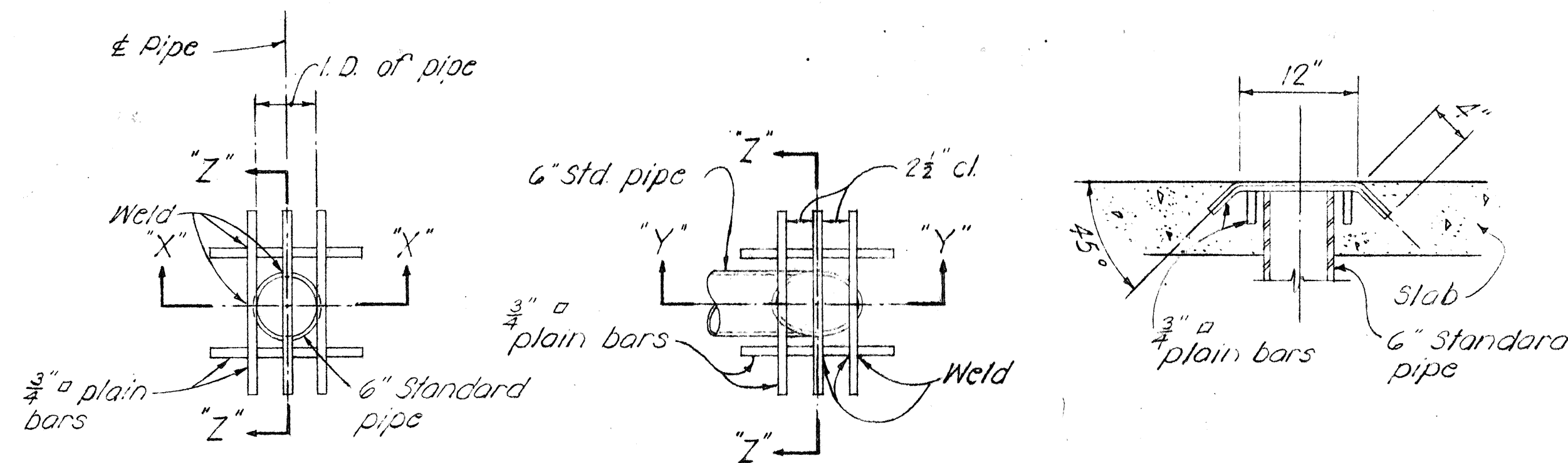
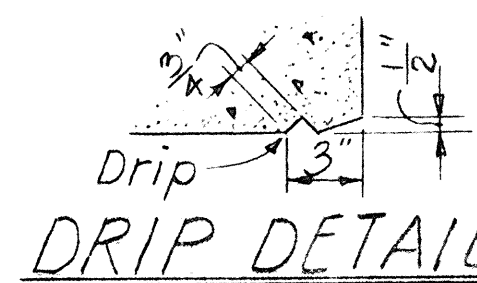


GENERAL NOTES

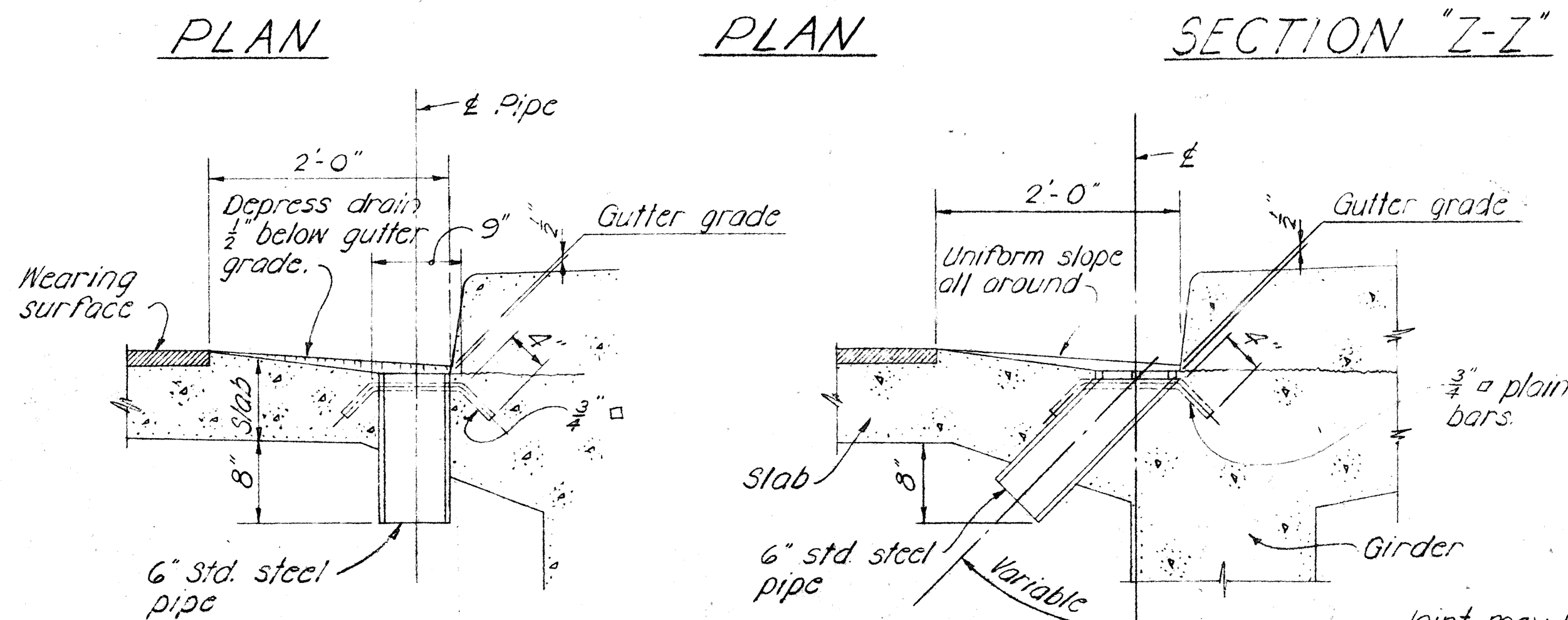
- All concrete shall be Class A unless otherwise noted.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1/2"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

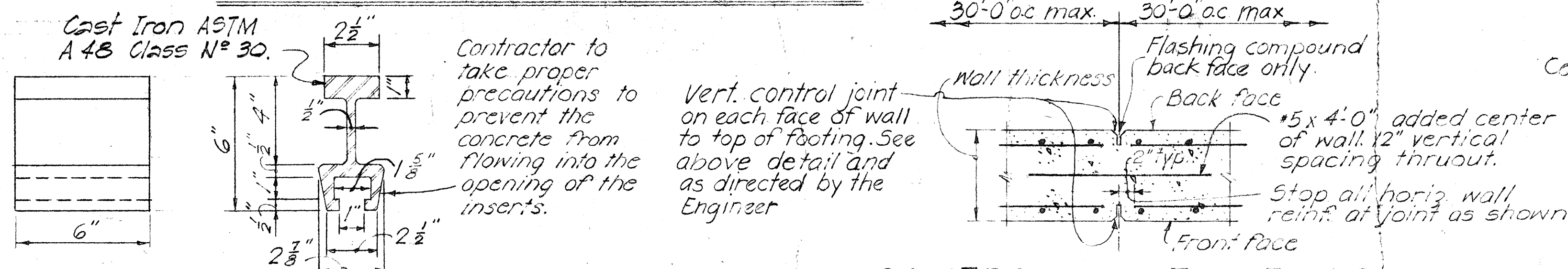


SECTION "X-X"

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. Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

