Finding Aid for
POWER SUPPLY COLLECTION
ACCESSION 2006.39

SUMMARY INFORMATION

CREATOR: Manhattan Railway, Interborough Rapid Transit Company, Brooklyn-Manhattan Transit Corporation, and Independent System

TITLE: Power Supply Collection

INCLUSIVE DATES: 1898-1998

BULK DATES: 1901-1920, 1948-1980

QUANTITY: 39.1 linear feet


Updated: 11/20/2007
ADMINISTRATIVE INFORMATION

ACCESS RESTRICTIONS: There are no restrictions on this collection.

COPYRIGHT: New York Transit Museum

PREFERRED CITATION: Courtesy of the New York Transit Museum

PROCESSING INFORMATION: Finding aid prepared by Chela Scott Weber and Desiree Alden

HISTORICAL NOTE/BIOGRAPHICAL NOTE

At the end of the 19th Century, New York City had a system of steam-powered, elevated train lines, run by the Manhattan Railway (MRy) in Manhattan and the Bronx, and by the Brooklyn Rapid Transit Company (BRT) in Brooklyn. Between 1898 and 1903, these steam-powered lines were converted to electric power. In 1899, the MRy began building a large powerhouse on the East River at 74th Street to generate power for its elevated lines and 8 substations to convert and transmit that power to the train lines. In 1904, the Interborough Rapid Transit Company (IRT) completed work on New York’s first subway lines. The IRT built a powerhouse on the Hudson River at 59th Street and 8 substations of its own; it also took over the elevated lines and power generation and distribution facilities of the MRy in 1903. From 1913-1917, as part of the Dual Contracts extension of the subway, the IRT and BRT together built 13 substations in Manhattan, Brooklyn, the Bronx, and Queens. BRT also built numerous substations on its own in the 1910s and 1920s in Brooklyn and Queens. From 1930 on, the Independent System (IND) built over 80 substations, the first five of which were manually operated; the remaining were small, automatic, and usually underground facilities. In 1959, the New York City Transit Authority (NYCTA) sold its power generating facilities at 59th and 74th Streets to Consolidated Edison, and moved the offices and headquarters which had been located in the Powerhouses to one building on West 53rd Street in Manhattan. NYCT continues to close down or modernize existing facilities, and build new power facilities as demand on the subway system dictates.

The Power Supply Collection was transferred to NYTM by Robert Lobenstein, New York City Transit General Superintendent of Power Operations. The collection was amassed by Mr. Lobenstein during his years of employment with NYCT Power Operations.

SCOPE AND CONTENT NOTE

The Power Supply Collection contains records of the construction and maintenance of the electrical supply systems for the New York City subway and elevated lines, from 1898-1998. The collection is primarily composed of photographs (prints and negatives) and paper records documenting the building and modernizing of electrical substations and powerhouses of the Manhattan Railway Company (MRy), Interborough Rapid Transit Company (IRT), Brooklyn-Manhattan Transit Corporation (BMT), and the Independent System (IND). The collection is organized in to four series: 1. Scrapbooks, 2. Photographs, 3. Documents, and 4. Log Books.
Series 1. Scrapbooks consists of 12 scrapbooks containing photographs documenting the construction of MRy substations and 74th Street Powerhouse, as well as early IRT substations and 59th Street Powerhouse. All photos have been cataloged at item level in the PastPerfect Collection Database and a high-resolution surrogate digital image has been attached to each record. Copy prints of the photographs are stored in the Archives Reading Room at 130 Livingston Plaza for access purposes and copy negatives are stored in the Cold Storage Vault at 130 Livingston for reproduction purposes.

Series 2. Photographs contains survey, construction, and modernization photos of MRy, IRT, BMT, IND, and Power Department substations, powerhouses, and other power-related facilities. The series is divided into sub-series by operating agency, and then arranged geographically by Power Zone, then alphabetically within zone and chronologically within each building. Please see the attached appendix for detailed listing of Power Zones. All photos have been cataloged, primarily at item level, in the Museum’s collection management database. A high-resolution digital surrogate image has been created for most of the photographs and attached to the item-level record in PastPerfect.

Series 3. Documents contain correspondence, reports, published pamphlets, construction specifications, and other records. It is divided by operating agency, and then arranged alphabetically within agency. Of particular interest are the extensive records of the construction process of IRT Substation #28 for the 1939-1940 World’s Fair, and the various Federal, State, and local agency reports contained in the miscellaneous sub-series. All documents have been cataloged at the sub-series level and have a container list at the folder level.

Series 4. Logbooks, 1911-1947 contains 9 notebooks used by employees to record the daily operations of IRT substations. Of particular interest are the Substation #11 Logbooks from 1917 and 1941, which contain comments about the draft and other references to World War I and II, respectively. Logbooks cataloged at the item-level in PastPerfect.

BOX AND FOLDER LISTING

<table>
<thead>
<tr>
<th>Box No.</th>
<th>Description</th>
</tr>
</thead>
</table>
1. SCRAPBOOKS

Box 1
Scrapbook #1, construction of MRy Substation #8; installation of underground electrical conduit, 1901

Box 2
Scrapbook #2, construction of MRy Substations #5, #6, #7, #8; installation of underground conduit, 1901

Box 3
Scrapbook #3, construction of MRy Substations #3, #5, #7, and 74th Street Powerhouse, 1902

Box 4
Scrapbook #4, construction of MRy Substations #5, #6, #7, #8; installation of underground conduit, 1901

Box 5
Scrapbook #5, construction of MRy 74th Street Powerhouse, IRT Substation #16, 1902-1903

Box 6
Scrapbook #6, construction of MRy 74th Street Powerhouse, IRT Substations #16, #18 and 59th Street Powerhouse; electrical equipment to be used in IRT substations and powerhouse in pieces prior to assembly, 1902-1904

Box 7
Scrapbook #7, construction of MRy 74th Street Powerhouse, 1901

Box 8
Scrapbook #8, construction of IRT Substations #11, #12, #13, #14, #15, #16; 59th Street Powerhouse; Repair and Inspection Shop, 1904

Box 9
Scrapbook #9, construction of MRy Substation #2, IRT 59th Street Powerhouse; electrical equipment to be used in IRT substations and powerhouse in pieces prior to assembly, 1902

Box 10
Scrapbook #10, construction of MRy Substation #2 and 74th Street Powerhouse, 1902

Box 11
Scrapbook #11, construction of MRy 74th Street Powerhouse, 1901-1902

Box 12
Scrapbook #12, 2 prints of construction of MRy 74th Street Powerhouse, plus duplicates of all but 2 prints in Scrapbook #11

