Torres Rojas, Genara FOI #14991

From: agarrahan@gpinet.com
Sent: Wednesday, June 11, 2014 12:34 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 Services for Civil Engineering, Reference No. 41514143, won by Jacobs Civil Consultants, Inc.

THE PORT AUTHORITY OF NY & NJ

FOI Administrator

October 10, 2014

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

Re: Freedom of Information Reference No. 14991

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", copy enclosed) for a copy of the "proposal for Call-In Services for Civil Engineering, Reference No. 41514143, won by Jacobs Civil Consultants, 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/14991-C.pdf. Paper copies of the available records are available upon request.

Certain portions of the material responsive to your request are exempt from disclosure pursuant to exemption (1) of the Code.

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

Very truly yours,

Heavyn-Leigh American
FOI Officer

Enclosure

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

JACOBS

Jacobs Civil Consultants Inc.
5 Penn Plaza, 18th Floor
New York, NY 10001
Tel: 212.944.2000 Fax 212.302.4645

September 30, 2010

Port Authority of New York and New Jersey
One Madison Avenue, 7th Floor
New York, NY 10010

Attention: RFP Custodian

Re: Request for Proposals for the Performance of Expert Professional Civil Engineering Services as Requested on a "Call-in" Basis during 2011, RFP Number 2218

Dear Sir or Madam:

As a provider of consulting services to the Port Authority of New York and New Jersey dating back over two decades, Jacobs Civil Consultants Inc. (Jacobs) submits this proposal with a deep sense of commitment.

Our years of experience in providing call-in services to the Port Authority amounts to significant knowledge of the Port Authority's facilities and a great understanding of the its programs and objectives. We are known to your staff across several departments and, most importantly, are well-versed in your standards and procedures. In short, we are dedicated and prepared to provide you with the level of excellence you have come to expect from our staff of professionals.

For this on-call submission we are proposing **Vincent A. Cassano, PE** as our **Project Manager**. As Project Manager, Vincent will serve as the single point of contact between JCCI and the Port Authority's staff. Currently, Vincent is project manager, working on task assignments for PANYNJ under the 2008-2010 Call-in contract and he is very familiar with your agency's standards and procedures. His task assignments have included: JFK Airport North Boundary Road, Stewart Airport Runway Incursion Mitigation Study, LaGuardia Airport Storm Drainage Rehabilitation Study, Teterboro Airport Construction Staging and Stock Pile area Study, and Harrison PATH Station Stage I & II.

We have committed a substantial staff with the requisite on-call knowledge and experience from which Vincent can choose in completing the tasks associated with this proposal, and we welcome the opportunity to provide you with the expertise necessary to successfully complete your "call-in" program for civil engineering services associated with the Port Authority's various facilities.

Very truly yours,

Michael P. Cavanaugh, PE
Chief Executive Officer

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JACOBS

ATTACHMENT B

PERFORMANCE OF EXPERT PROFESSIONAL CIVIL ENGINEERING SERVICES AS REQUESTED ON A "CALL-IN" BASIS DURING 2011 – RFP #22188

AGREEMENT ON TERMS OF DISCUSSION

The Port Authority of New York and New Jersey's (Port Authority) receipt or discussion of any information (including information contained in any proposal, ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) is not to impose any obligation whatsoever on the Port Authority or to entitle us to any compensation therefore (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 letter, either orally or in writing, is not given in confidence and 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 any information received from us, or made at any other time in any fashion, shall be void and of no effect. This letter is not intended, however, to grant to the Port Authority rights to use 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 Port 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.

Jacobs Civil Consultants Inc.
NAME OF COMPANY

_____
SIGNATURE OF OFFICER

Chief Executive Officer
TITLE

September 30, 2010
DATE

Jacobs

Multiplier: Overhead and Fee Summary

Location	Direct Labor	Fringe	Subtotal	G&A	Subtotal	Profit	Total Multiplier
Home Office	1.0	26.94%	1.2694	96.32%	2.2326	8%	2.41
Field	1.0	26.94%	1.2694	70.0%	1.9694	8%	2.13

Summary of At-Office and At-Site Rates
and
Statements of Fringe Benefit Expense and
General & Administrative Expense in Accordance with the
Federal Acquisition Regulation

North American Infrastructure

(formerly Jacobs Civil)

A Business Unit of Jacobs Engineering Group Inc.

For the Fiscal Year Ended October 2, 2009
With Report of Independent Auditors

THIS DOCUMENT CONTAINS CONFIDENTIAL AND PROPRIETARY INFORMATION WHICH HAS COMMERCIAL AND/OR FINANCIAL VALUE SUCH INFORMATION HAS NOT BEEN PUBLICLY DISCLOSED AND IS EXEMPT FROM DISCLOSURE UNDER THE FREEDOM OF INFORMATION ACT AND ALL OTHER SIMILAR LEGISLATION JACOBS ENGINEERING GROUP INC REQUESTS WRITTEN NOTICE BEFORE ANY PUBLIC DISCLOSURE IS MADE.

Summary of At-Office and At-Site Rates
and
Statements of Fringe Benefit Expense and
General & Administrative Expense in Accordance with the
Federal Acquisition Regulation

North American Infrastructure
(formerly Jacobs Civil)
A Business Unit of Jacobs Engineering Group Inc.

For the Fiscal Year Ended October 2, 2009

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Cleary & Gill LLC

REPORT OF INDEPENDENT PUBLIC ACCOUNTANT

To: Board of Directors of Jacobs Engineering Group Inc.

Re: Indirect Cost Rates Prepared in Accordance with Part 31 of the Federal Acquisition Regulation

We have examined the accompanying Summary of At-Office and At-Site Rates, Statement of Fringe Benefit Expense and Statement of General & Administrative Expense (Schedules of the Indirect Cost Rates) of North American Infrastructure (NAI), a segment of Jacobs Engineering Group Inc., for the twelve months ended October 2, 2009 prepared in accordance with Title 48, Code of Federal Regulations, Part 31 of the Federal Acquisition Regulation (FAR). NAI is a wholly-owned business unit of Jacobs Engineering Group Inc. These schedules are the responsibility of NAI's management. Our responsibility is to express an opinion on these schedules based on our examination.

We conducted our examination in accordance with the attestation standards established by the American Institute of Certified Public Accountants and also the attestation standards in the *Government Auditing Standards* (July 2007 Revision), issued by the Comptroller General of the United States. Those standards require that we plan and perform the examination to obtain reasonable assurance about whether the Schedules of the Indirect Cost Rates are free of material misstatement. An examination includes reviewing, on a test basis, evidence supporting the amounts and disclosures in the schedules and performing such other procedures as we considered necessary in the circumstances. Our examination also included assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall schedule presentation. We believe that our examination provides a reasonable basis for our opinion.

The aforementioned Schedules of the Indirect Cost Rates were prepared on a basis of accounting practices as prescribed by Part 31 of the FAR as discussed in Note 2, and are not intended to be a presentation in conformity with accounting principles generally accepted in the United States.

In our opinion, the Schedules referred to above present fairly, in all material respects, the Indirect Cost Rates of NAI for the twelve months ended October 2, 2009, calculated in accordance with Part 31 of the FAR.

In accordance with the *Government Auditing Standards*, we have also issued our report dated March 17, 2010 on our consideration of NAI's internal controls over financial reporting and our test of its compliance with applicable laws and regulations. That report is an integral part of an examination performed in accordance with *Government Auditing Standards* and should be read in conjunction with this report.

Individuals relying on this report must have an adequate understanding of Part 31 of the FAR. Therefore, this report is intended solely for the information of management and government agencies for use under contracts governed by the aforementioned regulations. It is not intended to be and should not be used by anyone other than the aforementioned parties nor should it be used for any other purpose.

Cleary & Gill LLC

Arlington Heights, Illinois
March 17, 2010

North American Infrastructure
A Business Unit of Jacobs Engineering Group Inc.
Summary of At-Office and At-Site Rates
For the Fiscal Year Ended October 2, 2009

The At-Office and At-Site rates relative to the audited Fringe Benefit Expense and General & Administrative Expense Statements were computed in accordance with Part 31 of the Federal Acquisition Regulation (FAR).

North American Infrastructure

At-Office

At-Site General & Administrative Rate	70.00%
Use & Occupancy Rate	26.32%
Fringe Benefit Rate	26.94%
Combined Rate	123.26%

At-Site

At-Site General & Administrative Rate	70.00%
Fringe Benefit Rate	26.94%
Combined Rate	96.94%

See the following statements for detailed computations of the above Fringe Benefit Expense and General & Administrative Expense rates and for the applicable explanatory notes.

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North American Infrastructure
A Business Unit of Jacobs Engineering Group Inc.
Statement of Fringe Benefit Expense
For the Fiscal Year Ended October 2, 2009

	NAI DIRECT FRINGE BENEFIT EXPENSE (Note 4)
COSTS, NET OF ADJUSTMENTS	
PAID TIME OFF	$ 21,573,944
FICA	15,039,670
SUI	636,315
FUI	142,486
THRIFT PLAN	4,307,569
GROUP INSURANCE	10,942,944
WORKERS' COMPENSATION	491,948
GENERAL LIABILITY	3,399,330
EMPLOYEE ASSISTANCE PLAN	58,898
TOTAL ALLOCATED FRINGE BENEFITS	$ 56,593,104
TOTAL FRINGE LABOR BASE	$ 210,045,920
COMPANY-WIDE FRINGE BENEFIT RATE	26.94%

The accompanying notes are an integral part of this statement.

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North American Infrastructure
A Business Unit of Jacobs Engineering Group Inc.
Statement of General & Administrative Expense
For the Fiscal Year Ended October 2, 2009

	TOTAL INCURRED G&A COSTS	TOTAL FAR UNALLOWABLE COST ADJUSTMENTS (Note 2)	NOTES	NET CLAIMED G&A COSTS	GENERAL & ADMINISTRATIVE RATE APPLIED TO AT-SITE & AT-OFFICE PROJECTS	USE & OCCUPANCY RATE (AT-OFFICE)
INDIRECT LABOR	$ 54,257,922	$ (196,208)	5	54,061,714	$ 54,061,714	$ -
INDIRECT EXPENSES						
OFFICE OCCUPANCY EXPENSES	32,759,399	(46,222)		32,713,177	8,454,107	24,259,070
PERSONAL COMPUTER SERVICES	16,056,925	(49,361)		16,007,564	46,231	15,961,333
FRINGE BENEFITS	14,618,977	-		14,618,977	14,618,977	-
TRAVEL & BUSINESS MEALS	3,399,746	(322,105)	6	3,077,641	3,077,641	-
VEHICLE EXPENSES	2,069,533	(56,425)		2,013,108	1,711,068	302,040
EMPLOYEE TRAINING & DUES	1,645,294	(283,389)	7	1,361,905	1,361,905	-
BUSINESS LICENSE & TAXES	1,293,204	(151)		1,293,053	1,126,553	166,500
PENSION & STOCK AMORTIZATION	1,247,827	-		1,247,827	1,247,827	-
OUTSIDE SERVICES	1,148,381	(46,568)		1,101,813	1,039,985	61,828
OFFICE AND OTHER SUPPLIES	1,040,262	(218,192)		822,070	1,278	820,792
RECRUITING & RELOCATION	736,225	(202,771)	8	533,454	372,941	160,513
REPRODUCTION	361,544	(11,675)		349,869	3,598	346,271
TEMPORARY STAFF	323,100	(68,163)		254,937	254,937	-
POSTAGE & FREIGHT	193,104	(122)		192,982	192,982	-
PUBLIC RELATIONS & ADVERTISING	106,848	(111,925)		(5,077)	(5,077)	-
COST RECOVERY	(906,070)	-	9	(906,070)	(906,070)	-
OTHER	2,078,145	(884,572)	10	1,193,573	987,510	206,063
SUBTOTAL INDIRECT EXPENSES	$ 132,430,366	$ (2,497,849)		$ 129,932,517	$ 87,648,107	$ 42,284,410
OTHER INDIRECT EXPENSES						
SALES, PROJECT SERVICES & CONST	$ 387,094	$ (1,862)		$ 385,232	$ 385,232	$ -
PUBLIC MANAGEMENT & ADMINISTRATION	277,450	(15,429)		262,021	$ 262,021	-
BONUS PAYMENTS	3,475,525	-		3,475,525	3,475,525	-
EMPLOYEE STOCK OPTIONS/PURCHASE PLAN	257,458	-		257,458	257,458	-
FIXED ASSET (GAIN)/ LOSS	261,835	-		261,835	261,835	-
OTHER	(161,091)	-		(161,091)	(161,091)	-
SUBTOTAL OTHER INDIRECT EXPENSES	$ 4,498,271	$ (17,291)		$ 4,480,980	$ 4,480,980	$ -
ALLOCATIONS						
CORPORATE ALLOCATIONS	56,220,224	$ (1,320,433)	3 & 11	54,899,791	$ 54,899,791	-
SUBTOTAL ALLOCATIONS	$ 56,220,224	$ (1,320,433)		$ 54,899,791	$ 54,899,791	$ -
TOTAL G&A EXPENSES	$ 193,148,861	$ (3,835,573)		$ 189,313,288	$ 147,028,878	$ 42,284,410
DIRECT LABOR (TOTAL AND AT-OFFICE)					$ 210,045,920	$ 160,673,729
NORTH AMERICAN INFRASTRUCTURE INDIRECT COST RATES					70.00%	26.32%
AT-OFFICE GENERAL & ADMINISTRATIVE RATE						96.32%

The accompanying notes are an integral part of this statement.

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North American Infrastructure
A Business Unit of Jacobs Engineering Group Inc.
Notes to Statements of Fringe Benefit Expense and General & Administrative Expense for the Fiscal Year Ended October 2, 2009

1. Business and Basis of Presentation

The financial information presented in the accompanying Statements of Fringe Benefit Expense and General & Administrative Expense includes the expenses of North American Infrastructure (formerly Jacobs Civil) and Jacobs Civil Consultants Inc. (collectively the Company) for the fiscal year ended October 2, 2009. Jacobs Civil Consultants Inc. was formerly known as Sverdrup & Parcel Consultants, Inc. The accompanying statements include the expenses of North American Infrastructure business unit as well as the expenses of the infrastructure operations of Carter & Burgess, Inc. (C&B) which was acquired by Jacobs Engineering Group Inc. in Fiscal Year 2008. The Fiscal Year 2009 company-wide indirect rates presented herein include the operations and results of North American Infrastructure (the Company) and are calculated consistently with the Company's Fiscal Year 2008 company-wide indirect rates.

The Company is a business unit of Jacobs Engineering Group Inc. (Parent Company) and Jacobs Civil Consultants Inc. is a wholly-owned subsidiary of the Parent Company. The Parent Company is a publicly traded company on the NYSE. The Company provides planning, design, construction management and design/build professional services. Major markets include transportation, public works and environmental.

The Parent Company was originally incorporated in 1957, and its clients include federal, state, local, and foreign government agencies, as well as numerous commercial entities. Revenues are derived from billings for professional services: project services; process, scientific and systems consulting services; operations and maintenance services, and construction services.

2. Basis of Accounting and Description of Accounting Systems

The Company's policy is to prepare the accompanying Statements of Fringe Benefit Expense and General & Administrative Expense on the basis of accounting practices prescribed by Chapter 1, Part 31 and Chapter 99 of the Federal Acquisition Regulation (FAR). The above mentioned statements are not intended to present the financial position or the results of operations of the Company in conformity with accounting principles generally accepted in the US.

The Company maintains its books of accounts using the Accrual Method of accounting.

The Company uses a multi-step process to identify and quantify unallowable costs as defined in FAR Part 31. First, the Company identifies certain expense accounts, expenditure types in the general ledger and certain indirect projects as totally unallowable (e.g., interest expense, bad debts expense, etc.) For certain other expense accounts that are likely to contain unallowable costs, the Company either reviews all of the significant transactions in the account or it reviews a sample of the transactions in the account. For those expense accounts that are sampled, the Company extrapolates the results of the sample to the related expense account population. In addition, the Company voluntarily excludes certain other costs from the indirect cost pools, and it uses estimates to determine the amount of certain other unallowable costs.

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2. Basis of Accounting and Description of Accounting Systems (continued)

The Company maintains a job cost accounting system based on actual costs for recording and accumulating costs incurred under its contracts. Each project is assigned a unique job number so that costs may be properly segregated and accumulated in the Company's job cost accounting system. Employee labor costs are charged to jobs using the employee's actual hourly pay rate at the time that the labor is incurred. For salaried employees, their actual hourly pay rate for job costing purposes is based on their annual salary divided by 2,080 hours per year.

Direct and Indirect Costs - Costs are specifically identified and recorded separately in formal financial accounting records as Direct Costs and Indirect costs as established in accordance with our disclosed practices. Direct costs are those costs that can be specifically identified to a customer project, work activity or final cost objective. Indirect costs are those costs that cannot be specifically identified with a single customer project, direct work activity or final cost objective. Contract/ Purchased labor is treated as Other Direct Costs.

Paid Time Off - The Company accrues Paid Time Off (PTO) based on the years of service for each employee. PTO may be used by employees for a variety of reasons, including (but not limited to) vacation, illness or accident, bereavement or personal time off. All requested PTO is subject to supervisory approval.

PTO benefits are paid based on the employee's base pay rate at the time that the absence occurs and does not include any special forms of compensation such as incentives, commissions, bonuses or shift differentials. Employees receive pay for all earned but unused PTO hours upon termination of employment

Uncompensated overtime - The Company's policy regarding overtime is to compensate NONEXEMPT employees for authorized additional hours of work. EXEMPT employees record only those overtime hours for which they are authorized to work and accordingly, compensated. As a result, uncompensated overtime is not tracked.

Depreciation - Depreciation and amortization is computed primarily using the straight–line method over the estimated useful lives of the assets. The cost of leasehold improvements is amortized using the straight-line method over the lesser of the estimated life of asset or the remaining term of the related lease. Estimated useful lives range from 20 to 40 years for buildings, from 3 to 10 years for equipment, and from 3 to 7 years for computers and software.

The Company's method of estimating costs for pricing purposes during the proposal process is consistent with the accumulation and reporting of costs under its job cost accounting system.

3. Allocation Methods

The Company has established two indirect rates: (1) an At-Office Rate that is applied to work performed in Jacobs-provided facilities, and (2) an At-Site Rate that is applied to work performed at non-Jacobs (i.e., customer) provided facilities. The allocation base for the At-Site G&A rate includes all Professional Services and all Field Staff Direct Labor including premiums. The allocation base for the At-Office G&A rate includes At-Office Professional Services and At-Office Field Staff Direct Labor including premiums.

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3. Allocation Methods

The Company uses the same fringe benefit rate for both its At-Office and At-Site direct labor and allocates fringe benefit expenses based upon total payroll dollars (including premiums and excluding incentive compensation.)

The Company receives an allocation of costs from the Parent Company that includes salaries, related fringe benefits and general and administrative expenses. These costs are allocated to the Company based upon a three-tier method, which allocates costs that are: (1) directly attributable to the Company; (2) separately associated with the Company that are allocated based upon appropriate bases that use direct labor dollars, total payroll dollars, revenues, or a combination thereof; and, (3) amounts remaining after the first two tiers, allocated based upon a two-factor formula that is computed using Professional Service and Field Staff payroll dollars and revenues.

The allocations of the Parent Company's Corporate Home Office costs have been properly adjusted to reflect FAR Part 31 disallowances. These amounts were determined by the multi-step process described above in Note 2. The net allowable costs for each of the Corporate Home Office cost pools are then allocated using the methodologies described above.

4. Fringe Benefits

The Parent Company calculates a Company-wide fringe benefit rate that is applied to its US business units and wholly owned subsidiaries. Fringe benefit costs include an adjustment of the indirect fringe benefit expense recorded in the general ledger at the standard fringe rate of 31.5% to the Fiscal Year 2009 actual fringe rate of 26.94%

5. Excess Compensation

The adjustment amount of $196,208 includes the amount that is unallowable in accordance with FAR 31.205-6.

6. Travel & Business Meals

Based on a review of travel and related costs, NAI disallowed $322,105 in accordance with FAR 31.205-46.

7. Employee Training & Dues

The adjustment amount of $283,389 represents dues that are unallowable in accordance with FAR 31.205-14.

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8. **Recruiting & Relocation**

The relocation adjustment of $202,771 represents employee relocation expenses that are considered unallowable in accordance with FAR 31.205-35.

9. Cost Recovery

The Cost Recovery accounts are used to charge projects for the usage of company-owned equipment, supplies and vehicles. Portions of the G&A relating to reproduction, vehicle costs, field equipment and supplies and other miscellaneous costs are charged (via a credit to cost recovery) to direct project expense based on actual usage.

10. Other

Included in the other adjustment of $884,572 are the following unallowable expenses of Fiscal Year 2009 actual costs:

Fines & Penalties (FAR 31.205-15)	$ 6,883
Contributions (FAR 31.205-8)	$ 105,500
Internal Promotion (FAR 31.2 various)	$ 376,229
External Promotion Meals, Entertainment & Other (FAR 31.2 various)	$ 367,882
	$ 856,494*

*The remaining balance of the disallowed amount is determined using the methodology discussed in Note 2.

11. **Acquisition of Jordan, Jones and Goulding, Inc. (JJG)**

On February 15, 2010, the Parent Company acquired Jordan, Jones and Goulding, Inc. (JJG), and the management and operations of JJG have been combined with those of the North American Infrastructure Business Unit (NAI) for the remainder of Fiscal Year 2010. Accordingly, the indirect rates presented herein appropriately do not include JJG. The NAI business unit is not a separate legal entity, and it will continue to operate as a separate business segment of the Parent Company .

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ATTACHMENT C

COMPANY PROFILE

REQUEST FOR PROPOSALS FOR THE PERFORMANCE OF EXPERT PROFESSIONAL CIVIL ENGINEERING SERVICES AS REQUESTED ON A "CALL-IN" BASIS DURING 2011 (RFP #22188)

1. Company Name (print or type):

   Jacobs Civil Consultants Inc.

2. Business Address (to receive mail for this RFP):

   5 Penn Plaza, 18th Floor

   New York, NY 10001

3. Business Telephone Number: 212.944.2000

4. Business Fax Number: 212.302.4645

5. Firm website: www.jacobs.com

6. Federal Employer Identification Number (EIN): [Ex.1]

7. Date (MM/DD/YYYY) Firm was Established: 10 / 02 / 1928

8. Name, Address and EIN of Affiliates or Subsidiaries (use a separate sheet if necessary):

   See attached

9. Officer or Principal of Firm and Title:

   Michael P. Cavanaugh, PE, CEO

10. Name, telephone number, and email address of contact for questions:

    Michael P. Cavanaugh, PE, CEO, 212.944.2000, mike.cavanaugh@jacobs.com

11. Is your firm certified by the Authority as a Minority-owned, Woman-owned or Small Business Enterprise (M/W/SBE)? ☐ Yes ☒ No

    If yes, please attach **Port Authority** certification as a part of this profile.

    If your firm is an M/WBE not currently certified by the Authority, see the Authority's web site – http://www.panynj.gov/DoingBusinessWith/economic/html/objo.html to receive information and apply for certification.

Vincent A. Cassano, PE
Project Manager

Education

- BSCE, Civil Engineering, 2005

Registration/Credentials

- Professional Engineer:

[Ex.1]

Vincent Cassano is a project manager and heads up the site-civil engineering group. He is responsible for project management, design and development of site/civil projects and has served as Project Manager and Project Engineer leading the design efforts on numerous projects for both public and private clients. He is experienced in the design and management of multi-disciplinary projects and has specific expertise in site-civil engineering including parking facilities, plazas, parks, roadways, drainage, utilities, and other related tasks.

Project Experience

Port Authority of NY & NJ, Civil Engineering "Call-In" (2008-11), NY and NJ. Project manager for this ongoing agreement. Following are a representative sample of assignments:

- **Teterboro Airport, Construction Staging:** Project Manager responsible for leading the Stage I effort to evaluate removal and relocation of the existing construction staging and storage area at Teterboro Airport. The Stage I report evaluated various alternative locations considering pros and cons associated with site access, environmental constraints, and facility concerns. Additionally the team prepared preliminary drainage analysis and identified all the necessary permits required for the improvements. This required extensive coordination with the PA environmental discipline as well as others to ensure all the constraints were identified and addressed.
- **Stewart International Airport, Runway Incursion Mitigation Study:** Project Manager responsible for leading the Stage I effort to evaluate the existing conditions and improve the maneuverability and load bearing capabilities of the perimeter roadway at Stewart International Airport. This project included roadway alignment vertical and horizontal, drainage, and pavement design. The objective was to improve the existing roadway and allow it to be used by a fully loaded fuel truck. The design enhanced maneuverability, and rehabilitated the pavement to accommodate the structural load as well as extend the service life of the roadway. Storm drainage as well as environmental constraints were evaluated and coordinated with the appropriate PA disciplines.
- **John F. Kennedy International Airport, North Boundary Road Pavement Rehabilitation.** Project Manager responsible for leading the Stage I effort to evaluate the existing conditions of North Boundary Road and providing recommendations as to the necessary rehabilitation to extend its service life. Jacobs performed a field assessment and condition analysis of the roads and parking facilities included in the program consisting of approximately 1 mile of roadway. We evaluated pavement cores taken by the PANYNJ subcontractor and made recommendations for rehabilitation which will extend the expected life of the surface and meet current Port Authority standards.
- **LaGuardia International Airport, Storm Drainage Rehabilitation/ Master Utility Study.** Managed the Stage III review of sewer video inspections at LaGuardia. This project will provide the PA with recommendations for rehabilitation and upgrading of the storm sewer system through out the airport and surrounding infrastructure. This task is a follow up to a master utility study also prepared by Jacobs. A hydraulic analysis of the airport storm sewer system evaluated the available capacities as compared to the expected design flows, and deficiencies were identified. We are currently working with the PA to combine the recommendations of both studies into a comprehensive long term rehabilitation plan.

Vincent A. Cassano, PE
Project Manager

Port Authority of NY & NJ, Civil Rail Engineering "Call-In" (2008-11), Harrison PATH Station Replacement, Harrison, NJ. Lead Engineer responsible for providing site civil design for the construction of four new head houses, plaza areas, and bus turnouts at the station. The upgraded station is the transit hub and center of the redevelopment zone which included a new stadium, residential and retail development as infill to an existing urban community. Plaza areas are designed to be an inviting park like atmosphere accommodating pedestrian and bicycle traffic and supported by the adjacent vehicular zones including bus and passenger drop off areas and parking facilities. The design will include grading drainage and utility improvements as well as storm water management and roadway design. Additionally this project requires extensive coordination between the Port Authority Real-estate developers, county and municipality.

MTA Metro-North Railroad, Cortlandt Station Parking, Intermodal and Access Improvements, Cortlandt, NY. Project Engineer involved with the design of a new parking and intermodal facility at Cortlandt Station. The design will include a new pedestrian overpass, plaza area and 400 car parking expansion. He is responsible for the grading, drainage and storm water management design for the project. Responsible for the design and analysis of a new detention basin to control water quality, and managed the water quality basin design and stream analysis associated with a new bridge crossing. He also reviewed SWPPP plans for the adjacent roadway project being developed, and prepared a combined SWPPP for the project.

State University Construction Fund, SUNY College of Environmental Science and Forestry, Bray Hall, Syracuse, NY. Project Manager responsible for leading the site design of a new parking facility to support the gateway building project. This task included site layout of a new parking lot, and access roadway, utility upgrades, storm water management, site lighting, retaining walls, stairs, landscaping and plaza improvements. Jacobs is currently managing the construction phase of this project with an expected completion in the spring of 2010. Mr. Cassano was also responsible for preparing design of a detention system to address NYSDEC water quantity and quality requirements. As part of the design, he prepared a SWPPP report and plans, coordinated with the MSU and received approval.

State University Construction Fund, SUNY College at Fredonia, Phase II Water Distribution Upgrade, Fredonia, NY. Project Manager for the Phase II Water distribution upgrade at the College at Fredonia. The project includes replacement of several thousand feet of water mains on campus as well as providing new service and backflow prevention to approximately 13 existing buildings. In addition to preparing plans and specifications for the water main replacement the team is developing a water model which will identify areas of deficiency, and account for future growth. Mr. Cassano is responsible for the overall quality control, including schedule, budget and coordination of lead and supporting disciplines. He is also coordinating long term goals associated with growth as they are factored into our model and design.

State University Construction Fund, SUNY College at Fredonia, Electrical Distribution Upgrade and Power Load Study. Project Manager responsible for project oversight, quality control, scheduling and coordination. The project will upgrade the campus electrical substation with new outdoor switchgear with walk in enclosure, new 13Kv feeder cables, and new medium voltage switchgear with in the existing heating plant.

Michael P. Cavanaugh, PE
Principal-in-Charge

Education

- BCE, Civil Engineering, 1977

Registration/Credentials

- Professional Engineer [Ex.1]

Mike Cavanaugh has extensive project management experience on a wide variety of assignments involving the rehabilitation of highways, streets and their related infrastructure in the New York metropolitan area. Mr. Cavanaugh has been involved in the design and construction services for over 30 miles of streets and roadways for agencies such as NYS Department of Transportation, NYC Department of Transportation and the NYC Economic Development Corporation. The projects have encompassed topographic surveys/ mapping, subsurface investigation and pavement design, design reports and the preparation of final plans, specifications and estimates for street reconstruction work including drainage, traffic signals and street lighting improvements. His experience encompasses extensive underground utility work that includes utility surveys, subsurface investigations and test pitting and the design of new and relocated utility system.

Project Experience

Port Authority of NY & NJ, World Trade Center Streets, Utilities, and Related Infrastructure Designs, New York, NY. Project Manager of the joint venture team providing design services for the creation of Greenwich Street between Vesey and Liberty Streets, and Fulton Street between Route 9A (West Street) and Church Street, including the installation of street utilities (water, storm and sanitary sewers, gas, and steam mains) to service the World Trade Center Site. Also responsible for the design coordination of the streets and related infrastructure designs with all participating stakeholders, including Silverstein Properties, Inc. (SPI), the MTA, Lower Manhattan Development Corp., NYCDOT, and NYCDEP. In addition to the new streets and utilities, the project includes the creation of Liberty Park, a new park adjacent to the WTC Memorial on Liberty Street, all roadway surfaces, sidewalks, street lighting, traffic control measures, appropriate street furnishings, way finding, landscaping and perimeter security measures.

Port Authority of NY & NJ, Civil Engineering Services on a "Call-In" Basis, NY & NJ. Principal-in-Charge for these "Call-In" agreements which include 33+ assignments ranging in fee from $25,000 to approximately $270,000. Project design work includes roadway reconstruction, airside site work, storm drainage rehabilitation, utility relocation and pavement repair.

NYS Dept. of Transportation, Route 9A Reconstruction Project, Horatio Street to W. 26th Street Phases V-VI, New York, NY. Project Manager for the final design and construction support services for the $70 million reconstruction of Route 9A through the Chelsea Section of Manhattan. The project encompassed the full reconstruction of the roadway corridor to provide a landscaped urban boulevard; construction of a new part at W. 14th Street and a significantly enlarged Thomas F. Smith Park at W. 23rd Street. The project also included extensive improvements to the underground utility systems including a new storm sewer system, new water main distribution system, new electric, telephone and gas facilities and new street lighting and traffic signal systems. Directed the overall design effort and interfaced extensively with NYS and NYC agencies, private utility companies and major stakeholders that included the Chelsea Piers Sports Complex and the Gransevoort Meat Market Associated.

NYC Dept. of Transportation, Hudson Street Reconstruction, New York, NY. Project Manager for the preparation of a design report and final PS&E (1.8 miles) for this $30 million street

Michael P. Cavanaugh, PE
Principal-in-Charge

reconstruction project. The design included a vault survey and special reconstruction details above existing vaults, 6,300 ft of new 48" trunk water main, the replacement of 16,000 ft of existing 12" and 20" distribution water mains, lining existing brick sewers, signal improvements at 32 intersections and the full reconstruction of the pavement, curb and sidewalks (including special streetscape designs at specific locations). The project also included the relocation design of the Empire City Subway duct system necessary to accommodate the new 48" water main.

NYC Dept. of Transportation, HWQ 342 Hillside Avenue Reconstruction, Queens, NY. Project Manager for the preparation of a design report and final PS&E for this 7-mile reconstruction. Project included widening of the roadway to provide a continuous mall to accommodate left turn lanes, special protection features at two Long Island Rail Road overpasses, upgrading traffic signalization and pedestrian crossings at 70 intersections, new water main construction, and the installation of seepage well systems to provide roadway drainage in unsewered sections. The project was constructed under four staged contracts covering different roadway segments.

NYC Dept. of Transportation, McGuiness Boulevard Reconstruction, Brooklyn, NY. Project Manager for the preparation of a design report and final PS&E (1.3 miles). The design included rehabilitation of the pavement, curbs and sidewalks, reconstruction of the boulevard's center mall to provide a planted median and channelization for left turning vehicles, signalization improvements at selected locations, the replacement of 9,000 feet of water main and 4,600 feet of combined sewers. Private utility work was also included in the design under a joint agreement with NYCDOT.

NYC Economic Development Corp., Linden Place, Queens, NY. Project Manager for the preliminary and final design for the reconstruction of NYC streets within the College Point Corporate Park in Queens. The project included subsurface investigations, geotechnical analysis and pavement design and final plans, specifications and estimates for pavement, curb and sidewalk rehabilitation. The project called for raising the Linden Place profile by approximately 5-feet to bring it into conformance with legal grade.

Battery Park City Authority, Vesey Street Utility Extensions, New York, NY. Project Manager for providing underground utilities to service the new NY Mercantile Exchange Building. New utilities constructed within Vesey Street between West Street and North End Avenue included 700 feet of new 10"/20" steam main, new electric duct banks, new storm/sanitary sewer connections and new water services. The project included test pitting to identify existing utility locations and the design of new utilities to minimize interferences. All designs were in accordance with NYCDEP and Con Edison standards.

MTA Bridges and Tunnels, 2003 Miscellaneous Design Services, NY. Principal-In-Charge for this "As Needed" design contract that includes more than 30 project assignments to date at the Authority's Bridge and Tunnel facilities for various structural/civil, architectural, electrical, mechanical, cost estimating, constructability review, value engineering and construction support services.

Michael J. Kennedy, PE
Quality Assurance/Quality Control

Education

- BS, Civil Engineering, 1980

Registration/Credentials

- Professional Engineer: [Ex.1]

Michael Kennedy has served as project manager on a wide variety of civil engineering assignments, including projects for site development, rail expansion and aviation improvements, new facility construction, and highway reconstruction. These projects have included conceptual studies, Major Investment Studies, Environmental Impact Statements, preliminary designs, preparation of final contract documents and design-build. He has been responsible for overall client contact, technical designs, quality control, budget and schedule. Mr. Kennedy has been in charge of producing contract documents on projects with construction costs ranging from $500,000 to $282 million. A skilled communicator, he maintains a strong public information program, building trust through proactive, informative, and honest communication.

Project Experience

Amtrak, Nationwide Program Management for Designated American Recovery and Reinvestment Act Projects (ARRA). Nationwide Design Manager overseeing the development of bridging documents for more than 400 Amtrak projects nationwide. The bridging documents will be used to procure approximately 50 design-build contractors to complete the series of ARRA stimulus projects within an 18-month time period. As the Nationwide Design Manager, Mr. Kennedy is responsible for delivery of these documents for $460 million worth of improvements at stations, facilities and along the mainlines. The work includes facility upgrades, security enhancements, station improvements, track replacement, signal projects, and right-of-way upgrades.

Port Authority of NY&NJ, Relocation of Taxiways "I" and "O" at John F. Kennedy International Airport, Queens, NY. Engineer responsible for the "landside" designs of the relocated service roads, parking lots, details and the construction cost estimate for the Port Authority of New York and New Jersey, as part of final design contract documents for the $30 million relocation of the two most heavily utilized taxiways at Kennedy Airport.

Port Authority of NY&NJ, 1990 - 1999 Civil Engineering Services on a "Call-In" Basis, NY & NJ. Project Manager responsible for more than thirty different projects encompassing rehabilitation and design for roadways and parking lots. Some of the projects included:

- LaGuardia Airport: drainage and utility study encompassing existing lines and proposed improvements
- JFK and LaGuardia Airports: design of new intersections and service roads, including drainage and utility designs
- Newark Airport: design and reconstruction of three parking lots at. This work included utility studies, regrading, architectural improvements, drainage design and maintenance of traffic
- North Tube of the Lincoln Tunnel: rehabilitation including pavement reconstruction, drainage improvements, traffic control, plaza reconstruction and construction sequencing; rehabilitation of roadway slabs over an electrical vault at the Lincoln Tunnel toll plaza
- Port Newark and Port Elizabeth: roadway rehabilitation and track reconstruction on several streets.

Michael J. Kennedy, PE
Quality Assurance/Quality Control

- George Washington Bridge: safety recommendations for impact attenuators.
- Outerbridge Crossing: rehabilitation of roadways and parking lots.
- Goethals Bridge: fencing improvements.

MTA Metro-North Railroad, Cortlandt Station Parking, Intermodal and Access Improvements, Cortlandt, NY. Project Manager for this $25 million project to add 750 parking spaces, a new pedestrian overpass, station and plaza to the Metro-North Railroad Cortlandt Train Station. The project involves new utilities, lighting, stormwater management facilities, roadway bridge, access road, retaining walls and toilet facility. Mr. Kennedy is responsible for the day-to-day management of the design, quality, administrative tasks and schedule.

MTA Long Island Rail Road, Arch Street Yard and Shop, Queens, NY. Managed design for a $76 million design-build project that received the American Council of Engineering Companies' "Diamond Award for Engineering Excellence, New York City;" and the American Society of Civil Engineers' "Design-Build Project of the Year Award," New York City. Responsible for producing nearly 900 contract drawings. The state-of-the-art facility is located on a 12-acre site and contains a 5-track heavy maintenance shop, administration offices, rail yard and several storage buildings. The new facility can accommodate more than 200 employees and has its own substation. LIRR sent a letter to our senior management stating that they "were extremely pleased with the cooperation of the design-build team and their commitment to providing a superior product." They also recognized "the efforts of Design Manager Michael Kennedy" and "the many competent design personnel that worked on the project."

MTA Metro-North Railroad, Harmon Shop Replacement Phase III, Croton-on-Hudson, NY. Design Manager responsible for the design for the largest engineering and construction project ever awarded by Metro-North Railroad. Responsible for preparation of approximately 1,750 contract drawings within a 12-month time frame. Oversaw technical team, administration, budget, and schedule. The $282 million project included a 65,000-SF locomotive shop, a 110,000-SF coach shop, 15 new tracks, new K-9 grounds for MTA police dogs, and design of drainage, utilities, communications systems, power, lighting, snowmelter, and traction power systems. All elements of the 20-acre site were designed in an active rail yard.

MTA Bridges and Tunnels, 2003 Miscellaneous Architectural/Engineering Services on a Task Order Basis, GFM 418, New York, NY. Project Engineer on several assignments to design new a new access road at the Bronx-Whitestone Bridge, remove two existing tollbooths at the Bronx-Whitestone Bridge, and implement pipe gallery improvements at the Brooklyn Battery Tunnel. Work involved the preparation of final contract documents on these assignments. Project Engineer responsible for a study that proposed nearly 1000 new trailblazer signs at all MTA Bridge and Tunnel facilities.

Alan Norris
Safety Manager

Education

- MS, Occupational Safety & Health, 1999
- MS, Environmental Science, 2000
- BS, Manufacturer Engineering Technology

Alan Norris has over twenty years of experience in the construction industry, with ten years in the health and safety disciplines with an emphasis on major infrastructure and capital construction projects. He is experienced in the specialized areas of construction safety, hazmat issues, contaminated soil and water, owner and subcontractor relations, insurance issues, and training and orientation.

Project Experience

Amtrak, Nationwide Program Management for Designated American Recovery and Reinvestment Act Projects (ARRA). Safety Manager on this project for $460 million worth of improvements at stations, facilities and along the main lines. The work includes facility upgrades, security enhancements, station improvements, track replacement, signal projects, and right-of-way upgrades.

Brightwater Conveyance, Seattle, WA. Oversaw safety compliance on fourteen miles of outfall tunnel and treatment plant for King County. Involvement in all aspects of the project from safety compliance to OCIP management, to review of submittals

Experience with Other Firms

URS Corporation, New York, NY and Atlanta, GA (2003-2008)
Safety Manager (East Side Access). Developed and implemented safety compliance procedures for a $6.3 billion tunnel project connecting Queens to Grand Central Terminal. Involvement in all aspects of the project from initiation to completion.

Safety, Environmental and Security Manager (Advantech). Developed and implemented the safety, security, and environmental procedures for a $2 billion scrubber improvement project and various Tennessee Valley Authority fossil fuel plants. Involvement in all aspects of the project from initiation to completion

Modern Continental Construction Co., Boston, MA (1999-2001)
Senior Safety Officer – Central Artery project.

- Oversaw safety and health issues on a number of project elements, including the Fort Point Casting Basin, involving: safety plans and program development, regulatory compliance issues, staff training and development, updating regulatory changes, representing company at meetings with owner and subcontractors
- Utilized expertise in: steel erection, concrete forming & placement, excavation, shoring and heavy equipment operation
- Successfully maintained positive relations with crafts and their supervisors
- Won two safety awards in the three years with Company
- Worked within an owner-controlled insurance program
- Reduced costs significantly via reduced claims for work-related injuries

Alan Norris
Safety Manager

Slattery/Skanska Group, New York, NY (1998-1999)
Senior Safety Officer – Kennedy Airport elevated light rail system project (Howard Beach Spur portion)

- Monitored daily safety and health functions, including: representing the company at meetings with owner and subcontractors; developing training programs for craft and supervisory personnel
- Utilized expertise in health & safety protocols and environmental regulations regarding disposal of contaminated soils and treatment of groundwater
- Worked within an owner-controlled insurance program

Parsons Brinckerhoff Construction Group, Boston, MA (1997-1998)
Construction Health & Safety Officer – Central Artery Tunnel project

- Oversaw contractor compliance with health & safety pans, including: advising project-management personnel on compliance issues, updating of regulatory changes, review of contractor submittals, auditing of contractor record-keeping
- Maintained effective dialog with owners' project managers and engineers
- Advised project managers on all regulatory compliance issues
- Trained owners' representative

Storch Associates, Cromwell, CT (1992-1997)
Safety Officer; Environmental Specialist – Connecticut Dept. of Transportation

- Audited and verified performance of Department's contractors
- Recommended and assisted in remedial action
- Performed waste characterization of soil and water contaminants
- Coordinated environmental monitoring & disposal actions (on multiple projects)

Maguire Group, New Britain, CT (1989-1992)
Construction Inspector; Safety Officer – various infrastructure projects

- Ensured compliance with plans and specifications (projects: bridge rehabs, installation of utilities, building construction, etc.
- Conducted quality control activities and commuted payment schedules

Ronaldo L. Abaquin
Senior Designer

Education

- BA, 1996
- AAS, Civil Engineering Technology, 1987

Ron Abaquin serves as a project manager and a senior designer in Jacobs' highway department. With over 22 years of experience, he has worked on a variety of projects in the civil engineering field, including the management and design of multidiscipline projects. His assignments as project manager have included roadway reconstruction projects, facility and site improvement projects and Intelligent Transportation Systems (ITS) studies and designs.

Project Experience

Port Authority of New York & New Jersey, Engineering Services "Call-In" Agreements, 1990-1993. Assisted in several different projects encompassing rehabilitation and design for roadways and parking lots; tasks assigned involved preliminary research, profile and cross-sectional study and development, roadway realignment design, facility schematic layout, landscaping for drainage purposes, maintenance and protection of traffic design, quantity take-offs and construction cost estimates.

Port Authority of New York & New Jersey, Outerbridge Crossing Repairs, Staten Island, NY. Assisted in the development of roadway design and maintenance of traffic for crossovers needed to complete the necessary facility repairs, including, quantity take-offs and cost estimates.

Port Authority of New York & New Jersey, Relocation of Taxiways "I" and "O" at John F. Kennedy International Airport, Queens, NY. Assisted in the design of the relocated service road and parking lot and in the preparation of final design contract documents by performing preliminary research, field study, schematic layout of roadway/parking lots, re-grading, quantity take-offs and cost estimates.

Battery Park City Authority, 2006 On-call Services, New York, NY. Assistant Project Manager and Senior Designer responsible for developing bid ready contract documents for various, multi-discipline on-call projects within Battery Park City. This on-call project ultimately comprised of roadway rehabilitation, miscellaneous metal work for parks and streetscape amenities, lighting solutions and various facility designs. Provided the required construction administration and support services for each of the on-call projects.

NYC Economic Development Corp., Linden Place Reconstruction, Preliminary Design Investigations, Final Design, and Construction Support Services, Queens, NY. Project Manager for the preliminary design, final design and construction support services for the reconstruction of city streets in College Point, Queens; this project calls for settlement mitigation design that would also raise the existing roadway profile by approximately 5 to 7-feet to bring it into conformance with legal grade. The project's preliminary design phase included the preparation of a preliminary design investigation report, including schematic design and reconstruction recommendations. The project's final design includes subsurface investigations, geotechnical analysis and pavement design. Final plans, specifications, and estimates have been developed as per recommendations approved during the preliminary design phase. Reconstruction of this project will consist of a surcharge construction stage and a final roadway construction stage.

Ronaldo L. Abaquin
Senior Designer

NYC Economic Development Corp., 28th Avenue Reconstruction, Preliminary Design Investigations, Final Design, and Construction Support Services, Queens, NY. Project Manager for the preliminary and final designs for the reconstruction of a city street in College Point, Queens; this project included feasibility studies of construction methods to mitigate the settlement of an existing city street that is adjacent to a $70 million public transportation facility, currently being operated by the Metropolitan Transportation Authority. The project's preliminary design included subsurface investigations, geotechnical analysis report, reconstruction feasibility studies and pavement design. The final design included the preparation of detailed contract plans, specifications and estimates for subsurface utility reconstruction, pavements, curbs, sidewalks, driveways, sign and striping and street trees. Also provided the support services for the project's construction phase.

MTA Bridges and Tunnels, 2003 Miscellaneous As-Needed Design Services, GFM 419A, De-Icing Facility at the Triborough Bridge, Randall's Island, NY. Senior Designer responsible for the design coordination and development of site civil elements in connection with the construction of a de-icing facility. The facility was established beneath and within the confines of the Triborough Bridge's peripheral and mainline bridge ramps and was to facilitate the delivery, distribution and storage de-icing materials. Developed the project's vertical and horizontal alignment plans, construction plans, signing and striping plans, and miscellaneous structural and architectural plans and details. Contributed to the preparation of the project's specifications, engineer's estimates and contract bid sheets.

MTA Metro-North Railroad, Beacon Station Parking Improvements, NY. Project Designer responsible for developing the construction staging strategies to successfully maintaining the station's parking facilities and operations during the construction phase. Also responsible for developing the project's roadway and parking facility's horizontal alignments, most of which, due to the tight spatial constraints of the project site, were designed and checked using the AutoTURN program by Transoft. Contributed to the development of the project's conceptual design report during preliminary design.

NYC Dept. of Transportation, Roadway Reconstruction, Preliminary Design/Investigation Reports and Final Design Projects, New York City. Project Designer responsible for performing preliminary research, surface/subsurface field investigation and survey, schematic design, highway horizontal/vertical alignment design, profile analysis, cross-sectional analysis, traffic accident analysis, traffic signalization design, maintenance and protection of traffic design, quantity take-offs, cost estimates, design report write-ups, special specification write-ups, progress report write-ups, quality control review, drafting on an "as-needed" basis, and assisted in the preparation of contract documents and drawings for both preliminary and final design stages for the following projects:

- Hudson Street, Manhattan, approximately 9,000 linear feet
- Avenue J, Brooklyn, approximately 16,500 linear feet
- Kent Avenue/Franklin Street, Brooklyn, approximately 15,000 linear feet
- Crescent Street, Queens, approximately 11,500 linear feet
- Sanford Avenue, Queens, approximately 8,000 linear feet
- Baisley Avenue, Bronx, approximately 18,000 linear feet

Michael J. Murno, PE, PP
Project Manager - Roadways

Education

- MS, Transportation Planning, 1973
- BS, Civil Engineering, 1969

Registration/Credentials

- Professional Engineer:

  [Ex.1]

- Professional Planner:

  [Ex.1]

Mike Murno has extensive and diversified experience in all phases of highway and transportation engineering including the design of such transportation facilities as interchanges, multi-lane highways and expressways, railroads, mass transit, arterials, and access roads. He has managed numerous planning and design projects, and has monitored the activities of multi-disciplined professional personnel in the preparation of contract documents, feasibility studies, alternative analyses, and site investigations for public and private sectors.

Mr. Murno's project experience includes coordination and liaison with state and local agencies, subconsultants, community groups, and chambers of commerce. Mr. Murno has been actively involved in public participation and involvement programs on large scale projects, including formal public information meetings, community board meetings, public hearings, and environmental impact statements.

Project Experience

Port Authority of New York & New Jersey, World Trade Center Streets, Utilities and Infrastructure, NY. Serves as Infrastructure Project Manager on this project which consists of the creation of Greenwich Street between Vesey and Liberty Streets, and Fulton Street between Route 9A (West Street) and Church Street, including the installation of street utilities (water, storm and sanitary sewers, gas, and steam mains) to service the World Trade Center Site.

NYS Dept. of Transportation, Route 9A Reconstruction Project Horatio Street to West 26th Street, Phases V-VI, NY. Project Engineer for final design services for this one-mile segment. This $70 million project involved full reconstruction of the roadway to provide a landscaped Boulevard adjacent to the Hudson River. Mr. Murno directed the development of MPT and civil designs for the project, which encompassed six construction stages. MPT was complicated by the extensive underground utility work of the project, which included a system of duel 20-inch water mains, a new storm sewer system, a relocated outfall/tide gate chamber and new nine-duct telephone bank. Extensive coordination was required with major adjacent uses, which included the Gansevoort Meat Market and the Chelsea Piers Sports Complex.

