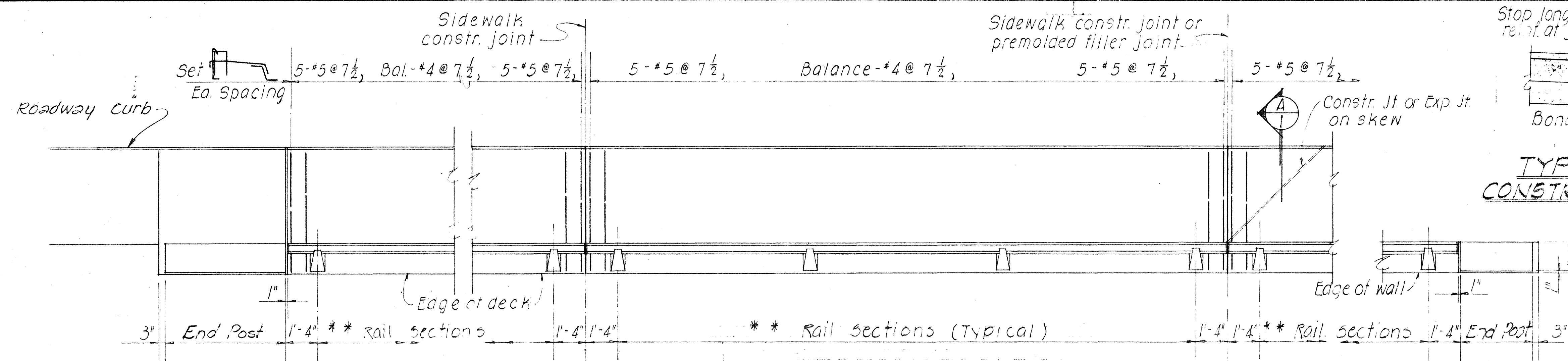
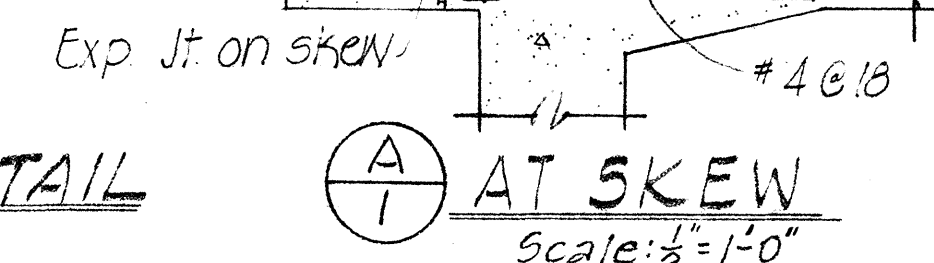




