



United States Department of the Interior
National Park Service

National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer to complete all items.

1. Name of Property

historic name Substation #401
other name/site number Old Essex Substation; BMT Substation #2

2. Location

street & number 3046 Fulton Street Between Essex Street and Shepherd Avenue [] not for publication
city or town Brooklyn [] vicinity
state Brooklyn code NY county Kings code 047 zip code 11225

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this [X] nomination [] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements as set forth in 36 CFR Part 60. In my opinion, the property [X] meets [] does not meet the National Register criteria. I recommend that this property be considered significant [] nationally [] statewide [X] locally. ([] See continuation sheet for additional comments.)
Bernadette Cardo, SAPO 5/11/05
Signature of certifying official/Title Date
State or Federal agency and bureau

In my opinion, the property [] meets [] does not meet the National Register criteria. ([] See continuation sheet for additional comments.)
Signature of certifying official/Title Date
State or Federal agency and bureau

4. National Park Service Certification

- I hereby certify that the property is:
- entered in the National Register
[] see continuation sheet
- determined eligible for the National Register
[] see continuation sheet
- determined not eligible for the National Register
- removed from the National Register
- other (explain) _____

Signature of the Keeper Robert H. Beall Date of Action 7/6/05

Substation # 401

Kings County, New York

Name of Property

County and State

5. Classification

Ownership of Property (check as many boxes as apply)	Category of Property (check only one box)	Number of Resources within Property (Do not include previously listed resources in the count)		
		Contributing	Noncontributing	
<input type="checkbox"/> private	<input type="checkbox"/> building (s)	_____	_____	Buildings
<input type="checkbox"/> public-local	<input type="checkbox"/> district	_____	_____	Sites
<input checked="" type="checkbox"/> public-State	<input type="checkbox"/> site	_____	_____	Structures
<input type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure	_____	_____	Objects
	<input type="checkbox"/> object	_____	_____	TOTAL
		1	0	
		1	0	

Name of related multiple property listing

(Enter "N/A" if property is not part of a multiple property listing)

Historic Resources of the New York
City Subway System

**Number of contributing resources
previously listed in the National Register**

0

6. Function or Use

Historic Functions

(Enter categories from instructions)

Transportation/rail-related

Government/public works

Current Functions

(Enter categories from instructions)

Transportation/rail-related

Government/public works

7. Description

Architectural Classification

(Enter categories from instructions)

Late 19th & 20th Century Revivals/

Beaux-Arts

Materials

(Enter categories from instructions)

Foundation Concrete

Walls Brick

Roof

Other Decorative finishes: terra cotta

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets)

See continuation sheet

United States Department of the Interior
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**National Register of Historic Places
Continuation Sheet**

Section 7 Page 1

Substation #401

Name of Property

Kings County, NY

County and State

7. Narrative Description

Substation #401 (BMT Substation #2), Broadway (Brooklyn) - Jamaica Line, is located in the Highland Park neighborhood of Brooklyn. This station was originally built to provide power for the Brooklyn Heights Railroad Company, which was absorbed into the BRT by 1904. The BRT was subsequently reorganized as the BMT in 1923. Construction began in 1901, and the substation began operation in 1903. It is located at 3046 Fulton Street between Essex Street and Shepard Avenue. This narrative description was taken largely from the *NYCT Historical Properties Survey: Phase II - Substation #401 Inventory Form* that was completed in 1994 and was supplemented with observations from field inspections undertaken in May of 2004.

General Characteristics and Construction Methods

The exterior of the station was built in a Neo-Classical design. It fronts onto the elevated tracks of the BMT Jamaica Line in a neighborhood of mostly commercial structures (Photo 1). The substation is rectangular in plan with a north-south orientation. It is two stories in height at the façade, but it steps down to a single story at the rear two-story elevation. Much of the façade is obscured by scaffolding and orange safety fencing, recently installed to protect pedestrians from falling masonry (Photo 2). There is no basement - only a shallow crawl space that once allowed for power to be brought into the building from the street. A large steel and glass pyramidal skylight projects from the center of the ceiling (Photo 3). It is surrounded by operable wind driven vent windows and copper-clad louvers. The ceiling is supported by massive trussed girders and steel beams set five feet on center, and an original, operational, overhead chain-pulled bridge crane, supported by side girders, spans the entire space (Photo 4). The forward portion of the building is an open space that is visually divided by three mezzanines and the steel crane rail. At the northwest corner of the main level, beneath the mezzanine above, a set of open winding stairs, with low balustrades decorated with scrolled balusters provide access to the upper level (Photo 5).

This structure originally served as a substation and is now the Power Group Zone II Office. Offices and locker rooms take up much of the former battery rooms and other service rooms located at the rear of the first and second stories.

