

FORM 2

5 Av-
Bryant
Park

• P4A •

• P4B •

Reference Projects

C.A.C. INDUSTRIES, INC.

Exit

Bryant Park
42 Street &
6 Avenue

Downtown &
Brooklyn

B D
F M

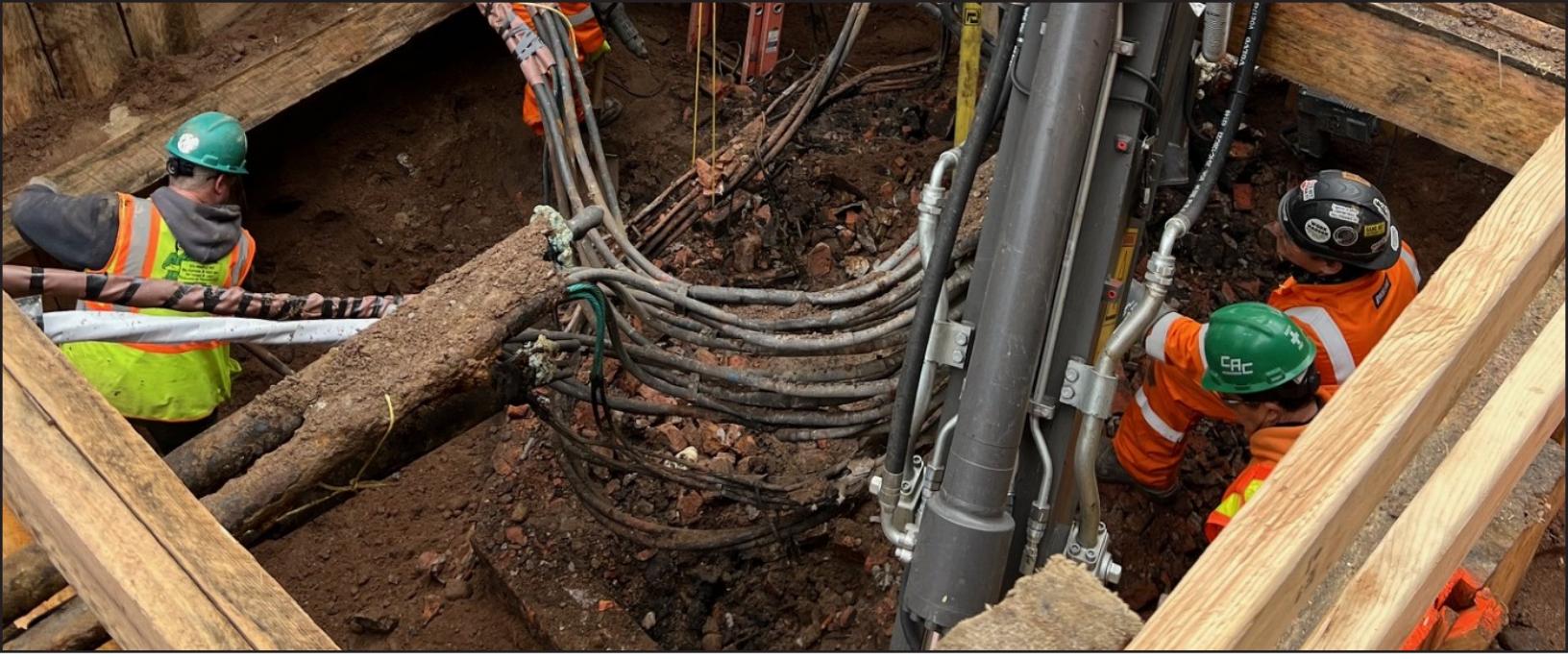
FORM 2: REFERENCE PROJECT DESCRIPTION

Complete a copy of Form 2 for each Reference Project:

