

VALUATION AND FAIR RETURN
WATER COMPANY'S SYSTEM
OF
NEWCOMERSTOWN, OHIO.
AS OF JANUARY 1, 1922.

C. W. KNIGHT & SON
HYDRAULIC AND SANITARY ENGINEERS

ROME, N. Y. Dec. 27th, 1921.

The Newcomerstown Water Company
Newcomerstown, Ohio.

Gentlemen:

We herewith submit our report upon the
valuation of the Newcomerstown Water Company's properties devoted
to public use in the Village of Newcomerstown, Ohio; also our
estimate of a fair lump sum return for the services rendered
and a schedule of rates, that if the present use of water con-
sumption, will produce sufficient revenue to equal that amount.

We submit the following estimate of our estimated
reproduction cost and accrued depreciation of the entire system
of the Newcomerstown Water Company of Newcomerstown, Ohio;

Gross reproduction cost of physical property	\$ 169342.00
Less accrued depreciation	28588.00

Fair net present value, as of Dec. 31, 1921 for the rate making purpose	\$ <u>140754.00</u>
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The following pages of this report and the appendix gives
the reasons for our conclusions and the data upon which our
estimates are based.

Very truly yours,

C. W. Knight & Son

FAIR VALUATION
of
NEWCOMERSTOWN WATER COMPANY'S PLANT

An appraisal was made by a board of five engineers, dated July 15, 1921 of the value of the Newcomerstown Water Works plant of Newcomerstown, Ohio in compliance with an order by the Village authorities of Newcomerstown. Said Board was composed of two engineers appointed by said Village authorities, two by said water company and a fifth by the said four engineers in accordance with a contract between the Village and water company.

Each of the members of said Board of Engineers made a careful survey of all the physical and other features of the water works system and agreed upon all data and its valuation and depreciation, a copy of which is comprised in the following 11 pages.

The appendix to this report with the preceeding map of Newcomerstown are the plans agreed upon as correct showing the construction of the Newcomerstown Water Company.

REPORT

On

APPRAISAL

of

THE NEWCOMERSTOWN WATER COMPANY

July 15, 1921.

ENGINEERS APPRAISAL BOARD

R. G. Backus
Cleveland, Ohio

Paul R. Murray
New Philadelphia, Ohio

Charles C. Hopkins
Rochester, N. Y.

G. W. Knight
Rome, N. Y.

Morris Knowles
Pittsburg, Pa.

NEWCOMERSTOWN WATER COMPANY

Summary Table

Module	Classification	Estimated Cost	New	Accrued Depreciation	Present Value
A	Real Estate and Rights of Way	\$ 2,765.00	\$		\$ 2,765.00
B	Reservoir	19,089.00		2,289.00	16,800.00
C	Pumping Plant	32,600.00		11,000.00	21,000.00
D	Well System	4,181.00		1,181.00	3,000.00
E	Distribution System	80,721.00		10,090.00	70,631.00
F	Stock on Hand	496.00		54.00	442.00
G	Tools and Equipment	290.00		145.00	145.00
H	Office Furniture and Fixtures	362.00		190.00	172.00
I	Meters	<u>4,703.00</u>		<u>941.00</u>	<u>3,762.00</u>
	Total	\$145,207.00	\$	25,890.00	\$119,317.00
	Organization and Legal Expenses, Engineering and Inspection, Interest, Taxes and Insurance during Construction, Going Concern Value and General Contingencies	<u>39,135.00</u>		<u>2,698.00</u>	<u>36,437.00</u>
	Total	\$184,342.00	\$	28,588.00	\$155,754.00

Newcomerstown Water Company.

Real Estate and Rights of Way

Schedule A

Description

- 1- Plot of land at pumping station containing approximately 3.8 acres.
- 1- Plot of land at reservoir containing approximately 5.0 acres.
- 1- Plot of land being roadway to reservoir containing approximately 1.69 acres.
- 1175- Lineal feet of right of way for 12" cast iron pipe and 8" tile drain from reservoir to Ohio Canal.
- 730- Lineal feet of right of way for 12" cast iron pipe from Megen to State Street.

Newcomerstown Water Company.

Reservoir

Schedule B

Description

- 1- Earth embankment reservoir, concrete bottom and brick slopes.

<u>Item</u>	<u>Quantity</u>
Earth excavation	5,720 C.Y. ✓
Embankment	4,974 " ✓
Clay Fuddle	1,043 "
Concrete	204.26 C.Y. ✓
Rubble Masonry	38.9 "
Brick slope facing	141,174 brick
Road grading	2,945 ft.
Seeding	0.5 acres
Brick gate house 9'-5" x 11'-5" x 11'-0" high at eaves, complete including foundations.	
Piping, valves, specials, copper screens and miscellaneous iron and steel.	

Newcomerstown Water Company

Pumping Plant

Schedule C

Description

- 1- Brick building 49'-6" x 37'-6" x 15'-0" high at eaves, slate roofing, complete including foundations, etc.
 - 1- Brick stack, 9' x 9' at base, 4'-10" x 4'-10" at top, 82' high including foundations, etc.
 - 1- Frame coal house, 24'-0" x 12'-0" x 10'-0" high slate roofing.
 - 1- Frame brick veneer stone trim engineers cottage, slate roofing including plumbing and hot air heating system.
 - 1- 10 ton platform ~~BRICK~~ scale.
 - 2- 75 H.P. boilers including settings, casing and 23' of 18" smoke flue.
 - 2- Pumping engines 12 x 8^{18/2} x 10^{1/2} x 18 - 1 H.C.D. capacity.
 - 1- Feed water heater 10' x 2^{1/2}'
 - 1- Boiler feed pump 4^{1/2}" x 2^{1/2}" x 4"
 - 1- Blake and Knowles vacuum pump 5^{1/2}" x 8" x 7"
- Pipe, fittings, etc.

NEWCOMERTOWN WATER COMPANY

Well System

Schedule " D "

<u>Description</u>	<u>Size</u>	<u>Quantity</u>
Cast iron pipe Laid	12"	350'
Wrought Iron Pipe Laid	6"	252'
Valves	6"	12
Valve Boxes		12
Wrought iron Ts and Plugs	6"	12
Specials		9290 lbs.
Screen Pot Manhole		1
Wells with 6" cast iron pipe and screen points average depth 37.5 feet		12

NEWCOMERSTOWN WATER COMPANY

Distribution System

Schedule "E"

Description	Size	Quantity	Weight Per Foot	Total Weight
Cast iron Pipe	12"	9,170'	91.7 Lbs.	840,889
	10"	550'	70.8 "	38,940
	8"	7,395'	52.1 "	385,279
	6"	11,295'	35.5	400,972
				Total Weight 1,666,080 lbs.
			" Tons 833	
Cast iron Pipe	4"	10,739'	23.3 lbs.	250,219 lbs.
			Total Tons	125.1
Wrought iron Pipe	2"	350'		
	1"	4,299'		
	3/4"	600'		
			Total Tons	17.36
Specials			Total Tons	17.36
Valves	12"	10		
	10"	2		
	8"	9		
	6"	16		
	4"	21		
	2"	1		
	1"	6		
Valve Boxes		65		
Hydrants		65		
for variation in weight of pipe 2% and of Specials 5%				
Cast iron pipe	12"	9,170'		
	10"	550'		
	8"	7,395'		
	6"	11,295'		
	4"	10,739'		
Wrought iron pipe	2"	350'		
	1"	4,299'		
	3/4"	600'		
Hydrants		65'		
Valves & Boxes		65'		
Specials		174'		
Replacing Brick Pavement		2,600'		
<u>Difficult Crossings</u>				
Railroad		5		
Creek		4		

NEWCASTLE WATER COMPANY

Tools and Equipment

Schedule "C"

Description

- 1 - set pipe Dies 1/4" to 1"
- 1 - " " " 1-1/4" to 2"
- 1 - " " " 2-1/2" to 4"
- 1 - pipe cutter 1/4" to 1"
- 1 - " " " 1" to 4"
- 2 - 18" pipe wrenches
- 1 - 24" pipe wrench
- 2 - Pair Chain Tongs
- 1 - Lead furnace and pot
- 1 - Trench pump and 8' of hose
- 12 - Lineal feet of 2" steam hose
- 50 - lineal feet of 3/4" Garden hose
- 2 - 18" Lawn Mowers
- 1 - Set Firing tools, lubricators,
wrenches and sundry pump room tools

NEWCASTLESTOWN WATER COMPANY

Office Furniture and Fixtures

Schedule "H"

Description

- 1 - Oak flat top desk 60" x 48"
- 1 - Oak Swivel Chair
- 5 - Oak Arm Chairs
- 10 - Years receipt books
- 2 - cash books
- 1 - Ledger
- 1 - Stock Ledger
- 2 - Contract Books
- 525 - Stamped Envelopes
- Meter reading cards and leather cover

NEWCOMERTOWN WATER COMPANY

Meters

Schedule "1"

Description

301	-	5/8"	Meters	at	\$	13.00
2	-	2"	"	"		75.00
2	-	4"	"	"		300.00
2	-	1"	"	"		20.00

**PIPING SYSTEM
NEWCOMERSTOWN, OHIO.
WATER WORKS**

-1901-

SCALE 1 INCH = 400 FEET



Hydrants
Valves



Note:
 Blue Lines etc, shown in white built 1902
 " " " red " " to 1921

Drs. No. 2684
 C.W. Knight & Son Eng.
 Knight & Hopkins, Rome, N.Y.

FAIR RETURN

To

NEWCOLBERTTOWN WATER COMPANY

It depends upon two fundamental facts to be ascertained:

First,- On what is a fair value for the property being used?

Second,- On what amount of return beyond operating and all other expenses is it fair to allow the owners for the use of their property?

We have assumed that the reproduction cost determined by the Board of Appraisers herein noted, less depreciation and intangible going value, will be a fair and just basis.

The owner of a public utility is entitled to a fair rate of interest on the value of the plant and an allowance for the maintenance of the integrity of the investment, usually called depreciation allowance, also, reasonable operating costs.

We estimate the fair interest as 7% on the reproduction cost less depreciation and going concern value and also the annual depreciation at the average of that shown in the report by the Board of Appraisers.

The table, page 20, shows an estimated average annual operating expenses and the following represents a Fair Return to the Newcomerstown Water Company for water supplied to the citizens of Newcomerstown:

Depreciated value of works	
less going value = \$140,764.00 at 7%...	\$ 9,852.78
Assumed average annual depreciation	1,429.40
Reasonable operating expenses.....	<u>12,745.00</u>
Total gross annual revenues should be....	\$24,027.18

We estimate that the amount of the annual revenues, with the change in rates proposed, will approach \$ 22,379.09 per annum at once, based on 1920 uses of water and that the probable increase under similar conditions will reach the sum that is assumed that the total gross fair returns should be in the near future, but if not the rates should again be modified.

A detail list of the payments made by the Newcomerstown Water Company for the years 1902 to 1920 inclusive is shown on page 19.

A schedule of our proposed rates for Newcomerstown is shown, page 22.

The appendix contains the plans of the works done in 1902, except the pipe lines and excessories which are shown on a blue print, page 15.

Respectfully submitted,

C. W. Knight & Son

Rome, New York.

17

Newcomerstown Water Company.

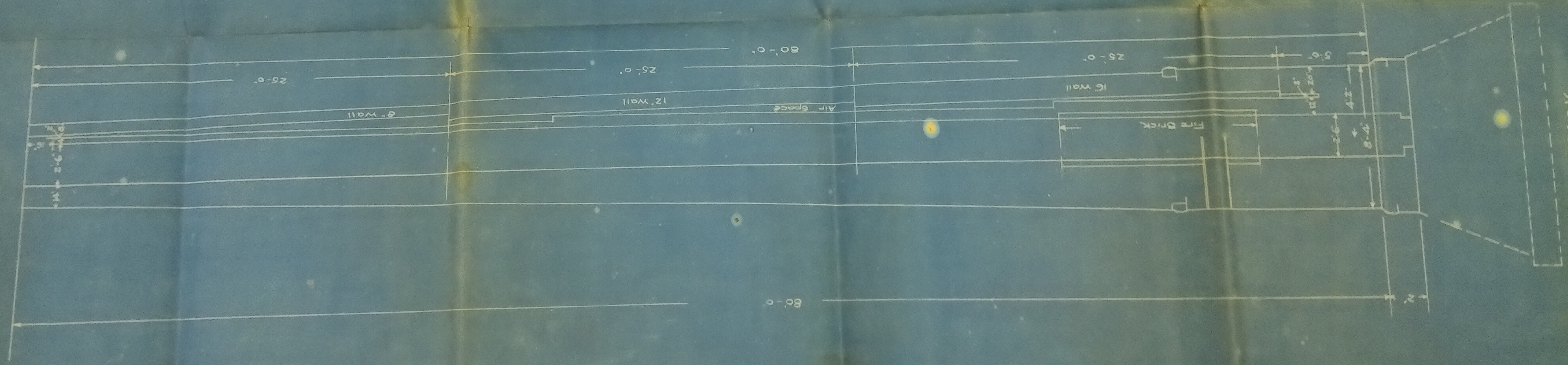
Showing Gross Receipts and Disbursements
from 1902 to 1920 inclusive.

Years	Received from all sources	Operating expenses paid	Meters and extensions	Bond interest not paid	Total Annual Disbursements
1902	\$ 2899.75	\$ 807.67	\$ 811.22		\$ 1618.89
1903	5539.85	7711.04	788.36		8499.40
1904	5798.79	7023.51	403.44		7426.95
1905	6016.27	7305.42	452.03		7757.45
1906	6236.75	7183.76	865.77		8049.53
1907	6372.80	7286.75	61.10		7347.85
1908	5652.99	7790.13	775.01		8565.14
1909	6217.20	7641.94	442.14		8083.08
1910	7101.68	8234.72	197.77		8432.49
1911	6849.34	7953.58	42.50		7996.08
1912	7890.62	5093.87	570.43	\$ 4070.00	9714.30
1913	8975.22	7661.10	1278.75	2035.00	10974.85
1914	6653.76	6999.06	832.60	2035.00	9866.66
1915	6341.58	5966.26	0.00	2035.00	8001.26
1916	8067.98	7406.14	110.80	2035.00	9551.94
1917	10162.39	9028.16	244.03	2035.00	11307.19
1918	11598.56	11577.96	382.42	2035.00	13995.38
1919	13182.96	11410.32	153.79	2035.00	13599.11
1920	14593.05	12820.28	594.10	2035.00	15449.38
	<u>\$ 146153.54</u>	<u>\$ 147901.67</u>	<u>\$ 8986.26</u>	<u>\$ 20350.00</u>	