2. PHOTOGRAPHS
2.1. Power Zones & Substations Sub-series

Box 13

**IRT/ MRy Division**

Zone 4, Substation 4, 1919, view of switchboard
Zone 6
  Substation 6
    1918, shop foreman portrait
    1949, disassembly of rotary converter
Zone 7
  Substation 7, 1948, modernized feeders and switches
  98th St. & 3rd Ave Equipment Shop, 1904, shop interior & equipment
Zone 8
  General, 1956, electrical conduit installation
  Substation 8
    1921, storeroom in sub-basement
    1932, exterior view of side wall
    1956, contract P-93 modernizations

**IRT Division (subway)**

Zone 11
  Lafayette-Broome Substation, Undated, contract C-214 modernizations
  Substation 11
    1902, substation construction
    1904, interior views showing electrical equipment
    1917, demolition of original location, construction at new location
    1918-1919, interior views showing electrical equipment
    1923, damaged equipment parts
    1924, damage to rotary converter #5
    1925, burnt armature on rotary converter #4
    1933, new 20,000 ampere shunts
    1948, equipment modernizations

Zone 12
  Substation 12
    1903, substation construction
    1949, contract P-43 modernizations
    1952, contract P-63 modernizations

Box 14

**IRT Division**

Zone 13
  General, 1967, surveying photos and construction under contract C-182 (6 folders)

  Substation #13
    1902, substation construction
1903, substation construction (3 folders)
1904, substation construction (2 folders)

Box 15

IRT Division
Substation #13 (continued)
1918, electrical equipment
1926, damaged oil pot, rotary #2 oil switch
1927, damaged skylight
1936, field coil damper of 1500 KW rotary converter
1949, installation of rotary converter
1955, contract P-92 modernizations
1980, front facade
Undated, flashover damage in high tension gallery
7th Ave-43rd Street Substation
1967, surveying and substation construction (2 folders)
1968, surveying and substation construction (3 folders)
1969, rebuilt street after construction
Zone 14
Broadway-73rd Street Substation, 1970, contract P-212 modernizations
Substation #14
1902, substation construction
1903, substation construction (4 folders)

Box 16

IRT Division
Substation #14 (continued)
1904, substation construction (2 folders)
1970, contract P-212 modernizations
Zone 15
Broadway-LaSalle Street Substation, 1973, building exteriors
Substation 15
1902, substation site before construction
1903, substation construction (3 folders)
1904, substation construction
1970, contract P-212 modernizations
Zone 16
General, 1958, Contract XK Lenox Avenue duct line work
Lenox-113th Street Substation, 1970, contract P-212 modernizations
Lenox-141st Street Substation, 1970, contract P-212 modernizations
Substation #16
1902, building site excavation
1903, substation construction (4 folders)
1904, substation construction (2 folders)
1964, manholes
Box 17

IRT Division

Zone 17

Broadway-240th St. Substation, 1973, building exteriors
Substation #17
1923, damaged switchboard after accident
ca.1975, interior views; escalator and elevator shop on upper floors

Zone 18

East 180th-Morris Park Substation, 1973, building exteriors
Substation #18
1902, substation construction
1903, substation construction (3 folders)
1904, substation construction (2 folders)
1919, emergency alarm
1954, contract P-91 modernization
1981, interior views
Westchester-Saint Ann’s Avenue Substation, 1972, survey photos (no prints, negatives in cold storage)

Zone 21, Substation #21, 1907, exterior and interior views

Box 18

IRT Division

Zone 22

Nostrand Avenue Substation
1948, survey photos of the building site
1949, substation construction
1950, completed construction
1951, contract P-44 modernizations
Substation #22, 1951, contract P-44 modernizations

Zone 23

Livonia Avenue Substation
1948, survey photos of the building site
1949, substation construction
1950, completed construction
Substation #23
1919, construction site
1951, contract P-44 modernizations

Zone 25

Tudor Substation
1952, substation construction (2 folders)
1957, contract P-64 modernizations

Zone 26

Substation #26
1916, substation construction
1917, substation construction
1919, terminal box wiring in substation basement
Box 19

IRT Division

Substation #26 (continued)
1920, terminal box wiring in substation basement
1937, broken insulators from high tension bus
1955, contract 92 modernizations
1980, building exterior

Zone 27
Substation #27
1923, substation construction (2 folders)
1924, exterior views
1925, safety features on rotary converters

58th Street Substation
1951, survey photos of substation site
1952, substation construction
1957, contract P-64 modernizations
ca.1960, posed photographs in front of rectifiers, switchboards

Zone 28
Lawrence Substation
1951, survey photos of building site
1952, substation construction
1957, contract P-64 modernizations

Box 20

IRT Division

Substation #28, World’s Fair Substation
1937, survey photos of building site
1938, substation construction; studio shots of electrical equipment (6 folders)
1939, substation construction

Zone 40
Substation #40
1917, substation construction
1919, substation interior
1922, interior shots of electrical equipment
1924, detail shots of rotary converters
1925, damaged rotary converter
1934, damaged rotary converter

Zone 41
General, 1968, contract C-204 survey photos (2 folders)

Substation #41
1916, substation construction

Box 21

IRT Division
Substation #41 (continued)
1917, substation construction (3 folders)
1918, substation construction
1948, modernizations
1973, contract P-214 modernizations

Zone 42
General, 1955
Lexington Avenue-78th Street Substation
1969, contract C-206 surveying photos (2 folders)
1975, contract P-214 modernizations
Park Avenue-41st Street Substation
1968, contract C-184 construction
1978, flashover damage to 13000 KV cubicle
Substation #42
1917, substation construction
1918, substation construction
1949, contract P-43 modernizations
1952, contract P-63 modernizations
1955, contract 92 modernizations
1963, contract P-206 modernizations

Box 22
IRT Division
Zone 43
General, 1967, contract C-183 survey photos (2 folders)
Pelham-St. Ann’s Avenue Substation, architect’s rendering, ca.1967
Substation #43
1917, substation construction
1948, interior views showing electrical equipment (no prints, negatives in cold storage)
Undated, substation facade

Zone 44
Substation #44
1916, substation construction
1917, substation construction (2 folders)
1918, substation construction

Zone 45
Jerome Avenue-176th Street Substation
1972, contracts C-234, D-13386 survey photos (no prints, negatives in cold storage)
1973, exterior views
Jerome Avenue-212th Street Substation
1972, contract C-235 survey photos (no prints, negatives in cold storage)
1973, exterior views
Substation #45, 1917, substation construction
Zone 46
Allerton Avenue Substation, 1954, contract P-61 modernizations
Baychester Substation, 1954, contract P-61 modernizations