TYPICAL SIDEWALK
CONSTRUCTION JOINT DETAIL
Scale: $\frac{1}{8}" = 1'-0"$



**** NOTE!!**

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

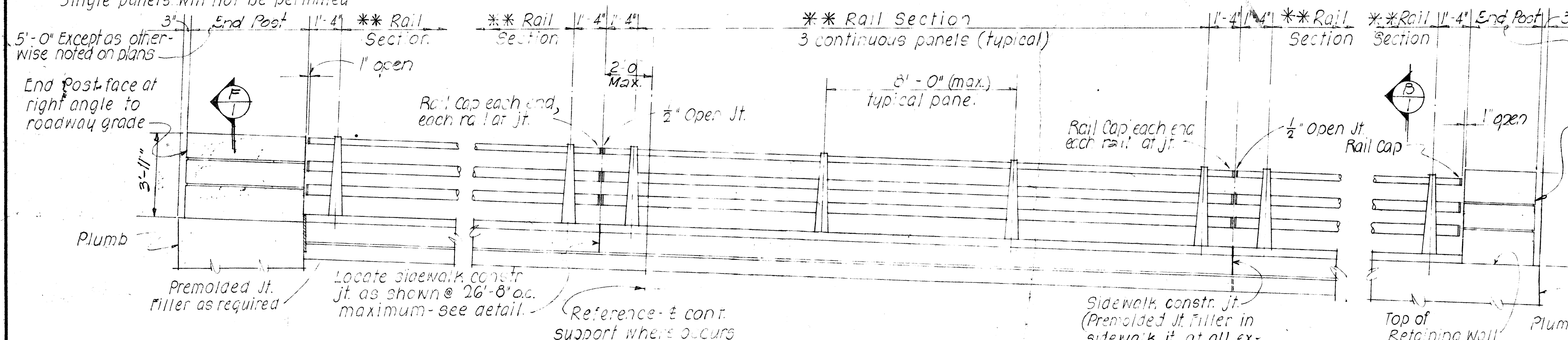
INTERMEDIATE
RAILING PLAN

SCALE: $\frac{3}{8}'' = 1' - 0''$

AT RETAINING WALL END POST

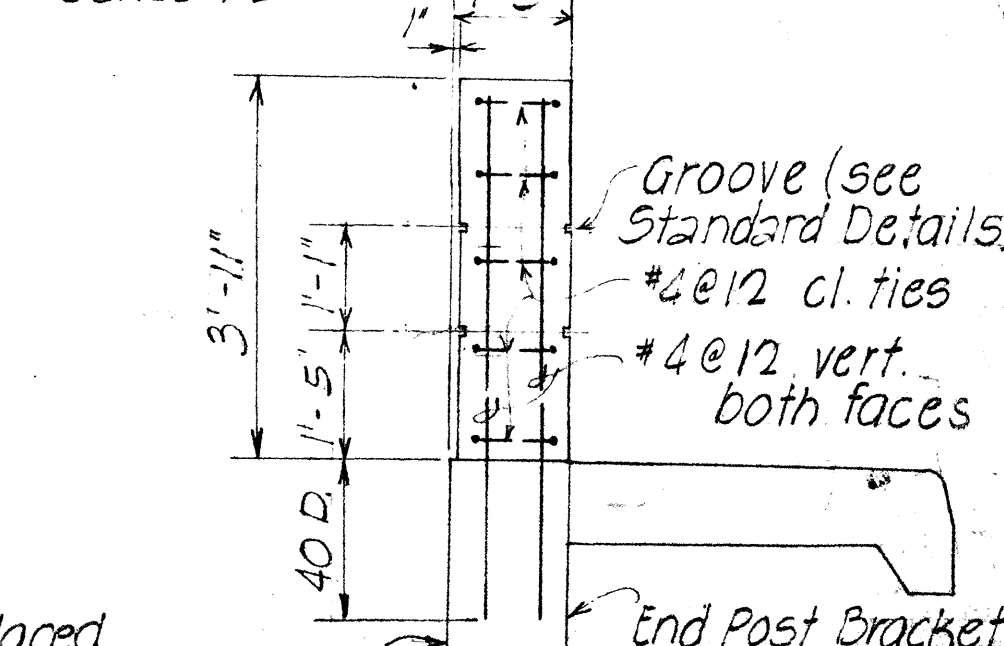
NOTES!

1. Rail Posts shall be normal to grade
2. Provide double posts at each expansion jt.,
fixed bridge jt. & as shown on detailed drawings



TREATMENT OF RAILING AT SKEWED ENDS

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



edge of deck
SECTION

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

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED

Paul T. Yamashita
BRIDGE DESIGN ENGINEER

1-23-77
DATE

APPROVE

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

DATE

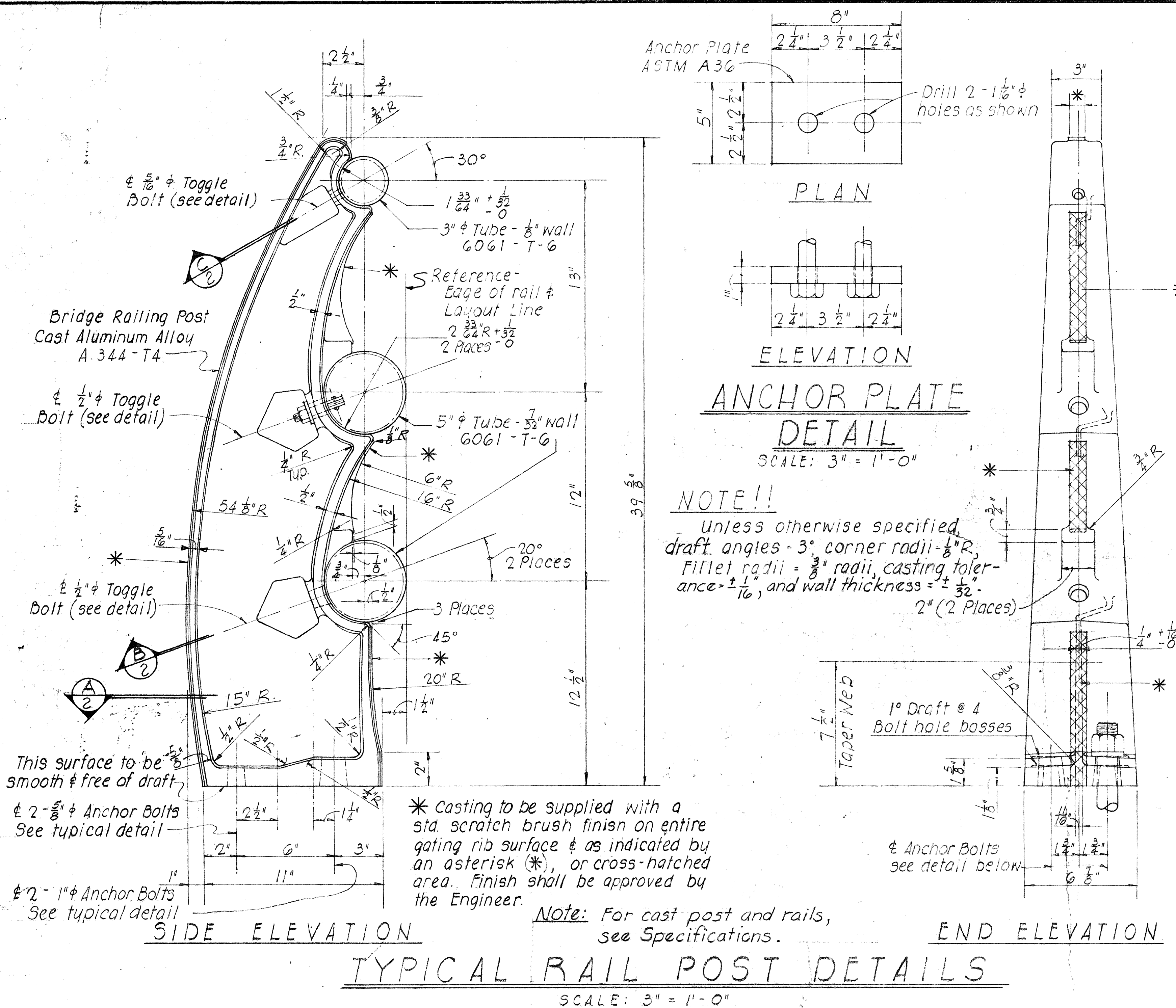
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS METAL BRIDGE RAILING