Bills receivable - 350.00

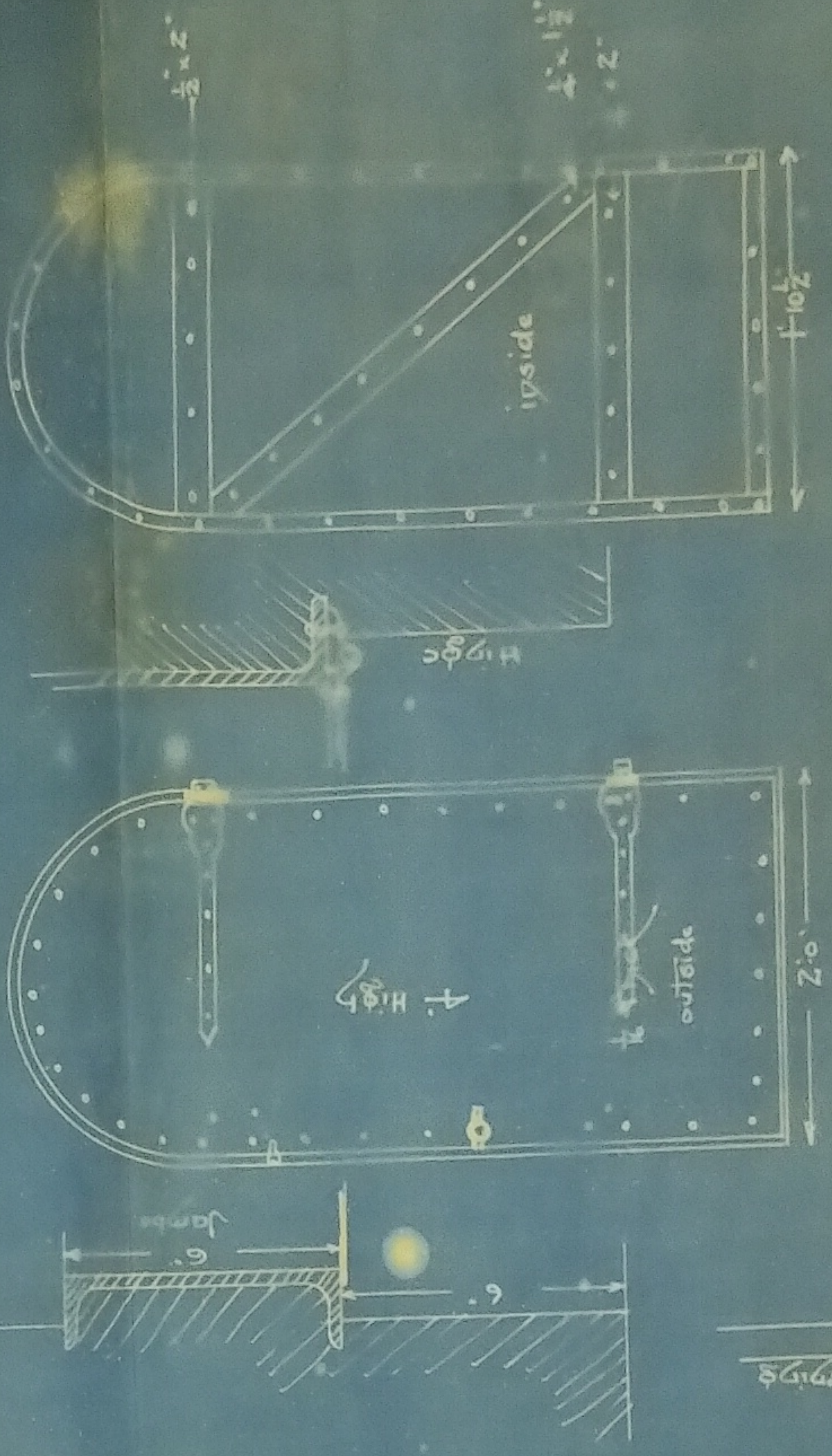
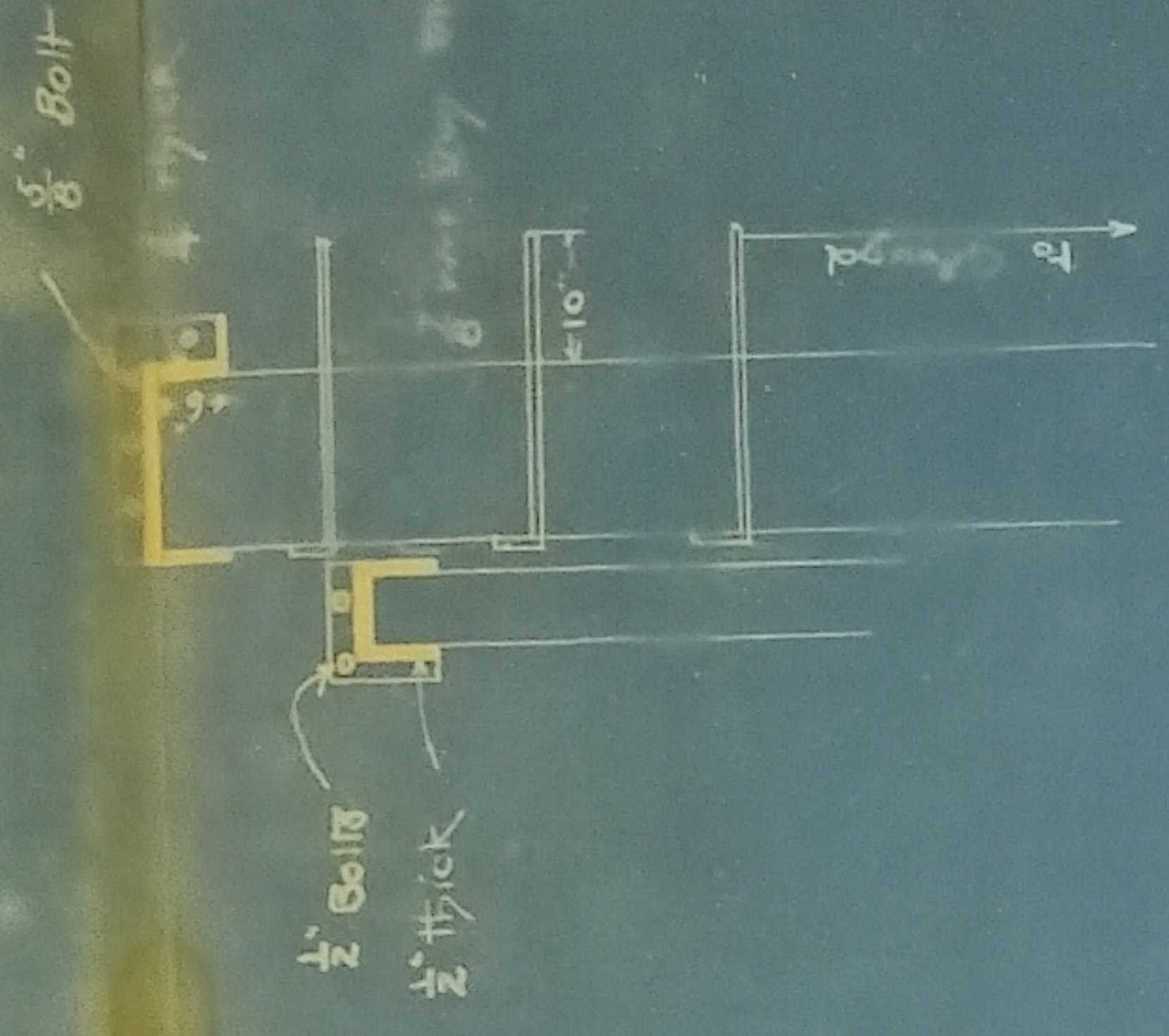
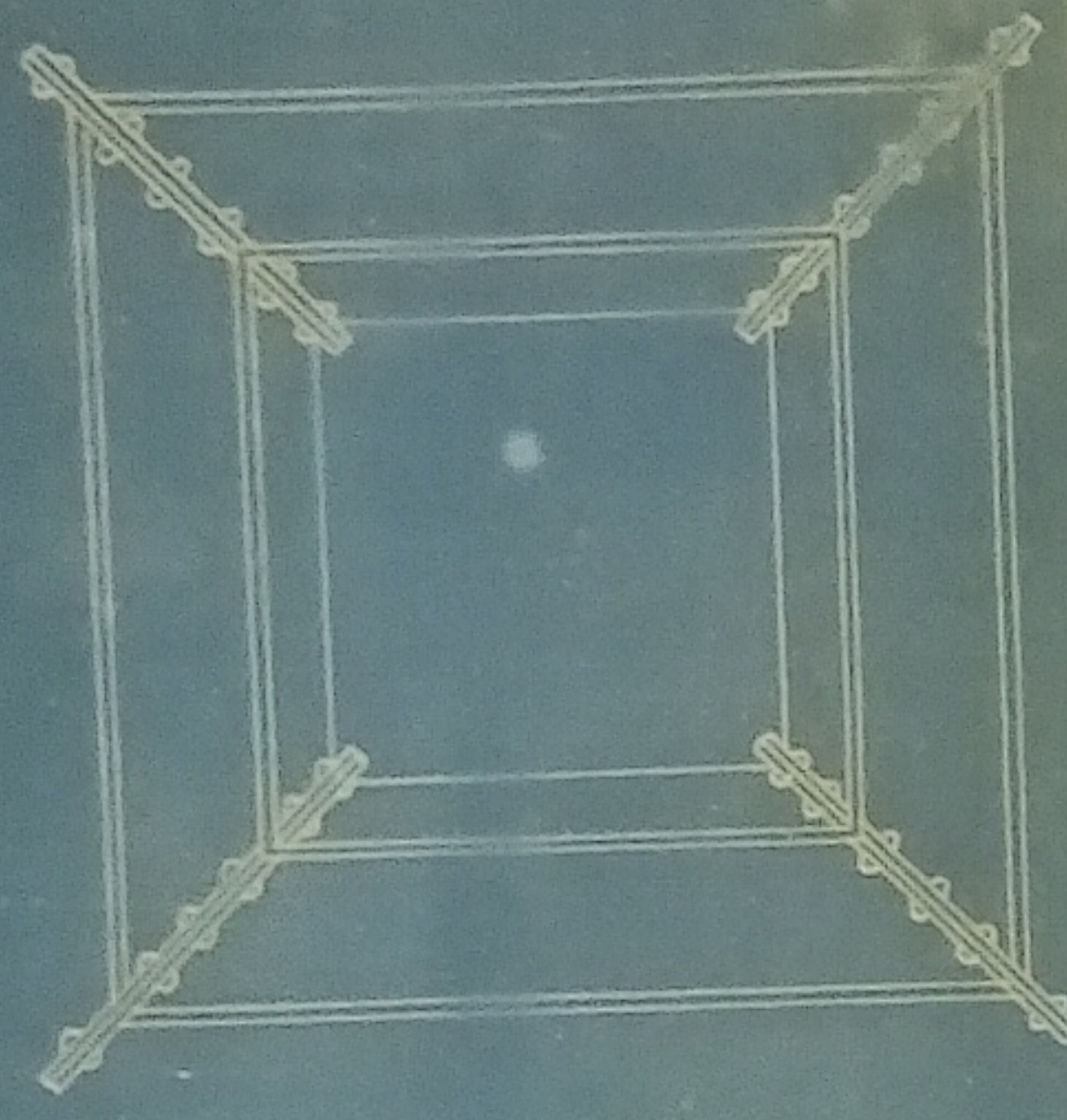
Delinquent water rents 5618.75
\$ 152122.29

Total of the annual disbursements - - - - - \$ 176,237.93
 Assumed depreciation loss - - - - - 28,588.00
 Total operating and development cost, Dec.31,1920 -204,825.93
 Total receipts and acc. receivable to Dec.31,1920 -152,122.29
 Total loss in operation of the plant on Dec.31,1920 52,703.64



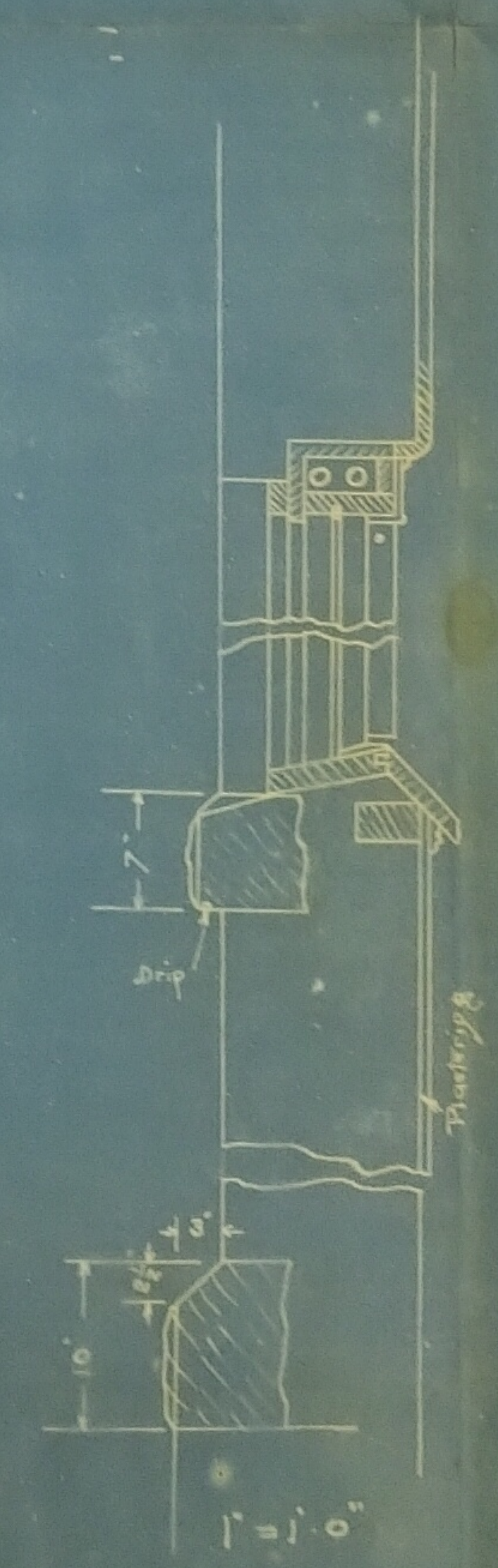
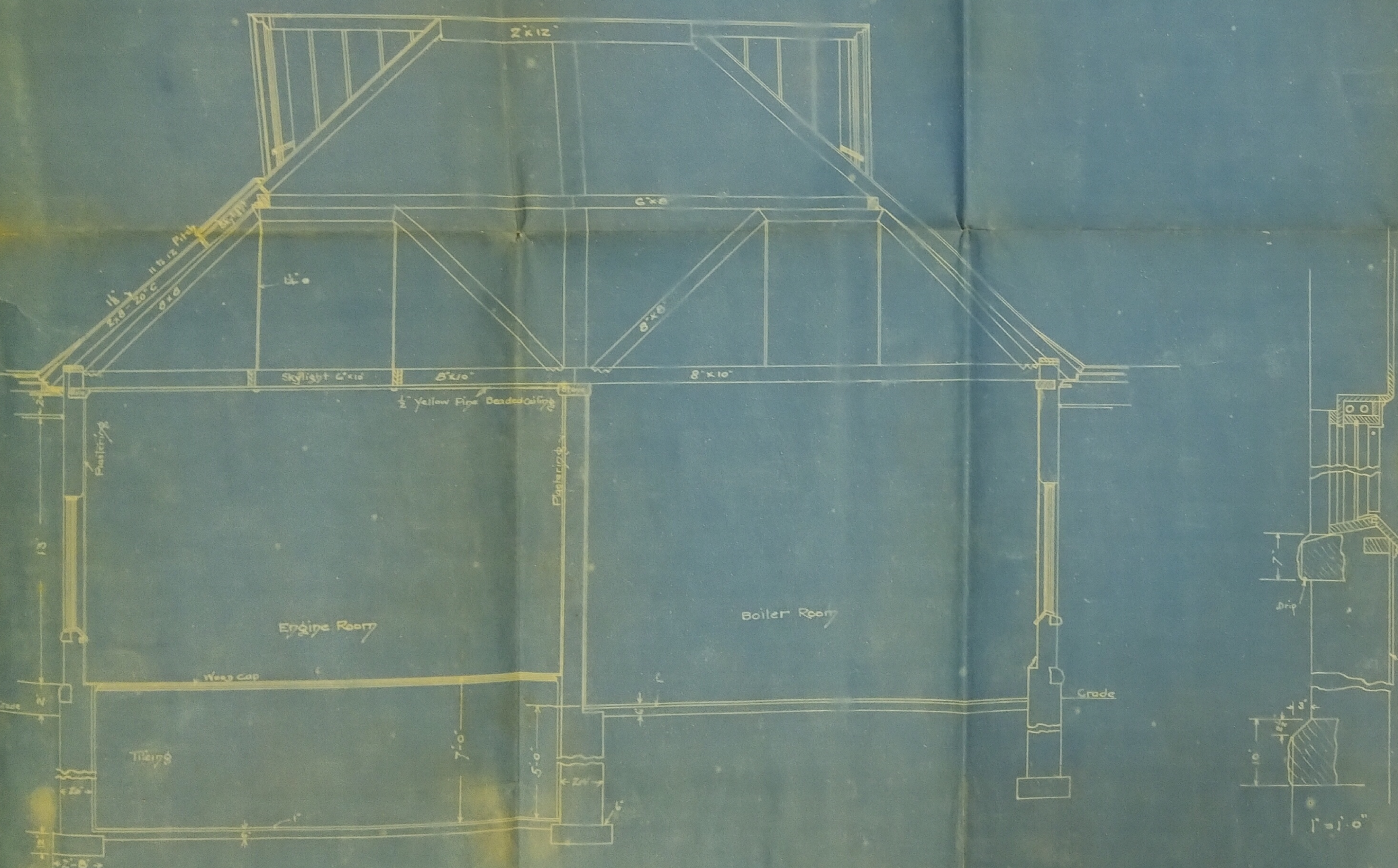
STACK
Scale 1/4" = 1'

CAST IRON CAP



Detail of
Drop Door for Stack
Scale 1/4" = 1'

DETAILS
PUMPING STATION
NEWCOMERSTOWN, OHIO.
WATER WORKS



Longst Section through
Pumping Station
1/4" = 1'-0"

**DETAILS
PUMPING STATION
NEWCOMERSTOWN, OHIO.
WATER WORKS**

— 1901 —

Draw No. 2500
Krafft & Harpuz, Rome, N.Y.



