

PLAN	DATE
BY	
CHECKED	
NOTED	
APPROVED	
DATE	

PROFILE	DATE
BY	
CHECKED	
NOTED	
APPROVED	
DATE	

0+39
Imp. 15"X52" C.M.
Rem. & Rep

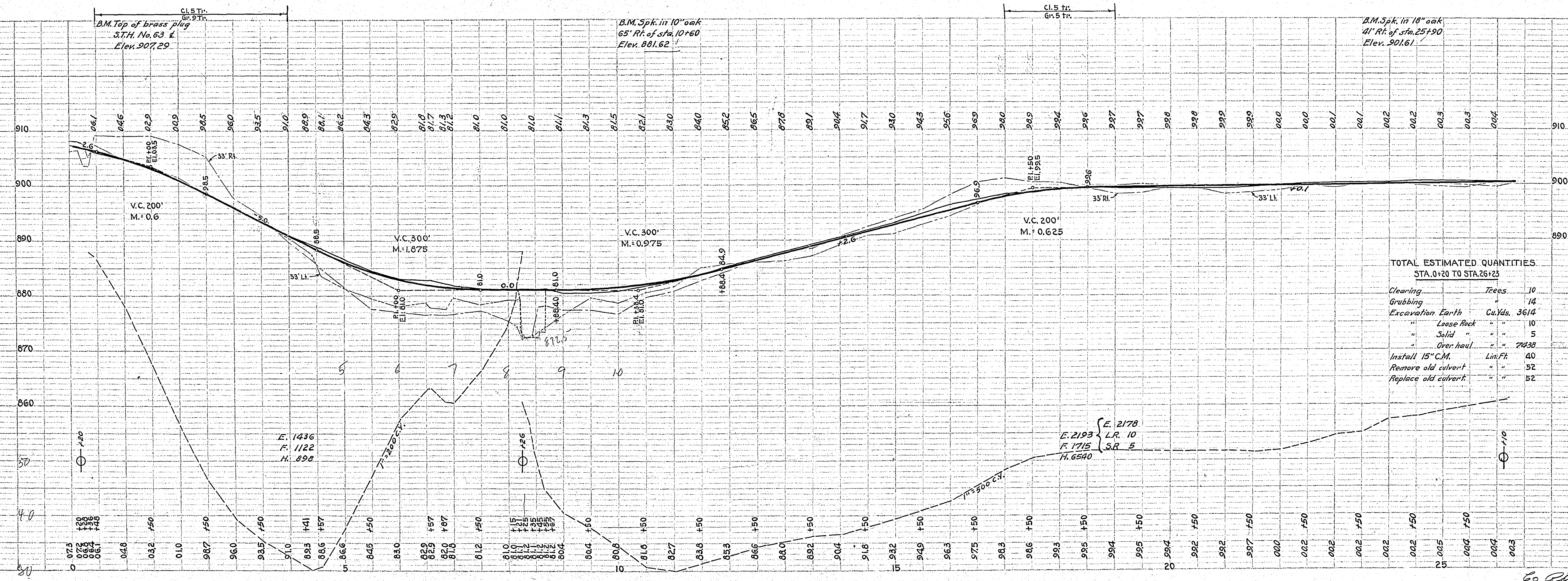
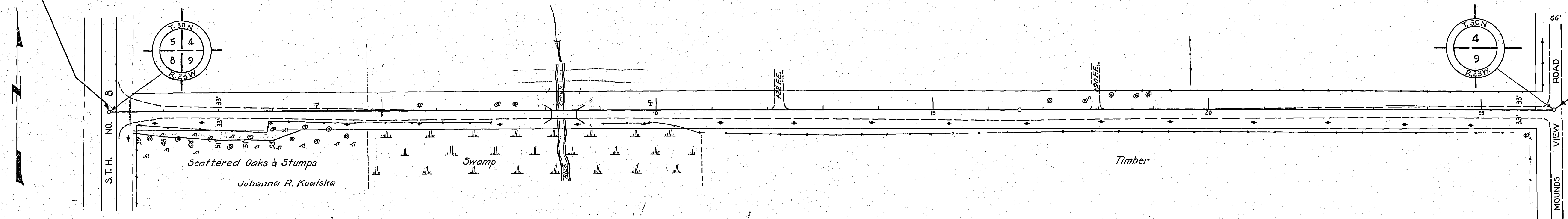
8+40
Rem. old bridge
Pl. 84"X43" C.M.
Headwall Rt. & Lt.
See detail - Sheet No. 2

12+22 Lt.
Pl. 15"X20" C.M.

17+90 Lt.
Pl. 15"X20" C.M.