THREE RAIL COMBINATION TYPE

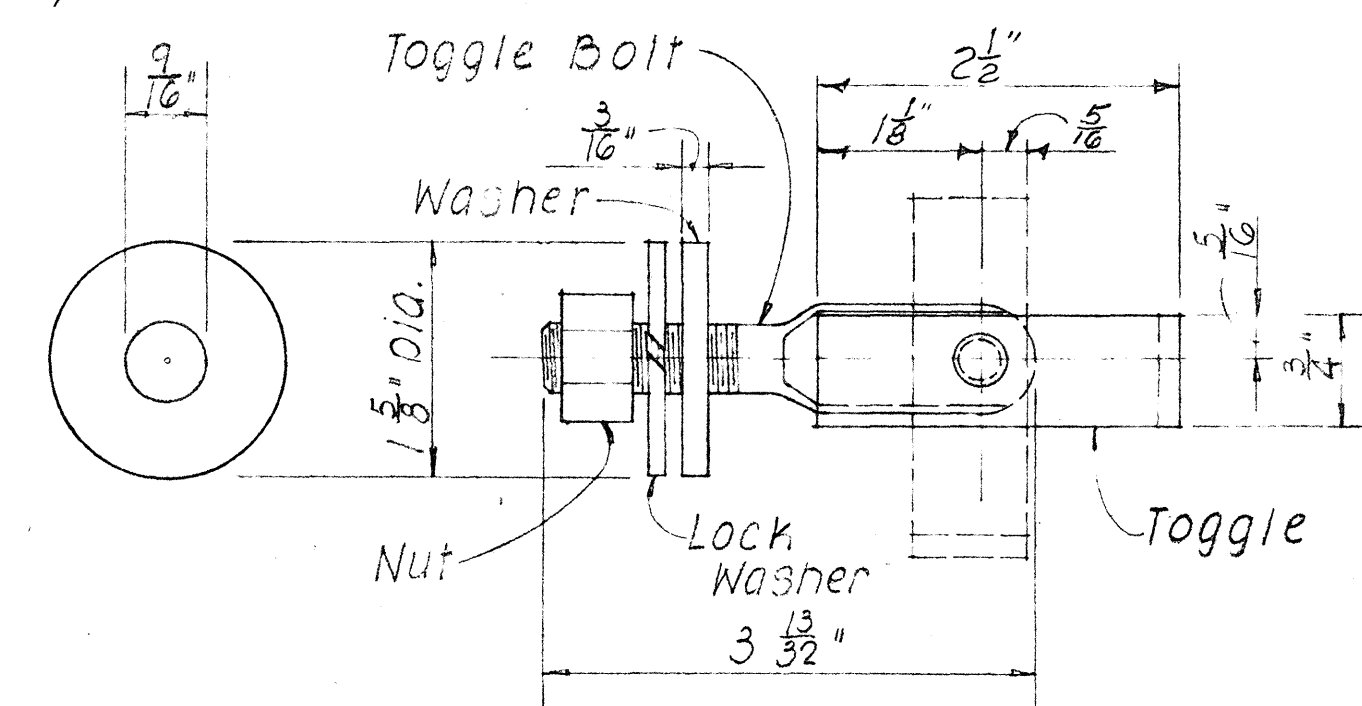
Date: Oct, 1970

SHEET No. 2 OF 5 SHEETS DB-203-1

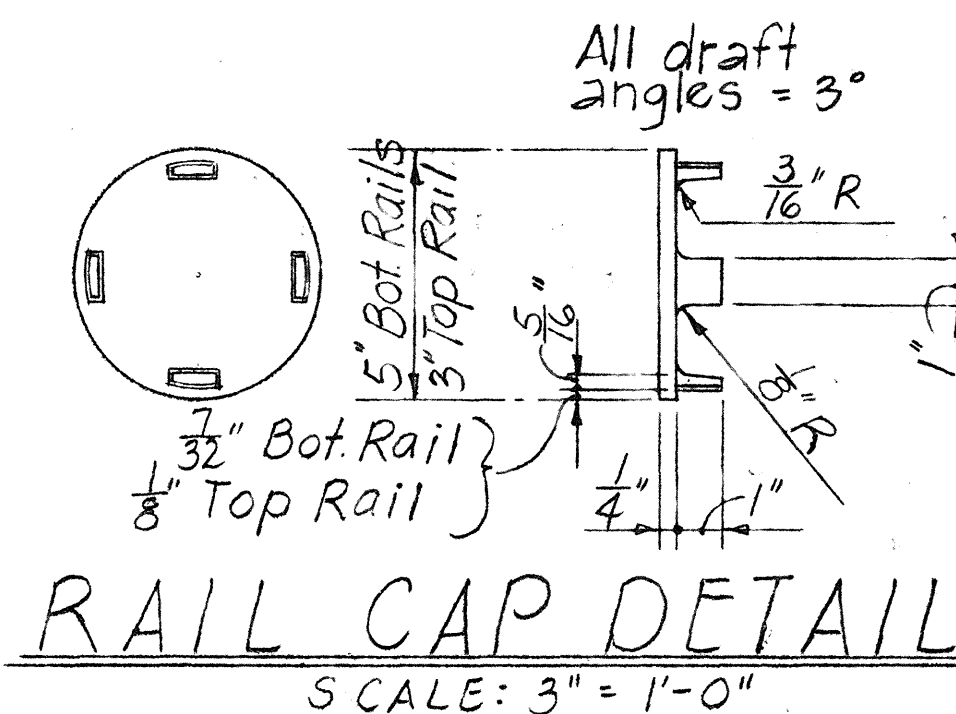


NOTE:

