



Statement of Qualifications for a Design-Build Project **INTERSTATE 66**

Active Traffic Management from District of
Columbia/Virginia Border in Arlington County
to U.S. 29 (Lee Highway) in Gainesville,
Prince William County

State Project No. 0066-96A-917, P101, N501
Federal Project Nos.: IM-5A01 (253) & IM-5A01 (274)
Contract ID Number: C00098017DB46



3.2 LETTER OF SUBMITTAL



1515 Wilmington Hwy. (28306)
P.O. Box 2949 * Fayetteville, NC 28302
Phone: (910) 483-9100 * Fax: (910) 483-8137

OF NORTH CAROLINA, INC.

3.2 Letter of Submittal

December 15, 2011

Commonwealth of Virginia
Department of Transportation (VDOT)
Central Office Mail Center
Loading Dock Entrance
1401 E. Broad Street
Richmond, Virginia 23219
Attention: Brenda L. Williams

RE: I-66 Active Traffic Management Design-Build Project

Dear Ms. Williams and Members of the Selection Committee:

VDOT is undertaking a tremendous traffic operational effort on I-66, a heavily-traveled—and highly-congested corridor subject to considerable public scrutiny. ALS of North Carolina, Inc. (ALS) and Atkins have joined forces to create a team that can minimize the risks that such an effort will have. ALS brings the proven, big-project ITS experience, backed by the financial strength and stability of Asplundh Tree Expert Co., ALS' parent company. Atkins brings not only national intelligent transportation system (ITS) design experience, including H. Alfred Badgett, PE, our design manager with more than 30 years of ITS and traffic signal/systems experience, but also the deepest experience available for active traffic management (ATM) designs, brought courtesy of our Atkins U.K. ITS professionals.

3.2.1 Point of Contact

ALS is a North Carolina corporation formed in July 1993. **James R. Hardiman, Vice President**, is our point of contact for this contract. His contact information follows.

James R. Hardiman
Vice President
11639 Davis Creek Road East
Jacksonville, Florida 32256
Phone: 904.886.4300
Fax: 904.886.4422
Email: hardiman@asplundh.com

3.2.2 Principal Officer of the Legal Entity

James R. Hardiman is the principal officer of ALS and to whom the design-build contract with VDOT would be written. His contact information is provided in 3.2.1 Point of Contact.

3.2.3 Offeror's Structure

ALS, a corporation, will undertake financial responsibility for the project. Atkins and T3 Design Corporation will be subconsultants to ALS.

3.2.4 Affiliated and/or Subsidiary Companies

Table 1. Subsidiary/Affiliated Companies

Subsidiary/Affiliated Company Name	Address
Asplundh Tree Expert Co.	708 Blair Mill Road, Willow Grove, PA 19090
American Lighting and Signalization, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
ACH, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Investments, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Blair Mill Investments, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Canada ULC	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Tree Service ULC	708 Blair Mill Road, Willow Grove, PA 19090
D.J. Silviculture Enterprises, Ltd.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Tree Expert (Australia) PTY LTD	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh (New Zealand Company)	708 Blair Mill Road, Willow Grove, PA 19090
Grid One Solutions ULC	708 Blair Mill Road, Willow Grove, PA 19090
Western Environmental Consultants ULC	708 Blair Mill Road, Willow Grove, PA 19090
Evergreen Receivables, Ltd.	708 Blair Mill Road, Willow Grove, PA 19090
UtiliCon Solutions, Ltd.	708 Blair Mill Road, Willow Grove, PA 19090
Advanced Power & Lighting	4757 Pinnacle Lane, Chattanooga, TN 37415
American Electrical Testing Co., Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Construction Corp.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Environmental Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Motor Company, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Buick-GMC, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh GMC-Isuzu, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh One Call, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Blair Mill Equipment Leasing, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Consolidated Meter Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090

Subsidiary/Affiliated Company Name	Address
Grid One Solutions, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Musgrove Construction, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Utility Lidar Software Solutions, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Utility Lines Construction Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Utility Meter Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Utility Pole Technologies, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Utilities Service Corporation	708 Blair Mill Road, Willow Grove, PA 19090
Utility Vegetation Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
ArborMetric Solutions, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Asplundh Brush Control Co.	708 Blair Mill Road, Willow Grove, PA 19090
Blume Tree Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Innovative Vegetation Services, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Lakeside Environmental Consultants, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
National Utility Line Clearance Co.	708 Blair Mill Road, Willow Grove, PA 19090
Nelson Tree Service, Inc.	3300 Office Park Dr, Dayton, OH 45439
Phillips Tree Experts, Inc.	1005 North Highway 3041, Corbin, KY 40702
Progressive Solutions LLC	708 Blair Mill Road, Willow Grove, PA 19090
Tree Preservation Co., Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Trees, Inc.	650 North Sam Houston Parkway, Houston, TX 77060
Utility Tree Service, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Western Environmental Consultants, Inc.	708 Blair Mill Road, Willow Grove, PA 19090
Willow Grove Aviation, Ltd.	708 Blair Mill Road, Willow Grove, PA 19090
Willow Grove Insurance, Ltd.	708 Blair Mill Road, Willow Grove, PA 19090

3.2.5 Certification Regarding Debarment

By signing the Certification Regarding Debarment forms (provided in the Appendix), ALS certifies that our team meets VDOT's requirements.

3.2.6 VDOT Prequalification

ALS is currently prequalified with VDOT through January 31, 2012 in the work classes of electrical installation, traffic signalization, and roadway lighting with a vendor number of F266. Mr. Don Silies of VDOT has approved ALS bidding this project and waived the bidding

restriction on our firm for this project. A copy of the Certificate of Qualification and the email from Mr. Don Stiles are provided in the Appendix.

3.2.7 Letter from Surety or Insurance Company

The letter from the Surety regarding the performance bond and 100 percent labor and materials payment bond and coverage during the warranty period is provided at the end of this section.

3.2.8 Required Licenses

Copies of the following licenses are provided in the Appendix.

Table 2. Virginia State Corporation Commission (SCC) Licenses

Name	Registration No.	Type of Corporation	Status
ALS of North Carolina, Inc.	F1155037	Foreign Corporation	Active
Atkins North America, Inc.	F0488397	Foreign Corporation	Active
T3 Design Corporation	06585392	Corporation	Active
Pulsar Advertising, Inc.	F1608555	Foreign Corporation	Active

Table 3. Virginia Department of Professional and Occupational Regulations (DPOR) Firm Licenses

Business	Address	Registration Type/No.	Expiration
ALS of North Carolina, Inc.	1515 Wilmington Highway Fayetteville, NC	Vendor F266 (See attached waiver from Mr. Don Silies, State Contract Engineer)	1/31/2012
Atkins North America, Inc.	1616 E. Millbrook Rd. Suite 310 Raleigh, NC 27609	ENG 0411000687	2/29/2012
Atkins North America, Inc.	5200 77 Center Dr. Suite 500 Charlotte, NC 28217	ENG 0411000782	2/29/2012
Atkins North America, Inc.	482 S. Keller Rd. Orlando, FL 32810	ENG 0411000601	2/29/2012
T3 Design Corporation	3927 Old Lee Highway, Suite 101-C Fairfax, VA 22030	ENG 0405001624	2/29/2012

Table 4. DPOR Personnel Licenses

Name/Firm	Address	Office Location	Registration Type/No.	Expiration
Claude Zukowski ALS	1515 Wilmington Highway Fayetteville, NC	Fayetteville, NC	Tradesman (Electrical/ Master Electrical) 2710045939	5/31/2012
H. Alfred Badgett Atkins	5200 77 Center Dr. Suite 500 Charlotte, NC 28217	Charlotte, NC	Professional Engineer 0402014501	6/30/2013
Steven Haynie Atkins	301 Evans Estates Dr. Cary, NC 27513	Raleigh, NC	Professional Engineer 0402033594	1/31/2012
Kenneth Zagers Atkins	208 Brooklands Way DeLand, FL 32724	Orlando, FL	Professional Engineer 0402046445	6/30/2013
Patricia Timbrook T3 Design Corporation	4216 Pineridge Dr. Annandale, VA 22003	Annandale, VA	Professional Engineer 0402037795	6/30/2013

Table 5. DPOR Non- APELSCIDLA Personnel Licenses

Name/Firm	Address	Office Location	Registration Type/No.	Expiration
Claude Zukowski ALS	1515 Wilmington Highway Fayetteville, NC	Fayetteville, NC	Tradesman (Electrical/ Master Electrical) 2710045939	5/31/2012

3.2.9 DBE Participation Goal

ALS is committed to achieving the 15 percent disadvantaged business enterprise (DBE) goal. We have included T3 Design Corporation on our team to satisfy this requirement.

We look forward to assisting VDOT on this important project.

Sincerely,



James R. Hardiman
Vice President

Safety First...No One Gets Hurt!



Elizabeth Marrero

Attorney-in-Fact

*Travelers Insurance Company of
America*

(215) 255-1866

(215) 255-1978 (fax)

*c/O: Aon Risk Services Central, Inc.
1650 Market Street
Philadelphia, PA 19103*

December 16, 2011

Atkins Global
4030 W. Boy Scout Blvd. Ste 700
Tampa, FL 33607
Attn: Amir Kangari, PE

RE: ALS of North Carolina, Inc.
Project: VDOT I-66 ATM Design Build Project
State Project No.: 0066-96A-917, P101, N501

Dear Sir/Madam:

It has been the privilege of **Travelers Casualty and Surety Company of America** ("Travelers")¹ to provide surety bonds for **ALS of North Carolina, Inc.**

It is our opinion that **ALS of North Carolina, Inc.** is qualified to perform the above captioned project, which we understand has an estimated value of approximately \$ 32,000,000. At their request we will give favorable support to provide the necessary bonds.

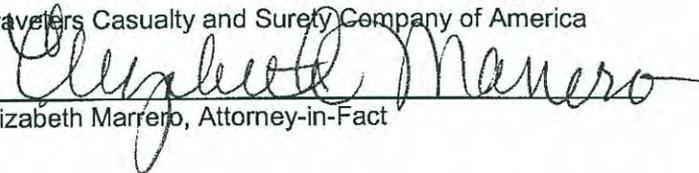
As surety for **ALS of North Carolina, Inc.**, **Travelers Casualty and Surety Company of America** with A.M. Best Financial Strength Rating A+ (Superior) and Financial Size Category XV is capable of obtaining 100% Performance Bond and 100% Labor and Materials Payment Bond in the amount of the anticipated 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 this project.

