

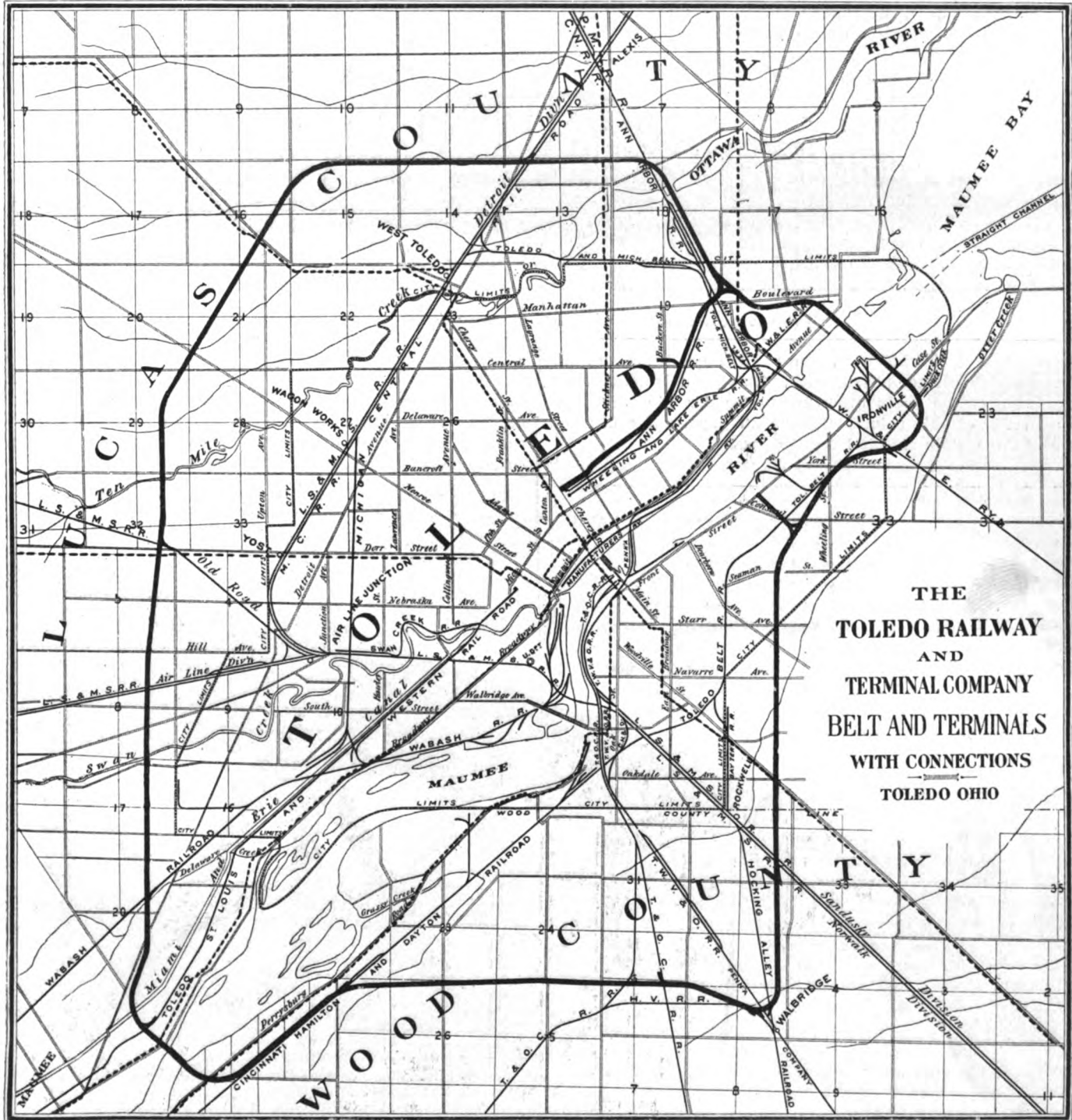
THE TOLEDO RAILWAY & TERMINAL COMPANY.

