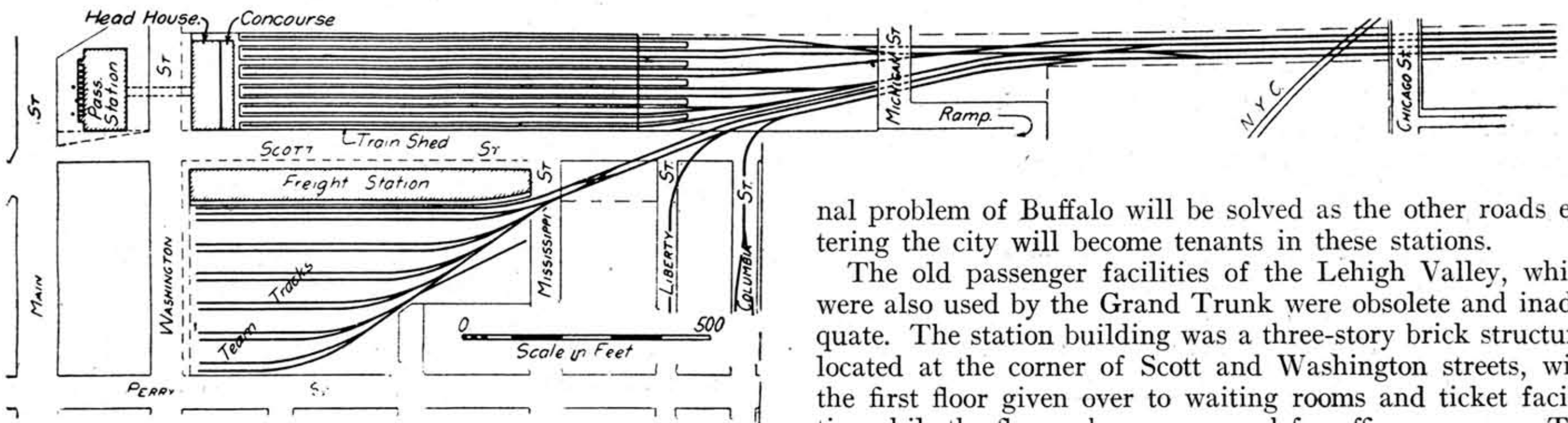


# New Lehigh Valley Terminal at Buffalo

Complete Passenger Facilities With Original Features  
Now Being Completed. L. C. L. Freight House Built

THE Lehigh Valley terminal improvements at Buffalo which involve an outlay of approximately \$5,000,000 for the properties and buildings are nearing completion. The project includes a new passenger station, a new freight house and yard and a new four-track main line approach to the terminal district. The freight layout was placed in service last December, and the passenger station, while not completed in all details, was opened for traffic on August 29. The construction of this terminal is a result of negotiations

finally rejected as impractical. The problem of the improvement of the separate terminals was next considered and, in order that the possibilities might be fully investigated, a terminal commission was created by an act of the New York state legislature to carry on the negotiations with the railroads. As a result, in addition to the Lehigh Valley, the Lackawanna is completing a new passenger terminal and plans for a new New York Central station are under consideration. When these three stations are completed the termi-



Track Layout at the New Terminal

nal problem of Buffalo will be solved as the other roads entering the city will become tenants in these stations.

The old passenger facilities of the Lehigh Valley, which were also used by the Grand Trunk were obsolete and inadequate. The station building was a three-story brick structure, located at the corner of Scott and Washington streets, with the first floor given over to waiting rooms and ticket facilities while the floors above were used for office purposes. The main entrance was from Washington street with the exit to the train shed in the rear, which was served by six-stub-end tracks. A double track main line approached the station at street grade, crossing Louisiana, Chicago and Michigan streets, and had a lengthwise occupancy of 900 ft. in Scott street. In the new layout this line has been abandoned from a point approximately one mile east of the terminal and Scott street has been restored to use as a public thoroughfare. The old line is replaced by a four-track line located entirely on property purchased for this purpose with all intersecting

that have been carried on between the city of Buffalo and the railroads for several years with the purpose of replacing the old stations which have long been unsatisfactory and inadequate. Buffalo is a terminal for all of the twelve roads entering the city except the New York Central and the Erie. Four old and inadequate stations owned by the New York Central, the Erie, the Lehigh Valley and the Lackawanna have served these roads. The first three are located within a radius of two



Interior of the Freight Station



Concrete Piles Cast on the Ground

blocks, while the Lackawanna is removed a considerable distance from the others. Because of these conditions a large number of passengers transfer from one terminal to another in addition to a large number who are required to wait for connecting trains, both of which make necessary commodious waiting room facilities in the various stations.

