



E-J ELECTRIC INSTALLATION CO.

Furnishes Power, Light and Communications Systems for

7 Line Extension



EST.

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E-J worked for over 2 years detailing the fixtures to ensure all aesthetic features matched the designer's intent and still remained easily maintainable for the end users.

E-J Electric's team has performed the installations of the 7 Flushing Line connecting Times Square to the newly created transit station on 34th Street and 11th Avenue. The scope of services included installation of lighting and power at the 34th Street station and fan plants referred to as Sites A, J, K, and L throughout the building site. In addition, the E-J team installed all communications systems on-site, which consist of the transmission backbone, wireless radio, PA/CIS, CCTV and security, fire alarm, EBCS, time clock and various telephones and intercoms.

7 LINE EXTENSION PROVIDES UNPRECEDENTED ACCESS TO AND FROM MIDTOWN WEST

The 7 Line Extension brings the Flushing line to the heart of what will be midtown Manhattan's newest thriving neighborhood. The new subway terminal improves reliability for all riders of the 7 Line in Queens and Manhattan, and also provides convenient access to the adjacent developments and attractions. It also provides additional storage space for trains.

The 7 Subway Line Extension provides transit access to the West Side of Manhattan, including the Jacob K. Javits Convention Center, by extending the 7 Line westward from its former terminus at Times Square to a new station constructed at 34th Street and 11th Avenue. It will help to stimulate economic growth and continuing development of the area.

NOTABLE FACTS ABOUT THE 7 LINE EXTENSION

- The new 34th Street station at 11th Avenue is projected to be the busiest single station in New York City.
- It extends the 7 Line by 1.5 miles.
- The new station is air tempered, and is several degrees cooler than the outside summer air.
- The new 7 Line station will be the only station with 2 high rise inclined elevators (similar to those used for the Eiffel Tower), and brings passengers 80ft below ground.
- Specialized low-vibration tracks provide a smoother, quieter and more comfortable ride for customers, decrease the need for track maintenance, and contribute to environmental sustainability by eliminating the use of wooden track blocks.

Facility power for the new station and supporting ventilation plants is supplied via (3) medium-voltage and (3) low-voltage incoming Con-Edison services spread out between 26th Street and 11th Avenue and 41st Street and Dyer Avenue. E-J furnished and installed four 15kV feeder cables under 11th Avenue between 33rd Street and 36th Street and installed (8) 15kV substations and associated collector bus switchgear which provides redundant power to the 34th Street Station and Sites J and K. A four-bank transformer vault was installed at Site L.

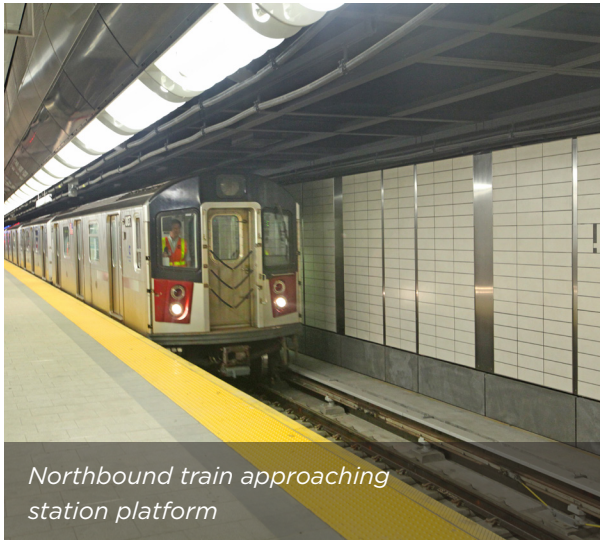
Nine separate Uninterruptable Power Supply (UPS) systems were installed throughout the facility which provide clean, redundant power to emergency/life safety systems and all communications equipment.

Over five thousand lighting fixtures were installed throughout the facility. Most of the lighting fixtures installed in the public spaces were custom fabricated for this project. E-J worked for over 2 years detailing the fixtures to ensure all aesthetic features matched the designer's intent and still remained easily maintainable for the end users.

