

AMPERE RAILROAD STATION
New Jersey Transit Montclair Branch,
Milepost 9.7, Ampere Plaza
East Orange
Essex County
New Jersey

HABS No. NJ-1212

HABS
NJ
7-ERAN,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN BUILDINGS SURVEY

National Park Service
Northeast Region
Philadelphia Support Office
U.S. Custom House
200 Chestnut Street
Philadelphia, P.A. 19106

HABS
NJ
7-ERAN,
1-

HISTORIC AMERICAN BUILDINGS SURVEY

AMPERE RAILROAD STATION

HABS No. NJ-1212

- Location: New Jersey Transit Montclair Branch, Milepost 9.7
Ampere Plaza, East Orange, Essex County, New Jersey.
- USGS Orange Quadrangle, Universal Transverse Mercator Coordinates:
18.567980.4512800
- Present Owner: New Jersey Transit
One Penn Plaza East
Newark, New Jersey 07105-2246
- Present Occupant: Vacant
- Significance: Ampere Station was one of the 53 NJ TRANSIT rail stations listed on the National Register of Historic Places as part of a thematic listing of operating railroad stations in New Jersey. It was an excellent example of late nineteenth century railroad architecture as designed by the Delaware, Lackawanna and Western Railroad. Ampere Station, initially constructed as a stop for the adjacent Crocker-Wheeler Company factory, precipitated the development of a community surrounding the station which was then named Ampere.
- Ampere Station was designed and constructed in 1907-08 by the Delaware, Lackawanna & Western Railroad (D. L. & W.) staff of Frank J. Nies, Architect, and Lincoln Bush, Chief Engineer. The 1921 alterations were designed by Frank Nies and George L. Ray, Chief Engineer. These men played a significant role in the D. L. & W.'s pioneering efforts in the use of reinforced concrete for railroad use.
- The station is also significant for its historical associations with Francis B. Crocker and Schuyler S. Wheeler of the Crocker-Wheeler Company, pioneers in the early development of the applications of electricity and who named the station stop Ampere in honor of the French scientist Andre Marie Ampere, the founder of the science of electrodynamics and whose name designates the unit by which electrical current is measured.

PART I - HISTORY OF AMPERE STATION

Ampere Station, located in the northeastern section of the city of East Orange, was the first station stop west of Newark on the Montclair Branch of the New Jersey Transit Morris and Essex Lines. Ampere Station, originally built by the Delaware, Lackawanna and Western Railroad in 1907-08, was the second railroad station to be constructed at this site. The construction of the station, its replacement and enlargement, and later its demise, was directly related to the initial growth, expansion and eventual decline of the neighborhood of Ampere which took its name from the station.

The four-mile Montclair Branch of the Delaware, Lackawanna & Western Railroad (D. L. & W.) was originally chartered in 1852 as the Newark & Bloomfield Railroad. In 1855, the railroad was completed from Bloomfield to a connection with the Morris & Essex (M. & E.) tracks at Bloomfield Junction, now Roseville Avenue. The line, which almost exclusively served commuter traffic, was extended to Glen Ridge and West Bloomfield (Montclair) in 1856. In 1868, the Newark and Bloomfield Railroad was absorbed by the Morris & Essex (M. & E.) in a long-term lease and became known as the Montclair Branch. It was included as part of the M. & E. leased to the D. L. & W. later that year.

The introduction of rail service precipitated a real estate boom in Orange in the 1840's and 1850's. By the Civil War, Orange had been transformed from an agricultural village to a suburban industrial community, and was formally incorporated as a town in 1860. The comparatively wealthy and less settled First Ward of the new town rebelled against the prospect of heavy taxation to provide the more crowded wards with such urban amenities as fire and police forces, paved streets, gas lighting, and water works, and was finally allowed to separate from the town of Orange in 1863 to form East Orange.