A union station scheme was originally presented, but was

streets carried over the tracks on viaducts. The construction of the new line was complicated by its proximity to the New York Central which adjoins the new location on the north. The intersecting streets had previously been carried over the New York Central tracks on viaducts and to utilize the new location it was necessary to continue these structures over the new line and provide new approaches. A further complication



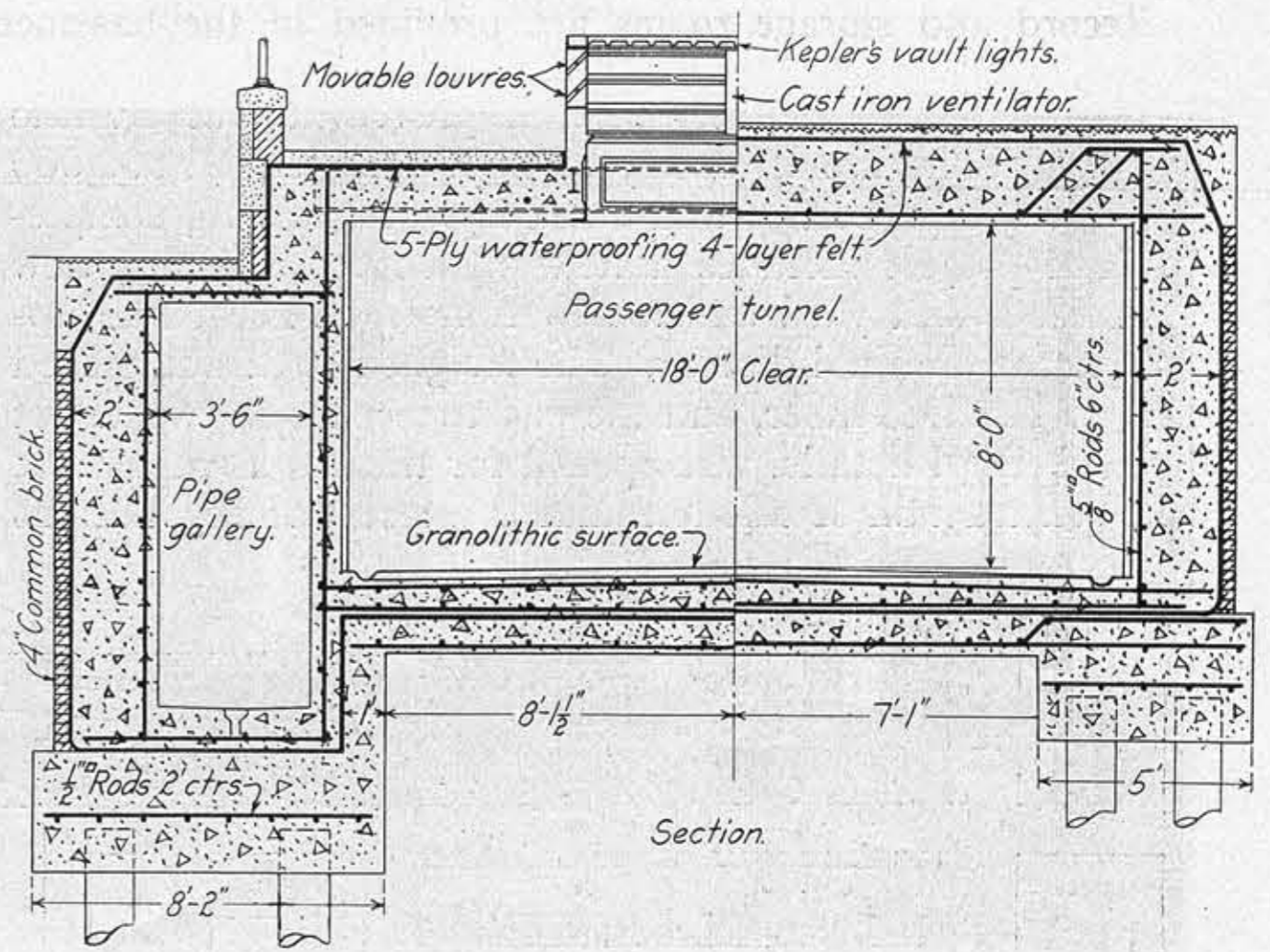
was caused by the streets that parallel the tracks, it being necessary to provide access to the viaducts from the streets and also from the New York Central freight house. The situation was met by constructing inclines connecting the two levels. This portion of the layout was completed before work was started on the terminal buildings.

