AECOM Imagine it. Delivered.

TECHNICAL PROPOSAL

Construction Management Services for the

Hoboken Signal and Yard Power Repairs

RFP No. 19-048

Submitted to:
NJ TRANSIT

Submitted by:
AECOM Technical Services, Inc.

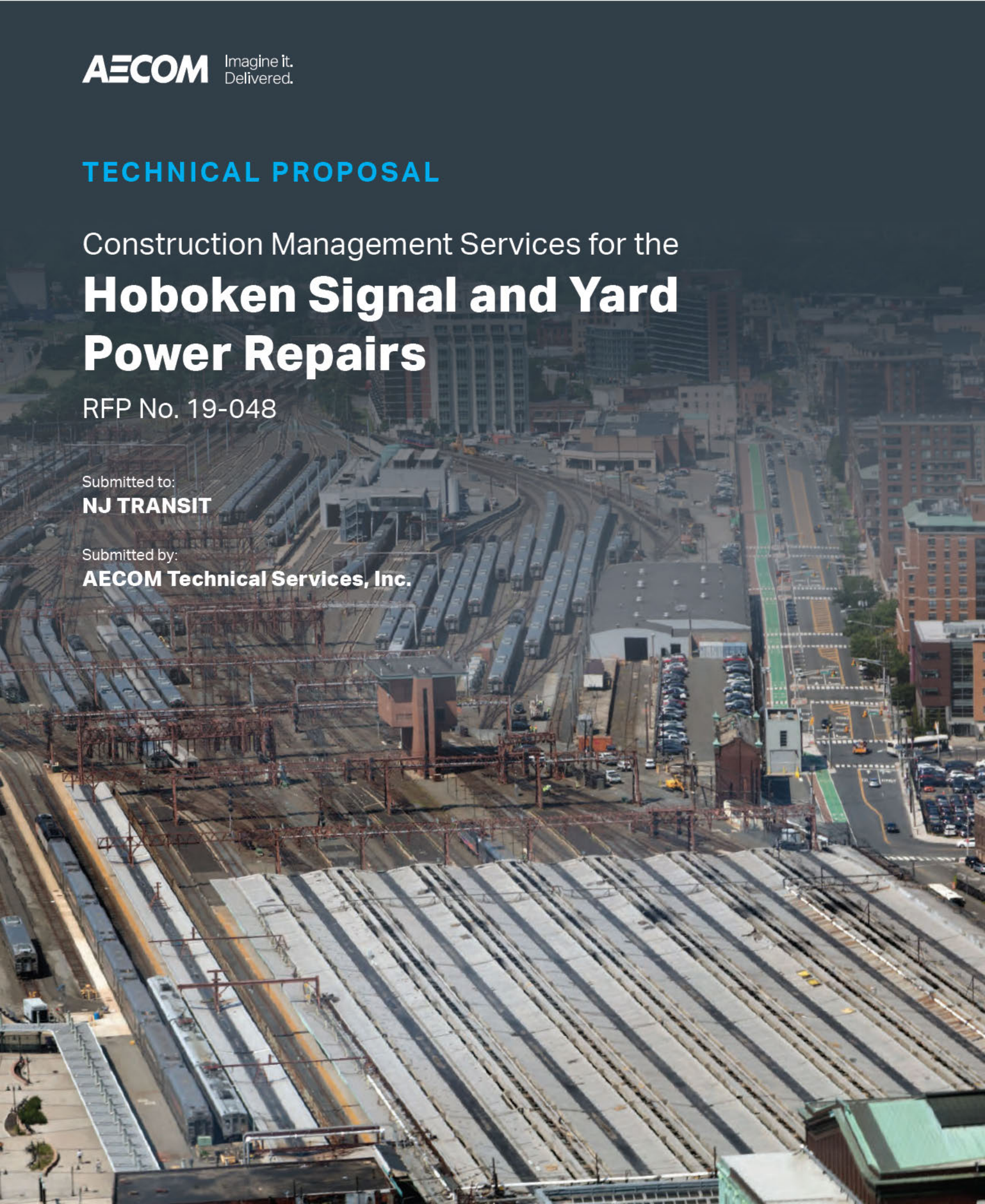


Table of Contents

Click on section title for hyper-link to that location

Cover Letter

AECOM
30 Knightsbridge Road
Suite 520
Piscataway, NJ 08854
www.aecom.com

732 564 3200 tel
732 369 0120 fax

July 29, 2020

NJ TRANSIT Corporation
One Penn Plaza East
Newark, New Jersey 07105-2246

Attn: Maggie Sotolongo, Principal Contract Specialist, Procurement Department

RE: NJ TRANSIT, RFP No. 19-048
Construction Management Services for the Hoboken Signal and Yard Power Repairs
TECHNICAL PROPOSAL

Dear Ms. Sotolongo:

AECOM is pleased to submit our **Technical Proposal for the Construction Management Services for the Hoboken Signal and Yard Power Repairs (NJ Transit RFP # 19-048).**

This project has unique challenges over the typical new rail system facilities project. Construction of a new, upgraded signal and power feeder systems within an existing and heavily-used operational railyard combined with the fact that access to this terminal is limited and restricted, makes this project a daunting undertaking. Extensive experience, innovative team approach and commitment to safety are required to manage the Construction Management team selected for the Hoboken Signal and Yard Power Repairs project.

NJT will be convinced that AECOM's Construction Management team has everything this project requires in order to complete this project successfully and on time. Our knowledge, experience, innovation and commitment to safety in the Construction Management of rail yard maintenance facilities make AECOM the clear choice for this project.

We will accomplish this important project through the application of proven leadership, construction management expertise, and the right combination of technical experience and construction knowledge. NJT will find that our team is comprised of people with construction management and engineering experience in all aspects of foundation and rail construction of major transportation facility projects throughout the NY Metropolitan Region.

AECOM is a global provider of construction management services for facilities and transportation projects. Our team features a NJ-NY based team with a strong rail and yard facilities work expertise. Our team includes **TY Lin International** providing electrical construction inspection services and force account management.

In addition, as part of AECOM's commitment to the Disadvantaged Business Enterprise (DBE) programs and providing the highest level of professionalism and quality work, we have added to our team **Matrix New World, Amercom Corp., and Haydan Consulting,** all registered DBE firms, to provide environmental, survey and project controls support for this project.

✓ We Understand the scope of this project and the Yard Operation:

Existing and New Signal System

The signal line system located in Hoboken Yard has normal and contingency power sources. The Morris and Essex Line signal power system is designed to provide 2400 volts, 100 HZ, single phase power for various components of the signaling system which are located along the length of the railroad. At each location step down transformers are used to reduce the 2400-volt distribution voltage to the 120 volts required at the load side. The new signal power cable system will be an aerial configuration throughout the yard. New steel Monopoles will be erected to support these systems primarily on the northern side of the yard. Some of the existing catenary trusses will be modified and signal line conduits will be installed on the modified trusses. New monopoles will be constructed on the south side of the yard to provide power to the signal control point (referred to as a signal house, signal bungalow, or signal cabinet). Also, one of the catenary light poles will be extended five feet to accommodate the installation of 120V secondary signal power feeders.

Existing and New Yard Powers and Wayside Power Systems

Yard "B" Substation provides power to most of the facilities located within Hoboken Train Yard. Power cables from Yard "B" Substation are routed underground to various Days Yard wayside power systems in the Yard. Normal and contingency 13.2kV power is delivered underground from Henderson St. Switching Station circuits. The Yard Power portion of the project will include replacement of electrical equipment at Days Yard, Yard "B", Hill Yard and Pullman Yard. The new yard power cables and equipment to include transformers, switchgear, power cabinets and control stations will be installed on elevated steel structures and platforms in the wayside and on the existing Hoboken Train Terminal roof and in the wayside.

✓ Management Team:

Our proposed team of professionals is uniquely qualified and ready to deliver this critical project to the NJ TRANSIT. The AECOM team brings extensive experience in performing inspection work for installation of pile foundation, erection of poles, signal power and Traction Yard Power work in the for NJ TRANSIT railroad environment. Our key personnel include:

- **Construction Manager, Philip Girandola, PE**: Phil has over 30 years of extensive experience in construction management including several deep pile foundation projects and has experience working in and around a live railroad environment.
- **Randall Doliber, PE, Constructability and Technical Advisor:** Mr. Doliber brings more than 45 years of experience in Construction Management, of which he has over 20 years of experience managing NJ Transit projects, including the role of Manager of Construction for the 11 New Jersey surface projects for the ARC Tunnel, and 16 years managing 11 projects at Hoboken.
- **Mukeshkumar Patel, PE, Structural/Civil Resident Engineer, :** Mukesh has 33 years of experience in design and construction management with NYCT including Canarsie line tunnel project which included deep pile foundation to support the new substation under live railroad traffic.
- **Ralph Glover, Yard Power and Signal Power Resident Engineer:** Ralph, from our sub TY Lin, has over 30 years' experience working for NJ Transit for various substation projects. He has performed substation maintenance, switching and tagging, clearance and protection assignments in a safe and responsible manner.
- **Michael Fitzsimmons, Force Account Manager**: Michael has over 30 years of electrical and mechanical experience focused on the transportation industry. Much of his experience has been with NJ Transit where he completed many switch, signal and substation projects throughout the system and were delivered safely, on time and within budget.

✓ Keys to Success:

- This project requires the consultant to understand NJ Transit's rail Infrastructure, rail and yard operations, force account practices, Electrical Operating Instructions and Operating Rules.
- Knowledge of existing signal system and Wayside Power distribution Systems in the Hoboken Yard
- Experience in pile foundations and erection of monopoles in operating yard, and most importantly coordinating work with NJ TRANSIT Force Account group.
- The work must be properly staged and progressed to monitor safety, productivity and minimize impact on railway and yard operations.
- Working safely within an electrified rail yard environment.
- Proven ability to schedule, track, and coordinate force account. Constant communication and cooperation between NJ Transit and the project stakeholders is key.
- Planning and monitoring work to ensure effective utilization of track fouling time and that all work is performed in accordance with the contract.
- Supporting NJT with community issues and concerns and coordination with adjacent NJT projects and maintenance activities.

Our team possesses the right experience and knowledge of Hoboken Yard and rail yard operations, the right staff, and can successfully meet these challenges and complete the project safely and on or before time and within the budget.

Based on understanding of the project scope and knowledge of the yard operations, AECOM is offering the following suggested improvements on the work plan of the project. AECOM believes that utilizing some of the recommendations listed below, the duration of the project can be shortened by approximately 6 months.

- Pile foundations locations 1-5: These are located outside the yard track. An additional rig could be used at these locations while work is in progress at the other locations in the yard *(see Figure 2 – Technical Section).*
- Pile foundations locations 6-32: These are located within the yard and between the yard tracks. Our assumption is that adjacent tracks will be out of service during weekend outages, and that the use additional rig working at more than one location may be feasible *(see Figure 2 – Technical Section).*
- To save mobilization/demobilization time, construction of a rollover type portable ramp (crane mats and ballast ramps) and temporary grade crossings between tracks on which the drilling rig can travel easily and can be placed at the next location of piles saving time during weekend outages.

AECOM is committed to bringing safety forward. In summary, our proposed team has the innovative approach backed up by the extensive experience required to provide the construction monitoring and inspection support to complete this project on time and within budget. We look forward to working with NJT and negotiating a final mutually acceptable contract. Should you have any questions or desire further information, please contact our Project Manager, Phil Girandola at [redacted] or me at [redacted].

On behalf of the AECOM Team, I am committed to the successful execution of this project and ensuring that the project is staffed with the necessary resources from beginning to end. I thank you for this opportunity to propose and for your consideration.

Thank you for your consideration.

Sincerely,

Anil Parikh, PE
Vice President

Qualification of Firms

2. Qualifications of Firms

During the Super Storm Sandy, the NJ TRANSIT's Hoboken Yard was flooded and the existing underground signal and power distribution lines and at grade eqiupment were damaged. Under this contract NJ TRANSIT is ready to construct, a new signal power and yard power distribution lines which will be mounted above ground on new monopoles and the at grade equipment will be mounted on elevated steel platforms.

The proposed AECOM Team is built around the right blend of expertise, experience and resources to deliver a successful project. This team provides all the essential qualifications to take on the construction management duties for this important project that is demonstrated by their extensive experience in all the project elements, our world-class track record, providing construction management services for many transit owners in the tri-state area. We have the know-how and a deep bench of local construction management resources to provide the right mix of talent, experience and commitment to ensure the success on this important project. In addition, we have selected specialty and DBE subconsultants that we have worked with successfully on other major projects.

Our team brings an organizational structure proven by experience to manage the NJ TRANSIT Construction Management Services for the Hoboken Signal and Yard Power Repairs project to its successful completion and to minimize impact on train operations in the busy Hoboken Yard. As you review our qualifications we ask that you consider the following characteristics:

- **Collaborative** – We will collaborate with NJ TRANSIT, regulators, reviewers and stakeholders.
- **Proven** – A team with knowledge and of NJ TRANSIT rail operations and proved record to delivering the projects
- **Efficient + Driven** – Our team is highly efficient and ready to deliver this project within schedule and budget.

We understand the uniqueness of this project and have structured the team around success factors such as:

Experience

- Our Team is exceptionally familiar with the Hoboken Yard and its train operations
- More than 25 years of history working with NJ TRANSIT, including Long Slip Canal Fill and running the Hudson-Bergen LRT Line
- Working relationships with all stakeholders, including rail transit, and federal regulators / reviewers

The AECOM Team—

PRIME CONSULTANT

AECOM

- ***Construction Management***
- ***Safety***
- ***Contract Administration***
- ***Resident Engineering/ Inspection***
- ***QA/QC***
- ***Rail Operation***

SUPPORT AND DBE SUBS

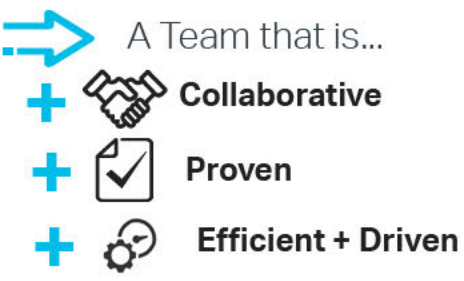
T.Y. LIN INTERNATIONAL

AmerCom Corp.

MATRIXNEWORLD Engineering Progress

HD HAYDAR CONSULTANTS, INC

Construction inspection • Survey • Electrical • Environmental • Force Accounts • Scheduling • Cost Estimating • Project controls



ORGANIZATIONAL STRUCTURE OF TEAM AND PERSONNEL REQUIRED

The organizational structure of our team represents an integrated, seamless group comprised of the most qualified individuals from the best firms. Our firms' experience is overlapping and complementary, and offers a unique blend that gives NJ TRANSIT the confidence that this project will be managed efficiently and driven to meet quality, schedule and budget demands. Our management philosophy requires member firms to be fully committed as a team to NJ TRANSIT's success. It's your railroad and our reputation; we are fully committed to both.

Our entire team shares a common vision: our success is dependent on how well we collaborate, share lessons learned, and discuss concepts and issues early in the process when decisions have the greatest impact. Team members were chosen for their direct relevant experience and proven past performance. They are proficient, easy to work with, and bring special talents. We will draw upon their depth of expertise, including team member synergies on previous projects to exceed expectations and deliver the project to NJ TRANSIT's expectations.

The Project Organization Chart presented in Section 3 defines specific roles to be filled to deliver our services.

The key staff and other professionals identified on our organization chart will be augmented as needed by other skilled professionals, both from within AECOM and from our subconsultant ranks.

TEAM'S CAPABILITY IN THE CONTEXT OF THE OVERALL PROJECT

AECOM was created to design, build, finance, and operate the world's infrastructure. Whether we serve clients at one phase of the project lifecycle or throughout it, our role is to apply creative vision, technical expertise, interdisciplinary insight, and local experience to address complex challenges in new and better ways. We help our clients deliver critical resources and services, improve the places where people live and work, and sustain a world in which we can all flourish.

AECOM is a leading consultant in the rail and highway/bridge industries, providing a range of services from program/construction management to planning and design. AECOM has provided services for numerous transit agencies in the U. S., and is especially proud of its record of performance for transit agencies in the New Jersey/New York Metropolitan region. The firm's experience includes commuter rail, heavy rail transit, light rail transit, high-speed rail, freight railroads and multimodal terminals. AECOM has planned, designed and managed the construction and commissioning of FTA funded New Start projects, system extensions and the modernization of existing systems.

AECOM has extensive experience on some of NJ TRANSIT's most ambitious projects to date. This includes Design and Construction Support Services for Long Slip Canal Fill in the Hoboken Yard, Design-Build-Operate-Maintain (DBOM) services for the Hudson-Bergen Light Rail Transit (HBLRT) System, the largest transit DBOM in the United States. Work has included a 15.95-mile system with an additional 3 miles of yard track, rehabilitation of an existing 4,096-foot-long

#1 TOP 500 ENR2020 TRANSPORTATION

AECOM brings a world of expertise and a history of successful collaboration with NJ TRANSIT.

Design + CM Services for the Long Slip Canal Fill, Hoboken Yard

NJ Transit Meadows Maintenance Complex Construction Management

Portal Bridge Capacity Enhancement

tunnel 160 feet below grade, 24 passenger stations and 18 elevators, five park-and-ride facilities, 52 Light Rail Vehicles (LRVs), a maintenance complex containing 75,000-square-foot LRV storage building, more than a dozen bridges, and state-of-the-art tunnel safety systems.

In addition to the initial system, our staff provided engineering design and construction services for improvements including the recently opened 8th Street Extension and an interlocking near Danforth Avenue Station.

Other major NJ TRANSIT projects include providing construction management for the Portal Bridge Replacement project; management of the 34-mile, 20-station River Line; assisting the master developer for the Hoboken Terminal and Yard Complex; providing design for the ARC Mass Transit Tunnel project; and providing project management and design for the Newark-Elizabeth Light Rail Extension, Renovation of Meadows Maintenance Complex, PMC Services for East Side Access Project; and Improvements of the Elizabeth Port including pile foundations. Details of these and other projects are provided under "relevant projects" section of this proposal

SUBCONSULTANTS

T.Y. Lin International (TYLI)

T.Y. Lin International (TYLI) will provide electrical, inspection services and Force Account Coordination services by their staff with prior experience working with NJ TRANSIT. The firm is a full-service, multi-disciplined engineering firm that provides infrastructure planning, engineering design, program management, and construction management services. TYLI is currently ranked nationally #13 among Transportation Design Firms and #12 for Mass Transit firms by Engineering News Record. TYLI provides services to transit authorities, commuter railroads, and private railroad companies. Services include the complete planning, design and construction of railways including high speed rail, light commuter rail, freight railways, multi-modal facilities, and maintenance yards. The firm's work has also included the rehabilitation of existing railroads, commuter rail, rapid rail, and light rail systems.

Regionally, TYLI has developed a proven CM/CI practice by providing proficient construction management and inspection services to New York City Transit in recent years. The firm is providing NJ Transit's Bay Head Substation Replacement, CM/CI services for the NYCT's 207th Street Yard Long Term Flood Mitigation and signal rehabilitation and NYCT CCM for St. George Terminal Flood Mitigation.

Their dedication and innovation in progressing the Post-Sandy Recovery and Resiliency Program, providing signal inspection on the Queens Boulevard Line Union Turnpike Interlocking, addressing the critical Subway Action Plan (SAP) drainage clean-out work, and administering Packages 3 and 4 of the Enhanced Station Initiative (ESI) Program gives TYLI well-rounded understanding of construction in various facilities, and the experience to execute it.

TYLI also has developed a group who are Signal and Communication specialists each with specific expertise in an area including CBTC, Ultra-Wide-Band and their design, installation, and commissioning. They have power specialists with experience in the design, construction and commissioning of substations traction power and circuit breaker houses.

AmerCom Corporation (DBE)

AmerCom Corporation (DBE), as part of AECOM's Team, will provide part-time on call survey services for this project in accordance with the terms and conditions specified in the RFP. This includes verifying the Contractor's civil, foundation, duct bank and catenary work layout prior to construction. The survey work will be as needed by a licensed NJ PLS. The project site is only 26 miles from AmerCom's office.

AmerCom Corporation is a multidisciplinary civil engineering consulting firm dedicated to providing reliable, cost-effective and professional services to governmental agencies in New Jersey and New York. A professional staff of sixty-eight (68) engineers, surveyors, technicians, construction managers and inspectors are available to meet the project needs.

As a sub-consultant, AmerCom Corporation performed survey and mapping; ROW documentation for numerous NJ TRANSIT projects. Recently, AmerCom completed a major survey effort for NJ Transit on the Northern Bus Garage Project. They performed surveys on four large parcels totaling nearly 60 acres utilizing both traditional and modern technological methods. AmerCom produced Survey plans, a General Property Parcel Map and Individual Property Parcel Map for each of the properties in accordance with ALTA/NSPS Land Title Survey requirements as well as all Right-of-Way documents for the whole parcel takings meeting NJ Transit's Real Estate Department requirements.

Matrix Matrix New World Engineering (Matrix)

Matrix New World Engineering, Land Surveying and Landscape Architecture, PC (Matrix) is a DBE, providing a wide range of engineering, environmental, document control, surveying and construction services. Since our establishment in 1990, Matrix has been known for delivering high quality results within budget and on schedule for a diverse group of clients and project types, including thousands of infrastructure projects in the New Jersey/New York City metro-region. Their employees regularly utilize the New Jersey Transit system and our project history includes hundreds of New Jersey Transit projects. The breadth of Matrix's services and personnel enables us to deliver the NJT Culvert Inventory Project without the use of subconsultants.

Matrix has an experienced, multi-disciplined, transportation infrastructure team with particular focus upon rail infrastructure and regularly deploy our expertise in civil engineering (grading / drainage), geotechnical (foundation exploration and design), environmental (site remediation), regulatory (NEPA, state/federal permitting) and surveying (3D scanning, construction layout, bathymetric surveying) for all of the major rail agencies in the region. Matrix's rail infrastructure projects experience includes multiple assignments for New Jersey Transit, HBLR, PATH, MTA/LIRR and NYCT. Matrix is currently providing services within the Hudson County project area of the proposed Rebuild by Design project, including features located within the New Jersey Transit Hoboken Yard as well as the HBLR Hoboken/Jersey/Weehawken right of way.

Haydan Consultants, Inc.

Haydan Consultants, Inc. offers a suite of hands-on professional services to the construction industry, leveraging the deep collective experience of its team members. It was founded in January 2019 by AEC industry veteran Dan Sawh, whose 32-year career includes key strategic and operational leadership roles.

Haydan strives to provide best-in-class service across the Transportation, Water, Facilities, Power/Energy and Environment sectors. With Haydan, Dan has assembled a team of experts whose knowledge, experience and personal passion for what they do make it an ideal partner for projects in both the public and private sectors. Dan's experience with New Jersey Transit includes key programs such as Hudson-Bergen Light Rail Transit, South Jersey Light Rail Transit, ARC Tunnel, Portal Bridge among others.

PROXIMITY TO THE SITE

Firm Name	Proximity to the Site (miles)	Type of Work to be Performed
AECOM	6	Prime
TY Lin Interrnational	10	Electrical inspection and Force Account Coordination
Amercom Corp.	29	Survey
Matrix New World	30	Environmental and Document Control
Haydan Consultants	72	Cost Estimating & Estimating

PROJECT OFFICE LOCATION

CERTIFICATION

Our Construction Manager and the field inspectors will be located at the Hoboken Yard field office to be provided by the Contractor

In addition, for specific specialties we are able to draw on the resources of our subconsultants, both in the New Jersey/New York area and nationwide.

AVAILABILITY OF KEYSTAFF/ANTICIPATED WORKLOAD

An evaluation of our current project workload, taking into account resources involved with existing proposals and active projects, indicates that the designated key personnel , all full-time employees, will be available for this project.

Regardless of our proposed staff current commitments, they will be available for the necessary percentage of time, and for the necessary hours to carry out their roles as proposed.

AECOM commits to providing additional personnel as needed to properly staff and support the NJ TRANSIT Hoboken Signal and Yard Power Repairs Project. This allocation of staff resources will enable us to meet NJ TRANSIT's specified deadlines.

A table illustrating our key staff availability at the time of Notice to Proceed, follows below.

Availability of Key Staff/Anticipated Workload			
Name/Role	**Firm**	**Anticipated Workload**	**Percentage Availability**
Philip Ghirandola Consultant Construction Manager	AECOM	▪ Conn Port Authority: Lead Owner's Rep - Constrcuction ▪ Gowanus Canal Superfund Site – pending Owner's Rep position (decision known 9/2020	50%
Randall Doliber PE Constructability and Technical Advisor	AECOM	▪ Senior Structural PM for JFK ▪ Construction Manager for Market Street	25%
Mukesh Patel, PE Resident Engineer – Structural/Civil	AECOM	▪ Proposed Construction Manager for 68th street Station ADA project	100%
Ralph Glover Resident Engineer – Signal/Power/ Electric	TY Lin	▪ None	100%
Joseph Calabro Structural	AECOM	▪ None	100%
Michael Fitzsimmons Force Accounts	TYLin	▪ NJ TRANSIT, CM Services for Replacement of Bay Head Substation, Bay Head, NJ	80%

The combined experience of the AECOM Team is presented in the "Representative Relevant Projects" on the following pages.

RELEVANT PROJECTS

NJ TRANSIT Construction Management Services for the Portal Bridge Capacity Enhancement

Hudson / Bergen Counties, NJ

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$950 million	Ongoing	Yes

AECOM is providing construction management services. The completion of the PBCE Project will eliminate reliability and maintenance issues of the existing 100-year-old two-track Portal swing bridge that crosses the Hackensack River just west of the Secaucus Transfer facility.

AECOM is providing construction management services. The completion of the PBCE Project will eliminate reliability and maintenance issues of the existing 100-year-old two-track Portal swing bridge that crosses the Hackensack River just west of the Secaucus Transfer facility.

AECOM is providing construction management services. The completion of the PBCE Project will eliminate reliability and maintenance issues of the existing 100-year-old two-track Portal swing bridge that crosses the Hackensack River just west of the Secaucus Transfer facility.

The scope of work of this project is the replacement of the two-track North Bridge for the Portal Bridge Capacity Enhancement Project (PBCEP).

AECOM's services include construction management; inspections, foundation geotechnical engineering, railroad operations and coordination; safety management; resident engineering; project outreach; DBE engagement, package execution; constructability and pre-award; project controls; environmental compliance; commission/ closeout; and Force Account work.

NJ TRANSIT Meadows Maintenance Complex Construction Management

Kearny, New Jersey

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$68 million	07/2008	Yes

AECOM Tishman provided Construction Management services for various renovation and construction tasks at the Meadows Maintenance Complex, the primary facility for rolling stock maintenance of New Jersey Transit's fleet of commuter rail trains. Since opening in 1987, the size of New Jersey Transit's rail fleet has increased by 50 percent, overwhelming the capacity of the complex and necessitating renovation and expansion projects.

Tasks on this project included the construction of a 10,000-square-foot bi-directional train washer in a separate but enclosed building; an expansion of the Service and Inspection Building to include a third track for inspection and maintenance activities and a two-ton monorail; and the expansion of the car area to accommodate additional hoist equipment and air brake work, as well as the addition of new locomotive storage tracks. Drainage, power, compressed air, lighting and switch heating systems were expanded to meet the new facility's increased capacity. A new hot lube oil tank and new Center Yard for train storage including a pit/ pedestal inspection track was constructed. Site work included the construction of retaining walls, sidewalks and signage.

The project expanded to include the removal and replacement of HVAC units with newer more efficient units. The most challenging aspect of the HVAC project was installing the new units via helicopter. Also, the Track 8 Extension project extends the current stub Track 8 through the building and into the yard. Two new bridge cranes were added, which required extensive steel reinforcements to the existing structure.

NJ TRANSIT Hoboken Terminal and Yard Complex Construction Management

Hoboken, New Jersey

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$161 million	03/2012	Yes

AECOM Tishman served New Jersey Transit as Construction Manager from 1997 to 2011 on this multi-phased plan for the historic Hoboken Terminal and Yard Complex.

The scope included a historic restoration of the landmark Main Waiting Room, construction of a modern, consolidated facility for maintenance, fill-in of the Long Slip, a Master Plan/ Constructability review, structural rehabilitation of the historic ferry terminal and con- struction of a new ferry service concourse within it, and construction of a maintenance/ fueling facility with a 72-car train storage yard and four-track railroad bridge. Other projects included the clock tower restoration, the River Walk and the Wheeltrue project.

More than 300 trains operate in and out of Hoboken Terminal every weekday. This pre- sented many logistical challenges that AECOM Tishman addressed in order to minimize the impact on train schedules and reduce commuter inconvenience.

The construction of the track reconfiguration and storage track additions impacted numerous existing catenary, signal, communication, and power facilities. Numerous systems required interim relocations to accommodate both construction and train operations. The AECOM Tishman team completed the six initial projects while keeping the Hoboken Terminal in operation; supported New Jersey Transit with maintaining rail operations at a safe, satisfactory and convenient level of activity and offered innovative, project and construction management techniques that lowered costs and shortened schedules.

NJ TRANSIT Contract Consultant for Construction Management

Hudson/Bergen Counties, NJ

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	Various	2019	Yes

AECOM Tishman was retained by NJ Transit to provide Task-Order based CM services on a wide variety of rail/transit facilities, including transit and bus stations, parking lots, light rail track and building facilities.

AECOM Tishman was retained by NJ Transit to provide Task-Order based CM services on a wide variety of rail/transit facilities, including transit and bus stations, parking lots, light rail track and building facilities. Representative Task-Orders include the following:

New Jersey Transit Project 15-009X

Rehabilitation of the Morris Bridge is the complete reconstruction of a bridge over the NJ Transit Morristown and Gladstone lines in Summit, NJ. The scope of the construction consists of, but is not limited to: removal and replacement of the steel bridge superstructure and concrete deck slab, partial reconstruction of the abutment seats, reconstruction of the approach slabs and sidewalks, widening of the approaches, and the various utility relocations. The work was coordinated with NJ Transit Operations to ensure that train service is uncompromised. As the Construction manager, AECOM Tishman personnel serve as the Owner's Representative coordinating all aspects of the project with the Contractor, NJ Transit Operations, Design Engineer and the various utility companies involved. As the main point of contact, all project correspondence including submittals, RFIs and change orders are reviewed and implemented by AECOM Tishman to ensure that the Contract Documents are being followed to the Owner's satisfaction. Additionally, the project budget and schedule are maintained and reported to the Owner via a monthly report, or more frequently if required.

New Jersey Transit Project 15-054X

Construction of the new Emergency Operations Facility in Maplewood, NJ will serve NJ Transit Police on managing emergency operations around NJ from a central location. The project also includes, but not limited to, installation of new ductwork, conversion from a pneumatic building controls to direct digital controls (DDC) system, electrical power, card access control system, camera installation, public address system, Wi-Fi interior antenna installation, system integration to existing building management system (BMS), fire sprinkler system and clean agent fire suppression system, audio/visual systems, furniture installation, raised access flooring, data floor boxes, and window treat- ments. AECOM Tishman is serving as NJ Transit's Resident Engineer managing the field activities such as, but not limited to, demolition of 18,000 (approx.) sq. of existing office space and construction of a new Emergency Operations Center, Operations Center, Control Rooms, Offices, restrooms with lockers & showers, kitchens, UPS Room, Data Center, Fire Suppression room, Electrical/Mechanical Rooms, rooftop units (on new dunnage), exhaust fans, condensing units and air handling units

NJ TRANSIT Long Slip Canal Fill Design Management

Jersey City, New Jersey

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$75 million (est.)	Current	Yes

AECOM is currently providing the final design and construction support services for bulkhead restoration on the Long Slip Canal Filling project.

Twenty-First Century Rail Corporation, a special purpose company formed by AECOM, was responsible for the design and construction of the $2 billion Hudson-Bergen Light Rail Transit System, and is now operating and maintaining the system. In conjunction with the design of the Hoboken Terminal segment of the system, AECOM provided engineering services associated with the Long Slip Canal Fill Project. These services included alternatives evaluation, conceptual design development, and final engineering associated with the filling of a 2000-foot channel along the Hudson River adjacent to Hoboken Yard. The task included design of a 10' x 12' combined sewer outfall extension, design of a pedestrian bridge, bulkhead restoration and canal closure retaining walls, geotechnical analyses, evaluation of impacts to adjacent land uses and regulatory considerations. The pedestrian bridge and bulkhead restoration was constructed in 2008-2009.

In October 2012, tidal storm surge associated with Superstorm Sandy caused significant damage to NJ TRANSIT facilities in Hoboken. The surge inundated the canal and overtopped its bulkheads, significantly contributing to flooding of Hoboken Yard as well as the City of Hoboken and Jersey City. Subsequently, NJ TRANSIT engaged AECOM to assist with a re-evaluation of the previous canal fill design, enhancements to improve future resiliency and technical support associated with the FTA grant application process to support project development.

In 2017 the AECOM led team was selected to provide engineering services in conjunction with the second phase of the Long Slip Project. The scope of work includes design of a retained earth fill above the former canal, design of a bridge and viaduct system, design of a six-track, three-platform resilient passenger station above the FEMA base flood elevation and design of all railroad infrastructure elements associated with the new station and lead tracks.

AECOM assisted NJ TRANSIT with alternatives analysis, project development and stakeholder coordination, preliminary civil design, geotechnical engineering, assess and utility design, constructability assessment, preliminary cost estimating and coordination of future rail systems and operational enhancements.

MTA LIRR Program Management and Construction Services for East Side Access

New York, New York

Client	Project Value	Completion	Completed on Time and within Budget
MTA Long Island Rail Road	$8 billion	Ongoing	Yes

AECOM is providing program and construction management services to the MTA LIRR East Side Access (ESA) project. The ESA project is considered a key component of the overall Transportation Improvement Program for the Long Island Transportation Corridor and the greater New York City metropolitan area. Work is being carefully managed to minimize interference with ongoing rail operations involving LIRR, New Jersey Transit, and Amtrak, totaling up to 800 trains per day. .

AECOM is providing program and construction management services for its $8.76 billion East Side Access (ESA) Project, which is to be commissioned in 2019. The ESA Project will provide a direct connection for LIRR commuter rail service to Grand Central Terminal (GCT) on the east side of Manhattan. It is the largest construction project ever performed for the MTA and its affiliated agencies in the New York metropolitan area.

The ESA Project includes a new commuter rail station at Sunnyside Yard in Long Island City; an eight track/four-island platform in a stacked 4-up and 4-down configuration for LIRR trans; new and/or upgraded LIRR passenger access points at GCT; reconfiguration of NYCT's Lexington Avenue subway station to accommodate increased passenger traffic; a new railcar storage yard in Queens; and traction power, signals, and communications systems.

The Project also includes more than 35,000 linear feet of new hard rock and soft ground tunnels in Manhattan and Queens, 1,200-ft-long caverns beneath GCT to house LIRR's new terminal, and renovation of 8,600 linear feet of the existing 63rd Street-Queens Boulevard Connector Tunnel's lower level reserved for the ESA project. The approximately 10,000-ft-long tunnels in Queens lie in soft ground and are designed for an earth pressure balance machine (EPBM). The 25,000-ft-long hard rock tunnels in Manhattan are designed for a tunnel boring machine (TBM) and terminate in two large underground caverns under the existing Grand Central Station. Various tunneling and cut and cover methods are used for the remaining segments, access shafts and caverns.

The AECOM program management (PM) team is serving as the primary day-to-day manager for the MTA and is responsible for supervising the Tunnel Engineer Consultant, Systems Engineering Consultant and Environmental Consultant. The AECOM Team is also providing construction management services for more than 50 contract packages and is directly procuring $135 million in general conditions and ancillary services.

APM Terminal, Project Management Consultant – Wharf, Gate and Buildings Improvement

Elizabeth, New Jersey

Client	Project Value	Completion	Completed on Time and within Budget
APM Terminals	$60 million	2017-2019	Yes

AECOM performed Project Management Consulting Services for APMT Elizabeth overseeing construction delivery to enhance the existing berths 94,96 & 98 for receiving newer and larger ships.

AECOM performed Project Management Consulting Services for APMT Elizabeth overseeing construction delivery to enhance the existing berths 94,96 & 98 for receiving newer and larger ships. Duties included assurance that the King Pile retaining wall is built to specifications and that all Quality Control inspections are performed to Port Authority NYNJ standards. AECOM's on site staff interfaces with Client, Port Authority, Designer and Contractor on a daily basis to assure the project is being constructed on-time, on-budget and within the quality standards expected. Constructability and Submittal/RFI tracking of the work are included in the duties along with review of change orders and progress schedules.

During Construction, AECOM provided full time construction management services for the wharf, access gate and demolition. Services provided included overall site supervision, field verification of construction activities, claims review, andmverification of payments.

AECOM performed Program Management Services for the construction upgrades of two existing berths. A unique feature is the King Pile sheet wall structure utilized to allow deepening of the berths to 50' Super Post Panamax depth. Also bigger, heavier STS cranes required the waterside and land side crane rail beams to be replaced. Other upgrades included new security bollards, fender panels, tie-down pits and electrical system upgrades.

SJTC Paulsboro Marine Terminal Construction Management

Paulsboro, New Jersey

Client	Project Value	Completion	Completed on Time and within Budget
South Jersey Ports Corporation (SCPC)	$175 million	2010-2017	Yes

AECOM Team members provided program and construction management services that included planning, permitting, conceptual design, NEPA compliance, construction management and site remediation compliance for a 150-acre multi-use bulk and breakbulk cargo terminal located on an existing brownfield site on the Delaware River

AECOM Team members provided program and construction management services that included planning, permitting, conceptual design, NEPA compliance, construction management and site remediation compliance for a 150-acre multi-use bulk and breakbulk cargo terminal located on an existing brownfield site on the Delaware River. Conceptual plans and design characteristics to accommodate Off Shore Wind components as well as recycled metal, forest products, steel, project cargo and RO-RO operations were developed. Terminal infrastructure included a 3 berth wharf, barge berth, backland infrastructure, and rail and road access. AECOM worked extensively alongside British Petroleum's own engineers involved with mitigating the previous Oil Terminal Storage site as well as with local land owner's and County/State officials in making the terminal redevlopment a reality.

