on in two 10-hour shifts. At first the block laying was done by special men, but during most of the work excavation and block laying were done by the same men.

As soon as the sewer on each side of a shaft was completed, the manholes and drop connections were constructed. The contractors were allowed to use the block form of construction in the lower half of the sewer passing through the manhole. The shaft timbering was drawn as the work of building the chambers leading to the surface progressed. Both outside and inside forms were required in building the manhole barrel and drop connections. Part of the former was removed as the work progressed, and before the back filling was placed. The inside forms were removed from below.

The engineering organization of the work is represented in the diagram below:—

City Engineer,

|

Assistant Engineer in Charge of Sewerage and Drainage,

|

Resident Engineer in charge of Tunnel Sewer,

|

Instrument-men. Inspectors.

In setting out line, the general method employed was to suspend, by means of piano wire, two 20-lb. plumb bobs down the shaft, these being immersed in a pail of oil. The two wires were brought into line at the surface by means of a transit, which was then taken below and the line extended into the tunnels. The level was transferred down the shaft by means of a steel tape, the point so obtained being used as a bench mark in giving grade. As the two faces approached within 10 to 15 feet, an opening was driven through to allow the meeting of grades and alignment to be checked. No adjustments were necessary, as all faces met both in alignment and grade with almost perfect accuracy.

Progress charts were made and brought up to date every two weeks, the progress of each two weeks being shown in color, so as to make comparisons easy. The character of the ground passed through was also shown, chiefly as a matter of record, although it served also to explain many variations in the rate of progress.

The work was divided into several contracts, and was executed by Manders and Gregory, D. McGarry & Co., and H. C. Ulen Co. The Midland Construction Co. had a sub-contract from the H. C. Ulen Co.

REGULATION OF VEHICLE LOADING.

THE bill to regulate the load of vehicles operated on highways, introduced a few weeks ago into the Ontario Legislature by Geo. S. Henry, M.P.P., is reproduced below. Believing that a discussion of its contents by road engineers is advantageous at this stage, editorial reference is made to it elsewhere in this issue. The bill is as follows:—

His Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:—

1.—(*a*) In this Act "highway" shall include bridge.

(*b*) "Vehicle" shall include traction engine, trailer and motor vehicle.

2.—(1) No vehicle shall be operated and no object shall be moved upon wheels, rollers or otherwise over or upon any highway in any municipality in excess of a total weight of twelve and a half tons, or of four tons on any one wheel, including the vehicle, object and load, without first obtaining a permit as provided by section 3.

(2) No vehicle shall be operated or object moved over or upon such highway which has any flange, rib, clamp or other device attached to its wheels or made a part thereof which will injure the highway, and in any municipality other than a city, no vehicle, object or contrivance for moving heavy loads shall be operated or moved upon or over any such highway the weight of which resting upon the surface of said highway exceeds six hundred pounds upon any inch in width of the tire, roller, wheel or other object, without first obtaining such permit, unless such highway is paved with brick, block, bituminous surface or concrete base or concrete pavement.

(3) The owner, driver, operator or mover of any such vehicle, object or contrivance who has obtained the permit mentioned in section 3 shall nevertheless be responsible for all damages which may be caused to the highway by reason of the driving, operating or moving of any such vehicle, object or contrivance.

3.—(1) The municipal corporation or other authority having jurisdiction over the highway may, upon application in writing, grant a permit for the moving of heavy vehicles, loads, objects or structures in excess of a total weight of twelve and a half tons over said highway or for operating or moving over any such highway any vehicle, object or contrivance the weight of which resting upon the surface of said highway exceeds six hundred pounds upon any inch in width of tire, roller, wheel or other object.

(2) Such permit may be general or may limit the time and the particular highway which may be used, and may contain any special conditions or provisions which may be deemed necessary for the protection of said highway from injury.

4.—(1) No steam traction engine, with or without trailers, and no motor truck carrying a weight in excess of four tons, including the vehicle, shall be operated upon any such highway at a speed greater than fifteen miles an hour; and no such vehicle carrying a weight in excess of six tons, including the vehicle, shall be operated upon any such highway at a speed greater than six miles an hour when such vehicle is equipped with iron or steel tires, nor greater than twelve miles an hour when the vehicle is equipped with tires of hard rubber or other similar substance.

(2) The municipal corporation or other authority having jurisdiction over the highway may make regulations limiting any vehicle passing over a bridge to a speed not exceeding six miles an hour, provided that notice is posted up in a conspicuous place at each end of the bridge.

5. Any person who contravenes any of the provisions of this Act or any regulations made or permits granted under the authority thereof shall incur a penalty of not more than $100, recoverable under the Ontario Summary Convictions Act, which shall be paid to the municipal corporation or other authority having jurisdiction over the highway, and shall form a fund for the maintenance and repair of the highway.

6. Nothing in this Act shall affect the provisions of the Motor Vehicles Act or the Traction Engines Act.