

The tank has a conical all-steel roof, and also a steel balcony (incorporated with the circular girder which rests on the eight legs, and to which the tank itself is attached) entirely surrounding the tank, provided with a suitable railing and a ladder giving access from the ground, although, to prevent boys, or other unauthorized persons, from climbing it, this ladder only reaches to about 8 feet from the ground.

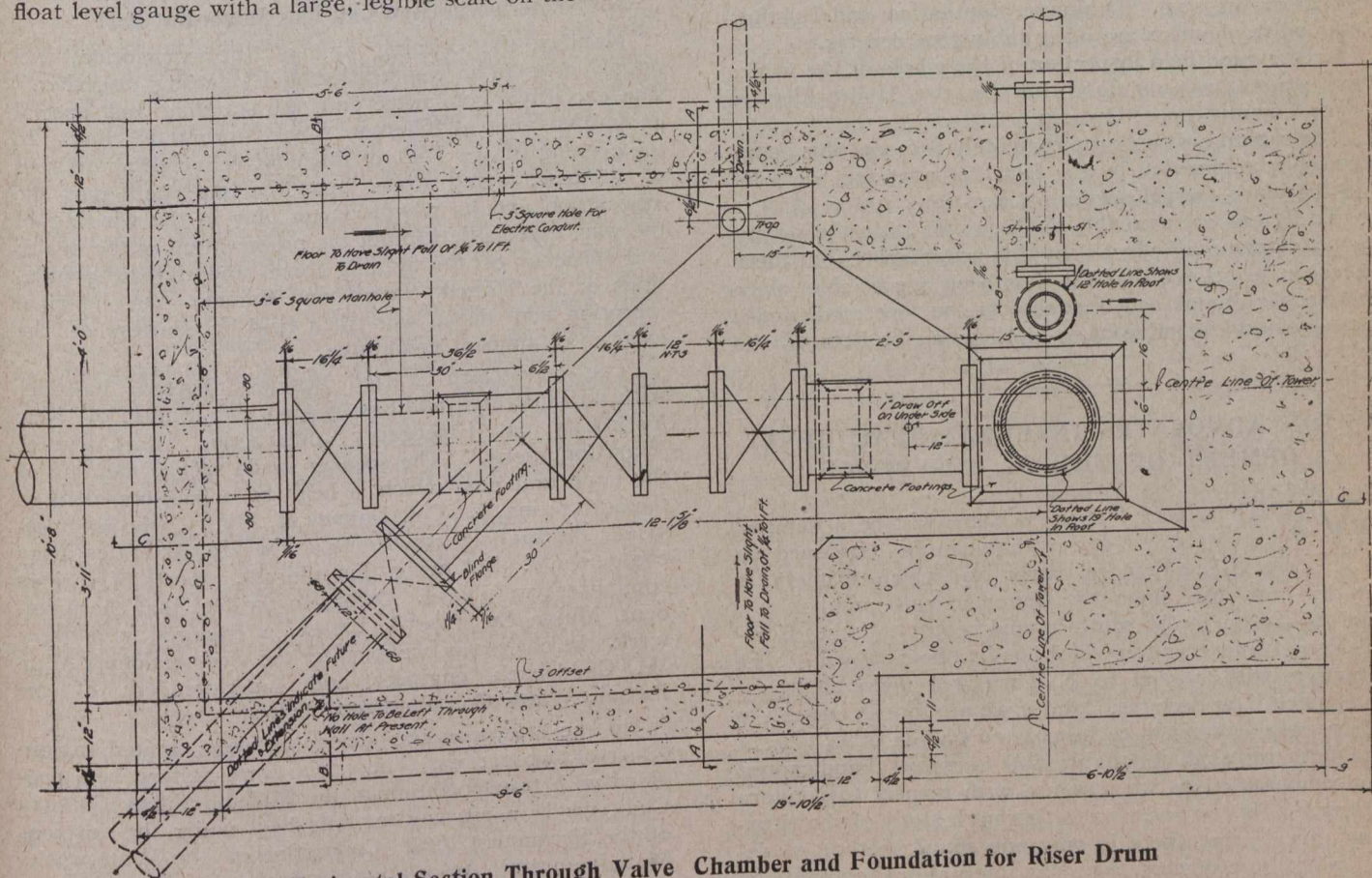
To enable the entire outside of the tank and roof to be conveniently inspected or painted, there is a revolving iron ladder reaching from the roof finial to the balcony; and, to provide similar access to all parts of the interior, a painter's trolley has been provided.

For the purpose of indicating the water level in the tank there is a pressure gauge in the pump-house and a float level gauge with a large, legible scale on the outside

Much consideration was given to the question of foundations for so ponderous a tower, and test borings were made to ascertain the nature of the ground in which the massive concrete footings would have to be set.

This ground was found to consist of approximately 3 feet thickness of clay on the top, underneath this being about 10 feet of coarse gravel, which gradually gets finer to a depth of about 20 feet. This gravel ridge extends to a sufficient distance horizontally to have warranted the assumption, which was made, that it would be safe to locate the tower on the spot selected. The foundations were designed for a maximum pressure on the soil of two tons per square foot.

The accompanying photograph of the completed water tower shows very plainly its great height and large size, and also the shallowness of the elliptical bottom. It is



Horizontal Section Through Valve Chamber and Foundation for Riser Drum

of the tank, and, in addition, an electric alarm whereby a loud bell in the pump-house is rung when the tank is nearly full or nearly empty.

In regard to painting, one shop and one field coat were specified, and for the interior of the tank special paint, suitable for that surface, has been employed.

The maximum unit stress in plate work does not exceed 12,000 lbs., with a joint-efficiency designed for 70 per cent. The compression joints are all milled and carefully fitted and there is sufficient number of rivets to carry 50 per cent. of the load at unit stresses consistent with the above. All metal in the structure is made to "Manufacturers' Standard Specifications."

The entire weight of the structure was estimated to be about 511,000 lbs., or over 255 tons, and actual weights later checked this figure closely. The weight of the water when the tank is full is 2,500 tons, so that the total weight on the eight concrete footings on which the steel legs rest, is a little more than 2,755 tons of 2,000 lbs. each.

easy to realize that the tower forms a good land-mark for miles around.

For the eight concrete foundations required to support the tower legs, 570 cubic yards of earth had to be excavated and 310 cubic yards of concrete were required. Each of the eight foundation piers is 15 ft. 6 ins. square at the base and 5 ft. square at the top. These piers are 9 ft. in depth and extend 1 ft. above the ground level. The anchor bolts are 1½ ins. in diameter and 6 ft. long.

Specifications for these foundations, and also for the valve chamber referred to below, were drawn up and tenders invited from firms located in and near Stratford. The contract was awarded to Messrs. Everitt and Marson, of Stratford.

In addition to the provision of the tower proper, with its foundations, it was necessary to construct a valve chamber, to accommodate, primarily, a valve required by the fire underwriters, capable of being instantly shut in case of fire, so that fire pressure could be put on the mains.