

Original

AUGUST 17, 2022

Statement of Qualifications

I-81 WIDENING

MM 221 to MM 225

Augusta County, Virginia

State Project No.: 0081-007-013, B638,
B639, B640, B641, B642, C501, D602,
D603, P101, R201

Federal Project No.: NHPP-081-2(329)

Contract ID Number: C00116269DB116



in association with WSP USA Inc.



14500 Avion Parkway, Suite 200
Chantilly, VA 20151

August 17, 2022

Commonwealth of Virginia
Department of Transportation (VDOT)
1401 E. Broad Street
Richmond, Virginia 23219
Attention: Joseph Clarke, P.E. DBIA (APD Division)

RE: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013, B638, B639, B640, B641, B642, C501, D602,
D603, P101, R201
Federal Project No.: NHPP-081-2(329)
Contract ID Number: C00116269DB116

Dear Mr. Clarke:

The Lane Construction Corporation (Lane) is pleased to submit this Statement of Qualifications for the above referenced project to the Virginia Department of Transportation (VDOT).

Lane is the Offeror and will be the overall authority on the I-81 Widening MM 221 to MM 225 Design-Build (D-B) Project, referred to as “the Project,” as well as the Lead Contractor. We have teamed with **WSP USA Inc. (WSP)** as the Lead Designer. WSP has provided transportation planning and engineering design services to VDOT for over 70 years and is currently the Lead Designer on two of Lane’s largest D-B projects in North Carolina. Together, we provide VDOT with a reputable team that has completed projects of this size and scope on time and on budget as evidenced in our collective project experiences.

Our team of professionals, featuring additional hand-selected design and construction specialty firms, who are well experienced with VDOT processes and procedures, will provide the design and construction for the Project. The Lane Team has assembled committed personnel, with proven, successful delivery of VDOT contracts to meet the similar requirements of quality, safety, and schedule demands of this Project. We are confident in our Team’s structure and experience and have elaborated on our distinctive qualifications in the subsequent sections.

3.2.2 Offeror’s Point of Contact Information: Mr. John Havel, PE is the authorized representative and Point of Contact for Lane for all matters associated with this qualifications submittal.

John Havel, PE, Pursuit Manager
14500 Avion Parkway, Suite 200
Chantilly, VA 20151
Tel: (412) 445-0423 Fax: (703) 222-5960
Email: JPHavel@laneconstruct.com

3.2.3 Offeror’s Principal Officer Information: Mr. Ignacio Botella is a Principal Officer of Lane.

Ignacio Botella, President & CEO (The Lane Construction Corporation)
90 Fieldstone Court
Cheshire, CT 06410
Tel: (203) 235-3351 Fax: (203) 237-4260
Email: IBotella@laneconstruct.com

3.2.4 Offeror's Corporate Structure: Lane was founded in 1890 and was incorporated in the State of Connecticut on April 5, 1902. Lane will undertake financial responsibility for the Project and has no known liability limitations. Lane's pre-qualification status/capabilities with VDOT are well in excess of the requirements of this Project. The co-sureties will furnish a single 100% performance bond and a single 100% payment bond.

3.2.5 Lead Contractor and Lead Designer: The full legal name of the Offeror is: The Lane Construction Corporation. Lane will serve as the prime/general contractor responsible for overall construction of the Project and will serve as the legal entity with whom VDOT will execute the contract. The full legal name of the Lead Designer is: WSP USA Inc. WSP will serve as the lead design firm responsible for the overall design of this Project under contract to Lane.

3.2.6 Affiliated/Subsidiary Companies: A complete list of our respective companies' affiliates and subsidiary companies may be found in the Appendix.

3.2.7 Debarment Forms: Certifications for Debarment for both Primary and Lower Tier Covered Transactions have been completed and executed for the Offeror and all subconsultants, subcontractors, and other entities as identified as members of the Lane Team and may be found in the Appendix.

3.2.8 Offeror's VDOT Prequalification Evidence: Evidence of VDOT's Prequalification (L002/Active) is included in the Appendix and verifies that Lane is prequalified for this SOQ submission.

3.2.9 Letter of Surety: A single surety letter from the bonding companies is included in the Appendix, confirming their willingness to provide any and all bonds for this Project.

3.2.10 SCC/DPOR Information and Evidence: The matrix in the Appendix delineates the respective state registrations and licensures of the Lane Team. The Offeror and all team members are eligible at the time of the SOQ submittal, under the law and relevant regulations, to offer and to provide any services proposed or related to the Project. Respective copies of licenses may be found in the Appendix.

3.2.11 DBE Statement: The Lane Team supports the Disadvantaged Business Enterprise (DBE) program and is committed to meeting the 6% goal for the design and construction of this Project utilizing Virginia certified DBE companies.

As evidenced by our proven performance, our Team will deliver this Project safely, on time, and within budget. We appreciate the opportunity to present our qualifications and look forward to working with VDOT on this important project.

Respectfully submitted,



Denny Luzier
Vice President - Operations
The Lane Construction Corporation

● 3.3 Offeror's Team Structure

The Lane Construction Corporation (Lane) will serve as the Lead Contractor for the Project. Lane will be responsible for managing the D-B contract, overseeing design and permitting work, supervising construction, and self-performing major work elements. Lane brings over 150 years of construction and project management experience and has the right approach to successfully deliver the Project in partnership with VDOT and Third Party Stakeholders. Lane maintains a proven track record in Virginia having completed numerous award-winning projects including 495 Express Lanes, 95 Express Lanes, 395 Express Lanes, I-66/Route 15 Interchange, and Route 29 Solutions.

Lane has carefully selected highly skilled team members, both firms and individuals, that understand D-B processes, demonstrate attributes and capabilities that enable collaboration and communication with VDOT, and have the experience to address Project challenges. Lane has selected **WSP USA Inc. (WSP)** as our Team's Lead Designer to be responsible for completing all design and permitting activities, ensuring design quality, and providing engineering support during construction. WSP is a leading engineering and professional services firm ranked #8 in *Engineering News-Record's* 2021 "Top 500 Design Firms" and #3 among "Top 100 Pure Designers" with significant experience delivering complex, multi-phased, D-B projects.

To ensure compliance with the Project's goals and objectives, and to address key Project elements and risks, our Team has enhanced our design expertise and depth of resources with specialty subconsultants that have extensive VDOT experience as shown in *Figure 1*.

Specialty Subconsultant	Expertise	Experience
CES Consulting, LLC (CES)	Quality Assurance	★ ★
Terracon Consultants, Inc. (Terracon)	Geotechnical/Pavement	★ ★
Straughan Environmental, Inc. (Straughan)	Environmental/Noise/Permitting (SWaM)	★
Alvi Associates, Inc. (Alvi)	Roadway/Bridge/Drainage (DBE/SWaM)	★ ★
Pennoni Associates Inc. (Pennoni)	Survey/Right-of-Way Plans	★ ★
Accumark, Inc. (Accumark)	Subsurface Utility Investigations	★ ★
ERM & Associates, LLC (ERM)	Right-of-Way Acquisition (DBE/SWaM)	★
Quantum Spatial, Inc. dba NV5 Geospatial (NV5)	Aerial Mapping	★ ★
Bowman Consulting Group Ltd. (Bowman)	Utility Coordination	★ ★

Figure 1: Specialty Subconsultants ★: VDOT D-B Experience ★: VDOT Staunton District Experience

3.3.1 Qualifications of Key Personnel

Our Team's proposed Key Personnel have performed similar roles on VDOT D-B transportation projects with parameters similar to the Project, as summarized below in *Figure 2* and further detailed in Attachment 3.3.1 of the Appendix. Our Key Personnel will be fully dedicated to the Project and their responsibilities will not be delegated to others. In accordance with the Request for Qualifications (RFQ), our Team anticipates utilizing VDOT's Deputy Key Personnel Program to facilitate the growth of up-and-coming Key Personnel.

Key Personnel Role Name – Firm	Years	VDOT	D-B	Interstate MOT	Interstate Widening	Bridge Widening
Design-Build Project Manager (DBPM) Jan Sherman – Lane	24	★	★	★	★	★
Entrusted Engineer in Charge (EIC) John Ecker, PE – Lane	24	★	★	★	★	★
Quality Assurance Manager (QAM) Avtar Singh, PE – CES	28	★	★	★	★	★
Design Manager (DM) Jeremy Beck, PE, DBIA – WSP	20	★	★	★	★	★
Construction Manager (CM) Jerzy Mykcow – Lane	43	★	★	★	★	★

Figure 2: Key Personnel

Reporting Relationships of Key Personnel

Design-Build Project Manager (DBPM), Mr. Jan Sherman (Lane) will provide our Team's single point of VDOT contact, will report to VDOT, and will coordinate with Third Party Stakeholders as needed. Mr. Sherman will be responsible for meeting our Team's obligations, and will oversee design, construction, quality management, and other services required by the Contract Documents. He will facilitate communication, resolve disputes, monitor design efforts to proactively eliminate potential constructability issues prior to breaking ground and will manage construction resources to deliver the Project on time. He will also be responsible for coordinating and attending public outreach activities and meetings, ensuring quality management, overseeing contract administration, and delivering the Project to VDOT's overall satisfaction.

Added Value: Mr. Sherman brings over 24 years of project management experience. He was the DBPM on VDOT's I-66/Route 15 Interchange Reconstruction project which received numerous awards including DBIA's Project of the Year Award.

Entrusted Engineer In Charge (EIC), Mr. John Ecker, PE (Lane) will report to the DBPM, will coordinate and integrate the work of the DM, the CM, and the QAM, and will operate independent of our Team's QA/QC obligations. Mr. Ecker is a Virginia registered Professional Engineer, will sign and seal the collection of final documents, and will ensure responsible charge engineering work is performed by qualified engineers. He will be assigned to the Project full-time and will be on-site at all times during construction. He'll be involved in or will have personal supervisory direction and control authority in making and approving engineering decisions throughout the entire Project duration. He will also answer questions/inquiries relevant to construction engineering decisions, will take immediate action to address issues involving potential hazards, and will have the authority to stop work.

Added Value: Mr. Ecker has 24 years of design and construction experience. His experience on past, relevant VDOT D-B projects, including the 95 Express Lanes, 395 Express Lanes, and the I-66 Inside the Beltway, are all examples of his abilities to provide engineering excellence to award-winning projects.

Quality Assurance Manager (QAM), Mr. Avtar Singh, PE (CES) will report to the DBPM, will communicate regularly with the EIC, the DM, and the CM, and will function independently from construction operations. Mr. Singh is a Virginia registered Professional Engineer and will be on the Project site full-time during construction. He will keep VDOT informed on quality issues/status/solutions through weekly reports and progress meetings. He will be responsible for the development and adherence to the Design-Build QA/QC Plan as well as the quality assurance of the work, inclusive of quality assurance testing. He'll ensure conformance with the Approved for Construction (AFC) plans, permits, and commitments and will certify Project compliance with the Contract Documents. He'll have the authority to stop work if quality issues warrant.

Added Value: Mr. Singh has 28 years of experience in the transportation-construction industry. He has extensive VDOT experience having served in several different roles with VDOT including the Area Construction Engineer (ACE). Additionally, he has served as a QAM on six VDOT D-B and P3 projects.

Mr. Singh will also oversee the activities of the **Bridges/Structures Quality Assurance Inspector, Mr. Beau Guttridge (CES)** as well as the **Roadway Quality Assurance Inspector, Mr. Kevin Davis (CES)** who will be on the Project full-time during construction of their respective elements. Mr. Singh is currently assigned to the I-95 Express Lanes Fredericksburg Extension project (part-time) and will be available for the Project prior to the start of construction.

Design Manager (DM), Mr. Jeremy Beck, PE, DBIA (WSP) will report to the DBPM and will communicate regularly with the EIC, the CM, and the QAM. Mr. Beck is a Virginia registered Professional Engineer and will be involved in or will have personal supervisory direction and control authority in making and approving design engineering decisions. He will be responsible for managing and coordinating design and permitting activities along with ensuring design work is in conformance with the Contract Documents. He will provide VDOT and Third Party Stakeholders with design plans and permits for review and approval and will also oversee the establishment and execution of the design QA/QC program. He will prepare for and attend progress and coordination meetings with VDOT and Stakeholders and will attend public outreach meetings. Finally, Mr. Beck will

Added Value: Mr. Beck has 20 years of experience developing, managing, and successfully delivering design plans and permits for complex D-B projects for VDOT such as the Warrenton Southern Interchange and the Route 606 Bridge Replacement over I-95. He has served as the Design Manger for numerous projects

continue to be involved during construction by attending progress meetings, reviewing working plans and shop drawings, responding to Requests for Information (RFI's), and preparing as-built plans.

Construction Manager (CM), Mr. Jerzy Mykcow (Lane) will report to the DBPM and will communicate regularly with the EIC, the DM, the QAM, and the Safety Manager. Mr. Mykcow will be on the Project site full-time during construction and will be responsible for managing construction activities. Mr. Mykcow will hold a Virginia DEQ Responsible Land Disturber (RLD) Certification and a VDOT Erosion and Sediment Control Contractor Certification (ESCCC) prior to commencement of construction. He will be responsible for preparing and managing the construction schedule and will coordinate with the adjacent projects. He will hold routine meetings with the QAM and QA Inspectors to discuss ongoing and planned construction activities. He will also review all QC reports and lab results. Mr. Mykcow is currently working on the US Route 1 project in Maryland and will be available for the Project prior to the start of construction.

exceeding \$6B of construction value and is extremely adept at identifying and managing risk.

✓ Added Value: Mr.

Mykcow brings 43 years of experience in the construction industry. He has completed a wide variety of D-B interstate widening projects including the I-66 Inside the Beltway project which is extremely similar project features and components (also included in our *Work Histories* section).

3.3.2 Organizational Chart

The Organizational Chart on the following page depicts our Team, VDOT, Third Party Stakeholders and their respective reporting/coordination lines.

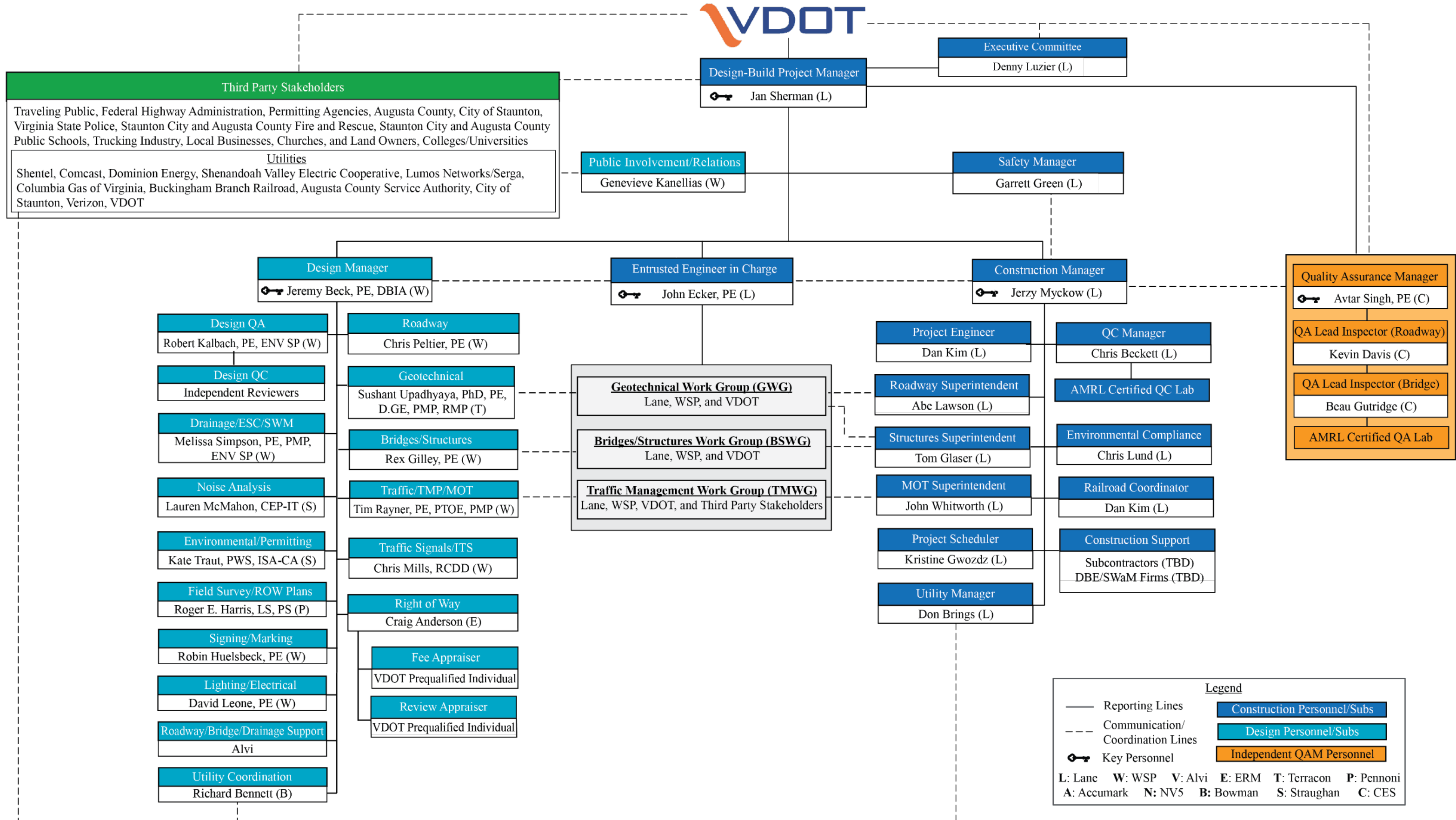
Functional Relationships and Design/Construction Team Interaction

Our Team's structure has a straightforward chain of command, with individual tasks and functional responsibilities clearly identified. Our organizational chart identifies Key Personnel and major functions to be performed for the successful management, design, and construction of the Project.