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Substation #401

Name of Property

Kings County, NY

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Exterior Elements

Substation 401 is a double-height brick building with single story at the rear. The facade is arranged symmetrically around a monumental arched portal and is constructed of polychrome buff and yellow bricks. The original doors have been fitted with a roll-down metal door but remain intact (Photo 6). The starburst pattern of metal supports seen on the door is carried throughout the station. The portal is flanked by a door on the eastern side and a narrow 4/4 double-hung sash window with square transom on the west side. Above a continuous projecting brick course, there are arched clerestory windows which are topped by a wide continuous band of soldier-course brick. The windows feature the same starburst design as the doors. A low brick parapet wall with brick coping lines the roofline. Although currently obscured by the scaffolding, the ghosting from a set of cast iron letters, which were once affixed above the portal, reads, "Substation #2."

The side and rear walls are constructed of simple red brick. At the junction of the buff colored façade with the red brick side walls, the two surfaces have been joined to resemble quoining. The west wall was a party wall and the adjoining structure has been demolished. The building is stepped down to a single story at the rear and at the rear portion of the second story there is another series of clerestory windows – these are fitted with 4-pane casements. There are no openings on the eastern elevation of the structure. On the sidewalk in front of the station entrance there is a manhole cover that reads, "B.H.R.R."

Interior Elements:

The interior is dominated by a large double-height volume with clerestory windows north and south, and a large central skylight (Photo 7). It has a concrete slab floor, brick walls with a wainscot of glazed bricks (white with red top and bottom bands), and a ceiling faced with terra cotta tiles and steel cross bracing. Mezzanines are located on the north, east, and west sides of the second story. The north mezzanine balustrade is decorated with the same starburst effect seen on the doors and façade windows, while the side mezzanines have scrolled balusters. The four original, manually-operated rotary converters were removed in the early 1980s, but some of the supporting equipment such as: high tension switches on metal panels, buses, DC feeder breakers, and ducts to bring air to transformers remain on the main floor and mezzanines (Photo 8). A tiled distribution board is located on the north wall of the second story mezzanine (Photo 9). There is an original toilet (with 1950s fixtures and original tiles) in the northeast corner.

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The rear two stories contain crew quarters on the lower level (with jack-arched ceilings) and offices above. The battery room, located on two levels at the northeast corner of the station, stored power while the train traffic was low. Troughs etched into the stone floor to catch the battery acid (called acid trays) are still visible. The brick-paved floors on the upper level (formerly the battery storage room) have, in places, been covered in concrete.

Substation #401

Kings County, New York

Name of Property

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

- Transportation
- Architecture
- Engineering
- Community Planning and Development
- Social History

Period of Significance

1901-1923

Significant Dates

1901, 1903, 1904, 1923

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Murray, Thomas E. (Designer)

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # NY-122

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal Agency
- Local Government
- University
- Repository name: NYC Transit Archives
- NYC Landmarks Preservation Commission

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Substation #401

Name of Property

Kings County, NY

County and State

8. Narrative Statement of Significance

As part of the Multiple Property Submission of the Historic Resources of the New York City Subway System, Substation #401 (former BMT Substation #2), Broadway (Brooklyn)-Jamaica Line, is significant under Criterion A in the areas of transportation, community planning and development, and social history. The station also meets Criterion C in the areas of engineering and architectural design. The substation was constructed in 1901 and began operation in 1903.

As early as 1892, Thomas Edison-style DC generators were being used in Brooklyn to power the elevated train lines. During the mid-1890s there was a shift to AC current due to the invention of the Tesla-Westinghouse system. This system could more effectively produce current to travel long distances and proved to more efficient than the DC system. From 1892-1893, seven of the original Edison style DC power generating plants were closed in Brooklyn to reduce pollution.

The substation was built for the New York Edison Company prior to the construction of the subway system. However, it shares many of the same architectural and design elements used in the later substations, including the large, arched portal on the façade and banded tiling on the interior. This continuity in style is due to the influence of Thomas E. Murray, who was responsible for the building's design. Best known for devising the Brooklyn Rapid Transit substations, Murray had also previously supervised the design of the New York Edison Company Stations.

This substation, completed in 1903, originally supplied power to the trolleys of the Brooklyn Heights Railway, an elevated and surface streetcar line that began operation in 1892. The company was absorbed into the BRT shortly before 1904. This was a common occurrence as many of the smaller rail lines became absorbed by the BRT. As a result, before the Brooklyn Rapid Transit Company became a subway operator during the Dual Contracts, it already had a number of substations to provide power to the extensive BRT system of streetcar and elevated lines. In 1923, the BRT was organized as the Brooklyn-Manhattan Transit Company (BMT). This substation serviced the BMT line from Alabama Avenue to 120th Street.

The function of a substation is to convert high voltage alternating current (AC) supplied by the power company to low voltage (about 600 volts) direct current (DC) which is used to run the trains.

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This substation is historically significant for its service to both of these essential transportation systems in the early 20th century. Of the few remaining BRT substations, none retain their original rotary converter equipment. Many of the stations are now used for other Transit Authority support functions, such as crew quarters (as at Old Essex).

