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PORTLAND, OREGON

NEWBERG, OREGON

ADVERTISEMENT, INSTRUCTIONS TO BIDDERS

PROPOSAL

S p e c i f i c a t i o n s

CONTRACT and BOND

For the Construction of

PUMPING PLANT AND SUPPLY MAIN

1911

LOUIS C. KELSEY,
Civil Engineer,
Portland, Oregon.

N. C. CHRISTENSON,
Mayor.

W. W. NELSON,
Recorder.

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N O T I C E T O C O N T R A C T O R S
A D V E R T I S E M E N T - P U M P I N G P L A N T A N D S U P P L Y M A I N

Newberg, Oregon. Dec.11, 1911.

Sealed proposals will be received at the office of the City Recorder, Newberg, Oregon, until 3 o'clock p.m. Monday, January 15, 1912, for furnishing materials and constructing pumping plant and supply main.

Plans and specifications may be seen and forms for proposal may be obtained upon application at the office of the City Recorder or of Louis C.Kelsey, civil engineer, 404-5 Selling Building, Portland, Oregon.

Parties desiring plans for their personal use may obtain them from the Engineer on payment of \$10.

The right is reserved to reject any and all bids.

By order of the City Council.

N.C.CHRISTENSON,
Mayor.

W.W.NELSON,
Recorder.

LOUIS C.KELSEY,
Civil Engineer,
Portland, Oregon.

INSTRUCTIONS TO BIDDERS

1. All proposals must be upon the attached form without detaching it from the specifications and contract.

2. Proposals must be enclosed in a sealed envelope and endorsed "Proposal for Constructing Pumping Plant and Supply Main".

3. The full name and place of residence of bidders must be stated in the proposal.

4. Any one signing a proposal as the agent of another or others, must file with it legal evidence of his authority so to do.

5. No alterations by erasures or interlineations will be allowed, and permission will not in any case be given for the withdrawal, modification or explanation of any bid.

6. All blank spaces in the proposal must be filled in. No change shall be made in the phraseology of the proposal, nor shall any additions be made in the items.

7. Transfers of contracts or of interests in contracts are prohibited.

8. Reasonable grounds for supposing that any bidder is interested in more than one proposal will cause a rejection of all proposals in which he is supposed to be interested.

9. Bidders are invited to be present at the opening of the proposals.

10. The bidder must satisfy the City Council of his ability to furnish the materials, and perform the work contemplated. The character of the appliances to be used, the adequacy of the security offered and also the previous experience and responsibility of the bidder, independently of the bond required, will be considered in awarding the work.

11. Each proposal must be accompanied by a cashier's check on some well known bank in Oregon for five per cent (5%) of the bid, which shall be forfeited to the City of Newberg if the proposal is accepted and the work awarded and the bidder fails to enter into a contract according to the terms of his proposal within five days after having been notified of the acceptance of the proposal.

12. A bond will be required for fifty per cent (50%) of the amount of the bid, to be approved by the City Council of Newberg.

13. These instructions are to be construed with and made a part of the contract.

14. All proposals shall be made and received with the express understanding that the bidder accepts the terms and conditions contained in the form of contract bound herewith.

15. No bid will be accepted which does not contain an adequate or reasonable price for each and every item named in the schedule of quantities.

16. The City of Newberg reserves the right to reject any and all proposals, and to waive any informality in any proposal received; also to disregard the proposal of any failing bidder or contractor known as such to the City Council.

17. For further information apply in writing to the City Council or to the Engineer at his office, Portland, Oregon.

P R O P O S A L

Newberg, Oregon, Jan 15 1912.

To the Honorable Mayor and City Council,

Newberg, Oregon:

The undersigned, after having personally and carefully examined the specifications and form of contract hereto attached, proposes to furnish materials and construct pumping plant and supply main and to fully complete the said work ready for use, including the furnishing of all material, labor and all other things necessary to finish and maintain the entire work in a proper and workmanlike manner according to the plans of the Engineer and upon the terms and conditions and in the manner set forth in the specifications and form of contract and under the penalty of the bond hereto attached and to the full satisfaction and acceptance of the Mayor and City Council and the Engineer of the City of Newberg, at the following prices for the respective items of work named:

WATERWORKS SYSTEM AND PUMPING PLANT

Work and Materials	Approximate Quantities	Price	Amounts
Excavating and Backfilling	5,000 cu.yds.	0.42	2100.00
<u>Furnishing and Laying Cast Iron Pipe:</u>			
4-inch	400 lin.ft.	0.55	220.00
10-inch	1,500 lin.ft.	1.39	2085.00
<u>Furnishing and Laying Wire-wound</u>			
<u>Wooden Stave Pipe:</u>			
10-inch 350-ft.Head	7,700 lin.ft.	0.48	3696.00
10-inch 275-ft.Head	3,750 lin.ft.	0.49	1837.50
10-inch 300-ft.Head	1,200 lin.ft.	0.52	624.00
10-inch 325-ft.Head	150 lin.ft.	0.53	79.50
Special Castings, per pound,	10,000 lbs.	0.04625	462.50
Furnishing and Setting Hydrants, each,	10	38.40	384.00
<u>Furnishing and Setting Valves, each:</u>			
4-inch	10	11.00	110.00
10-inch	6	37.00	222.00
Furnishing and Setting Iron Valve Boxes, each,	16	4.25	68.00
Furnishing and Setting Air Valves, each,	5	29.30	146.50
Constructing Pump House for Engine, complete,	1		
Constructing Pump House for Motor, complete,	1		200.00
Constructing Sump, complete,	1		480.00
<u>Furnishing and Laying Vitrified Sewer Pipe:</u>			
8-inch	540 lin.ft.	0.49	264.60
12-inch	530 lin.ft.	0.92	487.60
16-inch	470 lin.ft.	1.29	606.30
<u>Furnishing and Laying Y's:</u>			
12-inch x 8-inch	18	1.97	35.46
<u>Furnishing and Laying Vitrified Sewer</u>			
<u>Pipe for Drain:</u>			
6-inch	50 lin.ft.	0.30	15.00
8-inch	50 lin.ft.	0.44	22.00
10-inch	50 lin.ft.	0.60	30.00
Total (forward)			

WATERWORKS SYSTEM AND PUMPING PLANT

Work and Materials	Approximate Quantities	Price	Amounts
Total (forwarded)		\$	\$
Constructing Standard Manholes: 10 feet or less in depth, each, For additional depth, per lin.ft.	4 lin.ft.	47.50 5.00	190.00
Constructing Special Manholes: 6 feet or less in depth, each, For additional depth, per lin.ft.	18 lin.ft.	30.50 5.00	549.00
Constructing Catch Basin, complete,	1	25.00	25.00
Furnishing and Setting 12-inch Sluice Gates	2	38.85	77.70
Total			\$ 1507.66

~~Furnishing and Installing Engine, Pump and Equipment, including
Suction Pipe and connection with 10-inch Wood Pipe, complete,~~

~~Furnishing and Installing Motor, Pump and Equipment, including
Suction Pipe and connection with 10-inch Wood Pipe, complete,~~

~~The engine will be manufactured by _____
_____ of _____
and known as the _____ h.p. engine.
The motor will be manufactured by _____
_____ of _____
and known as the _____ h.p. motor.
The pump will be manufactured by _____
_____ of _____
and known as the _____ pump.~~

~~The engine (or) motor, pump and equipment will be in strict accordance with the
enclosed detail plans and specifications.~~

SEWER SYSTEM

Work and Materials	Approximate Quantities	Price	Amounts
<u>Excavating and Backfilling:</u> Earth	1000 cu.yds.	\$0.42	\$ 400.00
<u>Furnishing and Laying Vitrified Sewer Pipe:</u> 8-inch	1500 lin.ft.	0.37	555.00
<u>Furnishing and Laying Y's:</u> 8 x 6-inch	90	1.28	115.20
Constructing Manholes	4	45.00	180.00
Constructing Standard Flush Tank	1	70.00	70.00
Constructing Special Flush Tank	1	47.50	47.50
Constructing Septic Tank	1		225.00
Total			\$ 1612.70

The following are the name and place of business of the surety company which will sign the attached bond as surety if the work is awarded to the undersigned:

Little Guaranty & Surety Co. of Scranton, Pa.

It is hereby agreed that the City of Newberg has the right to reject this proposal or to award the contract to the undersigned at the prices bid. If the proposal is rejected then the enclosed check for \$ 1100.00 which is made payable to the Treasurer of the City of Newberg, shall be returned to the undersigned within thirty (30) days from the date hereof. If the proposal is accepted and the work awarded and the undersigned shall fail to enter into a contract of the form and terms hereto attached within five (5) days after the award shall have been made, then the said check shall be cashed and the amount thereof be paid into the treasury of the City as liquidated damages for the failure of the undersigned to comply with the terms of this proposal.

The undersigned further proposes and agrees to fully complete the entire work under this contract by May 15, 1912.

(Firm Name) WELTON, KIBBE & COCHRAN
By A. J. Welton

(Name) _____

(Place of Residence) Portland

(Name) E. G. Miller

(Place of Residence) Portland.

(Name) L. H. Cochran

(Place of Residence) Portland

Individual
Names and
Places of
Residence

S P E C I F I C A T I O N S

EXCAVATING AND BACKFILLING

Section 1. Work to be Done. Excavating and backfilling shall include the work of removing all earth, stone, loose rock, clay, shale, cement, hardpan, boulders, solid rock, and all other material that may be encountered or required in preparing the work, and shall also include all refilling, trimming, shaping, picking down, refilling, surfacing and all other work that may be required in bringing the work to the subgrade and shape required and of maintaining it in perfect condition until the work has been constructed; it being understood and agreed that the cost thereof shall be and is included in the contract price per cubic yard for excavating and backfilling, and no other compensation shall be allowed the contractor for hauling away the surplus material that may result from the work.

2. Width of Trench. The trench for the pipe shall be excavated eighteen (18) inches wider than the inside diameter of the pipe.

3. Depth of Trench. The trench for the pipe shall be excavated to the depth indicated by the Engineer's stakes.

4. Timbering. The trench for the pipe shall be properly timbered by the contractor wherever necessary to prevent the sides caving in.

5. Protection of Pipes. All water, gas or other pipes encountered in excavating the trench shall be carefully supported and protected from injury until the backfilling is completed.

6. Tunneling. No tunneling of trenches will be permitted without written consent of the Engineer.

7. Pumping and Draining. The Contractor shall do all pumping, shall build all drains and shall do all other work necessary to keep the trench and pipes free from water during the progress of the work. In wet trenches a channel shall be kept open on one side for conducting the water to a sump hole, where it shall be pumped out or drained off through a box, and no water shall be allowed to enter the pipes at any time during the construction.

8. Backfilling Pipe Lines. After the pipe is laid it shall be backfilled to a depth of one (1) foot with the finest material available in a manner which will not injure or disturb the position of the pipe. After the pipe is tested the backfilling shall be completed with good material well tamped or settled in place with water. All flumes, ditches and other property removed or injured during the progress of the work shall be restored. The surface of the ground shall be graded and left in as near its former condition as practicable.

9. Excess Excavation. All materials excavated in excess of that shown in the plans or ordered by the Engineer will not be paid for.

10. Measurements. Excavating and backfilling shall be measured in the excavation, and the quantities paid for shall be within the limits specified herein.

EMBANKMENTS

Section 2. Embankments. If the material excavated within 1000 feet is insufficient to make the required embankments the contractor shall construct said embankments of suitable material obtained elsewhere.

2. Rolling and Tamping. Embankments exceeding one (1) foot in depth shall be constructed in layers not exceeding one (1) foot in thickness, each of which shall be sprinkled and thoroughly rolled or settled with water to the satisfaction of the Engineer. Embankments one (1) foot or less in depth shall be constructed in layers of not more than four (4) inches in depth, each layer to be thoroughly tamped as directed by the Engineer before another layer is added.

WIRE WOUND PIPE

Section 3. Lumber. All lumber used in the construction of the staves shall be first class Oregon fir, cut from

live trees, and shall be clear, sound and straight grained, free from all loose and large knots, dry rot, pitch seams, cracks, wind-shakes, sap-wood or other defects that might impair its strength or durability.

2. Inspection. All lumber used shall be subject to inspection before being milled into staves and again before being made into pipe.

3. Seasoning. All lumber before being milled into staves shall be thoroughly seasoned by either air drying or kiln drying.

4. Thickness of Staves. The shell of the pipe shall in no case be less than one and three-eighths ($1 \frac{3}{8}$) inches thick, but in any case shall be sufficiently thick to properly fit the special castings and fittings.

5. Staves. The staves of pipe shall be dressed on both sides to true circles of the inside and outside diameter of the pipe, and the edges shall be planed to true radial lines. One edge shall have a small triangular groove near its center line and the opposite edge shall have a tongue or bead of the same shape but a trifle larger than the groove to make a tight joint when pipe is banded. The ends of the pipe shall be sawed off square and turned smoothly to correspond with the coupling used. The pipe may be made of varying lengths, but not more than ten (10) per cent shall be less than ten (10) feet in length.

6. Banding. The pipe shall be spirally banded with Washburn and Moen guage, double galvanized steel wire, having a tensile strength of not less than sixty thousand (60,000) pounds per square inch of section. All bands shall be of a size specified and shall be spaced in accordance with the diagrams of the Engineer. In winding, the wire must have sufficient tension to impress the wire slightly into the staves, but must not break the fibre of the wood or the pipe will be rejected. The wire banding must be securely fastened with staples at the beginning end of the winding and by a clip made of mild steel at the finishing end of the wire. All pipe over twelve (12) feet in length must have a staple in the center of the pipe to securely fasten the wire banding.

7. Coating. The banding and pipe shall be coated with a mixture of pure refined asphalt and tar of proper consistency. The tenon ends and inside of the pipe shall be properly protected from this coating. The coating shall be smooth and uniform in thickness, free from all blisters and bubbles. It must be of a tough and tenacious character, and shall show no tendency to become soft when heated to one hundred and fifty (150) degrees Fahrenheit, nor become brittle and flake off when exposed to the cold. Fresh material shall be added from time to time to keep the ^{right} ~~material~~ proportions and the mixture at the proper consistency.

After the pipe is coated it shall be rolled over in fine dry sawdust to facilitate handling. All pipe shall be subject to inspection before being coated and any defective pipe found will be rejected.

8. Couplings. Couplings for connecting ^{the} wooden pipe shall be of wood; they shall be made of the same class of material as the pipe sections they connect, and shall be not less than six (6) inches in length for pipe six (6) inches in diameter, and eight (8) inches in length for pipe eight (8) to twelve (12) inches in diameter. They shall be so manufactured as to make a tight joint with the tenon of the pipe. The couplings are to be spirally wound with wire of the same size as on the pipes they connect, but the spacing of the banding shall be only one-half of the spacing of the pipe. The couplings for the wire wound pipe fourteen (14) inches and larger shall be individual band couplings ten (10) inches in length. They shall be each bound with six (6) one-half inch steel bands as specified for the continuous wooden stave pipe.

9 Samples. All bidders will be required to submit samples of the wood pipe they intend to use. These samples must show the coupling complete, also the method of fastening the wire banding, and must be approved by the Engineer. Bids must state what kind of coupling is to be used.

10. Specials. All standard specials shall be made of a good quality of cast iron, and shall be coated with a similar preparation and in the same manner as the wood pipe and banding. All specials shall conform to the American Waterworks Association Standard Specifications adopted May 12, 1908, except the bells which shall be made to fit the wood pipe furnished.

11. Laying Pipe. All pipe shall be laid to the grades and alignment given by the Engineer. Immediately before laying any pipe it shall be carefully swept out and cleaned of all dirt, rubbish, or any other material that may have collected in the pipe. The pipe shall be laid by carefully driving the couplings on to the pipe with a heavy wooden maul, or ram, and then driving the next section of the pipe into the couplings. No driving of both coupling and pipe will be allowed. Short lengths of pipe must be used on all vertical and horizontal curves.

12. Repainting. As soon as the pipe is laid any places on the bands or pipe where the coating has been abraded must be repainted with asphaltum paint. Walking over the bare pipe at any time is prohibited.

13. Pipe Protected. All pipe distributed along the line of the ditch must be protected against exposure to the weather, if allowed to remain there more than two (2) days.

14. Tests. Whenever necessary in the judgment of the Engineer, suitable pipe lengths, together with couplings, shall be selected from the pipe to be laid and subjected to a hydraulic test pressure of not less than one hundred (100) pounds nor more than the static pressure for which the pipe is built, so as to determine the efficiency of the longitudinal and traverse joints, and of the couplings. If any leaks develop under such pressure and conditions, the entire lot of pipe from which the pipe lengths were taken shall be rejected.

15. Test of Wire. The Contractor shall also furnish samples of the wire to be used in banding the pipe, Such samples will be tested by the Engineer for tensile strength as hereinbefore specified.

16. Tests. All wooden pipe, after being laid and coupled, shall be subjected to a test of thirty (30) pounds pressure more than the static head, and any defects that may show up in the pipe, joints, or couplings during such tests shall be immediately remedied in a manner satisfactory to the Engineer. Where deemed necessary by the Engineer, any defective pipe, casting, band or other material shall be immediately removed and replaced with sound material by and at the expense of the Contractor.

17. Cost of Tests. The cost of making all tests, as specified above, shall be borne by the Contractor, who shall furnish all pumps, gages, labor and all other appliances necessary,

CAST IRON PIPE

Section 4. Cast Iron Pipe. The cast iron pipe and special castings to be furnished under this contract shall be in strict accordance with the specifications for cast iron pipe as adopted by the American Waterworks Association, May 12, 1908, for class "B" pipe.

2. Laying. In laying the pipe it shall be brought true to line and grade before the joints are made. The inner surface of the pipe shall conform exactly at the joints, and the annular space for the lead shall be of uniform width and depth.

3. Joints. The yarn shall be thoroughly caulked into the joints until the proper depth for the lead is secured.

4. Lead. The joints shall be filled flush with lead at one pouring and the lead thoroughly caulked until the joint is water tight.

5. Depth. The depth of lead in the joints shall be not less than two (2) inches.

6. Quality. The lead used shall be pure, soft lead of the best quality.

7. Testing. After the pipe is laid and the trench backfilled to a depth of one foot, except at the joints, it shall be tested with water at a pressure of one hundred and twenty pounds (120), and all defective joints shall be made water tight.

SPECIAL CASTINGS

Section 5. Special Castings. All special castings shall be made of the same material and shall conform to the same specifications as specified ^{herein} for cast iron pipe. All castings that do not come up to these specifications shall be rejected.

VALVES

Section 6. Valves. The valves furnished under this contract shall be the best Ludlow, Rensselaer or some other equally good valves, acceptable to the Engineer,

2. Materials and Workmanship. The valves shall be double-gate valves, bronze mounted. The materials used in their construction shall be of the best and the workmanship shall be first-class throughout.

3. Connections. The valve shall be double-hub or flange valves as required for the hydrants which shall be fitted with a hub on one end and a flange on the other end for connecting with the hydrants.

HYDRANTS

Section 7. Hydrants. The hydrants to be used on this work shall be the best Ludlow, Matthews or some other equally good hydrants, acceptable to the Engineer.

2. Materials and Workmanship. The hydrants shall be bronze-mounted with rubber-faced gates, with 4-inch inlet valve. The materials used in the construction of the hydrants shall be the best and the workmanship shall be first-class throughout.

3. Connections. The hydrants shall have two (2) two and one-half ($2\frac{1}{2}$) inch nozzels, Higbee thread, and shall be fitted with flange connections faced and drilled to fit the 4-inch valves furnished under this contract.

4. Setting. The hydrants will be set on a slab of stone or concrete, at least one foot square and two inches thick; said stone or concrete block to rest on a bed of broken stone or gravel. The entire bottom of the excavation for the hydrants shall be backfilled with broken stone or gravel to a point one foot above the bleeder of the hydrant.

5. Bracing. The Contractor will be required to brace each hydrant with two 4-inch by 4-inch braces between the hydrant and a 4-inch by 10-inch plank against the bank; one brace above the top of the connection pipe, and the other brace below the bottom line of the connection pipe,

the braces to be firmly wedged into place and securely fastened to the plank with spikes; the cost of the bracing to be included in the price bid for hydrants.

IRON VALVE BOXES

Section 8. Iron Valve Boxes. The cast iron valve boxes shall be adjustable in length and of a type approved by the Engineer.

PUMP HOUSE AND SUMP

Section 9. Pump House and Sump. The pump house and sump shall be constructed strictly according to the plans of the Engineer.

AIR VALVES

Section 10. Air Valves. The air valves furnished under this contract shall be the best Ludlow, or some other equally good air valves acceptable to the Engineer, including setting in wooden box.