The lines of the Toledo Railway & Terminal Company, constituting a belt around the city of Toledo, O., and necessarily crossing the lines of all steam and electric railroads entering that city have recently been completed. By this it is not meant to state that the line is in the shape to which it will finally come, but a connection has been made and the line is now in operation. The accompanying map will give

where the new and substantial terminal station is located. This makes a total of 31 miles, upon which single track has already been laid and which it is the intention to lay with double track as soon as circumstances will warrant.

Beginning from the Cherry street station the line has at Buckeye street a branch serving four exclusive industries and a connection with the Ann Arbor Railroad.

At the "Y," by which connection is made with the belt proper, are located shop, roundhouse and other terminal fea-



TOLEDO RAILWAY & TERMINAL COMPANY—DOTTED LINES SHOW ELECTRIC RAILWAYS.

a general view of the situation so far as this company is concerned.

The most important feature of a line of this nature is the number and character of the connections which it makes with other lines. A brief statement of these connections will show that the facilities offered by this terminal railway are of the first order in the matter of convenience. The belt line proper consists of a line 28½ miles entirely encircling the city, and with a branch of 2½ miles to Cherry street,

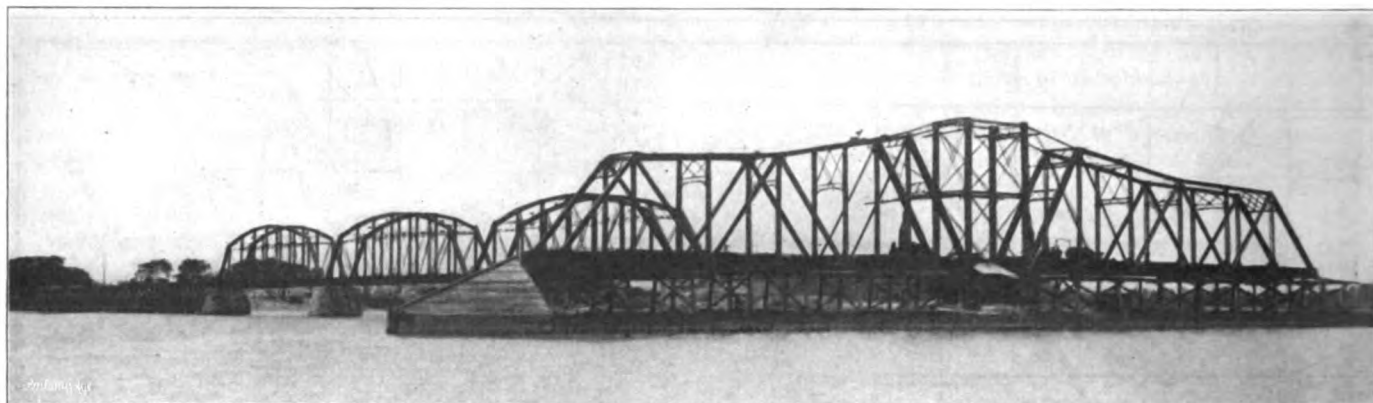
tures. At this point it is probable that a connection will eventually be made with the Shore Line Electric Railway, the Grand Trunk and the Clover Leaf.

At Ottawa River a connection is made with the Pere Marquette.

At Stickney avenue, just beyond this point to the left, is a connection with the Detroit Toledo & Monroe Short Line (an electric railway). At a point known as Tower K, just to the west, a connection is made with the Michigan Central,

and at Fitch connection is made with the Toledo & Western Electric Railway. At a new station known as Vulcan, and which is indicated on the accompanying map by Dorr street, connection is made with the Toledo Angola & Western Railway, a steam road, and with the Toledo & Indiana Electric road. This is the new location of the Vulcan Iron Works. At a point known as Nasby connection is made with the

here on what is known as the upper bridge, a crossing is made with the Toledo & Maumee Railway on each side of the river. At Bates, just south of the Maumee River, is a connection with the Cincinnati Hamilton & Dayton, and from this point also extends a branch to the Edward Ford Plate Glass Company's works, 2½ miles. This is an important industry.