Except for the replacement of the monumental portal doors and some windows, the exterior of this building is substantially intact. The facade is in a deteriorated condition due to water damage and scaffolding has been placed across the facade to protect pedestrians. The wooden frame and sash windows have not been painted in decades and are beginning to show signs of rot. Apart from the removal of the original manually operated rotary converters, the interior of the main space is fairly intact. The interior space is dominated by the central skylight which is of exceptional quality. Substation 401, as one of the original Edison substations, displays high quality craftsmanship and architectural detail.

The elevated BMT line dominates Fulton Street in this neighborhood. The Old Essex Substation contributed to the expansion of Brooklyn Heights Railroad, and later the subway into the outer reaches of Brooklyn. Today it serves as crew quarters and offices, and its function has been replaced by the neighboring Essex Substation. Two-story wood frame and masonry houses, with some commercial use at street level, especially along Fulton Street, define this area. The neighborhood is also interspersed with vacant buildings and empty lots used as dumping grounds.

In 1972, a new solid state substation, located on the lot west of this building was put into service. In the early 1980s, this old substation was finally decommissioned and the original manually operated rotary converters were removed. Two additional BRT substations: the East New York substation (a functioning substation) and the old 38th St. substation are, now used for other support purposes.

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Substation #401

Name of Property

Kings County, NY

County and State

9. Bibliography

Cudahy, Brian. *A Century of Subways: Celebrating 100 Years of the New York City's Underground Railways*. New York: Fordham University Press, 2003.

Hood, Clifton. *722 Miles: The Building of the Subways and How they Transformed New York*. Baltimore: Johns Hopkins University Press, 1993.

Interborough Rapid Transit Company. *The New York Subway: Its Construction and Equipment*. 1904. Reprinted on website managed by David Pirmann (2004). Retrieved 03/14/04 from source: <http://www.nycsubway.org/irt/irtbook/>.

Lobenstein, Robert. "The Race to Provide Electrical," *MTA - At Your Service*. January 2004.

National Park Service, Department of the Interior Historic American Engineering Record NY-122, "Interborough Rapid Transit Subway (Original Line): The NY Rapid Transit Decision of 1900: Economy, Society, Politics" prepared by Walter B. Katz, 1979.

New York City Landmarks Preservation Commission. *IRT Subway System Underground Interior Designation Report*. New York: NYC LPC, October, 1979.

Orlando, Barbara. "Recapturing the Past: Station Architecture," *At Your Service: MTA New York City Transit Employee Newsletter*, March, 2004.

Parsons, Brinckerhoff, Quade & Douglas, Inc., Historical Perspectives, Inc. and Robert E. Olmstead, P.E. "Phase I: Reconnaissance Level Historical Survey of Transit Authority Properties," June, 1991.

Payne, Christopher. *New York's Forgotten Substations: The Power Behind the Subway*. New York: Princeton Architectural Press, 2002.

Substation #401

Kings County, New York

Name of Property

County and State

10. Geographical Data

Acreage of Property Less than 1 acre

UTM References

(Place additional UTM references on a continuation sheet.)

UTM grid with Zone, Easting, and Northing columns for two rows.

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By (*See Continuation Sheet for authors*)

Form fields for name/title, organization, date, street & number, telephone, city or town, state, and zip code.

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

- A USGS map (7.5 or 15 minute series) indicating the property's location.
A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items

(Check with SHPO or FPO for any additional items)

Property Owner (Complete this item at the request of the SHPO or FPO)

Form fields for name, contact, street & number, telephone, city or town, state, and zip code.

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings.

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form.

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Substation #401

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Name of Property
Kings County, NY
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10. Geographical Data

Verbal Boundary Description

The boundary of Substation 401 is shown as the bold line on the accompanying site plan entitled, "CITI Map – Substation 401 – 3046 Fulton Street." The designation for Substation 401 includes all portions of the station structure and the property included within the boundary of the NYCTA right-of-way."

Boundary Description

The boundary for Substation 401 encompasses the entire station building and the NYCTA right-of-way associated with the structure.

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National Park Service**

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Substation #401

Name of Property

Kings County, NY

County and State

11. Form Prepared By:

Steven Bedford, Principal Architectural Historian
Stacey Vairo, Architectural Historian
Fitzgerald & Halliday, Inc.
72 Cedar Street
Hartford, CT 06106
860-247-7200

United States Department of the Interior
National Park Service

**National Register of Historic Places
Continuation Sheet**

Section 11 Page 2

Substation #401
Name of Property
Kings County, NY
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Additional Documentation