Please note that the decision to issue the bonds is a matter between **ALS of North Carolina, Inc.** and **Travelers Casualty and Surety Company of America**, and will be subject to our standard underwriting at the time of the final bond request, which will include but not be limited to the acceptability of the contract documents and bond forms. We assume no liability to third parties or to you if for any reason we do not execute said bonds.

If you have any questions or need any additional information, please do not hesitate to contact me.

Sincerely,

Travelers Casualty and Surety Company of America


Elizabeth Marrero, Attorney-in-Fact

¹ Travelers Casualty and Surety Company of America is rated A+ (Superior) by A.M. Best Financial Size Category XV (\$2.0 Billion or more). A.M. Best's rating of A+ applies to certain insurance subsidiaries of Travelers that are members of the Travelers Insurance Companies pool; other subsidiaries are included in another rating pool or are separately rated. For a listing of companies rated by A.M. Best and other rating services visit www.travelers.com. Ratings listed herein are as of May 26, 2011, are used with permission, and are subject to changes by the rating services. For the latest rating, access ambest.com.



POWER OF ATTORNEY

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company

Attorney-In Fact No. 222635

Certificate No. 004418490

KNOW ALL MEN BY THESE PRESENTS: That St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company and St. Paul Mercury Insurance Company are corporations duly organized under the laws of the State of Minnesota, that Farmington Casualty Company, Travelers Casualty and Surety Company, and Travelers Casualty and Surety Company of America are corporations duly organized under the laws of the State of Connecticut, that United States Fidelity and Guaranty Company is a corporation duly organized under the laws of the State of Maryland, that Fidelity and Guaranty Insurance Company is a corporation duly organized under the laws of the State of Iowa, and that Fidelity and Guaranty Insurance Underwriters, Inc., is a corporation duly organized under the laws of the State of Wisconsin (herein collectively called the "Companies"), and that the Companies do hereby make, constitute and appoint

Darella White, Richard G. Dicciani, Richard A. Jacobus, Mary C. O'Leary, Douglas R. Wheeler, Maureen McNeill, Wayne G. McVaugh, Rosemarie Caponi, Elizabeth Marrero, and Sandra E. Bronson

of the City of Philadelphia, State of Pennsylvania, their true and lawful Attorney(s)-in-Fact, each in their separate capacity if more than one is named above, to sign, execute, seal and acknowledge any and all bonds, recognizances, conditional undertakings and other writings obligatory in the nature thereof on behalf of the Companies in their business of guaranteeing the fidelity of persons, guaranteeing the performance of contracts and executing or guaranteeing bonds and undertakings required or permitted in any actions or proceedings allowed by law.

IN WITNESS WHEREOF, the Companies have caused this instrument to be signed and their corporate seals to be hereto affixed, this 18th day of July, 2011

Farmington Casualty Company
Fidelity and Guaranty Insurance Company
Fidelity and Guaranty Insurance Underwriters, Inc.
St. Paul Fire and Marine Insurance Company
St. Paul Guardian Insurance Company

St. Paul Mercury Insurance Company
Travelers Casualty and Surety Company
Travelers Casualty and Surety Company of America
United States Fidelity and Guaranty Company



State of Connecticut
City of Hartford ss.

By: [Signature]
George W. Thompson, Senior Vice President

On this the 18th day of July, 2011, before me personally appeared George W. Thompson, who acknowledged himself to be the Senior Vice President of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, and that he, as such, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

In Witness Whereof, I hereunto set my hand and official seal.
My Commission expires the 30th day of June, 2016.



[Signature]
Marie C. Tetreault, Notary Public

This Power of Attorney is granted under and by the authority of the following resolutions adopted by the Boards of Directors of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company, which resolutions are now in full force and effect, reading as follows:

RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President, any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary may appoint Attorneys-in-Fact and Agents to act for and on behalf of the Company and may give such appointee such authority as his or her certificate of authority may prescribe to sign with the Company's name and seal with the Company's seal bonds, recognizances, contracts of indemnity, and other writings obligatory in the nature of a bond, recognizance, or conditional undertaking, and any of said officers or the Board of Directors at any time may remove any such appointee and revoke the power given him or her; and it is

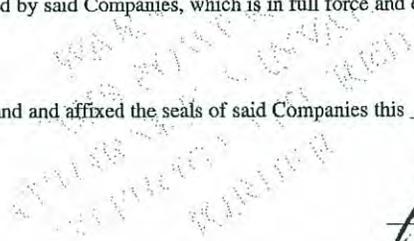
FURTHER RESOLVED, that the Chairman, the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President may delegate all or any part of the foregoing authority to one or more officers or employees of this Company, provided that each such delegation is in writing and a copy thereof is filed in the office of the Secretary; and it is

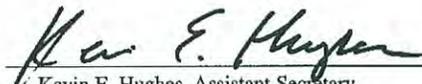
FURTHER RESOLVED, that any bond, recognizance, contract of indemnity, or writing obligatory in the nature of a bond, recognizance, or conditional undertaking shall be valid and binding upon the Company when (a) signed by the President, any Vice Chairman, any Executive Vice President, any Senior Vice President or any Vice President, any Second Vice President, the Treasurer, any Assistant Treasurer, the Corporate Secretary or any Assistant Secretary and duly attested and sealed with the Company's seal by a Secretary or Assistant Secretary; or (b) duly executed (under seal, if required) by one or more Attorneys-in-Fact and Agents pursuant to the power prescribed in his or her certificate or their certificates of authority or by one or more Company officers pursuant to a written delegation of authority; and it is

FURTHER RESOLVED, that the signature of each of the following officers: President, any Executive Vice President, any Senior Vice President, any Vice President, any Assistant Vice President, any Secretary, any Assistant Secretary, and the seal of the Company may be affixed by facsimile to any Power of Attorney or to any certificate relating thereto appointing Resident Vice Presidents, Resident Assistant Secretaries or Attorneys-in-Fact for purposes only of executing and attesting bonds and undertakings and other writings obligatory in the nature thereof, and any such Power of Attorney or certificate bearing such facsimile signature or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by such facsimile signature and facsimile seal shall be valid and binding on the Company in the future with respect to any bond or understanding to which it is attached.

I, Kevin E. Hughes, the undersigned, Assistant Secretary, of Farmington Casualty Company, Fidelity and Guaranty Insurance Company, Fidelity and Guaranty Insurance Underwriters, Inc., St. Paul Fire and Marine Insurance Company, St. Paul Guardian Insurance Company, St. Paul Mercury Insurance Company, Travelers Casualty and Surety Company, Travelers Casualty and Surety Company of America, and United States Fidelity and Guaranty Company do hereby certify that the above and foregoing is a true and correct copy of the Power of Attorney executed by said Companies, which is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 16th day of December, 20 11.




Kevin E. Hughes, Assistant Secretary



To verify the authenticity of this Power of Attorney, call 1-800-421-3880 or contact us at www.travelersbond.com. Please refer to the Attorney-In-Fact number, the above-named individuals and the details of the bond to which the power is attached.

3.3 OFFEROR'S TEAM STRUCTURE

3.3 Offeror's Team Structure

3.3.1 Key Personnel

The ALS/Atkins team is led by carefully selected key individuals, including our proposed design-build project manager, John R. "Jack" Hoffman, of which the most important three bring more than 30 years each of ITS and traffic management engineering experience. Further, this engineering experience is present in both ALS and in Atkins, ensuring that the engineering understanding needed to successfully complete this project is present throughout the team. All of these key senior engineers bring with them extensive real-world implementation experience. This, along with the ALS team's unparalleled international ATM experience, ensures risk minimization throughout the deployment.

Jack Hoffman, PE, Design-Build Project Manager

Mr. Hoffman has more than 35 years of both public- and private-sector ITS and traffic management experience. This experience includes all aspects of program delivery, including ITS plan preparation; traffic signal and advanced traffic management system (ATMS) design and construction; technical review and specification packages; ITS administration and management; traffic operations analyses; and transportation planning using many industry-accepted packages including TRANPLAN, SYNCHRO, PASSER II, NETSIM, CORSIM, and VISSIM. Mr. Hoffman provides project management and technical expertise in ITS throughout ALS and provides both construction and equipment technical expertise and lead engineering technical support during construction and design-build projects.

Pat Timbrook, PE, PTOE, Quality Assurance Manager

Ms. Timbrook has 37 years of traffic engineering, transportation planning, and ITS engineering experience. She has provided both technical expertise and project management in the application of system engineering principles to feasibility studies and master plans for transportation management systems;

application of national standards in the design of traffic signal and freeway management systems; integration, implementation, and testing of ATMS and components; management and integration of statewide transportation management centers; and evaluation of the benefits of these systems. Ms. Timbrook has prepared design plans for new and modified traffic signals for more than 150 intersections and has managed traffic impact, safety, and operations studies.

Alf Badgett, PE, Design Manager

Mr. Badgett has 33 years of experience with ITS, traffic operations studies, impact studies, traffic design, signal system feasibility studies, signal system design, plans preparation, and functional design for private and public clients. He provides senior management and technical expertise in ITS throughout the company for a variety of clients. As a senior ITS engineer, Mr. Badgett serves typically as the project manager or lead engineer on ITS projects.

Relevant to the I-66 ATM project is Mr. Badgett's experience after Hurricane Andrew, when he was assigned to lead an emergency team to restore all signing to 23 miles of Florida's Turnpike. Nothing left was usable. All signs had to be designed and replaced, including all overhead signs. Mr. Badgett worked with maintenance personnel to develop an interim plan and designed and prepared all of the bid documents to let six contracts to replace the signing in less than one year. Work included overseeing geotechnical, survey, structural, and electrical engineering staff.

Mr. Badgett's other relevant experience includes serving as project manager/lead designer for the Florida Department of Transportation's (FDOT) 15-mile extension of Jacksonville's freeway management system. He also served as project manager for the preparation of the conceptual plans and specifications for FDOT's I-75 freeway management system.

Michael Guerrero, Construction Manager

Mr. Guerrero has more than 20 years of experience in the electrical contracting industry, specifically in traffic signal system installation and integration and ITS. His experience includes supervising the installation and integration of contracts totaling more than \$16 million to install computerized traffic signal systems in Raleigh, North Carolina; Atlanta, Georgia; and Panama City, Florida. In 1997, Mr. Guerrero became the division manager for an electrical contractor in North Carolina. As such, Mike was responsible for all aspects of managing the state's traffic signal systems and ITS projects. Responsibilities included pursuing bid opportunities, estimating and supervising estimators, job costing, budgeting, supervising field and office staff, communicating with various project owners/construction engineering and inspection staff, and corporate financial reporting. From 2003 to 2009 Mr. Guerrero served as the North Carolina division manager for a subsequent electrical contractor, where he supervised more than \$50 million worth of work for owners such as the Town of Cary, North Carolina; North Carolina Department of Transportation (NCDOT); and Tennessee Department of Transportation.

