

**RAILWAY TERMINALS**

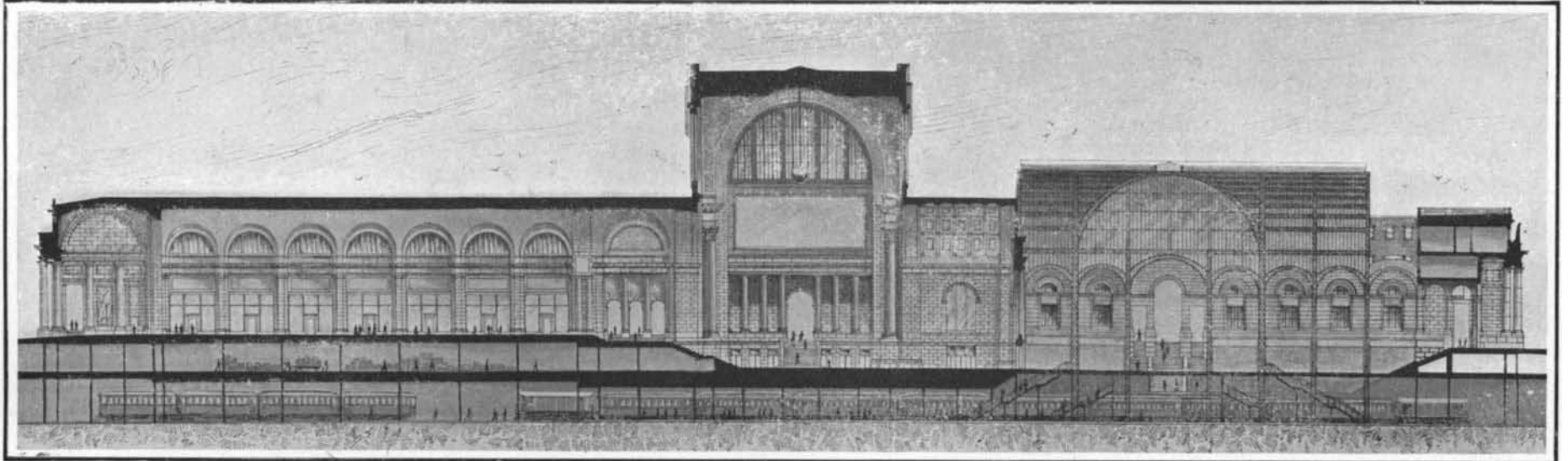
It is a curious anomaly that the leading city in the United States should, at the present time, have but a single trunk line terminal station within its borders; yet it is a fact that of all the great systems, the New York Central & Hudson River Railroad Company, alone, is in a position to run its trains directly into

dertakes work of the kind, the total estimated cost of the approaches, tunnels, and station, etc., being between ninety and one hundred millions of dollars. The tunnel section of the scheme has been handled in a previous chapter on Tunnels and Subways, and the present article will be given up mainly to a description of the great terminal yard and station.

The excavation for the new Pennsylvania terminal station as originally planned had a total width of about 500 feet and an extreme length of slightly over 2,000 feet. Roughly, it included four large city blocks.

ture which forms the subject of our engravings is being erected. It has a frontage on the avenues of 433 feet, and on the streets of 774 feet, the sides of the building forming a perfect parallelogram. Below the surface of the street, and within the area covered by the building, the station will be divided into three levels, on the lowest of which will be the tracks at a depth of 40 feet below street grade.

