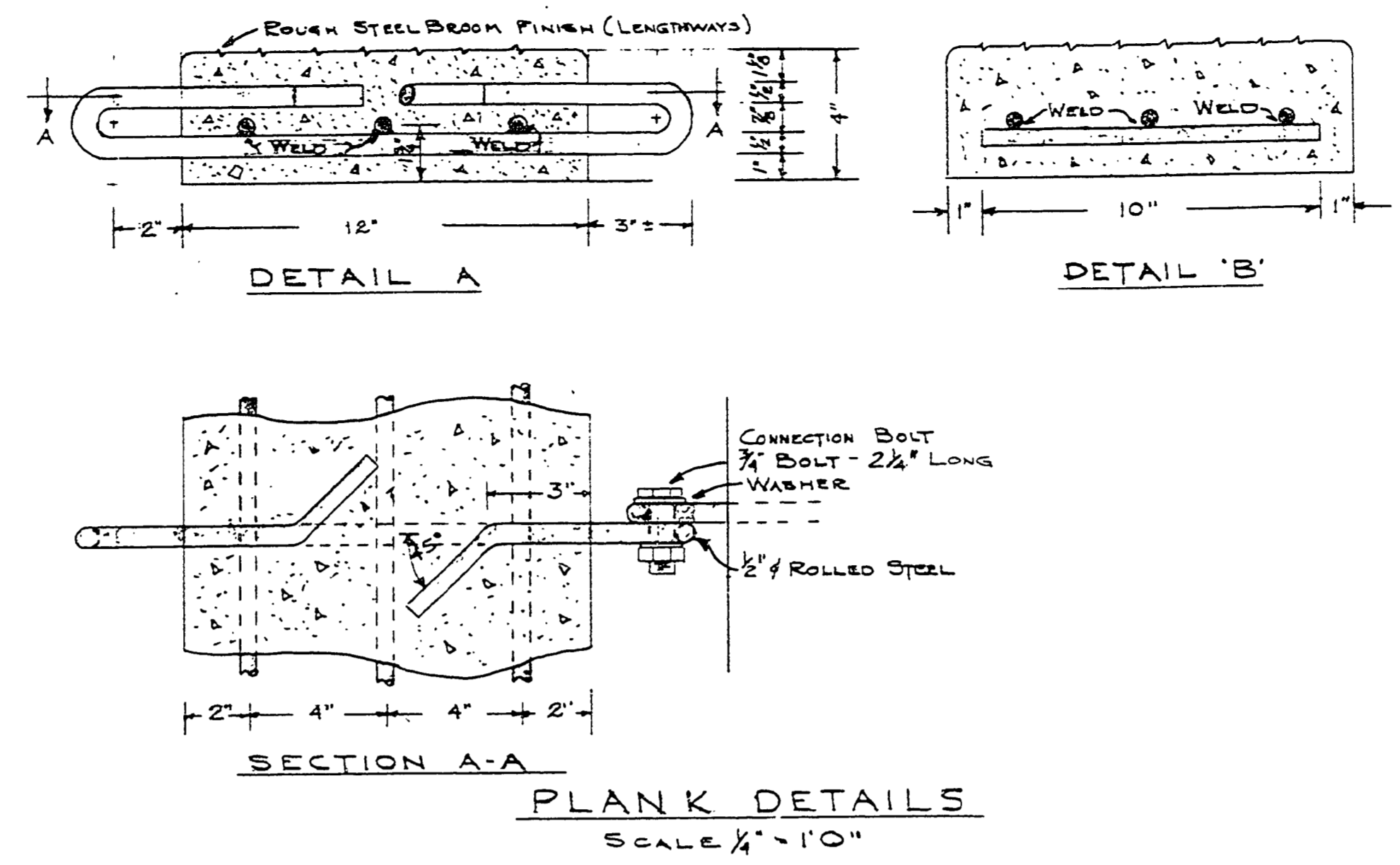
