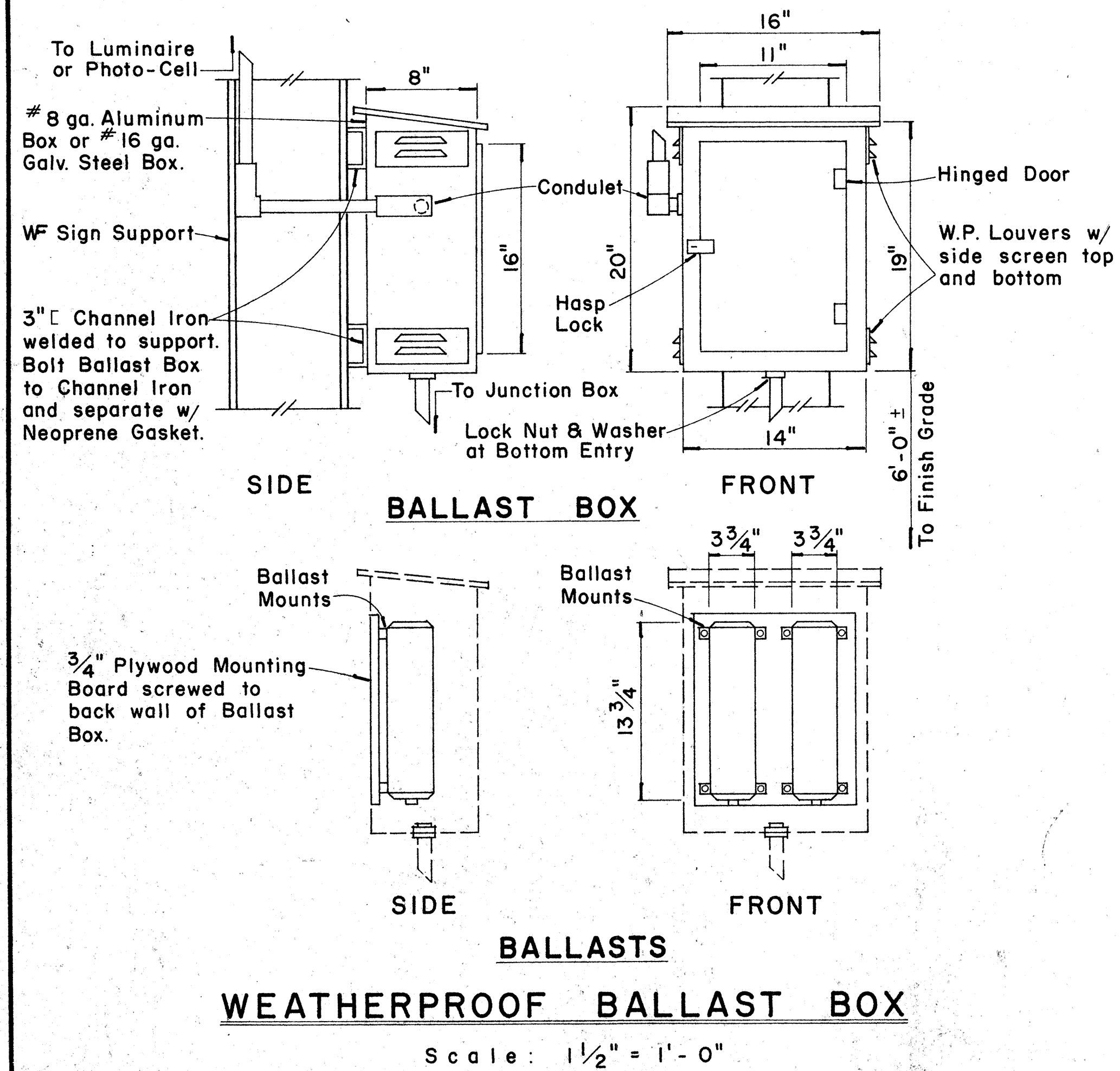
C.O. 316S-1

** For fills with side slopes flatter than 4:1, Minimum Footing Depth shall be 4½ feet.

[illegible]

TYPICAL DESTINATION & GROUND MOUNTED EXPRESSWAY SIGN

Not to Scale



APPROVAL RECOMMENDED:

Eishi Tanaka 12/29/09
TRAFFIC ENGINEER DATE

APPROVED:

W. J. Salas 12-30-09
ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

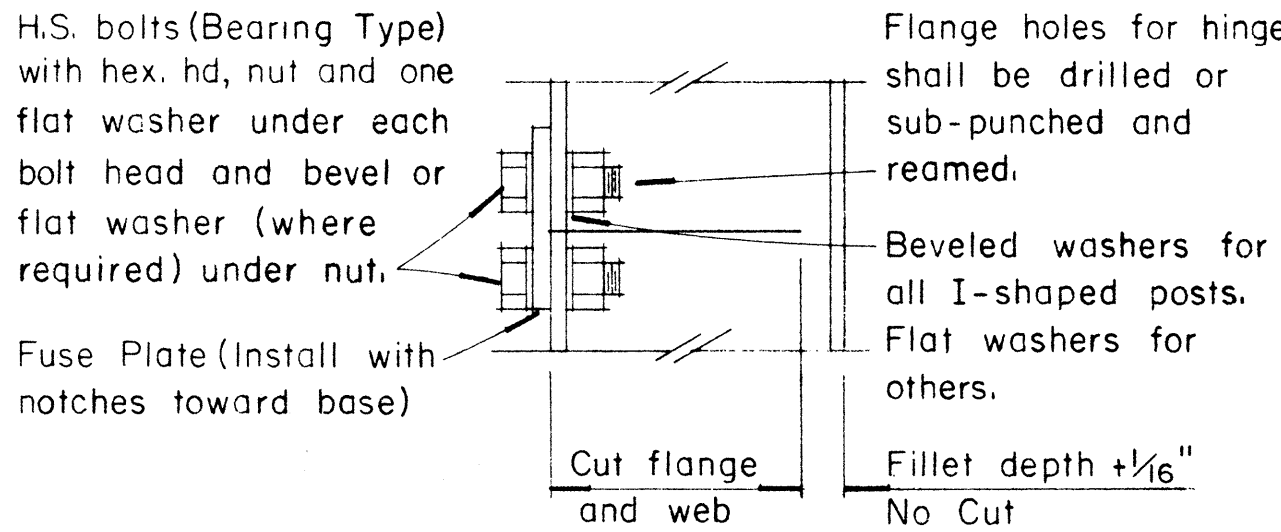
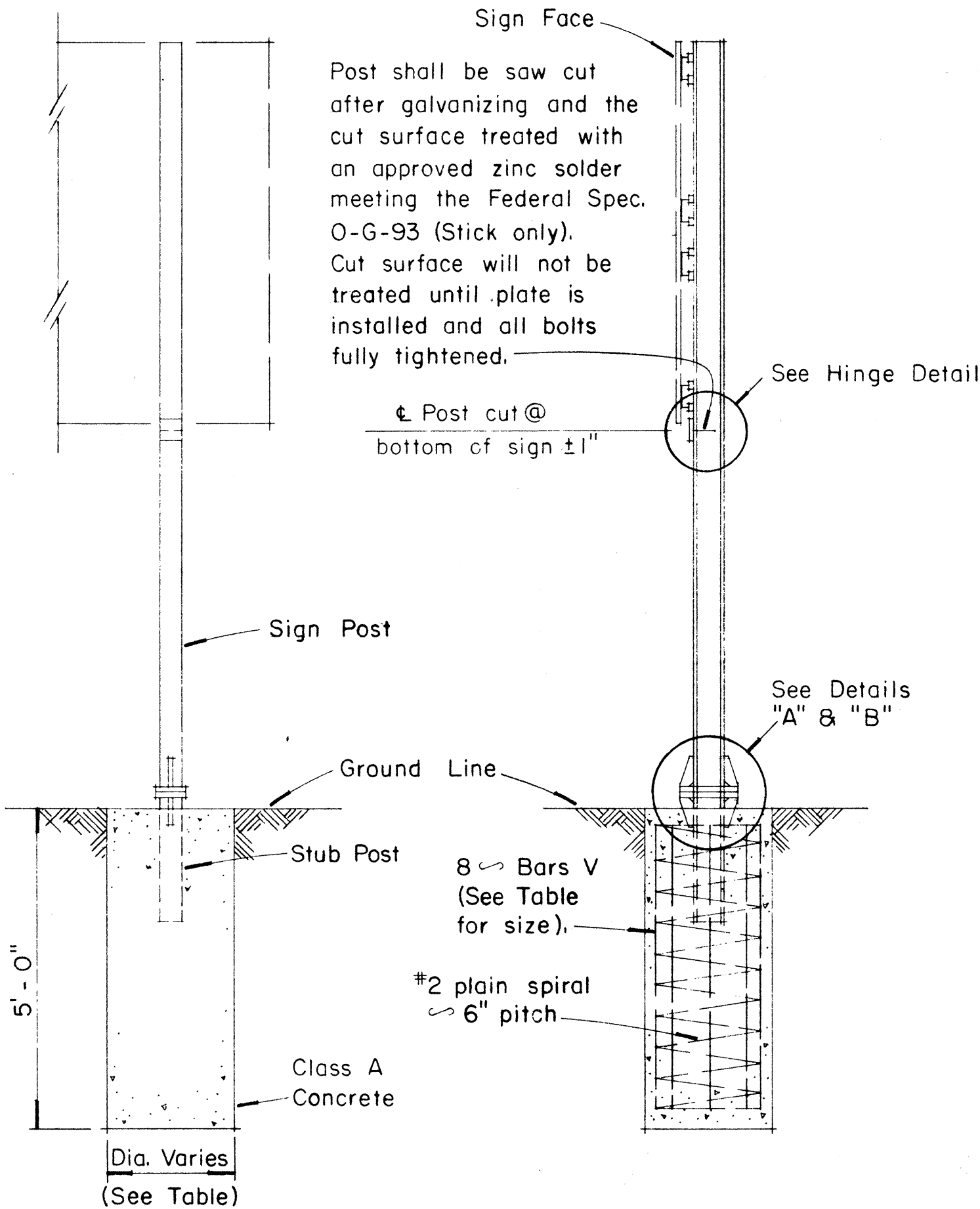
DESTINATION & GROUND MOUNTED
EXPRESSWAY SIGNS

