Harris, Commissioner of Works, Toronto, for that section of the city formerly known as the town of North Toronto. The scheme calls for a combined system, the estimated ultimate cost being \$4,144,256. The improvement divides the district into two sections at Eglinton Avenue. In the section north of Eglinton Avenue it is proposed to construct lateral sewers to cost \$422,000 and thirteen trunk sewers to cost \$584,644. Two storm outlet sewers are provided, the cost of which is estimated at \$366,275. The sewage disposal plant for this district will cost \$305,900 and consist of a stand-by tank for the treatment of storm water, detritus tanks, Imhoff tanks, chlorinating devices, sludge-drying beds and sprinkling filters.

The sewage disposal plant in Section 2, will be similar to the above, but of larger capacity, and will cost approximately \$400,000. The work in this section involves the construction of lateral sewers estimated to cost \$390,000 and seven trunk sewers costing \$648,000. Two storm outlet sewers will cost about \$360,000, while a dry-weather-flow sewer to the disposal works is also proposed. It should be stated that the estimate of each disposal plant includes a site for future development and that each trunk sewer will have a superficial area exceeding four square feet.

In the interview to which Mr. Kohlmann refers, Mr. Murray, who designed the present system of sewage in North Toronto, criticises the expenditure of \$4,000,000 on the proposed combined system. The present system was designed on the separate plan, to take domestic sewage only with a small proportion of roof water where necessary, but no surface water. Mr. Murray contends that the separate system is the only suitable one for the district, claiming that the purification point of view is one of the chief considerations relative to its sewage system as the practice of discharging sewage into the Don River must be continued for some time. In pronouncing the separate system of sewage as the ideal one for a suburban district such as North Toronto, which will probably be free from manufacturing industries, Mr. Murray alludes to the excessive cost of the project as outlined above and refers, as Mr. Kohlmann states, to the city engineering officials as being wedded to the oldfashioned combined sewage system. Hence Mr. Kohlmann's criticism.-Editor.]

A NEW STEEL SHEET PILING SECTION.

A new form of Lackawanna steel sheet piling section is Now being rolled for use in 90-degree corners of rectangular cofferdams or retaining walls, either with the hook or guard on the outside. These rolled corners overcome the necessity of using specially fabricated and less easily driven corners. Moreover, they weigh less per lineal foot than the fabricated corners, and can be used wherever the conditions of load are not excessive. With the flexibility characteristic of this make of joint the two new corners will meet most require-

The Port Arthur city council has been approached by J. Stewart of Chicago with a request for a favorable consideration of a proposal for the location of a coal gas plant at Port Arthur. The matter is being considered by the industrial committee of the council.

It has been reported that the Standard Oil Company has entered into an agreement with the Chinese government, or with with Yuan Shih-Kai, the dictator president, for the control of a of the extensive oil fields of northern Shensi. The amount paid by the company for this concession is not known.

SEWAGE POLLUTION OF BOUNDARY WATERS.

HE investigation into the pollution by sewage of the boundary waters between Canada and the United States has received frequent mention in The

Canadian Engineer. The whole subject is being well summed up by Dr. Allan J. McLaughlin, chief sanitary expert and director of field work for the International Joint Commission, in a paper to be read next week at the convention of the American Water Works Association, and published in the Journal of the Association for March, 1914. In December, 1910, Dr. McLaughlin was directed to investigate the sewage pollution of interstate and international waters with special reference to the spread of typhoid fever. In 1911 he completed a sanitary survey of the entire watershed of the Great Lakes on the United States side of the boundary. Briefly the conditions found were as follows :-

An excessive prevalence of typhoid fever, especially in the winter and spring months, punctuated at intervals by explosive epidemics. This excessive prevalence of typhoid fever especially in the winter and spring months was due in greatest measure to the unrestricted discharge of sewage into interstate and international waters used as sources of public water supplies. Disaster followed the use of this sewage polluted water for one of two reasons, either a failure to purify or the inefficiency of the attempted purification.

The delusion that water from the Great Lakes or their connecting rivers needs no purification has been cherished for years in our cities and even with our disgraceful record of waterborne typhoid and the lessons of numerous disastrous epidemics, it is still no easy task to convince municipal officials that purification of these waters is necessary.

The remedies suggested by the writer at that time were :-

1. Safe water supplies, that is, water shown to be safe by daily bacteriologic examination.

2. Supervision and control of water supplies by the state to ensure efficiency and a safe effluent at all times.

3. Control of sewage discharge within permissible limits to prevent an unreasonable burden or responsibility upon filter plants.

4. Prevention of pollution from vessels.

In order to secure efficient and uniform results from the application of these remedies, he recommended that two sets of standards for water be formulated.

1. Standards for filtered or treated water.

2. Standards for raw water at the intakes.

In accordance with this recommendation in January, 1913, the U.S. Surgeon-General appointed a commission for the determination of a standard of purity for drinking water, and the report of that commission will soon be published. This report will furnish a minimum standard to which all common carriers, trains and vessels must conform to prevent the spread of disease in interstate traffic. This furnishes the first standard recommended. The fixing of the second standard or standard for raw water at the waterworks intakes is a much more complex problem. However, great strides have been made in this direction also.

A committee of the national association for the prevention of pollution of rivers and waterways, made up of Geo. C. Whipple, Edward Bartow, Geo. M. Wisner, H. W. Clark, and Dr. McLaughlin, studied the problem of standards in a general way and agreed upon certain fundamental principles which made a very good starting