The new passenger layout includes the new station located between Main, Washington, Quay and Scott streets and the headhouse and train shed located on the site of the old station at the corner of Washington and Scott streets. The separation of the station building from the headhouse was made necessary by the refusal of the city to close Washington street. Because of this somewhat unusual condition it was necessary to construct a reinforced concrete tunnel under Washington street to connect the waiting room of the station with the concourse in the headhouse.

THE PASSENGER STATION

The station building is a four-story structure of gray Indiana lime stone with a granite base and terra cotta trimmings. It has a frontage of 164 ft. on Main street, which is the principal thoroughfare of the city, and extends back 102 ft. along Scott street. It is set back 50 ft. from Main street to provide space for approaches. The principal entrance is from Main street and is accentuated by a colonnade of eight columns backed by three great arches. This entrance opens directly into the waiting room, 82 ft. by 102 ft. in area and extending the full height of the structure. Directly in front of the entrance and on the opposite side of the waiting room is a ramp leading down to the tunnel under Washington street,

waiting room. A hall way off this lobby leads to the elevator and stairs to the floors above. The ticket office is located to the left of the ramp on the Washington street side



Cross-Section of the Subway Connecting the Passenger Station and the Concourse

of the waiting room and the parcel room and news stand are at the right of the ramp. The telephone and telegraph facilities, smoking room, woman's room and the toilets are on the



Main Street Elevation of the Passenger Station

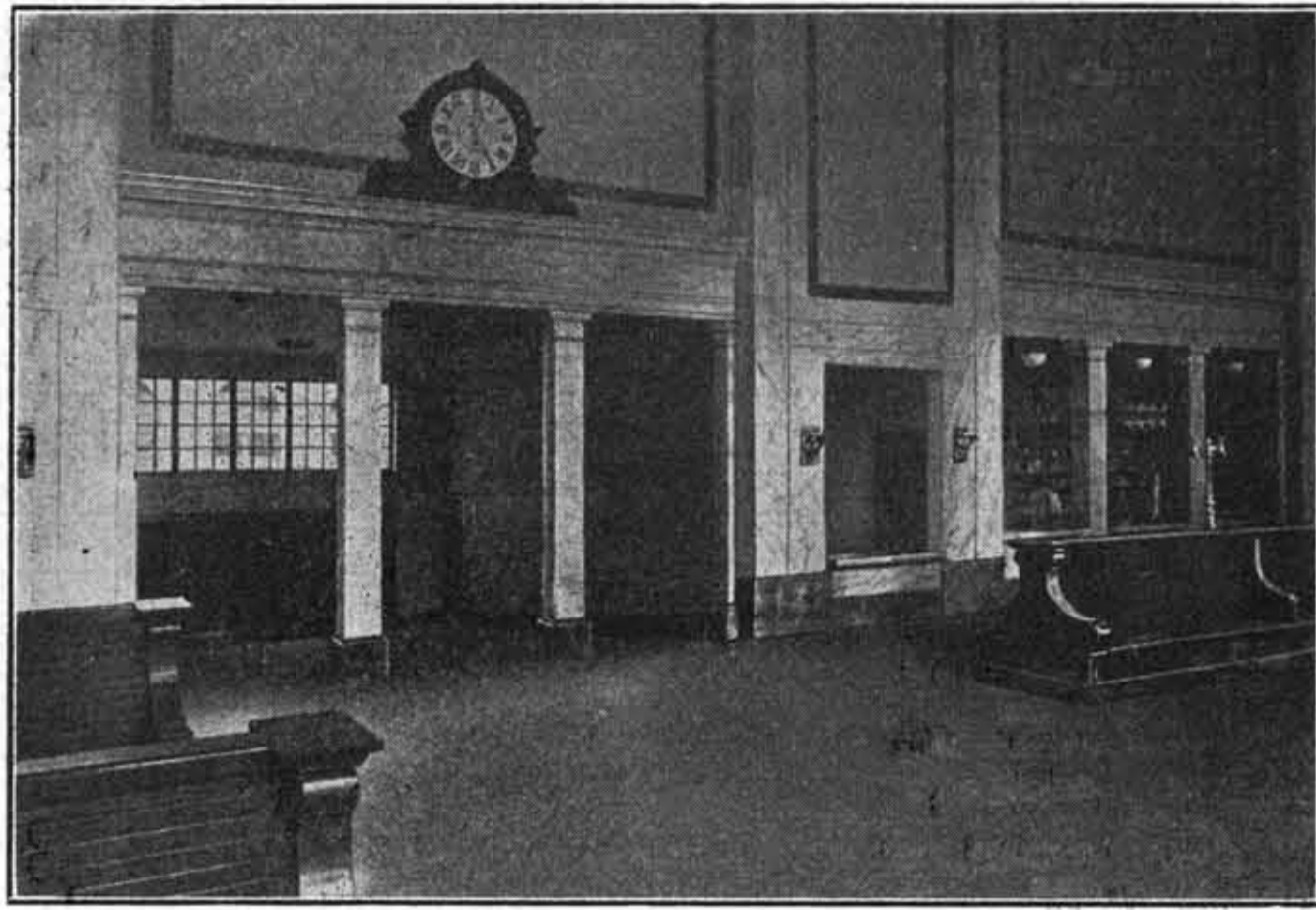
which connects the waiting room and the headhouse. The restaurant and the invalids' room are located on the Quay street side of the waiting room and on opposite sides of a lobby leading from the Quay street carriage entrance to the

