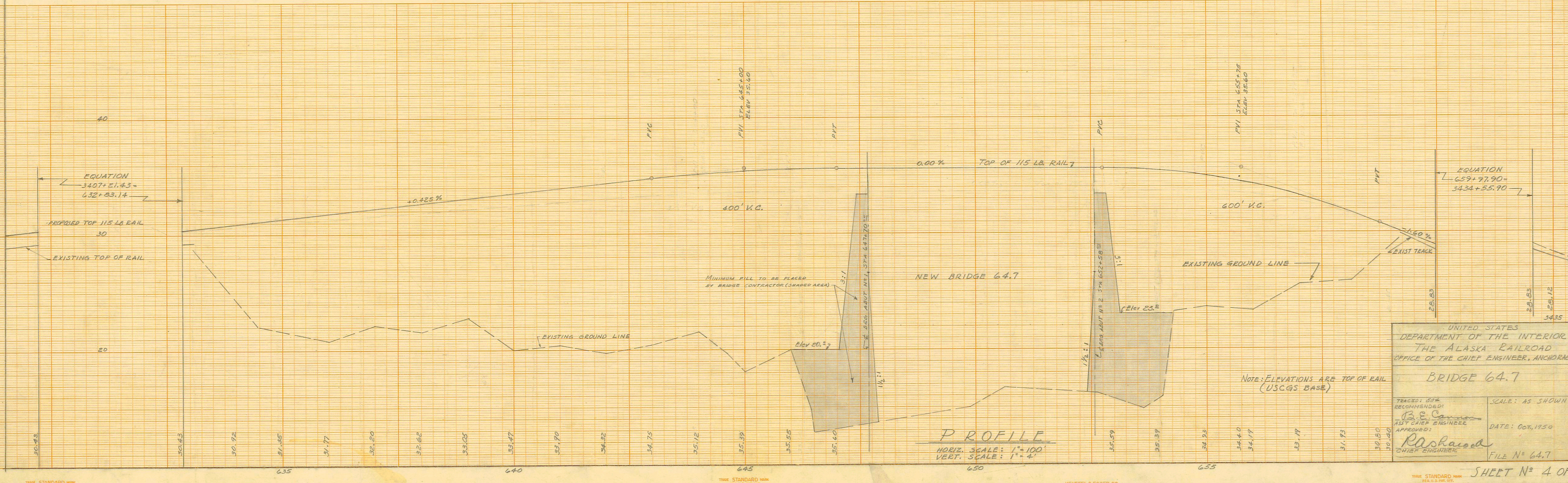
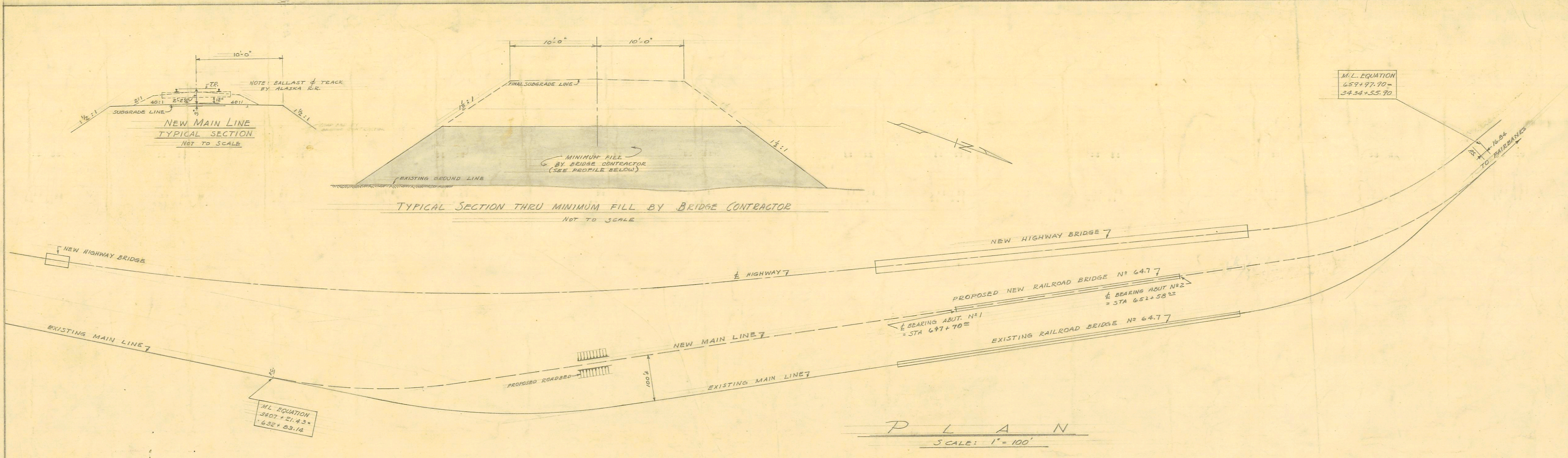
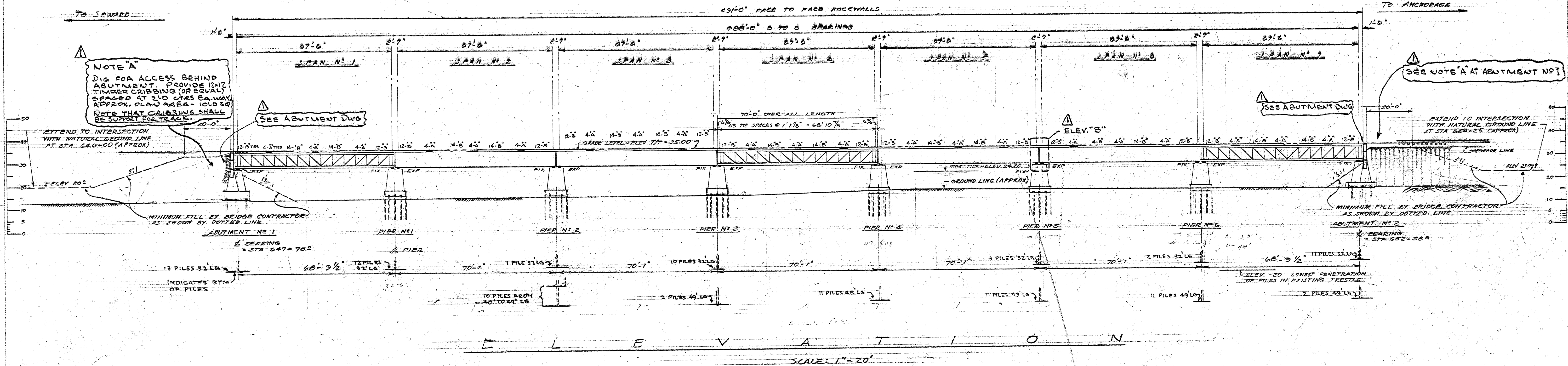


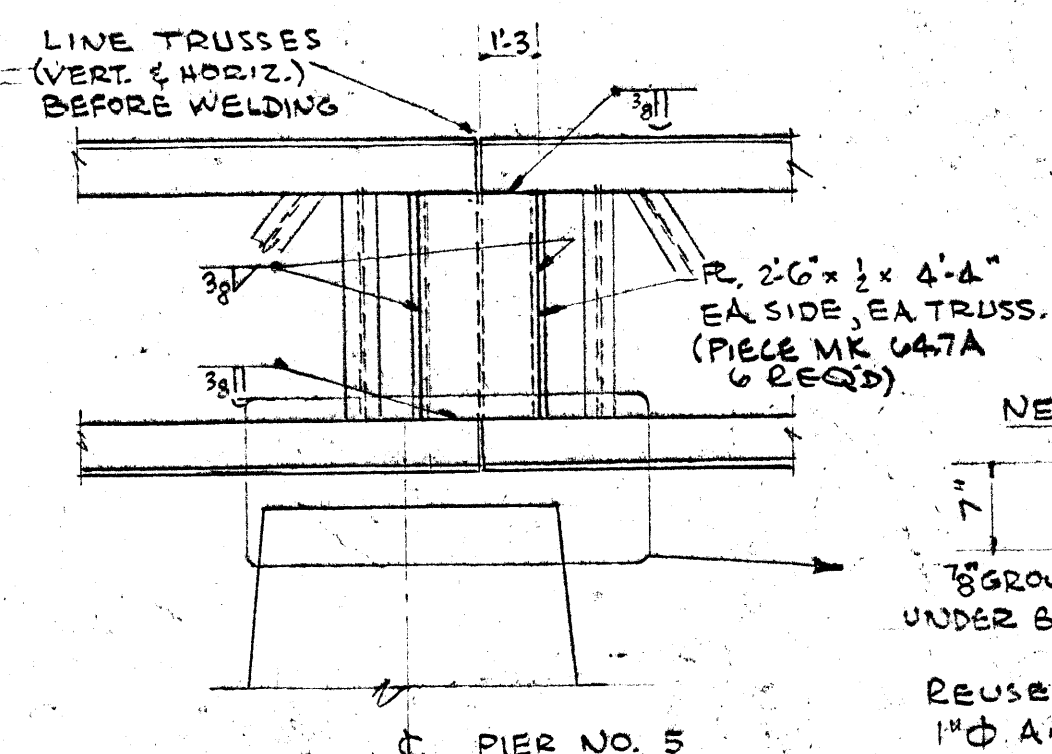
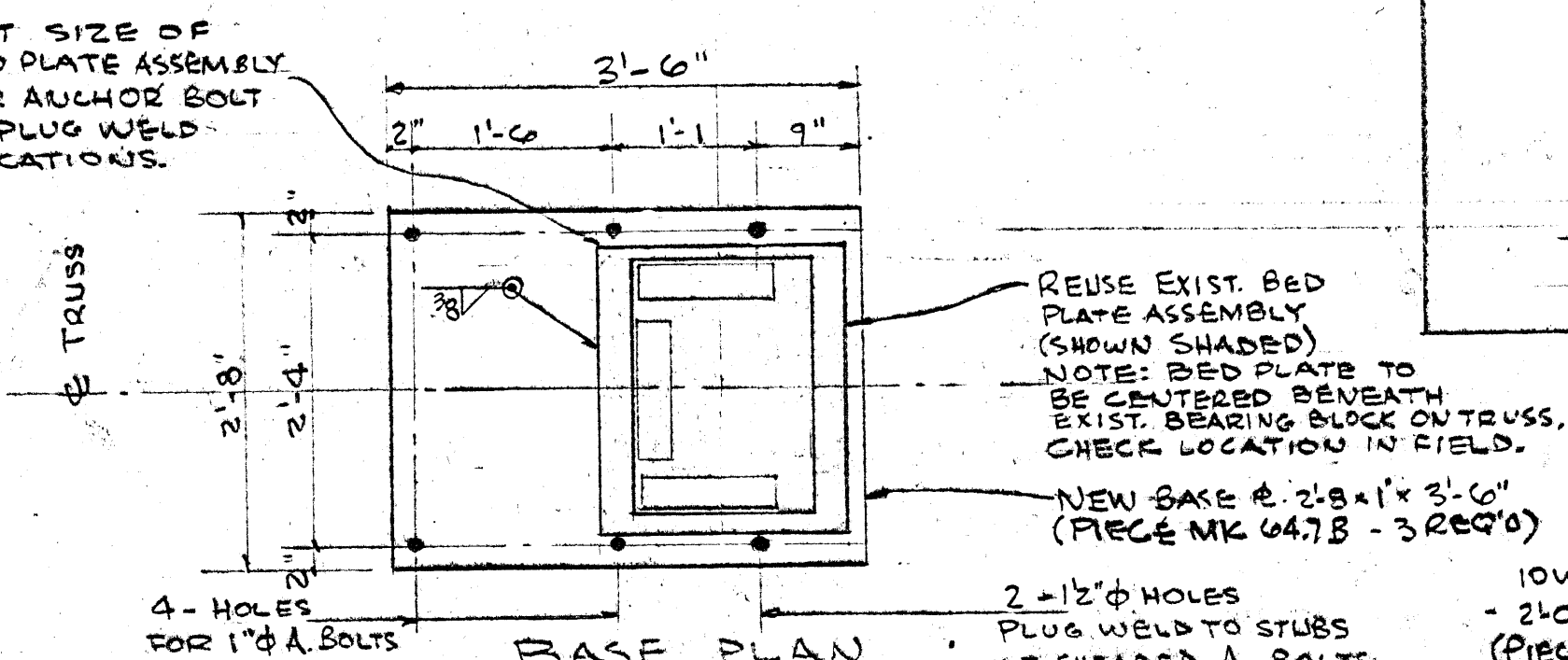




WORK AT PIER NO. 5 ORDER OF PROCEDURE

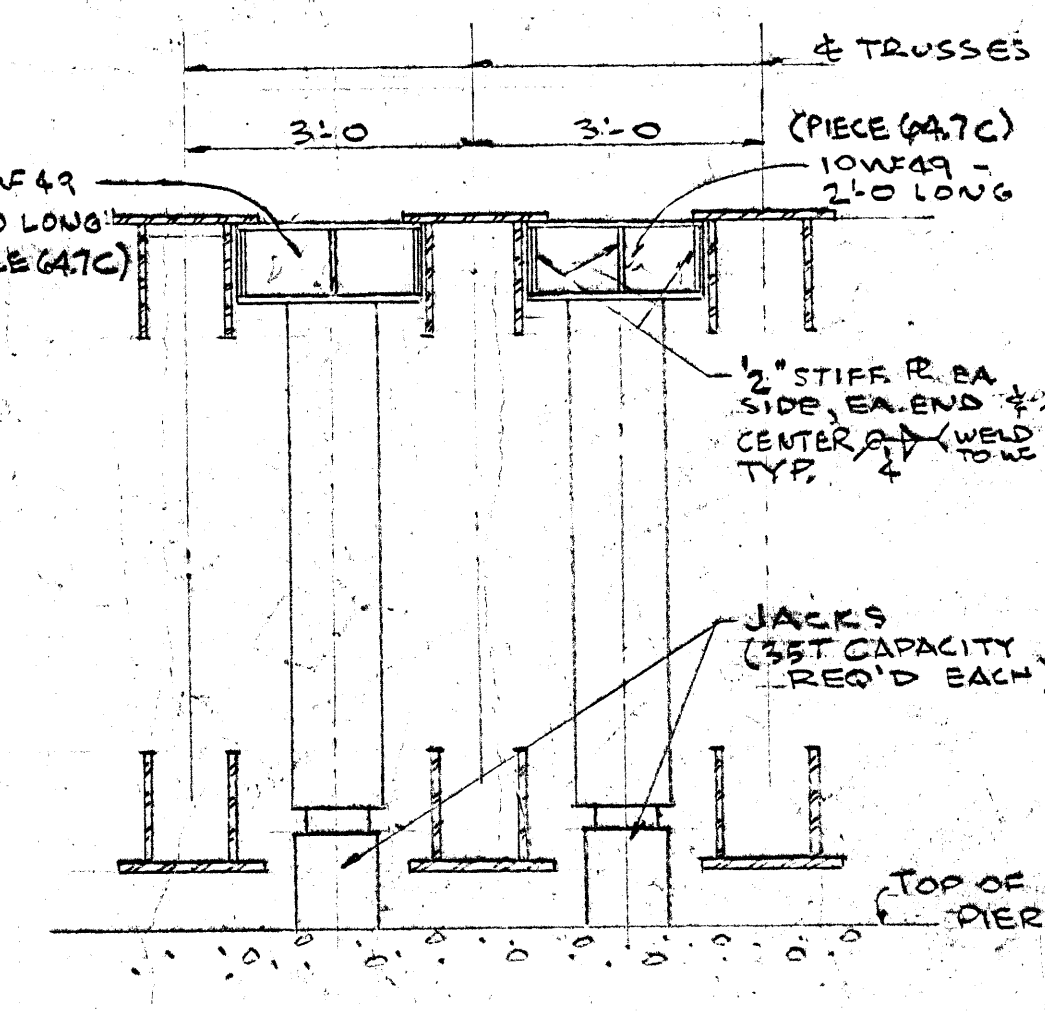
1. ALIGN TRUSSES & JOIN WITH PLATES WELDED TO END POSTS. SEE ELEV. "B".
2. JACK UP BOTH TRUSSES (JOINED TOGETHER).
3. REMOVE EXISTING BED PLATES.
4. TRIM ANCHOR BOLTS WHICH SHEARED OFF SO THEY CAN BE PLUG WELDED TO NEW BASE PLATE.
5. CUT DOWN 3 EXISTING BED PLATES & WELD TO NEW BED PLATES. SEE BASE PLAN.
6. SET NEW BED PLATES IN "EMIBECO" GROUT. ALLOW TO SET FOR 3 DAYS BEFORE RELEASING JACKS. GROUT SHALL BE COVERED WITH INSULATING BLANKETS DURING CURING PERIOD.

CUT SIZE OF BED PLATE ASSEMBLY FOR ANCHOR BOLT & PLUG WELD LOCATIONS.



