

**ORIGINAL**

**Statement of Qualifications**



A Design-Build Project  
Replacement of I-81  
Structures 18942 & 18944  
Over Rte. 808 Halls Bottom Rd.  
and Sinking Creek  
Washington County, Virginia

November 9, 2015

State Project No.: 0081-095-038  
Contract ID Number: C00107116DB85

*Submitted By:*



*in conjunction with*



Whitman, Reardon & Associates, LLP  
1915 100 YEARS 2015



**Existing I-81 Structures**



**Existing I-81 Structures**



**Existing I-81 Structures**



**I-81 Over Maury River**

*Subconsultants:*





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**CONSTRUCTION COMPANY**

www.ordersconstruction.com

**3.2 - LETTER OF SUBMITTAL**

**November 9, 2015**

Mr. Suril R. Shah  
 Alternate Project Delivery Office  
 Virginia Department of Transportation  
 1401 East Broad Street  
 Richmond, Virginia 23219

**RE: Replacement of I-81 Structures 18942 & 18944 over Rte. 808 Halls Bottom Rd and Sinking Creek, RFQ No.: C00107116DB85 (A Design-Build Project)**

Dear Mr. Shah:

**Orders Construction Company, Inc. (Orders)** is pleased to submit to the Virginia Department of Transportation (VDOT) our Statement of Qualifications (SOQ) in response to your Request for Qualifications (RFQ) for the Replacement of I-81 Structures 18942 & 18944 over Rte. 808 Halls Bottom Rd and Sinking Creek, RFQ No.: C00107116DB85. We are confident our SOQ presents a Team of superior experience and proven record in constructing and designing similar bridge replacement projects along the I-81 corridor. For example, **Orders** constructed the award winning I-81 Bridge Replacement over the Maury River designed by **Whitman, Requardt & Associates, LLP (WRA)**. This \$18 million project had similar complexities in maintenance of traffic, bridge design and geotechnical engineering in karst geology to this Design-Build project.

- 3.2.1 Offeror** - The full legal name and address of the Offeror is: Orders Construction Company, Inc., 501 Sixth Avenue, Saint Albans, WV 25177
- 3.2.2 Point of Contact** - The Point of Contact for Orders, the Offeror, is: Mr. Nathaniel R. Orders, President, Orders Construction Company, Inc., 501 Sixth Avenue, Saint Albans, WV 25177, 304.722.4237 (P), 304.722.4230 (F), [nateo@ordersconstruction.com](mailto:nateo@ordersconstruction.com)
- 3.2.3 Principal Officer** - The Principal Officer for Orders, the Offeror, is Mr. Nathaniel R. Orders. The address and telephone number is the same as provided above.
- 3.2.4 Corporate Structure** - Orders is structured as a corporation. Orders will undertake full financial responsibilities for the project and accept the risks and liabilities for the performance of the work.
- 3.2.5 Lead Contractor and Lead Designer** - The Lead Contractor for this Project is Orders Construction Company, Inc., and Whitman, Requardt & Associates, LLP will be the Lead Designer.
- 3.2.6 Affiliated and/or Subsidiary Companies** - Attachment 3.2.6 is provided in the Appendices.
- 3.2.7 Certification Regarding Debarment** - Provided in Appendices.
- 3.2.8 VDOT Prequalification** - Orders' prequalification number is O017 and current VDOT prequalification status is active. Evidence of our prequalification is included in the Appendices.
- 3.2.9 Bonding Capacity** - Evidence provided in Appendices.
- 3.2.10 SCC and DPOR Registration Requirements** - Provided in Appendices.
- 3.2.11 DBE Participation Goal** - Orders is committed to achieving or exceeding two percent (2%) DBE participation goal for the entire value of the contract.

Thank you in advance for your detailed review of our SOQ. We trust that you will find our commitment to VDOT focused and our credentials impeccable. We look forward to partnering with you on this project.

Very Truly Yours,

Nathaniel R. Orders, President,  
 Orders Construction Company, Inc.

### 3.3 OFFEROR'S TEAM STRUCTURE

Orders Construction Company (Orders) will be responsible for managing the project in its entirety, supervising the construction, and performing major elements of the construction work. Additional subcontractors for various specialty items such as guardrail, signage, and pavement striping will be under direct subcontract to Orders. Whitman, Requardt & Associates, LLP (WRA) will lead the design effort for all aspects of the project and will be responsible for the design QA/QC. The Orders team includes highly qualified subconsultants that bring specific expertise to enhance the team and ensure a quality project for VDOT. A complete list of team members follows and an organizational chart of the team is included in Section 3.3.2.

#### **Orders Construction Company, Inc. (Orders) - Offeror, Legal Entity, Lead Contractor**

Orders is a family-owned business now being managed by third- and fourth-generation highway contractors and Registered Professional Engineers. Orders was founded in 1964 as a general contractor specializing in bridge construction for West Virginia clients and has grown to become a widely diversified supplier of construction services to a broad range of clients from the Mid-Atlantic to the Midwest.

#### **Whitman, Requardt & Associates, LLP (WRA) – Lead Designer**

WRA is a full service architectural and engineering firm that was founded over 100 years ago primarily serving state and local governments in the Mid-Atlantic region of the United States. WRA will serve as the Lead Designer for this project and will be responsible for the design QA/QC as well as managing survey work performed by our survey subconsultant. WRA has been performing work for state and local governments in Virginia for over 65 years and has extensive experience with Design-Build projects for VDOT.

#### **Subconsultants**

The Orders/WRA Team is comprised of highly qualified individuals and subconsultants extremely knowledgeable in VDOT policies and procedures and experienced with similar VDOT Design-Build projects. The following team of subconsultants has been carefully selected based on their relevant past experience and established working history of project success with VDOT, Orders Construction, and/or WRA:

**A. Morton Thomas & Associates, Inc. (AMT)** will provide the Quality Assurance Management and Inspection for the Orders Team. For nearly 60 years, AMT has been a respected provider of transportation design and construction phase expertise in Virginia, including Design-Build projects.

**ECS-Mid-Atlantic, LLC (ECS)** will provide QC Testing & Lab Services for the Orders Team. Founded in 1988, ECS has a staff of over 600 employees in the Mid-Atlantic region and is currently working on three Design-Build projects across the Commonwealth.

**Schnabel Engineering Consultants, Inc. (SE)** will provide a Quality Assurance Lab for the Orders Team. Schnabel's in-house soil, materials, and asphalt laboratories are accredited by AASHTO Materials Reference Laboratory (AMRL) and the US Army Corps of Engineers (USACE) in their Richmond, Blacksburg, and Newport News offices.

**H&B Surveying and Mapping, LLC (H&B)** a Virginia-Certified, DBE/WBE (Woman-Owned Business) founded in 2009 will provide Surveying and Subsurface Utility Locating for the Orders Team. Since 2010, H&B Surveying and Mapping, LLC has teamed with WRA to provide surveying services on over 75 projects throughout Virginia including VDOT Design-Build projects including Walney Road Bridge and Road Widening in Fairfax County and Fall Hill Avenue Bridge Reconstruction and Widening project in the Fredericksburg, VA. H&B is currently contracted with WRA on 9 On-Call Contracts with VDOT, the City of Richmond, the Town of Blacksburg, and Montgomery and Chesterfield Counties.

### 3.3.1 KEY PERSONNEL

Key personnel Resume Forms are included in Attachment 3.3.1 located in Appendix C. A brief summary of key personnel is described below, and more detailed project experience for each are listed on the Resume Forms.

#### **Design-Build Project Manager – Charlie Stokes (Orders – 42 years of experience)**

**Charlie Stokes (DBPM)** Will serve as the project's DBPM and will have ultimate responsibility for the project delivery. He has been constructing VDOT roads and bridges for 42 years, and has served as Project Manager on numerous VDOT projects, including DBPM on the Route 60 Main Street Bridge Replacement (Design-Build) in Clifton Forge, VA; the DBPM on the Wolf Creek Bridge Replacement (Design-Build) in Giles County; PM on the Route 419 and East Main Street Interchange Bridge, Salem, VA; and PM on the Route 23/Kane Avenue in Gate City, VA. Throughout his career Charlie has excelled in bringing large transportation projects to completion on time and within budget from projects on the Capital Beltway to structures over South Holston Lake in Washington County and the Flannagan Reservoir in Dickenson County.

#### **Quality Assurance Manager – Chad McMurray, PE, PMP, CCM, DBIA (AMT - 21 years of experience)**

**Chad McMurray (QAM)** will report directly to the DBPM and will have direct, independent access to VDOT. Chad has performed this role previously on the \$90 million Route 460 Connector Phase I Design-Build roadway and bridge project in the Bristol District. As the QAM, Chad will be responsible for the Quality Assurance program and will coordinate with VDOT, supervise project QA inspection staff, and coordinate with the QA testing firm, Schnabel Engineering, Inc. Through this effort he will ensure conformance with the Contract Documents including the Approved for Construction plans and specifications. Chad will have overall responsibility for the development of and adherence to the Design-Build QA/QC Plan including coordination with the Design QA/QC Manager, Mark Vasco, PE. Chad will serve as a direct report to the DBPM but will function independently from the Construction QC Manager, auditing and monitoring Orders Construction Quality Control Program. He will have the authority to stop construction activities to ensure compliance with the specifications and issue Non-Compliance Reports (NCRs) if necessary. In addition, Chad will submit monthly written reports on the status of the QA Program to both VDOT and the Orders Design-Build Team.

#### **Design Manager – Michael Russell, PE (WRA – 27 years of experience)**

**Michael Russell (DM)** will also report directly to the DBPM. Mike has 27 years of experience designing and managing transportation projects and programs for VDOT. He is currently the Design Project Manager on the I-81 New River Bridge Replacement project in the Salem District which has similar traffic, MOT, and geological constraints that will be encountered on this project. He will be responsible for providing a quality product, meeting all design milestones, continual Design-Build Team coordination and ensuring the Design QA/QC Manager's involvement throughout the design phase. Mike is responsible for ensuring all design work is performed in accordance with current VDOT Policies, Procedures and Guidelines. He will manage all aspects of design including but not limited to roadway; structural; hydraulic; traffic; MOT; environmental; and geotechnical. He will assign resources as needed; oversee the design subconsultant for survey; coordinate design and review schedules; develop and implement corrective measures if necessary; and ensure environmental compliance measures are integrated into the design. He will coordinate the design and construction with the Environmental Permitting Coordinator, Taylor Sprenkle, to ensure all commitments are achieved by the project. Mike will maintain involvement in the project once construction begins to oversee any plan modifications and shop drawings, and review construction activities with the CM as work progresses.

### **Construction Manager – Kevin Conner (Orders – 32 years of experience)**

**Kevin Conner (CM)** will also report to the DBPM and be responsible for overseeing the project site for the duration of construction. He will be responsible for managing the overall construction process, including all construction quality control activities. Kevin has over 32 years of experience and has been employed with Orders for 11 years. He is responsible for successfully completing numerous roadway and bridge projects for VDOT and WVDOH, including working with Project Manager Charlie Stokes on VDOT’s Design-Build Route 60 Main Street Bridge Replacement project in Clifton Forge and the I-81 Maury River Bridge Replacement project in Rockbridge County (designed by WRA). Kevin currently holds a Virginia DEQ Responsible Land Disturber Certification (RLD) #RLD02695 and a VDOT Erosion and Sediment Control Contractor Certification (ESCCC) #1559C.

### **3.3.2 ORGANIZATIONAL CHART**

The Orders Design-Build Team Organizational Chart on Page 7 identifies key personnel members and depicts the reporting structure of the team. Solid lines identify the direct lines of reporting relationships of our team members from the DBPM to the Design, Construction and QA team. Dashed lines represent indirect reporting relationships and obligations to the DBPM and the team members. Furthermore, the reporting structure for the Quality Assurance shows a clear separation between the Construction Quality Control Inspection and field/laboratory testing duties.

As a continuation of the functional relationships for Key Personnel described in section 3.3.1, the following narrative further defines the roles and functional relationships of the additional team members. Each of these team members were carefully chosen based on their extensive experience and well-established working relationships on previous projects.

### **Safety Manager**

**Safety Manager: Jeff Dixon, CSP** reports to the CM and serves as the Company Safety Director for Orders Construction. Jeff ensures all projects are operating safely and in accordance with OSHA regulations. Jeff is a Certified Safety Professional and has been working with Orders Construction for 10 years. Jeff is responsible for safety training to all Orders employees, ensuring they have all the required personal protective equipment. Jeff is also in charge of all pre-employment training and certifications, and compliance with all job-specific safety plans.

### **Design**

**Structural/Bridge Engineer: Jeremy Schlüssel, PE** reports to the DM and will be in charge of structural engineering for the project including the I-81 Bridges and associated retaining walls. Jeremy has extensive experience designing bridge projects for VDOT including the I-81 New River Bridges in the Salem District and the I-81 Maury River and Buffalo Creek bridge replacement projects in the Staunton District. Jeremy serves as Structure Design lead for all of WRA’s VDOT Design-Build projects as well as managing over 200 bridge improvement tasks for VDOT’s Structure and Bridge Division under On-Call contracts over the last 10 years. He will lead production efforts for all structural engineering designs including plans, estimates and specifications for the project. Jeremy will also review structural shop drawings and assist the DBPM, CM and DM during construction.

**Roadway Engineer: Brad Stipes, PE** has 27 years of experience will report to the DM and lead the roadway design efforts for the project. He is currently serving as the lead designer on the I-81 Bridge Replacement Project over the New River, a \$98 million project in the Salem District. He has extensive working relationships with the Location & Design Staff in the Bristol District having worked on numerous Bristol District projects for more than 20 years, including WRA’s current Statewide On-Call design contract. Brad has worked on

numerous highway and roadway projects and understands VDOT policies and procedures, particularly as they relate to interstate projects.

**Geotechnical Engineer: *Jeff Basford, PE*** has over 15 years of experience in subsurface explorations, geotechnical analysis, design of pavement sections and shallow and deep foundations, slope stability analysis, concrete and geosynthetic reinforced earth retaining structures, and in-situ testing and verification during construction. Jeff is currently the Lead Geotechnical Engineer on the I-81 New River Bridge Replacement project in the Salem District, and was the Lead Geotechnical Engineer on both the I-81 Maury River and Buffalo Creek Bridge Replacement projects in the Staunton District. He has also been involved on numerous Design-Build projects for WRA in Virginia and Maryland. Jeff has a complete understanding of the VDOT Manual of Instruction, Chapter 3. Jeff will report to the DM and collaborate with the Structural Design Engineer and CM.

**MOT/Traffic Engineer: *Dana Trone, PE, PTOE***

Dana has over 19 years of experience in traffic engineering including development of transportation management plans (TMP); MOT design; lighting; signing; ITS; and pavement marking plans. Dana has developed several TMPs for bridges with construction on and over interstates in Virginia, including numerous Design-Build projects. She is extensively familiar with the Traffic Engineering Handbook, MUTCD, Highway Safety Design Manual and Virginia Work Area Protection Manual. Dana will report to the DM, Mike Russell and collaborate with the Construction MOT Manager, Steve McKee.

**Drainage/Hydraulics Engineer: *David Gertz, PE*** will report to the DM and lead the design efforts for drainage and SWM. David has over 36 years of experience in roadway drainage design and stormwater management, and has designed numerous projects for VDOT utilizing the new Virginia stormwater regulations that took effect in July 2014. David has worked on VDOT projects as the Lead Drainage/Hydraulics Engineer continuously for the last 25 years. He most recently served as Lead Drainage/Hydraulics Engineer for the Berkmar Extension section of VDOT's Route 29 Solutions Design-Build project in Albemarle County.

**Environmental Permitting: *Taylor Sprenkle*** will report to the DM and secure all environmental permits needed for the project. Taylor has over 12 years of experience with environmental reviews and permitting required for transportation projects including the I-81 Truck Climbing Lanes in Montgomery County and the 17-mile Route 460 project in the City of Suffolk and Isle of Wight County. Taylor will work closely with the Construction Environmental Manager, Joshua Sproles, to ensure all permit requirements are fulfilled.

**Utility Design Engineer: *Gary Fern, PE*** has 35 years of experience in utility designs/relocations and has worked on numerous VDOT On-Call Utility Design contracts as well as On-Call contracts for Virginia localities and public service authorities. He is currently responsible for the utility relocation design for the entire Route 29 Solutions Design-Build project. Gary will report to the DM, Mike Russell, and will interact closely with the CM, Kevin Conner, as necessary.

**Erosion and Sediment Control Reviewer: *Glenn Wilson*** has 18 years of experience in E&S Control design and other water resources engineering services for transportation projects. He is thoroughly familiar with the water quality requirements of USACE, DCR, VDOT's Drainage Manual, Virginia's SWM Handbook, Virginia E&S Control Handbook and related VDOT IIM's. He is a certified DCR Combined Administrator (Certificate #684). Glenn will report to the DM and collaborate with the Construction Environmental Manager.

**Design QA/QC**

**Design QA/QC Manager, *Mark Vasco, PE*** will report to the DM. Mark will coordinate with the QAM to integrate the Design QA/QC plan into the Design-Build Project QA/QC plan and will ensure that all design

quality control procedures are completed in accordance with that plan. He will verify that QC and interdisciplinary reviews, including comment resolution, are made prior to submissions. Mark has more than 32 years of experience in the design of transportation projects with extensive experience in both highway and maintenance of traffic designs, and has extensive experience with VDOT Design Manuals; IIMs; design standards; and VDOT/AASHTO criteria. Mark recently served as the Design QA/QC Manager on the Fall Hill Ave. & Mary Washington Blvd. Extension Design-Build project.

### **Construction QC**

**Construction QC Manager (CQC):** *Steve Short* has over 21 years of experience managing QC activities on various construction projects across Virginia including the Route 35 Bridge Replacement Design-Build project in Courtland, and provided QA inspection services for VDOT's Route 61 Bridge over the New River Design-Build project in Narrows. He will report to the CM and will be responsible for managing all QC work for Orders, including coordinating the ECS's QC testing lab and testing technicians. Steve is extensively knowledgeable in all of VDOT Construction requirements, specifications, and testing methods and will coordinate with the QAM and the DBPM on the QC components of the project.

