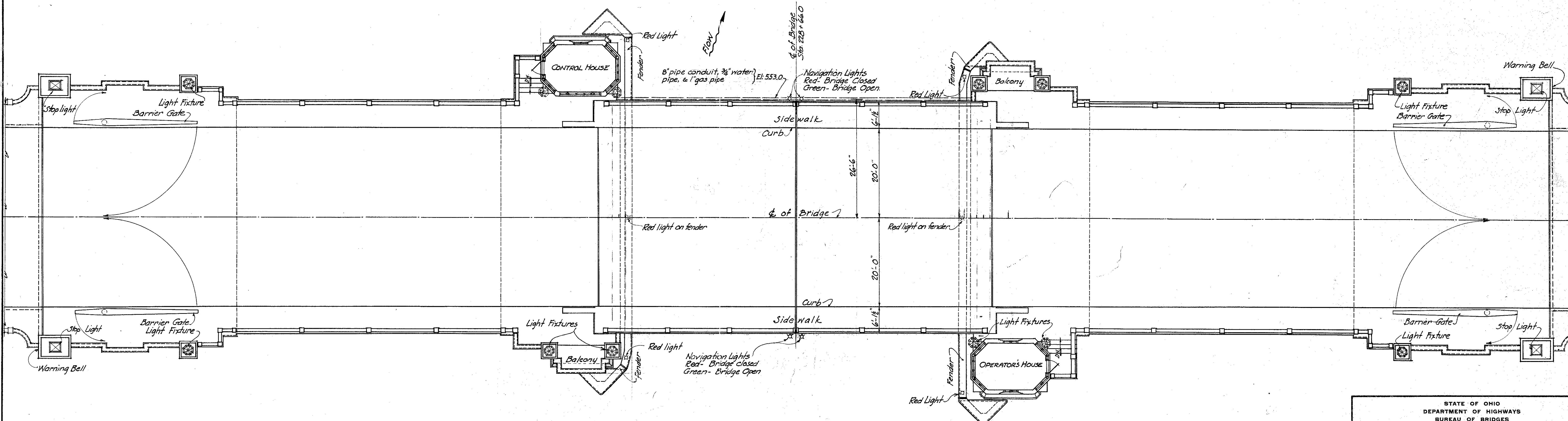
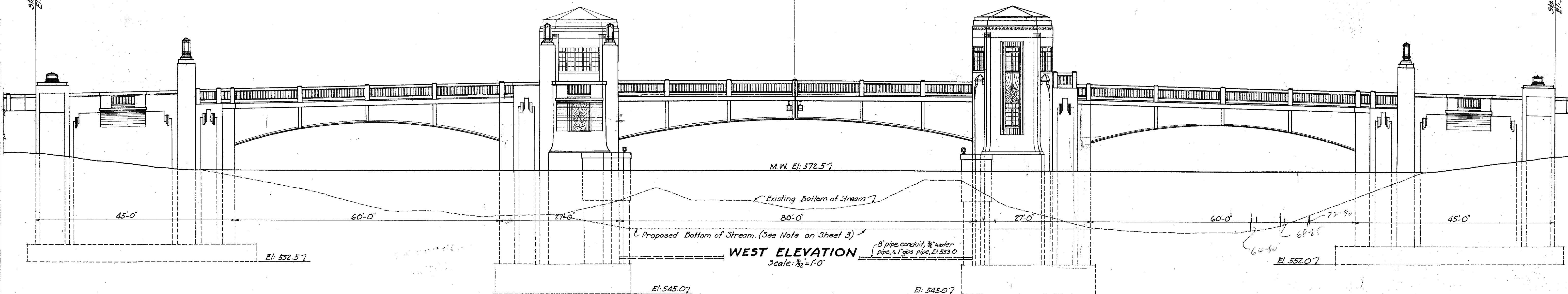


MICROFILMED  
JUN 24 1983

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10 OHIO	E-410-H	1932	10 33

OTTAWA COUNTY  
S.H. 279 SEC. "PORT CLINTON BR."



STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

GENERAL PLAN AND ELEVATION

BRIDGE NO. OT-2-208  
OVER PORTAGE RIVER

S.H. 279 OTTAWA COUNTY  
SEC. "PORT CLINTON BR." STA. 228+66.00

DESIGNED BY	DRAWN BY	TRACED BY	CHECKED BY	REVIEWED BY	DATE	REVISED BY
J.P.B. H.W.B.	J.P.B.	J.P.B.	W.C.B.	W.C.B.	12-14-32	W.C.B. 10/29/52

MICROFILMED

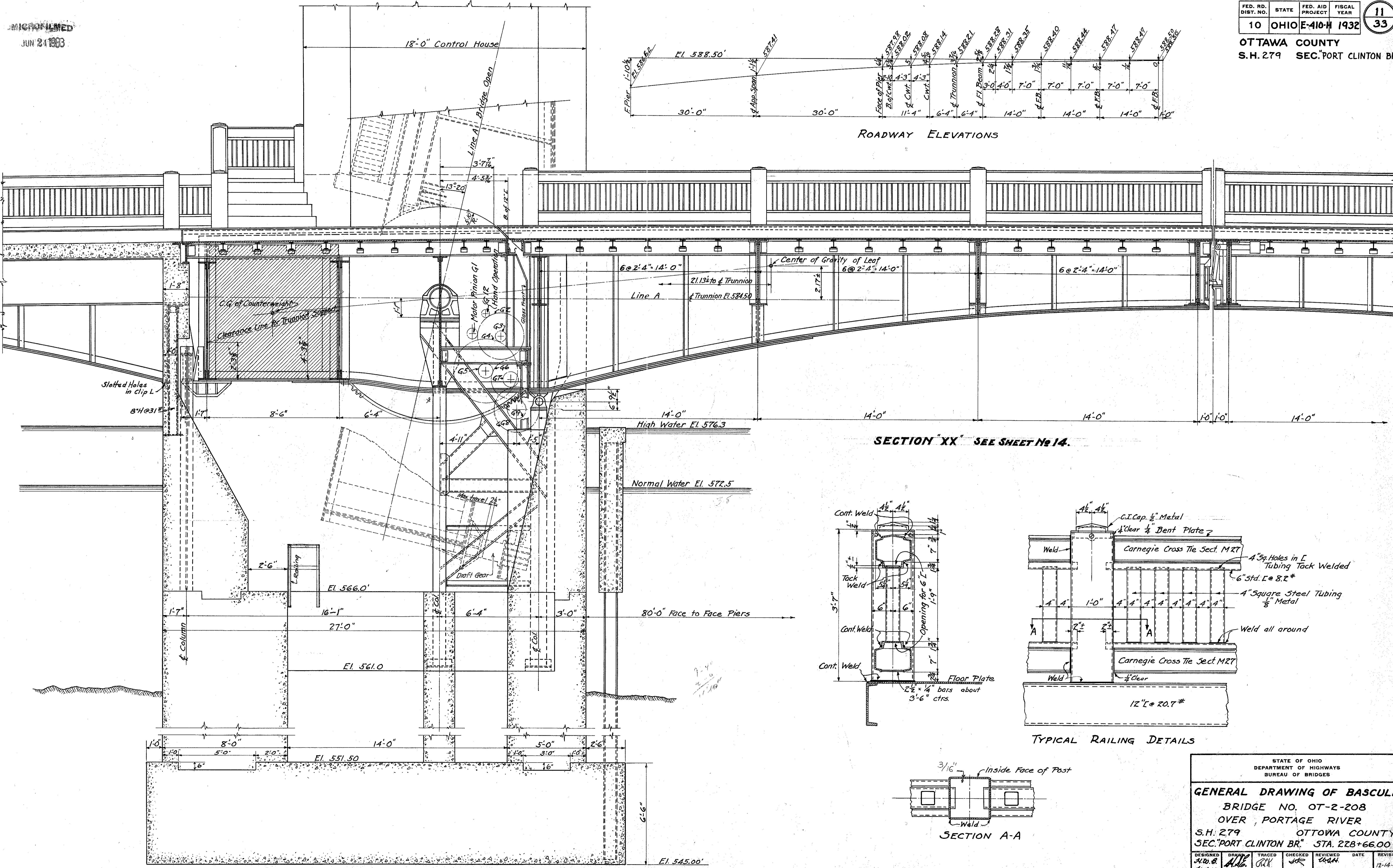
JUN 24 1983

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	E-410-4	1932

11

33

OTTAWA COUNTY  
S.H. 279 SEC."PORT CLINTON BR."



**MICROFILMED**

This technical drawing illustrates the foundation and pier structure of a bridge. The drawing includes the following key elements:

- Detail A-A' (Left):** Shows a cross-section of the pier foundation. It features a vertical "Copper Spouting" column with a flared base. A note indicates "Class A" concrete was poured at El. 576.25. The pier is supported by a "Main Girder" at El. 575.75.
- El. Top/W.S. 588.23:** The top elevation of the pier.
- El. 579.90:** The elevation of the "Channel face of pier".
- El. W. El. 576.3:** The elevation of the pier's base.
- El. 576.25:** The elevation where Class A concrete was poured.
- El. 575.75:** The elevation of the "Main Girder".
- El. 575.15:** The elevation of the pier's base.
- 40'-0" Road way:** The width of the roadway.
- Note: Slope gutter  $\frac{1}{8}$ " per ft.:** A slope requirement for the gutter.
- High point:** Indicated by a vertical arrow pointing upwards.
- Low Point:** Indicated by a vertical arrow pointing downwards.
- 20 oz copper gutter:** The material and thickness of the gutter.
- Copper Screen:** A mesh or screen material used in the construction.
- Machinery floor El. 581.36:** The elevation of the machinery floor.
- End Dam:** A horizontal line representing the end of the dam.
- High Point:** Indicated by a vertical arrow pointing upwards.
- Roadway Symm. ab:** Symmetry of the roadway.

DETAIL "A"

Copper nails

Solder

20 oz copper gutter

{ Wood blocks of variable thickness  
bolted to L on 2-0" ctrs.

THIS SHEET REPLACES THE  
SUPPLEMENTARY SHEET S-1  
SENT TO CONTRACTORS ON NOV. 16,  
1932 PRIOR TO NOV. 22, 1932  
LETTING.

FOR OTHER DETAILS NOT  
SHOWN ON THIS SHEET  
SEE SHEETS 19, 27, 33-A

## **ADDITIONAL SHEET**

**SECTION MM**

when pier is poured

16'-0" **ROADWAY DRAINAGE DETAILS**

El. 588.13' El. 587.98' El. 588.45' El. 588.02'

Top of W.S. 7

Top of 5" Fl. Pl. 7

El. 588.14' El. 588.21'

4' 5 3/16"

4" Trunnion

6"

5' 10"

Bev. Pl. & Shim

Wire Glass Front to Machinery Room.  
40'-0" % close Ends of Machinery Room  
with  $\frac{3}{16}$ " Pl. on 2" tubing frame. All tub-  
ing and angles to be galvanized.

36" WF @ 19.2#

8'-10 5/8"

8" HC 31#

El. Top. Col. Cap 584.04'

C

D

EI. 577.80'

B

A

5' 1/8"

5' 8"

12" WF @ 32#

6" H

6" H

3' 2"

5' 8 3/4"

1' 6"

2' 0"

cotter

3/8" Washer

1/8" CRS.

1/2" Weld

3 1/8" Bar

3/4" Rungs

Ladder to be horizontal normally, and pulled down only for access to machinery room. Interlock so bridge cannot be operated with ladder down. Provide operating ropes.

14'-10"

6' 4"

8' 6"

1' 3"

11"

8"

12"

5' 8"

6" H

5' 8 3/4"

1' 0"

3' 4"

16' 2 3/8"

3 1/8" Bar

5 spaces @ 10' = 50'.

**SECTION EE**

2" Sq. welded Tubing.  
 $\frac{3}{32}$ " Wall. Space abt. 30" o.c.

$\frac{1}{2} \times \frac{1}{2} \times 8$ " L. Tack weld or tap bolt.

1/2" L. Pos. (ten with brass screws.)

**SECTION SHOWING MACHINERY PLATFORM DETAILS AND REAR LIVE LOAD BEARING DETAILS**

1' 0" - 8"

A technical drawing showing a cross-section of a mechanical assembly. On the left, there is a vertical slot with dimensions: height of  $1/4''$ , width of  $45''$ , and depth of  $8''$ . To the right of this slot is a horizontal slot. A central support structure is positioned between the vertical and horizontal slots. The horizontal slot has a width of  $3\frac{1}{2}''$ . The entire assembly is labeled with dimension  $14\frac{1}{2}''$ .

**SECTION BB**

Y LIVE

1'-0" ← 8"

4"

6 3/4" ← 6 3/4"

8" H @ 3 1/2"

11' 0"

Technical drawing of Section DD showing a bridge structure. The left part shows a vertical column with horizontal rungs. Labels include "1'-6\"", "3\"/> Rung", and "do". The right part shows a more complex assembly with angled members and a central bracket. Labels include "4x $\frac{1}{2}$ " Steel Panel", "5x $3\frac{1}{2}$ x $\frac{1}{2}$ " Clip L", " $\frac{3}{4}$ " Bolt", "EI 566.0'", and " $\frac{1}{2}$ " Pl. Anchor to Concrete Stop Bar. Weld to  $\frac{1}{2}$ " P.". Dimensions shown are "1'-6"±", "5'-2\"", and "6'". A vertical label "Bridge" is on the left, and a horizontal label "SECTION DD" is at the bottom center.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

FED. RD.  
DIST. NO. STATE FED. AID  
PROJECT FISCAL  
YEAR

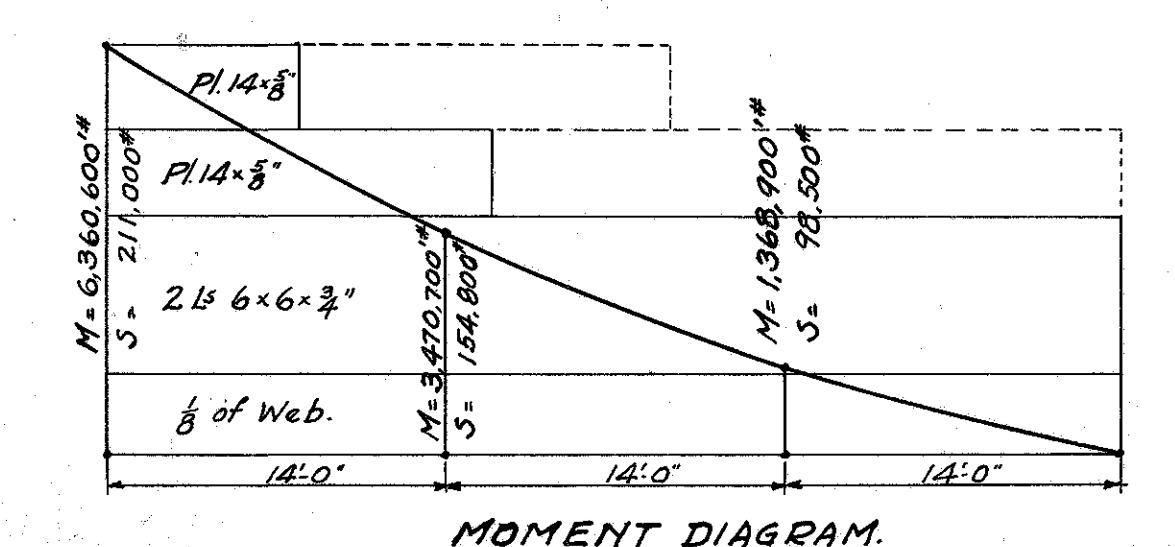
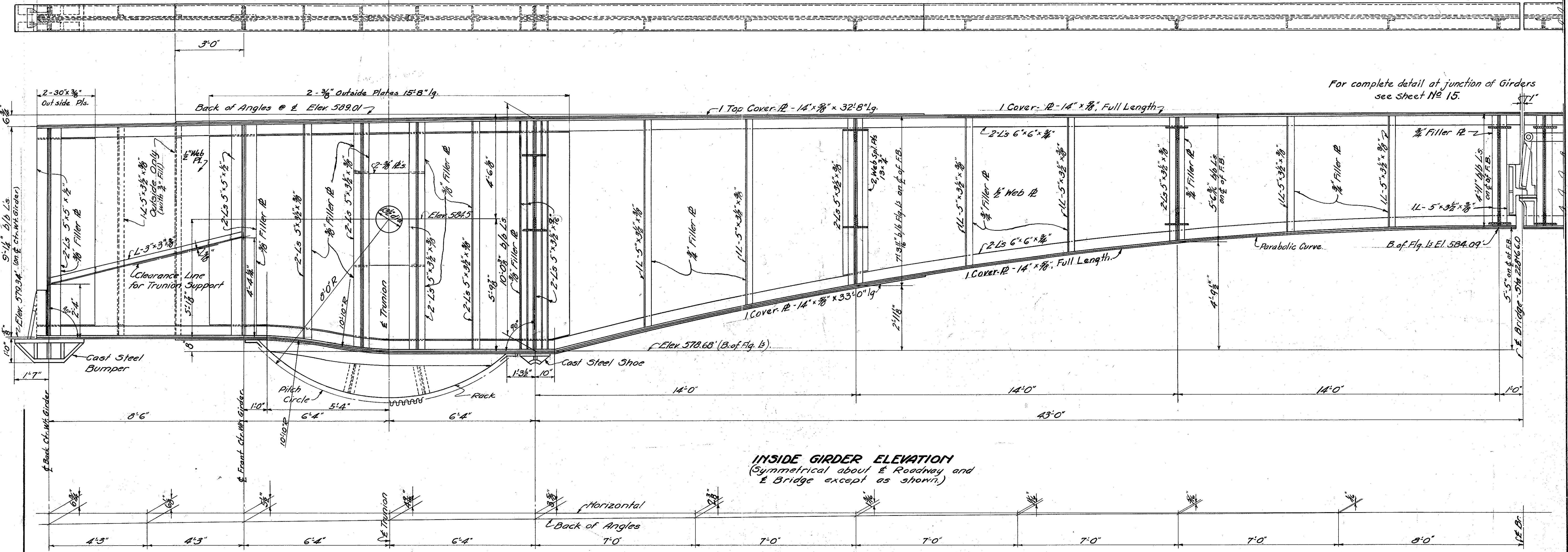
10 OHIO E-40H 1932

12  
33

OTTAWA COUNTY  
S.H. 279 SEC. PORT CLINTON  
BRIDGE

ANCHORPLATE

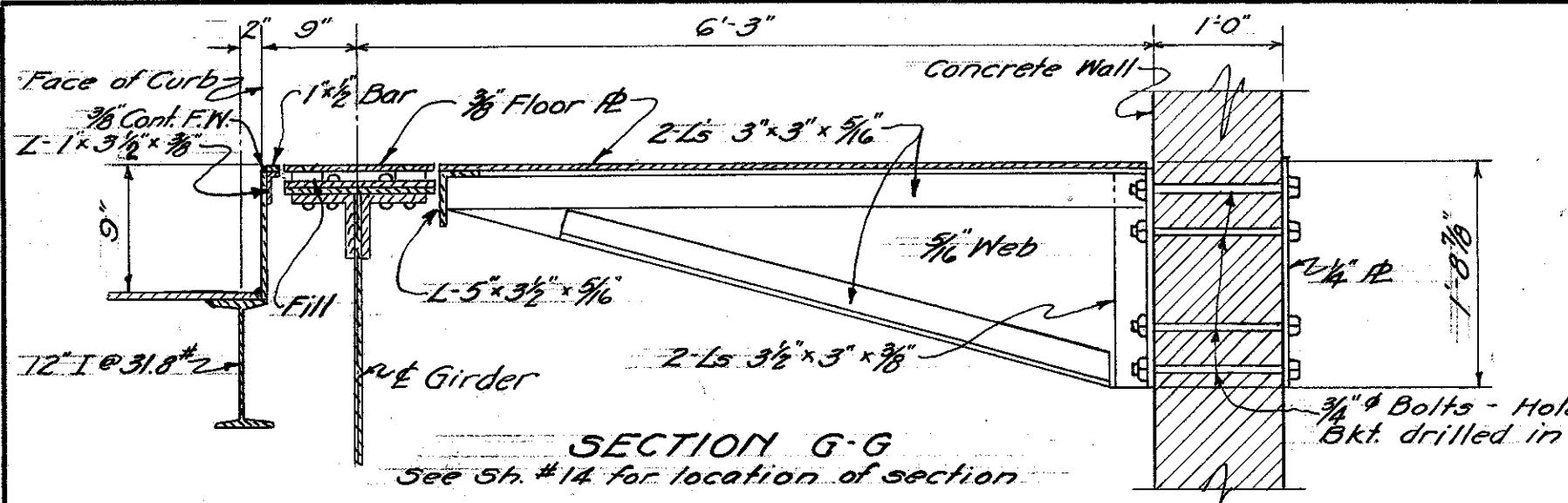
JUN 24 1933



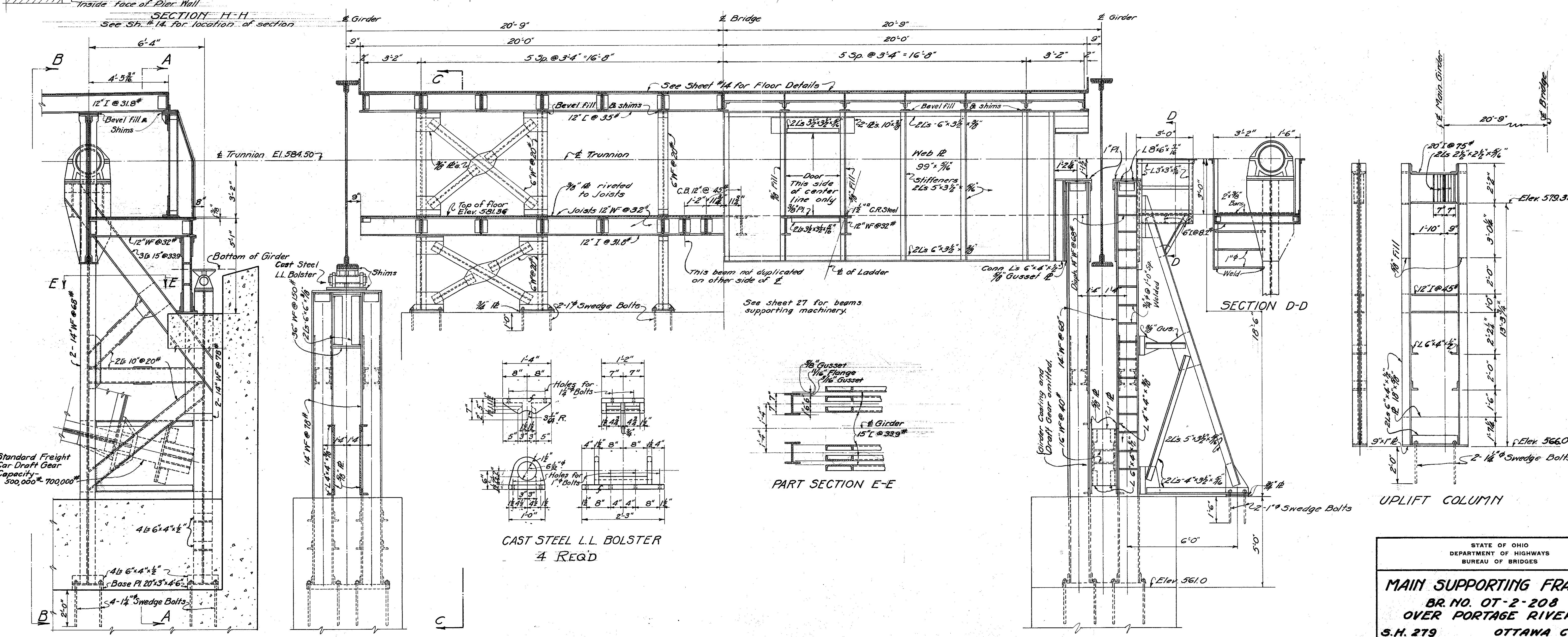
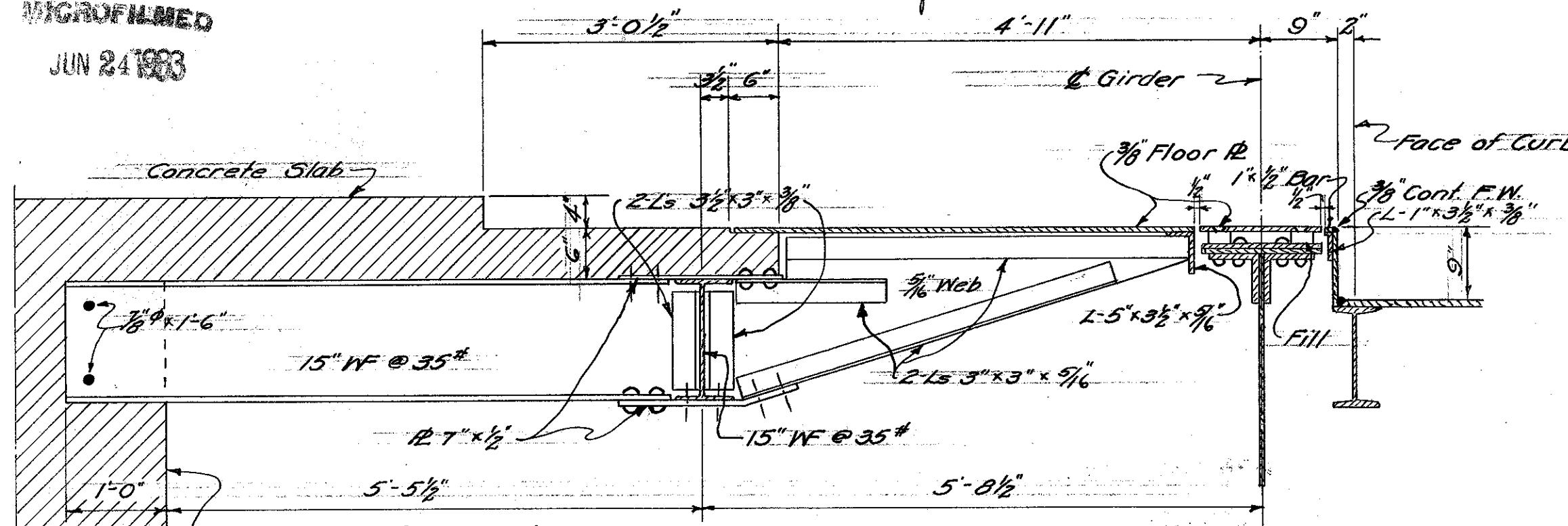
STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES					
GIRDER DETAILS BR. NO. OT-2-208 OVER PORTAGE RIVER S.H. 279 OTTAWA COUNTY SEC. PORT CLINTON BR. S.H. 228+660					
DESIGNED W.H.P. 11-28-32	DRAWN C.H.A.	TRACED C.H.A.	CHECKED F.E.E.	REVIEWED W.M.W.	DATE 12-14-32
REVISED W.H.P. 10/29/32					

FED. RD.  
DIST. NO. STATE FED. AID  
PROJECT FISCAL  
YEAR  
10 OHIO E410-H 1932  
13 33

OTTAWA COUNTY  
S.H. 279 SEC. PORT CLINTON  
BRIDGE



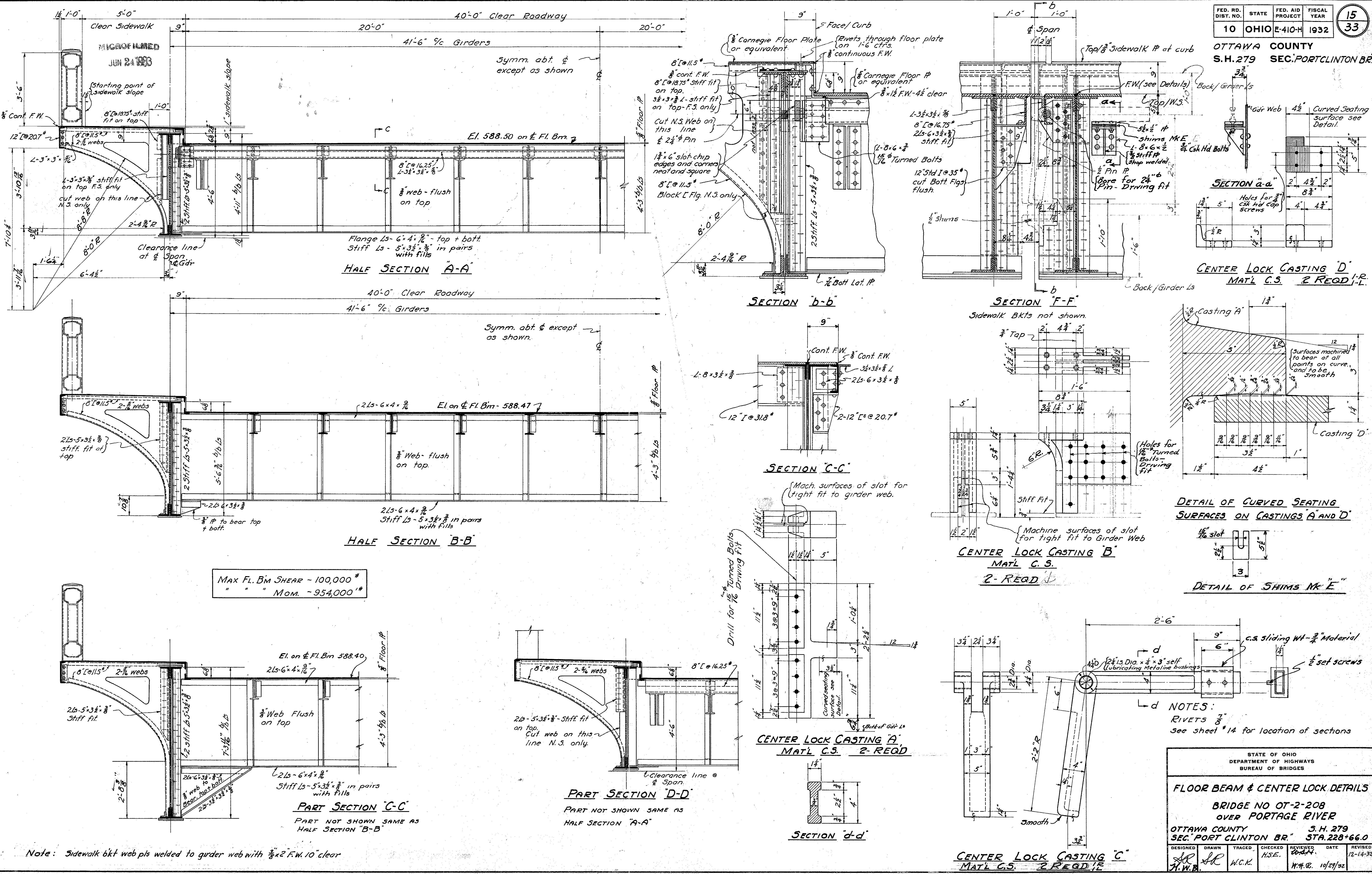
MICROFILMED  
JUN 24 1983





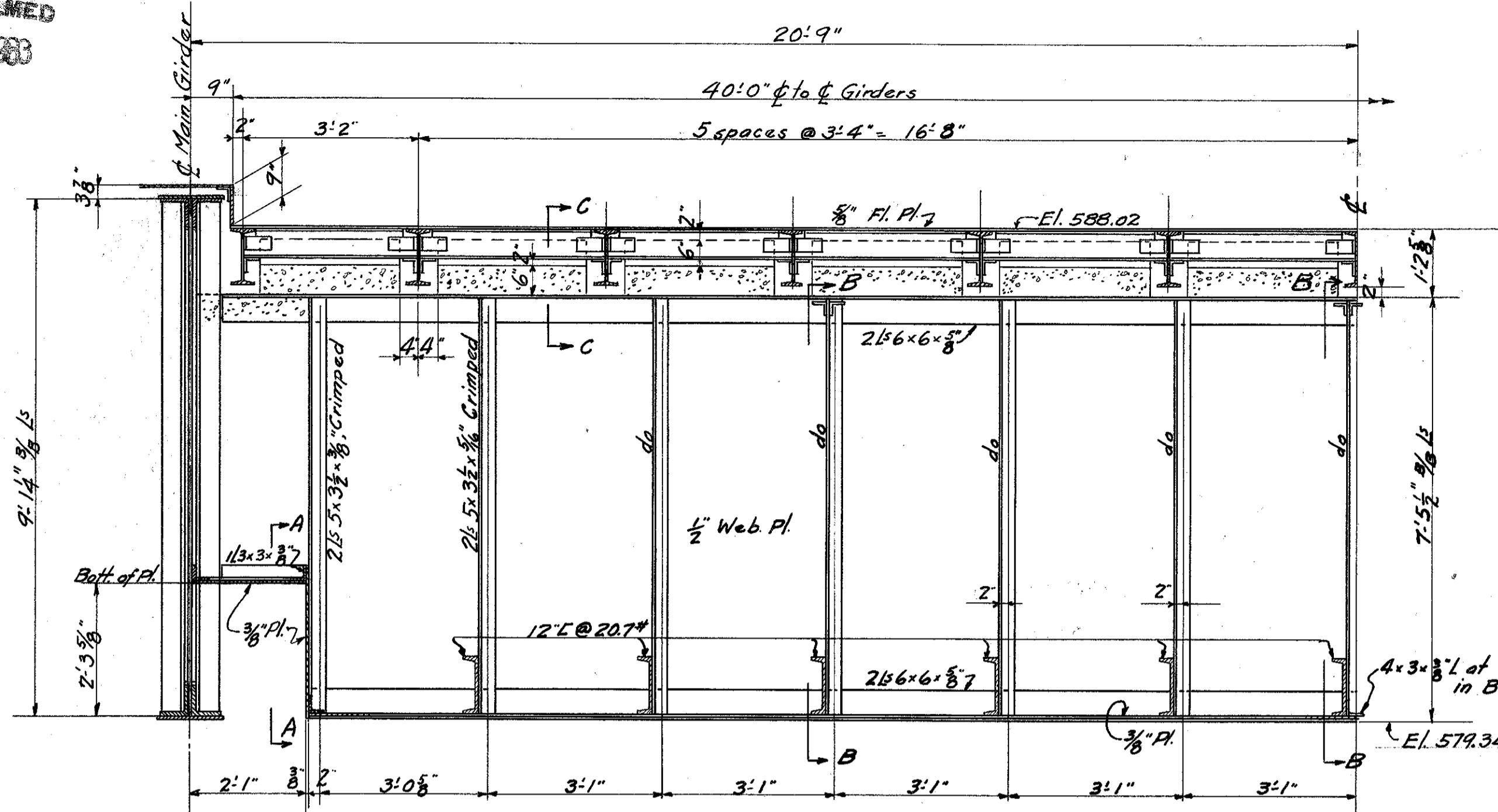
D. RD. ST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	E-410-H	1932

