

Torres Rojas, Genara

FOI#14992

From: agarrahan@gpinet.com
Sent: Wednesday, June 11, 2014 12:38 PM
To: Duffy, Daniel
Cc: Torres Rojas, Genara; Van Duyne, Sheree; American, Heavyn-Leigh
Subject: Freedom of Information Online Request Form

Information:

First Name: Anita
Last Name: Garrahan
Company: Greenman-Pedersen, Inc.
Mailing Address 1: 325 West Main Street
Mailing Address 2:
City: Babylon
State: NY
Zip Code: 11702
Email Address: agarrahan@gpinet.com
Phone: 631-587-5060
Required copies of the records: Yes

List of specific record(s):

The proposal for Call-In Contract for Structural Bridge Design Services, Reference number P41514091, won by AECOM USA, Inc.

THE PORT AUTHORITY OF NY & NJ

FOI Administrator

June 20, 2014

Ms. Anita Garrahan
Greenman-Pedersen, Inc.
325 West Main Street
Babylon, NY 11702

Re: Freedom of Information Reference No. 14992

Dear Ms. Garrahan:

This is in response to your June 11, 2014 request, which has been processed under the Port Authority's Freedom of Information Code (the "Code") for a copy of the "proposal for Call-In Contract for Structural Bridge Design Services, Reference number P41514091, won by AECOM USA, Inc."

Material responsive to your request and available under the Code can be found on the Port Authority's website at <http://www.panynj.gov/corporate-information/foi/14992-C.pdf>. Paper copies of the available records are available upon request.

Certain material responsive to your request is exempt from disclosure pursuant to exemption

Please refer to the above FOI reference number in any future correspondence relating to your request.

Very truly yours,



Daniel D. Duffy
FOI Administrator

*225 Park Avenue South, 17th Floor
New York, NY 10003
T: 212 435 3642
F: 212 435 7555*

Submitted to
**The Port Authority of
New York and New Jersey**

Submitted by
AECOM USA, Inc.

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

RFP Number 21976



August 19, 2010

The Port Authority of New York and New Jersey
One Madison Avenue, 7th Floor
New York, NY 10010
Attention: RFP Custodian

Re: RFP No. 21976 – Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2010

Dear Sir/Madam:

AECOM USA, Inc., is pleased to submit our proposal to provide Bridge Engineering “Call-In” Services to the Port Authority of New York and New Jersey (PANYNJ). Having previously held this contract, we are excited about the opportunity to continue to provide services to you and it is our goal to become the top ranked Bridge Call-in Consultant to the Port Authority. No other firm in the NY/NJ metropolitan region maintains the staff, breadth of resources or ability to access specialized consultants throughout the world. AECOM is a local and world leader in Structural Engineering and Bridge Engineering and we are right here, located in NY, ready to provide the highest quality services to the Port Authority.

Specialized Experience: AECOM has performed a variety of bridge structural design services, including new design, and repair or rehabilitation of all types of structures, and we have extensive experience in managing complex field investigations of existing structures. AECOM has a long and successful relationship with the Port Authority and we look to continue and improve on all the services we have provided and are prepared to provide to you in the future. For this assignment we have a large resource pool of experienced engineers located in NY and NJ who can provide literally any and all services to the Port Authorities Structural Engineering Group, including bridge rehabilitation assessment and design, bridge replacement planning and design, retrofitting or replacement of bearings, pin connections and expansion joints, painting, repair of concrete piers and abutments, repairing and strengthening structural steel members and connections, blast analysis and design, repairing concrete bridge and tunnel slabs, soffits, walls, traffic barriers and catwalks, traffic sign structures and foundations, etc. Many of the personnel identified to carry out this assignment have successfully completed similar projects for the PANYNJ and are very familiar with PANYNJ requirements for bridge and highway structures.

AECOM can perform all required tasks, whether small repair works or larger studies for bridge replacements. We have all the requisite support disciplines: traffic, civil, geotechnical, etc., all located in house, among our experienced and knowledgeable staff of over 2,300 professionals and technical staff located in the New York and New Jersey metropolitan area. AECOM takes great pride in providing a staff that will fulfill the requirements and demands of the PANYNJ. The firm also recognizes that our staff will serve as an extension to the PANYNJ's personnel and will be there to assist in any capacity needed.

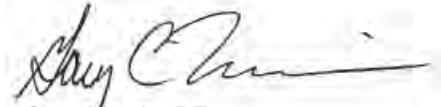
Point of Contact: Chee K. Lai, P.E., will serve as the **Project Manager**, point of contact, and primary liaison with the Port Authority. Mr. Lai has more than 28 years of experience in planning, inspection, design, project management, and construction support services for bridge rehabilitation and replacement projects. He has *worked alongside PANYNJ staff* in the Engineering/Architecture Design Division (Bridge Structures Group) early in his career. He is *currently managing the PANYNJ Structural Engineering Services (Bridges) Call-In for 2009 and 2010* and has *successfully managed Regional Design Services Agreement (Call-in) for the NYSDOT Region 11, and is currently managing the same Call-In agreement for Region 10.*

Mr. Lai will be supported by a cadre of Lead Structural Engineers: **Mr. John Hapkiewicz, PE, Joseph Matarazzo, PE, Swapan Chaudhuri, PhD, PE, Mr. Stewart Willis, PE, Jitesh Shah, PE, and Thomas Harriott, PE.** In addition, AECOM USA, Inc. will utilize the services of **KS Engineers, P.C. (MBE)** and **B. Thayer Associates (WBE)** as needed under this assignment.

I would like to thank you for the opportunity to submit this Call-In agreement proposal to you. We have priced our work very competitively for this assignment and again, I would like to reiterate our goal of becoming the No. 1 Bridge Consultant to Port Authority. We have some of the best professionals in the industry and we hope to have an opportunity in the near future to demonstrate the ability, quality and uncompromised commitment of the AECOM Structural and Bridge Engineering Staff. As Senior Vice President and Director of AECOM's Northeast Region Transportation Business Line, you have my personnel commitment that we will meet or exceed any and all measures of quality under this assignment.

If you have any questions or require additional information, please do not hesitate to call me at (212) 973-3014.

Very truly yours,
AECOM USA, Inc.

A handwritten signature in black ink, appearing to read "Gary Morris", is written over a light gray rectangular background.

Gary Morris, PE
Senior Vice President

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

A. Attachment B

ATTACHMENT B

**PERFORMANCE OF EXPERT PROFESSIONAL
STRUCTURAL ENGINEERING SERVICES (BRIDGES)
ON A "CALL-IN" BASIS DURING 2011**

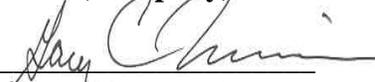
AGREEMENT ON TERMS OF DISCUSSION

The Port Authority's receipt or discussion of any information (including information contained in any proposal, vendor qualification, ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) shall not impose any obligations whatsoever on the Port Authority or entitle us to any compensation therefor (except to the extent specifically provided in such written agreement, if any, as may be entered into between the Port Authority and us). Any such information given to the Port Authority before, with or after this Agreement on Terms of Discussion ("Agreement"), either orally or in writing, is not given in confidence. Such information may be used, or disclosed to others, for any purpose at any time without obligation or compensation and without liability of any kind whatsoever. Any statement which is inconsistent with this Agreement, whether made as part of or in connection with this Agreement, shall be void and of no effect. This Agreement is not intended, however, to grant to the Port Authority rights to any matter, which is the subject of valid existing or potential letters patent. The foregoing applies to any information, whether or not given at the invitation of the Authority.

Notwithstanding the above, and without assuming any legal obligation, the Port Authority will employ reasonable efforts, subject to the provisions of the Port Authority's Freedom of Information Policy and Procedure adopted by the Port Authority's Board of Commissioners on November 20, 2008, which may be found on the Port Authority website at: <http://www.panynj.gov/corporate-information/pdf/Freedom-of-Information-Policy-and-Procedure.pdf>, not to disclose to any competitor of the undersigned, information submitted which are trade secrets or is maintained for the regulation or supervision of commercial enterprise which, if disclosed, would cause substantial injury to the competitive position of the enterprise, and which information is identified by the Proposer as proprietary, which may be disclosed by the undersigned to the Port Authority as part of or in connection with the submission of a proposal.

AECOM USA, Inc.

(Company)



(Signature)

Gary Morris, PE, Senior Vice President

(Title)

August 18, 2010

(Date)

**ORIGINAL AND PHOTOCOPIES OF THIS PAGE ONLY.
DO NOT RETYPE.**

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

B. Attachment C (Company Profile)

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

C. Multipliers

Section C: Multipliers

AECOM USA, INC.	
HOME OFFICE MULTIPLIER	
Direct Labor	1.00
Home Office Overhead	<u>1.36</u> 2.36
Profit (@ 7.5%)	0.18
Total Home Office Multiplier	2.54
<p><i>NOTE: AECOM is committed to providing the highest level of service to Port Authority at the most competitive price. AECOMs current home office overhead is 158 percent and profit of 10 percent. Due to the current economic conditions and funding situation for capital projects at Port Authority, AECOM is lowering its overhead to 136 percent and profit to 7.5 percent for this contract engagement with a resulting multiplier of 2.54. We look forward to providing high quality staff and services to Port Authority at this very competitive rate.</i></p>	
FIELD OFFICE MULTIPLIER	
Direct Labor	1.00
Field Office Overhead	<u>1.05</u> 2.05
Profit (@ 7.5%)	0.15
Total Field Office Multiplier	2.20

Note: AECOM USA, Inc., B. Thayer Associates, and KS Engineers' multipliers include vacation, holiday, sick pay, worker's compensation, insurance and office rent (for home office multiplier).

B. THAYER ASSOCIATES	
HOME OFFICE MULTIPLIER	
Direct Labor	1.00
Home Office Overhead	<u>1.48</u> 2.48
Profit (@ 8%)	0.20
Total Home Office Multiplier	2.68
FIELD OFFICE MULTIPLIER	
Direct Labor	1.00
Field Office Overhead	<u>1.19</u> 2.19
Profit (@ 8%)	0.17
Total Field Office Multiplier	2.36

KS ENGINEERS, P.C.	
HOME OFFICE MULTIPLIER	
Direct Labor	1.00
Home Office Overhead	<u>1.20</u> 2.20
Profit (@ 10%)	0.22
Total Home Office Multiplier	2.42
FIELD OFFICE MULTIPLIER	
Direct Labor	1.00
Field Office Overhead	<u>1.00</u> 2.00
Profit (@ 10%)	0.20
Total Field Office Multiplier	2.20

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

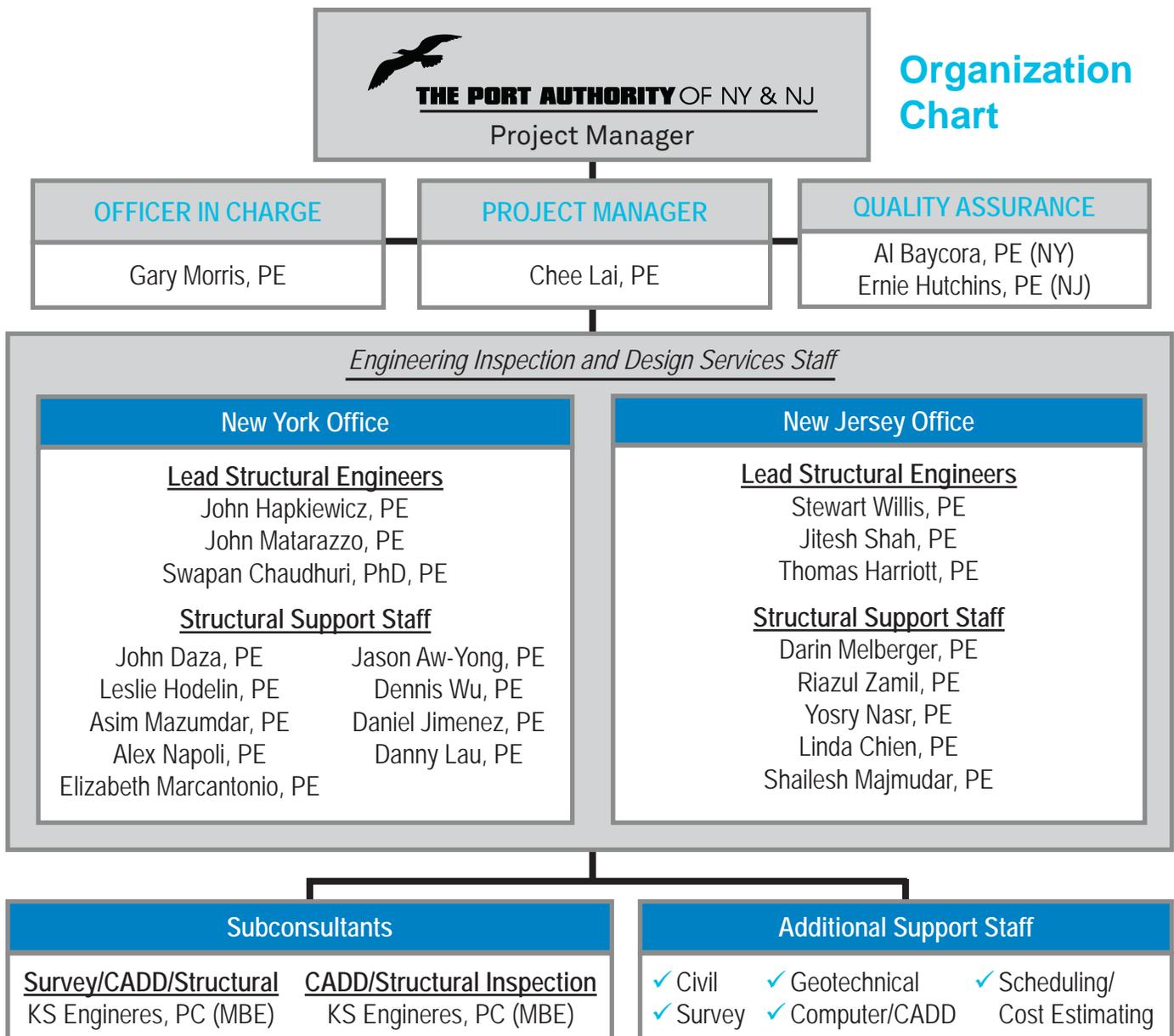
D. Staff Qualifications and Experience

Section D: Staff Qualifications and Experience

AECOM understands that the quality of the particular professionals who will be undertaking the project work is what matters most. To this end, we have carefully hand-picked the team members and assigned them tasks within their expertise. The combined resources of the AECOM Team offer the Authority the option of additional staff support in a great variety of engineering disciplines, if necessary. We can draw from AECOM's professional and technical staff of over 2,300 professional and technical staff concentrated in the New York and New Jersey metropolitan area. Our staff will serve as an extension to

the PANYNJ's personnel and are there to assist in any capacity needed. AECOM's local staff are highly skilled professionals who have worked on hundreds of bridge engineering projects throughout the United States, including many PANYNJ facilities. We have structured the team to ensure that PANYNJ is provided with the best possible management and technical professionals for each of the key aspects of this project. An organization chart and a summary table of our proposed staff are located on the following pages.

Organization Chart



All personnel are AECOM staff unless otherwise noted.

Chee K. Lai, PE

Project Manager

Mr. Lai has extensive experience in transportation engineering projects that includes bridges, highways, railroads and buildings structures. He has successfully managed and participated in various bridge design projects involving complex MPT and construction staging in the New York metropolitan area. He is very familiar with PANY&NJ, NYSDOT, and MTA design procedures and practices. Mr. Lai has worked very closely and coordinated with various NYC agencies, including the Port Authority and NYSDOT staff in regions 8, 10, and 11.

PANYNJ Marine Terminal McLester Street Widening, NJ (2009 Structural Engineering-Bridge Call-in assignment): Project Manager responsible for final design and contract drawings of two (2) overhead sign structures (four-chord steel truss supported on steel towers), one (1) cantilever sign structure (two-chord steel truss supported on a steel post) and the drilled shaft foundation designs, fatigue analysis and construction specifications.

PANYNJ Jet Blue Airways, Terminal 5, Terminal Redevelopment, JFK International Airport, NY: Structural Department Manager responsible for the review and quality control for the structural design effort for elevated departure roadway system. Scope of work includes conceptual to final design of the departure ramps connecting to the terminal building. The departure ramps include two long curved ramps at each side connect the departure frontage to arrival level roadway. Key project issues include consideration of existing landmark structure and the surrounding features like blast fence, Air Train connectors and nearby roadway intersection for Terminal 6. The construction support services may be included in the scope at a later date. Design will consider all Port Authority standards, AASHTO and NYCDOT seismic criteria.

NYSDOT Route 25 Reconstruction and Bridge Replacement, Southold, Suffolk County, NY: Project manager responsible for final design (Phases V-VI) for the realignment of a 2.0 km section of Rte 25. Project included realignments, reconstruction and resurfacing, bridge replacement, retaining walls, MPT and construction staging.

NYSDOT Henry Hudson Parkway Resigning Project from W 59th Street to Westchester County Line, NY:

Education

MS, Civil Engineering (Structures), Texas Tech University, 1987

BS, Civil Engineering (Structures), Texas Tech University, 1985

BS, Civil Engineering (Construction), Ungku Omar Polytech, Malaysia, 1979

Registration

PE: NY, 1994, Registration No.: 071557

Professional Associations

American Society of Civil Engineers (ASCE) - ASCE MET Section International Group, former Chair

American Society of Highway Engineers (ASHE)

Years of Experience: 28

Project manager responsible for the coordination with the State and Sub-consultants and the final design for this safety improvement project.

NYSTA Tappan Zee Bridge Partial Deck Replacement, Tarrytown, NY: Structural Task manager responsible for the inspection and rehabilitation design for the partial deck replacement and widening study of the Tappan Zee Bridge. Responsibilities include the inspection of the fascia girders and first interior stringers, preparation of the design report (including recommendations for the replacement and/or repair alternatives for the inspected members, bridge railing, and outer lanes of the deck).

NYSDOT Route 120, Route 22 and I 684 Improvements, Westchester County, NY: Structural task manager responsible for Phase I-VI structural design for the reconstruction project of Route 120. The project includes bridge replacement, new ramp and retaining structures, roadway widening, utility relocations, traffic signal modifications, and alignment and safety improvements for a three mile section of Rte. 120 and Interchange improvements/reconstruction along I 684 at Exits 2 and 3. The design utilize multi-steel girders for the two curved ramp structures and pre-stressed adjacent box beams for a structure over a creek. These structures will be supported on reinforced concrete substructures. Retaining

Chee K. Lai, PE continued

structures will comprised of MSE walls and cast-in-place cantilever walls.

DSNY Marine Transfer Station Ramp Structures, NY:

Task manager for the design of six ramp structures leading to land and water based Marine Transfer Stations. The design included curved bridge structures on sharply curved alignments consisting of twin connected box girders and single multi-cell box girders. Detailed activities included an integrated analysis using GT-STRUDL for the structure and CONBOX software for the design. The seismic analysis is carried out using multi-mode response spectra method as per AASHTO and NYSDOT Blue pages considering complete interactions of superstructure, substructure and foundation.

PANYNJ Howland Hook Marine Terminal - Port Ivory Intermodal Transfer Facility, NY: Structural task manager responsible for Stage I to IV design and support services for the Port Ivory Intermodal Transfer Facility. Project Scope includes the conceptual design and layout for 11 tracks, survey, site development and drainage, facility lighting, and final bridge design. The bridge is designed for the crossing of a Rubber Tire Gantry (RTG) Crane (45 feet wide by 80 feet long in cross travel configuration). The selected structure consist of adjacent pre-stressed concrete box beams superstructure with cast-in-place integral abutments supported on drilled caisson foundation. Currently providing construction support service and responding to RFI.

American Airlines, JFK Terminal Redevelopment Project, NY: Senior structural engineer responsible for the redesign of drainage structures due to field changes and the review of shop drawings. Also involved in providing technical reviews and support for the design of the elevated viaduct structure for the terminal. The elevated structure includes two curve ramps and a tangent section to provide access to the upper level of the terminal. The design will utilize steel superstructures framed to steel cap-beams supported on concrete columns.

NYSDOT Long Island Expressway Capacity Improvements Exit 30 to 32, Queens, NY: Design Phases I-VI for the widening of a 2.9 km (1.8 mile) of the LIE from Exit 30 to 32 in Queens County. Project included alignments and access modifications, resurfacing, new bridge construction, replacement/widening of three existing bridges, retaining walls, sound barriers, sign structures, complex

MPT and construction staging. Project Engineer responsible for the design of new and replacement bridges, retaining walls, sound barriers and sign structures.

NYSDOT Northern State Parkway, Long Island, NY:

Provided the final design of a 2.5-mile, \$90 million, rehabilitation and widening involving multiple bridge replacements, extensive retaining walls, sign structures and critical construction staging issues with complex MPT during construction. As Lead Structural Engineer, supervised the design and preparation of contract documents and coordination with sub-consultants. Bridge reconstruction involved replacing concrete rigid frames and arches with structures similar in appearance to maintain visual consistency along the parkway. The design was accomplished using simply supported pre-cast, pre-stressed box girders made continuous for live load, supported on reinforced concrete substructures. These unique pre-stressed box beams designed with a curved soffit, varying in depth from support to mid-span, to replicate the appearance of the existing rigid frames. Project Engineer responsible for construction support services that included shop drawing review, design and field changes and resolving field questions.

NYSDOT Route 9A Reconstruction, NY: Project engineer responsible for the construction support services of the Route 9A Segment 2 reconstruction project from Battery Place to Harrison Street. Structural elements include overhead sign structures, retaining walls, tide gates and drainage chambers, and the rehabilitation of the West Street Underpass leading from West Street SB to the Battery Tunnel.

NYSDOT Concrete Detail Vulnerability Assessment of 450 State Bridges in Bronx, Kings, Queens, Richmond and New York Counties:

Project manager responsible for the coordination with the State and sub-consultants and, Quality Control for this project. The concrete detail vulnerability program is divided into three phases, assessment, evaluation and the implementation. The assessment included the screening, classifying, rating of the bridges. The evaluation phase included the detailed engineering evaluation and structural integrity evaluation of the bridges that were found to have concrete vulnerable details. The implementation phase included the establishment of corrective action and prioritized the corrective action necessary for the retrofitting these bridges.

Gary C. Morris, PE

Officer in Charge

Mr. Morris is the head of AECOM's Northeast Transportation Practice and is well-known to the Port Authority. Mr. Morris has himself worked on many high-profile Port Authority projects and he is intimately familiar with the Port Authority's way of doing business and what the Authority expects from call-in consultants. As Officer in Charge, Mr. Morris will ensure AECOM is providing the highest quality and most cost-effective professional services on each and every assignment.

Mr. Morris has significant experience in major transportation projects - commuter railroads, highways, roadways, airports, and bridges. He has a strong background in horizontal and vertical geometry, analyzing traffic projects, pavement designs, cost estimating, maintenance, and protection of traffic and utilities.

Throgs Neck Toll Plaza, Triborough Bridge and Tunnel

Authority (TBTA), New York: Project engineer responsible for all aspects of this multi-discipline design project including plaza reconstruction alternatives, construction phasing, EZ-Pass coordination, and architectural treatments.

JFK Redevelopment Program, Port Authority of New York and New Jersey (PANYNJ), Queens, New York:

Civil engineering project manager on the PANYNJ team for the evaluation, analysis, design, and construction of \$400 million of utility improvements within the Central Terminal area as part of the \$3 billion redevelopment program. Efforts encompassed the relocation, rehabilitation, and construction of all appropriate civil, mechanical, and electrical utilities for the unit terminal buildings, and upgrades to the airport systems. Portions of the improvements required coordinating construction through airside areas, including contact gates, hardstands, and micro-tunneling under an active runway.

JFK 2000 Master Functional Plan, Port Authority of New York and New Jersey (PANY&NJ), Queens, New York:

Senior civil engineer prepared the master plan update for John F. Kennedy International Airport. Updated passenger projections, forecast growth potential at the unit terminal buildings, and analyzed frontages, roadway networks, and parking facilities to determine future requirements.

Education

BS, Civil Engineering, Union College at Schenectady, NY, 1983

Registration

PE: NY, 1988, Registration No.: 65086

Professional Associations

American Society of Civil Engineers (ASCE)
Transportation Research Forum (TRF), Past member
Concrete Industry Board (CIB)
Long Island Association, Past member
National Society of Professional Engineers (NSPE)
Society of American Military Engineers (SAME), Past member

Years of Experience: 27

John F. Kennedy International Airport, Central Taxi-Hold Facility, Port Authority of New York and New Jersey (PANY&NJ), Queens, New York: Project manager responsible for the design development and construction support services for the new parking area, street widening, associated buildings, and utility improvements for a new taxi-hold facility.

Route 120 & 22, Exits 2 & 3 on I-684, New York State Department of Transportation (NYSDOT), Westchester County, New York:

Project manager responsible for design phases I-VI for the widening and reconstruction of Route 120, capacity and operational improvements to exits 2 and 3 on I-684, and capacity and safety improvements to the signalized intersections on Routes 120 and 22. Work on four bridges involved both rehabilitation and reconstruction. This project required traffic analyses, developing highway widening plans and details, preparing maintenance and protection of traffic plans to keep traffic moving through this heavily traveled corridor, meeting with local agencies and the public to address community concerns, investigation of environmental considerations including drainage considerations on the NYC watershed, and performing bridge investigations and preliminary design. The project involved extensive coordination with outside agencies and was completed on an accelerated

Gary C. Morris, PE continued

schedule requiring tight project and administrative controls.

Route 9 over Salmon River, New York State Department of Transportation (NYSDOT), Plattsburgh, New York: Project manager responsible for design phases I-VI and reconstruction. Provided an in-depth inspection of the structure, prepared the bridge rehabilitation project report and preliminary design drawings, and provided final design of the new bridge superstructure and repairs to the existing substructure.

Route 22 over Interstate 87, New York State Department of Transportation (NYSDOT), Plattsburgh, New York: Project manager responsible for design Phases I-VI for the reconstruction of this \$4.5 million bridge project carrying Route 22 over I-87. The project involved complete bridge replacement to raise the structure to the STRAHNET-required 16 feet 6-inch clearance. Prepared a design report justifying the retention of substandard features on the cloverleaf interchange, a traffic and accident analyses, and the final design of the highway portion of the project.

Miller Highway Design and Rehabilitation, New York State Department of Transportation (NYSDOT), New York, New York: Civil engineer responsible for the design and rehabilitation of an existing viaduct on the west side of Manhattan. Mr. Morris provided the design of the vertical and horizontal alignment, traffic analysis, and utility relocations.

Reconstruction of the New England Thruway, New York State Thruway Authority (NYSTA), Westchester County, New York: Civil engineer responsible for the reconstruction of a 1-mile section of the Thruway in Westchester County. The project involved the rehabilitation of two single-span bridges and the New Rochelle Viaduct.

Reconstruction of 30th Avenue and 122nd Streets, New York State Department of Transportation (NYSDOT), Queens, New York: Project engineer for the design of the reconstruction of 30th Avenue and 122nd Street. Designed new storm and sanitary sewer systems and prepared pavement designs and cost estimates.

Staten Island Expressway Resurfacing and Rehabilitation, New York State Department of Transportation (NYSDOT), RSDA (Task #4), Richmond County, New York: Provided constructibility review and quality assurance reviews.

John T. Hapkiewicz, PE

Lead Structural Engineer - New York Office

Mr. Hapkiewicz is a structural engineer with extensive experience in structural engineering related to the design and construction of highway/railway bridges, transportation-related structures, and buildings and facilities. He previously worked for the Connecticut Department of Transportation Bridge Design Unit, where he was responsible for the design, development, and preparation of intricate project plans for various structural designs. He has prepared design materials for complete bridge replacements, building facilities, bridge widenings, the replacement of bridge superstructures, the replacement of bridge decks, and various types of bridge and structure rehabilitations.

PANYNJ EP-684.009 Elizabeth Port Authority Marine Terminal – McLester Street Widening: Lead Structural Engineer for the Stage III & Stage IV Structural Engineering Services for two (2) overhead sign structures (four-chord steel truss supported on steel towers), one (1) cantilever sign structure (two-chord steel truss supported on a steel post) and the associated drilled shaft foundations. The designs were performed per the 2009 AASHTO Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, using category I fatigue analysis and adjusted wind loads per PANYNJ criteria. StaadPro and PCACOL software was utilized in the analysis and design. Structural work was coordinated with in-house PANYNJ staff who provided design of other disciplines.

Ennery River Bridge Replacement, Ennery, Haiti: Lead Project Engineer for the design of a new 2-span, post tensioned, AASHTO girder bridge in northern Haiti. This original bridge failed during the hurricanes of August 2008. Led project team during site visit and in discussions with the Haitian Ministry. Coordinated geotechnical, environmental and hydraulic efforts and coordinated efforts to include local materials, manpower and technology to ensure successful delivery of this project. Led presentation of design package to US government officials. Client: United States Agency of International Development (USAID).

Route 25 over Long Island Railroad, Town of Southold, Suffolk County, Long Island, NY: Lead project engineer for the complete replacement of a three-span bridge.

Education

BS, Civil Engineering, Tufts University, Medford, MA, 1993

Registration

Professional Engineer: CT (1998, #PEN.0020870); NY (2009, #086783); and MA (2000, #42872)

Professional Associations

American Society of Civil Engineers (ASCE)

Years of Experience: 17

The proposed structure is a 33-meter single-span bridge with a superstructure consisting of steel plate girders supporting a composite concrete deck. The fascia girders are haunched to add aesthetic appeal. The superstructure is supported on full-height pile-supported abutments. Also included in the design were tie-back sheet pile walls and geosynthetic walls. Additional architectural items are pylons located at the front corners of each abutment and a modified picket-style handrail. The design is in accordance with the 2004 AASHTO LRFD Bridge Design Specifications.

Metro-North Railroad over the Saugatuck River (Saga Bridge), Westport, CT: Structural project manager for the Saga Bridge that carries four railroad tracks across the river. The project consists of the replacement of the Scherzer rolling lift moveable span and rehabilitation of the fixed approach spans. Other aspects of the design include seismic analysis, substructure retrofit, bearing replacement, a waterway fender system, a pedestrian walkway, and a new operator house.

Reconstruction of Bridge No. 01979, U.S. Route 6 over East Meadow Brook, Woodbury, CT: Structural project engineer for the complete replacement of bridge No. 01979. The new superstructure is a concrete deck supported on steel rolled beams supported by pile-supported integral abutments.

NYS DOT Route 9 - Briarcliff-Peekskill Parkway – Bay Street to Route 6 (Main Street), City of Peekskill, Westchester County, NY: Structural project engineer for engineering services for eight new retaining walls as part of the 1.3-kilometer reconstruction/widening of Route 9.

John T. Hapkiewicz, PE continued

The walls for all locations were cast-in-place cantilevered type walls. The wall heights vary up to 10.5 meters. Due to the high rock line in the area, tied-back soldier pile and lagging walls were designed to temporarily support Route 9 during the construction of the proposed walls. Close coordination with NYSDOT was required as several walls terminated at bridge wingwalls, which were designed by NYSDOT.

Rehabilitation of Bridge No. 00149, I-95 over Route 1, Milford, CT: Structural design engineer for this superstructure replacement and substructure modification project. The new bridge has a two-span steel rolled beam composite superstructure. The bridge was designed for live load continuity, and elastomeric expansion bearings were placed at each support.

New Vehicular Bridge over Metro-North Railroad at Commerce Drive Railroad Station, Fairfield, CT: Structural project engineer for a new vehicular bridge providing access over a local road, a kiss-and-ride, and Metro-North tracks as part of the new railroad station. The proposed superstructure is a two-span (each 128 feet) continuous steel plate girder structure supporting a concrete deck. The substructure consists of full height abutments and a multi-column pier. A detailed erection procedure was required to launch the girders over the Metro-North catenary wires and under the overhead wires. The design is in accordance with the 2004 AASHTO LRFD bridge design specifications.

Structural Damage Inspection, Bradley International Airport, Windsor Locks, CT: Structural project manager for the inspection to evaluate the condition of the east concourse that was damaged due to impact from a deicing vehicle. After the field inspection, a sealed report was prepared documenting the damage and recommending repairs.