BEGINNING OF PROJ.
STA. 0+00

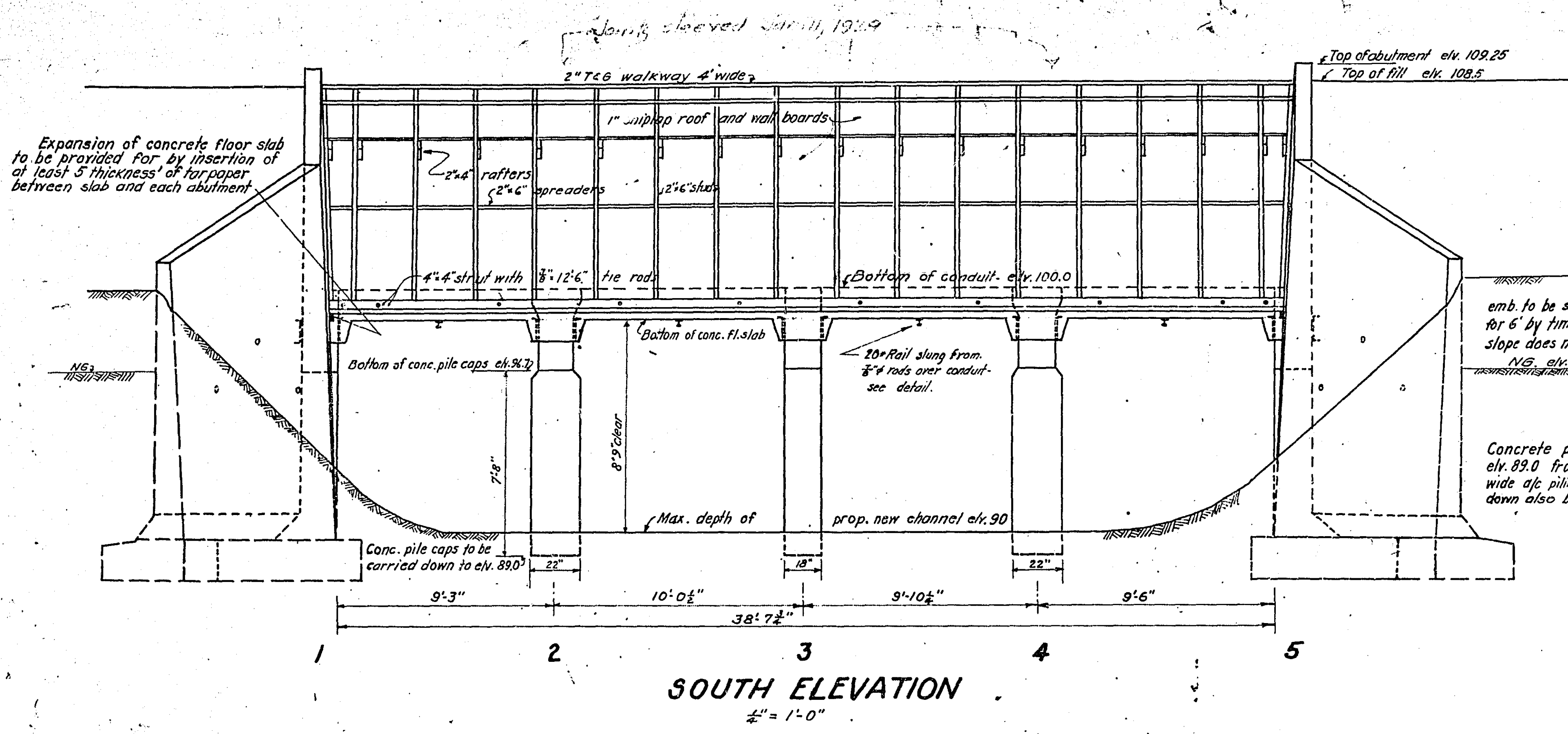
END OF PROJ.
STA. 26+23



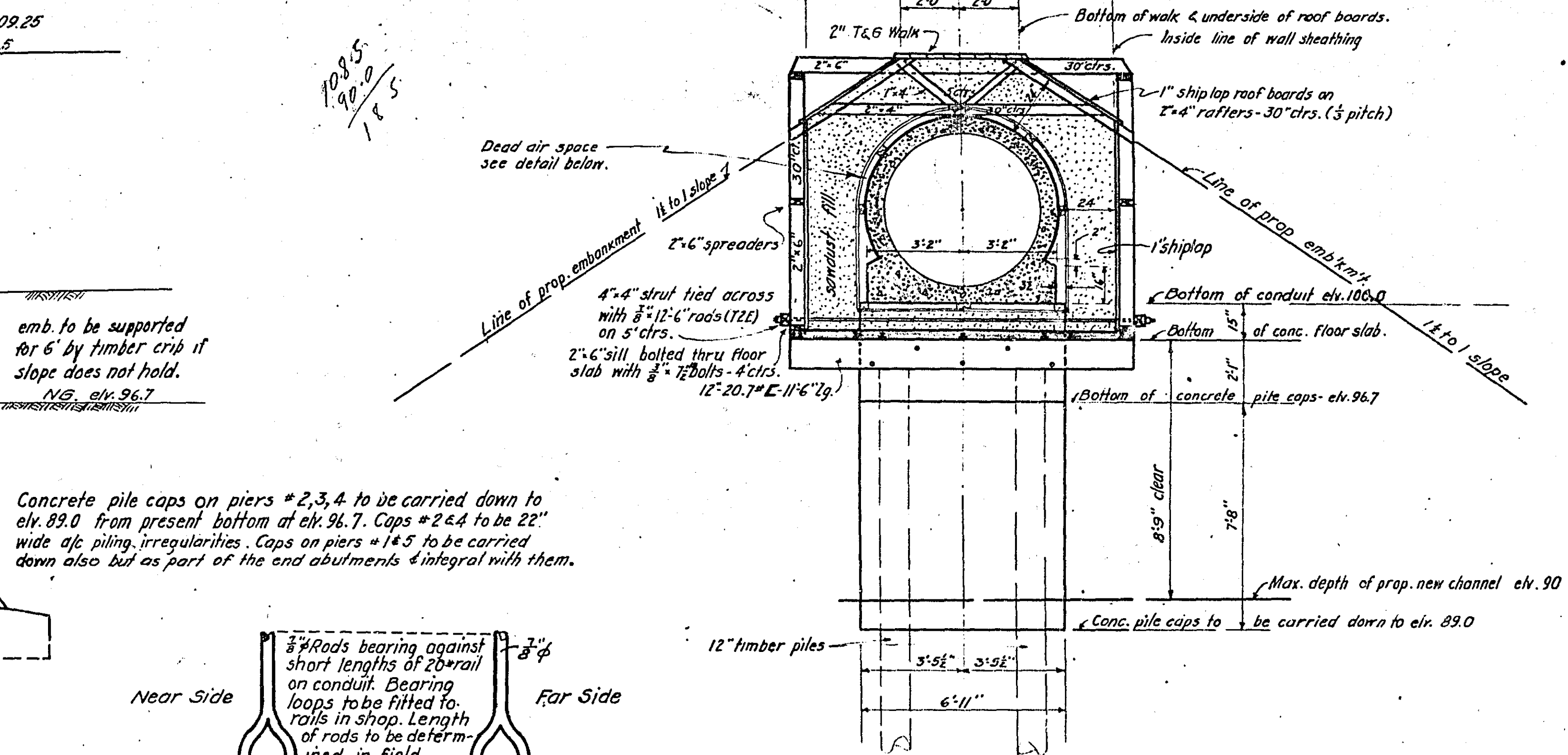
TOTAL ESTIMATED QUANTITIES
STA. 0+20 TO STA. 26+23

Clearing	Trees	10
Grubbing	"	14
Excavation Earth	Cu. Yds.	3614
"	Loose Rock	10
"	Solid	5
"	Overhaul	7438
Install 15" C.M.	Lin. Ft.	40
Remove old culvert	"	52
Replace old culvert	"	52

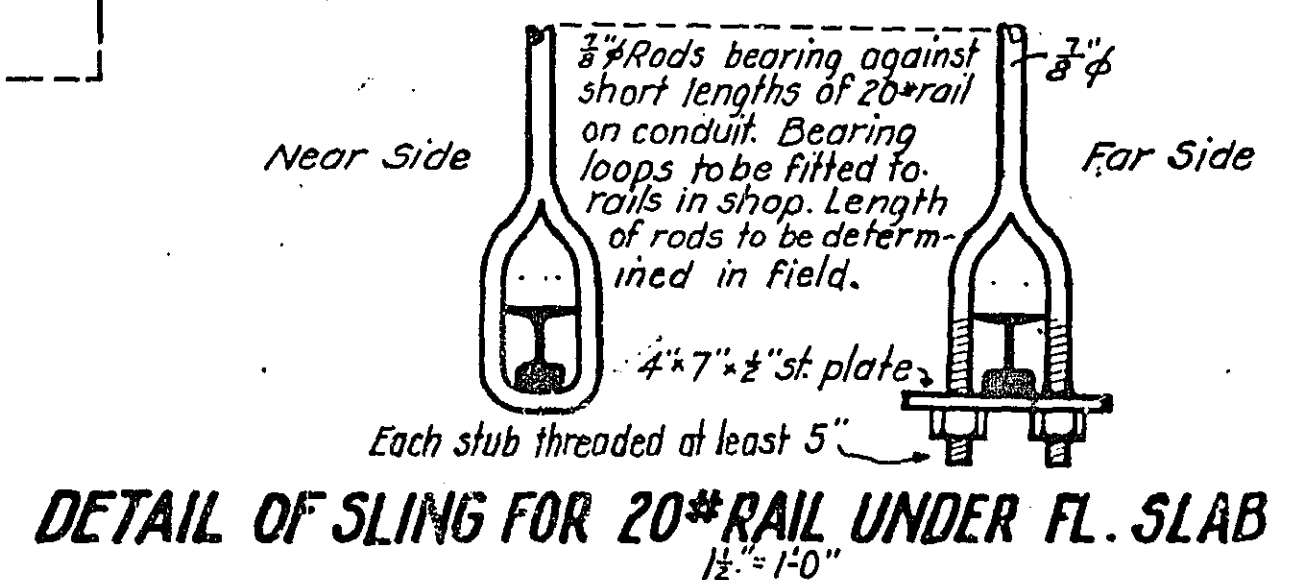
E. 2193 L.R. 10
F. 1715 S.R. 5
H. 6540



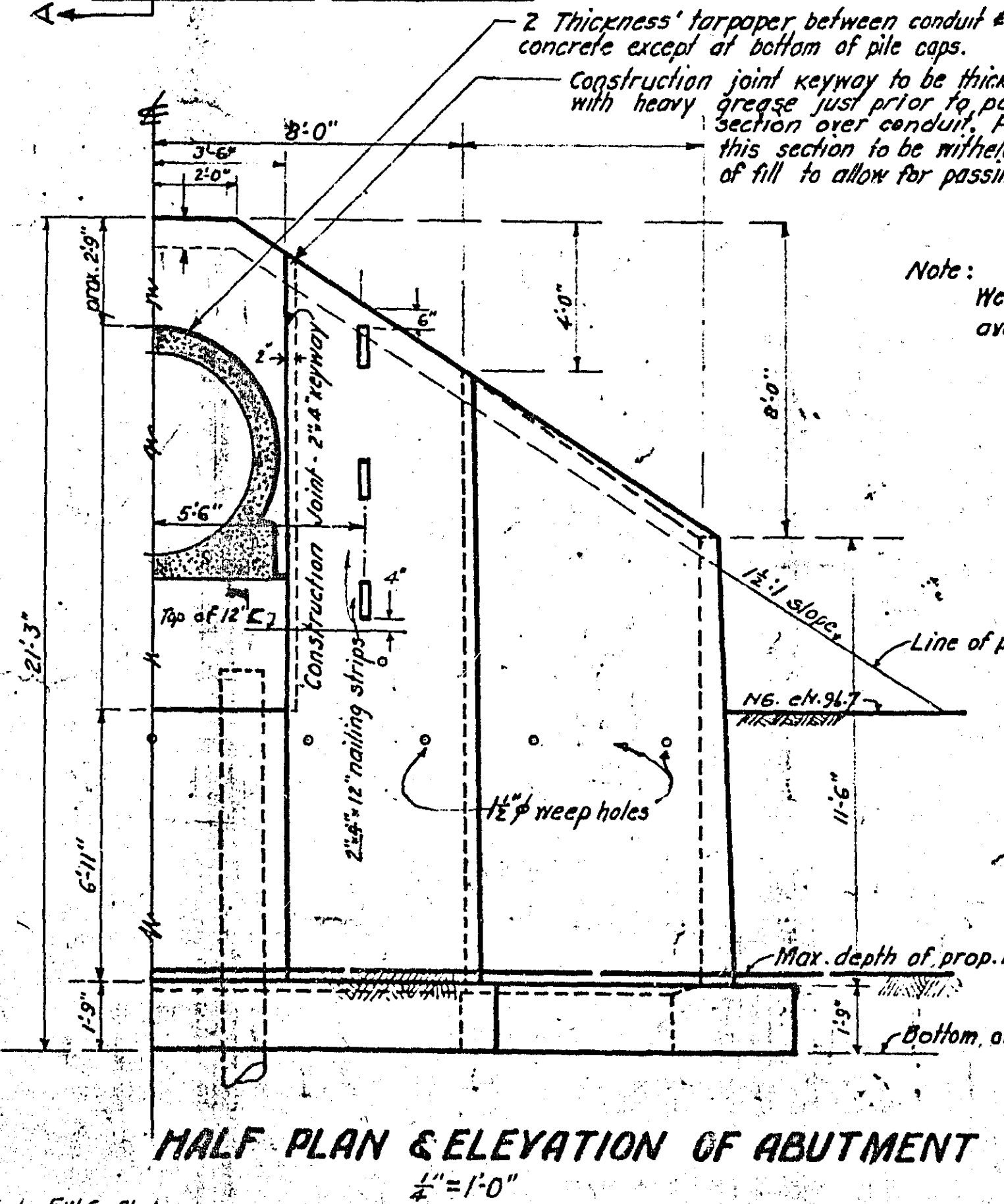
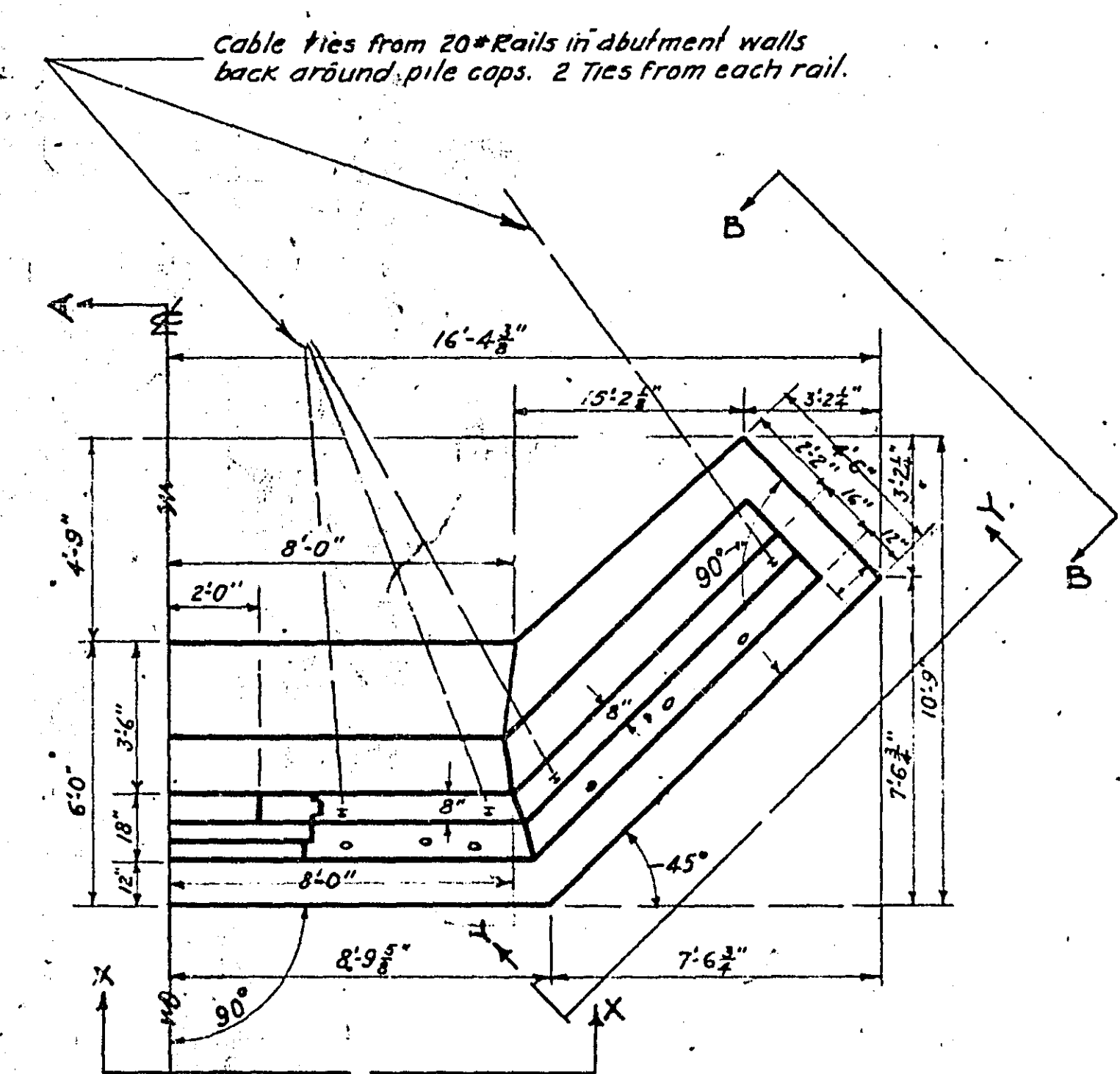
SOUTH ELEVATION
1/4" = 1'-0"