Box 23

IRT Division
Zone 46 (continued)
Brady Avenue Substation
1949, building site prior to construction
1950, substation construction
1954, contract P-61 modernizations

Zone 47
Substation #47
1917, substation construction
1954, contract P-61 modernizations
239th Street Substation
1948, building site prior to construction
1949, substation construction
1951, contract P-44 modernizations (no prints, negatives in cold storage)

Zone 48
Commonwealth Avenue Substation
1948, substation construction
1949, substation construction
Mulford Avenue Substation
1948, survey photos; substation construction

Box 24

IRT Division
Zone 48 (continued)
1949, substation construction
1950, interior views with electrical equipment (no prints, negatives in cold storage)
Substation #48
1919, substation location
1920, substation construction (3 folders)

BMT Division
Zone 4
Hudson Substation
ca.1973, contract P-214 modernizations
ca.1980, damage to rotary converter #4
Manhattan Bridge-York Street Substation
1969, contract C-207 survey photos
1973, building facade
1975, contract P-214 modernizations
Montague-Furman Street Substation
1973, building facade
1975, contract P-214 modernizations

Prospect Park Substation
1966, contract P-203 modernizations
1980, building facade

3rd Avenue Substation
1957, substation construction (2 folders)
1958, substation construction (2 folders)

Box 25

BMT Division / Zone 4
3rd Avenue Substation (continued)
1959, substation construction

4th Avenue-Garfield Place Substation
1968, contract C-191 survey photos (3 folders)
ca. 1975, flashover damage to supervisory control board

5th Avenue-Flatbush Substation
1967, contract C-190 survey photos (3 folders)

Box 26

BMT Division / Zone 4
5th Avenue-Flatbush Substation (continued)
1967, contract C-190 survey photos
1968, contract C-190 survey photos; substation construction

7th Avenue Substation
1965, contract C-157 manhole and emergency distribution room (no prints, negatives in cold storage)
1966, contract P-203 modernization photos (2 folders)

Zone 5
4th Avenue-38th Street Substation, 1981, building exteriors
4th Avenue-64th Street Substation, 1980, building exteriors

Zone 6
Brighton-West 8th Street Substation
1967, contract C-188 survey photos
ca. 1968, electrical equipment

Coney Island Substation
1948, proposed substation location (no prints, negatives in cold storage)
1949, substation construction
1950, completed substation exteriors
1951, contract P-44 modernizations (no prints, negatives in cold storage)
1954, control switchboards and panels

West 8th Street Circuit Breaker House, 1954, contract P-60 control cable installation
Box 27

BMT Division

Zone 7

Albermarle Circuit Breaker House, 1963 and 1964, contract C-157 survey photos (no prints, negatives in cold storage)

Brighton-East 15th Street Substation
1978, exterior views of building
1980, exterior views of building

Parkville Substation
1954, contract P-60 modernizations
1966, contract P-203 modernizations
1980, flashover damage to oil circuit breaker; exterior views

Quentin Road Substation
1963, contract C-159 survey photos
1964, contract C-159 survey and construction photos (3 folders)
1966, contract P-203 modernizations

Zone 8

Broadway-Cornelia Street Substation, 1973, exterior views of building

Broadway-East New York Substation, 1970, supervisory cubicle

Broadway-Myrtle Avenue Substation
1972, contracts C-237 & D-13389 survey photos (no prints, negatives in cold storage)
ca.1975, electrical equipment modernizations
1977, damage done from signal transformer failure

Fulton-Essex Street Substation, 1975, contract P-214 modernizations

Zone 9

Sea Beach-Avenue T Substation
1953, contract P-43 modernizations (no prints, negatives in cold storage)
1954, contract P-60 modernizations

Sea Beach-16th Avenue Substation
1967, contract C-170 substation construction (no prints, negatives in cold storage)
1970, contract P-212 modernizations

Zone 10

Canarsie-East 103rd Street Substation
1966-1967, contract C-170 substation construction (no prints, negatives in cold storage)

Box 28

BMT Division

Zone 10
Canarsie-East 103rd Street Substation (continued)
1970, contract P-212 modernizations
1973, exterior view from street and architects rendering

Zone 12
General, 1976, survey photos for proposed substation sites along Jamaica Avenue
Jamaica-144th Place Substation
c.1965, architects rendering
1966-1967, contract C-170 substation construction (no prints, negatives in cold storage)
1970, contract P-212 modernizations
Richmond Hill Substation, 1980, substation exterior
Woodhaven Substation, 1980, substation exterior

Zone 13, Lexington Substation, 1952, contract P-65 modernizations (no prints, negatives in cold storage)

Zone 18, Gates-Ridgewood Substation, 1973, contract C-249 modernizations

Zone 24
Broadway-Lorimer Street Substation, 1973, contract C-236 photos of building exteriors
Broadway-South 6th Street Substation, 1972-1973, contract C-248 modernizations

Zone 25
New Utrecht Substation
1953, contract P-43 modernizations (no prints, negatives in cold storage)
1970, contract P-212 modernizations

Zone 29
Astoria-24th Avenue Substation, 1973, contract C-220, photos of building exteriors
Queens Plaza South-9th Street, 1981, survey photos for proposed substation

**IND Division**

Zone 1
Dyckman Substation
c.1940, substation exterior
c.1988, *contract P-36258, dismantling and replacement of rotary converter ‘C’

Zone 3, Harlem Substation, 1975, flashover damage to building and electrical equipment

Zone 4
West 63rd Street Substation, ca.1978, *contract P-253, interior views with electrical equipment
West 82nd Street Substation, ca.1973, *contract P-215, interior views with electrical equipment
West 108th Street Substation, ca.1986, *contract P-36258, street excavation and removal and replacement of rectifier

Zone 5
General, 1951, survey photos for 53rd Street duct construction
Central Substation & Power Control Center
    1932, main entrance on front facade
    1949, contract P-16, supervisory control board in Control Center
    1962, contract P-204 modernizations
8th Avenue-53rd Street Substation
    1957, contract P-94 modernizations

Box 29

IND Division
Zone 6, Greenwich Substation, 1932, substation facades
Zone 7
    Cliff Substation
        1975, flashover damage to building and electrical equipment
        ca.1977, contract P-253 modernizations
Zone 8, Stanton Substation, 1970, contract P-212 modernizations
Zone 9
    Elliot Place Substation, 1966, street hatchway
    155th Street Substation, 1977, flashover damage to electrical equipment
Zone 13, Downing Substation & Control Room, ca.1978, contract P-253 modernizations
Zone 16
    Patchen Avenue
        1957, contract WU images of interior and hatchway at street level
        ca. 1975, *contract P-250, solid state electrical equipment
        Saratoga Avenue, 1948, Contract PLT EXT, electrical equipment in underground station (no prints, negatives in cold storage)