TOLEDO RAILWAY & TERMINAL COMPANY—LOWER BRIDGE, MAUMEE RIVER.

Lake Shore & Michigan Southern Air Line, being the old line from Toledo to Adrian, Mich. This point is actually an extension of the yards belonging to the Air Line Junction. Just south of this point is located an important consumer, namely, the State Hospital for the Insane.

Connection is made with the Wabash Railroad at a point

Continuing on the circuit to the east, at a point known as Hickox, passenger connection is made with the Toledo & Ohio Central, and at Stanley, just beyond, is the freight connection. These points are clearly shown upon the accompanying map. At Walbridge the direction of the line turns substantially at a right angle, and at this point are separate



TOLEDO RAILWAY & TERMINAL COMPANY—UPPER BRIDGE, MAUMEE RIVER.

which has been named Gould and just beyond this point at a place indicated on the map by the intersection of Detroit avenue, is a connection with the Toledo Urban & Interurban, which is an extension of the Toledo Bowling Green & Southern Railway. At Copeland is a connection with the Toledo St. Louis & Western.

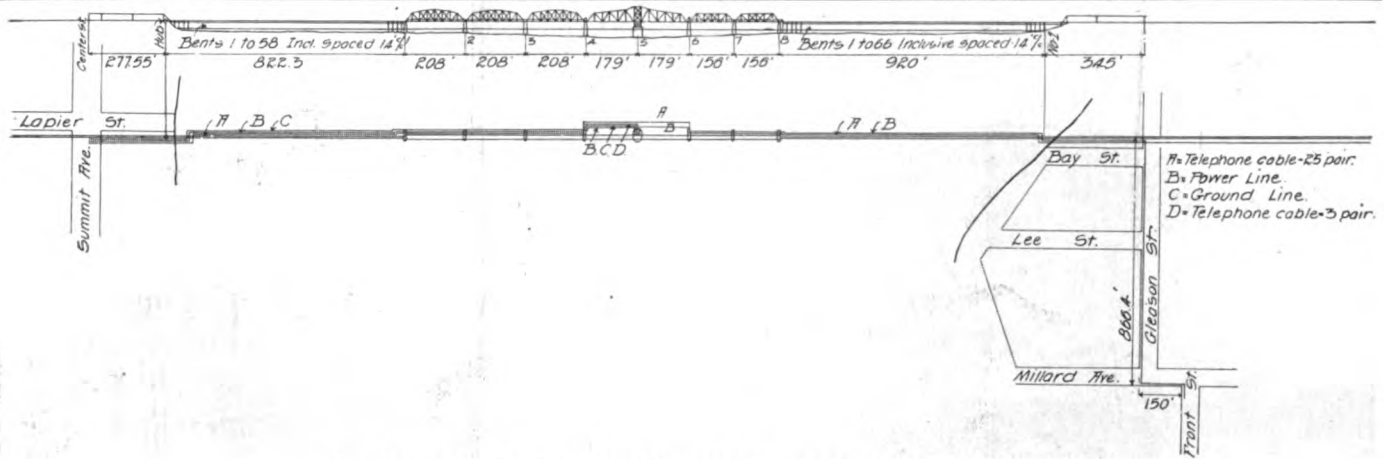
On both sides of the Maumee River, which is crossed

freight and passenger connections with the Hocking Valley Railroad and also a freight connection with the T. W. V. & O. line of the Pennsylvania Company.

A short distance north of this point is the crossing of the Sandusky & Norwalk division of the Lake Shore & Michigan Southern, with which it is expected that a freight connection will eventually be made. At Woodville street, shown upon

the map, is also a crossing of the Lake Shore Electric Line between Toledo and Cleveland. At Starr avenue is a crossing of a projected line from Toledo to Port Clinton, O.

the Toledo Furnace Company and connection with the lines of the Maumee Connecting Railway Company. This line also gives access to the yards of the Craig Ship Company and other industries in this vicinity. At this point also negotia-



TOLEDO RAILWAY & TERMINAL COMPANY—ELEVATION AND PLAN OF LOWER BRIDGE.