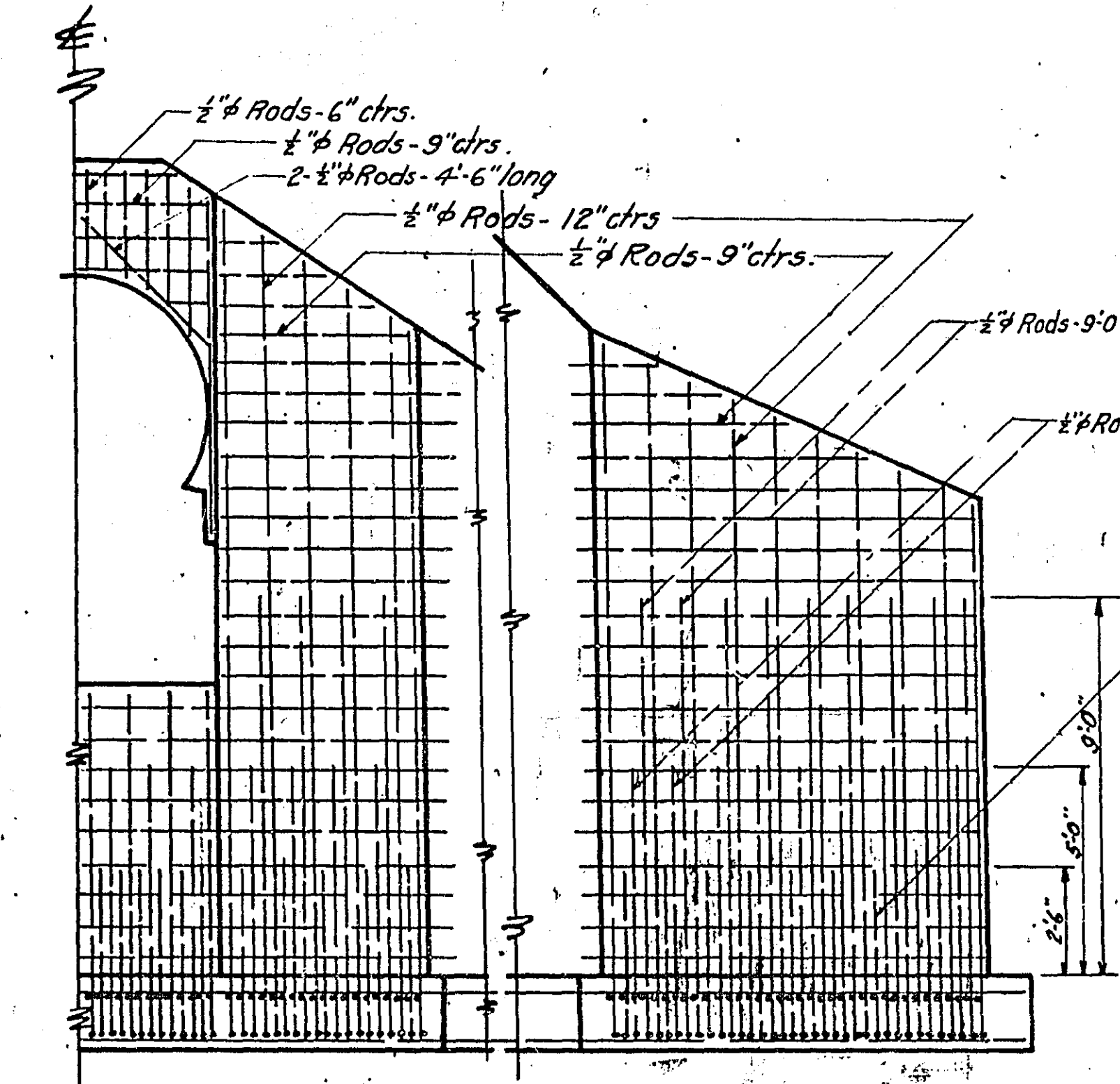
SECTION THRU AT TYPICAL BENT
1/4" = 1'-0"



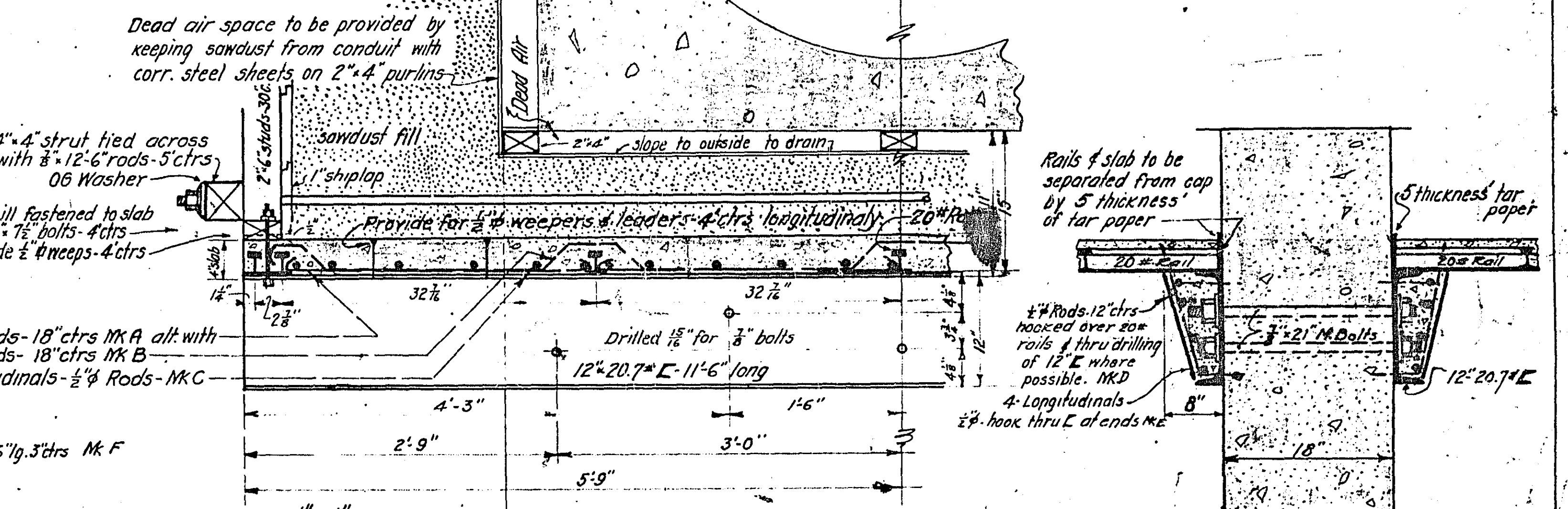
DETAIL OF SLING FOR 20# RAIL UNDER FL. SLAB
1/4" = 1'-0"



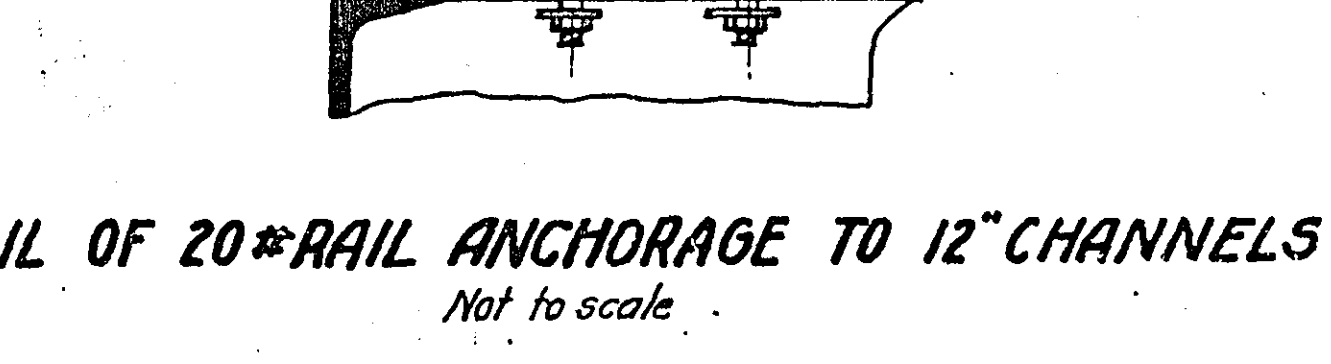
HALF PLAN & ELEVATION OF ABUTMENT
1/4" = 1'-0"



