



Interstate 66

Active Traffic Management (I-66 ATM)

STATEMENT OF QUALIFICATIONS FOR
VIRGINIA DEPARTMENT OF TRANSPORTATION

FROM DISTRICT OF COLUMBIA/VIRGINIA BORDER IN ARLINGTON COUNTY
TO U.S. 29 (LEE HIGHWAY) IN GAINESVILLE, PRINCE WILLIAM COUNTY

A DESIGN-BUILD PROJECT

ARLINGTON, FAIRFAX AND PRINCE WILLIAM COUNTIES, VIRGINIA



STATE PROJECT NUMBER:
0066-96A-917, P101, N501

FEDERAL PROJECT NUMBERS:
IM-5A01(253) & IM-5A01(274)

CONTRACT ID NUMBER:
C00098017DB46

SUBMITTED BY:
CHESAPEAKE ELECTRICAL SYSTEMS, INC.

IN ASSOCIATION WITH:
JACOBS ENGINEERING GROUP INC.
TRANSDYN, INC.
ENGINEERING & MATERIALS TECHNOLOGIES, INC.

Welcome

ATTACHMENT 3.1.2

0066-96A-917, P101, N501

STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS

Offerors shall furnish a copy of this Statement of Qualifications (SOQ) Checklist, with the page references added, with the Statement of Qualifications.

Statement of Qualifications Component	Form (if any)	RFQ Cross reference	Included within 20-page limit?	SOQ Page Reference
Statement of Qualifications Checklist and Contents	Attachment 3.1.2	Section 3.1.2	no	i - iii
Acknowledgement of RFQ, Revision and/or Addenda	Attachment 2.10 (Form C-78-RFQ)	Section 2.10	no	iv
Letter of Submittal (on Offeror's letterhead)				1 - 4
Offeror's point of contact information	NA	Section 3.2.1	yes	1
Authorized Representative's signature	NA	Section 3.2.1	yes	3
Principal officer information	NA	Section 3.2.2	yes	1
Offeror's Corporate Structure	NA	Section 3.2.3	yes	1
Affiliated/subsidiary companies	NA	Section 3.2.4	yes	1
Debarment forms	Attachment 3.2.5(a) Attachment 3.2.5(b)	Section 3.2.5	no	A1 – A4
Offeror's VDOT prequalification evidence	NA	Section 3.2.6	no	A5 – A6
Evidence of obtaining bonding	NA	Section 3.2.7	yes	4
Professional Services Evidence				

ATTACHMENT 3.1.2

0066-96A-917, P101, N501

STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS

Statement of Qualifications Component	Form (if any)	RFQ Cross reference	Included within 20-page limit?	SOQ Page Reference
Full size copies of SCC and DPOR registration documentation (appendix)	NA	Section 3.2.8	no	A7 – A22
SCC Registration	NA	Section 3.2.8.1	yes	A7 – A12
DPOR Registration (Offices)	NA	Section 3.2.8.2	yes	A13 – A16
DPOR Registration (Key Personnel)	NA	Section 3.2.8.3	yes	A17 – A22
DPOR Registration (Non-APELSCIDLA)	NA	Section 3.2.8.4	yes	-----
DBE statement within Letter of Submittal confirming Offeror is committed to achieving the required DBE goal	NA	Section 3.2.9	yes	2
Offeror’s Team Structure				5 – 10
Identity of and qualifications of Key Personnel	NA	Section 3.3.1	yes	5 – 9
Key Personnel Resume – DB Project Manager	Attachment 3.3.1	Section 3.3.1.1	no	A23
Key Personnel Resume – Quality Assurance Manager	Attachment 3.3.1	Section 3.3.1.2	no	A24
Key Personnel Resume – Design Manager	Attachment 3.3.1	Section 3.3.1.3	no	A25
Key Personnel Resume – Construction Manager	Attachment 3.3.1	Section 3.3.1.4	no	A26
Key Personnel Resume – Lead Designer	Attachment 3.3.1	Section 3.3.1.5	no	A27
Key Personnel Resume – Lead Structural Engineer	Attachment 3.3.1	Section 3.3.1.6	no	A28
Key Personnel Resume – Electrical/ITS Supervising Technician	Attachment 3.3.1	Section 3.3.1.7	no	A29
Organizational chart	NA	Section 3.3.2	yes	10
Organizational chart narrative	NA	Section 3.3.2	yes	5 – 9

ATTACHMENT 3.1.2

0066-96A-917, P101, N501

STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS

Statement of Qualifications Component	Form (if any)	RFQ Cross reference	Included within 20-page limit?	SOQ Page Reference
Experience of Offeror's Team				11 – 14
Lead Contractor Work History Form	Attachment 3.4.1(a)	Section 3.4	no	A30 – A32
Lead Designer Work History Form	Attachment 3.4.1(b)	Section 3.4	no	A33 – A35
Project Risk				15 - 20
Identify and discuss three critical risks for the Project	NA	Section 3.5.1	yes	15 - 20

ATTACHMENT 2.10**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

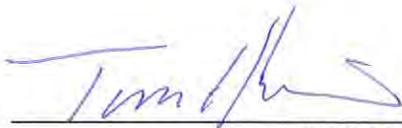
RFQ NO. C00098017DB46
 PROJECT NO.: 0066-96A-917, P101, N501

ACKNOWLEDGEMENT OF RFQ, REVISION AND/OR ADDENDA

Acknowledgement shall be made of receipt of the Request for Qualifications (RFQ) and/or any and all revisions and/or addenda pertaining to the above designated project which are issued by the Department prior to the Statement of Qualifications (SOQ) submission date shown herein. Failure to include this acknowledgement in the SOQ may result in the rejection of your SOQ.

By signing this Attachment 2.10, the Offeror acknowledges receipt of the RFQ and/or following revisions and/or addenda to the RFQ for the above designated project which were issued under cover letter(s) of the date(s) shown hereon:

1. Cover letter of RFQ 10/25/2011
(Date)
2. Cover letter of RFQ Addendum No. 1 12/13/2011
(Date)
3. Cover letter of _____
(Date)



 SIGNATURE

12-15-2011

 DATE

Letter of Submittal



December 22, 2011

Ms. Brenda L. Williams
Commonwealth of Virginia Department of Transportation
Central Office Mail Center- Loading Dock Entrance
1401 E. Broad Street
Richmond, Virginia 23219

RE: Interstate 66 Active Traffic Management (I-66 ATM) - Design-Build Project

Dear Ms. Williams and Selection Committee:

The Virginia Department of Transportation (VDOT) is committed to planning, delivering, operating and maintaining a transportation system that is safe, moves people and goods easily, is a catalyst for Virginia's economy and growth, and enhances the quality of life for Virginia residents. The I-66 ATM program is a key element in your continued achievement of these goals. The I-66 Corridor is one of the heaviest traveled and congested corridors in the Northern Virginia region. Given the planned growth in this area and an anticipated increase in Vehicle-Travel Miles, additional emphasis on the necessity to develop and implement the I-66 ATM program is paramount to enhance safety and reduce congestion within the Commonwealth.

Our Team is pleased to provide a response to this vital RFQ. Our Team brings a wealth of skills, resources and expertise to ensure VDOT a world-class project. Chesapeake Electrical Systems, Inc., a Maryland-based Corporation with Virginia offices (no affiliated and/or subsidiary companies), will serve as the Prime Contractor for our Team and will undertake the lead financial responsibility for the project. Chesapeake Electrical Systems, Inc. has provided VDOT with engineering and construction leadership and support for over 18 years on projects ranging from I-495 HOT Lanes in Northern Virginia to the Elizabeth River Crossing Project in Portsmouth. We are excited by this opportunity to continue our relationship with the Department and assist you in meeting the challenges of your I-66 ATM program. Our understanding of your expectations, requirements, standards and organization ideally positions us to cost-effectively perform your ATM project. As well as 'institutional knowledge', we also bring the record of successful past performance you need to be confident that we will deliver services in a way that enables you to minimize your administrative and overhead burden without impacting quality. Your primary point of contact for our Team will be Mr. Tim Harlow (*Vice President, 7950 Woodruff Court, Suite 10, Springfield, VA 22151, 301-206-5037 (phone) and 301-206-5038 (fax), tharlow@c-e-s.net*). Our Principal Officer, Mr. Joseph P. Tominovich Jr. (*9381 Davis Ave., Laurel, MD 20723, (phone) 301-206-5020*) will be responsible for legal authority of the firm.

The primary members of our Team include: Jacobs Engineering Group Inc., Transdyn, Inc. and Engineering & Materials Technologies, Inc. All firms are already known to VDOT having supported numerous VDOT projects either as Primes or subconsultants. We bring all the capabilities needed to assure strong depth of personnel with the right skill sets and VDOT experience is always available to you. Our Team members' roles include:

Team Member	Role
Chesapeake Electrical Systems, Inc.	Prime Contractor for our Team and will undertake the lead financial responsibility for the project
Jacobs Engineering Group Inc.	Project management (incl. design), systems engineering and ITS design; structural, drainage, traffic, MOT, electrical and power design
Transdyn, Inc.	ITS design and systems integration oversight and systems acceptance testing
Engineering & Materials Technologies, Inc.	Quality Assurance and quality control

Surveys, sub-surface utility investigations, utility coordination and other needed roles will be performed by other firms (to be identified at RFP stage) that may support the VDOT DBE 15% goal. Our Team is fully committed to achieving the 15% DBE participation goal for the value of the contract.

Our Team brings advantages and benefits to VDOT’s I-66 ATM Design-Build project:

Schedule and cost-certainty. From prior affiliations as well as relationships established through delivering projects in Virginia such as the I-495 HOT Lanes, Route 1 Widening at Neabsco Creek, Hampton Roads TOC Integration and multiple Richmond and Hampton Roads CEI projects, *we bring the well-established working relationships with key VDOT staff members needed to facilitate clear mutual understanding of project goals.*

Design-Build Experience in ITS/Electrical projects. We are a Team that specializes in the delivery of Design-Build projects with similar requirements including: I-5 ATM in Seattle - WSDOT; Maryland Inter-County Connector (ICC) - MDSHA; I-495 Capital Beltway HOT Lanes - VDOT; New Hampshire DOT; Florida DOT; Salt Lake City ATMS - UDOT; and Tampa Hillsborough County Reversible Express Lanes.

Available and committed Team members dedicated for efficient execution, responsiveness, and quality delivery. Given the base of the Team members, we bring an availability of resources of over 800 technical staff in the Region.

The staff that we have assembled has the experience and expertise to deliver the greatest return for your I-66 ATM investment. Our staff brings:

- Experience in systems engineering and ITS design.
- Expertise in electrical and ITS construction procedures and practice.
- Leadership in quality assurance and quality control processes and application.
- Experience and expertise of multi-disciplinary Team members - safety, operations, MOT, structural analysis, drainage/environmental.

A flexible and responsive partner. With its depth of resources, our Team can mobilize for VDOT immediately upon award and throughout the course of the contract can ‘flex’ our resources to support the I-66 ATM initiative. Should you have any questions, please feel free to contact Mr. Tim Harlow at (301)206-5037.



Certification Regarding Debarment Forms 3.2.5(a) and 3.2.5(b) for Chesapeake Electrical Systems, Inc., Jacobs Engineering Group Inc., Transdyn, Inc. and Engineering & Materials Technologies, Inc. can be found within the Appendix tab of this submittal.

Offeror's VDOT prequalification evidence for Chesapeake Electrical Systems, Inc. can be found within the Appendix tab of this submittal.

Evidence of obtaining bonding for Chesapeake Electrical Systems, Inc. can be found on the next page.

Professional Services Evidence for Chesapeake Electrical Systems, Inc. and Team Members can be found within the Appendix tab of this submittal. Below is a table summarizing all SCC and DPOR registrations and licenses.

SCC Registration				
Name	Registration No.	Type	Status	
Chesapeake Electrical Systems, Inc.	F124990-5	Corporation	Active	
Jacobs Engineering Group Inc.	F119261-8	Corporation	Active	
Transdyn, Inc.	F160922-3	Corporation	Active	
Engineering & Materials Technologies, Inc.	0478633-1	Corporation	Active	
DPOR Registration (By Office)				
Name	Address	Type	Number	Exp. Date
Chesapeake Electrical Systems, Inc.	9381 Davis Ave. Laurel, MD 20723	Class A Contractors License: Ele	2705033850A	05-31-2012
Jacobs Engineering Group Inc.	1100 N. Glebe Rd. Suite 500 Arlington, VA 22201	Branch Office: Eng	0411000506	02-29-2012
Transdyn, Inc.	2855 Premiere Pkwy Suite F Duluth, GA 30097	Class A Contractors License: Ele	2705091859A	05-31-2013
Engineering & Materials Technologies, Inc.	7857 Coppermine Dr. Manassas, VA 20109	Business Entity: Eng	0407005994	12-31-2013
DPOR Licenses (Key Personnel)				
Name	Address	Type	Number	Exp. Date
Robert Preston	Owings, MD	Master Electrician	2710051621	12-31-2012
Jeffrey Purdy, PE	Drexel Hill, PA	Professional Engineer	0402014146	01-31-2013
Mark Flak, PE	Oak Hill, VA	Professional Engineer	0402025047	09-30-2013
Elliott Mandel, PE	Arlington, VA	Professional Engineer	0402022085	01-31-2013
Shaz Moosa, PE	Manassas, VA	Professional Engineer	0402021398	07-31-2012

Sincerely,

Tim Harlow, Vice President
Chesapeake Electrical Systems, Inc.