NYC Dept. of Transportation, Bridge Rehabilitation Projects (Metropolitan Avenue over English Kills, Brooklyn Queens Expressway over Cadman Plaza, Crooke Avenue over the BMT, Newkirk Avenue over the BMT, Grand Street over Newton Creek, and Bryant Avenue over Amtrak and ConRail, Brooklyn and Bronx, NY. Manager of the Highway/Civil design efforts in the production of construction plans, including alignment, profiles, grading, paving, drainage, and MPT Plans; estimates; and specifications for the roadways.

NYC Dept. of Transportation, Manhattan Bridge over the East River, Lower Level Deck Replacement, Manhattan, NY. Manager of the highway/civil effort with respect to Alignment designs for the approach ramps, MPT designs for the replacement of the Lower Level Deck, including final MPT plans, specifications and estimate.

Michael J. Murno, PE, PP
Project Manager - Roadways

MTA Bridges and Tunnels, 2001 Miscellaneous Design Services, New York. Lead Project Engineer for civil design aspects responsible for the design of the following projects performed under 16 independent task orders for: the Triborough Bridge, De-icing Material Storage Dome Complete Task Leader; Throgs Neck Bridge, Relocation of the Harding Avenue Entrance Ramp – Civil Design; Verrazano Narrows Bridge, Rehabilitation of the Lower Level Approach Decks –MPT Schemes and Henry Hudson Bridge, Replacement of the Upper Level Toll Plaza – Scoping and Civil, Design Efforts and MPT Schemes and Replacement of the Lower Level Toll Plaza – Scoping and Civil Design Efforts and MPT Schemes.

MTA Bridges and Tunnels, Harding Avenue Ramp Removal/Relocation, Bronx, NY. Manager of the conceptual and preliminary plan development for the removal/relocation of the Harding Avenue Ramp. Responsibilities involved the development of three alternatives (two relocations and one operational) in addition to the no build alternative. The project included traffic studies, the development of conceptual plans and report, the further development of the preferred alternative, including preliminary plans and preliminary report.

NYS Dept. of Transportation, Design Phases I-IV Trans-Manhattan Connector Ramp from the Harlem River Drive, Manhattan, NY. Project Manager for the preliminary design phases, consisting of alternative analyses, traffic and environmental studies and Environmental Analysis (EA), including a final design report for the rehabilitation of the ramp connecting the Harlem River Drive with the Trans-Manhattan Expressway. Responsible for developing four alternatives with respect to the rehabilitation/ replacement of the Ramp; the No Build Alternative, a full rehabilitation of the existing ramp, a complete replacement of the existing ramp on the existing alignment, a partial/complete replacement on new alignments both onshore and offshore.

NYC Economic Development Corporation and HOK, Reconstruction of the St. George Station Ferry Terminal, Staten Island, NY. Technical Specialist QA/QC for the civil site work associated with the $90 million reconstruction of the Staten Island Ferry Terminal. Responsible for design quality review of parking lots, water mains, storm sewer lines, sanitary sewer ejector, utility evaluation and relocations.

NYS Dept. of Transportation, Van Wyck Expressway Operational Support Services During the PANY/NJ Design and Construction of the Light Rail Transit System to JFK International Airport, Van Wyck Expressway Corridor, NY. As Project Manager for the coordination of proposed NYSDOT projects during the design and construction of approximately 8 miles of the Light Rail Transit System (LRTS), Mr. Murno was responsible for all highway and bridge design related aspects of the Department's Van Wyck Expressway improvement program. In this capacity, he assisted the NYSDOT in managing and directing the efforts to facilitate and successfully complete proposed State projects within the corridor. These efforts consisted of coordination and liaison with the PANY/NJ and the LRTS Project, coordination of NYSDOT projects on the Van Wyck Expressway, and overall program coordination and project management.

Battery Park City Authority, 2006 On-Call, New York, NY. Senior Project Manager responsible for overseeing the development of bid ready contract documents for various, multi-discipline on-call projects within Battery Park City. This on-call project ultimately comprised of roadway rehabilitation, miscellaneous metal work for parks and streetscape amenities, lighting solutions and various facility designs.

Jessica M. Forse, PE
Civil Engineer

Education

- BSCE, Civil Engineering, 1999

Registration/Credentials

- Professional Engineer: [Ex.1]

Jessica Forse is responsible for project design and development as well as compilation of construction drawings including roadway layout, grading, drainage, utility design, construction staging, soil erosion and sediment control, and the preparation of site specifications and construction cost estimates.

Project Experience

Port Authority of NY & NJ, World Trade Center Streets, Utilities, and Related Infrastructure, New York, NY. Lead Civil Engineer for the design of the streets and infrastructure at the 16 acre World Trade Center Site. Responsibilities include design of the new roadway and utility network and extensive coordination with New York City Agencies including Planning, DEP, DOT, MTA and various other development projects on the site to define the surface and sub-grade design parameters. Additional project responsibilities include coordination for the installation of at-grade security devices and urban design features.

Port Authority of NY & NJ, **Civil Engineering "Call-In" 2002-2004.** Civil Engineer responsible for multiple assignments under a Civil Engineering "Call-In" agreement. The following projects are a representative sample of the assignments completed for the Port Authority:

- **JFK International Airport, Guard Post "R" Relocation and Reconstruction of North Hangar Road.** Designed site and roadway improvements in the vicinity of Guard Post "R" and North Hangar Road at the north side of the airport.
- **Newark Liberty International Airport, Brewster Road.** Provided design of additional roadway improvements along Brewster Road.
- **Jamaica AirTrain Station.** Prepared grading design of site features bounding the newly constructed Jamaica Station in the Borough of Queens, New York.

Port Authority of NY & NJ, Civil Engineering "Call-In" 1999-2001. Civil Engineer responsible for multiple assignments under a Civil Engineering "Call-In" agreement. The following projects are a representative sample of the assignments completed for the Port Authority:

- **Rehabilitation of the Approach Bridges to the Lincoln Tunnel.** This project included civil design for the rehabilitation of five approach bridges to the Lincoln Tunnel. Design services included grading, drainage, pavement rehabilitation and utility relocation and coordination.
- **LaGuardia Airport, Roads West of the Central Terminal Building Utility Design.** This project involved extensive utility rehabilitation and relocation due to the roadway reconstruction and realignment west of the Central Terminal Building. Design included drainage rehabilitation and relocations as well as the design of twin 24" water mains.

Somerset Development, Wesmont Station, Borough of Wood-Ridge, NJ. As project engineer, Ms. Forse is responsible for all aspects of the site design and permitting for the project as well as tasked with coordinating the site layout and design with the client, Borough, and project architect. The development included 737 residential units, in a mixture of single-family lots, townhouses, and multi-family mixed-use buildings. Also included in the 67-acre tract will be land for the construction of a recreation facility for multiple athletic fields and a future school building.

Avports, E. 34th Street Heliport, New York, NY. The project consists of the design of a new terminal building for the E. 34th Street Heliport and an upgrade of the entire heliport facility on

Jessica M. Forse, PE
Civil Engineer

Manhattan's eastside waterfront. Facility improvements include a new waterfront bikeway/walkway, a new hangar, an upgraded take off and landing area, and a view enhancing perimeter wall. Ms. Forse is responsible for the site design as well as coordination of the four project sub-consultants. Ms. Forse is also responsible for permit applications to the various New York City agencies including the New York City DEP, Department of Small Business Services, and the DOT.

FDNY Randall's Island Training Facility, New York, NY. Project Engineer for improvements to the New York City Fire Department Training facility at Randall's Island. This unique, multi-phased project involved the construction of one new training building and 2 new building additions at the FDNY's 20-acre training facility. Ms. Forse worked closely with various other project disciplines to ensure proper coordination of all project phases. As the Project Engineer, Ms. Forse was responsible for the design of all proposed site features including roadway design, grading, utility infrastructure and stormwater management designs.

S. Hekemian Kasparian and Troast LLC, Englewood Commons, City of Englewood, NJ. The project is mixed-use development in the City of Englewood, New Jersey; including 350 apartment units, retail and office in seven (7) separate buildings. Jacobs prepared design documents inclusive of site layout, roadway design, site grading, drainage, stormwater management facilities, utilities, lighting, and landscaping. The project was overwhelmingly received by the community and approved by the Englewood Planning Board. As a design engineer Ms Forse was involved in the preparation of application documents to the NJDEP and Bergen County.

Lowe's Companies Inc., Retail and Storage at King's Plaza, Borough of Brooklyn, NY. Site design of a ±90,000 sf Retail and Storage facility along the Mill Basin in the Borough of Brooklyn, New York. Other design services included a bi-level parking garage, site grading, stormwater management, utility systems and landscaping features. Ms Forse is involved in the permitting applications to New York City DEP for stormwater and sewer connections

NYS Department of Transportation, Design Phases I-IV for Route 347 Northern State Parkway to Route 25A, Suffolk County, NY. The project involves the preparation of a Design Report and environmental Impact Statement for 15 miles of roadway improvements, including widening one lane in each direction with increased width shoulders, the construction of 3 new interchanges, intersection improvements, environmental assessment, storm water management, public outreach, and community participation. Using Micro-Station V8 and In Roads, Ms. Forse's responsibilities include design and development of the horizontal and vertical alignment for the intersections as well as design of super elevations and transitions and typical sections.

NYC Department of Transportation, Manhattan Bridge Rehabilitation, Manhattan, NY. The Manhattan Bridge project included the rehabilitation of the lower roadway as part of a continuing maintenance effort on the structure by the NYCDOT. Ms. Forse's responsibilities included the design for the upgrade of the drainage system along the lower roadway and the rehabilitation design of the plaza and transition areas leading up to the suspended spans on both the Brooklyn and Manhattan sides.

Lauren Calia Brennan, PE
Project Engineer

Education

- BS, Civil Engineering, 1998

Registration/Credentials

- Professional Engineer: [Ex.1]

Lauren Calia Brennan is a Project Engineer in Jacob's Civil Engineering Group responsible for project design, development and management of site/civil and highway projects, contract documents and is thoroughly versed in AutoCAD/Microstation and other engineering software applications.

Project Experience

Port Authority of NY & NJ, Civil Engineering "Call-In" during 2002-2007. Project Engineer on tasks including:

- **Newark Liberty International Airport.** Study to install a new Oil Water Separator at Building 117 Stage I. Evaluated the quantity of storm-water run-off generated from a 10-year storm that is currently handled by the existing separator and what the increase in flow would be if tributary areas were increased.
- **JFK International Airport, Guard Post "R" Relocation and Reconstruction of North Hangar Road:** Designed site and roadway improvements in the vicinity of Guard Post "R" and North Hangar Road at the north side of the airport.
- **LaGuardia Airport, Crossover Chamber A:** Prepared design of a crossover valve chamber between high pressure and low pressure water supply systems.
- **LaGuardia Airport, Guard Post Drainage:** Prepared design to re-grade three guard posts to accommodate new security barriers.
- **LaGuardia Airport, Phase 3 Storm Improvements:** Providing construction support during the slip-lining of storm sewers throughout the airport.
- **Newark Liberty International Airport, Brewster Road:** Providing design of additional roadway improvements along Brewster Road.

Port Authority of New York & New Jersey, Civil Engineering "Call-In" during 1999-2001. As Project Engineer, involved in several assignments under this agreement; selected project assignments included:

- **Newark International Airport, Brewster Road Improvements.** Prepared a design for the relocation of Brewster Road and the construction of a bypass culvert system to redirect stormwater runoff under 3 separate contracts.
- **LaGuardia Airport, Master Utility Study - Storm Water Management.** Using state-of-the-art stormwater management software, Jacobs prepared a detailed hydrologic and hydraulic analyses of multiple stormwater conveyance systems and pump stations throughout the airport.

Amtrak, Nationwide Program Management for Designated American Recovery and Reinvestment Act Projects (ARRA) 2009-2011. Project Manager involved in the development of bridging documents at over 20 Amtrak facility locations. Ms. Brennan is responsible for the civil engineering design and coordination of discipline work at each site. The bridges documents will be used to procure design-build contracts to complete the ARRA stimulus projects within an 18-month time period. The projects include facility upgrades, security enhancements and station improvements.

MTA Metro-North Railroad, Cortlandt Station Parking, Intermodal and Access Improvements, Cortlandt, NY. Project Engineer for this $25 million project to add 750 parking spaces, a new

Lauren Calia Brennan, PE
Project Engineer

pedestrian overpass, station and plaza to the Metro-North Railroad Cortlandt Train Station. The project involves new utilities, lighting, stormwater management facilities, roadway bridge, access road, retaining walls and toilet facility. Ms. Brennan was responsible for the civil design elements, coordination of the technical design effort across a multi-discipline team, administration and support services during the design phase and preparation of final design documents.

MTA Long Island Rail Road, Morris Park Locomotive Shop, Jamaica, NY. Lead Civil Engineer responsible for site civil designs, including roadways, utilities and stormwater management. The site work includes the design of roadways, parking areas, water distribution system, sewer system and gas main connection. The design, which is seeking LEED certification, also includes a stormwater system that reuses rainwater within the building. Rainwater that is not re-used as part of the non-potable water system will be routed through the site new stormwater detention system to improve water quality and reduce peak flows.

MTA Metro-North Railroad, Harmon Shop Replacement Program, Phase III, Croton-on-Hudson, NY. Engineer responsible for the project's utility plans, utility alignment plans, profiles and details. Additionally, contributed to the preparation of the project's specifications and provided construction administration and support services during the project's construction phase. Harmon Shop Replacement Phase III is the largest engineering and construction project ever awarded by MTA Metro-North Railroad. Jacobs performed all site work on the $282 million project including 15 new tracks, new K-9 grounds for MTA police dogs, and design of drainage, utilities, communications systems, power, lighting, snow melter, and traction power systems. Responsibilities included the design of the water distribution, fire water, and sanitary systems.

NYS Dept. of Transportation, Alexander Hamilton Bridge and Highbridge Interchange Ramps Rehabilitation I-95 Corridor between Amsterdam Avenue in New York County and Undercliff Avenue, Bronx, NY. Project involved major bridge rehabilitation/replacement work for nine bridges and their associated segments of on grade roadways. As designer for this final design project, responsible for roadway design elements, including horizontal and vertical alignments using In-Roads, miscellaneous details, typical sections and for maintenance and protection of traffic.

ERA South Associates, Flatrock Square, City of Englewood, NJ. Engineer responsible for preparation of design documents inclusive of site layout, roadway design, site grading, drainage, stormwater management facilities, signage, utilities, lighting and landscaping. Also prepared application documents and obtained the required approvals from the NJDEP and Bergen County. Jacobs prepared site plan documents and provided traffic-engineering services on a 20-acre industrial and commercial parcel adjacent to Route 4 in the Englewood. The project includes 452 residential units, 50,000 sf of retail and two towers including more than 400,000 sf of office space.

Susan Bluni, PE
Structural Engineer

Education

- BS, Civil Engineering, 1990

Registration/Credentials

- Professional Engineer:

[Ex.1]

Ms. Bluni has experience in civil and structural engineering, including bridge, highway, and building design projects. Her background in the design, analysis, and inspection of multi-span highway fixed bridges carrying vehicular or railroad traffic includes design and inspection of steel superstructures (curved and straight), concrete deck slabs, abutments, wingwalls, bridge geometry, load rating calculations, and seismic analysis. Other work experience includes design and analysis of concrete retaining walls for lateral earth pressures, surcharge loads, and seismic forces. Ms. Bluni has also provided column analysis, timber and composite beam design, and concrete wall design for various station projects.

Project Experience

Port Authority of NY & NJ, 15 Miscellaneous Buildings at Brooklyn Marine Terminal Brooklyn, NY. Project Manager responsible for coordination with Port Authority and field crews, as well as overseeing all aspects of field inspections for 15 buildings.

Port Authority of NY & NJ, Conditions Survey of Group 2 Buildings at Port Newark Marine Terminal, Port Newark, NJ. Project Manager responsible for coordination with Port Authority and field crews, as well as overseeing all aspects of field inspection for 32 buildings with sizes of up to 200,000 square feet. Also responsible for writing and compiling condition survey reports and repair recommendations.

Port Authority of NY & NJ, JFK Airport Terminal Bridge Design, New York, NY. Structural Engineer responsible for design of all vertical geometry and superstructure and haunch tables for a ten-span airport terminal bridge and three approach ramps, each comprised of three or four simple spans (curved and straight) with steel beams framed into a steel cap girder and supported by a single concrete column on pile footings. Other responsibilities included engineering support during construction and shop drawing review for all steel fabrication and erection drawings, as well as for concrete abutments and footings.

NJ Department of Transportation, Route 7 Wittpenn Bridge over Hackensack River, Hudson County, NJ. Structural Engineer responsible for developing the Financial and Management plans for this bridge replacement project, as well as the Project Specifications for each of the four contracts. Project involves the preliminary design of a 9,500-foot long mid-level bridge carrying Route 7 across the Hackensack River between the Town of Kearny and the City of Jersey City, New Jersey to replace the existing Wittpenn Vertical Lift Bridge (one of the "Tri-Hack" Vertical Lift Bridges built on the Hackensack River in 1930) and approach viaducts on a north alignment.. The project features a vertical lift main span (believed to be the widest in the world) with east and west approach spans along the Route 7 Mainline, six curved ramps, approach roadway, and retaining walls. The 324-foot long by 110-foot wide main span features steel orthotropic box girder construction. The approach viaducts and curved ramps are of steel composite I-girder construction.

Maryland Department of Public Works and Transportation (Horizontal Engineering Contract No. S99-084), White House Road over Southwestern Branch Bridge Superstructure

Susan Bluni, PE
Structural Engineer

Replacement and Widening, Prince George's County, MD. Structural Engineer responsible for the QA/QC of superstructure and substructure design calculations of a new superstructure and widening. The superstructure replacement is a two-span pre-stressed concrete voided slab with a 6.5-inch, high-performance concrete deck with the capacity to support an HS-27 live load. The existing abutments and pier were raised and widened to support the new superstructure. The widened portion of the concrete abutments and pier are supported on monotube piles to match the existing substructure. Work also included modifications to the approach roadway, drainage improvements, and preparation of permit applications.

MTA Long Island Rail Road, Design for Year 2001 Bridges, Nassau County, NY. Structural Engineer/Team Leader. Served as a member of the inspection team for the inspection and design of various railroad bridges. The objective of the project was to ensure that the structures were in a state of good repair. Responsible for examining the structures for deterioration, paying special attention to bearings, deck waterproofing, drainage, corrosion in steel girders, corrosion of reinforcing bar, cracks in the abutments, and water leaks at the top of the abutments. After completion of the inspection of each bridge, proceeded to the design of the repairs and rehabilitation of the bridges. This entailed the review of inspection and investigation data, as well as the preparation of conceptual repair schemes, load rating calculation, and final designs.

MTA New York City Transit, Inspection of Special Transit Structures, New York, NY. As Structural Engineering, responsible for all coordination with New York City Transit for the in-depth inspection of three viaducts carrying NYC Transit subway lines: Culver Line Viaduct, Rockaway Line Viaduct, and Bridge over Ocean Parkway. Responsibilities included the in-depth inspection of the Culver Line Viaduct and the input of all field notes into a computer system specifically designed for this inspection.

NJ Transit, Penn Station Concourse Improvements, New York, NY. Structural Engineer. responsible for checking load calculations for the column study associated with the new East End Concourse in Penn Station, which will substantially improve the emergency evacuation of the station, as well as the overall quality of service for passengers. The design was developed in accordance with ADA accessibility guidelines as a "station within a station," containing the full complement of passenger services including ticketing, waiting rooms, rest rooms, information, security, and customer service.

Connecticut Department of Transportation, Stamford Station Improvements, Stamford, CT. Deputy Project Manager/Structural Engineer responsible for shop drawings and Requests for Information (RFIs) for this project, which included foundations, pedestrian overpasses, new platform pre-stressed beams, and canopy columns; construction support services, including field visits and inspections of ongoing work; the design of additional closure walls adjacent to the existing station building and the analysis of the existing building foundations that were damaged during construction; the design of a new pedestrian overpass which is an add-on to the original contract; the ongoing coordination with the project; and making revisions to the original contract, including the design of new pre-stressed platform beams, steel girders, canopy columns, new foundations, and maintenance and protection of traffic plans.

Nat Patel, PE
Civil/Structural/Utility Engineer

Education

- BS, Civil Engineering, 1966

Registration/Credentials

- Professional Engineer: [Ex.1]

Nat Patel has 42 years of experience in project planning, conceptual through final design; project economical evaluation; feasibility studies; site selection; civil/structural design, bridge design, bridge inspection; building inspection, VMS sign support design, construction staging; preparation of cost estimates; design coordination; design/drawings review; shop drawing review; construction inspection and preparation of construction scheduling; and specifications and bid documents. He has experience with hydraulic and erosion control studies, site development design, site grading, drainage design, utilities design, track design, roadway/pavement design, in-depth scour evaluation for bridges, and structural design/analysis of steel and concrete structures. He has participated in a wide variety of projects, including highways, bridges, tunnels, light rails, heavy rails, bus maintenance facilities, railroad car maintenance facilities, railroad stations, parking lots, substations, rail yards, pulp and paper mills, public buildings, industrial facilities, and power plant projects. Mr. Patel's expertise includes the bid proposal; state DCA review application, zoning change application, construction permit, soil erosion control permits, project's manpower projection, and quality/budget control/planning to meet the project deadlines and budgets.

Project Experience

Port Authority of NY & NJ, Facility Condition Survey, Newark Marine Terminal, Newark, NJ
Team Lead - Civil/Structural Inspector responsible for building and tower inspection and survey to determine the general condition of structures, identify any deficiencies, which might present potential safety hazards, verify the status of priority repairs that were recommended in previous reports, and develop recommendations for correcting deficiencies that were found. Mr. Patel developed and recommended a cost-saving method to repair wood columns and wood girders without any interface in operation.

NJ Department of Transportation, Route 7 Wittpenn Bridge over the Hackensack River Interim Priority Repairs Project, City of Jersey City and Town of Kearny, Hudson County, NJ. Senior Civil, Structural, and Drainage Engineer responsible for bridge deck/sidewalk repair, lifting span bridge framing repair, temporary jacking for counter weights, and replacement of sheave. Involved in field data collection, construction staging, preparation of construction/design documents for bridge deck and lifting span repair, review of design/drawing documents, and design coordination. Duties also include evaluating the existing roadway pavement, replacing lifting span ropes, repair of pier and pier cap, replacing bridge railing with safety fence, design stair cases for lifting tower, construction support, and shop drawing review.(2008-Present)

Conrail, National Docks Clearance Project, Enlarge Bergen Tunnel and Lower Tracks Under NJ TRANSIT Bridges, Jersey City, NJ. Team Lead Civil and Utility Engineer responsible for civil/utility design, drainage design, track design, project planning, feasibility studies, site selection, field data collection, field inspection, construction staging design, design coordination, construction documents preparation, design/drawing review, and all construction permit applications. Duties include evaluating existing underground utilities, design pump station structures, storm drainage design, track design, site grading, site clearing, soil erosion control

Nat Patel, PE
Civil/Structural/Utility Engineer

design, NJDEP/soil erosion control permits, and construction supports. The project involves screening/remediation, permitting (NJDEP, soil erosion control), track design, hydraulics (compliance with stormwater management rules), pump station, ditch lining, stone rip rap, rock bed cutting for lowering track profiles, and protection of high-voltage electrical duct system. (2008-Present)

NJ Department of Transportation, Route 36 Highlands Bridge over the Route 36 Shrewsbury River, City of Highlands, Monmouth County, NJ. Senior Highway and Drainage Engineer responsible for roadway/drainage design, field data collection, construction staging design, design coordination, preparing construction documents, and design/drawing review. Duties included evaluating the existing roadway, pavement design, soil erosion control design review, and traffic control design review for the bridge/highway project.

Conrail, North Jersey Terminal Capacity Improvement Infrastructure Project, Newark, NJ. Lead Civil/Structural and Utility Engineer responsible for civil/utility design, drainage design, track design, project planning, feasibility studies, site selection, field data collection, field inspection, construction staging design, design coordination, construction document preparation, design/drawing review, and all construction permit applications. Duties included evaluating existing bridge structures, designing new railroad bridge structures, utility relocation, storm drainage design, track design, site grading, site clearing, soil erosion control design, and soil erosion/NJDEP permits. The project involved wetlands, hazardous screening/remediation, permitting (USACOE and NJDEP), track design realignment and new (10.5 miles of double tracking on Main Line track and over five miles of double tracking within the Oak Island Yard Complex and Chemical Coast), signal design, hydraulics (compliance with the new stormwater regulations), nine grade crossings, mechanical for yard air, electrical for new service feeds, and lighting.

CSX, Preliminary Engineering Wye Track Connector Project, NJ. Lead Civil and Utility Engineer responsible for preliminary design, civil and drainage design, design of track alignments for sidings and yard tracks, identification of existing utilities, structural evaluation of existing bridge for E80 loading, field inspection, and prepare preliminary cost estimate for the project.

NYC Transit Authority, Reconstruction of Stillwell Avenue Terminal Station, Brooklyn, NY Lead Structural Engineer responsible for the structural design of this circa-1915 historical elevated station terminal shed, as part of the reconstruction and revitalization of Stillwell terminal and arcade. Duties included project planning, coordination, supervision, checking, analysis, design, and preparation of contract documents within time frame and budget. This project encompassed a number of different elements and historical development – elevated station platforms, arch modular shed, historical preservation, shed lighting, and roof gantry. Jacobs' team designed a unique photovoltaic panel roofing shed in four months to meet the very tight schedule. Jacobs integrated all these different elements to provide a universal architectural/structural design that appealed to the Coney Island community and also enhanced NYCTA's image.

Satish N. Patel, PE
Structural Engineer

Education

- MS, Civil Engineering (Structures), 2000
- BS, Civil Engineering, 1997

Registration/Credentials

- Professional Engineer:

[Ex.1]

Satish Patel has experience in structural analysis and design of bridges, stations, and other infrastructure. He possesses a strong technical background in structural theory and behavior and has also gained valuable practical experience in construction engineering. In addition, Mr. Patel has completed a three-year intensive research study on the rehabilitation of non-ductile reinforced concrete columns using carbon fiber reinforced polymer jackets. He has gained a working knowledge of various codes, such as American Railway Engineering Association Manual (AREA), AISC Manual of Steel Construction, ACI318, AASHTO LRFD, Indian Roads Congress (IRC), PennDOT Design Manuals, and has utilized various structural (STAAD, GT Strudl, ADAPT, RC Pier, PCA-COL) programs and CADD software (Microstation-J, AutoCAD).

Project Experience

NJ TRANSIT, Penn Station New York, 31st Street Entrance Design for the 7th Avenue Concourse, New York, NY. Project Manager for a street-level entrance building at Penn Station New York. This project involved providing structural, architectural, electrical, and mechanical engineering design and construction phase services for a 110-foot long, street-level entrance building utilizing curved roof trusses, which leads passengers to the recently completed 7th Avenue Concourse below street level. The project entailed extremely complex structural framing and constructability issues as a result of having to incorporate the design of the proposed entrance building in an area where existing framing is still in use for major projects completed in 1906, 1964, 1994, and 2002. Close and regular coordination between major stakeholders, such as Amtrak, and private developers, such as Vornado, was required to get resolution of supports and to address the issues regarding the integration of the new project with the existing conditions.

New Jersey Department of Transportation, Route 36 Highlands Bridge over the Shrewsbury River, Highland, NJ. Bridge Engineer. Project involves the preliminary and final design of a fixed bridge to replace on-line a 1,240-ft long low-level double leaf bascule bridge. The new bridge features twin precast segmental concrete box girder structures (mainline and curved exit and entrance ramps) designed to be built by the balanced cantilever method. During final design, involved in various design tasks and development of design drawings such as the following: Overhead and Cantilever Sign Structures, Expansion Joints, Balanced Cantilever Erection Sequence drawings, Foundation Layout drawings, Post-Tensioning Layout drawings, Quantities and Rebar list development for various elements. Also responsible for checking the longitudinal model for flexural and shear analysis and design utilizing the computer program, ADAPT. Coordinated development of the Preliminary and Final Design submittals which involved developing cost estimates using NJDOT spreadsheets and standard programs, developing list of pay items both standard and non-standard, coordinating efforts of drawings for various disciplines.

New Jersey Department of Transportation, Route 7 - Wittpenn Bridge over the Hackensack River, Kearny, NJ. Bridge Engineer. Project involves the preliminary design of a 9,500-ft long mid-level bridge carrying Route 7 across the Hackensack River between the Town of Kearny and

Satish N. Patel, PE
Structural Engineer

the City of Jersey City, NJ to replace the existing Wittpenn Vertical Lift Bridge (one of the "Tri-Hack" Vertical Lift Bridges built on the Hackensack River in 1930) and approach viaducts on a north alignment.. The project features a vertical lift main span (believed to be the widest in the world) with east and west approach spans along the Route 7 Mainline, six curved ramps, approach roadway and retaining walls. Responsibilities included providing structural engineering services for the Bridge Design Study report, specifically developing various concrete alternate superstructure cross-sections for the approach spans (such as prestressed concrete I-girder both regular and post-tensioned splice and prestressed concrete box girders) and estimating quantities and cost. Completed preliminary design of the lift span steel box girder and developed a procedure for approach span piers by the completing the analysis/design of a typical approach continuous span unit.

MTA Long Island Rail Road, Long Island Rail Road 2001 Bridges, New York, NY. Structural Engineer responsible for the development of load ratings for eight railroad bridges. Utilized current inspection reports of these seventy-year-old bridges, which consisted up built-up steel plate girder superstructures, and created a spreadsheet program to perform structural analysis and compute load ratings for a typical through girder railroad bridge. Assisted in the retrofit design of the existing railroad bridges in order to meet current AREA standard for railroad bridge ratings.

MTA NYC Transit, Reconstruction of Stillwell Avenue Terminal, Brooklyn, NY. Structural Engineer. Provided engineering services for the design of a modular train shed structure, which included a modular steel truss and cladding system design, and Building Integrated Photovoltaic panel system, which will supplement and/or replace electrical power from the utility at the terminal. Responsibilities included review of existing design and verification of truss and column layout geometry, evaluation of loading based on code requirements and the functional requirements of the overall design and project phasing, revision and updates to the STAAD computer model as required, completion of structural calculations, coordination with NYC Transit engineering for attachment to the platform structure, and structural detailing utilizing Microstation SE. Computer modeling and analysis of the platform structure on which the modular train shed is supported.

NJ TRANSIT, Highland Avenue Station – Pedestrian Tunnel Structural Survey and Design - Task Order Contract, Orange, NJ. Project Manager for the inspection, design, and rehabilitation contract document development for the Highland Avenue Station Pedestrian Tunnel. The station consists of an accessible upper tunnel used by NJ TRANSIT passengers and an abandoned lower tunnel, which connects the eastbound and westbound platforms of the station. Because of the severe deterioration of key structural members in the tunnel, a jump span shoring system is required to support the track and train loads while work is staged to complete the concrete repairs to the tunnel. Drainage is also a major issue to the project as flow patterns are difficult to assess because of the existing conditions of the lower tunnel and adjacent station area. Lighting was upgraded to meet current NJ TRANSIT illumination standards. Repair plans included structural, drainage, electrical, and aesthetic repairs in keeping with the historic character of the tunnels. Maintenance of pedestrian and train traffic has been included in the contract documents in addition to staging of work to coordinate with track outages.

Omar K. Raheem, PE
Civil Engineer

Education

- MS, Civil Engineering, 1971
- BS, Civil Engineering, 1966

Registration/Credentials

- Professional Engineer: [Ex.1]

Omar Raheem is a Senior Project Manager experienced in civil engineering design and construction, geotechnical and foundation engineering, site engineering, and project management for a variety of transportation and building facilities. He is also experienced in performing project management and design services on a task order basis; interfacing with various railroad departments, outside agencies, and utilities; and managing project scope, budgets, and schedules. Mr. Raheem also serves as the Quality Assurance Manager; in this role, he assists and audits project managers in formulating comprehensive Quality Assurance/Quality Control (QA/QC) programs for their respective projects. He was also instrumental in preparing numerous proposals and qualifications for the New York office.

Project Experience

Port Authority of New York & New Jersey, Rehabilitation of Pier Buildings 9B and 11 at Red Hook Marine Terminal, Brooklyn, NY– Quality Assurance Manager. Project involved structural, architectural, mechanical, electrical, and environmental services related to the rehabilitation of shed buildings of Pier 9B and 11. The sheds are one-story buildings, approximately 175,000 square feet each, which are used for temporary storage of cargo unloaded from ships. The rehabilitation included removal and replacement of exterior siding; repair of overhead doors; new fire protection system, and asbestos/lead-based paint abatement. Services included condition inspection, conceptual through final design, contract specifications, cost estimating and scheduling, shop drawing review, and construction support.

Port Authority of New York & New Jersey, Condition Surveys of Building Facilities on a "Call-In" Basis, 1990 through 1995, Various Locations - Quality Assurance Manager. Reviewed all quality assurance procedures and checked for compliance with such procedures for the condition survey of buildings at John F. Kennedy, LaGuardia, Newark, and Teterboro Airports.

MTA Long Island Rail Road, Jamaica Central Control Building Interior Fit-Out, Jamaica, NY. Project Manager responsible for the design and construction phase services of 6 task order projects for the interior fit-out for the eight-story, 200,000-SF control center. This Center will house LIRR employees and a control center to replace 3 existing interlocking towers. The Port Authority of NY & NJ designed the building shell. Work includes space planning; architectural design; fire protection; mechanical and electrical engineering; theater ergonomics; and coordination with two government agencies. The design work entails finishes for floors, walls, and ceilings, as well as space allocation/programming. On the north portion of the building, 3 floors are to be occupied by the MTA police. Jacobs is providing the interior fit-out design and construction phase services for this facility. Extensive coordination meetings were carried out with the MTA police to ensure that state of the art holding cells and other police facilities are incorporated into the design.

MTA Long Island Rail Road, Rehabilitation of Ten Passenger Stations, Nassau County, NY. Project Manager/Quality Assurance Manager responsible for the rehabilitation design services for ten passenger stations. Design services include architectural, civil, structural, mechanical, and electrical disciplines. A condition inspection of all ten stations was performed to determine the needed rehabilitation work, such as repair/replacement of buildings, platforms, waiting rooms, stairs, overpasses, public address system, smoke alarms, lighting, and air conditioning system. The

Omar K. Raheem, PE
Civil Engineer

projects entailed coordination with agencies such as the LIRR, LIPA, and Nassau and Suffolk Counties utility authorities. The stations also required infrastructure improvements to parking lots, retaining walls, drainage and sidewalks, as well as handicapped accessibility, lighting improvements, landscaping, and the improvement of traffic flows.

MTA Long Island Rail Road, General Engineering Consultant Services for Employee Facilities and Line Structures, Long Island, NY. Project Manager responsible for five task order design contracts consisting of: a 500-foot-long sheet pile retaining wall on the railroad embankment; a 370-foot-long precast concrete gravity wall at Jamaica Station; a 7,000-sf engine simulator training facility at Holban Yards; a 9,000-sf employee facility at Babylon Yard; 9,000-SF employee facility at the LIRR Garden City site.

MTA Long Island Rail Road, Main Line Electrification and Main Line/Port Jefferson Line Station Improvements, Nassau and Suffolk Counties, NY. Assistant Project Manager responsible for the final design for 15 passenger stations, an employee facility, and 20 new electrical substations and high level platforms. Design included elevators, platform lighting, signage, public address and communication systems, pedestrian overpasses, canopy roofs, stairs, windscreens, grading, drainage, plumbing, and heating, ventilation, and air conditioning.

MTA New York City Transit, Print Shop and Distribution Center, Brooklyn, NY. Project Manager responsible for the design services for a 40,000 square foot print shop and distribution center. The cramped existing print shop was replaced by an existing building which was renovated. Jacobs prepared engineering drawings and specifications, which were released to the low bid contractor. Design services include architectural, civil, structural, mechanical, and electrical disciplines, as well as surveying, cost estimating, construction schedule and constructability reviews. A condition inspection of the building was performed to determine the needed rehabilitation work.

MTA New York City Transit, Condition Inspection of Stations, New York, NY. Assistant Project Manager responsible for overseeing the inspection of structural components for approximately 200 transit stations throughout New York City. Stations that were determined to have a lower than desired factor of safety underwent a more detailed inspection, including field-testing. Inspection was carried out using state-of-the-art hand-held data collectors. Initial and in-depth reports detailing all repair guidelines and recommendations for each station, together with a User Manual for use by the Transit Authority, were prepared for this project.

NJ Transit, Cherry Hill Station, Cherry Hill, NJ. Project Manager responsible for the design and construction phase services of a new transit station. Project included design of three "all glass" type waiting shelters, platform, parking lots, access roads, and a bus stop. The site infrastructure improvement included parking lots, drainage, sidewalks, handicapped accessibility, site lighting, landscaping, and improving the existing traffic flow.

MTA New York City Transit, Stillwell Avenue Terminal-Modular Shed-Construction Phase Services, Brooklyn, NY. Project Manager responsible for the review of shop drawings and responding to RFI's for a renovated station, utilizing state-of-the- art photovoltaic roof elements. The design was carried out by Jacobs. Work entailed attending weekly construction site meetings, assisting the client in the review of contractor originated change orders, site visits to resolve construction problems and coordinating the work of various trades.

Christina Krasanakis
Civil Engineer

Education

- BS, Civil Engineering 2002

Christina Krasanakis has over eight years of experience as a civil engineer with experience on station and facility rehabilitations, design of highway bridges and railroads, and soil, track safety and in-depth structural integrity inspections. Her expertise includes design of steel and concrete structures and structural analysis. She is proficient in AutoCAD and Microstation.

Project Experience

Port Authority of NY & NJ, One-Call System, New York/New Jersey. Daily monitoring of approximately 14,000 "One-Call" notices received annually for geographic proximity and relevance to Port Authority facilities. All "One-Call" tickets were received thru Digtrack software and thoroughly reviewed on the basis of the type of work done as well as the work location. Contractors, Resident Engineers and facility staff of construction related "One-Call" notices were sent notification of any Port Authority facilities affected by work done throughout the area. Details of work done were added to the "One-Call" report, after Port Authority utilities had been marked. Each report sent via Digtrack was logged into the Master Utility Database and organized in accordance to different criteria for straightforward tracking capability of past reports.

Port Authority of NY & NJ, Marine Terminal, Brooklyn and Staten Island, NY. Civil Engineer for the inspection of the Brooklyn, Red Hook and Howland Hook Marine Terminals. Overall work included Priority, Safety and Routine repairs to preserve existing buildings and pier sheds.

Port Authority of NY & NJ, Bus Terminal, New York, NY. Traffic/Civil Engineer for the 3rd – 7th floors of the Bus Terminal. Civil Work included Priority Structural Repairs to preserve the existing structures. Other work included maintenance of traffic while repairs were accomplished.

Conrail, Terminal Capacity Improvements, NJ. Civil Engineer for the North Jersey terminal capacity improvement infrastructure projects at Conrail. Overall work included track safety inspection of utility relocation for the overall addition of proposed tracks at various locations of Conrail.

New Jersey Department of Transportation, Route 7 Wittpenn Bridge, Jersey City and Kearny, NJ. Civil Engineer for the inspection of soil borings performed before the construction of the Wittpenn Bridge. Inspection included split spoon sampling, vein shear tests and undisturbed tube sampling.

MTA Long Island Rail Road, Jamaica Central Control Building, Jamaica, Queens. Civil Engineer for interior fit out design of Central Control Building. Overall design included civil, mechanical (HVAC, plumbing, fire protection) and electrical disciplines. Work included design for floor and ceiling layout as well as maintenance of specifications and production of AutoCAD files in each discipline.

MTA Long Island Rail Road, Murray Hill Station Rehabilitation, Queens, NY. Civil Engineer for rehabilitation of commuter rail station. Civil design work included design for new pavement, site grading, curb cuts, and site utilities, such as electrical and storm drainage systems.

Christina Krasanakis
Civil Engineer

MTA Long Island Rail Road, Garden City Employee Facility, Garden City, NY. Civil Engineer for the design of a 10,000-square-foot employee facility and the development of a three-acre site. Overall design included civil, mechanical (HVAC, plumbing, fire protection), structural, and architectural disciplines. The building area houses LIRR Signal Department shops, offices, and locker rooms, and a lunch/assembly area. It was designed to optimize lighting and ventilation for the assembly of electronics and signal relay components. The building was designed to the standards for green buildings as required by the State of New York.

New York City Transit, BMT Stillwell Avenue Terminal, Final Design New Modular Train Shed, Brooklyn, NY. Civil Engineer for the design of this $30 million, 75,000 square foot shed spanning four platforms and eight tracks at Coney Island's Stillwell Avenue Terminal. The shed design incorporated a glazed photovoltaic panel skylight system, which provides up to 210 kW of power to the facility, and is supported on a framework of arched steel trusses. T

Charles Pace, LEED®AP
Civil Engineer

Education

- BS, Geological Science, 2006

Registration/Credentials

- LEED Accredited Professional

Charles Pace is responsible for design and development of site/civil projects. Mr. Pace has served as Project Engineer in the design efforts on numerous projects on the East Coast and in the Mid West.

Project Experience

Port Authority of NY & NJ, Civil Engineering and Civil (Rail) Call-In Contracts (2008), NY and NJ. Project Engineer for this ongoing Civil Engineering task order agreement. The following projects are a representative sample of his assignments completed or currently under way for the Port Authority:

- **John F. Kennedy International Airport, North Boundary Road Pavement Rehabilitation.** Project Engineer responsible for conducting the Stage I effort to evaluate the existing conditions of North Boundary Road and providing recommendations as to the necessary rehabilitation to extend its service life. Reviewed findings and prepared recommendations and quantities necessary for the repaving of North Boundary Road.
- **Stewart International Airport Runway Incursion Mitigation Study.** Project Engineer responsible for the Stage I effort to evaluate the existing conditions and improve the maneuverability and load bearing capabilities of the perimeter roadway at Stewart International Airport. This project included roadway, drainage, and pavement design in order to improve the road and allow it to be used by a fully loaded fuel truck. The recommendations provided will improve the usefulness and increase the service life of the roadway.
- **Harrison PATH Station Replacement.** Project Engineer providing site civil design for the construction of four new head houses, plaza areas, and bus turnouts at the Harrison Path Station. The design will include grading, drainage and utility improvements as well as storm water management and roadway improvements.
- **LaGuardia Airport, Storm Drainage Rehabilitation/Master Utility Study.** Project Engineer assisting with the Stage III review of sewer video inspections at LGA. This project will provide the PA recommendations for rehabilitation and upgrading of the storm sewer system through out the airport and surrounding infrastructure.

State University Construction Fund, SUNY Plattsburgh, Roads and Parking, Plattsburgh, NY. Project engineer responsible for preparing site design drawings for the concept, schematic, design manual and pre-bid phases. Responsibilities include: site layout, roadway design, creation of roadway profiles, design of site grading, drainage, stormwater management facilities, and utilities. Mr. Pace oversaw the field collection of pavement cores and conducted a visual survey of the pavement. He prepared a program verification report in accordance with SUCF Design Directives.

State University Construction Fund, SUNY College of Environmental Science and Forestry, Bray Hall, Syracuse, NY. Project Engineer responsible for preparing site design drawings for the schematic, design manual and pre-bid phases. Responsibilities include: site layout, roadway design, creation of roadway profiles, and design of site grading, drainage, stormwater management facilities, and utilities, as well as construction cost estimating in accordance with SUCF Design Directives.

Charles Pace, LEED®AP
Civil Engineer

MTA Metro-North Railroad, Cortlandt Station Parking, Intermodal and Access Improvements, Cortlandt, NY. Civil Engineer involved with the design of a new parking and intermodal facility at Cortlandt Station. The design will include a new pedestrian overpass, plaza area and 400 car parking expansion. He is supporting the design effort for the grading, drainage and storm water management design for the project.

MTA Metro-North Railroad, 10 New Traction Power Substations on the Upper Harlem Line, Upper Harlem, NY. Civil Engineer involved with the design of 10 new traction power substations on Metro-North's Upper Harlem Line. Mr. Pace is responsible for the grading, drainage and access road design for the project.

New York City School Construction Authority, Public School 18 and 25, Bronx, NY. Civil Engineer responsible for performing site evaluations at both PS-18 and PS-25 in the Bronx New York and developed a detailed scope report outlining existing conditions and necessary upgrades to the schools paved areas, sidewalks, entranceways, stairs, drainage and retaining walls.

New York City School Construction Authority. Flushing High School, Flushing, NY. Project Engineer assisted with the development of a detailed scope report outlining existing conditions and necessary upgrades to the entrance and plaza area, tennis courts, handball courts, synthetic turf athletic field, sidewalks, fences, drainage and retaining walls. This is one of the largest synthetic turf applications in the New York City Area with over 7 acres encompassing three fields, several courts, field hose and plaza area. Upon acceptance of the Scope Report, Mr. Pace will prepare design documents for the proposed improvements and provide bid and construction support services.

U. S. Army Corps of Engineers, Army Research Laboratory at Aberdeen Proving Grounds, Aberdeen, MD. Project Engineer involved with the design of a new vehicle testing facility at Aberdeen Proving Grounds. The design includes a new research building, truck loading area, access road, parking lot and service yard. Assisted with the facilitation of the survey and geotechnical work as well as permit expeditors and other sub-consultants involved in the site design. Assisting in the roadway and parking lot design, as well as grading, drainage, utility, storm water detention basin and erosion and sediment control design for the project. In addition to civil design Mr. Pace is responsible supporting the efforts to obtain utility, stormwater and erosion control permits as well as coordination and permitting for the relocation of a high pressure gas main.

MTA Long Island Rail Road, Babylon Yard Expansion, Babylon, NY. Project Engineer preparing site design drawings for the redesign of the Babylon Yard employee parking lot in Babylon, NY. With the addition and realignment of track within the Yard station, employee parking was dramatically reduced. Responsibilities included field measurements of existing facilities located within the lot and providing site drawings of various proposed parking configurations which would best suit the client's needs.

Terrence J. Ro, EIT
Civil Engineer

Education

- BS, Civil Engineering, 2001

Registration/Credentials

- Engineer-in-Training: NJ

Terrence Ro is responsible for project design, development and management of site/civil and highway projects, and contract documents. He is thoroughly versed in AutoCAD and other engineering software applications.

Project Experience

Port Authority of New York & New Jersey, Civil Engineering "Call-In" during 2008. Mr. Ro is Project Engineer on the following task assignments:

- **LaGuardia Airport:** Project engineer preparing inspection reports to improve the existing storm sewer systems at LaGuardia Airport. Responsibilities included analyzing and providing recommended pipe repair/remediation solutions.
- **JFK Airport – North Boundary Road.** Project engineer preparing inspection report for existing pavement conditions at JFK Airport along North Boundary Road. Due to being a major employee truck and vehicular access route, North Boundary Road has been in need of various forms of repair. Responsibilities included field inspections of existing pavement conditions and providing recommended pavement repair/remediation solutions.
- **Stewart International Airport Runway Incursion Mitigation Study.** Project Engineer assisting in the Stage I effort to evaluate the existing conditions and improve the maneuverability and load bearing capabilities of the perimeter roadway at Stewart International Airport. This project included roadway, drainage, and pavement design in order to improve the road and allow it to be used by a fully loaded fuel truck. The recommendations provided will improve the usefulness and increase the service life of the roadway.
- **LaGuardia Airport – Storm Drainage Rehabilitation / Master Utility Study:** Project Engineer for the Stage III review of sewer video inspections at LGA. This project will provide the PA recommendations for rehabilitation and upgrading of the storm sewer system through out the airport and surrounding infra-structure. This task is a follow up to a master utility study also prepared by Jacobs. A hydraulic analysis of the airport storm sewer system evaluated the available capacities as compared to the expected design flows, and deficiencies were identified. We are currently working with the PA to combine the recommendations of both studies into a comprehensive long term rehabilitation plan.

New York State Department of Transportation, Long Island Expressway, North Hills, NY. Project Engineer responsible for preparing site design drawings for the decommissioning of an existing Cingular cellular tower located along the Long Island Expressway in North Hills, NY. Key aspects within the project included the removal of the existing tower and associated facilities without disrupting existing utility services and remediation of the site. Responsibilities included site layout, site grading, drainage, and utilities designs.

MTA Long Island Railroad, Babylon Yard Expansion, Babylon, NY. Project Engineer preparing site design drawings for the redesign of the Babylon Yard employee parking lot in Babylon, NY. With the addition and realignment of track within the Yard station, employee parking was dramatically reduced. Responsibilities included field measurements of existing facilities located within the lot and providing site drawings of various proposed parking configurations which would best suit the client's needs.

Terrence J. Ro, EIT
Civil Engineer

MTA, Metro-North Railroad, Cortlandt Station Parking, Intermodal and Access Improvements, Cortlandt, NY. Project Engineer for lead civil discipline preparing site design drawings for an existing station building expansion with the addition of 700+ parking spaces. The Cortlandt Station expansion also required the acquisition of adjacent real estate parcels and easements. Responsibilities included coordination with all design disciplines and site layout, roadway design, site grading, drainage, stormwater management facilities, utilities and lighting designs.

Battery Park City Authority, Battery Park City, NY (2007-2008). Project Engineer preparing site design drawings for the restoration and/or replacement of over 100 tree pit hoop rail systems within the Battery Park City jurisdictional area. Responsibilities included design coordination with the subcontractor and providing hoop rail fabrication specifications and installation details.

State University Construction Fund, SUNY College of Environmental Science and Forestry, Bray Hall, Syracuse, NY. Project Engineer responsible for preparing site design drawings for the schematic, design manual and pre-bid phases. Responsibilities include: site layout, roadway design, creation of roadway profiles, and design of site grading, drainage, stormwater management facilities, and utilities.