List of Black and White Photos

Substation #401

Kings County, NY

Photographer: Stacey Vairo

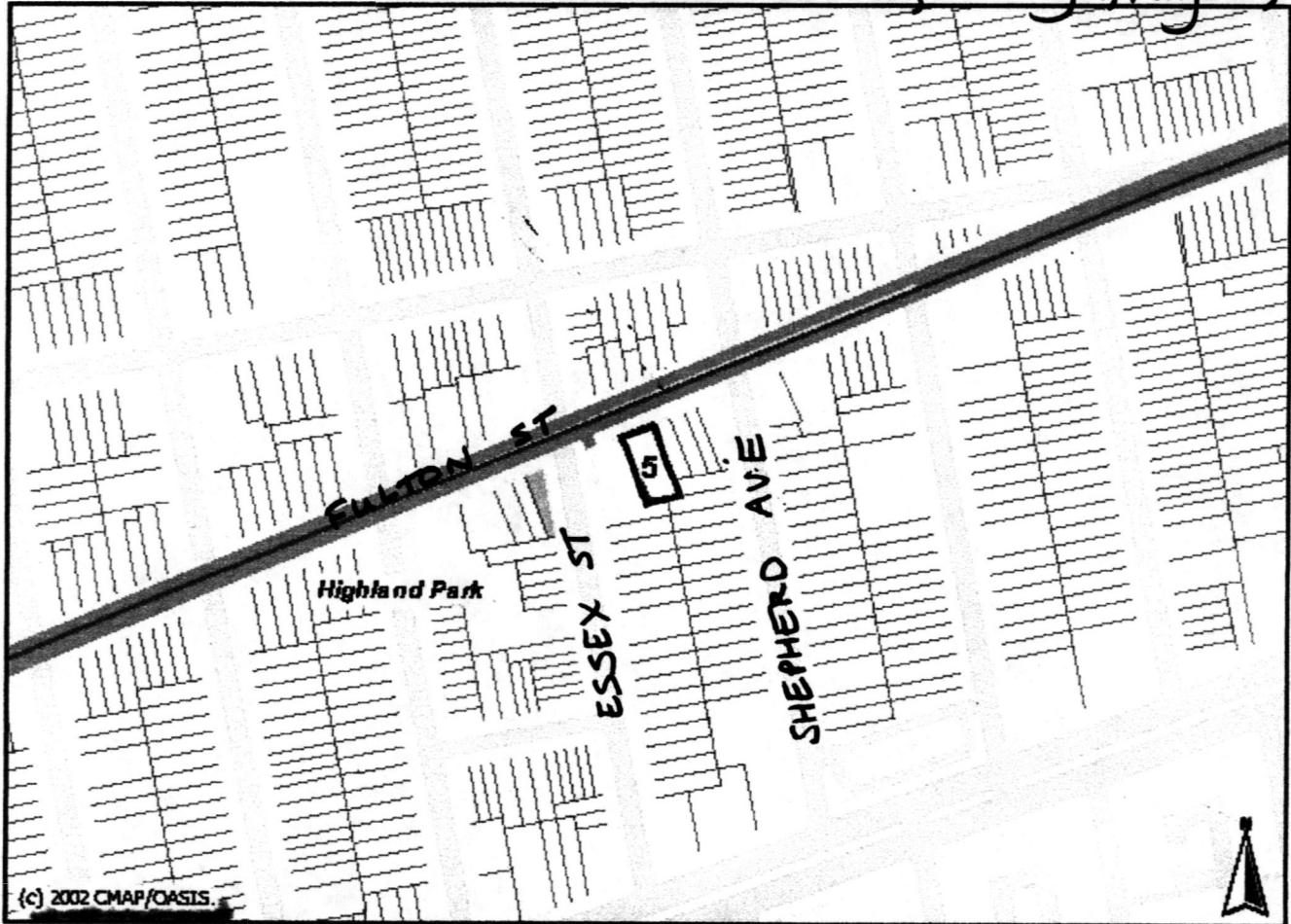
Date: March 12, 2004

Negatives on file: Fitzgerald & Halliday, Inc.
72 Cedar Street
Hartford, CT 06106

1. Substation 401 façade with elevated line in front. View south.
2. Substation façade scaffolding. View south.
3. Central skylight. View south.
4. Interior of Substation 401. View south.
5. Western mezzanine. View north.
6. Rolling doors and clerestory windows. View north.
7. Ceiling supports and crane. View northeast.
8. Switches on distribution board. View south.
9. Mezzanine and tiled distribution board. View east.

CITI Map

Substation 401 - 3046 Fulton Street, Brooklyn, Kings Co, N.Y.



width of map is 0.34 miles.

Property Land Use

- Block/Lot Boundaries
- 1 & 2 Family Residential
- Multi-Family Residential
- Mixed Residential/Commercial
- Commercial
- Institutions
- Parking & Transportation
- Industrial
- Vacant

Transportation

- Streets/Bridges
- Subway Stations
- Subway Routes

General Land Use

- Community Gardens
- Parks
- Playgrounds
- Open Spaces along Streets
- Cemeteries

Community Facilities

- Schools
- ## Planning Proposals
- Open Space Proposals
 - Rezoning Areas
 - Olympic Transportation Hubs
 - Olympic Transportation Rtes
 - Olympic Trails
 - Olympic Venues

Political Districts

- Community Districts
- City Council Districts

NYC Basemap copyrighted by the New York City Department of Environmental Protection, 2000.

The Bytes of the Big Apple (TM) PLUTO (TM) and Tax Block & Tax Lot files are copyrighted by the New York City Department of City Planning.