BERKLEY SURETY GROUP, INC.

December 2, 2011

Virginia Department of Transportation
1401 E. Broad Street
Richmond, VA 23123

Re: Request for Qualifications
A Design-Build Project – Interstate 66 Active Traffic Management (I-66 ATM)
Contract ID Number: C00098017DB46
Estimated Contract Value - \$32,000,000

To Whom It May Concern:

Chesapeake Electrical Systems, Inc. has been a client of Berkley Regional Insurance Company since 2003. In our opinion, Chesapeake Electrical Systems, Inc. is one of the finest, best-managed construction firms in the country. Chesapeake Electrical Systems, Inc. has handled each of its projects in a professional manner and completed all satisfactorily.

Chesapeake Electrical Systems, Inc. is capable of obtaining a 100% Performance Bond and 100% Labor and Materials Bond in the amount of the anticipated cost of construction, and said bonds will cover the Project and any warranty periods on behalf of the Contractor, in the event that such firm be the successful bidder and enter into a contract for the Project. This being contingent upon receipt of a contract and bond forms acceptable in terms and conditions to both Chesapeake Electrical Systems, Inc. and Surety, and Chesapeake Electrical Systems, Inc.'s continued satisfaction of normal surety underwriting requirements.

This letter is not an assumption of liability, nor is it a bid bond or a performance bond. It is issued only as a bonding reference as requested by our client.

Berkley Regional Insurance Company is listed on the U.S. Treasury Department's Listing of Approved Sureties (2011 Department Circular 570) \$68,988,000 and is rated A+ X by A.M. Best Company.

Very truly yours,

Berkley Regional Insurance Company

By: 
Brenda L. Patterson, Attorney-In-Fact

Offeror's Team Structure

Offeror's Team Structure

We have assembled a Team with the experience and expertise to guarantee VDOT a successful I-66 ATM project. We cover the breadth of skills in required design areas, construction management and quality assurance to assure that VDOT is provided quality delivery of a functional and innovative ATM system along I-66. All Firms and Key Personnel included in the RFQ response are fully committed to the project and to the achievement of VDOT's transportation objectives in northern Virginia.

In assembling our Team, our Firm and its partners have committed to providing their 'best' Team members to successfully meet your needs. *The organizational chart following this section highlights our Team's organization and the functional relationship between VDOT and Team members.* **Chesapeake Electrical Systems, Inc. (CES)** will serve as the Prime Contractor for this project. Their Management Team will directly contract with VDOT and coordinate with VDOT's Contracts Section in addition to providing the project management and construction management skills needed. Leading the Project Team and providing integral coordination with VDOT will be **Mr. Tim Harlow (CES)** as our **Design-Build Project Manager**. Mr. Harlow brings over 30 years of electrical construction and construction management leadership to the Team and will be responsible for the overall project design, construction, quality management and contract administration for this project. He is the current Vice President of Construction for CES and is CES' Overall Manager for their current I-495 HOT Lanes (PPTA) project with VDOT and Fluor-Lane. Mr. Harlow has led numerous multimillion dollars projects in the Washington, DC Metropolitan area, including The New Fourth Runway and Associated Taxiway Project at Dulles International Airport along with several major roadway rehabilitation projects for the DC Department of Transportation. He brings unique skills in collaborative efforts and coordination with public highway agencies. He will serve as the primary point of contact with the VDOT Project Manager. Mr. Harlow will also maintain direct working relationships with both the Deputy Project Manager and the Construction Manager throughout the project.

Weekly coordination meetings will be conducted by the Design Team during the design phase of the project. Following the weekly coordination meeting, weekly Management Team meetings will occur to coordinate both the design and construction facets of the project. In these meetings, a log of issues and their resolution will be maintained to assure that all items or issues have been successfully resolved. As part of our quality assurance reviews, all design plans will be reviewed by members of the Construction Team to assure the constructability of the design. Similarly, during the construction phases, key design team members will be included in reviews during progress meetings. Interaction between both the design and construction facets of the project will be maintained throughout the project to ensure that a successful product results.

To ensure that the highest level of priority is given to Quality Assurance during the project, our Team has selected **Mr. Shaz Moosa, PE (Engineering & Materials**

Technologies) as **Quality Assurance Manager**. He will implement a Quality Assurance Program for the project that fully meets VDOT's satisfaction. Mr. Moosa has over 26 years of experience in providing geotechnical, structural, materials, forensic engineering and construction quality control services. He has conducted these services on many projects in the Washington- Baltimore area. He is currently leading such activities on VDOT's I-495/Capital Beltway HOT Lanes project. Other notable projects include: Vienna Metro Station, Springfield Metro Station, Dulles and Woodbridge Park & Ride facilities, VDOT Camp 30, W& OD Trail, 11th Street Bridge in DC, P Street in DC, West Ox (Route 606) in Vienna, Dulles Greenway Ramp E, Aviation Road Bridge and North Area Airside Road at Dulles Airport, and other bridge and Metro Station projects throughout Virginia, Maryland and the District of Columbia. Mr. Moosa is knowledgeable on VDOT's Minimum Requirements for Quality Assurance and Quality Control on Design-Build and Public-Private Transportation Acts Projects and recent updates. He will bring a competent quality control staff from his firm, assuring that independence from the design build team is maintained. He will also work with the Design Quality Manager for the Team to assure that all aspects of quality assurance are maintained in the design phase also.

Leading the Design Team as **Design Manager** will be **Mr. Jeff Purdy, PE (Jacobs)**. He brings valuable experience in management and design of the technical areas of the project. He has performed similar duties on recent ITS projects in the eastern US and will be invaluable in providing his insights and experience to the VDOT Team. Mr. Purdy is recognized for his leadership abilities and work in the ITS arena for over 31 years. He has led several Jacobs ITS Design-Build projects in recent years. He also brings a breadth of leading experience and expertise to the project covering a range of skills from ITS Architecture development and updates, to deployment of innovative ITS devices and communication systems, to leading and managing construction management activities of his ITS projects. He is currently leading two PennDOT I-95 ITS Design-Build contracts in the Philadelphia metropolitan area. These projects have a construction value of over \$40 million covering ITS design, construction quality management and engineering contract administration and are nearing completion. He recently led an ITS Design-Build project for PennDOT that included design of ITS field devices (CCTV, sensors, DMS, etc.) and their deployment, design and implementation of the communication network, and design and development of the Transportation Management Center (construction value > \$16 million). He also successfully led the Borman Expressway Backhaul Replacement ITS Design-Build project for InDOT that included design of ITS field devices (CCTV, sensors, DMS, etc.) and their deployment, design and integration of the communication network, and upgrade of the Borman TMC (construction value > \$7 million). Mr. Purdy's leadership and experience in ITS Design-Build projects will guarantee a successful project fully meeting VDOT's needs. He is a registered, licensed Professional Engineer in Virginia and an active member of ITSVA.

Mr. Purdy's experience in ITS and preparation of design documents will assure that the design of the ATM project meets VDOT's requirements. He will have an experienced

and efficient engineering staff dedicated to the project goals. Mr. Purdy will also be responsible for managing a QA/QC program for all design facets of the project. Jacobs, itself, is a leader with its QA/QC program nationwide. Mr. Purdy will assure that the same quality philosophies and procedures are maintained throughout the design program.

Leading the Construction Team as **Construction Manager** will be **Mr. Charles Tamayo (CES)**. He brings over 23 years of construction and construction management experience, primarily for electrical and ITS systems. Mr. Tamayo will be responsible for managing the construction process to include all QC activities to ensure the materials used and work prepared meets contract requirements and the “approved for construction” plans and specifications. He is currently serving as a Senior Project Manager for the current I - 495 HOT Lanes project (\$36.7 million) for VDOT. He is leading all staff for the construction, quality control and construction management for the complex ITS, electrical and lighting elements of the project. Mr. Tamayo was the Senior Project Manager for the I-95/ Telegraph Road Interchange project as well as three other projects on the Woodrow Wilson Bridge Corridor project with VDOT. He led and managed the efforts on this high-visibility, multi-phased ITS, electrical, lighting and signage project. He’s also served as a Field Superintendent for the major ITS System Upgrade for the VDOT Hampton Roads District Traffic Management System (Phase 3) project. It included all aspects of the ITS, electrical, lighting and signage of the project. Mr. Tamayo will obtain a Virginia DCR Responsible Land Disturber (RLD) certificate, a VDOT ESCCC certificate and will successfully complete OSHA training in electrical safety for Arc Flash Protection and Lockout/Tagout procedures prior to the commencement of construction.

Mr. Tamayo’s experience in ITS and electrical construction and construction management will assure that all facets of the ATM construction are successfully achieved. He will have a staff of experienced and diligent foremen, supervisors, crew chiefs, electricians and constructors from Chesapeake Electrical Systems, Inc. and other Team members. Mr. Tamayo will also be responsible for managing a QA/QC program for all construction activities. Mr. Tamayo will assure that the quality assurance program developed by the Quality Assurance Manager and his Team is maintained to meet VDOT’s needs.

The **Lead Designer** will be **Mr. Mark Flak, PE (Jacobs)**. He has over 37 years of experience in traffic and ITS areas. Mr. Flak will be responsible for ITS Architecture, System Engineering and design. He recently led Jacobs’ ITS/ETC design efforts for Maryland Inter-County Connector (Segment A) Design-Build project. The project included the design (PS&E) and deployment of seven CCTV cameras, two DMS, four sets of lane use control signs, RWIS, HAR, ETC gantries, the redundant fiber-optics communications system, electrical/power systems and system acceptance tests of all equipment and the communications system for the seven miles highway segment. The roadway segment opened successfully in February 2011. He also recently led ITS design and construction management services for several successful projects in the Midwest US

that developed: ITS architectures or updates; design (PS&E) documents for CCTV, DMS, HAR, a ramp gate system, communications (fiber and wireless) systems; standard operating procedures (SOPs) for TMCs; and training programs for operations and maintenance. He also led the management of the deployment and integration of the ITS systems. He is experienced with VDOT design procedures and Specification documents, having prepared numerous design documents (including MOT plans) for VDOT and local agencies. Mr. Flak is fully versed in VDOT's Work Zone Protection Manual as well as the MUTCD. He will perform field reviews of MOT setups and temporary traffic patterns to ensure safe work zones. He is a registered, licensed Professional Engineer in Virginia and an active ITSVa member.

Given the specific issues associated with the gantry designs and structural needs, our Team has assigned **Mr. Elliott Mandel, PE (Jacobs)** to be **Lead Structural Engineer** for the project. Mr. Mandel will be responsible for structural design of support structures and foundations for ITS devices and overhead signs. He brings over 25 years of structural design experience to the Team, leading in the analysis and design of transportation structures including: bridges, retaining walls, highway sign support structures, ITS support structures, and transit facilities. He recently led the design oversight and structural design services for VDOT's I-95 Defense Access Road (DAR) Ramp in Springfield, VA. The project will result in new bridges and sign structures that will connect the HOV lanes of I-95 to the Fort Belvoir North area. Mr. Mandel specifically developed new design details to accommodate the physical connection between new and existing bridges. Recently, Mr. Mandel served as Project Manager for the Theodore Roosevelt Bridge Rehabilitation project bordering Virginia and Washington, DC. The project involved comprehensive inspection and testing of the facility and geotechnical data which resulted in rehabilitation design of the structure. The design also included a complex MOT plan to accommodate deck repairs and overlay. It also included installation of a guide system for the moveable barrier in the middle of the bridge. He brings invaluable experience in a variety of structures for various transportation purposes. He is a registered, licensed Professional Engineer in Virginia.