Resurfacing and Safety Improvements on I-95, Milford and Orange, CT: Project manager for a 6-mile overlay and safety improvement project along I-95. Provided modifications and safety improvements to eight bridges carrying I-95, and five bridges over I-95. This work included modifications of parapets to accommodate RB-350 rail anchorages; replacement of substandard bridge parapet railing with a concrete cap; overlay removal; deck patching; placement of new membrane waterproofing and overlay; installation of asphaltic plug joints; and

haunch removal. Ground penetrating radar was utilized to determine the magnitude of deck deterioration to quantify areas requiring deck patching.

I-84 Short Term Interchange Improvements, Danbury and Newtown, CT: Design engineer for the design of structural aspects for improvements to I-84 at interchanges 5, 6, and 11. This involved several bridge widenings, removal of bridge structures (including deconstruction plans), and construction of retaining walls. The preliminary design has been completed, and included the preparation of rehabilitation study reports.

Deck replacement and steel modifications for the Bashon Hill Road Bridge over Route 2, Bozrah, CT: Structural design engineer for the rehabilitation of bridge No. 00398. The original superstructure consisted of a two-span plate girder bridge, of which both spans were simply supported. The rehabilitation included a live-load continuity retrofit where a common fixed bearing at the pier supported the beam ends and the concrete deck was continuous over this area. Elastomeric bearings replaced the original steel bearings at the abutments.

Niantic Bay Overlook Project, East Lyme, CT: Structural design engineer for the design of the 2,000-linear-foot elevated, pile supported, timber boardwalk along Niantic Bay. The structure was designed to withstand the harsh marine environment and to minimize future maintenance.

ConnDOT Interchange Improvements at Routes 12/184/I-95, Including Replacement of Bridge No. 00659, Groton, CT: Structural design engineer for the complete replacement of Bridge No. 00659 and the construction of a soil nail wall in Groton. Work included removing the previous concrete arch structure and replacing it with a three-span continuous steel girder superstructure. The new substructure consisted of pile supported integral abutments and pier bents. The project also included the construction of a soil nail wall in front of a bridge abutment to allow for ramp traffic to pass through an area that was previously embankment fill.

Reconstruction of CT Route 159 over Kettle Brook/ Mill Pond, Windsor Locks, CT: Structural design engineer for the complete replacement of this double-pipe structure. The new structure consists of a twin precast-concrete box culvert. The structure included a low-flow weir and a safety grate at the inlet, and a junction chamber at the outlet.

Joseph B. Matarazzo, PE

Lead Structural Engineer - New York Office

Mr. Matarazzo is an engineer experienced in the planning, design and construction inspection of bridges and highways and other facilities. He has directed the rehabilitation of existing facilities as well as the development of new ones. Bridge types he has dealt with include long-span, high level, major river crossings as well as viaducts and grade separation structures. He is an accomplished project manager and resident engineer, skilled in technical and administrative project development. His combination of bridge design and construction experience makes him particularly well suited for a leadership role in constructibility initiatives.

NYS DOT Region 11, Rehabilitation of Major Deegan Expressway, Bronx County: As lead structural engineer, assisted with the development of preliminary plans for the deck replacement and superstructure rehabilitation of this 1200-meter-long, 6-lane viaduct.

NYS DOT Region 11, Seismic Vulnerability Assessments for Various Bridges, New York City: Project manager for the assessment of 834 bridges for vulnerability to seismic events. These bridges are located on and over various emergency access corridors in the five boroughs (counties) of New York City. Manages screening of each structure to establish its seismic risk classification and performs an empirical assessment to determine overall vulnerability to seismic events. Field verification of existing conditions is performed as required. For a limited number of structures, an analytical assessment involving capacity/demand ratios and "push-over" analyses was performed to compare the analytical results with the empirical results. The final product is a recommended course of action for seismic retrofit in relation to the vulnerability and importance on a structure-by-structure basis.

PANYNJ Hudson Terrace Bridge and TR1, TR2, and TR3 Ramp Rehabilitation, Fort Lee, NJ: Structural engineer for the rehabilitation of the Hudson Terrace Bridge over the eastbound approach to the lower level of the George Washington Bridge to improve the turning radius onto an emergency access ramp. Conducted plan review and assisted junior-level engineers involved in the development of designs, structural details, and plans.

Education

MS, Civil Engineering, Polytechnic Institute of New York, 1990

BS, Civil Engineering, Polytechnic Institute of New York, 1979

Registration

Professional Engineer: NY (1984, #060873); NJ (1987, #24GE03262700); and PA (1997, #052067E)

Professional Associations

American Institute of Steel Construction

American Engineering Alliance

Municipal Engineers of New York

Conference Presentations

"Seismic Vulnerability Assessments of Bridges in Areas of Low to Moderate Seismic Activity," 5th National Seismic Conference for Bridges and Highways, San Francisco CA, September 2006 (Co-author).

"Continued fatigued cracking in a retrofitted bridge," NHI Bridge Engineering Course, February 1998.

Publications

Artur Kasperski, Joseph Matarazzo, and Gary Wang, "Assessing Seismic Vulnerability," *Bridges Magazine*, July-August 2007.

Artur Kasperski, Joseph Matarazzo, and Gary Wang, "Seismic Vulnerability Assessments of Bridges in Areas of Low to Moderate Seismic Activity," *Journal of the Municipal Engineers of the City of New York*, Fall 2006.

Years of Experience: 31

NYS DOT Region 11, Route 9A Lower Manhattan Redevelopment Project Office, World Trade Center Site Reconstruction, New York City: Deputy project manager for miscellaneous structural engineering tasks associated with the reconstruction of Route 9A adjacent to the World Trade Center site. Work elements included demolition of the temporary pedestrian bridges at Vesey Street and Rector Street and reconstruction of approxi-

Joseph B. Matarazzo, PE continued

mately 60 feet of the approach structure ("bathtub") to the West Street Tunnel. The approach structure is being reconstructed due to the proposed alignment of Route 9A. Involves relocation of the east pier of the Liberty Street pedestrian bridge and design of a new center pier. The new piers are necessary due to the proposed alignment of Route 9A. Involves design of a \$5-million, 140-foot-long architecturally enhanced pedestrian bridge that connects to the existing Liberty Street Pedestrian Bridge. The bridge is necessary to maintain pedestrian circulation through the World Trade Center site during construction. Reviewed plans, specifications, and calculations prepared by others for the construction of a pedestrian concourse below Route 9A, and ventilation and egress structures for the PATH subway tunnels, which are below the highway.

NYSDOT Region 10, Wantagh Parkway over Sloop Channel, Nassau County New York: Project manager for construction support services for the new approach spans to this bascule bridge. Both approaches are four-span continuous precast, prestressed concrete superstructures, 80 meters long and 32 meters wide. The substructures consist of cap beams supported on 1.3-meter-diameter drilled shafts.

NYSDOT Region 11, Rehabilitation of 14 Bridges on or spanning the Cross Bronx Expressway, Morris Avenue to the Sheridan Expressway, Bronx, NY: Project manager for the preliminary design for rehabilitation and/or replacement of 14 bridges on or spanning the Cross Bronx Expressway from Morris Avenue to the Sheridan Expressway. Structures include 4 steel rigid frames, 4 concrete rigid frames, a concrete arch, an 18-span viaduct, a 9-span multi-girder bridge and 3 simple-span bridges at a cost in excess of \$90 million. Managed preparation of preliminary design documents, in-depth inspection, deck evaluation, design approval documents (DAD), calculation of as-built and as-reconstructed load ratings, and seismic analysis for each structure. Directed various studies: traffic, accident, utility, and environmental (hazardous material mitigation). Prepared maintenance and protection of traffic schemes and construction schedules. Directed a study for various widening alternatives, from six to eight lanes, for this section of the expressway. One alternative included HOV lanes. Directed a special detailed study for the replacement of 15 concrete frame structures along the entire corridor with precast compo-

nents. This study included preparation of construction schedules for each structural alternative for each bridge. An interim component rehabilitation design project was implemented to rehabilitate all structures to extend their "safe" life until final reconstruction in the year 2012.

NYSDOT Region 10, Wantagh Parkway over Sloop Channel, Nassau County, NY: Structural engineer for superstructure replacement and substructure rehabilitation for this 18-span 576-foot-long bridge that included new concrete slabs and continuous prestressed concrete I-Beams. Maintenance and protection of traffic was an important design element. Participated in in-depth inspection and performed load ratings of existing structure.

NYCDOT Belt Parkway Bridge over Mill Basin, Brooklyn, NY: Task leader, under the REI contract, for correction of a problem with replacement of the steel grid deck system and steel repairs for this two-leaf bascule bridge. The deck system was designed by a design-build contractor and AECOM provided resident engineering and inspection. During the final inspection, it was observed that the connection of adjacent grid deck panels, in the longitudinal direction of the bridge, did not provide sufficient rigidity. Responsible for investigating and developing details that successfully corrected the problem.

NYCDOT Rehabilitation of Grand Central Parkway Bridges, Queens County, NY: Participated in the rehabilitation of six single and multi-span steel bridges over the Grand Central Parkway: 31st Street, 35th Street, 37th Street, 44th Street, 47th Street, and 49th Street. Responsibilities included inspection, deck slab design, development of profiles, development of structural repair details, preparation of site/civil plans, maintenance and protection of traffic plans, and estimates.

NYC DDC On-Call Services for Rehabilitation of Retaining Walls - Jackie Robinson Parkway, Queens, NY: Project manager for the rehabilitation repair of a 280-foot-long wall that separates the parkway from Cypress Hills Cemetery. The wall has deflected laterally several inches. A context-sensitive design is required to avoid disturbing graves adjacent to the wall. Work includes in-depth inspection, preparation of rehabilitation alternatives.

Stewart L. Willis, PE

Lead Structural Engineer - New Jersey Office

Mr. Willis is an accomplished civil engineer with extensive experience in bridge design. As NJ Department Manager for AECOM USA, Inc., he is very familiar with PANYNJ, NJDOT and NJTA design standards. Mr. Willis has been the lead structural engineer for the design of a new flyover bridge on the Interchange 16W/Route 3 Ramps Improvements project for NJTA, as well as serving on bridge design and widening projects for both curved steel plate girder and prestressed concrete beam structures for NJDOT and the PANYNJ.

Southern Access Roadway Project (SARP), The Port Authority of New York and New Jersey (PANYNJ), Newark, NJ: Project manager and project engineer for three design and three construction contracts that included curved and straight steel plate girder bridges, as well as prestressed concrete beam bridges for access to new terminal space at Newark Airport. Responsible for structural management of the \$31-million SARP Contract 1 and \$19-million SARP Contract 2. Supervised eight structural engineers and four CADD designers.

Interchange 16W/Route 3 Ramp Improvements Project, New Jersey Turnpike Authority (NJTA), East Rutherford, NJ: Department manager responsible for supervision of the final design and contract document preparation for five bridges and four retaining walls. Two single-span bridges included integral abutments, prestressed concrete bulb-tee beams and wrap-around mechanically-stabilized earth two-stage retaining walls with stub abutments. One three-span flyover bridge consisted of curved steel plate girders on multi-column piers. Two additional bridges consisted of widening the existing structures while maintaining the original minimum vertical clearance.

Route 1&9 Interchange 35, New Jersey Department of Transportation (NJDOT), Woodbridge, NJ: Department manager responsible for supervision of the final design. The reconstruction of Route 1&9 and Route 35 interchange in Middlesex County included demolishing and constructing a new bridge carrying Route 1&9 over Route 35, and a reconstructed interchange at that location. The project also included evaluating and developing construction staging methods and alternatives at the Route 1&9/Route 35 interchange.

Education

MS, Civil Engineering, University of Central Florida, Orlando, 1993

BS, Civil Engineering, University of Florida, Gainesville, 1985

Registration

Professional Engineer: NJ (2002, # 24GE04340000); and NY (2005, #083362)

Professional Associations

American Society of Civil Engineers (ASCE)

American Institute of Steel Construction (AISC)

Years of Experience: 25

Route 139, Contract 2, NJDOT, Jersey City, NJ: Department manager for a contract for a complete concrete deck removal and deck replacement, implementing seismic retrofit and superstructure component rehabilitation/replacement for the 12th and 14th Streets Viaducts at the entrance to the Holland Tunnel. In order to perform this work using stage construction, a shoulder structure was constructed on the north side of the 14th Street Viaduct to provide the bridge width necessary to perform the lane shifts.

Route 139, Contract 3, Conrail Viaduct, NJDOT, Jersey City, NJ: Department manager responsible for this contract that included deck removal and replacement, structural rehabilitation of the Conrail Viaduct, and seismic retrofits. Staged construction was utilized in the removal and replacement of the existing bridge deck.

NYCDOS Marine Transfer Stations, NY: Department manager for this \$500-million contract that included the design of ramp structures at marine transfer stations at Hamilton Avenue in Brooklyn, and West 135th Street in Manhattan. The ramp structures consisted of cast-in-place concrete box girders on concrete piers with heavily curved and skewed alignments.

Route 46 over Browertown Road, Section 46, NJDOT, Little Falls, NJ: Department manager responsible for a \$14-million interchange improvement project. The project

Stewart L. Willis, PE continued

involved upgrading an interchange originally constructed in 1939 to improve safety and increase capacity. Included the realignment of four ramps, construction of two service roads to access existing businesses along the highway, reconstruction of Browertown Road, and three proposed traffic signals. Structures included a bridge widening with deck replacement, seven retaining walls, five sign structures, one new culvert, and three culvert extensions/rehabilitations.

Wedgewood Avenue over Wedgewood Brook, (Middlesex County), Woodbridge, NJ: Department manager responsible for the project, which included replacement of Bridge 1-B-19, a single cell reinforced concrete box culvert. The existing culvert was replaced by a single cell precast, post-tensioned concrete box culvert. Demolition notes and details were included for the removal of the existing box culvert. Cofferdam notes and details were also included for the removal and replacement of the existing culvert.

Burnt Mills Road over Maine Turnpike, Maine Turnpike Authority, ME: Project engineer responsible for providing superstructure design and detailing for a two-span continuous curved steel girder bridge replacement. Responsibilities included geometric layout, final design, cost estimation, plan preparation, and quality control. The project value is \$10 million.

Broken Arrow South Loop, Oklahoma Turnpike Authority, Tulsa, OK: Project engineer responsible for providing project management and engineering, structural design, and plan preparation for the Haikey Creek Viaduct, consisting of two 5,000-foot-long, 47-span, curved steel plate girder and prestressed concrete beam structures. Also provided, under a separate contract, design and plans preparation for seven two-span prestressed concrete beam structures. Project value is \$20 million.

Yellow Mill Bridges, Connecticut Department of Transportation (ConnDOT), CT: Project engineer responsible for the preparation, design, details, and plans of a reinforced concrete sidewalk removal and replacement of a movable bridge. Project value is \$25 million.

Sidney Lanier Bridge, Georgia Department of Transportation (GDOT), GA: Project engineer responsible for cable-stayed bridge design with A-frame towers, edge

girders, floorbeams, and precast deck panel superstructure. Project value is \$20 million.

Route 21, Section 6L, NJDOT, Newark, NJ: Project engineer responsible for roadway extension consisting of curved steel plate girders and prestressed concrete beam bridges on concrete and steel box girder pier caps. Project value is \$25 million.

Route US 46 and Ramp B over Route 21, NJDOT, Newark, NJ: Project engineer responsible for providing substructure design and plan preparation of steel box girder pier caps for a seven-span bridge. Prepared design and details for a four-span continuous curved steel plate girder superstructure including connections to steel boxes. Project value is \$20 million.

Central Artery Tunnel, Massachusetts Transportation Authority (MTA), Boston, MA: Project engineer responsible for the preparation of finite element tunnel models including geometry and seismic loading conditions for final design of three separate sections through downtown Boston. Participated in the final design and plan preparation of slurry/steel soldier pile walls, concrete floor slab, and steel girder roof systems. Project value is \$35 million.

SR-826 Palmetto Expressway, Florida Department of Transportation (FDOT), Miami, FL: Project engineer responsible for preparing final geometric layout design and plan preparation for five bridge replacements, and two bridge widenings with existing deck replacement. Provided geometric control, design, and details for 11,000 feet of stabilized earth retaining walls. Also responsible for design of concrete abutments, piers, deck slabs, and prestressed beams. Project value is \$20 million.

Fuller-Warren Bridge over St. John's River, FDOT, Jacksonville, FL: Project engineer responsible for providing geometric layout, design, and details for the Interstate 95 bridge replacement. Provided geometric layout of complex on-ramps and mainline Interstate 95 over the St. John's River in downtown Jacksonville. Also responsible for the design of the Bulb-Tee beam superstructure on concrete hammerhead piers. Project value was \$30 million.

Swapan K. Chaudhuri, PhD, PE

Lead Structural Engineer - New York Office

Dr. Chaudhuri has extensive experience in structural engineering related to highway bridges/railroad bridges and tunnels, nuclear/fossil power plants, defense applications, and industrial facilities. He has managed teams of engineers involved in a variety of bridge engineering and nuclear power projects. He recommended impact factors for horizontally curved I-girder bridges that were adopted in the AASHTO Guide Specifications for Horizontally Curved Girder Bridges. Dr. Chaudhuri also has extensive background in seismic analysis/design considering non-linearity effects as applicable to various bridge engineering and nuclear projects in the U.S. and abroad. Additional experience includes software development, applications and engineering automation projects in FEM, structural dynamics, and underwater blast/impact analysis.

PANYNJ, Lincoln Tunnel Bus Ramps Rehab and Sign Structures, NY: Design development of pre-cast concrete deck panels containing a snowmelt system for ramp E92, and review of design development for the sign structures. The project value was \$10 million.

PANYNJ Staten Island Rail Road Connections to Conrail Chemical Coastline, NY: This project features new rail links on embankment and structures, modifications of the existing bridge conveying vehicular traffic on Bayway Avenue over Conrail, partial modification and rehabilitation of the steel trestle approach to the Arthur Kill Lift Bridge, multiple grade separation structures, and utility relocations and appurtenances. Reviewed the design development packages for a ballasted closed deck multi-girder bridge segment, meeting the requirements of AREMA and AASHTO specifications. Detailed activities included developing conceptual design, project development and coordination of computer aided engineering/analysis/CAD activities of bridge segments under various railroad loading, including seismic conditions and utilizing LARSA/AutoCAD software, strength and fatigue designs of girders, design of railroad bearing, foundation design, and engineers estimate of quantities. The project value was \$24 million.

NYSDOT Rte 25 Bridge over LIRR: Project engineer for complete engineering services of a single-span bridge

Education

PhD, Civil Engineer, University of Pennsylvania, 1975

MS, Civil Engineer, University of Pennsylvania, 1970

BS, Civil Engineer, University of Calcutta, 1967

Registration

PE: NY, 2003, Registration No.: 080483

Professional Associations

American Society of Civil Engineers (ASCE);
Treasurer (2005)

American Institute of Steel Construction (AISC)

Years of Experience: 43

over LIRR, consisting of a composite concrete deck over 8 straight I-Girders framed by cross bracings and supported on skewed abutments.

NYSDOT Whitestone Expressway Project, NY: Reviewed FEM analysis and design of a twin curved box girder bridge structure as per AASHTO specifications. The project value was \$40 million.

NYCDOT Rehabilitation of Marine Parkway Bridge, NY: Design adequacy of the steel sidewalk platform connections under thermal loading due to solar radiation by FEA using LARSA software.

Hamilton Avenue Bascule Bridge over Gowanus Canal, NYCDOT: Supervised the seismic evaluation group. A detailed FEM model was developed and seismic analysis was performed for the skewed bascule bridges, including foundation piers, retaining walls, considering pile stiffness by using LARSA software. Recommendations called for site-specific evaluation of geotechnical parameters and development of site-specific spectra. A seismic evaluation report was developed and presented to NYCDOT.

NYDOS Marine Transfer Station Ramp Structures, New York, NY: Project supervision of the design engineering services for six ramp structures over water and land. The design activities included CIP concrete curved bridge structures on very sharp curve alignments consisting of twin connected box girders and single multi-cell

Swapan K. Chaudhuri, PhD, PE continued

box girders. Detailed activities included the longitudinal design/analysis using GT STRUDL and CONBOX software, the transverse design/analysis using STAAD and selection of bridge bearing. The seismic analysis was carried out using multi-mode response spectra method as per AASHTO and NYSDOT blue pages, considering complete interactions of superstructure, substructure, and foundation. The project value is \$58 million.

NYCDOT Rehabilitation of Hamilton Avenue Bascule Bridge over Gowanus Canal, NY: Supervised the seismic evaluation group. A detailed FEM model was developed and seismic evaluation was performed for the skewed bascule bridges, including foundation piers and retaining walls, considering pile stiffness by using LARSA software. Recommendations called for site-specific evaluation of geo-technical parameters and development of site-specific spectra. A seismic evaluation report was developed and presented to NYCDOT. The project value was \$10 million.

NYSDOT Route 120 Bridges over I-684, Westchester County, NY: Project supervision of the design engineering services for ramp bridges K and H of Route 120 over I-64. The structures considered are two-span continuous bridges with composite concrete decks over four horizontally curved I-girders connected by cross bracings and lateral wind bracings. Detailed activities included the design/analysis of the bridges using MDX and GT STRUDL software considering superstructure/substructure interactions, design of multi-rotational pot bridge bearings, piers, and abutments. The wind/thermal designs are carried out using static analysis, and the seismic design is carried out using dynamic multi-mode response spectra analysis, as per AASHTO and NYSDOT blue pages using GT STRUDL software. The project value is \$6.5 million.

NYSDOT Rehabilitation of Route 201 Bridge over Susquehanna River, NY: Supervised complete work of seismic/live load analysis and design, load rating for HS-20 truck and lane loading, and a recommendation of retrofit measures per AASHTO and NYSDOT standards. The project value was \$10 million.

NYCDOT Pelham Parkway Bridge Reconstruction Project: Senior structural engineer responsible for developing design plans consisting of general/MPT/demolition/proposed bridge/profiles/utility/ROW plans and sections

based on BRPR information, NYS Bridge Manual, NYC-DOT Standards and AASHTO specifications.

NYSDOT Roosevelt Avenue Viaduct Structure: As technical leader, responsibilities included the structural engineering activities for the rehabilitation of the Bascule span of the viaduct structure. The project includes bridge deck replacement, widening of the sidewalks, review of the existing design, condition evaluations of damaged/deteriorated structural members, recommendations for steel/concrete structure repairs and development of structural plans for the project.

NYSDOT Major Deegan Expressway Viaduct Structure: As technical leader, responsible for the rehabilitation project that includes bridge deck replacement, structural steel repairs, replacement of bearings. The activities included the review of the fatigue and seismic analysis of the complete viaduct structure using SAP2000 software and recommendation of retrofit measures for improving fatigue and seismic related deficiencies.

NYCDOT East 78th Street Pedestrian Bridge: Reviewed the Bridge Reconstruction Final Design covering computerized structural analysis for Dead Load, HS-20 Live Load, Seismic, Wind, Thermal loads, designs of Elastomeric Bearings, Supporting Columns, Concrete Deck Slab, Base Plates/Anchor Bolts and Abutments as per AASHTO/AISC/ACI codes, using LARSA software.

NYCDOT Pelham Parkway Bridge Reconstruction Project: Responsible, as a senior structural engineer, to develop design plans consisting of General/MPT/Demolition/Proposed Bridge/Profiles/Utility/ROW plans and sections based on BRPR information, NYS Bridge Manual, NYCDOT Standards and AASHTO specifications.

Jet Blue Airways, Terminal 5, Terminal Redevelopment, JFK Int'l. Airport: As senior structural engineer, responsible for conceptual layout design and framing details for two long curved ramps at each side, connecting the departure frontage to arrival level roadway. Supervised analysis/design activities that use MDX and SAP 2000 software and consider superstructure/substructure interactions, design of bearings, piers and abutments. Special supervision of the Seismic design using Multi-Mode Response Spectra analysis as per AASHTO, NYCDOT and NYSDOT downstate seismic criteria.

Jitesh Shah, PE

Lead Structural Engineer - New Jersey Office

Mr. Shah has extensive experience in structural engineering that includes working on bridges, retaining structures, power plants, airports, maintenance facilities, and heavy industrial and commercial buildings. He is thoroughly familiar with AISC and ACI codes, AASHTO and AREA specifications. He is also familiar with COGO-PC, Conspan, BAR-7, RC-Pier LA, STAAD-Pro and GTStrudl computer programs and finite element techniques. He has designed more than 22 bridges.

Englishtown Road Improvement Project, Old Bridge, New Jersey: Project engineer for design of a single barrel culvert under Route 527. Design involved staged construction of culvert to allow two lanes of traffic during construction. Prepared final contract plans and cost estimates.

U.S. Route 1-Section 3H, New Jersey Department of Transportation (NJDOT), Plainsboro, New Jersey: Project engineer for single barrel culvert under Ramp "C" and culvert extension under U.S. Route 1. Responsible for design and contract plan preparation.

NJ Turnpike Widening Project, New Jersey: Project engineer for the design, contract plan preparation and cost estimates for two culvert extensions for Road SNO widening.

Route 139 (1), Jersey City, New Jersey: Project engineer for 12th, 14th, and Conrail Viaducts. The project site is about half a mile west of the Holland Tunnel. The project involved seismic retrofit and deck replacement for the structures. Responsible for seismic analysis for various types of structures such as steel stringer, girder-floor beam, truss, two-level deck structure and concrete flat slab type structures. Deck replacement involved a long term, multi-stage deck construction for 12th and 14th Street Viaducts and overnight deck replacement for Conrail Viaduct.

Route U.S. 9 S.B. over Raritan Bridge, New Jersey: Project engineer for this 4,390-foot-long bridge over the Raritan River. Project consists of integral pier with spliced prestressed concrete girders (134-foot to 173-foot-long spans) and 1,890-foot-long nine-span continuous steel girder system.

Education

MS, Structural Engineering, University of Cincinnati, OH, 1980

BS, Civil Engineering, University of Baroda, India, 1975

Registration

PE: NJ, 1987, Registration No.: 24GE03265900

Professional Associations

American Institute of Steel Construction (AISC)

Years of Experience: 36

Seaview Circle Ramp Bridge over the North Channel of the Shark River, New Jersey: Project engineer for the design of a jointless bridge. Three-span continuous prestressed concrete bridge with prestressed concrete pile bent.

NJ Turnpike Southern Mixing Bowl Project, New Jersey: Project engineer for the development of contract plans and cost estimates for the following bridges and retaining walls:

NJ Turnpike over Foundry Street: Widening of three existing bridges to accommodate one additional 12-foot lane and 12-foot shoulder.

NJ Turnpike over Delancy Street: Three-span continuous composite, multi-girder steel superstructure.

Retaining Wall 12A and 12B: 860-foot-long retaining wall to support road NJ-14.

Route 35 over the North Channel of Shark River Project, Monmouth County, New Jersey: Project engineer responsible for three-span, continuous prestressed concrete girder superstructure supported on prestressed concrete pile bents.

Garden State Parkway Widening Project, New Jersey: Project engineer responsible for the complete design and detailing of three bridges over Garden state Parkway. Design included geometric design and structural design of super and substructures.

Jitesh Shah, PE continued

SR-1, Relief Route Project, Delaware: Project engineer for superstructure and substructure design by load factor method, preparation of final contract plan, cost estimate and specification for five bridges:

- SR-72 over SR-1, two-span continuous composite, multi-girder steel superstructure.
- Road 409 over SR-1, two-span continuous composite, multi-girder steel superstructure.
- N406 over SR-1, two-span continuous composite, multi-girder steel superstructure.
- SR-1 over Dragon Run Creek, four-span continuous prestressed concrete beam superstructure and prestressed concrete pile bent.
- SR-1 over Scott Run, two-span continuous prestressed concrete beam superstructure and prestressed concrete pile bent.

New Jersey Turnpike Widening Project, New Jersey: Project engineer for superstructure and substructure design by load factor method and contract plan preparation. Design included stage construction for five bridges:

- U-turn Bridge over NJ Turnpike - four-span continuous composite multi-girder steel superstructure.
- Fulton Street over NJ Turnpike - four-span composite multi-girder steel superstructure.
- Port Reading Avenue over NJ Turnpike - horizontally curved, composite multi-girder steel superstructure.
- SASI Ramp over the Northbound NJ Turnpike - horizontally curved, composite multi-girder steel superstructure and cantilever steel box girder cap beam supported on concrete pier.
- SANI Ramp over the Northbound NJ Turnpike - horizontally curved, composite multi-girder steel superstructure and cantilever steel box girder cap beam supported on concrete pier.
- SISA Ramp over the Southbound NJ Turnpike - horizontally curved, composite multi-girder steel superstructure and balanced cantilever steel box girder cap beam supported on concrete pier.
- NISA Ramp over the Southbound NJ Turnpike - horizontally curved, composite multi-girder steel superstructure and balanced cantilever steel box girder cap beam supported on concrete pier.

Garden State Parkway Widening between MP 163.4 to MP 167.4, New Jersey: Project engineer for design and detailing of the three bridges listed below as a part of widening of the Garden State Parkway.

- Widening of NB and SB GSP over Midland Avenue - Three-span prestressed concrete superstructure supported on concrete piers.
- Linwood Avenue over GSP - Four-span steel superstructure supported on concrete pier.
- East Glen Avenue over GSP - Four-span steel superstructure supported on concrete pier. Design involved stage construction.

Route 7, Delaware: Responsible for the design four bridges, which included the following:

- N.B. and S.B. Route 7 bridges over Route 40 - Two-span curved girder steel superstructure supported on concrete frame piers.
- N.B. and S.B. Route 7 bridges over School Bell Road - Single-span steel girder superstructure supported on concrete frame piers.

Washington Street Bridge, New Jersey: Designed and prepared final contract plans, estimation of prestressed concrete box girder bridge over Washington Street.

Nottley River Highway Bridge, North Carolina: Designed composite deck on prestressed concrete and steel plate girders. Project consisted of 60-foot-high piers on pile and spread footings.

Ellamore and Harmaoy Highway Bridges, West Virginia: Inspected, rated, and rehabilitated 150 feet of truss bridges.

University of Maryland Interconnecting Bridges, Maryland: Project entailed a steel bridge connecting two existing buildings at the ninth floor. Checked existing building frames for additional bridge loads.

Conrail Bridge over NJ Transit, Conrail, New Jersey: Designed and prepared contract plans and cost estimates through plate girder railroad bridge to carry two tracks of Conrail over NJ Transit, and pedestal to support superstructure.

Thomas E. Harriott, PE

Lead Structural Engineer - New Jersey Office

Mr. Harriott has 21 years of experience in bridge and structure projects. He is responsible for the structural analysis, design, planning, cost estimating and management of multidisciplinary transportation projects. He also provides construction management services for various transportation projects. He has expertise with STAAD III, Seisab and Descus design software and MicroStation.

The Port Authority of New York and New Jersey, George Washington Bridge, Repair Inspection, Fort Lee, New Jersey. Structural engineer responsible for cataloging repairs made to the George Washington Bridge as part of an ongoing maintenance program.

The Port Authority of New York and New Jersey, Continental Airlines, Newark International Airport, Newark, New Jersey. Structural engineer responsible for the superstructure and substructure design of a 2,000-foot-wide culvert to cover a drainage facility at Newark Airport and increase the mobility of aircraft taxiing at the airport.

The Port Authority of New York and New Jersey, International Arrivals Terminal Redevelopment, JFK International Airport, Jamaica, New York. Structural engineer responsible for the bridge design of elevated roadways servicing the arrivals terminal. Also prepared cost estimates for the airside and landside activities of several alternatives to upgrade the International Arrivals Terminal.

The Port Authority of New York and New Jersey, Port Authority Bus Terminal, New York City, New York. Structural engineer responsible for preliminary investigations to rehabilitate and/or replace the bus access ramps to the terminal from the street level.