Map provided by the Open Accessible Space Information System (OASIS) of New York City



Queens/Brooklyn

Joins Map 9



Joins Map 4

Joins Map 11

Substation #401
 Brooklyn, Kings County, NY

Location map -
 Hagstrom map of NYC
 1948
 Scale 1" = 1,750'

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY Substation #401
NAME:

MULTIPLE New York City Subway System MPS
NAME:

STATE & COUNTY: NEW YORK, Kings

DATE RECEIVED: 5/27/05 DATE OF PENDING LIST: 6/10/05
DATE OF 16TH DAY: 6/25/05 DATE OF 45TH DAY: 7/10/05
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 05000680

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: N SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

ACCEPT RETURN REJECT 7/6/05 DATE

ABSTRACT/SUMMARY COMMENTS:

Entered in the
National Register

RECOM./CRITERIA _____

REVIEWER _____ DISCIPLINE _____

TELEPHONE _____ DATE _____

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.

United States Department of the Interior
National Park Service

National Register of Historic Places
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Section 8 Page 1

RECEIVED 2280	
OMB No. 10124-0018	
MAR 19 2010	
Substation #401	
Name of Property	
Kings County, NY	
County and State	

NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

8. Narrative Statement of Significance

As part of the Multiple Property Submission of the Historic Resources of the New York City Subway System, Substation #401 (also known as the Old Essex Substation), Broadway (Brooklyn)-Jamaica Line, is significant under Criterion A in the areas of transportation, community planning and development, and social history. The station also meets Criterion C in the areas of engineering and architectural design. The substation was constructed in 1901 and began operation in 1903.

Brooklyn trolley cars were first electrified in 1892, the power supplied from localized direct current (DC) power stations based on those of the electric light companies of Edison and others. Electric operation was introduced on Brooklyn elevated rail lines in 1899, the power supplied by the same stations. However, the limited range of such stations required multiple plants which were expensive. High voltage alternating current (AC) systems offered great range but were incompatible with the available railway motors designed for DC. Thus "sub" stations were required to link the AC power systems to the DC railway lines for efficient, economical operation. The key element was the rotary converter, described by one inventor as "a DC generator overlaid on an AC synchronous motor." The converters supplied propulsion power at 550-600 volts DC

First used extensively to adapt the Tesla-Westinghouse AC system from the Niagara Falls hydro station to DC systems, the substation concept was adopted by the Brooklyn Rapid Transit Co. (BRT) in 1900. A holding company which had acquired the securities of the elevated, street railway, and small railroad lines, the BRT initiated large scale AC electric power generation at the "Central" power station on the Gowanus Canal in March 1901. Substations then supplanted the local DC power stations. Most, like Essex, were constructed by the Brooklyn Heights Railroad Co., a holding company which did not operate any rail lines but financed BRT improvement programs until its liquidation in the early 1900s.

Unlike some substations which were adapted from other purposes, Essex and other new BRT substations were designed specifically as such. Thus it shares many of the same architectural and design elements used in the later substations, including the large, arched portal on the façade and banded tiling on the interior. This continuity in style is due to the influence of Thomas E. Murray, the consulting engineer who was responsible for the building's design. Murray, an inventor, electrical engineer, and leading figure in the electric power business, designed power stations and substations throughout the eastern U.S. He is best known as the innovator who reorganized two dozen small lighting

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companies into the efficient system that became the electric operation of Consolidated Edison. His BRT work included both the BRT Central station and the later BRT Kent Avenue plant in Williamsburg.

Completed in 1903, Essex substation replaced a small DC station as it supplied power to both the trolley lines of the area and the elevated railway which had been electrified in 1899. At that time, the elevated line was operated by another BRT holding company, the Brooklyn Union Elevated Railroad Co.

As additional substations were constructed, the demand for increased power was supplied by the 1906 Kent Avenue station. A year later, the last small DC power station was retired as were the steam locomotives which had been used to meet peak rush hour traffic on the elevated lines of Brooklyn. The BRT became a subway operator in 1913 after entering an agreement with the city known as Contract #4, part of the "Dual Contracts" construction program.

The Essex Substation contributed to the expansion of the elevated line to Jamaica, Queens in 1918 as its territory extended from Alabama Avenue to that of the next substation located on 120th Street in Richmond Hill. By that time, the line had become part of the subway system as trains had been extended into the new Centre Street subway in Manhattan in August, 1913. Following bankruptcy, the BRT was reorganized as the Brooklyn-Manhattan Transit Corp. (BMT) in 1923.

It continued to operate with minor changes for more than seven decades. The territory supplied was reduced in the 1930s after a new substation was constructed near Forest Parkway in the 1930s. In 1972, a new solid state substation, located on the lot west of this building was put into service. In the early 1980s, this old substation was finally decommissioned and the original manually operated rotary converters were removed.

Of the few remaining BRT substations, none retain their original rotary converter equipment. Many of the stations are now used for other Transit Authority support functions, such as crew quarters (as at Old Essex). Today it serves as crew quarters and offices, its function has been replaced by the neighboring Essex Substation. Two additional BRT substations: the East New York substation (a functioning substation) and the old 38th St. substation are now used for other support purposes.

