staff. President Willard was in the city and expected to attend the luncheon but was called away by business. Mr. Thompson, in his remarks, urged the Baltimore & Ohio men individually and collectively to take an interest in the work and participate in the discussions of the Association, saying that this would be beneficial both to them personally and to the road. It is an interesting fact that the Baltimore & Ohio has more representatives among the members of the Association than any other railway. Mr. Thompson is among them, being a director in the Association.

STUDENTS VISIT THE EXHIBIT.

Students from the technical schools in and near Chicago are finding the Coliseum a great attraction this week, and many of them are taking advantage of the opportunity there presented to see the latest and best in railway supplies. Northwestern University, Armour, Purdue, Illinois, Wisconsin and Indiana are particularly well represented.

LARGE CROWD AT THE COLISEUM.

The attendance at the Coliseum on Wednesday afternoon broke all records for this year, and compared favorably with even the highest attendance last year. During the latter part of the afternoon, especially, the exhibits both on the ground floor and in the balconies were well filled. The association adjourned soon after 4:00 o'clock, and many of the members went to the Coliseum.

NEW PURCHASING AGENT OF THE NEW YORK CENTRAL.

Sydney B. Wight, purchasing agent of the New York Central & Hudson River, has been appointed general purchasing agent, succeeding F. H. Greene, whose resignation has been announced in the Railway Age Gazette. W. C. Bower, chief clerk in the office of the president, succeeds Mr. Wight, with office at New York.

A MEMBER CRITICIZES ENTERTAINMENT FEATURES OF THE SMOKER.

W. F. Steffens, engineer of structures of the Boston & Albany, yesterday sent the following letter to President L. C. Fritch:

Chicago, March 22, 1911.

Mr. L. C. Fritch, Pres. American Railway Engineering and Maintenance of Way Association,
Chicago, Ill.

Dear Mr. Fritch:—

Following out the policy of the association as to full discussion of the various matters affecting its interests, I should like to present a personal view of the "smoker" held Tuesday evening.

The fundamental idea of the "smoker," so well known in engineering societies, is an informal gathering at which members and their guests may mingle for conversation and light entertainment, with the usual accessories of refreshments and smoking included. The idea of this association incorporating a "smoker" evening is thoroughly appreciated by the members.

As an individual member, voicing, however, the thought of several other members, I wish to emphatically protest against a recurrence of such vaudeville and low-class comedy features as were introduced last night. It savors too strongly of the ten-cent theatre variety, and in the opinion of some is vulgarity at its best. For future "smoker" entertainments I would suggest that if music is to be provided this be of a high class order as opposed to the street band and hurdy-gurdy sort.

For one, I feel that the entertainment (?) of last evening was an infliction that prevented the members from holding conversation as they had expected would be possible from the announcement.

I have expressed my views freely in the hope that they will be received in the same spirit with which sent, and in the further hope that future entertainments will be of a higher order, as suggested.

Yours very truly,

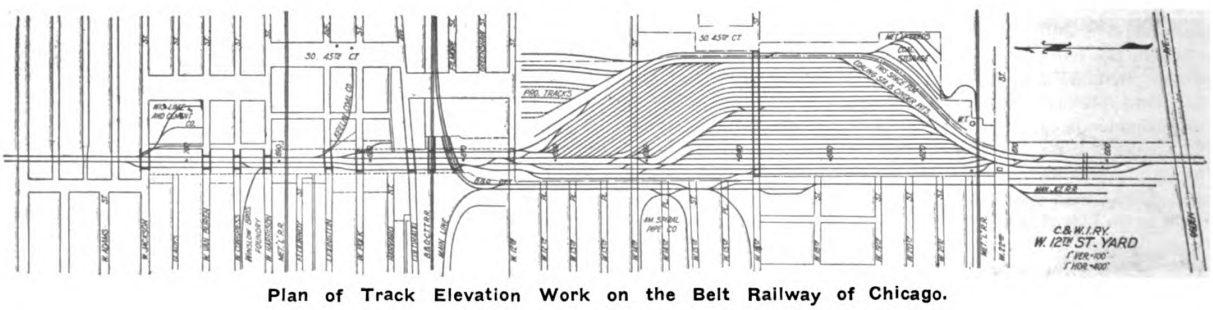
W. F. STEFFENS.

CHICAGO & WESTERN INDIANA TRACK ELEVATION ON FORTY-SIXTH AVENUE, CHICAGO.

The Chicago & Western Indiana is at present completing the work of elevating its Belt Railway tracks between Ogden avenue and Adams street on Forty-sixth avenue, near the western limits of the city of Chicago. The principal work of filling and building abutments for street subways was done during the season of 1910, and only the lining and surfacing of the track, the completion of subway abutments and improvement of the subways remains to be done this year.

This work is on that part of the Belt line which extends from a connection with the Chicago, Milwaukee & St. Paul, near Grand avenue, south on Forty-sixth avenue to Seventy-fourth street. The line has been elevated from its northern end south to Adams street, under the terms of two ordinances, one passed in 1898 and the other in 1902. The line has also been elevated from Ogden avenue to West Twenty-sixth street, provision for this work being made in an ordinance passed September 30, 1882, by the town of Cicero prior to its annexation to the city of Chicago. In addition to the two street subways included in this latter piece of elevation, there is an overhead crossing with the four-track line of the Chicago, Burlington & Quincy just south of Ogden avenue. The work that is now being completed was provided for in an ordinance passed October 22, 1906. It will connect the two sections previously elevated, making a continuous grade on high level from Grand avenue to Ogden avenue.