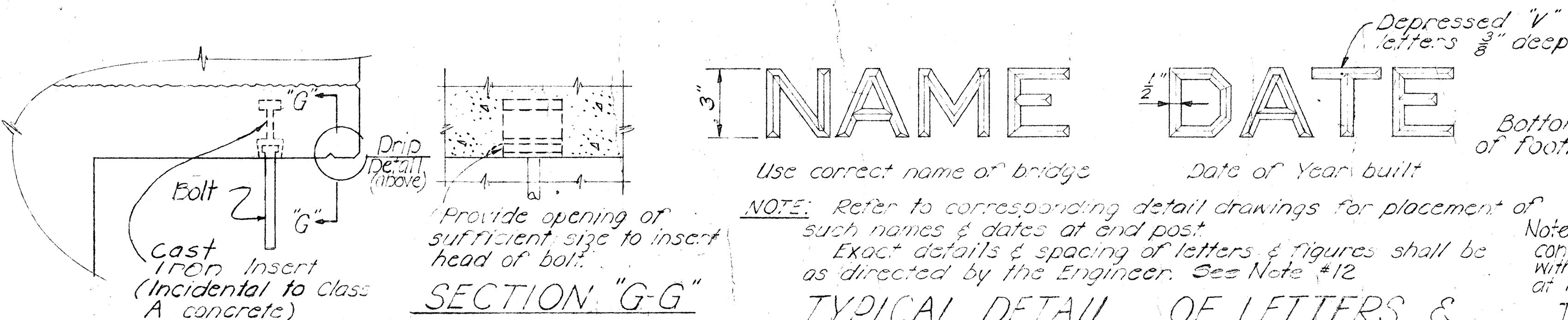
TYPICAL DRAINAGE DETAILS



INSERT DETAIL

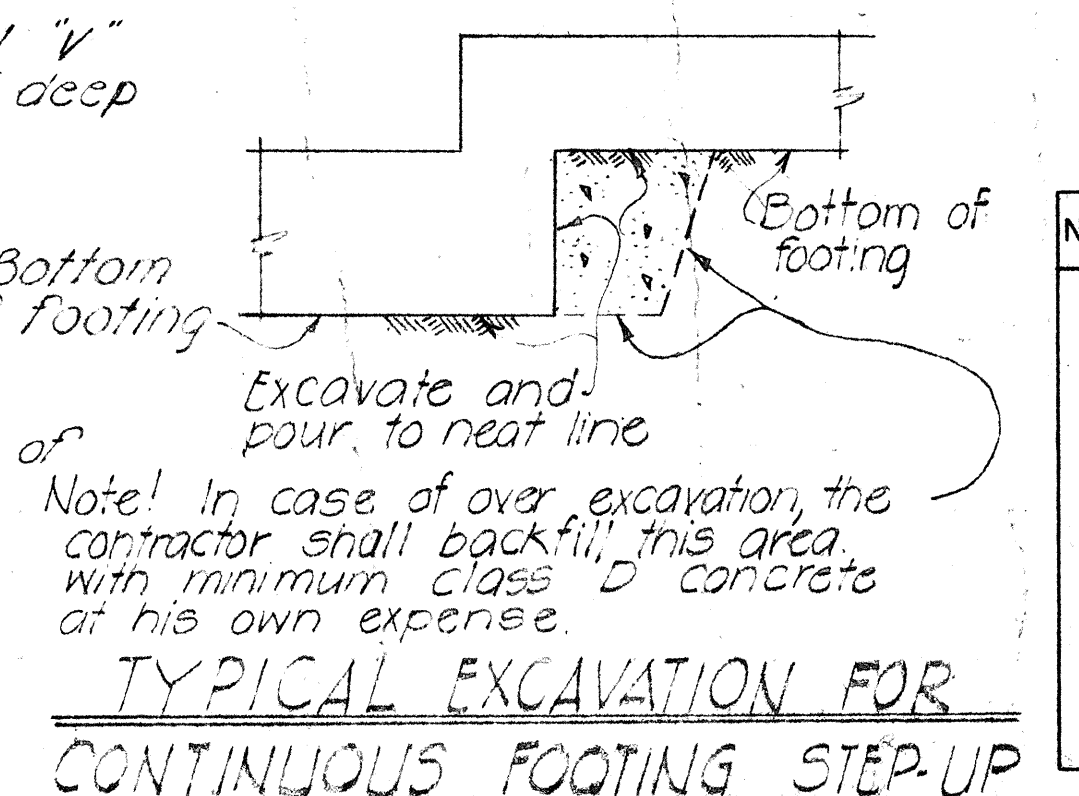
CONTROL JOINT DETAILS

TYP. FLASHING COMPOUND WATERPROOFING DETAIL



SECTION "G-G"

TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST



TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

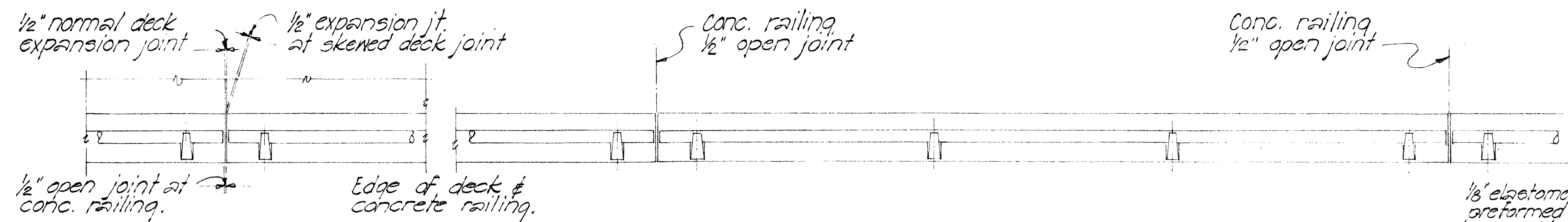
APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER
1-23-70
DATE

APPROVED
Paul T. Yamashita
FOR ASSISTANT CHIEF, ENGINEERING
1-28-70
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. 51 OF 4 SHEETS DB-100

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	377A-01-70	1971	25	29

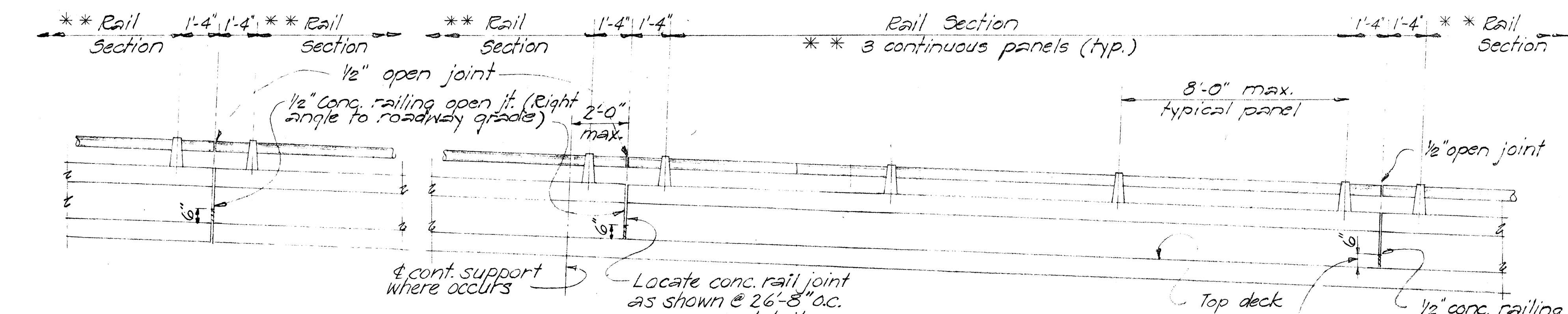


AT DECK EXPANSION JOINT

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.