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Substation #401
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9. Bibliography

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Hood, Clifton. *722 Miles: The Building of the Subways and How they Transformed New York*. Baltimore: Johns Hopkins University Press, 1993.

Interborough Rapid Transit Company. *The New York Subway: Its Construction and Equipment*. 1904. Reprinted on website managed by David Pirmann (2004). Retrieved 03/14/04 from source: <http://www.nycsubway.org/irt/irtbook/>.

Lobenstein, Robert. "The Race to Provide Electrical," *MTA - At Your Service*. January 2004.

Murray, Thomas Edward. *Electric Power Plants - a description of a number of power stations designed by Thomas Edward Murray, President, The Association of Edison Illuminating Companies, Member American Society of Mechanical Engineers, Member American Institute of Electrical Engineers*. New York: n.p., Thomas Edward Murray, 1910.

_____. *Power Stations by Thomas Edward Murray, LL.D, D.Sc., Past President, Association of Edison Illuminating Companies, Member American Society Mechanical Engineers, Fellow American Institute of Electrical Engineers*. New York: n.p., 1922.

_____. "Report on the Power Station Possibilities of the Kent Avenue Properties of the Brooklyn Heights Railroad Company...." Thomas E. Murray Consulting Engineer, April, 1903.

_____. "Estimates of Cost Proposed Kent Avenue Power Station Brooklyn Heights Railroad Company." Thomas E. Murray Consulting Engineer, 1905.

_____. "Specifications for the Williamsburg Power House Transit Development Company." Thomas E. Murray, Consulting Engineer, New York June 1905.

National Park Service, Department of the Interior Historic American Engineering Record NY-122, "Interborough Rapid Transit Subway (Original Line): The NY Rapid Transit Decision of 1900: Economy, Society, Politics" prepared by Walter B. Katz, 1979.

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Name of Property

Kings County, NY

County and State

11. Form Prepared By:

Steven Bedford, Principal Architectural Historian
Stacey Vairo, Architectural Historian
Fitzgerald & Halliday, Inc.
72 Cedar Street
Hartford, CT 06106
860-247-7200

Section 8: Narrative Statement of Significance amended February 2010 by:

Joseph J. Cunningham
74-10 35th Avenue #502W
Jackson Heights, NY 11372-8162
(718) 457-6404

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: ADDITIONAL DOCUMENTATION

PROPERTY Substation #401
NAME:

MULTIPLE New York City Subway System MPS
NAME:

STATE & COUNTY: NEW YORK, Kings

DATE RECEIVED: 3/19/10 DATE OF PENDING LIST:
DATE OF 16TH DAY: DATE OF 45TH DAY: 5/03/10
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 05000680

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: N SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

ACCEPT RETURN REJECT _____ DATE

ABSTRACT/SUMMARY COMMENTS:

Additional Documentation Approved

RECOM./CRITERIA Accept
REVIEWER Edson Beall DISCIPLINE History
TELEPHONE _____ DATE 4.21.10

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.



Substation 401

Facade (E1 is in front)

View S.

T.P.S. <No. 2A>002
215 97** N N N-2 12 2(024)



1475 BRUCKNER BLVD
BRONX, N.Y. 10470
718-528-4800
concreteandsteel.com
Specialty Contractors & Bridge Contractors
PERMIT NO.
EXPIRATION DATE

NO PARKING

NO PARKING
ANYTIME
P

NO
STREET
CLOSURE

Substation 401
facade

view south

T.P.S. <No.24A>025
213 97**NNNN 012(024)



Substation 401

Skylight
View south.

T.P.S. <No.20A>021
213 97** N N N-3 55 2(024)



Substation 401

W. mezzanine

New north

T.P.S. <No.17>017
213 97**NNN 2-08 2(024)



Substation 401

from mezzanine
View north.

T.P.S. <No.14 >014
213 97** NNN-1 11 2(024)



Substation 401

Ceiling supports + crane

View northeast.

T.P.S. <No.15 >015
213 97**NN-N-2 11 2(024)

AUX

THINK

H. T. FDR.
206
KENT AVE.
KENT - E. N. Y. - ESSEX
OZONE PK. RICH. HILL WOODMIX

ASBESTOS
GLOVE

WESTINGHOUSE



Substation 401

Switches on board

View South

T.P.S. <No.13 >013
213 97** N N N N-14 2(024)



Substation 401

n. mezzanine + board

Distribution board

View east.