Zone 17
    Avenue C Substation, 1954, contract P-60 modernizations
    Caton Avenue Substation, 1954, contract P-60 modernizations
    Seeley Street Substation
        1954, contract P-60 modernizations
        ca. 1986, *contract P-36258 modernizations
Zone 18, Avenue O Substation, 1954, contract P-60 modernizations
Zone 19
    Avenue Z Substation
        1954, contract P-60, electrical equipment
        1964, contract C-168 modernizations (no prints, negatives in cold storage)
Zone 20, 45th Street Substation, 1975, flashover damage to building and electrical equipment

Box 30

IND Division
Zone 22
General, Undated, Transformer room in subway station
86th Avenue Substation, 1966, street hatchway

Zone 23
Dalny Road Substation, 1951, contract P-42, electrical equipment (no prints, negatives in cold storage)
Hillside Substation & Control Room,
  1951, contract P-42 modernizations (no prints, negatives in cold storage)
  ca.1978, contract P-253 modernizations
178th Street Substation, 1951, contract P-42, electrical equipment (no prints, negatives in cold storage)

Zone 24, Floyd Street Substation, 1986, *contract P-36258, installation of solid state electrical equipment

Zone 25
Concourse Yard Substation, 1932, front facade
Mosholu Parkway Substation, ca.1978, contract P-253 modernizations

Zone 27
Fort Greene Place Substation, ca. 1975, *contract P-250, solid state electrical equipment
Livingston Street Substation, ca.1978, contract P-253 modernizations
State Street Substation, 1966, street hatchway

Zone 28
Hester Street Substation
  1963, water damage from leaks in walls, taken for dispute with contractor (no prints, negatives in cold storage)
  1964, contract P-202, electrical equipment (no prints, negatives in cold storage)

Box 31

**IND Division**

Zone 33
Atlantic Avenue Substation, 1948, *contract P-16, electrical equipment (no prints, negatives in cold storage)
Bradford Substation & Control Room, 1948, *contract P-16, electrical equipment (no prints, negatives in cold storage)
Eastern Parkway Substation, 1948, *contract PLT EXT and P-16, electrical equipment (no prints, negatives in cold storage)

Zone 34
Elton Substation, 1948, *contract P-16, electrical equipment (no prints, negatives in cold storage)
Fountain Avenue Substation & Control Room
  1948, *contract P-16, electrical equipment (no prints, negatives in cold storage)
  ca.1985, *contract P-36258, installation of new solid state electrical equipment
Lincoln Substation, 1948, *contract P-16, electrical equipment (no prints, negatives in cold storage)

Zone 35
Liberty Avenue-76th Street Substation
1953, survey photos of area prior to construction
1954, substation construction
1957, contract P-64, substation facades

Zone 36
Aqueduct Substation
1957, contract P-94, electrical equipment
1976, new emergency alarms on panels
Liberty Avenue-98th Street Substation
1973, contract C-217 images of exterior facades
1976, *contract P-215, solid state electrical equipment

Box 32

IND Division
Zone 37
Hamilton Beach Substation
1957, contract P-94 completed substation construction
1964, burnt potential transformers

Zone 38, Broad Channel Substation, 1957, contract P-94 completed substation construction

Zone 39
Edgemere Substation, 1957, contract P-94 completed substation construction

Hammels Substations & Control Room
1957, contract P-94 completed control room construction
1962, contract XO-1 survey photos of existing LIRR Substation 5 building conditions, to become new Hammels Substation
1963, contract P-108 modernizations
Wavecrest Substation, 1957, contract P-94 completed substation construction

Box 33

IND Division
Zone 40, Rockaway Park, 1959, contract P-106 modernizations
Zone 41
General, 1955, contract P-102 survey photos of street at Pitkin Avenue & Shephard Avenue, Brooklyn.
Pitkin Yard Substation, 1949, *contract P-16, interior views substation and machine shop (no prints, negatives in cold storage)

Zone X
Greely Substation
1966, General Electric ignition rectifier
ca.1975, *contract P-250, solid state electrical equipment
Village Substation, ca.1975, *contract P-250, solid state electrical equipment

**Power Control Department (NYCTA)**

*East 75th-York Avenue 13-27 KV Transmission Substation*
- 1955, survey photos of construction area; demolition and excavation of site (2 folders)
- 1956, substation excavation and construction (3 folders)
- 1957, substation construction
- 1958, aerial view of completed construction

*128th Street-2nd Avenue 69 KV Transmission Substation*
- 1955, survey photos of construction area; excavation of site
- 1956, excavation and substation construction (2 folders)
- 1957, substation construction
- 1959, aerial view of completed construction

### 2.2. Powerhouse Sub-series

**Box 34**

**IRT/59th Street Powerhouse**
- 1902, powerhouse construction (3 folders)
- 1903, powerhouse construction (7 folders)

**Box 35**

**IRT/59th Street Powerhouse (continued)**
- 1903, powerhouse construction (9 folders)

**Box 36**

**IRT/59th Street Powerhouse (continued)**
- 1903, powerhouse construction
- 1904, powerhouse construction (5 folders)

**Box 37**

**IRT/59th Street Powerhouse (continued)**
- 1904, powerhouse construction (7 folders)

**Box 38**

**IRT/59th Street Powerhouse (continued)**
- 1916, rebuilding of discharge tunnel
- 1917, rebuilding of discharge tunnel (3 folders)
- 1918-1924, miscellaneous electric equipment
- 1920, interior construction work
- 1921, panel boxes; rotary generator on engine room floor
- 1922, general views of engine room floor
- 1923, exterior views of powerhouse
- 1925, damaged electrical equipment
1930, testing room experiment
c.a.1932, interior and exterior views

**Box 39**

**IRT/59th Street Powerhouse (continued)**
- 1935, exterior views of power house and coal tower
- 1936, construction of new coal tower and crane
- 1938, masonry work on boilers; pilings in yard
- 1939, masonry work on boilers
- 1948, construction of powerhouse extension
- 1949, construction of powerhouse extension (5 folders)
- 1950, construction of powerhouse extension

**Box 40**

**IRT/59th Street Powerhouse (continued)**
- 1951, contract P-57 modernizations (2 folders)
- 1952, contract P-63 modernizations (no prints, negatives in cold storage)
- 1953, contract P-57 modernizations
- 1954, contract P-59 modernizations (2 folders)
- 1955, electrical galleries and powerhouse extension
- 1956, survey photos of existing site for modernization