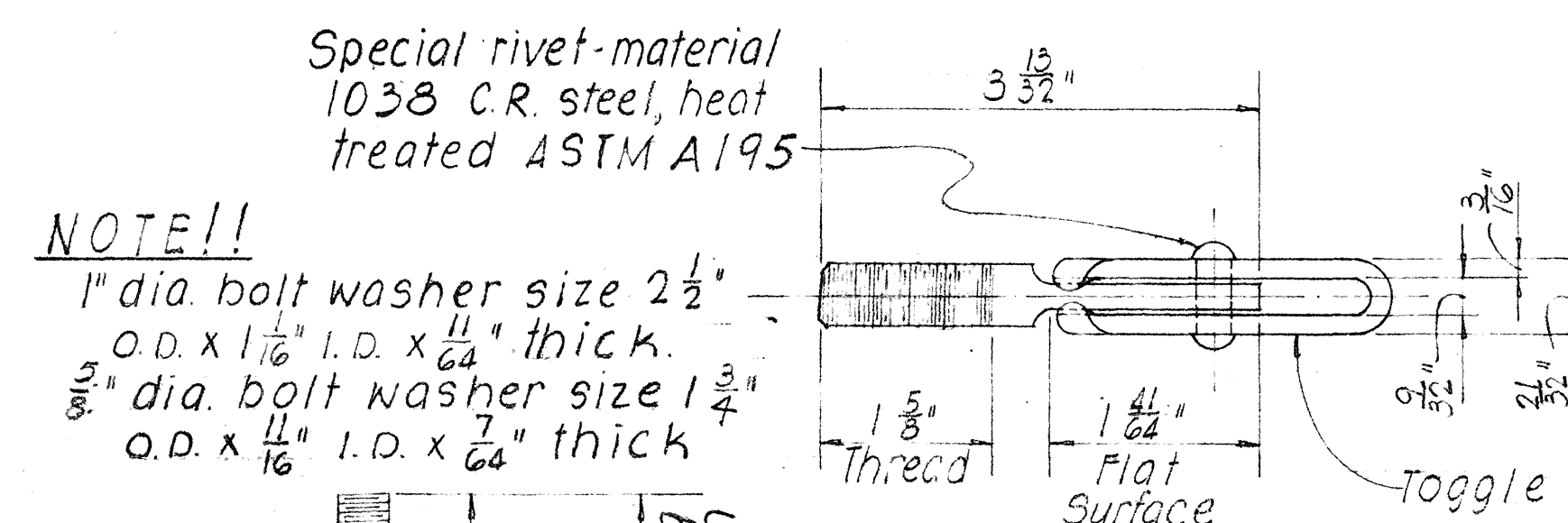
Toggle Bolt- Cadmium plating on steel- Type NS 0.0005" thick
ASTM- A165 (all parts).



WASHER SIDE ELEVATION ASSEMBLAGE

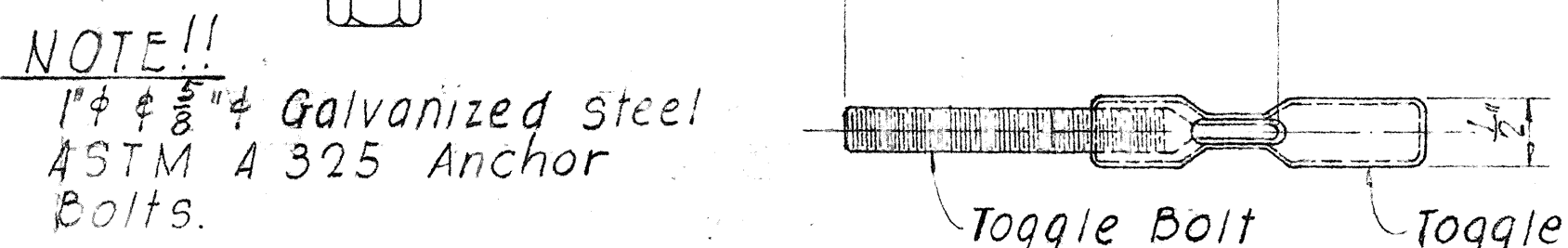


General Note: Metal bridge railing shown is for aluminum bridge railing. See Specifications for alternate railing in steel.



TOP PLAN

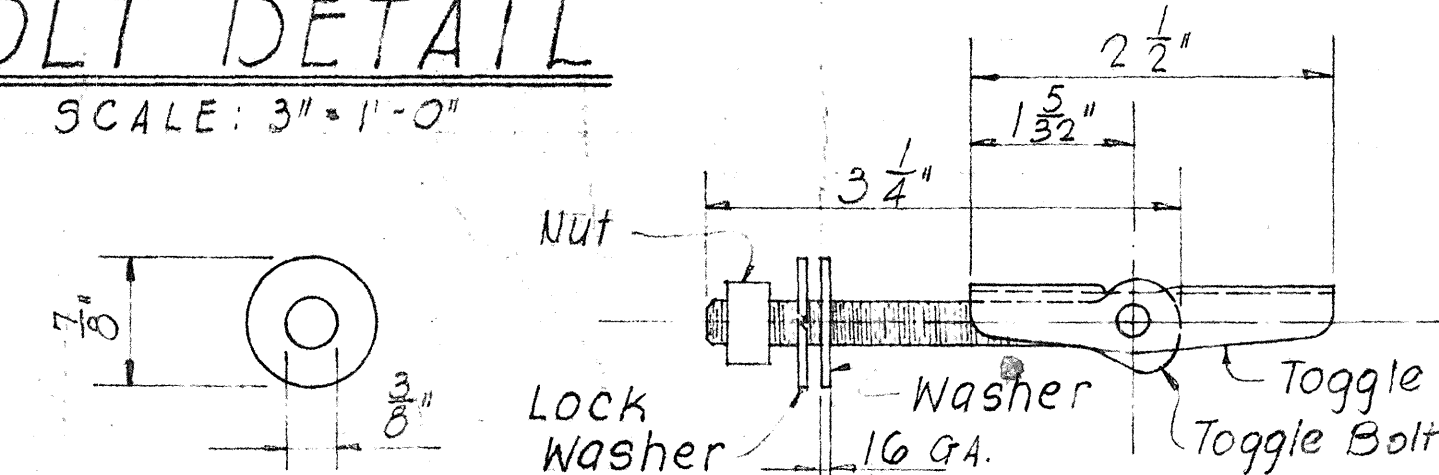
1
2 # 4 STEEL TOGGLE
BOLT DETAIL



TOP PLAN

TYPICAL ANCHOR
BOLT DETAIL

SCALE: 3" = 1'-0"