### **Construction**

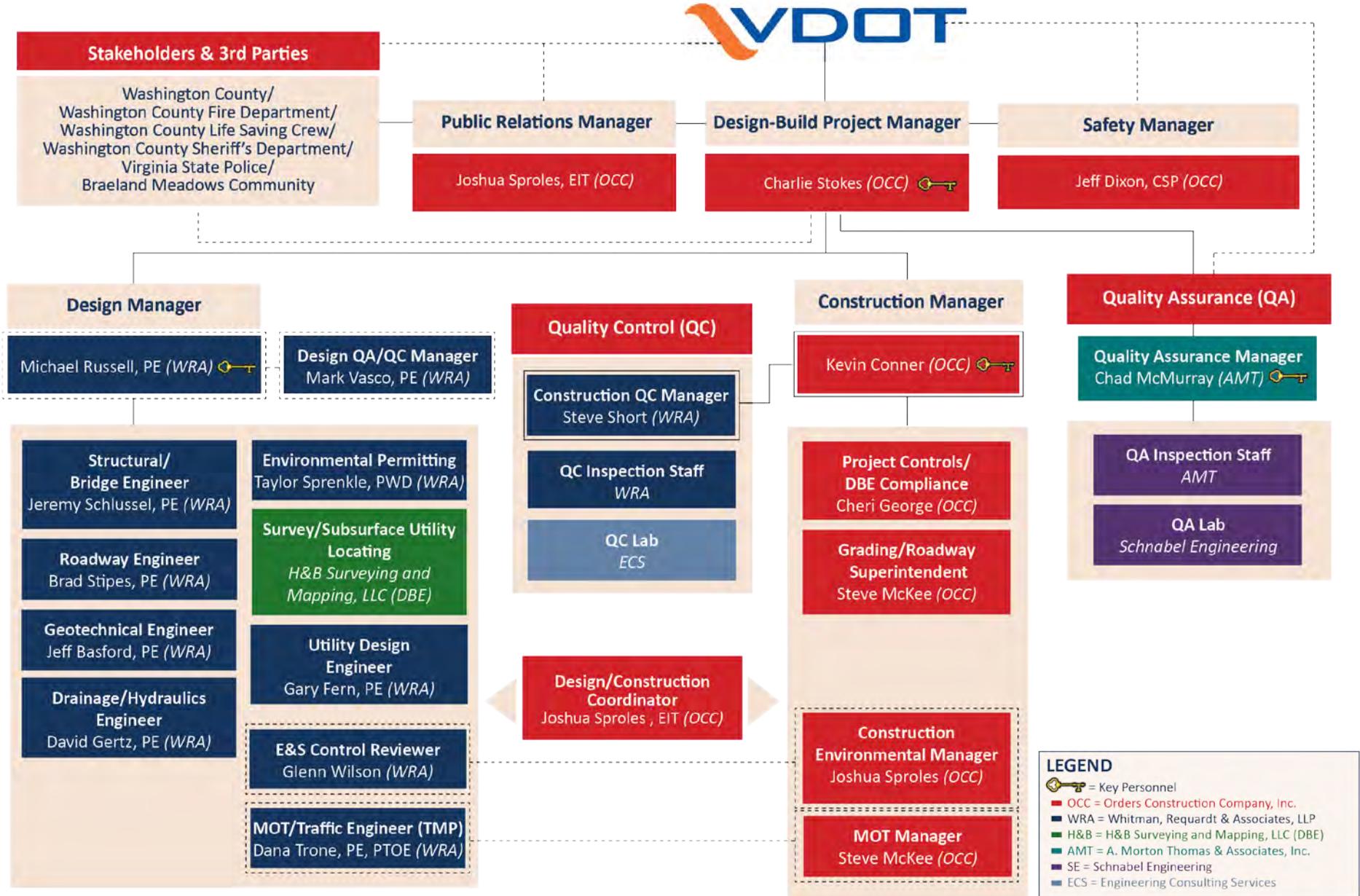
**Project Controls/DBE Compliance:** *Cheri George* will report to the DBPM and currently serves as the Office Manager for the Virginia office of Orders Construction. Cheri oversees day to day project controls and DBE compliance for all projects in Virginia. Cheri has a history of 25 years in this capacity.

**Grading/Roadway Superintendent and Construction MOT Manager:** *Steve McKee* will report to the CM and will be responsible for all phases of on-site roadway construction, including personnel supervision, job site safety, and subcontractor management. Steve possesses current ESCCC, Intermediate Work Zone Traffic Control, and ACI Concrete certifications. Steve has worked on the VDOT's Route 60 Main St. Bridge Design-Build project in Clifton Forge, Virginia and the Route 250 Bridge Replacement project in Highland County.

**Design/Construction Coordinator, Public Relations Manager, & Construction Environmental Manager:** *Joshua Sproles, EIT* will assist the DBPM and the CM by combining these roles. Josh will be responsible for coordinating project reviews during design and processing RFIs during construction. He will assist the DBPM with the initial schedule development and ongoing updates. He will also serve as Public Relations Manager and interface closely with the Bristol District Public Affairs section and the SWRO-TOC.

The Orders Design-Build Team was carefully assembled based on each firm's intimate knowledge of the site, existing working relationships internally and with VDOT, and their specific expertise to manage the project risks. The WRA design team has worked together extensively on major I-81 bridge replacement projects successfully managing very similar risks to those on this project including extensive MOT and geotechnical constraints. The risk management plan is developed to adapt quickly with mitigation and contingency plans in place prior to construction beginning. Partnering during construction ensures issues are quickly resolved with minimal impact to project schedule. The Orders DB Team relationships forged on previous similar interstate projects such as the I-81 Maury River Bridge Replacement Project and the I-64 Maury River Bridge project are being leveraged to present a Team to VDOT with a proven track record of effectively managing and delivering Design-Build projects for the Department. These examples of corporate partnership combined with the professional relationship enjoyed by Charlie Stokes, the DBPM and Mike Russell, the DM that dates back to the early 1990's, further illustrates the mutual respect and ability to partner that the team members have firmly in place. The Orders Design-Build Team has fully embraced the Design-Build program that has evolved over the past several years with VDOT and is a proven leader in the Design-Build arena in Virginia.

### 3.3.2 ORGANIZATIONAL CHART



### 3.4 EXPERIENCE OF THE OFFEROR'S TEAM

The Orders Design-Build Team members have successfully delivered numerous VDOT Design-Bid-Build and Design-Build projects and have a proven track record of completing projects within schedule and budget. Our personnel know what needs to be done, with whom we need to coordinate, and how to make things happen. We bring all of this experience together to provide the best team for this project.

#### Orders/WRA Design-Build Team:

Orders Construction Company (Orders) and Whitman, Requardt & Associates, LLP (WRA) developed a very strong and close working relationship by partnering during construction on VDOT's I-81 Maury River Bridge Replacement Project in Rockbridge County and continued that relationship on the I-64 Maury River Bridge Rehabilitation project. These very complex bridge replacement and rehabilitation projects required extensive coordination between the contractor (Orders) and the designer (WRA) during construction. The Maury River project was the first to utilize the now standard "Virginia Abutment" design developed by WRA. This new design feature combined with complex MOT and geotechnical constraints pulled all parties together in a partnering atmosphere to deliver this award winning project on time and on budget. The I-64 Maury River project introduced a new set of constraints including the unique "Delta-Frame" structure and how the frames deflect during deck removal and replacement. The combination of Orders' extensive traditional and Design-Build contracting experience combined with WRA's expertise in roadway and structures design and extensive VDOT Design-Build experience presents a team that is ideally suited for VDOT's I-81 Bridge Replacement over Halls Bottom Road and Sinking Creek Design-Build project.

#### 3.4.1 Lead Contractor and Lead Designer

##### Lead Contractor – Orders Construction Company:

Orders is a family-owned business, currently being managed by third- and fourth-generation highway contractors and Registered Professional Engineers. With the Orders name and reputation on the line, the commitment to delivering unmatched workmanship begins at the top of the organization and carries through the entire rank and file of our company. This dedication to quality has made Orders the contractor of choice for many public and private owners. To date, Orders has completed over a dozen Design-Build projects. The Replacement of the I-81 Structures over Halls Bottom Road and Sinking Creek is in the wheelhouse of the type of project Orders' employees tackle every day. Orders has completed numerous projects of similar size and scope to this VDOT project. Further details on three of Orders' recent projects is included in Appendix C as Attachment 3.4.1(a). Orders gained valuable experience and knowledge on each of the projects which are listed as follows:

- I-81 Bridge Replacement over Maury River, Rockbridge County, VA
- Route 670 Bridge Replacement over South Holston Lake, Washington County, VA
- Route 60 Main Street Bridge Replacement Design-Build, Clifton Forge, VA

Orders has additional extensive experience with roadway and bridge work, including the following two projects as examples:

**Route 614 over Cranes Nest River, Lake Flannagan, Dickenson County, VA** – This VDOT bridge project was over Flannagan Lake in an environmentally sensitive area. Floating barges and large cranes were required. The project included concrete deck and parapet removal over water, heavy structural steel removal, new girders to set, and water line replacement on the bridge.

**Thomas B. Pugh Memorial Bridge – Prince, WV** – Using leading edge construction practices, Orders constructed the Thomas B. Pugh Memorial Bridge, the first bridge in WV to incorporate Class H-IC concrete deck. Construction access was limited, making the site tight and congested and adding to the complexity of

crossing the New River. The construction access and causeway were complex in design and application to meet the environmental restrictions. Steel erection involved hanging 50 girders with minimal access for cranes, which resulted in false work to support girders in some cases that weighed over 60,000 LBS.

In addition to this experience, Orders has a portfolio of over a dozen Design-Build projects completed for satisfied owners. The Management Team of Orders has fully embraced the Design-Build process, allowing the company to showcase its strengths on the multitude of intangible qualifications not considered on low-bid projects. As a result of these intangibles, Orders has been awarded contracts on more than 50% of the Design-Build projects it has pursued, a much higher success rate than traditional low-bid work. Orders excels at building and inspecting its projects with minimal owner oversight and its commitment to quality is the single most important reason Orders *is* the preferred Design-Build Contractor for many clients.

#### **Lead Designer – Whitman, Requardt & Associates, LLP:**

Whitman, Requardt & Associates, LLP (WRA) has provided transportation design services to VDOT for over 65 years and engineering, planning and construction management services in the Mid-Atlantic region for over 100 years. WRA is currently ranked #114 on *Engineering News Record's Top 500 Design Firms* and has one of the largest design groups in Virginia and the region. WRA is a multi-disciplined engineering firm that has experienced staff for roadway, bridge, retaining wall, drainage, river mechanics analysis, traffic engineering, ITS, utility and geotechnical engineering. WRA is currently providing design services to VDOT on numerous projects both standalone and through our numerous on-call design contracts for the Location & Design, Structures & Bridge, Environmental, Transportation and Mobility Planning Divisions.

WRA has completed numerous projects similar in size and scope to the one contemplated in Washington County, Virginia. Information on three of WRA's recent projects is included in Appendix C as Attachment 3.4.1(a). WRA gained valuable experience and knowledge on each of the projects which are listed as follows:

- I-81 Bridge Replacement over Buffalo Creek, Rockbridge County, VA
- I-81 Bridge Replacement over the New River in Pulaski and Montgomery Counties, VA
- Fall Hill Avenue Widening and bridge over I-95 and Mary Washington Boulevard Extension Design-Build in the City of Fredericksburg, VA

WRA has additional extensive experience with roadway and bridge work with similar design constraints to the I-81 Bridge Replacement over Halls Bottom Road and Sinking Creek. Two additional representative projects depicting the extensive expertise in roadway, bridge, geotechnical, and MOT experience include:

**I-81 Bridges over Maury River in Rockbridge County, VA** – As prime consultant, WRA provided all roadway, bridge, hydraulic, and geotechnical engineering services for the project. The geotechnical investigation included an extensive testing and boring program to locate potential karst features. The Maury River bridges featured an innovative design element for the treatment of the deck joints at the abutments that has since included the detail in the Design Guidelines as a special alternative joint detail. The project won an **ACEC Grand Award For Design Excellence**.

**Route 123 over Campus Drive (George Mason University) Design Build – Fairfax County** – WRA was retained for the design of the 0.25 miles of Route 123 roadway improvements, new bridge on Route 123 over Campus Drive, retaining walls, geotechnical engineering and utility coordination efforts. For the final design, WRA designed the temporary re-alignment of Route 123 to facilitate the construction of the new bridge structure over Campus Drive. The new bridge structure is a simple span pre-stressed concrete structure that is jointless to reduce the long-term maintenance costs. WRA also prepared the geotechnical report for the 1.1 miles of Campus Drive and Route 123 and Braddock Road improvements.

### 3.5 PROJECT RISKS

The Orders Team has carefully reviewed the various documents included in the RFQ Informational Package and completed a detailed field investigation to identify the critical risks on the project. The Orders Team has identified the three most significant risks to the project as 1) Maintenance of Traffic and Incident Management; 2) Geotechnical Design in Karst Geology; and 3) Geometric Design & Impacts to Halls Bottom Road. Proactively planning and mitigating the potential impact of these risks are key to ensuring this project's success. These critical risks are further described below:

#### **RISK 1: Maintenance of Traffic and Incident Management**

##### **A. Define the Risk and Why it is Critical**

The conceptual design of the project depicted in the RFQ includes significant changes to the profile of both the northbound and southbound lanes. This design corrects a substandard sag vertical curve and aligns the mainline grades to allow for a structure carrying both northbound and southbound lanes to be constructed at a 3.1% superelevation rate across the entire structure. In order to eliminate the need for any additional right of way to be acquired, the conceptual design also requires shifting traffic to the median in each phase after constructing the portion of the ultimate bridge structure. Given the significant traffic volume along this section of the I-81 Corridor and the rapid rate of congestion buildup experienced during any incident or restriction of the travel lanes or shoulders, the Orders Team understands the need to provide a forgiving work zone that minimizes restrictions to the travelling public and also facilitates the clearing of any incidents that may occur in the work zone itself.

The adjacent improvements to the interchange at Exit 14 and the F-310 bridge replacement over I-81 at Exit 10 will be under construction at the same time as this project. This compounds the potential for impacts to the traveling public and introduces the need for the contractors at these various locations to be in constant communication with each other. For example, an incident at Exit 10 could quickly cause a traffic backup in the southbound lanes that could extend through the work zone of this project.

In addition to the unique MOT issues associated with this project, the ability for the contractor to access the work areas from mainline I-81 is in some respects a more difficult challenge to overcome. The requirement that no additional right of way be acquired severely restricts where and how the construction vehicles enter the work zone. WRA has encountered this same issue on our I-81 New River Bridge Replacement project.

In order to construct the I-81 Bridge a closure of Halls Bottom Road is most likely going to be required. The Orders Team has evaluated the construction phasing and we believe a design modification to the proposed bridge can minimize the amount of time that the closure will be needed.

##### **B. Impacts the Risk Will Have on the Project**

**Safety** – The major impact of this risk will be to the safety on the traveling public and to the construction workers. Secondary impacts are cost and schedule delays associated with any incidents that occur in the work zone that will have an impact on production. The temporary traffic controls must provide the travelling public with clear directions to navigate the work zone. Appropriate work zone protection devices must be installed to minimize the exposure of the construction workers to the adjacent traffic. The Orders Design-Build Team has extensive experience in developing MOT plans on interstate projects along the 81 Corridor and in the heavily congested Northern Virginia region where a well-planned MOT has successfully provided a safe work zone for both the traveling public and construction workers.

**Public Relations** – Keeping the 46,000 vehicles that travel the corridor daily informed of the planned construction activities will be difficult due the combined mixture of local commuters and long distance traveler. The Orders Team recognizes that the final TMP will also need to address the needs of the Braeland Meadows community and residents of southern Washington County during construction.

### C. Mitigation Strategies

The MOT and incident management risk can be mitigated through the development of a very detailed Traffic Management Plan. The four major traffic shifts and closure of Halls Bottom Road and the planned access points for construction vehicles will be outlined for each phase of construction. The TMP must also account for the communication of these various traffic configurations. Local



advertising and press releases can divert a small percentage of the traffic that may use I-81 onto Route 11, but for the most part, the communication will be through the use of dynamic messaging signs along the corridor. The residents of the Braeland Meadows Subdivision will need to be a particular focus of attention when developing a TMP and during construction. A communication plan must be developed with those residents in mind so they are fully aware of activities planned on the project. This will ensure that they are aware of construction activities and how to safely navigate the work zone or the proposed detour.

Each phase of the work will require advanced notification and static signage to inform the traveling public about upcoming traffic shifts. The proposed phasing of the construction work will require four major shifts in mainline I-81 traffic and closure of Halls Bottom Road for an extended period of time. We intend to develop a bridge design, sequence of construction, and associated TMP to minimize the impacts of these shifts and inform local traffic about detours for the Halls Bottom Road closure. Although the traffic in the area can easily find alternate routes, as they are currently doing with the Cleveland Road closure in southern Washington County, the TMP cannot rely on that local knowledge completely. Preliminary research into proposed design alternatives indicates that the closures and impacts to Halls Bottom Road can be **significantly** reduced. This is further described in Risk #3 in this section.

The Orders Design-Build Team sees the importance of ensuring the safe access to the construction area to and from mainline I-81. In order to construct the new bridges and approach work, a portion of the construction vehicles and material deliveries will need access from I-81. Carefully planning these maneuvers during the design phase and detailed sequence of construction development will identify where issues exist with access so that they can be minimized. Furthermore, a well-coordinated and detailed project work schedule that includes the delivery of major materials and certain construction activities taking place during off peak or nighttime hours to further minimize the impact to the traveling public.

The Orders Team is very aware of just how quickly conditions can change with any traffic-disrupting incident on the interstate. In addition to local VDOT staff and operators at the Traffic Operations Center, we plan to fully engage third party stakeholders including the Virginia State Police, the Washington County Sheriff’s Department, and Washington County Fire Department, and the Washington County Life Saving Crew. This engagement will include a thorough evaluation of potential incidents, traffic impacts, and access strategies to the travel area, in order to minimize clearance time and allow regular law enforcement monitoring. Keeping these entities informed of the construction activities will go a long way towards reducing the amount of time required to clear incidents in the area. Minimizing this time not only further reduces risk of secondary accidents but also reduces impact to the project schedule.

#### D. VDOT's Role in Mitigating Risk

As with any Design-Build project, the burden is on the Design-Build Team to provide a design that meets the requirement of the contract and applicable MOT standards. Subsequently, the VDOT role in helping to mitigate the risk would be to attend public information meetings, and review and approval of the Orders Team's TMP during design of the project.

### RISK 2: Geotechnical Design in Karst Geology

#### A. Define the Risk and Why it is Critical

A major risk to the success of the project is encountering an unknown karst feature during construction. This is based on WRA's and Orders' vast experience designing and constructing similar bridge replacement projects along the I-81 corridor in Virginia located in Karst geology such as:

- I-81 Bridge Replacement over the Maury River - Designed by WRA & Constructed by Orders
- I-81 Bridge Replacement over the Buffalo Creek – Designed by WRA
- I-81 Bridge Replacement over the New River – Under Design by WRA

WRA is the Geotechnical Engineer of Record on all three of the above projects and has designed and implemented geotechnical investigations that have resulted in finding the unknown during design and therefore *minimizing the risk* during construction. The I-81 Structures over Halls Bottom Road and Sinking Creek project is situated in Washington County over the Honaker Formation which consists of carbonate bedrock and fault zones. Zones of this carbonate bedrock tend to dissolve creating solution cavities, sinkholes, rock shelves, and conduits for groundwater flows. A number of these karst features are evident in the region and have been mapped in the vicinity of the proposed project. With this knowledge in hand, the Orders Design-Build Team plans to prepare a detailed mitigation and contingency plans to address the significant potential of encountering karst geologic features during construction.

