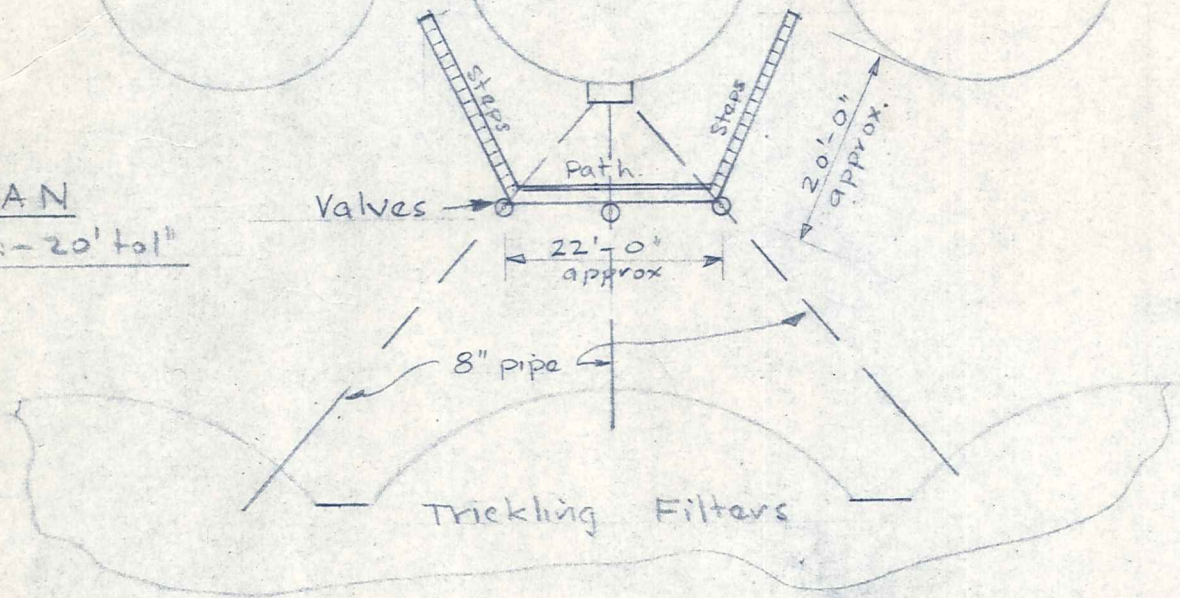
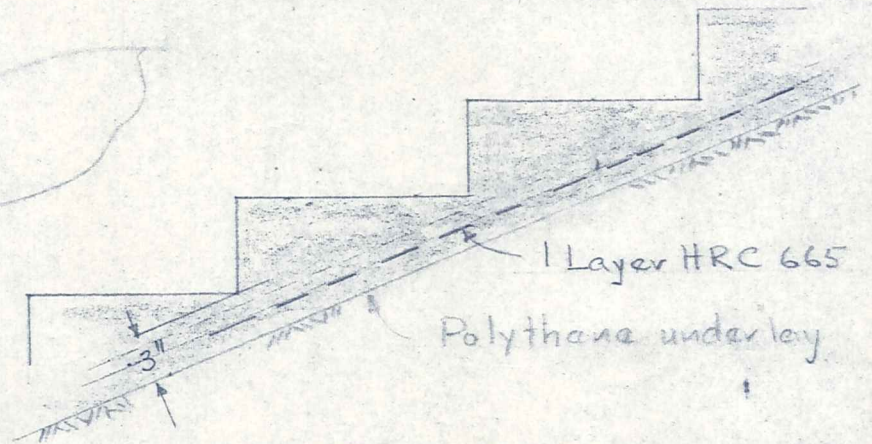


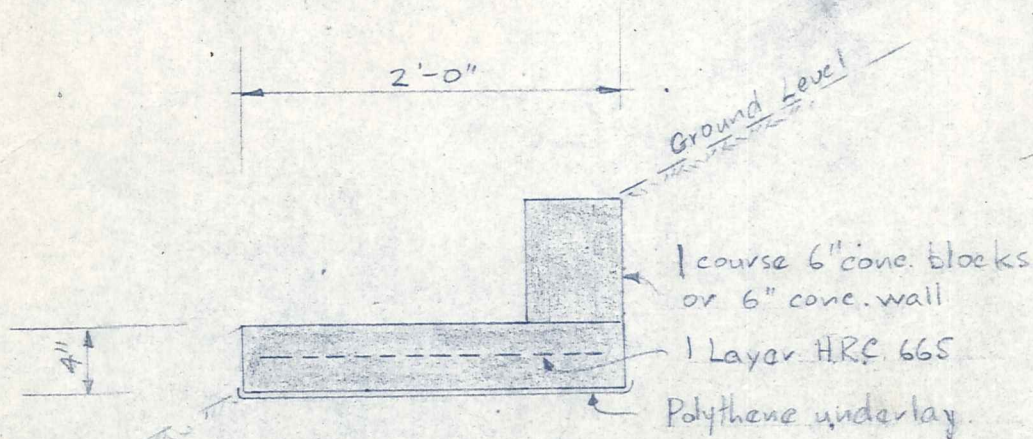
PLAN
Scale: - 20' to 1"



Riser plus tread to equal 17 1/4"



STEP DETAIL



PATH DETAIL

243

SEWAGE WORKS

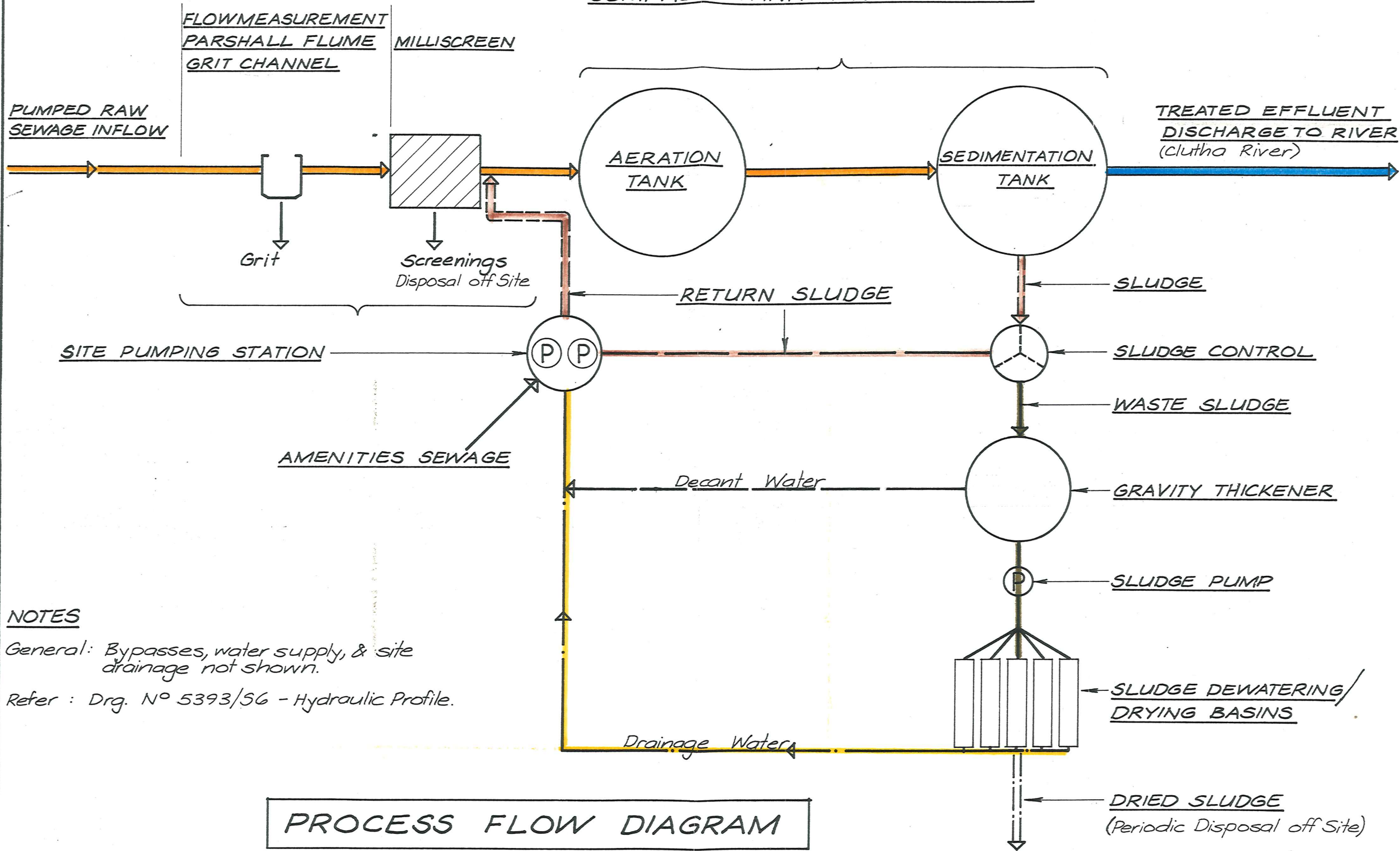
ALEXANDRA BOROUGH COUNCIL

PATH & STEPS

D.W.&K.

4290
21/108

COMPACT TANK ARRANGEMENT



NOTES

General: Bypasses, water supply, & site drainage not shown.

Refer : Drg. No 5393/56 - Hydraulic Profile.

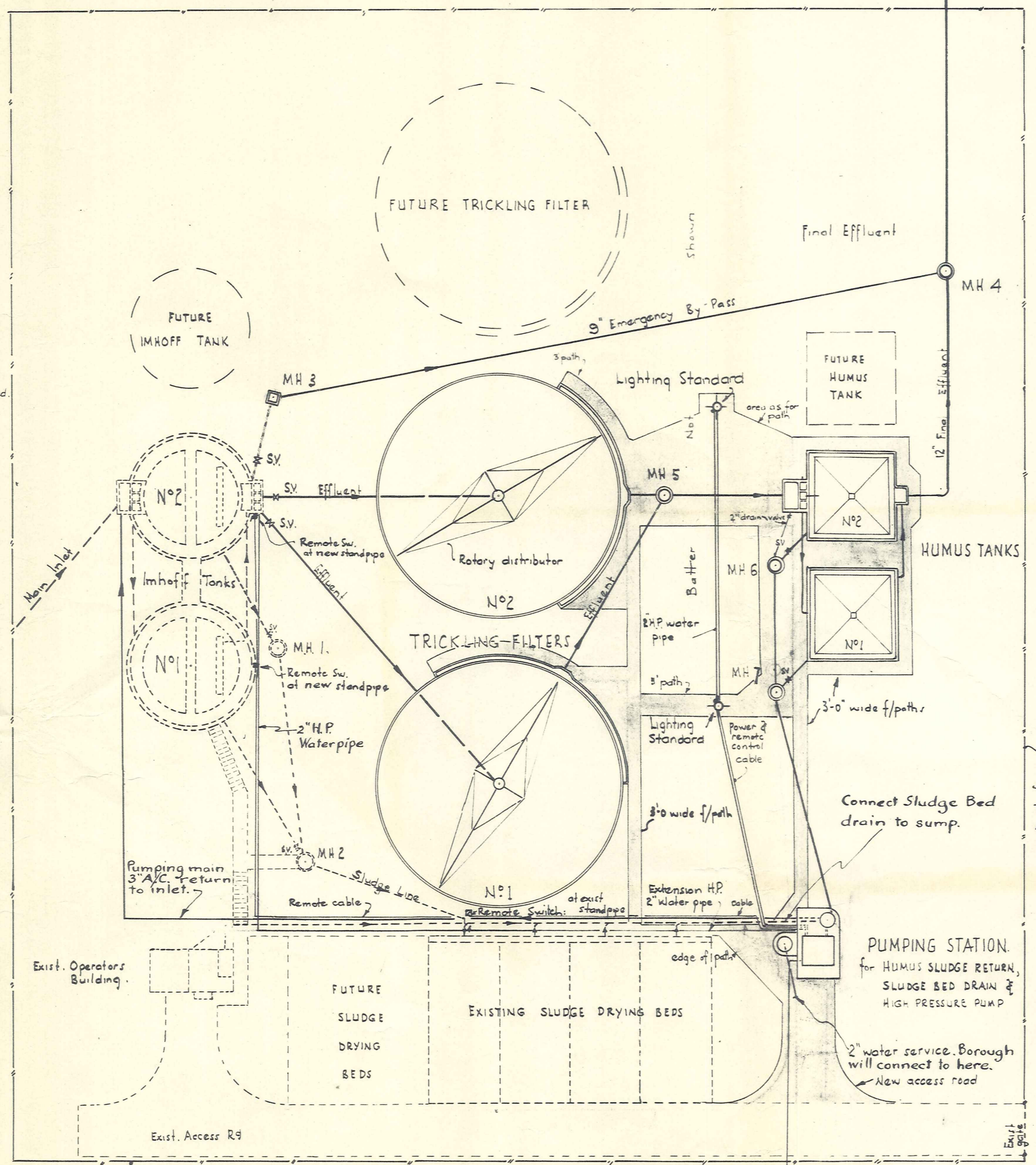
PROCESS FLOW DIAGRAM

Issue Date: 18.3.87

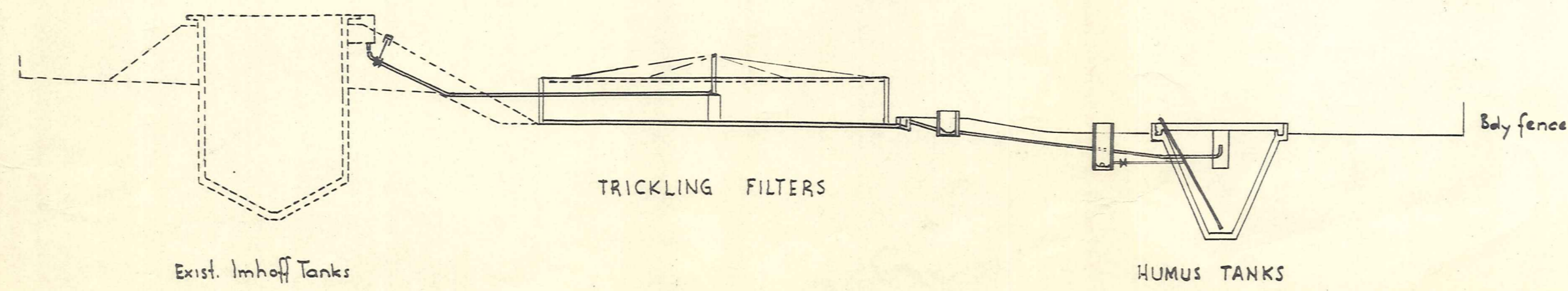
RoydsGarden LIMITED Consulting Engineers & Planners CHRISTCHURCH DUNEDIN BALCLUTHA INVERCARGILL PALMERSTON NORTH GREYMOUTH.	ALEXANDRA SEWAGE TREATMENT FACILITY	NO 53930/55
	COMPACT OXIDATION DITCH	SCALE N.T.S. DATE Feb 87 DRAWN KPM ^c

75
3
225,000

DESIGN DATA
 Initial design pop: 3000 = 2 units at 1500 pop each
 Ultimate " : 4500 " 3 "
 Pop. at commissioning of initial 2 units = 2200 (1961)
 Assumed data for Primary Works:
 Av Flow 50 gal/h/day = 75000 gall/unit/day
 Peak Flow = 2 1/2 x Av = 188,000
 B.O.D. = 0.12 lb/h/day. Susp. solids = 0.17 lb/h/day
 Imhoff Tank: 3 hr detention at av flow.
 Surface loading 270 gall/sq ft/day
 Sludge capacity 3 1/2 cu ft/head.
 BOD reduction 30 %
 Sludge Drying Beds: Area 3/4 sq ft/head.
 As a result of operating experience 1961/62 the design data for the Secondary Works is:
 Av winter sustained daily flow = 150,000 g/unit/day at design pop.
 Peak daily flow for 24 hr = 190,000 " "
 Instantaneous peak flow / unit = 1 pump at 300 gpm = 482,000 gall/day (rate of)
 As Imhoff rating is conservative, design BOD reduction is assumed.
 Filter loading: B.O.D. = 126 lb/day/unit
 Flow = 280 gall/cu yd/day
 Humus Tank: 2 hr det. at 150,000 g/d/unit
 Surface loading 500 g/sq ft/day
 Vent Velocity at surface = 5 1/4 ft/hr
 75"/hr is reached at 4'6" water depth
 Min sludge return = 60 gall/day/unit



PLAN OF SITE



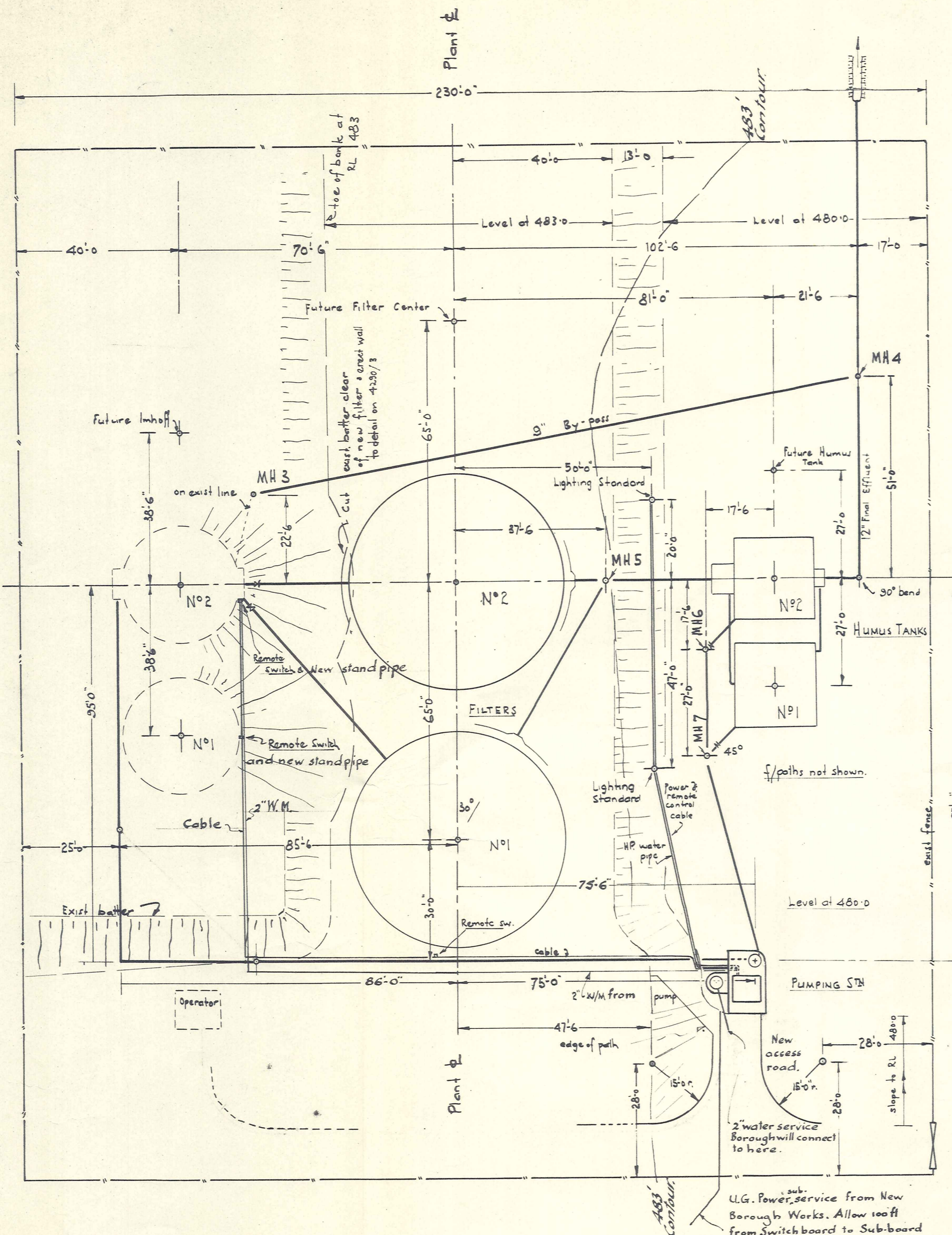
SECTION THROUGH WORKS
 SCALE: 20 ft to 1 in