T.P.S. <No.16>016
213 97**NNN 2-03 2(024)

Missing Core Documentation

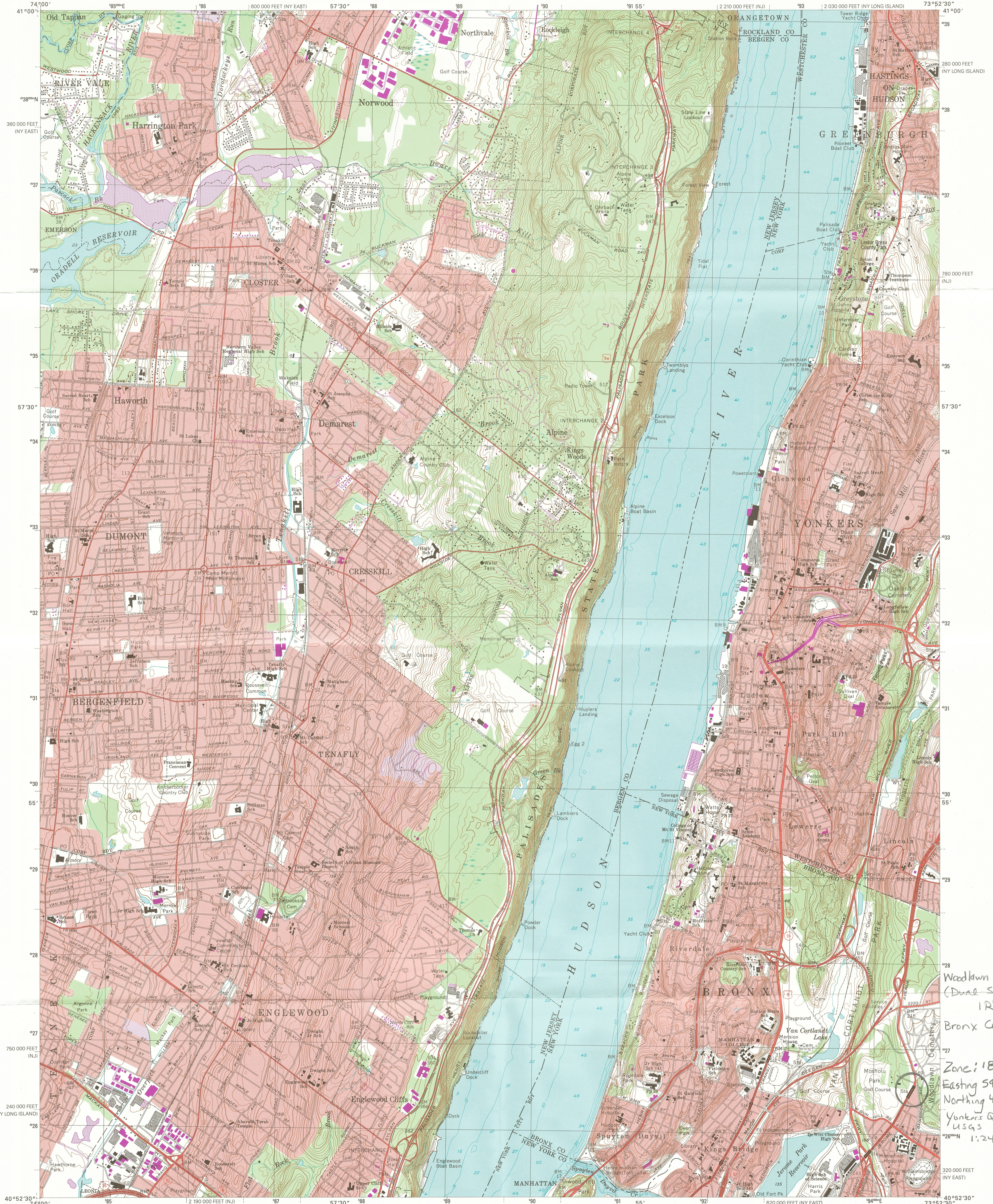
Property Name County, State	Multiple Property Name	Reference Number
Substation #401 Kings, NY	New York City Subway System MPS	05000680

The following Core Documentation is missing from this entry:

Nomination Form

Photographs (#4)

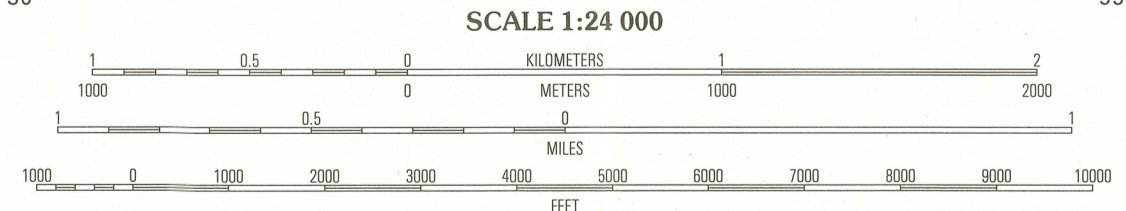
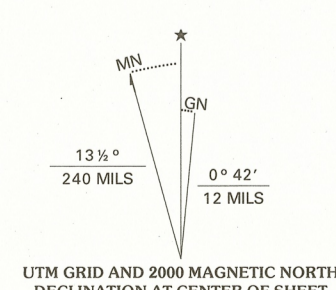
USGS Map