State University Construction Fund, SUNY Plattsburgh, Roads and Parking, Plattsburgh, NY. Project Engineer responsible for preparing site design drawings for the concept, schematic, design manual and pre-bid phases. Responsibilities include: site layout, roadway design, creation of roadway profiles, design of site grading, drainage, stormwater management facilities, and utilities.

State University Construction Fund, SUNY Albany Administration Building, Albany, NY. Project Engineer responsible for preparing site design drawings concept, schematic, design manual, and pre-bid phases. Responsibilities include: site layout with involvement of SUCF, mechanical engineer, and landscape architect.

State University Construction Fund, SUNY Canton, Canton, NY. Project Engineer responsible for preparing site design drawings for the design phase. Responsibilities included site layout, roadway design, design of site grading, drainage and utilities.

State University Construction Fund, SUNY College of Technology at Canton, Replace Electrical Substation and Perform Load Study, Emergency Power Study. Canton, NY. Project Engineer responsible for preparing site design drawings for the design phase. Responsibilities included site layout, roadway design, design of site grading, drainage and utilities for the design of the new switchgear building and substation.

Princeton Redevelopment, Mixed-Use Development, Princeton, NJ. Project Engineer responsible for preparing site design drawings. Including site layout, roadway design, design of site grading, drainage and utilities. Also responsible for the review of submittals, RFIs and the resolution of field and design issues with field contractors and architects.

Jason M. Rocco
Civil Engineer

Education

- BS, Civil Engineering 1997

Jason Rocco is a Civil Engineer experienced in developing plans and producing contract documents for various roadway construction and site development projects. He has also worked on a variety of projects in traffic engineering, railroad engineering, and has field experience dealing with water and sewer line installations.

Project Experience

Port Authority of NY & NJ, Civil Engineering Call-In Agreement, NY and NJ. Engineer involved in several different site rehabilitation and roadway design projects at LaGuardia International Airport, John F. Kennedy International Airport, and Newark International Airport. Responsibilities included drainage design, utility layout designs, and construction cost estimating

NYC Economic Development Corporation, Linden Place Reconstruction, Queens, NY. Project Engineer for the preliminary and final designs for the reconstruction of city streets in College Point. The project called for settlement mitigation design that would also raise the existing roadway profile by approximately 5 to 7 feet to bring it into conformance with legal grade. The project's preliminary design phase included the preparation of a preliminary design investigation report, including schematic design and reconstruction recommendations. The project's final design included subsurface investigations, geotechnical analysis and pavement design. Final plans, specifications and estimates have been developed as per recommendations approved during the preliminary design phase. Reconstruction of this project will consist of a surcharge construction stage and a final roadway construction stage.

MTA Metro-North Railroad, 10 Substations, Upper Harlem Line, Valhalla to Brewster, NY. Civil engineer involved with the site design and plan preparation related to the substation installations. Jacobs was contracted to design the plans for these substations.

MTA Metro-North Railroad, Harmon Shop Replacement Phase III, Croton-on-Hudson, New York, NY. Project Engineer for the preparation of the site and utility design plans for the largest engineering and construction project ever awarded by Metro-North Railroad. Jacobs performed all site work on the $282 million project including a 65,000 sf Locomotive shop, a 110,000 sf Coach Shop, 15 new tracks, new K-9 grounds for MTA police dogs, and design of drainage, utilities, communications systems, power, lighting, snow melter, and traction power systems. All elements of the 20-acre site were designed in an active rail yard.

MTA Metro-North Railroad, Beacon Station, Beacon, NY. Compiled the quality control review for the project's quantity cost estimate for embankment cut and fill, drainage, utility, and site design items.

NYC Economic Development Corporation, 132nd Street Construction, Queens, NY. Project Engineer for the preliminary and final designs for the construction of a new city street in the College Point section of Queens. The project's preliminary design phase involves the preparation of environmental studies, traffic analysis and preliminary design investigation report, including schematic design and recommendations. The project's final design includes subsurface investigations, geotechnical analysis and pavement design. Final plans, specifications and estimates are being developed as per recommendations approved during the preliminary design

Jason M. Rocco
Civil Engineer

phase. Construction of this project will consists of a stage for surcharging and a final stage for the actual new roadway construction.

MTA Bridges and Tunnels, 2003 As-Needed Design Services, De-Icing Material Storage Facility at the Triborough Bridge, Randall's Island, NY. Engineer responsible for the development of civil-site design elements in connection with the construction of a de-icing facility for TBTA. Developed the project's demolition plans, maintenance and protection of traffic plans, construction plans, grading plans, general site plans and miscellaneous structural and architectural plans and details. Contributed to the preparation of the project's specifications, engineer's estimates and bid sheets as well as provided construction administration and support services during the project's construction phase. The facility was established beneath and within the confines of the Triborough Bridge's peripheral and mainline bridge ramps and was to facilitate the delivery, distribution and storage of de-icing materials.

NYC Economic Development Corporation, 28th Avenue Reconstruction, Queens, NY. Project Engineer responsible for the preliminary and final designs for the reconstruction of a city street in College Point. The project called for a feasibility study of construction methods to mitigate the settlement of an existing city street that is adjacent to a $70 million public transportation facility. The project's preliminary design included subsurface investigations, geotechnical analysis report, reconstruction feasibility studies and pavement design. The project's final design was advanced as per the feasibility study's recommendations approved during the project's preliminary design.

U. S. Army, Bridgeview Inn Transient Lodging Facility, Fort Hamilton Army Post, Brooklyn, NY. Engineer responsible for the development of site civil designs in connection with the construction of a new multi-story building. Mr. Rocco was responsible for the preparation of general site demolition and construction plans, grading and drainage plans, and miscellaneous details and specifications.

NYS Dept. of Transportation, Route 347, Suffolk County, NY. Engineer responsible for the preliminary designs for 15 miles of a major highway reconstruction project. Duties included field investigations, photographic log preparation, and schematic plan design for public information meetings. Mr. Rocco furthered the initial schematic plans to include vertical and horizontal alignments during the final design stage utilizing Bentley's InRoads roadway design modeling software.

Karen Regan
Project Coordinator - Civil

Education

– Civil Engineering, 1981

Karen Regan has over twenty years of experience providing clerical support role since joining Jacobs in 1985. She is skilled in the use of various software packages including MicroSoft Word, MicroSoft Excel, and Primavera software. She is also familiar with the various formats and styles of layout the firm employs in the preparation of contract documents and plans, specifications and cost estimates.

Project Experience

NJSEA, Meadowlands Railroad and Roadway Improvement Project, East Rutherford, NJ. Project Coordinator responsible for management of contract documents including creating and maintaining logs for shop drawings, RFIs, and UCRs; processing shop drawings; updating project schedules and cost estimates; and coordinating contract submissions. Additional responsibilities include preparation and distribution of meeting agendas and minutes, and assistance with invoicing and progress reports. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The design for this $150 million rail project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications and a new station.

NJDOT, Route 21 TSM6 #1, 2 and 3 Construction Services, Newark, NJ. Project Coordinator responsible for management of contract documents including creating and maintaining logs for shop drawings, RFIs, and UCRs; processing shop drawings; preparing and updating project schedules and cost estimates; project filing, and coordinating quantities for contract submissions including Addenda and COPs. Additional responsibilities included assisting Project Manager with invoicing, progress reports, preparation of consultant agreement modification and addendum requests, and general correspondence with the client. The improvements primarily include the introduction of auxiliary lanes in addition to three lanes for through traffic for the 2.1-mile long project. Preparation of construction plans, specifications and estimates included design of horizontal and vertical geometry, traffic signals, pavement marking, signing, ITS design, ROW and access acquisition, and design of a replacement for the existing railroad bridge across Route 21.

NJ Dept. of Transportation, Rt. 28 at Westfield Circle FD, Westfield, NJ. Project Coordinator responsible for preparation of final cost estimate in CPS format, construction schedule, and coordination of quantities for final plan submission. This project involved a historic district, parklands and several "context sensitive" design provisions including streetscaping, ornamental lighting, paved walkways and landscaping, as requested by the Department and local officials. Access resolution is a key element of this project with unique problems involving access to emergency services being effectively addressed by the JEK/NJDOT team.

NJ Turnpike Authority, Interchange 11 Branch Toll Plaza, Woodbridge, NJ. Ms. Regan provided clerical support for the final design of the first "branch toll plaza" on the New Jersey Turnpike. This plaza or "host lane" which feeds the two-lane branch plaza approximately 250 feet beyond the mainline barrier plaza. This project includes development of unique booth details to house automatic ticket machines, a new canopy design to accommodate booth HVAC systems and staged construction under heavy traffic conditions at the busiest toll plaza on the Turnpike.

Michael Goldemberg, AICP
Senior Planner

Education

- MUP, Urban Planning, 2005
- BA, Political Science 1999

Registration/Credentials

- American Institute of Certified Planners

Michael Goldemberg is a Senior Planner with experience in the preparation of environmental analyses in coordination with all levels of government. Mr. Goldemberg's work includes numerous Environmental Impact Statements, Environmental Assessment Statements, Environmental Impact Analysis Reports and Environmental Assessment Forms within the context of NEPA, SEQR and CEQR for both public and private clients. He has been responsible for the comprehensive analyses of a project's impact to land use, zoning, public policy, socioeconomics, infrastructure, natural resources, historic and cultural resources, neighborhood character, urban design, and open space resources. He has also incorporated ArcView version 9.2 into projects for spatial analysis and mapping purposes.

Project Experience

NYS Dept. of Transportation, Route 347 NEPA EIS; Northern State Parkway to Route 25A, Suffolk County, NY. Planner involved with the preparation of a NEPA EIS (Draft and Final) to examine impacts associated with improvements to the Route 347 corridor, which spans approximately 15 miles. Prepared the following sections: Section 4(f) evaluation, parks, impacts of regional and local economies, highway-related businesses and business districts, relocation impacts. Assisted with public involvement activities including the preparation of brochures and presentations for open forum and elected officials meetings. Key concerns included wetlands, air and noise analysis, traffic studies including capacity and accident analysis, parklands and private property acquisition and business displacement. NEPA Record of Decision issued in August 2007.

GSA, Lease-Construction Project EAs, Jersey City, NJ. Preparation of NEPA Environmental Assessment. This study formally documented two locations under consideration for a lease-construction project for a Social Security Administration district office in Jersey City, NJ. This study included the preparation of two individual EAs to address the environmental impacts associated with each location. In addition to preparing all technical documentation, Mr. Goldemberg generated all GIS graphics.

Dormitory Authority of the State of New York, New Residence Hall SUNY Institute of Technology at Utica-Rome, Marcy, NY. Preparation of SEQR EAF and Supplemental Report to assess potential environmental impacts related to the construction of a new residence hall and associated parking on the SUNYIT campus. This new residence hall will alleviate a projected on-campus housing shortages as well as address an anticipated increase in freshman student enrollment over the next several years. Mr. Goldemberg was responsible for documenting existing conditions, mapping, and identifying potential impacts of the proposed project as related to all the impact areas generally addressed in an environmental review.

GSA, Designation as Restricted Use Streets Two Locations in Lower Manhattan EAS and Supplemental Report, New York, NY. Preparation of Environmental Assessment Statement and Supplemental Report pursuant to CEQR guidelines. This study formally documented the environmental impacts associated with public street closures and security enhancements that were installed around the perimeter of federal buildings in Lower Manhattan following the events of September 11, 2001. In addition to preparing all technical documentation, Mr. Goldemberg

Michael Goldemberg, AICP
Senior Planner

generated all GIS graphics and assisted in the development of the traffic network and trip distribution.

Florida Department of Transportation, FDOT District One Rail Traffic Evaluation, Polk County, FL. Authored Rail Relocation Options Technical Memorandum, a component of a larger study designed to identify potential projects, improvements and strategies to address community concerns related to rail services in Polk County. This technical memorandum required the use of GIS to identify existing rail conditions and feasible alternatives to existing freight rail traffic operations by exploring opportunities for relocation on alternate routes such as existing roadway right-of-way (ROW), inactive rail corridors, proposed trails, and utility corridor ROW. A secondary project component was to perform a conceptual analysis for potential environmental, socioeconomic, and localized impacts to surrounding communities using existing GIS data as well as to identify potential challenges with potential corridor alternatives and areas for further study.

Battery Park City Authority, Redevelopment of Pier A and Contiguous Upland Area EAF and Supplemental Environmental Studies, New York, NY. Preparation of Supplemental Environmental Studies, pursuant to SEQR, for the rehabilitation and reuse of Pier A located in Battery Park City. Two development alternatives were considered for the pier. One scenario involved ferry operations serving the Statue of Liberty Monument and Ellis and a restaurant while the second option was a catering facility occupying all floors. Key project issues included cultural resources, applicability to Waterfront Revitalization Plan criteria, and natural resources documentation.

Dormitory Authority of the State of New York, Staten Island Supreme Courthouse Project EIS/ULURP, Staten Island, NY. Preparation of an Environmental Impact Statement (Draft and Final) for a new court complex located in the St. George section of Staten Island pursuant to SEQR criteria. Key project issues included the displacement of a municipal parking lot, back-filling of existing court facilities, and the cultural significance of the project site, which was once used as a burial site for the former Marine Hospital/Quarantine Ground. Sections completed for the EIS include land use, zoning, public policy, community facilities, socioeconomics, shadows, open space, neighborhood character, cultural resources, urban design and visual resources, infrastructure, energy, alternatives to the proposed project, construction impacts and public health. Generated project-related graphics utilizing ArcGIS software. Prepared Uniform Land Use Review Procedure (ULURP) application for several discretionary actions associated with the proposed project including a Site Selection-Public Facility, Special Permit, and Site Selection-Public Facility and Property Acquisition.

NJ TRANSIT, Northern Branch Corridor DEIS, Hudson/Bergen Counties, NJ. Planner involved in the preparation of an Environmental Impact Statement to examine the potential impacts of introducing commuter rail service to a 12-mile stretch of right-of-way currently utilized for freight service. The DEIS analyzes four Build Alternatives representing two different rail vehicles types and two different northern termini. Sections completed for EIS include parklands, Section 4(f), community facilities, community disruption, safety and security, consistency with local plans, electric and magnetic fields, environmental justice, and irreversible and irretrievable commitments of resources.

Luis Duarte, PE
Structural Engineer

Education

- BSCE, Civil Engineering, 1995

Registration/Credentials

- Professional Civil/Structural Engineer: NJ

Luis Duarte has thirteen years of experience in civil engineering projects involving structural design, land development, site planning, building construction, and telecommunications facilities. His experience includes structural design of various superstructure and substructure bridge elements, structural building design, site engineering design, project management, permitting, preparation of plans and specifications, stormwater management design, and construction inspection for residential, commercial, and public works projects. Mr. Duarte performed these various structural tasks for a majority of New York/New Jersey transportation clients, including the NJ Turnpike Authority, and NJ TRANSIT, as well as State agencies including the NJ Sports & Exposition Authority. Much of his experience involves or has involved bridge designs for both rail and roadway bridges.

Project Experience

NJ Department of Transportation, Repair and Replacement of the Wittpenn Bridge, Route 7 over the Hackensack River, NJ. Senior Engineer responsible for the preparation of superstructure plans and design of the bearing system for two three-span continuous curved girder approaches. Jacobs is responsible for the preliminary design of a 9,500-foot long mid-level bridge carrying Route 7 across the Hackensack River between the Town of Kearny and the City of Jersey City, New Jersey to replace the existing Wittpenn Vertical Lift Bridge (one of the "Tri-Hack" Vertical Lift Bridges built on the Hackensack River in 1930) and approach viaducts on a north alignment. The project features a vertical lift main span (believed to be the widest in the world) with east and west approach spans along the Route 7 Mainline, six curved ramps, approach roadway and retaining walls. The 324' long by 110' wide main span features steel orthotropic box girder construction. The approach viaducts and curved ramps are of steel composite I-girder construction.

NJ Turnpike Authority, Interchange 6-9 Widening Program, Section 8. Senior Engineer responsible for preparing quantities for engineering study as well as preparing plan sheets, footing plans, abutment plans, etc. The NJTA Interchange 6 to 9 Widening Program is a proposed widening of the existing six-lane NJ Turnpike from the vicinity of Interchange 6 to Interchange 9. The approximate limits of the Program are from milepost 49 to milepost 83, totaling approximately 34 miles through 11 communities in 3 counties of central New Jersey. Our firm's permitting and design portion is for the widening of Section 8, which is approximately 12 miles long in Middlesex County and begins at milepost 71 in Cranbury Township and extends to milepost 83 in East Brunswick Township. The project requires design for roadway widening, bridgework, retaining walls, noise barriers, culverts, utility relocation, stormwater management, permit documentation and related engineering services.

NJ Turnpike Authority (NJTA), Interchange 16W Route 3 Improvements, East Rutherford, NJ. Senior Engineer responsible for preparing final quantities and cost estimates as well as reinforcing bar detailing for the substructure, deck slab, parapet, as well as plan preparation. Jacobs was responsible for the geometric roadway design and the design of two bridges carrying Route 120 southbound over Route 3 in East Rutherford, New Jersey. We were also responsible for realigning and resurfacing portions of the existing Route 3 eastbound roadway to conform with current roadway design standards.

Luis Duarte, PE
Structural Engineer

NJ Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Structural Engineer responsible for the design of a three-span continuous steel plate girder superstructure, multiple simple supported steel plate girder spans, fixed and expansion bearing design, concrete deck design, concrete pier frame, and pile foundation designs of over one mile of elevated rail-carrying structure. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The design for this $150 million rail project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications and a new station.

NJ Turnpike Authority (NJTA), Design Services for the Lengthening of Six New Jersey Turnpike Bridges, Southern, NJ. Structural Engineering Designer responsible for the structural design of a multi-span replacement bridge, using LRFD design, for a bridge carrying a state highway over the Turnpike Mainline in Southern New Jersey. The work included centerline pier and integral abutment design, as well as detailed staged construction activities and cost estimates. This project was designed in accordance with the NJDOT Design Manual, Federal Highway Administration Guidelines and AASHTO "A Policy on Geometric Design of Highways and Streets," using CADD MicroStation.

NJ Schools Development Authority, New PS #3 Elementary and Middle Schools, Jersey City, NJ. Structural Engineering Designer responsible for assisting the project team with various structural design tasks for both the elementary and middle schools. The work included preparing plans, calculating floor loads and designing columns for various buildings in both the elementary and middle school. Other tasks included anchor bolt and base plate design for all of the columns.

C. Lakshan Wichramrachchi, PE
Civil Engineer

Education

- BSCE, Civil Engineering, 1999

Registration/Credentials

- Professional Engineer: [Ex.1]

Lakshan Wickramarachchi has more than ten years of experience in infrastructure planning, managing, and leading design efforts for all functional highway classifications. His experience has included design work for design-build and Hyperbuild projects. His expertise includes designing urban roundabouts (he designed a retrofit roundabout in Wall Township, New Jersey, the first of its kind in the State), integrating light rail transit into existing city street systems, planning and assessing the conversion of one-way streets into two-way street systems, creating signal designs and timing/phasing plans utilizing Synchro/HCS 2000/TEAPAC/TRANSIT 7F software for intersections and urban traffic networks (this work was checked by using traffic simulators, such as SimTraffic and CORSIM (TSIS 5.0)). Lakshan used both SimTraffic and CORSIM (TSIS 5.0) to compute real time traffic conditions for speed and delay factors for various clients in Kentucky. He also calibrated numerous traffic models, utilizing travel time studies, queue/delay analysis, and data collected in the field.

Project Experience

NYS Dept. of Transportation, Alexander Hamilton Bridge and Highbridge Interchange Ramps Rehabilitation, I-95 Corridor Between Amsterdam Avenue in New York County and Undercliff Avenue in Bronx County. Senior Civil/Drainage Engineer responsible for providing Stormwater Treatment System and its components. Provided water quality calculations utilizing current NYSDOT SPDES manual, designed the Stormwater Treatment System in place of a previously provided water quality basin while incorporating NYSDEC comments to uphold current permit criteria, prepared the Stormwater Treatment System Maintenance program, prepared contractual design drawings, including specifications and cost estimate, and provided the coordination for Stormwater Treatment System design. Mr. Wickramarachchi wrote the final SWPPP permit report to NYSDEC. Additional responsibilities included providing temporary drainage for construction staging, providing revised soil erosion control plans and miscellaneous civil design. Mr. Wickramarachchi provided construction support service for this $407 million project, which includes drainage revision for the bridge deck drainage system. This $407 million project involves replacing bridges, replacing and widening deck slabs, eliminating and replacing deck joints, rehabilitating steel superstructure, and resurfacing on-grade roadways, replacing lighting systems, rehabilitating drainage systems, replacing overhead sign structures, replacing and installing new ITS, and steel superstructure painting.

NJ Department of Transportation, Route 7 Wittpenn Bridge over the Hackensack River, City of Jersey City and Town of Kearny, Hudson County, NJ. Senior Civil/Drainage Engineer responsible for bridge deck drainage design and civil design. Involved in field edit/ data collection, Mr. Wickramarachchi performed Water Spread Calculations and analysis for scuppers per the NJDOT Roadway Design Manual and NJDOT Bridges & Structures Design Manual, provided design/review and details for bridge downspout drainage system based on HEC 21/NJDOT Bridges & Structures Design Manual; wrote necessary specifications and special provisions for bridge deck drainage system; provided quantities and cost estimate for bridge deck drainage and other miscellaneous design work; and provided design/drawing documents and design coordination. Duties also include evaluate/review construction staging and traffic control design, and providing value engineering. Currently working on retaining wall/miscellaneous civil design. This $650 million project involves the preliminary to final design

C. Lakshan Wichramrachchi, PE
Civil Engineer

of a 9,500-foot long, mid-level bridge carrying Route 7 across the Hackensack River between the Town of Kearny and the City of Jersey City, New Jersey to replace the existing Wittpenn Bridge and bridge ramps.

NJ Department of Transportation, Route 36 Highlands Bridge over Shrewsbury River, Highland /Sea Bright, Monmouth County, NJ. Lead Civil Engineer responsible for leading the multi-complex traffic control staging effort (through a corridor designated as a primary evacuation route). The work included pavement design for all approach roads, development of traffic control staging plans, detour routes, recommendations for special engineering techniques to implement staging plans within constrained areas, provision of GIS aerial mapping for the entire project, assessment of roadway alignments utilizing AutoTURN, and leading the project team in designing temporary signals and their signal timing and phasing plans. He also provided necessary temporary alignments, geometric controls, grading for all temporary roadways/ramps and temporary drainage design for each stage, and designed an emergency vehicle operation plan for critical stages during construction. Mr. Wickramarachchi also coordinated with the project staff regarding modifications of staging plans, as required, and coordinated with key personal from NJDOT traffic control staging review. Mr. Wickramarachchi also designed the pavement for all approach roads and ramps utilizing AASHTO design guidelines and made pavement recommendations, which were approved by the NJDOT Pavement Technology Unit. He wrote the resultant pavement design report for the preliminary and final design submission.

County of Monmouth, Coastal Evacuation Routes Improvement Study, Monmouth County, NJ. Senior Civil Engineer responsible for assisting the development of a methodology for selection of evacuation routes. Evaluated the inter-relationship of transportation routes and its operation for capacity, reviewed existing conditions for physical deficiencies, recommended physical improvements, including identifying the locations to strengthen the roadway shoulder ("hard-running shoulder") to utilize them as temporary lanes in order to improve the capacity of the roadway, road widening, elevation, and intersection improvements, proposed new access (jug handles, ramps, etc.) to Main Highway from selected routes utilizing existing right-of-way and minimizing impacts. Mr. Wickramarachchi developed the physical improvements portion of the "Treatment Toolbox" for improving coastal evacuation routes. He also prepared cost estimates for short-range, medium-range, and long-range treatment improvements, worked with the public and the Technical Advisory Committee to obtain comments, opinions, and other input regarding the draft and final recommendations.

Conrail, Restoration of the Lehigh Valley Double Track for Conrail's North Jersey Terminal Capacity Infrastructure Project, NJ. Primary responsibility included finalizing drainage design/adjustments through wetland restricted areas and areas with constrained right-of-way corridors. Additional responsibilities included utilizing AREMA/NJ TRANSIT guidelines standards to provide super-elevations for all the curves through the project corridor, and manipulating the standard InRoad software to match rail capabilities and provide digital terrain modeling for the entire super-elevated segment. Mr. Wickramarachchi also designed civil, erosion prevention, grading, and drainage and track cross sections plans, as well as the QA/QC for all general civil drawings for final submission.

Robert Kleinert, PE
Technical Specialist - Structures

Education

- MS, Civil Engineering, 1992
- BS, Civil Engineering, 1982

Registration/Credentials

- Professional Engineer: NJ

Robert Kleinert has over 25 years of experience performing and/or supervising the inspections, rehabilitations, and designs of bridges, buildings, tunnels, pump stations, retaining walls, and telecommunication facilities. Mr. Kleinert performed these various structural studies and tasks for the majority of the New Jersey/New York transportation clients including the NJ Department of Transportation, NJ Turnpike Authority, NJ TRANSIT, NY State Department of Transportation, as well as state agencies such as the NJ Sports & Exposition Authority. Much of his work involves or has involved bridge studies and bridge designs for both rail and roadway bridges. In addition to his design and project management assignments, Mr. Kleinert has participated in over 20 value engineering (VE) studies in support of our in-house VE department involving highway and railroad bridges, bus terminals, underground and elevated subway stations and transit equipment repair facilities for the New York City Transit Authority, the Triborough Bridge and Tunnel Authority, and the New York State and Connecticut Departments of Transportation.

Project Experience

NJ Turnpike Authority, Design Services for the Lengthening of Six New Jersey Turnpike Bridges, Southern, NJ. Deputy Project Manager responsible for assisting project manager with daily project functions, as well as, structural design using ASSHTO LRFD. Jacobs provided professional design services for the lengthening of six bridges carrying Authority, local, and state roads over the Turnpike Mainline. In anticipation of the future widening of the Turnpike Mainline from four to six lanes along its southern reaches, the Authority choose these six structures (which are currently in need of substantial rehabilitation) for lengthening to accommodate the future widening of the roadways below. The staged lengthening of these structures was accomplished with minimal impact to the motoring public.

NJ Dept. of Transportation (NJDOT), Route 7 Wittpenn Bridge over the Hackensack River, NJ. Structural Engineer responsible for supervising the entire superstructure design of two, three-span continuous steel girder approach ramps (Ramp A - 1&9T and Ramp to Newark Avenue) to the Route 7 Wittpenn Bridge over the Hackensack River. Work included the design of horizontally curved girders, deck slab, deck joints, and bearing utilizing the AASHTO LRFD specifications.

NJ Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary and Final Engineering and Environmental Impact Statement, Rutherford, NJ. Structural Engineer responsible for performing structural alternative type studies, cost estimating and preliminary designs for railroad, highway and pedestrian bridges, retaining walls and station platforms. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The design for this project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications and a new station.

NJ Sports & Exposition Authority, Pedestrian Bridge Construction, East Rutherford, NJ. Project Manager responsible for the replacement of the 1200' pedestrian bridge at the Sports Complex. The project utilized a design/build construction delivery method. Mr. Kleinert prepared design/build documents (plans and specifications) and reviewed and approved design packages

Robert Kleinert, PE
Technical Specialist - Structures

submitted by the design/build team. He also provided construction supervision services during the construction of the new bridge. Jacobs designed a new pedestrian bridge and performed inspection during its construction. The new bridge spans Route 120 at Giants Stadium. Prior to construction of the new bridge, oversaw demolition of the outmoded existing bridge.

MTA Metro-North Railroad, Shell at Grade, New Rochelle, NY. Lead Structural Engineer responsible for overseeing the design of two new 55'-long railroad bridges over Webster Avenue, a new high level station platform and a relocated reinforced concrete pier for the North Avenue Bridge over MNRR tracks. Shell Interlocking is the junction point for Metro-North's New Haven Line and Amtrak's Hellgate Line, which is part of the Northeast Corridor. 240 Metro-North trains per day pass through the interlocking, while Amtrak operates 24 Boston Division trains. Metro-North operates four tracks through the interlocking, with two tracks branching west toward Amtrak's Hell Gate Line.

NJ Turnpike Authority, Design Services for the Lengthening of Six Turnpike Bridges, Southern, NJ. Deputy Project Manager responsible for assisting project manager with daily project functions, as well as, structural design using ASSHTO LRFD. Jacobs provided professional design services for the lengthening of six bridges carrying Authority, local, and state roads over the Turnpike Mainline. In anticipation of the future widening of the Turnpike Mainline from four to six lanes along its southern reaches, the Authority choose these six structures (which are currently in need of substantial rehabilitation) for lengthening to accommodate the future widening of the roadways below. The staged lengthening of these structures was accomplished with minimal impact to the motoring public.

Maher Terminals, Inc., Straddle Carrier-Fleet Maintenance and Administration Building/Maher Marine Buildings, Elizabeth, NJ. Structural Engineer responsible for the structural design of three 216 ft long elevated pedestrian bridges for access from straddle carrier vehicles to marine terminal buildings at Maher Terminal in Port Elizabeth. Jacobs prepared design documents and provided construction administration services for the demolition of 11 major buildings and the construction of several new buildings at the Terminal to facilitate the anticipated increase in container traffic.

NJ Sports & Exposition Authority, Replacement of Pedestrian Bridge over NJ Route 120, East Rutherford, NJ. Project Manager responsible for a study developing, evaluating and recommending alternative structure types and alignments for the replacement of a 1200'-long pedestrian bridge at the Meadowlands Sports Complex in East Rutherford. Responsibilities included continuous interfacing with the client in order to tailor design considerations to suit the client's operational needs. In addition, a detailed cost estimate was prepared for each alternative with consultations from manufacturers and contractors in order to develop accurate costs. Jacobs replaced the then existing pedestrian bridge at the Meadowlands Sports Complex in East Rutherford, NJ on behalf of the NJ Sports and Exposition Authority. The existing bridge was an enclosed steel truss bridge approximately 1200'-long by 10'- wide supported on steel trussed towers spanning NJ State Route 120 between the Giants Stadium and Continental Arena parking areas.

Jose Posada, PE
Structural Engineer

Education

- MS, Civil Engineering, 1974
- BS, Civil Engineering, 1971

Registration/Credentials

- Professional Engineer: NJ

Jose Posada has served Jacobs Engineering Group since 1974 on structural/geotechnical engineering and design assignments of wide variety and scope. His experience encompasses the study and design of highway and railroad structures, retaining walls, precast concrete post, and panel noise barrier systems. Mr. Posada has designed various types of bridges and bridge improvements that include: steel and prestressed concrete alternates, multi-span bridges with steel and prestressed concrete girders, viaducts spanning wetlands, curved welded steel girder viaducts, and jacking of existing structures for bearing replacement. Mr. Posada has also modeled and performed seismic design and evaluation of many structures, including a 7,000 foot long elevated rail structure for NJ TRANSIT, a 5,200-foot-long elevated rail structure for the NJ Sports & Exposition Authority, multi-span viaducts for the NJ Department of Transportation, two bridges for the Port Authority of NY and NJ, and bridge lengthenings for the NJ Turnpike Authority and the NY City Department of Transportation.

Project Experience

Port Authority of NY & NJ, North Avenue Westbound Elizabeth Marine Terminal Engineering Services for Roadway Widening including Four Bridges, Elizabeth, NJ. Lead Structural Engineer responsible for the lead design for the North Avenue bridge widening over the NJ Turnpike and over Conrail and for the modeling and seismic evaluation of the existing structure. Jacobs performed design services for roadway widening, signalization and westbound widening of bridges over the NJ Turnpike and Conrail on North Avenue in Elizabeth, New Jersey. North Avenue provides access from the New Jersey Turnpike and Routes 1&9 into the Port of Elizabeth and Port Newark.

NJ Turnpike Authority, Interchange 6-9 Widening Program, Section 8. Structural Design Leader responsible for structural analysis and design of several bridge structures over the New Jersey Turnpike. The project also includes noise walls, retaining walls, and sign structures. The NJTA Interchange 6 to 9 Widening Program is a proposed widening of the existing six-lane NJ Turnpike from the vicinity of Interchange 6 to Interchange 9. The approximate limits of the Program are from milepost 49 to milepost 83, totaling approximately 34 miles through 11 communities in 3 counties of central New Jersey. Our firm's permitting and design portion is for the widening of Section 8, which is approximately 12 miles long in Middlesex County and begins at milepost 71 in Cranbury Township and extends to milepost 83 in East Brunswick Township. The project requires design for roadway widening, bridgework, retaining walls, noise barriers, culverts, utility relocation, stormwater management, permit documentation, and related engineering services.

NJ Turnpike Authority (NJTA), Interchange 16W Route 3 Improvements, East Rutherford, NJ, Senior Structural Engineer (Bridge Design Engineer) responsible for the structural design of two bridges carrying Route 120 SB over Route 3 to Route 3 EB. Although the bridges were part of a NJTA Interchange 16W Improvement project, these bridges were designed in accordance with the NJDOT Design Manual, Bridges and Structures and following procedural guidelines set forth in the NJDOT Procedures Manual. Structural design was performed in accordance with current AASHTO LRFD Design Criteria. Some unique aspects of the project included the design of tight radius, horizontally curved girder structures on skewed substructures that maintained adequate sight

Jose Posada, PE
Structural Engineer

distance above and minimum horizontal and vertical clearances below; designing to minimize impacts to adjacent wetlands; designing to minimize staged construction activities; and the design of mechanically stabilized earth retaining wall systems. Data on existing adjacent structures, such as existing bridge plans, bridge inspection reports, SI&A sheets, and photos from the Bridge Management System were gathered and used to aid in the design of the new structures and the development of staged construction details. The project also included the design of new overhead and cantilever sign support structures in accordance wit the criteria set forth in the NJDOT Design Manual, Bridges and Structures.

NJ Sports and Exposition Authority, Meadowlands Rail and Roadway Improvement Project, East Rutherford, NJ,. Lead Structural Engineer responsible for providing structural analysis, design, and seismic evaluation of over one mile of elevated rail-carrying structure. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The design for this $150 million rail project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications, and a new station.

MTA Metro-North Railroad, Highbridge Yard-Design/Build, Bronx, NY. Structural Engineer responsible for the participation on the design and quality of the project. As joint venture partner and lead engineer, Jacobs' primary design responsibilities included civil (under- and above-ground utilities), trackwork, traction power, third rail, structural (shop and substation foundations, building and roof structures, high level platforms, and overpass), systems integration, and communications system, CCTV cameras and a security system which is integrated with the fire protection system. This project was a key component of the MTA/LIRR East Side Access Program with a fast-track, 18-month schedule for design and construction. Highbridge, with a storage capacity of over 100 rail cars, replaces facilities within Grand Central Terminal that were transferred to LIRR for East Side Access.

NYS Dept. of Transportation, Van Wyck Expressway Bridge Replacement, Jamaica, NY. Structural Engineer responsible for the seismic analysis for two bridges over the Van Wyck Expressway (VWE). Also responsible for modeling and evaluating the effect of the longer structures on the existing pier. This project involved design for the replacement of two local street bridges over the Van Wyck Bridge as part of the NYSDOT add-on work to the JFK LRS access project. The two bridges were replaced with longer structures to allow continuous accel/decel lanes to improve traffic flow on the Van Wyck Bridge. The bridge is two-span continuous roll beam structures support on spread footing C-I-P concrete abutments and piers. The work was performed under a design-build contract.

Michael Kaminski, PE
Technical Specialist - Structures

Education

- MS, Structures, 1977
- BS, Civil Engineering, 1975

Registration/Credentials

- Professional Engineer: NY and NJ

Michael Kaminski has thirty years of experience in structural engineering, design, and inspection with responsibilities encompassing steel, concrete and pipe support design, layouts and calculations in conformance with applicable codes and design standards. He has provided expert testimony at planning board hearings and has participated as the structural engineering representative for various value engineering studies.

Project Experience

NJ TRANSIT, Newark Drawbridge Rehabilitation and Replacement, Harrison and Newark, NJ. Structural Engineer responsible for providing designs and drawings for the rehabilitation of the Newark Drawbridge approach spans. Jacobs (Edwards and Kelcey) is leading a multi-consultant team to oversee the rehabilitation/replacement of the existing two-track Newark Draw Bridge with a new three-track structure to provide greater operational flexibility between Broad Street Station and the eastern terminals in a timely manner.

NJ TRANSIT, General Engineering Consultant for Bridge/Railway Engineering, Plainfield, NJ. Structural Engineer responsible for providing the design and drawings for a NJ TRANSIT railroad bridge rehabilitation and temporary bridge structure. As part of a multi-disciplinary team on this multi-year task order assignment, EK participated in the following tasks: study for the replacement of thirteen railroad bridges carrying NJ TRANSIT's Raritan Valley Line in Plainfield, NJ; design of one replacement railroad bridge, namely the Raritan Valley line over Grant Ave; revisions and edits to NJ TRANSIT's specifications for Pipeline Occupancy; track alignment and track design for a railroad storage yard.

MTA Bridges and Tunnels, 2003 Misc. Design Services On As Needed Basis for Project GFM 419B. Structural Engineer responsible for the modeling and analysis of the existing steel framing and hanger systems used to support the ceiling slabs within the Brooklyn Battery and Queens Midtown Tunnels.

NJ TRANSIT, Main-Bergen Connection and Main Line Improvements for Secaucus Transfer, Secaucus, NJ. Structural Engineer responsible for providing the design and drawings required for the rehabilitation of a NJ TRANSIT railroad bridge. NJ TRANSIT's Main-Bergen Connection and Main Line Improvements is a major rail expansion project in support of the Secaucus Transfer Station, transportation hub located at the junction of the Northeast Corridor and NJ TRANSIT's Main Line and Bergen County Line in the Hackensack Meadowlands. Jacobs was responsible for conceptual planning, environmental assessment, operations, and preliminary/final design of the project, including services during construction.

NJ TRANSIT, Montclair Connection Final Design and Construction Services, Montclair and Little Falls, NJ. Structural Engineer responsible for the design, analysis and drawing preparation for catenaries support foundations, inspection structures and retaining walls. Jacobs provided final design for development of the 30% to 100% construction packages for the connection of the Montclair Branch and Boonton Line in Montclair, New Jersey near Bay Street. The project included a 1,500-foot, two-track connection of the Montclair Branch with the Boonton Line, new universal cross-over, new high level platforms, a new station building, and overhead pedestrian access. Electrification was extended through the connection and five miles west along the Boonton Line to

Michael Kaminski, PE
Technical Specialist - Structures

Great Notch Station. At Great Notch, a new three-track electric train storage yard and crew facility was designed. T

MTA Bridges and Tunnels, Value Engineering Services, Various Locations, NY. Structural Engineer responsible for several bus depot and subway station design studies. Responsible for modifying designs or details to save fabrication and/or construction costs while maintaining or improving the structures intended function. The team is providing full Value Engineering teams to conduct studies for the Triborough Bridge and Tunnel Authority Capital Projects from 2001-2005. Assignments have included: Task 1 - Value Engineering Review for Project BW-82, Suspended Span Roadway Deck Replacement; Task 2 - Value Engineering Workshop on the Cable Strand Re-Anchoring work under TB-66 for the Triborough Bridge; Task 3 - Value Engineering Study for Project MP-08, New Administration Building at Marine Parkway Bridge.

Maersk, Inc., Warehouse Demolition and Site Redevelopment, Elizabeth, NJ. Structural Engineer responsible for creating the design drawing, which sequenced the demolition of two warehouse buildings, a two-story office building, and a security building. The project involved relocation and/or redistribution of existing water, sewer, and electrical utilities, drainage and grading design, hazardous material abatement, structural analysis of existing underground pipes and structures, revision to the existing fire protection plan including the water distribution and piping system and pavement design. The new drainage appurtenances and pipes were designed to withstand the heaviest anticipated loads.

Grafton Highway Department, Route 122 Worcester St Sidewalk Improvements, Grafton, MA. Structural Engineer responsible for the structural design, analysis, and preparation of all drawings for a pedestrian track overpass required by the Massachusetts Bay Transportation Authority. Jacobs provided engineering design for new sidewalks along Worcester St/Rt 122 in Grafton, MA.

NJ Sports & Exposition Authority, Meadowlands Railway and Roadway Project, East Rutherford, NJ. Structural Engineer responsible for structural design, analysis, and preparation of all drawings for the new NJ TRANSIT Rail Station. T The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The service will operate over a new 2.3-mile railroad alignment connecting with NJ TRANSIT's Pascack Valley Line. The design for this $150 million rail project included new track, structures, viaducts, roadwork, sitework, signals, communications and a new station.

NJ Dept. of Transportation, Route 1 and 9 Southbound Viaduct Replacement over Conrail's Oak Island Yards, Newark, NJ. Structural Engineer responsible for quantity and cost estimates, developed preliminary and final designs of steel and pre-stressed girders, foundations and retaining walls, and conducted studies for various highway and railway clearances on the mile-long viaduct over Conrail's Oak Island Yards.

Robert Foster, PE
Civil Engineer

Education

- BS, Civil Engineering, 1983

Registration/Credentials

- Professional Engineer: [Ex.1]

Robert Foster's expertise in preliminary and final roadway design and management, as well as planning and design of staging and MPT plans, is excellent. He has complete capabilities in MicroStation InRoads design and has performed many projects for the NJTA, NJDOT, and other agencies in the New York Metropolitan area during his 27 years of highway design experience. His responsibilities have included design of horizontal and vertical roadway alignment, typical sections, grading, drainage, utilities, earthwork calculations, right-of-way (ROW), quantity and final cost estimates, construction details, construction staging, and preparation of final contract drawings.

Project Experience

Port Authority of NY & NJ, North Avenue and McLester Street, Elizabeth, NJ. Project Manager and Lead Roadway Engineer responsible for all roadway improvements, project coordination, and roadway drawings, including horizontal and vertical geometrics, grading plans, cross-sections, estimates, and typical highway section design using CAD MicroStation and InRoads. Jacobs performed design services for three contracts on North Avenue that involved widening two bridges over the New Jersey Turnpike and two bridges over CONRAIL railroad tracks, widening and realignment of one mile of North Avenue, and the re-signalization of the North Avenue and Center Drive intersection. North Avenue provides access from the New Jersey Turnpike and Route 1&9 into the Port of Elizabeth and Port Newark.

Services performed and directed by Mr. Foster included roadway design including horizontal and vertical geometric design; typical sections, pavement design; cross-sections; design exceptions. Our firm also provided geotechnical design for piles and footings; seismic analysis for new structures; structural design for bridge widening; signal design for the widened intersection of North Avenue and Center Drive; maintenance and protection of traffic plans; and preparation of technical specifications for non-standard items and estimates. This project was designed with MicroStation InRoads design software to NJDOT Standards. This project was performed in accordance with NJDOT Design and Procedure Manual standards.

NJ Dept. of Transportation, Route 21 Reconstruction, Newark, NJ. Lead Highway Engineer responsible for the highway design of improvements that included realignment of the roadway over nearly one-third of the project, the introduction of auxiliary lanes in addition to three lanes for through traffic and 20 intersections for the 2.2-mile long project. Work performed by Mr. Foster included preparation of construction plans, specifications, and estimates for design of horizontal and vertical geometry/design using InRoads, highway sections, cross sections, design exception reports, traffic signals, construction staging, maintenance and protection of traffic, pavement marking, signing, ITS design, jurisdictional plans and agreements, ROW plans, estimates and agreements, driveway access modifications for compliance with the NJ State Highway Access Management Code, and design of a replacement for the existing railroad bridge across Route 21.

Mr. Foster was required to design the roadway considering complex subsurface design. He coordinated identification of utility conflicts, including the development of schemes of

Robert Foster, PE
Civil Engineer

accommodation for all subsurface facilities including sanitary sewer design, water main design, and design of two combined sewer regulator chambers.

New Jersey Turnpike Authority, Interchange 6-9 Widening Program, Design Section 8, Middlesex County, NJ. Lead Roadway Engineer and Project Engineer responsible for the widening of Section 8, a 12-mile section of the NJ Turnpike. Section 8 begins three miles south of Interchange 8A and extends twelve miles north to Interchange 9. The three southernmost miles, which taper from ten lanes to six lanes, will be widened to twelve lanes. The roadway will be dualized, with three inner lanes in either direction designated for use by cars only, and three outer lanes in either direction designated for use by cars, trucks, and busses. The nine northernmost miles, which are dualized, will be widened from ten lanes to twelve lanes. The firm will also design the reconstruction, modification, or replacement of six bridges and two culverts. The project also includes preparation of permit documentation, stormwater management, ITS signing, guide signing, retaining walls, noise barriers, and relocation of utilities.

New Jersey Turnpike Authority, Interchange 16W Route 3 Improvements, East Rutherford, NJ. Roadway Design Engineer for this project that was designed as a portion of a larger project sponsored by New Jersey Turnpike Authority (NJTA), to make significant roadway improvements to Interchange 16W. Our portion was designed in accordance with the NJDOT standards, NJDOT Roadway Design Manual, and NJDOT Specifications. Mr. Foster was responsible for the horizontal and vertical geometric roadway design, all maintenance and protection of traffic, staging, typical sections, cross-sections, and all other civil plans, which were coordinated with the design of two bridges carrying Route 120 Southbound over Route 3 Westbound and Route 3 Eastbound in East Rutherford, New Jersey. This portion of the project also dealt with shifting of the Route 3 Eastbound mainline roadway to make way for the new flyover ramp and correction of superelevation on Route 3 Eastbound to avert the need for drainage exceptions. The geometric design of the horizontal and vertical alignment needed to meet the Route 3 Eastbound Hackensack River bridge deck and satisfy all 60 mph speed criteria, all of which were achieved.

NJ Sports & Exposition Authority, Meadowlands Rail & Roadway Improvements Project, East Rutherford, NJ. Roadway Design Engineer responsible for all roadway drawings, including horizontal and vertical geometry, grading, geometric, typical highway sections, grading plans, and cross-sections design using MicroStation and InRoads. Responsibilities also include developing Driveway Access Permit plans for access along Paterson Plank Road, coordinating with structures, site, utility, and rail designers to facilitate a well-coordinated roadway design. The roadway design included reconfiguration of the North Connector Road Interchange with Route 120. This Connector Road serves traffic between the Izod Center Arena and Xanadu site to the Giants Stadium and Meadowlands Racetrack site and is elevated to span over the new railroad approach to a new three-track station. This design includes new ramps, parking areas, walls, complex staged construction, and MPT plans.

Christopher Ellis, PE
Geotechnical Engineer

Education

- MS, Geotechnical Engineering, 1996
- BSCE, Civil Engineering, 1992

Registration/Credentials

- Professional Engineer: NJ

Christopher Ellis is responsible for preparing subsurface investigation programs, contract documents, inspecting and supervising soil related field work, and analyzing and designing various foundations and retaining structures. Mr. Ellis has prepared many geotechnical reports and foundation designs for rail and roadway projects, including deep and shallow foundations.

Mr. Ellis has worked with clients such as the NJ Department of Transportation, NJ TRANSIT, MTA Metro-North Railroad, NJ Turnpike Authority, as well as private development companies, construction contractors, county agencies, and municipalities. Mr. Ellis has worked on the following project elements: piles, drilled shafts, spread footings, modular and cast-in-place retaining structures, temporary excavation support systems, roadway and heavy-duty pavement design, liquefaction potential, ground modification, earth dam, and embankments.

Project Experience

Port Authority of NY & NJ (PANYNJ), 2002-2004 Civil/Aviation Engineering Call-In, New York, NY. Geotechnical Engineer responsible for the field investigation and design of the roadway pavement for a facility in JFK Airport. Jacobs prepared civil engineering designs, contract drawings, technical specifications, and construction cost estimates for a wide variety of new projects and rehabilitation, restoration, and resurfacing projects.

Port Authority of NY & NJ (PANYNJ), North Avenue Eastbound Construction, Elizabeth, NJ. Geotechnical Engineer responsible for checking construction shop drawings for temporary support systems to drive piles along an existing roadway for widening. This project involved the widening of two bridges over New Jersey Turnpike and two bridges over Conrail tracks.

Port Authority of NY & NJ (PANYNJ), 1999 Civil/Aviation Engineering Call-in, New York, NY. Geotechnical Engineering for this 1999 Agreement included 30+ assignments ranging in fee from $6,000 to approximately $240,000. Project design work included roadway reconstruction, airside site work, storm drainage rehabilitation, utility relocation, and pavement repair. Detailed analyses were performed evaluating storm drainage improvements at Newark International Airport.

MTA Metro-North Railroad, Cortlandt Station & Parking Lot Improvement, Cortlandt, NY. Geotechnical Engineer responsible for preparing the subcontractor agreement, subsurface investigation program, laboratory testing program, and inspection of the soil borings. Soil conditions range from soft organic soils to bedrock outcroppings. Shallow foundations, retaining wall stability, estimation of the potential settlement, pile-supported foundations, and rock excavation were covered in the geotechnical engineering report.

NJ Turnpike Authority, Interchange 6 to 9 Widening Program, Design of Section 8. Geotechnical Engineer responsible for the design and analysis of the bridge foundations, retaining wall stability, and estimating the potential settlement of the new embankments required to widen Turnpike mainline roadway. Foundation recommendations were also presented for roadway sign structures and culvert extensions. Deep and shallow foundation types were utilized

Christopher Ellis, PE
Geotechnical Engineer

on this project. Cast-in-place concrete and proprietary retaining wall systems were also included in the analysis and design. The NJTA Interchange 6 to 9 Widening Program is a proposed widening of the existing six-lane NJ Turnpike from the vicinity of Interchange 6 to Interchange 9. The project requires design for roadway widening, bridgework, retaining walls, noise barriers, culverts, utility relocation, stormwater management, permits documentation, and related engineering services.