As part of the conceptual planning process, AECOM worked with the Port Operator to navigate a comprehensive alternatives analysis necessary to acquire the federal, state, and local permits to design and construct the proposed Terminal. Some of the permits included: United States Army Corp of Engineers Section 10/404 Permit and Jurisdictional Determination; New Jersey Department of Environmental Protection's EO215/ Environmental Impact Statement as well as the Wetlands Permits, Waterfront Development Permit, and the Water Quality Certification. AECOM assisted the Owner's Site Remediation efforts at the proposed project by completing the NJDEP Memorandum of Agreement / Hazardous Discharge Site Remediation Fund Application and a Preliminary Assessment to obtain potential funding for any required remediation at the site.

During Construction, AECOM provided full time construction management and site inspection services for the wharf, uplands, and access bridge construction project. Services provided included overall site supervision, field verification of construction activities, claims review, design review, and verification of payments.

NJ TRANSIT Hudson-Bergen Light Rail Line DBOM Services

Hudson/Bergen Counties, NJ

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$1.9 billion	Ongoing 2000-2020 Operation & Maintenance	Yes

HBLRT operates on a dedicated right-of-way including bridges, grade separation viaducts, and at-grade roadway crossings through the streets of Jersey City—one of the more densely populated cities in North America. AECOM provided design and construction services.

The $2.25 billion Hudson-Bergen Light Rail Transit (HBLRT) System consists of 15.9 miles of track and 24 stations serving seven cities in Hudson County from Bayonne to North Bergen. It is the largest public works program in New Jersey history and the largest transit DBOM in the United States. This ambitious FTA-funded transportation project was a public-private partnership with NJ TRANSIT, yet was designed to FRA standards. The alignment is built on private rights-of-way, city streets, and elevated structures.

With a weekday daily ridership of over 45,000, the success and contribution of the HBLRT is clearly demonstrated by the enormous growth of commercial and residential development in this formerly depressed area along the Hudson River waterfront. The scope of work included:

- 15.94-mile system with an additional 3 miles of yard track
- The rehabilitation of an existing 4,096-foot-long tunnel 160 feet below grade
- 24 passenger stations, 18 elevators, Five park-ride facilities and 52 light rail vehicles
- A maintenance complex containing 9 storage tracks, 5 maintenance tracks, a 100,000 square foot maintenance shop, a 75,000-square-foot Light Rail Vehicle (LRV) storage building, a 40-acre storage yard, car wash, paint shop, maintenance pits, and machine shop
- State-of-the-art tunnel safety systems include fire detection, fire suppression, four tunnel ventilation fans, two platform ventilation fans, two shaft pressurization fans, and emergency lighting and communications. The new underground station is accessed by high-speed elevators from an intermodal facility at grade level.

In addition to the MOS -1 and MOS-2, the initial system, AECOM provided engineering services, design, and construction services for improvements including the recently opened 8th Street Extension (MOS-2 extension) and an interlocking near Danforth Avenue Station. On the 8th Street Extension Project (MOS-2 extension), a 0.8-mile extension of the HBLRT system from southern terminus of 22nd Street to 8th Street, AECOM provided design and construction. Scope included catenary, signals, communications systems including control center upgrades, system safety certification, and startup, testing, and commissioning.

AECOM designed, constructed, and commissioned the new interlocking consisting of a diamond crossover and siding track south of Danforth Avenue Station which provides increased service capabilities and will integrate with the 8th Street extension. Scope includes civil work, track work, and systems. Systems upgrades included installation of new system-wide cabling and cable way, wayside signal equipment, track installation, and overhead catenary.

Since the inaugural opening of first phase in April 2000, the firm has continuously operated HBLRT and maintained the infrastructure, rail system, stations, and facilities. This operation and maintenance of the LRT System will continue through April 2020.

NJ TRANSIT Newark-Elizabeth Rail Link Extension

Newark, New Jersey

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$100 million	2006	Yes

This project involved an approximate one-mile extension of the Newark City subway linking NJ TRANSIT's Broad Street Station and Pennsylvania Station. The project includes an 800-foot long tunnel segment connecting to the existing subway tunnel, with surface running for the remainder of the route.

The new tunnel extension was built using the cut-and-cover method. AECOM designed the track alignment so that the existing turnout tunnels could be used as much as possible reducing impacts to the existing structure. The track structure utilized vibration dampening fasteners to minimize the noise and vibration impacts on nearby historic structures. The extension has an emergency ventilation system and ancillary rooms containing an electrical substation.

The remaining portion of the MOS-1 alignment is surface-running and includes four stations. A portion of at-grade track alignment is on a floating slab structure to provide noise and vibration mitigation for the nearby New Jersey Performing Art Center. The streets along the right of way was reconstructed from building face to building face to accommodate the track which required an alignment shift for the roadway. Existing underground utilities were relocated as required. Stations were designed to provide visual compatibility with the historic buildings, NJPAC, and neighborhoods that surround densely developed downtown Newark.

In addition to trackwork and track alignment, AECOM provided project management, civil and utility design for the at-grade segment of the project. AECOM also provided project coordination for geotechnical and environmental investigations, surveying, noise and vibration testing and design.

NJ TRANSIT Hoboken Terminal Substation Relocation

Hoboken, New Jersey

Client	Completion	Completed on Time and within Budget
NJ TRANSIT	2003	Yes

This new substation was built within the historical Hoboken Train Terminal. The project included the design, procurement, construction, installation, start-up, commissioning, and turnover of the substation.

Originally, the Hoboken Terminal Complex was electrically fed from a substation located within Hoboken Yard. This 480,277VAC, 3 Phase, 4 wire substation, which provided both primary and redundant electrical service to the Hoboken Terminal Complex, interfered with the site of the new Hudson-Bergen Light Rail Station. The substation, underground and aboveground electrical feeds to the substation and from the substation to the Terminal, and complex cable support structures were located within the Light Rail Station site and heavy rail yard. Therefore, a new substation having 2-2000kVA, 13.2kV, 480/277VAC, 3 phase, 4 wire and 1000kVA, 480/277 volts, 3-phase, 4-wire Standby Diesel-Generator set were designed and constructed concurrent with the construction of the Hoboken Light Rail Station. The work was sequenced to allow for a seamless transition from the existing substation to the new substation. This sequencing also allowed for the decommissioning and demolition of the existing substation within the active rail yard.

This new substation was built within the historical Hoboken Train Terminal. The project included the design, procurement, construction, installation, start-up, commissioning, and turnover of the substation. The substation required the construction of a new Substation Building within the existing Hoboken Terminal. This building included reconstruction of the marine support structure, raising the floors above the 100 year flood levels, SCADA, FM-200 Fire Protection, building electrical, mechanical/HVAC and architecture. Coordination of the 13.2 kV electrical service with PSE&G was also part of the scope.

The challenges associated with the substation relocation included:

- the non-interruption of electrical service to the Hoboken Terminal during construction;
- the construction of a new substation within the confines of a 100-year old structure listed on the National Historic Register;
- the coordination of the turnover from the old substation to the new substation without interrupting operations at either the Hoboken Rail Terminal, Hoboken Yard or the Light Rail Station;
- demolition of the old substation and associated utilities within the limited confines of the Light Rail Station and Hoboken Yard;
- design and construction within an active heavy rail terminal and yard; and
- Integration of the substation into the existing NJ Transit SCADA system.

The demolition and construction associated with the project involved 100-year old marine structures located along the Hudson River.

MNR Replacement of Wayside Electric Traction Substation

Greenwich to New Haven, CT

Client	Project Value	Completion	Completed on Time and within Budget
Connecticut Department of Transportation	$13 million	2013	Yes

AECOM provided preliminary and final design services for the replacement of five remaining 1915 vintage outdoor substations on the New Haven Main Line.

As prime consultant to Connecticut DOT, AECOM provided preliminary and final design services for the replacement of five remaining 1915 vintage outdoor substations on the New Haven Main Line. The substations consists of oil filled circuit breakers and switchgear located on anchor bridge catenary structures above the mainline tracks. The Connecticut DOT replaced those units with equipment conforming to their modern design standards (indoor modular unit substations) developed for New Haven Line Substations during the course of recent projects in Connecticut and New York State. The substations serve an important purpose providing sectionalizing, control, and fault protection for the tractionpower system. The new substation equipment provides greater reliability and safety for the traction power system, significantly improving the operational reliability and safety of the New Haven Line.

AECOM provided design for the new substations including the following major elements:

- General Drawings including Index, Survey Control Points, Borings, Existing Site Conditions and Signs
- Environmental Plans
- Site Drawings showing Substation Location, Foundations, Fencing and Security, Steel Poles, and Stairs
- Single Line Diagrams, General Electrical Drawings, and Metro North Standard Details
- Substation Equipment Layout, Electrical Panel Schedules, Equipment Detail Drawings
- Substation Control Drawings including Local Control Panel, SCADA System, RTU and MOD Control Panel
- Snowmelter Cabinet
- Underground Conduit and Overhead Cable Routings.

NJ TRANSIT CM Services for Replacement of Bay Head Substation
Bayhead, NJ

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$28,345,000 (construction cost)	Ongoing	Yes
Firm			
TY·LIN INTERNATIONAL			

TYLI is providing CM services for this project, located at the Bay Head Train Yard, which generally consists of the replacement of storm-damaged electrical equipment with new equipment constructed at a higher elevation to prevent damage from future flooding and building construction.

TYLI is providing CM services for this project, located at the Bay Head Train Yard, which generally consists of the replacement of storm-damaged electrical equipment with new equipment constructed at a higher elevation to prevent damage from future flooding and building construction. The existing General Service Substation will be demolished while the Layover Power Substation remains in service to maintain continuous operation of the Bay Head Yard. A new building to house the new substation will be built, a new 5000 kVA substation will replace both existing substations, including transformers, switchgear and other electrical equipment. A new building to house a new standby generator will be built where the Layover Power Substation was located.

NYCT, Rehabilitation and Resiliency of 207th Street Yard Extension

New York, New York

Client	Project Value	Completion	Completed on Time and within Budget
NYCT	$500 million (construction cost)	Ongoing	
Firm			Yes
TY LIN INTERNATIONAL			

TYLI, as managing partner in a Joint Venture, is providing Consultant Construction Management (CCM) services for the rehabilitation and resiliency of the 207th Street Yard that was severely damaged during Superstorm Sandy.

The yard, located in northern Manhattan and adjacent to the Harlem River is the main storage for the rolling stock on the A & C Lines. Due to the relatively low elevations of the yard, the high-water level of the Harlem River during Superstorm Sandy backed up through the drainage system and resulted in flood waters inundating the eastern half of the yard. Water flowed from the yard through the tunnel portal into the subway system, requiring significant repairs of the yard and subway line. This project both rehabilitates damaged equipment and seeks to protect the yard from future storm events.

The TYLI CCM team is providing Resident Engineers, Inspectors, Office Engineers and other personnel.

The construction includes signal modernization as follows:

- New signals equipment, track switch operating layouts, electric train stop layouts, cases, instrument racks, panels, signs, code system, relays, SSI system, power supplies, messenger systems, cables, control/ indication panels, standard track and power work (rail ties, IJ, bonding and replacement of running rails), all other ancillary equipment, and materials needed to provide a complete signal system for the entire 207th Street Yard.
- Construction of two new structure (Relay Building "A" & Relay Building "B"). These two building will include Relay Rooms, Train Control Rooms, Track Rooms, and Fire Suppression Room, Communication Room, Yard Tower to house signaling equipment and auxiliary (Electrical, Mechanical, HVAC, lighting, etc.) systems, and to provide additional Signal / RTO facilities. In addition, number of elevated platforms shall be provided to locate CIH cases as shown on the Contract Drawings.

NJ TRANSIT GOB Parking Deck Replacement

Maplewood, Essex County, NJ

Client	Project Value	Completion	Completed on Time and within Budget
NJ TRANSIT	$TBD	2020	Yes
Firm			
AmerCom Corp.			

As a sub-consultant, AmerCom Corporation performed property survey and mapping services as well as ROW documentation; Geotechnical Engineering ; and Utility Investigations for the proposed new multi-level parking deck.

Survey work included establishing horizontal and vertical controls; establishing ROW; field edit and survey report; surveying visible overhead and marked out subsurface utilities. Produced Survey plans, General Property Parcel Map and Individual Property Parcel Map in accordance with the NJ Department of Transportation (NJDOT) Survey Manual and the NJDOT ROW Engineering (ROWE) Manual. All underground utilities or appurtenances that were marked out by the NJ One Call prior to the survey and were located on the basemap.

Amtrak Hudson River Tunnel

New Jersey/New York

Client	Firm	Completion	Completed on Time and within Budget
Amtrak/FRA/NJ TRANSIT & PANYNJ [The Gateway Trans-Hudson Partnership (GTHP)	MATRIXNEWORLD Engineering Progress **Project Value** $1.5 million (fee)	Ongoing	Yes

During the initial Access to the Region Core (ARC) Project and continuing the current iteration, Matrix is providing environmental services for the preliminary engineering phases of the Hudson River Tunnel Project.

The purpose of the project is to expand and improve public transit capacity in the trans-Hudson midtown Manhattan corridor by building a new rail tunnel under the Hudson River and associated infrastructure in both New Jersey and New York, including new tracks and platforms near Penn Station New York. The project's goals remain to enhance the capacity in the trans-Hudson midtown corridor; to support growth for commuting opportunities from New Jersey and Orange and Rockland counties to Manhattan; to support the economic development of west midtown; to relieve congestion on all trans-Hudson transportation modes; to improve reliability for rail commuters; and (post Superstorm Sandy) to provide an alternative to the existing Amtrak North River Tunnel as to allow closure and rehabilitation efforts.

Matrix is responsible for performing all environmental investigation activities along the entire alignment corridor, including performance of Preliminary Assessments/ Phase I Environmental Assessments, Site Investigations, and Remedial Investigations of properties, preparation of sampling and analysis plans, preparation of Preliminary Assessment/Phase I Environmental Assessment and Site Investigation Reports, Remedial Action Workplans, and assistance in the preparation of Property Acquisition Environmental Cost Estimating Reports for properties to be acquired along the right-of-way. Areas to be impacted or acquired as part of this project have a long history of commercial, industrial, and transportation use and have the potential to be impacted by contaminants related to prior uses and historic fill. Other activities included environmental oversight and sampling during geotechnical investigations along the project corridor and within the Hudson River and the performance of hazardous materials surveys at properties to be acquired as part of the project.

Qualifications of Individuals

3. Qualifications of Individuals

The AECOM Team will deliver to NJ TRANSIT the expertise and resources needed for successful construction of the Hoboken Signal and Yard Power repairs Project. We have the right people to deliver.

Having the "right" people with the "right" experience is probably the best prognosis for a successful project. AECOM and our subconsultants offer NJ TRANSIT a team of professionals whose careers and experience have placed them in the perfect position to perform this project—they have unsurpassed construction management experience local to the area, on NJ TRANSIT and Amtrak projects, and on projects with all the same elements as the Hoboken Signal and Yard Power Repairs Project.

The AECOM team is comprised of highly qualified, experienced local staff as well as carefully chosen subconsultants who have significant and practical expertise in construction management and construction inspection. For this complex and critical project, we will draw on the specialized expertise of our people, who are familiar with similar projects and who will have no learning curve.

The team has available outstanding technical resources, with the capability to deal with all expected and unexpected issues related to the complexities of construction of the replacement of the Hoboken Signal and Yard Power Repairs Project Bridge.

The AECOM has available outstanding technical resources, with the capability to deal with the issues related to the complexities of construction of the replacement of the Hoboken Signal and Yard Power Repairs Project.

THE RIGHT TEAM WITH THE RIGHT PEOPLE

The AECOM Team consists of a unique blend of talent to deliver construction management excellence. Staff has been carefully selected to build a team with outstanding technical resources and to meet NJ TRANSIT's needs for a project delivered by experts, and a project delivered safely.

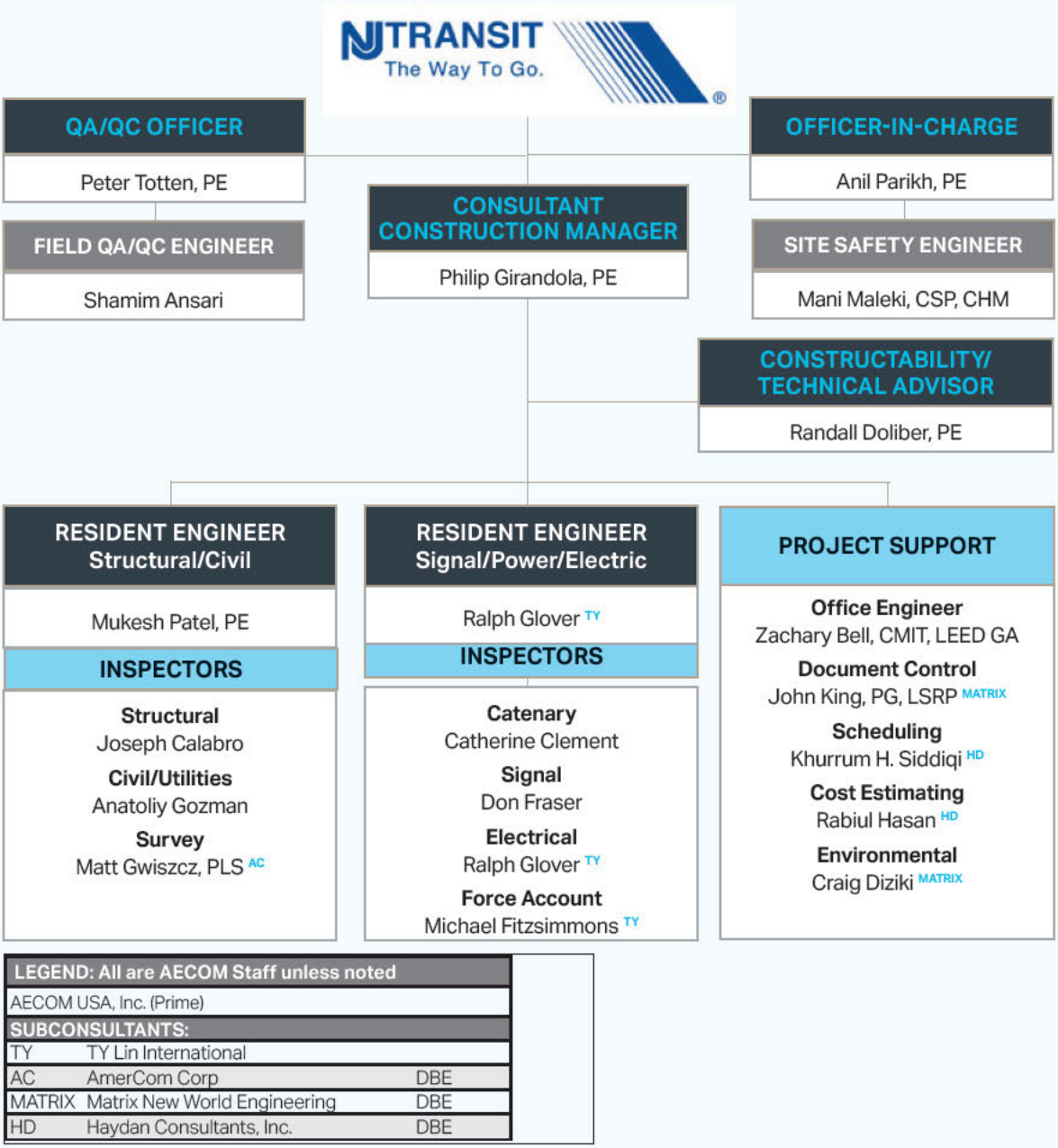
With thoughtful consideration of the challenges of this project, we have formed a team of industry leaders and experienced DBEs. Being able to work together as a cohesive team is also important; to this end, we selected firms that AECOM has successfully worked with on past successful projects and that can make a meaningful contribution the NJ TRANSIT Hoboken Signal and Yard Power Repairs Project's ultimate success.

AECOM – WE'RE THE RIGHT TEAM TO DELIVER...

Our Construction Manager will be the Team's principal contact with NJ TRANSIT. Our Construction Manager will keep NJ TRANSIT's Project Manager informed regarding the status of the project. The support and construction inspection staff that we have shown bring their construction experience to successfully deliver expert construction management servies.

Our proposed Project Organization Chart presented Below shows activities and responsibilities for the work being performed. We can assure NJ TRANSIT that resource availability will not be an issue for the AECOM Team should it be awarded the Hoboken Signal and Yard Power Repairs CM Contract.

PROJECT ORGANIZATION CHART



LEGEND: All are AECOM Staff unless noted		
AECOM USA, Inc. (Prime)		
SUBCONSULTANTS:		
TY	TY Lin International	
AC	AmerCom Corp	DBE
MATRIX	Matrix New World Engineering	DBE
HD	Haydan Consultants, Inc.	DBE

CORE TEAM

The success of the NJ TRANSIT Hoboken Signal and Yard Power Repairs Project, will require an experienced team of seasoned rail, structural, civil, and transportation professionals who have successfully provided these exact services on similar projects, using proven project management methods.

AECOM brings a unique blend of the team's extensive recent and current experience providing similar services to the NJ TRANSIT and its understanding of the scope of work under this program.

Leading our team is our **Construction Manager, Philip Girandola, PE,** who is ideally suited for this leading role. He has participated equally as a Construction Manager for AECOM on a multitude of projects and as a superintendent for large construction firms specializing in drilled shaft foundations. He possesses extensive knowledge in all types of pile supported foundation design and construction as well as transportation terminal rail track and electrical sub-station duct bank installations and systems. He recently completed hundreds of pile supported mono-pole foundation installations at APM Terminal in Elizabeth, NJ and has been involved with rail track installation systems

throughout many inter-modal Marine terminals during his career. Mr. Girandola brings a unique background of skills to the Construction Management position, having worked as a Marine Contractor building inter-modal (ship to truck to rail) terminals for the first 15 years of his career. His background includes the position as Lead Construction Manager for the construction of the Paulsboro Marine Terminal Phases 1 and 2 ($180 million). and continued working with client executives in managing the Port's phased construction, as well as managing the Resident Engineering and inspection staff for all aspects of Port development including deep foundation installations for track security and high-mast light systems.

Mr. Girandola will lead the team with his extensive experience, applying his experience and managing the RE resources as well as looking to develop innovative and cost-efficient solutions during the course of the project. He will provide a single point of contact to NJ TRANSIT and be responsible for the coordination between disciplines and serve as liaison to all parties implementing this project, and direct the execution of work during the entire contract. Mr. Girandola will act on behalf of the AECOM team; assign resources; adjust staffing; and manage all aspects of construction management support. He will support the core project office and manage day-to-day inspection teams. He will have the full backing and support from AECOM's local, regional, and national offices depending on the need. He will have a direct line of communication with Officer-in-Charge, Anil Parikh, PE.

Randall Doliber PE, Constructability/Technical Advisor, brings more than 45 years' experience in Construction Management, more than 34 of which he has spent with Tishman. He has over 20 years of experience managing NJ Transit projects, including the role of Manager of Construction for the 11 New Jersey surface projects for the ARC Tunnel, and 16 years managing 11 projects at Hoboken. As First Vice President he offers extensive hands-on project administration on a wide variety of major projects, including transportation, historic restoration, high-rise offices and facilities expansion work. Mr. Doliber served as Project Executive and Sr. Resident Engineer for NJT on a series of projects to upgrade and restore this key transportation hub. Projects he has administered include the construction of the 75,000-square-foot Hoboken shop maintenance facility and restoration of the Main Waiting Room.

Anil Parikh, PE, is our proposed **Officer-in-Charge** for this project. As the leader for the AECOM New York City Metro Rail Practice, Mr. Parikh is responsible for providing leadership, strategic guidance and management. He has more than 34 years of management experience on transit projects. In addition to providing technical oversight and managing project personnel, he takes full responsibility for quality, safety, financial integrity and schedule performance of all projects. Mr. Parikh brings experience working for New York City Transit and the State of New York's MTA Capital Construction Company, managing many successful projects from "cradle to grave." He has an excellent and proven track record of completing these projects on time and within budget. Mr. Parikh has successfully led all phases of the project from environmental review, conceptual and preliminary engineering, final design, value engineering, constructability review, procurement strategy, construction, testing and commissioning for mega projects such as the $645-million 63rd Street connection and the $4.4-billion Second Avenue Subway. These projects are among the most technically and institutionally complex and challenging projects ever undertaken by the MTA.

Supporting Phil Girandola will be:

Resident Engineer for Structural/Civil, Mukesh Patel, PE. Mukesh brings 33 years of experience in engineering design, project management and construction management with MTA New York City Transit. His experience includes rehabilitation, renewal, components and ADA elevator projects as well as small business mentoring. He has been involved in the Capital Program Management – Sandy

Recovery and Resiliency Program, New York for the New York Ciity Transit. He has experience with affiliate agencies, user departments and sponsors to ensure that construction procedures are followed by the requirements. He has managed the construction of the $883 million rehabilitation of Canarsie Tunnel and ADA projects at 1st Ave Station and Bedford Ave Station. This project included construction of the only power substation below ground near East River in Manhattan.

Ralph Glover from TY Lin will serve as Resident Engineer for Signal/Power/Electric. Mr. Glover has over 30 years' experience working for NJ Transit for various substation projects. He has served as NJ Transit, Supervisor of Substations – Morris and Essex Division, Location: Morris and Essex, NJ: Supervisor. He was supervising three (3) 230kV Supply Substations, one (1) 34.5kV Supply Substation, eleven (11) 55kV Autotransformer Substations, two (2) 55kV Switching Substations; Manage fifteen (15) Substation Mechanics, Manage switching and tagging assignments, Manage clearance and protection assignments, Manage standard operating procedures adherence, update and maintain all safety bulletins, protective equipment, procedures, update and maintain employee qualifications and training, order and track all maintenance material purchases and submit employee payroll.

Peter Totten, PE, our **QA/QC Manager**, brings more than 47 years of experience in providing engineering services for railroads, highways, bridges, marine structures, energy facilities and airports. Mr. Totten oversees the quality of work performed on engineering and design projects for a variety of clients and projects (including security systems design, bridge design and inspection, rail systems, highways, retaining walls, etc.). He was the Manager of Engineering for confidential security projects for PANYNJ's Security Capital Program. He plans and conducts project initiation surveillances and full project checkups, prepares Project-Specific Quality Plans, and trains staff in the AECOM Quality Management System.

Structural Inspector, Joseph Calabro has extensive construction inspection experience and has worked on numerous roadway and bridge reconstruction projects for transportation agencies throughout New York. He is currently a Senior Inspector on the Replacement of the Mill Basin Drawbridge for the NYCDOT. He has been a Senior Inspector for the New Jersey Turnpike Authority Interchange 14A, the Interchange 6 to 9 Widening Program and the Secaucus Interchange (15X) and Seaview Drive extension. Mr. Calabro was previously a Senior Inspector for the $375 M Reconstruction of Three Bridges on the Belt Parkway (Contract 1).

Catherine Clement, Catenary Inspector, is a lead overhead contact system (OCS) engineer with 20 years of experience designing catenary profiles, calculating catenary loads, preparing catenary structure and layout. She also has experience executing advance preliminary and conceptual OCS design. Ms. Clement has effective planning and organizational skills. A leader in her field, Ms. Clement offers innovative and practical solutions and has proven capacity to approach problems effectively and creatively, successfully manage multiple priorities and assignments. She serves as Task leader for the design of the OCS as part of the design-build team for the Long Slip Fill and Enhancement Project.

Michael Fitzsimmons from TYLin will be responsible for **Force Accounts**. He has over 30 years of electrical and mechanical experience focused on the transportation industry. Much of his experience has been with NJ Transit where he completed many state of good repair supply substation, switching station, rail yard, track interlocking, catenary, switch heater projects throughout the system. The projects were delivered on time and within budget. Mr. Fitzsimmons managed and developed budgets, bid specifications, material acquisition, schedules, estimates, project reporting, and force account personnel expenditures for the several projects including the New Jersey Transit, Electrical Substation State of Good Repair, Newark, NJ.

CERTIFICATION

The AECOM Team and its subconsultants certify that the listed key personnel are presently employed by the Consultant Team member firms, or will be on board, and will be assigned to the project in the manner prescribed.

QUALIFICATIONS/AVAILABILITY

Our proposed key staff is identified in the matrix on the following pages, which also summarizes their relevant qualifications and experience, and their availability to perform their stated role on the Hoboken Signal and Yard Power Repairs project. They will be supported by a depth of construction management resources that is unparalleled in the region.

RESUMES OF KEY PERSONNEL

Resumes of the above-mentioned key staff, as well as other technical personnel to be assigned to this Project is presented on the following pages.

Summary of Key Staff Qualifications

Expertise:	Yrs. of Exp.	Relevant Expertise	Representative Projects	Availability/ Anticipated Workload
Anil Parikh, PE Project Director	33	▪ Movable bridges and structures ▪ Program/project management of mega construction projects ▪ Movable bridge experience, nationally and internationally	▪ $21M Amtrak Arthur Kill Lift Bridge Rehabilitation ▪ $6-billion mega Qatar Project ▪ $883-million Local Roads and Drainage Program, State of Qatar	**Availability:** 50%
Phillip Girandola, PE Construction Manager	34	▪ Construction Management ▪ Expertise in managing large and complex rehabilitation projects ▪ Extensive knowledge in movable bridge inspection rehabilitation and rail track installations	▪ $200M APM Terminals Elizabeth, NJ ▪ $100M SJPA, Paulsboro Marine Terminal: ▪ $63M Global Container Terminal, New Berth Extension, Jersey City,	**Availability:** 50%
Randall Doliber, PE Constructability Review Advisor	45	▪ Construction Management ▪ Experience working on NJ TRANSIT projects ▪ Extensive hands-on project administration on a wide variety of major projects,	▪ Hoboken Terminal Rehabilitation ▪ $6.7M NJ Transit Meadowlands Maintenance Complex Expansion, Kearny ▪ ARC Tunnel Project, New Jersey/ New York	**Availability:** 25%
Mukeshkumar Patel, PE Resident Engineer & Task Manager for Structural/Civil	33	▪ Experience in project management and construction management ▪ Worked with affiliate agencies, to ensure that construction procedures	▪ MTA NYCT, Capital Program Management – Sandy Recovery and Resiliency Program ▪ MTA NYCT, Capital Program Management – Stations Division	**Availability:** 100%
Ralph Glover Resident Engineer & Task eader for Rail	30	▪ Extensive experience with substations, Autotransformer Substations ▪ Management of Substation Mechanics	▪ NJ Transit, Supervisor of Substations – Morris and Essex Division	**Availability:** 100%
Michael Fitzsimmons Force Accounts	30	▪ All aspects of new bridge construction, safety and maintenance ▪ Significant experience in movable and fixed bridge projects ▪ Resident engineering	▪ NJ Transit, CM Services for Replacement of Bay Head Substation, Bay, Head, NJ ▪ New Jersey Transit Corporation Inc. Newark, NJ	**Availability:** 80%
Joseph Calabro Structural Inspector	25	▪ Extensive construction management experience ▪ Worked on numerous roadway and bridge reconstruction projects	▪ NJTA Interchange 14A, the Interchange 6 to 9 Widening Program ▪ NYCDOT, Belt Parkway Bridges over Mill Basin Bridge, Brooklyn	**Availability:** 100%

RESUMES

Anil Parikh, PE

Officer-in-Charge

As the leader for the AECOM New York City Metro Rail Practice, Mr. Parikh is responsible for providing leadership, strategic guidance and management. He has more than 34 years of management experience on transit projects. In addition to providing technical oversight and managing project personnel, he takes full responsibility for quality, safety, financial integrity and schedule performance of all projects.

Mr. Parikh brings experience working for New York City Transit and the State of New York's MTA Capital Construction Company, managing many successful projects from "cradle to grave." He has an excellent and proven track record of completing these projects on time and within budget. Mr. Parikh has successfully led all phases of the project from environmental review, conceptual and preliminary engineering, final design, value engineering, constructability review, procurement strategy, construction, testing and commissioning for mega projects such as the $645-million 63rd Street connection and the $4.4-billion Second Avenue Subway. These projects are among the most technically and institutionally complex and challenging projects ever undertaken by the MTA. As the program executive, he was fully accountable for all aspects of planning, design, and construction, and both in-house and third-party design and construction. As such, Anil provided executive management and oversight related to schedule, estimating, quality, safety, contractor's claims, and budget controls. He led the interactions between various stakeholders in defining requirements, securing funds and finding the financial means to meet the requirements.

Relevant Project Experience

NJ TRANSIT, Portal Bridge Replacement Project, NJ: Served as Program Manager and performed contract packaging, schedule and cost estimating reviews. Also made recommendation on contract packaging options and is providing construction management support to NJ TRANSIT.

Ottawa Light Rail Transit Project, Canada: Part of the independent review team providing guidance to the owner in completing the construction work, and testing and commissioning work for Stage 1 of the LRT project.

MTA Capital Construction, New York, NY: Served as SVP and Program Executive (2014 to 2017); VP and Deputy Program Executive (2009 to 2014); and Program Manager Level II (2007 to 2009). Provided leadership and direction to the program managers and consultant construction managers during construction. Phase 1 of the Second Avenue Subway project includes the construction of tunnels from 92nd Street to 63rd Street station (approximately 2.3 miles), three new underground stations, and the rehabilitation of the existing 63rd Street station, track power, signals and communication.

QUALIFICATIONS

Firm: AECOM

Education

MS, Civil Engineering, New Jersey Institute of Technology

BS, Civil Engineering, New Jersey Institute of Technology

Registration/Certification

Professional Engineer: New York

Years of Experience

Total: 33

Training and Industry Skills

Various

Anil Parikh, PE, continued

- Managed completion of the final design and successful award of 10 construction contracts.
- Managed risk management, constructability reviews, contract packaging workshops, system safety certifications, and systems testing and commissioning activities.
- Served as the chair of the change control board for review and approval of change orders related to design changes, code requirements, and user requests.
- Created and implemented numerous systems and procedures to improve project management and achieved financial control, resulting in more efficient management and increased productivity.
- Implemented programmatic and financial reporting for project management and executive review, which enabled the Project Managers to make prudent decisions during a period of budget constriction.

MTA Capital Construction, New York, NY: Served as Program Manager Level II (2002 to 2007). Provided leadership and direction to the joint design team to complete the preliminary and final design of the Second Avenue Subway Project.

- Completed Environmental review and obtained Record of Decision for the full length of the Second Avenue Subway Project (8.5 Route miles and 16 underground new stations).
- Completed preliminary engineering design, and final engineering design of Phase 1 of Second Avenue Subway with ten construction contract packages.
- Managed risk assessment and constructability reviews for various design packages.
- Developed design management processes to effectively manage the design, such as the formation of various working groups, technical advisory, and senior management committees.
- Supervised a large team of consultants in the implementation of the Project Management Plan and Quality Plan.

MTA New York City Transit, New York, NY: Served as Lead Construction Manager (1996 to 2002); and Assistant Project Manager (1995 to 1996). Managed three construction contracts for the 63rd Street Connection Project to connect two existing subsurface subway lines ($645 million in construction costs). Also, managed the design-build of an addition to the Central Electronics Shop of the Woodside Maintenance Facility, and modifying the existing wet and dry fire lines in the 63rd Street Tunnel. Was responsible for assisting the program manager in the overall construction management of the program which included:

- Maintained project budgets and schedules.
- Coordinated construction with adjacent contracts.
- Implemented quality and safety programs for the project.
- Maintained and improving relationships with customers within and outside the Authority to maximize support and cooperation.
- Resolved field problems in a timely manner.
- Prepared management reports.
- MTA New York City Transit, New York, NY: Served as Project Engineering Manager (1992 to 1995). Managed the final design for the $645-million 63rd Street Line Connection Project in the following areas:
- Coordinated design of design consultant activities and in-house design for five construction contracts on the project.
- Provided support to the design consultant, such as NYCT standards, user requirements, and geotechnical exploration (such as borings, pump tests, and jet grouting).
- Monitored design budgets, schedules, and project cost estimates.
- Conducted in-house design progress meetings and consultant progress meetings with in-house designers and consultants.

Arranged for value engineering reviews, design submission reviews, and responses to comments.

Processed modifications to consultant contracts.

Phillip R. Girandola, PE

Consultant Contruction Manager

Mr. Girandola has significant experience in heavy Civil and Marine Structural, Road and Bridge and Rail related projects. He has participated equally as an engineering consultant on a multitude of projects and as superintendent for large heavy highway/civil/marine construction firms. He possesses extensive knowledge in movable bridge inspection rehabilitation and design, marine terminal rail track installations, port design, planning and design-build programs as well as in the construction and rehabilitation of waterfront marine structures, including drilled shafts, cofferdams, sheeted trenching, pile supported and floating platforms, temporary platforms, marine foundations, waterfront structures, retaining walls, bulkheads, piers and wharves and fender systems. He also has been involved with rail track installations throughout many terminals as well as several interstate type bridge spans in New Jersey. Additionally, he is familiar with the construction of tunnels, reservoir dams and high voltage electricity/sub station systems.

Relevant Project Experience

APM Terminals, Elizabeth, NJ.: Program Manager in charge of $200 million Wharf and Terminal improvements program. APM Marine Terminal, Elizabeth: AECOM is performing Program Management Services for the construction upgrades of two existing berths. A unique feature is the King Pile sheet wall structure utilized to allow deepening of the berths to 50' Super Post Panamax depth. Also bigger, heavier cranes are on order so the crane rail beams are both being upgraded for the increased loads. Upgrades for the Electrical systems are also part of the project.