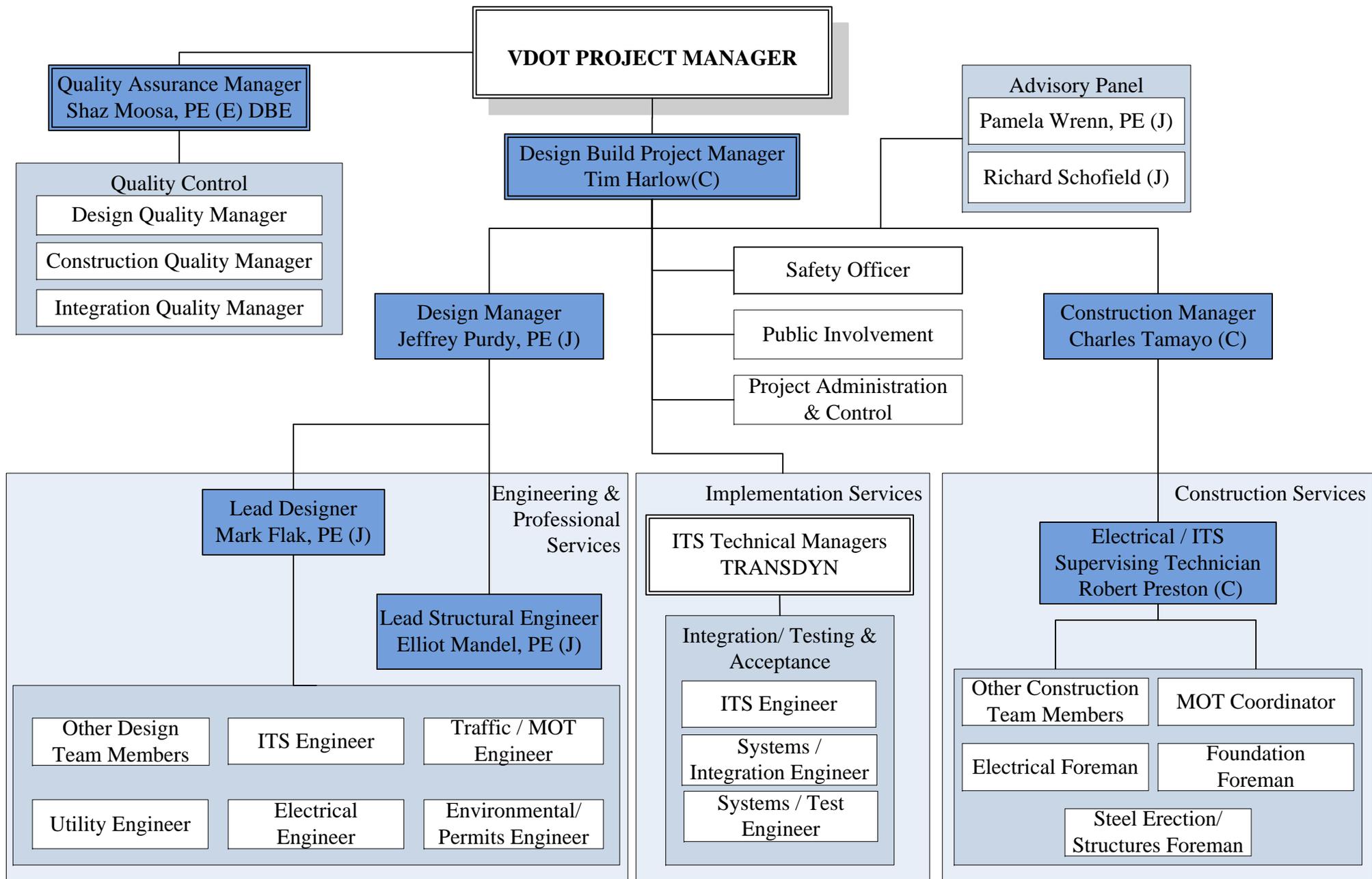
Mr. Robert E. Preston (CES) will serve as the **Lead Electrical/ITS Supervising Technician**. He will oversee the daily construction activities including: scheduling, maintaining the sequence of construction and managing/resourcing the daily manpower, equipment and material needs for the project. He will also ensure that quality assurance procedures are maintained. He brings over 34 years of experience in his field. He currently serves as the General Superintendent for Chesapeake Electrical Systems, Inc. for the I-495 HOT Lanes project (\$36.7 million). He is performing similar duties as planned for the I-66 ATM project including supervision over five subcontractors. He also recently completed work as the General Superintendent on the Dulles International Fourth Runway and Associated Taxiway Projects (\$27.7 million) at Dulles International Airport. In this role, he supervised schedules and over 100 men plus six subcontractors. Also, he recently completed a \$9.2 million project in Washington DC for the Reconstruction of the Benning Road and H Street Road Corridors as General

Superintendent for 30 men. He is a Master Electrician licensed in Virginia and has recently successfully completed OSHA training in electrical safety for Arc Flash Protection and Lockout/Tagout procedures.

In addition to the Key Personnel, the Team members have regional resources of over 100 experienced design engineers and over 120 construction personnel in the various disciplines needed to successfully complete the project. Further, in meeting the 15% DBE goal, additional experienced staff will be made available from resources available to the Team. The Team will assign the discipline leads and personnel to best meet VDOT's project needs.

It is proposed that co-location of the key personnel occur during the major activities of the project. Co-location will facilitate coordination and compatibility of the Team during the project. The Jacobs' Arlington office is immediately adjacent to I-66 at the N. Glebe Road exit and may be a potential site for co-location. It will permit strong working relationships to develop during the project. It will also allow for daily, informal reviews and discussions of the project (e.g. constructability issues, schedules, etc.) on a regular basis. Several alternative project sites are currently being looked at in the I-66 Corridor area.

Finally, a primary issue expressed by VDOT in the past has been a need to assure that the ATM technologies and guidance will be effectively understood and followed by the travelling public. We have added two key, valued resources to our Project Team. Both individuals are current employees of **Jacobs**. They will serve as advisors or information resources for issues related to public education and outreach of the ATM system and effective compliance and operation of the ATM system. Both individuals have led the planning, deployment and operation of ATM currently and in the past. **Ms. Pamela Wrenn, PE** will serve as a key advisor to the project due to her recent work with WSDOT on the Seattle ATM project, the leading active ATM project in the US (only 2 are active). **Mr. Richard Schofield** led the planning and deployment of several ATM systems in the UK and Europe. Both individuals will lend their experience in 'Best Practices' and current operations to assist in guaranteeing VDOT a successful project for years to come.



C – Chesapeake Electrical Systems, Inc.
 J – Jacobs Engineering Group Inc.
 T – Transdyn, Inc.
 E – Engineering & Materials Technologies, Inc.

Experience of Offeror's Team

Experience of Offeror's Team

Our Team has been assembled to ensure we deliver a successful project to VDOT that meets the performance goals in a cost effective manner that minimizes overall maintenance cost to the Department. We have brought together key Virginia firms with the requisite skills, experience, resources and expertise to meet the unique needs of this highly innovative ATM project. Further, we have carefully structured this team to emphasize the local presence and proximity to VDOT and the Project.



Chesapeake Electrical Systems, Inc. (CES) and our team of consultants bring strong experience in the summary of ATM strategies as listed in the RFQ, and are pleased to share our qualifications with VDOT.

CES will serve as the Prime Contractor and lead the coordination activities with VDOT. CES was founded in 1993 by Joseph P. (Joey) Tominovich as a small commercial electrical construction company in Beltsville, MD. We have since relocated our Headquarters to Laurel, MD and have grown into one of the Washington Metropolitan Areas Premier Electrical Construction Companies with satellite offices in Springfield, Virginia, Washington, DC and Dulles International Airport.

We are a full service electrical construction company with experience and expertise in the following areas: Intelligent Transportation Systems, Life Safety Systems, Commercial Electrical Construction, Highway Lighting and Maintenance, Traffic Signalization, Airfield Lighting, Service and Controls and Design-Build Projects. We are a Union only shop with a current field staff of over 120 highly qualified Master Electricians, Journeymen Electricians, Linemen Electricians, Apprentices Electricians, Operators, and Laborers. We are a SWAM certified VDOT contractor as well as a Local Disadvantaged Business Enterprise through the Metropolitan Washington Airports Authority.

Current major construction projects for which CES has been a leader include: the I-495 HOT Lanes in Virginia, Metro's New Silver Line Extension to Dulles International Airport, The Inter-County Connector Project in Maryland, The Elizabeth River Crossing Project in Portsmouth, VA including The Downtown Tunnel/Midtown Tunnel and Martin Luther King Expressway Extension, The Washington Metropolitan Transit Authority Bus Maintenance Facility Renovation Project, and the Arlington County Traffic Management and Communication Fiber Network Upgrade.

Joining CES on this contract will be Jacobs Engineering Group Inc. (Jacobs), Transdyn Inc. (Transdyn) and Engineering & Materials Technologies, Inc. (E.M. Tech). This team was assembled to provide maximum responsiveness to VDOT. CES, Transdyn and E.M. Tech are currently working together on the I-495 HOT Lanes project, ensuring a successful working relationship and seamless project and task management.

Following are brief descriptions of each team member, highlighting our expertise in traffic engineering and ITS. The *Lead Contractor Work History Form* and the *Lead Designer Work History Form*, Attachment 3.4.1(a) and 3.4.1(b) respectively, can be found within the Appendix tab of this submittal.

JACOBS™ With experience that spans more than seven decades, the firm has proven accomplishments in ITS, transportation, traffic engineering, communications, integrated systems, civil engineering and environmental consulting for public agencies and private clients. A staff of more than 50,000 engineers, architects, planners, environmental specialists and construction inspectors provides the depth and diversity of experience and expertise to advance even the most complicated projects from concept through to completion. Locally, Jacobs has offices in Arlington, VA and Baltimore, MD and is currently ranked among the top five consulting design and design-build firms in the nation, according to *Engineering News-Record*. Jacobs will lead the ITS design activities of the project and coordinate with the Team during construction activities. Jacobs' professionals have designed new transportation facilities to the latest industry standards and performed a wide variety of systems engineering and ITS projects to meet traffic operation and safety standards and specifications of state and local agencies. Their solutions are responsive to the safety and convenience of the public, while utilizing cutting edge technologies.

With an established record of accomplishment in ITS projects, Jacobs has designed ITS systems in concert with roadway and freeway projects. Jacobs has led ITS projects across the world. In particular, they have worked recently with Washington DOT in the successful deployment and operation of the Seattle area ATM project, one of two current installations in the US. They also bring a wealth of experience and leadership in ATM systems developed in Europe and the UK. These projects will lend a proven base of lessons learned in the US and around the world that will help to guarantee the success of this VDOT ATM project.

Over many decades, Jacobs has earned a reputation for excellence in traditional traffic engineering and transportation management systems, as well as in ITS, with demonstrated experience that includes:

- Program/Project Management.
- ITS Deployment (Including ATMS) Planning and Design.
- Communication System Design and Testing.
- Traffic Control System Planning, Design and Implementation.
- Area-Wide and Corridor Traffic Simulation Modeling and Studies.
- Roadway Design.
- Structural Design.
- Environmental Engineering Design.
- Hydraulics Design.
- Transportation Management Plan.
- Public Involvement and Public Relations.
- Quality Assurance and Quality Control.
- Rail and Transit Design.



For the I-66 ATM project, Transdyn, Inc. (Transdyn) will provide ITS design support services to CES and Jacobs. Transdyn will also assume the lead role of system integrator and tester for the newly installed and commissioned equipment, hardware, and

software. Transdyn will perform their role on this project from the locally based, full service, regional operation located in Chantilly, VA.

Transdyn is recognized by VDOT for their ITS systems management and integration capabilities. They are involved in leading national standards development for ITS areas. They have managed and integrated ITS across the country including working with Jacobs on complex ITS deployments in Maryland and Pennsylvania. For this project, Transdyn will participate in the VDOT software procurement project as a 'silent' partner. Their role will be to attend meetings, maintain status of the ATM software contract and provide input and feedback to/from the ATM software contractor to guarantee successful integration of the ATM project. Transdyn will also provide input to our ATM design requirements to assure field/equipment end of the ATM system is fully compatible with the software system.

As an experienced and proven ITS integrator with their own software, DYNAC™, Transdyn possesses the unique qualifications and tools to mitigate schedule, technical, and cost risk to the integration and testing portion of this project. In order to fully test from the field to the PSTOC as well as to verify and demonstrate integrated functionality such as queue detection, Transdyn will utilize a single-server DYNAC™ system. This independent system will enable our testers to verify device functionality and condition reporting from the road side equipment to the demarcation point within the PSTOC. Utilizing a standalone temporary DYNAC™ server, this approach eliminates the risk to on-going VDOT operations. Using Transdyn's proposed method, the delivered system will therefore be more likely to meet or exceed the overall system functionality described in the existing Concept of Operations documentation.