Respondent Name	C.A.C. Industries, Inc.			
Reference Project	Design-Build Services for Accessibility Upgrades at 42nd St-Bryant Park & Fifth Avenue Stations (A37149)			
Name of Company	C.A.C. Industries, Inc.			
Role of Company	Construction Contractor:	<input type="checkbox"/>	Designer:	<input type="checkbox"/>
	Other (describe):	<input checked="" type="checkbox"/>		
Experience (years)	Vertical Transportation:	<input type="checkbox"/>	Other (describe):	<input checked="" type="checkbox"/> Utility Work - 1 yr Underpinning/Jet
		<input type="checkbox"/>	<input type="checkbox"/>	grouting/Micropiles - 1 yr MPT - 1 yr

DESCRIPTION OF PRIOR PROJECT

Name of project	Second Avenue Subway Phase 2, Utility Relocation and Building Remediation - 106th Street Station in the Borough of Manhattan		
Location	Manhattan, NY		
Brief description	This contract is the first of four construction contracts for the Second Ave. Subway, which will extend the Q train from 96th St. to 125th St., serving the East Harlem community and building three new ADA-accessible stations. See next page.		
Nature of work for which company was responsible	See next page.		
Brief description of site conditions	See next page.		
List any awards or citations received for the project	None		
Client details (owner / agency / contractor etc.)	Client Name	MTA C&D	
	Address	2 Broadway, New York, NY 10004	
	Contact name	Michael Fitzpatrick	
	Telephone	917-363-9543	
	Contract Reference	C26201	
Contract value at time of award (US\$)	\$116,300,000	Final value (US\$):	Ongoing
% of total work done by Firm:	75%	Commencement date:	01/2024
Planned completion date:	03/2028	Actual completion date:	Ongoing
Amount of claims: (US\$)	\$0	Any litigation? (yes or no)	No



MTA C&D: SECOND AVENUE SUBWAY PHASE II CONTRACT I

SIMILARITIES TO ADA UPGRADES AT BRYANT PARK:

Transportation Infrastructure
Major Metropolitan Area
ADA Compliance
Railroad and Transit Infrastructure

BRIEF DESCRIPTION CONTINUED

The Work of this Contract consists of utility relocation and building remediation/protection along Second Avenue, between 104th Street and 112th Street, as well as the cross streets, in the Borough of Manhattan, in preparation for the cut-and-cover construction of the new 106th Street Station, for the Second Avenue Subway Project - Phase 2.

The Work includes the following: maintenance and protection of traffic to support the construction and operations, including the relocation of Second Avenue bike lane onto First Avenue; removal, relocation/modification of street/sidewalk furniture and sidewalk encroachments such as traffic signals, street lights, street trees, sidewalk vaults, cellar doors, canopies, and stoops, as required to perform the work; installation and monitoring of instrumentation on buildings and surrounding area to monitor potential construction impacts to the existing

buildings; strengthening, remediation and/or underpinning of specific buildings impacted by the utility relocation or future follow-on Contract work as shown in Contract Drawings; hazardous materials remediation, and relocation and construction of storm drain, sewer, water, electric, gas, telephone and other communication systems as required.