#### B. Impacts the Risk Will Have on the Project

These Karst features have the potential to cause sudden and potential catastrophic failures such as the collapse of a bridge or a section of roadway. These features introduce a significant risk to the project because they can lurk below, shielded by arching soils or a thin layer of rock and be undetectable at the ground surface with the naked eye and even through conventional soil borings. During construction encountering an unknown karst feature could introduce the need for design modifications that could impact traffic operations, construction budget and completion of the project on schedule.

#### C. Mitigation Strategies

**Subsurface Investigation** – Soil borings are good at identifying the subsurface conditions at discrete locations provided they are advanced, not just to the top of rock, but advanced several feet into rock beyond the influence zone of the proposed structure. From our review of the Geotechnical Data Report it appears that several of the soil borings were advanced in this manner. The risky part of only drilling soil borings in this geologic setting is that karst features are irregular and can meander between the soil borings. To mitigate the potential to miss features like this with the soil borings, WRA typically utilizes geophysics to explore a wider view of the subsurface. Electro Resistivity is a preferred technique for locating karst features. Water filled voids, and highly fractured rock are indicated by low resistance zones, whereas hard rock provides a signature of high resistance. Air filled voids also provide high resistance, but can be identified based on the surrounding soil response. If a feature is identified and it is in an area which could

potentially effect the planned construction we will investigate it further through a soil boring or hydro-track probe hole. WRA has used this combination of physical sampling and geophysical techniques also referred to as “Ground Truthing” on several projects along the I-81 corridor including; the I-81 Buffalo Creek Bridge Replacement project in Rockbridge County, the I-81 New River Bridge Replacement Project in Pulaski and Montgomery Counties, the Route 603 Re-alignment near Ironto, and the Stoney Point Parkway crossing of the CSX railroad.

***Modification of Design*** – In instances where a feature of concern is identified, WRA is well versed in remediating the condition. In cases where there is flexibility in the structure or road alignment, we shift the pier or roadway alignment away from the feature; be it a thin rock shelf, a cavity, or a soft soil filled void. WRA did this on our I-81 Buffalo Creek crossing project where the bridge approach was shifted to avoid potential impacts related to a stream that dropped underground in the area. Right of way restrictions on this project will make such adjustments more difficult and may introduce the need for additional retaining walls to accommodate any such adjustments.

In situations where the piers cannot be shifted and the features are isolated, WRA has used reverse filters to create a stable roadway. This technique involves excavating the potential sinkhole to an identifiable throat then the backfilling with riprap and stone varying from a large size at the bottom to small at the top before transitioning to an aggregate suitable for paving or placement of a geotextile filter. In situations where the features are less severe or scattered throughout a proposed alignment, WRA has utilized pressure grouting and high strength geogrids to stabilize the feature. The grouting operation involves drilling a pattern of injection holes and injecting various viscosity grouts in to the subsurface. Specific criteria based on injection pressure and grout take (volume injected) are used to determine when to move to the next hole. This technique provides a very high level of assurance against issues related to these karst features, but is typically a costly endeavor. WRA employed this type of grouting procedures on the I-70 /355 interchange project in Maryland due to the wide variance of karst features and groundwater fluctuations induced by the adjacent quarry pumping operations.

In situations where specific foundations are influenced by karst features, WRA has utilized a few different approaches. In some cases we have installed more redundant systems where many low capacity steel H-piles are driven to support a bridge abutment. Another approach is to install drilled shafts socketed several feet into rock below the karst feature. This was the approach taken at one of the south abutments for the I-81 New River Bridge Replacement project. Micropiles have been used when faced with supporting a structure over a complicated karst feature. Micropile foundations are advantageous because of their flexibility. Casing lengths, grouting sequences and penetration depth can be modified during construction to suit the conditions encountered. WRA utilized micropiles to support multiple spans of a pedestrian bridge over the Roanoke River in the City of Roanoke where varying rock conditions were encountered along the alignment, and to support the center pier of the Route 355 Bridge over I-70 in Maryland to address the variation in the top of rock elevation.

#### **D. VDOT’s Role in Mitigating Risk**

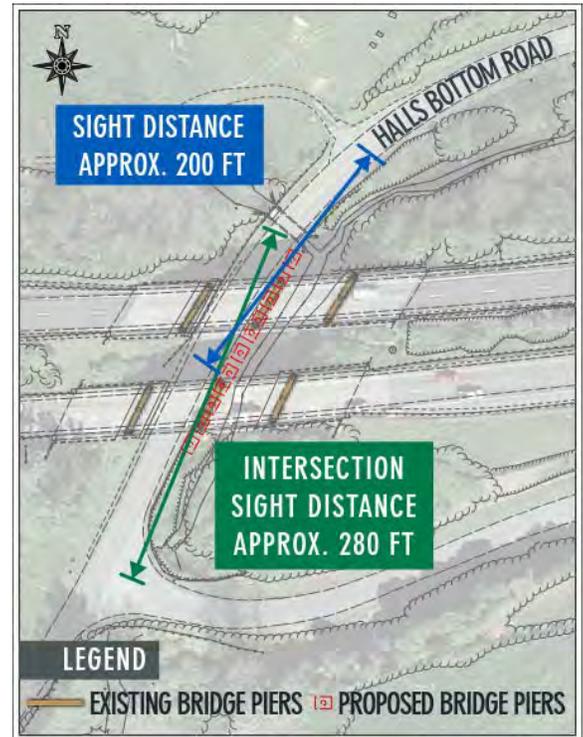
As with any Design-Build project, the burden is on the Design-Build Team to provide a design that meets the requirement of the contract and provide a durable product. The Departments role will be to stay informed of the conditions which are found along the project and approve planned mitigation measures as needed.

### RISK 3: Geometric Design & Impacts to Halls Bottom Road

#### A. Define the Risk and Why it is Critical

When rebuilding an existing bridge structure on a similar alignment while maintaining traffic and modifying the grades, a major risk for the bridge structure design is working with the existing geometric conditions while designing for the current geometric standards and making allowances for potential future widening. After a careful review of the conceptual design presented in the RFQ and numerous site visits to the field, the Orders Design-Build Team has identified several design risks associated with the geometrics of the proposed bridge structure replacement and mainline grade adjustment. Please note the following key design constraints:

- The design must accommodate future widening of I-81. The impact of the future widening on Halls Bottom Road and the structure (95-6433) carrying a tributary to Sinking Creek must also be evaluated to ensure that the future widening of I-81 is not precluded by those impacts.
- The design must not violate sight distance requirements along Halls Bottom Road or from the Singing Wood Lane intersection.
- The design must utilize the narrow tapering median area for MOT widened structures while providing required open longitudinal construction joint in final finished condition.
- The design must provide the best and most appropriate concept for a jointless structure.
- The design must minimize impact to the traveling public.



*Proposed Sight Distances Based on RFQ  
Conceptual Design*

These design constraints introduce a significant risk to the Orders Design-Build Team given that they are all interrelated and no significant improvements to Hals Bottom Road are possible due to the existing right of way constraint.

#### B. Impacts the Risk Will Have on the Project

The design risk described is critical in that it impacts the overall project safety, cost, schedule, and quality of the final project. The impacts are not only for this proposed project, but carry forward to the long-term needs of the corridor. The major impacts of this risk can be summarized as follows:

**Sight Distance & Impacts to the Traveling Public** – The conceptual plans included in the RFQ propose a two span bridge with piers located between Halls Bottom Road and Sinking Creek. This design does not allow for proper horizontal sight distance along Rte. 808 nor the intersection of Rte. F-022 and in fact *reduces* the substandard sight distance. This condition is made even worse with the potential future widening. This introduces the need for Design Exceptions that would be required since no additional right of way is permitted per the RFQ. This could have an effect on the approval process for the final design for the roadway and bridge structure plans. In addition to the sight distance issue, the proposed layout introduces a construction risk of building this pier adjacent to the stream and could have an impact on the means and methods of construction for the foundation element(s) of the piers. The location of the piers in

the conceptual plans also dictate an unavoidable and significant closure of Halls Bottom Road to construct the piers and their foundations. Eliminating the pier in this location significantly reduces these impacts.

**Long-Term Maintenance** – The conceptual design documents depict a final structure having an open longitudinal joint that is positioned over Sinking Creek and Halls Bottom Road. Traffic barrier would be on either side of the joint protecting the traveling public, separating north and south traffic. With the 3.1% cross slope moving stormwater runoff and chloride towards this barrier and joint from the northbound side, the long-term effect could be to compromise the integrity of the materials in and around the barrier and joint. Without proper long-term care for cleaning and removing debris, runoff from the deck could become a concern for Sinking Creek and the traveling public on Halls Bottom Road.

### C. Mitigation Strategies

All of the risks identified for the bridge structure can be managed by developing mitigation strategies through the study of the existing geometrics and all possible obstructions or confining elements located within the project area. The Orders Design-Build Team will analyze these constraints with the current geometric design standards and guidelines as published by VDOT. The use of innovative “out of the box” thinking will be required to produce appropriate solutions to mitigate the risks. The development of different alternative bridge layouts, variable skew angle(s) of the bridge structure(s) which could enable the use of a semi-integral abutments and review of the overall sequence of construction to reduce the long term maintenance will be reviewed along with each of their pros and cons. The use of a combination of solutions such as differing span lengths, pier placement (including elimination of the pier between Halls Bottom Road and Sinking Creek), number of spans, abutment locations, centerline shifts (horizontal and vertical), etc. will be considered to come up with the appropriate design that accomplishes the primary goal of replacing the mainline bridges while also improving sight distance along Halls Bottom Road, minimizing impacts to Sinking Creek, and accommodating future widening of I-81. This design approach is what establishes the Orders Design-Build Team as industry leaders when it comes to innovative bridge replacement alternatives.

### D. VDOT’s Role in Mitigating Risk

As with any Design-Build project, the burden is on the Design-Build Team to provide a design that meets the requirement of the contract and provides a long-term low maintenance structure. Subsequently, the VDOT role in mitigating the risk would be in review and approval of the preliminary and final plans.

## KEYS TO SUCCESS

The success of any fast-paced Design-Build project is contingent on continual, open, and honest communication and collaboration between all parties involved with the project, including the Orders Design-Build Team; VDOT; regulatory agencies; and project stakeholders. The Orders DB Team will hold regular weekly internal meetings during the design phase with all necessary team members present. These meetings will be continually tracked for each discipline the schedule progress; current and planned activities; team needs; and the status of design approvals. As the project progresses into construction the focus of the meetings will shift to include more construction field staff, with key design staff continuing to be heavily involved. Bi-weekly progress meetings are planned with Key DB staff, VDOT and appropriate stakeholders to make everyone aware of the status of the project and to resolve any outstanding issues as quickly and efficiently as possible. An open and continual dialogue between the Design-Build Team and VDOT is critical to keeping the project moving forward without allowing any issues to remain outstanding any longer than necessary.

**ATTACHMENT 3.1.2**

**Project: 0081-095-038, Contract ID#: C00107116DB85**

**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.

| <b>Statement of Qualifications Component</b>              | <b>Form (if any)</b>                       | <b>RFQ Cross reference</b> | <b>Included within 15-page limit?</b> | <b>SOQ Page Reference</b> |
|---|--|----------------------------|---------------------------------------|---------------------------|
| <b>Statement of Qualifications Checklist and Contents</b> | Attachment 3.1.2                           | Section 3.1.2              | no                                    | Appendices                |
|   |  |                            |                                       |                           |
| <b>Acknowledgement of RFQ, Revision and/or Addenda</b>    | Attachment 2.10<br>(Form C-78-RFQ)         | Section 2.10               | no                                    | Appendices                |
|   |  |                            |                                       |                           |
| <b>Letter of Submittal (on Offeror's letterhead)</b>      |  |                            |                                       |                           |
| Authorized Representative's signature                     | NA   | Section 3.2.1              | yes                                   | Page 1                    |
| Offeror's Point of Contact information                    | NA   | Section 3.2.2              | yes                                   | Page 1                    |
| Principal Officer information                             | NA   | Section 3.2.3              | yes                                   | Page 1                    |
| Offeror's corporate structure                             | NA   | Section 3.2.4              | yes                                   | Page 1                    |
| Identity of Lead Contractor and Lead Designer             | NA   | Section 3.2.5              | yes                                   | Page 1                    |
| Affiliated/subsidiary companies                           | Attachment 3.2.6                           | Section 3.2.6              | no                                    | Appendices                |
| Debarment forms   | Attachment 3.2.7(a)<br>Attachment 3.2.7(b) | Section 3.2.7              | no                                    | Appendices                |
| Offeror's VDOT prequalification evidence                  | NA   | Section 3.2.8              | no                                    | Appendices                |
| Evidence of obtaining bonding                             | NA   | Section 3.2.9              | no                                    | Appendices                |
|   |  |                            |                                       |                           |

**ATTACHMENT 3.1.2**

**Project: 0081-095-038, Contract ID#: C00107116DB85**

**STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS**

| Statement of Qualifications Component  | Form (if any)     | RFQ<br>Cross reference | Included<br>within 15-<br>page limit? | SOQ<br>Page<br>Reference |
|--|-------------------|------------------------|---------------------------------------|--------------------------|
| <b>SCC and DPOR registration documentation (Appendix)</b>  | Attachment 3.2.10 | Section 3.2.10         | no                                    | Appendices               |
| Full size copies of SCC Registration   | NA                | Section 3.2.10.1       | no                                    | Appendices               |
| Full size copies of DPOR Registration (Offices)  | NA                | Section 3.2.10.2       | no                                    | Appendices               |
| Full size copies of DPOR Registration (Key Personnel)  | NA                | Section 3.2.10.3       | no                                    | Appendices               |
| Full size copies of DPOR Registration (Non-APELSCIDLA)   | NA                | Section 3.2.10.4       | no                                    | Appendices               |
|  |                   |                        |                                       |                          |
| <b>DBE statement within Letter of Submittal</b> confirming Offeror is committed to achieving the required DBE goal | NA                | Section 3.2.11         | yes                                   | Page 1                   |
|  |                   |                        |                                       |                          |
| <b>Offeror's Team Structure</b>  |                   |                        |                                       | Pages 2-7                |
| Key Personnel Resume – DB Project Manager  | Attachment 3.3.1  | Section 3.3.1.1        | no                                    | Appendices               |
| Key Personnel Resume – Quality Assurance Manager   | Attachment 3.3.1  | Section 3.3.1.2        | no                                    | Appendices               |
| Key Personnel Resume – Design Manager  | Attachment 3.3.1  | Section 3.3.1.3        | no                                    | Appendices               |
| Key Personnel Resume – Construction Manager  | Attachment 3.3.1  | Section 3.3.1.4        | no                                    | Appendices               |
| Organizational chart   | NA                | Section 3.3.2          | yes                                   | Page 7                   |
| Organizational chart narrative   | NA                | Section 3.3.2          | yes                                   | Page 4-6                 |
|  |                   |                        |                                       |                          |
|  |                   |                        |                                       |                          |

**ATTACHMENT 3.1.2**

**Project: 0081-095-038, Contract ID#: C00107116DB85**

**STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS**

| <b>Statement of Qualifications Component</b>              | <b>Form (if any)</b> | <b>RFQ Cross reference</b> | <b>Included within 15-page limit?</b> | <b>SOQ Page Reference</b> |
|---|----------------------|----------------------------|---------------------------------------|---------------------------|
| <b>Experience of Offeror's Team</b>                       |                      |                            |                                       | Pages 8-9                 |
| Lead Contractor Work History Form                         | Attachment 3.4.1(a)  | Section 3.4                | no                                    | Appendices                |
| Lead Designer Work History Form                           | Attachment 3.4.1(b)  | Section 3.4                | no                                    | Appendices                |
|   |                      |                            |                                       |                           |
| <b>Project Risk</b>                                       |                      |                            |                                       |                           |
| Identify and discuss three critical risks for the Project | NA                   | Section 3.5.1              | yes                                   | Pages 10-15               |
|   |                      |                            |                                       |                           |

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

RFQ NO. C00107116DB85  
 PROJECT NO.: 0081-095-038

**ACKNOWLEDGEMENT OF RFQ, REVISION AND/OR ADDENDA**

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

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

1. Cover letter of RFQ 09/25/2015  
(Date)
2. Cover letter of RFQ Addendum No. 1 10/15/2015  
(Date)
3. Cover letter of \_\_\_\_\_  
(Date)

|   |                                    |
|---|------------------------------------|
| <br>_____<br>SIGNATURE | <u>10-23-15</u><br>_____<br>DATE   |
| <u>Nathaniel R. Orders</u><br>_____<br>PRINTED NAME   | <u>President</u><br>_____<br>TITLE |

## ATTACHMENT 3.2.6

**State Project No. 0081-095-038, Contract ID#: C00107116DB85**

### **Affiliated and Subsidiary Companies of the Offeror**

Offerors shall complete the table and include the addresses of affiliates or subsidiary companies as applicable. By completing this table, Offerors certify that all affiliated and subsidiary companies of the Offeror are listed.

**The Offeror does not have any affiliated or subsidiary companies.**

**Affiliated and/ or subsidiary companies of the Offeror are listed below.**

| <b>Relationship with Offeror<br/>(Affiliate or Subsidiary)</b> | <b>Full Legal Name</b>             | <b>Address</b>  |
|--|------------------------------------|---|
| Affiliate  | Paramount Builders, LLC            | 505 Sixth Avenue, St. Albans, WV 25177                    |
| Affiliate  | Central Contracting, Inc.          | 515 Sixth Avenue, St. Albans, WV 25177                    |
| Affiliate  | Underground Contractors, Inc.      | 501 Sixth Avenue, St. Albans, WV 25177                    |
| Subsidiary   | Summit Corporation                 | 501 Sixth Avenue, St. Albans, WV 25177                    |
| Subsidiary   | Middle Ridge Properties, LLC       | 501 Sixth Avenue, St. Albans, WV 25177                    |
| Affiliate  | AMT, LLC                           | 10 G Street, NE, Suite 430, Washington, D.C. 20002        |
| Subsidiary   | ECS Carolinas, LLP                 | 1812 Center Park Drive, Suite D, Charlotte, NC 28217      |
| Subsidiary   | ECS Southeast, LLC                 | 1281 Kennestone Circle, NE, Suite 200, Marietta, GA 30066 |
| Subsidiary   | ECS Midwest, LLC                   | 1575 Barclay Blvd, Buffalo Grove, IL 60089                |
| Subsidiary   | ECS Capitol Services               | 655 15th Street, NW, Washington, DC 20005                 |
| Subsidiary   | ECS Central                        | 318 Seaboard Lane, Franklin, TN 37067                     |
| Subsidiary   | ECS Texas, LLP                     | 4950 Keller Springs Rd, Suite 480, Addison, TX 75001      |
| Subsidiary   | ECS Florida, LLC                   | 2815 Directors Row, Suite 500, Orlando, FL 32809          |
| Subsidiary   | ECS Mid-Atlantic, LLC              | 14026 Thunderbolt Place, Suite 300, Chantilly, VA 20151   |
| Subsidiary   | Schnabel Management Services, Inc. | 9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059   |

## ATTACHMENT 3.2.6

State Project No. 0081-095-038, Contract ID#: C00107116DB85

### Affiliated and Subsidiary Companies of the Offeror

|                   |  |  |
|-------------------|--|--|
| <b>Subsidiary</b> | <b>Schnabel Engineering Consultants, Inc.</b>  | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Subsidiary</b> | <b>Schnabel Dam Engineering, Inc.</b>  | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Subsidiary</b> | <b>Schnabel Engineering DC, Inc.</b>   | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Subsidiary</b> | <b>Schnabel Services, Inc.</b>   | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Subsidiary</b> | <b>Schnabel Operations, LLC t/a Schnabel Engineering, LLC (formerly Schnabel South, LLC d/b/a Schnabel Engineering South, LLC, and successor in interest by merger to Schnabel North, LLC d/b/a Schnabel Engineering North, LLC)</b> | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Subsidiary</b> | <b>Lachel &amp; Associates, Inc. d/b/a Lachel, Felice &amp; Associates, Inc.</b>   | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Subsidiary</b> | <b>Geo/Environmental Associates, Inc.</b>  | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Affiliate</b>  | <b>Basinger Engineering, Incorporated d/b/a Schnabel Engineering of Michigan, Inc.</b>   | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Affiliate</b>  | <b>Schnabel Engineering South, P.C.</b>  | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Affiliate</b>  | <b>Schnabel-Lachel Engineering Corporation</b>   | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |
| <b>Affiliate</b>  | <b>Schnabel-Lachel Engineering, P.C. d/b/a Schnabel Engineering of New York</b>  | <b>9800 JEB Stuart Parkway, Suite 200 Glen Allen, VA 23059</b> |



**ATTACHMENT NO. 3.2.7(b)**

**CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0081-095-038  
Contract ID#: C00107116DB85

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 form.