The Lane Team will be cohesive and fully integrated under the direction of our DBPM. WSP will manage all design activities and perform a majority of the design work in-house. Alvi, Terracon, Pennoni, NV5, Accumark, ERM, Bowman, and Straughan will provide specific discipline support to WSP to augment our design capabilities and resources. Our Design Manager, Jeremy Beck, as he has done previously, will coordinate with each discipline and their design efforts, having continual discussions between the disciplines so design direction and consistency is provided throughout the entire Project. This is important to the success of the project and our ability to meet any design schedule. Our EIC, John Ecker, who reports directly to the DBPM, will work directly with the Design Manager and his team to ensure decisions are being made by competent, licensed engineers. He will also communicate directly with the Construction Manager, as well as the QAM. He will communicate regularly with VDOT and has the vested authority to act on behalf of the Lane Team.

Based on our Team's extensive D-B experience, we know that weekly discipline coordination meetings (Work Groups) held throughout the Project will be critical to ensuring a successful project. Therefore, our Team will establish Work Groups to coordinate the overall approach to various design and construction activities. The Work Groups will all be led by EIC John Ecker and will include appropriate technical personnel. VDOT and relevant Third Party Stakeholders will be invited and encouraged to participate to ensure thorough collaboration between the parties. The Work Group meetings will be held regularly during design and construction to discuss concerns, define specific approaches, consider and address challenges, optimize design and coordinate work, discuss progress, streamline construction activities, and coordinate responses.

Through this overall approach and team structure, our Team will create strong relationships and truly integrate D-B functions that will set the foundation to interact and partner with VDOT and Third Party Stakeholders, streamline reviews, eliminate potential construction field issues, and deliver the Project safely, as early as possible.



3.4 Experience of Offeror's Team

● 3.4 Experience of Offeror's Team

As previously mentioned, both Lane and WSP are among the nation's top ranked firms in their respective disciplines. Both companies have achieved a widely recognized level of success by paying specific attention to detail in controlling, managing, and executing their work. Bringing this team together for this Project unifies the abilities of each to perform in a complimentary manner based on our past performance together. Each team member, including our specialized subconsultants, was specifically selected due to their previous experience delivering projects of similar complexity and confirms our qualifications to successfully deliver all elements of this Project.

As evidenced by *Figure 3*, Lane and WSP have recently worked together on complex D-B projects in the Mid-Atlantic/Southeast region of the United States. The depth of our recent collaborative experience reinforces the benefit of capitalizing on firms that have already enjoyed a successful, productive working relationship with Owners.

	Project Value (M)	Year Completed	D-B	Roadway/Interstate Widening	Complex MOT	Pavement Recycling	Bridge Rehab/Widening	Varying Subsurface Conditions
Route 29 Solutions (VDOT)	\$128	2017	★	★	★	★	★	★
Prince William Parkway Interchange at Realigned Balls Ford Road (VDOT/Prince William County)	\$69	2023	★	★	★	★		★
I-40/I-77 Interchange (NCDOT)	\$279	2022	★	★	★	★	★	★
I-540 Triangle Expressway Extension (NCDOT)	\$403	2023	★	★	★			★
A. Max Brewer Bridge Replacement (FDOT)	\$45	2011	★		★		★	★
Port Access Road (SCDOT)	\$254	2022	★		★		★	★
I-440 Improvements (NCDOT)	\$346	2023	★	★	★	★	★	★

Figure 3: Recent/Relevant Lane and WSP Teaming Experience

As a team, we have received numerous commendations and awards that further demonstrate the benefits our Team can bring to VDOT. The Route 29 Solutions project is an excellent example of successful partnerships between the D-B Team (Lane), VDOT, and their subconsultants (WSP). The project was the Overall Winner for the VTCA's 2017 Engineering Awards and the coveted ACEC 2018 Pinnacle Award for Engineering Excellence and Grand Award for VDOT. It also was awarded the Design-Build Excellence in Engineering Award by DBIA Mid-Atlantic.

3.4.1 Work History Forms

Work History Forms (Attachments 3.4.1(a) and (b)) as required for Lane (Lead Contractor) and WSP (Lead Designer) are included in the Appendix.

● 3.5 Project Risks

During our evaluation to prioritize the three most relevant and critical Project risks, we considered various geotechnical, utility, floodplain, bridge, Intelligent Transportation Systems (ITS), MOT, construction resources, Third Party Stakeholder coordination, environmental, stormwater management, noise, and Right-of-Way (ROW) acquisition challenges. We concluded that **Reducing, Preventing, and Managing Crashes during Construction, Identifying and Addressing Varying Subsurface Conditions, and Minimizing Long-Term Bridge Deck Replacement Maintenance** will be the three most critical risks to be mitigated.

Risk No. 1 – Reducing, Preventing, and Managing Crashes during Construction

Why the Risk is Critical: I-81 is a heavily traveled north-south corridor that functions as a segment of the critical freight network along the east coast of the United States with an elevated potential for crashes. Many I-81 drivers are not familiar with local conditions and are not comfortable with the impact tractor trailers have on speeds, visibility, and traffic operations. Moreover, several high-volume, high-speed weave/merge areas exist within the Project Limits, quite a few of which are on or near existing bridges which will become bottlenecks during construction. Implementing highly restrictive work zones will only increase the potential and severity of crashes. Finally, I-81 within the Project Limits does not have a suitable incident management alternative route. Many times, crashes on I-81 within the Project Limits result in lengthy detours through Staunton. Therefore, reducing, preventing, and managing crashes during construction will be critical for Project success in order to minimize congestion, ensure public safety as well as the safety of construction workers, retain public support, and provide reliable trips on one of the most important interstates in Virginia.

For context, approximately 62,000 vehicles per day utilize I-81 within the Project Limits, of which nearly 30% are trucks. Since 2015 there have been over 400 crashes, or roughly 60 a year, representing more than one per week – many with visible injuries or worse. Often times, crashes on the interstate are due to recurring or non-recurring congestion. However, drivers are averaging nearly 70 mph in both directions on I-81, with acceptable density Levels-of-Service, suggesting that traditional congestion may not be the leading cause of crashes within the Project Limits.

A review of the red crash locations for both directions of I-81, provided in the crash heat maps of *Figures 4 and 5*, indicates that crashes within the Project Limits may likely be a result of speed variations and traffic volumes near weave/merge areas, localized road conditions, and/or frustrated drivers, perhaps more than chronic speed reductions symptomatic of highly-congested areas. As such, weave/merge areas and driver frustration will be of particular concern to our Team as we plan and execute construction activities geared towards reducing and preventing crashes.

In addition, the blue stars on *Figures 4 and 5* identify the five locations where bridges will be widened as part of the Project. These locations will require narrower travel lanes, shoulders, and temporary barrier offsets during construction, causing localized bottlenecks, when compared to other areas of the Project. The confluence of red crash locations with blue stars identifies ultra-critical areas of concerns for reducing, preventing, and managing crashes due to the heightened potential for serious crashes based on the highly restrictive nature of the bridge widenings themselves.

Impact on the Project: While unfortunate, crashes within the work zone will likely occur - impacting the safety and welfare of the traveling public, as well as construction workers and degrading regional mobility. The potential for serious crashes will be elevated when they include dense weave/merge traffic, significant speed variations, high truck volumes, and restrictive work zones. These types of crashes tend to be more severe and more complex to clear, leading to longer periods of incident management, severe back-ups, and dramatic impacts to secondary road systems. Additional consequences of crashes, or from not managing them well, include:

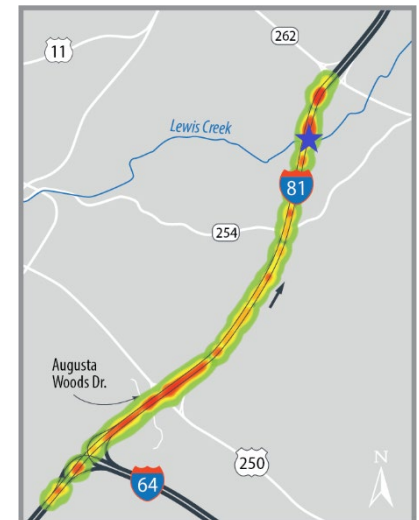


Figure 4: I-81 NB
Crash Heat Map

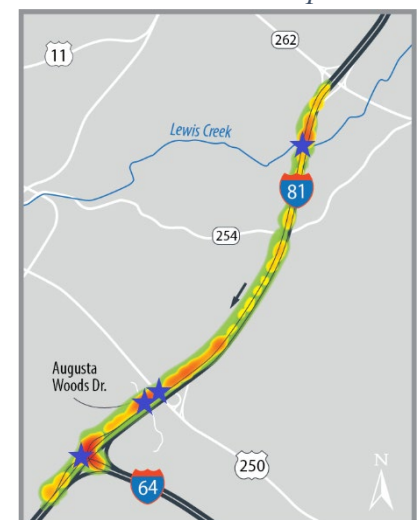


Figure 5: I-81 SB
Crash Heat Map

- ‘follow-on’ crashes due to back-ups or rubbernecking intensifying the original crash impact;
- driver confusion and frustration resulting from congestion, poor emergency detour routes, and/or improper/conflicting traffic control devices;
- travel delays for the public, as well as the trucking and commerce industries;
- loss of property, serious injury, or even death;
- negative perception of the Project and/or loss of community support;
- interruption of emergency access or evacuation routes degrading regional safety;
- work stoppages and/or redesign of the work zone leading to Project delivery delays;
- limiting complex construction activities to certain work hours, times of day, or even times of year, to align with more favorable traffic patterns resulting in schedule impacts; and/or
- loss of construction access leading to various types of construction delays.

Mitigation Strategies: Reducing, preventing, and managing crashes during construction will require a multi-faceted approach to the Transportation Management Plan (TMP) consisting of proper planning and coordination, community outreach, along with calculated implementation and continual monitoring and adjustment. Mitigation strategies will be based on planning construction ingress/egress access locations carefully during design, providing advanced and enhanced warning to local communities and the traveling public, facilitating consistency and safety through the work zone, promoting speed harmonization, and planning for emergencies. Our mitigation strategies will comply with, and when reasonable and feasible exceed the requirements of the Manual on Uniform Traffic Control Devices (MUTCD), Virginia Supplement to MUTCD, Virginia Work Area Protection Manual (VWAPM), VDOT Traffic Engineering and Instructional and Informational Memorandums (TEs/IIMs), and the Contract Documents.

As a type C project, the TMP will include a Temporary Traffic Control Plan (TTCP), a Public Communication Plan (PCP), as well as a Transportation Operations Plan (TOP), and will be a ‘living’ document - developed and vetted during the design phase and implemented and adjusted throughout the construction phase as needed. Detailed mitigation strategies to reduce, prevent, and manage crashes during construction as they relate to these three plans, in addition to our proposed Traffic Management Work Group, are described in the following narrative:

1. **Temporary Traffic Control Strategies:** Our Team will study various work zone control approaches, incorporate appropriate traffic control devices, and ensure coordination during design and construction. Specific mitigation measures our Team will investigate and implement as appropriate include, but may not be limited to, the following:
 - establishing an appropriate work zone speed limit balancing safety and mobility needs to minimize speed differentials between mainlines, ramps, and construction traffic;
 - coordinating with VDOT and the State Police regarding the potential use of photo speed monitoring within the work zone per VA Code 46.2-882.1 to reinforce speed management;
 - minimizing the number of traffic shifts and construction phases, reducing ‘zig-zag’ type maneuvers while accounting for bridge construction bottlenecks to simplify the work zone;
 - utilizing temporary lane shift and transition lengths that accommodated the full work zone speed limit (longer than the required minimum), particularly at bottleneck locations with high crash potential, to optimize traffic operations;
 - maximizing temporary barrier offsets and providing full width travel lanes and shoulders whenever possible to facilitate breakdown/enforcement and allow for emergency access;
 - limiting the use temporary barrier on both sides of travel lanes simultaneously and accounting for rainfall related spread adjacent to temporary barrier to maximize safety and operations;
 - providing additional crash management areas on the right side of the travel lanes, at a maximum spacing of 1 mile (exceeding the minimum), to the extent possible to reduce crash related traffic impacts;
 - minimizing/eliminating the interface/impacts of high-speed traffic with construction access locations and material deliveries by locating access/delivery points at crossing roads whenever possible, placing access locations in tangent sections, providing adequate deceleration/acceleration lengths, and using high-visibility signs and advanced warning to reduce the potential for construction access related crashes; and
 - utilizing high-visibility, high-durability pavement markers and markings during construction to improve awareness and reduce maintenance operations.

2. **Public Communications Strategies:** Our Team will prepare a Project-specific communications plan to detail public awareness strategies and driver information systems, keeping VDOT, the public, and Third Party Stakeholders informed about work-related impacts before and during construction. Our communications plan will provide proactive information to support reducing, preventing, and managing crashes inclusive of appropriate/approved measures as described below:
- coordinating with the VDOT Project Manager, the Regional Operations Manager, and the Public Affairs staff and utilizing the 511 system, VA-Traffic, WAZE, Google Maps, Apple Maps, and other publicly available technology;
 - implementing public awareness techniques, which may include holding and attending community and/or stakeholder meetings, maintaining/supporting a Project webpage, distributing regular updates via e-blast, using VDOT's local social media accounts, creating short informational videos, and developing media advisories;
 - promoting methods for the traveling public to avoid construction related delays through alternate routes, rideshare, telework, and public transportation;
 - preparing crash related communication plans outlining necessary activities and functions to be executed during major incidents; and
 - utilizing and coordinating existing/temporary portable changeable message signs (PCMS), overhead dynamic message signs (DMS), advanced vehicle detection systems, variable advisory speed signs, Closed-Circuit Television (CCTV), and other Smart Work Zone technologies to alert drivers to unfavorable conditions ahead, reduce the potential for crashes, provide the opportunity to choose an alternate route, and encourage more uniform speeds.
3. **Transportation Operations Strategies:** Our Team will incorporate demand management, corridor/network management, work zone management, and traffic/incident management mitigation measures consisting of:
- coordinating with adjacent projects for maintenance of traffic, construction phasing, and incident response to promote a seamless interface. The I-81 Auxiliary Lane and Route 635 Bridge Replacement is scheduled to be advertised in 2023 and will require coordination. In addition, it is believed the relocation of the ITS fiber backbone (by others), currently located on the median side of I-81 SB through the Project Limits, may also need extensive coordination;
 - confirming the process of notifying the VDOT Regional Transportation Operations Center (TOC), the VDOT Project Manager, Regional Operations Manager, and Public Affairs staff as well as utilizing the Lane Closure Advisory Management System (LCAMS) to reduce conflicts between projects and help reduce and prevent crashes;
 - preparing and maintaining an emergency responders contact list and holding quarterly coordination meetings to improve response times and minimize clearance durations when a crash occurs;
 - maintaining the work zone by conducting regular inspections to identify and resolve maintenance issues such as potholes, bumps, debris, guardrail, barrier, and traffic control devices;
 - establishing a Weather Response Plan (WRP) for snow, fog, heavy rain or other severe weather-related events that contains communication protocols as well as appropriate responses and requires maintaining the necessary resources for fast reaction times;
 - establishing an Incident Management Plan (IMP) to focus on quick incident response and clearance times that will:
 - i. plan for crashes at certain locations, identify emergency detour routes, and have the appropriate detour/trailblazing signage and other necessary temporary traffic control devices readily available/staged;
 - ii. coordinate and hold meetings with participating agencies to ensure that all Unified Commands and Incident Action Plans (IAP) are deployed within the Project Limits;
 - iii. review incident causes/responses to ensure satisfactory operations and identify/execute appropriate MOT/TMP adjustments; and
 - coordinating with VDOT's Northwest Regional Operations Center and their Safety Service Patrol Program, to establish Project dedicated resources, paid for by our Team, that would detect crashes, provide short term traffic control and scene management, minimize impact durations, clear obstructions, and provide other vital crash response duties.