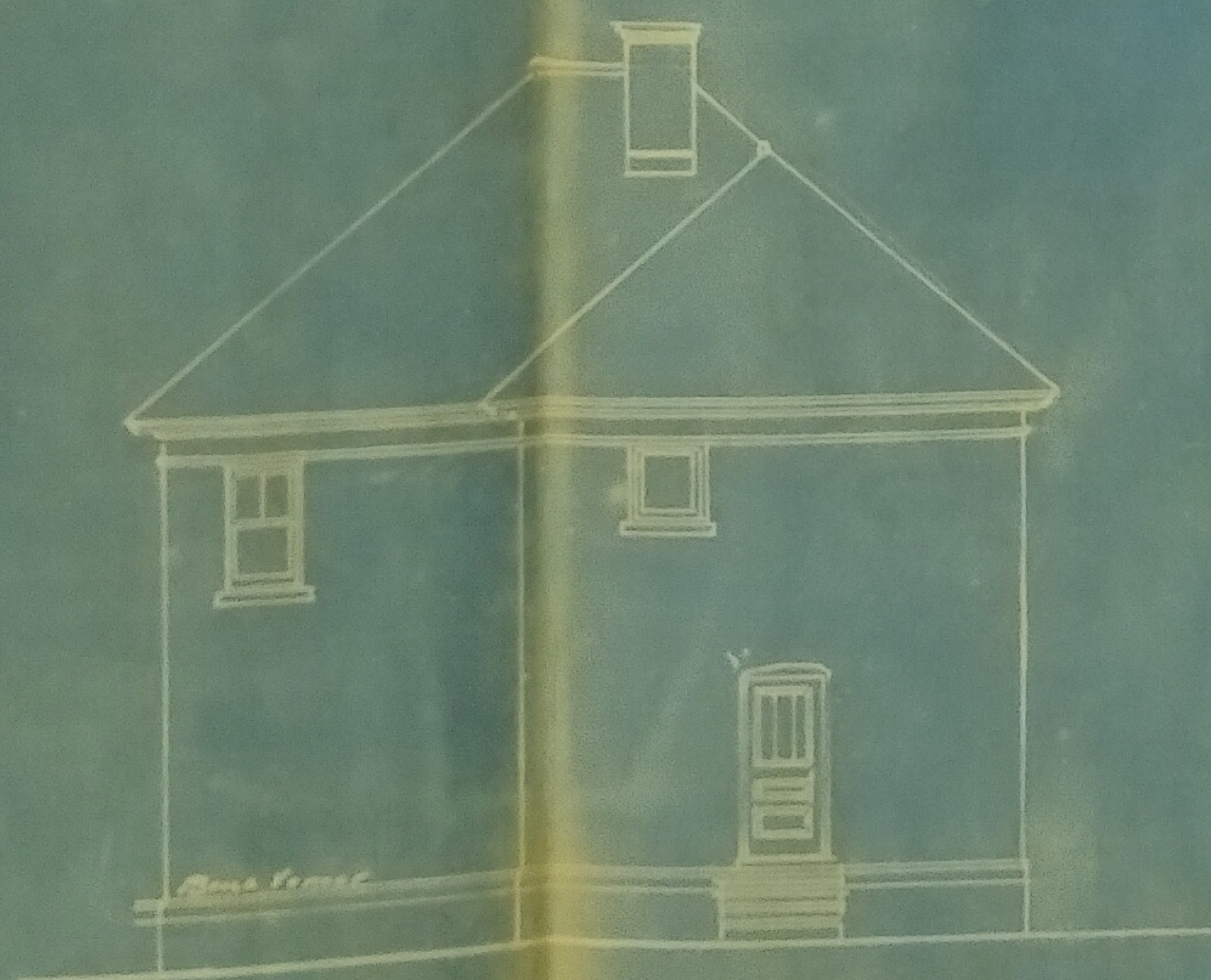
FRONT ELEVATION

ENGINEER'S HOUSE
NEWCOMMERSTOWN, OHIO
WATER WORKS

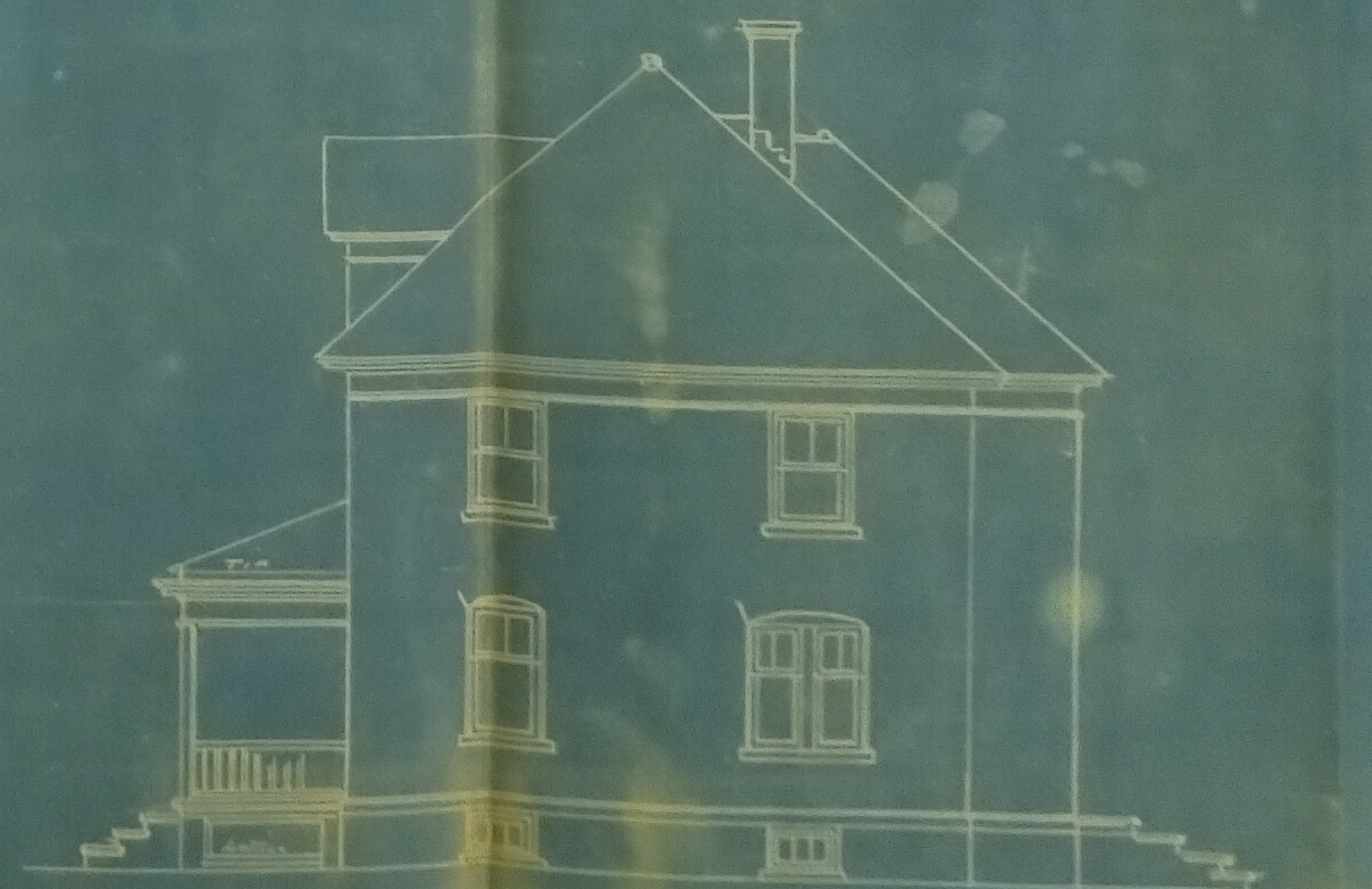
1902
SCALE 1/8" = 1 FT.



SIDE ELEVATION



REAR ELEVATION



SIDE ELEVATION

Newcomerstown Water Company

Estimated Annual Cost Of Operating Expenses

1921

The pumping expense has increased rapidly during the past few years, due principally to the increase in the cost of coal and the increase in the consumption of water.

The former is likely to remain quite constant until production exceeds demand. The only criterion we have is the period of eleven years after our civil war of a continuous high level of prices.

The latter will increase slowly from year to year on the supposition that Newcomerstown will continue to prosper and grow.

We assume that the average cost of coal, oil, waste, etc., per year for near future years will be \$ 5800.00

Engineer - - - - -	1500.00
Engineers assistant - - - - -	900.00
Superintendent - - - - -	1500.00
General expenses - - - - -	1400.00
Repairs to pumping station - - - - -	200.00
" " meters - - - - -	250.00
" " piping system - - - - -	250.00
" " service pipes - - - - -	100.00
" " reservoir - - - - -	25.00
Rents - - - - -	100.00
Taxes - - - - -	720.00
	<u>\$ 12745.00</u>

Newcomerstown Water Company.

Sources and amounts of present revenues, also estimated revenue based on schedule of rates filed Dec. 31, 1921.

Sources of Revenue	Present Revenue	Estimated Revenue
RATES		
Industrial services, metered.		
Penn. Railroad	\$ 5711.83	
James P. Clow & Sons	2202.97	\$1.00 per quarter
Buckhorn Creamery	25.00	1.00 per quarter
Fountain Hotel	98.04	1.00 per quarter
Central Hotel	72.62	1.00 per quarter
Behard, garage and house	15.00	1.50 per quarter
Drug store and fountain	12.00	
Sandy Kitchen	41.75	
Store, motor and sink	25.02	
N. of P. Lodge	50.00	
Quick---Block	21.68	
Restaurant	25.00	
Milling Co.	12.00	
Livery and house	24.00	
Behard Livery	12.00	1.000 gallons
Stirling Speciality Co.	46.38	1.000 gallons
Store and motor	14.80	1.000 gallons
Aratzins Garage	12.00	1.000 gallons
Bakery and fountain	12.00	1.000 gallons
	<u>8434.09</u>	<u>8434.09</u>
Not metered		
Village of Newcomerstown, Hydrants	1725.00	3250.00
Penna Co. Cattle Pen	15.00	15.00
" " drinking water at depot	12.00	12.00
Car Bros. Garage	15.00	15.00
Barber Shop	17.00	17.00
125 not metered services	988.00	
250 metered "	3375.00	
Total 375 services minimum rate \$ 16.00		<u>6000.00</u>
Fixtures proposed to be charged		
197 Bathtubs	4.00	788.00
218 Closets	4.00	860.00
196 Wash basins	3.00	588.00
300 Sprinklers	8.00	2400.00
	<u>\$ 14551.09</u>	<u>\$ 22379.09</u>

P. U. C. O. No. 1

Superceding P. S. C. O. No. 1

This Schedule Cancels and Supercedes All Preceding Schedules.

NEWCOMERSTOWN WATER CO.

Supplying Water

Newcomerstown Village, Ohio.

RATES.

In no case will water be furnished at a less rate than \$4.00 per quarter for each taker.

All users of water for each family or for other purposes shall pay, for the following fixtures, in addition to the above \$4.00 per quarter:

Bathtubs, each	\$1.00 per quarter
Water closets, each	1.00 per quarter
Wash basins75 per quarter
Lawn sprinklers	1.50 per quarter

All consumers using more water than the sum of the fixed charge and their fixture rates will allow, at the per thousand gallon meter rate, given below for the quantity of water they use, will be charged for all excess water at said rate.

METER RATES

When the daily consumption is:

100 to 500 gallons	Per 1,000 gallons \$0.45
500 to 1,000 gallons	Per 1,000 gallons 0.35
1,000 to 2,000 gallons	Per 1,000 gallons 0.30
2,000 to 4,000 gallons	Per 1,000 gallons 0.25
4,000 to 10,000 gallons	Per 1,000 gallons 0.18
10,000 to 20,000 gallons	Per 1,000 gallons 0.15
Over 20,000 gallons	Per 1,000 gallons 0.10

Quarterly and semi-annual bills are rendered on the first day of the following quarter and are due when rendered. If not paid within 15 days from date due, 10 per cent. will be added.

Monthly bills are rendered on the first day of the following month and are due when rendered. If not paid during this month, 10 per cent. will be added.

FIRE PROTECTION.

Fire hydrants per year, \$50.00.

Issued December 31st, 1921.

Effective February 1st, 1922.

W. H. Thompson, Sec'y and Treas.

Newcomerstown, Ohio.

RULES AND REGULATIONS

of the

NEWCOMERSTOWN WATER COMPANY

NEWCOMERSTOWN, OHIO.

February 1st, 1922.

The following are the rules and regulations after February 1st, 1922, of the Newcomerstown Water Company.

The quarterly rentals shall fall due on the first day of January, April, July and October of each year.

All lawn and yard hydrant consumers must pay at least \$4.00 per quarter.

If the meter gets out of order and fails to register, the consumer will be charged at the average daily consumption as shown by the meter when in order.

Consumers may not be furnished water who have failed to pay within the month in which bill is rendered.

All property owners will be held responsible for water rent caused by their tenants.

All rentals sent by mail must be received before 4 p. m. on the 15th day after due.

The minimum charge of 50 cents must be paid for turning on or shutting off water at the request of the property owner or his agent.

No reduction in the rentals will be made if the Water Company does not receive due notice in writing to shut off the water.

Although the Water Company has borne all the expense of introducing the meters, they will insist that the consumers must take care of their meters and bear the expense of their maintenance or repair, due to consumers' negligence, if they wish the Water Company to supply them with water.

Every water consumer owes it to himself to learn to read his meter and be careful to observe that there is no waste of water, and if any leak is found in his pipes or fixtures, it should be repaired IMMEDIATELY, as any waste, however small it may appear when running, will look large when found in the bill, and the full amount, whether consumed or wasted, must be paid for.

A meter will not register more water than passes through it, popular opinion to the contrary notwithstanding, and if surprised at the size of your bill, TEST YOUR METER; it requires no expert to do it, and a simple method is this: See that no water is being drawn from any of the fixtures and watch the circle on the dial registering the smallest number of gallons. If the hand moves at all there is a leak somewhere, the extent being shown by the movement of the hand. If this is the case, find it and have it stopped. Finding no leak (the hand remaining stationary), draw into a tank or vessel, of which you know the exact contents, an amount of water, and you will find, on referring to the dial, that so much has not been registered; it may be less—more, never.