South Jersey Port Authority, Paulsboro Marine Terminal: Managed the Construction, Resident Engineering and inspection staff for all aspects of initial phase of Port development including: Structural demolition of existing dock and site preparation of 200 Acres of terminal backlands, New construction of an access road and bridge into the site which entailed a seven span high-level bridge over the Mantua Creek, new grading cut / fill program, New freight rail-road track system into the terminal with loop track, switches and crossings, construction of a new pile supported wharf structure and combi-wall to create 3 new berths including in-laid railroad track access for freight rail from the mainline NS rail line.

South Jersey Port Authority, Paulsboro Marine Terminal, Paulsboro, NJ: Principal in charge of Construction Management for the construction of the Paulsboro Marine Terminal Phases 1 and 2 ($100 million). Managing the Resident Engineering and inspection staff for all aspects of Port development including: the structural demolition and site preparation of 190 A of backlands, new 1 mile long access road and 7 span high-level bridge, grade fill program, new rail-road tracks, construction of new berths - pile supported wharf, dredging of new slipway, utility and drainage features, sheet pile bulkhead installations etc. Duties also include tracking of finances for AECOM as well as for the construction project costs and schedule. Oversee team including senior RE staff

QUALIFICATIONS

Firm: AECOM

Education
BS, Civil Engineering, New Jersey Institute of Technology, 1985

Registration/Certification
Professional Engineer, New York

Years of Experience
Total: 34

Training and Industry Skills
N/A

Phillip R. Girandola, PE, continued

on site to promote and advocate overall sense of project welfare and monitoring of key project indicators

Global Container Terminal, New Berth Extension, Jersey City, NJ: Design-Build Program Manager of a $63 million Design-Build program to extend an existing wharf by an additional 900 linear feet. Managed the planning, environmental permitting, preliminary design, construction bid documents, contract award and NTP for the final design-build and test pile programs for the construction of the wharf. Key aspects of the design are: wharf is founded on 24" square concrete piles, pre-cast and cast-in-place concrete caps and deck, steel bulkhead retaining wall and includes other elements such as crane rails, electrical feeds, water supply, drainage system, fender system, armored slope protection and dredging. A unique aspect of the project was designing over an existing outfall tunnel which required the wharf structure to span 200 lineal feet to accommodate the water-side crane rail support while missing the tunnel and the prescribed vibration envelope. All permits and design have been completed and the project is currently ready to begin construction pending final signature by the Port Authority of NY/NJ.

Hudson River Park, Hudson River Park Trust (HRPT), New York, New York: Managed the construction of this $70 million multi-phased, multi-contracted project building a world class 12-acre park on three new piers and adjacent upland waterfront property. The project included the reconstruction of 3,000 linear feet of historic granite bulkhead and relieving platform areas, including sheet pile installations, demolition and complete replacement of piers 45, 46, and 51 utilizing water borne equipment. Responsible for complete upland renovation, including all new utility infrastructure (such as water supply systems, sewers and combined sewer outfalls, high voltage electrical grids, decorative granite walls and paving, planters, lawn areas, hundreds of tree and shrub transplanting, seating areas, a playground, a decorative water fountain, comfort stations, an irrigation system, lighting, artificial turf area, and railings throughout the park. Directed a team of six inspectors and an outside controlled inspection company to oversee quality control of all phases of the work. Provided pre-bid and post-bid cost analyses, handled all correspondence and cost controls, directed all meetings, implemented and redesigned the use of a new internet-based project management software (Construct ware) for use in the construction management collaboration among all stakeholders.

Philadelphia Regional Port Authority, Philadelphia, Pa.: Client area manager in charge of AECOM design projects and proposals on behalf of PRPA. Managed projects and proposal responses for various PRPA port and marine initiatives over the past several years such as: Tioga Marine Terminal structural investigation and rehabilitation of the pier (8/2010); Piers 38-40 Timber Piles and Hardware rehabilitation design (9/2013); Various inspection programs including underwater investigations; Familiar with and responded to multiple RFP's (2013-present) including: Pier 80-84 Marine repairs; Pier 78 Paving design repairs; Packer Avenue Marine terminal's bulkhead enhancement and paving replacements; Southport West Parcel condition survey including the Seaplane hanger and various buildings and pool structure. Also, Project Engineer in charge of On-Call engineering contract services for PRPA.

NY Metro Transit Authority (MTA) - Manhattan, NY: Resident Engineer Managed $11 million construction of the first phase of the Lower Manhattan transit recovery project which entailed the installation of secant piles for retaining walls and temporary pedestrian detour bridge for the Staten Island Ferry patrons. Retaining wall structure and bridge allowed for the excavation of the new 1/N/W train platform construction. Oversaw all aspects of construction including directing controlled inspection engineers and tracking all progress of work, change orders and claims by Contractor.

Randall Doliber PE

Constructability/Technical Advisor

Mr. Doliber has more than 45 years' experience in Construction Management, more than 34 of which he has spent with Tishman. He has over 20 years of experience managing NJ Transit projects, including the role of Manager of Construction for the 11 New Jersey surface projects for the ARC Tunnel, and 16 years managing 11 projects at Hoboken. As First Vice President he offers extensive hands-on project administration on a wide variety of major projects, including transportation, historic restoration, high-rise offices and facilities expansion work. He has managed work for Amtrak at Penn Station and for the USPS at Morgan GMF. His historic restoration projects include Hoboken Terminal, Farley Post Office, NY Penn Station, Morgan, 712 Fifth Avenue, Waldorf Astoria and Battery Maritime Building.

Relevant Project Experience

Hoboken Terminal Rehabilitation, Hoboken, NJ: Mr. Doliber served as Project Executive and Sr. Resident Engineer for NJT on a series of projects to upgrade and restore this key transportation hub. Projects he has administered include the construction of the 75,000-square-foot Hoboken shop maintenance facility and restoration of the Main Waiting Room, a project that won several awards for historic preservation. Mr. Doliber then led a team in the Yard B Project, expanding train storage capacity and adding a modern train washing and fueling facility, while concurrently managing teams performing structural repairs, stabilization work, historic restoration and service upgrades to the train shed, plaza canopy and YMCA building. He managed Phase I, Phase II and Phase III of the Ferry Service project, which included reintroduction of the Clock Tower, rehabilitation of the Terminal's sub- structure, and restored ferry service to the historic terminal. Due to his work with NJT, Mr. Doliber was named New York Construction News "Constructor of the Year" in 2001.

NJ Transit Meadowlands Maintenance Complex Expansion, Kearny, NJ: $67-million expansion included new buildings, modifications and additions to existing buildings, a fueling/sanding building, a train wash building and infrastructure upgrades at its principal maintenance facility. As Project Executive, Mr. Doliber administered a team performing preconstruction design review, value engineering and schedule review.

ARC Tunnel Project, New Jersey/New York: Mr. Doliber managed preconstruction CM services for New Jersey surface packages (1a, 1b, 2, 3, 4, 5, 6, 22, 23 and 24) which included the relocation of Amtrak towers and involved extensive planning/scheduling with Amtrak. He was instrumental in working with NJ Transit, the PA and the design team in design review for these 10 packages and in leading several value engineering initiatives. His was also responsible for staffing these projects, a task that was underway at the time of the project cancellation.

QUALIFICATIONS

Firm: AECOM

Education

BS/Civil and Structural Engineering, Illinois Institute of Technology

Masters/Civil Engineering, Construction Management, Illinois Institute of Technology

Registration/Certification

Professional Engineer: NJ, IL

Years of Experience

Total: 45

Training and Industry Skills

30 hours OSHA

Randall Doliber PE, continued

NJ Transit Task Order Projects, Summit, NJ/ Maplewood, NJ:. As Construction Manager, Mr. Doliber administered REs, scheduler and office engineer staffing embedded in NJ Transit CM Dept. teams at the Morris Ave. Bridge Replacement Project, the Emergency Operations Center and the GOB Reroofing Project, over the course of 4 years. He supported/advised both REs dealing with TTF shutdown claim and difficult GCs.

NYCT Bus Command Center - Brooklyn, NY: Tishman is serving as CCM for the construction of a new 30,000 SF state-of-the-art Bus Command Center for NYCT Department of Buses in East NY. Mr. Doliber is serving as Construction Manager, which is in final closeout.

Egg Harbor Township Bus Maintenance Facility - Egg Harbor Township, NJ: Resident Engineer for 175,000 SF facility, serving as a maintenance and operating base for a fleet of 120 buses. With bus-washing facilities, fueling stations, maintenance bays, paint booth; a bus storage, administrative and crew areas. It also entailed widening Parkway exit ramps and extensive sitework. Mr. Doliber led a 6-person CCM team, from NTP to final close.

Coliseum Bus Facility, Bronx, NY: Mr. Doliber shared the role of Project Executive on this 250-bus facility for the NYCT, which Tishman took over on behalf of the bonding company when the Contractor was not able to perform. Mr. Doliber's duties included reestablishing a functional CPM schedule.

Peter Totten, PE

QA/QC Officer

Mr. Totten is a manager and engineer with more than 45 years of experience and is responsible for the overall quality of engineering, design, and construction management on projects in areas including rail; security; architecture; civil and structural; and mechanical, electrical, and plumbing performed in the New York Metro Area. He plans and conducts project initiation surveillances and full project checkups, prepares Project-Specific Quality Plans, and trains staff in the AECOM Quality Management System. He has assists various clients, including NYC DOT, NYS DOT, MTAA/NYCT, MTA/LIRR, MTA B&T, PANYNJ, New York, NY. As AECOM's NY Metro Area Quality Manager. Mr. Totten oversees the quality of the work performed on our engineering and design projects for a variety of clients and project types (including security systems design, bridge design and inspection, rail systems, highways, retaining walls, etc.). Activities include preparation of Project Quality Plans/Programs, periodic audits of projects and project quality documents, review of corrective actions, if any, training of technical and administrative staff with respect to AECOM's quality requirements, support of all offices in the NY Metro Area to maintain certification in accordance with ISO-9001: 2008. Mr. Totten also works with other AECOM Area and Regional Quality Managers to review and update quality policy and procedure documents.

Relevant Project Experience

MTA Long Island Rail Road, Design-Build Penn Station Traction Power Substation (E01) Replacement, New York, NY: Mr. Totten served as the Quality Manager for our work on this project. The work scope entailed a study of several locations for a new traction power substation to replace the existing substation across from track #21, and the preparation of preliminary design/build documents for the substation.

NYSTA, Tappan Zee Hudson River Crossing, Tarrytown, NY: QA Manager for AECOM's Work Scope. AECOM was contracted to provide engineering design and construction support services by the design-build team for the replacement of the Tappan Zee Bridge. The New NY Bridge will consist of dual 3.1-mile bridges crossing the Hudson River between Westchester and Rockland Counties approximately 25 miles north of New York City to replace the older existing bridge that is over capacity and nearing the end of its useful service life. Mr. Totten was responsible for Accident, Threat, Vulnerability and Risk Assessment (ATVRA) of the new Tappan Zee Bridge (Tappan Zee Hudson River Crossing). Risks included accidental and man-made events. Mr. Totten also served as the QA manager for AECOM's portion of the design work, including bridge structure, roadways, and electronic security.

PANYNJ, Security Capital Program, New York, NY: Manager of engineering for confidential security projects under a contract to provide design and technical services to support the Port Authority's Security Capital Program. Tasks include design, testing and installation of comprehensive security measures for various Port Authority facilities,

QUALIFICATIONS

Firm: AECOM

Education

MS, Nuclear Engineering, New York University Tandon School of Engineering, 1976

BS, Mechanical Engineering, Manhattan College, 1968

Registration/Certification

Professional Engineer, New York, New Jersey, Connecticut, Massachusetts, Pennsylvania, North Carolina, Oklahoma, Idaho, Washington

Years of Experience

Total: 49

Training and Industry Skills

N/A

Peter Totten, PE, continued

which include bridges, tunnels, marine ports, a rail transit system and airports. Active participant in all threat, vulnerability and risk assessment (TVRA) segments of the work, participating in the workshops and/or reviewing all reports produced.

MTA, Capital Security Program, New York, NY: Project manager and manager of engineering for confidential security projects under a contract to provide design of security solutions and related technical and construction services for MTA facilities throughout New York City, which include rail transit, commuter rail, bridges, buses, stations/terminals, maintenance facilities and office buildings. Active participant in all task orders for this program and reviewed design bases prepared by the design teams. Participated in threat, vulnerability and risk (TVR) workshops and reviewed all TVR reports. Task orders included major facilities including the overbuild of commercial properties and the potential interrelationships and consequences of an event in a facility and its effects on the nearby facilities and structures.

NYSDOT, Regional Design Services Agreement, Various Locations in NYC and Long Island, New York: Quality Manager. Project involved a variety of design services including bridge design and inspection and highways in Regions 10 (Long Island) and 11 (New York City). Responsibilities included preparation of Project Quality Plans/Programs, audits of projects and project quality documents, training of technical and administrative staff in the AECOM QMS.

MTA Contracts CM-1279, CM-1287, CM-1260, CM-1535, Various Locations, NY: Quality Manager. Projects involved physical and electronic security, station enhancements and resiliency. Mr. Totten's responsibilities included preparation of Project Quality Plans/Programs, audits of projects and project quality documents, training of technical and administrative staff in the AECOM QMS.

NYCDDC, Call-In Design Contracts, Various Locations, NY: Quality Manager. Project involved a variety of design services including roadways, retaining walls, plazas. Responsibilities included preparation of Project Quality Plans/Programs, audits of projects and project quality documents, training of technical and administrative staff in the AECOM QMS.

NYCOMB, Asset Management Services, New York, NY: Project Manager for 5-year contract involving the condition assessment of New York City assets to enable OMB to establish annual budgets for capital spending (maintenance) for these facilities. Completed 29 task orders that included condition assessment survey of 129 fixed bridges, 23 movable bridges, 13 park bridges, 517 piers and bulkheads, 22 marinas, and 24 park special systems. He was responsible not only for the delivery of all work product on time and within budget, but also for the quality of AECOM's work on all work orders.

Shamin Ansari

Field QA/QC Engineer

Shamim Ansari is a seasoned construction engineer with over 34 years of International experience in the field of construction management and inspection. His responsibilities spanned and included roads, bridges, rail, tunnels, housing development, airport development, and other public works projects. He has completed over two years with the North African Regional Program Manager Assignment for AECOM Libya Housing and Infrastructure Board in Benghazi, Libya.

Relevant Project Experience

LIRR East Side Access – East and West Cavern, Contract CM – 0007, New York, NY: Resident Engineer/Chief Inspector. Supervising the installation of the Fire Stand Pipes, Sprinkler System and installation of BMS (Building Management System) for both East and West Cavern of East side Access project under construction.

MTA NYCT, South Ferry Rehabilitation Project, New York, NY: Quality Manager. Supervised the contractor and sub-contractors daily activities for various disciplines such as MEP, HVAC system, elevators/escalators, tracks and signal, communication and operating systems.

MTA MNR, Harmon Yard and Shop Replacement Program, Croton-on- Hudson, NY: Managed the construction of the largest Metro-North maintenance facilities on the East Coast.

- Supervised the construction of locomotive and coach shop facilities.
- Supervised activities of contractor and various subcontractors' daily activities.
- Coordinated activities between Metro-North departments such as track, structure, power, and safety during execution of work.

MTA MNR, Harmon Locomotive Fueling Facility, Croton-on-Hudson, NY: Chief Inspectorfor construction of a new locomotive fueling facility for Metro-North's Croton Harmon Rail Yard.

- Supervised the multidisciplinary project, which included a significant soil and groundwater remediation program for all work below grade, construction of a new pump house and fuel island while maintaining operation of the existing facility, and decommissioning and removal of the existing fueling facility.
- Responsibilities included daily inspection of contractor activities, preparation of meeting minutes, correspondence and change orders, monitoring testing requirements, coordinating with railroad for flag protection and third rail outages, and assuring compliance with the soil and groundwater remediation plans.
- Coordinated and interacted with electrical, mechanical and HVAC engineers and subcontractors to assure proper installation of equipment

QUALIFICATIONS

Firm: AECOM

Education

HND, Civil Engineering, Twickenham College of Technology, 1977

AAS, Civil Engineering, Polytechnic Institute, Pakistan, 1971

Registration/Certification

N/A

Years of Experience

Total: 45

Training and Industry Skills

OSHA 40-Hour HAZMAT Course OSHA 8-Hour HAZMAT Supervisor Course

OSHA 10-Hour

OSHA 30-Hour

ACI Concrete Field Testing Technician Grade I

NETTCP Concrete and Asphalt

Shamin Ansari, continued

AECOM Housing Infrastructure Board, Benghazi, Libya: Regional Program Manager. Collaborated with client representatives, consultants, contractor and other government agencies to ensure successful operations of the $1.5 billion project. Managed 16 different infrastructure projects simultaneously.

- Responsible for the execution and management of water treatment plants, sewer treatment plants, road, storm water, electrical, telecommunication, sewage and street light network for infrastructure projects.
- Responsible for the program management approved by Housing and Infrastructure Board of Libyan Government in conjunction with the guide lines and policies of FIDIC.
- Attended and chaired weekly progress review and design review meetings with consultants, contractors and other agencies involved in the project. Verifed all contractor monthly payment submissions for approval. Implement QA/QC plans for all materials and workmanship.
- Reviewed monthly progress reports which included charts and detailed description of progress for each stage of design, Construction documents, procurement, manufacture details, delivery at site, construction, and erection, testing and commissioning details with progress photographs.
- Supervised team of Engineers and Inspectors of both consultants and contractors and provided total Quality Control of materials and workmanship as per design drawings and specifications.
- Review Contract Documents prepared by Design consultants as per FIDIC Guidelines.
- Mentored AECOM training program for Libyan engineers

American Airlines Terminal Redevelopment, John F. Kennedy International Airport, Jamaica, NY: Chief Inspector for the redevelopment of Terminals 8 and 9 at JFK International Airport.

- Conducted daily inspection of various sub-contractors activities for sanitary, storm water drainage, water line, sewerage, deicing fluid collection and containment system, concrete, asphalt pavement for apron and taxi lane area.
- Key member in construction of single largest terminal at JFK, with area spanning 76 acres of pavement with potential 54 gates for regional and Group V aircraft.
- Ensured operations of $1.5 billion project were conducted effectively and efficiently, while maintaining existing airline operations.

MTA MNR, Croton Point Avenue Bridge, Westchester County, NY: Chief Inspector for the replacement of 1500 foot long vehicular bridge.

- Supervised construction of new bridge which was a 9 span steel girder structure, founded on spread footings, spanning over 24 Metro-North tracks including Hudson Line mainline, as well as, shop and yard tracks servicing the Croton-Harmon Maintenance Facility.
- Responsibilities included design review of contract plans for constructability prior to execution of bridge construction by general contractor, daily inspection of contractor activities, preparation of meeting minutes, correspondence and change orders, monitoring testing requirements and assuring compliance with lead abatement and demolition plans.
- Provided extensive coordination with the railroad for flag protection, third rail and track outages and various force account activities during both the construction of the new bridge and demolition of the old bridge.

Mani Maleki, CSP, CHM

Site Safety Engineer

Mr. Maleki has over 29 years of experience in the management of safety and environmental programs with the last 18 years exclusively in construction safety and environmental management. Mr. Maleki is responsible for the development of the environmental and safety specifications covering ambient air monitoring standards, hazardous waste management programs, construction safety and health plans, and environmental compliance plans. With his team of environmental and air monitoring inspectors, he oversees activities of contractors with respect to various Bridges and tunnels rehabilitation and construction activities. Among other duties Mr. Maleki reviews and comments on environmental plans and submittals, manages community related issues such as noise survey, construction activities' infringement into public and private domain, and workers' safety and health.

Relevant Project Experience

MTA New York City Transit, Construction Management Services for Sandy Repairs, Montague Tunnel Project, New York, New York: Senior safety engineer for this tunnel rehabilitation project. His responsibilities are to oversee hazardous and universal waste removal and disposal and to ensure compliance with ROW and track safety activities. His hands on involvements with site audit and inspection as well as his administrative oversight extend into all aspects of safety and environmental management including, Safe Work Plan review and acceptance, contractor's safety personnel review and approval, technical review of monitoring plans and job hazard analysis. His administrative duties involves co-ordination of contractors and CPM communications, accident investigation, management of weekly safety meetings, follow ups and closures of safety issues, and safety training of CM personnel involved with the tunnel demolition and construction activities.

New Jersey Turnpike Authority, Turnpike 14A Interchange: This project is $180-million major reconstruction of Interchange 14A to more effectively separate local traffic from the heavy truck traffic accessing the ports and regional transportation system. Reviewed environmental and safety submittals. performed periodic inspection and audit of site conditions. Ensured compliance with OSHA and environmental regulations. Investigated accidents and incidents and recommended mitigation and corrective actions.

Metropolitan Transportation Authority - Bridges & Tunnels, GFM 457 Toll Booths, New York, New York: Environmental and safety manager of the coating project. Involvement included providing technical support to the resident engineer for worker and public safety. The toll booth along with vent building and associated facilities were subject to SP2/SP3 cleaning and painting using Class 3p containment. Dust and VOC fumes in such close proximity to agency workers and public were the concern.

QUALIFICATIONS

Firm: AECOM

Education

MS, Occupational Safety and Health Engineering, West, Virginia University, 1994

BA, Environmental Studies, University of Kansas, 1985

Registration/Certification

Certified Safety Professional

Years of Experience

Total: 29

Training and Industry Skills

Certified Hazardous Materials Manager
Certified Safety Professional

Mani Maleki, CSP, CHM, continued

Various Clients, Hazardous Remediation, Various Locations: Experience in hazardous waste remediation. Provided labor and material cost estimates and marketing to potential clients. Developed, supervised, and performed all technical aspects of hazardous waste cleanup operations such as UST removal, excavation, highly hazardous chemical cleanups, waste container recovery and packaging, and lab-packs. Responsible for implementation of on-site safety and health procedures. Prepared work schedules, budgets, and reports on project cost and progress. Coordinated and supervised a hazardous materials emergency response team. Ensured compliance with OSHA, EPA, state, and DOT for storage, packaging, handling, and transportation of hazardous waste. As a team leader led and trained a 5-men crew in field testing hazardous materials for the purpose of on-site hazardous waste blending and processing.

New York City Department of Transportation, Bruckner Bridge Expressway Protective Coating, Bronx, New York: Project manager to provide environmental and safety oversight and managed and coordinated project activities and staff. Project involved 3-coat epoxy pain system and incorporated TSP high-volume air monitoring and management of hazardous waste from removal and processing of the lead-based paint on the bridge structure. [$5.6 million]

New York City Department of Transportation, Brooklyn Queens Expressway Bridges Protective Coating, New York, New York: Project manager and environmental and safety overseer of the coating project. Included management of the resident engineer staff and providing technical support for the management of the ambient air monitoring programs, waste management, and workers and public safety. Eleven overpasses were subject to abrasive blast cleaning and painting using Class 1A containment. [$170 million]

New York City Department of Transportation, Queensboro Bridge Protective Coating, New York, New York: Project manager from inception to completion to oversee activities of five independent contractors for construction for construction, abrasive blasting, cleaning, and dismantling of Class 1A containments. Reviewed and commented on environmental plans and submittals, managed community related issues such as noise survey, bridge construction activities infringement into public and private domain, and workers' safety and health. [$170 million]

Metropolitan Transportation Authority - Bridges and Tunnel, Triborough Lift Span TBM-367 Cleaning and Painting, New York, New York: Environmental/safety manager for the TBM-367 cleaning and painting. Responsible for management of the environmental and air monitoring activities. Oversees activities for construction, abrasive blasting, cleaning, and dismantling of Class 1A containments and other related safety and environmental oversight. [$26 million]

New York City Department of Transportation, Rikers Island Bridge BRC 289D Rehabilitation, Queens, New York: Environmental/safety manager responsible for environmental oversight including air monitoring activities. Project scope was expanded to include removal and replacement of the protective coating. Provided technical support for all safety related matters on the project.

New York City Department of Transportation, Queens Boulevard and Honeywell Street Bridges, New York, New York: Provided onsite environmental, industrial hygiene, and safety oversight and consultation for lead, asbestos, and contaminated-soil removal and disposal. Safety/environmental compliance officer to coordinate removal and processing of lead, asbestos, and contaminated soil for demolition and rehabilitation.

Mukeshkumar Patel, PE

Resident Engineer – Structural/Civil

Mukesh Patel brings 33 years of experience in engineering design, project management and construction management with MTA New York City Transit. His experience includes rehabilitation, renewal, components and ADA elevator projects as well as small business mentoring.

Relevant Project Experience

MTA NYCT, Capital Program Management – Sandy Recovery and Resiliency Program, New York, NY: Construction Manager for large Capital Projects.

- Managed the construction of the $883 million rehabilitation of Canarsie Tunnel and ADA projects at 1st Ave Station and Bedford Ave Station. This project included construction of the only power substation below ground near East River in Manhattan. The construction sequence required to erect support of excavation 80 feet deep from street level where the water table was 8 feet below the street. The work involved installation of secant piles and 1" thick sheet piles, 80 feet long and construction of 9' deep jet grout plug at the depth of 40 below street level. The 200' x 60' substation was built with the latest waterproofing system with excellent success. The project included construction of four new ADA elevators.
- Involved in developing the alternate traffic plan for the movement of the buses on E14th Street to mitigate impact on the community with respect to quality of air and noise issue. Involved in the coordination of noise mitigation plan for DEP and DOT. Developed a plan for the traffic movement of construction vehicles to reduce the impact on the quality of life for the entire Lower East Side.
- Successfully managed the construction management of the $25 million rehabilitation of five stations on the Broadway Line in Manhattan and Brooklyn, the $82 million rehabilitation of seven stations on the New Lots Ave Line, and the $8 million WEP Facility at Jay Street Station in Brooklyn.
- Managed design and construction of the Wilson Ave and Atlantic Ave Stations on the Canarsie Line and the Borough Hall Station on the Lexington Ave Line.

MTA NYCT, Capital Program Management – Stations Division, New York, NY: Resident Engineer of Capital Projects funded by operating budget with a total cost over $200 million.

- Construction administration for various projects, including Queens Plaza Station Rehabilitation, Jay/Metro Tech Station Rehabilitation, South Ferry Station Restoration, Broad Channel and Beach 116th Street Stations, Kew Gardens Station ADA Upgrade, 34th Street Station Rehabilitation, 207th Street Station Rehabilitation, and Grand Army Plaza Station Rehabilitation.
- Actively involved in scope review, masterplan phasing, constructability review and

QUALIFICATIONS

Firm: AECOM

Education
BS, Civil Engineering, BVM Engineering College

Registration/Certification
Professional Engineer: New York

Years of Experience
Total: 33

Training and Industry Skills
N/A

Mukeshkumar Patel, PE, continued

preparing spec section 1 for Capital Projects in the design phase. Provided active guidance and suggested alternate means and methods during design phase.

- Worked with affiliate agencies, user departments and sponsors to ensure that construction procedures were following NYCT requirements.

MTA New York City Transit, Capital Program Management – Stations Division, New York, NY: Senior Project Coordinator responsible for the administration of station rehabilitation construction contracts over $30 million. Ensured proper focus on project objectives such as safety, scheduling and cost, and quality in conformance with the PMP and PMG. Performed all the duties of Resident Engineer to manage projects in a timely and effective manner. Performed all the duties to support the design phase of Capital Projects.

MTA NYCT, Capital Program Management – Infrastructure "A" Division, New York, NY: Project Coordinator/Assistant Civil Engineer responsible for daily construction activities of the track and switches in the Queens and Manhattan.

Ralph Glover

Resident Engineer – Signal/Power/Electric

Mr. Glover has over 30 years' experience working for NJ Transit for various substation projects.

Relevant Project Experience

NJ Transit, Supervisor of Substations – Morris and Essex Division: Responsibility: Maintaining three (3) 230kV Supply Substations, one (1) 34.5kV Supply Substation, eleven (11) 55kV Autotransformer Substations, two (2) 55kV Switching Substations; Manage fifteen (15) Substation Mechanics, Manage switching and tagging assignments, Manage clearance and protection assignments, Manage standard operating procedures adherence, update and maintain all safety bulletins, protective equipment, procedures, update and maintain employee qualifications and training, order and track all maintenance material purchases and submit employee payroll.

NJ Transit, Assistant Supervisor of Substations – Morris and Essex Division: Responsibility: Assist with Maintaining three (3) 230kV Supply Substations, one (1) 34.5kV Supply Substation, eleven (11) 55kV Autotransformer Substations, two (2) 55kV Switching Substations; Manage fifteen (15) Substation Mechanics, Manage switching and tagging assignments, Manage clearance and protection assignments, Manage standard operating procedures adherence, update and maintain all safety bulletins, protective equipment, procedures, update and maintain employee qualifications and training, order and track all maintenance material purchases and submit employee payroll.

NJ Transit, Substation Foreman – Morris and Essex Division: Responsibility: Manage the daily maintenance of Maintaining three (3) 230kV Supply Substations, one 34.5kV (1) Supply Substation, eleven (11) 55kV Autotransformer Substations, two (2) 55kV Switching Substations. Manage Substation Mechanics performing daily switching and tagging, clearance and protection assignments in a safe and responsible manner.

NJ Transit, Substation Mechanic Class A – Morris and Essex Division: Responsibility: Perform substation maintenance, switching and tagging, clearance and protection assignments in a safe and responsible manner.

QUALIFICATIONS

Firm: TY Lin International

Education
N/A

Registration/Certification
N/A

Years of Experience
Total: 30

Training and Industry Skills
OSHA 30
NORAC
TRO3
Switching and Tagging
Roadway Worker
Accident Investigation

Page intentionally left blank

Joseph Calabro

Structural Inspector

Mr. Calabro has extensive construction inspection experience and has worked on numerous roadway and bridge reconstruction projects for transportation agencies throughout New York. He is currently a Senior Inspector on the Replacement of the Mill Basin Drawbridge for the NYCDOT. He has been a Senior Inspector for the New Jersey Turnpike Authority Interchange 14A, the Interchange 6 to 9 Widening Program and the Secaucus Interchange (15X) and Seaview Drive extension. Mr. Calabro was previously a Senior Inspector for the $375 M Reconstruction of Three Bridges on the Belt Parkway (Contract 1).

Relevant Project Experience

NYCDOT, Belt Parkway Bridges over Mill Basin Bridge, Brooklyn, NY: This $264 million dollar project includes construction of new 17 span bridge and demolition of existing 14 span bridge including moveable dual-leaf bascule span superstructure, reinforced bridge decks, fixed superstructure and substructures. New bridge will be a fixed structure with a 60 foot clearance over MHW, eliminating the need for opening and closing the structure to accommodate tall vessels. New bridge will be consist of two independent eastbound and westbound bridges constructed as steel multi-girder superstructures with reinforced concrete deck and substructures including multi-rotational bearings, modular type expansion joints, multi-column piers and common abutments with cast-in-place concrete piles. Construction of new approaches will incorporate mechanically stabilized retaining walls (MSE) for construction of approach roadways at new grade elevation and GRES walls in lieu of steel sheeting to accommodate stage construction. Various elements of construction include cofferdams using steel sheet piling for installation of new 0.6m diam. concrete filled steel pipe piles supporting reinforced concrete pile caps and piers. Installation of earth embankments on both ends of bridge including temporary surcharge for ground improvements and new grade elevations, new drainage, catch basins and manholes, section replacement of existing 24" diam. sludge force main. Project includes extensive landscaping and erosion controls including tree removals, tree protection, installation of new swale BMP grading, drainage and planting and extensive work zone traffic control requirements.

Interchange 14A, New Jersey Turnpike, Churchill Engineers, New Jersey: Provide Construction Inspection Services for the reconstruction of the Interchange. Scope of work for principle contract includes demolition of existing toll facility widening of the approach roadways new access ramps all required site utilities including drainage, water and electric and a new facility building.

New Jersey Turnpike Widening Interchange 6-9 Program: Provided Construction Inspection Services for the widening Program. Oversaw all phases of work including demolition of existing bridges and structures; construction of new structures including

QUALIFICATIONS

Firm: AECOM

Education

BPS, Construction Management, Pratt Institute, 1987

AAS, Construction Technology, New York City Technical College, 1981

Registration/Certification

NICET Level IV

Years of Experience

Total: 25

Training and Industry Skills

ACI

OSHA, 10 Hour

Joseph Calabro, continued

piles, reinforced concrete piers and abutments and the construction of new superstructures with new structural steel and HP concrete decks, all roadway utilities including drainage with re-charge basins, lighting and communication systems.

Belt Parkway Reconstruction, New York: Provided Construction Inspection Services for two contracts (HBK1024, HBK1091) included in this 2.6 mile, $375 million dollar project. Scope of work for principle contract includes demolition of existing 13 span bridge over Paerdegat Basin to be replaced by two new bridges –E/B 5 span and W/B 3 span –and new approach roadway on split alignments. New bridges to consist of a Class HP reinforced concrete superstructure slab supported by high performance steel box girders and substructures including reinforced concrete abutments, wing walls and multi column piers on new pile foundations. New widened approach roadways including pedestrian / bike access road path to be constructed east and west of new bridges. Construction to be completed in 5 stages to allow for current demolition of existing and erection of new bridges to maintain vehicular traffic throughout duration. Various elements of construction include cofferdams using steel sheet piling for installation of new 0.6 m diam. Concrete filled steel pipe piles supporting reinforced concrete pile caps and piers. Worked checking the steel reinforcement installation on the different structures.

Secaucus Interchange and Seaview Drive extension project, New Jersey Transit Authority (NJTA), Secaucus, NJ: Senior inspector for the $173 million construction of a new interchange within the eastern spur of the New Jersey Turnpike in the area of the new Secaucus Transfer Station. The construction of a new ramp barrier toll facility provides a network of access ramps that will provide better access to local warehouses and shopping malls, as well as provide direct access to the new rail facility. This project consists of eight separate base construction contracts and 10 major utility work orders. Construction was performed in and around sensitive wetland areas.

West Side Highway Promenade, New Yor: Senior Inspector to complete roadway reconstruction and installation of European style concrete pavement, new granite curbs and sidewalks, temporary pedestrian bridge across West Street, new sewers, water mains, traffic signals and street lighting. Construction of a new seven million dollar park within project limits.

Grand Central Terminal Lower-Level Train Shed Rehabilitation, MTA, Metro-North Railroad (MNR), New York: Inspector for construction supervision and inspection services for the Grand Central Terminal lower-level train shed rehabilitation. This project involved construction supervision and inspection services for the miscellaneous repairs being undertaken to address the deterioration that has occurred to the structural elements of the lower level, primarily due to water leakage from the upper level of the structure. Work also included coordination of MNR flaggers, and track outage requests.

Fresh Kills Bridge, New York State Department of Transportation, Staten Island, NY: Senior Inspector (2002) Senior inspector and office engineer for the $12.5 million construction of the Fresh Kills Bridge. Project work involved the demolition of the prior bridge and construction of a new simple-span bridge, including cofferdams, tremie concrete, piles, new pier and abutment construction, and a new deck with latex concrete overlay. Maintained all project records in accordance with the MURK system.

Anatoliy Gozman

Civil/Utilities Inspector

Mr. Gozman has more than 25 years of critical multidisciplinary decision-making and design experience in civil, highway, street infrastructure, utilities engineering, and QA&QC. He is a well-rounded and seasoned engineer whose duties have included roadway design, pavement rehabilitation, drainage analysis and design, storm and sanitary sewer analysis and design, MPT assessment and design, street, lighting, signage, markings, utility interference assessment, estimating, computer modeling and the production of CADD drawings, adjacent facilities coordination and obtaining regulatory permits.

Relevant Project Experience

PANYNJ – Project Manager: Monitor all elements of design development and construction. Coordinate preparation of study reports, construction cost estimates, and preliminary and final contract documents. Coordinate all aspects of the contract document review process. Coordinate the resolution of project-related issues. Review studies, preliminary designs, and contract documents. Ensure the timely review of the contractor shop drawing submittals and respond to contractor's Request for Information (RFI's). Conduct project kick-off and progress meetings with the project team. Conduct presentations and prepare documentation to obtain approval for the project. Attend construction progress meetings. Engage CMD staff to ensure the contract is proceeding on time, within the scope, and within budget. Monitor and report on the actual consultant/contractor/staff performance. Monitor the progress of construction.The PA TB&T projects include

- PABT - Replacement of Electrical Panels – TPC $4.5 million.
- Lincoln Tunnel - Communication System Improvements – TPC $3.5 million.
- PABT - Rehabilitation of Wearing Course for Lower Level, Partial 3rd And 4th Floor Bus Level - TPC $45 million.
- PABT Lower Bus Level - Epoxy Injection - TPC $1.6 million.
- PABT - Partial South Wing Third Floor Wearing Course Rehabilitation & Riding Surface Membrane - TPC $12.5 million.
- PABT - Crash Barrier on Lower Level Roadway - TPC $0.5million.
- PABT - Replacement of Ceiling Slats and Lighting – TPC $3.5 million.
- PM for a multiple Work Order emergency contracts and Operating Small projects in PABT with TPC up to $3 million.

MTA Metro-North Railroad, Hudson Line from E140th St in the Bronx to Croton-Harmon Yard in Westchester (CP5-CP35), New York, NY: Senior Civil Engineer. Work included replacement of 30 miles of signal power ductbanks conduit raceways, elevated platforms and related appurtenances adjacent to Metro-North Railroad's Hudson Line from E140th St in the Bronx to Croton-Harmon Yard in Westchester (CP5-CP35).

QUALIFICATIONS

Firm: AECOM

Education

MS, Civil Engineering, Kyiv National University of Construction and Architecture, 1995

MBA, Management and Information Technology, Kyiv National University of Construction and Architecture, 1997

Registration/Certification

N/A

Years of Experience

Total: 25+

Training and Industry Skills

N/A

Anatoliy Gozman, continued

Responsible for reviewing Related design documents and providing detailed assessments of the constructability and independent quality review in accordance with the Program QAQC plan.