WASHER ELEVATION ASSEMBLAGE

$\frac{5}{16}$ " ϕ STEEL TOGGLE BOLT DETAIL

NO.	REVISION	APPROVED BY	DATE

APPROVAL RECOMMENDED:

Paul T. Yamashita
BRIDGE DESIGN ENGINEER

1-23-70
DATE

APPROVED

APPROVED Paul T. Hama
 For ASSISTANT CHIEF, ENGINEERING

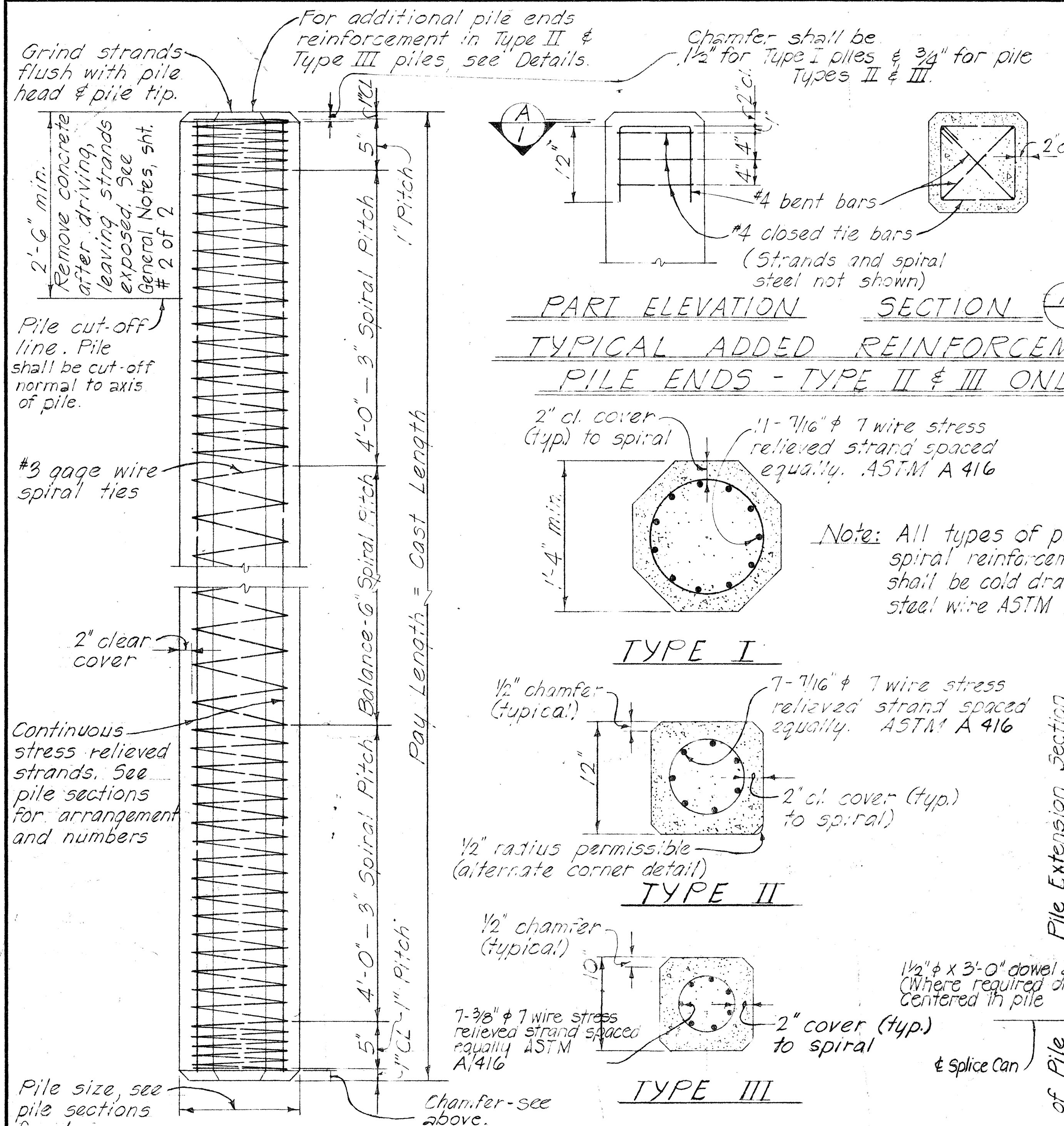
1-28-71
DATE

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

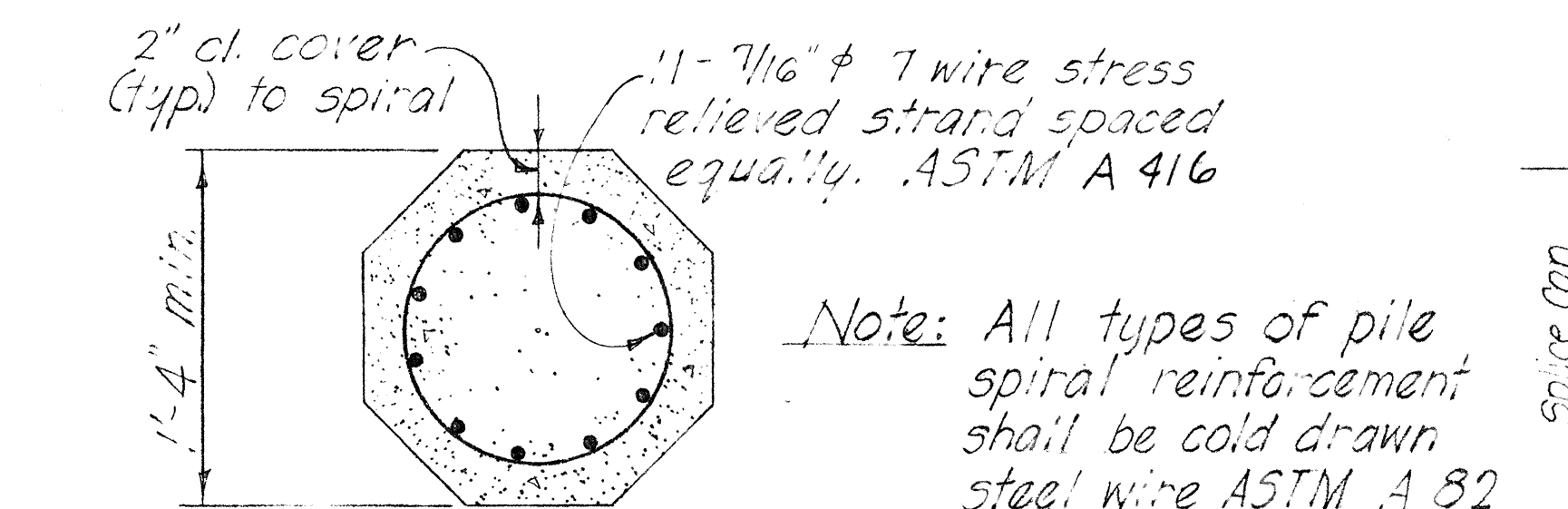
STANDARD DETAILS
METAL BRIDGE RAILING
THREE RAIL COMBINATION TYPE

Date: Oct. 1970

SHEET No. 3 OF 5 SHEETS DB-203-2