ELEVATION "B"
1'-0"

PIER NO. 5
1'-0"



JACKING ARRANGEMENT
1'-0"

SUMMARY OF ESTIMATED QUANTITIES (APPROX)

EXCAVATION	300 CY
CONCRETE	500 CY
STEEL TRUSS	3.1 TONS
FOUNDATION PILES - 88'-0" LONG (SEE DETAIL)	101 TONS
CAP PLATES FOR PILES	1.3 TONS
STEEL SHEET PILING (COFFERDAMS)	86.4 TONS
STRUCTURAL STEEL	348.25 TONS
TIES 329'-0" 8"x10"x12'-0"	26.7 MRF
119'-0" 8"x10"x12'-0"	13.2 MRF
LUMBER IN WALKS & BARREL STANDS	11.5 MRF
GORED RAIL 4'-0" 1000 L.F.	2.67 MRF

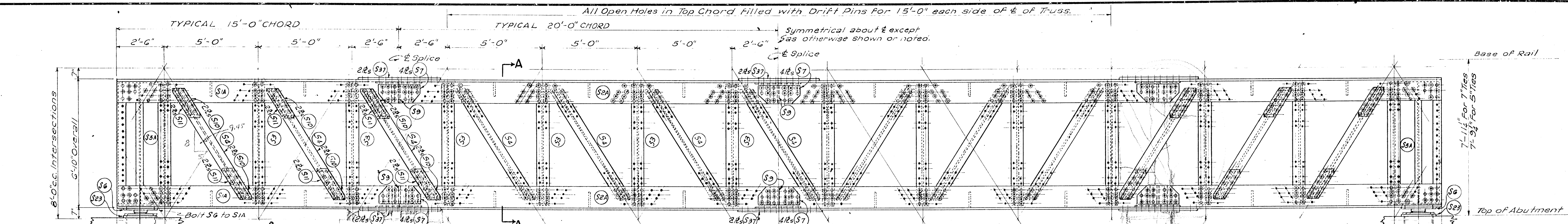
NOTE:
BOTH ABUTMENTS ALIKE EXCEPT FOR DEPTH OF FOOTINGS
ALL PIERS ALIKE

ELEVATIONS ARE TO U.S.C. & G.S. BASE
UNITED STATES
DEPARTMENT OF THE INTERIOR
THE ALASKA RAILROAD
OFFICE OF THE CHIEF ENGINEER, ANCHORAGE

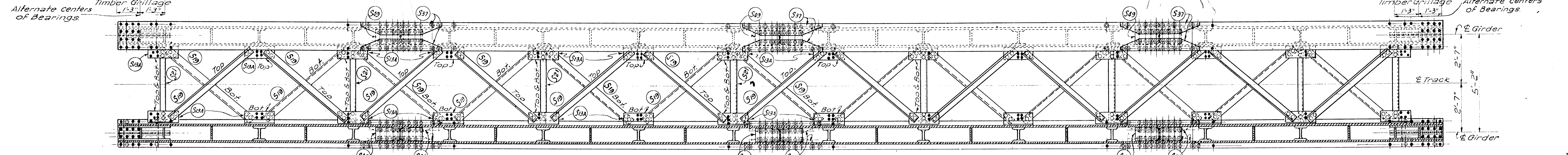
BRIDGE NO. 64.7
TWENTY MILE RIVER

DESIGNED: HOLMEN
RECOMMENDED:
DATE: OCT. 1950
APPROVED:
R. S. K. Rasmussen
CHIEF ENGINEER
FILE NO. 64.7

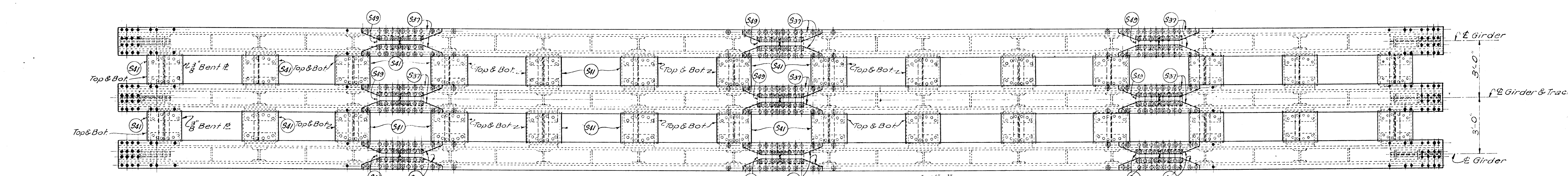
REVISION NO. 1 April 2, 1964 PIER NOS 5 & END ABUTMENTS.



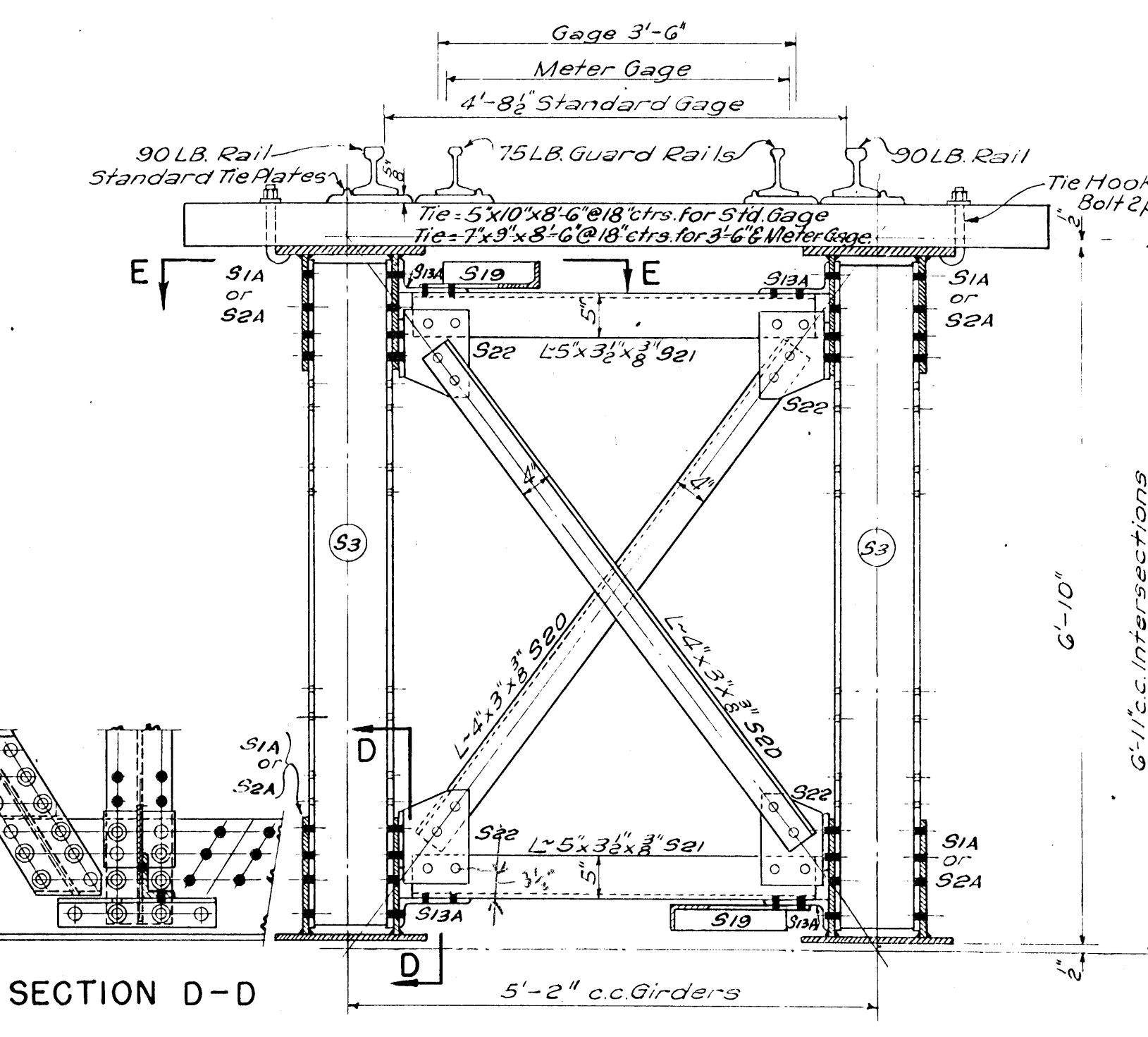
TYPICAL GENERAL ELEVATION



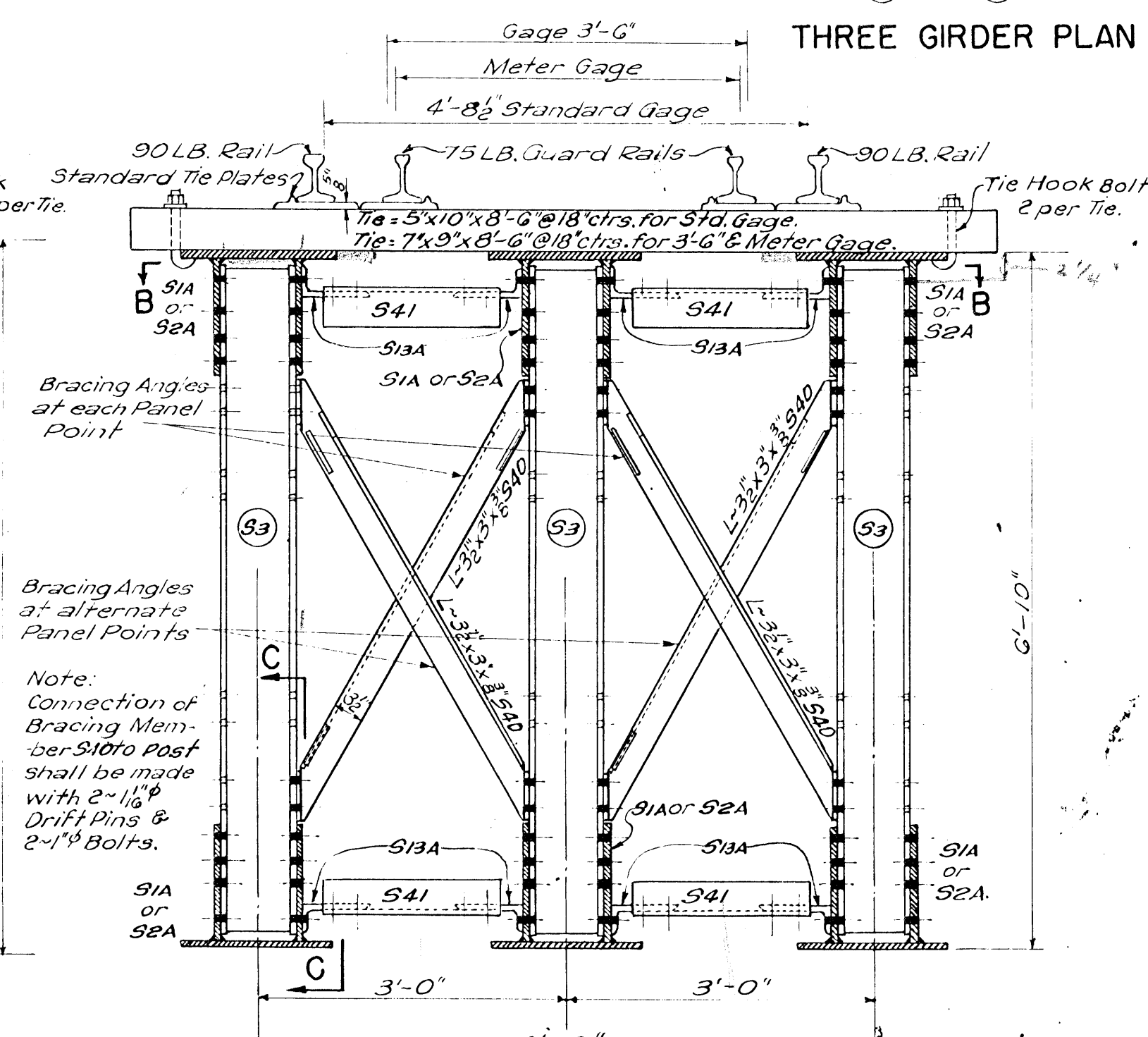
TWO GIRDER— HALF PLAN
HALF SECTIONAL PLAN



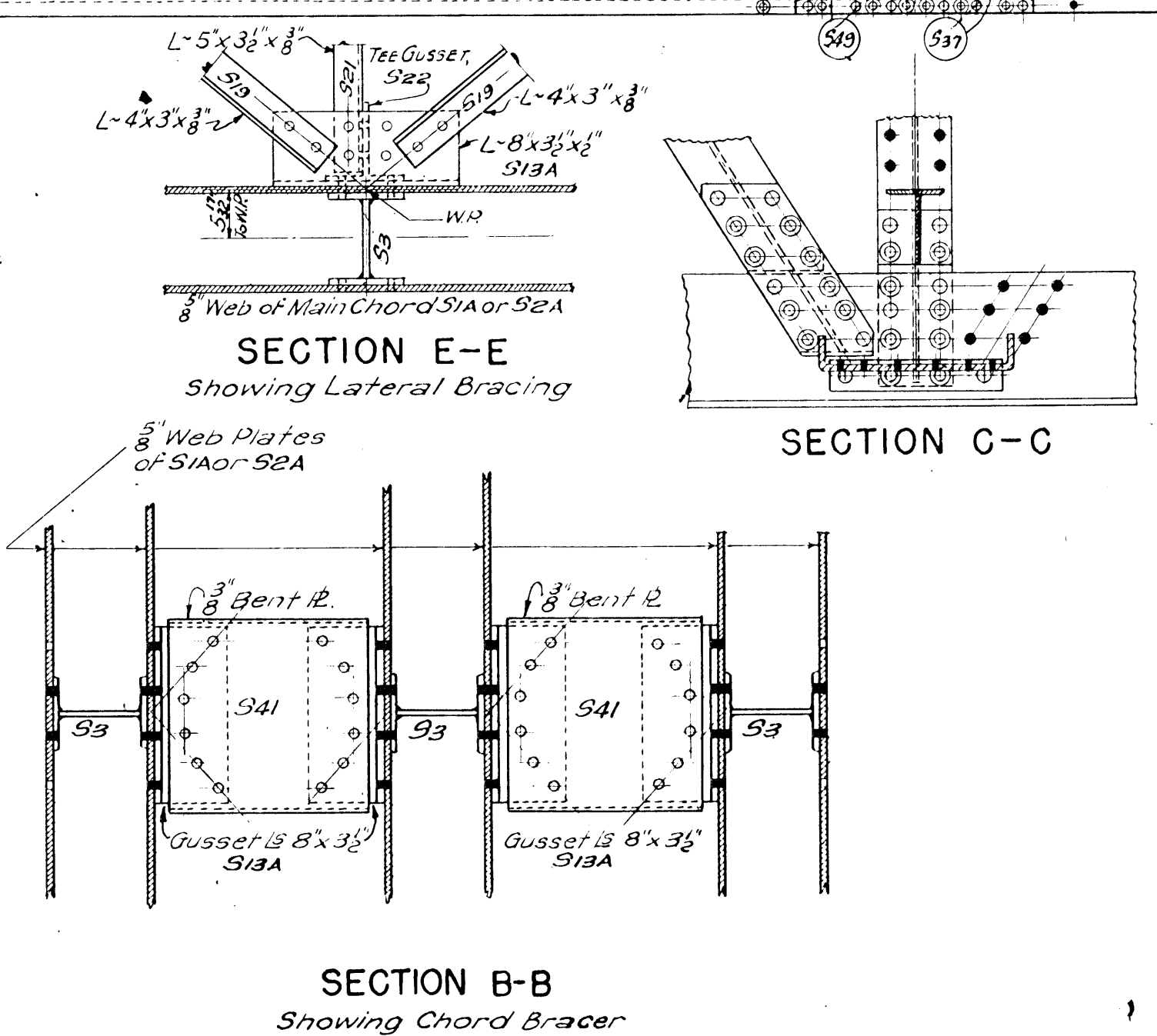
THREE GIRDER PLAN



TWO GIRDER TYPICAL CROSS SECTION A-A



THREE GIRDER TYPICAL CROSS SECTION A-A



NOTES:
 All holes shall be 1/8" except as otherwise noted.
 + Indicates Open Holes.
 o Indicates 1" Bolts (Field).
 * Indicates 1/8" Drift Pins (Field).
 All bracing shall be connected by Bolts except where Drift Pins are indicated in the General Elevation of the Truss and as noted for S40, S22, & S13A.