PANYNJ, World Trade Center Vehicle Security Center and Tour Bus Parking Facility, New York, New York: Senior Civil engineer/ Civil Coordinator, responsible for the site and roadway design of a 3-story below grade vehicular security center and tour bus parking facility to support the World Trade Center Site. Also responsible for design of all utility connections throughout the site. Responsible for the preparation of civil calculations, construction plans and specifications. Responsible for Civil group maintenance of contract documents and electronic records in accordance with PANYNJ standards for C&P documents. Provide overall Civil Group QA/QC procedures during contract preparation and submissions. Interact with cost estimate group to guideline process as well as answered technical questions.

PANYNJ, Port Authority Trans Hudson Service - Tunnels A&B Interior Mitigation Measures, New York, New York: Senior Civil engineer/ Project Engineer, in the design team involved in development a tunnel wall retrofit. Development coordinated duct bank replacement scheme utilizing Port Authority duct bank report and drawings. Development design documents for strengthening the tunnels. Identifying early action utility relocation work. Designing drawing showing retrofit on both brick section and unlined cast iron ring section with ductbank integration.

NYCDOT/Conti - Rehabilitation of Ramp Structures at the St. George Staten Island Ferry Terminal, Staten Island NY: Civil Engineer for this design-build project for the New York City Department of Transportation/ Conti. Responsible for Development of Key Plans, Work Zone Traffic Control Plans, Advance Signing Plans, Detour Plans, Staging Cross Sections, Sign Data Sheets and Cost Estimate. Developed horizontal and vertical alignments, road and construction plans, Civil 3D modeling for proposed surfaces of the roads, parking areas and ramp deck.

NYCDDC – Retaining Wall Projects at West 229th Street: Project Civil Engineer in the design and reconstruction of the retaining wall project including developed construction plans, horizontal alignment and vertical road and curb profiles, road cross sections, utility plans, MPT staging plans and MPT cross sections.

NYCDDC - Clifford Place Step Street-Project Civil Engineer - Bronx, NY: Project Civil Engineer in the design and reconstruction of the retaining wall project including developed construction plans, horizontal alignment and vertical road and curb profiles, road cross sections, utility plans, MPT staging plans and MPT cross sections.

Metropolitan Transportation Authority - New York City Transit, 96th Street Station, New York, New York: Civil engineer. Project involved the rehabilitation of this 100-year old transit station and constructing of a new Station House in an expanded center median of Broadway to provide for full ADA accessibility. Was involved in final roadway horizontal realignment, site grading, drainage improvements, street lighting, traffic signals, utility work, and Transit Authority related investigation(s). In addition to assisting with construction support, worked closely with NYC Transit to address station services? issues and DOT related approvals for MPT, Traffic Signals, street signals, street alignment, street lighting and pavement markings.

NYCDOT, Preliminary Design and Feasibility Study for Three Pedestrian Bridges – Civil Engineer - Brooklyn, NY: Civil Engineer for reconstruction design for three pedestrian bridges along the Shore Parkway in Brooklyn, New York. The three bridges will be reconstructed to meet current NYC requirements in regard to clearance and ADA compliance.

Matt Gwiszcz, PLS

Survey

Mr. Gwiszcz has over nineteen (19) years of experience in land, aerial and bathymetric surveying. and. Throughout his career as a professional land surveyor, he has been responsible for the planning and design of surveys and right-of-way documents for major roadway, bridge and rail projects throughout the region.

Relevant Project Experience

NJ Transit – Contract No. 16-037, Task Order Contract, Architecture/Engineering Services, AR No. 7, Survey Northern Bus Garage, Locations 1 through 4, Ridgefield Park, NJ: Task Leader & Crew Chief for topographic survey, mapping and preparation of Right-of-Way documents for each of the 4 locations. Locations 1 and 2 were approximately 33 and 23 acres respectively. Utilized a combination of ground and aerial survey to complete the tasks.

AMTRAK - Hamilton NJ Substation: Task Leader & Crew Chief for topographic mapping, survey and right of way for design of a new electrical substation along AMTRAK's Northeast Corridor Line. Work included base line survey, track profiles, track cross-sections, catenary location and clearance survey, topographic survey of the adjacent properties where substation is to be built, wetland surveys and establishment of property corners.

NJ Transit – Contract No. 13-007, Task Order Contract, Bridge and Railway Engineering, AR No. 11 Bergen County Line M.P. 6.34 Culvert Replacement Design, Rutherford, NJ: Task Leader & Crew Chief for topographic survey, mapping and preparation of Right-of-Way documents for a replacement culvert.

NJ Transit – Contract No. 13-007, Task Order Contract, Bridge and Railway Engineering, North Jersey Coastline M.P. 6.97 Culvert Replacement: Task Leader & Crew Chief for topographic survey, mapping and preparation of Right-of-Way documents for a replacement culvert in Aberdeen, NJ. ROW documents included preparation of: GPPM, IPM, and metes and bounds descriptions in accordance with the Map Recordation Law.

NJ Transit – Morgan Draw Bridge over Cheesequake Creek: Task Leader & Crew Chief for topographic survey, mapping and preparation of Right-of-Way documents for a new bridge control platform in South Amboy, NJ. ROW documents included preparation of: GPPM, IPM, and metes and bounds descriptions in accordance with the Map Recordation Law.

NJ Transit – Contract No. 13-007, Task Order Contract, Bridge and Railway Engineering, North Jersey Coastline M.P. 12.70 Culvert Replacement: Task Leader & Crew Chief for topographic survey, mapping and preparation of Right-of-Way documents for a replacement culvert in Middletown, NJ. ROW documents included

QUALIFICATIONS

Firm: AmerCom Corporation

Education
BS, Surveying, New Jersey Institute of Technology

Registration/Certification
Licensed Professional Land Surveyor: New Jersey, New York and Pennsylvania

Years of Experience
Total: 19

Training and Industry Skills
USDOT/FAA Certified Remote Pilot

Matt Gwiszcz, PLS, continued

preparation of: GPPM, IPM, and metes and bounds descriptions in accordance with the Map Recordation Law.

NJ Transit – Contract No. 13-007, Task Order Contract, Bridge and Railway Engineering, AR No. 9 –Brielle Drawbridge on North Jersey Coastline MP 36.09, Brielle and Point Pleasant, NJ: – Task Leader & Crew Chief for topographic survey, mapping and establishing Right-of-Way on both sides of the Manasquan River. Work included establishing horizontal and vertical controls; field edit and producing survey report.

MTA Long Island Rail Road, Design for the Replacement of Wreck Lead Bridge Submarine Cables across Reynolds Channel between Long Beach and Island Park, Nassau County, New York: Task Leader & Crew Chief for topographic survey (land and bathymetric), mapping and for the submarine cables replacement project across Reynolds Channel between Long Beach and Island Park in Nassau County, NY.

NJ Transit – Contract No. 13-007, Task Order Contract, Bridge and Railway Engineering AR No. 7, Engineering, Design and Construction Support Services, Track Repairs at Stirling Station, Gladstone Line MP 28.50: Task Leader & Crew Chief for topographic survey and mapping for this track repair project in Stirling, NJ.

NJ Transit – Leland Avenue Undergrade Bridge on the Raritan River Line: Task Leader & Crew Chief for topographic survey and mapping including Right-of-Way for a replacement bridge over Leland Avenue in Plainfield, NJ.

NJ Transit – Roosevelt Avenue Undergrade Bridge on the Raritan River Line: Task Leader & Crew Chief for topographic survey and mapping including establishing Right-of-Way for a replacement bridge over Roosevelt Avenue in Plainfield, NJ.

NJ Transit – North Jersey Coastline M.P. 0.39 Raritan River Draw Bridge, Emergency Repairs: Task Leader & Crew Chief for survey along the rails damaged by Superstorm Sandy in October, 2012.

NJ Transit – Watchung and Park Avenue Undergrade Bridges on the Raritan River Line: Task Leader & Crew Chief for topographic survey and mapping including establishing Right-of-Way for two replacement bridges over Watchung and Park Avenues in Plainfield, NJ.

NJ Transit – Old Bridge NJ Route 18 Park 'N' Ride: Task Leader & Crew Chief for topographic mapping, survey and right of documents for a new Park N Ride in Old Bridge, NJ adjacent to Route 18.

Catherine Clement, EIT

Catenary

Ms. Clement is a lead overhead contact system (OCS) engineer with 20 years of experience designing catenary profiles, calculating catenary loads, preparing catenary structure and layout. She also has experience executing advance preliminary and conceptual OCS design.

Ms. Clement has effective planning and organizational skills. She is highly organized and has the ability to work under pressure in a fast-pace environment.

A leader in her field, Ms. Clement offers innovative and practical solutions and has proven capacity to approach problems effectively and creatively, successfully manage multiple priorities and assignments.

Relevant Project Experience

Long Slip Phase 2, Hoboken, NJ: Task leader for the design of the OCS as part of the design-build team for the Long Slip Fill and Enhancement Project. The project include the preparation of catenary structure and wiring layouts for existing, proposed and final stages for the six new electrification tracks branching off from Track 4 Main and Track 119 Lead track. Staging was done to maintain track availability during construction. The design include new catenary support poles and foundations well as modifications of existing structures and the sectionalizing of the mainline and all new six tracks through section insulators and motorized operated disconnect switches.

Hudson Tunnel I-Ladder, Penn Station NY: OCS task leader for the design of the new cross-over track I-Ladder.

REM Project, Montreal, CA: OCS Engineer for the design of the single wire fixed termination (SWFT) and retractable overhead conductor rail (OCR) in the maintenance buildings. Design support details and loads for the vertical hangers from roof truss and V-terminations outside and inside the doors of the maintenance buildings.

Long Island RailRoad (LIRR), ESA, Queens, NY: Engineer overseeing the testing of impedance bonds for the commissioning of the new LIRR traction power substation G02 at Harold interlocking.

Citylynx Gold Line, Charlotte, NC : OCS engineer as part of a design-build team for the design of the modern articulated, low floor streetcar with the ability to operate off-wire for significant distances.

NJT HBLR Cable Testing, NJ: Determine the cable replacement priority of cable system for the transfer trip cable damage or compromised by Superstorm Sandy.

MBTA Mobile TP substation, MA: Develop specifications for the new mobile Traction power substation for the Massachusetts Department of Transportation.

QUALIFICATIONS

Firm: AECOM

Education

MS, Civil Engineering, Polytechnic University, New York, 2011

BS, Civil Engineering, Polytechnic University, New York, 2000

Registration/Certification

Engineer-In-Training (EIT)

Years of Experience

Total: 20

Training and Industry Skills

NYS Registered Certificate in Executive Construction Management, Polytechnic University, New York, 2004

Micro-station Auto CAD

Microsoft Office (Excel, Power Point, Access)

Catherine Clement, EIT, continued

Electrical Sectionalizing and Associated SCADA System Improvements for GCRTA, Cleveland, OH: Provide catenary support for the modification of the catenary system to isolate sections so as to maintain uninterrupted train services for the electrical sectionalization.

Brookpark Station, GCRTA, Cleveland, OH: Calculated loads for the relocate catenary structures for the station modification.

Metrolinx Electrification Project, Toronto, Ontario: Provided conceptual and preliminary OCS design, development of conceptual and preliminary engineering reports and performance specifications and design criteria as well as construction cost estimates for the commuter rail service Go Transit.

West Street Bridge, Amtrak Keystone Corridor at Parkesburg, PA: Provided layout plans and loads for new catenary structures. Calculate clearances for the catenary wires on the underside of the bridge and transmission wires to the new overhead bridge over Amtrak's rail lines.

Cincinnati Streetcar, Cincinnati, OH: Provided catenary support during construction phase, including response to RFI's and design support during construction.

Harbor Center, Buffalo, NY: Provided design for relocation of OCS structures, and coordinated with design team for catenary location and with NFTA on the proposed catenary modifications.

NFTA 500 Block, Buffalo, NY: Provided schematic and final design, including dead-end of existing catenary. Coordination with NFTA on the proposed catenary modifications, which included structure relocation, temporary and final supports.

Moynihan Project: Senior catenary engineer responsible for designing the extension of the West End Concourse. Designed Catenary profiles and erection diagrams for interim and final stages. Calculated catenary loads. Design specific attachments and fittings for low clearance and other special location. Revised layouts and incorporation the changes in the structure erection and wiring plans. Interfaced and coordinated with other system disciplines, e.g. structural, civil and electrical. Prepared Bill of Material for the project.

Marietta Avenue Bridge Rehabilitation Project : Modified the catenary system to accommodate the rehabilitations of the bridge, revised structural location plans, re-profile catenary, calculate new catenary loads, provide new erections diagrams and bill of materials.

East Side Access Project: Designed catenary system at Harold Interlocking. Prepare Schematic Sectionalizing Plans for existing and future stages. Planned for staged construction that avoids or minimizes interruption to operation and maintenance of trains. Designed catenary structure location and wiring layouts for existing, proposed and final stages. Designed Catenary profiles and erection diagrams for interim and final stages. Calculated catenary loads. Designed mono poles, portals and cantilever structures. Designed catenary structural and foundation details. Designed of specific foundations, where foundations are identified to be part of retaining wall. Revised layouts, structure erection and wiring plans, including temporary and permanent switching modification. Interfaced and coordinated with other system disciplines, structural, civil, electrical and tunnel engineers. Prepared Bill of Material for the project.

Michael Fitzsimmons

Force Account Specialist

Mr. Fitzsimmons has over 30 years of electrical and mechanical experience focused on the transportation industry. Much of his experience has been with NJ Transit where he completed many switch, signal and substation projects throughout the system that saved NJ transit significant money and were delivered on time and within budget.

Relevant Project Experience

New Jersey Transit, CM Services for Replacement of Bay Head Substation, Bay Head, NJ: Mr. Fitzsimmons serves as Senior Construction Inspector where TYLI is providing CM services for this project, located at the Bay Head Train Yard, which generally consists of the replacement of storm-damaged electrical equipment with new equipment constructed at a higher elevation to prevent damage from future flooding and building construction. The existing General Service Substation will be demolished while the Layover Power Substation remains in service to maintain continuous operation of the Bay Head Yard. A new building to house the new substation will be built, a new 5000 kVA substation will replace both existing substations, including transformers, switchgear and other electrical equipment. A new building to house a new standby generator will be built where the Layover Power Substation was located.

NYCT CCM for Rehabilitation and Resiliency of 207th Street Yard, Manhattan, NY: As Senior Construction Inspector, Mr. Fitzsimmons serves on the TYLI team which serving as managing partner in a Joint Venture, is providing Consultant Construction Management (CCM) services for the rehabilitation and resiliency of the 207th Street Yard that was severely damaged during Superstorm Sandy. The project entails the installation of pile-supported reinforced concrete floodwalls, seepage curtain wall and filter blanket, stabilizing existing relieving platform, repairing existing concrete wall, miscellaneous drainage and site work, storm water pumping system and flexible and deployable flood gates for tunnel portals and driveways. Other items include construction of steel bulkhead seawall along Harlem river, outfalls extensions, tracks replacement, as well as replacing positive and negative power traction cables. Electrical components include: installing new pull boxes and new disconnect switches on steel frames, control and battery cables, construction of ductbanks, electrical and pump room, replacing various communication and fiber optics cables, construction of two relay buildings.

New Jersey Transit Corporation Inc. Newark, NJ: As NJ Transit's Electrical Substation State of Good Repair Senior Project Engineer, Mr. Fitzsimmons managed and developed bid specifications, material and manpower estimates, equipment procurement, construction schedules, material delivery and project reporting. He requested electrical power and track outages and performed onsite safe working procedure oversite. As NJ transits Electrical Substation State of Good Repair Senior Project Engineer, I managed an annual substation maintenance budget of ten million

QUALIFICATIONS

Firm: TY Lin International

Education
Academy for Career Education, Electrical/ Mechanical Design - Diploma

Registration/Certification
N/A

Years of Experience
Total: 30

Training and Industry Skills
New York University, Electrical Building Design – Certificate

Michael Fitzsimmons, continued

dollars per year for approximately ten years. Mr. Fitzsimmons built one of the first four (4) year electrical apprenticeship training programs within the rail industry accredited by the United States Department of Labor. He was instrumental in the creation of NJ Transits fire retardant clothing program. He also created a disaster recovery and document management system to protect NJ Transits twenty four thousand electrical engineering drawings from loss or damage.

NJ Transit – System-Wide Switch Heater Installation, Various, NJ: As Senior Project Engineer, Mr. Fitzsimmons installed energy efficient switch heater equipment at over five hundred (500) switches locations on major rail lines and rail yards throughout the state. Electrical energy consumption was reduced on average by forty percent (40%). Electrical energy and manpower reductions saved NJ Transit approximately one million dollars per year for a ten (10) year period. This project was delivered on time and under its nine million dollar budget.

NJ Transit – Entrance Circuit Breaker Replacement at 10 Substations, Various, NJ: As Senior Project Engineer, Mr. Fitzsimmons replaced entrance circuit breakers at ten stations including: Meadows, Summit, West Wharton, Aberdeen and Red Bank Substations. This project was delivered on time and under its six million dollar budget.

Zachary L. Bell, CMIT, LEED GA

Support Services – Office Engineer

Mr. Bell is an office engineer with experiene in site inspections and field tests for multiple projects. He has managed project submittals using constuctware/Asite and acted as a field engineer to monitor construction progress and provide inspection reports.

Relevant Project Experience

World Trade Center Station (Cortlandt #1 Line) Reconstruction, New York City, New York: Work includes

- Document control to ensure proper project documentation.
- Managed the project punch list.
- Writing of requests for information, change orders and other field/construction administrative duties as needed and completed within the project schedule.
- Verified field work and compiled as-built data.

The Congregation of Agudath Sholom Building Addition Project, Stamford, CT:

- Drafted the site and utility plan for 3 additions to an existing building in Stamford, CT using AutoCAD.
- Developed a drainage plan to mitigate the runoff from the additional impervious area.
- Designed a turnaround and exit area for the proposed parking lot using Autoturn and AutoCAD.
- Completed the necessary permitting documents to have the project approved.

Stamford Hospital, Stamford, CT:

- Drafted and designed the site and utility plan for a 200-car parking lot to serve the newly built. Stamford Hospital.
- Conducted weekly site inspections to monitor and document construction progress and site conditions.
- Attended weekly project construction meetings.

QUALIFICATIONS

Firm: AECOM

Education
BS, Civil Engineering, The University of South Carolina

Registration/Certification
x

Years of Experience
Total:

Training and Industry Skills
x

Page intentionally left blank

John King, PG, LSRP

Support Services – Document Control

John King has more than 30 years of Federal and State level environmental restoration and compliance assessment experience. He is a subject matter expert (SME) on the technical, scientific and regulatory landscape of Federal and State remediation programs. Mr. King is specifically experienced with preliminary assessment and investigation level property evaluations, the remedy screening and selection process, pilot-scale design testing, full-scale remedial design, system shake-down, process operations and maintenance, permitting and system troubleshooting. Mr. King is well versed with the practical applications and limitations of many remedial systems, technology performance evaluations, estimating and system scale-up, remedial system optimization techniques, full-scale capital, O&M, and life-cycle costs, land use controls (institutional and engineering), waste stream management, construction site health & safety, management and inspections, storm water controls and best managements practices.

Relevant Project Experience

NJ Transit Corporation, Hoboken Terminal, Hoboken, Hudson County, NJ: Senior Hydrogeologist, Quality Assurance/Quality Control (QA/QC) Manager developed the hydrogeological conceptual site model, evaluated the application of non-intrusive innovative direct sensing approaches to support the remedial investigation and remediation program for the Hoboken Terminal. Mr. King was responsible for performing an extensive file review and site assessment to identify deficiencies in the Terminal's compliance with the NJDEP Site Remediation Program (SRP) process. As part of the assessment, Mr. King would evaluate the adequacy of historical data gathering efforts, assess completeness of required deliverables and relevance of previously issued "No Further Action (NFA)" notices, identify data gaps in the facility's conceptual site model and assess historical compliance and responsiveness to NJDEP issued Administrative Consent Orders (ACO). Over 50 AOCs were identified at the Hoboken Terminal, including LNAPL and surface water (Long Slip Canal). His responsibilities include preparation of a Remedial Investigation Workplan (RIWP) to delineate previously identified contamination, project coordination with Superstorm Sandy–related construction activities at the site, and coordination and scheduling of remediation activities so as not to interfere with New Jersey Transit rail operations and ensure that all activities were completed in accordance with NJDEP regulations and guidance.

NJ Transit, Hudson-Bergen Light Rail Transit System, Minimum Operable Segment – 1, Former Y&T Realty Properties, Jersey City, NJ: Senior Hydrogeologist responsible for integrating historical and current hydrogeological and residual contaminant information for the site into a sound conceptual site model (CSM). The synthesis of this information resulted in the identifications of an additional AOC/source and PCE at the Former Y&T Realty property (current NJ TRANSIT West Side Avenue Park and Ride). The plume was delineated on the site using a Membrane Interface Probe

QUALIFICATIONS

Firm: Matrix New World Engineering

Education

MS, Geology, Rutgers University

BA, Geology, Rutgers University

Registration/Certification

New Jersey Licensed Site Remediation Professional (LSRP) – (License No. 668251)

Licensed Professional Geologist: Tennessee, Alaska

Years of Experience

Total: 30

Training and Industry Skills

Certified: 40-Hour Hazardous Waste Operation Program Certificate

Certified: 8-Hour Certification: OSHA Hazardous Materials Operations Supervisory Course

John King, PG, LSRP, continued

and was determined to be migrating off-site. Mr. King was involved in preparation of the Remedial Investigation Workplan (RIWP) for PCE plume delineation. Mr. King executed a vapor intrusion assessment at an adjacent property potentially impacted by the contaminant plume.

Metropolitan Transportation Authority/Metro-North Railroad, Environmental Monitoring and Testing/ Engineering Support, 86th St. Substation/110th St. Negative Return: Office Engineer responsible for the environmental health and safety support to Metro-North Railroad (MNR) during the installation of a new negative reactor on the Park Ave. viaduct at 110th St substation and the reconstruction of the 86th St. traction power substation located in the Park Ave. tunnel at 86th St. and Park Ave. in Manhattan. Mr. King's duties included participation in monthly progress meetings, change order meetings, project budget and scheduling meetings, and project delay claim and analysis meeting by memorializing these proceedings in a series of meeting minutes. Mr. King assisted with coordinating weekly flagging and track outage requests, assessing availability and scheduling of work trains, and evaluated safe work practices for loading and off-loading of supplies/ equipment. He also assisted with the monthly CPM schedule update review by tracking delays, researching causes and identified new activity dependencies. As part of a 3rd party project delay analysis, he prepared a detailed project chronological review of key project milestones (i.e., reactors, AC Equipment, DC Equipment testing, delivery and installation). Mr. King was responsible for maintaining a central file on contractor certifications, training and licenses, daily work schedules, daily construction inspection reports, daily inspection checklists, tool box meeting topics, sign-in sheets, Job Safety Analyses, Crane Erection Checklists, Lifting Equipment and Rigging Check Lists, safety audit reports, daily safety reports, and daily observation report logs, asbestos and silica monitoring results, permits, requests for payment, requests for information (RFI)s and non-conformance reports (NCRs).

Phase V Stage 1 Harmon Main Shop Replacement, Croton on the Hudson, NY: Construction Manager responsible for the demolition, environmental and construction management/oversight support to Metro-North Railroad during a $250 million overhaul of its100-year old maintenance yard and shops at its Metropolitan Transportation Authority (MTA) Metro-North Railroad Harmon Yard located in the Village of Croton-on-Hudson, New York. The three (3) year project involved the partial replacement of the current Harmon Main Shop (Building 6) with a new state-of-the-art Consist Shop Facility (CSF). The work involved a retrofit of Building 6, demolition of the Blowshed Building, demolition of the existing Recycling Center Facility and finally, bifurcation and partial demolition of Building 6. The new CSF was built to provide a state-of-the-art maintenance facility for Metro-North Railroad's electrically run trains and was constructed with the provision for the future Stage 2 contract for the Running Repair and a Support Shop Facility. Mr. King also provided day to day environmental compliance support, which included monitoring, testing and residual construction waste storage and segregation. The support role was part of assuring that the handling of contaminated materials was consistent with applicable regulatory requirements, as well as Metro North Railroad's regulations and operating requirements, Mr. King conducted visual and instrumental screening of all construction soils to determine staging, segregation and future use requirements. Mr. King ensured that construction waters were treated in an appropriately sized fractionation tank and that the effluent discharge was turbidity free. Pump rates and discharge volumes were tabulated in the logbook to ensure that the 100,000-gallon daily discharge limit stipulated in the construction permit was never exceeded. Mr. King also conducted inspections of soil staging areas to ensure that all erosion and sedimentation controls were in place and working as intended, and scheduled repairs as necessary.

Khurrum H. Siddiqi

Support Services – Scheduling

Relevant Project Experience

OutFront Media (OFM) - MTA: CIC, ADV & DUP Media Screens, Manhattan, NY: Project Scheduler

- Created EPS & OBS Project Portfolio Management and Baseline, Master, Progress, Simulation and Archived Nodes
- Developed Progress Schedule with P6 of Construction Work Packages (CWP) of Long Island Rail Road Stations
- Updated Schedule for Installation of Media Screens at Each LIRR Station as Per Contractors Reports
- Tracked Submittal Log and Progress, Coordinated with Survey, Design, Construction & Quality Teams
- Updated Program Level Summary Schedule of NYCT, LIRR, Metro North and Staten Island Transit
- Reported Progress to Project Controls Manager and Program Manager along with Uploaded files on ProjectWise

Linesight, JPMC Data Center Construction, Manhattan, NY: Planner Scheduler

- Created Monthly Schedule Analysis Reports (SAR), and Progress Reports used P6 Schedule Data
- Performed Critical Path Review, Float, Delay, Variance and Schedule Impact Analysis in Primavera
- Created Excel Donut Charts, Progress of Individual Deliverables and Overall Performance with SPI
- Performed Schedule Health Check in line with 14 Point DCMA Matrix and Scheduling Best Practices
- Conducted Weekly Walk Downs for Progress Measurement and Cross Checked with all Stakeholders
- Attended Owner, Architect and Contractor's (OAC) and Schedule Review Meetings and Deliberations

ANSU Construction Inc. NYCSCA Public Schools, Mineola, NY: Project Engineer

- Ensured Work Progress is according to Engineering Drawings and Design Specifications
- Ensured Site Safety according to Occupational Health and Safety Organization (OSHA) and Building Codes
- Updated Schedule Progress and Identified Variance with Previous and Project Baseline

QUALIFICATIONS

Firm: Haydan Consultants

Education

Masters Information Systems, University of Toronto

BSc. Civil Engineering, University of Engineering and Technology, Lahore

Project Control Training Program, URS and Primavera P6 Advanced, Emerald Associates Calgary

Registration/Certification

N/A

Years of Experience

Total: 26

Training and Industry Skills

Site Safety Manager & Construction Site Fire Safety Manager Refresher Completion 8 Hour

OSHA 30 Hour Occupational Safety and Health Training Course

Khurrum H. Siddiqi, continued

AMR Engineering Ltd. Western Hotel, Calgary, AB: Project Engineer

- Planned Execution of Construction Activities and Managed Labor, Equipment, Material and Subs
- Visited sites to Measure Progress, Reported Delays, and Impact on Schedule
- Created Master Schedule with Primavera used Milestones to Assess Deviation and Variance with Baseline

AECOM (Oil & Gas Operations) Primavera Administrator & Planner / Scheduler, Calgary, AB: Project Controls System and Bid Scheduler

- Initial set-up of Primavera for Global and Project Profiles to Develop Project Portfolio Management
- Established Guidelines for Managing and Maintaining EPS, Work Flow, User Security Profiles
- Developed Proposal, Bid, Baseline, Master, Progress, Simulation Zone and Archived Schedules Nodes
- Developed Bid, Live and Baseline Schedules of Construction Projects, Histogram and S Curve
- Reviewed Key Engineering Documents, Drawings, Specifications and Technical Reports
- Analyzed Critical Path, Variance and Float for Schedule Management and Maintenance
- Evaluate Project Schedule Progress, Project Milestones, and Performance, Histogram and S Curve
- Analyzed Critical Path, Variance and Float for Schedule Management and Maintenance

ATCO Structures & Logistics, Modular Office Complex, Calgary, AB: Project Controls Coordinator

- Provided Input in Preparation of Project Controls Plan and Standard Process and Procedures for Project Delivery
- Analyzed completed projects and compared budget at completion (BAC) and estimate at completion (EAC)
- Managed close-out and handing-over process to client with necessary documents

Rabiul Hasan

Support Services – Cost Estimating

A competent Construction professional with excellent communication, organization, and co-ordination skills. Possessing a proven track record of preparing and executing project specifications, plans and programs, evaluating electrical systems, products, components and applications by designing and conducting research programs; applying knowledge of electricity and materials, confirms systems and components capabilities by designing testing methods; testing properties and ensuring that work is carried out in accordance with the companies procedures and clients satisfaction. Experienced with the ability to manage large tasks while consistently paying attention to detail and implementing analytical thinking. Able to ensure timely, safe, and cost- effective design and implementation during the life cycle of projects from conception till customer satisfaction. I am looking to join a team of professional individuals and seek out new challenges.

Relevant Project Experience

Implement Electrical Contracting Corp, Queens, New York: Senior GC Cost Estimator.

- Estimated & Value Engineered Various non-union open shop type projects (such as 140 East 46th Street, New York, NY (Power Generation & distribution), 166 East 124th Street, New York, NY (Self Storage), 640 Columbia Street, Brooklyn, NY (Industrial- Power Generation & Distribution), 537 Columbia Street, Brooklyn, NY (Warehouse- Structured Cabling), 415 West 120th Street, New York, NY (High End New Residential Building- Ground Up Installation)
- Additionally, estimated various health care projects -731 White Plains Road, Bronx, NY & Bronx Lebanon-Cancer Center, Bronx, NY.
- Estimated for New Construction building for Concrete, Masonry, Foundation, Roofing & Waterproofing, Electrical, Fire Alarm (575 Grand Street, Brooklyn, NY & 1915 Beverly Road, Brooklyn, NY)
- Estimated and supervised Brownstone Facade Renovation, Local Law 11 projects for Façade Inspection Work (Safe Work \ a Repair and Maintenance Program) for Masonry, Stucco, Waterproofing & Roofing Repair Works (413 East 50th Street, New York, NY, 521 Greene Avenue, Brooklyn, NY-11216, 124 Columbia Heights, Brooklyn, NY-11201)

Peter J Catanzaro Inc. 126 41st Street, Brooklyn, NY-11232: Senior Electrical Estimator (Contract Position)

- Estimated various NYC Department of Parks & Recreation Projects (such as Canarsie Park, Juniper Valley Park, Stapleton Playground, Fairview Park, Bowne Pond, Jackie Robinson Park & Flushing Meadows Corona Park and so on) in 5 Boroughs of New York. Especially Park Security Lighting, Sports Lighting & Electrical Service work. Additionally, estimated Creedmoor Psychiatric Center, New York Psychiatric Center & Coney Island Hospital Lighting Replacement Project.

QUALIFICATIONS

Firm: Haydan Consultants

Education

Master's In Electrical Engineering, 2016, State University of New York at New Paltz

B.Sc. In Electrical & Electronics Engineering, 2014, American International University – Bangladesh (AIUB)

Registration/Certification

N/A

Years of Experience

Total: 5

Training and Industry Skills

Construction Management Certificate (Regional Alliance for Small Contractors

- Contracts for Construction: Significant Considerations for Owners & Contractors
- Procore Certified Engineer & Project Manager

Rabiul Hasan, continued

- Estimated prevailing wage, PLA Union (DASNY NYCCT NAMM Hall Entrance Project) & Open Shop Labor type project like Brooklyn Lab. Charter School etc. with cost estimated budget and accurate scope of work analysis.
- Providing a pinpoint bid to get awarded job with quality control and assurance.

Cole Electric Corp. 219-05 Merrick BLVD, Laurelton, NY-11413: Senior Electrical Estimator / Project Manager

- Estimated and managed job site NYCDEP (Kensico Reservoir Shoreline Stabilization), estimated & supervised MTA (LIRR Murray Hill Station, NYCTA 57th Street ADA Elevator Install), NYCEDP (Pier 42-Temporary Electric Work), 15 Hudson Yards (Local 3 Union) project- (Low Voltage System Wiring), 103105 Corporate Park Drive Projects- Open Shop Labor- $10M worth type projects and analyzed different aspects of scope of work
- Scrutinized ins and outs of lowest bidding projects and compared supplier's material quote for cost savings.
- Inspect the Job Site, Field Co-ordination with Con Ed, and request for DOB final inspection and sign-off and close out the project

Adam Electrical Contracting, LLC. 3370 Prince Street, Suite-107, Flushing, NY-11354: Senior Project Manager / Estimator

- Determined costs, purchased materials, and designed working office procedures for business expansion into a competitive commercial market.
- Prepared electrical-related scope documents, pin-point exhibits, budgets, specifications, schedules, and request for proposal (RFP's)
- Performed material take-offs from blueprints, created material lists and contacted suppliers for pricing.
- Estimated projects from $500k to $3.5 M (Bedford Green House, Bronx, NY- prevailing wage, -149-32 132nd Street, Jamaica, NY-11432- Open Shop Labor- $ 2.5 Million, Pret A Manger 8th Avenue, New York, NY- Open Shop Labor- $ 1.8 Million) scope of work for electrical systems for power, lighting, fire alarm, telecommunication and other low voltage system including light control system.
- Communicated regularly with clients, architects, contractors, and Engineers to ensure that projects proceed smoothly, and issues are dealt with quickly and effectively.

Zaman Construction Corp. 97-53 85th Street, Ozone Park, NY-11416: Project Engineer

- Coordinated with the MEP Contractors to confirm that the specs and drawings are being followed in subcontract
- Directed all field personnel to achieve completion of the project on schedule within budget, with quality workmanship that conforms to original plans & specs (Various NYCHA Projects)
- Maintained construction schedule, identifies, and solves problems.
- Ordered materials and scheduled inspections as necessary throughout the process
- Prepared, scheduled, and supervised completion of a final punch list (PS-75K Brooklyn)
- Promoted job site safety, encouraged safe work practices, and rectified job site hazards immediately
- Ensured all company employees and contractors are adhering to the company safety policy

Craig Diziki

Support Services – Environmental

Craig Diziki has more than seven years of experience with a wide range of environmental and geotechnical engineering projects including site remediation, hazardous materials surveying for asbestos, lead based paint, PCBs, universal waste, mold, and lead in drinking water, pre-construction conditions surveying and documentation, environmental impact statement/environmental assessment (EIS/EA), Phase I & II environmental site assessments, Support of Excavation and Remediation oversight, soil borings and soil and rock classification, and well installation oversight. His experience includes, hazardous materials sampling for various structures including bridges, colleges/schools, and a naval station, preparation of hazardous materials investigation reports and proposals, preparation of specifications and abatement design plans for various NYC organizations, project monitoring for asbestos abatement, environmental remediation oversight, Phase I research and report preparation, Phase II site investigation including soil and groundwater sampling, EPA Lead in Drinking Water sampling in NY and NJ schools, and development of Health and Safety Plans (HASP). Mr. Diziki also has experience logging soil borings using both USCS and Burmister systems for NYC EDC, NYS DOT, NYCT, MNR, NYC SCA and NYC DEP, and permeability testing for NYC DEP and the NYC SCA.

Relevant Project Experience

Newark Terminal A Redevelopment Program, Newark, NJ: Environmental Scientist responsible for supporting the Port Authority of New York and New Jersey (PANYNJ) on the Terminal A Redevelopment Roadway Bridges N58 and N59 project at Newark Liberty International Airport, including a pre-construction environmental subsurface investigation to identify potential areas of contaminated materials and hazardous waste that may impact project design and construction along the proposed bridge alignments. By pre-characterizing the subsurface, Matrix identified the presence of any contaminated materials that could pose a health and safety risk to construction personnel and the public and cause costly delays if not identified and mitigated prior to construction. A Site Investigation Report (SIR) was written, providing the results of the investigation, and project design specifications and drawings were reviewed to ensure that they addressed environmental findings relative to materials management. Also evaluated project design specifications and drawings for adequate handling of potential hazardous materials, including asbestos, lead paint and universal wastes.

PANYNJ, LaGuardia Airport Building #19, Queens, NY: Field Lead conducting hazardous materials assessment at the existing Building #19 structure in coordination with the Central Terminal Building (CTB) Replacement Project at LaGuardia Airport (LGA). The inspection involved the identification, quantification, and delineation of ACM, LBP, PCB in caulking/sealant materials, and other universal and regulated hazardous materials which will be impacted during the proposed demolition of the existing structure. A total of 279 ACM samples, 11 LBP chip samples, and 4 PCB materials were

QUALIFICATIONS

Firm: Matrix New World Engineering

Education

BS, Environmental Science, Villanova University, PA, 2012

Registration/Certification

NYCDEP Asbestos Investigator

US EPA and NYSDOL Asbestos Inspector, Project Monitor, Air Sampling Technician

US EPA and NYSDOL Mold Assessor

New Jersey Department of Health Lead Inspector/ Risk Assessor

NYS EPA Lead Based Paint Risk Assessor

Secure Worker Assess Consortium Identification

Years of Experience

Total: 7

Training and Industry Skills

30 Hour OSHA Construction Safety

10 Hour OSHA Construction Safety and Health Training

Craig Diziki, continued

collected during the investigation. Mr. Diziki assisted in the completion of the hazardous materials report.