NJ TRANSIT, Portal Bridge Capacity Enhancement Project, Secaucus, NJ. Geotechnical Engineer responsible for the preliminary settlement calculations, slope stability analysis, retaining wall design, and staged surcharge embankment requirements. Alternative foundation types were considered. Jacobs is part of a Tri-Venture Team providing professional railway, structural, civil, and geotechnical services for the replacement of Portal Bridge over the Hackensack River on the Northeast Corridor in Kearny and Secaucus, New Jersey.

MTA Metro-North Railroad, Upper Harlem-10 Substations, NY. Geotechnical Engineer responsible for securing and coordinating with the soil boring contractor, preparing the subsurface investigation, and classification of the soils. Mr. Ellis was also responsible for the analysis and design of the various foundations required for the ten proposed sites along the Upper Harlem rail line. Site conditions required deep and shallow foundation types, as well as elevated and at-grade buildings.

MTA Metro-North Railroad, Parking and Access Improvements - Irvington, Greystone, and Spuyten Duyvil, NY. Geotechnical Engineer responsible for the subsurface investigation program, and the inspection of the soil borings and field infiltration tests. Geotechnical recommendations were provided for improvements for the existing parking lot and access roads.

NJ Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Geotechnical Engineer responsible for preparing the subcontractor agreement for the subsurface exploration program, onsite supervision for drilling activities, and preparing the laboratory testing program. Also responsible for geotechnical subsurface investigation (foundation and subsoil), preparation of a Foundation Report, pile and caisson design, pavement design, and geotechnical analysis for this project, which involved reconfiguration of the North Connector Road Interchange with Route 120. Other responsibilities include analysis of settlement, surcharge, slope-stability and instrumentation layout.

NJ Dept. of Transportation (NJDOT), Route 21 Reconstruction, Newark, NJ. Geotechnical Engineer responsible for the soil boring program, subsurface investigation program, pavement design, settlement analyses, embankment stability, retaining wall and foundation analyses, and geotechnical evaluation for roadway embankment, pile-supported bridge structure, retaining wall design, and preparation of Foundation Report for Route 21 widening and improvement in Newark, NJ. Subsurface design included development of schemes of accommodation for all subsurface facilities and included sanitary sewer design, water main design, and design of two combined sewer regulator chambers. Coordination with various government and private agencies including the City of Newark, Essex County, NJ TRANSIT, NJPAC, USACOE, NJDEP, SHPO, and PVSC was an important component of the design process. The design phase consisted of three individual construction contracts, which rebuilt approximately two miles of Route 21 from Green Street to North of Passaic Street in Newark, NJ.

Christopher Akil, PE
Geotechnical Engineer

Education

- MSCE, Civil Engineering, 1979
- BSCE, Civil Engineering, 1982

Registration/Credentials

- Professional Enaineer: [Ex.1]

Mr. Akil has over 25 years experience in geotechnical and foundation engineering. His vast experience encompasses field investigations, soil analyses, design of pile foundations, soil-structure interaction, preparation of design specifications, pavement design, and field supervision of soil testing, static and dynamic pile load testing, and pile driving.

He is responsible for the geotechnical design and the preparation of geotechnical reports for rail and highway projects. He is experienced in the analysis and design of foundation systems for viaduct and bridge structures, retaining walls, embankment construction on soft soils, and ground improvements.

Project Experience

Port Authority of NY & NJ, North Avenue East Improvements - Roadway and Westbound Bridge Widening, Elizabeth, NJ. Geotechnical Engineer responsible for geotechnical engineering and foundation design for North Avenue widening west of New Jersey Turnpike to McLester Street. The work included seismic design for pile-supported bridge piers and abutment, sheet pile retaining wall design, and slope stability analysis. Jacobs performed design services for three contracts on North Avenue in Elizabeth, New Jersey. North Avenue provides access from the New Jersey Turnpike and Routes 1&9 into the Port of Elizabeth and Port Newark. This portion of the contract included North Avenue Eastbound widening for approximately ½ miles including two bridge widenings. One bridge spans the NJ Turnpike and the other fifteen over Conrail Tracks.

Port Authority of NY & NJ, Civil/Aviation Engineering Call-in, New York, NY. Geotechnical Engineer responsible for pavement design for a container-stacking facility at Port Newark in Elizabeth, New Jersey. This agreement included 30+ assignments ranging in fee from $6,000 to approximately $240,000. Project design work included roadway reconstruction, airside site work, storm drainage rehabilitation, utility relocation, and pavement repair. Detailed analyses were performed evaluating storm drainage improvements at Newark International Airport.

New Jersey Turpike Authority, Interchange 6 to 9 Widening. Design of Section 8, Middlesex County, NJ. Lead Geotechnical Engineer responsible for the analyses and design of bridge and ramp foundations, embankment construction, sign structures, and retaining walls. The project requires design for roadway widening, bridgework, retaining walls, noise barriers, culverts, utility relocation, stormwater management, permits documentation, and related engineering services. The preliminary construction value of the contract is $180 million with final design scheduled for completion in 2013.

NYC Economic Development Corporation, Reconstruction of 28th Avenue (Supplemental to Linden Place Contract), Queens, NY. Geotechnical Engineer responsible for geotechnical evaluation and alternatives study to mitigate settlement problems at 28th Avenue between College Point Boulevard and Ulmer Street. Jacobs provided professional engineering services in connection with the following Linden Place Reconstruction project limits in Queens County:

Christopher Akil, PE
Geotechnical Engineer

- Linden Place Reconstruction, between 28th Avenue and 23rd Avenue, 23rd Avenue, between Linden Place and 130th Street, and 130th Street, between Ulmer Street/25th Avenue and 23rd Avenue (Original Contract) - Preliminary and Final Design Phases
- 28th Avenue Repairs, between Ulmer Street and College Point Boulevard (Contract Amendment No. 1) - Emergency Design Phase
- 132nd Street Construction, between 23rd Avenue and 20th Avenue (Contract Amendment No. 2) - Preliminary and Final Design Phases

MTA Metro-North Railroad, Cortlandt Station & Parking Lot Improvement, Cortlandt, NY. Lead Geotechnical Engineer responsible for planning a detailed subsurface investigation and laboratory testing program. The work included the design of micro-piles and H-piles to support the rail station, pedestrian overpass, and retaining walls.

NJ Department of Transportation, Route 10 & 53 Final Design. Lead Geotechnical Engineer responsible for the subsurface investigation, roadway embankment widening, pavement, and retaining wall design.

NJ Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Lead Geotechnical Engineer responsible for performing all geotechnical design and overseeing the subsurface exploration and laboratory testing program. The geotechnical work included the design of steel pipe and H-piles, pile load testing program, embankment surcharge, and construction monitoring program. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The design for this $150 million rail project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications, and a new station.

NJ TRANSIT, Portal Bridge Capacity Enhancement Project, Kearny and Secaucus, NJ. Lead Geotechnical Engineer responsible for the geotechnical analyses and design for the project. The work includes drilled shaft and pile-supported bridge and viaduct structures, embankment surcharge, drilled shafts and pile load testing program, and site-specific seismic study for the design of bridge structures and retaining walls. Jacobs is part of a Tri-Venture Team providing professional railway, structural, civil, and geotechnical services for the replacement of Portal Bridge over the Hackensack River on the Northeast Corridor in Kearny and Secaucus, New Jersey. The team is providing design, engineering, and environmental/regulatory compliance support focused on the need to supplement the capacity/replacement of the AMTRAK-owned Portal Bridge. Given the numerous bridges, spans, and trackwork involved, the project was broken down into three geographical sections. Jacobs will manage the western bridges and their associated civil and rail systems work along with any required roadway work.

NJ Turnpike Authority, Design Services for the Lengthening of Six New Jersey Turnpike Bridges, Southern, NJ. Geotechnical Engineer responsible for subsurface investigation program management, including soil borings, laboratory testing, foundation report preparation, shallow foundation design, settlement analyses, and construction services that included a pile-load test program for the project.

Joseph Matura, EIT
Senior Designer

Education

- BS, Civil/Environmental Engineering, 2000

Registration/Credentials

- Engineer-in-Training: NJ

Joseph Matura has been integral in the design of multiple utility relocation projects that include gas/fuel systems, sanitary and stormwater sewer systems, and water distribution networks. These projects have provided repeated exposure to the design process as well as the construction services role, helping to augment the contractor's efforts during the construction. Mr. Matura also has extensive experience in the design, installation, and inspection of fiber optic cable (FOC) networks throughout the United States. His engineering exposure with these systems is supplemented by his technical knowledge of splicing, optical amplification, and fiber termination. Additionally, his varied interactions with management personnel, clients, field representatives, and contractors have given him a detailed understanding of the engineering profession and its workings.

Project Experience

NJ Turnpike Authority (NJTA), Interchange 6-9 Widening Program, Design Section 8, New Jersey. Utility Relocation Designer responsible for utility relocations along Design Section 8 of the NJ Turnpike. In order to widen the main line of the NJ Turnpike, the adjacent utilities must be relocated and utility crossings must be modified. These utilities include gas, water, sanitary sewer, telephone, and electrical facilities. Design parameters must match the criteria of each utility company and then be coordinated with other disciplines involved with the project. He is accomplishing this through scheduled meetings with the utility companies as well as the program managers (HNTB) and internal discussions with other departments. Mr. Matura's responsibilities also included the development of the Freshwater Wetlands Individual Permit Plans (FWIP). This involved identifying and classifying all impacts the project will have on existing, pre-designated freshwater wetland areas. These areas are then quantified and included as part of the permit package to the NJDEP.

NJ Dept. of Transportation (NJDOT), Route 21 Reconstruction, Newark, NJ. Design Engineer responsible for designing the relocation of multiple gas mains and services, as well as developing construction plans, details, profiles, and other contract documents. Mr. Matura developed a detailed cost analysis of the project and created an agreement plan encompassing the entire project. Lastly, Mr. Matura served as liaison between the utility company and the NJDOT to address design and cost issues.

MTA Metro-North Railroad, Design and Construction Services for the Harmon Shop Replacement Program - Phase III, Croton Harmon, NY. Design Engineer responsible for the relocation of underground diesel fuel oil and lubricating oil pipelines, design of stormwater runoff sump pits, manhole buoyancy determinations, and site plan review. Mr. Matura's duties included the development of easily modifiable spreadsheets to calculate the various forces acting on manholes of varying shapes and sizes. He aided in the design of stormwater pumping stations based on anticipated flows. Mr. Matura was responsible for relocating existing underground oil distribution facilities to above ground support structures within an active rail operations center; and reviewing and modifying the site plans for the locomotive and coach shop replacement. Guidelines and standards that were followed include ASCE Guidelines for the Design of Buried Steel Pipe, Plastic Pipe Institute (PPI) Guidelines for Polyethylene Duct and Conduit, and National Electrical Manufacturers Association (NEMA) Guidelines for Underground Duct. Our firm was

Joseph Matura, EIT
Senior Designer

responsible for the design management, architectural, civil, track, electrical, and traction power for the design-build of two new rail maintenance shops for Metro-North Railroad. One shop is for maintenance of coach passenger cars and electric power passenger cars, and the other shop is for maintenance of locomotives. The 20-acre site also includes 15 new tracks, new utilities, and a new drainage system.

NJ Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Design Engineer responsible for the relocation of existing gas, water, and sanitary sewer systems, along with development of construction plans, details, profiles, and other contract documents. Mr. Matura was responsible for all facets of utility relocation and design including field surveying; coordination with the utility companies, construction manager, and designers from the adjacent Xanadu project; developing cost analyses; reviewing shop drawings; incorporating design changes resulting from field conditions; and handling RFI's from the contractor. During the preliminary stages of design, subsurface utilities were identified using surface geophysical techniques in accordance with CI/ASCE 38-02. After potential conflicts were identified, the relocation and/or protection design was discussed in detail with the owning utility companies and, when required, conformed to NJ TRANSIT Rail Operations: Specifications for Pipeline Occupancy on NJ TRANSIT Property EP-2, as well as the American Petroleum Institute (API) - Steel Pipeline Crossing Railroads and Highways standards. Sanitary sewer design included relocating gravity sewer lines and a wastewater force main, which involved constructing temporary by-passes and filing a TWA permit with NJDEP. Sewer design followed technical requirements of NJAC 7:14A-23. TWA filing followed administrative requirements of NJAC 7:14A-22.

NJ Turnpike Authority (NJTA), Design Services for the Lengthening of Six New Jersey Turnpike Bridges, Southern, NJ. Design Engineer responsible for preparing construction documents for the relocation of existing telephone, electric, gas, cable television, and fiber optic facilities on NJ Turnpike bridge structures. Meetings were conducted with the utility owners to develop and finalize relocation schemes and prepare utility orders, including a cost estimate. In accordance with CFR Title 23 Part 645, Utility Agreements were prepared following NJTPA Procedures Manual, Section 7, Utility Installations, Relocations, and Adjustments. In addition, the NJDOT Bridge and Structural Design Manual was used to determine utility hanger requirements. Our firm provided professional design services for the lengthening of six bridges carrying Authority, local, and state roads over the Turnpike Mainline. The staged lengthening of these structures was accomplished with minimal impact to the motoring public.

NJ Dept. of Transportation (NJDOT), Route 21 TSM6 C3 Construction Services, Newark, NJ. Design Engineer responsible for handling RFI's from the contractor and coordinating with the utility companies should any design changes be necessary because of field conditions. Additionally, he reviewed shop drawings and issued Change of Plans to incorporate the altered designs from the original contract documents. Change of Plan documents were completed in accordance with Section 4, Design Development, of the NJDOT Procedures Manual. This was our firm's third contract for the Route 21 Project, which dealt with Construction Services.

Michael Mastriani, PE
Civil Engineer

Education

- BS, Civil Engineering, 1995

Registration/Credentials

- Professional Engineer: NJ

Michael Mastriani has prepared numerous features of highway design, including horizontal layout, cross sections, grading, ROW, utilities and cost estimating. He has worked with various New Jersey Agencies and counties including New Jersey Department of Transportation (NJDOT) and New Jersey Turnpike Authority. As Project Engineer on many local roadway projects, he has been responsible for preliminary and final roadway design, design of roadway widenings, design of interchange ramps, as well as preparation of construction documents.

Project Experience

NJ Turnpike Authority, Interchange 6-9 Widening Program, Design Section 8, NJ. Roadway Project Engineer whose responsibilities include design of new Section 8 mainline realignment for 4-miles; design of new cross-over ramps within Section 8; realignment of existing ramps within the 8A Interchange; design of new locations for local roads crossing the proposed realigned Turnpike in Section 8; and design of lane and shoulder widening for 8-miles of southbound and northbound Turnpike mainline north of the 8A Interchange. Additional responsibilities associated with the previously cited roadway design work include design of new safety and guide rail elements, coordination with new structural design, including new bridges and retaining walls, and design of new ITS sign locations. Also responsible for maintenance and protection of traffic coordination between contracts within Section 8 and roadway items estimate.

NJ DOT, Route 21 Reconstruction, Newark, NJ. Project Engineer/Roadway Designer responsible for the preparing right-of-way, geometric design, horizontal & vertical design, highway sections, design exceptions, and access plans, and generating construction plans using Inroads and CAD software in accordance with NJDOT Roadway Manual. Mr. Mastriani was also responsible for finalizing change of plans due to field and design changes. Tasks included redesigning as requested by NJDOT Resident Engineer or due to changes in field conditions. Major changes included a widening of a proposed median along Route 21 in front of NJPAC and redesign of Route 280 ramps He also oversaw plan preparation and quantity calculations. The portion of the Route 21 alignment in the vicinity of the NJ Performing Arts Center (NJPAC) was developed in coordination with the alignment of the Newark City Subway Extension (NCSE) project immediately adjacent to Route 21. Preparation of construction plans, specifications, and estimates included design of horizontal and vertical geometry on InRoads, highway sections, cross sections, design exception reports, traffic signals, MPT, pavement marking, signing, ITS design, jurisdictional plans and agreements, ROW plans, estimates and agreements, access modifications, and design of a replacement for the existing railroad bridge across Route 21.

NJSEA and NJ TRANSIT, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Project Engineer/Roadway Designer responsible for geometric design, horizontal & vertical design, construction staging, and maintenance of traffic plans as well as generating construction plans using Inroads and CAD software. Responsibilities also included coordinating with structural, site, utility, drainage, and rail designers to facilitate a well-coordinated roadway design. Other responsibilities included quantifying and generating backup for roadway materials and earthwork. This project was performed in accordance with NJDOT Design and Procedure Manual standards. Our firm provided engineering, planning, and environmental services for a new rail station and heavy rail

Michael Mastriani, PE
Civil Engineer

service, and roadway for the Meadowlands Sports Complex area. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service, roadway, and station located within the Hackensack Meadowlands Area.

NJ Turnpike Authority, Design Services for the Lengthening of Six New Jersey Turnpike Bridges, Southern, NJ. Engineer for Phase B roadway design responsible for typical sections, roadway design/layout plans, design of maintenance and protection of traffic, and right-of-way coordination. Our firm provided design services for the lengthening of six bridges carrying Authority, local, and state roads over the Turnpike Mainline. In anticipation of the future widening of the Turnpike Mainline from four to six lanes along its southern reaches, the NJTA chose these six structures for lengthening to accommodate the future widening of the roadways below. The staged lengthening of these structures was accomplished with minimal impact to the motoring public.

NJ Dept. of Transportation, Route 21 Reconstruction, Newark, NJ, Completion: Engineer responsible designing new Route 21 roadway through Newark. Project entails realignment of existing roadway as well as adding new ramps and sidestreet construction. Tasks included preparing right-of-way and access plans for all 3 contracts as well as generating construction plans using Inroads and CAD software. Jacobs was responsible for roadway widening and relocation in Downtown Newark, from Green Street to north of Passaic Street. This project included the development of an interactive traffic communications and management system, to decrease delays and improve safety within the Route 21 corridor in the City of Newark, County of Essex. The improvements primarily include the introduction of auxiliary lanes in addition to three lanes for through traffic for the 2.1-mile long project. Preparation of construction plans, specifications and estimates included design of horizontal and vertical geometry, traffic signals, pavement marking, signing, ITS design, ROW and access acquisition, and design of a replacement for the existing railroad bridge across Route 21.

NJ Dept. of Transportation, Route 10/53 Interchange Improvements, Morris Plains & Parsippany Twp, NJ. Project Engineer responsible for horizontal and vertical roadway design. Project entailed widening and reconstruction of Route 53 as well as new ramp design connecting Route 10 to Route 53. This project involved final design of improvements to the Route 10/53 interchange, Sections 2L and 3J, developed in the metric system as per the NJDOT "Preliminary Metric Design Guidelines." The firm performed final design of improvements to mainline Route 53, including reconfiguration of the Route 10/Route 53 Interchange ramps. Improvements also involved roadway resurfacing, widening, four new ramps and new signalization at two new ramp/Route 53 intersections, safety appurtenances, new retaining walls prior to construction approval, widening of bridges on Route 10, new drainage, and new lighting.

Robert Zimmermann
Civil Engineer

Education

– BS, Civil Engineering, 1996

Mr. Zimmermann has been an Engineer on various projects throughout New Jersey. This has included R.O.W., cross sections, profiling, and grading and utilities. He has worked on both preliminary and final design plans for State and County projects. By utilizing the computer, he has been able to enhance the overall engineering process. With the knowledge of Bentley's Microstation and Intergraph's InRoads, Mr. Zimmermann has become efficient in preliminary plan preparation and final plan submission.

Project Experience

Port Authority of NY & NJ, Newark International Airport Peripheral Ditch Analysis, Newark and Elizabeth, NJ. Civil Engineering Designer responsible for geometry and layout design for sidewalk, island, and taxiway for two Authority assignments.

- **East Parking Garage Improvements, JFK Airport** - Project Engineer responsible for parking garage lot grading, curb and island geometry, sidewalk layout. The project required consideration of both existing and proposed conditions due to its proximity to Terminal 4/IAT redevelopment.

- **LaGuardia Airport Taxiway Fillets** - Project Engineer responsible for the layout of future taxiway turning radii improvements at LaGuardia Airport, in order to accommodate Boeing 777 aircraft's at the facility. A detailed hydraulic and hydrological analysis of the peripheral ditch at Newark Airport as part of a civil engineering call-in agreements for facilities in the New Jersey and New York Metropolitan Area.

NJ Dept. of Transportation, Collingswood Circle Improvements - Final Design, Camden County, NJ
Assistant Engineer responsible for the cross sections necessary for the widening of Route 30/130 from four lanes to six. The project eliminated the Circle and provided traffic signalization and ramp connections to control the major intersections. The project also included the widening of Route 30/130 from four lanes to six and improvements to guide signing, drainage, geometrics and lighting, in addition to design of a new pedestrian bridge. Other structural design included a retaining wall, a bridge deck rehabilitation and replacement of the superstructure of a bridge, which spans the Cooper River. Environmental issues include 4 ft. evaluation, soil and sediment control, permit applications for stream encroachment and freshwater wetlands and preparation of plans for removal of underground storage tanks.

County of Ocean, County Line Road Reconstruction, Lakewood/Jackson Township, NJ
Assistant Engineer responsible for the preliminary design for the reconstruction of approximately 1.6 kilometers (one-mile) of County Line Road (Route 526) from Kent Road to New Prospect Road. Construction Documents were prepared for roadway, pavement, and drainage design. In addition, right-of-way documents were prepared for the entire project. All contract drawings were created using Intergraph's InRoads design software and Bentley's Microstation CAD Software. The project involved the design for widening the roadway from New Prospect Road to Laurelwood Avenue to provide a wider, safer, 4-lane cross section with provision for turning lanes at the intersections of County Line Road with Hope Chapel Road and Kent Road, shoulders and a striped median. Alternative alignment studies were prepared to select an alignment that provides

Robert Zimmermann
Civil Engineer

a balance between the environmental and community concerns in an effort to minimize impacts to adjoining properties through this highly residential area. This process included extensive community interaction, and analyses of the existing and projected traffic conditions. Environmental permitting on the project included the Green Acres Diversion Process, Stream Encroachment Permit, Fresh Water Wetland Permit, Soil Erosion and sediment control permit, and water quality certification. The preparation of the construction documents included roadway design, pavement design, traffic signal design, and drainage design. In addition, right of way documents were prepared for the ninety-one parcels along the project corridor.

NJ Turnpike Authority, Garden State Parkway Interchange 80 to 83 Improvements (Widening and Permitting), New Jersey, NJ. Assistant Engineer responsible for the preparation of preliminary and final design improvements for this section of the Garden State Parkway. Plan sheets for phase submissions were created using Microstation and InRoads. This project involved the preparation of final construction plans for the inner widening of the GSP mainline between interchanges 80 and 83. Includes: roadway lighting systems, sign and bridge inspections, geotechnical studies, and project scheduling.

Glimcher Co., Jersey Gardens Mall Off-Site Roadway Improvements, Elizabeth, NJ. Assistant Engineer responsible for using InRoads and Microstation to create construction and utility plans for the design of access to this metropolitan shopping mall. The roadway improvements provided direct access between NJ Turnpike Interchange 13A and Jersey Gardens Mall, a 1.5 million sq. ft. retail mall. This direct connection across NJTP mainline and a connection to Trumbell Street that is also a part of these improvements, increase to three the number of access Routes to Port Elizabeth.

NJ Dept. of Transportation, South Jersey, Main Lake Road, Route 555 Reconstruction, Cumberland/Gloucester Counties, NJ. Assistant Engineer responsible for the preparation of final design plans for the reconstruction and widening of approximately 2.9 miles of Main Lake Road. Plans were created using Bentley's Microstation. The firm was responsible for the preparation of final design and construction contract documents for the reconstruction and widening of approximately 2.9 miles of Main Lake Road. The project also included review of existing storm drainage systems, traffic signing, striping and marking, community involvement, bridge study, preparation of right-of-way and utility documents and securing permits.

NJ Dept. of Transportation, Route 21 Reconstruction, Newark, NJ. Project Engineer responsible for assisting with the identification of utilities and the coordination of utility contacts involved in the project. These responsibilities include telephone conversations with each contact to discuss relocations, setting up meetings to review changes, and the preparation of plans and correspondence to display the existing and proposed utilities for review. Jacobs was responsible for roadway widening and relocation in downtown Newark, from Green Street to north of Passaic Street. The improvements primarily included the introduction of auxiliary lanes in addition to three lanes for through traffic for the 2.1-mile long project. Preparation of construction plans, specifications and estimates included design of horizontal and vertical geometry, traffic signals, pavement marking, signing, ITS design, ROW and access acquisition, and design of a replacement for the existing railroad bridge across Route 21.

Neesha Desai, PE
Civil Engineer

Education

- BS, Civil Engineering, 1998

Registration/Credentials

- Professional Engineer: VA

Neesha Desai has been involved in numerous features of highway design, including horizontal layout, cross sections, grading, R.O.W., utilities and cost estimating. She has held the title of Project Engineer on many projects and has been responsible for preliminary and final roadway design, design of roadway widening, design of interchange ramps, as well as preparation of engineer's construction cost estimate.

Ms. Desai has worked on both preliminary and final design plans for various State, County, and private developer projects.

Project Experience

Pennsylvania Department of Transportation, SR 0095, Section RES I-95 Reconstruction in the City of Philadelphia, PA. Project Engineer responsible for development of Maintenance and Protection of Traffic Plans and coordinating with the structural engineers for the construction sequencing for restoration and rehabilitation of Westmoreland Street Viaduct, Levick Street Bridge, State Road Viaduct, Pennypack Creek Bridge, Quarry Bridge and Bridges over AMTRAK. The tasks included were 1.5 km roadway reconstruction, 11.0 km roadway signing and stripping and maintenance and protection of traffic during construction. Preparation of Traffic Control Schemes required development of horizontal and vertical alignments, crossover design, development of typical sections, identifying and designating alternate routes (detours), and pavement marking plans per the PennDOT standards. Also prepared the engineer's estimate and did the road user liquidated damages computations.

Pennsylvania Department of Transportation, SR 0422, Sections M01 and M02 Transportation System Analysis, West Chester, PA. Project Engineer responsible for development of various conceptual horizontal and vertical alignments to finalize the most suitable alternative for reconstruction and rehabilitation of the roadway. The design had various constraints like limited right of way and vertical clearance underneath the structures.

Pennsylvania Department of Transportation, Open End Contract for Various Traffic Engineering/Safety Services, Statewide, PA. Project Engineer responsible for dual dimensioning of Publication 236M. The task included developing signing standards to be used statewide for which spacing calculations were done for various regulatory, warning and guide signs in U.S. Customary and Metric units. It involved dual dimensioning about 400 signs under a limited and tight project schedule.

Pennsylvania Department of Transportation, Environmental Mitigation Services, Design and Construction Consultation US Route 202, Section 300, New Alignment, West Chester, PA. Project Engineer responsible for the preliminary design that involved adding two lanes along this 8-mile section of roadway, as well as a collector-distributor road to improve traffic flow. The design involved development of horizontal and vertical alignments, developing digital terrain models for the various roadways involved, developing typical sections, grading plans and cross-sections. Prepared the design exception report for the sub-standard superelevation, provided to maintain the existing overpass over the Swedesford Road, as compared to the AASHTO and PADOT requirements. Prepared the drainage and grading plans which involved very limited right of way.

Neesha Desai, PE
Civil Engineer

New Jersey Turnpike Authority, Interchange 12 Alternatives Study, EIS, and Interim Final Design, Carteret and Linden, NJ. Engineer responsible for the development of various conceptual alternatives for improvements to NJTA Interchange 12 and identify all necessary project requirements and environmental permits for future development to address the immediate traffic congestion problems. Also involved in the final design of interim improvements at the interchange, which involved constructing new ramps to connect local roads in Carteret to the Toll Plaza and the construction cost estimate for it. Project Engineer responsible for finalizing change of plans due to field and design changes. Tasks included redesigning as requested by resident Engineer or due to changes in field conditions. In support of both the redevelopment of the Tremley Point area in Union County and the growing traffic difficulties at Interchange 12 in Middlesex County, the NJ Turnpike Authority has undertaken the study and EIS preparation for a reconstruction of Interchange 12 and a new connector road from Industrial Road in Carteret to Tremley Point Road in Linden. Engineer responsible for development of various (7) alternates for the Connector road and identified the various impacts and the construction cost estimates for the same. As Project Engineer, was also responsible for the final design of the preferred alternate.

NJ Dept. of Transportation, Route 10/53 Interchange Improvements, Morris Plains & Parsippany Twp, NJ. Project Engineer responsible for horizontal and vertical roadway design. Projected involves widening and reconstruction of Route 53 as well as new ramp design connecting Route 10 to Route 53. Final contract design contract documents were prepared for the improvements to mainline Route 53, including reconfiguration of the Route 10/Route 53 Interchange ramps. Improvements also involved roadway resurfacing, widening, four new ramps and new signalization at two new ramp/Route 53 intersections, widening of bridge on Route 10, new drainage, and new lighting.

State of New Jersey - Dept. of Transportation (NJDOT), Route 28 at Westfield Circle FD, Union County, NJ. Engineer responsible for development of preliminary and final plans for the provision of a "modern roundabout" to replace the existing Westfield Circle (Rt. 28) and analyze/upgrade several signalized intersections (West Broad Street, Westfield Avenue East Broad Street and Elm Street) approaching the circle. Prepared drainage and grading plans which involved maintain enough vertical clearance under the New Jersey Transit Overpass and not impacting the historical monuments in the area with restricted right of way. Prepared the cross-sections, typical sections and digital terrain models for the project. Also involved in preparing the engineer's estimate for the proposed design. Access resolution was a key element of this project with unique problems involving access to emergency services were effectively addressed.

County of Ocean, Route 528 Reconstruction, Lakewood, NJ. Engineer responsible for preliminary and final design for the reconstruction of approximately two (2) miles of Ocean County Route 528 from Gudz Road to Route 9. This section of Route 528 was a two-lane undivided roadway with shoulders of varying width split into two distinctly different areas. The design involved removing the existing concrete pavement, lowering the roadway profile and limiting all work to within the 66 feet existing right-of-way. Engineer responsible for the roadway design that included the horizontal and vertical alignments for the 2 mile roadway that had 22 side streets and including some major signalized intersections. Prepared drainage and grading plans and driveway profiles and put together the engineer's estimate for the proposed design. The design also included flood routing calculations as part of the design of a retention/detention basin for water quality control. This basin is being oversized to handle drainage from a future roadway improvement project to the West of this project.

Frank Lopatosky, PE
Civil Engineer

Education

- MS, Hydraulics & Environmental Engineering, 1986
- BS, Civil Engineering, 1980
- BA, Business Administration, 1980

Registration/Credentials

- Professional Engineer: NJ

Frank Lopatosky is responsible for managing and performing design, coordinating various design specialties, and maintaining budgets and communications with clients and subconsultants for both public and private clients. These projects have included the NJTA's Interchange 12 Alternatives Analysis Study, Preliminary Design and Interim Plan Final Design, the NJTA's Interchange 15X Concept Development and EIS, the elimination of the Collingswood Circle and providing a pump station to address a flooding problem on Route 130 in Camden County, and site rehabilitation for a 100-acre United States Postal Service facility in Hudson County. His former NJDOT highway and bridge field experience enhances his design skills, which includes preliminary and final design of roadway and drainage plans, staging and traffic control plans, utility relocations, and the preparation of specifications.

Project Experience

NJ Department of Transportation, Airport Circle Improvements - Final Design, Camden County, NJ. Project Manager responsible for the final design of improvements for the Airport Circle for the New Jersey Department of Transportation. Jacobs was contracted to design improvements to change the existing Circle's conflict points from a number of controlled weaving and merging sections to a series of signalized intersections and widened Route 30/130 from four lanes to six. The project also involved complex traffic control planning, guide signing, lighting (including high-mast lighting), and bridge deck rehabilitation at six existing structures. In addition to roadway drainage, the project included replacement of an existing bridge with twin 58"x 91" HERCCP and an open channel. Permit applications for stream encroachment and freshwater wetlands were also required.

NJ Department of Transportation, Collingswood Circle Improvements - Final Design, Camden County, NJ. Project Manager responsible for the final design of improvements to Collingswood Circle for the New Jersey Department of Transportation. This project eliminated the Circle and provided traffic signalization and ramp connections to control the major intersections. The project also included the widening of Route 30/130 from four lanes to six and improvements to guide signing, drainage, geometrics and lighting, in addition to design of a new pedestrian bridge. Three detention basins were designed to address low-point flooding under the existing PATCO railroad bridge. Other structural design included a retaining wall, a bridge deck rehabilitation and replacement of the superstructure of a bridge, which spans the Cooper River. Environmental issues included 4(f) evaluation, soil and sediment control, permit applications for stream encroachment and freshwater wetlands and preparation of plans for removal of underground storage tanks.

NJ Turnpike Authority (NJTA), Jersey Gardens Mall Off-Site Roadway Improvements (Kapkowski Road), Elizabeth, NJ. Project Engineer responsible for the drainage and stormwater management/water quality basin layout of six basins for the portion of the project in the vicinity of North Avenue. Six new bridges and two signalized intersections were included in this interchange design. As part of a multi-disciplinary team, Jacobs provided design and construction phase services for bridges and access roads connecting to the then new Jersey Gardens Mall.

Frank Lopatosky, PE
Civil Engineer

The process was unusual, as construction was accomplished on a fast-track basis, prior to completion of design. Jacobs' portion of the project involved the Jersey Gardens Mall access roads from the west, including crossing over the Turnpike to the Interchange 13A Toll Plaza and North Avenue within the City of Elizabeth, Union County, NJ. The project was a fast-track design, with construction starting just five months after the start of design.

NJ Department of Transportation, Route 10/53 Interchange Improvements, Morris Plains & Parsippany Twp, NJ. Project Manager responsible for the study and final design of the Route 10 and Route 53 interchange. This project was redesigned to accommodate the proposed expansion of the Pfizer site south of the project. An accelerated schedule was established for the new design. Duties entailed design of resurfacing profiles, development of super elevation, horizontal and vertical geometry, drainage stormwater management, construction cost estimates, and report writing. Jacobs performed final design of improvements to mainline Route 53, including reconfiguration of the Route 10/Route 53 Interchange ramps. Improvements also involved roadway resurfacing, widening, four new ramps and new signalization at two new ramp/Route 53 intersections, widening of bridges on Route 10, new drainage, and new lighting.

NJ Department of Transportation, Route 21 Reconstruction, Newark, NJ. Project Engineer responsible for coordinating the preparation of the Traffic Control and Staging plans for the fast-tracked Contracts 1 and 2 portions of the project. These contracts were designed 10 months and 11 months ahead of schedule respectively. The effort involved coordination of complex MPT plans along with extensive drainage, utility, pavement replacement, and bridge replacement work through the heart of Newark. Prepared specifications for numerous non-standard items. Jacobs was responsible for roadway widening and relocation in Downtown Newark, from Green Street to north of Passaic Street. This project included the development of an interactive traffic communications and management system, to decrease delays and improve safety within the Route 21 corridor in the City of Newark, County of Essex. The improvements primarily included the introduction of auxiliary lanes in addition to three lanes for through traffic for the 2.1-mile long project. Preparation of construction plans, specifications, and estimates included design of horizontal and vertical geometry, traffic signals, pavement marking, signing, ITS design, ROW and access acquisition, and design of a replacement for the existing railroad bridge across Route 21.

NJ Department of Transportation, Route 28 at Westfield Circle FD, Union County, NJ. Project Manager responsible for the Final Scope Development, Preliminary, Final Design of the Route 28 safety and operational improvements at the Westfield Circle. Also included was the analysis of six intersections on the approaches to the circle. The project involves base mapping, geometric and drainage design, utility relocations, traffic data collection and analysis, design exception preparation, access and ROW impact assessment, community relations and Section 106/4F approval. Extensive regrading of the roadway pavement was required to establish adequate cross-slope for drainage and adequate superelevation for curves approaching and through the roundabout. Vertical clearance under an existing NJ TRANSIT railroad bridge required development of options to lower the Route 28 pavement while protecting the existing steel piers and footings.

James J. Homoki, PE, CME
Technical Specialist

Education

- BS, Civil Engineering, 1986

Registration/Credentials

- Professional Engineer: [Ex.1]
- Certified Municipal Engineer

James Homoki has 24 years of varied experience in highway engineering, including bridge replacement and deck repair projects. He also has experience in project and task management levels for both preliminary and final design projects. He has worked with various New Jersey agencies and counties including NJDOT and NJTA.

Project Experience

NJ Department of Transportation (NJDOT), Route 31, Section 8P Bridge Replacement and Roadway Improvements, Hunterdon County, NJ. Project Manager and Highway Civil Design Team Leader for the replacement of an existing bridge over NJ Transit's Raritan Valley Line, addition of shoulders, extension of truck climbing lanes, and improvements to three intersections within the limits of this two-mile-long project. Completed horizontal and vertical geometric design elements included transition curves, design exception evaluation, super elevation and grading, and intersection design. Multi-disciplinary responsibilities included coordinating right-of-way, construction staging, environmental permitting, retaining walls, traffic signal design, and subconsultants.

NJDOT, Route 1 Heathcote Brook Culvert Replacement, South Brunswick Township, Middlesex County, NJ. Civil Design Team Leader for preparation of contract plans for the replacement of a scour damaged bridge with a concrete box culvert. Responsibilities included development of grading, traffic control, quantities, and utility relocation coordination. Coordinated subconsultant work for survey and right-of-way. Design performed in accordance with the NJDOT Roadway Design Manual.

NJTA, Bridge Deck Repairs & Resurfacing, Contracts R-1416, R-1389, R-1358, R-1333, NJ. Project Manager/Project Engineer for an annual bridge and roadway rehabilitation contract at select locations between Mile 0 and Mile 83. Contract documents developed under a compressed schedule and included inspection, repair recommendations, construction scheduling, development of local road detours, and MPT.

Monmouth County Engineering Department, Replacement of Five Monmouth County Bridges, Monmouth County, NJ. Highway Team Leader and Project Engineer for five separate contracts for replacement of various bridges throughout Monmouth County. The projects included development of conceptual design geometric alternatives, horizontal and vertical design, hydraulic analysis, permitting, MPT, structural design, right-of-way, utility relocation, and preliminary and final contract plans. The following projects were included:

- Replacement of Bridge No. S-27, Seven Bridges Road over Little Silver Creek, Borough of Little Silver, NJ
- Replacement of Bridge No. MN-30, Water Street (CR 522) over Weamaconk Creek, Borough of Englishtown, NJ
- Replacement of Bridge No. E-14, East Main Street over Pemberton Creek, Borough of Oceanport, NJ
- Replacement of Bridge No. 0-40, Patten Avenue over Manahassett Creek, Long Branch/Monmouth Beach, NJ
- Replacement of Bridge No. ML-30, Ticetown Road over Matawan Brook, Marlboro Township, NJ

James J. Homoki, PE, CME
Technical Specialist

Ocean County Engineering Department, Route 88 and Bay Avenue Intersection Improvements, Borough of Point Pleasant, NJ. Roadway Design Team Leader for intersection improvements designed to NJDOT Standards. The project included widening along Route 88 and Bay Avenue and the complete replacement of a traffic signal. Performed geometric design including the design of horizontal and vertical alignments, evaluated Design Exceptions, and supervised preparation of construction staging and MPT plans, utility relocations, right-of-way plans, and grading.

NJDOT, Route 21 Viaduct Replacement, Newark, NJ. Highway Team Leader for preliminary and final design services for Contracts A and B, design/construction contracts for the overall Route 21 project. Responsibilities involved hands-on geometric design of complex multi-level ramps using InRoads and MicroStation software, specifications, jurisdiction maps, preparation of design exceptions, and adherence to the NJDOT Procedures Manual. Also supervised development of final roadway plans, specifications, and cost estimates. Design of this project was based on the NJDOT Roadway Design Manual and included complex grade-separated interchanges over Route I-78, Conrail Yards, and busy AMTRAK NEC; horizontal and vertical realignment of Routes 1 & 9; retaining wall designs; intricate staged construction and traffic control; geotechnical engineering including solutions to address embankment settlement problems; state and interstate roadway lighting; drainage design; landscape plans; several major utilities including relocation of 138 kV line servicing Newark International Airport; sign structures; striping and signing; traffic signals; ITS facilities, and value engineering. Total construction cost was over $200 million.

Replacement of Fresh Ponds Road Bridge over Great Ditch Brook, Middlesex County Engineering Department, South Brunswick Township, NJ. Project Manager for the replacement of a deteriorated single span bridge with a rigid frame structure. The design included a structure and alignment type study, minor realignment, Right of Way, utility relocations, detour development, profiling, grading, and a comprehensive permit package including Fresh Water Wetlands and Flood Hazard Area to meet NJDEP requirements. Design performed in accordance with ASSHTO and the NJDOT Roadway Design Manual.

Ellen P. O'Donnell
Civil

Education

– BS, Civil Engineering, 2010

Ellen O'Donnell has been working with the Jacobs transit team for one year. Responsibilities in this position include station layouts, ramp connections, and geometry work on aerial sections, as well as sheet display. Ellen also has experience with drainage design, traffic engineering services, and sustainability consulting services. This experience includes the design of various storm drain systems for several highway projects in Virginia, traffic impact studies, and analysis of several projects' compliance with BREEAM sustainability standards in the UK.

Project Experience

Metropolitan Transportation Authority, MTA Purple Line, Baltimore, MD. Provided several design options for station layout including, bus bays, bus layover, kiss & ride, taxi, and park & ride access, all in accordance with WMATA standards. Design of the trail ramps along a portion of the corridor. Track alignment adjustments to accommodate community requests for different impact options on adjacent street intersection.

CSX, Bellwood Project. Coordinated revisions and updates, created and compiled plan sheets for submissions on a ten-mile second mainline expansion project.

Turner & Townsend, London, United Kingdom (January 2008 – April 2008)
Sustainability Intern (F/T Internship)

- Evaluated environmental performance measures of several city and university projects - Assisted in setting specific target goals for the design team throughout design, construction, and operation
- Monitored the progress of several BREEAM Assessments (LEED equivalent used in UK) - Consulted individual disciplines on requirements for achieving certain credits

Rinker Design Associates, Manassas, Virginia (august 2005 – January 2008)
Transportation Associate - Coordinated with transportation engineers on projects for VDOT, Fairfax County and Prince William County

- Developed the design of storm drain systems and ditches, drafted Erosion and Sediment Control plans, prepared quantity take-offs and cost estimates, conducted traffic impact studies
- Directed and trained interns and technical aides
- Provided guidance on new tasks, assembled tangible work assignments, reviewed completed work for quality assurance, assessed development over course of employment

Thomas Decker, PE
Hydraulics/Hydrology

Education

- MSCE, Water Resources and Environmental Engineering, 2003
- BSCE, Civil Engineering, 1986

Registration/Credentials

- Professional Engineer: NJ

Tom Decker is experienced in hydrologic and hydraulic studies, roadway drainage design, stream encroachment permits, bridge scour evaluations, and dam remedial improvements. He has applied HEC-1, HEC-2, HEC-RAS, and roadway-drainage design computer programs extensively, and has been involved in numerous projects relating to stormwater management, water quality control, and flood control. He has extensive experience related to stormwater management, especially designs of detention and water quality basins required to comply with NJ Department of Environmental Protection (NJDEP) Stream Encroachment, Coastal Area Facility Review Act, and Freshwater Wetlands Permit requirements. His experience also includes evaluation of floodplain impacts, including measures necessary for compliance with the NJDEP Flood Hazard Area Control Act Rules (FHACAR). Mr. Decker also has extensive bridge scour related experience and served as the Project Engineer responsible for the Stage I screening of 150 bridges in New Jersey, and prepared numerous detailed scour evaluations for bridges for New Jersey Department of Transportation, New York State Thruway Authority, and the Minnesota Department of Transportation.

Project Experience

Port Authority of NY & NJ, Teterboro Airport EMAS for Runways 6-24, Teterboro, NJ. Hydrology/Hydraulics Project Manager responsible for hydraulic evaluation and compliance with NJDEP flood hazard and stormwater management requirements. The project included design, preparation of construction and permit application documents, and construction of an Engineered Material Arresting System (EMAS) to be installed at the end of Runway 24 and Runways 1-19. The project included grading and drainage improvements in compliance with Federal Aviation Administration requirements. Compliance with the NJDEP SWM requirements was achieved with the use of a combination of vegetated filters (25-feet-long at 1% slope) and a manufactured treatment device for Runways 6-24. For Runways 1-19, detailed hydrologic and hydraulic analysis was performed to establish existing conditions and to evaluate the potential impacts for the proposed conditions and mitigation measures for both the East Riser Ditch and the Red Neck Avenue Ditch. The work required extensive use of the USACOE HEC-RAS and HEC-1 programs. A detailed Engineers Report was prepared in accordance with the NJDEP Stream Encroachment Permit requirements. Our services included preparation of stream encroachment permit plans and USACOE wetland plans for the related work.

Port Authority of NY & NJ (PANYNJ), Call-In Agreement, Task for Teterboro Airport Runway I-19 EMAS, Hydrologic/Hydraulic Studies and Permit Documents, Teterboro, NJ. Hydraulics/ Hydrology Design Manager responsible for the hydrologic and hydraulic evaluations. In an effort to increase safety at Teterboro Airport, the Port Authority NY & NJ undertook projects to install Engineered Material Arresting Systems (EMAS) at the end of runways. EMAS is a system installed to safely stop aircraft that overrun a runway. They are typically installed at the end of runways that are in close proximity with natural (i.e. bodies of water) or man-made boundaries (i.e. roadways, buildings, railroad tracks). We performed a hydrologic/hydraulic study to identify impacts and to evaluate possible alternative options related to the ditch impacts. The work required extensive use of the USACOE HEC-RAS and HEC-1 Computer Programs. A detailed Engineers Report was prepared in accordance with the NJDEP Stream Encroachment Permit

Thomas Decker, PE
Hydraulics/Hydrology

requirements. The project also involved preparation of Stream Encroachment Permit Plans and USACOE Wetland Plans for the related work.

Port Authority of NY & NJ (PANYNJ), 1999 Civil/Aviation Engineering Call-in, New York, NY. Hydraulic Engineer responsible for the hydraulic analysis for proposed bridges and modifications to existing bridges to identify impacts to the existing water surface elevation and to evaluate compliance with regulatory requirements. The evaluation included assessment of various downstream improvements, including replacement of hydraulically restrictive structures and modification or replacement of an existing tide gate system to reduce hydraulic losses to offset the impacts of proposed upstream encroachments. Project design work included roadway reconstruction, airside site work, storm drainage rehabilitation, utility relocation, and pavement repair. Detailed analyses were performed evaluating storm drainage improvements at Newark International Airport.

Port Authority of NY & NJ, Newark International Airport Peripheral Ditch Analysis, Newark and Elizabeth, NJ. Hydraulic Engineer responsible for detailed hydrologic and hydraulic evaluation of the Peripheral Ditch (PD) that conveys runoff from most of the airport and an equally large portion of the City of Newark to discharge at the Elizabeth Channel. We performed hydrologic analysis using HEC-1 and backwater analysis using HEC-2 programs. The hydrologic/hydraulic evaluation was complicated by the presence of numerous impoundment areas, a major stormwater pumping station, and tide gates. The evaluation established that the majority of the length of the PD is tidally influenced. The hydrology/ hydraulic report were used in support of a NJDEP Stream Encroachment Permit application and scour evaluation for a proposed bridge and parking deck structure. This project was part of our 1997-1998 Civil Engineering Call-In Engineering Agreements for Facilities in the NY/NJ metropolitan area.

NJ Turnpike Authority, Interchange 6 to 9 Widening Program, Design Section 8, Cranbury Township through East Brunswick, NJ. Hydrology and Hydraulics Project Manager responsible for preliminary and final highway drainage design as well as backwater analysis. The work included hydraulic design of the roadway drainage system including hydrology, water spread calculations, and pipe hydraulic calculations. The project included detailed hydrologic and hydraulic analyses, including HEC-1 Watershed Analysis, flood routing calculations for fifteen stormwater management basins using the Hydraflow program (equivalent to PondPack), and a HEC-RAS model backwater analysis for four streams. The project also included evaluation and design of measures necessary for compliance with the NJDEP Flood Hazard Area Control Act Rules (FHACAR). Detailed engineering reports and supporting documents were prepared for the NJDEP Land Use Permits.

NJ Sports & Exposition Authority (NJSEA), Meadowlands Rail and Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ, Water Resource Manager responsible for the final highway drainage design. The work included hydraulic design of the roadway drainage system including hydrology, water spread calculations, and pipe hydraulic calculations using the procedures in Section 13, Hydrology/Hydraulics of the NJDOT Procedures Manual and Section 10 of the NJDOT Design Manual – Roadways. The work also included design of the rail's viaduct drainage systems. The analysis considered the minimum pipe size and slope to maintain self-cleansing velocities; the location of the longitudinal pipe and how it affects the superstructure; location of cleanouts for easy maintenance; and the stability of the downspout locations.

John Corcoran, PE
Hydraulics/Hydrology

Education

- BSCE, Civil Engineering, 1995

Registration/Credentials

- Professional Engineer: NJ

John Corcoran has over ten years of experience in road and drainage design, utilities, and stream hydraulic analysis, and field inspection of various roadway and bridge construction projects. In addition, his background includes monitoring work pertaining to shallow- and deep-foundation construction and large-scale earthwork operations, including construction and mass excavations in soil and rock. Mr. Corcoran's skill set also includes environmental permitting and sampling.

Project Experience

Port Authority of NY & NJ (PANYNJ), Newark Airport Runway 11 EMAS, Newark, NJ. Hydraulic/Hydrology Engineer responsible for assisting in the swale and pipe design as part of the stormwater management for the proposed Engineered Material Arresting System (EMAS). Mr. Corcoran also assisted in the production of the final Engineer's Report. In an effort to increase safety at various airports, the Port Authority NY & NJ undertook projects to install Engineered Material Arresting Systems (EMAS) at the end of runways. EMAS is a system installed to safely stop aircraft that overrun a runway. The EMAS, which is an impervious surface, would significantly increase the total runoff and suspended solids at the end of the runway. The swales were designed to convey the runoff to the nearby peripheral ditch. Hydraflow modeling software was used to analyze the designed swales. The major challenge was to meet the Authority's strict standards for runway design, while working within significant environmental restrictions imposed by NJDEP and the Hudson-Essex-Passaic (HEP) Soil Conservation District.