New Jersey Department of Transportation, South Broad Street (Route 206) over Assumpink Creek, Trenton, New Jersey. Project manager for preliminary and final design for rehabilitation or replacement of Bridge No. 140.2, which has been classified as functionally obsolete due to the substandard geometry and as structurally deficient due to the poor condition of the superstructure and substructure. The bridge is in a historic area of Trenton and has been determined eligible for listing in the National Register of Historic Places. Attempts at minimizing the

Education

MSCE, Structural Engineering, New Jersey Institute of Technology, 1997

BSCE, Civil Engineering, Bucknell University, 1989

Training and Certifications

NJ Transit Rail Operations Contractor Safety Orientation, 2005

FHWA/NSBA Steel Bridge Design AASHTO LRFD Bridge Design Specifications, 2004

FHWA Bridge Management/Bridge Inspection Refresher Course, NHI #130053, 2004

ASCE Seismic Design of Highway Bridges, 2002

NJDOT Load and Resistance Factor Design of Highway Bridges, 2000

PennDOT 78-hour Bridge Safety Inspection Training Course, 1998

Professional Registrations

Professional Engineer, New Jersey, #39697, 1996

Years of Experience: 21

impact to the historic character of the bridge are being aggressively pursued in the design of the replacement bridge.

New Jersey Department of Transportation, Route 287 Northbound over Route 46 Deck Patching, Parsippany, New Jersey. Project manager for design of traffic control plans and structural details to repair the 4-span, simply supported bridge deck using Type B repairs. Managing investigation of the entire bridge deck for deteriorated areas, which will be repaired, then the entire bridge deck will be overlaid with a latex-modified concrete layer. The key is to get the plans to the client as fast as possible to include this project in the economic stimulus program for the state of New Jersey.

New Jersey Department of Transportation, I-295, Gloucester County, New Jersey. Structural engineer responsible for details to repair bridge decks located in this 10-mile highway corridor. The highway is being rehabilitated by rubblization and resurfacing.

Thomas E. Harriott, PE continued

New Jersey Department of Transportation, NJ Route 183 over NJ Transit, Netcong, New Jersey. Project manager for final design of a new bridge over NJ Transit railroad tracks. The proposed bridge will be part of a new intersection between US 46 and NJ Route 183. The new intersection will eliminate the traffic circle intersection currently in use and improve traffic flow through the Borough of Netcong.

New Jersey Department of Transportation, County Bridge Inspections and Evaluations, Union County, New Jersey. Team leader responsible for field inspections, load rating calculations, and condition survey reports for 45 of the 90 county bridges.

New Jersey Department of Transportation, Structural Evaluation and Bridge Management, 32 State-Owned Bridges, Various Counties, Northern New Jersey. Project manager responsible for NBIS inspections, condition ratings, and inspection reports for 32 state bridges in various counties.

New Jersey Department of Transportation, Shark River Bridge, Belmar, New Jersey. Structural engineer responsible for the final design of a timber fender system to protect bridge piers within the navigable waterway.

New Jersey Department of Transportation, Route 9 over the Bass River, New Gretna, New Jersey. Structural engineer responsible for the preliminary design of prestressed concrete members and other elements of the superstructure. Also prepared preliminary cost estimates for alternatives selected for various substructure configurations.

New York State Department of Transportation, Roslyn Viaduct, Roslyn, New York. Team leader for an inspection project to implement a monitoring program to determine the condition of expansion joints, pin and hanger assemblies, and fatigue-prone areas of the viaduct.

New York State Thruway Authority, Exchange Street Lift Bridge over the Erie Canal, New York. Structural engineer responsible for an in-depth inspection and repair recommendations for a closed lift bridge over the Erie Canal. Responsibilities included the preparation of a report describing structural deficiencies of the bridge, repair recommendations, replacement options, and cost estimates for various replacement alternatives.

New Jersey Department of Transportation, North Broad Street over Route 22 Interchange, Hillside, New Jersey. Structural engineer responsible for the preliminary design and cost estimates for a new two-span steel bridge and ancillary roadwork involving changes of grade and associated retaining wall structures.

New Jersey Department of Transportation, Route 1&9 Elizabeth River Viaduct, Elizabeth, New Jersey. Structural engineer responsible for the preliminary superstructure design and the preparation of drawings to rehabilitate the Elizabeth River Viaduct.

New Jersey Department of Transportation, Inspection and Evaluation of 80 Somerset County Bridges, New Jersey. Structural engineer responsible for field inspections, load rating calculations, and condition survey reports for 80 off-system bridges in Somerset County.

New Jersey Department of Transportation, Statewide Bridge Scour Evaluation Program, New Jersey. As structural engineer, prepared guidelines for the Bridge Scour Evaluation Program. [1994] Developed contract plans for implementation of scour countermeasures at various bridges.

New Jersey Department of Transportation, Inspection and Evaluation of 65 Bridges, Bergen County, New Jersey. Structural engineer responsible for field inspections, load ratings, and condition survey reports for 65 off-system bridges.

New Jersey Department of Transportation, I-80/95 (Sections E & J) Rehabilitation and Operational Improvements, Bergen County, New Jersey. Structural task leader responsible for designing noise barriers with varying foundations types to be placed in front of, on top of, or behind existing retaining walls along the roadway, rehabilitating four cross-over bridges to improve physical condition and conform to current seismic requirements and designing bridge mounted sign structures to replace highway signs along the length of the project. [2001 - 2003] As deputy project manager, provided construction support services throughout the construction period of the project for field changes and review of shop drawings.

Darin K. Melberger, PE

Structural Support Staff - New Jersey Office

With over 20 years of experience in the transportation industry as a structural engineer, Mr. Melberger's design experience includes a variety of structures, including tunnel, railway, and vehicular bridges. In addition, he also has field experience in heavy civil construction, geotechnical engineering, as well as bridge condition inspection, which includes several long-span bridge structures.

Reconstruction of the 145th Bridge Over Harlem River, New York, NYCDOT.

Senior structural engineer responsible for construction support services for this steel truss swing bridge and its composite steel approach spans. Work includes project coordination with the owner, responding to contractor RFIs, and reviewing shop drawings.

Belt Parkway Bridges over Mill Basin and Gerritsen Inlet, NYCDOT. Project engineer responsible for emergency repair/installation of the median guide rail for this dual leaf bascule bridge. Design included new box girder supporting the median guide rail. All designs and plans are detailed as per NYSDOT standards and specifications.

Reconstruction of Shore Road, Bronx, New York, NYCDOT. Senior structural engineer responsible for development of the Final Design Report for the reconstruction of this moveable bridge structure. Also provided input on the EIS regarding tidal and freshwater wetland, the navigation channel, and open water construction. The total proposed length of the structure is 800 feet.

Bear Tavern Road Bridge Replacement, Hopewell, New Jersey, NJDOT. Project manager for historic truss bridge. Work entailed preparation of Section 4(f) and SHPO documents as well as the design of a timber replacement truss.

Connecticut Bridge Rehabilitation Program I-95, Connecticut, CONNDOT. Structural inspection and design engineer for reconstruction of a multi-span steel girder bridge. Provided load ratings and inspection report recommendations, as well as a written report.

Reconstruction of Franklin Street at Lake Narraticon, Swedesboro, New Jersey, NJDOT. Project structural

Education

BS, Civil Engineering, Rutgers University, 1985

Registration

Professional Engineer: NJ (1993, #24GE03751700); and NY (2006, #083690)

Years of Experience: 25

engineer responsible for the design of a concrete spillway and an adjacent prestressed concrete box beam structure. Work required coordination with Dam analysis and hydraulic demand.

Replacement of Bridge #965 Over the Whippany River, Roxbury, Morris County, New Jersey. Project engineer for replacement of this steel through structure in using staged construction. Prepared staging drawings and structural drawings for construction contract.

Replacement of Various Single-Span Structures, Morris County, New Jersey. Project engineer responsible for design and construction support of several concrete culvert and precast concrete beam bridges. Responsibilities included approach and structure geometry, and structural design.

Replacement of the Route 21 Viaduct, Newark, NJ-DOT. Served as project design engineer for this steel viaduct over Amtrak and NJ Transit railroads. Work involved modeling curved steel segments with BSDI, and preparing final contract plans and cost estimates. Also responsible for advancing detailed geometry using Inroads software for all elevated structures. The total length of structure is approximately 5000 feet. Construction cost estimate: \$90 million.

Bridge Drainage Modifications, North Section, New Jersey, NJTP. Team leader and project design engineer responsible for inspection, evaluation and modifications to deck drainage on several viaduct structures. Work included hands-on inspection as well as the preparation of final contract documents.

Replacement of the Route 166 Bridge Over Jakes Branch, Toms River, New Jersey, NJDOT. Project

Darin K. Melberger, PE continued

engineer responsible for the design of this prestressed concrete structure. Design included pile supported concrete abutments and a timber retaining wall.

Diamond Street Bridge, Philadelphia, Pennsylvania, City of Philadelphia. Structural design engineer for this steel girder structure. The structure carries numerous utilities, including a large-diameter water and gas main. The total length of this bridge is over 1300 feet.

Connecticut Bridge Rehabilitation Program I-95, Connecticut, CONNDOT. Structural inspection and design engineer for reconstruction of a multi-span steel girder bridge.

Replacement of Hansen Road Bridge Over B&M RR, Town of Schaghticoke, New York, NYSDOT Region 1. Senior structural engineer responsible for the design of this 100-foot concrete bridge. Design includes adjacent precast prestressed concrete box beams founded on MSE abutments. Also prepared contracts plans, cost estimate, and specifications.

Hillside and Jamaica Avenue Bridge Replacements, Queens, New York, NYSDOT. Senior structural engineer for the design of two replacement bridges over the Van Wyck Expressway. The project requires the rolling in of the new bridges to alleviate traffic impacts on these two busy avenues. Provided design of the multi-stringer two-span superstructure with pile supported abutments. Also prepared final contract plans, cost estimates, and specifications.

Fairmont Gateway Connector Bridge, Fairmont, West Virginia, WVDOH. Senior structural engineer responsible for the design and detailing of this open spandrel deck arch bridge. The steel bridge utilizes vierendeel framing which required extensive modeling in 3D using GTstrudl software. The structure has a total length of nearly 500 feet.

Rumsey Bridge Rehabilitation, Shepherdstown, West Virginia, WVDOH. Project engineer for the repair and rehabilitation of this steel rhomboid truss structure over the Potomac River. Work included load rating and developing rehabilitation details. The length of the structure is 1500 feet.

I-10 Central Avenue Bridge, Phoenix, Arizona, AZDOT. Structural engineer for flat slab CIP structure. The bridge is founded on a tunnel structure, and the design involved modeling the short-term and long-term effects caused by the underlying structure.

Mid-County Expressway (Blue Route), Pennsylvania, PENNDOT. Structural engineer for curved steel girder structures. The length of structure in this project is over 2000 feet. Design utilized both V-load and GTstrudl modeling.

Atlantic City Tunnel Design-Build Project, New Jersey, Mirage/NJDOT. Design liaison and bridge lead for this multidiscipline project. Work included managing the design of eleven highway bridge structures and construction engineering review for the cut-and-cover tunnel. As design liaison, served as the full-time on-site project design engineer. Coordinated electrical, mechanical, civil, and structural designs during the construction phase of the work for a 4000-foot tunnel segment. Provided engineering expertise to the contractor for resolution of contract document conflicts, and managed all contract redesigns and field changes. Also performed reviews for temporary works including shop drawings related to tunnel support of excavation systems, static load tests, bridge erection, and MSE wall construction. Bridge work on the project included both curved steel girder and prestressed I-girder structures, with piled foundations. Construction cost was \$200 million.

John N. Daza, PE

Structural Support Staff - New York Office

Mr. Daza is a structural project manager and project engineer with extensive experience in highways and bridges. His structural engineering experience includes earth retaining systems and facilities design. His highway design experience includes the development of typical sections, pavement, alignments and profiles, and drainage.

Presently, Mr. Daza also provides technical support on implementation of computer technology and is responsible for the integration of computer hardware and software. In addition, he administers and provides technical support for MicroStation in the New York City office. Mr. Daza is proficient in a wide array of computer programs for engineering design, including Inroads, MicroStation, AutoCAD, Larsa, Conspan, Staad and MDX.

PANYNJ Hudson Terrace Bridge and TR1, TR2, and TR3 Ramp Rehabilitation, Fort Lee, NJ: Structural engineer for the rehabilitation of the Hudson Terrace Bridge over the eastbound approach to the lower level of the George Washington Bridge to improve the turning radius onto an emergency access ramp.

NYSDOT Region 11, Rehabilitation of the Brooklyn Queens Expressway, Queens, NY: Structural engineer for the final design of the rehabilitation of 1.5 miles of the BQE from Broadway to 25th Avenue, which includes reconstruction of 18 bridges, rehabilitation of over 5000 linear feet of retaining walls, 13000 linear feet of new walls, new drainage system, replacement of pavement and Maintenance and Protection of Traffic. Co-team leader of the retaining wall design team, which entailed providing assistance to design engineers, satellite offices, drafters and subconsultants working on the design and rehabilitation of the project's retaining walls. Coordinated between retaining wall designers and the various other design groups involved in this project, which include bridge, highway, landscaping, and utilities. Performed design calculations in conformance with AASHTO and New York State DOT design codes and standards. Design also included development of demolition and construction staging scheme in order to maintain existing traffic flow.

NYC DDC Connor Street Retaining Wall Design, Bronx, NY: Structural project manager for inspection,

Education

BS, Civil Engineering, State University of New York - Buffalo, 1997

Registration

Professional Engineer: NY (2002, # 079888); and NJ (2009, #24GE04798300)

Professional Associations

American Society of Civil Engineers (ASCE), Associate Member

Project and Professional Awards

ACEC Platinum Award: Seismic Vulnerability Assessment for Various Bridges, 2007

ASCE Gold Award: Battery Park Underpass Reconstruction

Years of Experience: 17

preliminary design, and final design for reconstruction of 125 linear feet of a pile-supported gravity-type concrete bulkhead on Connor Street along the Hutchinson River. Approximately 50 linear feet of the bulkhead has collapsed and 50 linear feet of the wall is severely undermined. The bulkhead supports a NYCDOT storage and maintenance facility.

NYSDOT Region 10, Wantagh Parkway over Goose Creek, Nassau County NY: Structural engineer for preparing PS&E package for the replacement of the bascule and flanking spans with a three-span continuous precast, prestressed concrete superstructure, 26 meters wide and 52 meters long. The substructures consist of cap beams supported on 1.3-meter-diameter drilled shafts. The bridge will be replaced in two stages.

NYSDOT Region 11, Seismic Vulnerability Assessment for Various Bridges, NY, NY: Structural project engineer and software developer involved is providing assessment of 300 to 400 bridges for vulnerability to seismic events. These bridges are located on and over an emergency access corridor extending from the Goethals Bridge in Staten Island to the George Washington Bridge in upper Manhattan. Each structure was screened to establish its seismic risk classification and an empirical

John N. Daza, PE continued

assessment was made to determine overall vulnerability to seismic events. Field verification of existing conditions was required for each structure. For a limited number of structures, a hands-on inspection and soil sampling was required, as well as an analytical assessment involving capacity/demand ratios and "push-over" analyses. AECOM recommended a course of action for seismic retrofit in relation to the vulnerability and importance on a structure-by-structure basis.

NYS DOT Region 11, Rehabilitation of the Long Island Expressway, Queens Midtown Viaduct to Grand Central Parkway, NY: As structural engineer, provided management and engineering design services for the rehabilitation of 5.5 miles of roadway and the rehabilitation/replacement of 27 bridges, various types of retaining walls, noise walls and overhead sign structures at a cost of \$150 million. Structural engineer for the construction support services.

Rehabilitation of 3 Canal Bridges, Long Beach, Nassau County, NY: Structural and highway engineer for the inspection of Sarazan, Ouimet, and Hagen Canal Bridges and the surrounding 800 meters of bulkheads. Structural design work consisted of the removal of the existing superstructures, design of the 3 three-span prestressed voided slab bridges, and rehabilitation of existing abutments, piers and surrounding bulkheads. Highway design included development of typical sections, pavement, alignments and profiles, drainage, maintenance and protection of traffic, addressing environmental impact concerns, and bikeway/walkway design.

NYS DOT Region 11, Cross Bronx Expressway - Rehabilitation of 13 Bridges, NY: Structural project engineer for in-depth inspection and load rating, bridge deck evaluations, surveys, substandard feature evaluation, preliminary design plans, maintenance and protection of traffic/construction staging, and bridge rehabilitation project reports for the rehabilitation of 12 bridges and a tunnel on or spanning the Cross Bronx Expressway, between Undercliff Avenue and East 174th Street in the Bronx. The bridges range from a 217-foot-long single-span steel girder ramp, to a hybrid structure of riveted variable depth girders and concrete rigid frame construction supporting an elevated subway line, to several two-span concrete rigid frames, to the Grand Concourse Tunnel through rock,

under a subway station and a major roadway. Except for the tunnel, this section of the expressway is in cut, up to 40 feet deep. Some locations are held by retaining walls, while others are cut rock. Participated in a study of the maintenance of traffic alternatives, detours and construction staging suitable to maintain existing lanes on the mainline at all times, except at night during off-peak operations. This study included innovative rehabilitation techniques to minimize future maintenance and speed construction.

NYS DOT Region 11, Cross Bronx Expressway Bridge Rehabilitations of 14 Bridges, Bronx, NY: Structural project engineer for the preliminary and final design (Phases I-VI), including a corridor study to evaluate the feasibility of increasing capacity and safety, which included studies considering HOV alternatives for the Cross Bronx Expressway. Work includes in-depth condition inspection, load ratings, seismic analysis, deck evaluation, design approval documents, and preliminary and final design of 14 bridges on or spanning the expressway from Morris Avenue to the Sheridan Expressway including redesign of the Sheridan Expressway (I-895) interchange. Participated in a special study for replacement of 16 concrete bridges along the corridor, which involved investigating the feasibility of using precast and prefabricated substructures, superstructures, and other innovative construction methods to minimize construction impacts and duration. The structures include four steel rigid frames, two 2-span concrete rigid frames, a closed spandrel, two concrete rigid frames with integral box type superstructure, a concrete arch, an 18-span viaduct with continuous girders, a 9-span multi-girder bridge, and three multi-girder grade separations, one of which supports an elevated subway line. As-built and as-reconstructed load ratings are required for all structures. As-inspected load ratings are required for steel bridges. A seismic analysis is performed for each structure and steel detail vulnerability assessments are performed for the 9 steel bridges. Other elements of the contract include traffic studies for the development of construction staging and maintenance and protection of traffic plans, accident study, utility study, and environmental study (hazardous material mitigation). An interim component rehabilitation design was prepared to rehabilitate all structures to extend their "safe" life until final reconstruction.

Leslie Hodelin, PE

Structural Support Staff - New York Office

Mr. Hodelin has extensive experience in the structural engineering of highways and bridges with public agencies such as the NYC DDC, NYCDOT, and NYSDOT. In addition, he is also proficient in the use of Staad-III, MathCAD, Cogo-PC, Excel, Lotus, WordPerfect, MicroStation, and AutoCAD.

NYCDDC Conduit Avenue Retaining Wall Designs, Brooklyn, NY: Structural engineer for rehabilitation of three concrete retaining walls totaling 195 feet, with granite facing flanking BIN 2-24446-0. Maintenance and protection of traffic and construction staging are significant components.

NYCDDC Highland Boulevard Stairway and Retaining Wall Rehabilitation, Brooklyn, NY: Structural engineer for rehabilitation of 90 feet of granite block stairway and retaining wall adjacent to BIN 2-03022-0, which carries Jackie Robinson Parkway over Sunnside Avenue.

NYCDOT Engineering Services Agreement - Pedestrian Bridge Inspections, NY: Inspector for various pedestrian bridges throughout the five boroughs of New York City. Tasks included general inspection of various bridge components, report preparation, and research of existing structural documents.

NYCDOT Engineering Services Agreement - Bridge Database System, NY: Project manager for the expansion of the existing NYCDOT Bridge Inspection System (BIS) to a more comprehensive division-wide bridge data system composed of three modules: a field system, an office system, and the upload-download module, with a database management tool to handle replication. The field system was a Visual Basic 5.0 application that processed data in a Microsoft Access 97 database using Data Access Objects (DAO) to achieve data manipulation. The office system and upload-download module were developed as Microsoft Access 97 VBA applications operating against a replicated Access database. The BDS will replace BIS with a new application and will consolidate the state and city database files into one comprehensive system. The new system will have enhanced functionality and will include all in-depth inspections performed under the Bridges Capital Program.

Education

BE, Civil Engineering, City College of New York, 1997

Registration

PE: NY, 2005, Registration No.: 082950

Professional Associations

American Society of Civil Engineers (ASCE)

Years of Experience: 14

NYCDOT Willis Avenue Bridge Replacement over the Harlem River, Manhattan and the Bronx, NY: Bridge engineer responsible for preparing proposals for bids and contract agreement documents for soil exploration program in the Harlem River and within project limits in Manhattan and the Bronx. Provided support services for drilling contractor. Attended meetings between New York City Department of Transportation and participating subconsultants/agencies, and prepared meeting minutes. Coordinated efforts between client, subconsultants and various city, state, and federal agencies involved. Assisted consultants in preparing design report, environmental impact statement, DEC permit application, HAER. Prepared USACE permit application and U.S. Coast Guard permit application. Provided information to private property owners within project limits concerning easements and work on property.

NYSDOT Region 9A Lower Manhattan Redevelopment Project Office, Temporary Bridge Extension for Liberty Street Pedestrian Bridge, NY: Structural engineer for the design of a temporary bridge extension to be connected along the southeast fascia of the Liberty Street Pedestrian Bridge, and span south. Superstructure designed in accordance with AASHTO and NYSDOT Bridge Manual specifications. Analysis using Staad model of superstructure. Prepared calculations and drawings, and coordinating staging with other work included in the overall project. Office CAD coordinator for project.

NYCDOT Hamilton Avenue Bridge Reconstruction over Gowanus Canal, Brooklyn, NY: Bridge engineer responsible for the design and detail of the operating machinery platform. Design consisted of cantilevered

Leslie Hodelin, PE continued

concrete slab and modification of pier walls for slab support system, and modification of south pier wall to provide concrete corbels for new railing posts. Responsibility also included steel design of access platforms, walkways, stairways, and ladders for access to trunnion towers, bearings, and counterweight.

NYSDOT Brooklyn-Queens Expressway Reconstruction from Broadway to 25th Avenue, Queens, NY:

Structural engineer for the final design for the reconstruction of 1.5 miles of the BOE from Broadway to 25th Avenue. Co-team leader of retaining wall design team which provided assistance to 6 design engineers, 2 satellite offices, and 1 subconsultant working on the design and rehabilitation of the project's retaining walls. Design consisted of both concrete cantilever and soldier pile and lagging walls. Performed design calculations in conformance with AASHTO and NYSDOT design codes and standards. Structural designer for new pumping station including preparation of plans and structural designs, and excavation system consisting of slurry wall cofferdam. Prepared quantity and cost estimates for pumping station structure and retaining walls. Responded to requests for information for retaining walls from contractors on site.

NYCDOT Engineering Services Agreement - Parade Balloon Review, NY: Engineer for the review of four new large balloons proposed for flying at the annual Macy's Thanksgiving Day Parade. Checked and reviewed specifications and calculations to ensure the balloons could be safely flown at the maximum designated wind speed, within the allowed clearance envelope. Monitored wind conditions during parade using wind meters on-site during the parade.

NYSDOT Wantagh State Parkway over Sloop Channel, Nassau County, NY: Bridge engineer responsible for the design and detailing of the Operator House, three auxiliary houses, and generator house for the new bascule bridge. Design consisted of concrete shear walls, deep beams, and slabs in conformance with AASHTO and ACI codes and standards. Prepared foundation design of spread footings for the generator house.

MTA, Long Island Rail Road, Rehabilitation of Queens Bridges, Queens, NY: Structural engineer responsible for the design and detail of soldier pile and lagging wall. Participated in inspection of three bridges.

NYC Department of Parks & Recreation, East River Parks, New York, NY: Structural designer of abutments and piers for two embayment bridges. Conducted analysis using STAAD and RCPiers, and provided structural details using AutoCAD. Designed elastomer bearings for superstructure in accordance with NYSDOT Bridge Design Manual. Designed removable concrete retaining wall system which consisted of cantilevered wall with spread footing, steel piles with concrete pile cap and concrete base beams to support footings. Prepared designs in accordance with AASHTO codes and standards.

NYSDOT East Pine Street Bridge Rehabilitations, Long Beach, NY: Structural engineer responsible for the design and detail of excavation and demolition staging of three bridge superstructures. Design and detail for new 12-inch water main suspended under superstructures. Prepared quantity and cost estimate for excavation and backfill, demolition, and water main.

NYSDOT Grand Central Parkway Bridge Rehabilitations, Queens, NY: Structural engineer responsible for the design of elastomer bearings to replace deteriorated rocker bearings on 13 bridges. Coordinated between two subconsultants and the lead consultant working on the project.

NYCDOT Engineering Services Agreement - Retaining Wall Inspections, NY: Lead inspector for various retaining wall inspections throughout the five boroughs of New York City. Tasks included general inspection of walls, report preparation, and general recommendations.

NYCDOT Bruckner Expressway Bridge Repairs, Bronx, NY: Structural engineer for detailed design and support during construction for temporary repairs to Bruckner Expressway (I-278) over Amtrak and CSX Railroads, following an oil tanker truck fire on the bridge that resulted in several steel girders being deformed and deflected downward, reducing vertical clearance. Assisting with development of contract documents to restore the vertical clearance by jacking the structure approximately six inches at the east abutment, replacing the deck joint, regrading the roadway, and repairing the separations between the deck and girders.

Asim K. Mazumdar, PE

Structural Support Staff - New York Office

Mr. Mazumdar has extensive experience with managing projects involving design engineering, along with construction support services to various facilities (such as highway and railroad bridges), including subway systems and railroad stations, commercial and industrial buildings, nuclear and fossil power generating stations, parking garage structures, and underground structures. Mr. Mazumdar is also skilled in the preparation of contract documents.

PANYNJ World Trade Center, Transportation Hub, Manhattan, NY: Package manager responsible for total design, developing contract documents, coordination with the Port Authority project management team and the contractor. Providing construction support services for early works packages. The various design packages involve design with consideration for blast loads and seismic loads over and above normal gravity loading conditions. The New York City Building Code and the International Building Code are used in the design. Blast analysis is performed based on criteria set by the U.S. Army. Detailed description of this project is confidential.

Jet Blue Airways, Terminal 5 – Elevated Roadway System, JFK International Airport, Jamaica, NY: Lead structural engineer responsible for the total structural design effort for the elevated departure roadway concrete structure. The scope of work included conceptual and final design of the departure ramps connecting to the terminal building. Two long curved ramps at each side connected the departure frontage to the arrival level roadway. Performed the conceptual design with consideration of the existing landmark structure and the surrounding features (like blast fence, AirTrain connectors, and nearby roadway intersection for terminal 6). Services also included site survey, conceptual design, preliminary cost estimate, final design, specifications, and engineer's estimate. Construction support services may be included in the scope at a later date. The design will consider all Port Authority standards, and AASHTO and NYCDOT seismic criteria.

PANYNJ Perimeter Intrusion Detection System for New York Airports, NY: Lead structural engineer responsible for the design of different systems mounted on the ground or on structures to detect moving objects

Education

MS, Structures, University of Pennsylvania, 1974
BS, Civil Engineering, University of Calcutta, India, 1969

Registration

PE: NY, 1997, Registration No.: 074717

Professional Associations

Structural Engineering Institute (SEI)

American Society of Civil Engineers (ASCE),
Treasurer

American Institute of Steel Construction (AISC),
Member

Publications and Presentations

Mazumdar, A.K., 1997. "Bridge Strengthening and Rehabilitation," presented to the National Science Foundation Symposium in Kansas City, MO

Years of Experience: 41

with or without provisions of detecting hazardous materials. Systems include CCTV, intelligent fence, crash gate protection system, etc. This work is classified and further discussion is not permitted.

Jet Blue Airways, Terminal 6 – Widening of Arrival Roadway, JFK International Airport, Jamaica, NY:

Lead structural engineer responsible for inspection, analysis, and load rating of the structure supporting the arrival roadway. The load rating was performed with consideration of an additional lane to the arrival frontage roadway to improve vehicular traffic flow and passenger movement. Developed contract documents with details of sidewalk demolition and construction phasing with consideration to maintaining terminal operation. In addition, provided construction support services.

Rehabilitation of Seven Bridges on or Crossing the Cross Bronx Expressway, Bronx, NY: Project engineer for phases I-IV, rehabilitation design for seven bridges from Bronx River Parkway to Castle Hill Avenue on or spanning the Cross Bronx Expressway. The work included a condition survey, load rating, bridge deck evaluation,

Asim K. Mazumdar, PE continued

and identifying substandard features. Developed preliminary plans with MPT scheme. Performed steel vulnerability and seismic assessment of existing structures, and calculation of quantity/cost with life cycle cost analysis for different rehabilitation alternatives for these bridges.

NYCDOT Upgrade of Several New York City Bridges, New York, NY: Project engineer during the design phase. This design and construction support services project is under the bridge component rehabilitation program of NYCDOT. Bridges involved included FDR drive at 58th Street, four bridges over Grand Central Parkway, part of Jackie Robinson Parkway, Belt Parkway over Ocean Parkway, and some city street bridges crossing Long Island Rail Road and Conrail tracks.

Reconstruction of the New England Thruway, Larchmont, NY: Project engineer for construction support services during reconstruction of 5 miles of New England Thruway, including rehabilitation of six bridges. Responsible to assure correctness and conformance of the construction documents to NYSDOT standard specifications and NYS Thruway Authority criteria. The work involved coordination between the contractor, Thruway Authority, Metro-North Railroad, and the project field office. Work also involved construction sequencing with consideration for railroad traffic on the New Haven line of MNR.

NYSDOT Concrete Vulnerability Assessment of 450 Bridges in New York City under Bridge Safety Assurance Program, Region 11, New York, NY: Task manager, working along with project manager to coordinate the entire work between subconsultants and in-house staff. One of the major responsibilities was to give engineering interpretation of three state manuals to assure the correctness of the coding scores assigned by each member of the team. Additional responsibilities included preparation of work schedules along with generation of progress reports and overall checking of the work.

NYSDOT Design of Prestressed Concrete Segmental Box Bridges, Route 120 over I-684, Westchester County, NY: Preliminary design of bridges considering the balanced cantilever design for the segmental box girders. Literature studies were done for finalizing the design approach along with AASHTO LRFD code criteria. Final design was done to develop the contract documents after approval of the preliminary design package by NYSDOT.

NYSDOT Rehabilitation of Sign Structures, Several New York Counties, NY: Project engineer responsible for scheduling and coordinating the design work with subconsultants' personnel and the construction schedule. Sign structures at different locations were identified and grouped for design, enabling efficient construction. Compiled and analyzed existing and new structures that needed rehabilitation. Prepared final design drawings and other construction documents.

DSNY Marine Transfer Station, Concrete Ramp Structures, NY: Joint lead for structural design engineering services for six ramp structures for land and water-based marine transfer facilities. The design activities included curved bridge structures on very sharp curved alignments consisting of twin connected box girders and single multi-cell box girders. Activities included design of the superstructures and substructures of the ramps. GTSTRUDL, CONBOX, and STAAD software were used for analysis/design. The bridge was designed to withstand seismic loads, and analysis was carried out per AASHTO and NYSDOT blue pages criteria, considering complete interactions of super-structure, substructure, and foundation.

American Airlines, Terminal Redevelopment – Elevated Roadway System, JFK International Airport, Jamaica, NY: Lead structural engineer responsible for the total structural design effort for a 160-foot-wide and 800-foot-long elevated roadway system in front of the new terminal building. Two 400-foot-long curved ramps at each side connect the elevated structure to the arrival level roadway. The construction documents for this viaduct structure were completed on a fast-track schedule of four months. The pedestrian/passenger overpass connecting the AirTrain station to the terminal building runs under this structure, and consideration was given to avoid interference between structural elements. Performed the structure study, and final design was performed with consideration of maintaining the terminal facilities during construction. Performed the complete design, developed contract documents, and assisted in bid preparation and finalization of the construction contract. The design considered AASHTO and NYCDOT seismic criteria. Also provided construction support services.

Alexander Napoli, PE

Structural Support Staff - New York Office

Mr. Napoli is experienced in the design, construction, and inspection of bridges and underground structures. He is currently working as a project manager on the Second Avenue Subway. He has designed numerous concrete structures, including pre-cast segmental box girder bridges, post-tensioned box girder bridges, and pre-cast concrete deck slabs, as well as composite steel highway bridges. His responsibilities included involvement in major structural decisions, oversight of the day-to-day design calculations, supervision of junior engineers and drafters, and monitoring the production of work.