Summary of Exist. PRIMARY WORKS

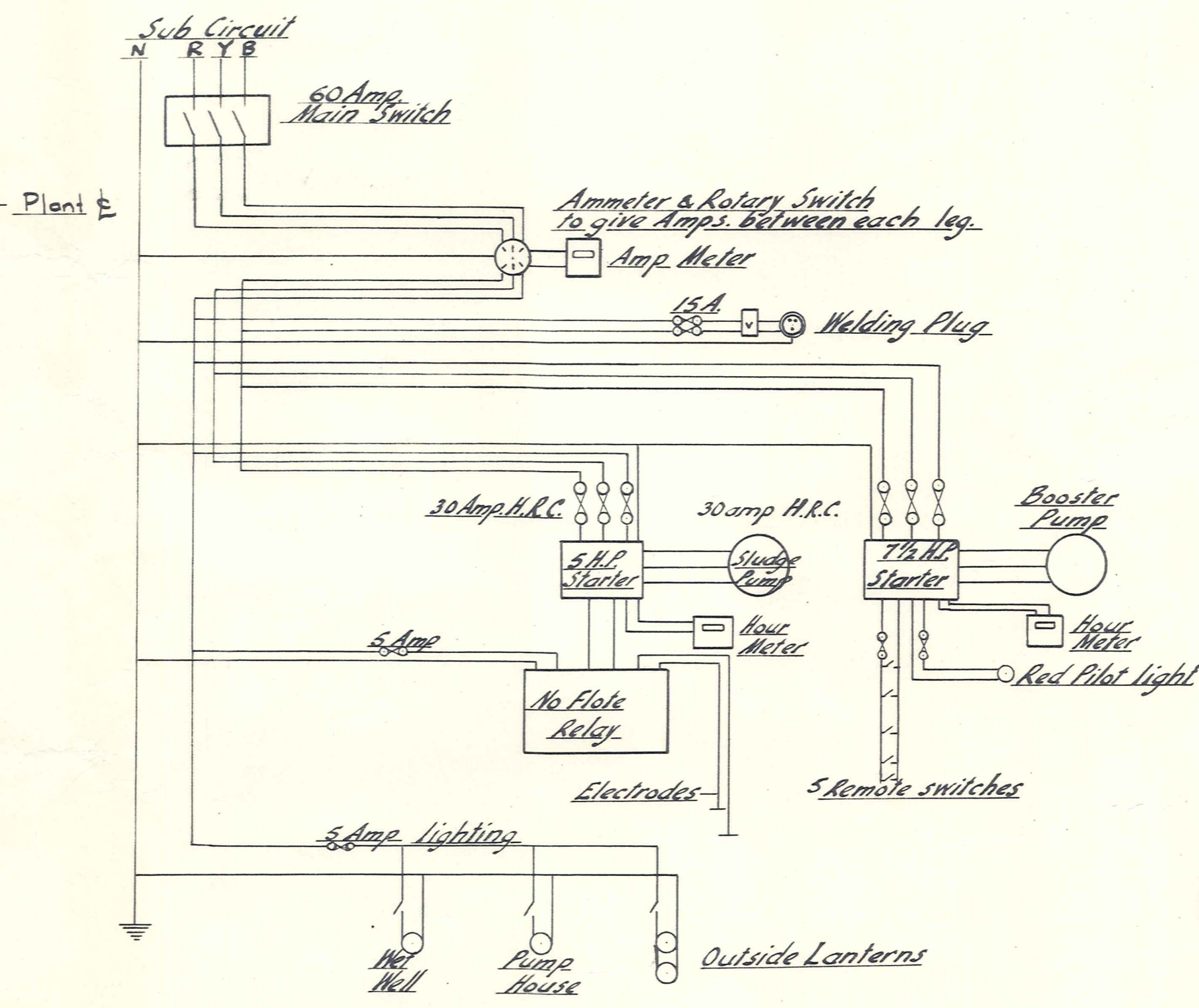
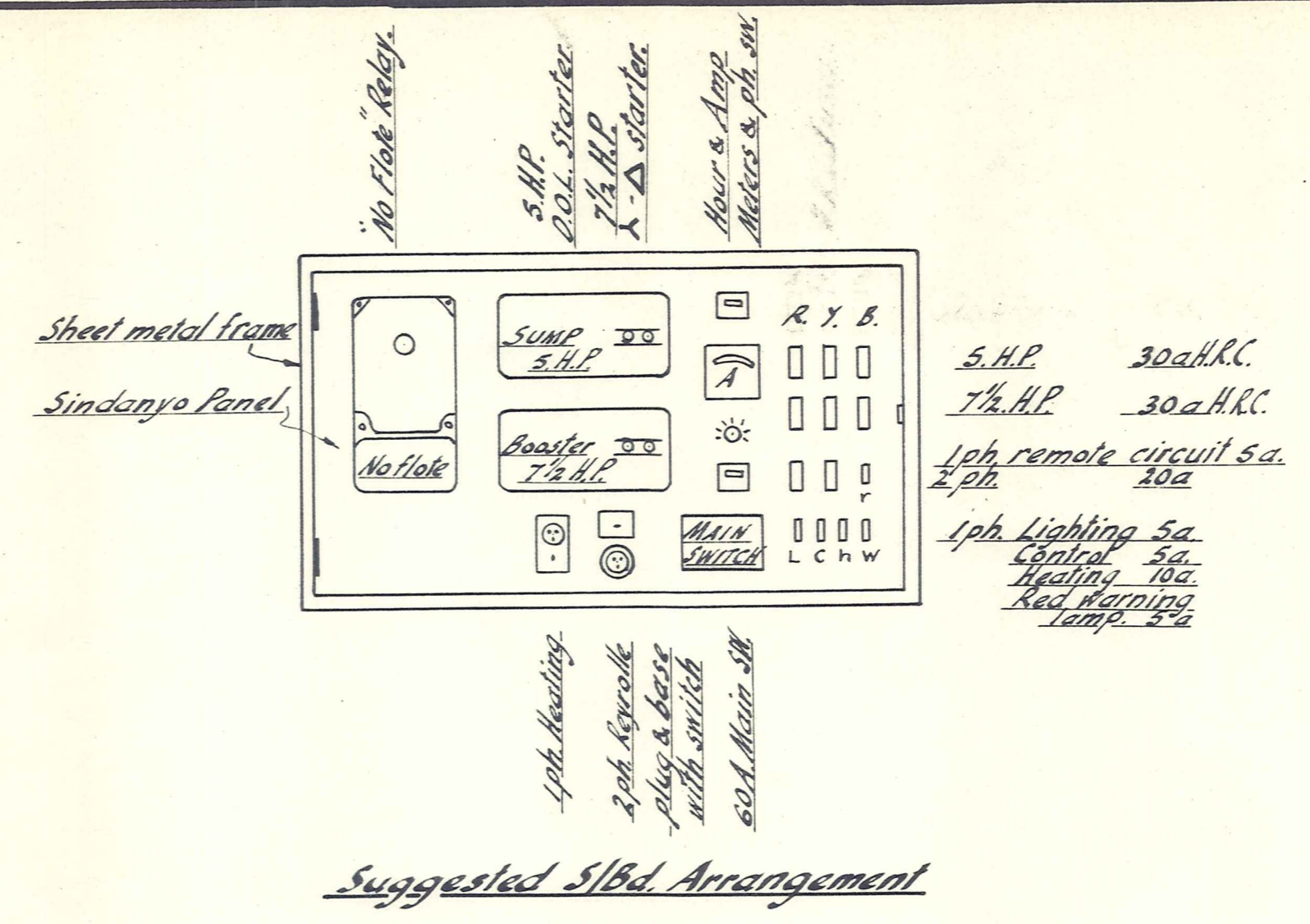
- Main inlet pipe 12" By-pass to MH 3 only
- 2 Imhoff Tanks Sludge line
- MH's 1 & 2 Sludge drain
- Sludge Drying Beds Bdy. Fencing
- Operators Bldg Power & Water to Operators Bldg.
- Access Rd Water to Imhoff (Low press)
- Paths & steps to Imhoff & sludge beds
- All generally as shown dotted.

Summary of New SECONDARY WORKS

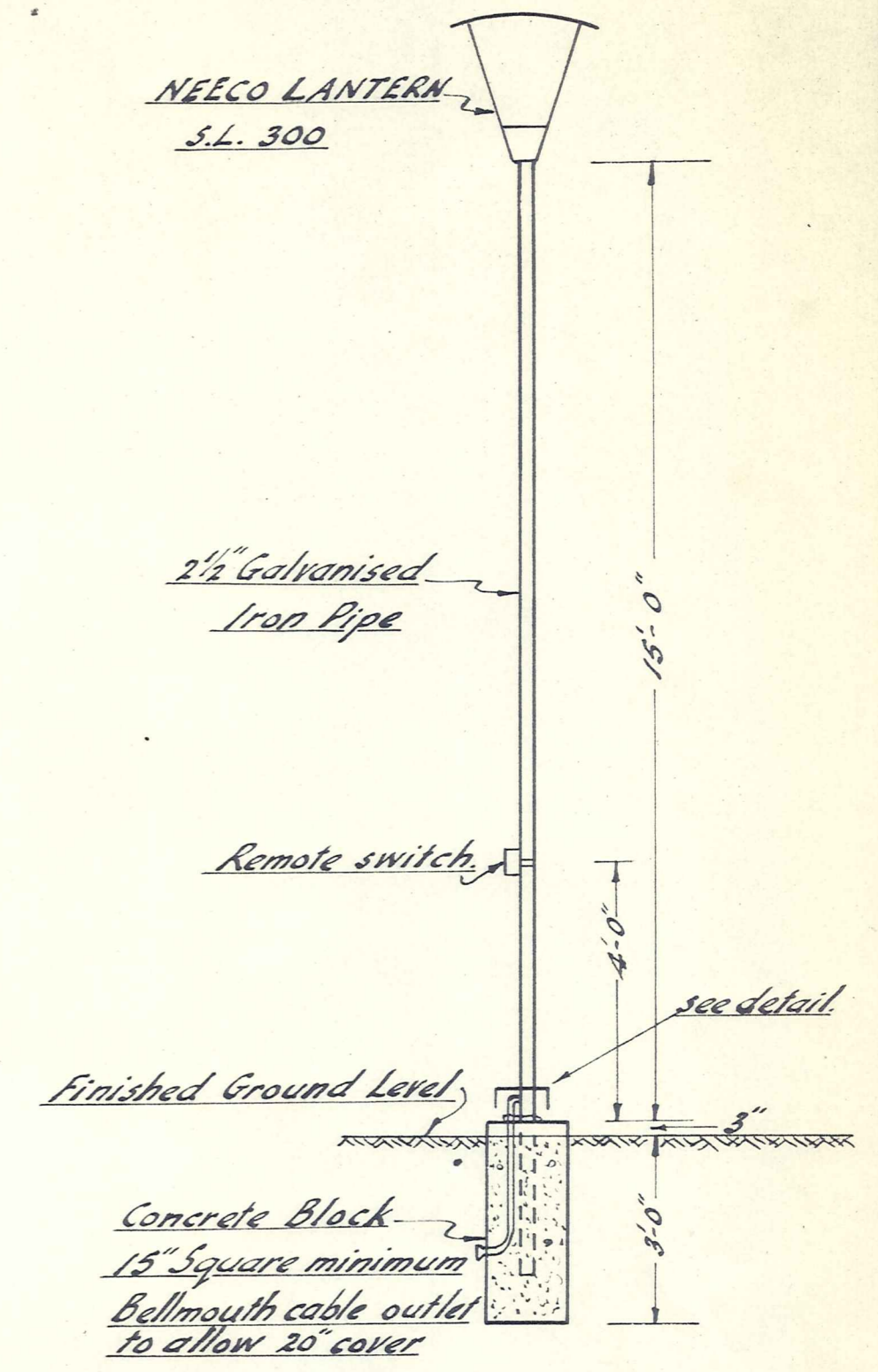
- 2 Filters MH's 3, 4, 5, 6, 7
- 2 Humus Tanks Effluent pipes & Valves & 9" By Pass
- Return Pump & H.P. Boost pump.
- Return Main Humus sludge pipes & valves
- 2 Lighting standards & Remote switching
- Power & Water to Pump St.
- Lighting & Hoisting Points
- Access Rd to Pump St.
- Paths to Filters, Humus Tanks, Pump St.
- All generally as shown in full lines.



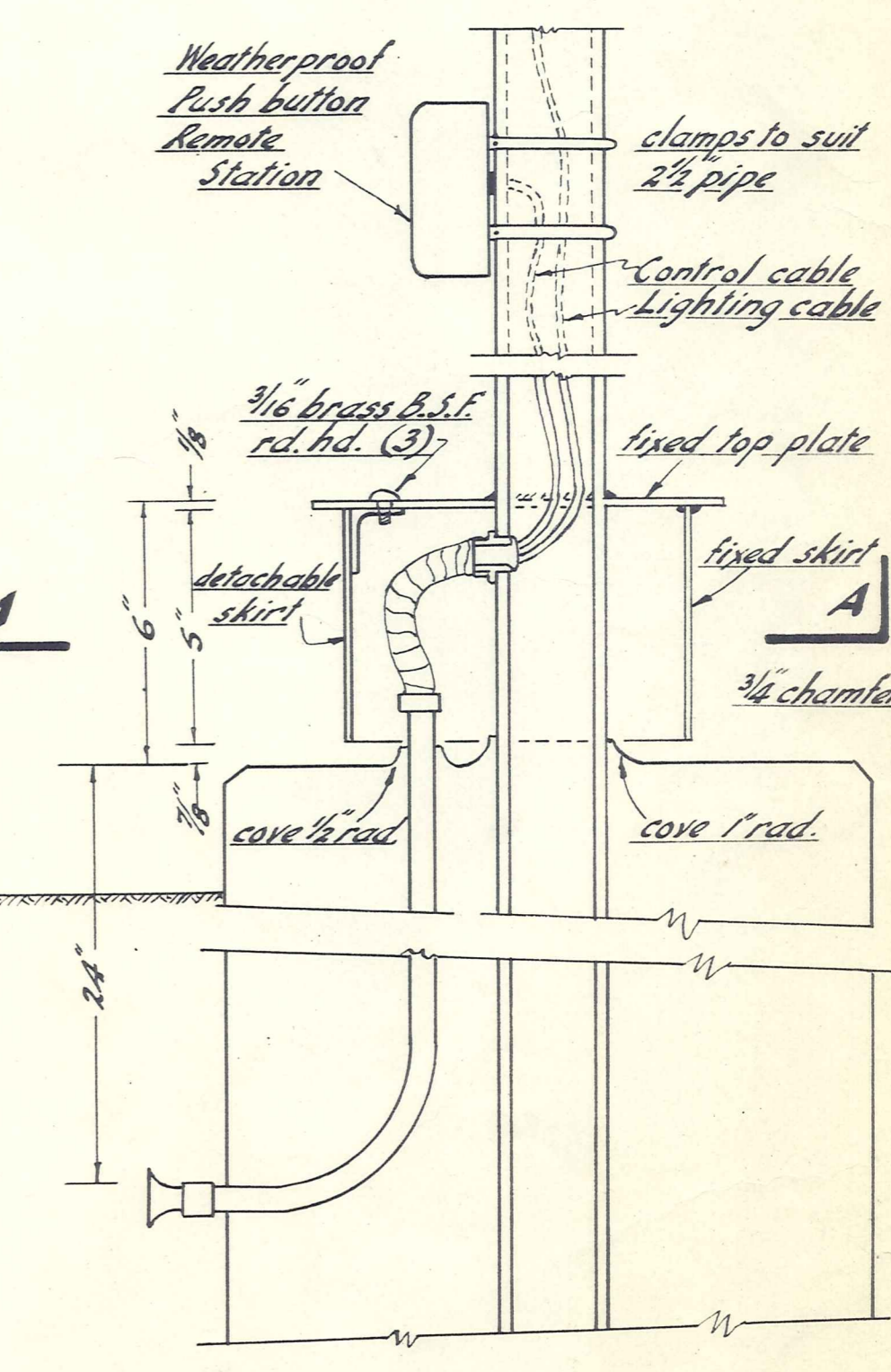
Scale: 20ft. to 1inch



SLUDGE DELIVERY DETAIL Scale 1/4" to 1" Section A-A



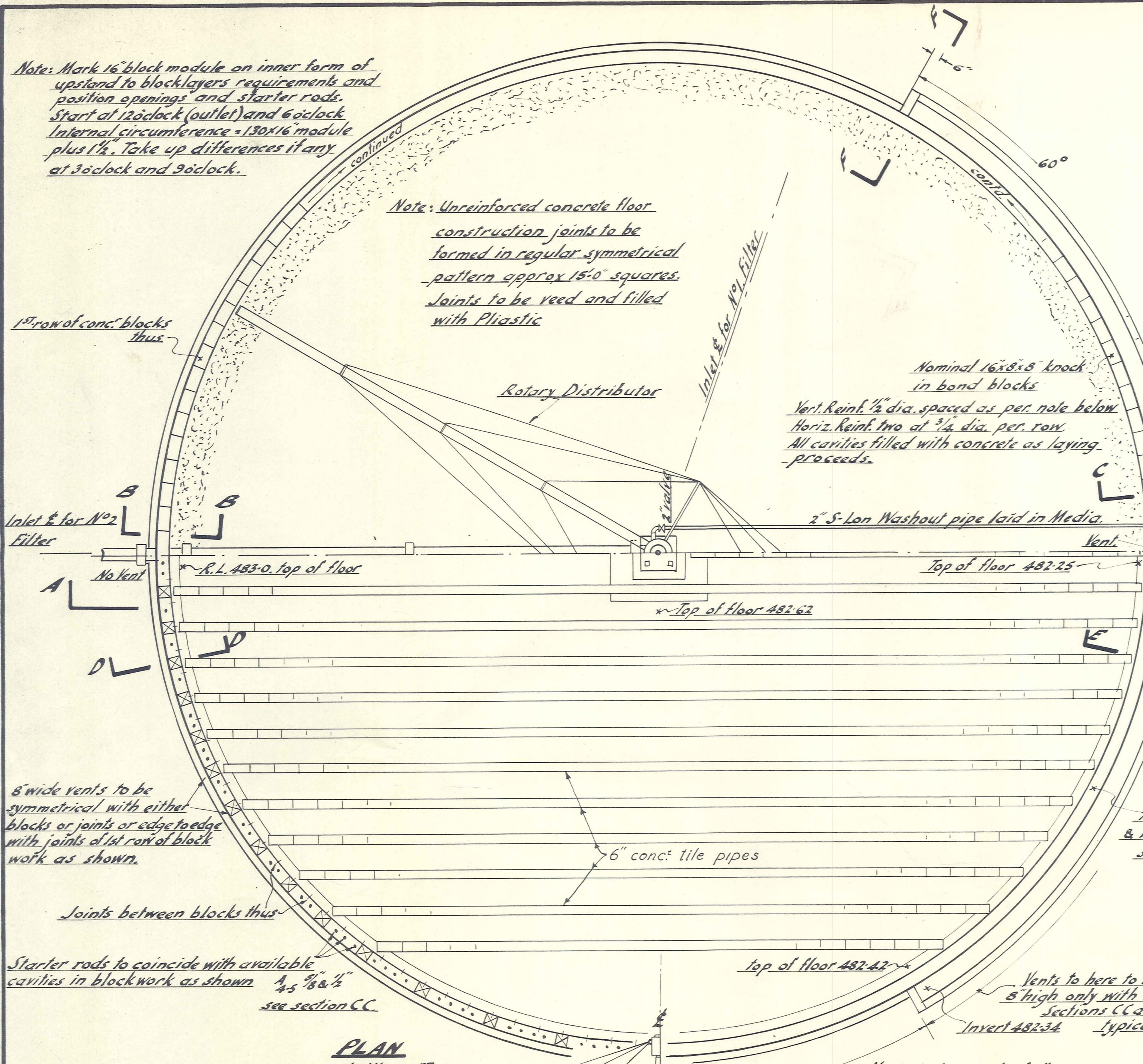
Pole & Lantern Detail 3/8" IN. 101 FT. Two thus.