Scale: As Shown

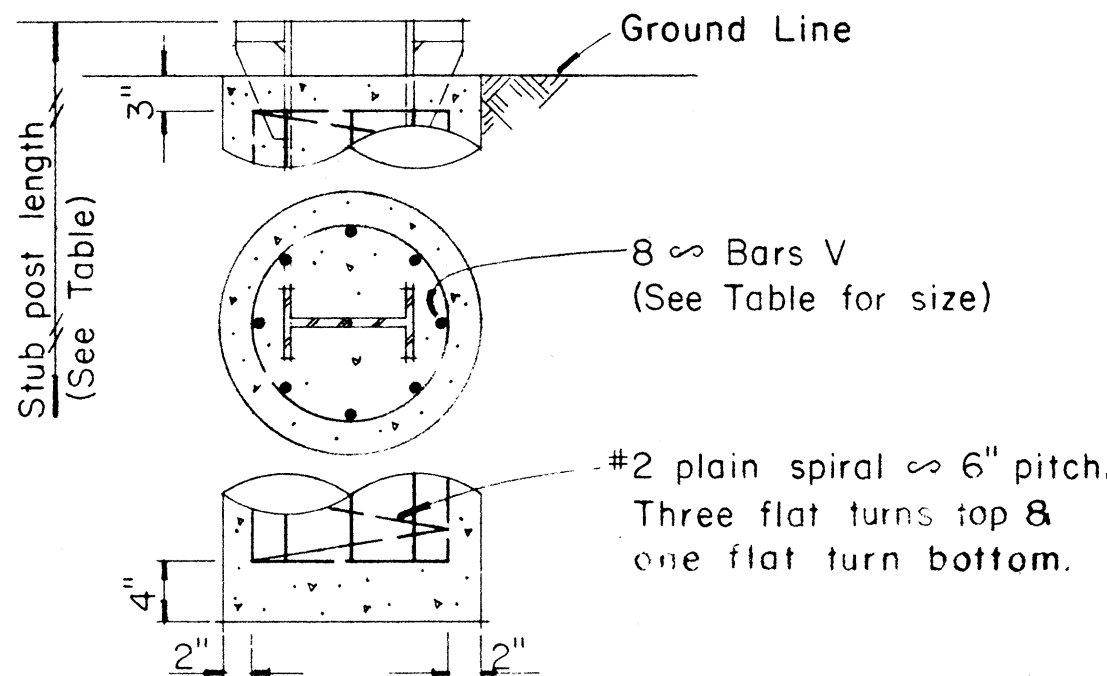
SHEET No. 5-101 OF 106 SHEETS DT 203

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(78)25	1974	318	369

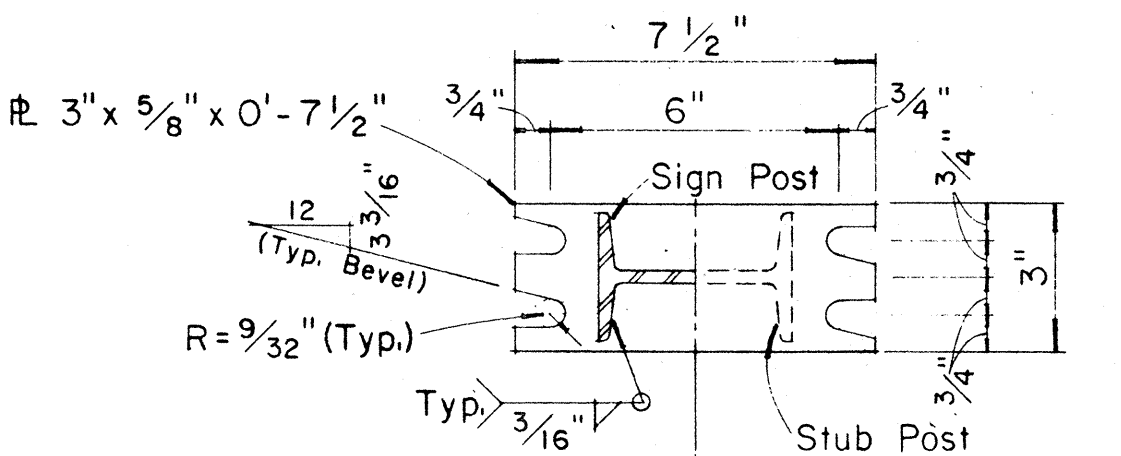
	BASE CONNECTION DATA TABLE										FUSE PLATE DATA TABLE										FOUNDATION DATA					
Post Size	Bolt Size & Torque	A	B	C	D	E	t1	t2	W	R	F	G	H	J	K	L	N	d1	t3	Bolt Dia.	Wt. of each Fuse Pl.	Stub Length	Stub Projection	Footing Diameter	Bars V Size	
6 B 8.5	5/8" ϕ x 2 3/4" Torque = 450 #	5"	2"	1 1/4"	2 3/4"	1 1/8"	3/4"	1/2"	1/4"	1 1/32"	3 5/8"	2"	1 1/8"	4"	2 1/4"	7/8"	1/2"	9/16"	1/4"	1/2" ϕ	1.09 #	2'-0"	3"	2'-0"	#5	
6 B 12											3 3/4"	2"	1 1/8"	4"	2 1/4"	7/8"	5/8"	1 1/16"	3/8"	5/8" ϕ	1.60 #	2'-0"	3"	2'-0"	#5	
6 B 15.5											4 1/2"	2 1/2"	1 1/4"	6"	3 1/2"	1 1/4"	3/4"	13/16"	1/2"	3/4" ϕ	3.75 #	2'-6"	3"	2'-0"	#6	
8 WF 17											4 1/2"	2 1/2"	1 1/4"	5 1/4"	2 3/4"	1 1/4"	3/4"	13/16"	1/2"	3/4" ϕ	3.27 #	2'-6"	3"	2'-0"	#7	
8 WF 20	3/4" ϕ x 3 1/2" Torque = 750 #	6"	2 1/4"	1 3/8"	3 1/2"	1 1/4"	1"	3/4"	5/16"	13/32"	4 7/8"	2 1/2"	1 1/2"	5 1/4"	2 3/4"	1 1/4"	7/8"	15/16"	9/16"	7/8" ϕ	3.93 #	3'-0"	2 1/2"	2'-0"	#8	
10 WF 21											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8" ϕ	4.75 #	3'-0"	2 1/2"	2'-0"	#9	
10 WF 25											5 3/8"	3"	1 1/2"	5 3/4"	2 3/4"	1 1/2"	7/8"	15/16"	9/16"	7/8" ϕ	4.79 #	3'-0"	2 1/2"	2'-0"	#10	
12 WF 27											5 3/8"	3"	1 1/2"	6 1/2"	3 1/2"	1 1/2"	7/8"	15/16"	9/16"	7/8" ϕ	5.42 #	3'-0"	2 1/2"	2'-0"	#11	
3 I 5.7	1/2" ϕ x 2 1/2" Torque = 200 #	SEE DETAIL "A"										3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2" ϕ	0.64 #	1'-6"	3 1/2"	1'-6"	#5
4 I 7.7	Torque = 200 #											3 1/8"	1 1/2"	1 1/8"	2 5/8"	1 1/2"	9/16"	1/2"	9/16"	1/4"	1/2" ϕ	0.64 #	1'-6"	3 1/2"	1'-6"	#5



HINGE DETAIL

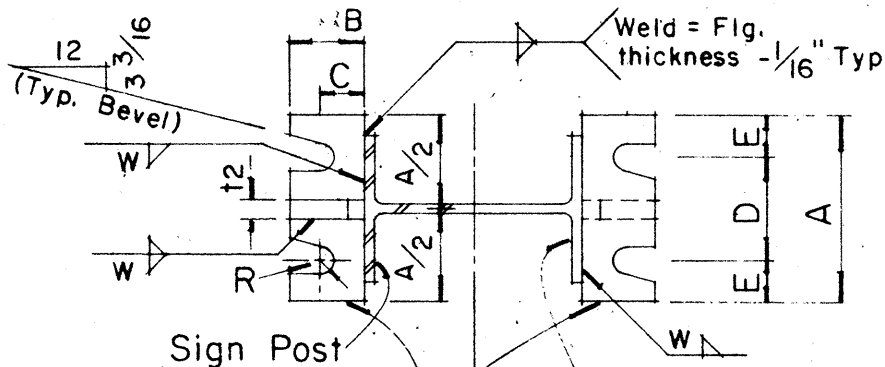


FOUNDATION DETAIL

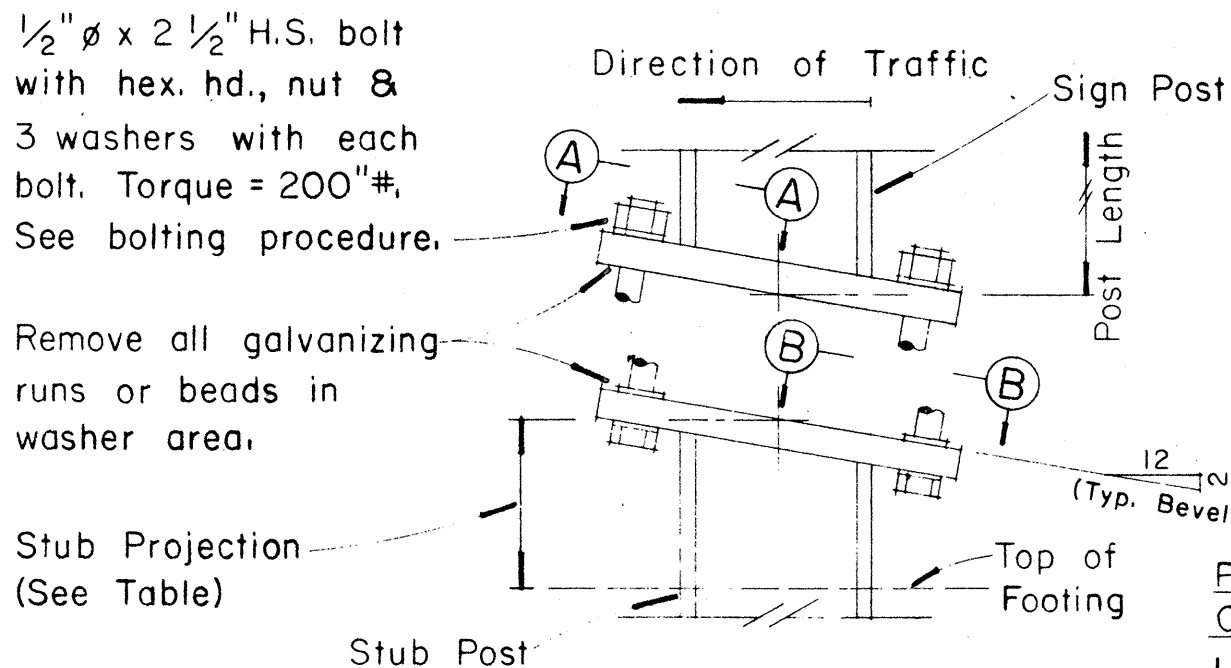


SECTION "A-A" SECTION "B-B"

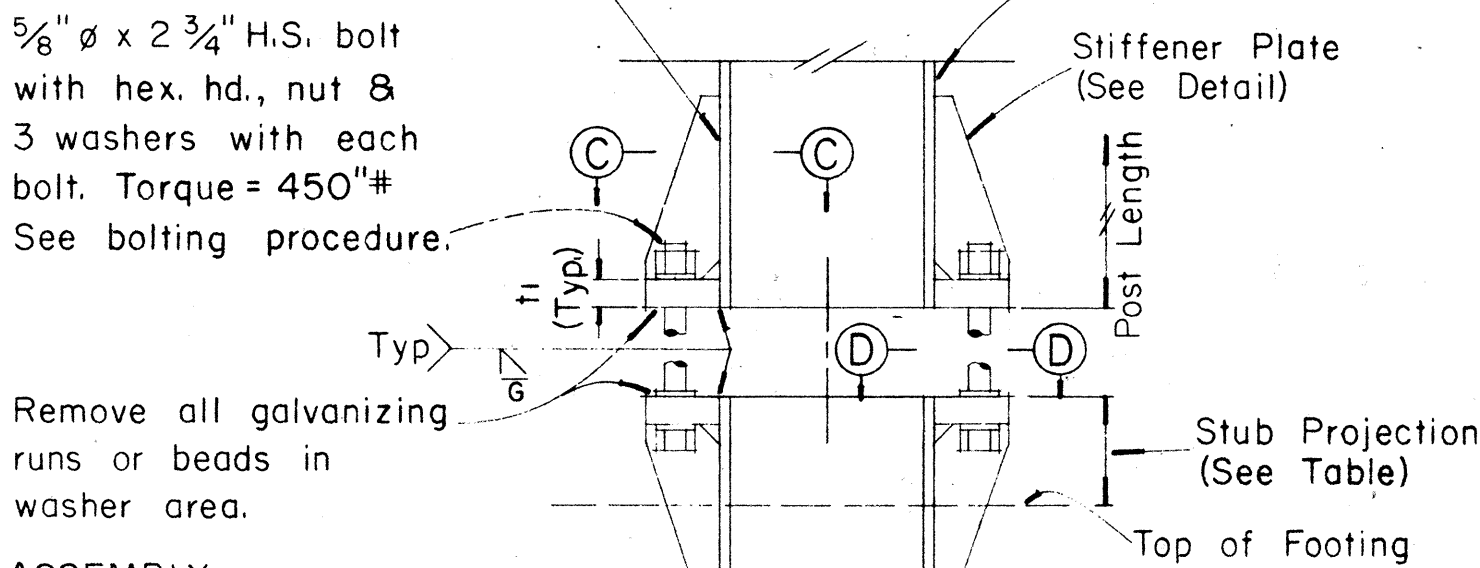
NOTE:
Sections shown are for installations on right shoulder and in gore. Reverse plate slot bevels for installations on left shoulder.



SECTION "C-C" SECTION "D-D"

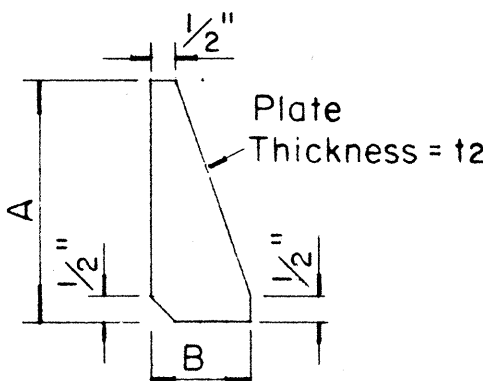


DETAIL "A"
SIGN POST & STUB POST
(For 4I7.7 and 3I5.7 Shapes)

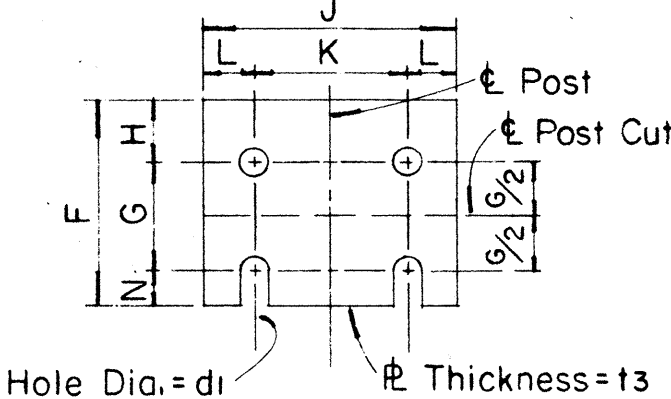


DETAIL "B"
SIGN POST & STUB POST
(For WF and B Shapes)

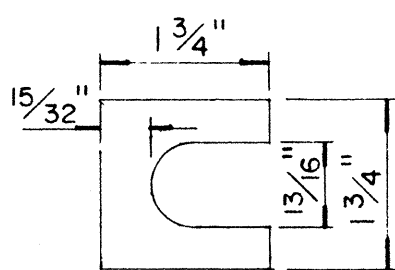
PROCEDURE FOR ASSEMBLY OF BASE CONNECTION:
1. Assemble post to stub with bolts and with one flat washer on each bolt between plates.
2. Shim as required to plumb post.
3. Tighten all bolts the max. possible with 12" to 15" wrench to bed washers & shims and to clean bolt threads then loosen each bolt in turn & retighten bolts in systematic order to prescribed torque. (See Table)
4. Burr threads at junction with nut using a center punch to prevent nut loosening.



STIFFENER PLATE DETAIL



FUSE PLATE DETAIL



SHIM DETAIL

Furnish 2<.012"± thick and 2<.032"± thick shims per post. Shims shall be fabricated from brass shim stock or strip conforming to A.S.T.M. - B 36.

GENERAL NOTES

- Design conforms with AASHTO Specifications for the design and Construction of Structural Supports for Highway Signs.
- Materials and Fabrication shall conform to the requirements of the Standard Specifications and Special Provisions.
- All holes shall be drilled. All plate cuts shall preferably be saw cuts, however; flame cutting will be permitted provided all edges are ground. Metal projecting beyond the plane of the plate face will not be tolerated.
- Tighten the high strength bolts in the base connection only to the torque shown, do not overtighten. All bolts other than high strength bolts shall conform to ASTM A 307, Class A.
- All structural steel, bolts, nuts and washers shall be galvanized as per the Standard Specifications and Special Provisions. Structural steel to be galvanized after fabrication except as noted.
- Structural steel shall conform with the requirements of ASTM A 441
- Galvanizing of all posts shall be projection above concrete plus 6" minimum.
- All friction fuse bolts shall be tightened in the shop following a method approved by the Engineer. Tightening shall be to such a degree as to obtain the following minimum residual tension in each bolt:

Bolt Size	Min. Tension	Bolt Size	Min. Tension
1/2"ø	12050 Lbs.	3/4"ø	28400 Lbs.
5/8"ø	19200 Lbs.	7/8"ø	36050 Lbs.