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



Signature

November 2015

Date

Senior Vice President

Title

Whitman, Requardt & Associates, LLP

Name of Firm

ATTACHMENT NO. 3.2.7(b)

**CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0081-095-038  
Contract ID#: C00107116DB85

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.

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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.

|   |          |           |
|---|----------|-----------|
|  | 10-16-15 | Principal |
| Signature   | Date     | Title     |
| Michael J. Wiercinski, PE   |          |           |

A. Morton Thomas and Associates, Inc.  
Name of Firm

ATTACHMENT NO. 3.2.7(b)

**CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0081-095-038  
Contract ID#: C00107116DB85

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



Signature

10/23/15

Date

Vice President

Title

ECS Mid-Atlantic, LLC

Name of Firm

ATTACHMENT NO. 3.2.7(b)

**CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0081-095-038  
Contract ID#: C00107116DB85

- 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 form.

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



Signature

October 22, 2015

Date

Vice President

Title

H&B Surveying and Mapping, LLC  
Name of Firm

**ATTACHMENT NO. 3.2.7(b)**

**CERTIFICATION REGARDING DEBARMENT  
LOWER TIER COVERED TRANSACTIONS**

Project No.: 0081-095-038  
Contract ID#: C00107116DB85

- 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 form.

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.

|   |            |                    |
|---|------------|--------------------|
|  | 10/28/2015 | Sr. Vice President |
| Signature   | Date       | Title              |
| Steven E. Conner, P.E.  |            |                    |
| Schnabel Engineering Consultants, Inc.  |            |                    |
| Name of Firm  |            |                    |



**Prequalified Vendors Sorted By Vendor Name  
Includes All Qualified Levels As Of 9/23/2015**

- O -

**Vendor ID:** O017  
**Vendor Name:** ORDERS CONSTRUCTION COMPANY, INC.  
**Prequal Exp:** 07/31/2016

**-- PREQ Address --**

501 6TH AVENUE  
ST. ALBANS, WV 25177-0000  
Phone: 304-722-4237  
Fax: 304-722-4230

**Work Classes (Listed But Not Limited To)**

002 - GRADING  
003 - MAJOR STRUCTURES  
007 - MINOR STRUCTURES  
019 - ERECT FABRICATED STRUCTURAL MATERIAL  
055 - BRIDGE REPAIRS

**Bus. Contact:** SPARKS, DONNIE JAMES  
**Email:** DONNIES@ORDERSCONSTRUCTION.COM

**-- DBE Information --**

**DBE Type:** N/A  
**DBE Contact:** N/A

**Vendor ID:** O062  
**Vendor Name:** ORION ASSOCIATES, INC.  
**Prequal Exp:** 07/31/2016

**-- PREQ Address --**

1317 CAVALIER BLVD.  
CHESAPEAKE, VA 23323-1501  
Phone: 757-558-6400  
Fax: 757-558-1009

**Work Classes (Listed But Not Limited To)**

005 - DRAINAGE STRUCTURES  
011 - CLEARING AND GRUBBING  
033 - ROADSIDE DEVELOPMENT  
045 - UNDERGROUND UTILITIES  
101 - EXCAVATING

**Bus. Contact:** HEBENSTREIT, JEFFREY RICHARD  
**Email:** ORIONEMAIL@AOL.COM

**-- DBE Information --**

**DBE Type:** N/A  
**DBE Contact:** N/A



UNDERSTAND. SERVICE. INNOVATE.

USI Insurance Services LLC  
1 Hillcrest Drive East  
Charleston, WV 25311  
www.usi.biz  
304-347-0611

October 19, 2015

Suril R. Shah  
Alternate Project Delivery Office  
Virginia Department of Transportation  
1401 East Broad Street  
Richmond, VA 23219

**Re: Orders Construction Company, Inc.  
St. Albans, WV**

**Project: Replacement of I-81 Structures 18942 and 18944 over Route 808  
Halls Bottom Rd and Sinking Creek  
State # 0081-095-038  
Contract ID # C00107116DB85  
Washington County, VA**

Dear Sirs:

Orders Construction Company has made us aware of their desire to bid on the subject project in March, 2016. It is our understanding that the estimate on the project is \$13,000,000. Orders Construction is capable of obtaining a bond for a project of this magnitude. If Orders Construction is the successful bidder and enters in to a contract to construct this project, we will, according to the terms and conditions of the required bid bond, issue the 100% performance and 100% labor and material payment bonds to warrant the integrity of this project including the warranty period.

Orders Construction's surety credit is underwritten by Great American Insurance Company. Great American has an A.M. Best financial strength rating of A+ and financial size category of XIII and is authorized to do business in the Commonwealth of Virginia.

This letter is intended for reference purposes and any formal and specific bond approvals will be based on current and pertinent underwriting factors at the time of the request.

If you have questions concerning this matter, please call me at 304-347-0666. Thank you for your consideration.

Sincerely,

Douglas P. Taylor  
Sr. Vice President

## ATTACHMENT 3.2.10

**State Project No. 0081-095-038, Contract ID#: C00107116DB85**

### SCC and DPOR Information

Offerors shall complete the table and include the required state registration and licensure information. By completing this table, Offerors certify that their team complies with the requirements set forth in Section 3.2.10 and that all businesses and individuals listed are active and in good standing.

| SCC & DPOR INFORMATION FOR BUSINESSES (RFQ Sections 3.2.10.1 and 3.2.10.2) |                            |                               |            |   |                        |                          |                      |
|--|----------------------------|-------------------------------|------------|---|------------------------|--------------------------|----------------------|
| Business Name  | SCC Information (3.2.10.1) |                               |            | DPOR Information (3.2.10.2)                               |                        |                          |                      |
|  | SCC Number                 | SCC Type of Corporation       | SCC Status | DPOR Registered Address                                   | DPOR Registration Type | DPOR Registration Number | DPOR Expiration Date |
| Orders Construction Company, Inc.  | F0268500                   | Foreign Corporation           | Active     | 501 6 <sup>th</sup> Avenue<br>St Albans, WV 25177         | Class A Contractor     | 2701032711               | 08/31/2016           |
| Whitman, Requardt & Associates, LLP  | K000382-4                  | Limited Liability Partnership | Active     | 801 South Caroline Street<br>Baltimore, MD 21231          | ARC, ENG, LS, LA       | 0407001676               | 12/31/2015           |
| Whitman, Requardt & Associates, LLP  | K000382-4                  | Limited Liability Partnership | Active     | 1700 Kraft Drive,<br>Suite 1200,<br>Blacksburg, VA 24060  | ENG                    | 0411000608               | 02/29/2016           |
| Whitman, Requardt & Associates, LLP  | K000382-4                  | Limited Liability Partnership | Active     | 3701 Pender Drive,<br>Suite 450,<br>Fairfax, VA 22030     | ENG                    | 0411000608               | 02/29/2016           |
| Whitman, Requardt & Associates, LLP  | K000382-4                  | Limited Liability Partnership | Active     | 9030 Stony Point Parkway, Suite 220<br>Richmond, VA 23235 | ENG                    | 0411000133               | 02/29/2016           |
| Whitman, Requardt & Associates, LLP  | K000382-4                  | Limited Liability Partnership | Active     | 11870 Merchants Walk, Suite 100<br>Newport News, VA 23606 | ENG                    | 0411000244               | 02/29/2016           |
| A. Morton Thomas and Associates, Inc.                                      | F04943112                  | Foreign Corporation           | Active     | 125 Deadmore St SE<br>Abingdon, VA 24210                  | ENG                    | 0411001044               | 02/29/2016           |
| H & B Surveying & Mapping, LLC   | S2805604                   | Limited Liability Company     | Active     | 612 Hull St, Suite 101B,<br>Richmond, VA 23224            | LS                     | 0407005432               | 12/31/2105           |
| ECS-Mid-Atlantic LLC   | S1208216                   | Limited Liability Company     | Active     | 5320 Peters Creek Rd Ste F,<br>Roanoke, VA 24019          | ENG                    | 0411000381               | 02/29/2016           |
| Schnabel Engineering Consultants, Inc.                                     | 07126741                   | Corporation                   | Active     | 1901 South Main St.<br>Suite 11, Blacksburg,<br>VA 24060  | ENG                    | 0411000697               | 02/29/2016           |



# Commonwealth OF Virginia



## State Corporation Commission

### *CERTIFICATE OF GOOD STANDING*

*I Certify the Following from the Records of the Commission:*

That ORDERS CONSTRUCTION COMPANY, INC., a corporation incorporated under the law of West Virginia, is authorized to transact business in the Commonwealth of Virginia;

That it obtained a certificate of authority to transact business in Virginia from the Commission on July 5, 1973; and

That the corporation is in good standing in the Commonwealth of Virginia as of the date set forth below.

Nothing more is hereby certified.



*Signed and Sealed at Richmond on this Date:*

*June 25, 2013*

*Joel H. Peck*

*Joel H. Peck, Clerk of the Commission*



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#### ORDERS CONSTRUCTION COMPANY, INC.

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##### Business Entities

##### UCC or Tax Liens

##### Court Services

##### Additional Services

##### General

SCC ID: F0268500  
 Entity Type: Foreign Corporation  
 Jurisdiction of Formation: WV  
 Date of Formation/Registration: 7/5/1973  
 Status: Active  
 Shares Authorized: 50000

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##### Principal Office

PO BOX 1448  
 501 6TH AVE  
 ST ALBANS WV25177

[New Search](#) [Home](#)

##### Registered Agent/Registered Office

CHARLIE STOKES  
 ORDERS CONSTRUCTION COMPANY INC  
 605 LITHIA RD  
 WYTHEVILLE VA 24382  
 WYTHE COUNTY 198  
 Status: Active  
 Effective Date: 7/8/2015

Screen ID: e1000

Need additional information? Contact [scinfo@scc.virginia.gov](mailto:scinfo@scc.virginia.gov) Website questions? Contact: [webmaster@scc.virginia.gov](mailto:webmaster@scc.virginia.gov)

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Build #: 1.0.0.24456

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

EXPIRES ON  
08-31-2016

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

NUMBER  
2701032711

BOARD FOR CONTRACTORS  
CLASS A CONTRACTOR  
\*CLASSIFICATIONS\* H/H

ORDERS CONSTRUCTION COMPANY INC  
501 6TH AVENUE  
ST ALBANS, WV 25177-1448



*Jay W. DeBoer*  
Jay W. DeBoer, Director

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

# Commonwealth of Virginia



## State Corporation Commission

### CERTIFICATE OF FACT

*I Certify the Following from the Records of the Commission:*

On August 10, 2000, a statement of registration as a foreign limited liability partnership was filed in the Clerk's Office of the Commission by Whitman, Requardt & Associates, LLP, a Maryland registered limited liability partnership.

As of the date below, this statement of registration is in effect.

Nothing more is hereby certified.

*Signed and Sealed at Richmond on this Date:  
July 15, 2015*



*Joel H. Peck*  
\_\_\_\_\_  
*Joel H. Peck, Clerk of the Commission*

# Commonwealth of Virginia



## STATE CORPORATION COMMISSION

*Richmond, August 10, 2000*

*This is to Certify that the statement of registration of*

**Whitman, Requardt & Associates, LLP**

*a limited liability partnership registered under the laws of MARYLAND; was this day admitted to record in this office and that the partnership is registered to transact business in Virginia as a foreign Registered Limited Liability Partnership, subject to all laws applicable to the partnership and its business.*



*State Corporation Commission*

*Attest:*

*Joel H. Beck*

*Clerk of the Commission*



COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION

Office of the Clerk

June 19, 2015

CT CORPORATION SYSTEM  
4701 COX ROAD, SUITE 285  
GLEN ALLEN, VA 23060

RECEIPT

RE: WHITMAN, REQUARDT & ASSOCIATES, LLP

ID: K000382 - 4

DCN: 15-06-19-0574

Dear Customer:

This is your receipt for \$50.00 to cover the fee for filing the annual continuation report for the above-referenced registered limited liability partnership.

The annual continuation report was filed on June 19, 2015.

If you have any questions, please call (804) 371-9733 or toll-free in Virginia, 1-866-722-2551.

Sincerely,

Joel H. Peck  
Clerk of the Commission

GPACCEPT  
CIS0362

**CT CORPORATION**  
A WoltersKluwer Company

07/07/2015

Sequence: 244

**RE:** Whitman, Requardt & Associates, LLP

**Account #:** 9100681700

**Service:** VA Foreign Representation (L.L.P.)

The enclosures are intended for the recipient for the business entity shown above.

Dan Voeltner  
Whitman, Requardt & Associates, LLP  
801 S Caroline St  
Baltimore, MD 21231-3311

Agent Services Admin  
111 Eighth Avenue  
13th Floor  
New York, NY 10011

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION  
COMMONWEALTH OF VIRGINIA

EXPIRES ON

12-31-2015

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

NUMBER

0407001676

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

PROFESSIONS: ARC, ENG, LS, LA

WHITMAN, REQUARDT AND ASSOCIATES LLP  
801 SOUTH CAROLINE STREET  
BALTIMORE, MD 21231



*Gordon N. Dixon*  
Gordon N. Dixon, Director

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COMMONWEALTH OF VIRGINIA

BOARD FOR APPELSCIDLA  
BUSINESS ENTITY REGISTRATION  
NUMBER: 0407001676 EXPIRES: 12-31-2015  
PROFESSIONS: ARC, ENG, LS, LA  
WHITMAN, REQUARDT AND ASSOCIATES LLP  
801 SOUTH CAROLINE STREET  
BALTIMORE, MD 21231



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9960 Mayland Dr., Suite 400, Richmond, VA 23233

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10010 (7/11) 107028-3

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION  
COMMONWEALTH OF VIRGINIA

EXPIRES ON

02-29-2016

9960 Mayland Dr., Suite 400, Richmond, VA 23233  
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0411000608

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

PROFESSIONS: ENG

WHITMAN REQUARDT & ASSOCIATES LLP  
1700 KRAFT DRIVE  
SUITE 1200  
BLACKSBURG, VA 24060



*Nick A. Christner*  
Nick A. Christner, Interim Director

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9960 Mayland Dr., Suite 400, Richmond, VA 23233  
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0411000134

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

PROFESSIONS: ENG

WHITMAN REQUARDT AND ASSOCIATES  
3701 PENDER DRIVE  
SUITE 450  
FAIRFAX, VA 22030-6045



*Nick A. Christner*  
Nick A. Christner, Interim Director

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**NUMBER  
0411000133**

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

**PROFESSIONS: ENG**

**WHITMAN REQUARDT AND ASSOCIATES  
9030 STONY POINT PKWY STE 220  
RICHMOND, VA 23235**



*Gordon N. Dixon*  
Gordon N. Dixon, Director

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9030 STONY POINT PKWY STE 220  
RICHMOND, VA 23235**



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COMMONWEALTH OF VIRGINIA**

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

**NUMBER  
0411000244**

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

**PROFESSIONS: ENG**

**WHITMAN REQUARDT & ASSOCIATES LLP  
11870 MERCHANTS WALK STE 100  
NEWPORT NEWS, VA 23606**



*Gordon N. Dixon*  
Gordon N. Dixon, Director

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**COMMONWEALTH OF VIRGINIA**

**BOARD FOR APPELSCIDLA  
BUSINESS ENTITY BRANCH OFFICE REGISTRATION  
NUMBER: 0411000244 EXPIRES: 02-29-2016  
PROFESSIONS: ENG  
WHITMAN REQUARDT & ASSOCIATES LLP  
11870 MERCHANTS WALK STE 100  
NEWPORT NEWS, VA 23606**



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# Commonwealth OF Virginia



## State Corporation Commission

### *CERTIFICATE OF GOOD STANDING*

*I Certify the Following from the Records of the Commission:*

That A. MORTON THOMAS & ASSOCIATES, INC., a corporation incorporated under the law of Maryland, is authorized to transact business in the Commonwealth of Virginia;

That it obtained a certificate of authority to transact business in Virginia from the Commission on November 26, 1997; and

That the corporation is in good standing in the Commonwealth of Virginia as of the date set forth below.

Nothing more is hereby certified.



*Signed and Sealed at Richmond on this Date:*

*September 26, 2013*

*Joel H. Peck*

*Joel H. Peck, Clerk of the Commission*



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#### A. MORTON THOMAS & ASSOCIATES, INC.