The Belt line handles a very heavy interchange traffic which requires large classification yards, and to meet the additional requirements in this vicinity a new 23-track yard was built on the new elevation between West Twelfth and West Twenty-



Plan of Track Elevation Work on the Belt Railway of Chicago.

second streets. The accompanying map shows a sketch of the layout of the yard, which is of the "push and pull" type, laid on a level grade. It will have a capacity of 2,000 cars. A water tank, coaling station and cinder pits will be provided at the south end of the yard to care for the switching engines, and switchmen's, car inspectors' and agents' buildings will be provided near West Twenty-second street. The Metropolitan West Side Elevated maintains a coal storage yard adjoining the south end of the Western Indiana yard, coal being delivered from a switching track east of the northbound main track of the Western Indiana. Team tracks are provided at the north end of the yard just south of West Twelfth street.

The building of the yard involved no particular difficulty, as it was only necessary to keep two through tracks open for traffic. A trestle was built from which to start the fill. By shifting the service tracks from one side to the other, the filling was carried on without interrupting traffic. Outside of the yard the method of raising one track at a time and diverting traffic to the other was used. The sand for filling was handled by the railway company in side dump gondolas from Dune Park, Ind., a distance of about 50 miles. The total fill amounted to about 700,000 yds.

The elevation work included the building of 14 subways, two of which were for steam railway crossings, one for the crossing of the Metropolitan Elevated and one for a private subway at the plant of the Western Electric Company. One of the steam railway subways is to provide for the separation of grades at the main line crossing of the Baltimore & Ohio Terminal Transfer. All clearances in street subways are 12 ft. on streets without car lines and 13½ ft. where surface cars must be provided for. The subways are of the Western Indiana's standard concrete abutment and I-beam type, the only special work being at the skew crossing provided for the Baltimore & Ohio Terminal Transfer "Y" connection and the private Western Electric subway.

CHICAGO & ALTON TRACK ELEVATION IN CHICAGO.

An ordinance was introduced in the city council of Chicago last Monday evening for the elevation of the tracks of the Chicago & Alton from South Albany avenue to beyond Kedzie avenue, Chicago, a distance of about three-quarters of a mile. The terms of this ordinance have been agreed to by both the city track elevation department and the railway company, and it probably will be formally passed at the next meeting of the council. Under its provisions the main tracks must be elevated on a temporary structure at Kedzie avenue by September 30 of this year, to provide for the construction of a street car line. By November 30, 1912, the main tracks must be elevated at Washtenaw, California and South Albany avenues, and all main and yard tracks at Kedzie avenue. While only four tracks are to be elevated under this ordinance, eventually the entire Brighton Park yard will be raised. The estimated cost of the work under the main line, including subways, is $750,000, while $500,000 additional will be required for the elevation of Brighton Park yard.

FROM ALL THE FOUR CORNERS OF THE EARTH.

Some very widely separated parts of the world are represented by men who are attending the meeting of the Maintenance of Way Association. Two of the speakers at the dinner last night were William P. Poland, who is from the Philippine Islands, and Sir Thomas R. Price, from South Africa. Among those who come from widely separated parts of North America are G. A. Mountain, chief engineer of the Canadian railway commission, Ottawa, Ont.; B. A. Wood, chief engineer of the Mobile & Ohio, Mobile, Ala.; R. J. Arey, engineer on the Coast Lines of the Santa Fe, Los Angeles, Cal., and Sherman Smith, assistant engineer of the Grand Trunk Pacific at Earl, Sask.

Proceedings.

The Wednesday morning session of the American Railway Engineering and Maintenance of Way Association was called to order at 9:30 o'clock, by President Fritch.

BALLAST.

The following sub-committees were appointed:

Revision of Manual: F. J. Stimson, chairman; W. J. Bergen, C. B. Brown, Jr.

Completing Physical Tests of Stone for Ballast: F. J. Bachelder, chairman; C. S. Millard, C. T. Brimson.

Proper Thickness of Ballast: H. E. Hale, chairman; J. M. Egan, S. N. Williams.

Review Report on Gravel Ballast: J. M. Meade, chairman; J. S. Lemond, C. C. Hill, G. D. Hicks.

REVISION OF MANUAL.

A few minor changes in wording were recommended.

PROPER THICKNESS OF BALLAST.

Some of the reasons for the use of ballast in track construction are:

(a) To provide drainage which will lead any water that may accumulate away from the ties; or to provide a protection for the subgrade from water, as in the case of cementing gravel.

J. V. Hanna.
Chairman, Committee on Ballast.

(b) To distribute the load from the ties more uniformly over the subgrade than would be done if the ties rested directly upon the subgrade.

(c) To provide a material which can readily be "worked" or tamped in all kinds of weather and which will not materially lose its carrying power or change its position as a result of the action of the elements.

The proper depth of ballast under the ties will depend, among other things, upon the following:

(a) The character of the subgrade: (1) rock, (2) firm material, as firm gravel, (3) soft material, as gumbo; (b) the kind of ballast; (c) the number and size of ties per rail length; (d) the stiffness of the rail; (e) the weight and magnitude of the wheel load and the number of applications in a given period; (f) the cost of materials used in construction of the track.

Character of Subgrade.—If the subgrade is of rock it will not be deformed by wet weather and it will carry all the load that can be put upon it by a timber tie; therefore, the depth of ballast required in this case is only sufficient to provide an equal bearing under the tie and sufficient material for tamping purposes.

If the subgrade is soft, then it is necessary to provide a depth of ballast which will produce as nearly as possible a uniform pressure on the subgrade.

Between solid rock and soft material, such as gumbo, there exists material used for subgrade of various capacity for supporting the load of the track. The softer the ma-