PANYNJ, LaGuardia Airport Pier C, Queens, NY: Asbestos Inspector performing hazardous materials assessment at the existing Pier C structure at LaGuardia Airport (LGA) in coordination with the Central Terminal Building (CTB) Replacement Project. The inspection involved the identification, quantification, and delineation of ACM, LBP, PCB in caulking/sealant materials, and other universal and regulated hazardous materials which will be impacted during the proposed demolition of the existing structure. A total of 2,191 ACM samples, 20 LBP chip samples, and 38 PCB materials were collected during the investigation. Mr. Diziki assisted in the completion of the hazardous materials report.

MNR, Harmon Yards Monitoring Well Installation and Development, Croton-on- the-Hudson, NY: Field Inspector responsible for providing field monitoring and project documentation for the installation of monitoring/product recovery wells. Provided oversight for the over drilling of four two-inch monitoring wells for conversion to four-inch monitoring wells and installation of three two-inch monitoring wells. Responsibilities also included developing the monitoring wells and performing groundwater quality evaluation with a Horiba U52 water quality meter.

MNR, Mott Haven Rail Yard, Bronx, NY: Field Inspector responsible for providing field monitoring and project documentation services for the installation of monitoring/product recovery wells and collection of soil samples. Provided oversight of drilling operations, soil classification and sample collection, and oversight for the installation of 4 monitoring/product recovery wells, approximately 15 to 20 feet below ground surface. Also responsible for the development of the monitoring/product recovery wells after installation and performing groundwater quality evaluation with a Horiba U52 water quality meter. Duties also included boring logs and well installation logs, and preparing a Remediation Report, detailing the field activities and proposed remedial activities.

NYC MTA, 148th Street and 207th Street Yards and Portals, Manhattan, NY: Field Inspector responsible for the oversight of drilling for the purposes of the development of flood mitigation to prevent floodwater intrusion into both yards from a Category 2 hurricane. Mr. Diziki collected soil samples and rock core samples and oversaw test pit excavation and monitoring well installation.

TBTA, Overcoat System at the Henry Hudson Bridge, Manhattan/Bronx, NY: Field Inspector responsible for providing hazardous materials services for the rehabilitation and/or repair of the overcoat system at the Henry Hudson Bridge due to deterioration of the bridge's components. Hazardous materials survey included utilizing various aerial lifts to check below both the upper and lower deck for presence of any ACM (asbestos containing material) across the entire span of the bridge, as well as at ground level bridge foundations.

MTAB&T, Henry Hudson Bridge, Bronx, NY MTA: Field Scientist responsible for providing field vibration and noise monitoring for Design and Support Services during construction in order to conduct the retrofit/repair of the bridge skewbacks, approach concrete piers/bents, and north abutment at the Henry Hudson Bridge. Field investigations included calibration and use of both SoundPro sound level meters and Minimate seismographs during horizontal and vertical drilling activities, recording noise data at five-minute intervals, and post production of field data.

References

4. References

A. Firm References

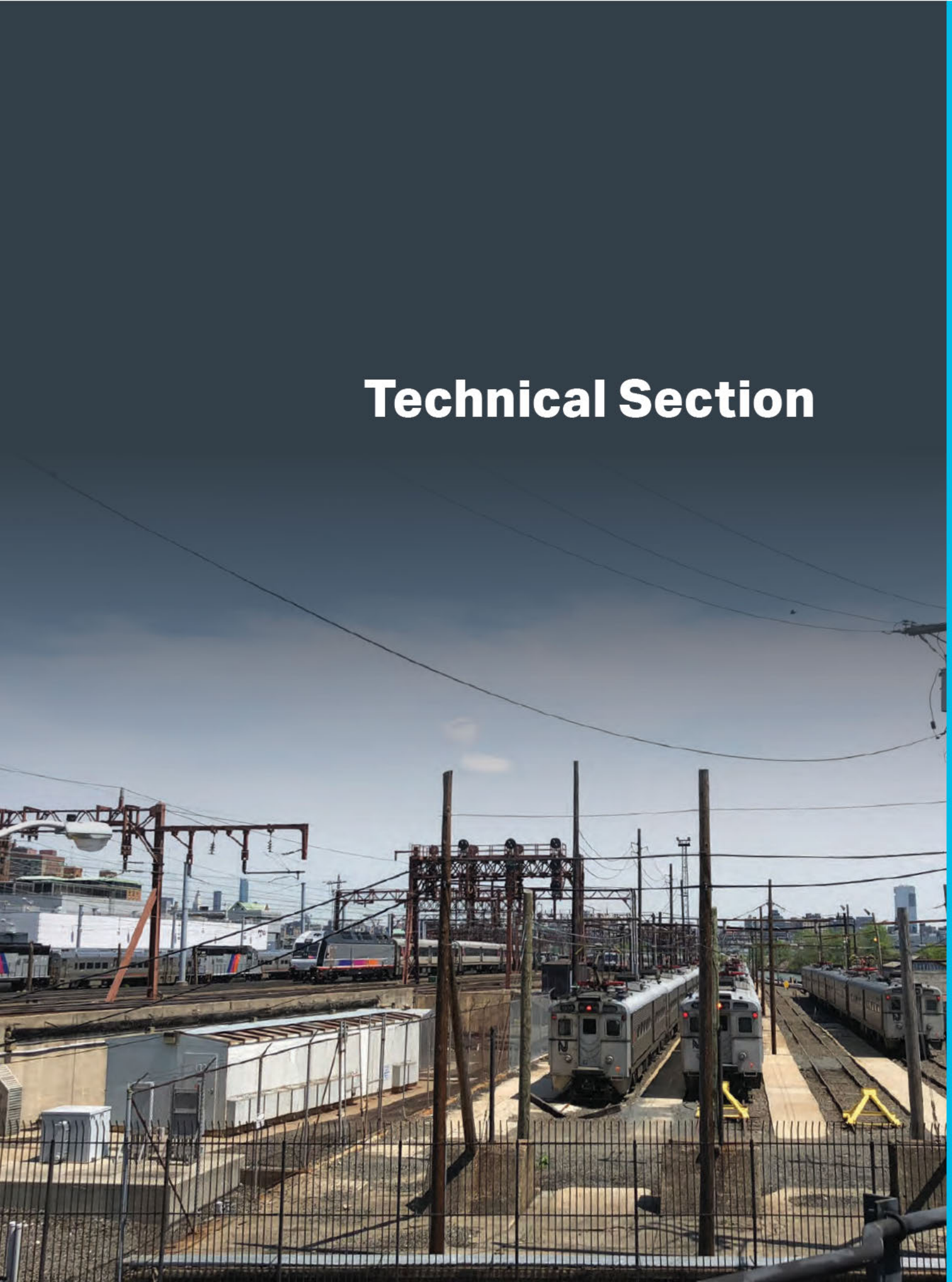
	Project/Services Provided	Project Duration	Client References
AECOM			
Non-NJ TRANSIT Projects	Amtrak American Recovery and Reinvestment Act (ARRA) – Program Management Oversight.	2009-ongoing	Amtrak [redacted] or Program Director, Stimulus
	NJTA, Interchange 6-9, Widening Program, Construction Management and Inspection, NJ	2008-2015	New Jersey Turnpike Authority (N Williams, Deputy Chief Engineer, [redacted]
	NJTA, Interchange 14A Improvements Construction Management and Inspection, NJ	2015-2018	N [redacted] rso, Supervising Engineer,
NJ TRANSIT*	NJ TRANSIT, Hudson-Bergen Light Rail Line. NJ	1996 – 2020 MOS-1: 1996 – 2000 MOS-2: 2000 – 2003 MOS-2b: 2003 – 2006 MOS -3: 2006 – 2011 O&M: 2000 – 2020	NJ TRANSIT, Design-Build Contract - Charles "Ty" [redacted] O& eral Manager O: [redacted]
	NJ TRANSIT, Long Slip Canal Fill and Rail Enhancement Project, NJ	1998-2003 2013-2023	[redacted] ck Valente, Senior Project Manager,
TY Lin Internaional			
Non-NJ TRANSIT Projects	MTA NYCT CCM for Cranberry and Rutgers Tubes Rehabilitation	2014-2017	N [redacted] thari, Program Manager
	NYCDOT TD/CSS for FDR Drive NB Bridge E42nd St to E49th St	2014-2017	[redacted] h Shah, PE, Project Manager
	MTA NYCT CCM for Joraleman Tube Rehabilitation	2014-2017	N [redacted] i, Associate Project Manager
NJ TRANSIT Projects*	NJ TRANSIT, New County Rd Grade Separation, Secaucus, NJ	2000-2004	NJ TRANS Edwards, Program Manager, [redacted]
	NJ TRANSIT Passaic-Bergen Passenger Restoration, Hawthorne to Hackensack, NJ	2005-2009	[redacted] k Marton, Senior Director
AmerCom Corporation (DBE)			
Non-NJ TRANSIT Projects	N.J. Turnpike Authority – OPS P3695 PNC Arts Center Improvements –	2018-2020	[redacted] rro, Supervising Engineer
	NJDOT – US Route 46 Willowbrook over the Passaic River, Wayne, NJ	2017-2020	N [redacted] Henry, Project Manager
	N.J. Turnpike Authority – OPS P3552 Interchange 125 Ramp Improvements, MP 125.7-128.1	2017-2019	N [redacted] gnella, Project Manager,

	Project/Services Provided	Project Duration	Client References
NJ TRANSIT Projects	NJ TRANSIT Contract No. 16-037B Assignment No. 7 Rev 1., Task Order Contract: Architecture/Engineering Services - Survey Northern Bus Garage, Bergen County, NJ	2019-2020	NJ TRANSIT, Joseph A. Russo AICP, MPA P eer, Capital Programs [redacted]
NJ TRANSIT Projects	NJ TRANSIT Contract No. 16-038, Bridge Railway Engineering Task Order Contract: Steel and Concrete Repairs for High Street Overhead Bridge, Summit, NJ	2019-2020	NJ TRANSIT, George Attara, PE, Senior Program Manager and Senior Design ructure Engineering [redacted]
Matrix New World Engineering			
Non-NJ TRANSIT Projects	NYC Parks Hammonds Cove Marina Reconstruction, Bronx, New York	2017-Ongoing	Stantec Consulting Services Inc. Senior Associate [redacted]
Non-NJ TRANSIT Projects	MTA/NYC Transit Environmental Services, 2nd Avenue Subway, New York City, NY	2001-2015	AECOM, Chris Bennett, PE V Chief Engineer Transit Rail [redacted]
Non-NJ TRANSIT Projects	NYC OMB Multi-Site Feasibility Study, Master Planning Study and Conceptual Design Alternatives for Recreation Facilities at Lyons Pool, Goodhue Center, and DSNY Community District 1 Garage, Staten Island, New York	2014-2017	Urbahn Architects PLLC ta, LEED AP, Senior Associate [redacted]
NJ TRANSIT Projects	NJ Transit Caven Point (sub to Systra)	2019-Ongoing	signore, PE, Executive Vice President [redacted]
NJ TRANSIT Projects	Amtrak/FRA/NJ TRANSIT & PANYNJ Hudson River Tunnel, New Jersey & New York	2017-Ongoing	The Gateway Trans-Hudson Partnership (GTHP) – Joint Venture of WSP USA, AECOM and STV, Inc. SP, USA [redacted]
Haydan Consultants, Inc.			
Non-NJ TRANSIT Projects	New York Power Authority – Sensor Deployment	April 2019-Ongoing	ensen [redacted]
Non-NJ TRANSIT Projects	Metropolitan Transit Authority – East Side Access	Dec. 2019-Ongoing	[redacted]
Non-NJ TRANSIT Projects	Port Authority of New York & New Jersey – LaGuardia Airport Redevelopment	May 2020-Ongoing	J [redacted]
NJ TRANSIT Projects	n/a		

▪ B. Key Staff References**

Name	Project Duration	Project	Client References
Philip Girandola, PE (A) Construction Manager	2010-2017	South Jersey Port Corporation, Paulsboro Marine Terminal New Wharf and Rail	ecutive Director (Ret.) [redacted]
	2017-2019	APM Terminals New Gate and Wharf Improvements	Lee Ba nstruction Office: Albert.[redacted]
Randall Doliber PE (A) Constructability Review Advisor	2012 2008	Hoboken Terminal Rehabilitation $6.7M NJ Transit Meadowlands Maintenance Complex Expansion, Kearny	Jason Wormeck, Sr. Program Manager Planning & Programs [redacted]
		NYCT Bus Command Center - Brooklyn, NY Coliseum Bus Facility, Bronx, NY	Deborah Hyman, R A., Program Manager Systems & Security Program agement [redacted]
Mukesh Patel, PE (A) Resident Engineer-Structural/Civil	2019-2020	MTA NYCT Rehabilitation of Canarsie Line Tunnel	Bharat Kohtari- Program Officer, Sandy R [redacted]
Ralph Glover (TY) Resident Engineer-Signal/Power/Electric	2016-2019	NJ Transit, Supervisor of Substations, Morris and Essex Division, Morris and Essex, NJ	rical Engineer [redacted]
	2016-2019	NJ Transit, Substation Foreman – Morris and Essex Division, Morris and Essex, NJ	rical Engineer [redacted]
Michael Fitzsimmons (TY) Force Accounts	2018-present	NJ Transit, CM Services for Replacement of Bay Head Substation, Bay Head, NJ	rical Engineer [redacted]
	2010-2016	New Jersey Transit, Electrical Substation State of Good Repair, Newark, NJ	rical Engineer [redacted]

Technical Section



5. Technical Approach

The AECOM Team understands oversight of all construction related activities associated with the construction management services related to construction phase of the Project

PROJECT UNDERSTANDING

NJ TRANSIT will be constructing new 2400 Volt **signal power** and 15 kV **yard power** distribution pole lines within the Hoboken train yard. Design of this project was completed by STV and NJ TRANSIT is engaging a Consultant to provide construction management services related to the construction phase of the Project. The Consultant will provide a team for oversight related to all construction activities associated with the project.

The existing systems for these two major components of the Hoboken Yard infrastructure are **currently run underground** within a manhole and conduit duct bank system to pad mounted transformers and wayside power **equipment located at the grade level in the yard.** During Super Storm Sandy Hoboken Yard was flooded and the existing underground utilities damaged. *(Figure 1 on the following page)*

The project will provide for the replacement of both signal and power lines **damaged during Super Storm Sandy** and elevate them on new monopole lines above the grade level and the floodplain elevation within Hoboken Yard. The **Days Yard wayside power substation equipment** will be also constructed **above grade on an elevated structural steel platform** as part of this project. The signal and yard power feeders will be distributed throughout the yard, primarily on the north side of the yard, on shared use of steel monopoles structures and will accommodate installations of feeders as well as spare positions for future feeders The yard power will also include replacement of the Days Yard Wayside Power, protection and control system, manholes, duct banks, wayside power cabinets and control stations.

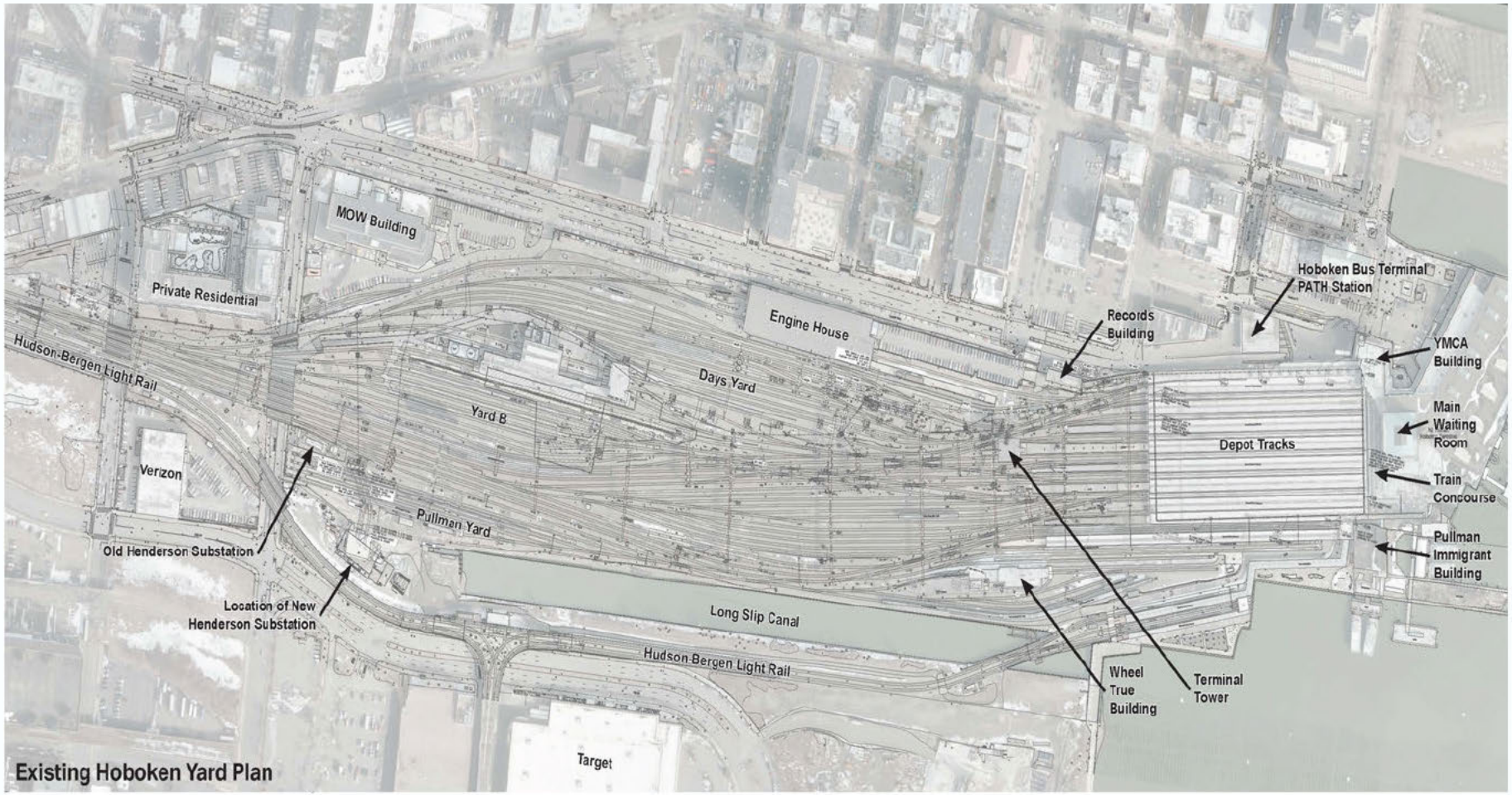
The signal power will be distributed from the **new Henderson Substation power feeders** (currently under construction), and resilient yard power from **Days Yard Wayside Power Substation**.

Benefits of the AECOM Team—

- ✓ **The resources to call upon for any issues and problems that may arise. We are solution driven and have local knowledge combined with national and global expertise.**
- ✓ **No learning curve. Our attention to detail, preparedness and innovation minimizes disruptions and enhances efficient project delivery, while minimizing construction and operation risks.**

With our unparalleled experience, we will minimize impacts based on our expertise and knowledge of the area...

FIGURE 1


MOW Building
Private Residential
Hudson-Bergen Light Rail
Engine House
Days Yard
Yard B
Verizon
Pullman Yard
Old Henderson Substation
Location of New Henderson Substation
Long Slip Canal
Hudson-Bergen Light Rail
Target
Records Building
Hoboken Bus Terminal PATH Station
YMCA Building
Main Waiting Room
Depot Tracks
Train Concourse
Pullman Immigrant Building
Wheel True Building
Terminal Tower
Existing Hoboken Yard Plan

APPROACH TO SERVICES

The following describes the major scope items and AECOM's approach for these items. AECOM's overall management approach for the project tasks (C1 through C9) is presented at the end of this section.

1. **Installation of micro piles, pile caps and monopole**
2. **Signal and Yard Power**
3. **Construction of Duct bank and manholes for Days Yard Power substation equipment**
4. **Force Account work by NJ TRANSIT**

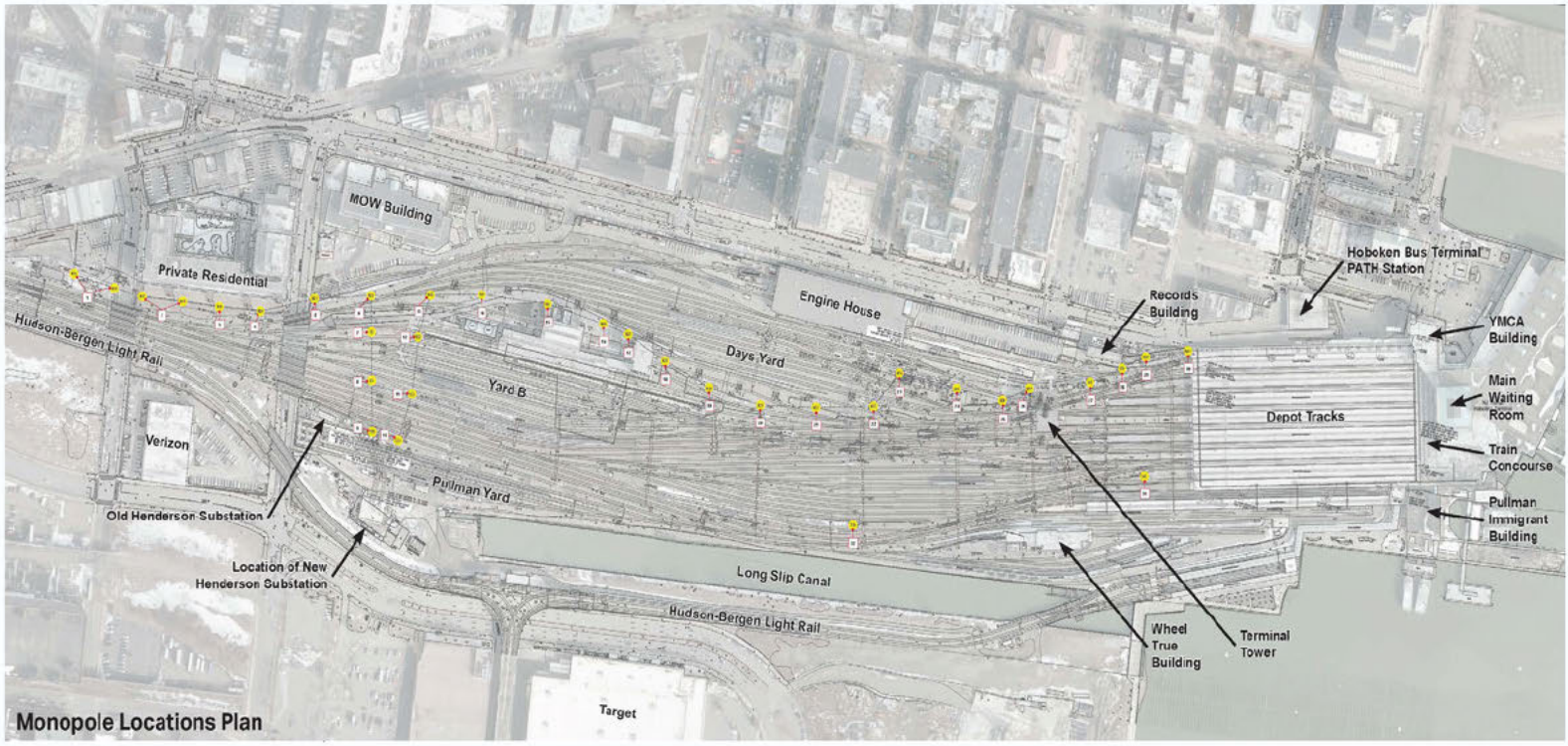
INTRODUCTION/OVERVIEW

(Figure 2 below)

To support the power and signal cables overhead, monopoles supported on micro pile foundations will be installed at various locations within the yard and includes the following:

- Total of thirty-two (32) poles with foundations are required under this project **(Two (2) pile foundations and pile caps have been already installed under a previous contract)**
- Test Pits for pile foundations
- Providing temporary shoring around each pile foundation location to support train loads from adjacent tracks and other surcharge loads
- Install **micro pile foundations** consisting of four (4) micro piles installed to bedrock approximately 60' to 90' below grade
- Construct Pile caps in size from 6'x6' to 10-6'x10-6'
- Install thirty-two (32) Square steel **monopoles** (size from 20'x20' and 44"x44" and height between 61' and 91')
- Modify one existing twelve-sided un-used catenary light pole to extend the height by 5' to accommodate the installation of 120V secondary signal power feeders.

FIGURE 2



Monopole Locations Plan

1. INSTALLATION OF MICRO PILES, PILE CAPS AND MONOPOLE

Pile Foundations:

Upon receiving notice to proceed, AECOM will request and obtain from NJ TRANSIT, all records drawings, reports and installation details related to the two pile foundations and pile caps that were installed under a previous contract.

We will request a **Master Project Schedule** from the contractor which incorporates start/completion dates for all major scope items including NJ TRANSIT Force Account work and other ancillary project work

We will request the following **Site-Specific Work Plans (SSWP's)** from the contractor:

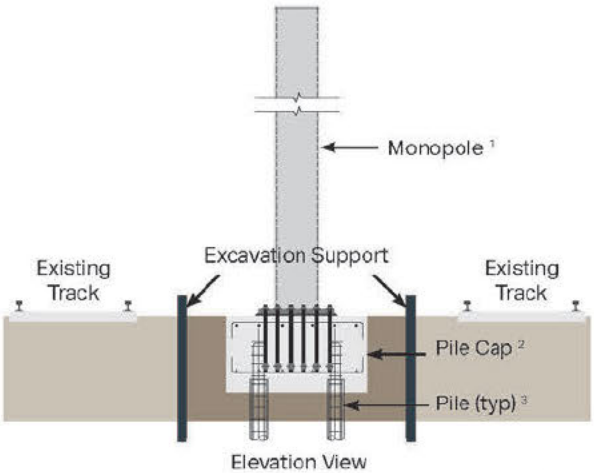
- Test pile(s) and load testing of the pile at a location approved by NJ TRANSIT.
- Micropile construction
- Pile Cap Construction
- Steel Monopoles installation; and
- Duct Bank Construction for the Days Yard Wayside Power Substation

The SSWP's will be reviewed by AECOM staff based on the lessons learned from the two (2) pile foundations already installed by NJ TRANSIT, and based on AECOM's prior experience with similar pile foundations projects

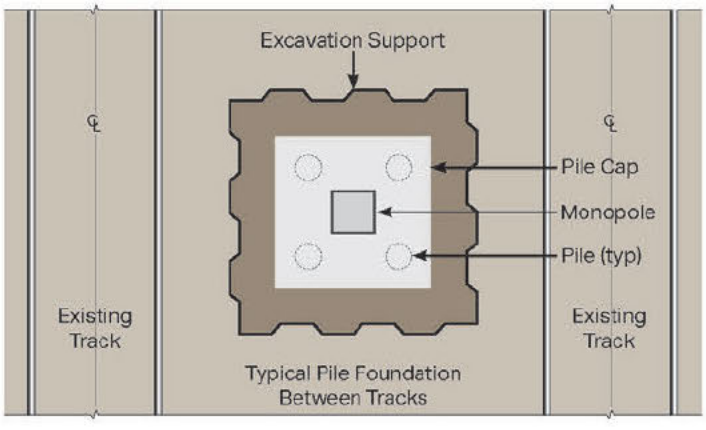
AECOM will ensure that the plan includes the following:

- Project schedule which has coordinated all work activities and meets the overall completion of contract in a safe manner
- Approved shop drawings from the Designer of Record (DOR) for pile installation
- Transporting pile drilling rigs to the pile locations at the jobsite.
- Delivery of all materials and equipment required for installation including caisson pipes, and rebar cage and confirmation that they meet requirements of the contract design and specifications
- Support of Excavation (SOE) for test pits and pile foundations are adequately designed for train loads from the adjacent tracks and existing structures in the vicinity
- Work area is clear from utilities
- Any track and power outages and access and protection required from NJ TRANSIT Force Account
- NJT's plan to energize the power and return the tracks back into service
- Agreed working hours for each shift
- Plan for required amount of water and compressed air required during the drilling operation.
- Plan to test excavated soils, wet spoils for contamination and disposal plan for contaminated soils, spoils, and water following EPA Guidelines

FIGURE 3



1 - square steel monopole 20" x 20" to 44" x 44", height between 61' to 91'
2 - from 6' x 6' to 10'-6" x 10'-6"
3 - anchored to rock length between 60' and 90'



Typical Plan and Section of Pile Between Existing Tracks

Once the SSWPs are reviewed and approved by AECOM and accepted by the NJ TRANSIT, the installation of the test pile will start. At this point AECOM will conduct a micro pile preconstruction meeting between, the Contractor and any subcontractors performing the work, the Designer of Record (DOR), and NJ TRANSIT'S representative to review the contractor's approved submittals and resolve any concerns by either party.

Upon successful completion of the test pile installation, and based on the lessons learned, we will schedule and chair a joint meeting with the contractor and NJ TRANSIT project team and the Designer of the Record, to discuss and develop the actual plan for production installation of the pile foundations

During installation, the AECOM inspector will at the jobsite full-time and maintain a micro pile installation log and record all activities required per NJ TRANSIT Guidelines including the following:

- Amount of time required for installation of each pile
- Depth to top of rock
- Depth of each hole
- Verify rebar size, length
- Load test data

The recorded documentation will be submitted to the DOR to ensure that the installation meets the design requirements

Pile Caps:

AECOM will follow the micro pile installation approach listed above for construction of the pile caps

Installing Monopoles

The project will construct monopoles ranging in size from 20"x20" and 44"x44" and ranging in height between 61' and 91' and per and in accordance with the requirements from NJ TRANSIT Rail Operations Department, the steel monopoles are required to be deliver to the site in their final installment lengths

The contractor will submit a SSWP and obtain approval from all stakeholders for installation of monopoles and high voltage aerial cables. Our team will ensure that the approved SSWP includes the following Safe rigging provisions:

- AECOM will inspect the steel monopiles at the shop prior to shipment and ensure that the monopoles are manufactured as per contract requirements and assembled as per the approved shop drawings. AECOM will also collect written reports from the contractor's approved independent testing laboratory that the test Poles are manufactured per the approved shop drawings
- Delivery and storage of monopoles at the site
- Pole installation methods (flown in by Helicopters or using crane pick).
- *Tie off points* and *anchor points* are provided for climbing and work position accessibility.
- *Ladders* are installed to provide vertical access to workers positioning themselves at the end of the conductor arm for installing cables.
- *Arm railings anchors* are attached to access the end of the conductor arm to install cable.

- *Anchor points* are available to attach *fall arrest systems*
- *Climbing rings* are provided to access work positions away from the ladder face.
- *Anchors points tie off points, ladders, climbing rings and arm railing anchors* are welded to the monopole during fabrication.

- *Lifting Vangs* (rigging point) at the top of the pole with a *Working Load Limit* of the entire pole including the arms, ladders and necessary anchors, tie-off point, ladder rings, climbing rings, arm railing etc.
- Specify if design of the poles is a *bolted flange* or a *slip joint* connection.
- Insure all *lifting Vangs* (rigging point) have the *working load limits* called out on the drawing. This will allow the installer a higher level of safety when preparing a *pick plan.*
- Welded nuts to attach cable support arms to install lighting or cellular electrical cables and equipment.
- Provisions are made for lineman to perform future maintenance tasks safely.
- Outfitted to accommodate lineman performing such tasks as stringing, sagging, clipping in and out & dead-end conductor connections to the monopole.

- The Monopoles are outfitted to attach with rigging (vangs) holes to attach rigging hoist to install dead end electrical cables; conductor blocks for stringing electrical cables; rope winch blocks for pulling electrical cable sag at dead end structures; and rigging hoists for clipping electrical cables in and out of pullies.
- Grounding lugs are provided to connect the monopole pole to the ground

For the production installation of foundations and erection of monopoles, AECOM proposes the following options to improve the contract schedule:

- AECOM recognizes the potential for multiple rigs working simultaneously to make the most efficient use of the work windows as possible. Therefore, for pile foundations located primarily outside live tracks **(Pile Locations 1-5);** refer to Pile Locations Plan 1.
- Start work in this area concurrently with additional rigs while work is in progress for pile installations in the yard between tracks.
- Pile foundations located between tracks **(Pile Locations 6-32).**
- Under this scenario, adjacent tracks will be out of service during weekend, outages providing an opportunity to use additional rigs and starting work at more than one location.
- In order to save Mobilization/Demobilization time we recommend the use of high-rail mounted equipment fitted with crane (supplied by the contractor) to bring rigs, pipes, water storage tank, air compressor and generators etc. to the work location. We will study the possibility if rig(s) can be stored within the yard at designated locations until completion of pile installation
- AECOM also would like to explore other access options with NJT and the Contractor, such as establishing temporary crossing areas to provide access to interior yard locations (Pile locations 31 & 32). These crossings would consist of built-up ballast between the tracks with the ability to set a crane mat. Drill rigs would stay in place until completion of the particular foundation. This would save down time for the drill rig and make better use of the shift working time.

We will work with the NJ Transit team to discuss and implement these ideas. Based on the above proposed recommendations, we believe we can reduce the overall project schedule and save between 3 and 6 months of project duration.

2. SIGNAL AND YARD POWER

Existing Signal and Yard Power Systems

This project requires an understanding of NJT's rail Infrastructure, rail operations, force account practices, TRO-3 Electrical Operating Instructions and TRO-5 Operating Rules. The M&E signal power system is comprised of independent Signal Generating stations, which are each in turn supplied from different utility lines. A certain amount of contingency is built into the system. Sectionalizing circuit breakers are used to interconnect or isolate power sources.

The 100 HZ frequency for the signaling system is obtained via motor generator sets. The sectionalizing circuit breaker may only be used to feed power to an adjacent section when the normal supply for that section is isolated from the system. Mechanical interlockings are used to prevent paralleling motor generating sets.

The signal line system located in Hoboken Yard has normal and contingency power sources. The Morris and Essex Line signal power system is designed to provide 2.4 kV, 100 HZ, single phase power for various components of the signaling system which are located along the length of the railroad. At each location step down transformers are used to reduce the 2.4 kV distribution voltage to the 120 volts required to feed signal bungalows to operate the signals for the movement of trains.

The West End Substation switchgear operates at 13.2 kV, 60HZ, 3-Phase power. The switchgear has two bus sections and a normally open bus tie breaker.

Normal and contingency 13.2 kV utility power is delivered to Henderson St. Switching Station from West End Substation. Henderson Street feeds 13,2KV power to Days Yard Substation and Hoboken Depot Substation and Grove Auto Substation (which feeds Grove Signal MG Set. Henderson St. Switching Station circuit 7-14 and 72H circuits feed a 300kVA, 13.2 kV/480V main transformer located inside Grove Auto No. 1. The main transformers 480V secondary output feeds power to Grove Signal No.1 switchgear, step up transformer and motor generator set. The motor generators provide 480 volts to a step up transformer which feeds 2.4 KV, 100 HZ, single-phase to power Signal Line 1 and Signal Line 2 in Hoboken Yard. The 2.4 kV signal lines from West End Signal 1A are tapped and sectionalized just west of Grove Signal No.1 and serve as a backup power source to Hoboken Yard.

Existing Wayside Power System

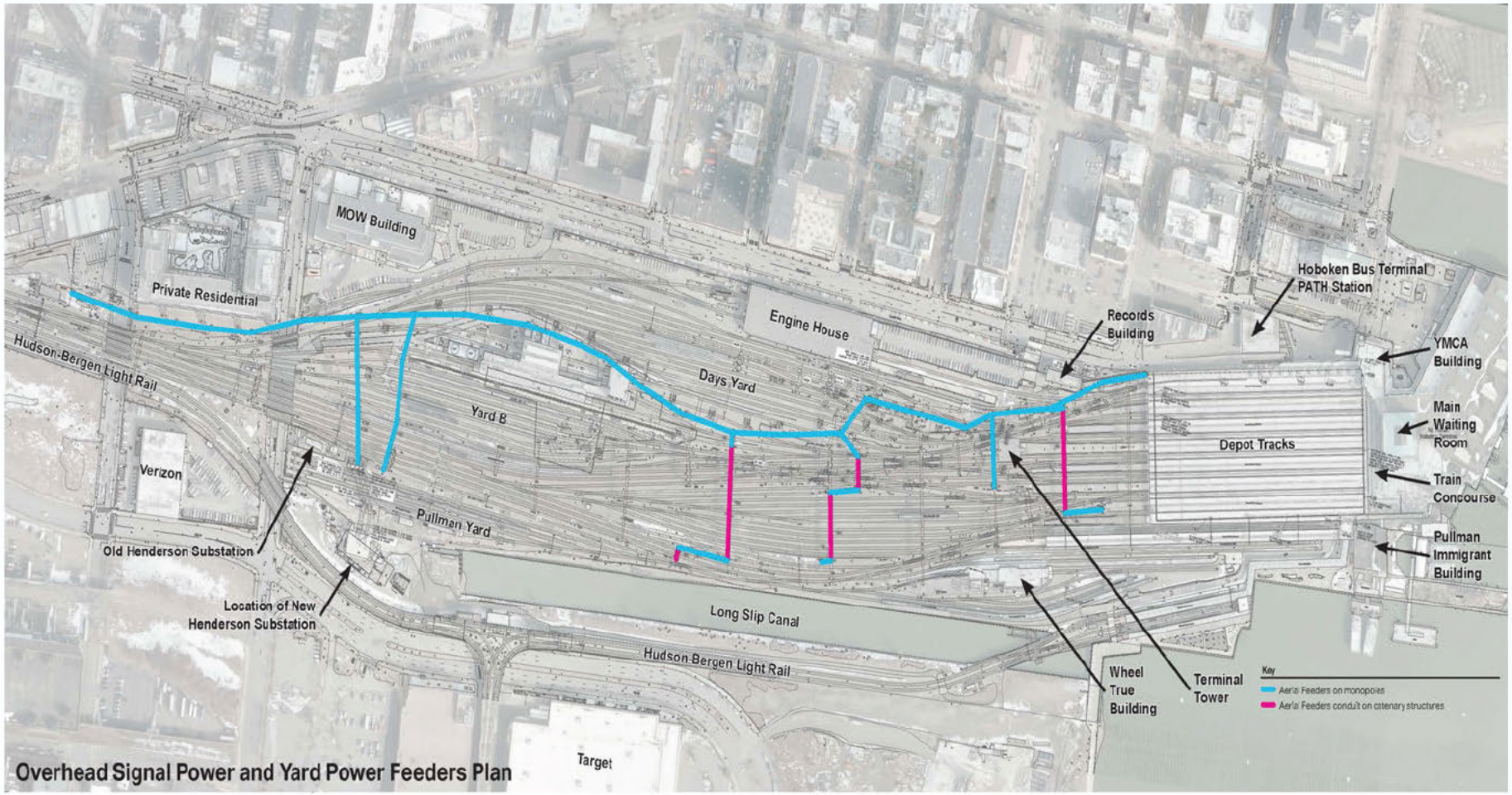
The Days Yard Substation switchgear operates at 13.2 kV/480V, 60HZ, 3-Phase being fed from the existing Henderson street switch house.. The switchgear has two bus sections and a normally open bus tie breaker. Normal and contingency 13.2kV power is delivered underground from Henderson St. Switching Station circuits 7-12 and 7-22 to a 2MVA, 13.2kV/480V main transformers in Days Yard. Days Yard substation provides 480V power to the wayside receptacles in days yard used to feed layover power to diesel trains stored in Days yard. 480V Power cables from the Days Yard substation are routed in manholes and underground via ductbanks to wayside power systems,

New Signal Power System

The ruling span of the 2.4 kV Signal Power Line cables runs between Grove Signal Station No.1 located on the west side of Grove St. on the north side of the railroad to Hoboken Terminal. The 2.4 kV Signal Power aerial cables run east and are "T" tapped at five separate locations inside the rail yard. New steel monopole structures will be installed and run north to south across the electrified rail yard. Existing catenary structures will be modified to carry 2400volt signal power cables to the south side of the yard. The 2400 volt aerial lines will be tapped and the cables will run across the electrified rail yard to power signal equipment locations on the south side of the yard to feed signal control points throughout the yard.