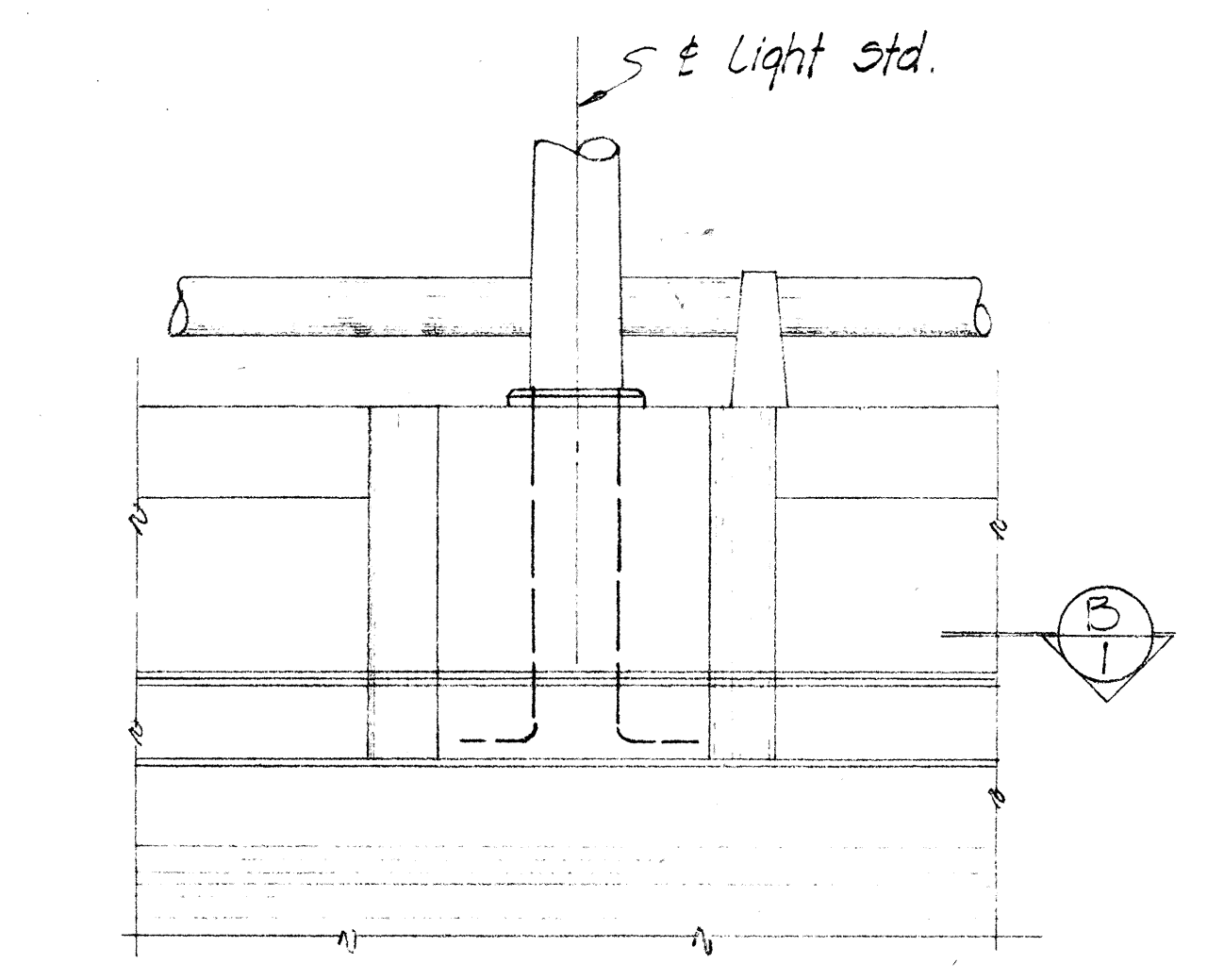
INTERMEDIATE
RAILING PLAN SCALE 3/8" = 1'-0"

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

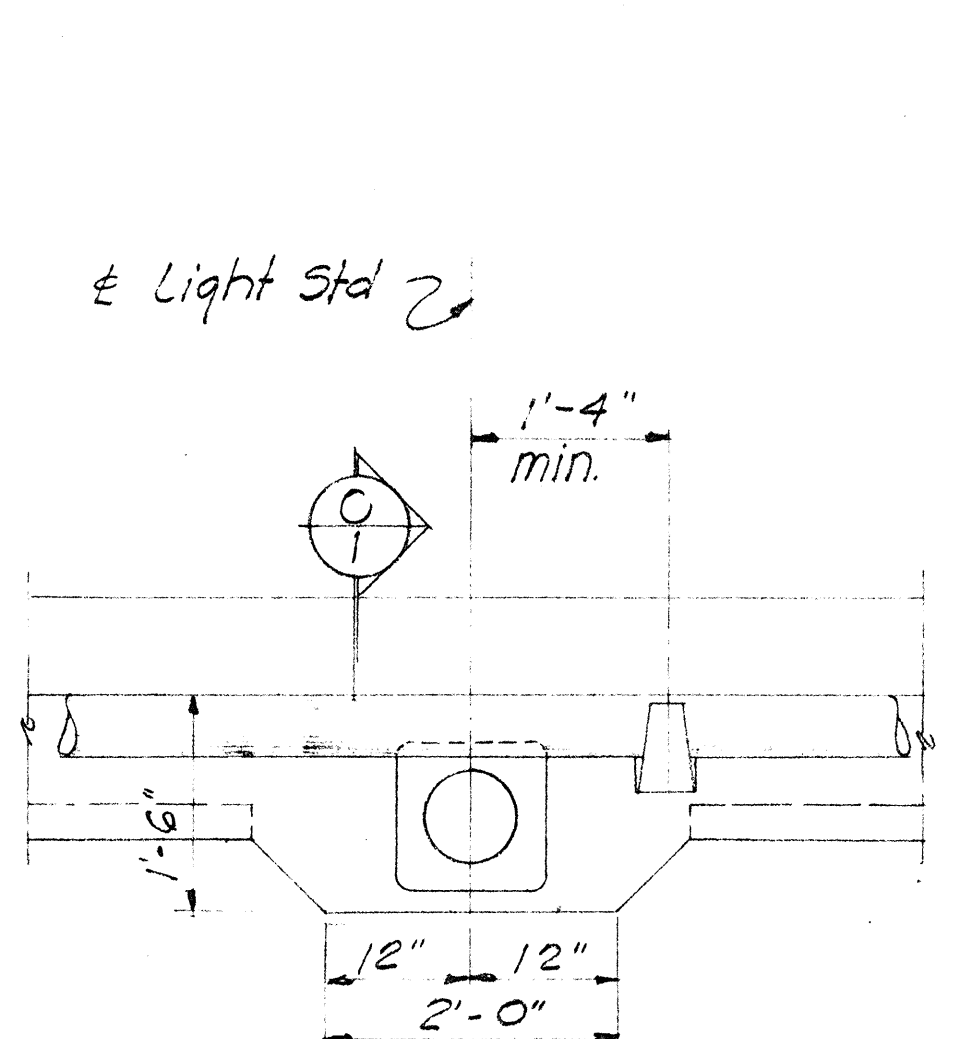


AT DECK EXPANSION JOINT

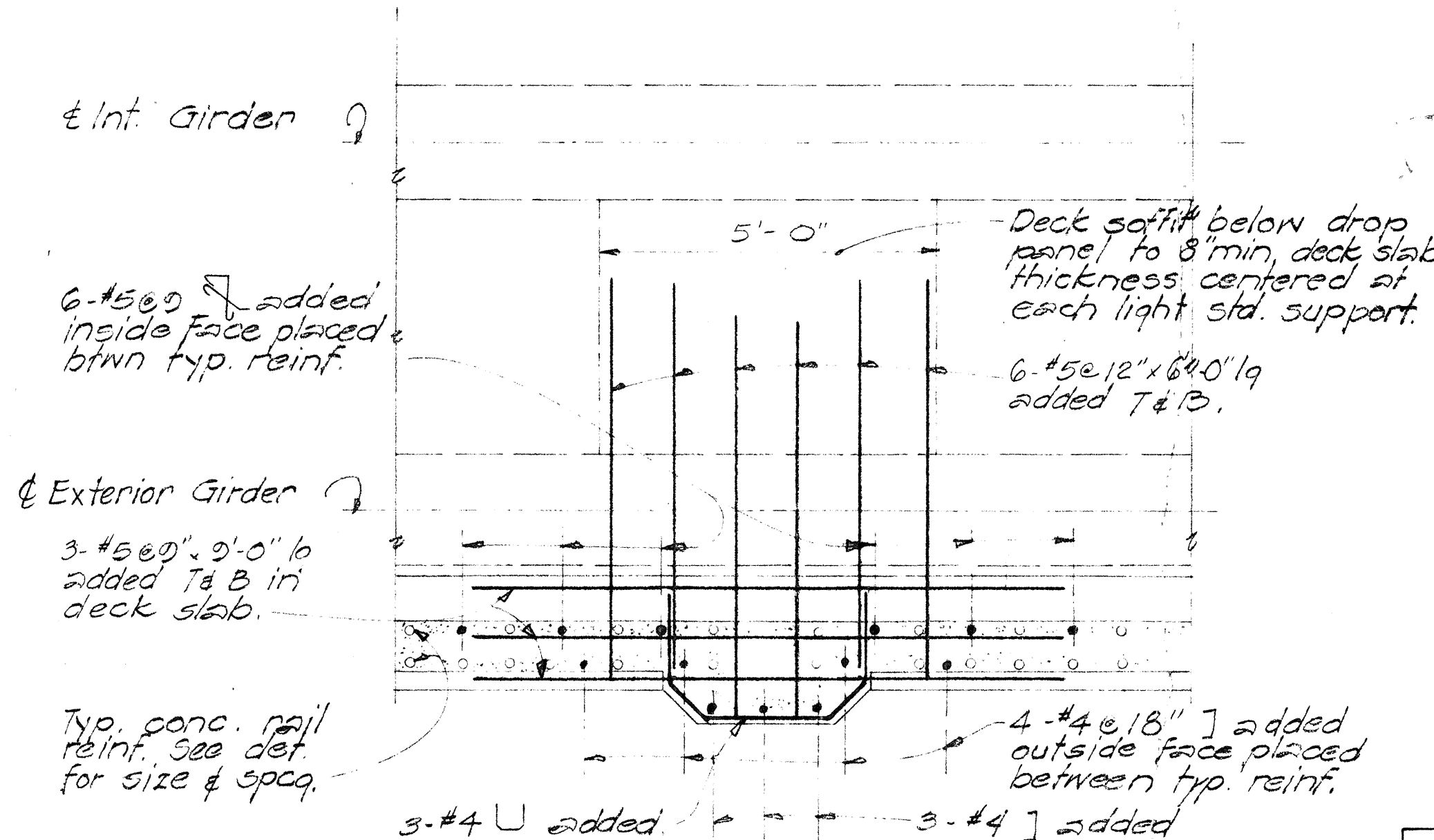
INTERMEDIATE
EXTERIOR RAILING ELEVATION SCALE 3/8" = 1'-0"