4. **Traffic Management Work Group (TMWG):** Our Team will establish a TMWG, led by EIC John Ecker, to coordinate the overall approach to traffic management during construction. The TMWG will include Traffic/TMP/MOT Lead Tim Rayner, MOT Superintendent John Whitworth, CM Jerzy Myckow, and DM Jeremy Beck. VDOT and relevant Third Party Stakeholders will be invited and encouraged to participate to ensure thorough collaboration between the parties. TMWG meetings will be held regularly during design and construction to discuss TMP related concerns, define specific approaches, consider and address challenges, optimize design and coordinate work, discuss progress, streamline construction activities, and coordinate responses with the goal of achieving a well-coordinated TMP that addresses the critical risk of reducing, preventing, and managing crashes during construction.

Role of VDOT and Other Agencies: VDOT and Third Party Stakeholders, particularly VDOT’s Northwest Regional Operations Center and their Safety Service Patrol Program, will be vital to the development and implementation of the TMP and we envision them staying involved and contributing to the TMWG process. These groups will be invaluable to our Team by imparting their experience and expertise of the local area and contributing to our focus of crash reduction, prevention, and management. We acknowledge and appreciate VDOT’s role during the plan development and approval process and we will work closely to incorporate necessary design requirements. Further, we anticipate utilizing VDOT’s technology infrastructure, such as DMS and contacts to coordinate with the local Traffic Operations Center and other Third Party technologies such as WAZE and Google Maps to help disseminate messages to the driving public.

Risk No. 2 – Identifying and Addressing Varying Subsurface Conditions

Why the Risk is Critical: The geology beneath I-81 within the Project Limits, as it passes through the axis of the Great Valley, ranges from calcareous rock, with the potential for karst terrain, to highly plastic/compressible soils. Certain areas are likely to form sinkholes, sinking streams, irregular “pinnacled” bedrock/soil interface, and include the possibility of encountering the Madison Cave Isopod (MCI) – a federally listed threatened species. These varying subsurface conditions will highly influence the design and construction approach and duration as well as the long-term performance of various elements included within the Project. Properly identifying and addressing these varying subsurface conditions will be crucial for the long-term viability of the constructed work and maintaining the overall schedule, leading to a successful project.

Impact on the Project: There are three major subsurface conditions along I-81 within the Project Limits as shown on *Figure 6*. With respect to karst terrain, **Area 1 (green)** has potential to encounter, **Area 2 (blue)** has little evidence, while **Area 3 (purple)** is not prone. With respect to highly plastic/compressible soils, **Areas 1 and 2 (green and blue)** have upper zones of elastic silts (~10’-15’ thick) while **Area 3 (purple)** has soft soils near Lewis Creek (~5’-15’ thick).

The impact of not appropriately identifying and/or accounting for varying subsurface conditions at critical locations (bridge widenings, stormwater management facilities, pavement subgrade, and cut/fill areas) could result in improper foundation selection, unaccounted for design, permitting, and construction activities, degraded infrastructure performance, delays to the overall Project schedule, cost overruns, if discovered within the scope validation period, and/or increased maintenance costs. Based on our Team’s experience with similar work, our review of soil borings in the area, and the information provided by VDOT, specific Project impacts include:

1. **Sinkholes/Caves:** Soluble rock has potential to form air filled or soil filled voids. If not properly identified during the field investigation, an unidentified cave or sinkhole encountered during construction can require significant adjustments to the design of roadways, bridges, drainage and stormwater management elements, and/or could require additional permits to address the MCI – all of which would likely impact the construction schedule in order to provide appropriate mitigation.
2. **Foundations:** Bridge widening foundation types will be dependent on the subsurface conditions, structural loads, settlement tolerance, configuration (working immediately adjacent to existing bridges), and vibration

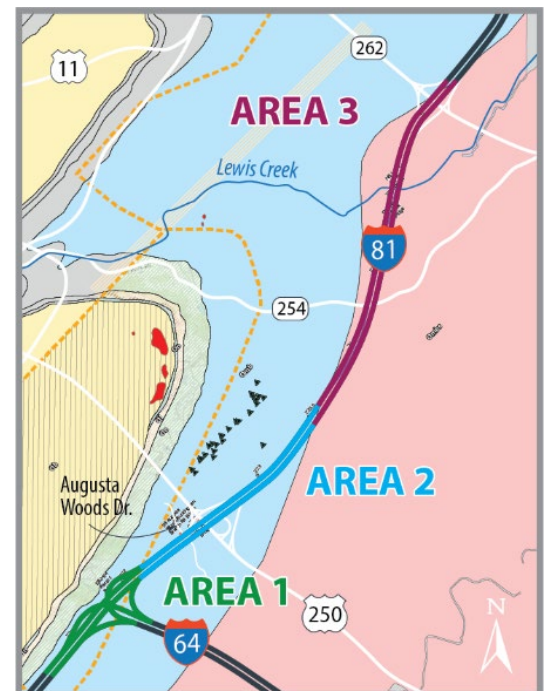


Figure 6: Major Subsurface Conditions

tolerance among other items. Unaccounted subsurface conditions would likely require time consuming design and construction adjustments, such as implementing shallow (in lieu of deep) foundations from encountering a bedrock pinnacle or switching to drilled (from driven) foundations due to negative skin friction (downdrag).

3. **Settlement:** Highly plastic/compressible soils and normally consolidated alluvium soils along Lewis Creek, if not appropriately identified and addressed, will affect the settlement of the bridge widenings and related embankments. The magnitude of settlement and consolidation/waiting period, if not properly estimated during the design, and/or the need for ground improvements, may increase construction durations and costs.
4. **Global Stability:** Highly plastic/compressible soils also affect short-term and long-term global stability analyses. If the subsurface conditions are not accurately identified and modeled, it could create long-term stability and poor performance of Project elements, increased maintenance, and/or re-construction. Unanticipated undercuts or replacements to address global stability may result in constructability problems, increased truck traffic to haul off/on excess material, permitting issues, schedule impacts, and/or increased construction cost.
5. **Pavement Subgrade:** When unanticipated or undiscovered highly plastic/compressible soils, susceptible to shrink/swell and settlement, remain near the pavement subgrade elevation, poor pavement performance will usually result. Because the Project involves I-81 pavement widening, the settlement differential between existing and new pavement will be critical to ensuring a smooth riding surface and long-term pavement performance. Moreover, if pavement cracks develop over plastic/compressible soils, surface runoff will typically migrate to the pavement subgrade, soften it, and cause further pavement deterioration leading to increased maintenance or re-construction.
6. **Madison Cave Isopods (MCI):** The MCI is endemic to the Shenandoah Valley and lives in saltwater karst aquifers. If a cave system is encountered, field investigations, habitat and water quality protection measures, and permitting processes would need to be completed, likely delaying certain construction activities.

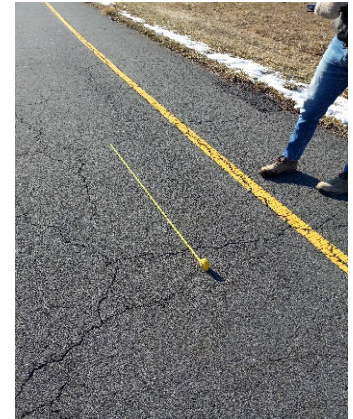


Figure 7: Pavement Cracking due to Poor Subgrade

Mitigation Strategies: Properly identifying and addressing karst terrain and highly plastic/compressible soil conditions will not only require a well-planned and executed geotechnical field exploration program, it will also necessitate extensive coordination among the design and construction teams and VDOT, as well as significant oversight during construction. Our mitigation strategies, in addition to our planned Geotechnical Work Group, geared towards addressing this critical risk, are described in the following narrative:

1. **Desktop Study and Geotechnical Field Investigation:** Our Team will plan and execute investigations, per the VDOT Manual of Instructions (MOI) Chapter III and AASHTO Load and Resistance Factor Design, to provide a comprehensive subsurface understanding and facilitate appropriate design and construction solutions. We will likely increase the number of borings and geophysical activities beyond the minimum specified in MOI to ensure we have appropriate information. The field investigation plan will be submitted to the District Material Engineer for review and approval and will fully account for public and staff safety. The investigation will include, but may not be limited to:
 - examining aerial photographs, LiDAR data, and the digital elevation model to determine if any surface karst features (e.g., sinkholes, closed depressions, etc.) are present within the Project Limits;
 - identifying subsurface features by conducting field locating activities ensuring uncatalogued features are identified, characterized, and added to pertinent maps;
 - conducting Electrical Resistivity Investigation (ERI) and/or Multi-Channel Analysis of Surface Waves (MASW) to detect areas of potential subsurface anomalies including pinnacled bedrock, soft soils and clays, incipient sinkholes, or voids – and then further tailoring the geotechnical program accordingly;
 - utilizing Air Track Probes (ATPs) with a downhole camera to investigate anomalies detected during the geophysical investigation to determine the extent of intercepted air/water filled voids; and
 - performing geotechnical borings to determine highly plastic/compressible soil characteristics as well as rock coring of bedrock to ascertain fracture density, open voids, and rock quality.
2. **Design/Construction Development:** Our Team will account for necessary activity durations, analyze and share field data to determine its impact on Project elements, avoid unsuitable subsurface conditions when possible, and work through solutions with VDOT in our planned Geotechnical Work Group, described in more detail later. Specific mitigation approaches include:

- **Sinkholes/Caves:** Depending on the vertical and horizontal extent of the sinkhole or cave, we will coordinate with VDOT and select the most appropriate mitigation method - typically reverse graded filters, cap grouting, or low-mobility grouting.
 - **Foundations:** Based on subsurface conditions, soil types, downdrag, potential impacts to the existing bridge, and other constructability issues, we will explore and utilize foundation types (shallow, driven, or drilled), or a combination of foundation types, that address the needs of each individual bridge.
 - **Settlement:** Depending upon the subsurface conditions, soil types, and loading scenario, we will evaluate undercut and replacement, waiting periods, wickdrains, and light weight aggregate fill to minimize the impact of settlement on the proposed foundations and existing bridges. Our Team will also evaluate the need for isolation cans in the fill area to reduce the downdrag on the piles.
 - **Global Stability:** To evaluate the need for soil stabilization measures such as piles, light weight fill, undercut, geogrid, and/or MSE wall straps, our Team will perform additional laboratory tests to characterize material properties, conduct statistical analysis to estimate the soil shear properties, and perform probabilistic analysis for global stability. We will likely perform additional in-situ field testing to reduce the data variability and optimize the design.
 - **Pavement Subgrade:** Our preferential method to address poor pavement subgrades will be in-situ stabilization with lime or cement because it will minimize unsuitable/suitable hauling activities, reduce construction durations, and increase safety to the traveling public. Alternatively, we will perform undercut and replacement in the area where soil stabilization cannot be used.
 - **Madison Cave Isopod:** Our Team will coordinate with Wil Orndorff, the director of the karst section of the VA DCR-NHP karst program, to document and minimize adverse impacts. If a cave is encountered, it will be evaluated by Wil to verify the MCI habitat. Accordingly, the cave will be capped so surface run off (fresh water) does not impact the MCI.
3. **Construction Oversight:** The design team and the QAM will be heavily involved during construction to observe foundation subgrade and potential karst features. The design team will provide geotechnical consultation during construction if unforeseen conditions arise during earthwork and foundation construction and will provide monthly geotechnical certification letters attesting that the work was completed per the approved plans and specification.
4. **Geotechnical Work Group (GWG):** Our Team will hold GWG meetings, led by EIC John Ecker, during design and construction to coordinate the overall approach to varying subsurface conditions and other geotechnical concerns. The GWG will include Geotechnical Lead Sushant Upadhyaya, CM Jerzy Myckow, DM Jeremy Beck, Roadway Superintendent Abe Lawson, and Structures Superintendent Tom Glaser. VDOT's attendance and participation will be highly valued by our Team. GWG meetings will coordinate subsurface investigation methods, review results, discuss and address issues, optimize geotechnical related design and construction approaches, discuss progress, and review construction implementation to achieve a high degree of subsurface condition risk mitigation.

Role of VDOT and Other Agencies: The Lane Team encourages VDOT and other agencies to share information regarding past subsurface condition experiences and concerns during Project execution. VDOT and relevant Third Party Stakeholders will be invited to meetings throughout the duration of work to keep them informed of progress and alert them of impending or potential actions. We understand and appreciate VDOT's role during plan development and approval process and we will work closely to incorporate necessary geotechnical related designs as may be appropriate. Alternative designs will be discussed with VDOT and other agencies as appropriate to ensure satisfaction with Project specific solutions. We also appreciate VDOT's role during construction and we will work collaboratively with VDOT and other agencies to address unanticipated events as they relate to subsurface conditions.

Risk No. 3 – Minimizing Long-Term Bridge Deck Replacement Maintenance

Why the Risk is Critical: Decks are a key component of any bridge, providing the vehicular riding surface and structural support as well as protecting the girders and substructures below. Replacing the bridge decks will be one of the most complex and observable elements on the Project - highly utilized (and scrutinized) by Third Party Stakeholders. To construct high-performing, long-lasting bridge deck replacements, various design and construction challenges will need to be resolved. When complete, the new bridge decks will become key features of VDOT's infrastructure for many years. If not properly designed and constructed, including adherence to material testing procedures and placement sequencing, the new decks may rapidly deteriorate, and become expensive and disruptive to maintain. For these reasons, minimizing long-term bridge deck replacement

maintenance will be critical for Project success in order to reduce VDOT's future efforts, make the best use of VDOT's limited funds, provide long term performance, and maximize safety and mobility along I-81.

To replace and widen the existing bridge decks, phased construction will be required within highly restrictive work zones. Placing a portion of new bridge deck, while live traffic will be on an immediately adjacent recently built or existing bridge deck, can damage the new deck due to live-load induced vibrations. With the anticipated phasing scenarios, deck construction joints will be a prime location for initial defects and on-going maintenance concerns. Additionally, many interrelated bridge deck design and construction items will need to be incorporated while addressing long-term maintenance, such as:

- analyzing and appropriately designing bridge elements, including longitudinal deck joint locations, relative stiffness of the superstructure, and crossframe/diaphragm installation methods for multiple interim construction phases, as well as the permanent condition;
- constructing phased bridge widening and deck replacements within restricted work zones immediately adjacent to interstate traffic with a high percentage of trucks;
- addressing rainfall runoff, attaching temporary barriers, and receiving/staging material deliveries;
- accommodating I-81 mainline crown shifts and bridge clearances; and
- achieving the final ride quality and preserving the remaining superstructure and substructure elements.



Figure 8: Inadequate Concrete Consolidation in the Longitudinal Joint Region

Impact on the Project: Bridge deck replacements with initial defects will reduce serviceability and could result in the following impacts during construction and/or throughout the service life of the structure:

- unsuitable deflection and dead load on the beams leading to unacceptable Load Rating results;
- poor rideability and other deck issues leading to negative public perception and the need to implement mitigation ranging from minor deck repairs to full re-decking of recently replaced bridge decks;
- deck cracking and longitudinal deck joints leading to water penetration and/or issues with freeze/thaw resulting in accelerated bridge deck deterioration, delamination, and potential superstructure and substructure deterioration;
- additional phases of construction leading to driver frustration and loss of community support;
- additional testing, evaluation, and corrective measures leading to design and construction time impacts;
- increased inspection and maintenance regimes resulting in increased VDOT-led efforts and costs; and/or
- increased traffic and safety impacts due to additional maintenance activities resulting in degraded operations and increased incidents.