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
BREAK-AWAY SIGN SUPPORTS
FOR
GROUND MOUNTED GUIDE SIGNS

Not to Scale

SHEET No. S-102 OF 106 SHEETS DT 204

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(73)-15	1974	319	369

(OVERHEAD SIGNS)
SUPPORT SPACING TABLE

PANEL THICK.	LENGTH OF SIGN A	NO. OF SUPPORTS	OVERHANG B	SUPPORT SPACING C or C ₁
1"	6'-0"	2	12"	48"
1"	6'-6"	2	15"	48"
1"	7'-0"	2	15"	54"
1"	7'-6"	2	18"	54"
1"	8'-0"	2	18"	60"
1"	8'-6"	2	20"	62"
1"	9'-0"	2	22"	64"
1"	9'-6"	2	23"	68"
1"	10'-0"	2	24"	72"
1"	10'-6"	2	24"	78"
1"	11'-0"	2	24"	84"
1"	11'-6"	2	27"	84"
1"	12'-0"	2	30"	84"
1"	12'-6"	2	30"	90"
1"	13'-0"	2	30"	96"
1"	13'-6"	2	30"	102"
1"	14'-0"	2	30"	108"
1"	14'-6"	2	36"	102"
1"	15'-0"	2	36"	108"
1"	15'-6"	3	24"	69"
1"	16'-0"	3	24"	72"
1"	16'-6"	3	24"	75"
1"	17'-0"	3	24"	78"
1"	17'-6"	3	24"	81"
1"	18'-0"	3	24"	84"
1"	18'-6"	3	27"	84"
1"	19'-0"	3	27"	87"
1"	19'-6"	3	27"	90"
1"	20'-0"	3	30"	90"
1"	20'-6"	3	30"	93"
1"	21'-0"	3	30"	96"
1"	21'-6"	3	33"	96"
1"	22'-0"	3	36"	96"
1"	22'-6"	3	36"	99"
1"	23'-0"	3	36"	102"
1"	23'-6"	3	36"	105"
1"	24'-0"	3	36"	108"

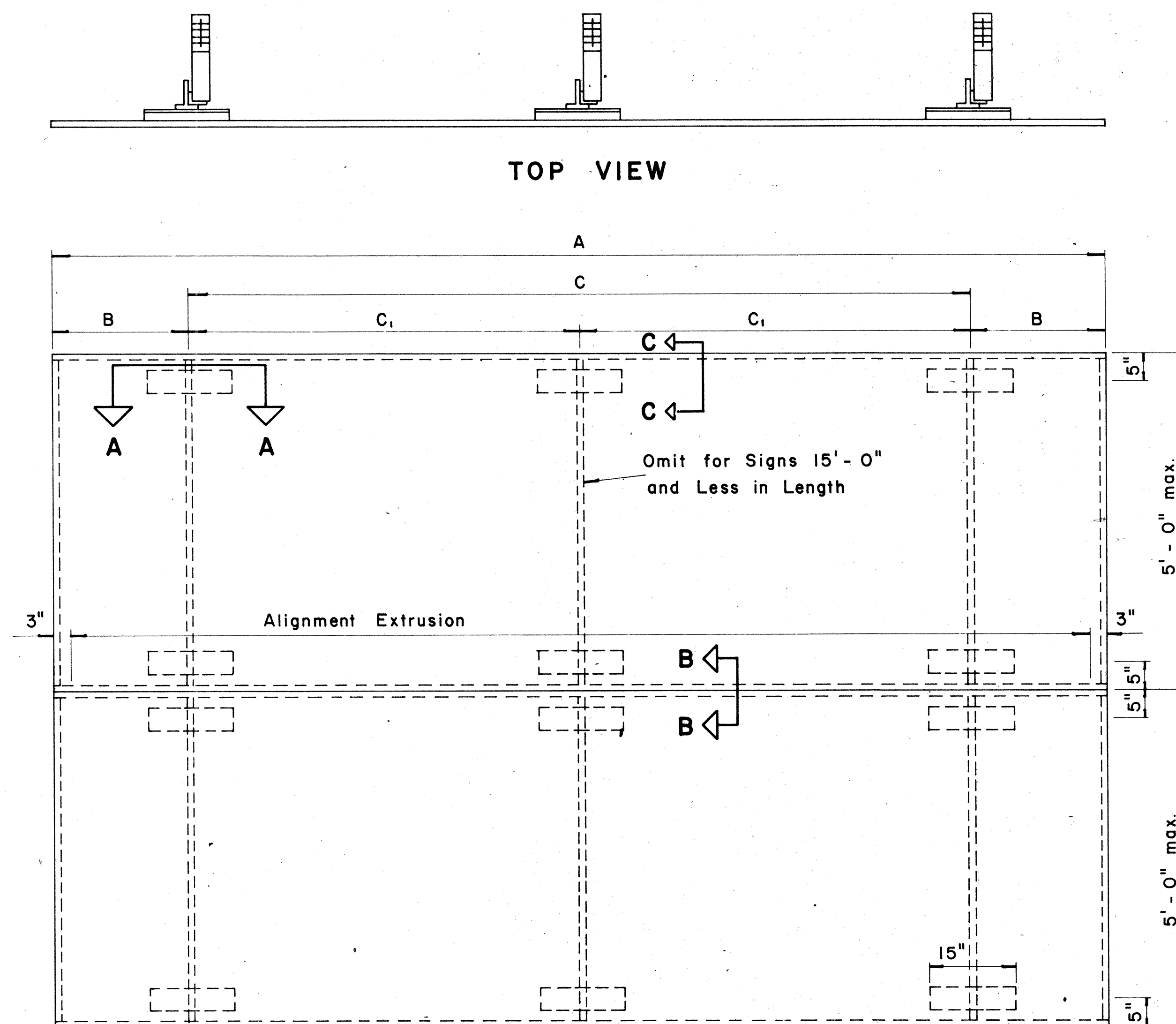
APPROVAL RECOMMENDED:
Eichi Tanaka 12/29/69
TRAFFIC ENGINEER DATE

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

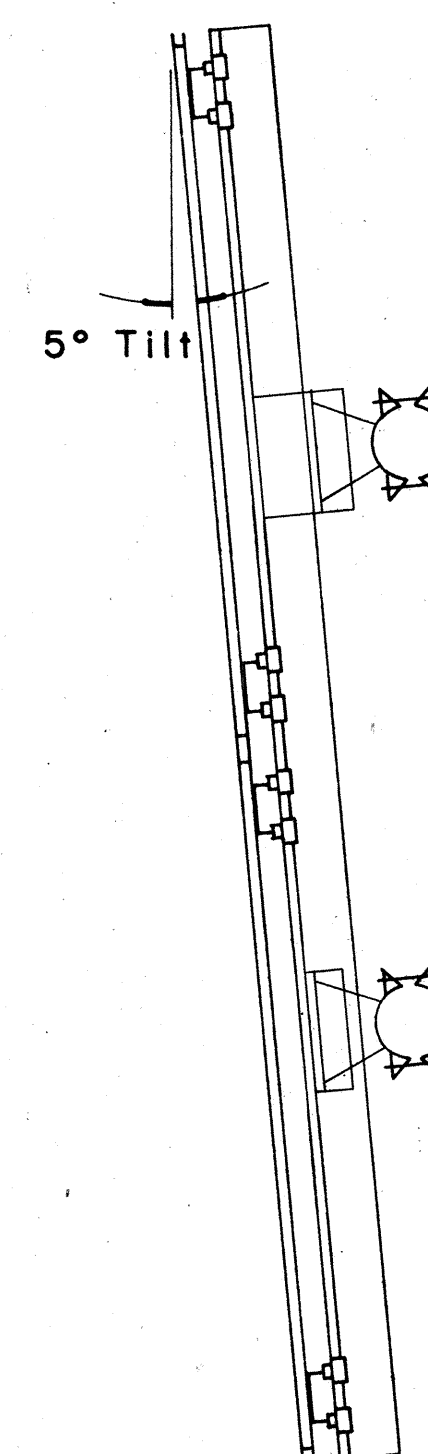
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

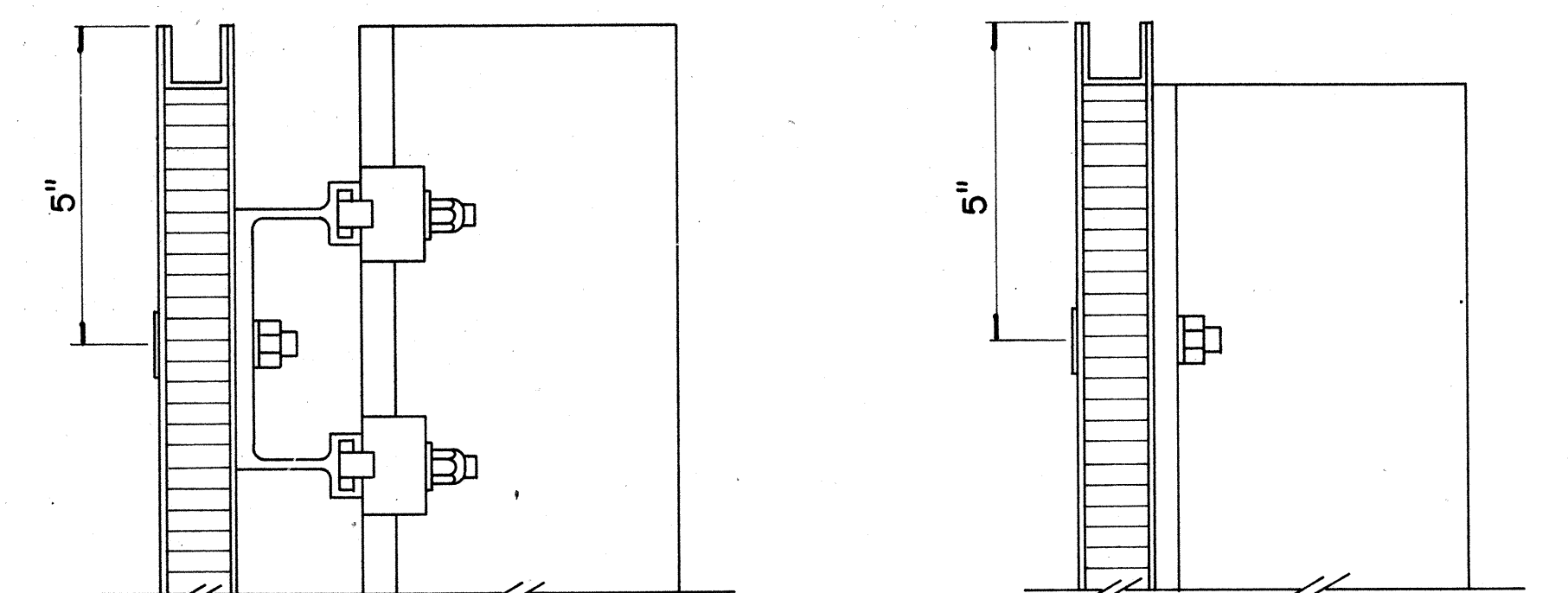
STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(OVERHEAD)
Scale: As Shown
SHEET No. 319 OF 106 SHEETS DT 205



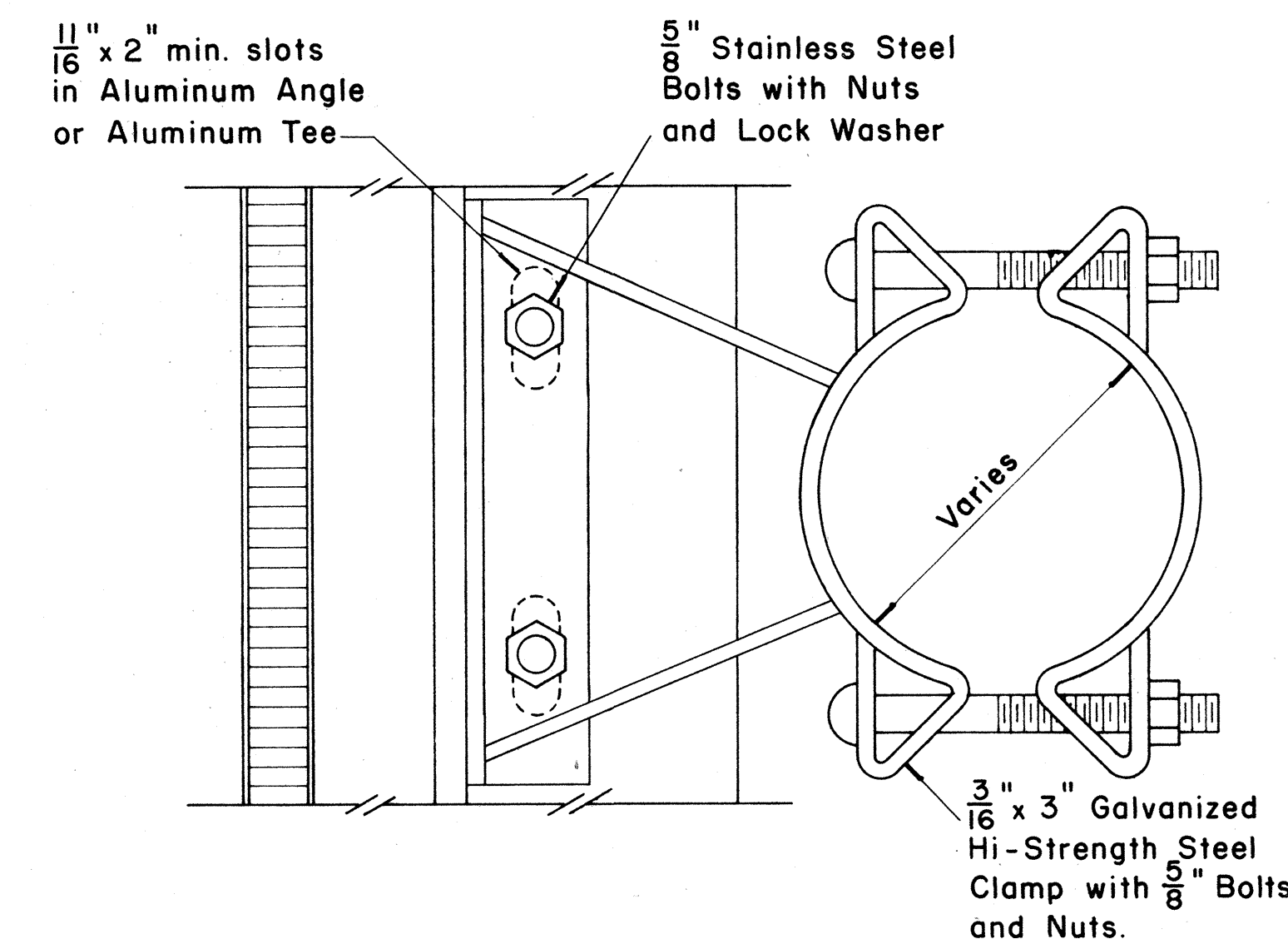
ELEVATION
TYPICAL SIGN ASSEMBLY
Scale: $\frac{3}{4}$ " = 1'-0"