Woodlawn Station
(Dual System
IRT)
Bronx County, NY

Zone: 18
Easting 594430
Northing 4526490
Yonkers Quad
USGS
1:24000

Produced by the United States Geological Survey
Topography compiled 1966. Planimetry derived from imagery taken 1977 and other sources. Photoinspected using imagery dated 1998; no major culture or drainage changes observed. Survey control current as of 1966. Boundaries, other than corporate, revised 2000
North American Datum of 1927 (NAD 27)
Projection: New Jersey coordinate system (transverse Mercator)
10 000-foot ticks: New Jersey coordinate system, and New York coordinate system, east and Long Island zones 1000-meter Universal Transverse Mercator grid, zone 18
North American Datum of 1983 (NAD 83) is shown by dashed corner ticks. The values of the shift between NAD 27 and NAD 83 for 7.5-minute intersections are obtainable from National Geodetic Survey NADCON software
There may be private inholdings within the boundaries of the National or State reservations shown on this map
Information shown in purple may not meet USGS content standards and may conflict with previously mapped contours



CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
TO CONVERT FROM FEET TO METERS, MULTIPLY BY 0.3048
DEPTH CURVES AND SOUNDINGS IN FEET/DATUM IS MEAN LOWER LOW WATER
THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE
MEAN RANGE OF TIDE IS APPROXIMATELY 3.7 FEET



ROAD CLASSIFICATION

Primary highway hard surface	Light-duty road, hard or improved surface
Secondary highway hard surface	Unimproved road

● Interstate Route
 ○ U.S. Route
 ○ State Route

1	2	3	1 Park Ridge
4	5	6	2 Nyack
7	8	9	3 White Plains
			4 Hackensack
			5 Mount Vernon
			6 Westchester
			7 Central Park
			8 Flushing

YONKERS, NY-NJ
1998
NIMA 6265 IV NW-SERIES V821



THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, P.O. BOX 25286, DENVER, COLORADO 80225
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST



The New York City Landmarks Preservation Commission

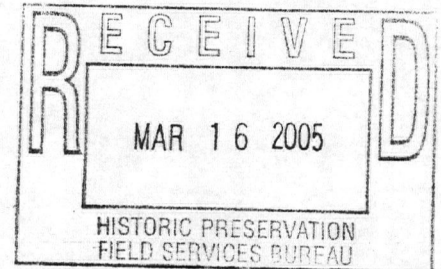
1 Centre Street, 9th Floor North, New York NY 10007 TEL: 212-669-7922 FAX: 212-669-7797

<http://nyc.gov/landmarks/>



RONDA WIST
EXECUTIVE DIRECTOR
rwist@lpc.nyc.gov

March 11, 2005



Ms. Ruth Pierpont, Director
New York State Office of Parks Recreation
and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island
P.O. Box 189
Waterford, New York 12188-0189

Re: The Historic Resources of the New York City Subway
System, various counties, New York

Dear Ms. Pierpont:

I write on behalf of Chair Robert B. Tierney in response to your request for comment on the eligibility of The Historic Resources of the New York City Subway System (Bronx, Kings, Queens, and New York Counties) and the individual substations nominated for the State and National Registers of Historic Places.

The Commission has reviewed the materials submitted by the Historic Preservation Field Services Bureau and believes that the Morris Park Station, Woodlawn Station, Avenue U Station, Bay Parkway Station, 15th Street-Prospect Park Subway Station, 4th Avenue Station, New Utrecht Avenue Station, 9th Avenue Station, Ocean Parkway Station, Substation #401, Wilson Avenue Subway Station, Brooklyn Bridge-City Hall Subway Station, Chambers Street Subway Station, 14th Street-Union Square Subway Station, and Elmhurst Avenue Subway Station appear to meet the criteria for inclusion on the State and National Registers of Historic Places.

Sincerely yours,

Ronda Wist

cc: Robert B. Tierney, Chair
Mary Beth Betts



**New York State Office of Parks,
Recreation and Historic Preservation**

Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189

518-237-8643

www.nysparks.com



David A. Paterson
Governor

Carol Ash
Commissioner

March 17, 2010

Ms. Alexis Abernathy
National Park Service
National Register of Historic Places
1201 Eye St. NW
8th Floor
Washington, D.C. 20005

Re: Transmittal of National Register
Nominations

Dear Ms. Abernathy:

I am pleased to transmit four new National Register nominations and one multiple property context to be considered for listing by the Keeper of the National Register as follows:

Industrial Resources in the City of Syracuse, Onondaga Co., NY (MPDF cover document)
C.G. Meaker Food Company Warehouse, Syracuse, Onondaga Co., NY (first property)

Temple Beth El of Borough Park, Brooklyn, Kings Co., NY

Owasco Reformed Church, Cayuga Co., NY

Elmendorf Reformed Church, New York, New York Co., NY

I am also including technical corrections to one of our previously listed properties associated with the New York City Subway MPDF. Please call Kathy Howe at 518-237-8643 ext. 3266 if there are any questions about these pages.

Thank you for your assistance in processing these proposals. Please feel free to call on me at 518-237-8643 ext. 3258 if any questions arise.

Sincerely,

Mark L. Peckham
National Register
Program Coordinator

enclosures