LaGuardia Airport Cantilever Deck Replacement, PANYNJ, New York: Performed investigative analysis of the composite modular deck panels. Responsibilities included finite element analysis, report preparation, and presentation of results to the client.

JFK Bridge Repairs, PANYNJ, New York: Routine repairs of 27 bridges located within JFK airport. Bridge designer responsible for the field inspection, design calculations, and drawing production. Performed structural integrity evaluations of the most deficient bridges.

Repaving of Hudson Terrace, PANYNJ, Fort Lee, New Jersey: Investigation into the constructibility and cost impact of widening the overpass structure. Responsible for the development and preliminary design of five alternatives and composition of the final report.

Second Avenue Subway, MTA Bridges and Tunnels, New York City, New York: Currently working as the project manager on the 63rd Street Station rehabilitation with an estimated construction budget of \$106 million. Previous roles on the project included working as a structural engineer of the 96th Street Station, responsible for the analysis and design of the station slurry walls, and for the cast-in-place concrete roof, mezzanine, and invert. In addition, he worked on the final design study of the rock cavern concrete liner, investigating the cavern shape, creep and shrinkage, and service load conditions.

Marine Transfer Stations Ramp Structures, The City of New York Department of Sanitation (DSNY), New York City, New York: Structural engineer for six ramp structures, having sharp vertical and horizontal curved align-

Education

MS, Structural Engineering & Mechanics of Materials, University of California, Berkeley, 1999

BS, Civil Engineering, Manhattan College, NY, 1998

Registration

PE: NY, 2003, Registration No.: 080536 (Civil)

Professional Associations

American society of Civil Engineers (ASCE)

American Institute of Steel Construction (AISC)

Years of Experience: 13

ments, consisting of twin/single multi-cell concrete box girders. Responsibilities included the longitudinal, transverse, and seismic design/analyses that were completed using GT-STRUDL and STAAD software. A multimodal response spectra seismic analysis was conducted as per AASHTO and NYSDOT Blue Pages for Essential bridges.

Brooklyn-Queens Expressway Rehabilitation, New York State Department of Transportation (NYSDOT), New York: Structural engineer responsible for the analysis, design, and production of drawings for the bridge superstructure, consisting of continuous steel stringers with a composite concrete deck.

Concrete Details Vulnerability, New York State Department of Transportation (NYSDOT), New York: Inspection and assessment of the vulnerability of concrete details of NYSDOT bridges. Responsible for field inspection, assessment of design drawings, and the structural integrity evaluation of the most deficient bridges.

Missisquoi Bay Bridge, Vermont Department of Transportation (VDOT), Vermont: Bridge designer for this 1,100-meter continuous precast concrete segmental box girder – span by span erection. Responsible for the analysis, design, and detailing of the bearing/seismic isolation system and the deviator and abutment segments.

Taiwan High Speed Rail, Taiwan (Taiwan Ministry of Transportation): Bridge designer for a three-span continuous cast-in-place post-tensioned concrete box girder bridge. Responsibilities included the time-dependent

Alexander Napoli, PE continued

analysis of the superstructure, design of longitudinal post-tensioning, seismic design of the reinforced concrete piers, and supervision of the production of drawings.

Vancouver Light Rail System, Vancouver, BC, Canada: Bridge designer responsible for the analysis (longitudinal, seismic, and torsional) and design of this three-span continuous precast post-tensioned concrete bridge – balanced cantilever erection.

Concrete Details Vulnerability, New York State Department of Transportation (NYSDOT), New York: Inspection and assessment of the vulnerability of concrete details of NYSDOT bridges. Responsible for field inspection, assessment of design drawings, and the structural integrity evaluation of the most deficient bridges.

Miami Heat American Airlines Arena, Miami, Florida: As a summer intern, participated in the design and construction support of the Miami Heat Arena. Reviewed shop drawings of concrete details and calculated the cost impact of change orders.

Denver Nuggets Pepsi Center, Denver, Colorado: As a summer intern, assisted in the design of the structural floor slabs, reviewed shop drawings of the concrete frame bents and floor slabs, and assisted in the structural design changes during construction.

Palisades Center Mall, Rockland, New York: As a summer intern, served as site engineer for the inspection and review of the steel frame erection at the Palisades Center Mall.

Sidewalk Replacement on The Triborough Bridge, MTA Bridges and Tunnels, New York: As a summer intern served as assistant project manager, responsible for ordering materials, payroll accounting, and preparation of monthly reports used to support contract payments.

Rehabilitation of the East Tremont Avenue Bridge over Metro North Train Tracks, New York City Department of Transportation (NYCDOT), Bronx, New York: As a summer intern, served as assistant project manager for the rehabilitation of the overpass structure while maintaining full train service during rush hour. Responsible for surveying; scheduling; cost management, ordering materials; payroll accounting; and preparation of contract payments, estimates, and monthly reports required by NYCDOT.

Sidewalk Replacement on The Triborough Bridge, Port Authority of New York and New Jersey (PANYNJ), New York: As a summer intern, served as assistant project manager, responsible for ordering materials, payroll accounting, and preparation of monthly reports used to support contract payments.

Elizabeth D. Marcantonio, PE

Structural Support Staff - New York Office

Ms. Marcantonio is a highly skilled structural engineer offering broad experience in the engineering field. Her relevant experience includes the design of dunnage, floors, and framing systems to support mechanical and electrical equipment for industrial and institutional buildings, bridges, overhead sign structures, and various retaining walls. She has also developed detailed specifications for the various aspects of structural design, and compiled all related documents, including cost estimates, for various bid packages. In addition, she has developed design task protocols (DTP), which are detailed scopes of work created at the beginning of a project, detailing applicable codes, standards, testing, and all related parties for coordination.

PANYNJ West Midtown Redevelopment, NY: Project engineer to PANYNJ in developing a comprehensive strategy for maximizing the potential value of their properties on the west side of Midtown Manhattan. PANYNJ operates two major transportation facilities on the west side of Midtown Manhattan, the Port Authority Bus Terminal and the Lincoln Tunnel. In conjunction with its transportation responsibilities, PANYNJ owns or controls about 19 acres of property on 15 parcels, most of which are adjacent to the transportation infrastructure. As structural engineer for the project, was responsible for analyzing the existing structural, geotechnical, utilities, and traffic conditions in order to formulate recommendations on column and foundation placements for building potential developments on these properties, and for developing a comprehensive technical report according to PANYNJ standards.

PANYNJ 2004 and 2005 Biennial Inspection of La Guardia Airport, NY: Structural integrity engineer for the biennial inspection of the central terminal building, all hangars, and other airport facility buildings. Also provided immediate response to structural emergencies and provided recommendations to stabilize the situation.

PANYNJ Vehicular Security Center for Freedom Towers: Structural engineer for the preliminary design of a three-tier framing structure underground. There is a park and a church on top of the structure. The whole structure will be designed to sustain the blast loading. The structure is founded on sound rock.

Education

MS, Civil Engineering/Structural, Manhattan College, Riverdale, NY, 2005

BS, Civil and Environmental Engineering, Villanova University, PA, 2002

Registration

PE: NY, 2008, Registration No.: 085926

Professional Associations

American Society of Civil Engineers (ASCE),
Treasurer (in college), Younger Members Forum

Women's Transportation Seminar (WTS)

American Institute of Steel Construction (AISC)

Years of Experience: 8

In-Depth Inspection of the Commodore Hull Bridge over the Housatonic River, Shelton, CT: Design engineer responsible for the inspection of gusset plates on the Commodore Hull Bridge and the access ramps that carry Route 8 over the Housatonic River (Bridge Nos. 00541A, B, and C) in Shelton. These inspections are the first phase of a rehabilitation project that will address structural elements found during the inspection. Access to the deck trusses over the river for the in-depth inspection was provided by a self-propelled barge equipped with a 60-foot man-lift. This provided complete access to portions of the bridges without the need for lane closures.

NYSTA, MTA MNR, and NYSDOT Tappan Zee Bridge I-287 Environmental Review, NY: Member of the project management team working to address the highway, bridge, and transit needs within a 30-mile corridor. Structural engineer responsible for the day-to-day coordination with the design consultant developing various technical documents, and various management level reports. Working closely with the client group as they address procedural issues for the bridge design development, developing a tiered approach to address highway and bridge components.

NYSDOT Route 9A Program Management, NY: Responsible for the redevelopment of Route 9A. Primary

Elizabeth D. Marcantonio, PE continued

activities included project management and controls, construction contract coordination, constructibility reviews, graphic/visual aids, community outreach, and staff support for NYSDOT.

NYCDOT Westchester Avenue Bridge Rehabilitation, Bronx County, NY: Structural engineer responsible for the rehabilitation design of the substructure, superstructure, and deck replacement for the Westchester Avenue Bridge.

Jetblue T5 Redevelopment, Jetblue Airways: Structural engineer responsible for analysis and design of overhead sign structures (both cantilever and span types) throughout the airport. Also responsible for all drawings associated with the overhead sign structures.

NYSDOT Route 120 (Ramp H Southbound Entrance Ramp and Ramp K Southbound Exit Ramp) over I-684, New York: Prepared abutment calculations for the proposed curved steel I-girder two-span bridges.

Metro-North Railroad over the Saugatuck River (Saga Bridge), Westport, Connecticut: Design engineer for this project. The Saga Bridge carries four railroad tracks across the river. The project consists of the replacement of the Scherzer rolling lift moveable span, and rehabilitation of the fixed approach spans. Other aspects of the design include seismic analysis, substructure retrofit, bearing replacement, waterway fender system, pedestrian walkway, and a new operator house.

Jason Aw-Yong, PE

Structural Support Staff - New York Office

Mr. Aw-Yong has considerable experience in the design, analysis, rehabilitation and maintenance, and construction support of modern highway bridges. He has multidisciplinary versatility with superb analytical skills to assess problems and provide expert on-site solutions. He performs engineering estimates, calculates solutions, coordinates and schedules work for junior engineers, and oversees all phases of construction from initial conception through successful startup. He is proficient in MicroStation V8, SAP 2000, CONSYS 2000, DESCUSII, GEOMATH, ANSYS, and MATLAB. He is also knowledgeable in AutoCAD 2000, CONSPAN, LARSA 98, and Primavera Project Planner.

Permanent World Trade Center Path Terminal, PA-NYNJ, New York, NY: Structural engineer for the World Trade Center Transportation Hub, a \$2.21-billion project with the Federal Transit Administration's funding and Port Authority investing the difference. He is responsible for the temporary bracing and permanent structure designs for New York City Transit existing 1/9 subway and South PATH Mezzanine Hall steel framing design.

Major Deegan Expressway Safety Improvement at Fordham Road, Bronx, New York: Construction support services for this \$4.7-million project extending a non-standard acceleration lane for the northbound entrance ramp at Fordham Road by modifying the retaining walls and constructing new retaining walls along the northbound Major Deegan Expressway.

Major Deegan Expressway Viaduct Rehabilitation, Bronx, New York: Contract for rehabilitation study, stability analysis, and load carrying capacity of the existing superstructures and the substructures for widening the 72-span viaduct between 135th Street and Macombs Dam Bridge. Designed the retaining wall, precast super-slab pavement, and parking lot pavement. Project involved structural analysis on existing steel pier bents and existing steel framing for the widening of the superstructure to accomplish the roadway geometry improvement. Determined the stability and load carrying capacity of the steel bents; evaluated the added loads on the pile foundations; and developed the proposed steel framing to be connected to the column and cap beams of the viaduct.

Education

ME, Civil Engineering, City College of New York, 2005
BS, Civil Engineering, Oklahoma State University, 1999

Registration

Professional Engineer: NY (2007, #085272)

Professional Associations

National Council of Examiners for Engineering and Surveying (NCEES)

American Society of Civil Engineers (ASCE)

Years of Experience: 11

Four Bronx River Parkway Bridges, Bronx, New York: Contract to study the better alternative rehabilitation or replacement for four bridges on the Bronx River Parkway. This project involves bridges over Metro-North, Amtrak/CSX, East Tremont Avenue, and a 1,500-foot viaduct over New York City Transit Authority property.

Kosciszko Bridge, Queens, New York: Contract to study the better alternative for rehabilitation or replacement for this bridge. This project included scoping, corridor studies, traffic studies, environmental studies/documentation, structural studies, and community involvement.

Northbound Whitestone Expressway (I-678) Replacement Bridge over the Flushing River, Queens, NY: \$200-million design project for the replacement of the double leaves bascule span over the Flushing River with a high-level fixed bridge. The associated design included reconstruction of the approach structures from the Van Wyck Expressway to Astoria Boulevard. Services included scoping, planning and traffic studies, community involvement, in-depth inspection, rehabilitation, and staged construction.

Dennis Wu, PhD, PE

Structural Support Staff - New York Office

Dr. Wu has extensive design, analysis and inspection experience on bridges, buildings and multimodal transportation centers, following AASHTO, AREMA, IBC and local design guidelines in New Jersey, New York, and Connecticut. He has been a structural engineer on a number of highway bridge projects in both China and the United States, including Huangcun Viaduct on Jingkai Expressway in Beijing, Movable Railway Bridge over Saugatuck River in CT, Ambrose Brook Bridge in NJ, Preliminary design of the Central Corridor in MN and Evaluation of three bridges in the Bronx in New York.

In addition to his structural design experiences, Dr. Wu specializes in 3D finite element analysis, soil-structure interaction analysis and seismic evaluation for bridges, buildings and underground structures. As part of his PhD program at New Jersey Institute of Technology, he performed innovative investigations on the prediction of the remaining service life of existing concrete structures in terms of fracture energy and concrete crack control.

PANYNJ Facility - Jet Blue Jet Blue Terminal 5 Airside and Landside Improvements at JFK International Airport – Construction Support Services, NY:

As structural engineer, responsibilities include design of slab on-grade pavement panel, taking into account manhole openings for live loads from current aircrafts Boeing 747 and A380. The footprint and distribution of these loads were calculated and analyzed using FEM methods. Also, the strength of pavement panel was checked against several different loading situations. The stress concentration due to the opening was also considered when detailing the reinforcement.

Evaluation of Three Bridges, Bronx, NY: Structural engineer for three bridges including 175th Street over MNR; Snuff Mill Road Bridge over Bronx River; and Mosholu Parkway Bridge over the Bronx River. All were evaluated in terms of their capacities following AASHTO. Since no guidelines were available for the load rating of the concrete and masonry arch bridge (in the case of the Snuff Mill Road Bridge and Mosholu Parkway Bridge), technical investigations were carried out and an elastic frame analysis method was proposed. In addition, instructions about analysis details were also developed.

Education

PhD, Civil/Structural Engineering, New Jersey Institute of Technology, 2005

MS, Civil/Hydraulic Structural Engineering, Tsinghua University, Beijing, China, 2000

BS, Civil Engineering - Bridges and Highways, Beijing Institute of Civil Engineering and Architecture, 1996

Registration

PE: OH, 2006, Registration No.: PE.71247

Professional Associations

American Society of Civil Engineers (ASCE);
Secretary

Awards and Commendations

Outstanding Performance Award in the Jingkai Highway Project, Transportation Department of P.R. China, 2002

Teaching Assistant Scholarship from New Jersey Institute of Technology for PhD Program

Publications and Presentations

Wu, Xuezheng. "Comparison of Seismic Design following AASHTO, AREMA, and IBC," in *Proceedings of 2009 ASCE/SEI Congress*.

Wu, Xuezheng. "Load Rating of Aged Rigid-Frame Bridges Using Elastic Frame Method," under review by *Journal of Bridge Engineering*.

Wu, Xuezheng. "Crack Propagation in Concrete and its Remaining Service Life Prediction of Cracked Concrete Structures," Ph.D Dissertation, NJIT, 2005.

Wu, Xuezheng. "Water Penetration Properties Investigation of Stone Matrix Asphalt Overlay," Zhangji etc., *Transportation Journal*, China, 2002.

Years of Experience: 9

Dennis Wu, PhD, PE continued

Ambrose Brook Railroad Bridge Replacement, Middlesex, NJ: Structural engineer for this project. The existing 6-span masonry arch bridge was redesigned into a four continuous span concrete arch bridge. Finite Element Analysis was performed using plate elements to simulate the arch barrel, interior pier and shallow foundation. Various loads were generated following AREMA and NJT General Provisions.

Rehabilitation of Westchester Avenue Bridge and Lowering of the Hutchinson River Parkway Below, Bronx, NY: Structural lead for the design of elastomeric bearings in order to isolate the seismic force from the superstructure to substructure based on the NY State bridge design manual and AASHTO. Checked the design of several girders, which are going to be replaced and have been designed by other engineers.

Movable Railway Bridge Design over Saugatuck River, Westport, CT: Structural engineer for this bascule rolling railway rebuilding project. Work involved load determinations for the mechanical engineers and foundation design, and setting up the structure model to analyze and design the lifting girder and segmental girder. Special attention was given to the uplift at the girder heel. Finite Element Analysis using SAP 2000 and Staad Pro was performed with a plate element to take the stiffness of the segmental portion and function of heel lock into account. Additionally, the interference of different portions of the bridge, when bridge is opened, was considered in the geometric design. Finally, a whole set of 60% structural drawing were prepared and submitted to the Connecticut DOT.

Grove Street Overpass Review, Hartford, CT: Structural engineer for a 3-span prestressed NEBT girder with precast concrete deck bridge. LEAP and CONSPAN were used to perform the independent girder design and determine the load for the substructure. A simple-supported model was created to design NEBT for positive moment and checked by a 3-continuous span model for negative moments. Special attention was also paid to the connection of simple-span girders for continuity, considering both negative moments and positive moments. In order to determine the lateral load for pier columns, seismic analysis

based on both IBC and AASHTO was performed using an equivalent static force method and single mode method, respectively. SAP2000 bridge model was also created to perform response spectrum analysis using the AASHTO LRFD 2006 spectrum function.

DSNY Transfer Stations Substructure Design and Ramps, NY: Served as structural engineer for this mega project, which included several DSNY transfer stations' design from 2004. Services included: 1) Review of a complicated structural model for North Shore Transfer Stations, which considered soil-structure interaction; 2) Calculation Review for 91st Street Transfer Station Ramp Design; 3) Modeling of 91st Street Transfer Station; 4) Noise Wall and its support design for North Shore Transfer Station; 5) Seismic Restraint Analysis for the piping support in the North Shore Transfer Station Ramp.

CNJ Bridge Inspection, Edison Properties, Newark, NJ: Structural engineer for this project, which included site inspection work on the existing rail steel bridge, plus deterioration level investigation and load rating analysis in terms of pedestrian load. Seismic analysis will be performed on the north side and south side abutments once the soil condition is available.

Transportation Department of Beijing, No.2 Beltway of Beijing Rehabilitation Project, Beijing, China: As senior structural engineer, performed preliminary design in the rehabilitation of the No. 2 Beltway in Beijing, a 19-mile, multi-lane highway which includes 12 interchanges. Tasks included bridge type selection, structural analysis using SAP2000 and preparing the structural design report.

Huangcun Bridge Project, Jingkai Interstate Expressway, China: As structural engineer, performed detailed design for HuangCun Bridge, a six continuous span expressway with prestressed concrete box girders and composite slab. Also designed the retaining wall and drive piles. Handled the structural model on seismic and wind load analysis using SAP2000. In addition, also provided in-site construction assistance to the contractor.

Daniel Jimenez, PE

Structural Support Staff - New York Office

Mr. Jimenez has a variety of experience in structural engineering related to the design and construction of highway/railroad bridges and other transportation related structures. He has been responsible for the design, development, and preparation of intricate project plans for various structural designs. He has also performed field inspections of highway/railroad bridges and developed detailed inspection reports.

PANYNJ, Permanent World Trade Center Path Terminal, Manhattan, NY:

Structural engineer for the World Trade Center Transportation Hub, a \$2.21-billion project with the Federal Transit Administration's funding and Port Authority investing the difference. He is responsible for the performing structural design and shop drawing reviews.

New Jersey Turnpike Widening between Interchanges 6 to 8A, New Jersey Turnpike Authority, NJ:

Design engineer responsible for the conceptual design of up to 30 new bridges, including several alternatives, necessary for widening the New Jersey Turnpike. Tasks performed included designing span lengths, structure depths, optimal alignments, and performing preliminary cost estimates for each alternative bridge type.

NYCDOT Bridge Project Rehabilitation Reports for Ten Culverts in the Borough of Staten Island, New York, NY:

Design engineer responsible for developing the bridge project rehabilitation reports, including the field inspection, structural assessment, load rating calculations, cost benefit analysis and estimates, narratives, recommendations, and the preliminary maintenance and protection of traffic plans for the ten culverts. Responsible as team leader during field inspections. Other tasks involved providing technical support for additional aspects of the reports, including hydraulic, traffic, environmental, and historical impact studies for each culvert.

NYSTA Rehabilitation of the North Middletown Road Bridge, Rockland County, NY:

Structural engineer responsible for the design and installation of noise walls along the existing bridge fascia. Tasks performed included designing and detailing the support steel framing, elastomeric bearings, anchor bolts, masonry plates, diagonal

Education

MS, Civil Engineering Technology, Stevens Institute of Technology, 2009

BS, Civil Engineering Technology, Rochester Institute of Technology, NY, 2000

AAS, Civil Engineering Technology, Nassau Community College, Garden City, NY, 1997

Registration

PE: PA, 2006, Registration No.: 073615

Professional Associations

American Society of Civil Engineers (ASCE)

- North Jersey Younger Member Group, Vice President (1/01/04 - 12/31/05)

- Vice President, North Jersey Younger Member Group

Years of Experience: 11

bracing, internal diaphragms, and connections for the composite concrete-metal panels.

ConnDOT Reconstruction of the Water Street Pedestrian Bridge, New London, CT:

Structural engineer involved in the reconstruction and seismic retrofit of a four-span structural steel pedestrian bridge. Tasks performed included designing and detailing the fixed and expansion steel-reinforced elastomeric bearings for each span.

NJTA Inspection Contract Nos. R-1476, R-1461, and R-1448, NJ:

Design engineer responsible for the inspection of New Jersey Turnpike mainline, local road, overpass and ramp bridges, and the development of contract documents for bridge rehabilitation. Responsible as team leader and assistant team leader during field inspections. Each individual project consisted of the inspection of over 100 Turnpike bridges and the development of contract documents for the rehabilitation of up to 25 of the bridges, including pavement removal/resurfacing, rehabilitation of deck joints, parapet replacement, partial deck replacements, other miscellaneous bridge repairs, and the development of maintenance and protection of traffic requirements for each bridge or group of bridges. Responsible for structural design and detailing, development

Daniel Jimenez, PE continued

of contract documents for bridge rehabilitation, and review of shop drawings during construction.

Bridge Deck Reconstruction for the Passaic River and Belleville Turnpike Bridges, New Jersey Turnpike Authority (Contract No. R-1393B), NJ: Design engineer responsible for the development of contract plans and documents, including the project specifications, staged construction plans, construction cost estimates, and maintenance and protection of traffic plans for the seismic retrofit, limited repainting, and miscellaneous structural and roadway improvements of these two bridges. Responsible for designing and detailing the new steel deck joints, reinforced concrete parapets and median barrier, reinforced concrete deck slab, and the computer-aided design and drafting of structural repairs. Construction support services included the review of shop drawings and project coordination.

Route 3/21 over Passaic River, Passaic County, NJ: Structural engineer responsible for designing and detailing reinforced concrete abutments and retaining walls for two new structures connecting I-295 and Route 42, one of which is a 1,700-foot curved viaduct. Responsible for designing and detailing reinforced concrete noise and retaining walls for a new bridge replacing the existing movable bridge carrying Route 3 over the Passaic River. Tasks performed included designing the battered pile footing foundations, performing seismic analysis, and detailing the steel reinforcement for each structure.

MTA TBTA Partial Rehabilitation of South Approach of the Cross Bay Bridge, New York City, Queens County, NY: Structural engineer responsible for the structural rehabilitation of the south approach and abutment span of the Cross Bay Bridge in Queens. Tasks performed included designing and detailing the reinforced concrete deck slab, roadway median, and parapets, in addition to an independent roof slab and walls for the electrical and mechanical equipment room. Tasks performed also included analyzing the capacity of the existing spread footings to support the additional loadings imposed after rehabilitation.

ConnDOT MTA MNR over the Saugatuck River (Saga Bridge), Westport, CT: Design engineer for this project. The Saga Bridge carries four railroad tracks across the river. The project consisted of replacement of the rolling lift moveable span and rehabilitation of the fixed approach spans. Other aspects of the design included seismic analysis, substructure retrofit, bearing replacement, waterway fender system, pedestrian walkway, and a new operator's house.

MTA MNR Inspection and Live Load Rating of Undergrade Railroad Bridges, NY: Team leader responsible for the inspection, evaluation, and report preparation for over 80 fixed undergrade MNR bridges on the Harlem, Hudson, and New Haven Lines. Bridge types included concrete slab, open deck, concrete arch, stone arch, and thru-girder structures. Also responsible for performing as-built and as-inspected load ratings for 10 of the inspected structures.

NJT Inspection, Rating and Evaluation of 40 Fixed Bridges, NJ: Design engineer responsible for the inspection, analysis, and report preparation for 40 fixed undergrade NJT bridges on the Boonton, Main, Montclair, and Pascack Valley Lines. Services consisted of 3rd and 4th cycle inspections for over 5,200 track feet of bridges. Bridge types consisted of concrete slab, open deck, thru-girder, and thru-truss. As-built and as-inspected ratings were reviewed and revised as necessary. Reports also included recommended repairs, estimated costs, photographs, a narrative, and bridge data input forms.

FDOT In-Depth Complex Bridge Inspection, District 2, Duval County, FL: Structural engineer responsible for the structural inspection of 17 bridges, both movable and fixed, with varying types of machinery. Responsible as assistant team leader during field inspections. Prepared reports documenting existing conditions and PONTIS database entry.

Danny Lau, PE

Structural Support Engineer - New York Office

Mr. Lau has extensive bridge design and rehabilitation experience. He has been a project engineer on projects for a number of local transportation agencies, including the New York City Department of Transportation and the Port Authority of New York and New Jersey. He was the senior structural engineer for the SAGA movable bridge for ConnDOT/Metro-North, and recently served as deputy project manager for the Henry Hudson Parkway resigning project. He was the project engineer for the design of the replacement of the Center Avenue Bridge for the Port Authority of New York and New Jersey, and served as the project engineer for drainage system improvements on the Throgs Neck Bridge. He also provided design and construction support services for the rehabilitation of the Second Avenue and East 36th Street Manhattan overpass bridges, projects undertaken on behalf of MTA Bridges and Tunnels.

SAGA Bridge Design, Connecticut Department of Transportation (ConnDOT), Connecticut: Senior structural engineer for the complete final design of the replacement of the moveable span and operator's house, and rehabilitation of the fixed spans. The whole structure will be designed to sustain the E-80 train loads. The new pit-pier will be founded on sound rock, and the superstructure is a steel plate girder system where each track will be supported by two girders.

Vehicular Security Center Design for Freedom Towers, Port Authority of New York and New Jersey (PANYNJ): Senior structural engineer for the complete preliminary design of the three-tier framing structure under the ground. There is a park and church on top of the structure. The whole structure will be designed to sustain the blast loading. The structure is founded on sound rock and piles.

Terminal Redevelopment, Jet Blue Airways, Terminal 5, JFK International Airport, New York: Lead structural engineer responsible for the structural shop drawing review of the elevated departure roadway structure.

Rehabilitation of the Second Avenue and East 36th Street Manhattan Overpass Bridges (QM-82), MTA Bridges and Tunnels, New York: Project engineer for

Education

MS, Structural Engineering, University of Utah, 1986

BS, Civil Engineering, University of Cheng Kung, Taiwan, 1982

Registration

Professional Engineer: NY (1997, #074699)

Professional Associations

American Society of Civil Engineers (ASCE) Associate
- New York Metropolitan Section Structures Group

Years of Experience: 31

design and construction support services. Project work includes a detailed visual inspection as well as a complete deck evaluation survey. Scope of work includes developing a comprehensive concrete coring and testing program to determine the condition of the deck and deck reinforcement. The project will also develop alternatives for rehabilitating the bridges, including repairs to the bottom of the concrete deck up to the first layer of reinforcement, replacement of the concrete deck alone, and replacement of the deck and superstructure steel. All of these alternatives will be evaluated based on advantages and disadvantages, construction costs and impact to operations. A life cycle analysis will also be performed.

Westchester Avenue Bridge Rehabilitation, Bronx County, New York: Project engineer for the coordination with the state and subconsultants, and the final design for this safety improvement project. The project includes the rehabilitation of substructure and superstructure, as well as the deck replacement for the Westchester Avenue Bridge.

Henry Hudson Parkway Resigning Project from West 59th Street to Westchester County Line, NY: Deputy project manager for coordination with the state and subconsultants, and the final design for this safety improvement project. The project includes installation of new guide signs, replacement of sign structures and panels, and the erection of new sign structures to replace deteriorated sign structures along the Henry Hudson Parkway.

Danny Lau, PE continued

Throgs Neck Bridge (TN-81), MTA Bridges and Tunnels, New York: Project engineer for drainage system improvements and structural steel repairs. Project work included investigation and design for improvements to the Throgs Neck Bridge's drainage system, where the majority of the open-curb system's water drains off the edge of the pavement. Design included methods for installing a partially-open curb drainage system, and repairs to the structural steel elements of the bridge. Twenty types of structural steel repairs were made due to the deterioration that occurred from the existing drainage system. Responsible for review of structural steel repair, drainage, and drawings.

Center Avenue Bridge Replacement, Port Authority of New York and New Jersey, New York: Project engineer for the design of the replacement of the Center Avenue Bridge. Project work involves the complete design of the retrofit of the multi-columns and pier wall. The retrofit of the columns will be constructed by using an infill-pier wall. The space in between the two columns will be filled with a reinforced concrete wall, which also comprises the bridge bent. The pier wall will effectively resist all lateral loads in both directions.

Mill Basin Bridge Rehabilitation, New York City Department of Transportation (NYCDOT), New York: Project engineer for the rehabilitation of the Mill Basin Bridge over the Belt Parkway. Project work included inspection, and complete evaluation and design for the rehabilitation of the Mill Basin Bridge. Performed the preliminary design and cost estimates for approach spans, and level-one load rating.

Division Street Bridges over I-95, New York State Department of Transportation (NYSDOT), New York: Senior project engineer for the complete design of a bridge over I-95 and the replacement of a superstructure for a bridge over the railroad. Reviewed and performed the preliminary and final designs of both bridges. Coordinated with New York State Department of Transportation.

Repairs to 11 Bridges on the Van Wyck Expressway, New York State Department of Transportation (NYSDOT), New York: Senior project engineer for the repairs to 11 bridges. Project work included the design of bear-

ings, joints, and repair details for decks and substructures. Reviewed and performed designs, and produced reports and cost estimates. Coordinated with NYSDOT and subconsultants.

DeKalb Avenue and Prince Street Stations Rehabilitation, MTA New York City Transit, New York: Senior project engineer for the rehabilitation of the DeKalb Avenue and Prince Street stations. Project involved the design of new beams and columns for a new elevator and stairs. Reviewed and performed structural design and repair details for structural defects. Coordinated with the architect and MTA.

Design of Seven Roadway Bridges over Railroads, Riverside South for Trump/New World: Senior project engineer for the design of roadway bridges over railroads. Project work involved the complete design of seven roadway bridges to connect the roadway between the new group of buildings over railroads along Riverside Drive South. Responsibilities included performing final design, construction services, and coordinating with clients and the New York City Department of Transportation. Designed superstructure, bearing, substructure, and performed seismic analysis.

Watershed Bridges, New York City Department of Environmental Protection, Westchester County, New York: Project engineer for the inspection, evaluation, and design for the superstructure (including bearings) for the rehabilitation of six concrete arch-span bridges. Performed the final design and cost estimates.

Goethals Bridge Deck and Approach Span Substructures, Port Authority of New York and New Jersey (PANYNJ), New York: Project engineer for the complete design of the deck and substructures of the approach spans. This new bridge was designed to replace a truss bridge over the Arthur Kill. The new bridge was located parallel to the original bridge. Performed the preliminary design for cable bridge substructures and slab.

Queens Approach Spans on the Triborough Bridge, MTA Bridges and Tunnels, New York: Junior project engineer for the bridge inspection. Reviewed shop drawings.