NYS Department of Transportation, Route 347 Reconstruction Environmental Impact Statement and Preliminary Design Services for Roadway Improvements Phases I-IV, Suffolk County, NY. Hydraulic Engineer responsible for design of recharge basins to provide compliance with NYS Department of Environmental Conversation water quality/quantity requirements, including grading and computation of storage volume based on runoff calculations using NYSDOT design criteria. Also responsible for field investigations to determine feasibility of recharge basin locations based on existing or proposed conditions.

NJ Turnpike Authority (NJTA), Interchange 6 to 9 Widening Program, Design Section 8, Cranbury Township through East Brunswick, New Jersey. Hydrologic and Hydraulic Project Engineer assisting in the design of preliminary and final highway drainage designs, stormwater management (SWM), and floodplain management in accordance with regulatory requirements. The work included hydraulic design of the roadway drainage system including hydrology, water spread calculations, and pipe hydraulic calculations. The project included detailed hydrologic and hydraulic analyses, including Watershed Analysis utilizing the National Resource Conservation Service (NRCS) methodology with Geographic Information System (GIS) tools, flood routing calculations for SWM basins using the Hydraflow program, and HEC-RAS model backwater analysis for four streams. The project also included evaluation and design of measures necessary for compliance with the NJDEP Flood Hazard Area Control Act Rules (FHACAR). The SWM and soil erosion measures include design of 14 recharge or detention basins plus numerous Manufactured Treatment Devices (MTDs) to achieve Total Suspended Solids (TSS) treatment for the project in compliance with the NJDEP SWM Regulations. Detailed engineering reports and supporting documents were prepared for the NJDEP Land Use Permits. The project utilized

John Corcoran, PE
Hydraulics/Hydrology

MicroStation J, SelectCAD Storm and Sanitary Sewer drainage design software, and Bentley's MicroStation CAD software (equivalent to StormCAD).

New Jersey Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Hydraulic/ Hydrology Engineer responsible for the preliminary and final drainage evaluations and drainage design as well as backwater analysis. The work included hydraulic design of the roadway drainage system, including hydrology, water spread calculations, and pipe hydraulic calculations using the procedures in Section 13, Hydrology/Hydraulics of the NJDOT Procedures Manual and Section 10 of the NJDOT Design Manual – Roadways. The project included detailed hydrologic and hydraulic analyses, including Watershed Analysis, using the Hydraflow program (equivalent to PondPack), and preparation of engineering documents for the NJDEP Land Use Permits. The stormwater management (SWM) and soil erosion design included two stormwater detention basins, several manufactured treatment units, approximately 3,000 feet of 25-foot wide vegetated filters, all to achieve Total Suspended Solids (TSS) treatment for the project in compliance with new NJDEP SWM Regulations.

NJ Department of Transportation (NJDOT), Route 10/53 Interchange Improvements, Morris Plains & Parsippany Township, NJ. Hydraulic/Hydrology Engineer responsible for analysis of the existing sewer system and design of a new roadway drainage system as necessitated for the study and final design of the Route 10/Route 53 Interchange Improvements, Sections 2L and 3J, in Parsippany. Mr. Corcoran modeled the existing drainage system using Hydraflow software and assisted with the design of the new drainage system in accordance with Section 10 – Drainage Design of the NJDOT Design Manual-Roadways. The design included components in accordance with the NJDEP Best Management Practices (BMP) Manual to achieve compliance with the current NJDEP stormwater management regulations.

NYC Department of Transportation (NYCDOT), Metropolitan Avenue- Six NYC Bridges - Total Design and Construction Services, Brooklyn and Bronx, NY. Geotechnical Engineer responsible for inspection of soil borings (land and water) and compilation and analysis of boring data. The bridges included a 100-foot double leaf bascule span (Metropolitan Avenue over English Kills, Brooklyn), a 225-foot span swing bridge (Grand Street over Newtown Creek, Brooklyn), and a major arterial (Brooklyn Queens Expressway over Cadman Plaza, Brooklyn). The project involved a complete in-depth inspection and development of alternatives for rehabilitation and/or replacement of the structural and mechanical systems.

NJ Department of Transportation (NJDOT), Construction Services for Route 21 TSM(6) and TSM(6) C3, Newark, NJ, Completion Date 2003 TSM(6) and 2006 for TSM(6) C3. Hydraulic/Hydrology Engineer responsible for redesign of drainage system around existing utilities, to resolve conflicts identified in the Utility Conflict Report (UCR's). UCR's were based on identification of conflicts with existing subsurface obstructions using procedures in CI/ASCG 38-02 Standard Guideline for the collection and depiction of existing subsurface utility data to accurately determine the horizontal and vertical location of existing facilities. Also reviewed and logged shop drawings for numerous drainage and utility items.

Kathleen Thomson, PE
Hydraulics/Hydrology

Education

- BSCE, Civil Engineering, 1997

Registration/Credentials

- Professional Engineer: NJ

Kathleen Thomson is currently a Civil Engineer with our North American Infrastructure - Water Resources Group, though in the past she has provided technical support for the Civil and Site Planning, Rail Engineering, and Site Development/Architectural groups. Ms. Thomson has provided expert assistance for site plans, drainage and stormwater designs, and drafts for a wide variety of projects - from municipal road improvement projects to residential/commercial site development for the private sector. Her project work has been for a diverse selection of clients including the United States Army Corps of Engineers, the New Jersey Turnpike Authority, Maher Terminals Incorporated, and the New Jersey Schools Development Authority.

Project Experience

Port Authority of NY & NJ, Call-In Agreement, Task: Teterboro Airport Runway 1 EMAS, Hydrologic/Hydraulic Studies and Permit Documents, Teterboro, NJ. Civil Engineer responsible for stream analysis and wetland impact analysis related to site and road improvements. In an effort to increase safety at Teterboro Airport, the PANYNJ undertook projects to install Engineered Material Arresting Systems (EMAS) at the end of runways. EMAS is a system installed to safely stop aircraft that overrun a runway. They are typically installed at the end of runways that are in close proximity with natural (i.e. bodies of water) or man-made boundaries (i.e. roadways, buildings, railroad tracks). We performed a hydrologic/hydraulic study to identify impacts and to evaluate possible alternative options related to the ditch impacts. The work required extensive use of the USACOE HEC-RAS and HEC-1 Computer Programs. A detailed Engineers Report was prepared in accordance with the NJDEP Stream Encroachment Permit requirements. The project also involved preparation of Stream Encroachment Permit Plans and USACOE Wetland Plans for the related work.

NJ Turnpike Authority (NJTA), Interchange 6 to 9 Widening Program, Design Section 8, Cranbury Township through East Brunswick, New Jersey. Hydrologic and Hydraulic Project Engineer assisting in the design of preliminary and final highway drainage designs and stormwater management (SWM) in accordance with regulatory requirements. The work included hydraulic design of the roadway drainage system including hydrology, water spread calculations, and pipe hydraulic calculations. The project included detailed hydrologic and hydraulic analyses, including Watershed Analysis utilizing the National Resource Conservation Service (NRCS) methodology with Geographic Information System (GIS) tools, flood routing calculations for SWM basins using the Hydraflow program, and HEC-RAS model backwater analysis for four streams. The project also included evaluation and design of measures necessary for compliance with the NJDEP Flood Hazard Area Control Act Rules (FHACAR). The SWM and soil erosion measures include design of fourteen recharge or detention basins plus numerous Manufactured Treatment Devices (MTDs) to achieve Total Suspended Solids (TSS) treatment for the project in compliance with the NJDEP SWM Regulations. Detailed engineering reports and supporting documents were prepared for the NJDEP Land Use Permits. The project utilized MicroStation J, SelectCAD Storm and Sanitary Sewer drainage design software, and Bentley's MicroStation CAD software (equivalent to StormCAD).

NJ Division of Property Management & Construction (NJDPMC), NJDPMC - Charles O Hayford State Fish Hatchery, Hackettstown, NJ. Civil Engineer responsible for assisting in preparation of

Kathleen Thomson, PE
Hydraulics/Hydrology

conceptual plans and applications to state agencies for permitting. Our firm was responsible for design and construction administration services for the New Water Distribution System and Well at the Charles O. Hayford State Fish Hatchery Complex located in Hackettstown, New Jersey. The main purpose of project is to provide approximately 4,000 liner feet of new water distribution piping from the onsite natural spring houses to the existing Hatchery Building located on the other side of the property.

County of Essex, NJ, Central Avenue Traffic Signal Operations, East Orange, and Newark, NJ. Civil Engineer responsible for assisting in preparing survey plans and files for permit submission and for use by other departments for engineering and design. The County of Essex retained our firm to develop and implement corridor rehabilitation and traffic signal timing plans, thus optimizing traffic flow, and minimizing delay and congestion along Central Avenue (County Road 508) through the township of West Orange and the cities of Orange, East Orange, and Newark, NJ. The project consisted of 29 intersections along the 4.2-mile corridor. The roadway work consisted of milling and resurfacing of the full width pavement as well as the restoration of deteriorated curb and sidewalk and upgrading the pedestrian ramps to the latest Federal Standards. The traffic signal modernization included the upgrading of all above ground traffic signal hardware, controller firmware platform, and central control operating system. Five innovative concepts were implemented for this project: Context Sensitive Design (CSD), Fire Preemption, Steel Mast Arms and Vertical Support, Video Detection, and Wireless Communication – Synchronized Traffic Signals. These innovative concepts were not discussed in the client's RFP, but were identified by our Team.

NJ Sports & Exposition Authority (NJSEA), Meadowlands Rail & Roadway Preliminary and Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Project Engineer responsible for the site design related to the railroad improvements and new railroad station at the Meadowlands Sports Complex. The design included site layout, minor roadway design, grading, demolition, assistance with prefabricated buildings, and assistance in general planning on the site to maintain existing operations. We provided engineering, planning, and environmental services for a new rail station and rail service for the Meadowlands Sports Complex area. The project included preliminary and final engineering and preparation of an Environmental Impact Statement for the rail service located within the Hackensack Meadowlands Area. The service will operate over a new 2.3-mile railroad alignment connecting with NJ TRANSIT's Pascack Valley Line. The design for this rail project included new track, structures, viaducts, roadwork, sitework, utilities, geotechnical, drainage, construction phasing, signals, communications, and a new station.

Vitetta, Greystone Park Psychiatric Hospital Site Improvements, Parsippany, NJ. Project Engineer responsible for site plan design of new psychiatric hospital. Design included roadway, parking lots, grading, utilities, and stormwater design and detention systems. Ms. Thomson was also responsible for permit applications to the Soil Conservation District, NJDEP, and other agencies. Our firm provided engineering services, from concept development through construction support for a new 3-story, 400-bed facility, exterior courtyards, a staff and vehicle support structure, a new horticulture structure and roadway realignments to bound the site and eliminate the current bisection of the site by existing roads on a 250-acre portion of the existing Greystone site. In addition boundary, topographic, and right-of-way surveys were performed.

Jeepsi Patel, PE, CFM
Hydraulics/Hydrology

Education

- MS, Civil Engineering, 2003
- BS, Civil Engineering, 2002

Registration/Credentials

- Professional Engineer: NJ
- ASPFM Certified Floodplain Manager

Jeepsi Patel is a Hydraulic and Hydrology Engineer with eight years experience in Hydrologic and Hydraulic Modeling, as well as the preparation of plans and reports for state, county, and local governmental agencies as they relate to NJDEP Flood Hazard Permits, bridge, channel culverts, spillways, and dam design. She has conducted scour analysis using Federal Highway Administration's HEC-18. Ms. Patel is experienced in dam breach analysis, including dam and spillway redesign, hydrologic and hydraulic modeling of potential dam breach scenarios, and unsteady flow modeling using ACOE HEC-RAS in conjunction with the HEC-GeoRAS software to define the downstream Inundation Mapping limits.

Ms. Patel, a Certified Floodplain Manager by the Association of State Floodplain Managers (ASFPM), has conducted and prepared several flood control studies. These studies included detailed field reconnaissance; historical flood record evaluation; hydrologic and hydraulic modeling and analyses; GIS mapping; aerial photographic interpretation of recent flood events; coordination with local citizens groups; and the development of flood control measures.

Project Experience

Port Authority of NY & NJ, Call-In Agreement, Task: Teterboro Airport Runway I-19 EMAS, Hydrologic/Hydraulic Studies and Permit Documents, Teterboro, NJ. Hydraulics and Hydrology Design Engineer responsible for the hydrologic and hydraulic evaluations. In an effort to increase safety at Teterboro Airport, the Port Authority NY & NJ undertook projects to install Engineered Material Arresting Systems (EMAS) at the end of runways. EMAS is a system installed to safely stop aircraft that overrun a runway. They are typically installed at the end of runways that are in close proximity with natural (i.e. bodies of water) or man-made boundaries (i.e. roadways, buildings, railroad tracks). We performed a hydrologic/hydraulic study to identify impacts and to evaluate possible alternative options related to the ditch impacts to two existing ditches. The project also involved channel improvements and dredging to improve flow, to provide for net flood fringe fill mitigation, and to mitigate the hydraulic impacts. The work required extensive use of the USACOE HEC-RAS and HEC-HMS Computer Programs. A detailed Engineers Report was prepared in accordance with the NJDEP Permit requirements. The project also involved preparation of NJDEP Flood Hazard Area Permit Plans and USACOE Wetland Plans for the related work.

NJ Turnpike Authority, Interchange 6 to 9 Widening Program, Design Section 8, Cranbury Township through East Brunswick, NJ. Hydrologic and Hydraulic Project Engineer assisting in the design of preliminary and final highway drainage designs and stormwater management (SWM) in accordance with Regulatory requirements. The work included hydraulic design of the roadway drainage system including hydrology, water spread calculations, and pipe hydraulic calculations. The project included detailed hydrologic and hydraulic analyses, including watershed analysis utilizing the National Resource Conservation Service (NRCS) methodology with Geographic Information System (GIS) tools, flood routing calculations for SWM basins using the Hydraflow program, and HEC-RAS model backwater analysis for four streams. Ms. Patel performed scour analysis for one of the stream crossings in accordance with the Federal Highway Authority (FHWA) HEC-18, HEC-20, and HEC-23 procedures. The project also included evaluation and design of measures necessary for compliance with the NJDEP Flood Hazard Area Control Act

Jeepsi Patel, PE, CFM
Hydraulics/Hydrology

Rules (FHACAR). The SWM and soil erosion measures include design of 14 recharge or detention basins plus numerous Manufactured Treatment Devices (MTDs) to achieve Total Suspended Solids (TSS) treatment for the project in compliance with the NJDEP SWM Regulations. Detailed engineering reports and supporting documents were prepared for the NJDEP Land Use Permits.

NJ TRANSIT, Lackawanna Cut-Off Passenger Rail Service Restoration, Port Morris, NJ to Andover, NJ. Hydrology and Hydraulics Engineer for the drainage analysis and preparation of permits. The Lackawanna Cut-Off rail service restoration project will restore passenger service between Port Morris and Andover Township in Sussex County, New Jersey. The project included drainage analysis and ditch cleaning to restore the capacity of the existing rail side ditches, watershed analysis, bridge replacement, drainage design and stormwater management for a proposed station and parking lot, and preparation of permit applications. The project includes design of soil erosion and sediment control measures and certification plans plus a NJPDES Stormwater Permit application. The project also included environmental assessments and preparation of Wetland Permit applications.

NJTA, Bass River Bridge Rehabilitation and Widening Milepost 51.9 (P3241), Burlington County, NJ (Ongoing) Hydrology and Hydraulics Engineer responsible for the tidal scour modeling of the bridge. The modeling included both the effects of a tidal impacted storm and fluvial discharges routed to the crossing location using the Unsteady HEC-RAS Modeling Routine to obtain the scour analysis variables to estimate the scour depths for the substructure design and scour countermeasures. The design was based on the procedures in HEC-18 (Evaluating Scour at Bridges), and HEC-23 (Bridge Scour and Stream Instability Countermeasures). ArcGIS Software and HEC-GeoRAS were also utilized to obtain hydrologic parameters and cross-sections for the hydraulic modeling. The project also included culvert inspection and a report containing recommendations for cleaning or replacement. This was important since much of the existing pipe was corrugate metal pipe that showed signs of deterioration and requires replacement. As a subconsultant, we are providing highway design, roadway appurtenance design, and preparation of MPT plans for a new "sister" bridge and rehabilitation of the existing Bass River Bridge, which carries the Garden State Parkway northbound and southbound roadways.

County of Somerset, Bennetts Lane Bridge Replacement, Franklin Township, NJ. Hydrology and Hydraulics Engineer responsible for stream hydrologic and hydraulic analysis. Environmental and Water Resource analysis will include drainage, wetlands delineation, and HEC-RAS modeling to establish the flood hazard area. Potential scour depth will be computed using the procedures in FHWA HEC-18. Footings will be designed to be scour resistant in accordance with FHWA HEC-18. Permit plans and applications will be prepared for a NJDEP Flood Hazard Area Permit and wetland General Permit 10A – Very Minor Road Crossing and General Permit 11 – for outfall and intake. Somerset County recently awarded Jacobs the engineering design services for the total replacement of Bridge No. K0402. The structure is located on Bennetts Lane in Franklin Township and spans over a tributary to Six Mile Run, a category one watercourse. The existing structure is comprised of concrete encased simple span steel stringers supporting a concrete deck overlaid with asphalt. The bridge roadway width is approximately 20 feet, providing two 10-foot lanes, and no shoulders, to accommodate two-way traffic. Jacobs is providing services for bridge, roadway, and utility design;

Kyrra Mosely
Hydraulics/Hydrology

Education

- BS, Civil Engineering, 2000

Kyrra Mosley's experience includes developing plans for test excavations, test-holes, schemes of accommodation, agreement plans, permit plans, nonstandard detail plans, and drainage, utility, and soil erosion plans, as well as drainage evaluations, drainage design, and backwater analysis for various roadway/highway/bridge projects. She has applied HEC-1, HEC, HEC-RAS, and roadway-drainage design computer programs to several projects relating to stormwater management, water quality control, and flood control.

Ms. Mosley has utilized Inroads drainage design software, Bentley's MicroStation J, MicroStation V8, and Select Cad Storm and Sanitary Sewer software (equivalent to StormCAD) for clients the likes of NJDOT; NYSDOT; NJSEA; DelDOT; and the Counties of Essex and Ocean New Jersey.

Project Experience

Port Authority of NY & NJ, Call-In, Task: Teterboro Airport Runway 1 EMAS, Hydrologic/ Hydraulic Studies and Permit Documents, Teterboro, NJ. Hydrology and Hydraulics Design Engineer responsible for assisting with the hydrologic and hydraulic evaluations. In an effort to increase safety at Teterboro Airport, the Port Authority NY & NJ undertook projects to install Engineered Material Arresting Systems (EMAS) at the end of runways. EMAS is a system installed to safely stop aircraft that overrun a runway. They are typically installed at the end of runways that are in close proximity with natural (i.e. bodies of water) or man-made boundaries (i.e. roadways, buildings, railroad tracks).

NJ Turnpike Authority, Interchange 6 to 9 Widening Program, Design Section 8, Cranbury Township through East Brunswick, NJ. Hydrologic and Hydraulics Project Engineer assisting in the design of preliminary and final highway drainage designs and stormwater management (SWM) in accordance with regulatory requirements. The work included hydraulic design of the roadway drainage system including hydrology, water spread calculations, and pipe hydraulic calculations. The project included detailed hydrologic and hydraulic analyses, including watershed analysis utilizing the National Resource Conservation Service (NRCS) methodology with Geographic Information System (GIS) tools, flood routing calculations for SWM basins using the Hydraflow program, and HEC-RAS model backwater analysis for four streams. The project also included evaluation and design of measures necessary for compliance with the NJDEP Flood Hazard Area Control Act Rules (FHACAR). The SWM and soil erosion measures included design of 14 recharge or detention basins, plus numerous Manufactured Treatment Devices (MTDs) to achieve Total Suspended Solids (TSS) treatment for the project in compliance with the NJDEP SWM Regulations. Detailed engineering reports and supporting documents were prepared for the NJDEP Land Use Permits. Ms. Mosley and the project team utilized MicroStation J, SelectCAD Storm and Sanitary Sewer drainage design software, and Bentley's MicroStation CAD software (equivalent to StormCAD).

MTA Metro-North Railroad, Design and Construction Services for the Harmon Shop Replacement Program - Phase III, Croton Harmon, NY. Ms. Mosley was responsible for training fellow peers in designing in the Bentley Sanitary and Storm Select Cad programs and supervising their efforts in providing a preliminary plan. Our firm was responsible for the design management, architectural, civil, track, electrical, and traction power for the design/build of two

Kyrra Mosely
Hydraulics/Hydrology

new rail maintenance shops for Metro-North Railroad. One shop is for maintenance of coach passenger cars and electric power passenger cars, and the other shop is for maintenance of locomotives. The 20-acre site also includes 15 new tracks, new utilities, and a new drainage system.

NJ Department of Transportation (NJDOT), Route 10/53 Interchange Improvements, Morris Plains & Parsippany Twp, NJ. Project Hydrology and Hydraulics Design Engineer responsible for analysis of the existing drainage system and design of a new roadway drainage system as necessitated for the study and preliminary design of the Route 10/Route 53 Interchange Improvements, Sections 2L and 3J, in Parsippany, New Jersey. Ms. Mosley modeled the existing drainage system using Bentley Storm and Sanitary SelectCAD software and assisted with design of a new drainage system in accordance with Section 10 – Drainage Design of the NJDOT Design Manual - Roadways. The design included components in accordance with the NJDEP Best Management Practices (BMP) Manual to achieve compliance with the current NJDEP Stormwater Management Regulations. The design also addressed the recently revised NJDEP Flood Hazard Area Control Act rules. Topography divides Route 53 into two separate drainage systems, both of which ultimately discharge to Watnong Brook.

NJ Department of Transportation, Route 21 Reconstruction, Newark, NJ. Project Engineer responsible for assistance in preparing all contracts. Technical responsibilities included providing test-hole and test excavation plans, providing quantities for restoration of test excavation, providing test-hole verifications from reports, coordination with the respective utility departments in order to create test-hole and test excavation plans, creating schemes of accommodations for all contracts, creating the utility agreement plans for Contracts 1 and 2, and initial preparation for Contract 3.

NJ Sports & Exposition Authority, Meadowlands Rail and Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Hydraulics and Hydrology Design Engineer responsible for the preliminary and final drainage evaluations and drainage design, as well as backwater analysis. The work included hydraulic design of the roadway drainage system, including hydrology, water spread calculations, and pipe hydraulic calculations using the procedures in Section 13, Hydrology/Hydraulics of the NJDOT Procedures Manual and Section 10 of the NJDOT Design Manual – Roadways. The project included detailed hydrologic and hydraulic analyses, including HEC-1 Watershed Analysis, flood routing calculations for two detention basins using the Hydraflow program (equivalent to PondPack), and preparation of engineering documents for the NJDEP Land Use Permits. The stormwater management (SWM) and soil erosion design included stormwater detention basins, several manufactured treatment units, and approximately 3,000 feet of 25-foot wide vegetated filters, all to achieve Total Suspended Solids treatment for the project in compliance with new NJDEP SWM Regulations.

Kirk A. Kisinger, PE, CFM
Hydraulics/Hydrology

Education

- MS, Water Resources Engineering, 1994
- BS, Civil Engineering, 1989
- AA, Liberal Arts, 1983

Registration/Credentials

- Professional Engineer: [Ex.1]
- ASFPM Certified Floodplain Manager (CFM)

Kirk Kisinger's water resources engineering analysis, computer modeling and design experience encompasses watershed hydrology, open channel and closed conduit hydraulics, river and floodplain modeling, scour analysis, stream water quality and assimilative capacity modeling, stormwater collection system and detention basin modeling and design, and groundwater resource protection.

Project Experience

Conrail, Stormwater Drainage and Permit Review, Pennsauken, NJ. Hydrologic and Hydraulics Engineer responsible for review of a drainage analysis and impacts to an existing rail line. A new rail transit center and park and ride facility is proposed in Pennsauken, Camden County, New Jersey by New Jersey Transit. The proposed project will result in additional runoff to Conrail property. The work involves data collection site visit and assessments, review of drainage area maps, hydrologic and hydraulic calculations, environmental and drainage reports, proposed design plans, attendance at meetings, and preparation of review memorandums.

NJTA, Bass River Bridge Rehabilitation and Widening Milepost 51.9 (P3241), Burlington County, NJ (Ongoing). Hydrologic and Hydraulics Engineer responsible for detailed hydrologic and hydraulic analyses, modeling and bridge scour calculations. One of several goals of this project was to determine the scour depths for both existing (745-foot span) and proposed (980-foot span) Garden State Parkway Bass River Bridge piers and abutments that could be used for both scour countermeasure and new pier substructure designs, respectively. As a subconsultant, our firm is also providing highway design, roadway appurtenance design, and preparation of MPT plans for a proposed, northbound "sister" bridge and rehabilitation of the existing, southbound Bass River Bridge. Astronomical semi-diurnal tide, synthetic hurricane storm surge, and fluvial design storm hydrographs for the 100 and 500-year design events were developed and then routed through a 4.61-mile model of the Bass River and the project bridge crossing location using the HEC-RAS Unsteady-State Modeling Routine. The model was used to obtain the resulting hydraulic variables needed in order to be able to calculate specific pier and abutment scour depths. The analyses and countermeasure designs were primarily based upon the Federal Highway Administration's procedures found in their HEC-18 (Evaluating Scour at Bridges), HEC-23 (Bridge Scour and Stream Instability Countermeasures) and HEC-25 (Tidal Hydrology, Hydraulics and Scour at Bridges) manuals.

Public Service Electric & Gas Co. (PSE&G), Silver Lake Dam Inspection Preport, Edison, NJ. Hydrology and Hydraulics Engineer responsible for preparation of a regular inspection report including recommended repairs and studies. This project was for the required inspection of Silver Lake Dam as per the guidelines of the New Jersey Department of Environmental Protection (NJDEP), Dam Safety Section. The project also included updating an existing Operational and Maintenance (O&M) Manual. A staff of geotechnical, hydraulic, and licensed structural engineers inspected Silver Lake Dam in Edison, New Jersey, which included review of recent safety improvements made prior to the scheduled inspection and resulted in recommendations that would improve dam safety and functionality.

Kirk A. Kisinger, PE, CFM
Hydraulics/Hydrology

Experience with other Firms

Brandywine at Broadway, Franklin Township, Warren County, NJ - Senior Technical Manager who coordinated and performed the watershed hydrologic modeling and floodplain hydraulic analysis for a NJDEP stream encroachment H&H report and permit application for the proposed Brandywine at Broadway residential development. A peak regulatory flood flow for the 100-yr design event was determined for a farm field ditch adjacent to the proposed project site using Haestad Methods' PondPack drainage design software and the SCS TR-55 runoff method. A "Farm Ditch" HEC-RAS hydraulic model was developed over a reach length of approximately 1600 feet as part of the floodplain delineation analysis. A Floodplain Delineation Report was prepared in support of the NJDEP Stream Encroachment application package which was submitted to the NJDEP for approval.

County Route 547 & County Route 549, Howell Township, Monmouth County, NJ - Senior Technical Manager who performed the watershed hydrologic modeling and floodplain hydraulic analysis for a NJDEP stream encroachment report and permit application. Peak regulatory flood flows (2-, 10- & 100-yr) were determined for the Bear Swamp Brook drainage basin from 500 feet upstream to 500 feet downstream of the C.R.549 bridge and culvert crossing over the Bear Swamp Brook using Haestad Methods' PondPack drainage design software and the SCS TR-55 runoff method. Pre- and post-construction floodplain and floodway HEC-RAS models were developed and used to compare proposed floodway and floodplain flow, stage and volume changes due to the proposed replacement culvert design. Proposed culvert design change recommendations were made based on hydraulic analysis results and for the purpose of minimizing the new structure's hydraulic impacts along the Bear Swamp Brook.

Gateway at Sunnymeade, Hillsborough, Somerset County, NJ - Hydraulics & Hydrology Task Manager who coordinated and performed the floodplain delineation analysis for a NJDEP stream encroachment H&H report and permit application for the proposed Gateway at Sunnymeade residential development situated between the Royce Brook and its Tributary "C". A detailed existing conditions HEC-RAS model was developed for over 4700 feet of the Royce Brook and 7500 feet of its Tributary "C". Somerset County-established regulatory, 100-year flood flows were used in the combined HEC-RAS hydraulic model for the floodplain delineation analysis of both waterbodies. A Floodplain Delineation Report was prepared in support of the NJDEP Stream Encroachment application package which was ultimately approved in December, 2005.

Heaters Pond Dam, Emergency Spillway Feasibility Study, Ogdensburg, Sussex County, NJ - Design Engineer for the preliminary emergency spillway design for the existing Heaters Pond Dam. The existing dam and reservoir are out of compliance with the State of New Jersey Dam Safety Regulations. The 100-year, half-Probable Maximum Flood (half-PMF) and full-PMF were previously modeled using Haestad Methods' PondPack software. The resulting peak flow rates from these three storms were then used in turn to design several ogee spillway configurations for preliminary cost estimates as part of an initial feasibility study for upgrading the dam. A technical memo with supporting calculations, modeling results, and design recommendations was prepared at the conclusion of the design analysis.

Theodore M. Turanick
Track Engineer

Education

- AAS, Construction Technology, 1956

Ted Turanick has held responsible positions on most of our major rail, subway and highway projects. This has contributed to his vast experience and ability to quickly develop solutions to complex engineering design problems. His technical ability encompasses all facets of engineering covering conceptual layout, track and special trackwork design, civil design, construction staging and sequencing, cost estimating, contract specifications, and most of all, the preparation of final contract documents.

During his career, Mr. Turanick has prepared thousands of final drawings for NJ TRANSIT, AMTRAK, Metro-North Railroad, SEPTA, Conrail, NYCTA, Port Authority of New York & New Jersey, SIRTOA, WMATA, SCRTD, MARTA, NFTA, MBTA, MTA, and other state and private sector clients. Mr. Turanick's long list of constructed projects include:

- above and below ground rail passenger stations and accessories,
- track, special trackwork, high speed turnouts,
- tunnel, cut-and-cover, at-grade, and aerial, subway, light rail and heavy rail, designs with catenary or third rail
- rail yards for storage and maintenance, crew facilities, and yard service components,
- passenger parking, park/ride and site access,
- major highway, road and street design with utility relocations

Project Experience

Port Authority of NY & NJ, Civil Engineering "Call-In" Agreements, Various Metropolitan Locations, New York and New Jersey. Project Track Engineer under these "Call-In" agreements.

- Port Elizabeth Roadway and Track Improvements, New Jersey. Directed the replacement design for approximately 5000 feet of track included within the project. The trackwork included horizontal and vertical alignment improvements, new rail and bedding, and replacement of several switches. This project also involved the development of a comprehensive rehabilitation design for several streets within Port Newark and Port Elizabeth, including Distribution, Kellogg, Marlin and Navy Streets.

MTA Metro-North Railroad, Engineering and Design for Addition of Mid-Harlem Third Mainline Track and Associated Interlocking Improvements, Mount Vernon to Crestwood, NY. Responsible for the final design of the $30 million addition of a third track on Metro-North's Mid-Harlem Line between Mount Vernon and Crestwood Stations. Engineered improvements include 3.5 miles of track improvements; high speed interlocking design; new and rehabilitated bridge and retaining structures; substation modifications and traction power improvements; communications and signal improvements; historic structure evaluation; and construction phasing and sequencing.

MTA Metro-North Railroad, Shell Flyover Options, New Rochelle, NY. Track Engineer responsible for the final design of the $100 million improvement to provide a 45 mph move through Shell interlocking where Amtrak's Hell Gate Line two tracks, 24 trains per day merge with Metro-North's New Haven Line four tracks, 240 trains per day. The flyover consists of an elevated structure to carry Amtrak's double-track over Metro-North's two eastbound tracks which are depressed to pass under the structure. The four tracks widen to seven and back to four in a very limited distance. A new high-speed special trackwork interlocking was designed to provide the

Theodore M. Turanick
Track Engineer

merge. In addition the design includes: three new interlockings, new platforms at New Rochelle Station, the replacement of four bridges, the addition of two bridges, and several thousand feet of retaining walls. A detailed construction phasing plan was developed to provide during peak hours three tracks for Metro-North and one for Amtrak. It also incorporates additional off-peak track outages. New signal, catenary, and traction power systems were designed to accommodate both the temporary and final track locations.

Amtrak, Chicago Union Station Co., Track Rehabilitation - Lake Street Interlocking, Chicago, IL. Track Engineer responsible for the rehabilitation and redesign for the removal and replacement of double slip switches with standard turnouts providing access to ten platform tracks and three through tracks. The interlocking is approximately 2,500 feet long with building overbuild columns throughout that made for an intricate design. A new signal system was designed to accommodate 17 stages of construction and the final layout. Both Metra commuter trains and Amtrak passenger service have to be maintained during construction.

New Jersey Sports & Exposition Authority, Meadowlands Rail & Roadway Preliminary & Final Engineering and Environmental Impact Statement, East Rutherford, NJ. Project Civil/Track Engineer responsible for design of track alignment and special trackwork, preparation of contract documents, specifications, and estimates. The NJ Sports and Exposition Authority retained our firm to provide engineering, planning, and environmental services for a new rail station and rail service for the Meadowlands Sports Complex area. The project included Preliminary and Final Engineering and preparation of an Environmental Impact Statement (EIS) for the rail service located within the Hackensack Meadowlands Area, only eight miles from Manhattan. The service will operate over a new 2.3-mile railroad alignment connecting with NJ TRANSIT's Pascack Valley Line. A majority of the project alignment is located within the Meadowlands Sports Complex property, owned and operated by the NJSEA.

NJ TRANSIT, Montclair Connection Final Design and Construction Services, Montclair and Little Falls, NJ. Track Engineer responsible for the development of the final design contract documents, providing a 1,200 foot long rail connection between the Montclair Branch and the Boonton Line and the extension of electrification along five miles of the Boonton Line to a new rail yard in Great Notch. The work includes; track reconfigurations, new interlockings, new side high-level platforms, parking improvements, and a new station building at Bay Street; a new 3,000 ft long train storage yard with maintenance capabilities, a new crew facility, and special trackwork at Great Notch; street relocations, right-of-way, utility relocations, and grade crossing improvements, all at a cost of $52 million.

NJ TRANSIT, Main-Bergen Connection and Main Line Improvements for Secaucus Junction, Secaucus, NJ. Civil Engineer responsible for the preparation of the contract documents for the expansion of the Main Line from two tracks to four tracks for 10,000 feet with one new universal interlocking and a 4,500-foot, two-track connection from the Main Line to the Bergen County Line. The project includes 2,400 feet of two-track viaduct over wetlands. The improvements will allow 137 daily trains to access the Secaucus Transfer Station.

Lewis O. Morgan, PE, PP
Track Engineer

Education

- BS, Civil Engineering, 1980

Registration/Credentials

- Professional Engineer: NY, DE and PA
- Professional Planner, NJ

Lew Morgan has worked on a wide range of activities including project management and technical analyses on major transportation and infrastructure projects throughout the NY metropolitan area. The types of projects have ranged from feasibility studies to complete construction plans and specifications. Mr. Morgan also offers considerable expertise for the filing of environmental permits.

Project Experience

NJ TRANSIT, Phase II Preliminary and Final Design Lackawanna Cutoff Trackbed Restoration Project MOS-1, Morris and Sussex Counties, NJ. Project Manager for the design of the rehabilitation of 8 miles of abandoned freight railroad to provide a service to northern and western New Jersey. The line will connect to the existing Morris and Essex Line to provide train service to New York City. The first 4 miles of the project is scheduled for construction in November of 2010.

NJSEA and NJ TRANSIT, NJ Meadowlands Rail and Roadway Improvement Project, East Rutherford, NJ. Project Manager responsible for design and construction phase services to bring rail service to the NJ Sports and Exposition Authority complex. The total project construction cost was approximately $214 million which included the construction of 2.3 miles of new railroad, 2 miles of new roadway; 3,500 linear feet of viaduct; $20 million train station; 3 bridges; 2 pedestrian overpasses; 435,000 cubic yards of embankment; signal and communications systems; electric distribution systems; and, extensive water, sewer, communication, electric and gas utility relocation activities. The soils to the west of Berrys Creek are extremely soft with open water and wetlands in abundance. Jacobs developed design plans for large portions of the project alignment that would allow the contractor to build into these marsh/swampy areas from the top down thereby minimizing the limits of disturbance in the environmentally sensitive areas. In order to save time many of the viaduct components were fabricated and pre-cast offsite. Utilizing panelized construction techniques the contractor was able to build his structures efficiently from the top down in a leapfrog fashion across the marshy and open water areas.

MTA Metro-North Railroad Croton Harmon Yard, NY. Task Manager for civil engineering, for the $62 million expansion of Croton Harmon Yard. The project involved the redesign of the yard facilities south of the existing shops and modification of the tracks and supporting facilities to support MNR's diesel fleet servicing. A new yard master control system was designed to allow for remote control of the new yards from a refurbished tower.

NJ TRANSIT, Morrisville Train Storage Yard, Fall Township, PA. Project Manager for a 28-acre (11-hectar), $82 million train storage yard project for NJ TRANSIT, capable of storing 26 passenger trains for a total of 236 units. The project included an operational analysis covering yard functions and interface with main line operations; concept definition of the new yard, including layout of tracks, roads, structures, drainage, utilities, catenary, wayside and traction power, communications, and site mitigation measures required to construct the yard; and preliminary and final design of the selected alternative including a 12,000 square foot Crew Facility, 100 foot long S&I Facility, and a 1,040 foot long S&I Facility. The project also included the redesign of MY Interlocking, redesign of Morris Interlocking, the replacement of Conrail

Lewis O. Morgan, PE, PP
Track Engineer

Bridges 0.40 and 0.50 and the rehabilitation of Amtrak Bridge 58.16. An environmental assessment and permitting was also prepared as well as providing technical support during construction.

NJ TRANSIT, Passaic-Bergen DMU Project, Passaic and Bergen Counties, NJ. Responsible for the preparation of preliminary and final construction plans for the Passaic Bergen Diesel Multiple Unit (DMU) project. The project involves the restoration of passenger rail service within the existing New York Susquehanna and Western (NYS&W) right-of-way along a 10.2-mile corridor from Hawthorne to Hackensack. The project will upgrade existing NYS&W infrastructure, and restore two-track commuter rail service operated by NJ TRANSIT. The project would construct up to twelve passenger stations, two park-and-ride facilities, a vehicle maintenance facility, and improvements to track and signal infrastructure. The project also required the reconstruction/upgrade of four open deck and thru-girder bridges.

NJ TRANSIT, Main and Pascack Valley Line Right-of-Way Improvement Project, NJ. Responsible for the design of improvements on two NJ TRANSIT lines to increase capacity. Project elements included specifications for high-speed turnouts; expansion of the Suffern Yard; and double tracking of a 1.7-mile (2.7-kilometer) single-track segment that included two through girder bridges and extensive retaining walls, five passing sidings, and a 2-mile-long (3.2-kilometer) freight siding with industrial side tracks.

North Avenue Improvements Project, Elizabeth, NJ. Responsible for the preparation of preliminary and final construction plans for improvements to the North Avenue Corridor serving the Kapkowski Road and Port Elizabeth area. The project involved the construction of a new bridge at North and Dowd Avenue and 3.5-miles of interconnecting roadway construction with Ramps to 1&9 and Interchange 13A. The project also involved the widening of three other ramp bridges to accommodate the new roadway geometry.

NJ TRANSIT, Northern New Jersey Bus Maintenance Facility, Clifton, NJ. Civil Task Leader for the design and construction of a new 265,000 square foot Bus Maintenance Facility for NJ TRANSIT's Northern Bus Fleet. Responsibilities included site grading, drainage, and permits, oversight of geotechnical work, and management of various subconsultants for surveying, soil borings, environmental testing, and wetlands delineation.

Southern New Jersey Light Rail Transit System. Prepared site plans for 20 new passenger stations along a 33-mile light rail corridor. The station design elements included the geometric layout, grading and drainage design for station platforms and parking facilities. The project contained several large park-n-ride areas ranging from 300 to 800 parking spaces. Additional tasks included coordination with other disciplines for station architecture, lighting and electrical design, and structural design of the station platform and foundation systems.

Irvine Turner Traffic Calming Project, Newark, NJ. Responsible for the development and design of traffic calming measures for a busy 1.1mile section of Irvine Turner Boulevard including 8 intersections. Responsibilities included cost control, project management, initial and final construction plan preparation of existing roadways, and client and subconsultant coordination.

Richard Sirabian, PE
Track Engineer

Education

- BSCE, Civil Engineering, 1983

Registration/Credentials

- Professional Engineer: NJ & PA

Richard Sirabian has played key design and management roles in the study, planning and final design of major mass transit, and roadway improvement projects. His responsibilities have encompassed track and special trackwork design, facilities and operations analysis, horizontal and vertical track and roadway alignment, railroad criteria and design standards, construction staging, and constructability analysis. Furthermore, he has been charged to perform alternatives analyses, quantity and cost estimates, and developed final design plans and contract documents for construction, procurement, and force account contracts, as well as be a lead player in the Bid and Construction Phases of projects.

Project Experience

NJ TRANSIT, Frank R. Lautenberg Rail Station at Secaucus Junction, Secaucus, NJ. Project Manager responsible for the investigation of track alignment alternatives including various configurations for high-speed operations, maneuvering and station access. Mr. Sirabian was also responsible for development and evaluation of track support alternatives, particularly comparing embankments and elevated structures, while addressing cost, R.O.W., environmental, and embankment/ground stabilization alternatives. The project included 7,000 linear feet of elevated rail structure, seven thru girder railroad bridge crossings, foundations for the Frank R. Lautenberg Rail Station and future 40-story high-rise overbuild, retaining walls, and ancillary structures. A special feature of this project included developing a variety of constructible details for all of the above-mentioned structures with said construction being performed adjacent to an operating high-speed rail system (AMTRAK's Northeast Corridor Main Line). Also served on several Technical Evaluation Committees with NJT, evaluating the qualifications of prospective contractors for the construction of the project.

NJ TRANSIT, General Engineering Consultant for Bridge/Railway Engineering, Plainfield, NJ. Rail Systems Engineer responsible for providing a variety of services as a subconsultant under this contract, including technical support for preparation of a new EP-2 Manual for Specifications for Pipeline Occupancy, requiring intimate familiarity with the Railroad. A Feasibility Study for Bridge Rehabilitation on the Raritan Valley Line was performed, and he was responsible for spearheading the construction staging and alignment alternatives for the Grant Avenue Bridge construction. As part of a multi-disciplinary team on this multi-year task order assignment, Jacobs participated in the following tasks: study for the replacement of thirteen railroad bridges carrying New Jersey Transit's Raritan Valley Line in the City of Plainfield, New Jersey; design of one replacement railroad bridge, namely the Raritan Valley line over Grant Avenue; revisions and edits to New Jersey Transit's specifications for Pipeline Occupancy; track alignment and track design for a railroad storage yard.

NJ TRANSIT, Main-Bergen Connection and Main Line Improvements for Secaucus Transfer, Secaucus, NJ. Project Manager for final design and construction services. Responsibilities included developing contract documents, and turnout procurement documents, coordinating permitting requirements, managing the development of new Country Road grade separation over NJ TRANSIT main line. The project involved the expansion of NJ TRANSIT main line from 2 to 4 tracks, while providing a 2 track connection between the Main Line and Bergen County Line.

Richard Sirabian, PE
Track Engineer

SEPTA, Media West Chester Systems Improvements, Philadelphia, PA. Track Engineer responsible for the preparation of civil engineering and track design for the rehabilitation and upgrading of this 15-mile (24-kilometer) commuter rail line track and roadbed. The project also included the modernization of the signal and communications system, including grade crossing protection, addition of a second track for a two-mile (3.2 kilometer) segment between Media and Elwyn, rehabilitation of a high trestle bridge plus a new catenary system, reconfiguration of Media Yard and station platforms (including mini high-level platforms) and parking lot expansions at three stations. Jacobs (then Edwards and Kelcey) provided Design Documents and Construction Support Services for the $29 million rehabilitation of SEPTA's Regional Rail Division (RRD) Media-West Chester Branch which represented a continuation of the agency's Railroad Facilities Improvement Program to modernize and repair this 15-mile two-track commuter railroad facility for the RRD.

New Jersey Sports & Exposition Authority, New Jersey Sports & Exposition Sports Complex General Consulting Services, East Rutherford, NJ. Track Engineer responsible for studying alternative solutions for providing rail services to the Sports Complex considering the use of Allied Junction and the proposed Hudson-Bergen LRT as well as bus services from Vince Lombardi Service Center on the New Jersey Turnpike. Engineering, environmental, ridership and economic analysis were performed to identify the most viable transit mode, operations and cost effective solutions. The feasibility level study work being performed involves development of a Route 120 mainline alignment that will run along the easterly side of the Sports Complex and layout of interchange ramps to interconnect the main roadways bordering the complex including Route 3, New Jersey Turnpike Interchanges 16W and 18W, Washington Avenue and the realigned Route 120. All alignment schemes being developed are under review of the NJDOT Bureau of Preliminary Engineering.

NJ TRANSIT, North Jersey Coast Line Electrification and Modernization Park and Ride (First Project), South Amboy to Long Branch, NJ. Track Engineer involved with several projects associated with the $150 million, 22-mile (35.4-kilometer) commuter rail electrification improvement program, including: redesign of Wood and Graw Interlockings of NJCL with Conrail and Northeast Corridor Lines to accommodate increased speeds of 60 to 70 mph, including horizontal and vertical curve realignment and best fit, layout and geometry of mainline, sidings, grade crossings, and turnouts/crossovers, grading, earthwork and drainage for site restoration, construction staging, Force Account and Contractors, cost estimates; vertical alignment for track across several bridges; Long Branch Terminus and Yard horizontal geometrics for the track and turnouts, typical section design and special construction details and signing; and coordination of contractors regarding design revisions for track, turnout and wall locations.

Peter R. Haag
Designer

Education

- BS, Architectural Technology, 1981

As Manager of Project Deliverables for the Rail Transit Group Mr. Haag is responsible for managing the production of CADD, design project deliverables. Client materials documents include computer graphics in CADD, support of community/public agency reviews and reports as well as contract documents for major rail transportation projects.

Mr. Haag has performed key roles in the study, planning, and design of mass transit, roadway, and site engineering projects. Responsibilities have encompassed creating and maintaining the hierarchy of computer files structures for intelligent CADD drawings, organization and scheduling of CADD/drafting work, and execution of coordinate geometry of horizontal alignments and vertical profiles with superelevations and earthwork.

Project Experience

Somerset Development, Wesmont Rail Station, Wood-Ridge, NJ. CADD Designer responsible for preparing concept drawing documents. Jacobs provided assistance in the concept development planning for the proposed Westmont Station along the NJ TRANSIT Bergen County Line in Woodridge, NJ. To accomplish this, the firm worked with another consultant to establish the design concepts for the station, including parking requirements and the existing NJ TRANSIT shop relocations. is also assisting in the drafting of memorandum of understanding (MOU) for NJ TRANSIT's acceptance defining the agreed upon design concepts for the proposed station including ownership, construction, maintenance, and the level of service to be provided (number of trains serving the station). Drawing exhibits showing the conceptual engineering design are also to be included. Lastly, Jacobs prepared budgetary construction cost estimates based on the concept plan.

MTA Long Island Rail Road, Design/Build Arch Street Yard / Shop JV, New York, NY. Project Documents Coordinator responsible for project contract documents for client/agency review and joint venture, as well as construction progress coordination. Upon project completion, the document management effort included closure of all RFIs, over 900 Final Design construction drawings and 16 divisions of Specifications, as well as management of all interim and final client design review submissions. Mr. Haag documented and accounted for over 550 contractor shop drawing submissions for timely multi-office, multi-consultant review. Instituted the clients computer aided design-drawing standards and coordinated the education of the entire design team in the use of the latest software of Bentley Microstation V8 and managed standards of design drawings/specifications and electronic documentation and correspondence.

MTA Metro-North Railroad, Highbridge Yard-Design/Build, Bronx, NY. Designer/Project Documents Coordinator responsible for project contract documents for client/agency review and joint venture, as well as construction progress coordination. This effort included over 100 RFIs and responses, 550 Final Design construction drawings and 16 divisions of specifications. Mr. Haag coordinated all interim and final client design review submissions in addition to documenting and accounting for over 450 contractor shop submissions for timely, multi-office, multi-consultant review. Mr. Haag also managed standards of design drawings/specifications and electronic documentation as well as all correspondences. As joint venture partner and lead engineer, our primary design responsibilities included civil (under- and above-ground utilities), trackwork, traction power, third rail, structural (shop and substation foundations, building and roof structures,

Peter R. Haag
Designer

high level platforms, and overpass), systems integration, and communications system, CCTV cameras and a security system which is integrated with the fire protection system. This project was a key component of the MTA/LIRR East Side Access Program with a fast-track, 18-month schedule for design and construction. High Bridge, with a storage capacity of over 100 rail cars, replaces facilities within Grand Central Terminal that were transferred to LIRR for East Side Access.

NJ TRANSIT, Frank R. Lautenberg Rail Station at Secaucus Junction, NJ. Designer responsible for 3D design, topographical designs and development of drawings for the EIS associated for a proposed rail transfer facility. The project included 10,000 linear feet of elevated rail structure, fifteen thru girder railroad-bridge crossings, foundations for the Frank R. Lautenberg Rail Station and future 40-story high-rise overbuild, retaining walls, and ancillary structures. A special feature of this project included developing a variety of constructible details for all of the above-mentioned structures with said construction being performed adjacent to an operating high-speed rail system (AMTRAK's Northeast Corridor Main Line). In addition, bid package preparation, bid phase assistance, and construction support services were provided for 8 construction and 3 turnout procurement contracts.