TOLEDO RAILWAY & TERMINAL COMPANY—TRESTLE OVER DUCK CREEK.



TOLEDO RAILWAY & TERMINAL COMPANY—TRESTLE OVER SWAN CREEK.

Paine station, connection is made with several industries and a branch is extended to the northwest for the development of dock property known as the Toledo & Riverside Railway. There is also at this point the beginning of what is known as the Blast Furnace spur to reach the works of

tions are about completed for interchange tracks with the Wheeling & Lake Erie. At Bay street the line reaches the works of the Craig Refining Company, and thence passes across the Maumee River to Manhattan boulevard, which is the location of the shop and roundhouse before mentioned.

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Perhaps the most noticeable feature in this entire construction is the substantial character of the work. To a certain extent this is indicated by the accompanying engravings from photographs showing the various views of the bridges

has a drawspan in the center 253 feet in length, and on each side of this are four spans, each 145 feet long, and at either end are steel girder approaches 40 feet in length. The height from base of rail to water level is 58 feet.



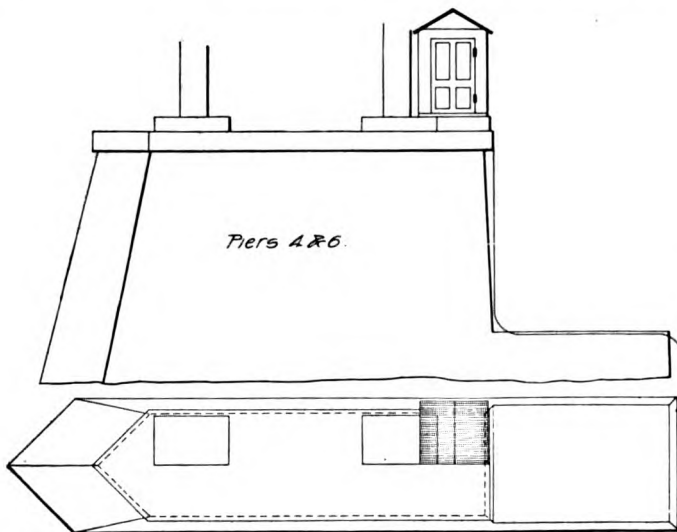
TOLEDO RAILWAY & TERMINAL COMPANY—WATER TANK.



TOLEDO RAILWAY & TERMINAL COMPANY—INTERLOCKING TOWER.

As previously stated, it is the ultimate intention to double track the entire line, and for this reason the piers of the

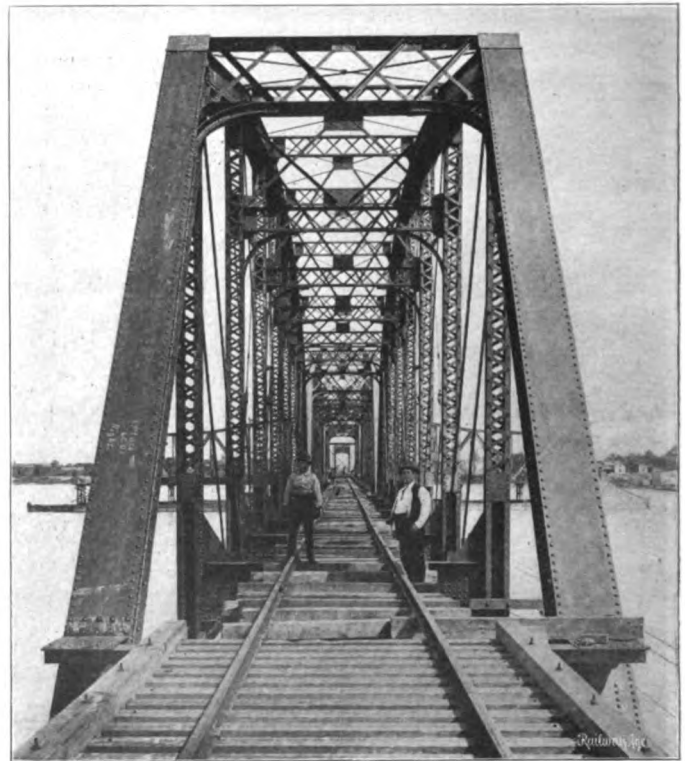
and trestles which are found upon the line. The principal bridge structure is that known as the lower bridge over the Maumee River. This consists of five spans, three of 208 feet each, two of 256 feet each, and a drawspan of 358 feet, with approaches on either side of trestle work 920 feet and



TOLEDO RAILWAY & TERMINAL COMPANY—DETAIL OF WIRING ON BRIDGES.