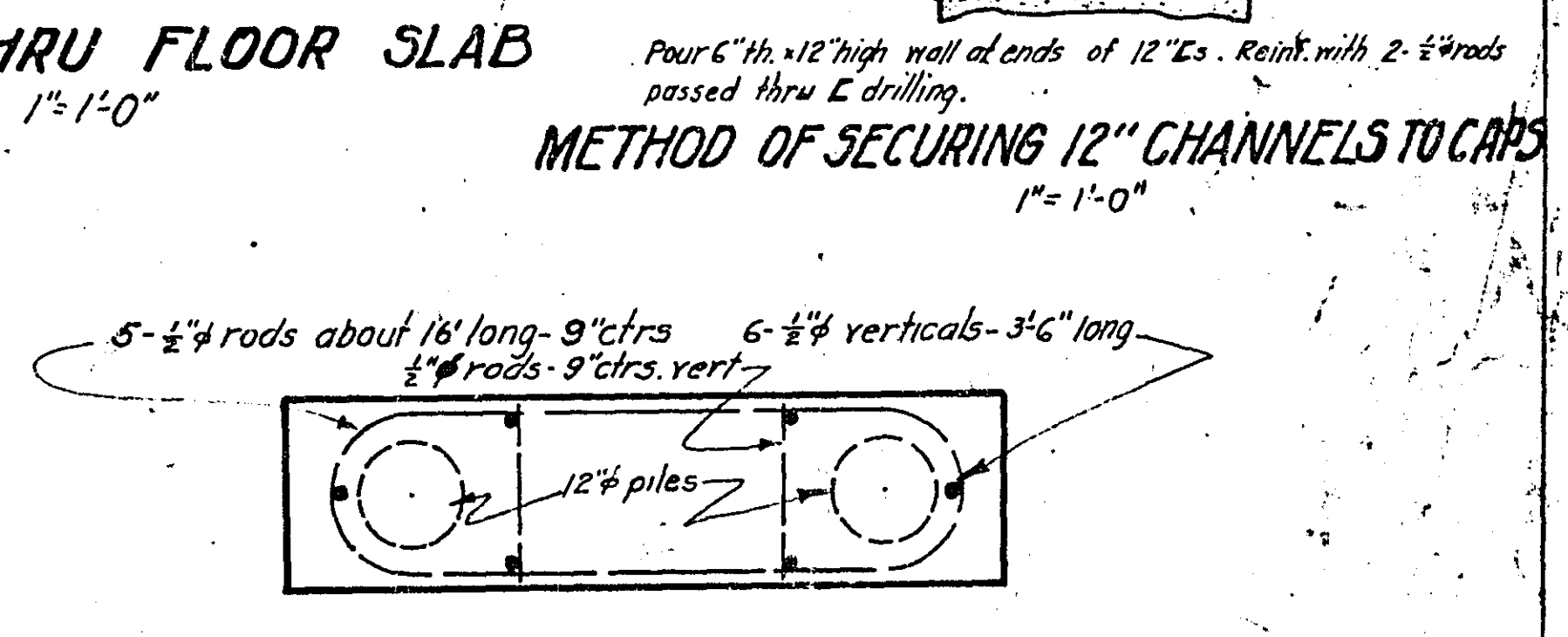
XX YY ELEVATIONS OF HALF ABUTMENT SHOWING REINF.
1/4" = 1'-0"



HALF SECTION THRU FLOOR SLAB
1/4" = 1'-0"



DETAIL OF 20# RAIL ANCHORAGE TO 12" CHANNELS
Not to scale

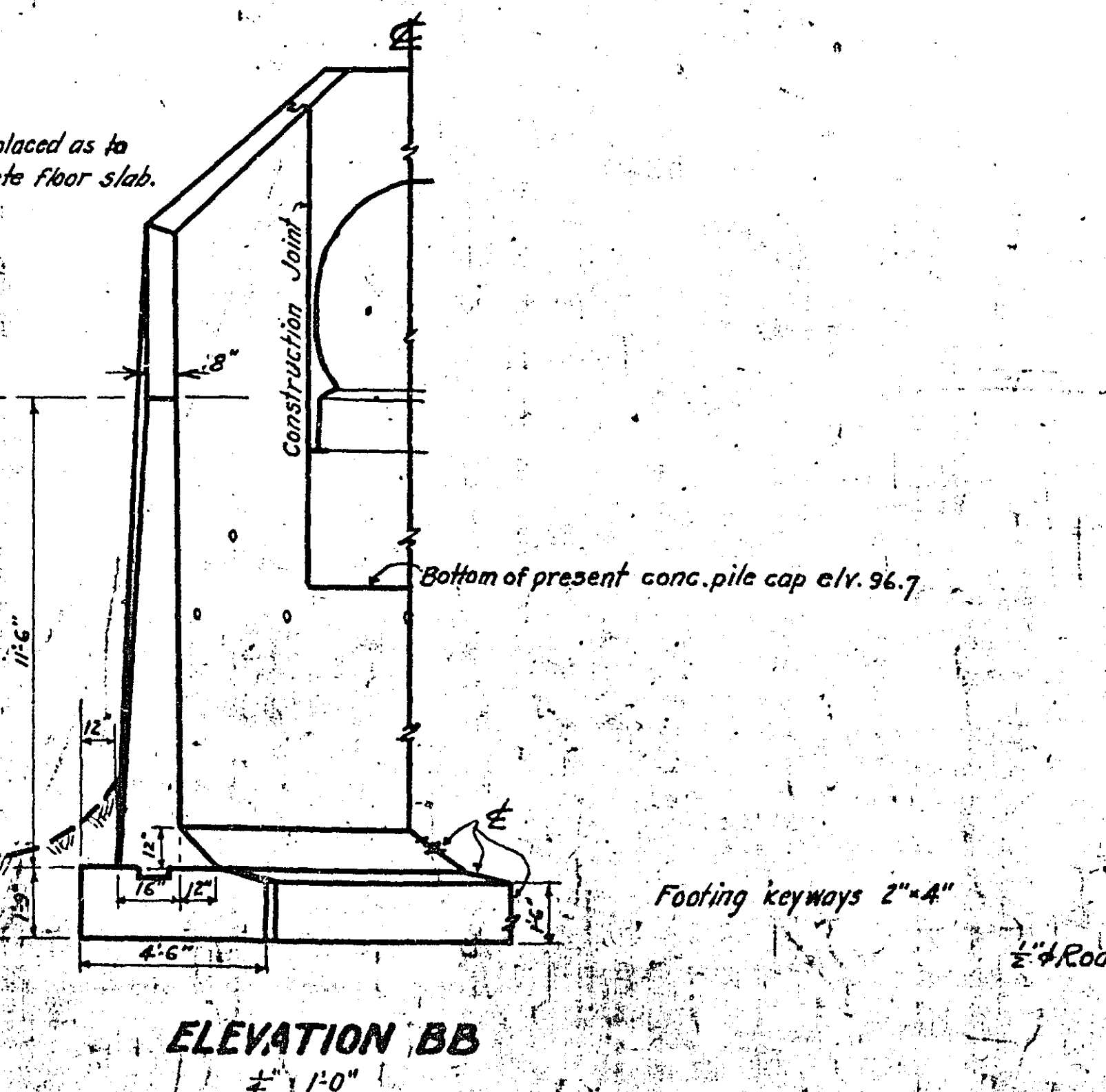


METHOD OF SECURING 12" CHANNELS TO CAPS
Not to scale

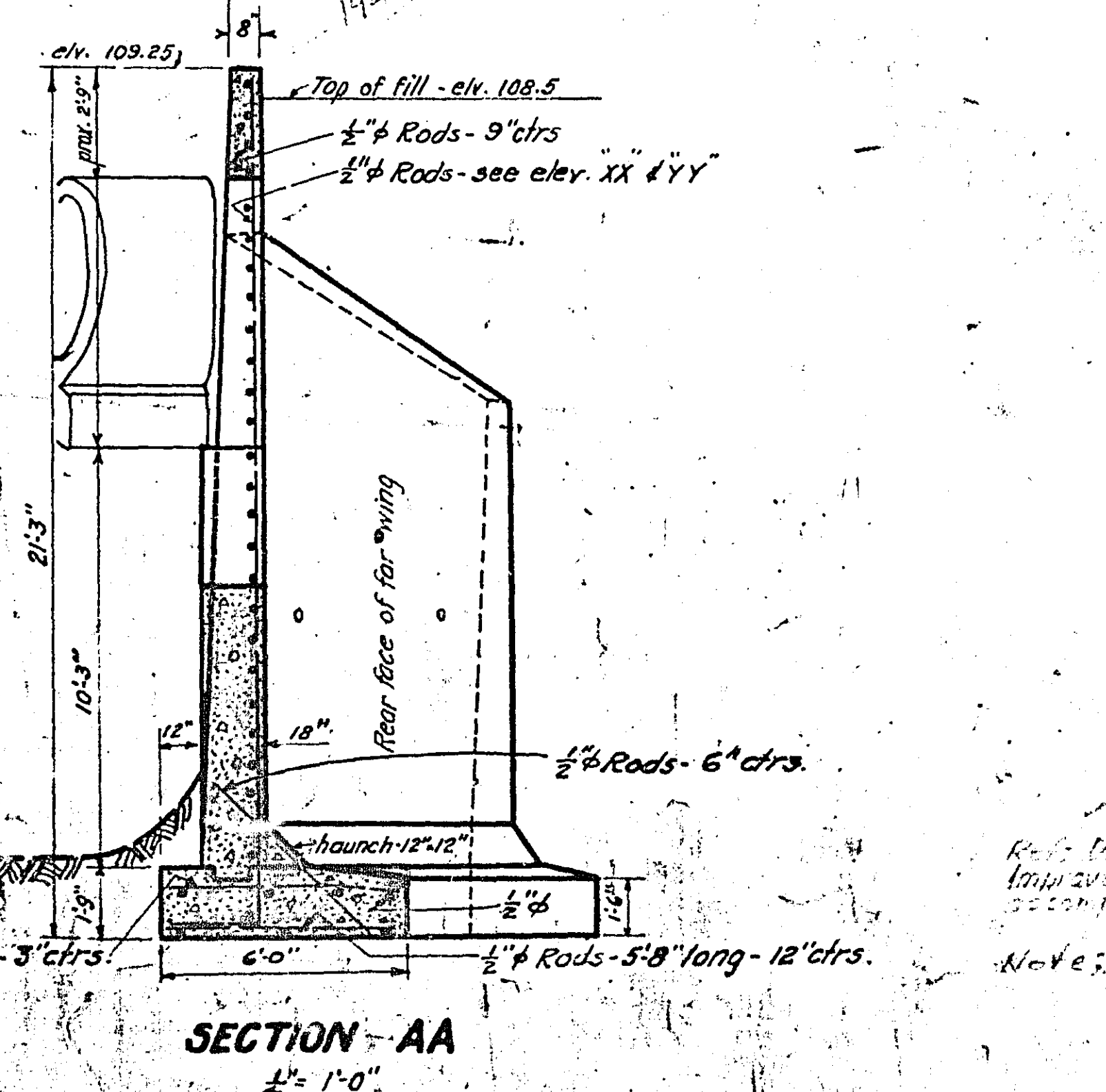
REINF. PLAN OF EXTENDED PILE CAPS - PIERS 2,3,4.
Not to scale