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



TYPICAL SECTIONS THRU PILES

Max. Length "L"*	Max. Length "L"*	Length "L"*
Type I "L" = 53'-0"	Type I "L" = 75'-0"	Type I "L" over 75'-0"
12" Type II "L" = 50'-0"	12" Type II "L" = 72'-0"	12" Type II "L" over 72'-0"
10" Type III "L" = 46'-0"	10" Type III "L" = 66'-0"	10" Type III "L" over 66'-0"
0.30L 0.70L	0.21L 0.58L 0.21L	0.15L 0.35L 0.35L 0.15L

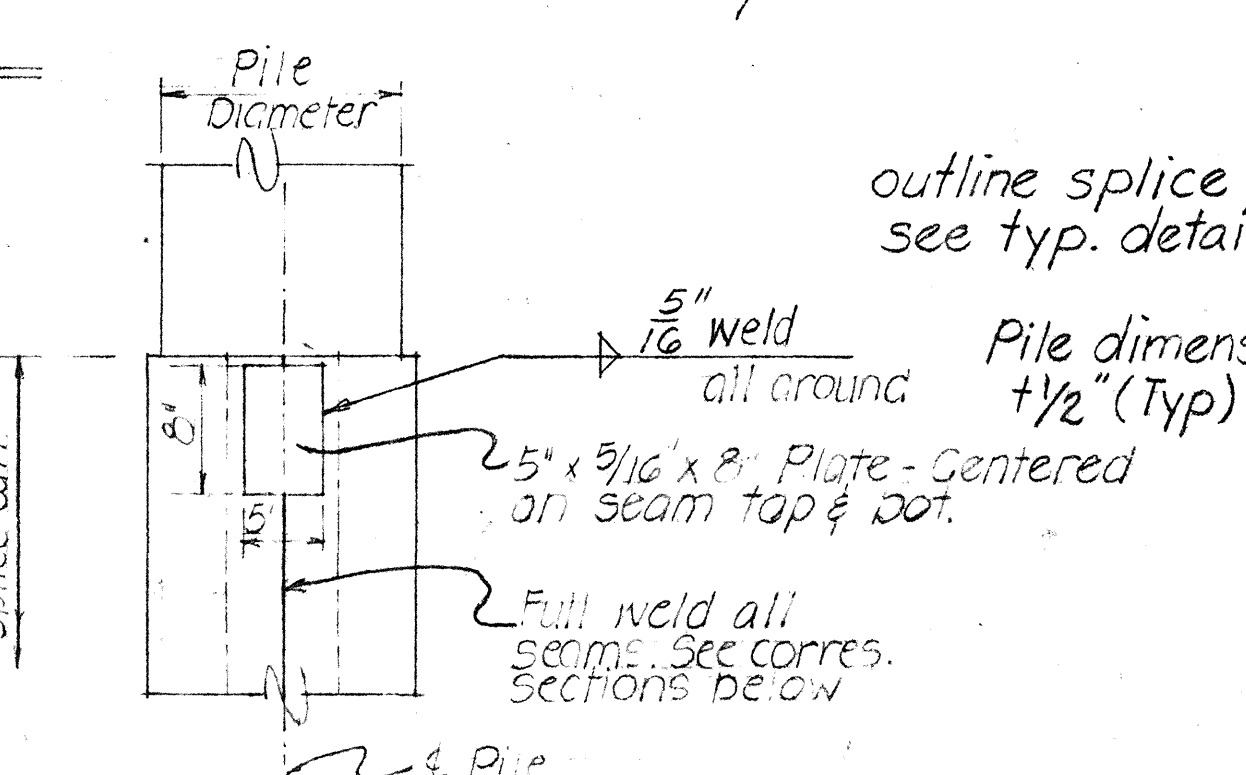
*The length "L" is the distance end to end of pile.