**OTTAWA COUNTY  
H.279 SEC. PORTCLINTON BR.**

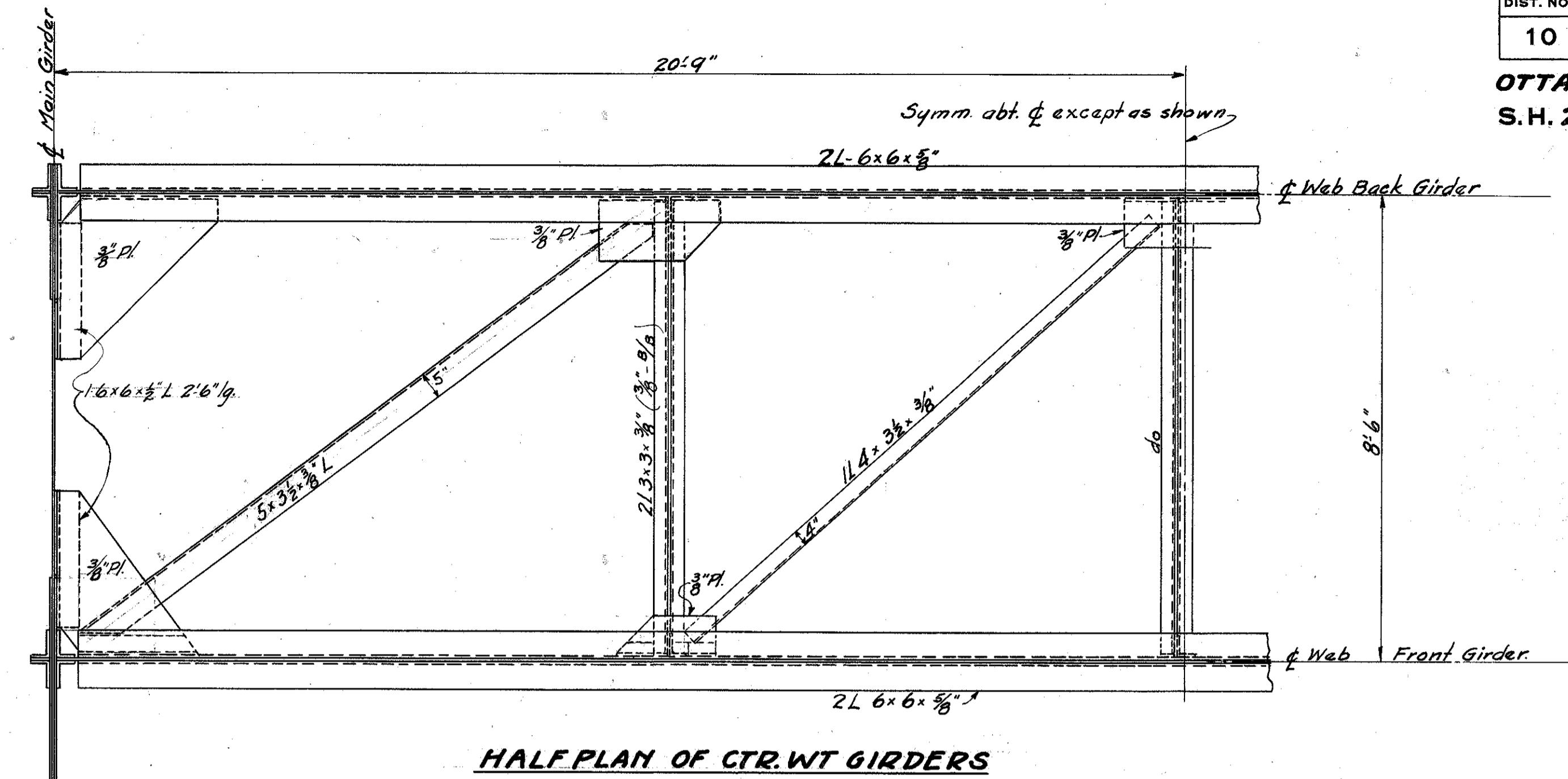


MICROFILMED

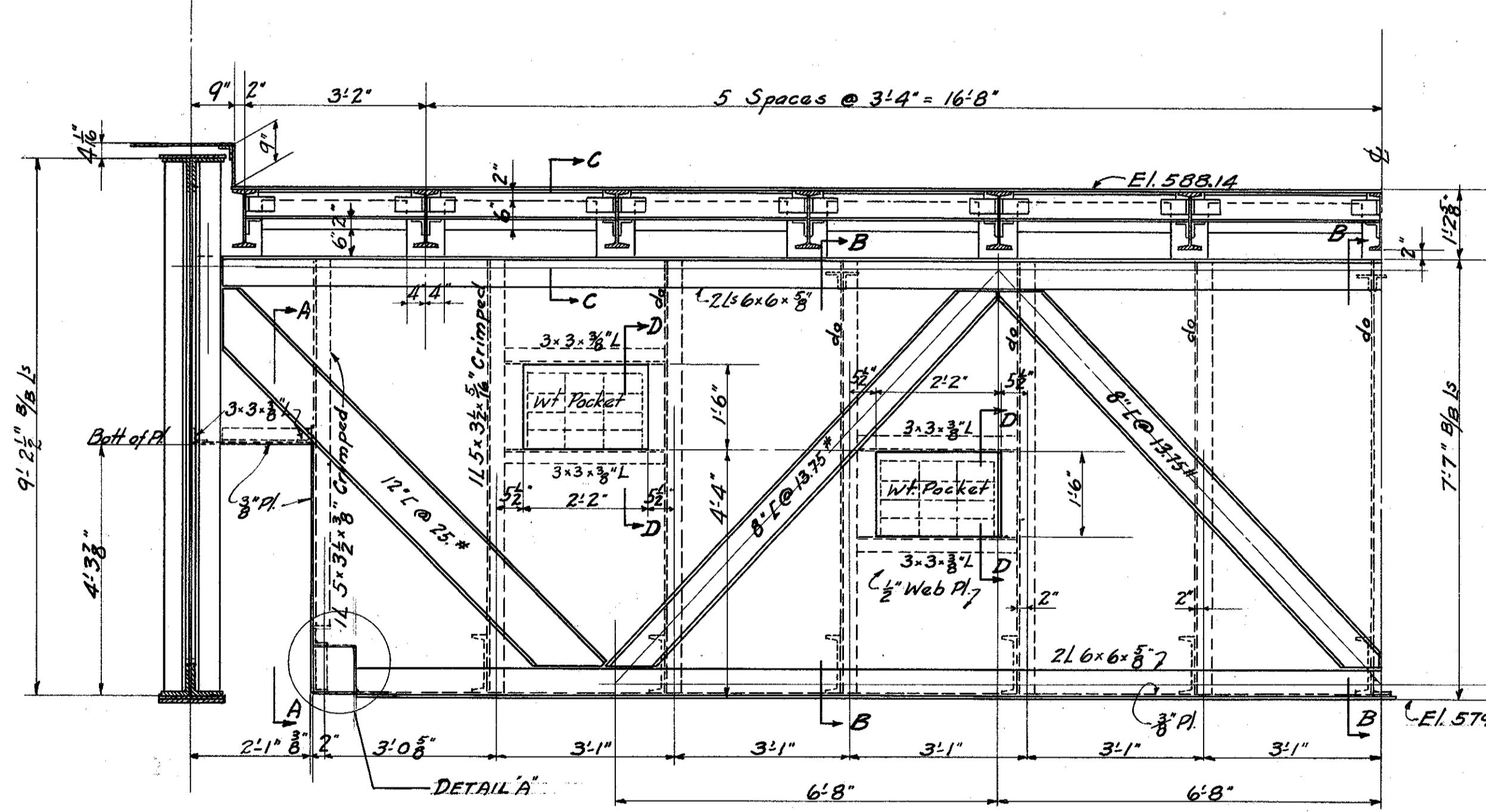
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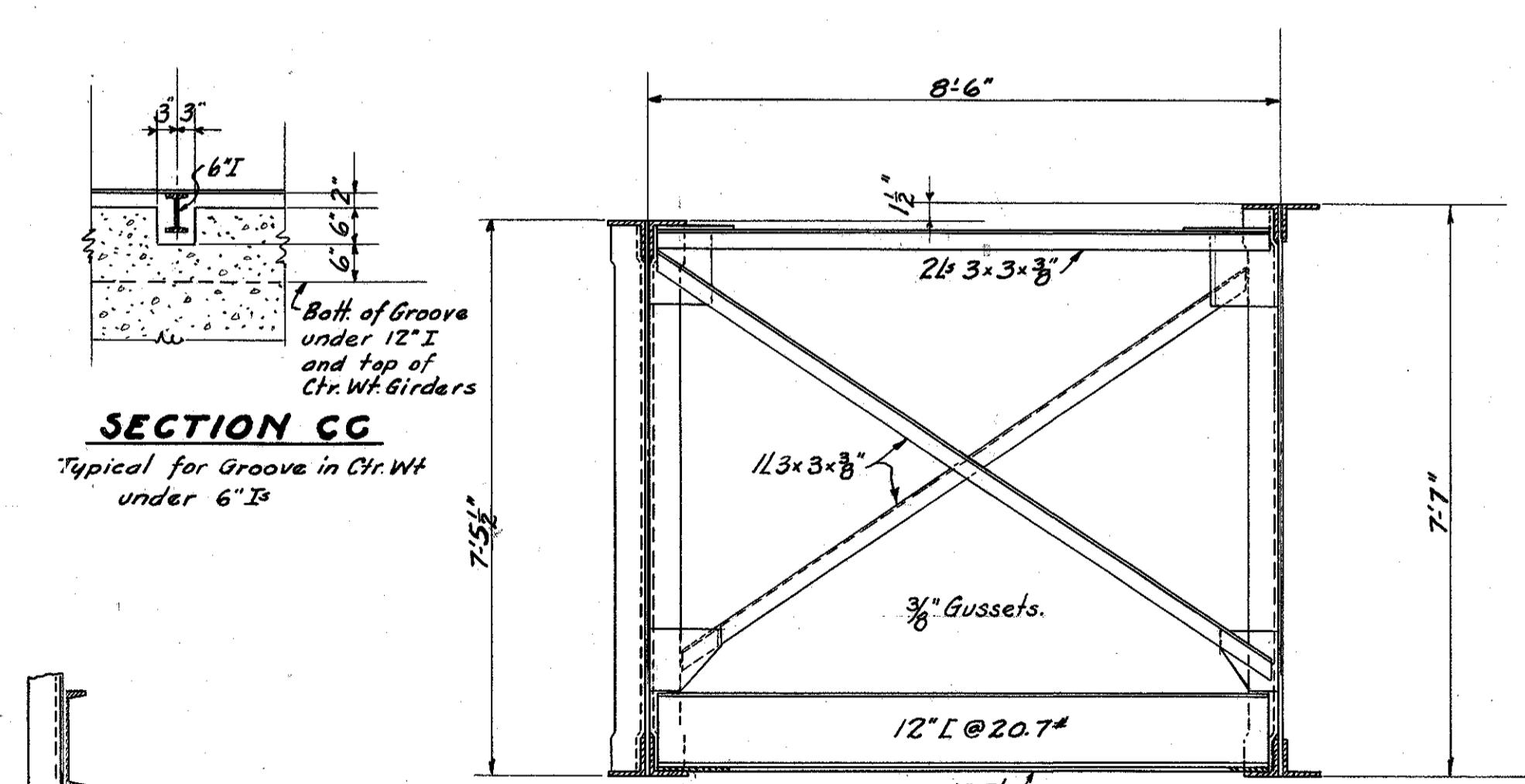
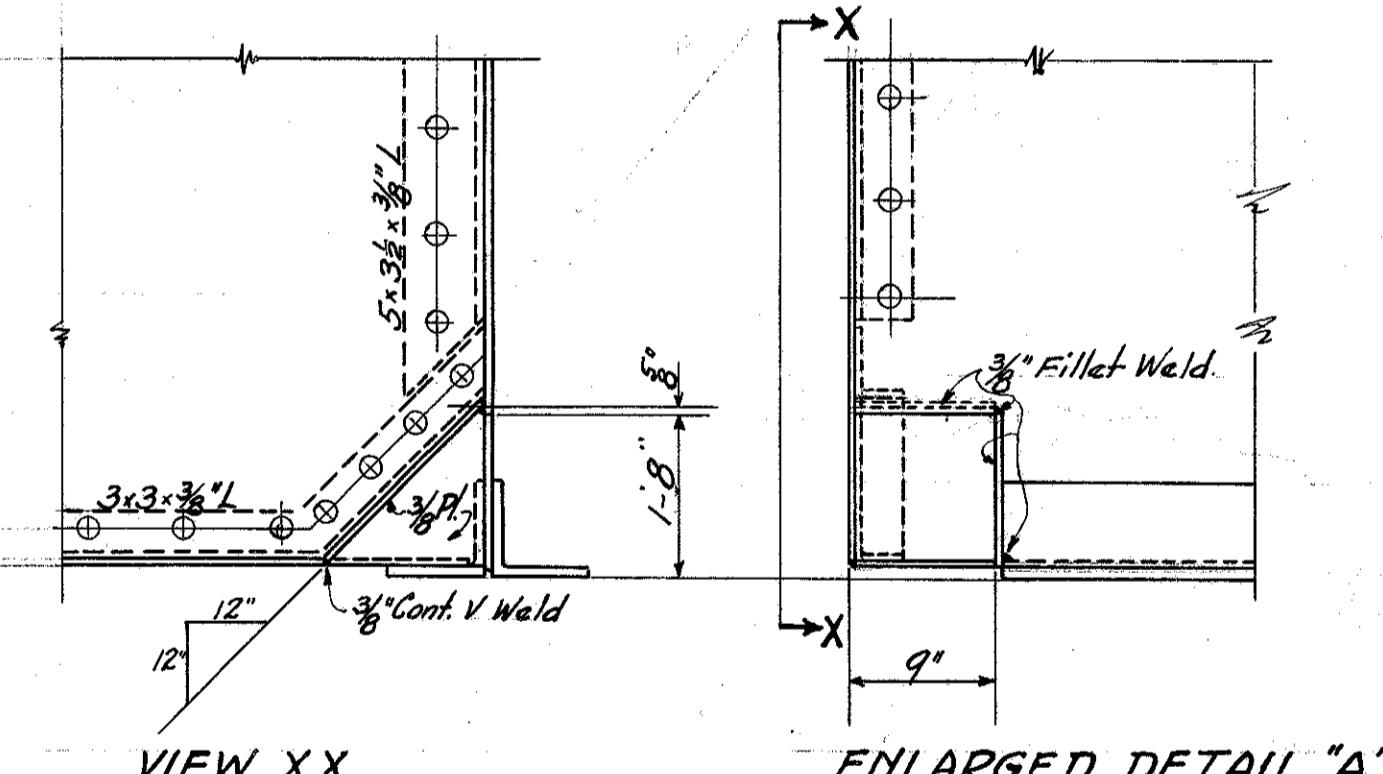
ELEVATION BACK CTR. WT. GIRDER



HALF PLAN OF CTR. WT. GIRDERS

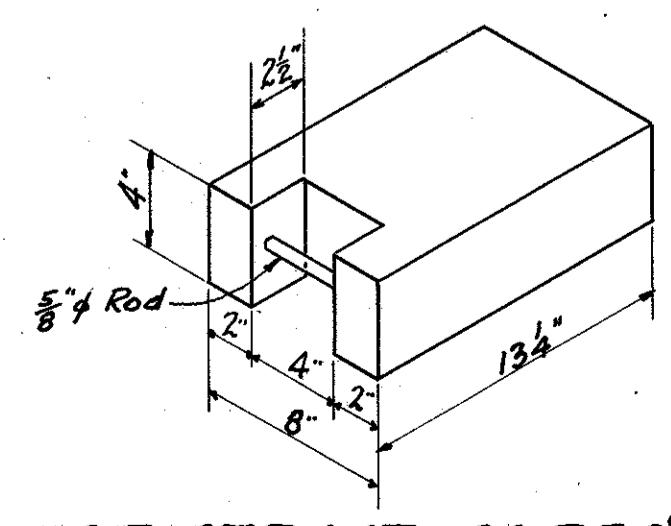
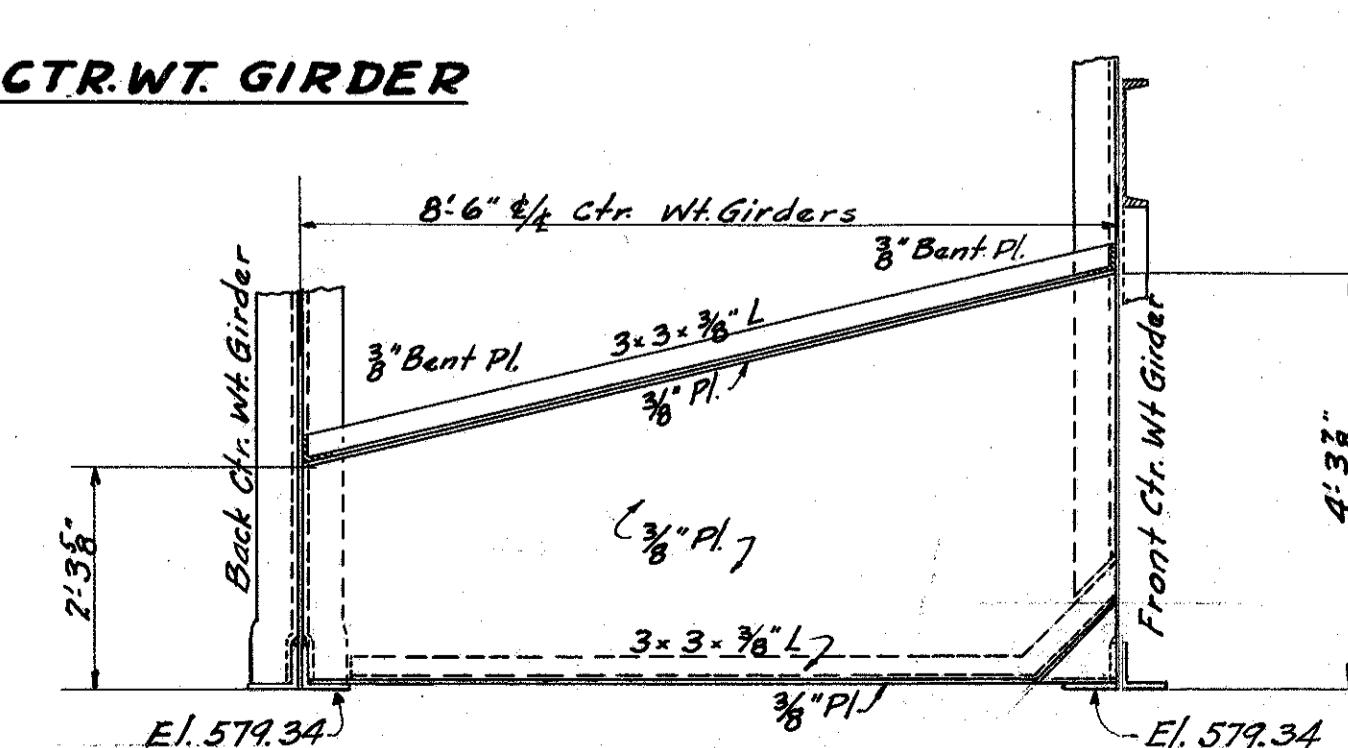


ELEVATION FRONT CTR. WT. GIRDER

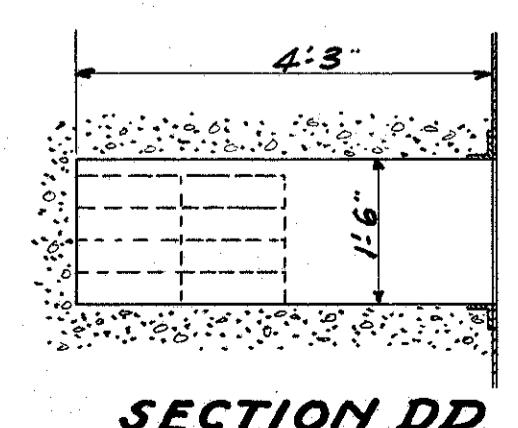
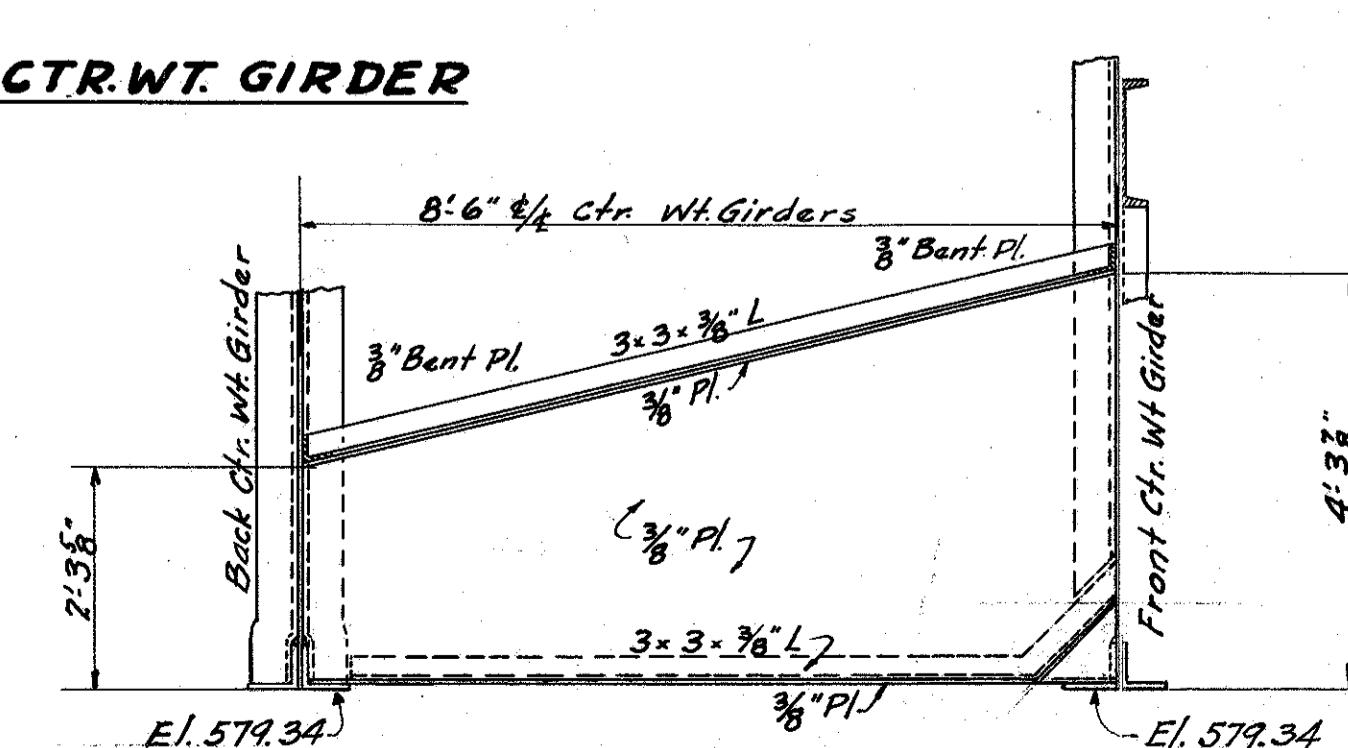
SECTION CC  
Typical for Groove in Ctr. Wt.  
under 6' 11"

VIEW XX

Provide 3/4" dowels in concrete for ctr. wt.  
where horiz. const. jts. occur.  
3/8" Diam. Rivets.

C.I. CTR. WT. 96 REQ'D.  
(APPROX. 100 LB. EA.)

SECTION AA



SECTION DD

STATE OF OHIO		DEPARTMENT OF HIGHWAYS		BUREAU OF BRIDGES	
COUNTER WEIGHT DETAILS BRIDGE NO. OT-2-208 OVER PORTAGE RIVER					
S.H. 279 OTTAWA COUNTY SEC. "PORT CLINTON BR." STA. 22B+66.00					
DESIGNED O.R.N.	DRAWN H.B.	TRACED H.A.C.	CHECKED S.P.	REVIEWED W.M.R.	DATE 12-14-32 REVISED M.Y.R. 10/29/32

FED. RD.  
DIST. NO. 10  
STATE OHIO  
FED. AID  
PROJECT E-410-H  
FISCAL  
YEAR 1932  
16  
33

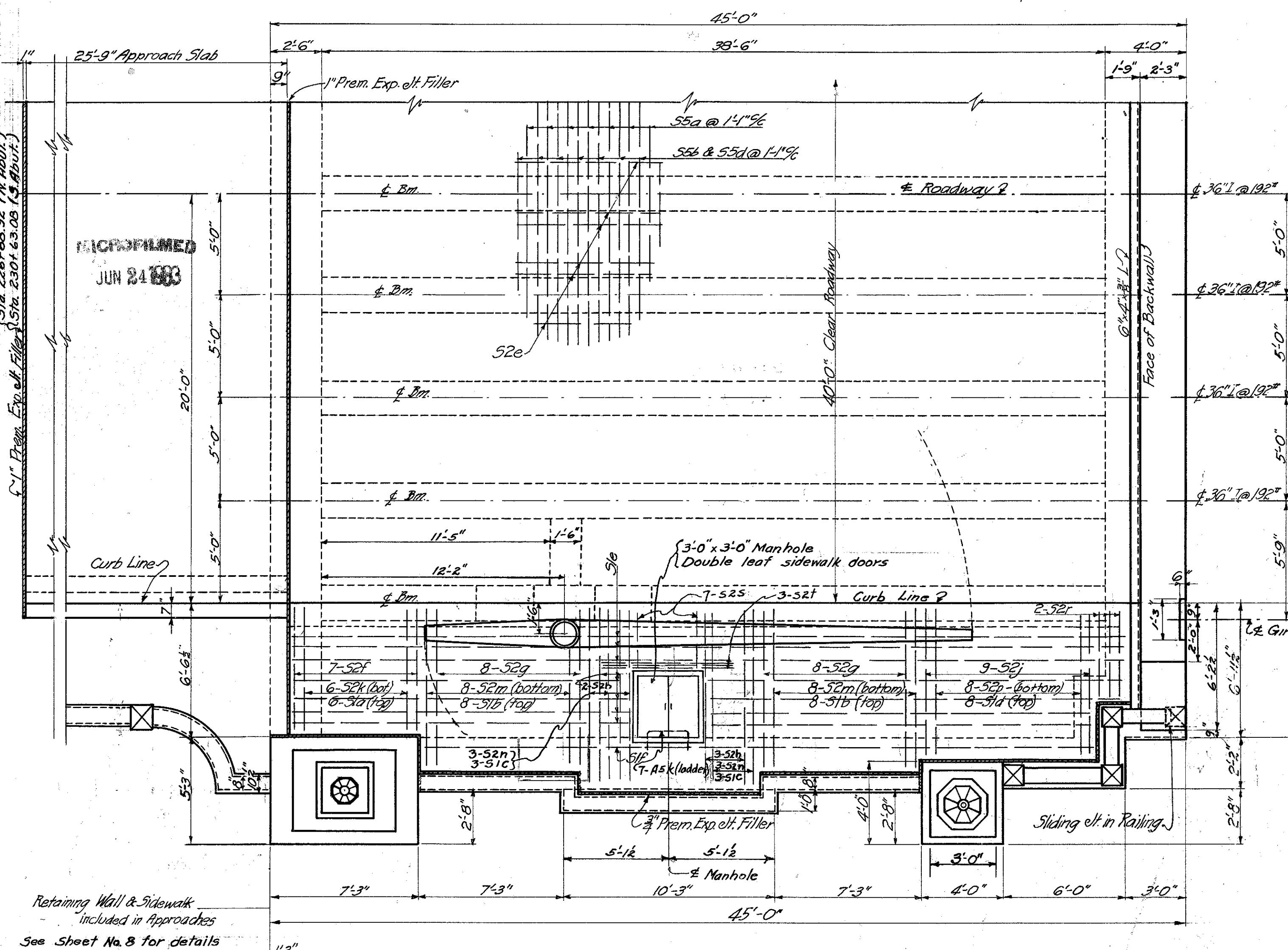
OTTAWA COUNTY  
S.H. 279 SEC. "PORT CLINTON"  
BR.



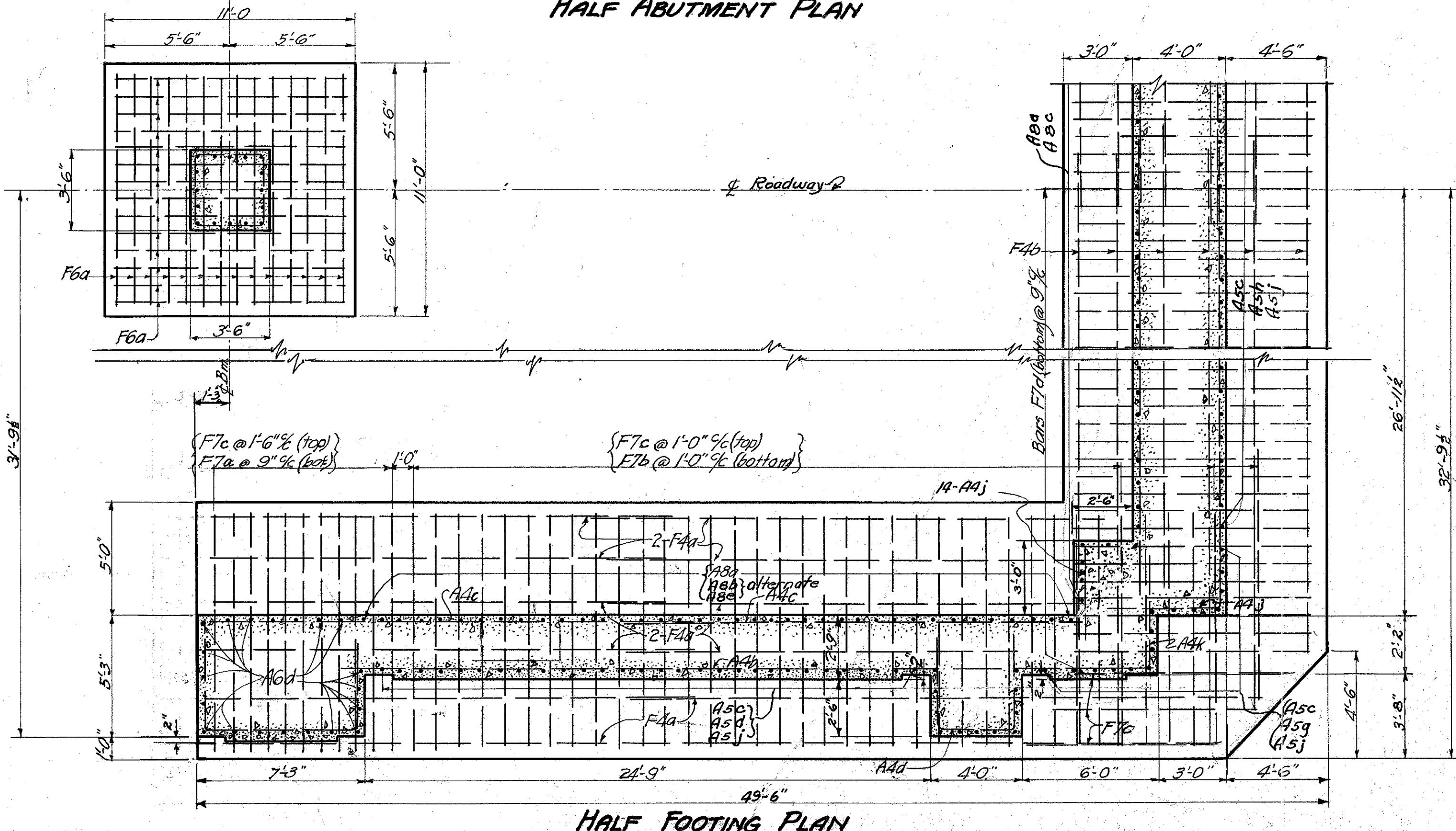
RD. T. NO.	STATE	FED. AID PROJECT	FISCAL YEAR	1 3
0	OHIO	E-410-H	1932	

8  
33

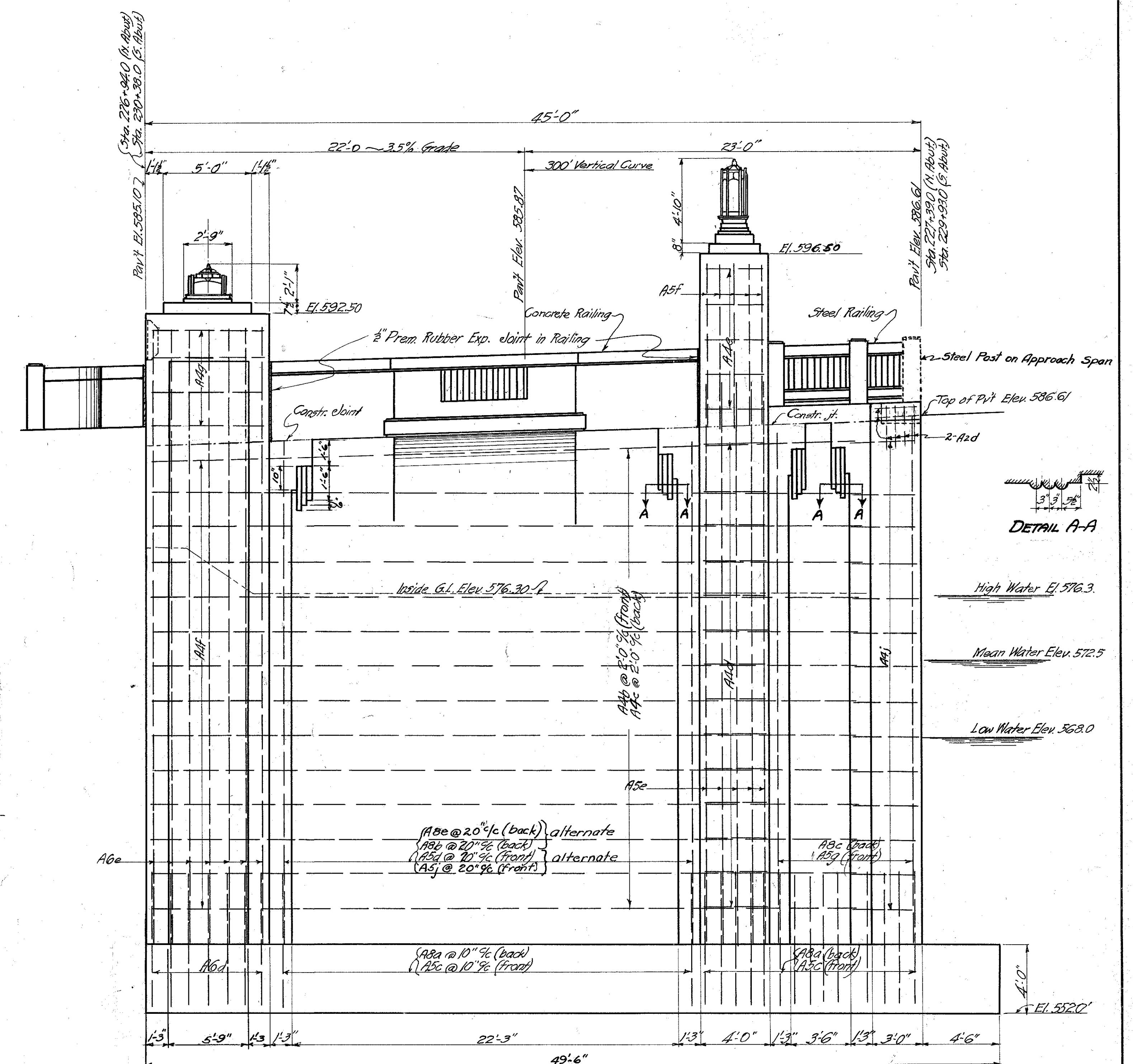
OTTAWA COUNTY  
H. 279 SEC."PORT CLINTON BR."



## HALF ABUTMENT PLAN



## HALF FOOTING PLATE



## *SIDE ELEVATION*

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

***ABUTMENT DETAILS***

***BRIDGE NO. OT-2-208  
OVER PORTAGE RIVER***

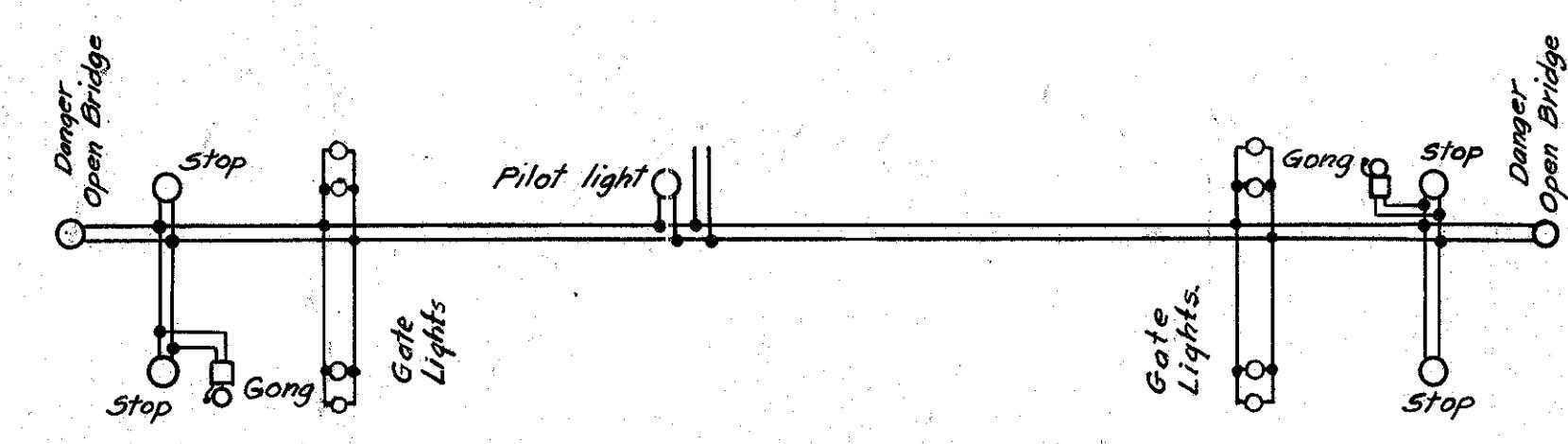
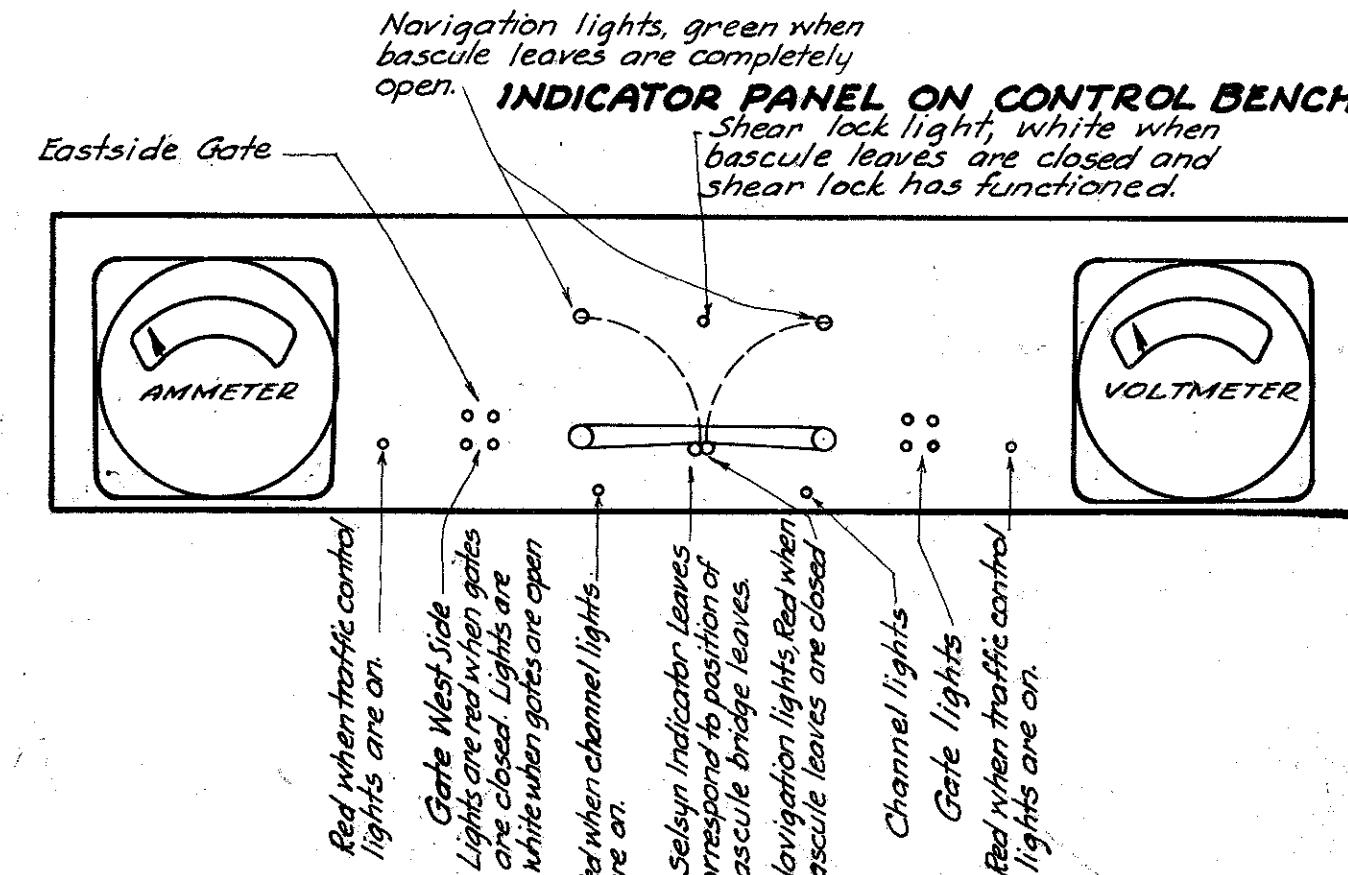
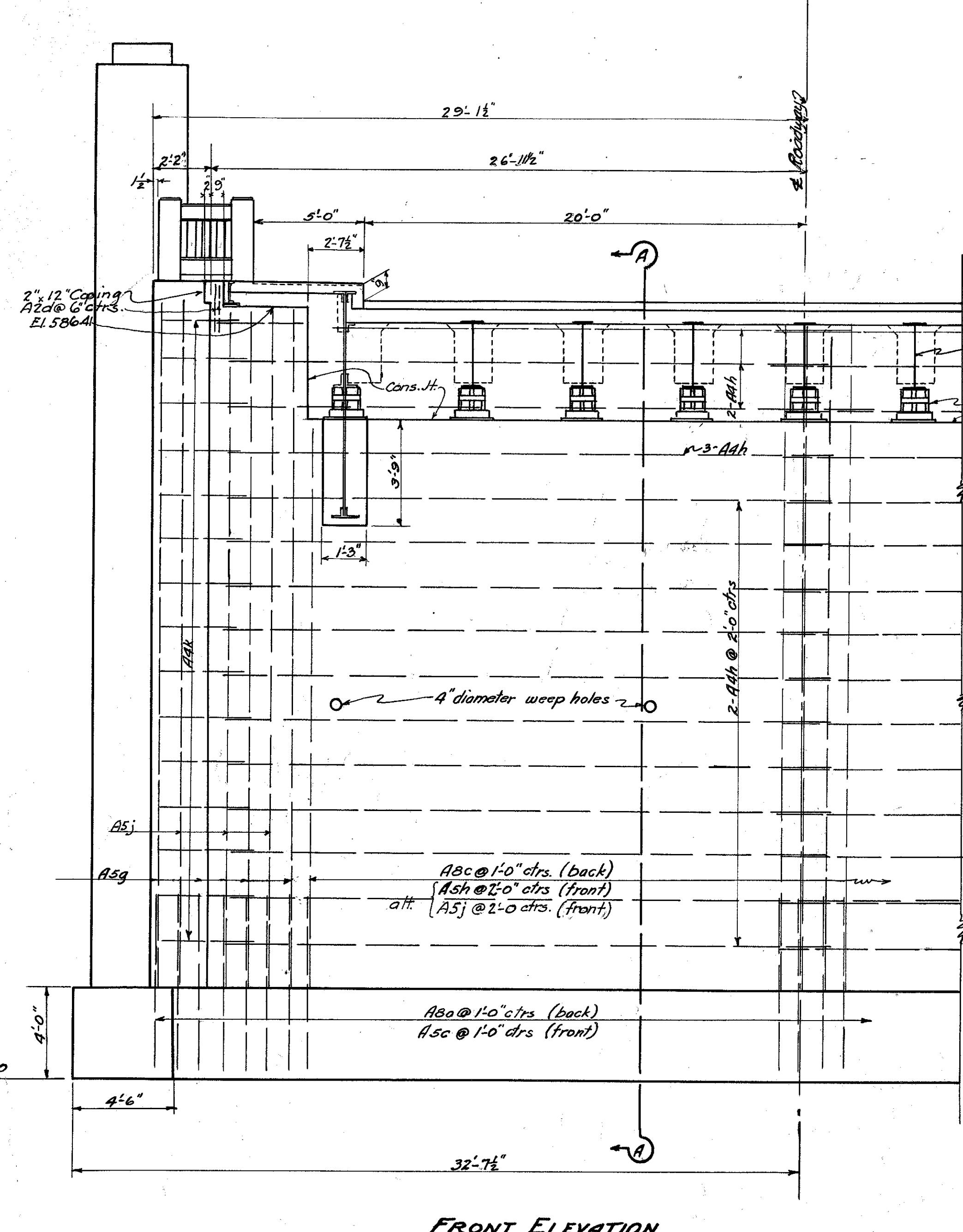
**OTTAWA COUNTY  
SEC. "PORT CLINTON BR."**