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

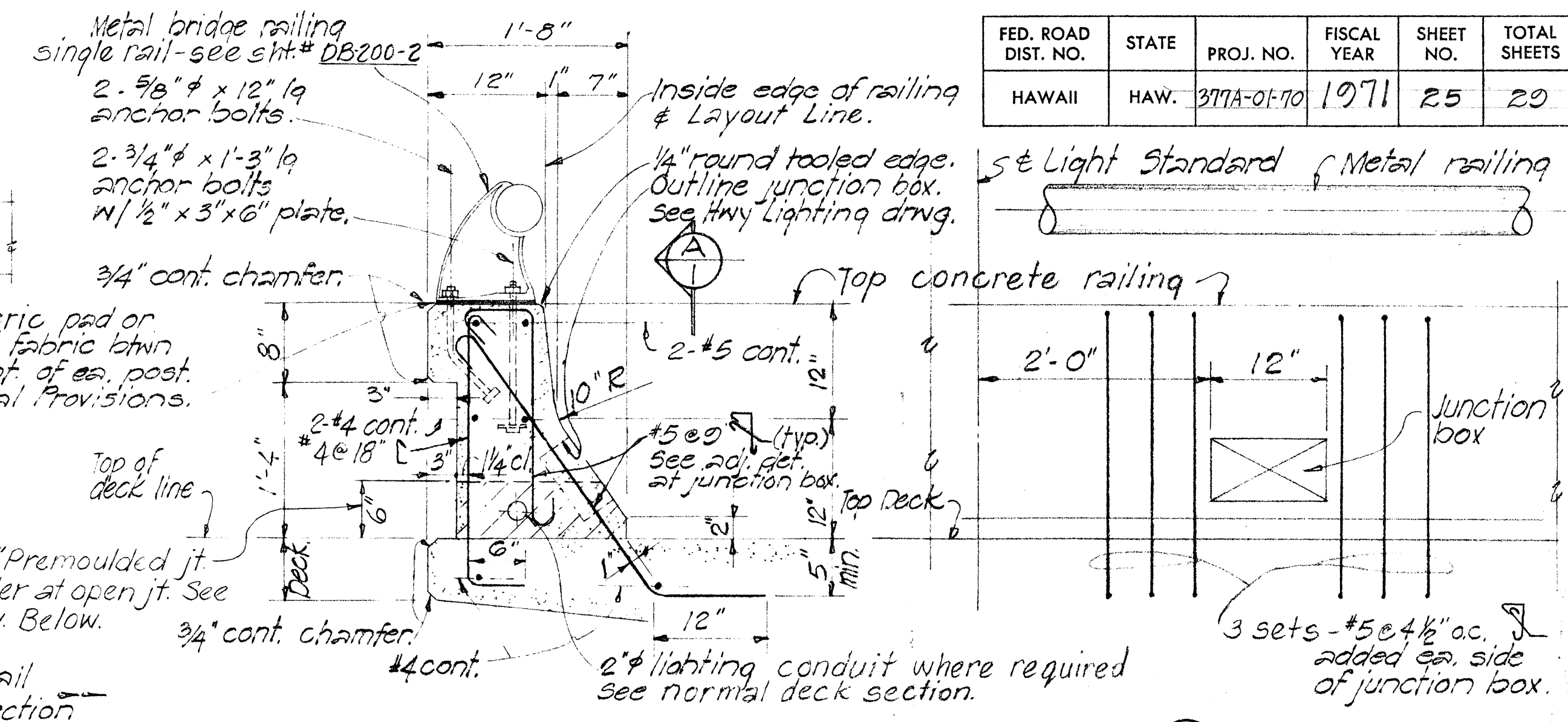


PART PLAN
 SCALE: 3/4" = 1'-0"



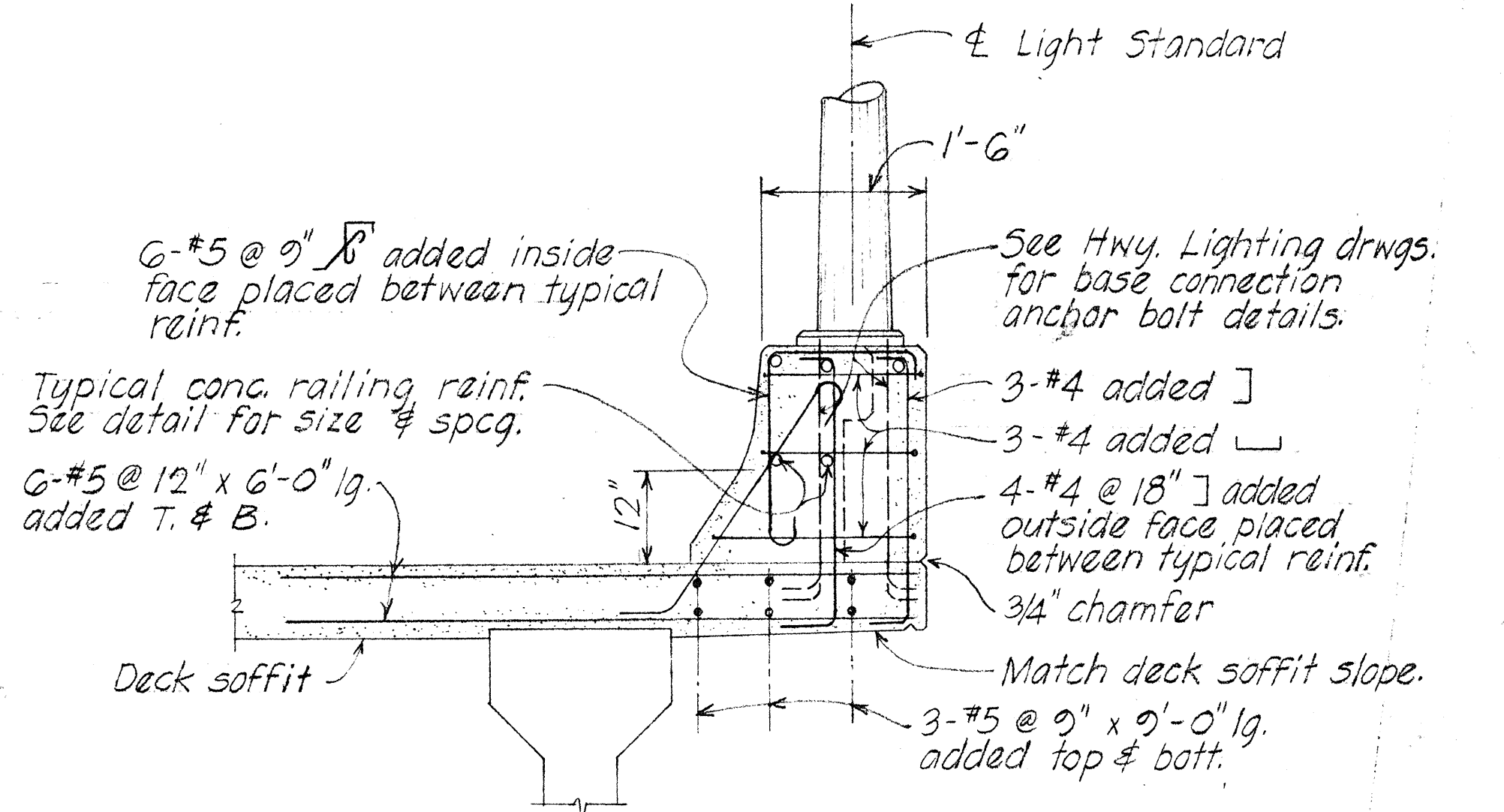
SECTION (B)
 SCALE: 1/2" = 1'-0"