Over 35 years, they have taken their expertise as system integrators in four major markets; Transportation, Environmental, Rail Transit and Security and applied technology to successfully improve the quality of life for the traveling public, provide safe drinking water for our cities, reduce commuter travel times, lower pollution into the air and waterways and protect critical infrastructure. Their customers who recognize their unmatched system integration capabilities and ATMS product, DYNAC, include: the "world's busiest" George Washington Bridge, MassDOT's Boston Central Artery Tunnel, VDOT Hampton Roads and Capital Beltway HOT Lanes and the entire country of New Zealand.

The depth of their staff and strong financial position assure their customers of their ability to provide long-term support as a solution provider for their mission-critical systems. Transdyn has the flexibility to serve as a specialty subcontractor or system supplier for many projects, but when appropriate they also take full turnkey responsibility as prime contractor with full bonding and assurances of a timely and successful completion.



E.M. Tech is a full service engineering company, providing geotechnical, structural, and forensic engineering, consulting, materials testing, and construction quality assurance/quality control services. Since its establishment in January 1997, E.M. Tech has been committed to providing high quality service to their clients in the Virginia, Maryland, and Washington,

DC areas. Over the past 15 years, E.M. Tech has developed into one of the region's most respected full-service engineering consulting firms.

E.M. Tech will serve as the Quality Assurance Management Team for the project. They provide a broad spectrum of services in which their personnel combine common sense with sophisticated analysis to provide the most feasible recommendations and conclusions to their clients. They are dedicated to providing consistent and concentrated efforts toward the application of knowledge and expertise to project design, development, construction and forensic investigation. Their capabilities range from performing laboratory tests to investigating complex subsurface conditions, from assessing the conformance of construction methods and materials to developing project specifications, from assessing water intrusion in basements to evaluating the cause of foundation settlement, from evaluating soil erosion to analyzing and designing critical slopes and retaining structures, from inspecting building foundations to analyzing and designing building foundations, from inspecting structural members of projects under construction to evaluating the structural integrity of buildings already in use, and much more.

E.M. Tech's fully equipped in-house materials laboratory supports their consulting and testing services. Their facilities have been accredited by the AASHTO Materials Reference Laboratory (ARML), the Washington Area Council of Engineering Laboratories (WACEL), and the Cement and Concrete Reference Laboratory (CCRL).

E.M. Tech's staff of approximately 20 technical and administrative personnel is comprised of Professional Engineers, a Professional Geologist, Staff Level Engineers, and Certified Engineering Technicians who provide accurate and timely consulting, engineering, materials testing, and inspection services. Their key staff is comprised of individuals with significant experience, strong educational and training backgrounds, and a service-centered attitude toward providing quality control services.

Project Risks

Project Risk

We understand that there are numerous risks and unknowns in projects such as the I-66 ATM project. As a Team, we are structured to ensure that all risks are identified and minimized or eliminated. We can effectively make this statement because of our past experiences and the lessons learned from past, similar efforts. Our Team will employ a standard systems engineering process during our design. We plan to conduct life-cycle cost analyses to assure that only favorable technologies and products are utilized. We also plan to build on the successes of VDOT in its recent research on ATM and our global experience in ATM design and operations. Our Team will coordinate with national Standards Committees to assure that the system fully meets current and planned future standards. We also encourage periodic peer reviews with agencies having implemented similar such systems as well as those in progress. Our Team plans to conduct soil borings at each location where a gantry, CCTV or other foundation is planned. We will conduct extensive, hands-on field reviews of existing conditions. These tasks are aimed at minimizing or eliminating all project risks.

We will use a risk management process to identify, evaluate and resolve key project risks. Our risk management process is an iterative process applied during all phases of a project from the proposal phase through the warranty and maintenance period and communicated using a risk management plan. The key objectives of our risk management process include:

- a) **Reduce surprises:** Control of adverse events is improved by identifying and taking actions to minimize their probability and impact.
- b) **Improve planning, performance, and effectiveness:** Sound and effective planning mitigates negative outcomes and achieves better performance.
- c) **Enhance economy and efficiency:** Improve resource management and avoidance of costly time or financial mistakes.
- d) **Client satisfaction:** Mutual, proactive risk management enhances two-way communications and significantly improves the likelihood of a successful outcome.

For the RFQ Response, we have identified three of our most critical risks of this Project. They are:

RISK #1 – COORDINATION

Coordination among stakeholders is essential to ensure the successful design and operation of the ATM system. Close coordination with other local projects and programs as well as national programs (e.g. Standards Development) are vital to ensuring compatibility of systems and operations in the near-term and for future expansion needs. Coordination with VDOT's Northern Region Public Safety and Traffic Operations Center (PSTOC) operational protocol is critical to the eventual seamless integration of the ATM component into the overall regional operational strategy.

1.1 ATM Software Developer Coordination

Risk - The proposed I-66 ATM project will design and install the ATM hardware at the field level and communication system between the field hardware and the PSTOC. A separate,

independent procurement is planned by VDOT for the software system aimed at controlling and operating the ATM and communicating to/from the devices and between the field and the TMC. It requires close coordination of the ATM hardware, firmware and software elements. Gaps in the coordination can result in field and system compatibility issues that can be costly to resolve and result in delays to field operation of the system.

Mitigation – The systems engineering process will be followed to ensure individual field elements and the integrated system meets or exceeds the overall system functionality described in the existing Concept of Operations. Proper systems integration and verification/ validation testing at key stages during the project are necessary to mitigate possible schedule, technical and cost risks. Factory acceptance testing of sample field equipment, integration testing of installed subsystems, system verification testing to ensure end-end functionality, and system validation testing are all important components of this process. Transdyn, a key member of our Team, recognized for their ITS systems management and integration expertise, are involved in leading ITS national standards development and have managed and integrated ITS across the country including working with Jacobs on complex ITS deployments in Maryland and Pennsylvania. Transdyn will participate in the VDOT software procurement project as a silent partner. Their role will be to attend meetings, maintain status of the ATM software contract and provide input and feedback to/from the ATM software contractor to guarantee successful integration of the ATM project. Transdyn will also provide input to our ATM design process to assure field/equipment end of the ATM system is fully compatible with the software system.

In order to fully test from the field to the PSTOC as well as to verify and demonstrate integrated functionality such as queue detection, Transdyn will utilize a single-server DYNAC™ system. This independent system will enable our testers to verify device functionality and condition reporting from the road side equipment to the demarcation point within the PSTOC. Utilizing a standalone temporary DYNAC™ server, this approach eliminates the risk to on-going VDOT operations. Cost and schedule risk will be mitigated as Transdyn will utilize our own resources, staff, tools, and software to complete the testing, rather than rely on piecemeal 3rd party vendor applications which are not designed to verify “integrated” functionality. Using Transdyn’s proposed method, the delivered system will therefore be more likely to meet or exceed the overall system functionality described in the existing Concept of Operations documentation.

1.2 Lack of National ATM Standards

Risk - ATM is a relatively new concept in the US. Limited standards, definitions or protocols exist for its application. Even the MUTCD does not have a standard for Lane Control Signs with Washington and Minnesota using different sign displays. Over the course of the I-66 ATM project, there is a risk that several ITS standards that would impact the system operation may be developed or enhanced resulting in later, more costly upgrades to the deployed ATM.

Mitigation- To limit the impact of compatibility to new standards, it will be necessary for our Team to build-in flexibility into the standards used in system development. Our Team has several parties from Transdyn and Jacobs that are active members of various ITS Standards Committees and who participate in the regular meetings on ITS Standards Development including TRB, ITS America and other venues where Committee meetings are held. Our Team

members will use their contacts and information on the latest standards' status to assure that its end of the ATM design/deployment as well as ATM software development vendor are kept aware of the latest developments and can design as needed.

1.3 Capital Beltway HOT Lanes Coordination

Risk - Other projects under construction in the vicinity will require coordination to assure that the construction staging and phasing for the I-66 ATM is compatible with travel needs of the public. One of these projects will be the ongoing HOT lanes project on the Capitol Beltway. Inconsistencies can result in misinformation to the traveling public as well as lack of public acceptance of the ATM system.

Mitigation - Our Team's coordination with the HOT Lanes project is enhanced by the ongoing participation of two valued Team members, CES and Transdyn, as integral members of the HOT Lanes PPTA Team. Their similar roles in the project as proposed for the I-66 ATM will optimize coordination on the project schedule, scope and needs. For other projects ongoing or planned during the I-66 ATM project life, including the ATM Software Development project, we propose having one of our Team members participate in project meetings as a silent partner to facilitate coordination.

1.4 FHWA Coordination

Risk - The I-66 ATM project is a federally-funded project. As such, approval of all phases of the project will require FHWA buy-in. Given the current state of ATM standards, lack of compatibility of ATM messaging within FHWA, and limited applications to-date on ATM policies and procedures, there may be risks to time schedules related to approvals or acceptance to designs and design issues.

Mitigation - As noted earlier, one of the strengths of our Team is the involvement of our Team members in active deployments and operation of ATM systems in the U.S. and overseas (Jacobs), development and application of national ITS standards (Jacobs, Transdyn), and use of the systems engineering process (CES, Jacobs, Transdyn). We plan to leverage the experience and lessons learned by our Team to address and facilitate the approvals/acceptance of FHWA throughout the project.

RISK # 2 – COST

Project costs for an innovative project such as the I-66 ATM can represent a key risk in budget control management. Escalating material costs, unknown or additional field conflicts, changes in ITS Standards, risks associated with Integration needs, additional design requirements required by other local agencies (e.g. WMATA), and need for 'special' equipment (not part of off-the-shelf items) all present challenges that can impacts budgets. Developing and implementing an ATM system compatible with the VDOT budget and system requirements will require strict cost control management. Key issues are:

2.1 Construction, Operations and Maintenance Costs

Risk – Construction, Operations and Maintenance Costs exceed VDOT budget.

2.1.1 Sign Structures/Gantries Cost Controls

Challenges facing the project include the current status of the approved gantry structure designs. Gantry structures in some areas may have span lengths exceeding 210 feet to clear all travel lanes, shoulders, clear zones and WMATA right of way. The current four-chord sign trusses can cost in excess of \$350,000. With spacing at ½ mile intervals, the cost of the structures is significant.

VDOT has proposed the use of monotube structures but this design, to the best of our knowledge, has not been approved as a standard by VDOT Structures - Central Office and would require special VDOT permissions. In addition, these structures will require specific fabrication challenges due to size, design of access points and other features. A limited number of vendors will be available to support the fabrication needs of the structures. Long lead times in fabrication also may be expected and may impact time schedules as well.

Mitigation - Our Team will work closely with VDOT to value engineer the gantry structures and cost. We have a Team of structural engineers experienced in VDOT structural design and procedures. We also plan to closely review the proposed footing design and locations of the gantry structures, particularly around WMATA's METRO system, and define location alternatives where foundations may be placed between the VDOT and WMATA right of way without compromising the operations and safety of either.

In addition, the design features of the gantry structures will have a direct bearing on ATM maintenance costs. Access to the signs on the structure for maintenance purposes will be required and should be such that traffic on I-66 and the WMATA Metrorail has little or no disruption. Integrated walkways and other options will be considered and value engineered simultaneously minimize construction costs and improve maintenance capabilities.

Once a gantry design is established, prequalification of fabricators will be conducted so that the quality in fabrication is established early in the process and production efficiencies established.

2.1.2 Utilities in the ROW

VDOT-owned utilities are prevalent in the I-66 right of way area. They include ITS communications network; power lines; and ITS field devices themselves. Relocation of these elements of the VDOT I-66 infrastructure can be expensive and disruptive to day-to-day operation of the Corridor.

Mitigation - We will conduct detailed site investigations to determine asset location and to mark-out these assets prior to construction. Use of available as-built plans will be made as a preliminary check but will be augmented with field checks for verification of asset location, quality and condition. We will identify opportunities to leverage these assets for use in the ATM project. For example, we will examine opportunities to tap existing power lines and upgrade the lines to minimize costs and the addition of new power drops by the local utility.

If new construction is needed, we will evaluate horizontal direction drilling (HDD) to mitigate the need to relocate existing infrastructure, avoid open trench construction, and place all fiber optic and power cables in a single bore using dielectric cables that meet all code requirements.

2.1.3 Maintenance of Traffic (MOT) and Construction Productivity

Traffic control and maintenance of traffic costs will represent a respectable project cost item, primarily due to daily setup and take down. In addition, the limited night-time work hours lengthen the project schedule. Both present opportunities for cost and schedule recovery.

Mitigation - Our Team will conduct constructability reviews for the project at all stages of design. We will identify opportunities to stage the project off the I-66 right of way and bring pre-assembled units to the site. These activities may range from stuffing and testing cabinets with their electronics prior to shipping and placing in the field, to pre-termination of cables for quicker hook-up in the field, to pre-assembly of the gantry structures off-site nearby. Also, pre-installation and field testing ITS devices on gantry structures prior to final overhead placement will be considered.