**Box 41**

**IRT/59th Street Powerhouse (continued)**
- 1957, survey photos of existing site for proposed modernizations;
  modernization construction work (6 folders)

**Box 42**

**IRT/59th Street Powerhouse (continued)**
- 1958, modernization construction work (6 folders)
- 1959, completed modernizations
- Undated, electrical equipment

**74th Street Powerhouse**
- c.a.1902, exterior view of nearly completed construction
- 1918, general view of engine room floor
- 1919, general view of engine room floor
- 1921, damaged electrical equipment
- 1934, 73rd Street dock
- 1952, contract P-63 modernizations (no prints, negatives in cold storage)

**Box 43**

**IRT/74th Street Powerhouse (continued)**
- 1953, construction, powerhouse extension
- 1954, construction of powerhouse extension, coal tower and ash building,
  contracts P-70, P-72, P-78 and P-80 modernizations (5 folders)

**Box 44**
IRT/74th Street Powerhouse (continued)
1955, electrical equipment modernizations, construction of control room, coal tower and ash building, ash tower; sidewalk and road conditions outside powerhouse; interior construction of powerhouse extension; digging of fuel oil pipe trench (5 folders)
1956, Interior of powerhouse during extension

Box 45
IRT/74th Street Powerhouse (continued)
1956, construction on waterfront facilities, ash bridge, and interior of powerhouse extension (4 folders)
1957, demolition of old coal and ash structure, construction of new turbine house, intake and outtake tunnels, ash building, duct trenches and manholes; demolition of old electrical galleries; (5 folders)

Box 46
IRT/74th Street Powerhouse (continued)
1958, demolition of old boiler house; construction of turbine house, coal tower runway; installation of condenser (4 folders)
1959, construction of boiler house, turbine house; completed construction of coal and ash building

BHRR
39th Street-1st Avenue Powerhouse, 1998, views from street of original building, no longer used as a powerhouse
Wyckoff-Madison D.C. Powerhouse, 1998, views from street of original building, no longer used as a powerhouse
Southern Powerhouse, 1998, interior and exterior views of original building, no longer used as a powerhouse

BMT
Williamsburg-Kent Avenue Powerhouse
1949, freight elevator and shaft (no prints, negatives in cold storage)
1952, lintel installation in basement wall
1955, interior views of coal tower and boiler house
1956, demolition and construction of exterior and interior of powerhouse; excavation and installation on new pilings in yard area

Box 47
BMT/ Williamsburg-Kent Avenue Powerhouse (continued)
1956, demolition of old and construction of new boiler and turbine houses; construction of new ash handling facilities; excavation and installation on new pilings in yard area (2 folders)
1957, construction of boiler house, coal and ash handling facilities, and bridges between main building and dock area (3 folders)
1958, construction of boiler house, coal and ash handling facilities; installation of new precipitator; new restrooms and showers (2 folders)
1959, construction in interior of new boiler house, mechanical control room, coal tower conveyer belts

**MSRy**
- 96th Street Temporary Power Plant,
  - 1898, view from roof
  - 1900, interior view

**Unknown**
- Jeanette Park Powerhouse, 1914 and 1920, substation location and construction

### 2.3. Power Department Sub-series

**Box 48**
- Circuit Breaker House #118, 1964, contract C-164 survey photos (no prints, negatives in cold storage)
- Dyre Avenue Circuit Breaker House, 1954, contract P-61 terminal box wiring
- Orchard St. Circuit Breaker House, 1955, contract 92 wiring installation; manholes (no prints, negatives in cold storage)
- 9th Avenue Signaling Tower, 1981, view of tower from street
- 10th Street Circuit Breaker House, 1955, contract 92 cables and conduit installation (no prints, negatives in cold storage)
- 11th Street Circuit Breaker House, 1955, contract 92 cable installation; wiring (no prints, negatives in cold storage)
- 42nd Road Circuit Breaker House, 1955, contract 92 cable installation; control terminal box (no prints, negatives in cold storage)
- 53rd Street Control Center
  - 1977, excavation of trenches for duct runs
  - 1978, manholes and duct run trenches
  - 1979, building construction (3 folders)
  - 1980, building construction; installation of duct runs in trenches (5 folders)
- 53rd & Broadway Circuit Breaker House #4, 1955, contract 92 cable and conduit installation (no prints, negatives in cold storage)
- 58th & Broadway Circuit Breaker House #5, 1955, contract 92 cable and conduit installation (no prints, negatives in cold storage)
- 240th & Warwick St. Circuit Breaker House, 1949, survey photo of proposed location

### 2.4 Miscellaneous

**Box 49**

**IRT/MRy Division**
- 1919, marble switchboard

**IRT Division**
- 1904, signal interlocking cabin
- 1918, battery room
- 1919, electrical equipment
- 1920, part of rotary converter
- 1922, electrical equipment
1923, electrical equipment
1927, underfeed stoker diagram
1982, survey photographs of duct line
Undated, disconnect switches

**BMT Division**
1927, Canarsie Yard facility

**IND Division**
1976, solid state electrical equipment
Undated, electrical equipment

**Miscellaneous – Equipment**
1930, damaged switch
1959, damaged equipment
Undated, electrical equipment, repair shop, London, England rectifier station

**Miscellaneous – People**
ca. 1958, award ceremony
ca. 1959, award ceremony, George J. Tzougras,
Undated, award ceremony, George J. Tzougras bronze plaque,
portrait of employee George Tappan

### 3. DOCUMENTS

**Box 50**

**IRT/Substation #28, World’s Fair**
Curve Sheets and Memo, August 8, 1939
Substation #28, Long Island, NY, December 14, 1938
Details of Operation of Automatic Equipment, 1939 (3 folders)
Equipment Testing Procedures, December 1938
Esterline Charts, 1939
I-T-E Circuit Breaker Co. Correspondence, 1939-1940
I-T-E Circuit Breaker Co. Specification Booklet F-5022, December 30, 1937
I-T-E Circuit Breaker Co. Specification Booklet #157-2, 1938
I-T-E Specifications & General Data Re: S.S. #28, 1937-1938

**Box 51**

**IRT/ Substation #28, World’s Fair (continued)**
Miscellaneous Computations, 1937-1940
Miscellaneous Subjects- World’s Fair, 1937-1940
Operation Troubles, 1939-1945
Preliminary Specification for Automatic Equipment for Substation No. 28, August 10, 1937
Substation 28 Correspondence, Equipment, Aerial Cable, 1936-1940
Tests, 1938-1939
Thomas E. Murray Report, January 1939
World’s Fair Data, 59th St. Power Station, Substations 13-26-27, 1937-1938
20 Ton Crane Bids and Correspondence, 1938
74th Street Power House, World’s Fair, 1937