DETAILS OF RAILING AT LIGHT STANDARD
 SCALE AS NOTED



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

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



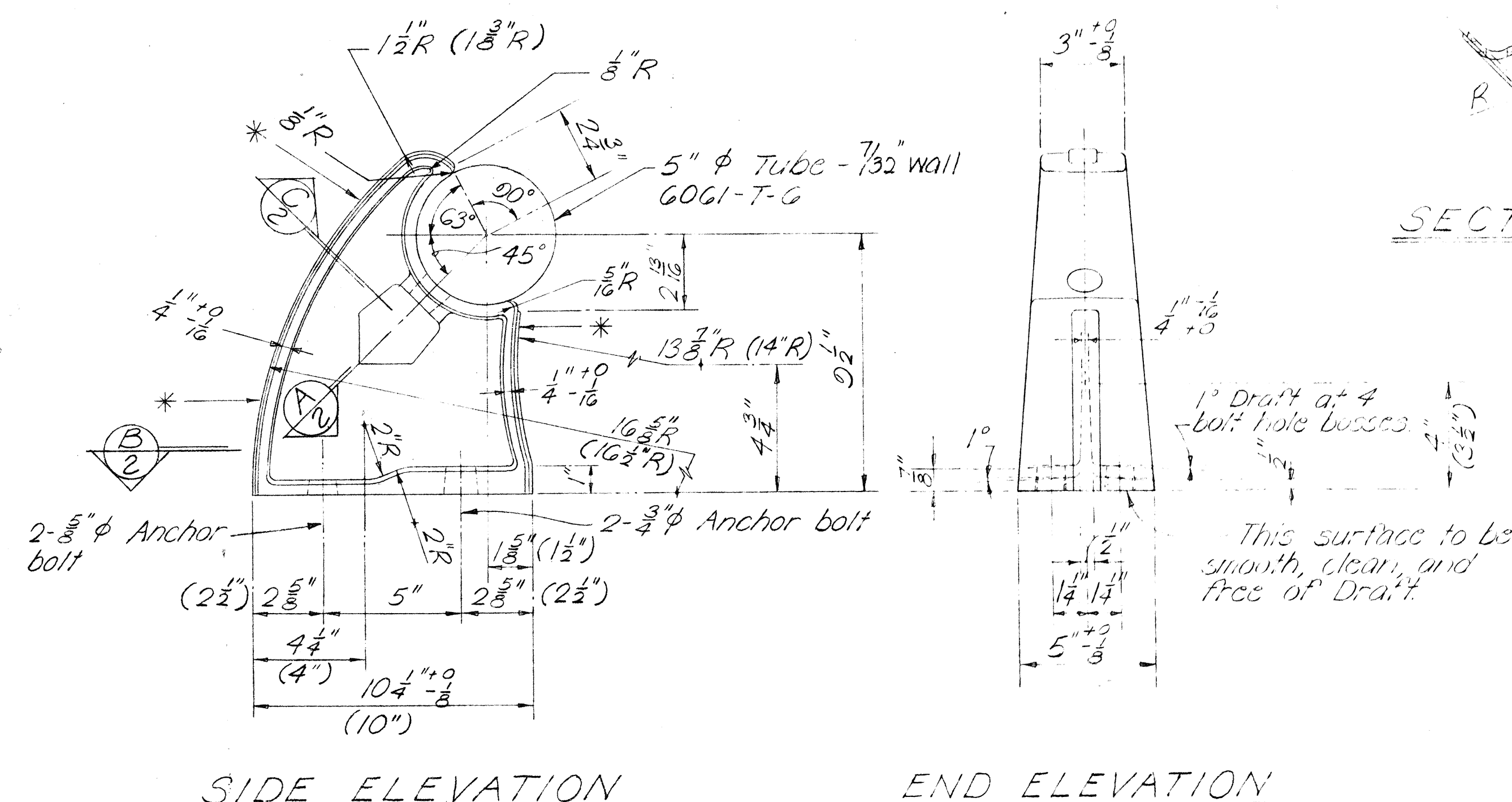
SECTION (C)
 Scale: 3/4" = 1'-0"

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

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

NO.	REVISION	APPROVED BY	DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
STANDARD DETAILS
METAL BRIDGE RAILING
ONE RAIL COMBINATION TYPE
ON PARAPET
 Date: October 1969



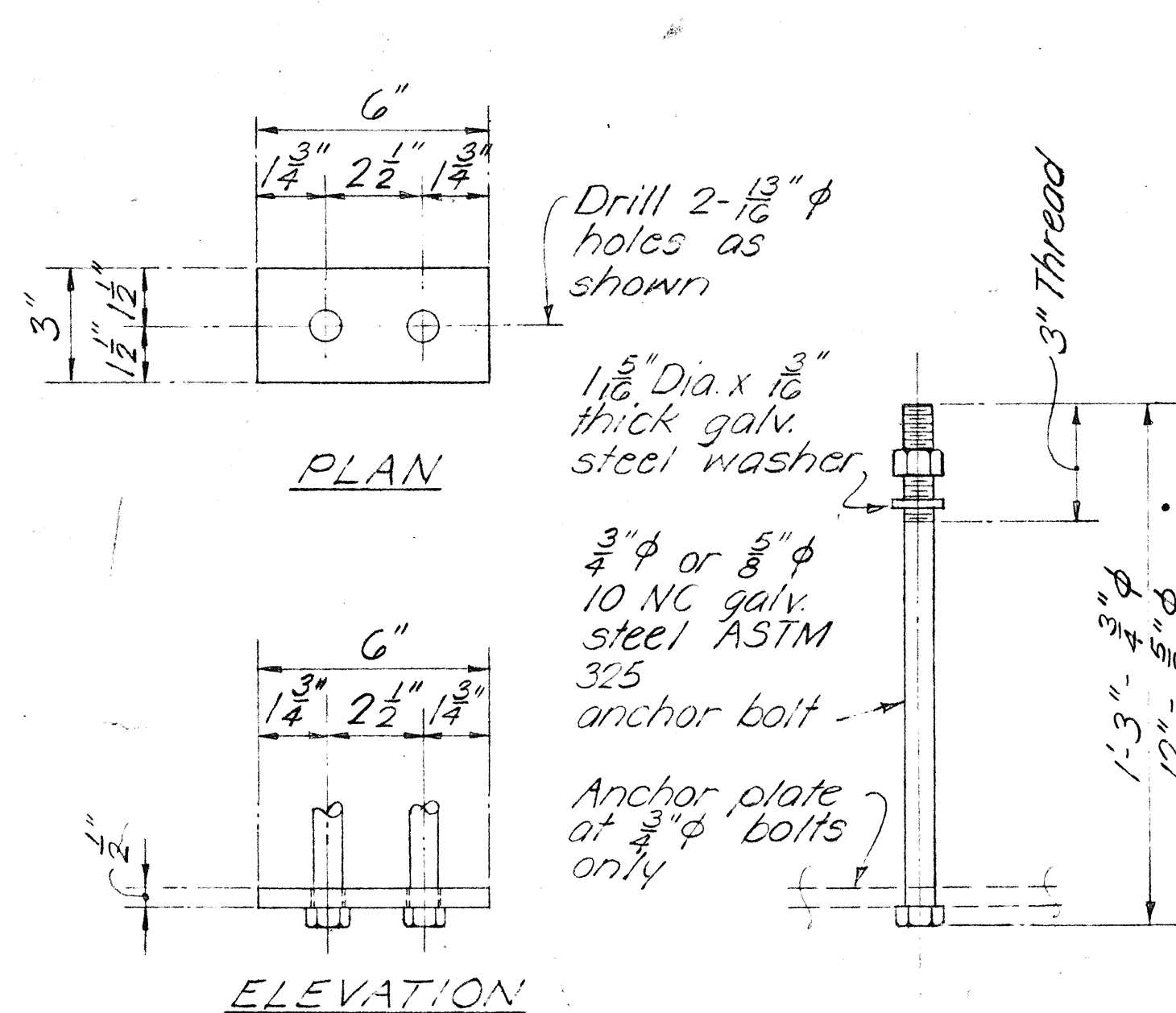
NOTE:

* 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 $\frac{3}{32}"R$, casting fil to be $\frac{1}{16}"$, wall thickness to be $\frac{1}{16}"$.
Dimensions may be as shown or as shown in parenthesis ().

