

REVISION

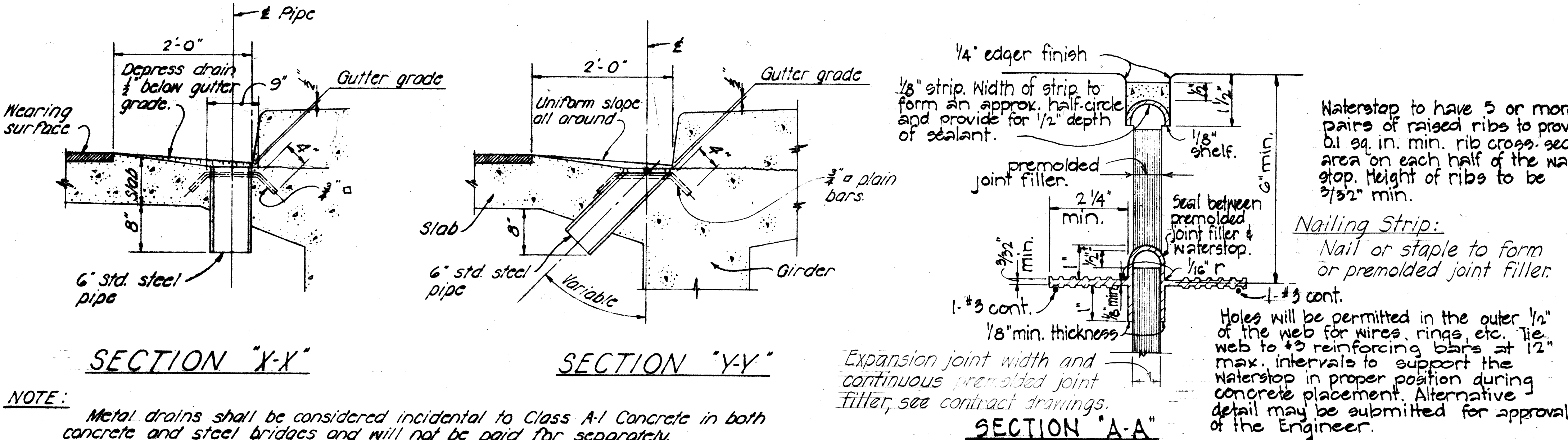
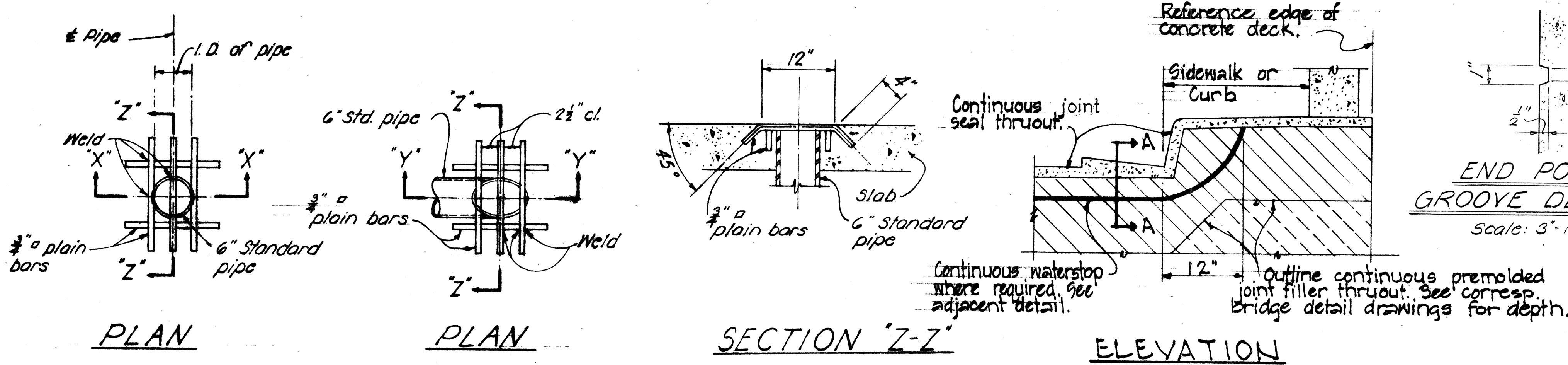
Jan. '67
Feb. '67
Apr. '67
June '68
Apr. '69
May '69

GENERAL NOTES

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.

- The Contractor shall verify the location of all existing utility lines and notify the respective owners before commencing work of excavation.
- All concrete shall be Class A unless otherwise noted.
- Clearance for reinforcing bars shall be as follows, unless otherwise noted:
 - 1" for stirrups of beams & pier caps.
 - 2" for ties of columns.
 - 2" for formed walls.
 - 3" for footings.
- Concrete seats receiving steel plates, lead plates or neoprene pads shall be poured monolithically with supporting structures & top surfaces of the concrete seats shall be finished with a steel trowel to a smooth level at the elevation shown on the plans.
- Reinforcing shall be detailed in accordance with A.C.I. Manual of Standard Practice for Detailing Reinforced Concrete Highway Structures 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.
- Splices of reinforcing - See Special Provisions.

END POST GROOVE DETAIL Scale: 3"=1'-0"

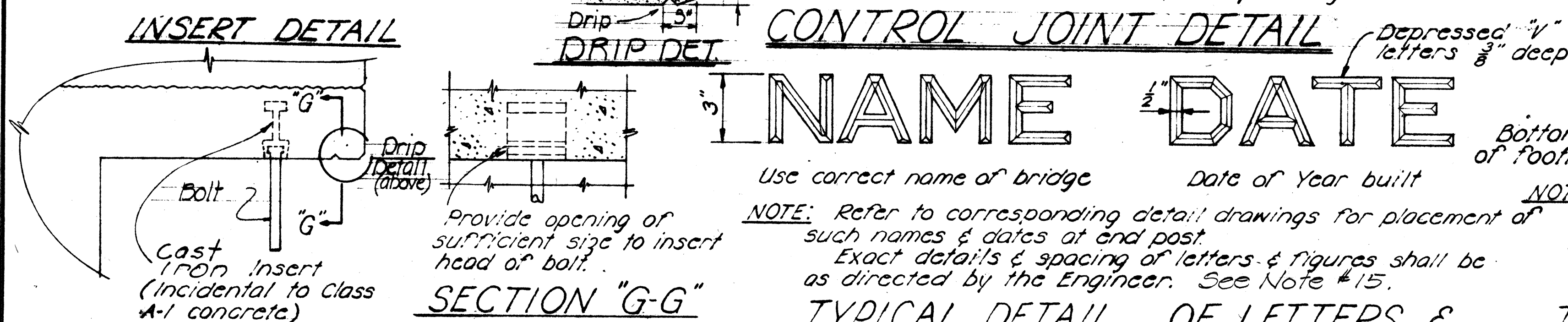
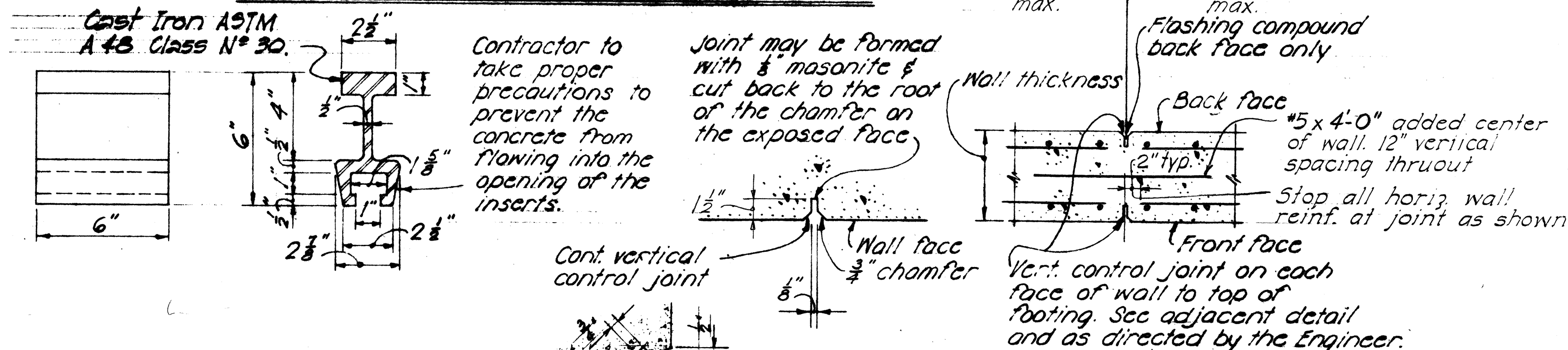


NOTE: Metal drains shall be considered incidental to Class A-1 Concrete in both concrete and steel bridges and will not be paid for separately. Assemblage of grillage and pipe shall be hot-dip galvanized after all welding is completed.

