

July 27, 2016

**SUBJECT: REQUEST FOR PROPOSALS FOR PERFORMANCE OF EXPERT PROFESSIONAL SERVICES FOR NEWARK LIBERTY INTERNATIONAL AIRPORT TERMINAL A REDEVELOPMENT PROGRAM – DESIGN OF THREE (3) MULTIPLE-SPAN BRIDGE STRUCTURES, AT-GRADE ROADWAYS AND ASSOCIATED SIGNAGE AND APPURTENANCES (RFP #46659)**

Dear Sir or Madam:

The Port Authority of New York and New Jersey (“the Authority”) is seeking Proposals in response to this Request for Proposals (RFP) for a Consultant to perform expert professional services for Terminal A Redevelopment Roadway Bridges N61, N62 and N63, at-grade roadways and associated signage and appurtenance at Newark Liberty International Airport. The services of the selected consultant shall consist of design development, final design, contract document preparation (“Stage III”), and post award (“Stage IV”) services as provided in Attachment A to the Authority’s standard agreement, included herewith. You should carefully review this Agreement as it is the form of agreement that the Authority intends that you sign in the event of acceptance of your Proposal and forms the basis for the submission of Proposals.

**I. PROPOSER REQUIREMENTS:**

The Authority will consider only those firms able to demonstrate that they meet the following qualification requirements:

- A. Successful completion of at least two (2) roadway bridge projects similar in scope and complexity to those contemplated herein. The projects shall have had minimum values of \$8 million each and shall have been completed within the past five (5) years.
- B. Principal Engineer shall be licensed to practice engineering in the State of New Jersey and shall have a minimum of twenty (20) years experience and multi-discipline technical expertise performing professional engineering and/or architectural services. The Principal Engineer shall have professional experience on at least three (3) similar bridge programs.
- C. Project Engineer shall have a minimum of eight (8) years professional experience and multi-discipline technical expertise. The Project Engineer shall have professional experience on at least two (2) similar major roadway bridge redevelopment programs.
- D. Engineering Design Managers for each of the functional areas listed in Attachment A shall have a minimum of ten (10) years of experience in their areas of expertise and a minimum of five (5) years of experience serving as Engineering Design Managers. All Engineering Design Managers for the aforesaid disciplines shall have professional design experience on at least two (2) similar major roadway bridge programs.

If submitting as a common law joint venture, at least one (1) member must meet the forgoing requirements.

A determination that a Proposer meets the forgoing requirement(s) is no assurance that the Proposer will be selected for performance of the subject services. Firms that do not meet these requirements shall not be considered.

## **II. PROPOSAL FORMAT REQUIREMENTS**

To respond to this RFP, the Proposer shall submit a concise Proposal complying with the following requirements:

- A. To be acceptable, the Proposal shall be no more than 50 pages-single-sided or 25 pages-double-sided, using 12-point or greater font size. The page limit pertains only to Letters E, H, and I in Section III below. Each resume shall be two-page maximum, single-sided or one-page double-sided, using 12-point or greater font size. The Proposal pages shall be numbered and bound, with “Your Firm Name,” and **RFP Number 46659** clearly indicated on the cover.
- B. Separate each section of the Proposal with a tab divider that is labeled in accordance with the letter of the requirements specified below in Section III.
- C. All proposals must be delivered in sealed envelopes and/or packages. Address the Proposal to: The Port Authority of New York and New Jersey, 4 World Trade Center, 21st Floor, New York, NY 10007, Attention: RFP Custodian. You are requested to submit one (1) reproducible original and six (6) copies, along with seven (7) compact disc or USB copies, of your Proposal for review. In case of conflict, the reproducible original of the Proposal shall take precedence over material on the compact disc or USB.

If your proposal is to be hand-delivered, note that only individuals with proper identification (e.g. photo identification) will be permitted access to the Authority’s offices. Individuals without proper identification will be turned away and their packages not accepted.

There is extensive security at the World Trade Center Site. You must present a valid government-issued photo ID to enter 4 WTC. Individuals without packages or carrying small packages, envelopes or boxes that can be conveyed by hand or on a hand truck may enter through the lobby. All packages, envelopes and boxes may be subject to additional security screening. There is no parking available at 4 WTC/150 Greenwich Street, and parking in the surrounding area is extremely limited. Express carrier deliveries by commercial vehicles will only be made via vendors approved by Silverstein Properties, the WTC Property Manager, through the Vehicle Security Center (VSC). Please note that use of the U.S. Mail does not guarantee delivery to Authority offices by the above listed due date for submittals. Proposers using the U.S. Mail are advised to allow sufficient delivery time to ensure timely receipt of their proposals. Presently, UPS is the only delivery vendor with approved recurring delivery times. UPS makes deliveries to 4 WTC around 9:30 a.m. each day. Please plan your submission accordingly. As additional express carriers may be approved by Silverstein Properties and scheduled for recurring delivery times with the VSC, this information may be updated. Under certain circumstances, a solicitation may allow for a commercial vehicle to be approved to make a delivery in accordance with the VSC procedures. If applicable, the specific solicitation document will include that information. The Port Authority assumes no responsibility for delays, including, but not limited to, delays caused by any delivery services, building access procedures, or security requirements.

- D. In each submission to the Authority, including any return address label, information on the compact disc and information on the reproducible original and copies of the Proposal,

the Proposer shall use its **FULL LEGAL NAME WITHOUT ABBREVIATIONS**. Failure to comply with this requirement may lead to delays in contract award and contract payments, which shall be the responsibility of the Proposer.

- E. Your Proposal should be forwarded in sufficient time so that the Authority receives it **no later than 2:00 p.m. on August 17, 2016**. The outermost cover of your submittal must be labeled to include the RFP Number and title as indicated in the “Subject” above. The Authority assumes no responsibility for delays caused by any delivery services.

### **III. SUBMISSION REQUIREMENTS:**

To respond to this RFP, provide the following information:

- A. In the front of your Proposal, a copy of Attachment B (Agreement on Terms of Discussion) signed by an officer of your company. If proposing as a joint venture, each firm in the joint venture must sign a copy of Attachment B.

- B. Transmittal Letter

Submit a transmittal letter, on letterhead, signed by an authorized representative, demonstrating compliance with each of the aforementioned “Proposer Requirements”. Your transmittal letter shall also include, but not be limited to:

- 1. A statement indicating whether the Consultant is proposing as a single entity, or as a joint venture.

All the qualification information required for a single entity shall be submitted for each participant in the joint venture. If a common law joint venture submits a Proposal, all participants in the joint venture shall be bound jointly and severally, and each participant shall execute the Proposal. If a joint venture is deemed qualified to receive an invitation to deliver a formal presentation of how it proposes to provide the services outlined herein, the joint venture shall be composed of the same participants as were in the joint venture when it submitted the Proposal. No substitution of participants will be allowed without the express prior written permission of the Authority.

- 2. Submit as part of your Proposal a copy of any written agreement or understanding which exists between each party to the joint venture. If no written agreement or understanding exists, the Lead Proposer shall be identified and the joint venture shall include in its Proposal a written statement explaining how the joint venture will fulfill the requirements of the Agreement. Such explanation shall fully discuss and identify the responsibility of each party to the joint venture for performing the Work, and for providing the required insurance.

- C. Complete a copy of Attachment C (Company Profile).

- D. Qualifications and Experience of Staff

List the names and titles and provide resumes of personnel (including subconsultants, if any) who will be assigned to perform the required services.

- E. Firm Qualifications and Experience

Submit your firm's qualifications and experience in providing the services contemplated herein. For each project identified, indicate:

1. Description of services provided by your firm;
2. Start and end dates of services performed;
3. Contract value (total value of services performed by you);
4. Indicate whether said projects were completed on schedule and within budget;
5. Hiring entity and contact person (name, title, phone number, email address).

F. Project Staffing Analysis:

Provide a staffing and cost analysis for each task to be performed as identified in Attachment A using the Excel spreadsheet in the following link: [Attachment D Staffing Cost Analysis Sheet](#). Staff analysis should provide a breakdown for each discipline identifying hours of work per task, reimbursable direct costs, actual hourly pay rate, and multiplier/billing rate.

G. Provide a breakdown of the multiplier as indicated in the first line of subparagraph 9.A of the accompanying Agreement. Indicate all of its components (e.g. vacation, holiday, sick pay, worker's compensation, office rent, insurance, profit).

If proposing the use of subconsultant(s), provide the terms and conditions for their compensation (including their multiplier, and/or billing rates as appropriate), and their Minority/Women-owned Business Enterprise (MBE/WBE) status.

H. A detailed description of the proposed technical approach to be taken for the performance of the required services for each task in Attachment A, and a schedule for completion of said tasks. Factors addressed in your technical approach shall include, but are not limited to, your proposed methodology and strategy for performing the services described in Attachment A as well as any specific software or other technology you may employ in the performance of these services.

I. A detailed description of the proposed management approach for performance of the required services. Factors addressed in your management approach shall include, but are not limited to: your proposed organizational structure for delivery of the contemplated services; your proposed approach to ensuring the quality and timeliness of the required work products; and your proposed approach to keeping the client apprised of the project status. If the various completion dates contained in Attachment A cannot be adhered to, you may submit revised dates. However, the fact that you were not able to adhere to the original dates and the extent of date revisions will be included among the factors that the Authority will consider in evaluating Proposals.

J. Your attention is directed to Paragraph 23 of the Agreement in which the Authority has stated the M/WBE goals for participation in this project. Submit details on how you intend to meet these goals. A listing of certified M/WBE firms is available at <http://www.panynj.gov/business-opportunities/sd-mini-profile.html>.

The Consultant shall include its MBE/WBE Participation Plan (Form PA 3760C) with its Proposal, to be reviewed and approved by the Authority's Office of Business Diversity and Civil Rights (OBDCR).

The MBE/WBE Plan submitted by the Consultant to the Authority shall contain, at a minimum, the following:

- Identification of MBE/WBEs: Provide the names and addresses of all MBE/WBEs included in the Plan. If none are identified, describe the process for selecting participant firms in order to achieve the good faith goals under this Contract.
- Level of Participation: Indicate the percentage of MBE/WBE participation expected to be achieved with the arrangement described in the Plan.
- Scope of Work: Describe the specific scope of work the MBE/WBEs will perform.

All MBE/WBE subconsultants listed on the MBE/WBE Participation Plan must be certified by the Authority in order for the Consultant to receive credit toward the MBE/WBE goals set forth in this Agreement. Please go to <http://www.panynj.gov/business-opportunities/supplier-diversity.html> to search for MBE/WBEs by a particular commodity or service. The Authority makes no representation as to the financial responsibility of these firms or their ability to perform work under this Agreement.

Subsequent to Agreement award, all changes to the MBE/WBE Participation Plan must be submitted via a modified MBE/WBE Participation Plan to the Manager for review and approval by OBDCR. For submittal of modifications to the MBE/WBE Plan, Consultants are directed to use form PA3760D. The Consultant shall not make changes to its approved MBE/WBE Participation Plan or substitute MBE/WBE subconsultants or suppliers for those named in their approved plan without the Manager's prior written approval. Unauthorized changes or substitutions, including performing the work designated for a subconsultant with the Consultant's own forces, shall be a violation of this section. Progress toward attainment of MBE/WBE participation goals set forth herein will be monitored throughout the duration of the Agreement.

The Consultant shall also submit to the Project Manager, along with invoices, the Statement of Subcontractor Payments in the form of the MBE/WBE Participation Report, which may be downloaded at <http://www.panynj.gov/business-opportunities/become-vendor.html>. The Statement must include the name and business address of each MBE/WBE subconsultant and supplier actually involved in the Agreement, a description of the work performed and/or product or service supplied by each such subcontractor or supplier, the date and amount of each expenditure, and such other information that may assist the Project Manager in determining the Consultant's compliance with the foregoing provisions.

#### **MBE/WBE Conditions of Participation**

MBE/WBE participation will be counted toward meeting the MBE/WBE agreement goal, subject to all of the following conditions:

1. Commercially Useful Function: An MBE/WBE is considered to perform a commercially useful function when it is responsible for the execution of a distinct

element of work on a contract and carries out its responsibilities by actually performing, managing, and supervising the work involved in accordance with normal industry practice. Regardless of whether an arrangement between the Consultant and the MBE/WBE represent standard industry practice, if the arrangement erodes the ownership, control or independence of the MBE/WBE or in any other way does not meet the commercially useful function requirement, that firm shall not be included in determining whether the MBE/WBE goal is met and shall not be included in MBE/WBE reports. If this occurs with respect to a firm identified as a MBE/WBE, the Consultant shall receive no credit toward the MBE/WBE goal and may be required to backfill the participation. An MBE/WBE does not perform a commercially useful function if its role is limited to that of an extra participant in a transaction or contract through which funds are passed in order to obtain the appearance of MBE/WBE participation. An MBE/WBE may rebut a determination by the Authority that the MBE/WBE is not performing a commercially useful function to the Authority.

2. Work Force: The MBE/WBE must employ a work force (including administrative and clerical staff) separate and apart from that employed by the Contractor, other Subcontractors on the contract, or their Affiliates. This does not preclude the employment by the MBE/WBE of an individual that has been previously employed by another firm involved in the Contract, provided that the individual was independently recruited by the MBE/WBE in accordance with customary industry practice. The routine transfer of work crews from another employer to the MBE/WBE shall not be allowed.

3. Supervision: All Work performed by the MBE/WBE must be controlled and supervised by the MBE/WBE without duplication of supervisory personnel from the Consultant, other subconsultants on the agreement, or their Affiliates. This does not preclude routine communication between the supervisory personnel of the MBE/WBE and other supervisors necessary to coordinate the Work.

### **Counting MBE/WBE Participation**

The value of the Work performed by an MBE/WBE, with its own equipment, with its own forces, and under its own supervision will be counted toward the goal, provided the utilization is a commercially useful function. An MBE/WBE prime contractor shall still provide opportunities for participation by other MBE/WBEs. Work performed by MBE/WBEs will be counted as set forth below. If the Authority determines that some or all of the MBE/WBEs work does not constitute a commercially useful function, only the portion of the work considered to be a commercially useful function will be credited toward the goal.

1. Subconsultants: One hundred percent (100%) of the value of the Work to be performed by an MBE/WBE subconsultant will be counted toward the MBE/WBE goal. The value of such Work includes the cost of materials and supplies purchased by the MBE/WBE, except the cost of supplies or equipment leased from the Consultant, other subconsultants or their affiliates will not be counted. When a MBE/WBE subcontracts part of the work of its contract to another firm, the value of the subconsultant work may be counted toward MBE/WBE goals only if the MBE/WBE subconsultant is itself a MBE/WBE. Work that a MBE/WBE subconsultants to a non-MBE/WBE firm does not count toward MBE/WBE goals.

2. Material Suppliers: Sixty percent (60%) of the expenditure to a MBE/WBE material supplier will be counted toward the MBE/WBE goal. Packagers, brokers, manufacturer's representatives, or other persons who arrange or expedite transactions are not material suppliers within the meaning of this paragraph.

3. Broker's/Manufacturer's Representatives: One hundred percent (100%) of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees for transportation charges for the delivery of materials or supplies provided by an MBE/WBE broker/manufacturer's representative will be counted toward the MBE/WBE goal, provided they are determined by the Authority to be reasonable and not excessive as compared with fees customarily allowed for similar services. The cost of the materials and supplies themselves will not be counted.

4. Services: One hundred percent (100%) of fees or commissions charged by an MBE/WBE for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of the Work will be counted toward the MBE/WBE goal, provided the fee is reasonable and not excessive as compared with fees customarily allowed for similar services.

5. Joint Venture: Joint ventures between MBE/WBEs and non-MBE/WBEs may be counted toward the MBE/WBE goal in proportion to the total dollar value of the Agreement equal to the distinct, clearly defined portion of the work of the contract that the MBE/WBE performs with its own forces. Contact OBDCR at (201) 395-3958 for more information about requirements for such joint ventures.

K. A complete list of your firm's affiliates.

L. If the Proposer or any employee, agent or subconsultant of the Proposer may have, or may give the appearance of, a possible conflict of interest, the Proposer shall include in its proposal a statement indicating the nature of the conflict. The Authority reserves the right to disqualify the Proposer if, in the Authority's sole discretion, any interest disclosed from any source could create, or give the appearance of, a conflict of interest. The Authority's determination regarding any question(s) of conflict of interest shall be final.

Proposers are advised that, while not currently anticipated, nothing herein shall preclude the Authority from determining at a subsequent point in time during performance of the services contemplated hereunder gives rise to the existence of, or the appearance of, a conflict of interest, and thereby conclude that a firm(s) selected for performance of the subject services, is/are expressly precluded from participation in, or the performance of other procurement opportunities for any project on which the firm has provided such services. Proposers are directed to paragraph 33 of the attached Standard Agreement. Proposers are further advised that under this Agreement, firms must provide, upon receipt of a Task Order issued by the Port Authority, written notice to the Port Authority of any existing or potential conflict of interest the firm(s) may have in the performance of Services under this Agreement.

M. The selected Consultant(s) shall comply with the requirements of the Agreement. You should therefore not make any changes in this standard agreement, nor restate any of its

provisions in your Proposal or supporting material. However, if you have any specific exceptions, such exceptions should be set forth in a separate letter included with its response to this RFP. The Authority is under no obligation to entertain or accept any such specific exceptions. Exceptions raised at a time subsequent to proposal submission will not be accepted. The scope of the tasks to be performed by you is set forth in Attachment A to the Authority's standard agreement.

#### **IV. SELECTION PROCESS:**

The qualifications-based selection will take into consideration the following technical criteria listed in order of importance, and subsequently cost, as appropriate. After consideration of these factors, the Authority may enter into negotiations with the firm(s) deemed best qualified, in terms of the forgoing technical criteria, to perform the required services.

- A. qualifications and experience of the proposed staff;
- B. qualifications and experience of the firm, including the quality of similar services provided to others, and the demonstrated ability to complete the services in accordance with the project schedule;
- C. project staffing analysis;
- D. technical approach to performance of the contemplated services; and
- E. management approach to the performance of the contemplated services.

#### **V. ORAL PRESENTATIONS:**

After review of all Proposals, an oral presentation to the selection committee and others, as appropriate, may be requested. It should be noted that firms selected to make presentations may be given short advance notice. Presentations will be limited to 60 minutes, and should include material contained in your Proposal. The presentation will be followed by an approximately 30-minute question and answer session. Proposer's staff making the presentation shall be led by the proposed Project Engineer, who may be supported by no more than six (6) other senior staff members proposed to work on this project. Notification of presentation scheduling will be made by email. Please provide the name, telephone number, and email address of the person who should be contacted for presentation scheduling, as well as an alternate in the event that person is unavailable.

#### **VI. ADDITIONAL INFORMATION:**

If your firm is selected for performance of the subject services, the Agreement you will be asked to sign will include clauses entitled "Certification of No Investigation (Criminal Or Civil Anti-Trust), Indictment, Conviction, Debarment, Suspension, Disqualification and Disclosure Of Other Information" And "Non-Collusive Proposing And Code Of Ethics Certification; Certification Of No Solicitation Based On Commission, Percentage, Brokerage, Contingent Or Other Fees." By submitting a Proposal the firm shall be deemed to have made the certifications contained therein unless said firm submits a statement with its Proposal explaining why any such certification(s) cannot be made. Such a submission shall be submitted in a separate envelope along with your Proposal, clearly marked "CERTIFICATION STATEMENT."

It is Authority policy that its consultants, contractors and vendors comply with the legal requirements of the States of New York and New Jersey. Your attention is therefore called to New York State's requirements that certain contractors, affiliates, subcontractors and subcontractors' affiliates register with the New York State Department of Taxation and Finance for the purpose of collection and remittance of sales and use taxes. Similarly, New Jersey requires business organizations to obtain appropriate Business Registration Certificates from the Division of Revenue of the State's Department of the Treasury.

Proposers are advised that additional vendor information, including, but not limited to forms, documents and other related information may be found on the Authority website at: <http://www.panynj.gov/business-opportunities/become-vendor.html>.

After a review of all proposals received, the Authority will forward two (2) copies of the Agreement and Attachment A thereto to the selected firm(s), who shall sign and return both copies. Signature shall be by a corporate officer. The return of one copy executed by the Authority will effectuate the Agreement.

Should you have any questions, please contact Ekatherina Carrera, Solicitation Manager, by email at [ecarrera@panynj.gov](mailto:ecarrera@panynj.gov). All such correspondence must have your name, title, company, mailing address, telephone number and state "RFP 46659" in the subject line. The Authority must receive all questions no later than 4:00 P.M., seven (7) calendar days before the RFP due date. Neither Ms. Carrera nor any other employee of the Authority is authorized to interpret the provisions of this RFP or accompanying documents or to give additional information as to their requirements. If interpretation or additional information is required, it will be communicated by written addendum issued by the undersigned, and such writing shall form a part of this RFP, or the accompanying documents, as appropriate. Addenda to the RFP, if any, will be posted at <http://www.panynj.gov/business-opportunities/bid-proposal-advertisements.html?tabnum=6>. You should therefore monitor the advertisement on said website, as appropriate, to ensure you are aware of changes, if any.

Proposal preparation costs are not reimbursable by the Authority, and the Authority shall have no obligation to a firm except under a duly authorized agreement executed by the Authority.

No rights accrue to any Proposer except under a duly authorized agreement for performance of the specified services.

The Authority reserves the right, in its sole and absolute discretion, to reject all Proposals, to undertake discussions and modifications with one or more Consultants, to waive defects in Proposals, and to proceed with that Proposal or modified Proposal, if any, which in its judgment will, under all the circumstances, best serve the public interest.

Sincerely,

David Gutiérrez, CPPO  
Assistant Director  
Procurement Department

Attachments

## ATTACHMENT A

### PERFORMANCE OF EXPERT PROFESSIONAL SERVICES FOR NEWARK LIBERTY INTERNATIONAL AIRPORT TERMINAL A REDEVELOPMENT PROGRAM – DESIGN OF THREE (3) MULTI-SPAN BRIDGE STRUCTURES, AT-GRADE ROADWAYS AND ASSOCIATED SIGNAGE AND APPURTENANCES

#### **I. BACKGROUND**

For background with respect to The Port Authority of New York and New Jersey (the “Authority”) see [www.panynj.gov](http://www.panynj.gov). Additionally, the most recent electronic version of the Authority’s Annual Report is available at <http://www.panynj.gov/corporate-information/annual-reports.html>.

Terminal A at Newark Liberty International Airport (EWR) opened for air passenger traffic in 1973, and now, more than forty years later, no longer meets the standards of a modern airport. A Stage I report was subsequently prepared for the redevelopment of this terminal. The report described the required landside elements and airside improvements, along with an environmental assessment of impacted resources.

This project is a critical part of landside elements that provides public access to and from the proposed Terminal A building by connecting to the frontage roadway of the terminal.

#### **II. SCOPE OF WORK**

This project will implement a Building Information Modeling (BIM) design process.

##### **A. Base Work – Bridges N61, N62, N63:**

The services of the Consultant shall generally consist of performing Design Development, Final Design and Contract Document preparation (“Stage III”) and Post-Award (“Stage IV”) services for three (3) new elevated roadway bridge structures, designated Bridges N61, N62, and N63 (see Exhibit 1, Figures 1 to 7), including related abutments, wing walls, retaining walls, etc., as well as foundations for new overhead sign structures and new ground-mounted sign structures supporting variable message signs (VMS). Electrical and Electronics infrastructure to support the Optional Work described below shall be part of the base work.

Design of the roadway bridges shall be based on the information contained herein, any additional information provided by the Authority during Stage III and further information developed by the Consultant in the performance of the contemplated services.

The Consultant shall be responsible for the services of Structural, Electrical, Electronics, Environmental, and Traffic (including maintenance and protection of traffic) Engineering disciplines for Stages III and IV. Civil Engineering, including drainage, Geotechnical Engineering and Landscape Architectural services, will be performed by the Authority’s Engineering Department.

The Consultant shall provide:

1. Project site-related electrical and electronics design, including roadway and under bridge lighting and connections to new and existing sign structure locations.

2. Design of permanent traffic, maintenance and protection of traffic, utilities- and drainage-related foundations and structures, and environmental-related design, permitting and services to support the development of Bridges N61, N62 and N63, at-grade roadways, sign structure foundations and infrastructure;
3. Construction staging planning and contract drawings for the base work, including but not limited to the N61, N62 and N63 bridge structures, foundations and pedestals for new overhead sign structures and new ground-mounted sign structures, electrical and electronics infrastructure and overall project site construction staging. Construction must be staged such that normal airport services are not disrupted;
4. Overall design coordination and management for the subject project for all disciplines, including but not limited to, Civil, Electrical, Electronics, Environmental, Geotechnical, Structural and Traffic, in both Stages III and IV; and,
5. Documentation demonstrating compliance with the Authority's Sustainable Infrastructure Guidelines (SIG).

## B. Optional Work

### 1. New and Existing Sign Support Structures:

Optional work Item No. 1 consists of performing design development, final design and contract document preparation ("Stage III") and Post-Award ("Stage IV") services in accordance with all applicable Tasks outlined in Section III below for twenty-two (22) new overhead sign structures to support VMS and/or static signs, two (2) new ground-mounted sign structures to support VMS, and evaluation of eight (8) existing overhead sign structures to remain that will receive new static sign panels. The existing sign support structures to remain shall be checked for the new loading based on current codes and standards and shall be strengthened or replaced as needed to support the new loading. (see Exhibit 3, Figures 1 and 2)

Design of the overhead sign structures shall be based on the information contained herein, any additional information provided by the Authority during Stage III and further information developed by the Consultant in the performance of the contemplated services.

### 2. Intelligent Transportation System (ITS) and Signing

Optional work Item No. 2 consists of performing design development, final design and contract document preparation ("Stage III") and post-award ("Stage IV") services for new ITS and associated field infrastructure in accordance with all applicable Tasks outlined in Section III below for the signing and field devices to be mounted on the new and existing sign support structures that comprise Optional Work Item No. 1. This Optional Work Item shall also include design of the associated electronics, power and communications.

The contract documents for the Optional Work will be included with the Bridges N61, N62, and N63 package.

The Consultant shall perform the Optional Work only if and as directed by the Authority.

The Consultant shall be responsible for the services of Structural, Electrical, Electronics, Environmental, and Traffic (including maintenance and protection of Traffic) Engineering

disciplines for Stages III and IV. Civil Engineering and Geotechnical Engineering services will be performed by the Authority's Engineering Department.

The Consultant shall provide:

1. Project Electrical and Electronics design services for all associated electronics, power and communications.
2. Permanent traffic and maintenance and protection of Traffic design services for the Optional Work to support the development of the sign structures.
3. Construction staging planning and contract drawings for the Optional Work and overall project site construction staging. Construction must be staged and performed such that normal airport services are not disrupted.
4. Overall design coordination and design management for the Optional Work for the subject project, including but not limited to, Civil, Electrical, Electronics, Environmental, Geotechnical, Structural and Traffic, in both Stages III and IV.

### **III. DESCRIPTION OF CONSULTANT TASKS**

Staffing shall be estimated per Stage, as defined in Section II above, for all Tasks. Separate drawing lists, staffing estimates and cost proposals, each further delineated by engineering discipline, shall be provided for all Base Work tasks and for each Optional Work task. Tasks to be performed by the Consultant shall include, but not be limited to, the following:

#### **TASK A. PROJECT SCHEDULE & QA/QC PROGRAM**

Submit a detailed project schedule and Consultant's Quality Assurance/Quality Control (QA/QC) Program, for performance of the following tasks within fourteen (14) calendar days after receipt by you of a fully executed agreement. The schedule shall comply with the requirements of Section IV, shall include milestones and interdependencies and shall be prepared using Primavera P6 or industry software compatible with Primavera P6. The schedule shall also include assumed construction duration, which Consultant shall review and update by the end of Stage III.