Riazul Zamil, PE

Structural Support Staff - New Jersey Office

Mr. Zamil is a structural engineer with extensive experience in the design of bridges, buildings, transit structures, environmental projects, and aerial tramways for PennDOT, SEPTA, DRPA, NYSDOT, and NJDOT. He has six years of teaching and research experience in civil, structural, geotechnical, and earthquake engineering.

He taught undergraduate design courses for concrete, steel, truss, and plate girder bridges, water tank, and folded plate. He conducted mechanics of materials, concrete and geotechnical engineering labs, as well as assisted in teaching engineering mechanics and foundation design. Proficient in GTSTRUDL, STAAD, SEISAB, RC-PIER, LARSA, RISA, PennDOT software, GEOMATH, and AutoCAD.

Interchange 16W and Route 3 Ramp Improvements, New Jersey Turnpike Authority, Secaucus, New Jersey: Structural engineer responsible for the superstructure and substructure design of this \$65-million project that includes five bridges (Ramp WT Widening over South Service Road, Widening of the bridge over Route 3, proposed ramp TW over South Service Road, proposed ramp TW over Route 3, and ramp TW flyover). Provided senior level technical expertise for conceptual engineering design, detailed engineering design, and preparation of contract drawings. Worked on geometry, plan preparation, cost estimate, and checking of curved girder design. Also performed seismic analysis of five bridges using GTSTRUDL and STAAD-Pro software.

Route 139 Project, New Jersey Department of Transportation (NJDOT), Jersey City, New Jersey: Structural engineer responsible for the seismic design of the 12th Street Viaduct. Responsibilities included structural modeling of the bridge using software GTSTRUDL, and checking the structural capacity and deflection of the existing column bents. Also checked the 14th Street seismic model.

Route 139, New Jersey Department of Transportation, Contract 3, Jersey City, New Jersey: Structural engineer for the Conrail Viaduct, a steel truss bridge on concrete piers. The project includes seismic retrofit and deck replacement for this structure. Worked on geomet-

Education

MS, Geotechnical Engineering, State University of New York at Buffalo, 1992

MS, Structural Engineering, The University of Rhode Island, 1989

BS, Civil Engineering, Bangladesh University of Engineering and Technology, 1983

Registration

Professional Engineer: NY (1998, #075665); and PA (1995, #PE048191E)

Professional Associations

American Institute of Steel Construction (AISC), Professional Member

Years of Experience: 28

rics, seismic analysis, and plan preparation for repair and retrofit of steel truss structure.

Marine Transfer Stations, New York City Department of Sanitation, New York, New York: Structural engineer for the design of five new marine transfer stations throughout New York City. Ramp structures at marine transfer stations at Hamilton Avenue in Brooklyn and West 135th Street in Manhattan consisted of cast-in-place concrete box girders on concrete piers with heavily curved and skewed alignments. Worked on design and plan preparation of box girders, substructure, and approach structures. For East 91st Street marine transfer station at Manhattan, and North Shore marine transfer station at Brooklyn, checked STAAD models of building, pier and foundations, pile group reduction factors, pile fixity locations, and post processing of model output. Also checked GTSTRUDL model for fender panels and designed fender support beams and hangers. Prepared STAAD model for pier and foundations, and designed C.I.P. deck for the West 59th Street marine transfer station.

JFK Terminal 5 Airside and Landside Improvements, Jet Blue Airways Corporation, Jamaica, New York: Structural engineer responsible for the substructure design of this \$20-million project that includes two ramp structures (north ramp - four spans, bridge length=300

Riazul Zamil, PE continued

feet; and south ramp - seven spans, bridge length=590 feet) for the departure roadway. Performed the structural design and detailing of the hammerhead piers, columns, abutments, wing walls, and foundations. Also performed the seismic analysis of the bridges.

Market Street Elevated Reconstruction Project, Southeastern Pennsylvania Transportation Authority (SEPTA), Philadelphia, Pennsylvania: Structural engineer responsible for the analysis and design of the new replacement structure for the 11,000-foot-long elevated rail structure. Responsibilities included structural design of bents, platform girders, radial knee stiffeners, mat slab foundation, and checking of guideway girder and footing design. Also checked models to determine rail structure interaction forces due to direct fixation rail fasteners, and to determine forces due to seismic events. Performed the temporary staging check that included temporary towers, interim rail bridges, and existing structure retrofitting.

SR-309 over McKean Road and Tennis Avenue, Pennsylvania Department of Transportation (PennDOT) District 6-0, Montgomery County, Pennsylvania: Structural engineer responsible for the final check of these three-span continuous multi-girder steel bridges. Checked structural design computations for deck slab, elastomeric bearing, girder load rating, shear stud, bearing stiffeners, and girder field splice. Provided supplementary computations where necessary.

Driscoll Bridge Rehabilitation and Widening Project, Garden State Parkway New Jersey Highway Authority, New Jersey: Performed load rating calculations for this 29-span welded plate girder viaduct carrying the Garden State Parkway over the Raritan River.

I-95 Roadway Access Improvements to Philadelphia International Airport, City of Philadelphia, Division of Aviation, Philadelphia, Pennsylvania: Structural engineer responsible for the substructure design of this \$80-million project that includes six bridges (total length of 2,400 feet), 5,000 feet of retaining walls, and three new ramps. Performed the structural design and detailing of the piers, foundations, and ramps "A" and "L" demolition. Also checked the design of an integral steel box cross-girder at the interior support for a two-span (56-meter and 75-meter) plate girder structure, and provided the seismic analysis of the bridges.

Delaware River Aerial Tram, Delaware River Port Authority (DRPA), Philadelphia, Pennsylvania, and Camden, New Jersey: Structural engineer responsible for the preliminary and final design of the Delaware River Aerial Passenger Tramway across the Delaware River connecting the cities of Philadelphia, Pennsylvania, and Camden, New Jersey. Developed the design of the Pennsylvania and New Jersey tower foundations, the Pennsylvania anchorage, and prepared the seismic analysis of the river towers. Involved as a team engineer for the design of the 300-foot river towers and ship collision protection systems, as well as structural modeling of the cable-structure system to facilitate tower and foundation design.

North George Street over Codorous Creek, Pennsylvania Department of Transportation (PennDOT) District 8-0, York County, Pennsylvania: Structural engineer responsible for the final design of a two-span prestressed concrete bridge. Designed the pier and south abutment extension and performed the seismic analysis of this bridge. Responsibilities also included checking the deck and girder design, and the bridge geometry.

Rating of the Delair Railroad Bridge crossing the Delaware River, New Jersey Transit, Philadelphia, Pennsylvania: Structural engineer responsible for the computer modeling of eyebar and riveted through trusses (including a swing span) to produce as-built and existing load ratings based upon AREMA criteria.

Calhoun Street Bridge Replacement, New Jersey: Designed precast/prestressed spread box beams; prepared and drafted contract drawings and checked preliminary cost estimate for this project.

Replacement of County Route 673 over Nehonsey Brook, New Jersey: Reviewed shop drawings for sheet piling design for a new abutment, including waler, strut, and cofferdam.

Yosry Nasr, PE

Structural Support Staff - New Jersey Office

Mr. Nasr is a project manager with extensive experience in the preparation of studies, proposals, reports, and contract documents for design and rehabilitation of transportation facilities. His background includes roadway reconstruction; pavement evaluation and design; grading and drainage design; right-of-way acquisition, permitting preparation, and bridge replacement design. Mr. Nasr has also served as a client liaison and coordinated with subconsultants and contractors on many projects.

PANYNJ AirTrain Guideway Structures at Newark

International Airport, NJ: Project engineer for the condition inspection of the guideway structures of the AirTrain system at Newark Liberty International Airport. The scope of work included the preparation of a facility condition survey report documenting inspection findings and recommended repairs.

PANYNJ Holland Tunnel Miscellaneous Structures, New York City/Jersey City:

Project engineer for the condition inspection of the Holland Tunnel's ventilation buildings. The scope of work included field inspection and the preparation of a facility condition survey report documenting inspection findings and recommended repairs.

NJDOT Route 49 Cape May Branch Bridge, NJ: Project manager (subconsultant) for utility relocation design to facilitate replacement of this bridge. The scope of work includes preparation of utility agreements, development of schemes of accommodations, and preparation of utility relocation plans.

MTA Bridges and Tunnels, Design and Construction Support for project TN-85 at the Throgs Neck Bridge,, NY:

Project engineer for the design of various steel repairs and suspended ropes investigation at the suspended span of the bridge structure. The scope of work included field inspection, review of previous projects and reports, development of repair details, preparation of contract documents, and construction support services.

NYS DOT FDR Between 125th Street to 116th Street Capacity Improvement Project, NY:

Project manager for scoping, preliminary and final design to mitigate the current and future congestion of this section of the highway. The scoping work includes survey and right-of-

Education

MS, Civil Engineering, New Jersey Institute of Technology

BS, Civil Engineering, Cairo University, Egypt

Registration

Professional Engineer: NY (1990, #067493); NJ (1996, # 24GE04000900)

Years of Experience: 31

way mapping, traffic data collection and analysis, noise and air quality studies, development of project scoping alternatives, and the preparation of the expanded project proposal and the final design approval document. The final design involved roadway widening, development of a maintenance and protection of traffic scheme, drainage and lighting modifications, replacement of the pedestrian bridge, ROW acquisition, and utility relocations.

MTA Bridges and Tunnels, Triborough Bridge Deck Replacement TB-64B, NY:

Provided quality control review for the contract documents of the widening and re-decking of the bridge structure from Randall's and Wards Island viaducts and Wards Island Anchorage. The work also included the construction of new access ramps, seismic retrofit, improvements to the horizontal and vertical alignments, drainage modifications, and critical MPT plan.

Delaware River Port Authority, Commodore Barry Bridge, New Jersey, and Pennsylvania:

Project engineer for the biennial condition inspection of the bridge structure and the administration buildings. The work also included the development of an inspection report and recommended repairs.

NYS DOT Wantagh State Parkway Ramps and Safety Improvements, Long Island, NY:

Project manager for the preliminary and final design for the improvements of six ramps along the section of the Parkway between the Northern State Parkway and Old County Road. The scope of work includes survey, traffic study, Maintenance and Protection of Traffic Scheme, noise and air quality analysis, preparation of Design Approval Document, and contract documents for construction.

Yosry Nasr, PE continued

NYSDOT Van Wyck Expressway/Belt Parkway Interchange Improvements, Queens, NY: Project manager for the design of safety and mobility improvements for this interchange. The project includes the construction of a new flyover ramp between the Van Wyck and the Belt Parkway. Work also included roadway realignment, traffic analysis, environmental studies, and community outreach.

NYSDOT Long Island Expressway Capacity Improvements, Exit 32 to Exit 36, Nassau County, NY: Project engineer for the construction of new retaining walls along ramps D and F. The project included construction of a new HOV lane, drainage, lighting, signing, reconstruction of on-and-off-ramps, and a complex maintenance and protection of traffic scheme.

Henry Hudson Bridge, MTA Bridges and Tunnels, Bronx, NY: Project engineer for miscellaneous repair design for the bridge structure spanning between Manhattan and the Bronx in the city of New York. The project included condition inspection of the structure, development of condition report, development of rehabilitation design, and preparation of contract documents.

Delaware River Port Authority (DRPA), Walt Whitman Bridge, New Jersey, and Pennsylvania: Project engineer for biennial condition inspection of the 6.2-mile-long bridge structures connecting New Jersey with the City of Philadelphia across the Delaware River. The scope of services included preparation of the inspection report, and development of recommended repairs and future maintenance.

NYSDOT Westbound Belt Parkway, 134th Street Entrance Ramp and Lefferts Boulevard Exit Ramp Safety Improvements Project, NY: Project manager for the design of safety improvements of this section of the Belt Parkway. Services included lengthening the acceleration and deceleration lanes using pre-cast pavement panels; survey and right-of-way mapping; pavement evaluation and design; traffic counts and capacity analysis; maintenance and protection of traffic; pavement coring program; drainage modifications design; signing and striping upgrade; and lighting design. The project required extensive coordination with various city agencies and the pre-cast fabricator.

New Jersey Turnpike Bridge Drainage Modifications, North, NJ: Project manager for drainage modifications for several bridge structures in Essex, Hudson, and Bergen Counties. Services included condition inspection, hydraulic analysis, preparation of contract documents for the recommended drainage improvements, and construction support services.

NYSDOT Clearview Expressway/LIE Interchange, Queens, NY: Project manager for engineering and design for interchange improvements. The project included maintenance and protection of traffic, soils investigation, ROW mapping, utility maintenance, cost estimating, field survey, capacity analyses, and community involvement. The design included lengthening acceleration and deceleration lanes; widening and reconstructing ramps; asphalt overlay; replacing guide rails, signage, and lighting; and improving field inlet and catch basin systems.

NYSDOT Highway Safety Investigation, NY, NY: Project manager for highway safety investigations of 20 high accident locations (HAL) on the West Side Highway; Long Island, Van Wyck, and Cross Bronx Expressways; FDR Drive; and Southern State, Shore and Laurelton Parkways. The project included preparing collision diagrams, conducting field studies, analyzing and interpreting field and accident data, and preparing final reports. Follow-up services included traffic engineering studies, planning-level project recommendations, and preliminary design for safety improvements based on HAL results.

NYSDOT Rehabilitation of the Long Island Expressway, Queens, NY: Project manager responsible for collection and analysis of data, preparation of five bridge reports, and preliminary plans for the rehabilitation of the expressway from the LIRR to Grand Central Parkway.

Linda Chien, PE

Structural Support Staff - New Jersey Office

Linda Chien is a structural engineer, with experience working on concrete and steel structures. Her assignments include initiatives for the PANYNJ, the Triborough Bridge and Tunnel Authority and other agencies. She has expertise in GT Strudl, MDX and LARSA structural analyses software.

MTA NYCT, Dey Street Concourse, NY: Designed and detailed steel and concrete framing for two existing station roofs, platform and concourse levels to create a connection between the two stations via an underground pedestrian walkway for a design-build project.

JetBlue Airways JFK Terminal 5 Redevelopment, JetBlue Airways Corporation, Queens, NY: Developed models of steel I-shaped built-up and rolled girders with steel diaphragm superstructure for structural analysis under service loads. Designed steel box diaphragms with steel details and connections.

NYCDOS Marine Transfer Station Program, NY: Developed models for two ramp structures using GT Strudl for structural analysis. Response spectrum analyses were performed for two curved bifurcating, multi-cell box girder bridges per AASHTO and NYSDOT Blue Pages. Designed longitudinal box girder reinforcement.

PANYNJ Port Ivory New Intermodal Container Transfer Facility, Staten Island, NY: Analyzed and designed various elements of one simply supported span bridge over Bridge Creek. Seismic procedures were taken during analysis of prestressed box beam girders. The bridge was designed for extraordinarily large vehicular loads.

NYSDOT Route 120 (Ramp H Southbound Entrance Ramp and Ramp K Southbound Exit Ramp) over I-684, NY: Prepared preliminary drawings of proposed curved steel I-girder two-span bridges in MicroStation, including plans, elevations, roadway profiles, and cross sectional views over Interstate 684. Developed GT Strudl and MDX models of the superstructure for structural analysis due to seismic and service loads. Designed the superstructure using MDX.

NYCDOT Westchester Avenue Bridge over Hutchinson River Parkway, Bureau of Bridges, NY: Reviewed the design of the High Vehicle Warning System and

Education

MS, Civil Engineering (Structural), University of California, Berkeley, 2002

BE, Civil Engineering, The Cooper Union, NY, 2001

Registration

PE: NY, 2007, Registration No.: 084462

Professional Associations

American Institute of Steel Construction (AISC), Member

American Society of Civil Engineers (ASCE)

- Member
- Secretary, New York Metropolitan Younger Member Forum
- Treasurer, New York Metropolitan Younger Member Forum
- Vice President, New York Metropolitan Younger Member Forum
- Treasurer, New York Metropolitan International Group

Years of Experience: 11

re-analyzed a new sign gantry from shop drawings done by a previous design based on earlier code. Performed a field visit during the installation of the sign gantry.

MTA TBTA Installation of Variable Speed Limit Signs and Variable Message Signs, NY: Analyses of various sign gantries and posts onto existing bridge viaducts were performed using GT Strudl. Special considerations were taken for the design of connections and gantry members onto existing structures.

PANYNJ Rehabilitation of Parking Lot P6 at EWR (Newark Liberty International Airport), Newark and Teterboro Airports - Professional Architectural and Engineering Design Services on an "As Needed" Basis, Newark, NJ: Reviewed the design and analysis of a new sign gantry at the entryway into Parking Lot P6. Special attention was given at the posts since the gantry is a Vierendeel truss system with non-linear columns inducing large forces at the base.

Shailesh A. Majmudar, PE

Structural Support Staff - New Jersey Office

Mr. Majmudar has extensive experience as a structural engineer, specializing in design and contract plan preparation. He has extensive experience in the planning, design, inspection, and rehabilitation of bridges, as well as the preparation of contract documents for bridges, buildings, and transportation projects.

PANYNJ Palisades Interstate Parkway to Lower Level Connector Ramp, NJ:

Project structural engineer responsible for review and partial checking of design calculations for five-span continuous and three-span continuous curved girder bridges over Hudson Terrace and retaining walls. The bridges consist of concrete abutments and piers and steel superstructure. The superstructure was designed using the MDX program and piers were designed using the R.C. Pier program. SEISAB analysis was performed for seismic analysis of bridges. The previously prepared contract drawings were reviewed and checked and coordinated with the client's civil, geotechnical, and utility drawings for 100% submission.

PANYNJ Palisades Interstate Parkway, Connector Ramp to Lower Level Roadway, Fort Lee, NJ:

Project structural engineer responsible for the quality control and review of widening of 5-span bridge over GWB approach, bridge over Hudson Terrace, Service Street Bridge, Central Road Bridge, Hoyt Avenue Bridge and retaining walls. The bridges consist of steel girders and rigid frames.

NJDOT I-80/I-95 (E&J) Rehabilitation and Operational Improvements, Bergen County, NJ:

Project structural engineer responsible for the rehabilitation of four bridges over I-80, which includes replacing the deck slab and seismic retrofitting of bearings by using isolation bearings for Park Avenue and Second Street bridges. The work also includes rehabilitation of Quinn Ann Road Bridge and Teaneck Road by performing partial and full-depth repair and reconstruction of deck joints. Deck slabs were designed using LRFD specifications.

NJDOT I-80 (Section I) Westbound Rehabilitation and Operational Improvements, Bergen County, NJ:

Project structural engineer responsible for the rehabilitation and widening of two existing bridges, one a single-span

Education

MS, Structural Engineering, Polytechnic University, New York, 1986

BS, Civil Engineering, MS University, India, 1967

Registration

Professional Engineer: NJ (2003, #24GE04427100); and NY (1989, #066101)

Years of Experience: 39

bridge and the other a four-span bridge. Work includes the preliminary and final design of a new steel superstructure using LRFD specifications, the strengthening of existing pier bent columns, and cost estimates. The project also involves a feasibility study, the design of retaining walls and noise walls, and the rehabilitation of two other bridges.

NJDOT Inspection and Evaluation of 38 Bridges, Hunterdon County, NJ:

Team leader responsible for supervising field inspections and load ratings according to NBIS and NJ Department of Transportation standards.

NYS DOT Rehabilitation of 13 Bridges on the Cross Bronx Expressway, Bronx, NY:

Structural team leader for the in-depth inspection of 11 bridges, including bridges with one to five spans, multigirders, rigid concrete frames, and tunnel type structures. Prepared condition evaluation reports, recommendations for rehabilitation, and preliminary cost estimates.

NJDOT Inspection and Evaluation of 65 Bridges, Bergen County, NJ:

Structural Team Leader responsible for condition inspections, the preparation of condition reports, recommendations for repairs, and cost estimates for two cycles of 65 county-owned bridges. The condition of paint was also evaluated for steel bridges.

NYS DOT Liberty Street Bridge over Route 9 A, New York, NY:

Project structural engineer responsible for the QA/QC review of the three simple-span pedestrian bridge with hammerhead steel columns on drilled shafts. The floor consists of steel deck and metal curved roof. Performed partial checking of design calculations.

Shailesh A. Majmudar, PE continued

NYSDOT - Region 11, 40th Street to 59th Street - Route 9A Reconstruction, NY, NY: Senior structural engineer responsible for the review and checking of two simple span pedestrian steel bridges. The design of steel superstructure and steel substructure was reviewed and checked.

NYCDOT Shore (Belt) Parkway over Fresh Creek Basin, Brooklyn, NY: Project structural engineer responsible for rehabilitation and strengthening of the existing severely deteriorated concrete pier caps. The pier caps need strengthening before construction of the permanent Fresh Creek bridge. Various alternatives using reinforced fiber wrap, steel jacketing with additional steel beam under cap were prepared.

NJDOT Structural Evaluation and Bridge Management of 32 State-Owned Bridges, NJ: Team leader for field inspections, load rating calculations and condition survey reports for various state-owned bridges in New Jersey.

NYCDOT Shore (Belt) Parkway over Fresh Creek Basin, Brooklyn, New York, NY: Project structural engineer responsible for the final design of 3-span continuous bridge, eastbound and westbound. The project includes the design of deck slab, longitudinal steel girders and multiple concrete column bents on continuous pile foundation. The longitudinal girders were designed using the MDX Program. The piers were designed using RC PIER program. The seismic analysis was performed using the SEISAB program and using Site Specific Response Spectra. Also responsible for the contract drawings.

NJDOT Inspection and Evaluation of 28 Off-System Mercer County Bridges, NJ: Team leader responsible for condition inspections, load ratings, and the preparation of condition reports, including recommendations for repairs and cost estimates, for 28 county-owned steel and concrete bridges. The condition of paint was also evaluated for steel bridges.

NYCDOT Shore (Belt) Parkway Emergency Repair over Paerdegat Basin, Brooklyn, New York, NY: Project structural engineer responsible for the emergency repair for the bridge. The west column of one of the multiple pile/column bents was severely damaged by the vessel collision, and the pier protection (fender) system with steel piles and timber rails was designed along the navigable

channel to protect the piers. Reviewed shop drawings for the bridge and fender system. Construction services were also performed.

NYSDOT Bridge Rehabilitation, NY: Structural engineer for bridge rehabilitation projects. Conducted bridge inspections, checked rating computations, designed retaining walls, and performed cost studies.

NJDOT East Ridgewood Avenue over Route 17 Interchange, Paramus, NJ: Project structural engineer for the final design and preparation of contract plans and cost estimates for the replacement of a deficient simple 2-span bridge. The project included the design of a two-span continuous multistring superstructure, substructure rehabilitation, seismic retrofit of substructure and superstructure, and retaining walls. The superstructure was analyzed using the DESCUS and SEISAB program.

Somerset County Engineering Department, Opossum Road Bridge Rehabilitation, Somerset County, NJ: Project structural engineer responsible for the final design and preparation of contract plans and cost estimates for the rehabilitation of a historical two-barrel stone arch bridge. The stone arch, spandrel wall, and wingwalls were rehabilitated with a core reinforced concrete arch ring and walls with stone facing.

NJDOT Inspection and Evaluation of 40 State-Owned Bridges, NJ: Team leader and crew member responsible for the inspection of bridges located in Union, Morris, Essex, and Hudson Counties. Prepared the preliminary reports and load factor ratings using the BAR-7 program.

NJDOT Route 120 (Paterson Plank Road) over Route 17 and N.J. Transit, New Jersey: Senior structural engineer responsible for the review and checking of design calculations for the final design of these two bridges. Checked and reviewed abutment, retaining walls, piers design and superstructure. Also responsible for the design of pile foundation for abutments and piers. Also responsible for review and checking the seismic analysis of both bridges using SEISAB.

NYSDOT Road Rehabilitation, NY: Structural engineer for bridge rehabilitation projects. Inspected bridges, checked rating computations, designed retaining walls, and performed cost studies.

Al Baycora, PE

Quality Assurance - New York Office

Mr. Baycora is a professional engineer with extensive experience in design, value engineering, inspection, and construction support for rehabilitation projects for numerous clients, including the Port Authority of New York and New Jersey, MTA Metro-North Railroad, MTA Bridges and Tunnels, New York City and State DOTs, New Jersey DOT, and ConnDOT.

Permanent World Trade Center PATH Terminal, Port Authority of New York and New Jersey (PANYNJ), New York:

Structural engineer and moveable structures specialist for the Permanent World Trade Center PATH Terminal. Member of the team engaged in the design of the \$2-billion Permanent World Trade Center PATH Terminal at the World Trade Center Site in New York City, currently serving as a specialist for the signature design of the moveable arches proposed by architect Santiago Calatrava. The moveable arches are one of the key aesthetic features of this critically important transportation structure, and have been conceived to facilitate natural and emergency ventilation, as well as enhancing the commemoration of September 11, 2001. The moveable arch assemblies consist of a pair of 1.6 million-pound unbalanced, winged canopies fabricated of glass, where the drive is provided by hydraulic rams in a bascule type movement. As the canopies move laterally, the supporting arch pivots at each end, thus opening the entire terminal to the sky.

Call-in Structural (Bridge) Engineering Services Contract, Port Authority of New York and New Jersey (PANYNJ), New York and New Jersey:

As project manager, provided design services on two tasks: the assessment of seismic retrofitting of ramps on the George Washington Bridge, and the rehabilitation and seismic retrofitting of the Center Avenue Bridge. Work on the former involved performing an analysis and assessment of the structure and previously completed seismic retrofit of the HR-1 and HR-2 ramps between the George Washington Bridge and the Henry Hudson Parkway. Project work for the latter involved the removal of the deteriorated concrete deck and construction of a new structural deck, including superstructure and deck replacement of three spans for the seven-span Center Avenue Bridge.

Education

BE, Civil Engineering, Manhattan College, 1985

Registration

Professional Engineer: NJ (1993, #24GE03761300); NY (1992, #069295); and CT (2004, #PEN.0023643)

Professional Associations

American Society of Civil Engineers (ASCE) - ASCE Legislative Committee

New York Association of Consulting Engineers (NYACE) - NYACE NCDOT Liaison Committee

Heavy Movable Structures (HMS)

- HMS Structural Committee
- Structural Committee Chairman, 2004-2006

Years of Experience: 26

Center Avenue Bridge Reconstruction, Port Authority of New York and New Jersey, New York:

Project manager for the removal of the deteriorated concrete deck and construction of a new structural deck, including superstructure and deck replacement of three spans for this seven-span bridge spanning the New Jersey approach of the George Washington Bridge. Work on this assignment included replacement of the sliding steel bearings and steel rocker bearings with new elastomeric bearings, investigation of a seismic retrofit scheme for the piers and abutments, and design of new roadway lighting.

Father Duffy Square TKTS Building, Times Square Alliance, New York City, New York:

Project structural engineer for the design of the new TKTS building in Father Duffy Square. Responsibilities included managing the design of the pile foundation and reinforced concrete support framing for this new glass building to house the TKTS Broadway Theatre booth. Also involved in the structural design was the development and oversight of the soil boring/rock coring program, determination of the rock classification, and approvals by the New York City Transit Authority (NYCTA). Managed the design of the new support framing for the NYCTA ventilation grating and emergency exits that required raising due to the change in

Al Baycora, PE continued

the grades of the overall Father Duffy plaza. Also provided support services during construction.

Saugatuck River Bridge, Connecticut Department of Transportation (ConnDOT), Connecticut: Project manager, project engineer, and team leader for the engineering feasibility/economic analysis study, interim rehabilitation design, and replacement design of the Saugatuck River Bridge. Project work includes developing alternatives for the repair, rehabilitation, or replacement of this six-span structure carrying four railroad tracks over the Saugatuck River. The bridge consists of four open deck girder spans, a deck girder flanking span, and a Scherzer rolling lift span. The bridge carries Metro-North and Amtrak passenger trains as well as several freight lines. The project included performing an in-depth inspection of the structural, mechanical, and electrical systems. The civil, architectural and waterway hydraulic portions were also examined. A load rating of all of the live load carrying members was performed in the as-built and as-inspected condition. Additional aspects of the feasibility report include analyses of the rail and marine operations, soil conditions, seismic response, and impacts from environmental and utility concerns. Two replacement alternatives (a new vertical lift bridge and a new bascule type structure with corresponding cost estimates and comparative advantages/disadvantages) were developed. Constructibility and rail/marine traffic maintenance were examined so that impacts due to construction would be kept to a minimum. Responsibilities include overseeing the technical portions of the project, including directing technical staff, developing the repair/rehabilitation/replacement alternatives, and preparing the feasibility report. The interim rehabilitation design has been completed and the preliminary design for the permanent replacement is currently underway.

Rehabilitation of the Second Avenue and East 36th Street Manhattan Overpass Bridges, New York: Project manager for design and construction support services for the rehabilitation of the Second Avenue and East 36th Street Manhattan overpass bridges. Project work included a detailed visual inspection and a complete deck evaluation survey. As part of this survey, a comprehensive concrete coring and testing program was developed to determine the condition of the deck and deck reinforce-

ment. The project also developed alternatives for rehabilitating the bridges, including repairs to the bottom of the concrete deck up to the first layer of reinforcement, replacement of the concrete deck alone, and replacement of the deck and superstructure steel. Responsibilities include coordination of field inspection of the bridges, development of a concrete deck coring and testing plan, directing design staff, and supervising the development of the design documents. Additional responsibilities include maintaining client contact and resolving issues with all affected agencies.

East 153rd Street Bridge, New York City Department of Transportation (NYCDOT), New York: Project manager for total design services for the construction of the East 153rd Street Bridge over Metro-North Railroad. Project involves complete design and construction support services for a new bridge, which when built, will be New York City's first true cable-stayed vehicular bridge. The new 150-meter structure will span five MNR tracks and will carry two lanes of traffic in each direction, as well as bicycle lanes and sidewalks. Project work includes preparing a bridge reconstruction project report to determine the best alternative for a new 150-meter structure at East 153rd Street. The existing through truss structure was removed leaving the stone masonry piers and abutments. The project also includes performing an in-depth inspection of the piers, abutments, and retaining walls, developing replacement alternatives, preparing preliminary and final contract documents, and providing construction support services during construction. Responsibilities include directing design staff and supervising the development of the design documents. Additional responsibilities include maintaining client contact and resolving issues with all affected agencies.

Ernie R. Hutchins, PE

Quality Assurance - New Jersey Office

Mr. Hutchins has extensive experience in the management, preliminary and final design of steel prestressed concrete bridges and box culverts, retaining walls and sign support structures. He has performed inspection, rating and repair recommendations of existing highway and railroad bridges.

Garden State Parkway, Contract No. 104-1213, Rehabilitation of Existing Bridge No. 127.2, New Jersey Turnpike Authority (NJTA), Woodbridge/Sayreville, NJ: Project manager for the rehabilitation of the Driscoll Bridge over the Raritan River. The project includes construction staging and redecking of the bridge.

Interchange 16W/Route 3 Ramps Improvements, NJTA, East Rutherford, NJ: Quality assurance reviewer for \$80-million traffic safety and improvement project that includes the construction of three new bridges, widening of two existing bridges, and construction of five retaining walls.

Rehabilitation/Reconstruction of Route 139(1), New Jersey Department of Transportation (NJDOT), Jersey City, NJ: Project manager for the rehabilitation of 1.2 miles of Route 139, which consisted of three construction contracts. Two contracts rehabilitated the Conrail, 12th Street and 14th Street viaducts totaling 3,885 feet in length, by removing concrete encasement, deck replacement, superstructure rehabilitation, and seismic retrofitting. The third contract involved redecking and strengthening of the top level of the 3,380-foot-long Hoboken viaduct, and provided operational improvements at seven local cross-street intersections. All construction took place while maintaining traffic on this heavily traveled corridor by utilizing staged construction, overnight construction, temporary detours, and traffic signal retiming. Also included were community involvement, traffic operational improvements, EA and 4(f) documents, utilities, and ROW. Project value is \$192 million. All work will be performed using staged construction.

Route US 9, Section 25K&1F over Raritan River, NJDOT, Middlesex County, NJ: Bridge task leader responsible for coordinating the design and plans for the bridge of this \$60-million design-build project. The 1,337-meter-

Education

BS, Civil Engineering, Rutgers University, NJ, 1969

Registration

Professional Engineer: NJ (1974, # 24GE02092800); and PA (1990, # PE-040815-R)

Professional Associations

American Society of Civil Engineers (ASCE)

Years of Experience: 41

long bridge is comprised of a nine-span continuous steel girder unit over the river, and continuous concrete spliced girder approach spans with integral pier caps and pile-supported foundations.