Lantern Base & Fittings 3/16" to 1 FT.

Note: Mark 16" block module on inner form of upstand to blocklayers requirements and position openings and starter rods. Start at 12 o'clock (outlet) and 6 o'clock. Internal circumference = 130x16 module plus 1 1/2". Take up differences if any at 3 o'clock and 9 o'clock.

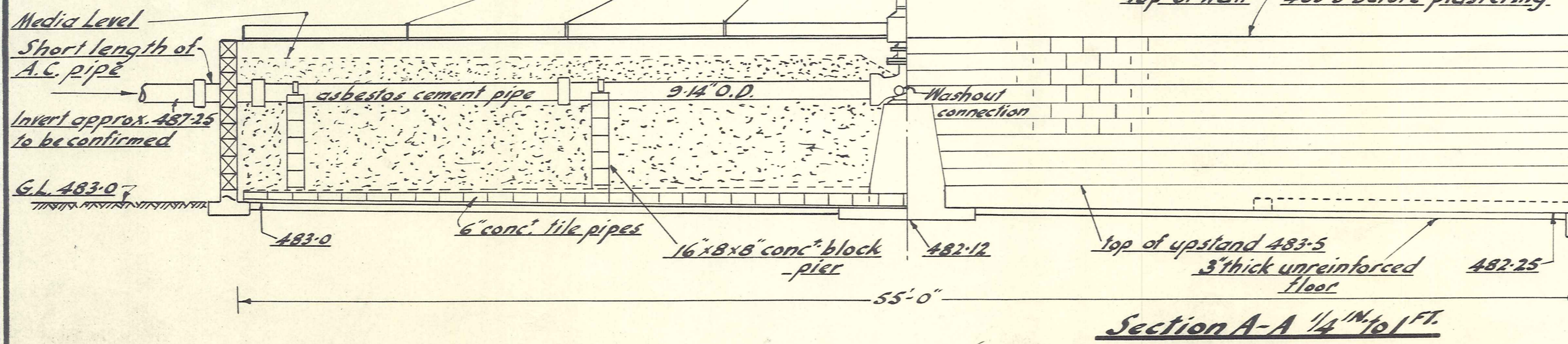
Note: Unreinforced concrete floor construction joints to be formed in regular symmetrical pattern approx 15'-0" squares. Joints to be veed and filled with Plastic.



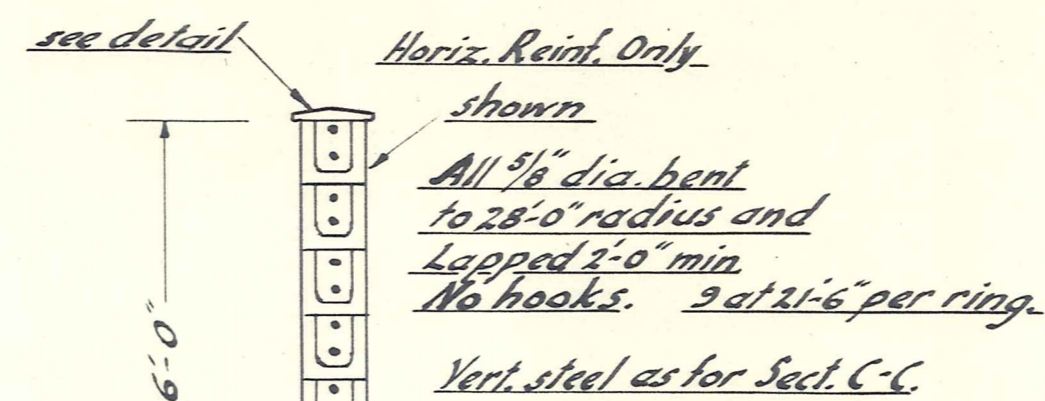
8" wide vents to be symmetrical with either blocks or joints or edge to edge with joints of 1st row of block work as shown.

Starter rods to coincide with available cavities in blockwork as shown 1/2" dia. 1/2" see section C.C.