822 feet, respectively. The substructure consists of concrete piers made of Wyandotte Portland cement, resting upon a solid limestone ledge, which forms the bottom of the river.

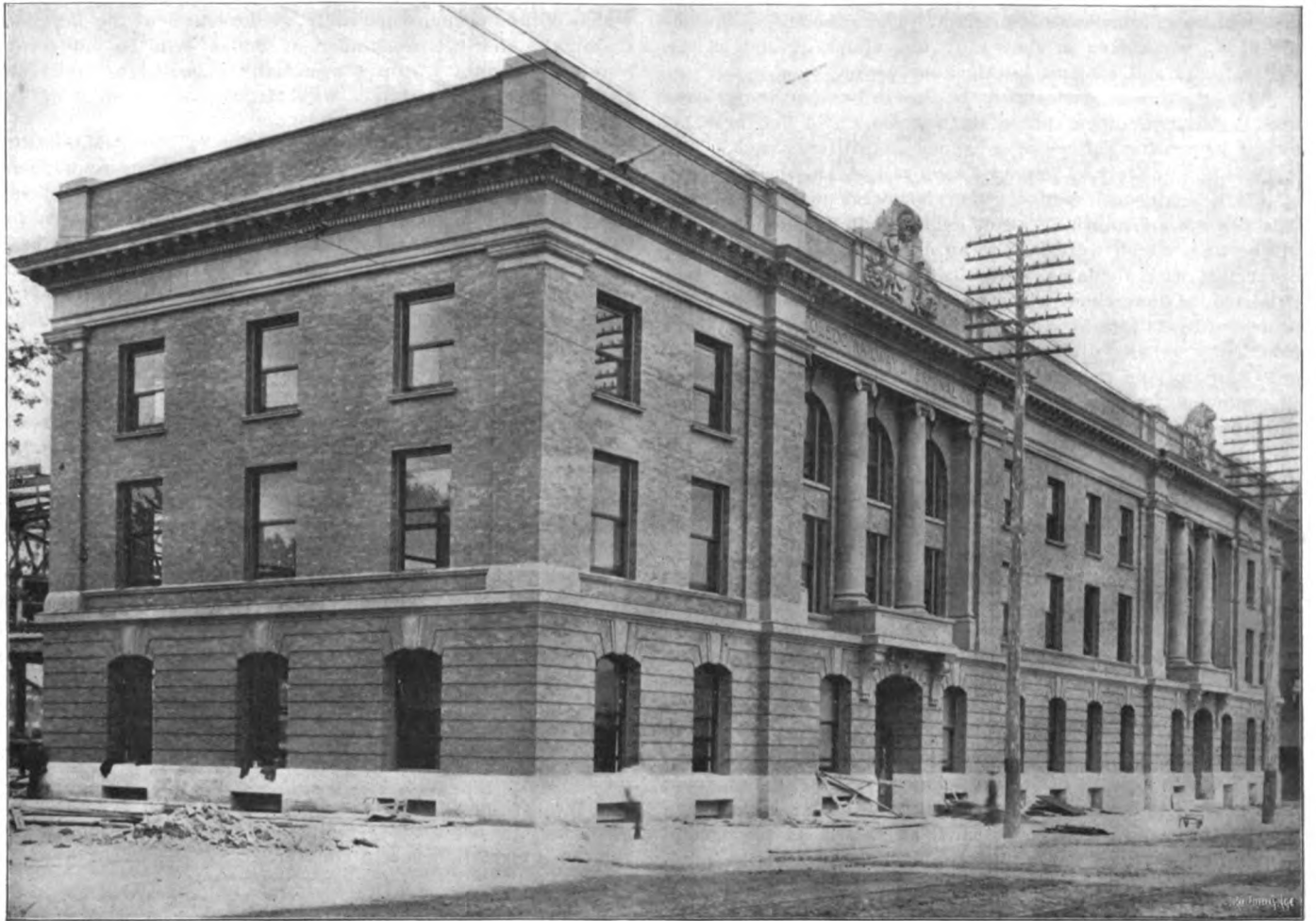
The upper bridge has a total length of 1,490 feet. It