Box 52

**IRT/74th Street Power House**
Contract P-44 Piping and Miscellaneous Equipment, List of Contractor Drawings, 1955
J.G. White Engineering Corp. Correspondence Regarding Drawing Classification and Numbering Systems, 1949-1958
P-80 Contract 1 General Construction, Technical Features of Bids, June 1951
P-80 Contract 2 Heating, Ventilating and Air Conditioning, Technical Features of Bids, July 15, 1951

Box 53

**BMT**
Bridge Substation Closing Records, 1975-1976
Broadway – Park Row Substation, Inspector’s Daily Reports, 1983-1984
(7 folders)

Box 54

**BMT (continued)**

Broadway – Park Row Substation, Inspector’s Daily Reports, 1985-1988
(7 folders)
Broadway – Park Row Substation, Report Regarding Borings, 1983
Central Substation Closing Records, 1970-1972
Coney Island Substation Closing Records, 1972-1976
Halsey Substation Closing Records, 1974-1975
Lexington Substation Closing Records, 1968-1970
Miscellaneous Photographic Logs, 1968-1970

Box 55

**IND**
Greeley & Village Substations, Mercury Arc Rectifiers Instructions, Undated
Stanton St. Substation
Allis-Chalmers Testing Records, 1935 (2 folders)
Construction Receipts, 1935
Correspondence Regarding Allis-Chalmers Request for Extra Compensation, 1936-1937
Kenotron Testing, 1935

Box 56

**IND (continued)**
General
Multiple Locations, Certified Tests of Rotary Converters and D.C. Switchgear, 1930-1962
Substation, System Operation and Supervisory Construction Calculations, 1930-1944

Box 57

**Power Department**
Contract P-36300 Depositions, April 22, 1980
Contract P-97 Correspondence Regarding Construction of 69 KV Transmission and Distribution Substation, 1956-1958 (2 folders)
Department Organization and Hierarchy Diagrams, 1953-1983
Power Department Safety Rules Booklet, December, 1960
Report on the Effect of Lagging New York Board of Transportation Rectifier Tanks, 1931
Schedule of Working Conditions for Employees of the Power Department, 1937-1948

Box 58

**Miscellaneous**
City of New York, Report of the Mayor’s Committee on Transit Power Plants, April, 1958
Consolidated Edison Miscellaneous Franchise Consolidation Documents, 1887-1945
Correspondence Regarding Conduit Runs on Chicago’s State Street Subway Line, June 11, 1931
General Electric Pumpless, Metal-Enclosed Rectifier Substation Equipment, June 14, 1950
Plant Sale Contract and Power Supply Contract between City of New York, NYC Transit Authority and Consolidated Edison Company of New York, Inc. 1959 (3 folders)

Box 59

**Miscellaneous (continued)**
Power Stations, by Thomas E. Murray, 1922
Power Supply for the New York City Transit System, October 13, 1954
Report on the Power Supply of the New York City, 1940
Report on the Power Supply System of the Brooklyn Rapid Transit Company,
May 8, 1918
Report on the Powerstation Possibilities of the Kent Avenue Property of the
Brooklyn Heights Railroad Company, by Thomas E. Murray, 1903
Substation and Powerhouse Training and Promotion Exams, 1943
Supplemental Indenture between Williamsburgh Power Plant Corporation and
The Chase National Bank of the City of New York, July 1, 1932
Supplementary Report on Power Supply of the New York City Transit
System, July, 1945
Westinghouse Specification of Synchronous Converter, Proposal on 4200
KVA Air Blast Transformer, Undated

4. LOG BOOKS

Box 60
IRT Substation 11
1917

Box 61
1928

Box 62
1930

Box 63
1941

Box 64
1947

Box 65
IRT Substation 12
1911
1913

Box 66
IRT Substation 21
1923

Box 67
1928

Subject Headings
Brooklyn Heights Railroad
Brooklyn Manhattan Transit Company
Brooklyn Rapid Transit Company
General Electric Company
Independent Subway
Interborough Rapid Transit Company
I-T-E Circuit Breaker Company
New York Central Railroad
John B. McDonald
Manhattan Railway Company
Metropolitan Street Railway
Thomas E. Murray
Westinghouse Electric and Mfg. Co.