Scott street side. The floors and wainscoting in the waiting room are of marble. A flat plaster finish is used on the walls, and the ceiling is finished with ornamental hung plaster. Light is admitted by three large arched windows on the Main



street side and smaller windows on the other sides. The artificial lighting is both direct and indirect. The direct light is furnished by two suspended chandeliers and seat lights, and the indirect by wall lights.

Record and storage rooms are provided in the basement.



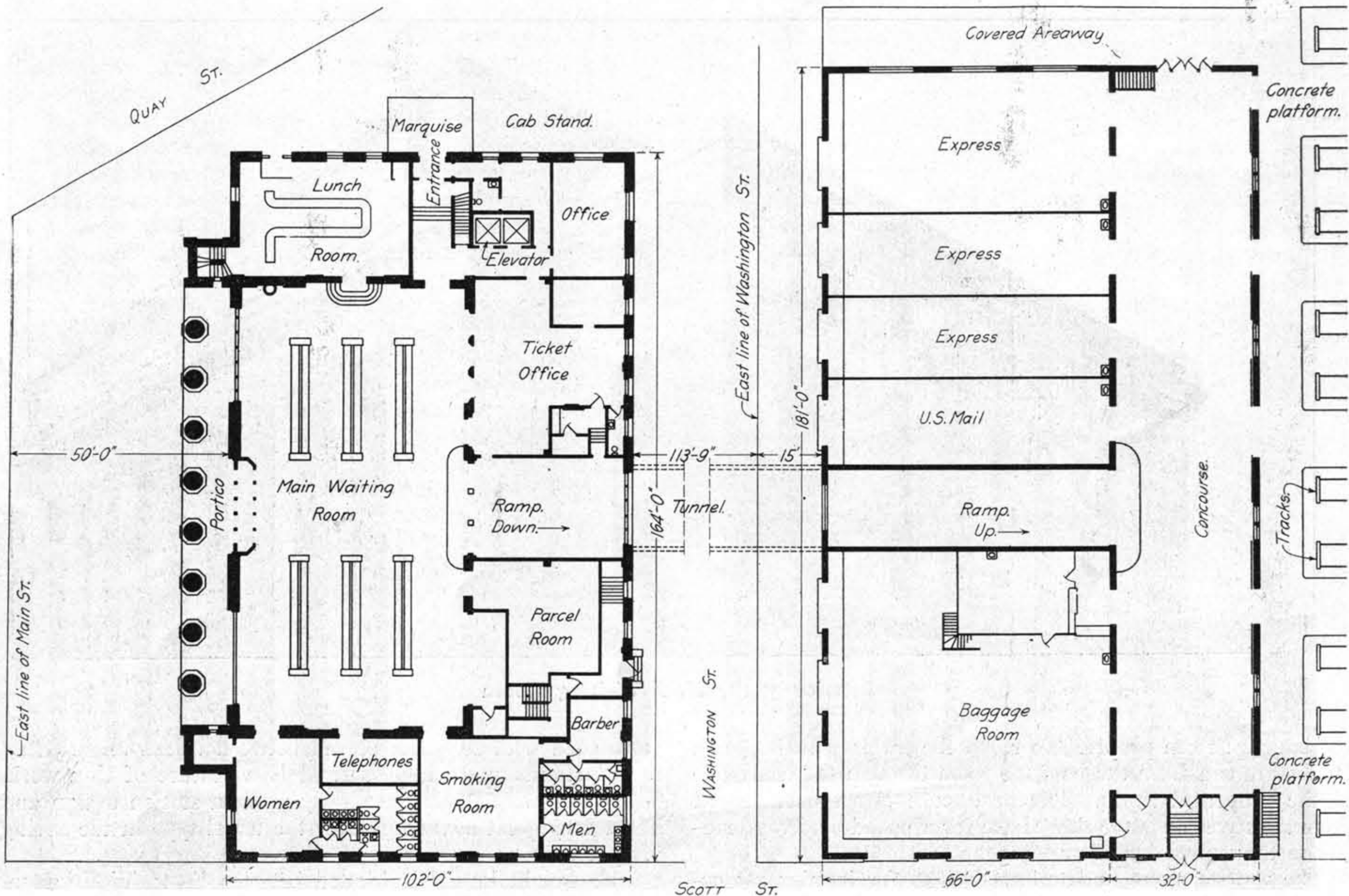
Waiting Room Entrance to the Subway

The mechanical and electrical equipment is also located in the basement, as is the heating plant which will furnish heat for the entire passenger layout, including passenger cars when

which passes under the building on a slight skew, with the flow line above the elevation of the basement floor. The sewer was protected during construction by two lines of Lackawanna sheet piling. The basement floor is carried over the sewer by a reinforced concrete slab with ramps between the two levels. The foundation walls for the station are carried over the sewer on plate girders 8 ft. 2 in. in height and 42 ft. long. These girders are supported on reinforced concrete piles as is the entire foundation wall of the station. These piles were cast on the ground and were driven to rock, 35 ft. below street grade by means of a jet and steam hammer. A total of 560 piles was used in the passenger station foundations.

On the Quay and Washington street sides of the station is a paved area way for parking public conveyances with a drive to the Quay street entrance which is covered by a broad marquis serving as a porte cochere. A second drive serves the main entrance with a platform between it and the street for passengers waiting for street cars. This platform is elevated above the drive and protected from it by a concrete railing.

The reinforced concrete tunnel under Washington street provides a passage way for passengers between the waiting room and trains. This tunnel has a clear width of 18 ft. and 8 ft. clear head room. A pipe gallery 3½ ft. in width adjoins the tunnel and is separated from it by a 10 in. concrete wall. The entire structure is supported on wooden piles driven to rock and is waterproofed by four layers of felt and one ply of reinforced felt, backed by a 4 in. wall of



Floor Plan of the Station and Concourse

parked in the train shed. The second and third floors are utilized for office purposes.

The construction of the station building was complicated by the presence of the Hamburg canal sewer, 28 ft. in width,

common brick with joints laid with asphalt. Cast iron ventilators and Keppler vault lights are provided. The approaches to the tunnel are on 10.5 per cent grades at each end. The entrance to the ramp at the waiting room end con-