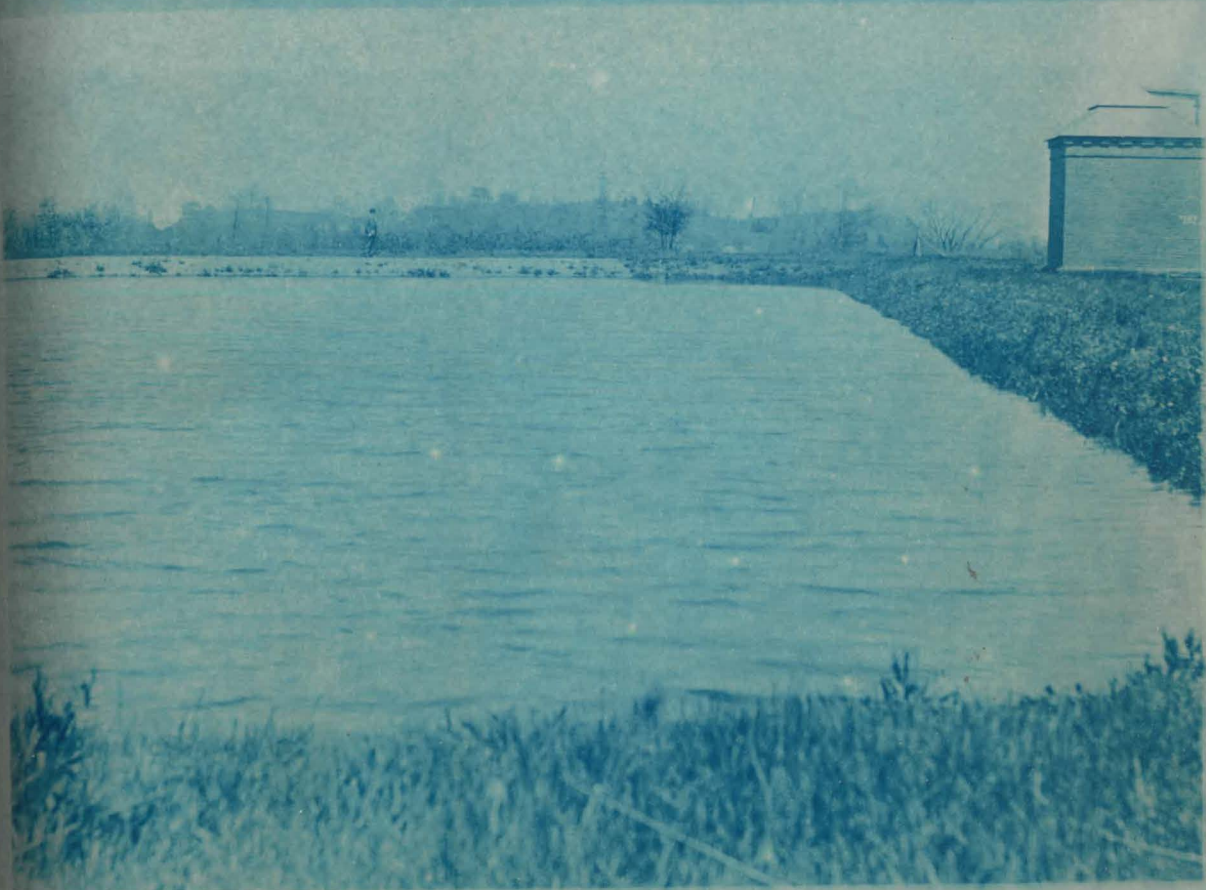
The intention of the above is to put it in the hands of every consumer to satisfy himself of the accuracy of his bill at any time, and to enable the Water Company to work on a harmonious basis with its consumers.

THE NEWCOMERSTOWN WATER COMPANY

February 1st, 1922.

APPENDIX

Contains 15 Blue Prints



Reservoir

Newcomerstown Water Company

Newcomerstown, Ohio.



Engineer's Cottage

Pumping Station

Coal Shed

NWECOMERSTOWN WATER COMPANY

Newcomerstown, Ohio.



ENGINEER'S COTTAGE

NEWCOMERSTOWN WATER COMPANY

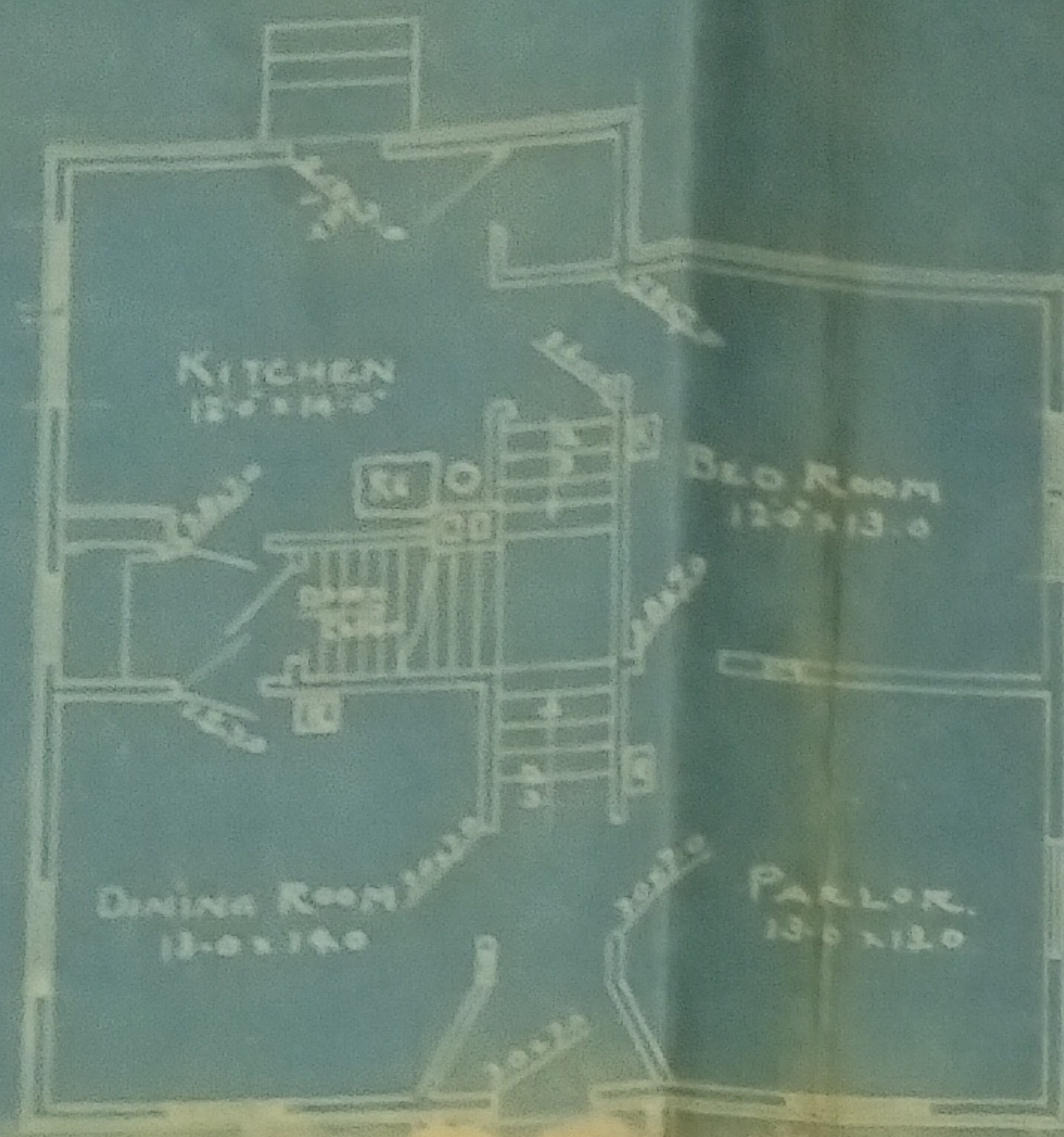
Newcomerstown, Ohio.

BOND

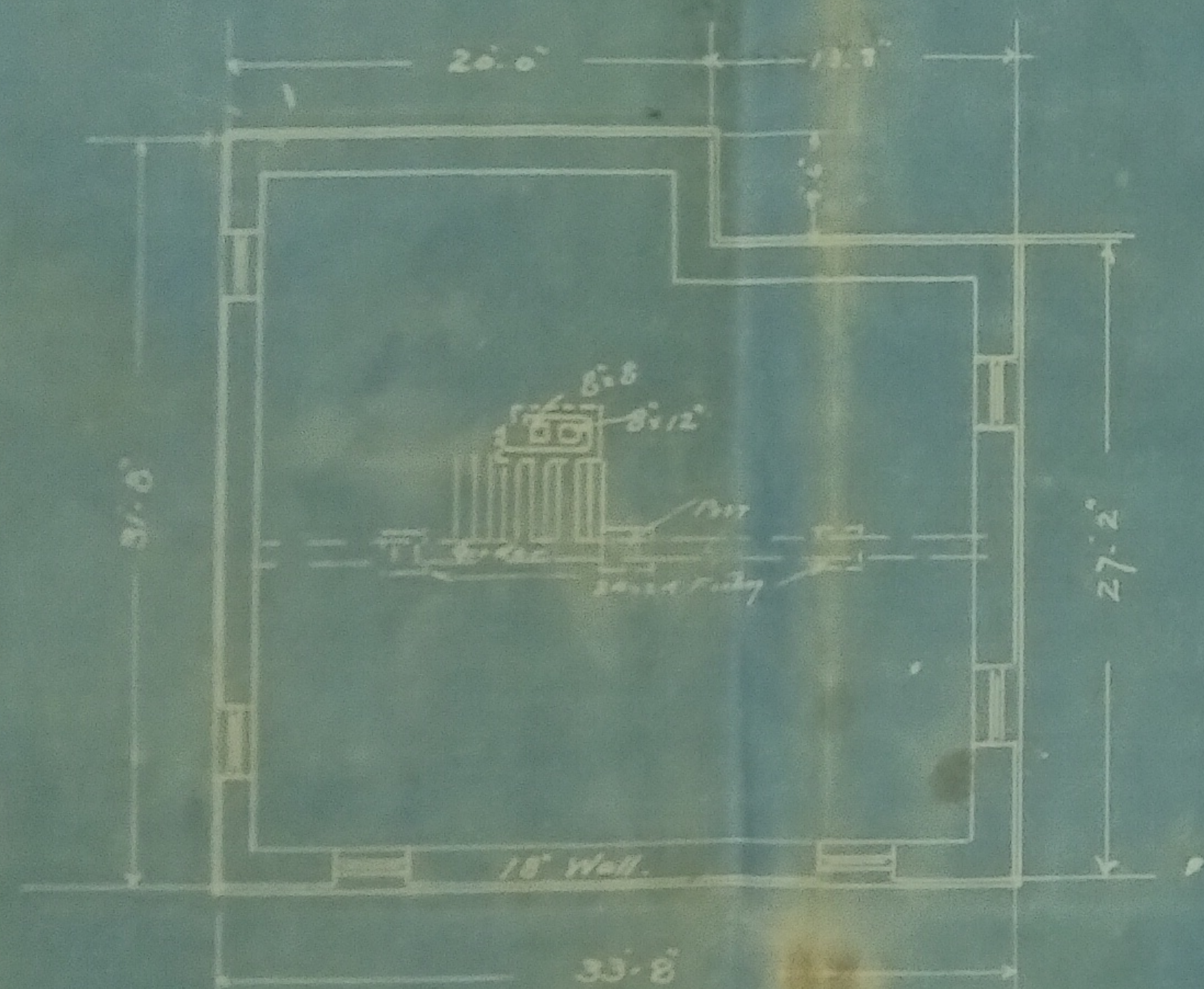


Coal Shed

NEWCOMERSTOWN WATER COMPANY
Newcomerstown, Ohio.