Mr. Guerrero will obtain all required certifications prior to construction.

Steve Haynie, PE, Lead Designer

Mr. Haynie has more than 15 years of traffic signal system and ITS experience, including the actual operations and maintenance of a 144-signal system in Syracuse, New York, and specialized expertise in traffic signal system timing optimization including implementation, and fine-tuning of newly implemented timing plans. Mr. Haynie is an expert in Synchro, SimTraffic, and Tru-Traffic software programs. Additionally, his broad range of project experience has included communication cable-routing plans, closed-circuit television (CCTV) monitoring systems, ATMS, and spread spectrum radio communication field

tests. His relevant ITS design experience includes the Midtown Tunnel in Norfolk, Virginia; Capital Beltway High-Occupancy Toll Lanes Concessionaire Design-Build Support Services in Fairfax County, Virginia; and Arlington Entertainment District in Arlington, Texas.

Ken Zagers, PE, Lead Structural Engineer

Mr. Zagers is a project manager in the national structures program. He has 14 years of experience in the design, coordination, review, and construction administration of a variety of structural projects including bridges, toll plazas, commercial buildings, stadiums, and convention centers. Construction material experience includes steel, concrete, post- and pre-tension concrete, and wood. He also has experience with geotechnical engineering projects, providing geotechnical engineering analysis of bridge structures, mechanically stabilized earth walls, box culverts, roadways, and buildings.

Mr. Zagers designed 16 large (walk-in) changeable message signs on new tri-chord cantilever and span structures on FDOT's I-4 DMS Replacement project. He also designed mono-tube structures with unique tube framing to support ITS equipment at a lower level for Harris County Toll Road Authority's Loop 375 Cesar Chavez Managed Lane and Tolling project.

Steve Balmer, Electrical/ITS Supervising Technician

Mr. Balmer has 40 years of electrical contracting experience, eight of them with ALS. Prior to joining ALS, Mr. Balmer owned and operated his own electrical contracting company. He is responsible for the successful completion of more than \$30 million in construction projects in North and South Carolina. Mr. Balmer focuses on supervising the crews to maintain a safe work environment while maintaining an exemplary project completion rate. He is International Municipal Sign Association Level II certified as well as Work Zone Safety certified. Mr. Balmer is an

instructor for the NCDOT/South Carolina Department of Transportation Flagging Certification program. He has an unlimited electrical license in North Carolina, with reciprocity available in Virginia, South Carolina, Georgia, and Florida. Mr. Balmer will obtain any other required certifications prior to construction.

3.3.2 Team Organization

Our team organization is shown in Figure 1: Organizational Chart. The chart demonstrates a clear separation of the construction activities from the other project activities including pre-construction, quality assurance, and inspection. Despite the fact that we are functioning as a well-integrated team, with efficiencies that should translate into both schedule and cost savings, it is critical that appropriate separations are provided to ensure that all of our team's efforts are being objectively performed, without risk of conflict of interest.

Todd Kell, AICP, will be our project manager—a position separate from either the design-build project manager or the design manager—as there are numerous non-design elements anticipated under this project such that the organization needs to ensure all pre-construction accountability without detracting from the ATM design efforts. Further, we have placed the design manager and the structural engineer as peers. Given the significant structural component of this project, we have decided to organize our design team in this manner to ensure that the structural component, likely the single most costly part of this deployment, is given the organizational prominence that its cost contribution requires.

Communications between the pre-construction and the construction parts of the project will be critical throughout the effort— both before and during construction. Our view of an organization chart is that while it clearly depicts the chain of command, it should not limit communication. Communication

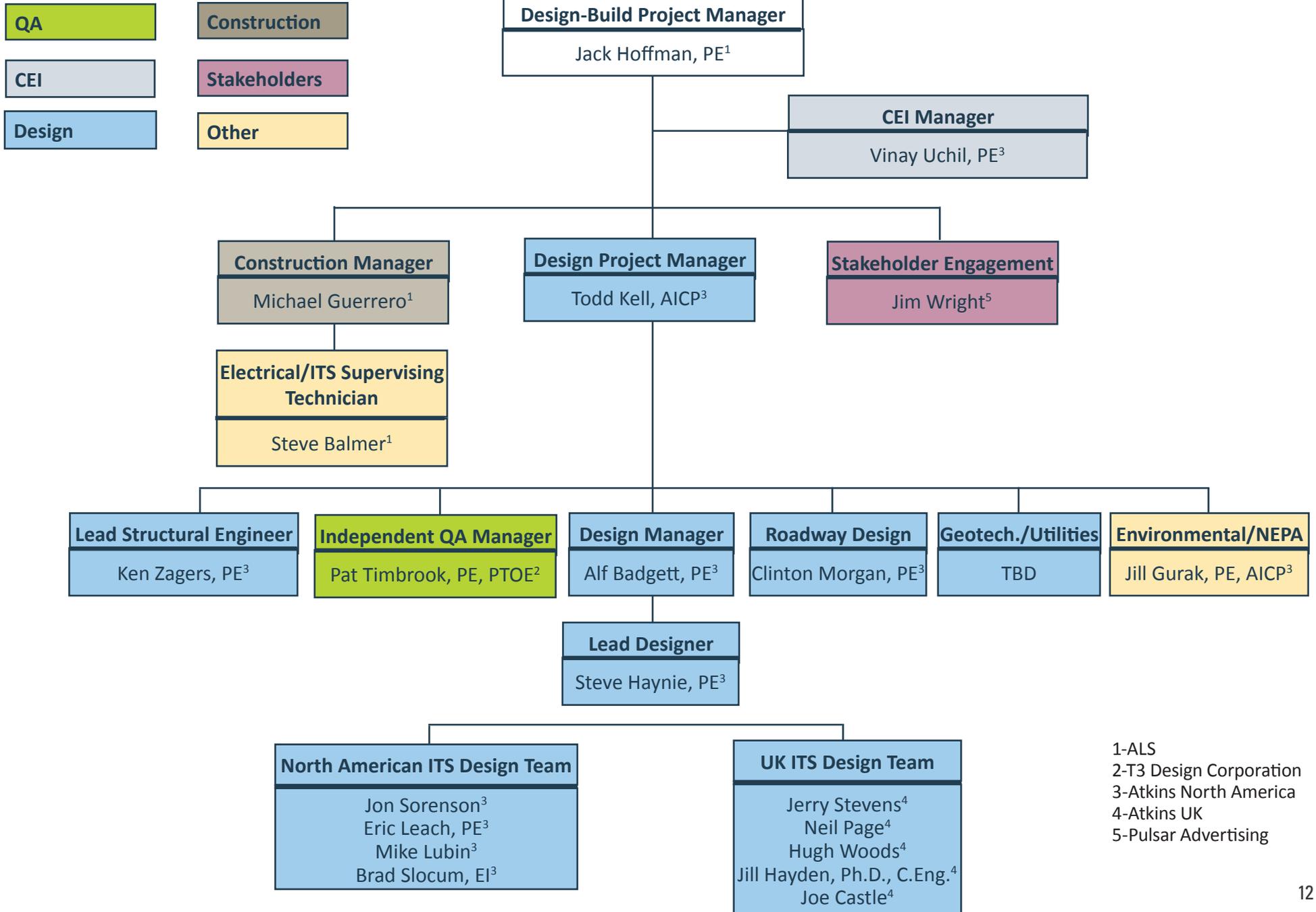


between construction and pre-construction will be necessary throughout to ensure that the designs being developed are well understood by the builder and make the most sense. As discussed in 3.4 Project Risks, the use of virtual reality (VR) software, which Atkins has used on other ATM projects, goes to great lengths to ensure that what is being designed is being understood comprehensively, including underground impacts. During construction, that interaction will continue to deal quickly and efficiently as field situations seem to always require.

Also of significance is our proposed involvement of UK ITS staff throughout the design process to ensure that the experience Atkins has gained over the past ten years deploying seven ATM projects across the UK, including those projects shown in 3.3 Experience of Offeror's Team, is present for I-66 as well. Atkins' experience in deploying ATM projects in the UK exceeds the quantity of all US ATM deployments. These individuals have the experience that is expressed in our understanding of risks in 3.4 Project Risks. Those individuals are shown among our design resources and will be an active and significant part of developing our ATM designs. This will ensure that the efficiencies that our years of ATM experience have generated are applied in the best manner possible.



Figure 1: Organizational Chart



The ALS/Atkins team will employ a management approach proven highly effective in ensuring strict quality and contract compliance in the performance of similar work. Our team has the technical expertise to perform the work with a high level of competence, while also supporting effective communication with VDOT staff and other local stakeholders. We believe that the most effective way to deliver this combination of capabilities and experience is through the formation of a strong project management team, operating within a highly structured organizational framework. It includes eight critical components:

- An efficient, functional organizational structure that provides clear lines of authority, responsibility, accountability, and communication.
- Highly qualified key personnel with a project manager who has a proven track record for managing ITS projects.
- Strict cost and schedule control procedures that address planning, scheduling, budgeting, performance measurement, performance evaluation, and quality control (QC).
- Proven successful project scheduling, tracking, and documentation procedures and systems to facilitate the early identification of performance issues.
- Well-planned and disciplined execution of timely and effective corrective action.
- Highly refined vendor/subconsultant management methods.
- Formalized communication requirements to ensure teamwork.
- A quality assurance (QA)/QC plan designed to expedite progress and eliminate rework.

ALS and Atkins have assembled an exceptionally qualified team for this series of services. The team includes nationally recognized expertise, coupled with extensive Virginia knowledge.



The ALS/Atkins team is committed to helping VDOT successfully implement this pioneering ATM project on I-66 by providing design services that are based on our national and international experience, are innovative in approach, and are constructible. The proposed design staff have worked on ITS projects as far away as Alaska, Hawaii, Canada and Saudi Arabia, and as local as Alexandria and Newport News. In addition, the ALS/Atkins team has significant non-ITS resources that can be accessed to support design elements, including electrical, structural, surveying and civil staff. The following paragraphs describe the team's qualifications and approach for the most prominent and critical elements an ITS design program typically encounters.

The ALS/Atkins team recognizes that the decisions and deliverables have impacts that extend well beyond the construction of this project. The design must be constructible, integrate with its control system, and aesthetically complement existing site conditions while also considering concurrent and future work program projects within the same right-of-way. Further, decisions made during design have implications for the system operators and maintainers, so ease of maintenance also needs to be considered up front when evaluating design alternatives. Good design considers all aspects of maintainability, access, and protection from vehicular damage and vandalism. This lifecycle approach allows for early identification and remedy of potential construction and maintenance issues, and correcting these issues during design results in significant cost savings through reduced change orders,

schedule impacts, and fewer maintenance trouble tickets.