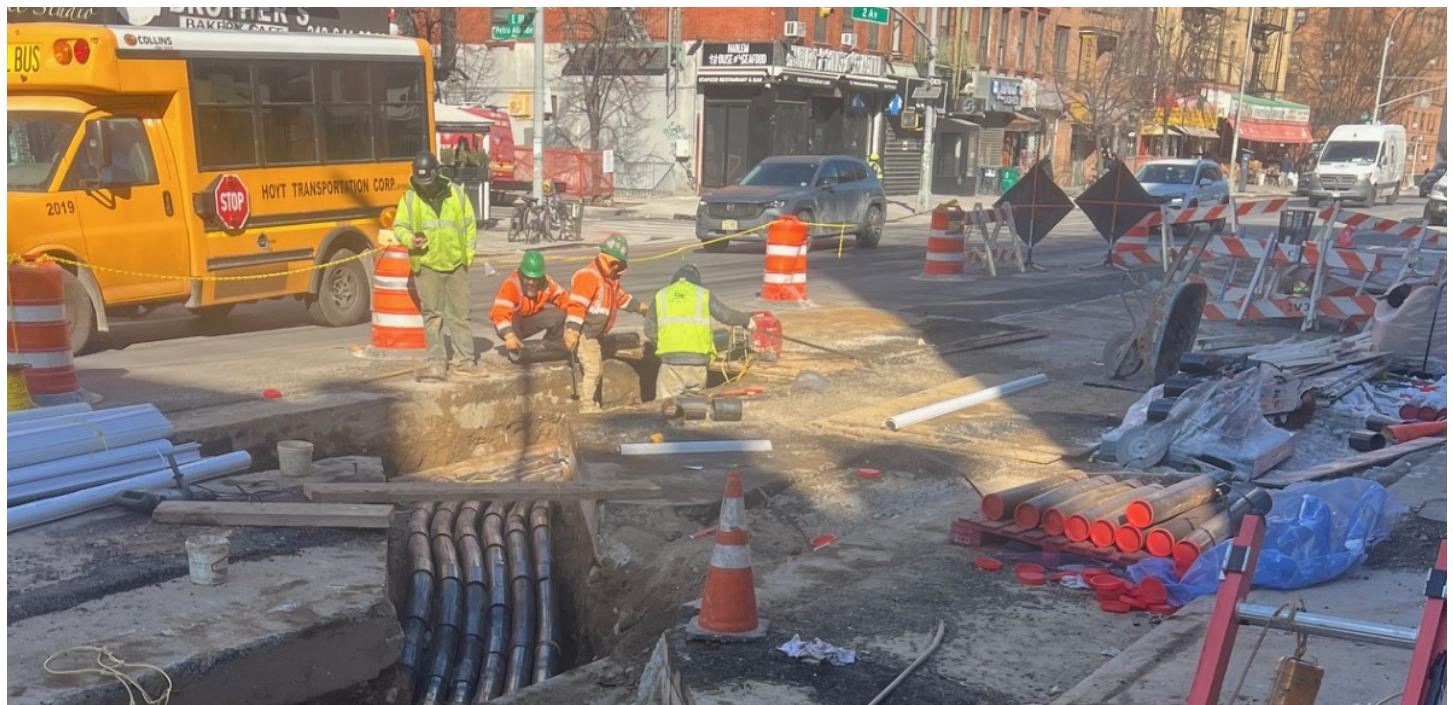
NATURE OF WORK CONTINUED

The project involves extensive utility installations, removals, and relocations, including sewer, storm drain, water, electrical, gas, and telecom systems. Key construction activities include jet grouting and the driving of minipiles along Second Avenue, along with a complex support of excavation system adjacent to numerous buildings to facilitate underpinning. Vibration instrumentation is installed and monitored, with pre- and post-construction surveys conducted on surrounding structures. The project requires intricate Maintenance and Protection of Traffic (MPT) phasing to accommodate all necessary work, as well as the replacement and relocation of multiple traffic signals. Dewatering is essential for both support of excavation and underpinning operations. Additionally, the project entails the installation and removal of support of excavation for utility work, street and sidewalk cut-backs and restoration, and the milling and paving of an expanded First Avenue bike lane.

SITE CONDITIONS CONTINUED

This project site is highly urban and densely crowded, requiring that all four lanes of traffic on Second Avenue remain active at all times while ensuring continuous pedestrian access to all properties. The site contains a

large number of subsurface utilities, both marked and unmarked, posing significant coordination challenges. Additionally, many of the buildings within the project's zone of influence are approximately 100 years old, poorly maintained, and require remediation or underpinning work to ensure structural stability.