SIDE VIEW

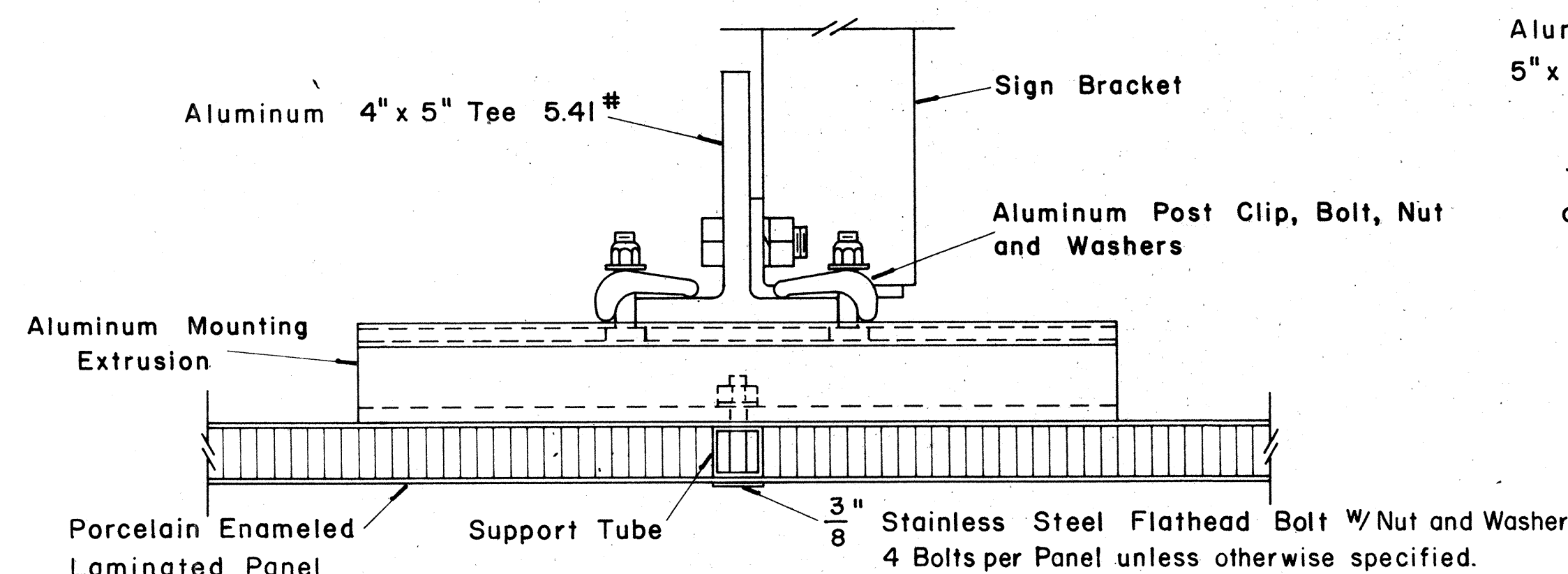


SECTION "C-C"
Scale: $\frac{3}{8}$ " = 1"
SECTION "C-C" (Alternate)
Scale: $\frac{3}{8}$ " = 1"

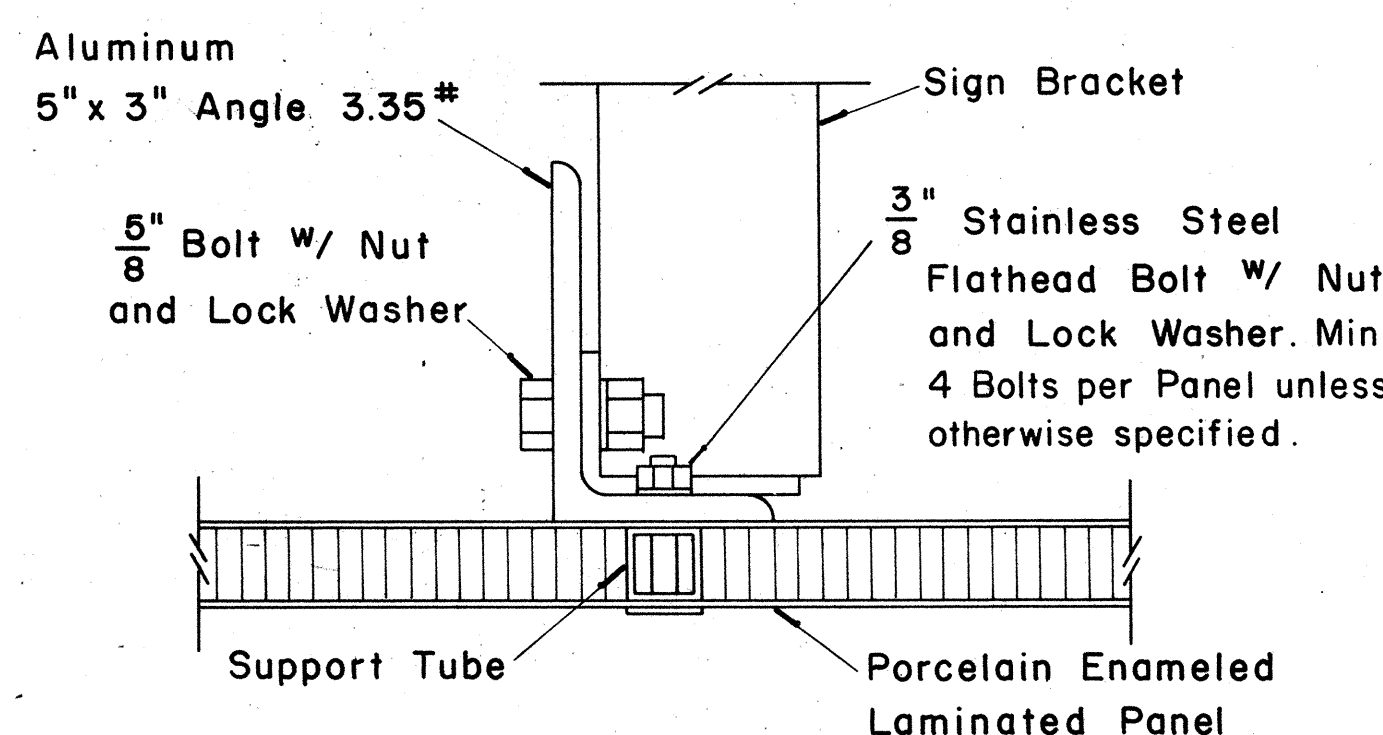


SIGN BRACKET ASSEMBLY
Scale: $\frac{3}{8}$ " = 1"

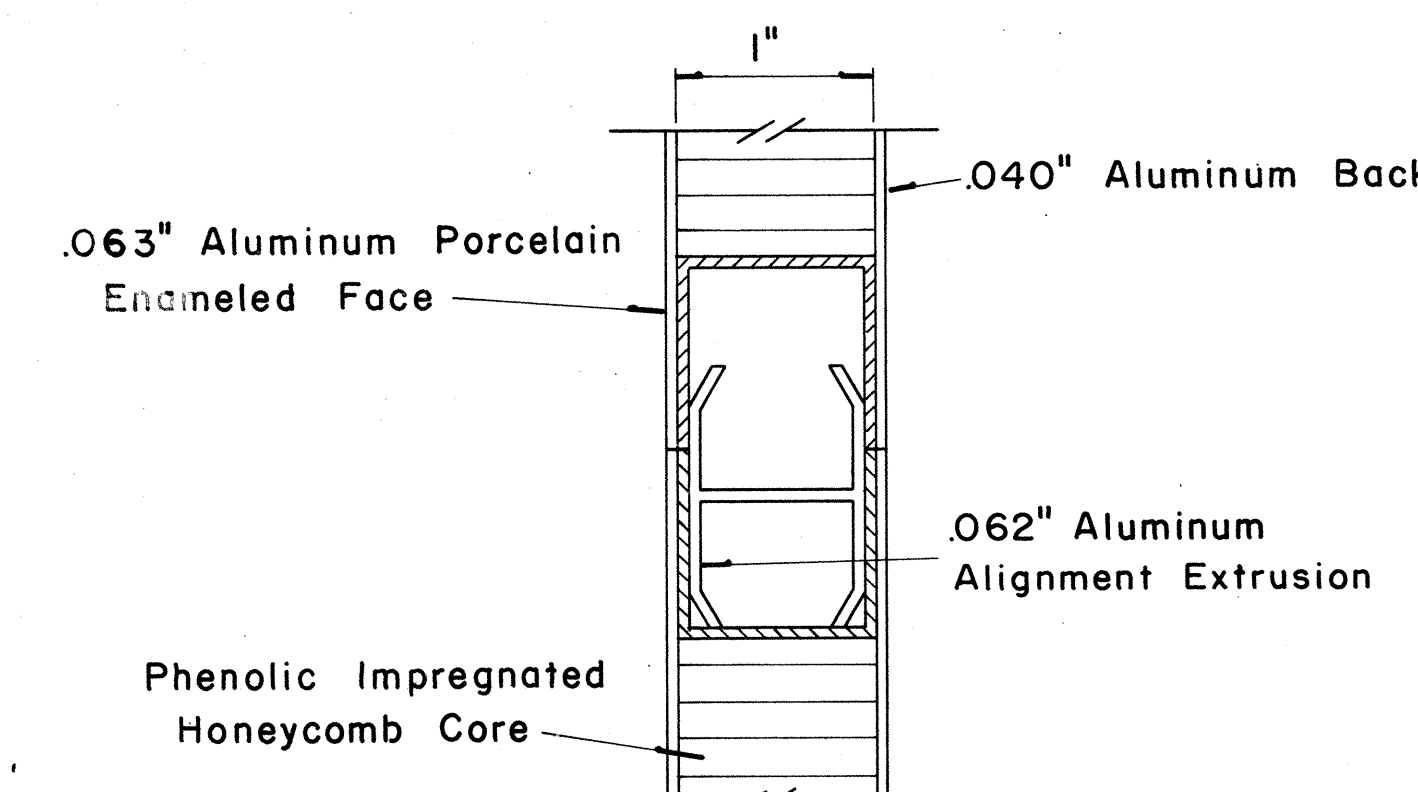
NOTE: For additional details of Sign Bracket Assembly, see Standard Detail Sheet "Overhead Sign Supports."



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



SECTION "A-A" (Alternate)
Scale: $\frac{3}{8}$ " = 1"



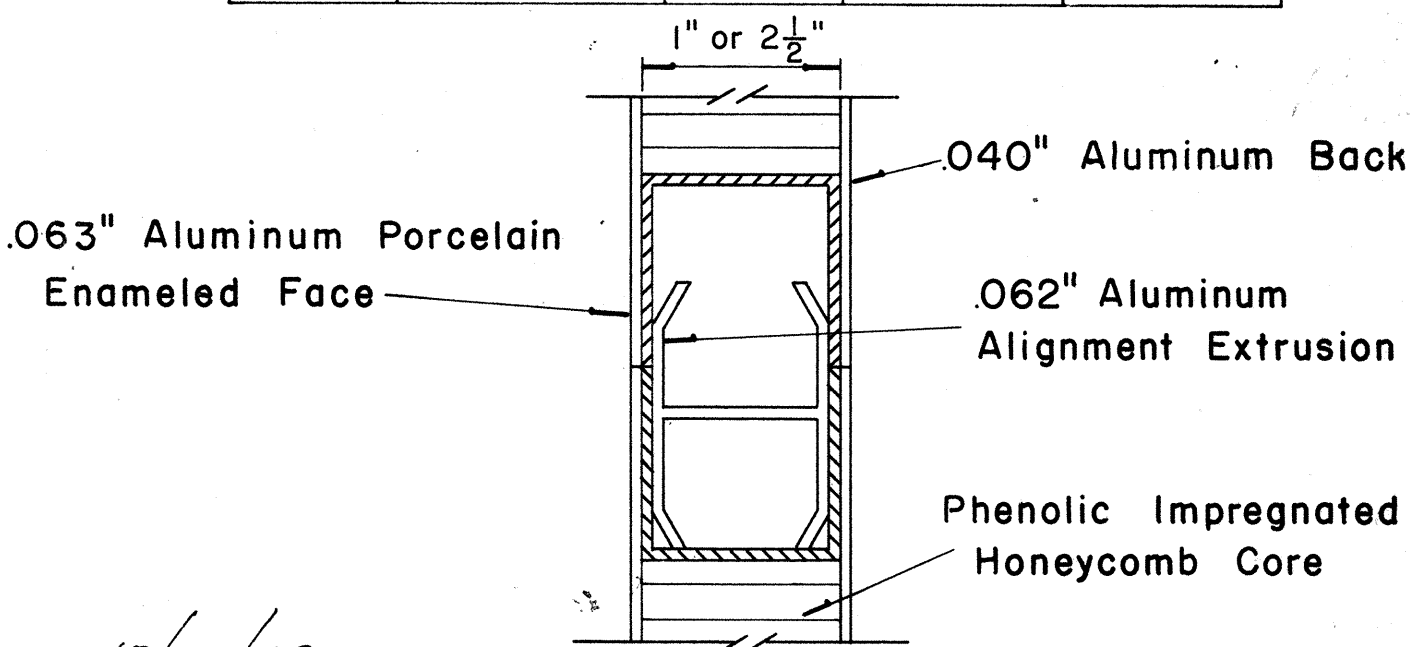
CLOSURE DETAIL
SECTION "B-B"
FULL SCALE

DATE
DRAWN BY
DESIGNED 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.	HI-1(73)-15	1974	320	369