Mitigation Strategies: To achieve superior deck riding surfaces and long-term deck performance, items such as beam deflection, concrete mix design, vibration, wheel path location, crack mitigation, location and types of joints, and abrasion/wear must be considered in the bridge deck design and detailing in conjunction with the construction sequence/methodology and traffic conditions. Having performed numerous bridge deck replacements on widened interstate facilities, our Team understands the design and construction processes needed to ensure high-quality bridge decks will be provided to the required line and grade that will stand the test of time and exposure to the elements.

To properly assess the potential for initial defects and long-term maintenance issues, our Team will first determine how sensitive the bridges will be to live load induced vibrations with respect to certain design and construction practices. Endeavoring to provide bridge deck replacements built in phases that will perform as well as ones constructed monolithically will be crucial for success. Specific mitigation strategies to minimize long-term bridge deck replacement maintenance, along with our proposed Bridges/Structures Work Group, are described in the following narrative:

1. **Structural Analysis and Evaluation:** our Team will properly evaluate and accommodate the relative stiffness and deflection characteristics of the existing fascia beam with respect to the new beams within the bridge widening. The beam analysis and evaluation will be performed for the range of conditions and traffic loadings during the various construction phases. Resultant differential dead load deflections will drive many

of the decisions regarding the construction constraints and will be utilized to evaluate the need for a longitudinal closure pour.

2. **Bridge Configuration:** our Team will account for the bridge configuration in each construction phase, which will be governed by the final configuration as well as the number and width of travel lanes and the offsets to barriers established for the work zone of each particular phase. Once the configuration of each phase is determined, the existing and proposed bridge widening will be examined to determine if the phase lines will be located in an undesirable location with respect to performance and/or constructability. In some instances, our Team may coordinate configuration adjustments with VDOT to optimize the location of phase lines and improve deck placement parameters and/or work zone conditions without degrading safety or operations. For instance, if the wheel path in the final condition would be located on/very near a phase line, it may be prudent to shift the phase line to reduce impact-induced damage that can occur at the deck construction joint.
- On the TDOT I-440 Reconstruction From I-40 to I-24 Project, Rex Gilley, PE (WSP) evaluated the I-440 bridge widening over I-65 for dead load deflections, carefully considering erection sequence and deck placement. Through analysis and coordination with the contractor and TDOT, he was able to develop an approach that allowed as much as ten inches of dead load deflection to occur with early deck placements, which then facilitated a longitudinal closure pour to be placed with only minimal dead load deflection remaining – resulting in a high-quality bridge deck.*
3. **Constructability:** Our Team will address these concerns by completing certain field investigations, design analyses, and constructability reviews, culminating in extensive coordination between the design and construction teams and VDOT including, but not limited to, the following items:
 - inspecting and examining the bridge decks carrying traffic in each construction phase to determine if any work should be performed to remove inconsistencies that lead to higher impacts and/or vibrations from vehicular wheel loads, especially truck wheel loading. Simple adjustments such as shifting traffic to a single lane farthest from the deck pour, performing the deck placement during night work, and/or reducing speeds during placing operations, will minimize vibrations;
 - preparing details and approaches to minimize congestion of rebar at the construction joint, such as utilizing bar couplers rather than lap splices to facilitate proper concrete consolidation at the joint;
 - evaluating the concrete mix itself, ensuring proper workability and slump for best performance;
 - accounting for deck placement operations with respect to the girder diaphragm placement and bolt tightening to avoid untimely load transfer between two bridge deck segments and to obtain the intended deck thickness; and
 - determining the need for closure pours, the details to be used if closure pours become necessary, and the parameters for deck placement and curing prior to placing closure pours.
 4. **Bridges/Structures Work Group (BSWG):** Our Team will establish a BSWG to coordinate the overall approach to bridge deck long-term maintenance and other structural elements. The BSWG will be led by EIC John Ecker and will include Bridges/Structures Lead Rex Gilley, CM Jerzy Myckow, DM Jeremy Beck, , and Structures Superintendent John Whitworth. VDOT’s partnership and meeting attendance will be highly desired by our Team. BSWG meetings will be held regularly throughout design and construction to discuss bridge/structure concerns, define specific approaches, consider and address challenges, optimize design, discuss progress, and streamline construction activities with the intention of identifying and executing the activities needed to provide high-performing bridge decks that minimize long-term maintenance requirements.

Role of VDOT and Other Agencies: The Lane Team welcomes VDOT collaboration during the design and construction processes regarding past I-81 bridge deck replacement concerns and experiences. We understand and appreciate VDOT’s role during the plan development and approval process and we will work closely to incorporate necessary design requirements. VDOT will be invited to the BSWG meetings for coordination and oversight purposes, to keep them informed of progress, and alert them of key decisions points. Bridge deck design, details, and maintenance concerns will be coordinated with VDOT so that solutions and decisions are incorporated into the Stage I Bridge Reports to avoid re-work in the Stage II plan development. We also appreciate VDOT’s role during construction and we will work collaboratively with VDOT and other agencies to address any unanticipated event as it relates to bridge deck replacements.



Attachment 3.1.2
SOQ CHECKLIST



ATTACHMENT 3.1.2

Project: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013

STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS

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

Statement of Qualifications Component	Form (if any)	RFQ Cross reference	Included within 15-page limit?	SOQ Page Reference
Statement of Qualifications Checklist and Contents	Attachment 3.1.2	Section 3.1.2	no	Appendix
Acknowledgement of RFQ, Revision and/or Addenda	Attachment 2.10 (Form C-78-RFQ)	Section 2.10	no	Appendix
Letter of Submittal (on Offeror's letterhead)				
Authorized Representative's signature	NA	Section 3.2.1	yes	2
Offeror's Point of Contact information	NA	Section 3.2.2	yes	1
Principal Officer information	NA	Section 3.2.3	yes	1
Offeror's Corporate Structure	NA	Section 3.2.4	yes	2
Identity of Lead Contractor and Lead Designer	NA	Section 3.2.5	yes	2
Affiliated/subsidiary companies	Attachment 3.2.6	Section 3.2.6	no	2; Appendix
Debarment forms	Attachment 3.2.7(a) Attachment 3.2.7(b)	Section 3.2.7	no	2; Appendix
Offeror's VDOT prequalification evidence	NA	Section 3.2.8	no	2; Appendix
Evidence of obtaining bonding	NA	Section 3.2.9	no	2; Appendix

ATTACHMENT 3.1.2

Project: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013

STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS

Statement of Qualifications Component	Form (if any)	RFQ Cross reference	Included within 15- page limit?	SOQ Page Reference
SCC and DPOR registration documentation (Appendix)	Attachment 3.2.10	Section 3.2.10	no	Appendix
Full size copies of SCC Registration	NA	Section 3.2.10.1	no	Appendix
Full size copies of DPOR Registration (Offices)	NA	Section 3.2.10.2	no	Appendix
Full size copies of DPOR Registration (Key Personnel)	NA	Section 3.2.10.3	no	Appendix
Full size copies of DPOR Registration (Non-APELSCIDLA)	NA	Section 3.2.10.4	no	Appendix
DBE statement within Letter of Submittal confirming Offeror is committed to achieving the 6% DBE goal	NA	Section 3.2.11	yes	2
Offeror's Team Structure				3-6
Identity of and qualifications of Key Personnel	NA	Section 3.3.1	yes	3-5
Key Personnel Resume – DB Project Manager	Attachment 3.3.1	Section 3.3.1.1	no	Appendix
Key Personnel Resume – Entrusted Engineer in Charge	Attachment 3.3.1	Section 3.3.1.2	no	Appendix
Key Personnel Resume – Quality Assurance Manager	Attachment 3.3.1	Section 3.3.1.3	no	Appendix
Key Personnel Resume – Design Manager	Attachment 3.3.1	Section 3.3.1.4	no	Appendix
Key Personnel Resume – Construction Manager	Attachment 3.3.1	Section 3.3.1.5	no	Appendix
Organizational chart	NA	Section 3.3.2	yes	6
Organizational chart narrative	NA	Section 3.3.2	yes	5

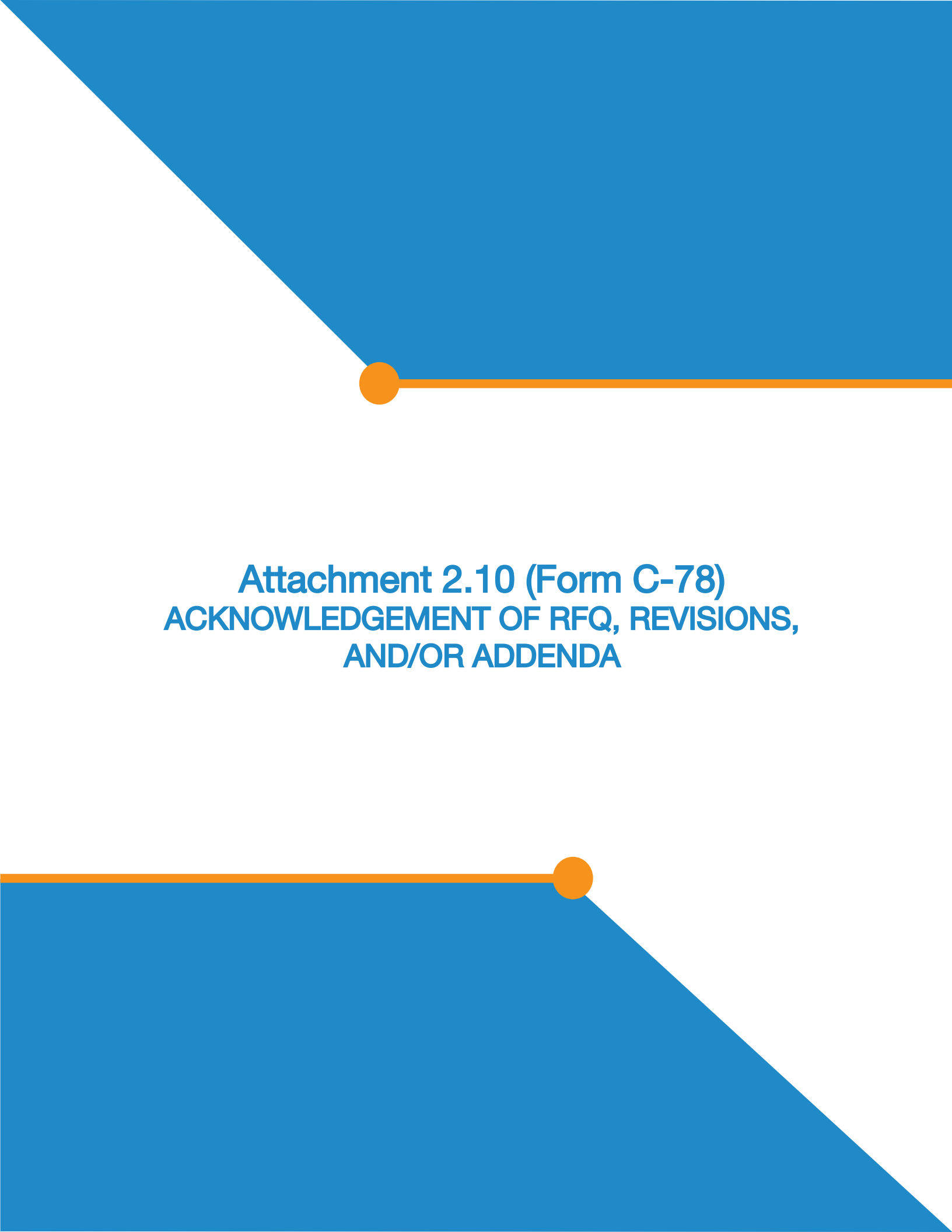
ATTACHMENT 3.1.2

Project: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013

STATEMENT OF QUALIFICATIONS CHECKLIST AND CONTENTS

Statement of Qualifications Component	Form (if any)	RFQ Cross reference	Included within 15- page limit?	SOQ Page Reference
Experience of Offeror's Team				7
Lead Contractor Work History Form	Attachment 3.4.1(a)	Section 3.4	no	Appendix
Lead Designer Work History Form	Attachment 3.4.1(b)	Section 3.4	no	Appendix
Project Risk				
Identify and discuss three critical risks for the Project	NA	Section 3.5.1	yes	8-15

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Attachment 2.10 (Form C-78)
ACKNOWLEDGEMENT OF RFQ, REVISIONS,
AND/OR ADDENDA

ATTACHMENT 2.10

**COMMONWEALTH OF VIRGINIA
DEPARTMENT OF TRANSPORTATION**

PROJECT: I-81 Widening MM 221 to MM 225
CONTRACT ID: C00116269DB116
PROJECT NO.: 0081-007-013

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 – July 1, 2022
(Date)
- 2. Cover letter of Addendum No. 1 – August 9, 2022
(Date)
- 3. Cover letter of _____
(Date)



SIGNATURE

8-15-2022

DATE

Dennis A. Luzier

PRINTED NAME

Vice President- Operations

TITLE



Attachment 3.2.6
LIST OF AFFILIATED & SUBSIDIARY COMPANIES



ATTACHMENT 3.2.6

Project: I-81 Widening MM 221 to MM 225

State Project No. 0081-007-013

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.

Relationship with Offeror (Affiliate or Subsidiary)	Full Legal Name	Address
Affiliate	Webuild, S.p.A.	Milano Fiori Business Center, Street 6, Building L Rozzano, Milan, Italy L-20089
Affiliate	Webuild US Holdings, Inc.	2711 Centerville Road, Suite 400, Wilmington, DE 19808
Affiliate	Lane Industries Incorporated	90 Fieldstone Court, Cheshire, CT 06410-1212
Affiliate	Lane Infrastructure, Inc.	90 Fieldstone Court, Cheshire, CT 06410-1212
Affiliate	Lane Worldwide Infrastructure, Inc.	90 Fieldstone Court, Cheshire, CT 06410-1212
Subsidiary	VSL Electrical, Signing, Lighting LLC	90 Fieldstone Court, Cheshire, CT 06410-1212
Affiliate – Joint Venture	C43 Water Management Builders	90 Fieldstone Court, Cheshire, CT 06410-1212
Affiliate – Joint Venture	Lane-Security Paving Joint Venture	90 Fieldstone Court, Cheshire, CT 06410-1212
Affiliate – Joint Venture	Salini Impregilo Healy JV 3RPORT	90 Fieldstone Court, Cheshire, CT 06410-1212
Affiliate – Joint Venture	Salini Impregilo Healy JV NEBT	2600 Independence Avenue SE, Washington D.C. 20003
Affiliate – Joint Venture	The Lane-Blythe Construction JV	6125 Tyvola Center Drive, Charlotte, NC 28217
Affiliate – Joint Venture	LMH-Lane Cabot Yard JV	100 Hancock Street, Suite 901, Quincy, MA 02171
Affiliate – Joint Venture	Lane-Abrams Joint Venture	3001 Meacham Boulevard, Suite 215, Fort Worth, TX 76137
Affiliate – Joint Venture	Flatiron West, Inc. - The Lane Construction Corporation Joint Venture	1400 Talbot Road S, Suite 500, Renton, WA 98055

ATTACHMENT 3.2.6

Project: I-81 Widening MM 221 to MM 225

State Project No. 0081-007-013

Affiliated and Subsidiary Companies of the Offeror

Relationship with Offeror (Affiliate or Subsidiary)	Full Legal Name	Address
Affiliate – Joint Venture	Fluor-Lane South Carolina, LLC	100 Fluor Daniel Drive, Greenville, SC 29607
Affiliate – Joint Venture	Skanska-Granite-Lane Joint Venture / I-4 Leasing, LLC	1551 Sandspur Road, Suite 200 Maitland, FL, 32751
Affiliate – Joint Venture	Unionport Constructors JV	150 Meadowlands Parkway #3, Secaucus, NJ 07094
Affiliate – Joint Venture	AGL Constructors	929 West Adams Street, Chicago, IL 60607
Affiliate – Joint Venture	Fluor-Lane 95, LLC	6700 Las Colinas Boulevard, Irving, TX 75039
Affiliate – Joint Venture	Purple Line Transit Constructors, LLC	100 Fluor Daniel Drive, Greenville, SC 29607-2762
DBA Name	Lanecon Corporation	90 Fieldstone Court, Cheshire, CT 06410-1212
DBA Name	S.A. Healy Company	90 Fieldstone Court, Cheshire, CT 06410-1212
DBA Name	Virginia Sign and Lighting Company <i>(Being phased out)</i>	90 Fieldstone Court, Cheshire, CT 06410-1212

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Attachment 3.2.7(a)
DEBARMENT FORM
PRIMARY COVERED TRANSACTIONS

ATTACHMENT 3.2.7(a)

CERTIFICATION REGARDING DEBARMENT
PRIMARY COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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


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

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

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

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

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



Signature

8-15-2022

Date

Vice President- Operations

Title

The Lane Construction Corporation

Name of Firm



Attachment 3.2.7(b)
DEBARMENT FORM
LOWER TIER COVERED TRANSACTION

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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



Signature

07/27/2022

Date

Vice President/Senior Director-Herndon
Transportation Lead

Title

WSP USA Inc.

