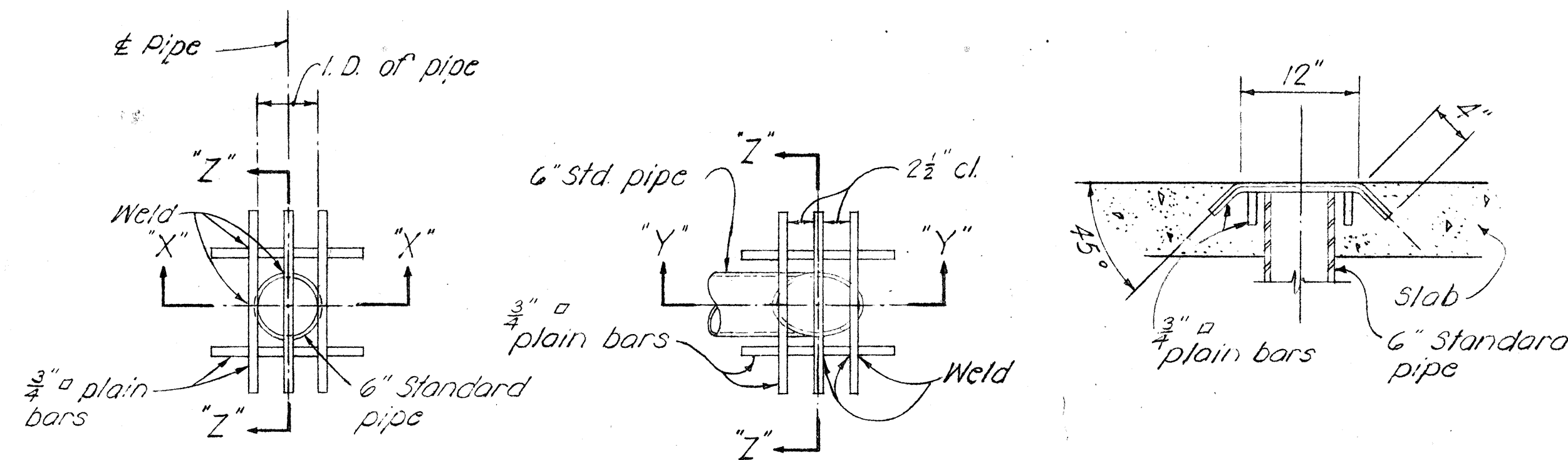
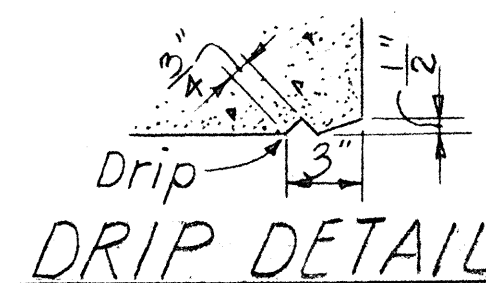


GENERAL NOTES

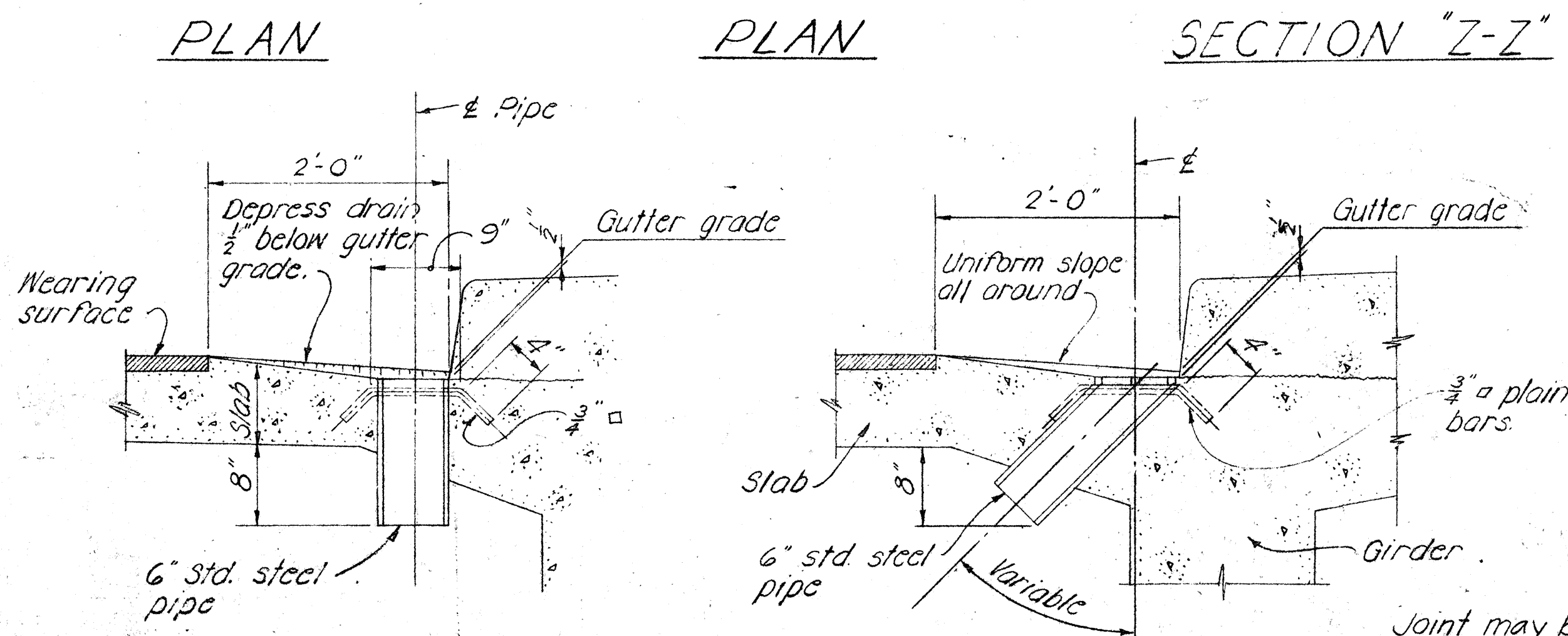
- All concrete shall be Class A unless otherwise noted.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted.
 - 1/2" 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.



TYPICAL CONCRETE GROOVE DETAIL



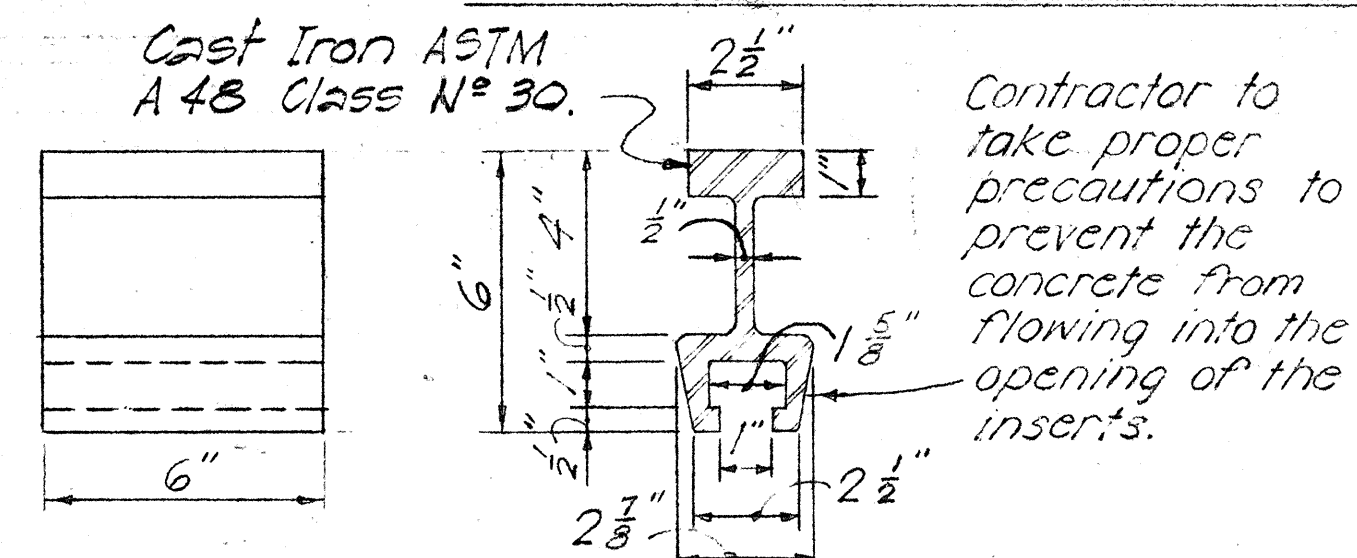
DRIP DETAIL



SECTION "X-X" SECTION "Y-Y"

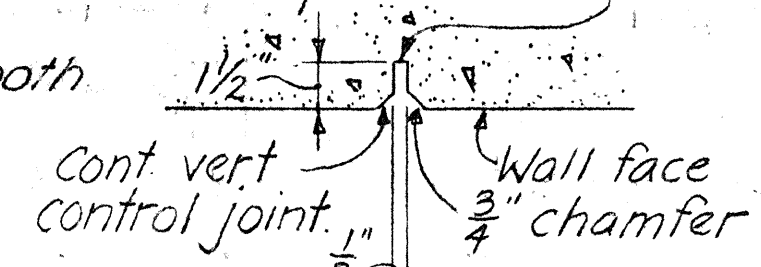
NOTE: Metal drains shall be considered incidental to Class A Concrete in both concrete and steel bridges and will not be paid for separately. Assembly of grillage and pipe shall be hot-dip galvanized after all welding is completed.