SLUICE GATE

Section 11. Sluice Gate. The sluice gate furnished under this contract shall be the best Coffin or some other equally good sluice gate acceptable to the Engineer.

CEMENT

Section 12. Cement. The cement used in any and all work done under this contract shall be high-grade Portland

cement, and shall be sampled and stored, and shall stand the following tests before being used in the work:

2. Fineness. It shall be so finely ground that ninety (90) per cent will pass through a number 100 sieve.

3. Tensile Strength. Briquettes one (1) inch square, made of neat cement, when seven (7) days old, shall have a tensile strength of not less than four hundred and fifty (450) pounds.

4. Briquettes. Briquettes one (1) inch square, made of one (1) part cement and three (3) parts sand, when seven (7) days old, shall have a tensile strength of not less than one hundred and fifty (150) pounds.

5. Pat Tests. Pats made of neat cement and immediately placed in moist air at a temperature of forty-six (46) degrees Centigrade until set and then immersed in water, at the same temperature for three (3) hours, shall be sound and shall not check or curl.

6. Barrel of Cement. A barrel of cement shall contain not less than three and two tenths (3.2) cubic feet of packed Portland cement, and the net weight shall be not less than three hundred and seventy-five (375) pounds.

7. Initial Set. The initial set as indicated by the Gilmore tests on pats of normal consistency shall not take place within less than forty-five (45) minutes after the cement has been mixed with water.

8. Final Set. The final set as indicated by the Gilmore test on pats of normal consistency shall not take place within less than two hours and thirty minutes after the cement has been mixed with water.

9. Volume. The volume of one (1) barrel of Portland cement (375) pounds net will be assumed to be four (4) cubic feet.

10. Protection. All cement after having been sampled shall be protected until used. Any cement that has not been protected or that has been damaged in any way shall not be used in the work.

11. Brand. Any brand of cement not having established good reputation, or with which the Engineer is unfamiliar, may be rejected without test, or will be accepted only after having satisfactorily passed the twenty-eight (28) day test.

SAND

Section 13. Sand. The sand used in any and all work done under this contract shall be coarse, clean, sharp sand, free from earth, loam or foreign matter of any kind.

GRAVEL

Section 14. Quality of Gravel. The gravel used in any and all work done under this contract shall be thoroughly cleaned from dust, earth or other objectionable matter, by washing.

2. Broken Stone. Broken stone of hard and durable character may be substituted for any class of gravel, provided the dimensions of the broken fragments of stone conform to the class of gravel for which it is substituted.

CONCRETE

Section 15. Proportions. All concrete used in the work under this contract shall be composed of Portland cement, sand and broken stone or gravel in the following proportions: Cement, one (1) part; sand, three (3) parts, and broken stone or gravel, five (5) parts, except for sump which shall be: Cement one (1) part; sand, two and one-half ($2\frac{1}{2}$) parts; gravel or broken stone four (4) parts.

2. Measurements. The sand and gravel of the different classes shall be of the class hereinbefore specified to be used under this contract and the proportions used in each and every batch of mixture shall be carefully measured in boxes or square and uniformly sized wheelbarrows specially designed for the purpose. The use of the ordinary round-bottom wheelbarrow for the measurement of materials will not be considered satisfactory and will not be permitted. Each measure shall be struck.

3. Mixing and Depositing Concrete. All concrete shall be mixed in batch mixers, and the results must be satisfactory to the Engineer, and shall be in such a manner that each fragment of gravel shall be completely covered with

a coat of mortar. The mixture shall be immediately placed in position and rammed until all the coarser particles are driven below and the mortar flushed to the surface.

4. Concrete to be in Place. The concrete shall be in place and rammed within thirty (30) minutes after the cement is wet, and any concrete material which has been wet for more than thirty (30) minutes will not under any circumstances be allowed to be used in the work.

5. Sufficient Labor to be Employed. The whole operation of mixing and laying each batch of concrete shall be performed as expeditiously as possible by the employment of a sufficient number of skilled workman.

6. Finishing Concrete Surfaces. The inner faces of all openings in the concrete and the interior of all waterways, cleanouts, storm-water inlets, storm-water outlets and all exposed surfaces of concrete masonry unless otherwise specified, shall be smoothly finished by forcing all large fragments of the concrete mixture back from the surface of the forms with specially constructed tools for that purpose and allowing the mortar portion of the mixture to come in direct contact with the forms.

7. Protection of Concrete. The Contractor shall protect all concrete masonry from the effects of traffic for a period of not less than ten (10) days and for such a period as required by the Engineer by means of barricades, fences or otherwise.

8. Keeping Concrete Damp. The Contractor shall keep the surface of all concrete masonry moist by sprinkling or covering with damp materials and shall protect all concrete from the effects of sunlight and wind for a period of not less than ten (10) days.

9. Replacing Damaged Concrete. All concrete masonry that may for any cause or reason become damaged in any way before the final acceptance of the work by the City Council and Engineer, shall be immediately restored to good and perfect condition by and at the expense of the Contractor.

FORMS FOR CONCRETE MASONRY

Section 16. Wooden Forms. All wooden forms for concrete masonry shall be made of planed lumber of such sizes and thickness as in the opinion of the Engineer the character of the work demands.

2. Metal Forms. Metal forms of a type acceptable to the Engineer may be used, and the faces of all metal forms for concrete masonry shall be smooth as planed lumber.

3. Setting Forms. All forms for concrete masonry shall be set true to line and grade and properly secured, tied and braced in a rigid manner to insure the forms against possible movement before the concrete masonry becomes set.

4. Coating Forms. The faces of all forms shall be coated with grease, oil, soap or some other mixture accept-

able to the Engineer each and every time the forms are used for the moulding or shaping of the work, to insure the non-adherence of the concrete mixture to the surface of the forms.

5. Defective Forms. Forms that have become warped, racked, checked, bent, cracked or in any way defective shall not be used in the work.

MORTAR

Section 17. Proportions. Mortar for the pipe joints and the cement plaster shall be made of one (1) part of cement and one and one-half ($1\frac{1}{2}$) parts sand. The cement shall be measured in boxes and each measure shall be struck.

2. Mixture. The cement and sand shall be thoroughly mixed dry. The proper amount of water shall then be added and the materials thoroughly mixed. The mortar shall be used within thirty (30) minutes after the cement is wet.

CEMENT PLASTER

Section 18. Materials. Mortar for the cement shall be made of one (1) part of cement and one and one-half ($1\frac{1}{2}$) parts sand. The cement and sand shall be measured in boxes and each measure shall be struck.

2. Mixture. One barrel of cement and six (6) cubic feet of sand shall be thoroughly mixed dry. The proper amount of water shall then be added and the materials again thoroughly mixed. The mortar shall be used within thirty (30) minutes after the cement is wet.

3. Grouting. Before the surface of the concrete shall have become dry and immediately proceeding the work of putting on the plaster a thin mixture of grout made from equal parts of Portland cement and sand shall be poured over and be thoroughly rubbed with a trowel into the surface of the concrete.

4. Troweling. The surface of the plaster shall be thoroughly troweled before the cement begins to set and when finished it shall adhere perfectly to the concrete and shall not crack or blister.

5. Wetting. The plaster shall be kept wet for six (6) days after being put on.

VITRIFIED PIPE

Section 19. Pipe. The pipe shall be the best quality salt-glazed vitrified sewer pipe of a manufacture approved by the Engineer. The Contractor shall not change the pipe during the progress of the work without the written consent of the Engineer.

2. Quality. The pipe shall be straight, smooth, thoroughly vitrified, salt-glazed free from lumps, blisters and other imperfections, of true cylindrical shape, and the inner and outer surfaces shall be concentric.

3. Dimensions. The standard length of pipe shall be not less than two (2) feet and shall conform to the following dimensions:

Size of Standard Pipe	Thickness of Pipe	Depth of Socket	Cement Space
8-inch	3/4 inch	2 inches	1/4 inch
10-inch	7/8 inch	2 1/8 inches	1/4 inch
12-inch	7/8 inch	2 1/4 inches	3/8 inch
14-inch	1 inch	2 1/2 inches	3/8 inch
15-inch	1 inch	2 1/2 inches	3/8 inch
16-inch	1 1/8 inch	2 1/2 inches	3/8 inch

Size of Double Strength Pipe	Thickness of Pipe	Depth of Socket	Cement Space
18-inch	1 1/2 inches	2 3/4 inches	1/2 inch
21-inch	1 3/4 inches	3 inches	1/2 inch
24-inch	2 inches	3 1/4 inches	1/2 inch
27-inch	2 1/4 inches	3 1/2 inches	5/8 inch
30-inch	2 1/2 inches	4 inches	5/8 inch

4. Fittings. The curves, slants, tees and "Y" junctions shall conform to all the foregoing requirements as regarding quality, form and workmanship, and their thickness shall be equal to that of the pieces of the same calibre to which they may be joined.

5. Rejections. If twenty (20) per cent of any lot of pipe furnished fails to pass the specifications, the whole lot will be rejected.

PIPE LAYING

Section 20. Laying Pipe. The sewer pipe shall be laid on a firm bed, true to line and grade. The joints shall be made of oakum gaskets and cement mortar.

2. Gaskets. The gaskets shall be calked tightly into a bell, the inner surface of the pipe shall conform exactly at the joints.

3. Joints. The bell shall be filled flush with mortar of such consistency that it can be tamped solidly into the bell with a steel calking tool. The joints shall be immediately beveled off at an angle of about forty-five (45) degrees with mortar.

4. Cleaning. After the pipe is laid, the interior surface shall be carefully cleaned and all dirt and mortar removed.

5. Tight Joints. The joints shall be made in the best possible manner, and they shall be water tight.

6. Joints Dry. The cement joints shall be kept dry for at least twenty-four (24) hours.

7. Protection. Before leaving the work for the night or during a storm, the end of the pipe shall be closed with an iron cover fastened in with clay or mortar.

8. "Ys". The Contractor shall place 8-inch Y branches for connections at all points indicated by the Engineer. The Ys shall not be covered until they have been located.

9. Stoppers. All Y branches and dead ends shall be covered with a galvanized iron cover cemented into the hub with about one (1) inch of mortar made of one (1) part cement and three (3) parts sand.

TESTING FOR LEAKS

Section 21. Testing for Leaks. When completed the pipe shall be water tight. After the trench is backfilled for a depth of two (2) feet, it shall be filled with water which shall stand for at least two (2) hours. All leaks that may develop by this test shall be stopped immediately by the Contractor, and all defective joints renewed.

MANHOLES

Section 22. Manholes. The Contractor shall construct manholes of concrete with cast-iron covers, as shown on the plans.

2. Forms. In order to have the work executed with a fine, smooth surface, the Contractor shall use collapsible steel forms for the inside of all manholes, of a form approved by the Engineer.

3. Plastering. The interior surface of all manholes shall be plastered with a one-half inch coat of cement plaster.

4. Cleaning. The surface of the concrete in the manholes shall be cleaned and washed before the plaster is put on. The plaster shall adhere perfectly and shall not crack or blister.

5. Troweling. The surface of the plaster shall be thoroughly troweled before the cement begins to set, and when finished it shall be smooth, true and free from trowel marks.

6. Manhole Covers. The Contractor shall furnish and set on all manholes standard cast-iron^{manhole} covers with dust-pans, as shown on the plans. The covers shall be of good quality cast iron, free from flaws, cracks or other defects, and shall be perfect castings of the form and size shown on the plans.

REINFORCEMENT

Section 23. Materials. The material from which the metal reinforcement is constructed shall be equal to medium open-hearth steel. The finished product, whether rods, bars, expanded metal or other form of device, shall have an ultimate tensile strength of not less than 64,000 pounds per square inch. The elastic limit shall be equal to not less than one-half of the ultimate tensile strength and the percentage of elongation in specimens eight (8) inches long shall be not less than twenty-two (22) per cent.

2. Tests. The tested specimen shall be capable of being bent cold one hundred and eighty (180) degrees around a diameter equal in thickness to the specimen tested without fracture on the outside of the bent portion.

LAYING DRAIN PIPE

Section 24. Laying Pipe. The sewer pipe shall be laid on a firm bed true to line and grade.

2. Joints. The joints on the lower half of the pipe shall be made with cement mortar and the upper half shall be covered with cheesecloth to prevent sand from entering pipe and then covered with approximately two (2) inches of gravel to allow ground water to enter pipe.

3. Cleaning After Pipe is Laid. The interior surface of the pipe shall be carefully cleaned and all dirt and mortar removed.

4. Protection. Before leaving the work for the night or during a storm, the end of the pipe shall be closed with an iron cover fastened in with clay or mortar.

PLANS

Section 25. Plans. The plans will be supplemented from time to time by detail drawings intended to amplify and explain the plans on which this contract is based.

2. The specifications and all plans are intended to co-operate and agree, but in case any discrepancies exist larger scaled plans shall take precedence over those to a

smaller scale; figured dimensions shall take precedence over measurements scaled from plans, and the wording of the specifications shall take precedence over all, except as the same may be modified by the wording of the contract.

PUMP

Section 26. Pump. The pump furnished under this contract shall be a horizontal two-stage turbine pump.

2. Required Capacity of Pump. The pump shall deliver 600,000 gallons per day of 24 hours through a pipe line consisting of 1500 feet of 10-inch iron pipe and 12,800 feet of 10-inch wood pipe with a static head of 265 feet.

ENGINE

Section 27. Engine. The distillate engine furnished under this contract shall be _____ horse-power and of sufficient size to operate the pump furnished under this contract.

MOTOR

Section 28. Motor. The motor furnished under this contract shall be _____ horse-power and of sufficient size to operate the pump furnished under this contract.

EQUIPMENT

Section 29. Equipment. The pump and engine shall be fully equipped and installed ready for operation, including suction pipe, foot valve, strainer and connection with 10-inch wood pipe.

MEASUREMENT AND PAYMENT OF WORK

Section 30. Excavating and Backfilling. Excavating and backfilling shall be paid for by the cubic yard, measured in the excavation. The contract price shall include all excavation, trimming, backfilling, tamping and all other labor and expense necessary to prepare and maintain the trench until the backfilling is completed.

2. Wood Stave Pipe. The contract price per linear foot for furnishing and building wood stave pipe shall include the staves, bands, boxing and all other material, labor and expense connected with the work of hauling and building the pipe in place complete, making the joints and setting special castings, valves, testing the pipe after it is built and maintaining it in good condition until accepted by the City of Newberg.

3. Cast Iron Pipe. The contract price per linear foot for furnishing and laying cast iron pipe shall include the pipe, lead, yarn, boxing and all other materials, labor and expense connected with the work of laying and placing the pipe, making joints complete and testing the pipe after it is laid and maintaining it in good condition until accepted by the City of Newberg.

4. Length of Pipe. In measuring the length of all pipe the measurements shall be taken along the center line and shall be continuous through all valves and special castings and manholes.

5. "Y's!" The Y's are to be paid for each, and the price is to be in addition to the price per linear foot to be paid for furnishing and laying pipe.

6. Special Castings. The contract price per pound for furnishing and setting special castings shall include all bends, crosses, T's, Y's and special bends, delivered in place and connected ready for use.

7. Hydrants and Valves. The contract price for hydrants and valves shall include hydrants and valves complete, delivered on the work and set in place complete ready for use, including the bolts for the flange.

8. Iron Valve Boxes. The contract price each for ^{cast} furnishing and setting iron valve boxes shall include the boxes delivered on the work and set in place ready for use.

C O N T R A C T

THIS AGREEMENT, made and entered into this 26th day
of Jan 1912, between the City of Newberg
(a municipal corporation under the laws of the State of
Oregon), by the Mayor and the City Council of said city,
hereinafter called the City, and Albert Kibbe
+ Cochran of Portland, Oregon
hereinafter called the Contractor;

WITNESSETH, that the said Contractor having been award-
ed the contract for furnishing materials and constructing
pumping plant and supply main for said City in accordance
with the proposal therefor, which is bound herewith, and for
and in consideration of the premises and of the covenants
and agreements to be preformed and of the payments herein
specified to be made by the City, hereby covenants and
agrees to and with the city to undertake and execute all
of said named work in a good, substantial and workmanlike
manner and to furnish all the materials and all tools and
labor necessary to properly perform and complete the work
ready for use, in strict accordance with the attached speci-
fications and under the penalty expressed in the attached
bond, bearing even date herewith, which are hereby declared
and accepted as essential parts of this agreement, and to
accept as full compensation therefor the rates named in the
proposal.

Section 1. What the Contract Prices Include. The prices named in the proposal are for the completed work of each class and include the furnishing of all materials, and all labor, tools and appliances, and all expense, direct or indirect, connected with the proper execution of the work in accordance with the specifications for the respective classes of work and of maintaining the same until it is approved by the Engineer and accepted by the Mayor and City Council.

Section 2. Extra Work. The Contractor shall do such extra work in connection with the work herein contracted to be done as the City Council may direct, and if it shall be of a nature for which no price is fixed in the above schedule, then the price thereof shall be determined by the Engineer and approved by the City Council. But no allowance for extra work on any kind will be made unless such work shall have been ordered in writing, signed by the Mayor. On or before the fifteenth day of each month succeeding that in which any such extra work shall have been done the Contractor shall render to the Engineer a full and complete statement of such extra work, and no payment shall be allowed for any extra work for which the Contractor fails to render such statement.

Section 3. Inspection. All materials furnished by the Contractor shall be subject to the inspection and approval of the Engineer at any time during the progress of the work and until the final completion thereof, and the materials shall be delivered by the Contractor a suf-

ficient length of time in advance of the work to enable the City to make the proper tests and inspection. As soon as the materials are tested and inspected the Contractor shall immediately remove all rejected materials from the work and to such a point distant therefrom as the Engineer may require. No materials shall be used before being inspected and approved by the Engineer, but the neglect or failure on the part of said Engineer to condemn or reject inferior materials or work shall not be construed to imply an acceptance of the same should their inferiority become evident at any time prior to the final acceptance of the work. The Contractor shall furnish at his own expense such labor as may be required to enable a thorough inspection and culling of all the materials.

Section 4. Obstructions and Guards. The Contractor shall erect and maintain good and sufficient guards, barricades and signals at all unsafe places at or near the work, and shall in all cases maintain safe passage-way at all road crossings, cross-walks and street intersections and shall do all other things to prevent accident or loss of any kind.

Section 5. Property Liable to Damage. The Contractor shall protect from damage all water, sewer, gas, steam or other pipes or conduits, and all hydrants, poles or other

property that is liable to become damaged or displaced by reason of the execution of the work.

Section 6. Time for Commencement and Completion. The Contractor shall commence the work as soon after the approval of this contract by the City Council as the Engineer may direct, continuing the work without interruption, and shall fully complete all work ordered under this contract by May 15. 1912. And the Contractor agrees that for each and every day any portion of the work remains unfinished after the time herein fixed for its completion the City shall deduct and retain out of the money which may be due said Contractor under this agreement the sum of Twenty-five dollars (\$25.00) and also the cost of all engineering and inspection after said date, which sum is, in view of the difficulty of estimating damages, hereby fixed, agreed upon and determined by the parties hereto as liquidated compensatory damages that the City will suffer by reason of the failure of the Contractor to complete the work within the time agreed upon, and such daily compensation shall apply to each ^{portion} ~~annex~~ of said work after the date herein agreed upon for its completion.

Section 7. Claims for Damages. The Contractor shall not be entitled to any claim for damages on account of hindrance or delay from any cause whatever, but if occasioned by any act or omission on the part of the City, such hindrance or delay may entitle the Contractor to an extension of time in which to complete the work, which shall be determined by the City Council; provided, that

the Contractor shall give notice in writing of the cause of such delay.

Section 8. Sub-letting. The Contractor shall not assign or sublet the whole or any part of the work contemplated in this contract (except only for the supply of materials and tools) without having first obtained the written consent of the City Council to do so; and in case such consent be given it shall in no way release the Contractor from any responsibility, but he shall be held in all respects accountable the same as if no consent had been given. The Contractor will be required to give his personal attention to the work.

Section 9. Specifications, Plans and Stakes. The work shall be done in strict conformity to the plans and specifications and to the exact lines and grades as fixed by the Engineer and with such written instructions as shall from time to time be given by the City Council. The Contractor shall provide such assistance and materials as may be required by the Engineer for giving lines, grades, etc. and shall protect and preserve in their original position all stakes, points or marks set by the Engineer for the work, and where the Engineer shall consider such stakes or marks to have been unnecessarily destroyed, he may cause the expense of replacing them to be charged to the Contractor and the amount deducted from any sum due or which may become due to the Contractor.

Section 10. Cleaning Up. Immediately upon the completion of the work the Contractor shall at his own expense clean up and remove all refuse materials of every kind resulting from the work, and upon failure to do so within twenty-four hours after having been notified by the City Council, the work may be done by the City and the cost thereof charged to the Contractor and deducted from the amount of his final estimate.