By 1876, East Orange had grown to over 4,000 in population and was of sufficient size to attract the Erie Railroad as a competitor for the Delaware, Lackawanna, & Western Railroad. The Erie built the Watchung Branch from the Greenwood Lake Line to Park Avenue in West Orange, with depots at Prospect Street and Brighton Avenue. This attracted some real estate development in the area of what was to become Ampere, but the Erie suspended service for lack of business in August 1877.

Originally, trains stopped in Ampere only under special order obtained from the railroad. In 1890 a station was built at the request of the Crocker-Wheeler Company, an electrical equipment manufacturing company established in 1888 that had constructed a plant east of the railroad tracks.

Historic photographs indicate that the original station building at this station stop was a single-story fieldstone structure with a pyramidal roof and overhanging eaves supported by smooth posts. A brick chimney extended from the western roof slope. At the behest of Dr. Schuyler S. Wheeler, one of the founders of the Crocker-Wheeler Company, the station was named in honor of the distinguished French scientist Andre Marie Ampere. Ampere is regarded as the founder of the science of electrodynamics whose name is used to designate the unit by which electric current is measured. The area surrounding the new station rapidly developed largely as a residential neighborhood though other industrial concerns, such as General Electric and the Ward Baking Company, eventually followed Crocker-Wheeler. The neighborhood itself soon became known as Ampere. In 1899, the citizens of East Orange voted to incorporate the community of over 20,000 as a city. By the turn of the century, the Montclair Branch had become a very busy commuter line.

In 1907-08, a new, larger, more substantial building, the one documented here, was built by the D. L. & W. to replace the original station at Ampere. Building Department records from East Orange City Hall indicate that the cost of the new station was \$44,000. The new Ampere Station was designed in the Renaissance Revival style. The station was a single-story building of Flemish bond brick walls with extensive concrete trim and a roof covered with green-glazed terra cotta tiles. Porticoes and platform canopies had Tuscan columns. The most distinguishing feature of the new station was the large concrete round-arched door surround which extended above the roof line.

Original plans of the station indicate that Ampere Station was designed by the D. L. & W. Railroad's in-house staff. Drawings are attributed to Frank J. Nies, Architect and Lincoln Bush, Chief Engineer. Nies, who designed many other stations for the D. L. & W., was noted for his innovative use of reinforced concrete for railroad stations. Lincoln Bush, who served as Chief Engineer for the D. L. & W. from 1903 - 1908 was best known for his patented design of the Bush Train Shed, a deviation from the high balloon shed used during the nineteenth century and whose initial installation was at Hoboken Terminal. Bush specialized in bridge engineering and played a significant role in the planning and execution of the early grade separation projects, pioneering the use of reinforced concrete for railroad stations and viaducts.

The station was dedicated on December 4, 1908. A bronze tablet honoring Andre Marie Ampere was unveiled at the new station in a formal ceremony by Jules J. Jusserand, the Ambassador of France to the United States; local dignitaries, including Mayor Cardwell, were also in attendance. This tablet, the donation of the Crocker-Wheeler Company, was mounted on a wall of the main waiting room.

The Crocker-Wheeler Company, whose presence provided the impetus for the creation of Ampere Station, played a significant role in the development of the community of Ampere and was a significant force in the early development of the electrical manufacturing industry in America.

The Crocker-Wheeler Company was founded by Francis B. Crocker and Schuyler S. Wheeler, two pioneers in the field of electrical equipment manufacturing. Crocker and Charles G. Curtis had formed the C. & C. Electric Company to make the first successfully-marketed small electric commercial motors of standard specification in 1886. Wheeler went to work for C. & C. as a designer, electrician, and manager; Crocker and Wheeler formed their own enterprise in 1888.

Dr. Francis Bacon Crocker (1861-1921) received his E.M. and Ph.D. degrees from Columbia University, and in 1889 was appointed by Columbia to teach the first electrical engineering course in the country. He served as president of the American Institute of Electrical Engineers, and was chairman of the Conference of the Insurance and Engineering Representatives that formulated the National Electrical Code. He wrote such early electrical studies as *Electric Lighting* and *Electric Motors*, and with Dr. Wheeler authored *Management of Electrical Machinery*, and, as did Wheeler, contributed often to technical journals on the subject of electricity.

