

NPS Form 10-900  
(Oct 1990)

OMB No. 10024-0018

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 "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 235  
other name/site number Greenwich Substation

#### 2. Location

street & number 23 West 13<sup>th</sup> Street [ ] not for publication  
city or town New York [ ] vicinity  
state New York code NY county New York code 061 zip code 10011

#### 3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this  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  meets [ ] does not meet the National Register criteria. I recommend that this property be considered significant [ ] nationally [ ] statewide  locally. ([ ] See continuation sheet for additional comments.)  
[Signature] SAPO 9/19/05  
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 \_\_\_\_\_  
Date of Action \_\_\_\_\_

Substation 235

New York 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			Sites
<input checked="" type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure			Structures
<input type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure	1	0	Structures
	<input type="checkbox"/> object			Objects
		1	0	<b>TOTAL</b>

**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**

1 (in Greenwich Village Historic District)

**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)

Modern Movement/

Art Deco

**Materials**

(Enter categories from instructions)

Foundation Concrete

Walls Brick, concrete

Roof Steel, concrete

Other Decorative finishes: brick, limestone

**Narrative Description**

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

See continuation sheet

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## 7. Narrative Description

Substation 235 (also known as the Greenwich Substation) is located at 23 West 13<sup>th</sup> Street at the intersection of Greenwich Avenue and Horatio Street in the West Village neighborhood of Manhattan. The substation was previously listed as a contributing building in the Greenwich Village Historic District (19 June 1979), but the current nomination focuses on the building's significance as part of the New York City Subway System. The substation was built in 1932 to provide power to the 8<sup>th</sup> Avenue Line of the IND system. It has a unique shape, built to accommodate its position at this complicated intersection. The rectangular plan has one chamfered corner (at the southwest). The building measures approximately 50 feet in width by 103'3 in length.

### General Characteristics and Construction Methods

The construction of IND Substations in the early 1930s marked the end of the manually operated substation. All but five of the 75-plus stations built for the IND system used mercury arc rectifiers in place of the manually operated rotary converters (Payne, 48). These rectifiers functioned by placing a mercury electrode in contact with mercury vapor – a process that resulted in the current being conducted in only one direction. The most conspicuous change seen in the design of the IND substations was the lack of windows and as a result natural light. The majority of the IND substations built after 1932 were smaller underground vaults that used a single mercury arc rectifier. The smaller type of station allowed the power to be more evenly spaced along the line.

The above-ground IND substations were constructed in a simple Art Deco style. Brick facades feature ornamental limestone and aluminum doors embossed with geometric and sunburst patterns (Payne, 49). One consistent element found throughout the IND stations is the ornamental limestone door surround carved with zig zag designs and topped by a tall inscribed lintel that reads, "CITY of NEW YORK" and lists the substation name.

### Exterior Description

Substation 235 is a three-story, masonry building constructed in the Art Deco style, on an infill lot on West 13th Street (Photo 1). The southwestern corner has been clipped from the typical rectangular plan to accommodate the intersection of Greenwich Avenue. The building that once shared the substation's west party wall has been razed, and this rough brick wall has been painted with a mural that now faces a parking lot. The front façade, which forms a point at the spot where West 13th Street and Greenwich Avenue meet, is

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basically symmetrical (Photo 2). The front and angled corner facades are flanked by limestone piers set off in low relief and carried vertically through the cornice line where they are crowned by square stone turrets. A geometric limestone frieze vertically crosses the center of each facade and links to the stone coping of the brick parapet wall. The bulk of the exterior is clad with variably brown-toned bricks arranged in variations of Flemish coursing. Striations in a lighter-colored brick and recessed vertical mortar joints work to suggest a diamond pattern. The wider (29'-6") facade facing W. 13th St. is dominated by a monumental portal that acts as a loading bay. The doors of this portal are clad in embossed aluminum, decorated with Art Deco-style motifs (although these are barely visible through multiple layers of paint) (Photo 3). The door is framed by fluted limestone jambs surmounted by a stone pediment carved with geometric patterns and the familiar "City of New York Greenwich Substation" name plate (Photo 4). The narrower (25'-6") facade faces Greenwich Avenue. A human-scale door is located at the sidewalk level and is surrounded with a more simple ornamental treatment than the rest of the structure. The entire façade sits on a four-foot-high polished granite plinth.

