

A PAGE OF COSTS

ACTUAL, ESTIMATED and CONTRACTED

COST OF CONCRETE PILES.

In constructing a group of buildings for the United States Naval Academy at Annapolis it was found necessary to put in over 2,000 piles. It was found upon investigation that if concrete pile were used there would be considerable saving. Concrete pile were used and the following itemized figures are in the case of wood estimated and in the case of concrete actual:—

Comparative Cost of Wood and Concrete Piles—Wood Piles.

2,193 piles, at \$9.50	\$20,835.50
4,542 cubic yards excavation, at 40 cents	1,816.80
3,250 cubic yards concrete, at \$8.....	26,000.00
5,222 lb. I-beams, at 4 cents.....	208.88
Shoring and pumping	4,000.00
Total cost	\$52,861.18

Concrete Piles.

855 piles, at \$20	\$17,100.00
1,038 cubic yds. excavation, at 40 cents	415.00
986 cubic yards concrete, at \$8.....	7,888.00
Shoring and pumping
Total cost	\$25,403.00
Difference in cost	\$27,458.18

COST OF LIGHTING GAS.

During 1909 at Kingston, Ont., the city gas cost 47.3 cents per 1,000 cubic feet at the station meter and 53 cents at the consumer's meter. The fixed charges brought the cost up to \$1 per 1,000 cubic feet.

Gas was sold at \$1.08 including the meter rent and 99 cents excluding the rent:—

	per 1,000 cu. feet.
In 1908 the cost was.....	\$1.06
" 1907 "	1.26
" 1906 "	1.23

COST OF ELECTRICITY.

At Kingston, Ont., during 1909 electricity cost per kilowatt hour:—

	At Station Meter	At Consumers' Meter
During 1909	\$1.84	\$2.17
" 1908	1.87	2.16
" 1907	1.04	2.36
" 1906	1.87	2.28

The following rates were received for electricity during 1909: For lighting, 9.7 cents a kw.; for street arc lighting, 4.5 cents; for street railway power, 1.62 cents. Lighting for street arc lamps was furnished at a slight loss, about \$173 on the year.

METHOD AND COST OF TRENCHING.

Among the expensive improvements carried on in urban municipalities, water mains and sewers form a very consider-

able item. Anything that will cut down expense to the municipality will increase the volume of work to be done.

From the engineers and contractors point of view any machinery or invention that will lessen uncertainty will increase his profits and will be acceptable to him.

A machine that is becoming quite popular for trenching work is the traction, ditcher and Messrs. Laurin & Leitch, of



Buckeye Ditcher.

Beaver Hall Square, Montreal, have used in their work at Westmount with success a particular type of traction trench, the Buckeye, manufactured by the Buckeye Traction Ditcher Company, of Findlay, Ohio.

This machine consists essentially of a large wheel, to the rim of which are fastened the digging buckets. The wheel has no axle, but is supported by four pairs of rollers inside its rim. The wheel is supported between I-beams projecting from the rear of the trucks. These I-beams can be quickly raised or lowered by the operator, so that the bottom of the wheel can cut to the exact depth and grade desired. By sighting along range poles stuck in the ground ahead of the machine, the operator can not only keep on line with his trench, but he can keep the bottom of trench exactly to grade. The machine is self-propelling and moves steadily forward, leaving the completed trench behind. In digging a trench 26 inches wide by 7 feet deep in tough clay, the ditcher was geared to travel at a speed of two feet per minute.