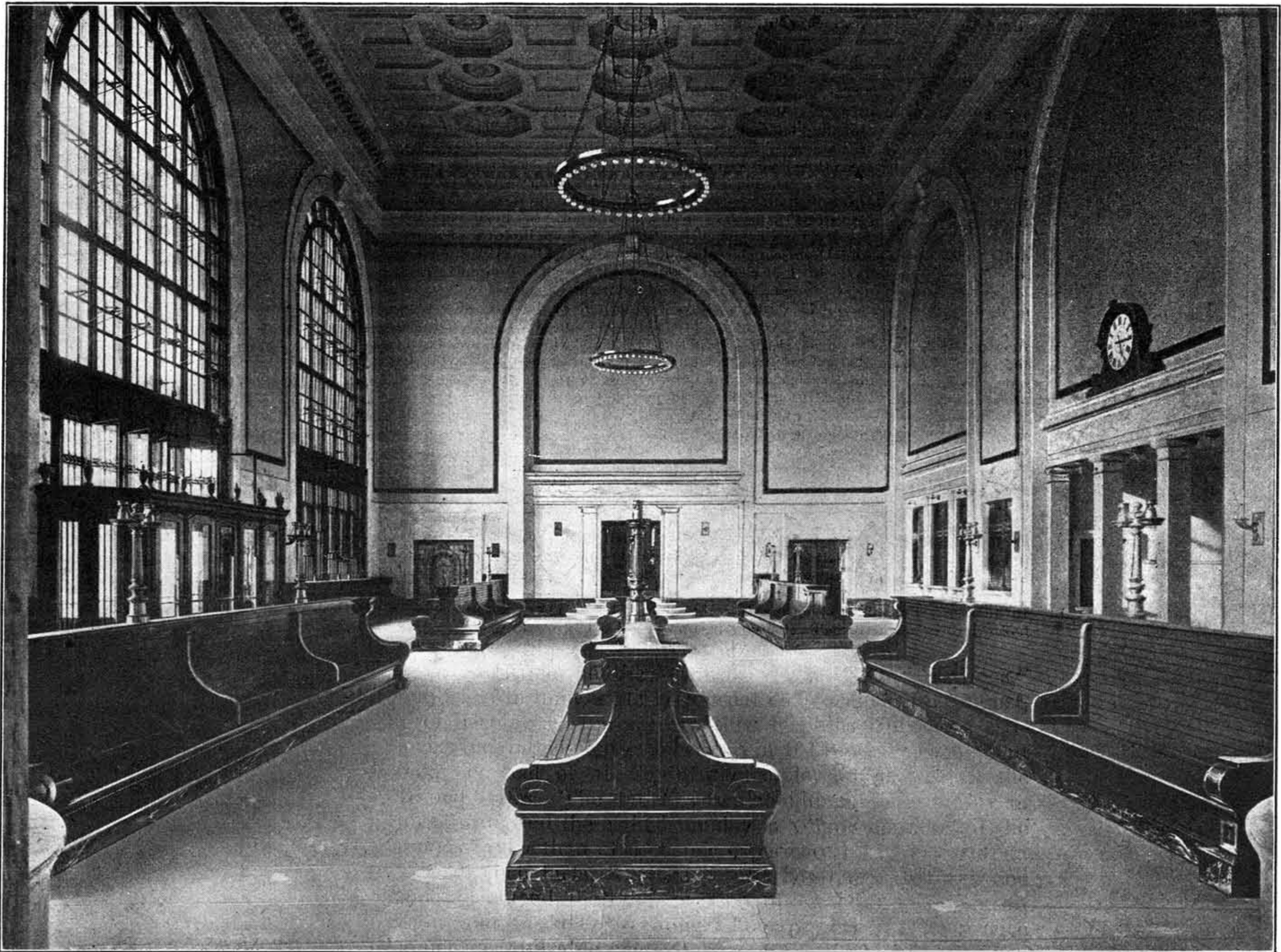


sists of a flat arch supported on marble pillars. Five doors open from the ramp into the tunnel. These doors will remain open except when strong drafts are created and when it is necessary to control the crowds.

The headhouse is a two-story, steel encased structure harmonizing with the station building in architectural design. It has a frontage of 181 ft. on Washington street and extends 66 ft. along Scott street. The first floor is devoted to express, mail and baggage. The express rooms with 4,600 sq. ft. of floor space are located in the west end of the building; a baggage room with 4,300 sq. ft. of floor area occupies the Scott street end and the United States mail room is placed in the central portion of the building and adjoins the ramp from the tunnel. On the street sides of the baggage room an elevated platform 12 ft. in width and 3 ft. above the floor level is built. Scales are provided in this platform and in

ing room facilities for passengers not desiring to enter the main station. On the Scott street side are the offices for the baggage master and station master. Exits from the concourse are provided to Washington and Scott streets.

The train shed is 195 ft. wide and 842 ft. in length and providing for 10 tracks adjoins the concourse. The shed is the Bush type of concrete and steel with the supports placed between tracks. The tracks are stub-end and have a combined clear width of 9,750 ft. They are arranged in pairs 14 ft. 8 in. center to center and are separated by concrete platforms 14 ft. 2½ in. in width, with their top surfaces 6 in. above the rail, with a 2-in. crown in the center. Keppler skylights requiring more than 50,000 sq. ft. of glass are used in the train sheds. The movement of trains in and out of the sheds will be controlled by an all-electric interlocking plant not yet constructed. The arrangement of the



Interior of the Main Waiting Room

the baggage room proper. To reach the trains with baggage, trucks are run from the baggage room through the concourse to the proper platform. The headhouse is set back 20 ft. from the street lines to allow space for a paved areaway leading to the express, mail and baggage rooms.