### Interior Description

The interior is set six steps above street level. The bulk of the space is a large, windowless volume with brick walls, concrete floor slab and a flat concrete ceiling supported by metal trusses (Photo 5). The full basement is accessed via a spiral staircase located at the southeast corner of the building. It contains some of the original equipment including some original feeder cables (Photo 8), but suffered a series of fires in 2003 and 2004. The interior underwent renovations in 2005 which included the scheduled removal of the only two remaining automatic rotary converters (Photo 6). The original overhead electric crane still runs the entire length of this space on massive steel girders. The original fresh air intake plenum also remains.

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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
- Community Planning and Development

**Period of Significance**

1932

**Significant Dates**

1932

**Significant Person**

(Complete if Criterion B is marked above)

N/A

**Cultural Affiliation**

N/A

**Architect/Builder**

Unknown

**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  
# \_\_\_\_\_

**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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### 8. Narrative Statement of Significance

As part of the Multiple Property Submission of the Historic Resources of the New York City Subway System, Substation 235 (the Greenwich Substation) is significant under Criterion A in the areas of transportation and community planning and development. The station also meets Criterion C in the areas of engineering and architectural design. The substation was constructed in 1932 to serve the new IND system which was built between 1932 and 1940. The Greenwich Substation retains a relatively high degree of integrity of location, design, setting, materials, workmanship, feeling, and association making it significant at the local level.

Substations play a vital role as part of the New York Subway system. A substation is an electrical plant built to convert high voltage alternating current (AC) to low voltage (about 600 volts) direct current (DC) used to provide traction power for the trains. Power was generated at a central station and sent to the substation via belowground feeder cables. These cables entered the substation basement in an area known as high tension alley to a pitch-filled copper pot known as a pothead. From the pothead, the line split into three smaller feeders and traveled to a set of oil circuit breakers (Payne, 19). The oil filled circuit breakers were powered by solenoids that were mounted on top of each oil tank. The current was then fed into stacked copper bars called high tension bus, which fed the electricity to a second set of oil circuit breakers. The current was then sent through transformers which stepped the voltage down to about 400 volts. The power was then sent to the rotary converters which took the AC power and changed it to DC. Copper buses took the DC current to a smaller circuit breaker and then to a manually operated switchboard lined with rows of knife switches and meters. Finally, from the switchboard DC feeders ran to the third rails to power the trains (Payne, 20).

The technology has changed over the years. By the time the IND was built, mercury arc rectifiers (MRCs) became the state-of-the-art technology. Most of the original IND substations are of this type. The building of the city-owned IND system brought significant changes in the supply technology. Instead of generating its own 11,000-volt 25-cycle power, the city opted to purchase 13,200 volt 60 cycle AC from Con Edison (who coincidentally had purchased the original IRT powerhouse on West 59th Street in Manhattan).

The IND substations are usually housed in masonry structures designed in a distinctively Art Deco tradition prevalent at the time, much like the Telephone Company buildings of the same era. Like other IND substations, this one is architecturally notable for its highly

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articulated Art Deco facade of brick and limestone, which masks the true function of articulated Art Deco facade of brick and limestone, which masks the true function of converting power for the subway system. Art deco motifs are found throughout the facade design, including: the basketweave brick patterns, embossed geometric patterns on the aluminum-clad doors, and the stylized lettering bearing the name of the substation carved in the limestone frames over the main portal.