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#### Business Entities

#### UCC or Tax Liens

#### Court Services

#### Additional Services

#### General

SCC ID: F0494312  
 Entity Type: Foreign Corporation  
 Jurisdiction of Formation: MD  
 Date of Formation/Registration: 11/26/1997  
 Status: Active  
 Shares Authorized: 52000

#### Select an action

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#### Principal Office

800 KING FARM BOULEVARD 4TH FL  
 ROCKVILLE MD20850

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#### Registered Agent/Registered Office

NATIONAL CORPORATE RESEARCH, LTD.  
 250 BROWNS HILL COURT  
 MIDLOTHIAN VA 23114  
 CHESTERFIELD COUNTY 120  
 Status: Active  
 Effective Date: 9/30/2015

Screen ID: e1000

Need additional information? Contact [scinfo@sc.virginia.gov](mailto:scinfo@sc.virginia.gov) Website questions? Contact: [webmaster@sc.virginia.gov](mailto:webmaster@sc.virginia.gov)

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

**EXPIRES ON**  
02-29-2016

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

**NUMBER**  
0411001044

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

PROFESSIONS: ENG

A MORTON THOMAS AND ASSOCIATES INC  
125 DEADMORE ST SE  
ABINGDON, VA 24210



*Gordon N. Dixon*  
Gordon N. Dixon, Director

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**COMMONWEALTH OF VIRGINIA**  
BOARD FOR APESCIDLA  
BUSINESS ENTITY BRANCH OFFICE REGISTRATION  
NUMBER: 0411001044 EXPIRES: 02-29-2016  
PROFESSIONS: ENG  
A MORTON THOMAS AND ASSOCIATES INC  
125 DEADMORE ST SE  
ABINGDON, VA 24210



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

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# Commonwealth of Virginia



## STATE CORPORATION COMMISSION

*Richmond, April 27, 2009*

*This is to certify that the certificate of organization of*

**H & B Surveying and Mapping, LLC**

*was this day issued and admitted to record in this office and that the said limited liability company is authorized to transact its business subject to all Virginia laws applicable to the company and its business. Effective date: April 27, 2009*



*State Corporation Commission*

*Attest:*

*Joel Heck*  
Clerk of the Commission



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#### H & B Surveying and Mapping, LLC

##### SCC eFile

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##### Business Entities

##### UCC or Tax Liens

##### Court Services

##### Additional Services

##### General

SCC ID: S2905604  
 Entity Type: Limited Liability Company  
 Jurisdiction of Formation: VA  
 Date of Formation/Registration: 4/27/2009  
 Status: Active

##### Select an action

- [File a registered agent change](#)
- [File a registered office address change](#)
- [Resign as registered agent](#)
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- [Pay annual registration fee](#)
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##### Principal Office

612 HULL STREET STE 101B  
 RICHMOND VA23224

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##### Registered Agent/Registered Office

TIMOTHY H GUARE  
 TIMOTHY H GUARE PLC  
 6802 PARAGON PL STE 100  
 HENRICO VA 23230  
 HENRICO COUNTY 143  
 Status: Active  
 Effective Date: 7/2/2009

Screen ID: e1000

Need additional information? Contact [scinfo@sc.virginia.gov](mailto:scinfo@sc.virginia.gov) Website questions? Contact: [webmaster@sc.virginia.gov](mailto:webmaster@sc.virginia.gov)

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Build #: 1.0.0.24456

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

EXPIRES ON  
12-31-2015

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

NUMBER  
0407005432

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

PROFESSIONS: LS

H & B SURVEYING & MAPPING LLC  
612 HULL ST  
SUITE 101B  
RICHMOND, VA 23224



*Gordon N. Dixon*  
Gordon N. Dixon, Director

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# Commonwealth of Virginia



## STATE CORPORATION COMMISSION

*Richmond, April 16, 2004*

*This is to certify that the certificate of organization of*

**Engineering Consulting Services - Mid-Atlantic,  
LLC**

SCC ID: S1208216

*was this day issued and admitted to record in this office and that the said limited liability company is authorized to transact its business subject to all Virginia laws applicable to the company and its business. Effective date: April 16, 2004*



*State Corporation Commission*

*Attest:*

*Joel H. Peck*  
Clerk of the Commission



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#### ECS - Mid-Atlantic, LLC

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- Business Entity Search
- Certificate Verification
- FAQs
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- Give Us Feedback

##### Business Entities

##### UCC or Tax Liens

##### Court Services

##### Additional Services

##### General

SCC ID: S1208216  
 Entity Type: Limited Liability Company  
 Jurisdiction of Formation: VA  
 Date of Formation/Registration: 4/16/2004  
 Status: Active

##### Select an action

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##### Principal Office

14026 THUNDERBOLT PL STE 100  
 CHANTILLY VA20151

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##### Registered Agent/Registered Office

JAMES A ECKERT  
 14026 THUNDERBOLT PL STE 100  
 CHANTILLY VA 20151  
 FAIRFAX COUNTY 129  
 Status: Active  
 Effective Date: 4/16/2004

Screen ID: e1000

Need additional information? Contact [scinfo@sc.virginia.gov](mailto:scinfo@sc.virginia.gov) Website questions? Contact: [webmaster@sc.virginia.gov](mailto:webmaster@sc.virginia.gov)

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Build #: 1.0.0.24456

**COMMONWEALTH OF VIRGINIA  
STATE CORPORATION COMMISSION**

AT RICHMOND, AUGUST 5, 2004

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

**ECS - Mid-Atlantic, LLC**  
(formerly known as Engineering Consulting Services - Mid-Atlantic, LLC)

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

**CERTIFICATE OF AMENDMENT**

be issued and admitted to record with the articles of amendment in the Office of the Clerk of the Commission, effective August 5, 2004.

STATE CORPORATION COMMISSION

By

A handwritten signature in black ink that reads "Mark L. Christie". The signature is written in a cursive, flowing style.

Commissioner

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION  
COMMONWEALTH OF VIRGINIA

EXPIRES ON  
02-29-2016

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

NUMBER  
0411000381

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

PROFESSIONS: ENG

ECS-MID-ATLANTIC LLC  
5320 PETERS CREEK RD STE F  
ROANOKE, VA 24019



*Nick A. Christner*  
Nick A. Christner, Interim Director

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COMMONWEALTH OF VIRGINIA  
BOARD FOR APELSCIDLA  
BUSINESS ENTITY BRANCH OFFICE REGISTRATION  
NUMBER: 0411000381 EXPIRES: 02-29-2016  
PROFESSIONS: ENG  
ECS-MID-ATLANTIC LLC  
5320 PETERS CREEK RD STE F  
ROANOKE, VA 24019



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

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# Commonwealth of Virginia



## State Corporation Commission

*I Certify the Following from the Records of the Commission:*

Schnabel Engineering Consultants, Inc. is a corporation existing under and by virtue of the laws of Virginia, and is in good standing.

The date of incorporation is August 12, 2009.

Nothing more is hereby certified.



*Signed and Sealed at Richmond on this Date:  
November 17, 2009*

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



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#### Schnabel Engineering Consultants, Inc.

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##### Business Entities

##### UCC or Tax Liens

##### Court Services

##### Additional Services

##### General

SCC ID: 07126741  
 Entity Type: Corporation  
 Jurisdiction of Formation: VA  
 Date of Formation/Registration: 8/12/2009  
 Status: Active  
 Shares Authorized: 10000

##### Select an action

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##### Principal Office

9800 JEB STUART PARKWAY, STE 200  
 GLEN ALLEN VA23059

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##### Registered Agent/Registered Office

CT CORPORATION SYSTEM  
 4701 COX ROAD, SUITE 285  
 GLEN ALLEN VA 23060  
 HENRICO COUNTY 143  
 Status: Active  
 Effective Date: 10/4/2013

Screen ID: e1000

Need additional information? Contact [scinfo@sc.virginia.gov](mailto:scinfo@sc.virginia.gov) Website questions? Contact: [webmaster@sc.virginia.gov](mailto:webmaster@sc.virginia.gov)

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Build #: 1.0.0.24456

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

EXPIRES ON

02-29-2016

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

NUMBER

0411000697

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

PROFESSIONS: ENG

SCHNABEL ENGINEERING CONSULTANTS, INC  
1901 SOUTH MAIN ST.  
SUITE 11  
BLACKSBURG, VA 24060



*Nick A. Christner*  
Nick A. Christner, Interim Director

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**COMMONWEALTH OF VIRGINIA**

BOARD FOR APELSCIDLA  
BUSINESS ENTITY BRANCH OFFICE REGISTRATION  
NUMBER: 0411000697 EXPIRES: 02-29-2016  
PROFESSIONS: ENG  
SCHNABEL ENGINEERING CONSULTANTS, INC  
1901 SOUTH MAIN ST.  
SUITE 11  
BLACKSBURG, VA 24060



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

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10010 (7/11) 107028-3

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

EXPIRES ON

02-29-2016

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

NUMBER

0402024814

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

MICHAEL A RUSSELL  
17282 CLEVELAND RD  
ABINGDON, VA 24211



*Nick A. Christner*  
Nick A. Christner, Interim Director

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(POCKET CARD)

COMMONWEALTH OF VIRGINIA

BOARD FOR APELSCIDLA  
PROFESSIONAL ENGINEER LICENSE  
NUMBER: 0402024814 EXPIRES: 02-29-2016

MICHAEL A RUSSELL  
17282 CLEVELAND RD  
ABINGDON, VA 24211



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

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10010 (7/11) 107028-3

DEPARTMENT OF PROFESSIONAL AND OCCUPATIONAL REGULATION  
COMMONWEALTH OF VIRGINIA

EXPIRES ON  
01-31-2016

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

NUMBER  
0402039985

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

CHADWICK RYAN MCMURRAY  
3937 FOXFIRE LN  
KINGSPORT, TN 37664



*Gordon N. Dixon*  
Gordon N. Dixon, Director

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# COMMONWEALTH OF VIRGINIA

## State Water Control Board

629 East Main Street, Richmond, Virginia 23219

### RESPONSIBLE LAND DISTURBER

**Kevin Conner**

CERTIFICATE NUMBER

RLD02695

EXPIRATION DATE

10/17/2018



This certificate is for your records and should be kept in a safe location. Please detach the above certificate and the two wallet size cards below. It is your responsibility to ensure that your certification is kept current and that you meet the requirements for re-certification before the expiration date.

COMMONWEALTH OF VIRGINIA  
State Water Control Board  
629 East Main Street, Richmond, Virginia 23219

### RESPONSIBLE LAND DISTURBER

Kevin Conner

Certificate Number  
RLD02695



Expiration Date  
10/17/2018

COMMONWEALTH OF VIRGINIA  
State Water Control Board  
629 East Main Street, Richmond, Virginia 23219

### RESPONSIBLE LAND DISTURBER

Kevin Conner

Certificate Number  
RLD02695



Expiration Date  
10/17/2018

COMMONWEALTH OF VIRGINIA  
Virginia Department of Transportation  
1401 E. Broad Street  
Richmond, VA 23219

Erosion & Sediment Control  
Contractor Certification Program  
Certificate of Completion  
for

Expires  
2/18/2016

Cert. #  
1559C

Kevin T. Conner

Please contact VTCA at 804-330-3312 with changes of employment or change of address.

## ATTACHMENT 3.3.1

### KEY PERSONNEL RESUME FORM

|  |
|--|
| <b>Brief Resume of Key Personnel anticipated for the Project.</b>  |
| a. Name & Title: <b>Charlie Stokes – Project Manager</b>   |
| b. Project Assignment: <b>Design-Build Project Manager</b>   |
| c. Name of Firm with which you are now associated: <b>Orders Construction Company, Inc.</b>  |
| d. Employment History: With this Firm <u>5</u> Years With Other Firms <u>42</u> Years<br>Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):<br><br><b>Orders Construction Company, Inc.: Vice President (2010-Present):</b> Responsible for bidding and project management for roadway and bridge projects including scheduling, contract administration, coordination with stakeholders, safety, resource allocations and project quality. Serve as Design-Build Project Manager for all of Orders' Virginia Design-Build projects.<br><br><b>Corte Construction Company/ Fort Chiswell Construction Company (wholly owned subsidiary of Corte): President (1992-2010):</b> Responsible for bidding and project management of grading, bridge and tunnel projects, including daily operations, resource allocation, scheduling, safety and project quality. Served as Design-Build Project Manager for nine Design-Build projects in the Mid-Atlantic region.  |
| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:<br><b>University of Pittsburgh, Pittsburgh, PA / NA / NA / NA</b>   |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #:<br><b>N/A</b>   |
| g. Document the extent and depth of your experience and qualifications relevant to the Project.<br><ol style="list-style-type: none"><li>1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i></li><li>2. <i>Note whether experience is with current firm or with other firm.</i></li><li>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i></li></ol> <b>(List at least three (3), but no more than five (5) relevant projects* for which you have performed a similar function.)</b><br><br><b>Project: Route 60 Main Street Bridge Replacement, Clifton Forge, VA Project Role: Design-Build Project Manager</b><br><b>Responsibilities:</b> This \$3.5 million design-build project was to replace the Route 60 bridge in downtown Clifton Forge, VA. This project involved replacing a bridge, which abuts commercial buildings on both sides, on Route 60 Westbound over Smith Creek in downtown Clifton Forge and rebuilding Main Street from Commercial Avenue to Ridgeway Street. The project also involved changing Route 60 Business from a one-way (Eastbound only) to a two-way road and removing a traffic island that separated Route 60 Business East and Route 60 West (Main Street). Additionally, traffic signals were added at the intersection of Route 60 and Commercial Avenue. Mr. Stokes was responsible for overall management of all facets of the project, including daily operations and scheduling; resource and manpower allocation; contract administration; safety; project quality and quality management; traffic control; communications with the public/public outreach; and work with chief engineer for design of project. <b>Performed with Orders Construction Company Inc. (2011 thru 2013)</b><br><br><b>Project: Avens Bridge over South Holston Lake, Washington Co., VA Project Role: Project Manager</b><br><b>Responsibilities:</b> This project was to replace the existing truss bridge over the South Fork Holston River/Lake in Washington County, VA with a new two lane structure constructed on the upstream side of the existing bridge. The new structure used drilled shaft piers due to water depth at full pool of approximately 80 feet deep. Much of the construction and demolition on this project was completed from barges. Two lanes of traffic were being maintained through most of the project duration. Mr. Stokes was responsible for overall management of all facets of the project, including daily operations and scheduling; resource and manpower allocation; contract administration; safety; project quality and quality management; and traffic control. <b>Performed with Orders Construction Company, Inc. (2013 thru 2015)</b> |

**Project: Route 419 and East Main Street Interchange Bridge, Salem, VA Project Role: Project Manager**

**Responsibilities:** This \$4 Million project included widening of Route 460; widening East Main Street to five lanes; replacing the existing bridge over Mason Creek with a 2-span, 5-lane structure; widening Route 419; and adding turn lanes onto Route 460. To accommodate the high traffic volume and significant grade changes, the work was designed to be constructed in eight phases. Work included bridge demolition and construction, phased; temporary drainage and paving and new paving; new storm drain system, new water system, new sanitary sewer system; relocation of a major gas line; new curb and gutter; medians, and sidewalks; new commercial entrances; and new signals and signage. Mr. Stokes was responsible for overall management of all facets of the project, including daily operations; resource and manpower allocation; scheduling; safety; project quality; traffic control; partnering with the public, and final acceptance. **Performed with Corte/Fort Chiswell Construction Companies, Inc. (2003 thru 2004)**

**Project: I-81 Exit 7 Interchange Improvements Project, City of Bristol, VA Project Role: Project Manager**

**Responsibilities:** This was \$3.4 million project, which involved the widening of Old Airport Road, the Northbound Interstate 81 off ramp, and the Bridge over Beaver Creek at Exit 7 on Interstate 81, located in Bristol, VA. This project consisted of 6,000 cubic yards of excavation, roadway drainage features, a double box culvert extension, utility relocations, 10,000 square yards of asphalt paving, 1,500 linear feet of curb & gutter, widening a 116 linear feet bridge, constructing a 225 linear feet RW-3 retaining wall, signing, and guardrail. Exit 7 is one of the most congested interchanges in the area and the project mandated that all traffic be kept moving through the project with limited off hour interruptions. By altering the contract transportation management plan, Orders Construction worked with the Virginia Department of Transportation to complete this project with minimal impact to motorists. The project also required bridge (bearing pile) and retaining wall foundations in the karst conditions of the area. Orders was able to design the temporary shoring to work and meet standards in the unstable karst terrain conditions on this project. Mr. Stokes was responsible for all facets of the project from daily operations; resource management; scheduling; quality; safety; partnering and final acceptance. **Performed with Orders Construction Company, Inc. (2014 thru 2015)**

**Project: I-81/Route 419 Interchange Project, Roanoke Co., VA Project Role: Project Manager**

**Responsibilities:** Management of the project which consisted of: Widening of North and South bound Route 419 over Interstate 81, with additional lanes. Ramp modifications included widening and adding lanes to the Southbound and Northbound on and off ramps. Acceleration and deceleration lanes on I-81 were extended. Route 419 was widened and turn lanes were added. Traffic signals were added to the Route 419 intersection of the on and off ramps. Four lanes of I-81 were mandated to be open at all times during a 6:00 AM to 7:00 PM period. Mr. Stokes was responsible for all facets of the project from daily operations; resource management; scheduling; quality; safety; partnering and final acceptance. **Performed with Corte/Fort Chiswell Construction Companies, Inc. (2003 thru 2004)**

\* On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.