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Name of Company	C.A.C. Industries, Inc.			
Role of Company	Construction Contractor:	<input type="checkbox"/>	Designer:	<input type="checkbox"/>
Experience (years)	Other (describe):	<input checked="" type="checkbox"/>		
	Vertical Transportation:	<input type="checkbox"/>	Other (describe):	<input checked="" type="checkbox"/>
			Signal, Track, Electrical,Comms-5 GO/Flagging Coordination-5 Ground stabilization-5 Transit Infrastructure-5 Utilities in transit facility-5	
DESCRIPTION OF PRIOR PROJECT				
Name of project	207th Street Yard Sewer Line Relocation “B” Division (IND)			
Location	Manhattan, New York			
Brief description	This project is a Sandy Resiliency Project to relocate the interceptor sewer that played a part in flooding the NYCT 207th Street Yard during Super-storm Sandy. See next page.			
Nature of work for which company was responsible	See next page.			
Brief description of site conditions	This project is located at the 207th Street Train Yard (NYCT) as well as the surrounding streets on 10th Avenue and 215th Street. See next page.			
List any awards or citations received for the project	None.			
Client details (owner / agency/ contractor etc.)	Client Name	MTA C&D		
	Address	2 Broadway, New York, NY 10004		
	Contact name	Amen Mukhlis, P.E.		
	Telephone	603-205-2265		
	Contract Reference	C34869		
Contract value at time of award (US\$)	\$95,400,000		Final value (US\$):	\$100,540,000
% of total work done by Firm:	45%		Commencement date:	05/2020
Planned completion date:	02/2024		Actual completion date:	02/2024 (substantial)
Amount of claims: (US\$)	\$0		Any litigation? (yes or no)	No



Birdseye view of the 207th Street Yard

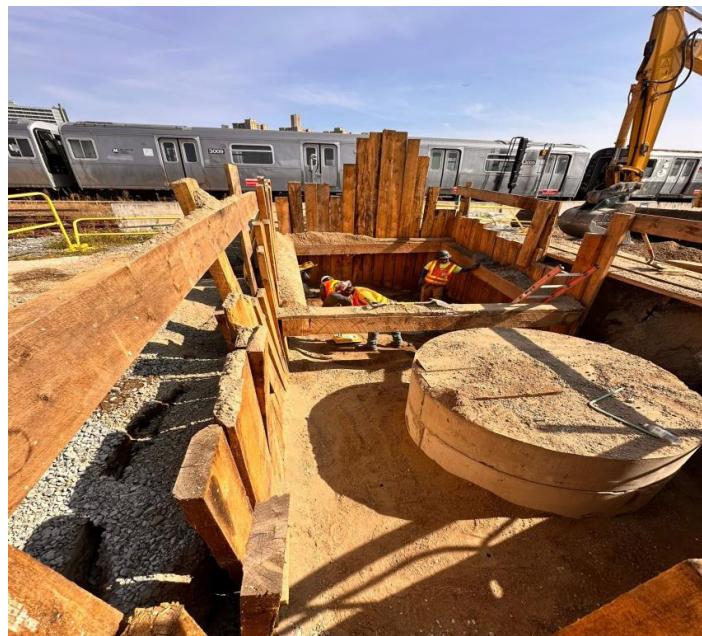
MTA C&D: 207th Street Yard

SIMILARITIES TO ADA UPDATES AT BRYANT PARK:

Design-Build Aspects for MTA Transportation Infrastructure
Major Metropolitan Area
Railroad and Transit Infrastructure

NATURE OF WORK CONTINUED

- Gas utility relocation
- Deep pit excavation
- Manhole, regulator, and pump station construction
- Pit backfilling
- Sidewalk reconstruction
- Roadway reconstruction



Work Adjacent to Tracks inside the 207th St. Train Yard

BRIEF DESCRIPTION CONTINUED

In conjunction with an additional contract to build a flood wall around the yard, the relocation of the sewer will protect the yard from storm-related flooding in the event of a future storm.