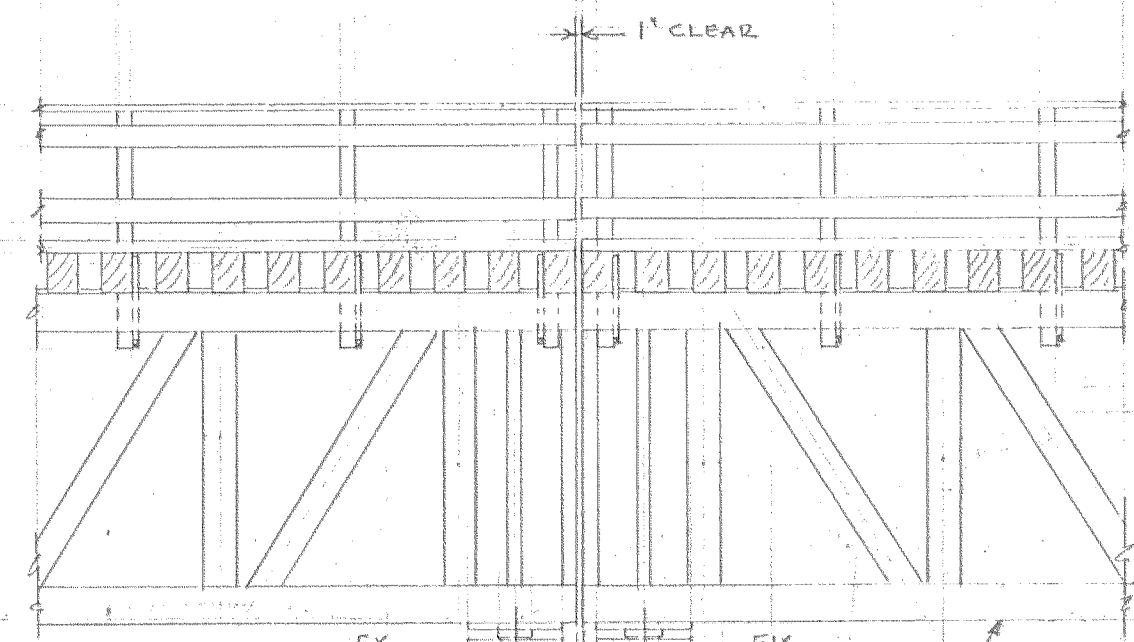
WAR DEPARTMENT THE ENGINEER BOARD TECHNICAL DIVISION IV BRIDGE BRANCH, STRUCTURAL DESIGN SECTION FORT BELVOIR, VIRGINIA	
UNIT CONSTRUCTION RAILWAY BRIDGE GENERAL DETAILS FOR DECK TYPE BRIDGE	
DESIGNED	NAME DATE
DRAWN	F.J.T. OCT. 1942
TRACED	D.J.J.B.O.C. OCT. 1942
CHECKED	J.G.B.S.B. DEC. 1942
PLAN NO. D-2604-2	
SHEET 2 OF 5	
SUBMITTED FOR APPROVAL 12-17-42 Haward H. Mullins SENIOR ENGINEER RECOMMENDED FOR APPROVAL J.G.B.S.B. MAJOR C. E. ASSISTANT EXECUTIVE OFFICER APPROVED C.E. EXECUTIVE OFFICER	



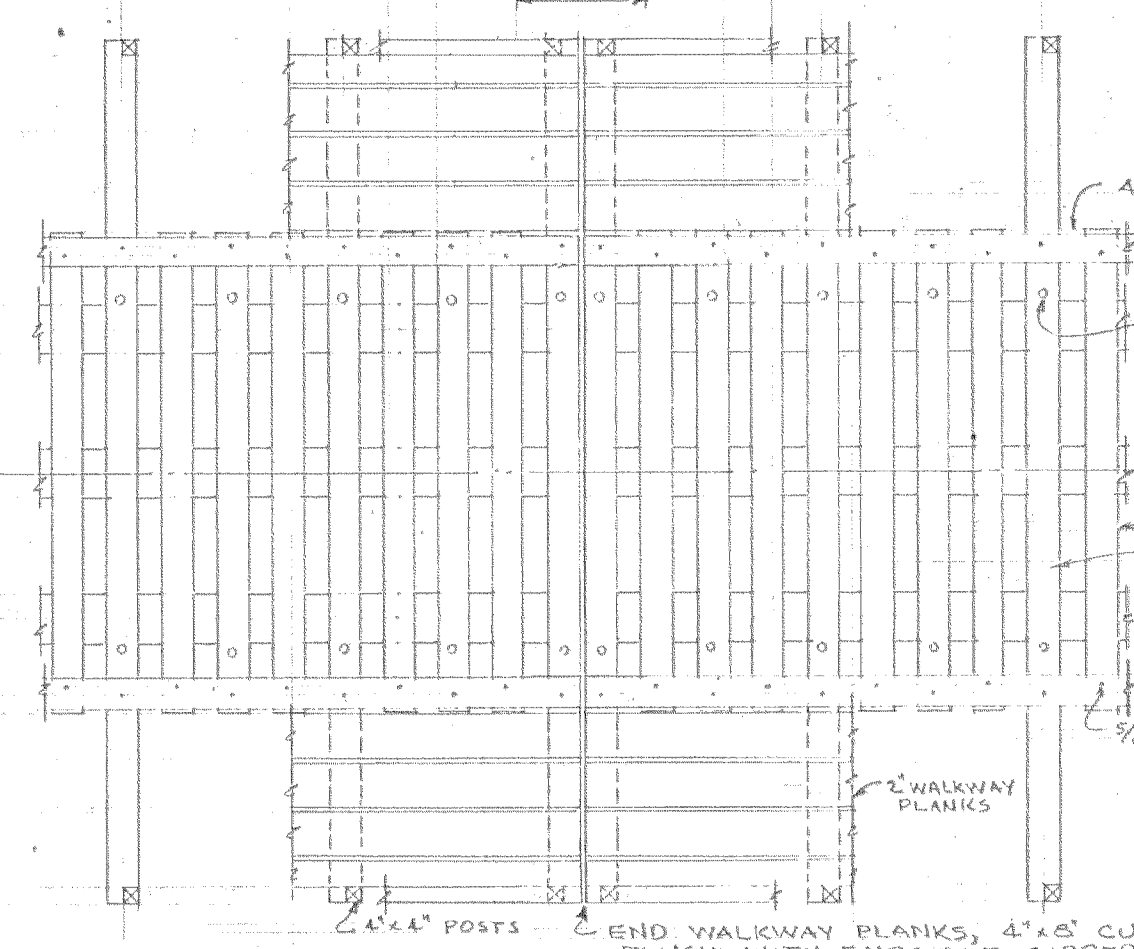
Notes:

- ϕ Indicates 1/16" ϕ holes except as otherwise noted.

[illegible]



LONGITUDINAL SECTION

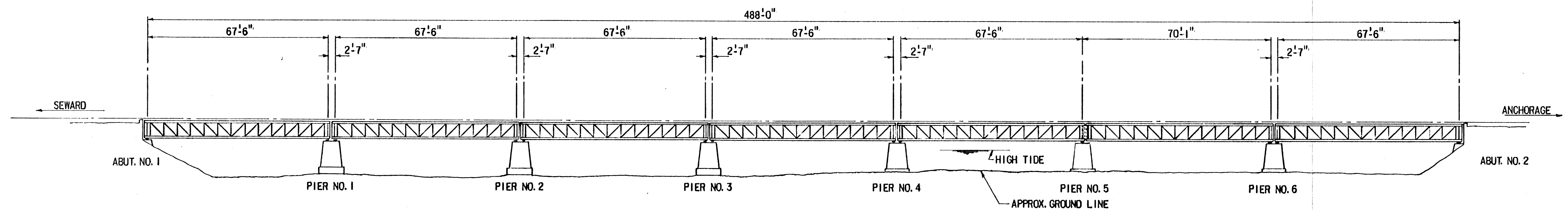


PLAN

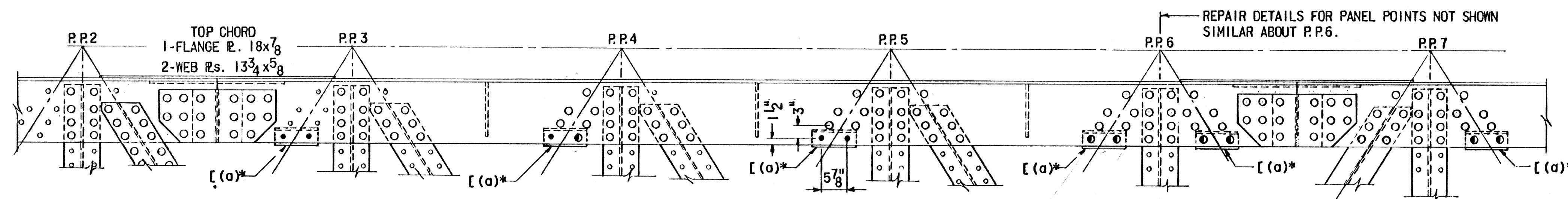
EXPANSION DETAIL AT PIERS

SCALE: 1/4" = 1'-0"

UNITED STATES DEPARTMENT OF THE INTERIOR	
THE ALASKA RAILROAD	
OFFICE OF THE CHIEF ENGINEER, ANCHORAGE	
EXPANSION DETAIL AT PIERS	
FOR BRIDGE 64.7	
DRAWN: eah RECOMMENDED:	SCALE: AS SHOWN
APPROVED: Assistant Chief Engineer	DATE: JULY 16, 1951
Chief Engineer	FILE N° 64.7



ELEVATION
SCALE: 1"=20'-0"



TYPICAL TOP CHORD DETAIL
(ALL GIRDERS AND SPANS)

NOTES:
For complete details of girders see War Department Technical Manual TM 5-372 and revision by the Alaska Railroad, April 1964.
Existing fasteners are 1"φ rivets.

GENERAL NOTES:

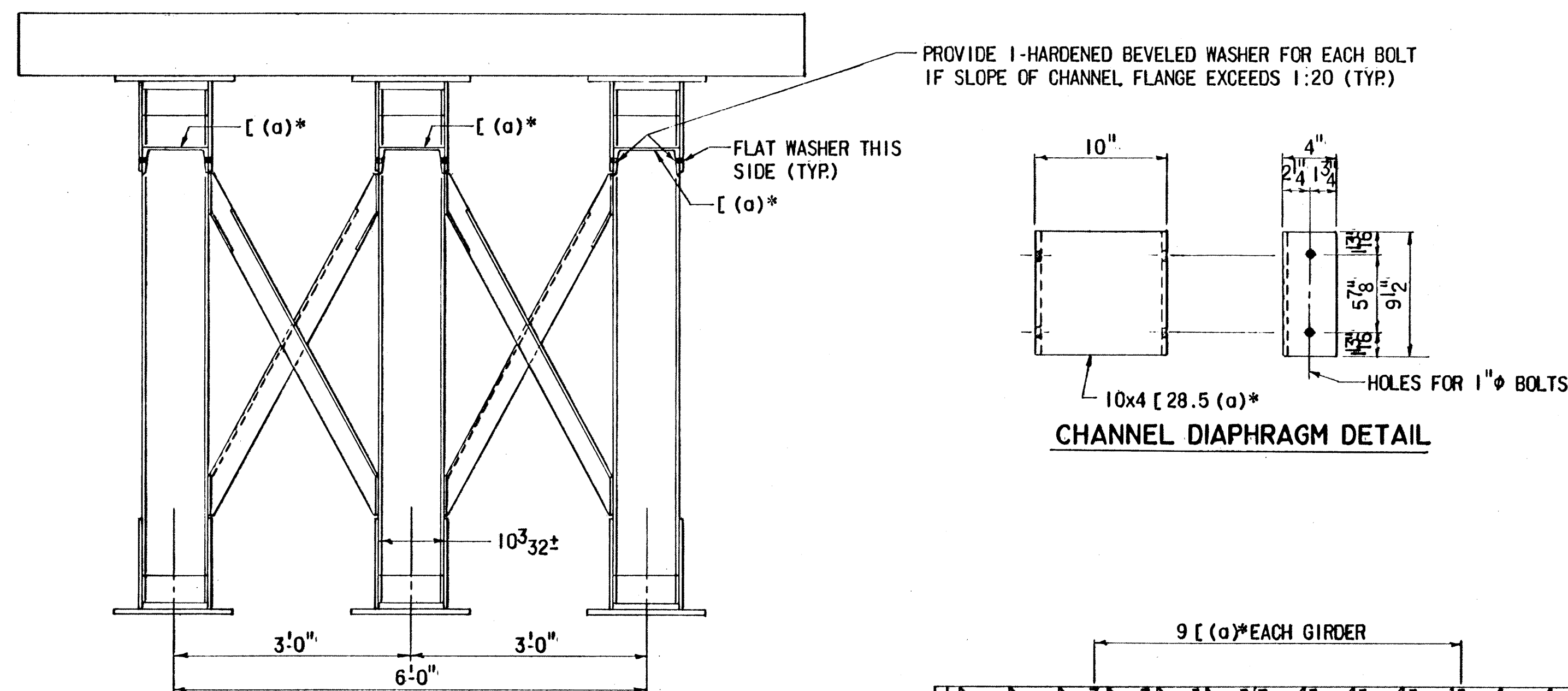
DESIGN SPECIFICATIONS
The 1967 A.R.E.A Specifications for Steel Railway Bridges shall apply.

STRUCTURAL STEEL
Material furnished under this contract shall be structural steel conforming to A.S.T.M. A36-67.
All new and replacement fasteners shall be high strength bolts conforming to A.S.T.M. A325-66b.
High strength bolts shall be 1"φ; a hardened washer shall be placed under the turned element. All permanent bolts shall be installed in accordance with "Specifications for Structural Joints using A.S.T.M. A325 or A490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
All bolt holes in the new material shall be sub-drilled 3/16" smaller than nominal size of bolt, assembled and reamed or drilled to full size to match the existing holes in the member.

PROCEDURE FOR INSTALLATION OF STRENGTHENING MATERIALS
The general requirement for placing new bolts and material shall be as follows:
1. All paint from the existing material in area of holes for new and replaced bolts and all rust and loose paint from areas to be in contact with new material shall be removed.
2. Each rivet removed, shall be immediately replaced with a properly tightened high strength bolt. Rivets shall not be removed by burning.
3. Clean and paint all new material and abraded paint surfaces with two coats of paint in the field.

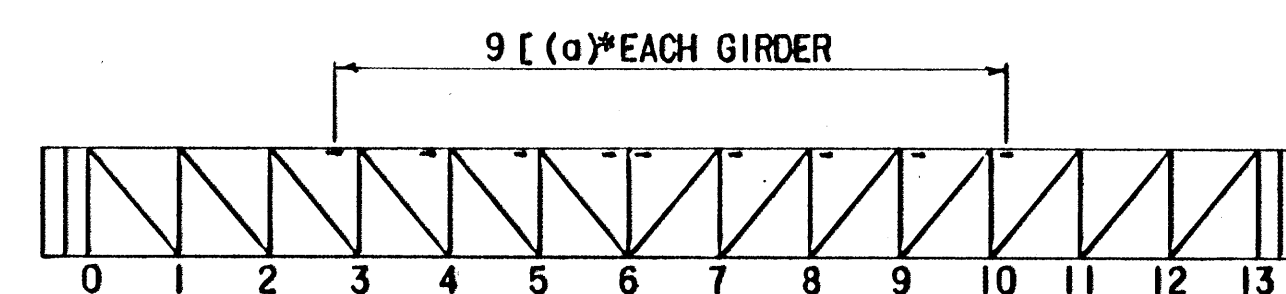
LEGEND
Symbols and their definitions are as follows:
○ Existing fasteners.
○ Existing open holes to remain open.
● Existing holes to be filled with H.S. Bolts.
● Existing fasteners to be removed and replaced with H.S. Bolts.
* New material, all others existing.

MATERIAL LIST
189-10"x4" [28.5 x 0'-9 1/2"
756-1"φ x 2 3/4" bolts
Furnish hex head bolts, nuts and washers (provide one hardened washer for each bolt; also, provide one hardened beveled washer for each bolt if slope of channel flange exceeds 1:20).

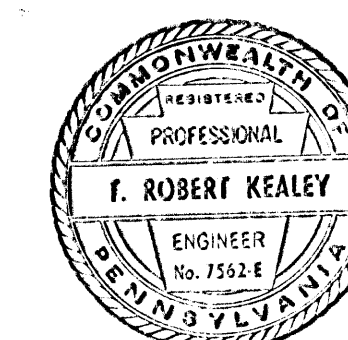


TYPICAL CROSS SECTION

CHANNEL DIAPHRAGM DETAIL



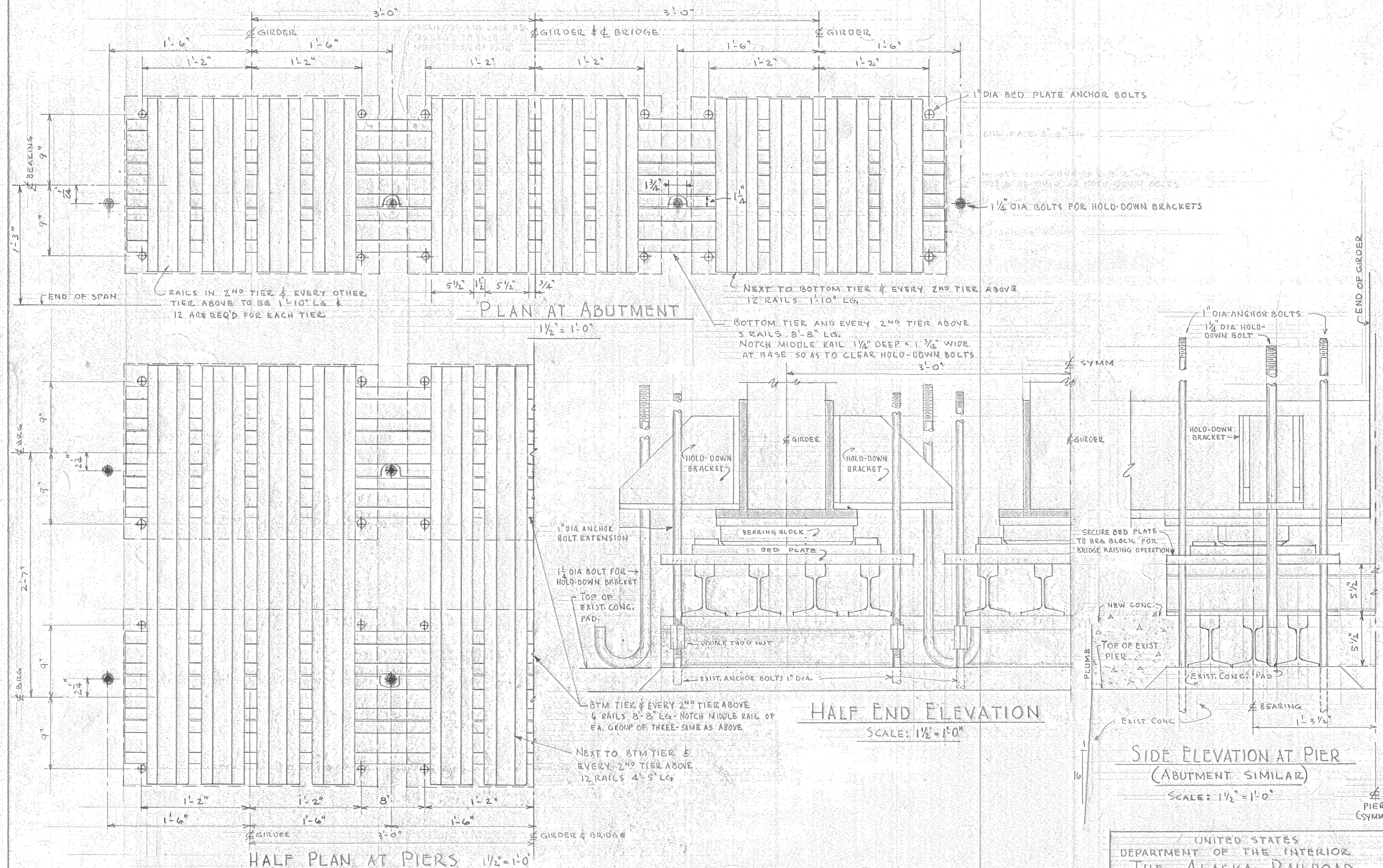
GIRDER KEY ELEVATION



PREPARED BY
MODJESKI & MASTERS
HARRISBURG, PA.