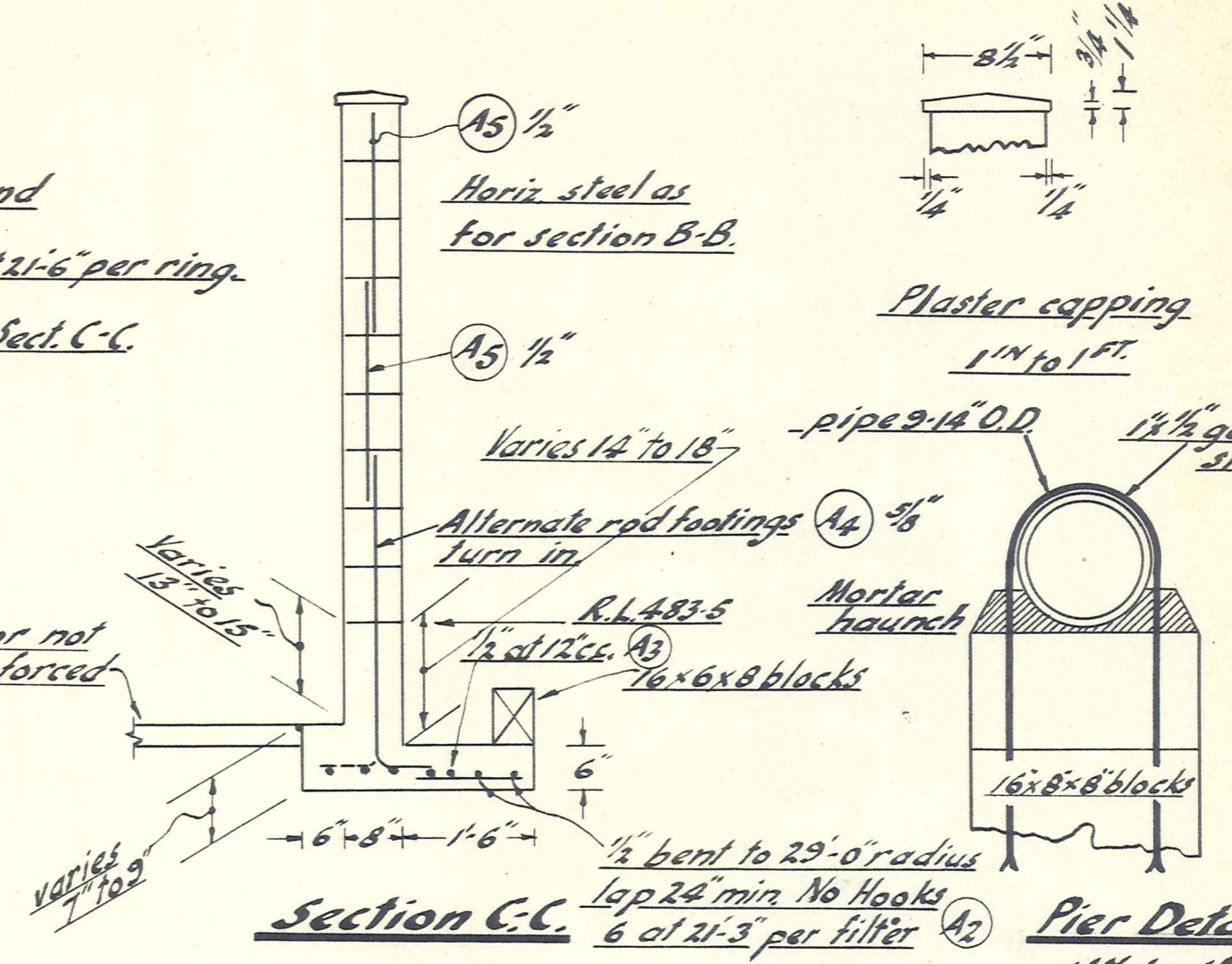
PLAN
1/4" to 1' FT



Section A-A 1/4" to 1' FT

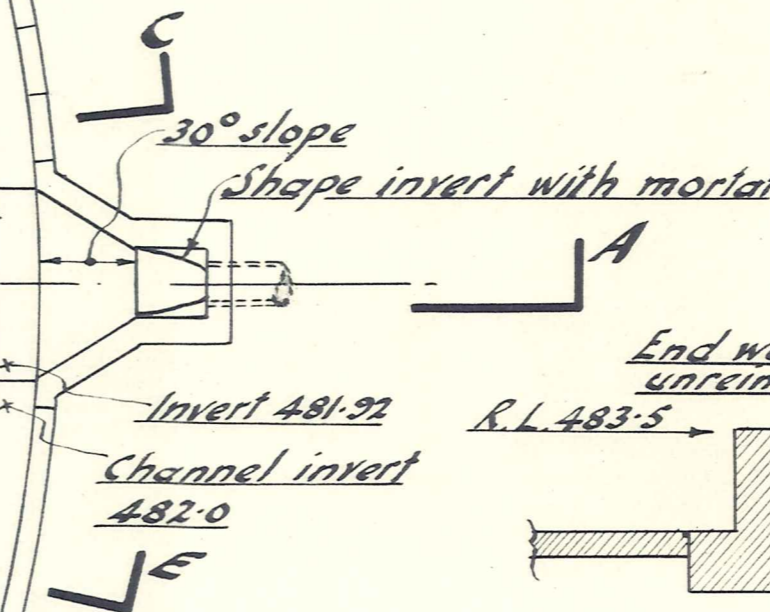


Section B-B

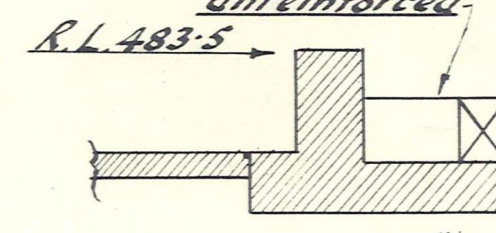


Section C-C

Pier Detail
1/4" to 1' FT

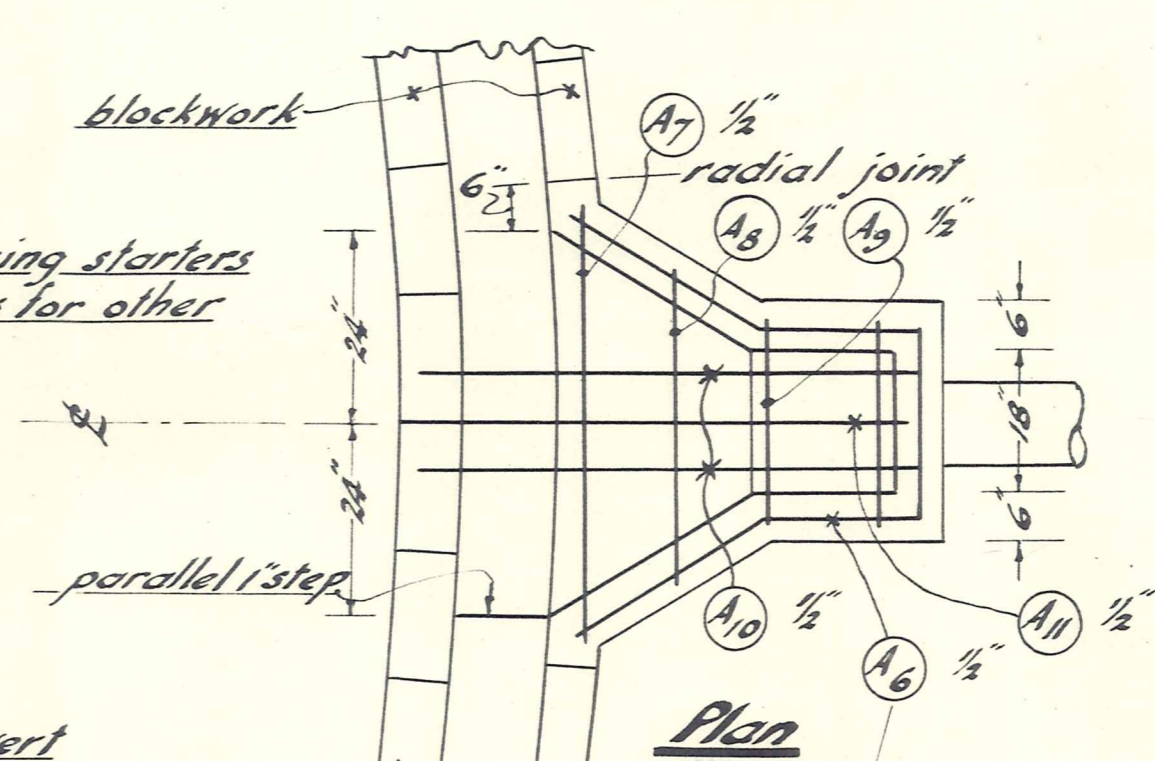


Section D-D

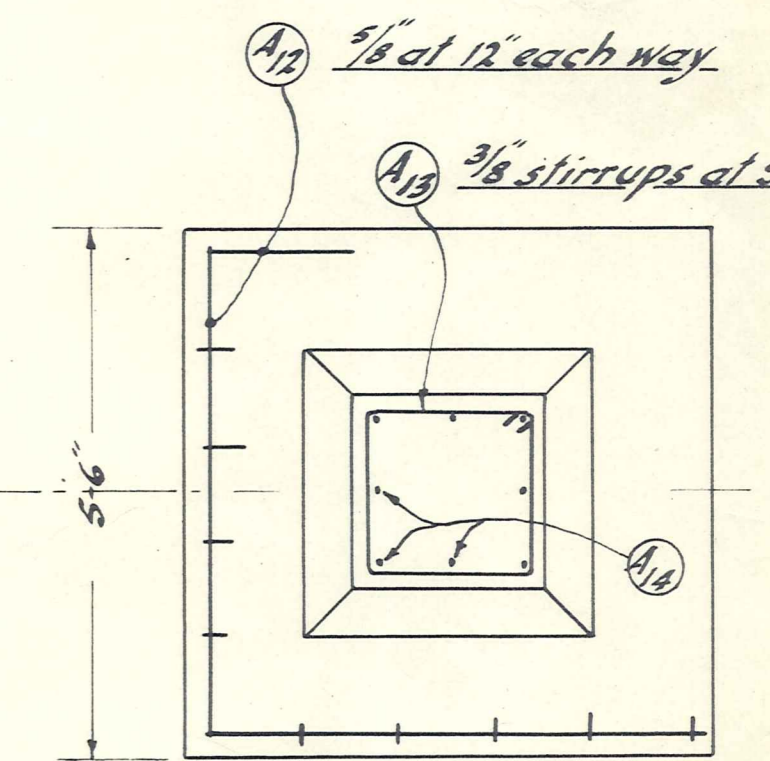


Section E-E

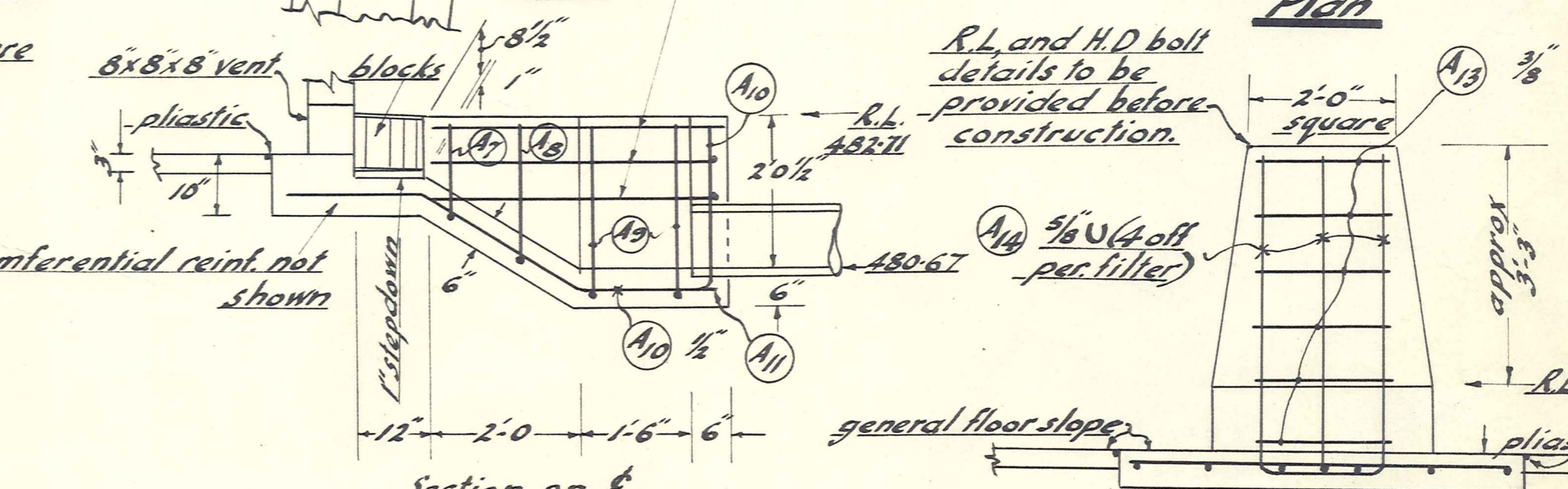
Sections 1/2" to 1' FT



Plan



Plan

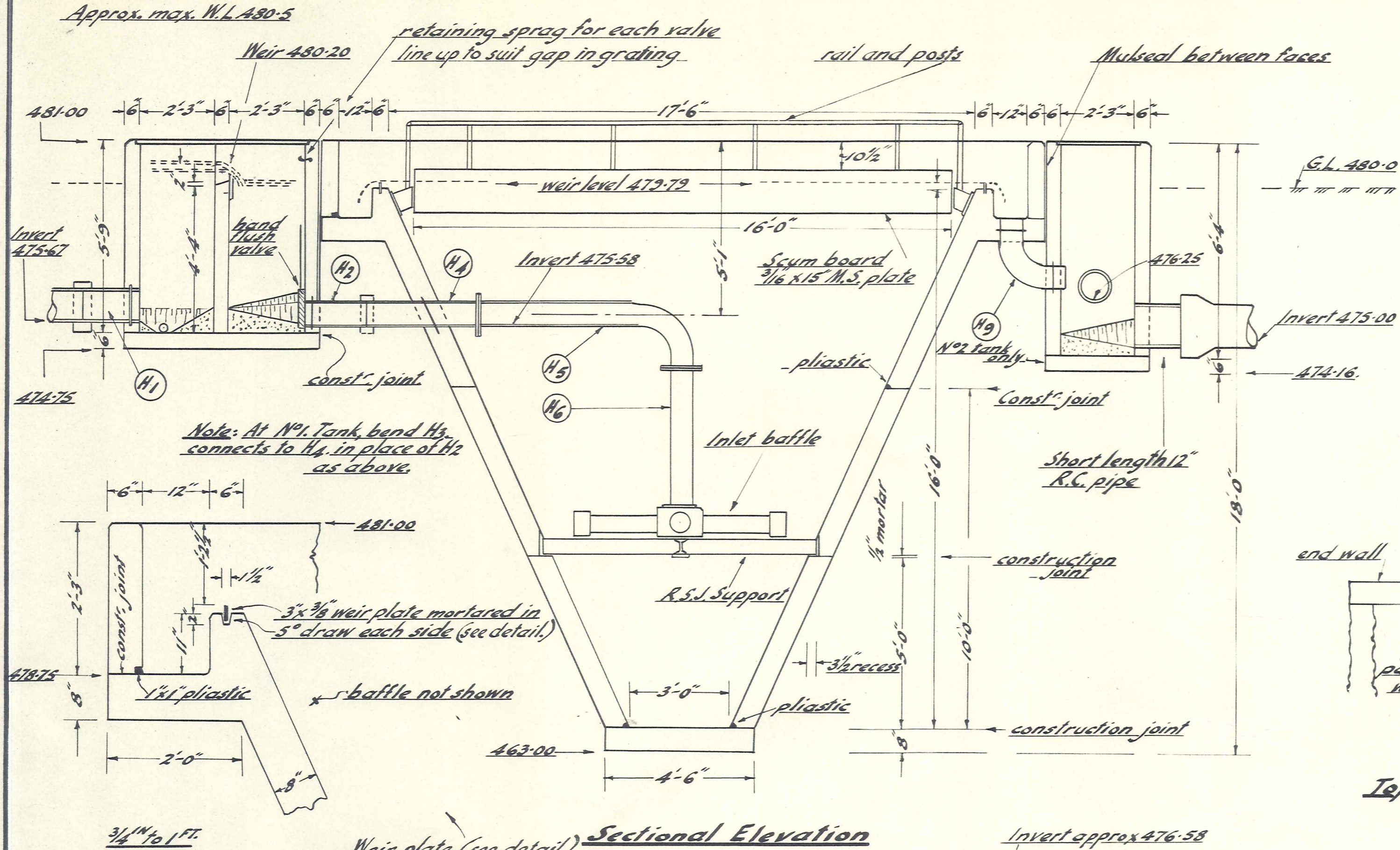


Elevation

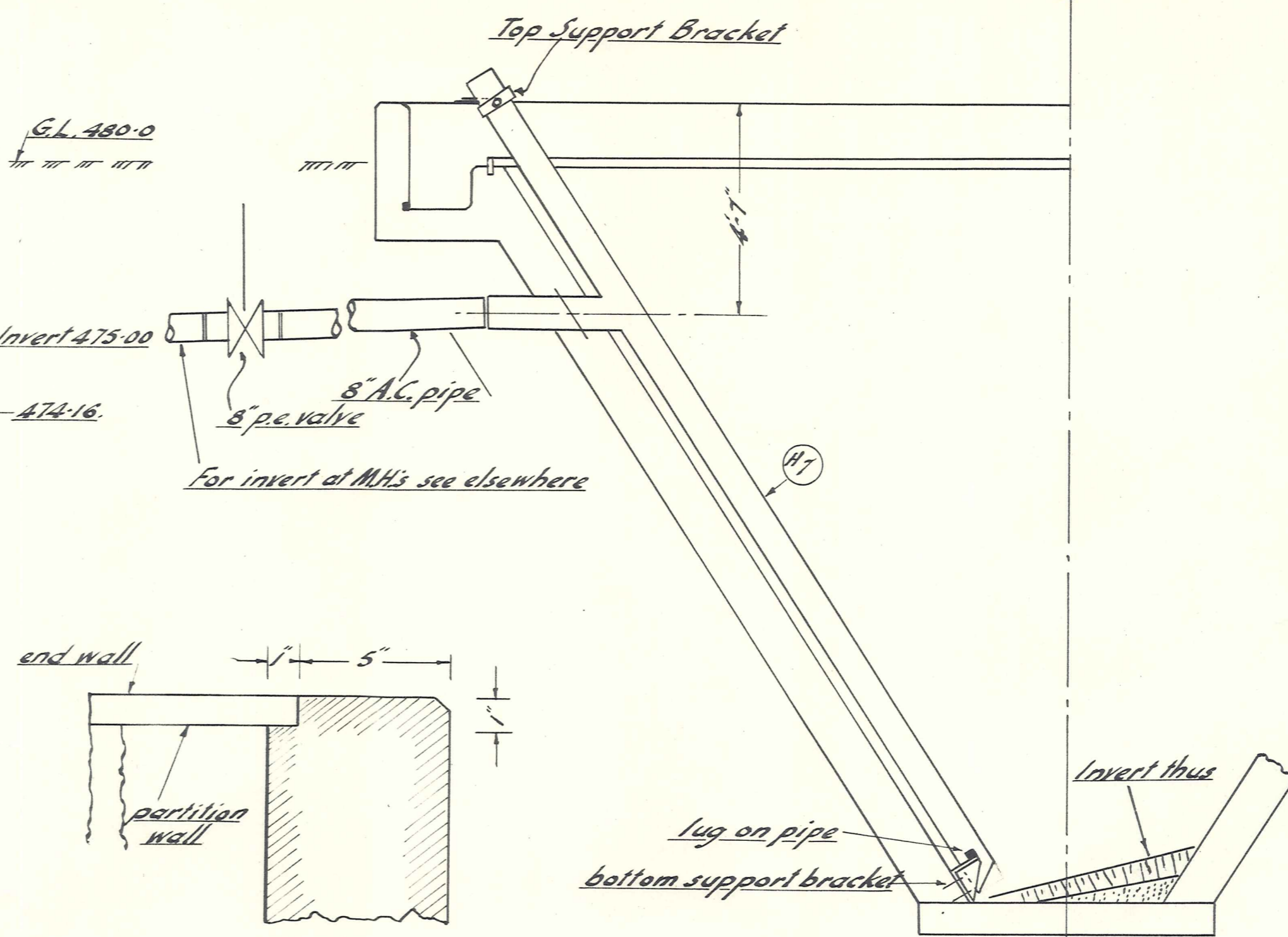
Central Pier 1/2" to 1' FT

TRICKLING FILTERS
Two Thus
Scales: 1/4", 1/2", 1' to 1' FT

Approx. max. W.L. 480.5

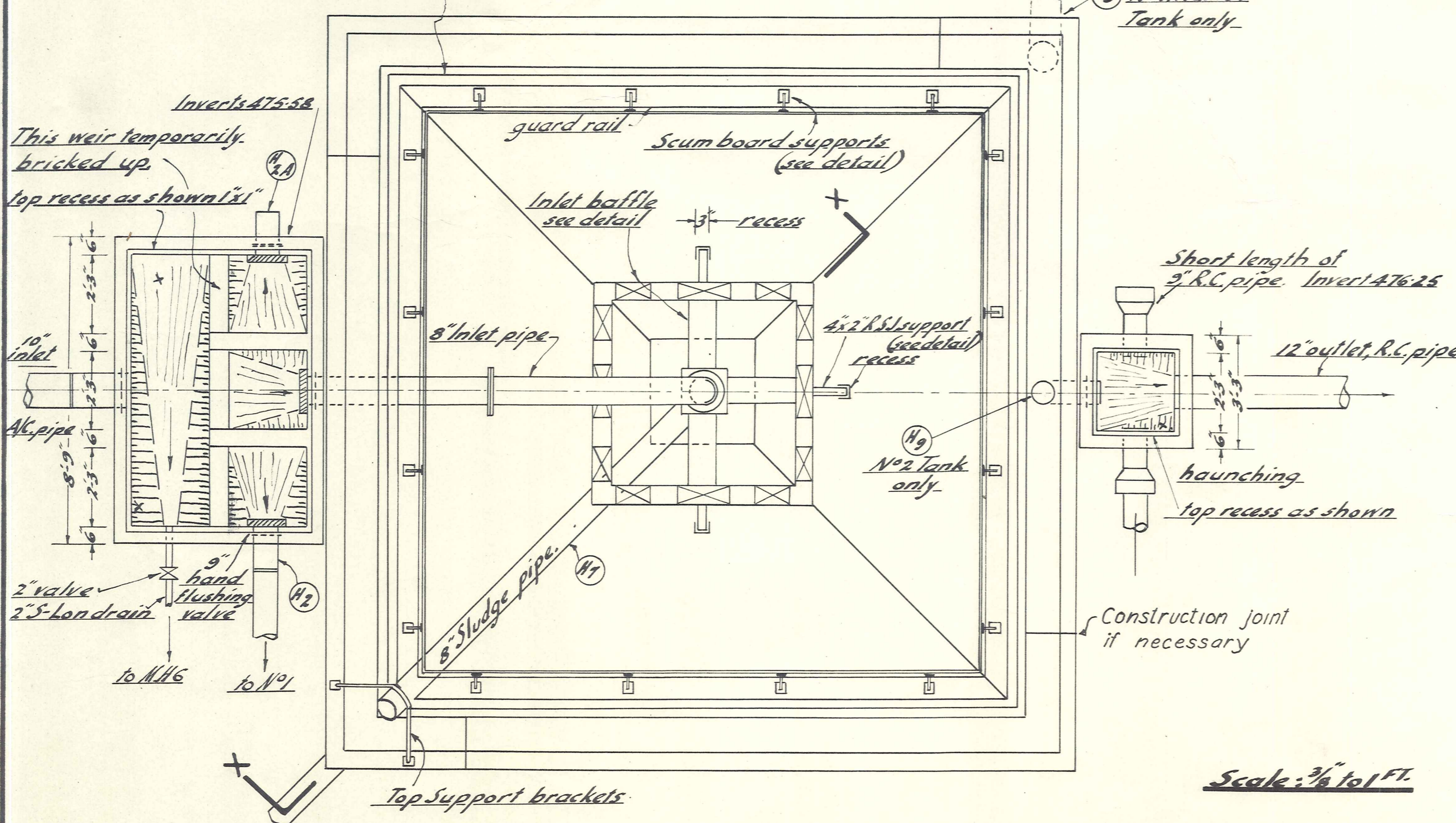


Sectional Elevation



Top recess detail
3' to 1'

Section X-X
Scale 3/8" to 1' FT.