2.1.4 Technology Costs

Several of the ATM features may consist of special items or have limited standards that may be in the process of change. Or, the designs themselves may represent unique features of proven technologies. For example, the DMS signs planned for use in ATM may require special design and fabrication due to its specialized size and application. This uniqueness may represent added project costs for development and fabrication.

Mitigation - Our Team plans to conduct FHWA-compliant value engineering studies to verify that equipment selected is the most cost-effective for existing and future needs. We plan to work with the vendors to identify favorable solutions at reasonable costs. Our past relationships with many of the major vendors will bode well to meeting this objective.

2.2 Recurring Operating and Maintenance Expense

Risk - With the added ITS assets planned for the I-66 ATM, increased maintenance and operating costs may be expected. With new equipment, short-term costs due to warranties and the favorable nature of electronics and their service lives may be considered low. As time goes on, these costs will increase and may represent a key budget item.

Mitigation - Our Team plans to utilize the value engineering process throughout the project. The process looks not only at the initial construction or deployment costs of specific assets but also at operating and maintenance costs. Our goal is to provide the project with assets and devices that are engineered to minimize maintenance needs.

RISK #3 – SAFETY

Similar to the Virginia Department of Transportation, our Team members highlight safety as a #1 priority in its operation. We embrace VDOT's safety initiative and the FHWA initiative for zero fatalities. We discuss key elements of our safety approach for the I-66 ATM project below.

3.1 Safety During Construction

Risk – Presence of construction activities associated with the ATM project and limited lane closures during specific construction periods can inadvertently disrupt traffic and result in increased exposure to crashes as well as providing some temporarily restricted conditions for I-66 motorists, WMATA patrons, WMATA staff and construction workers. These situations can result in increased opportunities for crashes or incidents. Mitigation strategies are discussed below.

Mitigation - Limited closures will be permitted for project work. To assure that optimal safety objectives are maintained, all work areas will require that detailed, VDOT-approved traffic control plans (MOT) are developed, implemented and maintained for each work area. Regular review of these plans for compliance during the work period are required as part of our Safety Program.

CES has a committed Safety Program that it employs for its entire staff and will require that any staff (including VDOT staff) that will be present in the work area be required to participate in safety training. We will conduct safety training and routine safety (daily briefings) for all team members and construction personnel.

Mitigation - Enforcement of work zone traffic control regulations is critical to maintaining a safe environment for motorists and construction workers. While we expect limited lane closures, there may be isolated situations (e.g. when raising a gantry over the roadway or installing DMSs or lane control signs) that may require temporary, short-term lane closure(s). We will coordinate these situations with the VDOT Mega Projects Team. We will limit these activities to the lowest volume time periods. We will limit any work over the roadway to minimal lengths of time by planning and performing as much work as feasible on the roadside or off-site such that minimal closures are required.

Mitigation - The project requires significant coordination with WMATA as construction occurs adjacent to and above WMATA properties. Our objective will be to maintain WMATA Metrorail operations at all times and a safe operating environment for WMATA patrons and staff as well as for our construction workers operating near the WMATA right of way.

The VDOT preferred sign gantry design in the WMATA track area will have a single span crossing from one side of I-66 to the other side. Limited lane closures of I-66 and coordination with Metrorail will be required in planning and conduct of the lifting and setting of these structures. By limiting this type construction to very early morning hours when Metrorail operation is shut down, impact to WMATA operations will be minimized. However, further coordination with Metrorail will be required for de-energizing WMATA's third rail to assure worker construction safety. We will perform close, early coordination with WMATA and approvals of permits to work within their encroachment area.

Appendix

ATTACHMENT NO. 3.2.5(a)

**CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS**

Project No.: 0066-96A-917, P101, N501

1) The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency.

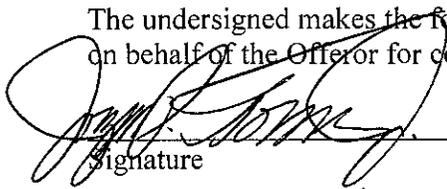
b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; and have not been convicted of any violations of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property;

c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1) b) of this certification; and

d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

 _____
Signature Date Title
11/30/11 President
Chesapeake Electrical Systems, Inc.
Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-007-111, P101, R-201, C-501, B-627

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

[Handwritten Signature] 12-15-2017 Vice President
Signature Date Title

Jacobs Engineering Group Inc.

Name of Firm

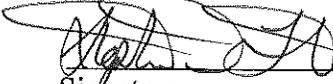
ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-007-111, P101, R-201, C-501, B-627

- 1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- 2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

 11/29/2011 REGIONAL MANAGER
Signature Date Title

TRANSOYN, INC.
Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0066-96A-917, P101, N501

1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

The undersigned makes the foregoing statements to be filed with the proposal submitted on behalf of the Offeror for contracts to be let by the Commonwealth Transportation Board.

<u><i>smjasa</i></u>	<u>12-2-11</u>	<u>Principal Engineer</u>
Signature	Date	Title

Engineering & Materials Technologies, Inc. (E.M. Tech)
Name of Firm



COMMONWEALTH OF VIRGINIA



CERTIFICATE OF QUALIFICATION

Chesapeake Electrical Systems, Inc.

Vendor Number: **C855**

In accordance with the Regulations of the Virginia Department of Transportation, you are hereby notified that the following Rating and Classifications has been assigned to you by the Commissioner:

PREQUALIFIED (CURRENTLY INACTIVE)

Work Classes: Electrical Installation.

Issue Date: March 22, 2011

This Rating and Classification will Expire: March 31, 2012

Handwritten signature of Suzanne FR Lucas in cursive script.

Suzanne FR Lucas Prequalification Officer

Handwritten signature of Don E. Silies in cursive script.

Don E. Silies, Contract Engineer

=====
C855
CHESAPEAKE ELECTRICAL SYSTEMS, INC.
EMPLOYER ID: 52-1844991
PREQ. EXP : 03/31/2012

--PREQ ADDRESS ----- -- WORK CLASSES -----
9381 DAVIS AVENUE 018 - ELECTRICAL INSTALLATION
LAUREL, MD 20723-0000
PHONE : 301-206-5020
FAX : 301-206-5021

BUSINESS CONTACT: HARLOW, TIMOTHY WILLIAM
EMAIL: THARLOW@C-E-S.NET

-----DBE INFORMATION-----

DBE TYPE : N/A
DBE CONTACT: N/A
DBE/WBE EXP: N/A

=====
C1203
CHESAPEAKE SHOTCRETE, INC.
EMPLOYER ID: 20-5219927
PREQ. EXP : 03/31/2012

--PREQ ADDRESS ----- -- WORK CLASSES -----
111 CATHEDRAL STREET 054 - MARINE CONSTRUCTION
SUITE 102 055 - BRIDGE REPAIRS
ANNAPOLIS, MD 21401 056 - MASONRY CONSTRUCTION
PHONE : 410 295-1224
FAX : 410-295-1557

BUSINESS CONTACT: MILLER, MATTHEW UPTON
EMAIL: MUMILLER@COMCAST.NET

-----DBE INFORMATION-----

DBE TYPE : N/A
DBE CONTACT: N/A
DBE/WBE EXP: N/A



Commonwealth of Virginia
State Corporation Commission

Virg

11/30/11CISM0180CORPORATE DATA INQUIRY09:47:42

CORP ID: F124990 - 5 STATUS: 00 ACTIVE STATUS DATE: 10/16/00
CORP NAME: CHESAPEAKE ELECTRICAL SYSTEMS, INC.
DATE OF CERTIFICATE: 10/16/2000 PERIOD OF DURATION: INDUSTRY CODE: 00
STATE OF INCORPORATION: MD MARYLAND STOCK INDICATOR: S STOCK
MERGER IND: CONVERSION/DOMESTICATION IND:
GOOD STANDING IND: Y MONITOR INDICATOR:
CHARTER FEE: 50.00 MON NO: MON STATUS: MONITOR DTE:
R/A NAME: CT CORPORATION SYSTEM
STREET: 4701 COX RD #301 AR RTN MAIL:
CITY: GLEN ALLEN STATE : VA ZIP: 23060
R/A STATUS: 5 B.E. AUTH IN VI EFF. DATE: 01/05/04 LOC : 143
ACCEPTED AR#: 211 52 8787 DATE: 11/30/11 HENRICO COUNTY
CURRENT AR#: 211 52 8787 DATE: 11/30/11 STATUS: A ASSESSMENT INDICATOR: 0

<u>YEAR</u>	<u>FEES</u>	<u>PENALTY</u>	<u>INTEREST</u>	<u>TAXES</u>	<u>BALANCE</u>	<u>TOTAL SHARES</u>
11	100.00					1,000

(Screen Id:/Corp_Data_Inquiry)



Commonwealth of Virginia
State Corporation Commission

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Virginia.gov

CISM0180

CORPORATE DATA INQUIRY

09/30/11

15:42:29

CORP ID: F119261 - 8 STATUS: 00 ACTIVE STATUS DATE: 10/17/94
 CORP NAME: JACOBS ENGINEERING GROUP INC.

DATE OF CERTIFICATE: 10/17/1994 PERIOD OF DURATION: INDUSTRY CODE: 70
 STATE OF INCORPORATION: DE DELAWARE STOCK INDICATOR: S STOCK
 MERGER IND: CONVERSION/DOMESTICATION IND:
 GOOD STANDING IND: Y MONITOR INDICATOR:
 CHARTER FEE: MON NO: MON STATUS: MONITOR DTE:
 R/A NAME: CT CORPORATION SYSTEM

STREET: 4701 COX RD STE 301

AR RTN MAIL:

CITY: GLEN ALLEN STATE : VA ZIP: 23060 6802

R/A STATUS: 5 B.E. AUTH IN VI EFF. DATE: 01/05/04 LOC : 143

ACCEPTED AR#: 210 26 9170 DATE: 09/27/10 HENRICO COUNTY

CURRENT AR#: 210 26 9170 DATE: 09/27/10 STATUS: A ASSESSMENT INDICATOR: 0

YEAR	FEES	PENALTY	INTEREST	TAXES	BALANCE	TOTAL SHARES
11	1,700.00				1,700.00	241,000,000

(Screen Id:/Corp_Data_Inquiry)

Commonwealth of Virginia



STATE CORPORATION COMMISSION

Richmond, October 17, 1994

This is to certify that a certificate of authority to transact business in Virginia was this day issued and admitted to record in this office for

Jacobs Engineering Group Inc.

a corporation organized under the laws of DELAWARE
and that the said corporation is authorized to transact business in Virginia, subject to all Virginia laws applicable to the corporation and its business.



State Corporation Commission

Attest:

William J. Bridge

Clerk of the Commission



Virginia.gov

CISM0180

CORPORATE DATA INQUIRY

11/29/11

14:15:04

CORP ID: F160922 - 3 STATUS: 00 ACTIVE STATUS DATE: 01/26/06
 CORP NAME: **TRANSDYN, INC.**

DATE OF CERTIFICATE: 12/01/2004 PERIOD OF DURATION: INDUSTRY CODE: 00
 STATE OF INCORPORATION: DE DELAWARE STOCK INDICATOR: S STOCK
 MERGER IND: CONVERSION/DOMESTICATION IND:
 GOOD STANDING IND: Y MONITOR INDICATOR:
 CHARTER FEE: 50.00 MON NO: MON STATUS: MONITOR DTE:
 R/A NAME: CT CORPORATION SYSTEM

STREET: 4701 COX RD STE 301 AR RTN MAIL:

CITY: GLEN ALLEN STATE : VA ZIP: 23060 6802

R/A STATUS: 5 B.E. AUTH IN VI EFF. DATE: 12/01/04 LOC : 143

ACCEPTED AR#: 210 30 4048 DATE: 12/10/10 HENRICO COUNTY

CURRENT AR#: 210 30 4048 DATE: 12/10/10 STATUS: A ASSESSMENT INDICATOR: 0

YEAR	FEES	PENALTY	INTEREST	TAXES	BALANCE	TOTAL SHARES
11	100.00				100.00	1,000

(Screen Id:/Corp_Data_Inquiry)

Please note: The SCC website will be unavailable **Thursday, December 15, from 6:00 until 10:00 p.m.** for system maintenance.

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CISM0180

CORPORATE DATA INQUIRY

12/15/11

09:32:18

CORP ID: 0478633 - 1 STATUS: 00 ACTIVE STATUS DATE: 01/29/97

CORP NAME: ENGINEERING & MATERIALS TECHNOLOGIES, INC.