Section 11. Orders. Whenever the Contractor is not present on any part of the work where it may be necessary to give instructions, orders may be given by the Engineer to the superintendent or foreman who may have charge of the particular work in question, and such orders shall be obeyed.

Section 12. Defective Work. The Contractor, upon being so directed by the City Council, shall remove ^{or} ~~xxx~~ reconstruct or make good without charge any work which it may consider to be defectively executed.

Section 13. Competent Men to be Employed. The Contractor shall employ suitable mechanics for ^{every} ~~any~~ kind of mechanical work. If any person employed by the Contractor is incompetent, disorderly or disobedient to the Engineer, he shall be discharged immediately upon request of said Engineer and shall not again be employed upon the work.

Section 14. Order of Executing Work. The Contractor shall commence work at such point or points as the Engineer may direct and shall conform to his directions as to the time and order in which various parts of the work shall be done.

Section 15. Changes in Plans and Specifications. The City shall have the right to make any changes in the plans, specifications or quantities that may be hereafter determined upon as necessary or desirable, either before or after the commencement of the work, by defining them in writing, and in case such alterations increase or diminish the approximate quantities as stated in the proposal, then the Contractor shall be paid for the work actually done at the contract rates herein specified, and such alterations shall not constitute a claim for damages, nor shall any claim be made on account of anticipated profits on the work that may be altered or dispensed with.

Section 16. Failure to Pay for Labor and Materials. If at any time it shall appear that the Contractor has failed to pay the sub-contractors or the laborers employed upon the work or has failed to pay for the material used therein, the City may withhold from the money which may be due or which may become due to the Contractor under this agreement such ~~sum~~ amount or amounts as may be necessary for the payment of such sub-contractors, labor and materials and may apply the same in such

payment and deduct the same from the final estimate of the Contractor. This provision is intended to protect the sub-contractors and laborers employed upon the work and the parties who may furnish material to be used therein, and the City may or may not exercise its option as it may deem best.

Section 17. Laws and Ordinances to be Observed. In all operations in connection with the work embraced in this contract, the Contractor will be held responsible for any failure to respect, adhere to and comply with all local ordinances and laws controlling or limiting in any way the actions of those engaged upon the work or affecting the materials or the transportation or disposition of them. And the Contractor hereby assumes all liability for and agrees to indemnify the City against all loss, cost or damage for or by reason of any claim for damages or for materials or to premises or from laborers or others, and from any damage arising from injuries sustained by workmen or other persons by reason of accident or otherwise, and from damages sustained by depositing materials to public injury or to the injury of any person or corporation, or resulting from the use of any patented material, implement or process which may be employed in executing the work under this contract, including cost and expenses.

of defense; provided, that he shall be notified of the bringing of suit in such cases and be permitted to defend the same, and it shall be lawful to withhold final payment on this contract so long as it may seem necessary for the indemnity of the City.

Section 18. Failure to Prosecute Work Vigorously. If at any time during the existence of this contract it shall appear to the City Council that the force employed, the appliances provided or the character or progress of the work or materials furnished are not such as will insure the completion of the work under this contract within the time specified, or are not in accordance with the specifications for such work, it may serve a written notice on the Contractor to at once supply the increase of force, appliances or tools or to make such improvements in the character of the work or materials as may be required to make the same conform to the stipulations of the contract; and if on the expiration of two days after service of such written notice upon the Contractor personally or by leaving the same with some person at his office or place of business, the Contractor refuses or fails to remedy the specified deficiencies, the City may enter upon and take possession of said work or any part thereof with the tools, materials, appliances and appurtenances and may hold them as security for any and all damages or

liabilities that may arise by reason of the non-fulfillment of the contract within the time herein stipulated; and said City may employ said tools, materials and appliances in any way it may deem proper to complete the work at the expense of the Contractor.

Section 19. Decisions of the Engineer Final. Any questions, differences or controversies which may arise between the City and the Contractor with reference to the performance or non-performance of the work, or with reference to delays or penalties, or relating to the plans, profiles and specifications or the technical sufficiency of the materials furnished or the work done under this contract, shall be referred to the Engineer and his decision shall be final and conclusive to both parties.

Section 20. Estimates. Partial estimates based on contract prices shall be made and certified by the Engineer monthly of the amount of work done during the month or since the previous estimate, and if the estimate is approved by the Mayor and City Council eighty-five per cent (85%) thereof shall be paid to the Contractor and fifteen per cent (15%) shall be retained by the City until the whole work contracted for shall have been completed and accepted. Within ninety (90) days after the completion of the entire work the Engineer shall make a final estimate of the entire work done and upon its ap-

proval the City shall pay and the Contractor shall receive the amount thereof as full compensation for the work performed under this contract.

Section 21. Definitions. Whenever the words defined in this section or pronouns used in their stead occur in the Instructions to Bidders, Proposal, Specifications and Contract, they shall have the meaning here given:

"City" shall mean the municipal corporation or Newberg, Oregon.

"Mayor" shall mean the Mayor of the City of Newberg, Oregon.

"City Council" shall mean the City Council of the City of Newberg, Oregon.

"Engineer" shall mean the Engineer employed by the City of Newberg, acting either directly or through his properly authorized assistants, such assistants acting severally within the scope of the particular duties entrusted to them.

"Contractor" shall mean the party entering into the contract for the performance of the work hereby required and the legal representative of said party or the agent appointed to act for said party in the performance of the work.

Section 22. Miscellaneous. All acts to be performed by the City of Newberg may be performed by its duly authorized agents or employees.

The said Contractor further agrees that preference shall be given to home materials and bona fide residents for employment upon the work, and that all laborers employed on the work shall be paid weekly.

This contract with all its forms, specifications and stipulations shall be binding upon the heirs, executors, administrators or assigns of the said Contractor and upon the successors and assigns of the said City as much as if each and all of them had been specially mentioned.

IN WITNESS WHEREOF, the Mayor and Recorder of the City of Newberg have made and executed this contract on behalf of said City and have caused the seal of said City to be hereunto affixed, in pursuance of a resolution duly adopted by the City Council, and the said Contractor has hereunto set his hand and seal the day and year first above written.

CITY OF NEWBERG, OREGON.

By

J. L. Gordon
Mayor.

Attest:

W. W. Nelson
Recorder.

Signed in the presence of:

A. B. Wood
Orange Elliott
Wm. Clemmens

WELTON, KIBBE & COCHRAN

By A. J. Welton

Original.

B O N D

KNOW ALL MEN BY THESE PRESENTS, that Welton
Kibbe + Cochran as principal
and Title Guaranty & Surety Co.
of Scranton, Pa as surities, are firmly bound and held
unto the City of Newberg, Oregon, in the penal sum of Eight
thousand five hundred dollars (\$ 8500.00) to be levied
upon our property, goods and chattels in case default be made
in the conditions following, that is to say:

WHEREAS, the said Welton, Kibbe +
Cochran, under the name and style of Welton, Kibbe + Cochran has this day entered into a
contract (bound herewith) with the City of Newberg, Oregon,
whereby he has agreed to furnish the materials and labor and
all ~~other~~ things necessary to execute the following work, to-
wit: Furnishing materials and constructing pumping plant and
supply main for said city.

NOW, THEREFORE, the conditions of this obligation are such
that if said Welton, Kibbe + Cochran shall
well and faithfully perform all the obligations entered into
under said contract and shall pay all laborers employed in
said work and for all materials used therein, then these presents
shall become void; otherwise to remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and
seals at Newberg, Oregon, this 26th day of Jan'y 1912.

Signed in the presence of:

A. Wood

WELTON, KIBBE & COCHRAN

C. M. Lusher

By J. E. Kibbe

C. M. Lusher

The Title Guaranty & Surety Co.

By Karl Lively
Its attorney-in-fact.

NEWBERG OREGON

MAP OF
SEWERAGE SYSTEM

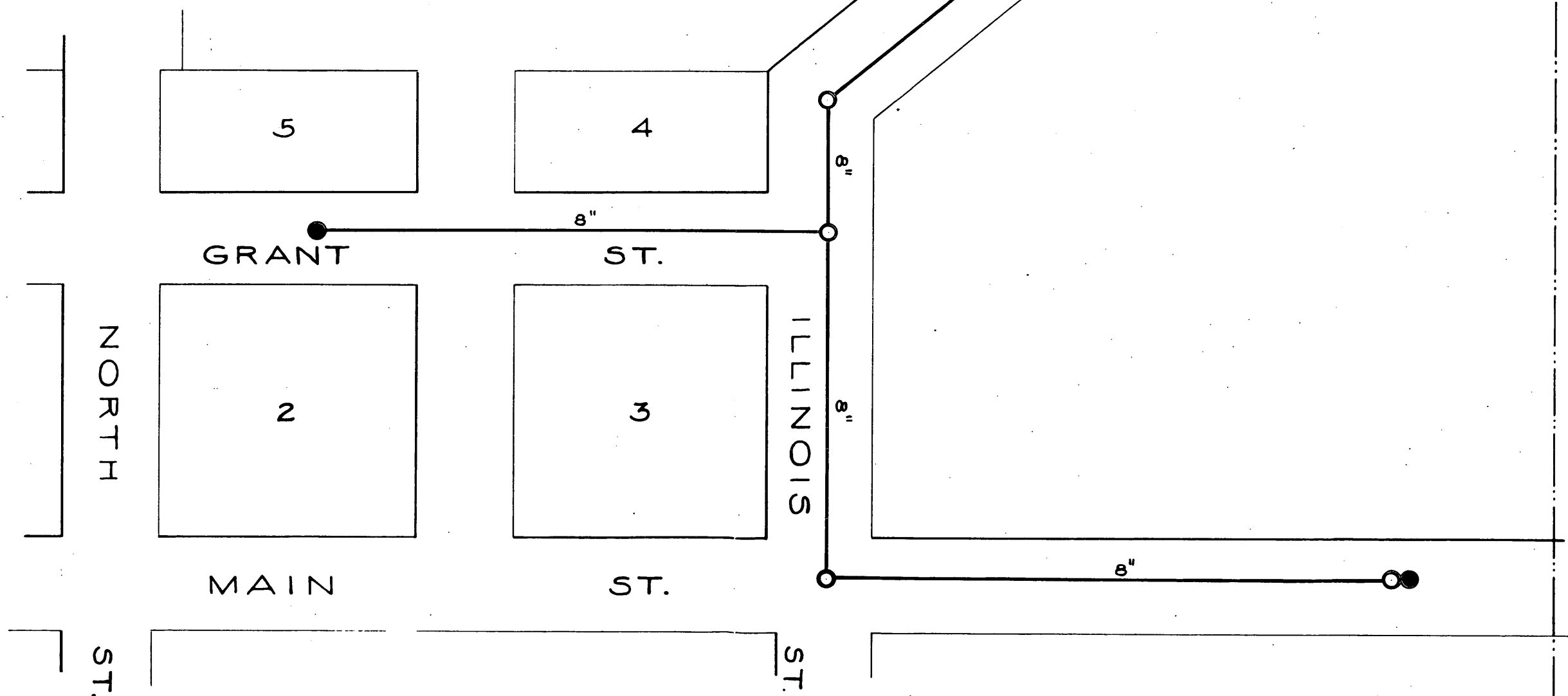
Portland Oregon
1912

Scale: 1 in = 80 Ft.

Louis C. Kelsey
Civil Engineer

LEGEND

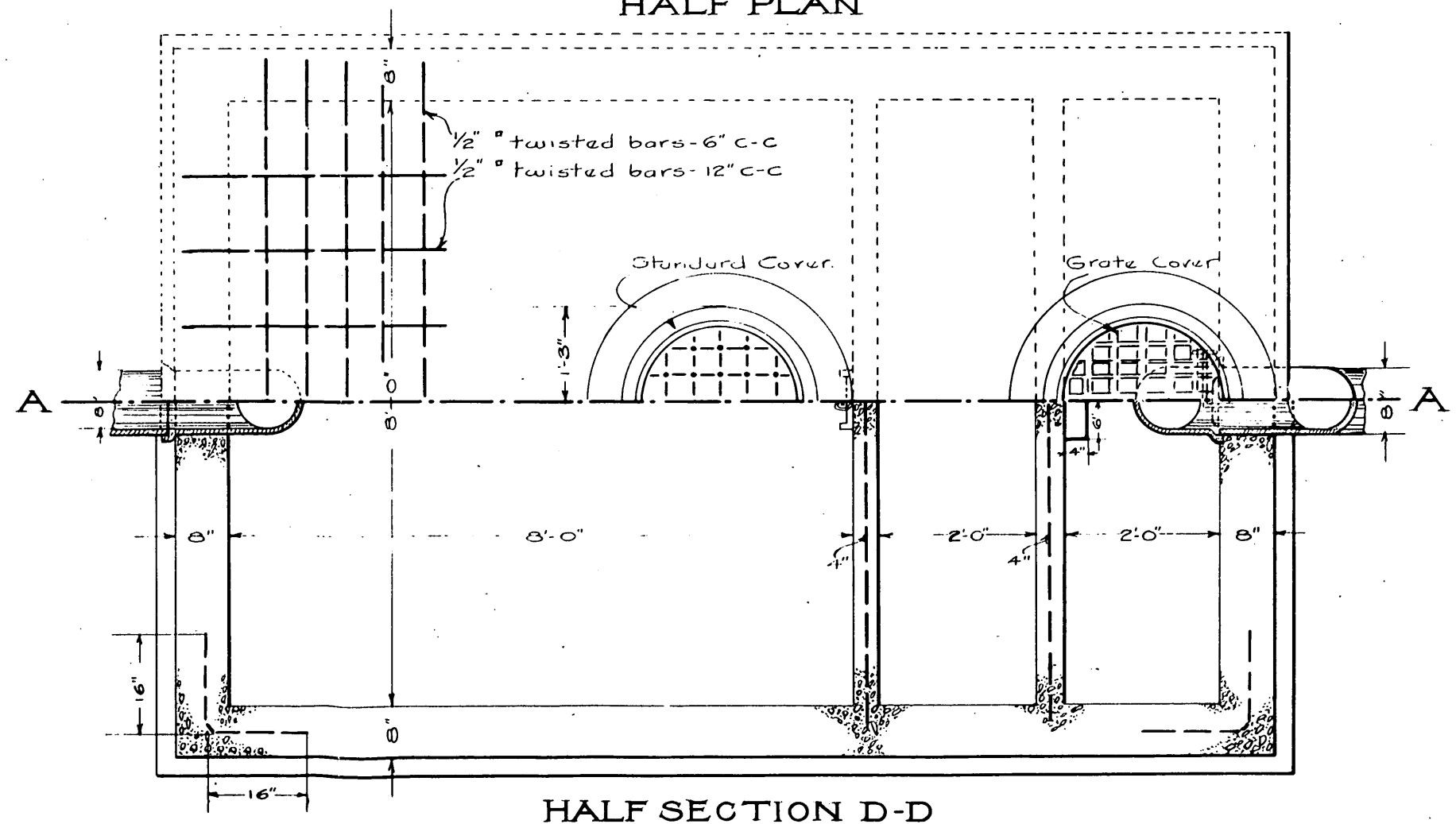
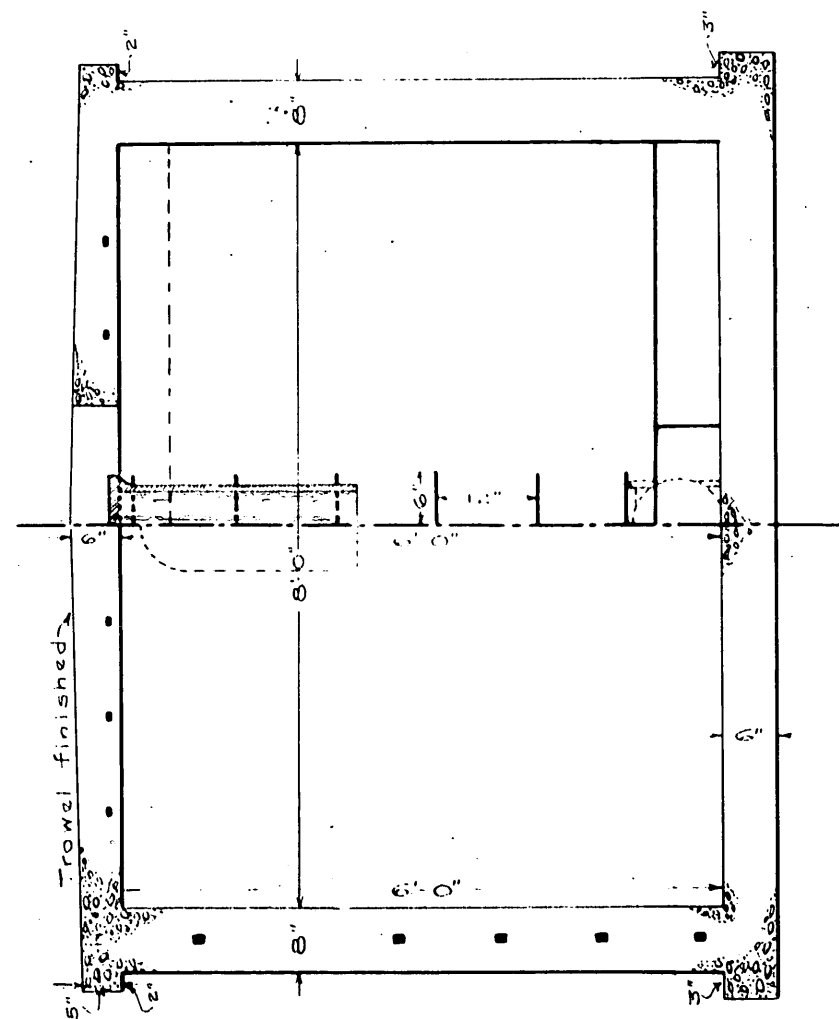
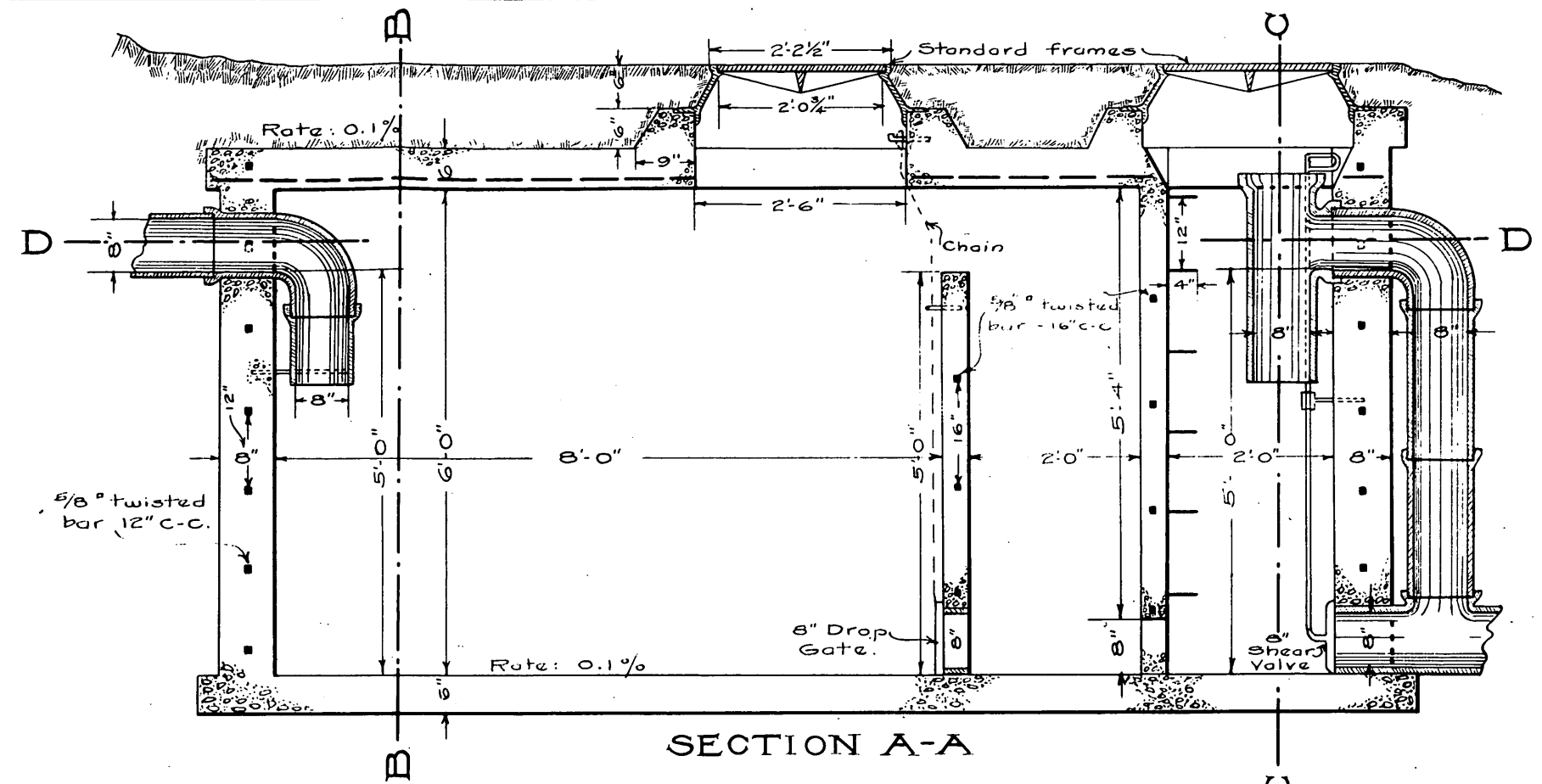
Sewer ———
Manholes —○—
Flush Tanks —●—
Spl. Flush Tanks —●○—