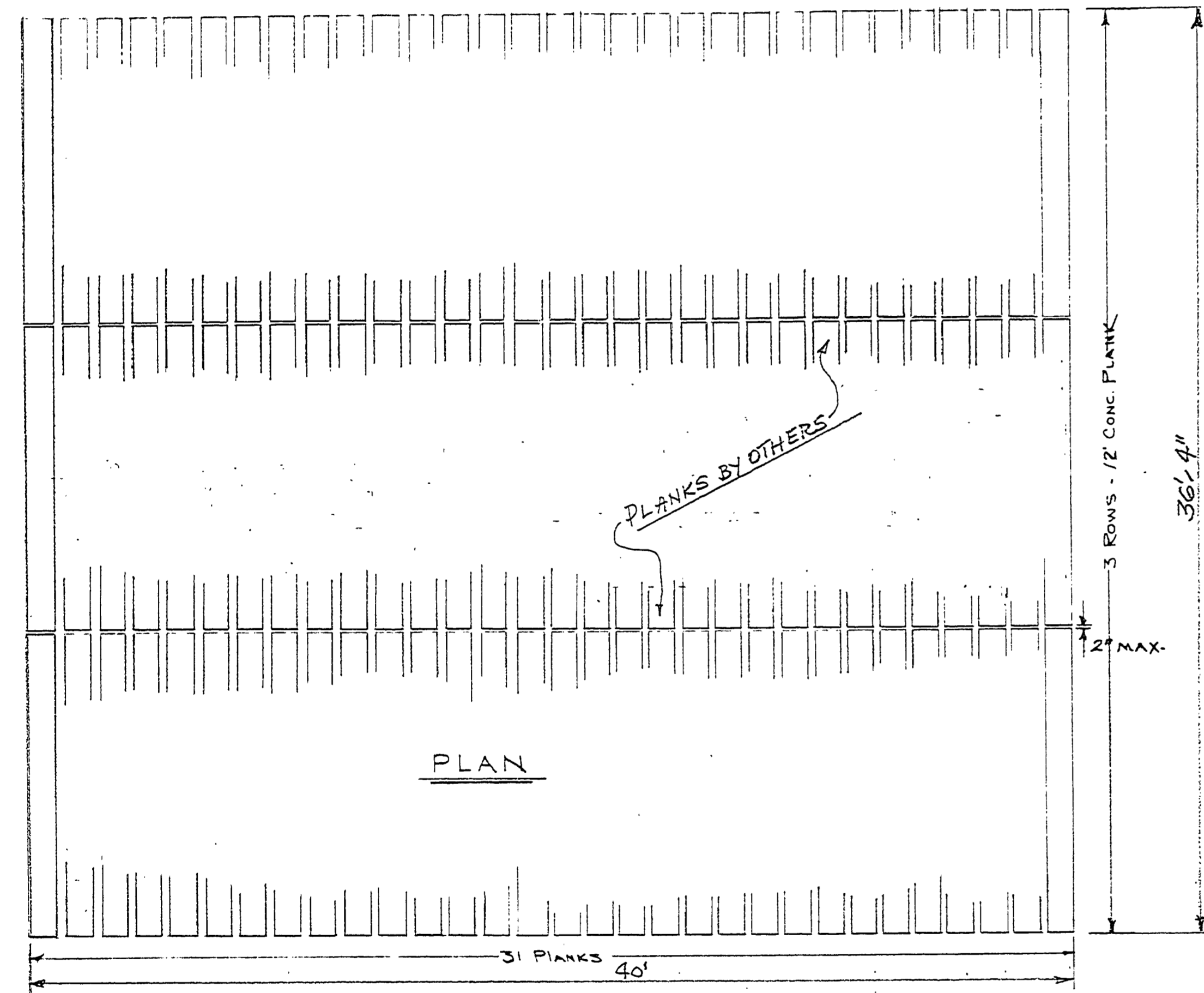