The question of the architectural treatment of a building of this magnitude, and to be used for this special purpose, was one that called for the most care-



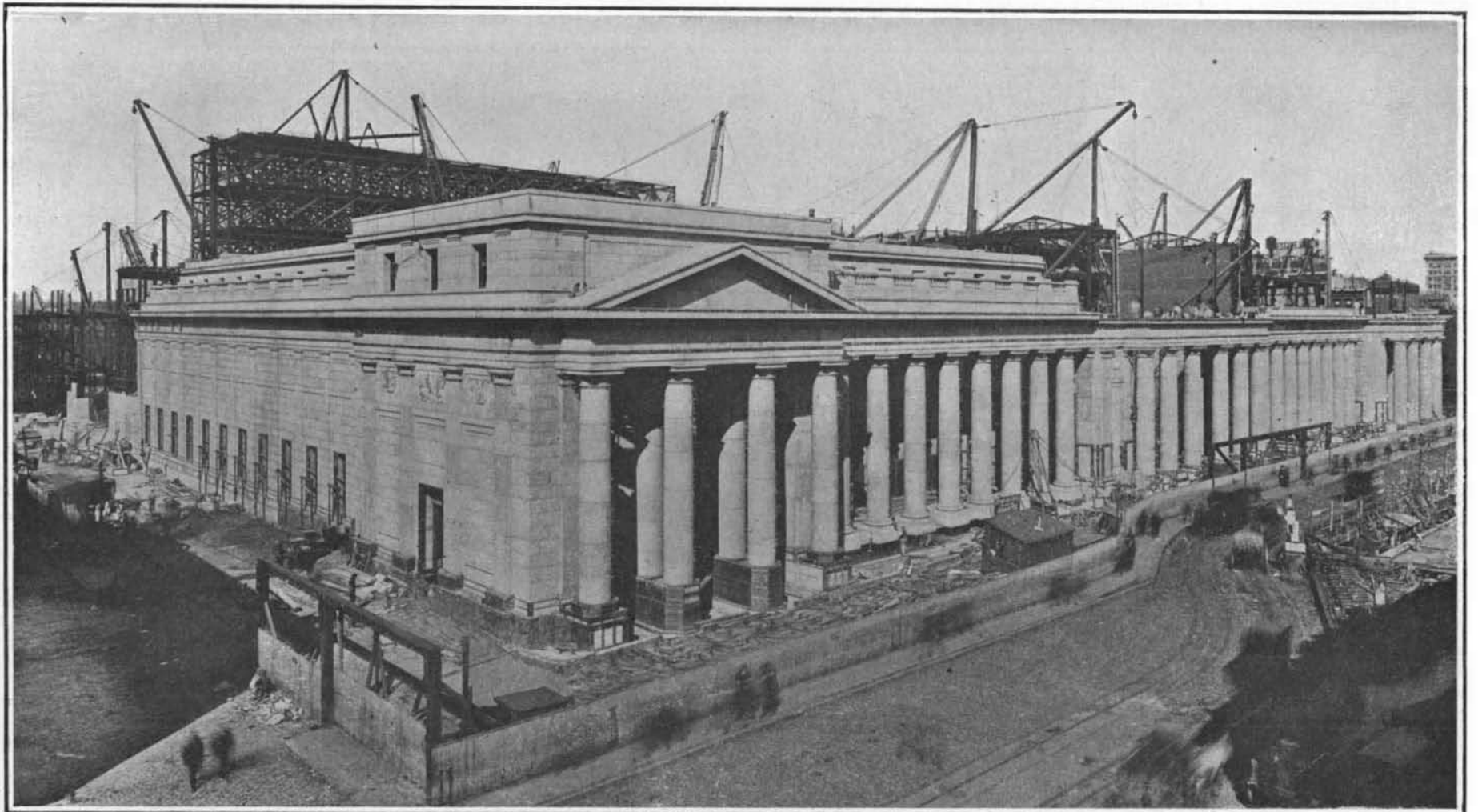
SECTIONAL VIEW OF THE STATION ON A LINE RUNNING EAST AND WEST.

the city itself, the trains of the New York, New Haven & Hartford Railroad entering the same terminal under a rental agreement over the New York Central's tracks. The insular position of the major portion of New York city is responsible for this condition of affairs, the broad waters of the Hudson River having served, up to the present time, as an effectual barrier to prevent the other trunk roads from building their terminal stations on Manhattan Island. The most important of these, the Pennsylvania Railroad Company, after seriously considering the construction of a large railroad bridge across the Hudson with such