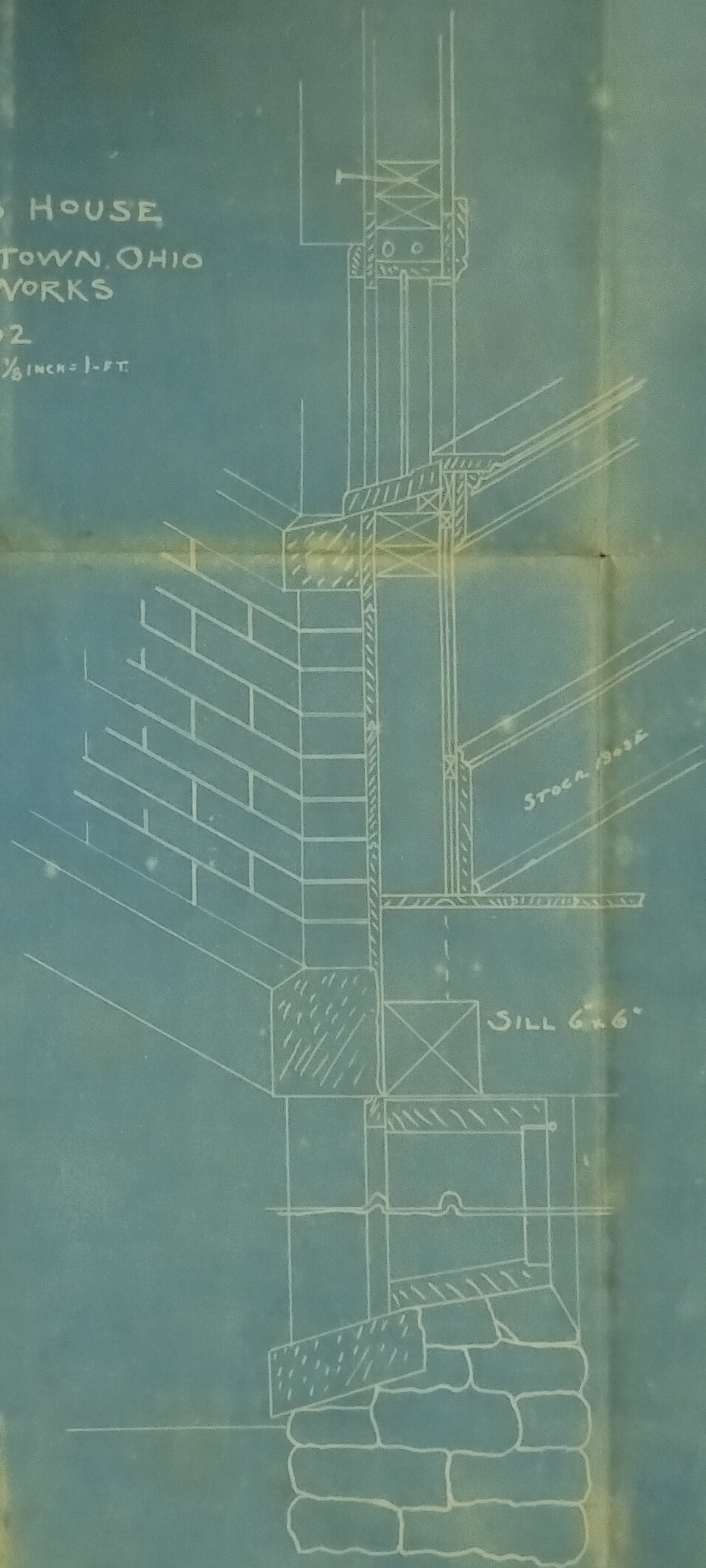
FIRST FLOOR



BASEMENT

ENGINEER'S HOUSE
NEWCOMMERSTOWN, OHIO
WATER WORKS

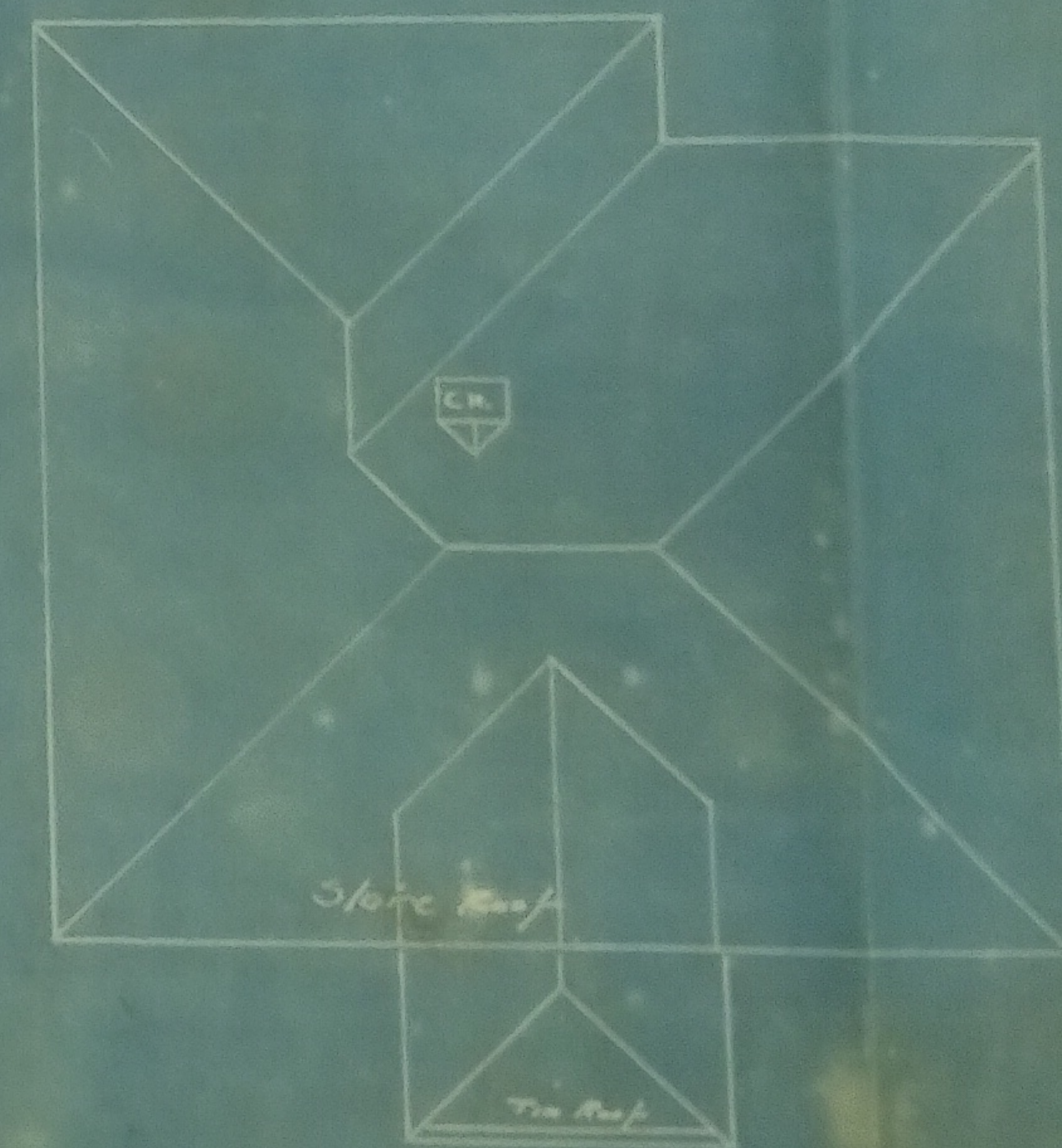
1902
SCALE 1/8" = 1'-0"



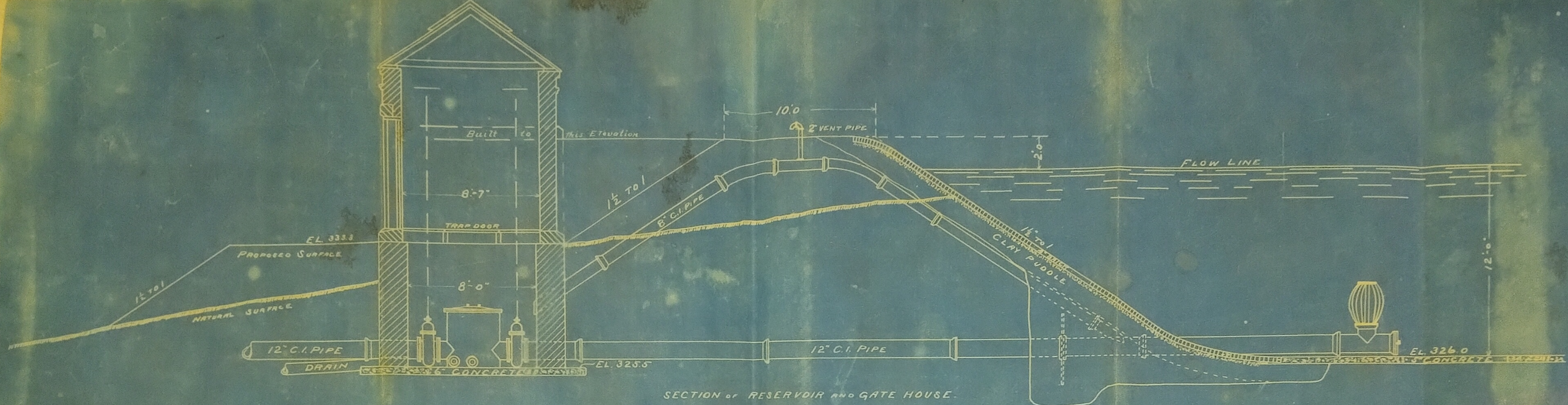
SCALE DETAILS
1/2" = 1'-0"



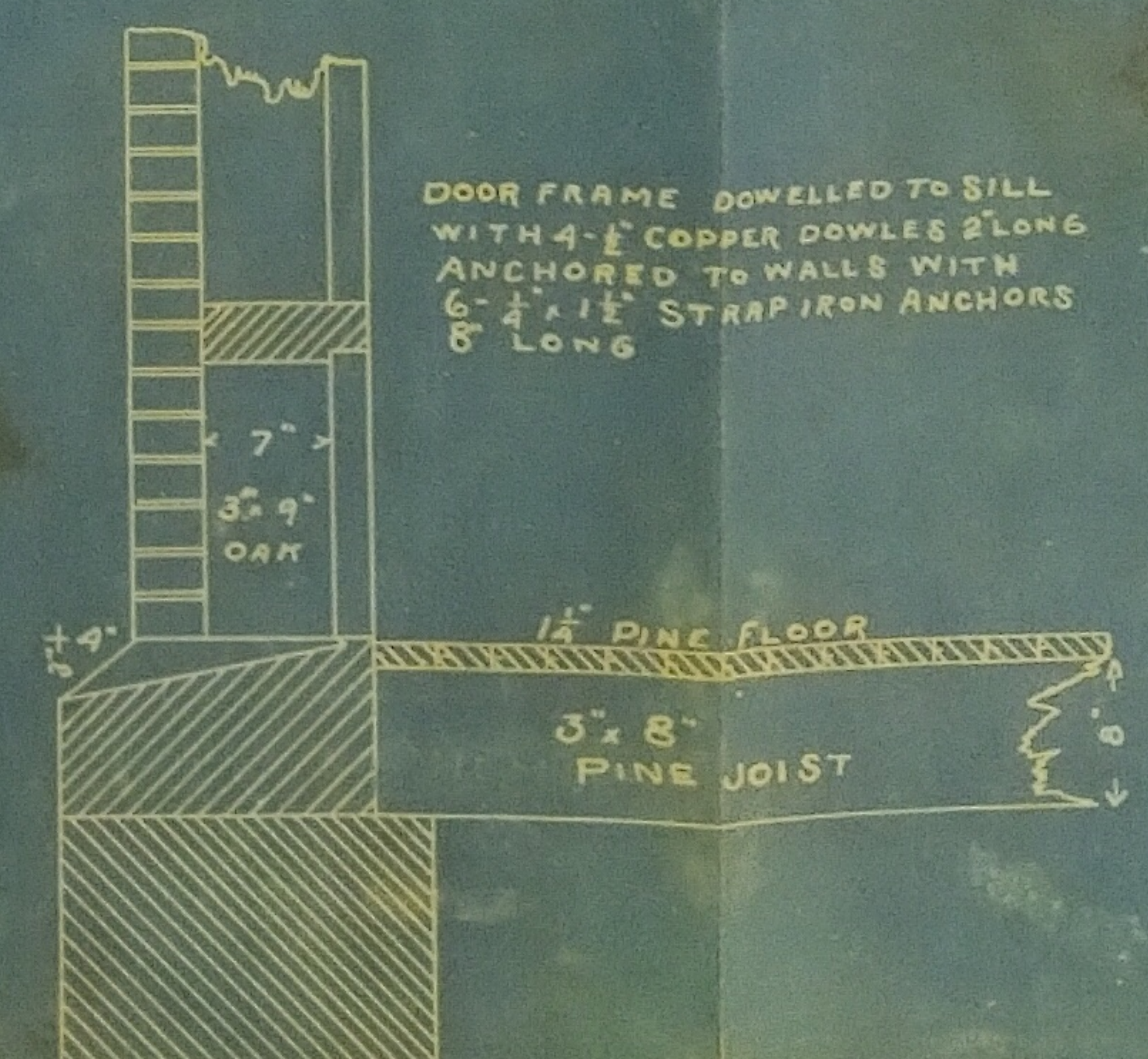
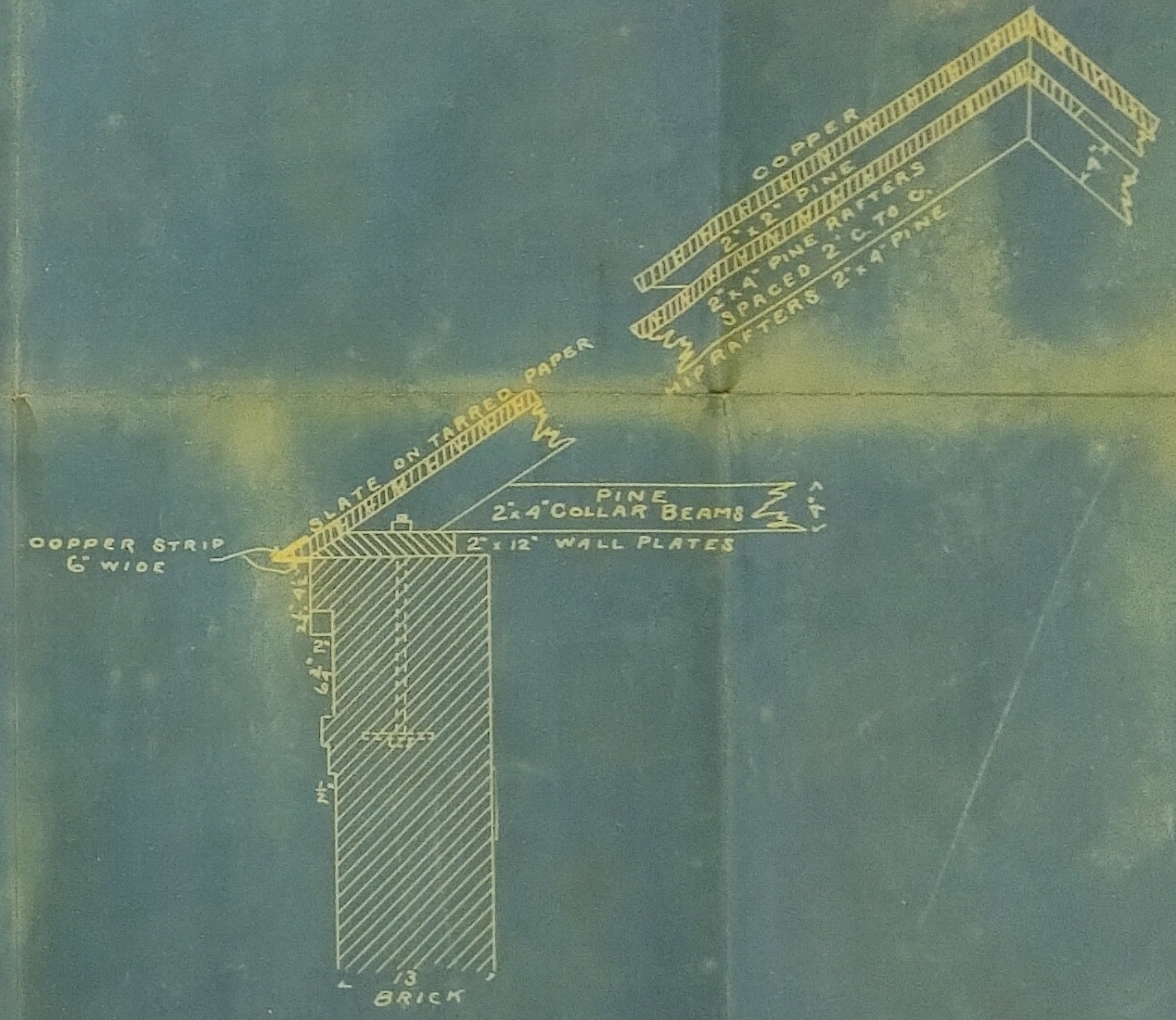
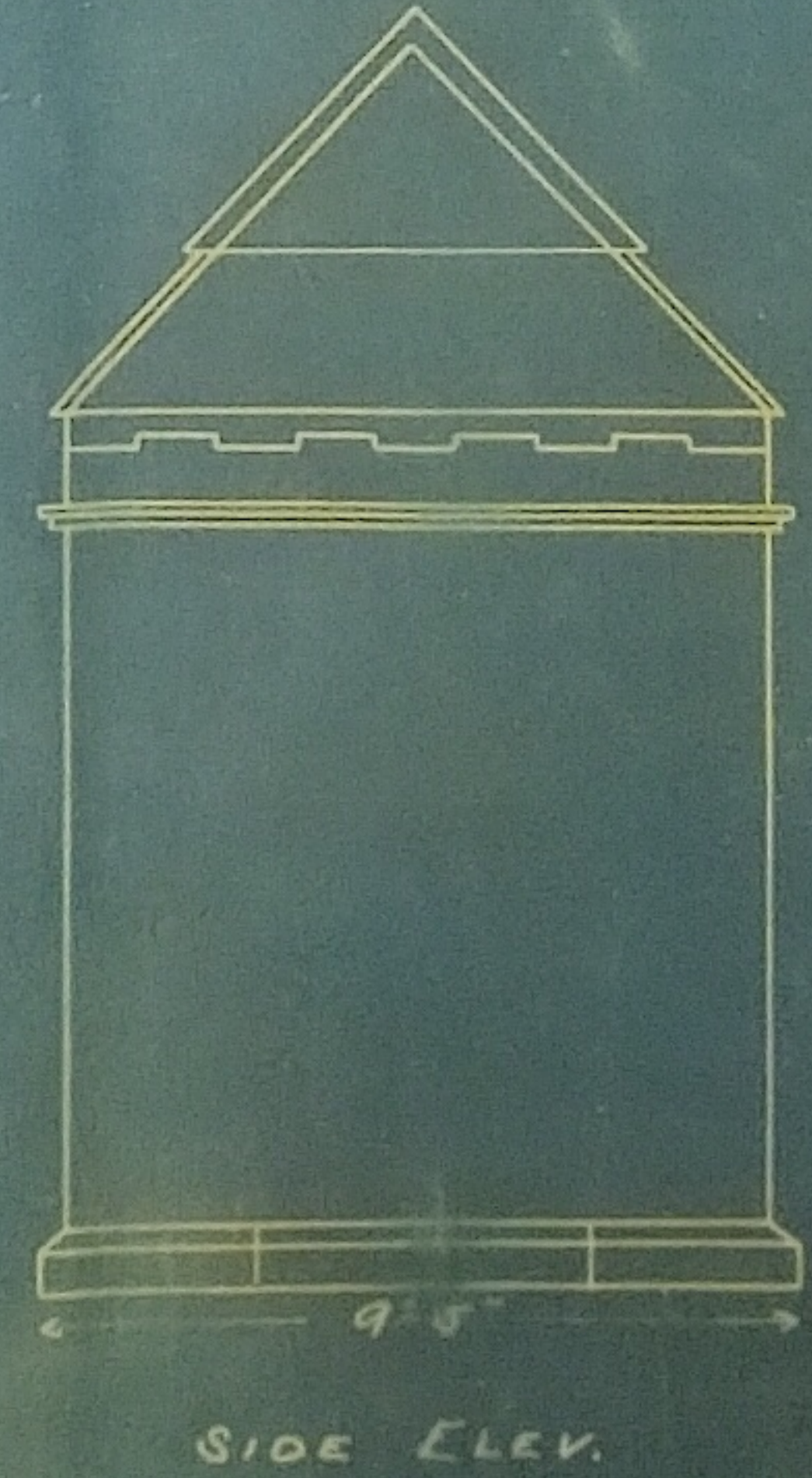
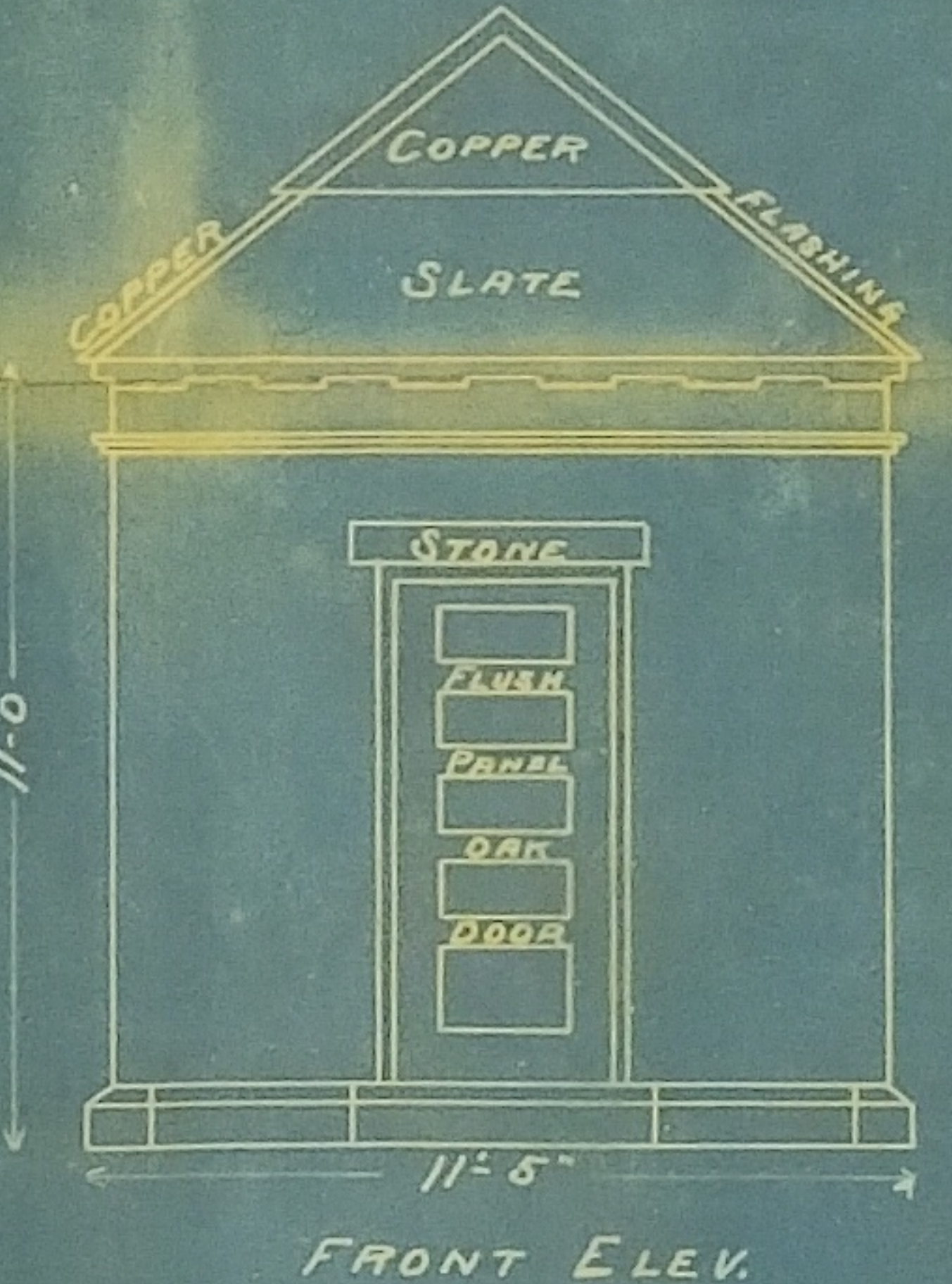
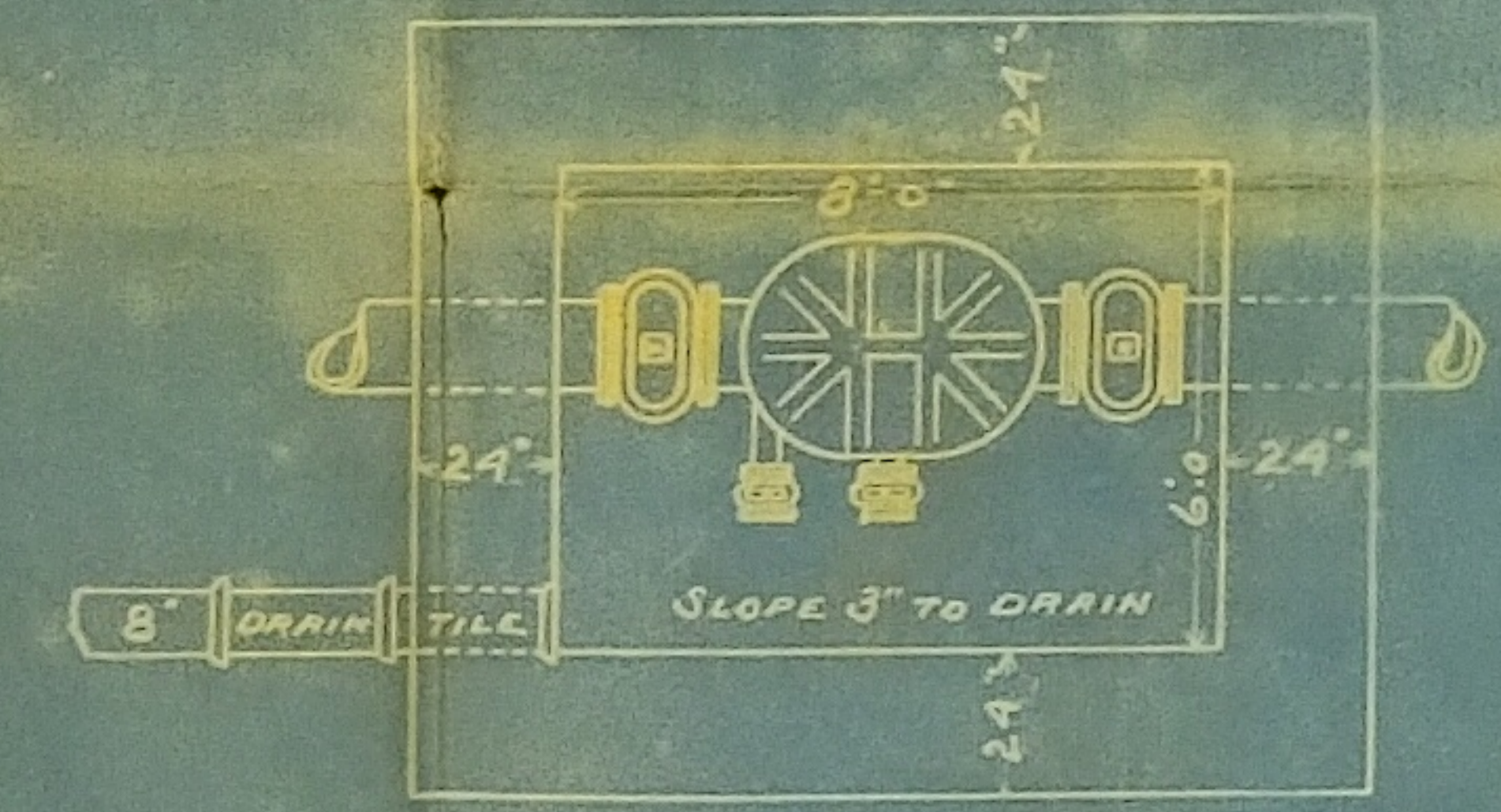
SECOND FLOOR