The exterior is substantially intact except for two modern metal louver panels that have been installed in the facade for exhaust fans. There is also some cracking evident in the limestone elements and in the brick throughout. The interior has been significantly modified to accommodate the new solid state rectifiers that have replaced the original automatic rotary converters, but given the relative extent of the remaining equipment, the Greenwich Substation is significant in the areas of architecture and engineering. The original overhead crane and the fresh air intake plenum remain.

Substation 235 is located at the northeast corner of Jackson Park, a recently renovated small urban park at the north edge of the Greenwich Village Historic District. It is flanked on its Greenwich Avenue side by a parking lot and on its West 13<sup>th</sup> Street Side by the Great Building Crack-Up International Headquarters of the First National Church of the Exquisite Panic, Inc., originally the Jackson Square Branch of the NY Public Library. This 1887 brick building resembles an old Dutch guild hall and was built by Richard Morris Hunt. Other buildings in the neighborhood include early 19<sup>th</sup> Century brick row houses and 18-story brick apartment buildings.

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**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/>.

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 235

New York County, New York

Name of Property

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10. Geographical Data

Acreeage of Property Less than 1 acre

UTM References

(Place additional UTM references on a continuation sheet.)

UTM grid with columns for Zone, Easting, and Northing for multiple points.

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 property owner 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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**10. Geographical Data**

**Verbal Boundary Description**

The boundary of Substation 235 is shown as the bold line on the accompanying site plan entitled, "CITI Map – Substation 235 – 253 West 13<sup>th</sup> Street." The designation for Substation 235 includes all portions of the station structure and the property included within the boundaries of the NYCTA right-of way.

**Boundary Description**

The boundary for Substation 235 encompasses the entire station building and the NYCTA right-of way associated with the structure.

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Substation 235

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**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

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**Additional Documentation**

List of Black and White Photos

Substation 235  
New York County, NY  
Photographer: Stacey Vairo  
Date: November 2004  
Negatives on file: Fitzgerald & Halliday, Inc.  
72 Cedar Street  
Hartford, CT 06106

1. Substation 235. View northeast.
2. Façade at the corner of Greenwich Avenue and W. 13<sup>th</sup> Street. View northeast.
3. Pressed aluminum doors on façade. View northeast.
4. Limestone lintel above W. 13<sup>th</sup> Street portal. View northeast.
5. Interior trusses. View northeast.
6. Rotary converter. View northeast. (Schedule for removal in 2005).
7. Oil-cooled transformer. View north.
8. Basement. View northeast.

JERSEY CITY QUADRANGLE  
NEW JERSEY - NEW YORK

7.5 MINUTE SERIES (TOPOGRAPHIC)

GEORGE WASHINGTON BRIDGE 8 MI.