DATE OF CERTIFICATE: 01/29/1997 PERIOD OF DURATION: INDUSTRY CODE: 70

STATE OF INCORPORATION: VA VIRGINIA STOCK INDICATOR: S STOCK

MERGER IND: CONVERSION/DOMESTICATION IND:

GOOD STANDING IND: Y MONITOR INDICATOR:

CHARTER FEE: 50.00 MON NO: MON STATUS: MONITOR DTE:

R/A NAME: SHAHZAD S MOOSA

STREET: 7857 COPPERMINE DR AR RTN MAIL:

CITY: MANASSAS STATE : VA ZIP: 20109

R/A STATUS: 2 OFFICER EFF. DATE: 07/20/06 LOC : 176

ACCEPTED AR#: 211 02 6160 DATE: 01/20/11 PRINCE WILLIAM

CURRENT AR#: 211 02 6160 DATE: 01/20/11 STATUS: A ASSESSMENT INDICATOR: 0

YEAR	FEES	PENALTY	INTEREST	TAXES	BALANCE	TOTAL SHARES
12	100.00				100.00	5,000

Commonwealth of Virginia



STATE CORPORATION COMMISSION

Richmond, January 29, 1997

This is to Certify that the certificate of incorporation of

ENGINEERING & MATERIALS TECHNOLOGIES, INC.

*was this day issued and admitted to record in this office
and that the said corporation is authorized to transact its business
subject to all Virginia laws applicable to the corporation and its
business. Effective date:*

January 29, 1997



State Corporation Commission

William J. Bridge
Clerk of the Commission

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
05-31-2012

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
2705 033850A

BOARD FOR CONTRACTORS
CLASS A CONTRACTORS LICENSE

CHESAPEAKE ELECTRICAL SYSTEMS INC
9381 DAVIS AVE
LAUREL MD 20723



Jay W. DeBoer
Jay W. DeBoer, Director

CLASSIFICATIONS ELE

ALTERATION OF THIS DOCUMENT, USE AFTER EXPIRATION, OR USE BY PERSONS OR FIRMS OTHER THAN THOSE NAMED MAY RESULT IN CRIMINAL PROSECUTION UNDER THE CODE OF VIRGINIA.

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COMMONWEALTH OF VIRGINIA

BOARD FOR CONTRACTORS - CLASS A
CONTRACTOR LICENSE - CLASSIFICATIONS: ELE

NUMBER: 2705 033850A EXPIRES: 05-31-2012

CHESAPEAKE ELECTRICAL SYSTEMS INC

9381 DAVIS AVE

LAUREL MD 20723



(DETACH HERE)

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
02-29-2012

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0411000506

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ARC, ENG

JACOBS ENGINEERING GROUP INC
1100 NORTH GLEBE RD STE 500
ARLINGTON, VA 22201



Gordon N. Dixon
Gordon N. Dixon, Director

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COMMONWEALTH OF VIRGINIA

BOARD FOR APESCIDLA
BUSINESS ENTITY BRANCH OFFICE REGISTRATION
NUMBER: 0411000506 EXPIRES: 02-29-2012
PROFESSIONS: ARC, ENG
JACOBS ENGINEERING GROUP INC
1100 NORTH GLEBE RD STE 500
ARLINGTON, VA 22201



1001

(DETACH HERE)

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
05-31-2013

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
2705 091859A

BOARD FOR CONTRACTORS
CLASS A CONTRACTORS LICENSE

TRANSDYN INC

2855 PREMIERE PARKWAY SUITE F

DULUTH GA 30097



Gordon N. Dixon
Gordon N. Dixon, Director

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(POCKET CARD)

COMMONWEALTH OF VIRGINIA

BOARD FOR CONTRACTORS - CLASS A
CONTRACTOR LICENSE - CLASSIFICATIONS: ELE

NUMBER: 2705 091859A EXPIRES: 05-31-2013
TRANSDYN INC

2855 PREMIERE PARKWAY SUITE F



(FOLD)

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
9960 Mayland Dr., Suite 400, Richmond, VA 23233

(DETACH HERE)



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DULUTH GA 30097

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON
12-31-2013

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER
0407005994

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
BUSINESS ENTITY REGISTRATION

PROFESSIONS: ENG

ENGINEERING & MATERIALS TECHNOLOGIES, INC
7857 COPPERMINE DR
MANASSAS, VA 20109



Gordon N. Dixon
Gordon N. Dixon, Director

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DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON

07-31-2012

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER

0402021398

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

SHAHZAD SULTAN MOOSA
7857 COPPERMINE DR.
MANASSAS, VA 20109



Gordon N. Dixon
Gordon N. Dixon, Director

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**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA**

EXPIRES ON

01-31-2013

**9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500**

NUMBER

0402014146

**BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE**

**JEFFREY ELLISON PURDY
1032 BELFIELD AVENUE
DREXEL HILL, PA 19026-4209**



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Gordon N. Dixen
Gordon N. Dixen, Director **A18**

(SEE REVERSE SIDE FOR NAME AND/OR ADDRESS CHANGE)

**DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA**

EXPIRES ON

09-30-2013

**9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500**

NUMBER

0402025047

**BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE**

**MARK A FLAK
2893 OAK SHADOW DR
OAK HILL, VA 20171**



Gordon N. Dixon
Gordon N. Dixon, Director

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION
COMMONWEALTH OF VIRGINIA

EXPIRES ON

01-31-2013

9960 Mayland Dr., Suite 400, Richmond, VA 23233
Telephone: (804) 367-8500

NUMBER

0402022085

BOARD FOR ARCHITECTS, PROFESSIONAL ENGINEERS, LAND SURVEYORS, CERTIFIED INTERIOR DESIGNERS
AND LANDSCAPE ARCHITECTS
PROFESSIONAL ENGINEER LICENSE

ELLIOTT DAVID MANDEL
115 NORTH CLEVELAND STREET
ARLINGTON, VA 22201



Gordon N. Dixon
Gordon N. Dixon, Director

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Commonwealth of Virginia



Let it be known that

ROBERT E. PRESTON

having demonstrated professional competence through training and written examination in accordance with the State Certification Program for Building Related Tradesmen is hereby certified as a

MASTER ELECTRICIAN

in accordance with Section 15.1-11.4, of the Code of Virginia promulgated by

the State Board of Housing and Community Development

In witness thereof this certificate has been issued

this 23RD day of MARCH, 1992

Agent

Department of Professional & Occupational Regulation
9960 Mayland Dr., Suite 400, Richmond, VA 23233
(804) 367-8500

BOARD FOR CONTRACTORS
TRADESMAN LICENSE

Card No. 2710 051621

Issue Date: 12-30-2008
Expire Date: 12-31-2012

ROBERT EDWARD PRESTON
3536 TENLEY PLACE

OWINGS MD 20736



TRADE DESIGNATIONS
MASTER ELECTRICIAN

A handwritten signature in cursive script, reading "Gordon N. Dixon".

Gordon N. Dixon, Director
Department of Professional & Occupational Regulation

*Alterations of this document, use after expiration, or use by persons
other than those named may result in criminal prosecution.*

Cut along dotted line. Fold on solid line. Lamination recommended.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title:	Tim Harlow, Vice President
b. Project Assignment:	Design Build Project Manager
c. Name of Firm with which you are now associated:	Chesapeake Electrical Systems, Inc.
d. Years experience: With this Firm <u>16</u> Years With Other Firms <u>14</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last (15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.):	<p>Chesapeake Electrical Systems, Inc., Vice President July 1995 – Current</p> <p>Mr. Harlow oversees and manages all Project Manager, Estimators, Buyers and office staff for the Northern Virginia Office. He is involved with all projects in the region.</p>
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:	<p>Bishop Ireton High School, Alexandria, VA/ 1981</p> <p>IBEW Local Union 26 JATC, Washington, DC/ 1984</p>
f. Active Registration: Year First Registered/ Discipline/VA Registration #:	
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.)	<p>I-495 HOT Lanes Project (2008 – Current) Mr. Harlow was previously the Senior Project Manager for Chesapeake Electrical Systems, Inc. and is now the Vice President overseeing all project operations. His responsibilities include assisting the Project Manager with oversight of day to day operations of project team comprised of three Assistant Project Managers, one Quality Control Manager, one ITS/ Electrical Superintendent, and two ITS Technical Managers to construct this complex ITS, electrical and lighting project.</p> <p>Dulles International Airport – 4th Runway (2007 – 2009) Mr. Harlow was CES's Senior Project Manager for the electrical work on this project. CES teamed with Lane Construction Corporation. His responsibilities included: management and oversight of day to day operations with a project team comprised of Project Engineers, Assistant Project Managers, General Superintendent, Technical Managers and Administrative Assistants on this multi-phased ITS, electrical, lighting and signage project.</p> <p>Frederick Douglas Bridge Project (2005 – 2007) Mr. Harlow was CES's Senior Project Manager for the upgrade to the bridge's architecture and infrastructure project. Recognized in part for its complex requirements and fast-tracked schedule, the success of the bridge's renovations marked an achievement for CES and the other contractors involved. His responsibilities included: management and oversight of day to day operations with a project team comprised of Project Engineers, Assistant Project Managers, General Superintendent, Technical Managers and Administrative Assistants on this multi-phased electrical and lighting project.</p>

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title:	Shaz Moosa, PE, Principal Engineer/ President
b. Project Assignment:	Quality Assurance Manager
c. Name of Firm with which you are now associated:	Engineering & Materials Technologies, Inc. (E.M. Tech)
d. Years experience: With this Firm <u>15</u> Years With Other Firms <u>15</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last (15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.):	<p>Engineering & Materials Technologies, Inc., Principal Engineer, President Jan. 1997 - Current Principal Engineer-in-Charge of all engineering and consulting services, providing Quality Control / Quality Assurance management of projects involving construction inspections, materials testing, geotechnical engineering, structural design, analysis & evaluation, and forensic engineering. Mr. Moosa's expertise includes exploration, investigations, studies, analyses, design, inspections, and remedial specifications for the following: foundations (steel piles, helical piers, auger cast piles, conventional underpinning); earth supporting and earth retaining structures (roadways, slabs, mechanically stabilized walls, cast in-place concrete walls); reinforced slopes and embankments (cut-off caissons, geogrids, tie-backs, soil nails); ponds, lakes, and dams; improvement and/or stabilization of unsuitable soils (lime, cement, soil blending); recycled construction materials (recycled concrete, pulverized bituminous pavement); and underground utilities SWM structures (sand filters, box culverts, junction boxes, weirs, SWM detention tanks, riser structures, etc.).</p>
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:	<p>Iowa State University, Ames, Iowa / Master of Science / 1986 / Geotechnical Engineering Iowa State University, Ames, Iowa / Bachelor of Science / 1983 / Civil Engineering</p>
f. Active Registration: Year First Registered/ Discipline/VA Registration #:	1990 / Professional Engineer – Civil / 0402021398
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.) PMC Quality Assurance Program (2009 – current) (with E.M. Tech) Provides Quality Assurance management on this open-ended contract for various projects for MWAA at Reagan National and Dulles International Airports. Duties include oversight of scheduling, meetings, report review, problem solving, etc. for inspections and testing of subgrade soils, subbase stone, cement treated aggregate base, Portland cement concrete, asphalt concrete, ground improvement systems, and steel piles. ACM Quality Control Program (2007 – 2009) (with E.M. Tech) Provided Quality Control management for multiple projects at Reagan National and Dulles International Airports, including oversight of inspections and testing of subgrade and subbase materials, the installation of piles, construction of box culverts and retaining walls, and roadways and taxiways construction. Manassas Airport Taxiway D (Aug. 2009 – Dec. 2009) (with E.M. Tech) Provided Quality Control management for this project including oversight of inspections and testing of subgrade soils, unsuitable subgrade remediation, cement treated aggregate base, Portland cement concrete, and asphalt concrete.	