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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

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



07/14/2022

Vice President

Signature

Date

Title

Accumark, Inc.

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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



Signature

July 12, 2022

Date

President & Chief Engineer

Title

Alvi Associates, Inc.

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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



Signature

July 29, 2022

Date

Director of Right of Way and Utility
Coordination

Title

Bowman Consulting Group Ltd.

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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

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



Signature

July 21, 2022

Date

President

Title

CES Consulting, LLC

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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



Signature

07/11/22

Date

President

Title

ERM & Associates, LLC

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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

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



07/13/2022

NOVA Survey Division Manager -
Associate Vice President

Signature

Date

Title

Pennoni Associates Inc.

Name of Firm


ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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

 Signature	July 20, 2022 Date	Vice President Title
-------------------------------------------------------------------------------------------------	-----------------------	-------------------------

Quantum Spatial, Inc. dba NV5 Geospatial
Name of Firm

ATTACHMENT 3.2.7(b)

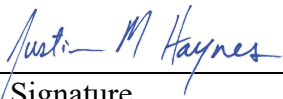
CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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

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

 _____ Signature	7/14/2022 _____ Date	Vice President _____ Title
----------------------------------------------------------------------------------------------------------	----------------------------	----------------------------------

Straughan Environmental, Inc.

Name of Firm

ATTACHMENT 3.2.7(b)

CERTIFICATION REGARDING DEBARMENT
LOWER TIER COVERED TRANSACTIONS

Project: I-81 Widening MM 221 to MM 225
Project No.: 0081-007-013

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

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

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



Signature

07/13/2022

Date

Office Manager

Title

Terracon Consultants, Inc.

Name of Firm

The page features a white background with decorative blue and orange elements. At the top left, a blue triangle points towards the top-left corner. A horizontal orange line extends from the right side of this triangle across the top of the page. At the bottom right, a blue triangle points towards the bottom-right corner. A horizontal orange line extends from the left side of this triangle across the bottom of the page. The text is centered between these two orange lines.

OFFEROR'S VDOT PREQUALIFICATION CERTIFICATE



**Department's List of Prequalified Vendors
Includes All Qualified Levels As Of 7/27/2022**

- L -

Vendor ID: L002

Vendor Name: THE LANE CONSTRUCTION CORPORATION

Prequal Level: Prequalified

Prequal Exp: 06/30/2023

-- PREQ Address --

90 FIELDSTONE COURT
CHESHIRE, CT 06410-1212
Phone: (203)235-3351
Fax: (203)237-4260

Work Classes (Listed But Not Limited To)

002 - GRADING
003 - MAJOR STRUCTURES
004 - ASPHALT CONCRETE PAVING
006 - PORTLAND CEMENT CONCRETE PAVING
007 - MINOR STRUCTURES
045 - UNDERGROUND UTILITIES

Bus. Contact: FIRMENDER, SETH TADDIA

Email: VAPREQUAL@LANECONSTRUCT.COM

-- DBE Information --

DBE Type: N/A

DBE Contact: N/A



SURETY LETTER



LIBERTY MUTUAL INSURANCE COMPANY
UNITED STATES INSURANCE COMPANY
NATIONWIDE MUTUAL INSURANCE COMPANY

EVEREST REINSURANCE COMPANY
MARKEL INSURANCE COMPANY

August 12, 2022

Virginia Department of Transportation
1401 East Broad Street
Richmond, VA 23219

RE: **The Lane Construction Corporation**
Request for Qualifications
A DESIGN-BUILD PROJECT - I-81 Widening MM 221 to MM 225, Augusta County, Virginia
State Project No.: 0081-007-013, B638, B639, B640, B641, B642, C501, D602, D603, P101, R201
Federal Project No.: NHPP-081-2(329); Contract ID Number: C00116269DB116
Estimated Project Value: \$122,000,000.00

To Whom It May Concern:

This letter will serve to confirm that The Lane Construction Corporation is a highly regarded and valued client of the sureties, Liberty Mutual Insurance Company, United States Fire Insurance Company, Everest Reinsurance Company, Nationwide Mutual Insurance Company and Markel Insurance Company (the 'co-sureties'). Each surety company is licensed to conduct surety business in the Commonwealth of Virginia, and each surety company holds a Certificate of Authority as listed in the Department of the Treasury's Listing of Approved Sureties (Department Circular 570) dated July 1, 2022. Furthermore, each surety company is rated "A" or better by A.M. Best Company, all with Financial Size Category "XIII" or better.

As the sureties for The Lane Construction Corporation, we advise that The Lane Construction Corporation is capable of obtaining 100% Performance Bond and 100% Labor and Materials Payment based on the current estimated contract value referenced in Section 2.1, and said bonds will cover the Project and any warranty periods as provided for in the Contract Documents on behalf of the Contractor, in the event that such firm be the successful bidder and enter into a contract for this Project.

Naturally, as is customary within the surety industry, the issuance of any bonds is contingent upon a favorable underwriting review of project specifics including, but not limited to, the contract terms, conditions, documents, bond forms and confirmation of complete project financing by both The Lane Construction Corporation and its co-sureties, as well as such other underwriting criteria that may be applicable, at the time a request for bonds is made. We assume no liability to third parties or to you by issuance of this letter, should bid or final bonds not be issued.

Should you need additional assurance regarding the technical ability or bonding capacity of The Lane Construction Corporation, please do not hesitate to contact this office.

Sincerely,

Liberty Mutual Insurance Company
United States Fire Insurance Company
Everest Reinsurance Company
Nationwide Mutual Insurance Company
Markel Insurance Company


Theresan E. Rowedder
Attorney-in-Fact





This Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

Certificate No: 8207846-012022

POWER OF ATTORNEY

KNOWN ALL PERSONS BY THESE PRESENTS: That The Ohio Casualty Insurance Company is a corporation duly organized under the laws of the State of New Hampshire, that Liberty Mutual Insurance Company is a corporation duly organized under the laws of the State of Massachusetts, and West American Insurance Company is a corporation duly organized under the laws of the State of Indiana (herein collectively called the "Companies"), pursuant to and by authority herein set forth, does hereby name, constitute and appoint, Bryan Huft; Jane Gilson; Jean Correia; Nathaniel E. Jakaitis; Theresan E. Rowedder

all of the city of Boston state of MA each individually if there be more than one named, its true and lawful attorney-in-fact to make, execute, seal, acknowledge and deliver, for and on its behalf as surety and as its act and deed, any and all undertakings, bonds, recognizances and other surety obligations, in pursuance of these presents and shall be as binding upon the Companies as if they have been duly signed by the president and attested by the secretary of the Companies in their own proper persons.

IN WITNESS WHEREOF, this Power of Attorney has been subscribed by an authorized officer or official of the Companies and the corporate seals of the Companies have been affixed thereto this 20th day of April, 2022.



Liberty Mutual Insurance Company
The Ohio Casualty Insurance Company
West American Insurance Company

By: [Signature]
David M. Carey, Assistant Secretary

Not valid for mortgage, note, loan, letter of credit, currency rate, interest rate or residual value guarantees.

State of PENNSYLVANIA ss
County of MONTGOMERY

On this 20th day of April, 2022 before me personally appeared David M. Carey, who acknowledged himself to be the Assistant Secretary of Liberty Mutual Insurance Company, The Ohio Casualty Company, and West American Insurance Company, and that he, as such, being authorized so to do, execute the foregoing instrument for the purposes therein contained by signing on behalf of the corporations by himself as a duly authorized officer.

IN WITNESS WHEREOF, I have hereunto subscribed my name and affixed my notarial seal at King of Prussia, Pennsylvania, on the day and year first above written.



Commonwealth of Pennsylvania - Notary Seal
Teresa Pastella, Notary Public
Montgomery County
My commission expires March 28, 2025
Commission number 1126044
Member, Pennsylvania Association of Notaries

By: [Signature]
Teresa Pastella, Notary Public

This Power of Attorney is made and executed pursuant to and by authority of the following By-laws and Authorizations of The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company which resolutions are now in full force and effect reading as follows:

ARTICLE IV - OFFICERS: Section 12. Power of Attorney.

Any officer or other official of the Corporation authorized for that purpose in writing by the Chairman or the President, and subject to such limitation as the Chairman or the President may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Corporation to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact, subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Corporation by their signature and execution of any such instruments and to attach thereto the seal of the Corporation. When so executed, such instruments shall be as binding as if signed by the President and attested to by the Secretary. Any power or authority granted to any representative or attorney-in-fact under the provisions of this article may be revoked at any time by the Board, the Chairman, the President or by the officer or officers granting such power or authority.

ARTICLE XIII - Execution of Contracts: Section 5. Surety Bonds and Undertakings.

Any officer of the Company authorized for that purpose in writing by the chairman or the president, and subject to such limitations as the chairman or the president may prescribe, shall appoint such attorneys-in-fact, as may be necessary to act in behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations. Such attorneys-in-fact subject to the limitations set forth in their respective powers of attorney, shall have full power to bind the Company by their signature and execution of any such instruments and to attach thereto the seal of the Company. When so executed such instruments shall be as binding as if signed by the president and attested by the secretary.

Certificate of Designation - The President of the Company, acting pursuant to the Bylaws of the Company, authorizes David M. Carey, Assistant Secretary to appoint such attorneys-in-fact as may be necessary to act on behalf of the Company to make, execute, seal, acknowledge and deliver as surety any and all undertakings, bonds, recognizances and other surety obligations.

Authorization - By unanimous consent of the Company's Board of Directors, the Company consents that facsimile or mechanically reproduced signature of any assistant secretary of the Company, wherever appearing upon a certified copy of any power of attorney issued by the Company in connection with surety bonds, shall be valid and binding upon the Company with the same force and effect as though manually affixed.

I, Renee C. Llewellyn, the undersigned, Assistant Secretary, The Ohio Casualty Insurance Company, Liberty Mutual Insurance Company, and West American Insurance Company do hereby certify that the original power of attorney of which the foregoing is a full, true and correct copy of the Power of Attorney executed by said Companies, is in full force and effect and has not been revoked.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed the seals of said Companies this 12th day of August, 2022.



By: [Signature]
Renee C. Llewellyn, Assistant Secretary

For bond and/or Power of Attorney (POA) verification inquiries, please call 610-832-8240 or email HOSUR@libertymutual.com.

**POWER OF ATTORNEY
UNITED STATES FIRE INSURANCE COMPANY
PRINCIPAL OFFICE - MORRISTOWN, NEW JERSEY**

80844

KNOW ALL MEN BY THESE PRESENTS: That United States Fire Insurance Company, a corporation duly organized and existing under the laws of the state of Delaware, has made, constituted and appointed, and does hereby make, constitute and appoint:

Mark P. Herendeen, Theresan E. Rowedder, Jean Correia, Jane Gilson, Bryan Huft, Maria Chaves

each, its true and lawful Attorney(s)-In-Fact, with full power and authority hereby conferred in its name, place and stead, to execute, acknowledge and deliver: Any and all bonds and undertakings of surety and other documents that the ordinary course of surety business may require, and to bind United States Fire Insurance Company thereby as fully and to the same extent as if such bonds or undertakings had been duly executed and acknowledged by the regularly elected officers of United States Fire Insurance Company at its principal office, in amounts or penalties: **Unlimited**

This Power of Attorney limits the act of those named therein to the bonds and undertakings specifically named therein, and they have no authority to bind United States Fire Insurance Company except in the manner and to the extent therein stated.

This Power of Attorney is granted pursuant to Article IV of the By-Laws of United States Fire Insurance Company as now in full force and effect, and consistent with Article III thereof, which Articles provide, in pertinent part:

Article IV, Execution of Instruments - Except as the Board of Directors may authorize by resolution, the Chairman of the Board, President, any Vice-President, any Assistant Vice President, the Secretary, or any Assistant Secretary shall have power on behalf of the Corporation:

- (a) to execute, affix the corporate seal manually or by facsimile to, acknowledge, verify and deliver any contracts, obligations, instruments and documents whatsoever in connection with its business including, without limiting the foregoing, any bonds, guarantees, undertakings, recognizances, powers of attorney or revocations of any powers of attorney, stipulations, policies of insurance, deeds, leases, mortgages, releases, satisfactions and agency agreements;
- (b) to appoint, in writing, one or more persons for any or all of the purposes mentioned in the preceding paragraph (a), including affixing the seal of the Corporation.

Article III, Officers, Section 3.11, Facsimile Signatures. The signature of any officer authorized by the Corporation to sign any bonds, guarantees, undertakings, recognizances, stipulations, powers of attorney or revocations of any powers of attorney and policies of insurance issued by the Corporation may be printed, facsimile, lithographed or otherwise produced. In addition, if and as authorized by the Board of Directors, dividend warrants or checks, or other numerous instruments similar to one another in form, may be signed by the facsimile signature or signatures, lithographed or otherwise produced, of such officer or officers of the Corporation as from time to time may be authorized to sign such instruments on behalf of the Corporation. The Corporation may continue to use for the purposes herein stated the facsimile signature of any person or persons who shall have been such officer or officers of the Corporation, notwithstanding the fact that he may have ceased to be such at the time when such instruments shall be issued.

IN WITNESS WHEREOF, United States Fire Insurance Company has caused these presents to be signed and attested by its appropriate officer and its corporate seal hereunto affixed this 28th day of September, 2021.

UNITED STATES FIRE INSURANCE COMPANY



Matthew E. Lubin, President

State of New Jersey }
County of Morris }

On this 28th day of September, 2021, before me, a Notary public of the State of New Jersey, came the above named officer of United States Fire Insurance Company, to me personally known to be the individual and officer described herein, and acknowledged that he executed the foregoing instrument and affixed the seal of United States Fire Insurance Company thereto by the authority of his office.



Melissa H. D'Alessio (Notary Public)

I, the undersigned officer of United States Fire Insurance Company, a Delaware corporation, do hereby certify that the original Power of Attorney of which the foregoing is a full, true and correct copy is still in force and effect and has not been revoked.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of United States Fire Insurance Company on the 12th day of August 20 22

UNITED STATES FIRE INSURANCE COMPANY



Michael C. Fay, Senior Vice President



**POWER OF ATTORNEY
EVEREST REINSURANCE COMPANY
DELAWARE**

KNOW ALL PERSONS BY THESE PRESENTS: That Everest Reinsurance Company, a corporation of the State of Delaware ("Company") having its principal office located at 477 Martinsville Road, Liberty Corner, New Jersey 07938, do hereby nominate, constitute, and appoint:

Mark P. Herendeen, Jean Correia, Theresan E. Rowedder, Bryan Huft, Jane Gilson, Jennifer L. Jakaitis

its true and lawful Attorney(s)-in-fact to make, execute, attest, seal and deliver for and on its behalf, as surety, and as its act and deed, where required, any and all bonds and undertakings in the nature thereof, for the penal sum of no one of which is in any event to exceed UNLIMITED, reserving for itself the full power of substitution and revocation.

Such bonds and undertakings, when duly executed by the aforesaid Attorney(s)-in-fact shall be binding upon the Company as fully and to the same extent as if such bonds and undertakings were signed by the President and Secretary of the Company and sealed with its corporate seal.

This Power of Attorney is granted and is signed by facsimile under and by the authority of the following Resolutions adopted by the Board of Directors of Company ("Board") on the 28th day of July 2016:

RESOLVED, that the President, any Executive Vice President, and any Senior Vice President and Anthony Romano are hereby appointed by the Board as authorized to make, execute, seal and deliver for and on behalf of the Company, any and all bonds, undertakings, contracts or obligations in surety or co-surety with others and that the Secretary or any Assistant Secretary of the Company be and that each of them hereby is authorized to attest to the execution of any such bonds, undertakings, contracts or obligations in surety or co-surety and attach thereto the corporate seal of the Company.