#### **TASK B. MEETINGS**

Attend an estimated twenty-four (24) meetings, at four (4) hours each, throughout the design phase (Stage III) and an estimated twenty-four (24) meetings, at four (4) hours each, throughout the construction phase (Stage IV). The Consultant shall take the lead for all Stage III meetings. At each Stage III meeting the Consultant shall record, and subsequently distribute for review and comment, draft minutes, summary of action items and summary of current and next critical path issues no later than five (5) calendar days from the date of the meeting. Incorporate all comments and distribute the minutes, summary of action items and summary of current and next critical path issues as final. The Consultant shall provide technical assistance and design coordination for all Stage IV meetings led by the EWR Resident Engineer. Meetings shall take place within Authority facilities, including Four World Trade Center (4WTC) or EWR, as determined by the Authority.

#### **TASK C. DOCUMENT REVIEW**

Review and obtain all available documents, as listed herein, from the Authority's files at EWR or 4WTC. Specific data not found in your review shall be determined as part of your

inspection services (Task E). Estimate forty (40) hours of staff time for performance of this Task. Meet with Authority staff to discuss your findings.

#### TASK D. DESIGN CRITERIA SUMMARY

Prepare a detailed summary of all criteria to be used in the performance of the required design services, including but not limited to loads (dead, live, fatigue, wind, seismic, snow, impact, breaking force, flood, thermal, collision, ice, and other loads as appropriate), centrifugal forces on curved bridges, material ASTM specifications and grades, utilities design, codes and assumptions. Include criteria on bridge load rating analysis and deliverables in accordance with New Jersey Department of Transportation (NJDOT) requirements. Submit to the Authority for approval a detailed design criteria summary not more than twenty-eight (28) calendar days after receipt by you of a fully executed agreement.

1. As a minimum, the project shall be executed in conformance with:
  - a. NJDOT 2007 Standard Specifications for Road and Bridge Construction, with latest interim revisions
  - b. NJDOT Design Manual for Bridges and Structures (Baseline Document), 5th Edition, with latest interim revisions
  - c. NJDOT Highway Bridge Load Rating Manual, 1st Edition, with latest interim revisions
  - d. American Association of State Highway Transportation Officials (AASHTO) Load and Resistance Factor Design (LRFD) Bridge Design Specifications, Customary U.S. Units, 7th Edition, with latest interim revisions;
  - e. AASHTO Guide Specifications for LRFD Seismic Bridge Design, 2nd Edition, with latest interim revisions;
  - f. NJDOT/Federal Highway Administration (FHWA): NJ Seismic Design Considerations (FHWA-NJ-2010-006) Final Report March, 2012 NJDOT
  - g. NJDOT Bridge Scour and Stream Instability Countermeasures Experience, Selection, & Design Guidance 2nd Edition
  - h. AASHTO LRFD Bridge Construction Specifications, 3rd Edition, with latest interim revisions.
  - i. American Welding Society (AWS) D1.1 Structural Welding Code, with latest interim revisions.
  - j. AASHTO/AWS D1.5 Bridge Welding Code, with latest interim revisions.
  - k. AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, 1st Edition, with latest interim revisions.
  - l. New Jersey Turnpike Authority (NJTA) Standard Drawings, as pertaining to Overhead Span VMS Support Structures
  - m. AASHTO Manual for Bridge Element Inspection, 1st Edition, with latest interim revisions.
  - n. AASHTO Manual for Bridge Evaluation, 2<sup>nd</sup> Edition, with 2011, 2013, 2014, 2015 and 2016 Interim Revisions

- o. National Fire Protection Association (NFPA) 502, Road Tunnels, Bridges, and Other Limited Access Highways
  - p. Occupational Safety and Health Administration (OSHA) Safety and Health Standards – 29 CFR 1926
  - q. AASHTO: Guide for Design of Pavement Structures, 4<sup>th</sup> edition with 1998 supplement
  - r. AASHTO: A Policy on Geometric Design of Highways and Streets, 6<sup>th</sup> edition
  - s. AASHTO: Roadway Design Guide, 4<sup>th</sup> edition
  - t. FHWA: Manual on Uniform Traffic Control Devices, 2009 Edition
  - u. New Jersey State Storm Water Management Design Manual
  - v. American Concrete Pavement Association (ACPA): Concrete Pipe Design Manual
  - w. Ductile Iron Pipe Research Association (DIPRA): Design of Ductile Iron Pipe
  - x. Design of Bridge Deck Drainage – HEC21
  - y. Federal Aviation Administration (FAA), Advisory Circular No. 150/5200-33B dated 8/28/2007, entitled “Hazardous Wildlife Attractant on or Near Airports”.
  - z. State Open Waters/Freshwater Wetlands (N.J.A.C. 7:7A et. seq.)
  - aa. Flood Hazard Area Control (N.J.A.C. 7:13)
  - bb. Standards for Soil Erosion and Sediment Control in New Jersey – January 2014 (N.J.A.C. 16.25a)
  - cc. Dewatering – NJPDES (N.J.A.C. 7:14A)
  - dd. Department of Community Affairs Subchapter 8 Asbestos Hazard Sub-Code (N.J.A.C. 5:23-8)
  - ee. Water Supply Allocation (N.J.A.C. 7:19)
  - ff. Treatment Works Approval (N.J.A.C 7:14A)
  - gg. The Authority’s Engineering Available Documents, which may be obtained at <http://www.panynj.gov/business-opportunities/engineering-documents.html>.
  - hh. The Authority’s Discipline Guidelines for Structural (2014), Electrical (2014), Environmental (2008), Traffic (2014), Civil (2014) and Architecture (2014).
  - ii. The Authority’s Sustainable Infrastructure Guidelines (2011)
  - jj. The Authority’s Climate Resilience Design Guidelines (2015)
  - kk. The Authority’s Roadside and Median Barrier Design Guide, latest edition
  - ll. The Authority’s Standards and Guidelines for Port Authority Technology (2014)
2. Design criteria summary shall also include, but not be limited to, consideration of the following:
- a. Environmental Permitting
  - b. Traffic Lane Closures

- c. Construction Staging and Sequencing
  - d. Project Site Geometry
  - e. Airport Operations
  - f. Potential construction conflicts/risks with other ongoing projects in the immediate area.
3. Design criteria specifically for the Base Work of Bridges N61, N62 and N63 and the Optional Work of the overhead sign structures:
- a. Bridge superstructure framing shall consist of steel plate girders and shall be composite with a reinforced concrete slab deck.
  - b. The “operational classification” for Bridges N61, N62 and N63 shall be "Critical Bridges" for seismic design purposes according to the AASHTO LRFD Bridge Design Specifications, NJDOT Bridge Design Guidelines and NJDOT/FHWA NJ Seismic Design Guidelines Final Report (2012). Site-specific spectra will be provided by the Authority’s Engineering Department for seismic design purposes.
  - c. Design of vehicle barriers shall be in accordance with current NJDOT standard bridge barrier details.
  - d. For the ease of future maintenance, the use of bridge expansion joints shall be minimized.
  - e. Access shall be designed for the future hands-on structural inspection of all bridge elements.
  - f. All bridges design criteria and specifications shall be at a minimum in conformance with NJDOT. Bridge seismic design criteria shall comply with the more stringent of AASHTO LRFD, NJDOT criteria and the NJDOT/FHWA NJ Seismic Design Guidelines Final Report 2012. The AASHTO "LRFD Bridge Design Specifications, 7<sup>th</sup> edition" shall be used for the seismic design of bridges.
  - g. Bridge N61 shall be a multi-span bridge structure, currently envisioned to be an eight (8)-span structure, approximately 790 feet long and thirty-four (34) feet wide out-to-out of deck, spanning at-grade roadways and connecting the departure level of the future Terminal A frontage roadway structure (N60) to Bridge N63. Piers 1 and 2 shall be configured to span the arrivals roadway below. The superstructure shall be comprised of steel plate girders.
  - h. Bridge N62 shall be a multi-span bridge structure, currently envisioned to be a five (5)-span structure, approximately 480 feet long and thirty-four (34) feet wide out-to-out of deck, spanning the entrance/exit roadway to/from the EWR facility parking lot, connecting the arrival level of the future Terminal A to Bridge N63. The superstructure shall be comprised of steel plate girders.
  - i. Bridge N63 shall be a multi-span steel bridge structure, currently envisioned to be a six (6)-span structure, approximately 570 feet long with an out-to-out of deck width of seventy (70) feet tapering down to fifty-six (56) feet, spanning at-grade roadways and connecting bridges N61 and N62 at the east end, to the recirculation roadways. The superstructure shall be comprised of curved steel plate girders.
  - j. For approximate elevations, lengths and widths of Bridges N61, N62 and N63, refer

- to Exhibit 1 - Figures 2, 3, 5 and 6. In addition to HL-93 vehicular loads, the bridges shall be designed for the loading of NJDOT Permit Vehicles and the Oshkosh Striker 6x6 3000-gallon Airfield Rescue Fire Fighting (ARFF) Truck.
- k. All bridges and roadways shall meet a minimum vertical clearance of 14'-6".
  - l. The vertical clearance requirement for overhead sign structures shall be a minimum of 17'-9".
  - m. Design sign support structures for VMS panel(s) covering the full width and height of the truss area, plus a minimum twelve-inch (12") extension on all sides.
  - n. All abutments, piers and retaining walls shall be placed on deep foundation systems. Cast-in-place concrete footings with concrete-filled steel pipe piles shall be used on retaining walls and bridge abutments.
  - o. Retaining walls shall be either cast-in-place reinforced concrete or Precast Concrete Modular.
  - p. Drainage from bridge decks and ramps cannot be directly discharged into the Peripheral Ditch, but shall be designed to discharge into the local storm drainage system. Coordinate design of the type(s), size(s), location(s) and quantities of bridge drainage elements with the Authority's Engineering Department.
  - q. Location of bridge piers and abutments adjacent to roadways shall be evaluated for environmental impact, future Terminal A elevations, sight distance and clear zone distance.
  - r. Design shall comply with the Authority's Sustainable Infrastructure Guidelines included herewith and made a part hereof. The Consultant shall determine the maximum achievable credits immediately after notice to proceed, achieving a minimum "Certified" level as per the guidelines. The credit list shall be included in the Design Criteria Summary. Authority Sustainable Infrastructure Guidelines are available at <https://www.panynj.gov/about/pdf/Sustainable-infrastructure-guidelines.pdf>
  - s. Design shall utilize the Authority's Climate Resilience Guidelines, which provide projected climate criteria for heat, precipitation and sea level rise to be incorporated into the project. The Authority's Climate Resilience Guidelines are available at: <http://www.panynj.gov/business-opportunities/engineering-documents.html>.
  - t. Design shall comply with the Authority's Standards and Guidelines for Port Authority Technology, included herewith and made a part hereof as Appendix A. The Consultant shall coordinate with the Authority's Engineering and Technology Departments for the design of all infrastructure that may connect to, or otherwise impact, the Port Authority Wide Area Network (PAWANET), including security considerations.

#### TASK E. FIELD INSPECTION AND VERIFICATION

- 1. The goal of the initial field inspection is to become familiar with the project area and surrounding areas (see Exhibit 2), and to identify design issues and conflicts. The time required for the inspection is estimated to be forty (40) hours.

2. The Consultant's inspection services shall identify potential constructability issues related to concurrent engineering and construction efforts, the AirTrain Newark System, and surrounding structures, including future Terminal A and frontage roadways.
3. Submit copies of completed field findings and photos to the Authority for review and approval. Meet with Authority staff to discuss those findings and potential conflicts, if any.
4. For Optional Work Item No. 1 only, as directed by the Authority: The Consultant's inspection services shall include a visual condition inspection of the overhead sign structures that are to receive new signage, to confirm that the condition is as indicated in the reports for the most recently performed condition survey. This work shall include identification of potential constructability issues, submittal of field findings and photos and meeting with the Authority to discuss those findings and potential conflicts, as described in items E.1, E.2 and E.3 above.

#### TASK F. BUILDING INFORMATION MODELING (BIM)

This project will implement a BIM design process as outlined herein.

The Consultant shall use the following design software for all preliminary and final design deliverables:

1. Environmental, Traffic: Autodesk Civil 3D
2. Structural, Electronics, Electrical: Autodesk Revit
3. All disciplines, for producing a clash-free 4D model: Autodesk Navisworks

The Consultant shall:

1. Submit a BIM Execution Plan in accordance with the requirements and template found in the Authority's Engineering/Architecture (E/A) Design Division BIM Standard Manual ("BIM Standard"). The Authority's BIM Standard Manual is available at: <http://www.panynj.gov/business-opportunities/pdf/engineering-consultants-ead-bim-standard-manua-september-2012.pdf>.
2. Develop all BIM Models using object-based components such as columns, beams, walls, slabs, pipes, etc., which shall include associated parameters.
3. Develop and maintain the Revit BIM Models and Civil 3D files as the only sources of information from which the plotted sheets and DWF files are generated.
4. Each discipline shall develop its own BIM Model.
5. The BIM Model shall depict the exact design intent.
6. The BIM Model shall be developed, as a minimum, to a Level of Development (LOD) 300 for geometry based components.
7. Construction details shall be prepared to a LOD 350 either as part of the BIM Model (as native elements) or by importing 2D information. Regardless of which method is used, all details shall be contained within the BIM environment and shall meet the LOD requirements contained herein.
8. Follow the Authority's BIM Standard and deliver coordinated clash-free models and files.

9. Coordinate with Authority Civil and Geotechnical Engineering and Landscape Architecture, and other Engineering disciplines as may be required, to ensure seamless integration of all project information and design deliverables.
10. The BIM shall be use to generate the quantity take offs

The Consultant shall be responsible for producing Contract Drawings that comply with the current Authority BIM Standard, E/A Design Division CAD Standard (“CAD Standard”) and Authority Contracts Unit Review Standards, which are available at <http://www.panynj.gov/business-opportunities/engineering-documents.html>. BIM Models shall be prepared in Revit RVT format. Civil engineering drawings shall be prepared in Civil 3D DWG format. Design Web Format (DWF) shall be used for all documents that require Authority review.

#### TASK G. FINAL DESIGN AND CONTRACT DOCUMENTS

As part of the fifty percent (50%), one hundred percent (100%, Authority Wide Review) and final submissions of the Contract Documents required hereunder, the Consultant shall submit a letter to the Authority certifying that the Consultant has performed the QA/QC Program as defined in the Consultant’s QA/QC Program submitted under Task A. For each submission milestone submit a Revit central model, linked models, Civil 3D drawings and Navisworks files per the Authority’s BIM Standard.

Prepare Final Design and Contract Documents, including but not limited to:

1. Coordinate with the Authority for vertical profiles, elevations, horizontal alignment and vertical clearances for the bridges, especially at areas near the future Terminal A building. The slope and turning radius of the roadway must satisfy AASHTO requirements. Survey Information, Utility Information, and Geotechnical Information, if required during the design phase, may be obtained via written request to the Authority.
2. Provide overall design coordination and design management services for the subject project, including design coordination services for work being performed by the Authority’s Engineering Department.
3. Coordinate and acquire deliverables from all disciplines in a timely manner, prior to each submission date listed under Section IV. Prepare, assemble and issue complete submission deliverables, including deliverables prepared by the Authority’s Civil Engineering, Landscape Architectural and Geotechnical Engineering groups, to be used by the Authority’s Engineering Department, in accordance with the design schedule and submission requirements herein. Perform quality control on deliverables prepared by the Consultant prior to each submission. For all submissions, provide written responses to all comments regarding deliverables prepared by the Consultant, and compile and track all comments, responses and resolutions implemented from all reviewers and disciplines, according to the schedule in Section IV.
4. Lead design process and coordinate with various disciplines/stakeholders.
5. Perform a constructability study and identify potential construction issues. Evaluate the extent of service interruption and the effect on facility operations, as well as other concurrent construction programs, including but not limited to Bridges N57, N58 and N59, ongoing Infrastructure Renewal contracts and the future AirTrain Replacement system. Develop schemes to mitigate construction risks.

6. Develop construction staging schemes for the project. For Bridges N61, N62 and N63 assume that the site will be closed to all but local traffic. Construction staging shall coordinate with other concurrent construction programs, including but not limited to Bridges N57, N58 and N59, ongoing Infrastructure Renewal contracts and the future AirTrain Replacement system. Airport and AirTrain Newark services shall not be interrupted.
7. Contract Documents: Contract documents for all disciplines, to the greatest extent possible, shall be prepared for lump-sum bidding. This shall include, but not be limited to, the appropriate work items contained in the foregoing tasks and the following:
  - a. General requirements for all disciplines, as appropriate:
    - 1) Location Plan (including Limits of Constructions), Key Plan
    - 2) General Notes, Legend and Abbreviation (including for work in proximity to AirTrain Newark)
    - 3) Plans, Sections and Details
    - 4) Specifications
    - 5) Construction Cost Estimate, include Unit Price (Classified) and Net Cost Items
    - 6) Site Construction Staging Drawings in Plans and Elevations
    - 7) Implementation of sustainable design strategies in concurrence with Authority Sustainable Infrastructure Guidelines (SIG). With each contract document submission, provide to the Authority a SIG Submission. At a minimum, the submission shall include an updated SIG Credit Checklist, including a summary identifying the overall Sustainability goals of the Project. For the final submission, the Consultant shall provide a SIG Checklist, Project Credit Documentation, and all supporting calculations and documentation required for the Sustainable Infrastructure Guidelines.
    - 8) Coordination of services with appropriate Authority staff.
  - b. Structural Engineering:

The Consultant shall provide structural design services for the roadway bridges and other structural elements of this project, including but not limited to:

    - 1) Prepare Bridges N61, N62 and N63 and at-grade roadways design drawings, including General Plan, Elevations, Sections and Details for bridge substructures and superstructures, and details for utilities-related structures and foundations.
    - 2) Prepare Bridges N61, N62 and N63 and at-grade roadways construction staging drawings. Ensure construction sequence is shown on the drawings when a specific construction sequence is required for the stability and integrity of the structure involved.
    - 3) Prepare Bridges N61, N62 and N63 and at-grade roadways structural analysis and design calculations, and new sign structures foundations structural analysis and design calculations:

- a) Perform analysis and design of the Bridge Substructures (Deep Foundations, Piers and Abutments, Wing Walls, Retaining walls, etc.) based on the soil and groundwater data and geotechnical parameters as provided by the Authority.
  - b) Perform analysis and design of the Bridge Superstructures (Decks, including roadway, overlay, traffic barrier and railing, Horizontal Bridge Framing, Bearings, Expansion Joints, Approach Slabs, etc.).
  - c) Perform analysis and design of the new sign structures' foundations. The foundations (deep foundations) analysis and design shall be based on the soil and groundwater data and geotechnical parameters as provided by the Authority.
- 4) Design shall consider whether there are interferences between the bridge foundations and new or existing underground utilities, based upon underground utility survey information to be provided by the Authority, as well as surface obstructions based upon your field inspection and verification under Task E and further information as may be provided by the Authority. Coordinate with other disciplines to avoid all potential interferences. Design supports and openings for utilities that are carried by the bridge structures. Coordinate with Authority Civil Engineering to develop best-fit design for environmental permits as needed.
  - 6) Prepare Bridges N61, N62 and N63 load rating analysis per NJDOT requirements for new bridges. Deliverables for load rating analysis shall be in strict conformance with NJDOT requirements and shall be prepared using AASHTOWare Bridge Rating analytical software.
  - 7) Prepare Authority standard and customized material specifications. Create customized specifications for bridge superstructure and substructure elements in conformance with latest NJDOT bridge material specifications, except that the Authority's structural steel and standard concrete specifications shall be followed.
  - 9) Prepare updated Structural Design Criteria Summary, including selected bridge type for each of Bridges N61, N62 and N63, with consideration for ease of future maintenance and access for hands-on inspection of all surfaces and elements. List all design references and design loads, including load rating information, where appropriate on structural drawings. The updated summary shall be included as part of the calculation submission.
  - 10) Identify and indicate on structural drawings all items subject to special inspection during construction stage by the Authority and/or the Contractor per Authority and NJDOT requirements.
  - 11) Verify soil bearing capacity, deep foundation capacity and other soil properties with Authority Geotechnical Engineering. Indicate such information on structural drawings.
  - 12) Provide all foundations as required to support the Optional Work; see Task G.g entitled "Optional Work – Sign Support Structures" and Task G.h entitled "Optional Work – Signing and ITS" below. Where the use of overhead sign structures is required according to Authority Traffic Engineering, NJTA overhead HCMS, VMS/VSLs & CMS support structures standard drawings shall be followed as a guide for the general configuration of the structures and

foundations. The Consultant shall design the foundations for overhead and ground-mounted sign structures to carry the loads as described herein.

Should the Authority elect not to exercise one or both items of the Optional Work as defined herein, the scope of this Base Work shall not change, and the Consultant shall coordinate with the Authority's Engineering Department for information needed to develop the Consultant's structural design.

13) Prepare Bridges N61, N62 and N63 Bridge Element Quantity Estimates.

c. Traffic Engineering:

The Consultant shall:

- 1) Field inventory all traffic control devices in the work area to determine if any devices require modification as part of the project.
- 2) Prepare Maintenance of Traffic (MT) drawings for the required temporary maintenance and protection of traffic for the construction of the three (3) bridges and the sign structures foundations. This shall include all roadway/lane closures for the bridge work as well as any detour routing required for full roadway closures. MT drawings shall be coordinated with other concurrent construction programs, including but not limited to Bridges N57, N58 and N59, ongoing Infrastructure Renewal contracts and the future AirTrain Replacement system.
- 3) Prepare Traffic drawings for the installation of permanent pavement markings and regulatory and warning signs for the three (3) bridges.
- 4) Prepare Traffic drawings for the roadside barriers for the three (3) bridges including guide rail, impact attenuators, attachment to parapet walls, and concrete barrier end treatments for guide rail and concrete barriers.
- 5) Evaluate the locations of sign structure foundations for AASHTO clear zone distance. Prepare Traffic drawings for the roadside barriers for the overhead sign structures including guide rail, impact attenuators, and concrete barrier end treatments for guide rail and concrete barriers.
- 6) Provide input to construction staging to reduce or eliminate traffic impacts to operations.

Discipline Specific Criteria and Assumptions:

- 1) All Traffic designs shall be developed in accordance with criteria and guidelines set forth in the latest edition of Port Authority Traffic Design Guidelines.
- 2) Access to occupied buildings and parking lots shall be maintained at all times.

d. Electronics:

The Consultant shall design all communications infrastructure, including but not limited to conduits, ductbanks, manholes and handholes, as required, to support the Optional Work; see Task G.g entitled "Optional Work – Sign Support Structures" and Task G.h entitled "Optional Work – Signing and ITS" below. The Authority may request that spare conduits be included, but the base number/size of conduits required shall be as per the design calculations for the communications.

Should the Authority elect not to exercise one or both items of Optional Work as defined herein, the scope of this Electronics Base Work shall not change and the Consultant shall coordinate with the Authority's Engineering Department for information needed to develop the Consultant's electronics design.

e. Electrical:

The Consultant shall:

- 1) Provide electrical design and submit electrical drawings, calculations and list of specifications as part of the contract documents. The size and number of conduits shall be provided as part of the electrical design for the roadway/bridge lighting system. The Authority may request that spare conduits be included, but the base number/size of conduits required shall be as per the design calculations for the lighting load. Information regarding available electrical service points as may be available will be provided by the Authority.
- 2) Design all infrastructure as required to support the Optional Work; see Task G.g entitled "Optional Work – Sign Support Structures" and Task G.h entitled "Optional Work – Signing and ITS" below. Should the Authority elect not to exercise one or both items of Optional Work as defined herein, the scope of this Base Work shall not change and the Consultant shall coordinate with the Authority's Engineering Department for information needed to develop the Consultant's electrical design.
- 3) The Consultant shall be responsible for the design of:
  - a) Electrical conduit supports at the bridges.
  - b) Lighting design for roadway, bridges and under bridges.
  - c) Power distribution to feed the roadway, bridges and under bridges lighting.
  - d) All ductbanks, manholes and handholes as required.

f. Environmental:

The Consultant shall:

- 1) Complete surveys, as needed, of hazardous materials impacted by the construction of this project. The materials include, but are not limited to, asbestos, lead-containing paint, universal wastes, PCB-containing materials, and other hazardous building system materials. Prepare contract documents for the management, removal, abatement and disposal of impacted materials.
- 2) Prepare a list of all applicable environmental permits that would be required to undertake all aspects of this project. Coordinate with any permits that may exist for ongoing projects in the immediate area. Apply for and obtain, on behalf of the Authority, all environmental permits or modifications of existing permits required for the construction of all aspects of the project. Prepare and submit to regulatory agencies all required permit application packages, after they have been reviewed and approved by the Authority. Permit application packages include, but are not limited to, application forms, narrative, drawings, engineering reports, supporting documentation, public notifications, and fees. Hydraulic/hydrologic modeling to support Flood Hazard Area permitting will be provided by the Authority's

Engineering Department. Schedule and attend meetings with regulating agencies, as needed, to address permitting issues. Ensure that all required permits are received or obtained from the regulating agency or agencies on or before the date of the submission of sealed and signed Permalife<sup>®</sup> contract drawings identified in accordance with Section IV.

- 3) Contract Documents shall include all requirements and provisions of applicable permits for construction activities subject to the permits.
- 4) Prepare Soil Erosion and Sediment Control contract drawings for all areas of the project.
- 5) Prepare Contract Documents to address management and off-site disposal of excess excavated soil materials.
- 6) Prepare Contract Documents to address dewatering effluent management during construction of this project.
- 7) Provide a list of universal and regulated waste that is likely to result from the proposed construction.

g. Optional Work – Sign Support Structures:

- 1) Prepare new sign structures and existing overhead sign structures to receive new signage, including all structural analysis and design calculations.
- 2) Perform analysis and design of new sign structures. The structures shall provide for rear access to the VMS without interruption to traffic flow. Use NJTA requirements for overhead span HCMS and VMS/VSLs support structures as a guide.
- 3) Analyze the existing overhead sign structures (including the existing foundations) for their ability to carry loads imposed by new signage, equipment and appurtenances. Present to the Authority the results of the analysis, including recommendations to strengthen or replace any of the structures as may be necessary, in a letter-style report. Assume up to five (5) existing sign structures may require strengthening and up to three (3) existing sign structures and associated foundations may require replacement.
- 4) Prepare updated Structural Design Criteria Summary for the new overhead sign structures and existing overhead sign structures that will receive new signage. List all design references on structural drawings. The updated summary shall be included as part of the calculation submission.
- 5) Provide Electronics design and submit Electronics drawings, calculations and list of specifications as part of the Contract Documents. The size and number of communications conduits, conduit supports at bridges, ductbanks and handholes shall be provided as part of the Base Work electrical and electronics design for the roadway/bridge lighting system and sign structure foundations. The Authority may request that spare conduits be included, but the base number/size of conduits required shall be as per the design calculations for the communications infrastructure, VMS and ITS elements. Information regarding available fiber optic and other communication service points, communications closets and control rooms/locations as may be available, will be provided by the Authority.

- 6) The Consultant shall be responsible for the design of:
  - a) Communication conduit supports at the bridges.
  - b) Communication distribution across all bridges and roadways, and to all signs, new and existing sign structures, and equipment pad locations.
  - c) All ductbanks, manholes and handholes, as required.
- h. Optional Work – Signing and ITS:
  - 1) Traffic Engineering:

Prepare contract drawings for all ITS devices, which includes thirty-three (33) VMS at nineteen (19) locations; seven (7) vehicle detection sites; four (4) travel time detection sites; and a Road Weather Information System (RWIS) station. Locate control equipment for these systems in shared cabinets when possible to reduce construction, maintenance and energy costs. Cabinets and equipment shall be placed at locations where minimal or no roadway closures would be needed for maintenance access. Indicate the layout and location of the ITS equipment, up to and including the control cabinet, on the Traffic ITS drawings. The power and communications to the control cabinets shall be shown on the Electrical and Electronics drawings. Unless stated otherwise, all ITS devices shall be connected to the Port Authority Wide Area Network (PAWANET) in accordance with the Authority Standards and Guidelines for Port Authority Technology.