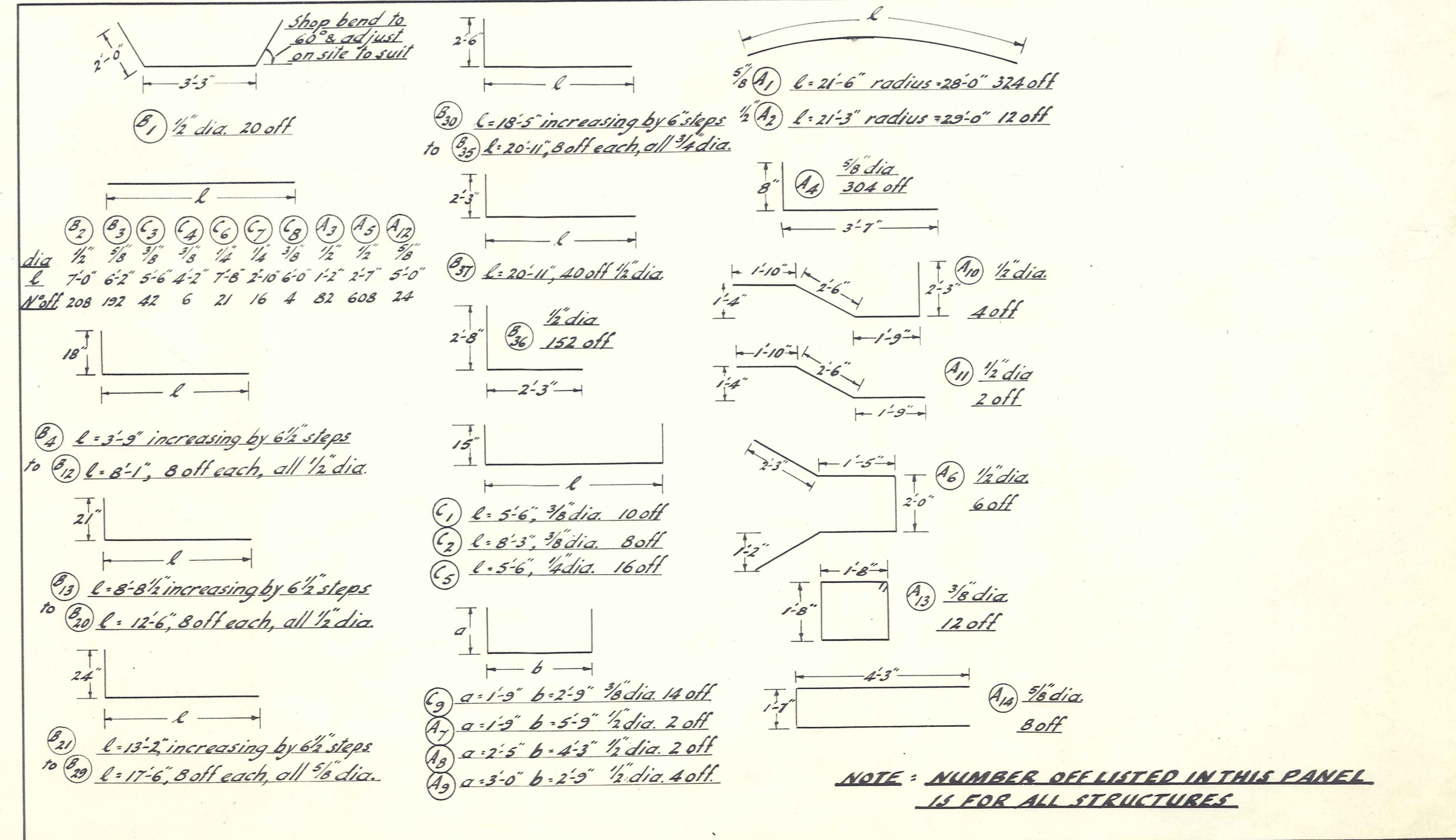
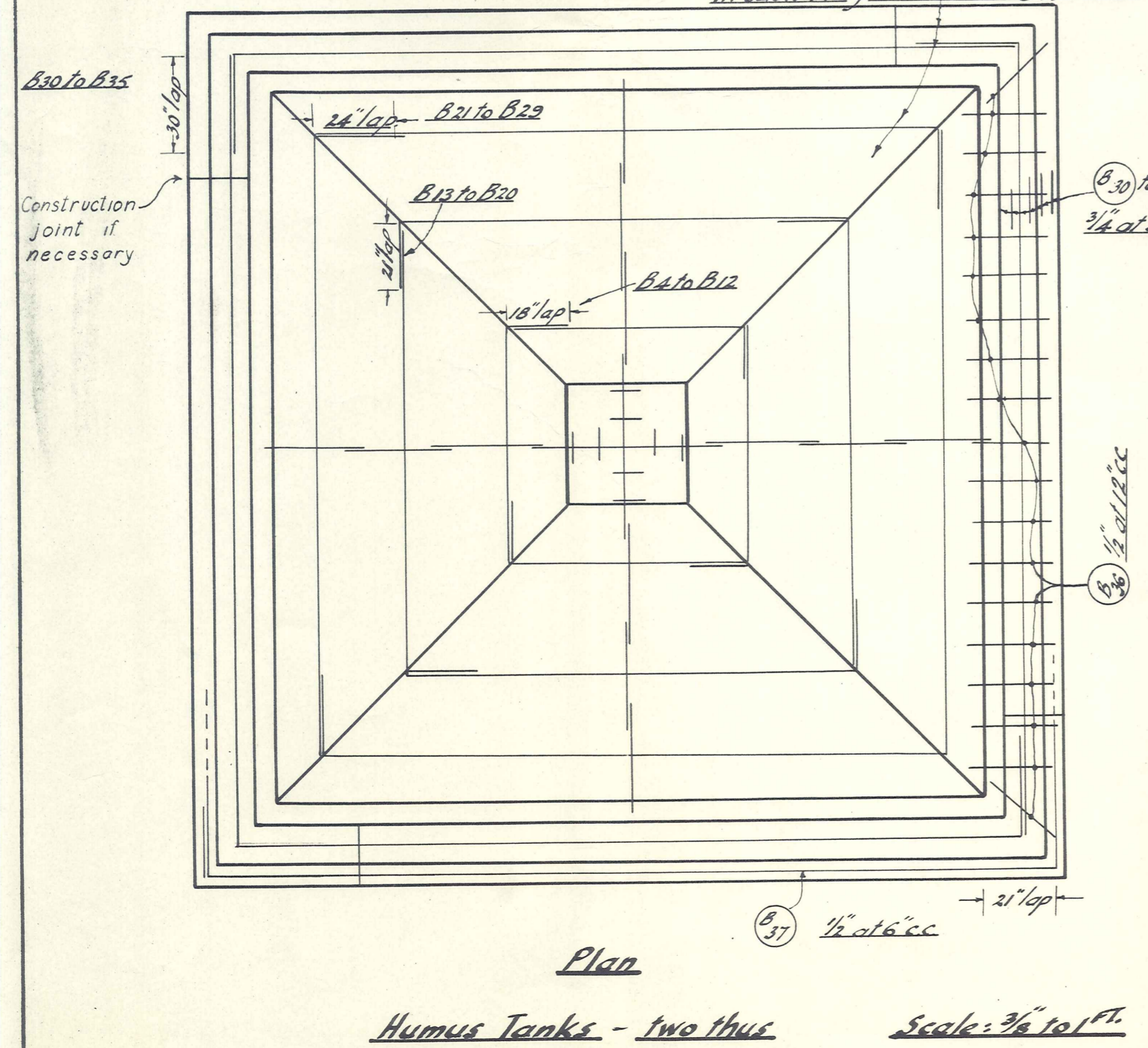
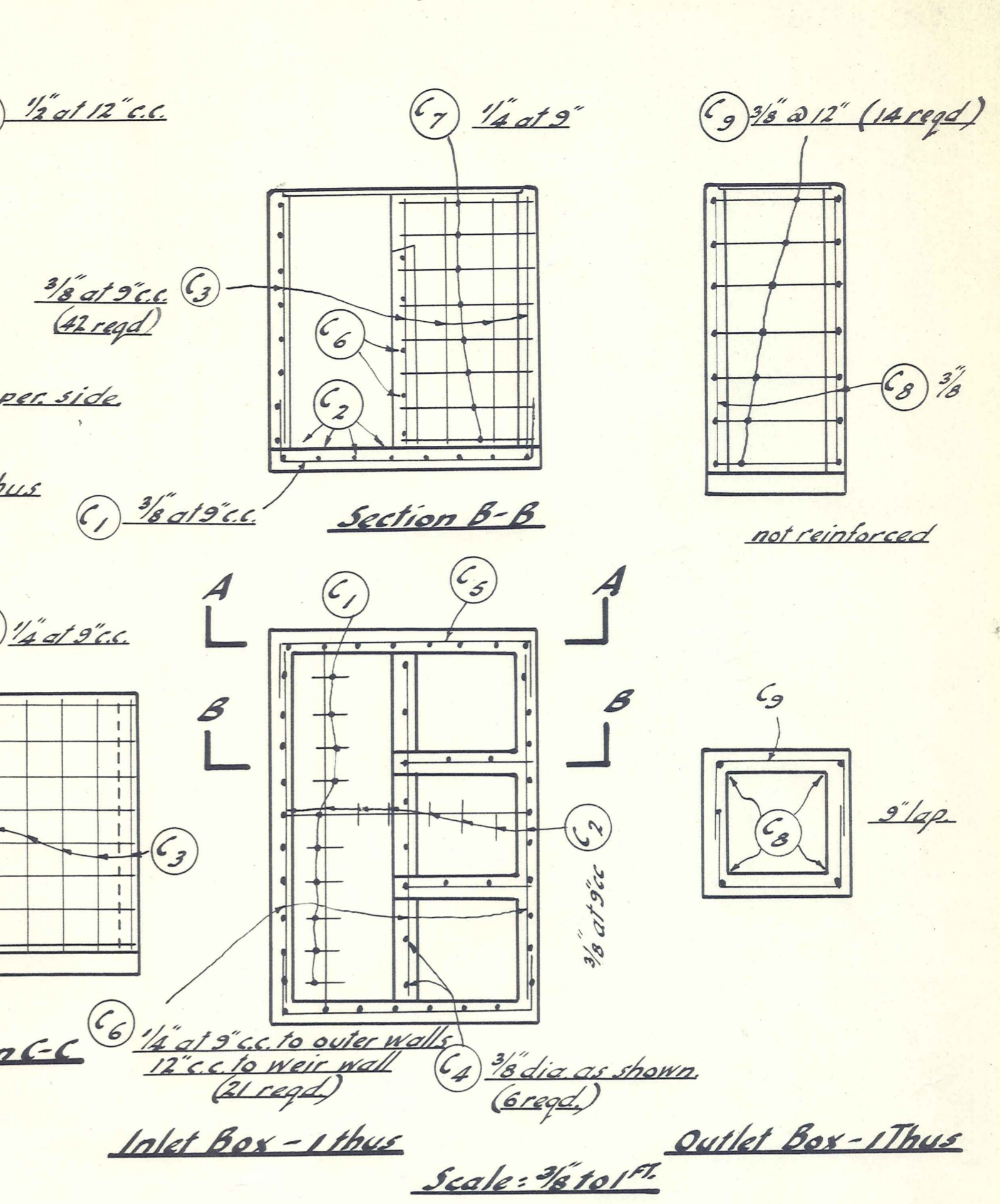
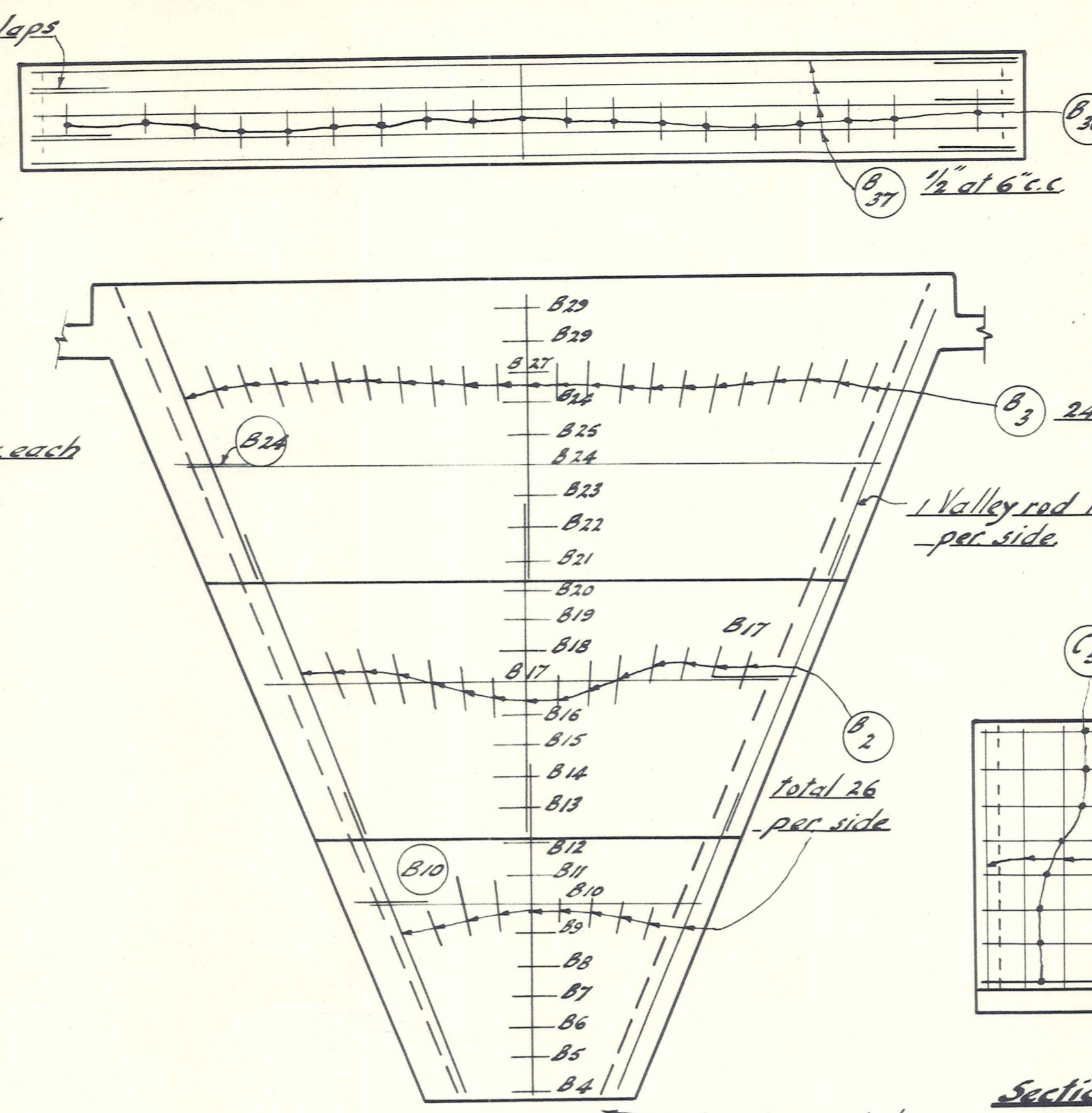
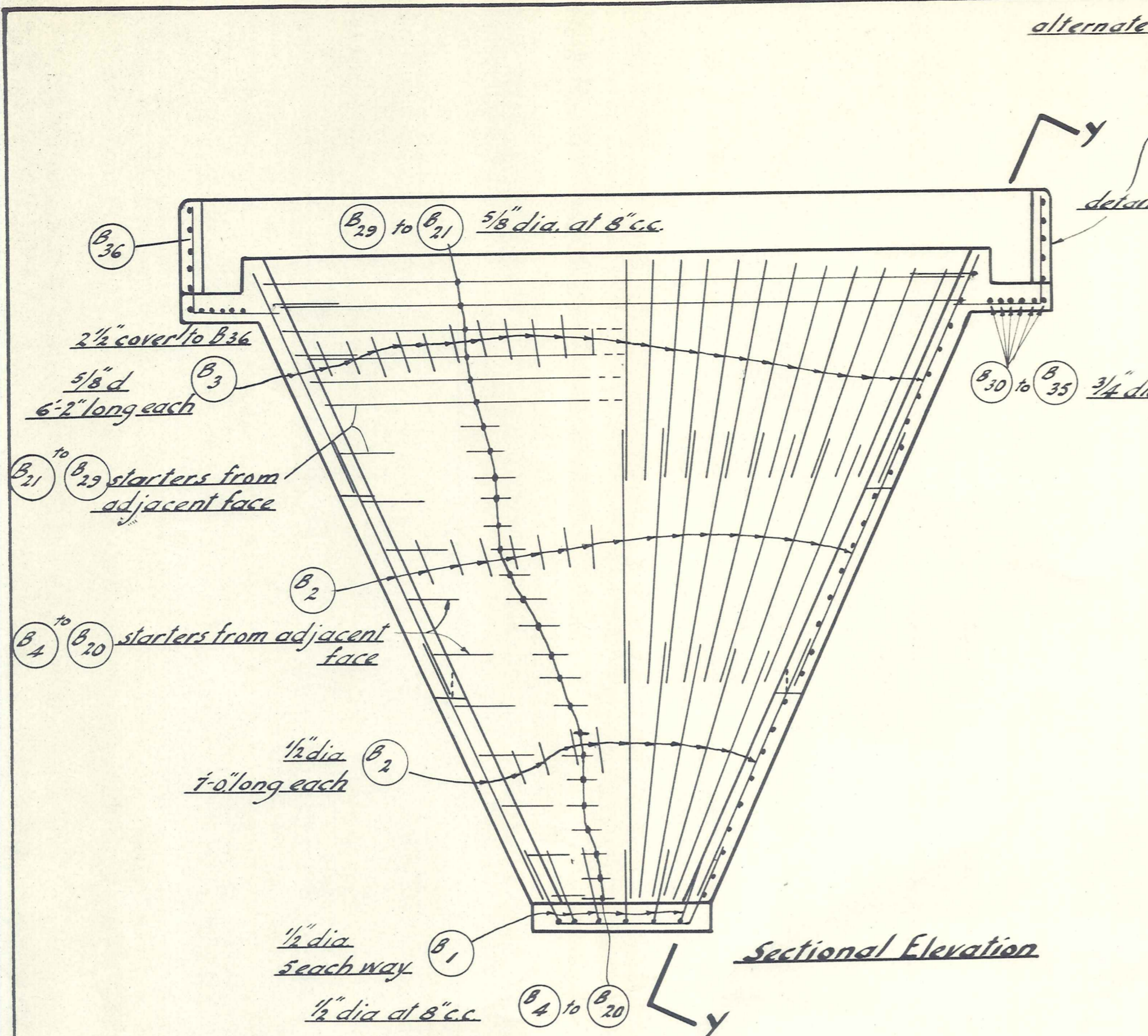
Plan