As an example, to be most effective to operators, CCTV cameras need to be placed to cover all facilities of interest with minimal interference in view corridors. Atkins uses bucket truck video surveys with an ITS camera to record the views from the proposed site location, including zoom ranges. These recordings are then reviewed to confirm camera views will not be obstructed by trees, overhead sign panels, overpasses, horizontal/vertical curve features, and the topology along the right-of-way. Gaps in coverage are identified



and filled during design, and not discovered by traffic operations center operators during construction.

Great care and attention is required during design of dynamic message signs (DMS), given the visibility of DMS and lane control signals to the traveling public and the cost associated with constructing them. Placement of the DMS needs to consider upstream and downstream static panel signage to avoid sign clutter or impair the ability for motorists to view message copy when traveling at freeway speeds. These considerations must also be balanced with the DMS's operational objectives, such as providing sufficient advance notice of incident and congestion trouble spots so drivers have time to make better travel decisions.

Any **roadway design** efforts needed will begin with the development of design criteria that are consistent with VDOT's guidelines and the most recent accepted version of the *American Association of State Highway*

and Transportation Officials (AASHTO) Policy on Geometric Design of Highways and Streets, the "Green Book." Atkins will build upon the functional needs that will result from the concept design efforts.

Plan and profile sheets will be prepared and will include horizontal and vertical alignments for all alignments, including detours and service roads. Cross sections will be prepared and preliminary construction limits will be shown. The title sheet, typical sections, and structure recommendations will also be prepared.

Once the preliminary plans are approved, a pre-design meeting will be held with the hydraulics staff.

The **hydraulic design** will begin with a review of the location survey data to determine that all natural drainage channels that cross the project have been identified. A drainage field survey will be performed to collect additional survey data as necessary to accurately set cross pipe inverts and analyze the outfall channels.

Storm drainage systems will be designed and will consist of appropriately located grated inlets in the roadside and median ditches. These inlets will be connected by pipe networks sized for the ten-year discharge and will convey stormwater runoff to appropriate natural outfall points. Spread calculations will be performed for bridge deck drainage and spacing requirements for deck drains, if different from standard, will be identified. Stormwater management measures will be utilized to minimize the impacts that outlet discharges have on receiving streams and/or wetlands. These measures will include the use of grassed swales, level spreaders, and pre-formed scour holes.

Permit drawings will be prepared as necessary to identify and quantify the impacts to jurisdictional streams and wetlands.

Any drainage design studies and plans will conform to the procedures and guidelines set forth in VDOT's drainage and hydraulics guidelines.

The ALS/Atkins team recognizes two important technical needs that the project may require: **geotechnical** and **utilities planning** and management. Given the volume of foundations that will be drilled, the need for geotechnical services to evaluate subsurface soil conditions is anticipated. Similarly, that same amount of foundation activity makes clear the need for utilities coordination. At the appropriate time, we will identify local expert firms to fill these roles.

While no **right-of-way** acquisition is anticipated for this work, Atkins' roadway design practice is full-service and includes right-of-way planning and acquisition services. Upon completion of the preliminary plans and subsequent reviews by VDOT, work will commence on final right-of-way plans. Atkins will closely work with its subconsultants to verify that the appropriate right-of-way and easements limits are shown to contain all maintenance of traffic needs, drainage structures, and outfalls. After receiving final approval, Atkins will submit the final right-of-way plans so that staking of the proposed centerline and new right-of-way indicated on the plans can commence.

Although a **“programmatic categorical exclusion”** is already in place, assisting clients through the maze of environmental regulations concerning wetlands, threatened and endangered species and their habitats, and water quality has long been an integral Atkins service. Our company has developed an excellent reputation for developing efficient and innovative solutions to complex regulatory problems. Atkins has extensive experience in conducting research and investigations and preparing studies and documents that comply with the requirements of the Clean Water Act; Endangered Species Act; Clean Air Act; National Environmental Policy Act; National Historic Preservation Act; California Environmental Quality Act; and numerous other federal, state, and local regulations.

Atkins is prepared to conduct environmental analysis and prepare environmental documentation in accordance with all pertinent VDOT and Federal Highway Administration (FHWA) regulations. As required by VDOT, Atkins will prepare special study reports detailing impacts to the social, cultural, natural, and physical environment. Atkins will conduct a background literature search, complete a field survey of the project site, and produce the required historic resources report(s) to obtain project approval by and concurrence from VDOT and other appropriate state agencies. Upon acceptance of any special studies reports needed, Atkins will prepare and submit a programmatic categorical exclusion for approval by VDOT.



It is important to gain as much support from stakeholders as possible within the scope of the work and the budget available. **Stakeholders** will include road users, local businesses, emergency services, and other public agencies. Stakeholder management will aim to overcome opposition and increase compliance with the system while improving the perception of VDOT. Atkins has stakeholder engagement experience on a wide range of projects large and small and will tailor a stakeholder engagement plan appropriate to the scale of the project and the budget available. The Atkins team has experience communicating with the UK's Highways Authority (HA), the UK equivalent of the FHWA, to gain support for ATM, known in the UK as managed motorways, as well as discussion of potential issues with emergency services and local chambers of commerce. We have assisted HA with publicity materials for road users such as brochures and videos.

Every Atkins employee is committed to the success

of continuous **quality improvement**. We actively pursue quality performance and quality improvement in our work. QA/QC is an important aspect of every project that we undertake. We also strive to improve and adhere to the business processes we use to develop our products and services. By combining the elements of QA/QC, the Atkins quality process formalizes our methods of bringing high-value products and services to our clients. The ALS/Atkins team will use Pat Timbrook of T3 Design Corporation as our independent QA reviewer.

Atkins' goal will be to provide an effective project management and documentation program to monitor the contractor's activities and facilitate the I-66 ATM construction process, ensuring the contractor delivers the project on time and within budget. VDOT desires to achieve construction and inspection services goals in a responsible, expeditious, and accurate manner and with minimal participation by VDOT personnel.

Atkins' role will be to represent VDOT by embracing VDOT's general and project-specific goals and objectives. Atkins' approach to fulfilling these objectives will be centered on our strong leadership, technical expertise, and administrative experience. Our project documentation, knowledge of construction means/methods, and staff resources will enable us to meet VDOT's scope of services and project-specific needs. These qualities are integrated into basic construction procedures that will be followed to ensure an effective construction program from the pre-construction phase through construction observation and documentation, project acceptance, and subsequent closeout.

3.4 EXPERIENCE OF OFFEROR'S TEAM

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) Greensboro ITS Computerized Traffic Signal System Greensboro, North Carolina	<p>For this citywide ITS/traffic signal system project, ALS is responsible for all construction elements associated with the project, including the successful change out of 450 National Electrical Manufacturers Association (NEMA) TS-1 cabinets to Type 332 and 336 cabinets, including all in-cabinet devices, consisting of:</p> <ul style="list-style-type: none"> • Ethernet MMUs • 41 Aironet 1522 Mesh AP units • 25 900MHz Encom wireless radios, • 460 RuggedCom RS900G field hardened switches • 31 VDSL Ethernet-over-copper using existing CBD copper interconnect • 41 CCTV PTZ cameras/poles • 57 encoders • 32 decoders • 10 Cisco 6504, 10Gb core switches <p>Further, ALS's services include complete system integration, development of system testing matrix documents, development of the complete citywide network VLAN Internet protocol data schema and metadata.</p> <p>ALS's services also included installation, integration, calibration, and setup of the control center video wall.</p>	<p>North Carolina Department of Transportation (NCDOT) Division 7 Darrel Ferguson, Resident Engineer 1584 Yanceyville Street P. O. Box 14996 Greensboro, NC 27415-4996 Tel: 336.334.3192</p>	April 2013	July 2012	\$16,845	\$17,600	\$17,600

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
(2) Traffic Signal System Upgrade Rocky Mount, North Carolina	<p>The North Carolina Department of Transportation (NCDOT) ITS and Signals Unit contracted with ALS to implement the rehabilitation and expansion of the existing City of Rocky Mount computerized traffic signal system. ALS' work consists of communications system upgrade and expansion, field equipment upgrades, enhancement of the central system/traffic management center, and the expansion of the video monitoring system.</p> <p>The upgraded Rocky Mount system integrated 150 traffic signals initially, and ALS's work included installation of ten new closed-circuit television (CCTV) surveillance cameras and replacement of the existing five CCTV cameras.</p> <p>ALS's work also included installing 46 miles of new single-mode fiber-optic communications cable which replaced the existing mixed-mode fiber-optic communications system in its entirety with a new Ethernet communications system.</p> <p>ALS also relocated the control center to a new location, including installation, integration, setup, configuration, and calibration of a new video wall.</p>	<p>NCDOT Division 4 P.O. Box 3165 Wilson, NC 27895</p> <p>Tel: 252.237.6164</p>	4/1/2014	Ongoing	\$4,539	\$4,539	\$4,539

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) Dynamic Message Sign Replacement Wake County, North Carolina	ALS is responsible for the upgrade/replacement of three dynamic message signs (DMS) and installation of two new DMSs. ALS's work included furnishing and installing five Daktronics DMSs, including construction of foundations, construction of electrical service, and installation of wireless communications equipment. ALS' work also included removal of existing DMSs and abandoned structures at the three existing sites.	NCDOT Division 5 Boyd Tharrington, PE, Resident Engineer P. O. Box 1018 Youngsville, NC 27596 Tel: 919.562.7000	April 2011	May 2011	\$503	\$496	\$496

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)  M4 J19 to M5 J17 Hard Shoulder Running (HSR) Detailed Design Phase and Construction Design Support Bristol, United Kingdom	<p>Atkins developed a technical and economically viable ATM solution to reduce congestion, improve travel time, and reduce accidents on the M4 and M5 freeway network around Bristol. Atkins provided a detailed design and technical assessment; environmental and ecological assessments; traffic and economic assessment; construction phasing and program advice; management of a large, multidisciplinary team; and stakeholder coordination, plus construction phase support.</p> <p>The resulting design used all the available options within a very demanding schedule: Hard Shoulder Running (HSR) on the M4 J19/J20 and the M5 J16/J17 links; controlled motorway through the Almondsbury interchange and M5 north of the interchange; and controlled all lane running on two other segments of the M5. Lane and vehicle speed control were achieved by using gantry-mounted signals and signs to keep users informed at all times of the network's status.</p> <p>With the loss of the hard shoulder for emergency use, emergency refuge areas were provided within the existing roadway width which, as with the whole of the scheme, are subject to 24/7 closed-circuit television coverage. The new infrastructure locations called for close attention to detail due to the complexities of a combination of lane drops and lane gains at the interchange.</p> <p>Key benefits and success factors included:</p> <ul style="list-style-type: none"> • Full commitment to and understanding of the client's objectives. • A project team with a complete range of professional expertise available in house. • Developing a signalling and signing system to cater to the interchange's complexities. • Effective collaboration and communication. • On-time, high-quality key objectives. 	<p>UK Highways Agency Paul Unwin Senior Project manager Highways Agency The Cube 199 Wharfside Street Birmingham B1 1RN United Kingdom</p> <p>Tel: +44 121 678 8180 Cell: +44 776 6794884</p>	March 2014	Estimated March 2014	Approximately \$137,000	Estimated \$137,000	Estimated \$14,000