    - a) Evaluate sign type and size for each VMS location. Design of the VMS shall be coordinated with the static signs and their associated structures at all locations. Currently the base model(s) for VMS are Daktronic's VF-2320-64x288-20-RGB and VF-2329-64x288-20-RGB. The 2329 series is modified for rear access and is preferred if it is being installed on a rear accessible structure. Specification for software for control and monitoring shall be included as part of the design of this system. Develop a message library for the VMS subsystem to include twenty-four (24) scenarios, and up to eight (8) messages per sign, which shall be included in the design for the Contractor to implement. Include a data interface with the Transportation Operations Coordinating Committee (TRANSCOM) for travel time messages to be posted on the VMS as a default, with the times updated automatically by the system. (see Exhibit 3, Figures 1 and 2)
    - b) Review and design locations of the Vehicle Detection System sensors and access points based on manufacturer's recommendations for installation. Sensors shall be connected to the Sensys's SNAPS software on PAWANET.
    - c) Design a RWIS station that includes non-invasive pavement temperature sensors on both an elevated and ground level roadway near Terminal A. These sensors shall be placed at locations where minimal or no roadway closures would be needed to maintain the equipment.
    - d) Design the travel time sensors at locations which obtain vehicle information at the exits and entrances to/from US Routes 1 & 9. The travel time system uses Kapsch Janus readers to provide TRANSCOM's data fusion engine with the information required to create travel time links to other readers in the

region. The existing system is not part of PAWANET and connects via TRANSCOM's wireless devices provided by TRANSCOM.

- e) Prepare contract specifications for the ITS equipment by reviewing, modifying and updating existing ITS customized specifications (C-specs). Develop functional requirements for each ITS system, which must be tested during construction by the future contractor who will perform the work, and include those requirements in the specifications of each system. Provide information regarding controlled inspections on the Contract Drawings.
- f) Develop all documentation required to obtain approvals for sole-source vendors and providers.
- g) Discipline Specific Criteria and Assumptions - All Traffic designs shall be developed in accordance with criteria and guidelines set forth in the latest edition of Port Authority Traffic Design Guidelines and Port Authority ITS Guidelines.
- h) Prepare Maintenance of Traffic (MT) drawings for the temporary maintenance and protection of traffic during the construction of the sign structures. This shall include all roadway/lane closures for the work as well as any detour routing required for full roadway closures
- i) Prepare Traffic drawings for the installation/replacement of all overhead signs shown in Exhibit 3. The Authority will provide the sign designs and the Consultant will be responsible to ensure all designs comply with the Port Authority "Airport Roadway Sign Design Manual".
- j) Run power cable(s) to support ITS and VMS equipment.

8. Contract Drawings Format and Requirements:

- a. All Consultant Contracts shall have a cover sheet containing the facility name, contract title and contract number. The cover sheet shall have the appropriate places for signature by Authority staff. No other information shall appear on the cover sheet. This will be the only Contract Drawing prepared by the Consultant that will be signed by Authority staff.
- b. Sign and seal all drawings prepared by the Consultant.
- c. Any sub-consultant shall sign and seal its own drawings. The Consultant's logo shall appear on each drawing prepared by a sub-consultant.
- d. All Final Drawings (Permalifes®) shall be signed and sealed by a Principal Engineer of the firm or sub-consultant. The Principal Engineer shall hold a Professional Engineer license in the State of New Jersey and shall be familiar with and responsible for the design. The Permalifes® shall have the following beneath each seal:

ORIGINAL SEALED AND SIGNED BY:

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- e. The drawings and models shall be prepared in conformance with the Authority's BIM and CAD Standards, which can be downloaded at <http://www.panynj-cadstandards.com/>. Contract Drawings shall be prepared in Autodesk Revit RVT and Civil 3D DWG formats and published/printed/saved in DWF and PDF format. Refer to the latest version of the Authority CAD Standards for specific procedures and details. The Consultant is required to check the website regularly for updates to the Authority BIM and CAD standards and to adhere to all updates. The 50% and 100% submissions will be audited by the Authority for BIM and CAD compliance. The consultant shall make the necessary changes, identified in the audit, to comply with Authority BIM and CAD Standards. All submission of Revit, Civil 3D and Navisworks files shall follow the folder structure described in the Authority's BIM and CAD standards.

9. Design Calculations:

- a. Calculations shall clearly distinguish between new and existing construction. Documents from which existing criteria, dimensions, and properties were obtained shall be referenced in the calculations. All engineering calculation sheets, including computer generated input and output sheets, shall be numbered (sheets shall also include total number of sheets in the package), dated, indexed and bound. The designer and the checker shall initial all calculations sheets. Design criteria summary shall be included as part of the calculation. The index sheets shall define the total number of sheets submitted and shall bear the stamp and signature of an experienced Professional Engineer licensed in the State of New Jersey and who is familiar with and responsible for the design.
- b. For all computations submitted in computer print-out form, furnish the following:
  - 1) The description of each software including:
    - a) The type of problems solved by the software.
    - b) The nature and extent of the analysis and design.
    - c) The assumptions made in the software.
    - d) Instructions for interpreting the computer input and output formats.
  - 2) Indicate the design criteria used and include diagrams showing the loading conditions and loading combinations.
  - 3) Indicate design constants, spring constants and equations used, including all references.
  - 4) Include diagrams of all member forces (axial, shear, bending and other forces, as appropriate) for each loading condition that controls the design.
  - 5) Indicate reaction loads from all loading combinations acting on bridge bearings and deep foundations. Present the reactions clearly in table format.
  - 6) Include indexed and clearly identified input and output sheets for the entire structure or for those portions of the structure that will be sufficient to enable the Authority to evaluate the structure.
- c. All technical software, including commercial off-the-shelf software and in-house developed software (e.g., Excel spreadsheets, Mathcad worksheets, etc.) used in the

project, shall have been validated by the Consultant prior to its use to ensure that the output results are acceptable, reliable, and consistent with input parameters and assumptions, and that the software is suitable and sufficient for the specific types of work encountered.

- d. Bridges N61, N62 and N63 Load Rating calculations, records and deliverables shall be prepared in strict conformance with NJDOT. Software for Bridge Load Rating shall be AASHTOW Bridge Rating analytical software.
  - e. Bridges N61, N62 and N63 Bridge Element Quantity Estimate calculations shall be prepared in conformance with latest AASHTO Manual for Bridge Element Inspection, for all bridge elements. Present the quantity estimate clearly in table format, with element description, unit, quantity, etc.
10. Specifications: Prepare Specifications to include the work specified above in accordance with the following:

Division 1 - Provide the following information for the Authority Standard Division 1 Specifications, which will be prepared by Authority staff:

- a. Information specifically related to Conditions and Precautions, Construction Staging, Available Property, Temporary Structures and other General Provision Requirements of the subject contract;
- b. A list of the Contract Drawings;
- c. A list of unit price items, where appropriate, with description and estimated quantities for each item;
- d. Division 1 Maintenance of Traffic Specification.

#### 11. Technical Specifications

- a. The Authority has prepared certain standard technical specifications, which will be made available in electronic copy to the Consultant. These standard technical specifications must be reviewed by the Consultant. Structural standard specifications may be altered or revised by the Consultant in accordance with NJDOT specifications, except that the latest Authority structural steel and concrete material specifications shall be followed. Since these standard Technical Specifications may contain materials and related procedures which are not appropriate to the specific Contract being proposed, the Contract Drawings general notes section may also be used to clearly define the materials, related submittals and scope of work. However, any required submittal shall be clearly defined and numbered on Appendix A of the related specification.

Division 1 of the Authority's specifications, dealing with general provisions, includes the following language:

"In case of a conflict between a requirement of the Contract Drawings and a requirement in Division 1 of the Specifications, the requirement of Division 1 shall control. In case of a conflict between a requirement contained in other Divisions of the Specifications and a requirement of the Contract Drawings, the requirement of the Contract Drawings shall control."

- b. Prepare any required technical specification that is not available from the Authority. Any technical specifications prepared by the Consultant shall be in the same format as the Authority standard technical specifications and the Consultant shall make any changes therein requested by the Authority throughout its various reviews. Final version of technical specifications or customized specifications prepared by Consultant shall be signed and sealed by a Professional Engineer licensed in the state of New Jersey, and submitted at the end of Stage III.
- c. Prepare a list of required construction submittals, including requirements on each submittal item, on Appendix A section of each technical specification.

## 12. Fifty Percent (50%) Submission Requirements:

At the fifty percent (50%) submission milestone, the Consultant shall submit copies of all documents, including but not limited to: contract drawings, details, sketches, calculations, analyses, construction staging, schedule(s), estimates, updated Design Criteria and Technical Specifications list. Copies shall be provided of the type and in the quantities identified in Section IV. Documents submitted to the Authority shall demonstrate actual progress of not less than fifty percent (50%) on all Base Work and deliverables required herein, including any Optional Work directed by the Authority, and shall be composed of a thorough (complete) set of Contract and Design Documents at a minimum fifty percent (50%) level of completion, except that the design criteria and constructability study shall be in a one hundred percent (100%) complete state. Payment of the Consultant's invoice following the fifty percent (50%) milestone shall be prorated based on the actual Earned Value reflected by the completeness of the documents submitted in accordance with this section.

### TASK H. COST ESTIMATE AND CONSTRUCTION SCHEDULE

Prepare a Construction Cost Estimate for each submittal of the Contract Drawings and Specifications, including itemized list of "Net Cost" items, in accordance with the Authority's Estimating Procedures Guide, which is available at: <http://www.panynj.gov/business-opportunities/engineering-documents.html>.

Provide an estimate of the time required to complete construction, as well as an estimate of delivery time for all long lead-time items. Present the Construction Schedule in Gantt Chart form using days, weeks or months as appropriate for the unit of time, with respect to each task or long lead-time item.

The Consultant shall obtain quantities used for the cost estimate from the BIM model. The construction cost estimate for each involved discipline shall be compiled and presented on the Authority's standard estimating forms, which will be provided by Authority staff. The construction cost estimates will be reviewed and will be subject to approval by the Authority's cost estimator.

### TASK I. POST-AWARD DUTIES (STAGE IV SERVICES)

1. Submit your specific QA/QC for the professional services to be performed in connection with the performance of your Post Award Duties specified hereunder.
2. Review and approve (APP), approve as corrected (AAC) or disapprove (NA) all working drawings, catalog cuts and design calculations submitted by the Contractor, in

conformance with Contract Documents, within eight (8) working days after receipt of said articles from the Authority's Submittal Management Unit. Indicate any corrections, comments and additions as required. Advise the Authority thereof, giving the reasons for your decisions. Have a Professional Engineer licensed in the state of New Jersey sign and stamp all submittals. , The Professional Engineer shall be responsible for the submitted items requested in the Contract Documents. Six (6) hard copies and a scanned electronic file of each working drawing shall be submitted back to the Authority. Hard copies of submittals shall be sent to Authority's Submittal Management Unit within eight (8) working days after receipt. The review status of submissions reviewed with comments (RWC) and reviewed with no comments (RWNC) shall be used on submittals in which the Contractor's Professional Engineer is responsible for the design, such as (but not limited to) temporary structure design for construction.

3. The Consultant shall function as the point of contact on overall design works for the EWR Resident Engineer's Office and Contractor. The Consultant shall coordinate all Requests for Information (RFIs), actual field conditions and constraints, modifications to foundations, and material substitute requests, if any, with all involved disciplines. Lead coordination meetings to resolve construction issues. Clearly indicate technical approach and assumptions on this matter in your Proposal.
4. Review and respond to RFI from the Contractor, as requested by the Authority. Clearly indicate assumed RFI quantities, based on similar types of contracts, in your Proposal.
5. Prepare and maintain a single, central tracking database or spreadsheet for all RFIs received and responded to, including but not limited to the following information regarding each RFI: date received; date responded; unique tracking/sequence number; name of Bidder submitting RFI; Contract Document(s) (e.g., drawing, specification section, etc.) and other RFIs with which the RFI is associated; lead discipline for the response; title; description and/or content; response; Contract Documents affected by response; changes/addenda issued.
6. Prepare and submit, at the first pre-construction meeting, an outline list of required Contractor's submittals, to include but not be limited to working drawings, catalog cuts, samples, certificates and test reports.
7. Monitor and update the associated verification documentation with respect to the approved Final SIG Project Credit Checklist throughout the duration of the Construction Work. Submit monthly status reports verifying that all items identified during the Design Work are completed during the Construction Work. Compile all evidence and documentation, as required by the SIG and submit to the Authority as a requirement for Final Acceptance.
8. Evaluate alternative construction details and materials, as requested by the Authority.
9. As required, issue post-award contract changes (PACCs) with detailed estimates and conduct site inspections as required for the changes.
10. Make available on site a Professional Engineer licensed in the state of New Jersey, as requested by the Authority, for performance of construction support services, as defined by the Authority, as well as to attend progress meetings during the construction stage. For the purpose of this task, the Consultant shall estimate a total of eighty (80) staff-days, and assume eight (8) hours per day. In addition to any on-site observations you may require as the Engineer-of-Record, assume two (2) pre-construction meetings and two (2)

field meetings/site visits for each month of the construction period. Assume three (3) years and nine (9) months for the construction duration for Bridges N61, N62, N63, the at-grade roadways, associated signage and appurtenances.

Compensation for the evaluations and changes referred to in paragraphs 8 and 9 above shall be computed in accordance with the paragraphs of the Agreement relating to compensation and shall not be charged against the estimated cost, provided that none of these items result from non-compensable work.

#### **IV. SCHEDULE AND SUBMISSIONS**

Submit the work identified above for review by the Chief Engineer within the number of calendar days stipulated below (Elapsed Time) after receipt by you of one copy of the Agreement executed by the Authority.

	<u>Description</u>	<u>Elapsed Time (Calendar days)</u>	<u>Submittals</u>
1a	BIM Execution Plan; Project Schedule for Both Design and Construction; Consultant's signed QA/QC Program	14	1 electronic copy, Live P6 file
1b	Design Criteria Summary	28	1 electronic copy
1c	Authority provides comments on 1a, 1b (above)	42	
2a	50% complete drawings, specifications, design calculations, cost estimates, Sustainable Design Submission, construction schedule and signed QA/QC letter	122	1 electronic copy (DWF, DWG, RVT, PDF), and submit 15 - 11 x 17 paper copies for drawings.
2b	Authority provides comments on 50% Review	136	
2c	Written response to 50% comments	150	
3a	100% complete drawings, specifications, design calculations, Sustainable Design Submission, cost estimates, construction schedule, NJDOT load rating deliverables, bridge quantity estimate and signed QA/QC letter	269	1 electronic copy (DWF, DWG, RVT, PDF), and submit 15 - 11 x 17 paper copies for drawings.
3b	Authority performs Authority Wide review	276	
3c	Authority provides comments for Authority Wide Review	283	
3d	Written response to Authority	297	

	Wide Review comments		
4a	Final review submission on contract drawings and specifications	304	1 electronic copy (DWF, DWG, RVT, PDF), and submit 15 - 11 x 17 paper copies for drawings.
4b	Authority provides final comments	311	
4c	Written response to final comments	325	
5	Permalife® contract drawings, complete contract specifications, final design calculations, final Sustainable Design Submission, final cost estimate, final construction schedule, final NJDOT load rating deliverables, final bridge quantity estimate and signed QA/QC letter	330	1 electronic scanned copy, 1 electronic copy (DWF, DWG, RVT, PDF), signed and sealed Permalife® drawings, and submit 15 - 11 x 17 paper copies for drawings

**V. ADDITIONAL INFORMATION FOR THE PREPARATION OF CONTRACT DOCUMENTS AND CONSTRUCTION COST ESTIMATES**

- A. Except as otherwise noted herein, the Preparation of Contract Documents shall conform to Authority standards and codes which would be applicable if the Authority were a private corporation and, in case of a conflict, the more stringent requirement shall apply.
- B. Prepare all Contract Drawings on standard size Authority Permalife® tracings. Tracings shall be prepared in such manner as to produce clearly legible drawings after reduction in size. Scales shall be graphical rather than numerical.
- C. All documents are to be submitted to the Authority according to Section IV. The Consultant shall meet with the Authority to review such documents, incorporate Authority comments, compile all comments/written responses and submit in final written response form within fourteen (14) calendar days of receipt of such comments.
- D. Perform the following additional services as part of this Agreement:
  - 1. Provide input to answer questions asked of the Authority by bidders during the bid period.
  - 2. Prepare Contract addenda, including Contract Drawing revisions and engineering calculations, as necessary or as requested by the Chief Engineer, for Authority approval and issuance by the Authority. Furnish originals for final printing.
  - 3. Upon request, assist Authority staff in Item E specified below.
- E. Authority staff will:
  - 1. Prepare Information for Bidders, Form of Contract, General Division 1 of the Specifications and the Analysis of Bid and Contract Progress Schedule.
  - 2. Meet with Consultant from time to time to review all Specifications, Contract Drawings, construction cost estimates and schedules prepared by the Consultant.

3. Review with, and transmit comments from, various Authority Departments to the consultant for incorporation by him into the Contract Documents.
4. Review addenda with, and obtain approval of, various Authority Departments.
5. Solicit, receive and open bids, and recommend that the Authority award Contract or reject bids.

## **VI. CONDITIONS AND PRECAUTIONS**

### **A. General**

1. All Engineering drawings and documents are to be handled, transmitted and destroyed in accordance with Authority guidelines. The Consultant shall designate a Security Information Manager (SIM) for the subject Authority project. The SIM shall oversee the collection of required non-disclosure documents and shall submit required forms, such as General Firm Non-Disclosure Agreement, Exhibit A - Individual Acknowledgment, Exhibit B - Sub-Consultant (if required), and Engineering Security Education and Awareness Training sign-in sheet.
2. All electronic Engineering drawings and documents shall be transmitted through the Authority's Livelink site for electronic files transfer. Upon receipt of fully executed agreement, the Consultant will receive Livelink account access forms. The Consultant shall complete and return the Livelink account access forms for Consultant's staff as needed. Upon review and approval, a Livelink account token or password will be sent to the Consultant's office for access to subject Livelink project folder.
3. Ensure Items 1 and 2 above are performed in a timely manner at the beginning of the project to ensure successful on-time submissions in accordance with schedule identified in Section IV.
4. All electronic drawings files shall be in compliance with the Authority's BIM and CAD Standards.
5. Immediately inform the Authority of any unsafe condition discovered at any time during the course of this work.
6. Follow access, personnel identification and security requirements at the site. These requirements include daily notification to the EWR Police when entering and exiting the site and obtaining identification placards for all vehicles on site and badges for all site personnel.
7. Coordinate with EWR Facilities, as directed by the Project Manager, for inspection date and duration.
8. Airport Operations at EWR shall always have priority over all of the Consultant's operations and/or Construction Activities.

### **B. Work Areas**

The Consultant shall limit inspection work to the areas necessary for the performance of such inspection and shall not interfere with the operation of the facility without first obtaining specific approval from the Authority.

The Consultant shall not permit any objects or pieces of equipment to lie unattended on sidewalks, roadways or structures at any time.

Area of Work, as well as Area Available for the Contractor's Use, shall be developed during construction as part of TASK G.

C. Work Hours

Do not perform work on a legal federal holiday of the State where the work is performed, unless approved by the Engineer.

**VII.COMMERCIAL GENERAL LIABILITY INSURANCE AND WORKERS' COMPENSATION INSURANCE PROCURED BY CONSULTANT**

A. Commercial Liability Insurance:

- 1) The Consultant shall take out and maintain at his own expense Commercial General Liability Insurance including but not limited to Premises-Operations, Completed Operations and Independent Contractor' coverages in limits of not less than \$5,000,000 combined single limit per occurrence for Bodily Injury Liability and Property Damage Liability. If vehicles are to be used to carry out the performance of this Agreement, then the Consultant shall also take out, maintain and pay the premiums on Automobile Liability Insurance covering all owned, non-owned and hired autos in not less than \$5,000,000 combined single limit per accident for bodily injury and property damage. Any/all activities performed airside must, at all times, be performed while under security escort as approved in advance, and in writing by the Project Manager. If at any time, the Consultant is unescorted in the performance of any field services airside, or if so directed by the Authority, the Commercial General Liability Insurance and Automobile Liability Insurance must contain limits of not less than \$25,000,000 combined single limit per occurrence, as provided in item 2) (a) below. In addition, the liability policies (other than Professional Liability) shall include the "Port Authority of New York and New Jersey and its related entities" as additional insureds and shall contain an endorsement that the policy may not be canceled, terminated or modified without thirty (30) days written advance notice to the Project Manager as noted below. Moreover, the Commercial General Liability policy shall not contain any provisions (other than a Professional Liability exclusion, if any) for exclusions from liability other than provisions or exclusions from liability forming part of the most up to date ISO form or its equivalent, unendorsed Commercial General Liability Policy. The liability policy(ies) and certificate of insurance shall contain cross-liability language providing severability of interests so that coverage will respond as if separate policies were in force for each insured. Furthermore, the Consultant's insurance shall be primary insurance as respects to the above additional insureds, its representatives, officials, and employees. Any insurance or self-insurance maintained by the above additional insureds shall not contribute to any loss or claim.

Further, the certificate of insurance and the liability policy(ies) shall be specifically endorsed that "*The insurance carrier(s) shall not, without obtaining the express advance written permission from the General Counsel of the Port Authority, raise any defense involving in any way the jurisdiction of the Tribunal over the person of the Port Authority, the immunity of the Port Authority, its Commissioners, officers, agents or employees, the governmental nature of the Port Authority, or the provisions of any statutes respecting suits against the Port Authority.*"

- 2) Additional Coverages: The Consultant shall have the policy endorsed when required by the Chief Engineer for specific services hereunder and include the additional premium cost thereof as an out-of-pocket expense:
  - a) If the services of the Consultant, as directed by the Authority, require the performance of services airside, the Commercial General Liability and Automobile Liability coverage limits stipulated in subparagraph 1, above, shall be increased to an amount not less than \$25,000,000 per occurrence as provided herein.
  - b) Endorsement to eliminate any exclusions applying to the explosion, collapse, and underground property damage (XCU) hazards.
  - c) Endorsement to eliminate any exclusions on account of ownership, maintenance, operation, use, loading or unloading of watercraft.

B. Coverage for work within fifty (50) feet of railroad. Workers' Compensation Insurance:

- 1) The Consultant shall take out and maintain Workers' Compensation Insurance in accordance with the requirements of law and Employer's Liability Insurance with limits of not less than \$1,000,000 each accident. A waiver of subrogation in favor of the Authority and its related entities, as allowed by law, shall be included.
- 2) Additional Coverages: The Consultant shall have the policy endorsed when required by the Chief Engineer for specific services hereunder and include the additional premium cost thereof as an out-of-pocket expense:
  - a) United States Longshoremen's and Harbor Workers' Compensation Act Endorsement.
  - b) Coverage B Endorsement - Maritime (Masters or Members of the Crew of Vessels), in limits of not less than \$1,000,000 per occurrence.
  - c) Amendments to Coverage B, Federal Employers' Liability Act in limits of not less than \$1,000,000 per occurrence.

C. Professional Liability Insurance:

The Consultant shall take out and maintain Professional Liability Insurance in limits of not less than \$5,000,000 each occurrence, covering acts, errors, mistakes, and omissions arising out of the work or services performed by Consultant, or any person employed by Consultant. All endorsements and exclusions shall be evidenced on the certificate of insurance. The coverage shall be written on an occurrence basis or may be written on a claims made basis with a minimum of a three-year reporting/discovery period.

D. Compliance:

Prior to commencement of work at the site, the Consultant shall deliver a certificate from its insurer evidencing policies of the above insurance stating the title of this Agreement, the P. A. Agreement number, compliance with notice of cancellation provisions, and containing a separate express statement of compliance with each of the requirements above set forth, via e-mail, to the Project Manager.

- 1) Upon request of the General Manager, Risk Management/Treasury, the Consultant shall furnish to the Authority a certified copy of each policy itself, including the provisions establishing premiums.

- 2) Renewal certificates of insurance or policies shall be delivered via e-mail to the Authority's Project Manager at least fifteen (15) days prior to the expiration date of each expiring policy. The General Manager, Risk Management must approve the renewal certificate(s) of insurance before work can resume on the facility. If at any time any of the certificates or policies shall become unsatisfactory to the Authority, the Consultant shall promptly obtain a new and satisfactory certificate and policy.
- 3) If at any time the above liability insurance should be canceled, terminated, or modified so that the insurance is not in effect as above required, then, if the General Manager shall so direct, the Consultant shall suspend performance of the Agreement at the premises. If the Agreement is so suspended, no extension of time shall be due on account thereof. If the Agreement is not suspended (whether or not because of omission of the General Manager to order suspension), then the Authority may, at its option, obtain insurance affording coverage equal to the above required, the cost of such insurance to be payable by the Consultant to the Authority.

The requirements for insurance procured by the Consultant shall not in any way be construed as a limitation on the nature or extent of the contractual obligations assumed by the Consultant under this Agreement. The insurance requirements are not a representation by the Authority as to the adequacy of the insurance to protect the Consultant against the obligations imposed on them by law or by this or any other Agreement.

\* \* \*

**EXHIBIT 1**

Figure 1

(Bridges N61, N62 and N63 Location Plan)

Figure 2

(Bridges N61 and N62 Plan and Elevation)

Figure 3

(Bridges N61 and N62 Conceptual Transverse Sections)

Figure 4

(Bridges N61 and N62 Conceptual Pier Elevations)

Figure 5

(Bridge N63 Plan and Elevation)

Figure 6

(Bridges N63 Conceptual Transverse Elevation)

Figure 7

(Bridge N63 Conceptual Pier Elevation)

**EXHIBIT 2**

(Project Area)

**EXHIBIT 3**

SK01

(Location Plan – Conceptual Landside Overhead Signing – SK01)

SK02

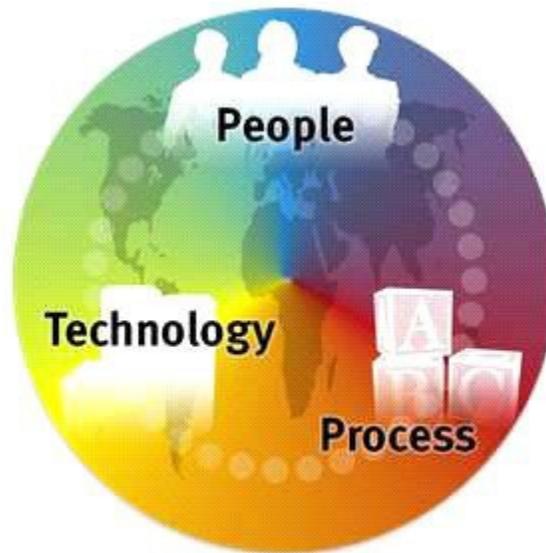
(Location Plan – Conceptual Landside Overhead Signing – SK02)

## **Appendix A**

(Authority Standards and Guidelines for Port Authority Technology (2014))

**STANDARDS AND GUIDELINES  
FOR  
PORT AUTHORITY TECHNOLOGY**

**(Non-Confidential Sections for use in  
preparation/distribution with RFP)**



**Technology Department**

**Version 7.5  
5/28/14**

**(PREPARED FOR RFP: 46659 - REQUEST FOR PROPOSALS FOR PERFORMANCE OF  
EXPERT PROFESSIONAL SERVICES FOR NEWARK LIBERTY INTERNATIONAL AIRPORT  
TERMINAL A REDEVELOPMENT PROGRAM – DESIGN OF THREE (3) MULTI-SPAN BRIDGE  
STRUCTURES, AT-GRADE ROADWAYS AND ASSOCIATED SIGNAGE AND  
APPURTENANCES**

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## Introduction

The purpose of this document is to communicate the standards established by the Technology Department (TD) and provide guidance in proposing Information Technology (IT) solutions for the Port Authority of New York & New Jersey (PANYNJ), the Agency.

To that end, these guidelines intend to help RFP Submitters do the following:

- Implement computing and networking solutions that ensure the utmost reliability, availability and security.
- Procure hardware and software that advances business needs in a manner that is compatible in an ever-changing IT environment that enables departments to work with each other more effectively.
- Easily and efficiently communicate and exchange information throughout the agency.
- Achieve greater systems integration so that the application will be interoperable resulting in cost effectiveness and quality control.
- Adherence to these standards ensures that IT investments achieve Enterprise connectivity, interoperability, consistency, and will enhance performance in a cost-effective way.