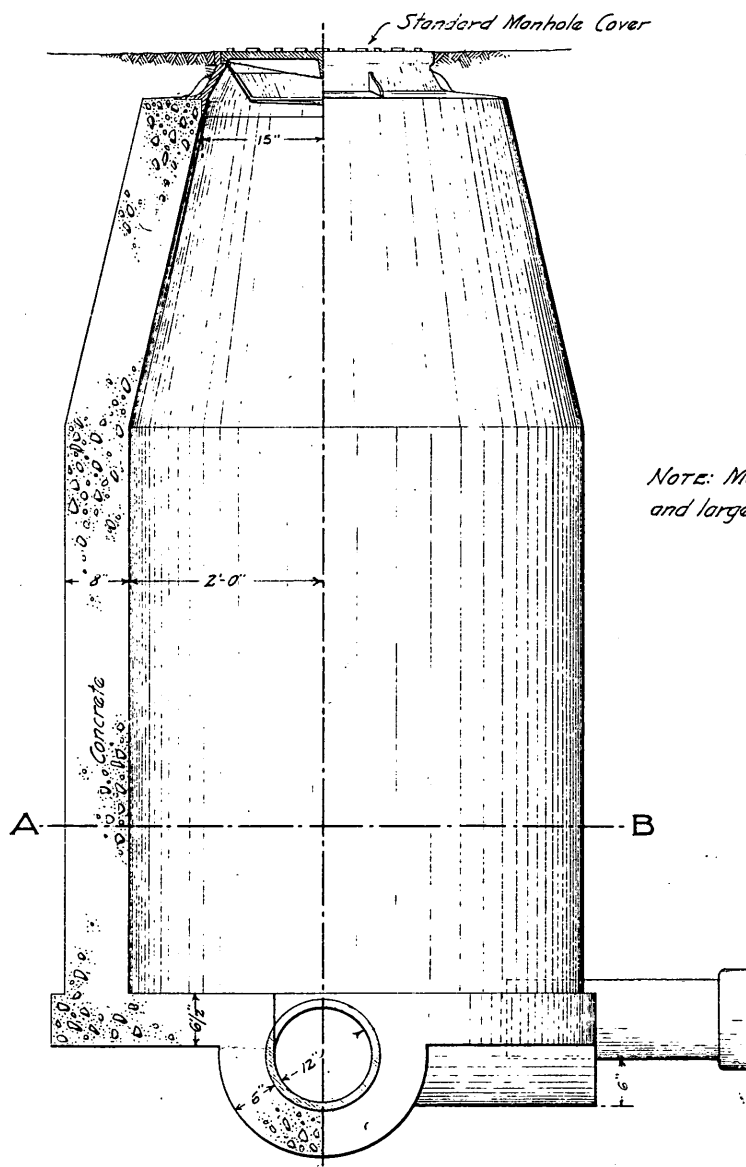


NEWBERG OREGON
 PLAN OF
 SEPTIC TANK
 Portland Oregon
 1912

Scale: $\frac{1}{2}" = 1 \text{ Ft.}$

Louis C. Kelsey
 Civil Engineer.





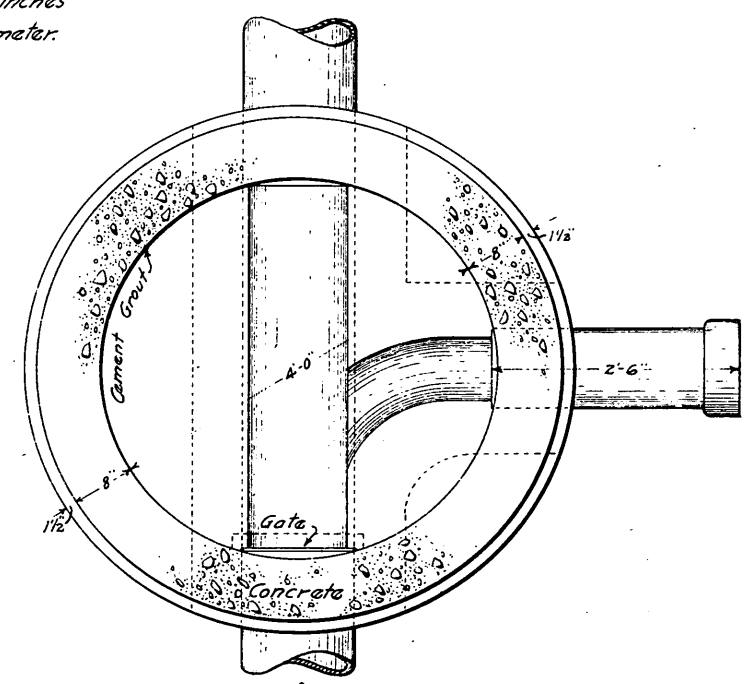
HALF SECTION HALF ELEVATION

NOTE: Manholes for sewers 15 inches and larger shall be 5 feet in diameter.

PLAN OF STANDARD MANHOLE PORTLAND, OREGON

SHEET No 2
SCALE: 1/2" = 1 FT.

LOUIS C. KELSEY,
CIVIL ENGINEER.



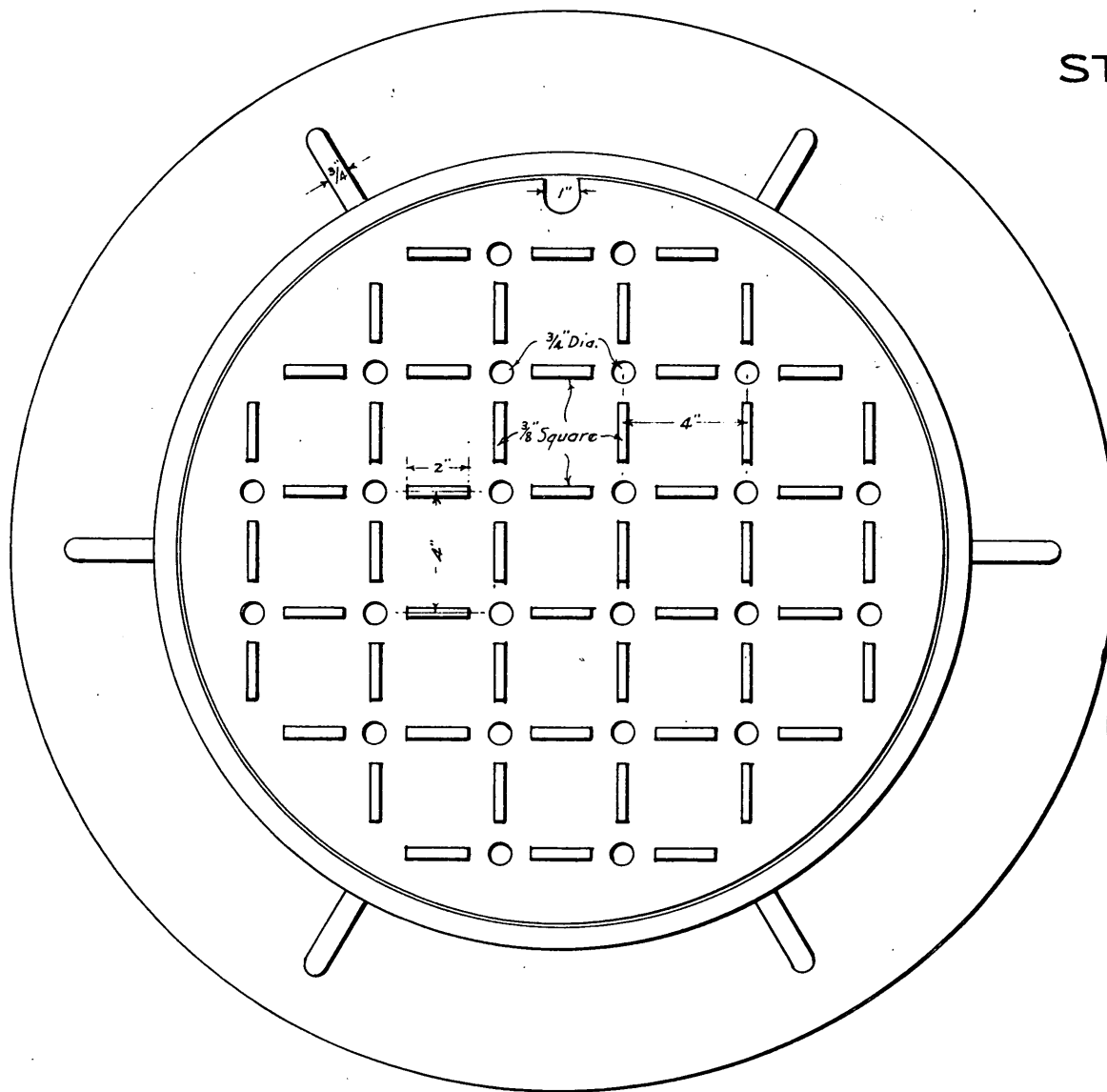
SECTION AT A - B

PLAN OF STANDARD MANHOLE COVER

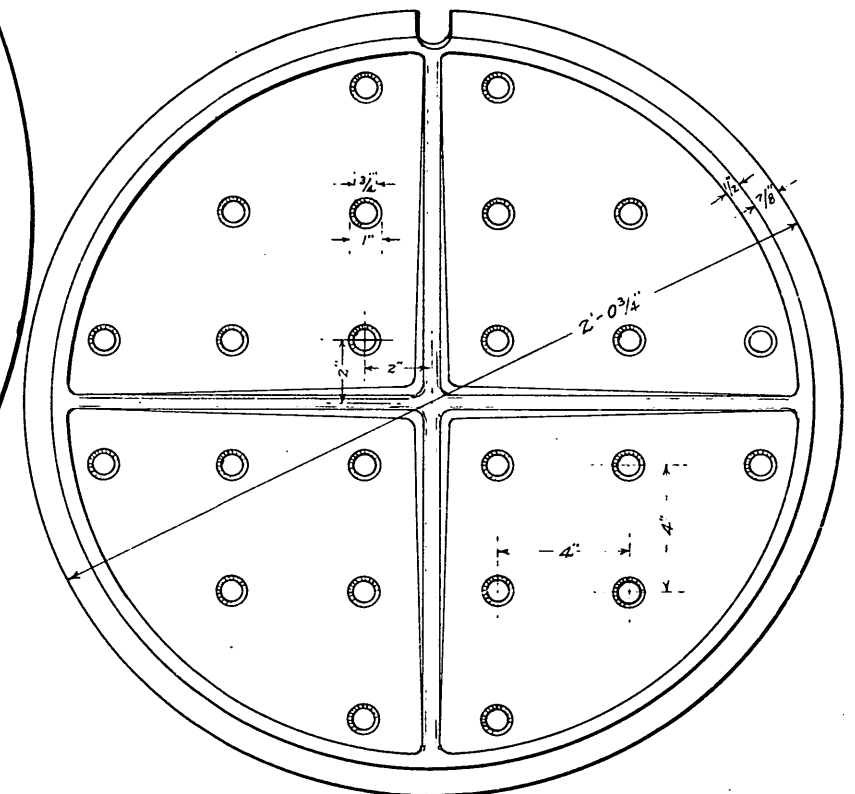
PORTLAND, OREGON

SHEET No 5
SCALE: 2" = 1 FT.

LOUIS C. KELSEY,
CIVIL ENGINEER.



PLAN

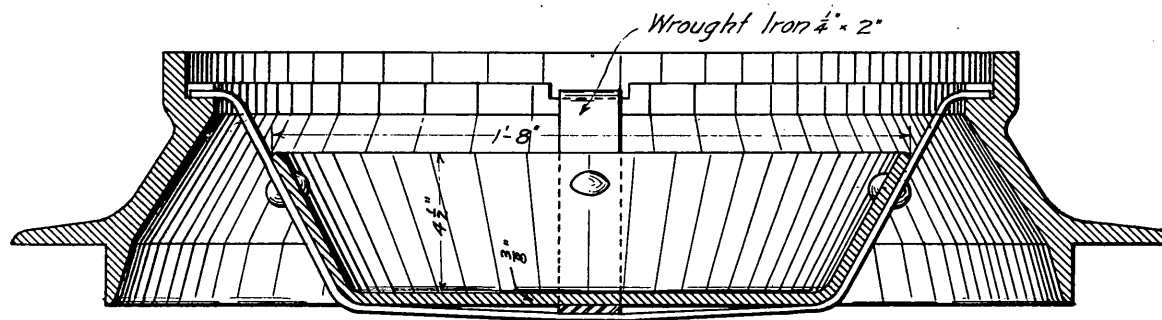


BOTTOM VIEW OF LID

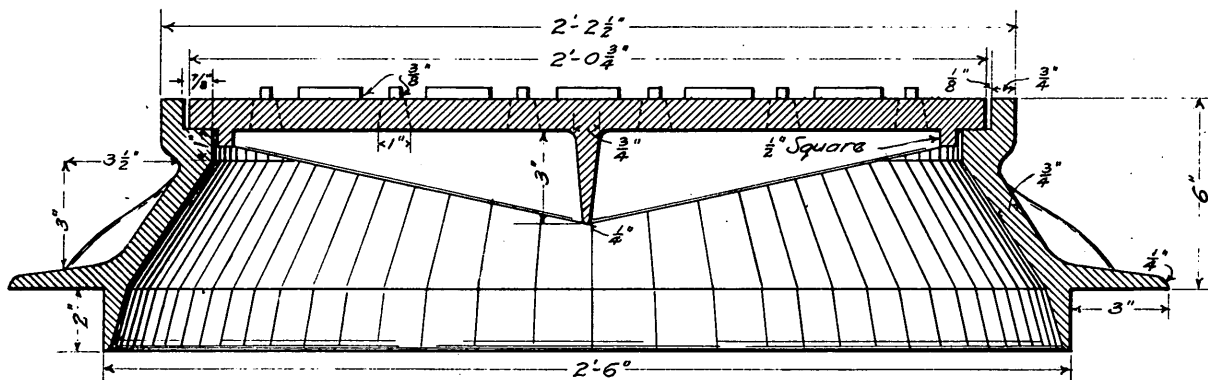
DETAILS OF
MANHOLE COVER AND GATE
 PORTLAND, OREGON

SHEET N° 6
 SCALE: 2" = 1 FT.

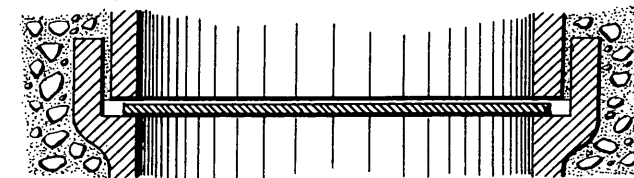
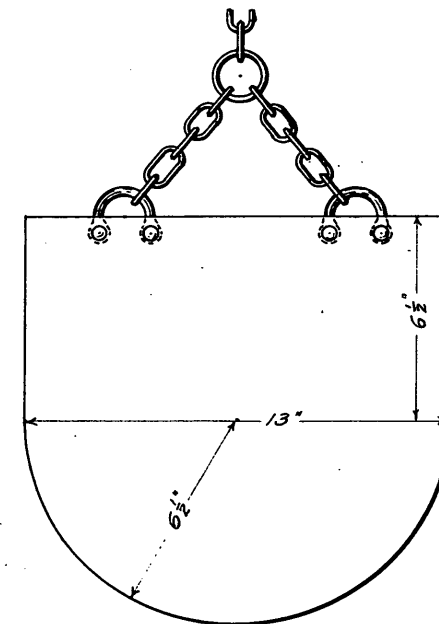
LOUIS C. KELSEY,
 CIVIL ENGINEER.



SECTION SHOWING PAN
 LID REMOVED



SECTION
 PAN REMOVED

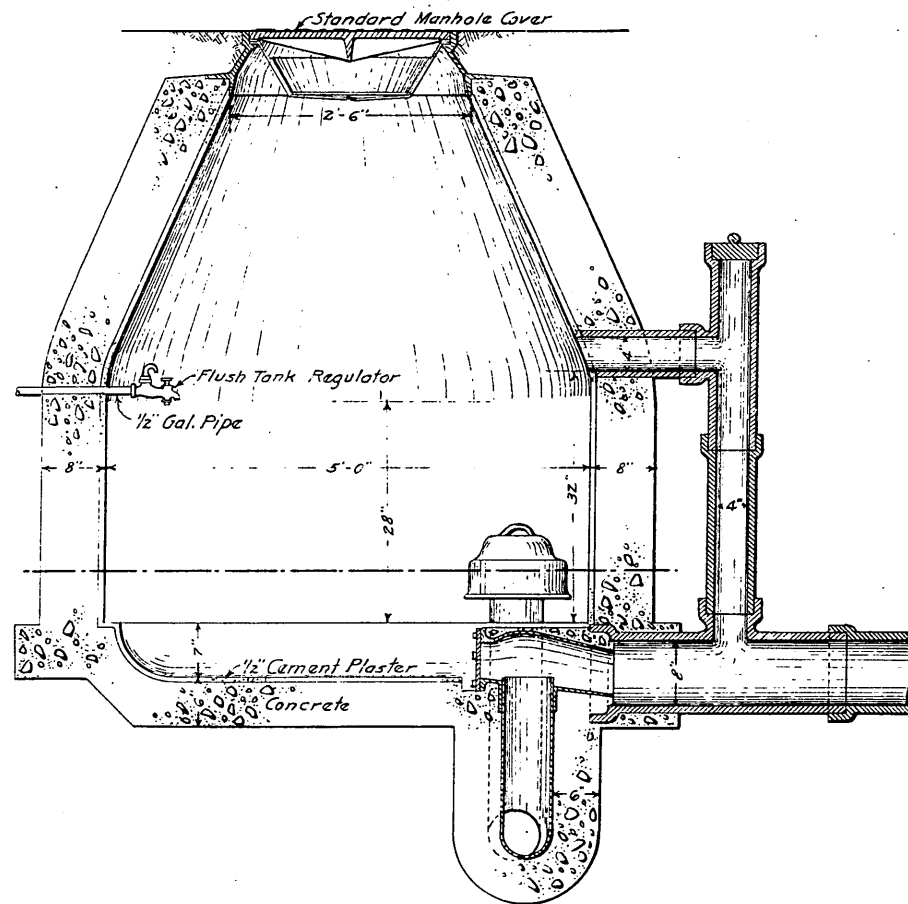


FLUSH GATE

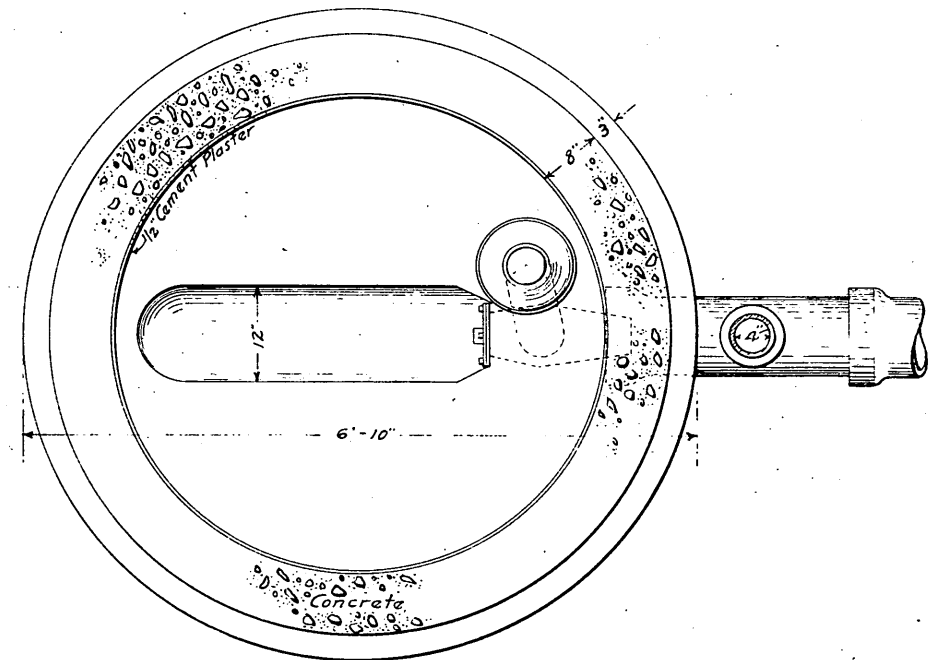
PLAN OF
STANDARD FLUSH TANK
PORTLAND, OREGON.