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
(2)   M62, J25 to J30, Managed Motorway England, UK	<p>In spring 2000, the South West Yorkshire Multi-Modal Study identified that congestion on the M62 in southwest Yorkshire would become substantially worse and recommended a short-term widening scheme between Junctions 25 and 28 to complement a long-term road pricing strategy. Due to financial and environmental concerns associated with widening, the UK Highways Agency led a study into other alternatives, which resulted in proposing a permanent four-lane option. Following the M42 ATM pilot's success, the Agency adopted dynamic hard shoulder (DHS) running as the preferred choice for the provision of extra capacity.</p> <p>Atkins assessed the benefits of DHS in comparison with a rapid widening solution as part of the national managed motorway program. The scheme was extended to include Junctions 25 to 30. A ministerial announcement confirmed DHS as the preferred option.</p> <p>Atkins developed the preliminary design for four permanent running lanes and a 8-foot-wide combined hardstrip and hardened verge. The current scheme involves installation of gantries and communication infrastructure to implement variable mandatory speed limits and hard shoulder running, avoiding land take, demonstrating value for money in comparison with widening, and upgrading the existing Regional Control Center.</p> <p>Atkins' commitment to the project has ensured its place as one of the first to be delivered under the national managed motorway program.</p>	<p>UK Highways Agency David Pilsworth Project Manager Highways Agency Lateral 8 City Walk Leeds LS11 9AT United Kingdom</p> <p>Tel: +44 113 2836483 Cell: + 44 7977 555 114</p>	March 2014	Estimated March 2014	\$ 234,209	Estimated \$234,000	Approximately \$9,500

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)  I-295, SunGuide Phase V System Manager Jacksonville, Florida	<p>Atkins served as the system manager for a 19-mile expansion of the freeway management system. Work included the design of a Gigabit Ethernet communications system over single mode fiber-optic cable, 19 closed-circuit television (CCTV) cameras, 37 microwave detectors, 2 field Ethernet hub switches, relocation of an existing hub switch, and 10 cantilever-mounted dynamic message signs. The system tied to an existing Ethernet core switch. Atkins prepared a project systems engineering master plan. The design work included the preparation of plans for the device layout, cable routing, fiber-optic splicing, structures design, electrical power service, utility coordination, technical special provisions, cost estimate, and bid documents. Atkins assisted the Florida Department of Transportation (FDOT) by providing technical reviews of all plans, requests for information and shop drawing submittals.</p> <p>As system manager, Atkins assisted FDOT in procurement support for FDOT-supplied equipment. We prepared specifications, quantities, and bid documents for the first statewide purchase of intelligent transportation system (ITS) devices. Atkins was responsible for stockpiling these items on FDOT's behalf and for providing the initial testing on the devices to ensure that they are in working condition. Atkins provided integration services for the new devices into the communications network before FDOT integrated these devices into the statewide SunGuide software.</p>	<p>FDOT Pete Vega, PE P.O. Box 25201 Jacksonville, FL 33204</p> <p>Tel: 904.360.5463</p>	January 2009	January 2009	\$887	\$887	\$785

3.5 PROJECT RISKS

3.5 Project Risks

A large-scale deployment of a new operational concept will have risks that need to be enumerated and prioritized, and that will require mitigation strategies to be developed. These risks are unique for ATM deployments and are not the same as the ITS, much less the traffic operations industry, has encountered. There is a much higher level of ATM being placed on I-66 than a typical US ITS deployment, and that brings with it risks focusing on project delivery, stakeholder acceptance, and adequacy of funding. The following discussions of these risks were developed by Atkins' UK staff, based on their real-world experience in delivering seven ATM projects in the UK.

3.5.1 Critical Risk 1 - Supply Chain Immaturity

Impact of the Risk

The US ATM market is relatively new, so very few of the typical ITS vendors and suppliers really understand the complex issues and interactions of activities and system elements that occur on an ATM scheme. Further, some of the field devices used in ATM, while currently available, are not produced in quantity sufficient to efficiently supply an effort the size of the I-66 ATM project.

Failure to understand the scale, complexity, and program/sequencing dimensions of the project will cause cost overruns and delay, but will also threaten the ability of the project to deliver all of its anticipated operational benefits.

Mitigation Strategy

To best address this risk, VDOT will need to employ a design-build team that has relevant, recent experience delivering projects of this scale and complexity. In particular, the scopes of work/specifications/requirements for the software and design-build suppliers will need to be compatible to ensure that both teams work together to realize the benefits of the entire deployment.

Atkins' experience of delivering seven ATM schemes in the UK, and the lessons we learned from doing so, will significantly reduce this risk for VDOT. Our UK experts will work side-by-side with Atkins' North American ITS professionals to bring international best practice experience to specifically address the supply chain immaturity risk.

For example, there are numerous potential contributors to this risk, each of which has its own mitigation. These risks are amplified in a design-build context, where a single supply chain will be responsible for delivering the entire I-66 ATM field deployment, though the software is being procured separately.

By failing to understand the wider issues, there is a significant danger that this will be seen as a run of the mill ITS project, though on a larger scale than normal, and that will encourage overlooking the complexities associated with significant construction at multiple sites, on an extremely busy route, and involving a broad range of disciplines. To overcome this, it is necessary to adopt the type of programming and phasing methodology and make use of the organizational skills more normally associated with major civil engineering schemes.

While individual technologies used in ATM are well established, delivering so many elements together in a single deployment may cause problems with the integration of equipment of different types from a range of suppliers. For example, incompatibility of DMS mounting arrangements is a frequent issue with US ITS deployments involving DMS attachment to gantries. Frequently, these challenges are successfully accommodated via field modifications which have little impact on the overall project delivery. But, in these scenarios, the typical project includes only a small number of DMS. This ATM project stands to include hundreds of DMS of various sizes. When this problem is amplified across more than 100 gantries and involves multiple signs on each gantry, it is essential to adopt

proven technologies and approaches while working closely with the entire supply chain and being clear about the integration requirements from the outset, which will allow these issues to be overcome.

ATM's success is entirely dependent upon the close integration of centrally located and field devices. Excluding the controlling software system from this contract means that the field ATM system designers and software vendors, operating under separate contracts, will have to work very closely to define the control methodology and to calibrate and validate the installed system. This situation and its potential complication is enhanced by the upcoming VDOT statewide ITS software procurement, which is anticipated to be the ultimate and long-term control system for the I-66 ATM deployment.

Early engagement with Dominion Power and a consistent plan for coordinating with them to ensure power is available is essential for initial on-time system power-up, both in terms of location and quantity. Some contingency plans, including even temporary generators may be needed if discussions with Dominion become protracted, particularly the issues around easements needed for power supply to the highway.

Maintenance planning, especially in Segment 2 from US 50 to I-495, must be dealt with early in the project development to ensure a clear understanding of how maintenance access to equipment will be achieved.

A specific sub-element of maintenance is the failure of newly installed equipment (infant failures) often cause significant problems during commissioning and acceptance testing, delaying the program. Our UK experience has led us to recommend a best practice to carry out a 100-hour "soak" test of all new equipment before installation, where equipment is powered up and repeatedly exercised through all of its functions outdoors to stress it before it is installed at roadside. Equipment failures during soak testing are simpler to resolve and reduce the amount of infant failures encountered post installation.

The project requires comprehensive CCTV coverage, but effectiveness will be reduced during hours of darkness. Previously specified CCTV cameras may not perform adequately in poor visibility, and low light cameras may need to be investigated and, if acceptable, used. The long-term quality of the current cameras will be assessed by analyzing data stored in TrafficLand's video quality management tool. Newer technology CCTV cameras, which work in conjunction with infrared detection, may provide a response to this situation.

With a high density of electrical equipment on gantries there is an increased risk of impact from errant vehicles with exposure to live electricity. Given the risks to maintenance personnel on an active, heavily traveled I-66, a sensible mitigation is to design a means to electrically isolate gantries from either end so that they can be made safe in the event of an accident.

3.5.2 Critical Risk 2 - Institutional Issues

Impact of the Risk

Since this is the first ATM scheme that VDOT has implemented, as well as being one of the first in the US, there will be many institutional issues that will need to be addressed. Without addressing the issues, the scheme will be delayed, incur additional costs, and may fail to deliver all of its benefits.

Mitigation Strategy

VDOT will need to provide leadership and direction in this area, and will need to work closely with the ALS/Atkins appropriately experienced design-build team to ensure that all of the issues are addressed, that stakeholders are on board, concept of operations is established, the public is educated, and appropriate standards are in place or can be developed through or in parallel with the deployment.

Atkins has been involved in ATM deployments in the UK for the past ten years. We were responsible for the first ATM scheme in Wales and had to address all of the institutional issues around stakeholder, concept of operations, public acceptance and development/adoption of standards that will be necessary for the I-66 project. Atkins looks forward to bringing its expertise to support the locally based team, featuring Pulsar and their depth of high-profile experience with UK experts who have this first-hand experience of addressing these complex, non-engineering issues.

There are multiple strands to this risk, some of which follow.

Multiple stakeholders, each with a different agenda, could easily disrupt the deployment. Failure to engage with these stakeholders may result in deployment delay, significant redesign, or some modification to its operation which severely limits the benefits generated by the deployment. Early identification of, and engagement with the utilities, Washington Metropolitan Area Transit Authority, state and national parks, emergency services (specifically the police focusing on enforcement), local authorities, etc. to understand their objectives for the scheme, and any constraints that they might impose will be fundamental to the development of a sensible design.

Despite the expenditure of a significant amount of money on designing and building a state of the art project, without a robust underlying safety case and operational concept (including the development of the necessary standard operating procedures and staff competencies at the control center), the system will fail to deliver its anticipated benefits. Keeping the operational requirements in focus throughout the design process, and developing the design around operational requirements, will be part of the solution. A significant amount of effort will need to be expended in parallel to develop the necessary safety case, and to put into place a concept of operations that can make best use of the newly deployed technology. For example, defining what

speed limits will be set at what times, what conditions may invoke different lane management plans, what DMS message plans are required, etc.