Mk	Req	Size	Diagram
A	116	1/2"	
B	116	1/2"	
C	96	1/2"	
D	104	1/2"	
E	32	1/2"	
F	258	3/8"	

Note: design made with a view to using surplus and reclaimed materials from stores.

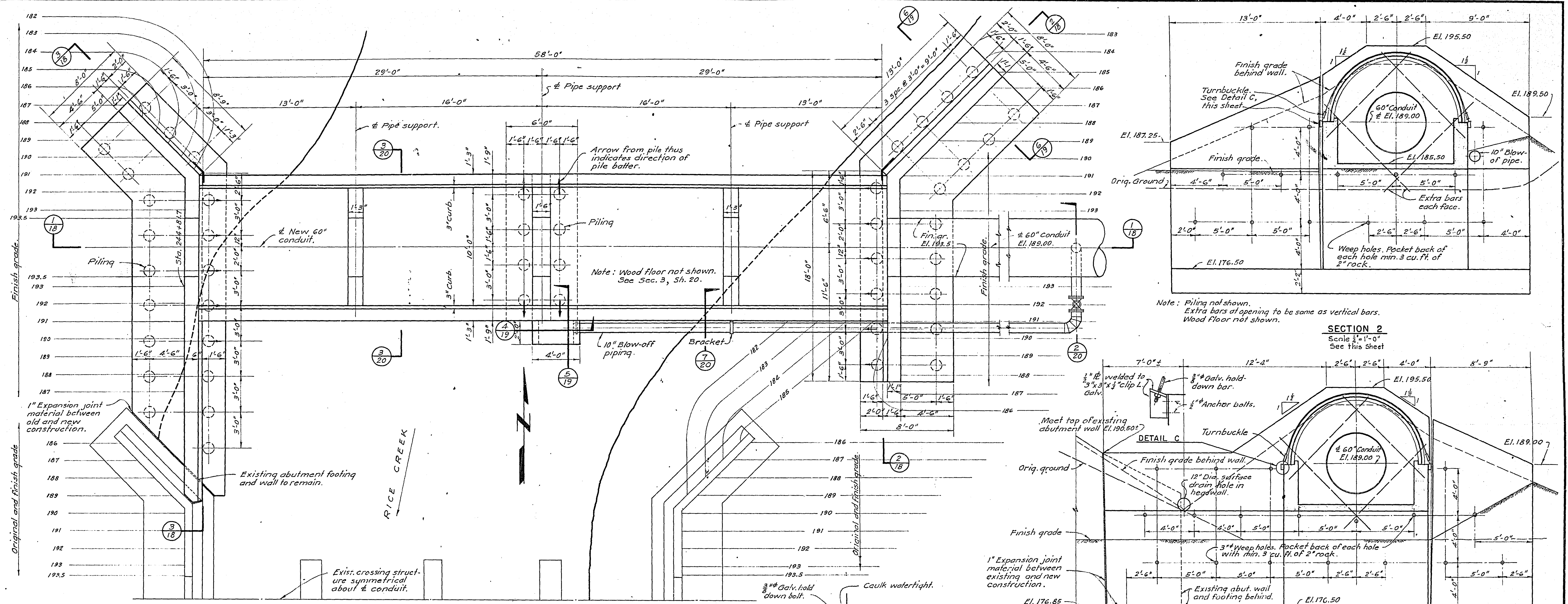


ELEVATION BB
1/4" = 1'-0"

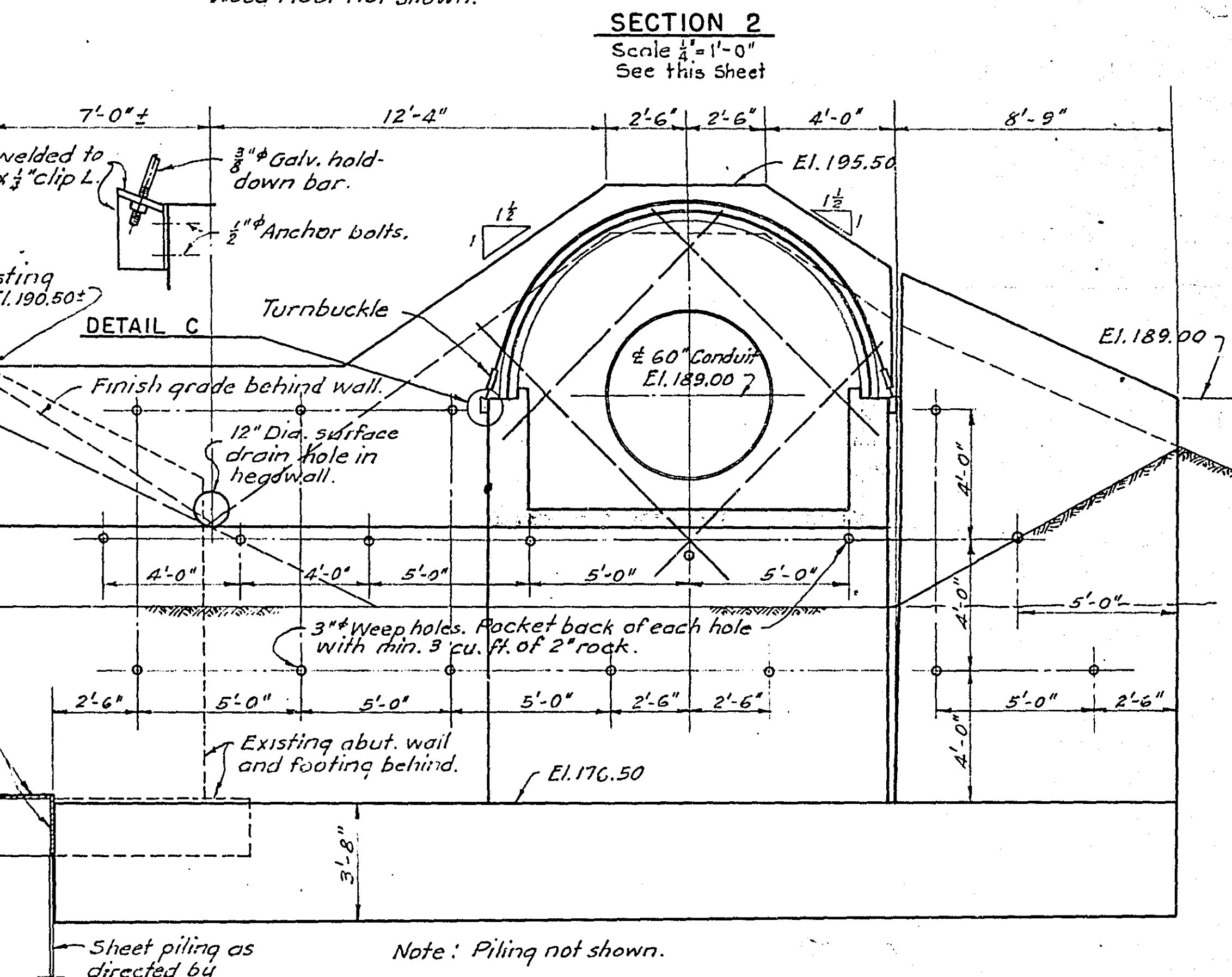


SECTION AA
1/4" = 1'-0"