**S.H. 279  
STA. 228+66.0**

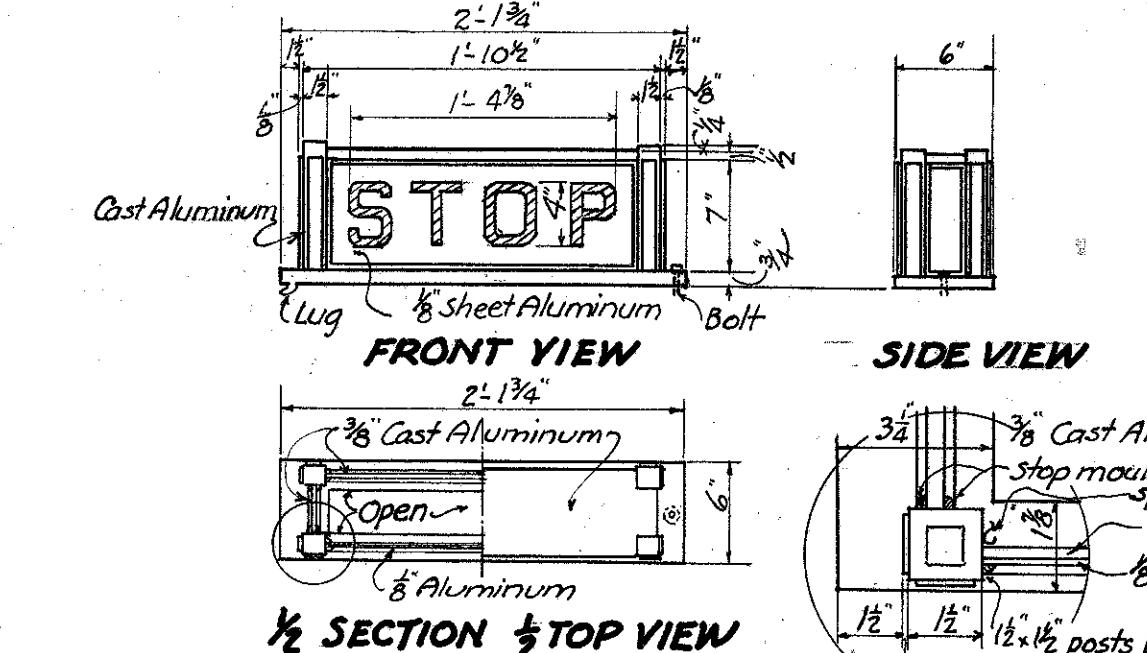
SIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
W.S.	R.W.S.	<i>L.S.D.</i>	C.H.Q.	<i>W.M.L.</i>	10/29/30	12-14-32

FED. RD.  
DIST. NO. 10 OHIO  
STATE E-410-H  
FED. AID PROJECT 1932  
FISCAL YEAR 33

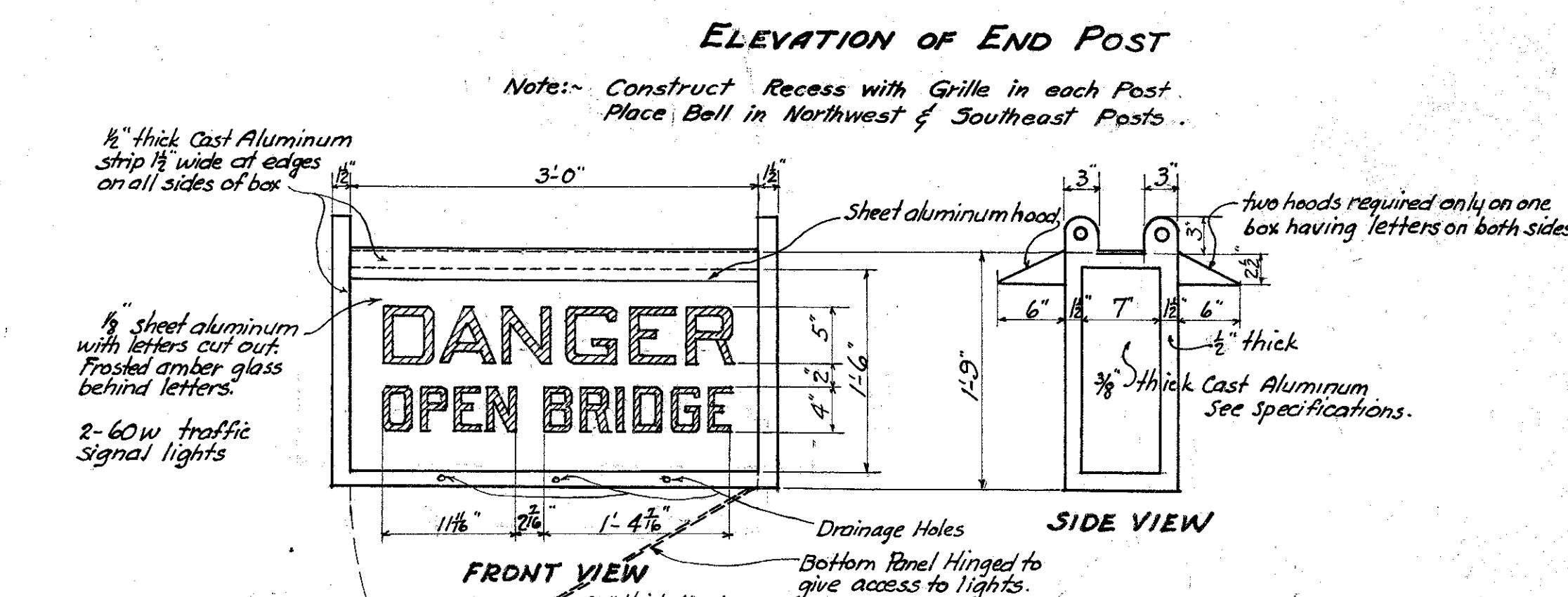
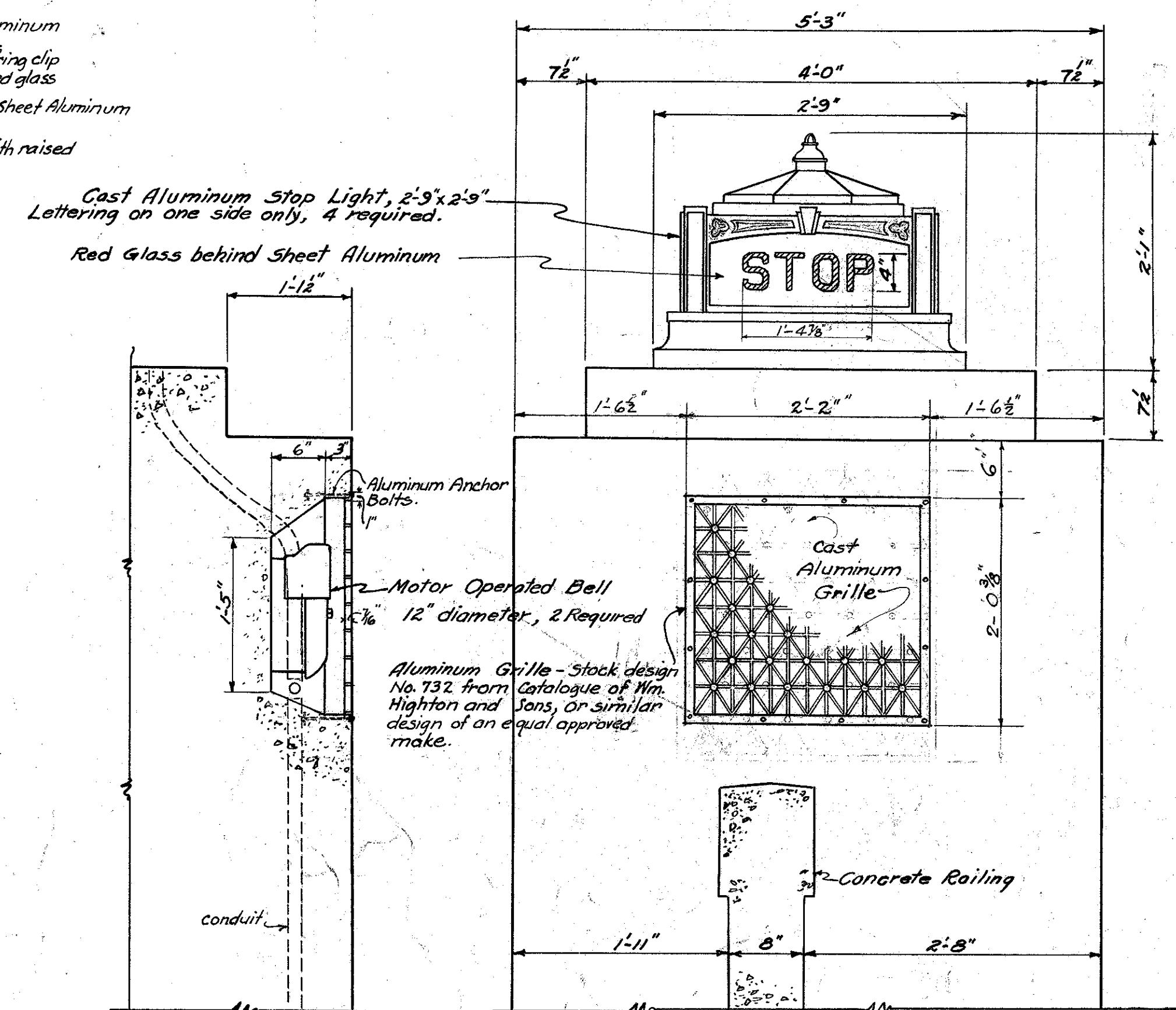
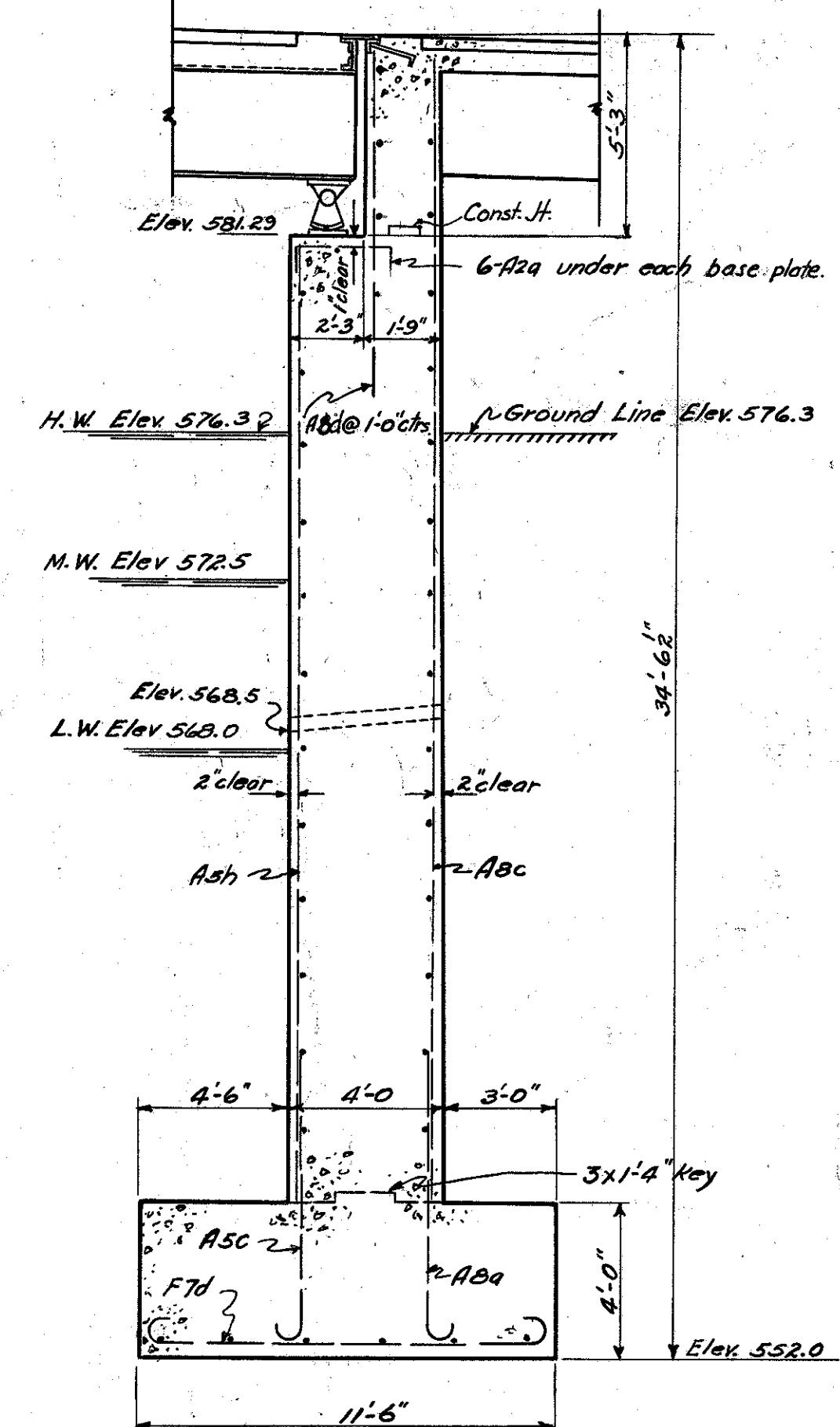
OTTAWA COUNTY  
S.H. 279 SEC. PORT CLINTON BR



TRAFFIC CONTROL LIGHTING

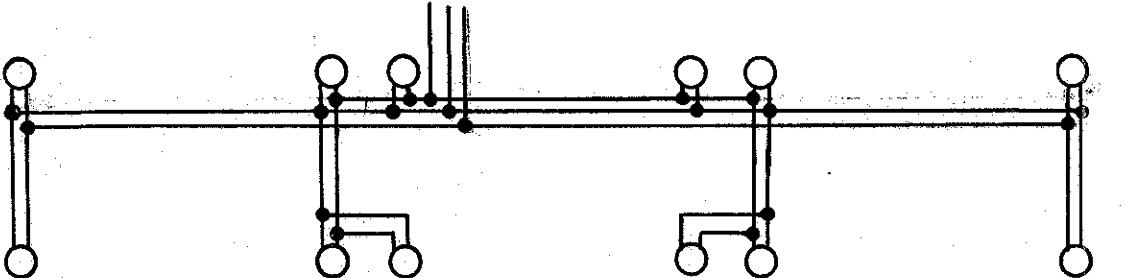


DETAILS OF ILLUMINATED SIGNS  
ON BARRIER GATES (8-Required)



ILLUMINATED SIGNS AT APPROACH INTERSECTIONS

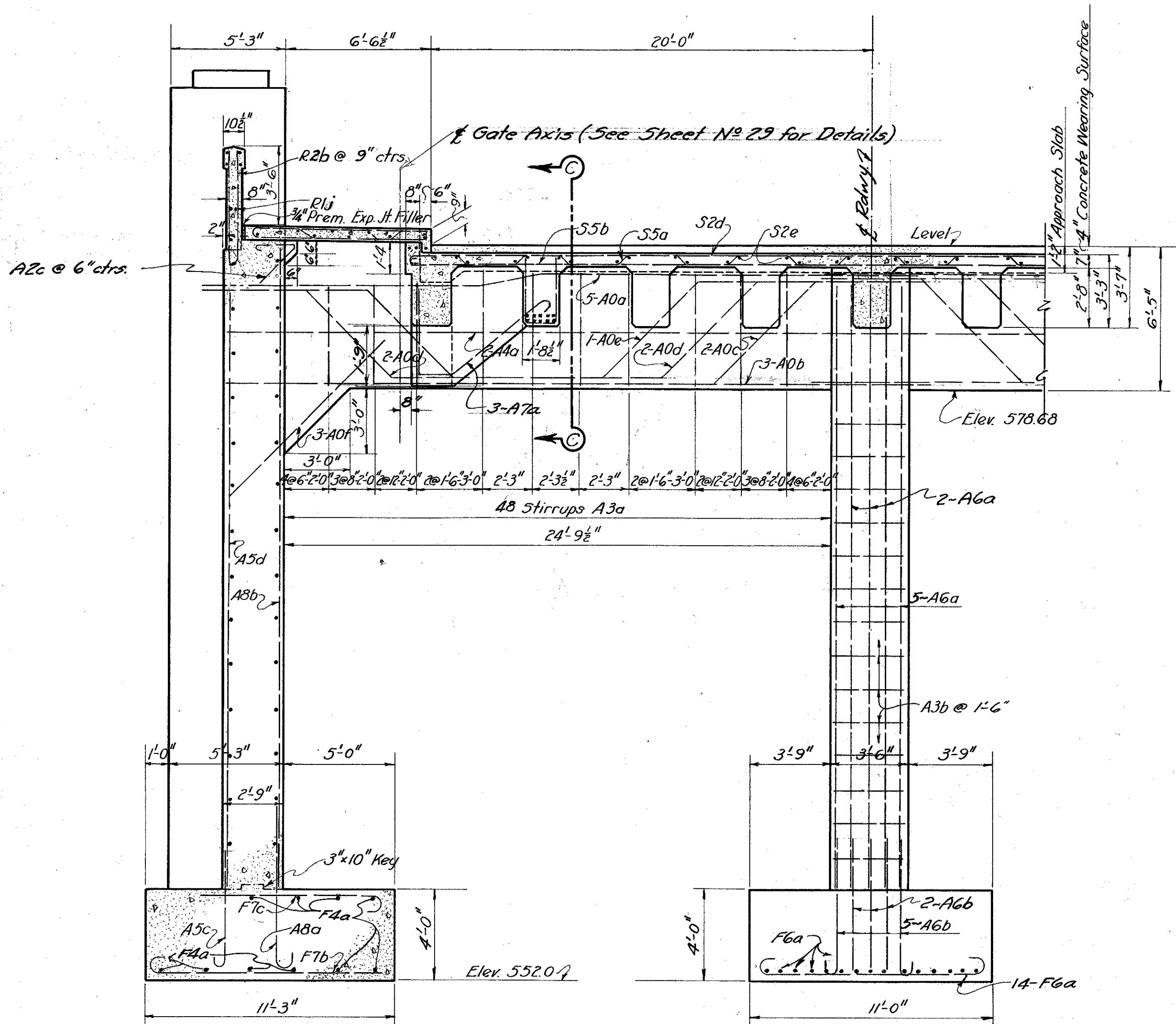
2-Required - 1-required with letters on two faces, and 1-required with letters on one face.



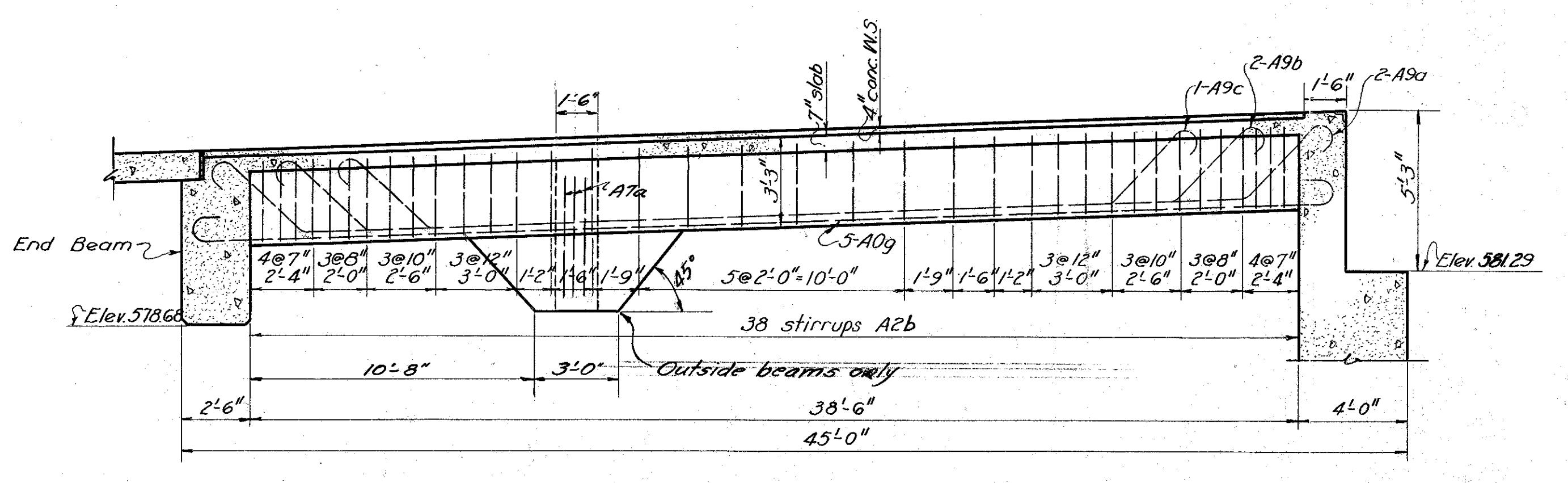
BRIDGE HIGHWAY LIGHTING

STATE OF OHIO DEPARTMENT OF HIGHWAYS BUREAU OF BRIDGES			
ABUTMENT DETAILS			
BRIDGE NO. OT-2-208 OVER PORTAGE RIVER			
OTTAWA COUNTY SEC "PORT CLINTON BR"	S.H. 279	STA 5TH 228166.00	
DESIGNED BY	DRAWN BY	TRACED BY	CHECKED BY
R.H.S.	R.H.S.	R.H.S.	C.P.A.J.
REVIEWED BY	DATE	REVISED	
M.H.G.B. 10/29/32	12-14-32		

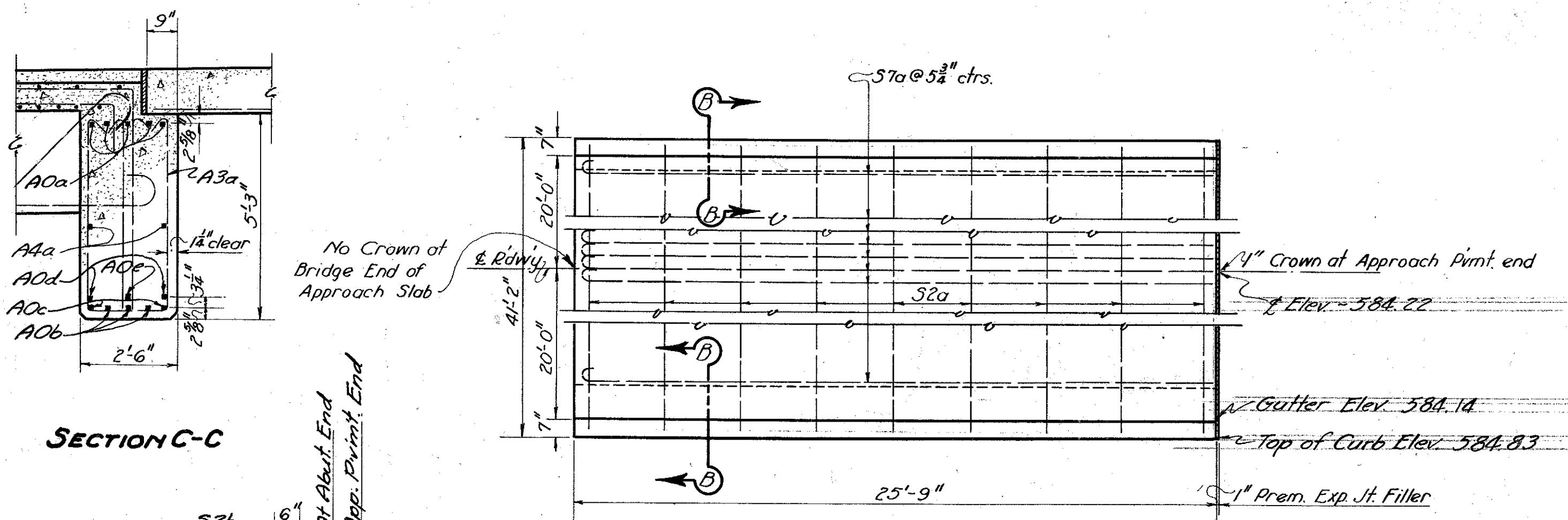
**OTTAWA COUNTY  
H. 279 SEC. "PORT CLINTON**



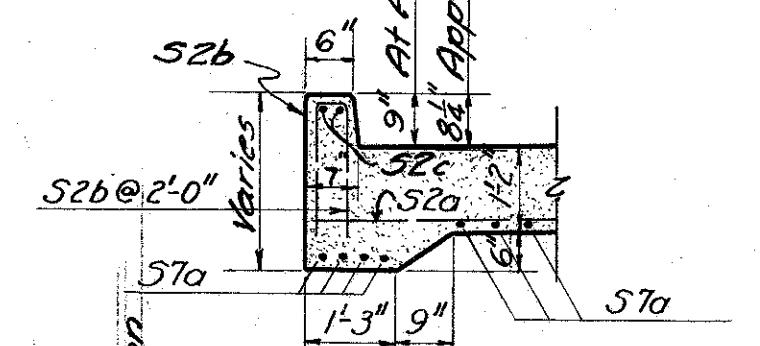
## ELEVATION END BEAM



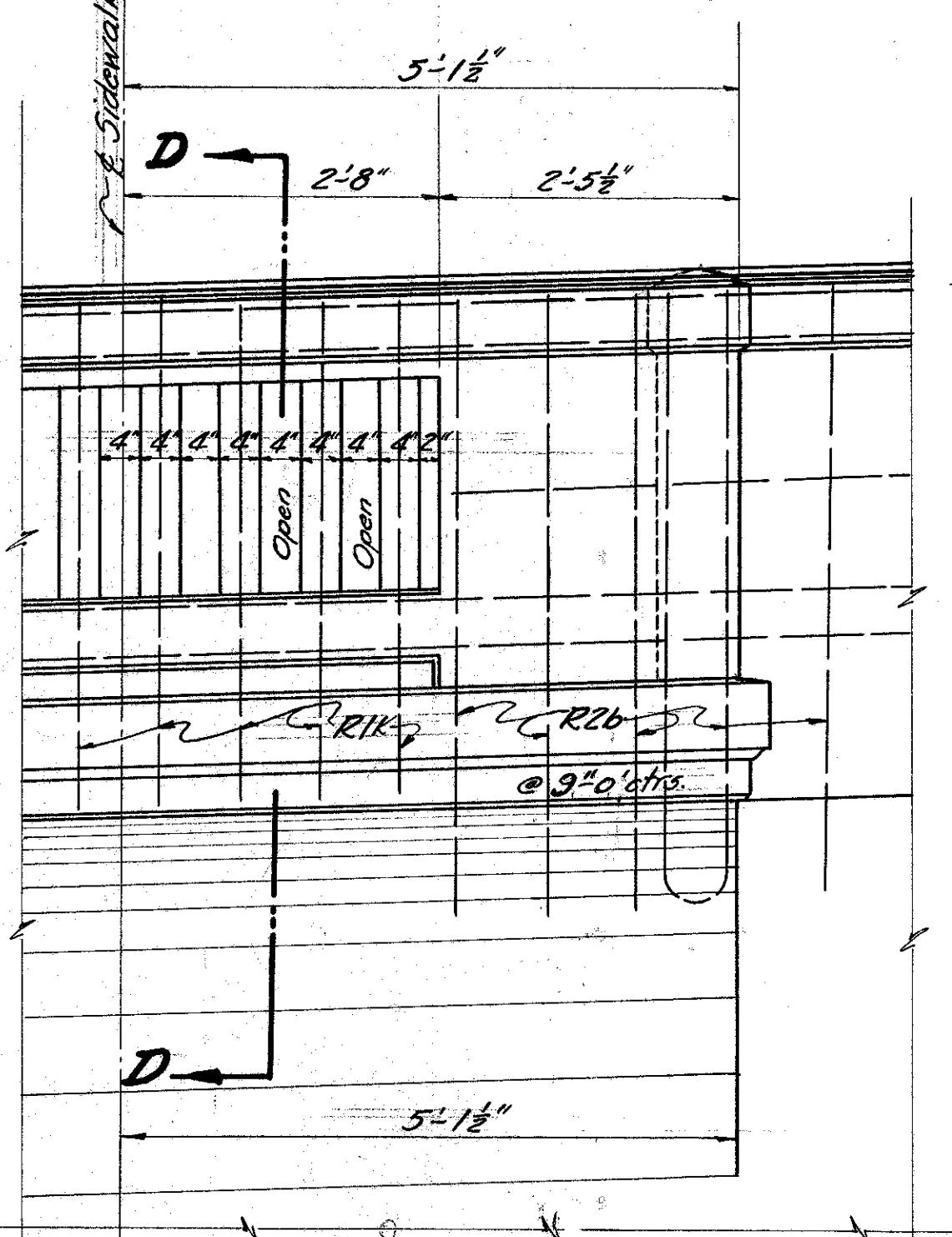
## LONGITUDINAL SECTION



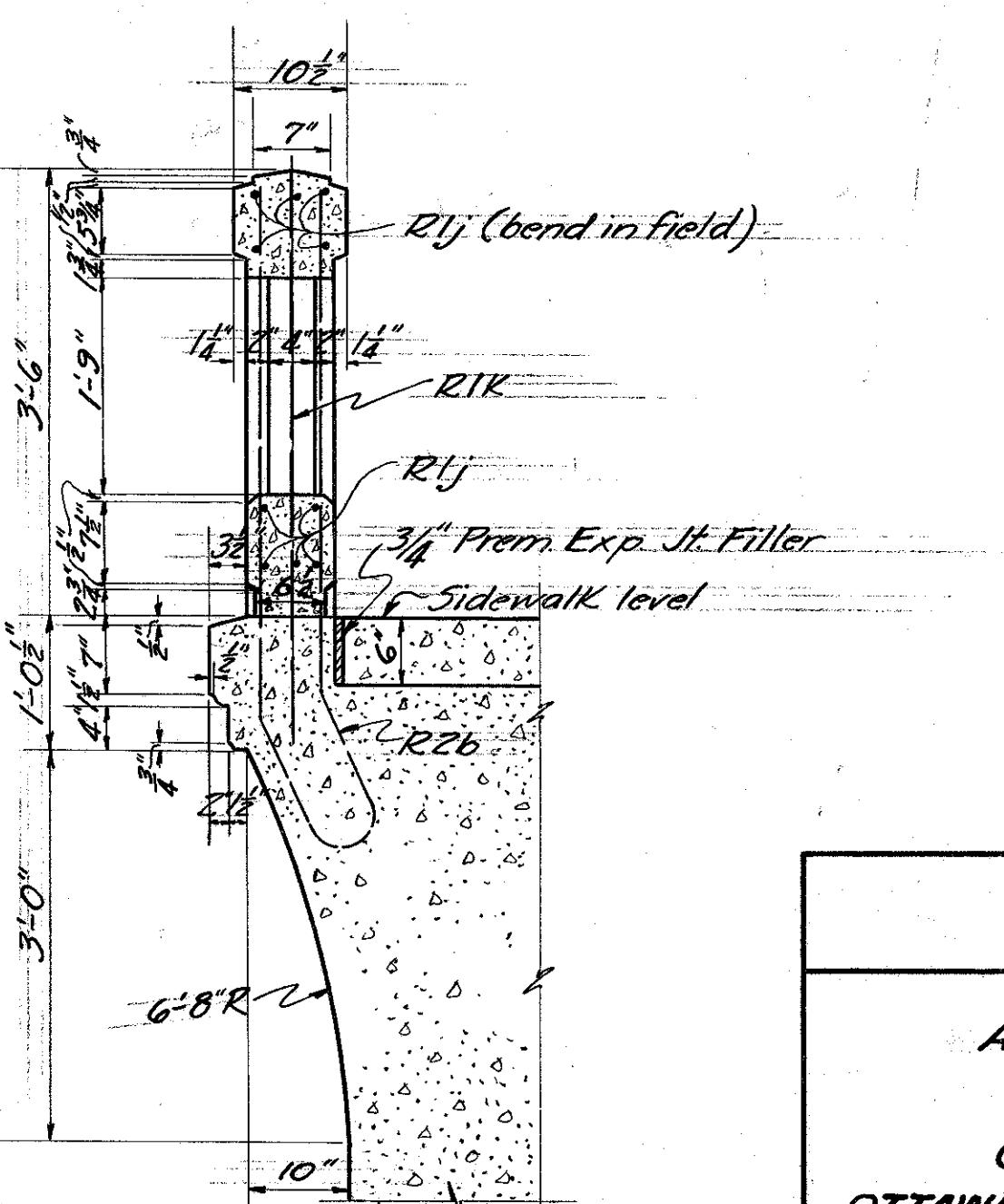
### **SECTION C-C**



## *SECTION B-B*



## DETAIL OF SIDEWALK PROJECTION



~~SEC.D-D~~

**STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES**

BRIDGE NO. OT-2-208  
OVER PORTAGE RIVER

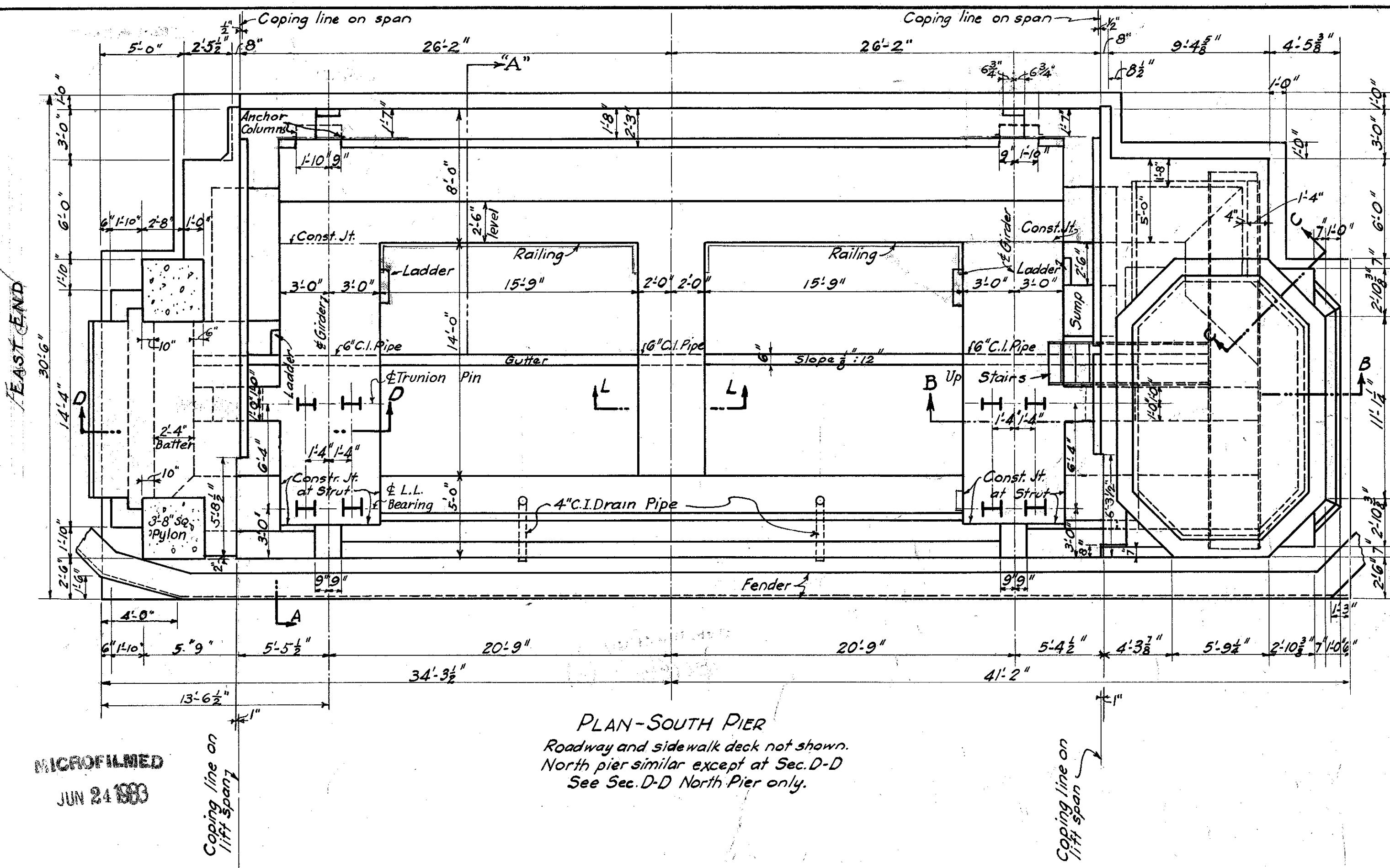
**OTTAWA COUNTY " " S.H. 279**  
**SEC PORT CLINTON RD Sta 228+66**

SIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISE
P.W.S.	R.W.S.	R.P.B.	C.H.A.	C.W.N.	W.H.R.	10/29/32

RD. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
0	OHIO	E-410-H	1932

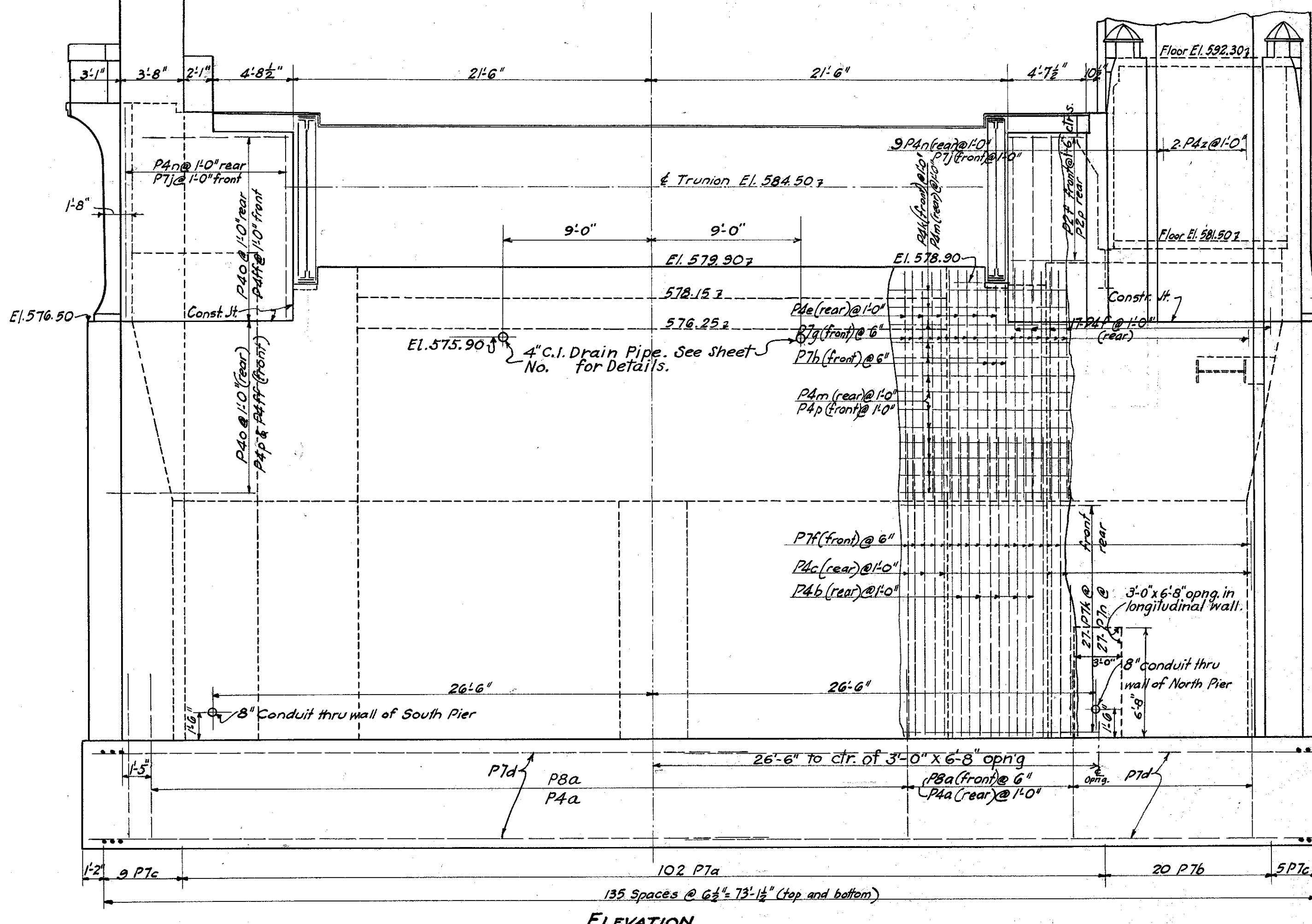
1

OTTAWA COUNTY  
S.H. 279 SEC. PORT CLINTON  
BR.