RESOLVED, FURTHER, that the President, any Executive Vice President, and any Senior Vice President and Anthony Romano are hereby authorized to execute powers of attorney qualifying the attorney named in the given power of attorney to execute, on behalf of the Company, bonds and undertakings in surety or co-surety with others, and that the Secretary or any Assistant Secretary of the Company be, and that each of them is hereby authorized to attest the execution of any such power of attorney, and to attach thereto the corporate seal of the Company.

RESOLVED, FURTHER, that the signature of such officers named in the preceding resolutions and the corporate seal of the Company may be affixed to such powers of attorney or to any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be thereafter valid and binding upon the Company with respect to any bond, undertaking, contract or obligation in surety or co-surety with others to which it is attached.

IN WITNESS WHEREOF, Everest Reinsurance Company has caused their corporate seals to be affixed hereto, and these presents to be signed by their duly authorized officers this 28th day of July 2016.



Everest Reinsurance Company

Attest: Nicole Chase, Assistant Secretary

By: Anthony Romano, Vice President

On this 28th day of July 2016, before me personally came Anthony Romano, known to me, who, being duly sworn, did execute the above instrument; that he knows the seal of said Company; that the seal affixed to the aforesaid instrument is such corporate seal and was affixed thereto; and that he executed said instrument by like order.

LINDA ROBINS
Notary Public, State of New York
No 01R06239736
Qualified in Queens County
Term Expires April 25, 2023

Linda Robins, Notary Public

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the seal of said Company, at the Liberty Corner, this 12th day of August 2022.

Everest Reinsurance Company
461 5th Avenue – 4th Floor
New York, N.Y. 10017



EVEREST.

SURETY BOND SEAL ADDENDUM EVEREST REINSURANCE COMPANY

Due to logistical issues associated with the use of traditional seals during the COVID-19 pandemic, Everest Reinsurance Company (“Everest”) has authorized its Attorney-in-Fact to affix Everest’s corporate seal to any bond executed on behalf of Everest by any such Attorney-in-Fact by attaching this Addendum to said bond.

To the extent this addendum is attached to a bond that is executed on behalf of Everest by its Attorney-in-Fact, Everest hereby agrees that the seal below shall be deemed affixed to said bond to the same extent as if its raised corporate seal was physically affixed to the face of the bond.

Dated this 7th day of April 2020.

EVEREST REINSURANCE COMPANY

By: _____
Anthony Romano – Vice President & Global Head of Surety



Power of Attorney

KNOW ALL MEN BY THESE PRESENTS THAT:

Nationwide Mutual Insurance Company, an Ohio corporation

hereinafter referred to severally as the "Company" and collectively as "the Companies" does hereby make, constitute and appoint:

AKLIMA NOORHASSAN; ANNE POTTER; BEVERLY WOOLFORD; BRYAN HUFT; DEBRA A DEMING; FRANCES RODRIGUEZ; FRANCESCA KAZMIERCZAK; JANE GILSON; JEAN CORREIA; KEMAL BRKANOVIC; MARK P HERENDEEN; NANCY SCHNEE; NATHANIEL JAKAITIS; PETER HEALY; SANDRA DIAZ; SUSAN A WELSH; THERESAN E ROWEDDER; VALORIE SPATES;

each in their individual capacity, its true and lawful attorney-in-fact, with full power and authority to sign, seal, and execute on its behalf any and all bonds and undertakings, and other obligatory instruments of similar nature, in penalties not exceeding the sum of

UNLIMITED

and to bind the Company thereby, as fully and to the same extent as if such instruments were signed by the duly authorized officers of the Company; and all acts of said Attorney pursuant to the authority given are hereby ratified and confirmed.

This power of attorney is made and executed pursuant to and by authority of the following resolution duly adopted by the board of directors of the Company:

"RESOLVED, that the president, or any vice president be, and each hereby is, authorized and empowered to appoint attorneys-in-fact of the Company, and to authorize them to execute and deliver on behalf of the Company any and all bonds, forms, applications, memorandums, undertakings, recognizances, transfers, contracts of indemnity, policies, contracts guaranteeing the fidelity of persons holding positions of public or private trust, and other writings obligatory in nature that the business of the Company may require; and to modify or revoke, with or without cause, any such appointment or authority; provided, however, that the authority granted hereby shall in no way limit the authority of other duly authorized agents to sign and countersign any of said documents on behalf of the Company."

"RESOLVED FURTHER, that such attorneys-in-fact shall have full power and authority to execute and deliver any and all such documents and to bind the Company subject to the terms and limitations of the power of attorney issued to them, and to affix the seal of the Company thereto; provided, however, that said seal shall not be necessary for the validity of any such documents."

This power of attorney is signed and sealed under and by the following bylaws duly adopted by the board of directors of the Company.

Execution of Instruments. Any vice president, any assistant secretary or any assistant treasurer shall have the power and authority to sign or attest all approved documents, instruments, contracts, or other papers in connection with the operation of the business of the company in addition to the chairman of the board, the chief executive officer, president, treasurer or secretary; provided, however, the signature of any of them may be printed, engraved, or stamped on any approved document, contract, instrument, or other papers of the Company.

IN WITNESS WHEREOF, the Company has caused this instrument to be sealed and duly attested by the signature of its officer the 20th day of August, 2021.

[Handwritten signature of Antonio C. Albanese]

Antonio C. Albanese, Vice President of Nationwide Mutual Insurance Company

ACKNOWLEDGMENT

STATE OF NEW YORK COUNTY OF NEW YORK: ss

On this 20th day of August, 2021, before me came the above-named officer for the Company aforesaid, to me personally known to be the officer described in and who executed the preceding instrument, and he acknowledged the execution of the same, and being by me duly sworn, deposes and says, that he is the officer of the Company aforesaid, that the seal affixed hereto is the corporate seal of said Company, and the said corporate seal and his signature were duly affixed and subscribed to said instrument by the authority and direction of said Company.



Stephanie Rubino McArthur
Notary Public, State of New York
No. 02MC6270117
Qualified in New York County
Commission Expires October 19, 2024

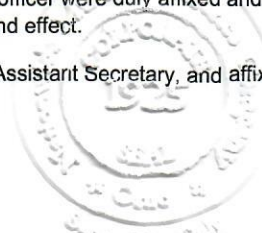
[Handwritten signature of Stephanie Rubino McArthur]

Notary Public
My Commission Expires
October 19, 2024

CERTIFICATE

I, Laura B. Guy, Assistant Secretary of the Company, do hereby certify that the foregoing is a full, true and correct copy of the original power of attorney issued by the Company; that the resolution included therein is a true and correct transcript from the minutes of the meetings of the boards of directors and the same has not been revoked or amended in any manner; that said Antonio C. Albanese was on the date of the execution of the foregoing power of attorney the duly elected officer of the Company, and the corporate seal and his signature as officer were duly affixed and subscribed to the said instrument by the authority of said board of directors; and the foregoing power of attorney is still in full force and effect.

IN WITNESS WHEREOF, I have hereunto subscribed my name as Assistant Secretary, and affixed the corporate seal of said Company this 12th day of August, 2022.



[Handwritten signature of Laura B. Guy]

Assistant Secretary

JOINT LIMITED POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS: That SureTec Insurance Company, a Corporation duly organized and existing under the laws of the State of Texas and having its principal office in the County of Harris, Texas and Markel Insurance Company (the "Company"), a corporation duly organized and existing under the laws of the state of Illinois, and having its principal administrative office in Glen Allen, Virginia, does by these presents make, constitute and appoint:

Theresan E. Rowedder

Their true and lawful agent(s) and attorney(s)-in-fact, each in their separate capacity if more than one is named above, to make, execute, seal and deliver for and on their own behalf, individually as a surety or jointly, as co-sureties, and as their act and deed any and all bonds and other undertaking in suretyship provided, however, that the penal sum of any one such instrument executed hereunder shall not exceed the sum of:

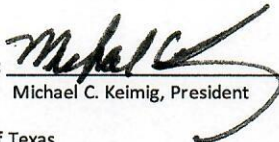
In Unlimited Amounts

This Power of Attorney is granted and is signed and sealed under and by the authority of the following Resolutions adopted by the Board of Directors of SureTec Insurance Company and Markel Insurance Company:

"RESOLVED, That the President, any Senior Vice President, Vice President, Assistant Vice President, Secretary, Assistant Secretary, Treasurer or Assistant Treasurer and each of them hereby is authorized to execute powers of attorney, and such authority can be executed by use of facsimile signature, which may be attested or acknowledged by any officer or attorney, of the company, qualifying the attorney or attorneys named in the given power of attorney, to execute in behalf of, and acknowledge as the act and deed of the SureTec Insurance Company and Markel Insurance Company, as the case may be, all bond undertakings and contracts of suretyship, and to affix the corporate seal thereto."

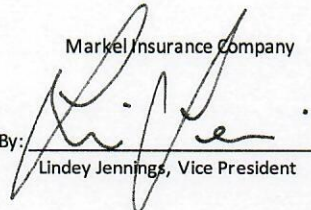
IN WITNESS WHEREOF, Markel Insurance Company and SureTec Insurance Company have caused their official seal to be hereunto affixed and these presents to be signed by their duly authorized officers on the 29th day of June, 2021.

SureTec Insurance Company

By: 
Michael C. Keimig, President



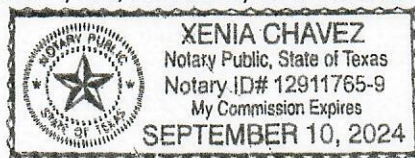
Markel Insurance Company

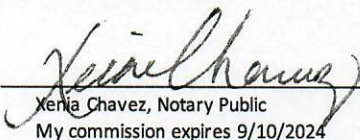
By: 
Lindsey Jennings, Vice President

State of Texas
County of Harris:

On this 29th day of June, 2021 A. D., before me, a Notary Public of the State of Texas, in and for the County of Harris, duly commissioned and qualified, came THE ABOVE OFFICERS OF THE COMPANIES, to me personally known to be the individuals and officers described in, who executed the preceding instrument, and they acknowledged the execution of same, and being by me duly sworn, disposed and said that they are the officers of the said companies aforesaid, and that the seals affixed to the preceding instrument are the Corporate Seals of said Companies, and the said Corporate Seals and their signatures as officers were duly affixed and subscribed to the said instrument by the authority and direction of the said companies, and that Resolutions adopted by the Board of Directors of said Companies referred to in the preceding instrument is now in force.

IN TESTIMONY WHEREOF, I have hereunto set my hand, and affixed my Official Seal at the County of Harris, the day and year first above written.

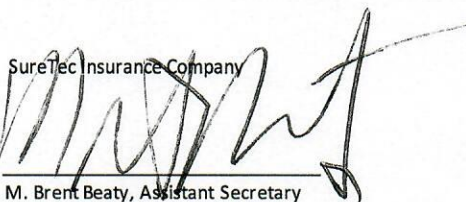


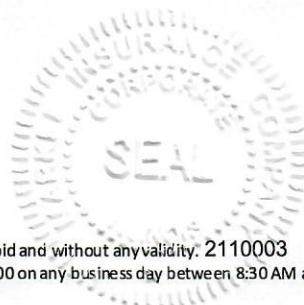
By: 
Xenia Chavez, Notary Public
My commission expires 9/10/2024

We, the undersigned Officers of SureTec Insurance Company and Markel Insurance Company do hereby certify that the original POWER OF ATTORNEY of which the foregoing is a full, true and correct copy is still in full force and effect and has not been revoked.

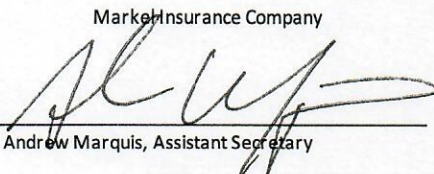
IN WITNESS WHEREOF, we have hereunto set our hands, and affixed the Seals of said Companies, on the 12th day of August, 2022.

SureTec Insurance Company

By: 
M. Brent Beaty, Assistant Secretary



Markel Insurance Company

By: 
Andrew Marquis, Assistant Secretary

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Attachment 3.2.10
SCC and DPOR REGISTRATION DOCUMENTATION

ATTACHMENT 3.2.10

Project: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013

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
The Lane Construction Corporation	F0254476	Stock Corporation	Active	90 Fieldstone Court, Cheshire, CT 06410	Contractor Class A	2701011871	01-31-2024
The Lane Construction Corporation	F0254476	Stock Corporation	Active	14500 Avion Pkwy, Suite 200, Chantilly, VA 20151	Business Entity Registration	0407002174	12-31-2023
WSP USA Inc.	F0501603	Stock Corporation	Active	13530 Dulles Technology Dr. Suite 300, Herndon, VA 20171	Business Entity Branch Office Registration	0411000142	2-29-2024
Accumark, Inc.	04407458	Stock Corporation	Active	9500 King Air Ct., Ashland, VA 23005	Business Entity Branch Office Registration	0411000864	02-29-2024
Alvi Associates, Inc.	F1799750	Stock Corporation	Active	110 West Road Suite 250 Towson, MD 21204	Business Entity Registration Engineering	0407002864	12-31-2023
Bowman Consulting Group Ltd.	11139594	Stock Corporation	Active	3951 Westerre Pkwy, Suite 150, Richmond, VA 23233	Business Entity Branch Office Registration	0411000610	2/29/2024

ATTACHMENT 3.2.10

Project: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013

SCC and DPOR Information

Bowman Consulting Group Ltd.	11139594	Stock Corporation	Active	13461 Sunrise Valley Dr, Suite 500 Herndon, VA 20171	Business Entity Branch Office Registration	0407003896	12/31/2023
CES Consulting, LLC	S3416007	Limited Liability Co.	Active	23475 Rock Haven Way, Suite 255, Dulles, VA 20166	Business Entity Registration	0407005783	12-31-2023
ERM & Associates, LLC	S4315836	Limited Liability Co.	Active	n/a	n/a	n/a	n/a
Pennoni Associates, Inc.	F1800798	Stock Corporation	Active	349 Southport Circle Suite 100, Virginia Beach, VA 23452	Business Entity Branch Office Registration	0411001104	02-29-2024
Quantum Spatial, Inc. (DBA NV5 Geospatial)	F1135948	Stock Corporation	Active	45180 Business Court, Ste 800, Dulles, VA 20166	Business Entity Registration	0407005489	12-31-2023
Straughan Environmental, Inc.	F1295916	Stock Corporation	Active	10245 Old Columbia Rd., Columbia, MD 21046	Business Entity Registration	0407005614	12-31-2023
Terracon Consultants, Inc.	F1574286	Stock Corporation	Active	19955 Highland Vista Drive, Suite 170, Ashburn, VA 20147	Business Entity Branch Office Registration	0411001673	02-29-2024

ATTACHMENT 3.2.10

Project: I-81 Widening MM 221 to MM 225

State Project No.: 0081-007-013

SCC and DPOR Information

DPOR INFORMATION FOR INDIVIDUALS (RFQ Sections 3.2.10.3 and 3.2.10.4)						
Business Name	Individual's Name	Office Location Where Professional Services will be Provided (City/State)	Individual's DPOR Address	DPOR Type	DPOR Registration Number	DPOR Expiration Date
The Lane Construction Corporation	John Ecker	Chantilly, VA	Purcellville, VA	Professional Engineer	0402037393	12-31-2023
WSP USA Inc.	Jeremy Beck	Herndon, VA	Clifton, VA 20124	Professional Engineer	0402043254	07-31-2023
CES Consulting, LLC	Avtar Singh	Dulles, VA	12423 Henderson Rd. Clifton, VA 20124	Professional Engineer	0402035169	01-31-2023

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FULL SIZE COPIES OF SCC REGISTRATION

State Corporation Commission Clerk's Information System

Entity Information

Entity Name: THE LANE CONSTRUCTION CORPORATION	Entity ID: F0254476
Entity Type: Stock Corporation	Entity Status: Active
Formation Date: N/A	Reason for Status: Active and In Good Standing
VA Qualification Date: 07/24/1972	Status Date: 09/11/2019
Industry Code: 0 - General	Period of Duration: Perpetual
Jurisdiction: CT	Annual Report Due Date: N/A
Registration Fee Due Date: N/A	Charter Fee: \$1000.00

Registered Agent Information

RA Type: Entity	Locality: HENRICO
RA Qualification: BUSINESS ENTITY THAT IS AUTHORIZED TO TRANSACTION BUSINESS IN VIRGINIA	
Name: C T CORPORATION SYSTEM	Registered Office Address: 4701 Cox Rd Ste 285, Glen Allen, VA, 23060 - 6808, USA