NJ TRANSIT, Rail Operations Center Communications Link (SONET), Hoboken - Kearny/ Secaucus, NJ. Designer responsible for contract document development. Jacobs (then Edwards and Kelcey) designed and built a complete voice, data, and video communications system to support NJ TRANSIT's new Rail Operations Center (ROC) and back-up operations center. The fiber optic and twisted pair copper cable communications network provides a redundant, fault tolerant system for train control, signaling and track operations. Fiber optic cable is strung on existing catenary structures along the railroad right-of-way to connect a high speed Synchronous Optical NETwork (SONET) OC-3 backbone. Using the existing twisted pair copper cable, T-1 lines multiplex local DS0 channels at all rail stations and connect to the SONET ring for communications to the ROC. Supervisory Control and Data Acquisition (SCADA) and remote equipment provide local control. Constant automatic monitoring design provides alerts for major and minor equipment failures with fault tolerant communications maintained through dual fiber counter rotating SONET ring and closed loop T-1 design.

MTA Metro-North Rail Road, Engineering and Design for Addition of Mid-Harlem Third Mainline Track and Associated Interlocking Improvements, Mount Vernon to Crestwood, NY. Project Documents Coordinator responsible for the design support for Client/Project deliverables. Jacobs (then Edwards and Kelcey) provided Comprehensive engineering and construction phase services for the addition of a third mainline track and associated high-speed interlocking improvements on approximate 3.6- mile section of Metro-North's Mid-Harlem line. Design responsibilities included reconstruction or widening of bridges, retaining wall structures and modifications to the Bronxville Station. Traction power modifications include a new third rail system with associated positive and negative feeder cables, control cable, ductline and conduit system, as well as modifications to substations.

D. Andrew Byler
Senior Track Engineer

Education

- MS, Civil Engineering, 1998
- BS, Civil Engineering, 1996

Registration/Credentials

- Engineer-in-Training, PA

Andrew Byler has extensive experience in track alignment and special trackwork design, track inspection and construction coordination, cost estimating, railway surveying, freight and passenger operations planning, third rail layout, systems integration, structural engineering and testing.

Project Experience

Port Authority of NY & NJ, PATH Harrison Station Track Realignment, Harrison, NJ. Track Design lead for redesign of the station track alignment at Harrison Station to accommodate expansion of the platforms from 8 to 10 cars. The design involved modification of the alignment and profile for 1400 feet to accommodate the reconstruction of the station platforms on tangent track and a constant grade. The design also included relocating the westbound PATH track through the curve east of the station to vacate a track bay needed for future Amtrak track expansion.

Port Authority of NY & NJ, PATH Pavonia Station, Jersey City, NJ. Track Design lead investigating the interface of the track, PATH rail cars, and platform at Pavonia Station regarding expansion of the station platform 80 feet into a curve to permit lengthening of trains from 7 to 8 cars. The project investigated multiple stopping locations and created a platform edge layout to meet ADA gap criteria at the proposed door locations.

Amtrak, ARRA Stimulus Project – Central and Southern Division Track Program, Multiple Locations (2011). Track Lead coordinating and performing field work scoping and engineering design for the reconstruction of tracks at 15 sites on the Amtrak system in the Central and Southern Divisions. Sites include Chicago Union Station, Amtrak Chicago Main Line, 14th Street Yard, and Brighton Park Shop, Chicago, IL; Midway Station, St. Paul, MN; Central Union Terminal, Toledo, OH; Amtrak Wye Track, St. Louis, MO; Memphis Central Station, Memphis, TN; New Orleans Union Passenger Terminal, New Orleans, LA; Birmingham Station, Birmingham, AL; Charlotte Station, Charlotte, NC; Savannah Station, Savannah, GA; Jacksonville Station, Jacksonville, FL; Auto-Train Terminal, Sanford, FL; Tampa Union Station, Tampa, FL; Miami Station and Hialeah Shop and Yard, Hialeah, FL. Total project value is $40 million. Responsibilities include performing field investigations of each site to finalize work-scope, creating 30% design-build engineering documents, and coordinating the work with Amtrak and the adjacent host railroads. Jacobs will also be providing construction management to these projects starting in 2010.

MTA Long Island Rail Road, Morris Park Locomotive Shop, Jamaica, NY. Lead Track Designer for project to design a new six track locomotive shop on an constricted existing yard and shop site. The new shop will provide a modern maintenance facility for LIRR's diesel fleet to replace an antiquated roundhouse and backshop, and a new wye track to replace a turntable. Responsible for conceptual designs, alignments, profiles, and special trackwork details.

Port of Tacoma, Blair/Hylebos Peninsula Project, Tacoma, WA. Track Designer for project to construct two new intermodal container yards at the Port of Tacoma to support expanded import capacity. Project includes new six track and eight track loading/unloading yards, a new 16 track support yard, an extended 10 track arrival/departure yard, revision of existing interlocking

D. Andrew Byler
Senior Track Engineer

entering the port, an engine and car servicing facility, and the reorientation of various existing industrial tracks. Project length is over 4 miles, and includes 50 miles of new track and 100 new turnouts.

NICTD/CN/Metra, Kensington Interlocking, Chicago, IL. Track Designer for project to rebuild interlocking used by NICTD trains to cross the four track CN main line and join the 4 track Metra Electric line. Project involves adding additional routes for parallel moves using two new crossovers, rebuilding six existing crossovers and four crossing diamonds on CN, and double tracking NICTD's approach to the interlocking. Responsible for alignments, profiles, and construction staging of track, signals and catenary.

Bucks County Planning Commission, Quakertown Rail Restoration Project, Lansdale, PA to Quakertown, PA. Lead Track Engineer and Planner for $115 million project to extend commuter service from Lansdale to Quakertown. Planning work included inspection and redesign of 20 miles of existing double track railroad to create reconstruction estimate and plans, revision of the local freight blocking/operating plan, and preliminary passenger operations scheduling. Designed typical station layouts including freight bypass and storage tracks and yards. Coordinated planning efforts with SEPTA, CSX, and East Penn Railway, local political leaders, planners, and the public.

MTA Metro-North Commuter Railroad, Croton Harmon Shops, Phase III, Croton, NY. Lead Track Designer for $300 million design/build project to construct new Locomotive and Coach Shops and Wheel Truer. Responsible for alignments, profiles, sections, special trackwork, third rail layout, and related specifications for a five track locomotive shop, a nine track coach shop and yard, and a three track wheel truing facility. Reviewed submittals and RFI's and provided other construction support as needed.

MTA Long Island Rail Road, Arch Street Yard, Queens, NY. Lead Track Designer for this Design/Build project, a part of the MTA/LIRR East Side Access. Designed the final horizontal and vertical alignments for a new 10-track passenger car maintenance shop and for the realignment of an adjacent 4-track New York and Atlantic Railway freight transload yard.

Miami-Dade County, Kendall Corridor Alternatives Analysis, Miami, FL. Track Planner responsible for creating commuter rail alternative using CSX Homestead Subdivision. Project involved creation of preliminary plans and cost estimates to double track most of the subdivision to accommodate commuter rail service, and investigation of demographics to locate stations using US Census data

MTA Long Island Rail Road, Babylon Carwash, Babylon, NY. Lead Track Designer for project to coordinate track design of the expansion of Babylon Yard with reconstruction of the Babylon Carwash. Designed final alignments and profiles of the sidetrack through the new carwash and adjacent main tracks, third rail sectionalizing, and new and relocated home signals. Project also included design of one new and one relocated crossover in Babylon Interlocking to allow staging of the carwash construction. Provided construction support during track construction, including as-builts.

William J. DeGraaff, PE
Airport Engineer

Education

- MS, Civil Engineering, 1975
- BS, Civil Engineering, 1972

Registration/Credentials

- Professional Engineer: [Ex.1]

Bill DeGraff's background includes an impressive 34 years of experience in airport planning and engineering, the majority of which has been with the FAA Airports Division. Bill has held numerous managerial positions while in the Airports Division, including Deputy Division Manager, Acting Division Manager, Safety & Standards Branch Manager and Programming & Planning Branch Manager. In addition, he was the Regional Runway Safety Program Manager for 5 years. Bill is very knowledgeable in airport design and construction standards as well as airport safety issues and with the many FAA Advisory Circulars that cover these topics. His contribution to airport planning and engineering projects is greatly enhanced, as a result of his thorough understanding of FAA Standards and protocols. Bill is considered an expert in airport paving and airport safety. He has made numerous presentations on these topics at conferences throughout the country.

In his former career with FAA, Bill has worked closely with the Port Authority staff on many issues. These topics included airport design and construction standards, requests for modifications to standards, compliance with Part-139, as well as grant funding and runway safety issues.

Project Experience

DY Consultants, Director of Technical Services (2006-2010)
Bill served as Project Manager for airport engineering and planning projects and resident expert on FAA design, construction, and safety standards. He was the liaison for coordination issues with FAA and provided advice/ assistance to junior airport engineers. Projects include:

- **Port Authority of New York & New Jersey:**
  - **JFK Rotating Beacon Relocation Analysis. Project Manager.** This project was a study to determine the three best locations for a new rotating beacon at Kennedy Airport as well as the best and most appropriate equipment (beacon) available for the airport. The existing rotating beacon is currently located on Hangar 12, which is scheduled for demolition.
  - **JFK, Runway 13L/31R and Runway 4L/22R, Runway Safety Area Improvement Project. Project Manager.** Bill's role was to identify all navigational equipment that would be required to be relocated under the various alternatives and identify new sites for each piece of equipment. Bill provided guidance on how to adjust or relocate these items to accommodate the new location of the runway ends.

- **Los Angeles World Airport, Peer Review Group, LAX - Project Manager.**
  A Peer Review meeting for Los Angeles World Airport. The airport was considering runway/terminal alternatives to accommodate an increase in operations, the introduction of the Airbus A-380 and terminal capacity enhancements, all with severe Runway Incursion problems. Bill lent the group his expertise in Runway Safety in considering alternatives to airside improvements.

- **Connecticut Dept. of Transportation, Airport Obstruction Analysis. Project Manager.**
  Obstruction Analyses at Bradley International Airport as well as five general aviation airports.

William J. DeGraaff, PE
Airport Engineer

Project consisted of an in-depth analysis of FAR Part 77 surfaces and approach surfaces, TERPS, and ILS critical areas.

- **Groton-New London Airport, EMAS, Groton, CT. Project Manager.** Design and installation of an Engineered Materials Arresting System at an environmentally sensitive airport.

- **East Hampton Airport, Airport Master Plan, East Hampton, NY. Project Manager.** Development of a non-FAA funded Master Plan, which presented alternatives for the future of a controversial airport in the very noise sensitive area of the Hamptons.

- **Capital City Airport, MALSR Installation, Harrisburg, PA. Project Manager.** In charge of replacement of an SSALR approach lighting system with a MALSR. Light stations traversed a residential area presenting numerous design/construction challenges. Project also included design and installation of a PAPI.

- **Trenton-Mercer Airport, Taxiway A, C and J Rehabilitation, Trenton, NJ. Project Manager.** Coordinated and oversaw design and construction of over 7,000' of taxiways. This project encompassed pavement rehabilitation, survey work, drainage and the installation of new technology LED lights on the taxiways.

Bill was also a valued member of the team on the following Port Authority projects:
- JFK Operational Efficiency Study
- ALP Update (EWR, JFK, LGA, TEB)
- Snow Study Update (All five Port Authority Airports)
- Delay Reduction Initiative (All five Port Authority Airports)

Federal Aviation Administration – Eastern Region, Queens, NY (1980-2006)
- Regional Runway Safety Program Manager. 10/2000-2006. Bill served as a recognized technical authority on the Runway Safety Program and as such was responsible for the formulation, direction, coordination, management and evaluation of runway safety strategic plans, programs, procedures and mitigation strategies. The purpose of the work was to maximize safety, efficiency and service levels within the National Airspace System by reducing runway incidents/accidents.
- Deputy Manager, Airports Division. 4/1997-10/2000.
- Acting Manager, Airports Division. 6/1996-4/1997
- Manager, Planning & Programming Branch, Airports Division. 5/1994-6/1996.
- Manager, Safety and Standards Branch, Airports Division. 7/1987-5/1994.
- Supervisor, Standards Section, Airports Division. 8/1986-7/1987.
- Paving Engineer, Standards Section, Airport Division. 12/1982-9/1986.
- Supervisory Civil Engineer, Construction Branch, Airways Facilities Division. 12/1980-12/1982.
- Civil Engineer, Construction Branch, Airways Facilities Division. 6/1976-12/1980.

Richard A. Lasdin, PE
Principal Engineer - Airports

Education

- BSCE, Civil Engineering, 19189

Registration/Credentials

- Professional Engineer: [Ex.1]
- Professional Civil Engineer: [Ex.1]

Richard Lasdin is a Principal Engineer and Project Manager for Jacobs' Airports Group. He brings over 25 years of engineering experience, including 10 years focusing on a wide variety of aviation design and construction projects. Mr. Lasdin is intimately familiar with all aspects of project development, from the initial data collection phase, through the design and bidding stages, to ultimately performing construction management and inspection. In recent years, he has successfully completed assignments at a broad range of aviation facilities, including Logan International Airport, Philadelphia International Airport, T.F. Green Airport, and Barnstable Municipal Airport. For each assignment, he draws upon his vast experience to ensure projects are designed and constructed with minimal impacts to day-to-day airport operations.

Prior to joining Jacobs, Mr. Lasdin worked for 15 years in the design and construction of roadways, bridges, toll facilities, and airports. During this time, he developed extensive knowledge of AASHTO and state guidelines for highway and street design. His experience includes the design of new roads and the widening/rehabilitation of existing roads. His construction experience includes serving as a Resident or Construction Manager for heavy highway and bridge construction projects involving concrete construction, steel erection, earth support, foundation construction, blasting and road construction. Mr. Lasdin has also overseen the construction or rehabilitation of various specialty projects related to toll road facilities.

Project Experience

Massachusetts Port Authority - Airfield Engineering Consultant, Massachusetts. Project Manager overseeing all projects issued through a term consulting engineering contract. Projects vary and have included taxiway construction and improvements; airfield electrical and lighting studies and improvements, ALP update, Telecom infrastructure studies, and construction administration. Duties include QA/QC, scope and fee development, and overall project management.

Massachusetts Port Authority – Runway 22R/33L Runway-End Safety Area Improvements EA/EIR, MA. Project Manager overseeing development of airfield planning and engineering of multiple concepts to improve the runway safety areas. The concepts included various studies for shortening and shifting of the existing runways, and constructing infrastructure within the Boston Harbor in order to allow for runway end safety areas complying with FAA requirements.

T.F. Green Airport, Improvement Program- Environmental Impact Statement, Providence, RI. Project Manager overseeing the development of multiple different concepts proposed to improve safety and enhance capacity at T.F Green Airport. These concepts involved expanding the terminal, replacing related support facilities, runway safety area improvements, runway lengthening, taxiway and airfield facilities upgrades and improvements. Specific design elements included terminal and airfield design, airspace analysis, scheduling and phasing, and cost estimates.

Philadelphia International Airport, Capacity Enhancement Program – Environmental Impact Statement, Philadelphia, PA. Deputy Project Manager overseeing the development of three

Richard A. Lasdin, PE
Principal Engineer - Airports

different concepts proposed to replace Philadelphia International Airport. These concepts involved replacement of the terminals and related support facilities, the runway and taxiway system, and all airfield facilities. Specific design elements included terminal and airfield design, airspace analysis, scheduling and phasing, and cost estimates. Specific design responsibilities included the development of airfield geometry and determining locations for the airport general aviation and support services facilities. Also responsible for the development of the construction schedule and phasing plans for this 12-year, multi-billion dollar project. Additional responsibilities included coordination of design efforts performed by three separate Jacobs offices and one subconsultant firm, totaling a project staff of 20 employees.

Massachusetts Port Authority, Upgrade Runway 4R-22L Lighting Systems. Project Manager and Resident Engineer responsible for design and construction related to the complete replacement of all lights, cables and regulators for Logan Airport's only category II runway. This project required extensive coordination with airport operations due to the nightly closures of this runway and all other intersecting taxiways and crossing runways.

Barnstable Airport Commission, Terminal Ramp Rehabilitation, Barnstable Municipal Airport, Hyannis, MA. Project Engineer for the rehabilitation of the terminal ramp. Design efforts included preparing plans, profiles, cross sections, a grading plan, specifications and engineers' estimates.

Massachusetts Port Authority, Taxiway K North Overlay and Miscellaneous Improvements, Logan International Airport, East Boston, MA. Project Engineer for design and Resident Engineer for construction of a portion of Taxiway K North. This project required the sequential closure of sections of the taxiway during construction and also included concrete repair work on specific airlines' gates requiring coordination with airline representatives.

Massachusetts Port Authority, Taxiway A North Overlay and Runway Ground Lights, Logan International Airport, East Boston, MA. Project Manager and Resident Engineer responsible for the complete design and construction of the Taxiway A North Overlay and Runway Ground Lights. Project required the sequential closure of ¾ miles of Taxiway A North and 15 aircraft gates. The temporary closure of the airport's main cargo ramp and aircraft overnight parking area required the design of a temporary taxiway and the temporary replacement of the overnight parking positions.

Massachusetts Port Authority, Taxiway A East 9-27 and 15R Rehabilitation, Logan International Airport, East Boston, MA. Project Engineer for design and Resident Engineer during construction. This project involved the sequential reconstruction of the taxiway plus the reconstruction of portions of two runways.

Provincetown Airport Commission, Runway 6-24 Rehabilitation, Provincetown Municipal Airport, Provincetown, MA Project Engineer responsible for the implementation of all requirements needed to satisfy the various permitting agencies, including Massachusetts DEP, Cape Cod Commission, National Park Service and Provincetown Conservation Commission. Additional responsibilities included generation and review of specifications.

Christopher W. Bowker, Jr., PE
Aviation Practice Leader

Education

- BS, Civil Engineering, 1990

Registration/Credentials

- Professional Engineer: MA, FL, VA

Mr. Bowker has over 18 years of experience in airport engineering with specific emphasis on airfield related projects. He is extremely familiar with the FAA Advisory Circulars and the various requirements of the FAA. Mr. Bowker not only has experience in the traditional "design/bid/build" delivery method of a project, but has also been involved with FAA reimbursed design-build projects.

Mr. Bowker currently serves as a Senior Project Manager / Aviation Practice Leader. Mr. Bowker's professional experience reflects his strong aviation background. He has served as a Project Manager and Resident Engineer on numerous airport design and construction projects ranging from small general aviation airports to major hub airports. Projects have included pavement design for runways, taxiways, and parking aprons, the installation of guidance signs, taxiway centerline and edge lights; pavement rehabilitation and overlays; airfield drainage NAVAIDS, and design and construction of Engineered Material Arresting System (EMAS).

Project Experience

Port Authority of NY & NJ, Engineered Material Arresting System (EMAS), Newark Liberty International Airport, Newark, NJ. Project Manager on this Design-Build project to design, permit and construct an Engineered Material Arresting System in the overrun to Runway 29. The project included designing the site to accommodate the installation of and EMAS. The site improvements included drainage and earthwork, which required the project to obtain permits from NJDEP and Bergen County. Jacobs' responsibilities included all aspects of design, permitting and the construction of the site improvements and the installation of the EMAS material. Project management responsibilities included all aspects of design, construction management, safety, and subcontractor and subconsultant coordination.

Port Authority of NY & NJ, Engineered Material Arresting System (EMAS), JFK International Airport, Queens, NY. Project Manager on this Design-Build project to design, permit and construct an Engineered Material Arresting System in the overrun to Runway 22L. The project included designing the site to accommodate the installation of and EMAS. The site improvements included drainage, earthwork, re-routing low and high voltage utilities, and modifications and upgrades to ALSF-2 approach lights. Jacobs' responsibilities included all aspects of design, permitting and the construction of the site improvements and the installation of the EMAS material. Project management responsibilities included all aspects of design, construction management, safety, and subcontractor and subconsultant coordination.

Port Authority of NY & NJ, Engineered Material Arresting System (EMAS), Teterboro Airport, Teterboro, NJ. Project Manager on this Design-Build project to design, permit and construct an Engineered Material Arresting System in the overrun to Runway 6. The project included designing the site to accommodate the installation of and EMAS. The site improvements included drainage and earthwork, which required the project to obtain permits from NJDEP and Bergen County. Jacobs' responsibilities included all aspects of design, permitting and the construction of the site improvements and the installation of the EMAS material. Project management responsibilities included all aspects of design, construction management, safety, and subcontractor and subconsultant coordination.

Christopher W. Bowker, Jr., PE
Aviation Practice Leader

Port Authority of NY & NJ, Engineered Material Arresting Systems, LaGuardia Airport. Design Engineer and Construction Manager on this Design-Build project for two Engineered Material Arresting Systems (EMAS) in the overruns of Runways 22 and 13 at LaGuardia Airport. Responsibilities included design and construction supervision. Design involved preparing construction plans and specifications. Construction supervision involved construction inspec-tion, coordination of construction subcontractors with the airfield operational requirements, and certifying the installation of each EMAS.

Pensacola Regional Airport, Terminal and Parking Structure Expansion, Pensacola, FL. Project Principal directed design efforts for this multi-facility, multi-phase project expansion of the existing apron, construction of a new remote overnight parking area, relocation of airfield power and control circuits together with fiber optic cables. This project involved interfacing with facility utilities with the building expansion of the existing terminal as well as local utilities to coordinate the relocation and connection of storm, sanitary, water and natural gas. Extensive coordination with NWFWMD for permitting of the projects was also required.

Hartsfield-Jackson Atlanta International Airport, Extension of Runway 27R, Atlanta, GA. Project Manager for a 500 foot extension to Runway 27R and associated parallel taxiways L and M. The extension accommodated a three position "shotgun" start for group V and IV aircraft. The extensions included earthwork, drainage, PCC construction, taxiway edge and centerline light, runway edge and centerline lights, and pavement runway runway guard lights. The extensions also impacted existing FAA NAVAIDS. The project requires the relocation of the runway 9L localizer and the installation of in-pavement approach lights, along with modifications to existing approach tower elevations. Responsibilities include all aspects in design drawings, specifications, estimates, bidding, and construction administration.

Hartsfield Jackson Atlanta International Airport, Extension of Taxiway L, Runway Safety Area (27R), and Rehabilitation of Taxiway M, Atlanta, GA. Project Manager for the extension of Taxiway L and the rehabilitation of the parallel Taxiway M. The extension and rehabilitation is approximately 3,800 feet in length for each taxiway and included PCC construction, new taxiway centerline and edge lighting, runway guard lights, and illuminated guidance signs, new homerun cables, and modifications to the airfield lighting vault. The extension of the Runway 27R safety area included the construction of an MSE retaining wall. Responsibilities included all aspects in design drawings, specifications, estimates, bidding, and construction administration.

Norwood Memorial Airport Commission, Runway 17-35 Reconstruction, Construction of Runway Safety Areas, Relocate PAPI's and Approach Lights, Norwood, MA Project Principal for the design and reconstruction of Runway 17-35 and it's associated safety areas. This project required shifting the runway 200' to obtain the necessary safety areas, while at the same time minimizing the environmental impacts. The project also included the installation of 50 airfield illuminated guidance signs, 243 new airfield runway and taxiway edge lights (including new airfield lighting vault), three wind cones, 50 acres of tree clearing, and construction of 18,000 SF wetland replication. Responsible for coordinating design and construction efforts with the FAA to install two new PAPI and the relocation of the existing MALSF. Responsibilities included design, bidding, and construction administration.

David M. Chamberlain, PE
Airport Engineer

Education

- BSCE, Civil Engineering, 1989

Registration/Credentials

- Professional Engineer: [Ex.1]
- Professional Civil Engineer: [Ex.1]

Dave Chamberlain has served as PIC, Senior Project Manager, Project Engineer, and Resident Engineer on numerous aviation and airport design and construction projects. His design experience includes grading, drainage, runway and taxiway pavement design, apron pavement design, design and layout of runway and taxiway lighting systems, horizontal and vertical alignment, cross sectioning, and estimating construction quantities and costs. His field inspection experience includes earthwork, Portland cement concrete pavement, bituminous concrete pavement, high voltage lighting installation, and electrical vault construction. Dave has extensive experience preparing Federal and State grant applications, technical specifications, design reports, construction reports, and record drawings for airport improvement projects. He is also intimately familiar with Federal Aviation Administration design and construction criteria, as well as the various requirements of State agencies.

Project Experience

County of Fulton, Rehabilitate Runway 10-28 and Parking Apron Expansion-Fulton County Airport, Johnstown, NY. Project Manager responsible for the design and construction administration for the rehabilitation of Runway 10-28 and aircraft parking apron expansion at the Fulton County Airport. The runway rehabilitation portion of the project consisted of reclaiming the existing runway pavement and base course, re-grading and compacting the reclaimed base material, constructing a bituminous concrete surface course, and painting new runway markings. The apron expansion portion of the project consisted of construction of a full depth pavement box, new drainage structures and pipes, new under-drain and drainage grass swales.

County of Saratoga, Reconstruct, Mark and Light Runway 5-23-Saratoga County Airport, Milton, NY. Project Manager responsible for the design and construction administration for reconstructing the 4700 ft Runway 5-23 at the Saratoga County Airport. Project consisted of reclaiming the existing bituminous concrete pavement and amending the base with supplemental aggregate, new bituminous concrete pavement, new medium intensity runway edge light system, new pavement marking, and runway safety area grading.

County of Saratoga, Remove Obstructions Runways 5-23 & 14-32, Saratoga County Airport, Milton, NY. Project Manager responsible for removing obstructions from Runway 5-23 and Runway 14-32 at the Saratoga County Airport. Approximately 42 acres of vegetation were penetrating the approach/departure clear surfaces for both runways and another 29 acres of vegetation were within 15 ft of the surfaces which are required to be clear of all obstructions by the FAA. This project included the clearing of the 71 acres of vegetation. Because of the clearing proximity to the Blue Lupine/Karner Blue Butterfly habitat, a federally endangered species, areas affected by the obstruction removal were replanted and maintained in an effort to create additional hospitable habitat for the species.

County Of Saratoga, Reconstruct, Mark, and Light Runway 14-32-Saratoga County Airport, Milton, NY. Project Manager responsible for the design and construction administration for reconstructing the 4000 ft Runway 14-32 at the Saratoga County Airport. Project consisted of reclaiming the existing bituminous concrete pavement and amending the base with supplemental

David M. Chamberlain, PE
Airport Engineer

aggregate, new bituminous concrete pavement, new medium intensity runway edge light system, new pavement marking, and runway safety area grading.

MassDOT Aeronautics LPV Aeronautical Surveys for Three GA Airports, Various Locations, MA. Principal-in-Charge for this FAA-funded project to develop the first state-contracted LPV instrument approaches at three GA airports: Mansfield, Martha's Vineyard, and Taunton. Jacobs and its team prepared the aeronautical mapping, ground surveys, and obstacle analysis to obtain the lowest LPV minimums at each airport. This was in compliance with FAA Advisory Circulars 150/5300-16A for Aeronautical Surveys; -17B Imagery for National Geodetic Survey; -18B Data Collection and GIS Standards; AC150/5300-13 Airport Design; and FAA Orders 8260.3B TERPs and 8260.54A RNAV approaches. The key objectives were to: (1) obtain geodetic control and survey at each airport; (2) collect aerial photogrammetric imagery to support the development of the LPV approach procedures; (3) submit the survey data to the FAA and National Geodetic Survey (NGS) for approval; (4) analyze the airspace surfaces to identify any penetrations and mitigation to obtain the lowest possible LPV approach minimums; (5) coordinate with the three airports, MassDOT Aeronautics, and the FAA throughout the project to ensure minimal delay in obtaining these innovative new procedures.

City of Chicago, O'Hare Modernization Program, Runway 10C-28C and Associated Taxiways, NAVAIDS, Chicago O'Hare International Airport, Chicago, IL. Task Manager responsible for the design and preparation of bid documents for the NAVAIDS portion of the above project. NAVAID design items included a localizer and glide slope on both ends of the new runway, ALSF-2 systems on ends, inner markers, runway visual range, far field monitors, precision approach path indicators, and a fiber optic network back to the air traffic control tower for systems control.

City of Bangor, Reconstruct Terminal Apron Phase 4, Bangor International Airport, Bangor, ME. Project Manager responsible for design and construction administration of the reconstruction of the existing 346,600 SF PCC Apron and 50' Shoulder pavement. Project was designed to FAA Standards and elements of the project included removal of existing PCC pavement, bituminous concrete pavement, trench drains, PCC milling and reclaiming the existing bituminous concrete shoulder pavement. New construction elements include sub base course, crushed aggregate base course, bituminous concrete overlay, bituminous concrete shoulder pavement, ASR pressure relief strips, PCC pavement and jointing, trench drain, concrete drainage structures, oil/water and sediment separator reinforced concrete and ductile iron drainage pipe, under drain, glycol recovery system, adjustment of fuel hydrants, PCC saw cut control joints, bituminous concrete saw cut control joints, taxi lane painting, slurry seal, actuated gate valves, and flow meters.

Maine Department of Transportation, Reconstruct Mark and Light Runway 14-32, and Obstruction Removal/Vegetation Management Plan-Newton Field Airport, Jackman, ME. Project Manager responsible for the design of Runway 14-32 at Newton Field Airport in Jackman, Maine. Projects included new vertical alignments, new bituminous concrete pavement, rehabilitating the existing rigid foam insulation, constructing additional frost protection above the existing rigid foam insulation, safety areas grading, new runway edge lighting system, new underdrain, new pavement markings, and obstruction removal for FAR Part 77 surfaces.

Craig Schuster, PE
Airport Engineer

Education

- BSCE, Civil Enginee4ring, 1988

Registration/Credentials

- Professional Civil Engineer:

[Ex.1]

Mr. Schuster oversees the development, design, and construction of major airport improvement projects throughout New England. His extensive experience in airport design includes: survey and soils analysis; pavement design; layout and grading of runways, taxiways, and aprons; airfield lighting, marking, and signing plans; preparation of Airfield Sign Master Plans; Exhibit "A" preparation; detailed construction phasing programs; environmental and planning agency coordination; construction cost estimating; AIP grant processing; FAA, state aeronautical agency, and local Airport Commission coordination; reimbursement requests; FAA Advisory Circulars and MAC regulations; construction inspection and administration services; and overall project management.

Project Experience

Barnstable Airport Commission, Owner's Project Management Services for Design of the New Terminal, Terminal Area Roadways, and Parking Areas Final Design (Design Only). Barnstable Municipal Airport, Hyannis, MA. Provided Owner's Project Management services (per Massachusetts General Laws) for the design of a new 44,800 gross square foot, two-story commercial airport terminal, approximately ¾ miles of a new access and egress terminal area roadway system, and parking lots to accommodate approximately 750 parking spaces. Owner's Project Management services included review of project scheduling and phasing, assisting in defining design/bid packages, technical review of scopes of work and associated fees, and general conformance review of contract drawings and specifications.

Barnstable Airport Commission, Construct New Airport Access Road and Overflow Parking Area (Design Only), Barnstable Municipal Airport, Hyannis, MA. Project Manager/Engineer for the design of a $2.2 million, 3,000 foot long, 32 foot wide airport access road and 220,000 square foot overflow stabilized grassed parking area. Responsibilities include project survey, soils and roadway design to meet Mass Highway and Town standards; coordination of design with Town officials and Airport users. This project is part of an overall multi-million dollar airport improvement project that includes a new airport terminal and roadways.

Beverly Airport Commission, Reconstruct Taxiway F, Beverly Municipal Airport, Beverly, MA Project Manager responsible for the design and construction of approximately 2,100 foot long by 35 foot wide reconstruction of Taxiway F. Project included pavement markings, signage and a new taxiway edge light system. Since this project was an ARRA 2009 project, monthly and quarterly reporting, per Federal guidelines, was followed.

Barnstable Airport Commission, Phase 1 Runway 33 Safety Area Design, Barnstable Municipal Airport, Hyannis, MA. Project Manager responsible for the design and construction of the Phase 1 Runway 33 Safety Area (500' wide x 700' long) and the installation of an airfield security system comprised of 18 surveillance cameras, as well as an access control system for each of the airport's five airfield access gates.

Barnstable Airport Commission, Phase 2 Runway 33 Safety Area , Relocate Mary Dunn Way, Airport Access Road, and Runway 15 Localizer, Barnstable Municipal Airport. Project Manager responsible for the design of the Phase 2 Runway 33 safety area (approx. 500' wide x

Craig Schuster, PE
Airport Engineer

300' long), relocation of Mary Dunn Way (approx. 1,400' long x 20' wide), relocation of airport access road (approx. 2,000' long x 20' wide), and the removal and relocation of Runway 15 localizer antenna, localizer shelter, and DME antenna.

Beverly Airport Commission, Construct Runway 34 Extension and End Safety Area; Construct Parallel Taxiway; Obstruction Removal Runway 34 Approach and Install Airport Rotating Beacon, Beverly Municipal Airport, Beverly, MA. Project Manager responsible for the design and construction of 366 foot extension to Runway 34; new 1,300 foot long by 35 foot wide parallel taxiway from the east ramp to new Runway 34 end; new 150 foot wide by 300 foot long end safety area; removal of approximately 18 acres of PART 77 tree obstructions; remove and relocate localizer, DME antenna, localizer shelter, and REILS; new 11,000 square foot wetland replication area; runway/taxiway lighting and signing; and new rotating beacon.

Beverly Airport Commission, Crack Repair Runway 9-27; Install Airfield Fencing (Approx. 5,300'), Beverly Municipal Airport, Beverly, MA. Project Manager responsible for the design and construction of approximately 8,000 linear feet of full pavement depth crack repair and the installation of approximately 5,300 feet of 8-foot high PVC coated chain link fence on the east side of the airport.

Norwood Airport Commission, Runway 17-35 Design, Norwood Memorial Airport, Norwood, MA. Project Manager responsible for the design and construction of Runway 17-35. The project consisted of the 100' wide x 4000' long reconstruction of Runway 17-35, installation of a new electrical vault, installation of two PAPIs, relocation of the existing MALSF system, 18,000 square foot of wetland replication, 50 acres of tree clearing, installation of 243 runway and taxiway edge lights, 62 airfield guidance signs, three wind cones, and 35,000 square yards of runway grooving.

Norwood Airport Commission, Install Ramp Lighting and Security Enhancements, Norwood Memorial Airport, Norwood, MA. Project Manager responsible for the design and construction of a video surveillance camera system installed to digitally records three vehicle access gates, portions of the airfield, fuel farm, and aircraft parking ramps; the installation of an access control system at each of the Airport's three airfield access gates and one pedestrian gate to record the use each gate; and the installation of ramp floodlighting to illuminate the aircraft parking ramps.

Massachusetts Port Authority, Cargo Aircraft Apron Expansion, Logan International Airport, East Boston, MA. Project Manager responsible for the design of a 550,000 square foot north cargo aircraft apron expansion including grading, drainage, and pavement design.

Massachusetts Port Authority, Runway 15L-33R Light Upgrade, Logan International Airport, East Boston, MA. Project Manager/Engineer responsible for the design of an upgrade from the existing medium intensity runway lights to high intensity runway lights for Runway 15L-33R. A fiber-optic cable system from the Air Traffic Control Tower to Facilities 3 was installed. Replaced existing runway distance remaining signs on runway 15R-33L with new signs. Also included a new airfield wide pavement sensor system; new 15KV feeder from Bird Island Flats substation to fire training area; and remarking the existing vehicle service road.

Stephen J. Flecchia, PE
Airport Engineer

Education

- BS, Civil Engineering, 1990

Registration/Credentials

- Professional Civil Engineer: [Ex.1]

Stephen Flecchia's design experience includes grading, drainage, and pavement design of runway, taxiway, apron, and safety area construction, as well as terminal, aircraft rescue fire fighting, and snow removal equipment facilities. His field inspection experience includes earthwork, drainage, pavement, and electrical installations. He also has prepared federal and state grant applications, contract documents, technical specifications, construction management plans, disadvantaged business enterprise goals, construction reports and, record drawings for various airport improvement projects. Mr. Flecchia is experienced with Federal Aviation Administration design and construction criteria and has attended and conducted various project progress meetings including pre-design, pre-bid, pre-construction and final inspection meetings.

Project Experience

Martha's Vineyard Airport Commission, Shift Runway 6-24, Martha's Vineyard Airport, West Tisbury, MA. Project Manager for the construction of an airport improvement that includes the shifting of the airport's only instrument runway. The project involves shifting the runway 303 feet to the northeast to allow the construction of FAA standard safety areas. Four FAA NAVAIDs will be relocated as a result of the runway shift. NAVAID facilities to be relocated include the glide slope antenna and equipment shelter, REILs, PAPIs, and approach lights.

Provincetown Airport Commission, Re-Stripe and Crack Fill Runway 7-25, AIP 3-25-0043-26-2009, Provincetown Municipal Airport, Provincetown, MA. Project Manager for the restoration of critical runway pavement markings and crack sealing maintenance. Construction phasing had to occur at night as this is the airports only runway that has commercial service to Boston Logan International Airport.

Provincetown Airport Commission, Reconstruct Terminal Apron (Approx. 400' x 130'), AIP 3-25-0043-23-2008, Provincetown Municipal Airport, Provincetown, MA. Project Manager for the reconstruction of the airport's only commercial terminal ramp. This project involved detailed construction phasing in tight conditions to allow minimizing the construction time frame while maintaining secure and non-secure passengers safely to their respective airplanes.

Nantucket Airport Commission, Terminal Improvement Project, AIP 3-25-0033-42/45/46/48-2006/2008/2009, Nantucket Memorial Airport, Nantucket, MA. Project Manager assigned to Owner's Project Manager (OPM) services for a $30 million major renovation and building expansion. This project included approximately 12,500 square feet of major renovations and an approximate 18,000 square foot new building expansion. This project also featured unique construction technology including the installation of a geothermal well HVAC system.

Nobadeer Hangars LLC, Nobadeer Hangar Site Development, Nantucket Memorial Airport, Nantucket, MA. Project Manager for a private development that included civil/site layout, grading, drainage, electrical, sewer, telephone, and cable work for three proposed aircraft hangars on the north side of the airfield. This project involved such challenges as the successful Massachusetts Aeronautics Commission airspace determination and a Commonwealth of Massachusetts Ethics Commission decision.

Stephen J. Flecchia, PE
Airport Engineer

Nantucket Airport Commission, Replace Taxiway A, B, C, D, and E Edge Lights (MITLS) and Fence (Approx. 6,600 L.F.), AIP 3-25-0033-43-2007, Nantucket Memorial Airport, Nantucket, MA. Project Manager for the replacement of a majority of the entire airfield taxiway edge lighting system. This project replaced existing direct buried/stake mounted incandescent fixtures with a light base and conduit/LED fixture system. The project also replaced several thousands of feet of existing airport perimeter/security fence.

Provincetown Airport Commission, Purchase Snow Removal Equipment (SRE) Truck, AIP 3-25-0043-21-2007, Provincetown Municipal Airport, Provincetown, MA. Project Manager for the acquisition of a snow plow vehicle for the airport. Worked closely with Airport Management to obtain the intended SRE characteristics. Prepared project grant applications and attended State grant vote approval process.

Norwood Airport Commission, Snow Removal Equipment (SRE) Building, AIP 3-25-0037-28-2007, Norwood Memorial Airport, Norwood, MA. Client Project Manager for the design and construction of a snow removal equipment building. Coordination with an outside architectural firm and internal mechanical, electrical, plumbing, fire protection, structural, and civil/site engineers to complete the design of a four bay garage with office and storage space. The building also includes eventual space for airport management, an airport conference room, and other airport administration space. Coordination involved with the local conservation commission as project limits were located adjacent to protected wetlands and within a wetland buffer zone.

Norwood Airport Commission, Reconstruct Gate 3 Apron (Approx. 325' x 260') and Taxilane (Approx. 600' x 35'), AIP 3-25-0037-27-2006, Norwood Memorial Airport, Norwood, MA. Project Manager for the design and construction of an aircraft parking apron reconstruction improvement. The scope involved close coordination with airport staff and tenants as several aircraft had to be temporarily relocated during construction as well as dealing with impacts to a taxilane serving several facilities such as aircraft maintenance, fueling, and parking. Coordination involved the local conservation commission as project limits were located adjacent to protected wetlands and within wetland buffer zones.

Nantucket Airport Commission, Final Terminal Design and Improvements/Program Management, Nantucket Memorial Airport, Nantucket, MA. Project Manager for a $25 million terminal improvement project. The project included the rehabilitation of the airport's existing terminal and the construction of a new terminal addition. Elements of the project included coordination with the airport's architect/engineering firm and the construction management company. Responsibilities involved meeting coordination and Owner's Project Management (OPM) work tasks under the projects Construction Manager at Risk format.

Nantucket Airport Commission, Purchase Re-Circulating Air Sweeper, Nantucket Memorial Airport, Nantucket, MA. Project Manager for the acquisition of a self propelled mechanical pavement sweeper for the airport. Worked closely with airport maintenance staff to obtain the intended sweeper characteristics. Prepared the bid documents and assisted the airport through the advertisement process up to project close-out.

Steven N. Agri
Senior Designer

Education

- Certification, Land Surveying, Building Design Management, 1988

Mr. Agri serves as a Senior Designer in Jacobs' Airports and Highway Division. With over 20 years experience, Mr. Agri has worked extensively in the civil and airport engineering fields. As Senior Designer for Logan International Airport projects since 1989, Mr. Agri has been directly involved in the design and layout for many runways and taxiway rehabilitations, and electrical design layouts for a number of upgrades to existing vault modifications and all associated underground utilities. Mr. Agri is also responsible for and ensuring that Jacobs follows all proper procedures according to CAD manuals associated with the various airports. In addition, he prepares various conceptual presentations and graphic layouts for unique and complex airports.

Project Experience

Port Authority of New York and New Jersey, Engineered Material Arresting Systems, LaGuardia Airport, New York, NY. Senior CAD Designer for the design layout of an Engineered Material Arresting System (EMAS). The EMAS was installed in the overrun of the respective runway. Design involved preparing a construction set of CAD plans. He worked closely with the Project Manager in developing a quality set of plans.

Port Authority of New York and New Jersey, Taxiways I and O Rehabilitation, JFK International Airport, New York, NY. Senior CAD Designer responsible for most phases of the CAD layout on this project.

Massachusetts Port Authority, Camera Intrusion Detection and Reporting System (CIDRS) CCTV Pole, Foundation, and Communications Design, Boston, MA. Senior Designer responsible for the layout and design, creating plans, following all Massport Cad standards. Also worked to coordinated all drawings transfers between our other Jacobs (then Edwards and Kelcey) departments/ offices.

The Mayaguana Company LLC, Mayaguana Airport Improvements – Phase 2 Engineering. Senior CAD Manager involved in developing a Project CADD Plan for the entire airport improvement system to help provide a basis from which the management and utilization of the data produced for the Project can be organized and integrated.

Beverly Municipal Airport - Reconstruct Runway 9-27 (Approx. 100' x 4,800') and End Safety Areas (Approx. 150' x 300'), Parallel Taxiway A (Approx. 1,100' x 35'), Runup Areas and Obstruction Tree Removal Runway 27 Approach (Design Only). Responsible for the layout and design of this entire runway, taking the survey data and creating grading plans. Worked closely with the Project Manager to create plans while followings all FAA standards. Worked with the FAA to transfer drawings over to the Jacobs (then Edwards and Kelcey) system while maintaining all EK drafting/drawings standards.

Provincetown Airport Commission, Runway 7-25 Reconstruction, Provincetown Municipal Airport, Provincetown, MA. Responsible for the layout and design of this entire runway, taking the survey data and creating grading plans. Worked very closely with the Project Manager to create plans while following all FAA standards. Worked with the FAA to transfer drawings over to our system while maintaining all EK drafting/drawings standards.

Steven N. Agri
Senior Designer

Logan International Airport, Rehabilitate of Northern Portion of Runway 4R-22L and Other Miscellaneous Airport Pavements, East Boston, MA. Senior CAD Manger and Designer responsible for file management and layout of all project plans. Coordinated all drawings, taking the survey data and creating grading plans, profiles and cross sections while following all Massport CAD standards

Massachusetts Port Authority, Existing Airport Layout Plan Update (MPA L180/G-2254, W.O. No. 11), Logan International Airport, East Boston, MA. Senior CAD Designer responsible for coordinating information from various Massport departments and incorporating all information onto the ALP. Part of the process was to create a redline (color) version of the revised plan for ease in reviewing the modifications. Once all comments had been addressed, final versions of the ALP were printed in a traditional format for submission to the FAA.

Massachusetts Port Authority, Second Airfield Lighting Vault Preliminary Design Study (MPA L257-D1/L-7146, W.O. No. 1), Logan International Airport, East Boston, MA. Senior CAD Designer responsible for preparing several different options on using CAD for a Second Airfield Lighting Vault Preliminary Design Study. Since the existing airfield lighting vault at Logan International Airport had reached its useful life span, Massport proposed several new airfield improvements, an evaluation to design and new airfield lighting vault was undertaken.

Massachusetts Port Authority, Installation of Fiber Optic Cable – Phases 2 and 3, and the Installation of Upgrades to the Existing Touchscreen Airfield Lighting Control System (MPA L180/G-2254, W.O. No. 12), Logan International Airport, East Boston, MA. Senior CAD Designer responsible for file management and drafting layout of plans for the installation of a fiber optic cable and ATCT, the existing vault, and other buildings around the airfield to support the upgrades to the touchscreen airfield lighting control system.

Massachusetts Port Authority, Airfield Electrical GIS Database Development (MPA L180/G-2254, W.O. No. 6), Logan International Airport, East Boston, MA. Senior CAD Designer involved in developing a comprehensive airfield electrical database. A review of as-built plans and available information was input into the GIS database. Once the data was input, links were made to the proper AutoCAD drawings. As Designer, assisted with this process and worked closely with all members of the team to maintain a general CAD plan that worked in conjunction with the Logan 2000 CAD manual.

Massachusetts Port Authority, South Security Gate Complex, Logan International Airport, East Boston, MA. Senior CAD Designer responsible for file management and layout of all plans, coordination of all drawing transfers to and from multiple offices. Also responsible for the layout and design of civil drawings.

Nantucket Airport Commission, Complete South Apron, Reconstruct Portions of Taxiway F, Remove and Replace Portions of Perimeter Fence, and Airport Safety Enhancements, Nantucket Memorial Airport, Nantucket, MA. Senior Designer responsible for the layout and design, taking the survey data and creating grading plans, cross sections and profiles.

Sarah E. Dennechuk, PE
Airport Engineer

Education

- BS, Civil Enginee4ring, 1999

Registration/Credentials

- Professional Engineer:

[Ex.1]

Sarah Dennechuk's design experience includes developing construction phasing plans, safety plans, setting profiles, as well as grading, drainage, pavement and electrical design of runway, taxiway, apron and safety area construction. Her field experience includes airfield fencing, paving, and underground utility installation. Her experience also includes environmental reports and a variety of project estimates. She has prepared federal and state grant applications, FAA Safety Checklists and associated plans, contract documents, technical specifications, construction management plans, disadvantaged enterprise goals, and record drawings for various airport improvement projects. Ms. Dennechuk is experienced with Federal Aviation Administration design and construction criteria and has attended various project progress meetings, including predesign, pre-bid, pre-construction and final inspection meetings.

Project Experience

Massachusetts Port Authority, Taxiway D Extension, Logan International Airport, East Boston, MA. Project Manager responsible for the development of contract specifications and drawings including phasing plans and layout plans associated with the extension of Taxiway D from Taxiway C to Runway 4R-22L. Coordinated with electrical engineer to develop light installation and adjustment plans to incorporate them into the set of contract drawings. Developed budgetary cost estimate for review by the Authority. Coordinated with various Massport departments to determine alignment, signage, marking and overall phasing of the project.

Massachusetts Port Authority, Replace 4160V Feeder Cables to FAA NAVAIDS and other Miscellaneous Improvements, Logan International Airport, East Boston, MA. Project Manager responsible for the development of contract specifications and drawings including phasing plans and layout plans associated with the replacement of FAA NAVAID feeder cables, the construction of the Taxiway C hold apron and various other improvements including duct bank installation. Coordinated with electrical engineer to develop plans for the feeder cable replacement to incorporate them into the set of contract drawings. Developed budgetary cost estimate for review by the Authority. Coordinated with various Massport departments to determine overall phasing of the project.

Massachusetts Port Authority, Rehabilitate Approximately 4,000' of Runway 11-29, Reconstruct Taxiway D and Other Improvements, Worcester Regional Airport, Worcester, MA. Project Manager responsible for the development of technical specifications and contract drawings for bidding including phasing plans, safety plans, and layout plans associated with the mill and inlay of approximately 4,000' of Runway 11-29 and the reconstruction of Taxiway D to 65% frost depth. Coordinated with subconsultants for performing topographic survey and soils exploration. Responsible for advertisement of project, preparing FAA and MAC grant applications, and coordinating with Airport, Massport, and FAA regarding project schedule and phasing.

New York State Department of Transportation, New York State Airport Runway Safety Area Study, Various Locations, NY. Assisted in the development of technical reports associated with the study of individual airport safety areas. Reviewed applicable FAA safety area criteria and identified deficiencies and substandard safety areas at each airport based on field data

Sarah E. Dennechuk, PE
Airport Engineer

collected by others. Assisted in the development of recommended projects for each airport to improve safety areas and meet FAA criteria.