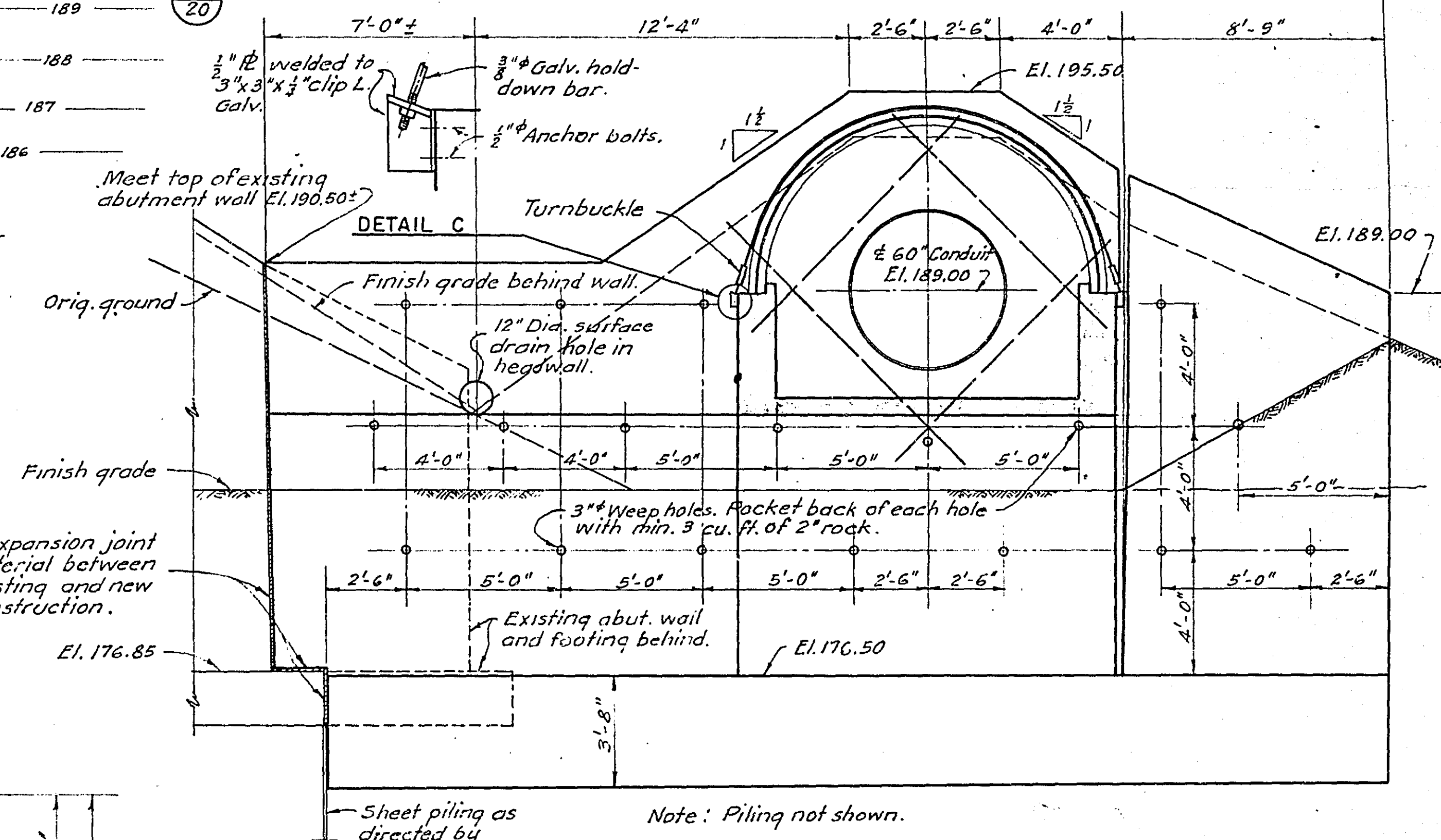
WATER DEPARTMENT
CITY OF ST. PAUL, MINN.
FROST BOX FOR 60" CONDUIT OVER RICE CREEK - SEC. 4 T30N-R23W
St. Paul, Minn. August 28, 1928 Scales noted.
MICROFILMED BY RAMSEY CO. ENGR.
AG 2945



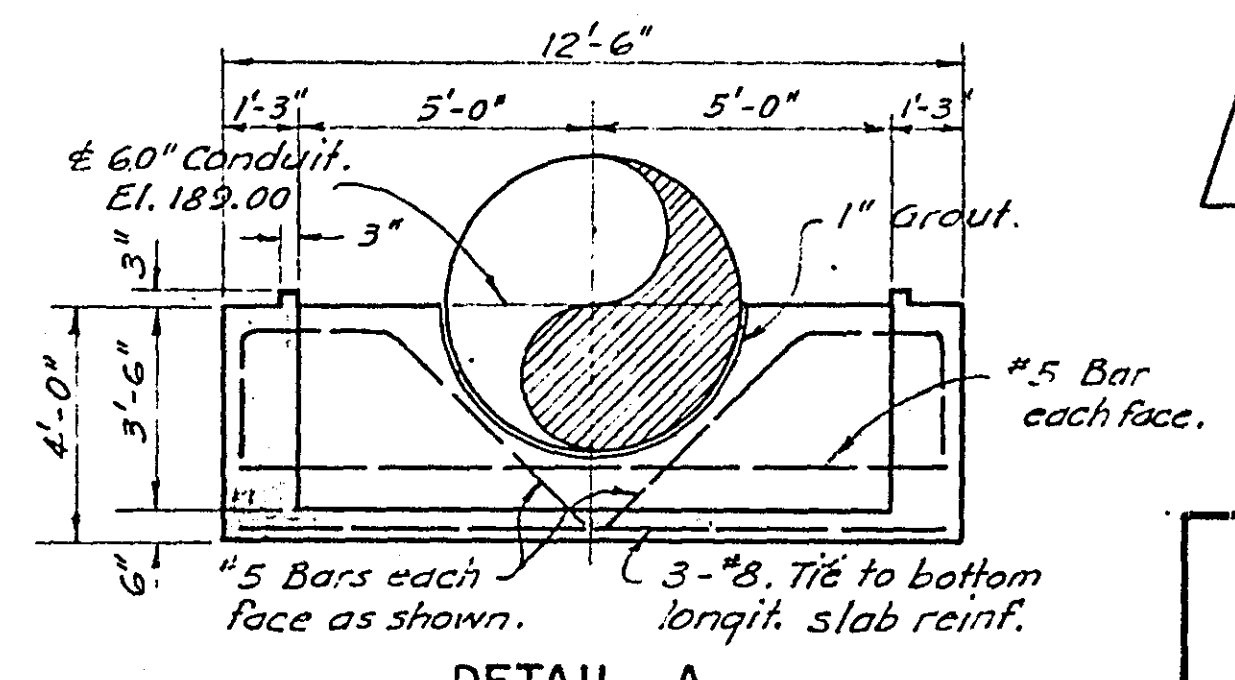
PLAN
Scale 1/4" = 1'-0"



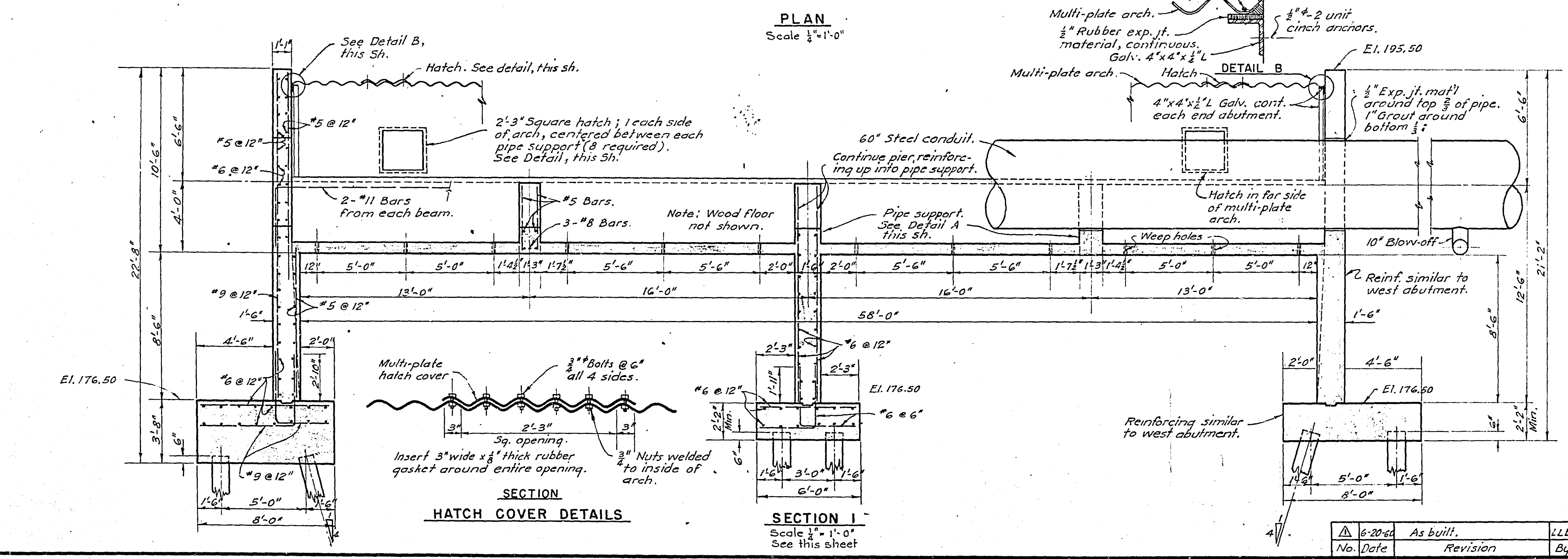
SECTION 2
Scale 1/4" = 1'-0"
See this sheet



SECTION 3
Scale 1/4" = 1'-0"
See this sheet



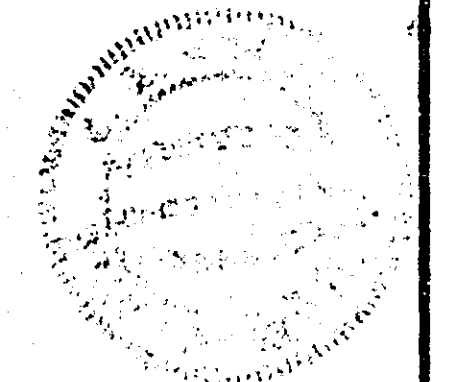
DETAIL A
Scale 1/4" = 1'-0"
See this sheet



SECTION HATCH COVER DETAILS

SECTION I
Scale 1/4" = 1'-0"
See this sheet

THIS TRACING IS AN EXEMPLIFIED COPY OF THE ORIGINAL PAPER TRACING HERETOFORE APPROVED BY AND BEARING THE APPROVAL SIGNATURES HEREIN BELOW PRINTED IN.



CONTRACT NO. 2

WATER DEPARTMENT
CITY OF ST. PAUL, MINN.

60" MISSISSIPPI RIVER CONDUIT NO. 2
RIVER TO LAKE CHARLES

RICE CREEK CROSSING STRUCTURE

APPROVED **LEONARD N. THOMPSON** GENERAL MANAGER

BLACK & VEATCH
CONSULTING ENGINEERS, KANSAS CITY, MO.