TYPICAL EXPANSION JOINT DETAIL

- 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.
- 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.
- 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". See Standard Specifications.
- Concrete Finish - See Special Provisions.
- All welders and welding procedures shall be qualified according to the requirements of the Special Provisions.
- Gothic letters and figures approximating dimensions shown will be acceptable if approved by the Engineer.

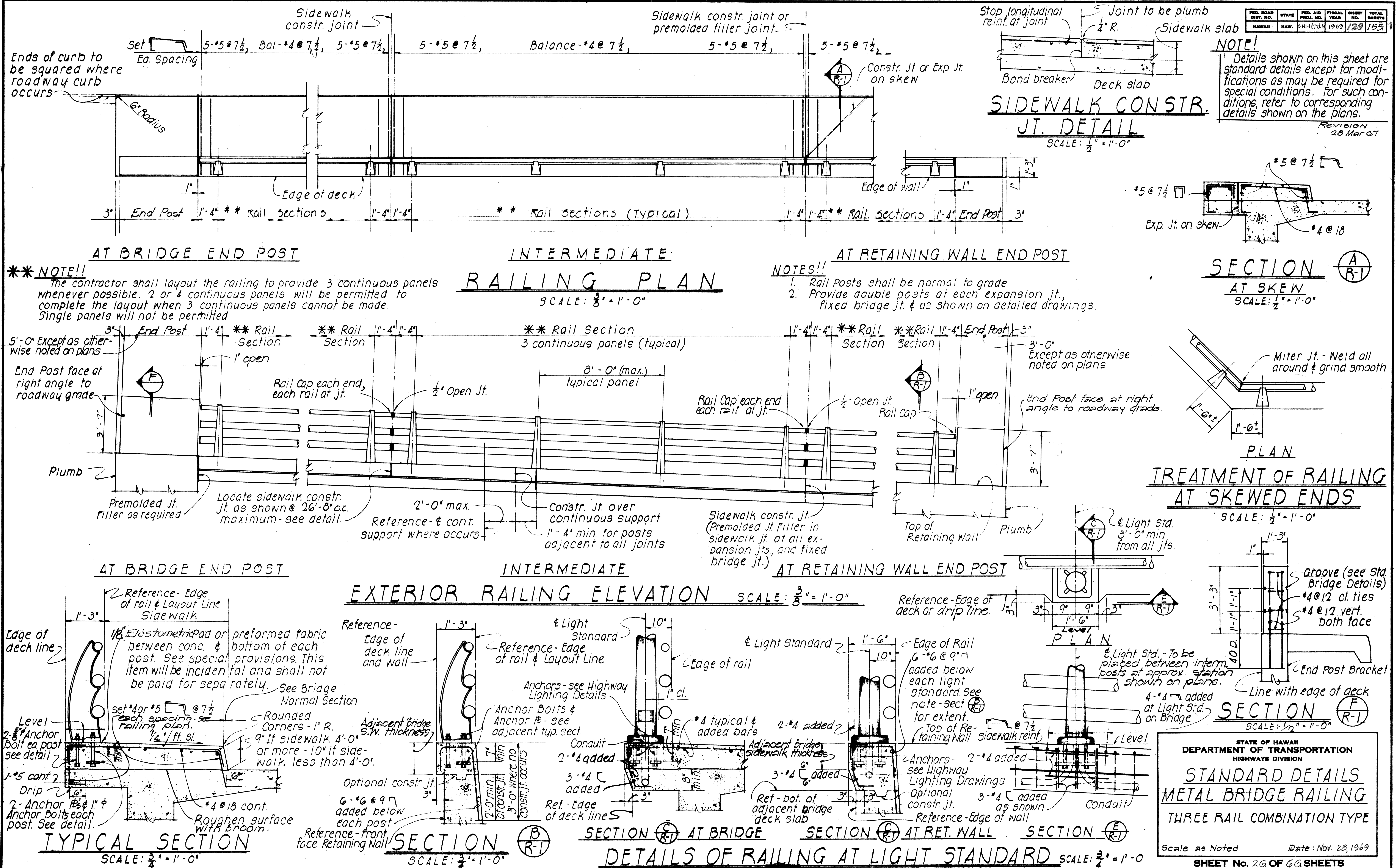
TYPICAL DRAINAGE DETAILS

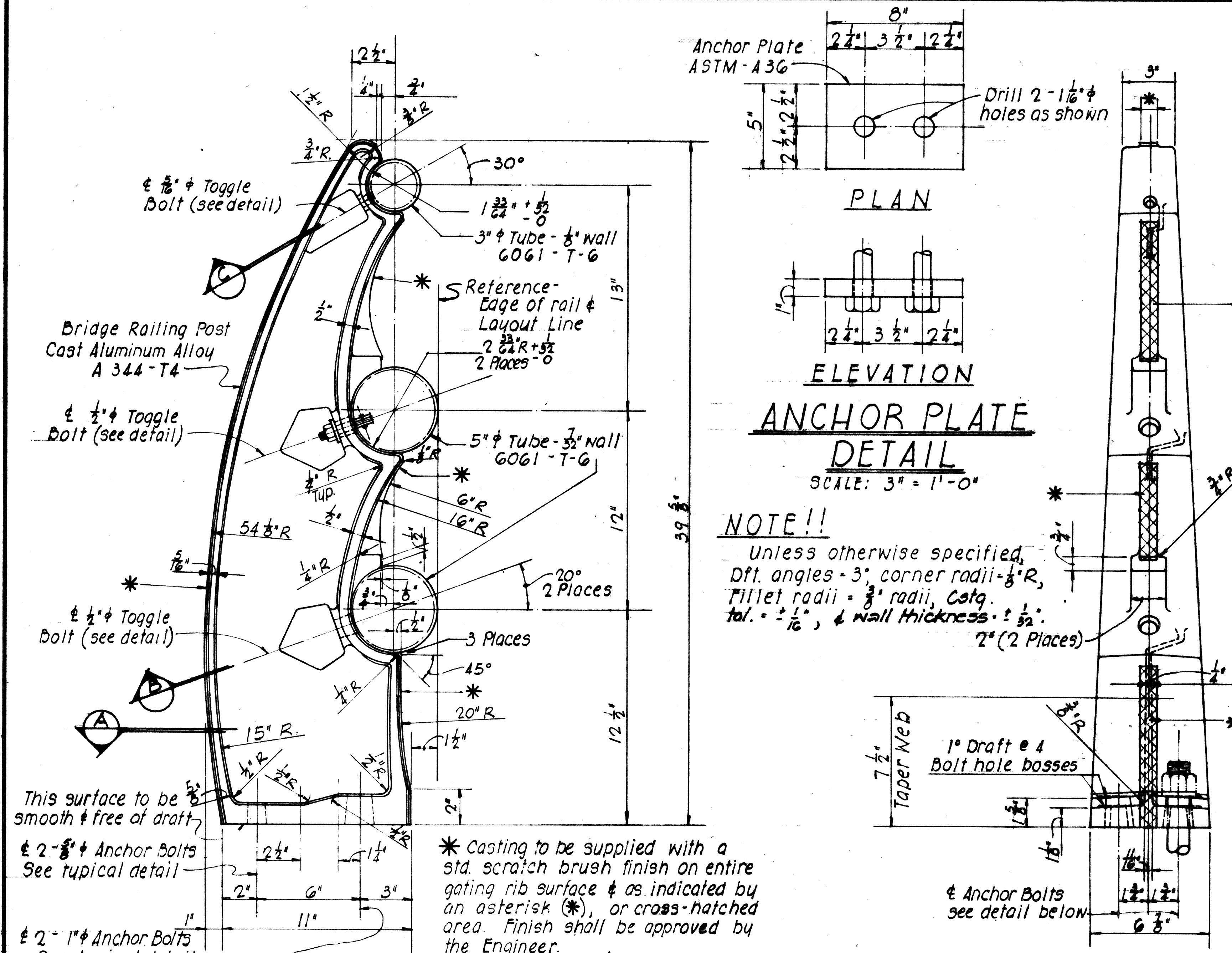


DETAIL OF PIPE HANGERS & INSERTS

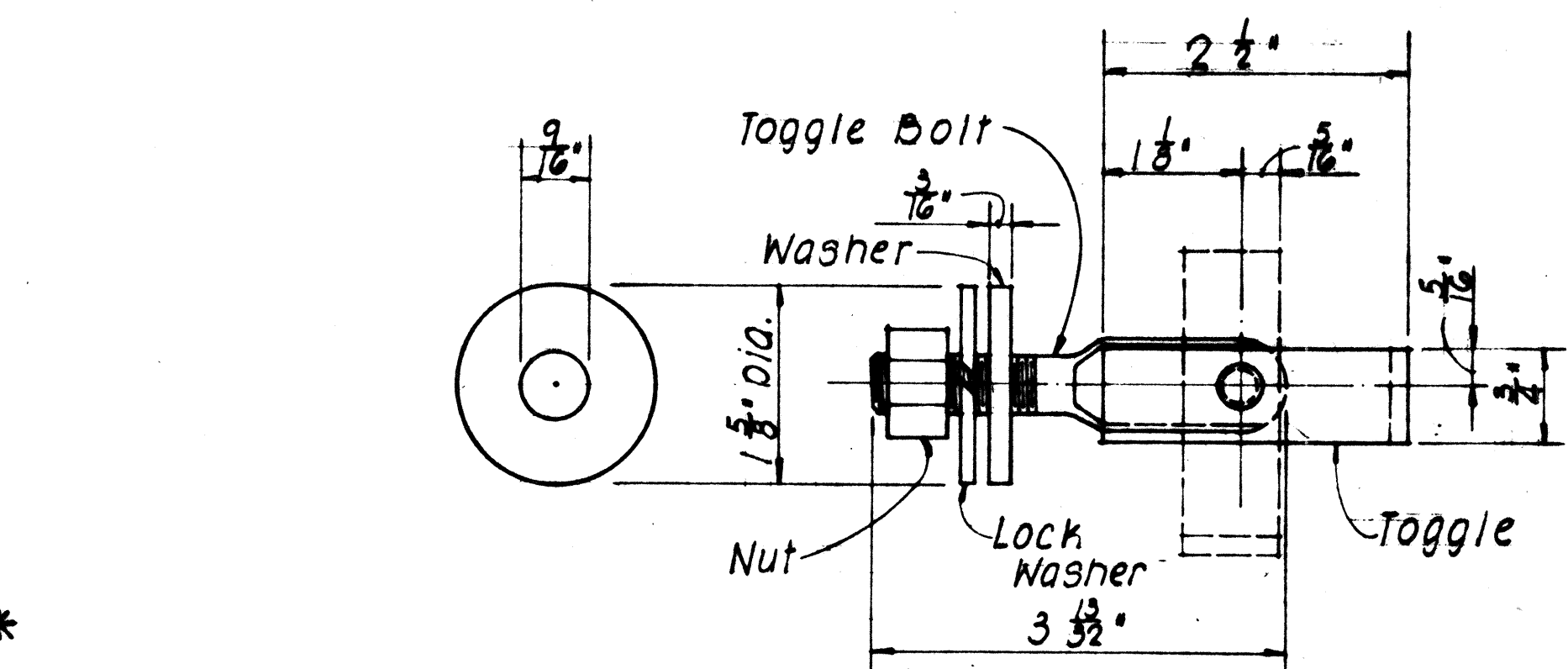
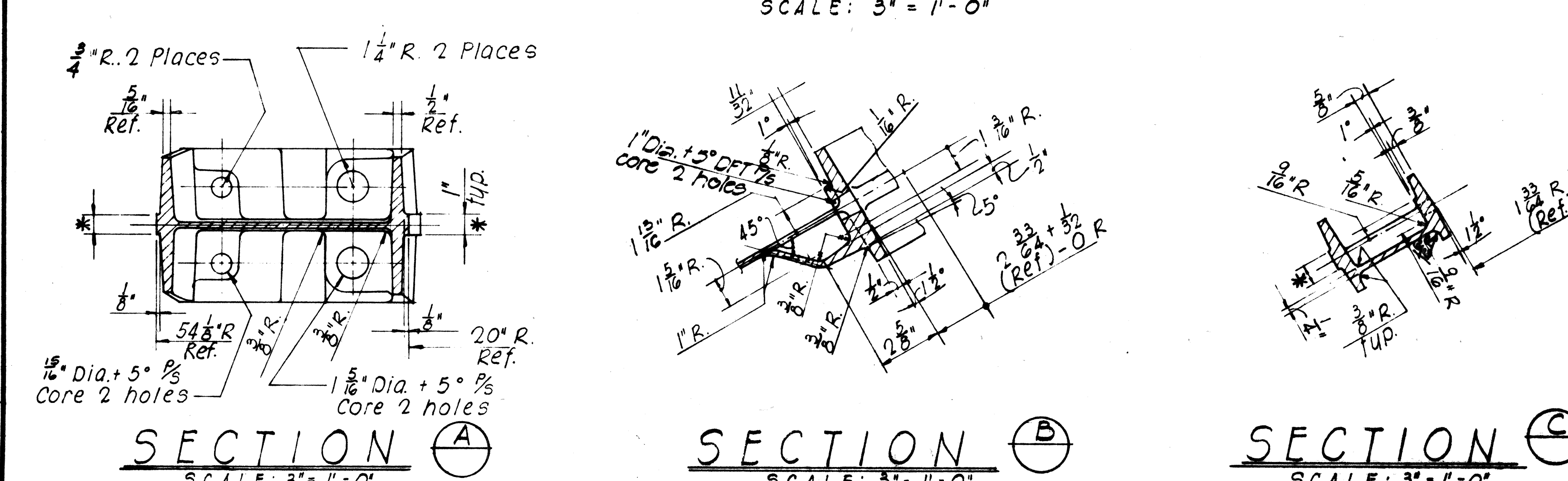
TYPICAL DETAIL OF LETTERS & FIGURES AT CONCRETE END POST

TYPICAL EXCAVATION FOR CONTINUOUS FOOTING STEP-UP

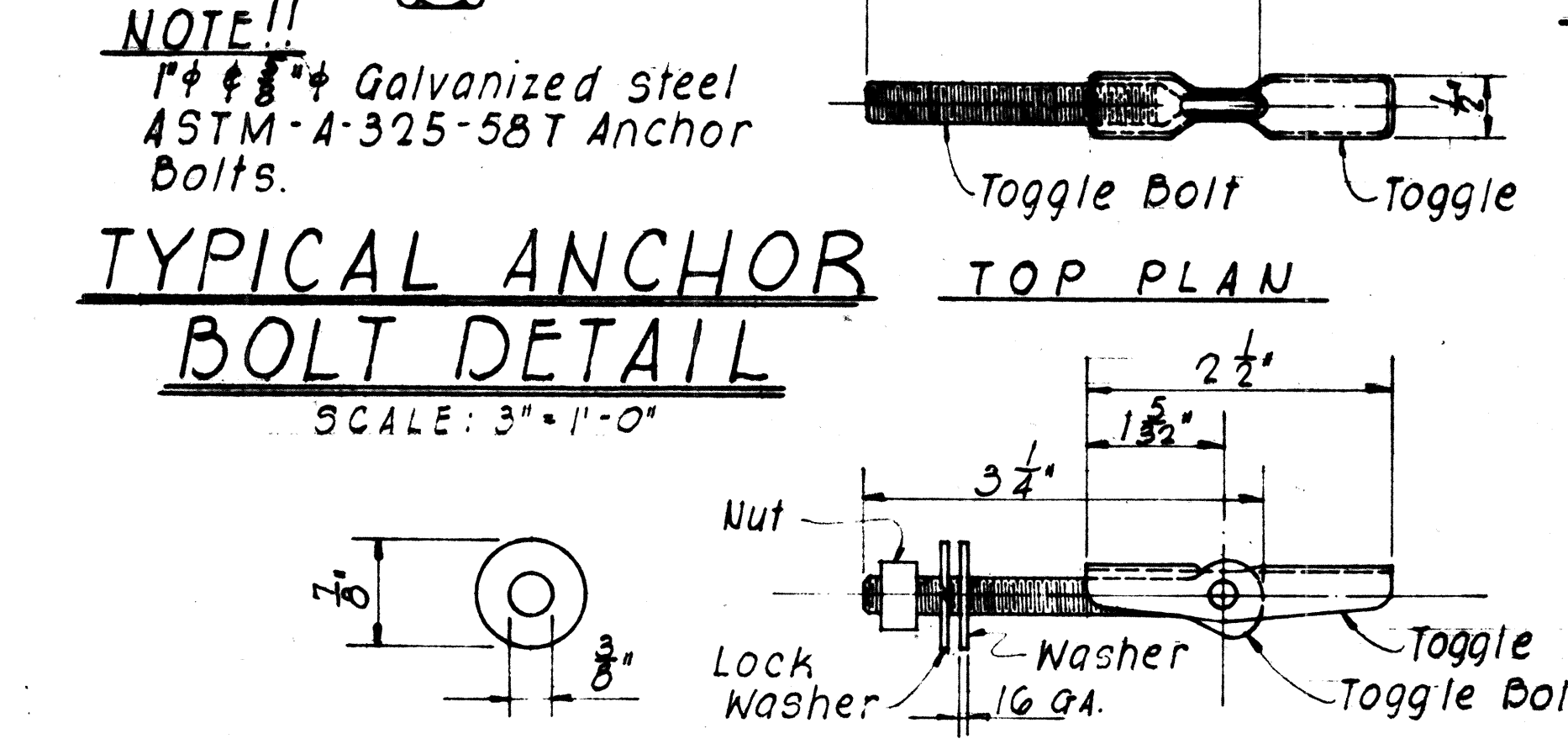
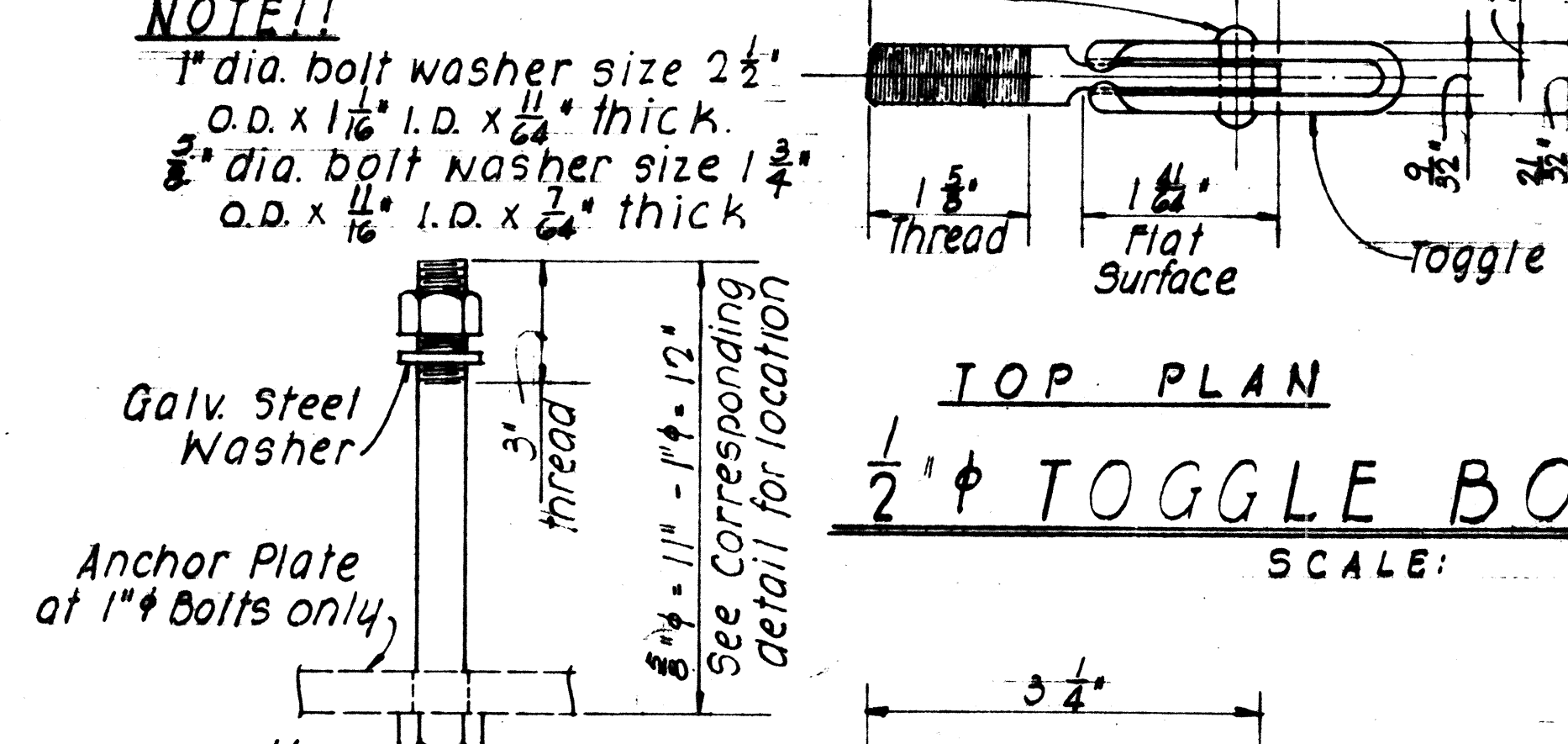