Much additional space was subsequently included for the accommodation of a power plant and the tunnel approaches to the station. The present site, which has reached the total area of 28 acres, is bounded by Seventh Avenue on the east, Tenth Avenue on the west, and on the north and south respectively by Thirty-third and Thirty-first Streets. The whole of this area will be covered at the lower level by the station tracks. At the easterly end, the tracks converge from twenty-one to four, and they extend beneath New York city, two of the tracks below Thirty-second and two below Thirty-first Street, ultimately

ful consideration, and New York city is to be congratulated on the fact that the Pennsylvania Railroad Company were willing to forego the opportunity to erect a huge office building above the station site, and preferred to memorialize its entrance into New York city by the erection of a magnificent and purely classic structure, commensurate with the importance of the company and the dignity of the great city in which it has at length found a fitting terminal.

The architectural design of the entire exterior is a Doric colonnade 35 feet in height, surmounted by a low attic, the average height of the elevation being



Length of station building, 774 feet; width, 433 feet; 69 feet in height. The handsome façade is faced with granite.

VIEW OF THE NEW PENNSYLVANIA TERMINAL STATION FROM SEVENTH AVENUE.

assistance as it might be able to get from its smaller rivals, finally decided to carry its lines into Manhattan Island by tunnel instead of by bridge, and to build a large terminal station of sufficient capacity to handle the present traffic of the road and allow a considerable margin for future development.

**PENNSYLVANIA RAILROAD TERMINAL STATION.**

The work of building a Manhattan terminal station and the necessary connections was planned on the invariably generous scale with which this railroad un-

passing in four separate tubes under the East River to Long Island City. At the westerly end, the tracks converge to two tracks, which pass beneath the North River in two separate steel-and-concrete tubes.

From what has been said above, it will be seen that the site of the station and yard is intersected by two important thoroughfares, namely, Eighth Avenue and Ninth Avenue. Eighth Avenue divides the site into two equal portions, the westerly half constituting the station yard, while the easterly half constitutes the station proper; and here it is that the imposing struc-

69 feet. In the center of the building, however, in order to accommodate the great waiting room, the roof of the structure reaches a height of 153 feet. The unusual extent of the building in area and its general type are suggestive of the great baths of ancient Rome; in fact, the architects of the building, McKim, Meade & White, took the baths of Caracalla, which are still magnificent in their ruins, as the inspiration of this architectural plan. The dignity and beauty of the building are enhanced by the contrast of the lofty "skyscraper" buildings of the vicinity; and when

the structure is completed, the eye will turn with a sense of relief from the exaggerated perpendicular lines of the modern office building to the long, low perspective of this station, relieved at its mid-length by the lofty walls and roof of the waiting room. The exterior construction is of pink Milford granite, similar to the building stone of the Boston Public Library and the University Club in New York. This is a particularly effective structural stone, and its soft shades of color are decidedly pleasing to the eye.

The main entrance to the station for foot passengers will be at the center of the Seventh Avenue façade and opposite the intersected end of Thirty-second Street. Once inside the building the passenger will find himself in a noble arcade, 45 feet in width and 225 feet in length. On either side will be shops where will be displayed wares suitable to the needs of the traveler. At the further end of the arcade the intending traveler will pass the entrance to two large restaurants, one to the left, the other to the right, and will then find himself at the head of a broad flight of stairs leading down to the floor of the general waiting room. This vast hall will be 103 feet in width, 277 feet in length, and will have a clear height from floor to ceiling of 150 feet. Within its spacious walls will be located ticket offices, parcel rooms, telegraph and telephone offices, and baggage checking windows, all so disposed that a passenger may proceed from one to the other in their logical order. Adjoining the general waiting room on the west will be two subsidiary waiting rooms, corresponding in their relation to the main hall to the two restaurants. Each waiting room will measure 58 x 100 feet. One of these is reserved for men, the other for women, and each will be provided with every convenience for comfort. The entrances for carriages will be by way of pavilions located at the corners of Thirty-first and Thirty-third Streets and Seventh Avenue. The carriages will descend on a slight gradient until they reach the level of the station proper. Entrance will be had by the Thirty-first Street incline,

and the carriages will leave by the Thirty-third Street ascent as an exit.