Failure of the public to accept or understand the scheme may result in non-compliance and inability to realize the deployment's benefits. A clear publicity strategy is vital, as is clarity about how information/restrictions will be presented to the road users, but more important is the need for the deployment to be seen to be making a positive impact. Our experience in the UK is that a well-managed deployment, where speed restrictions change dynamically and appear to the road users to be appropriate to the conditions they are experiencing, is far more likely to be complied with and will deliver its anticipated benefits.

Local and national standards for ATM, where available, are immature but are nonetheless evolving as new deployments are implemented. The risk is that the newer deployments, such as I-66, will not comply with new standards as they mature. To overcome this, best practices from around the world, blended with detailed local knowledge of the VDOT environment, will allow the I-66 ATM deployment to become a well-respected example deployment for future state and national standards. This deployment is an excellent opportunity to influence the national picture to adopt the best of what the ATM suite of operational techniques delivers.



3.5.3 Critical Risk 3 - Inadequate Budget

Impact of Risk

The aims of the scheme may not be achieved because not all of the anticipated elements can be afforded.

Mitigation Strategy

VDOT has two alternative approaches: to vary budget to match the real costs of the deployment or to work with the design-build team to tailor requirements so that an affordable deployment is delivered that meets the desired outcomes. A clear understanding of the aims of the scheme, as well as the relative priorities of the different elements, is therefore fundamental to building an affordable solution. VDOT will need to be able to share these objectives and the anticipated (quantifiable) benefits with the design-build contractor.

Atkins' UK experience of value engineering ATM schemes to suit client budgets will play a critical role in ensuring the best response to dealing with budgetary limitations. For example, the M4 variable speed limit scheme in Wales cost 70-75 percent less than a typical UK ATM deployment of the same length by changing some of the principles behind the way that speed limit information is presented to road users. We have also found that visualizing the scheme at design stage using a VR model allows the value engineering decisions to be taken from a position of knowledge and understanding.

There are a number of facets to this risk, some of which follow.

The typical European model of implementing variable speed limits and lane control is to install overhead gantries at inter-visible distances to reinforce speed restrictions. This approach may not be affordable or appropriate in this context. A lower cost approach of using gantries with a much wider spacing, perhaps interspersed with gore-area mounted supplemental speed limit signs (as successfully implemented by Atkins in the UK) may be more appropriate.

Spacing CCTV cameras with a requirement to give continuous CCTV coverage could result in either excessive provision or failure to meet the coverage requirement. Using the VR model will allow us to visualize the viewpoint of every camera before installation, to ensure that its coverage is sufficient, and that overlaps are eliminated, without the need to extensive site visits.

Constructing a complex deployment such as I-66 often results in conflicts between underground utilities, drainage structures, other foundations, and obstacles, resulting in claims back to VDOT. The VR model can be used to carry out conflict detection at design stage, eliminating these risks.

APPENDIX

SOQ CHECKLIST FORM

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	Appendix
Acknowledgement of RFQ, Revision and/or Addenda	Attachment 2.10 (Form C-78-RFQ)	Section 2.10	no	Appendix
Letter of Submittal (on Offeror's letterhead)				
Offeror's point of contact information	NA	Section 3.2.1	yes	1
Authorized Representative's signature	NA	Section 3.2.1	yes	5
Principal officer information	NA	Section 3.2.2	yes	2
Offeror's Corporate Structure	NA	Section 3.2.3	yes	2
Affiliated/subsidiary companies	NA	Section 3.2.4	yes	2
Debarment forms	Attachment 3.2.5(a) Attachment 3.2.5(b)	Section 3.2.5	no	Appendix
Offeror's VDOT prequalification evidence	NA	Section 3.2.6	no	Appendix
Evidence of obtaining bonding	NA	Section 3.2.7	yes	6
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	Appendix
SCC Registration	NA	Section 3.2.8.1	yes	4
DPOR Registration (Offices)	NA	Section 3.2.8.2	yes	4
DPOR Registration (Key Personnel)	NA	Section 3.2.8.3	yes	5
DPOR Registration (Non-APELSCIDLA)	NA	Section 3.2.8.4	yes	5
DBE statement within Letter of Submittal confirming Offeror is committed to achieving the required DBE goal	NA	Section 3.2.9	yes	5
Offeror's Team Structure				
Identity of and qualifications of Key Personnel	NA	Section 3.3.1	yes	9
Key Personnel Resume – DB Project Manager	Attachment 3.3.1	Section 3.3.1.1	no	Appendix
Key Personnel Resume – Quality Assurance Manager	Attachment 3.3.1	Section 3.3.1.2	no	Appendix
Key Personnel Resume – Design Manager	Attachment 3.3.1	Section 3.3.1.3	no	Appendix
Key Personnel Resume – Construction Manager	Attachment 3.3.1	Section 3.3.1.4	no	Appendix
Key Personnel Resume – Lead Designer	Attachment 3.3.1	Section 3.3.1.5	no	Appendix
Key Personnel Resume – Lead Structural Engineer	Attachment 3.3.1	Section 3.3.1.6	no	Appendix
Key Personnel Resume – Electrical/ITS Supervising Technician	Attachment 3.3.1	Section 3.3.1.7	no	Appendix
Organizational chart	NA	Section 3.3.2	yes	12
Organizational chart narrative	NA	Section 3.3.2	yes	11

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				
Lead Contractor Work History Form	Attachment 3.4.1(a)	Section 3.4	no	Following 3.4.1 tab (no page #)
Lead Designer Work History Form	Attachment 3.4.1(b)	Section 3.4	no	Following 3.4.1 tab (no page #)
Project Risk				
Identify and discuss three critical risks for the Project	NA	Section 3.5.1	yes	17

ACKNOWLEDGEMENT OF RFQ, REVISIONS, AND/OR ADDENDA

ACKNOWLEDGEMENT OF RFQ, REVISIONS, AND/OR ADDENDA

OFFEROR'S VDOT PREQUALIFICATION EVIDENCE



COMMONWEALTH OF VIRGINIA



CERTIFICATE OF QUALIFICATION

ALS of North Carolina, Inc.

Vendor Number: F266

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, Traffic Signalization, Roadway Lighting.

Issue Date: March 22, 2011

This Rating and Classification will Expire: January 31, 2012

Suzanne FR Lucas Prequalification Officer

Don E. Silles, Contract Engineer

From: Hoffman ALS (jhoffman.als@bellsouth.net)

To: jhoffman.als@bellsouth.net;

Date: Fri, December 16, 2011 12:44:10 PM

Cc:

Subject: ALS of North Carolina, Inc. waiver of 'inactive status' for I-66 ATM Project
Contract ID: C00098017DB46

From: "Silies, Don E. (VDOT)" <Don.Silies@VDOT.Virginia.gov>

To: Hoffman ALS <jhoffman.als@bellsouth.net>

Cc: "Lucas, Suzanne F. (VDOT)" <SFR.Lucas@VDOT.Virginia.gov>

Sent: Fri, December 16, 2011 10:30:34 AM

Subject: RE: ALS of North Carolina, Inc. waiver of 'inactive status' for I-66 ATM Project

I have reviewed the qualifications of ALS of North Carolina, Inc. and I find them acceptable for the purpose of bidding this project. Therefore, I hereby waive the bidding restriction on your firm for this project. If in the future you desire to bid beyond what your prequalification status allows, please continue to make a request to me by email. As before, please state which project you wish to bid on and that I have granted a waiver in the past. I will keep the supportive information on file so you do not need to send it again. I would welcome additional supportive information if available. VDOT looks forward to your proposal.

Don Silies

Assistant Division Administrator

Scheduling and Contract Division

Virginia Department of Transportation

(804) 786-1630

Don.Silies@vdot.virginia.gov

DEPARTMENT FORMS

DEPARTMENT FORMS

ATTACHMENT NO. 3.2.5(a)

**CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS**

Project No.: 0064-054-703, P101, R201 & C501

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.

Claude Zerkowat 10/15/11 MANAGER
Signature Date Title
ALS OF NORTH CAROLINA, INC.
Name of Firm

ATTACHMENT NO. 3.2.5(b)

**CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0064-054-703, P101, R201 & C501

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>Charles Zukowski</u>	<u>12/15/11</u>	<u>MANAGER</u>
Signature	Date	Title
<u>ALS OF NORTH CAROLINA, INC.</u>		
Name of Firm		

SCC AND DPOR REGISTRATION DOCUMENTATION

Commonwealth of Virginia



State Corporation Commission

I Certify the Following from the Records of the Commission:

The records of this office show on February 04, 2011, POST, BUCKLEY, SCHUH & JERNIGAN, INC., a FLORIDA corporation, filed in the Office of the Secretary of State of FLORIDA, articles of amendment changing its name to Atkins North America, Inc., filed in this office on April 29, 2011.

Atkins North America, Inc., a corporation incorporated under the laws of FLORIDA is authorized to transact business in Virginia and is in good standing. It obtained a certificate of authority from the Commission on August 13, 1985.

Nothing more is hereby certified.



*Signed and Sealed at Richmond on this Date:
May 25, 2011*

Joel H. Peck
Joel H. Peck, Clerk of the Commission



Commonwealth of Virginia
State Corporation Commission

Virg

CISM0180

CORPORATE DATA INQUIRY

09/02/11

13:50:47

CORP ID: 0658539 - 2 STATUS: 00 ACTIVE STATUS DATE: 07/14/10
CORP NAME: T3 Design Corporation

DATE OF CERTIFICATE: 05/18/2006 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: REES BROOME PC

STREET: 8133 LEESBURG PIKE 9TH FL

AR RTN MAIL:

CITY: VIENNA

STATE : VA ZIP: 22182 2706

R/A STATUS: 5 B.E. AUTH IN VI EFF. DATE: 05/01/07 LOC : 129

ACCEPTED AR#: 211 51 0988 DATE: 05/27/11 FAIRFAX COUNTY

CURRENT AR#: 211 51 0988 DATE: 05/27/11 STATUS: A ASSESSMENT INDICATOR: 0

YEAR	FEES	PENALTY	INTEREST	TAXES	BALANCE	TOTAL SHARES
11	100.00					5,000

(Screen Id:/Corp_Data_Inquiry)

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

AT RICHMOND, JUNE 10, 2011

The State Corporation Commission has found the accompanying articles submitted on behalf of

T3 Design Corporation (formerly T3 Design, P.C.)

to comply with the requirements of law, and confirms payment of all required fees. Therefore, it is ORDERED that this

CERTIFICATE OF RESTATEMENT

be issued and admitted to record with the articles of restatement in the Office of the Clerk of the Commission, effective June 10, 2011.