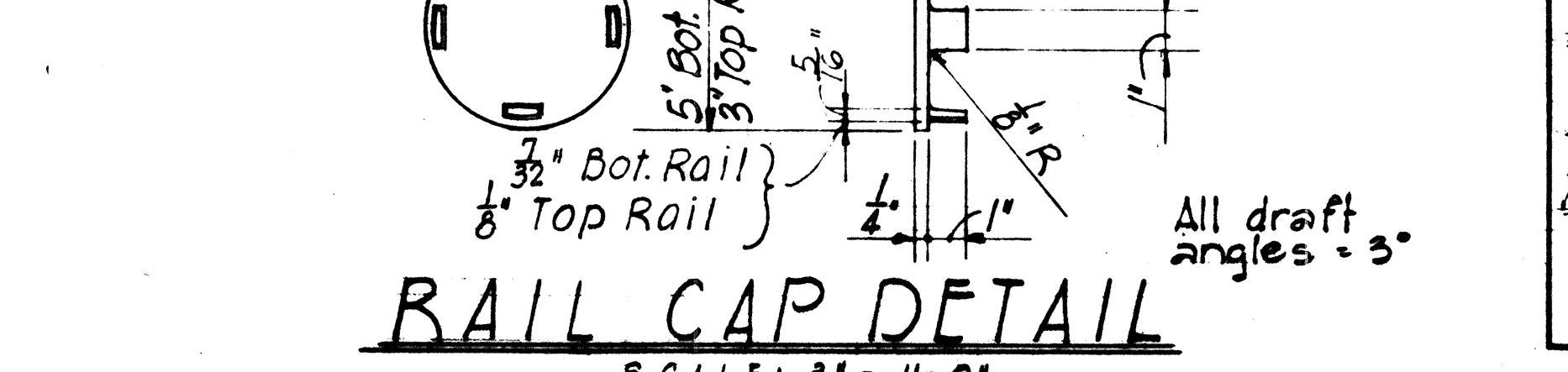
TYPICAL RAIL POST DETAILS
 SCALE: 3" = 1'-0"



1/2" TOGGLE BOLT DETAIL
 SCALE: 3" = 1'-0"



5/16" TOGGLE BOLT DETAIL
 SCALE: 3" = 1'-0"



NOTE!!
 Toggle Bolt Material - 1/2"-13 N.C. 1335 C.R. - Steel heat treated R.C. 32-38 ASTM-A354
 Toggle Material - 1015 H.R. steel pickled and oiled. Round edges ASTM-A305.
 Washer Material - SAE 1020 H.R. steel plates. ASTM-A-7 Break sharp edges.
 Nut - 1/2"-13 Amer. hex. nut - Heavy Mat'l. 1035 C.R. Stl. - Heat treated ASTM A325
 Cadmium plating on steel - Type N.S. .0005 thick - ASTM-A165. (All parts)
 For cast post specifications, see special provisions.

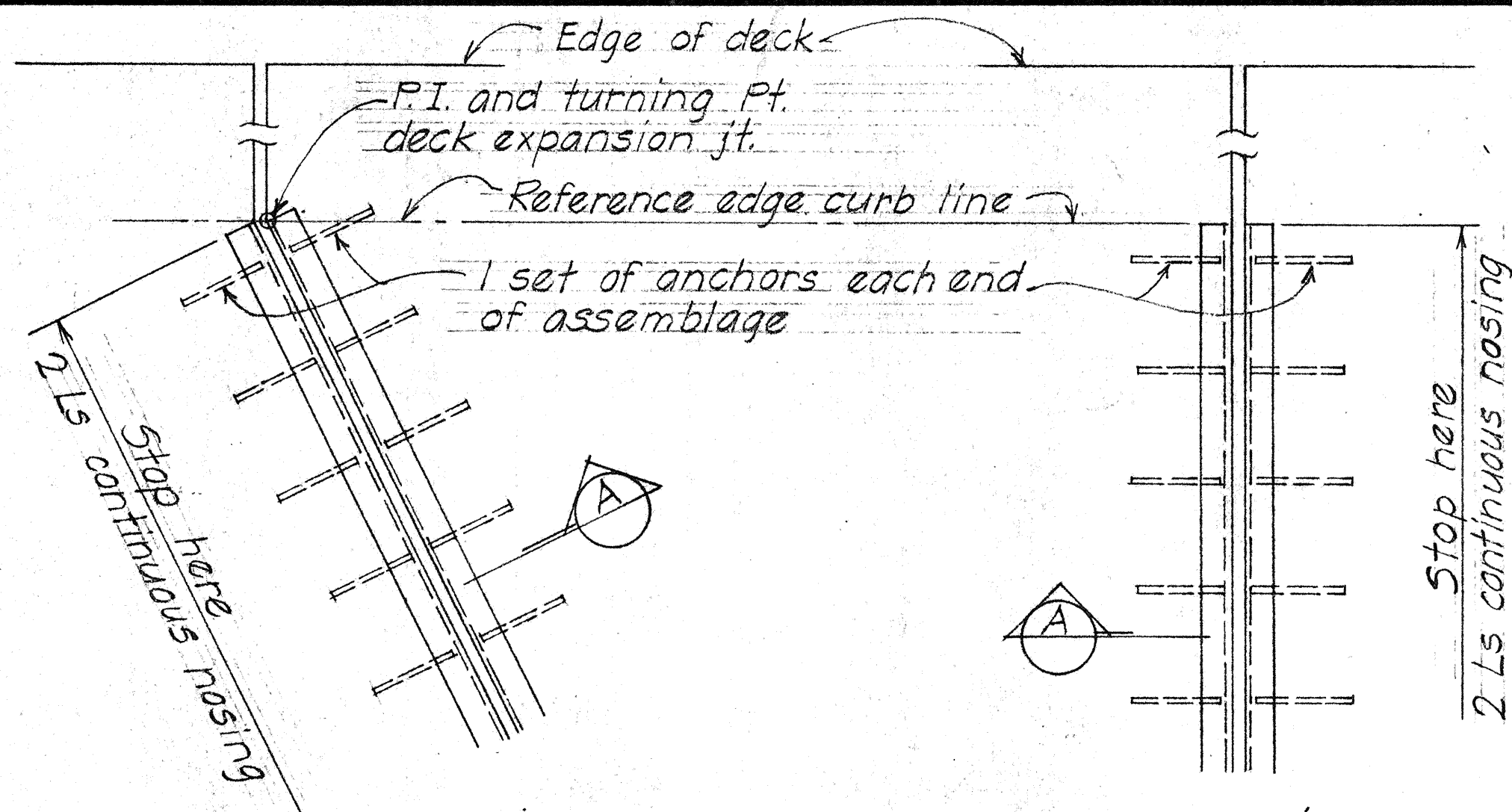
NOTE!!
 Toggle Bolt Mat'l. - 5/16"-18 N.C. SAE 1020 C.R. Steel unannealed after forming
 Toggle Mat'l. - H.R. steel pickled and oiled
 Washer Mat'l. - C.R. steel (1020)
 Nut Mat'l. - 5/16"-18 N.C. Amer. std. hex. nut cold punched (1020 stl)
 Cadmium plating on steel. Type N.S. .0005 thick - ASTM-A165. (All Parts)

