The New Michigan Central Yard at Detroit

Design and Construction of a 5,500-Car Classification Yard to Be the Third Operated by This Company in Detroit

Although the Michigan Central already operates two yards in Detroit and one just across the river in Windsor, Ont., for the collection, classification and distribution of freight, the company has pushed with unusual speed during the past year the construction of a new classification yard at West Detroit with a capacity of about 5,500 cars. Before the construction of the Detroit river tunnel connecting Detroit with Windsor, very little main line classification was handled here on account of the lack of yard facilities, although the fact that the Bay City and the Toledo branches connect with the main line at Detroit makes this a natural point for such classification. The plans for the improvements made in connection with the building of the tunnel included a classification yard with a capacity of about 3,500 cars on the Windsor side, this location being adopted on account of the impracticability of securing property for a yard in the industrial district along the main line between the Detroit portal of the river tunnel and Bay City junction, where the line branches. A description of the Windsor yard was published in the Railway Age Gazette of August 18, 1911. The River Rouge yard on the Toledo division and the North yard on the Bay City line, both of comparatively small capacity, help materially to relieve the congestion in the Windsor yard by handling most of the local business for the branches on which they are located, but the amount of business originating in the industrial district of Detroit has increased so rapidly that none of the roads serving the city have been able to develop fast enough their facilities for handling it.

While the necessity for added yard room in properly handling this local business was the most important factor in the decision to build a new yard in West Detroit, the capacity and arrangement of this yard was designed to handle a large amount of main line classification so as to still further relieve the Windsor yard. A very small yard had been operated west of Bay City junction on the main line, and as the location was well suited to the purpose for which the new yard was needed, the same site with the necessary additional property has been used. The location is very favorable for relieving the local situation on account of the fact that the new outer belt line, owned jointly by the Michigan Central, the Grand Trunk and the Lake Shore and operated by the Detroit Terminal, crosses the Michigan Central main line just west of the west end of the new yard and will serve to bring directly to the yard a large amount of the freight originating along the belt line and will also furnish a short connection with the River Rouge yard. As an indication of the amount of freight which originates in Detroit, the Michigan Central requires 95 switching crews every 24 hours to deliver empty cars and pick up loaded ones from the industries along its various lines in the city.

ARRANGEMENT OF YARD

The new yard is located entirely to the south of the four-track main line which will be straightened to eliminate a curve that was necessary to carry it around the old yard. The arrangement is extremely compact. The property occupied by the yard has an extreme length of 2.1 miles and includes about 75 acres. The classification and receiving yards for opposite directions are placed side by side in the usual manner with the two humps near together between the two groups. The space alongside the humps is occupied by repair tracks and a complete engine terminal is located at the east end of the yard. Large car shops adjoin this engine terminal, although these were not a part of the yard development. The old engine house at this location was replaced by a new one immediately previous to the construction work on the yard.

The westbound receiving yard has 10 tracks with a total capacity of 792 cars and is divided near the middle by two sets of crossovers to allow a larger number of short drags from local industries to be pulled in and pushed over the hump separately if necessary. The westbound classification yard has 25 tracks with a total capacity of 2,231 cars. In order to provide for the large number of classifications of westbound business that are necessary, without further widening the yard, 14 of the 25 tracks are cut by two parallel and adjacent ladders, dividing these tracks into lengths of about 50 and 40 cars capacity, respectively. The eastbound receiving yard has nine tracks with a total capacity of 865 cars. The design of this yard provided for two sets of crossovers similar to those in the westbound receiving yard, but these were not built. The east-
bound classification yard has 33 tracks with a total capacity of 1,676 cars, these tracks being arranged on three ladders leading from the hump in order to utilize the available space to the best advantage.

The grades over the humps have been fixed from experience gained in operating the Windsor and the River Rouge yards, the accelerating grade having been made 3 per cent. as compared with 2.5 per cent, in the Windsor yard. The 200 ft. of 3 per cent. grade at the top of the hump is followed by 200 ft. of 1.5 per cent. and then about 500 ft. of 1 per cent. grade. The remainder of the eastbound yard is on a 0.3 per cent. or a flat grade and 0.25 per cent, and flat grades are used in the remainder of the westbound yard. The receiving yards are level through the greater part of their length, the approach grades to the hump being 0.8 per cent. and 1 per cent., the choice being principally governed by the necessity for providing clearance over Central avenue and Lonyo road. The type of hump engine to be used on these grades has not been definitely decided, although it will probably be either a decapod similar to the ones used in the Windsor yard, or a Mallet.

The complete yard contains about 73 miles of track and 374 switches. All crossovers and frogs are No. 9 with a ladder angle of 9 deg. 42 min., except in two cases at the outbound end of yards, where 9 deg. 1 min. is used. Manganese frogs and Ajax manganese guard rails are standard. The space between tracks in the yards is generally 13 ft. and 15 ft. alternately, with wider spaces in some cases along thoroughfare tracks and the leads to the engine terminal. The yard tracks are laid with second hand 80-lb. rail on oak ties with gravel ballast. The yard is lighted with flaming arc lights. Track scales will be provided in the classification yards on independent tracks with level grades.

ENGINE TERMINAL

The layout of the engine terminal is very complete and convenient. An ample number of thoroughfare tracks and engine leads are provided throughout the yard to facilitate the movement of engines between the yards and the engine house and to the transfer house, stock yards and repair shops. The work on the new coaling station and clinker pits was pushed as rapidly as possible to allow the old engine facilities located a short distance north of the new ones to be removed, which in turn would allow the new leads to be put in service. Considerable shifting of the roundhouse leads was required in order to handle this development and during the time required to build the new engine terminal facilities filling operations were concentrated on that part of the classification yard west of the old leads. The accompanying photograph, which was taken from the top of the new coaling station looking west, shows the tracks laid in the eastbound classification yard as far as this new fill had been completed. With the new engine terminal in service, practically all of the necessary leads can be carried through and south of the terminal so as to allow the remainder of the classification yard and the westbound receiving yard to be finished.

The construction of the yard included the separation of grades at two street crossings, Central avenue and Lonyo road, both of which cross under the hump approaches. Two structures are required for the yard tracks at each street. The approach to the westbound hump is carried over Central avenue on a single track structure and the leads from the eastbound hump to the classification yard are carried over that street on a seven-track structure. As the street is only 60 ft. wide, columns were provided on the curb lines only. The piers and abutments are of reinforced concrete, the pier caps and the deck being of I beams encased in concrete. Two double-track bridges are required over Lonyo road, these bridges having both curb and center piers, as the street is 66 ft. wide. The type of construction is the same as the Central avenue bridges. About 4,000 cu. yd. of concrete was required for these bridges. The only other important concrete work in the yard was the extension of a 16-ft. reinforced concrete arch culvert carrying Baby creek under the yard. This required about 3,800 yd. of concrete.
Plan and Profile of the New Yard Showing Also Location of Old Tracks in the East Half

Note.—Same scale is used for plan and profile allowing points to be projected vertically from one to the other.