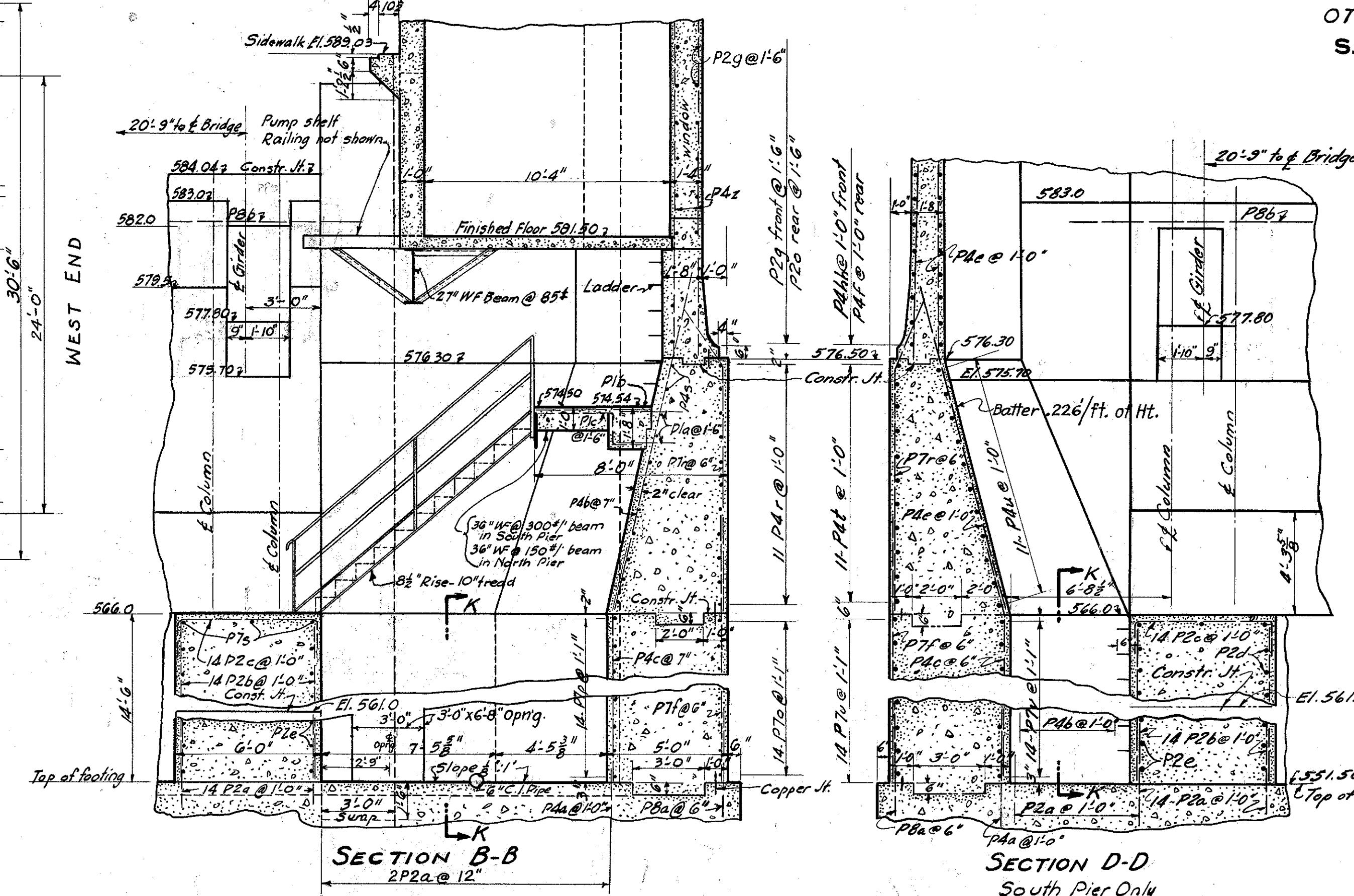


**MICROFILMED**

**PLAN-SOUTH PIER**  
Roadway and sidewalk deck not shown  
North pier similar except at Sec. D-  
See Sec. D-D North Pier only.



**ELEVATION**  
*Channel side of H.*



**SECTION B-B**

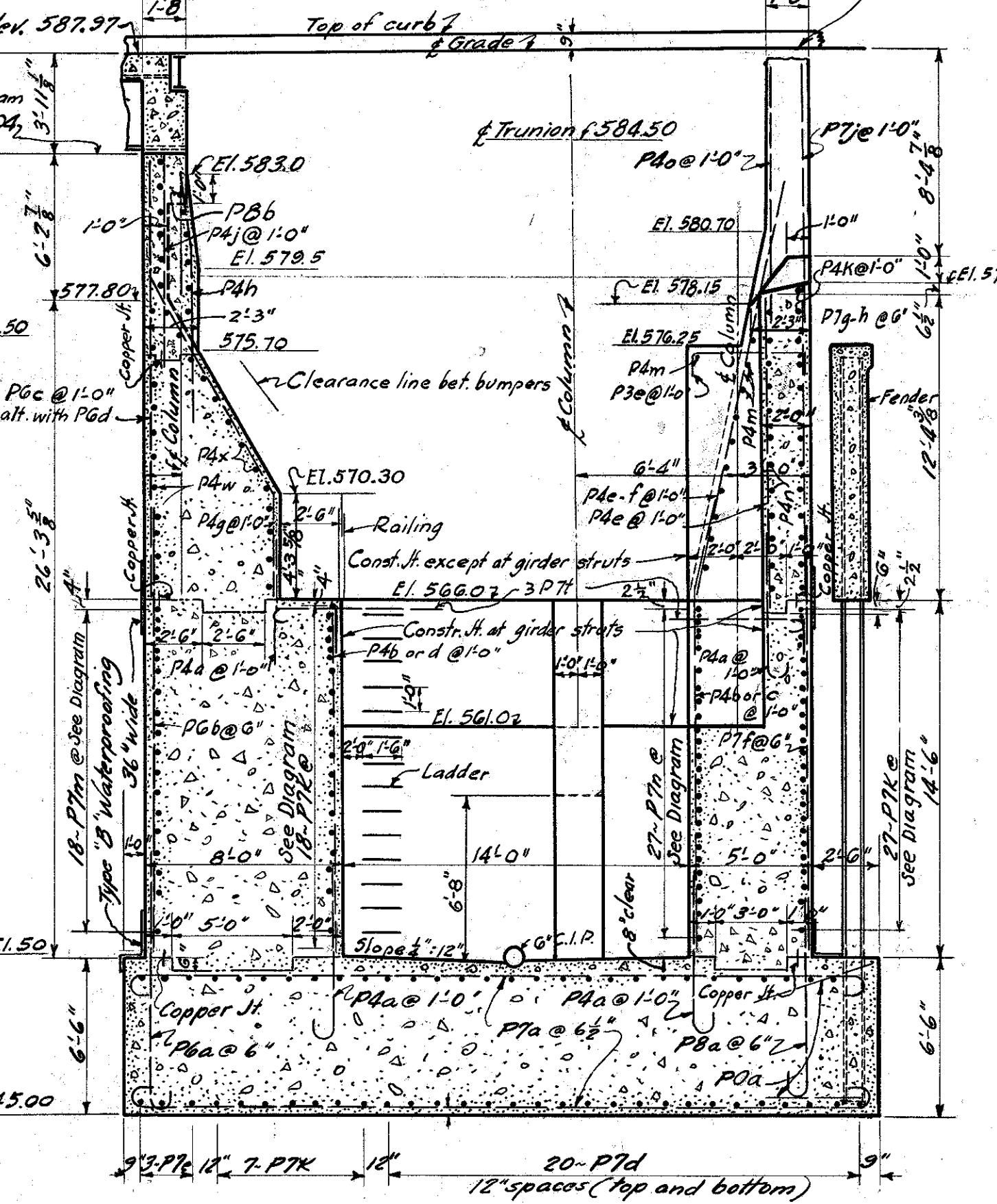
**SECTION D-D**  
South Pier Only

**NOTES**

CONCRETE in footings shall be 1:6 $\frac{1}{2}$  mix. All other concrete shall be 1:5 $\frac{1}{2}$  mix.  
REINFORCING STEEL shall be two inches clear of face of walls unless otherwise shown.  
CONSTRUCTION JOINTS other than those shown will be allowed only upon permission  
of the Director of Highways.

of the Director of Highways.  
WATERPROOFING, TYPE "B," 36" wide, shall be placed over all construction joints below low water level.  
Copper JOINTS, 24 oz. per sq. ft. in strips 9" wide shall be placed 6" from the face of wall in all construction joints. All joints in the copper strip shall be riveted and soldered. Special care shall be taken while placing concrete around copper joints in order not to displace them from their correct position.

PRESSURE on footing for maximum loading conditions equals 4600 lbs. per sq. ft.  
COFFERDAMS for each pier shall be started at about the same time, and the schedule  
of progress shall be such that similar operations on each pier shall be done as  
nearly simultaneously as possible.



**BAR SPACING DIAGRAM  
FOR SECTION "A-A"**

**NOTE~** Loop POa bars snugly around fender columns

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

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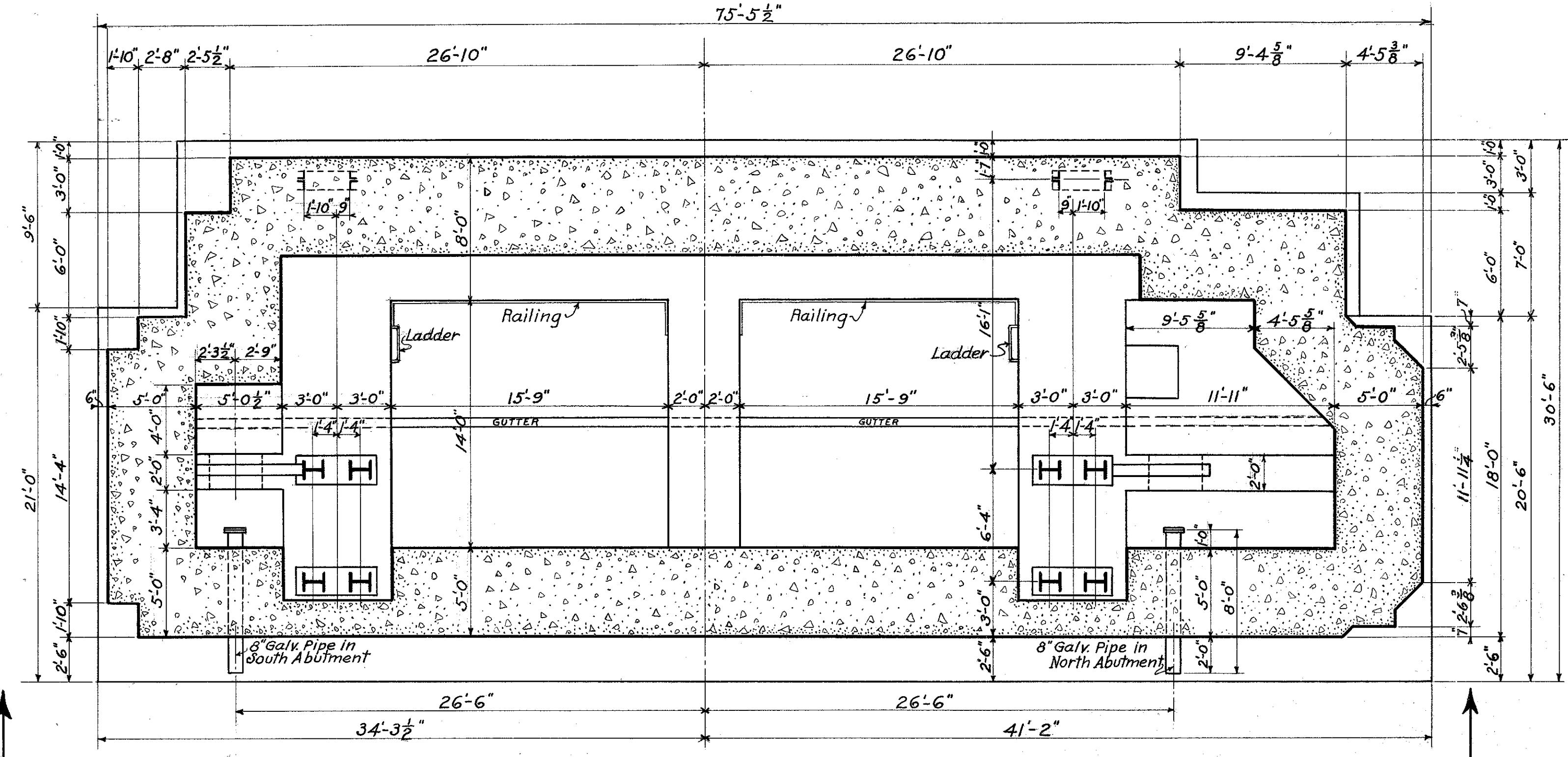
**UNCLASSIFIED**

JUN 24 1961

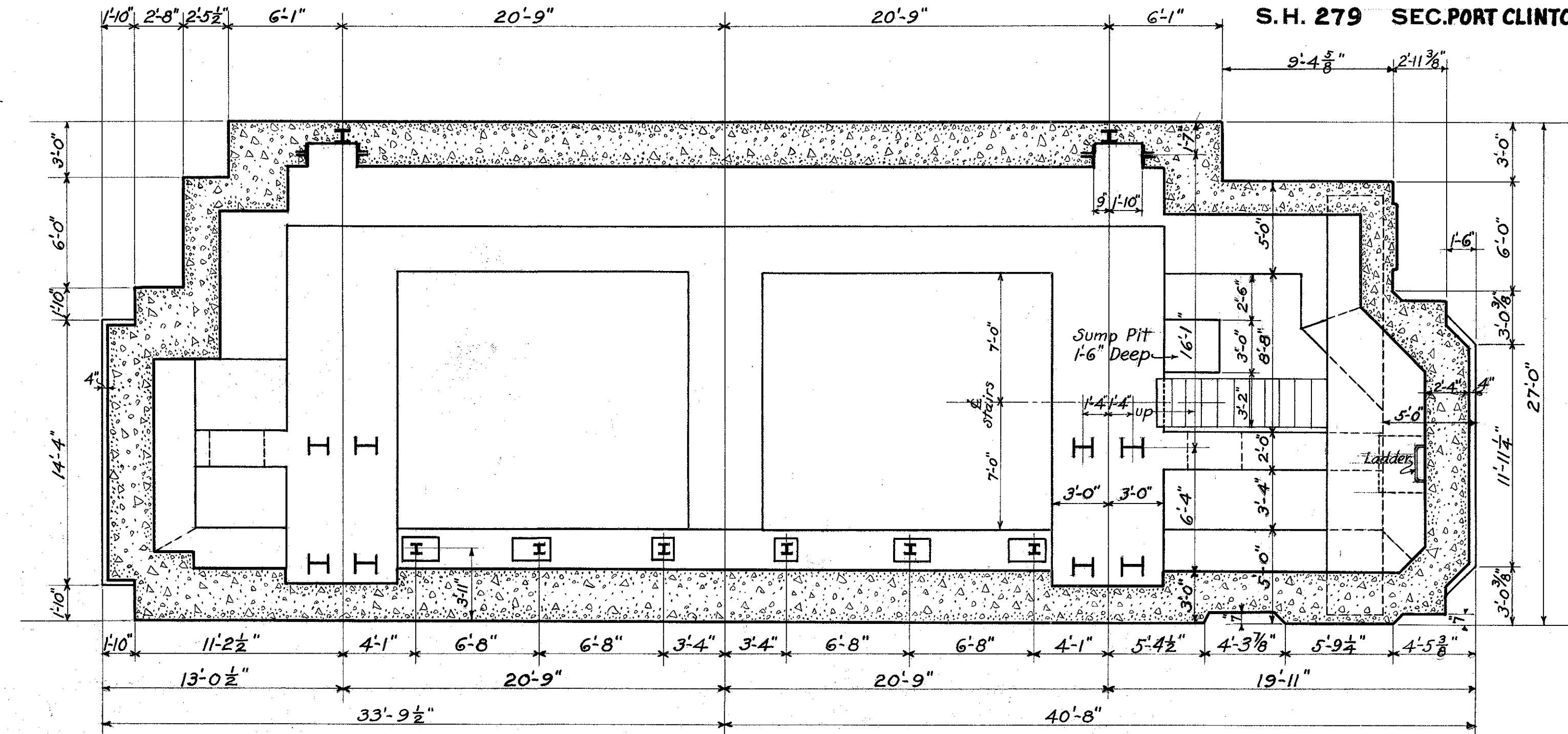
RD. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
0	OHIO	E-410-H	1932

-A  
3

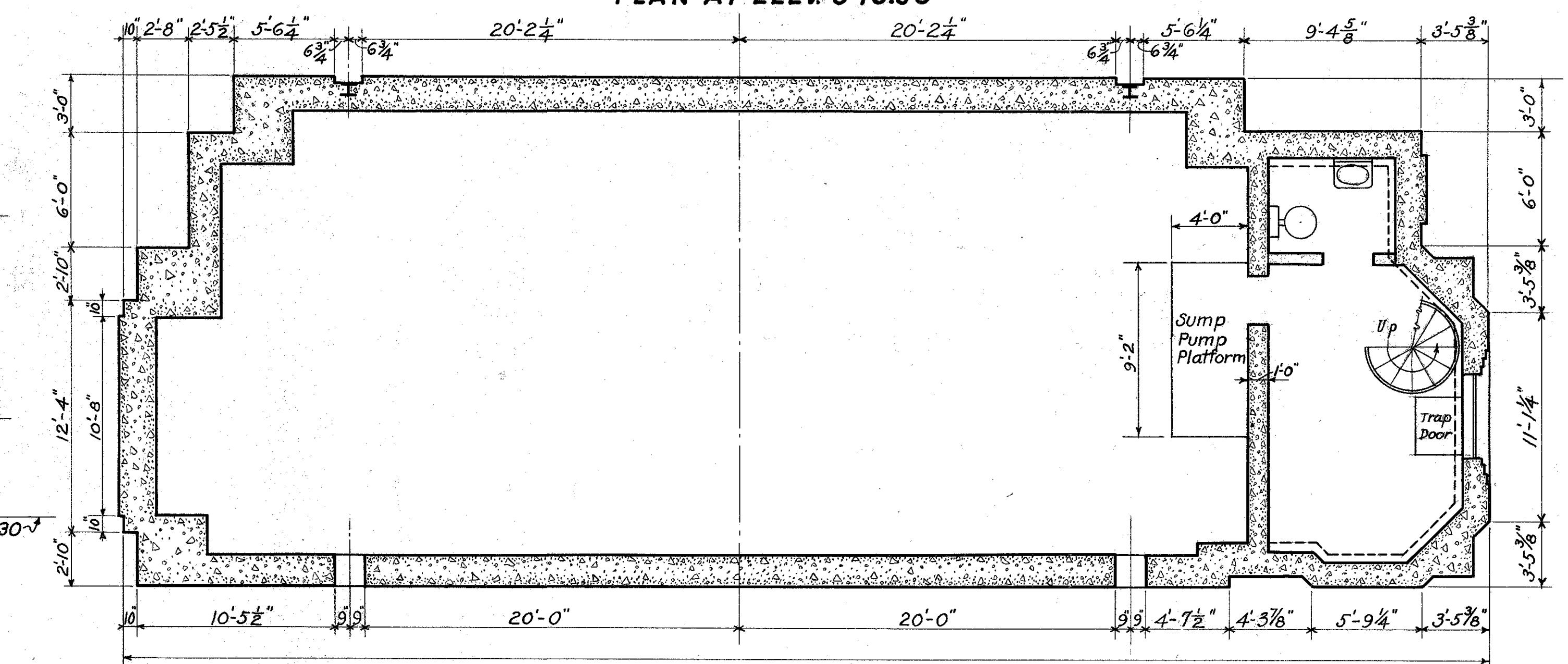
**TTAWA COUNTY  
L.H. 279 SEC.PORT CLINTON BR.**



**PLAN AT ELEV. 566.00**

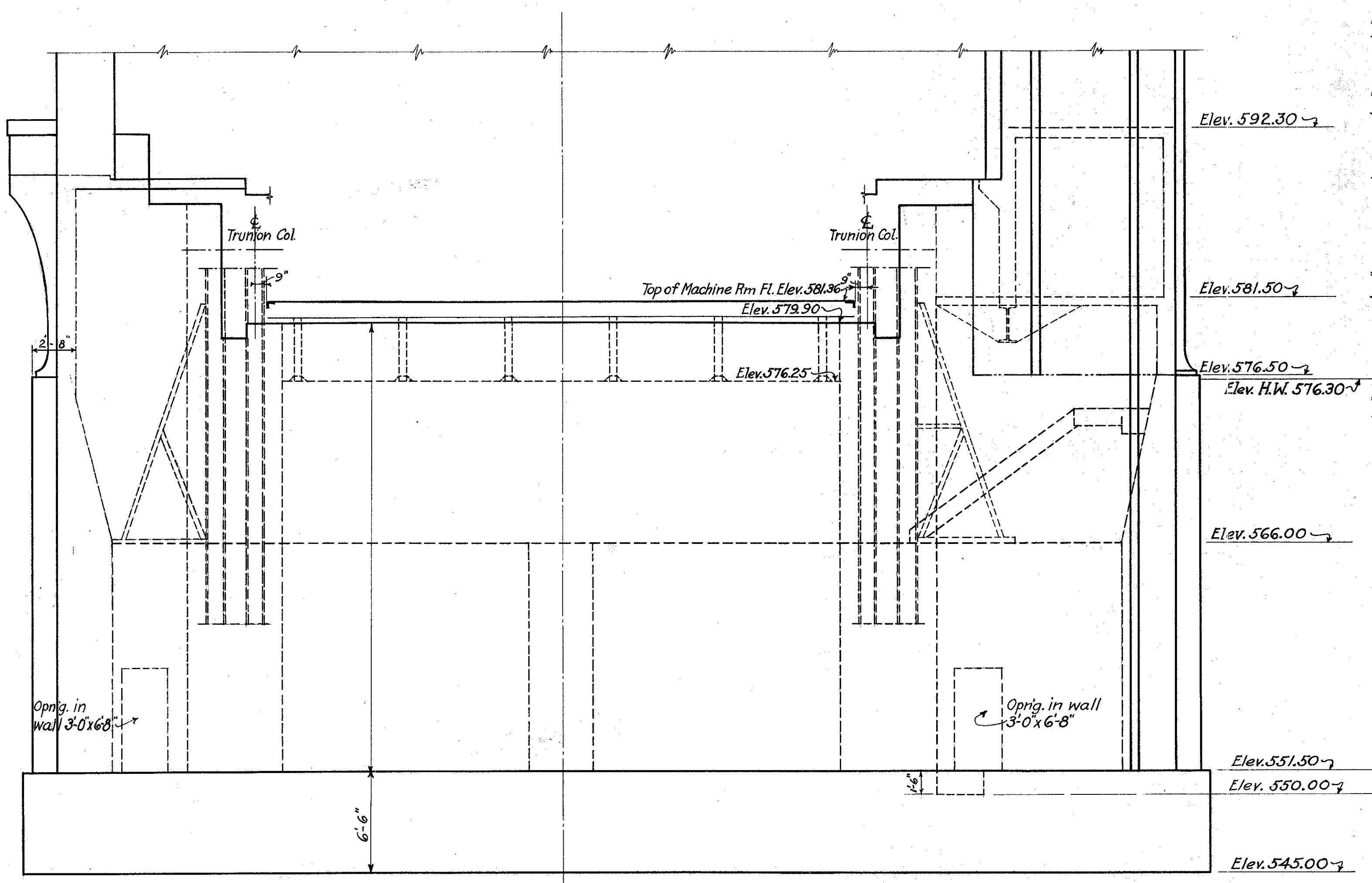


**PLAN AT ELEV. 576.50**



**PLAN AT ELEV. 581.50**

# **ADDITIONAL SHEET**



**ELEVATION ON "A-A**

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES



MICROFILMED  
JUN 24 1993

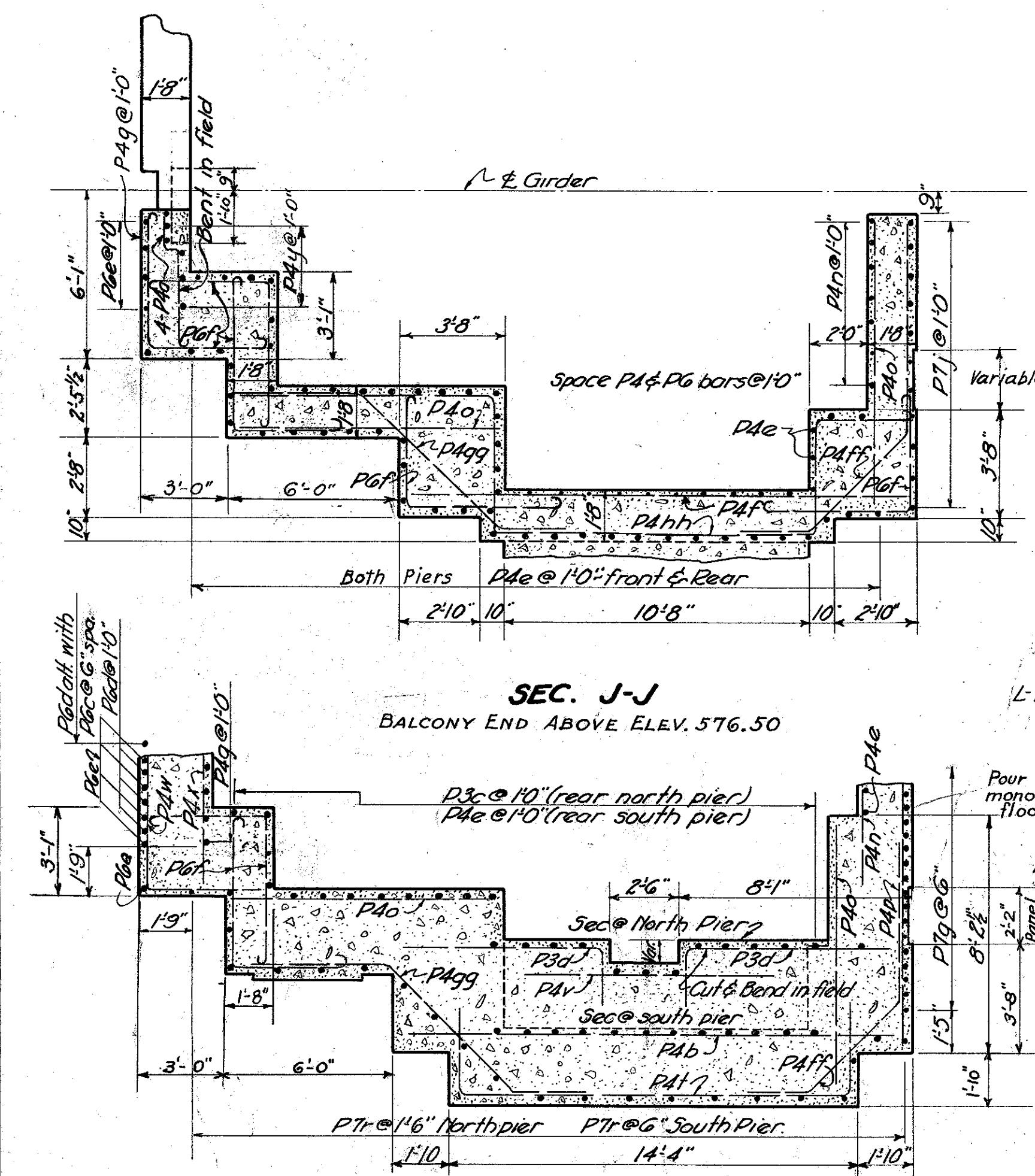
JUN 24 1993

**MICROFILMED**

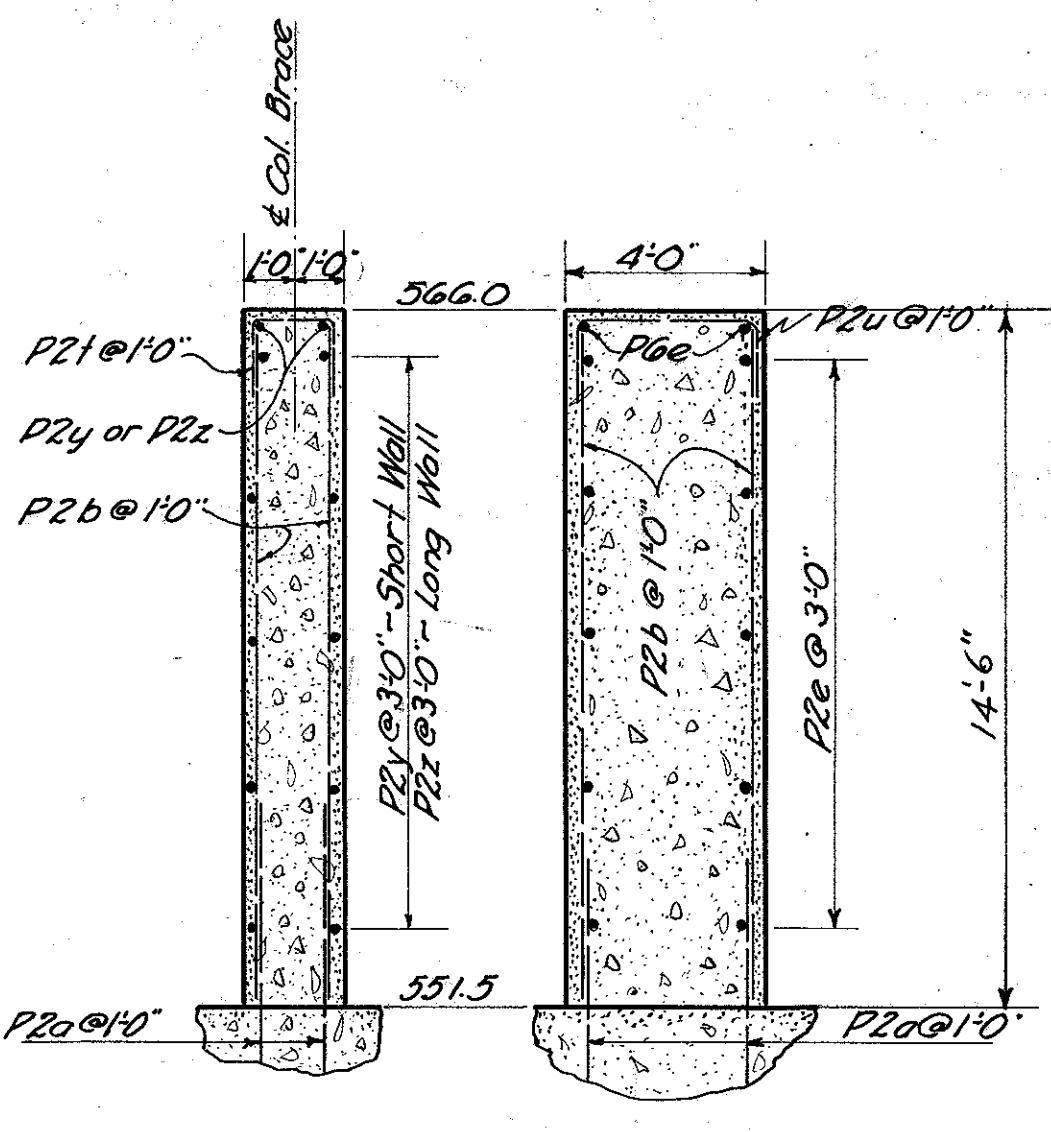
ED. RD. ST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	E-410-H	1932

3  
3

OTTAWA COUNTY  
L.H. 279 SEC. PORT CLINTON BR.