New signal power poles will be constructed on the south side of the yard. Signal power cables will be attached to the new poles to provide power to the signal control point (signal bungalows). Existing catenary pole will be extended to mount 2400/120V transformers to feed 120V secondary signal power . Signal power platforms will be constructed throughout the rail yard to mount 2.4kV/120V, 100 HZ transformers.

FIGURE 4


MOW Building
Private Residential
Hudson-Bergen Light Rail
Engine House
Days Yard
Yard B
Verizon
Pullman Yard
Old Henderson Substation
Location of New Henderson Substation
Long Slip Canal
Hudson-Bergen Light Rail
Target
Records Building
Hoboken Bus Terminal PATH Station
YMCA Building
Main Waiting Room
Depot Tracks
Train Concourse
Pullman Immigrant Building
Wheel True Building
Terminal Tower
Key
Aerial Feeders on monopoles
Aerial Feeders conduit on catenary structures
Overhead Signal Power and Yard Power Feeders Plan

New Yard Power System

The new 15 kV Power Distribution System cables connecting to the new Henderson St. Switching Station will feed new Days Yard wayside power switchgear, Future Hoboken Depot Substation and Grove Auto Substation (which feeds Grove Street Signal MG Set).

New steel monopole structures will carry the cables across the south side of the yard from Henderson St. Substation to the newly constructed ruling span pole line on the north side of the yard. The 15 kV power cables will provide normal and contingency power connections to Days Yard substation and power to Bus Section No. 2 of the future Hoboken Depot Substation. When the power cables transition from underground conduits to riser pole conduits a junction box is needed for pulling and spicing purposes.

AECOM Approach For Managing The Signal And Power Work

The AECOM team will ensure that the Contractor has submitted a SSWP for each system and obtained approval from all stakeholders. Our team will ensure that the approved SSWP includes the following:

Work Location Assessment: Each site has been evaluated to determine what equipment needs access and what type of system is to be built to allow access. Typically, matting is installed within right of ways and graded stone at railroad crossings and rail yards. Low bridge hazards, bridge loading, and the ability to enter and exit worksite safely and fouling rail tracks hazards will be addressed.

Access Plan for Construction: Access to locations where heavy equipment is necessary for construction activities, overhead electrical equipment needs, including pulling machines, tensioning machines, bucket trucks, winch trucks, cranes, and work trains issues are addressed.

Material Management: Adequate laydown areas for material storage and space to safely navigate heavy equipment including tractor-trailers are provided

Site Safety & Emergency Contacts: All Emergency Contacts are established. This includes but is not limited to: All necessary NJ Transit Emergency Contacts such as NJ Transit Police, Rail Operations, Electrical Operations, NJT Safety Department, and Environmental. All Utility Emergency Contacts such as Water Utility, Gas Utility, and Electric Utility.

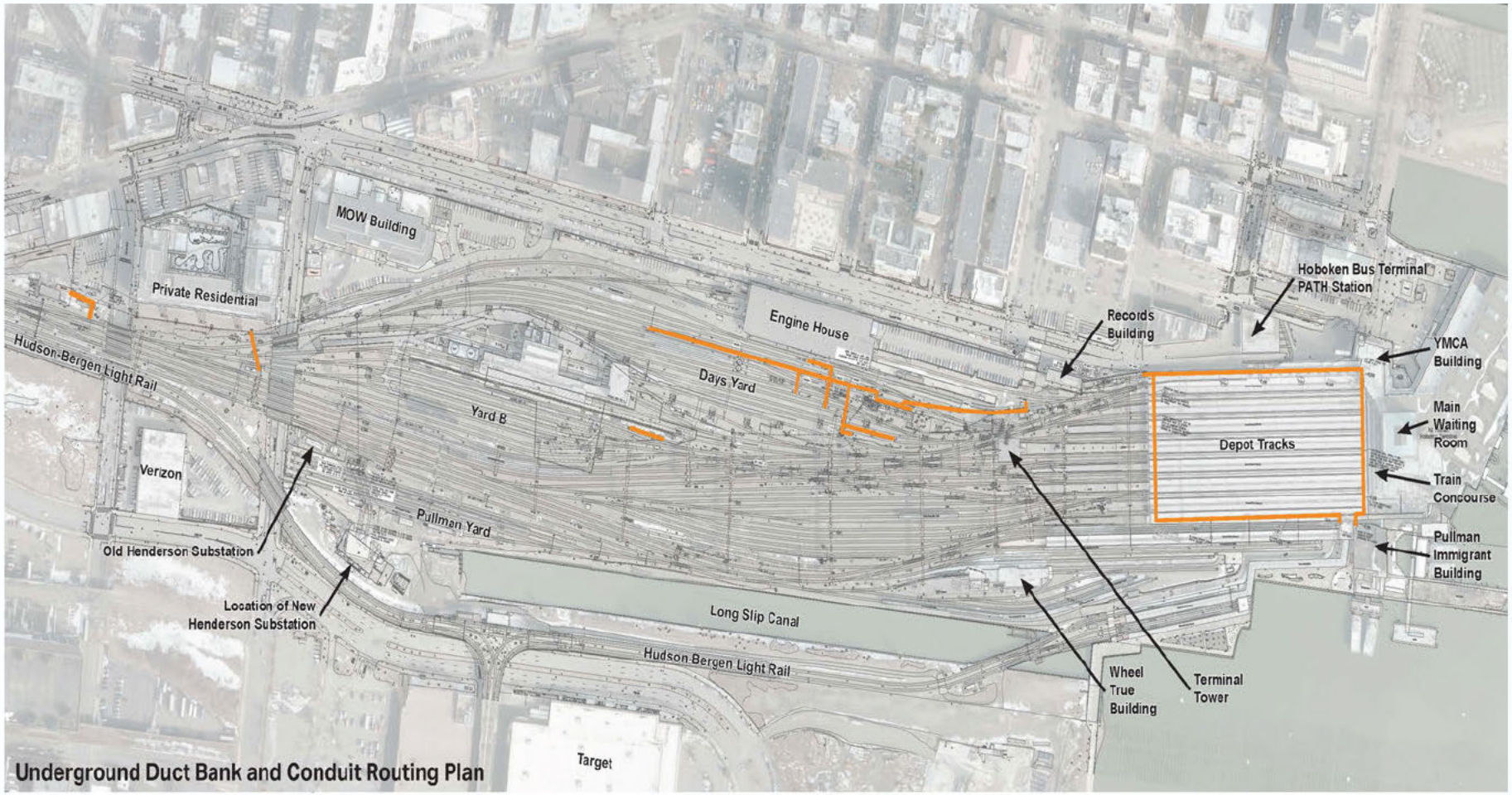
Established Plan Approval Process: If Crane Lift Plans or Wiring Pulling Plans need approval from NJ Transit, the process for submittal and approval turnaround time is established. A submittal process is established for the electrical contractor to include Job Hazard Analysis, Site Specific Work Plan (SSWP) and Health & Safety Plan (HASP), Track Outage Request, Electrical Outage Requests, Flagman Protection Requests and "A" Man Protection Requests.

3. CONSTRUCTION OF DUCT BANK AND MANHOLES FOR DAYS YARD POWER SUBSTATION EQUIPMENT

- Portions of the Signal Power distribution will be installed in conduits on Hoboken Terminal train shed roof.
- 2.4 KV signal power will be tapped on the pole to 10-50 KVA 2.4 KV/120V transformers on pole, and 120V will be distributed to a signal control point (also refered as signal house/signal bunglalow/signal cabinet) with Auto Transfer Switch (ATS) located in the signal bungalows
- 13.2KV in manholes to ductbanks to conduit installation on catenary trusses, to steel rack structures on terminal train shed roof

- Platforms above flood level for installation of transformer and switchgear equipment
- Days Yard Wayside Power switchgear Equipment, Wayside Power Outlets and Control Stations

FIGURE 5


MOW Building
Private Residential
Hudson-Bergen Light Rail
Engine House
Days Yard
Yard B
Verizon
Pullman Yard
Old Henderson Substation
Location of New Henderson Substation
Long Slip Canal
Hudson-Bergen Light Rail
Target
Records Building
Hoboken Bus Terminal PATH Station
YMCA Building
Main Waiting Room
Depot Tracks
Train Concourse
Pullman Immigrant Building
Wheel True Building
Terminal Tower
Underground Duct Bank and Conduit Routing Plan

AECOM APPROACH

With the exception of underground ductbanks, NJ TRANSIT Force Account Department will be responsible for furnishing and installing all electrical equipment, wiring and related electrical hardware.

AECOM will:

- Supervise works for strict compliance and enforcement of all Contract requirements, drawings, specifications, rules, standards and requirements of NJ TRANSIT. Contractor's work will be inspected daily & progress work will be recorded.
- Maintain project safety procedures during duct bank and conduit installation by the contractor.
- Communicate with the Construction Contractor to transmit the design consultant's information regarding Contracts, technical issues or resolutions.
- Coordinate shop drawings reviews, prompt responses to Requests-for-Information (RFIs).
- Take measures for Timely & safe completion of the work within approved contractor's CPM construction schedule.
- Witness testing and commissioning as per the project requirements.
- Ensure that concrete encased duct crossing tracks are installed below the ties per approved shop drawings
- Ensure that underground conduit or direct burial are installed below the ground level as per approved drawings
- Coordinate conduits, switches and panels on the pole surface & trusses with approved pole structure.
- Coordinate overhead conduit crossing the over the tracks & on the train shed roof with approved pole and existing structure.
- Ensure that underground, underground & concrete encased conduits materials are per approved drawings
- Ensure that the Project Schedule includes timeline for installation of ductbank work that does not need yard outages can be constructed during weekdays.
- Maintain overall project schedule and update CPM schedule on monthly basis
- One existing twelve-sided un-used catenary poles will be extended to accommodate the installation of 120V secondary signal power feeders.

4. FORCE ACCOUNT WORK BY NJ TRANSIT

NJ TRANSIT Rail Infrastructure Force Account non-agreement and agreement personnel will perform portions of the railroad construction work as required. NJ TRANSIT Rail Infrastructure Force Account personnel will be responsible to furnish and install electrical systems and or equipment, wiring, testing and commissioning as specified. AECOM will support the Force Account Work performed by the many trades as follows:

- *Catenary lineman* will install and terminate 13.2 kV, 2.4 kV, 480V, 120V aerial cables. Catenary Lineman will install 13.2 kV, 2.4 kV, 480V and 120V electrical systems and or equipment as specified. Catenary Lineman will be needed to provide right-of way switching & tagging electrical clearance protection outages assignments and disconnect and terminate all traction power cables.

- *Electricians* will install and terminate 13.2 kV, 2.4 kV, 480V and 120V cables residing in conduits and or troughs. Electricians will install 13.2 kV, 2.4 kV, 480V and 120V electrical systems and or equipment as specified. Electricians will provide switching & tagging electrical clearance protection to persons fouling underground power cables.
- *Substation Relay Technicians* will perform acceptance testing, commissioning, final testing and perform start up procedures, relay protection system which interface with existing NJ Transit's protection systems.

Substation Electronic and Communications Technicians will perform acceptance testing, commissioning, final testing and perform start up procedures on new Substations and SCADA systems which interface with existing NJ Transit's SCADA systems.

AECOM will ensure that the approved SSWP includes:

- Engineering data to the electrical contractor (NJT Electrical Force Account Workers) in an appropriate amount of time so the electrical contractor can determine the proper tools & equipment for safe installation.
- Required materials e.g. Conductor reel descriptions which included reel dimensions, reel weight and reel material (wood or steel). This allows the Overhead Electrical Contractor the ability to procure the proper equipment for wire installation.
- The Electrical Contractor provided Wire Pulling Plan which includes: A wire pull communication protocol; Wire pull locations identifying the location of the pulling equipment and tensioning equipment; conductor information to include wire type, wire diameter, and weight per foot; and existing conductor information if, existing conductor is being used to pull in new conductors.
- The Electrical Contractor will provide conductor tensions which will include: The tension range during the wire pull, the maximum tension for the wire pull, and the final tensions after installation is complete. The electrical contractor will also provide wire pull total footage information to include the total number of spans and the Ruling Span (longest span in the wire pull).
- The Electrical Contractor provided safe working load limits and descriptions information on all tools and equipment being used for the wire pull.
- Information regarding PPE to be worn during the wire pull.
- Information regarding worker rail safety training and equipment training certificates.
- Grounding information (equipment grounds machine traveling grounds).
- Information regarding unique aspects of the wire pull including: train movement; underground utilities; overhead catenary; terrain and environmental hazards; and immoveable object restrictions.
- Address all wire pull areas of concern. Hold downs for conductor elevation changes, pull through dead ends, angles, condition of existing conductor if, being used to install new conductor (damaged wire strands) and integrity of the structures should be addressed by the electrical contractor.
- List of employee assignments and contact information for the manager, supervisor, foreman, employee in charge, equipment operators, flagman and electrical "A"
- Address all railroad track, catenary, road crossings and their hazard mitigations including but not limited to:
  a. **Hot Crossings:** all overhead electrical crossings underneath the wire pull (both NJ Transit & the utility local utility) that has the potential to energize the conductors being installed. A hazard mitigation example would be a for a catenary crossing. The Catenary Circuit de-energized & grounded, working limits and A-man protection.
  b. **Parallel Circuits**: All energized parallel circuits are to be identified and minimum approach distance to be designated. An example would be all contract workers must maintain a 20 Ft distance from energized NJ Transit assets.
  c. **Railroad crossings**. All railroad crossings and tracks where equipment has the potential to foul. A hazard mitigation example would be a flagman to give permission to work over or around railroad tracks and provide protection. The protection may include foul time, tracks out of service and the working limits.
  d. **Road Crossings:** Maintenance and Protection of Traffic (MPT): Ensure MPT plans and all applicable documents will be submitted for approval by NJ Transit and NJ Dept of Transportation. Ensure all protocols are in place for road closure and diversions. All road crossings are to be identified and precautions are to be made to protect the public from low or

dropped conductors during installation. An example would be: The location identified: Marin Blvd. The protections used to protect the public (road closure, lane closure, police presence, guard structure etc.) if road or lane closures are required a permit may also be required by NJDOT or a local municipality.

AECOM will monitor NJ TRANSIT's Force Account work with the project's approved master construction schedule and coordinate and integrate of all NJ TRANSIT Force Account work activities into the Contractor's CPM schedule. AECOM will create a monthly update of all the NJ TRANSIT Force Account schedules and send progress to NJ TRANSIT

AECOM Understanding of Track and Electrical Outage Process:

- *Train Dispatchers* will issue foul time and track outages for work on or near the tracks
- *Power Dispatches* to issue switching & tagging electrical clearance protection outages to provide electrical protection for those work on or near high voltage electrical cable.
- *Conductor flagman* are needed anytime the contractor's equipment fouls or has the possibility of fouling the tracks. Conductor flagman are needed anytime contractors are working within fifteen (15) feet of the tracks. Conductor flagging protection requests must be submitted to NJ Transit Rail Operations with at least 24 hours advance notice for long term and short duration track protection assignments.
- *NJT Police* will provide confined space rescue services when work is performed in manholes.
- *Locomotive Engineers* will operate all on-track work train equipment per union agreement. Locomotive engineer requests must be submitted to NJ Transit Rail Operations with at least 48 hours advance notice for short duration assignment.
- *Trackman* will be needed to remove and replace the rail tracks to install prefabricated wayside power conduit duct banks five (5) feet below the yard tracks.
- A Site-Specific Work Plan (SSWP) electrical and or track out request must be submitted to NJ TRANSIT Rail Operations Department for approval two (2) weeks in advance of the actual work.

AECOM Understanding of Project Work Windows

- The steel monopole work will only be performed during twelve (12) hour work windows on Saturdays and Sundays, except when there is a football game at MetLife Stadium. On those weekends, only work on Saturdays will be allowed. Other events that NJ TRANSIT will provide train service to/from will result in only an 8-hour work window on the day of the event.
- The work that will be performed on the catenary trusses must also be carefully planned and supported by an SSWP so that it can be coordinated with NJ TRANSIT and the work can be performed while minimizing the affect to passenger train service.
- Aerial cable installation work may require weekend work because of the need for large catenary outages.
- The work on the terminal roof may be done during the week during regular work hours.

AECOM APPROACH TO OVERALL MANAGEMENT

Our management approach starts with a clear understanding our role as the CM for New Jersey Transit. Our role is to manage the project via planning, construction, and engineering management expertise. This is our mission. Understanding this mission, our corresponding management approach for maintaining control and providing direction to the Hoboken Terminal Contractor starts with applying the right, experienced resources that are task oriented, adaptable, responsive, and proactive in providing solutions in the field.

As part of our management approach, our relationship with the Contractor and project stakeholders will be collaborative

and proactive. One of the most important elements for success for any project, especially in an active rail yard environment, is appropriate communication. Because of the complexity and requirement for rapid response to keep the project moving, one of the key drivers for success for the CM is a well thought out procedure for communicating intent, and receiving the appropriate, timely feedback required for implementation and monitoring. We are focused on identifying issues before they happen relying on our demonstrated experience in understanding what issues historically arise, and associated solutions to mitigate these issues. Consistent with our approach to identify issues before they happen, our team will thoroughly inspect the site, including video recording before construction documenting existing conditions and identifying any potential latent conditions.

TASK C1: GENERAL ADMINISTRATION

A. Mobilization at Construction Site

AECOM's proposed staff is prepared to mobilize immediately upon Notice to Proceed by NJT. We understand that the contractor will provide office facilities and supplies. Our preference is to have an office facility located on or directly adjacent to the construction site. While space is limited in the project vicinity, we will coordinate with NJT and the contractor to identify a suitable location for the field offices. It is anticipated that a small section of the at-grade parking lot may be required. AECOM will maintain a full-time office at the site and the project manager will be available through that office for the full duration of the project. The facility will be such that it will comfortably accommodate the proposed CM staff and provide space for NJT's project Manager. All field personnel will be provided with radios and/or other communications of the type which utilizes the frequency as directed by NJT.

B. Work Coordination

AECOM will coordinate the work of the contractor with NJT force account work. Additionally, utility force account will also be coordinated. During constructability, careful attention will be paid to language identifying the contractor's responsibility for coordinating utility company and railroad force account. Specifications must identify the contractor's responsibility for coordination of these activities. AECOM's experience is that the door opens for claims when the construction manager is solely responsible for this coordination.

AECOM's CM team will have continuous conversations with the contractor regarding pending construction activities. Material and equipment deliveries will be discussed to have all items mobilized when the schedule dictates start of the work activity. Designated staging areas and storage facilities will be reviewed to monitor that they are secure and prepared to receive impending material or equipment deliveries.

AECOM's inspection personnel will be provided approved construction work plans, which will always be monitored for adherence by the contractor. Prior to the start of new work, Readiness Meetings will be held. Attendees will include the contractor's superintendent, Foreman in charge of the operation, Resident Engineer and inspection personnel assigned to the work items. Discussions will include, but are not limited to, the review of approved shop drawings and SSWP's, testing requirements, restrictions to the work such as hours or work locations, and protection requirements. The goal of the Readiness Meetings is to discuss requirements for the work so that all players involved in each activity, including the contractor's Foreman and CM inspection, are on the same page prior to the start of the activity. NJT management and protection personnel and utilities (if necessary) will also be invited to the meetings when appropriate.

Weekly meetings will be chaired with the contractors and NJT personnel to review, provide comments, and/or accept the contractor's plans for work proposed in the next two weeks when track occupancy and/or foul time is required. Site Specific Work Plans (SSWP) will be required by NJT for all work with the potential to foul the Hoboken Terminal Yard. On past projects, when contractors have been deficient in preparation of the required SSWP's, AECOM initiated the use of special meetings with the contractor at which time SSWP's were jointly written by the contractor and AECOM's CM personnel. Advancing the level of completion of the SSWP's.

C. Force Account Assistance

The NJ Transit force account personnel needed on this project include flagman to provide on track protection, Train Dispatchers to provide foul time and track outages and Power Dispatches to issue switching & tagging electrical clearance protection outages.

Track Outages are typically required when worker and or work equipment can potentially foul the track. Given the proximity to tracks, managing outages will be a critical issue. Track Outages are requested two weeks in advance of the actual work.

Electrical outages are typically required when worker and or work equipment can potentially foul the high voltage cables. Given the proximity to the catenary, managing electrical outages will be a critical issue. Electrical outages are requested two weeks in advance of the actual work.

Flagging protection requests must be submitted to NJ Transit Rail Operations with at least 24 hours advance notice for short duration track protection assignments. Electrical "A" man protection must be submitted to NJ Transit Rail Operations with at least 48 hours advance notice for short duration electrical protection assignments.

AECOM shall keep lines of communications with NJT and utilities to maintain control of the project scheduling. Activities will be introduced to the contractor's schedule for force account work activities, whether NJT or utilities. The schedule will be monitored and discussed with the appropriate force account personnel to identify the windows for support work so as not to impact the contractor's progress. Communication and relationships are key to the successful integration of the force account activities.

AECOM is currently working with and has worked with NJT on past projects and is aware of their requirements for SSWP's. Upon receipt AECOM will review the submission to identify deficiencies or areas of concern. SSWP's that do not comply with NJT requirements will be returned to the contractor with items to address prior to submission to NJT. We have found that our experience and knowledge of NJT requirements can save a substantial amount of time in the process. AECOM's comments to an SSWP can be turned around to the contractor in a minimal amount of time as compared to submission to, and review by NJT.

D. Document Control

AECOM will utilize a document control system acceptable to NJT, a construction filing system for tracking all project correspondence, reports, test result, shop drawings, SSWP's, RFI's, contract addenda, bids, meeting minutes, force account records, Change Orders and Change Order documentation, environmental issues, and all other project related documents. All data shall always be maintained on site and available to NJT and compatible and easily assimilated with NJT's Enterprise Content Management Systems (ECMS).

ACOM will maintain on site a daily updated set of marked-up set of record drawings that indicate As-Built conditions. The record drawings will be kept up to date by redlining all changes, additions or deletions to the construction contract, including subsurface conditions. The as-built conditions will be checked regularly with the Construction Contractor's marked-up drawings and all differences and variances will be discussed and reconciled with the Construction Contractor. NJT will be notified of any such occurrences and we will give its recommended course of action. Prior to final payment the contractor will be required to submit final As-Built drawings, whether marked-up or not along with the contractor's certification that the information is accurate.

E. Project Meetings

AECOM will conduct preconstruction meetings prior to the start of the contract with responsible personnel representing the contractor, NJT, the project's design consultant, public utilities, local municipalities, and any other project stakeholders where such attendance is deemed necessary.

Biweekly progress meetings will be held. Should project conditions warrant, AECOM will initiate discussions with NJT, and meetings will be held on a weekly basis if necessary. Minutes of all meetings attended by AECOM will be forwarded to NJT's designated Project Manager for review and approval within three workdays of the meeting. Upon approval of the minutes, AECOM will distribute to team members or as directed by NJT. AECOM will also chair and/or participate in any other meetings that may be scheduled throughout the duration of the project, including those with public utilities and any other body exercising jurisdiction over the project. A log of all meetings will be maintained and incorporated into monthly reports. Special meetings will be held for new work activities, coordination of force account activities or any other issues related to the project. AECOM will chair and/or participate in all meetings as required.

Progress meetings will be documented in AECOM's standard meeting minute's format. The format highlights the scheduled discussion, old and new business, labor and

equipment on site, and status of outstanding submittals. An action list is developed from each meeting which is forwarded to all responsible parties and attached to the meeting minutes.

F. Community Relations

AECOM will assist NJT in its community and governmental efforts answering inquiries or complaints. We will maintain a log to record each inquiry and/or complaint, which will be maintained at the project site. Any issue that could negatively impact the project or community will immediately be discussed with NJT.

G. Cost Control

As part of our construction management procedures, all contract pay items are reviewed for allowable payment. Our inspectors and Resident Engineer will review quantities with the contractor, and NJT daily. This practice averts discrepancies between AECOM's quantities and the contractor's payment requisitions. It also reduces the time required to review contractor's invoices. Recommendation for payment of invoices will be provided to NJT within five calendar days of receipt. This timeframe includes discussions with the contractor regarding any discrepancies found in the contractor's invoices. A computer system will be utilized to track quantities, including quantities paid-to-date, the date work was performed, and the location of the work. This procedure applies to contract quantities as well as change orders paid by unit cost or on a time and material basis.

AECOM's project control systems are all geared to minimize claims for additional time, cost, or other liability issues. Response time to correspondence, and RFI's or submissions is a major factor in claims avoidance. As issues arise, they are immediately discussed with the contractors, and NJT's Project Manager, and a recommendation is provided as to how to proceed. Should a contractor submit a claim or a request for a change order, we will evaluate the issue, assemble all pertinent documentation, and provide a recommendation to NJT for resolution.

H. Labor Relations Assistance

As the construction manager for this project, AECOM will set up a routine process with the contractor for submission of certified payrolls for the project. These payrolls will be used to review the contractor's compliance with the labor requirements as stated in the contract. We will review certified payrolls and compare them to wage rates required. Any discrepancies between the two will be brought to the attention of the contractor and NJT, and the contractor will be required to rectify problems.

A report will be originated at the beginning of the project outlining the contractor's DBE requirements and his subcontractors, who will be utilized to fulfill those requirements. The report will outline the work to be performed by the DBE, WBE or SBE subcontractors, along with the dollar value associated with that work, as the work is performed, and the subcontractor's invoice for the work performed. The report will be updated with the current values of the contractor's compliance with the firm's agency's affirmative action programs. Requirements for the prevailing wages and the DBE, WBE and SBE compliance will be included as a regular aspect of this monthly report. Should the contractor fail to meet the participation goal, we will immediately discuss the issue with NJT and schedule a meeting with the contractor to resolve any disputes.

I. Record Keeping

AECOM will maintain onsite all current record of contracts, drawings, specifications, samples, catalog cuts, test results, shop and working drawings, change orders, inquiries or complaints from citizens or local officials, and any other pertinent project documents. Daily diaries will be kept by all non-clerical staff. Records will be kept of all work accomplished referencing the applicable item number. Personnel and equipment will be documented for each activity as well as material deliveries, weather conditions, tests performed, general observations, force account activities, material shortage, labor disputes, visitors, and any unusual circumstances on the project.

AECOM will utilize force account inspection sheets to track NJT force account activities. Each account inspection sheet will be signed by the representative in authority to verify work performed, manpower equipment and materials utilized. This practice easily allows review of the invoices and resolution of any discrepancies.

J. Project Progress Reports

AECOM will provide two copies of progress reports on a monthly basis, or more frequently, if requested by NJT. Typically, we attach monthly report to invoices. The monthly

progress report will address, but not necessarily be limited to, actual vs. planned progress, schedule analysis, decision and/or resolution logs, change order status, including status of work completed and associated costs incurred, CM fees to date and projected work for the next period. The report will also include an issue section, which will provide a brief narrative of any issues that could adversely affect the project. Issue narratives will be maintained and updated in monthly reports until such time as they are resolved. A section on cost control will also be included. The report will identify payments to the contractor for contract completed work to date as well as change order work. Additionally, the report will identify any changes to the contract completion date.

We will maintain a digital camera with a date imprint on site to document the progress of work. Additionally, photographic records will be maintained for any issues that arise on the project. Photos/slides/electronic media will be submitted to NJ TRANSIT as requested and all negatives/photos/slides/discs will be turned over to NJ TRANSIT at the completion of the work. We will maintain photographic records detailing the status of all construction work in progress for each Contract and program element.

Deliverables for Task C1 include:

- Document Control Logs
- Meeting minutes as required
- Meeting logs with descriptions of each meeting
- Inquiry and complaint log
- Cost Account records
- Outline of filing system
- Submittal of as-built drawings
- Daily job diaries
- Daily inspection reports
- Project monthly progress reports
- Project photographs providing examples of construction progress

TASK C2: INSPECTION AND TESTING

In addition to non-clerical staff diaries, each onsite activity will be documented in an inspection report outlining the work performed, crew size and equipment utilized by the contractor, and any other pertinent information. AECOM will monitor all work for conformance with contract documents, applicable codes, permits, and any other pertinent regulations. AECOM has a standard inspection report which will be customized for this project to meet any requirements of NJT. All completed work shall be approved by AECOM prior to final approval/acceptance of such work by NJT.

We will coordinate with NJT's Licensed Site Remediation Professional (LSRP) for any environmental aspects or provisions of this Contract. It is under understanding that the LSRP will be solely responsible for any environmental testing or inspections and we are not responsible for their scope.

We will identify all items of work which do not conform to the contract documents and notify the contractor within 24-hours. We will evaluate the non-conforming work and determine if it justifies the issuance of a stop work order to the contractor. Prior to issuance of a Stop Work Notice, we will inform NJT's designated project manager of the non-conforming work and obtain concurrence on the recommended actions to be taken. Upon concurrence, a Stop Work order will be issued.

Should the non-conforming work not warrant a Stop Work Order, we will evaluate the nonconforming work for potential impacts to subsequent work. AECOM will bring the issue to the immediate attention of NJT and provide recommendations regarding appropriate corrective actions. Nonconforming work, which does not impact other work activities, will be brought to the attention of the contractor in writing and maintained on a punch list until such time as corrective action is taken. A log will be maintained for all noncompliant work on the project's site including the type and date of resolution.

Correspondence regarding noncompliant work forwarded to the contractor will present the opportunity for the contractor to submit remedial work to obtain compliance with the intent of contract documents. Submissions will be reviewed, and recommendations discussed with NJT.

AECOM will conduct on and off-site (if necessary) inspection and testing of all material and equipment to be incorporated and/or installed on the project. We will approve all such items prior to placement, installation, and/or final acceptance by the agencies.

AECOM will maintain one set of As-Built construction prints on-site. The as-builts will be kept up-to-date redlining all changes, additions or deletions to the construction contract including subsurface conditions. Upon completion of construction, AECOM will review As-Built drawings prepared

and submitted by the contractor. Should differences be identified, we will reconcile the items with the contractor to identify true As-Built conditions and the deliverables will include redline prints; inspector's daily report of work progress; inspector's daily diaries; other inspection reports as required; and an NPC log.

We will oversee field tests as may be required of the Construction Contractor to ensure material and equipment compliance with the specifications and to evaluate and approve the quality and workmanship of all project work, within seven (7) calendar days after its installation. Per the RFP, AECOM understands that the contractor will provide an independent laboratory testing agency certified in areas in testing for the areas of work performed. Written reports will be supplied by the testing agency detailing all test data, results and recommended action. These reports will be reviewed in conjunction with contract documents to evaluate the quality of workmanship.

We will certify that all manufacturers' testing required under the specifications has been performed prior to any material or equipment being installed or placed into service. Deliverables include Testing Plans/Programs and Testing/Monitoring/Survey information as required.

Finally, we will ensure that the Construction Contractor's handling of any contaminated material is conducted in strict compliance with all Federal, State and local regulations. Upon discovery of any contaminated material, we will immediately notify NJT. Deliverables include recommendation memos as appropriate and monitoring of hazardous and contaminated materials.

Deliverables include:

- Redline Prints (As-Builts)
- Inspector's Daily Record of Work progress
- Inspector's Daily Diaries
- Inspection reports as required
- NPC Log
- Testing Plans/Programs
- Testing/Monitoring/Survey information as required
- Recommendation memos as appropriate
- Monitoring of hazardous and contaminated materials

TASK C3: SCHEDULE CONTROL

Upon receipt of the contractor's baseline schedule., we will review the schedule for constructability and compliance with contract documents. Comments will be provided within fourteen calendar days of receipt. Careful attention will be afforded work sequences identified by the contractor and contract milestones, whether interim or completion dates. Additionally, railroad and utility force account work must be identified in the schedule. We will reject contractor's submissions that do not meet requirements of the contract. Comments will be provided to NJT's designated project manager with recommended action. Written comments regarding our review will be provided to the Contractor upon concurrence from NJT's designated project manager. We have found it very useful on past projects to conduct a workshop with the contractor's scheduler and management to discuss comments. Minutes will document conversations from all workshops. Comments will be provided to the contractor within 14 calendar days after receipt of submissions.

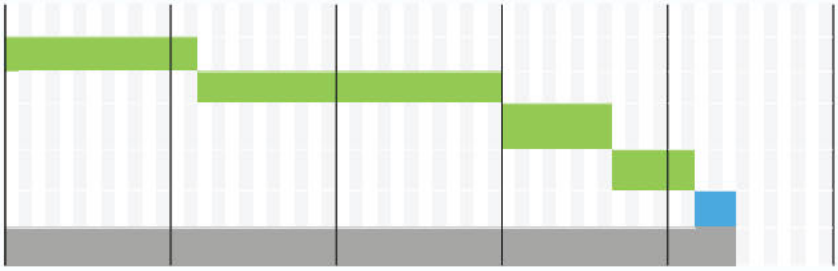
AECOM will review monthly updates to determine that they are consistent with progress of the contract. Should job conditions warrant, we will recommend more frequent submissions until such time as monthly submissions are sufficient. Updates will be reviewed and a recommendation for approval or rejection will be discussed with NJT's designated Project Manager. Should the contractor fall behind schedule recommendations mitigating impacts and/or gain the lost time will be provided.

Monthly schedule meetings will be held on or about the 25th of each month. Discussions will include a detailed review of the schedule, and a joint update of schedule activities. The percent of work complete will be evaluated and the contractor advised our determination. Subsequent to meetings the contractor will submit the updated schedule for review and submission to NJT as part of the contractor's monthly payment requisition.

Should the contractor claim a delay and request a time extension to the contract, sufficient back-up material will be required to justify his claim for time. We will review all materials submitted and provide a recommendation to NJT's Project Manager for acceptance or denial. We will also provide an independent analysis of the alleged impact and its effect on the construction schedule.

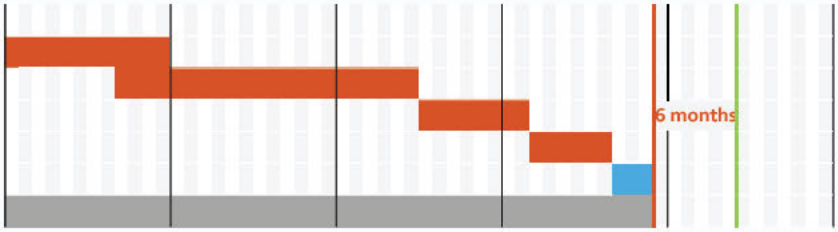
New Jersey Transit Schedule

ACTIVITY	COMPLETION MILESTONES	PLAN DURATION (Months)
Contract Activity		
Notice to Award (NOA)	1/1/2021	N/A
Micropile Construction	2/28/2022	14
Pile Cap Construction	12/31/2023	22
Steel Monopole Installation Construction	8/31/2024	8
Duct Bank Construction	2/28/2025	6
Contract Closeout	5/31/2025	3
Total Contract Time	5/31/2025	53



Proposed AECOM Schedule

ACTIVITY	COMPLETION MILESTONES	PLAN DURATION (Months)
Contract Activity		
Notice to Award (NOA)	1/1/2021	N/A
Micropile Construction	12/31/2021	12
Pile Cap Construction	6/30/2023	22
Steel Monopole Installation Construction	2/28/2024	8
Duct Bank Construction	8/31/2024	6
Contract Closeout	11/30/2024	3
Total Contract Time	11/30/2024	47



Approximate saving: 6 months

Assumptions:

1. Use additional rig for Micropile construction
2. Start Pile Cap construction prior to Micropile construction completion

Deliverables include:

- Construction Contractor's CPM reviews
- Project construction schedule and updates
- Impact analyses and extension of time reviews, as necessary.

TASK C-4: STAGING AND SITE-SPECIFIC WORK PLANS (SSWP)

AECOM understands that this project entails an extreme complexity in the staging and phasing of the work and that "Access is Everything". A major advantage of the AECOM team is that their proposed **Construction Manager, Phil Girandola, PE,** has vast and expansive experience as a contractor in installations of pile foundations in tight, remote and busy workspaces and places.