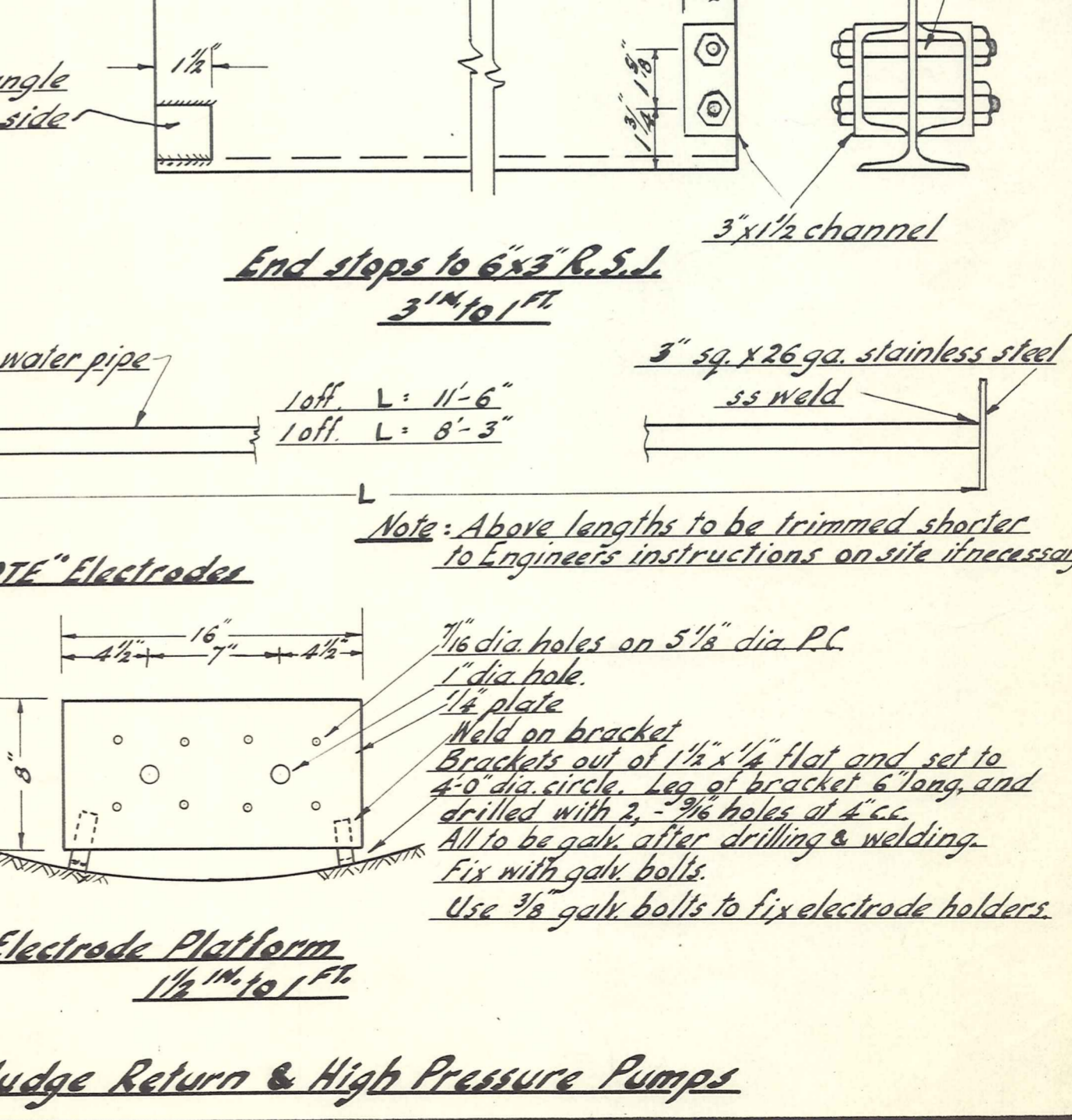
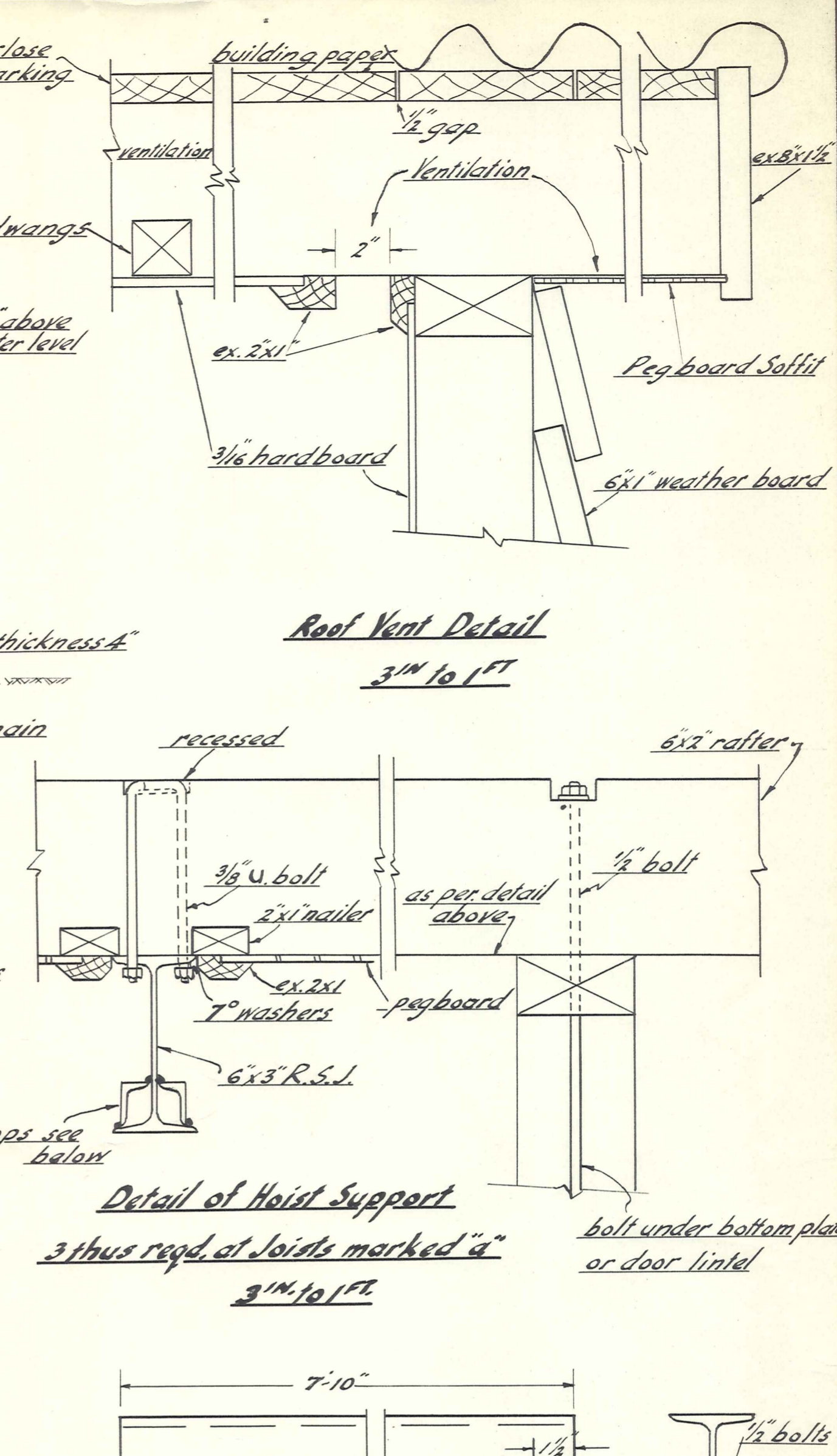
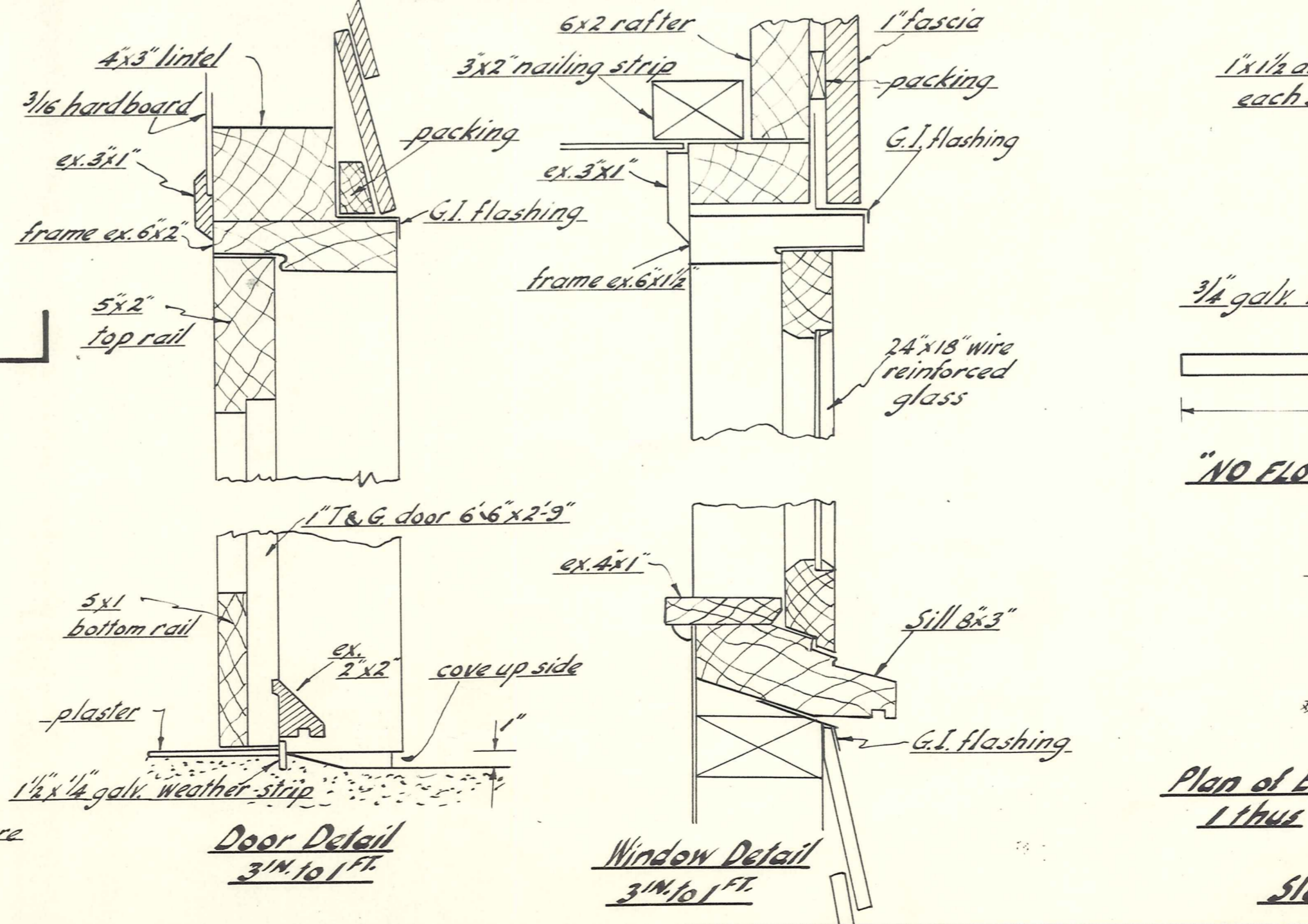
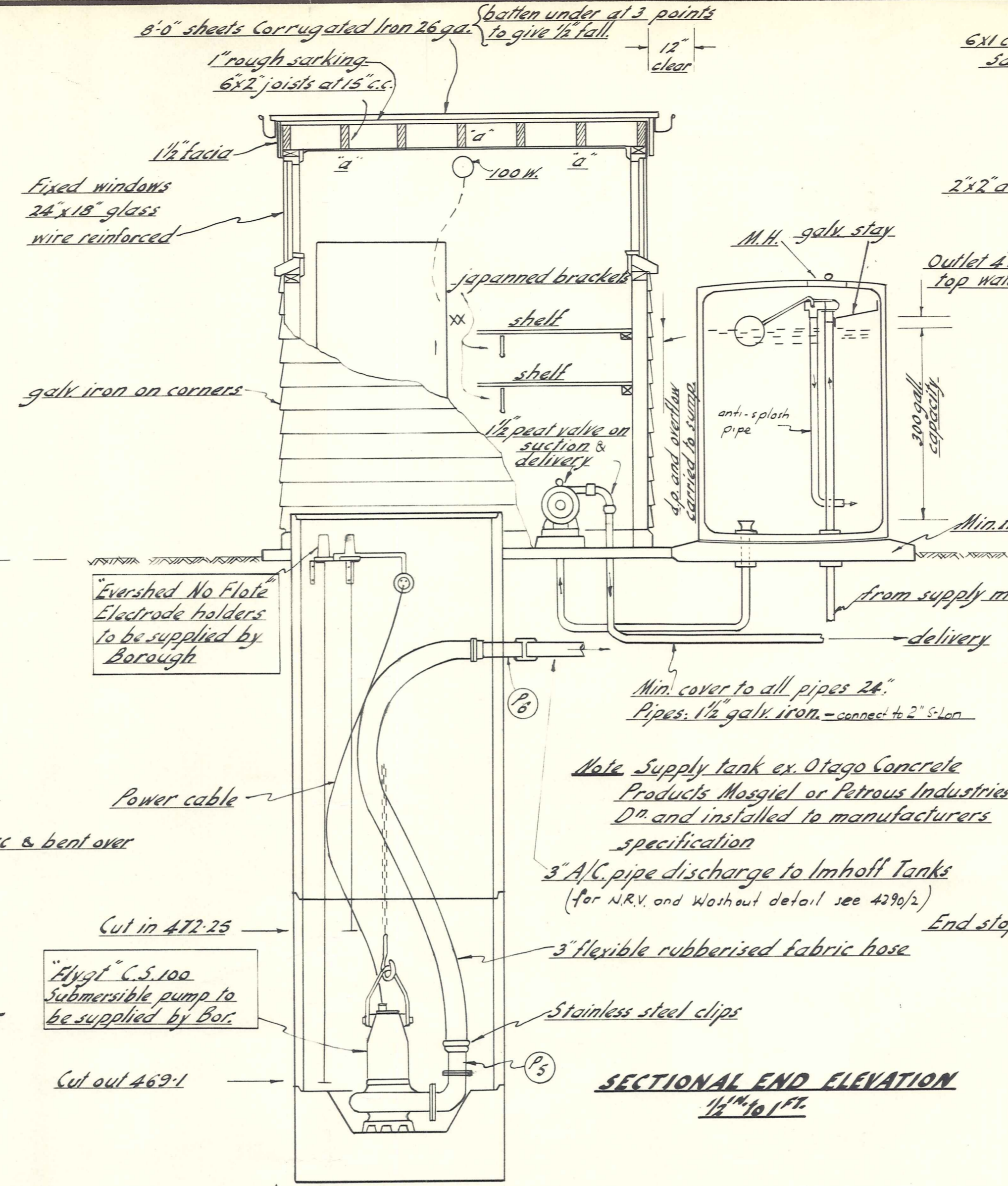
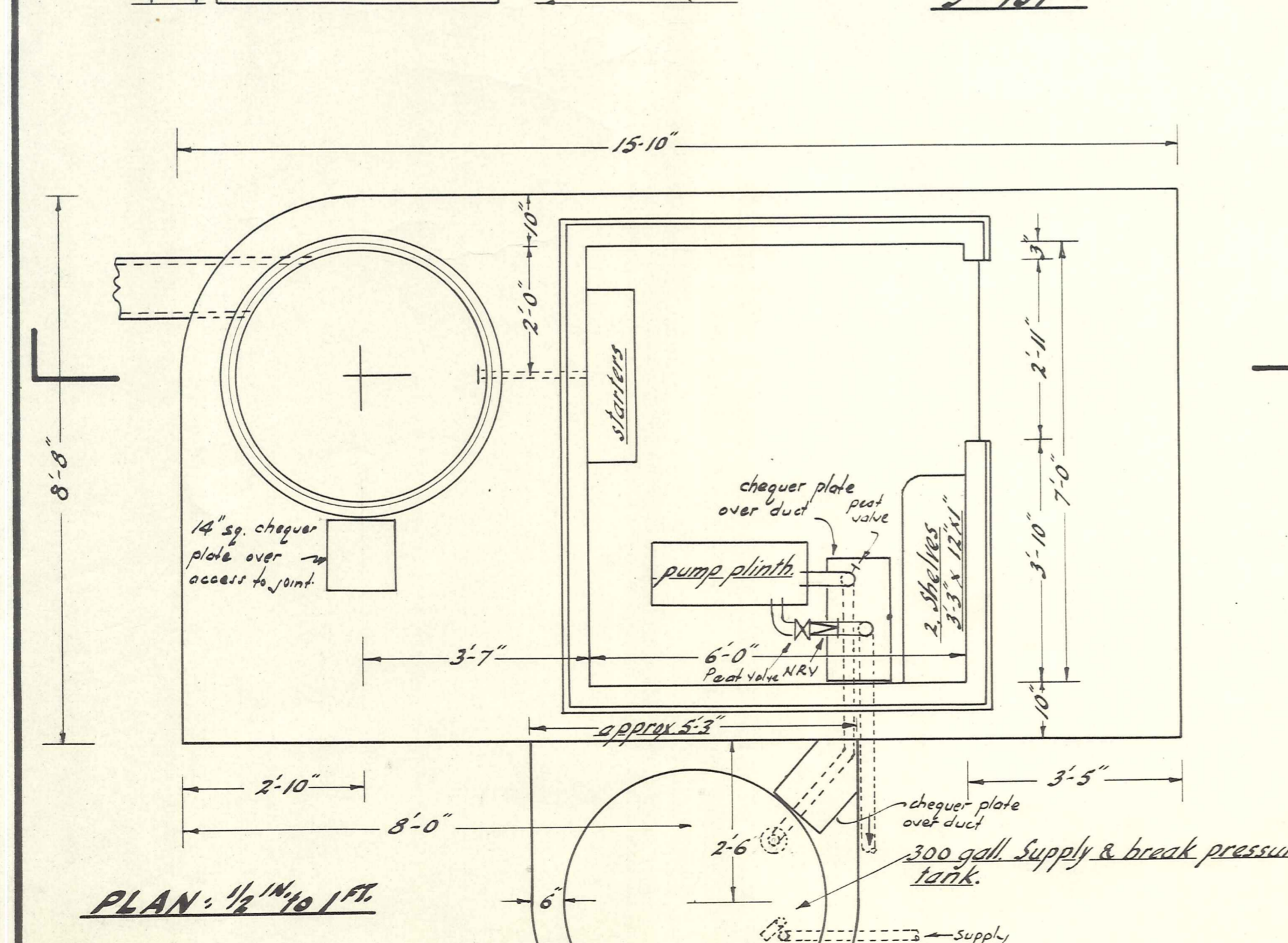
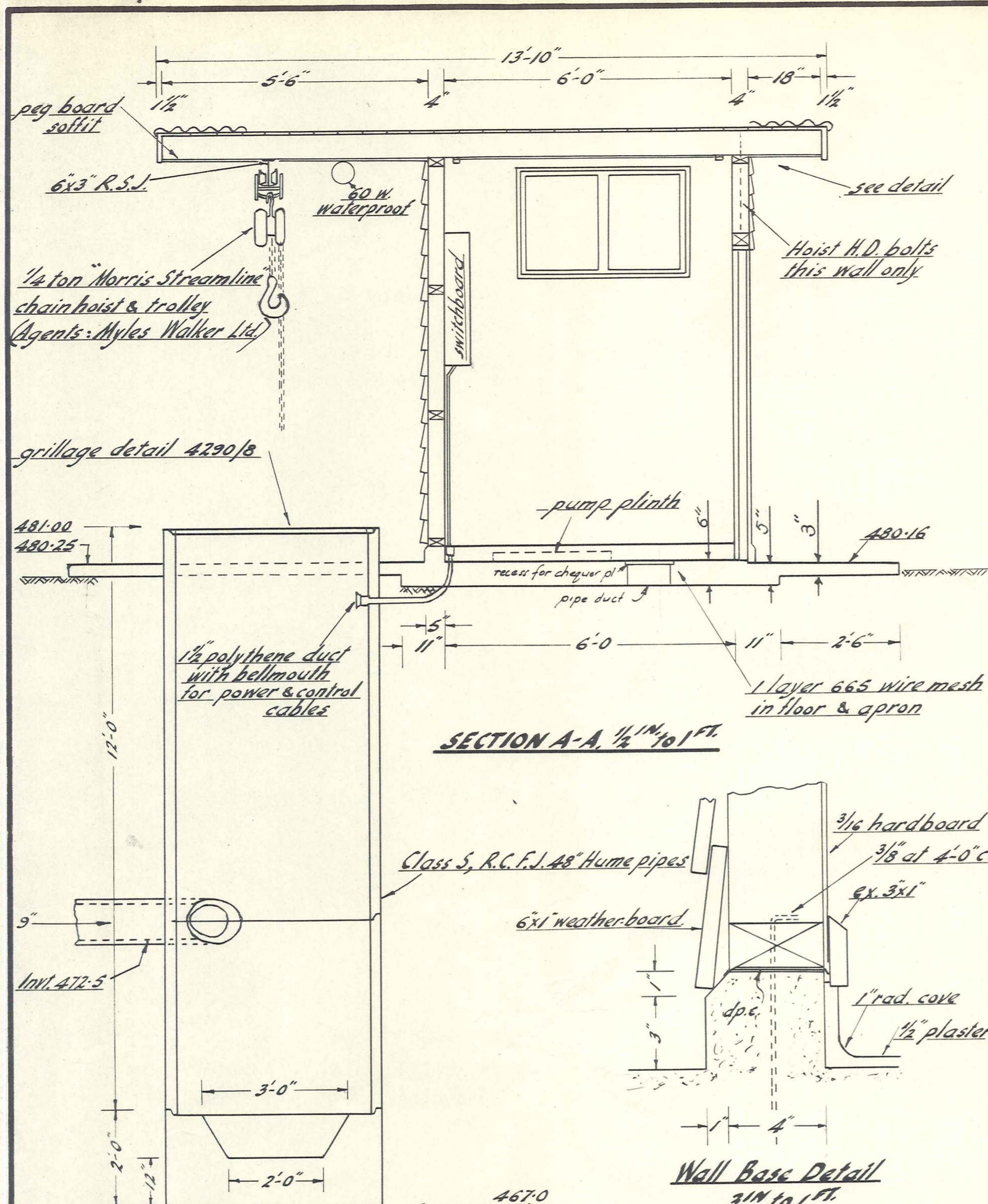
Note: Hand Flush Valves to be As T. Burt Ltd pattern "disc valves" with C.I. faces with flange drilled to B.S. Table C. 2. Supply and fit retaining sprag. Valve handles to be slotted and finish 6'-0" above valve F.