APPROVED
ADRIAN P. WINKEL
COMM. PUBLIC WORKS
MRS. DONALD M. DE COURCY
COMM. OF FINANCE
MILTON ROSEN
PRESIDENT, BOARD OF WATER COMMS.

No.	Date	Revision	By	CHKD
1	6-20-50	As built.	LLB	BNS

DESIGNED WEM
CHECKED WEM
APPROVED
TRACED LLB

SHEET
18 OF 20

CONVENTIONAL SIGNS & ABBREVIATIONS

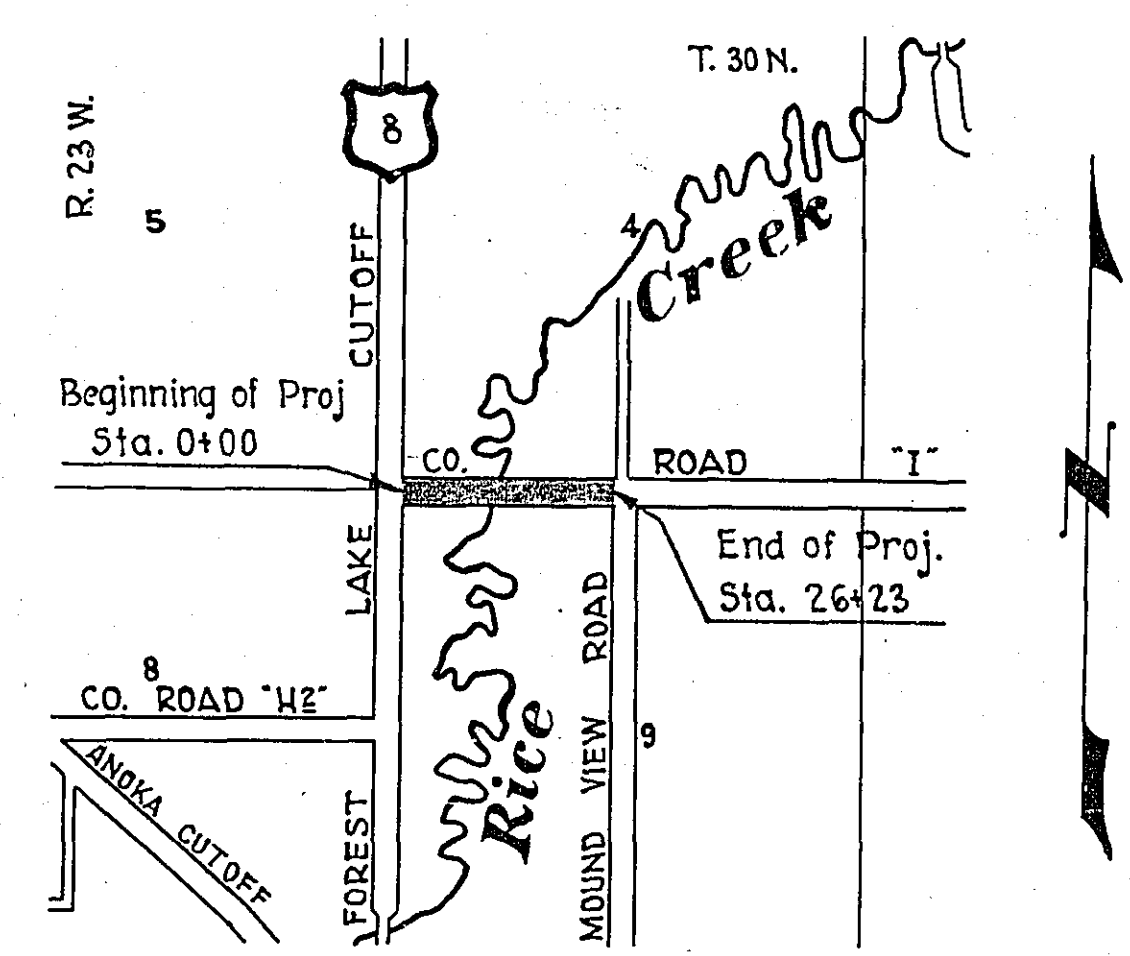
STATE LINE	-----	EXCAVATION	-----	E
COUNTY LINE	-----	EMBANKMENT	-----	F
TOWNSHIP LINE	-----	OVERHAUL	-----	H
SECTION LINE	-----	SURFACING	-----	S
CITY, VILLAGE, OR BOROUGH	-----	GUARD RAIL	-----	GR
FENCE LINE	-----	INTERSECTION ANGLE	-----	A
RIGHT-OF-WAY LINE	-----	RADIUS	-----	R
TRAVELLED WAY	-----	ELEVATION	-----	EL
RAILROADS	-----	VERTICAL CURVE	-----	VC
RETAINING WALL	-----	BENCH MARK	-----	B.M.
BASE OR SURVEY LINE	-----	SECTIONAL CONCRETE CULVERT	-----	P.C.
LEVEE	-----	CORRUGATED METAL CULVERT	-----	C.M.
GRAVEL PIT	-----	CULVERT HAUL	-----	P.L.H.
SAND PIT	-----	TON MILES	-----	T.M.
CLAY PIT	-----	PLACE	-----	P
ROCK QUARRY	-----	IN PLACE	-----	INP
CULVERTS	-----	REPLACE	-----	Rep
PLAIN	-----	RIGHT	-----	R
WITH FACE WALLS	-----	LEFT	-----	L
WITH WING WALLS	-----	HAND DITCHING	-----	H.D.
DROP INLET	-----	POINT OF CURVE	-----	P.C.
POWER POLE LINE	-----	POINT OF TANGENT	-----	P.T.
TELEPHONE OR TELEGRAPH LINE	-----	POINT OF INTERSECTION	-----	P.I.
MARSH	-----	SPECIAL EXCAVATION	-----	S.E.
HEDGE, BRUSH, OR TIMBER	-----	SPECIAL FLOWING	-----	S.P.
GROUND ELEVATION	-----	TELEPHONE POLE	-----	T&P.
GRADE ELEVATION	-----			

OFFICE OF COUNTY SURVEYOR
 RAMSEY COUNTY
 Plan and Profile of County Project No. W.P.A. 60

From the N.W. Cor. Sec. 9-30-23 To the N. 1/4 Cor. Sec. 9-30-23

GROSS LENGTH 2623.0 FEET 0.50 MILES
 LENGTH OF EXCEPTIONS FEET MILES
 NET LENGTH 2623.0 FEET 0.50 MILES
 PLAN, 1 Inch = 100 Feet
 PROFILE, Horz. 1 Inch = 100 Feet, Vert. 1 Inch = 10 Feet
 WORKING PLANS { Horz. 1 Inch = 100 Feet
 { Vert. 1 Inch = 10 Feet
 { Cross-Sections, 1 Inch = 10 Feet { Horz. { Vert.
 LAYOUT
 SCALE, 1 Inch = 2640 Feet

INDEX OF SHEETS
 Sheet No. 1. Title Sheet and Layout Map
 " No. 2. Typical Cross-Sections and Statement
 " No. 3. Plan and Profile, Sta. 0+00 to Sta. 26+23.
 " No. 4, & 5 Cross Sections

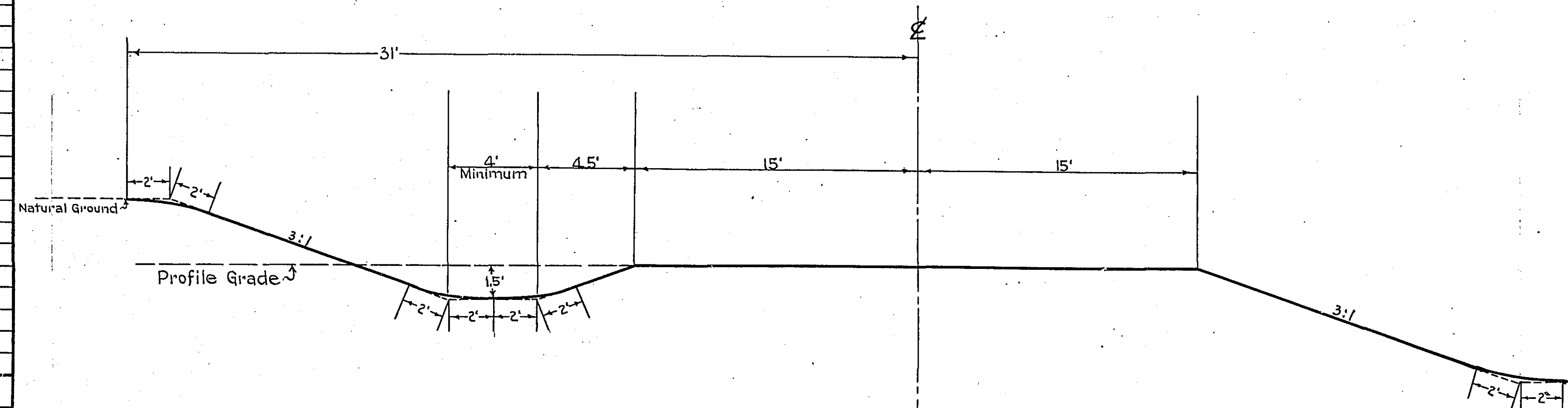


Planned by M. W. Carles OFFICE ENGINEER
 Recommended for Approval J. Haas MAINTENANCE ENGINEER
 Plans Approved and Recommended for Consideration Emil Schuch COUNTY SURVEYOR
 Approved by County Board 19 CHAIRMAN OF COUNTY BOARD