ROOF PLAN



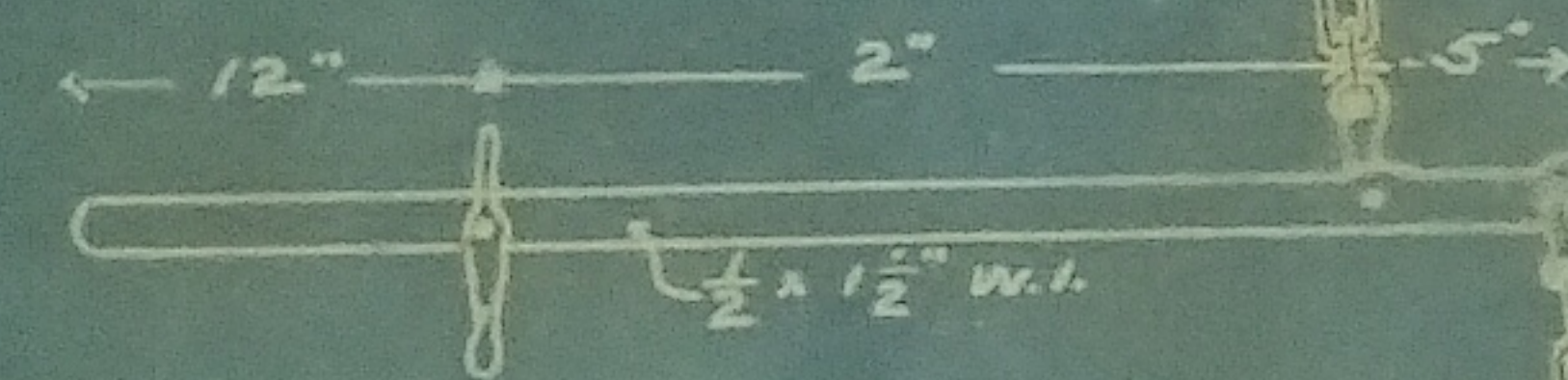
SECTION OF RESERVOIR AND GATE HOUSE.



NEWCOMERSTOWN, OHIO.
WATER WORKS

DETAILS NEWCOMERSTOWN, OHIO. WATER WORKS

DEVICE FOR REMOVING
SCREEN POT COVER
SCALE 1"=1'