REVISION	DATE	DESCRIPTION	BY
UNITED STATES DEPARTMENT OF TRANSPORTATION FEDERAL RAILROAD ADMINISTRATION THE ALASKA RAILROAD OFFICE OF THE CHIEF ENGINEER, ANCHORAGE STRENGTHENING OF THE BRIDGE NO. 64.7 GIRDER SPAN - DETAILS			
SUBMITTED:		SCALE: 3/4"=1'-0" UNLESS NOTED	
APPROVED:		DATE: DECEMBER 1968	
CHIEF ENGINEER		SHEET 1 OF 1	
		FILE NO. 64.7-A	

DR.CWH/CK.HS



UNITED STATES
 DEPARTMENT OF THE INTERIOR
 THE ALASKA RAILROAD
 OFFICE OF THE CHIEF ENGINEER, ANCHORAGE

RAISING DETAILS BRIDGE 64.7

DRAWN BY
 RECOMMENDED

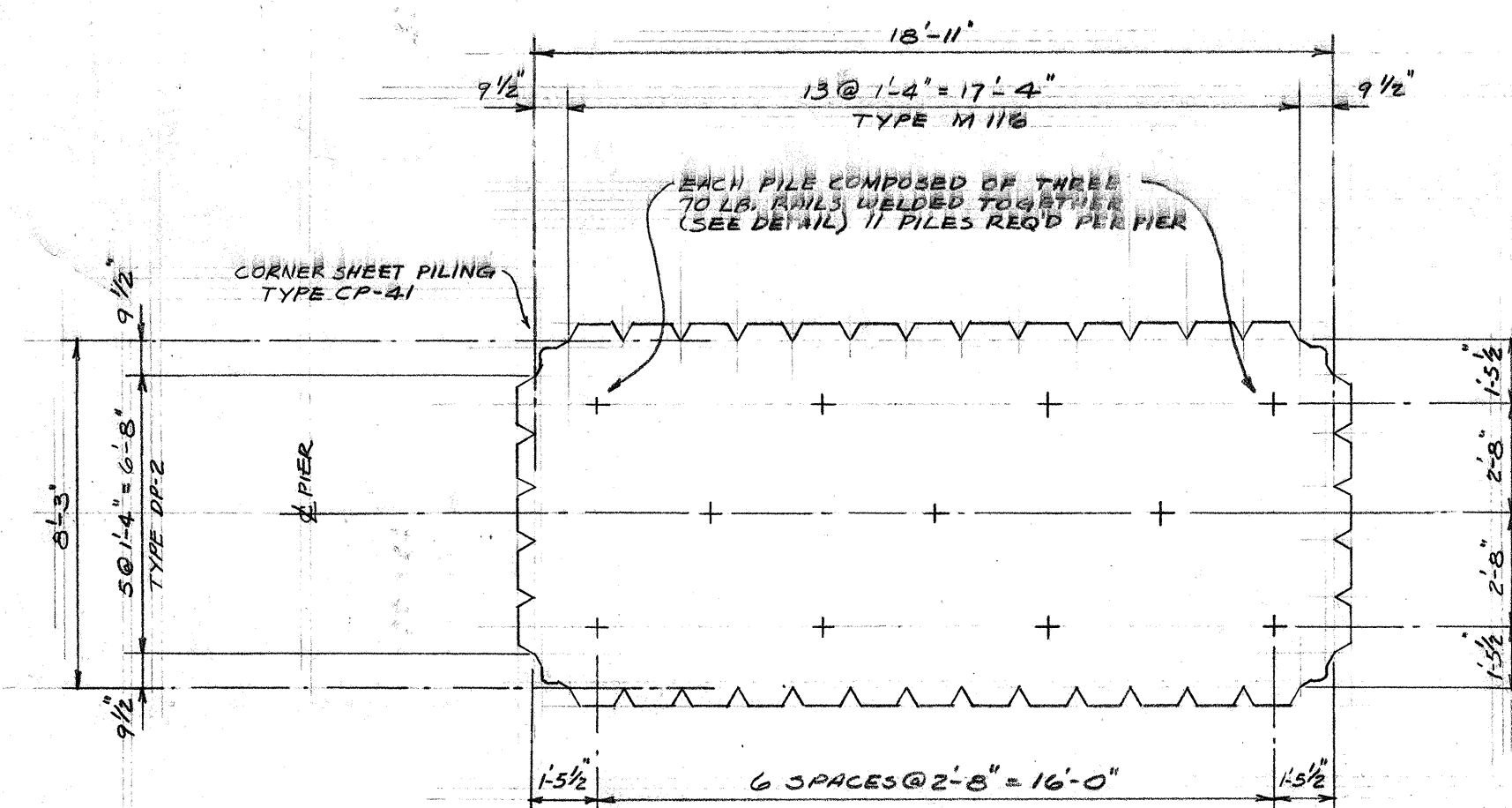
SCALE

ASST. CHIEF ENGINEER
 APPROVED

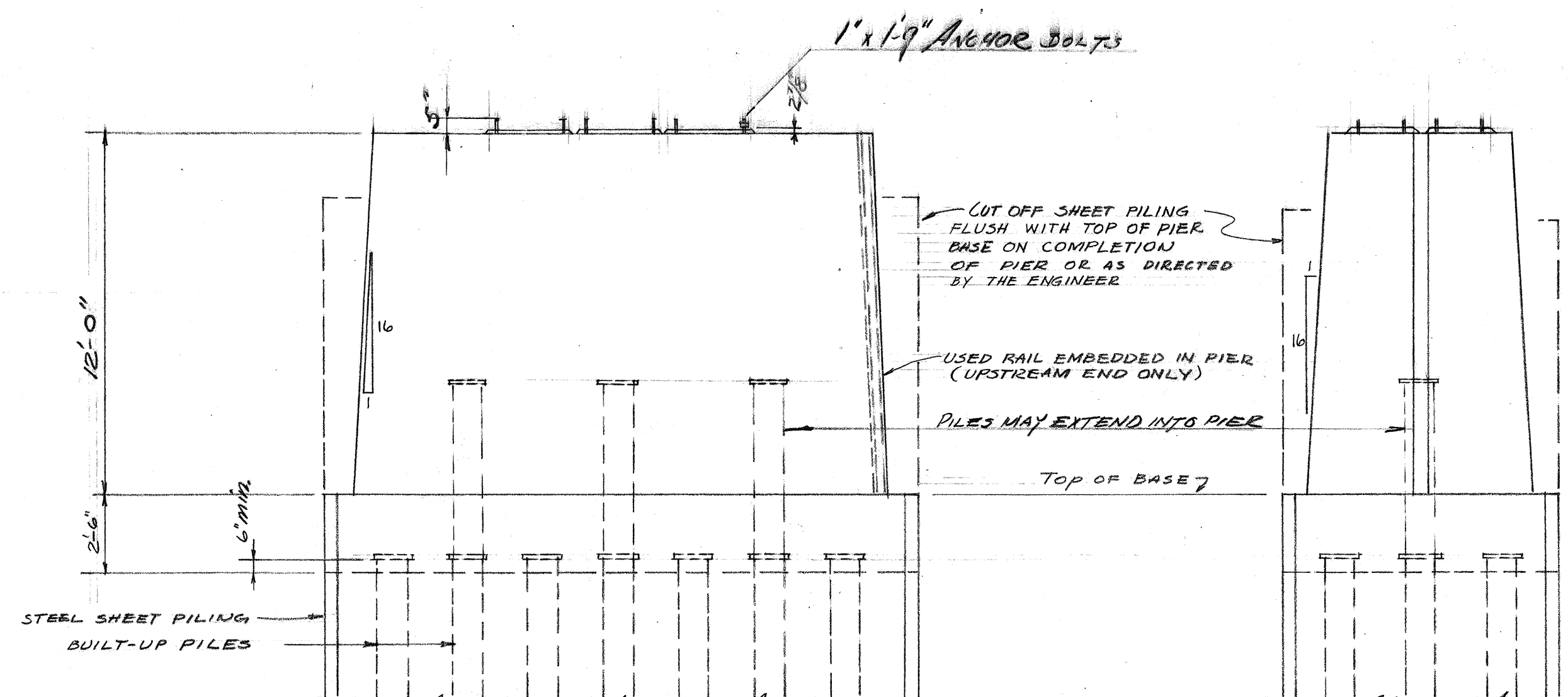
DATE:

CHIEF ENGINEER

FILE NO. 64.7



SHEET PILING & PILE PLAN FOR PIERS
SCALE: 1/4" = 1'-0"



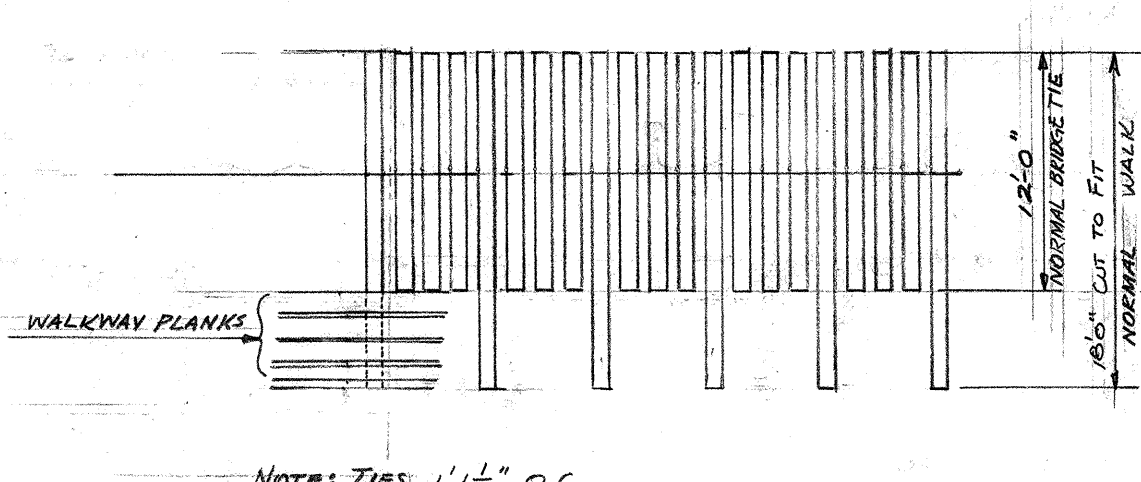
ELEVATION

END ELEVATION

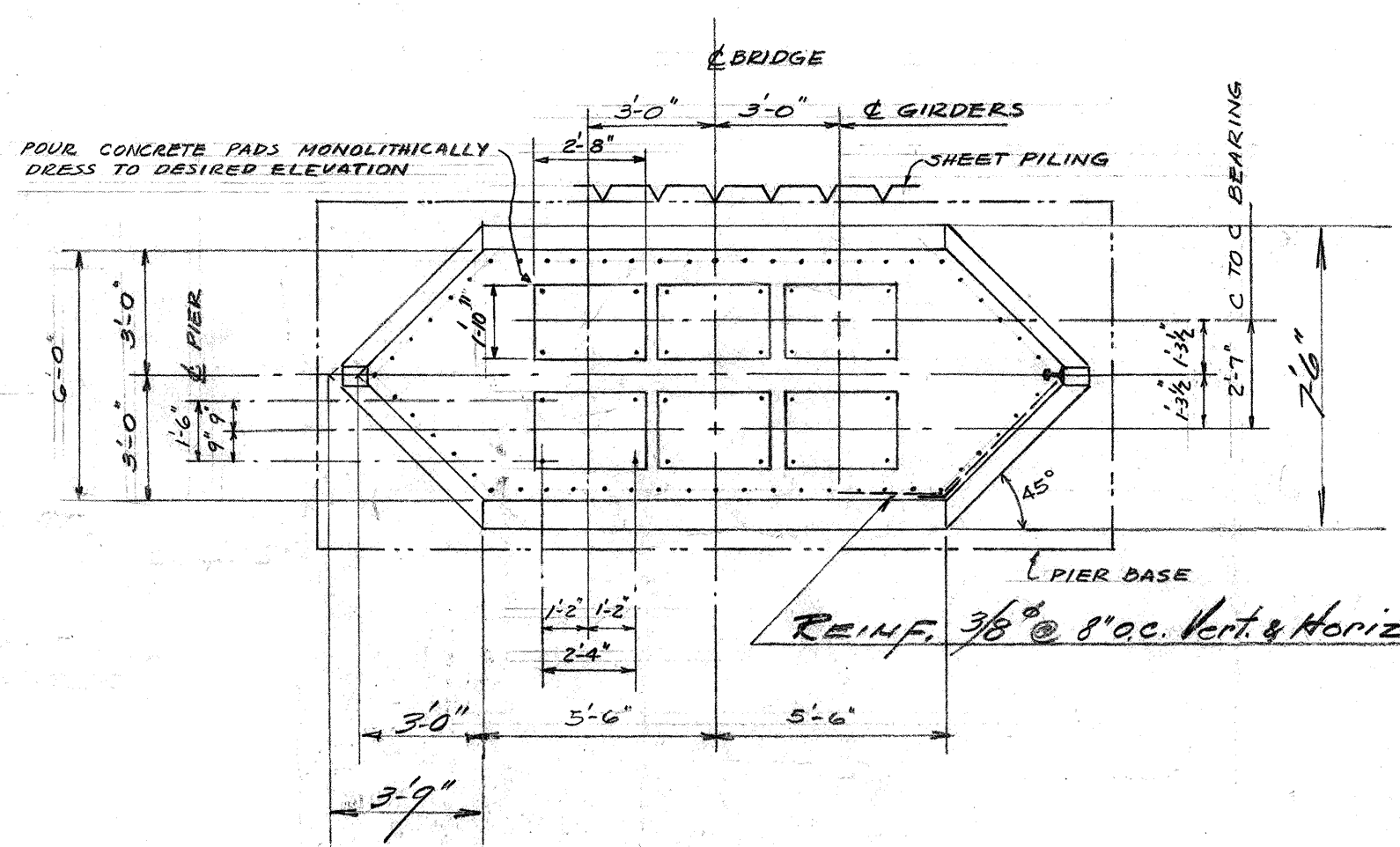
ESTIMATED QUANTITIES

ONE PIER

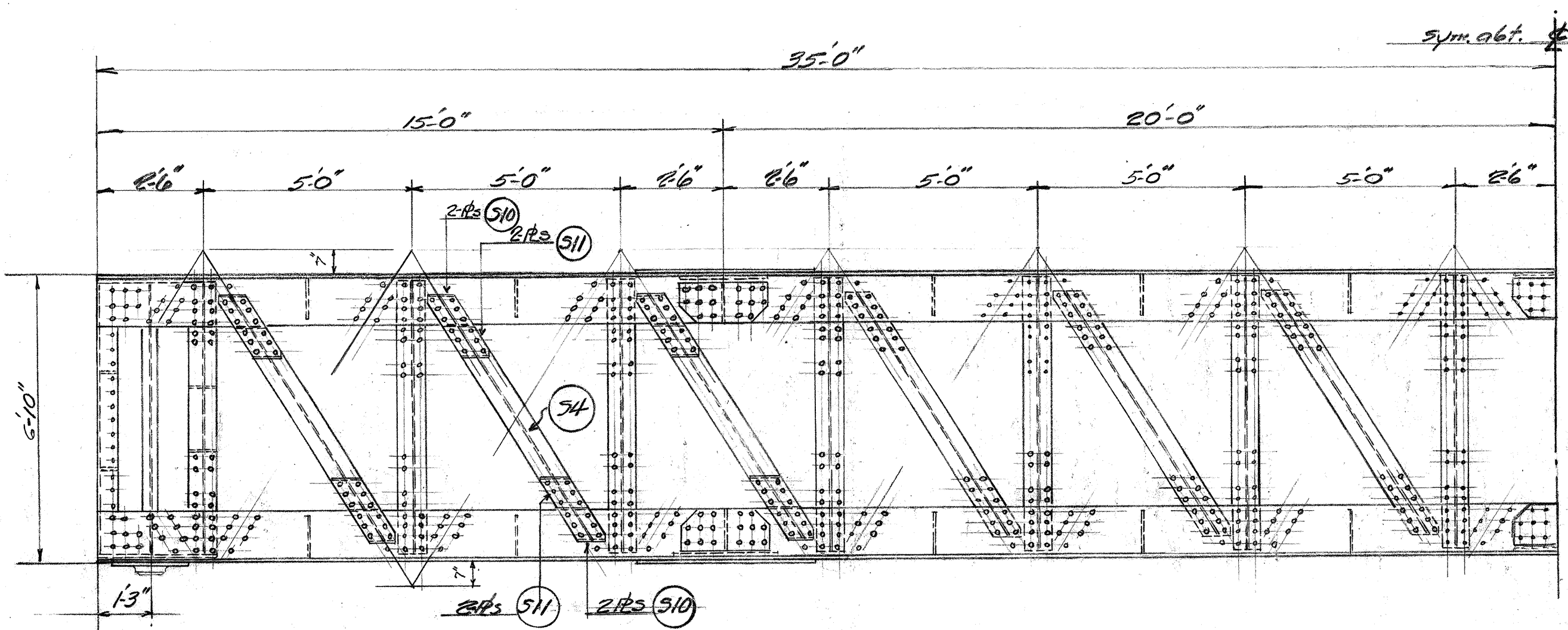
- 59 CUYD. CONCRETE
- 1600 ft. 3/8" REINF BARS = 600 pounds
- 40 STEEL SHEET PILES 20 1/2" 28,800 pounds
- 11 FOUNDATION PILES 33 1/2" 27,200 "
- 38 CUYD EXCAVATION (APPROXIMATE AVERAGE)