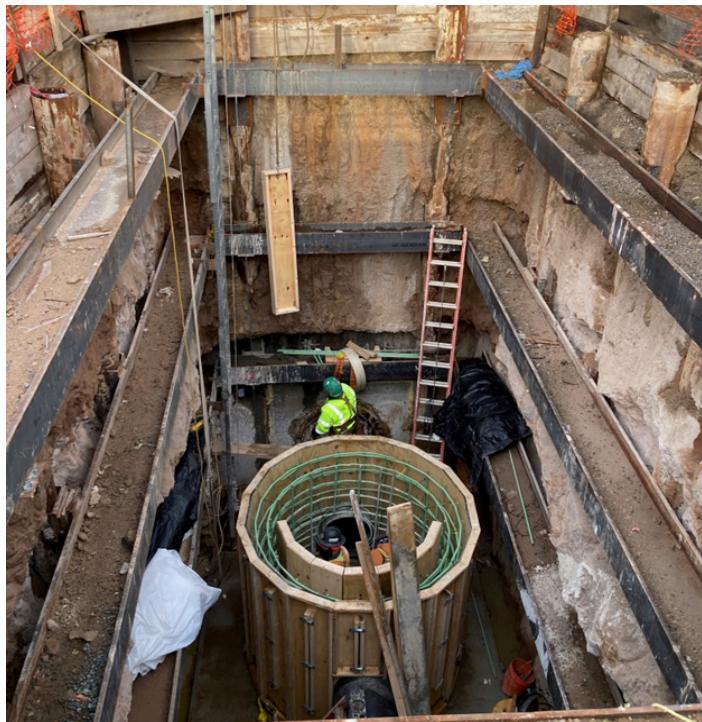
The work consists of construction of a DEP interceptor sewer outside NYCT's 207th Street Yard to replace the existing sewer system within the yard. The work includes installation of interceptor sewer pipe by microtunneling through jet grouted tunneling pits along 10th Avenue and 215th Street and two regulators along 10th Avenue and 215th Street, relocation of private and public utilities, reconnection of yard internal facility drainage to the combined sewer utilizing pumping stations in the yard and pneumatic ejector pump pits in Overhaul and Inspection Shops, and lining of existing DEP outfall pipes passing through the yard.

SITE CONDITIONS CONTINUED

On 10th Avenue, the project site is located underneath the elevated 1 Train subway line, a structure sensitive to vibration or ground movement. On 215th Street, the work zone is located along the DSNY garage and requires extensive communication with the DSNY and NYCDOT staff for maintenance and protection of traffic. Within the yard, coordination with the NYCT Overhaul Shop employees was required to ensure no interference with day-to-day overhaul shop activities.

DESIGN AND CONSTRUCTION INNOVATION PROCESS

The original support of excavation design for this project was a conceptual secant pile design with a jet grouted bottom seal to prevent the need for dewatering efforts, which could potentially negatively impact the structure of the elevated subway line above. After award, the team proposed a redesign of this SOE system to utilize soldier piles and jet grouted walls as the support of excavation, reducing the cost of the project significantly.



Construction of a Manhole Base inside the shaft



Moving Microtunneling Boring Machine (MTBM)



Regulator N9

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Name of Company	C.A.C. Industries, Inc.			
Role of Company	Construction Contractor:	<input type="checkbox"/>	Designer:	<input type="checkbox"/>
	Other (describe):	<input checked="" type="checkbox"/>	Design-Build Subcontractor	
Experience (years)	Vertical Transportation:	<input type="checkbox"/> 2	Other (describe):	<input type="checkbox"/>
DESCRIPTION OF PRIOR PROJECT				
Name of project	Design-Build Services for Accessibility Upgrades Package 2			
Location	Various Boroughs, NY			
Brief description	This project called for the installation of new elevators, replacement of existing elevators, ADA upgrades and state of good repair improvements at eight subway stations across the five boroughs in New York City, and the performance of long-term elevator maintenance for the new elevators. See next page.			
Nature of work for which company was responsible	C.A.C. was responsible for the relocation of sewers, watermains, hydrants, streetlights, and traffic lights to make way for the new elevator pits to be installed. See next page.			
Brief description of site conditions	CAC's work on this contract was located at 3 separate subway stations See next page.			
List any awards or citations received for the project	None.			
Client details (owner / agency/ contractor etc.)	Client Name	MLJTC2		
	Address	1010 Northern Blvd. Suite 200, Great Neck, NY 11021		
	Contact name	Joe Sammut, PE		
	Telephone	929-800-1972		
	Contract Reference #	A37135		
Contract value at time of award (US\$)	\$242,000,000 (total) \$6,002,000 (C.A.C. portion)		Final value (US\$):	\$242,000,000 (total) \$2,552,000 (C.A.C. portion)
% of total work done by Firm:	70%		Commencement date:	10/2022
Planned completion date:	11/2023		Actual completion date:	11/2024
Amount of claims: (US\$)	\$0		Any litigation? (yes or no)	No