The waiting room and toilet facilities for immigrants occupy the Scott street end of the second floor of the headhouse. The remainder of this floor is devoted to lounging and locker rooms for the use of the employees of the railroads, the Pullman Company, the express company and mail clerks. Four toilet rooms are also provided for the use of employees.

Immediately adjoining the headhouse is the concourse 35 ft. by 181 ft. in area and open to the roof. It provides wait-

train shed with supports placed between tracks and leaving the platforms space unobstructed is a feature of this work. This plan has not been generally used in station design and has a very great advantage over the usual type in the saving of space.

The freight layout is located between Scott, Washington, Mississippi and Perry streets, directly across Scott street from the headhouse and train sheds of the passenger terminal. It includes the freight house and tracks, a team yard and a track equipped with a 40-ton electric crane for handling heavy materials. This crane operates through a longitudinal distance of 148 ft. and can serve four cars at a time. The yard tracks are all stub-end. The entrance to



the yards is double tracked and will be controlled by an all-electric interlocking plant. At the corner of Scott and Perry streets a track is equipped with a concrete ramp for unloading end-opening cars.

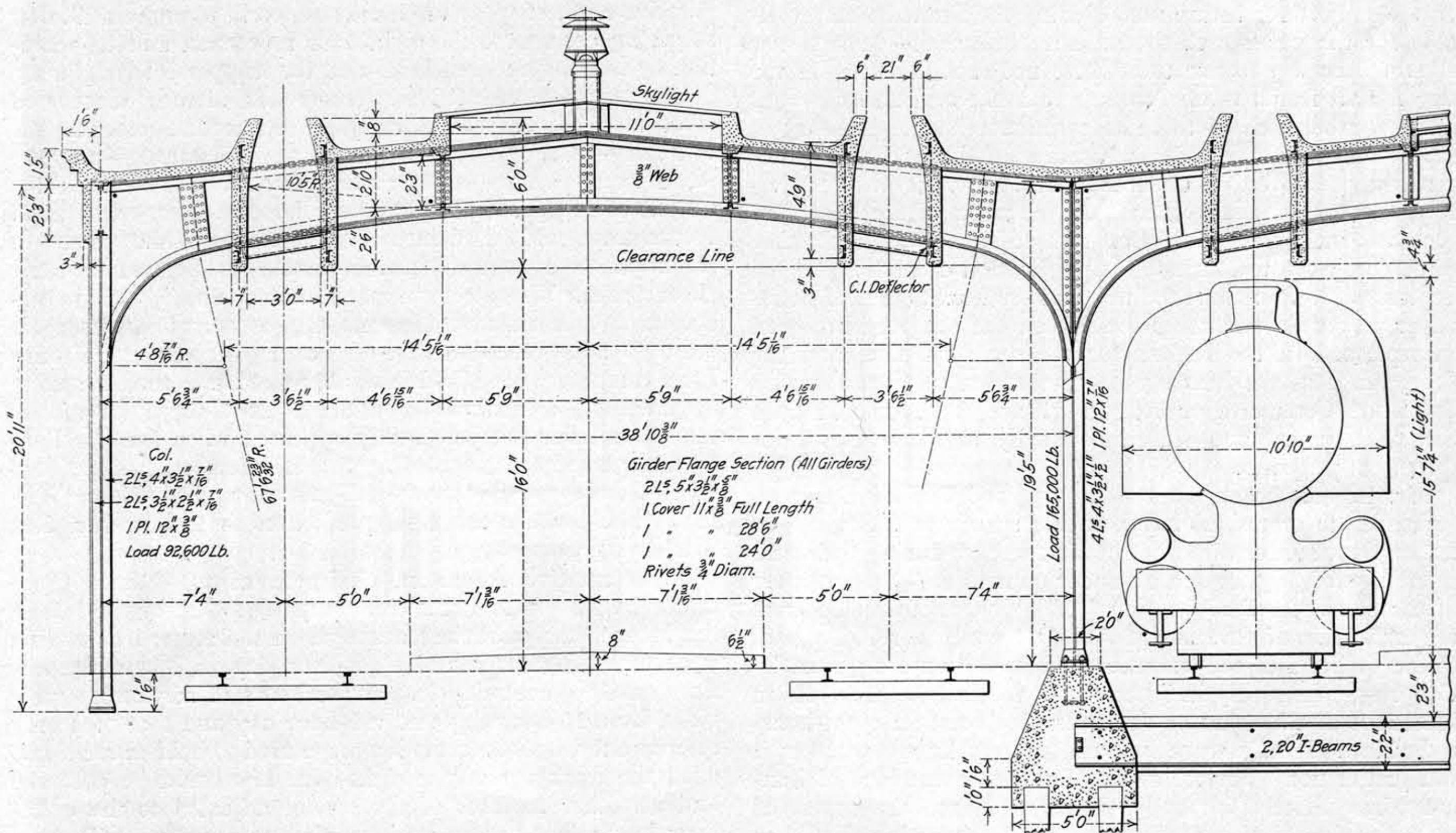
In acquiring the site for the freight layout a large area of valuable improved property was purchased by the railroad. To utilize the site it was necessary to close Burrell place and Beaver alley and in the agreement with the terminal commission the necessary consent was secured.