### 1.1 The Port Authority Wide Area Network(PAWANET)

#### 1.2 PAWANET Overview

The Port Authority has a modern distributed computing network, called the Port Authority Wide Area Network (PAWANET), which is managed as an enterprise resource. It connects all the various Port Authority facilities and transportation systems using high-speed voice, data, and video lines or links.

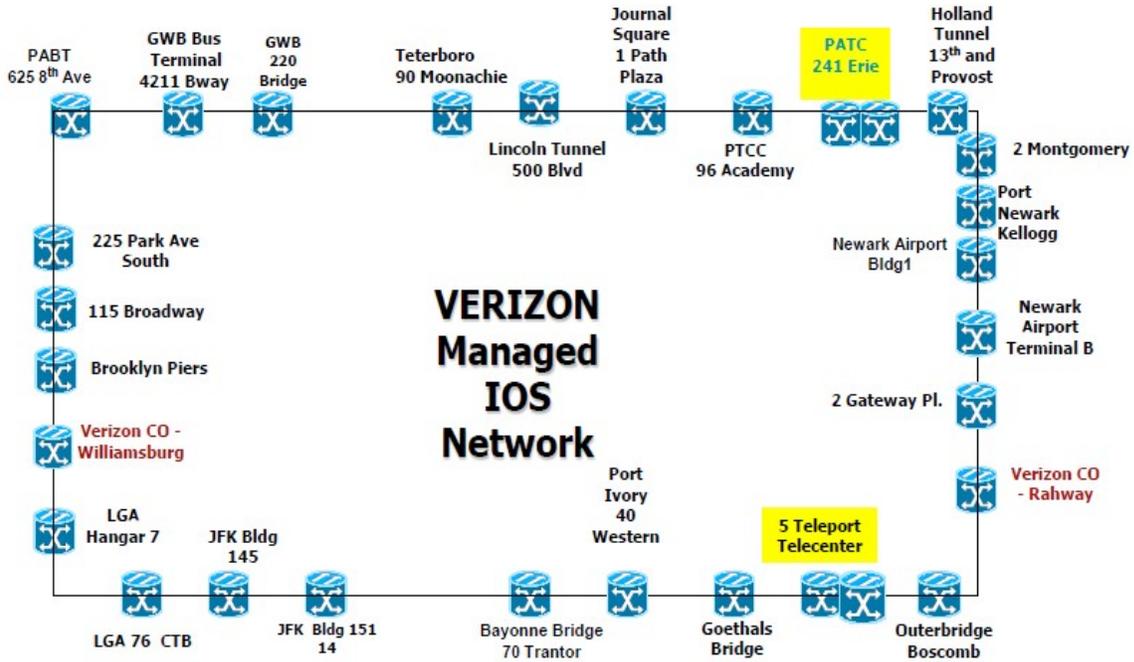
This network is crucial to all Port Authority businesses because it provides the connections for applications such as e-Mail, Internet and Intranet access, SAP, PeopleSoft, Electronic Toll Collection, Computer Aided Design and Drafting (CADD), Lease Image, Closed Circuit Television (CCTV) surveillance systems, and in the future, videoconferencing, and more.

PAWANET consist of a Managed Fiber Optic Dense Wave Division Multiplexed (DWDM) Network, provided by Verizon Select Services, as an Integrated Optical Service (IOS) network. This network consists of eleven separate and distinct (1) Gbps lightwave networks, each interconnecting with the data centers at Telecenter and the Port Authority Technical Center (PATC). Site-to-Site interconnectivity is achieved via the “hub and spoke” topology through the data centers. Additional high-speed Ethernet Private Lines (EPL) have been deployed to support key Port Authority off-ring facilities. Remote locations are linked using redundant high-speed dedicated point-to-point leased communication lines.

Remote locations are linked using redundant high-speed dedicated point-to-point leased communication lines. Wireless connectivity also supported when hardwired connections are not practical.

The network consists of state-of-the-art Cisco Systems equipment and services, such as, high performance Cisco Catalyst switches and routers. The Port Authority uses Bluewater Network Monitoring Services to monitor PAWANET, and Cisco Systems SMARTnet hardware/software maintenance services, and Cisco's Technical Assistance Center (TAC) to support and maintain the network.

### 1.3 VOIP Circuit Diagram –



### 1.4 Inter-site Services Providers

The Technology Department (TD) has contracted with a variety of companies to provide inter-site services. Companies providing communications services for the Wide Area Network are listed below.

- AT&T Local Services
- Verizon

## 1.5 PAWANET Functions

Currently PAWANET is used to transport the following:

Data	Supports the low and high volume transfer of data used for applications, such as SAP and PeopleSoft, and for network communications, such as e-Mail. Provides a data path for off-site, mainframe data backup of file, print and application servers. Enables the use of Storage Area Network (SAN) for network storage of user files and routing jobs to shared network printers.
Video	The transfer of Closed Circuit TV (CCTV) data is supported across the entire network to provide security for the Port Authority's key facilities. The network provides the hardware capabilities for voice and VoIP transmission.
Voice	The network switches and transmission lines are used for videoconferencing to enable diversely located staff participate in meetings across large geographic area.
Videoconferencing	Voice Over Internet Protocol (VOIP) is in the process of being implemented for the agency to replace the legacy Nortel system, which currently serves the majority of Port Authority users. VOIP will be another data stream utilizing the PAWANET infrastructure.
VOIP	

## 1.6 Features of PAWANET

PAWANET provides a high performance and reliable fail-safe communications network. These are its key features:

- Alternate paths of communication
- Support of high volume traffic such as CADD, CCTV and others
- Catalyst 3000, 4000 and 6500 switches at all the major sites, and at the Teleport
- Cisco high performance 2000, 3000 and 7200 router family products with redundant power supplies

## 1.7 Supported Protocols

The network supports the following network protocols, allowing dissimilar platforms to communicate within PAWANET:

TCP/IP:	TCP/IP is the universal protocol that allows communications between all systems within the Port Authority's network, as well as other networks.
IPX/SPX:	This protocol allows communications between all Novell platforms.
SNA/SDLC:	This protocol allows communications between all IBM systems and other systems that support System Network Architecture (SNA).

## 1.8 PAWANET Switches and Routers

The current standard switches and routers used on PAWANET are:

- Tellabs Reconfigurable Optical Add Drop Multiplexers (ROADMS) are the DWDM nodes on the Verizon Managed IOS Network.
- Cisco High performance 3000, 4000, and 6000 series switches
- Cisco High performance 2000, 3000 series routers for intermediate connectivity.
- Cisco 7200 high performance routers  
Provide high-speed connectivity and routing capabilities across the network in

support of TCP/IP, IPX/SPX and bridging functions, and provides routing capabilities for Port Authority Internet access.

- A pair of fault tolerant 10 Gbps links on IOS are established on IOS to provide the required band with between the data centers at Telecenter and PATC.

## 1.9 Approved Servers

Only IBM File & Print and Application servers may be connected to PAWANET.

This includes turnkey and distributed systems where File & Print or Application servers are used. Any replacement File & Print or Application servers must be IBM servers. Deviation from this policy will not be allowed, without prior approval of the Chief Technology Officer or their designee.

## 1.10 Enterprise Addressing Scheme (including IP addressing)

The Port Authority's enterprise network is a TCP/IP Class B network allowing for a maximum of 255 subnet assignments. Subnets assigned on a geographical basis according to the number of resources required. Workstations are configured for dynamic assignment of IP addresses via Dynamic Host Configuration Protocol (DHCP).

TD will assign static IP addresses for servers, printers and faxes that are to be connected to PAWANET.

## 1.11 Enterprise Network Monitoring Software

The Port Authority has selected Bluewater Network Monitoring Services to continually provide real time monitoring of PAWANET, and its data and voice link availability. To provide for real time network monitoring, the following software utilities are used by Bluewater and the Port Authority, respectively:

- Remedy Network Management software used by Bluewater
- Cisco Works for Switched Internetworks used by Port Authority

## 2.1 Network Resources

### 2.2 Network Overview

The Port Authority has a modern distributed computing network, which is managed as an Enterprise resource. The network connects all individual PCs, servers, printers, and other devices in a unified computing infrastructure that makes it possible for the Port Authority to conduct its business.

The Enterprise Network consists of the PAWANET (see Section 1.1) and connected Local Area Networks (LAN's). The line of demarcation between the cable and wiring is the responsibility of the carrier and the Port Authority's area of responsibility is usually a wiring closet. The Port Authority's Enterprise Network consists of the following components on the Port Authority side of demarcation:

#### Enterprise Devices

- Cabling
- Routers
- Switches
- Wiring Closets
- Communications Equipment Racks
- Server Racks
- File and Print Servers
- Application Servers
- Storage Area Networks (SAN)
- Network Printers
- Security Devices (Video Encoders, IP Cameras, ACS Panels)

## LAN Devices

- Desktop PCs
- Workstations
- Voice Over IP Phones
- Laptops
- Video Conference Units
- Local Printers
- Scanners
- Copiers
- PC Peripherals

## 2.3 Enterprise Network Architecture

The Port Authority operates an extensive network of Enterprise file, print and application servers. These devices are linked to an Enterprise Wide Area Network. The flexibility provided by the use of multiple servers, server clusters and Storage Area Networks (SAN) offers users improved network response, greater reliability, increased data security and reduced operating cost. Adherence to the standards outlined in this section allows the Port Authority to manage their systems, applications and data in a way that best meets our business needs while maintaining interoperability and safeguarding Port Authority's information assets.

### 2.2.1 Server Operating System and Software

All Enterprise File & Print services in the Port Authority are currently, based on the Windows Operating System. Microsoft Windows, Linux and Sun Solaris are supported as application servers when required for functionality.

In addition to the base operating system, all servers must include the following components:

- Virus Protection (minimum: McAfee Engine 8.5.0i, with current DAT files)
- Network Security
- Remote Monitoring and Management
- Intrusion Detection
- Mainframe Systems Backup (minimum: Upstream 3.5.0c)
- Uninterrupted Power Supply (If central UPS is not installed at the location)
- Current Service Packs and security patches (minimum: SP1)

Note: All operating system and server software shall be provided and configured by the Technology Department prior to connection to PAWANET.

### 2.2.2 Configuration

All network devices--including servers, workstations, network printers, and network faxes--must use IP addresses which conform to the standards outlined in sections, 1.9 Enterprise Addressing Scheme, and 2.3.1, Server Names. System Administrators may refer to the Guide to System Administration for specific instructions on how to install and configure the Windows operating systems.

#### 2.2.2.1 Drive Mapping Conventions and Organization

Mapping of workstation drive pointers to SAN or server disk volumes or folders is accomplished through a Windows Active Directory Login Script or the Microsoft equivalent. The following drive letters are reserved for Windows Active Directory installations:

Pointer	Volume or Folder
M:	Reserved
P:	Public Applications

Q:	Installation and Upgrade Utilities
S:	Departmental shared directories and files
T:	Reserved
U:	Users Private Home Directory

- Public (Shared) application software installed on a file and print server cluster must reside on a separate volume named "APPS".  
Example:  
P:\APP  
S
- Each software application installed on the file and print server, or server cluster, must have its own sub-folder.  
Examples: P:\APPS\EXCEL  
P:\APPS\WORD
- Shared Data stored on a file and print server cluster, shall reside in a volume named Data, and shall be mapped to the "S:\" drive pointer.  
Example <Cluster\_name>:\DATA\<Department\_NAME>\SHARE on a server cluster
- Each Department's SHARE folder will contain at least three sub-folders titled Org, Everyone and Projects.
- Under the Projects folder will be two additional folders, one called "Active" and one called "Completed". Active projects reside in the "Active" folder.
- When staff identifies a project as being completed, the project folder will be moved to the "Completed" folder and all rights, except for "Browse" will be removed from the folder. This will ensure that the final project documents remain unchanged, while still allowing authorized staff to review the old documents and use them as templates for new documents if desired. The "Completed" folder will be set to archive its data.
- Under the "ORG" folder will be subfolders with names corresponding to the various divisions within the department. By default, only staff within a division will have access to a division's folder. These folders are intended to hold data for a specific division that would not normally be shared departmentally. Staff from other divisions would not have access to these folders unless the division manager of the owning division gives their approval. Having folders setup by divisions will simplify the process of identifying who is responsible for the contents of a folder.
- The "S" and "U" drives should only be used to store business related files.
- The Systems Administrator, at the direction of the Chief Technology Officer, may from time to time remove any data deemed to be non-business related.
- A folder called "Everyone" will be created in the Share folder. All staff in the department will have full access to this folder to store and retrieve files that are not related to a project or a division's day-to-day operations.
- Additional shared folders, with access restricted to only specific users, if required, will be created in the Share folder. Access will be restricted through the use of Inherited Rights Filters and access will be granted through the use of groups. These groups will be named using the same name as the folder name.
- In general, rights to any folder will be granted through the use of a group having the same name as the folder. The group would have trustee rights to the folder, and users would be added to or removed from the group as needed. All rights would be granted or revoked through the use of form PA-3624A. Designated staffs in each department are required to approve these requests.

- A user “U” drive will be assigned to each standard Windows Active Directory account for use by each individual user to store business related data on the network. Access to the “U” drive is restricted to the account owner only. Users receive all rights to this folder”. Users cannot share data on their “U” drive. Files should be shared only by using the Share, (“S”) drive.
- Access to a user’s home directory, by anyone other than the owning user is prohibited and will be removed after notifying the end-user.
- Installation files used in the installation of desktop software must reside in a sub-folder under the “APPS” volume

Example P:\APPS\Pstf

### 2.2.2.2 Connecting LAN Devices to the Enterprise Network

The Technology Department (TD) is responsible for connecting all LAN devices to the Enterprise Network (PAWANET) provided they meet the Port Authority’s standards. The following system components must meet the standards in order to connect department devices:

#### Type of Device or Software

- Primary Network Operating System (NOS)
- Application Server Operating System
- Network Interface Card (NIC)

## 2.2.3 Server Network Resources Security

### 2.2.3.1 Server Physical Security

All servers and communication equipment must be located in locked rooms or secured with a cable and lock with the keyboard secured to prevent tampering and unauthorized usage.

### 2.2.3.2 Server Logical Security

To safeguard the Port Authority’s Information Technology (IT) systems and data, TD has implemented a number of processes and procedures, including the requirement that all users accessing the Port Authority’s networks authenticate to the Microsoft (MS) Windows Active Directory (Active Directory). The Active Directory Service is a database containing descriptions of all network devices including servers, workstations and user accounts.

In plain English, this means that by executing a login when you first power on your PC you are telling the network who you are. This is accomplished by providing your Windows Username and password. Just as you are issued an ID card for access to certain facilities, buildings or rooms you need to visit to perform your job, your Windows authentication grants you access to network resources, such as shared data volumes, software applications and network printers you use in performing your assigned tasks.

TD, or its contracted vendor, is responsible for providing all enterprise servers with the following protection of their logical resources:

- Guard against unauthorized access.
- Perform daily incremental backups of servers and authorized workstations and full backups weekly.
- Store all monthly backups off site at a secure location and secure daily and weekly backups on-site in a locked area.
- Test recovery procedures annually.
- Use system and application passwords that conform to the Technology Services Department standards.
- Configurations must conform to security parameters identified by NetVision and Quest

- Intrust Suite software.
- Control all remote access using the Port Authority's Remote Access System.
- Maintain current patch levels and critical security updates.

## 2.2.4 Network Access and User Account Security

### 2.2.4.1 Account Creation

User accounts are created and managed in MS Windows Active Directory Services for the Windows network resources. Documentation for the creation of user accounts and authority for access is maintained by the Customer Service Desk Manager.

### 2.2.4.2 Time Restrictions

Due to the fact that The Port Authority serves its clients 24 hours a day, we do not have Login Time Restrictions on our File & Print servers. All staff may access their account 24 X 7.

### 2.2.4.3 Concurrent Logins

Login sessions will be limited to one connection per user. User accounts should not have the ability to login to multiple workstations after establishing one active connection to the network.

### 2.2.4.4 Intruder Detection

These system-monitoring features must be active:

- Restrict the count of incorrect login attempts to three before the account is locked out.
- The time for which unsuccessful login attempts are retained to determine a possible intruder attack should be a minimum of 30 minutes before the counter is reset to zero.
- The time for which a user account remains disabled before the account can be used again should be a minimum of 30 minutes.

### 2.2.4.5 Passwords

All user accounts must have passwords conforming to the following standards:

- Minimum length is six (6) characters.
- The password should not be easily guessed. It should not be related to one's job and should not be a word in the dictionary or a proper name.
- Should be set to expire at least every 90 days and 30 days for accounts with system or application administrator access
- Grace Logins should be activated and limited to three
- Users should be notified several days in advance of password expiration.
- Users should be forced to change their password on initial login and once it expires.
- Unique passwords should be required when changed. Users should be prevented from reusing a previous password for a minimum of one-year.
- Users should not be permitted to change their passwords more than once a day.
- Passwords should be encrypted in storage.
- Passwords must be entered in a non-display field with a re-enter verify function for new passwords.
- Passwords must not be available on hardcopy.
- Passwords used in system startup files and login scripts must be encrypted.
- If an application uses a default password, change it on installation.
- Do not use cyclical passwords, such as the word, February, during the month of February.
- Do not reveal your password to anyone except authorized persons.
- Use both upper and lower case characters and special characters where possible.
- Change password if it has been disclosed or compromised.
- Protect by using a screen saver password with a recommended 15-minute time- out

- period.
- Passwords should not be the same as the user ID

Passwords are considered confidential data. They protect the Port Authority's network resources and grant system privileges and access. Disclosure may result in unauthorized access to data, system files and transactions. Passwords are also your signature and identify you as the individual who is responsible for the system activity.

#### 2.2.4.6 Modems and Switches

Staff is prohibited from connecting dial-up modems and switches including wireless switches (e.g. Linksys wireless switches) to workstations that are simultaneously connected to PAWANET or another internal communication network unless approved by the Technology Department (TD).

Where modems have been approved, users must not leave modems and/or switches connected to personal computers in auto answer mode, such that they are able to receive in-coming dial-up calls.

#### 2.2.5 Remote Access System

The use of local modems to establish direct dial connections to devices on the Port Authority's network is prohibited. Exceptions to this policy require the approval of the Technology Department's Chief Technology Officer.

The approved mechanism for remote access to the Port Authority network is through the Remote Access System (RAS). The Remote Access System utilizes an Internet-based Virtual Private Network (VPN) tunnel established over the Internet linking remote users to the Port Authority Wide Area Network (PAWANET) (remote client to PA site). It is designed to provide authorized Port Authority users with secure access to corporate applications and to files available on their departmental file servers. This access to applications and resources is delivered through a thin-client environment consisting of a farm of Citrix MetaFrame/Microsoft Terminal Services servers capable of supporting 200 or more simultaneous users each. There is no provided access to the user's office PC desktop. Port Authority offices without direct connection to the Port Authority Wide Area Network (PAWANET) can use this system to establish remote access to corporate applications located on PAWANET.

RAS provides multiple security mechanisms to ensure that only authorized users gain access to the Port Authority's computing resources and systems. Through multiple security steps, the user must respond to security challenges. After successful authentication verification, authorized users are provided with access to corporate applications and their departmental network resources through the thin-client environment.

The Port Authority also supports corporate site-to-site VPN connections and utilizes Cisco equipment for these connections.

Remote access is authorized on a case-by-case basis by the Chief Technology Officer.

#### 2.2.6 Hardware Standards

The TD Enterprise Architecture team is responsible for setting the agency hardware standards. As of October 2012, the hardware standards are as follows:

- |                                    |                 |
|------------------------------------|-----------------|
| • Desktop, Laptop, CAD*            | Lenovo          |
| • High End Multimedia Workstation* | Apple           |
| • Mobile Devices                   | BlackBerry      |
| • Printers*                        | Hewlett Packard |
|                                    | Cisco           |
| • Routers and Switches             |                 |

- Servers\* IBM and NEC
- Smart Devices iPhone/iPad
- Storage Area Network (SAN) IBM (Entry Level and Mid-Range)

\* Note: To maintain optimal operating efficiency of the computing environment a standard “refresh” age has been adopted. The agency standard refresh age is greater than 5 years. TD is responsible for the automatic replacement/upgrade of hardware that has exceeded the agency standard age limit.

### 2.2.6.1 Standard Servers

A representative sample of standard servers is as follows:

Server Description	IBM Model
WEB Server, Small applications server	xSeries 3550M4
Medium applications server	xSeries 3650M4
Database Server, Multiple and Large application server	xSeries 3850M4
Virtual Clusters	NEC Express 5800 series or IBM as stated above

Each server shall have at least three (3) network interface ports to support a production, management and backup network, and redundant power supplies.

The Port Authority manages servers models via a lifecycle process with a minimum ‘in service’ life of three (3) years.

## 2.3 Network Naming Conventions

### 2.3.1 Server Names

The Port Authority employs a naming convention for all servers within PAWANET. That convention will be discussed during a solution implementation phase.

## 2.4 Directory Services and Structure

The Port Authority uses Windows Active directory to manage network resources and user access. Port Authority departments are designated as organizational units (OU) and servers are network objects contained within the OU.

All network printers should be created using Printer Properties Pro utility.

Applications are distributed using Microsoft System Center Configuration Manager (SCCM).

Applications are distributed based on the type of workstation and user definitions.

Scheduling of distributions is performed in conjunction with client departments.

## 2.5 System Backup and Recovery

There are two Port Authority approved standard software products, used to perform scheduled server backups:

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- **Upstream Reservoir** is a centralized backup tool used to create data backups for all distributed systems.
- **FDR Upstream** is a Mainframe based tool used to backup all Mainframe data.

Backup data is stored on disk storage for prompt backup and restore. Encrypted tape backup is stored remotely at a secure facility, and is required to assure off-site disaster recovery data storage. All backup media and records must be treated with the same level of security and confidentiality as the original data.

The System Administrator is responsible for verifying that system backups, both local and remote backups, can be used to restore the data. Tests of the ability to successfully restore from both backup systems should be performed annually. It is recommended that:

- Tests of the ability to restore system and application files will be performed on a non-production server.
- When incremental or differential backups are routinely used, the test restore procedure should incorporate both.
- Immediately prior to performing the test restore procedure, do a special full backup on the directories being tested.

#### 2.5.1 Backup Logs

The System Administrator will maintain the following logs for a period of two years:

- Back-up activity
- Rotation of back-ups
- Usage/rotation of back-up media
- Off-site data storage

#### 2.5.2 Backup Scheduling

The System Administrator is responsible for performing back-ups of data, application and system files. This must be as follows:

- Weekly full back up of each server. A full back-up is a back up of all files on the server.
- Daily differential, incremental or full back up of each server or server cluster. The type of back-up performed is dependent on time constraints and the amount of data to be backed up. Incremental back ups are back-ups of all files changed since the last back up. Differential back ups are back-ups of all files changed since the last full back-up.
- A Grandfather, Father, Son (GFS) scheme based on a 33 tape rotation should be used to ensure complete back-up and recovery.

### 2.6 Business Resumption Plan

The vendors, providing IT services to the PA, shall work with the Technology Department (TD) to develop a disaster recovery and contingency plan. The System Administrator will participate in the planning, design, implementation, testing, updating and documentation of the plan. [Appendix 1](#) shows a recommended outline for such a plan. The Business Resumption Plan will be reviewed quarterly and tested at least annually.

### 2.7 Telecommunications Standards for Enterprise Network Resources

To see the standards and guidelines for the following telecommunications components, please see the Appendix.

[Appendix 2](#) - Communication Rooms/Closets Standards

[Appendix 3](#) - Standard Cabling Schemes

- [Appendix 4](#) - Unified Wiring Specifications
- [Appendix 5](#) - Telephone Closet / IDF Termination Blocks
- [Appendix 6](#) - Workstation Jacks
- [Appendix 7](#) - Standard Switches
- [Appendix 8](#) - Workstation and Lateral Cable Identification Management
- [Appendix 9](#) - Fiber Optics Specifications for Network Services - PAWANET

#### 2.7.1 [Closet and Telecommunications Room Access](#)

The following standards must be followed regarding access to closets and communication rooms:

- All telecommunications rooms must be physically secured. Remote locations, which are not secured, by a guard or within line of sight of personnel, must be secured by a card access system and/or videocameras.
- The Network Connections (NC) group is responsible for installing routers, switches (along with Cisco Staff when applied) and station drops. They also patch connections and troubleshoot LAN cabling.
- System Administrators requiring routine maintenance of data communications equipment should call the Customer Support Desk when new devices or reconfigurations are required.

#### 2.7.2 [Telecommunications Installation Contractor's Responsibilities](#)

1. Adherence to all of the above specifications
2. Assurance of labor harmony by providing installation technicians whom currently maintains appropriate union membership
3. The contractor must supply all cable, blocks, brackets, connectors, jacks, housings, face plates, special tools, etc., as necessary to perform an installation which is satisfactory to the Port Authority.
4. The contractor must label every workstation (jack faceplate) and the corresponding cross connect point (punch down block or patch panel) in accordance with the cable identification management plan, as previously described.
5. Install all Category 5e cabling in the proper manner, with the appropriate number of twists, to maintain Category 5e integrity and capabilities, as outlined in the TIA/EIA 568-B.2 standard.
6. The contractor must ensure that cable connections are in accordance with

standard telecommunications practices and that all cabling maintains normal connectivity and continuity.

7. All materials must be agreed upon by PA Network Services prior to the start of installation.
8. All computer or network communication rooms and closets are to be isolated, locked, and secured. No other equipment, storage area, or smoking area are to be located in this room. This room must provide appropriate cooling and ventilation. Access to this room will be reserved to TD staff and an agreed upon Facility Manager or designee of the site where the PAWANET equipment is located. This procedure is to ensure the security and the integrity of the Port Authority's computer network and its users.

### 2.7.3 Electrical Requirements

The following power and receptacles should be installed to support different equipment requirements such as:

- Standard 110/120 volt power receptacles
- Standard and/or NEMA 5L630P 220/240 volt 30 amp power receptacles
- Dedicated circuit breaker per AC feed, with alternate power source.
- Server rack electrical requirements are specified in the appropriate design document.

Currently, services obtained through the PA's contract are required to have the APC (American Power Conversion) UPS included in the delivered service.

### 2.7.4 Telephone Company Interface

The following items are needed for the telephone company interface, if needed for a specific vendor solution:

- a) Install a dedicated wallboard for Telco demarcs (if none available for implementation)
- b) Standard Telco demarcs:
  - P66 Block
  - Network Termination Unit (Rj48 interface) Smartjacks
  - Network Termination Unit (DB15-pin female interface)
  - Network Termination Unit (V.35/V.36 female interface)
  - Digital Signal X-connect (DSX)
  - Basic T1 CSU/DSU
  - Basic DS3 handoff coax/HSSI unit
  - High-speed dialup modems for network trouble-shooting when needed

## 2.8 Documentation

It is the responsibility of the System Administrator to update and maintain a library of all documentation designated as standard by the Port Authority. These include archived system files and system backups. Vendors will be provided our "Guide to Systems Administration" during the implementation phase of a project. The "Guide to Systems Administration" covers the provisioning and setup of computing & networking resources to successfully implement a project within the Port Authority.

## 3.0 Virus Scanning & Management

### 3.1 Overview

This section describes the standards and guidelines for the prevention, detection and removal of  
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computer viruses, (malware). Its purpose is to minimize the risk and negative impact of computer virus infections in the work environment by establishing clearly defined roles, responsibilities and procedures for the effective management of computer viruses.

### 3.2 Standards

Standard virus protection software must be installed on all network servers and personal computers, and updated on a regular basis. The Port Authority currently uses McAfee ePolicy Orchestrator (ePO) v4.5 to monitor, manage and maintain the virus definition (DAT files) of the Agency desktop computing platform. The McAfee ePO Management Agent (v4.6), and VirusScan / AntiSpyware Enterprise (v4.8), are part of the standard desktop core image.