This project work will need experienced work crews and complex equipment for the installation of the pile foundations. AECOM recommends making use of multiple drill rigs at several locations in order to make the best use of the outage time. Additionally, the ability to remain mobilized over the micro-pile installation locations would be a major advantage to the project so that as the weekend shift ends, the crew can shut everything down and make the area safe, then perform a quick re-start upon the next shift on the following weekend.

Through experience from our CM, AECOM team will take a proactive approach and work with the contractor in the development of staging and the SSWP.

Submission of construction staging plans by the contractors is required within 30 calendar days from award of the contract. AECOM will review the sequencing of various work elements. Plans will be reviewed, and comments discussed with NJT Rail Operations. Through these discussions, comments will be identified for contractor action or approval will be recommended.

Comments will be provided to the Contractor within 10 calendar days of receipt by AECOM. The Contractor

is required to identify means and methods, crew size, equipment, staging areas, and a schedule in each work plan submitted. Site specific work plans (SSWP) submitted for work or activities with the potential to foul yard operations, will be reviewed and returned to the Contractor rejected for modifications if necessary. Should we concur that the submission correspondence with SSWP requirements and are consistent with contract staging, it will be forwarded to the appropriate representatives of NJT for review and approval. Prior to major work activities effecting railroad operations, we will coordinate a meeting with the Contractor and NJT to discuss the impending work and the site-specific work plan submitted. A great deal of time can be saved with these meetings with the NJT. A log of all submissions will be maintained and discussed at regularly scheduled job meetings. We will coordinate meetings with NJT to discuss major work activity and the return of SSWP's within thirty calendar days from submission. Should the review duration jeopardize the thirty-calendar day requirement for return of comments, we will immediately notify NJT's Project Manager.

Deliverables include:

- Review construction staging plans
- SSWP reviews and comments

TASK C-5: SHOP DRAWINGS AND MATERIAL REVIEW/HANDLING

AECOM will follow the detailed procedures established during the pre-construction phase for expediting the processing and review of shop drawings and materials. We will maintain a shop drawing and material submittal log and coordinate the processing and review of all such data with the design consultant. We understand that the design consultant will complete its review of all submissions within twenty-one (21) calendar days of receipt of the same from the Consultant.

Upon receipt of the Contractor's shop drawing and material submissions, AECOM will review the submission within three (3) calendar for Contract conformance prior to forwarding to the design consultant and/or the respective utility. Our approach will be to sit down with the Contractor that day to quickly resolve. If a submission is not in conformance with the Contract, we will reject the submission and log its rejection and note it for resubmission. AECOM will log each submission sent to the design consultant and inform NJT's Project Manager when the design consultant's review has taken in excess of twenty-one (21) calendar days. AECOM will forward to the Contractor the submission with the design consultant's approval or comments of rejection, within three (3) calendar days after receipt from the design consultant.

A section of our biweekly progress meetings is dedicated to discussion regarding submissions and their current status. The shop drawings, working plans, SSWP's and RFI's are discussed. Prior to each meeting, our CM and resident engineer will discuss outstanding submissions with the designer, or other reviewing parties, to ascertain their current status to improve review times as identified in contract documents. Additionally, our CM Team will develop a relationship with a design project manager which will include regularly scheduled discussions regarding outstanding submissions. We have found on numerous projects that this relationship and these continuous discussions not only enhance the return of submittals within the allowable review times identified in contract documents, but often reduces the durations.

AECOM will take any actions required, including Stop Work Orders, to prevent installation of any materials or equipment not approved or certified. The contractor will be notified immediately of any and all work items that fail to conform to contract plans, specifications, and shop drawings. Should the contractor vehemently insist on progressing the work without approved submissions, notification will be given in writing that the contractor is proceeding at his own risk.

AECOM understands that RFI's may be generated by any party. Upon receipt of RFI's we will provide an initial review. The Contractor will submit the RFI to the AECOM and will forward it to the design consultant and NJT. Each RFI received will generate an RFI form, have a number assigned for tracking purposes, a response date noted, and forwarded to the responsible party. RFI's will be logged and tracked and returned within fourteen (14) calendar days.

Deliverable include:

- Construction Contractor shop drawing submittal log
- RFI review/response log

TASK C-6: PROJECT CHANGE MANAGEMENT (CHANGE ORDERS)

Upon receipt of a proposed change and direction from NJT, AECOM will issue a Notice of Proposed Change (NPC) number, prepare correspondence detailing the change, and transmit all applicable information to the contractor with a request for proposed monetary or schedule impacts. We will perform an independent estimate and schedule analysis, if applicable. Upon receipt of the contractor's NPC Cost Estimate, we will review the submission for entitlement, price analysis, and submit a recommended course of action to NJT's project manager and Contracting Officer. These items will be completed within 5 calendar days and a log will be maintained for all NPC's. Should our analysis indicate that the contractor's request is without merit and NJT's Project Manager and contracting officer agree, an issue file will be compiled, and the cost of any disputed work will be tracked daily.

AECOM will coordinate and participate in the negotiation meetings for all change orders. We will not negotiate any change orders without the agency's contracting officer and Project Manager present, unless otherwise directed. AECOM understands and concurs that NJT contracting officer is the only person authorized to direct the respective contractor to proceed with the change order work.

Deliverables will include:

- The NPC Log.
- Cost Estimates
- Pertinent backup documentation for Each NPC.

TASK C-7: QUALITY ASSURANCE AND QUALITY CONTROL

To remain a leader in the construction services industry, AECOM maintains a corporate Global Quality Policy providing our clients with the best in-class solutions and services. Our Quality Program will be modified as necessary to meet the requirements of the NJT and the Federal Transit Administration (FTA). Our Quality Management System (QMS) manages all aspects of our work. AECOM approaches quality management in alignment with the ISO 9001:2015 international standard. The company is fully committed to the management principles underlying the standard and to AECOM's Quality Management System (QMS). These principles emphasize the need to understand our customers' needs and preferences and meet their requirements. To accomplish this goal, AECOM's Global Quality Policy Q1-001-PL1 defines six quality principles, aligned to the AECOM core values that define how leadership and employees can engage in the quality objectives and processes.

Copies of each Quality Assurance Program checklist will be provided to NJT with a request for comments so that any items requiring improvement can be addressed. Also, prior to the start of work on this project, we will solicit comments from NJT to identify specific items they wish to be included in the Quality Assurance checklist. The results of the Quarterly Quality Assurance Program are tracked so that AECOM can correct perceived weaknesses and increase our strengths. AECOM will designate a member of the CM team who will monitor the implementation of the QA/QC Program and shall review for approval similar plans prepared and submitted by for review by the contractors.

Deliverables include:

- Our Written QA/QC Program
- Nonconformance reports
- Material certificates
- Test results

TASK C-8: PROJECT SAFETY

Safety is the highest priority for this project. The safety objective is zero incidents through well-planned and properly executed work. AECOM will designate a safety officer who will have full authority to act on behalf of our team to monitor construction work performance in accordance with the standard industry practices in state and federal laws. All contractor work plans shall be reviewed by the safety officer as well as the resident engineer and project manager. The contractor shall be notified of any questionable work practices and adjust his plan accordingly. Prior to the start of work on NJT's property, our field team will attend NJT's safety orientation class and our CM employees will display the badge when working on NJT property.

Working within an active rail yard and terminal station brings an added dimension to safety on the construction site. Site safety is critical protecting construction personnel, NJT personnel and property. To maximize project safety, AECOM will review the contractor safety programs and recommendations will be provided to NJT for improvement

of the contractor's plans. Periodic meetings with the Contractor and NJT will be held to review the status of the Contractor's project safety and loss prevention program, as well as emergency and first aid plans. However, it is the Contractor's responsibility to control his day to day job site safety programs and procedures.

One of the primary tools to avoid issues before they start is to perform a Site Hazard Analysis before the start of field work. Our hazard assessment identifies potential hazards to people, property, and the environment in advance. Our safety officer/manager and project manager make sure that all the organizational requirements are identified, understood, implemented, and recorded. Our site leaders are charged with full power and responsibility to implement all the safety requirements.

The AECOM Team is prepared to take a proactive approach to monitor issues and request Contractor compliance with their accepted safety program. If the designated Safety Officer observes the contractor performing an imminent hazard, the Safety Officer shall issue a Stop Work Order and prepare a detailed report of the incurrence that justifies this action. The Contractor will not resume this work until corrective measures have been taken, which are acceptable to NJT.

Our OSHA certified health and safety officer will also be available as part of the construction management. Prior to initiation of the project, we will review the contractors' safety programs and work plans with respect to health and safety compliance and safe work practices. Any items found to be out of compliance, or any work practices found to be nonconforming to industry's acceptable job safety standards, will be brought to the contractor's attention immediately. A resolution as to how the job will be conducted will be determined by the contractor prior to work commencement.

During the project, the site's health and safety officer will perform the following functions: Job Site Inspections, CM Weekly Toolbox Meetings, Daily Safety Logs, and Drills for Emergency Evacuations

AECOM will institute procedures wherein visitors are directed to the CM office when arriving at the site. This effort will be instituted in conjunction with the contractor and tailored to the project. Inspection reports utilized by AECOM on CM projects, which will be modified to be site specific, include an area to identify visitors at the specific work activity. Our inspectors are trained to document any such visitors. Should it be noted that visitors have been to the site without notification to the CM, discussions will be initiated with the appropriate party to rectify the situation. NJT will be notified of visitors when appropriate to make a final determination on their appropriate attendance at the site.

Deliverables will include:

- Stop Work Order (if applicable)
- Accident reports
- Safety checklist
- Minutes of Safety Meetings
- Visitors Log
- Nonconformance Report

TASK C9: PROJECT CLOSEOUT

AECOM will prepare a preliminary punch list for each activity performed by the contractor through the duration of the project. This practice helps to minimize the final punch list at substantial completion of the project. Prior to a recommendation for a substantial completion, we will monitor the Contractor's testing of services and readiness for services. After approval of all systems and contractual completion deemed acceptable by NJT, we will recommend that the Contractor be notified of substantial completion. Upon concurrence, we will prepare a punch list of remaining work with the contractor and NJT and prepare a Certificate of Substantial Completion and punch list attached, which will be approved by AECOM and the contractor. The certificate will then be given to NJT for approval. If applicable, we will provide all documentation for the determination and assessment of liquidated damages to NJT.

We will coordinate the completion of all remaining work identified on the punch list and generate a monthly report on the status of each item. Upon completion of punch list items, we will provide written notice to NJT that the work is ready for final inspection. Upon satisfactory final inspection and NJT concurrence, all guarantees, affidavits, releases, bonds and retainers, etc., shall be provided to the NJT Project Manager. Upon completion of all work, AECOM shall certify in writing that the work has been

completed in accordance with the plans and specifications and the final estimate of payments to the contractor are correct.

Deliverables

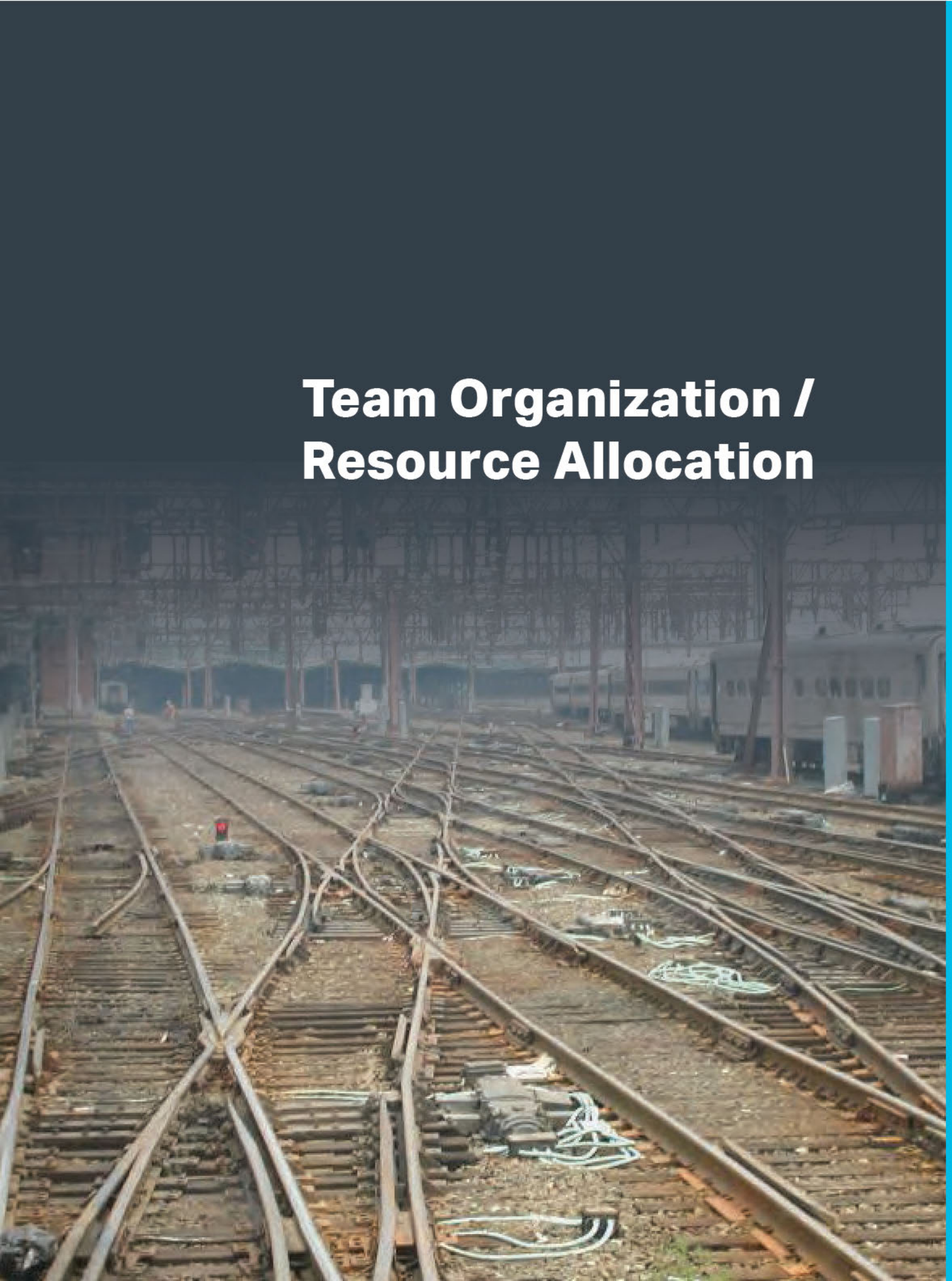
- Certificate of substantial completion
- Punch list and subsequent updates
- Monthly punch list status report
- Construction Contractor's certificate of completion
- Affidavit of payment
- Record drawings
- Provide final as-built drawings

WHY AECOM...

We have assembled a Team of professionals who have working relationships from past projects and we will support NJT's Project Manager and Contract Administrator driving the project to closure and obtaining the required documentation. Our team stands ready to offer our considerable expertise and our best talent — a team with numerous years of NJT and rail industry CM experience; and familiarity with NJ TRANSIT operations, track, traction power, signals and communications.

The success of your project rests not only in the experience of our firm but in the unique blend of experts who have delivered similar successful projects. Many of these individuals are familiar with NJT design, construction and maintenance standards and processes, as well as NEC and NJT operations, and have worked together in the industry and for NJT. We trust that you will find our technical proposal both satisfactory and responsive. We will apply our hands-on experience to provide you with the construction monitoring and inspection services required for this assignment.

Team Organization / Resource Allocation



6. Team Organization/Resource Allocation

The AECOM Team understands NJ TRANSIT 's requirements and has at its disposal outstanding technical resources with the capability to deal with all expected and unexpected issues related to this project.

TEAM ORGANIZATION AND STAFFING

The AECOM Team consists of a unique blend of talent to deliver construction management excellence. Staff has been carefully selected to build a team with outstanding technical resources and to meet NJ TRANSIT's needs for a project delivered by experts, and a project delivered safely.

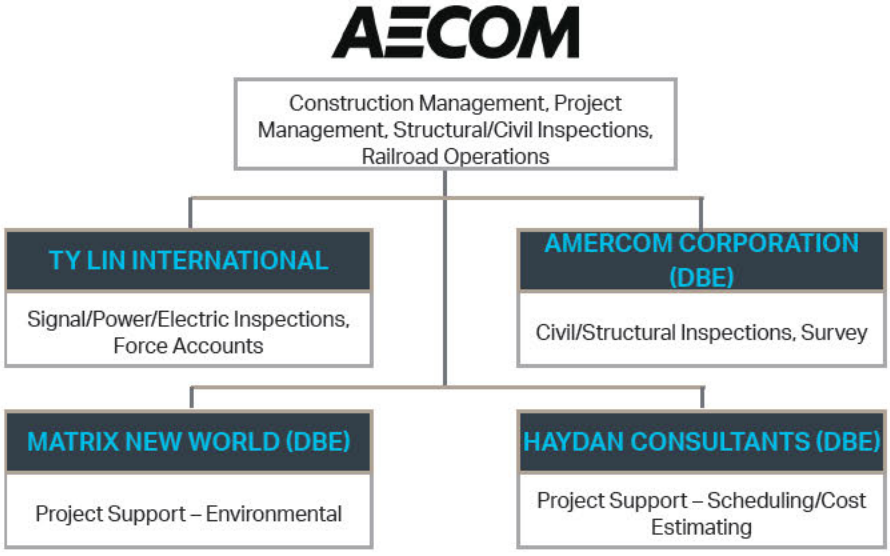
With thoughtful consideration of the challenges of this project, we have formed a team of industry leaders and experienced DBEs. Being able to work together as a cohesive team is also important; to this end, we selected firms that AECOM has successfully worked with on past successful projects and that can make a meaningful contribution the NJ TRANSIT Hoboken Signal and Yard Power Repairs Project's ultimate success.

Our Construction Manager will be the Team's principal contact with NJ TRANSIT. Our Construction Manager will keep NJ TRANSIT's Project Manager informed regarding the status of the project. The support and construction inspection staff that we have shown bring their construction experience to successfully deliver expert construction management servies.

A Team Organization Chart showing the reporting and contractual relationships of all firms included as **Figure 6-1.**

AECOM will lead the team and provide overall project oversight, thought leadership, and best in class innovations. Our team is strengthened by the drawing upon a group of experienced DBE firms.

Figure 6-1: Team Organization Chart



Our proposed Project Organization Chart presented Below shows activities and responsibilities for the work being performed. We can assure NJ TRANSIT that resource availability will not be an issue for the AECOM Team should it be awarded the Hoboken Signal and Yard Power Repairs CM Contract.

PROJECT ORGANIZATION

The success of the NJ TRANSIT Hoboken Signal and Yard Power Repairs Project, will require an experienced team of seasoned rail, structural, civil, and transportation professionals who have successfully provided these exact services on similar projects, using proven project management methods.

AECOM brings a unique blend of the team's extensive recent and current experience providing similar services to the NJ TRANSIT and its understanding of the scope of work under this program.

Leading our team is our **Construction Manager, Philip Girandola, PE,** who is ideally suited for this leading role. He has participated equally as a Construction Manager for AECOM on a multitude of projects and as a superintendent for large construction firms specializing in drilled shaft foundations. He possesses extensive knowledge in all types of pile supported foundation design and construction as well as transportation terminal rail track and electrical sub-station duct bank installations and systems. He recently completed hundreds of pile supported mono-pole foundation installations at APM Terminal in Elizabeth, NJ and has been involved with rail track installation systems throughout many inter-modal Marine terminals during his career. Mr. Girandola brings a unique background of skills to the Construction Management position, having worked as a Marine Contractor building inter-modal (ship to truck to rail) terminals for the first 15 years of his career. His background includes the position as Lead Construction Manager for the construction of the Paulsboro Marine Terminal Phases 1 and 2 ($180 million). and continued working with client executives in managing the Port's phased construction, as well as managing the Resident Engineering and inspection staff for all aspects of Port development including deep foundation installations for track security and high-mast light systems.

Mr. Girandola will lead the team with his extensive experience, applying his experience and managing the RE resources as well as looking to develop innovative and cost-efficient solutions during the course of the project. He will provide a single point of contact to NJ TRANSIT and be responsible for the coordination between disciplines and serve as liaison to all parties implementing this project, and direct the execution of work during the entire contract. Mr. Girandola will act on behalf of the AECOM team; assign resources; adjust staffing; and manage all aspects of construction management support. He will support the core project office and manage day-to-day inspection teams. He will have the full backing and support from AECOM's local, regional, and national offices depending on the need. He will have a direct line of communication with **Officer-in-Charge, Anil Parikh, PE.**

Randall Doliber PE, Constructability Review Advisor, brings more than 45 years' experience in Construction Management, more than 34 of which he has spent with Tishman. He has over 20 years of experience managing NJ Transit projects, including the role of Manager of Construction for the 11 New Jersey surface projects for the ARC Tunnel, and 16 years managing 11 projects at Hoboken. As First Vice President he offers extensive hands-on project administration on a wide variety of major projects, including transportation, historic restoration, high-rise offices and facilities expansion work. Mr. Doliber served as Project Executive and Sr. Resident Engineer for NJT on a series of projects to upgrade and restore this key transportation hub. Projects he has administered include the construction of the 75,000-square-foot Hoboken shop maintenance facility and restoration of the Main Waiting Room.

Anil Parikh, PE, is our proposed Officer-in-Charge for this project. As the leader for the AECOM New York City Metro Rail Practice, Mr. Parikh is responsible for providing leadership, strategic guidance and management. He has more than 34 years of management experience on transit projects. In addition to providing technical oversight and managing project personnel, he takes full responsibility for quality, safety, financial integrity and schedule performance of all projects. Mr. Parikh brings experience working for New York City Transit and the State of New York's MTA Capital Construction Company, managing many successful projects from "cradle to grave." He has an excellent and proven track record of completing these projects on

time and within budget. Mr. Parikh has successfully led all phases of the project from environmental review, conceptual and preliminary engineering, final design, value engineering, constructability review, procurement strategy, construction, testing and commissioning for mega projects such as the $645-million 63rd Street connection and the $4.4-billion Second Avenue Subway. These projects are among the most technically and institutionally complex and challenging projects ever undertaken by the MTA.

Supporting Phil Girandola will be:

Resident Engineer for Structural/Civil, Mukesh Patel, PE. Mukesh brings 33 years of experience in engineering design, project management and construction management with MTA New York City Transit. His experience includes rehabilitation, renewal, components and ADA elevator projects as well as small business mentoring. He has been involved in the Capital Program Management – Sandy Recovery and Resiliency Program, New York for the New York Ciity Transit. He has experience with affiliate agencies, user departments and sponsors to ensure that construction procedures are followed by the requirements. He has managed the construction of the $883 million rehabilitation of Canarsie Tunnel and ADA projects at 1st Ave Station and Bedford Ave Station. This project included construction of the only power substation below ground near East River in Manhattan.

Ralph Glover from TY Lin will serve as Resident Engineer for Signal/Power/Electric. Mr. Glover has over 30 years' experience working for NJ Transit for various substation projects. He has served as NJ Transit, Supervisor of Substations – Morris and Essex Division, Location: Morris and Essex, NJ: Supervisor. He was supervising three (3) 230kV Supply Substations, one (1) 34.5kV Supply Substation, eleven (11) 55kV Autotransformer Substations, two (2) 55kV Switching Substations; Manage fifteen (15) Substation Mechanics, Manage switching and tagging assignments, Manage clearance and protection assignments, Manage standard operating procedures adherence, update and maintain all safety bulletins, protective equipment, procedures, update and maintain employee qualifications and training, order and track all maintenance material purchases and submit employee payroll.

Our Project Organization Chart on the following page illustrates all other project positions and reporting relationships that comprise the project's organizational structure.

PROJECT MANAGEMENT

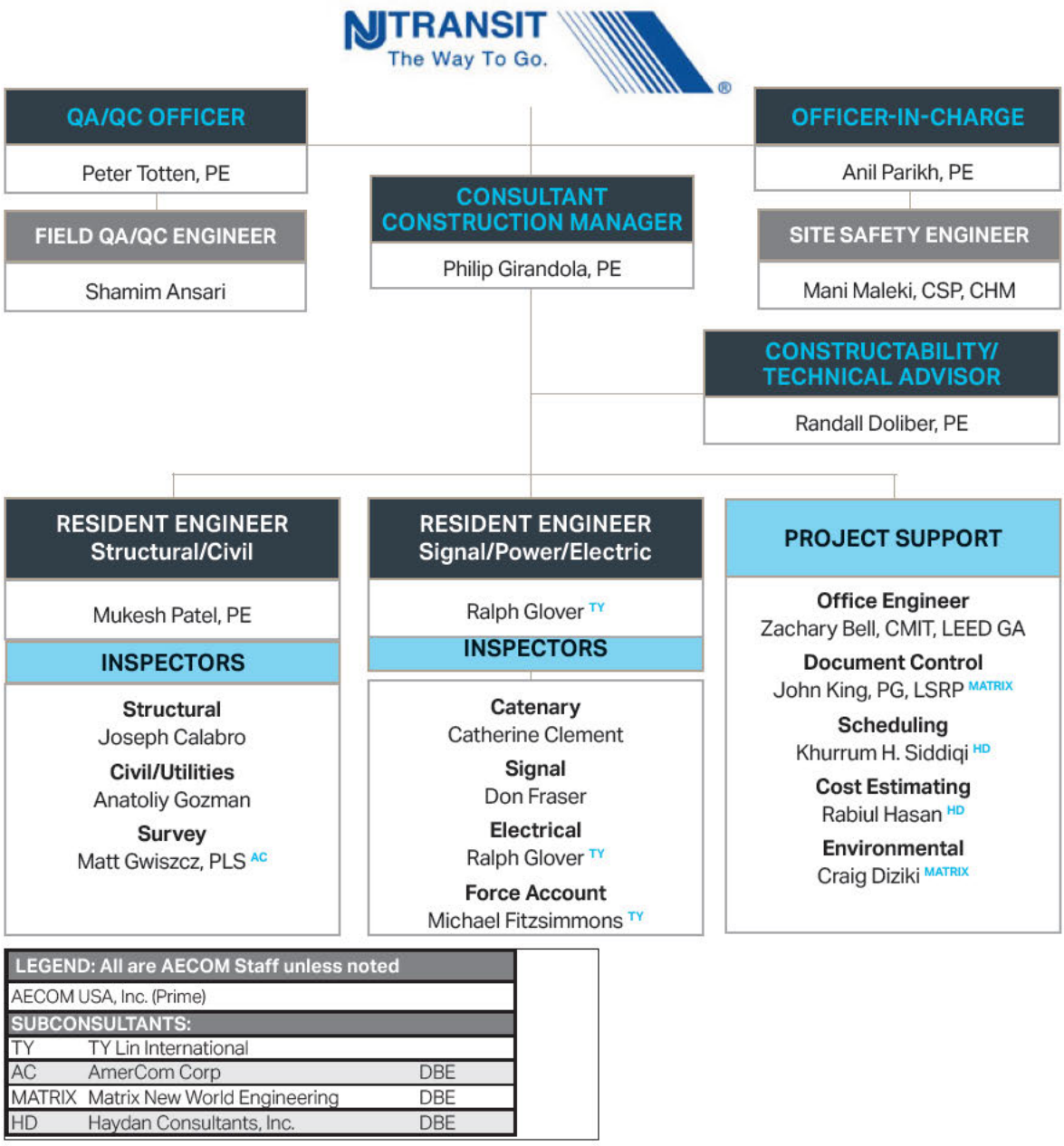
AECOM'S management approach for the NJTRANSIT Hoboken Signal and Yard Power Repairs Project, has been developed after successfully completing multiple similar assignments with NJ TRANSIT, as well as with other governmental and public agencies in the tri-state area and beyond. It is an approach based on teamwork, clear communications, and responsiveness.

Projects such as this, require a broad range of in-house skills, specialty subcontractors and swift timely completion of tasks. They require effective communication and coordination among the team members and the client, as well as interface with other local, state, and federal agencies that may have a particular interest. At AECOM, we have developed a proven management approach that allows us to coordinated and complete tasks on time and within budget.

Our team will use a variety of management techniques to monitor progress on this assignment and achieve project objectives. Project management techniques that will be utilized include:

- Development of a Project Management Plan (PMP) that identifies the scope, stakeholders, responsible AECOM leads, schedule, quality system, procedures, and communication and reporting. The PMP will be subject to review and audit by the railroads. All responsible leads will be required to sign-off on having received and understood the requirements of the PMP.
- Develop and maintain a risk register of key project risks along with mitigation measures.
- Utilize project checklists to adherence to approved project procedures and provide for auditing.
- Conduct regular in-house coordination meetings of key project personnel to review the progress of each task and ensure proper coordination.
- Conduct interdisciplinary team meetings and peer-reviews as necessary to monitor progress and coordinate engineering disciplines.
- Implement appropriate project management software to schedule and record, retain and retrieve project documentation.

PROJECT ORGANIZATION CHART



LEGEND: All are AECOM Staff unless noted		
AECOM USA, Inc. (Prime)		
SUBCONSULTANTS:		
TY	TY Lin International	
AC	AmerCom Corp	DBE
MATRIX	Matrix New World Engineering	DBE
HD	Haydan Consultants, Inc.	DBE

At the outset of the project, we will establish the necessary management activities required during the course of the project. These activities include:

- Develop the PMP, attain railroad approval and implement the plan throughout the project
- Work with the Quality Manager to develop and implement the Quality System. Define the quality system in a Quality Plan distributed to all key staff of the project.
- Monitor progress in terms of earned value throughout the course of the project
- Ensure adherence to document control procedures and the approved quality measures
- Provide periodic reporting to NJ TRANSIT
- Document meeting discussions in minutes, particularly those items relevant to the execution of the work and direction from the railroad. Provide timely notification to the railroad of direction received that is believed to

be inconsistent with the scope of work and project objectives.

- Provide a single informed point of contact with NJ TRANSIT
- Assist NJ TRANSIT project personnel in conveying project progress and issues to the railroad stakeholders

We will provide general administrative tasks to facilitate project management and communication among project participants.

MATRIX PERSON-HOURS

AECOM has undertaken a comprehensive assessment of the Project staffing needs and hours based on our proposed schedule, scope of services, specific tasks, and our extensive knowledge of the project and the project site.

The personnel for this project will be tapped from AECOM's vast resources and complemented by a group of professionals from our subconsultants. Our person-hours are included on the following pages.

MATRIX: PERSON-HOURS

NJ TRANSIT
RFP 19-048

CM Services for Hoboken Signal and Yard Power Repairs

HOURS BY FIRM RECAP - TEAM SUMMARY

FIRM	HOURS	PERCENTAGE
AECOM	17408	55.9%
TY Lin International	7070	22.7%
Matrix New World Engineering	2696	8.7%
AmerCom Corp	1320	4.2%
Haydan Consultants Inc.	2660	8.5%
TOTAL	31154	100%

DBE Percentage: 21.4%

NJ TRANSIT
RFP 19-048

CM Services for Hoboken Signal and Yard Power Repairs

HOURS BY TASK - TEAM SUMMARY

TASK	DESCRIPTION	HOURS
TASK C1	General Administration	3585
TASK C2	Inspection & Testing	7219
TASK C3	Schedule Control	4570
TASK C4	Staging & SSWP	4351
TASK C5	Shop Drawings & Material Review/Handling	1483
TASK C6	Project Change Management	3753
TASK C7	Quality Assurance & Quality Control	3772
TASK C8	Project Safety	793
TASK C9	Project Closeout	1628
TEAM TOTAL		31154

NJ TRANSIT

RFP 19-048

CM Services for Hoboken Signal and Yard Power Repairs

STAFFING SCHEDULE BY FIRM

FIRM **AECOM**

STAFF PERSON or CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	TASK C1 General Admin. HRS	TASK C2 Inspection & Testing HRS	TASK C3 Schedule Control HRS	TASK C4 Staging & SSWP HRS	TASK C5 Shop Dwgs & Review HRS	TASK C6 Proj. Change Mgmt. HRS	TASK C7 QAQC HRS	TASK C8 Project Safety HRS	TASK C9 Project Closeout HRS	TOTAL HOURS
Phillip Girandola	Consultant Construction Manager	594		264	394	394	394	394	131	63	2628
Shamim Ansari	Field QA/QC Engineer							855		45	900
Mukesh Patel	Resident Engineer - Structural/Civil	276	739	739	1379	98	739	739	99	118	4926
Joseph Calabro	Inspector - Structural		2918						182	548	3648
Anatoliy Gozman	Inspector - Civil/Utilities		589						37	110	736
Catherine Clement	Inspector - Catenary		1310						82	246	1638
Mani Maleki	Safety Engineer	184		80	122	122	122	122	41	19	812
Zachary Bell	Office Engineer	119	318	318	318	318	318	318	42	51	2120
Total		1173	5874	1401	2213	932	1573	2428	614	1200	17408

NJ TRANSIT

RFP 19-048

CM Services for Hoboken Signal and Yard Power Repairs

STAFFING SCHEDULE BY FIRM

FIRM **TY Lin International**

STAFF PERSON or CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	TASK C1 General Admin. HRS	TASK C2 Inspection & Testing HRS	TASK C3 Schedule Control HRS	TASK C4 Staging & SSWP HRS	TASK C5 Shop Dwgs & Review HRS	TASK C6 Proj. Change Mgmt. HRS	TASK C7 QAQC HRS	TASK C8 Project Safety HRS	TASK C9 Project Closeout HRS	TOTAL HOURS
Michael Fitzsimmons	Inspector - Force Account	255	684	684	1277	91	684	684	91	110	4560
Ralph Glover	Resident Eng. - Signal/Power/Electric	141	377	377	577	176	376	376	50	60	2510
Total		396	1061	1061	1854	267	1060	1060	141	170	7070

NJ TRANSIT

RFP 19-048

CM Services for Hoboken Signal and Yard Power Repairs

STAFFING SCHEDULE BY FIRM

FIRM **Matrix New World Engineering**

STAFF PERSON or CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	TASK C1 General Admin. HRS	TASK C2 Inspection & Testing HRS	TASK C3 Schedule Control HRS	TASK C4 Staging & SSWP HRS	TASK C5 Shop Dwgs & Review HRS	TASK C6 Proj. Change Mgmt. HRS	TASK C7 QAQC HRS	TASK C8 Project Safety HRS	TASK C9 Project Closeout HRS	TOTAL HOURS
Craig Diziki	Environmental	34	86	86	86	86	86	86	12	14	576
John King	Document Control	1908								212	2120
Total		1942	86	86	86	86	86	86	12	226	2696

NJ TRANSIT

RFP 19-048

CM Services for Hoboken Signal and Yard Power Repairs

STAFFING SCHEDULE BY FIRM

FIRM **AmerCom Corp**

STAFF PERSON or CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	TASK C1 General Admin. HRS	TASK C2 Inspection & Testing HRS	TASK C3 Schedule Control HRS	TASK C4 Staging & SSWP HRS	TASK C5 Shop Dwgs & Review HRS	TASK C6 Proj. Change Mgmt. HRS	TASK C7 QAQC HRS	TASK C8 Project Safety HRS	TASK C9 Project Closeout HRS	TOTAL HOURS
Maciej "Matt" Gwiszcz	Surveyor	74	198	198	198	198	198	198	26	32	1320
Total		74	198	198	198	198	198	198	26	32	1320

NJ TRANSIT

RFP 19-048

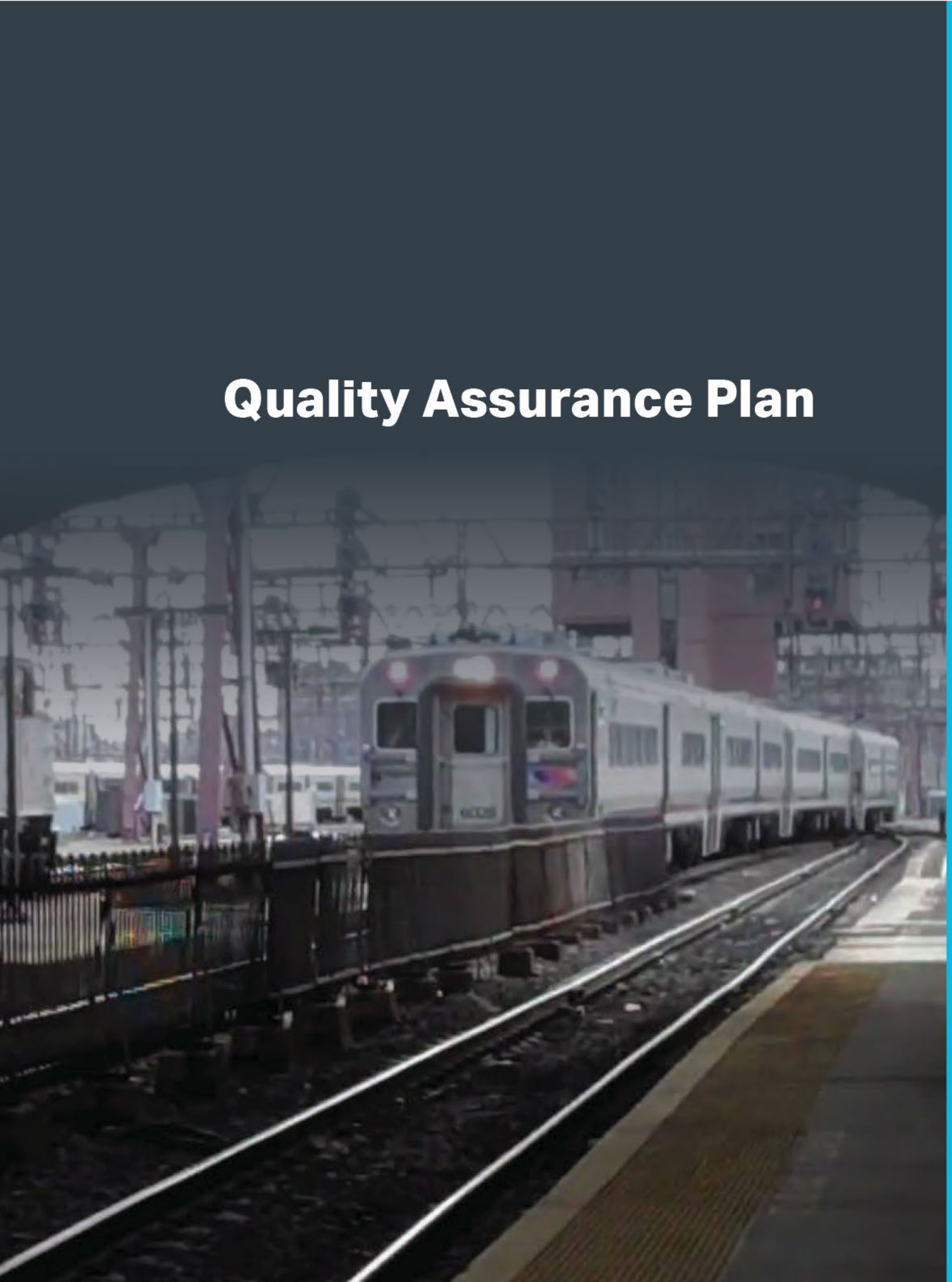
CM Services for Hoboken Signal and Yard Power Repairs

STAFFING SCHEDULE BY FIRM

FIRM **Haydan Consultants Inc.**

STAFF PERSON or CLASSIFICATION	PROJECT TITLE OR DISCIPLINE	TASK C1 General Admin. HRS	TASK C2 Inspection & Testing HRS	TASK C3 Schedule Control HRS	TASK C4 Staging & SSWP HRS	TASK C5 Shop Dwgs & Review HRS	TASK C6 Proj. Change Mgmt. HRS	TASK C7 QAQC HRS	TASK C8 Project Safety HRS	TASK C9 Project Closeout HRS	TOTAL HOURS
Khurrum Siddiqi	Scheduler			1824							1824
Rabiul Hasan	Cost Estimator						836				836
Total		0	0	1824	0	0	836	0	0	0	2660

Quality Assurance Plan



7. Quality Assurance Plan

AECOM applies a set of quality practices throughout the company, regardless of where work is performed or managed and deliver best-in-class solutions and services to clients.