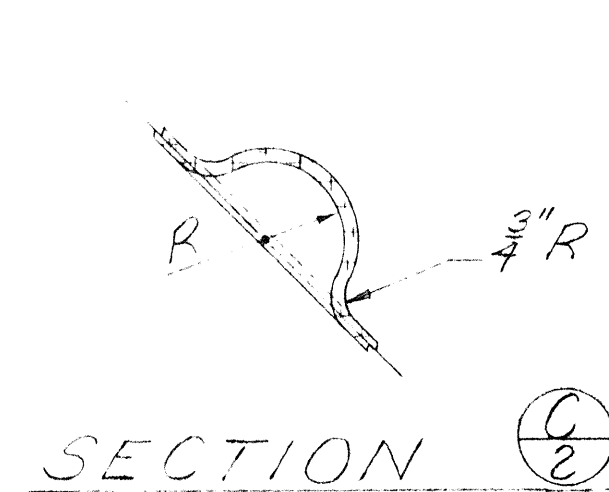
TYPICAL RAIL POST DETAILS

Scale: $3'' = 1'-0''$

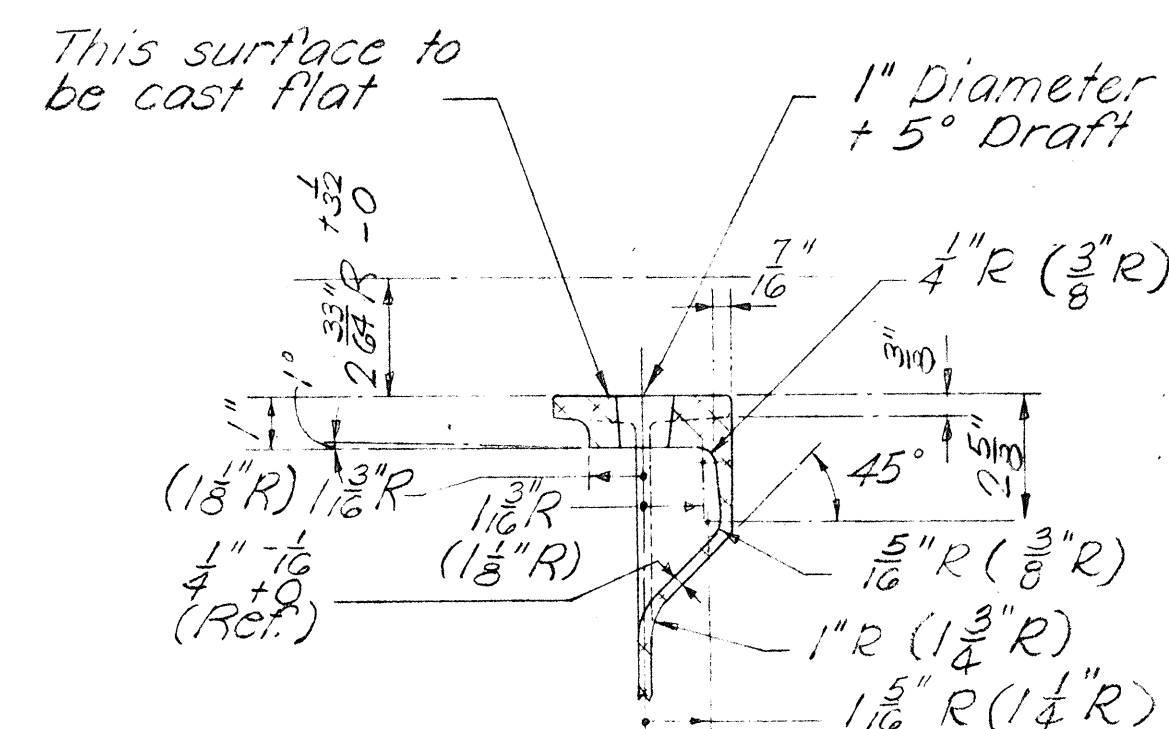
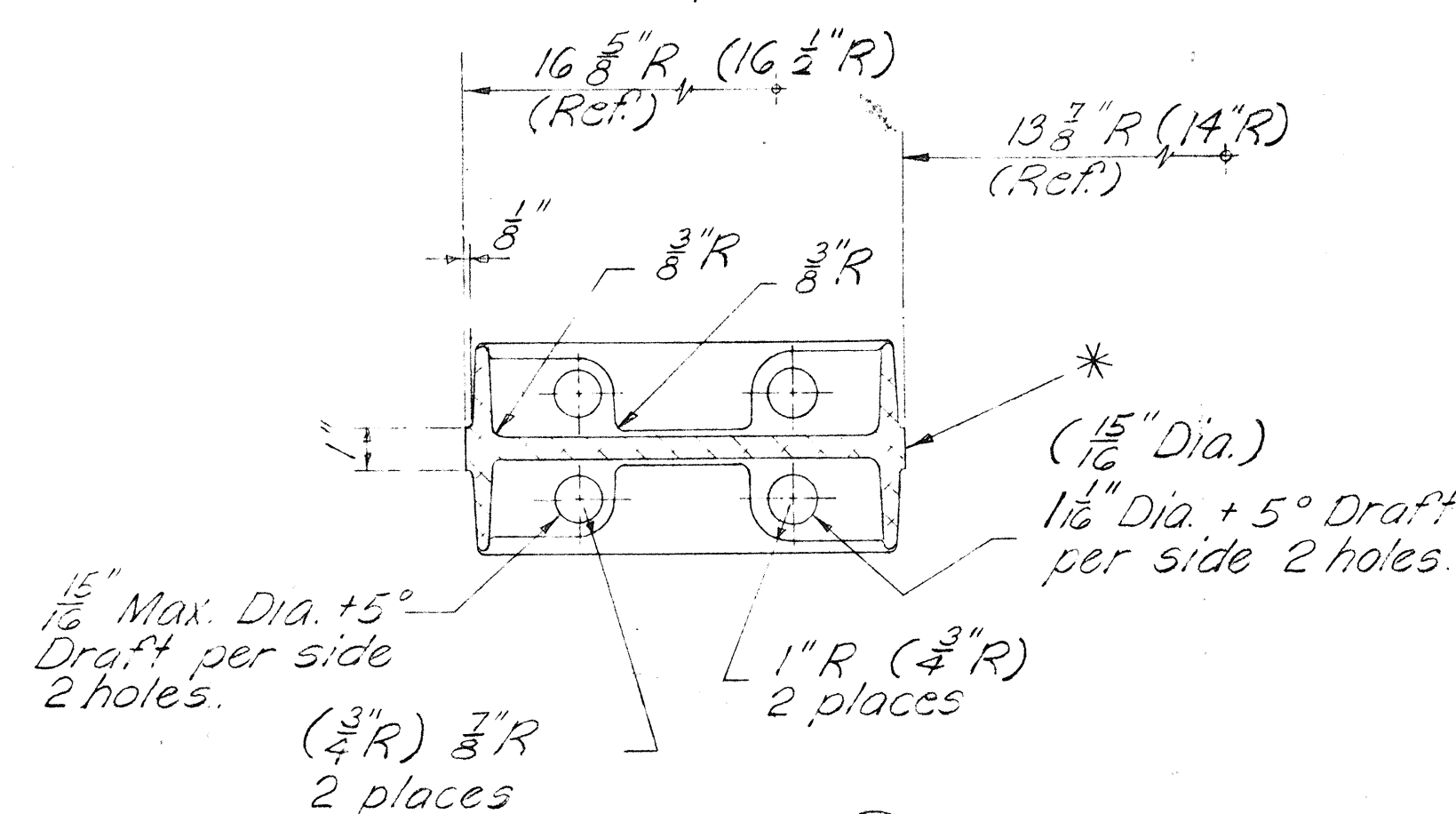
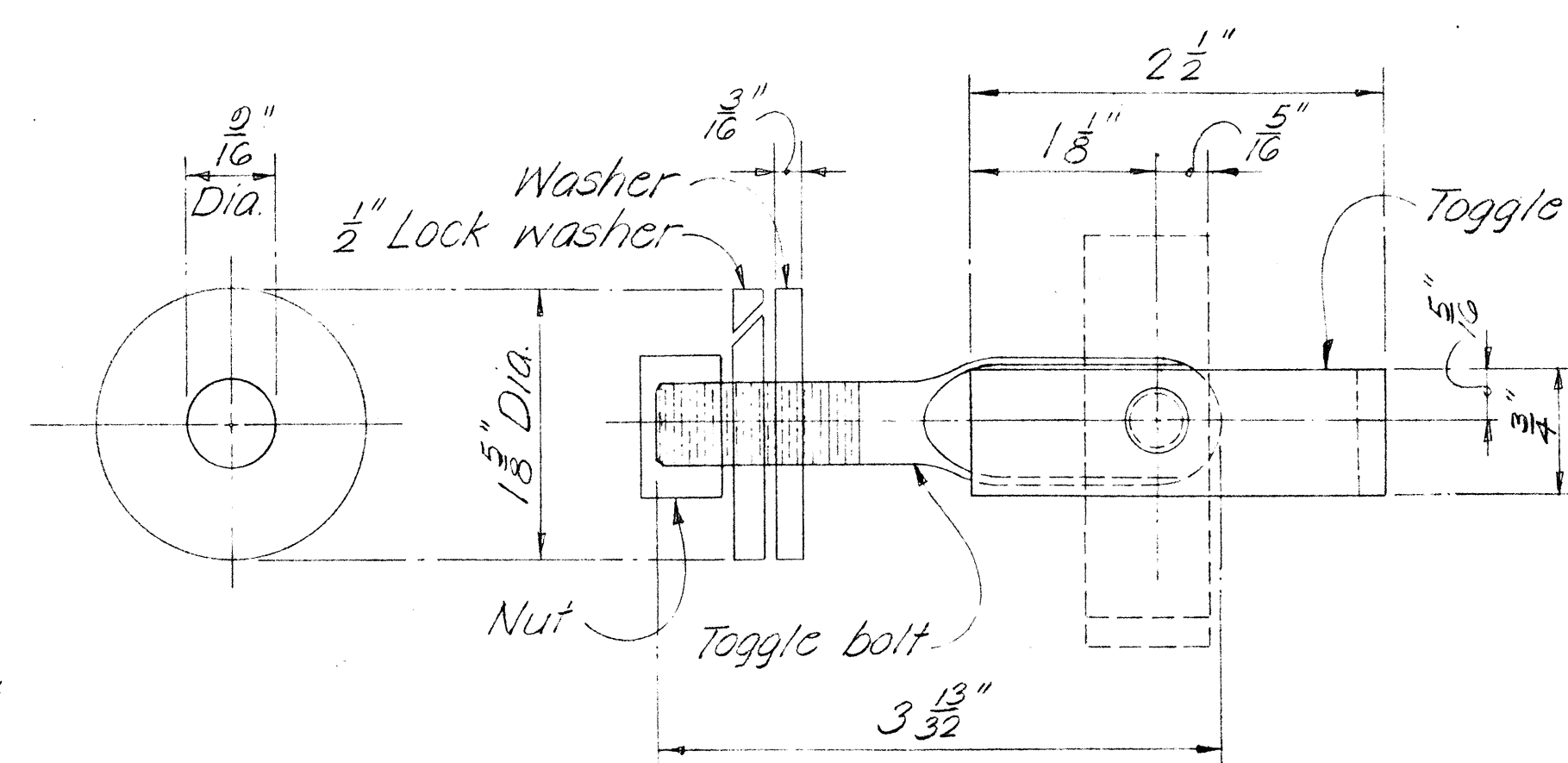