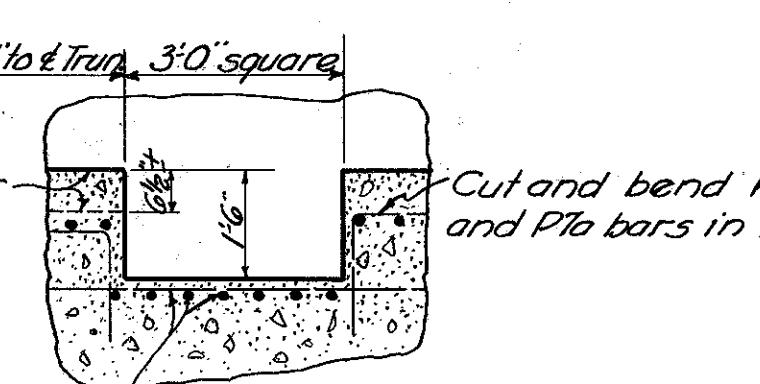


**SEC - I-I**  
**BALCONY END BELOW ELEV. 576.5**

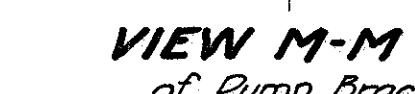


SEC. K-K

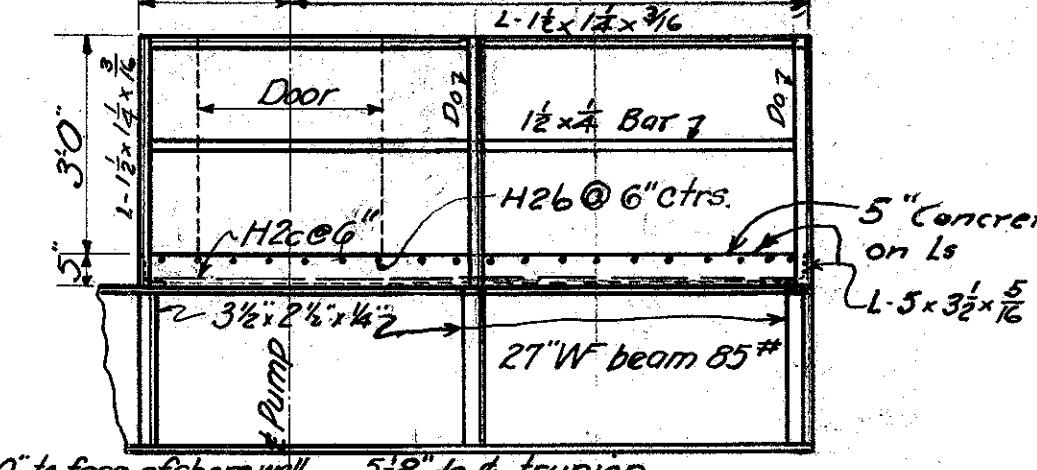
SEC. L-4



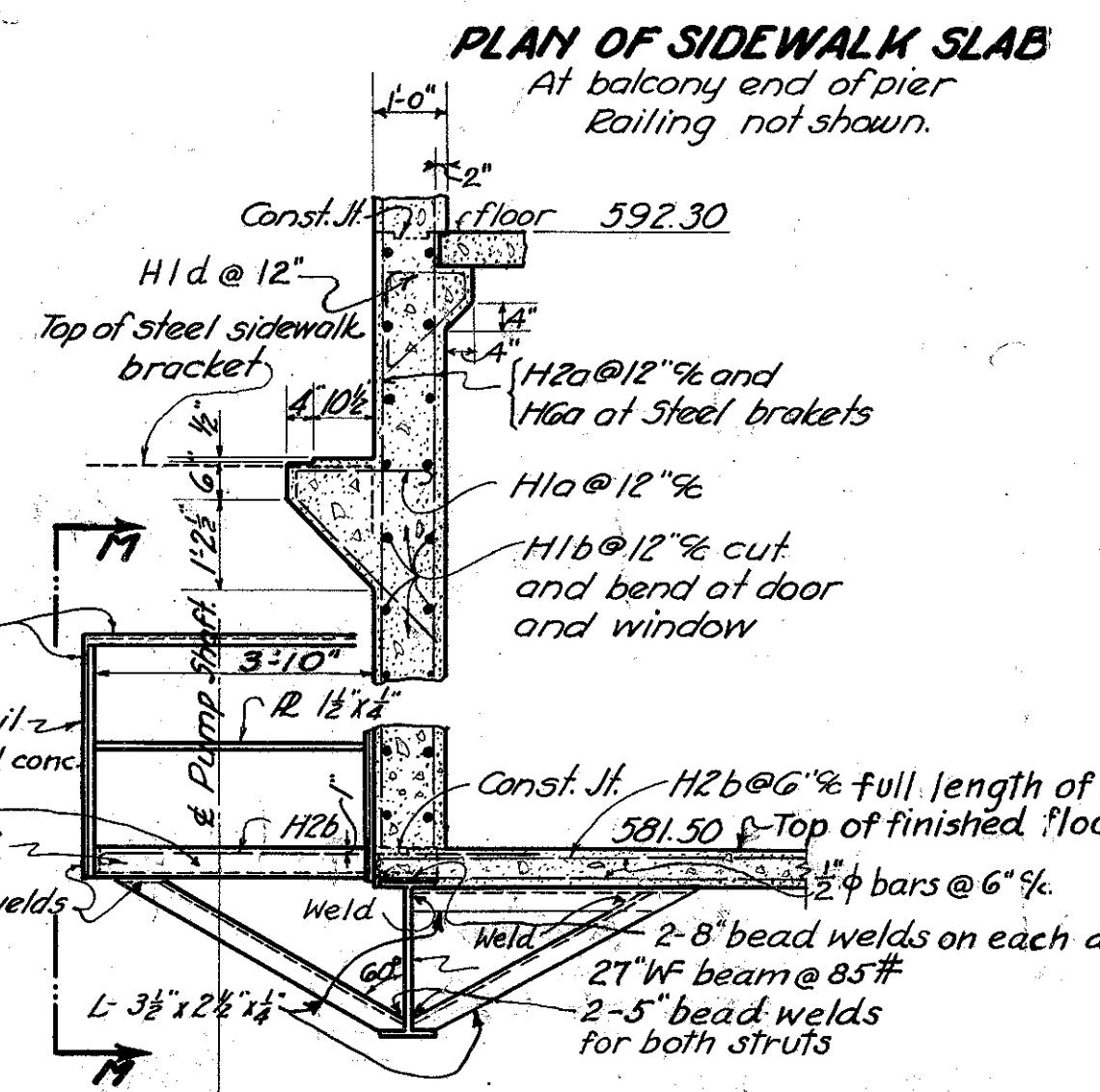
*DETAIL OF SUR*



**VIEW M-M**

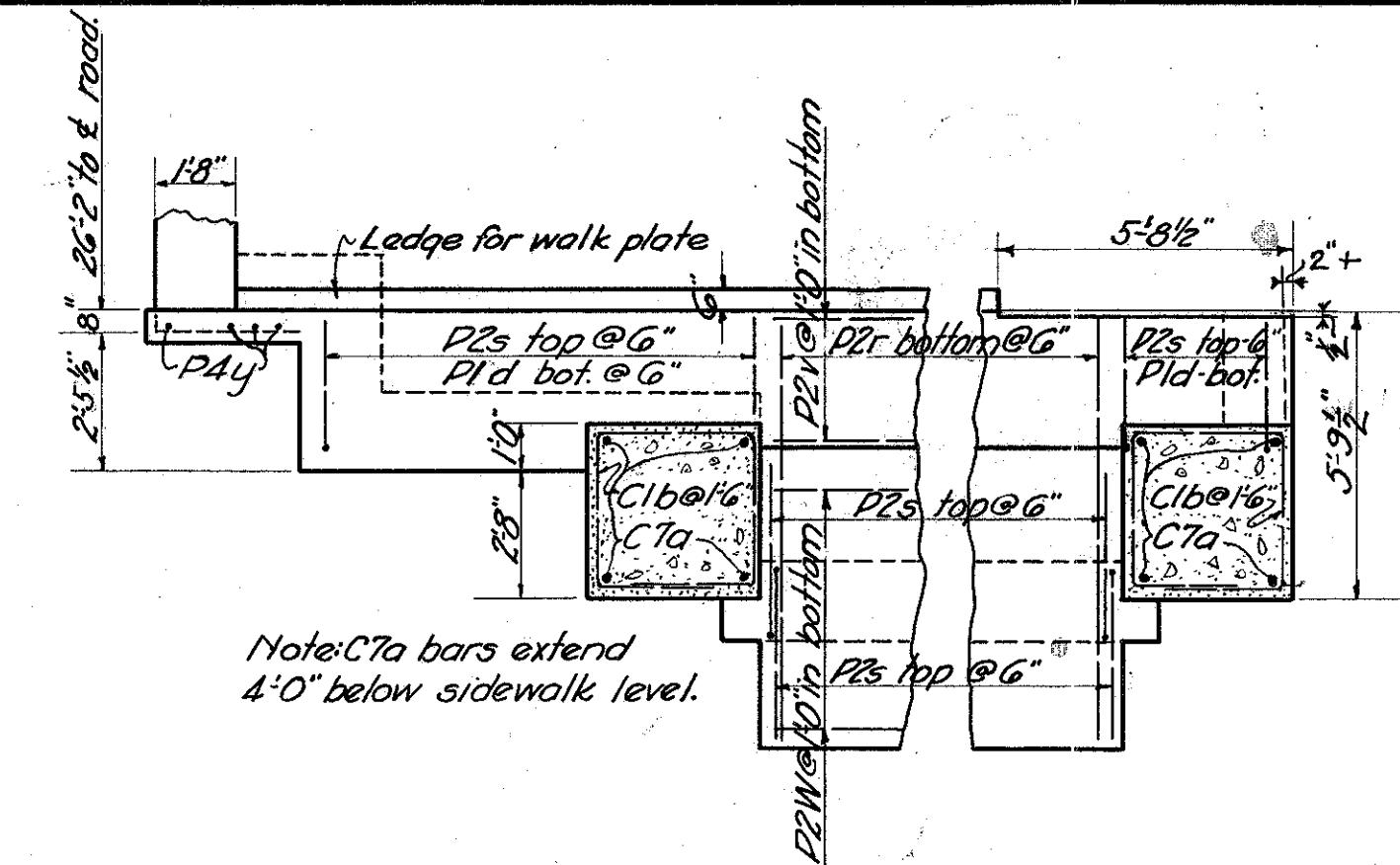


# **SECTION OF HOUSE WI Near Pump Platform.**

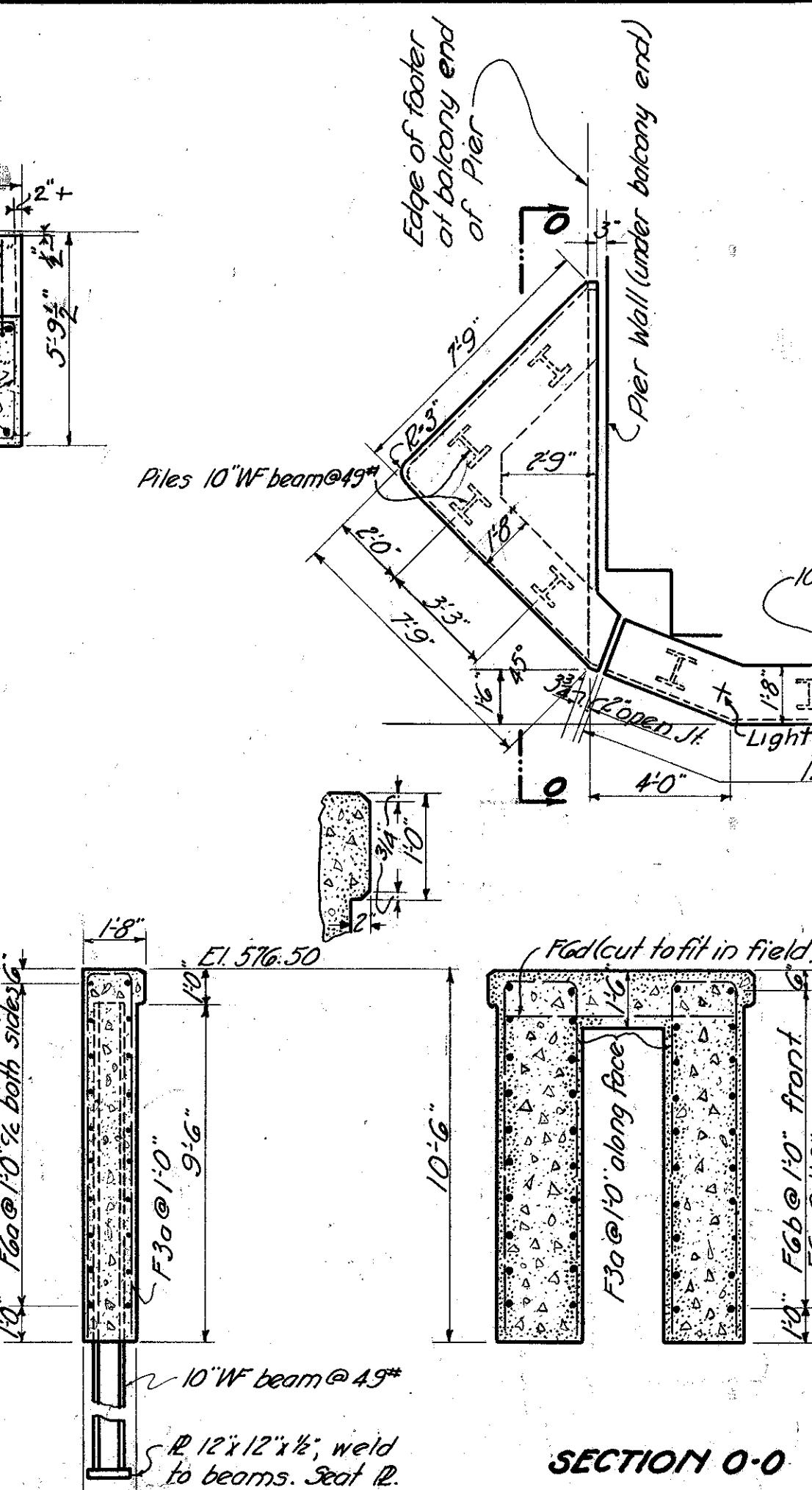


**PLAN OF SIDEWALK SL.**

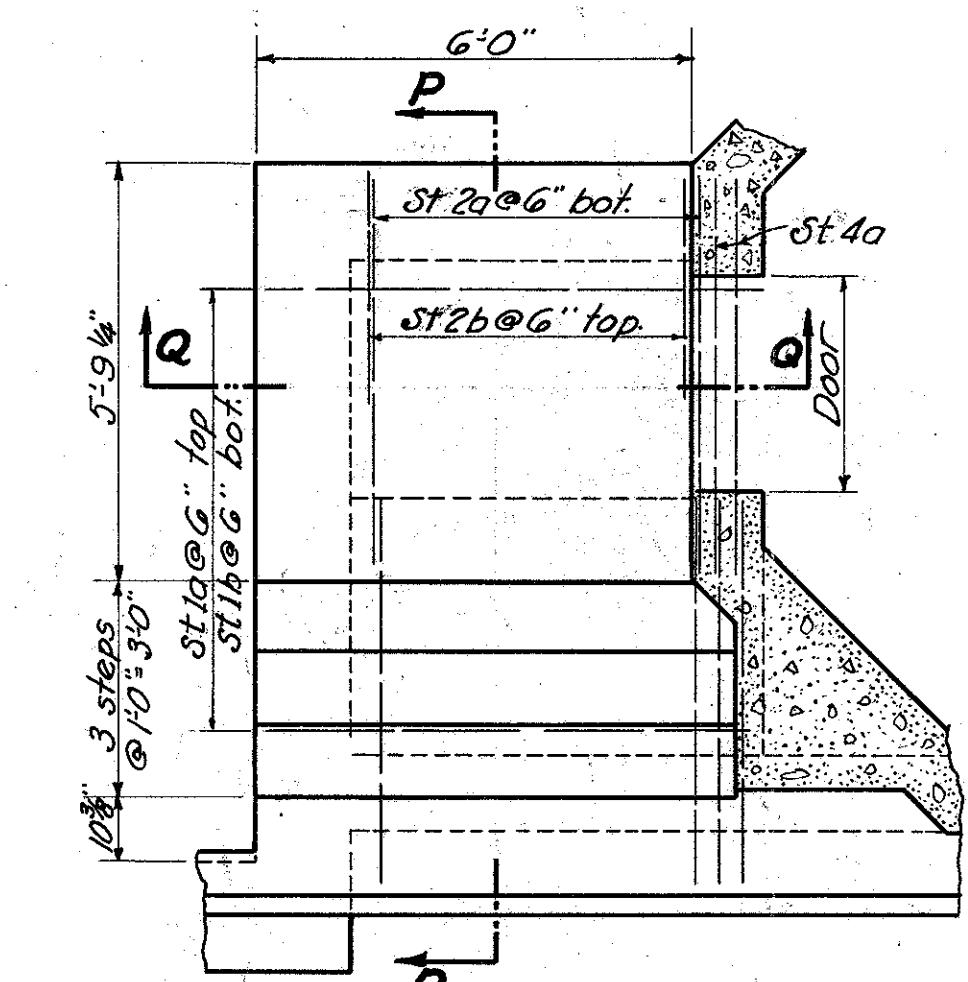
At balcony end of pier  
Railing not shown.



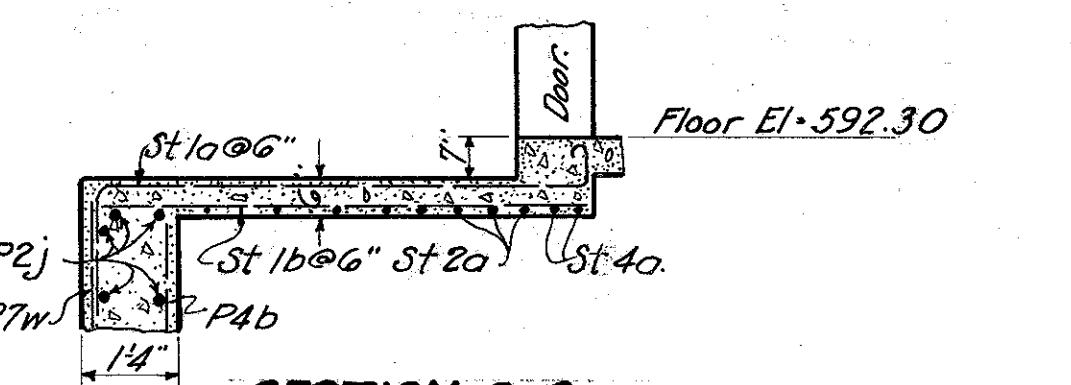
Note: C7a bars extend 4'-0" below sidewalk level



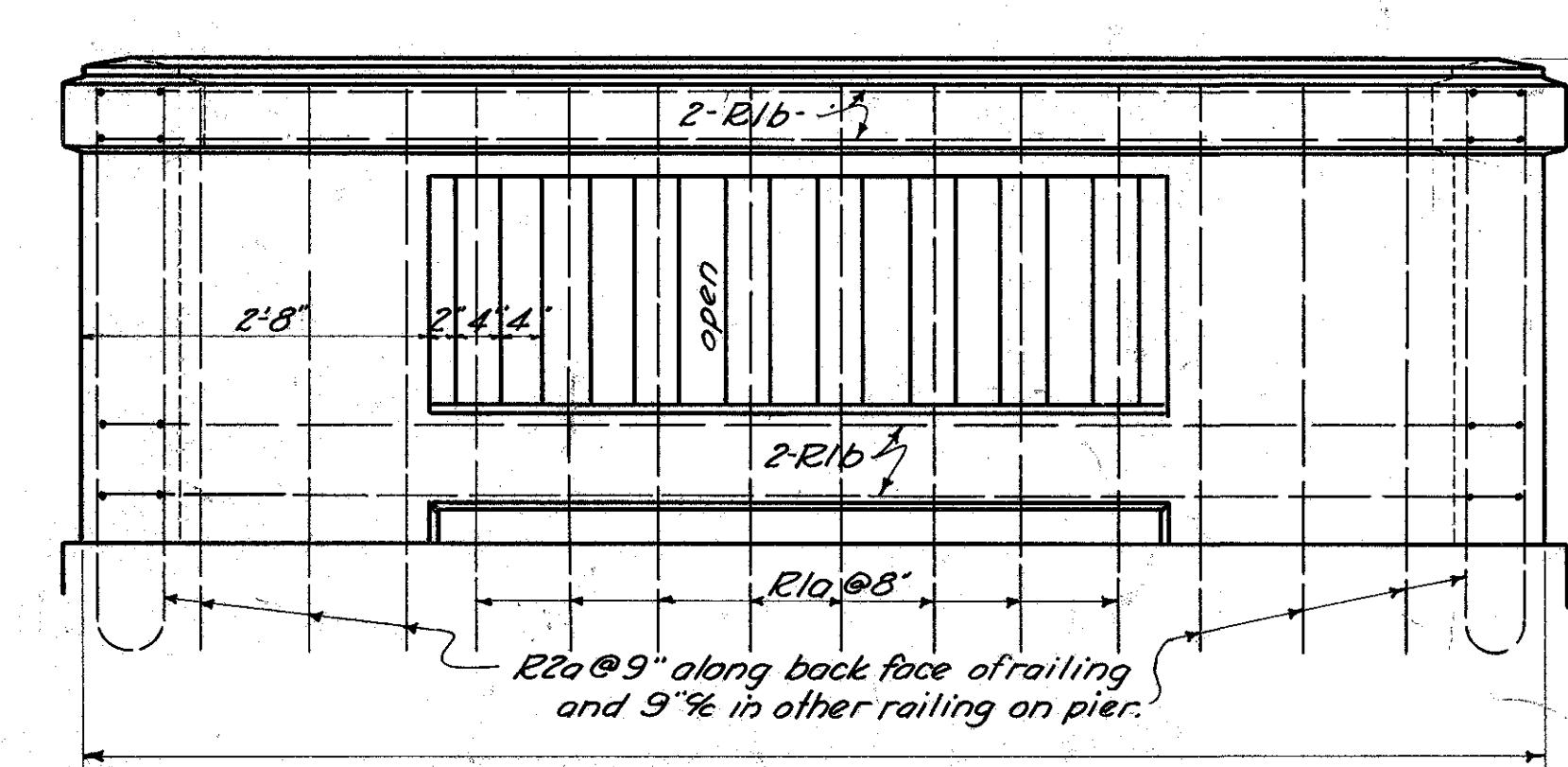
## **PLAN OF PIER FENDER**



**PLAN OF STEPS AT HOUSE**  
Railing not shown



## SECTION Q-Q



## **ELEVATION OF BALCONY RAIL**

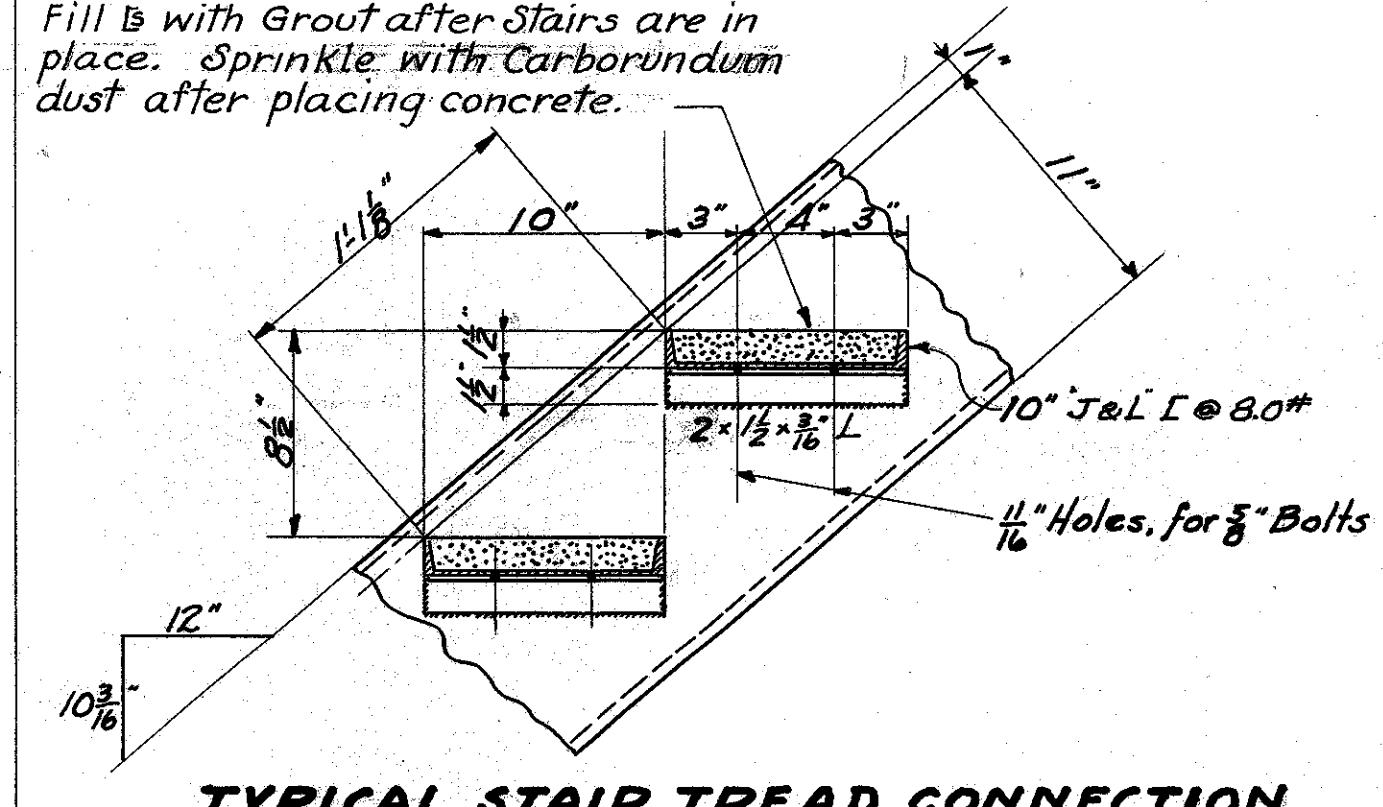
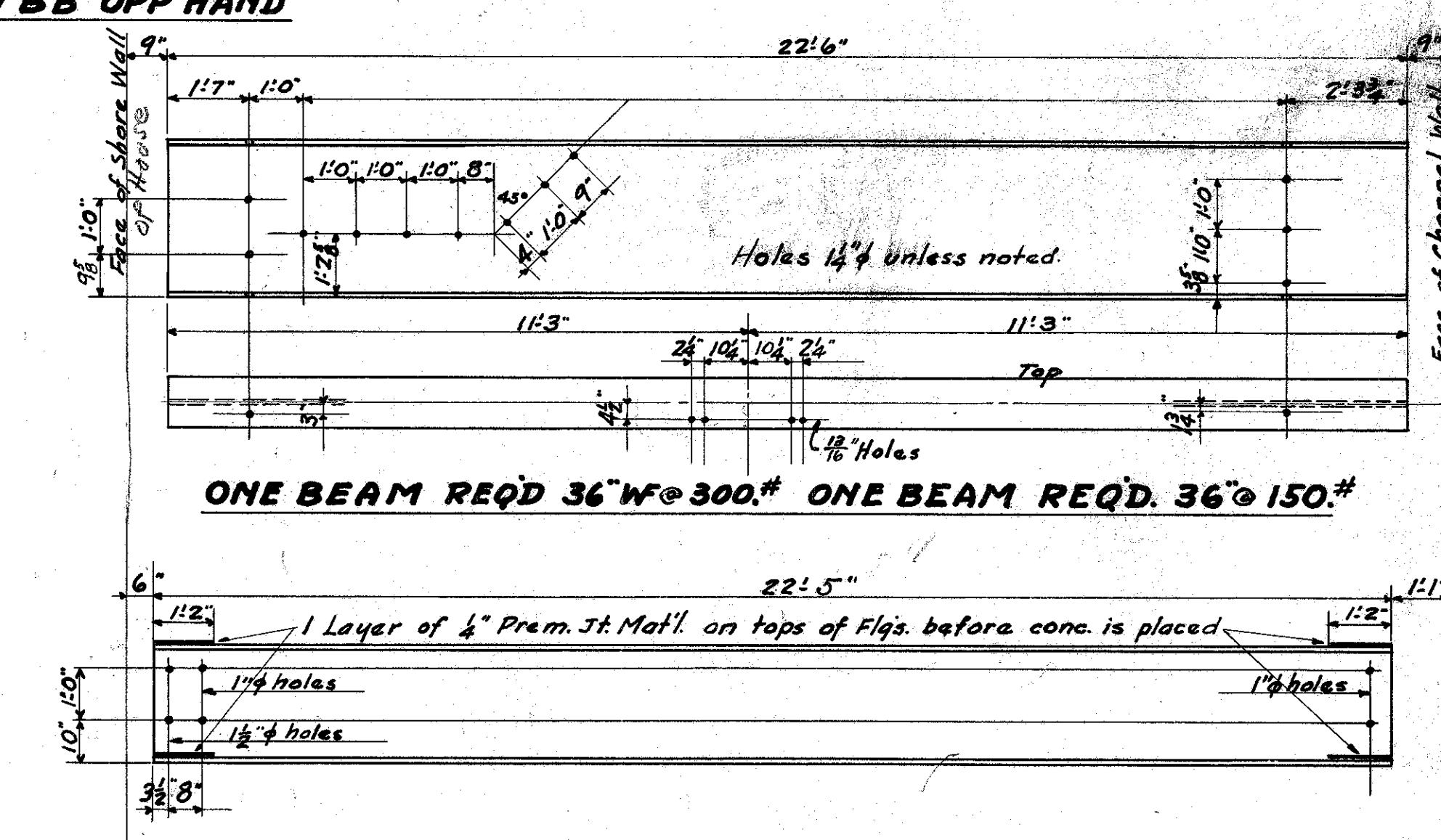
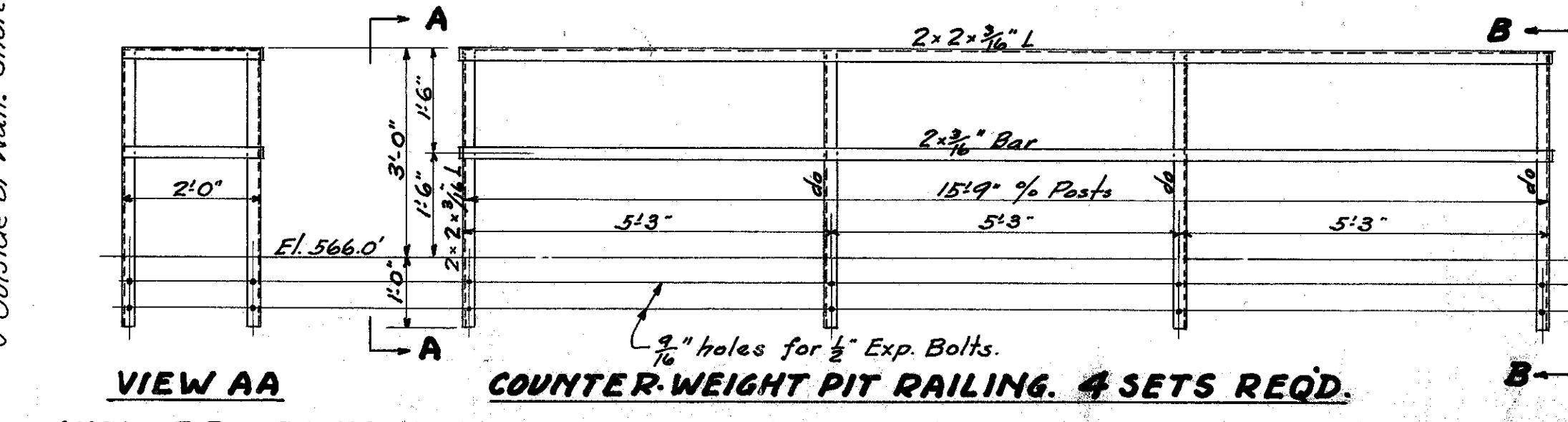
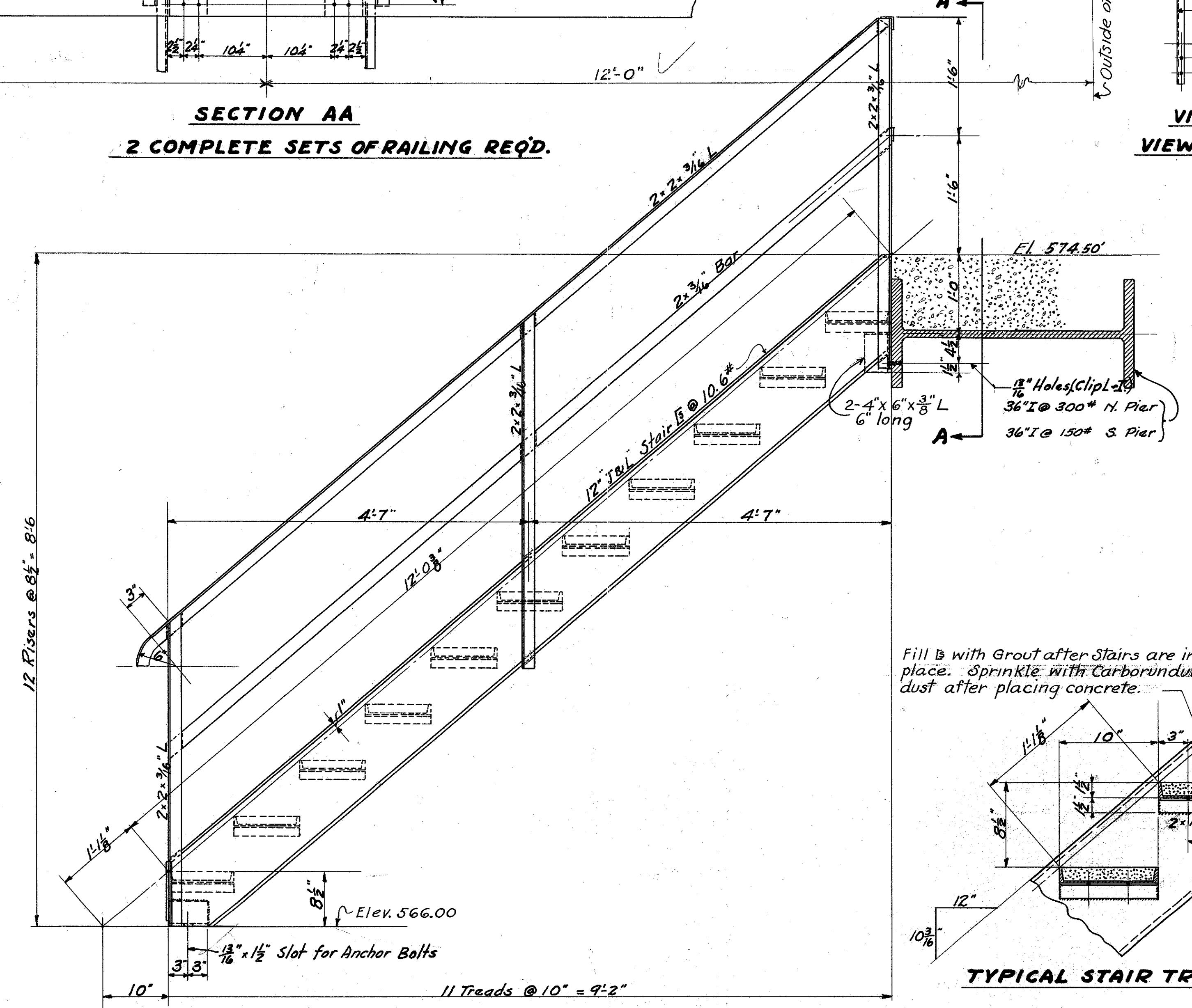
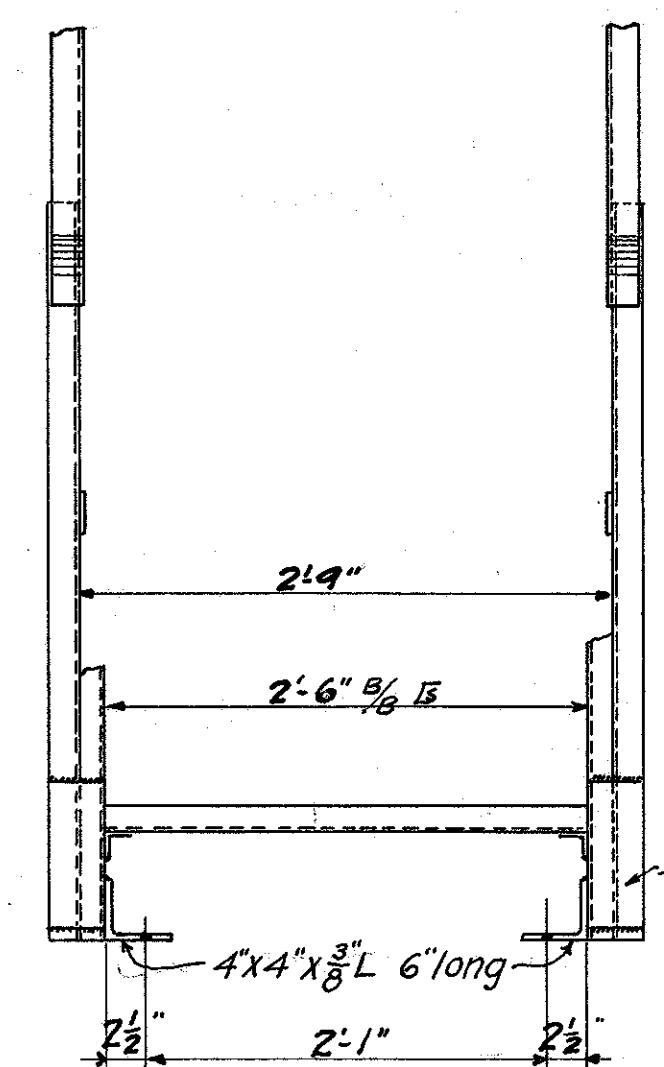
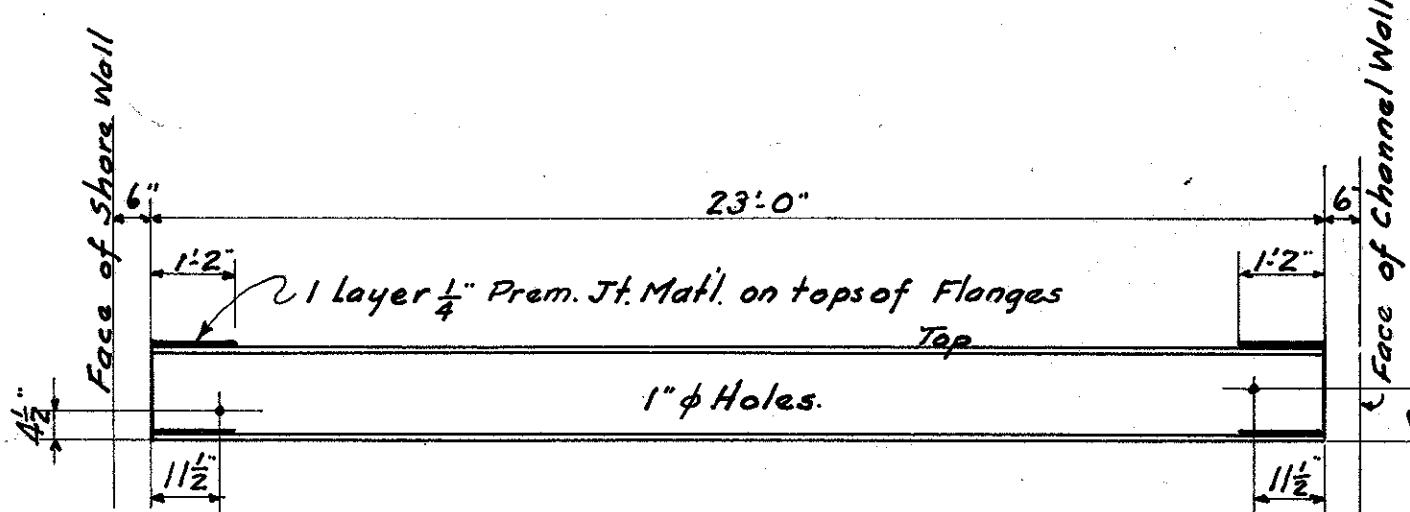
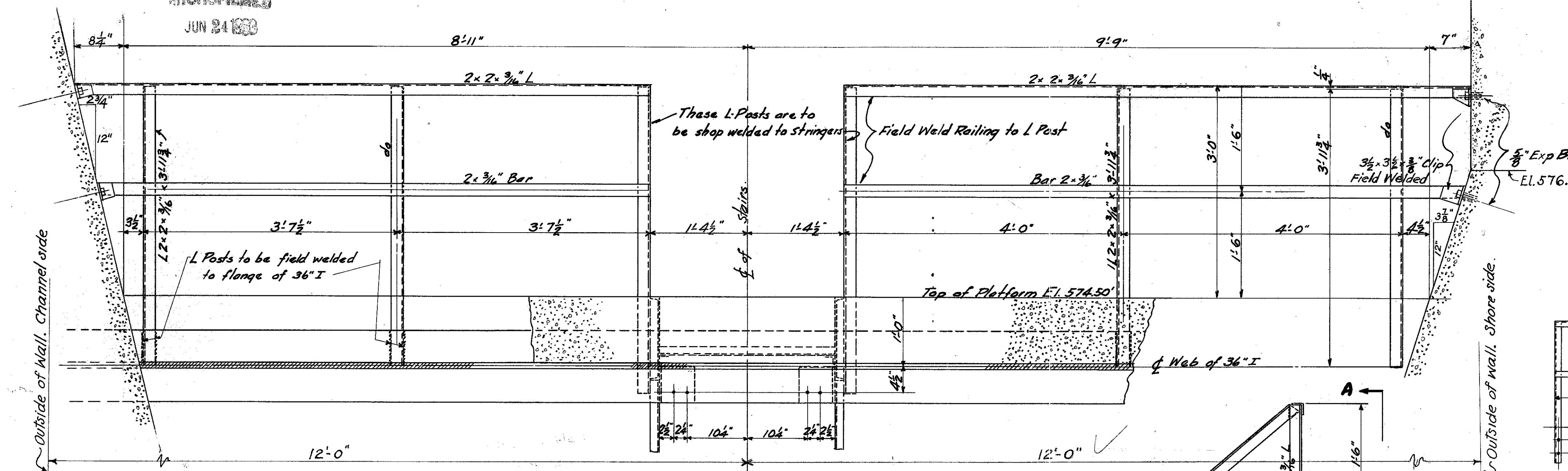
Cut & bend R1b bars in field to fit various rail.