General Note: Metal bridge railing shown is for aluminum bridge railing. See Special Provisions for alternate railing in steel.

DATE
 SURVEY PLOTTED BY
 DRAWN BY
 CHECKED BY
 ORIGINAL PLAN
 NOTED BOOK
 NO.

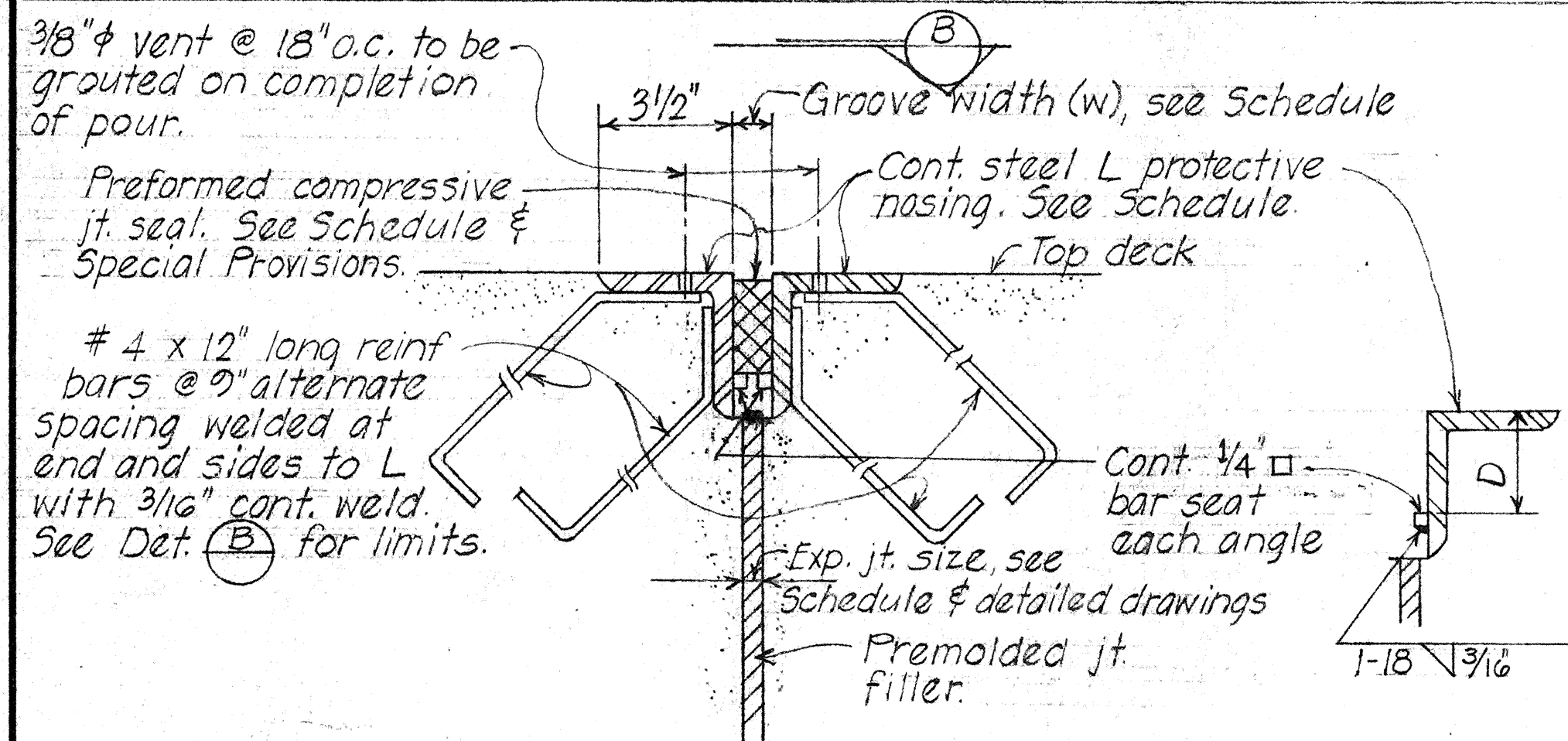
ORIGINAL	SURVEY PLOTTED BY _____	DATE _____
PLAN	DRAWN BY _____	" _____
	TRACED BY _____	" _____
NOTE BOOK	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
No. _____	CHECKED BY _____	" _____





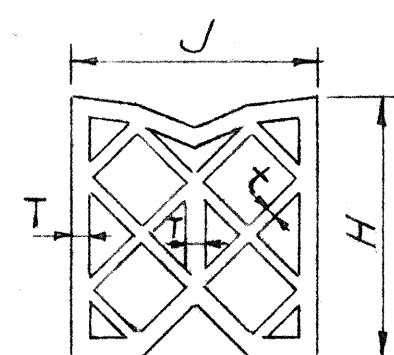
AT RADIAL & NORMAL TO DECK JOINT

AT SKEWED JOINT
PLAN-LIMITS OF DECK STEEL ANGLE PROTECTIVE NOSING

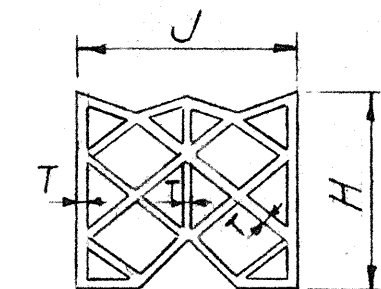


SECTION A
Scale: 3"=1'-0"

Exp. Jt. Size	Steel Angle Protective Nosing	Groove Size		Size of Joint Seal
		W	D	
1/2"	3 1/2" x 3 1/2" x 1/2"	1 1/8"	2 3/8"	①
5/8"	3 1/2" x 3 1/2" x 1/2"	1 1/8"	2 3/8"	①
3/4"	4" x 3 1/2" x 1/2"	1 5/16"	2 3/4"	②