ANCHOR PLATE DETAIL ANCHOR BOLT
TYPICAL RAIL POST
STEEL ANCHOR BOLT ASSEMBLY

Scale: 3" = 1'-0"

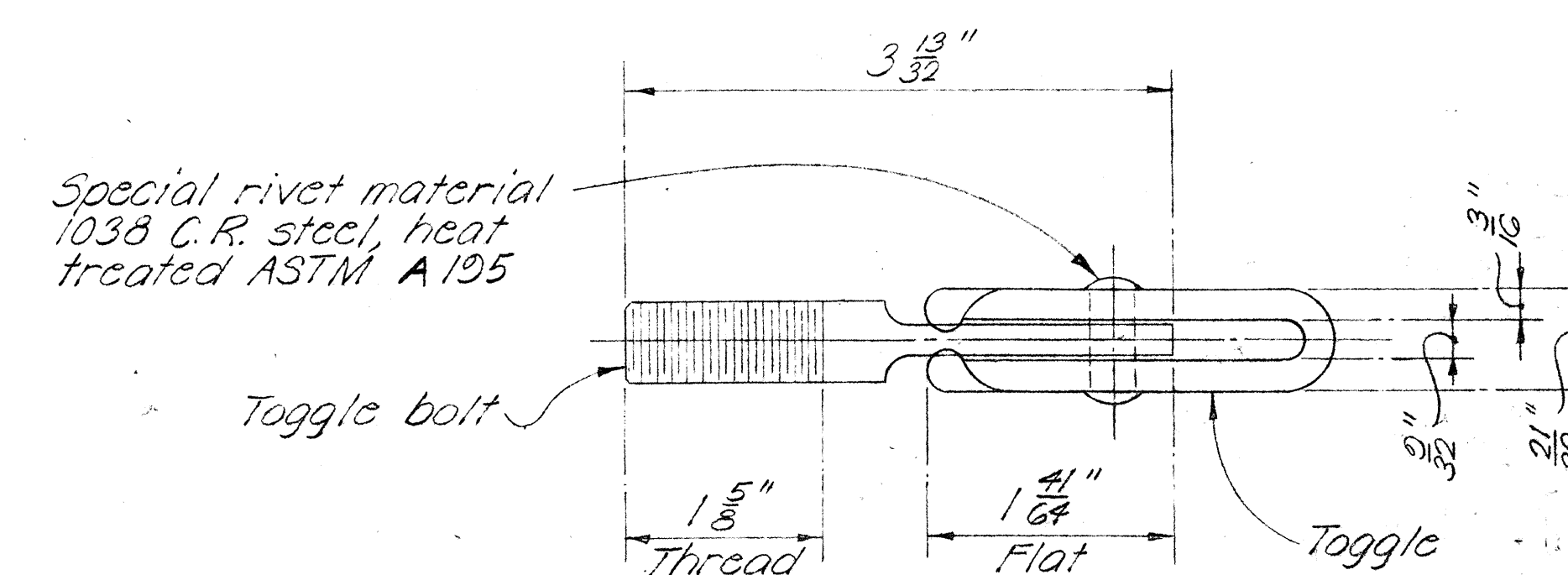


SECTION

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

WASHER

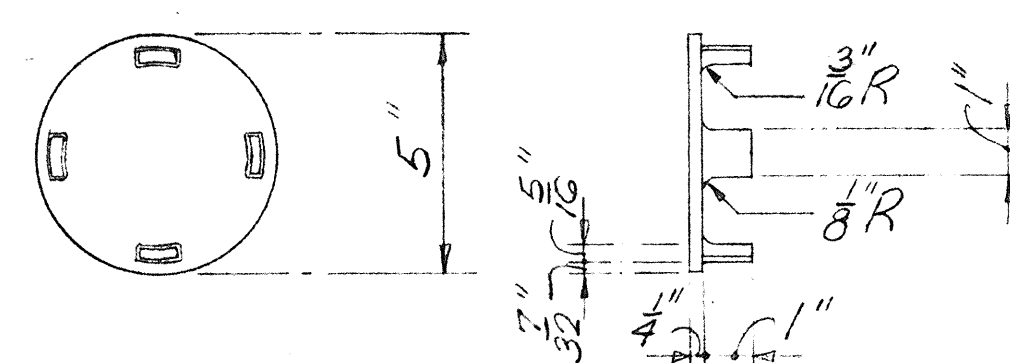
SIDE ELEVATION ASSEMBLAGE



TOP PLAN

$\frac{1}{2}$ " ϕ STEEL TOGGLE BOLT DETAILS

Full Scale



All draft angles = 3°

RAIL CAP DETAIL

Scale: 3" = 1'-0"

GENERAL NOTES:

Metal bridge railing shown is for Aluminum bridge railing. See Specifications for alternate railing in steel.