TYPICAL DRAINAGE DETAILS

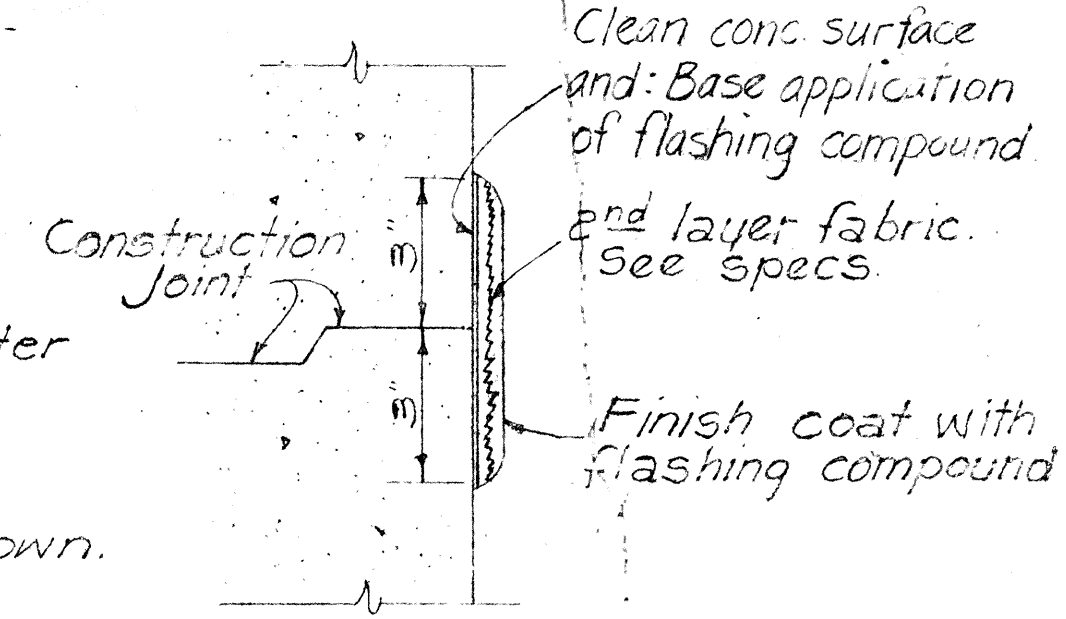


INSERT DETAIL

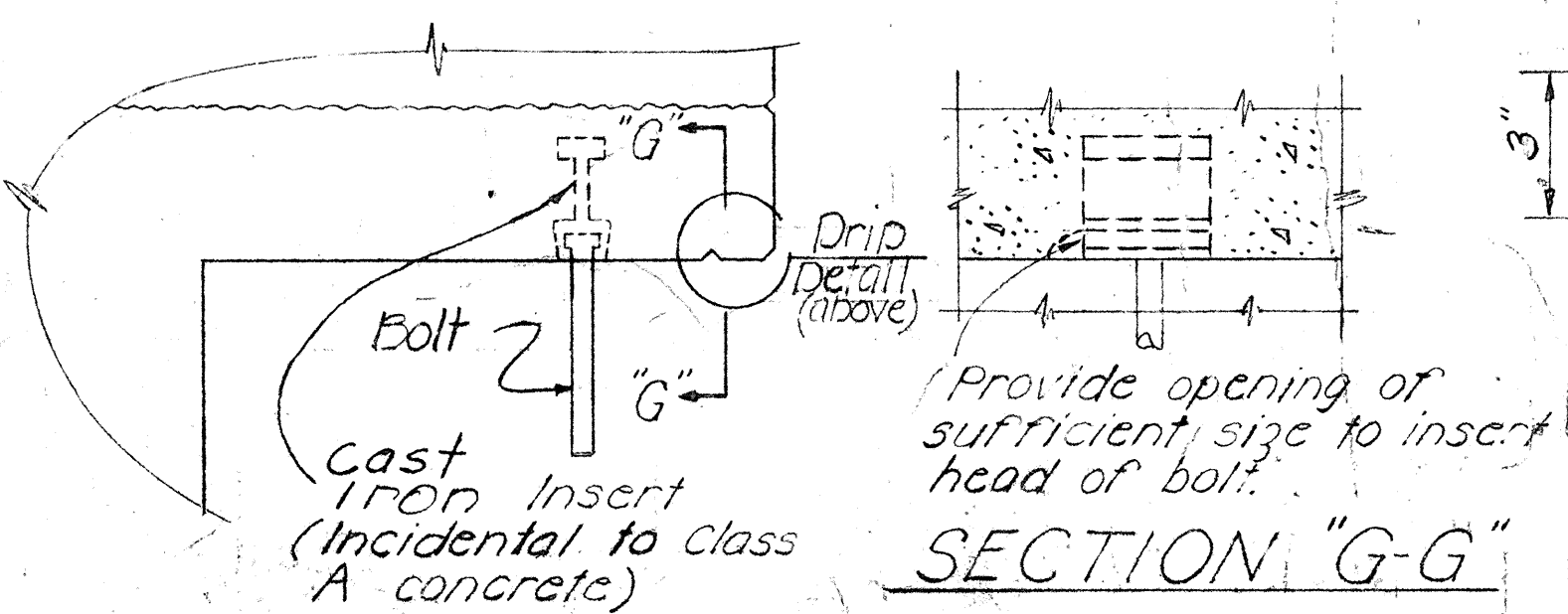
Contractor to take proper precautions to prevent the concrete from flowing into the opening of the inserts.



CONTROL JOINT DETAILS



TYP. FLASHING COMPOUND WATERPROOFING DETAIL

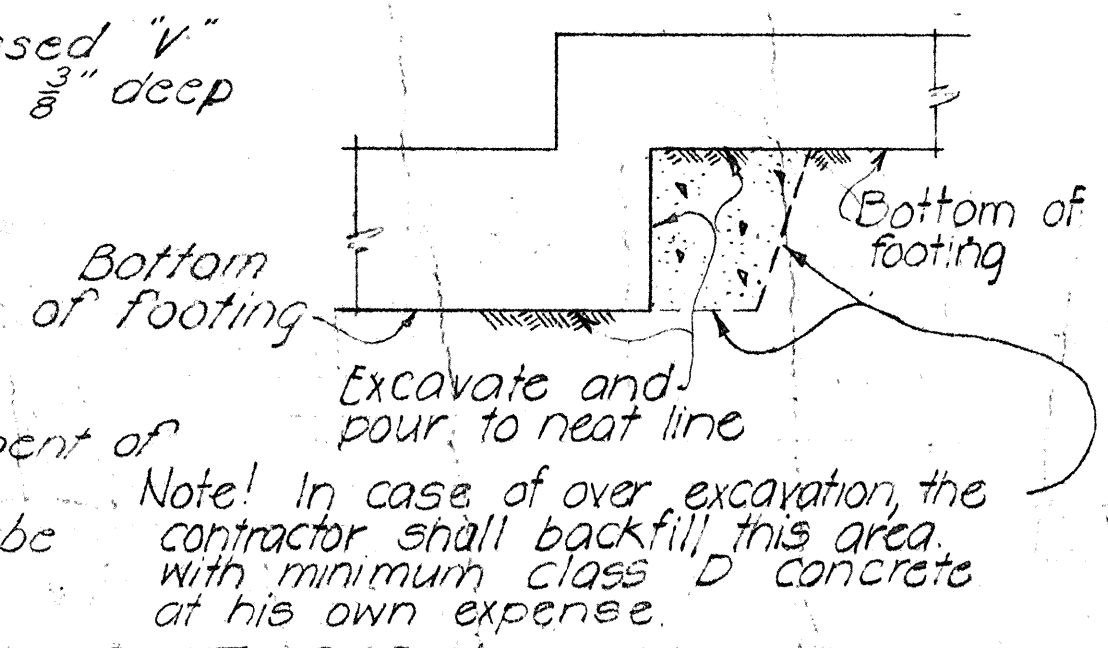


DETAIL of PIPE HANGERS & INSERTS

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 EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