To the east of the general waiting room is the main baggage room with its 450 feet of frontage. The baggage will be delivered and taken away by a special subway, 30 feet wide, which will extend under and along the entire length of Thirty-first Street and Sev-

enth and Eighth avenues. From the baggage room trunks will be taken to the tracks below by motor trucks and elevators. Cab-stands will also occupy this level.

The passenger, after securing his ticket, checking his baggage, etc., passes through between the smaller waiting room entrances onto the great station con-

also be made, in due time, with the proposed subway station of the Hudson Companies' subway running up Sixth Avenue from the North River tunnels of that company. The northern side of the station, paralleling Thirty-third Street, will be assigned to the suburban service of the Long Island Railroad. The third level, which will be at a depth below the surface of the street corresponding to the height of an ordinary four-story building, will be entirely covered below the station building with twenty-one parallel tracks and their respective platforms. Within the station area, covering 28 acres of ground space, there will be 16 miles of tracks. A trackage area of this amount will afford ample facilities for the easy movement by electric power

of the many hundreds of trains per day that will use this station. Through trains from the West, after discharging passengers, will proceed at once to Long Island City, where the main train yard and terminals will be located, thus leaving the station tracks clear of any idle equipment. In like manner, the westbound through trains, which will be made up at the Long Island City terminal, will pass through the station, stopping only to take up their quota of passengers. The suburban service of the Long Island Railroad will be operated on the "shuttle" plan. The planning of the station, with its numerous entrances and exits independent of each other, and separating the incoming from the outgoing throng, was worked out to facilitate, in greatest measure, the prompt and uninterrupted movement of the traffic. The exposure of the building on all four of its sides to main arteries of street traffic gives the plan a flexibility which is rarely obtainable and also insures easy connections by underground subways with the future extensions of the city's rapid transit system. The station will probably be opened for service early in 1910.