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

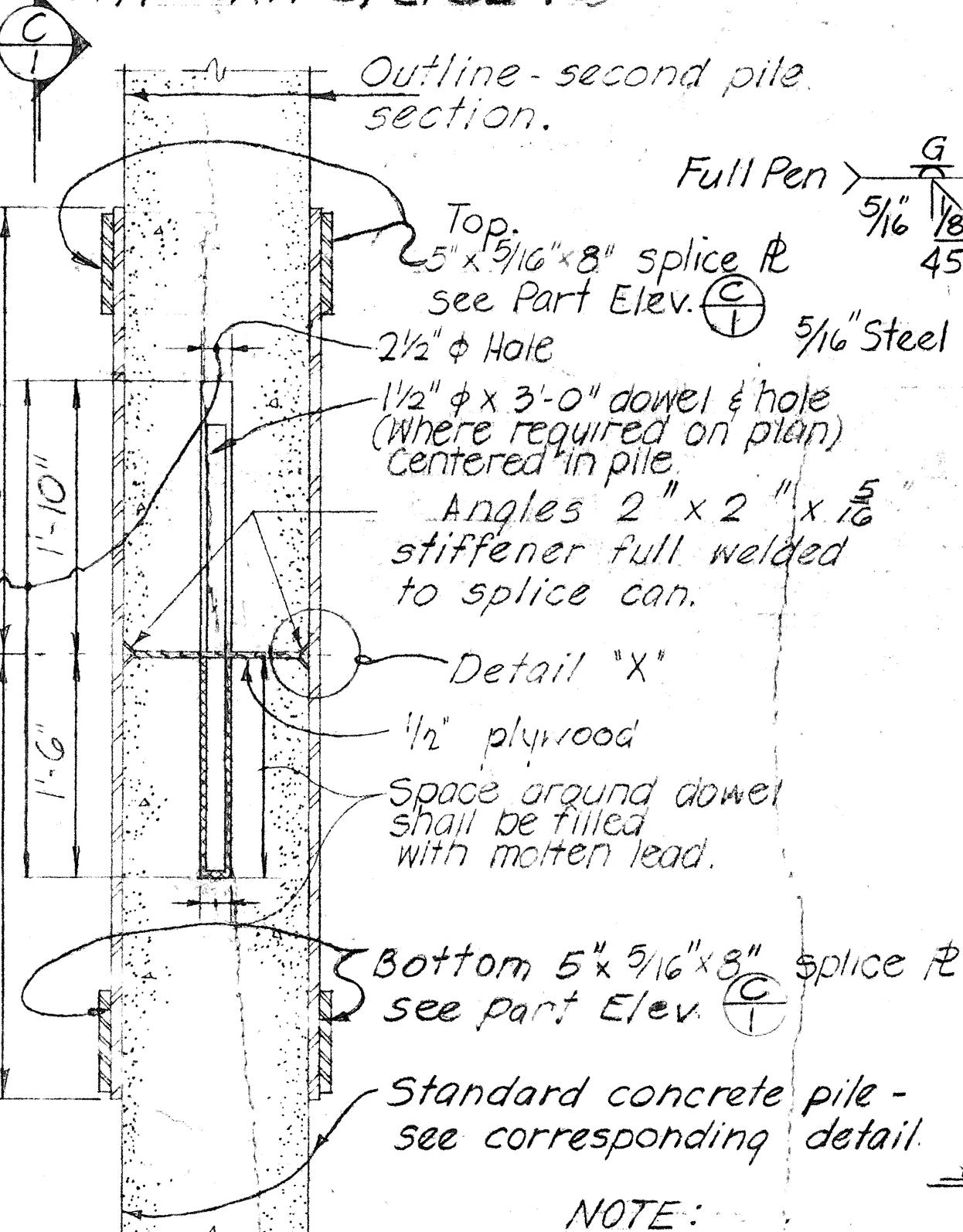
NOTE: Unless special lifting devices are attached for pick-up points, pick-up points shall be plainly marked on all piles after removal of the forms and all lifting shall be done at these points.

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.

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.