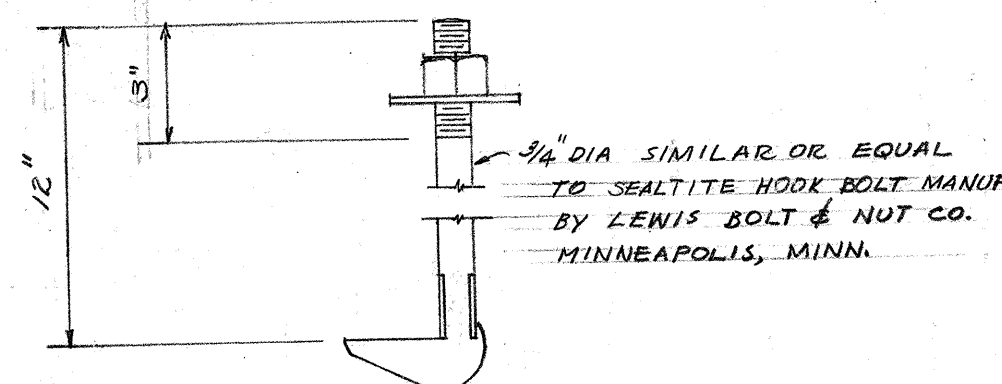
TYPICAL TIE PLAN
SCALE: 1/8" = 1'-0"



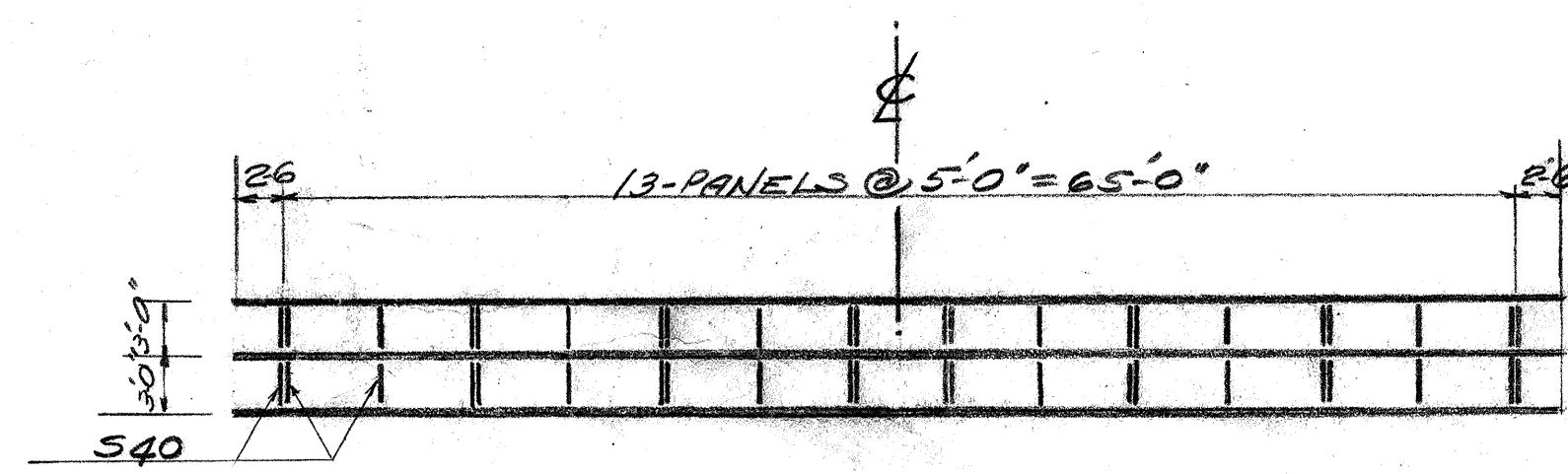
PLAN
Scale: 1/4" = 1'-0"



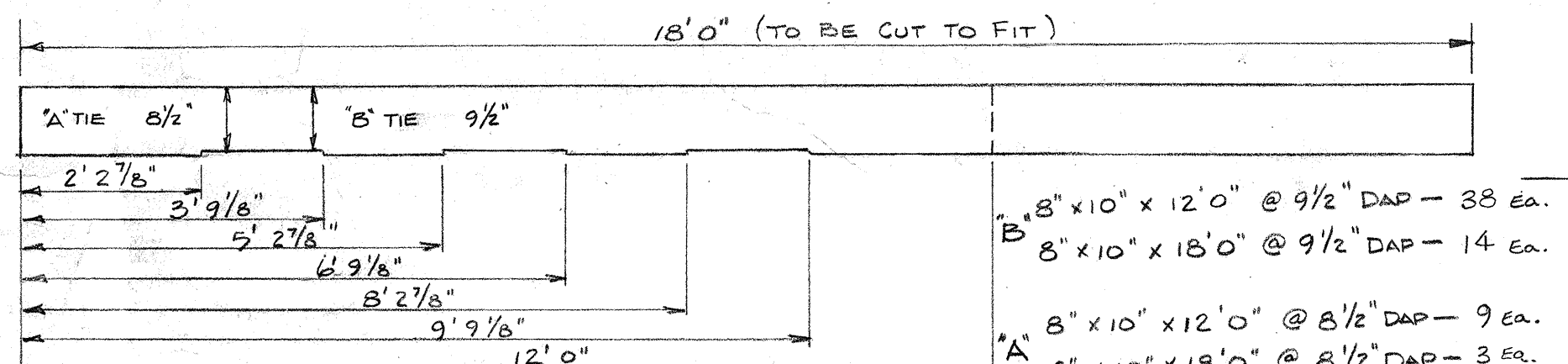
ELEVATION OF GIRDER
HALF SPAN



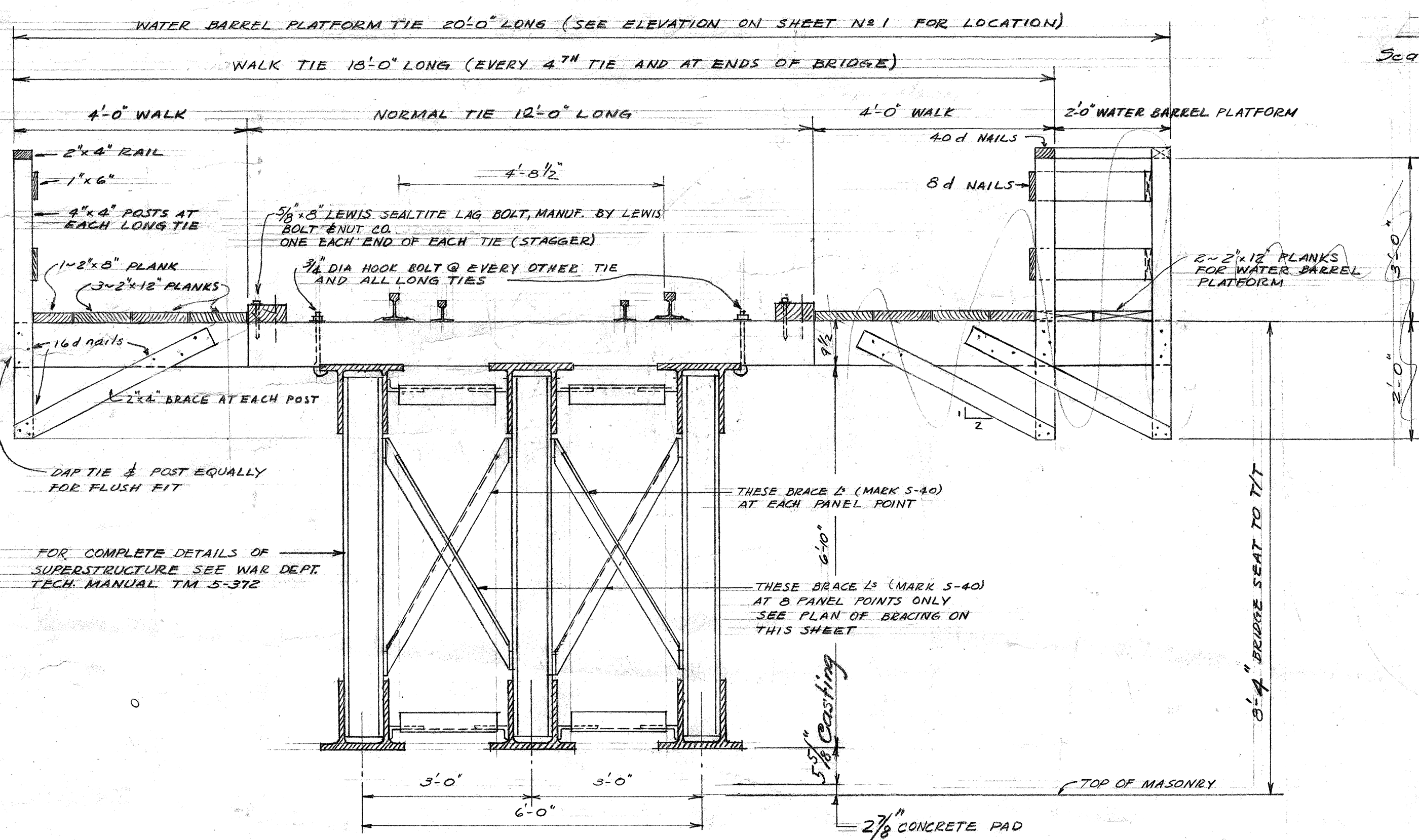
HOOK BOLT DETAIL
SCALE: 3/16" = 1'-0"



TIE DETAIL



TIES PER SPAN
(7 SPANS)