MTA C&D: ADA UPGRADES PACKAGE 2

SIMILARITIES TO ADA UPGRADES AT BRYANT PARK:

Design-Build for MTA
Vertical Transportation
Transportation Infrastructure
Major Metropolitan Area
ADA Compliance
Elevator Design
Railroad and Transit Infrastructure

Out of a total of eight stations in the project, three experienced significant utility interferences, which became the focus of our efforts. The main objective of these relocations was to facilitate the rebuilding of elevators at these stations.

SITE CONDITIONS CONTINUED

C.A.C.'s work on this contract was located at three separate subway stations: the 6 line subway station at Westchester Avenue and Commerce Avenue; the 7 line subway station at Queensboro Plaza, spanning from Crescent Street to 27th Street; and the J-Z line subway station at Woodhaven Boulevard and Jamaica Avenue.

The areas near the elevated subway stations experience exceptionally heavy pedestrian traffic across all three locations. The vehicular flow is equally intense, with congested intersections making navigation challenging. Each site also sees frequent bus activity, with multiple routes passing through consistently.

At Queensboro Plaza, the situation is further complicated by the off-ramp of the 59th Street Bridge, which feeds directly into the work zone. Additionally, numerous contractors and developers in the vicinity contribute to increased congestion outside the designated work area.

BRIEF DESCRIPTION CONTINUED

This ensured full vertical accessibility at the stations by installing a total of seventeen elevators and implementing other ADA-compliant upgrades. The General Contractor installed elevators at the subway station, but in order to install the elevators, C.A.C. had to shift the utilities.

NATURE OF WORK CONTINUED

The primary relocations performed by C.A.C. included watermains ranging in size from 6 inches to 20 inches. This work was distributed across three locations: Woodhaven in Jamaica, Queens; Westchester Avenue in the Bronx; and Queens Plaza in Queens. All three sites involved electric, watermain, and sewer utilities.

Woodhaven Boulevard is another complex site, featuring six lanes of northbound and southbound vehicle traffic, along with separate service lanes in each direction. These service lanes, divided by a concrete median, house bus stops, adding to the area's traffic density. Meanwhile, Jamaica Avenue runs directly beneath the J-Z elevated subway station, amplifying activity in this already busy area.

Westchester Avenue and Commerce Avenue form a high-traffic intersection, where the flow is further intensified by several articulated buses operating throughout the day. These factors collectively contribute to the significant transportation challenges at all three locations.



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Name of Company	C.A.C. Industries, Inc.			
Role of Company	Construction Contractor:	<input type="checkbox"/>	Designer:	<input type="checkbox"/>
	Other (describe):	<input checked="" type="checkbox"/>	Design-Build Subcontractor	
Experience (years)	Vertical Transportation:	<input type="checkbox"/>	Other (describe):	<input type="checkbox"/>

DESCRIPTION OF PRIOR PROJECT

Name of project	Package 4 - Design-Build Services for ADA Upgrades at Various Stations		
Location	Various Boroughs, NY		
Brief description	This contract is part of a \$6 billion plan to expand station accessibility throughout New York City in its 2020-2024 Capital Program. See next page.		
Nature of work for which company was responsible	C.A.C. was selected as a subcontractor to perform work at each of the four locations. See next page.		
Brief description of site conditions	The work was performed near/adjacent to train station entrances. Traffic conditions at some of the sites required electric duct and gas relocation work to be performed at night. DIP water main work located below the elevated structure at Parkchester was performed at night to allow daytime work to continue uninterrupted. The work sites had limited storage requiring material deliveries and soil disposal to be coordinated.		
List any awards or citations received for the project	None.		
Client details (owner / agency/ contractor etc.)	Client Name	JTTC JV	
	Address	1010 Northern Blvd. Suite 200, Great Neck, NY 11021	
	Contact name	Bruce Carnovale	
	Telephone	201-259-8526	
	Contract Reference #	A37139	
Contract value at time of award (US\$)	\$145M (total) \$13.25M (C.A.C. portion)	Final value (US\$):	\$145M (total) \$11.4M
% of total work done by Firm:	100%	Commencement date:	9/2023
Planned completion date:	12/2023	Actual completion date:	11/2024
Amount of claims: (US\$)	\$0	Any litigation? (yes or no)	No