PRECAST CONCRETE PLANK
SCALE 3/4" = 1'-0"

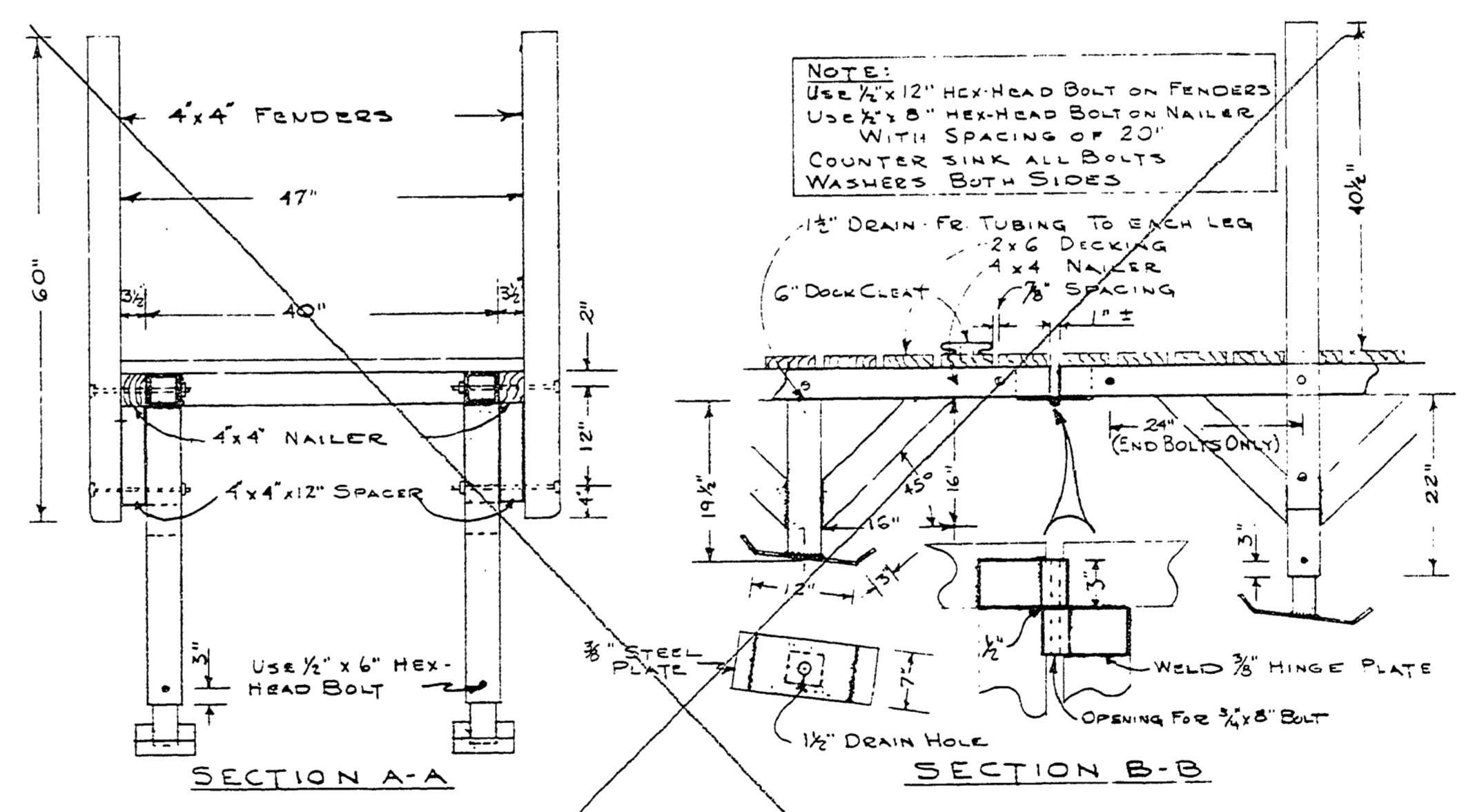


PLANK DETAILS
SCALE 1/2" = 1'-0"

NOTE:
THE CONCRETE PLANKS AND SKID PIER
ARE NOT PART OF THIS CONTRACT,
THEY WILL BE CONSTRUCTED AND
INSTALLED BY OTHERS.

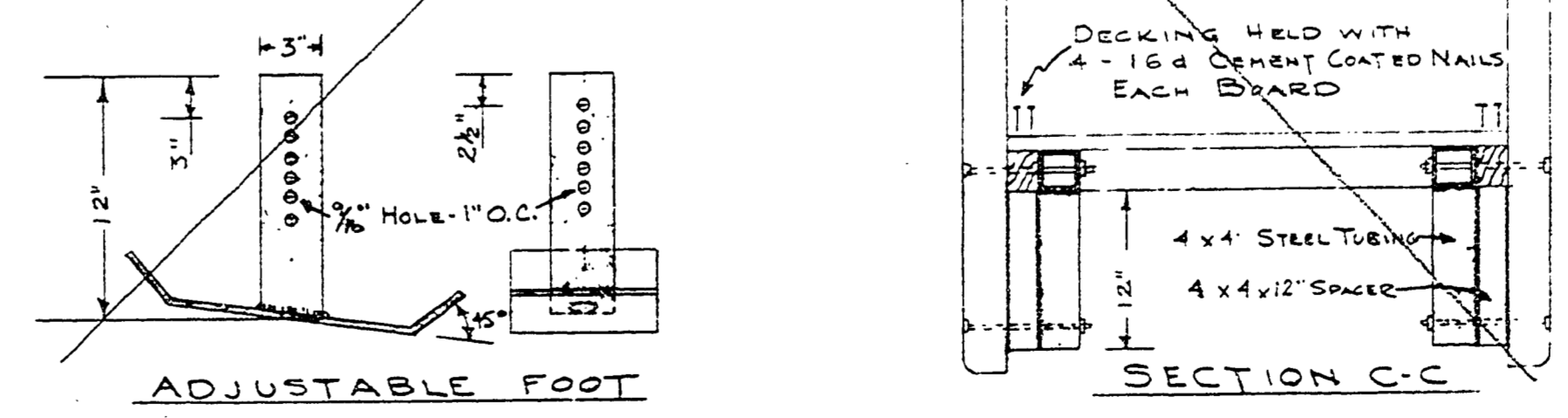


PLAN



NOTE:
USE 4"x4"x8" STRUCTURAL STEEL TUBING
WELD ALL JOINTS - WELD ALL OPEN ENDS CLOSED
USE 3"x3" TUBING FOR ADJUSTABLE FEET