INTRODUCTION

AECOM has been requested by New Jersey Transit to provide a proposal for construction management and coordination of the works on behalf of New Jersey Transit (NJT) to ensure that the Project is delivered in accordance with the safety, quality, schedule and cost requirements of the project. The Construction Management and Resident Engineering staff shall ensure that the Project is delivered in accordance with the NJT process.

The project is made up of the following components:

WORKS	DURATION
Micropiles Construction	14
Pile Caps Construction	22
Steel Monopole Installation Construction	8
Duct Bank Construction Days Yard Wayside Power Substation Equipment, Wayside Power Outlets and Control Stations	6
Total Contract Time	50
Contract Closeout	3

This sample project Quality Assurance Plan (QAP) has been developed to supplement AECOM's corporate Quality Management System policy and procedures. This QAP works hand-in-hand with the AECOM's Project Execution Plan and Construction Management Plan and is a living document whose elements will be revised and updated as needed throughout the Hoboken Signal and Yard Power Repairs Project execution. The QAP has also been developed to address the requirements of AECOM's proposed contract agreement with NJ Transit to provide services on the Project.

PHILOSOPHY AND APPROACH

AECOM regards quality assurance and quality control functions as essential to the value our services provide to our clients. Maximizing this value assures that our reputation in the marketplace is enhanced and broadened, not only for the individual business units or geographic locations, but for AECOM as a whole.

The successful delivery of a quality project lies in adopting a systematic quality assurance and quality control approach—one that focuses on proactive and root cause analysis rather than reactiveness and rote symptomatic treatment. To this end, the quality program for this project will follow a dynamic process in all phases of the Project through on-going and systematic attention to quality and quality-related activities, from design to installation and construction.

The following provides a summary description of the program:

- **Quality Assurance**. The planned and systematic approach necessary to provide adequate confidence that a material, component, structure, system or facility will perform satisfactorily in service. Quality Assurance is primarily a management tool.
- **Quality Control**. Those actions that control and measure the characteristics of a material, component, system process or facility to meet or exceed pre-established requirements. For example, procedures are followed and critical characteristics are achieved and verified by measurements or observations. Quality Control is primarily a production tool.

The AECOM QA/QC Guidelines identify 14 elements of a project QA/QC program. The remainder of this text describes the manner in which each of the 14 elements of the Guidelines will be addressed.

SECTION 1 MANAGEMENT RESPONSIBILITY

1.1 Management

Senior Management at AECOM is committed to a policy of performing quality work in providing its services. It is their responsibility to ensure that the QAP is understood, implemented, maintained, and improved throughout the duration of AECOM's work on the project and among all employees actively working on the project.

Project Director

- Responsible for the oversight for all aspects of the project
- Responsible for financial performance
- Responsible for client satisfaction

Regional Quality Manager

- Develops and implements AECOM's corporate Quality Management System
- Monitoring, support and assistance to projects as needed

Construction Managers

- Responsible for applying AECOM's Quality Management System and policy to work performed
- Performs program oversight
- Monitors technical performance and mandates that procedures be followed
- Assists the Quality Assurance Manager in the implementation of Quality Assurance Plan Management Plans

Project QA Manager

- Performs construction project QAP oversight
- Verifies QAP continues to meet specified requirements
- Guides CM team to verify contractor compliance with approved Quality Plan
- Responsible for proper execution and documentation of the QAP process and procedures
- Trains and documents training of Staff and Subconsultant's on the processes and procedures of the QAP
- Implementing the requirements of the QAP
- Reviews performance of staff and subconsultant's
- Report to Project Manager
- Resident Engineering Staff and Subconsultants
- Assists the CM in maintaining the QAP
- Observation of contractor activities to determine that construction is in general conformance with the plans and specifications and the approved contractor Quality Plan
- Coordinate materials testing and properly document testing results
- Responsible for filing and distributing project documentation

1.3 QA/QC Manager Independence

As shown on Exhibit 1 Organization Chart, the QA Manager is independent of those having direct responsibility for the work being performed.

1.4 QA Manager Representative Authority/ Responsibility

The QA Manager has the responsibility to verify that that specified requirements of this QAP are being met. Furthermore, as Exhibit 1 shows, the QA representative has the authority over the personnel having the direct responsibility for the work being performed and will exercise this authority to meet the requirements of the QAP.

1.5 Management Review of the QAP

The QA Manager along with Senior and Project Management will jointly review the QAP and audit results annually as a minimum to determine its continuing suitability for the work being performed and its effectiveness in assuring quality. This review will be documented with review meeting minutes.

SECTION 2 DOCUMENTED QUALITY SYSTEM

2.1 Construction Management Quality Assurance Program

This QAP is structured according to 14 elements as defined by AECOM for a construction management quality program. All applicable elements are addressed.

2.2 Sub consultant QAP Responsibilities

All subconsultants contracted by AECOM for work on the Project will be required to adhere to this QAP. They will not be required to submit a separate QAP.

2.3 Procedures and Activities Affecting Quality

The activities that affect the quality of the construction include Construction Observation, Submittals, Material

Testing, Cost Management, Schedule Management, Requests for Information, Deficiencies/Nonconformance and Coordination with New Jersey Transit. The purpose, scope and procedure for achieving quality for these activities are as follows:

2.3.1 Construction Observation

Purpose: To determine that the construction work on the project meets project specifications.

Procedure:

- Appropriate members of the project team will be on site inspecting and observing the work being performed by the contractor using the approved contract drawings, shop drawings and specifications.
- Daily reports of work performed will be recorded using an Engineer's Daily Report form.
- Material testing will be performed in accordance with the requirements of QAP Sections 8, 9 and 11.

2.3.2 Submittals

Purpose: To determine that materials proposed for use and associated methods of installation on the project meet project specifications.

Procedure:

- Submittal process will follow the General Requirements of the contract between New Jersey Transit and the Contractors.
- Submittal Log will be kept on file by the Document Controller.
- The Document Controller will forward for review and track all submittals.

Additionally, the Document Controller will verify that the current submittal is being used as the basis for the associated piece of construction work.

2.3.3 Material Testing

Purpose: To determine that materials used in the construction of the project meet project specifications and that the tests are being performed as required and at the frequency required.

Procedure: In accordance with AECOM scope of work, an independent laboratory shall be retained subject to NJT approval to provide quality assurance testing and meet all Local Authorities requirements for controlled testing.

2.3.4 Cost Management

Purpose: To track, monitor and manage the overall cost of the project.

Procedure: Construction Costs

- Payment Applications will be submitted by the contractor following the designated process.
- The Construction Manager will perform review based on the progress recorded during the period and discuss with the respective construction managers and scheduler.
- The Construction Manager will submit to NJ Transit's Project Manager (PM) for final approval and submittal to NJT for with recommendation for payment.
- Contractors pay request will also show payment for all approved and completed contract modifications and variations.
- Lump sum items paid on a percent complete basis will have a separate cost breakdown sufficient to show how the partial payment was determined.

AECOM/Consultant Costs

- Will be tracked by invoices submitted to NJT. The Construction Manager is responsible for reviewing the AECOM invoice prior to its submittal to NJT.

2.3.5 Schedule Management

Purpose: To track, monitor and manage the project schedule.

Procedure:

The contactor's construction schedule will follow the contract requirements for time for completion.

- The schedule status will be reviewed during bi-weekly progress meetings and documented in the minutes.
- Monthly updates of the project schedule are submitted by the contractor showing actual vs. planned progress and percent complete.
- A two weeks look ahead schedule is required from the contractor each progress meeting.
- AECOM will prepare the Integrated Master Schedule for the Project in which all contracts and NJ Force Accounts are included and other NJT contractors involved with the commissioning will have their schedules integrated.

2.3.6 Request for Information (RFI)

Purpose: To address and process additional information required by the contractor in a timely manner.

Procedure:

- Contractor will submit all RFIs using an RFI form. Applicable details of the RFI will be identified on the form, including response time needed and level of detail.
- RFIs will be tracked using an RFI Log and discussed during Progress meetings to assure that there is no impact to the project schedule.

2.3.7 Deficiencies/ Nonconformance

Purpose: To identify and record deficiencies discovered during the construction process.

Procedure:

- When a nonconformance is identified, the contractor will be notified using a Non-Conformance Correspondence form. This form will identify the details of the deficiency.
- Status of the deficiency will be tracked using a Nonconformance Report.
- The nonconformance process is further outlined in Section 11 of this QAP.

2.3.8 Coordination with New Jersey Transit

Purpose: To coordinate construction interfaces with other NJT contractors.

Procedure:

- Status of construction operations will be discussed at periodic interface coordination meetings with NJT and other contractors.
- Minutes of these meetings will be distributed to those parties involved with follow up actions indicated.

2.4 Format for Procedures and Instructions

The format for the procedures and instructions is reflected in this QAP. Any additional procedures or instructions will follow this format.

2.5 Standard Formats for Quality Records.

The standard forms prepared by AECOM as well as other forms included in this QAP will be used as the format for quality records on this project. If other forms or records are found necessary during the course of the work, they will be developed in a format consistent with those presented herein.

SECTION 3: DESIGN CONTROL

3.1: General

NJT has selected STV to carry out the technical due diligence and the detailed engineering design as the Engineer of Record (EOR) for the Projects. Specific tasks to be carried out by the Design Consultant include:

- Detailed design of the civil works,
- Preparation of civil tender packages, permit applications, and Commissioning
- Obtain approval of applicable permits and the Design packages from NJT
- Technical clarification support during tendering of the civil/ utilities, pile foundations, erection of monopoles, signal and power works works.
- Technical support during the execution of the civil, and
- Close out applicable permits and packages per the NJT Process.

The CM's role shall therefore not include any services as detailed for the Design Consultant.

3.2 Shop Drawing and Submittals Review

Submittal review is an important step in the construction process and translates the design documents into constructible elements. The CM scope includes review and comment on technical submittals, test reports, inspection reports, and shop drawings as applicable during the allowed EOR review period. Coordinate comments with the EOR response.

The basic goal is a confirmation that the fabricator, supplier, erector and construction personnel have correctly interpreted the design contract drawings and specifications and the materials supplied and installed. The following includes some of the major items that are reviewed and check for conformance to the design documents:

- General appearance of the submittal understandable and able to be interpreted by construction of fabricator's personnel
  - Member sizes, materials, grades, class and other material characteristics meet design requirements, codes and standards
- Coordinated with other trades
- Metal Elements

  - Piece Mark, Location, camber, Surface prep, finishes, and coatings
  - Connections: Geometry and layout; bolt sizes, type, material, hole sizes and types, Weld geometry, sizes, types and length, connection types and materials, copes/ edge distances, Bolt and weld material strengths
- Concrete and Masonry Elements
  - Design mix, w/c ratio, strength, air entrainment, cement type and strength meet specs
  - Rebar, strand and fabric grade, strength, grade and finish/coatings
  - Reinforcing spacing meets code requirements to allow concrete flow
  - Shoring and re-shoring requirements met
- Signal, Power and Pile foundations and erection of pole works
- Shop and Field material test properties reports meet project requirements

3.4 Procedure for Modifications and Changes to Design

The procedure for the evaluation, coordination, review and approval of changes and modifications to the approved technical documents will be executed as mandated in the project specifications and documented as follows:

- Design changes can be requested by NJT or the Contractor
- Design changes initiated by NJT shall be communicated to the contractor for determination of cost and schedule impacts, if any, through use of a Request for Variation Proposal, (RFVP). The contractor responds accordingly which are subject to review by AECOM and a recommendation is provided to NJT.
- In the event a potential change or modification is identified by the Contractor, it will be submitted to the AECOM project team. Design related aspects shall be reviewed by the EOR.
- The approved revision will be transmitted to the contractor.
- The documentation of the modifications will be tracked as necessary throughout the duration of the project and become part of the IFC drawings, specifications or other record contract documents.
- Variation Orders resulting from agreed changes shall be prepared by AECOM and approved by NJT and the Contractor.
- Changes will be processed and tracked using the following forms:
  - Contract Modification T&M
  - Pre-Negotiation Contract Modification Cost Worksheet
  - Contract Modification Worksheet
- Contract Modification Log

SECTION 4: DOCUMENT CONTROL

An electronic document control system, New Jersey Transit's Electronic Content Management System (ECMS), will be utilized to manage the project documents. NJT, the contractor, AECOM and other authorized parties shall have access to the web-based system. Documents are uploaded to the system and corresponding notifications are sent out to the appropriate users. As an example, the contractor will upload a submittal for approval consisting of shop drawings. Notifications are sent out to the EOR design review manager (DRM) and other authorized personnel. The DRM distributes the review assignment to the appropriate engineer. The engineer will provide review comments which are reviewed by the Design Review Manager. The DRM uploads the comments and returns it to the CM. The CM will coordinate its comments with the EOR response.

The procedures for handling and archiving project documentation and contract documents will follow the mapping in the configured ECMS system which includes distinct folders for the main categories of the work as well as sub folders for subjects. In addition, a master chronological folder is utilized into which all correspondence enters regardless of the subject matter. The Configured ECMS Project Filing System defines what documents are to be created, logged, distributed, tracked and filed from their inception to final disposition. At the completion of the project, all documents and records will be turned over to NJT.

SECTION 5: SUB CONSULTANT SELECTION REQUIREMENTS

AECOM assumes all responsibility for the work of their subconsultants. Records of all correspondence and quality related documentation of all subconsultants are kept on file as quality records within the document control system.

Subconsultants to AECOM shall adhere to all applicable

aspects of the Quality Assurance Plan relating to their work. They shall acknowledge, by their execution of the subcontract, that they have received, reviewed and will comply with such quality programs. Every submittal, as well as their quality control process at their office, is subject to QA audits by the Quality Manager based on this QAP.

SECTION 6: PROJECT PLANNING

The Project Execution Plan is the planning mechanism that provides the information necessary to control the project, execute the work tasks, and tailor the implementing procedures to the specific project requirements. In addition, the Project Execution Plan identifies unique or additional quality objectives, monitoring, documentation, records, and verification, validation, and resource requirements. The planning required is described in the Project Execution Plan implementing procedure. Records attesting to the conformity with the Project Execution Plan will include internal quality reviews and responses. Section 7.3 of this Quality Assurance Plan covers the planning of the process.

6.1 Client-Related Processes

6.1.1 Determination of Requirements

Client project requirements are provided through contract documentation. The contract, in conjunction with the request for proposal, proposal, negotiations notes, and scope of work, provides the basis for identifying and understanding the requirements. These are translated into project requirements by the Project Execution Plan.

6.1.2 Review of Requirements

The contract review process ensures that project management is aware of the contract requirements. The key client requirements are transmitted to the project personnel by the Project Execution Plan and, where applicable, project kickoff meetings.

6.1.3 Client Communications

Communications with the client as to the ongoing progress of the work and/ or changes in project requirements are addressed through correspondence, meetings, telephone calls, e-mails, project status reports, and/or client comments on interim deliverables.

6.2 Program Management Development

6.2.1 Planning

The construction management process planning is based on the Integrated Master Schedule to anticipate the milestone dates. The Construction Manager will keep in close communication with the client to mitigate fluctuations in the design and construction schedule.

6.2.2 Deliverable Checking and Verification

The AECOM review team will follow AECOM procedures, as listed below, for checking review comments prior to sending them to the client. Sub-consultants will follow the AECOM Quality Procedures as approved by the AECOM Quality Manager.:

- Checking and Verification Procedure
- Document Checking Guideline
- Subs Management Procedure

Quality Assurance

All deliverables will be Quality Assurance reviewed by the construction management team.

SECTION 7: SPECIAL PROCESS CONTROL

Under the construction contracts, the contractors are required to provide all quality control testing including soil, concrete, piles, steel, mechanical, electrical, plumbing, roofing, fire sprinkler, fire alarm and other testing services that may be required. The type and frequency of testing shall be indicated in the contractors QAP Testing and Inspection Plans and project specifications.

It is anticipated under this project that field and shop welding, all concrete testing and cylinders, pile installation are activities considered as a special process under this section. All welding, both field and shop will be inspected by a certified welding inspector provided by the contractor. Welding inspection certification will be kept on file in the project files. The frequency of both field and shop welding inspection shall be in concurrence with the Contractors QAP as well as the corresponding project specification and standard industry practices. The results of the inspections shall be submitted by the contractor through the project ECMS system, reviewed by the CM and RE and will be kept on file as part of the permanent record. All nonconformance issues related to welding will be processed according to Sections 11 and 12 of this QAP.

In addition to certified welding testing provided by the contractor, the independent laboratory will perform verification testing of both shop and field welding on designated welds selected by AECOM.

Concrete testing and cylinder preparation shall utlize ACI certified Concrete Technicians.

Prior to the start of any major activity, the Construction Manager will conduct a pre-activity meeting with all AECOM field staff. This meeting will address the issues relative to the activity such as site access, coordination with all necessary parties, QA requirements, construction method and schedule. Subsequently, a kick-off meeting will be held with the Contractor prior to initiation of major items of work. If other activities requiring a special or unusual process are encountered during the course of the project, a procedure to monitor and control the process will be developed at that time.

SECTION 8: INSPECTION AND TESTING

Contractors shall be required to furnish their daily work plans to AECOM preferably the day before. Based on the work plans the respective construction managers will assign the areas of responsibility to the inspectors. This occurs at the AECOM project tailgate meeting. The inspectors will have the required project documentation to perform their oversight duties including Issued for Construction (IFC) drawings, specifications and shop drawings.

The inspectors shall oversee the work for compliance with the contract documents and record the work on Inspector Daily Reports (IDR). The data recorded includes the meteorological conditions, number and type of trade employees and equipment, work accomplished, location and measurements and time of execution. In addition, any special conditions or non-compliant work which must be corrected is recorded.

The IDR's are signed and submitted in the AECOM field office at the end of the shift. The inspectors will communicate any questions or request clarifications to the construction manager promptly as the work progresses.

The contractors shall develop and submit Inspection and Testing Plans (ITPs) to be used in the project as part of their Quality System.

AECOM will review these plans in accordance with the requirements of the contract documents. Once approved they will be used to monitor the work.

Various activities are identified as a (H) Hold Point or (W) Witness Point on the approved ITPs.

Effective integration of quality and contractor planning will ensure that there are no delays due to witness or hold point scheduling and that no critical inspections are missed.

The ITPs shall contain sufficient detail to ensure that all work performed complies with project requirements. ITPs will be developed in accordance with the requirements of the contract drawings and specifications.

Final inspection requests are received from the contractor at the AECOM field office. The construction managers and inspectors are notified of the request and they proceed to jointly do a pre-final review to verify that it is ready for final inspection. If it is not they will notify the contractors of the items which require correction before a final inspection can be carried out.

On-site inspection of the work and testing of materials shall provide objective verification that structures, systems, components or services, including those provided by Subcontractors, Suppliers, and Independent Testing Laboratories meet the contract requirements. The independent QC Inspection Firm is responsible for performing the QC inspections for construction and for acceptance of materials. The ITP emphasizes material delivery inspections and inspection of work both in progress and completed.

The Resident Engineer, in consultation with the Quality Manager, reviews in detail all Contract Documents and the specific ITP and submits it to NJT for approval prior to the commencement of work. The ITP includes a list of activity inspections and tests to be performed, specification paragraphs containing the inspection or test requirements for each, responsibility for performing inspection and testing i.e. subcontractor or supplier, and inspection/test schedules. The ITP also identifies the independent testing laboratories to be used, specialized equipment, and/or personnel training or qualifications required, work activities or units to be inspected, examined, and or tested at each activity point, hold point and witness point. The RE ensures that personnel performing inspection and testing have suitable technical qualifications and current applicable certifications/licensures. Qualification records shall be maintained by the RE.

Under the direction of the RE, the field inspectors are responsible for ensuring the work is being performed and

materials delivered to the site comply with the plans and specifications. Materials and construction activities are witnessed throughout the project. Inspections provide measurement and documentation of materials used for construction. Deviations from the plans or specifications or non-conforming materials are immediately brought to the attention of the RE, who notifies the Construction Manager and the NJT Construction Quality Engineer. Inspectors document their activities and findings in their Daily Work Reports using Site Manager. These reports are reviewed and approved by the RE for inclusion in the project documentation.

The detailed sampling or test procedures are prepared by the subcontractors, testing expert, or manufacturers and are reviewed and submitted to NJT for approval by the RE, on the appropriate NJT forms or accepted contractor forms. The test procedures identify the method of testing the characteristics of each activity point, type of testing equipment to be used, the qualified person who performed the test, as well as inspection and test hold points. The RE or designee monitors or witnesses the performance of these tests. Test reports shall be generated as per specification, or by the Laboratory engaged in the actual Testing and Inspection. These are reviewed by the RE, designee, and/or others as applicable. It shall be ensured that the test results are acceptable before the product can be accepted.

Inspection and Testing reports and associated quality records are identified, indexed, and filed for easy retrieval and shall be made available to NJT upon request. NJT forms and recordkeeping procedures using New Jersey

Transit's Electronic Content Management System (ECMS shall be used per project requirements. Inspection and testing records shall be kept in the project field office for the duration of the contract.

The Contractors are responsible for performing quality control testing to establish that the work complies with the requirements of the contract documents. The results of all material tests shall be submitted to the CM and EOR for approval and will be recorded in Special Inspection Report. The CM will keep a QA testing log, which identifies the type of material test required, pertinent test data, and results. Nonconforming materials will be identified, as applicable.

The CM will verify that all independent testing laboratories are certified as required per the following:

- NRTL: A nationally recognized testing laboratory according to 29 CFR 1910.7.
- NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- The American Association of State Highway and Transportation Officials (AASHTO)
- International Accreditation Services, Inc. (IAS)
- U. S. Army Corps of Engineers Materials Testing Center (MTC)
- American Association for Laboratory Accreditation (A2LA) program

This QAP will be updated as the relevant tests for subsequent portions of the program are determined.

SECTION 9: INSPECTION, MEASURING AND TEST EQUIPMENT

An independent equipment testing lab will be selected as the Qualified Testing Laboratory for this project. Their credentials will be reviewed by NJT and the EOR for the project. The Resident Engineer is responsible to oversee the Testing Lab's efforts on the project. He will make sure:

- That all equipment is calibrated, certified and ready for use.
- Technicians are qualified to perform the specified tests.
- Supporting documentation is properly provided and stored with the quality documents.
- Reviews of the lab's documentation are performed.

Independent laboratories performing tests or quality inspections have additional requirements, including certification by a nationally recognized testing accreditation organization as appropriate for the scope of the inspection or test:

- NRTL: Nationally Recognized Testing Laboratory according to 29 CFR 1910.7.
- NVLAP: A testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program.
- The American Association of State Highway and Transportation Officials (AASHTO).
- International Accreditation Services, Inc. (IAS).
- U. S. Army Corps of Engineers Materials Testing Center(MTC).

- American Association for Laboratory Accreditation (A2LA) program.

The Resident Engineer shall oversee and maintain documented procedures to control calibrate and maintain inspection, measuring and test equipment used to demonstrate the conformance of product to the specified requirements. He shall also select the necessary equipment as defined by the material acceptance elements of the individual work item specifications.

For equipment that is used by the QC Inspection Firm all calibrations will be performed as required by NJT Standard Materials Methods.

For equipment that is used by the QC Testing Lab, the Lab Manager shall be responsible to make sure all testing equipment is calibrated and records are maintained in accordance with ASTM guidelines. The QC Inspection Firm shall maintain all records in compliance with NJT.

Any testing equipment found to be non-conforming shall be tagged as such by the Resident Engineer and removed from the project for repair or disposal. All equipment will be stored and maintained in accordance with the manufacturer's recommendations and records of such maintenance will be kept in the field office.

SECTION 10: INSPECTION AND TEST STATUS

The Contractors are responsible for performing quality control testing to establish that the work complies with the requirements of the contract documents. The results of all material tests shall be submitted to AECOM for review and will be kept in a material testing log. This log identifies what type of material was being tested, which tests were run, when the sample was taken, where it was taken, when the test was conducted and what the results were. Nonconforming materials will be identified, as applicable.

SECTIONS 11: NONCONFORMANCE AND CORRECTIVE ACTION

The process for identifying nonconformance issues is as follows:

Services and deliverables which do not conform to requirements are identified and controlled to prevent unintended use or delivery or are repaired or replaced to conform to contract requirements. The identification and prevention of nonconforming work is addressed in the implementing procedures. AECOM deals with nonconforming work in one or more of the following ways:

- By taking action to eliminate or correct the detected potential or real nonconformity.
- By authorizing its use, release or acceptance as approved by the relevant authority, and, where applicable, the Client.
- By taking action to preclude its use or application until nonconformities are overcome.

In general, non-compliant delivered work is the result of a failure to adhere to established procedures. The cause of actual or potential process failures is addressed in accordance with the Corrective and Preventive Action Procedure.

1. Through construction inspection and material testing a facet of the construction is found to be not in conformance with the project requirements.
2. The facet of construction is re-inspected or re-tested to confirm nonconformance. Results and necessary information are documented in a Nonconformance Report.
3. If nonconformance exists, the contractor and NJT are notified both verbally and through a Record of Contractor Contact.
4. The level of corrective effort of the re-work will be at the discretion of the Quality Assurance Manager and NJT
5. Once the necessary corrective action has been executed, the re-work will be inspected and the results recorded.

This section addresses nonconformance by the Contractor in the construction work performed on the project. The process to correct the nonconformance is as follows:

a. The Quality Manager in conjunction with the respective construction manager will document and communicate incidents of nonconformance to the Contractor.

b. The Contractor will be responsible for developing and implementing the required Corrective and Preventive Actions in accordance with his own construction PQM, and communicating the proposed actions plan to the CM in response to the nonconformance report.

c. The construction manager will review the contractor's CA plan and assess its suitability and effectiveness. The

level of corrective action necessary for the re-work will be subject to approval of the Construction Manager and the EOR if it affects design aspects.

d. Measures will then be developed by the Contractor to prevent reoccurrence of the problem.

e. Final disposition of the Corrective Action will be documented by the Construction Manager in the project's records, as well as by the Contractor in his own records.

SECTION 12: QUALITY RECORDS

All records and documentation including subconsultants will be kept up to date and filed according to the Master File Index. The Document Controller is responsible for production, collection, indexing, filing, storage, maintenance and disposition of the records and project documentation.

The project records are required to be legible, identifiable and kept in a safe environment as to prevent damage and deterioration. The project records will be kept by AECOM until such time as the project has been closed out and the records are turned over to NJT. AECOM records pertaining to the project will be kept in accordance with company policy for a period of 10 years after the project is completed.

SECTION 13: QUALITY AUDITS

A Quality Audit Form will be used to document the audit for AECOM and all subconsultants. Semi-annual quality audits will be performed by the QA Manager until the completion of the project to ensure that the elements of the QAP are functioning as intended.

A Quality Audit shall be performed periodically by the Contractor in accordance with its approved QC Plan. The Quality Assurance Manager from AECOM shall attend the audit and be provided with the audit report.

SECTION 14: TRAINING

The training requirements, in addition to the NJT required Safety Training, for the individuals working on this project are constantly assessed and updated by AECOM as part of our corporate policy. Topics such as Ethics, Core Values, Risk Management, Safety and Quality are required to be completed by employees.

Records of skills and competence training needed to maintain licenses, registrations and certifications are kept as corporate records in the home office. Resumes of key personnel are included. Training needs are continually assessed and addressed as needed.

The Quality Assurance Manager is responsible for providing copies of this QAP to all personnel working on the project and training them in its use. All personnel working on the project shall acknowledge receipt of and training on this QAP by signing the QAP Receipt and Training Acknowledgement a copy of which shall be maintained in the project files.

EXHIBITS

Exhibits will provided in Quality Plan following award of Contract and NTP.

Conflict of Interest

8 Conflict of Interest

In response to your request relative to the subject RFP No. 19-048, AECOM Technical Services, Inc. does not have any employee, agent or subcontractor that has a conflict of interest, or give the appearance of a conflict of interest regarding this proposal.

Consultant Certifications

9 Consultant Certifications

As requested, the following Consultant Certifications for the AECOM Team are provided as a seperate file.

- Exhibit 2 - Acknowledgment of Receipt of Addenda
- Exhibit 5 - Statement of Joint Venture (if applicable)
- Exhibit 6 - Ownership Disclosure Form
- Exhibit 8 - Disclosure of Investment Activities in Iran
- Exhibit 9 - Contractor's Certification of Eligibility
- Exhibit 10 - Non-Collusion Affidavit
- Exhibit 11 - Affidavit of Compliance (Code of Vendor Ethics)
- Exhibit 12 - Certification of Contracts, Grants & Loans Cooperative Agreements (Byrd Anti-Lobbying Certification).

Suggested Contract Exceptions

10 Suggested Contract Exceptions

AECOM requests the following modifications to the NJ Transit Professional Services Agreement. Please note that in most cases these changes reflect previously negotiated contract terms between NJ Transit and AECOM entities.

1. In Article 11, first paragraph, Line 4, delete ", servants and agents" and replace with "and designated agents". In Article 11, first paragraph, Line 9, delete "operations of said" and replace it with "performance of said." In Line 10, delete "because of any" and replace it with "but only to the extent due to any negligent".

This change is needed to appropriately tie AECOM's indemnity to its negligence.

2. Add the following as the Third Paragraph in Article 11:

   "Consultant's liability to NJ TRANSIT for damages under this Contract, whether in contract or tort or any other theory of law, but excluding gross negligence or willful misconduct on the part of Consultant, shall be limited to the value of this Contract."

This change is needed for a reasonable limitation of AECOM's risk.

3. Add the following as the Fourth Paragraph in Article 11:

   "Notwithstanding anything in this agreement, it is agreed that Consultant shall not be liable in any event for any special or consequential damages suffered by NJ TRANSIT arising out of the services hereunder. Special or consequential damages as used herein shall include, but not be limited to, loss of capital, loss of product, loss of use of any system, or other property, or any other indirect, special or consequential damage, whether arising in contract, tort (including negligence), warranty or strict liability."

This change is needed to reflect that AECOM is not responsible for consequential damages.

4. Add the following at the end of Article 11:

   "Consultant shall not be responsible for, nor have control over the cost of labor, materials, or equipment furnished by others, or over the resources provided by others, not under contract to Consultant, to meet related schedules. Any opinions of probable construction costs provided by Consultant represent Consultant's good faith professional judgment in light of its experience, knowledge and the information reasonably available to Consultant at the time of preparation of the opinion. However, since Consultant has no control over the market, economic conditions or the bidding procedures, Consultant, its directors, officers and employees and subconsultants do not make any guarantees or warranties whatsoever, whether express or implied, with respect to such opinions and accept no responsibility for any loss or damage arising therefrom or in any way related thereto. Third parties relying on such opinions do so at their own sole risk.

   Consultant shall also bear no responsibility for the construction work ("Work") to be performed in connection with this Agreement, including without limitation, (i) the construction means, methods, techniques, sequences, or procedures; (ii) the direction of construction personnel; (iii) selection of construction equipment; (iv) the allocation of space where the applicable Work is being performed (each a "Project Site"); (v) placing into operation any plant or equipment; or (vi) quality control of the Work. In addition, Consultant shall not be responsible for and shall have no authority to exercise any control over NJ Transit's or other parties' employees, contractors, subcontractors, consultants and vendors, or their respective officers, directors, employees, representatives, lower-tier subcontractors, agents or invitees.

   NJ Transit shall require its contractor and contractor's subcontractor's to name Consultant as an additional insured on all of contractor's and contractor's subcontractor's insurance policies for the project (except Worker's Compensation/Employer's Liability) and obtain and maintain for the benefit of Consultant the same indemnities and insurance benefits obtained for the protection of NJ Transit from any contractors working on the project and shall obtain from such contractors insurance certificates evidencing Consultant as an additional named insured.

   Neither Party shall be responsible for a delay or disruption in, or inability to provide its respective performance under this Agreement, other than a delay in payment for services already performed, if such delay is caused by events or contingencies, existing or future, beyond the reasonable control of the claiming Party, including "acts of God," abnormal weather conditions or other natural catastrophes, war (whether declared or not), terrorism, sabotage, computer viruses, civil unrest, strikes, lockouts or other industrial disturbances, pandemics, epidemics, health emergencies, virus (e.g.,

SARS Cov-2), disease (e.g. COVID-19), plague, changes in law or regulations, quarantine, travel restrictions, discovery of hazardous materials, differing or unforeseeable site conditions, acts of governmental agencies or authorities (whether or not such acts are made in response to other Force Majeure Events), or any other events or circumstances not within the reasonable control of the party affected, whether or not of a similar kind or nature to any of the foregoing (a "Force Majeure Event"). The Party seeking application of this provision shall notify the other Party in writing promptly upon learning of the impact of the Force Majeure Event upon the notifying Party's performance of its obligations under this Agreement. Upon the occurrence of a Force Majeure Event, Consultant shall be entitled to an equitable adjustment to the project schedule and compensation sufficient to compensate Consultant for any increase in the time or costs necessary to perform the services under this Agreement. Should a Force Majeure Event substantially prevent or be reasonably likely to substantially prevent Consultant's performance of the services for more than thirty (30) days, then Consultant shall be entitled to terminate this Agreement without breach. In case of such termination, Consultant shall be entitled to compensation for those services performed as of the date of termination."

These changes are needed to address risk for items that are not part of AECOM's scope and events out of AECOM's control.

5. Add the following at the end of the second to last Paragraph in Article 13:

   "Notwithstanding that NJ TRANSIT, as provided by this Agreement, is the owner of all documents, drawings, plans and specifications prepared by Consultant pursuant hereto, nothing in this Agreement shall be construed as limiting or depriving Consultant of its rights to use its basic know-how and skills to design or carry out other projects or work for itself or others, whether or not such other projects or work are similar to the services to be performed pursuant to this Agreement, nor shall NJ TRANSIT's ownership of documents include those documents comprising procedures and calculations proprietary to Consultant. Furthermore, Consultant may keep copies of all of such documents for its permanent files and records. Any reuse of Consultant prepared documents without the written verification or adaption by Consultant for the specific purpose intended will be at NJ TRANSIT's sole risk and without liability or legal exposure to Consultant or its consultants, if any."

   This change is needed to clarify that while NJT may own the AECOM prepared documents, should NJT use such documents for any purpose other than as intended under this contract, AECOM should not have liability for such re-use.

6. Article 13, Third Paragraph - Delete: ", provided all costs incurred by NJ Transit in conducting any such audit shall be reimbursed by Consultant in the event such audit reveals an aggregate discrepancy in any invoice or cumulative invoice not previously audited by NJT of more than two percent (2%) of the final total costs and fees for the period under audit as determined by NJ TRANSIT"

Deletion is needed to ensure that AECOM is not responsible for the cost of NJT's audit.

7. Add the following as the second paragraph to Article 16:

   "If this Agreement is terminated for any reason prior to the final completion of the project and if under such circumstances, NJ TRANSIT uses or engages the services or directs another consultant to use any documents prepared by the Consultant to complete such work, NJ TRANSIT agrees to release the Consultant from any liability arising out of the use by the second consultant of the documents prepared by the Consultant except where such liability arises out of an error or omission of the Consultant."

This change is needed to clarify that AECOM should not have liability for another consultant's work.

8. In Article 46 in the third paragraph, third line, insert "negligent" between "any" and "act". In the fourth paragraph, fourth line, insert "negligent" between "any" and "act".

This change is needed to appropriately tie AECOM's indemnity to its negligence.

9. In Article 12 – Insurance, please change all references to policy limits of $10,000,000 to policy limits of $3,000,000.

AECOM
Knightsbridge Road
Piscataway, NJ 08854
732-564-3200

www. aecom.com