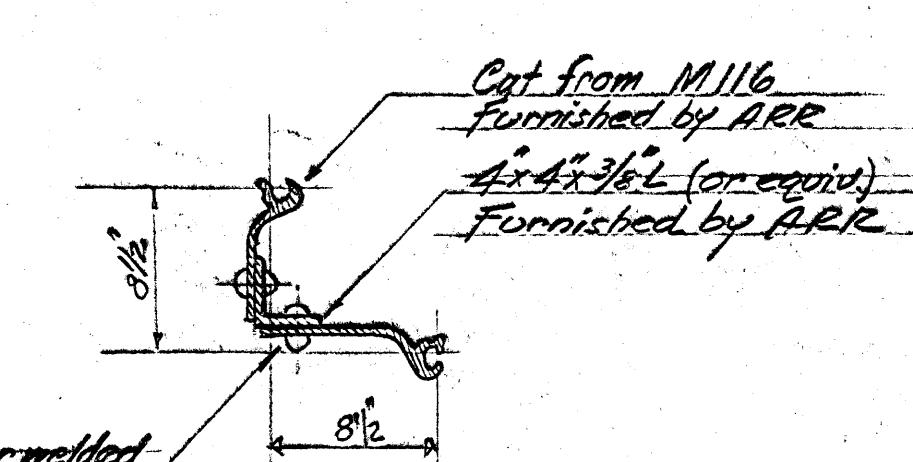
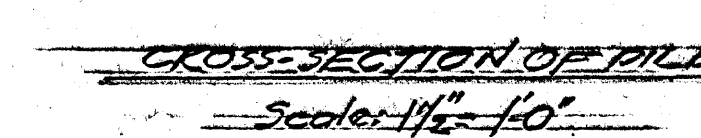
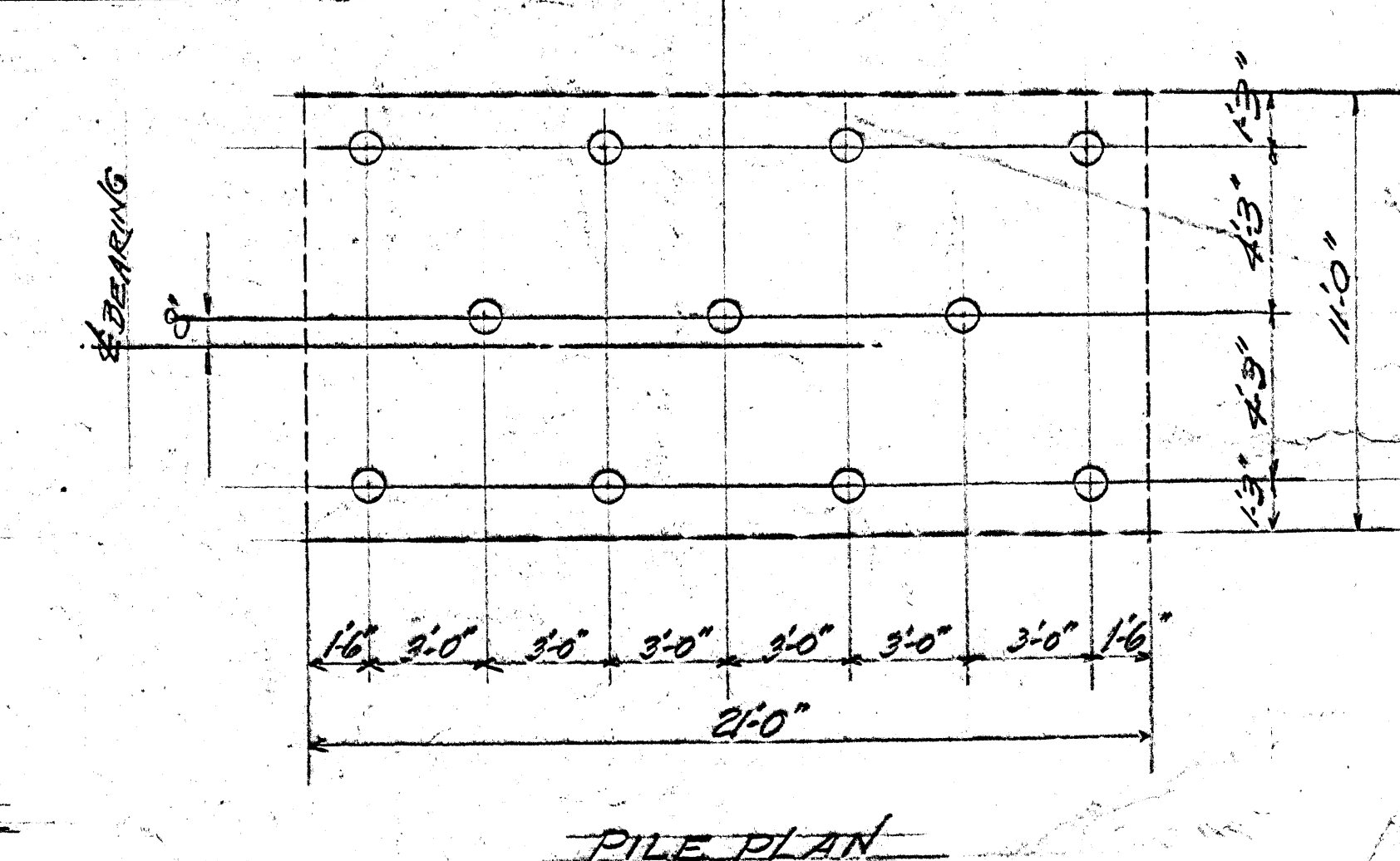
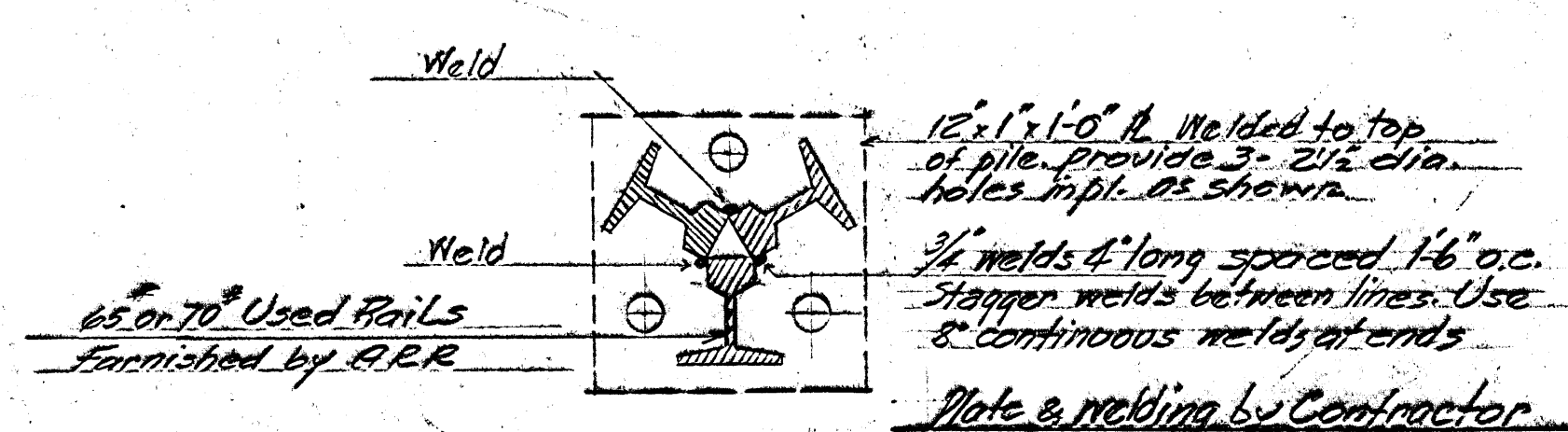
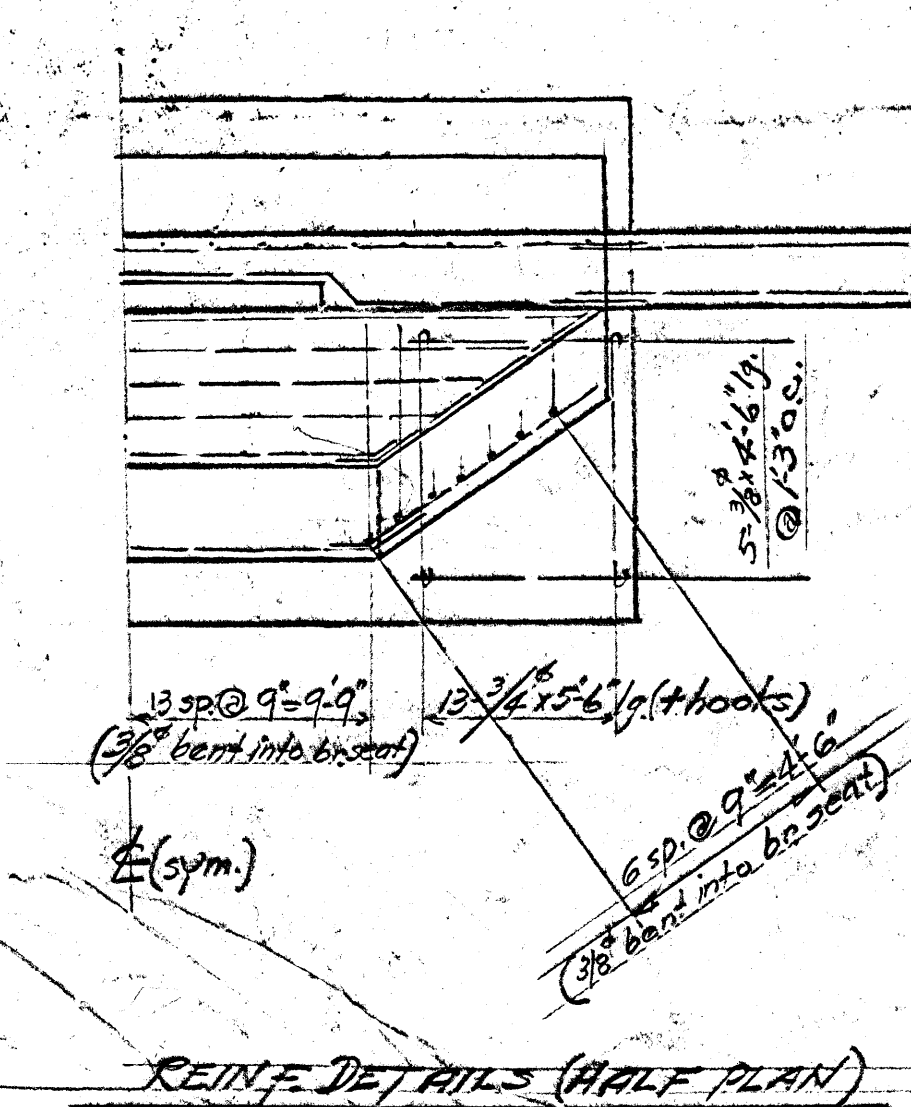
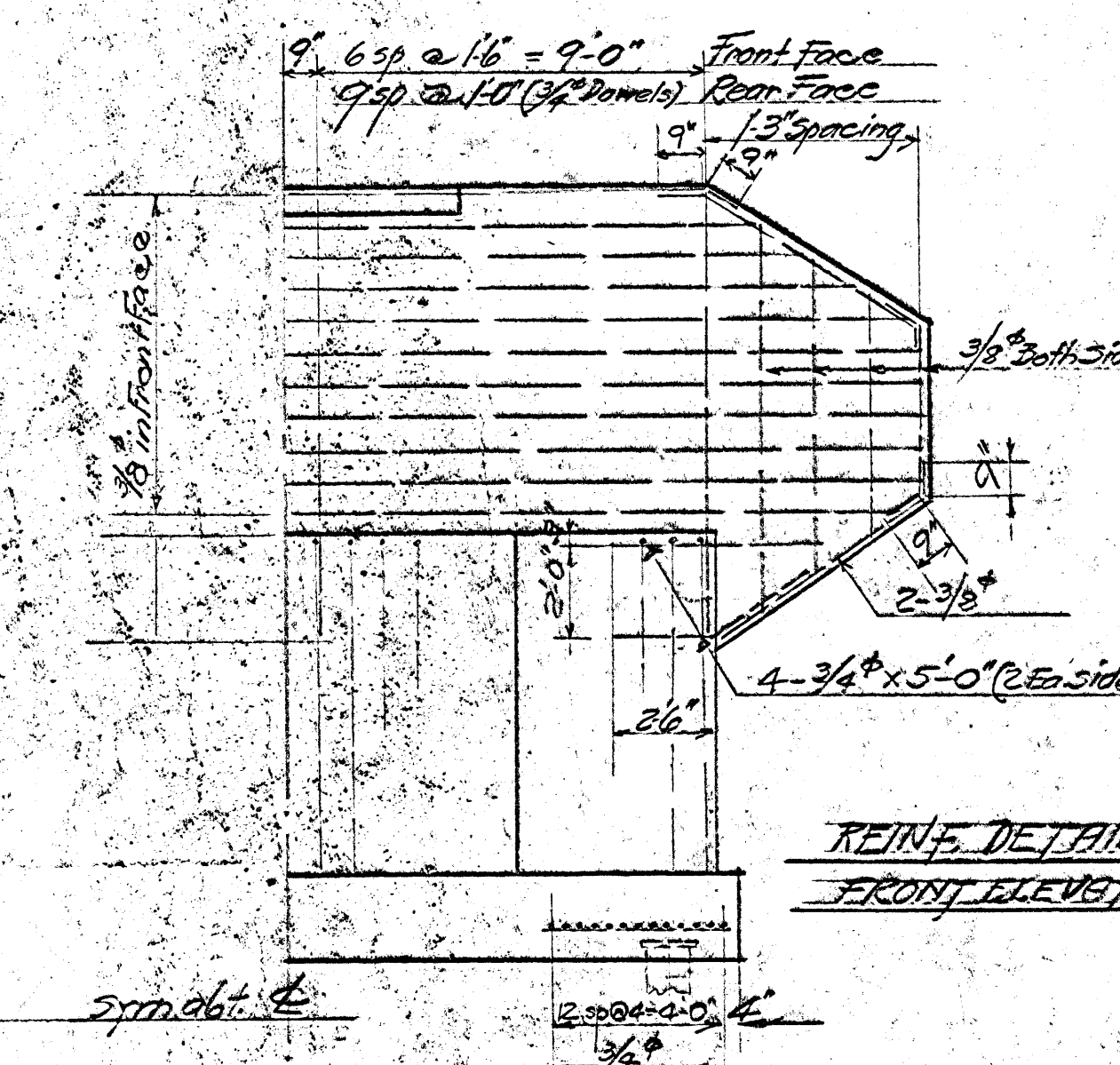
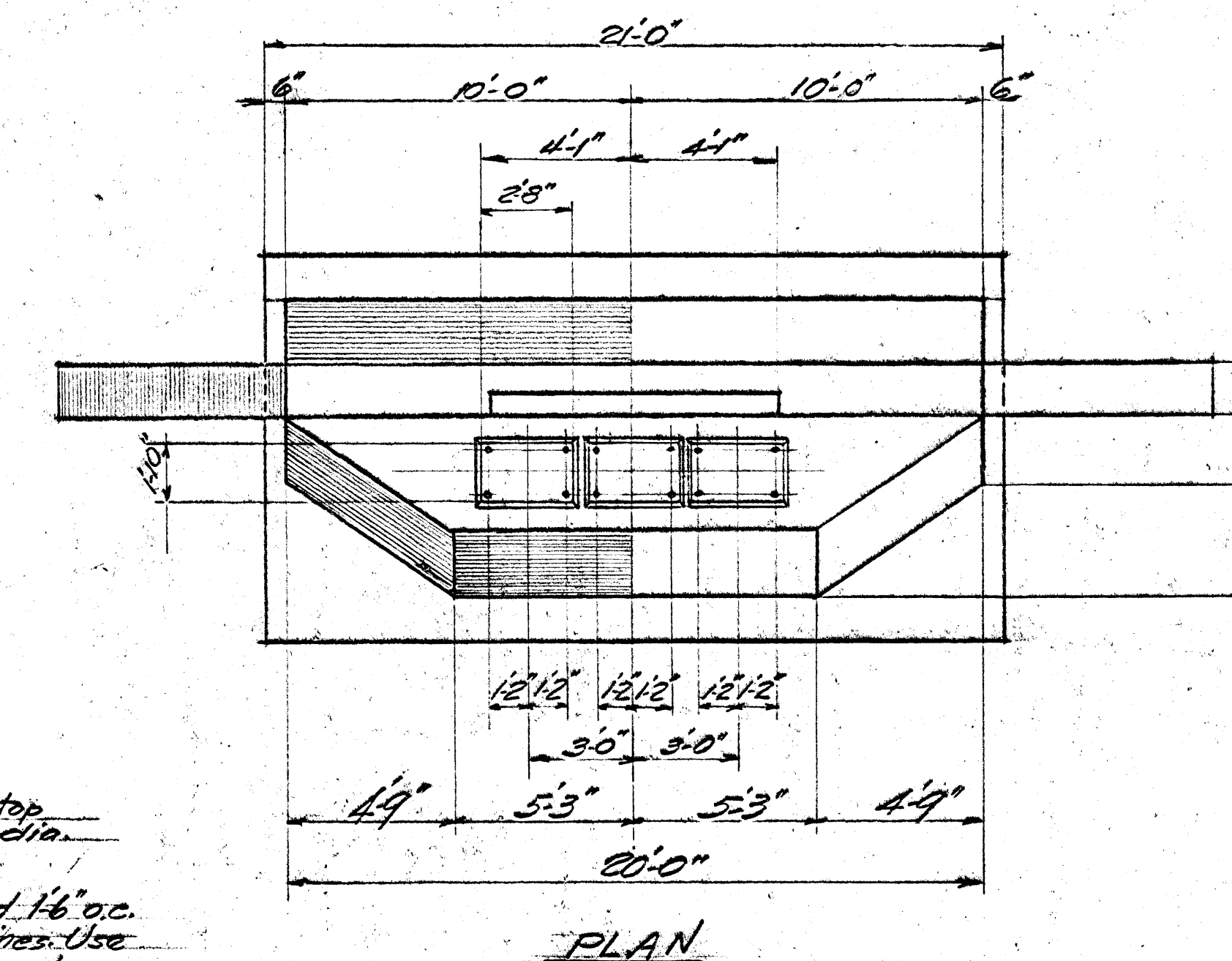
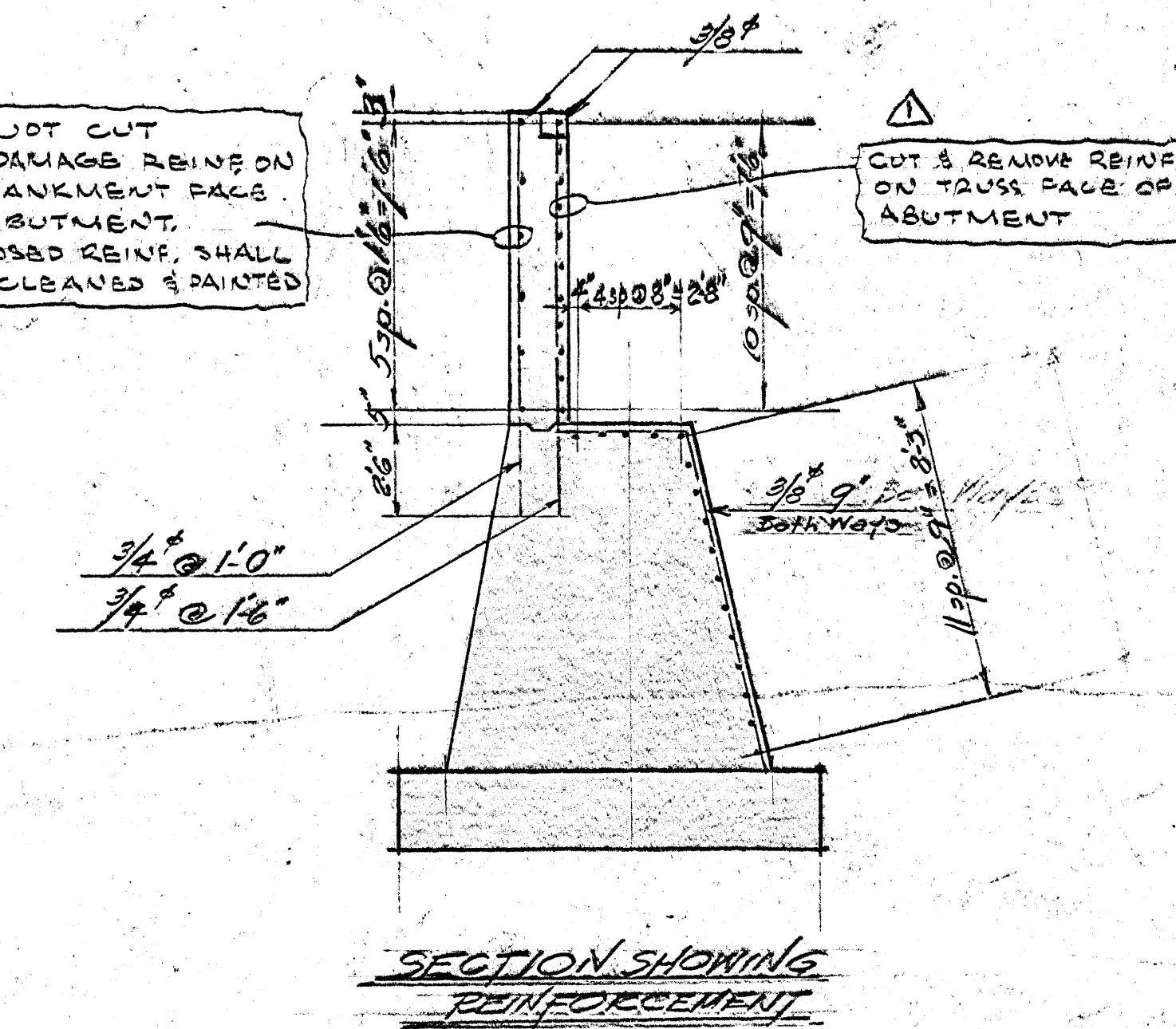
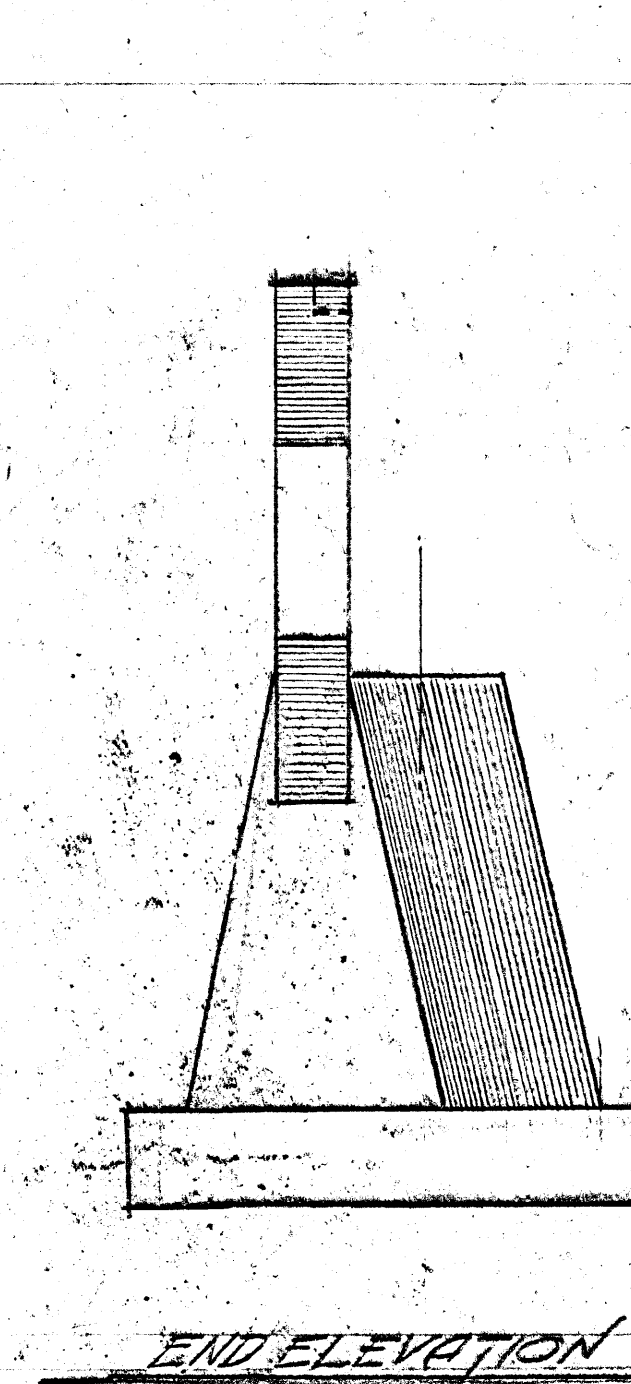
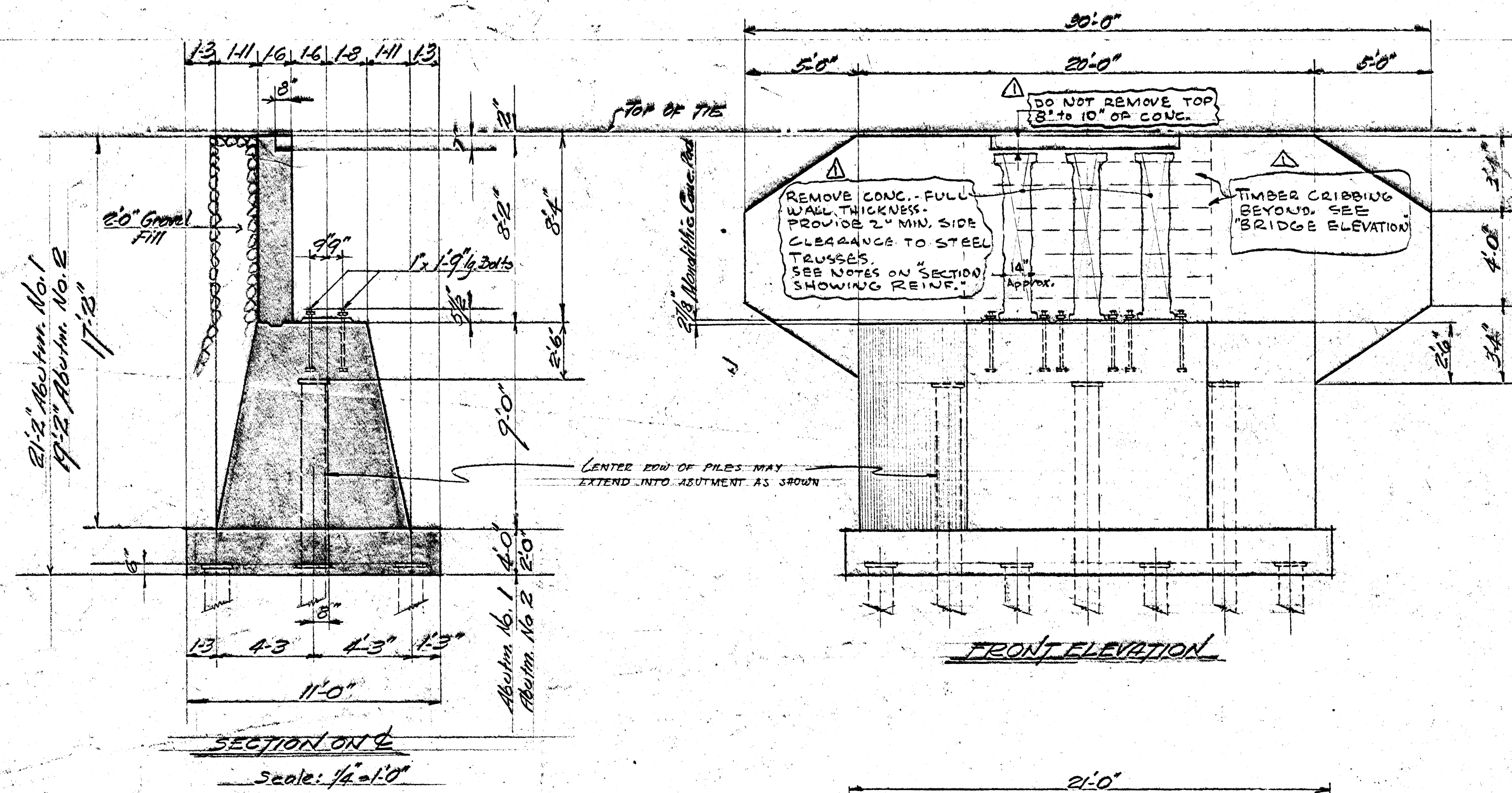
TYPICAL CROSS SECTION
NOT TO SCALE