(GROUND MOUNTED SIGNS)
SUPPORT SPACING TABLE

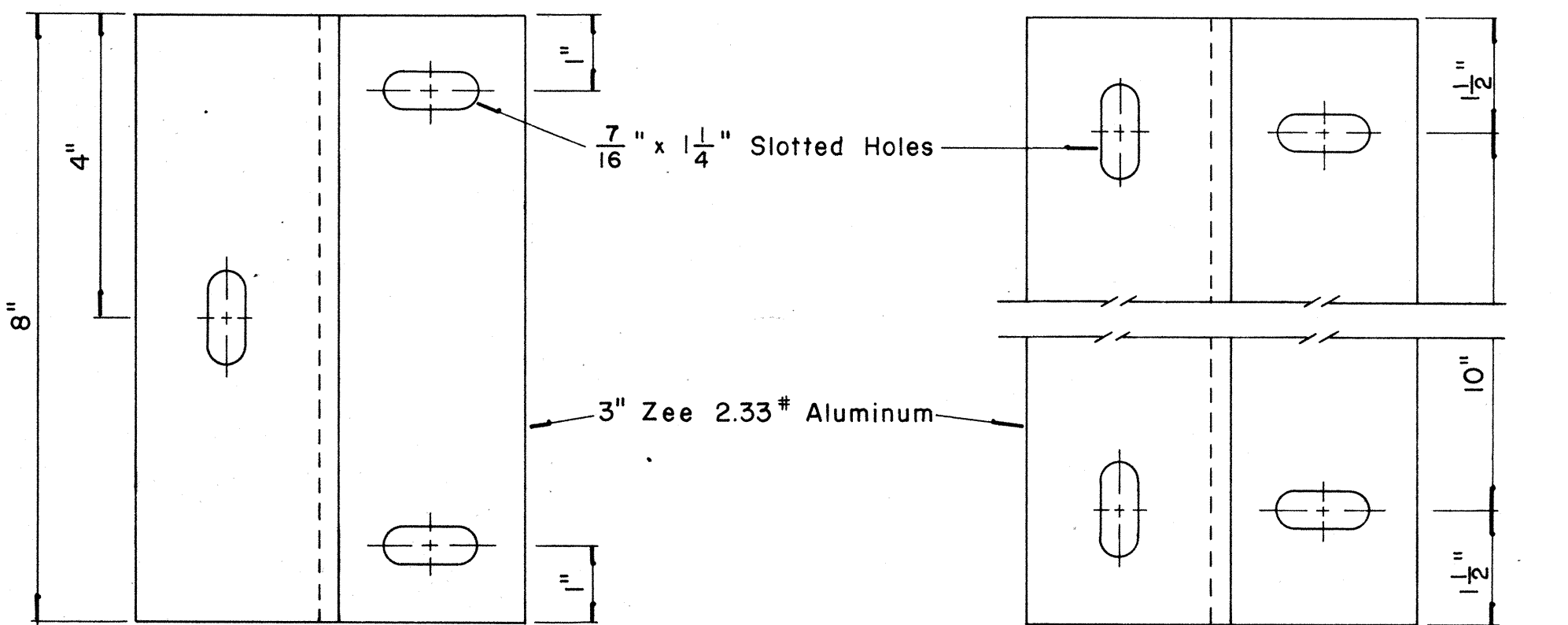
PANEL THICK.	LENGTH OF SIGN		NO. OF SUPPORTS	OVERHANG		SUPPORT SPACING
	A	B		B	C	
1"	6'-0"	2		12"	48"	
1"	6'-6"	2		15"	48"	
1"	7'-0"	2		15"	54"	
1"	7'-6"	2		18"	54"	
1"	8'-0"	2		18"	60"	
1"	8'-6"	2		20"	62"	
1"	9'-0"	2		22"	64"	
1"	9'-6"	2		23"	68"	
1"	10'-0"	2		24"	72"	
1"	10'-6"	2		24"	78"	
1"	11'-0"	2		24"	84"	
1"	11'-6"	2		27"	84"	
1"	12'-0"	2		30"	84"	
1"	12'-6"	2		30"	90"	
1"	13'-0"	2		30"	96"	
1"	13'-6"	2		30"	102"	
1"	14'-0"	2		30"	108"	
1"	14'-6"	2		36"	102"	
1"	15'-0"	2		36"	108"	
2.5"	15'-6"	2		36"	114"	
2.5"	16'-0"	2		39"	114"	
2.5"	16'-6"	2		39"	120"	
2.5"	17'-0"	2		39"	126"	
2.5"	17'-6"	2		42"	126"	
2.5"	18'-0"	2		42"	132"	
2.5"	18'-6"	2		45"	132"	
2.5"	19'-0"	2		45"	138"	
2.5"	19'-6"	2		45"	144"	
2.5"	20'-0"	2		48"	144"	
2.5"	20'-6"	2		48"	150"	
2.5"	21'-0"	2		51"	150"	
2.5"	21'-6"	2		51"	156"	
2.5"	22'-0"	2		51"	162"	
2.5"	22'-6"	2		54"	162"	
2.5"	23'-0"	2		54"	168"	
2.5"	23'-6"	2		54"	174"	
2.5"	24'-0"	2		57"	174"	



CLOSURE DETAIL
SECTION "C-C"
FULL SCALE

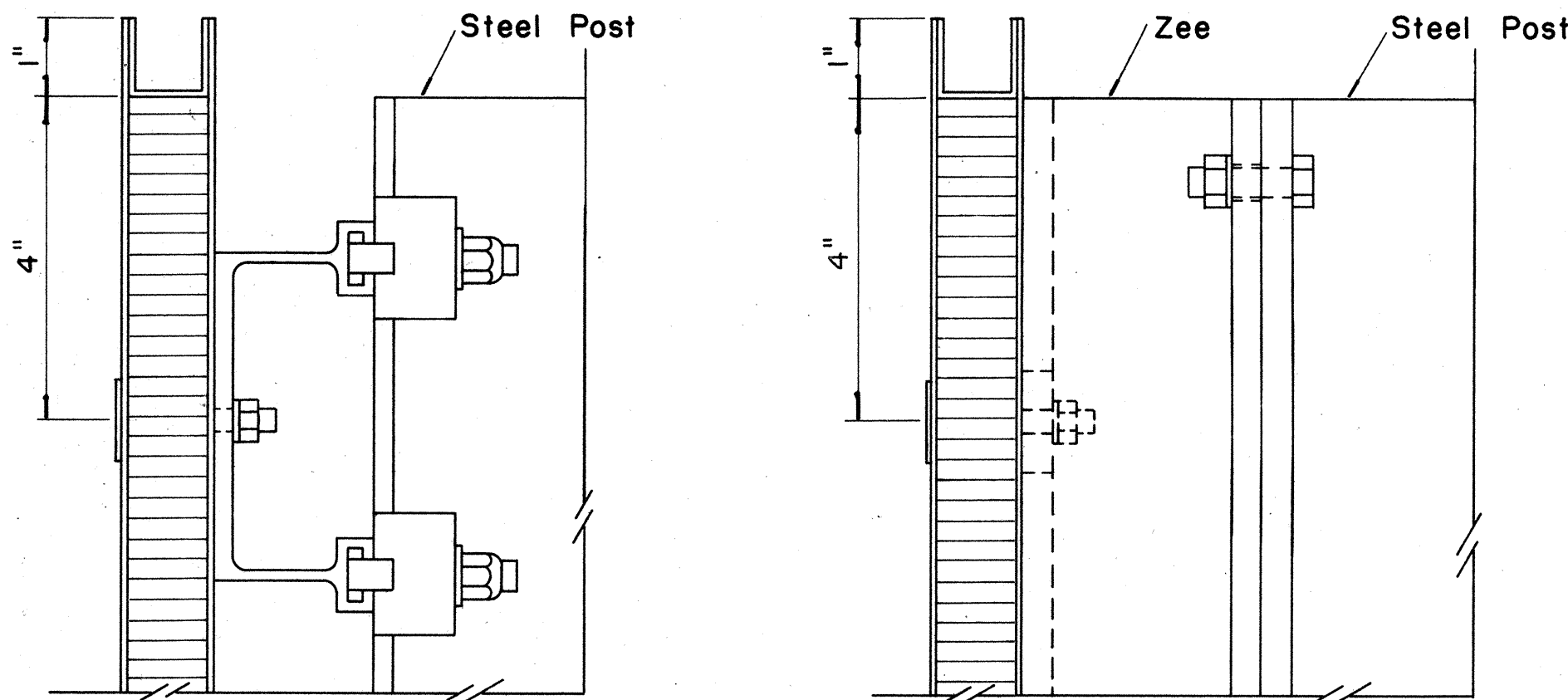
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
LAMINATED ALUMINUM
SIGN PANELS
(GROUND MOUNTED)
Scale: As Shown



ZEE MOUNTING DETAILS

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



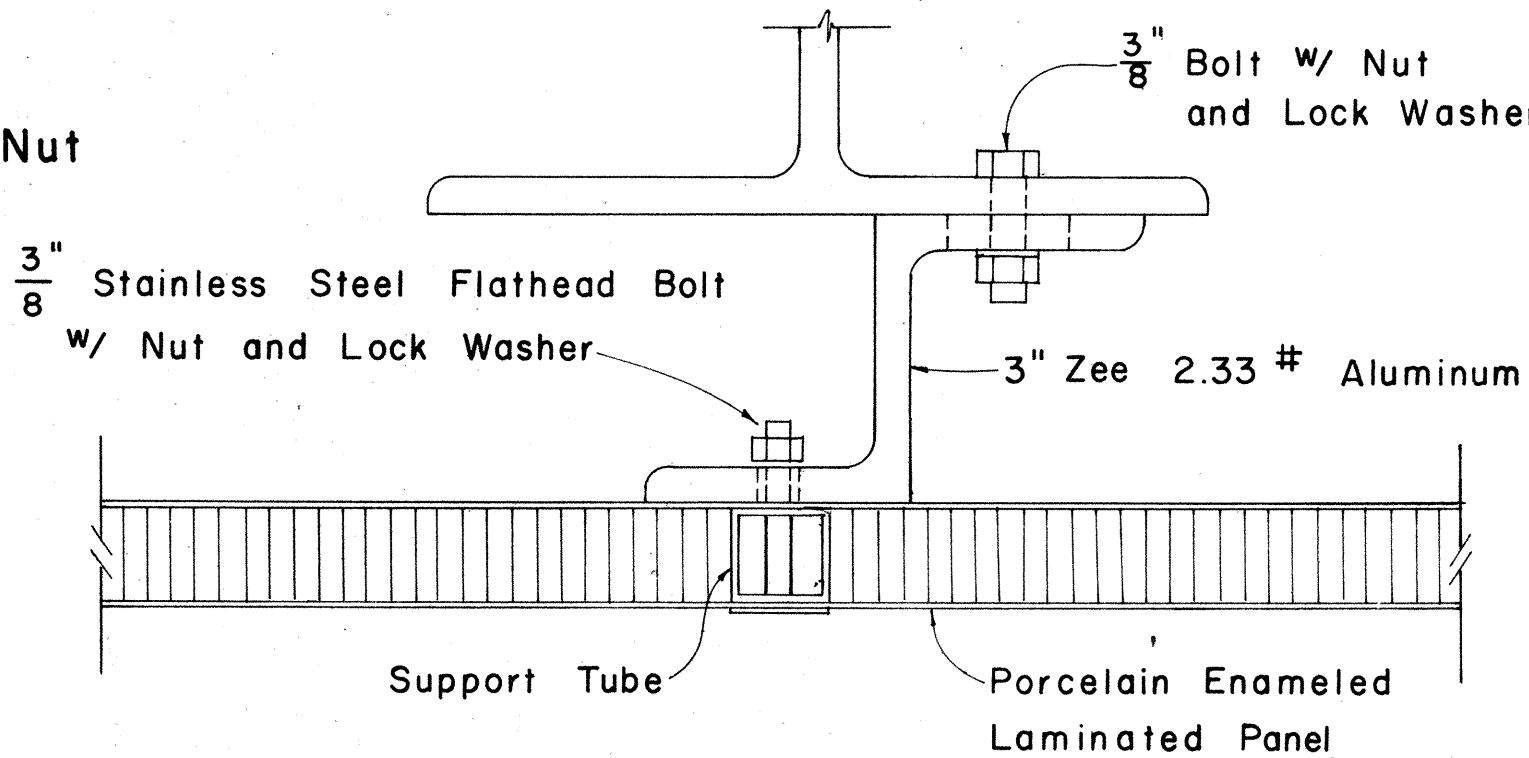
SECTION "B-B"

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

SECTION "B-B"

(Alternate)

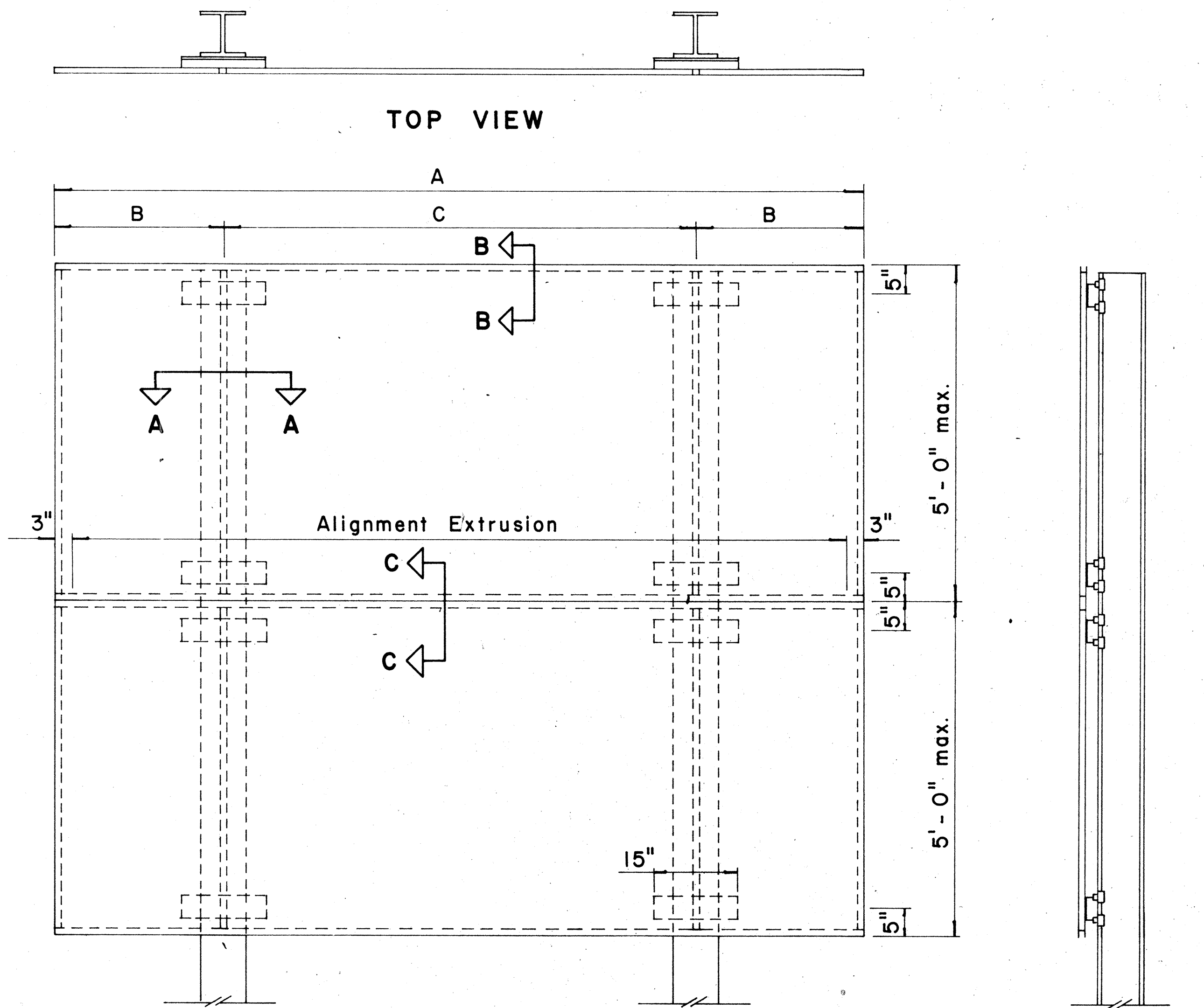
Scale: $\frac{1}{2}$ " = 1'