### 3.3 Acquisition and Installation

The Technology Department maintains current versions of standard virus protection software and virus detection files, (DATs), including configuration-specific instructions for downloading and installing the software on network servers and desktops

### 3.4 Virus Detection and Response

The Port Authority's IT support vendor is responsible for responding to all virus outbreaks, as well as eradicating them and, where possible, preventing them.

The speedy reporting of all computer viruses is essential for the protection of the information stored on Port Authority LANs. Much of that information is important to the safety of the public, as well as the day-to-day business of the PA.

If the anti-virus software has detected a virus and cleaned it, no further action is required on the end user's part. If the virus is not cleaned, or the end-user suspects that a virus still exists, the end-user should immediately contact the Customer Support Desk, and they will work to remove the virus.

The Port Authority IT support vendor will respond quickly to all such alerts by doing the following:

#### **Assess the risk**

- Confirm the existence of a virus.
- Take appropriate measures to quarantine the virus so that it does not infect other Port Authority devices.

#### **Notify Appropriate Parties**

- Contact the originating party who introduced the virus to the Port Authority.
- If it is a new virus, contact our antivirus vendor, McAfee, for further assistance.

#### **Remove the virus**

- Work with appropriate parties until the virus is removed.

In addition, the Port Authority's IT support vendor will report on all such outbreaks on a weekly basis. The report must include:

Support Ticket Number

User Name

Virus Name

Information which was lost, (if any)

Time to correct the problem, (lost staff time)

Virus Origin, (if this can be determined; Diskette, CD, Internet)

## 4.0 Electronic Mail

### 4.1 E-Mail Overview

The Port Authority's Electronic Mail System (E-Mail) is designed to facilitate business communication among employees, job shoppers, contractors, consultants, and outside business associates. This E-Mail system is comprised of Microsoft Outlook desktop software accessing e-mail stored on Microsoft Exchange servers. This solution also includes group calendaring and workgroup collaboration.

### 4.2 E-Mail System Architecture

The Port Authority's E-Mail system is hosted by AT&T Corp, who acquired USinternetworking, a managed application service provider; and consists of Microsoft Exchange servers connected to the Port Authority's enterprise network. Authorized Port Authority staff access their corporate e-mail through Microsoft Outlook desktop software on the network. The system has multiple Exchange servers containing mailboxes and Public Folders. Additional servers host Outlook Web Access, BlackBerry services, and perform Internet-based e-mail services including anti-spam and anti-virus e-mail checking.

The hosted Exchange site is on a Windows resource domain with a one-way trust to the Port Authority's corporate user account Windows domain located on the Port Authority network. This Port Authority Windows domain is used for Windows authentication services when the Outlook client is opened. In addition, the Port Authority hosts DNS servers to satisfy requests from the Outlook client as needed.

High-speed, secure, and redundant network connections connect the AT&T's data center and network to the Port Authority network.

### 4.3 E-Mail Environment: Design Considerations and Infrastructure

The E-mail environment is further described below:

- The E-Mail system is comprised of Microsoft Outlook 2007 desktop software accessing e-mail (via MAPI mail protocol) stored on several Microsoft Exchange 2007 servers
- E-mail is protected by TrendMicro's InterScan Messaging Security Suite and ScanMail for Microsoft Exchange virus protection software products on the Exchange servers.
- Incoming Internet-based e-mail is also scanned for Spam and for viruses through McAfee (MX Logic), a web-based service provider.
- The servers are currently configured for the following messaging protocols:
  - o MAPI (Microsoft's Messaging Mail protocol) and SMTP
- IMAP4 and POP3 mail protocols, NNTP news protocol, and LDAP directory protocol are disabled.
- Front-end Exchange servers running TrendMicro's InterScan Messaging Security System (IMSS) are being used to send and receive Internet SMTP mail. No other mail system connectors (such as Lotus Notes) are in place.
- RIM's BlackBerry Enterprise Server software for Exchange provides wireless e-mail and calendar access to BlackBerry wireless handheld device users.
- There are several forms of SMTP addresses used at the Authority. Exchange Active Sync is used to provide email and calendar access to Apple iPads/iPhones and Windows Mobile devices.
- Exceptions are governed by the Authority's directory services

- structure and user account requirements.
- Each individual e-mail message and its file attachments have a combined limit of 10MB.
- Each regular user mailbox has the following size limits:
  - 80 MB - user receives warning notice
  - 90 MB - user is prohibited from sending
  - 100 MB - user is prohibited from sending or receiving
- Other mailbox sizes exist on an exception basis.
- This E-Mail system also includes group calendaring and workgroup collaboration.
- Public Folders are supported based on departmental and agency-wide requirements and, in general, are used for dynamic items for a form of workgroup collaboration. Static documents like corporate policy statements are placed on the corporate intranet (EmployeeNet) and not on the Public Folders. Documents requiring long-term storage are stored elsewhere such as on Windows file servers.

#### 4.4 Integrating Applications Server with Port Authority Email System

##### 4.4.1 Requesting SMTP Services

The vendor will request SMTP services from and coordinate its work with the Technology Department

Port 25 needs to be available to utilize it for SMTP services.

##### 4.4.2 Email Restrictions

The following restrictions are in place to protect the SMTP system and the “reputation” of Agency mail servers on the Internet:

- Forged email headers are STRONGLY discouraged, but applications for circumvention will be entertained, and valid business justifications must be included. The “From” and “Reply-to” fields should be valid users on the system sending email.
- Settings: The maximum number of recipients per email is currently 90. This includes “To”, “cc”, and “bcc”; maximum size with attachments is 10MB. Emails that do not conform to these restrictions will be rejected by the SMTP servers.
- Mail will be relayed only if your server has an entry in the SMTP access database.

Note: SMTP logs are checked periodically for policy violations. Repeated violations and failure to correct them will result in SMTP services being disabled for the offending system.

#### 5.0 Intranet

##### 5.1 Intranet Overview

The Port Authority EmployeeNet (eNet) is intended to provide timely information and resources to employees via the web browser on their desktops. eNet is a decentralized collection of web pages, data lookup services and applications that are managed as if they were a centralized enterprise resource. It is accessible to all personal computer workstations on the Port Authority Wide-Area Network (PAWANET). eNet is housed on servers at the Teleport.

Examples of business information hosted on eNet include:

- Departmental Websites
- Directories
- Corporate Announcements
- Reference Materials
- Document Collections
- Library Services
- News Displays
- Enterprise and Departmental Applications

## 5.2 Direction of eNet Development

eNet is intended to provide a convenient, timely and accurate source of information for Port Authority employees as well as providing access to enterprise and departmental applications. The owner of content on eNet is responsible for authorizing its publication, its accuracy and timeliness. Technology Services provides a common infrastructure and technical support for those departments that electronically publish agency information or make available electronic resources. Infrastructure standards and guidelines are recommended to ensure compatibility and facilitate maintenance. Departments requesting specific applications should discuss their requirements with eNet staff to determine a solution that best meets the department's business needs.

## 5.3 eNet Software Infrastructure Standards & Guidelines

Category	Software Name	Minimum Version
Browser:	Microsoft Internet Explorer	7.0
Browser Plug-in	Windows Media Player	10.0
	Adobe Acrobat Reader	9.0
	Macromedia Shockwave Player	9.0
Web Server Software	Sun One Web Server	6.1
	Microsoft IIS	5.0
Media Server Software	Microsoft Media Server	9.0
Application Server Software	Adobe Cold Fusion 9	7.0
Development and Design Tool	Adobe CS5	11.0
Database	Oracle Database	9i
	MS SQL Server	2008
	MS Access	2007
Programming Language/Scripts	ColdFusion MX	7.0
	Java	6.0
	PERL for Windows	5.0
	JavaScript	1.0
Search Engine Software	UltraSeek	5.7
Web Performance Monitoring	WebTrends Marketing Lab 2	2.0
Content Management	Stellent	7.5
	Open Text Website Management	10.1

### 5.3.1 Design Guidelines

We have developed the following guidelines to ensure that all web pages on eNet have a consistent look, feel and navigation scheme, while providing creative flexibility.

#### Departmental Web Site Standards and Guidelines

Prescribed standards are assigned to only the following items:

Resolution: Pages are designed for optimal viewing at the 1024x768 setting.  
Page Width: Each page has a fixed page width of 960 pixels.  
Page Justification: The entire page is center-justified within the browser window.  
Page Layout: Each web page will follow the same, basic layout:  
A Global Navigation strip;  
A Masthead;  
A Local Navigation strip;  
A Body area (with a 1-column, 2-column or 3-column layout);  
A Footer.

### 5.3.2 Accessibility Guidelines

TD's eBusiness Unit is committed to making all eNet content accessible to persons with disabilities. In order to ensure that all eNet web content is in compliance with accessibility guidelines and applicable legal requirements, contact the Webmaster via email at [webmaster@panynj.gov](mailto:webmaster@panynj.gov), or call 212-435-3294.

## 6.0 Workstation Hardware and Operating System Software

### 6.1 Overview

The Port Authority makes extensive use of computers (workstations) networked into an Enterprise Wide Area Network to accomplish its business objectives. For the purpose of this section, the term computer and/or workstation will be used to reference desktop, laptop and CAD computing devices. In order to ensure compatibility with the agency's enterprise network and to make optimal use of its resources, this section defines the standards governing workstations and their configuration and use.

### 6.2 Workstation Operating System Standard

The Port Authority's standard operating system for workstations is Microsoft's Windows XP Professional. The following are operating systems used within the Agency:

- Microsoft Windows XP SP3
- Microsoft Windows 7
- Apple OS X

### 6.3 Workstation Configuration

#### 6.3.1 Workstation Naming Conventions

All departmental workstations must contain a unique computer name which is the machine's serial number.

Example: Workstation name: 23AAH86

System Administrators are responsible for naming workstations and maintaining an up-to-date inventory of equipment and names used.

### 6.3.2 Automated Software Distribution for Computers

The Port Authority currently uses Microsoft System Center Configuration Manager (SCCM) 2012 to, at a minimum, do the following:

- Install new, or upgrade existing, software on Agency desktop, laptop, and CAD computers
- Create packages to automate system tasks (e.g. data migrations of desktop computers, eDiscovery requests, etc.).
- Bare Metal Provisioning of Servers.

### 6.3.3 Remote Workstation Management

The Port Authority also distributes software applications and upgrades via Novell's ZENworks. Each workstation should have Novell's Workstation Management module installed as part of the NetWare workstation client. This will enable remote distribution and updates of software, hardware inventory and workstation troubleshooting.

### 6.3.4 Drive Mappings

Computer drive mappings are automatically accomplished using a Microsoft login script. The script is executed upon successful login to the Agency's Microsoft domain.

### 6.3.5 Standard Workstation Hardware Configurations

There are standard configurations established for workstations and laptops. The standards specify the product approved for the following devices: processor, memory, storage, CD/DVD-ROM/multimedia and monitor. The following is current workstation standard:

**Lenovo ThinkStation D30 4223-CC9** - Custom PA configuration based on Lenovo Model 4223-69U; (1) Intel Xeon E5-2650 2.0Ghz 8core – (2) x 8GB RAM - (2) 500GB SATA HDD - NVIDIA Quadro 4000 2GB - Windows 7 Professional x64.

**Lenovo ThinkPad T430 2347-EZ4** - Custom PA configuration based on Lenovo Model 2347-G6U; i5-3320M, (2) x 4GB RAM, 14.0" High Definition+ Wide Screen Display, 720p Camera, 500GB 7200rpm Hard Drive, Backlit Keyboard-None, Intel 6205 PCIe mini card, PCIe WWAN upg, Finger Print Reader, Blue Tooth, Battery Cells 9, Intel vPro, Windows 7 Professional x64.

**Lenovo ThinkCentre M92p 3212-C14** - Tower - Custom PA configuration based on Lenovo Model 3212-C7U; 4x5 i5-3550, (2) x 4GB RAM 1600MHz, 250GB 7200 rpm hard drive, Bay DVD±RW, Media Reader-None, High Definition 2500 Graphics Card, Display Port Dongle-None, Chassis Intrusion Switch-None, Energy Star 5.2, Intel vPro, Global Program-None, Windows 7 Professional x64.

**NEC AccuSync AS191WM-BK** Flat Panel display- TFT-19 " widescreen1440 x 900 /250 cd/m2 1000:1 5ms 56 - 75 Hz Analog RGB 0.7 Vp-p/75 OhmsDVI-D and VGA 15-pin D-Sub

**NEC MultiSync EA243WM-BK** - LED monitor - 24" - 1920 x 1200 - TN - 250 cd/m2 - 1000:1 - 25000:1 (dynamic) - 5 ms - HDMI, DVI-D, VGA, DisplayPort - speakers - black

### 6.3.6 Standard Workstation Software

The following software is the standard Port Authority software for departmental workstations. New computer installations should conform to the existing standard.

### 6.3.6.1 Standard Workstation Software

The following list is a compilation of the core software components found on the computer Arc Build (commonly referred to as an image).

Windows XP, Professional Edition  
Lumension Patchlink  
System Center Configuration Manager - SCCM  
McAfee Antivirus  
Internet Explorer  
Microsoft Office Professional

Because technology is rapidly changing, TD should be consulted to obtain the most recent versions of standard software.

### 6.3.7 Enterprise Software

The following is a list of standard enterprise application software used in the Agency. The applications supported by third party service providers are: PeopleSoft, SAP and Livelink Content Management.

### 6.3.8 Other Business Applications

Other Enterprise applications are deployed on occasion to user workstations. This includes systems like the Business Expenses system, (BEAM) and BudgetPro. System Administrators are responsible for deploying the workstation clients and network server software according to standards and guidelines provided by the Technology Department.

Current list of Enterprise applications, is shown below –

AutoCAD	Oracle
BudgetPRO	PeopleSoft
Cognos Client Software	Primavera
Livelink	SAP
Microsoft Server	Schedulesoft
MS SQL	TRIM

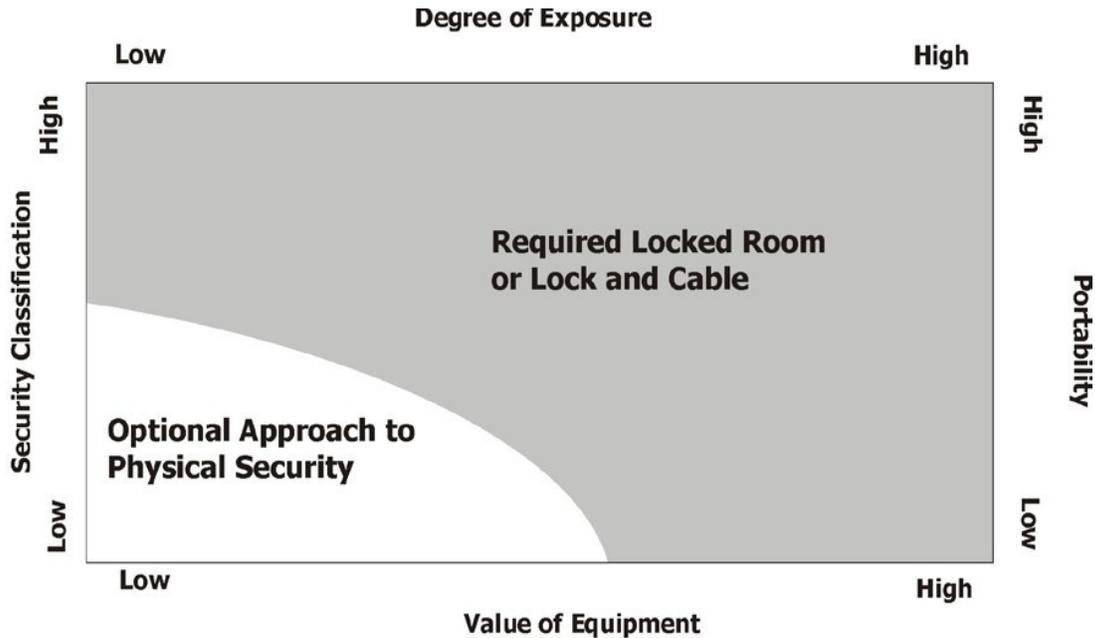
## 6.4 Workstation Security

Workstation users and their managers are responsible for the security of computer equipment and safeguarding critical corporate data and access to Port Authority network resources. This includes both the physical securing of equipment as well as logical safeguarding equipment and data.

### 6.4.1 Physical Security

The method of control should be based on the value of the equipment, the sensitivity of the data, its portability and the degree of exposure to theft. The department's Business Manager should make the appropriate determination of physical security required based on their best business judgment.

The graph below provides general guidance to Business Managers in determining the level of physical security required.



In all cases, laptops must be secured with a Lock/Cable product (e.g., Kensington).

#### 6.4.2 Logical Security

The Technology Department (TD) is responsible for providing for the security of computer resources and devices:

- Workstations are protected with Novell and Microsoft directory security mechanisms.
- Screen saver passwords are implemented with a maximum of a fifteen (15) minute time-out.
- All critical data are backed up nightly onto either external media or a network drive.

### 7.0 Distributed Systems Environment

#### 7.1 Overview

A number of enterprise servers provide critical application and system services. Different operating systems and configurations may be required for specific applications. This section provides information on the standards and guidelines for supported systems within the Port Authority.

#### 7.2 Microsoft Windows Servers

The standard for general-purpose application servers and File and Print Computing is IBM servers. Microsoft Windows 2003 & 2008 Server (Enterprise) are supported Operating Systems for application servers.

##### 7.2.1 Virtual Environment

The standard for Virtualization Computing is both IBM and NEC FT host servers. The Port Authority will provide a VMware ESX-based Guest Virtual Machine (VM) to operate all

Contractor- provided applications software on one of the above host computing platforms depending on the critical nature of the application.

All applications software shall be capable of operating in a virtual environment under VMware ESX server and shall operate in a VMware ESX-based Guest Virtual Machine (VM) on a 'shared' host- computing platform for Contractor application, unless performance or other requirements mandate a dedicated system.

### 7.2.2 Windows Data Encryption

For those applications that require additional data security measures, TD offers additional tools that provide encryption services to protect the data stored in the application's database, even from authorized individuals that have physical access to the applications and database servers but not the decryption key.

## 7.3 Unix

Sun/Oracle Solaris is the currently supported UNIX operating system for infrastructure (e.g., SMTP services) and corporate servers. RedHat Enterprise Linux Server is the supported operating system for infrastructure and corporate servers (e.g., SAP, Peoplesoft).

### 7.3.1 Unix Security

Unix and Linux servers must be physically and logically secured from unauthorized access. Operating system logical security is defined by the Technology Department (TD).

### 7.3.2 Backup

Critical system backup must be performed regularly (daily and/or weekly) utilizing our centralized backup strategy and associated tools. Extra copy of backup is kept offsite for disaster recovery purposes if required.

### 7.3.3 Download Scripts in the Unix/Linux Environment

- The script must be written in a generally supported language: Perl, Korn shell and Powershell. Powershell should be consistent with Microsoft standards and best practices.
- The script must be limited in access, as well as the script's owner's user account. The owner of the script should be able to read, edit, and execute the script, but no one else (with the exception of the root or administrator accounts).
- If the content being downloaded is public information or widely available on the Internet, File Transfer Protocol (FTP) may be used.
- For all other content, Secure FTP must be used, and a key exchange made with the entity who is providing the content. A username and password must be used when retrieving the content.
- If the entity cannot accommodate the use of SFTP, ftp may be used as long as the content is encrypted with a secure, widely used utility like PGP.
- Information and guidance on securing passwords should follow Recommendations of the National Institute of Standards and Technology.

## 7.4 z/OS

z/OS (currently release 1.5) is the IBM-supplied operating system on the IBM 2096-R07. This hardware/software supports multiple users and multiple applications. Provided on this platform for transaction-processing applications are TSO/E, ISPF, and CICS. The database is DB2, although other file structures are also supported.

### 7.4.1 Databases

Oracle 10.2.0.5 or higher and MS/SQL 2005 Server or higher are the supported database platforms for Port Authority systems. Auditing trail enabled for all database accounts with administrator privileges.

#### 7.4.2 Geospatial Databases

This GIS environment is built on an ESRI platform using ArcSDE for the spatial database. ArcGIS Server 10 and ArcSDE Version 10 are the supported platforms for the current GIS environment.

### 7.5 Application Security

TD recognizes the critical importance of application security and maintains a Best Practices document containing rules and recommendations for purchased applications, and those developed in-house.

### 7.6 Server Physical Security

All servers and communication equipment must be located in locked rooms or secured with a cable and lock with the keyboard secured to prevent tampering and unauthorized usage. The Business System Manager is responsible for determining the appropriate access control method (receptionist, metal key lock, magnetic card door locks, etc.) This person must also maintain a list of persons authorized to enter secured areas. Technology Department staff is available to provide technical assistance in making this determination.

### 7.7 Load Balancing – Failover Architecture

Depending on the requirements of the application, load balancing and failover architectures are supported.

## 8.0 Vendor Provided Dedicated Systems

### 8.1 Overview

Vendor Provided Dedicated Systems refers to the application software and possibly the computer hardware that may be furnished and/or installed by an outside contractor. These systems are usually procured through either a Request for Proposal (RFP), or a “Low Bid” contract and are

specifically engineered to support a dedicated application.

These systems generally support Capital Projects, which are usually large scale, multi-year engagements, requiring specialized technical and management staff, as well as, Systems Integration support. These projects normally have significant construction components and require the coordination, design and support from many diverse Engineering and Technology disciplines.

On all technology related projects a representative from the Technology Department (TD) provides a single point of contact for technology oversight, accountability, adhering to standards and systems integration, which is required under the Roles and Responsibilities of the Director and is expected by our client departments.

To ensure a successful project implementation and honoring our responsibility to the Agency and

our customers, one of the steps undertaken by TD is to provide guidance and focus attention on, adherence to and compliance with the Port Authority Technology Standards and Guidelines.

By following the Standards and Guidelines, it enables the Port Authority to

- Leverage large discounts negotiated in the various requirements contracts.
- Ensure that the seamless integration of equipment with other existing systems.
- Ensure that long-term maintenance and systems administration contracts are focused on the same product lines.
- Ensure that the relevant sections of the Standards and Guidelines are included in either, the basic design of a low bid contract or as requirements in an RFP. Responses to RFP's shall be reviewed for their compliance with the Standards and Guidelines.
- Deployment, integration and testing shall be monitored by TD to ensure that equipment or infrastructure is not duplicated, that the integration and migration plan will not adversely affect existing systems, and to integrate new systems under existing maintenance contracts where applicable.

In cases where a specific vendor or system is so specialized that it normally does not adhere to the hardware, software, infrastructure and operations guidelines of the Standards and Guidelines, the vendor shall be directed to work with TD in exploring all options. If an exception is required, the vendor should work with TD to prepare the necessary business case scenarios to receive written concurrence from the Chief Technology Officer for this deviation from the Port Authority Technology Standards and Guidelines.

## 8.2 Physical Security Technology Standards

### 8.2.1 Agency Standard for Digital Video Recording, Access Control and Alarm Monitoring

Based upon the Agency's investment and positive experience with Lenel's Systems OnGuard access control and alarm monitoring application offering as well as Verint Nextiva, CCTV and Digital Video recording technologies, these product sets are the Agency's standard. Below is a description of when these standards apply.

The Port Authority has long recognized the need for a corporate architecture for its security systems that would allow us to integrate digital video and access control recording compatible technologies agency-wide. Using these standards will improve the Agency's security posture and will permit us

to leverage additional operations and business benefits while keeping our operations resources, maintenance and support costs at a minimum.

The standard will also improve:

- Access to and the sharing of information from a centralized location
- Centralized monitoring of all facilities from an Emergency Operations Center
- The operational and cost-effectiveness of adding a variety of modular features to the core systems, such as paging, e-mail, fire systems, facility management, etc.
- Alarm notification, response, and acknowledgement
- Operational flexibility for facility and Public Safety staff
- Single learning curve
- Reduce the cost for maintenance and system administration

#### **Guidelines for using the Verint Nextiva standard include:**

1. If the CCTV system needs to be recorded
2. When an existing system is in place, at a PA facility or at a tenant facility that is monitored/reviewed by PA personnel, and needs to be upgraded or expanded to accommodate a particular project.
3. When rule based intelligence is to be added like motion detection and other related algorithm processes, all efforts should be made to ensure compatibility, functionality, maintainability (version upgrade resiliency) with the existing Verint

system.

4. If WEB based video needs to be made available
5. When monitoring at remote locations is needed to view on site operations and archived events via the corporate WAN
6. When live video monitoring is required
7. When distributed recording is required i.e. at multiple locations, concurrently
8. When network transport (communication) medium has limited bandwidth and the video needs to be sent to designated workstations on the network. All network transport tasks and bandwidth planning is required to be discussed with Technology Department before proposing any solutions
9. On all new projects where Verint Nextive is the current site base system
10. When the Office of Emergency Management (OEM) department needs override capabilities in the event of an emergency
11. If third party technology (non-Verint supplied) is required to be integrated with the current Verint system at a facility, that technology must be compatible with the existing Verint system at the particular facility. Any third party integrations need to be reviewed and approved by the Technology Department and be approved for use by the manufacturer (Verint) for the software version in production at the facility. When a (Verint) software upgrade is required in order to deploy a third party interface, that upgrade will have to be coordinated through TD, the facility, and the appropriate contractors(s).
12. Any server or workstation supplied in conjunction with a particular system must comply with the hardware and software requirements of both the Port Authority and the manufacturer of the video management software.  
For more information regarding CCTV standards, reference the CCTV Standards and Guidelines documentation.

**Guidelines for using the Lenel OnGuard standard include:**

1. All new or upgrade projects that require electronic card access and / or alarm monitoring
2. All projects that will have security that needs to be monitored by PA personnel or contractors (airports are monitored by contractors)
3. All new projects where Lenel OnGuard is the site base system currently
4. Where access is required to work with ID cards that exist and are compatible with the agency standard
5. When the OEM department needs override capabilities in the event of an emergency
6. If third party technology (non-Lenel supplied) is required to be integrated with the current Verint system at a facility, that technology must be compatible with the existing Verint system. Any third party integrations need to be reviewed and approved by the Technology Department and be approved for use by the manufacturer (Lenel) for the software version in production at the facility. When Lenel software upgrade is required in order to deploy a third party interface, that upgrade shall have to be coordinated through TD, the facility and the appropriate contractor(s).
7. Any expansion of card access systems (added card readers, sensors, etc.) need to be reviewed and approved by the Technology Department to ensure that the new devices meet the agency standards for card access(including but not limited to: card formats, badge layouts, encryption algorithms,etc.)
8. Any server or workstation hardware required in conjunction with a specific system must be provided by the Technology Department.

Currently the Access Control Task Force is working on the Access Control Standards for the Agency. The work is tentatively scheduled to complete by year-end 2013. The Access Control Standards documentation will be available upon completion.

### 8.2.2 Situational Awareness Platform Software

The Situational Awareness Platform Software (SAPS), is a software application that allows multiple, independently manufactured and installed security, life safety, and building systems to all interoperate under a single, common operating picture, giving a user access to information  
Version 7.5 (RFP – 46659)

spreading across multiple systems as if they were all one single system. This “common view” is made even more valuable by the incorporation of powerful, rules-based tools within the SAPS system, which allows intelligent linking of seemingly unrelated events into “Situations” that represent patterns of activity that pose a threat to security or site-wide operations.

The SAPS objective is to monitor the identity and event data from the various systems, identify incidents and anomalies, and detect trends that could be a threat to our facilities. SAPS turns data into actionable intelligence when an incident is detected. SAPS have the capability to automatically alert the security operations staff and push the information to security control centers and first responders.

- Provide a software platform to enable integrating the various electronic systems across all agency sites
- Provide a single software perform solution for situational awareness.
- Provide a single system database for reports
- The SAPS will provide transparent notification of security related events for all agency security systems.

### 8.3 Communications Infrastructure Standards

The Port Authority Standard for Communications Infrastructure is Cisco. This applies to all future systems, as well as, upgrades to existing systems. This standard ensures the interoperability of all deployed systems and permits the full integration of systems into PAWANET. In addition, all Cisco equipment either designed in a low bid contract or specified in an RFP must be purchased through the Cisco Requirements contract, which is administered by TD and permits the Agency to purchase equipment, maintenance and support services under the high discounts negotiated in the Requirements Contract.