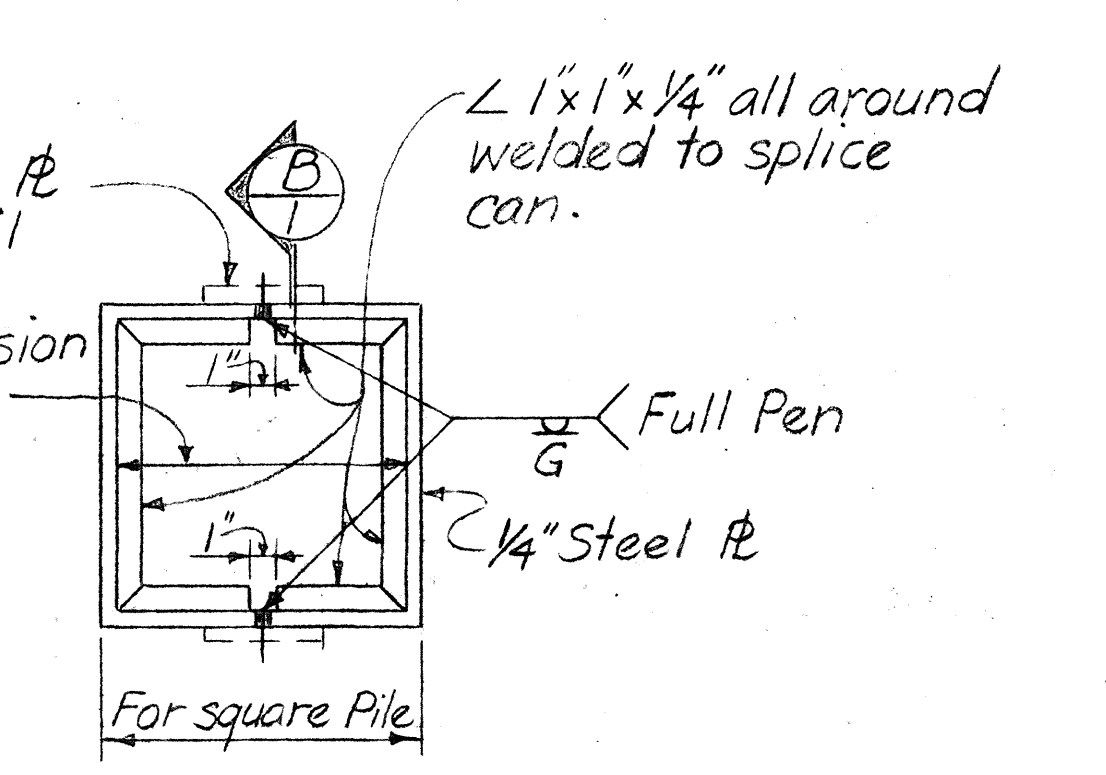
PART ELEV (TYP CAN SPICE R)



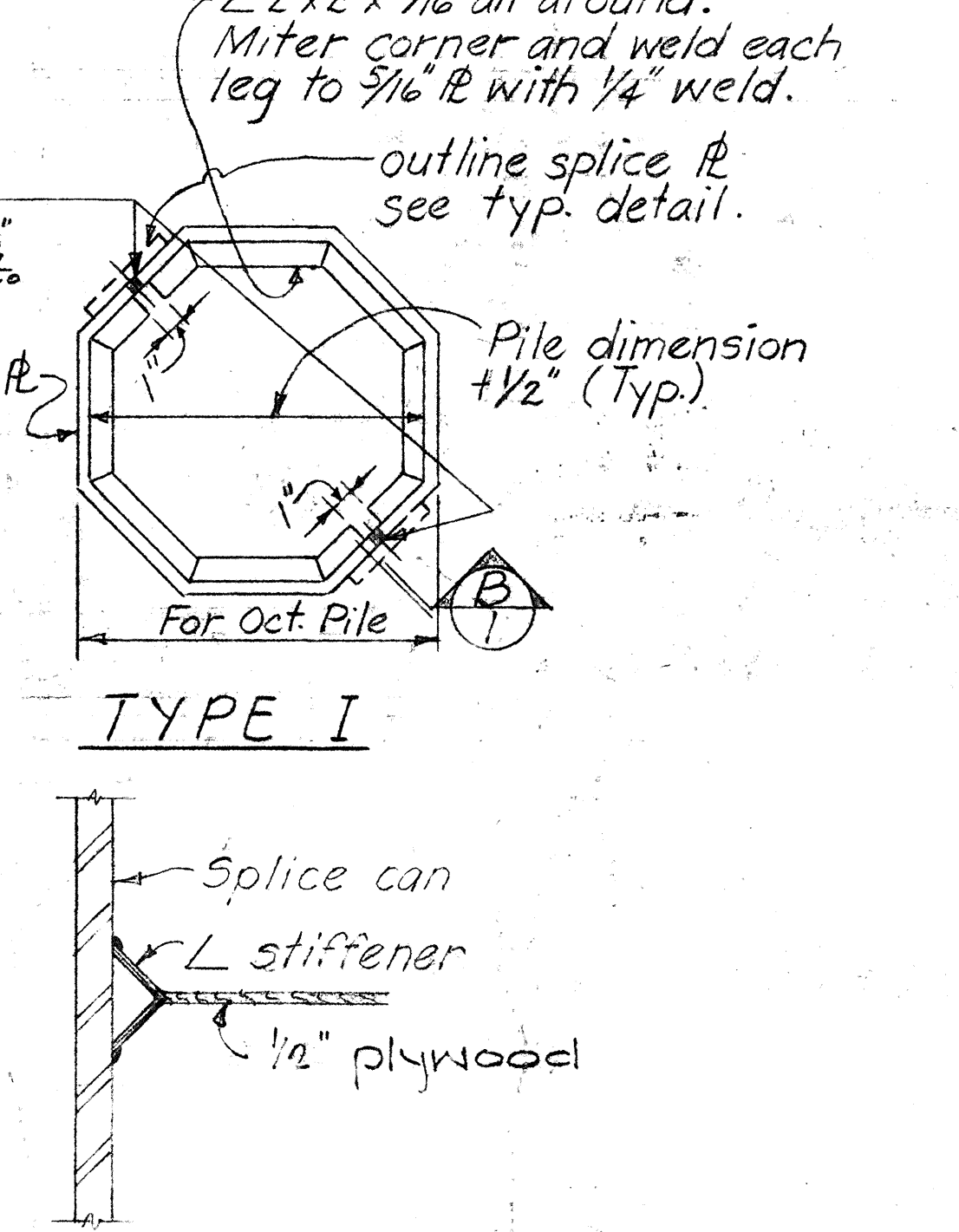
SECTION B

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.



TYPE II & III



DETAIL "X"

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.

NO.	REVISION	APPROVED BY	DATE

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

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS
PRESTRESSED CONCRETE PILES

Date Oct. 1970

SHEET No. 5 OF 5 SHEETS DB-300-1

DATE
DRAWN BY
CHECKED BY
DESIGNED BY
NOTED BY