SHEET N^o 3
SCALE: $\frac{1}{2}$ " = 1 FT.

LOUIS C. KELSEY,
CIVIL ENGINEER.



SECTION

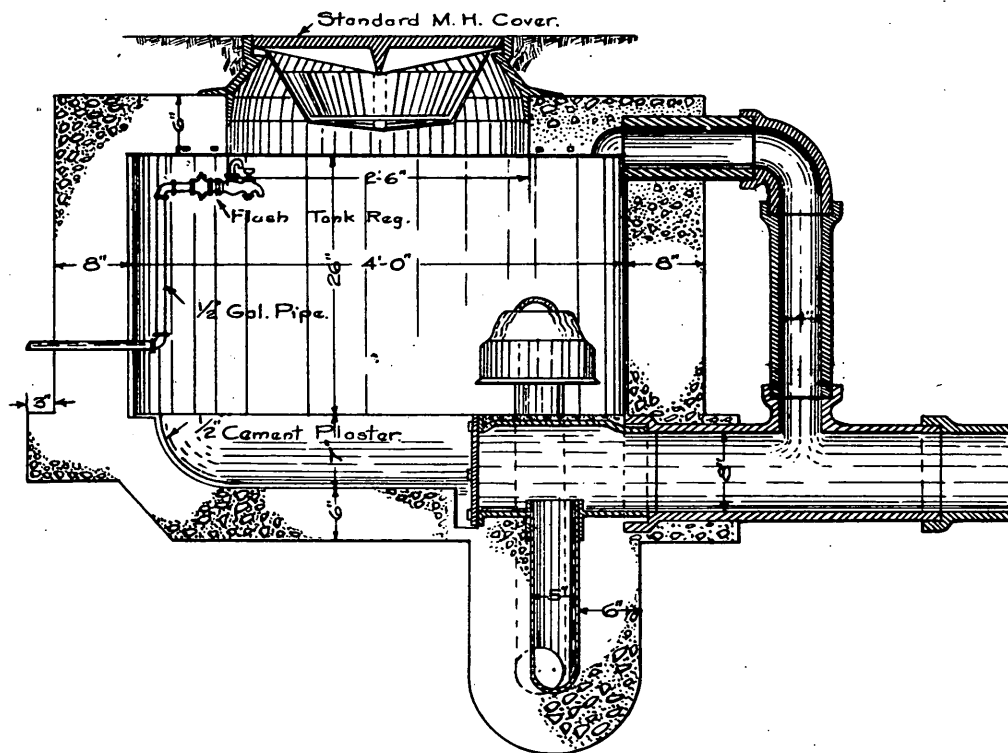


SECTION AT C-D

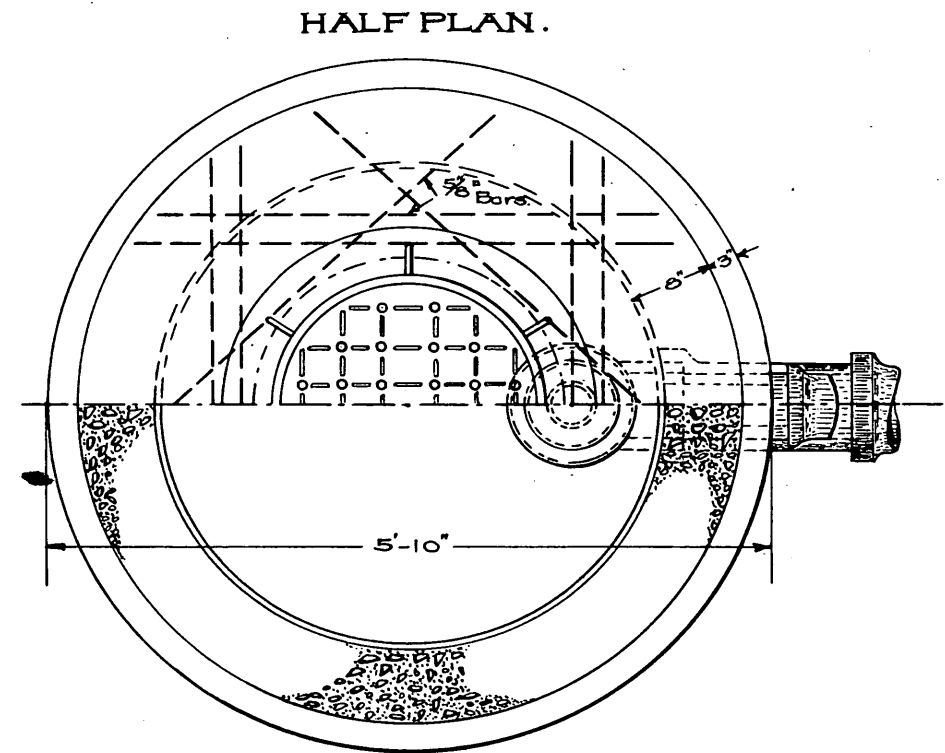
PLAN OF
SPECIAL FLUSH TANK
PORTLAND.

SHEET No. 7.
SCALE: $\frac{3}{8}$ " = 1 FT.

LOUIS C. KELSEY,
CIVIL ENGINEER.



SECTION.



HALF SECTION.

LOUIS C. KELSEY
M. Am. Soc. C. E.
Civil and Hydraulic Engineer
PORTLAND, OREGON

CITY OF NEWBERG
CITY RECORDER INDEX NO. 1073

NEWBERG, OREGON

ADVERTISEMENT, INSTRUCTIONS TO BIDDERS

PROPOSAL

S p e c i f i c a t i o n s

CONTRACT and BOND

For Installing

MOTOR, PUMP and TRANSFORMERS

1912

LOUIS C. KELSEY,
Civil Engineer,
Portland, Oregon.

J. D. GORDON,
Mayor.

W. W. NELSON,
Recorder.

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N O T I C E T O C O N T R A C T O R S
ADVERTISEMENT - PUMPING PLANT AND SUPPLY MAIN

Newberg, Oregon, Dec.11, 1911. .

Sealed proposals will be received at the office of the City Recorder, Newberg, Oregon, until 3 o'clock p.m. Monday, Jan.15th,1912, for furnishing materials and constructing pumping plant and supply main.

Plans and specifications may be seen and forms for proposal may be obtained upon application at the office of the City Recorder or of Louis C.Kelsey, civil engineer, 404-5 Selling Building, Portland, Oregon.

Parties desiring plans for their personal use may obtain them from the Engineer on payment of \$10.

The right is reserved to reject any and all bids.

By order of the City Council.

N.C.CHRISTENSON,
Mayor.

LOUIS C.KELSEY,
Civil Engineer,
Portland, Oregon.

W.W.NELSON,
Recorder.

INSTRUCTIONS TO BIDDERS

1. All proposals must be upon the attached form without detaching it from the specifications and contract.

2. Proposals must be enclosed in a sealed envelope and endorsed "Proposal for Constructing Pumping Plant and Supply Main".

3. The full name and place of residence of bidders must be stated in the proposal.

4. Any one signing a proposal as the agent of another or others must file with it legal evidence of his authority so to do.

5. No alterations by erasures or interlineations will be allowed, and permission will not in any case be given for the withdrawal, modification or explanation of any bid.

6. All blank spaces in the proposal must be filled in. No change shall be made in the phraseology of the proposal, nor shall any additions be made in the items.

7. Transfers of contracts or of interests in contracts are prohibited.

8. Reasonable grounds for supposing that any bidder is interested in more than one proposal will cause a rejection of all proposals in which he is supposed to be interested.

9. Bidders are invited to be present at the opening of the proposals.

10. The bidder must satisfy the City Council of his ability to furnish the materials, and perform the work contemplated. The character of the appliances to be used, the adequacy of the security offered and also the previous experience and the responsibility of the bidder, independently of the bond required, will be considered in awarding the work.

11. Each proposal must be accompanied by a cashier's check on some well known bank in Oregon for five per cent (5%) of the bid, which shall be forfeited to the City of Newberg if the proposal is accepted and the work awarded and the bidder fails to enter into a contract according to the terms of his proposal within five days after having been notified of the acceptance of the proposal.

12. A bond will be required for fifty per cent (50%) of the amount of the bid, to be approved by the City Council of Newberg.

13. These instructions are to be construed with and made a part of the contract.

14. All proposals shall be made and received with the express understanding that the bidder accepts the terms and conditions contained in the form of contract bound herewith.

15. No bid will be accepted which does not contain an adequate or reasonable price for each and every item named in the schedule of quantities.

16. The City of Newberg reserves the right to reject any and all proposals, and to waive any informality in any proposal received; also to disregard the proposal of any failing bidder or contractor known as such to the City Council.

17. For further information apply in writing to the City Council or to the Engineer at his office, Portland, Oregon.

P R O P O S A L

Newberg, Oregon, Jan.15, 1912.

To the Honorable Mayor and City Council,

Newberg, Ore.;

Gentlemen:

The undersigned, after having personally and carefully examined the instructions to bidders, plans and specifications and forms of contract and bond on file in the office of the City Recorder of Newberg, Ore., hereby proposes to furnish materials and install Motor, Pump and Transformers and do all other work that may be required to fully complete the said work ready for use, including the furnishing of all materials, labor and all other things necessary to finish and maintain the entire work in a proper and workmanlike manner, according to the plans of the Engineer and upon the terms and conditions and in the manner set forth in the specifications and form of contract, and under penalty of the bond hereto attached, and to the full satisfaction and acceptance of the Mayor and City Council and the Engineer of the City of Newberg, Ore., at the following prices for the respective items of work named:

Furnishing and Installing Motor, Pump,
Transformers and Equipment, including
Suction Pipe and connection with 10-
inch Wood Pipe, complete,

\$1,965.00

The three transformers will be manufactured by General Electric Company of Sch^enectady, N.Y., and known as the General Electric 25 K.W. transformers.

The motor will be manufactured by General Electric Company of Sch^enectady, N.Y., and known as the General Electric 75 h.p. motor.

The pump will be manufactured by Je^eansville Iron Works Company of Hazelton, Pa., and known as the Worthington Je^eansville Turbine pump.

The motor, pump, transformers and equipment will be in strict accordance with the enclosed detail plans and specifications.

The following is the name and place of business of the
which
Surety Company will sign the attached bond as surety if the
work is awarded to the undersigned: The Title Guaranty
& Surety Company of Scranton, Penna.

It is hereby agreed that the City of Newberg has the
right to reject this proposal or to award the contract to
the undersigned at the prices bid. If the proposal is re-
jected then the enclosed check for \$6000, which is
made payable to the Treasurer of the City of Newberg, shall
be returned to the undersigned within thirty days from the
date hereof. If the proposal is accepted and the work award-
ed and the undersigned shall fail to enter into a contract
of the form and terms hereto attached within five days
after the award shall have been made, then the said check
shall be cashed and the amount thereof paid into the treas-
ury of the City of Newberg as liquidated damages for the
failure of the undersigned to comply with the terms of this
proposal.

The undersigned further proposes and agrees to fully
complete the entire contract by May 15, 1912.

(Firm Name) Yamhill Electric Co.

(Name) C. J. Edwards Pres

(Place of Residence) _____

Individual
Names and
Places of
Residence

(Name) _____

(Place of Residence) _____

(Name) _____

(Place of Residence) _____

S P E C I F I C A T I O N S

PUMP

Section 1. (26) Pump. The pump furnished under this contract shall be a horizontal two-stage turbine pump.

2. Required Capacity of Pump. The pump shall deliver 600,000 gallons per day of 24 hours through a pipe line consisting of 1500 feet of 10-inch^{iron} pipe and 12,800 feet of 10-inch wood pipe with a static head of 265 feet.

MOTOR

Section 2. (28) The motor furnished under this contract shall be 75 horse-power and of sufficient size to operate the pump furnished under this contract.

EQUIPMENT

Section 3. (29) Equipment. The pump and engine shall be fully equipped and installed ready for operation, including suction pipe, foot valve, strainer and connection with 10-inch wood pipe.

GENERAL ELECTRIC COMPANY

SCHENECTADY, N. Y.

SPECIFICATIONS FOR INDUCTION MOTOR

For **Yamhill Electric Company,**
Newberg, Oregon.

Spec. No. _____
Date **1-26-12**

CLASSIFICATION

	Type	Poles	H.P.	Syn. Speed R.P.M.	Volts	No. of Phases	Cycles	Form †
1	I	4	75	1800	440	3	60	K
2								
3								

TEMPERATURES, HIGH POTENTIAL TESTS AND OVERLOAD

	RISE IN TEMPERATURE BY THERMOMETER °C.		Factory High Potential Tests Between Primary Coils and Frame A. C. Voltage for 1 Min.	Maximum Running Torque % Full Load Torque	Full Load Speed R.P.M.
	Full Load Continuously*	125 % Load 2 Hrs.			
1	40	55	2000	200	1745
2					
3					

The above temperature rises are based on a room temperature of 25° C. and will be corrected according to standards of A.I.E.E. Overload tests will immediately follow full load tests.

EFFICIENCIES AND POWER FACTORS

	1 1/4 LOAD		FULL LOAD		3/4 LOAD		1/2 LOAD	
	EFF.	P.F.	EFF.	P.F.	EFF.	P.F.	EFF.	P.F.
1	89	92	89	91	88	88	86	80
2								
3								

ARRANGEMENT AND APPROXIMATE NET WEIGHTS

	Connection Belted Direct Geared Chain	No. of Bearings	PULLEY		Shipping WEIGHTS			
			Diameter	Face	Motor Complete			
1	Direct	2	none	none	2070			
2								
3								

† K=Squirrel Cage Rotor. L=Polar wound Rotor; Starting resistance in Rotor. M=Polar wound Rotor with collector rings and external resistance. P=Same as M with devices for short circuiting collector rings and lifting brushes.

*Machine is run in test until temperatures become constant.

Prepared by **L. R. Elder**

Specifications for Induction Motors. Page 2

Insulation Tests

The insulation between primary winding and core will stand a test of 2500 volts, alternating current, for one minute.

Temperatures

After a continuous run until constant temperature has been attained at rated voltage, frequency and load, the temperature of no part of the motor will be more than 40 ° C. above that of the surrounding air, nor more than 55 ° C. after 2 hours at 25% overload. These temperatures are to be taken by thermometer and are based on the assumption that the temperature of the air is 25° C. If it differs from 25° C. the rise in temperature should be corrected $\frac{1}{2}\%$ for each degree C. that the room temperature differs from 25° C.

GENERAL DESCRIPTION

The stationary member, or stator, will be the primary, and the rotating member, or rotor, will be the secondary.

The general construction will be as simple as possible, consistent with thorough reliability and satisfactory operation. All work will be done in an entirely workmanlike manner, and the design and finish of the machines will be such as to produce a neat and suitable appearance.

STATOR

Frame

The stator frame will be so proportioned that the laminations and winding will be supported with practically no deviation from a perfect circle. The greater part of the outer surface of the core is freely exposed, thereby obtaining the most effective ventilation.

Laminations

The core will be built of the best grade of thin sheet iron provided with slots on the inner circumference to receive the windings. Eddy currents will be prevented by suitably insulating the various sheets.

Windings

The windings will consist of copper conductors thoroughly insulated before being assembled, and held firmly in place by means of wedges driven into grooves in the teeth.

The insulation will consist of layers of fabric treated with a special insulating compound. The quality of insulation will be such that no deterioration will take place when subjected to the temperatures above given, neither will it be permanently injured if exposed to dampness. In the event of any winding being injured, it can be readily removed and another substituted by removing a few adjacent windings.

ROTOR

Construction

The rotor will consist of a cast iron spider which will form the framework to support the core and windings and which will be mounted on the shaft.

Spider

The spider will be made from the best quality of cast iron, so designed as to hold rigidly in place the magnetic core and windings.

Core

The magnetic core will be composed of the best quality of laminated soft iron, thoroughly annealed and of high permeability. The laminations will be properly insulated before being assembled in order to prevent eddy current losses. They will also be clamped by suitable bolts or flanges and keys.

*Specifications for Induction Motors. Page 3***Windings**

The windings will consist of copper bars placed in the slots and short-circuiting rings at each end of the core. These bars will be fastened tightly in place and the overhanging portion of the teeth will serve to prevent their being displaced by centrifugal force.

Shaft

The shaft will consist of one piece of forged steel, accurately finished to gauge.

BEARINGS

The bearings will be self-oiling and will have ample surface to insure cool running. The oil reservoirs will be capable of holding a liberal supply of oil, and convenient gauges for indicating the height of the oil, and outlets for drawing it off will be provided. There will also be easy means for examining the oiling device in operation.

END FRAMES

The bearings will be supported in end frames of cast iron which will be bolted to the stator frame. The arrangement of bolts and joints will be such that the end frames can be easily removed and the rotor taken out for examination or repairs. The end frames will not interfere with the free examination of the air gap.

METHOD OF STARTING

The starting current may be cut down by means of a starting compensator connected in the primary circuit, which will act as a transformer. This compensator will be furnished with a switch having one position for starting and another for running. It will be further provided with several sets of taps from its windings, any one of which can be connected to the switch, thus making it possible to start the motor with small or large torque and current.

THE JEANESVILLE IRON WORKS COMPANY

NEW YORK

WORKS:—HAZLETON, PA.

SPECIFICATIONS

FOR

#4, A, Two Stage, Split Case,

Jeanesville Turbine Pump

FOR

City of Newburg, Oregon.

The casing will be of the HORIZONTALLY SPLIT TYPE made of the best material, with the suction and discharge openings cast integral with the lower half. This design permits of the quick and easy access to the interior of the pump, for inspection or repairs, without disturbing the pipe connections or alignment of the pump. Both halves of the casings will be fitted with flanges, carefully faced, drilled and bolted together: the joint being made with an especially prepared gasket. The return chamber leading the water from stage to stage will be cast as part of the casing itself.

Casing

The impellers will be of the single suction enclosed type, especially designed for the conditions of service stipulated herein. The hubs of each impeller will be fitted with renewable cast bronze wearing rings to take up the wear and prevent leakage of fluid into the suction and the formation of eddy currents. These rings will be threaded on the impellers and pinned in position. The impellers will be keyed on the shaft and the revolving parts accurately balanced.

Impellers

In each stage of the pump will be furnished diffusion vanes or guide passages which receive the water as it leaves the impeller at high velocity. The design of the passages of the vanes is such as to gradually transform this velocity into pressure, with the least possible loss. The water leaves these vanes at low velocity and is delivered radially into the return chamber or passage leading to the next stage.

Diffusion
Vanes

The shaft will be of high quality machinery steel, perfectly straight, true and round, and will be of ample size to easily transmit the maximum power required at full speed and capacity. The shaft will be protected by bronze sleeves wherever it comes in contact with the fluid handled, and through the stuffing boxes on the pump casing. These sleeves can be easily renewed. The impellers will be driven on the shaft and secured by feathers; the shaft bushings screwed against the impeller hub act as lock-nuts.

Shaft

There will be no bearings inside the pump casing. There will be one horizontally split bearing on each side of the pump, of ample size to properly distribute the load and insure free running qualities. Both bearings will consist of cast iron shells properly babbitted, bored and scraped to fit the shaft. The bearing on the inboard end of the pump will be lubricated by the ring oiling method and the bearing on the outboard end of the pump will be of the marine multi-collar water jacketed thrust type, lubricated by a centrifugal oiling device. Both bearings will have large oil pockets to insure thorough cooling of the oil.

Bearings

The stuffing boxes will be of ample depth to insure tight packing without undue pressure on the packing or strain on the studs and glands.

Stuffing
Boxes

A flexible coupling will be furnished for connecting the pump shaft to prime mover. It will be of the pin and rubber buffer type, especially designed to afford maximum facility for dismantling and flexibility.

Coupling

The bedplate upon which the pump is mounted will be designed of ample cross section to give rigid foundation. Lugs for foundation bolts will be provided.

Bedplate

The pump will be given two coats of mineral paint before shipment and all bright parts covered with machine dope to prevent rusting in transit.