The corporation is granted the authority conferred on it by law in accordance with the articles, subject to the conditions and restrictions imposed by law.

STATE CORPORATION COMMISSION

By

A handwritten signature in black ink, appearing to read "James C. Dimitri", written over a horizontal line.

James C. Dimitri
Commissioner

Commonwealth of Virginia



State Corporation Commission

I Certify the Following from the Records of the Commission:

Pulsar Advertising, Inc., a corporation incorporated under the laws of NEW YORK is authorized to transact business in Virginia and is in good standing. It obtained a certificate of authority from the Commission on November 22, 2004.

Nothing more is hereby certified.



*Signed and Sealed at Richmond on this Date:
December 6, 2010*

Joel H. Beck

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
0411000687

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

PROFESSIONS: ENG

ATKINS NORTH AMERICA, INC.
1616 EAST MILLBROOK RD
STE 310
RALEIGH, NC 27609-4968



Gordon N. Dixon
Gordon N. Dixon, Director

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BUSINESS ENTITY BRANCH OFFICE REGISTRATION

PROFESSIONS: ENG

ATKINS NORTH AMERICA, INC.
5200 77 CENTER DR
STE 500
CHARLOTTE, NC 28217



Gordon N. Dixon
Gordon N. Dixon, Director

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ATKINS NORTH AMERICA, INC.
5200 77 CENTER DR
STE 500
CHARLOTTE, NC 28217



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Telephone: (804) 367-8500

**NUMBER
0411000601**

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

PROFESSIONS: ENG

**ATKINS NORTH AMERICA, INC.
482 S KELLER RD
ORLANDO, FL 32810**



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Gordon N. Dixon, Director

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ATKINS NORTH AMERICA, INC.
482 S KELLER RD
ORLANDO, FL 32810**



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Telephone: (804) 367-8500

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

PROFESSIONS: ENG

T3 DESIGN CORPORATION
3927 OLD LEE HWY STE 101-C
FAIRFAX, VA 22030-2422



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Gordon N. Dixon, Director

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PROFESSIONAL CORPORATION REGISTRATION
NUMBER: 0405001624 EXPIRES: 12-31-2011
PROFESSIONS: ENG



T3 DESIGN CORPORATION
3927 OLD LEE HWY STE 101
FAIRFAX, VA 22030-2422

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

BOARD FOR CONTRACTORS
TRADESMAN LICENSE

Card No. 32710 045939

Issue Date: 05-24-2006
Expire Date: 05-24-2012

CLAUDE ZUKOWSKI

PO BOX 2949
FAYETTEVILLE NC 28302

TRADE DESIGNATIONS
MASTER ELECTRICIAN



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

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NUMBER

0402014501

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

HENRY ALFRED BADGETT
5200 SEVENTY-SEVEN CENTER DRIVE
SUITE 500
CHARLOTTE, NC 28217



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Gordon N. Dixon, Director

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PROFESSIONAL ENGINEER LICENSE
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HENRY ALFRED BADGETT
5200 SEVENTY-SEVEN CENTER DRIVE
SUITE 500
CHARLOTTE, NC 28217



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Telephone: (804) 367-8500

NUMBER

0402033594

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

STEVEN GLENN HAYNIE
301 EVANS ESTATES DR.
CARY, NC 27513



Jay W. DeBoer
Jay W. DeBoer, Director

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BOARD FOR APELSCIDLA
PROFESSIONAL ENGINEER LICENSE
NUMBER: 0402033594 EXPIRES: 01-31-2012

STEVEN GLENN HAYNIE
301 EVANS ESTATES DR.
CARY, NC 27513



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

NUMBER

0402046445

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

KENNETH THOMAS ZAGERS
208 BROOKLANDS WAY
DELAND, FL 32724



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Gordon N. Dixon, Director

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BOARD FOR APELSCIDLA
PROFESSIONAL ENGINEER LICENSE
NUMBER: 0402046445 EXPIRES: 06-30-2013

KENNETH THOMAS ZAGERS
208 BROOKLANDS WAY
DELAND, FL 32724



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

PATRICIA TIMBROOK-MCMULLAN
4216 PINERIDGE DRIVE
ANNANDALE, VA 22003



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Gordon N. Dixon, Director

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BOARD FOR APPLSCIDLA
PROFESSIONAL ENGINEER LICENSE
NUMBER: 0402037795 EXPIRES: 06-30-2013

PATRICIA TIMBROOK-MCMULLAN
4216 PINERIDGE DRIVE
ANNANDALE, VA 22003



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SP12 200 0/1

KEY PERSONNEL RESUME FORMS

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: John R. (Jack) Hoffman Jr. , PE
b. Project Assignment: Design-Build Project Manager
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>3</u> Years With Other Firms <u>26</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.): ITS Construction Engineer, ALS, Jacksonville, Florida, August 2008-present. Responsible for installation and integration of ITS components, including advanced traffic management system (ATMS), dynamic message signs, and video detection systems. President, Hoffman Engineering LLC, Jupiter, Florida, July 2006 –August 2008. ATMS design and specification and bid packages as subconsultant to DKS for Hillsborough Co FL; traffic signal design for developers as subconsultant for The Good Group. Traffic Signal System Manager, Palm Beach County Engineering and Public Works, Palm Beach County, Florida, November 2001-May 2006. See description in block g. President, Intrepid Technology Group, Inc. Hilliard, Ohio, July 1993-January 2001. Subconsultant to Wilbur Smith in Columbus – Ohio Department of Transportation regional travel surveys; District traffic data collection; and VISSIM configuration of controller features;
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: North Carolina State University, Raleigh, North Carolina/B.S./1974/Civil Engineering The Ohio State University, Columbus, Ohio/M.S./1995/Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #: TX PE 9366; OH PE #E-56691; FL PE #56691 Pending application through NCEES for PE Licenses in NC and VA
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.) Traffic Signal System Manager, Palm Beach County Engineering and Public Works, Palm Beach, Florida (2001-2006). <ul style="list-style-type: none">• Designed (in-house) entire ATMS upgrade for countywide signal system based on National Transportation Communications for ITS Protocol requirements.• Prepared in-house plans for approximately 400 miles of fiber-optic cable.• Prepared metropolitan planning organization ITS justification and funding documentation.• Updated County typical detail drawings including detection, fiber splicing, pull boxes, and conduit.• Developed specifications for new traffic controllers/cabinets, Ethernet switches, video encoders/decoders, and deployed/tested various vendors' products.• Developed and designed hub locations inside existing or proposed Palm Beach County fire stations for 11 locations for full build-out for core switches and backbone access. Greensboro Computerized Traffic Signal System, North Carolina Department of Transportation (NCDOT), Greensboro, North Carolina (ALS, 2008-present). Changed out of 450 TS1 cabinets to 332 and 336 cabinets including all pluggables, Ethernet MMUs, 41-Aironet 1522 Mesh AP units, 25-900MHz Encom wireless radios, 460 RuggedCom RS900G field hardened switches, 31 VDSL Ethernet-over-copper using existing CBD copper interconnect, 41-CCTV PTZ cameras/poles, 57-encoders, 32-decoders, 10-Cisco 6504, 10Gb core switches (integration, system testing matrix documents, development of entire network VLAN IP data schema and METADATA), and video wall. I-40, I-540, US 1 DMS Project, NCDOT, Wake County, North Carolina (ALS, 2010-2011). Upgraded existing and installed new DMS/structures at five locations on Wake County, North Carolina, interstates.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Pat Timbrook, PE, PTOE
b. Project Assignment: Quality Assurance Manager
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>5.5</u> Years With Other Firms <u>33.5</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.): Owner/Principal ITS Engineer, T3 Design Corporation, Annandale, Virginia, 2006–present. Responsible for the provision of traffic engineering and ITS services throughout the mid-Atlantic region. Vice President/Director of Virginia Operations, StreetSmarts, Inc., Alexandria, Virginia, 2000–2006. Served as ITS project manager for numerous projects for the Virginia Department of Transportation (VDOT), Federal Highway Administration (FHWA), and Maryland Transportation Authority. Director of ITS Systems, Frederic R. Harris, Arlington, Virginia, 1987-2000. Project manager for numerous ITS projects involving implementation, upgrades, system replacements, and traffic management systems.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Juniata College, Huntingdon, Pennsylvania, B.S./1973/Mathematics
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2003/Professional Engineer/037795
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.) VDOT Megaproject, Northern Virginia (T3 Design, 2008-present). As lead traffic/ITS engineer for the I-95/395 high-occupancy vehicle/ high-occupancy toll/bus lanes project, Ms. Timbrook’s responsibilities include managing the traffic engineering review of all preliminary engineering and design associated with the project, including the interchange justification report to be presented to FHWA requesting additional access and access modification at 15 locations along the project. VDOT Statewide On-Call ITS/Safety/Operations Contract (T3 Design, 2006-present). Project manager for a fast-track task in support of the Northern Virginia District. As a subconsultant to the prime firm, Ms. Timbrook’s responsibilities included assessing the current traffic management system, analyzing alternates and providing recommendations for a traffic management system (TMS) that would support the vision of the NOVA District Operation’s Division. Ms. Timbrook worked as part of a management team responsible for providing a foundation for effectively managing traffic operations, and facilitating the communications and coordination of transportation information in the National Capital region. In conjunction with the alternative analysis, she also assisted in the update of the NOVA Smart Travel Program Plan and the NOVA ITS Architecture. VDOT Limited Services Design and Study, Northern Virginia District Traffic Engineering Section (T3 Design, 2006-present). As subconsultant, principal-in-charge on a task order contract to provide design of traffic control devices (traffic signals, flashers, signs, and pavement markings/markers), traffic engineering studies (signal, sign, safety, general and cut-through traffic), and traffic engineering analyses. Current task orders include traffic signal designs in Fairfax, Loudoun, and Prince William Counties.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: H. Alfred Badgett, PE
b. Project Assignment: Design Manager
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>27</u> Years With Other Firms <u>5</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.) Senior Engineer IV/Project Manager, Atkins, Charlotte, North Carolina, 1983-present. Provides senior engineering and project management on wide variety of intelligent transportation system (ITS) planning and design projects including signal systems, freeway management (dynamic message signs [DMS], closed-circuit television [CCTV], and microwave vehicle detection systems [MVDS]), ramp metering, communications system, traffic management centers, weigh stations.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: North Carolina State University, Raleigh, North Carolina/M.S./1978/Civil Engineering North Carolina State University, Raleigh, North Carolina/B.S./1976/Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 1984/Professional Engineer/014501
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.) Midtown Tunnel ITS Plan, Skanska Infrastructure, Portsmouth and Norfolk, Virginia (Atkins, 2009-2010). Task manager for the conceptual ITS plan, functional requirements, and cost estimate for this public-private partnership project. The plan included a device layout for DMS, CCTV, MVDS, reference location signs, road weather information systems, and communications equipment. Triangle Expressway, North Carolina Department of Transportation, Durham and Wake Counties, North Carolina (Atkins, 2008-present). Task manager for the preparation of the design-build request for proposal and invitation to propose documents for the ITS and tolls communications system and ITS field equipment. This effort included the preparation of conceptual design plans for the ITS deployment. The scope included relocating the state traffic operations center and the regional traffic management center to a new joint National Guard and emergency management facility. Mr. Badgett continues to provide ongoing submittal review support. Arlington Entertainment District, City of Arlington, Texas (Atkins, 2009). Project engineer for the development of base plans for DMS, reversible lane equipment, all mast arm and sign support structures, electrical details, and quantity/cost estimates. Mr. Badgett coordinated the structural and geotechnical analysis, led research for various DMS for travel information and lane use control, prepared preliminary and final cost estimates, assisted the City in preparing the material order lists, and developed conceptual designs for the variable lane control signs at key intersections. I-295, SunGuide Phase V System Manager, Florida Department of Transportation (FDOT), Jacksonville, Florida (Atkins, 2004-2009). As project manager and lead designer, oversaw and led design and system integration; managed all discipline work; and managed subconsultants including geotechnical, structural, and electrical engineering, surveys, and system integrator. Led the development of project system engineering plan and concept of operations. I-75 Freeway Management System (FMS), FDOT, Lee and Collier Counties, Florida (Atkins, 2004-2009). As project manager and lead designer, oversaw and led the conceptual design plans and design-build request for proposal for a 75-mile FMS project that included one of the first Ethernet systems with CCTV, DMS, RWIS, MVDS, and a crash barrier monitoring system.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Michael Guerrero
b. Project Assignment: Construction Manager
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>1</u> Years With Other Firms <u>21</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.): Estimator, ALS, Fayetteville, Jacksonville, Florida, March 2011-present. Estimator for ITS construction projects. Self-Employed Outside Plant Consultant, Florida, 2010-2011. General ITS construction management/estimation consulting. Regional Vice President, World Fiber Technologies Inc., Alpharetta, Georgia, 2010. Regional vice president for engineering services contractor. Regional Sales Director, South Atlantic Traffic Corporation, Englewood, Florida, 2008-2009. Regional sales director for traffic control products firm. Southeast Regional ITS Director, Trans Tech Electric LP, Sanford, Florida, 2003-2008. As division manager, supervised \$50 million worth of work on ITS projects. Traffic and ITS Division Manager, Georgia Electric Company, Albany, Georgia, 1989-2003. Supervised the installation and integration of over \$16 million of computerized traffic signal systems.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Texas State Technical Institute, Waco, Texas/no degree/1983-1984/Basic Electronics
f. Active Registration: Year First Registered/ Discipline/VA Registration #:
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.) Nashville SmartWay ITS, Tennessee Department of Transportation, Nashville, Tennessee (ALS, 2008-present). Director of ITS Traffic Signal System, North Carolina Department of Transportation, Raleigh, North Carolina (Georgia Electric Company, 1989-1994). As project manager, oversaw installation and integration of more than 400 traffic signals, and installation and integration of wireless closed-circuit television (CCTV) cameras via microwave. Traffic Signal System, Georgia Department of Transportation, Atlanta, Georgia (Georgia Electric Company, 1994-1996). Project manager for traffic signal system and CCTV camera system for 1996 Olympic Games.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