Ash Disposal
Construction
Excavation
Demolition
Surveying

Air compressors
Ammeters
Basements
Bents
Blowers
Boiler Houses
Boilers
Breechings
Brickwork
Caissons pile
Chimneys
Circuit breakers
Circuit breaker houses
Coal
Coal ash sites
Coal chutes
Condensers
Construction workers
Control house
Control rooms
Conveying Systems
Conveyors
Cranes (equipment)
Derrick
Duct banks
Electric conduits
Electric relays
Electric switches
Electric wiring
Elevated highways
Engine rooms
Engines
Exciters
Evaporator
Electrostatic precipitator
Fenders
Foundations (structural elements)
Frequency changer
Generators
Machine shops
Machinery
Manholes
Meters
Milling machinery
Motors
Panelboards
Piers
Piles (structural elements)
Pipes (conduits)
Plumbing systems
Potheads
Reinforced concrete construction
Rheostat
Roofs
Rotary Converters
Skylights
Slips (waterfront spaces)
Sluices
Smokestacks
Switchboards
Steelwork
Steel Structures
Structural frames
Thermal Insulation
Transformers
Transformer rooms
Turbines
Volt Meters
<table>
<thead>
<tr>
<th>IRT Division</th>
<th>Borough</th>
<th>Zone Name</th>
<th>Substations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Manhattan</td>
<td>Mt. Morris Park</td>
<td>Lexington Ave / East 99th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lexington Ave / East 126th St</td>
</tr>
<tr>
<td>11</td>
<td>Manhattan</td>
<td>Hanover</td>
<td>Battery Park / State Street</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lafayette / Pearl St.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lafayette / Broome</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#11- Park Row, 29-33 City Hall Place</td>
</tr>
<tr>
<td>12</td>
<td>Manhattan</td>
<td>Grammercy</td>
<td>4th Ave / East 11th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Park Ave South / East 25th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#12- 108-110 East 19th St</td>
</tr>
<tr>
<td>13</td>
<td>Manhattan</td>
<td>Lincoln Center</td>
<td>7th Ave / 43rd St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#13- Broadway / West 53rd St</td>
</tr>
<tr>
<td>14</td>
<td>Manhattan</td>
<td>Riverside Park</td>
<td>Broadway / 73rd St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadway / 97th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#14- 264-266 West 96th St</td>
</tr>
<tr>
<td>15</td>
<td>Manhattan</td>
<td>Medical Center</td>
<td>Broadway / LaSalle St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#15- Broadway / West 143rd St</td>
</tr>
<tr>
<td>16</td>
<td>Manhattan</td>
<td>Lenox</td>
<td>Lenox Ave / 141st St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lenox Ave / 113th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#16- Lenox / 132nd St</td>
</tr>
<tr>
<td>17</td>
<td>Manhattan / Bronx</td>
<td>Van Cortland</td>
<td>Broadway / 240th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadway / Harlem River</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#17- Hillside / Dyckman St</td>
</tr>
<tr>
<td>18</td>
<td>Bronx</td>
<td>Bronx Park</td>
<td>East 180th St / Morris Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#18- Westchester Ave / Simpson St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Westchester Ave / St Anns Ave</td>
</tr>
<tr>
<td>21</td>
<td>Brooklyn</td>
<td>Brooklyn Heights</td>
<td>Flatbush / 5th Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#21- Joralemon / Willow Place</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pierrepont / Furman St</td>
</tr>
<tr>
<td>22</td>
<td>Brooklyn</td>
<td>Eastern Parkway</td>
<td>Nostrand Avenue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Nostrand Ave / Lenox Rd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#22- Nostrand Ave / President St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eastern Pkwy / Underhill Ave</td>
</tr>
<tr>
<td>23</td>
<td>Brooklyn</td>
<td>New Lots</td>
<td>Livonia</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#23- Livonia / Rockaway Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Eastern Pkwy / Utica Ave</td>
</tr>
<tr>
<td>25</td>
<td>Queens</td>
<td>Queens Boro</td>
<td>Tudor</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>50th Ave / 11th St</td>
</tr>
<tr>
<td>26</td>
<td>Queens</td>
<td>Queens Plaza</td>
<td>#26- Jackson Ave / West St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Queens Blvd / 39 Place</td>
</tr>
<tr>
<td>27</td>
<td>Queens</td>
<td>Woodside</td>
<td>58th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Roosevelt Ave / 78th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Roosevelt Ave / Spruce St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#27- Roosevelt Ave / 90th St</td>
</tr>
<tr>
<td>28</td>
<td>Queens</td>
<td>Flushing</td>
<td>Corona Yard</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lawrence</td>
</tr>
<tr>
<td>Zone Number</td>
<td>Borough</td>
<td>Zone Name</td>
<td>Substations</td>
</tr>
<tr>
<td>------------</td>
<td>----------</td>
<td>------------------</td>
<td>---------------------------------------------------------</td>
</tr>
<tr>
<td>40</td>
<td>Manhattan</td>
<td>Battery City</td>
<td>Hanover Square / Pearl St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#40- West Broadway / Murray St</td>
</tr>
<tr>
<td>41</td>
<td>Manhattan</td>
<td>Chelsea</td>
<td>Varick / Vardham St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7th Ave / West 27th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#41- 7th Ave / West 16th St</td>
</tr>
<tr>
<td>42</td>
<td>Manhattan</td>
<td>Grand Central</td>
<td>Park Ave / 41st St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Lexington / East 78th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#42- Lexington / East 57th</td>
</tr>
<tr>
<td>43</td>
<td>Bronx</td>
<td>Mott Haven</td>
<td>Pelham / St Anns Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pelham / Tiffany St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#43- 351 East 139th St</td>
</tr>
<tr>
<td>44</td>
<td>Bronx</td>
<td>High Bridge</td>
<td>Concourse / East 144th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#44- Jerome Ave / East 162nd St</td>
</tr>
<tr>
<td>45</td>
<td>Bronx</td>
<td>Woodlawn</td>
<td>Jerome Ave / East 176th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#45- Jerome Ave / Kingsbridge Rd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jerome Ave / East 212th St</td>
</tr>
<tr>
<td>46</td>
<td>Bronx</td>
<td>Dyre</td>
<td>Brady</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Allerton</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Baychester</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dyer Ave / Secor Ave</td>
</tr>
<tr>
<td>47</td>
<td>Bronx</td>
<td>White Plains</td>
<td>239th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>White Plains Rd / East 215th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>White Plains Rd / Astor Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#47- 707 East 211th St</td>
</tr>
<tr>
<td>48</td>
<td>Bronx</td>
<td>Pelham</td>
<td>Commonwealth</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>#48- Westchester / Rowland St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Mulford</td>
</tr>
<tr>
<td>4</td>
<td>Brooklyn</td>
<td>Brooklyn Civic</td>
<td>Bridge</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Center</td>
<td>Flatbush / Empire Blvd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flatbush / Willoughby</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flatbush / 5th Avenue</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hudson</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Manhattan Bridge / York St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Montague / Furman St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Prospect Park</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3rd Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4th Ave / Garfield Pl</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7th Ave</td>
</tr>
<tr>
<td>5</td>
<td>Brooklyn</td>
<td>Bay Ridge</td>
<td>38th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4th Ave / 89th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4th Ave / 64th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4th Ave / 38th St</td>
</tr>
<tr>
<td>6</td>
<td>Brooklyn</td>
<td>Coney Island</td>
<td>Coney Island-- aka Sheepshead Bay</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brighton / West 8th St</td>
</tr>
<tr>
<td>7</td>
<td>Brooklyn</td>
<td>Flatbush</td>
<td>Quentin Rd</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brighton / East 15th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Albermarle / East 17th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Parkville</td>
</tr>
<tr>
<td>8</td>
<td>Brooklyn</td>
<td>East New York</td>
<td>Broadway / Myrtle Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadway / Cornelia St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadway / East New York</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Essex</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Fulton / Essex St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Halsey</td>
</tr>
<tr>
<td>9</td>
<td>Brooklyn</td>
<td>Sea Beach</td>
<td>Sea Beach / 16th Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sea Beach / Ave T</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Stillwell Yard</td>
</tr>
<tr>
<td>10</td>
<td>Brooklyn</td>
<td>Canarsie</td>
<td>Van Sideren / Blake Ave</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Canarsie / East 103rd St</td>
</tr>
<tr>
<td>12</td>
<td>Queens</td>
<td>Richmond Hill</td>
<td>Jamaica / 144th Place</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Richmond Hill-- aka Jamaica / 120th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Jamaica / Forest Pkwy</td>
</tr>
<tr>
<td>15</td>
<td>Brooklyn</td>
<td>Greenpoint</td>
<td>Bedford Ave / North 6th St</td>
</tr>
<tr>
<td>18</td>
<td>Brooklyn</td>
<td>Ridgewood</td>
<td>Gates Ave / Ridgewood</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Bushwick / Boerum-- aka Bushwick</td>
</tr>
<tr>
<td>23</td>
<td>Manhattan</td>
<td>City Hall</td>
<td>Broadway / Park Row</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Centre / Pearl St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Delancy / Suffolk St</td>
</tr>
<tr>
<td>24</td>
<td>Brooklyn</td>
<td>Williamsburg</td>
<td>Broadway / South 6th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadway / Lorimer St</td>
</tr>
<tr>
<td>25</td>
<td>Brooklyn</td>
<td>West End</td>
<td>86th St / Bay 26th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New Utrecht</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>New Utrecht / 65th St</td>
</tr>
<tr>
<td>27</td>
<td>Manhattan</td>
<td>Union Square</td>
<td>Broadway / East 19th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Broadway / West 39th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>7th Ave / 59th St</td>
</tr>
<tr>
<td>29</td>
<td>Queens</td>
<td>Astoria</td>
<td>9th St / Queens Blvd South</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Astoria / 24th Ave</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Zone Number</th>
<th>Borough</th>
<th>Zone Name</th>
<th>Substations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Manhattan</td>
<td>Dyckman</td>
<td>Dyckman</td>
</tr>
<tr>
<td>2</td>
<td>Manhattan</td>
<td>Washington Heights</td>
<td>Washington Heights</td>
</tr>
<tr>
<td>3</td>
<td>Manhattan</td>
<td>Harlem</td>
<td>Harlem</td>
</tr>
<tr>
<td>4</td>
<td>Manhattan</td>
<td>Park</td>
<td>West 119th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>West 108th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>West 99th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>West 91st St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>West 82nd St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>West 73rd St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>West 63rd St</td>
</tr>
<tr>
<td>5</td>
<td>Manhattan</td>
<td>Central</td>
<td>Central</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6th Ave / West 58th St</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>8th Ave / 53rd St</td>
</tr>
<tr>
<td>6</td>
<td>Manhattan</td>
<td>Greenwich</td>
<td>Greenwich</td>
</tr>
</tbody>
</table>