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

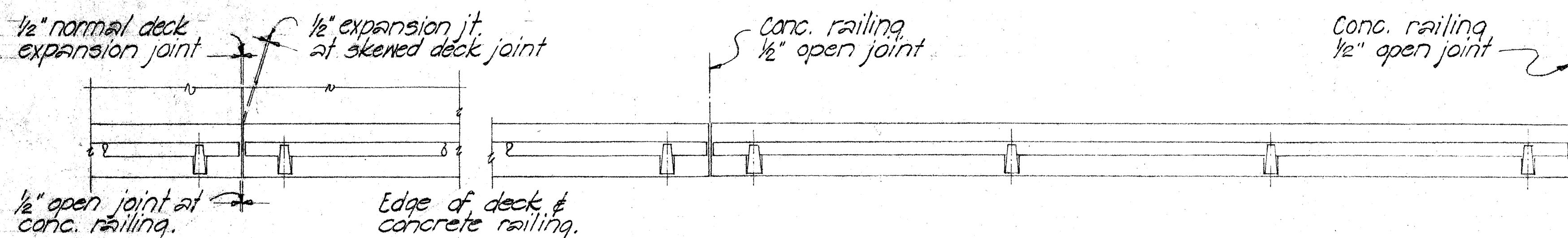
APPROVED
Paul T. Yamashita
1-28-70
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
NOTES AND MISCELLANEOUS
DETAILS
Date: October 1969
SHEET No. 1 OF 1 SHEETS DB-100

NO.	REVISION	APPROVED BY	DATE

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(7)	1972	74	113



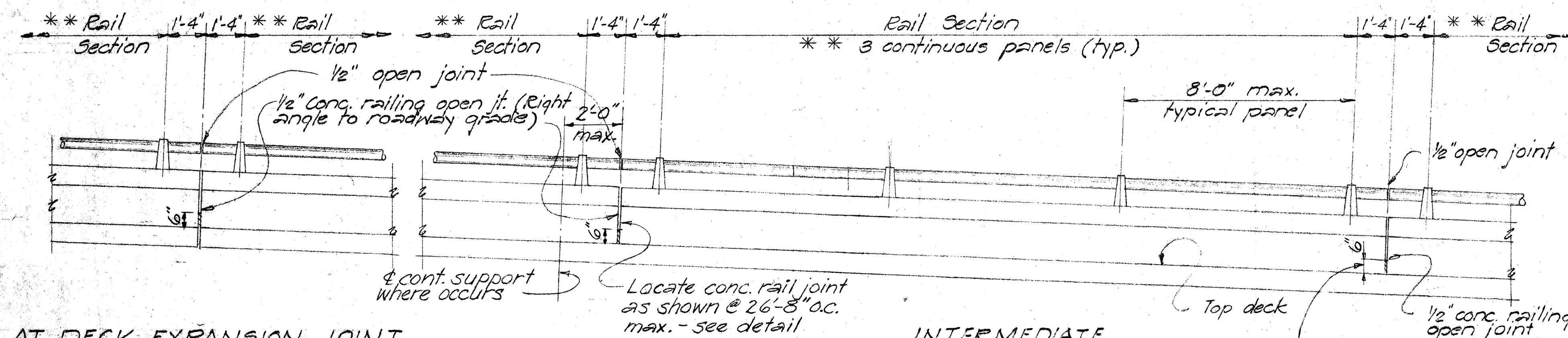
AT DECK EXPANSION JOINT

* * Note!!

1. The contractor shall layout the railing to provide 3 cont. panels whenever possible. 2 or 4 cont. panels will be permitted to complete the layout when 3 cont. panels cannot be made. Single panels will not be permitted.

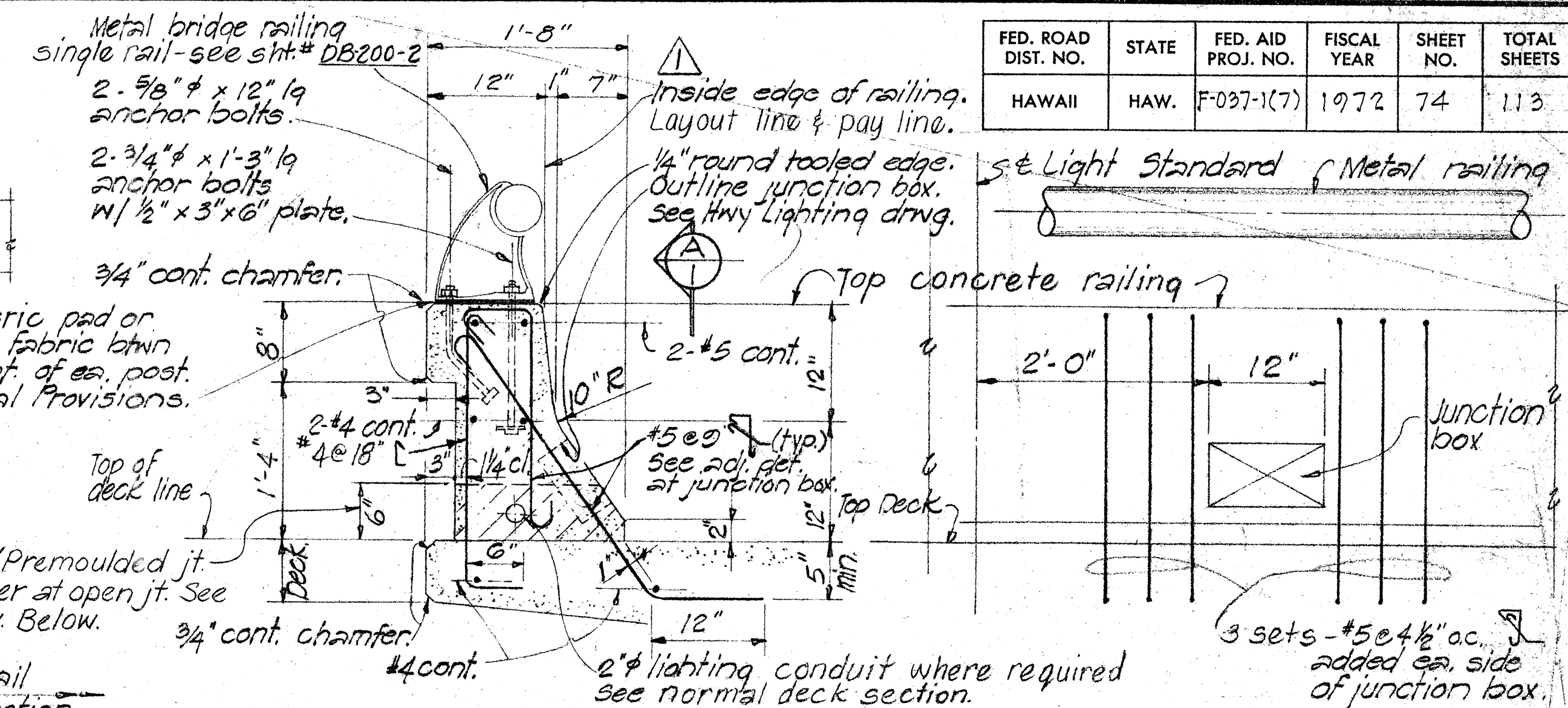
INTERMEDIATE
RAILING PLAN SCALE $\frac{3}{8}" = 1'-0"$

2. Rail Posts shall be normal to grade.
3. Provide double posts at each expansion jt., fixed bridge jt., continuous support, and as shown on detailed drawing.