#### NEW GRAND CENTRAL TERMINAL STATION.

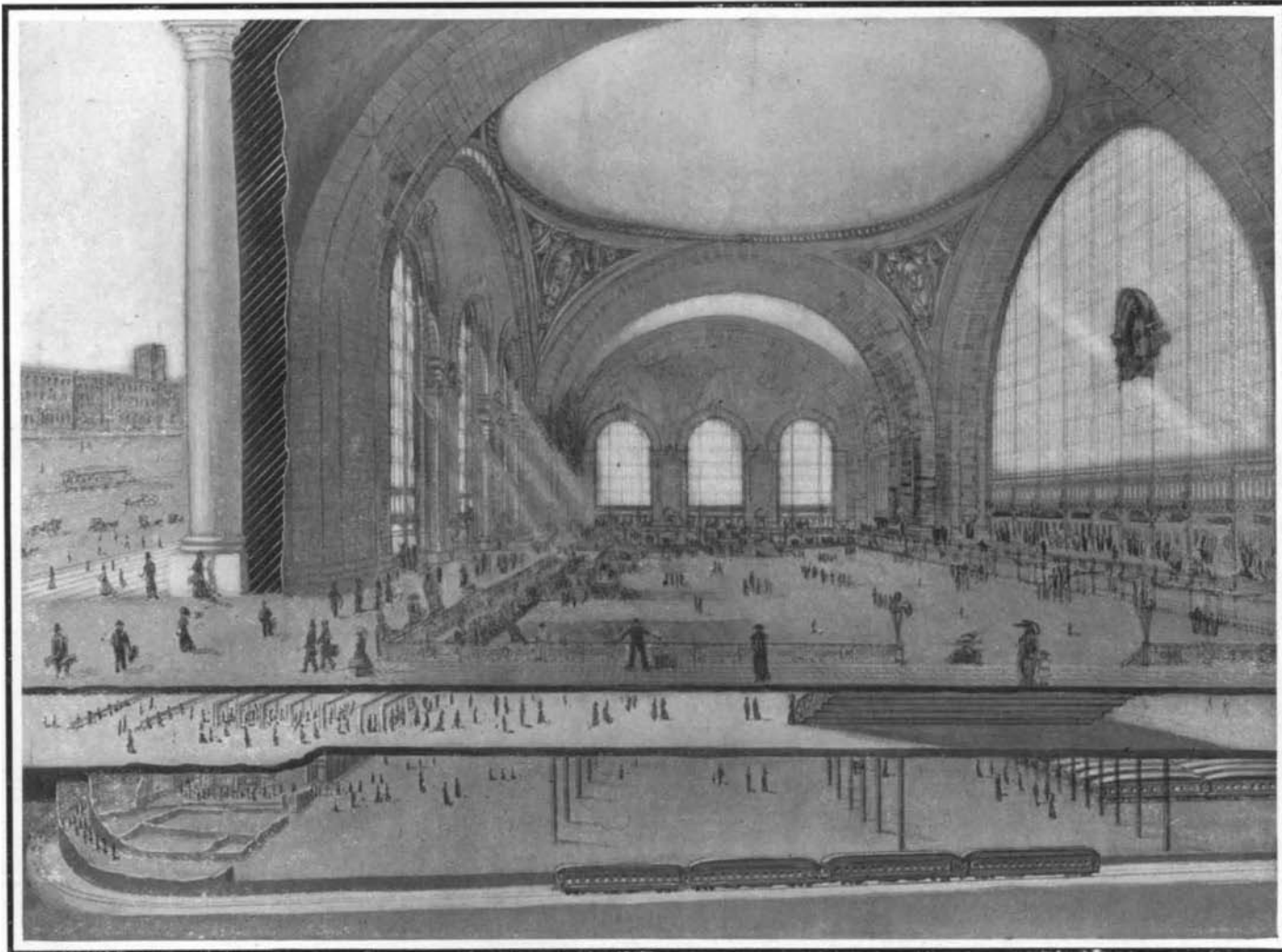
Of equal importance to the Pennsylvania terminal above described is the reconstruction of the terminal station of the New York Central

& Hudson River Railroad Company at Forty-second Street, familiarly known as the Grand Central. Briefly summarized, this work includes the removal of the old train shed (which was done a few months ago); the pulling down of the present terminal and office building; a great enlargement of the present station yard, and its excavation to an average depth of about



VIEW OF THE NEW GRAND CENTRAL STATION FROM FORTY-SECOND STREET.

course, an iron-and-steel-covered area over 100 feet wide, which extends across the entire width of the building. Crossing the concourse he will be confronted by a series of gates, bearing signs announcing the destination and time of departure of the trains on the various platforms below at the track level. The concourse and the adjacent areas are open to the tracks, and together they form a great courtyard 340 feet in width by 210 feet broad, roofed in by a lofty trainshed of iron and glass similar in design to the famous trainsheds of the new stations in Frankfort and Dresden, Germany. In addition to the entrances to the concourse from the waiting room, there are also direct approaches from Thirty-first Street, Thirty-third



The grand concourse on the upper floor will be 160 feet wide, 470 feet long, and 150 feet from floor to roof. To the right will be the entrance gates to the express tracks. On the lower floors will be waiting rooms, ticket booths, etc., and the loop and stub tracks for the local trains.

#### SECTIONAL VIEW OF THE NEW GRAND CENTRAL TERMINAL STATION.

Street, and Eighth Avenue. Below the main concourse, and located between it and the tracks below, is a sub-concourse, 60 feet in width, which will be used for exit purposes only. From the sub-concourse staircases and inclines will lead to the streets and avenues and to future rapid transit stations under Seventh or Eighth Avenue. Direct connection may