For Key Personnel required to be on-site full-time for the duration of construction, provide a current list of assignments, role, and the anticipated duration of each assignment. – *Not Applicable*

## ATTACHMENT 3.3.1

### KEY PERSONNEL RESUME FORM

|  |
|--|
| <b>Brief Resume of Key Personnel anticipated for the Project.</b>  |
| a. Name & Title: <b>Chadwick McMurray, PE, PMP, CCM, DBIA – Associate</b>  |
| b. Project Assignment: <b>Quality Assurance Manager</b>  |
| c. Name of Firm with which you are now associated: <b>A. Morton Thomas and Associates, Inc.</b>  |
| d. Employment History: With this Firm <u>4</u> Years With Other Firms <u>17</u> Years<br>Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):<br><br><b>A. Morton Thomas and Associates, Inc.: Associate (2011-Present):</b> Responsible Charge Engineer for Abingdon Office with direct control and supervision of all engineering services provided out of this office of 40 employees. QAM duties on Design-Build projects have included developing and updating QA/QC plans, providing/overseeing testing and inspection, QA documentation including RFI's, NCR's, Materials Notebook, QAM approvals, etc., verification for conformance to VDOT's Minimum Standards, and project record closeout. Other general duties include management of contracts, supervision of project staff, performance of contract duties including acting as the owner's representative on projects, providing QA/QC services on Design-Build and Design-Bid-Build projects, development of project reports, and meeting client and company performance requirements.<br><br><b>AMEC E&amp;I, Inc. (formerly MACTEC): Senior Principal Engineer (2008–2011):</b> QA/QC duties included documentation including RFI's, NCR's, DWR's, schedule review and monitoring, providing/overseeing QA/QC testing and inspecting, oversight of QA/QC inspection/testing staff. Duties included management of contracts, supervision of project staff, performance of contract duties including acting as the owner's representative on projects, providing QA/QC services on Design-Build and Design-Bid-Build projects development of project reports, and meeting client and company performance requirements.<br><br><b>Virginia Department of Transportation: Area Construction Engineer (2004–2008):</b> Coordinate and supervise field inspection staff responsible for construction oversight and QA/QC on VDOT projects in the Bristol District. Review plans and specifications prior to their bid advertisement. Provide direction on specification and plans interpretation and applications on projects. Review and approve project progress schedules and estimates. Review and approve project change orders. Responsible for ensuring the Department met on-time, on-budget, quality, and environmental compliance goals for assigned geographic area. Assign QA Inspection staff and oversee inspection and testing program in area.<br><br><b>Avisco, Inc.: Project Manager/Engineer (2000 – 2004):</b> Responsible for supervision and coordination of all field activities from start to completion of complex civil construction projects and assistance with managing overall Oak Ridge Operations. Specific duties include: Management/Supervision of office/field personnel and equipment; Scheduling/Coordinating activities and subcontractors; Contract review/interpretation; Conducting project coordination and progress meetings; Responding to client concerns and requests; Cost estimating; Project change orders; Project cost management; Construction layout and site control; Procurement of materials and providing project submittals; Responsible for project Quality Control testing and inspection. |
| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:<br><b>University of Tennessee, Knoxville, TN/ BS/ 1993/ Civil Engineering</b>   |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #:<br><b>2004/ Professional Engineering VA # 39985</b><br><b>Certified Construction Manager (CCM) # A2397</b><br><b>Project Management Professional (PMP) # 1405995</b><br><b>Design-Build Professional (DBIA), SMW and ESC Certification, Guardrail Installation Training (GRIT)</b><br><b>Intermediate Work Zone Traffic Control Certification</b><br><b>Workzone Training for Law Enforcement Officers (LEO)</b>  |
| g. Document the extent and depth of your experience and qualifications relevant to the Project.<br>1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i><br>2. <i>Note whether experience is with current firm or with other firm.</i>  |

3. *Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.*

**(List at least three (3), but no more than five (5) relevant projects\* for which you have performed a similar function.)**

Mr. McMurray has over 21 years of experience in design-build, civil, construction, geotechnical, and transportation engineering projects. His experience includes Quality Assurance Management and overall management of projects of various size and complexity during planning, design and construction for consulting firms, construction contractors, and the public sector. On numerous Design-Build projects, Mr. McMurray has provided QA/QC services as the Owner's representative and has been in charge of QA/QC compliance as an employee of the builder. Having spent the past 10 years working as an Area Construction Engineer and Consultant QAM and Responsible Charge Engineer for the Virginia Department of Transportation, Mr. McMurray has been responsible for monitoring and documenting contractor QA/QC compliance and schedule performance utilizing SiteManager, Sharepoint, and Primavera P6 software among others. In addition, Mr. McMurray has been responsible for ensuring projects were environmentally compliant. He has extensive experience with schedule reviews, schedule status updates, constructability reviews, plan revisions during construction, work order changes, field survey layout and verification, work order development, pay estimate reviews, as-built drawing development, and conducting weekly progress meetings. His relative experience includes:

**Project: U.S. Route 460 Connector Phase I Design Build, Breaks, VA Project Role: Quality Assurance Manger**  
**Responsibilities:** Quality Assurance Manager and QA Geotechnical Engineer for this \$90 million Design-Build highway / bridge project in Buchanan County. His responsibilities included the development, updating, and implementing of a Quality Assurance plan, review of geotechnical design and issues, and coordination design revisions. The design-build project includes 1 mile of new 460 Connector Roadway and 0.56 miles of widening and realignment of Route 80. The project also includes three bridges: twin 1,733 foot long cast-in-place hollow box concrete structures crossing Grassy Creek and Route 610 at a maximum height of 267 feet, and a 300 foot long bulb-T girder bridge crossing Hunts Creek. Roadway work includes major excavation and filling of roadway embankments in steep, mountainous terrain including coordination of QA/QC testing of embankment, drainage structures, subgrade, asphalt and incidental items. As the QAM, he is responsible for the acceptance testing and documentation of all materials used on the Contract as well as the generation of the VDOT Materials Book and constructability reviews. He verifies that the QC staff is following the QC Inspection Plan/Materials Testing Requirements in the approved QA/QC Manual for this Contract. He is also responsible for ensuring environmental compliance is met and performing environmental reviews on the project. Duties include oversight of all construction activities and analysis and interpretation of project plans and specifications to insure constructability as well as providing oversight and management of inspection and testing staff. Sharepoint software was used to keep project documentation and materials information. **Performed with A. Morton Thomas and Associates (2011 thru 2015)**

**Project: Avens Bridge/ Route 58 Project Specific CEI, VDOT Bristol District, VA Project Role: Construction Project Manager**  
**Responsibilities:** Provided Construction Quality Assurance/Quality Control as Construction Project Manager providing CEI oversight for these separate construction contracts totaling \$31M for the construction of 3 miles of roadway and a new 1015' steel girder bridge with drilled shaft foundations in deep water. Responsibilities include Quality Assurance of all work, materials, testing, and sampling were performed in accordance with the contract requirements documentation, record keeping and as-built plans, processing monthly progress estimates and verifying quantities. He works with the design teams to resolve plan discrepancies and develop work orders when changes occur. He ensures that environmental compliance is achieved and all permit conditions are met. Duties also include oversight of all construction activities and analysis and interpretation of project plans and specifications to ensure constructability as well as providing oversight and management of inspection and testing staff. **Performed with A. Morton Thomas and Associates (2012 thru 2015)**

**Project: Route 460 Phase II CEI, VDOT Bristol District Project Role: Construction Project Manager**  
**Responsibilities:** Provided Construction Quality Assurance/Quality Control as Construction Project Manager for this \$36 M highway construction project being performed in very rugged terrain with the largest cut being 600 vertical feet. Project records were kept in SiteManager and in accordance with VDOT and FHWA standards. Responsibilities included Quality Assurance, project management, documentation and record keeping including as-built plans, schedule analysis and review using Primavera P6, budget monitoring, processing monthly progress estimates and verifying quantities and serving as the department's liaison for contractor and public involvement issues. He also ensured that environmental compliance was achieved and all permit conditions were met. The project required maintaining traffic on an active roadway through this vital arterial route with no feasible detours or alternate routes available. Duties also included oversight of all construction activities and analysis and interpretation of project plans and specifications to ensure constructability. **Performed with AMEC (2009 thru 2011)**

\* On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.

For Key Personnel required to be on-site full-time for the duration of construction, provide a current list of assignments, role, and the anticipated duration of each assignment. – **Not Applicable**

## ATTACHMENT 3.3.1

### KEY PERSONNEL RESUME FORM

|   |  |  |
|---|--|--|
| <b>Brief Resume of Key Personnel anticipated for the Project.</b>                   |  |  |
| a. Name & Title:  | <b>Michael Russell, P.E. – Vice President</b>  |  |
| b. Project Assignment:  | <b><i>Design Manager</i></b>   |  |
| c. Name of Firm with which you are now associated:                                  | <b>Whitman, Requardt &amp; Associates, LLP</b>   |  |
| d. Years experience: With this Firm <u>1</u> Years With Other Firms <u>26</u> Years | Please list chronologically (most recent experience first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of experience, please list the experience for those years you have worked. Project specific experience shall be included in Section (g) below):  |  |
|   | <b>Whitman, Requardt &amp; Associates, LLP</b>   | <b>Vice-President</b> <b>2014 – Present</b>            |
|   | Mr. Russell is currently a Vice-President with Whitman, Requardt & Associates, LLP where he is primarily responsible for managing transportation projects in Central and Southwestern Virginia. He currently serves as WRA's Design Manager on major Design-Build projects and Project Manager on major interstate and other transportation projects in the region.  |  |
|   | <b>Virginia Department of Transportation</b>   | <b>District Administrator</b> <b>2011-2014</b>         |
|   | Mr. Russell became the Bristol District Administrator in 2011 and provided executive leadership and direction to the Department's 623 employees in the 12 county Bristol District. He served as an extension of the Commissioner's Office with direct oversight of a Six-Year construction program valued at over \$500M and an annual maintenance and operation budget averaging \$170M per year. He maintained a high level of involvement in the oversight and design of key projects in the District providing design guidance and construction claim resolution. He worked proactively with staff to resolve design and construction issues to ensure the advancement of the District's program. The major highlights of the construction program are the \$2.8B Coalfields Expressway and Corridor Q programs.   |  |
|   | <b>Virginia Department of Transportation</b>   | <b>PE Manager/PIM</b> <b>2008-2011</b>                 |
|   | Mr. Russell became the Salem District Assistant District Administrator for Preliminary Engineering, Planning, and Investment Management in 2008 and led the District's Preliminary Engineering staff including Location & Design, Environmental, and Right of Way sections. He was responsible for all engineering functions to ensure compliance with all state and federal transportation and environmental standards and policies. In addition to the P.E. Manager role, he led the District's Planning & Investment Management staff including Land Use, Land Development, Planning, and Programming.  |  |
|   | <b>Virginia Department of Transportation</b>   | <b>Location &amp; Design Engineer</b> <b>2005-2008</b> |
|   | Mr. Russell became the Salem District Location & Design Engineer in 2005 and subsequently led and managed design staff responsible for the preparation of highway, right of way and construction plans, including survey, roadway and hydraulic design. He coordinated with right of way, environmental, bridge, traffic, and materials sections to ensure a cohesive and collaborative design for all projects. He provided engineering oversight to ensure projects were developed in accordance with applicable state and federal standards. As District L&D Engineer he was responsible for the design of multiple projects from small projects costing less than \$1 million to very complex projects costing \$100 million. His collaborative and hands on approach to project management and design guided the design teams to significantly improve the on-time and on-budget performance of the District's projects and Dashboard performance measures while maintaining a problem solving mindset of the team. |  |
|   | <b>Virginia Department of Transportation</b>   | <b>Resident Engineer</b> <b>2004-2005</b>              |
|   | Mr. Russell became the Wytheville Resident Engineer in 2004. He was responsible for all construction and maintenance activities in Wythe and Grayson Counties. In addition to having geographic responsibility for all VDOT activities in Wythe and Grayson counties, he served as the Department's Responsible Charge Engineer for construction activities and ensured compliance with plans, specifications, environmental requirements and contract documents. He reviewed and accepted independent work order estimates and analysis while focusing on successful field resolution of disputes by providing technical analyses of issues, and negotiating and implementing partnering with contractors to settle conflicts. He was responsible for on-time/on-budget completion and increased controls to track and monitor progress on projects including earned value & cost analysis. He supervised Construction Managers and provided oversight of VDOT inspectors.  |  |
|   | <b>Virginia Department of Transportation</b>   | <b>Transportation Engineer Sr.</b> <b>2000-2004</b>    |
|   | Mr. Russell joined VDOT in 2000 as a Transportation Engineer, SR where he served as project manager for a number of major projects in the Salem District.  |  |

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| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:<br><b>Virginia Polytechnic Institute and State University – Blacksburg, Virginia/B.S./1989/Civil Engineering</b>  |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #:<br><b>1994/Professional Engineer/Virginia/#0402024814</b>   |
| g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none"> <li>1. <i>Note your specific responsibilities and authorities for each project, not those of the firm.</i></li> <li>2. <i>Note whether experience is with current firm or with other firm.</i></li> <li>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i></li> </ol> <p><b>(List at least three (3), but no more than five (5) relevant projects* for which you have performed a similar function.)</b></p> <p><b><i>VDOT I-81 Bridge Replacement over the New River and Route 232 over I-81 – Montgomery and Pulaski Counties, VA – VDOT</i></b></p> <ol style="list-style-type: none"> <li>1. Mr. Russell is the current Project Manager responsible for the design of the \$98 million project, which includes 1.72 miles of improvements to the existing four-lane divided interstate. The improvements consist of the replacement of the existing two-lane bridges over the New River with three-lane bridges in each direction and the replacement of the Route 232 overpass bridge at Exit 105. The I-81 bridges are approximately 1,600 feet long and are 80 feet above the river. I-81 will be widened to provide deceleration and acceleration lanes along I-81. The widening of the mainline bridges and the associated MOT also require the replacement of the Route 232 Bridge over I-81. The project is being developed under a “Turnkey Delivery” and Mr. Russell is providing oversight and coordination for all elements of the design including surveys, roadway, hydraulics, SWM, structural, geotechnical, and traffic engineering, ITS, TMP, environmental permits and utility design. Due to funding constraints, the design is currently being modified to provide for phasing the construction to accelerate construction of the Northbound Bridge and the Route 232 Bridge at Exit 105.</li> <li>2. <b>Firm: Whitman, Requardt and Associates, LLP</b></li> <li>3. <b>December 2014 – June 2016 Advertisement</b></li> </ol> <p><b><i>VDOT Route 29 Solutions Design-Build – Berkmar Avenue Extension Project– Albemarle County – Lane/Corman JV</i></b></p> <ol style="list-style-type: none"> <li>1. Mr. Russell is WRA’s Project Manager responsible for the Berkmar Avenue Extension portion of the very unique Route 29 Solutions Design-Build Project being delivered to VDOT by Lane/Corman JV design-build team. His role on the project team is that of Design Element Lead responsible for the design the 2.5 mile Urban Connector roadway including a 716’ long bridge over the South Fork of the Rivanna River. The design-build project is being delivered on an accelerated schedule with right of way plans completed in just six months and approved construction plans scheduled for December of 2015. Mr. Russell accelerated design efforts needed to advanced right of way approvals and VSMP permits to allow clearing activities to occur before the time of year restrictions of the Northern Long-Eared Bat, which was listed as endangered after the award of the contract. This advanced construction activity has allowed the project to remain on schedule despite what could have been a six month delay to the project and also facilitated construction activities on the Route 29 Widening portion of the project by providing borrow material needed on that phase of construction already underway. The total estimated construction cost for the project is currently \$32 million.</li> <li>2. <b>Firm: Whitman, Requardt and Associates, LLP</b></li> <li>3. <b>December 2014 – October 2017 Planned Completion Date</b></li> </ol> <p><b><i>VDOT I-81 Exit 162 - Widen Northbound and Southbound Bridges – Botetourt County</i></b></p> <ol style="list-style-type: none"> <li>1. Mr. Russell served as VDOT’s Project Manager for the widening and major rehabilitation of the I-81 Bridges at Exit 162 in Botetourt County responsible for coordinating all design activities on the project including roadway, bridge, traffic, right of way, materials, environmental, and drainage/hydraulics. The \$3 million project improved the bridges at one of the highest accident locations on the I-81 corridor due to the mainline horizontal geometry and limited acceleration length onto the southbound lanes and the limited deceleration length in the northbound direction. The accident rate at this location was exacerbated by the inadequate superelevation of the mainline roadway. The project included widening the structures in both directions of I-81 and included specific enhancements to the structure in the southbound direction to provide additional turning movement clearance for heavy trucks. The project required careful attention to the MOT and sequencing of construction due to the known accident rate in the area and the close proximity of Mill Creek required extensive slope protection around the abutments.</li> <li>2. <b>Firm: Virginia Department of Transportation</b></li> <li>3. <b>July 2001 –November 2002</b></li> </ol> <p>* On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.</p> |
| h. For Key Personnel required to be on-site full-time for the duration of construction, provide a current list of assignments, role, and the anticipated duration of each assignment. – <b><i>Not Applicable</i></b>   |

## ATTACHMENT 3.3.1

### KEY PERSONNEL RESUME FORM

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| <b>Brief Resume of Key Personnel anticipated for the Project.</b>  |
| a. Name & Title: <b>Kevin Conner – Construction Manager</b>  |
| b. Project Assignment: <b>Construction Manager</b>   |
| c. Name of Firm with which you are now associated: <b>Orders Construction Company, Inc.</b>  |
| d. Employment History: With this Firm <u>11</u> Years With Other Firms <u>21</u> Years<br>Please list chronologically (most recent first) your employment history, position, general responsibilities, and duration of employment for the last fifteen (15) years. (NOTE: If you have less than 15 years of employment history, please list the history for those years you have worked. Project specific experience shall be included in Section (g) below):<br><br><b>Orders Construction Company, Inc.: Construction Manager (2004-Present):</b> Responsibilities include all phases of on-site construction management and contract compliance for Design-Bid-Build and Design-Build projects, including quality control, construction engineering, personnel supervision, subcontractor management, materials coordination, job site safety, owner relations, and ensuring compliance with all environmental regulations and permit requirements. Provides field construction expertise to Design-Build teams during the design phase of the projects to facilitate the incorporation of specific construction techniques and to minimize risk encountered during the construction phase.<br><br><b>DLB, Inc.: Construction Superintendent, Party Chief (1993-2004):</b> Responsibilities as Construction Superintendent included being the direct site manager for production, safety, schedule, and quality control; managing material orders and subcontractor work. Responsibilities as Party Chief included overseeing all site layouts and making record drawings of completed work.  |
| e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization:<br><b>Bluefield State College, Bluefield, WV/BS/1985/Civil Engineering</b>  |
| f. Active Registration: Year First Registered/ Discipline/VA Registration #:<br><b>Virginia DEQ RLD Certification (Certification RLD02695)</b><br><b>VDOT ESCCC (Certification Number 1559C)</b><br><b>Intermediate Work Zone Traffic Control Certification (Certification No.: 040315750)</b><br><b>ACI Concrete Certification (Certification ID# 01035442)</b>   |
| g. Document the extent and depth of your experience and qualifications relevant to the Project.<br><ol style="list-style-type: none"><li>1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i></li><li>2. <i>Note whether experience is with current firm or with other firm.</i></li><li>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i></li></ol> <b>(List at least three (3), but no more than five (5) relevant projects* for which you have performed a similar function.)</b><br><br><b>Project: I-81 over Maury River, Rockbridge County, VA Project Role: Construction Manager</b><br><b>Responsibilities:</b> This \$19 million project included demolition and replacement of two existing bridges, approximately 300,000 cubic yards of excavation, and maintenance of traffic on I-81, including the installation of a traffic management system. Mr. Conner was responsible for day-to-day site operations, including scheduling men and equipment; overseeing and conducting quality control testing; conducting bridge layout and implanting a complex MOT plan to maintain two lanes of traffic at all times. Participated in routine partnering meetings with VDOT and the project designers from Whitman Requardt & Associates, LLP due to the new and innovative abutment design introduced for the first time on this project. <b>Performed with Orders Construction Company, Inc. (2004-2006)</b><br><br><b>Project: Route 60 Main Street Design-Build Bridge Replacement, Clifton Forge, VA Project Role: Construction Manager</b><br><b>Responsibilities:</b> This design-build project was to replace the Route 60 bridge in downtown Clifton Forge, VA. This project involved replacing a bridge, which abuts commercial buildings on both sides, on Route 60 Westbound over Smith Creek in downtown Clifton Forge and rebuilding Main Street from Commercial Avenue to Ridgeway Street. The project also involved changing Route 60 Business from a one-way (Eastbound only) to a two-way road and removing a traffic island that separated Route 60 Business East and Route 60 West (Main Street). Additionally, traffic signals were added at the intersection of Route 60 and Commercial Avenue. Mr. Conner's responsibilities included day-to-day site operations including directing manpower and equipment; managing subcontractors and vendors; resolving on-site disputes; traffic control inspection; E&S inspections; safety; and working daily with QA/QC manager. <b>Performed with Orders Construction Company Inc. (2011 thru 2013)</b> |

**Project: I-81 Marlowe Overpass, Berkeley Co., WV Project Role: Construction Manager**

**Responsibilities:** Located in Berkeley County on heavily traveled I-81, this project required widening the interchange overpass and mainline approach roadway from four lanes to six. Two lane traffic was maintained in both directions at all times. An additional complication was that roadway and bridge pavement grade elevations were raised as much as six feet requiring extensive shoring of new embankments for the roadway portion of the work and excavations for the bridge portion. Project cost was \$16 Million. Mr. Conner's responsibilities included day-to-day site operations, including supervision of manpower and equipment, up to 40 workers; managing subcontractors and vendors; resolving on-site disputes; installation and monitoring of traffic control, with 55,000 ADT on I-81; monitoring erosion control to protect the Chesapeake Bay watershed; monitoring quality control; safety; developing efficient sequence of construction over four phases; and monitoring layout to ensure proper alignment of staged construction. **Performed with Orders Construction Company, Inc. (2010 thru 2012)**

**Project: I-81 Tabler Station Interchange, Berkeley Co., WV Project Role: Construction Manager**

**Responsibilities:** The project consists of constructing 1.55 miles of new 4-lane highway, with a center turning lane, along new and existing alignment. Relocation of utilities, demolition of structures, and new drainage was required to complete the roadway. A 2-lane overpass bridge crossing I-81 was dismantled and replaced with a new 4-lane bridge in phased construction. An on grade railroad crossing was constructed across the Winchester and Western Railroad. During construction of the overpass across I-81 numerous night time lane closures in heavy traffic were required. Mr. Conner's responsibilities included day-to-day site operations, including directing manpower and equipment; managing subcontractors and vendors; resolving on-site disputes; monitoring traffic, erosion, and quality control; safety; coordination of night closures for steel erection and bridge demolition over I-81; coordination of construction of highway/rail crossing with the Winchester and Western Railroad; and coordination of utility relocation. **Performed with Orders Construction Company, Inc. (2009 thru 2011)**

**Project: US 220 Bypass at Rocky Mount, Franklin County, VA Project Role: Construction Manager**

**Responsibilities:** This \$4 million project includes an overpass and new approaches at Route 220 (S. Main Street) over the Pigg River in phased construction. Other work includes excavation, road widening, and demolition of the existing concrete arch structure. Mr. Conner's responsibilities included day-to-day site operations, including directing manpower and equipment; managing subcontractors and vendors; resolving on-site disputes; monitoring traffic control, erosion control, and quality control; safety; administration of on-the-job training program; preparation of shield, demolition, and steel erection plans over the Pigg River. **Performed with Orders Construction, Inc. (2012 thru 2014)**

\* On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.

h. For Key Personnel required to be on-site full-time for the duration of construction, provide a current list of assignments, role, and the anticipated duration of each assignment.