SKETCH SHOWING LOCATION (PLAN)
OF BRACING & MARKED S40
44-REQ'D

UNITED STATES
DEPARTMENT OF THE INTERIOR
THE ALASKA RAILROAD
OFFICE OF THE CHIEF ENGINEER, ANCHORAGE
BRIDGE 64.7 TWENTY MILE RIVER

DESIGNED: HOLMEN
RECOMMENDED
APPROVED: *R. S. H. Smith*
ASSISTANT CHIEF ENGINEER
CHIEF ENGINEER

SCALE: AS SHOWN
DATE: Oct. 1950
FILE NO. 64.7



ESTIMATED QUANTITIES
ABUTMENT No. 1

11- FOUNDATION PILES 33 FT. LG. 25,500 lb.
11- CAP PLATES FOR PILES 12'x1'x1'-0" 450 •
CONCRETE 85.5 cu.yd.
REINFORCING BARS

$\frac{3}{4}"$ 580 Ft. - 870 lb.
 $\frac{3}{8}"$ 1200" - 450 •
TOTAL REINF. 1320 lb.

ABUTMENT No. 2

11- FOUNDATION PILES 33 FT. LG. 25,500 lb.
11- CAP PLATES FOR PILES 12'x1'x1'-0" 450 •
CONCRETE 68.5 cu.yd.
REINFORCING BARS

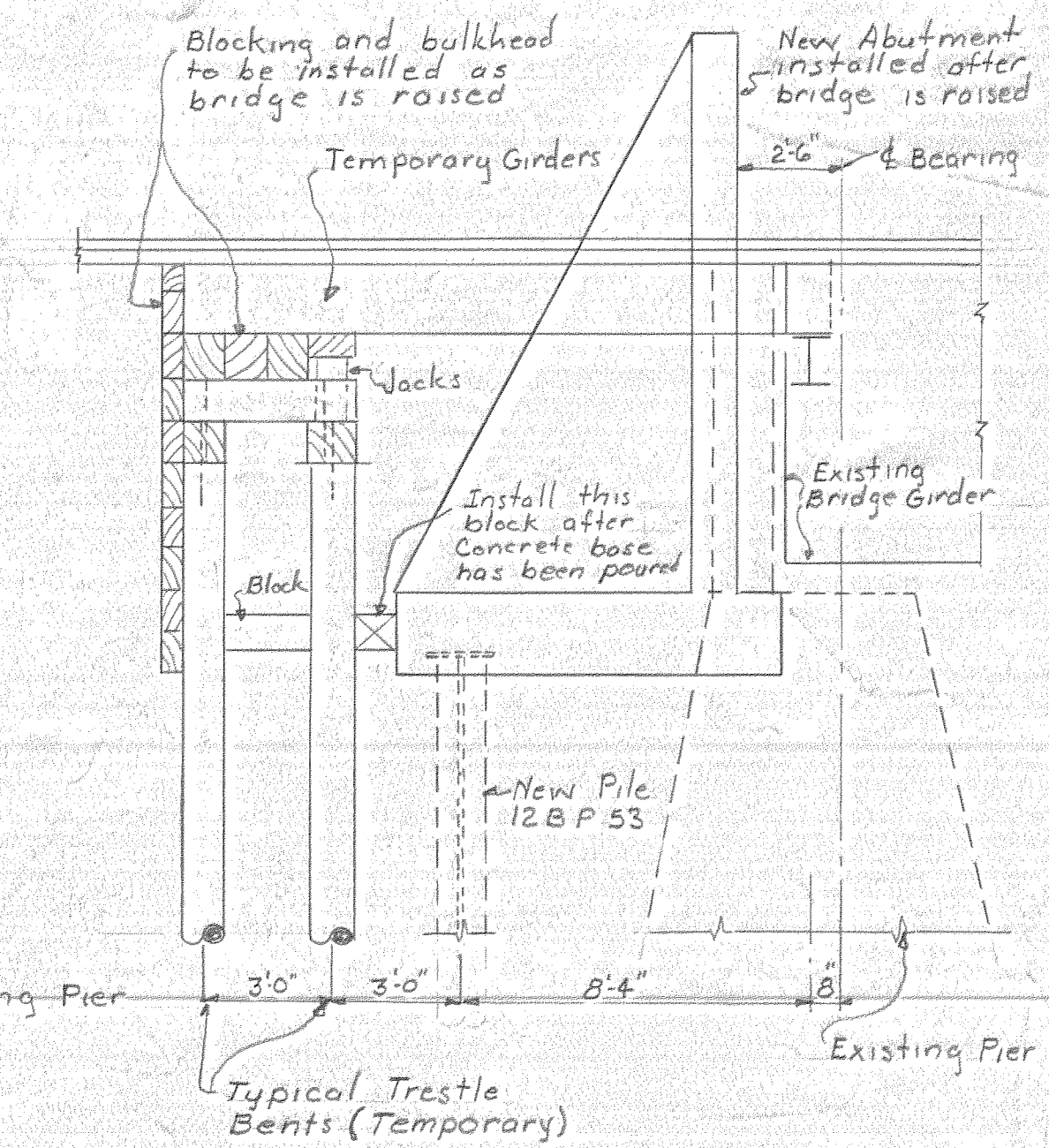
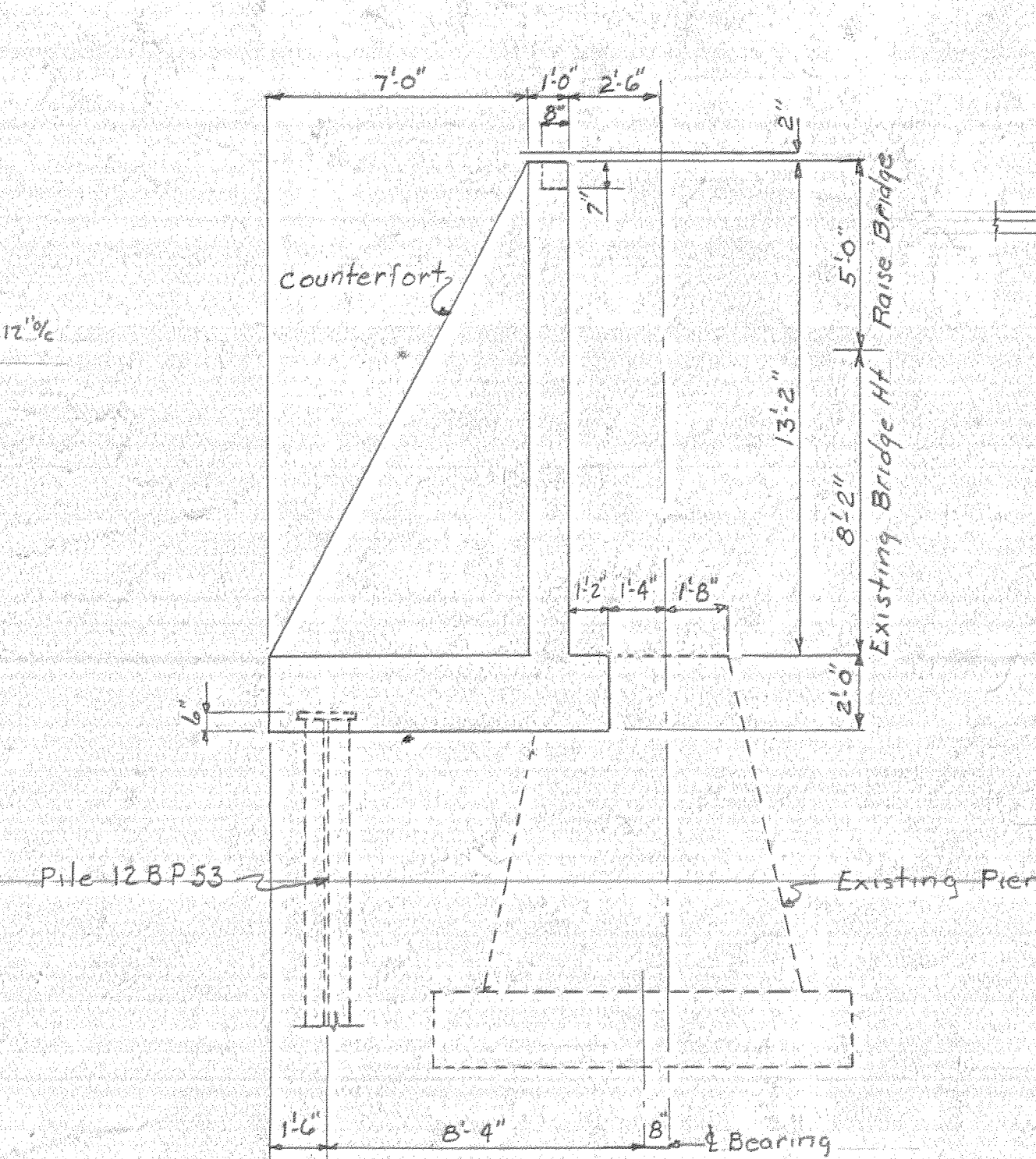
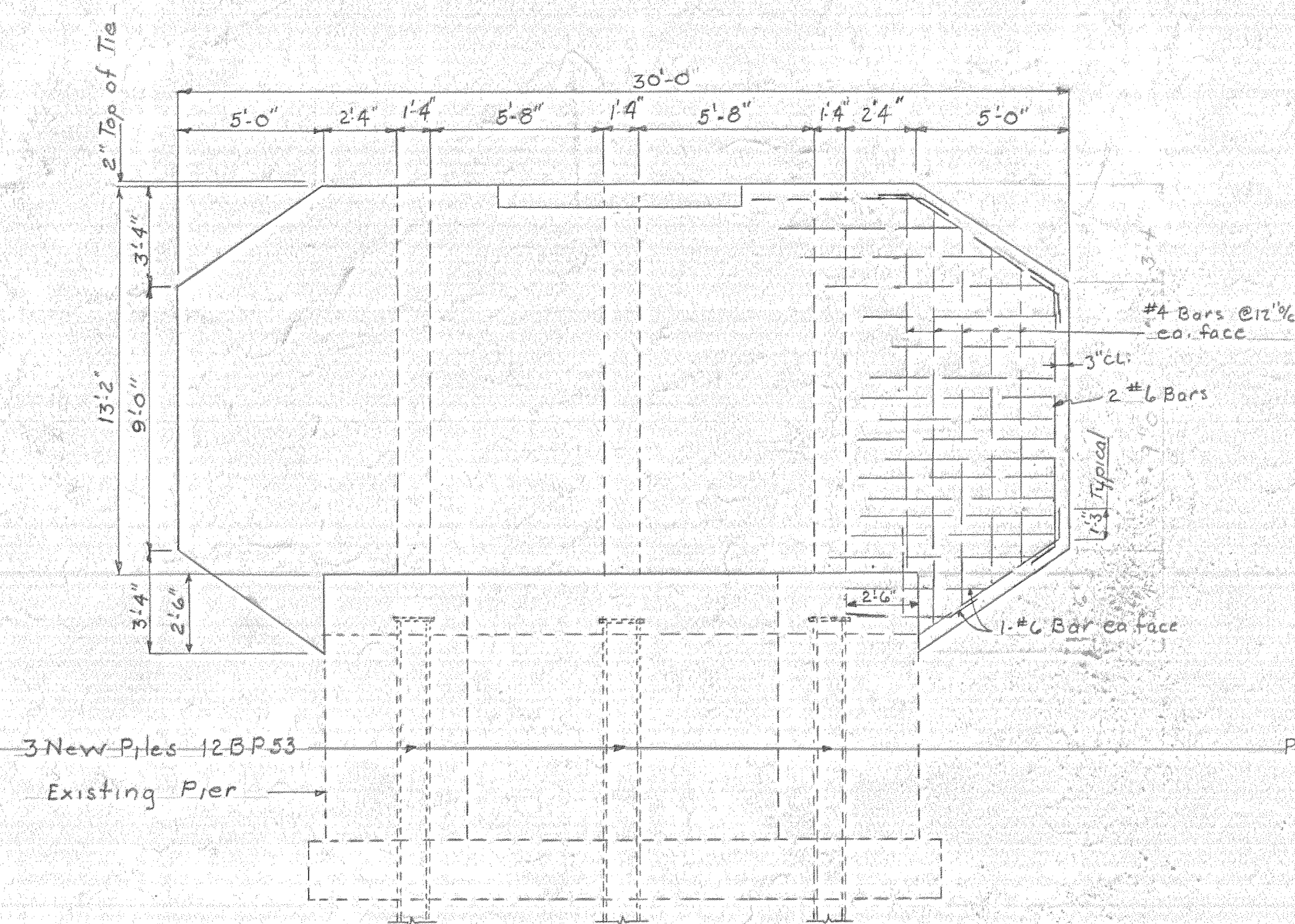
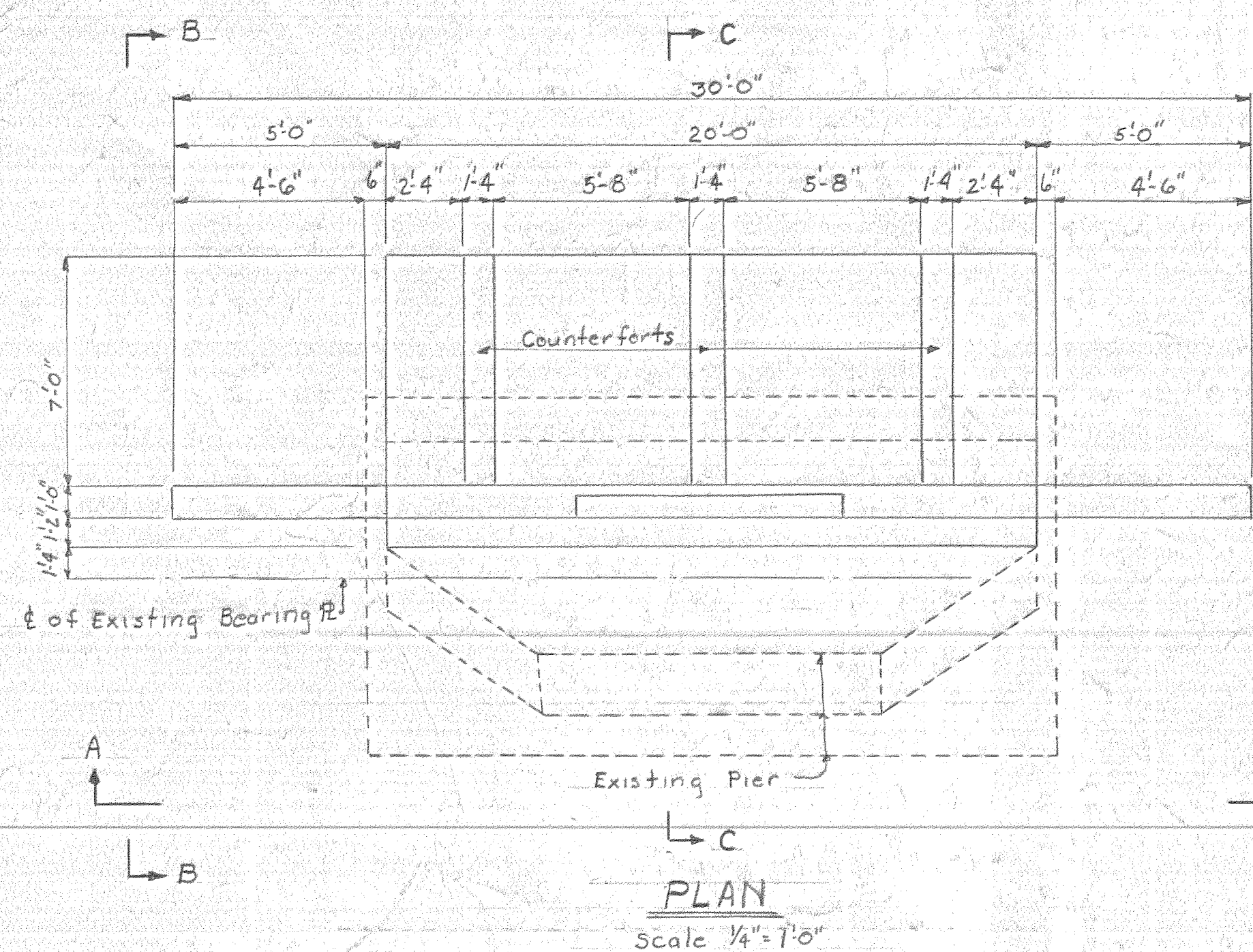
$\frac{3}{4}"$ 580 Ft. - 870 lb.
 $\frac{3}{8}"$ 1200" - 450 •
TOTAL REINF. 1320 lb.