Painting

J-144-8-1510

We guarantee the herein specified machinery to be of correct design and the material used in its construction to be carefully selected for the service, and that it will perform the work specified when properly erected and handled. We do not assume any responsibility covering the resistance of the metal of which the machinery is composed against either the erosive or corrosive action of the fluid handled. The purchaser specifically agrees to furnish a sufficient quantity of the fluid to be handled free from all entrained air or vapors, or foreign matter.

Guarantee

GENERAL ELECTRIC COMPANY

SCHENECTADY, N. Y.

DESCRIPTIVE SPECIFICATIONS FOR OIL-COOLED TRANSFORMERS

CORE TYPE

GENERAL CONSTRUCTION

Tank

The general design of the transformer will be that having coils arranged concentrically around the core.

The transformer will be securely supported in either a cast iron tank or a heavy sheet steel tank with cast iron base and cover. All seams of sheet steel tanks will be electrically welded, effectually preventing leakage of oil.

Provision will be made for readily lifting the transformer out of the tank. The tank will be provided with lugs for lifting it separately if desired.

The transformers will be made proof against ordinary dust and moisture of the atmosphere by the use of a gasket between the tank and cover.

CORE

Laminations

The core will be built up of steel laminations of high permeability and low hysteresis loss, and will not be subject to appreciable magnetic deterioration. The laminations will be carefully annealed and will be insulated from each other to reduce eddy current losses.

WINDINGS

Coils and Insulation

The primary and secondary coils will be either wound directly on the core, and insulated as wound, or on winding forms, and insulated individually and separately and assembled on the core.

The conductors will be cemented together with a special insulating oil-resisting compound, thus making a very rigid and durable construction especially adapted to resisting severe mechanical and electrical strains.

The primary and secondary windings will be thoroughly insulated from each other and from the core and frame and will withstand a potential strain much greater than the rated voltage of the transformer.

Ducts

Carefully arranged ducts will give the oil free access to all parts, giving additional insulation, and will facilitate the conveyance of the heat from the interior portions of the transformer to the surface of the tank, thus insuring even temperatures throughout the windings.

OIL

Quality

Sufficient oil to completely immerse the core and windings will be supplied with the transformer. In order to secure the best insulating qualities and a high flashing point, the oil will be specially refined and tested for this use.

A plug or valve for drawing off the oil will be located in the base of the tank on all transformers 10 kv-a. and larger.

TERMINALS AND COUPLINGS

Terminals

Terminal leads from primary and secondary windings will be thoroughly insulated and brought out through porcelain bushings which will have ample surface to prevent leakage to the frame of the transformer.

Couplings

The secondary leads of all transformers and the primary leads of transformers over 50 kv-a. will be provided with couplings to facilitate rapid connection or disconnection from the lines.

GENERAL ELECTRIC COMPANY

SCHENECTADY, N. Y.

SPECIFICATIONS FOR OIL-COOLED TRANSFORMERS

For Yamhill Electric Company,

Spec. No.

Newberg, Oregon.

Date 1 - 26 - 12

CLASSIFICATION

Type	Cycles	Kv-A.	Primary	Secondary
H	60	25	Volts 11000	Volts 220/440
No. of Phases 1			Amperes at Full Voltage 2.27	Amperes at Full Voltage 113.6/56.8

This transformer is designed for delta connection on 11000 volt circuits.

TEMPERATURE RISE (Determined by Increase of Resistance—at Full Rated Voltage and Frequency)

Per Cent. of Rated Kv-A.	Hours	Temperature Rise Deg. C.
100	24	40
125	2	55

EFFICIENCY (At Full Rated Voltage, Frequency and 1.00 P.F.) REGULATION

.....Load	5/4 Load	Full Load	¾ Load	½ Load	¼ Load	1.00 P.F.
%	97.3 %	97.5 %	97.6 %	97.4 %	96. %	1.7 %

HIGH POTENTIAL TEST (For One Minute—Transformer Filled with Oil)

Prim. to Sec. and Core	22000	Volts	Sec. to Core	2500	Volts
------------------------	--------------	-------	--------------	-------------	-------

Across full primary winding 22000 volts (For One Minute at Suitable Frequency)

APPROXIMATE NET WEIGHTS AND DIMENSIONS

Height to top of high tension leads 33-1/2"

Height to top of cover 41 Floor space 34" x 24"

Weight of transformer including oil 1310 lb. Weight of oil 180 lb.

Prepared by O. B. Helt.

TEMPERATURE RISE

The temperature rise specified herein is based on a surrounding air temperature of 25° C. normal conditions of ventilation and a barometric pressure of 760 mm. of mercury; corrections for variations from this surrounding air temperature and barometric pressure will be made in accordance with the standardization rules of the A.I.E.E. Variations in any of these conditions will result in variations in temperature rise. The transformer should not be operated under conditions resulting in an actual temperature higher than 90° C., as measured by increase in resistance of windings, or by thermometer.

Tests to determine the temperature rise for continuous operation will be continued only until a constant temperature is reached.

When more than two transformers are furnished in accordance with these specifications, complete temperature tests will be made on two transformers only and the average results of these two tests will be considered as determining the temperature rise on all transformers.

EFFICIENCIES

The average of the core losses and the average of the I²R losses, of all the transformers furnished in accordance with these specifications, is to be used in determining the efficiencies specified herein.

C O N T R A C T

THIS AGREEMENT, made and entered into this 17th
day of Feb. 1912, between the City of Newberg (a
municipal corporation under the laws of the State of Ore-
gon), by the Mayor and the City Council of said city,
hereinafter called the City, and Yamhill
Electric Co. of Newberg, Oregon.
hereinafter called the Contractor;

WITNESSETH, that the said Contractor having been award-
ed the contract for furnishing and installing motor, pump
and transformers for said City in accordance with the pro-
posal therefor, which is bound herewith, and for and in
consideration of the premises and of the covenants and
agreements to be performed and of the payments herein speci-
fied to be made by the City, hereby covenants and agrees to
and with the City to undertake and execute all of said
named work in a good, substantial and workmanlike manner
and to furnish all the materials and all tools and labor
necessary to properly perform and complete the work ready
for use, in strict accordance with the attached specifica-
tions and under the penalty expressed in the attached bond,
bearing even date herewith, which are hereby declared and
accepted as essential parts of this agreement, and to ac-
cept as full compensation therefor the rates named in the
proposal.

Section 1. What the Contract Price Includes The price named in the proposal is for the completed work of each class and includesthe furnishing of all materials, and all labor, tools and appliances, and all expense, direct or indirect, connected with the proper execution of the work in accordance with the specifications for the respective classes of work and of maintaining the same until it is approved by the Engineer and accepted by the Mayor and City Council.

Section 2. Extra Work. The Contractor shall do such extra work in connection with the work herein contracted to be done as the City Council may direct, and if it shall be of a nature for which no price is fixed in the above schedule, then the price thereof shall be determined by the Engineer and approved by the City Council. But no allowance for extra work of any kind will be made unless such work shall have been ordered in writing, signed by the Mayor. On or before the fifteenth day of each month succeeding ^{such} that in which any [^]extra work shall have been done the Contractor shall render to the Engineer a full and complete statement of such extra work, and no payment shall be allowed for any extra work for which the Contractor fails to render such statement.

Section 3. Inspection. All materials furnished by the Contractor shall be subject to the inspection and approval of the Engineer at any time during the progress of the work and until the final completion thereof, and the materials shall be delivered by the Contractor a suf-

ficient length of time in advance of the work to enable the City to make the proper tests and inspection. As soon as the materials are tested and inspected the Contractor shall immediately remove all rejected materials from the work and to such a point distant therefrom as the Engineer may require. No materials shall be used before being inspected and approved by the Engineer, but the neglect or failure on the part of said Engineer to condemn or reject inferior materials or work shall not be construed to imply an acceptance of the same should their inferiority become evident at any time prior to the final acceptance of the work. The Contractor shall furnish at his own expense such labor as may be required to enable a thorough inspection and culling of all the materials.

Section 4. Obstructions and Guards. The Contractor shall erect and maintain good and sufficient guards, barricades and signals at all unsafe places at or near the work, and shall in all cases maintain safe passageway at all road crossings, cross-walks and street intersections and shall do all other things to prevent accident or loss of any kind.

Section 5. Property Liable to Damage. The Contractor shall protect from damage all water, sewer, gas, steam or other pipes or conduits, and all hydrants, poles or other

property that is liable to become displaced or damaged by reason of the execution of the work.

Section 6. Time for Commencement and Completion. The Contractor shall commence the work as soon after the approval of this contract by the City Council as the Engineer may direct, continuing the work without interruption and shall fully complete all work ordered under this contract by May 15, 1912. And the Contractor agrees that for each and every day any portion of the work remains unfinished after the time herein fixed for its completion the City shall deduct and retain out of the money which may be due said Contractor under this agreement the sum of Twenty-five dollars (\$25.00) and also the cost of all engineering and inspection after said date, which sum is, in view of the difficulty of estimating damages, hereby fixed, agreed upon and determined by the parties hereto as liquidated compensatory damages that the City will suffer by reason of the failure of the Contractor to complete the work within the time agreed upon, and such daily compensation shall apply to each portion of said work after the date herein agreed upon for its completion.

Section 7. Claims for Damages. The Contractor shall not be entitled to any claim for damages on account of hindrance or delay from any cause whatever, but if occasioned by any act or omission on the part of the City, such hindrance or delay may entitle the Contractor to an extension of time in which to complete the work, which shall be determined by the City Council; provided, that

the Contractor shall give notice in writing of the cause of such delay.

Section 8. Sub-letting. The Contractor shall not assign or sublet the whole or any part of the work contemplated in this contract (except only for the supply of materials and tools) without having first obtained the written consent of the City Council to do so; and in case such consent be given it shall in no way release the Contractor from any responsibility, but he shall be held in all respects accountable the same as if no consent had been given. The Contractor will be required to give his personal attention to the work.

Section 9. Specifications, Plans and Stakes. The work shall be done in strict conformity to the plans and specifications and to the exact lines and grades as fixed by the Engineer and with such written instructions as shall from time to time be given by the City Council. The Contractor shall provide such assistance and materials as may be required by the Engineer for giving lines, grades, etc. and shall protect and preserve in their original position all stakes, points or marks set by the Engineer for the work, and where the Engineer shall consider such stakes or marks to have been unnecessarily destroyed, he may cause the expense of replacing them to be charged to the Contractor and the amount deducted from any sum due or which may become due to the Contractor.

21.

Section 10. Cleaning Up. Immediately upon the completion of the work the Contractor shall at his own expense clean up and remove all refuse materials of every kind resulting from the work, and upon failure to do so within twenty-four hours after having been notified by the City Council, the work may be done by the City and the cost thereof charged to the Contractor and deducted from the amount of his final estimate.

Section 11. Orders. Whenever the Contractor is not present on any part of the work where it may be necessary to give instructions, orders may be given by the Engineer to the superintendent or foreman who may have charge of the particular work in question, and such orders shall be obeyed.

Section 12. Defective Work. The Contractor, upon being so directed by the City Council, shall remove or re-charge construct or make good without any work which it may consider to be defectively executed.

Section 13. Competent Men to be Employed. The Contractor shall employ ^{suitable} mechanics for every kind of mechanical work. If any person employed by the Contractor is incompetent, disorderly or disobedient to the Engineer, he shall be discharged immediately upon request of said Engineer and shall not again be employed upon the work.

Section 14. Order of Executing Work. The Contractor shall commence work at such point or points as the Engineer may direct and shall conform to his directions as to the time and order in which various parts of the work shall be done.

Section 15. Changes in Plans and Specifications. The City shall have the right to make any changes in the plans, specifications or quantities that may be hereafter determined upon as necessary or desirable, either before or after the commencement of the work, by defining them in writing, and in case such alterations increase or diminish the approximate quantities as stated in the proposal, then the Contractor shall be paid for the work actually done at the contract rates herein specified, and such alterations shall not constitute a claim for damages, nor shall any claim be made on account of anticipated profits on the work that may be altered or dispensed with.

Section 16. Failure to Pay for Labor and Materials. If at any time it shall appear that the Contractor has failed to pay the sub-contractors or the laborers employed upon the work or has failed to pay for the material used therein, the City may withhold from the money which may be due or which may become due to the Contractor under this agreement such amount or amounts as may be necessary for the payment of such sub-contractors, labor and material and may apply the same in such payment and deduct the

same from the final estimate of the Contractor. This provision is intended to protect the sub-contractors and laborers employed upon the work and the parties who may furnish material to be used therein, and the City may or may not exercise its option as it may deem best.

Section 17. Laws and Ordinances to be Observed. In all operations in connection with the work embraced in this contract, the Contractor will be held responsible for any failure to respect, adhere to and comply with all local ordinances and laws controlling or limiting in any way the actions of those engaged upon the work or affecting the materials or the transportation or disposition of them. And the Contractor hereby assumes all liability for and agrees to indemnify the City against all loss, cost or damage for or by reason of any claim for damages or for materials or to premises or from laborers or others, and from any damage arising from injuries sustained by workmen or other persons by reason of accident or otherwise, and from damages sustained by depositing materials to public injury or to the injury of any person or corporation, or resulting from the use of any patented material, implement or process which may be employed in executing the work under this contract, including cost and expense of defense; provided, that he shall be notified of the bringing of suit in such cases and be permitted to defend the same, and it shall be lawful to withhold

final payment on this contract so long as it may seem necessary for the indemnity of the City.

Section 18. Failure to Prosecute Work Vigorously.

If at any time during the existence of this contract it shall appear to the City Council that the force employed, the appliances provided or the character or progress of the work or materials furnished are not such as will insure the completion of the work under this contract within the time specified, or are not in accordance with the specifications for such work, it may serve written notice on the Contractor to at once supply the increase of force, appliances or tools or to make such improvements in the character of the work or materials as may be required to make the same conform to the stipulations of the contract; and if on the expiration of two days after service of such written notice upon the Contractor personally or by leaving the same with some person at his office or place of business, the Contractor refuses or fails to remedy the specified deficiencies, the City may enter upon and take possession of said work or any part thereof with the tools, materials, appliances and appurtenances and may hold them as security for any and all damages or liabilities that may arise by reason of the non-fulfillment of the contract within the time herein stipulated; and said City may employ said tools, materials and appliances

in any way it may deem proper to complete the work at the expense of the Contractor.

Section 19. Decisions of the Engineer Final. Any questions, differences or controversies which may arise between the City and the Contractor with reference to the performance or non-performance of the work, or with reference to delays or penalties, or relating to the plans, profiles and specifications or the technical sufficiency of the materials furnished or the work^{done} under this contract, shall be referred to the Engineer and his decision shall be final and conclusive to both parties.

Section 20. Estimates. Partial estimates based on contract prices shall be made and certified by the Engineer monthly of the amount of work done during the month or since the previous estimate, and if the estimate is approved by the Mayor and City Council eighty-five per cent (85%) thereof shall be paid to the Contractor and fifteen per cent (15%) shall be retained by the City until the whole work contracted for shall have been completed and accepted. Within ninety (90) days after the completion of the entire work the Engineer shall make a final estimate of the entire work done and upon its approval the City shall pay and the Contractor shall receive the amount thereof as full compensation for the work performed under this contract.

Section. 20-A. Guarantee. The contractor hereby guarantees for a period of one year from the date of this contract all the herein specified machinery to be of correct design and the materials used in its construction to be carefully selected for the service and that it will perform the work specified, that it will be properly erected and operated, and to replace any defective machinery or parts without cost to the City.

Section 21. Definitions. Whenever the words defined in this section or pronouns used in their stead occur in the Instructions to Bidders, Proposal, Specifications and Contract, they shall have the meaning here given:

"City" shall mean the municipal corporation of Newberg, Oregon.

"Mayor" shall mean the Mayor of the City of Newberg, Oregon.

"City Council" shall mean the City Council of the City of Newberg, Oregon.

"Engineer" shall mean the Engineer employed by the City of Newberg, acting either directly or through his properly authorized assistants, such assistants acting severally within the scope of the particular duties entrusted to them.

"Contractor" shall mean the party entering into the contract for the performance of the work hereby required and the legal representative of said party or the agent appointed to act for said party in the performance of the work.

Section 22. Miscellaneous. All acts to be performed by the City of Newberg may be performed by its duly authorized agents or employees.

The said Contractor further agrees that preference shall be given to home materials and bona fide residents

for employment upon the work, and that all laborers employed on the work shall be paid weekly.

This contract will all its forms, specifications and stipulations shall be binding upon the heirs, executors, administrators or assigns of the said Contractor and upon the successors and assigns of the said City as much as if each and all of them had been specially mentioned.

IN WITNESS WHEREOF, the Mayor and Recorder of the City of Newberg have made and executed this contract on behalf of said City and have caused the seal of said City to be hereunto affixed, in pursuance of a resolution duly adopted by the City Council, and the said Contractor has hereunto set its hand and seal the day and year first above written.

CITY OF NEWBERG, OREGON.

By

J. D. Gordon

Mayor.

Attest:

W. W. Nelson

Recorder.

Signed in the presence of:

acStambrough

Yamhill Electric Co.

L. C. Kelany

C. Edwards
Pres

B O N D

KNOW ALL MEN BY THESE PRESENTS, that the Yamhill Electric Company as principal and The Title Guaranty & Surety Company as sureties, are firmly bound and held unto the City of Newberg, Oregon, in the penal sum of one thousand dollars(\$1000) to be levied upon our property, goods and chattels in case default be made in the conditions following, that is to say:

WHEREAS, the said Yamhill Electric Company has this day entered into a contract (bound herewith) with the City of Newberg, Oregon, whereby it has agreed to furnish the materials and labor and all things necessary to execute the following work, to-wit: Furnishing and installing motor, pump and transformers for said city;

NOW, THEREFORE, the conditions of this obligation are such that if said Yamhill Electric Company shall well and faithfully perform all the obligations entered into under said contract and shall pay all laborers employed in said work and for all materials used therein, then these presents shall become void; otherwise to remain in full force and effect.

IN WITNESS WHEREOF, we have hereunto set our hands and seals at Newberg, Oregon this 14th day of February ~~January~~ 1912.

Signed in presence of:

L. C. Kelsey

May Lupton

Yamhill Electric Co
C. Edwards

THE TITLE GUARANTY & SURETY CO.

by Karl Lively
Attorney-in-fact.

THE TITLE GUARANTY & SURETY CO.

by Carla Bates Lively
Its local General Agent

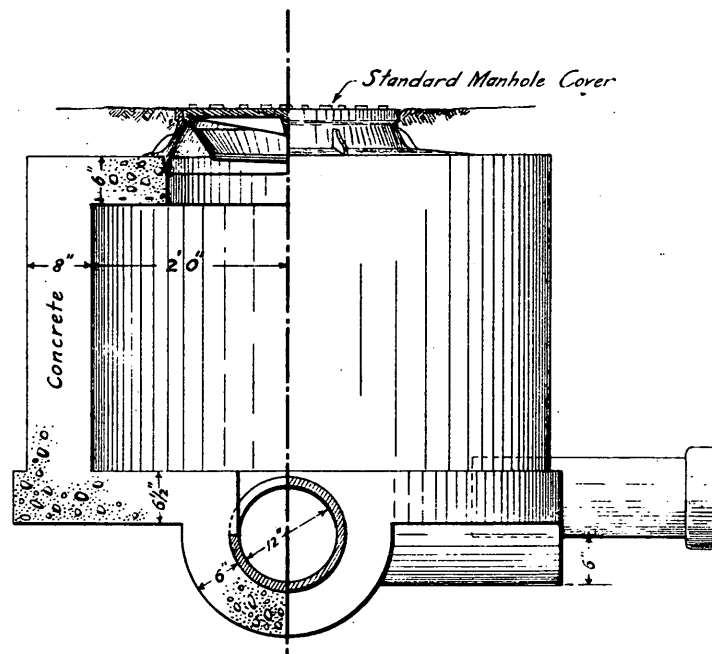
by K. Lively
Member of Firm.

PLAN OF
SPECIAL MANHOLE
 PORTLAND, OREGON.