**SECTION OF PIER RAIL**  
*Spindles on balcony only*

MICHAEL

JUN 24 1933

8' 11"

2x2x $\frac{3}{16}$ " L

Note: All connections for stairs and railing shall be electric welded unless otherwise shown or noted.

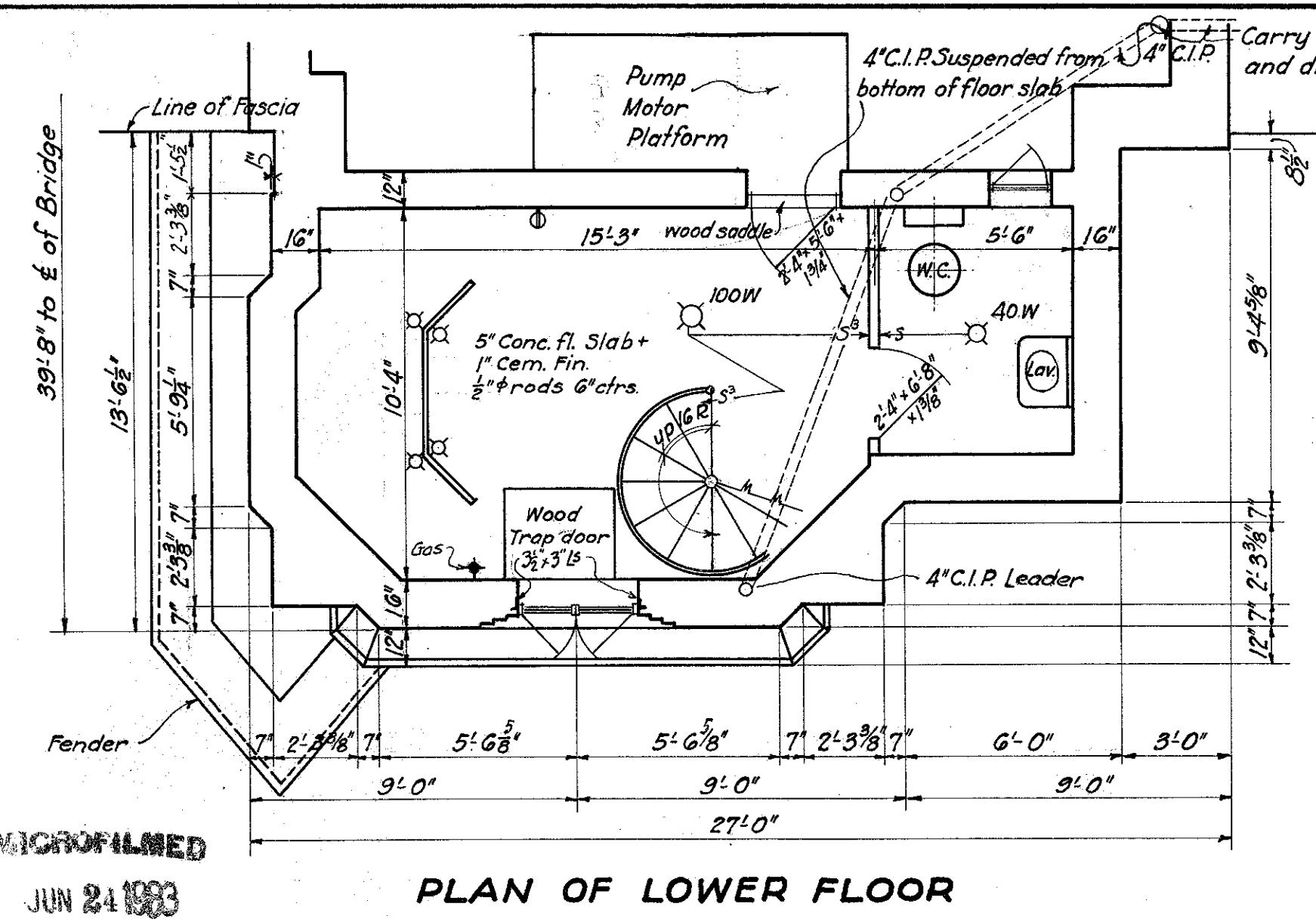
DETAIL OF STAIRS, RAILING & BEAMS					
BRIDGE NO 07-2-208					
OVER PORTAGE RIVER					
S.H. 279 OTAWA COUNTY					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
10/29/32	10/29/32	10/29/32	10/29/32	10/29/32	10/29/32
W.H.R. 10/29/32					

FED. RD.  
DIST. NO. STATE FED. AID  
PROJECT FISCAL  
YEAR

10 OHIO E-410-H 1932

24  
33

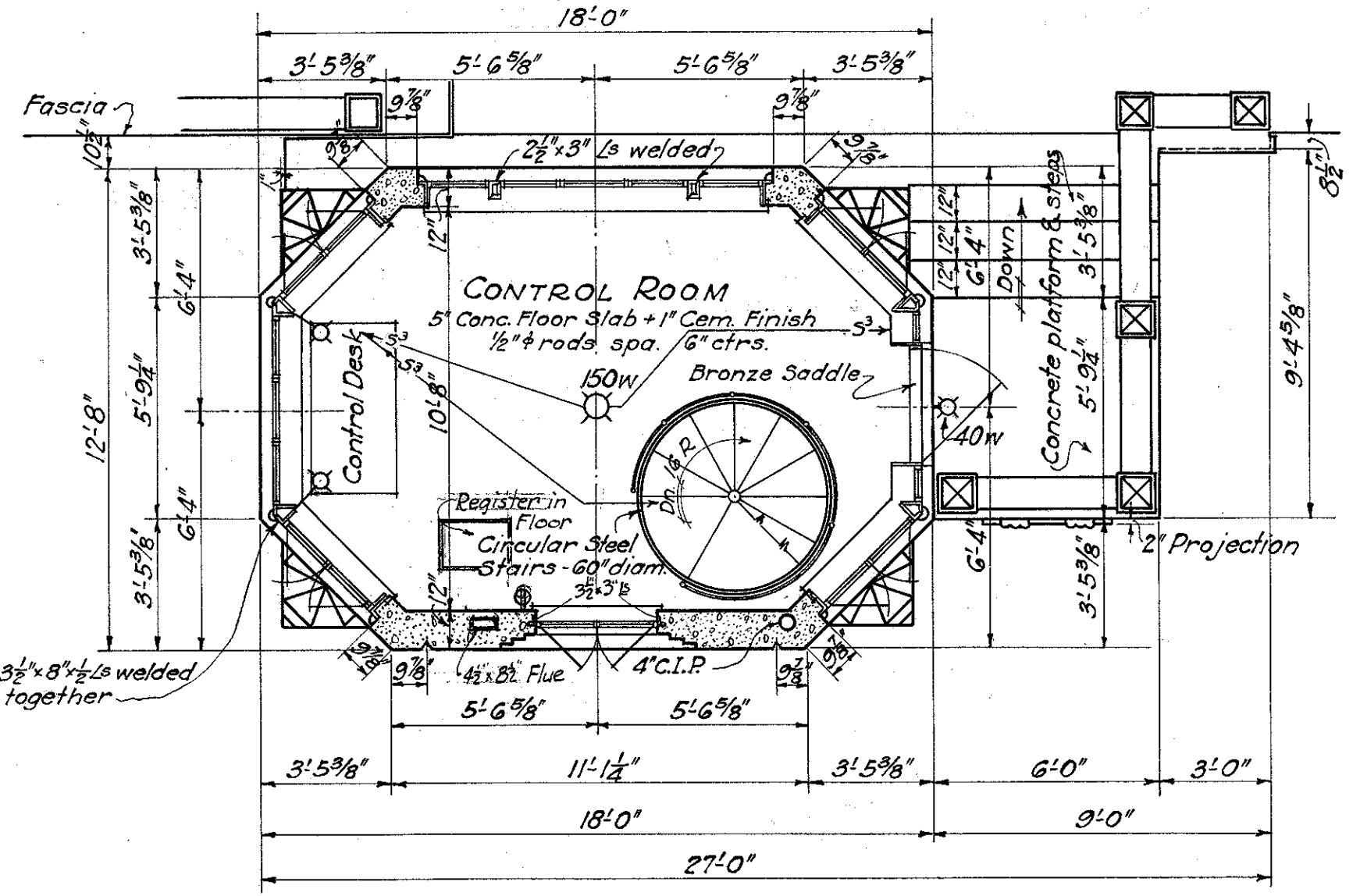
OTTAWA COUNTY  
S.H. 279 SEC. "PORT CLINTON"  
BR'



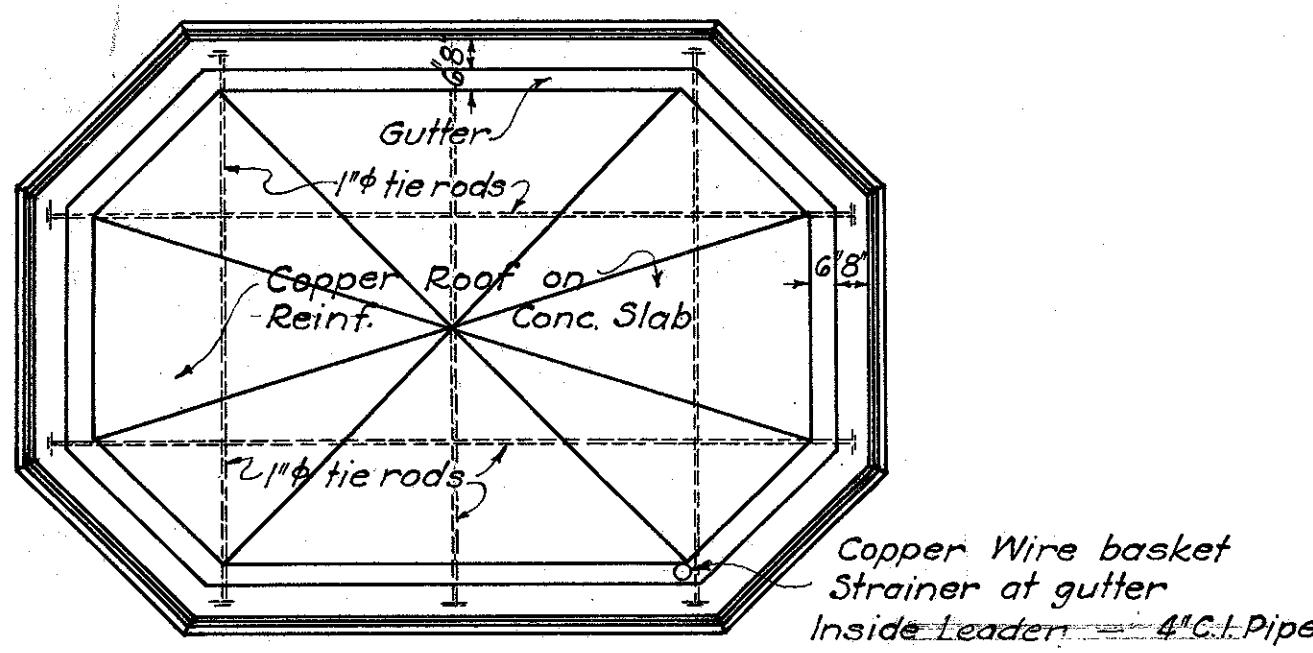
## **PLAN OF LOWER FLOOR**

**DICOFOLINE**

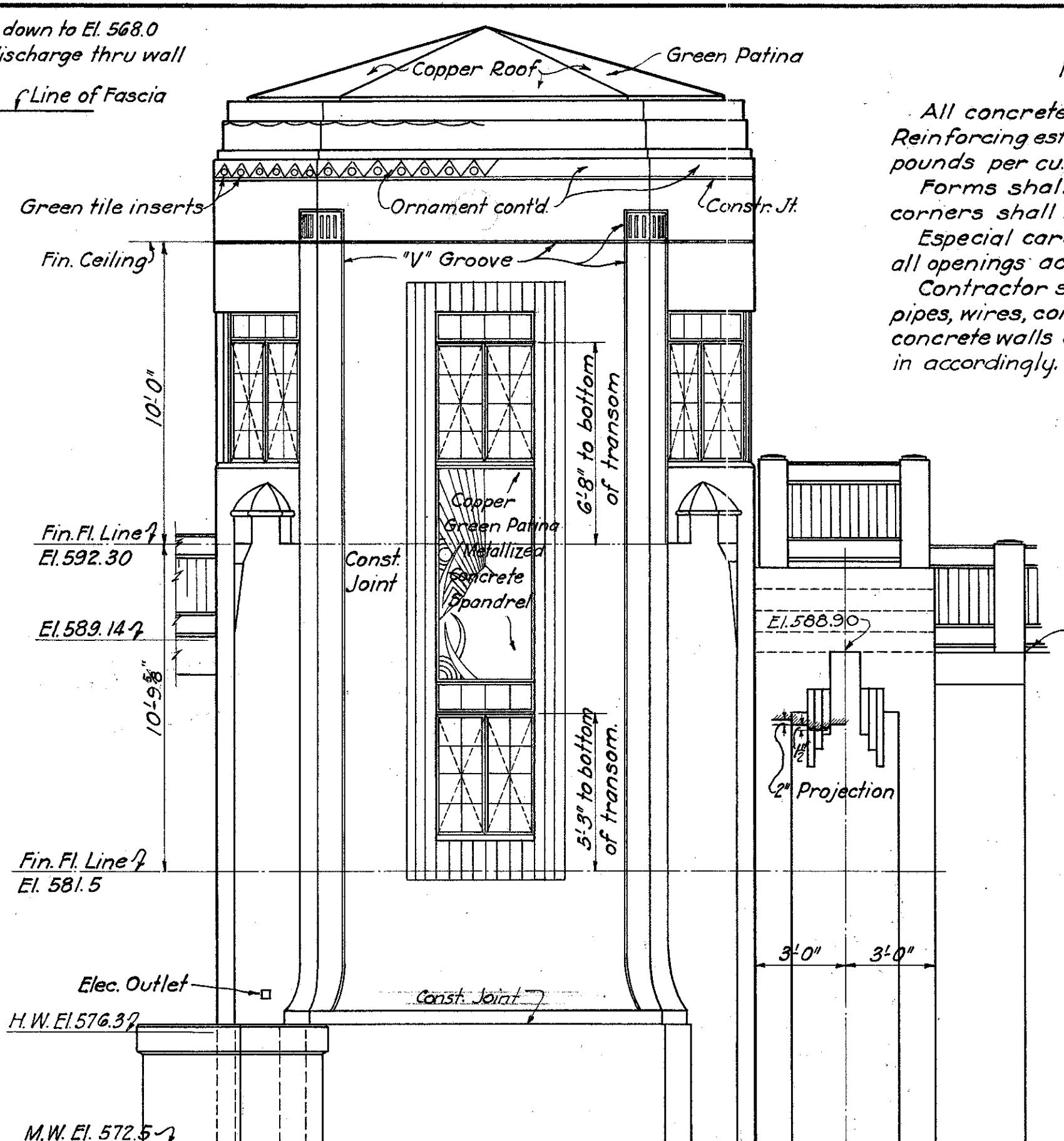
JUN 24 1993



## **PLAN OF UPPER FLOOR**

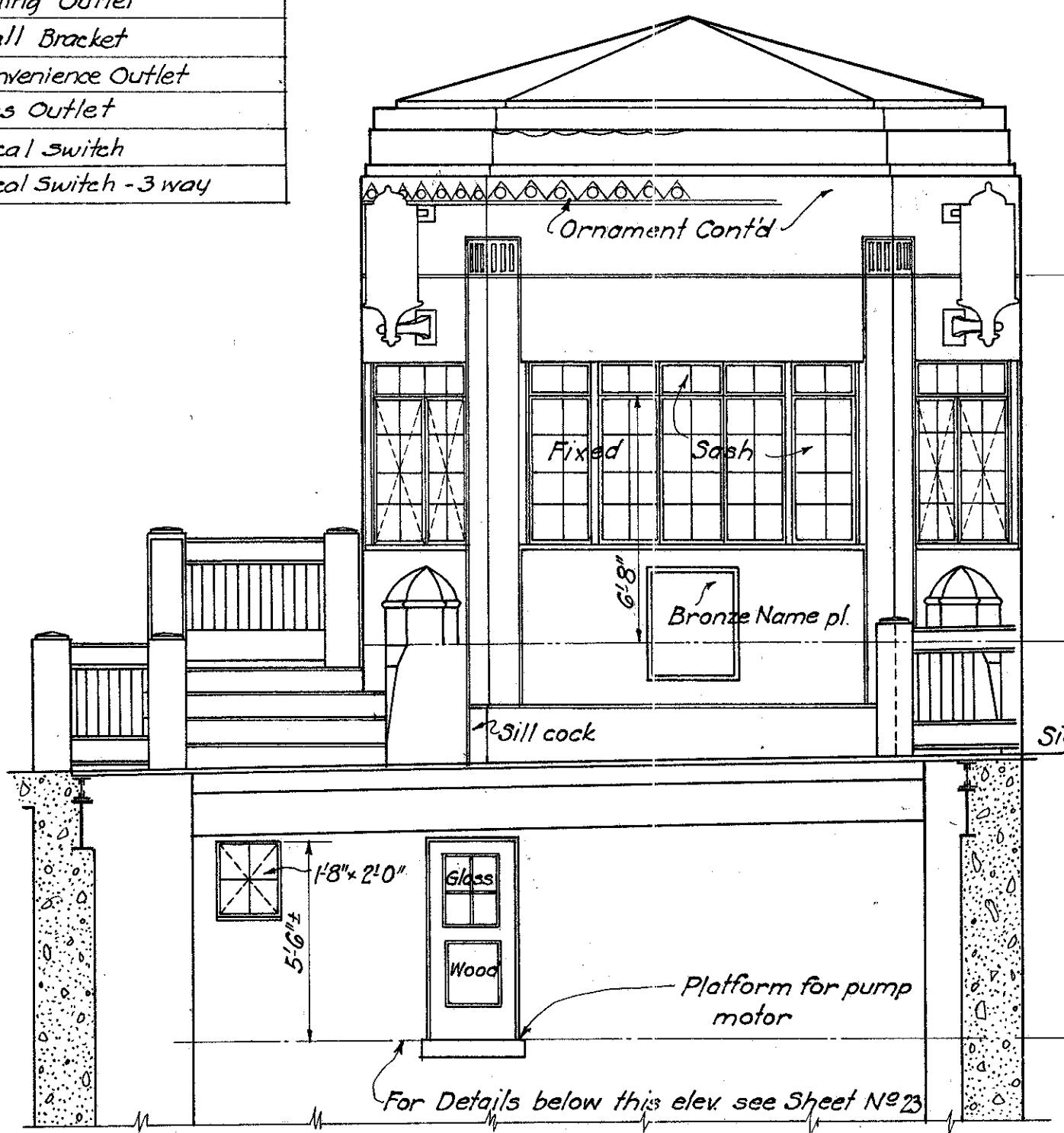


## **ROOF PLAN**

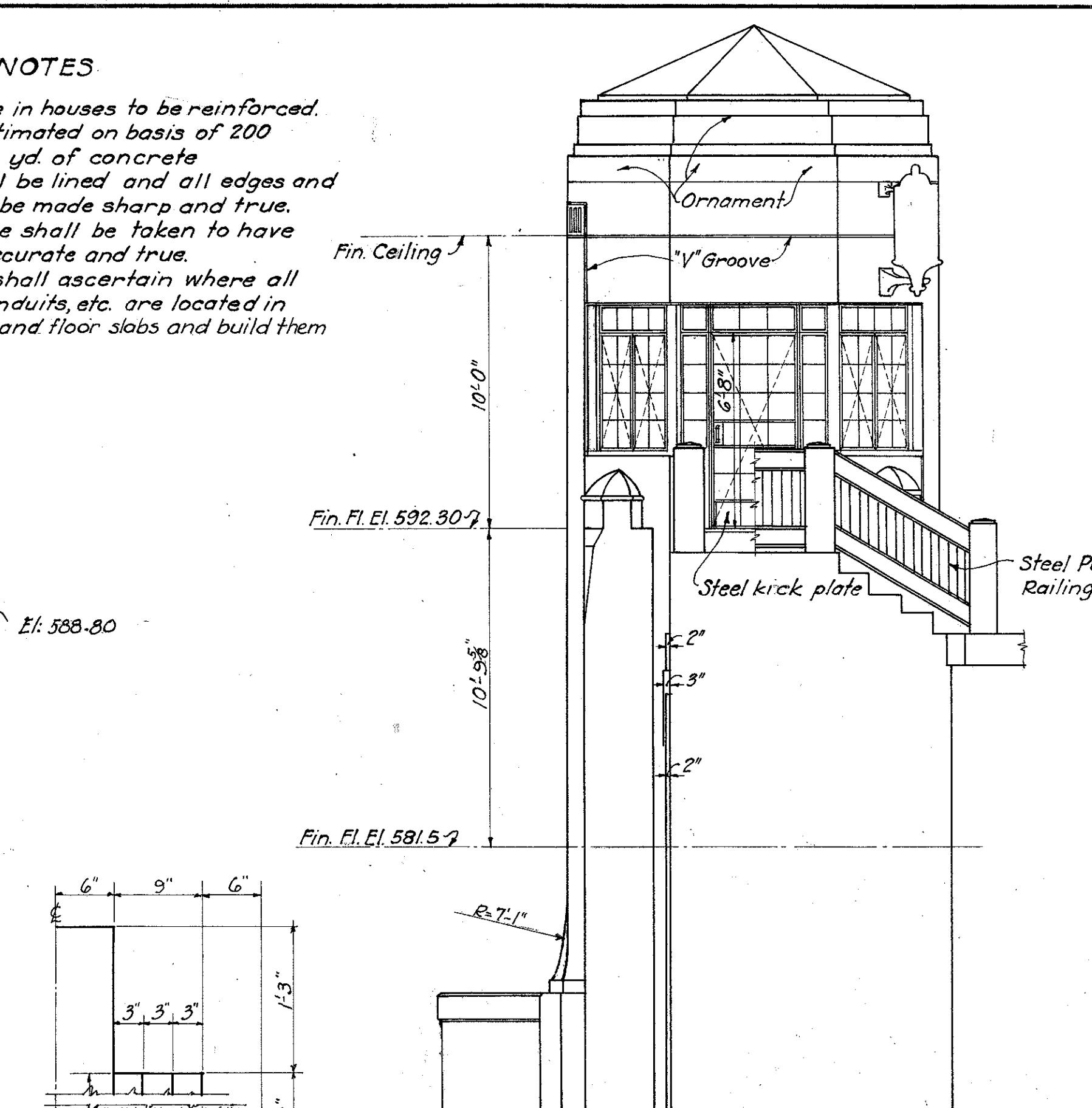


## **EAST ELEVATION**

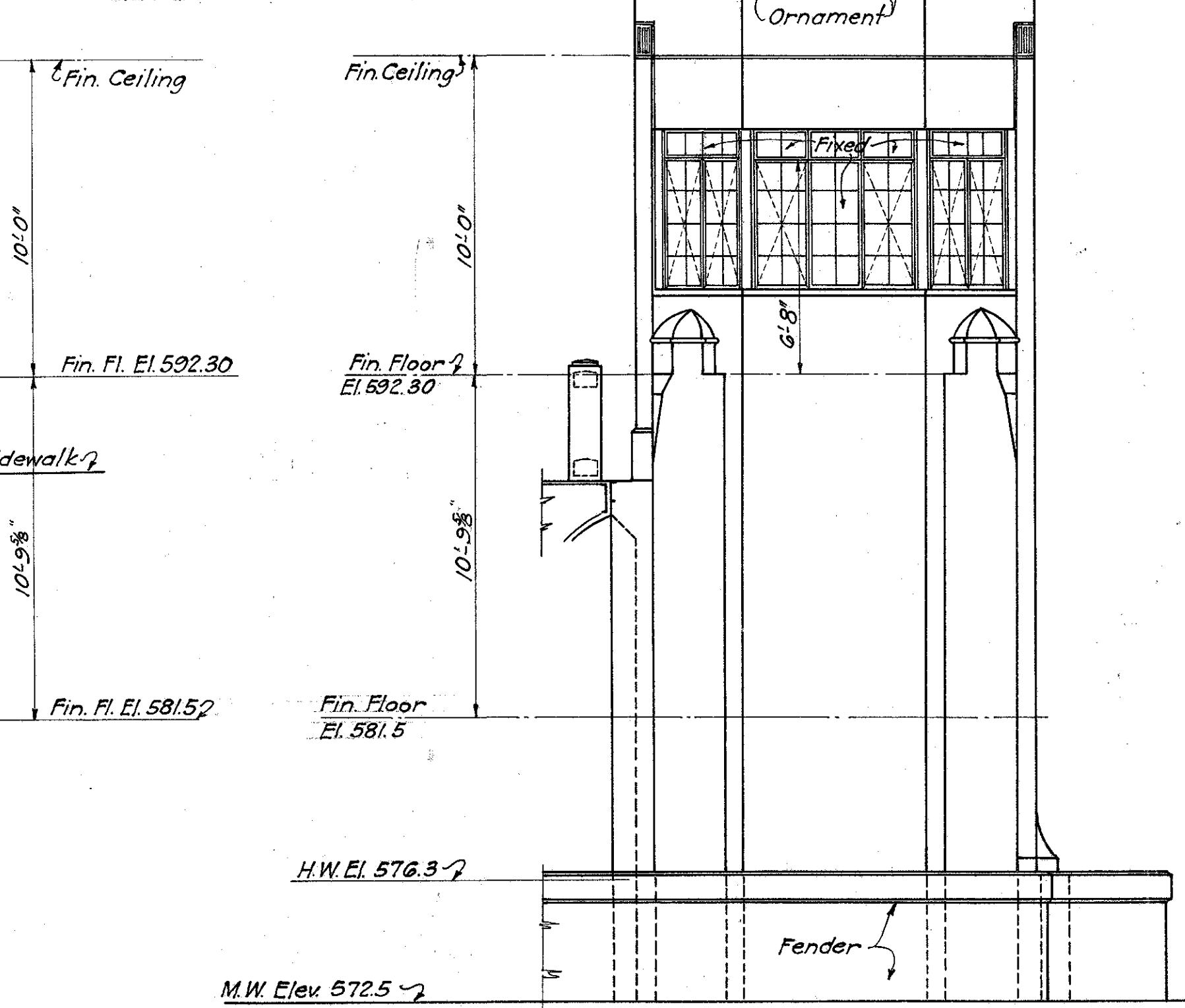
SYMBOLS USED ON FLOOR PLANS	
	Ceiling Outlet
	Wall Bracket
	Convenience Outlet
	Gas Outlet
	Local switch
	Local Switch - 3 way



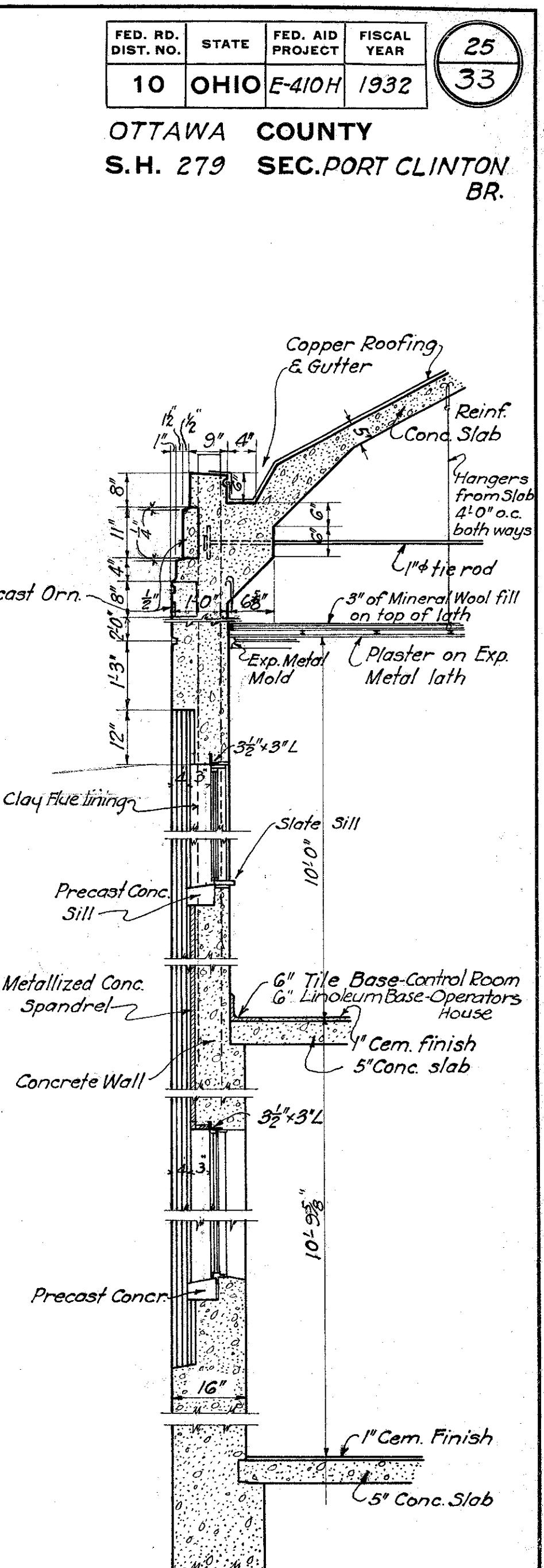
## **WEST ELEVATION**



**NORTH ELEVATION**



**SOUTH ELEVATION**

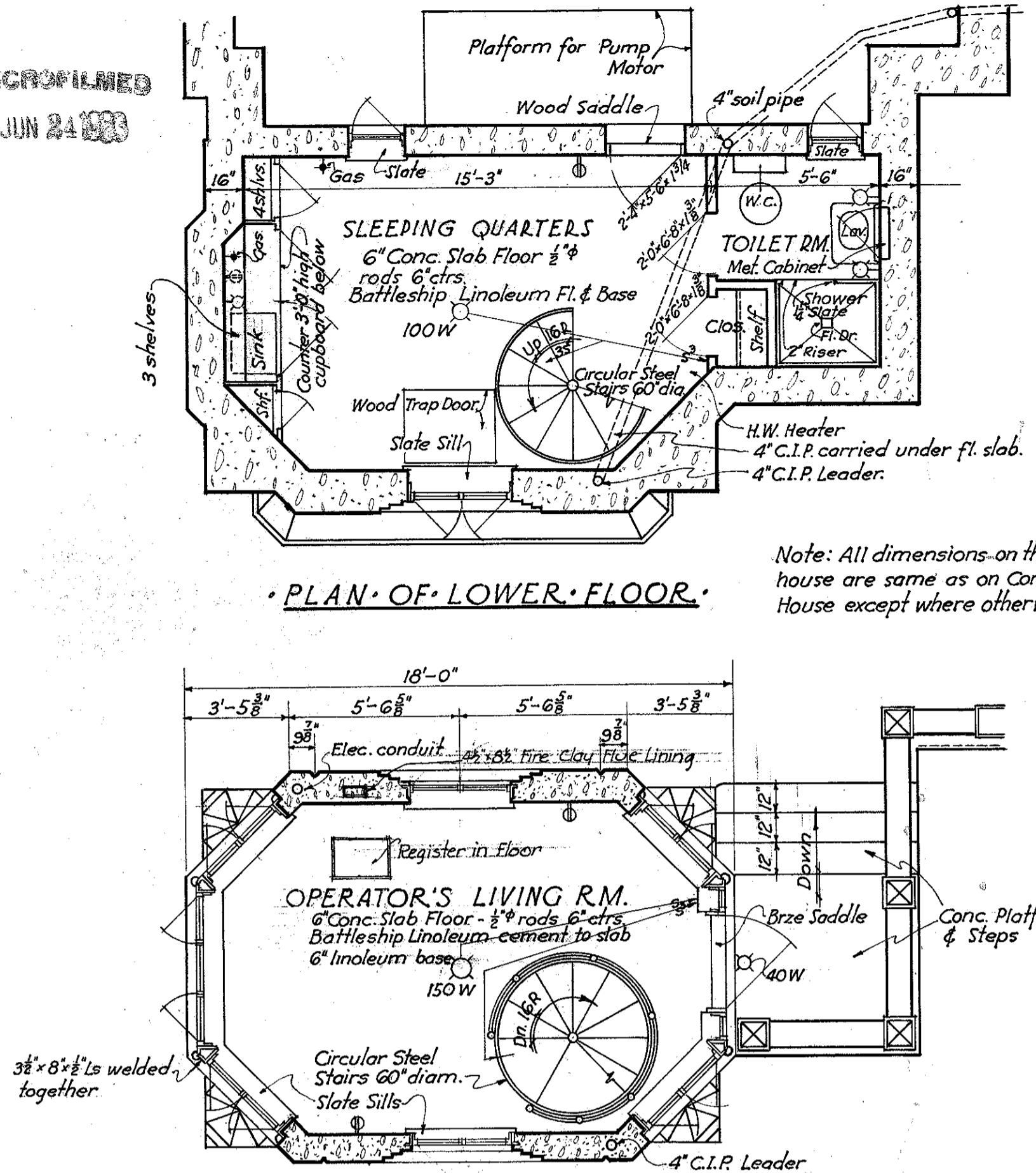


## **WALL SECTION**

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

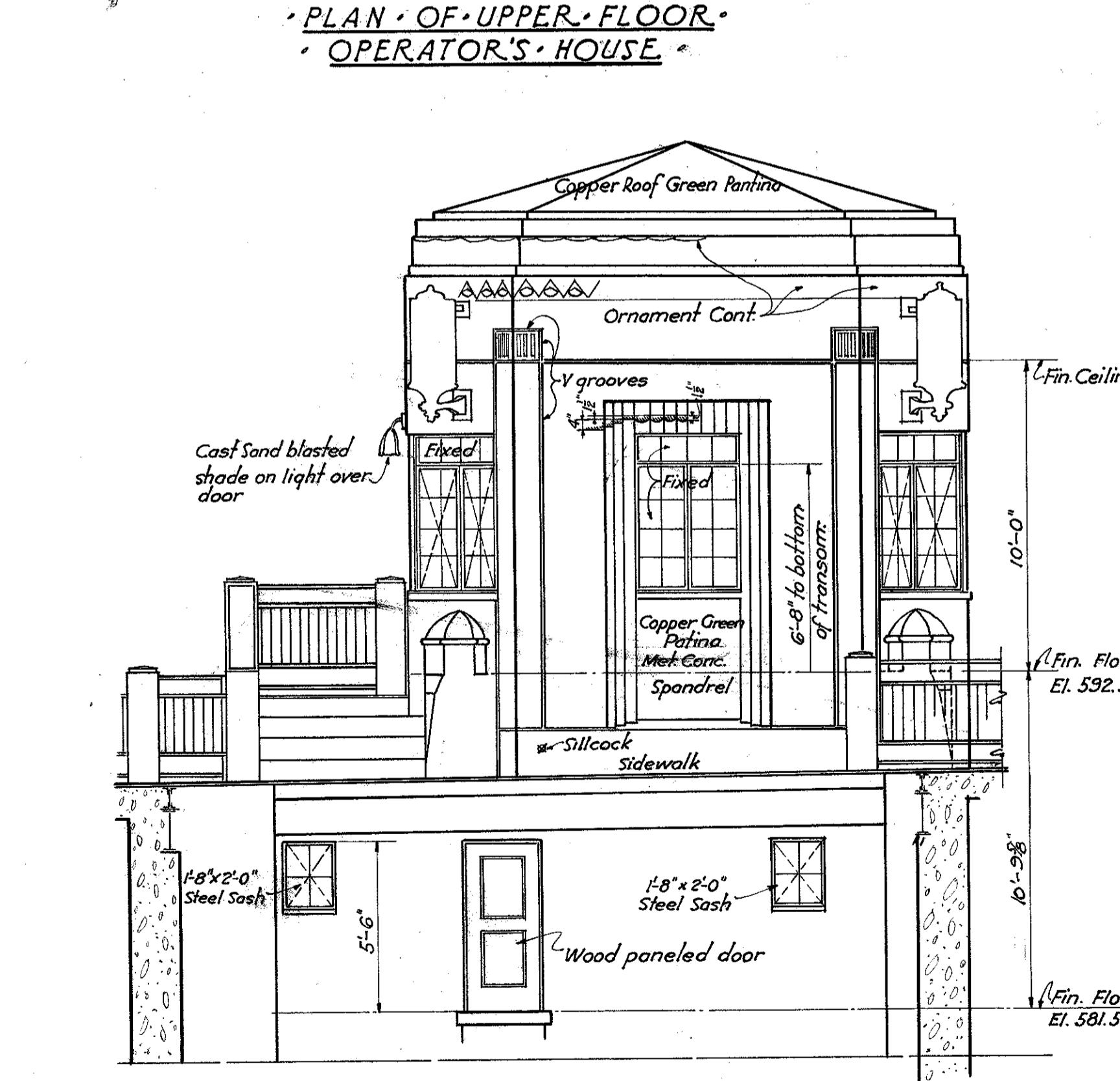
MICROFILMED

JUN 24 1968



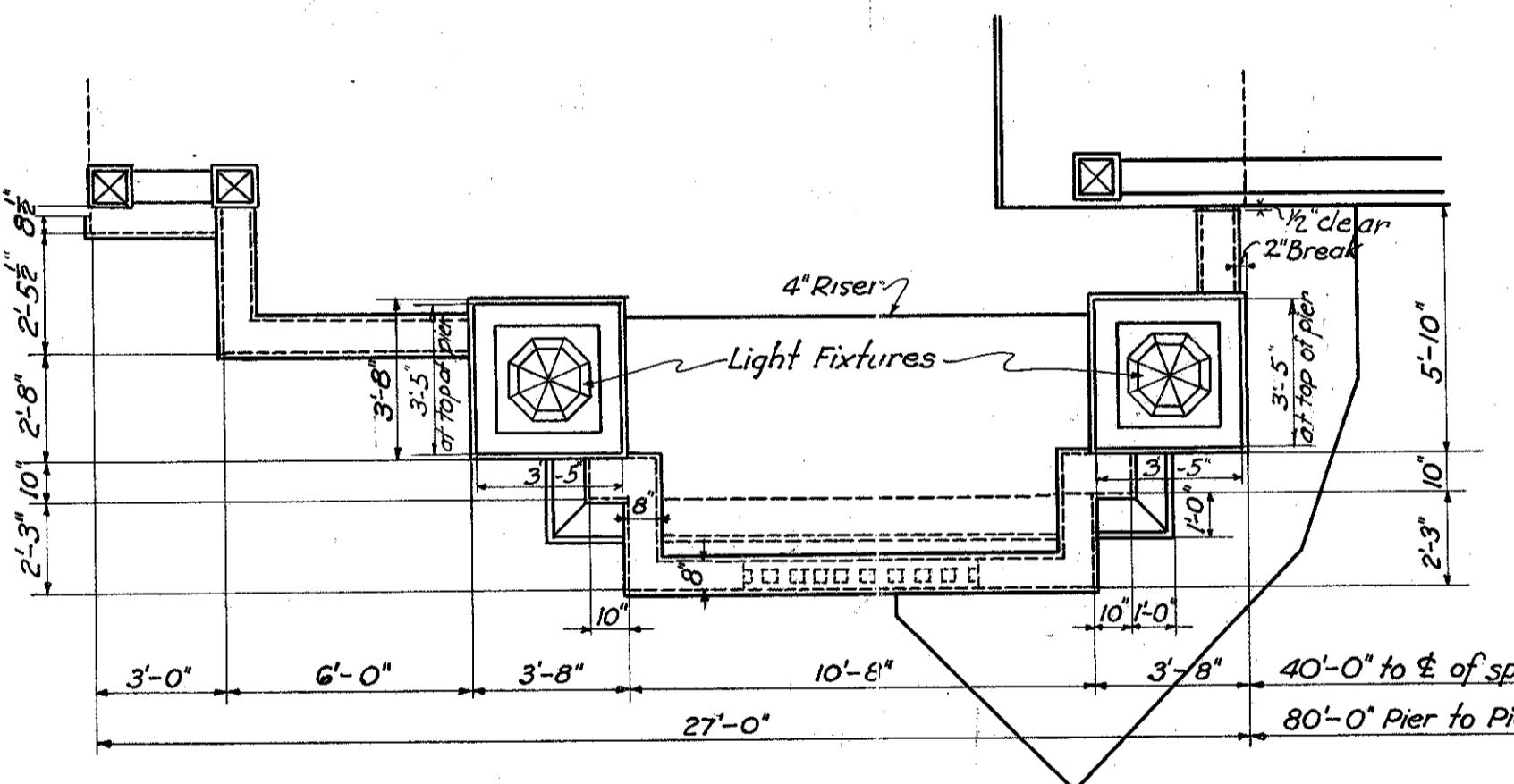
•PLAN• OF •LOWER• FLOOR.