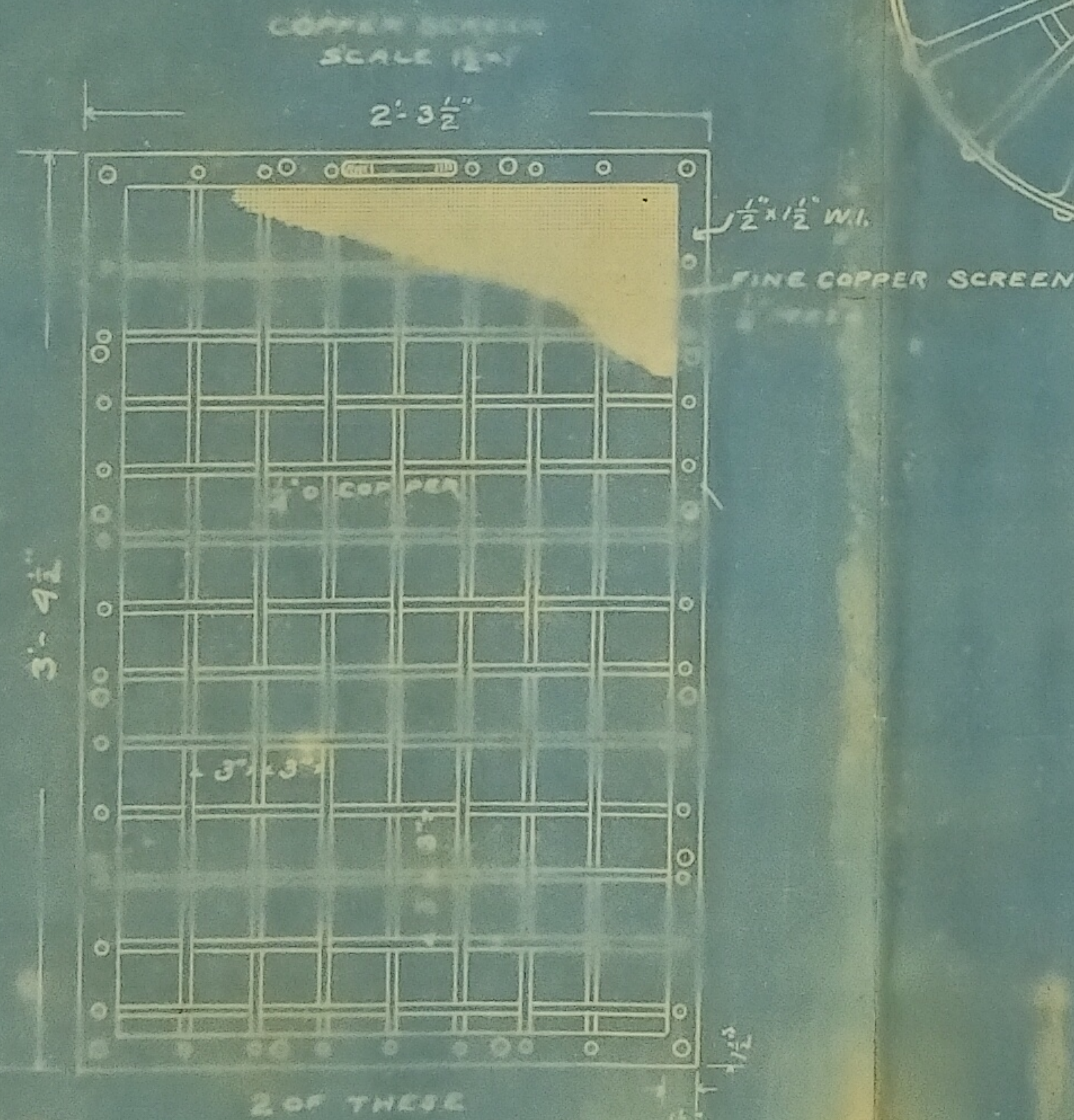
CHAIN DOUBLE
FROM HERE DOWN

COVER OFF

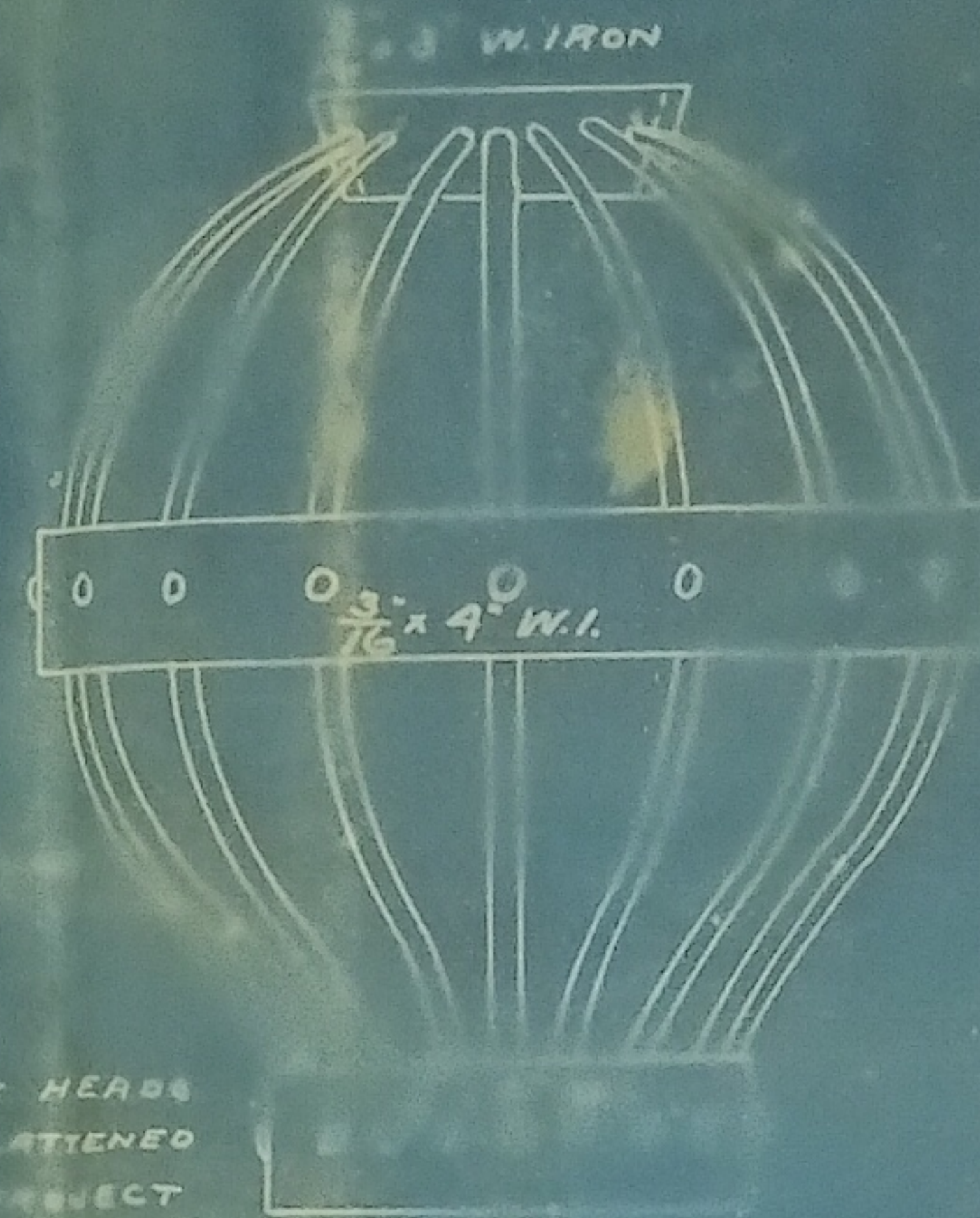
COVER ON

SCREEN POT

SCREEN POT



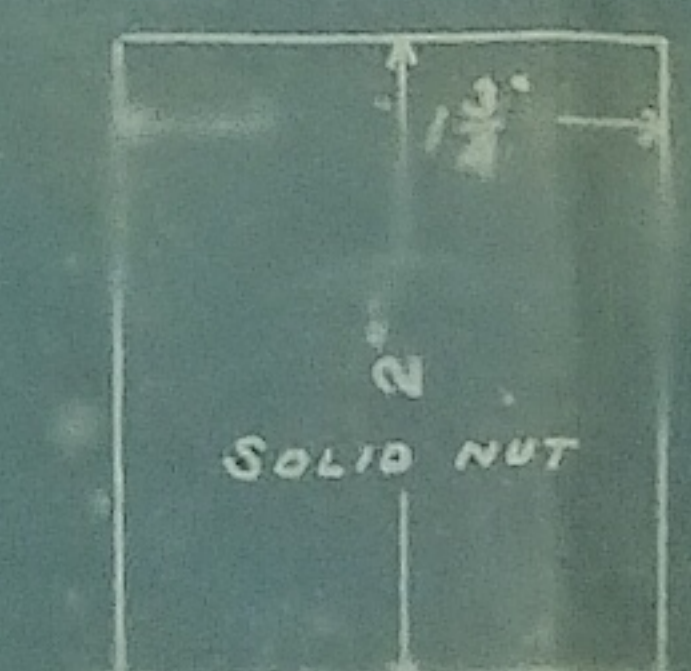
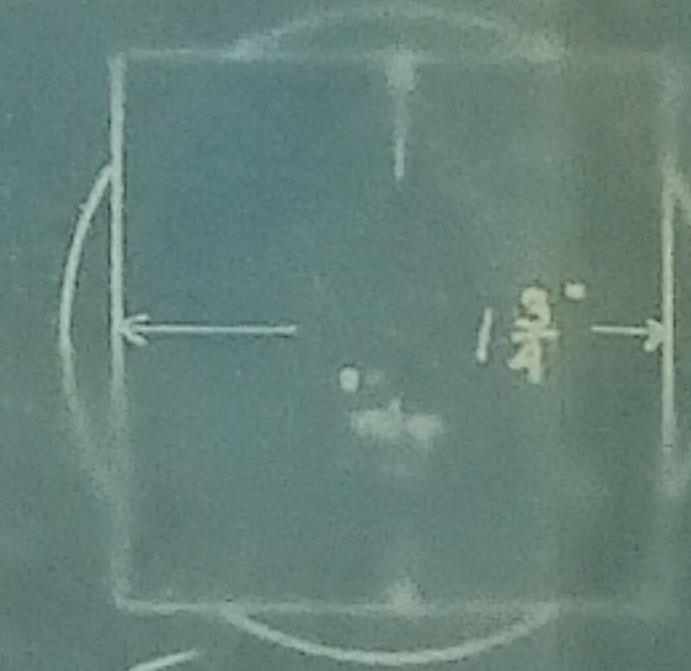
RIVETS ALONG THESE EDGES MUST
BE COUNTERSUNK



HOOD RACK
1 OF THIS

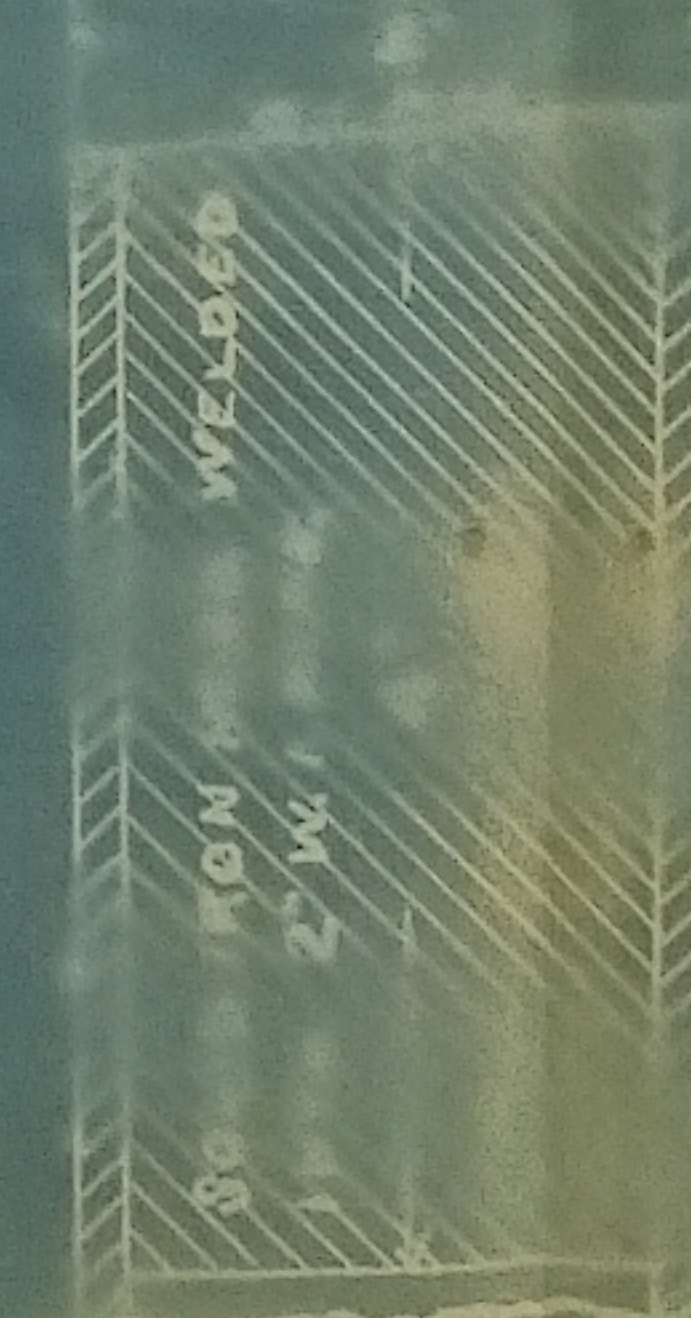


SECTION AND PLAN
OF
HEAD FOR VALVE RODS

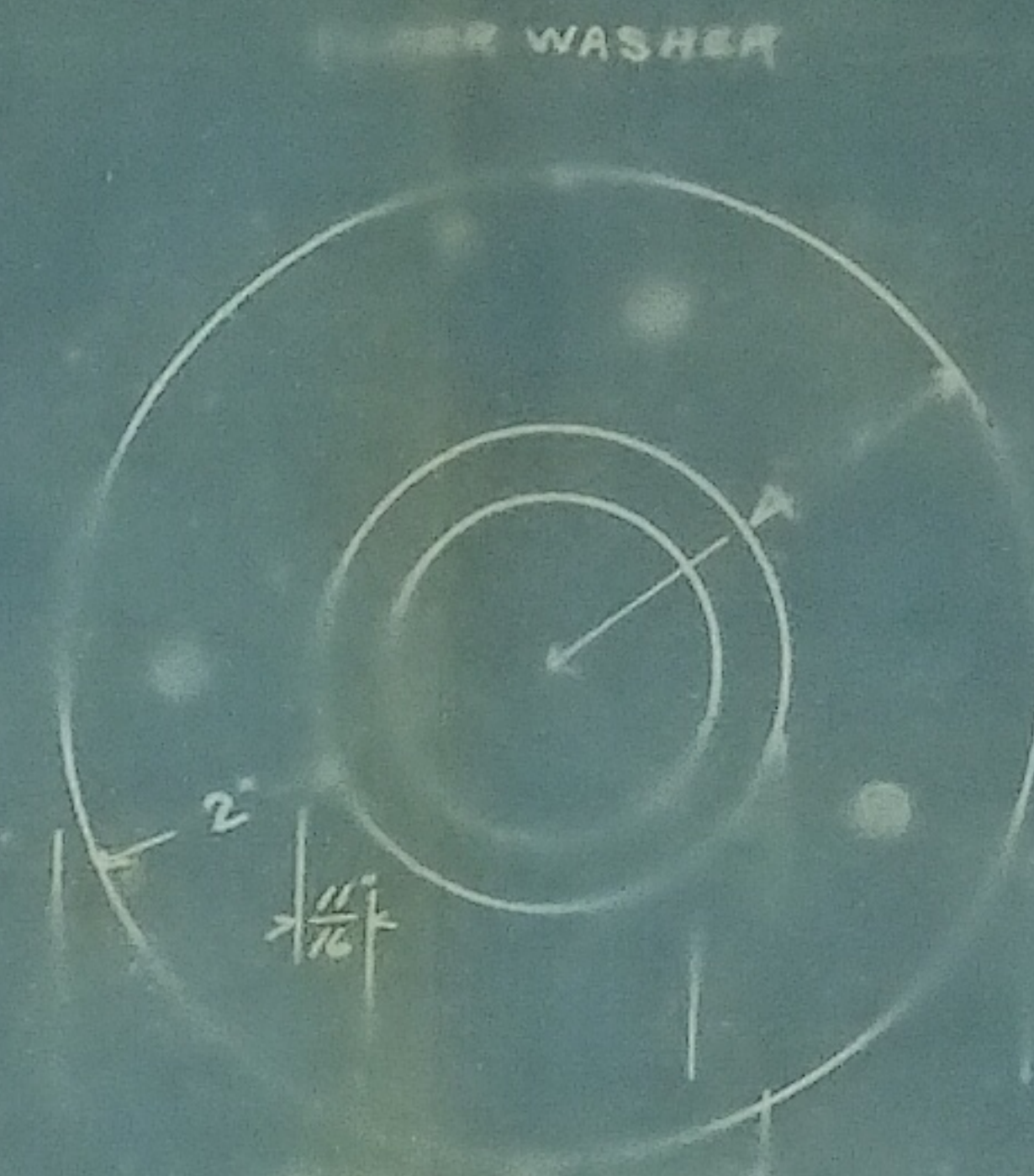
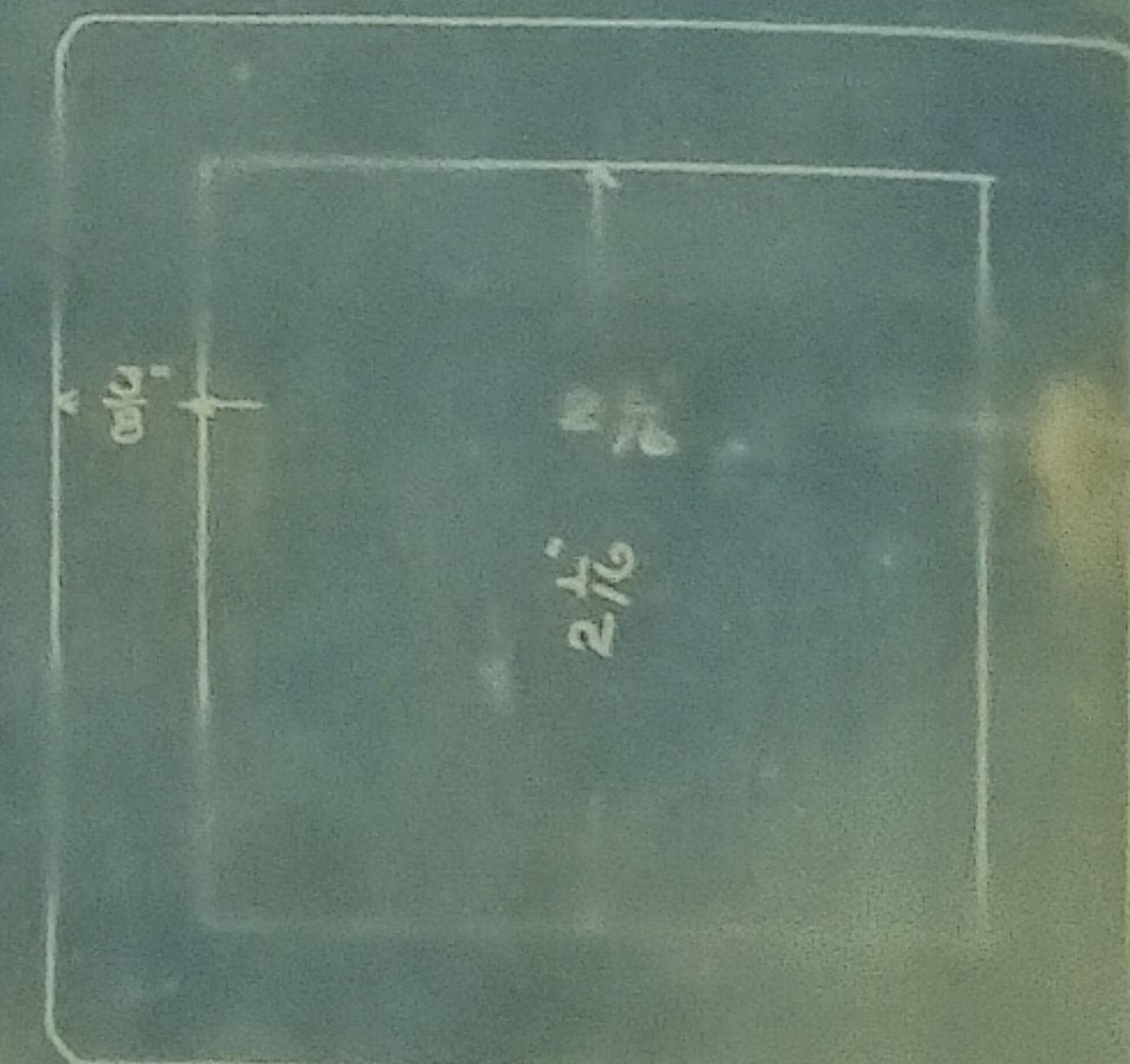