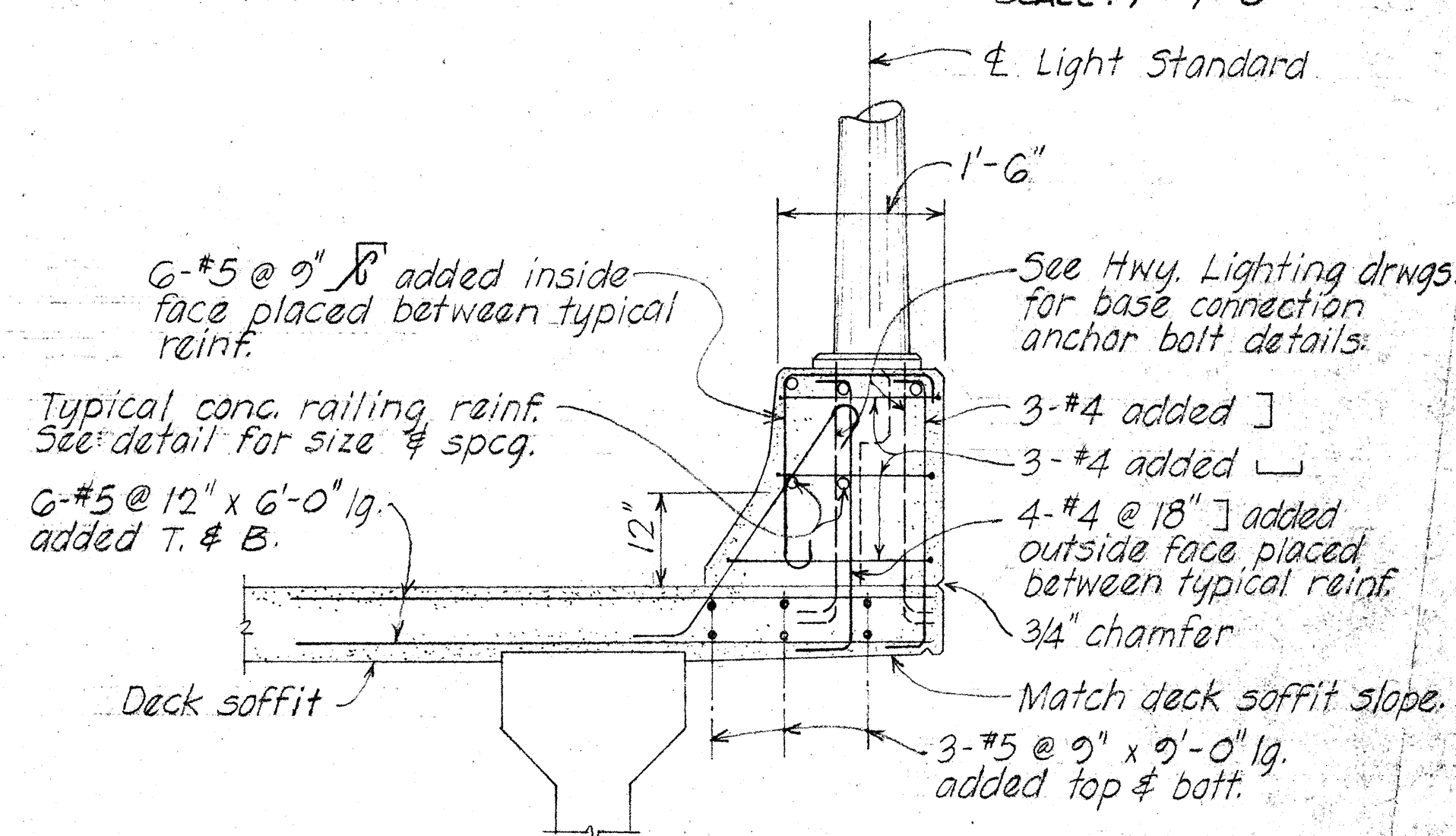
AT DECK EXPANSION JOINT

I max. - see detail INTERMEDIATE
EXTERIOR RAILING ELEVATION SCALE: $\frac{3}{8}" = 1'-0"$

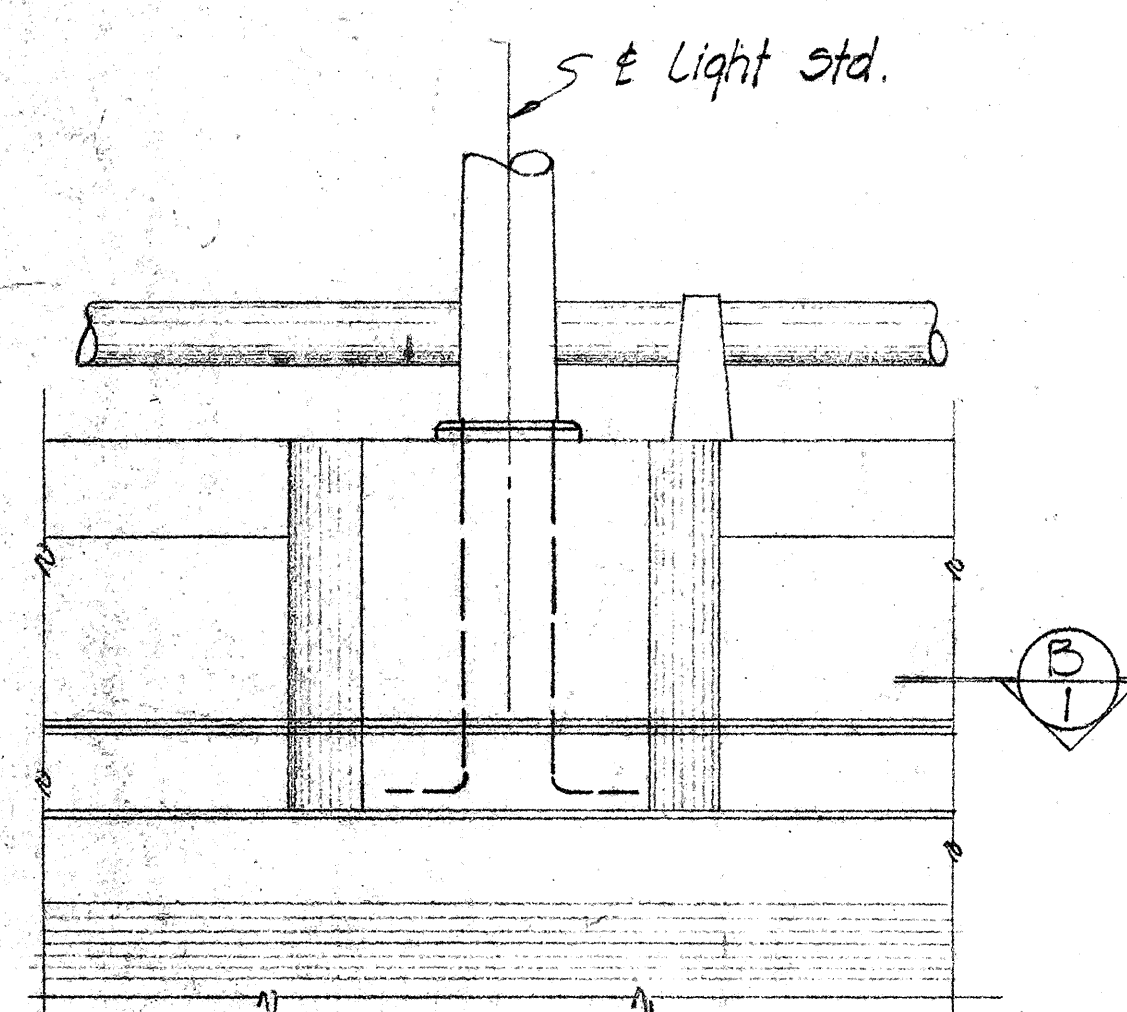


TYPICAL CONCRETE
RAILING SECTION
SCALE: 1" = 1'-0"

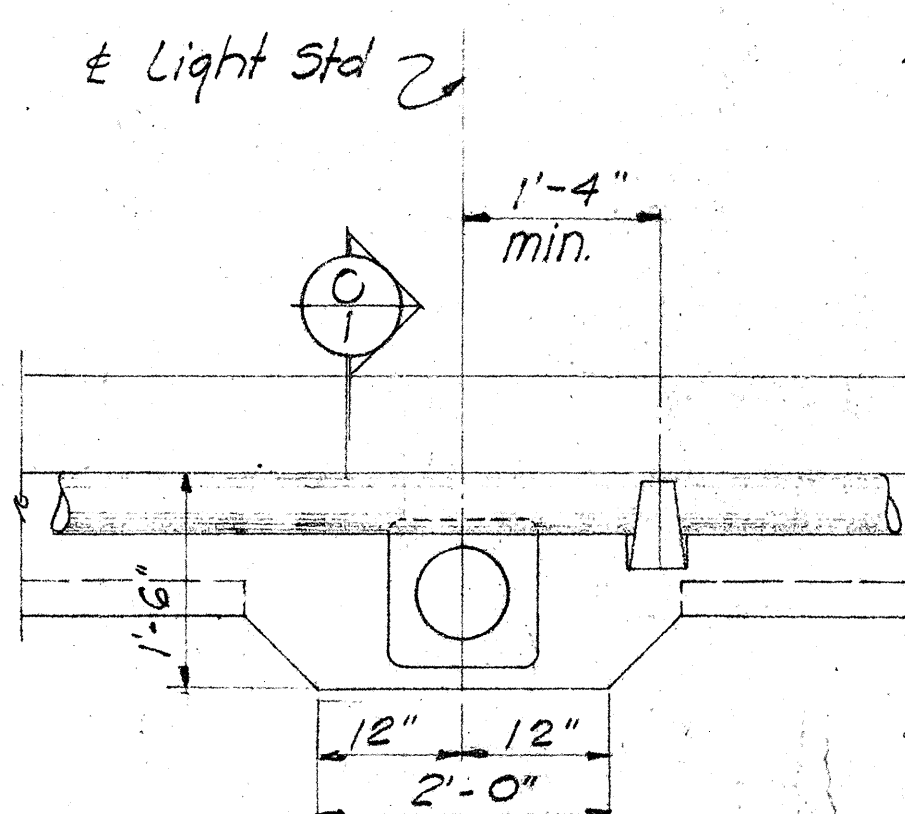
ELEVATION SHOWING SPECIAL
REINFORCEMENT AT JUNCTION BOX
SCALE: 1" = 1'-0"