Dr. Schuyler Skaats Wheeler (1860-1923), the long-time president of the Crocker-Wheeler Company, was also an alumnus of Columbia University. He was associated with several of the earliest electrical enterprises including Thomas A. Edison's engineering staff, the Jablochhoff Electric Light Company, the U.S. Electric Lighting Company, and the Herzog Teleseme Company. From 1888 to 1895, Wheeler was the electrical expert member of the Board of Electric Control in New York City when the city's overhead electrical wires were placed underground. He was a member of all the national engineering societies of his day, and, as did Crocker, served as President of the American Institute of Electrical Engineers where he was instrumental in the adoption of a code of engineering ethics. His inventions included far-ranging applications of the use of electrical power such as electric elevators, an electric fire engine system, a series multiple motor control, and the parallel connection of dynamos. In 1896 Hobart College honored him with an honorary degree for his work in electricity.

Crocker and Wheeler's new enterprise, which was formally incorporated in 1889, grew dramatically. At the Chicago World's Fair in 1893, there were some seventy-eight Crocker-Wheeler Company machines in use, thirty-two more than the closest of the company's twenty-seven competitors represented (a field which included the Edison and Westinghouse companies).

From 1910 to 1913, the Delaware, Lackawanna & Western Railroad undertook a major grade crossing elimination campaign on all of their lines. This program was largely in response to an ordinance passed by the City of Newark in 1900 which required the three main railroad lines (the Pennsylvania Railroad, the Central Railroad of New Jersey and the D. L. & W.) to eliminate grade crossings within the city limits. During the grade crossing elimination campaign, many of the D. L. & W. stations were replaced with larger, more substantial buildings, and all grade crossings were eliminated except for those in East Orange including the two in Ampere.

By 1912, trains to or from Hoboken made over sixty stops a day at Ampere. The first luxury apartment building in the city was erected in 1911, and upper Central Avenue soon developed as a major shopping center. East Orange was among the first suburbs in New Jersey to enjoy the convenience of branches of the major New York City department stores. The population of East Orange more than doubled between 1910 and 1920, when it stood at 50,710.

By the First World War, the Crocker-Wheeler Company had become a major employer in Ampere. Its twenty-five acre plant was a self-sufficient community with its own post office, telegraph, telephone, and express and freight facilities. The industrial campus boasted a large collection of industrial buildings and was reputedly the first manufacturing establishment in the world to have all its machinery driven by electricity. The Crocker-Wheeler Company beautified the factory grounds with plantings of grass, trees, shrubs and flowers.

Because of a lack of cooperation from the East Orange government, grade crossings remained at each end of Ampere Station until 1921, when the city was forced by the courts to give approval and financial support to the D. L. & W.'s plans. The two grade crossings at Springdale and Fourth Avenues were finally eliminated that year by raising the tracks twelve feet and lowering the streets. During the grade crossing elimination project, a temporary track was constructed to the west of the station, and a second floor was added to the building to provide access through the station to the newly raised platform level. The platform canopies were raised to the height of the new platforms. A brick shelter house and canopy was constructed on the westbound side of the tracks, partly with materials from the 1908 station (including sections of canopy and columns from the eastbound side, and benches from the smoking room).

These alterations and additions were also designed by Frank J. Nies, the architect of the 1908 station, with George J. Ray as Chief Engineer. Ray, the successor to Lincoln Bush, served in this position from 1908 to 1934 when he was appointed Vice President and General Manager of the D. L. & W., where he remained until his retirement in 1946. Ray continued the use of reinforced concrete for railroad viaducts and stations, a pioneering effort of the D. L. & W. that was to become their hallmark. The alterations to Ampere Station in 1921 marked the end of the D. L. & W.'s great wave of new station construction in New Jersey and marked the beginning of the decline of rail travel in favor of the automobile. The D. L. & W.'s last station in New Jersey was constructed in Lyons in 1931.