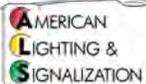
Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Steven Haynie, PE
b. Project Assignment: Lead Designer
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>10</u> Years With Other Firms <u>6</u> Years Please list chronologically (most 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.): Senior ITS Engineer, Atkins, Raleigh, North Carolina, 2001–present. Advanced transportation management system design, closed-circuit television (CCTV) monitoring systems, and optimized signal timing development. ITS/Traffic Engineer, F.R. Harris, Fairfax, Virginia, 1998-2001. Operation and maintenance of a 144-signal system and optimized signal timing development. Traffic Engineer, Wilbur Smith, Fairfax, Virginia, 1996-1998. Traffic signal design.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: North Carolina State University, Raleigh, North Carolina/M.C.E./1996/Civil Engineering North Carolina State University, Raleigh, North Carolina/B.S./1987/Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2000/Professional Engineer/033594
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.) Winston-Salem Traffic Signal System Design, North Carolina Department of Transportation, Winston-Salem, North Carolina (Atkins, 2011-present). Mr. Haynie is the task manager for CCTV camera site surveys and location analysis, systems engineering documents, communications technology review, and system detector design. Rocky Mount Traffic Signal System Design Project, NCDOT, Rocky Mount, North Carolina (Atkins, 2010-2011). Mr. Haynie was the task manager for CCTV camera site surveys and location analysis, systems engineering documents, and system detector design. Midtown Tunnel Project, Skanska Infrastructure Development, Norfolk, Virginia (Atkins, 2008). As a project engineer, Mr. Haynie surveyed the existing Midtown Tunnel ITS devices and proposed ITS devices for the conceptual ITS plans for the existing Midtown tunnel, new Midtown tunnel, and surrounding areas. August 2008 to September 2008. Wilmington Signal System Design, NCDOT, Wilmington, North Carolina (Atkins, 2007-2008). As a project engineer, Mr. Haynie was responsible for the systems engineering document. This document included the summarization of the existing system’s operations and functionality, the proposed system’s boundaries, concept of operations, system detector locations, and compliance with the regional ITS architecture. Raleigh Traffic Signal System Design, HNTB Corporation, Raleigh, North Carolina (Atkins, 2006-2008). As a project engineer, Mr. Haynie developed a methodology for locating CCTV cameras, located CCTV sites, conducted bucket truck surveys, and prepared 40 CCTV site plans. He also conducted splice diagram quality assurance/quality control.

ATTACHMENT 3.3.1
KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Ken Zagers, PE
b. Project Assignment: Lead Structural Engineer
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>8</u> Years With Other Firms <u>8</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.): Senior Project Manager, Atkins, Orlando, Florida, 2003–present. Designed and coordinated transportation-related structures including bridges, box culverts, mast arms, strain poles, gantries supporting ITS equipment, drainage structures, overhead sign structures, retaining walls, and toll plaza related structures. In addition, provided construction administration support, including shop drawing review, requests for information (RFI) response, and field observations. Associate Structural Engineer, Walter P. Moore and Associates, 1997-2003. Designed and coordinated structures including commercial buildings, stadiums, facility structures, parking garages, and convention centers. In addition, provided construction administration support, including shop drawing review, RFI response, and field observations. Project Manager, Geotechnical and Environmental Consultants, Inc., 1995-1997. Geotechnical engineering providing foundation recommendations for projects including, bridge structures, mechanically stabilized earth walls, box culverts, roadways, and buildings.
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: University of Central Florida, Orlando, Florida/M.S./1998/Structure/Foundation University of Central Florida, Orlando, Florida/M.S./1995/Civil Engineering
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2009/Professional Engineer/ 046445
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-4 Dynamic Message Sign Replacement From East of SR 528 to East of SR 472 Design-Build, Florida Department of Transportation (FDOT), District Five, Orange/Seminole/Volusia County, Florida (Atkins, 2011-present). Responsibilities include design of cantilever and span tri-chord truss structures founded on drilled shafts for the support of variable message signs. Project required close coordination with both ITS and geotechnical engineering and providing construction phase services support. Traffic Signal Mast Arm Replacement, FDOT, District Five, Volusia County, Florida (Atkins, 2011-present). Responsibilities include design of mast arm structures founded on drilled shafts for the support of signs and traffic signals. Project required close coordination with ITS and geotechnical engineering and construction phase services support. Loop 375 Cesar Chavez Managed Lane and Tolling Project, Harris County Toll Road Authority, El Paso, Texas (Atkins, 2011-present). Responsibilities include design and coordination of mono-tube structures to support ITS equipment for tolling, cameras, antennas, and detection equipment. Design included special details required to mount the equipment to the mono-tube. SR 408 and Interstate 4 Guide Signing Improvements, Orlando Orange County Expressway Authority, Orange County, Florida (Atkins, 2010-2011). Responsibilities include design and coordination of cantilever and span tri-chord truss structures founded on drilled shafts and bridge mounted signs. Custom column, large and small variable message signs were used.

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.
a. Name & Title: Steve Balmer
b. Project Assignment: Electrical/ITS Supervising Technician
c. Name of Firm with which you are now associated: 
d. Years experience: With this Firm <u>8</u> Years With Other Firms <u>32</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.): Supervisor, ALS, Fayetteville, North Carolina, 2004-present. Supervisor for ITS projects. Owner/Operator, Balmer Electric, North Carolina, 1998-2004. Owner/operator of general electric contractor. Electrical contractor/supervisor, Watson Electric Specialty Group, North Carolina, 1996. Electrical contractor/supervisor
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Dutchess Community College, Fairview, New York/no degree/1972-1973/General
f. Active Registration: Year First Registered/ Discipline/VA Registration #: Will obtain reciprocity from Virginia prior to construction.
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.) Citywide Signal Upgrade, South Carolina Department of Transportation, Spartanburg, South Carolina (ALS, 2010-present). Project consists of installing fiber communications, replacing 17 span wire signalized intersections with mast arm poles, and changing out 23 traffic signal cabinet assemblies. Traffic Signal System, North Carolina Department of Transportation, Greensboro, North Carolina (ALS, 2008-present). Changed out of 450 TS1 cabinets to 332 and 336 cabinets including all pluggables, Ethernet MMUs, 41-Aironet 1522 Mesh AP units, 25-900MHz Encom wireless radios, 460 RuggedCom RS900G field hardened switches, 31 VDSL Ethernet-over-copper using existing CBD copper interconnect, 41-CCTV PTZ cameras/poles, 57-encoders, 32-decoders, 10-Cisco 6504, 10Gb core switches (integration, system testing matrix documents, development of entire network VLAN IP data schema and METADATA), and video wall. Wake County DMS Project, NCDOT, Raleigh, North Carolina (ALS, 2011). Upgraded three DMS and installation of two new DMS signs in Wake County, North Carolina. Included Daktronics DMS, foundations, electrical service, wireless communications, and removal of existing signs and abandoned structures.



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