TYPE A

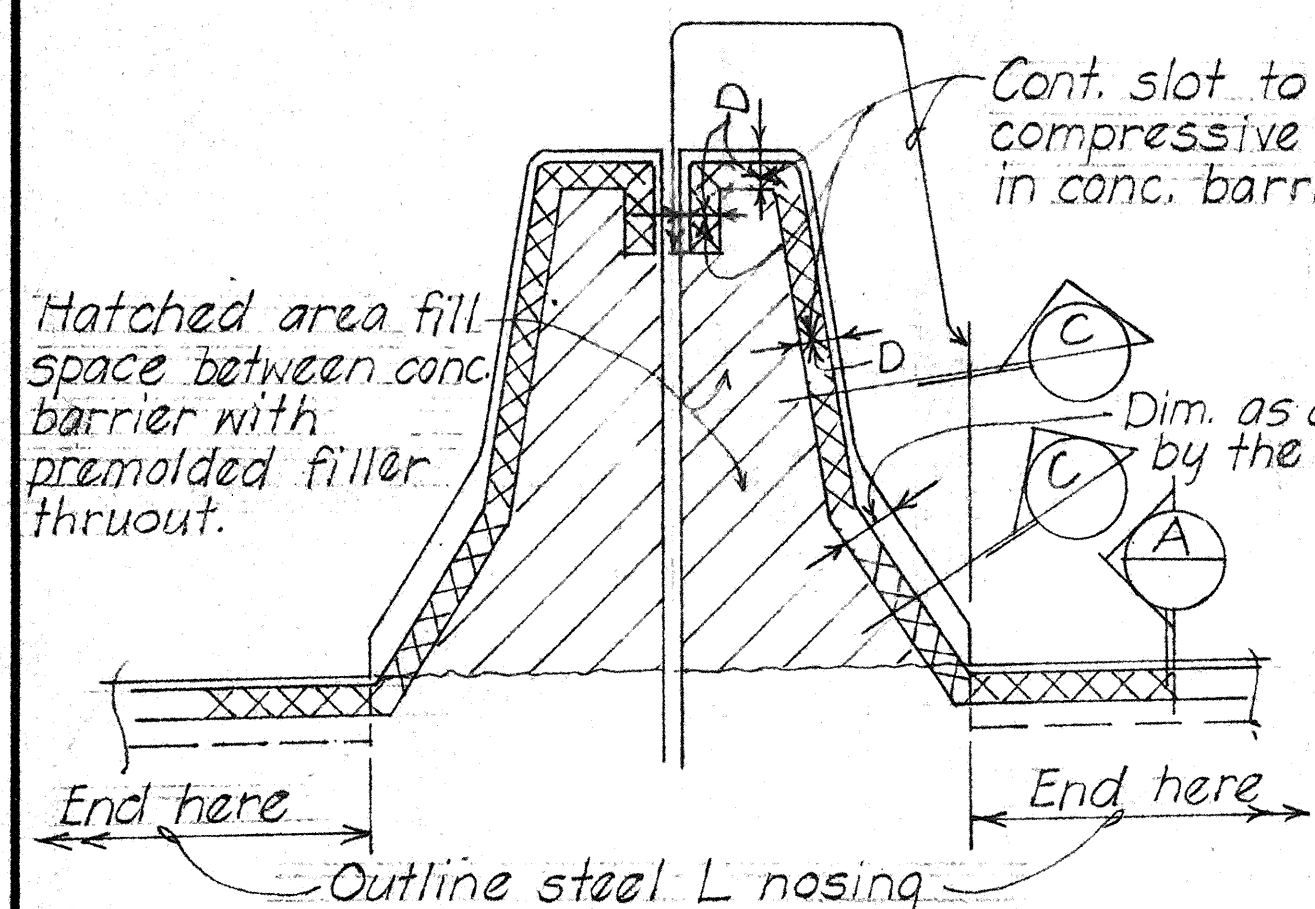


TYPE B

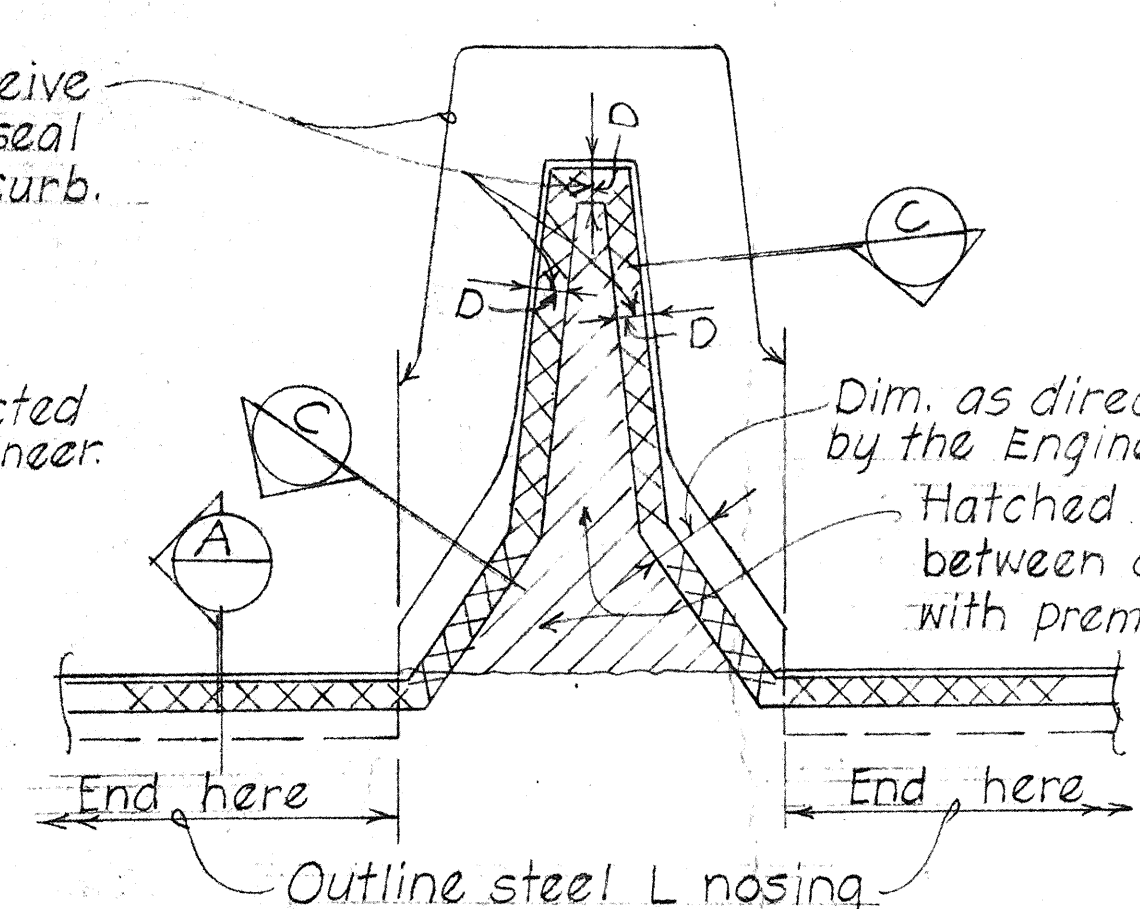
Size of Joint Seal	JOINT SEALER DIMENSIONS & TOLERANCES									
	Type	J	H	T	t	Type	J	H	T	t
①	A	1 3/4 +3/16 -0	2 ± 1/8	1/8 +1/32 -1/64	3/32 +1/64 -1/32	B	1 3/4 +3/16 -0	1 3/4 ± 3/16	5/16 +1/32 -1/64	—
②	A	2 +3/16 -0	2 1/16 ± 1/8	1/8 +1/32 -1/64	3/32 +1/32 -1/64	B	2 +3/32 -0	2 ± 1/8	7/16 +1/32 -0	—

NOTE:

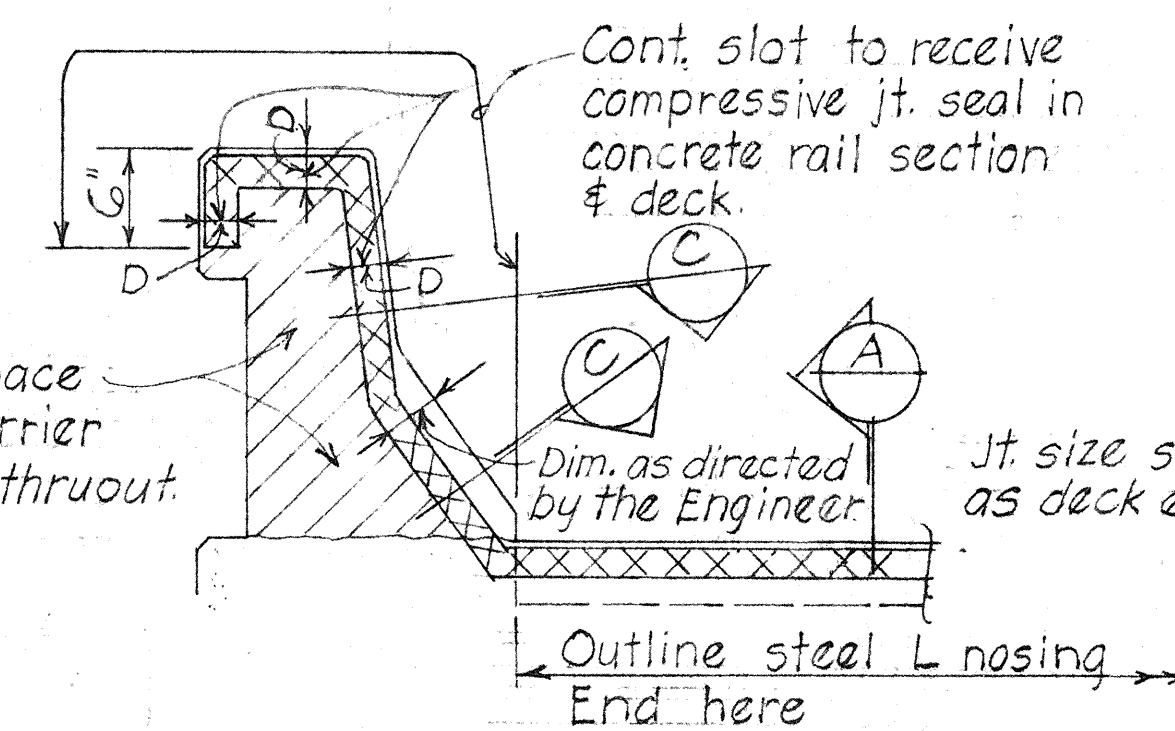
Entire steel angle protective nosing to be hot-dip galvanized after fabrication.