SECTION "A-A"

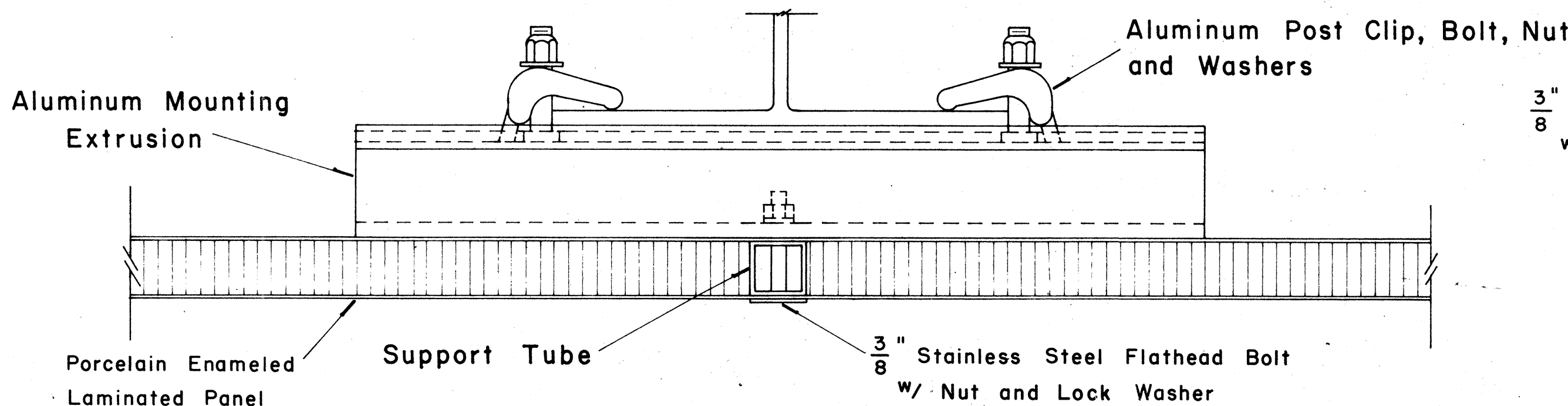
(Alternate)

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



TYPICAL SIGN ASSEMBLY

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



SECTION "A-A"

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

APPROVAL RECOMMENDED:

Erich Tanaka
TRAFFIC ENGINEER

12/29/69
DATE

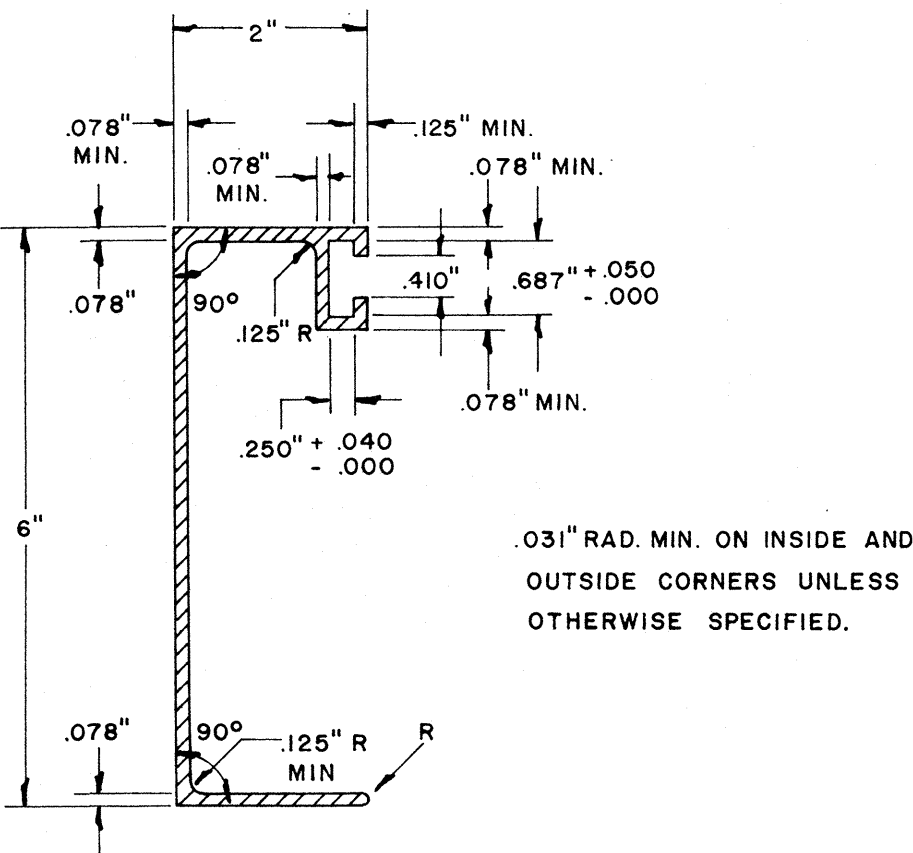
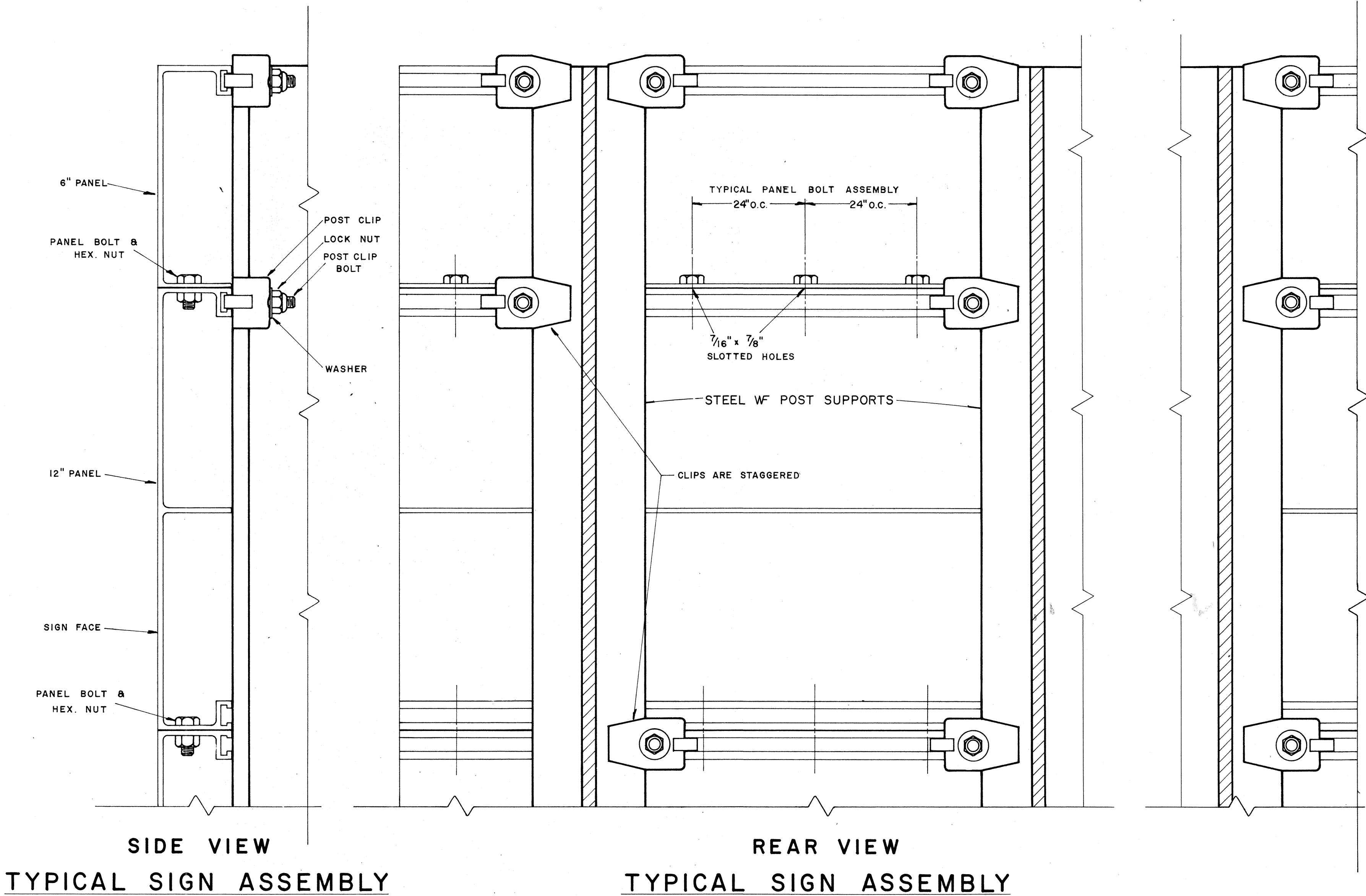
APPROVED:

John J. [Signature]
ASSISTANT CHIEF, ENGINEERING

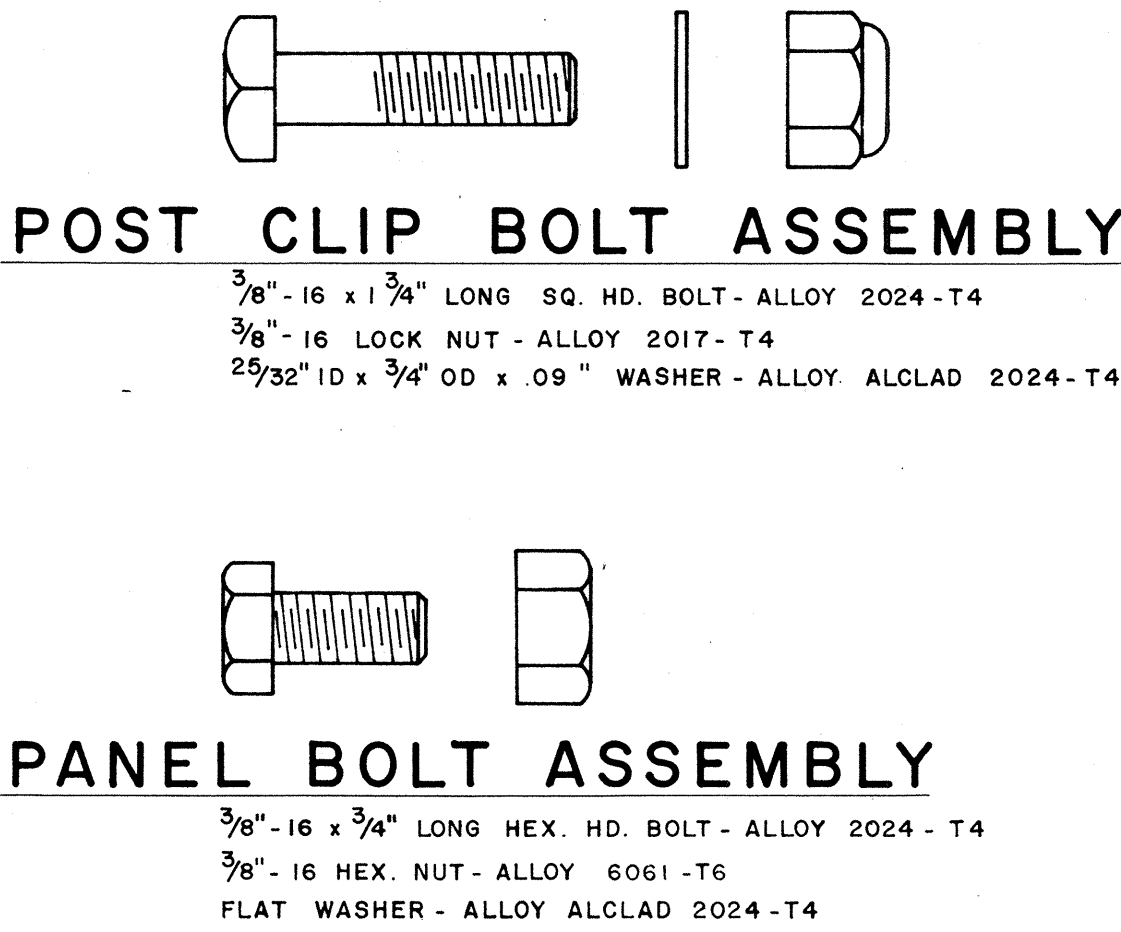
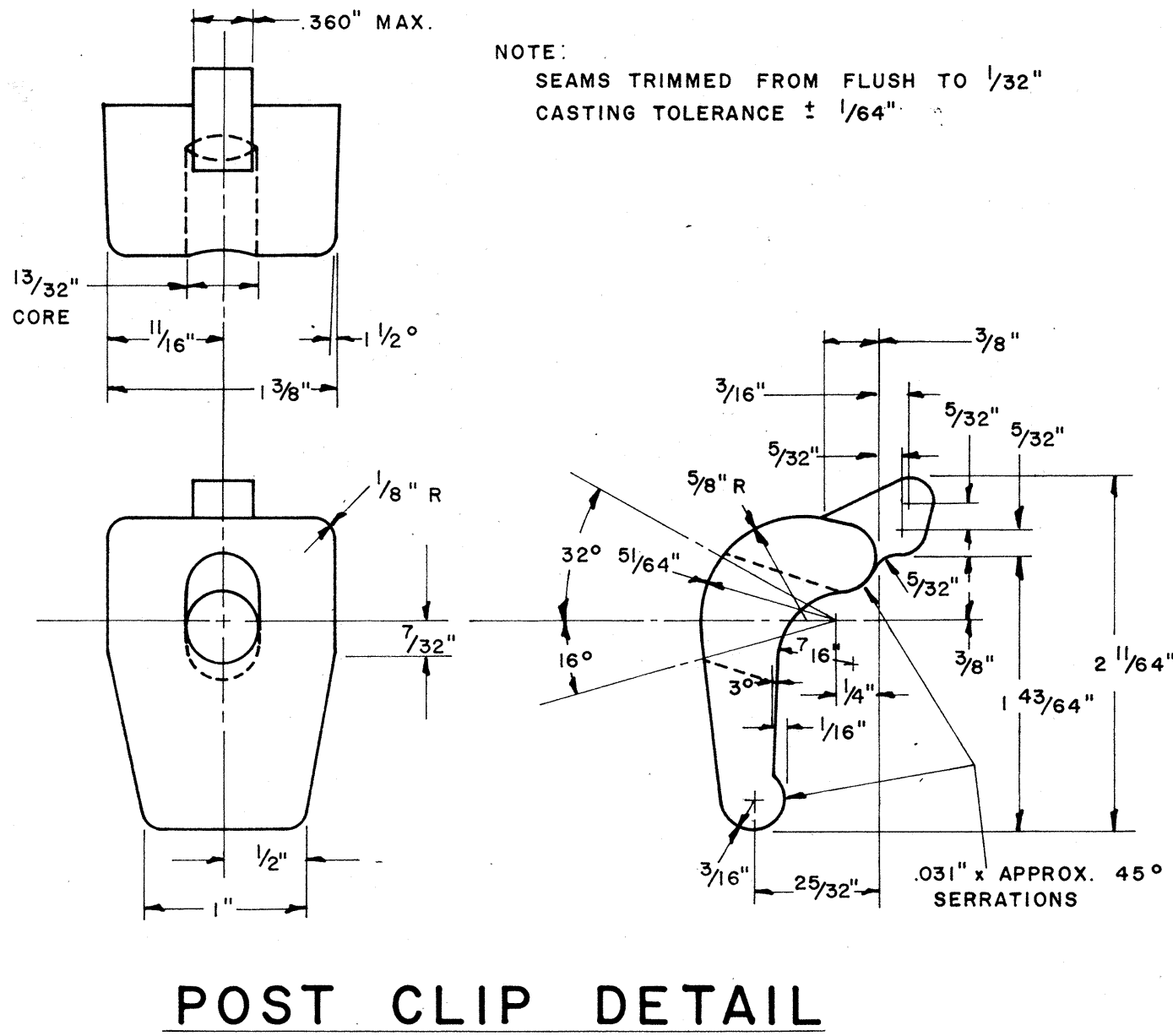
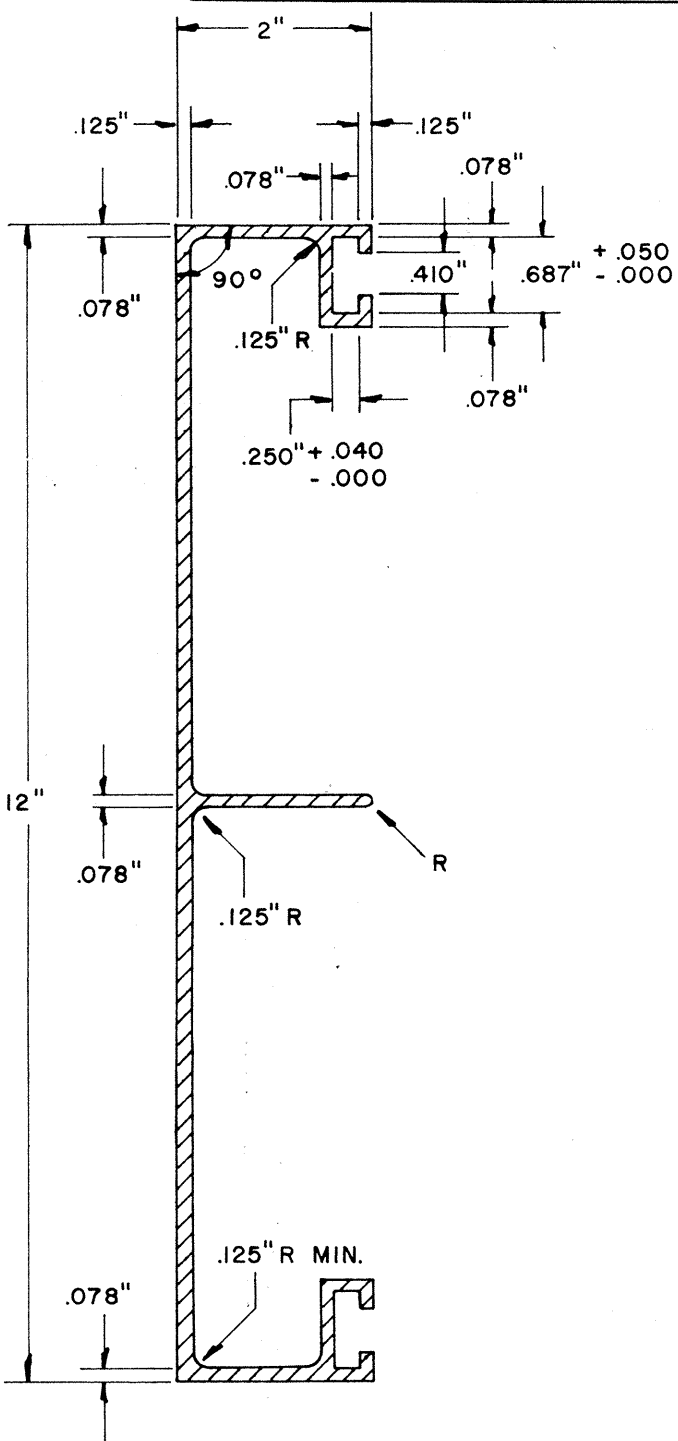
12-30-69
DATE