NOTE:
EDGE OF SKID PIER DOES
NOT REQUIRE OVER HANG
OF 2x6 DECKING



ADJUSTABLE FOOT
SKID PIER DETAILS
SCALE 3/4" = 1'-0"

LIST OF MATERIALS

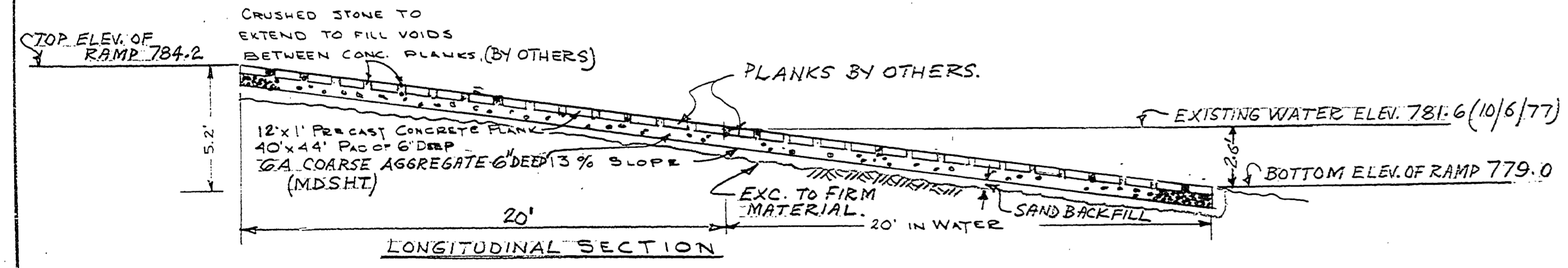
RAMP - 12' CONCRETE PLANK				
Concrete	4"x12"x12'	.15 C.Y. ea.	93 Req.	14 C.Y.
Re-Rod	11"x10"	8.3 #	279 "	2304 #
1/2" Rolled Steel	1/2"x36"	2.05#	186 "	381#
Bolts	3/4"x2 1/4"	.518#	180 "	94#
Washer				360
Crushed Stone	4-A	6" Depth	40' x44'	35 C.Y.

SKID PIER - DECK MATERIAL

Nailers	4x4x16'	4 Req.	@ 15'
Fenders	4x4x16'	2 Req.	@ 15' - cut each 5' long
Decking	2x6x16'	15 Req.	@ 16' - cut 60 to deck width
Nails	16d cement coated	240 Req.	Approx 5 lbs.
Bolts	1/2" hexhead	12" long	12 Req.
Washers	3/4"	8"	90 Req.
Washers	For 1/2" bolts		90 Req.
Preservative			1 Gal.
Dock Cleat - (Wilcox-Crittended)		6" long	4 Req.
Galvanized Iron #401			8 Req.
#14 Screws - Oval head	4 1/2" long		8 Req.
Bolt with 4 washers, 3/4" hexhead	8" long		2 Req.

SKID PIER - STEEL

Structural Steel Tubing	4x4x3/8	120 L.F.	2021 # approx.
	3x3x1/4	4 L.F.	35 # "
Steel Foot	7x18x3/8	12 L.F.	115 # "
Hinge Plate	3/8 steel	4 Req.	
Steel Toe-Hitch	3/8x12" Dia (1/2 circle)	1 Req.	
Drill Holes	1 1/2 Dia.	12 "	
	9/16 Dia.	42 "	(thru both sides)
	3x3 Tubing	9/16 Dia.	56 "
Weld			Approx. 100 L.F.



TYPICAL LAUNCH RAMP
SCALE 1/2" = 1'-0"

BUILDING COMMITTEE APPROVAL

BY: _____ CHAIRMAN DATE: _____

RECOMMENDED FOR APPROVAL

BY: _____ ENGINEERING OR ARCHITECTURAL SUPERVISOR DATE: _____

RECOMMENDED FOR APPROVAL

BY: _____ PROGRAM AND PLAN COORDINATOR DATE: _____

DIVISION/REGION APPROVAL

BY: _____ DIVISION CHIEF/REGIONAL MANAGER DATE: _____

ENGINEERING DIVISION

APPROVED: _____ CHIEF ENGINEER DATE: _____

SURVEYED BY	K. ROON	8-77	DRAWN BY		NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	MICHIGAN DEPARTMENT OF NATURAL RESOURCES	STANDARD LAUNCH RAMP	SLEEPY HOLLOW STATE PARK	PROJECT NO. 24,1879
DESIGNED BY			CHECKED BY		1.				3.				DEPARTMENT OF NATURAL RESOURCES	PROJECT ROADS AND PARKING LOTS	AREA OR PARK	PROJECT NO. 24,1879
					2.				4.					SHEET 8 OF 8	ROADS AND PARKING LOTS	PLAN NO. E-111