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Jeffrey E. Purdy, PE, Vice President
b. Project Assignment: Design Manager
c. Name of Firm with which you are now associated: Jacobs Engineering Group Inc.
d. Years experience: With this Firm <u>16</u> Years With Other Firms <u>15</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last (15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.): Jacobs Engineering Group Inc., Vice President June 1995 – Current Mr. Purdy manages the design and construction of ITS projects from New England to Florida and west to California, including advanced transportation management and information systems on a design-bid-build basis, as well as a turnkey or design-build basis. The projects have included the development of ITS Architectures, ITS strategic plans and final design plans, and specifications encompassing the latest technologies in digital CCTV surveillance, vehicle detection systems, dynamic message sign system , travel time systems, roadway weather information systems, highway advisory radio networks and the broadband communications (fiber optic, wireless and digital microwave) networks supporting these ITS technologies.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: University of Virginia, Charlottesville, VA / Master of Science / 1980 / Civil/Transportation Systems Engineering Case Western Reserve University, Cleveland, OH / Bachelor of Science / 1978 / Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 1984 / Professional Engineer – Civil / 0402014146
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.) Pennsylvania Department of Transportation, District 6 I-95 ITS Design Build Sections ITC & ITF (2010 – 2013) Mr. Purdy is Jacobs' Project Principal for two concurrent design build projects in the Philadelphia metropolitan area with a construction value in excess of \$40 Million responsible for overall project design, construction quality management and engineering contract administration. Pennsylvania Department of Transportation, District 8 ITS Design Build (2008 – 2011) - Mr. Purdy is Jacobs' Project Principal responsible for the design of the ITS field device deployment, design and implementation of the communication network and design and development of the District 2 Transportation Management Center. The project has a construction value over \$16 Million. Indiana Department of Transportation, Borman Expressway Backhaul Replacement ITS Design Build, (2008 – 2009) - Mr. Purdy was the Project Principal for this \$7 Million ITS design build project for the Indiana Department of Transportation, responsible for the design of the ITS field device deployment, design and integration of the communication network and upgrade of the Borman TMC.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title:	Charles Tamayo, Senior Project Manager
b. Project Assignment:	Construction Manager
c. Name of Firm with which you are now associated:	Chesapeake Electrical Systems, Inc.
d. Years experience: With this Firm <u>16</u> Years With Other Firms <u>15</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last (15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.):	Chesapeake Electrical Systems, Inc., Senior Project Manager/ Estimator September 2010 – Current Midasco, LLC, Senior Project Manager/ Estimator January 2005 – September 2010 Midasco, Inc., Project Manager/ Estimator April 2001 – January 2005 Transportation Safety Contractors, Inc., General Superintendent June 1988 – April 2001
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:	University of Virginia, Charlottesville, VA/ Controlling Project Risks and Costs/ 2007 ARBTA/ Project Management Academy/ 2006 Tidewater Community College/ National Electrical Code 1 and Code 2/ 2000
f. Active Registration: Year First Registered/ Discipline/VA Registration #:	
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.) I-495 HOT Lanes Project (2010 – Current) Mr. Tamayo is the Senior Project Manager for Chesapeake Electrical Systems, Inc. His responsibilities include: management and oversight of day to day operations of project team comprised of three Assistant Project Managers, one Quality Control Manager, one ITS/ Electrical Superintendent, and two ITS Technical Managers to construct this complex ITS, electrical and lighting project. I-95 Telegraph Road Interchange Project (2008 – 2010) Mr. Tamayo was the Senior Project Manager for Midasco, LLC. His responsibilities included: management and oversight of day to day operations with a project team comprised of one Project Engineer, one Assistant Project Manager, one General Superintendent, two Technical Manager and one Administrative Assistant on this multi-phased ITS, electrical, lighting and signage project. Virginia Department of Transportation Hampton Roads District Traffic Management System (Phase 3) (1999 – 2001) Mr. Tamayo served as the General Superintendent for Midasco, Inc. His responsibilities included: managing the sequence of construction and daily manpower, equipment needs and materials for 15 crews and five subcontractors on this complex ITS, electrical, lighting and signage project.	

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Mark Flak, PE Director of ITS and Traffic Engineering
b. Project Assignment: Lead Designer
c. Name of Firm with which you are now associated: Jacobs Engineering Group Inc.
d. Years experience: With this Firm <u>10</u> Years With Other Firms <u>27</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last fifteen(15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.): Jacobs Engineering Group Inc., Director of ITS and Traffic Engineering 2001 - Current JHK/SAIC/TransCore, Senior Project Manager, ITS/Traffic 1984 – 2001 Mr. Flak’s background spans ITS planning and design, traffic operations, TMC/TOC operations, highway safety, traffic engineering, transportation planning, civil engineering design, and applied research.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: University of Michigan, Ann Arbor, MI/ Master of Science/ 1973/ Civil Engineering, University of Michigan, Ann Arbor, MI/ Bachelor of Science/ 1972/ Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 1993/ Professional Engineer – Civil/ 0402025047
g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none">1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i>2. <i>Note whether experience is with current firm or with other firm.</i>3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.) Maryland Inter-County Connector (ICC) ITS/ETC (Design-Build) Segment A (2007 – 2009) Mr. Flak was the Jacobs ITS/ETC Lead Engineer for the planning and design (incl. specifications) of the first segment of the ICC for the intelligent transportation systems (ITS) and electronic toll collection (ETC) infrastructure for the ORT (Open Road Tolling) system. Mr. Flak led the Design Team for the ITS/ETC task, coordinated with the Construction Team during construction activities and further coordinated with the MDSHA as the Client for the project. The ITS/ETC task designed and built ETC gantry systems, CCTV cameras, lane use control gantry systems, DMS installations, an RWIS site, a systemwide HAR network, and the redundant fiber-optics communication backbone and network along the ICC. Eastern Iowa ITS Services (2005 – 2008). Mr. Flak was the Jacobs Project Manager and led the development of an ITS RFP and functional design for the implementation and integration of ITS programs for the Iowa City and Quad Cities areas of Eastern Iowa. He led the development and update of ITS project and regional architectures to assure coordination of the ITS programs with regionally adopted programs. He led the preparation of ITS design concepts and detailed plans and specifications for the proposed communications network for the ITS systems planned for the areas. Iowa I-235 Reconstruction-Traffic and ITS Services (Traffic Management Plan), Iowa DOT – Des Moines, IA (2001 – 2007) Mr. Flak was the Jacobs ITS Lead Engineer and led the development of a Traffic Management Plan for the reconstruction of I-235 through Des Moines. He led the continued maintenance, operation, and update of the Plan throughout its inception (2002-2007).

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title:	Elliott Mandel, PE, Manager of Structural Engineering
b. Project Assignment:	Lead Structural Engineer
c. Name of Firm with which you are now associated:	Jacobs Engineering Group Inc
d. Years experience: With this Firm <u>2 months</u> Years With Other Firms <u>25</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last (15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.):	Jacobs Engineering Group Inc., Manager of Structural Engineering, November 2011 – Current Parsons Transportation Group, Inc., Lead Structural Engineer, 1989 – 2011 Mr. Mandel leads the structural design group for bridges and other transportation structures for the Jacobs Arlington, Virginia office. Having recently joined the company, he is charged with guiding the structural engineering operation, leading design assignments, performing interdisciplinary coordination, and ensuring design quality.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:	University of Texas, Austin, TX/ Master of Science/ 1989/ Engineering (Structures) University of Texas, Austin, TX/ Bachelor of Science/ 1984/ Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #:	1991/ Professional Engineer – Civil/ 0402022085
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.)	<p>I-95 DAR Ramp, Springfield, VA (2008-2011) Mr. Mandel, serving as Parsons Project Manager, provided design oversight and structural design services for new bridges that connect the HOV lanes of I-95 to the Fort Belvoir North area. The new ramp will “T” into an existing structure in the median of I-95 and then cross I-95 and Backlick Road. A second bridge will cross over an environmentally sensitive stream. Traffic control devices and sign support structures are attached to various structures throughout the project. Mr. Mandel developed special details to accommodate the connection between new and existing bridges.</p> <p>Theodore Roosevelt Bridge Rehabilitation, Washington, DC (2005-2007) Mr. Mandel served as the Parsons Project Manager for rehabilitation of this major crossing of I-66 over the Potomac River. The work involved comprehensive inspection and testing which resulted in rehabilitation design of the structure. The design included a complex MOT plan to accommodate deck repairs and overlay. The work also included installation of a guide system for the moveable barrier in the middle of the bridge.</p> <p>John Jay Audubon Bridge, St Francisville, LA (2009-2010) Mr. Mandel was the Parsons Task Manager for design of deep foundations for approach structures for this major crossing of the Mississippi River. He performed soil-structure interaction analysis for pile foundations and provided oversight for foundation design. He additionally participated in design of concrete approach structures including pile bents and precast girders.</p>

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title:	Robert E. Preston, General Electrical Superintendent
b. Project Assignment:	Electrical/ ITS Supervising Technician
c. Name of Firm with which you are now associated:	Chesapeake Electrical Systems, Inc.
d. Years experience: With this Firm <u>10</u> Years With Other Firms <u>24</u> Years Please list chronologically (most recent experience first) your employment history, position and general experience or fields of practice for the last (15) years. (NOTE: If you have less than 15 years of experience, please list all of your experience for those years you have worked.):	<p>Chesapeake Electrical Systems, Inc., General Electrical Superintendent 2001 – Current John E. Kelly & Sons, Electrical Construction, Inc., General Foreman 2000 – 2001 Heller Electric Company, Inc., General Foreman 1993 – 2000</p> <p>Mr. Preston is a General Electrical Superintendent. His duties include scheduling construction, daily manpower, equipment and material needs.</p>
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:	Fairfax, VA/ OSHA 30 Construction Safety and Health Training/ 2003 Washington, DC/ International Brotherhood Electrical Workers/ 1982/ Apprenticeship
f. Active Registration: Year First Registered/ Discipline/VA Registration #:	1992 / Master Electrician / 2710051621
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your specific responsibilities and authorities for each assignment, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each assignment.</i> (List at least three (3), but no more than five (5) relevant projects for which you have performed a similar function.)	<p>I-495 HOT Lanes Project (2009 – Current) Mr. Preston is the General Superintendent for Chesapeake Electrical Systems. He is responsible for overseeing over 70 field personnel including (1)Foreman, (4)sub-foreman, (20)electricians, (10)apprentices, (10)operators, and (25) laborers. Daily responsibilities also include Scheduling sequence of construction, daily manpower requirements, tools and equipment requirements as well as coordinating among five separate subcontractors and four Area Engineers. Other duties include updating field personnel of the constant changing conditions that require immediate attention on any design build project.</p> <p>Dulles International Fourth Runway and Associated Taxiway Project (2006 – 2008) Mr. Preston was the superintendent for Chesapeake Electrical Systems on this project. He was responsible for the overall coordination of daily manpower, equipment needs, sequence of construction, night shift and day shift coordination for field crew of over 100 men including six major subcontractors. During the construction of this project Chesapeake Electrical Systems was also awarded approximately \$8 million worth of additional sub contracts located throughout the airfield that Mr. Preston was responsible to for overseeing manpower and daily coordination.</p> <p>Reconstruction of Benning Road Corridor and H Street Corridor, (2008 – 2011) Mr. Preston acted as General Superintendent for Chesapeake Electrical System on this multiphase project that included rehabilitation of approximately four miles of roadwork and 20 complete intersections. Responsibilities included overseeing a field crew of approximately 30 men and (1) subcontractor. Other main responsibilities included working closely with the general contractor coordinating setting up and taking down maintenance of traffic, permanent and temporary lane closures and well as assisting the in the design of a temporary lane use control system used to help mitigate traffic flow through this very busy corridor in the city.</p>

ATTACHMENT 3.4.1(a)

LEAD CONTRACTOR - WORK HISTORY FORM

(LIMIT 1 PAGE PER PROJECT)

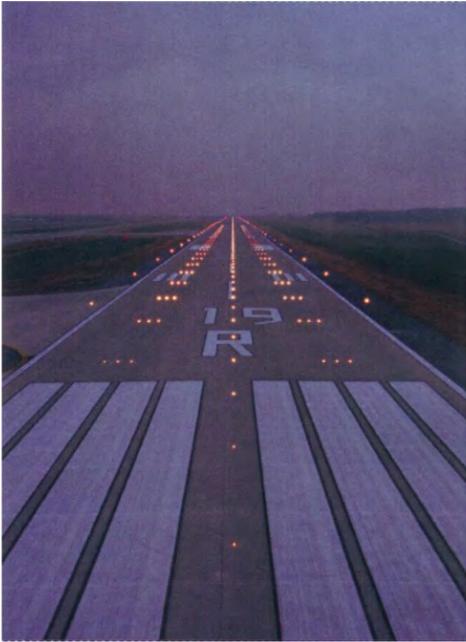
Work by Lead Contractor - three (3) projects which best illustrates current qualifications relevant to this Project.							
a. Project Name & Location	b. Narrative describing nature of Firm's Responsibilities	c. Client/Owner/Project Manager who can verify Firm's responsibilities. Include address and current phone number.	d. Contract Completion Date (Original)	e. Contract Completion Date (Actual or Estimated)	f. Estimated Value (in Thousands)		
					Original Contract Value	Final or Estimated Contract Value	Dollar Value of Work for Which Firm Was/Is Responsible
(1) I-495 HOT Lanes in Virginia Project – Fairfax County Virginia	<p>Chesapeake Electrical Systems, Inc. is responsible for the Electrical, Communication, Lighting, and ITS portion of this project. This project includes building 14 miles of toll lanes on the Capital Beltway from the Springfield Interchange to just north of the Dulles Toll Road.</p> <p>Chesapeake role includes the installation of (88) Dynamic Message Boards, (84) CCTV and AID Cameras mounted on (26) concrete camera poles, (94) Vehicle Microwave Detectors. Complete electrical fit out of (10) tolling Technical Shelters all with emergency generator back-up systems. Complete Under bridge Lighting for (15) new bridges, (485) new Roadway Lighting Poles and (160) existing relocated Roadway Lighting Poles.</p> <p>Chesapeake is also responsible for the installation, termination, integration and testing of over 300,000 feet of fiber optic cable and the installation of over 180 new Roadside Equipment cabinets used to house the electronics that will provide power to the above systems.</p> <p>This project demonstrates CES' ability to successfully deliver on a fast paced, high profile, multimillion dollar, alternative delivery method project.</p>	<p>Chesapeake Electrical Systems, Inc. subcontract with Fluor-Lane, LLC</p> <p>Please contact Jeff Taylor ITS Systems Manager at 703-244-6685 for verification of our responsibilities.</p> <p>His address is: 6315 Bren Mar Drive Suite 250 Alexandria, Virginia 22312</p>	December 2012	December 2012	26,530	36,704	31,610