29
<table>
<thead>
<tr>
<th></th>
<th>Borough</th>
<th>Zone Name</th>
<th>Substations</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>Manhattan</td>
<td>Cliff</td>
<td>Cliff St</td>
</tr>
<tr>
<td>8</td>
<td>Manhattan</td>
<td>Stanton</td>
<td>Stanton</td>
</tr>
<tr>
<td>9</td>
<td>Manhattan</td>
<td>Macombs</td>
<td>West 144th St, West 155th St, East 161st St, East 165th St, Elliot Pl</td>
</tr>
<tr>
<td>10</td>
<td>Bronx</td>
<td>Fordham</td>
<td>East 175th St, Burnside Ave, East 184th St, East 193rd St, Bedford Park Blvd</td>
</tr>
<tr>
<td>11</td>
<td>Queens</td>
<td>Court Square</td>
<td>Hunter Ave North, Hunter Ave South, Skillman Pl, 11th St</td>
</tr>
<tr>
<td>12</td>
<td>Brooklyn</td>
<td>Meserole</td>
<td>South 4th St, Withers St, Meserole Ave Substation &amp; Control Room, Green St, 48th Ave</td>
</tr>
<tr>
<td>13</td>
<td>Brooklyn</td>
<td>Downing</td>
<td>Decatur St, Spencer Pl, Downing Substation &amp; Control Room, Clermont Ave</td>
</tr>
<tr>
<td>14</td>
<td>Brooklyn</td>
<td>Jay St</td>
<td>Jay St</td>
</tr>
<tr>
<td>15</td>
<td>Brooklyn</td>
<td>Prospect</td>
<td>6th Ave, 10th St, Smith St, Baltic St</td>
</tr>
<tr>
<td>16</td>
<td>Brooklyn</td>
<td>Patchen</td>
<td>Saratoga Ave, Patchen Ave Substation &amp; Control Room, Chauncey St</td>
</tr>
<tr>
<td>17</td>
<td>Brooklyn</td>
<td>Canton</td>
<td>Ave C, Canton Ave Substation &amp; Control Room, Seely St, 13th St, 9th St</td>
</tr>
<tr>
<td>18</td>
<td>Brooklyn</td>
<td>Ave O</td>
<td>Ave O</td>
</tr>
<tr>
<td>19</td>
<td>Brooklyn</td>
<td>Ave Z</td>
<td>Ave Z</td>
</tr>
<tr>
<td>20</td>
<td>Queens</td>
<td>Woodside</td>
<td>Hulst St, 41st St, 45th St, 57th St, 69th St, 78th St</td>
</tr>
<tr>
<td>21</td>
<td>Queens</td>
<td>Nassau</td>
<td>South Railroad Ave, 55th Rd</td>
</tr>
<tr>
<td>IND Division</td>
<td>Borough</td>
<td>Zone Name</td>
<td>Substations</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>-------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>34</td>
<td>Brooklyn</td>
<td>Fountain</td>
<td>Elton St&lt;br&gt;Fountain Ave Substation &amp; Control Room&lt;br&gt;Lincoln</td>
</tr>
<tr>
<td>35</td>
<td>Queens</td>
<td>Liberty</td>
<td>Liberty / 76th St</td>
</tr>
<tr>
<td>36</td>
<td>Queens</td>
<td>Aqueduct</td>
<td>Liberty / 98th St&lt;br&gt;Aqueduct</td>
</tr>
<tr>
<td>37</td>
<td>Queens</td>
<td>Hamilton Beach</td>
<td>Hamilton Beach</td>
</tr>
<tr>
<td>38</td>
<td>Queens</td>
<td>Broad Channel</td>
<td>Broad Channel</td>
</tr>
<tr>
<td>39</td>
<td>Queens</td>
<td>Hammels East</td>
<td>Hammels Substation &amp; Control Room&lt;br&gt;Edgemere&lt;br&gt;Wave Crest</td>
</tr>
<tr>
<td>40</td>
<td>Queens</td>
<td>Hammels West</td>
<td>Rockaway Park</td>
</tr>
<tr>
<td>41</td>
<td>Brooklyn</td>
<td>Pitkin Yard</td>
<td>Pitkin Yard</td>
</tr>
<tr>
<td>X</td>
<td>Manhattan</td>
<td>Pitkin Yard</td>
<td>Greeley</td>
</tr>
</tbody>
</table>