STATEMENT OF ESTIMATED QUANTITIES

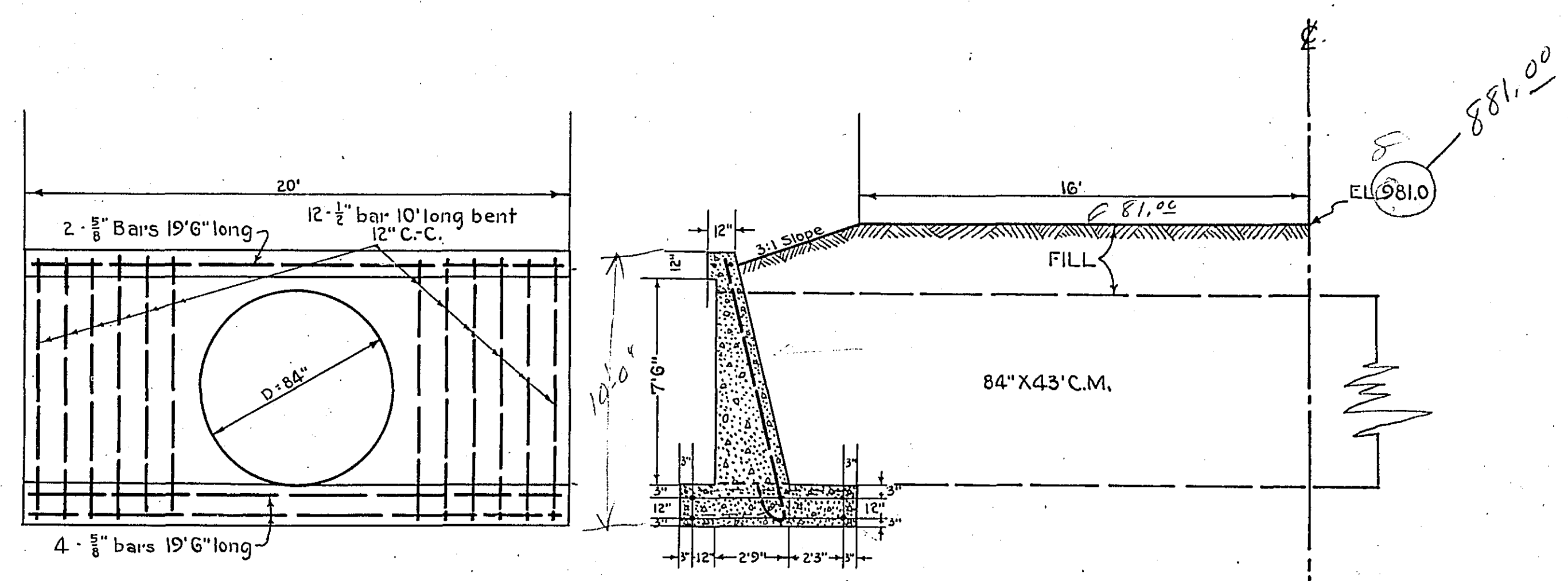
CLASS	ITEM	UNIT	MILE ONE From 0+00 To 26+10	MILE From To	MILE From To	MILE From To	MILE From To	MILE From To	MILE From To	MILE From To	MILE From To	MILE From To	TOTAL ESTIMATED QUANTITIES
GRADING	1	Clearing	Trees	10									10
	2	Grubbing	Trees	14									14
	3	Clearing	Acres										
	4	Grubbing	Acres										
	5	Excavation Earth	Cu. Yds.	3614									3614
	6	Excavation Loose Rock	Cu. Yds.	10									10
	7	Excavation Solid Rock	Cu. Yds.	5									5
	8	Excavation Overhaul	Cu. Yds.	7438									7438
	9	Excavation Special	Cu. Yds.										
	10	Excavation Hand Ditch	Cu. Yds.										
	11	Install 12" C.M.	Lin. Ft.										
	12	Install 15" C.M.	Lin. Ft.	40									40
	13	Install 18" C.M.	Lin. Ft.										
	14	Install 24" C.M.	Lin. Ft.										
	15	Install	Lin. Ft.										
	16	Install	Lin. Ft.										
	17	Install 18" P ₃	Lin. Ft.										
	18	Install 24" P ₃	Lin. Ft.										
	19	Install 30" P ₃	Lin. Ft.										
	20	Install 36" P ₃	Lin. Ft.										
	21	Install	Lin. Ft.										
	22	Install	Lin. Ft.										
	23	Remove Old Culvert	Lin. Ft.	52									52
	24	Replace Old Culvert	Lin. Ft.	52									52
	25	Finishing and Seeding	100 Sq.Yds.										
	26	Rubble Gutter	Cu. Yds.										
	27	Headwall Concrete	Cu. Yds.										
	28	Headwall Steel	Lbs.										
	29												
	30												
	31												
	32												
C.M. CULVERTS	1	Furnish 12" C.M.	Lin. Ft.										
	2	Furnish 15" C.M.	Lin. Ft.	40									40
	3	Furnish 18" C.M.	Lin. Ft.										
	4	Furnish 24" C.M.	Lin. Ft.										
	5	Furnish	Lin. Ft.										
	6	Furnish	Lin. Ft.										
	7	Furnish 12" C.M. Band	Each										
	8	Furnish 15" C.M. Band	Each										
	9												
	10												
P ₃ CULVERTS	1	Furnish 18" P ₃	Lin. Ft.										
	2	Furnish 24" P ₃	Lin. Ft.										
	3	Furnish 30" P ₃	Lin. Ft.										
	4	Furnish 36" P ₃	Lin. Ft.										
	5												
GUARD RAIL	1	Guard Rail - Cable	Lin. Ft.										
	2	Guard Rail Anchors	Each										
	3	Dummy Posts	Each										
	4												
SIDEWALKS AND CURBING	1	Concrete Curb - Straight	Lin. Ft.										
	2	Concrete Curb - Radius	Lin. Ft.										
	3	Remove Old Curb	Lin. Ft.										
	4	Remove Old Curb and Gutter	Lin. Ft.										
	5	Remove Old Sidewalk	Sq. Ft.										
	6	Replace Old Sidewalk	Sq. Ft.										
	7	Construct New Sidewalk	Sq. Ft.										
	8	Curb Inlet	Each										
	9	Catch Basin Complete	Each										
	10												
	11												
	12												
SEWER	1	12" Vitrified Sewer Pipe	Lin. Ft.										
	2	15" Vitrified Sewer Pipe	Lin. Ft.										
	3	18" Vitrified Sewer Pipe	Lin. Ft.										
	4	20" Vitrified Sewer Pipe	Lin. Ft.										
	5	24" Vitrified Sewer Pipe	Lin. Ft.										
	6	Manhole Complete	Each										
	7	Catch Basin Complete	Each										
8													
9													
10													
PAVEMENT	1	Pavement - 1 Course Conc.	Sq. Yds.										
	2	Pavement - Asphaltic Conc.	Sq. Yds.										
	3	Integral Curb 8"	Lin. Ft.										
	4	Integral Curb 12"	Lin. Ft.										
	5	Surface Drain	Each										
	6	Surface Drain Basin	Each										
	7	Shoulders - Earth	Lin. Ft.										
	8												
STRUCTURES	1	Concrete	Cu. Yds.										
	2	Reinforcing Steel	Lbs.										
	3	Excavation	Cu. Yds.										
	4	Piling	Lin. Ft.										
	5												
	6												
	7												
	8												
	9												
	10												

DETAILS



TYPICAL SECTION

NOTE: ALL SLOPES TO CONFORM TO 66' R.O.W. EXCEPT AS SHOWN ON SHEET NO. 3

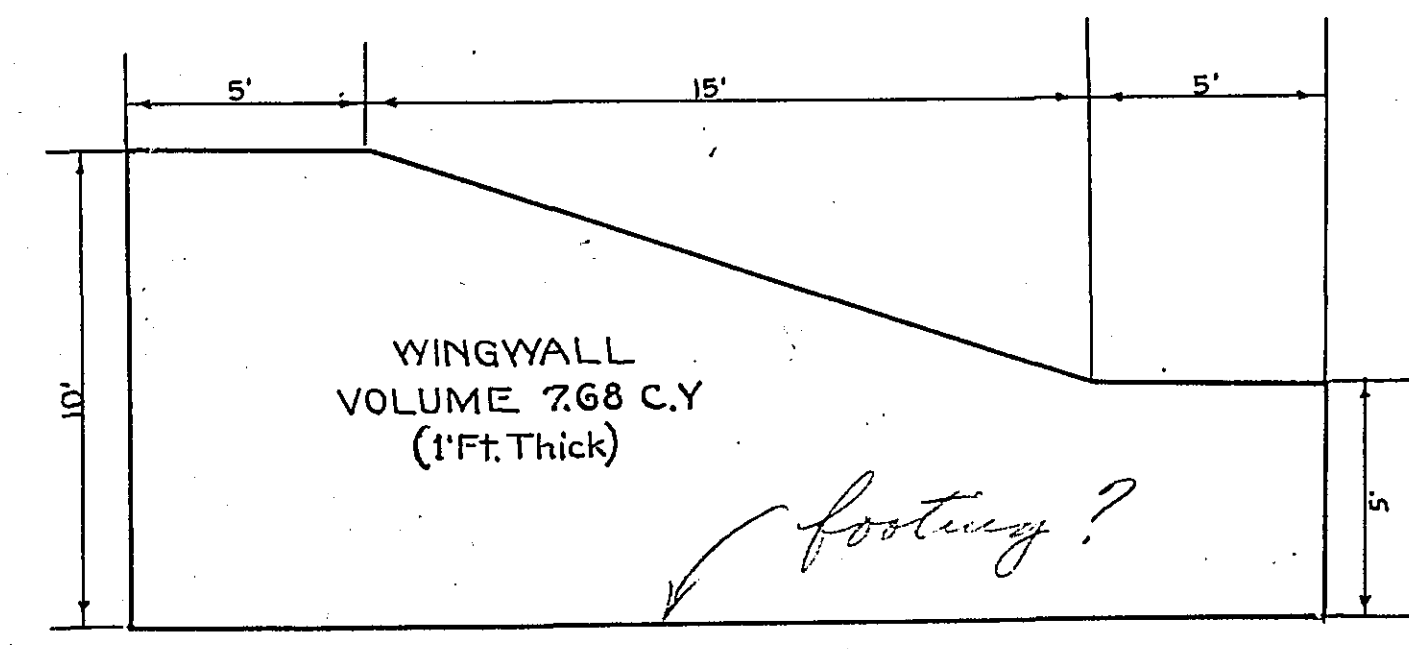


HEADWALL

MATERIAL

Concrete	C.Y.	31.42
Steel	Lbs.	404
Excavation	C.Y.	25
Rail (2" Pipe)	L.F.	130
84" C.M.	L.F.	43

2 HEADWALLS



WINGWALL VOLUME 768 C.Y. (1' Ft. Thick)