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:

Paul T. Yamashita
BRIDGE DESIGN ENGINEER

1-23-76
DATE

APPROVED

Paul T. Yamashiro
For ASSISTANT CHIEF, ENGINEERING

1-28-7
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
METAL BRIDGE RAILING
ONE RAIL COMBINATION TYPE
ON PARAPET

Scale as noted Date

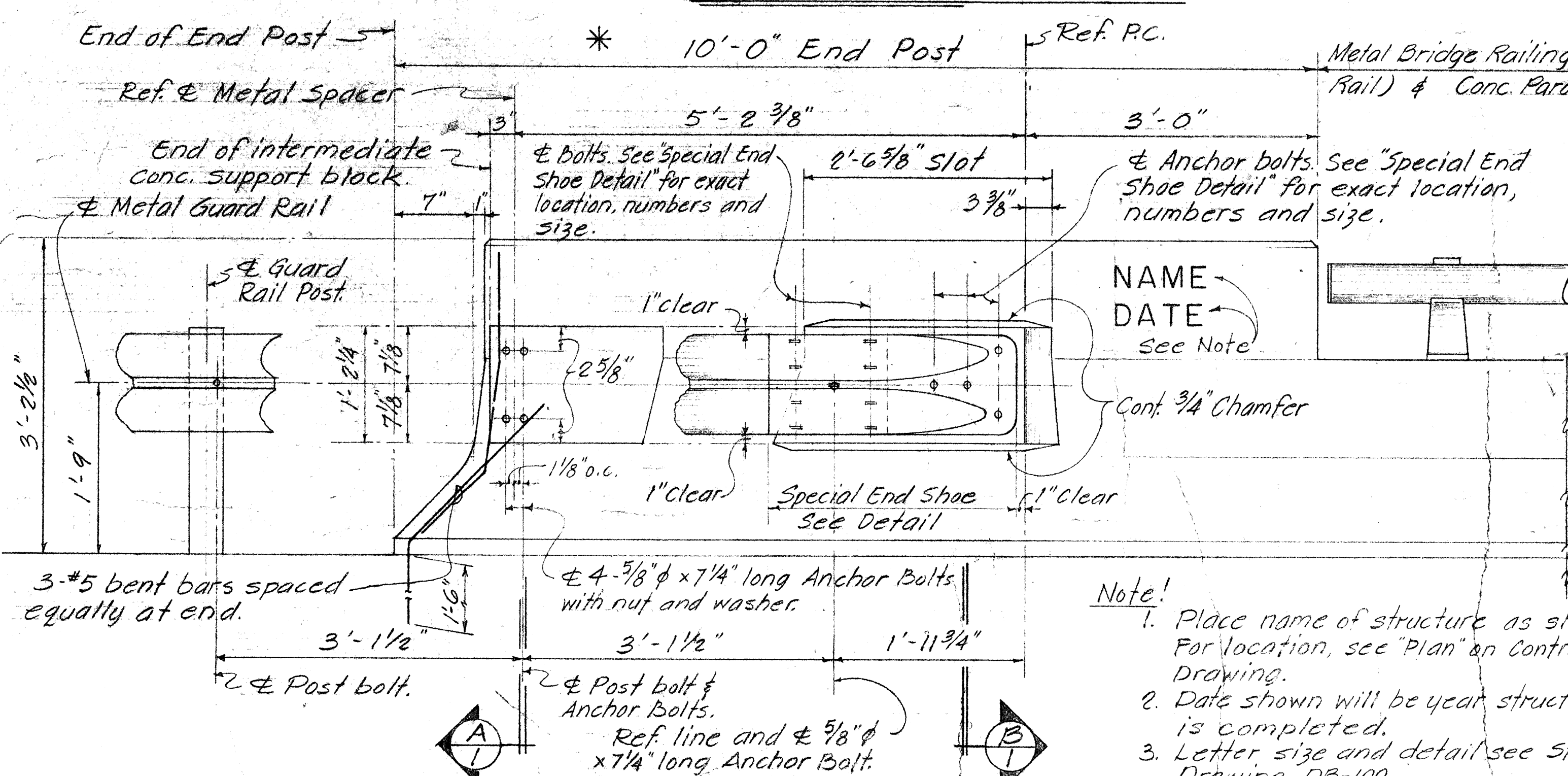
SHEET No. 53 OF 4 SHEETS DB-200-2

CURVE DATA
 $\Delta = 40^{\circ} 06' 25''$
 $R = 10.0'$
 $L_c = 7.0'$

Notes:
 ** Dimensions as detailed except as otherwise noted on Detailed Drawings.

Labels:
 Ref. Front face of End Post.
 Intermediate conc. support block. Monolithic pour with endpost & Guard Rail Post and Spacer block.
 End of End Post.
 3-#5 bent bars spaced equally at end.
 3-#5 bent @ 6"
 2-#4 x 2'-6" long.
 10' Radius P.C.
 2'-3 1/4"
 2'-6 5/8" Slot
 3'-0"
 3 3/8"
 3 3/8"
 3" 1 1/8"
 Metal Spacer
 3'-1 1/2"
 3'-1 1/2"
 1'-11 3/4"
 1" Clear
 Special End Shoe
 Ref. Front face of conc. parapet.
 12'-6" (Standard Guard Rail Panel.)
 See note (4)
 10'-0" End Post
 Conc. Parapet

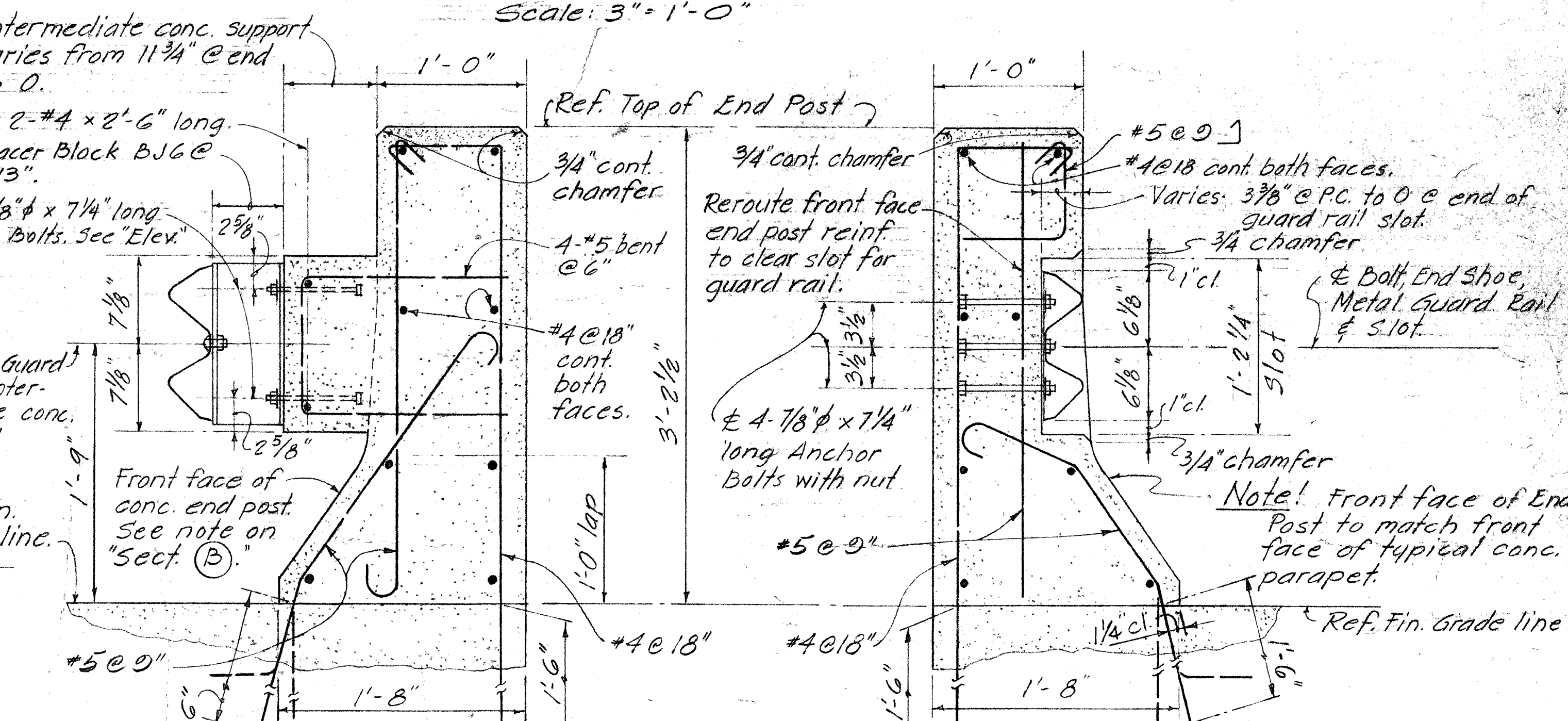
PLAN Scale: 1" = 1'-0"



ELEVATION Scale: 1" = 1'-0"

NOTES:

- SECTION (C)
SPECIAL END SHOE DETAILS
Scale: 3" = 1'-0"



SECTION (A)
Scale: $1\frac{1}{2}" = 1'-0"$

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

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:
Paul T. Yamashita
BRIDGE DESIGN ENGINEER

APPROVED, *Paul T. Vanez*
 ASSISTANT CHIEF, ENGINEERING

1-28-70
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

METAL GUARD RAIL CONNECTION.

ONE RAIL COMBINATION TYPE END POST.

Date _____

SHEET No. 54 OF 4 SHEETS DB-20