The freight house is set back 15 ft. from the east line of Washington street and 18 ft. from the south line of Scott street. The Washington street end is a two-story, steel-encased structure with a granite base and terra cotta trimming, with a 60-ft. frontage on Washington street and extending back 111 ft. along Scott street. The entrance is from Washington street and opens into a lobby with offices for the cashier and clerk on either side. In the rear of the lobby is a 5 ft. passage way leading to the freight room and

Light is admitted to the freight room by continuous wire glass windows over the doors. Artificial light is provided by 3-200 watt lights in each section.

The areaway between Scott street and the house is paved with Belgian blocks. On the track side a concrete platform 10 ft. in width extends the full length of the building with ramps at both ends. Canopies are provided over the driveway and the platforms. The foundation piers that support the house are carried on concrete piles cast on the ground and driven to rock by means of a jet and a steam hammer. These piles are designed for a load of 25 tons.

The house is served by three tracks having a combined clear length of 1,800 ft. Both inbound and outbound freight are handled through the house, the two east sections being used for inbound freight and the third section which adjoins the office for outbound. Two and four wheel hand trucks are used. Nine Kron scales of 3,500-lb. capacity are provided in the freight rooms. Electric light conduits are provided un-



**Cross Section of the Train Shed Showing the Supports Between the Tracks and Unobstructed Platforms**

separating a storage room from the perishable freight room, each of which has an area of 26 ft. by 54 ft. The perishable freight room is heated in cold weather, but has no refrigerating plant for summer use.

The second floor is occupied by the agent and clerks. The general office has an area of 58 ft. by 69 ft. with a record room in the rear with an area of 20 ft. by 58 ft. Toilet facilities are provided on both floors of the office building. The floors in the lobby and toilets are tile while maple flooring is used in the offices.

Connected directly with the office building is the freight house proper, 60 ft. in width by 577 ft. in length. This house is a steel, brick and concrete structure and is divided into three sections by firewalls, equipped with Kinnear automatic steel rolling doors on one side of the wall and Ajax sliding doors on the other. The side doors are also Kinnear steel rolling doors equipped with chain hoists and steel canopies. The roof trusses span the entire width of the building, leaving the floor area clear of obstructions. Johns-Manville mastic floor on a concrete base is used in the freight house.

der the platform slab with sockets in the track side for portable lights for use inside cars.

Refrigerator cars are iced at the house by an arrangement with a local ice company. The cars to be iced are placed on the track next to the platform and the ice wagons are driven up the ramp, the cars iced and the wagons then pass along the platform and down the ramp at the other end.

A concrete fence with iron gates encloses the entire freight layout. A concrete house is provided for the yard man and gate tender on the Washington street side.

This project has been carried out under the direction of E. B. Ashby, chief engineer. Kenneth M. Murchison of New York was architect for the station building and J. Henry Miller of Baltimore was the contractor for both the passenger station and the freight house.

**AN ENGLISH RAILWAY'S CONTRIBUTION.**—Of the 3,406 men who have joined the colors from the London, Brighton and South Coast, 162 have been killed, 304 wounded, and 30 made prisoners.