Massachusetts Port Authority, Runway Guard Lights and Taxiway Lighting Modifications, Logan International Airport, East Boston, MA. Project Manager responsible for the development of contract specifications and drawings including phasing plans and layout plans associated with the installation of additional runway guard lights along Runway 4L-22R, the re-circuiting of existing runway guard lights, and the installation of semi-flush edge lights along Taxiway A. Coordinated with electrical engineer to develop electrical plans and details to incorporate them into the set of contract drawings. Developed budgetary cost estimate, reviewed bids received, and reviewed shop drawings submitted for review by the contractor. Reviewed shop drawings submitted by the Contractor, and coordinated with the Contractor regarding the project schedule and submittals. Provided support and guidance to on-site resident engineer.

Beverly Municipal Airport Commission, Construct RW 34 Extension (Approx. 100' X 366') And End Safety Area (Approx. 150' X 300'), Construct TW (Approx. 1300' X 35'), Obstruction Removal RW 34 Approach, And Install Airport Rotating Beacon (Design Only), Beverly, MA. Project Engineer responsible for the design and development of contract drawings and specifications associated with a runway extension, safety area construction and new parallel taxiway including setting profiles, developing grading plans, and overall bid documents. This project extended Runway 34 by 334' and designed a parallel taxiway with run-up area to the new runway end approximately 1,400' in length. The intent of this project was to extend Runway 16-34 to a length of 5,000' with standard 150'x300' safety areas as the main runway, Runway 9-27 will have to be shortened in order to construct full-sized safety areas under a future project. Due to the proximity of Runway 9-27 to the Runway 34 extension, this project required close coordination with the air traffic control tower, airport management, and tenants in an effort to develop a feasible construction phasing plan. Coordination with subconsultants developing a wetland replication area and performing subsurface exploration and topographic survey was required, as well as coordination with FAA Airways Facilities to relocate critical NAVAIDS equipment including REILS, a DME antenna, localizer and localizer shelter.

Massachusetts Port Authority, Install Runway 11 End EMAS, Worcester Regional Airport, Worcester, MA. Project Manager responsible for the development of technical specifications and contract drawings for bidding including phasing plans, safety plans, and layout plans associated with runway safety area improvements including the installation of an engineered materials arresting system (EMAS) at the Runway 11 end for aircraft departing Runway 29. As the approach lighting system was within the project limits and the localizer needed to be relocated, close coordination was required with the FAA Airways Facilities Group. Coordinated with subconsultants for performing topographic survey, soils exploration and design of EMAS bed. Responsible for advertisement of project, preparing FAA and MAC grant applications, and coordinating with Airport, Massport, and FAA regarding project schedule and phasing. Provided support and guidance to the resident engineer during construction. Coordinated with the Contractor and attended weekly job and operations meetings.

Eric LeGuelaff, PE
Senior Airport Engineer

Education

- BS, Civil Engineering, 19189

Registration/Credentials

- Professional Civil Engineer: [Ex.1]

Eric LeGuelaff has served as a Project Manager and Senior Airport Engineer for Jacobs for 10 years. His design experience includes grading, drainage, pavement marking layout and runway and taxiway lighting layout. Field inspection experience includes earthwork, drainage, pavement and electrical installations. He has prepared contract drawings, technical specifications, construction management plans, construction reports, and technical reports. Mr. LeGuelaff is experienced with FAA design and construction criteria.

Project Experience

Port Authority of NY & NJ, Design/Build of an Engineered Material Arresting System for the 22L Safety Area, John F. Kennedy International Airport, New York, NY. Project Engineer responsible for the development of contract drawings, technical specifications, and engineer's estimate for the design of an Engineered Material Arresting System (EMAS) for the 22L safety area. The project included the design of the EMAS support surface, drainage system and reconstruction of the 4R ALSF-II system within the EMAS project limits. Also served as site supervisor for site preparation and paving of the support surface, installation of the ALSF-II and installation and finishing of 5600 4-foot by 4-foot EMAS blocks. The project provides the airport with additional safe measures on its widest runway used to service the newest generation of aircraft.

Port Authority of NY & NJ, Runway 6-24 Safety Enhancements - Design/Build of an Engineered Material Arresting System, Teterboro Airport, Teterboro, NJ. Project Engineer responsible for the development of contract drawings, technical specifications, and engineer's estimate for the design of an Engineered Material Arresting System (EMAS) on Runway 6-24. The project included the design of the EMAS support surface and drainage system on the Runway 24 end. Also served as site supervisor for site preparation and paving of the support surface and installation and finishing of 2500 4-foot by 4-foot EMAS blocks

Port Authority of New York and New Jersey, Runway 4R-22L Repair of Engineered Material Arresting System (EMAS), John F. Kennedy International Airport, New York, NY (2005) Supervised the installation of approximately 1,100 4-foot by 4-foot EMAS blocks following the arrestment of a Boeing 747 that overran Runway 4R on landing.

Port Authority of NY & NJ, Design and Construction of Foam Arrestor Beds, LaGuardia Airport, Queens, NY. Project Engineer responsible for revisions to the original design of two Engineered Material Arresting Systems (EMAS) at LaGuardia Airport. Developed changes to contract drawings and specifications and prepared an updated engineer's estimate for EMAS beds at the Runway 4 and 31 ends. Revisions included drainage improvements, asphalt surface preparation for widening of EMAS material, and electrical improvements.

Port Authority of NY & NJ, Runway 4R-22L Repair of Engineered Material Arresting System (EMAS), John F. Kennedy International Airport, New York, NY. Supervised the installation of 250 4-foot by 4-foot EMAS blocks to repair the EMAS after the arresting of an MD-11 that overran Runway 4R on landing.

Eric LeGuelaff, PE
Senior Airport Engineer

Port Authority of NY & NJ, Runway 4R-22L Design Production, and Construction of Engineered Material Arresting System (EMAS), John F. Kennedy International Airport, New York, NY. Project Engineer responsible for the development of contract drawings, technical specifications, and engineer's estimate for the design of the support surface of an EMAS installed at John F. Kennedy International Airport. Also served as resident engineer to supervise the site preparation and paving of the support surface and installation and finishing of over 5000 4-foot by 4-foot EMAS blocks.

Connecticut Department of Transportation, Bradley International Airport Restriping of Terminal A Concourse C Gates 20-30, Windsor Locks, CT. Project Manager for design of proposed gate layout as a result of additional airline tenants occupying Concourse C gates. Multiple options were developed for review based various aircraft models and configurations. The design required coordination with multiple airlines and adherence to each individual standard.

Connecticut Department of Transportation, Bradley International Airport Rehabilitation of Runway 15-33, Windsor Locks, CT. Project Manager for design, bid and construction administration services to rehabilitate Runway 15-33. The 6,850' Runway received a 3" to 4" mill and inlay of new bituminous concrete. Also included in the project was the replacement of the runway edge lighting cable, replacement of signs and sign panels and installation of new electrical duct bank for future use.

Massachusetts Port Authority, Taxiway D Extension, Logan International Airport, East Boston, MA. Project Engineer responsible for the development of contract drawings including alignments, profiles, grading and drainage plans associated with the extension of Taxiway D from Taxiway C to Runway 4R-22L. Assisted in development of budgetary cost estimates for review by the Authority. Responsible for development of pavement section design based on newly release FAA Advisory Circular 150/5320-6D Airport Pavement Design and Evaluation.

Massachusetts Port Authority, Install Runway 29 EMAS, Worcester Regional Airport, Worcester, MA. Project Engineer responsible for the development of contract drawings, technical specifications, and engineer's estimate for the installation of Engineered Material Arresting System (EMAS) for the Runway 29 safety area. The project included the design of the EMAS support surface, drainage system, electrical relocation, and EMAS installation. The project provides the airport with significant safety improvements.

Saratoga County DPW, Acquire Avigation Easements Saratoga County Airport, Saratoga Springs, NY. Project Engineer assisting the airport in acquiring avigation easements from surrounding land owners. Prepared easement descriptions, exhibits and letters of correspondence with owners, attorneys on behalf of the DPW of Saratoga County.

Capital District Transportation Authority, Rensselear Train Station Long Term Parking Upgrades, Rensselear, NY. Project Engineer assisting in the development of concepts, and bid documents for upgrades to the CDTA's long term parking lots located at the Rensselear Rail Station. Tasks included design of the parking lot re-construction, lighting, striping and sidewalk layout. The project provided a greatly needed rehabilitation to a busy facility that links Albany to major hubs such as New York City.

Irvin Baptiste, EIT
Airport Engineer

Education

- BSCE, Civil Engineering, 2006

Registration/Credentials

- Engineer-in-Training

[Ex.1]

Mr. Baptiste is proficient in the major disciplines of civil engineering, including structural, transportation, soil mechanics, and site drainage design. Currently, Mr. Baptiste is one of the lead designers for a major CAT II/III runway NAVAID systems site, which is part of the Chicago O'Hare International Airport Modernization program.

Project Experience

City of Chicago, O'Hare International Future Runway 10C-28C Construction, Chicago, IL. Engineer responsible for designing the NAVAIDS systems layout of a major 10,800 foot long CAT II/III runway, which includes dual 20 element localizers, dual CAT II-III glide slopes, ALSF-2 Approach Lighting Systems, precision approach path indicator, distance measuring equipment, and associated equipment buildings and facilities.

City of Chicago, O'Hare International Cargo Aprons Construction, Chicago, IL. Engineer responsible for preliminary grading of South Cargo Area for FedEx and United Airlines apron areas, associated Design Group IV taxiways, cargo facility buildings, and de-icing area. These areas total approximately 3.5 million square feet.

City of Atlanta, Hartsfield Jackson Atlanta Intl. Airport, Runway 27R Threshold Displacement, Atlanta GA. Engineer responsible for readjustment of the existing primary light plane for the Runway 27R Medium-Intensity Approach Lighting System light bar structures, which spans 1,400 feet into the approach path and intersects with the airfield's inner loop access road.

Rhode Island Airport Corporation, Block Island State Airport Turf Tie-down Apron Construction, Block Island, RI. On-site Resident Engineer responsible for the construction of a turf tie-down apron area to facilitate over 22,000 square yards of parking area for general aviation aircraft. Worked as the mediator between RIAC and the general contractor, and also as the on-site engineer providing technical information, quality assurance, on-going site inspections, maintenance of airfield safety during construction operations, and quantity checks.

Massachusetts Port Authority, Reconstruction of Northern Portion RW 22L, Boston, MA Assistant Resident Engineer responsible for periodic on-site resident engineering and paving inspection assistance during the resurfacing of Runway 22L at Logan International Airport. Followed ASTM standards to select the required random numbers associated with the layout of the pavement cores taken as part of Massport's overall quality assurance program.

City of Philadelphia-Division of Aviation, Philadelphia Airport Draft EIS, Philadelphia, PA Engineer responsible for producing construction phasing drawings for a 12-year projection plan associated with one of the proposed airport reconfigurations. The proposed design encompassed the northeast quadrant of the airfield, including future terminals, people mover, and parking garages. Developed preliminary grading, profile, and cross section drawings of associated taxiways, apron areas, and three major runways: 8-26, 9L-27R, and 9R-27L.

Beverly Airport Commission, Reconstruction of Runway 9-27, Beverly, MA Engineer responsible for developing taxiway sign layout and pavement marking detail drawings for the

Irvin Baptiste, EIT
Airport Engineer

total length (5,000 feet) of the redesigned Runway 9-27, associated taxiways, and aircraft hold locations. Developed preliminary grading, profile, and cross section drawings for the realigned section of Taxiway D at Runway 9 end to assist with natural and efficient drainage and tie into existing land contour surfaces.

Massachusetts Bay Transportation Authority, Red Line Station Renovations, Boston, MA.
Assistant Field Engineer and member of the survey crew party that worked with structural, architectural, landscape and civil utility contract drawings using AutoCAD. Reviewed sub-contractor shop drawings for design compliance and constructability issues. Modified and created multiple CADD drawing overlays for on-site installation of structures. Assisted with large field elevation survey (10,000+ SF), elevation loops, control point traverses, column line grid survey, and on-demand site survey for immediate installation of critical structures.

Eric S. Nielsen, PE
Airport Engineer

Education

- BS, Civil Engineering, 1979

Registration/Credentials

- Professional Engineer: [Ex.1]
- Professional Planner: [Ex.1]

Eric Nielsen has over 28 years of experience in aviation and civil project design and management. His expertise includes:

- Design and construction inspection expertise in airfield pavement, drainage, lighting, and resurfacing.
- Airfield design and construction, conceptual planning; facility and airport layout plans; facility and property requirements; site, land use, airfield, and terminal planning; airport master plans.
- Structural component manufacturing, municipal engineering and consulting

Project Experience

Pensacola Regional Airport, Terminal and Parking Structure Expansion, Pensacola, FL, Design Project Manager. Mr. Nielsen directed design efforts for this multi-facility, multi-phase project expansion of the existing apron, construction of a new remote overnight parking area, relocation of airfield power and control circuits together with fiber optic cables. This project involved interfacing with facility utilities with the building expansion of the existing terminal as well as local utilities to coordinate the relocation and connection of storm, sanitary, water and natural gas. Extensive coordination with NWFWMD for permitting of the projects was also required.

Orlando International Airport, Taxiways E, F, and Associated Taxiway Connectors Rehabilitation, Orlando, FL. This project for the Greater Orlando Aviation Authority (GOAA) involved the rehabilitation of the primary cross-field taxiways due to the age of the pavement and the increase in larger aircraft traffic at Orlando International Airport (OIA). The rehabilitation services consisted of restoring the pavement to provide the strength needed for larger aircraft for the next 20 years and the widening of the taxiways to increase the turning radius needed by the larger aircraft. Since portions of the taxiways needed to remain active during the construction phase, the project incorporated detailed construction phasing in order to minimize the impact to aircraft operations on the taxiways, which provide a critical connection between the four runways at OIA and many of the aircraft boarding gates. Also included in this project was the widening of Taxiway E5 and Taxiway F shoulders to accommodate the A-380.

Orlando International Airport, North Crossfield Taxiway, Orlando, FL, Design Project Manager. Mr. Nielsen was design project manager for owner's authorized representative and managing consultants for the North Crossfield Taxiway at OIA. The project included airfield lighting and signage; roadway relocation; airfield security systems; pavement design; LLWAS relocation; landscaping and irrigation; stormwater permitting and wetland mitigation. The highlight of the project was the design of two taxiway bridges: one 346 feet long and the other 210 feet long. The project also involved design development, FAA coordination, FAA funding, cost estimate reconciliation, and project phasing.

Wright-Patterson Air Force Base, West Apron Design-Build, OH, Design Project Manager. Mr. Nielsen was the design project manager for the West Ramp Design-Build Project at WPAFB. This project included the phased demolition and construction of an apron to serve 14 C-141 aircraft. Pavement design included frost penetration, cement stabilized subgrade, drainage layer design, and familiarity with military design methods and standards. Phasing of the project to maintain aircraft operations was a major element of the job. Other activities included drainage design, subsurface drainage design, access road design, airfield lighting, and apron lighting.

Eric S. Nielsen, PE
Airport Engineer

Orlando International Airport, Rehabilitation of the Southern End Runway 18R-36L, Orlando, FL. Design Project Manager. Mr. Nielsen was design manager for the design and construction of the rehabilitation of approximately 3,000 feet of a 150-foot wide runway and approximately 600 feet of a 75-foot wide taxiway all designed to Group V standards. A detailed phased construction schedule to maintain aircraft operations was a major element of this runway rehabilitation project. Other activities included temporary access roads for baggage carts and tenant use, designing a taxiway stub for future extension that would allow extension construction without impacting the adjacent active taxiways. Construction activities included the monitoring of the contractor's progress and developing responses and repair alternatives for a variety of construction quality items.

Albert Whitted Airport, South T-Hangars, Maintenance Hangar, and Site Development, St. Petersburg, FL, Project Manager. Mr. Nielsen was project manager for the design and construction administration services for the construction of 40 new T-Hangars, a three-bay maintenance hangar and associated site, and drainage improvements at this general aviation airport. Geotechnical investigations, extensive phasing to maintain aircraft operations and parking areas, use of local construction specifications, and pavement rejuvenation were some of the challenging aspects of the projects.

Southwest Florida International Airport, Runway 6-24 Extension, Fort Myers, FL, Deputy Project Manager. Mr. Nielsen was deputy project manager for project extending the single runway on both ends, including the relocation of the ILS system, airfield lighting and signage, drainage, and pavement design. Of special interest was an extensive environmental element that involved the creation of new wetland areas, development of a five-year monitoring and maintenance program, and selective tree topping to allow existing vegetation to remain and be clear of Part 77 surfaces The project also required extensive geotechnical investigation and design of structural enhancements of the subgrade to alleviate potential sinkholes present under the runway extension on the Runway 6 approach.

Lake Wales Municipal Airport, Runway 17-35 Reconstruction, Lake Wales, FL, Deputy Project Manager. Mr. Nielsen was deputy project manager for the reconstruction of runway 17-35 which required phasing to maintain operations at the uncontrolled airfield. The project also included construction.

Herlong Airport, Airside Improvements, Jacksonville, FL, Project Manager. Serving as project manager to provide design services for several improvements at this general aviation airport. The project had three major elements: 24 new T-hangars, associated taxiways, and access road with parking; new aircraft and automobile self-fueling facilities; and widening of an access taxiway. City and water management district permitting, self-fueling facilities, and fast-track project delivery were also an integral part of the project.

Jacksonville International Airport, Taxiway F Widening, Jacksonville, FL, Project Manager. Mr. Nielsen was project manager for the design of widening and overlay of Taxiway F. The project included airfield lighting, pavement design, stormwater permitting, cost estimating, and project phasing.

Tom A. Valencia
Aviation Designer

Education

- AA, Applied Technology

An experienced engineering technician with nearly 22 years of experience, Tom Valencia has been involved in a variety of technical assignments ranging in size and complexity for Jacobs. These have roadway, utilities, and drainage designs for military base residential housing at Tyndall, Altus, and Sheppard AFB; Airport Runway Safety Area EMAS installations at JFK International, Newark-Liberty International, and Teterboro (NJ) Municipal airports; engineering assistance for the extension of Taxiway L and rehabilitation of Taxiway M, and the Runway 27R Extension projects at Atlanta-Hartsfield International Airport which included construction phasing, paving, lighting, utilities, striping, and signage throughout an extended portion of the airfield; civil portion of the Pensacola Airport parking garage expansion and aircraft overnight parking apron project which also included taxiway improvements.

Project Experience

Port Authority New York/New Jersey, Engineered Material Arresting System (EMAS),

- **Newark Liberty International Airport, Newark, NJ.** Design-Build project to design, permit and construct an EMAS in the overrun to Runway 29. The project included designing the site to accommodate the installation of and EMAS. The site improvements included drainage and earthwork, which required the project to obtain permits from NJDEP and Bergen County.
- **JFK International Airport, Queens, NY.** Design-Build project to design, permit and construct an EMAS in the overrun to Runway 22L. The project included designing the site to accommodate the installation of and EMAS. The site improvements included drainage, earthwork, rerouting low and high voltage utilities, and modifications and upgrades to ALSF-2 approach lights.
- **Teterboro Airport, Teterboro, NJ;** Design-Build project to design, permit and construct an EMAS in the overrun to Runway 6. The project included designing the site to accommodate the installation of and EMAS. The site improvements included drainage and earthwork, which required the project to obtain permits from NJDEP and Bergen County.

Pensacola Gulf Coast Regional Airport, Terminal and Parking Structure Expansion, Pensacola, FL. Project expansion of the existing apron, construction of a new remote overnight parking area, relocation of airfield power and control circuits together with fiber optic cables.

Hartsfield Jackson Atlanta International Airport, Extension of Runway 27R, Atlanta, GA;. A 500 foot extension to Runway 27R and associated parallel taxiways L and M. The extension accommodated a three position "shotgun" start for group V and IV aircraft. The extensions included earthwork, drainage, PCC construction, taxiway edge and centerline light, runway edge and centerline lights, and pavement runway runway guard lights. The extensions also impacted existing FAA NAVAIDS.

Hartsfield Jackson Atlanta International Airport, Extension of Taxiway L, Runway Safety Area (27R), and Rehabilitation of Taxiway M, Atlanta, GA. Extension of Taxiway L and the rehabilitation of the parallel Taxiway M. The extension and rehabilitation is approximately 3,800 feet in length for each taxiway and included PCC construction, new taxiway centerline and edge lighting, runway guard lights, and illuminated guidance signs, new homerun cables, and modifications to the airfield lighting vault. The extension of the Runway 27R safety area included the construction of an MSE retaining wall.

W. Charles Waller, PE
Roadway/Drainage Design

Education

- MS, Civil Engineering, 2000
- BS, Civil Engineering, 1996

Registration/Credentials

- Professional Engineer: [Ex.1]

Charles Waller has seven years experience in the design of roadway drainage systems as well as the design of urban and rural roadways. Work on these projects included drainage system modeling and subsequent layout, roadway geometrics, and development of maintenance of traffic (MOT) plans. In addition, he has led the development of preliminary engineering reports. These reports identified the initial design approach for the proposed roadway, existing drainage issues, proposed pond sites, cost estimates, and any unique issues along the project corridor.

Mr. Waller's drainage work has involved analyzing piped collection systems using the ASAD modeling software. Included in these designs was the analysis of drainage ditches and cross drains. His stormwater collection pond designs have included ponds that discharge with a positive outfall and those that discharge directly through the pond bottom to the groundwater below. Analysis of these systems utilized the modeling software programs adICPR v3.0 and Modret, respectively. Mr. Waller has also designed French drain collection systems, using Modret, as an alternative to additional ponds.

Project Experience

Eglin Air Force Base, Parallel Taxiway Ladder, FL. Project Engineer on for this project which is one of four projects designed to provide upgraded facilities to service the US military's latest fighter plane, the F-35 Joint Strike Fighter. Mr. Waller designed the proposed drainage system for this taxiway using the hydraulic modeling software adICPR version 3. This involved identifying all basins and associated basin characteristics as well as the associated hydraulic connections. This proposed drainage system required modification of the existing drainage system. Therefore, using adICPR, it was possible to utilize the storage volume available in the existing drainage system resulting in an efficient and cost effective design. He also developed the erosion control plan for all four projects to allow for concurrent construction.

Mr. Waller also prepared and assembled all necessary drainage calculations, exhibits, and plan sets for submission to the Northwest Florida Water Management District for an Environmental Resource Permit that covers all four projects. Mr. Waller's prior work with this water management district facilitated communication with the District's reviewing staff in an effort to provide a complete initial submittal. Mr. Waller also gained valuable experience with the District's latest web-based submittal process that greatly reduced the effort required in transmitting all necessary documentation to the District.

Atlanta Hartsfield Airport, Department of Airports, Extension of Runway 27R, Atlanta, GA. Project Engineer assisting in the design of the extension of runway 27R at the Atlanta Hartsfield Airport. Assisted in the design of the construction phasing accounting for runway and taxiway closure times, the grading of runway and taxiway extension areas, the relocation of aircraft guidance facilities, and the realignment of various access roads in the area of the extensions. The phasing plan included the use of a displaced threshold to minimize the construction time while maximizing construction area safety. Also assisted in the design of an interim grading and drainage plan to allow for a three month settlement period of the newly placed fill material.

United States Air Force, Tyndall AFB Housing Development, Bay County, FL. Design-build project for three new subdivisions on Tyndall Air Force Base in Bay County. Designed all aspects of the drainage systems for each subdivision. This drainage system included closed collection

W. Charles Waller, PE
Roadway/Drainage Design

systems modeled with HydraFlow software. Stormwater treatment provided in two dry detention ponds, one retention pond, and one wet detention pond. All four ponds were designed using Modret modeling software, incorporating infiltration through the pond sides and bottom allowed advantageous use of well-drained sandy soils in the area. The ponds discharge to St. Andrew Bay, a portion of which is an Outstanding Florida Water body. Due to this, additional treatment volume was included in the appropriate ponds.

FDOT District Five, SR 25/US 27 Reconstruction, Lake County, FL. Project Engineer assisted in designing the entire drainage system for a 2.7-mile segment of US 27. Design included the analysis and layout of the piped collection systems for three drainage basins, stormwater collection ponds, and a French drain collection system. The stormwater ponds discharge directly into the subsurface aquifer and were modeled to account for groundwater effects. Existing ponds and drainage ditches were also utilized where possible.

FDOT District Five, SR 100 Reconstruction, Flagler County, FL. Project Engineer assisted with roadway, drainage, and MOT design. The project involved the reconstruction of approximately two miles of roadway connecting the City of Bunnell to Interstate 95. The reconstruction included milling and resurfacing of a two-lane road located in an historic downtown area. Beyond the historic area, the road was widened to a four-lane divided highway with a grassed median. The MOT plan included the design of a separate detour road to facilitate phased construction of six cross drains along the roadway corridor.

City of Jacksonville, Broward Road Reconstruction, Jacksonville, FL. Project Engineer for the technical drainage design for Broward Road from Lem Turner Blvd to I-95 in Duval County. This project involved the reconstruction of a two-lane two-way road to a three-lane roadway with a center left turn lane. Project involved the design of four detention ponds with adICPR v3.0 and the associated collection systems with ASAD storm sewer modeling software. Lack of available right-of-way for one of the detention ponds was overcome by compensating stormwater treatment in the next drainage basin along the alignment. Broward Road is located adjacent to the Trout River, a tidally influenced tributary of the St. Johns River. Four small tributaries of the Trout River are spanned by four bridges along Broward Road. To avoid significant wetland impacts, Broward Road was designed to taper down to two lanes at each of these bridges and then widen back to three lanes beyond each bridge.

City of Jacksonville, Collins Road from Blanding Blvd. to Pine Verde Lane, Jacksonville, FL. Project Engineer for the technical drainage design for Collins Road. This project was a two-lane two-way road proposed to be a three-lane roadway with a center left turn lane. Designed two detention ponds using adICPR v3.0 and the associated collection systems using ASAD storm sewer modeling software. Project also involved coordination with St. Johns River Water Management District on a significant wetland issue concerning the Ortega River wetland system. This project spanned the Ortega River with a bridge and impacted the surrounding wetlands. To reduce impacts, the northern sidewalk ends at the wetland line. The pedestrians and bicyclists crossed to the southern sidewalk and proceed across the river. From there, the northern sidewalk begins again.

City of Jacksonville, Broward Road Preliminary Engineering Report, Jacksonville, FL. Project Engineer responsible for the preliminary engineering report describing the issues involved with improving Broward Road from an existing two-lane two-way rural typical section to a three-lane urban typical section with a two-way center left turn lane. This was for a 2.7-mile segment of Broward Road from Lem Turner Road to I-95. This segment of Broward Road is adjacent to the Trout River, a tributary of the St. Johns River. In addition, this segment has four bridges that cross creeks draining to the Trout River.

Personnel Project Assignment Salary Schedule

Title / Project Assignment	Name	Hourly Rate, $
Principal-in-Charge/ Project Executive	Michael P. Cavanaugh, PE	200.00*
Project Manager	Vincent A. Cassano, PE	54.15
QA/QC	Michael J. Kennedy, PE	101.70
Safety	Alan Norris, Safety	56.61
	Ronaldo Abaquin	56.80
	Michael Murno, PE	87.44
	Jessica Forse, PE	62.45
	Lauren Calia Brennan, PE	52.29
	Susan Bluni, PE	53.48
	Natvar Patel, PE	65.92
	Satish Patel, PE	62.61
	Omar Raheem, PE	87.44
	Christina Krasanakis	33.87
	Charles Pace	28.86
	Terrence Ro, EIT	38.18
	Jason Rocco	39.25
	Michelle Tsang	34.67
	Jean Go	38.31
Civil/Utility/Structural Engineers/Designers	Karen Regan	42.88
	Michael Goldemberg, AICP	41.21
	Luis Duarte, PE	50.20
	Lakshan Wichramrachchi, PE	45.15
	Robert Kleinert, PE	64.50
	Jose Posada, PE	74.12
	Michael Kaminski, PE	68.29
	Robert Foster, PE	65.14
	Christopher Ellis, PE	48.29
	Christopher Akil, PE	63.45
	Joe Matura	40.74
	Michael Mastriani	56.94
	Robert Zimmermann	39.28
	Neesha Desai, PE	58.47
	Frank Lopatosky, PE	65.08
	James Homoki, PE, CME	62.20
	Ellen O'Donnell	30.01

**Principal Billing Rate*

Title / Project Assignment	Name	Hourly Rate, $
Hydraulics/Hydrology Engineers	Thomas Decker, PE	72.15
	John Corcoran, PE	47.12
	Kathleen Thomson, PE	45.46
	Jeepsi Patel, PE, CFM	43.71
	Kyrra Mosley	39.77
	Kirk Kisinger, PE, CFM	46.58
Track Engineers	Theodore Turanick	71.13
	Lewis Morgan, PE	96.40
	Richard Sirabian, PE	95.22
	Peter Haag	57.80
	D. Andrew Byler, PE	65.06
Airport Engineers/Designers	Michael Marlow, PE	33.22
	William DeGraaff, PE	74.64
	Richard Lasdin, PE	52.61
	Christopher Bowker	88.53
	David Chamberlain	77.14
	Craig Schuster	51.76
	Stephen Flecchia	52.22
	Steven Agri	41.38
	Sara Dennechuk	39.83
	Eric LeGuelaff	38.77
	Irvin Baptiste	30.52
	Eric Nielsen	62.72
Drafters/CADD/Support	Charles Waller	44.79
	Thomas Valencia	36.67
	Juan Vivar	45.40
	Alexander Chizhik	45.34
	Jose Cerezo	44.48
	Mark Elia	51.16
	Brian Wilson	24.99
	Wojciech Sredzinski	28.64
	Ben Morales	26.10
	Juan Torres	38.46
	Ingrid Lien	37.34

JACOBS

U.S. Policy Supplement		Policy No: USP 5-202	Page: 1 of 4
Overtime Policy and Pay Practices		Supersedes: Rev. 1	Rev. 2
Issuing Department: Human Resources	Approval: Patricia H. Summers	Previous Rev. Date: 01-Oct-95	Current Revision Date: 27-Jun-08

1.0 PURPOSE

The purpose of this policy is to define Jacobs Engineering Group Inc., its subsidiaries and affiliated companies (hereinafter, "the Company") pay practices and overtime pay eligibility, in order to appropriately pay employees in accordance with their classification as defined by the Fair Labor Standards Act, 29 C.F.R. § 541.602 (FLSA).

2.0 SCOPE

This policy applies to all Jacobs employees in the United States.

3.0 POLICY

The Company policy on pay practices and overtime pay eligibility compliance is established to appropriately pay employees in accordance with their classification as defined by the Fair Labor Standards Act, 29 C.F.R. § 541.602 (FLSA). This policy discusses federal regulations regarding overtime. State laws may be more restrictive than federal laws. Local Human Resources representatives will provide details regarding regulations for specific states.

The FLSA is the federal law that establishes minimum wages, premium pay for overtime, child labor protections, and certain record-keeping and posting requirements. It authorizes the U.S. Department of Labor (DOL) to define exemptions from those requirements for bona fide executive, administrative, professional or outside sales employees. It also exempts certain employees in the computer software field.

3.1 The Company's salary pay policy shall be interpreted and applied in accordance with the salary pay requirement of the Fair Labor Standards Act.

3.1.1 Compliance

It is the Company's policy to promptly remedy any failure to properly compensate an employee. Any questions regarding compliance with this policy should be directed to an employee's Human Resources Representative. Questions or concerns may also be directed to the Company's compliance hot line.

Inquiries from government compliance agencies or auditing agencies which are addressed to the Company should be directed to the Senior Vice President, Global Human Resources or Director, Human Resources.

3.1.2 Exempt/Non-Exempt Classification

Pursuant to FLSA regulations, all Company employees are classified as either exempt from overtime pay (exempt employee) or not exempt from overtime pay (non-exempt employee). In certain circumstances, exempt employees may receive additional compensation for work in excess of their regular schedules. It is the immediate supervisor's responsibility to ensure that there is adequate supervision while overtime work is performed.

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3.1.2.1 Non-exempt Employees

3.1.2.1.1 FLSA requires that employees (unless they are determined to be exempt), must be paid at least the minimum wage for all hours worked in the designated workweek and receive overtime pay for all hours worked in excess of 40 hours during the designated work week. FLSA provides that such overtime will be paid on a premium basis, at one and one-half times the employee's hourly rate. These employees eligible to receive overtime premium pay in accordance with the FLSA regulations are referred to as "non-exempt" employees.

3.1.2.1.2 Work should be planned and scheduled to avoid having non-exempt employees work overtime (over 40 hours per week under FLSA). The company reserves the right to require employees to work beyond the designated work schedule when business conditions dictate. Non-exempt employees may not work overtime without the prior knowledge and approval of their appropriate supervisor. Employees who work unauthorized overtime are subject to disciplinary action, up to and including termination. However, all overtime work for non-exempt employees must be compensated, regardless of whether or not it was approved.

3.1.2.1.3 All hours of work must be recorded and compensated. A supervisor may not direct, tolerate or allow a non-exempt employee to work without recording the work time. Any questions regarding what activities are considered to be work must be directed to an employee's Human Resources Representative.

3.1.2.2 Exempt Employees

3.1.2.2.1 Certain types of employees may be excluded from eligibility to receive overtime pay as required by the FLSA. These employees are classified as "exempt". While not required by law, some exempt employees may be provided overtime compensation at the company's discretion in support of certain industry practices or customer request. Overtime compensation to exempt employees is normally provided on a straight time basis. However, there may be situations where exempt employees may not receive the extra compensation for extended work hours.

Additionally, when the demands of business require a pre-determined period of work beyond the designated regular work hours and therefore, overtime is scheduled and authorized in advance, exempt employees may receive pay equal to their straight time hourly rate with the approval of the appropriate supervisor.

3.1.2.2.2 Hours worked by employees are tracked for billing purposes. Exempt employee's salaries will not be reduced for a scheduled work day in which some work (there is no minimum) is performed. If a partial day's absence occurs, the portion not worked shall be charged to the employee's accrued paid time off (PTO), if hours are available. If PTO hours are not available, the hours not worked will be charged to the 555-000 account of the employee's performance unit. Charges to the Company's 555-000 account will need prior approval of the appropriate unit manager.

3.1.2.2.3 Where PTO benefits have been exhausted or have not yet accrued, salaries may be reduced only for the reasons set out below:

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- For unpaid leave as provided by the Family and Medical Leave Act
- For partial initial and final weeks of employment
- For absences of a full day for personal purposes such as vacation, sickness or disability
- For suspensions of a full day or more for disciplinary purposes in accordance with a written policy of general applicability
- For violations of safety rules of major significance
- For absences for an entire workweek for any reason

A reduction in salary must comply in every case with federal and state laws, as well as any contractual obligation.

3.1.2.2.4 The limitations on reducing exempt employees' salaries do not limit the Company's ability to address attendance, tardiness or untimely work.

3.2 Responsibilities

Human Resources is responsible to maintain all employee files relating to compensation and employee status.

3.3 Training

NA

3.4 Audits

The Internal Audit department will review employee status relating to this policy and report exceptions to Human Resources.

3.5 Disciplinary Action

The violation of this policy, including the following misconduct, may result in discipline, up to and including termination of employment:

3.5.1 The falsification of any time record or the alteration of a time record by an employee or a supervisor such that the time record is inaccurate;

3.5.2 Performing work without recording the work time in accordance with this policy;

3.5.3 A supervisor's directing, permitting or tolerating a non-exempt employee to work off the clock or to work in violation of applicable requirements; and

3.5.4 Retaliating or discriminating against a non-exempt employee for accurately reporting all work time or raising a concern regarding the reporting of work time or regarding the employee's compensation or another employee's compensation.

4.0 PROCEDURE

NA

5.0 MAINTENANCE

Human Resources will review this policy periodically against applicable regulations and update as needed.

6.0 DEFINITIONS

NA

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7.0 ATTACHMENTS AND RELATED DOCUMENTS (References)

7.1 Global Company Policy GP-001

7.2 Timekeeping Policy – USP 2-105

8.0 RECORDS

Human Resources will maintain all employee files relating to exempt status and pay practices.

REVISION HISTORY

Rev #	Date	Author	Reason for Changes
2	02/15/08	Corporate Compensation	FLSA regulation update

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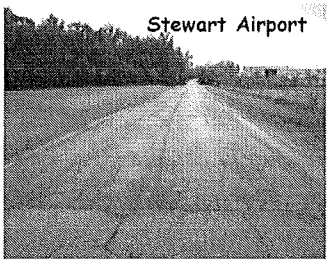
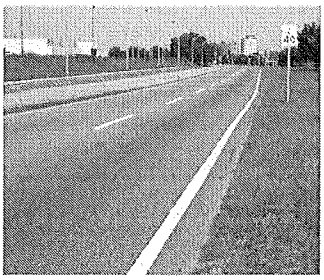
Jacobs is a full service engineering, design, planning, and construction management firm. Our results-oriented approach to business, coupled with our relationship-based philosophy, has enabled us to expand our organization to more than 50,000 employees worldwide and over 300 employees in the New York /New Jersey metropolitan area.

Under partnerships with both public and private clients, our multi-disciplined consulting engineering and planning organization includes civil engineering and highway design; building and site design; value engineering; constructability reviews; rail and mass transit engineering; bridge inspection, rehabilitation, reconstruction and design; aviation-related engineering; traffic engineering; transportation planning; geotechnical engineering; telecommunications; Intelligent Transportation Systems; electrical engineering; mechanical engineering; sanitary engineering; environmental assessment; historic preservation; land use planning; and computer operations.

Since 1988 we have successfully completed over 100 assignments under annual Civil Engineering Call-In Agreements at every major Port Authority facility. The projects assigned under these agreements ranged in size from $5,000 to $250,000 in fee and typically involved civil engineering work at existing Authority facilities. The projects were performed on a fast-track basis and design included the entire range of project development, from project scoping through construction support services including: field inspections; schematic design and design development; the preparation of final design contract plans; specifications; and detailed construction cost estimates, as well as shop drawing review and approval. Typical projects successfully completed through the years, on our call-in projects have included:


Stewart Airport

- Roadway Rehabilitation Design at Stewart Airport
- Roadway, Site, Utility and Track Design at Harrison Path Station
- Evaluation of Construction Staging areas at Teterboro Airport
- Performance of hydrologic/hydraulic studies at Teterboro Airport for the Runway 1 EMAS
- Design for realignment of McLester Street and North Avenue at the PA Marine Terminal
- Design of new taxiways at LaGuardia Airport
- Design of new or rehabilitated roadways at the Lincoln Tunnel, JFK International Airport, Newark International Airport, Port Newark and Port Elizabeth
- Drainage studies at LaGuardia Airport and Newark International Airport
- Design for the reconstruction of parking areas and courtyard pavements at Newark International Airport and the Outerbridge Crossing

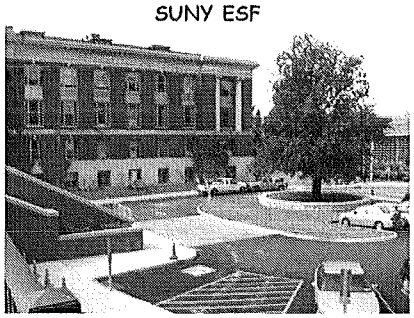

JFK North Boundary Road

- Design of utility improvements such as electric lines and water mains at Port Elizabeth, Port Newark, JFK International Airport and the Grove Street PATH Station
- Design of trackwork and bedding at Port Elizabeth and Port Newark

We have also completed numerous call-in assignments for PANYNJ in other disciplines including structural engineering, traffic planning and design and building/facility inspections. More detailed project descriptions of our PANYNJ Call-In project assignments are contained on the following pages.

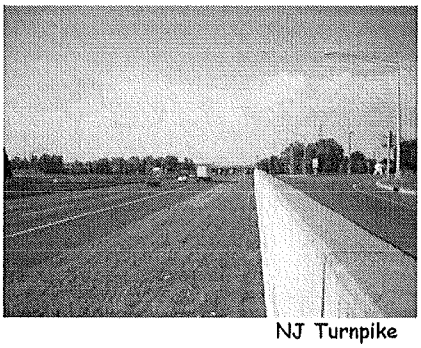
In addition to our Port Authority Call-In experience, we have performed a wide variety of civil engineering projects including the design of aeronautical pavements, such as runways, taxiways and aprons, as well as the design of highways, streets, local roads and utilities at numerous airport facilities in the New York, New Jersey, Atlanta and New England areas. In fact, we have completed six on-call aviation engineering/planning contracts with Massport for whom we have successfully completed over 100 individual work order projects at Logan International Airport and the three Massport facilities over the last 20 years. Additionally we have provided On-Call services for several landside assignments at Hartsfield Atlanta airport.

SUNY ESF



Under Call-In agreements with the State University Construction Fund and New Jersey Department of Transportation we have completed several key civil engineering assignments including parking expansion, roadway and intersection improvements as well as utility upgrades at SUNY ESF, SUNY Fredonia, and SUNY Plattsburgh. These projects included pavement, curbing, drainage/stormwater systems, lighting, electrical distribution upgrades and water distribution upgrades. We have also completed several bridge projects for NJDOT which include structural rehabilitation, roadway design, maintenance and protection of traffic, utility relocation and drainage evaluations.

Our recent roadway/highway design experience includes a project with the Port Authority at the World Trade Center for the design of streets, utilities, and related infrastructure, including the creation of Greenwich Street between Vesey and Liberty Streets, and Fulton Street between Route 9A (West Street) and Church. The work includes new street utilities to service the site as well as street lighting, furnishings, parks and security improvements. We also have an extensive record of successful performance on major projects for highway agencies on both sides of the Hudson River. Recent projects, which included extensive relocation of underground utilities, include:



NJ Turnpike

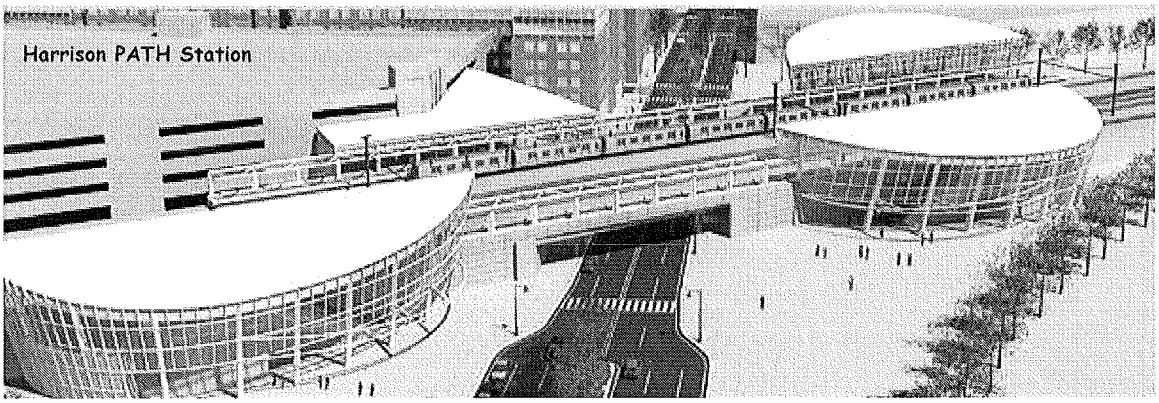
- New Jersey Turnpike Authority – A $180 million widening program between Interchange 6 and 9
- New York State Department of Transportation – A $11 million roadway reconstruction of Route 347
- New Jersey Department of Transportation – A $100 million reconstruction of Route 21 in downtown Newark.
- New York State Department of Transportation – A $70 million reconstruction of Route 9A on the west side of Manhattan.
- New York City Economic Development Corporation – A $6 million reconstruction of Linden Place; a local street in Queens.

In addition to the above projects, for NYCDOT we have designed over 30 miles of street improvement along with associated drainage utilities within New York City.

We have designed large scale site improvements including roadways, utilities and drainage facilities at various public and private locations in the metropolitan area including Cortlandt Station, Morris Park Locomotive Shop, and Meadowlands Rail Station. Under design-build contracts, we have designed three major rail yard and shop complexes; Harmon Shop Complex Phase III, Highbridge Yard and Arch Street Yard for Metro-North Railroad and Long Island Rail Road respectively. All of these design-build projects have featured the development of complex site utility plans.

Cortlandt Station

Jacobs also has extensive experience in track design and rehabilitation. We recently provided Stage I and II design for the track realignment at Harrison PATH station to accommodate 10 car trains. We prepared track design for the realignments at Pavonia / Newport PATH Station to allow for 8 car trains in conjunction with ADA improvements, and are currently designing 7 miles of track restoration for the Lackawanna Cut-Off in New Jersey for NJ TRANSIT. We are also designing track improvements for the new Wesmont Rail station in Garfield, NJ.



The depth and breadth of experience that the Jacobs team brings is unparalleled in the industry, and will bring tremendous benefits to the PANYNJ. We understand that the PANYNJ serves a critically important service throughout the region and has a responsibility to respond to its many constituents. This requires that the services that we provide to the PANYNJ be of the highest level of service and quality. Jacobs is committed to providing exceptional service and to being responsive and timely to all requests made by the Port Authority.

Port Authority of New York & New Jersey, Civil Engineering Call-in Contract 2008-2011, New York and New Jersey

Client
George Soriano
973.792.4379

Joseph Calautti
973.792.4337

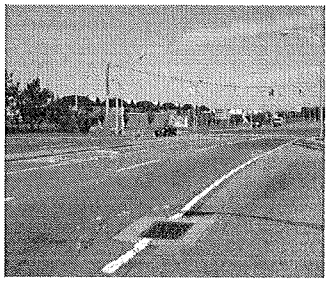
Port Authority of NY & NJ
Civil Aviation
Two Gateway Center
Newark, NJ 07102

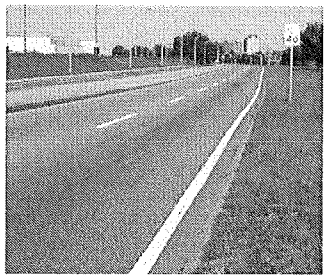
Construction Value
Varies by task

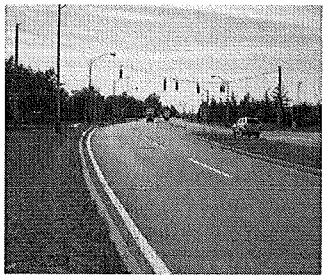
The project tasks were completed within mutually agreed upon budget and schedule

Jacobs was awarded a call-in contract by the Port Authority of NY & NJ to provide services for civil projects. The following tasks are a representative sample of the assignments under this contract:

John F. Kennedy International Airport, North Boundary Road and Eastern Roads Pavement Rehabilitation, Stage I, Queens, NY. As part of a Port Authority civil call-in services contract, Jacobs evaluated the condition of roadways, concrete and grass medians, and parking areas at JFK International Airport and developed preliminary plans and recommendations for rehabilitation of the pavement. The project included a section of the main airport loop road as well as associated roadways, driveways and parking lots.







The project was first started in 2004 to assess the condition of the pavement but was subsequently put on hold. The study of the roadway was restarted in 2008 in order to assess the work needed to rehabilitate the pavement. This task included visual inspection, pavement cores and core analysis.

Jacobs performed a field assessment and condition analysis of the roads and parking facilities included in the program consisting of approximately 1 mile of roadway. We evaluated pavement cores taken by the PANYNJ subcontractor and made recommendations for rehabilitation which will extend the expected life of the surface and meet current Port Authority standards.

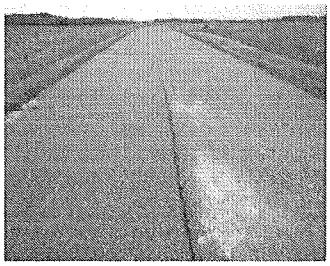
The roads in this program were constructed in the 1980s and have begun to show signs of age and wear. The roadways exhibited cracking, rutting and shoving with the worst areas occurring at intersections. The parking area was in very poor condition with severe cracking, deep potholes, ponding of water, and vegetation growth.

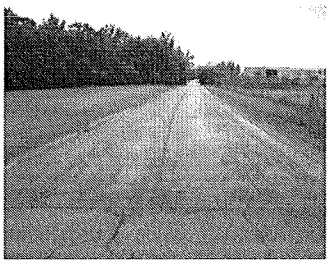
In order to further assess the condition of the roadway Jacobs reviewed core samples of the existing pavement and compared to the original pavement design and the current Port Authority standards. In order to keep costs from becoming extremely high, Jacobs strove to rehabilitate rather than replace as much pavement as possible however there were sections that had unsuitable sub-grade and required full depth reclamation. The roadway sections were acceptable for milling and resurfacing, and Jacobs designed the thickness of this rehabilitation to meet current PA standards. An "ultra-thin white-topping" concrete treatment was utilized at the intersections to provide the rigidity

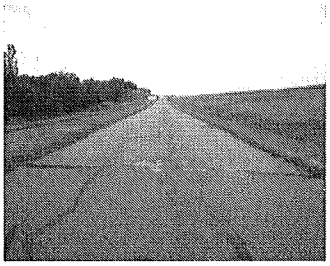
necessary to resist future rutting caused by truck traffic on the roadway. The concrete medians and associated curbs were selected for replacement. The parking area had a total pavement thickness of less than two inches, showed signs of sub-grade failure and was selected for full depth replacement of pavement.

The project shows Jacobs ability to evaluate existing roadway conditions and develop resourceful solutions to roadway failures. Additionally the in depth analysis performed up front in a project allows us to avoid issues during construction and develop cost effective designs.
Est. Construction Value: $8.5 million. Services completed: 2009.
Port Authority Contact: Guy Zummo, 973.792.4388

Stewart International Airport, Runway Incursion Mitigation Study, Phase 1A, AOA Perimeter Road, New Windsor, NY. As part of the Port Authority civil call-in services contract, Jacobs performed a Stage I evaluation and preliminary design of the Perimeter Loop Road at Stewart Airport. This design will make the road suitable for travel in terms of both weight and maneuverability of a fully loaded 15,000 gallon fuel truck addressing the needs of this growing facility. The project began in April 2009 with Stage I completed in August 2009. The project scope included existing conditions evaluation of the roadway, pavement and drainage, design of widening, shoulders pavement design, and security fence relocation.