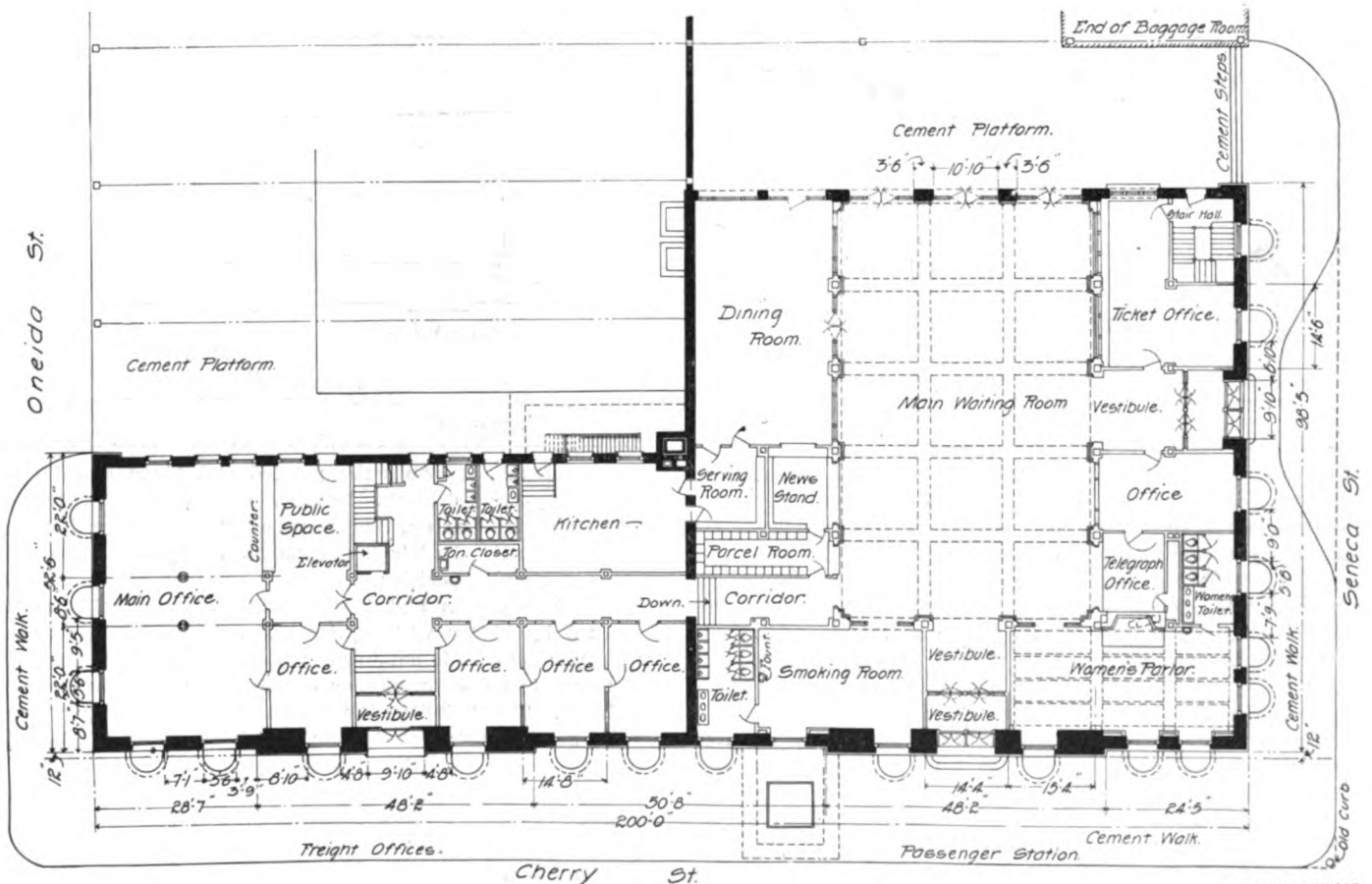
TOLEDO RAILWAY & TERMINAL COMPANY—PORTAL OF LOWER BRIDGE.