*Note: All dimensions on this house are same as on Control House except where otherwise noted.*

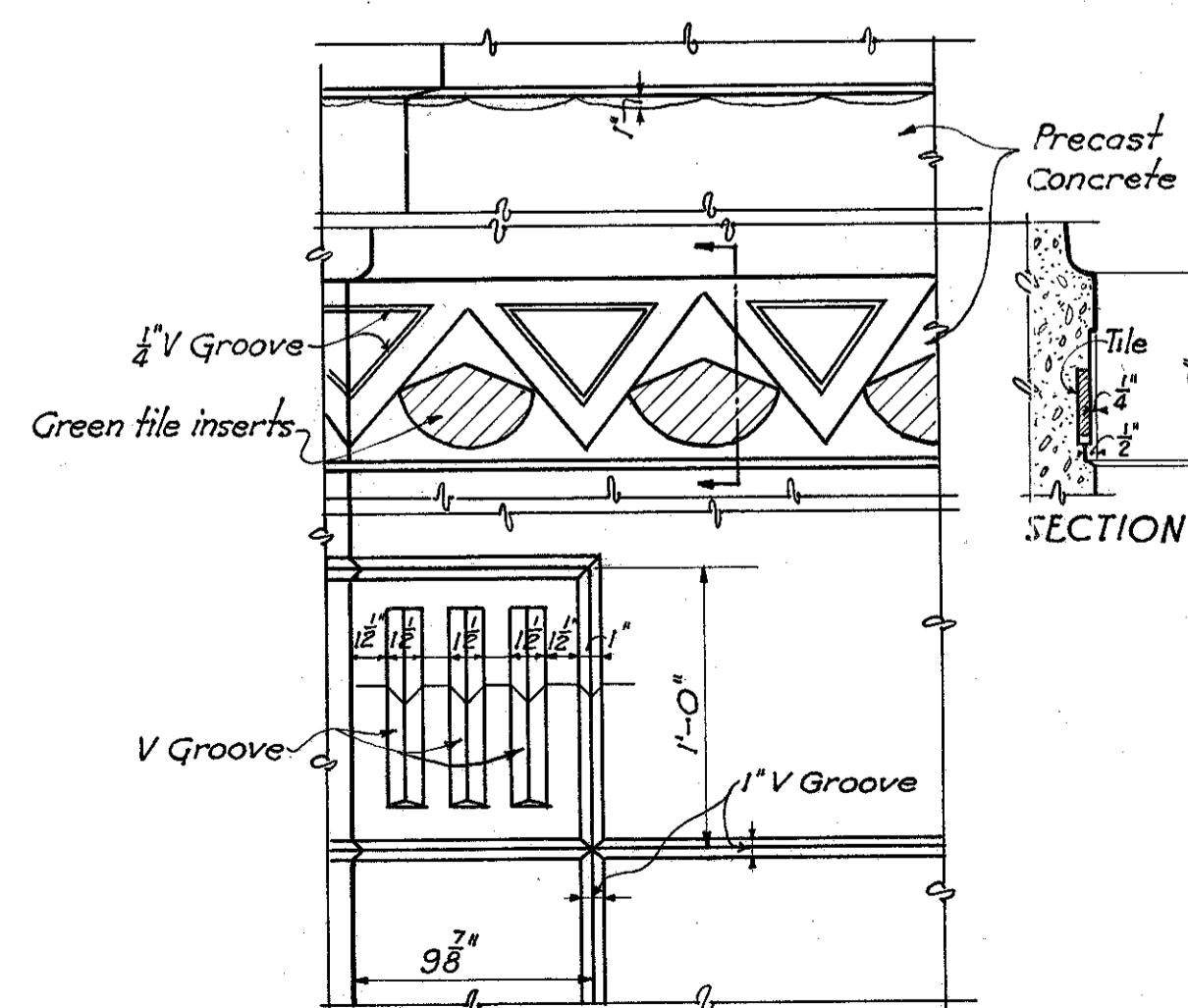


PLAN - OF - UPPER - FLOOR -  
- OPERATOR'S - HOUSE -

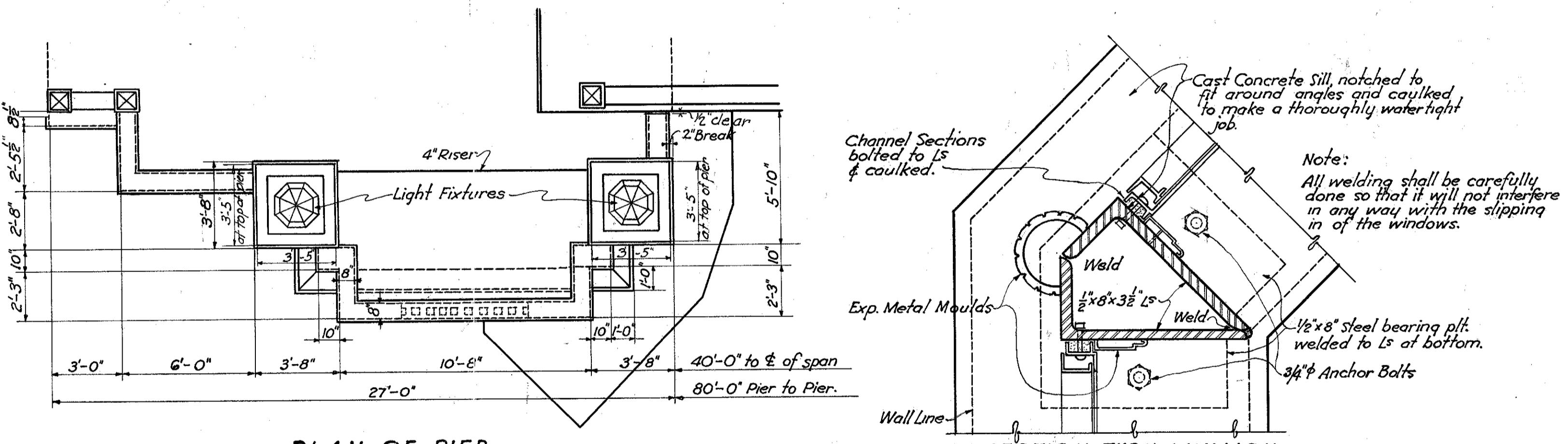
## OPERATOR'S HOUSE



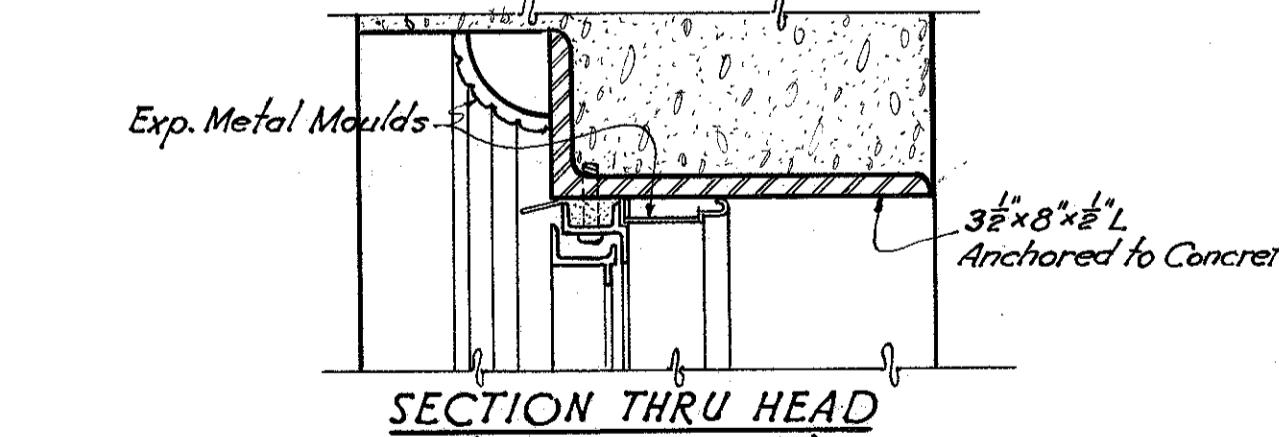
## PLAN OF PIE



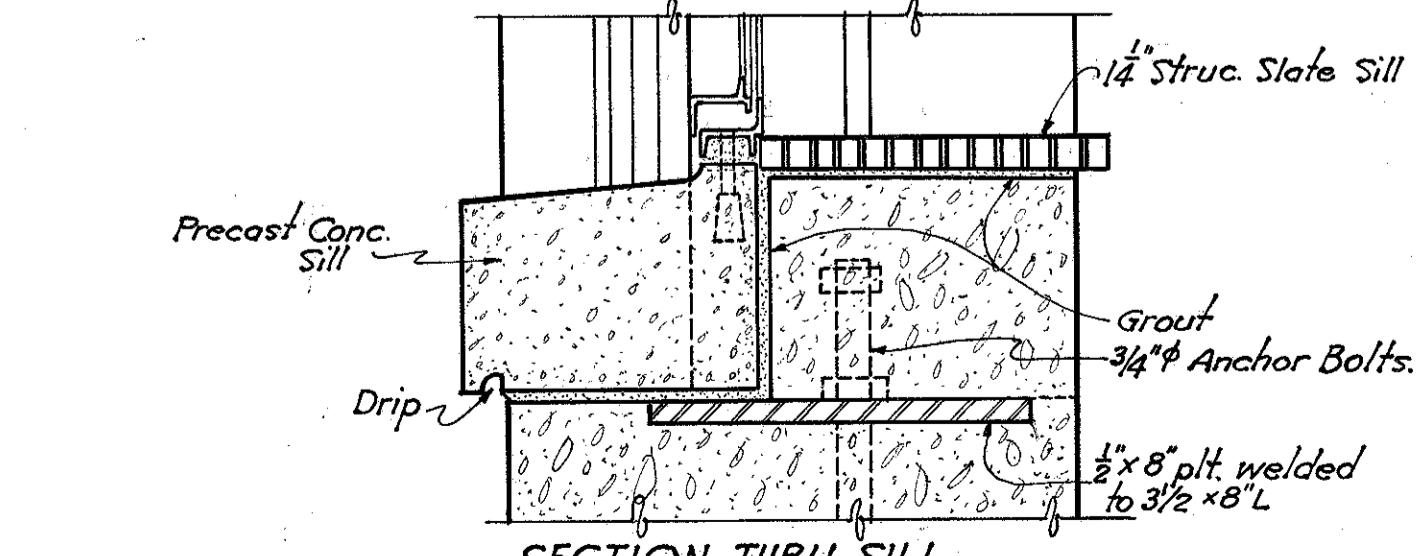
## DETAIL ORNAMENT AT TOP OF HOUSE.



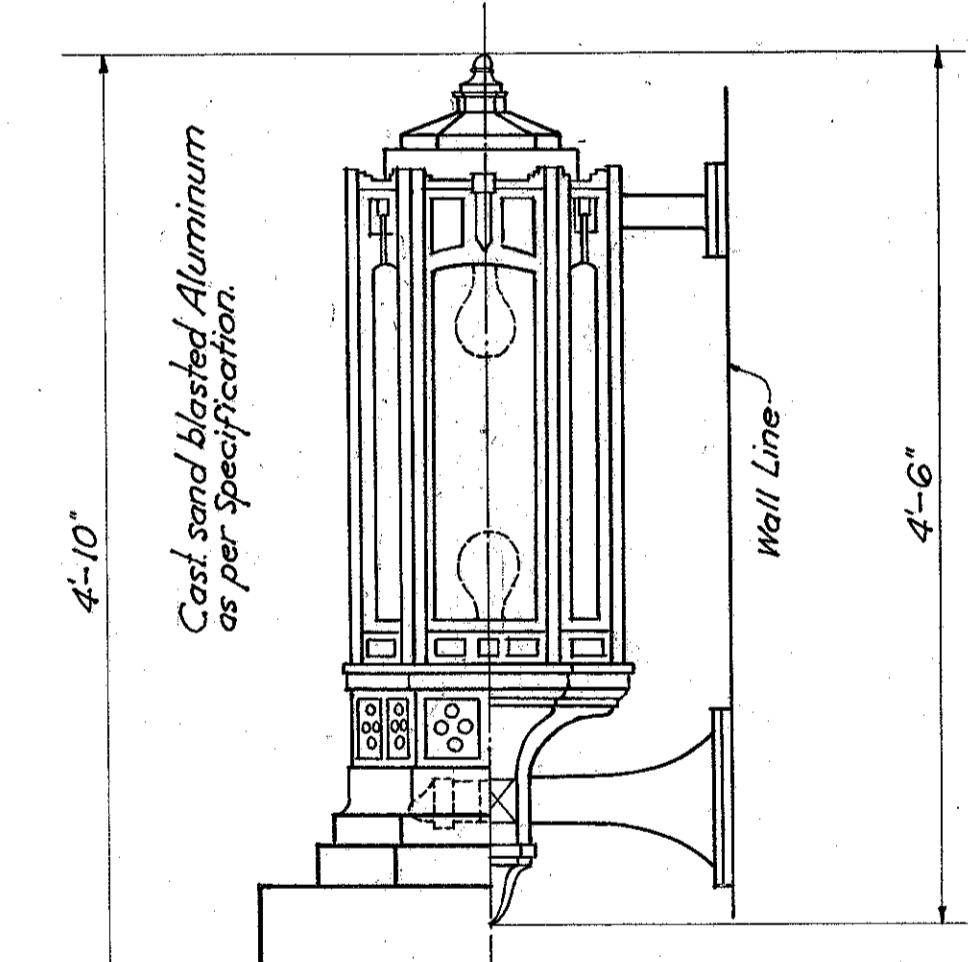
SECTION THRU MULLIC



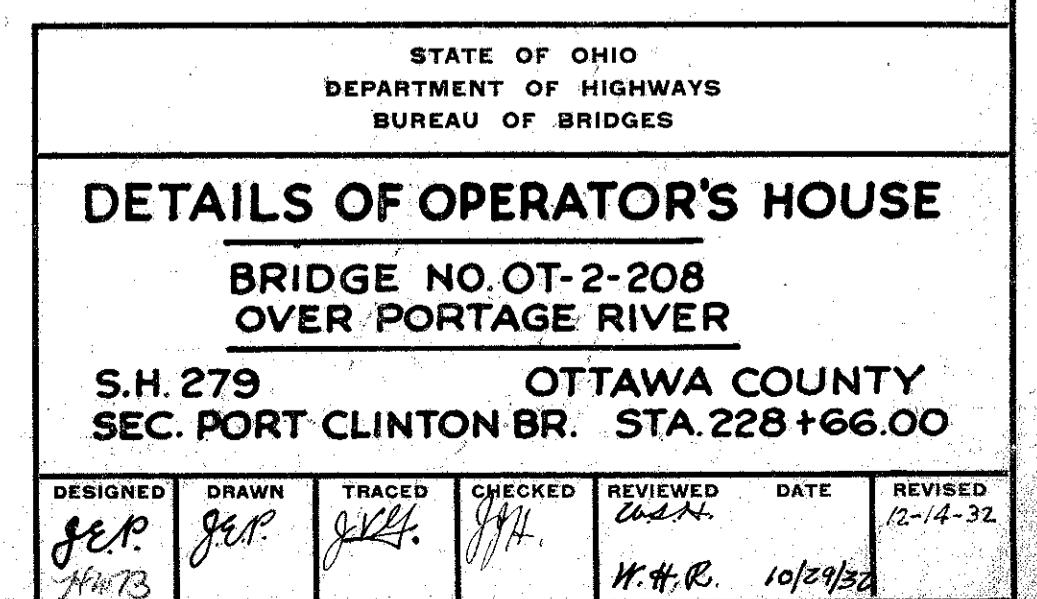
SECTION THRU HEAD



SECTION THRU S



*1/2 ELEVATION SHOWING LAMPS FOR PIERS AND ABUTMENTS.*      *1/2 ELEVATION SHOWING BRACKET LAMPS FOR HOUSES.*



## **DETAILS OF OPERATOR'S HOUSE**

**BRIDGE NO. OT-2-208  
OVER PORTAGE RIVER**

## **OTTAWA COUNTY**

H. 279 OTTAWA COUNTY  
C. PORT CLINTON BR. STA. 228 + 66.00

H. 279 OTTAWA COUNTY  
C. PORT CLINTON BR. STA. 228 + 66.00

**ED** DRAWN **TRACED** **CHECKED** **REVIEWED** **DATE** **REVISED**

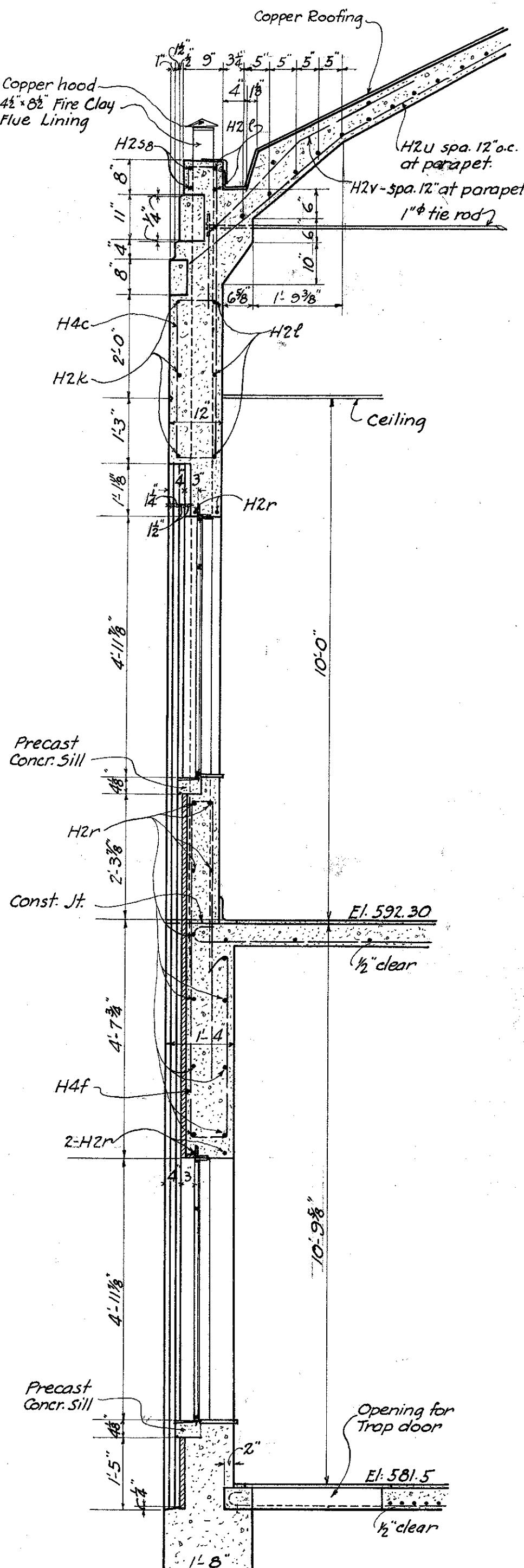
BROWN TRACED CHECKED REVIEWED DATE REVISE  
89 P J.W. C.S.A. 12-14-

*J.C.* *J.C.* *J.C.* *W.H.P.* *10/17/01-2*

ID. RD. ST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	E-410-H	1932

**KIAMA COUNTY**

**OTTAWA COUNTY  
H. 279 SEC. "PORT CLINTON  
BRIDGE"**



**SECTION A-A**

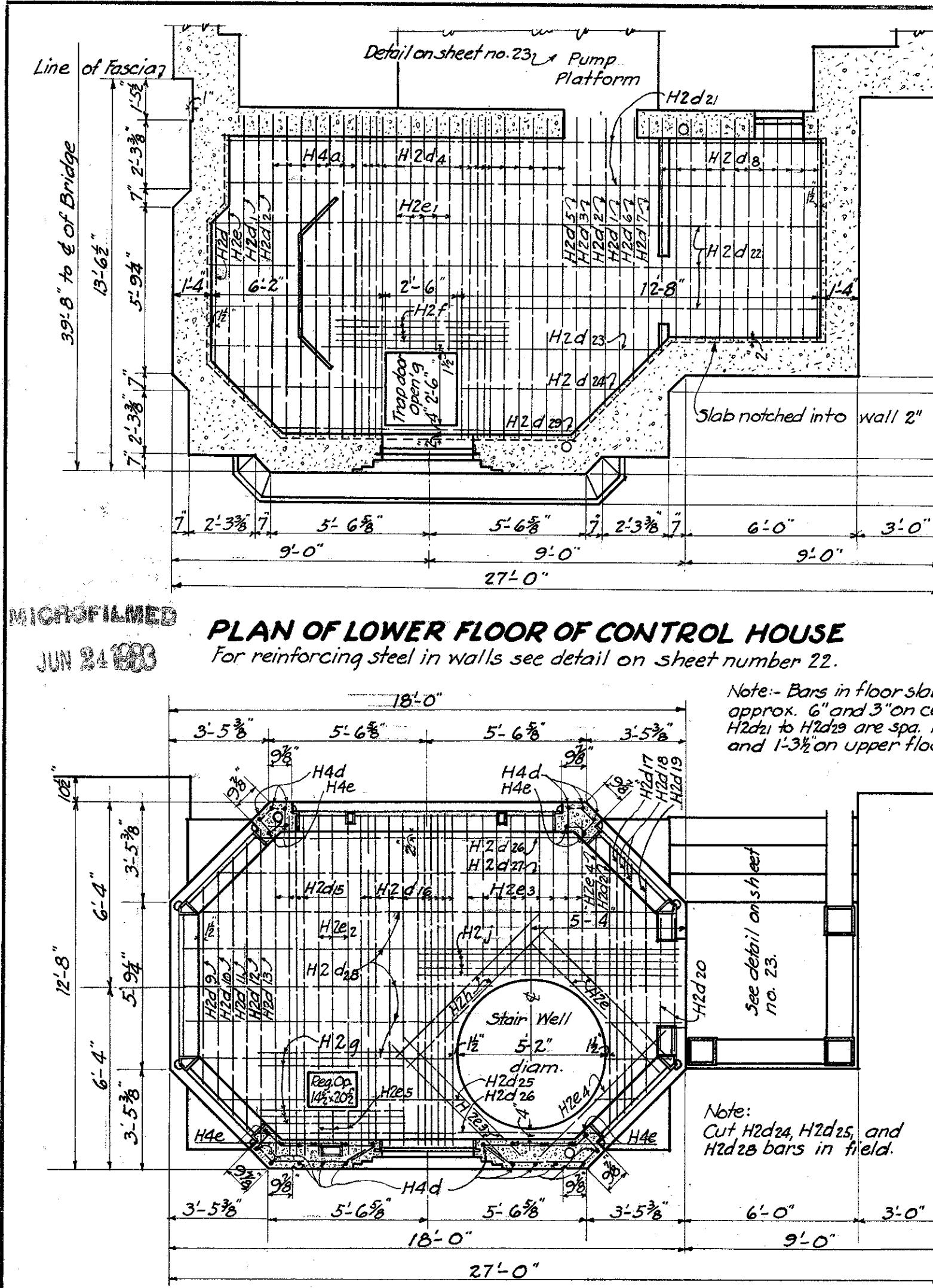
STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

REINFORCING STEEL IN HOUSES  
OF TRAP DOORS & FINIALS

**INTON B.R. OTTAWA COUNTY STA. B22 LCC**

TRACED	CHECKED	REVIEWED	DATE
8/10	8/11	cash.	

W.A.R



**WICHES FILMED** **PLAN OF LOWER FLOOR OF CONTROL HOUSE**  
JUN 24 1983  
For reinforcing steel in walls see detail on sheet number 22

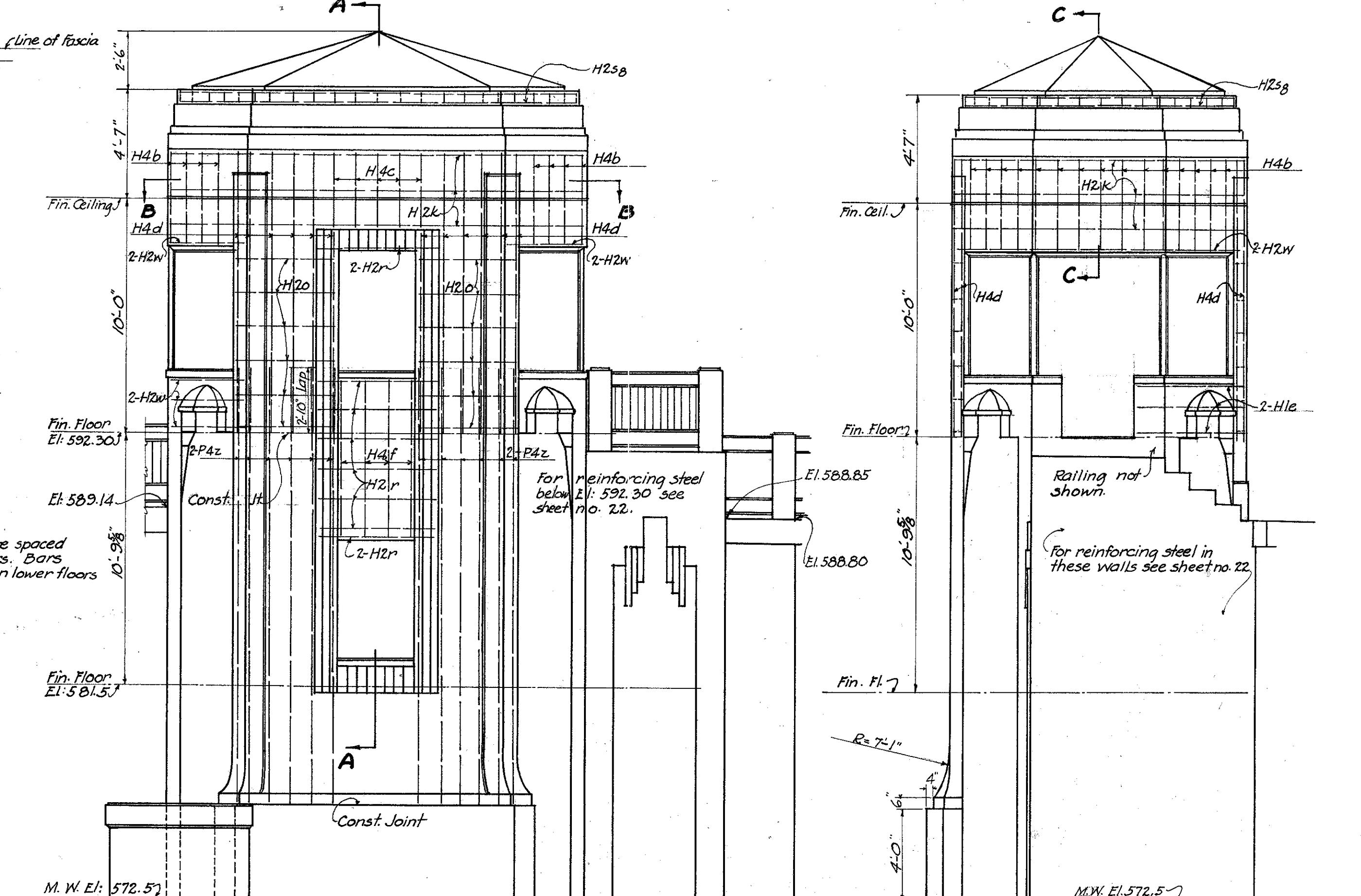
JUN 24 19

JUN 24 19

**PLAN OF LOWER FLOOR OF CONTROL HOUSE**

For reinforcing steel in walls see detail on sheet number

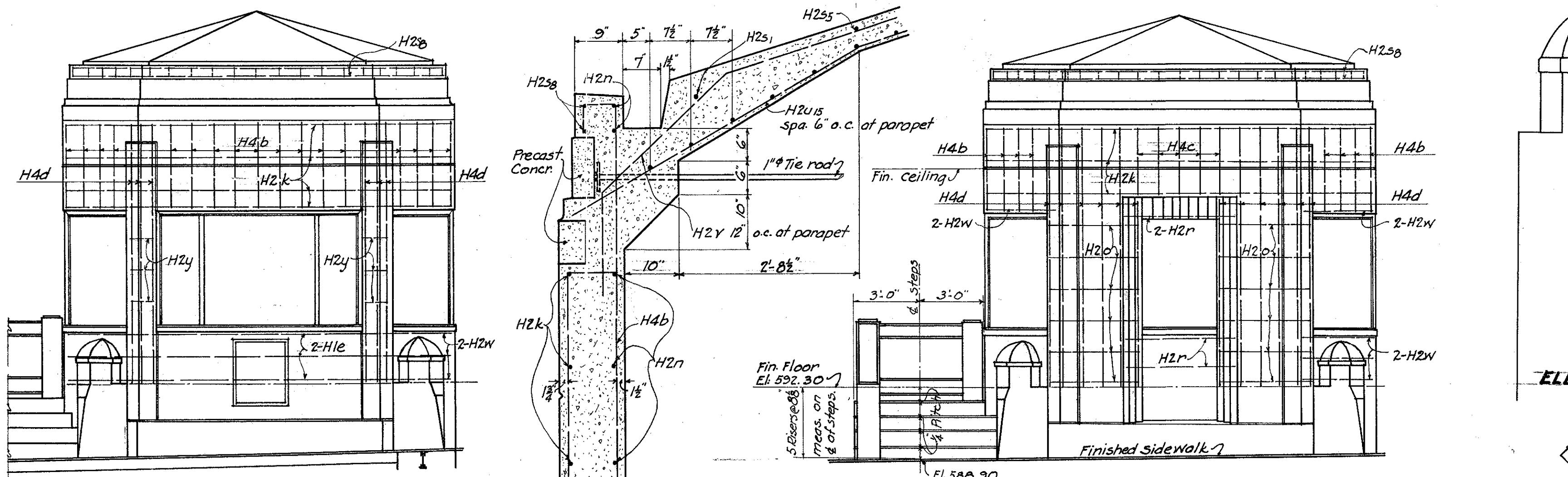
JUN 24 19



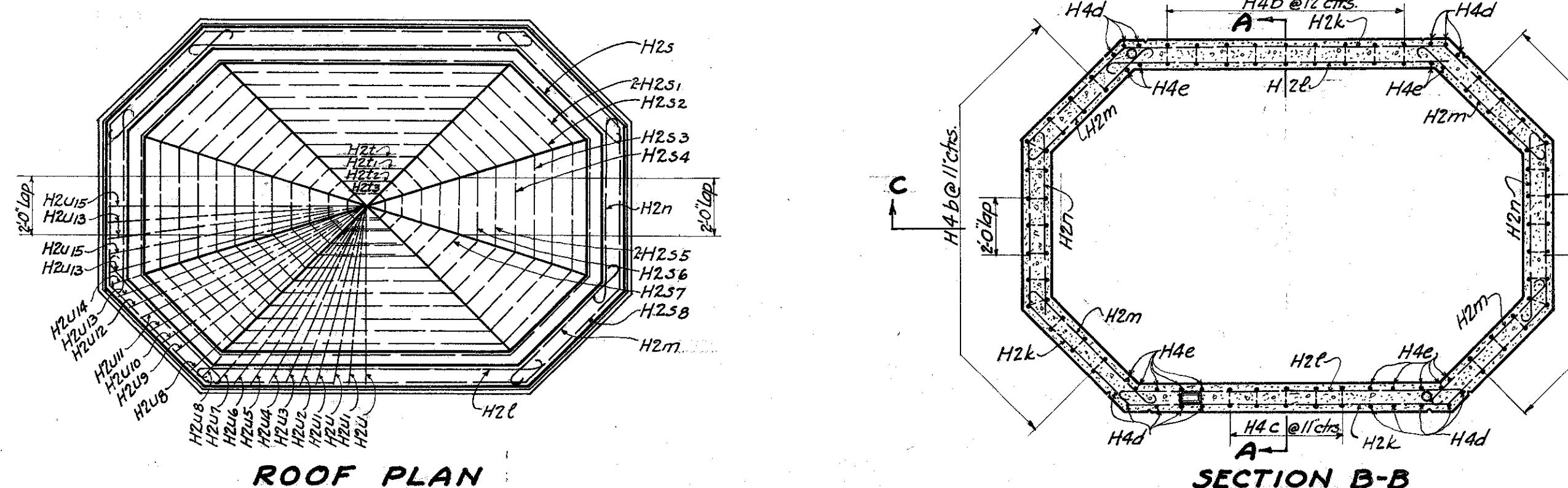
**EAST ELEVATION OF CONTROL HOUSE**  
West Elevation of Operator's House is the same.

**NORTH ELEVATION OF CONTROL HOUSE**  
South Elev. of Operator's House is the same.

**SOUTH ELEVATION OF CONTROL HOUSE**  
North Elev. of Operator's House is the same.



## **PLAN OF LOWER FLOOR OF OPERATORS HOUSE**



## **ROOF PLAN**

## **SECTION B**

• 187 •

*Edge of concr. below* **EAST ELEVATION OF OPERATORS HOUSE**

13/4      2'-9 1/2"      13/4

**SECTION THRU TRAP DOOR  
IN OPERATOR'S HOUSE**

The drawing consists of two parts. The top part is a plan view showing a circle divided into four quadrants by a horizontal and vertical axis. A vertical line labeled "wall line 1" extends from the bottom center up to the top center. A diagonal line labeled "E 1/2" runs from the bottom-left quadrant to the top-right quadrant. The bottom part is a section view of the same structure, showing a cross-section with a vertical wall line and a diagonal cut through the circle.