The line was electrified in 1928 and 1929. In 1930, West Orange resident Thomas A. Edison helped to bring the D. L. & W.'s first electrified train from Hoboken to Montclair. From 1928 to 1957, the Montclair Branch was reputedly the most heavily traveled commuter branch line in the country.

The census figures show that the population of East Orange peaked at 79,340 in 1950; in 1990 only 73,552 residents were counted. The development of interstate highways throughout

northern New Jersey after World War II precipitated an exodus of the more prosperous residents who headed to new suburban communities.

The postwar period in East Orange was also marked by the loss and migration of many industries. The loss of the manufacturing, office and retail businesses from the local economy greatly eroded the tax base in East Orange. Ampere's major employer, the Crocker-Wheeler plant, was eventually acquired by the Carrier Corporation and continued to operate at the original site until 1963 at which time the plant was operated by the Worthington Company for the manufacture of air conditioning and refrigeration equipment.

In 1984, Ampere Station bore sufficient distinction to merit its inclusion in a thematic National Register listing of historic railroad stations in New Jersey. The listing was a result of a statewide survey of the operating railroad stations that were at least fifty years old. The survey was conducted in 1981 by New Jersey Transit, the newly formed state-wide mass transportation agency. A total of 112 railroad stations were evaluated in the survey. Following a field survey, research and evaluation, each station was evaluated on a numerical point system. The highest ranked stations were recommended for inclusion in a thematic nomination to the National Register of Historic Places. Although considered of somewhat lesser significance and/or architectural quality with a rating of 115, (among the lowest rating of those stations recommended for inclusion in the nomination), Ampere Station was included in the nomination and thus, listed on the National Register of Historic Places.

A total of 53 historic railroad stations were listed on the National Register of Historic Places in June, 1984. (Other historic railroad stations in New Jersey had been previously listed on an individual basis). Of the stations included in the thematic listing, Ampere Station is one of the two stations that have been destroyed: Elberon Station in Long Branch, Monmouth County, New Jersey was destroyed by an accidental fire in 1987.

By the early 1990's, almost all of the Crocker-Wheeler physical plant, which once dominated the area to the immediate east of the station, had been demolished. With the loss of the major employers, the activity in Ampere waned and the use of the station diminished. A series of fires and repeated vandalism damaged the station to the point where the building was unsafe. The station site had become a dumping grounds for old appliances and broken furniture and the average daily ridership at Ampere had declined to 51 persons in 1990. In the Spring of 1991, following an agreement between the City of East Orange and New Jersey Transit, rail service was discontinued at Ampere Station.

PART II - DESCRIPTION OF AMPERE STATION

The Ampere Railroad Station in the City of East Orange, Essex County, New Jersey, was located east of Ampere Plaza and extended from Fourth Avenue on the south to Springdale Avenue on the north. The Ampere Station complex consisted of a two-story red brick station building in the Renaissance Revival style, with an attached wood frame and concrete canopy, and platforms on either side of the tracks. A concrete staircase south of the station and a concrete pedestrian tunnel provided access between the eastbound and westbound platforms. A single-story shelter and canopy were located on the westbound side.

Immediately east of the Ampere Station site is a vacant lot where the Crocker-Wheeler Company factory was located; beyond this lot to the east are two-and-a-half story residential structures and scattered industrial and warehouse structures. Industrial and warehouse structures are located to the south and to the northeast; small-scale apartment buildings face the station site to the west across Ampere Plaza. The nearest commercial street is Fourth Street, one block to the west of the station site.