SHEET No 8.
 SCALE: $\frac{1}{2}" = 1\text{ FT.}$

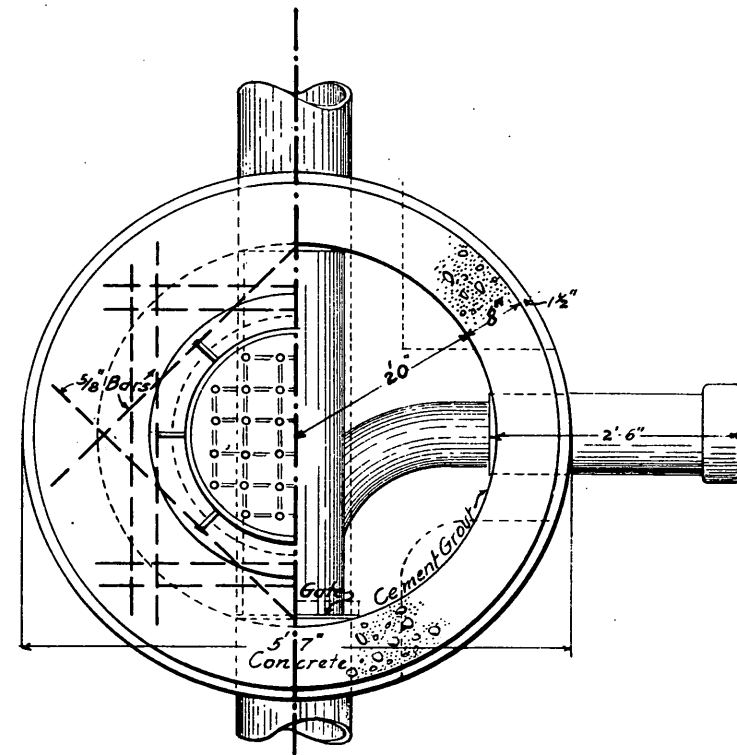
LOUIS C. KELSEY,
 CIVIL ENGINEER.

*Note: Manholes for sewers 15 inches
 and larger shall be 5 feet in diameter.*



HALF SECTION

HALF ELEVATION



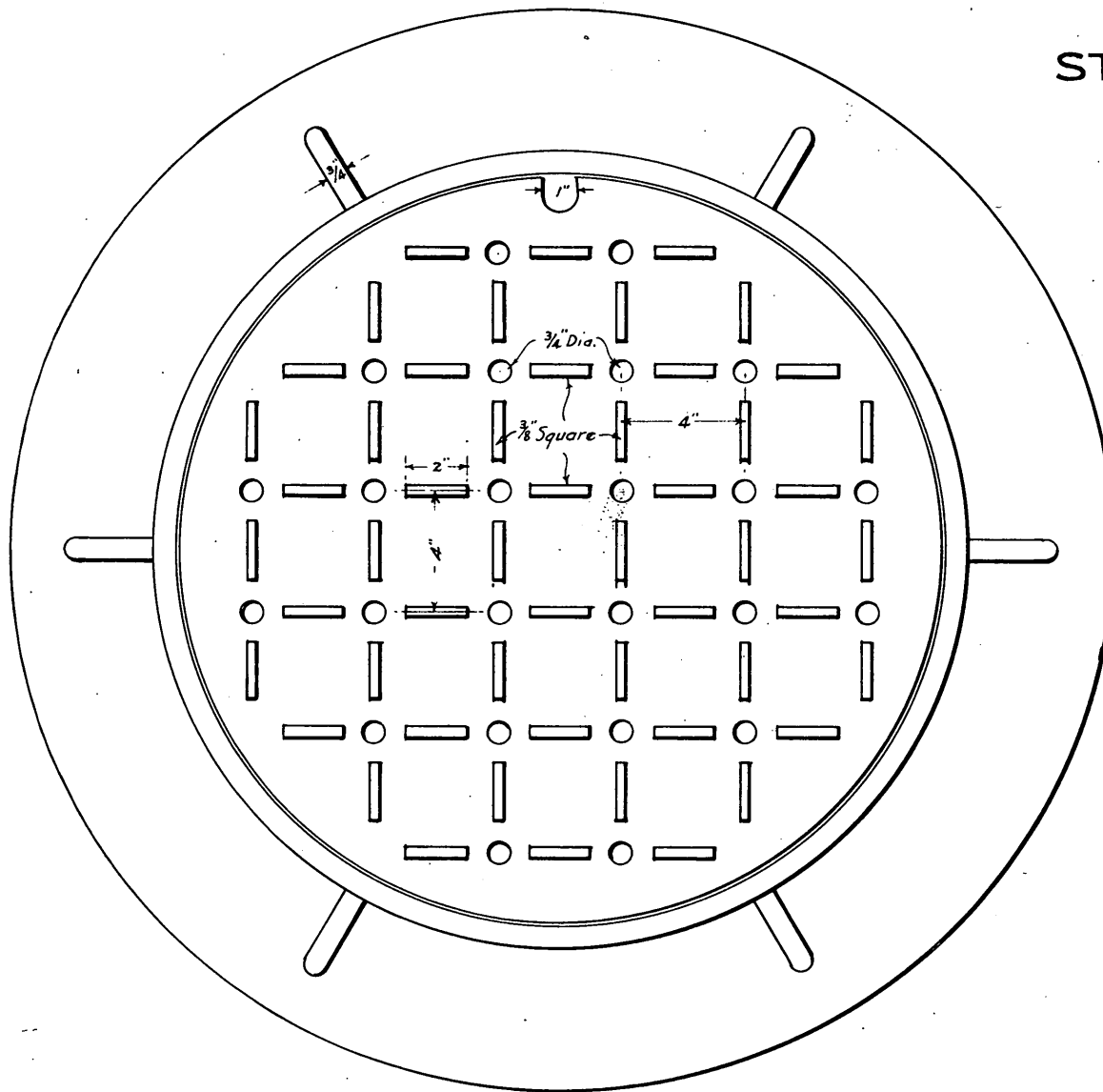
HALF PLAN

HALF SECTION

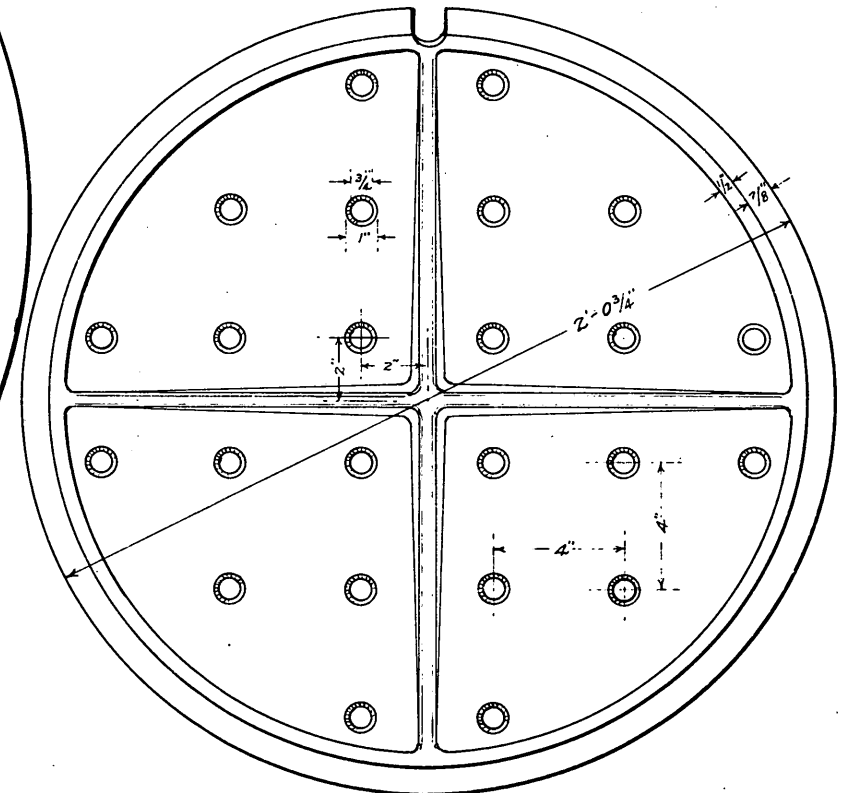
PLAN OF
STANDARD MANHOLE COVER
PORTLAND, OREGON

SHEET No 5
SCALE: 2" = 1 FT.

LOUIS C. KELSEY
CIVIL ENGINEER.



PLAN

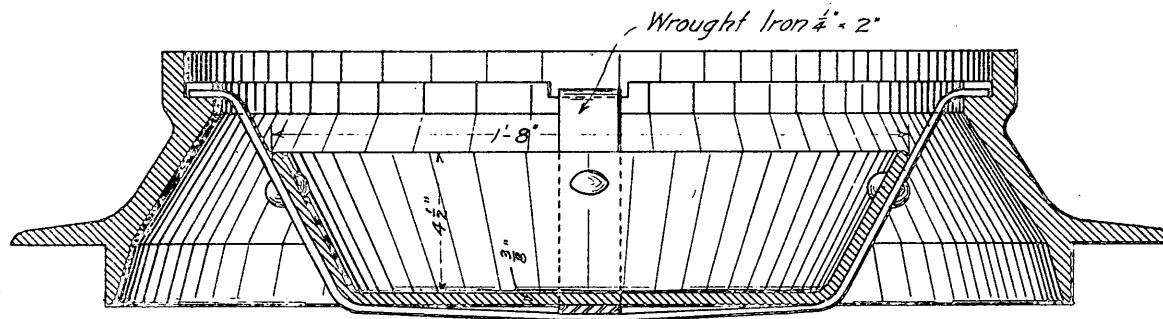


BOTTOM VIEW OF LID

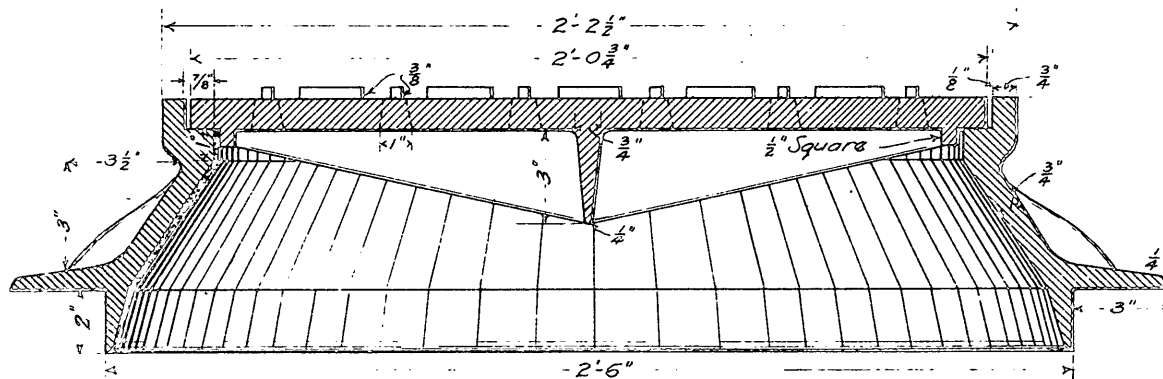
DETAILS OF
MANHOLE COVER AND GATE
 PORTLAND, OREGON

SHEET NO 6
 SCALE: 2"=1 FT.

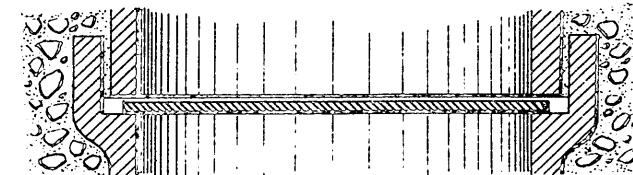
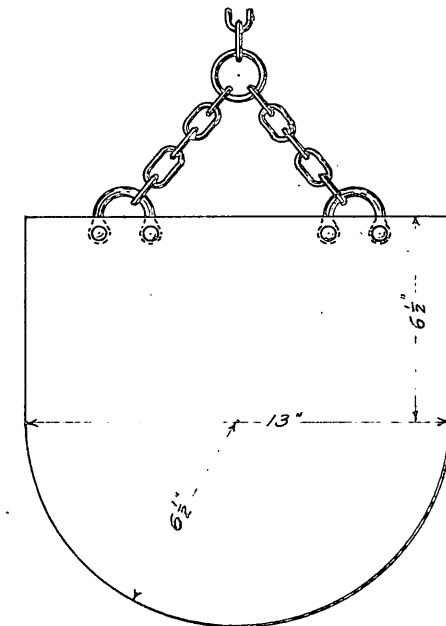
LOUIS C. KELSEY,
 CIVIL ENGINEER.



SECTION SHOWING PAN
 LID REMOVED

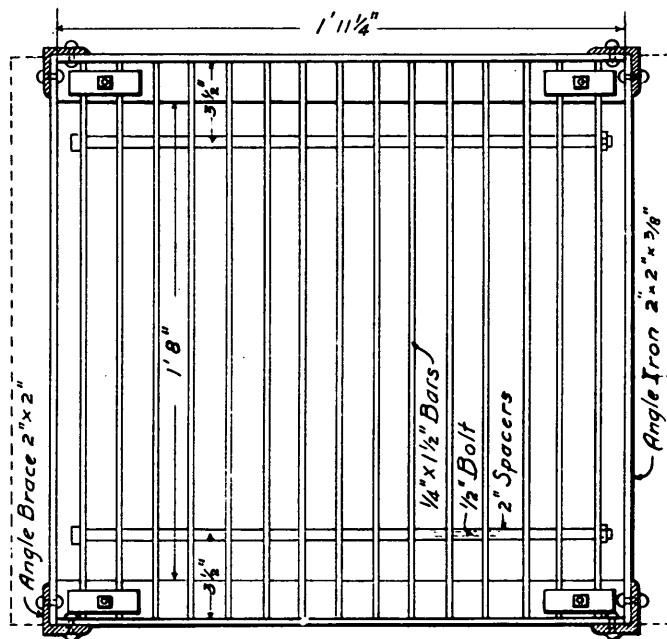


SECTION
 PAN REMOVED

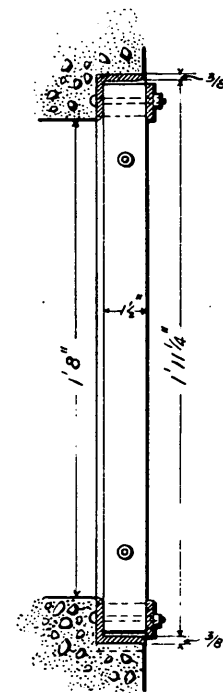


FLUSH GATE

NEWBERG-OREGON
 PLAN OF
 GRATE FOR CATCH BASIN
 PORTLAND, OREGON.
 SCALE: $1\frac{1}{2}" = 1\text{ FT.}$ LOUIS C. KELSEY,
 CIVIL ENGINEER.