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name: WSP USA Inc.	Entity ID: F0501603
Entity Type: Stock Corporation	Entity Status: Active
Series LLC: N/A	Reason for Status: Active and In Good Standing
Formation Date: N/A	Status Date: 03/11/2002
VA Qualification Date: 02/11/1986	Period of Duration: Perpetual
Industry Code: 70 - Other DULY LICENSED PROFESSIONAL ENTITY not listed below as SPECIFIED in Section 13.1-543 of the Code of Virginia	Annual Report Due Date: N/A
Jurisdiction: NY	Charter Fee: \$0.00
Registration Fee Due Date: Not Required	

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name: ACCUMARK, INC.	Entity ID: 04407458
Entity Type: Stock Corporation	Entity Status: Active
Series LLC: N/A	Reason for Status: Active and In Good Standing
Formation Date: 01/30/1995	Status Date: 02/07/2015
VA Qualification Date: 01/30/1995	Period of Duration: Perpetual
Industry Code: 0 - General	Annual Report Due Date: N/A
Jurisdiction: VA	Charter Fee: \$50.00
Registration Fee Due Date: Not Required	

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name: ALVI ASSOCIATES, INC.	Entity ID: F1799750
Entity Type: Stock Corporation	Entity Status: Active
Series LLC: N/A	Reason for Status: Active and In Good Standing
Formation Date: N/A	Status Date: 10/15/2020
VA Qualification Date: 08/13/2009	Period of Duration: Perpetual
Industry Code: 0 - General	Annual Report Due Date: N/A
Jurisdiction: MD	Charter Fee: \$50.00
Registration Fee Due Date: Not Required	

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name: Bowman Consulting Group Ltd.	Entity ID: 11139594
Entity Type: Stock Corporation	Entity Status: Active
Series LLC: N/A	Reason for Status: Active and In Good Standing
Formation Date: 11/13/2020	Status Date: 11/25/2020
VA Qualification Date: 11/25/2020	Period of Duration: Perpetual
Industry Code: 0 - General	Annual Report Due Date: N/A
Jurisdiction: DE	Charter Fee: \$750.00
Registration Fee Due Date: Not Required	

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name:	CES Consulting, LLC	Entity ID:	S3416007
Entity Type:	Limited Liability Company	Entity Status:	Active
Formation Date:	10/14/2010	Reason for Status:	Active
VA Qualification Date:	10/14/2010	Status Date:	10/14/2010
Industry Code:	70 - Other Professional Companies	Period of Duration:	Perpetual
Jurisdiction:	VA	Annual Report Due Date:	N/A
Registration Fee Due Date:	Not Required	Charter Fee:	N/A

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name:	ERM & ASSOCIATES, LLC	Entity ID:	S4315836
Entity Type:	Limited Liability Company	Entity Status:	Active
Series LLC:	No	Reason for Status:	Active
Formation Date:	12/03/2012	Status Date:	12/03/2012
VA Qualification Date:	12/03/2012	Period of Duration:	Perpetual
Industry Code:	0 - General	Annual Report Due Date:	N/A
Jurisdiction:	VA	Charter Fee:	N/A
Registration Fee Due Date:	Not Required		

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name:	Pennonni Associates Inc.	Entity ID:	F1800798
Entity Type:	Stock Corporation	Entity Status:	Active
Series LLC:	N/A	Reason for Status:	Active and In Good Standing
Formation Date:	N/A	Status Date:	08/25/2009
VA Qualification Date:	08/25/2009	Period of Duration:	Perpetual
Industry Code:	0 - General	Annual Report Due Date:	N/A
Jurisdiction:	PA	Charter Fee:	\$200.00
Registration Fee Due Date:	Not Required		

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name:	Quantum Spatial, Inc.	Entity ID:	F1135948
Entity Type:	Stock Corporation	Entity Status:	Active
Series LLC:	N/A	Reason for Status:	Active and In Good Standing
Formation Date:	N/A	Status Date:	05/16/2022
VA Qualification Date:	02/09/2000	Period of Duration:	Perpetual
Industry Code:	0 - General	Annual Report Due Date:	N/A
Jurisdiction:	WI	Charter Fee:	\$200.00
Registration Fee Due Date:	Not Required		

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name:	Straughan Environmental, Inc.	Entity ID:	F1295916
Entity Type:	Stock Corporation	Entity Status:	Active
Series LLC:	N/A	Reason for Status:	Active and In Good Standing
Formation Date:	N/A	Status Date:	06/14/2019
VA Qualification Date:	01/09/2008	Period of Duration:	Perpetual
Industry Code:	0 - General	Annual Report Due Date:	N/A
Jurisdiction:	MD	Charter Fee:	\$50.00
Registration Fee Due Date:	Not Required		

State Corporation Commission Clerk's Information System

Entity Information

Entity Information

Entity Name:	Terracon Consultants, Inc.	Entity ID:	F1574286
Entity Type:	Stock Corporation	Entity Status:	Active
Series LLC:	N/A	Reason for Status:	Active and In Good Standing
Formation Date:	N/A	Status Date:	02/26/2021
VA Qualification Date:	01/21/2004	Period of Duration:	Perpetual
Industry Code:	0 - General	Annual Report Due Date:	N/A
Jurisdiction:	DE	Charter Fee:	\$50.00
Registration Fee Due Date:	Not Required		

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FULL SIZE COPIES OF DPOR REGISTRATION (OFFICES)

DPOR License Lookup License Number 2701011871

License Details

Name	THE LANE CONSTRUCTION CORPORATION
DBA Name	VA SIGN AND LIGHTING COMPANY
License Number	2701011871
License Description	Contractor
Firm Type	Corporation
Rank ¹	Class A
Address	90 FIELDSTONE CT, CHESHIRE, CT 06410
Specialties²	Highway / Heavy (H/H)
Initial Certification Date	1972-10-12
Expiration Date	2024-01-31

DPOR License Lookup License Number 0407002174

License Details

Name	THE LANE CONSTRUCTION CORPORATION
License Number	0407002174
License Description	Business Entity Registration
Firm Type	Corporation
Rank	Business Entity
Address	14500 AVION PARKWAY STE 200, CHANTILLY, VA 20151
Initial Certification Date	1985-09-30
Expiration Date	2023-12-31

DPOR License Lookup License Number 0411000142

License Details

Name	WSP USA INC
License Number	0411000142
License Description	Business Entity Branch Office Registration
Business Type	Corporation
Rank	Business Entity Branch Office
Address	13530 DULLES TECHNOLOGY DR STE 300, HERNDON, VA 20171
Initial Certification Date	1997-03-18
Expiration Date	2024-02-29

Accumark Inc.

DPOR License Lookup License Number 0411000864

License Details

Name	ACCUMARK INC
License Number	0411000864
License Description	Business Entity Branch Office Registration
Business Type	Corporation
Rank	Business Entity Branch Office
Address	9500 KING AIR COURT, ASHLAND, VA 23005
Initial Certification Date	2011-09-15
Expiration Date	2024-02-29

Alvi Associates Inc.

DPOR License Lookup License Number 0407002864

License Details

Name	ALVI ASSOCIATES, INC.
License Number	0407002864
License Description	Business Entity Registration
Rank	Business Entity
Address	110 WEST RD STE 250, TOWSON, MD 21204
Initial Certification Date	1988-04-04
Expiration Date	2023-12-31

Bowman Consulting Group Ltd.

DPOR License Lookup License Number 0411000610

License Details

Name	BOWMAN CONSULTING GROUP LTD
License Number	0411000610
License Description	Business Entity Branch Office Registration
Rank	Business Entity Branch Office
Address	3951 WESTERRE PKWY SUITE 150, RICHMOND, VA 23233
Initial Certification Date	2009-07-17
Expiration Date	2024-02-29

DPOR License Lookup License Number 0411001691

License Details

Name	BOWMAN CONSULTING GROUP LTD
License Number	0411001691
License Description	Business Entity Branch Office Registration
Business Type	Corporation
Rank	Business Entity Branch Office
Address	12950 WORLDGATE DR. STE 100, HERNDON, VA 20170
Initial Certification Date	2021-03-30
Expiration Date	2024-02-29

CES Consulting, LLC

DPOR License Lookup License Number 0407005783

License Details

Name	CES CONSULTING LLC
License Number	0407005783
License Description	Business Entity Registration
Firm Type	LLC - Limited Liability Company
Rank	Business Entity
Address	23475 ROCK HAVEN WAY SUITE 255, DULLES, VA 20166
Initial Certification Date	2010-11-05
Expiration Date	2023-12-31

ERM & Associates, LLC

N/A

Pennoni Associates Inc.

DPOR License Lookup License Number 0411001104

License Details

Name	PENNONI ASSOCIATES, INC.
License Number	0411001104
License Description	Business Entity Branch Office Registration
Business Type	Corporation
Rank	Business Entity Branch Office
Address	349 SOUTHPORT CIR STE 100, VIRGINIA BEACH, VA 23452
Initial Certification Date	2014-03-20
Expiration Date	2024-02-29

Quantum Spatial Inc. (DBA NV5 Geospatial)

DPOR License Lookup License Number 0407005489

License Details

Name	QUANTUM SPATIAL INC
License Number	0407005489
License Description	Business Entity Registration
Rank	Business Entity
Address	45180 BUSINESS COURT STE 800, DULLES, VA 20166
Initial Certification Date	2009-07-30
Expiration Date	2023-12-31

Straughan Environmental Inc.

DPOR License Lookup License Number 0407005614

License Details

Name	STRAUGHAN ENVIRONMENTAL INC
License Number	0407005614
License Description	Business Entity Registration
Firm Type	Corporation
Rank	Business Entity
Address	10245 OLD COLUMBIA RD, COLUMBIA, MD 21046
Initial Certification Date	2010-01-28
Expiration Date	2023-12-31

DPOR License Lookup License Number 0411001673

License Details

Name	TERRACON CONSULTANTS INC
License Number	0411001673
License Description	Business Entity Branch Office Registration
Business Type	Corporation
Rank	Business Entity Branch Office
Address	19955 HIGHLAND VISTA DR STE 170, ASHBURN, VA 20147
Initial Certification Date	2021-03-10
Expiration Date	2024-02-29



**FULL SIZE COPIES OF DPOR REGISTRATION
(KEY PERSONNEL)**



DPOR INFORMATION FOR INDIVIDUALS – KEY PERSONNEL:

John Ecker, PE (LANE)

DPOR License Lookup License Number 0402037393

License Details

Name	ECKER, JOHN JOSEPH
License Number	0402037393
License Description	Professional Engineer License
Rank	Professional Engineer
Address	PURCELLVILLE, VA 20132
Initial Certification Date	2002-12-19
Expiration Date	2022-12-31

Jeremy Beck, PE (WSP)

DPOR License Lookup License Number 0402043254

License Details

Name	BECK, JEREMY JAMES
License Number	0402043254
License Description	Professional Engineer License
Rank	Professional Engineer
Address	CLIFTON, VA 20124
Initial Certification Date	2009-07-13
Expiration Date	2023-07-31

Avtar Singh, PE, DBIA (CES)

DPOR License Lookup License Number 0402035169

License Details

Name	SINGH, AVTAR
License Number	0402035169
License Description	Professional Engineer License
Rank	Professional Engineer
Address	CLIFTON, VA 20124
Initial Certification Date	2001-01-18
Expiration Date	2023-01-31



Attachment 3.3.1
KEY PERSONNEL RESUMES



ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title: JAN SHERMAN / PROJECT DIRECTOR	
b. Project Assignment: DESIGN-BUILD PROJECT MANAGER	
c. Name of the Firm with which you are employed at the time of submitting SOQ.: THE LANE CONSTRUCTION CORPORATION	
d. Employment History: With this Firm <u>24</u> Years With Other Firms <u>0</u> Years 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): The Lane Construction Corporation, 2007–Present: Mr. Jan Sherman has been working for Lane for over 20 years. His construction experience consists of a wide assortment of projects for up to \$2B. His project experience includes roadway construction, interstate highways, toll lanes, asphalt plant operations; asphalt runway, taxiway, and apron construction; new bridges, ramps, soundwalls, structures rehab, parking lot construction; cut and cover pedestrian tunnels and trails; and work over major railroads. Mr. Sherman currently serves as Project Director and is responsible to oversee the overall design and construction of his current project in California. He ensures that the contractor meets their obligations in a timely manner, including design, construction, quality management, contract administration and all services required by the Contract. He communicates with the owner directly to answer questions, resolves possible disputes and has extensive experience coordinating public outreach and public meetings. Mr. Sherman is a well-qualified individual, given his vast experience working on numerous highway transportation infrastructure projects procured under alternative project delivery involving interchange, roadway, and bridge aspects of similar complexity, size and scope; as well as his trajectory working with the Virginia Department of Transportation, and now for this proposed DBPM role on the I-81 Widening Project.	
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Clarkson University, Potsdam, NY / Bachelor of Science / 1998 / Civil Engineering	
f. Active Registration: Year First Registered/ Discipline/VA Registration #: N/A	
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> (List only three (3) relevant projects* for which you have performed a similar function. If additional projects are shown in excess of three (3), the SOQ may be rendered non-responsive. In any case, only the first three (3) projects listed will be evaluated.) * On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.	
San Bernardino County Transportation Authority, I-10 Express Lanes, San Bernardino County, CA (DESIGN-BUILD)	
Name of Firm: The Lane Construction Corporation	Project Role: Project Director
Beginning Date: 08/2018	End Date: 03/2023
Specific Responsibilities: Mr. Sherman manages this \$673M highly complex D-B project by interfacing with the Owner and designers to ensure that the project is on schedule and on budget. His large-scale highway D-B management expertise provided a lot of insight when it came to project cost reports, budget, subcontractor oversight, close-out oversight, and DBE planning and compliance. Responsible for the overall design, construction, quality, and contract administration for the Project. Including managing multiple departments to ensure coordination among the various groups to meet contract compliance and Project safety, schedule, and budget.	
Project Relevance: This \$673M D-B project includes design and construction of 11 miles of two express lanes in each direction of I-10 from the Los Angeles/San Bernardino County line to east of the I-10/I-15 interchange. This project also includes reconstruction of 16 bridge structures and substantial drainage with erosion, significant mainline pavement replacement, retaining and sound walls, and utility relocation work. The construction takes place in a densely populated urban area, which requires extensive MOT and staging to work around extremely high traffic volume without major disruption to the traveling public. The scope of work also includes the design and construction of a toll system infrastructure; extensive coordination with stakeholders; assistance to the owner for public involvement activities; environmental permitting, mitigation, and required compliance monitoring; extensive drainage and erosion control work, among the major construction components.	