E-J ELECTRIC'S ON-SITE COMMUNICATIONS SYSTEMS

The communications work for the 7 Line Extension includes furnishing, installing, testing and placing in operation the following Communications equipment, materials and systems:

1. **Transmission Backbone System (TBS)** which consists of furnishing and installing fiber optic communications network interfaces and equipment with associated power supplies, cabinets,



Northbound train approaching station platform



Circuit breaker lifting device in Collector Bus Switchgear

wiring and cabling at designated network access sites to support communication needs of the systems required for the 7 Line Extension.

2. Fire Alarm System (FAS) / Emergency Voice

Communications Systems which are comprised of initiation and notification circuits, suppression equipment and interfaces that monitor, communicate, control and report to NYCT's existing Maintenance of Way Fire Desk (MOWFD) located at the Rail Control Center (RCC) and the Back-up RCC located at 130 Livingston via the 7 Transmission Backbone System.

3. Station Emergency Control Room (SECR) is located at street-level, near the main entrance to the station with direct access to the street where emergency personnel can monitor and control many systems.

4. **Station Service Center (SSC)** is located at the border of the paid and unpaid areas at Site J and provide a base of operations for the Customer Service Agent (CSA). From the SSC, CSAs can monitor and/or control many of the communications systems.

5. **Intrusion and Access Control System** which consists of controllers, power supplies, card readers, local horn/strobe alarm units, electromagnetic locks, door contacts, tamper switches, and motion detectors which shall be managed by the Authority's proprietary Central Alarm Monitoring System (CAMS) located at the Rail Control Center.

6. **Time Clock System.**

7. **Closed Circuit Television Equipment** which provides monitoring, control and recording at the following locations



Medium voltage remote control and indication panel

a. Every 2 low turnstiles will receive 1 camera on the paid side facing the direction of ingress and 1 camera on the unpaid side facing the direction of egress

b. Agent Operated Gate Intercom (AOGI)

c. Elevator landings (ADA camera)

d. Elevator cabs (ADA camera)

e. Help Point Intercom locations (HPI)

f. Fire Alarm pull stations in public spaces

g. Escalator landings

h. Signal rooms (CIR)

i. Communications-Based Train Control (CBTC) rooms

j. Network wireless rooms (NWR)

k. Communications rooms and closets with active equipment

8. **Public Address / Customer Information Sign System (PA/CIS)** which delivers live and pre-recorded messages, both audio and visual, throughout the public area in passenger stations, from the SSC and SECR, and from the remote locations such as RCC, Back-up Control Center, 34th Street Station Dispatcher Office, and EMD at East NY as required by the NYCT. In emergency, the PA/CIS shall be activated as a part of Emergency Voice Alarm Communication System (EVACS). The primary function of the EVACS is to provide secure and highly intelligible emergency speech broadcast to all public areas. The normal PA/CIS announcements will be automatically interrupted by the EVACS system, as an emergency occurs, to deliver emergency announcements. EVACS is required by NFPA.

9. **Private Mobile Radio System (PMRS) and PMRS Monitor, Control, and Alarm System (MCAS)** which provide radio coverage in the entire Extension that is seamless both with the existing 7 Line, and with above and below ground coverage for all Police, Fire, Emergency Services, and below ground coverage for New York City Transit (NYCT) radio users.

10. **Various telephones and telephone systems** such as administrative IP Phones, HPIs, SPIs, Maintenance & Firefighter Sound powered Telephone Systems, agent operated gate intercoms, Train Dispatching, Computer Based Dispatching System, Six Wire System.
11. **Tunnel Emergency Alarm System.**

The new 7 line extension fosters greater interconnection between New Yorkers and strengthens an already robust midtown economy. The E-J team was selected for this monumental undertaking in public transit due to its experience and access to sophisticated tools and resources. These advantages allowed E-J to overcome the unique aesthetic and logistical requirements of the project and create effective lighting and communications solutions. New York is one of the busiest cities in the world, and E-J is proud to have helped create what may soon be its busiest single station. By effectively harnessing its sophisticated resources, E-J will continue to make a brighter future for New York City.



View of upper mezzanine and turnstile array



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