**SECTION THRU TRAP DOOR CONTROL HOUSE**

**DETAILS OF FINIALS  
AT UPPER FLOOR LINE**

**MICROFILMED**  
**JUN 24 1983**

JUN 24 1990

JUN 24 1983

RD. T. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
0	OHIO	E410-H	1932

11

# STAWA COUNTY

H. 279 SEC. "PORT CLINTON BR"

100

111

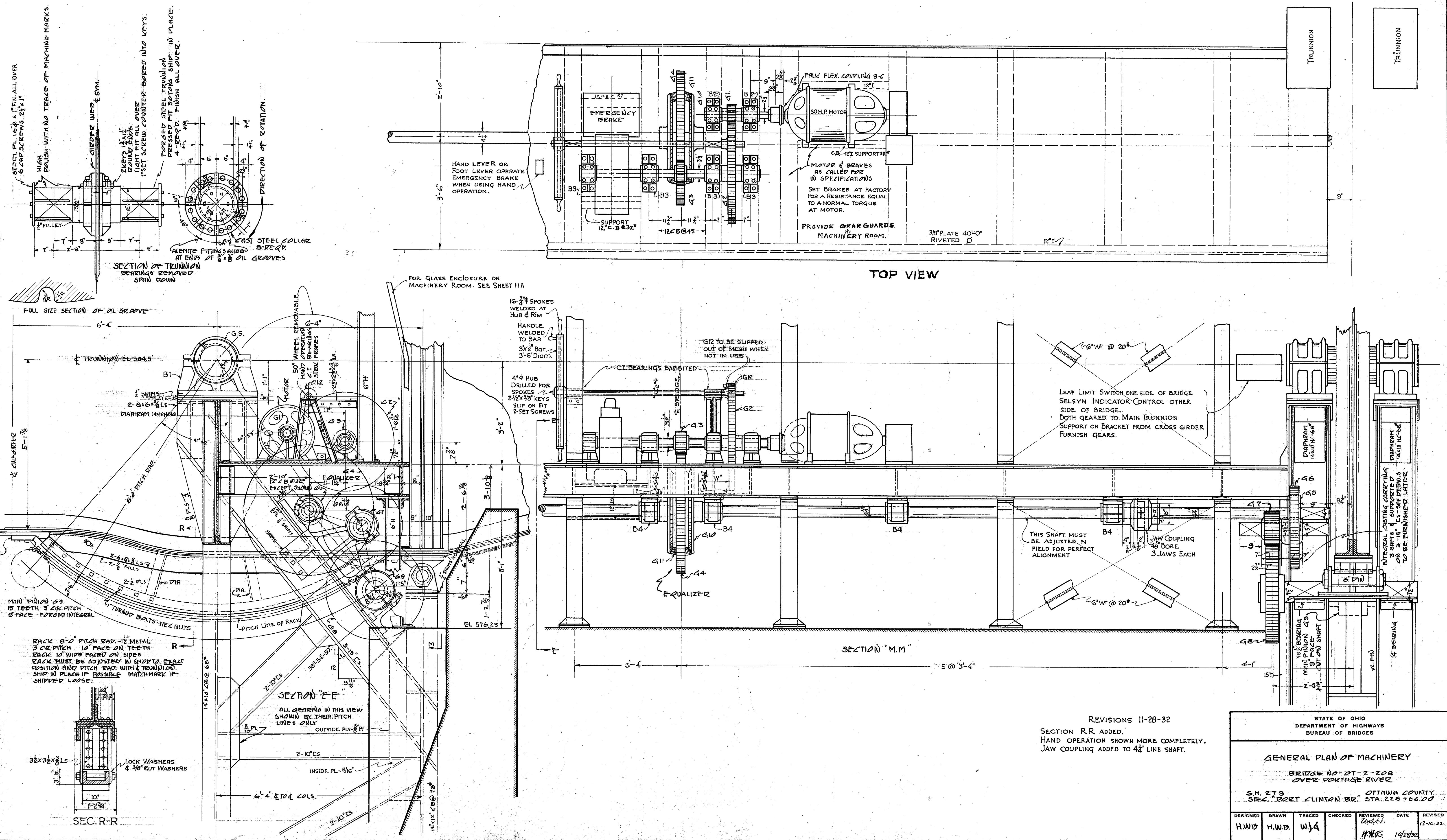
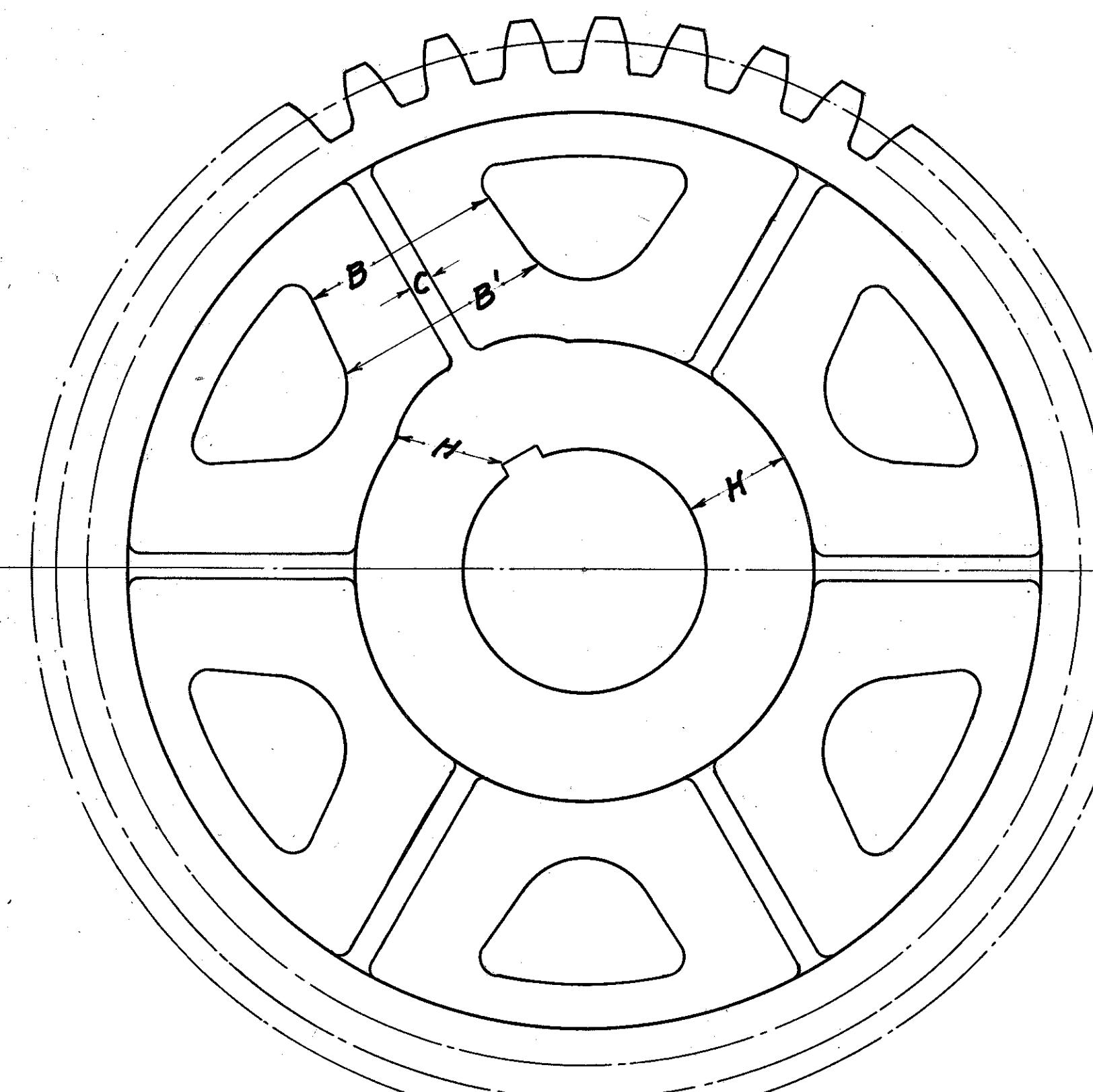


TABLE OF GEARS

Gear	No. Req'd	No. of Teeth	Pitch	Pitch Diam.	Face	Teeth	Keys Per Gear	Bore	Hub Diam.	Length	Material
Rack	4		3"	10"		10"	Std. 20° cut Involute				Cast Steel
G1	2	15	1 1/2"	7.162"	2 1/4"	do.	1 - 5/8" x 7/16"	2 1/2"	5"	4 1/2"	Forged Steel
G2	2	76	1 1/2"	36.287"	2 1/4"	do.	1 - 3/4" x 1/2"	3"	6"	4 1/2"	Cast Steel
G3	2	15	1 3/4"	8.35"	3"	do.	1 - 3/4" x 1/2"	3"	6"	4 1/2"	Forged Steel
G4	2	87	1 3/4"	48.46"	2 1/4"	do.	3/8" Bronze Bushing	4 7/8"	8"	6"	Cast Steel
G5	4	15	2 1/4"	10.74"	3"	do.	1 - 1" x 5/8"	4 1/8"	8"	6"	Forged Steel
G6	4	42	2 1/4"	30.08"	3"	do.	2 - 1" x 3/4"	5 1/4"	10"	7"	Cast Steel
G7	4	15	2 1/2"	11.93"	4 1/2"	do.	2 - 1" x 3/4"	5 1/4"	10"	7"	Forged Steel
G8	4	46	2 1/2"	36.60"	4 1/2"	do.	2 - 1 1/4" x 1"	7 1/2"	14 1/2"	9"	Cast Steel
G9	4	15	3"	14.32"	9"	do.	Int. Port Shaft - 54				Forged Steel
G10	4	96	1 1/8"	34.377"	3"	do.	1 - 7/8" x 5/8"	4 1/8"	8"	5"	Cast Steel
G11	6	24	1 1/8"	8.594"	3"	do.	3/8" Bronze Bushing	2 1/2"	4"	3 1/4"	Forged Steel
G12	2	13	1 1/2"	6.207"	2 1/4"	do.		2"	3 1/2"	4"	Forged Steel
G13	4	15	1 1/4"	5.968"	2 1/4"	do.	1 - 1" x 3/8"	2 1/4"	4 1/4"	2 3/4"	Forged Steel
G14	4	49 IN 90°	1 1/4"	77.886"	2 1/2"	do.	2 - 3/4" x 1" x 6"	14 1/4"	17 1/4"	6"	Cast Steel



GEAR DIMENSIONS

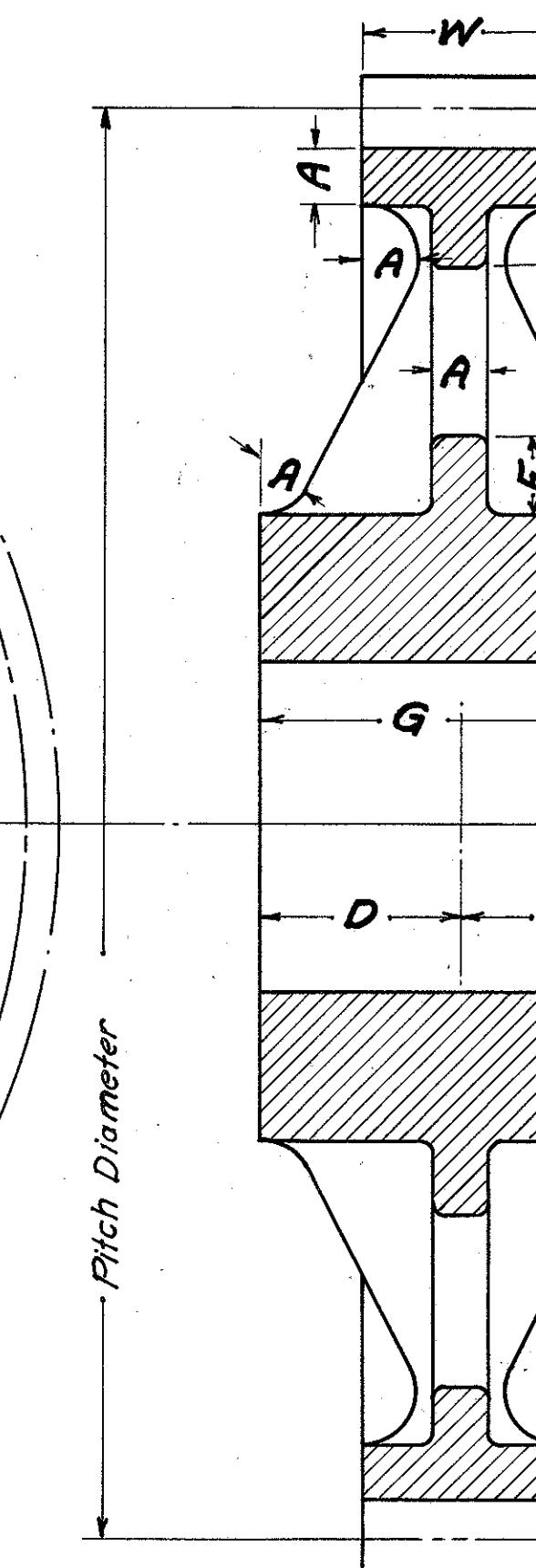
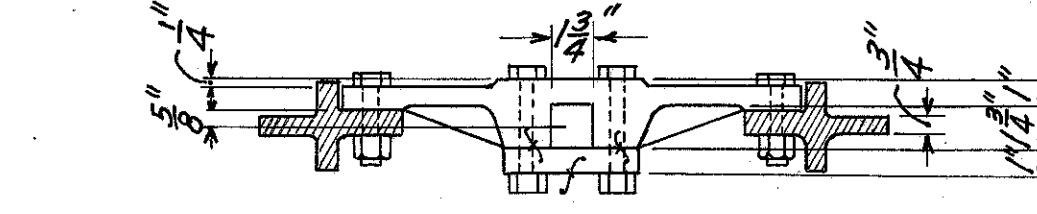


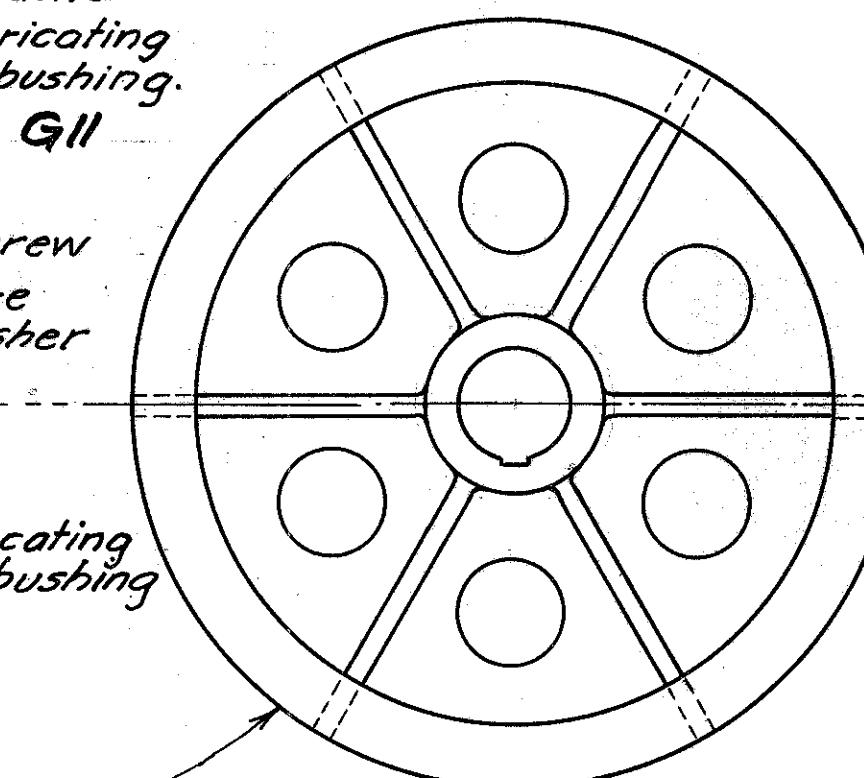
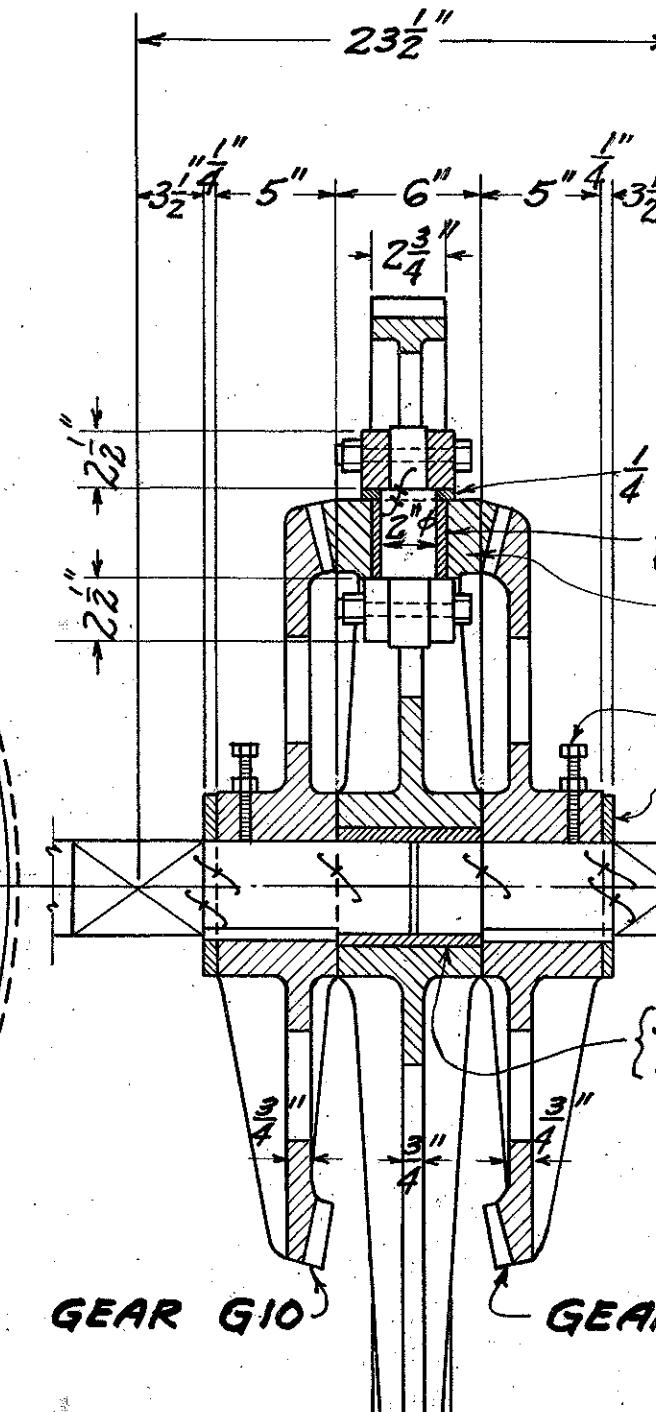
TABLE OF GEAR DIMENSIONS

Gear	A	B	B'	C	D	E	F	G	H	W
Rack	1 1/2"									9"
G1	3/4"				2 1/2"	2 1/4"		4 1/2"	1 1/2"	2 1/4"
G2	3/4"	3 3/4"	4 1/2"	5/8"	2 1/4"	2 1/4"	1 1/8"	4 1/2"	1 1/2"	2 1/4"
G3	7/8"				2 1/4"	2 1/4"		4 1/2"	1 1/2"	2 1/4"
G4	7/8"	1 3/8"	5 1/2"	3/4"	3"	3"	1 1/4"	6"	1 1/16"	2 3/4"
G5	15/16"				3"	3"		6"	1 1/16"	3"
G6	15/16"	5 5/8"	6 1/4"	3/4"	2 1/2"	4 1/2"	1 1/2"	7"	2 3/8"	3"
G7	15/16"				2 1/2"	4 1/2"		7"	2 3/8"	4 1/2"
G8	15/16"	6 1/4"	7"	3/4"	4"	5"	1 1/4"	9"	3 1/2"	4 1/2"
G9	15/16"									9"
G10					1 1/2"	3 1/2"		5"	1 1/16"	3"
G11					1 1/2"	1 3/4"		3 1/4"	3/4"	3"
G12										
G13	See Gear Details on Gate									
G14	See Gear Details on Gate									

NOTE:- for Gear G10 & G11 see Equalizer.



SECTION A-A developed



EQUALIZER

MACHINERY NOTES:-

All pinions shall be forged.

All castings and forgings shall be made of steel and shall be annealed unless noted otherwise.

All gears, pinions and racks shall have machine cut teeth.

All gears, pinions and racks shall have pitch lines plainly marked on both sides of each.

All shafts from 0" to 3 3/4" shall be cold rolled, from 3 3/4" to 4 1/2" shall be rolled, shafts greater than 4 1/2" shall be forged.

Gib Head Tapered Keys shall be used where possible.

Each collar shall be secured in place with two (2) set screws counterbored in shafts and provided with lock nuts.

Shanks of turned bolts shall be 1/16" larger than the threaded ends.

Except as noted, all holes in machinery supports for bolts connecting machinery parts to supports shall be subdrilled and reamed in the field with the machinery parts in place. The holes in the machinery parts shall be subdrilled in the shop. Bolts to have light driving fit.

All bearings shall be provided with ALEMITE Button Head type fittings except where self lubricating bearings are specified.

Spring Lock Washers shall be used under all nuts or bolts where lock nuts are not shown or called for.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

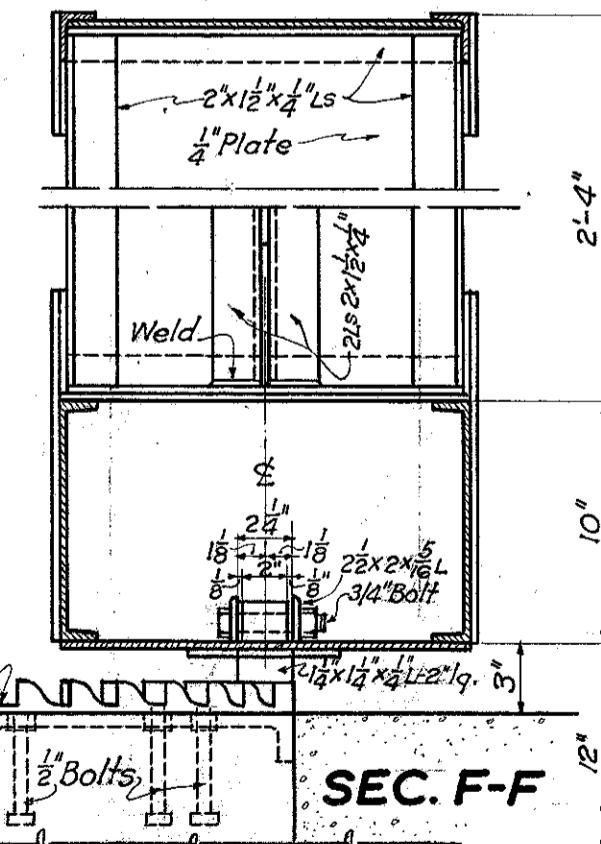
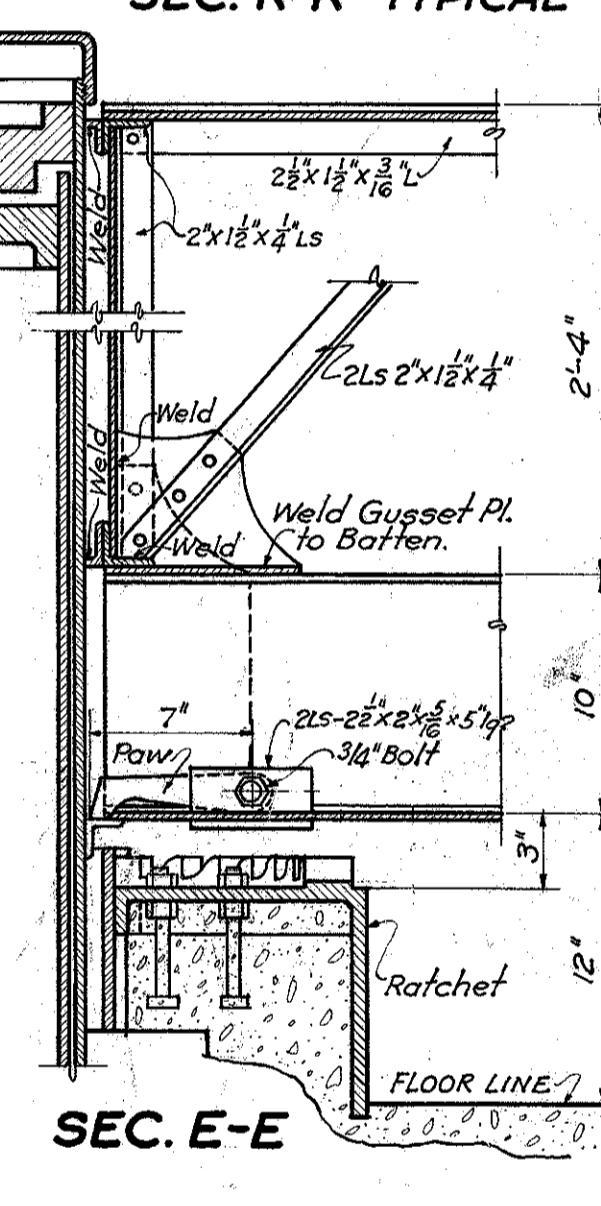
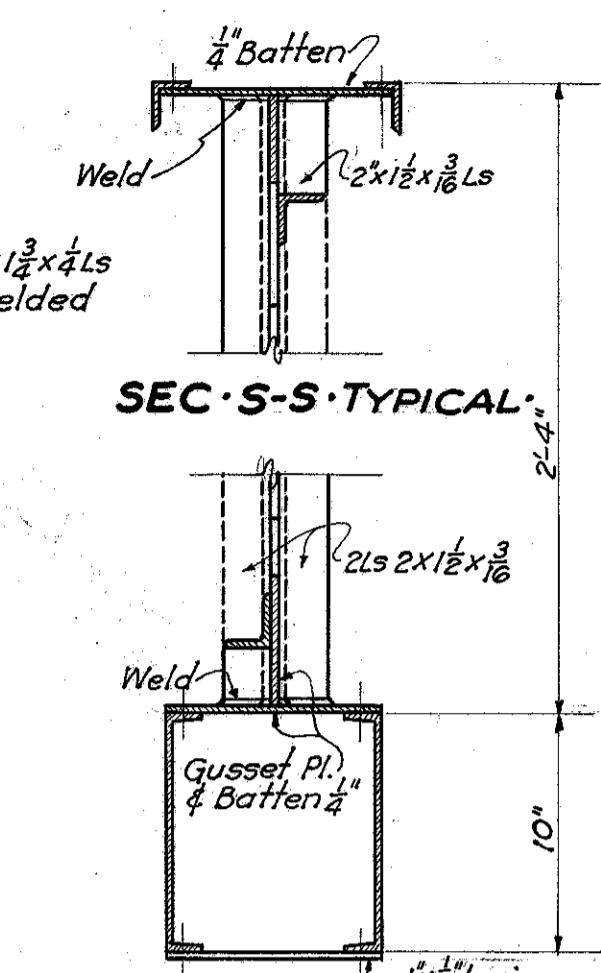
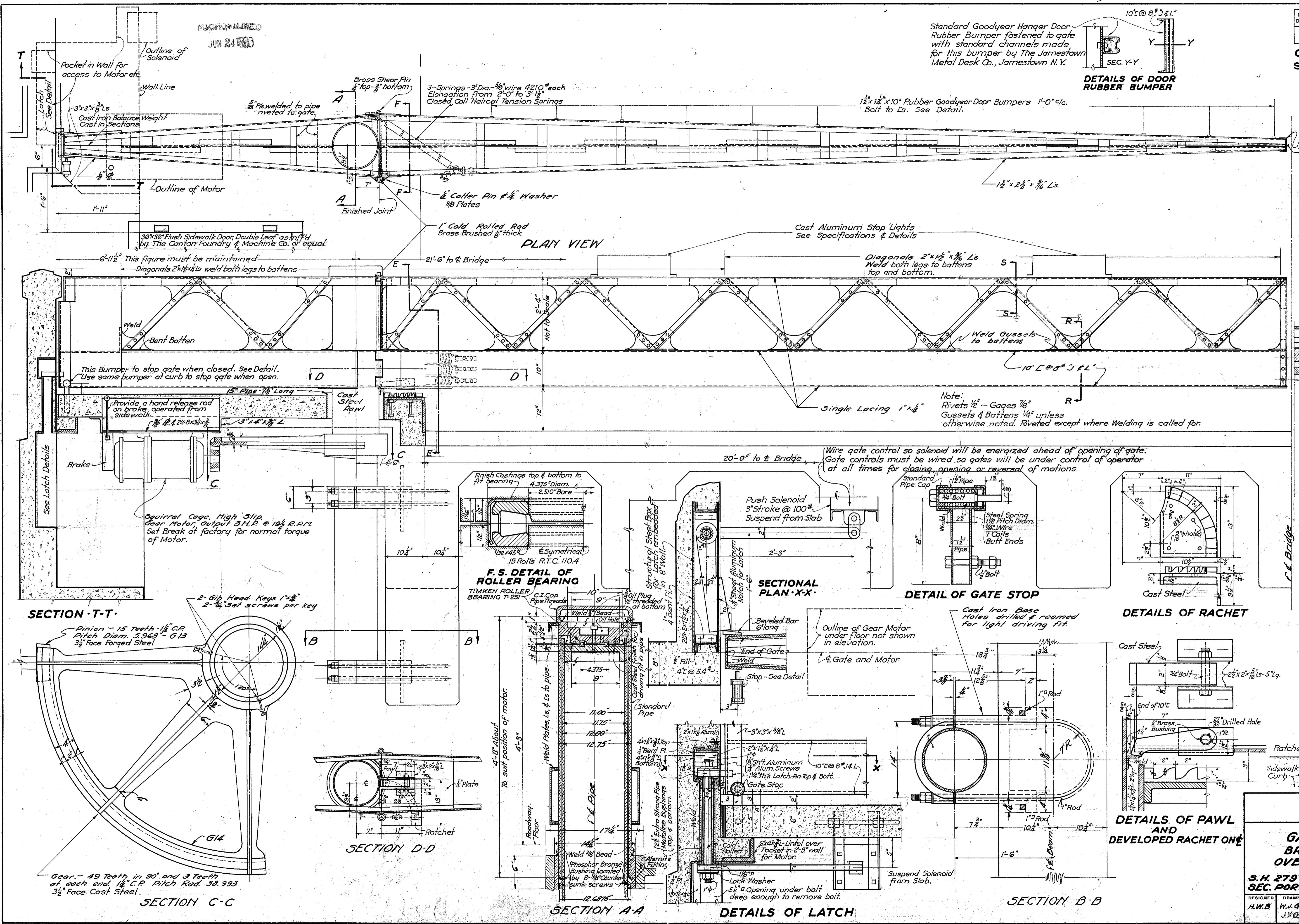
GEAR DETAILS

BRIDGE NO.	OT-2-208	OVER PORTAGE RIVER	S.H. 279	OTTAWA COUNTY	SEC. PORT CLINTON BR.	STA. 228+66.00
DESIGNED	H.M.B.	DRAWN	449	TRACED	K.E.O.	CHECKED
REVIEWED	2044	DATE	10/29/58	REVISED	12-14-32	

RD. T. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
0	OHIO	E-410-H	1932

29  
33

**OTTAWA COUNTY  
S. H. 279 SEC. PORT CLINTON  
BRIDGE**



**STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES**

**GATE DETAILS**  
**BR. NO. OT-2-208**  
**OVER PORTAGE RIVER**

S.H. 279 OTTAWA COUNTY  
SEC. PORT CLINTON BR. STA. 228+66.

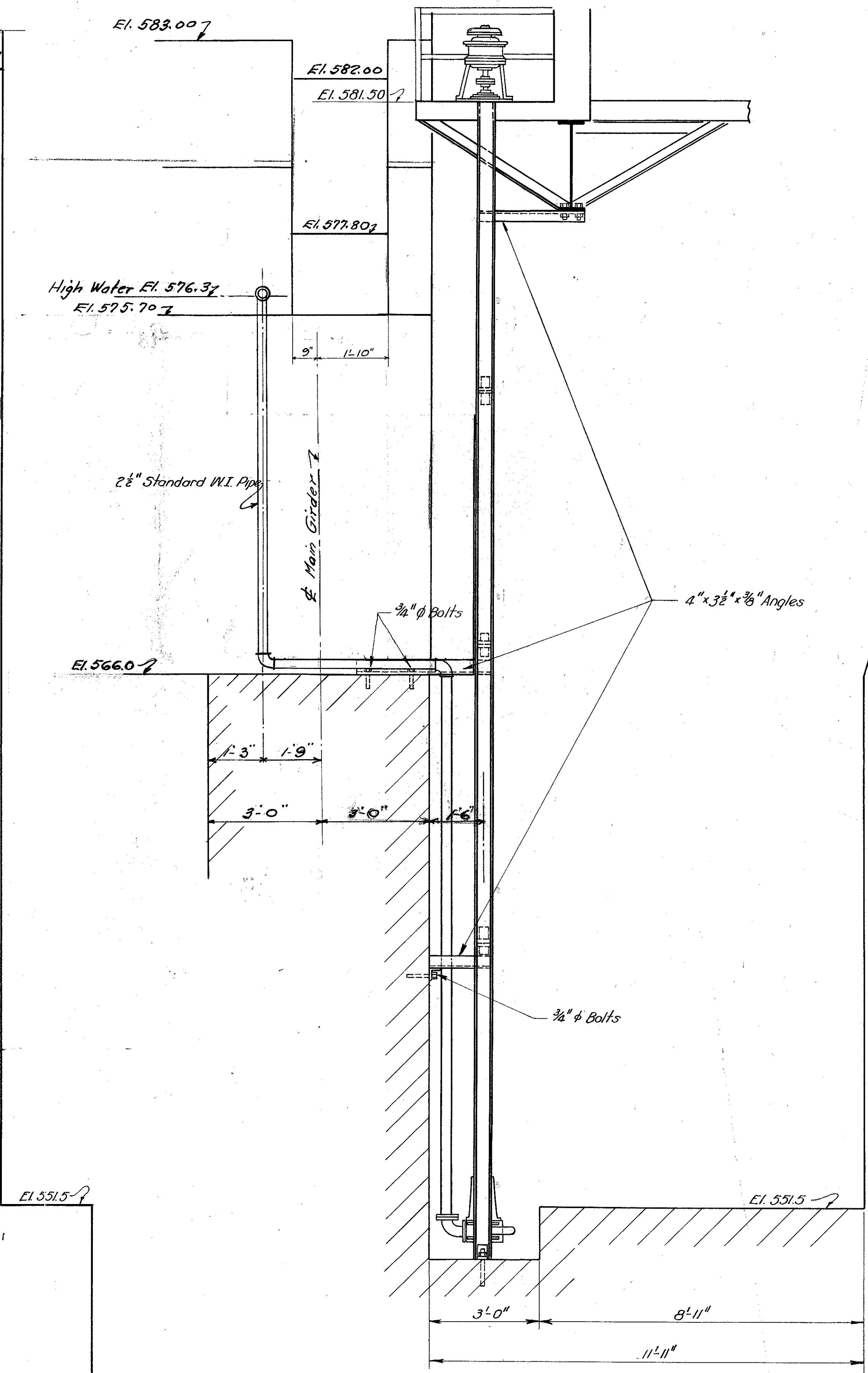
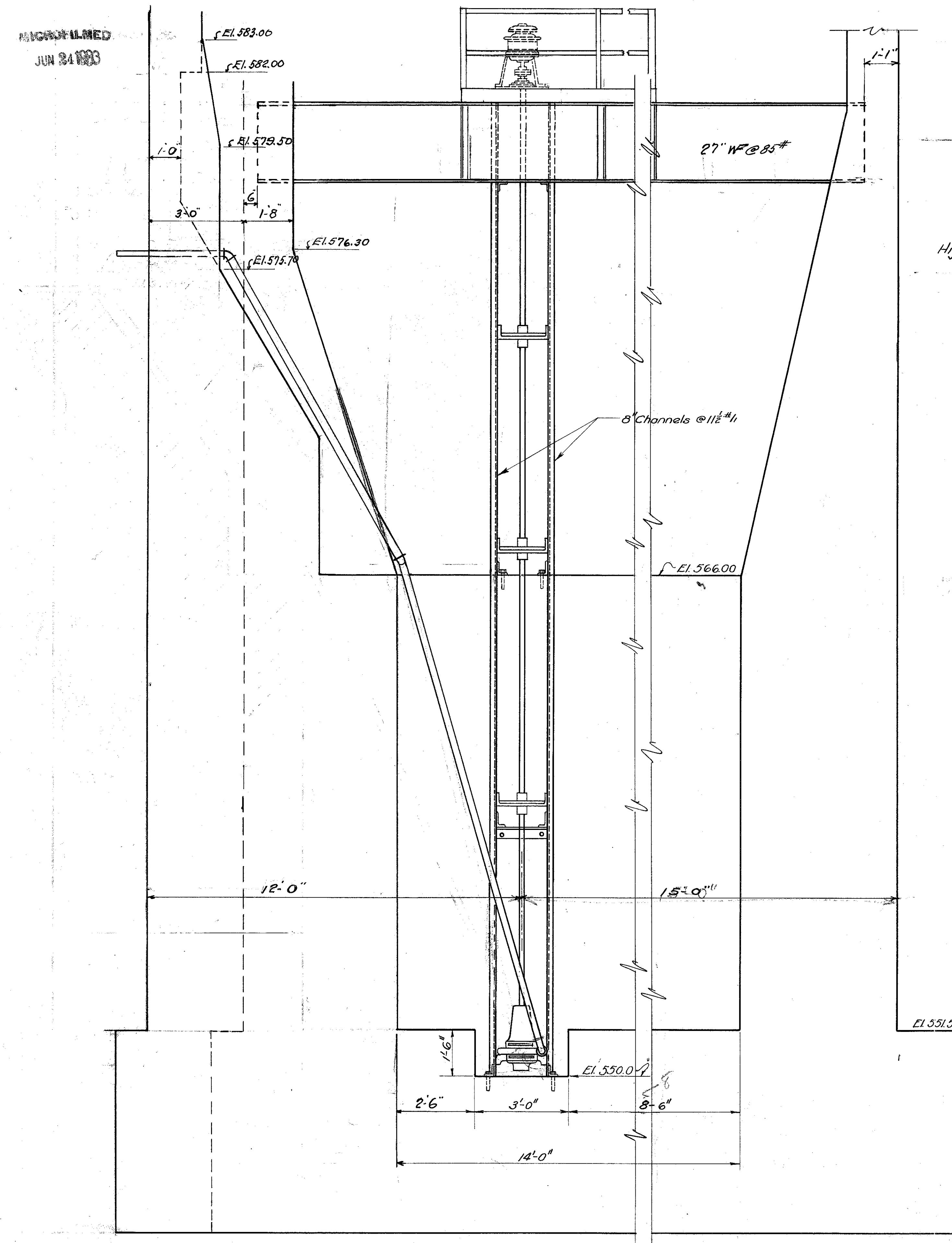
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
H.W.B	W.J.G J.V.G	C.H.Q. J.V.G.		W.H.R.	10/29/36	12/14/32 Latch & General Details

MICROFILMED  
JUN 31 1983

FED. RD. DIST. NO.	STATE	FED. AID PROJECT	FISCAL YEAR
10	OHIO	E-410-A	1932

30  
33

OTTAWA COUNTY  
S.H. 279 SEC. PORT CLINTON BR.



#### SPECIFICATIONS OF SUMP PUMP

ONE REQUIRED FOR EACH PIER  
PUMP TO BE AMERICAN MARSH TYPE: A.V.M. VERTICAL, CENTRIFUGAL OR EQUIVALENT. PUMP TO HAVE A CAPACITY OF 250 G.P.M. AGAINST A HEAD OF 25FT AND TO BE A SOLID CASE, SINGLE SUCTION, SINGLE STAGE TYPE.  
IT IS TO BE PROVIDED WITH A SHAFT 1&1/2" DIAMETER, EQUIPPED WITH FLEXIBLE COUPLINGS AT MOTOR AND PUMP.  
WEIGHT OF SHAFT TO BE CARRIED BY A THRUST BEARING PROVIDED IN THE MOTOR.

#### MOTOR

MOTOR TO BE A 5 H.P. 1750 R.P.M. TOTALLY ENCLOSED SQUIRREL CAGE TYPE, 3 PHASE, 60 CYCLES, 440 VOLTS. MOTOR IS TO HAVE A DRIP COVER AND TO BE MOUNTED ON A SUITABLE PLATE ON TOP OF CHANNEL FRAME. PUMP IS TO BE EQUIPPED WITH A SUITABLE FLOAT SWITCH ON ONE SIDE OF FRAME WITH AN EXTENDED FLOAT ROD OF SUITABLE LENGTH TO PERMIT LOW LEVER CUT OFF AT ANY POINT OF FLOAT AT ANY LEVEL. MOTOR IS TO BE EQUIPPED WITH AUTOMATIC STARTER OPERATED BOTH BY FLOAT SWITCH AND BY A REMOTE CONTROL PUSH BUTTON STATION.

STATE OF OHIO  
DEPARTMENT OF HIGHWAYS  
BUREAU OF BRIDGES

CLEARANCE DIAGRAM OF THE  
SUMP PUMP  
BRIDGE NO. OT-2-208  
OVER PORTAGE RIVER  
OTTAWA COUNTY S.H. 279  
SEC. PORT CLINTON BR. STA. 228+66.0

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
A.W.B.(W)G	R.R.G.	X.H.C.	T.M.L.	K.H.C.	10/29/50	12-14-32