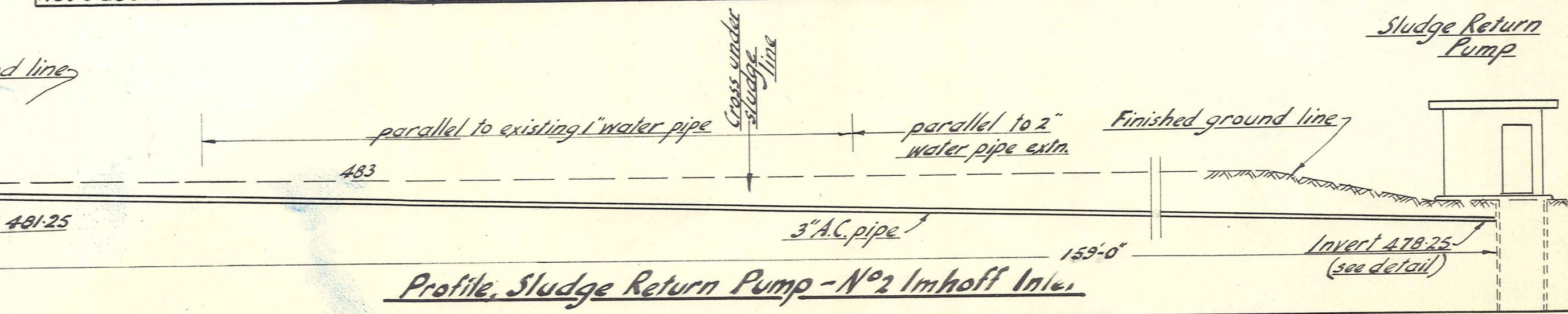
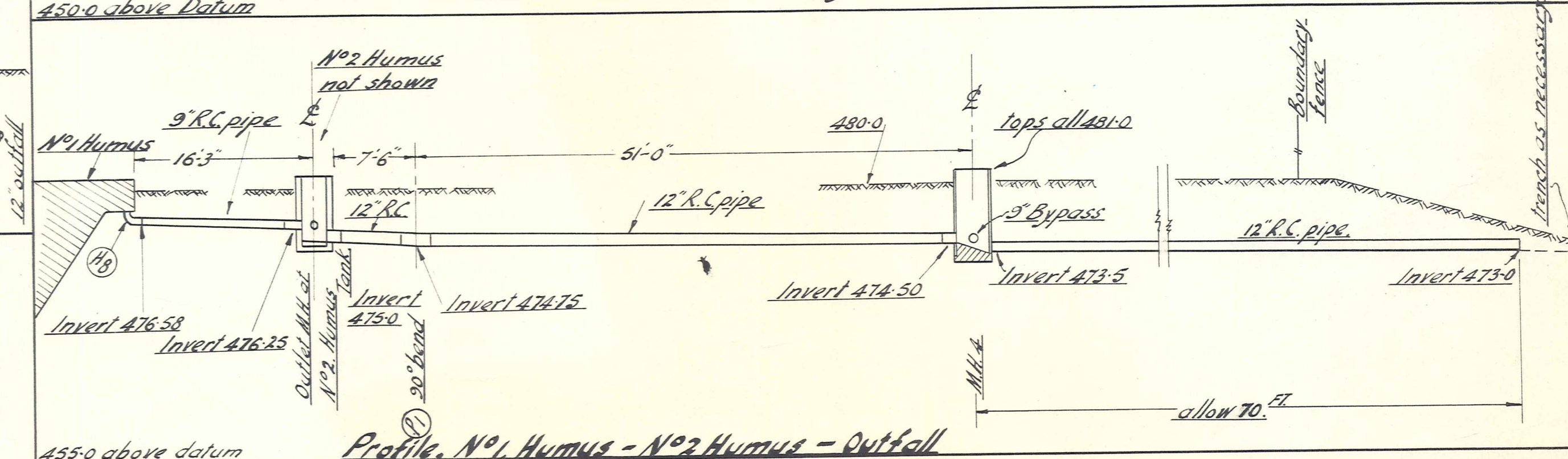
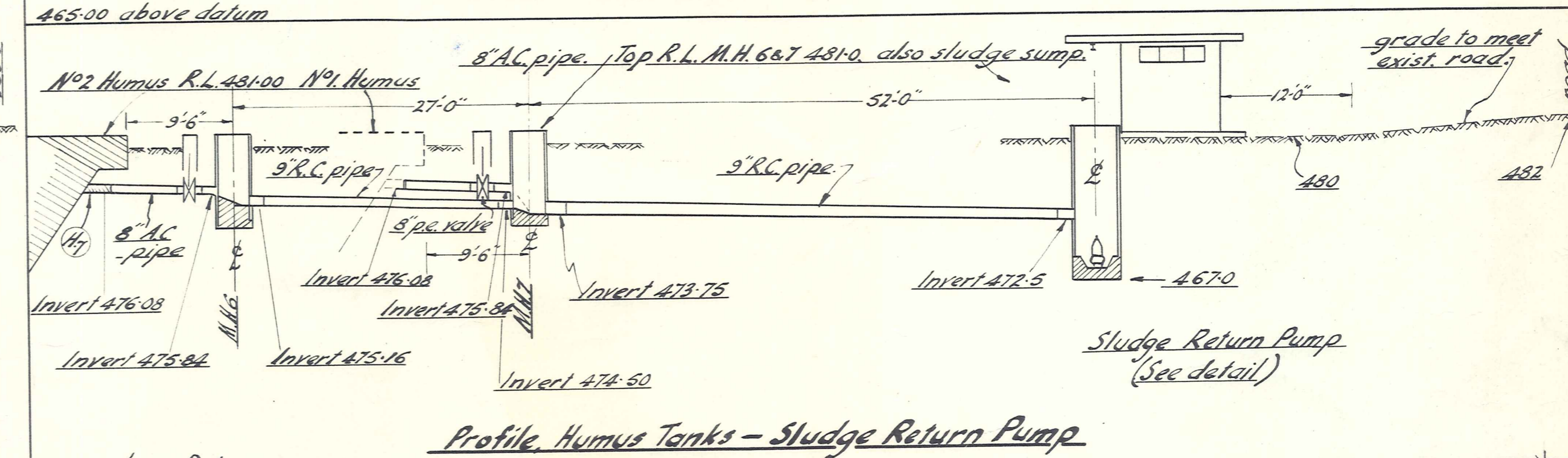
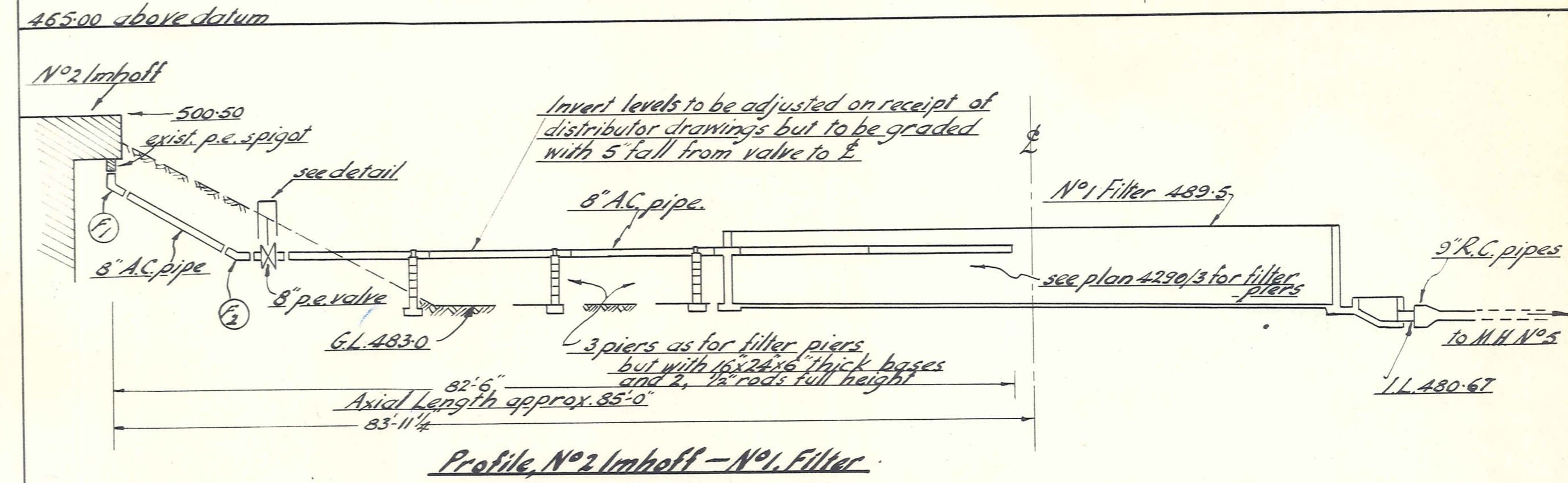
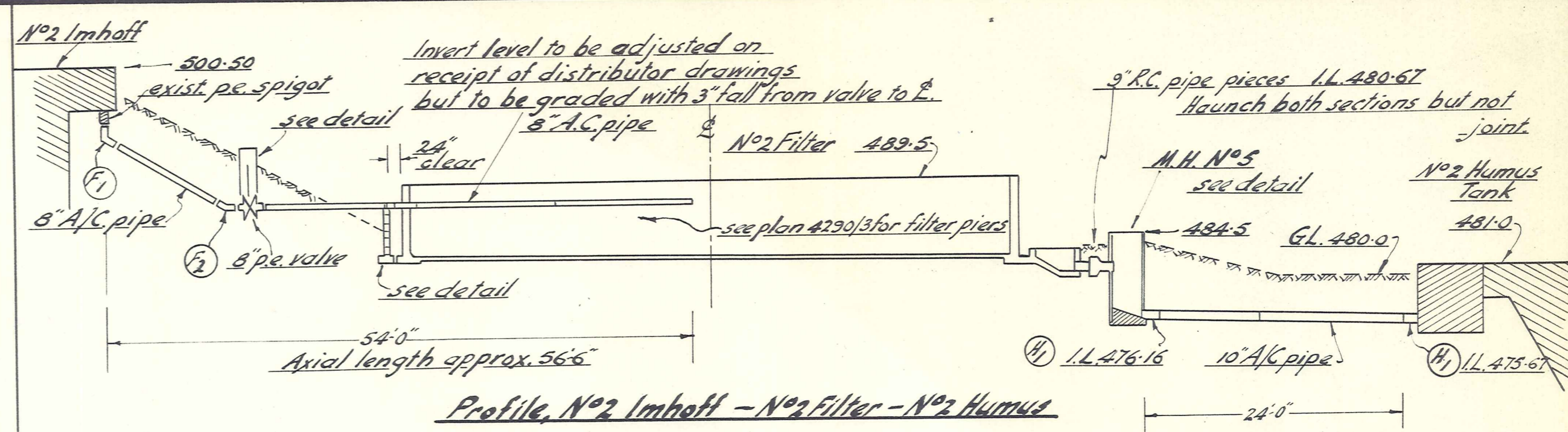
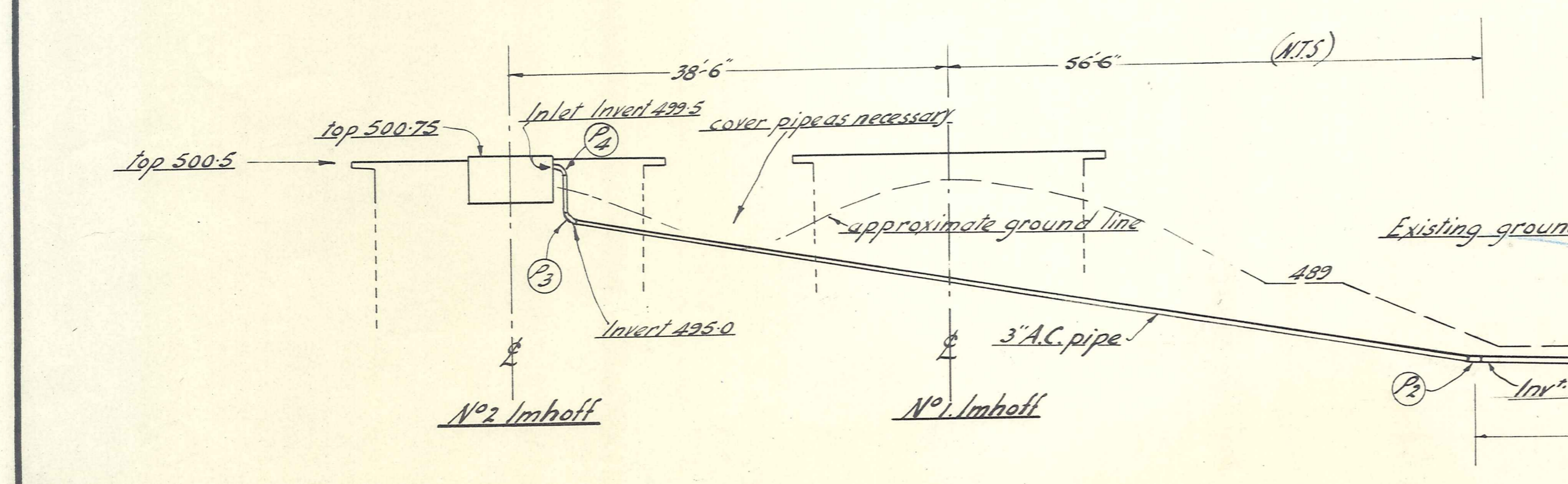
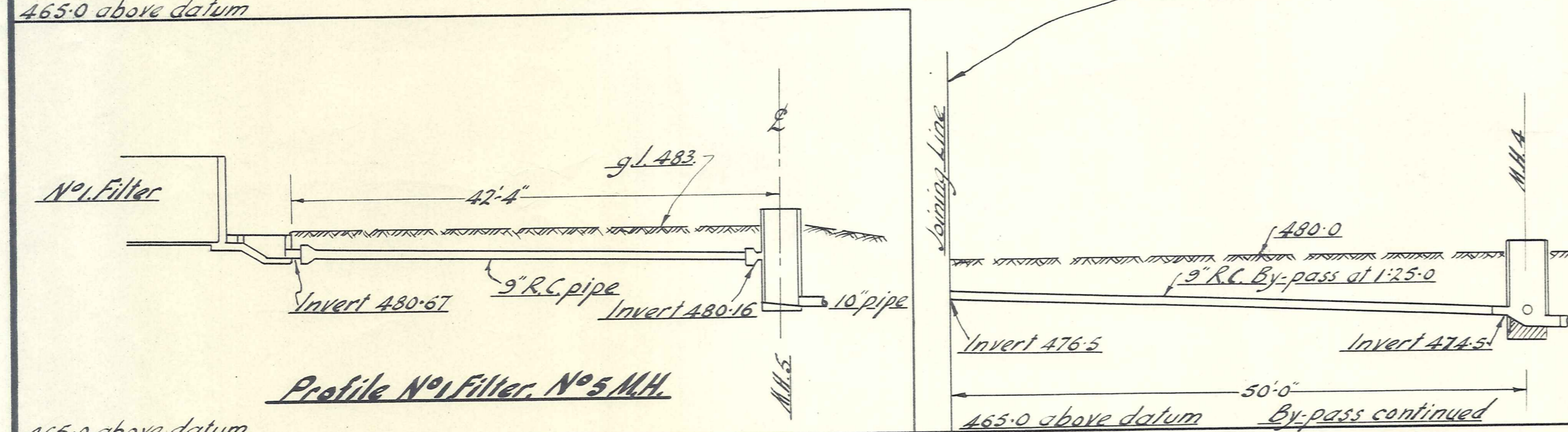
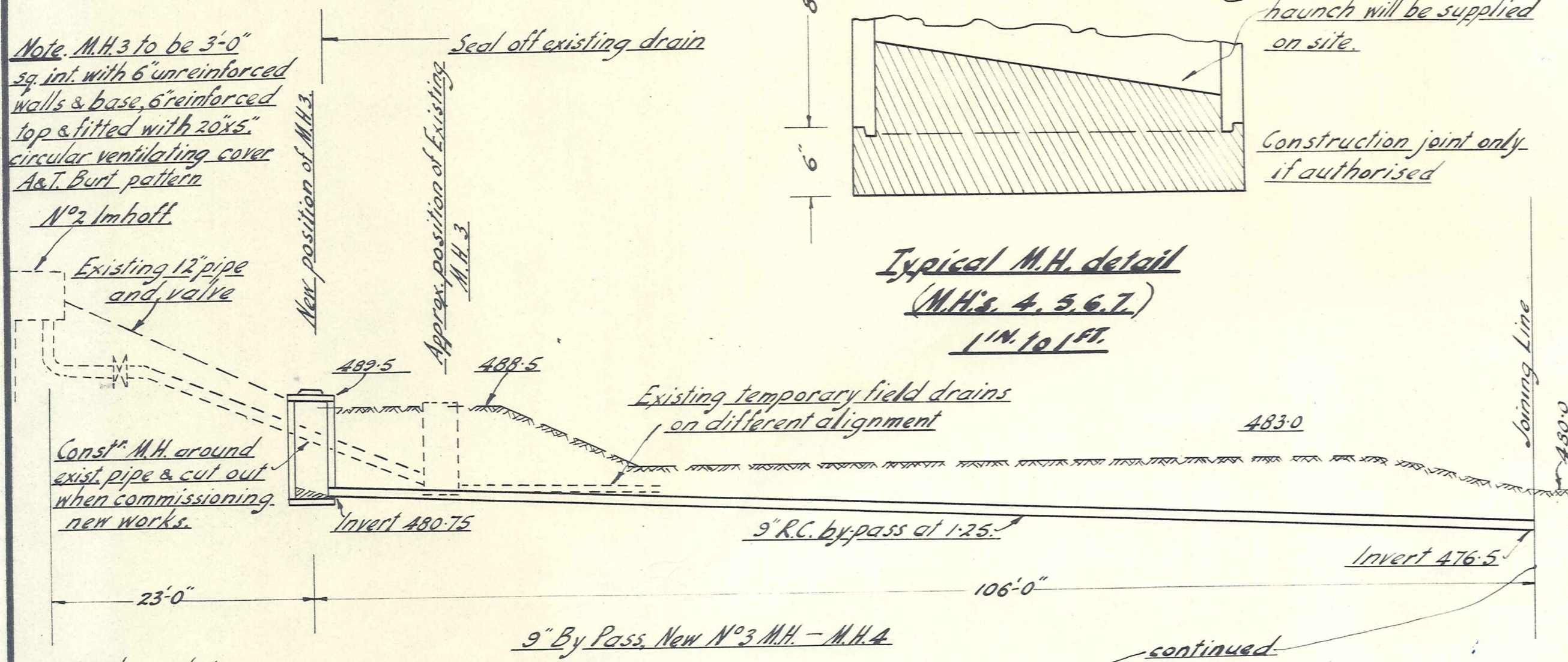
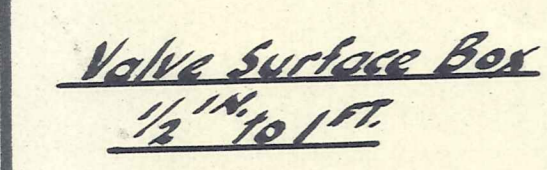
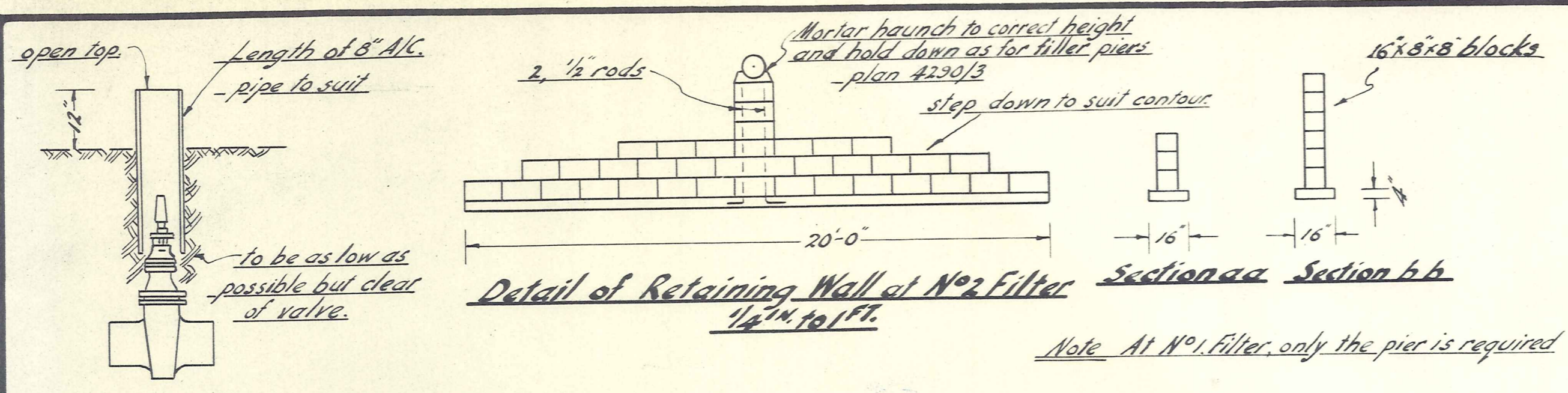
Note: No. 2. Humus Tank as above
No. 1. Humus Tank has inlet and outlet boxes omitted

Scale: 3/8" to 1' FT.

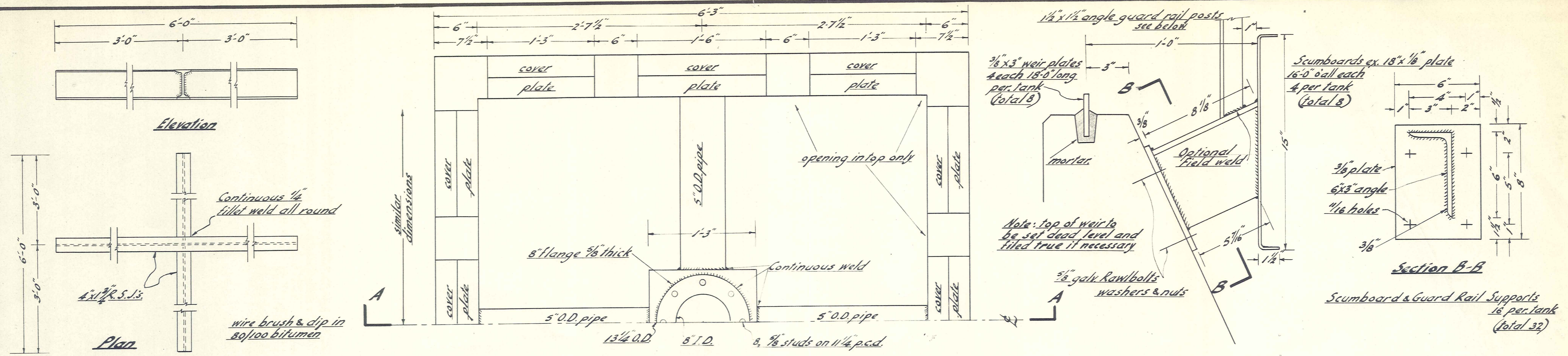
Alexandra Borough		Concrete Lined Steel Pipe Specials	Sewage Treatment Works
Mark No of	Description	Sketch	Sketch
H1	2 10" pe-puddle flange adaptor		pipe O.D. 11.26" to match A.C. pipe puddle flange O.D. 13.25 "Dry Galv." outside. Type H1.
H2	2 8" pe-puddle flange adaptor with 5" flange. ditto with pe-blanked off all complete with nuts & gaskets		pipe O.D. 9.14" to match A.C. pipe puddle flange O.D. 11.25" end flange O.D. 14 1/2" (B.S. Table C, 9") 8 studs 2 1/2 x 3/8 all at 12 1/2 dia. P.C. Dry Galv. outside
H3	1 8" pe. 90° bend with long leg.		O.D. 9.14" to match A.C. pipe Bitumen dip 3x Hessian wrap except for 3" each end
H4	2 8" pe-F adaptor with diag. puddle flange		O.D. 9.14" to match A.C. pipe diagonal puddle flange 1" wide end flange to B.S. Table C, 8" Dry Galv. outside
H5	2 8" F-F 90° bend with long leg		Flanges to B.S. Table C, 8" Dry Galv. outside
H6	2 8" F-F straight piece		Flanges to B.S. Table C, 8" Dry Galv. outside
H7	2 8" Sludge pipe & branch		cut at 30° Pipe O.D. 9.14" to match A.C. pipe 1 1/2 x 1 1/2 x 3/8 stud on each side Dry Galv. outside
H8	1 9" 90° pe bend		Pipe O.D. 10.75" puddle flange O.D. 12.75" Dry Galv. outside
H9	1 8" 90° pe bend		Pipe O.D. 10.75" puddle flange O.D. 12.75" Dry Galv. outside