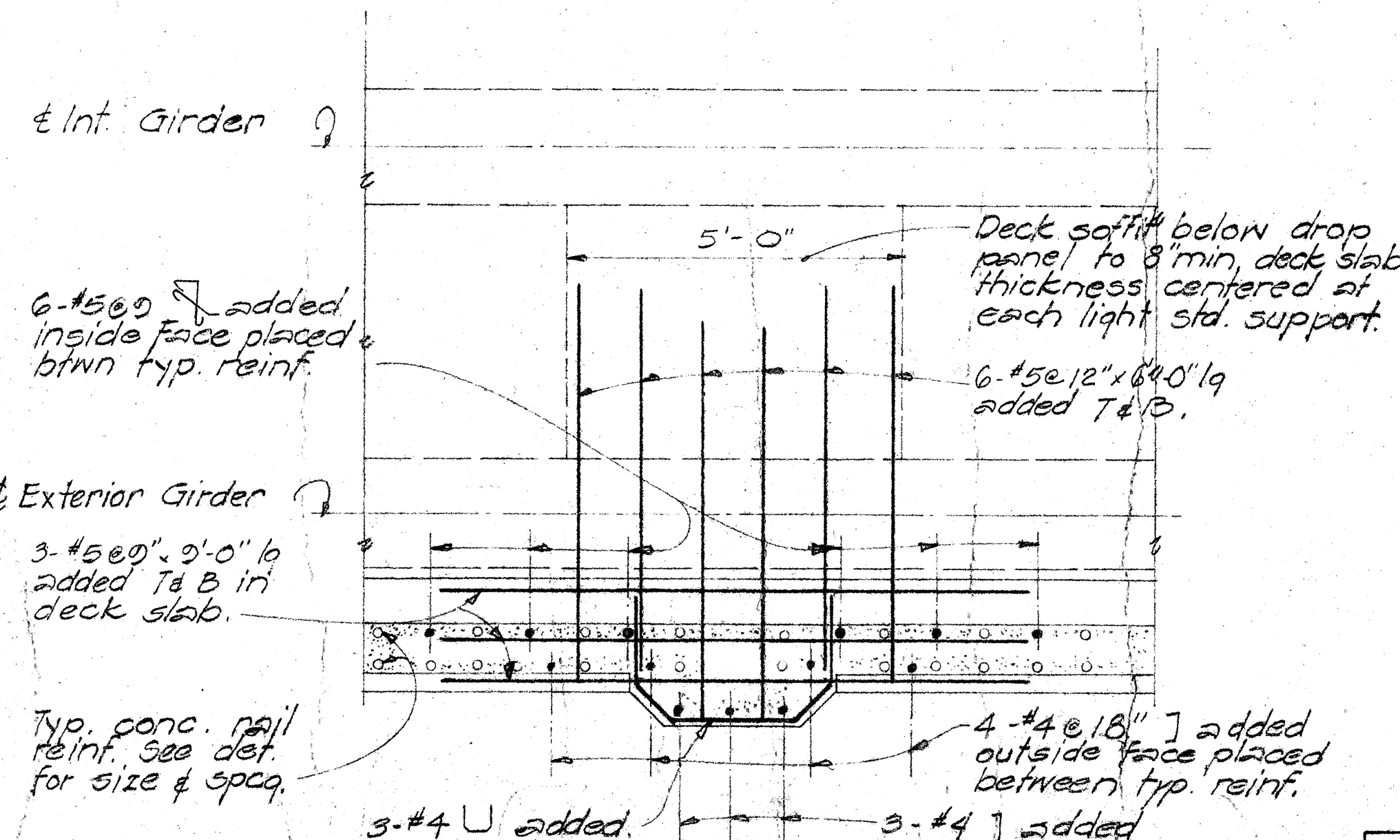
SECTION (C)
1
Scale: $\frac{3}{4}" = 1' - 0"$



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



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



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

DETAILS OF RAILING AT LIGHT STANDARD
SCALE AS NOTED

NO.	REVISION	APPROVED BY	DATE
1	Change title block rail designation. Change note	H.P.	2/1/17