The 1921 Ampere Station building, located west of the tracks, was a two-story brick structure of rectangular plan. The main section of the station was three bays wide and two bays deep with a shallow gable roof, its ridge paralleling the tracks. Prominent gable end copings with notched corners and segmental arch profiles rose above the roof, forming a parapet. Flanking the main block on the north and south were two single story wings, each with a pent roof. The wing to the north was four bays wide and three deep with the two end bays forming a portico supported by concrete Tuscan columns. The south wing, two bays wide and three bays deep, was entirely open and similar to the portico on the north. A short rectangular brick chimney rose from the coping at the north end of the station's main block. Roofing was green-glazed terra cotta tile.

The main and west facade of the station building had a central, two-story round-arched concrete door surround with radiating voussoirs and a keystone. Deeply recessed in the concrete door surround were double doors. The door surround was flanked on either side at street and track level by sash windows, segmentally-arched with concrete keystones and spring blocks at the second story level and trabeated at the first story. First story windows were covered with decorative iron grilles. Concrete was also used at the foundation, copings, lintels, sills, and chimney cap. The eaves of the main facade had decorative wood brackets.

The east facade contained a central window flanked on either side by doors with transoms. The upper north and south facades each contained a single multi-pane round-arched window with sidelights and a continuous transom light while the lower south facade contained a central window flanked by doors. (When the second floor was built, the window was bricked over and the doors converted to windows). The north wing contained three windows on the west facade and two windows and a freight door facing the portico. The lower east facade abutted a concrete

retaining wall. The 1921 improvements included a concrete-paved ramp to facilitate baggage and freight handling that rose from the north portico to a track-level loading area north of the station.

The westbound platform shelter at Ampere Station was constructed in 1921, east of the railroad tracks, and consisted of a single-story brick building of rectangular plan. The shelter had a concrete foundation and a hipped roof, its ridge paralleling the tracks. The west facade had three windows and a door and the east facade had four windows. The north and south facades had no fenestration. Roofing was green-glazed terra cotta tile.

Both platforms, resurfaced with asphalt in the 1980's, were originally constructed of concrete. The eastbound (to Newark and Hoboken) platform extended 946 feet. This platform was covered by a canopy nineteen bays long that was centrally attached to the station with seven bays to the north and nine bays to the south. The canopy's wood frame hipped roof was supported on wood beams with shaped ends, above concrete Tuscan columns with cast iron bases. The soffit consisted of matched boards with attached incandescent lighting fixtures, one to a bay. The roof was sheathed in glazed green terra cotta tiles, with copper gutters and cast iron leaders.

The westbound (to Montclair) platform was similar to the eastbound platform but extended only 824 feet long. Eleven bays long, the canopy was attached to the west facade of the shelter. Like the eastbound canopy, its wood frame hipped roof was supported on a single row of wood beam lintels with shaped ends and concrete Tuscan columns set in cast iron bases. The soffit was of matched boards with attached incandescent lighting fixtures, one to a bay and the roof was sheathed in glazed green terra cotta tile with copper gutters and cast iron leaders.

In September 1994, the interior of the station had been extensively damaged by several fires and water infiltration, and was therefore inaccessible, however, original drawings of both the original 1908 station and the expanded 1921 version have been reproduced on microfilm in New Jersey Transit archives in Newark, New Jersey.

The drawings of the original single story 1908 station indicate that the first floor had a large waiting room with five benches and a large newsstand that projected from the south wall. The ticket office and a women's room was located north of the waiting room. A passageway led to the baggage room and the smoking room through which the men's room was reached. Window and wall trim was marble and terra cotta. Floors in the public areas were terrazzo, white maple in the ticket office and newsstand, and granite in the baggage room.

The original 1908 Ampere Station building was altered by the railroad in 1921 when the second story was added to accommodate the additional twelve foot height of the newly raised tracks. The alterations were skillfully conducted without compromise to the architectural integrity of the original Renaissance Revival structure.