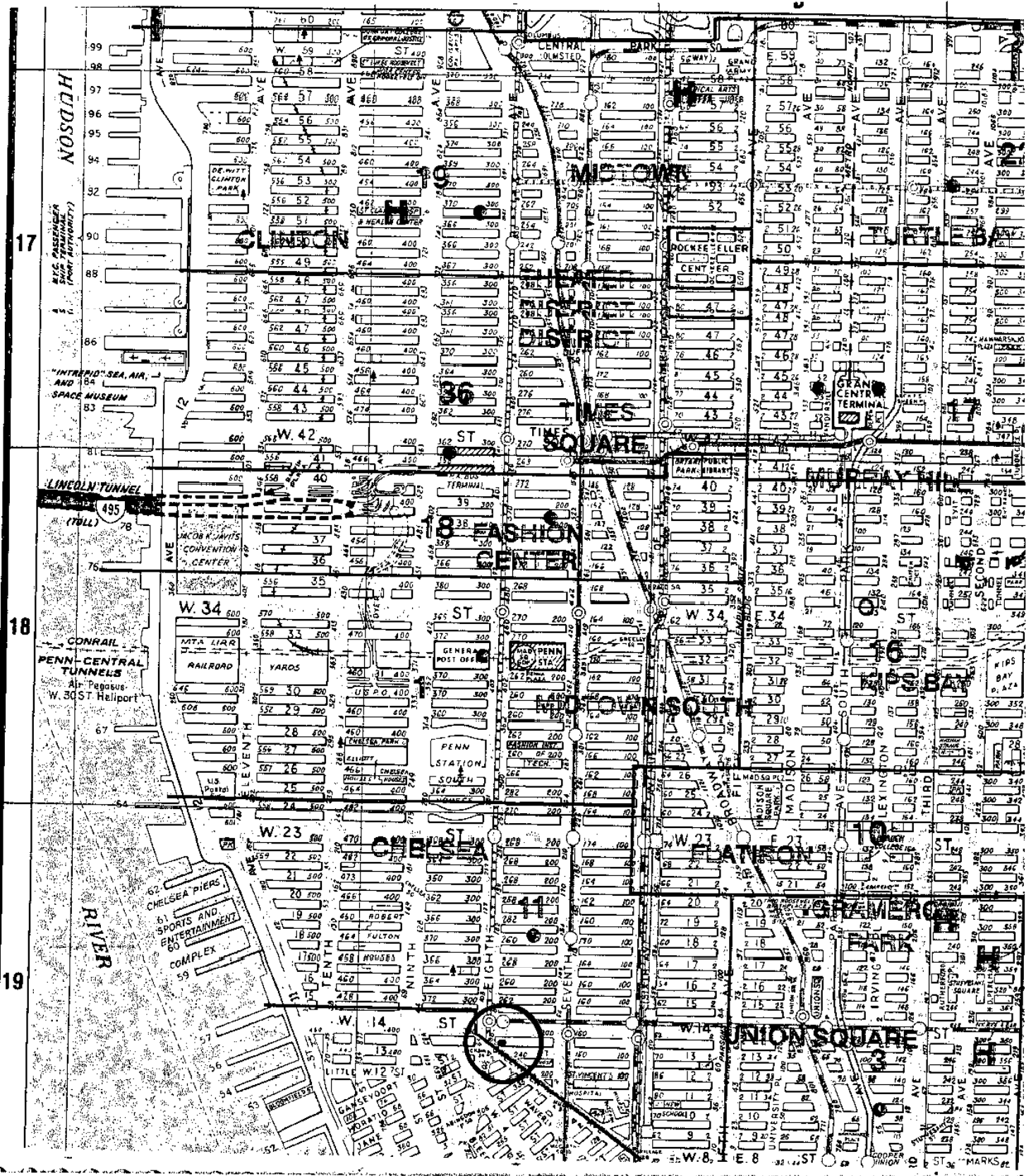
6265 IV SW  
(CENTRAL PARK)



Substation 235  
23 West 13th Street  
New York County, NY  
New York County, NY

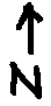
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Easting 584210  
Northing 4510030