NOTE - BOTH ADJUSTMENTS ALIKE EXCEPT FOR DEPTH OF FOOTINGS

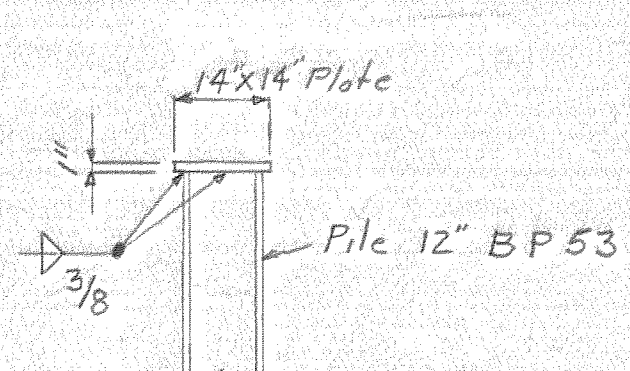
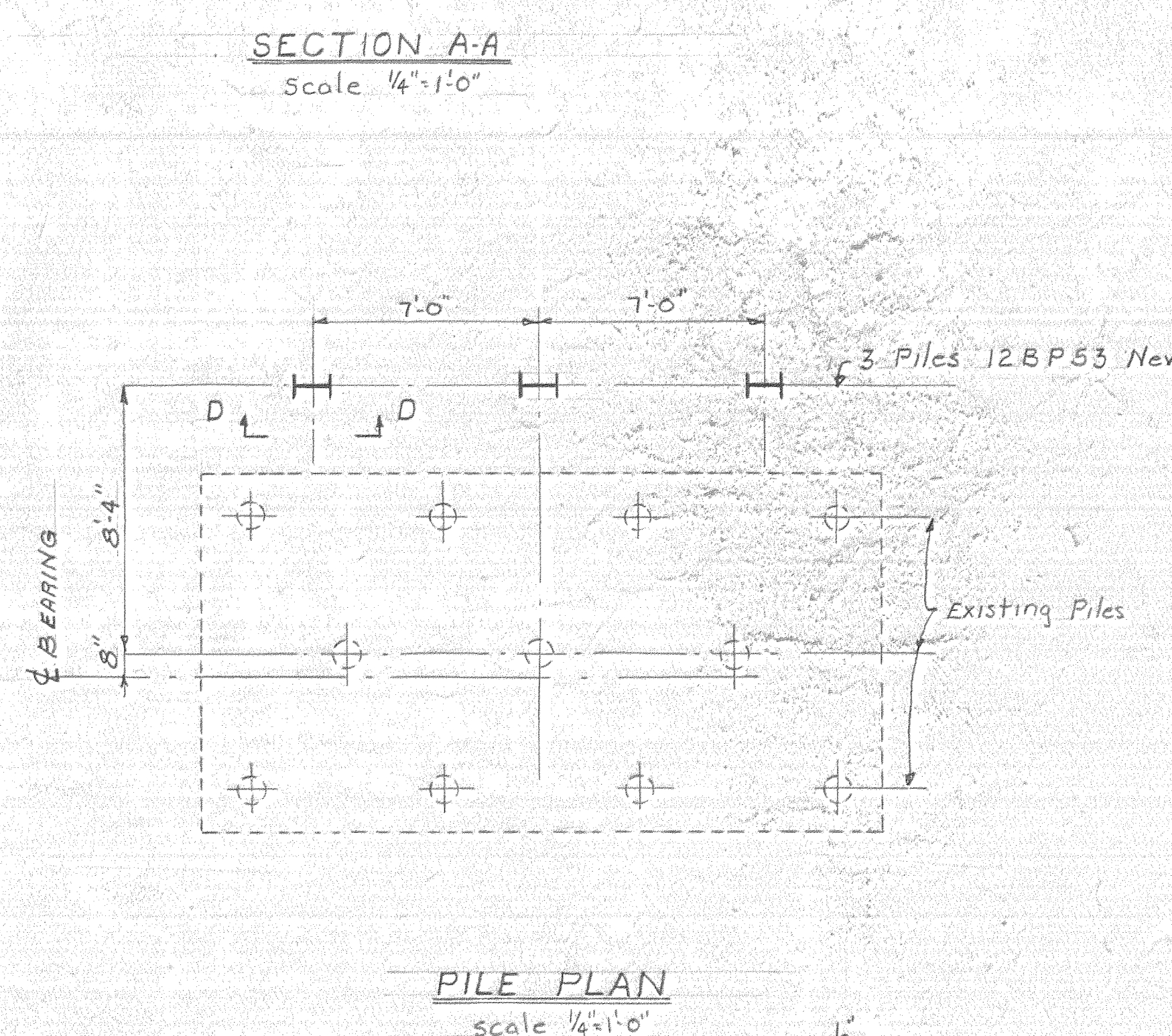
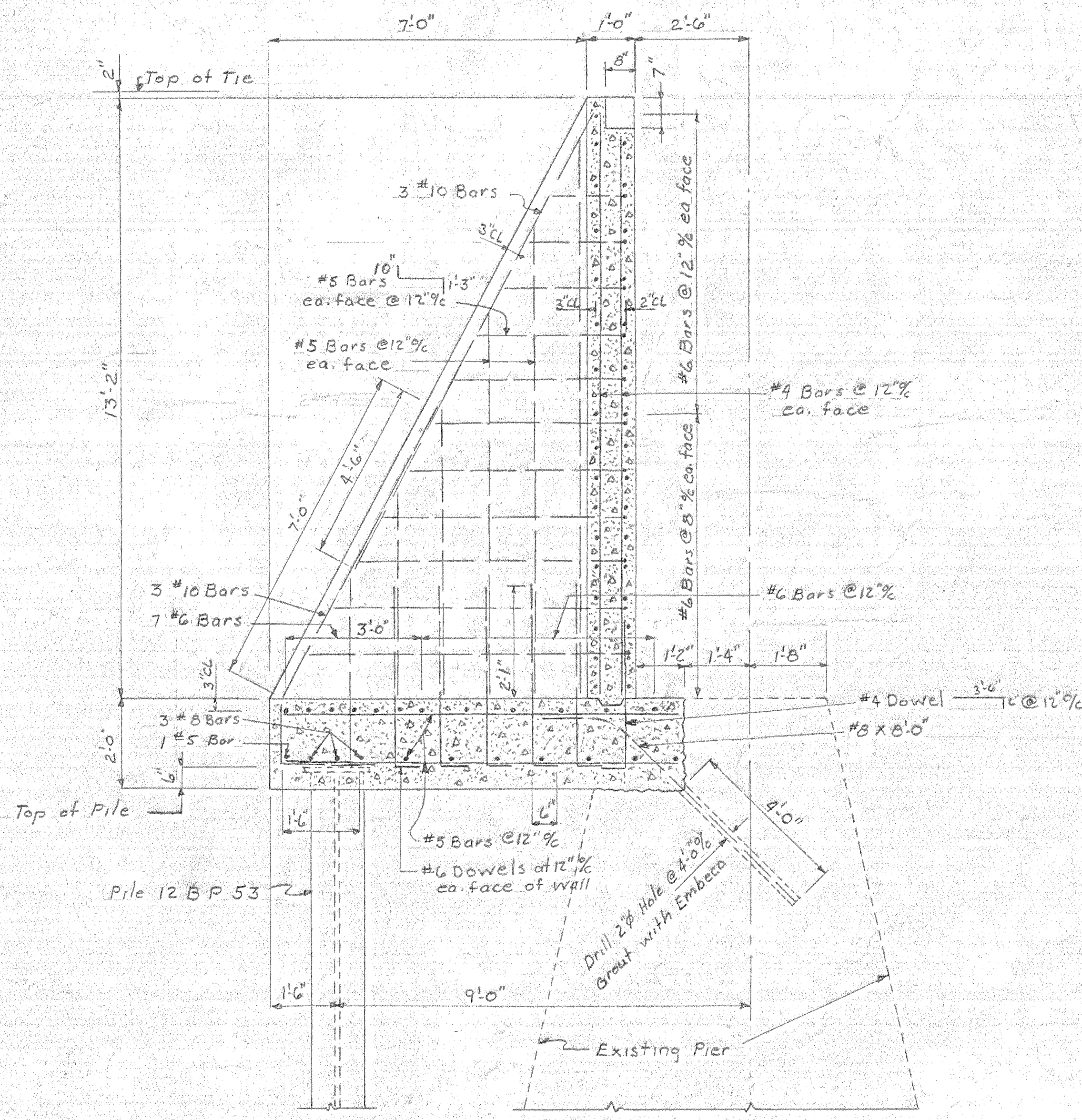
20 MILE RIVER BRIDGE

UNITED STATES
DEPARTMENT OF THE INTERIOR
THE ALASKA RAILROAD
OFFICE OF THE CHIEF ENGINEER, ANCHORAGE
BRIDGE NO. 647
ABUTMENT NO. 1 & 2

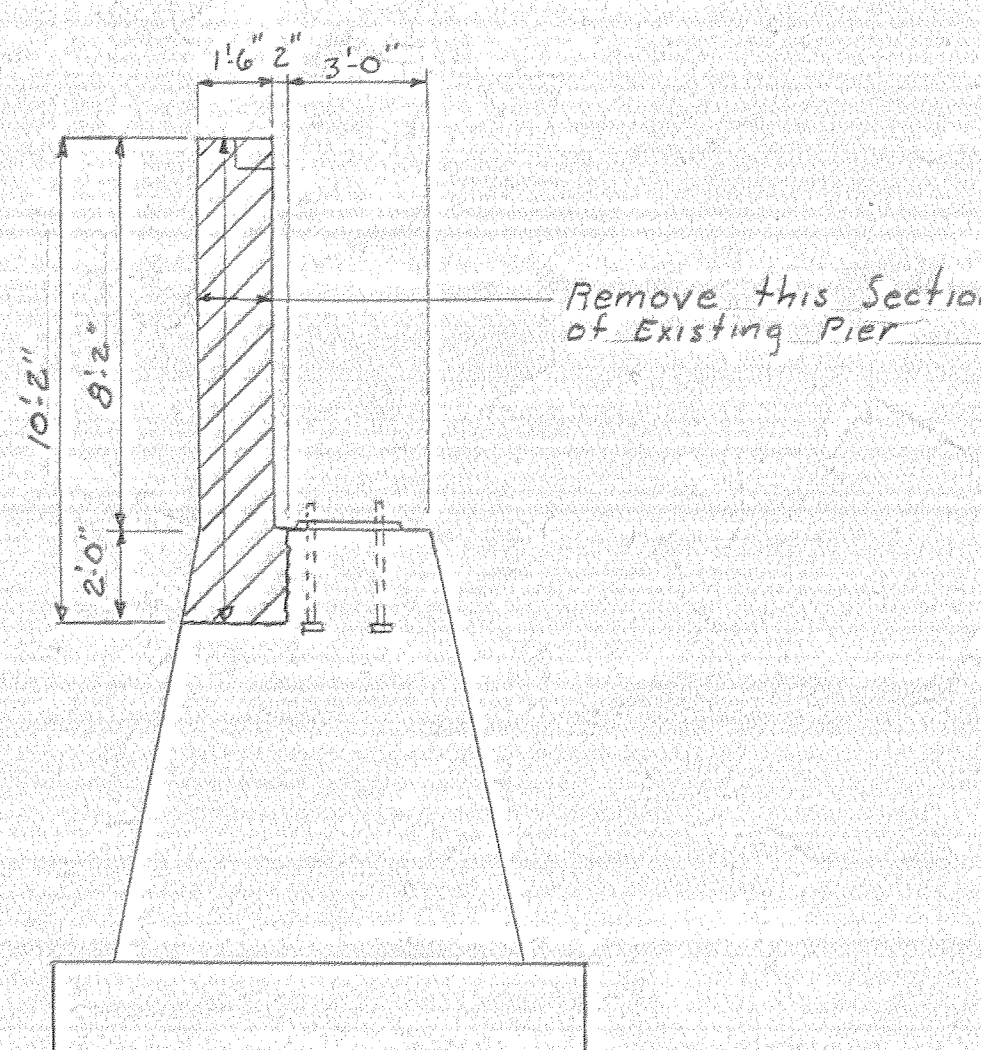
Designed: McManis Recommended: B. E. Connor Assistant Chief Engineer Approved: R. A. Anderson Chief Engineer	Scale: $\frac{1}{4"} = 1'-0"$ October 1950 FILE: 647
--	--



TEMPORARY SUPPORTS FOR
INSTALLATION OF NEW ABUTMENTS



TYPICAL KEY
WALL AND COUNTERFORT



NOTES
Concrete 2500 #8
Reinforcing Steel intermediate grade
Both abutments are similar
New Piles 12 BP 53 X 40'-0" long

EARL AND WRIGHT, INC. CONSULTING ENGINEERS 40 FREMONT ST. SAN FRANCISCO, CALIFORNIA	UNITED STATES DEPARTMENT OF THE INTERIOR THE ALASKA RAILROAD OFFICE OF THE CHIEF ENGINEER, ANCHORAGE	
	PORTAGE ALASKA BRIDGE 64.7 NEW ABUTMENT	
DESIGNED BY <u>M. Watt</u> DRAWN BY <u>M. Watt</u> CHECKED BY <u>W. W. Hayes</u> SUBMITTED BY <u>W. W. Hayes</u> DATE <u>August 15, 1966</u>	RECOMMENDED BY APPROVED BY	DATE <u>12 Aug 1966</u> SHEET NO. <u>1</u> OF <u>1</u> FILE <u>64.7</u>