MTA C&D: ADA UPGRADES PACKAGE 4

SIMILARITIES TO ADA UPGRADES AT BRYANT PARK:

Design-Build for MTA
Vertical Transportation
Transportation Infrastructure
Major Metropolitan Area
ADA Compliance
Elevator Design
Railroad and Transit Infrastructure

BRIEF DESCRIPTION CONTINUED

The scope of work for the project is to provide accessibility upgrades, installation of new elevators, replacement of existing elevators, and repairs at four stations in Brooklyn, the Bronx, Manhattan, and Queens to provide full ADA compliance. Key elements of this project include:

Elevator installation:

Design and construct new elevators at street level to access platforms at each station, including elevator shafts, machine rooms, and associated landing areas.

Platform edge improvements:

Modify existing platform edges by adding ADA-compliant raised boarding areas and tactile warning strips along the full length of the platform.

Stair modifications:

Reconstruct or replace existing stairs to ensure proper handrail placement and compliant slope for accessibility.

Signage upgrades:

Install new tactile signage and visual wayfinding indicators to guide passengers with visual impairments.

Canopy adjustments:

Modify existing canopies or add new ones to provide shelter at entry points and accommodate new elevator access.

Lighting improvements:

Upgrade lighting systems on platforms and stairwells to meet ADA visibility standards.

Utility relocation:

Adjust existing utilities as needed to accommodate new elevator installations and platform modifications.

Station environment improvements:

Consider aesthetic upgrades to the station interior, including finishes, artwork, and overall design to enhance passenger experience.

NATURE OF WORK CONTINUED

At the station in the Bronx, C.A.C. was responsible for the installation of a new 20" ductile iron water main and a welded steel water main in a reinforce concrete encasement beneath the ground floor level of the station.

At the station in Queens, C.A.C. was responsible for the relocation of water mains, hydrants, and ConEdison electrical ducts. Additionally, C.A.C. supported the installation of micropiles and jet grouted lagging as support of excavation for the elevator shaft. C.A.C. then excavated the elevator shaft to prepare for the elevator installation and the excavation and installation of SOE to support the elevator shaft.

At the Brooklyn station, C.A.C. performed the relocation of water mains, combined sewers, manholes, and Con Edison electrical ducts. Additionally, C.A.C. facilitated the micropile installation and support excavation for the future elevator shaft and the underground station extension. This work required a full closure of the sidewalk, parking lane, and one travel lane, along with a partial closure of a second travel lane. To minimize traffic disruption, a steel plate decking system was engineered, allowing the second travel lane to reopen at the end of each work shift.

(Please use this as the Parsons Blvd. Station will require a very similar street/sidewalk closing for the construction of the underground mezzanine extension and WILL be mentioned as one of the construction challenges of the Parsons Blvd. Station, which we have previously successfully performed).

At the station in Manhattan, C.A.C. relocated a multitude of utilities out of the way of the elevator shafts, including water main, ConEdison gas main, and ConEdison electric ducts. C.A.C. was also responsible for the full support of excavation installation as well as shaft excavation at these locations.

As a member of the integrated Design-Build team, C.A.C.'s input on utility relocation constructibility as well as excavation support and deep excavation for the shafts provided valuable insight to the Design-Builder in the overall successful completion of this contract.



SITE CONDITIONS CONTINUED

The work was performed near/adjacent to train station entrances. Traffic conditions at some of the sites required electric duct and gas relocation work to be performed at night. DIP water main work located below the elevated structure at Parkchester was performed at night to allow daytime work to continue uninterrupted. The work sites had limited storage requiring material deliveries and soil disposal to be coordinated.