NO.	REVISION	APPROVED BY	DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(73)15	1974	321	369



SOLID EXTRUDED SIGN PANEL DETAILS



NOTE:
Extruded Aluminum Panels to be used for
Destination Signs with Reflective Sheeting Background

APPROVAL RECOMMENDED:
Eishi Tanaka 12/29/62
TRAFFIC ENGINEER DATE

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

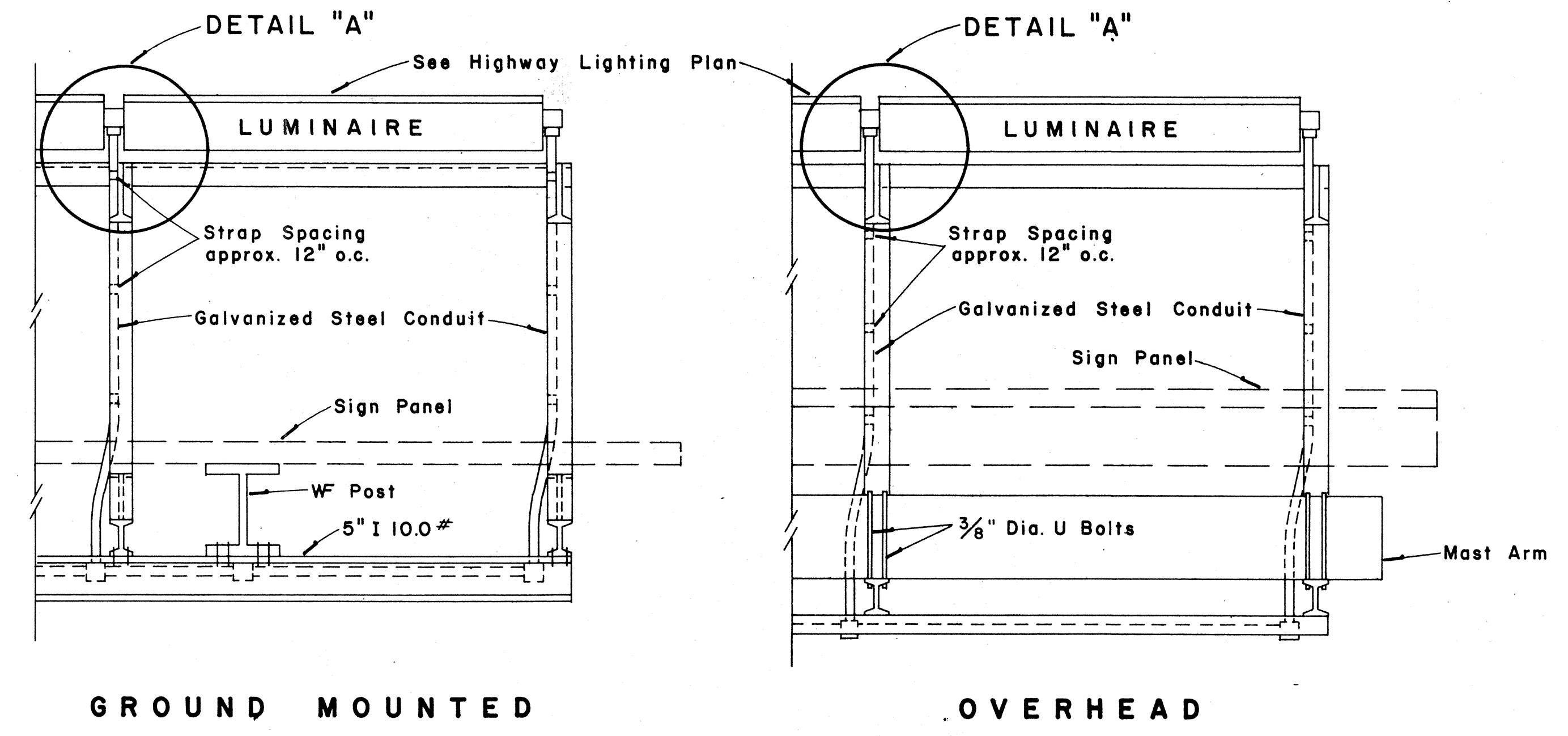
NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
SOLID ALUMINUM
EXTRUDED SIGN PANEL
AND
ACCESSORY DETAILS
SCALE:

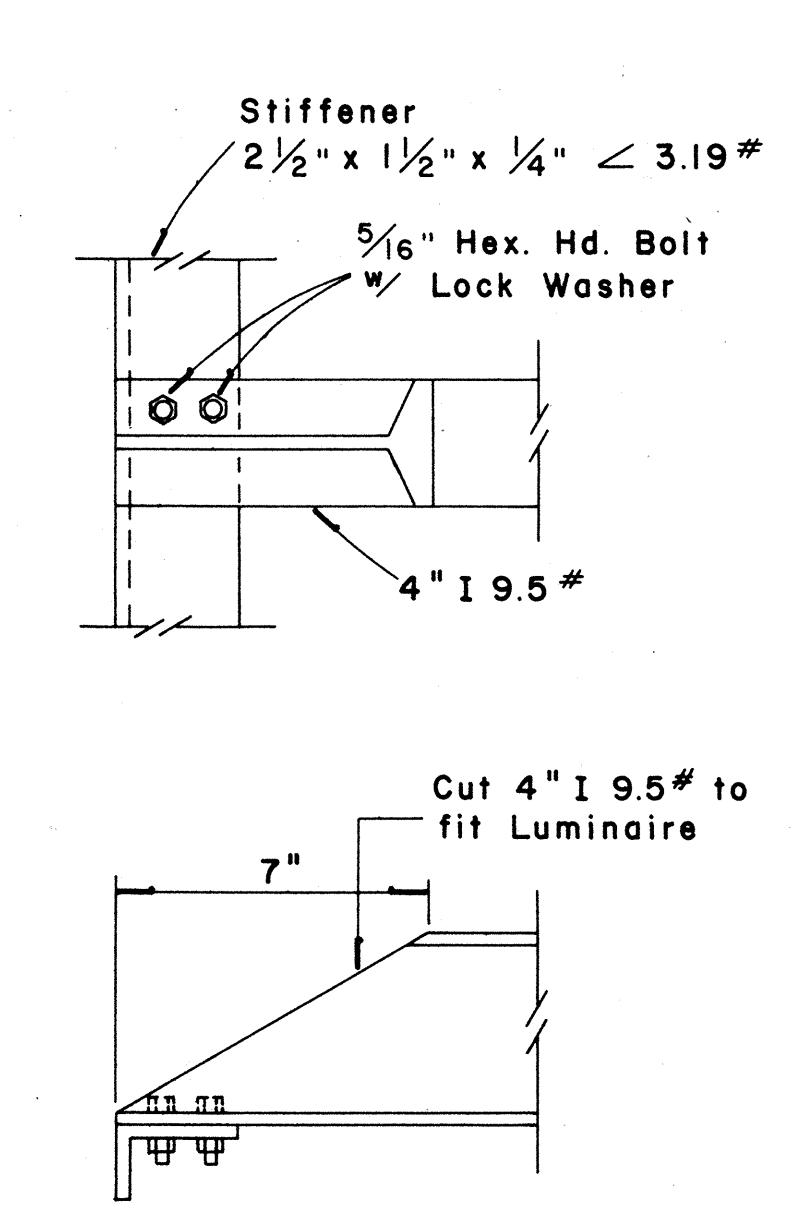
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-11(73)15	1974	322	369

GENERAL NOTES

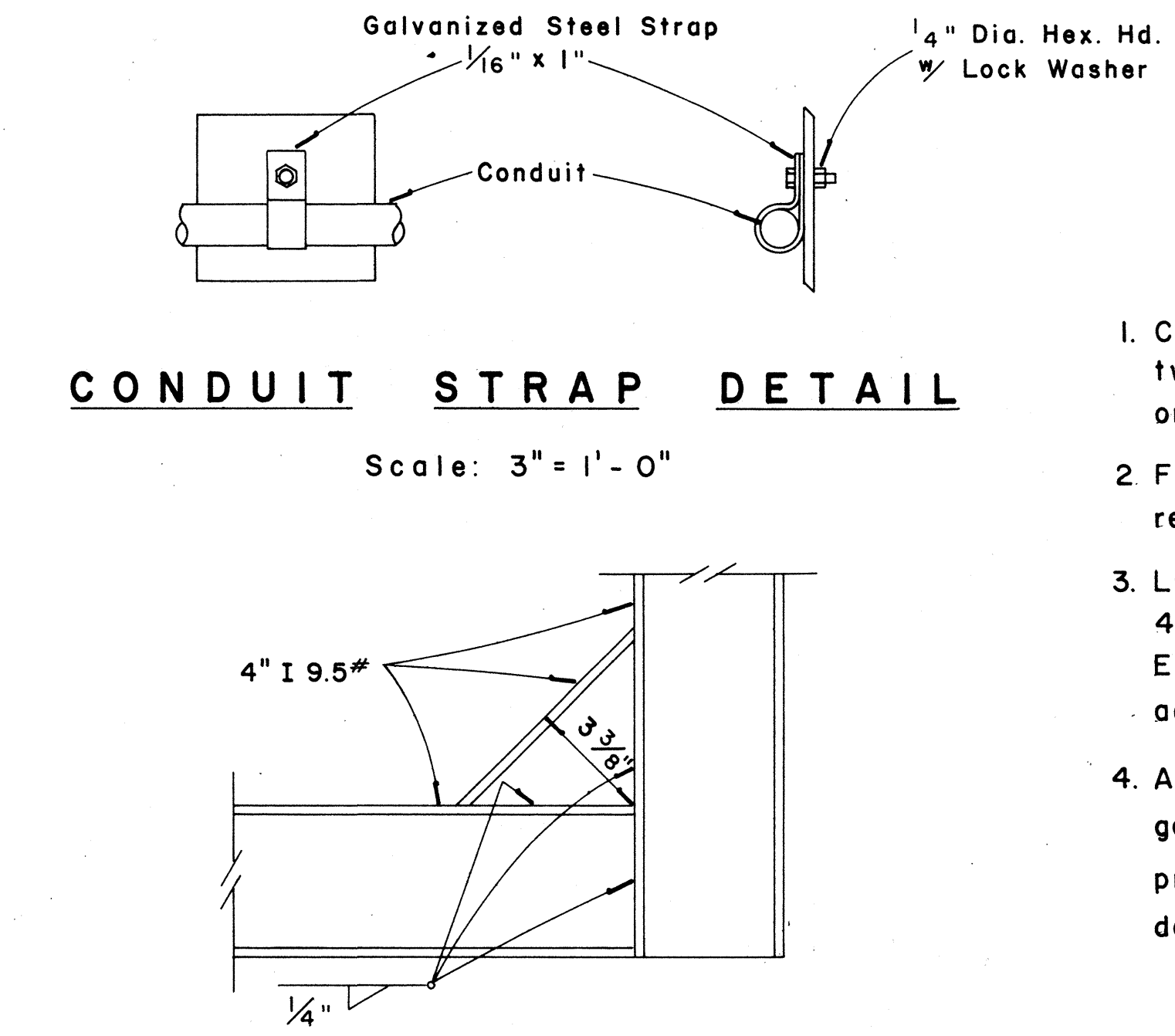
1. Conduit sizes: $\frac{3}{4}$ " diameter for one or two Luminaire Units, 1" diameter for three or more Luminaire Units.
2. Fluorescent Fixtures shall be installed as recommended by the manufacturer.
3. Luminaire brackets shall be spaced to fit 4'-0" to 6'-0" luminaires with fittings. Eight feet (8'-0") luminaires shall have an additional bracket at midpoint.
4. All parts of the bracket shall be hot-dip galvanized, prime coated with a suitable primer and painted with three coats of dark green enamel.