**Assignment:** I-64 over Kerrs Creek and Maury River Bridge Rehabilitation, Rockbridge County, VA

**Role:** Construction Manager

**Duration:** Orders anticipates promoting the Assistant Construction Manager on this project to fill Kevin Conner's role in Spring 2016 to allow his full time assignment to the I-81 Replacement of Structures over Route 808 and Sinking Creek Design-Build project.

**ATTACHMENT 3.4.1(a)**

**LEAD CONTRACTOR - WORK HISTORY FORM**

**(LIMIT 1 PAGE PER PROJECT)**

| a. Project Name & Location   | b. Name of the prime design consulting firm responsible for the overall project design. | c. Contact information of the Client or Owner and their Project Manager who can verify Firm's responsibilities.  | d. Contract Completion Date (Original) | e. Contract Completion Date (Actual or Estimated)   | f. Contract Value (in thousands) |  | g. Dollar Value of Work Performed by the Firm identified as the Lead Contractor for this procurement.(in thousands) |
|--|---|--|--|---|----------------------------------|--|---|
|  |   |  |  |   | Original Contract Value          | Final or Estimated Contract Value  |   |
| Name: <b>I-81 Over Maury River</b><br><br>Location: <b>Rockbridge County, VA</b> | Name: <b>Whitman, Requardt &amp; Associates, LLP</b>                                    | Name of Client/ Owner: <b>Virginia Department of Transportation</b><br><b>P.O. Box 2249</b><br><b>Staunton, VA 24402</b><br>Phone: <b>540-332-9074</b><br>Project Manager: <b>Randy Kiser</b><br>Phone: <b>540-332-9075</b><br>Email: <b>Randy.Kiser@VDOT.Virginia.gov</b> | <b>12/2006</b>                         | <br><b>12/2006</b> | <b>\$17,736</b>                  | <br><b>\$18,991 (including incentive payment)</b> | <b>\$18,991</b>   |

h. Narrative describing the Work Performed by the Firm identified as the Lead Contractor for this procurement. If the Offeror chooses to submit work completed by an affiliated or subsidiary company of the Lead Contractor, identify the full legal name of the affiliate or subsidiary and the role they will have on this Project, so the relevancy of that work can be considered accordingly.

***Relevance to the I-81 Bridges over Halls Bottom Road and Sinking Creek Project***

- ✓ Roadway
- ✓ Bridge
- ✓ Geotechnical
- ✓ Karst Topography
- ✓ Environmental
- ✓ MOT & TMP
- ✓ Public Outreach

**PROJECT DESCRIPTION**

Orders served as general contractor on this project for the replacement and widening of twin bridges over the Maury River on a heavily traveled section of I-81 in Rockbridge County, VA. This project included significant roadway work, including approach roadways being widened to accommodate maintenance of traffic and future widening of I-81. Multiple traffic shifts were required to adjust the approach alignment to accommodate the wider bridges. The 800' long bridge structures totaled more than 100,000 square feet of deck area and included innovative and complex expansion devices at each end known as the Virginia Abutment, designed by Whitman Requardt & Associates, LLP (WRA). Other facets were significant rock excavation, roadway drainage, asphalt paving, signing, guardrail, and a new traffic management system. Additionally, a full-time "Safety Service Patrol" was used due to the high traffic volumes. This relatively simple accommodation reduced incident clearance times significantly during the construction duration.

**Evidence of good performance** – Orders partnered with VDOT and strived continually to improve upon the aggressive construction schedule and earned an early completion incentive of more than \$400,000. This project also won the 2006 *Award for Excellence in Construction* from the VDOT Staunton District.

**LESSONS LEARNED** include the unique goals and priorities toward which VDOT strives on major bridge projects, and how to meet and exceed VDOT's standards. In addition, Orders gained valuable experience working in and adjacent to a heavily traveled road and development of TMP for the safety of their workers and the traveling public. This experience with traffic control and MOT will carry over to the Halls Bottom Road project. Partnering was significant to this project because everyone understood the value of finishing on time. Orders' partnered with VDOT and WRA to compress the project schedule and to resolve design/construction issues quickly. This experience will apply as Orders keeps the project at hand on schedule. Orders was attentive to environmental concerns related to the installation of cofferdams for bridge piers. Regulators were pleased the river was spanned with a temporary bridge. Orders will continue this practice of partnering and being attentive to the risks at the Halls Bottom project. Additionally, while working with WRA on the construction of piers and abutments foundations, Orders learned much about the karst substrata in the area and how to mitigate design and construction issues. Many key staff from Orders including Charlie Stokes and Kevin Conner will apply these lessons learned to the I-81 Bridge Replacement over Halls Bottom Road and Sinking Creek Project.

***Orders Team Advantage***

***Orders is proposing the same Construction Manager and Roadway, Bridge, Geotechnical and Hydraulics Design Team for the I-81 Bridge Replacement project ensuring a proven integrated team approach to the project, which will allow the Lessons Learned to be applied directly to the project.***



\*For a project with multiple phases or multiple contracts, only one phase or one contract will be considered. If additional phases or contracts are shown under the same Work History Form, only the first phase or contract listed will be evaluated.

**ATTACHMENT 3.4.1(a)**

**LEAD CONTRACTOR - WORK HISTORY FORM**

**(LIMIT 1 PAGE PER PROJECT)**

| a. Project Name & Location  | b. Name of the prime design consulting firm responsible for the overall project design. | c. Contact information of the Client or Owner and their Project Manager who can verify Firm's responsibilities.   | d. Contract Completion Date (Original) | e. Contract Completion Date (Actual or Estimated)   | f. Contract Value (in thousands) |  | g. Dollar Value of Work Performed by the Firm identified as the Lead Contractor for this procurement.(in thousands) |
|---|---|---|--|---|----------------------------------|--|---|
|   |   |   |  |   | Original Contract Value          | Final or Estimated Contract Value  |   |
| Name: <b>Route 670 Bridge Replacement over South Holston Lake</b><br><br>Location: <b>Washington County, VA</b> | Name: <b>AECOM</b>  | Name of Client/ Owner: <b>Virginia Department of Transportation</b><br><b>870 Bonham Road</b><br><b>Bristol, VA 24201</b><br>Phone: <b>276-696-3367</b><br>Project Manager: <b>Marty Halloway</b><br>Phone: <b>276-791-2189</b><br>Email: <b>Marty.Halloway@VDOT.Virginia.gov</b> | <b>06/2015</b>                         | <br><b>06/2015</b> | <b>\$16,237</b>                  | <br><b>\$17,677</b> | <b>\$17,677</b>   |

h. Narrative describing the Work Performed by the Firm identified as the Lead Contractor for this procurement. If the Offeror chooses to submit work completed by an affiliated or subsidiary company of the Lead Contractor, identify the full legal name of the affiliate or subsidiary and the role they will have on this Project, so the relevancy of that work can be considered accordingly.

***Relevance to the I-81 Bridges over Halls Bottom Road and Sinking Creek Project***

- ✓ Roadway
- ✓ Bridge
- ✓ MOT
- ✓ Geotechnical
- ✓ Karst Topography
- ✓ Environmental
- ✓ Retaining Walls
- ✓ Public Outreach

**PROJECT DESCRIPTION**

Orders was general contractor on this project to replace the Route 670 Avens Bridge over South Holston Lake. The greatest challenge was to build the bridge in the deep water of South Holston Lake, while being in close proximity to the existing Route 670 bridge and high voltage power lines. This project included significant bridge work, including approach roadway realignment, drilled shafts in 80+ feet of water, and barge/crane work. The 1,005-foot long bridge structure totaled more than 34,500 square feet of deck and included 8 complex drilled shafts in deep water. Other features of the project were roadway drainage, more than 5,000 cubic yards of borrow excavation, asphalt paving, and signing. Nearly 2,000,000 pounds of structural steel erection and winter concrete work on the bridge took place.

**Evidence of good performance** – Despite abutment foundation issues that were encountered during the project significant enough to require re-design, Orders finished the project within the originally planned completion date and significantly under the final contract amount of the project by partnering with VDOT and adding additional crews and utilizing temporary bents for steel erection to keep the project on schedule to offset delays associated with the adjustments to the abutment design.

**LESSONS LEARNED**

Orders gained valuable experience, which will apply to the Halls Bottom project. Working through foundation issues presented unique challenges and influenced Orders to change to a more aggressive construction schedule. Orders' partnered with the VDOT Bristol District to complete this project on time and in a safe manner. Orders also gained experience with handling both roadway and boat traffic on this project and worked with VDOT Public Relations to notify the public of upcoming construction activities. Foundations were designed to be constructed on drilled shaft and spread footers in karst terrain and required changes daily to meet the conditions encountered in the field. This included adjustments to drilling techniques, pile driving and concrete placement. Ground heaters were added to the list of Orders extensive equipment to better insure quality for winter placement of concrete. The dynamic nature of this project and a common desire for safety and project success necessitated a strong working relationship between VDOT Bristol District Construction, VDOT's consultant CEI staff (Chad McMurray with AMT), District Bridge Section staff and key Orders Construction staff including Charlie Stokes and Josh Sproles. Those relationships forged on the Avens project will carry through to the I-81 Bridge Replacement over Halls Bottom Road and Sinking Creek Design-Build project.

***Orders Team Advantage***

***Orders is proposing the same Construction Project Manager, Project Engineer, for the I-81 Bridge Replacement project. Additionally, Chad McMurray (Orders DB Team QAM) assisted VDOT with CEI. These relationships will carry over to the project, which will allow the Lessons Learned to be applied directly to the project.***



\*For a project with multiple phases or multiple contracts, only one phase or one contract will be considered. If additional phases or contracts are shown under the same Work History Form, only the first phase or contract listed will be evaluated.

**ATTACHMENT 3.4.1(a)**

**LEAD CONTRACTOR - WORK HISTORY FORM**

**(LIMIT 1 PAGE PER PROJECT)**

| a. Project Name & Location   | b. Name of the prime design consulting firm responsible for the overall project design. | c. Contact information of the Client or Owner and their Project Manager who can verify Firm's responsibilities.   | d. Contract Completion Date (Original) | e. Contract Completion Date (Actual or Estimated)   | f. Contract Value (in thousands) |   | g. Dollar Value of Work Performed by the Firm identified as the Lead Contractor for this procurement.(in thousands) |
|--|---|---|--|---|----------------------------------|---|---|
|  |   |   |  |   | Original Contract Value          | Final or Estimated Contract Value   |   |
| Name: <b>Route 60 Main Street Bridge Replacement</b><br><br>Location: <b>Town of Clifton Forge, Alleghany County, VA</b> | Name: <b>Clark Nexsen, Inc.</b>   | Name of Client/ Owner: <b>Virginia Department of Transportation</b><br><b>275 Alphin Lane</b><br><b>Lexington, VA 24450</b><br>Phone: <b>800-367-7623</b><br>Project Manager: <b>George Bezold</b><br>Phone: <b>540-462-6990</b><br>Email: <b>George.Bezold@VDOT.Virginia.gov</b> | <b>12/2012</b>                         | <br><b>10/2012</b> | <b>\$3,488</b>                   | <br><b>\$3,488</b> | <b>\$3,488</b>  |

h. Narrative describing the Work Performed by the Firm identified as the Lead Contractor for this procurement. If the Offeror chooses to submit work completed by an affiliated or subsidiary company of the Lead Contractor, identify the full legal name of the affiliate or subsidiary and the role they will have on this Project, so the relevancy of that work can be considered accordingly.

- Relevance to the I-81 Bridges over Halls Bottom Road and Sinking Creek Project**
- ✓ Design-Build
  - ✓ Roadway
  - ✓ Bridge
  - ✓ Geotechnical
  - ✓ Karst Topography
  - ✓ Hydraulics & SWM
  - ✓ MOT & TMP
  - ✓ Public Outreach

**PROJECT DESCRIPTION**

Orders was general contractor on this design-build project to replace the Main Street Bridge in downtown Clifton Forge. The greatest challenge was to build the bridge which directly abuts old historical and commercial buildings on both sides and also provide public access to these buildings throughout construction. The contract also included the reconstruction of Main Street, reconfiguration of two-way traffic flow on Ridgeway Street, and the addition of traffic signals at the intersection of Route 60 and Commercial Avenue. Orders worked closely with the entire design-build team, the Town of Clifton Forge, and VDOT and resolved several unforeseen issues during construction without a single change order to the project and still completed the project *two months* ahead of schedule.

**Evidence of good performance** – The project was ahead of schedule, quality was in the forefront; and there were no deficiencies. Through careful management of public relations with affected businesses and city officials, all stakeholders remain supportive of the project, in spite of its effect on the downtown area.

**LESSONS LEARNED**

Truck traffic was one of the big concerns at Clifton Forge, and the project had tight constraints on the Route 60 detour. The computer program Auto Turn was used to ensure that large trucks could navigate the roadway. While the westbound Route 60 bridge was being replaced, Clark Nexsen designed and Orders constructed a two-way traffic system on Clifton Forge's Ridgeway Street by widening turns and reconfiguring parking arrangements to allow truck and bus traffic to navigate the town. Elevated temporary walkways were also designed and implemented to allow pedestrian traffic to access local businesses on Main Street while the bridge structure was being replaced. Also, well-planned signage and pavement markings prevented traffic accidents on the detour. This experience will apply at the Halls Bottom Road project as the risks of traffic control and MOT are handled. Additionally, the Clifton Forge project was constrained by limited right-of-way needed to accomplish widening. At Clifton Forge there were also unique requirements of working in a historic district. Downtown Clifton Forge is on the National Register of Historic Places, and the historic Masonic Theater was one of the structures touching the bridge to be replaced. The theater merited special consideration in Orders' demolition and erection plans, and construction impacts were tracked through the installation of vibration monitors on the structure. The construction phase of this project was much more streamlined and coherent than traditional design-bid-build.

**PROJECT ACCOLADES**

The Route 60 Design Build project received the **2014 ACEC Engineering Excellence Honor Award**; was presented as the **Small Transportation Project of the Year** at the San Jose, CA DBIA conference in 2014; and the **APWA Mid-Atlantic Public Works Project of the Year**.

**Orders Team Advantage**

*Orders is proposing the same Design-Build Project Manager, Construction Manager, and Project Engineer for the I-81 Bridge Replacement project ensuring a proven integrated team approach to the project, which will allow the Lessons Learned to be applied directly to the project.*

\*For a project with multiple phases or multiple contracts, only one phase or one contract will be considered. If additional phases or contracts are shown under the same Work History Form, only the first phase or contract listed will be evaluated.



**ATTACHMENT 3.4.1(b)**

**LEAD DESIGNER – WORK HISTORY FORM**

**(LIMIT 1 PAGE PER PROJECT)**

| a. Project Name & Location  | b. Name of the prime/general contractor responsible for overall construction of the project. | c. Contact information of the Client and their Project Manager who can verify Firm’s responsibilities.  | d. Construction Contract Completion Date (Original) | e. Construction Contract Completion Date (Actual or Estimated) | f. Contract Value (in thousands)                      |  | g. Design Fee for the Work Performed by the Firm identified as the Lead Designer for this procurement (in thousands). |
|---|--|---|---|--|---|--|---|
|   |  |   |   |  | Construction Contract Value (Original)                | Construction Contract Value (Actual or Estimated)      |   |
| Name: <b>I-81 BRIDGE OVER NEW RIVER AND ROUTE 232 BRIDGE OVER I-81</b><br>Location: Montgomery and Pulaski Counties, VA | Name: Construction Advertisement scheduled for mid-2016 - Contractor TBD                     | Name of Client: <i>Virginia Department of Transportation (VDOT)</i><br>Phone: (540) 387-5332<br>Project Manager: Mr. Timothy Dowdy<br>Phone: (540) 387-5332<br>Email: Timothy.Dowdy@VDOT.Virginia.gov | 04/2019 (Estimated)                                 | 04/2019 (Estimated)  | \$58,000 (Phase I)<br>\$40,000 (Phase II) (Estimated) | \$58,000 (Phase I)<br>\$40,000 (Phase II) (Est. Final) | \$4,200   |

h. Narrative describing the Work Performed by the Firm identified as the Lead Designer for this procurement. Include the office location(s) where the design work was performed and whether the firm was the prime designer or a subconsultant.