Jacobs performed a field assessment and condition analysis of the approximately 1.5 mile roadway. Additionally, we analyzed pavement cores and geotechnical data taken by a Port Authority subconsultant and made recommendations to improve the capacity and longevity of the roadway. The roadway was widened at turns in order to improve two way traffic flow for large fuel trucks.

The roadway in this program was constructed in the 1970s and was not designed for use by much smaller vehicles. As a result of the Port Authority taking over the facility, and increasing needs in the industry the design of this project not only rehabilitated the road surface to extend its useful life but also increased its structural capacity and traffic capacity.

Pavement cores were critical to this project to evaluate the existing thickness and composition of the layers so the structural capacity can be determined, as well as what additions are necessary to support the current needs. Additionally geotechnical borings were advanced in order to confirm the suitability of the subgrade and the necessary section for increased loading. Removal and replacement of the full section to meet the current needs would have been extremely cost prohibitive therefore the solution was to mill a portion of the deteriorated pavement and replace it with additional binder and top course which would increase the overall thickness of the section and provide the necessary support.

Although the majority of the pavement could be resurfaced in this manner, however there were areas which were in poor condition that showed signs of failure that required full depth reclamation. The geotechnical investigations showed the base course and subgrade of these areas was sufficient, so Jacobs recommended the reuse of the base course while replacing the full depth asphalt pavement only. Not only was this a cost saving measure from a roadway perspective it allowed the project to have less than one acre of disturbance avoiding the need for a Storm Water Pollution Prevention Plan, and potential for a costly detention basin.

Jacobs has provided a cost effective roadway design for this integral part of the airports infrastructure that meets the needs of the users, and satisfied the requirements of the engineering department.
Est. construction value: $3.1 million. Services completed: 2009
Port Authority Contact: Joseph Calautti, 973.792.4337

LaGuardia International Airport, Storm Drainage Rehabilitation, Queens, NY: Jacobs is responsible for the Stage II review of sewer video inspections at LGA. This project will provide the PA recommendations for the long-term rehabilitation and upgrading of the storm sewer system throughout the airport and surrounding infrastructure.

John F. Kennedy International Airport, Rehabilitation of Outfalls 10 &13 Stage I, Queens, NY: Jacobs is responsible for the Stage I Site Civil design for the rehabilitation of two outfalls at JFK airport. Jacobs provided Stage I site civil plans to support the structural design of the new outfalls. The Stage I plans outlined construction limits site restoration, grading and site features.

Teterboro Airport, Construction Staging and/or Stock Piling Area, Stage I, Patrol Road. The existing construction staging area/stock piling area along Patrol Road will be eliminated for storm water management under a contract for Runway 1-19 Safety Area Improvements Redneck Avenue Relocation. This staging and/or stockpiling area is critical to construction activity at the airport and needs to be replaced. From a cost and implementation basis, two possible locations have been identified as a replacement area and are to be investigated further to determine if the proposed locations are acceptable for staging and/or stock piling material during construction activities. The locations are at Industrial Avenue and Moonachie Avenue. Jacobs has evaluated these locations considering the facility needs and constraints and prepared a report and conceptual plans outlining the potential layouts. We have identified the required permits, issues and benefits of each location such as available area access and cost. This will aid the facility in their decision as to which is the best alternative.

Port Authority of New York & New Jersey, Teterboro Airport, Runway 1-19 Safety Area Improvements and Hydrologic and Hydraulic Services

Client
Phil Cremin, PE
Assistant Chief Engineer
973.792.4326

Port Authority of NY & NJ
Civil Aviation
Two Gateway Center
Newark, NJ 07102

Services
Drainage System Design
Compliance with the SWM Rules and Total Suspended Solids Treatment
Soil Erosion and Sediment Control Certification
Final Construction Documents
Hydrologic and Hydraulic Study
Watershed Analysis
HEC-1,HEC-HMS and HEC-RAS Analysis
Environmental Analysis
Construction Cost Estimates

Project Completion
2007

The project was completed within mutually agreed upon budget and schedule

In an effort to increase safety at Teterboro Airport, the Port Authority New York and New Jersey (PANYNJ) has undertaken projects to install Engineered Material Arresting Systems (EMAS) at the end of Runways. EMAS is a system installed to safely stop aircraft that overrun a runway and are typically installed at the end of runways that are in close proximity with natural (i.e. bodies of water) or man made boundaries (i.e. roadways, buildings, railroad tracks

Installation of an EMAS at the end of Runway 1-19 required impacting two ditches and the associated wetlands. Jacobs prepared a study to evaluate the very sensitive environmental and hydrologic and hydraulic issues that would be impacted by the proposed project.

The project will require impacting East Riser Ditch and the Red Neck Avenue Ditch. Site constraints require a portion of the relocated Red Neck Avenue roadway to be located within the floodplain and existing floodway of Red Neck Avenue Ditch (RNAD). The EMAS project requires enclosing a portion of the existing East Riser Ditch (ERD) and installation of a concrete box culvert.

A hydrologic/hydraulic (H&H) study was performed to identify impacts and to evaluate possible alternative options related to the ditch impacts. The Study resulted in additional work to prepare final H&H studies and certain permit documents.

The project also involves channel improvements and dredging to improve flow, to provide for net flood fringe fill mitigation, and to mitigate the hydraulic impacts.

Detailed hydrologic and hydraulic (H&H) analysis was performed to establish existing conditions and to evaluate the impacts for the proposed conditions and mitigation measures for both ERD and RNAD. The work required extensive use of the USACOE HEC-RAS, HEC-1and HEC-HMS Computer Programs. A detailed Engineers Report was prepared in accordance with the NJDEP Flood Hazard Area Permit requirements.

The project involved preparation of Flood Hazard Area Permit Plans and USACOE Wetland Plans for the related work. Coordination was required with other PANYNJ consultants.

Port Authority of New York & New Jersey, Harrison PATH Station Urban Design and Planning, Harrison, NJ

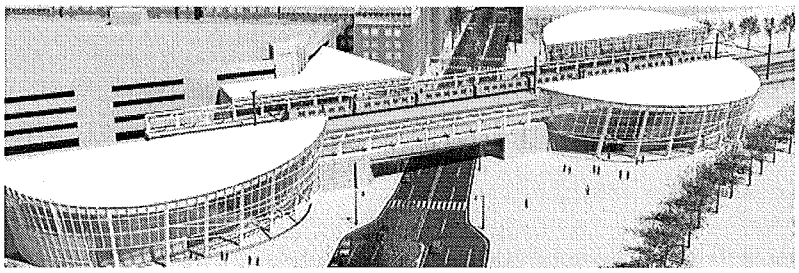
Client
E.J. Stastny, PE
973.792.4380

Port Authority of NY & NJ
Two Gateway Center
Newark, NJ 07102

Services
Roadway Design; Site Design; Pavement Design; Bus Stop Grading Drainage and Utilities Design; Track Design
LEED; Cost Estimating

Construction Value
$173 Million (estimated)

Project Completion
Ongoing



As part of the PANYNJ Civil Rail call-in services contract, Jacobs performed a Stage I and Stage II evaluation and preliminary design of Harrison PATH Station site including roadway rehabilitation, bus stops and track realignment. These tasks were performed as part of the overall reconstruction of the station which was originally constructed in 1936.

The station is located within Harrison's redevelopment district where a number of developers have begun construction or are planning projects such as residential, office, and commercial as well as a new sports arena. Upgrading the station is in response to this recent development which will drastically change the population and urban climate in Harrison and consequently the traffic loading at and in the area immediately surrounding the station. The site was designed to accommodate four new head houses including new plazas, utility connections and bus drop offs. The track was realigned to provide for a future platform expansion from 8 cars to 10. The site design required extensive coordination with the surrounding development as well as the Harrison Redevelopment plan. This challenging site is also located in the flood hazard area and required a built up floor elevation and conformance to the NJDEP Flood hazard Area Requirements. Jacobs not only evaluated the storm water management issues but provided guidance to the PA with regard to the environmental permitting process required and countermeasures required to account for the flood elevations.

Jacobs performed field investigations, preliminary designs, including site layout, grading, drainage and utility design at the four head house locations. We provided roadway rehabilitation design and bus turnout design at Frank E. Rodgers Boulevard. Jacobs also provided the vertical and horizontal track alignment for the new station. Working with the station architects and engineers, we produced coordinated alignments for both operating tracks that accommodated increased platform lengths for 10 car trains.

Designing the new alignments required determining the existing track geometrics and maintaining the track alignments on the existing undergrade bridge over Frank E. Rogers Boulevard. The new alignments were designed to meet ADA criteria and the requirements of the proposed head houses and adjacent retaining walls. The new alignments used the existing horizontal and vertical tangents through the station to minimize the extent of track work. The design included preparation of geometric data tabulations, platform edge plans, to determine the limits of trackwork and utility relocation requirements.

Our Stage I and II efforts included reports, cost estimates constructability review, and LEED evaluation of site credits. Working closely with the PA engineering department other consultants, Jacobs has provided a cost effective, efficient design for this integral part of the PATH systems infrastructure.

Port Authority of New York & New Jersey, World Trade Center Engineering and Design Services for Streets, Utilities, and Related Infrastructure, New York, NY

Client
Vito Ranieri
212.435.5568

Port Authority of NY & NJ
115 Broadway
New York, NY 10006

Services
Civil
Utilities
Electrical
Security
Urban Design

Project Completion
Ongoing

Jacobs, part of the Downtown Streetscape Partners joint venture, is performing engineering and design services for the new World Trade Center (WTC) in lower Manhattan. The project consists of the creation of Greenwich Street between Vesey and Liberty Streets, and Fulton Street between Route 9A (West Street) and Church Street, including the installation of street utilities (water, storm and sanitary sewers, gas, and steam mains) to service the World Trade Center Site.

In addition to the new streets and utilities, we are responsible for the creation of Liberty Park, a new park adjacent to the WTC Memorial on Liberty Street, all roadway surfaces, sidewalks, street lighting, traffic control measures, appropriate street furnishings, way finding, landscaping and perimeter security measures.

We manage the design coordination of the streets and related infrastructure designs with all participating stakeholders, including Silverstein Properties, Inc. (SPI), Metropolitan Transit Authority (MTA), Lower Manhattan Development Corporation (LMDC), New York City Department of Transportation (NYCDOT), New York City Department of Environmental Protection (NYCDEP). This effort involves responding to stakeholder requests for design treatments that enhance the design quality and aesthetics of the site.

MTA Metro-North Railroad, Cortlandt Station Parking, Intermodal and Access Improvements, Cortlandt, NY

Client
Mukesh Mehta, PE
212.499.4415

MTA Metro-North Railroad
347 Madison Avenue
New York, NY 10017

Construction Value
$20 Million

Completion Date
2011

Cortlandt Station, opened in 1996, is located approximately 35 miles north of Manhattan on the Hudson Line and serves as a major regional commuter transit center to Grand Central Terminal in New York City as the final destination from Cortlandt and its surrounding communities. To meet increasing ridership demands, Metro-North decided to improve access and add major parking capacity on the Hudson Line by further developing the Cortlandt Station into a Strategic Passenger Intermodal Facility. The plan is to design the required improvements at the station using design parameters on traffic flow, environmental issues, commuter safety, and visual enhancement.

As prime consultant Jacobs led the civil design effort and provided project management. The project calls for the addition of approximately 750 parking spaces including the construction of a new parking lot on the west side of the tracks, extension of the existing commuter overpass with an elevator, and a new intermodal area with station plaza.

In addition, a 30% design of the six-car length side platform on the west side of the tracks is required – an element for possible future construction under a separate project.

The project work includes:

- new parking lot built on property under acquisition on the west side of the tracks
- earthwork, retaining walls, and paving
- drainage improvements
- lighting, electrical upgrade
- signage
- extension of the existing station overpass to provide access from both sides of the tracks
- a new intermodal area on the west side
- design of all necessary construction and post-construction stormwater management measures
- a facility design that is environmentally friendly and bike accessible
- modifications to Route 9A interchange with vehicular connection and streetscape and a new access road to Route 9A with improved pedestrian and vehicular points of access and egress
- environmental restoration of federal wetlands and bank stabilization, as well as all investigation and document preparation necessary to obtain any environmental permits

The 100% design of drainage improvements includes developing a Stormwater Pollution Prevention Plan (SWPPP) in accordance with NYSDEC Phase II permit regulations and the design of all necessary associated elements including bioretention system, retention pond, drainage pipes, grading, etc. The drainage design also includes all data and information required for NYSDEC Phase II permitting and Army Corps of Engineers permitting requirements and specifications.

The design services for this project include:

- Review of existing as-built drawings, subsurface data collection, existing conditions survey and site investigation
- Preparation of conceptual design and preliminary design documents
- Final design, preparation of detailed plans, specifications, and construction cost estimates
- Construction support services

MTA Long Island Rail Road, Morris Park Locomotive Shop, Queens, NY

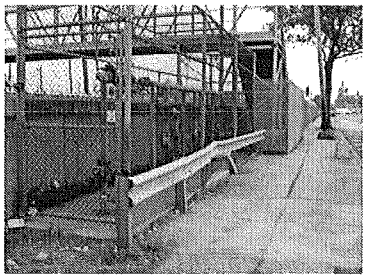
Client
Sherrol Blackman
Project Manager
718.558.3669
sablack@lirr.org

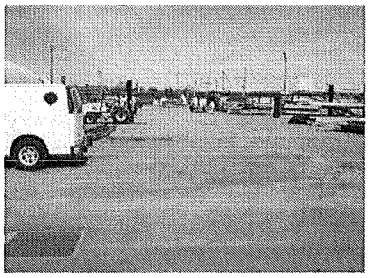
MTA Long Island Rail Road
Jamaica Central Control Bldg.
144-41 94th Avenue,
Jamaica, NY 11435

Construction Value
$40 Million

Completion Date
2010

The project was completed within mutually agreed upon budget and schedule





Jacobs, as a subconsultant, is performing the site electrical, site civil and track design elements for Long Island Rail Road's new Morris Park Locomotive Shop in Queens. The heavy maintenance shop will be located on 6 acres of the 24-acre Morris Park Facility. The track work includes design of more than a dozen tracks on the compact site, including future storage and wye tracks.

The site work includes the design of roadways, parking areas, water distribution system, sewer system and gas main connection. The design, which is seeking LEED certification, also includes a stormwater system that reuses rainwater within the building.

The electrical design includes the design of a new 5000A, 208V outdoor substation with step-up medium voltage transformer and medium voltage switchgear to provide power for the new facilities. Site medium voltage power distribution design at 4160V is also included. Due to the heavy traffic on the site, extensive ductbank design is part of the scope allowing for both existing and future needs.

Extensive coordination with Con Edison is required since the utility fault currents at the point of connection are so high due to the low voltage. Jacobs has performed extensive short circuit analysis to determine appropriate substation equipment withstand ratings for both operators and maintainers to ensure safe working conditions and.

SUNY College of Environmental Science and Forestry, Gateway Buildings Roads and Parking, Syracuse, NY

Client

Richard Beerle
518.320.1129

State University Construction Fund
State University Plaza
Albany, NY 12246

Construction Value
$2.04 Million

Completion
2010

The project was completed within mutually agreed upon budget and schedule

As part of Jacobs Upstate Term agreement for Site Infrastructure Work, Jacobs has assessed options and developed plans to provide additional parking to support the construction of the Gateway Building. Jacobs has developed concepts for a pre-cast concrete parking deck as well as several surface lot options. We worked with the SUCF and ESF Campus to determine the most viable option which ultimately became the surface lot. .

Additionally we evaluated the potential to remove the existing deteriorated pedestrian bridge between Bray Hall and Walters Hall. Jacobs had developed a cost saving option where the bridge will remain and be rehabilitated for less than the removal cost.

We have completed design of the parking and associated new access as well as the pedestrian bridge rehabilitation. This design incorporates innovative solutions such as porous pavement and storm water bio-retention systems as well as new storm and sanitary sewers.

The key elements of this task were design schedule, construction schedule, and existing conditions. The new Gateway Building will occupy an existing parking lot near the Syracuse University Sports Dome and the schedule on this project was critical since it must be completed prior to the construction of the Gateway building in order to have adequate parking to service all the facilities. Construction schedule and staging was also critical due to the proximity to the sports dome and the fact that Forestry Drive and Sims Drive is a main bus route. Furthermore there were several historic trees and statues that must be maintained as part of the project so the design team paid close attention to fit the project into the surroundings in the least intrusive way while maximizing the number of parking spaces provided.

Additionally, Jacobs has delivered a portion of the design in advance of the main package to be constructed under the JOCS program thereby expediting the construction schedule. We will also closely monitor the construction to be sure it is delivered on time.

When finished, the project will accomplish the following:

- New access road form Sims Drive to East Campus drive
- New surface parking to accommodate approximately 70 cars
- Rehabilitation of a portion of Forestry Drive and the adjacent parking
- Separation of combined sewers
- New stairs and retaining walls
- Underground storm water detention system, bio-retention, and porous pavement
- New site lighting
- Rehabilitation of an existing pedestrian bridge

New Jersey Sports & Exposition Authority, Utility Relocations for Meadowlands Rail Project, East Rutherford, NJ

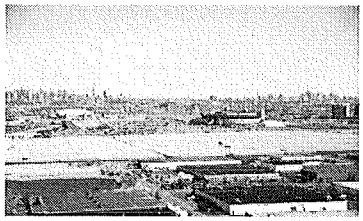
Client
T. Roberson Edwards
973.491.7297

NJ Transit
One Penn Plaza East
Newark, NJ 07102

Construction Value
$16 Million

Project Completion
2005 - design

The project was completed within mutually agreed upon budget and schedule



The New Jersey Sports and Exposition Authority (NJSEA) retained our firm to provide engineering, planning, and environmental services for a new rail station and heavy rail service for the Meadowlands Sports Complex area. As part of the project, numerous utilities required protection and/or relocation in order to accommodate the new rail line and station. *The utility construction budget exceeded $3 million.*

During the early stages of design, subsurface utilities were identified using surface geophysical techniques in accordance with CI/ASCE 38-02. After potential conflicts were identified, the relocation and protection design was discussed in detail with the owning utility companies. Several utility easements were prepared in coordination with the utility company and the property owner.

The relocation design of a 24" ductile iron sanitary sewer force main was prepared in accordance with BCUA standards and a NJDEP TWA permit was applied for and obtained for this work. The force main cut over was designed with linestops and a temporary at grade HDPE bypass in order to maintain flow at all times. In addition, a sanitary gravity sewer was replaced using a temporary at grade by-pass pump in order to maintain flow during construction. The design called for 100% redundant pumping capacity with 24 hour supervision to assure that any sewage emergency is minimized and prepared for. Differing pipe materials were investigated and selected based upon the surrounding soil conditions, the existing pipe materials, the applied rail and earth loading, and other factors such as corrosion resistance. The pipe materials used for the sanitary sewers included ductile iron, HDPE, and thick walled PVC pipe.

Jacobs performed comprehensive communication cable identification during design by entering each manhole and labeling each cable. The design could then proceed with the relocation of each cable through a new conduit and manhole system. The design included fiber-optic cable, coaxial cable, copper cable, and air pressurized cable. Several custom manholes were designed in order to integrate the new system with the existing.

A challenge of the project was accounting for the soil settlement due to surcharge and its affect on the utilities. There were areas within the project limits that the surcharge was expected to contribute to 18"-30" of settlement. In order to protect the utilities from this settlement, several solutions were designed which differed based on each individual circumstance. Proposed utility crossings of the rail alignment were minimized as much as possible. Several utilities were designed on a support structure consisting of piles and a continuous support beneath the utility so that any soil settlement would not affect the utility. In another area, a more cost effective design was to provide a structural slab over the underground utilities in order to eliminate settlement in the area of those utilities. In addition, two innovative designs were detailed which enabled electric and telephone ducts to withstand the expected settlements. One design called for polyurethane foam around existing ducts at select manholes in order to account for the expected settlement. The second design used a combination of expansion / deflection fittings and a casing consisting of ductile iron joints, which could rotate slightly to accommodate the expected settlement.

Massachusetts Port Authority, CMPA L595 D4/LL-4411 Term Airfield Design, Logan Intl. Airport, East Boston & LG Hanscom Field, Bedford, MA

Client
Peter Austin
617.568.3969
Joseph Calautti
973.792.4337

Massachusetts Port Authority
Ten Park Plaza
Boston, MA 02116

Project Duration
2008-2010

Construction Value
Varies by task

During this on-call engineering and planning contract, Jacobs has executed or is in the process of executing different work orders. Brief descriptions for several projects that illustrate our wide range of planning, design, and construction experience are included below:

Taxiway D Extension (MPA P.M. Gaidis) – This project, which consisted of three work orders under this on-call agreement, extended existing Taxiway D 2,100' to the southwest from Taxiway C to Runway 4R-22L. As this extension would have created a five-way taxiway intersection, Taxiway G and the associated holding apron on Taxiway C were shifted to the southwest. For the first work order, Jacobs developed schematic designs showing the potential realignment of Taxiway G and the associated holding apron and developed preliminary construction cost estimates for potential options relating to the Taxiway G realignment and Taxiway D extension. Jacobs also investigated the signage airfield wide to note any issues with legends and sign colors that may not be in compliance with current FAA Advisory Circulars, took an inventory of all existing surface painted holding position markings, and made recommendations for locations of additional painted signs to be included in the final design.

Prior to commencing full design under the second work order, Jacobs developed several possible options for the relocation of Taxiway G and the apron for approval by the Authority and the FAA. The team performed a subsurface exploration of the proposed pavement areas during the data collection phase. Final design included storm water drainage improvements, a new semi-flush taxiway edge lighting system, modifications to the airfield lighting control system in the ATCT, and guidance sign modifications. Jacobs completed the pavement design for this project using FAA Advisory Circular 150/5320-6E, which is a completely revised edition of Pavement Design and Evaluation. As this project involved construction up to and within the safety areas of three runways, it required close coordination with the client to develop construction phasing that limited the pavement closures with minimal disruption to air traffic. Of particular concern during the project was the work within the Taxiway C/D intersection to tie in the new extension. The closure of this intersection impeded access to two runway ends and effectively cut off the southeastern portion of the airfield. Working with Massport Operations, Capital Programs and the FAA Air Traffic Control Tower, Jacobs developed phasing plans to minimize this closure to reduce impact to the airlines. During construction, as part of the third work order, Jacobs provided full time resident inspection services and closely coordinated with the Massport Project Manager and Massport Operations.

Update Airport Layout Plan (ALP) (MPA P.M. Bessom) – Under previous on-call contracts Jacobs had updated the airport layout plan as well as all associated drawings with the final plan set. As part of this work order, Jacobs updated the entire set of drawings to reflect the myriad of improvements completed since the last update as well as to show any proposed work.

New Jersey Sports & Exposition Authority, Meadowlands Rail & Roadway, Preliminary and Final Engineering and Environmental Impact Statement, East Rutherford, NJ

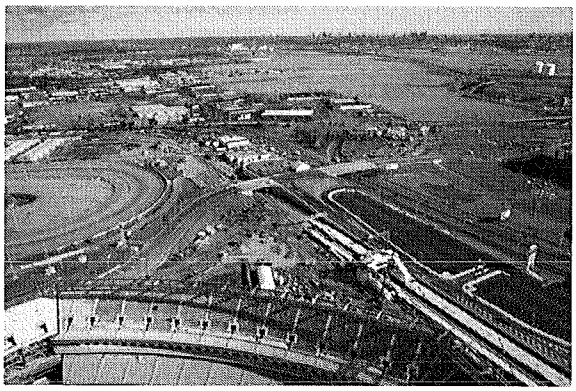
Client
T. Roberson Edwards
973.491.7297

NJ Transit
One Penn Plaza East
Newark, NJ 07102

Project Completion
2009

The project was completed within mutually agreed upon budget and schedule

The New Jersey Sports and Exposition Authority (NJSEA) retained our firm to provide engineering, planning, and environmental services for a new rail station and heavy rail service for the Meadowlands Sports Complex area.



The flood improvement services included preliminary and final design of culverts and stormwater collection and conveyance systems. The work included detailed hydrologic and hydraulic analyses, including a HEC-1 Watershed Analysis, a HEC-RAS model for the existing ditches including tidal considerations, and a proposed HEC-RAS model analysis for new bridges over Berry's Creek and two (2) unnamed tributaries. Included was proposed ditch relocation and cleaning. Scour analysis was also performed for the bridge over Berry's Creek in accordance with the procedure in FHWA HEC-18 Evaluating Scour at Bridges. In addition, a stormwater management (SWM) was prepared in compliance with new NJDEP SWM regulations. The SWM and soil erosion design included two (2) stormwater detention basins, several manufactured treatment units, and approximately 3,000 feet of 25-foot wide vegetated filters, all to achieve Total Suspended Soils (TSS) treatment for the project.

Another required permit was the Department of the Army Permit. The U.S. Army Corps of Engineers (USACOE) requires a permit for any structure or work in or affecting waters of the United States. A Section 10 of the Rivers and Harbors Act (Section 10) permit is required for the placement of structures in navigable waters (i.e., waters subject to the ebb and flood of the tides) of the United States. In addition, authorization was required for the placement of fill in waters of the United States (i.e., wetlands) pursuant to Section 404 of the Clean Water Act (Section 404).

An NJDEP Multi-Permit Application was also required, using existing information provided in the EIS, and submitted to the NJDEP's Land Use Regulation Program (LURP). This single, multi-permit application included applications for a Waterfront Development and Stream Encroachment Permits; a Water Quality Certificate; and a Coastal Zone Management Consistency Determination.

An application for Soil Erosion and Sediment Control Plan Certification was submitted to the Bergen County Soil Conservation District. As part of this certification package, notification of the use of the NJPDES General Permit for Construction Activity Stormwater (NJO088323) was also submitted to the Soil Conservation District.

This Project required significant coordination between several area stakeholders including the NJSEA, NJ TRANSIT, New Jersey Department of Transportation, and New Jersey Turnpike Authority (the Project Sponsors).

New Jersey Turnpike Authority, Interchange 6 to 9 Widening Program, Design Section 8 Various Locations, NJ

Client
John M. Keller
732.750.5300 x8263

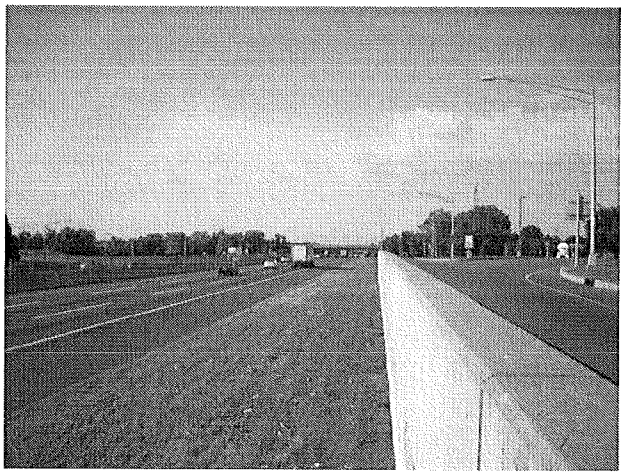
New Jersey Turnpike Authority (NJTA)
P. O. Box 5042
Woodbridge, NJ 07095

Key Design Elements/Services
Roadway Design
Structural Analysis and Design
Geotechnical Engineering
Hydrology / Hydraulics Design
Utility Relocation Design
Lighting Design
ITS and Signing Design
Environmental Documentation
Right-of-Way Engineering
Topographic/ROW Surveying
Scheduling Cost Estimates
Construction Consultation

Construction Value
$180 Million (estimated)

Project Duration
2007-2011 (est. completion)

Jacobs Engineering Group Inc. is designing the widening of a 12-mile section of the Turnpike. The project also requires design for bridgework, utility relocation, stormwater management, and related engineering services. Officials estimate the preliminary construction value of the contract at $180 million with final design scheduled for completion in 2011.



Jacobs is providing design services for a section of the Turnpike that begins three miles south of Interchange 8A and extends 12 miles north to Interchange 9. The three southernmost miles, which taper from 10 lanes to 6 lanes, will be widened to 12 lanes. The roadway will be dualized, with three inner lanes in either direction designated for use by cars only and three outer lanes in either direction designated for use by cars, trucks, and busses. The nine northernmost miles, which are dualized, will be widened from 10 lanes to 12 lanes.

The firm will also design the reconstruction, modification, or replacement of six bridges and two culverts. The bridgework includes two local road crossings and a structure to accommodate a U-turn for the New Jersey State Police Barracks near the Molly Pitcher Service Area. New ramps will be constructed to establish connections to the barracks and the Molly Pitcher Service Area. Another new ramp will link the 8A toll plaza ramp to the southbound inner roadway.

The project also includes the preparation of permit documentation, construction of a stormwater management system consisting of seven retention basins plus, ITS signing, guide signing, retaining walls, noise barriers, and relocation of utilities such as electric, gas, oil, and fiber optic lines.

Our long-term relationship with the NJTA includes other recent work such as the preliminary design for Interchange 12 in Carteret, NJ; and the design to reconstruct, rehabilitate, or replace six bridges carrying state highways and turnpike ramps over the Turnpike south of Interchange 4. Jacobs also is designing the Tremley Point Connector Road between Carteret and Linden in NJ.

INTRODUCTION

Jacobs is a full service engineering, design, planning, environmental assessment, and construction management firm with offices throughout the United States, including major offices located in New York, New Jersey, and Pennsylvania. Our fundamental business strategy is building long-term client relationships by providing high-quality service and value to our clients. Jacobs is one of the largest global providers of comprehensive professional services including civil engineering, rail engineering and design, planning, building and site design, telecommunications, in-building systems, intelligent transportation systems, airports, construction inspection and construction management projects. We have successfully implemented projects for public and private-sector clients and continue to be a leader in the transportation field. We have an exceptional record of guiding projects from concept through implementation.

Our New York/New Jersey metropolitan offices have over 300 professional staff members dedicated to all disciplines of engineering as well as civil engineers, traffic engineers, environmental scientists, urban planners, architects, economists, urban designers, air/noise specialists, and environmental permitting specialists.

We are proud to be providing a diverse range of high quality engineering services to The Port Authority of NY & NJ currently and for the past several decades. We recognize the importance of the Port Authority to the transportation and economic well being of the region and understand how essential it is to be responsive to the Port Authority's need by providing high quality cost effective engineering services.

ORGANIZATION

Jacobs recognizes the importance of the call-in program to PANYNJ. This program enables PANYNJ to quickly and efficiently assign complex projects of varied sizes to capable engineers with technical expertise in the required disciplines. In order for this program to be successful, the Port Authority needs to know that the consultant understands the assignment, the importance of schedule and the criticality of budget. Further, communication between PANYNJ and the consultant is essential in assuring continued successful progress of each task assigned to the consultant.

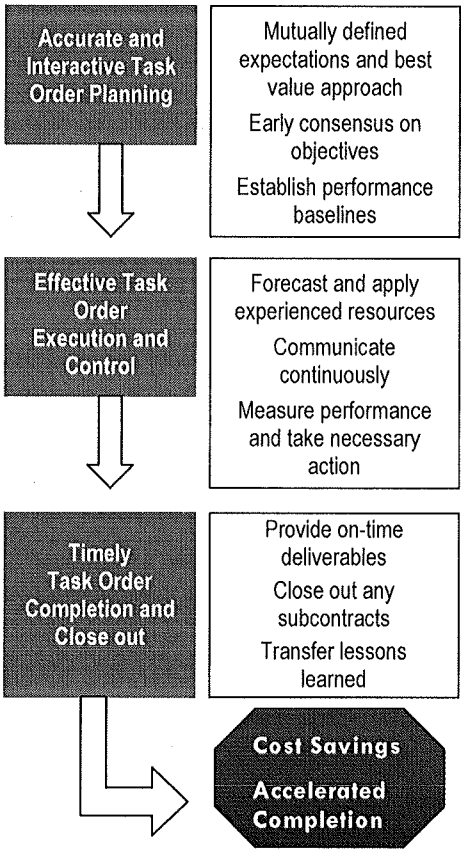
Jacobs recognizes all of this and has an organization that is responsive to the needs and objectives of the Port Authority. As a result of this understanding we are offering the PANYNJ a flexible and cost-effective matrix organization structured to provide only the required support necessary to successfully accomplish assigned task orders. We will identify the most cost effective team with requisite technical capabilities. A Senior Engineer will provide the supervision and quality assurance on all tasks. As such, the personnel are used only in response to the special demands of the project and the size of the team will fluctuate in response to the workload ensuring that you will receive the maximum return for each design dollar spent. Our cohesive and responsive organization has clear lines of authority to working levels accompanied by well-defined project controls and strong management checks and balances. At the start of each task order, our Project Manager (PM), will review the scope of work for that particular task, will choose the team that has the appropriate experience and is available to work the task assigned. As you can see from our resumes, our staff has a broad array of experience, giving us a great depth of resources.

MANAGEMENT PLAN CAPABILITY

We have assembled a first-rate team to be on call for this project. Furthermore, we will use an established approach that is based upon our extensive experience in task order contracts and that incorporates best practices and lessons learned (Figure 1). Our Management Approach is based on:

- Close partnering, team building, and joint interactive planning to ensure full understanding and strong working relationships – NO SURPRISES
- Proven systems for cost tracking, forecasting, scheduling, variance analysis, subcontractor management, and project reporting – COST AND SCHEDULE CERTAINTY
- A streamlined program and task order management in which the PM is fully empowered with the authority to execute task orders with direct access to Jacobs' technical capabilities and resources – QUICK RESPONSE
- Proven project management procedures from company-wide task order contracts – LESSONS LEARNED
- Best practices from our other contracts that will shorten our learning curve and streamline execution, reduce costs, and shorten schedules – WORLD-CLASS SOLUTIONS
- Sound workload, staffing and forecasting tools that ensure the right people with the right skills are available at the right time – VALUE FROM YOUR CONSULTANT

Figure 1
Best Value Management Approach



CAPACITY AND SYSTEMS TO MANAGE AND EXECUTE MULTIPLE, CONCURRENT TASK ORDER CONTRACTS

Multiple task order, multiple location contracts constitute a very significant portion of Jacobs' work. With over 300 technical staff of all disciplines available in the New York metropolitan area, including over100 civil/utility engineering personnel we have all the capabilities needed to support such contracts for numerous clients simultaneously. These personnel are available to support the PANYNJ tasks when the discipline specialty is required.

ROLE OF SUBCONSULTANTS IN THE ORGANIZATION

While Jacobs possesses the depth and mix of engineering design and construction support resources and expertise to support the PANYNJ task orders. We will, if and whenever it is in your best interest to do so, subcontract selected services in the execution of this contract. As a company, we are committed to maximizing the participation of disadvantaged enterprises and will make every effort to meet the PANYNJ's 12% MBE and 5% WBE goals.

TEAM LEADERSHIP

The key to being responsive to the PANYNJ and to meeting its needs timely is the ability to provide personnel with varied structural engineering backgrounds to staff small to medium scale projects for the Authority on short notice as the needs arise. Jacobs will accomplish this by having a core project team with current and on-going experience of bridge and structural on-call projects.

The Team is under the overall direction of Jacobs' Project Executive, **Michael Cavanaugh, PE**, who will be responsible to the PANYNJ for all matters relating to contractual obligations. He is acutely aware that ensuring staff availability is critical for these types of agreements and therefore he will see that the proper resources of the firm are available to the PANYNJ as required to address individual project workload and schedules.

Our Project Manager, **Vincent Cassano, PE**, will maintain complete control for the management of the contract in all phases. Vincent has demonstrated repeated success in being responsive to our clients by providing timely and cost effective support as requested. Vincent's experience in managing civil engineering projects of varying scopes in the New York City Metro and surrounding areas ensures full understanding of your mission and requirements. He has extensive experience in managing call-in assignments for public agencies, including the PANYNJ, and has also been responsible for multidisciplinary total design projects. He will be the single point of contact for all decision-making throughout the life of the contract. His overall goal is to assure Jacobs' responsiveness to PANYNJ and his detailed responsibilities include:

- Preparing/negotiating proposals for each project assignment
- Assigning the proper staff to each project assignment
- Coordinating all work elements and disciplines, including interaction with subconsultants
- Ensuring the Authority's goals/objectives, as set forth in the individual proposals, are met as each project progresses
- Maintaining the schedule and budget of each project assignment

Our Quality Control Advisor, **Michael Kennedy, PE**, has extensive experience with the Port Authority and will provide guidance and oversight throughout the development of our Quality Plans and design documents, ensuring that products of the highest quality are delivered to the Port Authority.

SCOPE OF SERVICES

The general scope of work for the projects to be assigned by the Port Authority under this agreement will consist typically of preparing civil engineering designs, contract drawings, technical specifications and construction cost estimates for a wide variety of new projects, also rehabilitation, restoration and resurfacing projects covering such areas as, but not limited to:

- Design and modifications of urban highway, street and local roadway pavements at airports, marine terminals, rail facilities, tunnel and bridge facilities
- Civil site design including parking lots, curb, sidewalk, and intermodal facilities
- Airfield design including runways, taxiways, and aircraft parking aprons
- Design and/or redesign of trackwork for freight operations
- Design and analysis of drainage and utility systems

TASK ORDER PROPOSAL

Upon notification of a project task order assignment the Project Manager, **Vincent Cassano**, will coordinate with PANYNJ's Project Manager a site/scoping meeting, which both of them will attend along with key engineering discipline leaders/project engineers. Project objectives, as well as the general scope of work to meet these objectives, will be agreed upon at that time. These discussions, along with a review of available information will serve as the basis for the proposal submission.

A proposal for the specific task order assignment will be prepared. The proposal, typically prepared in letter format, will generally contain the following information for the Authority's review:

- Task name and number
- An opening statement identifying the goals and objectives of the project
- A description of the project scope of work on a task-by-task basis
- A description of any assumptions on which the proposal is based
- A staffing table that presents estimated staff hours for the project broken down by the tasks described in the scope of work
- A description of the quality control procedures that will be applied to each task
- A cost summary that presents:
    - ✓ Total salary costs by personnel classification
    - ✓ Breakdown of direct expenses
    - ✓ Summary of subconsultant costs
    - ✓ Total estimated fee
- A staffing table and cost summary for each subconsultant as required
- A project schedule

Vincent Cassano will be responsible for submitting proposals for individual task order assignments generally within five days of the site visit as well as assigning staff.

TASK ORGANIZATION

Our Project Manager, **Vincent Cassano**, will manage the Jacobs Team throughout the contract. The New York and New Jersey offices have the required personnel resources and company infrastructure support for project controls, contract management, and administrative services, as well as established equipment systems such as communications, computer workstations, servers, MIS, printers, plotters, and CADD systems. To ensure a responsive and effective management organization, we empower at the lowest required level, promoting rapid decision-making, effective allocation of resources, and rapid task order mobilization. Each task will have a Task Leader with experience appropriate to the work to be performed. The Task Leader will report to Vincent Cassano for the successful completion of the assigned task.

COMMUNICATIONS

Effective communication is a key factor in the successful execution of individual and especially simultaneous task orders. Clear reporting and communication procedures within the Jacobs Team and with the PANYNJ staff is essential in achieving effective control, timely guidance and consistent monitoring of the program.

A Communication Plan is an integral element of our project procedures. The plan includes:

- Established project reporting requirements and formats, both internal and external to each task order team
- Contact information for each key team member (PANYNJ & Jacobs)
- Scheduled meetings for each task order team including meetings with the PANYNJ representatives
- Issue resolution (both during scheduled meetings and for immediate action)
- Emergency reporting procedures
- The use of common platforms that ensure connectivity and compatibility for reporting and data/drawing transfer
- Web page utilization

The PM and the task order leaders for each task will meet with representatives of the PANYNJ monthly, or more frequently as needed, to obtain available information, review the project schedule, and maintain coordination efforts. Progress meetings are valuable in assuring that all task participants have the same information, in clarifying questions and alternatives that may affect the design and keeping the design team fully synchronized. The process ensures that the channels of communication remain open between the PANYNJ and Jacobs Team throughout the project.

Contract Mobilization

Upon notification of award, the Jacobs Team will be activated in order to ensure quick responsiveness in mobilizing for task orders within expedited time periods.

A client expectation survey and kick-off meeting will be conducted to confirm full understanding of the PANYNJ's requirements and understanding of overall program and project requirements.

Project Procedures Manual

One of our mandatory requirements is to completely plan the work at the onset of the project. The plan is used to progress and monitor the project. Development of the plan entails preparation of an in-house Project Procedures Manual (PPM), which includes a Project Criteria Document (PCD) and a Quality Plan (QP) for every project. The PM is responsible for preparing these documents. The PPM is prepared to provide each task order team with a clear and concise team organization, schedule, scope of work, and detailed administrative procedures for execution of the specific task order. The PCD is the basis for all technical work to be done on the project and establishes the guidelines for each individual task order. The outline PCD is established at the commencement of the contract, and is updated as each task order is requested of the Jacobs Team. The QP provides the project team a document outlining the quality goals, control, assurance, and procedures for reviewing and checking project deliverables. The PM is responsible for the project administration, staffing, schedule, contact with you, reviews with your engineers, budget and quality control, and the day-to-day operations of the project.

Task Order Execution Plan

For each task order we will:

- Work with the PANYNJ to clearly define the delivery requirements of the task order
- Determine staffing for the task order team and mobilize personnel

- Conduct initial site visits as required to understand site conditions, climate and topography, local design/construction requirements, cultural parameters, neighboring facilities and utilities, etc.
- Obtain and review all applicable documents, existing drawings, codes, regulations, etc.
- Develop Scope of Work (SOW) for any subcontractors and obtain quotes from subs
- Establish performance measures and milestones
- Develop a Task Order Hazard Assessment Safety Action Plan
- Establish a Task Order Execution Plan based upon the above steps
- Develop a WBS based on the SOW, to individual activity/element
- Develop a schedule
- Develop the cost estimate
- Review and modify Quality Plan
- Update Project Criteria Document

PROJECT CONTROLS

1. Cost Control Design – Controlling Cost Through Planning and Operational Efficiency

We begin cost control during the early planning phases of each project. During the scope definition and proposal phase, our PM and key discipline leads clearly establish the scope, technical approach, and schedule to effectively execute each task order as defined in the PANYNJ's scope. We maintain cost control by holding monthly project financial review meetings where continually reviewing the scope of services to make sure that we remain within scope limits. At the monthly meetings the project budget is reviewed and the project progress is compared with the estimated cost to complete. Typical actions that we've implemented include adding or modifying staff to account for specific project elements as they develop and revising a task procedure to take advantage of newly gained information. For example, we may find that certain load combinations and design conditions may apply to multiple locations, making the design process more efficient.

The time we invest in planning before design is kicked off effectively reduces design cost by eliminating unfocused effort and results in lower cost to you. Our task order team prepares detailed work plans with associated cost breakdowns, which are summarized in proposals provided to the Port Authority.

2. Cost Control Construction – Controlling Construction Cost and Designing to Budget

Effective cost control ensures that money is spent efficiently and that cash flows are appropriately matched to your design services and construction work. All personnel identified to support the Call-in contracts know that cost control depends upon an achievable budget, value engineering, continuous and accurate cost estimating, carefully managed procurement, and a proven project accounting system. We approach cost control early by:

- Establishing budgets and contingencies
- Developing a cost-based risk analysis of conditions impacting cost
- Evaluating possibilities of outside influence: market conditions, inflation, labor shortages, or design uncertainties
- Using parametric estimating techniques at each milestone

- Making adjustments to the design to adhere to established cost targets

3. Compliance with Performance Schedules Through Schedule Control and Planning

Like cost control, schedule control begins in our Interactive Planning Sessions in which we bring together our relevant design disciplines and technical experts to develop the best technical approaches. We will also invite and encourage representatives of the Port Authority to participate in this process. Interactive Planning (IAP) helps identify efficiencies and schedule delay avoidance strategies before start-up and throughout the life of each task order. Our IAP team analyzes and evaluates alternative technical and design solutions, work sequencing, and resource need.

4. Monthly Reporting

Jacobs will submit a work plan progress report on a monthly basis and task by sub-task to keep the Port Authority informed of the design progress. The report will consist of the following: 1) summary highlighting the key events that happened during the previous month, overall budget status, percentage of design completion, upcoming deliverables and key issues that require attention, if any; 2) description of work completed the previous month, and work anticipated for the coming month; 3) cost control by comparing actual cost incurred to date; budgeted amount; actual value of work performed; and the budget remaining; 4) required actions, key decisions, information required, and areas of responsibility; 5) an updated project schedule comparing actual status of each task order and anticipated schedule (for any sub-tasks within a task order that may be slipping, the reasons for the sub-task slippage and an outline of corrective measures to bring the sub- task back on schedule); 6) a staff loading plan showing anticipated staffing requirements versus actual staff used for each task order.

QUALITY CONTROL

1. Quality planning at the proposal stage

Quality work is a top priority for Jacobs and is assured by early project planning and ongoing review. We achieve quality through procedures as well as by having qualified experienced professionals preparing our designs. During each task order initiation, we select our team from our resource pool based on the scope of services and the experience background of the team. This alignment of statement of work requirements with the skill sets and experience of our people is our first step in ensuring that the highest quality work is achieved. As the performance plan is developed, our project manager identifies and schedules all required quality control (QC) activities and milestones. By clearly identifying the requirements, staff-hours are budgeted and schedules developed that include the QC activities.

2. Quality during execution

By assigning an experienced team, the knowledge obtained from past designs contributes to a quality new design. In addition, we require that our Jacobs Project Delivery Quality Control process be used on all projects. The process includes formal procedures for assuring quality standards throughout all project phases. It facilitates the continuous pursuit of improvement needed to provide best-of-class services for our clients. Any "product" that goes through Jacobs's quality process meets the customer's needs and requirements.

The Jacobs Quality Control Process has been carefully developed to meet our customers' needs and those of our own organization. It is a documented process whose effectiveness can best be measured

by our record of performance. Our process continues after the final QC and delivery of design packages to the Port Authority with our staff capturing lessons learned and in order to apply to subsequent projects. In addition to our quality processes, we continuously improve our program execution through the Jacobs Performance Review System (PRS). The PRS includes the following elements:

- Client interview(s) for performance feedback and improvement goals
- PRS report documenting performance rates from clients
- Team feedback and improvement plan development
- Follow-up evaluations assessing progress toward improvement
- Follow-up client interviews for assessment of improvements, and identification of new improvement opportunities

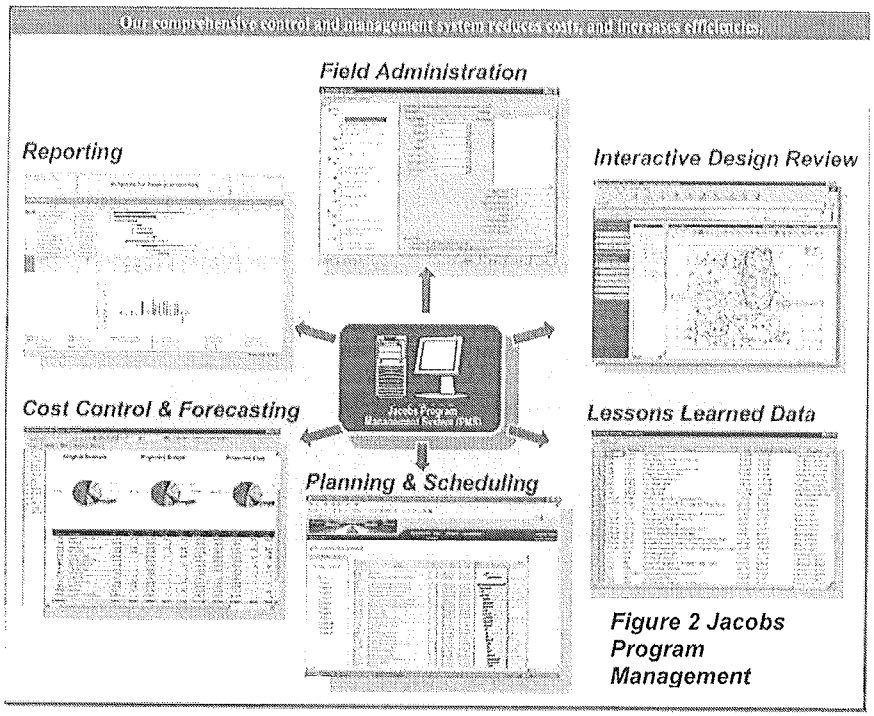


Figure 2 Jacobs Program Management

CONCLUSION

The Jacobs Team is prepared to provide outstanding design and construction support services to the Port Authority. We understand that the Port Authority is committed to serving the transportation needs of the region effectively and responsibly and we look forward to being able to support PANYNJ in providing a safe and reliable transportation infrastructure to its customers.

Section H – Firm Affiliates

The parent and affiliates of Jacobs Civil Consultants Inc., located at 5 Penn Plaza, New York, NY 10001, include the following:

Jacobs Engineering Group Inc. (Parent Company of Jacobs Civil Consultants Inc.)
1111 South Arroyo Parkway
Pasadena, CA 91105
Tel: 626.578.3500
EIN: [Ex. 1]

Jacobs Engineering New York Inc.
260 Madison Avenue, Suite 1200
New York, NY 10016
Tel: 212.268.1500
EIN: [Ex. 1]

Jacobs Project Management Co.
260 Madison Avenue, Suite 1200
New York, NY 10016
Tel: 212.268.1500
EIN: [Ex. 1]

Section H – Possible Conflict of Interest

In accordance with Subsection I or Section II (Submission Requirements), Jacobs maintains no conflict of interest in relation to the awarding of this contract.

Section J – Contract Exceptions

We have reviewed the proposed performance of expert professional Civil Engineering Services as requested on a call-in basis during 2011 contract and find it to be generally acceptable as the basis for the negotiation of a mutually-agreed-to final contract between the parties.