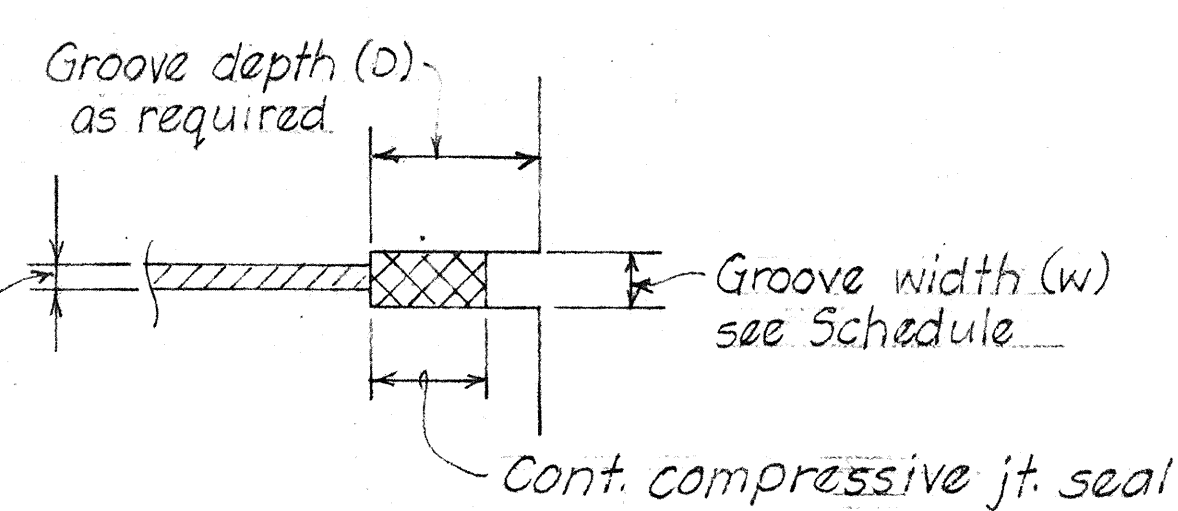
AT DOUBLE MEDIAN BARRIER



AT SINGLE MEDIAN BARRIER



AT CONCRETE RAILING



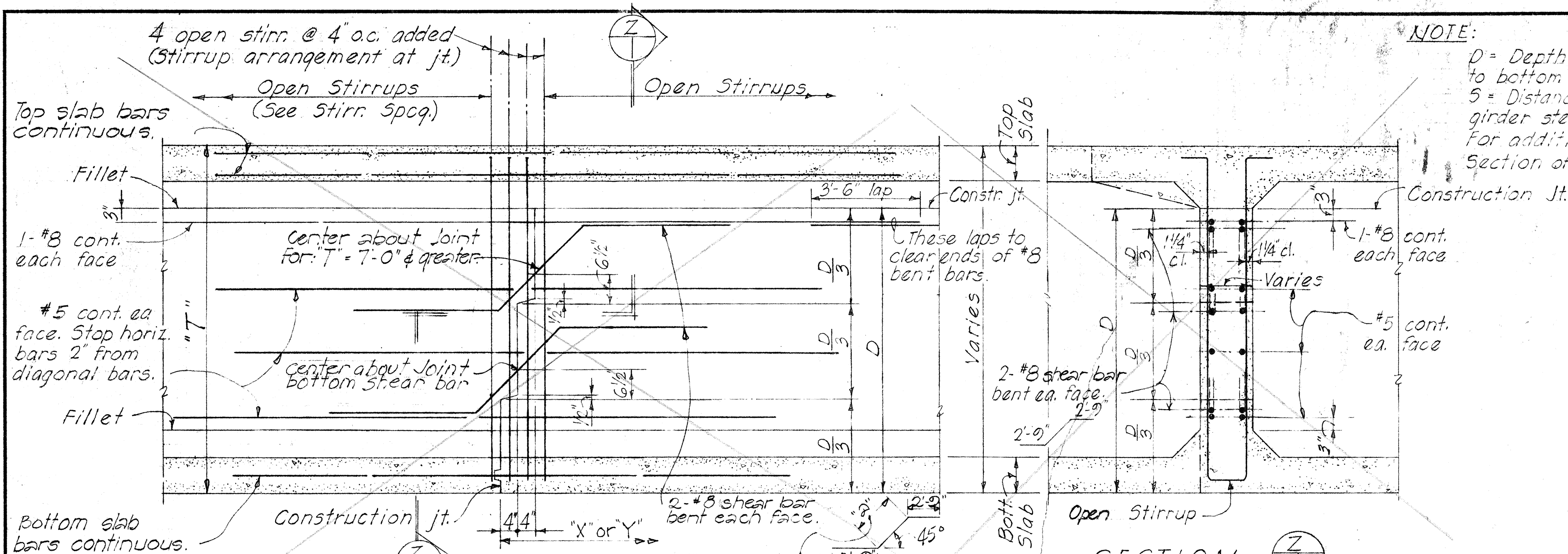
SECTION C

COMPRESSIVE SEAL WATERPROOFING DETAILS
TYPICAL EXPANSION JOINT WATERPROOFING DETAILS

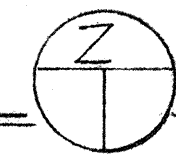
REVISION
May 1967
June 1967
July 1967

NOTE:

D = Depth of girder stem to bottom of slab.
S = Distance between top & bott. cont. girder stem longitudinal bars.
For additional details see Normal Section of the Plans.



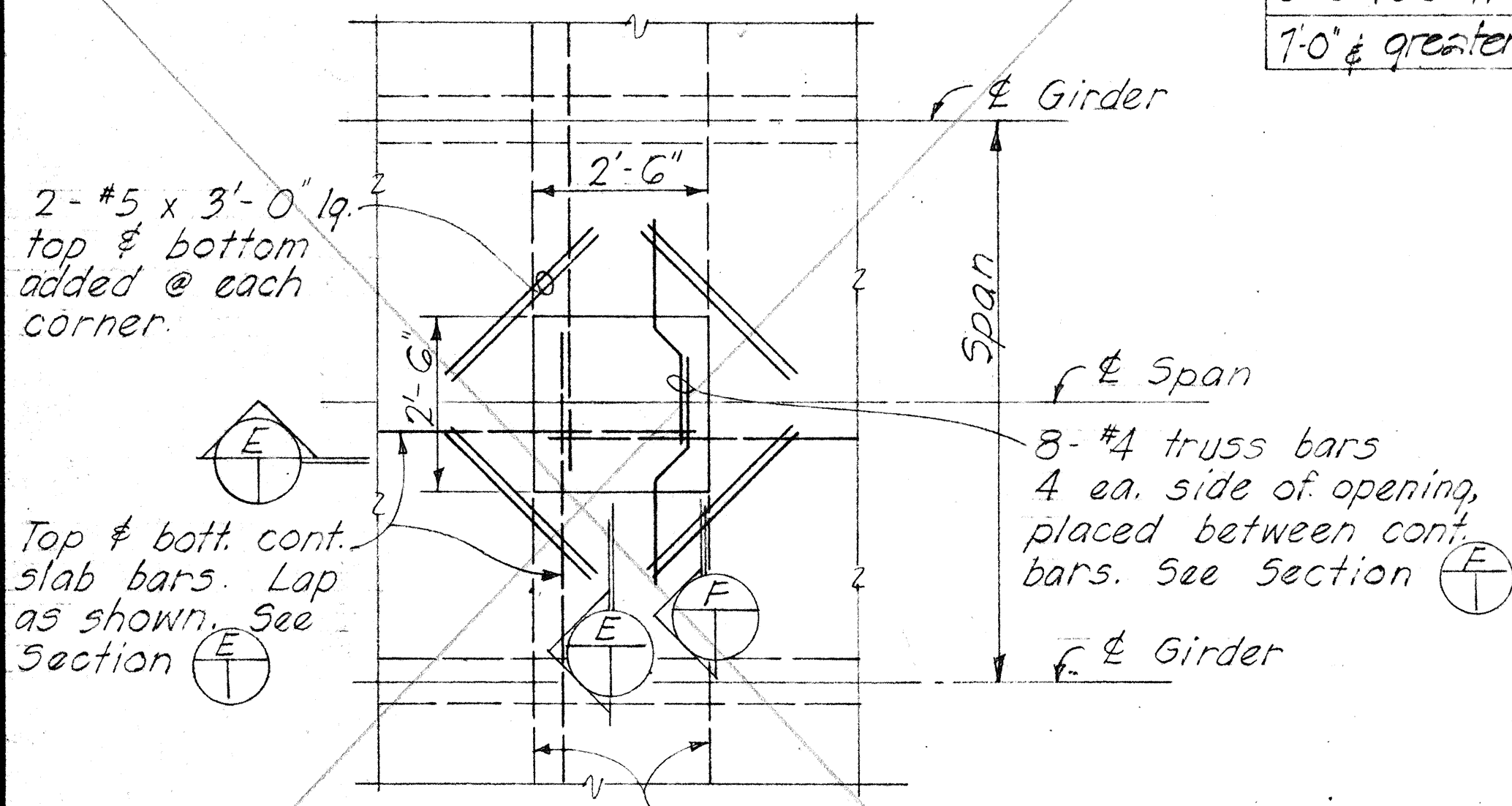
SECTION



GIRDER STEM CONSTRUCTION JOINT

Depth "T"	"S"
4'-11" & smaller	1'-9"
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.