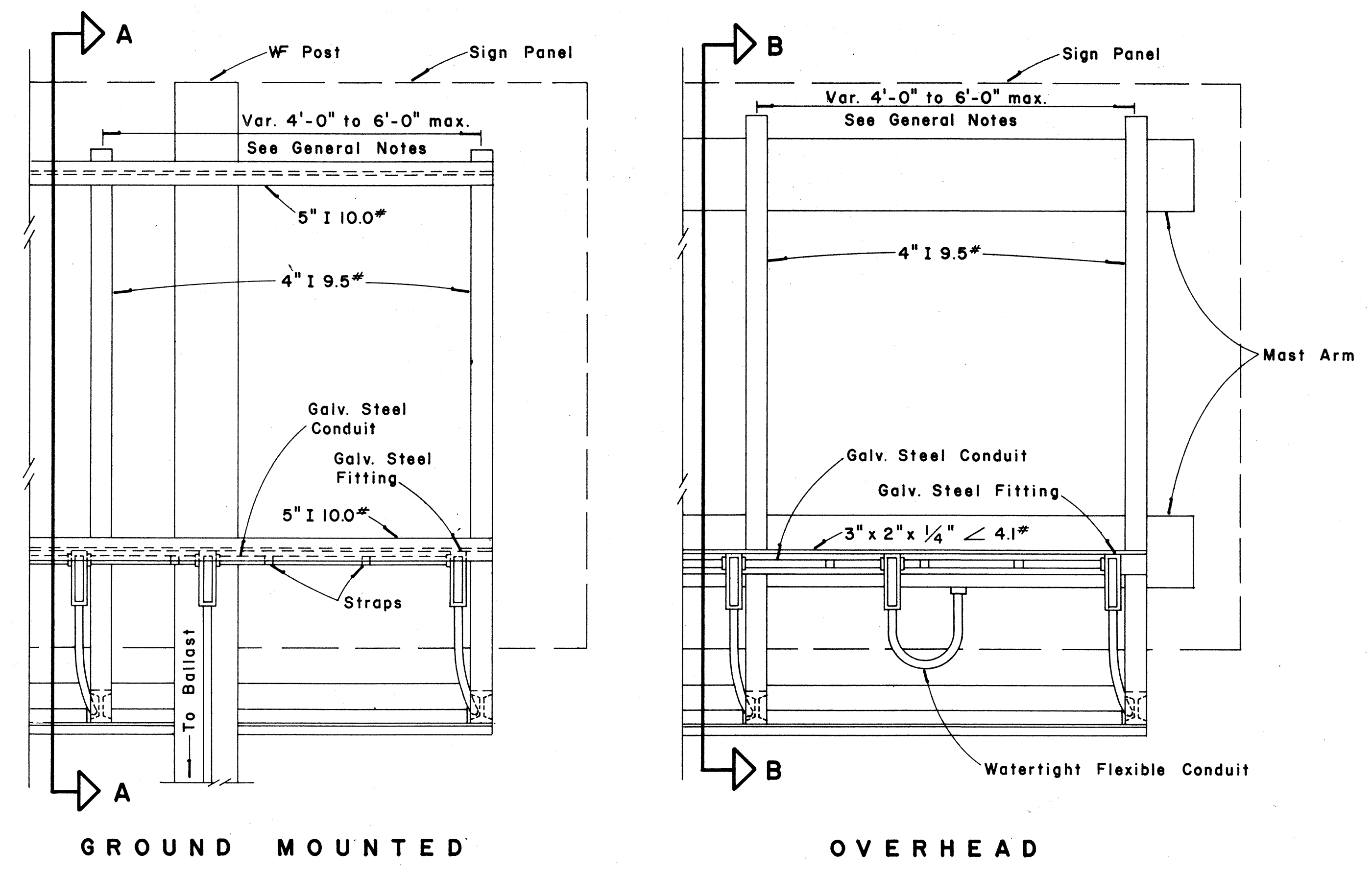
TOP VIEW
LUMINAIRE MOUNTING
Scale: 1" = 1'-0"



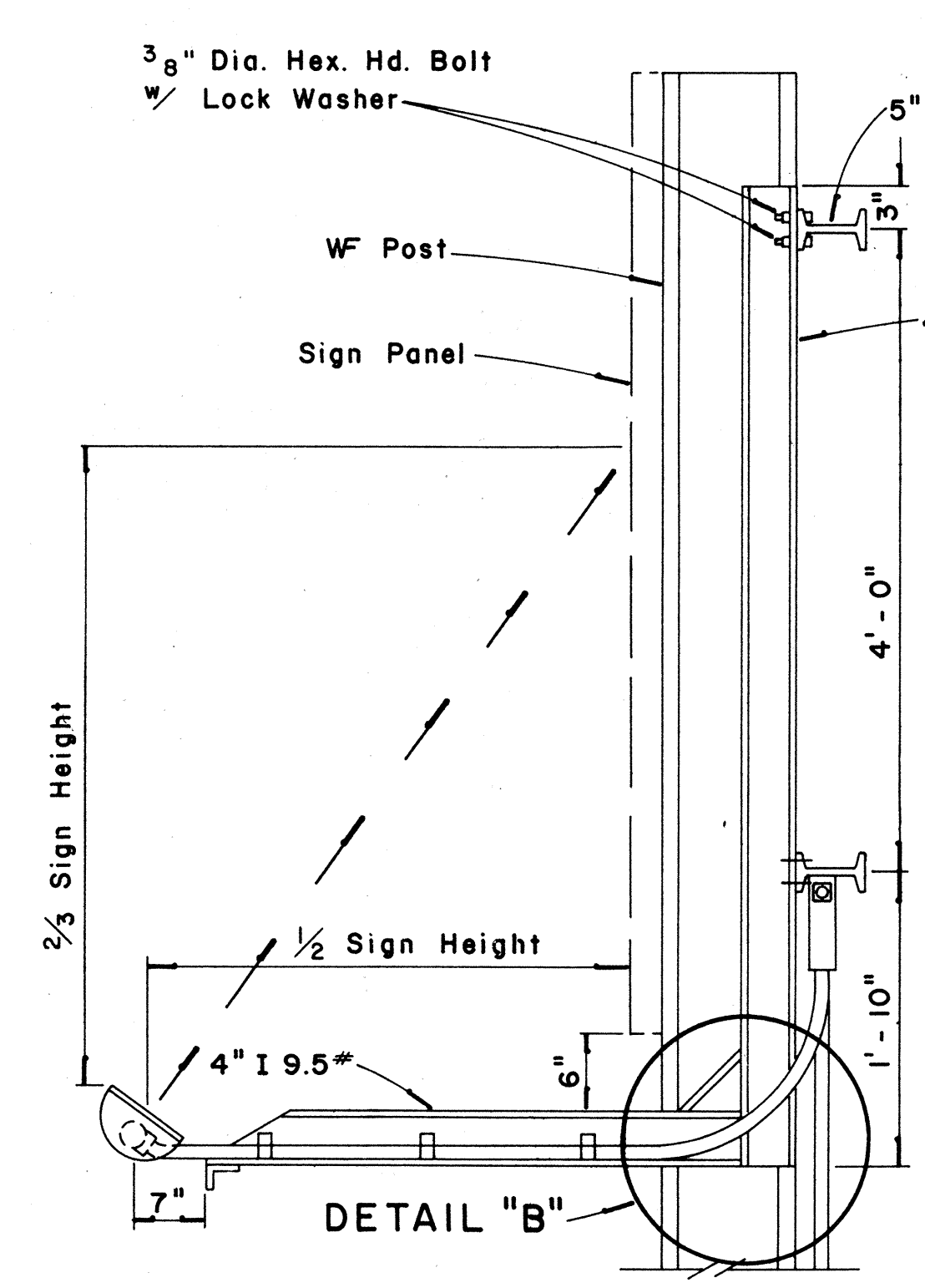
DETAIL "A"
Scale: 3" = 1'-0"



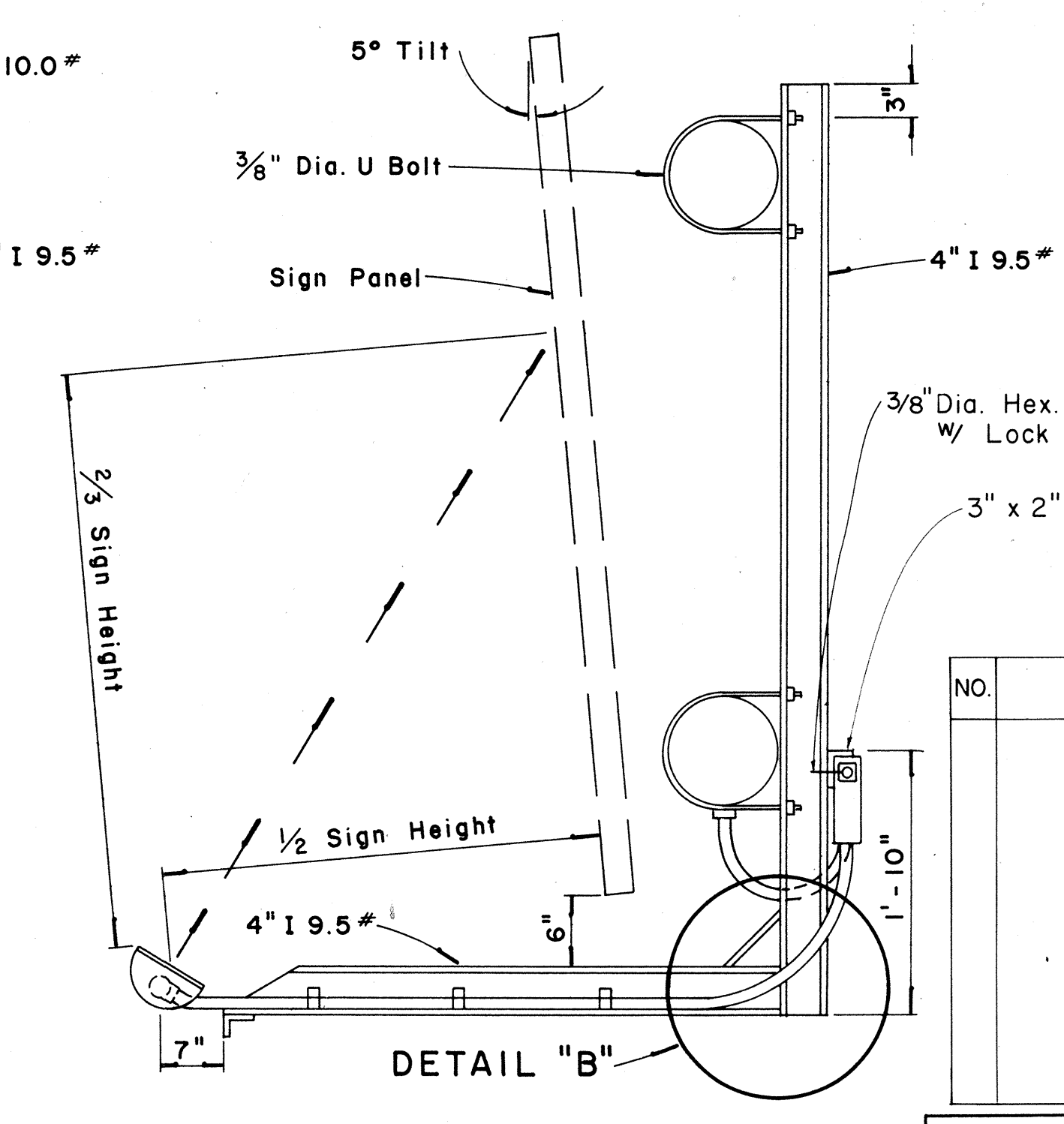
CONDUIT STRAP DETAIL
Scale: 3" = 1'-0"
DETAIL "B"
Scale: 3" = 1'-0"



REAR VIEW
LUMINAIRE MOUNTING
Scale: 1" = 1'-0"



SECTION "A-A"
Scale: 1" = 1'-0"



SECTION "B-B"
Scale: 1" = 1'-0"
APPROVAL RECOMMENDED:
Erich Tanaka
TRAFFIC ENGINEER
DATE: 12/23/69
APPROVED:
[Signature]
ASSISTANT CHIEF, ENGINEERING
DATE: 12/30/69

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**EXPRESSWAY SIGNS
LUMINAIRE MOUNTINGS**

Scale: As Shown
SHEET No. 322 OF 369 SHEETS DT 208

ORIGINAL PLAN
DATE
DRAWN BY
CHECKED BY
NOTED BY
QUANTITIES BY