This standard applies but is not limited to; Layer 2 and 3 Ethernet switches, Routers, Wireless Access Points (WAP), Mobile Access Routers (MAR), GIG E (Gigabit Ethernet) switching and networking and SONET (Synchronous Optical NETWORK) equipment. Deviation from this standard requires the written consent of the Chief Technology Officer.

### 8.4 Server Infrastructure Standard

The Port Authority’s standard platform for File & Print and Application servers is IBM.

Technology Services has contracted discounted pricing with our service provider for its servers and hardware support. In order for the agency to take full advantage of these savings, any new Application servers or File & Print servers must be built using IBM hardware purchased by TD. This includes turnkey and distributed systems where File & Print or Application servers are specified in the design. Any replacement File & Print or Application servers must be IBM servers. Deviation from this policy will not be allowed without prior approval of the Chief Technology Officer or his designee.

## 9.0 Wireless Technologies

### 9.1 Wireless Guidelines

#### 9.1.1 Purpose and Scope

This section references the standard policies and procedures for all wireless devices and technologies including voice and data capabilities that store, process, transmit or access data. This includes but is not limited to commercial and unlicensed wireless networks and laptops, cellular devices, scanning devices, messaging devices (email devices) and PDAs.

#### 9.1.2 General Policy

Employees will only use PA owned wireless devices to store, process, transmit or access PA data.

The following must be considered:

- Wireless Technologies Vulnerabilities Protection
- Minimum Requirements
- Identification and authentication at both the device and network level.
- Confidentiality encryption of data transmitted is required.
- Data end-to-end over an assured channel (a communication link with security protocol such as Secured Sockets Layer).
- At the device level, implement file system encryption where applicable.
- Devices should not be connected to PA systems for data synchronization, data transfer, or any other purpose without virus protection, mobile code restrictions (executable information delivered to information system and directly executed on any architecture that has appropriate host execution environment) and other preventative measures.

### 9.1.3 Personal Area Networks - PAN

PAN technologies should not be used for transmitting information without encryption.

Bluetooth security alone is unacceptable because it is not encrypted and does not use Federal Information Processing Standardization (FIPS) 140-1/2.

Wireless devices should be procured without Bluetooth embedded transmitters, when not possible transmitter should be disabled.

### 9.1.4 Wireless Local Area Networks –WLANs

#### 9.1.4.1 Overview

Business requirements have arisen throughout various Port Authority locations for the improved use of Wireless LAN technology to facilitate local user mobility. Research performed on the different technologies support the use of Cisco as opposed to various wireless vendors in an attempt to produce a standard that will provide the agency with a secure, robust and scalable solution as WLAN's continue to grow within the agency.

In summary, the current Port Authority Wireless LAN standards are based upon IEEE 802.11n draft 2.0 technologies. (802.11n is backwards-compatible with existing 802.11 a/b/g network adapters.)

The physical infrastructure is now based upon a centralized WLAN architecture that relies upon Cisco wireless bridges, access points, mesh routers and newly implemented controllers. WLAN's should be standardizing on the 4404 and 4402 controllers at this time as described further in this document.

Wireless LAN technology is continually developing with rapidly evolving industry standards, government regulations, and vendor products. As a result, the WLAN Standard presented in this document will likely be superseded in the future as the technology and products change.

## 9.2 Scope

The scope of this document shall present some standards for the Agency Wireless LAN and the specification of all devices and configurations.

## 9.3 Principles

At the highest level, the principles for the Wireless Standard are based upon the following attributes:

- Security - use of strong encryption (e.g. WPA-TKIP / WPA2- AES) for use as authentication of all traffic on a port-to-port basis, with the use of credentials stored on a back-end RADIUS server utilizing key distribution.
- Scalability - with LWAPP access points & use of LWAPP tunnels

- Reliability - via authentication of users to the networking enterprise mode.
- Manageability - via secured ports and VPN / FW access.

## 9.4 Compliance Requirements

All specifications defined in this document may be effective upon approval of and complete concurrence with TD's Chief Technology Officer, to update wireless standards and policies as per IEEE and Wi-Fi Alliance Standards

## 9.5 Device Specifications

The following sections will provide the various hardware components, and related firmware versions, that are specified for use in the Port Authority's WLAN solution.

### 9.5.1 Access Point (AP) Standard

Standards Details:

- 3600 AP's are the agency standard for WLAN deployment. These AP's have 802.11n 2.0 radios. Backward compatible to 802.11 a/b/g.
- 1310 AP/ Bridge is certified for use in unique situations where both internal and external antennae are supported. The major distinction is that of a more rugged chassis designed for higher-stress outdoor-type conditions. 3250 mobile routers for mesh deployments.
- AP Deployments will be Lightweight Access Point(LWAP)
- AP Standard Summary:
  - a) Two cables per pull during wiring for wired to wireless.
  - b) AP's & controller placements via RF propagation results.
  - c) PA supported standard AP's need to be verified with TD
  - d) If wireless is primary connection-'load-balance' AP' cabling connection to two different network switches
- WLAN Controller Standard  
This standard is in the process of being upgraded to Network Control System (NCS) & Identity Services Engine (ISE) Appliance to accommodate more advanced wireless deployments.

- **Best Practice**

The following information is industry best practices for wireless hardware implementation agency- wide deployments, not for wireless device configuration practices.

WLAN Best Practices Add-ons:

1. Ensure that the PA maintains an up-to-date wireless hardware inventory.
2. Identify rogue wireless devices via wireless intrusion prevention systems ( IPS )
3. Enable automatic alerts on the wireless IPS
4. Perform stateful inspection of connections.
5. Augment the firewall with a wireless IPS
6. Mount AP in location that do not permit easy physical access
7. Secure handheld devices with strong passwords
8. Enable WPA and WPA2 under ENTERPRISE mode
9. Synchronize the AP's clocks to match networking equipment.
10. Manage remote physical locations of all access points which support an isolated network that needs access to PAWANET for server farms and internet access.
11. Maintain cryptographic strength range from 128-bits to 256-bits with matching symmetric algorithms AES-128 to AES-256

Wireless Control System (WCS):

1. Single license

2. Secure "WIRELESS LOCATION APPLIANCE" with real-time client tracking & RF fingerprinting
3. Secure Windows-Based deployment as minimum, for example, windows server 2003; intel dual-core; 3.2 GHz; 4-GB RAM; 80-GB hard drive; IPS devices; IOS firewall routing; HTTP port 80; HTTPS port 443.
4. Multi-homed server (i.e., two NIC cards)
5. Secure WCS and IIS (i.e., internet information service), installation sequence
6. Create configuration group (configure multiple controllers)
7. Secure auto provisioning with filtering
8. Secure WCS with RF modeling for heat map planning
9. Secure 15 second alarm summary refresh

#### 9.1.5 Portable Electronic Devices (PEDs) – Cell Phones, PDAs, messaging devices, laptops and tablets

If a device receives information via a wireless technology, and that device allows that information to be placed directly into the corporate network at the workstation level, then all perimeters and host-based security devices have been bypassed. Therefore, the following procedures apply:

- PEDs connected directly to a PA wired network via a hot sync connection to a workstation shall not be permitted to operate wirelessly at the same time. Wireless solutions could create backdoors into corporate networks.
- IR, Bluetooth and 802.11 peer to peer should be set to "off" as the default setting. Mobile code should be downloaded only from trusted sources over assured channels.
- Anti-virus software should be on devices and workstations that are used to synchronize/transmit data, if available. Where not available on a device, you need to disable the synchronization capability or provide server or workstation based handheld anti-virus protection.
- PEDs are easily lost or stolen therefore approved file system/data store encryption software should be installed.
- PEDs need to be capable of being erased or overwritten to protect data. If the device is no longer needed and cannot be erased or overwritten, it must be physically destroyed.

#### 9.1.6 Cellular and Wireless Email

Cellular and wireless email devices are subject to several vulnerabilities (e.g. interception, scanning, remote command to transmit mode, etc). Therefore, the following procedures apply:

- These devices are not to be allowed into an area where classified information is being discussed unless it is rendered completely inoperable.
  - Must have end-to-end encryption.
- PC based redirectors are not allowed as it requires the PC to be active at all times only server based redirectors should be used.
- Electromagnetic sensing shall be periodically performed to detect unauthorized LANs, Bluetooth transmitters etc.

#### 9.1.7 Synchronization

Some synchronism systems will operate even if the workstation is locked and the wireless or handheld device is not registered with the sync application on the workstation. As long as the workstation is on, the user is logged on, the data application client (e.g. MS Outlook) is active, and the "hot sync" cable is attached to the workstation; any person can place a compatible wireless or handheld device in the "hot sync" cradle and download data. Therefore, the following procedures apply:

- "Hot sync" cable or cradle has significant security risks, therefore perform "hot sync", and then remove immediately once "hot sync" operation is complete.
- Secure "hot sync" cables and cradles.
- Use only PA approved third party sync access control software installed on all workstations.
- PA owned devices may only be synchronized with PA owned computer systems

### 9.1.8 Responsibilities of Technology Department

- Monitor and provide oversight of all PA wireless activities, insure interoperability of wireless capabilities across the agency.
- Develop appropriate technical standards and guidelines for secure wireless and handheld solutions.
- Establish a formal coordination process to ensure protection of PA information with PA information systems employing wireless technologies.
- Review and evaluate wireless technologies, products, solutions that meet PA requirements.
- Identify approved monitoring mechanisms for wireless devices to ensure compliance with policy.
- Periodically review approved wireless technology standards and procedures to ensure products and solutions remain compliant.
- Support risk management activities associated with evaluating wireless services
- Act as central coordination point and final approval authority for any exceptions to this policy.
- Define or approve acceptable wireless devices, products, services and usage.
- Provide immediate consultation to PA units.

### 9.1.9 Responsibilities of Technology Services Voice Networks Group

- Adhere to wireless procedures and standards, establish procedure for reviewing and approving requests for using wireless devices to store, process, or transmit information.
- Establish procedures for periodically reviewing approved wireless devices and services to ensure that the business requirement for device/service/system is still valid and meet current PA guidance.
- Establish procedures for inventory and control of wireless devices and equipment.
- Establish procedures and implementation plans for auditing wireless connections to the network.
- Provide user training.

### 9.1.10 Responsibilities of Wireless and Handheld Device Users

- Coordinate all requests through Technology Department...
- Read and follow standards and guidelines.
- Access information systems using only approved wireless hardware, software, solutions and connections.
- Take appropriate measures to protect information, network access, passwords and equipment.
- Use approved password policy and bypass automatic password saving features.
- Use extreme caution when accessing PA information in open areas where non-authorized persons may see PA info (airport lounge, hotel lobby).
- Protect PA equipment and information from loss or theft at all times, especially when traveling.
- Keep current anti-virus software on devices.
- Use appropriate Internet behavior (e.g. approved downloads).
- Exercise good judgments in efficient cooperative uses of these resources and comply with current and future standards of acceptable use and conduct at all times.
- Report any misuse of wireless devices, services or systems to management.

## 9.2 Paging Device Policy

### 9.2.1 Policy

The Port Authority obtains its paging services under governmental contracts. All orders for paging

service or equipment must be placed under these contracts. If the contract service provider cannot meet the paging requirements, a memorandum requesting approval to obtain paging service outside of the contract's must be sent to the Chief Technology Officer.

### 9.3 Cellular Phone & Wireless Modem Policy and Procedures

#### 9.3.1 Policy

The Port Authority obtains cellular service under governmental contracts. All orders for cellular service or equipment must be placed under these contracts. If the contract service provider cannot meet the requirements, a memorandum requesting approval to obtain cellular service outside of the contracts must be sent to the Chief Technology Officer.

### 9.4 Technology Services Mobile Device (Windows Mobile and Apple) Policy

#### 9.4.1 Introduction

Mobile devices are a class of handheld computers that currently offer limited functionality with compact size and portability. Mobile devices are designed to replace the paper organizer; functionality typically includes maintaining a date book, address list, to-do lists, email, etc. Additional functionality such as Word and Excel are already included in many Mobile devices, with further enhancements predicted.

In order to better serve the PA, and to limit the expense of supporting a wide variety of Mobile device hardware and software, Technology Services will support the use of the Windows and Apple IOS based devices.

With a Mobile device, a user can maintain their calendar, address book, to-do list, and e-mail on a platform that is very portable and easy to use. Integration with Outlook makes it possible for users to keep identical, synchronized copies of data on both the desktop application and the Mobile devices.

#### 9.4.2 Hardware – Hyper Link

Manufacturers using the current Windows Mobile or Apple IOS software are supported.

#### 9.4.3 Software

The current version of Windows Mobile or Apple IOS software are supported. Microsoft ActiveSync is used for connecting to the corporate E-Mail system.

Any software found to interfere with normal operation must be uninstalled in order to receive support from Technology Services.

#### 9.4.4 Support

Support for Mobile devices hardware and software is provided by Technology Services through the Customer Support Desk. TD will support the physical hardware connection (PDA cradle to PC) and software to support this connection. No software can be added to company owned mobile devices without TD's assistance and Chief Technology Officer approval.

#### 9.4.5 Training

Training will be available covering basic mobile devices use and integration with Outlook at the time of installation of the equipment. Training classes for the mobile devices may be provided in the future depending on user demands.

#### 9.4.6 Acquisition

The PA will purchase Mobile devices for employees with a business need for the mobile device. Employees are responsible for obtaining management approval. TD also recommends that a protective case (preferably a zippered case) be purchased to reduce damage to the

units.

Since the PA owns the device, if an employee leaves the PA, the device is returned to the director's office of their department.

#### 9.4.7 Personal Acquisition

Employees, who purchase their own mobile devices, will not be allowed to connect to the PA corporate network or equipment, unless approved by Technology Services.

Customer Support Desk personnel will support all PA owned and authorized mobile devices.

#### 9.4.8 Data Security Considerations

Since in most cases the data residing on a mobile device is not encrypted or password-protected, data can be easily browsed by anyone having possession of the device. Users should carefully consider what type of information they store on their mobile. Extreme caution should be taken when using company confidential data on the mobile units.

All mobile devices accessing corporate resources should be password protected.

At the present time, Technology Services is researching options for encrypting mobile data using a third-party application. Until a solution is found, great care should be taken to ensure that important or confidential information does not end up in the wrong hands.

#### 9.4.9 Data Backup

Though it does not happen often, it is possible to lose, damage or duplicate the data that resides in the mobile devices and PC applications. Technology Services will provide assistance in attempting to recover files or data from data corruption.

### 9.5 BlackBerry Device Policy & Procedure

The Port Authority provides corporate wireless e-mail services using the BlackBerry device from RIM.

The BlackBerry is a palm-sized device designed to synchronize with Outlook and other e-mail systems. With a BlackBerry device, one can read, compose and respond to e-mail messages and meeting requests, which are transmitted through the Port Authority's E-Mail System. The BlackBerry contains the user's synchronized Outlook "Contacts" address book, Outlook Calendar, memo pad and task list as well as a calculator and an Internet browser.

## 9.6 BlackBerry Guidelines

### 9.6.1 Introduction

BlackBerry devices (data only or combined data (e-mail) & voice) are available from most wireless carriers in the Port District. Combined BlackBerry devices are designed to replace stand-alone cellular telephones and stand-alone BlackBerry data devices and they operate on the same wireless network as a stand-alone cellular telephone from the same carrier.

### 9.6.2 Support

Support for BlackBerry devices is provided by Technology Services through the Customer Support Desk. The Customer Services/PMO Group provides additional support as needed.

### 9.6.3 Breakage and Loss

Be aware that the screen used on a BlackBerry device is very fragile. Dropping a device from the height of a desktop can result in breakage. It is also sensitive to water damage. Once this happens, the device is likely to be unusable. Broken, lost or stolen devices should be reported to the Customer Support Desk at 212-435-7469, who will notify the appropriate staff for further action. As with all PA equipment, BlackBerry devices should be used for business purposes only.

#### 9.6.4 Data Security Considerations

Data residing on a BlackBerry device can be easily browsed by anyone having possession of the device. Agency policy automatically activates the password security available on the device. Users should not disable this security feature. Users should carefully consider what type of information they store on their devices. Extreme caution should be taken when using company confidential data on the devices.

#### 9.6.5 Data Backup

Though it does not happen often, it is possible to lose, damage or corrupt the data that resides on the BlackBerry device. There are data backup features on the PC utilizing the BlackBerry Desktop Manager software. We recommend setting the advanced automatic backup to 7 days with the backup of all device application data. In the event of a lost or broken device, this backup may be used to recover lost data.

# Appendices

## Appendix 1 -- Business Resumption Plan Document Format

### I. PURPOSE

- Goals and objectives of plan
- Benefits obtained if plan properly implemented

### II. SCOPE OF PLAN

- Planning assumptions
- Facilities and resources included in plan

### III. NOMENCLATURE

- Recovery terms
- Definitions and acronyms

### IV. DISASTER SEVERITY DEFINITION

Define level of potential disaster based on impact to critical functions. Explain what degree of operational disruption would constitute each level of disaster:

- catastrophic
- serious
- major
- limited

### V. OPERATIONS RECOVERY PROCEDURES (Procedures for recovering services)

1. Indicate time frames in which essential operational/business functions must be resumed.
2. Specify sequence of operations recovery events and individuals responsible for activity. Note any specific activities required for particular levels of disaster severity. For example:
  - Notifications
  - Preliminary evaluation
  - Activate operations recovery personnel
  - Coordinate with emergency personnel
  - Evaluate recovery options and issue directive which details:
    - Assigned tasks
    - Project schedule/timeframe
    - Coordination required
    - Identify relocation activities, if required
    - External/internal status updates
3. Identify items required for backup of critical functions. For example:
  - Alternate work site
  - Hardware/software
  - Personal computers

- Necessary software packages
- Documentation
- Peripherals (printers, modems, etc.)
- Databases
- Emergency equipment
- Communications
- Transportation
- Supplies
- Security
- Operations and procedures manuals

**VI. OFFICE/FACILITY BUSINESS SITE RESTORATION PROCEDURES**  
(Procedures for restoring physical facilities)

- Identify restoration responsibilities
- Assess damage
- Develop restoration plan/timeframes

**VII. BRP UPDATE PROCEDURES**

- Specify responsibility for updating and communicating BRP changes
- Indicate frequency of review/update

## Appendix 2 -- Communication Rooms/Closets Standards

### SPACE

All data communication rooms must be designed with required and estimated space to meet immediate requirements, as well as, future growth.

### ENVIRONMENTAL

The following conditions must be met:

- a) Doorways/Entrances must be designed to support at least the minimum space requirements of 90"Hx72" Wx60" D.
- b) The room's cooling capabilities must be sufficient to support the heat dissipation requirements for the equipment. This requirement will be measured in minimum and maximum BTUs powered by AC-powered systems. Equipment specs will be supplied by TD upon request.
- c) Backup UPS systems are necessary to avoid equipment damage in case of site power failure.
- d) Telco demarcs must be located in a central location with sufficient space to house Telco termination equipment.
- e) The room should be designed with the appropriate fire safety regulations such as a sprinklers, pre-action of FM 2000 systems.
- f) Cables trays must also be installed in the communications room ceiling where appropriate, to support the routing of data communications and Telco cables.
- g) Basic 24"W/30"D/84"H cabinets with 19" racks must be installed to house communications equipment such as: routers, switches, hubs, DSUs/CSUs and monitors.
- h) To create more wall space the use of wall mount racks can be installed. Appropriate sized plywood must be installed prior to mounting racks.
- i) Category 5e/6 cable must be terminated in wall/rack mounted patch panel.
- j) Fiber patch panel must be installed in fiber IDF panel with SC female interface.
- k) The fiber must be neatly tie wrapped and enclosed in flexible inner-duct.
- l) Telephone access must be installed in the appropriate location to provide for basic troubleshooting and vendor support.
- m) All communications equipment and cabinets must have ample room for easy access and proper ventilation.

## Appendix 3 – Standard Cabling Schemes

- a) Teflon-coated cables will be installed per fire code regulations.
- b) Overhead cable trays and drop post must be installed for cable routing.
- c) Cabling scheme must be used to label and identify all cables. All cables must be neatly tie-wrapped.

## Appendix 4 -- Unified Wiring Plan

To satisfy existing and future voice and data communications requirements, while minimizing the need for wiring changes and additions, the Port Authority has adopted the following lateral wiring specifications for all workstations being constructed. This plan is applicable to all PA locations, except when specifically noted.

### LATERAL CABLE:

Voice and data telecommunications requirements for each workstation will be provided by a combination of three individual cables, installed between the workstation and the serving telephone closet / intermediate distribution frame (IDF), in a "home run" configuration. All cabling installed will be of plenum type, fire retardant (FEP) rated.

Cable specifications:

(3) Cables capable of supporting Category 5e capabilities as outlined in the TIA/EIA-568-B.2 standard. Specifically:

Gauge: 24 AWG Pair

Size: 4

Insulation: Plenum, fire code rating (FEP)

Cable allocations will be as following:

Cable #1: Voice\*\* Cable

#2: Data

Cable #3: Data

- \*100.0MHz is the speed the PA wants to deliver to the desktop.
- \*\*Cable #1 is to be split in the workstation to support 2 telephones.

Technical specs for the Cat 5e cable is as follows

### TECHNICAL DATA - ELECTRICAL

Frequency MHz	Horizontal		Patch	
	Attenuation dB/100 m max.	Next dB min.	Attenuation dB/100 m max.	Next dB min.
1	2	62.3	2.4	62.3
4	4.1	53.2	4.9	53.2
10	6.5	47.3	7.8	47.3
16	8.2	44.2	9.8	44.2
20	9.3	42.7	11.1	42.7
31.25	11.7	39.8	14.1	39.8
62.5	17	34.3	20.4	34.3
100	22	32.3	26.4	32.3

**TECHNICAL DATA--PHYSICAL**

	CMR	CMP	CM (Patch)*
	0.02	20	24
Conductor diameter-in. (mm)	-0.52	-0.52	-0.61
Cable diameter-in. (mm)	0.195 -5	165 -4.2	215 -5.5
Nominal cable weight-lb./kft. (kg/km)	21 (31)	21 (31)	23 (34.2)
Max. installation tension-lb. (N)	25 -110	25 -110	25 -110
Min. bend radius-in. (mm)	1 -25.4	1 -25.4	1 -25.4

\* Patch cables utilize stranded tinned copper conductors

PARAMETRIC MEASUREMENTS		
	Horizontal	Patch
Mutual Capacitance	4.6 nF/100 m nom.	5.6 nF/100 m nom.
DC resistance	9.38 Ohms/100 m max.	9.09 Ohms/100 m max.
Skew	45 ns/100 m max.	45 ns/100 m max.
Velocity of Propagation	72% nom. Non Plenum	72% nom.
Input Impedance	100 + 15% 0.7772-100 MHz	100 + 15% 0.772-100MHz
	ISO/IEC 11801	

COLOR CODE			TEMPERATURE RATING	
Pair 1	White/Blue	Blue	Installation	0 degrees C to +50
Pair 2	White/Orange	Orange	Operation	-10 degrees C to +60
Pair 3	White/Green	Green		
Pair 4	White/Brown	Brown		

## Appendix 5 -- Telephone Closet / IDF Termination Blocks

Lateral Data cabling serving each workstation will be terminated on a CAT5e/6 patch panel (RJ45 face, 110 punch rear) in the telephone closet. For analog phone service, termination is to be on 110 blocks in telephone closet, allowing access to the telephone riser. For data, a patch cord is installed between patch panel and IT device. The patch panel can be mounted on the wall with a wall mount kit or in a rack if one is needed and should be appropriately numbered with the workstation number. The patch panel must be capable of supporting Category 5e/6 the TIA/EIA-568-B.2 standard. The patch panel shall have a swing away faceplate or rack mountable.

NOTE: The Category 5e/6 patch panel should be equivalent to the AMP SL series 110Connect Category 5e/6 patch panel or approved Category 6 patch panel. The number of ports may vary.

Each workstation shall be assigned a unique station identification number.

## Appendix 6 -- Workstation Jacks

Workstations will be equipped with various components of the AMP Communications Outlet system (AMP equivalent can be used with TD approval). Each workstation will be installed with (1) double-gang jack housing box and matching face plate, capable of securely mounting three Category 5e cables or Category 6 and four modular data connectors, maintaining the integrity of category 5e/ Category 6 capabilities as outlined in the TIA/EIA-568-B.2 standard. All workstation jacks will be wired in accordance with the TIA/EIA-568-B.2 standard. All modular jacks are to be labeled in accordance with TD number schema.

## Appendix 7 -- Standard Switches Inside the Department

Any switches in the following Cisco series are acceptable (Vendors will consult with the Technology Department (TD) to determine the appropriate switch configuration at the time of proposal submission):

- Cisco 3000 series – low capacity
- Cisco 4000 series – medium capacity
- Cisco 6000 series – high capacity
- Cisco Nexus 7000 series – high capacity

## Appendix 8 -- Workstation and Lateral Cable Identification Management

### WORKSTATION AND LATERAL CABLE IDENTIFICATION/MANAGEMENT (Facility)

All lateral cabling installed to workstations at the Port Authority Facilities must be designated in accordance with the Port Authority's workstation and lateral cable identification code: This code consists of two elements, as follows:

- 1 - Room number or department name (acronyms are acceptable).
- 2 - Workstations (3 numeric digits)

The cable identification code for Workstation 10 in room 3801 at LGA CTB is 3801-010. The cable identification code for Workstation 15 in PA Automotive shop is Auto-015

## Appendix 9 – Fiber Optic Specification for Network Services - PAWANET

### General Scope of Work

1. Conduct a walk thru based on the specific Scope of Work for the job in question.
2. Note that all diagrams and or sketches that may be provided are approximates and not to scale.
3. All fiber optic cable is to be installed in rigid conduit or, where applicable, in plenum rated flexible inner duct.
4. Contractor shall furnish and install fiber optic cable as designated in the specific Scope of Work.
5. Fiber optic cable type for interoffice use shall be loose tube, with aramid yarn water block:
  - Singlemode Fiber – 8.3/125/250 micron diameter (core/cladding/coating) manufactured by General Cable or approved equal.
6. Fiber optic cable attenuation from the factory, before installation, shall not exceed:
  - Singlemode – 4db per km @ 1310nm/.3 db per km @ 1550nm
7. All fiber optic cable is to be labeled on each end and at any junction or patch panel with, 28 gauge, 2” wide embossed with ¼” high letters. The labels are to be fastened to the fiber optic cable using sealed wrap around labels or pliable Velcro ties.
8. Fiber optic cable shall be installed in accordance with the manufacturer’s specifications. Any portion of the cable damaged during installation will be repaired or replaced by the contractor without any additional cost to the Port Authority of New York New Jersey.

### Fiber Optic Terminations

1. Fiber optic terminations will use **SC** connectors unless otherwise specified in the Scope of Work.
2. Fiber optic terminations shall not yield more than 1db per mated (at the bulkhead) connector.

### Fiber Optic Testing

1. Fiber optic testing shall be performed by the contractor and certified fiber optic technicians.

Fiber optic technicians will be prepared to complete test procedures with the following equipment:

- Source and power meter testing to provide optical loss measurements.
  - Reference test cables and mating adapters that match the cables to be tested.
  - Cleaning materials – lint free cleaning wipes and pure alcohol.
  - OTDR test set with the proper launch cables and adapter types.
  - Power loss testing from both ends.
2. Fiber optic technicians will perform OTDR test on all terminated fibers unless otherwise noted in the Scope of Work.
  3. Fiber optic test results shall be recorded, and reports provided to the PA in hardcopy and via a readable txt file (PDF or RTF is acceptable).

## Appendix 10 -- Public Telephone Ordering Guidelines

Technology Services (TD) staff is responsible for the management of the permit for public telephone service are available to answer any questions and provide direction for any matter relating to public telephones.

### **General Guidelines**

All public telephone requests – that is both coin and non coin in any Port Authority space or any area of the tenant space – both “public” and “club” locations will be coordinated by the Port Authority to cover both New York and New Jersey.