bridges have been extended up to the water line to a sufficient width to take care of the added structure.

The line is provided throughout with telegraph and telephone lines and the manner in which these lines are strung



TOLEDO RAILWAY & TERMINAL COMPANY—NEW FREIGHT AND PASSENGER STATION.



TOLEDO RAILWAY & TERMINAL COMPANY—GROUND PLAN OF TERMINAL STATION.

THE RAILWAY AGE

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upon the lower bridge is shown in one of the illustrations and will be of considerable interest. The substantial character of all structures is shown by the views of one of the water tanks and also an interlocking tower.

The maximum grade upon the line is two-tenths per cent and the maximum curvature six degrees. The line now includes 10 passing sidings of a capacity of 70 cars each. The track is laid entirely of 70-pound steel rail of American Society of Civil Engineers' section, with 55-pound rail on sidings. The ties are substantially all of oak, except on some portions of the line, which were laid at an earlier date and these are cedar ties with tieplates. Practically the whole line is rock ballasted. Connections with the various lines mentioned are protected by 13 interlocking plants, whose equipment has been practically equally divided between the Union Switch & Signal Company and the Pneumatic Signal Company. One point is protected by apparatus furnished by the Taylor Signal Company. The equipment at the present time consists of four locomotives, with six additional to be delivered within a short period, and 101 cars, consisting of flat, gondola and Rodger ballast cars.

One of the particularly interesting features of this new railroad is the terminal station which is now nearly completed. Its location is on Cherry street, in close proximity to the terminal stations of the Ann Arbor and the Wheeling & Lake Erie and at a point which has been mentioned as the ultimate terminus of the Wabash Railroad at such time as its entrance into Toledo is completed. This station is a substantial structure, the main building covering a ground area of 200 by 95 feet, of which 86 feet by 95 feet is devoted to passenger service. The remaining portion of the building extends back to a depth of 52 feet 6 inches and is 104 feet long. This portion is devoted to freight purposes. The main structure is three stories in height and, as shown by the accompanying engraving from a photograph, is an unusually handsome structure. The claim is made for the building that it is one of the most thoroughly fireproof that was ever erected; in fact, there is absolutely no woodwork about the building except the floors and casings.

Back of the main structure extend two parallel trainsheds, 352 feet in length, and each containing five tracks.

rooms above are divided into large and well finished offices, which will be occupied partially by the offices of the Terminal Company, and the remainder of which will be subject to rental to tenants who are eventually expected to make use of the line. The architect was Mr. George S. Mills of Toledo, O.