APPROVAL RECOMMENDED:
Paul T. Yamasaki
BRIDGE DESIGN ENGINEER

1-23-70
DATE

APPROVED Paul T. Yamashita
 ASSISTANT CHIEF, ENGINEERING

1-28-70
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

ALUMINUM BRIDGE RAILING

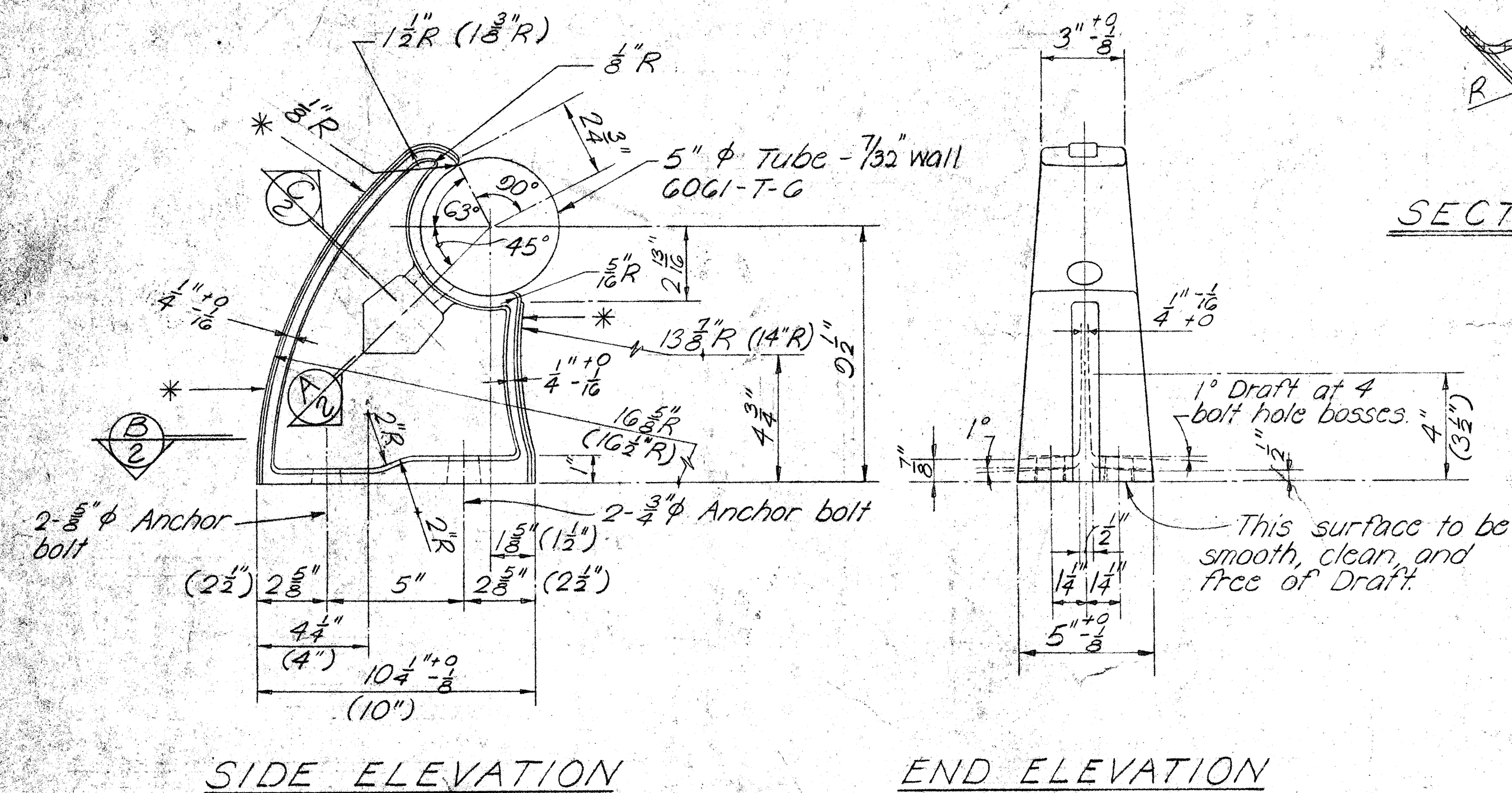
ONE RAIL COMBINATION TYPE

ON PARAPET

Date: October 1969

SHEET No. / OF 2 SHEETS DB-200-

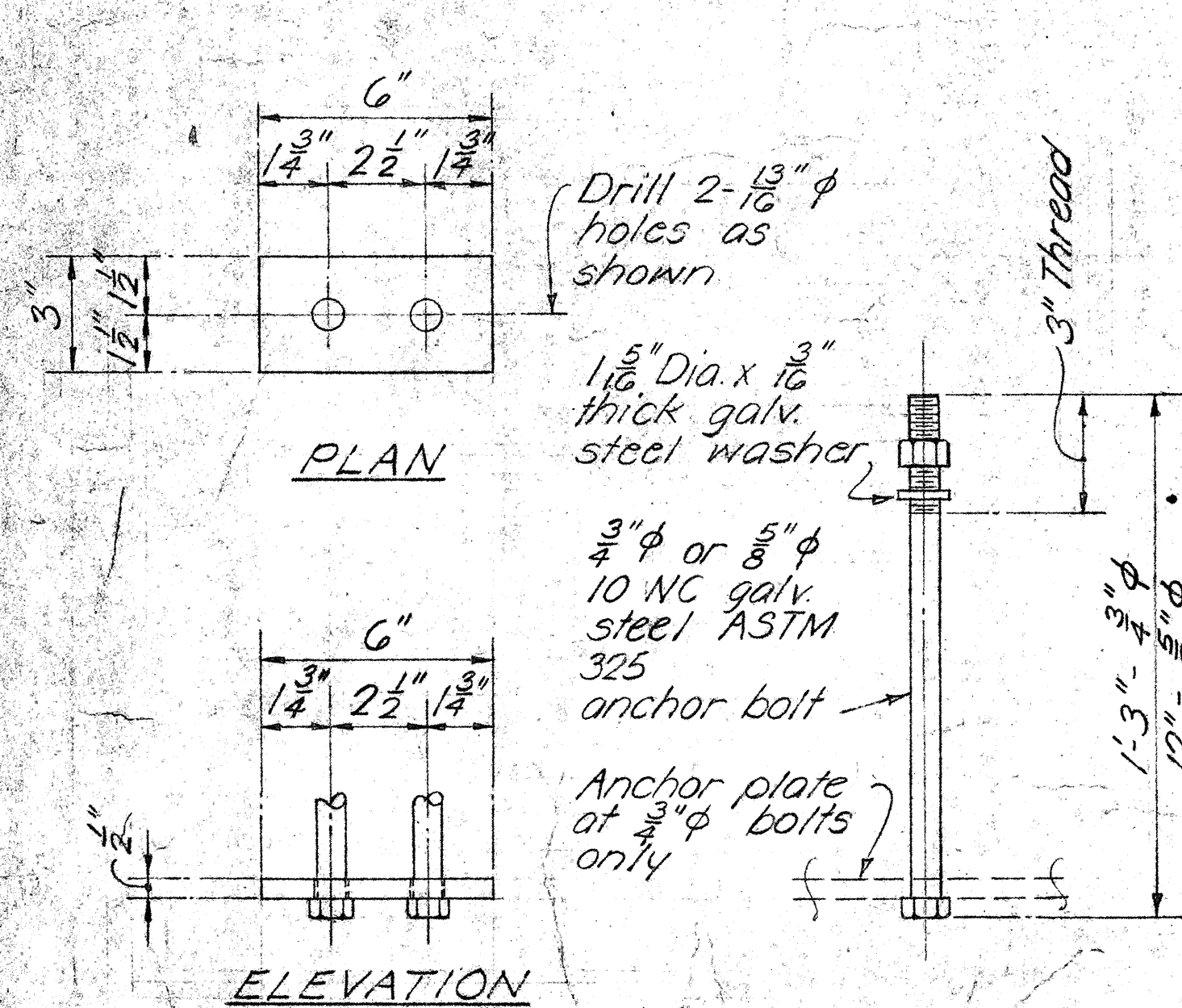
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-037-1(72)	1972	75	113



NOTE:
 * Casting to be supplied with a standard scratch brush finish, on entire gating rib surface and as indicated by an asterisk (*). Finish shall be approved by the Engineer.
 Casting to be neatly trimmed and any protruding flash to be broken off. Unless otherwise specified, draft angles to be 3°, corner radii to be $\frac{3}{32}$ " R, fillet radii to be $\frac{3}{8}$ " R casting tol. to be $\pm \frac{1}{16}$ ", wall thickness to be $\pm \frac{1}{32}$ ".
 Dimensions may be as shown or as shown in parenthesis ().

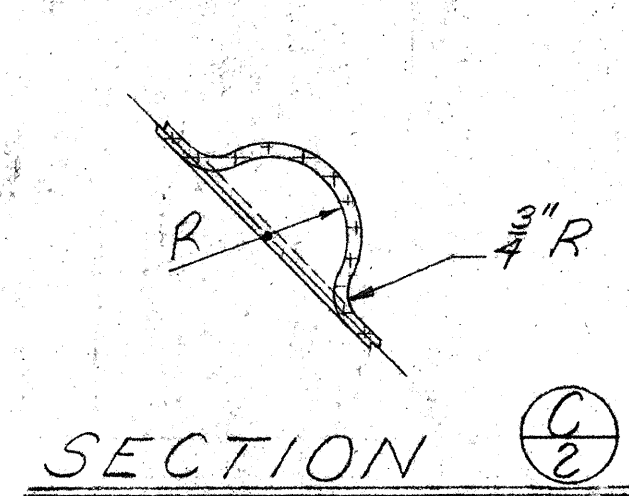
TYPICAL RAIL POST DETAILS

Scale: 3" = 1'-0"