Route 35, Section 5-J over Shark River, NJDOT, Monmouth County, NJ: Project manager for the replacement of a bascule span bridge with a new twin 1,885-foot-long high-level bridge. The project included preparation of the level of action assessment, community involvement, initial and final design, geotechnical design, ROW, and preparing NJDEP and ACOE permits. The design also included the replacement of the three-span North Channel bridge with a three-span jointless-ramp bridge. The project value was \$42 million.

Southern Mixing Bowl, Widening Section 6C1, NJTA, Newark, NJ: Project manager for a 1.5-mile section of highway widening between Interchanges 14 and 15E. The project included design of and modifications to five multi-span bridges, a 1,500-foot flyover bridge, 1,600 feet of M.S.E. and bin-type walls, ROW acquisition, highway lighting, and staged construction to maintain traffic. The project value was \$12 million.

Walt Whitman Bridge Redecking and Rehabilitation, Delaware River Port Authority (DRPA), NJ/PA: Structural project engineer for the \$75-million redecking and rehabilitation design of this major structure. The structure system encompasses the 3,540-foot suspension spans that were milled and overlaid, and over 7,000 feet of approach stringer, girder, and truss spans that were redecked using a seven-stage construction sequence to

Ernie R. Hutchins, PE continued

maintain six lanes of traffic on the seven-lane structure. Services include strengthening design and fatigue elevations for many of the structural steel details incorporated in the structure system. Much of the structure system entailed fatigue sensitive fracture critical members, including two girder, truss, pin and hanger, and cable elements.

Route 130 over Oldmans Creek, Logan, NJ: Project manager for the inspection, rehabilitation study, and construction documents for a four-span vertical lift bridge. The project included structural repairs and strengthening the superstructure and deteriorated substructure, staged construction to maintain traffic, and filing USCG, USACOE, and DEPE permits. Project value was \$4 million.

SR-1 Relief Route, DE: Project manager for a 5.5-mile section of divided highway of SR1 with a \$50 million construction value. Project included design of five, two-span continuous steel girder highway bridges approximately 210 feet each and three continuous span prestressed concrete bridges ranging from 130 to 260 feet each.

Bridge Drainage Rehabilitation, NJTA, NJ: Project manager for the design and contract plans to make modifications to the drainage systems on 26 New Jersey Turnpike bridges between interchanges 9 and 13E. The project included hydraulic analysis to eliminate unnecessary bridge inlets, realigning bridge drainage pipe to increase slopes, and upgrading pipe bends to current NJTA requirements to reduce future maintenance costs.

Pennsylvania Turnpike Bridges WB-511 and WB-512, Westmoreland County, PA: Project manager for widening and redecking using three-stage construction of two structures over T-755 and U.S. Route 30, respectively. The project included repair of substructure, approach roadway and embankment widening, a post and plank retaining wall, and extension maintenance of traffic for Turnpike and local traffic. Project value was \$9 million.

1985-90 Widening, Section 5A-1 and 5B-1, NJTA, Woodbridge, NJ: Project engineer for the preliminary and final design of the New Jersey Transit railroad bridge structure over the Turnpike. The work included coordination with NJ Transit operations for the design of new plate girders roll-in roll-out superstructure spanning the proposed Turnpike roadway widening.

Baker Street Bridge over Rahway River, NJ: Project manager for the replacement design of Baker Street Bridge, including channel and stream modification, and filing NJDEPE encroachment permits.

Pennsylvania Turnpike Bridge EB-744, Chester County, PA: Project manager for a three-span continuous girder/floorbeam structure over US 422 and North Gulph Road. The project included superstructure and substructure widening, roadway resurfacing, utility coordination, and stage construction for maintenance of Turnpike and local traffic.

Washington Street Viaduct, Perth Amboy, NJ: Responsible for the preliminary and final design for a replacement of the existing viaduct and a single-span railroad bridge over the depressed, electrified, NJ Transit tracks in Perth Amboy. The new structures consisted of a single-span, prestressed concrete, adjacent box beam roadway structure and a single-span ballast railroad bridge.

SR7 Bridges, DE: Responsible for the design of two-span continuous horizontally curved plate girder bridges over U.S. Route 40 and single-plate girder bridges over School Bell Road, which carries Route 7 in Delaware.

U.S. Routes 1 and 9 (Truck), Vertical Lift Bridge over Passaic River, NJDOT, NJ: Structural task leader for the revised connection to the NJ Turnpike interchange 15E and Route 1 and 9 Truck, which included redesign of interchange ramps connecting Routes 1 and 9 with the Turnpike; reconstruction of the Raymond Boulevard approach; widening of the west approach spans of the Route 1 and 9 structure of the Passaic River, including extending the existing substructure and the addition of new variable depth and plate girders; strengthening structural members as necessary to upgrade the ratings to HS20; removal and replacement of the concrete deck in the approach and flanking spans, and the rehabilitation of the steel grid decking in the lift span; and design of a new single-span structural steel stringer bridge.

Inspection and Rating, NJDOT, NJ: Prepared report for eight bascule and vertical lift bridges and 50 NJ Highway Bridges in Salem, Gloucester, and Cumberland.

Kenneth A. Clausen, PE

Survey/CADD/Structural Support Services

Mr. Clausen has 42 years of diverse structural/bridge engineering experience, including corporate oversight, section and project management, and design for both highway and railroad bridges. He has designed steel girder and prestressed concrete girder railroad and highway bridges and miscellaneous structures for expressways, river crossings, and railroad relocation projects. Mr. Clausen led the development of preliminary designs for 22 railroad bridges, over 40 retaining walls, as well as site work, and wrote the Quality Assurance plan for our team's bid on NJ Transit's South New Jersey Light Rail System. On three occasions he has presented a seminar/workshop on railroad bridge design with a total of over 150 engineers in attendance.

PANYNJ, JFK Airport – Aqueduct Bridge Crossing Stages 3 & 4, NY: Project engineer for structural design services for contract repairs to the JFK Airport Aqueduct Bridge railings and expansion joints. Responsible during Stage III to perform structural design and prepare the structural contract drawings for the necessary repairs. The scope includes preparation of General Drawings and incorporating requirements and drawings from various non-structural disciplines.

PANYNJ, Protective Structures at JFK Airport – Taxiways Q and A, NY: Project Engineer for providing design services for protective slabs at Taxiway A and Q at JFK Airport in Queens, NY. KSE is responsible for the structural design and preparation of structural contract drawings for protective structures over the Junction chamber and triple barreled culverts that run under Taxiway's Q and A. The protective structures are to carry the loads from various aircraft specified by the Authority with allowances for future increases in load and impact. Protective systems include precast slabs, cast-in-place slabs and a steel beam framing system with a steel plate deck support system. The work also includes preparation of General Drawings and incorporating requirements and drawings from various non-structural disciplines. KSE will prepare detailed cost estimates as well as an estimate of the construction duration. During stage IV, KSE will attend preconstruction meeting, review shop drawings, respond to requests for information and attend field meetings as

Firm

KS Engineers, P.C.

Education

MS, Civil Engineering, University of Illinois, 1967

BS, Civil Engineering, University of Illinois, 1966

Registration

Professional Engineer: NJ (#24GE03087900, Expires: 4/30/12), NY (#060567-1, Expires: 9/30/11)

Training

The Mini Bridge – Culvert Planning and Design, Rutgers University, Spring 2009

LRFD Steel Bridge Design course, presented by Highway Bridge Services, Boston MA, May 2010

Accelerated Construction Using the Northeast Extreme Tee (Next) Beam, presented by PCI, April 2009

Applications of Fiber Reinforced Polymer (FRP) Composites to Bridge Rehabilitation and Design, presented by ASCE at NJIT including a speaker from FHWA, April 2010.

Years of Experience: 42

required. KSE, if required, will be responsible for preparation of Post-Award Contract Changes to the design and contract plans.

PANYNJ, JFK Airport - Repair of Deck Slab at Structure R1: Project engineer for design of repairs to structural deck slab, preparation of contract plans and estimates.

NYSDOT, Richmond Road Bridge Design, Rehabilitation and TMS Measure as Part of 21 Bridge Contract on Staten Island Expressway, Richmond County, NY (Contract D010248): Project engineers for structural design of four bridges carrying Staten Island Expressway (S.I.E.) WB and EB over Richmond Road and Targee Street, replacing the steel beam bridges and widening the S.I.E. using prestressed concrete box beams. A similar project is underway for the steel beam superstructure and

Kenneth A. Clausen, PE continued

widening of the Renwick Street Bridge. Prestressed concrete NEXT beams and box beams are being evaluated for the replacement. Abutments are also being widened.

MTA LIRR, Contract No. 5973-1-5, Release A, POJ6243 – Design for Shinecock Canal, Montauk Highway and North Highway Bridge Rehabilitation Project: Project manager for this rehabilitation project of three (3) Long Island Railroad bridges located in Hampton Bays, Suffolk County, NY. Responsible for computation of As-Built and As-Inspected Ratings for the North Highway Bridge and the Montauk Highway Bridge, including estimates of remaining fatigue life. Work involves the conceptual design study for the replacement of the North Highway Bridge abutments and superstructure according to two alternatives. Construction schemes and conceptual cost estimates will be prepared for the two schemes. Work also involves computing quantities and estimating costs at the various phases of the work as well as performing a general review of the plans.

NJTA, Cedar Creek Bridge Replacement, Garden State Parkway, Berkeley Township, NJ: Project engineer for the replacement of a northbound and southbound 3-span deck slab bridges with wider single-span prestressed girder bridges, according to LRFD. Semi-integral abutments on steel pipe piles are being used. Construction staging to maintain traffic on the Parkway is required.

NJTA, Delaware River Bridge Deck Reconstruction and Miscellaneous Structural and Roadway Repairs, NJ: Bridge engineer responsible for the replacement of finger-plate deck joints with modular deck joints. KSE, a subconsultant to Parsons Brinckerhoff, was also responsible for deck drainage improvements, navigation and roadway lighting, and below-deck walkway repairs.

NYCDOT, 145th Street Bridge Reconstruction Support Services, New York, NY: Provided oversight for shop drawing review of bridge deck replacement using prefabricated Inverset and Effideck systems.

Hudson County Department of Public Resources, Lincoln Park Bridges over US Route 1&9T, Jersey City, NJ: Deputy project manager/bridge engineer responsible for the design of two 90-foot prestressed-concrete box beam bridges with integral abutments over US Route 1&9T, extensive modular retaining walls and a bridge-mounted sign structures. Coordinated the structural with roadway design, traffic control plans, utility impacts, a handicapped access ramp and bridge mounted signs.

NYSDOT, Preliminary & Final Design of Two Bridge Replacements on Route 3 over Salmon River, Oswego County, NY: Quality Assurance/Quality Control Leader responsible for the structural design review of the preliminary and final design of 2 bridge replacements on Route 3 over the Salmon River. The bridges are in excess of 200 feet in length. 5/8 of a mile of roadway was designed. Alternate alignments were considered. The design of piers for seismic loading required the investigation of various alternatives. The area is environmentally sensitive with wetlands on both sides of the existing alignment.

Barbara Thayer, PE, RA

CADD/Structural Inspection Support Services

Ms. Thayer, as founder and president of B. Thayer Associates, is involved in all phases of the firm's work. As a licensed architect and engineer, she is particularly qualified to supervise project teams comprised of both architects and engineers. The firm was founded to offer architectural and engineering services, especially for those areas of design in which a multidisciplinary approach is advantageous. Below is a listing of some of the projects she has supervised.

Condition Survey of Group 1 Buildings at Port Newark-NJMT (Port Authority Agreement No. 405-99-19).

Architectural conditions survey for 26 buildings equaling approximately 1.5 million square feet of space. Using guidelines provided by the Port Authority for conditions surveys of buildings, conditions tables were developed from field inspections. Architectural components, as well as overall building conditions, were surveyed and evaluated. Tables were developed indicating architectural components, descriptions, ratings and repair recommendations. Comparisons were made between previous condition surveys and current conditions. All defects or questionable conditions regarding substandard construction, code compliance violations and adjacent site conditions were brought to the attention of the prime consultant. The purpose of the survey was to provide the Port Authority with an updated cyclical condition report.

Terminal Service Road Bridge over Route 78 Connector at Newark Airport (The Port Authority of NY & NJ).

Abutment and wingwall design for new bridge to be built partially on surcharged fill. Pile supported foundation. Seismic design and analysis.

Twelve Bridges in the Croton Watershed Westchester County, NY (NYCDEP).

Architectural consultant for the reconstruction of twelve bridges, several of which are designated as contributing to the historic character of the area. Design of ornamental railing to meet AASHTO criteria. Restoration of existing stonework. Architectural detailing of piers and abutments. Renderings needed, plus SHPO and NYC Art Commission Approvals.

Inspection of Lighting Standards and Sign Structures (The Port Authority of NY and NJ). Route 9A Recon-

Firm

B. Thayer Associates

Education

BE, 1985, Civil Engineering, CUNY, New York

Graduate Studies in Structures

Bachelor of Architecture, 1979, Cooper Union for the Advancement of Science and Art, New York

Registration

Professional Engineer, New York, 1989; New Jersey, 1992

Registered Architect, New York, 1989; New Jersey, 1992; Michigan, 2003; Pennsylvania, 2004; NCARB, 2004

Years of Experience: 25

struction Project, Segment 1 (NYSDOT). Urban planning and design of streetscape on Battery Place. Final design of three new pedestrian bridges over Route 9A in Manhattan at the following locations: Morris Street, Clinton to Passenger Ship Terminal, and the Intrepid Museum. The design of the Intrepid Bridge was coordinated with the design of the new Intrepid Museum Visitor's Center and incorporated nautical motifs. The design provides ADA access from street and park levels and utilizes aesthetic treatments in keeping with the local environment. Lighting, landscaping, pavement, drainage and site amenities associated with the bridges were also integrated into the design. Presentations to Community Task Force.

Reconstruction of 145th Street Swing Bridge over the Harlem River, New York City (NYCDOT).

Architectural and associated structural design in preliminary and final design. Design of gate houses, machinery house, stairs, access platforms and utility connections. SHPO coordination and approval for new bascule span to replace historic span.

Sloop Channel and Partial Bridge Replacement - Wantagh Parkway (NYSDOT).

Work for final design includes architectural design for new operator house, generator house and gate house towers for the replacement

Barbara Thayer, PE, RA continued

bridge. Design was in keeping with the historic character of the Wantagh Parkway. Access to piers was provided from towers. New gate house towers were designed with granite façade and copper roof to preserve the distinctive appearance of the bridge.

Fulton Street Transit Center, New York, NY (New York Transit Authority). The project is part of new connection with J, M & Z, A/C, 2/3, 4/5, Transit Center. Involves coordination with structural, electrical, mechanical and communication disciplines.

Port Jervis Yard Extension (Metro-North Railroad). Architectural and structural preliminary and final design for new maintenance of equipment storage building and air compressor building and enlargement of T & E building within the yard. Work includes site survey and conditions assessment and documentation, the development of plans and complete CSI specifications, architectural finishes, spatial layouts to meet ADA requirements, cost estimating, constructibility reviews and shop drawing review.

Meadowlands Maintenance Complex Facility Expansion (NJ Transit). Architectural and structural engineering services including site inspection, conceptual planning, design, value engineering, interagency coordination, cost estimating, scheduling, calculations, specifications and plan, elevation and section preparation and the preliminary design of the new trainwasher.

White Plains Road Line Rehabilitation (NYCT). Final design of five elevated stations. Work includes architectural design and coordination with the structural, electrical and mechanical design disciplines. Includes construction support services. Special features of the project include the design of replacement hung mezzanines and the development of design standards for elevated stations including the design of canopies, windscreens, stairways and finishes.

Rehabilitation of the Ventilation, Mechanical and Electrical Systems for Three (3) Vehicular Tunnels (NYCDOT). Architectural and structural inspection and final design services of personnel facilities, exits and ventilation structures. Rehabilitation of above-grade stone clad ventilation structures, which serve as an important landscape element in Battery Park.

Repairs to Linden Shop Roof, Windows and Lighting, Borough of Brooklyn (NYCT). Architectural and structural inspection of 150,000-square-foot repair facility in the Transit Authority Division of Track. Design of a new roofing system and parapet reconstruction.

Design of LIRR Train Wash Facilities at Babylon, Ronkonkoma and Port Jefferson Yards, Suffolk County. Architectural and structural consultants for the design of new enclosed train wash facilities at 3 existing yards. Train wash design to accommodate all LIRR equipment types including diesel and dual mode locomotives, diesel hauled bi-level passenger coaches and single level multiple unit electric train consists. Building design to house train wash equipment and systems, including overhead walkways, overhead crane supports and ancillary spaces. Coordination with LIRR Engineering and Maintenance of Equipment Departments.

General Design Consultant Services for the Rehabilitation & Redevelopment of the Hoboken Ferry Terminal, (NJ Transit). Design for the restoration of ferry service for the rehabilitation and redevelopment of the Hoboken Ferry Terminal, which is listed on the National Register of Historic Places. Work included a survey of existing conditions including development of base plans of existing conditions, underwater inspection, fathometric survey and asbestos/lead sampling and abatement. Development of alternative designs includes consideration of ticketing, boarding and circulation, and incorporates architectural and engineering systems.

MTA (Long Island Railroad) East Side Access Project, Borough of Queens. Planning and architectural design for all facilities located in Long Island City.

Abdol R. Haghayeghi, PhD, PE

Structural Support- Special Structures

Dr. Hagh is an industry veteran, with an extensive engineering career that spans the building, bridge, tunnel, airport and marine market sectors. He has a PhD from Northeastern University and a Master of Science degree from MIT and has published numerous technical journal articles on complex structural systems. Dr. Hagh has led the analysis and design of several major projects for public authorities, including the PANYNJ, MTA of New York, the Port Authority of New York and New Jersey, as well as many other agencies around the country. Dr. Hagh has been involved in security assessments around the U.S., and contributed to the "Guidelines for Protecting Buildings and People against Terrorism through Architecture" for the NYPD.

Vehicular Security Screening Center (VSC) Design, New York, New York: Structural design of this screening center for trucks with a very large threat level located in downtown Manhattan.

World Trade Center Transportation Hub (PATH), Port Authority of New York and New Jersey (PANYNJ), New York: Providing structural engineering and blast mitigation expertise for the PATH transportation hub, a centerpiece of the redevelopment of the World Trade Center.

MTA 1-line (9x Alt) World Trade Center PATH Project, New York, New York: Project manager for the design of a three-story structure below grade, as well as temporary permanent underpinning of the existing subway line of in New York World Trade Center Project. The proposed structure is approximately 975 feet long and 70 feet wide, with an excavation depth of 65 feet below the street level. Provided structural design for top-down and construction phasing and sequencing needed to complete the structure.

George Washington Bridge, Suspender Rope Assessment, New York, and New Jersey: The George Washington Bridge consists of a suspension structure with approaches from the New York and New Jersey sides. Two steel truss towers, each 593 feet tall, support the four main cables of the bridge, one on the New Jersey side of the Hudson River, the other on the New York side. There

Education

PhD, Northeastern University, Boston, MA

MS, Structural Engineering, Massachusetts Institute of Technology, Cambridge, 1981

BSCE, Civil Engineering, Northeastern University, Boston, MA, 1978

Registration

Professional Engineer: NY, AL, CO, CT, DE, FL, GA, IL, KY, MD, ME, MO, OH, SC, VA and DC

NCEES: US, 1993, Registration No.: 11846

Professional Associations

American Society of Civil Engineers (ASCE)

Boston Society of Civil Engineers (BSCE)

American Concrete Institute (ACI)

Precast/Prestressed Concrete Institute (PCI)

International Association for Bridge and Structural Engineering (IABSE)

Years of Experience: 30

are three spans supported by the main cables with an overall length of 4,670 feet between anchorage saddles. The bridge is divided into a 3,500-foot center span, with back spans of 610 and 650 feet at the New Jersey and New York sides spans respectively. Steel suspender ropes hang from the main cables and connect into the bridge deck steel floor beams. The upper deck consists of a concrete deck supported by a combination of floor beams, with stringers and bracing. The lower deck consists of a concrete deck supported by steel floor beams and stringers. Two stiffening trusses running the entire length of the north and south edges of the bridge connect the upper and lower deck. The GWB has a total roadway width of 90 feet and an overall bridge width of 119 feet, with eight 11-foot-wide lanes on the upper deck and six 12-foot-wide lanes on the lower deck. A vertical clearance of 212 feet exists between the mean high water level and the mid-span of the lower deck of the bridge.

Abdol R. Haghayeghi, PhD, PE continued

After the events of September 11, some security measures were put in place to protect the bridge against a terrorist attack. One such measure included the protection of the steel suspenders hanging from the main cables. The steel suspenders are vulnerable; however, there is considerable redundancy in these elements because of the quantity and relatively close spacing. The mitigations measures were put in place to protect the suspenders against torching, cutting, and other means used by a terrorist to destroy the suspenders.

Lower Manhattan Streetscape, New York, New York: Structural design of the barrier and bollard system for vehicular collision protection.

Metropolitan Transportation Authority (MTA), Underwater Precast panel for Tunnel protection, New York, New York: Project manager for the design of concrete panels and anchoring system for protection against ship collision and erosion. Panels cast and floated were sunk to sit on top of existing tunnels in the East River in New York.

Port Authority of New York and New Jersey (PANYNJ), FEMA Disaster Application Preparation - TB&T Risk Assessment Method, New York: Developed and implemented a comprehensive, rigorous, and rational risk assessment method as a consultant to the Port Authority of New York and New Jersey. The method was subsequently reviewed by a panel of experts appointed by the Federal Highway Administration (FHWA) to the FHWA/AASHTO Blue Ribbon Panel on Bridge and Tunnel Security.

Port Authority of New York and New Jersey (PANYNJ) and Metropolitan Transportation Authority (MTA), "Sensitive Document Control," New York: Oversaw the preparation and implementation of "handling critical infrastructure information" instructions at the Port Authority of NYNJ and at MTA.

Port Authority of New York and New Jersey (PANYNJ), Capital Security Program, New York: Blast analysis and concept design of PATH Tunnels.

South Carolina Department of Transportation (SCDOT), Community Bridge Office, Charleston, South Carolina: Project manager for the design of piers, roadway, and demolition and reconstruction of four river crossings and approaches approximately 5 miles long. Provided structural engineering for temporary shoring and demolition of the Grace Memorial and Silas Pearman Bridges over the Cooper River and Town Creek in Charleston. Each bridge consisted of two crossings with through trusses approximately 600 feet and 1,000 feet long. The project posed numerous environmental challenges, including containment of contaminated materials and protection of sensitive wetlands. Demolition began in August 2005 and was completed in early 2007.

I-93 Charlestown Bridge, Boston, Massachusetts: Award-winning emergency bridge repair. Design to AASHTO specifications, project involved materials monitoring, on-site supervision, and modification of construction. Designed and supervised the fabrication and installation of a transverse girder and two support columns within 72 hours, so that the bridge could reopen on schedule. Columns on top of an existing diagonal truss member transferred the load to the existing connection via the existing gusset plates. This structure was later dismantled using temporary shoring with columns that were approximately 60 feet above water level and 50 feet below water level.

Blast Study of MTA Fulton Transit Center, Manhattan, New York: A confidential study was performed at the request of the MTA project manager for this significant glass facility, assessing the above-ground facility for progressive collapse and damage to the glazing system.

Hamid R. Adib, PhD, PE

Structural Support - Special Structures

Dr. Adib has extensive experience in the management and performance of structural engineering services for a broad range of projects. He has supervised numerous design projects for some of the most critical infrastructure facilities in the Northeastern United States. An adjunct professor of civil and architectural engineering at the University of Hartford since 1985, Dr. Adib is a Fellow of the ASCE and has served as a Board of Governors member of their Structural Engineering Institute. He has also served on the board of directors of a number of firms in the construction and design industries. He is licensed as a professional engineer or structural engineer in 13 states.

Port Authority of New York and New Jersey (PANYNJ), World Trade Center Transportation Hub, New York, New York:

As an integral part of the reconstruction of the World Trade Center (WTC) site and the larger revitalization of lower Manhattan, the permanent WTC transportation hub is one of New York City's most important and visible transportation infrastructure projects. Structural design was performed in association with renowned Spanish architect Santiago Calatrava, S.A., as part of the Downtown Design Partnership to design the new hub. The terminal will serve as a major regional transportation hub as well as a significant cultural and retail destination. An integral component of the master plan for the WTC site, the terminal will feature state-of-the-art safety, security, and environmental enhancements, as well as seamless pedestrian connections to the World Financial Center and the Metropolitan Transportation Authority's proposed Fulton Street Transit Center. Construction will take place in a phased and sequential format in order to keep the trains operational. A complete construction sequencing analysis was performed due to the project's complex nature.

Port Authority of New York and New Jersey (PANYNJ), Port Authority Bus Terminal, New York, New York:

Study of vulnerable components and progressive collapse analysis of the building built over a series of periods of time. Design of retrofits to components and critical elements of the structure subjected to man-made hazards.

Hudson Yards Development Corporation, Hudson Yard Development Competition, New York, NY:

Education

MBA, Finance and Marketing, University of Connecticut - Storrs, 1999

PhD, Applied Mechanics and Structural Analysis, University of Connecticut - Storrs, 1995

MS, Structural Engineering, University of Connecticut - Storrs, 1984

BS, Civil Engineering, University of Hartford - Hartford, CT, 1981

Registration

Professional Engineer: NY, NJ, CA, CT, FL, GA, IN, KY, MA, NJ, RI, MI, NH, OH

Professional Associations

American Society of Civil Engineers (ASCE), Fellow

ExCom for the Local Activities Division, Appointee

Structural Engineering Institute, Board of Governors

Committee on Long Range Planning of the Structural Congress, Member

American Concrete Institute (ACI)

American Institute of Steel Construction (AISC)

International Code Council

American Welding Society

Society of College and University Planners

Connecticut Society of Civil Engineers, Structural Technical Group

Connecticut Engineers in Private Practice, Structural Engineers Coalition

Years of Experience: 28

Yards is the area of Manhattan bounded by West 42nd and 43rd Streets, 7th and 8th Avenues, West 28th and 30th Streets, and Hudson River Park. The City of New York, Metropolitan Transportation Authority, and the State of New York collaborated on extraordinary planning initiatives to create a development program that will transform the Hudson Yards area into a vibrant, pedestrian-friendly, transit-oriented mixed-use district. Hudson Yards has the

Hamid R. Adib, PhD, PE continued

capacity for approximately 24 million square feet of new office development, 13,500 units of housing, of which almost 4,000 units will be affordable units, 1 million square feet of retail, and 2 million square feet of hotel space. As part of the development, about 14 million square feet of development is to be constructed over MTA West Side Rail Yards. This task required building of a platform over the existing train tracks with columns in between tracks or transferring over the tracks, to accommodate a park and gathering space, while the buildings would be constructed over the end tracks. Design had to be done such that no four tracks would be out of service at any given time. The portion between 10th and 11th avenues, 33rd street and 31st Street involved as of rights development, while the 11th Avenue to West Side Highway had to go through a ULURP (Uniform Land Use Review Procedure) process.

34th Street Development, New York, New York: The new train tunnel to be constructed below Henry Hudson River between New Jersey and New York extends in Manhattan to Fifth Avenue below 34th Street. As part of this work, studies were commissioned by the client to assess the effects of this tunnel on the adjacent lots on future full development, given maximum FAR (Floor Area Ratio) and assuming assemblage of smaller properties to create larger parcels. Given the New York zoning regulations, buildings of large magnitudes could be constructed. We had to work with the design team to stipulate the location of building cores, height, setbacks, and given the geologic properties of the site, determine viability of the tunnels for the full development loads. This study not only took into affect the above-ground elements, but also below-grade developments and stations.

CBS Building, Vent Tunnel Excavation Peer Review, New York, New York: Acted as the liaison between the owner and MTA in reviewing the work that was being performed as part of the ventilation projects undertaken by New York City Transit. Project challenges included deep excavation adjacent to the existing structure under the Avenue of Americas and removal and reconstruction of part of the existing basement in order to accommodate the ventilation plant, while maintaining the structural and waterproofing integrity of the structure while the adjacent areas were occupied.

Rawabi City Masterplan, Palestine: The new city is designed for 40,000 residents and will accommodate an additional 50,000 from surrounding towns. Infrastructure will have the capacity to generate future growth as well. Rawabi will offer commercial, civic, and entertainment facilities, a state-of-the-art business and technology incubator complex, and more than 5,000 units of affordable housing. Given the scarcity of available building sites, Rawabi is being developed on a very steep site. Clad in local stone, the design incorporates elements of traditional Palestinian architecture.

The development will be compact and urban, concentrating larger structures at the top of the ridge with smaller buildings on the sides of the hill. For the first time on this scale, home ownership will be within the reach of teachers, health care and social service professionals, government employees, and those employed by Rawabi's targeted IT and creative sector businesses.

Mercedes Benz of Manhattan, New York, New York: As part of the extension of the No. 7 subway line from its current terminus at Times Square to a new terminal station at 34th Street and 11th Avenue, studies were performed to determine maximum usable and developable mixed-use office, residential and hotel space to be built over the existing Amtrak rails and planned No. 7 subway extension. This study was commissioned by the client to assess the costs and difficulties associated with such development in order to help them in negotiations with the MTA (Metropolitan Transportation Authority), during the land transfer.

Seabrook Station High Security Office Support Building, Seabrook, New Hampshire: Project is a new office building designed as the main building to house office functions of the Seabrook Nuclear Power Plant. The four-story structure needed to be designed for high security loading, while portions of it was founded atop 10-to-12-foot diameter pipes, which were the major water intake and discharge pipes to the power plant.

Yousef M. Alostaz, PhD, PE

Structural Support - Special Structures

Dr. Alostaz is a professional engineer with a 17-year engineering career that spans the buildings, bridges, tunnels, airports, and marine market sectors. He holds a PhD degree from the University of Illinois at Urbana and has published numerous technical journal articles. Since the events of 9/11, Dr. Alostaz has worked on the analysis and design of protective systems for several major public authorities around the nation, including the Atlanta Hartsfield International Airport, the New York Metropolitan Transportation Authority, the Port Authority of New York and New Jersey, as well as many airports around the country. He has been involved in protective design for most of the downtown New York City public projects for the past five years.

Sensitive Document Control, the Port Authority of New York and New Jersey (PANYNJ) and the Metropolitan Transportation Authority, New York: Oversaw the preparation and implementation of Handling Critical Infrastructure Information instructions at the PANYNJ and the MTA.

Capital Security Program, Port Authority of New York and New Jersey, New York: Provided blast analysis and conceptual design of PATH tunnels.

World Trade Center Transportation Hub (PATH), Port Authority of New York and New Jersey (PANYNJ), New York: Providing structural engineering/blast mitigation expertise on the PATH Transportation Hub, a centerpiece of the redevelopment of the World Trade Center site in Lower Manhattan.

Port Authority Trans-Hudson, New York and New Jersey: Provided an assessment of the system-wide infrastructure and stations subjected to man-made hazards in an effort to help with capital improvement program prioritization.

George Washington and Bayonne Bridges: Provided structural hardening for George Washington and Bayonne Bridges.

PANYNJ/NJ Transit, ARC Project/Trans-Hudson Express Tunnel (THE Tunnel), NJ/NY: Provided structural hardening for THE Tunnel Project.

Education

PhD, Structural Engineering, University of Illinois, Urbana-Champaign, 1997

MS, Structural Engineering, Jordan University of Science and Technology, Jordan, 1992

BS, Structural Engineering, Jordan University of Science and Technology, Jordan, 1989

Registration

SE: MA, 2000, Registration No.: 41481

Professional Associations

American Society of Civil Engineers

Years of Experience: 17

System-wide threat and vulnerability methodology, New York MTA, New York: Worked with original author of the report that was drafted for the New York Metropolitan Transportation Authority, through a joint venture, on the security capital program contract.

Blast study of MTA Fulton Transit Center, New York City, New York: A confidential study was performed at the request of the MTA project manager for this significant glass facility, assessing the above-ground facility for progressive collapse and damage to the glazing system.