SOLID NUT

SCALE
3/4"=1"

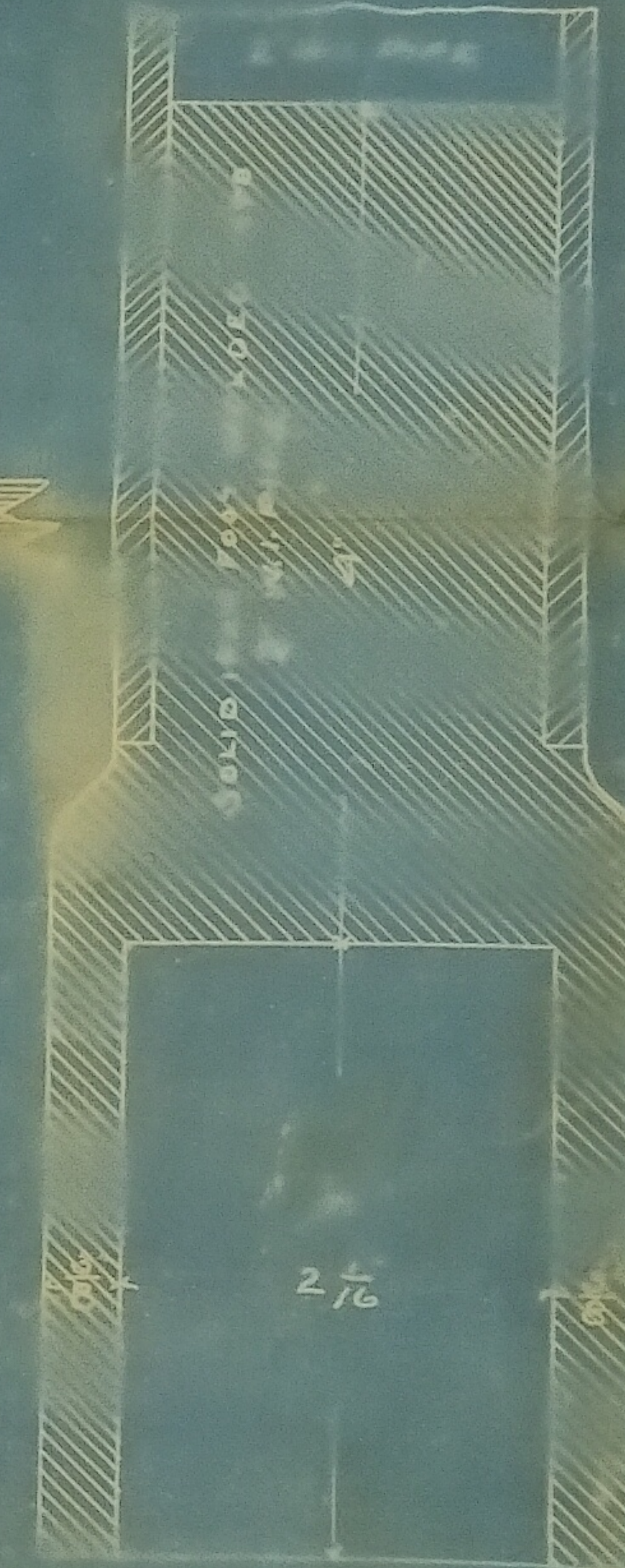


SECTION AND PLAN
OF
FOOT OF VALVE RODS

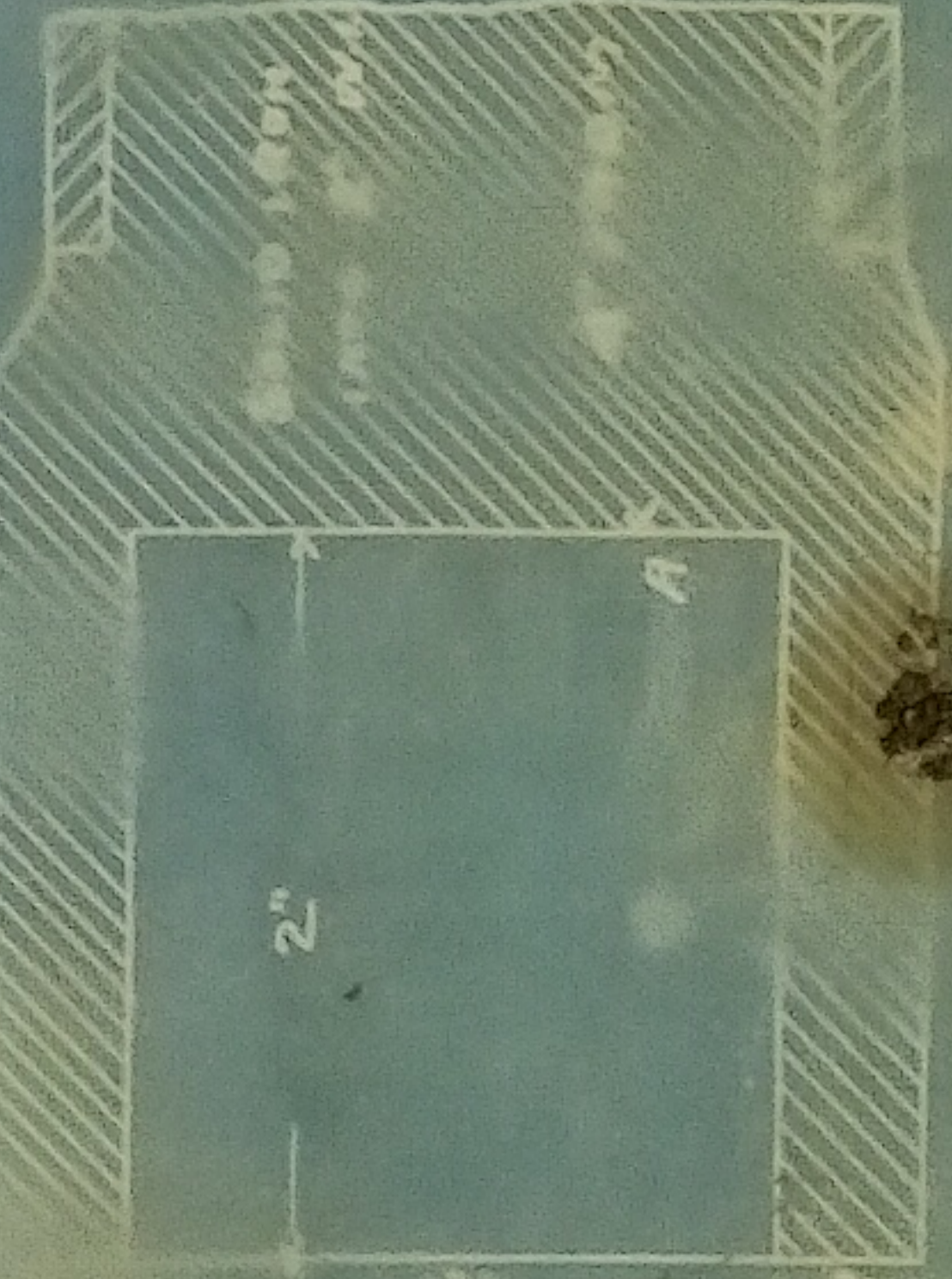
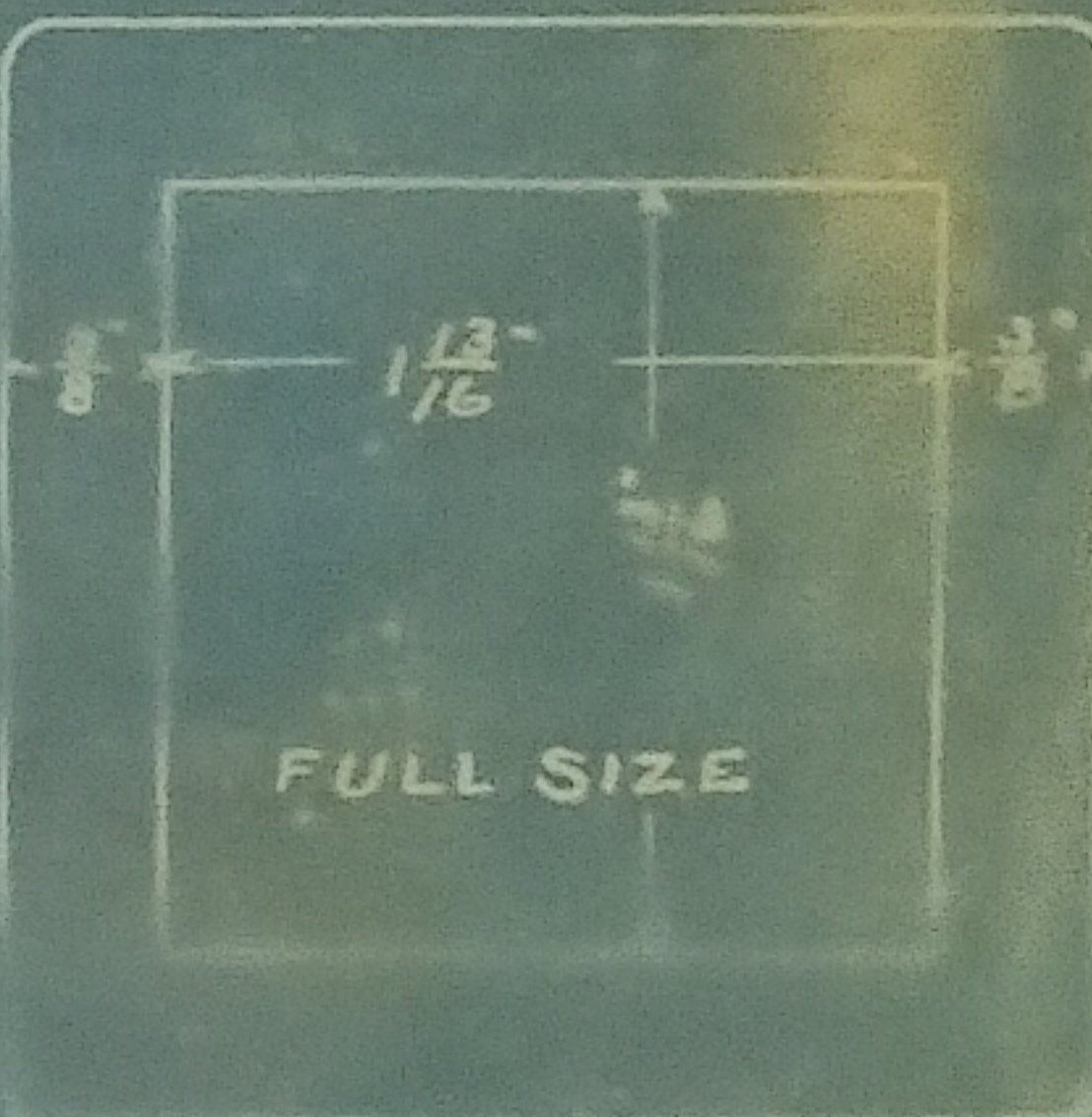


4 OF THESE

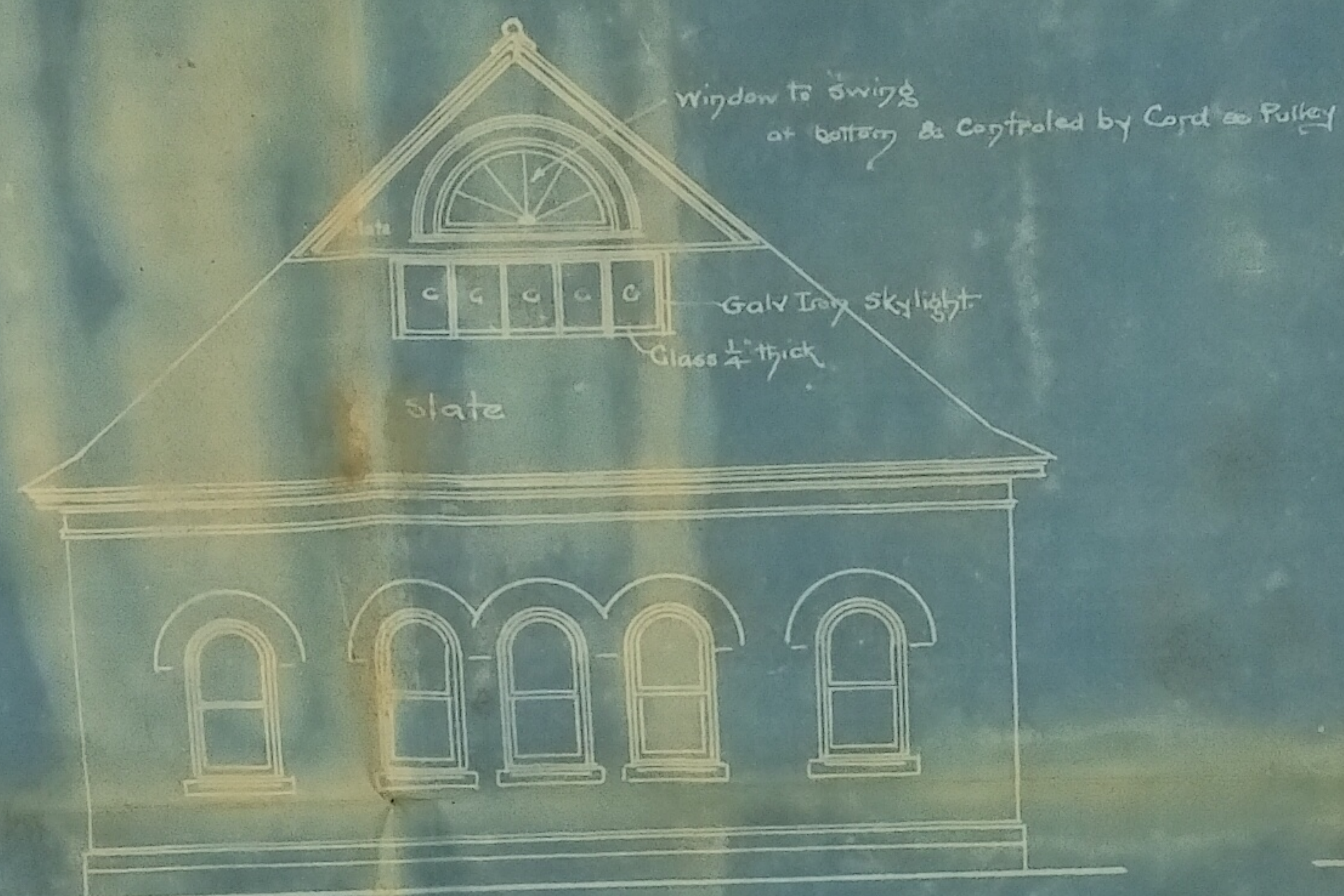
FULL SIZE



PLAN AND SECTION
OF
FOOT OF VALVE WRENCH



FULL SIZE



END ELEVATION



FRONT ELEVATION

**PUMPING STATION
NEWCOMERTOWN, OHIO.
WATER WORKS**

- 1901 -

SCALE $\frac{1}{8}$ IN. = 1 FT.



FOUNDATION PLAN

Draw No.

Knight and Hopkins, Rome, N.Y.