**Relevance to the I-81 Bridges over Halls Bottom Road and Sinking Creek Project**

- ✓ Roadway
- ✓ Retaining Walls
- ✓ Bridge
- ✓ Future I-81 Widening
- ✓ Environmental Permits
- ✓ Hydraulics and SWM
- ✓ Geotechnical
- ✓ TMP
- ✓ Public Involvement
- ✓ Design QA/QC
- ✓ Construction Engineering
- ✓ Project Management

**PROJECT DESCRIPTION**

VDOT retained WRA as the prime consultant to provide comprehensive planning and engineering design services to VDOT for the replacement of two 1,600-foot bridges that carry Interstate 81 traffic over the New River, and replacement of the Route 232 Bridge over I-81. Services include planning and design of I-81 bridge replacements and approaches; bridge replacement of the Route 232 bridge over I-81; traffic data collection, forecasting/analysis, and preparation of an Interchange Modification Report for FHWA; hydrologic and hydraulic analyses; flood plain studies; surveys; and all aspects of public involvement, including individual meetings with project stakeholders to cultivate understanding and support of the project’s goals and objectives. WRA is responsible for all aspects of project planning and design, as well as support during construction in the form of shop drawing reviews, addressing requests for information, and assisting the Department with technical support during construction. WRA is the prime designer on the project, and the majority of design efforts have been accomplished by WRA staff in our Blacksburg and Richmond offices.

**Roadway Design** – The project required reconstruction of approximately 1.085 miles of mainline I-81. Due to identified funding limitations following the Field Inspection stage of project development, the Department found it necessary to phase the project such that the I-81 NB bridge replacement project is constructed on the original schedule (Phase 1), while the I-81 SB bridge replacement project (Phase 2) is delayed until funding is available. In order to keep the I-81 SB (Phase 2) project “shovel ready” if additional funding becomes available, VDOT’s desire was to complete the Phase 2 project design on the original schedule. This phasing required separating the project into two independent construction plan sets while in final design, and doubling the number of PAC Constructability and PAC review meetings all while maintaining the original schedule.

**Bridge Design** – This project includes replacement of the existing I-81 bridges over the New River with a new 7-span, continuous, haunched structural steel superstructure resting on dual hammerhead piers with a total length of approximately 1,670 feet. The bridges carry three lanes with shoulders each north and southbound. The bridge will incorporate jointless concepts by utilizing the Virginia style abutments (developed by WRA), which encase the end of the structural steel with a floating concrete backwall and a tooth joint in the abutment. The northbound bridge will be constructed in two phases, and the southbound bridge in a single phase. Also included in the project is the reconstruction of the Route 232 bridge over I-81, which includes a complete replacement structure 300 feet long with a two-span continuous, steel superstructure on a conventional pier with semi-integral abutments. WRA worked closely with VDOT to confirm that the design of the proposed bridges would accommodate future widening of I-81 and included proposed widening concepts in the Stage I Bridge Report.

**Geotechnical Design** – The project area is situated in complex geological formations, including the Pulaski fault and karst topography. The known presence of karst topography required extensive subsurface analysis and varied pier foundation designs to minimize the risk during construction. Retaining walls are required to eliminate shoulders from spilling down large existing fill slopes. Additionally, as the project entered final design significant changes to the stormwater management regulations had a profound impact on the design of stormwater management basins requiring additional geotechnical investigations for those design features.

**Drainage/H&HA/SWM Design** – With the bridges spanning the New River and its tributaries paralleling I-81 leading to the New River, extensive modelling of the New River was required to ensure all applicable impacts of the construction were considered. The phasing of the project introduced a need to model each phase independently to ensure no-rise of the 100-year flood elevation of the river. Additionally, as the project encountered evolving stormwater management regulations, the stormwater features had to be redesigned in a particularly constrained environment due to the location of the project and the proximity of the river. This additional design effort was required to be completed within the initial advertisement schedule. Due to the project construction phasing described above, Phase 1 SWM design was designed in accordance with Performance Based Criteria and Phase 2 SWM was designed in accordance with new Runoff Reduction Method Criteria.

**TMP** – The sequence of construction and maintenance of traffic requires two lanes of traffic to be maintained during construction with only minimal nighttime lane closures permitted. Short durations of the Route 232 off ramp is incorporated to facilitate the construction of the Route 232 bridge. All traffic impacts were carefully coordinated with the Southwest Regional Operations group with additional restrictions placed on construction activities to coincide with high traffic events associated with nearby Virginia Tech and Radford University. The project incorporates long term high-speed crossovers in the second phase when southbound

traffic will be shifted on to the newly constructed northbound bridge, which is designed to accommodate four lanes of traffic during that phase. Construction vehicle access from the mainline I-81 was carefully considered and improvements to the mainline shoulder incorporated both for long-term incident management along I-81 but also to serve as an acceleration lane for construction vehicles. As noted earlier, the phasing of the project during final design necessitated the development of independent MOT plans for the two phases of the project.

**Public Involvement** – WRA provided all presentation materials and participated in the Design Public Hearing for the project. Due to the adjacent New River and City of Radford property, several stakeholder meetings were needed to ensure the public’s understanding and support of the project.



**WRA Team Advantage**

*WRA is proposing the same core Roadway, Bridge, and Geotechnical Design Team for the I-81 Bridge Replacement project ensuring a proven integrated team approach to the project, which will allow the Lessons Learned to be applied directly to the project.*

**ATTACHMENT 3.4.1(b)**

**LEAD DESIGNER – WORK HISTORY FORM**

**(LIMIT 1 PAGE PER PROJECT)**

| a. Project Name & Location   | b. Name of the prime/general contractor responsible for overall construction of the project. | c. Contact information of the Client and their Project Manager who can verify Firm’s responsibilities.  | d. Construction Contract Completion Date (Original) | e. Construction Contract Completion Date (Actual or Estimated)                                 | f. Contract Value (in thousands)       |   | g. Design Fee for the Work Performed by the Firm identified as the Lead Designer for this procurement (in thousands). |
|--|--|---|---|--|--|---|---|
|  |  |   |   |  | Construction Contract Value (Original) | Construction Contract Value (Actual or Estimated)   |   |
| <b>Name: I-81 BRIDGES OVER BUFFALO CREEK</b><br><br>Location:<br>Rockbridge County, VA | Name: Fairfields Echols, LLC<br>(Fairfield Skanska, Inc.)                                    | Name of Client: <i>Virginia Department of Transportation (VDOT)</i><br>Phone: (540) 332-7724<br>Project Manager: Mr. Wayne Nolde<br>Phone: (540) 332-7724<br>Email: Wayne.Nolde@VDOT.Virginia.gov | 07/2007   | <br>07/2007 | \$27,151                               | <br>\$28,897<br>(including approved work orders) | \$2,221   |

h. Narrative describing the Work Performed by the Firm identified as the Lead Designer for this procurement. Include the office location(s) where the design work was performed and whether the firm was the prime designer or a subconsultant.

- Relevance to the I-81 Bridges over Halls Bottom Road and Sinking Creek Project**
- ✓ Roadway
  - ✓ Bridge
  - ✓ Future I-81 Widening
  - ✓ Environmental Permits
  - ✓ Hydraulics and SWM
  - ✓ Geotechnical (Karst)
  - ✓ TMP
  - ✓ Public Involvement
  - ✓ Design QA/QC
  - ✓ Construction Engineering
  - ✓ Project Management

**PROJECT DESCRIPTION**

WRA was selected as the prime designer for the I-81 bridge replacement project at Buffalo Creek. WRA completed approximately 90% of the design from our Richmond, Virginia office. The bridges had reduced shoulder width and were classified as functional obsolete. The project was to be the first part of the I-81 reconstruction efforts and were designed to widen I-81 from 4 to 6 lanes.

**Roadway Design** – The project required the reconstruction of approximately one mile of the interstate facility. The design required total replacement of the existing pavement section, which required the roadway typical section to be shifted to the east to ensure two travel lanes were maintained during construction at all times.

**Hydraulic Analysis** – The project required a detailed hydraulic analysis of Buffalo Creek to ensure the project had no impact to the 100-year flood elevation. Additionally, the analysis included the evaluation of temporary causeways into the stream during construction. Three stormwater management facilities were designed for the projects and all existing corrugated metal drainage pipes were replaced requiring the boring and jacking of several pipes. The projects also included the design of the extension of 2 box culverts.

**Geotechnical Engineering** – WRA provided all geotechnical engineering services for the project, which included an extensive testing and boring program to locate potential karst features. Our geologists performed extensive site visits and used dye testing to identify underground stream features that may have impacted the project design. At the Buffalo Creek northbound bridge it was determined the existing median contained a major underground stream network. The bridge and roadway improvements were shifted to the outside of the existing northbound I-81 lanes to avoid the karst features. WRA provided a detailed geotechnical report including the design of a major embankments, rock cut slopes and bridge foundations.

**Structural Design** – The structural design of the two I-81 bridges over the Buffalo Creek gorge with a depth well over 100 feet on I-81 was a main focus of the design. The bridges were on independent alignments and grade with approximately 1,000’ distance between the roadways. The NBL bridge was the more challenging design due to the requirement that it be constructed in two stages just downstream from the existing bridge, and due to the site topography. Alignment studies also revealed the need to raise the profiles of the bridges approximately 8 feet to meet current FHWA Interstate Design Standards. The design consists of continuous hybrid steel plate girder bridges with the following span configurations: NBL Bridge: 137’-166’-166’-137’ = 606’ and the SBL Bridge: 138’-154’-154’-138’ = 584’. The NBL Bridge is on a curved alignment while the SBL Bridge is on a tangent alignment. Both bridges required tall piers of up to 110 feet in height due to the depth of the gorge. The Buffalo Creek bridges featured an innovative design element for the treatment of the deck joints at the abutments. The ends of the steel girders are encased in a concrete diaphragm that is integral with the deck and located just beyond the bearings. The deck joints are tooth expansion joints that are located on the abutment side of the concrete diaphragm. VDOT has since included the detail in the Design Guidelines as a special alternative joint detail known as the Virginia Abutment. The design of the bridge was carefully coordinated with VDOT to ensure that it would accommodate future widening of I-81 to four lanes in each direction.

**TMP** – The sequence of construction and maintenance of traffic required all existing travel lanes to remain open during construction. This required a phased construction of the bridges. The Buffalo Creek northbound bridge was constructed in two phases, while the southbound bridge was shifted into the median and constructed in a single phase.

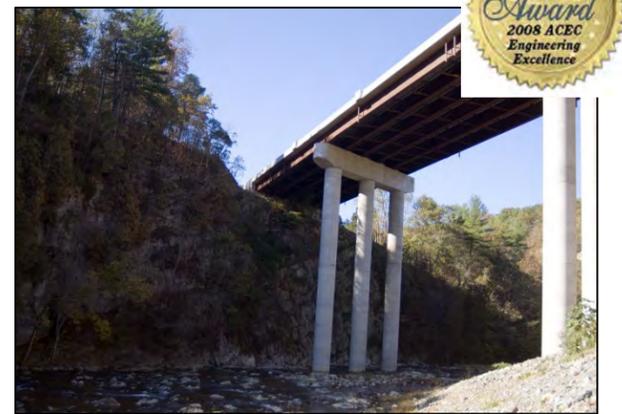
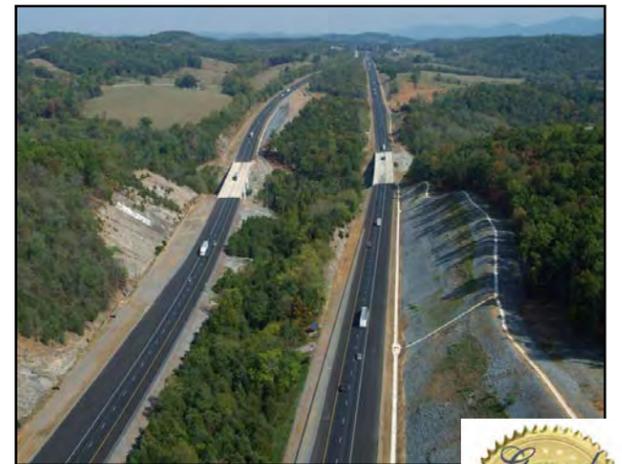
**Public Involvement** – WRA provided all presentation materials and participated in the Design Public Hearing for the project.

Project Awards:

**VDOT Virginia Statewide Construction Quality Award, NPHQ Award “Breaking The Mold” and ACEC Grand Award For Design Excellence**

**LESSONS LEARNED FOR THE I-81 BRIDGE REPLACEMENT PROJECT**

- **Geotechnical** – Early involvement of geotechnical staff can have a significant enhancement to constructability and cost of project.
- **Innovation in Bridge Design** – Innovative bridge design eliminated all deck joints over the steel girders to reduce maintenance.
- **Permitting** – Permits must carefully consider all temporary construction impacts required by the contractor.



**WRA Team Advantage**  
*WRA is proposing the same core Roadway, Bridge, Geotechnical and Hydraulics Design Team for the I-81 Bridge Replacement project ensuring a proven integrated team approach to the project, which will allow the Lessons Learned to be applied directly to the project.*

**ATTACHMENT 3.4.1(b)**

**LEAD DESIGNER – WORK HISTORY FORM**

**(LIMIT 1 PAGE PER PROJECT)**

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|--|--|--|---|---|--|--|---|
|  |  |  |   |   | Construction Contract Value (Original) | Construction Contract Value (Actual or Estimated)  |   |
| Name: <b>DESIGN-BUILD FALL HILL AVE. WIDENING &amp; MARY WASHINGTON BLVD EXTENSION</b><br>Location: Fredericksburg, VA | Name:<br>Corman Construction   | Name of Client: <i>Virginia Department of Transportation (VDOT)</i><br>Phone: (540) 899-4214<br>Project Manager: Mr. Michael T. Coffey, PE<br>Phone: (540) 899-4214<br>Email: michael.t.coffey@vdot.virginia.gov | 01/2017   | <br>01/2017<br>(Estimated) | \$30,784                               | <br>\$31,081<br>(Est. Final – including approved work orders) | \$1,815   |

h. Narrative describing the Work Performed by the Firm identified as the Lead Designer for this procurement. Include the office location(s) where the design work was performed and whether the firm was the prime designer or a subconsultant.

- Relevance to the I-81 Bridges over Halls Bottom Road and Sinking Creek Project**
- ✓ Design-Build
  - ✓ Roadway
  - ✓ Bridge
  - ✓ Environmental Permits
  - ✓ Hydraulics and SWM
  - ✓ Geotechnical
  - ✓ MOT & TMP
  - ✓ Public Involvement
  - ✓ Design QA/QC
  - ✓ Construction QC
  - ✓ Construction Engineering
  - ✓ Project Management

**Project Description** – The Fall Hill Design-Build Project included widening Fall Hill Avenue to a four-lane divided highway from Carl D. Silver Parkway to an extension of Mary Washington Boulevard from Route 1 and included the replacement of a substandard bridge over I-95 to a new four-lane bridge.

**Relevant Project Scope and Complexity** – WRA was the lead design firm for this Design-Build project responsible for preparing final engineering design documents and approvals for major improvements to the existing Fall Hill Avenue corridor and extension of Mary Washington Boulevard and bridge over I-95 in the City of Fredericksburg, VA. Existing Fall Hill Avenue is a two-lane roadway with no bike facility and limited pedestrian facilities. Along the project alignment are Snowden Park, Rappahannock Canal, and several historic resources that are impacted by the project.

The proposed roadway provides a four-lane divided urban street with a 10-foot shared-use path on the north side and a 5-foot sidewalk on the south. A key project feature is the roundabout at the Fall Hill Avenue and Mary Washington Boulevard intersection. The roundabout design was developed to provide smooth traffic flow while minimizing historic resource impacts. There are major conflicts with above and underground utilities along the entire project alignment. The project also replaces the Fall Hill Avenue bridge over I-95. This bridge is designed to accommodate the planned future improvements along the I-95 corridor.

The project was led from the WRA Richmond, VA office and additional design work was performed from the Baltimore, MD office. Services included highway design, hydrologic and hydraulic design, stormwater management (SWM) design, erosion and sediment control design, geotechnical engineering, pavement evaluation and design, maintenance of traffic, signing, lighting, pavement markings, traffic signalization, bridge structural design, retaining wall design, sound wall design, park design, utility relocation/coordination, public involvement, permitting and coordination with project stakeholders. WRA will also be providing

quality control and construction related design support services.

The traffic volumes on Fall Hill Avenue, Mary Washington Boulevard, and I-95 are significant and required a well-planned and extensive Maintenance of Traffic and Transportation Management Plan to minimize impacts to the travelling public during construction. Two 11-foot lanes are being maintained in each direction at all times on both Fall Hill Avenue and Mary Washington Boulevard. Existing pedestrian facilities are being maintained at all times. Existing travel lanes and left turn lanes are being maintained, except during short-term lane closures. Existing travel lanes and widths on I-95 will be maintained at all times, except when placing the bridge girders and removing the existing bridge.

**Proven Cooperative Work and Teaming Experience** – WRA participated in the Kickoff Meeting, which sets goals and objectives during the early stages of design. Subsequent monthly meetings are held with the client to ensure goals and objectives are being met by discussing the project progress, quality, resolve issues, and current/future schedule activities. In addition, internal team meetings are held every week to ensure project progress is on track with the proposed schedule and that all team members needs are efficiently addressed.

**Skills and Qualifications to Successfully Design and Construct as Evidenced by this Project** – WRA’s innovative approach to the project has helped to reduce construction and future maintenance costs, improve constructability, and reduce construction duration by eliminating the longitudinal joints across the bridge, utilizing the MSE wall abutments, and providing semi-integral abutments. The horizontal and vertical alignments were revised to reduce the construction limits within the conservation easement and historic resources along Fall Hill Avenue, which further minimizes the impacts to these significant resources. The median was widened in two locations to provide additional green space without additional right-of-way needs. Additional retaining walls were utilized to reduce wetland and stream impacts along with a reduction of impacts to civil war trenches. The WRA design also eliminated the need for two stormwater management facilities along Mary Washington Boulevard.

**Successful Delivery & Good Performance** – The project is anticipated to be delivered on schedule and within the approved budget. The innovative design and construction will provide for a significantly improved alignment, less impacts to the environment and a vital link between Fall Hill Avenue and Route 1.

**LESSONS LEARNED FOR THE I-81 BRIDGE REPLACEMENT PROJECT**

- **Communication** – Early and continual communications between the Design-Build Team internally, and with VDOT District staff allowed for rapid resolution of issues both during the design and construction of the project.
- **MOT** – The heavily travelled I-95 Corridor and local traffic necessitated a detailed MOT to ensure that the work zone was safe for the travelling public and the construction workers. This plan facilitated construction operations from the very beginning.



**WRA Team Advantage**  
WRA is proposing the same core Bridge, Geotechnical and Hydraulics Design Team for the I-81 Bridge Replacement project ensuring a proven integrated team approach to the project, which will allow the Lessons Learned to be applied directly to the project.



*in conjunction with*



Whitman, Requardt & Associates, LLP  
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*Subconsultants:*