East Side Access transit tunnel and station, MTA, New York: Provided blast analysis and design recommendations for the bored tunnels and station caverns for the Metropolitan Transportation Authority.

Vehicular Security Center screening design, New York, New York: Provided structural design for this downtown Manhattan screening center for trucks with a very large threat level.

Grand Central Terminal, New York, New York: Performed several security design tasks for the Grand Central Terminal on the proposed East Side Access facilities under Grand Central Terminal as well as for GCT perimeter protection and the historic glazing system. Also provided analysis for blast-resisting trash containers inside the station.

Yousef M. Alostaz, PhD, PE continued**Lower Manhattan Streetscape, New York, New York:**

Provided the structural design for the barrier and bollard system for vehicular collision protection.

MTA Capital Security Program, Metropolitan Transportation Authority, New York: Blast assessment for 13 East River tunnels.

Metropolitan Transportation Authority Subway line R/W, New York, New York: Performed seismic analyses of the retrofitted station.

Metropolitan Transportation Authority Subway line 4/5, New York, New York: Performed seismic analyses of the retrofitted station.

Airport security:

- JFK International Airport, Perimeter Protection, New York, NY
- La Guardia Airport, Perimeter Protection, New York, NY
- Teterboro Airport, Perimeter Protection, Teterboro, NJ
- Newark International Airport, Perimeter Protection, Newark, NJ
- Hartsfield Atlanta International Airport, I-285 Fifth Runway Tunnel, Atlanta, GA
- Hartsfield Atlanta International Airport, North and South Terminals, Atlanta, GA
- Bangor International Airport, Perimeter Protection, Bangor, ME

Mehrdad Mirzakashani, PE

Structural Support - Special Structures

Mr. Mirzakashani has extensive experience providing structural and construction engineering service for tunnels, major underground facilities, piers and marine structures, and elevated viaducts. In addition to leading the design and analysis teams, he has lead design teams in developing construction documents, constructibility reports, erection shop drawings, phasing and erection procedure drawings for pre-stress and post-tensioned traffic decking, as well as support of excavation. He has produced construction engineering design for crane operation, various rigging, phasing, demo, and design of temporary structures needed by contractors for a wide variety of project types.

MTA, Underwater Precast Panel for Tunnel Protection New York, New York:

Project manager for the design of concrete panels and anchoring system for protection against ship collision and erosion. Panels cast and floated were sunk to sit on top of existing tunnels in the East River in New York City.

PATH, River Bed Concrete Mat System, New York, New York:

Project manager for the design of concrete precast panels and anchoring system for protection against ship collision and erosion. Panels cast and floated were designed to sink on top of existing tunnels in the Hudson river New York.

MTA 1-line (9x Alt) World Trade Center PATH Project, New York, New York:

Project manager for the design of 3-story structure below grade as well as permanent underpinning of the existing subway line of in New York World Trade Center Project. The proposed structure is approximately 975 feet long and 70 feet wide with excavation depth of 65 feet below street level. Provided structural design as well as the necessary construction phasing and sequencing needed to complete the structure.

Bridge Demolitions, South Carolina Department of Transportation (SCDOT) Community Bridge Office, Charleston, South Carolina:

Project manager for the demolition of four river crossings and approaches approximately 5 miles long. Provided structural engineering for demolition of the Grace Memorial and Silas Pear-

Education

MS, Structural Engineering, Northeastern University, Boston, MA, 1992

BS, Civil Engineering, Northeastern University, Boston, MA, 1984

Registration

PE: MA, 1990, Registration No.: 35480 (Structural)

Professional Associations

American Society of Civil Engineers (ASCE)

Boston Society of Civil Engineers (BSCE)

Precast Prestressed Concrete Institute (PCI)

American Institute fo Steel Construction (AISC)

Years of Experience: 26

man Bridges over the Cooper River and Town Creek in Charleston. Each bridge consisted of two crossings with through trusses approximately 600 feet and 1,000 feet long, respectively. In addition to the removal of the piers, approaches, and all debris, services included design and construction of interchange improvements and enhancements (new streets, sidewalks, and a pedestrian/bicycle bridge). The project posed numerous environmental challenges, including containment of contaminated materials and protection of sensitive wetlands. Demolition began in August 2005 and was completed in early 2007.

Sakonnet River Bridge, Precast Segmental Design Constructibility Review, Providence, Rhode Island:

The proposed Sakonnet River Bridge will be near Providence, and will consist of seven spans. Provided an independent constructibility review for the segmental and bulb-tee alternative. The focus of the constructibility review is to identify issues that could adversely affect construction feasibility, schedule/duration, sequence, quality, and cost on the project. Each review was performed based on the documents available at the time of the review. Other issues (such as project management and on-call assistance to address the current design issues) were included as part of the constructibility study.

Mehrdad Mirzakashani, PE continued

MHD Route 117 Bridge over North Nashua River, Lancaster, Massachusetts: This project comprised the complete replacement of the bridge that carries Route 117 over the North Nashua River, required because of advanced deterioration of the existing superstructure and abutments. Includes approach roadways from north and south to accommodate the construction of the bridge in stages. The new structure is supported by new abutments on both sides of the river. Designed the 13.31-meter-wide roadway to accommodate two 3.75-meter vehicular lanes, one in each direction, a 1.5-meter shoulder, and a 2-meter sidewalk in the southbound direction.

MHD Route 7 Bridge over the Hemlock Brook, Williamstown, Massachusetts: Design of a new 15-meter, cast-in-place post-tensioned reinforced concrete deck with a 45° skew that is super-elevated 5.4 percent (or approximately 1 meter higher than the existing deck). The new abutments will be constructed beyond the existing ones that will be used for framework support.

I-93 Charlestown Bridge, Boston, Massachusetts: Emergency bridge repair designed to AASHTO specifications. The project involved materials monitoring, on-site supervision, and modification of construction. Designed and supervised the fabrication and installation of a transverse girder and two support columns within 72 hours, so that the bridge could reopen on schedule. The columns are on top of an existing diagonal truss member. Transferred the load to the existing connection via the existing gusset plates.

MHD Phillipston Bridge, Route 2 over Route 2A and the Bass River, Phillipston, Massachusetts: This project included emergency repair, inspection, and rating.

MTA Capital Security Program, New York City, New York: Mitigation design for numerous MTA assets (stations, tunnels, control facilities, etc.). This study includes establishing a priority ranking of the critical assets and providing structural mitigation options for various threat scenarios. Other more focused tasks of this study include the evaluation of the Grand Central Terminal Station and various underwater subway/transit tunnels.

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

E. Hourly Rates

Section E: Hourly Rates

HOURLY RATES					
NAME	TITLE	HOURLY RATE	NAME	TITLE	HOURLY RATE
AECOM USA, Inc.					
Gary Morris	Officer-in-Charge	\$250 *	Kovac, John	Sr. Estimator	\$61.02
Lai, Chee	Project Manager	\$77.78	Kubovic, Douglas	Engineer	\$39.77
Baycora, Alim	QA/QC	\$81.12	Lau, Kaising	Sr. Engineer	\$58.81
Hutchins, Ernie	QA/QC	\$84.68	Levin, Aron	CADD Drafter	\$36.92
Aksman, Brian	Sr. Engineer	\$46.16	Lo, Chung	CADD Drafter	\$29.21
Aw-Yong, Jason	Sr. Engineer	\$45.80	Manayath, Paul	Sr. CADD Drafter	\$40.92
Balais III, Ignacio	Sr. CADD Drafter	\$40.53	Hartney, Elizabeth	Engineer	\$37.00
Bath, Christopher	Sr. Engineer	\$55.95	Marchan, Edward	CADD Drafter	\$39.93
Bayersdorpher, Jay	Sr. Estimator	\$69.31	Majmudar, Shailesh	Sr. Engineer	\$58.66
Blaney, Indhira	Engineer	\$44.70	Martin, Catherine S.	Engineer	\$28.19
Brook, Chia	Engineer	\$39.77	Matarazzo, Joseph	Lead Struct Engr	\$68.51
Bunting, Robert	Sr. Engineer	\$53.64	Mazumdar, Asim	Sr. Engineer	\$63.13
Chaudhuri, Swapan	Lead Struct. Eng.	\$67.77	Melberger, Darin	Sr. Engineer	\$64.54
Chen, Wei Tao	Lead Traffic Engr.	\$70.60	Morales, Hiram	Engineer	\$37.37
Chien, Linda	Engineer	\$40.53	Napoli, Alex	Sr. Engineer	\$50.12
Cho, Yong	Sr. CADD Drafter	\$41.26	Nasr, Mohammed Y	Sr. Engineer	\$75.35
Curtis, Christopher	Engineer	\$43.65	Patel, Vanita	Engineer	\$32.50
Crincoli, Anthony	Lead Geotech	\$59.25	Perez, Nayibe	Engineer	\$28.35
Dahzy, Jason	CADD Drafter	\$24.28	Perez, Michele	Engineer	\$42.27
Dai, Xin	Sr. Engineer	\$45.80	Pugh, Raymond	Engineer	\$21.82
Daza, John	Sr. Engineer	\$50.73	Richey, Ashley	Sr. Engineer	\$50.72
Egan, Mike	Sr. Engineer	\$51.87	Sabean, Bradford	Engineer	\$27.86
Estrada, Yurintzy	Engineer	\$29.96	Scarcello, Frederick	Sr Engineer	\$68.12
Ella, Joselito	Sr. Engineer	\$50.39	Scott, Sean	Scheduler	\$38.08
Ella-Trinidad, Janelle	Engineer	\$42.27	Shah, Jitesh	Lead Struct. Engr.	\$64.35
Fan, Zhuo	Engineer	\$35.09	Shayer, Yelena	Engineer	\$38.94
Fernandez, Pablo	CADD Drafter	\$37.26	Singh, Pavittar	Engineer	\$38.47
Ferrer, Aracely	CADD Drafter	\$36.16	Swensen, Eric	Engineer	\$35.01
Garbolski, Mike	Lead Civil Engr.	\$55.18	Suelto, Bryan	Engineer	\$41.61

Note: * = principal rate • All rates listed above are actual hourly rates effective 1/2/2010.

HOURLY RATES

NAME	TITLE	HOURLY RATE	NAME	TITLE	HOURLY RATE
<i>AECOM USA, Inc. continued</i>					
Griffith, Donnell	CADD Drafter	\$37.35	Tang, Yimin	Engineer	\$41.43
Guan, Jim	Engineer	\$42.49	Wagner, Thomas	Engineer	\$29.04
Hapkiewicz, John	Lead Struct. Engr.	\$55.32	Walkes, Kevin	Engineer	\$42.51
Harriott, Thomas	Lead Struct. Engr.	\$58.28	Wasserman, Joanna	Engineer	\$40.41
Hawksley, Alan	Sr. CADD Drafter	\$44.72	Wessel, Dan	Engineer	\$42.23
Hegde, Anand	Sr. Engineer	\$48.58	Willis, Stewart	Lead Struct. Engr.	\$81.96
Hodelin, Leslie	Engineer	\$38.43	Wu, XueZeng	Engineer	\$42.07
Jimenez, Daniel	Sr. Engineer	\$45.27	Xiong, Yanbin	Engineer	\$38.46
Khan, Mohammad	Engineer	\$32.23	Yapur-Quintal, Erica	Engineer	\$32.09
Kim-Choi, Sun	Engineer	\$29.81	Yartey, Philip	Engineer	\$28.91
Koch, Danielle	Engineer	\$28.75	Zamil, Raizul	Sr. Engineer	\$49.69
B. Thayer Associates			KS Engineers, P.C.		
Huang, Gloria	Structural Engineer	\$57.95	Opong, Dickson	Project Manager	\$62.10
Mody, Harshad	Structural Engineer	\$59.45	Clausen, Kenneth	Dir. Bridge Design	\$55.38
Fong, Ken	Structural Engineer	\$28.85	Hwang, Carl	Sr. Structural Engr	\$40.00
Yu, Edwin	Structural Engineer	\$30.02	Su, Khac-Suon	Sr. Struct. Engr.	\$36.55
Patel, Chetan	Civil Engineer	\$25.50	Dynda, Dariusz	Structural Engr.	\$38.46
Smith, Brendan	Civil Engineer	\$28.85			



Note: * = principal rate • All rates listed above are actual hourly rates effective 1/2/2010.

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

F. Representative Project Experience

NJDOT Route 139, Conrail and Hoboken Viaducts *Jersey City, New Jersey*

Client Contact: Henry Cole
New Jersey Department of
Transportation (NJDOT)
(609) 530-5773

Completion Date / Status:
ongoing; on budget & on schedule

Cost: \$90 million

Team Members: Ernest Hutchins,
PE, Jitesh Shah, PE, Stewart
Willis, PE

AECOM Services:

- Design services for 1.2 miles of Route 139 located between the Tonnelles Circle and the Holland Tunnel.
- Vital rehabilitation to the Conrail, 12th and 14th Street viaducts, a total of 3,885 feet in length.
- Rehabilitation included concrete encasement removal, deck replacement, superstructure rehabilitation and seismic retrofit.
- Redecking and strengthening of the top level of the 3,380-foot-long Hoboken Viaduct.
- Overall project management, traffic studies, environmental studies, preparation of environmental assessment and section 4(f) document and community programs.

**Walt Whitman Bridge Main Span Reconstruction** *Gloucester, New Jersey & Philadelphia, Pennsylvania*

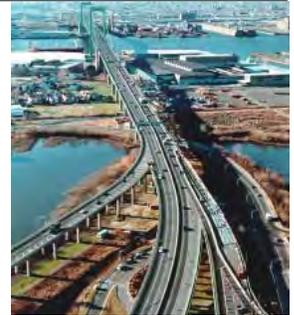
Client Contact: William Brooks
Delaware River Port Authority
(865) 968-2060

Completion Date / Status:
2008; on budget & on schedule

Cost: \$5 million

AECOM Services:

- Final design of the redecking, strengthening and retrofitting of the Walt Whitman Bridge, a 7-lane suspension bridge spanning the Delaware River.
- Developed concept-level designs for both modern concrete-filled grid and steel orthotropic alternatives.
- Developed final design details and prepared bid documents for the preferred alternative.



- Reconstruction work included strengthening of suspended span floorbeams, installation of new tower joint assemblies, installation of new safety barrier, structural enhancements to improve the lateral-torsional stability of the main suspended span, redecking of anchorage spans, deleading and repainting of main span truss elements, and improvements to main span gantry signing, lighting and SCADA systems.

Driscoll Bridge Widening and Rehabilitation *Woodbridge & Sayreville, New Jersey*

Client Contact: Mike Garofalo
New Jersey Turnpike Authority
(732) 750-5300

Completion Date / Status:
2009; on budget & on schedule

Cost: \$215 million

Team Members: Ernest Hutchins,
PE, Jitesh Shah, PE, Stewart
Willis, PE

AECOM Services:

- As a joint venture, provided design and construction management services for the 4,400-foot bridge.
- Design of the new bridge, approach roadways at both ends of the new bridge and rehabilitation of the existing structure.
- New bridge required that both concrete segmental and steel bridge options be fully designed and bid.
- New bridge features a high performance concrete (HPC) mix, and nearly 3 million pounds of stainless steel reinforcement.



- Major repairs and strengthening, including approach slabs, pier rehabilitation, abutment repairs, structural steel strengthening, miscellaneous diaphragm repairs, joint replacement, an HPC-reinforced concrete replacement deck, a median barrier and parapets, bridge jacking and bearing replacements, seismic retrofitting, bridge lighting, and drainage systems.

NYSDOT Region 10 Design Assignments Agreement *New York*

Client Contact: Ken Murphy
NYSDOT (631) 952-6645

Completion Date / Status:
2005/2010; on budget & on schedule

Cost: \$100 million combined

Team Members: Chee Lai, PE,
John Hapkiewicz, Yosry Nasr, PE,
Swapan Chaudhuri, PhD, PE, Asim
Mazumdar, PE, Bryan Suelto, PE

AECOM Services for eight task assignments:

- **Reconstruction of 2-km Rte 25 and bridge replacement in Southold, Suffolk County, NY.** Project included realignments, reconstruction and resurfacing, bridge replacement, retaining walls, MPT and construction staging, and construction support services.
- **Emergency Repairs to Damaged Girder to Lincoln Blvd. Bridge over I-495, Suffolk County, NY.**
- **Rte 27 Culvert Replacement in Southampton, Suffolk County, Final Design (Phases V-VI) for the replacement of the culvert crossing Mill Creek.** Project included permitting, hydraulic analysis, railing and guide rail replacements, culvert replacement, MPT and cofferdam design.

- **Interstate 495 Mill and Fill (Exits 52 to 57) and HOV Improvements (Exits 52 to 60), Suffolk County, New York.** The work also included installation of span sign structures, drainage modifications and utility relocations, preparation of specifications, special notes, final plans and quantity and cost estimates.
- **Northern State Parkway Mill and Fill from the NYC Line to Exit 30, Suffolk County, New York.** The work also included the preparation of specifications, special notes and quantity and cost engineer's estimate.
- **Route 347 Reconstruction, Suffolk County, NY.** Value Engineering Study for the Reconstruction of Rte 347 involving highway reconstruction and widening, bridges, retaining walls, sign structures, MPT plans, and cost estimates. Projects include several interchanges along Route 347.
- **NYSDOT, Bridge Painting Project at Various locations, Nassau and Suffolk Counties, NY.** Develop specifications, contract documents for the painting of 30 Bridges. Works include inspection, quantity estimates, design of work zone traffic control plans.

Routes 120 and 22, Exits 2 and 3 on I-684 *Armonk, NY*

Client Contact: Joseph Foglietta
NYSDOT (845) 431-5878

Completion Date / Status:
2004 / 2007; on budget & on schedule

Cost: \$90 million

Team Members: Wei Tao Chen,
Chee Lai, PE, Swapan Chaudhuri,
PhD, PE, Linda Chien, PE

AECOM Services:

- Phases I-VI design and environmental permitting services (EIS) for improvements to State Routes 120 and 22 and Interchange Exits 2 and 3 on I-684.
- Evaluated various interchange configurations at Exits 2 and 3 to improve safety and mitigate operational deficiencies.
- Interchange ramp design included two curved steel girder structures with tight radius constraints.



PANYNJ Airport Security Design Services *New York/New Jersey*

Client Contact: Michael Valletta
PANYNJ (201) 595-4754

Completion Status: Ongoing; on budget & on schedule

Cost: \$100 million

Team Members: Chee Lai, PE,
Dennis Wu, PhD, PE

AECOM Services:

- Major security program encompassing all PA's aviation facilities – over \$100M construction.
- Approximately 60% of projects are for physical security, including perimeter intrusion detection, barriers and force protection infrastructure.
- 40% are technology-based, including electronic security, communications and surveillance.



Replacement of Undercliff Avenue Bridge Over the Cross Bronx Expressway *Bronx, NY*

Client Contact: Harold Fink, PE,
NYSDOT, Region 11
(718) 482-4725

Completion Date / Status: 2008;
on budget & on schedule

Cost: \$6.31 million

Team Members:
Joseph Matrazzo, PE, and
John Daza, PE

AECOM Services:

- Final design of new \$950-million terminal.
- 2.2 million-square-foot terminal consists of 3 levels with 55 gates, new two-level roadway curved steel plate girder ramp structure, four concourses (one connected through a 320-foot tunnel) with moving walkways, customs and immigration facility, baggage-claim systems, 110,000 square feet of concession space
- Other elements included: aprons and taxiways, fuel transmission and hydrant systems, and elevated and at-grade roadways.



Interchange 16W Improvements *Rutherford, NJ*

Client Contact: Lisa Kenney
NJTA (732) 750-5300

Start / Completion: 2005 / 2010;
on budget & on schedule

Cost (fee): \$6.8 million

Team Members: Ernie Hutchins,
PE, Stuart Willis, PE, John Azzaro,
PE

AECOM Services:

- Design and construction support services for roadway and structure improvements that include the conceptual design alternatives to best improve the access from the Interchange.
- A new curved steel plate girder flyover structure was also designed from Route 120 southbound to Route 3 Eastbound to improve weaving conditions at that location.
- An EO215 environmental document is included in minimizing impacts to sensitive areas of wetlands.
- The design also includes maintenance of traffic, geotechnical program, surveying and mapping.



JetBlue Airways JFK Terminal 5 Redevelopment *Jamaica, NY*

Client: Richard Smyth
JetBlue Airways Corporation
(718) 709-3099

Completion Date / Status:
2001 / 2008; on budget & on
schedule

Cost (fee): \$7.5 million

Team Members: Wei Tao
Chen, PE, Chee Lai, PE, Asim
Mazumdar, PE, Bryan Suelto,
PE, Dennis Wu, PE, Elizabeth
Marcantonio, PE

AECOM Services:

- Designer-of-record to provide engineering/architectural (E/A) design services on \$875-million program.
- Major elements: all design documents, curved steel girder bridge design, agency coordination, general site preparation, geotechnical and environmental engineering, access roads, arrival and departure ramp structures, sign structures, curbs, site utilities relocation, airside aprons, taxiways, airside fencing, aircraft fuelling and landscaping.



American Airlines Terminal at JFK International Airport *Jamaica, NY*

Client Contact: Lewis Walling
American Airlines Corporate Real
Estate (646) 932-9602

Completion Date / Status:
2007; on budget & on schedule

Cost: \$950 million

Team Members: Chee Lai, PE,
Asim Mazumdar, PE

AECOM Services:

- Final design of new \$950-million terminal.
- 2.2 million-square-foot terminal consists of 3 levels with 55 gates, new two-level roadway curved steel plate girder ramp structure, four concourses (one connected through a 320-ft tunnel) with moving walkways, customs and immigration facility, baggage-claim systems, 110,000 square feet of concessions.
- Other elements included: aprons and taxiways, fuel transmission and hydrant systems, and elevated and at-grade roadways.

**Shore Parkway Reconstruction** *Brooklyn, NY*

Client Contact: David Dunn
NYCDOT (212) 487-7880

Completion Date / Status:
2009; on budget & on schedule

Cost: \$115 million

**AECOM Services:**

AECOM provided design services for replacement of the 55-year-old Shore Parkway Bridge over Fresh Creek in Brooklyn. The existing 270-foot-long bridge consisted of five simply supported spans carrying the 6-lane Shore Parkway and a bicycle path over Fresh Creek, a navigable waterway. AECOM designed a new superstructure of the five-span viaduct with continuous steel stringers and a widened concrete deck to improve substandard shoulder widths. The MPT design required maintaining operation of all lanes of traffic plus an existing bikeway throughout the construction. A comprehensive seismic analysis was performed based on data obtained from a drilling program developed by AECOM to determine response characteristics of the existing pile foundation and seismic resistant design of the entire structure. Work included underwater inspection, final design for the reconstructed bridge, and full-depth pavement reconstruction of 1,200 feet of approach roadway. AECOM is presently providing construction support services responsible for developing repair details for the various structural and safety flags that have been issued.

Lower Manhattan Redevelopment. Route 9A Reconstruction Battery Place to Chambers Street *New York NY*

Entities Involved: AECOM

Completion Date / Status:
Ongoing; on budget & on schedule

Cost: \$27 million

Client Contact: Shilpan Patel,
PE, NYSDOT (212) 267-4113

Team Members:
Joseph Matarrazzo, PE,
John Daza, PE, and
Leslie Hodelin, PE

AECOM Services:

- Design of a 140-foot-long architecturally enhanced pedestrian bridge that connects to the existing Liberty Street Pedestrian Bridge. The bridge is necessary in order to maintain pedestrian circulation through the World Trade Center site during construction. The bridge includes an elevator.
- Rehabilitation of the pedestrian bridge at Rector Street, and reconstruction of approximately 60 feet of the approach structure ("bathtub") to the West Street Tunnel. The approach structure is being reconstructed due to the proposed alignment of Route 9A.
- Relocation of the east pier of the Liberty Street pedestrian bridge and design of a new center pier. The new piers are necessary due to the proposed alignment of Route 9A.

Lower Manhattan Redevelopment. Route 9A Reconstruction Battery Place to Chambers Street *continued*

- Relocation of the North Portal of the Battery Park Underpass by approximately 9 meters to accommodate the realignment of Battery Place. In addition, approximately 8 meters of the existing roof portion of the structure was replaced. The total length of the new roof slab is 26 meters. The modifications consisted of a cast-in-place superstructure and pier with tiled walls and ceilings to match the existing construction.
- Design and design support during construction for a temporary pedestrian bridge across Route 9A at Vesey Street adjacent to the World Trade Center. The 240-foot-long bridge opened in November 2003 and provides safe access for 6,500 pedestrians per hour to the World Financial Center, on the west side of Route 9A, from the temporary PATH station at the WTC. The facility includes east and west touchdown structures including elevators, escalators and staircases, canopies and roof, architectural treatments, lighting, prefabricated superstructure.
- **Awards:** American Society of Civil Engineers Metropolitan Section - Construction Achievement Award for the Route 9A Lower Manhattan Redevelopment - South Promenade Project. June 2007
- **Gold Award** - Structural Systems Category for Battery Park Underpass Portal Reconstruction, American Council of Engineering Companies New York, November 2006.
- **Silver Award** - Structural Systems for Vesey Street Pedestrian Bridge, American Council of Engineering Companies New York, November 2004



Seismic Vulnerability Assessments *New York, NY*

Client Contact: Harold Fink,
NYSDOT (718) 482-4725

Completion Date / Status:
2009; on budget & on schedule

Cost: \$2.6 million (fee)

AECOM Services: AECOM provided consulting services to assess the seismic vulnerability of 834 bridges throughout New York City and provide retrofit recommendations. These bridges are located on and over various emergency access corridors in the five boroughs. This is the first project of its type by NYSDOT. The assessments are performed in accordance with the NYSDOT Seismic Vulnerability Assessment Manual. The process begins with data collection, followed by screening of each structure to establish its seismic risk classification. The rating is obtained through a semi-empirical method to determine overall vulnerability to seismic events.

Field inspection and verification of existing conditions is performed as required. For a limited number of structures, an analytical assessment involving capacity/demand ratios and "push-over" analyses was performed to compare the analytical results with the empirical results. The final product is a recommended course of action for seismic retrofit in relation to the vulnerability and importance on a structure-by-structure basis.

As part of the project, AECOM developed guidelines and procedures for technical issues not addressed by the Seismic Vulnerability Assessment Manual. This included assessing rigid frames, multi-level bridges, steel substructures, and slender concrete columns. AECOM staff developed a comprehensive electronic spreadsheet to perform the assessments. The spreadsheet is linked to the NYSDOT BIIS database, which minimizes data entry errors and allows the assessments to be performed more efficiently.

Platinum Award - Studies, Research, and Engineering Category for Seismic Vulnerability Assessment of Various Bridges, American Council of Engineering Companies New York, November 2006.

2009 and 2010 PANYNJ Structural Engineering Services (Bridge) Call-in Agreement- Task Order Number 1 EP-684.009 Elizabeth Port Authority Marine Terminal – McLester Street Widening *New York, NY*

Client Contact: Stewart Sloan, PANYNJ, (973) 792-4534 or Yatsun Lau, PANYNJ, (973) 792-4498
Completion Date / Status: ongoing; on budget & on schedule
Cost: \$120,000 (fee)
Team Members: Chee Lai, PE, John Hapkiewicz, PE, Yurintzy Estrada

AECOM Services: Performed Stage III & Stage IV Structural Engineering Services for two (2) overhead sign structures (four-chord steel truss supported on steel towers), one (1) cantilever sign structure (two-chord steel truss supported on a steel post) and the associated drilled shaft foundations. The designs were performed per the 2009 AASHTO Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, using category I fatigue analysis and adjusted wind loads per PANYNJ criteria. Structural work was coordinated with in-house PANYNJ staff who provided design of other disciplines.

Engineering Services Agreement *New York, NY*

Client Contact: Henry Perahia, PE, NYCDOT (212) 839-6300
Completion Date / Status: ongoing; on budget & on schedule
Cost: \$10 million (fee)

AECOM Services: AECOM provides various design and resident engineering services, including survey, highway design, bridge design, inspection, shop drawing review, value engineering, constructibility review, public outreach, hydraulic engineering, environmental engineering, geotechnical engineering, and special projects. Assignments include the following:



- Bridge Data System (BDS) Development
- Inspection of over 625 retaining walls
- Review of Balloon Applications for Macy's Thanksgiving Day Parade
- URLURP Applications for Various Bridges
- Engineering Review of MTA's East Side Access Project
- Bruckner Expressway Bridge Repairs and Preparation of Design-Build RFP Documents
- Peer Review for the Seismic Retrofit of the Manhattan Bridge
- Peer Review for the Seismic Retrofit of the Queensboro Bridge
- Paerdegat Basin Bridge Foundations
- Emergency Design Services for Paerdegat Basin Bridge Superstructure and Substructure Repair
- Peer Review of Electrical Design for the Paerdegat Basin Bridge
- Review of Final Design for the East 153rd Street Bridge over Metro North Railroad
- CSS for the Reconstruction of 3 Bridges over LIRR
- Mill Basin Construction Inspection Services
- Repairs for the Belt Parkway Bridge over Fresh Creek
- Queensboro Bridge Mechanical Room Inspection
- Whitehall Ferry Terminal Roof
- Rehabilitation of BQE Deck Joints
- Coin Collection Facility

Tappan Zee Bridge/I-287 Corridor Environmental Review *Port Chester to Suffern, NY*

Client Contact:
Michael Anderson, NYSDOT
(914) 358-0600

Completion Date / Status:
ongoing; on budget & on schedule

Cost: \$16 billion

Team Members:
Elizabeth Marcantonio, PE, and
Wei Tao Chen, PE

AECOM Services: AECOM is providing program management, transportation planning, forecasting, and environmental screening analyses to support the evaluation of a full range of multimodal alternatives to improve mobility in a 30-mile corridor, which spans Rockland and Westchester Counties in New York and includes the Tappan Zee Bridge.



AECOM is the AA/EIS consultant for the New York State Department of Transportation in conjunction with the New York State Thruway Authority and Metro-North Railroad, a subsidiary of the Metropolitan Transportation Authority, for the comprehensive study to address infrastructure and transportation needs in the corridor and satisfy the National Environmental Policy Act of 1969 (NEPA) and the State Environmental Quality Review Act (SEQRA). Three other consultant teams comprise the project team for this complex corridor analysis and provide public outreach, engineering support, and program coordination services.

The study has been divided into three stages – alternatives analysis (AA) process, DEIS, and FEIS. AECOM is currently completing the AA process, which includes a two-part screening evaluation. The first tier screening analyzed 150 alternative elements and formed 15 corridor-wide scenarios for more detailed analysis in a level 2 screening process. Scenarios include highway alone, highway and bus rapid transit, highway and commuter rail, and highway and commuter rail with a light rail or bus rapid transit component. A variety of river crossings are being examined in conjunction with different modal alternatives including preserving or rehabilitating the existing bridge, rehabilitating and widening the existing bridge, and replacing the bridge with a new bridge or tunnel.

Conceptual plans, profiles, and typical cross sections are being developed for each of the 15 scenarios. In addition, the best practices model (BPM), a regional model developed by the New York Metropolitan Transportation Council – the regional metropolitan planning organization (MPO) – is being modified to reflect conditions in the subregional study area. AECOM is the first consultant to use BPM with a transit assignment.

AECOM completed four travel surveys (origin-destination, stated preference, commercial vehicle, and bus on/off counts) to gain a full understanding of existing travel patterns and potential future choices. A SYNCHRO model network is being developed to provide quantitative screening information. AECOM is also completing an analysis of potential ecological impacts to the Hudson River and its ecosystem. The project involves intensive coordination with the MPO, project stakeholders, environmental groups, and the public.

Cross Bronx Expressway Bridge Rehabilitation *Bronx, NY*



Client Contact:
Harold Fink,
NYSDOT,
(718) 482-4725

Completion Date / Status:
ongoing;
on budget & on schedule

Cost: \$165 million

AECOM Services: AECOM is providing preliminary and final design (Phases I-VI), including a corridor study to evaluate the feasibility of increasing capacity and safety, which included studies considering HOV alternatives for the Cross Bronx Expressway. Scope of work for this project includes in-depth condition inspection, load ratings, seismic analysis, deck evaluation, design approval documents (DAD), and preliminary and final design of 14 bridges on or spanning the Cross Bronx Expressway from Morris Avenue to the Sheridan Expressway including redesign of the Sheridan Expressway (I-895) interchange.