### **Process**

When the Facility, Property Manager, tenant or their representative (e.g. designer, architect, general contractor) has a public telephone requirement, they will contact the Technology Department (TD) whom will review the request and provide coordination with the appropriate service provider.

**P.A. Agreement #415-\*\*-\*\*\***

DATE

FIRM

ADDRESS

CITY, ST ZIP

Attention: CONTACT, TITLE

**SUBJECT: PERFORMANCE OF EXPERT PROFESSIONAL SERVICES FOR  
NEWARK LIBERTY INTERNATIONAL AIRPORT TERMINAL A  
REDEVELOPMENT PROGRAM – DESIGN OF THREE (3) MULTIPLE-  
SPAN BRIDGE STRUCTURES, AT-GRADE ROADWAYS AND  
ASSOCIATED SIGNAGE AND APPURTENANCES**

Dear CONTACT:

1. The Port Authority of New York and New Jersey (hereinafter, the "Authority") hereby offers to retain FIRM NAME (hereinafter, "the Consultant" or "you") to provide expert professional services as more fully set forth in Attachment A, which is attached hereto and made a part hereof.

2. This Agreement shall be signed by you and the Authority's Chief Procurement Officer. As used herein "Chief Engineer" shall mean the Chief Engineer, or the Deputy Chief Engineer of the Authority, acting either personally or through their duly authorized representatives acting within the scope of the particular authority vested in them unless specifically stated to mean acting personally.

For the purpose of administering this Agreement, the Chief Engineer has designated DAR NAME, TITLE, to act as his duly authorized representative. The Project Manager for this project is NAME, at (\*\*\*) \*\*\*-\*\*\*\*, or e-mail address [\\*\\*\\*@panynj.gov](mailto:***@panynj.gov).

3. Your services shall be performed as expeditiously as possible and at the time or times required by the Chief Engineer. Time is of the essence in the performance of all your services under this Agreement.

4. In order to effectuate the policy of the Authority, the services provided by the Consultant shall comply with all provisions of federal, state, municipal, local and departmental laws, ordinances, rules, regulations, and orders which would affect or control said services as if the services were being performed for a private corporation, unless the Authority standard is more stringent, in which case the Authority standard shall be followed, or unless the Consultant shall receive a written notification to the contrary signed by the Chief Engineer personally, in which case the requirements of said notification shall apply.

5. The Consultant shall meet and consult with Authority staff as requested by the Chief Engineer in connection with the services to be performed herein. Any Contract Drawings and Technical Specifications and other items to be submitted or prepared by the Consultant hereunder shall be subject to the review of the Chief Engineer. The Chief Engineer may disapprove if, in his sole opinion said items are not in accordance with the requirements of this Agreement, sound engineering principles, or accepted professional standards, or are impractical, uneconomical, or unsuited in any way for the purpose for which the contemplated construction, or services is intended. If any of the said items or any portion thereof are so disapproved, the Consultant shall forthwith revise them until they meet the approval of the Chief Engineer, but the Consultant shall not be compensated under any provision of this Agreement for performance of such revisions. No approval or disapproval or omission to approve or disapprove, however, shall relieve the Consultant of its responsibility under this Agreement to furnish the requested services in accordance with an agreed upon schedule, a complete, practical, economical design and Contract Drawings and Technical Specifications, and corrections and changes therein which are best suited for the contemplated construction, or services, are done in accordance with sound engineering principles and are signed and sealed by a licensed Professional Engineer.

6. When services to be performed by the Consultant include the preparation of contract documents, or the performance of post award services, the Consultant shall submit its specific Quality Control/Assurance Program to the Chief Engineer prior to the performance of said services. Upon completion of specific services requested hereunder, the Consultant shall submit a letter to the Chief Engineer certifying the Consultant's conformance with the aforementioned Quality Control/Assurance Program.

7. When the services to be performed by the Consultant include the preparation of computer aided design and drafting (CADD) documents, said documents must be prepared using the latest available revision of Autodesk's "AUTOCAD" software or as directed by the Engineer prior to the performance of specific services. All drawings shall be prepared in strict conformance to the Port Authority CAD Standards. All submissions of CAD drawings shall be submitted to the Authority on compact discs, USB drives, uploaded to the Project Website, or as otherwise required in DWG and DWF format in accordance with the Port Authority CAD Standards.

8. You shall not continue to render services under this Agreement after the point at which the total amount to be paid to you hereunder including reimbursable expenses reaches the amount of \$\*\*\* unless you are specifically authorized in writing to so continue by the Chief Engineer. If no such authorization is issued, this Agreement shall be terminated without further obligation by either of the parties as to services not yet performed, but you shall be compensated as hereinafter provided for services already completed. It is understood, however, that this limitation shall not be construed to entitle you to the above amount as a minimum compensation.

9. As full compensation for all your services and obligations in connection with this Agreement, the Authority will pay you the total of the amounts computed under subparagraphs A, B, C, D and E below, subject to the limits on compensation and the provisions set forth in paragraph 8 above. Subject to the terms and conditions below, travel time is not reimbursable under subparagraphs A, B, and C hereunder.

A. The Consultant will be compensated at an amount equal to \*.\* times the actual salaries paid by you to professional and technical personnel (but not partners or principals) for time actually spent by them in the performance of services hereunder, plus an amount equal to the number of hours actually spent by partners and principals in the performance of services hereunder times the billing rate (no multiplier applied) described below but in each case excluding premium payments for overtime work or night work or for performing hazardous duty. Attached hereto is a schedule of actual salaries and titles of architects, engineers, technical staff, or other permanent professional and technical personnel employed by you, as well as rates customarily billed for partners and principals on projects such as this. Said staffing analysis shall clearly indicate any of your employees, proposed by you to perform the requested services that are former Authority employees. For compensation purposes under this Agreement, no said salary or amount shall exceed the salary or amount received by said personnel or rate customarily billed for a partner or principal as of the effective date of this Agreement unless the Chief Engineer has been notified in advance, in writing, of the increased salary, rate or amount and approves the increase.

The Consultant shall verify that its employees, or subconsultants, working under this Agreement are legally present and authorized to work in the United States, as per the federally required I-9 Program. Furthermore, upon request of the Authority, the Consultant shall furnish, or provide access to the Authority, federal Form I-9 (Employment Eligibility Verification) for each individual hired by the Consultant, performing services hereunder. This includes citizens and noncitizens.

The Authority reserves the right of approval of all personnel, amounts, billing rates and salaries of said personnel performing services under this Agreement. When requesting salary or billing rate adjustments for one or more of its personnel, the Consultant shall submit his/her name, title, current direct hourly rate or billing rate, proposed new direct hourly salary or billing rate, resulting percentage increase, effective date, and reason for the requested change setting forth in detail any increased costs to the Consultant of providing the services under this Agreement which has given rise to the request for increased salary. For adjustments submitted after the effective date of this Agreement it is the intention of the Authority to grant an increase if the Consultant demonstrates compliance with all of the following conditions: that increases in salary, or partner's or principal's billing rate or amount are in a) accordance with the program of periodic merit and cost of living increases normally administered by it, b) are warranted by increased costs of providing services under this Agreement, c) are based upon increases in salaries and billing rates which are generally applicable to all of Consultant's clients, and d) are in accordance with the Authority's salary rate increase policy for the current year for Authority employees possessing comparable skills and experience. If during any calendar year, Authority limits are not available to the Consultant in a timely fashion, increases falling within such limits may be approved retroactively, as appropriate. The amount of increase in salary or billing rate, if any, to be applicable under this Agreement will therefore in all cases be finally determined by the Chief Engineer or their designee, in their sole and absolute discretion.

Notwithstanding the above, the multiplier set forth in the first line of this subparagraph shall be applied only in the case of personnel other than partners or principals who are permanent employees.

B. Premium payments for overtime work or night work or for performing hazardous duty, actually paid to professional and technical employees, but not partners, principals for time actually spent by them in the performance of services hereunder when such overtime or other premium payments have been demonstrated to be in accordance with the Consultant's normal business practice and have been authorized in advance by the Chief Engineer in writing. The Project Manager for the Authority shall have the right to authorize and approve premium payments up to a total amount of one thousand dollars (\$1,000) per occasion. Payments above said total amount shall be subject to the prior written authorization of the Chief Engineer. Such premium payments to supervisory employees, who do not receive such payments in the Consultant's normal business practice shall not be given under this Agreement.

C. Amounts actually paid to subconsultants hereunder who have been retained after the written approval by the Chief Engineer of the subconsultant and the compensation to be paid the subconsultant. The Consultant shall submit a copy of the terms and conditions of the subconsultant's compensation (including multiplier, if applicable), as well as an estimate of the number of hours required by the subconsultant to perform his services, as part of any request for approval of the subconsultant.

D. Out-of-pocket expenses, approved in advance by the Chief Engineer, necessarily and reasonably incurred and actually paid by you in the performance of your services hereunder. Out-of-pocket expenses are expenses that are unique to the performance of your services under this Agreement and generally contemplate the purchase of outside ancillary services, except that for the purpose of this Agreement, out-of-pocket expenses do include amounts for long distance telephone calls; rentals of equipment; travel and local transportation; and meals and lodging on overnight trips.

Notwithstanding the above the Authority will pay an amount approved in advance by the Chief Engineer and computed as follows for the reproduction of submittal drawings, specifications and reports:

1) If the Consultant uses its own facilities to reproduce such documents, an amount computed in accordance with the billing rates the Consultant customarily charges for reproduction of such documents on agreements such as this, or

2) If the Consultant uses an outside vendor for the reproduction of such documents, the actual, necessary and reasonable amounts for the reproduction of such documents.

The Authority will not pay for expenses that are usually and customarily included as part of the Consultant's overhead. For the purposes of this Agreement out-of-pocket expenses do not include amounts for typing, utilization of computer systems, computer aided design and drafting (CADD), cameras, recording or measuring devices, flashlights and other small, portable equipment, safety supplies, phones, telephone calls, electronic messaging including Fax, Telex and telegrams, or expendable office supplies. Unless otherwise indicated, required insurance is not a reimbursable expense.

When the Consultant uses its personal vehicle to provide services within the Port District, the Consultant will be reimbursed for travel expenses beyond normal commuting costs at a rate not higher than the Annual Federal Mileage Reimbursement Rate (as determined by the United

States General Services Administration (GSA) – <http://www.gsa.gov/portal/content/100715>) per mile traveled by auto.

When the Consultant is asked to provide services outside the Port District, the actual cost of transportation as well as the cost for hotel accommodations and meals will be reimbursable hereunder when approved in advance in writing by the Chief Engineer. The cost for all meals and lodging on approved overnight trips are limited to the amounts established by the GSA for that locality.

GSA Domestic Rates: <http://www.gsa.gov/portal/category/21287>

You shall obtain the Chief Engineer's written approval prior to making expenditures for out-of-pocket expenses in excess of one-thousand dollars (\$1,000) per specific expenditure and for all overnight trips, which are reimbursable expenditures as set forth above. You shall substantiate all billings for out-of-pocket expenses in excess of twenty-five dollars (\$25) with receipted bills and provide said receipts with the appropriate billing.

E. As used herein:

"Port District" is an area comprised of about 1,500 square miles in the States of New York and New Jersey, centering about New York Harbor. The Port District includes the Cities of New York and Yonkers in New York State, and the cities of Newark, Jersey City, Bayonne, Hoboken and Elizabeth in the State of New Jersey, and over 200 other municipalities, including all or part of seventeen counties, in the two States.

"Salaries paid to employees" or words of similar import means salaries and amounts actually paid (excluding payments or factors for holidays, vacations, sick time, bonuses, profit participations and other similar payments) to architects, engineers, designers, drafters or other professional and technical employees of the Consultant, for time actually spent directly in the performance of technical services hereunder and recorded on daily time records which have been approved by the employee's immediate supervisor, excluding the time of any employee of the Consultant to the extent that the time of such employee of the Consultant is devoted to typing/word processing, stenographic, clerical or administrative functions. Such functions shall be deemed to be included in the rates referred to in subparagraph A above.

10. You shall keep, and shall cause any subconsultants under this Agreement to keep, daily records of the time spent in the performance of services hereunder by all persons whose salaries or amounts paid thereto will be the basis for compensation under this Agreement as well as records of the amounts of such salaries and amounts actually paid for the performance of such services and records and receipts of reimbursable expenditures hereunder, and, notwithstanding any other provisions of this Agreement, failure to do so shall be a conclusive waiver of any right to compensation for such services or expenses as are otherwise compensable hereunder. The Authority will have the right to audit all such records.

The Authority will have the right to inspect your records, and those of your subconsultants, pertaining to any compensation to be paid hereunder, such records to be maintained by you and your subconsultants for a period of one year after completion of services to be performed under this Agreement.

11. On or about the fifteenth (15<sup>th</sup>) day of each month, you shall render a bill for services performed and reimbursable out-of-pocket expenses incurred in the prior month, accompanied by such records and receipts as required, to the Project Manager. Each invoice shall bear your taxpayer number and the purchase order number provided by the Chief Engineer. Upon receipt of the foregoing, the Chief Engineer will estimate and certify to the Authority the approximate amount of compensation earned by you up to that time. As an aid to you the Authority will, within fifteen (15) days after receipt of such certification by the Chief Engineer, advance to you by check the sum certified minus all prior payments to you for your account.

12. The Authority may at any time for cause terminate this Agreement as to any services not yet rendered, and may terminate this Agreement in whole or in part without cause upon three (3) days notice to you. You shall have no right of termination as to any services under this Agreement without just cause. Termination by either party shall be by certified letter addressed to the other at its address hereinbefore set forth. Should this Agreement be terminated in whole or in part by either party as above provided, you shall receive no compensation for any services not yet performed, but if termination is without fault on your part, the Authority will pay you as the full compensation to which you shall be entitled in connection with this Agreement the amounts computed as above set forth for services completed to the satisfaction of the Chief Engineer through the date of termination, minus all prior payments to you.

13. You shall not issue or permit to be issued any press release, advertisement, or literature of any kind, which refers to the Authority or the services performed in connection with this Agreement, unless you first obtain the written approval of the Chief Engineer. Such approval may be withheld, if for any reason the Chief Engineer believes that the publication of such information would be harmful to the public interest or is in any way undesirable.

14. Under no circumstances shall you or your subconsultants communicate in any way with any contractor, department, board, agency, commission or other organization or any person whether governmental or private in connection with the services to be performed hereunder except upon prior written approval and instructions of the Chief Engineer, provided, however that data from manufacturers and suppliers of material shall be obtained by you when you find such data necessary unless otherwise instructed by the Chief Engineer.

15. Any services performed for the benefit of the Authority at any time by you or on your behalf, even though in addition to those described herein, even if expressly and duly authorized by the Authority, shall be deemed to be rendered under and subject to this Agreement (unless referable to another express written, duly executed agreement by the same parties), whether such additional services are performed prior to, during or subsequent to the services described herein, and no rights or obligations shall arise out of such additional services.

16. No certificate, payment (final or otherwise), acceptance of any work nor any other act or omission of the Authority or the Chief Engineer shall operate to release you from any obligations under or upon this Agreement, or to estop the Authority from showing at any time that such certificate, payment, acceptance, act or omission was incorrect or to preclude the Authority from

recovering any money paid in excess of that lawfully due, whether under mistake of law or fact or to prevent the recovery of any damages sustained by the Authority.

17. Mylars of the contract drawings, originals of technical specifications, estimates, reports, records, data, charts, documents, renderings, computations, computer tapes or disks, and other papers of any type whatsoever, whether in the form of writing, figures or delineations, which are prepared or compiled in connection with this Agreement, shall become the property of the Authority, and the Authority will have the right to use or permit the use of them and of any ideas or methods represented by them for any purpose and at any time without compensation other than that specifically provided herein. The Consultant hereby warrants and represents that the Authority will have at all times the ownership and rights provided for in the immediately preceding sentence free and clear of all claims of third persons whether presently existing or arising in the future and whether presently known to either of the parties to this Agreement or not. This Agreement shall not be construed, however, to require the Consultant to obtain for the Consultant and the Authority the right to use any idea, design, method, material, equipment or other matter which is the subject of a valid patent, unless owned by the Consultant, or subconsultant, or an employee of either. Whether or not your Proposal is accepted by the Authority, it is agreed that all information of any nature whatsoever which is in any way connected with the services performed in connection with this Agreement, regardless of the form of which it has been or may be given by you or on your behalf, whether prior or subsequent to the execution of this Agreement, to the Authority, its Commissioners, officers, agents or employees, is not given in confidence and may be used or disclosed by or on behalf of the Authority without liability of any kind, except as may arise under valid existing or pending patents, if any.

18. If research or development is furnished in connection with the performance of this Agreement and if in the course of such research or development patentable subject matter is produced by the Consultant, his officers, agents, employees, or subconsultants, the Authority will have, without cost or expense to it, an irrevocable, non-exclusive royalty-free license to make, have made, and use, either itself or by anyone on its behalf, such subject matter in connection with any activity now or hereafter engaged in or permitted by the Authority. Promptly upon request by the Authority, the Consultant shall furnish or obtain from the appropriate person a form of license satisfactory to the Authority, but it is expressly understood and agreed that, as between the Authority and the Consultant the license herein provided for shall nevertheless arise for the benefit of the Authority immediately upon the production of said subject matter, and shall not await formal exemplification in a written license agreement as provided for above. Such license agreement may be transferred by the Authority to its successors, immediate or otherwise, in the operation or ownership of any real or personal property now or hereafter owned or operated by the Authority but such license shall not be otherwise transferable.

19. Notwithstanding anything to the contrary herein, the work product of the Consultant, its officers, agents, employees, or sub-consultants which is produced in accordance with the Agreement, whether it consists of computer programming or documentation thereof, including source code, and on any media whatsoever, shall be deemed to belong exclusively to the Authority, and the Authority will have the exclusive right to obtain and to hold in its own name

any and all copyrights, patents, trade secrets, or other proprietary rights and protection as may be produced as part of this work product, including the right to extensions or renewals, where appropriate. The work product shall not be destroyed or released to anyone outside of the Engineering Department without express written authorization of the Chief Engineer. The Authority will have the exclusive right to use or permit the use of them and any ideas or methods represented by them for any purpose and at any time without other compensation than that specifically provided for herein. You agree to contract with your employees for the benefit of the Authority to insure that the Authority has such rights and to give to the Authority or any party designated by the Authority all assistance reasonably required to perfect the rights herein above stated. You shall indemnify and hold harmless the Authority against any claims of proprietary rights infringement arising out of such use of your work product.

20. You shall promptly and fully inform the Chief Engineer in writing of any intellectual property disputes, as well as patents or patent disputes, whether existing or potential, of which you have knowledge, relating to any idea, design, method, material, equipment or other matter related to the subject matter of this Agreement or coming to your attention in connection with this Agreement.

21. You shall promptly and fully inform the Chief Engineer, in writing, of any patent or patent dispute, whether existing or potential, of which you have knowledge, relating to any idea, design, method, material, equipment or other matter related to the subject matter of this Agreement or coming to your attention in connection with this Agreement.

22. This Agreement being based upon your special qualifications for the services herein contemplated, any assignment, subletting or other transfer of this Agreement or any part hereof or of any moneys due or to become due hereunder without the express consent in writing of the Authority shall be void and of no effect as to the Authority, provided, however, that you may sublet services to subconsultants with the express consent in writing of the Chief Engineer. All persons to whom you sublet services, however, shall be deemed to be your agents and no subletting or approval thereof shall be deemed to release you from your obligations under this Agreement or to impose any obligation on the Authority to such subconsultant or give the subconsultant any rights against the Authority.

23. The Authority has a long-standing practice of encouraging Minority Business Enterprises (MBEs) and Women Business Enterprises (WBEs) to seek business opportunities with it, either directly or as subconsultants or subcontractors. "Minority-owned business" or "MBE" means a business entity which is at least fifty-one percent (51%) owned by one (1) or more members of one or more minority groups, or, in the case of a publicly held corporation, at least fifty-one percent (51%) of the stock of which is owned by one (1) or more members of one (1) or more minority groups; and whose management and daily business operations are controlled by one (1) or more such individuals who are citizens or permanent resident aliens. "Women-owned business" or "WBE" means a business which is at least fifty-one percent (51%) owned by one or more women; or, in the case of a publicly held corporation, fifty-one percent (51%) of the stock of which is owned by one (1) or more women; and whose management and daily business

operations are controlled by one (1) or more women who are citizens or permanent resident aliens.

"Minority group" means any of the following racial or ethnic groups:

A. Black persons having origins in any of the Black African racial groups not of Hispanic origin;

B. Hispanic persons of Puerto Rican, Mexican, Dominican, Cuban, Central or South American culture or origin, regardless of race;

C. Asian and Pacific Islander persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian subcontinent or the Pacific Islands;

D. American Indian or Alaskan Native persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification.

The Authority has set a goal of twelve percent (12%) participation by qualified and certified MBEs and five percent (5%) to qualified and certified WBEs on technical service projects.

To be "certified" a firm must be certified by the Authority's Office of Business Diversity and Civil Rights.

In order to facilitate the meeting of this goal, the Consultant shall use every good-faith effort to utilize subconsultants who are certified MBEs or WBEs to the maximum extent feasible.

The Authority has a list of certified MBE/WBE service firms which is available to you at <http://www.panynj.gov/business-opportunities/supplier-diversity.html>. The Consultant will be required to submit to the Authority's Office of Business Diversity and Civil Rights for certification the names of MBE/WBE firms it proposes to use who are not on the list of certified MBE/WBE firms.

#### 24. NON-DISCRIMINATION REQUIREMENTS

The Consultant shall take all necessary and reasonable steps to ensure non-discrimination in the performance and administration of all aspects of this Agreement.

A. Consultant hereby agrees that no person on the ground of race, color, national origin, creed/religion, sex, age or handicap/disability shall be excluded from participation in, denied the benefits of, or be otherwise subjected to discrimination in the furnishing of goods or services or in the selection and retention of subconsultants and/or vendors under this Agreement. Consultant shall also ascertain and comply with all applicable federal, state and local laws, ordinances, rules, regulations, and orders that pertain to equal employment opportunity, affirmative action, and non-discrimination in employment.

B. Consultant agrees that these "Non-Discrimination Requirements" are a binding part of this Agreement. Without limiting the generality of any other term or provision of this Agreement, in the event the Authority, or a state or federal agency finds that the Consultant or any of its subconsultants or vendors has not complied with these "Non-Discrimination

Requirements”, the Authority may cancel, terminate or suspend this Agreement in accordance with Section 12 of this Agreement.

C. Consultant agrees to cooperate fully with the Authority’s investigation of allegations of discrimination. Cooperation includes, but is not limited to, allowing the Authority to question employees during the investigation of allegations of discrimination, and complying with directives that the Authority or the State or Federal government deem essential to ensure compliance with these “Non-Discrimination Requirements.”

## 25. NOTIFICATION OF SECURITY REQUIREMENTS

The Authority has the responsibility of ensuring safe, reliable and secure transportation facilities, systems, and projects to maintain the well-being and economic competitiveness of the region. Therefore, the Authority reserves the right to deny access to certain documents, sensitive security sites and facilities (including rental spaces) to any person that declines to abide by Authority security procedures and protocols any person with a criminal record with respect to certain crimes or who may otherwise poses a threat to the construction site or facility security. The Authority reserves the right to impose multiple layers of security requirements on the Consultant, its staff and subconsultants and their staffs depending upon the level of security required, or make any amendments with respect to such requirements as determined by the Authority.

These security requirements may include but are not limited to the following:

- Execution of Non-Disclosure and Confidentiality Agreements and Acknowledgments

At the direction of the Authority, the Consultant shall be required to have its principals, staff and/or subconsultant(s) and their staff, execute Authority approved non-disclosure and confidentiality agreements.

- Consultant/Subconsultant identity checks and background screening

The Authority’s designated background screening provider may require inspection of not less than two forms of valid/current government issued identification (at least one having an official photograph) to verify staff’s name and residence; screening of federal, state, and/or local criminal justice agency information databases and files; screening of any terrorist identification files and access identification, to include some form of biometric security methodology, such as fingerprint, facial or iris scanning.

The Consultant may be required to have its staff, and any subconsultant’s staff, material-men, visitors or others over whom the Consultant/subconsultant has control, authorize the Authority or its designee to perform background checks, and personal identity verification checks. Such authorization shall be in a form acceptable to the Authority. The Consultant and subconsultants may also be required to use an organization designated by the Authority to perform the background checks.

As of January 29, 2007, the Secure Worker Access Consortium (S.W.A.C.) is the only Authority approved provider to be used to conduct background screening and personal identity verification, except as otherwise required by federal law and/or regulation (such as Security Identification Display Area {SIDA}), the federal regulatory requirements for

personnel performing Work at aviation facilities and such as the Transportation Worker Identification Credential for personnel performing in secure areas at Maritime facilities). Information about S.W.A.C., instructions, corporate enrollment, online applications and location of processing centers can be found at <http://www.secureworker.com>, or S.W.A.C. may be contacted directly at (877) 522-7922 for more information and the latest pricing. The cost for said background checks for staff that pass and are granted a credential shall be reimbursable to the Consultant (and its subconsultants) as an out-of-pocket expense as provided herein. Staff that are rejected for a credential for any reason are not reimbursable.

- Issuance of Photo Identification Credential

No person shall be permitted on or about the Authority construction sites or facilities (including rental spaces) without a facility-specific photo identification credential approved by the Authority. If the Authority requires facility-specific identification credentials for the Consultant and the subconsultant's staff, the Authority will supply such identification at no cost to the Consultant or its subconsultants. Such facility-specific identification credential shall remain the property of the Authority and shall be returned to the Authority at the completion or upon request prior to completion of the individual's assignment at the specific facility. It is the responsibility of the appropriate Consultant or subconsultant to immediately report to the Authority the loss of any staff member's individual facility-specific identification credential. The Consultant or subconsultant will be billed for the cost of the replacement identification credential. Consultant's and subconsultant's staff shall display Identification badges in a conspicuous and clearly visible manner, when entering, working at or leaving an Authority construction site or facility.

Employees may be required to produce not less than two forms of valid/current government issued identification having an official photograph and an original, unlaminated social security card for identify and SSN verification. Where applicable, for sensitive security construction sites or facilities, successful completion of the application, screening and identify verification for all employees of the Consultant and subconsultant shall be completed prior to being provided a S.W.A.C. ID Photo Identification credential.

- Designated Secure Areas

Services under the Agreement may be required in designated secure areas, as the same may be designated by the Authority ("Secure Areas"). The Authority will require the observance of certain security procedures with respect to Secure Areas, which may include the escort to, at, and/or from said high security areas by security personnel. All personnel that require access to designated Secure Areas who are not under escort by an authorized individual will be required to undergo background screening and personal identity verification.

Forty-eight (48) hours prior to the proposed performance of any work in a Secure Area, the Consultant shall notify the Project Manager. The Consultant shall conform to the procedures as may be established by the Project Manager from time to time and at any time for access to Secure Areas and the escorting of personnel hereunder. Prior to the start of work, the Consultant shall request a description from the Project Manager of the Secure Areas, which will be in effect on the commencement date. The description of Secure Areas may be

changed from time to time and at any time by the Project Manager during the term of the Agreement.

- Access control, inspection, and monitoring by security guards

The Authority may provide for Authority construction site or facility (including rental spaces) access control, inspection and monitoring by Port Authority Police or Authority retained contractor security guards. However, this provision shall not relieve the Consultant of its responsibility to secure its equipment and work and that of its subconsultant/subcontractor's and service suppliers at the Authority sites or facilities (including rental spaces). In addition, the Consultant, subconsultant or service provider is not permitted to take photographs, digital images, electronic copying and/or electronic transmission or video recordings or to make sketches on any other medium at any Authority sites or facilities (including any rental spaces), except when necessary to perform the Work under this Agreement, without prior written permission from the Authority. Upon request, any photograph, digital image, video recording or sketch made of any Authority sites or facility shall be submitted to the Authority to determine compliance with this paragraph, which submission shall be conclusive and binding on the submitting entity.