USGS  
Jersey City Quad  
1:24000



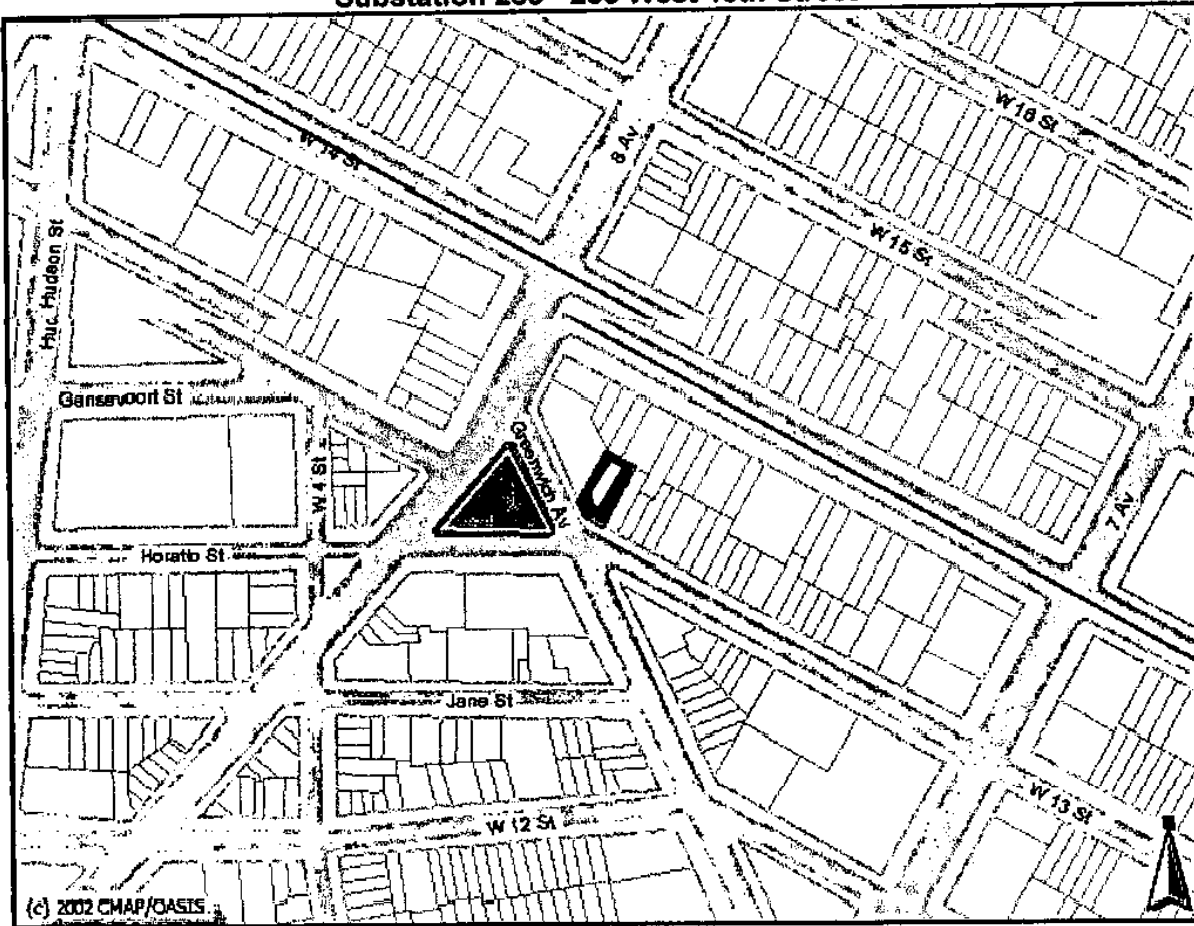
Substation 235  
 23 West 13<sup>th</sup> Street  
 New York County, NY

Hagstrom map, 1948  
 1" = 1,750'



# CITI Map

## Substation 235 - 253 West 13th Street



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

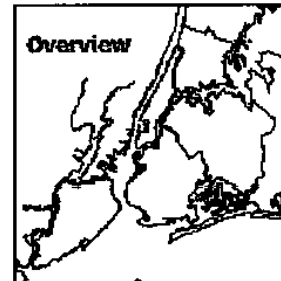
- Community Districts
- City Council Districts



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





The New York City Landmarks Preservation Commission

1 Centre Street, 9<sup>th</sup> 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](mailto:rwist@lpc.nyc.gov)

February 3, 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 and New York Counties) and the individual substations and related buildings 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 Joralemon Street Tunnel, Subway Substation 7, Substation 13, Substation 17, Substation 42, Substation 409, Substation 235, Central IND Substation, Substation 219, the 207<sup>th</sup> Street Yard—Signal Service Building and Tower B, the Coney Island Yard Gatehouse, the Coney Island Electric Motor Repair Shop, the Concourse Yard Entry Buildings, and the Concourse Yard Substation 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