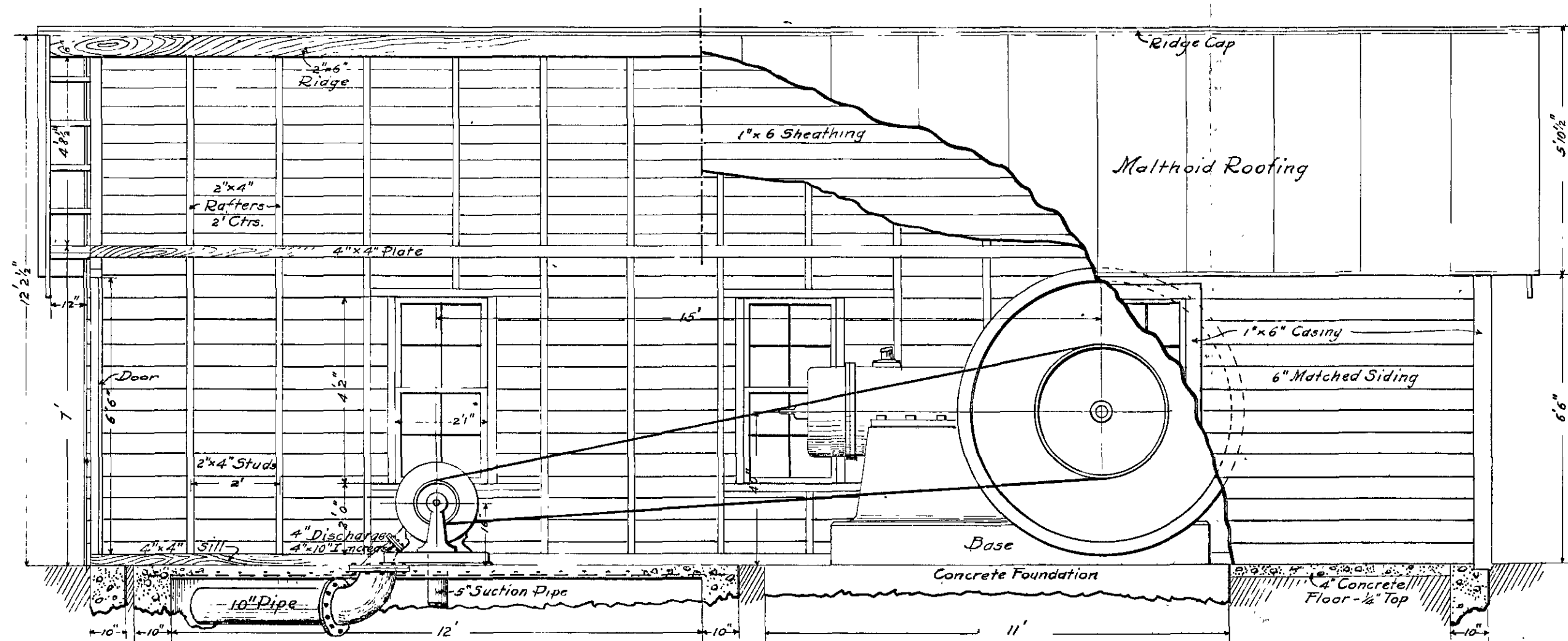


PLAN
 GRATING AND FRAME



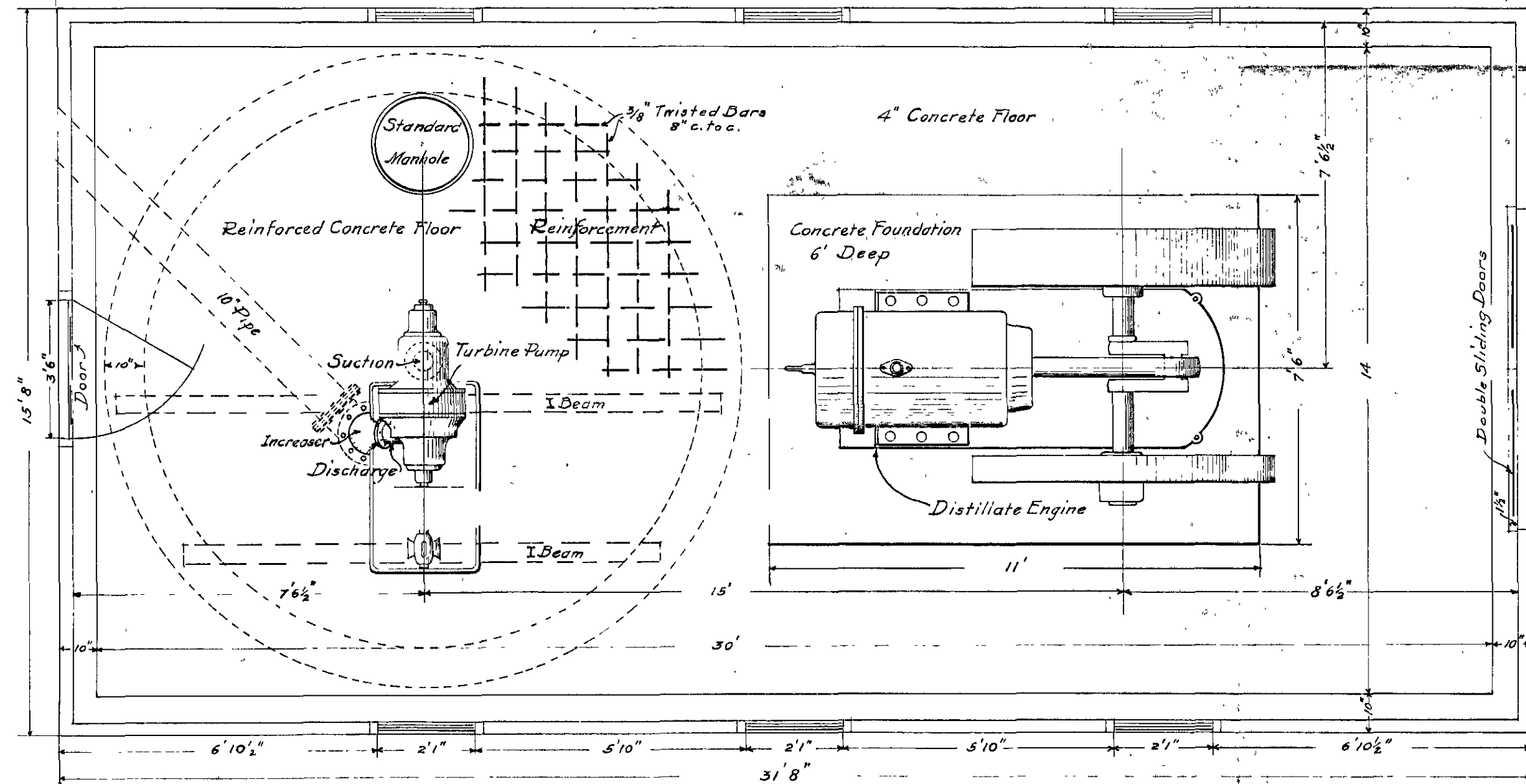
SECTION

Note: To be set in Standard Manhole

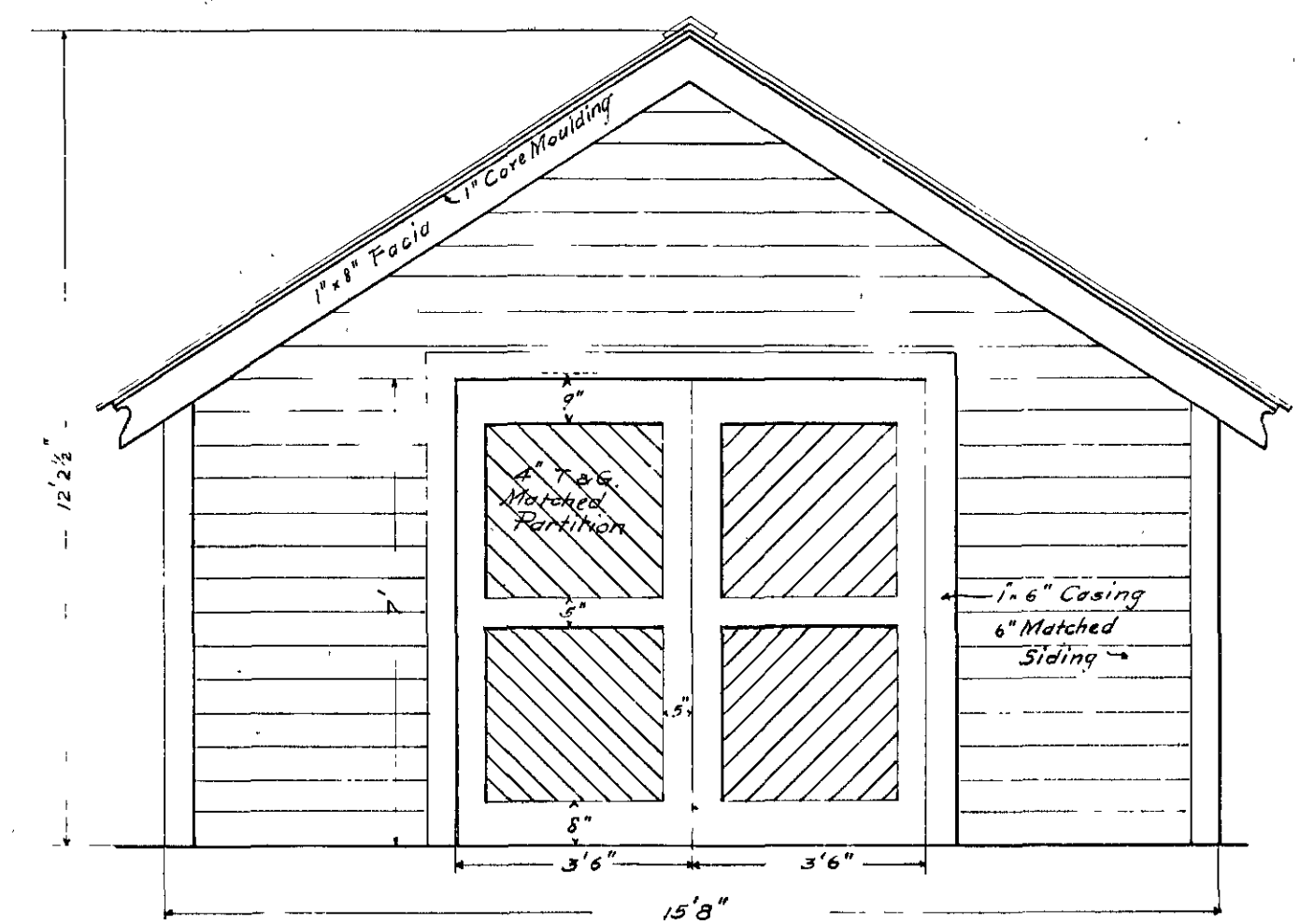


HALF SECTION

HALF ELEVATION



PLAN



REAR ELEVATION

NEWBERG OREGON
 PLAN OF
 PUMP HOUSE
 FOR
 DISTILLATE ENGINE
 Portland Oregon
 1912
 Scale: $\frac{3}{8}$ " = 1 Ft. Louis C. Kelsey
 Civil Engineer

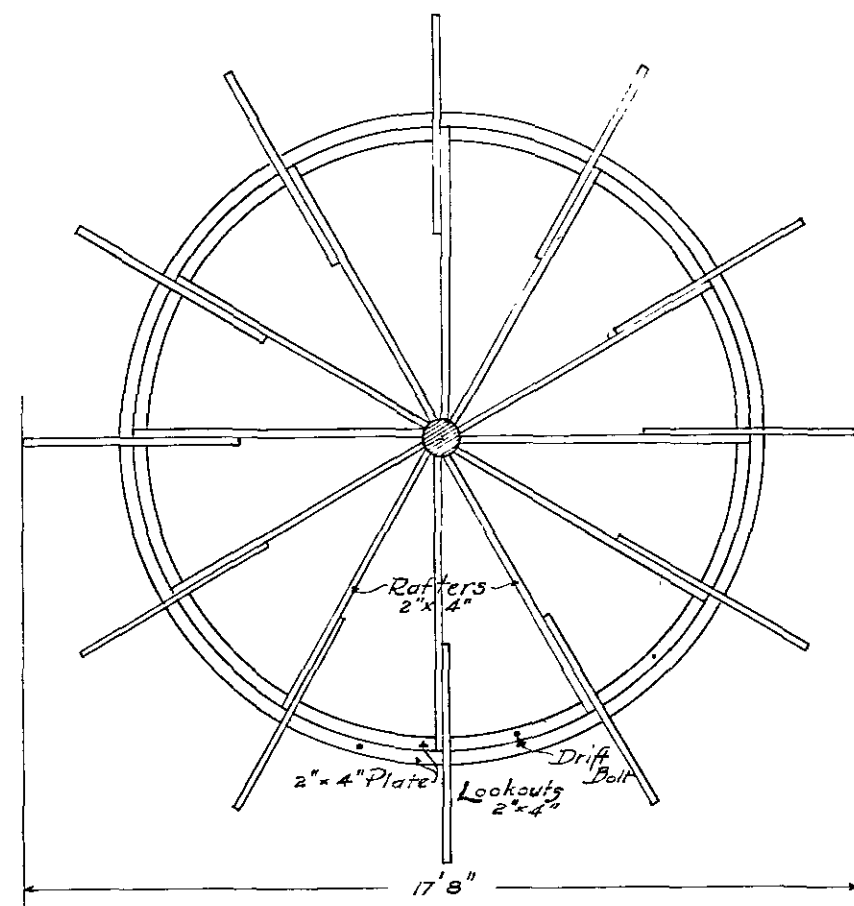
NEWBERG OREGON

PLAN OF PUMP HOUSE AND SUMP

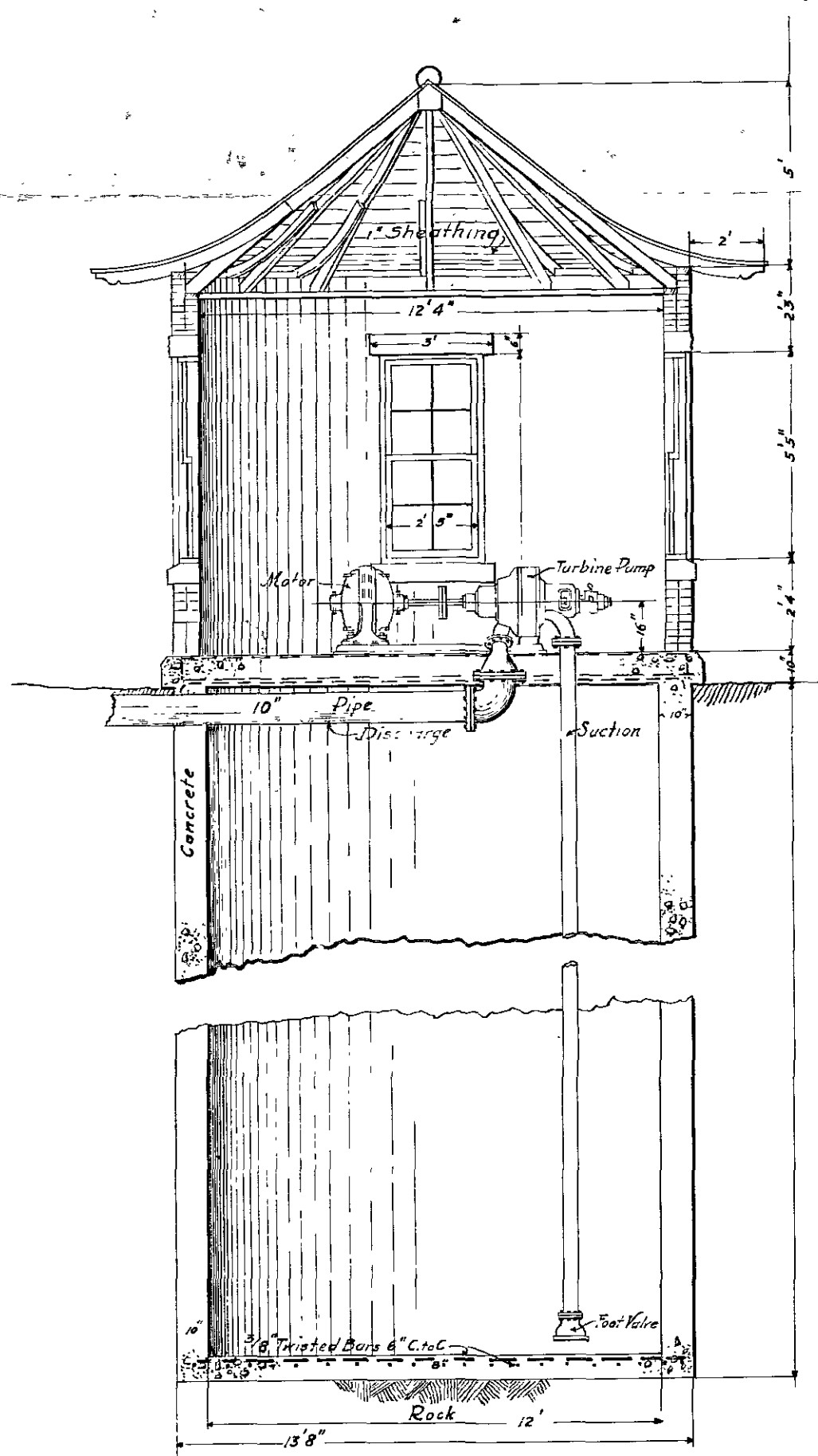
Portland Oregon
1912

Scale: $\frac{1}{4}" = 1 \text{ Ft.}$

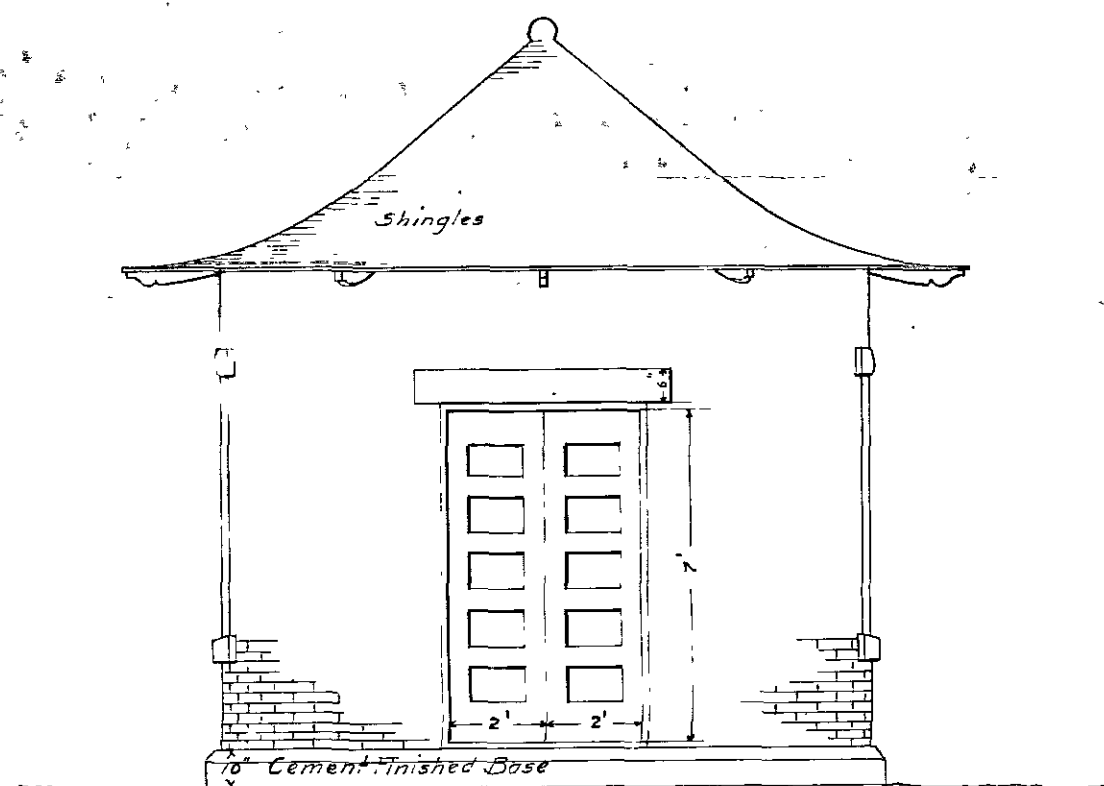
Louis C Kelsey
Civil Engineer.



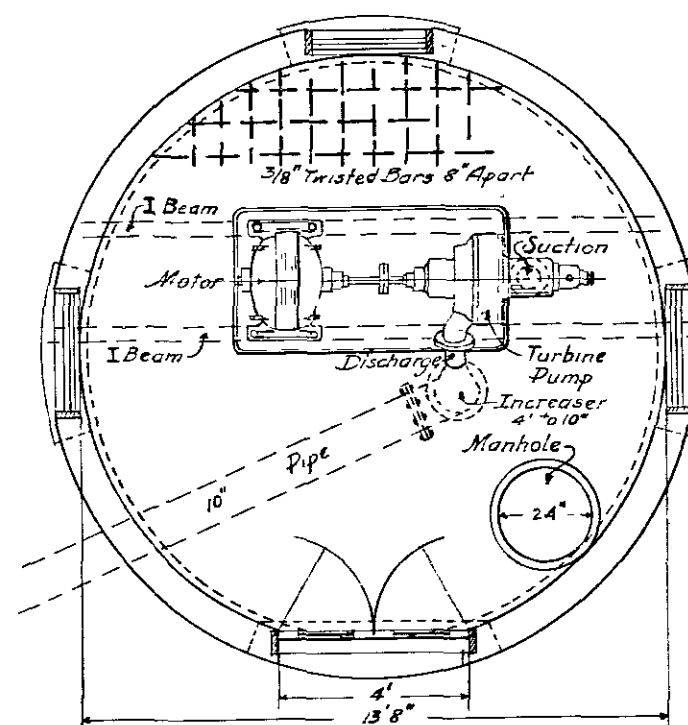
ROOF PLAN



SECTION



ELEVATION



PLAN

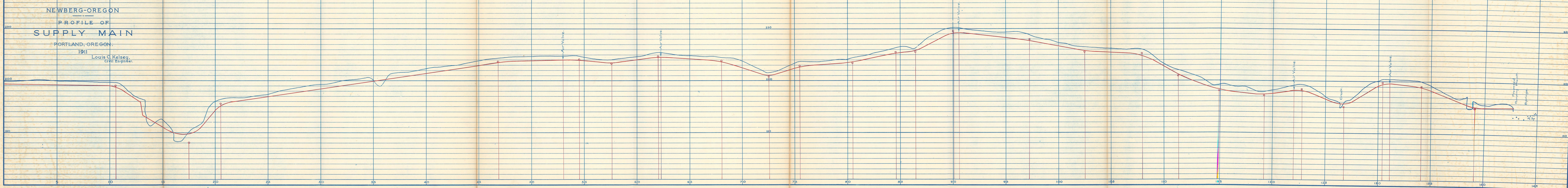
NEWBERG-OREGON

PROFILE OF
SUPPLY MAIN

PORTLAND, OREGON.

1911

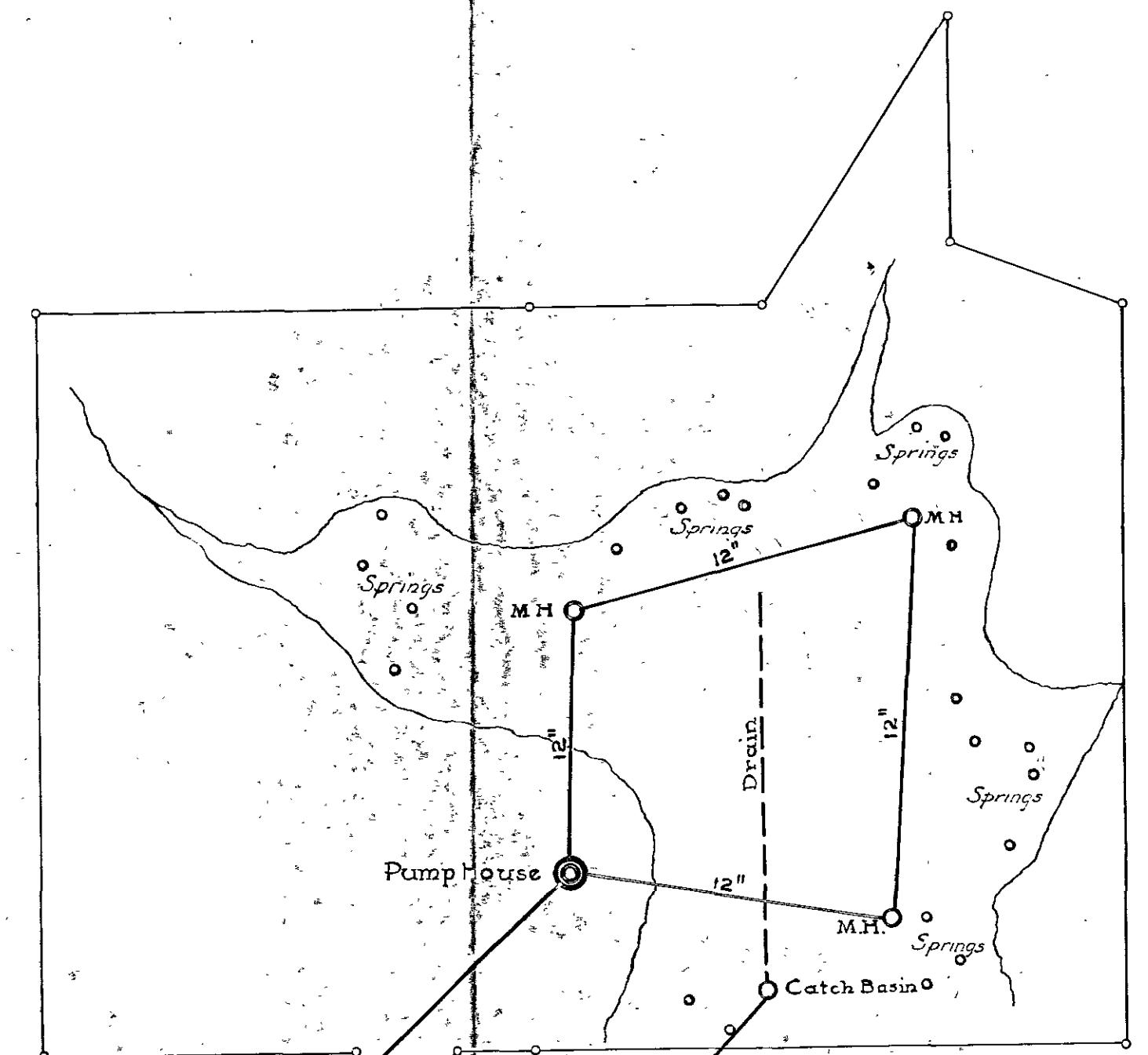
Louis C. Kelsey,
Civil Engineer.



NEWBERG OREGON
 MAP OF
 SPRINGS AND SUPPLY MAIN
 Portland Oregon
 1912

Louis C. Kelsey
 Civil Engineer

Scale: 1 in = 60 Ft.



Scale: 1 in = 200 Ft.