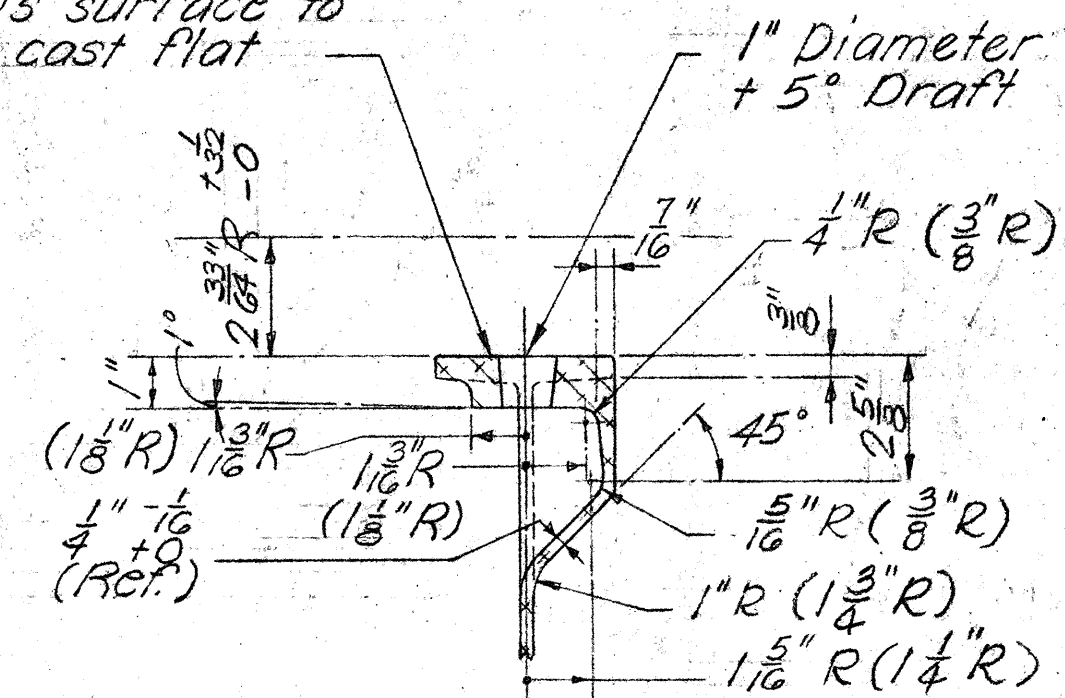
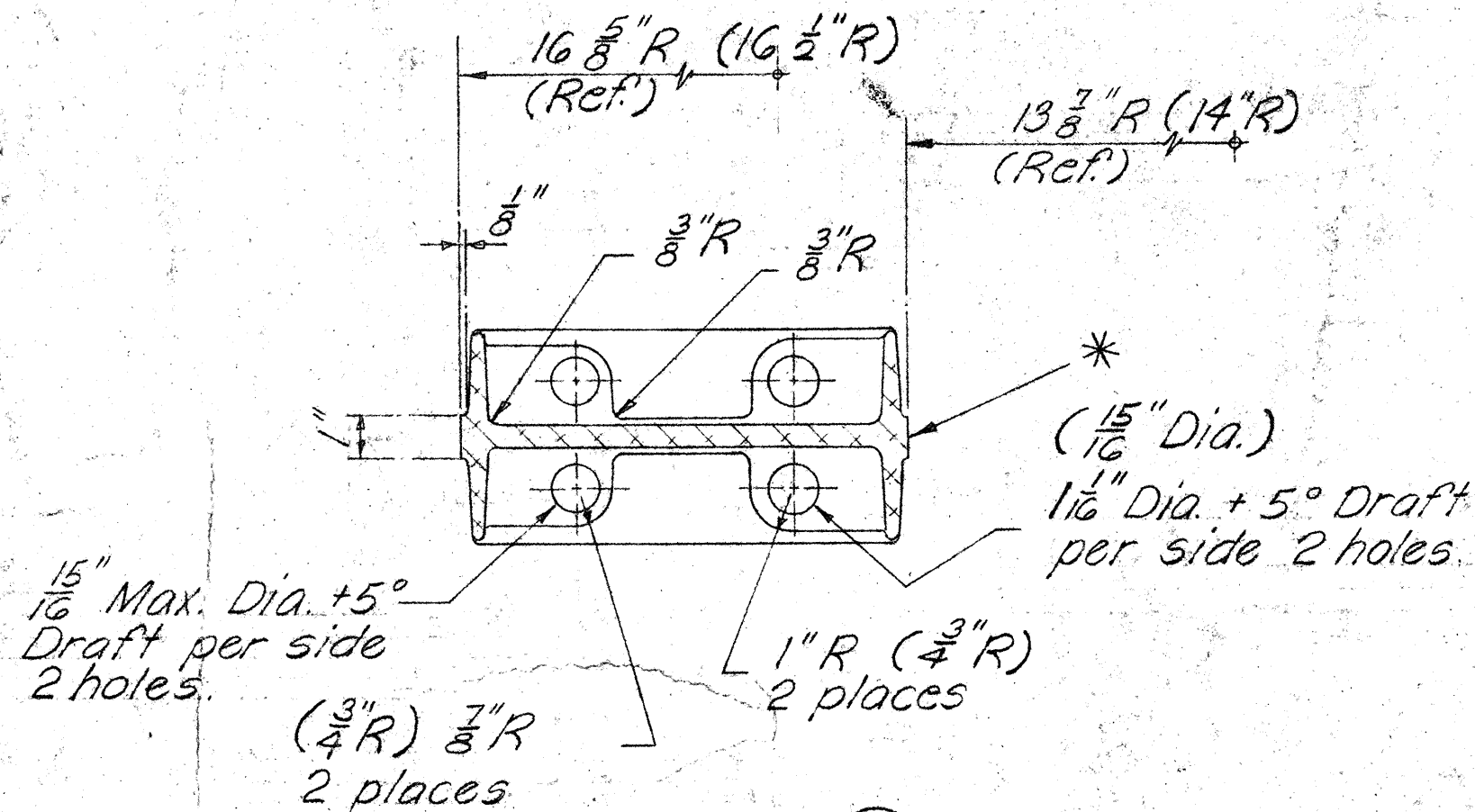
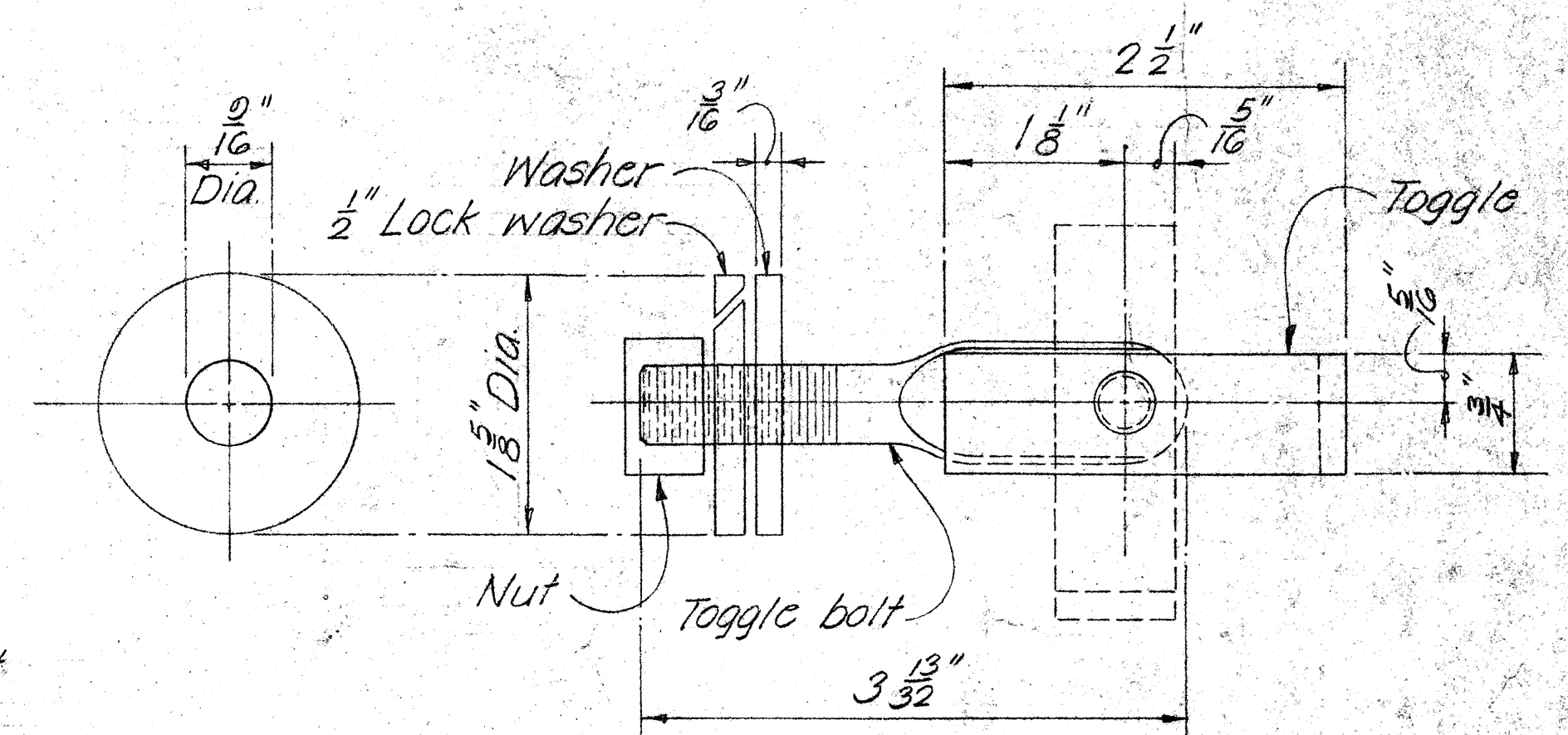


ANCHOR PLATE DETAIL ANCHOR BOLT
TYPICAL RAIL POST
STEEL ANCHOR BOLT ASSEMBLY

Scale: 3" = 1'-0"

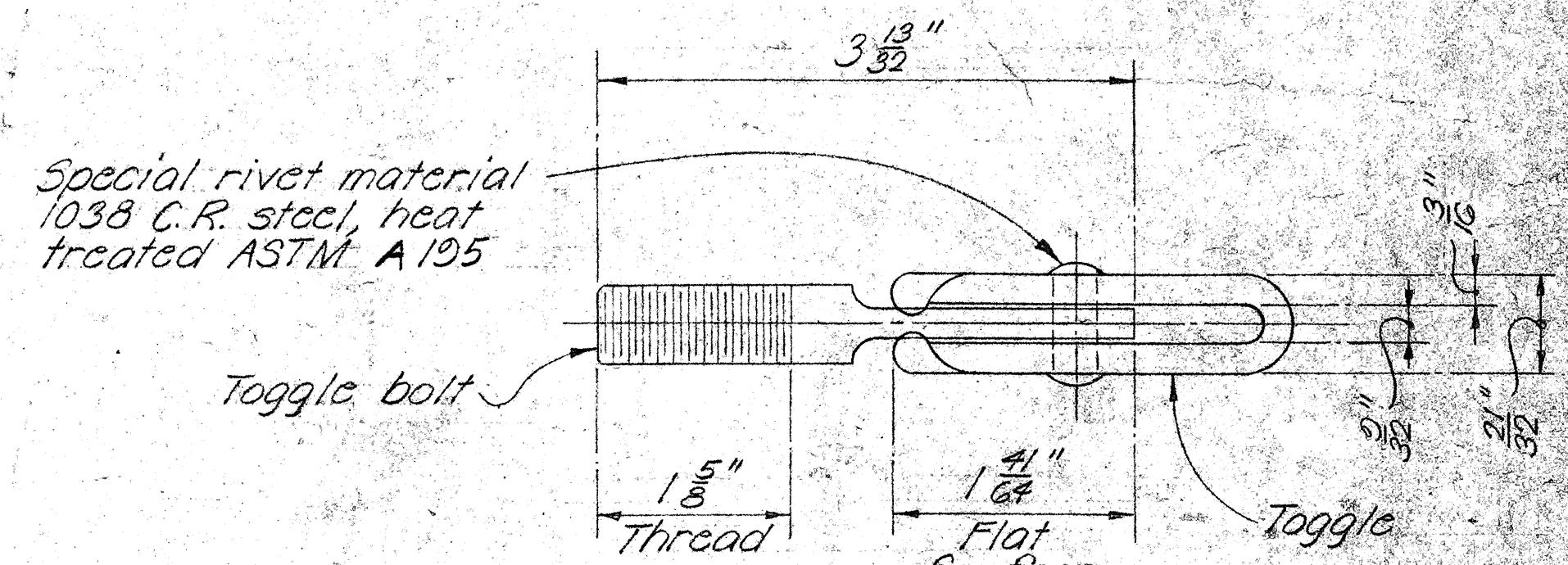


This surface to be cast flat -

SECTION SECTION $\textcircled{\frac{B}{2}}$ 

WASHER

SIDE ELEVATION ASSEMBLAGE



1/2" ϕ STEEL TOGGLE BOLT DETAILS

Full Scale.

