

of steel, which is capable of hauling a train of loaded freight cars four and three-quarters miles long, *if the cars would stand it*. Bridges have been strengthened to the extent of 30 per cent. axle-load capacity in the past ten years, which means that most of them have been renewed with steel.

Heavier rails and fastenings call for steel, steel.

Have we not found in this, therefore, the ideal basis for co-operation between our great industries? You have only to do your part. We *must* do ours.

## NEW D. L. & W. FREIGHT STATION AT UTICA, N. Y.

The new Delaware, Lackawanna & Western inbound freight house at Utica, N. Y., embodies a number of advanced features of design for this type of building. It is 51 ft. 4 in. wide and 402 ft. 4 in. long, the frame work being of reinforced concrete with the panels filled in with brick. The main floor contains a freight room 382 ft. 8 in. long and 48 ft. wide, and a public lobby, cashier's office, and locker and lunch rooms occupying 20 ft. of space for the entire width in one end of the building. A second

The freight doors along both sides of the building are counter-balanced and are equipped with the Wilcox horizontal bearings. They are 10 ft. wide and 8 ft. high, and are covered by canopies 9 ft. 4 in. wide, consisting of a steel frame supporting a concrete slab. In order to improve the lighting in the freight room the roof is raised high enough to provide for a row of Lupton steel sash above the canopy on each side of the house. Ventilation is also secured by the installation of the Pond operating device for a portion of the sash. The higher roof allows the use of a deeper and correspondingly lighter steel roof truss. The clear height under the trusses is 10 ft., and their depth at the walls is 6 ft., this being increased by the roof pitch of  $\frac{3}{4}$  in. per foot to 7 ft.  $6\frac{3}{4}$  in. at the ridge. Timber purlins over these trusses carry the 2 in. plank roof which is covered with a surface coat of tar and gravel. The roof on the office portion consists of a concrete slab carried by reinforced concrete beams and girders. An 8 ft. concrete platform on the track side is carried on the house foundation and a 12 in. wall under the outer edge.

The freight room is divided by three fire walls of brick with tin covered doors equipped with the Wilcox fixtures. The building is fitted with both gas and electric light. The offices on the



New Inbound Freight Station on the Lackawanna at Utica, N. Y.

story covers 82 ft. 4 in. of the length, containing private offices for the freight agent and the chief clerk, a general clerk's office, and a file room. A basement is provided under the office portion of the building, in which the heating and lighting plants are located. A new house, identical in most of the details, has also been built in Syracuse, N. Y.

The basement walls are of concrete, 1 ft. 8 in. thick with spread footings to keep the bearing pressure on the soil within the allowable maximum. The walls above the main floor level are 1 ft. thick with pilasters at 20 ft. intervals. The outer surface of the concrete walls is bush hammered. A timber floor is used in the freight room laid directly on a cinder fill. It consists of a  $\frac{3}{4}$ -in. maple wearing surface on creosoted planks running diagonally over creosoted sleepers. The wearing surface will be replaced when it has worn down  $\frac{1}{2}$  in. This floor is pitched  $\frac{1}{4}$  in. to 1 ft. towards the street side to assist in moving freight. A scale is provided in the floor of each bay. A concrete floor is used for both the first and second stories in the office portion of the building, interior column supports being provided in line with the pilasters.

second floor are well lighted by windows on three sides and are ample in size to care for all requirements. The record room is fitted with cases in which can be filed all records for seven years. A dumb waiter connects the two floors for the transfer of bills, receipts, etc., between the clerk's office and the cashier. The portion of the freight room under the offices is kept warm in the winter by the steam pipes under the platform on the car side and perishable freight is stored in this bay.

Adequate fire protection, viz., a hydrant and hose stored in a rack, is provided in each bay. Toilets and wash room are also installed for the freight handlers, on the house floor, and separate toilets, locker rooms and lavatories for the male and female help in the offices.

Three tracks parallel the house and team tracks with a total capacity of about 74 cars join one end of the house. The driveways between the team tracks and along the house are paved with granite blocks.

This freight house was designed and built under the general direction of G. J. Ray, chief engineer, F. J. Nies, formerly architect, and C. E. Wickham, division engineer.