- Compliance with the Port Authority Information Security Handbook

This Agreement may require access to Authority information considered Protected Information ("PI") as defined in the Port Authority Information Security Handbook ("Handbook"), dated October, 2008, corrected as of November 14, 2013, and as may be further amended. The Handbook and its requirements are hereby incorporated into this Agreement and will govern the possession, distribution and use of PI if at any point during the lifecycle of the project or solicitation it becomes necessary for the Consultant to have access to PI. Protecting sensitive information requires the application of uniform safeguarding measures to prevent unauthorized disclosure and to control any authorized disclosure of this information within the Authority or when released by the Authority to outside entities.

- (1) require that the Consultant and subconsultants, when appropriate, sign Non-Disclosure and Confidentiality Agreements (NDAs), or an Acknowledgment of an existing NDA, provided by the Authority as a condition of being granted access to Protected Information categorized and protected as per the Handbook;
- (2) require that individuals needing access to PI be required to undergo a background check, pursuant to the process and requirements noted in § 3.2 of the Information Security Handbook.
- (3) require Consultants and commercial enterprises to attend training to ensure security awareness regarding Authority information;
- (4) specific guidelines and requirements for the handling of PI to ensure that the storage and protection of PI;
- (5) restrictions on the transfer, shipping, and mailing of PI;

- (6) prohibitions on the publication, posting, modifying, copying, reproducing, republishing, uploading, transmitting, or distributing PI on websites or web pages. This may also include restricting persons, who either have not passed a pre-screening background check, or who have not been granted access to PI, from viewing such information;
  - (7) require that PI be destroyed using certain methods, measures or technology pursuant to the requirements set forth in the Handbook;
  - (8) require the Consultant to mandate that each of its subconsultants maintain the same levels of security required of the Consultant under any Authority awarded Agreement.
  - (9) prohibit the publication, exchange or dissemination of PI developed from the project or contained in reports, except between Consultants and subconsultants, on a need to know basis, without prior approval of the Authority;
  - (10) require that PI only be reproduced or copied pursuant to the requirements set forth in the Handbook.
- Audits for Compliance with Security Requirements

The Authority may conduct random or scheduled examinations of business practices under this section and the Handbook in order to assess the extent of compliance with security requirements, PI procedures, protocols and practices, which may include, but which are not necessarily limited to, verification of background check status, confirmation of completion of specified training, and/or a site visit to view material storage locations and protocols.

## 26. CONFIDENTIAL INFORMATION/NON-PUBLICATION

A. As used herein, confidential information shall mean all information disclosed to the Consultant or the personnel provided by the Consultant hereunder which relates to the Authority's and/or the Port Authority Trans Hudson (PATH) Corporation's past, present, and future research, development and business activities including, but not limited to, software and documentation licensed to the Authority or proprietary to the Authority and/or PATH and all associated software, source code procedures and documentation. Confidential information shall also mean any other tangible or intangible information or materials including but not limited to computer identification numbers, access codes, passwords, and reports obtained and/or used during the performance of the Consultant's Services under this Agreement.

B. Protected Information shall mean and include collectively, as per *The Port Authority of New York & New Jersey Information Security Handbook (October 15, 2008, corrected as of November 14, 2013)*, Confidential Information, Confidential Proprietary Information, Confidential Privileged Information and information that is labeled, marked or otherwise identified by or on behalf of the Authority so as to reasonably connote that such information is confidential, privileged, sensitive or proprietary in nature. Confidential Information shall also include all work product that contains or is derived from any of the foregoing, whether in whole or in part, regardless of whether prepared by the Authority or a third-party or when the Authority receives such information from others and agrees to treat such information as Confidential.

C. The Consultant shall hold all such Protected Information in trust and confidence for the Authority, and agrees that the Consultant and the personnel provided by the Consultant hereunder shall not, during or after the termination or expiration of this Agreement, disclose to any person, firm or corporation, nor use for its own business or benefit, any information obtained by it under or in connection with the supplying of services contemplated by this Agreement. The Consultant and the personnel provided by the Consultant hereunder shall not violate in any manner any patent, copyright, trade secret or other proprietary right of the Authority or third persons in connection with their services hereunder, either before or after termination or expiration of this Agreement. The Consultant and the personnel provided by the Consultant hereunder shall not willfully or otherwise perform any dishonest or fraudulent acts, breach any security procedures, or damage or destroy any hardware, software or documentation, proprietary or otherwise, in connection with their services hereunder. The Consultant shall promptly and fully inform the Chief Engineer in writing of any patent, copyright, trade secret or other intellectual property rights or disputes, whether existing or potential, of which the Consultant has knowledge, relating to any idea, design, method, material, equipment or other matter related to this Agreement or coming to the Consultant's attention in connection with this Agreement.

D. The Consultant shall not issue nor permit to be issued any press release, advertisement, or literature of any kind, which refers to the Authority or to the fact that goods have been, are being or will be provided to it and/or that services have been, are being or will be performed for it in connection with this Agreement, unless the Consultant first obtains the written approval of the Authority. Such approval may be withheld if for any reason the Authority believes that the publication of such information would be harmful to the public interest or is in any way undesirable.

27. The Consultant assumes the following distinct and several risks to the extent arising from the negligent or willful intentional acts or omissions of the Consultant or its subconsultants in the performance of services hereunder:

A. The risk of loss or damage to Authority property arising out of or in connection with the performance of services hereunder;

B. The risk of loss or damage to any property of the Consultant or its subconsultants arising out of or in connection with the performance of services hereunder;

C. The risk of claims, arising out of or in connection with the performance of services hereunder, whether made against the Consultant or its subconsultants or the Authority, for loss or damage to any property of the Consultant's agents, employees, subcontractors, subconsultants, materialmen or others performing services hereunder;

D. The risk of claims, just or unjust, by third persons made against the Consultant or its subconsultants or the Authority on account of injuries (including wrongful death), loss or damage of any kind whatsoever arising in connection with the performance of services hereunder including claims against the Consultant or its subconsultants or the Authority for the payment of workers' compensation, whether such claims are made and whether such injuries, damage and loss are sustained at any time both before and after the completion of services hereunder.

The Consultant shall indemnify the Authority against all claims described in subparagraphs A through D above and for all expense incurred by it in the defense, settlement or satisfaction thereof, including expenses of attorneys. If so directed, the Consultant shall defend against any claim described in subparagraphs B, C and D above, in which event the Consultant shall not without obtaining express advance permission from the General Counsel of the Authority raise any defense involving in any way jurisdiction of the tribunal, immunity of the Authority, governmental nature of the Authority or the provisions of any statutes respecting suits against the Authority, such defense to be at the Consultant's cost.

The provisions of this clause shall also be for the benefit of the Commissioners, officers, agents and employees of the Authority, so that they shall have all the rights which they would have under this clause if they were named at each place above at which the Authority is named, including a direct right of action against the Consultant to enforce the foregoing indemnity, except, however, that the Authority may at any time in its sole discretion and without liability on its part cancel the benefit conferred on any of them by this clause, whether or not the occasion for invoking such benefit has already arisen at the time of such cancellation.

Neither the completion of services hereunder nor the making of payment (final or otherwise) shall release the Consultant from his obligations under this clause. Moreover, neither the enumeration in this clause or the enumeration elsewhere in this Agreement of particular risks assumed by the Consultant or of particular claims for which he is responsible shall be deemed (a) to limit the effect of the provisions of this clause or of any other clause of this Agreement relating to such risks or claims, (b) to imply that he assumes or is responsible for risks or claims only of the type enumerated in this clause or in any other clause of this Agreement, or (c) to limit the risks which he would assume or the claims for which he would be responsible in the absence of such enumerations.

No third party rights are created by the Agreement, except to the extent that the Agreement specifically provides otherwise by use of the words "benefit" or "direct right of action".

Inasmuch as the Authority has agreed to indemnify the Cities of New York and Newark against claims of the types described in subparagraph D above made against said cities, the Consultant's obligation under subparagraph D above shall include claims by said cities against the Authority for such indemnification.

## 28. CERTIFICATION OF NO INVESTIGATION (CRIMINAL OR CIVIL ANTI-TRUST), INDICTMENT, CONVICTION, DEBARMENT, SUSPENSION, DISQUALIFICATION AND DISCLOSURE OF OTHER INFORMATION

By proposing on this Agreement, each Consultant and each person signing on behalf of any Consultant certifies, and in the case of a joint proposal each party thereto certifies as to its own organization, that the Consultant and each parent and/or affiliate of the Consultant has not:

A. been indicted or convicted in any jurisdiction;

B. been suspended, debarred, found not responsible or otherwise disqualified from entering into any agreement with any governmental agency or been denied a government agreement for failure to meet standards related to the integrity of the Consultant;

C. had an agreement terminated by any governmental agency for breach of agreement or for any cause based in whole or in part on an indictment or conviction;

D. ever used a name, trade name or abbreviated name, or an Employer Identification Number different from those inserted in the Proposal;

E. had any business or professional license suspended or revoked or, within the five years prior to proposal opening, had any sanction imposed in excess of \$50,000 as a result of any judicial or administrative proceeding with respect to any license held or with respect to any violation of a federal, state or local environmental law, rule or regulation;

F. had any sanction imposed as a result of a judicial or administrative proceeding related to fraud, extortion, bribery, proposal rigging, embezzlement, misrepresentation or anti-trust regardless of the dollar amount of the sanctions or the date of their imposition; and

G. been, and is not currently, the subject of a criminal investigation by any federal, state or local prosecuting or investigative agency and/or a civil anti-trust investigation by any federal, state or local prosecuting or investigative agency.

#### 29. NON-COLLUSIVE PROPOSING, AND CODE OF ETHICS CERTIFICATION, CERTIFICATION OF NO SOLICITATION BASED ON COMMISSION, PERCENTAGE, BROKERAGE, CONTINGENT OR OTHER FEES

By proposing on this Agreement, each Consultant and each person signing on behalf of any Consultant certifies, and in the case of a joint proposal, each party thereto certifies as to its own organization, that:

A. the prices in its proposal have been arrived at independently without collusion, consultation, communication or agreement for the purpose of restricting competition, as to any matter relating to such prices with any other Consultant or with any competitor;

B. the prices quoted in its proposal have not been and will not be knowingly disclosed directly or indirectly by the Consultant prior to the official opening of such proposal to any other Consultant or to any competitor;

C. no attempt has been made and none will be made by the Consultant to induce any other person, partnership or corporation to submit or not to submit a proposal for the purpose of restricting competition;

D. this organization has not made any offers or agreements or taken any other action with respect to any Authority employee or former employee or immediate family member of either which would constitute a breach of ethical standards under the Code of Ethics dated April 11, 1996 (a copy of which is available upon request to the Authority), nor does this organization have any knowledge of any act on the part of an Authority employee or former Authority employee relating either directly or indirectly to this organization which constitutes a breach of the ethical standards set forth in said Code;

E. no person or selling agency other than a bona fide employee or bona fide established commercial or selling agency maintained by the Consultant for the purpose of securing business, has been employed or retained by the Consultant to solicit or secure this Agreement on the

understanding that a commission, percentage, brokerage, contingent, or other fee would be paid to such person or selling agency;

F. the Consultant has not offered, promised or given, demanded or accepted, any undue advantage, directly or indirectly, to or from a public official or employee, political candidate, party or party official, or any private sector employee (including a person who directs or works for a private sector enterprise in any capacity), in order to obtain, retain, or direct business or to secure any other improper advantage in connection with this Agreement; and

G. no person or organization has been retained, employed or designated on behalf of the Consultant to impact any Authority determination with respect to (i) the solicitation, evaluation or award of this Agreement; or (ii) the preparation of specifications or request for submissions in connection with this Agreement.

The certifications in this Section and the Section entitled "Certification of No Investigation (Criminal or Civil Anti-trust), Indictment, Conviction, Debarment Suspension, Disqualification and Disclosure of Other Information" shall be deemed to be made by the Consultant as follows:

\* if the Consultant is a corporation, such certification shall be deemed to have been made not only with respect to the Consultant itself, but also with respect to each parent, affiliate, director, and officer of the Consultant, as well as, to the best of the certifier's knowledge and belief, each stockholder of the Consultant with an ownership interest in excess of 10%;

\* if the Consultant is a partnership, such certification shall be deemed to have been made not only with respect to the Consultant itself, but also with respect to each partner.

Moreover, the certifications in this Section and the Section entitled "Certification of No Investigation (Criminal or Civil Anti-trust), Indictment, Conviction, Debarment Suspension, Disqualification and Disclosure of Other Information", if made by a corporate Consultant, shall be deemed to have been authorized by the Board of Directors of the Consultant, and such authorization shall be deemed to include the signing and submission of the proposal and the inclusion therein of such certification as the act and deed of the corporation.

In any case where the Consultant cannot make the certifications in this Section and the Section entitled "Certification of No Investigation (Criminal or Civil Anti-trust), Indictment, Conviction, Debarment Suspension, Disqualification and Disclosure of Other Information", the Consultant shall so state and shall furnish with the signed proposal a signed statement, which sets forth in detail the reasons therefor. If the Consultant is uncertain as to whether it can make the foregoing certifications, it shall so indicate in a signed statement furnished with its proposal, setting forth in such statement the reasons for its uncertainty. With respect to the foregoing certification in paragraph "29G.", if the Consultant cannot make the certification, it shall provide, in writing, with the signed proposal: (i) a list of the name(s), address(es), telephone number(s), and place(s) of principal employment of each such individual or organization; and (ii) a statement as to whether such individual or organization has a "financial interest" in this Agreement, as described in the Procurement Disclosure policy of the Authority (a copy of which is available upon request to the Chief Procurement Officer of the Authority). Such disclosure is to be updated, as necessary, up to the time of award of this Agreement. As a result of such disclosure, the Authority shall take appropriate action up to and including a finding of non-responsibility.

Failure to make the required disclosures shall lead to administrative actions up to and including a finding of non-responsibility.

Notwithstanding that the Consultant may be able to make the certifications in this Section and the Section entitled "Certification of No Investigation (Criminal or Civil Anti-trust), Indictment, Conviction, Debarment Suspension, Disqualification and Disclosure of Other Information" at the time the proposal is submitted, the Consultant shall immediately notify the Authority in writing during the period of irrevocability of proposals on this Agreement or any extension of such period, or during the term of this Agreement, of any change of circumstances which might under this clause make it unable to make the foregoing certifications or require disclosure. The foregoing certifications or signed statement shall be deemed to have been made by the Consultant with full knowledge that they would become a part of the records of the Authority and that the Authority will rely on their truth and accuracy in awarding this Agreement. In the event that the Authority should determine at any time prior or subsequent to the award of this Agreement that the Consultant has falsely certified as to any material item in the foregoing certifications or has willfully or fraudulently furnished a signed statement which is false in any material respect, or has not fully and accurately represented any circumstance with respect to any item in the foregoing certifications required to be disclosed, the Authority may determine that the Consultant is not a responsible Consultant with respect to its proposal on the Agreement or with respect to future proposals on Authority agreements and may exercise such other remedies as are provided to it by the Agreement with respect to these matters. In addition, Consultants are advised that knowingly providing a false certification or statement pursuant hereto may be the basis for prosecution for offering a false instrument for filing (see, e.g. New York Penal Law, Section 175.30 et seq.). Consultants are also advised that the inability to make such certification will not in and of itself disqualify a Consultant, and that in each instance the Authority will evaluate the reasons therefor provided by the Consultant.

Under certain circumstances, the Consultant may be required as a condition of this Agreement award to enter into a Monitoring Agreement under which it will be required to take certain specified actions, including compensating an independent Monitor to be selected by the Authority. Said Monitor shall be charged with, among other things, auditing the actions of the Consultant to determine whether its business practices and relationships indicate a level of integrity sufficient to permit it to continue business with the Authority

### **30. CONSULTANT ELIGIBILITY FOR AWARD OF AGREEMENTS – DETERMINATION BY AN AGENCY OF THE STATE OF NEW YORK OR NEW JERSEY CONCERNING ELIGIBILITY TO RECEIVE PUBLIC AGREEMENTS**

Consultants are advised that the Authority has adopted a policy to the effect that in awarding its agreements it will honor any determination by an agency of the State of New York or New Jersey that a Consultant is not eligible to propose on or be awarded public agreements because the Consultant has been determined to have engaged in illegal or dishonest conduct or to have violated prevailing rate of wage legislation.

The policy permits a Consultant whose ineligibility has been so determined by an agency of the State of New York or New Jersey to submit a proposal on an Authority agreement and then to establish that it is eligible to be awarded an agreement on which it has proposed because (i) the

state agency determination relied upon does not apply to the Consultant, or (ii) the state agency determination relied upon was made without affording the Consultant the notice and hearing to which the Consultant was entitled by the requirements of due process of law, or (iii) the state agency determination was clearly erroneous or (iv) the state agency determination relied upon was not based on a finding of conduct demonstrating a lack of integrity or violation of a prevailing rate of wage law.

The full text of the resolution adopting the policy may be found in the Minutes of the Authority's Board of Commissioners meeting of September 9, 1993.

### 31. CONSULTANT RESPONSIBILITY, SUSPENSION OF WORK AND TERMINATION

During the term of this Agreement, the Consultant shall remain responsible. The Consultant agrees, if requested by the Authority, to present evidence of its continuing legal authority to do business in the States of New Jersey or New York, integrity, experience, ability, prior performance, and organizational and financial capacity.

The Authority, in its sole discretion, reserves the right to suspend any or all activities under this Agreement, at any time, when it discovers information that calls into question the responsibility of the Consultant. In the event of such suspension, the Consultant will be given written notice outlining the particulars of such suspension. Upon issuance of such notice, the Consultant shall comply with the terms of the suspension order. Agreement activity may resume at such time as the Authority issues a written notice authorizing a resumption of performance under the Agreement.

Upon written notice to the Consultant, and an opportunity to be heard with appropriate Authority officials or staff, the Agreement may be terminated by the Authority at the Consultant's expense where the Consultant is determined by the Authority to be non-responsible. In such event, the Authority or its designee may complete the contractual requirements in any manner he or she may deem advisable and may pursue available legal or equitable remedies for breach, including recovery of costs from Consultant associated with such termination.

### 32. NO GIFTS, GRATUITIES, OFFERS OF EMPLOYMENT, ETC.

At all times, the Consultant shall not offer, give or agree to give anything of value either to an Authority employee, agent, job shopper, consultant, construction manager or other person or firm representing the Authority, or to a member of the immediate family (i.e., a spouse, child, parent, brother or sister) of any of the foregoing, in connection with the performance by such employee, agent, job shopper, consultant, construction manager or other person or firm representing the Authority of duties involving transactions with the Consultant on behalf of the Authority, whether or not such duties are related to this Agreement or to any other Authority agreement or matter. Any such conduct shall be deemed a material breach of this Agreement.

As used herein "anything of value" shall include but not be limited to any (a) favors, such as meals, entertainment, transportation (other than that contemplated by the Agreement or any other Authority agreement), etc. which might tend to obligate the Authority employee to the Consultant, and (b) gift, gratuity, money, goods, equipment, services, lodging, discounts not available to the general public, offers or promises of employment, loans or the cancellation

thereof, preferential treatment or business opportunity. Such term shall not include compensation contemplated by this Agreement or any other Authority agreement. Where used herein, the term "Port Authority" or "Authority" shall be deemed to include all subsidiaries of the Authority.

The Consultant shall ensure that no gratuities of any kind or nature whatsoever shall be solicited or accepted by it or by its personnel for any reason whatsoever from the passengers, tenants, customers or other persons using the Facility and shall so instruct its personnel.

In the event that the Consultant becomes aware of the occurrence of any conduct that is prohibited by this section entitled "No Gifts, Gratuities, Offers of Employment, Etc.", it shall report such occurrence to the Authority's Office of Inspector General within three (3) business days of obtaining such knowledge. (See "<http://www.panynj.gov/inspector-general>" for information about reporting information to the Office of Inspector General). Failing to report such conduct shall be grounds for a finding of non-responsibility.

In addition, during the term of this Agreement, the Consultant shall not make an offer of employment or use confidential information in a manner proscribed by the Code of Ethics and Financial Disclosure dated April 11, 1996 (a copy of which is available upon request to the Office of the Secretary of the Authority). Without the express written approval of the Chief Engineer, you shall keep confidential, and shall require your employees, your subconsultants, and your subconsultant's employees to keep confidential, a) all information disclosed by the Authority or its consultants to you or b) developed by you or your subconsultants in the performance of services hereunder. Disclosure of any such information shall constitute a material breach of the Agreement.

The Consultant shall include the provisions of this clause in each subagreement entered into under this Agreement.

### 33. CONFLICT OF INTEREST

During the term of this Agreement, the Consultant shall not participate in any way in the preparation, negotiation or award of any agreement (other than an agreement for its own services to the Authority) to which it is contemplated the Authority may become a party, or participate in any way in the review or resolution of a claim in connection with such an agreement if the Consultant has a substantial financial interest in the Consultant or potential Consultant of the Authority or if the Consultant has an arrangement for future employment or for any other business relationship with said Consultant or potential Consultant, nor shall the Consultant at any time take any other action which might be viewed as or give the appearance of conflict of interest on its part. If the possibility of such an arrangement for future employment or for another business arrangement has been or is the subject of a previous or current discussion, or if the Consultant has reason to believe such an arrangement may be the subject of future discussion, or if the Consultant has any financial interest, substantial or not, in a Consultant or potential Consultant of the Authority, and the Consultant's participation in the preparation, negotiation or award of any agreement with such a Consultant or the review or resolution of a claim in connection with such an agreement is contemplated or if the Consultant has reason to believe that any other situation exists which might be viewed as or give the appearance of a conflict of

interest, the Consultant shall immediately inform the Chief Engineer in writing of such situation giving the full details thereof. Unless the Consultant receives the specific written approval of the Chief Engineer, the Consultant shall not take the contemplated action which might be viewed as or give the appearance of a conflict of interest. The Chief Procurement Officer may require the Consultant to submit a mitigation plan addressing and mitigating any disclosed or undisclosed conflict, which is subject to the approval of the Chief Procurement Officer and shall become a requirement, as though fully set forth in this Agreement. In the event the Chief Engineer shall determine that the performance by the Consultant of a portion of its services under this Agreement is precluded by the provisions of this numbered paragraph, or a portion of the Consultant's said services is determined by the Chief Engineer to be no longer appropriate because of such preclusion, then the Chief Engineer shall have full authority on behalf of both parties to order that such portion of the Consultant's services not be performed by the Consultant, reserving the right, however, to have the services performed by others and any lump sum compensation payable hereunder which is applicable to the deleted work shall be equitably adjusted by the parties. The Consultant's execution of this document shall constitute a representation by the Consultant that at the time of such execution the Consultant knows of no circumstances, present or anticipated, which come within the provisions of this paragraph or which might otherwise be viewed as or give the appearance of a conflict of interest on the Consultant's part. The Consultant acknowledges that the Authority may preclude it from involvement in certain disposition/privatization initiatives or transactions that result from the findings of its evaluations hereunder or from participation in any agreements, which result, directly or indirectly, from the services provided by the Consultant hereunder. The Authority's determination regarding any conflict of interest shall be final.

#### 34. DEFINITIONS

As used in sections 28 to 33 above, the following terms shall mean:

Affiliate - Two or more firms are affiliates if a parent owns more than fifty percent of the voting stock of each of the firms, or a common shareholder or group of shareholders owns more than fifty percent of the voting stock of each of the firms, or if the firms have a common proprietor or general partner.

Agency or Governmental Agency - Any federal, state, city or other local agency, including departments, offices, public authorities and corporations, boards of education and higher education, public development corporations, local development corporations and others.

Investigation - Any inquiries made by any federal, state or local criminal prosecuting agency and any inquiries concerning civil anti-trust investigations made by any federal, state or local governmental agency. Except for inquiries concerning civil anti-trust investigations, the term does not include inquiries made by any civil government agency concerning compliance with any regulation, the nature of which does not carry criminal penalties, nor does it include any background investigations for employment, or federal, state, and local inquiries into tax returns.

Officer - Any individual who serves as chief executive officer, chief financial officer, or chief operating officer of the Consultant by whatever titles known.

Parent - An individual, partnership, joint venture or corporation which owns more than 50% of the voting stock of the Consultant.

35. The entire agreement between the parties is contained herein and no change in or modification, termination or discharge of this Agreement in any form whatsoever shall be valid or enforceable unless it is in writing and signed by the party to be charged therewith, or his duly authorized representative, provided, however, that termination in the manner hereinbefore expressly provided shall be effective as so provided.

36. No Commissioner, officer, agent or employee of the Authority shall be charged personally by you with any liability or held liable to you under any term or provision of this Agreement, or because of its execution or attempted execution or because of any breach hereof.

37. Nothing in this Agreement is intended to constitute the creation of an agency relationship between the Authority and the Consultant or any other right for the Consultant to act as the representative of the Authority for any purpose whatsoever except as may be specifically provided in this Agreement. It is hereby specifically acknowledged and understood that the Consultant, in performing its services hereunder, is and shall be at all times an independent contractor and the officers, agents and employees of the Consultant shall not be or be deemed to be agents, servants, or employees or "special employees" of the Authority.

38. If the foregoing meets with your approval, please indicate your acceptance by signing the original and the additional enclosed copy in the lower right-hand corner and returning them to the Authority.

Sincerely,

THE PORT AUTHORITY OF  
NEW YORK AND NEW JERSEY

Lillian D. Valenti  
Chief Procurement Officer

Date \_\_\_\_\_

ACCEPTED:

FIRM NAME

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**INSTRUCTIONS**

If the selected Consultant firm is not located in the States of New York or New Jersey, change the number of the last Paragraph of this Agreement from "38" to "39" and insert a new Paragraph "38" as follows:

38. This Agreement shall be governed by and construed in accordance with the Laws of the State of New York without regard to conflict of laws principles.

**ATTACHMENT B**

**REQUEST FOR PROPOSALS FOR PERFORMANCE OF  
EXPERT PROFESSIONAL SERVICES FOR NEWARK LIBERTY INTERNATIONAL  
AIRPORT TERMINAL A REDEVELOPMENT PROGRAM – DESIGN OF THREE (3)  
MULTI-SPAN BRIDGE STRUCTURES, AT-GRADE ROADWAYS AND ASSOCIATED  
SIGNAGE AND APPURTENANCES  
(RFP #46659)**

**AGREEMENT ON TERMS OF DISCUSSION**

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

Any information (including information contained in any proposal, vendor qualification(s), ideas, models, drawings, or other material communicated or exhibited by us or on our behalf) provided in connection with this procurement is subject to the provisions of the Port Authority Freedom of Information Code and Procedure adopted by the Port Authority’s Board of Commissioners on October 22, 2014, which may be found on the Port Authority website at: <http://www.panynj.gov/corporate-information/pdf/foi-code.pdf>. The foregoing applies to any information, whether or not given at the invitation of the Authority.

\_\_\_\_\_  
(Company)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Title)

\_\_\_\_\_  
(Date)

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

**ATTACHMENT C**

**COMPANY PROFILE**

**REQUEST FOR PROPOSALS FOR THE PERFORMANCE OF EXPERT PROFESSIONAL SERVICES FOR NEWARK LIBERTY INTERNATIONAL AIRPORT TERMINAL A REDEVELOPMENT PROGRAM – DESIGN OF THREE (3) MULTI-SPAN BRIDGE STRUCTURES, AT-GRADE ROADWAYS AND ASSOCIATED SIGNAGE AND APPURTENANCES (RFP #46659)**

1. Company Name (print or type):

\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_

3. Business Telephone Number: \_\_\_\_\_

4. Business Fax Number: \_\_\_\_\_

5. Firm website: \_\_\_\_\_

6. Federal Employer Identification Number (EIN): \_\_\_\_\_

7. Date (MM/DD/YYYY) Firm was Established: \_\_\_\_/\_\_\_\_/\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_

9. Officer or Principal of Firm and Title:

\_\_\_\_\_

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

\_\_\_\_\_  
\_\_\_\_\_

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 a copy of your **Port Authority** certification as a part of this profile.

If your firm is an MBE/WBE not currently certified by the Authority, see the Authority's web site – <http://www.panynj.gov/business-opportunities/supplier-diversity.html>, to receive information and apply for certification.