APPROVAL RECOMMENDED:

Paul T. Yamashita
BRIDGE DESIGN ENGINEER

23-70
DATE

APPROVED

Paul T. Yamashita
For ASSISTANT CHIEF, ENGINEERING

1-28-70
DATE

NO.	REVISION	APPROVED BY	DATE
1	Change title block rail designation. Delete note.	H.P.	2/4/71

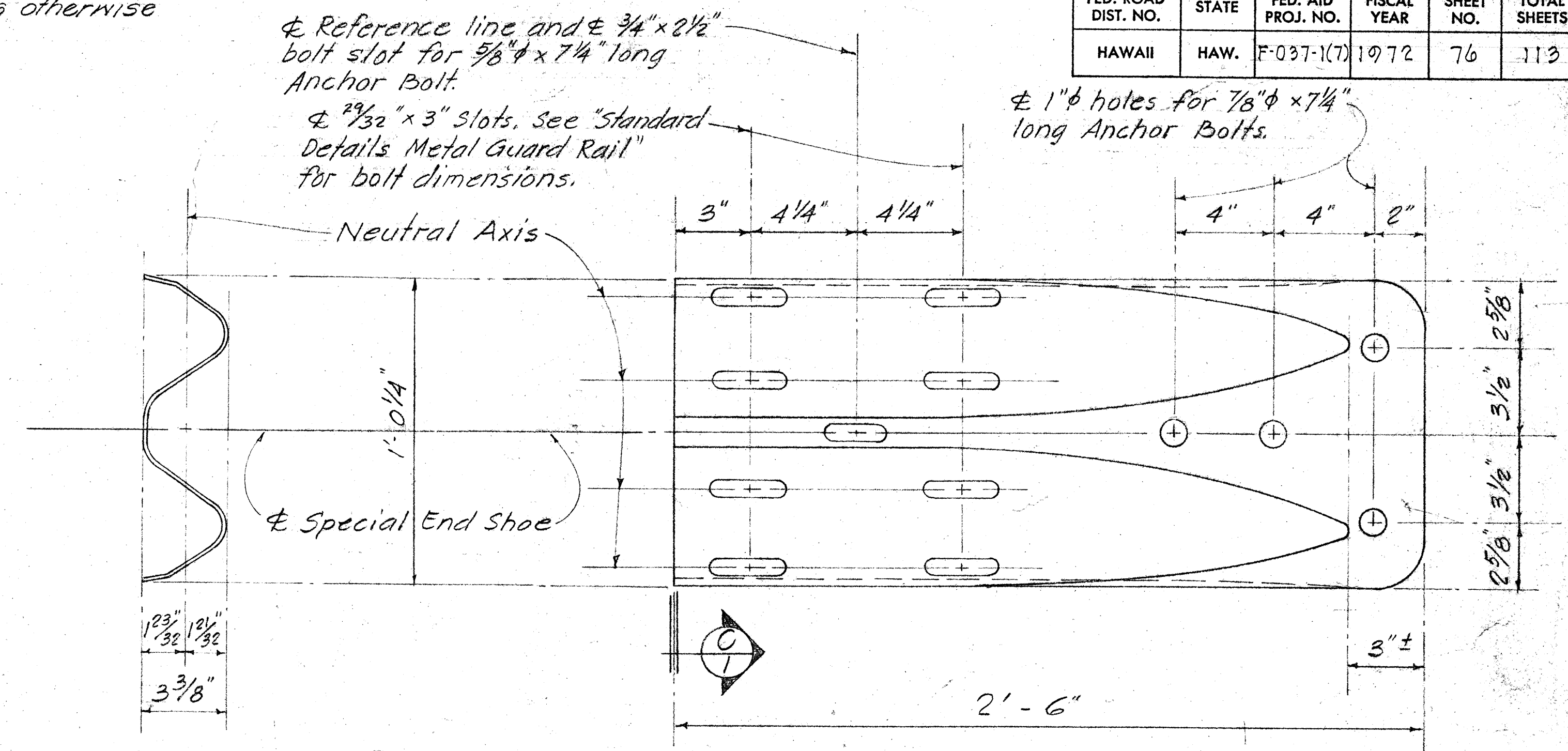
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
ALUMINUM BRIDGE RAILING
ONE RAIL COMBINATION TYPE
ON PARAPET

Scale as noted Date:

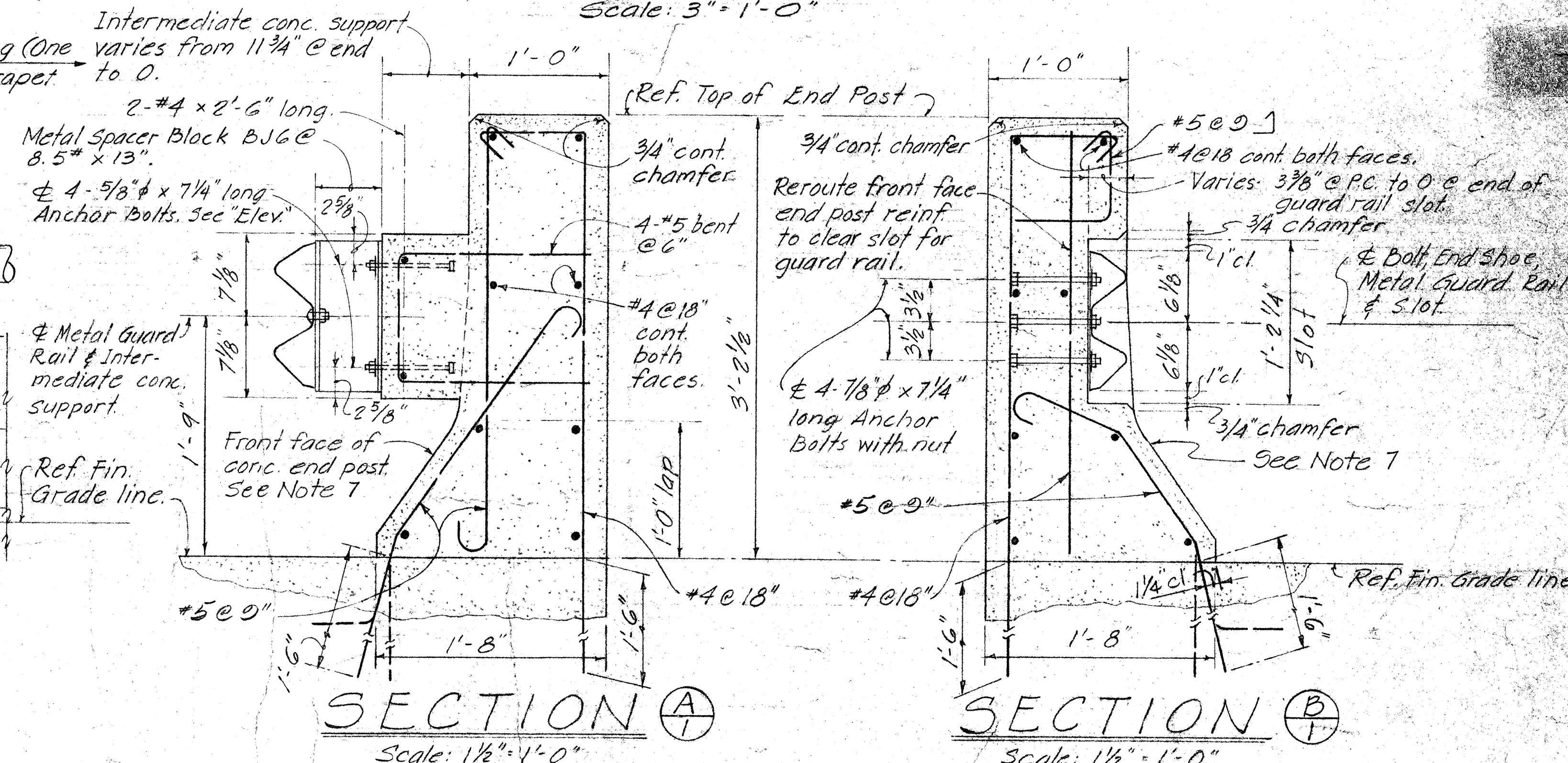
SHEET No. 2 OF 2 SHEETS DB-200-2

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



* Length given along front face of parapet and end post.

Scale: 3" = 1'-0"



SECTION (B)

- ① All Anchor Bolts shall be High Strength bolts conforming to the requirements of ASTM A325.
- ② All Shoe assembly, including anchor bolts, nuts and washers, shall be galvanized.
- ③ Special End Shoe shall be fabricated from 10 gage steel conforming to the requirements of AASHTO 180.
- ④ First 25'-0" of guard rail adjoining "Special End Shoe" shall be galvanized steel.
- ⑤ Anchor Bolt length given from under bolt head.
- ⑥ Place name of structure as shown. For location, see "Plan" on Contract Drawing. Date shown will be year structure is completed. Letter size and detail see standard Drawing DB-100.
- ⑦ Front face of End Post to match front face of typical conc. parapet.

APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER

1-23-75
DATE

1-28-7
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL CONNECTION

ONE RAIL COMBINATION TYPE END POST

Scale: As shown Date

SHEET No. OF SHEETS DB-205