The new second story platform level consisted of a large open waiting room with four passenger benches, a terrazzo floor and a newsstand on the east wall. At the first story, a large staircase with decorative cast iron balusters, a wood rail and a marble base was built at the south end of the former waiting room where the newsstand was formerly located. Columns were added to support the new second story and the waiting room benches were reduced in size. The ticket office and men's and women's rooms remained intact, but the smoking room was absorbed by an expanded baggage room. Seats from the smoking room were relocated to the new shelter across the tracks. The trackside entrance from the original first-story waiting room to the original grade level platform became the entrance to a concrete pedestrian tunnel (marked "subway" on the drawings) under the tracks which provided access to the westbound platform.

New second story windows were added to the west (main) facade and the 1908 station dedication tablet from the Crocker-Wheeler Company was reset in the new second level waiting room. Large round-arched windows were added to the north and south facades to provide additional light into the waiting room and a new front entrance marquis was added. Platforms and canopies were raised with the existing concrete columns raised and reset and concrete retaining walls were constructed at the perimeter of the platforms with concrete stairs at each end of each side of the platforms. Vault lights were imbedded into the concrete platforms to provide natural light into the new pedestrian tunnel.

The Renaissance Revival styling of the Ampere Station was relatively common among D. L. & W. railroad stations in New Jersey of the early twentieth century, although most stations of this style featured low, rectangular hipped roofs rather than the Ampere Station's gable roof with high end wall parapets. This deviation from the standard D. L. & W. station architecture may be attributed to the fact that the original 1908 station was raised to accommodate another story and the new raised platforms during the grade crossing elimination in 1921. For most of its suburban stations, the D. L. & W. developed a fairly standardized design with repeated minor variations in scale, material and trim. Other D. L. & W. stations in New Jersey with generalized Renaissance Revival references include those at Highland Avenue, Short Hills, Convent, Far Hills, Mountain, Chatham, and Morris Plains. The original 1908 Ampere Station had a fairly standard D. L. & W. plan with the waiting room and baggage room situated in two large end rooms separated by a ticket office, rest rooms, and a connecting central passageway. Ampere Station for the most part was similar to other classically detailed stations of the period, but was unique for its distinctive gable end coping and monumental concrete door surround.

When Ampere Station was demolished, it was in a deteriorated condition due to years of neglect and vandalism and a fire in 1992. The shelter and its associated westbound canopies had been demolished by 1986, leaving the cast iron bases of the columns embedded in the asphalt. The section of canopy that was in front of the station building's east (facing the platform) facade was demolished following a fire, leaving several of the concrete Tuscan columns toppled on the ground still connected to their iron bases with reinforcement bars.

Original architectural details that were missing included the classically-detailed entrance marquis, the incandescent torches with bronze brackets and globe lamps that flanked the main entrance and a freight scale under the portico at the south facade. In the 1980's, all of the window and door openings were boarded when the station was closed by New Jersey Transit, but the concrete platforms, still in use at that time, were resurfaced with asphalt. Trash (including a broken organ and a television set) had been dumped at the porticoes and on the track side of the station. The terra cotta roof tiles of the north portico had been partially replaced by asphalt shingles and many of the roof tiles on the station building and on the canopies were damaged or missing exposing large sections of the canopy framing. Copper gutters and roof flashing had been stripped, wood brackets at the main facade eaves and much of the tongue-and-groove soffits of the porticoes and the canopies were missing or damaged.

PART III. - PROJECT INFORMATION

This documentation was undertaken in the Fall of 1994 as a mitigative measure prior to demolition as stipulated in the letter of authorization for demolition from the Deputy Commissioner of the New Jersey State Historic Preservation Office (SHPO). In 1993, New Jersey Transit requested permission from the SHPO to demolish Ampere Station. At the request of the SHPO, both New Jersey Transit and the City of East Orange advertised for expressions of interest for the adaptive re-use and rehabilitation of Ampere Station. Due to a lack of interested parties to effect a rehabilitation, the request was granted.

Prepared by: Lynn Drobbin
Title: Architectural Historian
Affiliation: Lynn Drobbin & Associates
Date: October 8, 1994

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Oral Interview: John Catrambone, Former Dispatcher for the Erie-Lackawanna Railroad

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