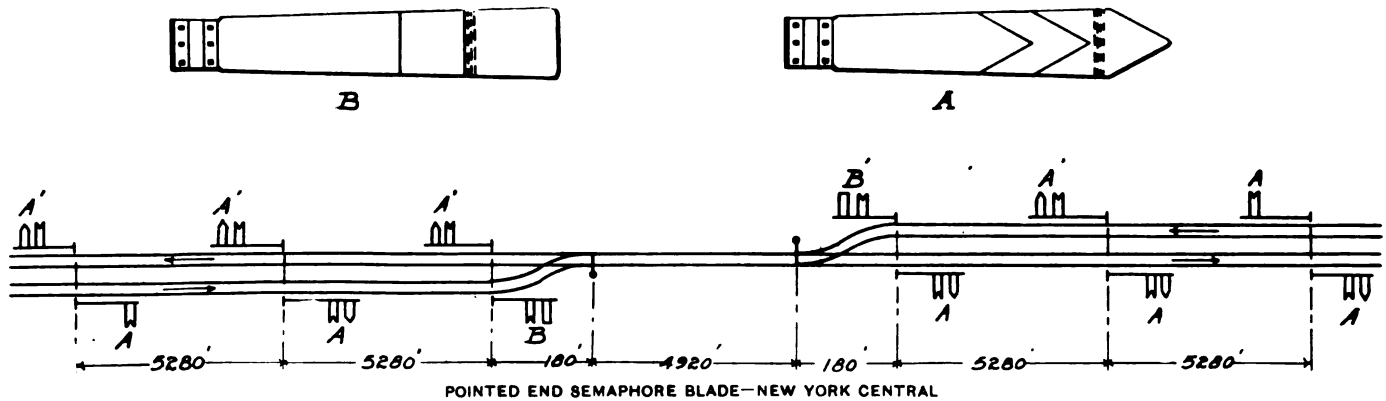
It has been mentioned that at the "Y" near Manhattan boulevard are located shop and roundhouse. The roundhouse is a brick structure containing eight stalls, with concrete floors and pits and the usual number of modern conveniences for this purpose. The shop, though small, is very well arranged and should afford ample facilities for caring for the motive power owned by the line.

The intention of the company is to afford accommodations for such of the roads entering Toledo as may desire to avail themselves of ample facilities for interchange with other lines and for their own terminals. Satisfactory arrangements have already been made with a number of these roads and it is expected that others will appreciate the advantages thus afforded and enable this line to become what it is designed to be, namely, a clearing house for all lines, both steam and electric. In addition to this, the company owns a large amount of property which can be devoted to industrial purposes and for whose use ample transportation facilities are thus afforded. The scheme has been carried out on a bold basis and the work thoroughly done. The officers of the company are: Mr. H. E. King, president; Mr. T. H. Tracy, vice-president; Mr. T. F. Whittelsey, general manager; Mr. F. M. Cramer, traffic manager; Mr. L. P. Harris, general agent industrial department; Mr. E. A. Williams, Jr., auditor; Mr. J. G. Glazier, trainmaster, and Mr. H. P. Latta, master mechanic.

We are indebted to Mr. T. F. Whittelsey, general manager, for the opportunity to inspect the line thoroughly and for the information herein contained.

POINTED SEMAPHORE BLADE ON THE NEW YORK CENTRAL.

The New York Central has recently standardized the use of a pointed end semaphore blade to govern permissive blocks. The form and manner of use are shown in the accom-



The five tracks opposite the freight portion of the building are devoted to freight purposes and have adjacent thereto and under the shed a cement platform 39 feet in width. On the opposite side and forming an extension of the passenger portion of the building are baggage and express rooms, the entering tracks being shortened to give proper space for this purpose. Between each of the tracks on the passenger side are laid concrete platforms 12 feet 4 inches in width, the spacing of the tracks being 22 feet 4 inches from center to center. The freight portion is divided from the passenger by a 13-inch brick wall, with iron columns supporting the roof trusses. At the present time the freight trainshed is completed and work is beginning upon the passenger trainshed.

The distribution of space on the ground floor is shown upon the accompanying plan. This shows the usual divisions for passenger service and also convenient offices for the transaction of the public part of the freight business. The

accompanying sketch, A being the pointed end blade and B the ordinary square end blade. In use the pointed blade is understood as giving the engineman permission to proceed under full control, after he has first come to a stop, when the arm is in a horizontal position.

Absolute blocks and home signals at interlockings are governed by blades with square ends, which indicate to an engineman that he is not to pass them except when properly authorized to do so by written orders or by flagging through the block. The value of the pointed blade is clearly shown in the accompanying sketch, in which the pointed blade is used in conjunction with automatic signals at A on the double track, while the square end blade is used at B to protect the piece of single track which connects the two double tracks.

The Great Northern will build a frame passenger station 60 by 30 feet at Adrian, Wash.

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