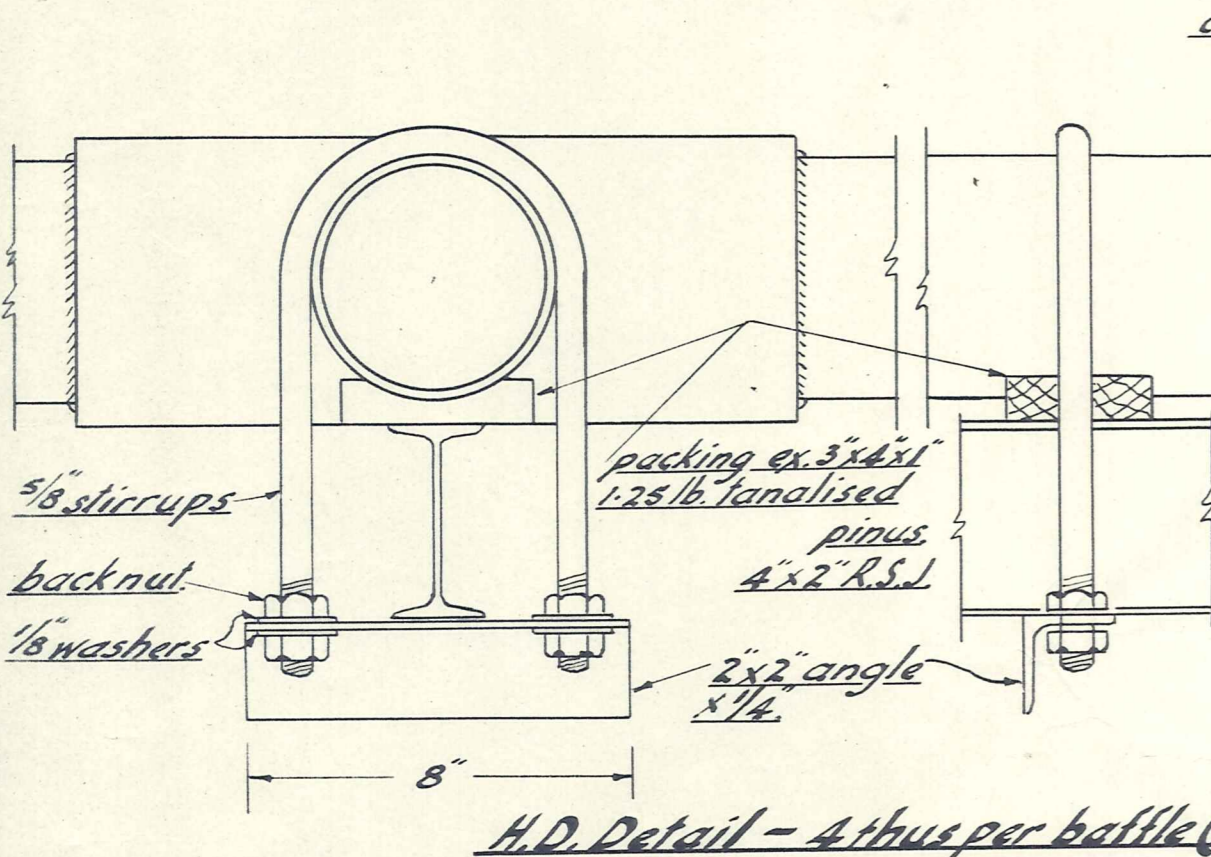




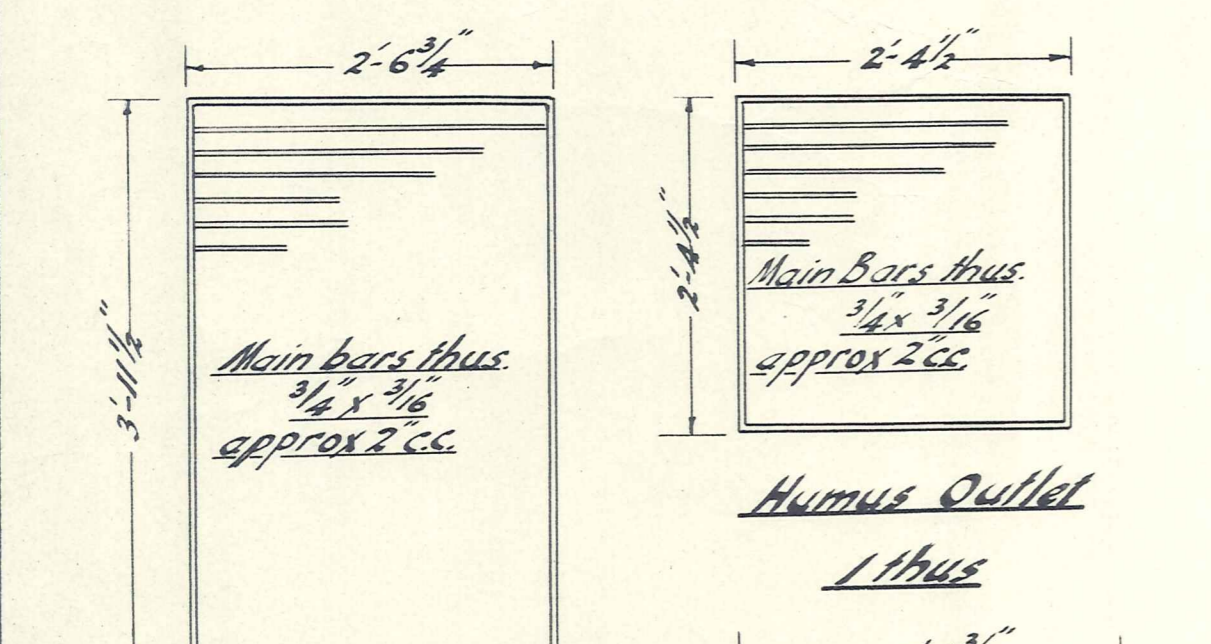
Scale: 10" to 1"



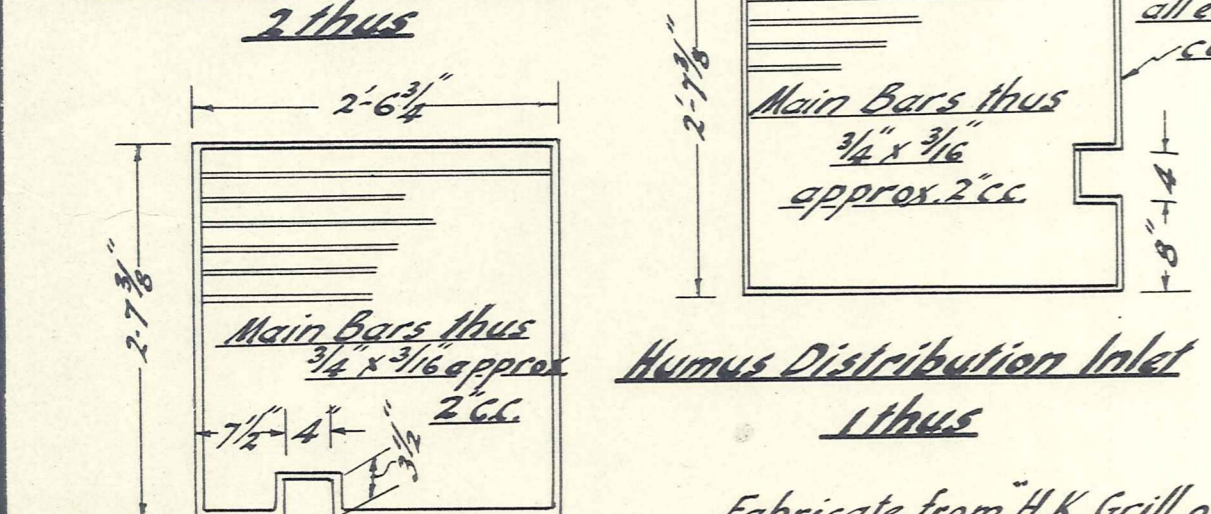
Inlet Baffle Support Humus Tanks
2 thus
1 1/2\"/>



H.D. Detail - 4 thus per baffle (total 8)
3\"/>

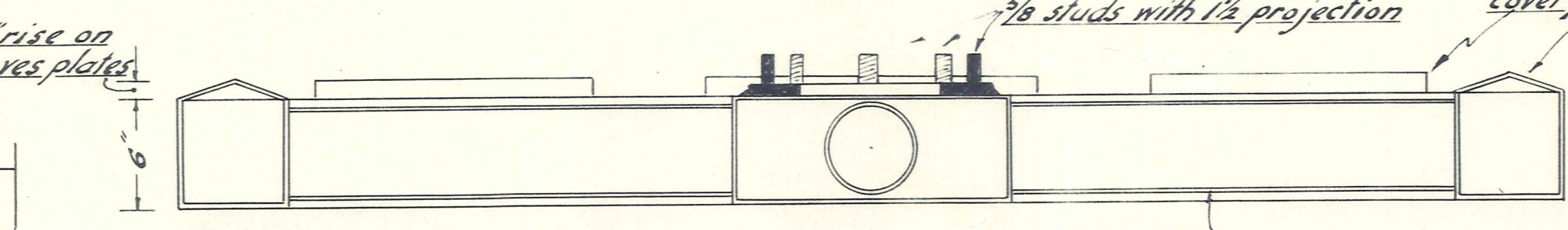


Humus Inlet Forebay
2 thus

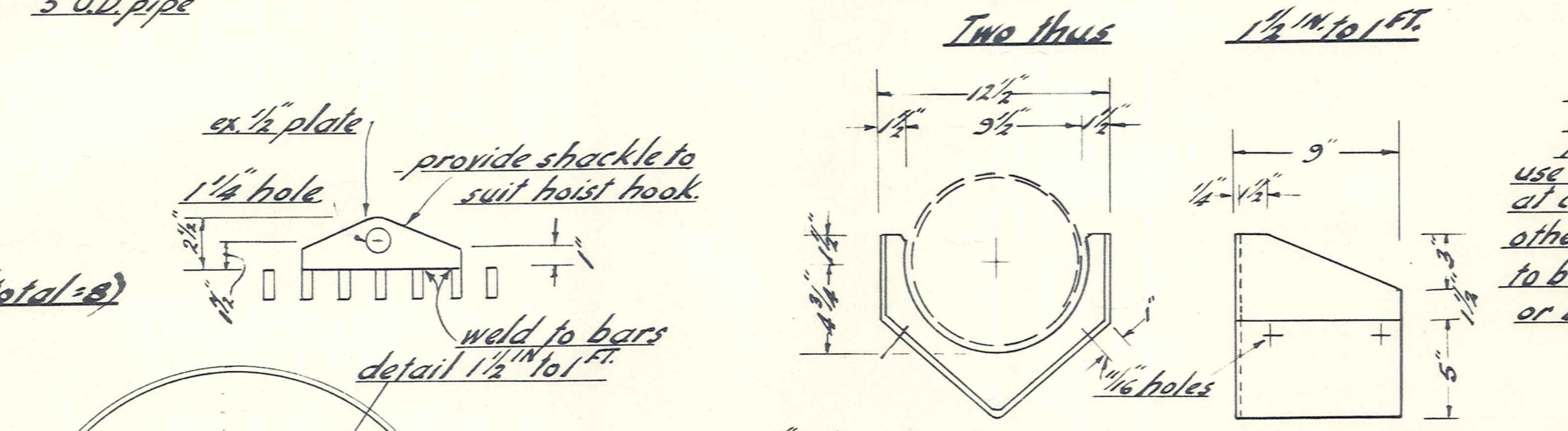


Humus Distribution Inlet
2 thus

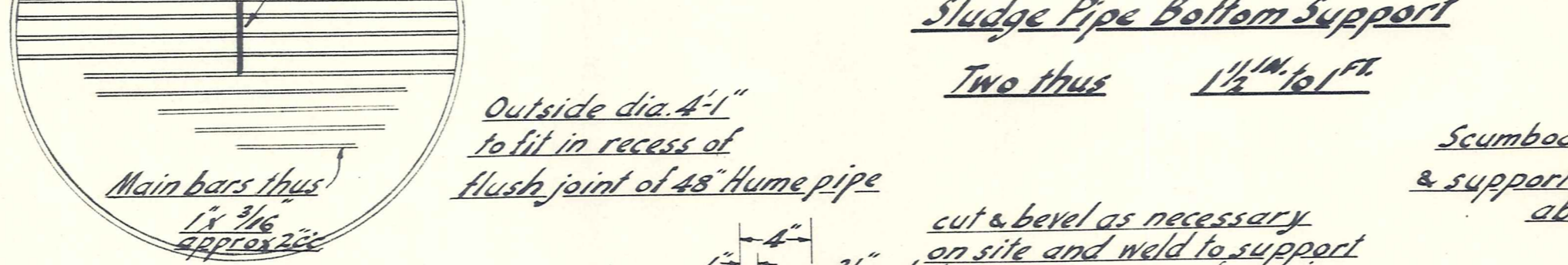
Half Plan - other half similar



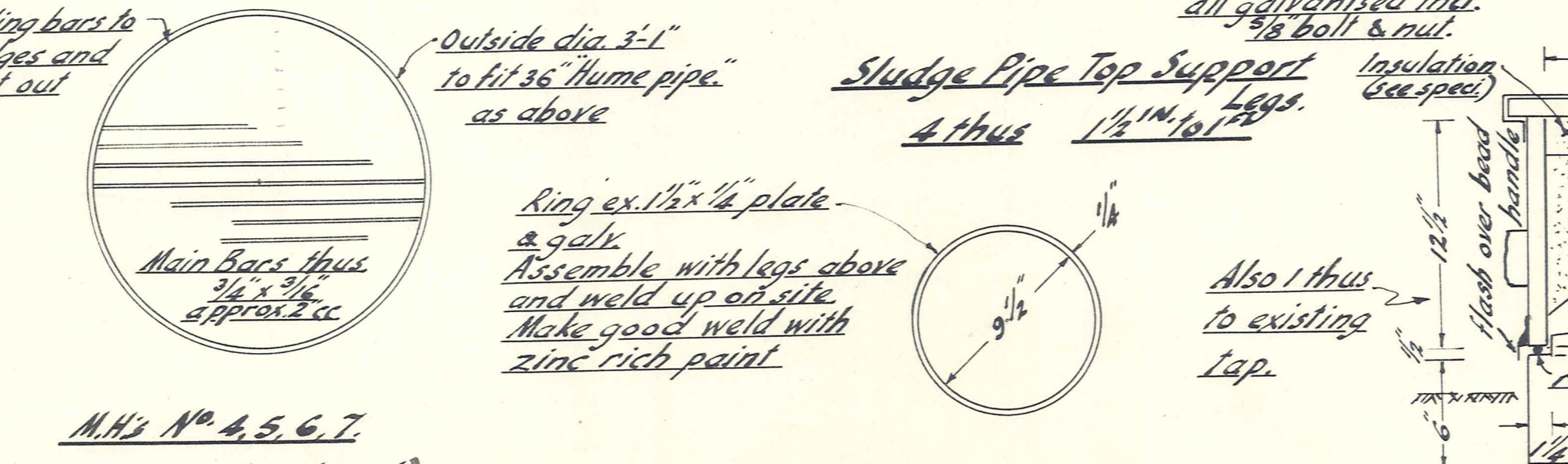
Section A-A Humus Tank Inlet Baffle
Two thus
1 1/2\"/>



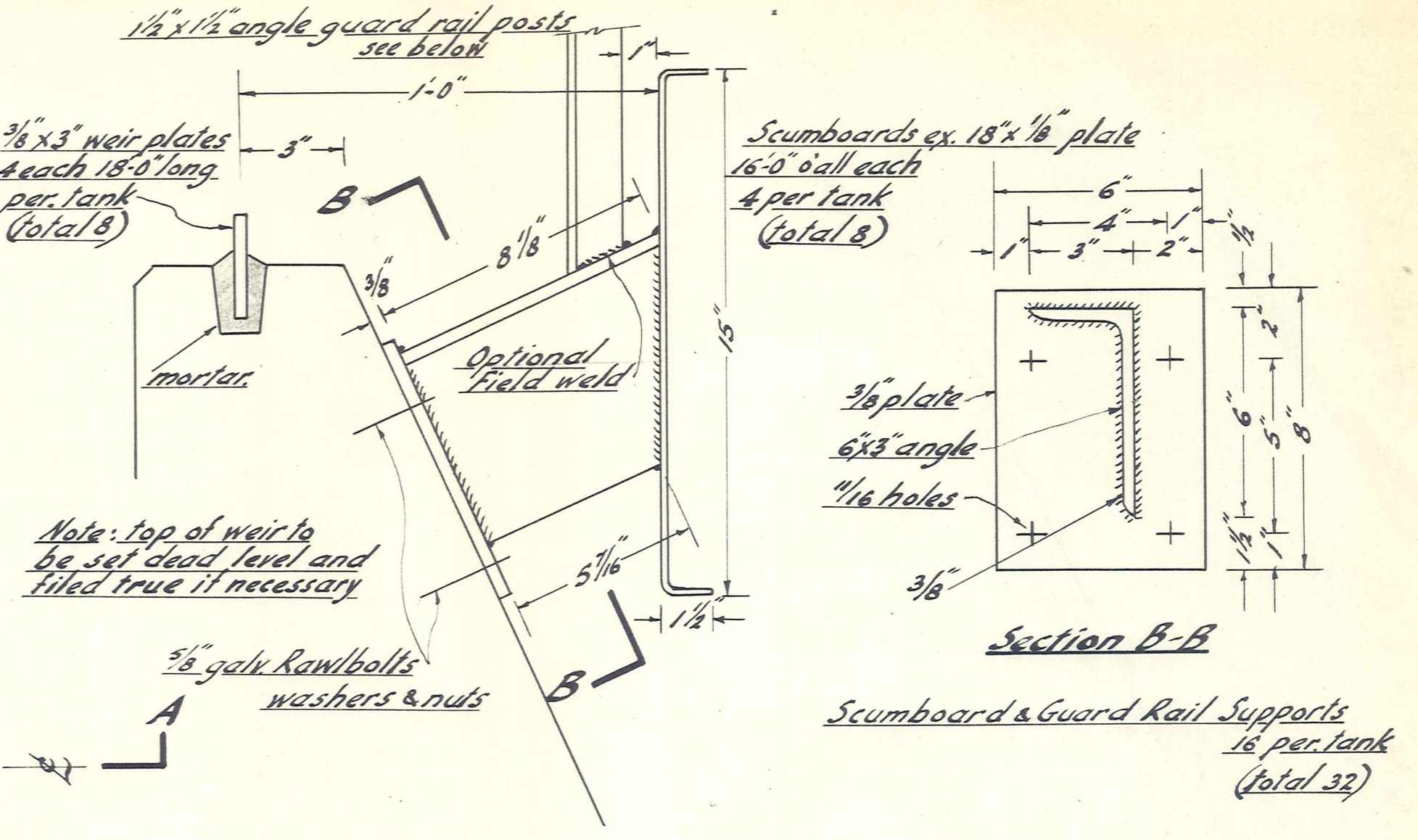
Sludge Pipe Bottom Support
Two thus
1 1/2\"/>



Sludge Pipe Top Support
4 thus
1 1/2\"/>



Sludge Pipe Top Support Ring
2 thus
1 1/2\"/>



Weir Plate Scumboard & Scumboard Supports
Scale: 3\"/>

Note: Above items all to be sand blasted and coated with 2 coats zinc rich paint. Touch up paint (2 coats) after field welding, and filing off.
Weir plates & scumboards to be welded at corners
For Weir and scumboard heights see plan 4290/4

Alexandra Borough Sewage Treatment Works			Steel Pipe Specials
Type	No Off	Description	Diagram
F1	2	8\"/>	
F2	2	8\"/>	
P1	1	12\"/>	
P2	1	3\"/>	
P3	1	3\"/>	
P4	1	3\"/>	
P6	1	3\"/>	
P7	1	4\"/>	

Note: All specials ex. 1/8\"/>