ATTACHMENT 3.4.1(a)

LEAD CONTRACTOR - WORK HISTORY FORM

(LIMIT 1 PAGE PER PROJECT)

Work by Lead Contractor - three (3) projects which best illustrates current qualifications relevant to this Project.							
a. Project Name & Location	b. Narrative describing nature of Firm's Responsibilities	c. Client/Owner/Project Manager who can verify Firm's responsibilities. Include address and current phone number.	d. Contract Completion Date (Original)	e. Contract Completion Date (Actual or Estimated)	f. Estimated Value (in Thousands)		
					Original Contract Value	Final or Estimated Contract Value	Dollar Value of Work for Which Firm Was/Is Responsible
<p>(2) Fourth Runway and Associated Taxiways Project- Paving and NAVAIDS Contract No. 1-06-C061</p> <p>Washington Dulles International Airport</p>	<p>Chesapeake Electrical Systems, Inc. (CES) was the electrical sub-contractor for the construction of the 4th runway and associated taxiways at Dulles International.</p> <p>CES teamed with the Lane Construction Corporation. The CES contract consisted of installing over 2,300 airfield lighting fixtures and guidance signs and approximately 54,000 linear feet of underground duct bank system, including over 250 associated electrical manholes and handholes.</p> <p>CES was also responsible for the electrical installation of the new airfield electrical vault and the relocation of one of the existing electrical vaults. These vaults, equipped with emergency generator systems, feed the new runway lighting system.</p> <p>This project demonstrates CES' ability to successfully execute a high-profile, multimillion dollar, fast paced electrical project.</p>	<p>Jim Niedham with the Washington Metropolitan Airports Authority can be reached at 703-572-7031</p> <p>Current Address is 1 Aviation Circle Washington DC 20001</p>	November 2009	November 2009	27,761	27,360	21,307
							

ATTACHMENT 3.4.1(a)

LEAD CONTRACTOR - WORK HISTORY FORM

(LIMIT 1 PAGE PER PROJECT)

Work by Lead Contractor - three (3) projects which best illustrates current qualifications relevant to this Project.							
a. Project Name & Location	b. Narrative describing nature of Firm's Responsibilities	c. Client/Owner/Project Manager who can verify Firm's responsibilities. Include address and current phone number.	d. Contract Completion Date (Original)	e. Contract Completion Date (Actual or Estimated)	f. Estimated Value (in Thousands)		
					Original Contract Value	Final or Estimated Contract Value	Dollar Value of Work for Which Firm Was/Is Responsible
(3) Reconstruction of Benning Road and H Street Corridor from Oklahoma Avenue NE to 3 rd Street NE Washington, DC	<p>Chesapeake Electrical System acted as the Prime Lighting and Traffic Signal Sub contractor for Nationwide Electrical Services for this very aggressive reconstruction project located in the heart of downtown DC. Project scope of work consisted of removal and replacement of over 20 signalized intersections complete with new Traffic Signal Controllers, Traffic Signals and Signal Poles, Pedestrian Signal Heads and Pushbutton Devices.</p> <p>A complete new underground infrastructure was built by replacing over 235 existing manholes with new manholes and replacing over 20 city blocks of underground duct bank systems.</p> <p>The projects also consisted of removal and replacement of over 500 Street Light Poles.</p> <p>This project demonstrates CES experience in working in confined, traffic congested areas with limited right of way.</p>	<p>Please contact John Young owner of Nationwide Electrical Services.</p> <p>He can be reached at 202-636-3800</p> <p>2625 Evarts Street, NE Unit B Washington, DC 20018</p>	September 2011	September 2011	9,209	8,922	8,922
							

ATTACHMENT 3.4.1(b)

LEAD DESIGNER - WORK HISTORY FORM

(LIMIT 1 PAGE PER PROJECT)

Work by Lead Designer - three (3) projects which best illustrates current qualifications relevant to this Project.							
a. Project Name & Location	b. Narrative describing nature of Firm's Responsibilities	c. Client/Owner/Project Manager who can verify Firm's responsibilities. Include address and current phone number.	d. Contract Completion Date (Original)	e. Contract Completion Date (Actual or Estimated)	f. Estimated Value (in Thousands)		
					Original Contract Value	Final or Estimated Contract Value	Dollar Value of Work for Which Firm Was/Is Responsible
(1) I-95 Fiber Optic Network and ITS Design – Design – Build Projects Bucks and Philadelphia Counties, PA	<p>Under two design-build contracts, we are leading the design and integration for the construction of the broadband fiber optic network and intelligent transportation system (ITS) along two sections of I-95 in the Philadelphia, PA metropolitan region.</p> <p>In total, we designed over 50 miles of underground fiber optic outside plant (OSP) including two 1¼ inch direct burial HDPE conduit and associated junction boxes and splice vaults, fiber optic equipment shelters and the associated electrical service. Inside plant (ISP) design included structured wiring from building entrance to the equipment room, equipment room rack layouts and an upgrade of the PennDOT Transportation Management Center.</p> <p>As a part of the 2009 ARRA, the project is designed to sustain continuous, rapid construction. Responsibilities include the procurement, construction, installation, integration, testing, and documentation of the fiber optic network and ITS expansion as well as:</p> <ul style="list-style-type: none"> • Storm water and erosion control permits • USACE permits for navigable waterway crossing • Railroad crossing permits • Final design of OSP and ISP plans and specs • Fiber optic network equipment procurement • Network installation, integration, testing and commissioning • Program Management • Fiber to the Premise (FTTP) design and construction to Delaware County Emergency Operations Center, Philadelphia Traffic Police, Philadelphia International Airport and PennDOT Regional Transportation Management Center. 	<p>Pennsylvania Department of Transportation District 6-0 7000 Geerdes Boulevard, King of Prussia, PA 19406</p> <p>Steve A. Laws, PE Senior Assistant Construction Engineer (610) 205-6677</p> <p>Manny Anastasiadis Traffic Operations Manager (610) 205-6590</p> <p>Contractor: Carr & Duff, Inc.</p>	2013	2013	32,409	34,409	3,610
							
							

ATTACHMENT 3.4.1(b)

LEAD DESIGNER - WORK HISTORY FORM

(LIMIT 1 PAGE PER PROJECT)

Work by Lead Designer - three (3) projects which best illustrates current qualifications relevant to this Project.							
a. Project Name & Location	b. Narrative describing nature of Firm's Responsibilities	c. Client/Owner/Project Manager who can verify Firm's responsibilities. Include address and current phone number.	d. Contract Completion Date (Original)	e. Contract Completion Date (Actual or Estimated)	f. Estimated Value (in Thousands)		
					Original Contract Value	Final or Estimated Contract Value	Dollar Value of Work for Which Firm Was/Is Responsible
<p>(2) Washington State Department of Transportation – General Tolling Consultant Services</p> <p>Puget Sound Region of Washington</p>	<p>Jacobs assisted WSDOT by performing overall program management services, procurement and contract administration during the design and construction of the signs and the supporting infrastructure, as well as testing and start-up of the system.</p> <p>The Washington State Department of Transportation's (WSDOT) active traffic management system helps manage the region's congestion. The "Smarter Highways" system utilizes dynamic message signs over each highway lane at one-half mile intervals. Known locally as "Smarter Highways", the Federally funded program uses European technology that is new to the United States.</p> <p>The signs display variable speed limits, lane status and real-time traffic information so drivers know what is happening ahead, and can adjust accordingly.</p> <p>WSDOT controls the signs from a remote operations center to actively close lanes or slow speeds in advance of congestion or a blocking incident. Warning drivers of incidents and congestion ahead is expected to reduce the number and severity of collisions.</p> <p>By summer 2011, active traffic management was implemented on three high-volume corridors in the Puget Sound Region: I-5 (northbound only), SR 520 and I-90.</p> <p>Project features include:</p> <ul style="list-style-type: none"> - 31 new CCTV cameras - 18 replacement CCTV cameras - 10 large variable message signs - 47 side-mounted DMS - Seven ground-mounted DMS - Over 300 lane control signs - 66 induction loop detectors - Replacement of 46 induction loop detectors 	<p>Washington State Department of Transportation Jennifer Charlebois WSDOT Toll Division Project Engineer 401 2nd Avenue South, Suite 300, Seattle, WA 98104 206-491-6006</p>	June 2011	December 2011	34,450	38,050	798



ATTACHMENT 3.4.1(b)

LEAD DESIGNER - WORK HISTORY FORM

(LIMIT 1 PAGE PER PROJECT)

Work by Lead Designer - three (3) projects which best illustrates current qualifications relevant to this Project.							
a. Project Name & Location	b. Narrative describing nature of Firm's Responsibilities	c. Client/Owner/Project Manager who can verify Firm's responsibilities. Include address and current phone number.	d. Contract Completion Date (Original)	e. Contract Completion Date (Actual or Estimated)	f. Estimated Value (in Thousands)		
					Original Contract Value	Final or Estimated Contract Value	Dollar Value of Work for Which Firm Was/Is Responsible
(3) Maryland Intercounty Connector (ICC) Segment A Design-Build – ITS and ETC Elements Montgomery County, MD	<p>In joint venture with Parsons Transportation Group, Jacobs provided design and engineering services for the first segment of the Intercounty Connector (ICC) project. Contract A consists of 7.1-miles of roadway from the westernmost Section I-270/I-370 to East of MD 97. Jacobs led the Intelligent Transportation System (ITS) design efforts.</p> <p>As a tolled facility, ITS is planned to improve the capability to manage and operate the transportation network of the ICC and the intersecting roadways. ITS elements included: Closed Circuit Television, Dynamic Message Signs, Remote Traffic Microwave Sensors, Highway Advisory Radio throughout the corridor, dynamic Toll Rate signs, ETC gantries and cabinet systems, Lane use control signs, HAR advance warning signs, Road Weather Information System, fiber optic backbone (dual ring, redundant topology) and telephone communications, electrical service, and other improvements needed to provide a fully functioning system.</p> <p>Jacobs was responsible for the design, construction, relocation, integration, and testing of all ITS equipment, including the structures that the devices are placed on as well as integration of these elements with the existing Authority Operations Center and the CHART Program.</p> <p>The ICC is Maryland's first ORT facility and Jacobs is providing the project management services for the design, installation, testing, and acceptance of the ORT system.</p> <p>Jacobs used innovative designs resulting in the following cost savings: integrated design of ETC gantries for subsequent use in other ICC Design Segments (\$400k); coordination of conduit systems for lighting, ITS/ETC, and signing purposes (\$100k); and coordination of power sources for lighting, ITS/ETC, deckover, and sign lighting (\$100k).</p>	<p>Owner: Maryland State Highway Administration/ Maryland Transportation Authority</p> <p>Project Manager: Ms. Melinda Peters, Maryland State Highway Administration 707 North Calvert Street Baltimore, MD 21202 301-586-9261</p> <p>Client: Joint Venture Granite Construction Inc. 585 West Beach Street Watsonville, CA 95076 831-724-1011</p> <p>Corman Constructon, Inc. 12001 Guilford Road Annapolis, MD 20702 301-953-0900</p> <p>GA & FC Wagman, Inc. 3290 North Susquehanna Trail York, PA 17406-9754 717-764-8521</p>	2011	2011	464,000	464,000	12,000
							



SUBMITTED BY:
CHESAPEAKE ELECTRICAL SYSTEMS, INC.

IN ASSOCIATION WITH:
JACOBS ENGINEERING GROUP INC.
TRANSDYN, INC.
ENGINEERING & MATERIALS TECHNOLOGIES, INC.