AECOM also performed a special study for replacement of 16 concrete bridges along the corridor, which involved investigating the feasibility of using precast and prefabricated substructures, superstructures, and other innovative construction methods to minimize construction impacts and duration.

PANYNJ World Trade Center Transportation Hub (PATH) *New York, NY*

Client Contact: Mark Pagliettini,
PANYNJ, (212) 435-5531

Completion Date / Status:
2014; on budget & on schedule

Cost: \$3 billion



AECOM Services: The Port Authority of New York & New Jersey selected the AECOM-led Downtown Design Partnership, in association with renowned architect Santiago Calatrava, to design the new \$3-billion permanent Port Authority Trans-Hudson (PATH) terminal at the World Trade Center (WTC) site in Lower Manhattan. The team is responsible for final engineering of site preparation, site stabilization, PATH facilities—including tracks, platforms and mezzanine, as well as preliminary through final design for the terminal building, pedestrian connections, security, sustainable design, vertical transportation and conveyances, and public wayfinding systems. All design is being performed with the best state-of-the-art practices for sustainable design.

PANYNJ World Trade Center Vehicular Security Center (VSC) and Tour Bus Parking Facility *New York, NY*

Client Contact: Vincent Stellato,
PANYNJ, (212) 435-5650

Completion Date / Status:
2010; on budget & on schedule

Cost: \$500 million

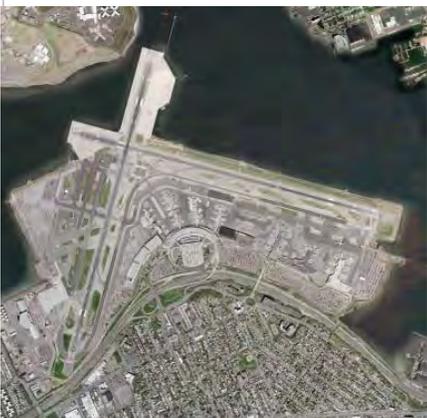
AECOM Services: AECOM is part of a team providing design services for the World Trade Center Vehicular Security Center (VSC) and Tour Bus Parking Facility Project for the PANYNJ. The project provides for secure vehicular access to the World Trade Center basement areas and tour bus parking for the WTC Memorial, anticipated to be a prime tourist destination. The project will contribute significantly to the economic recovery of Lower Manhattan by meeting vehicular security needs of WTC tenants, screening for vehicle-borne threats to the WTC site and providing underground tour bus parking for the WTC Memorial.

PANYNJ LGA Rehabilitation of CTB Alleyways, Gates, Taxiways Q, R, Y and ZA *New York, NY*

Client Contact: Mark Pagliettini,
PANYNJ, (212) 435-5531

Completion Date / Status:
2014; on budget & on schedule

Cost: \$3 billion



AECOM Services: AECOM provided professional engineering services for the investigation and design of the rehabilitation of the Central Terminal Building (CTB) alleyways, gates, and pavement for Taxiways Q, R, Y, and ZA at LaGuardia Airport (LGA).

The asphalt concrete pavement in the alleyways between the concourses and Gates C-3 through C-6—and the alleyway area east of Concourse A, including Taxiways Y and ZA—displayed medium to severe distress, including longitudinal and transverse cracks, wheel path rutting, localized settlement, ponding, raveling, map cracking, potholes, and oxidation. Tests on pavement core samples revealed low-viscosity (soft) asphalt and low in-place air voids in the upper lifts.

In addition, the asphalt concrete pavement of Taxiways Q and R exhibited high-severity transverse cracks, medium-severity multiple cracking, and edge cracking parallel to the joint. The new asphalt concrete paving for all these areas provides smoother pavement surfaces and improved grading, and alleviates ponding problems. Using concrete with modified asphalt makes the pavement more stable under traffic, while prolonging pavement life. The Portland cement concrete (PCC) pavement between Concourses A and B, C and D, and between PA Gates C-3 through C-6, exhibited minor cracking and loss of joint material. The concrete pavement repairs improved pavement conditions and will prevent further deterioration.

2008 Structural Engineering "Call-In" Protective Structures at JFK Airport <i>New York</i>	
<p>Client Contact: PANYNJ, Robert Kumapley, (973) 792-4497</p> <p>Completion Date / Status: ongoing; on budget & on schedule</p> <p>Cost: \$99K (fee)</p>	<p>KS Services: As Prime Consultant, KSE is responsible for the structural design and preparation of structural contract drawings for protective structures over the Junction chamber and triple barreled culverts that run under Taxiways Q and A. The protective structures are to carry the loads from various aircraft specified by the Authority with allowances for future increases in load and impact. Protective systems include precast slabs, cast-in-place slabs and a steel beam framing system with a steel plate deck support system. During stage IV, KSE reviewed shop drawings, responded to requests for information and attended field meetings as required.</p>
2008 Structural Engineering "Call-In" LGA – Upgrade CTB EAST HVAC <i>New York</i>	
<p>Client Contact: PANYNJ, Joseph Chu, (973) 792-4301</p> <p>Completion Date / Status: 2008; on budget & on schedule</p> <p>Cost: \$34K (fee)</p>	<p>KS Services: As Prime Consultant to provide structural engineering services on a "Call-In" basis at various Port Authority facilities, KS Engineers, P.C. (KSE) was retained to provide structural design services for the installation of support framing for the two (2) roof-mounted air conditioning units.</p> <p>KSE's scope includes, but is not limited to, Stage III & IV structural design services for the installation of support framing for the two (2) roof-mounted air conditioning units. During Stage IV, KSE attended preconstruction meeting, reviewed shop drawings, responded to requests for information and attended field meetings as required.</p>
2008 Structural Engineering "Call-In" Backflow Prevention Devices <i>New Jersey</i>	
<p>Client Contact: PANYNJ, Shui-lun Ng, (973) 792-4530</p> <p>Completion Date / Status: 2008; on budget & on schedule</p> <p>Cost: \$85K (fee)</p>	<p>KS Services: Prime Consultant to provide structural engineering services on a "Call-In" basis at various Port Authority facilities. KS Engineers, P.C. (KSE) was retained to provide structural design for the installation of backflow prevention devices at PATH New Jersey facilities. This project includes, but is not limited to, Stages III & IV structural/architectural design services for construction of the following items:</p> <ul style="list-style-type: none"> • Two (2) reinforced concrete pads supported on grade in "C" Yard. • New domestic water line through existing foundation of Coin Room facility in "C" Yard. • New 8-inch drain line to replace existing 4-inch drain line in the Head-house at Exchange Place Station. • Reconstruction of Head-house granite pavers and exterior plaza pavers, plus and miscellaneous interior modifications/replacement of existing conditions at janitor closet. <p>During Stage IV, KSE attended preconstruction meeting, reviewed shop drawings, responded to requests for information and attended field meetings as required.</p>

Reconstruction of Willis Avenue Bridge over the Harlem River *Bronx, NY*

Client Contact: Sean Bluni,
Hardesty & Hanover
(212) 944-1150
Completion Date / Status: 2008;
on budget & on schedule



B. Thayer Associates Services: B. Thayer Associates is responsible for the architectural and structural features of the extensive pedestrian network for the reconstruction of the swing bridge over the Harlem River. The bridge is an important pedestrian and bicycle link between Manhattan and the Bronx. Access was required to the Manhattan River Front and the area adjacent to the river on the Bronx side. Architectural and structural design includes the bridge operator house, auxiliary bridge operator house, pedestrian stairways and ramps, granite piers, railings and other architectural components. The B. Thayer team is providing structural design for the ramps, stairs and bridge house. Attention is given to enhance the character of the new bridge to complement the surrounding architecture and neighborhood. Services include cost estimates, construction support, and presentations to the New York City Art Commission and State Historic Preservation Office (SHPO) for review and approval.

Steel Bridge Rehabilitation across and along the Long Island Expressway *Nassau and Suffolk County, NY*

Client Contact: Deborah Chase,
NYSDOT, (516) 587-5060
Start / Completion: 2010; on
budget & on schedule
Cost: \$19 million



B. Thayer Associates Services: This project involves various bridge repairs for 16 bridges in various towns of Nassau and Suffolk Counties (Final Design Phases V – VI) to prolong the service lives so that comprehensive bridge work would not be required for an extended period of time. Project locations include several bridges across and along the Long Island Expressway and Sunrise Highway. Work items include steel girder repairs, bearings replacements, concrete pier repairs, concrete patching, joints replacement, painting, etc. Design tasks include surveying and mapping, environmental studies, detailed highway design (V – VI), bridge repair design (V – VI), and project management. B. Thayer Associates is responsible for developing work zone traffic control plans for the bridge inspection as per the Manual on Uniform Traffic Control Devices (MUTCD) and its New York State Supplement. The B. Thayer Team is also conducting bridge inspection to address bridge elements such as abutments, wingwalls, approaches, girders, deck elements, and superstructure. Bridge inspection conforms with the New York State Department of Transportation Bridge Inspection Manual and with the Federal Highway Administration Bridge Inspector's Training Manual 90. Findings to date include fatigue, steel corrosion, concrete spalls, settlement, or other critical points. Appropriate solutions have been recommended.

Port Authority Security On-Call Services *New York, NY*

Client Contact: Ira Quiat,
PANYNJ, (212) 946-0398
Start / Completion: 2009

B. Thayer Associates Services: B. Thayer Associates provided architectural and interior design services for the Port Authority security on-call contracts within the PATH System. Their services included both interior and exterior renovations to accommodate security equipment and related facilities.

Interior design services include relocation, alteration and restoration of existing facilities as required to provide full operational security systems. B. Thayer was the designer and architect for a new train control center. Work included a theater, acoustic wall, floor and ceiling treatments, welfare facilities, bathrooms, locker rooms, offices, conference room, lunchroom, situation room, furniture and equipment. Exterior work included security landscaping, and included barriers and other security features while incorporating materials to aesthetically conceal the barriers and equipment. Other assignments included strengthening of various types of facilities including office buildings, airports and tunnels, vent shafts and stations. B. Thayer's intricate and detailed design maintained the architectural integrity of the various structures while integrating the necessary security elements for each unique PATH facility.

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

G. Management Approach

Section G: Management Approach

Introduction

AECOM considers a properly prepared and well executed Management Plan an essential element of a successful project. The AECOM team's management approach and organization has been developed based on over 30 years of experience in providing call-in services to the Port Authority. It is our understanding of the way in which the Port Authority utilizes call-in consultants that has allowed us to organize our project team in a manner that maximizes value to the Port Authority and will assure efficient completion of each task on schedule and within budget.

The AECOM team is confident of its organization and management approach, as this is a proven approach, one we've applied successfully under many Call-In Agreements with the PANYNJ. AECOM has demonstrated that it excels in all types of assignments, due to our staff's technical proficiency, familiarity with the Authority's facilities, our established working relationships with the Engineering/Architecture Design Division (EADD) and with facility management and engineering staff. AECOM's management philosophy and approach to conducting task order assignments has been further honed based on a variety of other ongoing task order assignments (Structural Bridges, Civil, Traffic, Geotechnical, Aviation Planning, etc.) with the PANYNJ, as well as work performed for numerous other transportation agencies, including: New York State Department of Transportation, New Jersey Department of Transportation, Connecticut Department of Transportation, MTA Bridges and Tunnels, New Jersey Turnpike Authority, and the South Jersey Transportation Authority. We've worked on such notable projects as the the World Trade Center Hub, PANYNJ World Trade Center Vehicular Security Center, ARC Tunnel, Second Avenue Subway Tunnel, the Route 139 Replacement leading to the Holland Tunnel, and the Bayonne Bridge Replacement Study.

The AECOM team is aware that all project assignments must be completed according to the guidelines established by the Port Authority of New York and New Jersey (PANYNJ). The combined resources of the AECOM team, including our subconsultants **KS Engineers (MBE)** and **Barbara Thayer Associates (WBE)**, offer PANYNJ the



option of requesting additional staff support in a great variety of engineering disciplines, if necessary.

Understanding the Objective and Organizational Needs

AECOM understands the requirements involved in executing task order assignments and is aware of some key technical issues that may need to be addressed for the scope items identified in Attachment A in the RFP.

The work performed under this contract will be under the direction of the PANYNJ's Chief Structural Engineer and his staff. The contract encompasses the full range of engineering activities, from condition surveys and engineering studies through contract documents and post-award tasks. The scope, as described in Attachment A, ranges from small-scale repairs to the design of complete transportation structures. The scope of services includes, but is not limited to, retrofitting or replacement of bearings, pin connections and expansion joints, repairing concrete piers and abutments, repairing and strengthening structural steel members and connections, repairing of concrete bridge and tunnel slabs, soffits, walls traffic barriers and catwalks, repairing and replacing traffic sign structures and foundations, design of various transportation structures and providing CAD services upon request.

AECOM is fully capable and staffed to provide the full range of services, from the small tasks involving a few days or even a few hours of an Engineer's time to the larger projects involving a large-scale multidisciplinary team.

To further clarify our management approach, it is important to convey our understanding of the organizational context in which a call-in assignment might be required. Typically a task order assignment is generated in response to a facility's request to the Engineering Department to develop a scope of work, budget and schedule for a specific project. This request may be in response to a safety, security, operational, customer service, or state-of-good-repair issue.

Often, the task order assignment is a component of a multidisciplinary design effort, encompassing both in-house (Authority) staff and one or more consultants. AECOM has found that the keys to successfully completing a task order assignment include: 1) understanding how the assignment fits within the greater context of addressing the facility's needs; 2) providing the technical expertise to efficiently prepare the requisite deliverables to achieve the facility's objectives; and 3) the capability to work as an extension of staff and within a team environment. AECOM is attuned to these requirements from our more than 30 years of providing engineering services for nearly every facility operated by the Authority.

The AECOM team will complete each assignment as expeditiously as possible. AECOM will manage the overall program and serve as the primary point of contact through our Project Manager. Assignments under this agreement could be diverse in terms of scope, complexity, and geographic location. While the duration and extent of these efforts, including coordination with our team members, could vary, the general manner in which AECOM would respond to these assignments is similar.

Typical Approach to Task Order Assignments

The PANYNJ Project Manager/Project Lead initiates a task by providing the AECOM Project Manager with a proposed scope of work. AECOM will visit the site with the PANYNJ Project Manager and review the scope of work. The project kick-off (scoping) meeting is the important first step for all parties involved with the assignment, needed to thoroughly discuss the project's objectives, key issues, constraints, scope of work and schedule.



Based on this scope, AECOM submits a cost proposal for the engineering services required and a technical description of any items not specifically addressed in the scope. This proposal may be revised based on subsequent discussions with the PANYNJ Project Manager. Upon reaching an agreement, the PANYNJ will issue a letter authorizing AECOM to proceed with the proposed design project.

Under this contract, AECOM will serve as an extension of the PANYNJ's Chief Structural Engineer's staff and will conform to the high professional standards of that staff in all respects. The AECOM project manager will provide the PANYNJ with the current status (percent complete, date of completion and cost to date) for all tasks for each pay period. He will immediately alert the PANYNJ of any changes to budget or schedule and explain the reasons for the change.

We recognize that not all assignments under this agreement may be procured in this specific manner. For this reason, we will tailor our management strategy to conform to the specific project assignment requirements. AECOM is familiar with PANYNJ procedures for project scoping, cost proposals and project execution under "Call-In" agreements.

The tasks will normally proceed in conformance to the PANYNJ's Stage 1, Stage 2, Stage 3 (contract documents) and Stage 4 (post-award) process. For small, simple projects, Stage 2 may be eliminated. Appropriate documents for each stage of the work will be submitted: sketches, calculations, estimates and written reports at Stage 1, preliminary contract drawings and estimates at Stage 2, contract documents (including specifications) estimates, final calculations and construction schedule (if desired) at Stage 3. Staff will review and approve shop drawings and catalogue cuts in Stage 4 and will be available for field visits and meetings as required.

The nature of rehabilitation and repair work, which constitutes the majority of the scope in Attachment A, is that it requires a proactive approach by experienced engineers who can analyze the problem, understand the underlying cause, and develop appropriate cost-effective solutions. AECOM takes this type of work seriously and will assign staff who are very experienced and who have dealt with older structures and their repair. This is not academic design. It requires extensive knowledge of detailing, materials and techniques of construction. Having expert structural staff available in the preliminary phases is critical to making the correct decisions regarding the nature of the problem and the repairs necessary. AECOM's broad, in-depth expertise will get projects on the right track, and will keep them on target throughout the repair process.

The PANYNJ owns a variety of bridges: minor structures, highway and bus ramps, bridge approaches, and major structures such as the Staten Island bridges and the George Washington Bridge. AECOM has staff in both New York and New Jersey offices that are familiar with the maintenance issues and repairs necessary for all of these facilities. Repair and rehabilitation work may also involve other disciplines, requiring traffic engineering for M.O.T. design and drawings, for example. AECOM is a full-service firm capable of providing design and contract documents for most disciplines and with competent sub-consultants for specific specialty areas. When necessary, AECOM can prepare graphic material for presentations by PANYNJ staff in a wide variety of media, for presentations to senior PANYNJ staff or the public.

Team Organization, Technical Management and Discipline Integration

The AECOM team has arranged its organization to maximize value to the Port Authority by focusing technical resources in the appropriate groups, with strong project management, project engineering and specialty resources support.

The success of this agreement is entirely dependent upon the degree of expertise held by our team. AECOM has assembled a project team staffed with highly skilled, seasoned bridge rehabilitation design professionals who have worked on hundreds of bridge rehabilitation and replacement projects throughout the New York metropolitan area,



AECOM is confident of its proposed organization and approach, as it has successfully applied this approach to complete similar on-call contracts for the PANYNJ and other agencies.

including many for PANYNJ. We have structured the team to ensure that the PANYNJ is provided with the best possible management and professionals for each of the key positions on this project. AECOM is ready to undertake any Structural Engineering (Bridges) assignment for any of the Authority's facilities, especially the Tunnels, Bridges & Terminals (TB&T) facilities.

Chee K. Lai, PE - Project Manager

Our Team will be led by **Mr. Chee Lai, PE**, who will serve as the **Project Manager**. He will be the single point of contact with PANYNJ on this agreement and will be responsible for scope, schedule, and budget. Mr. Lai has more than 28 years of experience in planning, inspection, design, project management, and construction support services for bridge design, bridge rehabilitation and bridge replacement projects. He has successfully managed several on-call agreements, such as Regional Design Services Agreements (Call-in) for the New York State Department of Transportation (3 agreements). He is currently managing the PANYNJ Structural Engineering Services (Bridges) Call-In for 2009 and 2010 and the Engineering Service Agreement for Painting of Bridges Citywide (Call-in) for the New York City Department of Transportation. He is very familiar with PANYNJ requirements, having worked on dozens of call-in assignments with the Authority during his nearly three decades of service to the industry. Mr. Lai will be supported by a cadre of Lead Structural Engineers, Mr. John Hapkiewicz, PE, Joseph Matarazzo, PE, Swapan Chaudhuri, PhD, PE, Mr. Stewart Willis, PE, Jitesh Shah, PE, and Thomas Harriott, PE.

**Mr. John Hapkiewicz, PE -
Lead Structural Engineer - New York Office**

His career spans more than 18 years, and includes experience in planning, design, construction supervision and project management. He has significant experience in Bridge Rehabilitation and Bridge Design, and is proficient in the computer-aided design software utilized in today's industry. He has supervised a wide range of engineering projects in the transportation and structural rehabilitation sectors, for agencies such as the New York State Department of Transportation, Connecticut Department of Transportation, the PANYNJ, and the New York City Department of Transportation. Mr. Hapkiewicz will lead the design assignments for our New York office.

**Mr. Joseph Matarazzo, PE -
Lead Structural Engineer - New York Office**

Mr. Matarazzo is an engineer experienced in the planning, design and construction inspection of bridges and highways and other facilities. He has directed the rehabilitation of existing facilities as well as the development of new ones. Bridge types he has dealt with include long-span, high level, major river crossings as well as viaducts and grade separation structures. He is an accomplished project manager and resident engineer skilled in technical and administrative project development. His combination of bridge design and construction experience makes him particularly well suited for a leadership role in constructibility initiatives. Recently he has provided services for NYSDOT Region 11's Rehabilitation of the Major Deegan Expressway project, Seismic Vulnerability Assessments for Various Bridges, and PANYNJ's Hudson Terrace Bridge and TR1, TR2, and TR2 Ramp Rehabilitation projects.

**Mr. Swapan Chaudhuri, PE -
Lead Structural Engineer - New York Office**

He has over 43 years of experience in rehabilitation design, construction supervision and project management. He is an expert in bridge rehabilitation and bridge design, having worked on the rehabilitation of the Marine Parkway Bridge, Lincoln Tunnel Bus Terminal Ramp, Hamilton Avenue Bascule Bridge, Staten Island Railroad Connections, and Whitestone Expressway projects in the Metropolitan New York area. He has supervised a broad range of engineering projects in transportation and structural rehabilitation, for a variety of agencies. Mr. Chaudhuri will be a Lead Structural Engineer on design assignments for our New York office.

**Mr. Stewart Willis, PE -
Lead Structural Engineer - New Jersey Office**

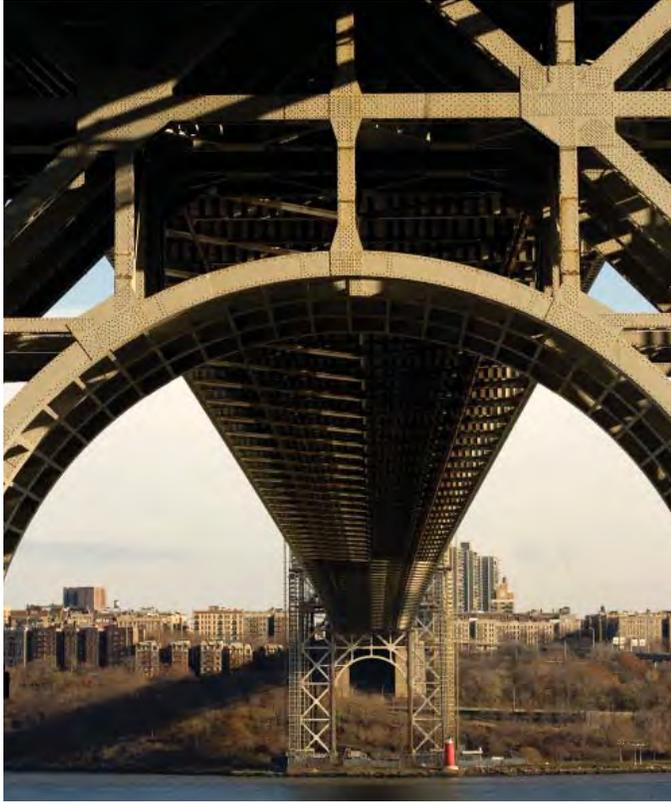
Mr. Willis has over 28 years of experience in planning, design, engineering management, and construction management for numerous diversified engineering projects, including bridges, tunnels, marine facilities, and transportation facilities. He has supervised a diversified range of engineering projects in transportation rehabilitation initiatives for various agencies, such as the New Jersey State Department of Transportation, New Jersey Turnpike Authority, the PANYNJ, and the New York City Department of Sanitation. He will lead the design assignments for our New Jersey office.

**Mr. Jitesh Shah, PE -
Lead Structural Engineer - New Jersey Office**

Mr. Shah has over 30 years of experience in planning, design, construction supervision and project management and is an expert in bridge rehabilitation and design projects. He has supervised a wide range of engineering projects in transportation and structural rehabilitation projects, for a variety of area agencies. Mr. Shah will be a Lead Structural Engineer on the design assignments for our New Jersey office.

**Thomas Harriott, PE -
Lead Structural Engineer - New Jersey Office**

Mr. Harriott has 21 years of experience in bridge and structure projects. He is responsible for the structural analysis, design, planning, cost estimating and management of multidisciplinary transportation projects. He also provides construction management services for various transportation projects. He has expertise with STAAD III, Seisab and Descus design software and MicroStation. Recently, Mr. Harriott was the structural engineer for PANYNJ's George Washington Bridge Repair Inspection



project, PANYNJ's JFK International Airport's International Arrivals Terminal Rehabilitation project and PANYNJ's Port Authority Bus Terminal project.

Mr. Alim Baycora, PE - Quality Assurance - New York Office

Mr. Baycora has over 28 years of experience relating to the design of numerous bridge and railroad structures for various national, state, and local agencies. He has extensive rehabilitation experience in the design of steel and concrete bridges, retaining structures and sign support structures, and has developed contract document from conceptual to final designs. He will serve as the Quality Assurance Manager for work performed in our New York office.

Ernest Hutchins, PE - Quality Assurance - New Jersey Office

Mr. Hutchins has over 38 years of experience relating to the design of numerous bridge and railroad structures for various national, state, and local agencies. He has extensive experience in the design of steel, pre-stressed concrete bridges, retaining structures and sign support structures, and has developed contract document from conceptual to final designs. He will serve as the Quality Assurance Manager for work performed in our New Jersey office.

The Project Manager will monitor the performance of the work, including assurance that the Quality Control procedures have been followed and work is being completed in a manner that meets the standards that the PANYNJ expects and deserves. The completed work, survey, study or design will be submitted to the PANYNJ in the desired medium, on time and within budget. The work will normally be done in AECOM offices in New York and New Jersey, but when requested by the PANYNJ, AECOM staff can be assigned to work directly in the PANYNJ offices in New Jersey or New York for whatever period necessary. AECOM currently has staff working on-site, or as an extension of the facility's staff, at many of the Authority's facilities, including John F. Kennedy International Airport as well as in the Engineering Program Management Division at 2 Gateway.

Gary C. Morris, PE - Officer in Charge

Mr. Morris has extensive experience in major transportation projects – bridges, roadways, highways, commuter railroads, and airports. He has a strong background in horizontal and vertical geometry, analyzing traffic projects, pavement designs, cost estimating, maintenance, and protection of traffic and utilities. Currently a Senior Vice President at AECOM, Mr. Morris has worked on several Port Authority projects, including PANYNJ's JFK Redevelopment Program, JFK 2000 Master Functional Plan project and JFK International Airport's Central Taxi-Hold Facility project. In addition to his Port Authority experience, he has also provided services for TBTA's Throgs Neck Toll Plaza and NYSDOT's Route 120 & 22, Exits 2 & 3 on I-684 projects. His knowledge and experience on these projects will prove invaluable in ensuring that the project assignments are adequately staffed with the right personnel to ensure successful completion of all assignments in a timely and efficient manner.

Overall Management Plan

The approach to managing is focused on three key components:

1. **Communication**
2. **Technical Competence** - *Having the right people in the right roles*
3. **Quality Control/Quality Assurance** - *Making sure the work is done right*

Communication

The AECOM team's approach to effective communication for this project will focus on:

- ✓ Communication with the Port Authority
- ✓ Communication within the Team
- ✓ Communication with Public Stakeholders

Point of Contact - Chee Lai, PE, Project Manager

Our team will be led by Mr. Lai, who will be the single point of contact with the Port Authority. All communication as it relates to this contract will be through Mr. Lai and the Port Authority's representative. This will ensure that the scope of work, fees, contract modifications, and any information relative to the completion of this contract will be received and transmitted to the project team. The benefit of this single point of contact is the assurance that the AECOM team will deliver the scope and deliverables expected by the Port Authority, while simultaneously meeting budget and schedule requirements. Mr. Lai will also be directly responsible for communication between project stakeholders and the Port Authority.

Additional Project Manager Responsibilities - Internal Accounting: The team's internal accounting system provides real-time budgeting information that will afford Mr. Lai the opportunity for continual budget monitoring. Combined with bi-weekly team project meetings, this up-to-date information will allow the work effort versus budget expenditures to be tracked, monitored, and managed, thus reducing the potential for budget over-runs.

Technical Review: Review of the technical documents and the work effort required for this contract has led the team to identify lead structural engineers to complete the work. Our approach will consist of technical teams that will drive the design and production of the work. These teams will be led by experienced lead engineers in structural design. This approach will effectively utilize the resources necessary to expedite and coordinate the design. The Lead Structural Engineers will report directly to our project manager. This contact between the technical resource team and our project manager will maintain a consistent understanding of the scope of work, the design and production, and the progress, schedule, and budget. Our Lead Structural Engineers are shown in the organization chart in Section D, Staff Qualifications and Experience, of this proposal.



Record Keeping: The AECOM team uses Project Wise for all document controls projects. Project Wise is an electronic document storage mechanism with a centralized fileserver. The benefit of using Project Wise is its ability to record all users that have opened and modified a project-related document. Opening and modifying a document requires the individual to "check out" the document and ensures that only one individual can modify the document at a time. Project Wise also allows files to be referenced to one another, ensuring that work in one file is coordinated with the relevant information from reference files. This system provides the team with the assurance that work is always being performed on the latest version of files and eliminates the potential for errors on projects. The team will set up Project Wise so subconsultants and the Port Authority have access to the system to coordinate efficient and high quality designs. Project Wise is similar to the Port Authority's Live Link system. Should the Port Authority desire, the team will work within Live Link for all data file storage to allow Port Authority staff to monitor the project's process. The project financial and schedule information is available to the project manager and the production staff. During the monthly progress meetings, Mr. Lai will provide continual updates to the team, tracking the budget expenditures with the percent complete. This information will identify variances in the budget and schedule, allowing time for corrections and successful project delivery.

CAD Standards: AECOM has been working with the Port Authority and we are well versed and compliant with the Port Authority's CAD standards and updates as they are published. All of the team's previous projects have passed the Port Authority's internal CAD compliance reviews.

Technical Competence

Our project manager, Chee Lai, P.E., will work closely and coordinate with the Lead Structural Engineers to ensure that all work is being done in accordance with the Port Authority's objectives and with the needs and input of the project stakeholders. Considering our project manager's design experience and his specific experience with the Port Authority, coupled with the proven technical expertise of our Lead Structural Engineers, we are confident that we will meet the Authority's expectations and deliver successful projects.

Quality Assurance/Quality Control

Alim Baycora, PE, and Ernest Hutchins, PE

Alim Baycora and Ernest Hutchins, our proposed QA/QC managers, have extensive experience in the management, preliminary and final design of steel pre-stressed concrete bridges and box culverts, retaining walls and sign support structures. Together, they have successfully managed and participated in numerous bridge design projects involving complex MPT and construction staging in the New York/New Jersey metropolitan area. They are very familiar with Port Authority design procedures and practices and have worked very closely and coordinated with the Port Authority on several projects.

AECOM (ISO 9001 certified) has a rigorous QA/QC plan and policy that is required on all projects. QA/QC is not an "add-on" to our projects but rather, it is an integral part of each project. QA/QC efforts are completed throughout the duration of the work. At the onset of each project, the QA/QC plan is developed and key reviewers are identified based on their experience as it relates to the project work. Our project managers are responsible for implementation of the plan and compliance to the policy is reviewed on a monthly basis by senior management.

Mr. Lai will work closely with Alim Baycora and Ernest Hutchins, our proposed QA/QC managers for this contract. It is his responsibility to implement the plan. Baycora and Hutchins will monitor the specifics of the plan with Mr. Lai, our project manager, to ensure that review processes are being followed and that the proper documentation is being filed.



There are subtle yet significant differences regarding the responsibilities for each position as it relates to Quality Control and Quality Assurance for this contract:

Title	Responsibility
Project Manager	Ensure the process is being followed
Lead Engineers	Perform the necessary reviews
QA/QC Managers	Assign the right staff to complete the reviews
Engineering Staff	Complete tasks according to team policy guidelines

A key benefit of our team's approach to quality is the active involvement of all staff members and the understanding of each person's role in the development of a quality project. Each individual is made aware of his/her responsibility for the project within the limits of the team's quality program. Quality is understood, practiced, monitored and rewarded by AECOM. This approach leads to dedicated employees and team members, and to satisfied clients and stakeholders.

Performance of Expert Professional Structural Engineering Services (Bridges) on a “Call-In” Basis During 2011

H. Affiliates

Section H: Affiliates

AECOM USA, Inc. Affiliates

AECOM Services, Inc.
515 South Flower Street
Los Angeles, CA 90071
Federal ID: 95-2084998

AECOM, Inc.
Two Technology Park Drive
Westford, MA 01886
Federal ID: 06-0852759

EDAW
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Earth Tech/Archer Western, LLC.
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