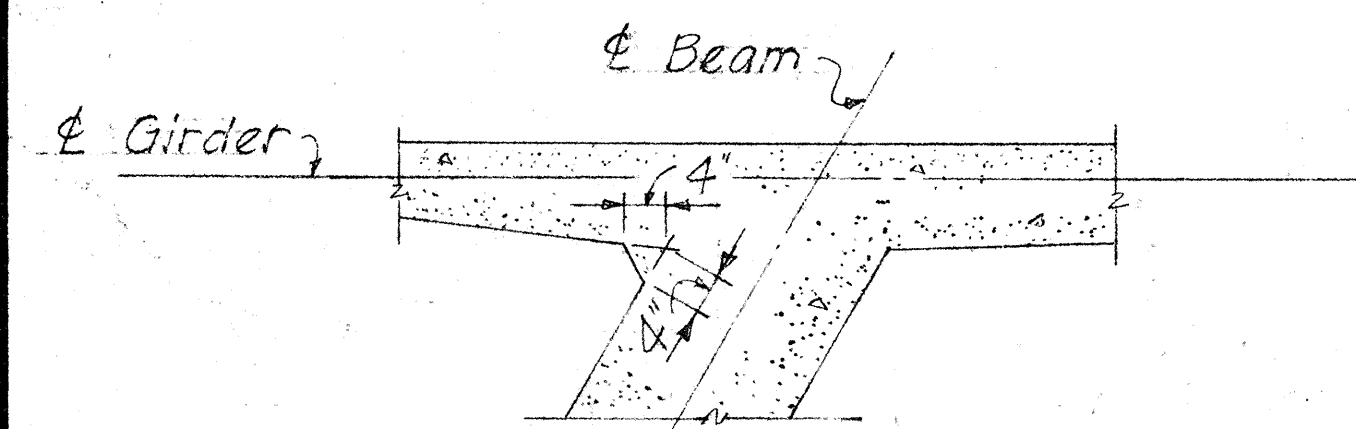


Note: Final location of opening shall be determined by the Engineer.

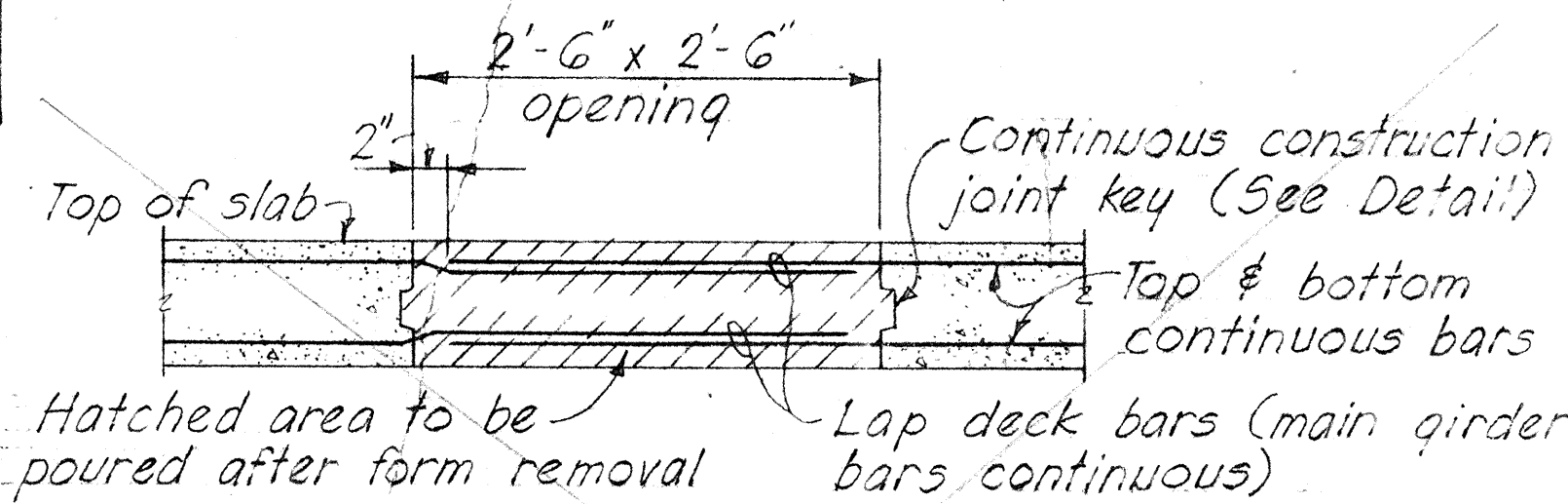
Form removal opening may extend from edge of deck to edge of deck with approval of the Engineer. Lap small longitudinal deck bars as shown on Section E

PART PLAN - DECK

SHOWING FORM REMOVAL OPENING



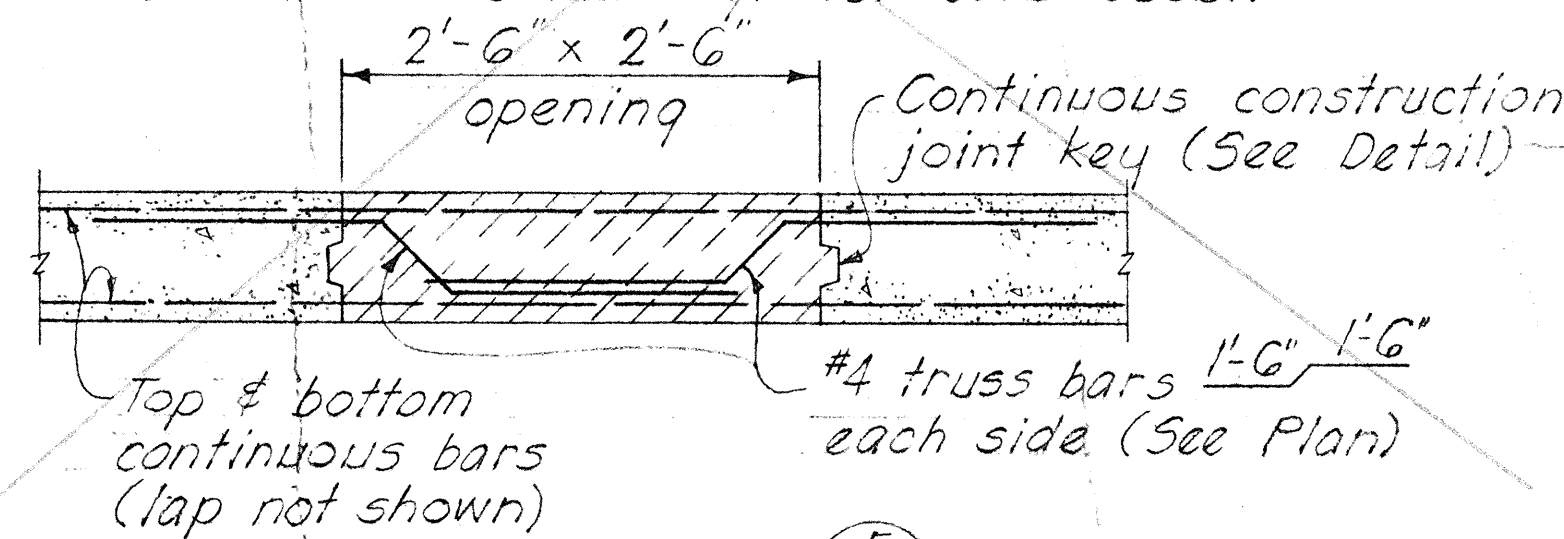
TYPICAL DETAIL OF VERTICAL CHAMFER AT ACUTE INTERSECTION OF SKEWED CONCRETE MEMBER



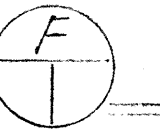
SECTION



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



SECTION



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS CONCRETE BOX GIRDER

DATE: NOV 28, 1969

SHEET No. 66 OF 66 SHEETS