VDOT, I-66 Route 15 Interchange Reconstruction, Prince William County, VA (DESIGN-BUILD)	
Name of Firm: The Lane Construction Corporation	Project Role: Design-Build Project Manager
Beginning Date: 06/2014	End Date: 08/2017
<p>Specific Responsibilities: As DBPM for this project, Mr. Sherman is responsible for the overall project design and construction. He supervises and manages the design, construction, quality management, contract administration and other services required by the contract, including the procurement and timely delivery of all materials, equipment, services and labor. Mr. Sherman ensures all contract obligations are met and successfully avoids and/or resolves disputes in accordance with contract documents. He is responsible for overseeing the construction and field personnel as well as permitting, erosion control, lighting, signing and pavement marking, traffic control, right-of-way and utility relocation. Mr. Sherman also coordinates public outreach and public meetings.</p> <p>Project Relevance: This \$39M D-B project included reconstructing the interchange of Route 15 over I-66. The project included: diverging diamond interchange (DDI), widening of Route 15 and Route 55, construction of a new service road, and replacement of northbound and southbound bridges carrying Route 15 over I-66. Additionally, the DDI on I-66/Route 15, included two longer bridges with two crossover intersections, ramp improvements, wider intersections, and a shared-use path for pedestrians and cyclists. Project elements included design and construction of roadway pavement and concrete curbs, lane extensions and realignment, implementation and management of a safe work zone, bridges and structures, drainage, utilities, traffic signals and lighting, transportation management plan, survey and mapping, QA/QC, public involvement, and VDOT and stakeholder coordination. Despite a nearly one-year delay due to environmental issues outside of the team's control, Lane, at VDOT's request, expedited the project to successfully complete it on time and on budget and received an acceleration bonus. This project earned the <i>2018 DBIA National Design-Build Project of the Year</i> award.</p>	
VDOT, 495 Express Lanes, Fairfax County, VA (DESIGN-BUILD)	
Name of Firm: The Lane Construction Corporation	Project Role: Construction Manager
Beginning Date: 10/2010	End Date: 12/2012
<p>Specific Responsibilities: As Construction Manager, Mr. Sherman was responsible for directing and managing the project management team, coordinating with and monitoring contract progress with VDOT and subcontractors (including adherence to contractual requirements and specifications), and overseeing the overall safety and quality control programs. He ensured that project resources (manpower, materials and equipment) were available in a timely manner. Was responsible for oversight of construction activities, assisting in estimating quantities, reviewing construction plans and general conduct of the project in Area 2. In addition, he assisted with the maintenance and updating of the project CPM schedule using Primavera Scheduling software as well as scheduling and assuring continued inspection of all materials and construction for conformance to the contract plans and specifications.</p> <p>Project Relevance: This \$1.5B D-B project involved two new lanes which were constructed in each direction on a 14-mile stretch of I-495 from the Springfield Interchange to just north of the Dulles Toll Road. Area 2 of the Express Lanes encompassed the I-495 interchange at I-66, new ramp access at Route 29, W&OD Trail and overpasses south of Route 7 interchange. Construction of the new interchanges in Area 2 required close coordination with homeowners, WMATA, NVRPA and both vehicular & pedestrian foot traffic through the work areas. Unique to Area 2, an active HOV ramp from I-66 to the beltway was maintained throughout the majority of the project, requiring innovative traffic management and alternate means of construction to build the entire interchange. As one of the more congested interchanges along the beltway, construction was performed in a manner to minimize impacts to the traveling public.</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. <i>N/A</i>	

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title: JOHN ECKER, P.E. / PROJECT MANAGEMENT DESIGN MANAGER	
b. Project Assignment: ENTRUSTED ENGINEER IN CHARGE (EIC)	
c. Name of the Firm with which you are employed at the time of submitting SOQ.: THE LANE CONSTRUCTION CORPORATION	
d. Employment History: With this Firm 9 Years With Other Firms 15 Years 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): Mr. Ecker has 24 years of experience in the construction industry and has successfully designed and delivered numerous projects throughout Virginia. Mr. Ecker will be assigned to the Project full-time and shall be actively engaged in coordinating all engineering decisions for the life of the Project (from Notice to Proceed through Final Acceptance). As the proposed EIC on this important project, he will make all engineering decisions as needed for the project and will ensure that responsible charge engineers are available to take immediate action to resolve matters involving potential hazards; ensuring that all engineering work is integrated and in conformance with the contract, ultimately delivering a safe, constructible and functional project. The Lane Construction Corporation, 2021–Present: Mr. Ecker serves as Project Management Design Manager. Currently responsible for a team of project engineers, sealing and signing all shop drawings, design engineer for retaining and sound walls, and temporary support of excavation systems, the development of the design calculations and shop drawings for the above system, and involved in the development of the preliminary design requirements for the bid proposals. ERS LLC, 2020–2021: As Director of Engineering, Mr. Ecker responsibilities included sealing and signing all shop drawings, Lead Designer for Aggregate Pier Foundation Support Systems, Retaining and Sound walls, and temporary support of excavation systems, the development of the primary design requirements for the proposals in order to bid the projects. Also responsible for the development of the design calculations and shop drawings for the above systems. The Lane Construction Corporation (Civil Wall Solutions) 2012–2020: As Design Manager, Mr. Ecker was responsible for a team of project engineers, sealing and signing all shop drawings, design engineer for retaining and sound walls, and temporary support of excavation systems, the development of the design calculations and shop drawings for the above system, and involved in the development of the preliminary design requirements for bidding. GeoStructures, Inc., 2007–2012: As Director of Engineering, Mr. Ecker’s responsibilities included sealing and signing all shop drawings, training and managing project managers, development of the design calculations and shop drawings for the above systems, involved in the development of the preliminary design requirements for the proposals in order to bid the work for the above systems, interpreting the soils information provided in the Geotechnical Engineers report for various projects to assign the design parameters in order to efficiently design the above systems, and design engineer for the Geopier Foundation Support Systems, Retaining and Sound Barrier walls, and temporary support of excavation systems.	
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: University of Massachusetts Amherst, Boston, MA / B.S. / 1998 / Civil Engineering; University of Maryland, College Park, MD / 2009 / ME / Project Management	
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2002/ Professional Engineer / VA Registration # 0402037393	
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> (List only three (3) relevant projects* for which you have performed a similar function. If additional projects are shown in excess of three (3), the SOQ may be rendered non-responsive. In any case, only the first three (3) projects listed will be evaluated.) * On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.	
VDOT, I-95 Express Lanes, Fairfax, Prince William, Stafford Counties, VA (DESIGN-BUILD)	
Name of Firm: The Lane Construction Corporation	Project Role: Project Engineer/Engineer of Record (EOR)
Beginning Date: 06/2012	End Date: 11/2014
Specific Responsibilities: As Project Engineer/EOR for the Civil Walls Solutions division, Mr. Ecker was responsible for engineering decisions and facilitated coordination between the design, construction, and quality assurance teams. He	

worked to make sure the project was in conformance with the contract, compiled the final released for construction plans, specifications, and ensured design decisions were made by qualified professional engineers. He oversaw coordinating design elements from a design and construction perspective to ensure the project was constructible. He reviewed design/construction work in progress/final product, including quality management, contract administration and other services, including procuring/furnishing materials, equipment, services and labor. He made engineering decisions and evaluated for project impacts, made and approved engineering decisions during construction, held authority to stop work and ensured a safe, constructible, functional project delivery.

Project Relevance: This \$726M D-B Project, similar in scope to the proposed American Legion Bridge I-270 to I-70 Relief Plan Project, created 29 miles of Express Lanes on I-395/I-95, from Alexandria, VA, to Route 610 in Stafford, VA. The scope of work included a new 9-mile 2-lane roadway extension of the existing HOV lanes from Dumfries to Route 610; earthwork, major clearing, extensive ITS and signing system, sound walls, new asphalt pavement and mill and overlay, shoulder reconstruction, and structural bridge work on 29 bridges and rehabilitated flyovers including 9 new structures. He oversaw the design and construction of approximately 1 million square feet of sound walls along the project corridor. Relevant scope of work to the I-81 Widening project includes: roadway; survey; structure and/or bridge; environmental; geotechnical; drainage, erosion and sediment control, and stormwater management; traffic control devices; transportation management plan; soundwalls; ROW; utilities (including conduit for future considerations); public involvement/ relations; signage, lighting, variable message boards, and cameras; quality assurance and quality control; construction engineering & inspection; and overall Project management. *Mr. Ecker worked with proposed QAM, Avtar Singh (CES) on this project.*

VDOT, I-66 Inside the Beltway, Alexandria, VA to Washington, DC (DESIGN-BUILD)

Name of Firm: The Lane Construction Corporation	Project Role: Project Engineer/EOR
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Beginning Date: 09/2019	End Date: 06/2020
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Specific Responsibilities: As Project Engineer and EOR for the Civil Walls Solutions division, Mr. Ecker worked with the design and construction teams, including the QAM, to streamline integration ensuring compliance with the contract, compiled the final released for construction plans/specifications/final work packages, ensured complex design decisions were made by qualified professional engineers, performed design quality and constructability reviews, confirmed owner’s requirements were met, and coordinated design reviews with reviewing agencies. He held coordination meetings with the designer, performed value engineering, and coordinated interaction between to members to meet design schedules. Mr. Ecker made engineering decisions and evaluated project impacts, made and approved engineering decisions during construction, held authority to stop work and ensured a safe, constructible, functional project delivery.

Project Relevance: This \$86M project provides an additional lane for eastbound traffic on I-66 from west of Great Falls St. to George Mason Dr. for approximately 3.6 miles. Scope includes interstate roadway widening, drainage and SWM, and full corridor lighting. It also replaced existing noise walls and adds new noise walls along EB I-66. There were also ramp modifications at Exits 69 and 71, bridge widening, and rehabilitations on I-66. There were several upgrades to sections of the Washington & Old Dominion (W&OD) Trail, and design and construction of a new W&OD Trail bridge over Route 29, which was challenged by high tension power lines overhead and large underground utility duct banks near proposed foundations. As part of the “I-66 Inside the Beltway Improvements”, this project provided direct access from eastbound I-66 to the West Falls Church Metro station by constructing a new ramp connection between two existing ramps, EB I-66 to Route 7 and the EB I-66 collector-distributor road adjacent to the station’s parking garage and widening of an existing bridge. *Mr. Ecker worked with proposed QAM, Avtar Singh (CES) on this project.*

Transurban/VDOT, 395 Express Lanes, Washington, DC (DESIGN-BUILD)

Name of Firm: The Lane Construction Corporation	Project Role: Project Engineer/EOR
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Beginning Date: 11/2017	End Date: 09/2019
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Specific Responsibilities: As Project Engineer and EOR for the Civil Walls Solutions division, Mr. Ecker responsibilities included coordinating with the designer and construction teams to streamline integration, conformance with the contract, compiled the final released for construction plans/specifications/final work packages, performed design quality and constructability reviews, confirmed owner’s requirements were met, and coordinated design reviews with reviewing agencies. Mr. Ecker made engineering decisions and evaluated project impacts, made and approved engineering decisions during construction, held authority to stop work and ensured a safe, constructible, functional project delivery.

Project Relevance: The \$350M 395 Express Lanes project was an 8-mile extension of the existing 95 Express Lanes and extends from the current northern terminus of the 95 Express Lanes at Turkeycock Run, near Route 236 (Duke Street) in the south, to the vicinity of Eads Street near the Pentagon in the north. The project converted the two existing HOV lanes on I-395 to three High Occupancy Toll (HOT) lanes, which are used by HOV 3+ vehicles for free, and by other permitted vehicles for a fee (toll). The 395 Express Lanes ties into the existing 95 Express Lanes and now operate as a single, fully-integrated Express Lanes facility. The project included approximately 500 square feet of sound and retaining walls along the corridor.

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. 495 NEXT Project **Role:** Project Management Design Manager **Duration of Project:** 01/2022-3/2023

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title: AVTAR SINGH, PE, CCM, DBIA / PRESIDENT AND QA MANAGER (QAM)	
b. Project Assignment: QUALITY ASSURANCE MANAGER (QAM)	
c. Name of the Firm with which you are employed at the time of submitting SOQ.: CES Consulting, LLC	
d. Employment History: With this Firm 12 Years With Other Firms 16 Years 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): Mr. Singh has 28 years of construction management and project controls experience focused on transportation infrastructure. He served as the QAM/QCM for 6 D-B and P3 high profile local projects. In addition, he has provided technical guidance and oversight of QA, QC, and OIA (owner's independent assurance) management services of 20+ D-B and P3 projects including high-volume and high-speed urban interstates. Due to Avtar's leadership and expertise, VDOT has rated his QAM services as 'Exceeds Expectations' and he has earned excellent CQIP scores for QA services ranging up to 100%. As a result, Avtar understands the complexities of managing large construction projects on congested interstates and has proven ability to develop QA/QC plans; mitigate risks; and resolve design and field issues. As the former Area Construction Engineer for VDOT's NOVA District, Avtar was responsible for more than 28 projects with a cumulative construction value of more than \$230M. He ensured that project startup, execution and closeout processes complied with VDOT and FHWA standards. Avtar's expertise will be a great asset on the proposed I-81 Widening Project. He will be on the Project site full-time for the duration of construction operations. CES Consulting, LLC, 2010–Present: Mr. Singh, serves as President and QAM. He is a hands-on manager who actively manages QA and QC services for D-B and P3 projects. He develops and updates QA/QC plans and monitors compliance; conducts QA audits of the design QA/QC plan; manages QA inspection and testing to confirm correct frequency and accuracy of QC inspection and testing; approves materials testing reports; identifies and resolves non-compliant work and testing results; certifies compliance to contract requirements; leads preparatory inspection meetings; coordinates witness and hold points; prepares QA reports and NCRs; maintains the non-conformance log, deficiency log, and project testing /frequencies Materials Notebook; and generates the punch list and verifies completion. VDOT Northern Virginia District, 2007–2010: As Area Construction Manager, Mr. Singh managed VDOT DBB projects and provided oversight of locally administered projects in Prince William and Loudoun counties. He was responsible for constructability and biddability reviews prior to advertisement, project startup and execution, pay application certifications, and contract closeouts. He resolved contractual issues with the District and central offices and field issues; reviewed and negotiated work orders; and resolved construction and schedule claims.	
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: George Washington University, Washington, DC / Masters Certificate / 2007 / Project Management; Queens University, Kingston, Ontario in Canada / MS / 1994 / Civil Engineering; Queens University, Kingston, Ontario in Canada / BS / 1992 / Civil Engineering. Certifications: CMAA, Certified Construction Manager, #A2127; DBIA, Design Build Professional, #141914; DEQ Combined Administrator (2024); OSHA 30-Hour Safety Training.	
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2001 / Professional Engineer / VA Registration #0402035169	
g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none">1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i>2. <i>Note whether experience is with current firm or with other firm.</i>3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> (List only three (3) relevant projects* for which you have performed a similar function. If additional projects are shown in excess of three (3), the SOQ may be rendered non-responsive. In any case, only the first three (3) projects listed will be evaluated.) * On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.	
VDOT/Transurban, I-95 Express Lanes Fredericksburg Extension, Stafford/ Spotsylvania Counties, VA (DESIGN-BUILD)	
Name of Firm: CES Consulting, LLC	Project Role: Quality Assurance Manager
Beginning Date: 2018	End Date: 2022
Specific Responsibilities: As the QAM, Mr. Singh drafted the Construction Quality Management Plan and the overall Quality Management System Plan. He manages the QA inspection team to ensure all construction activities are inspected, tested, and documented properly and coordinates OIA/IV testing with VDOT. He led preparatory inspection meetings; participates in design and executive meetings and QA audits of the design team's deliverables to confirm compliance	

with the Design Quality Management Plan. Avtar confirms compliance with the DEQ and USACE environmental permits and MOT plans and recommends solutions to non-compliant work and design and field issues such as the presence of unsuitable soil conditions, safely maintaining heavy interstate traffic, extensive MOT and logistical coordination with multiple adjacent projects, and multiple stream crossings with environmental permit constraints. The team uses PlanGrid, Procure, Aconex and other construction management software in the field to ensure seamless and digital interface with the concessionaire, VDOT, DB, QA, and QC teams. **Project Relevance:** This \$401M D-B project includes extension of the I-95 Express Lanes 10 miles south of Route 610 to the I-95 Rappahannock River Crossing projects to create a continuous 50-mile express lane corridor from Fredericksburg to the DC line. The project includes 2 reversible HOT lanes, 2 new access points, 7 new interstate bridges, extensive ITS infrastructure, retaining and sound walls, geotextile reinforced slopes/embankments, drainage and box culverts and large cut-to-fill operations.

VDOT, Route 29 Solutions, Albemarle County and Charlottesville, VA (DESIGN-BUILD)

Name of Firm: CES Consulting, LLC	Project Role: Quality Assurance Manager
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Beginning Date: 2/2015	End Date: 10/2017
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Specific Responsibilities: Avtar managed QA inspection and testing services for the simultaneous construction of three projects along the Route 29 corridor: (1) accelerated bridge construction (ABC) of a grade-separated intersection at Route 29 and Rio Road; (2) widening of a 3-mile segment of Route 29 from 4 to 6 lanes; (3) a 2.3-mile extension of Berkmar Drive including a new 715-foot-long bridge crossing over the Rivanna River, a bike lane, sidewalk and shared use path. Avtar prepared the QA/QC plan ensuring testing and sampling procedures met or exceeded the minimum requirements and oversaw QA inspections in compliance with the QA/QC Plan. He was responsible for QA staffing; reviewing and confirming inspection frequencies and reporting; conducting and participating in preconstruction and weekly meetings; reviewing and approving RFIs; and auditing ESC inspections. Avtar recommended procedural improvements that reduced rework and overall construction costs. He recommended solutions to project challenges such as meeting a fast track schedule to avoid extensive monetary disincentives and 24-hour-a-day-work operations requiring long QA/QC works hours and staffing coordination. Also, Avtar recommended solutions that involved maintaining heavy traffic volumes and safety for many pedestrians; wet and dry utility relocations with numerous latent conflicts and tight urban workspaces; and maintaining access and minimizing impacts to businesses. He was also responsible for ensuring successful execution of the project QMP and ensured quick closeout of project. **Project Relevance:** This \$128M D-B Route 29 Solutions Program consisted of eight highway projects to improve safety and increase mobility along the Route 29 corridor in Charlottesville and Albemarle County. A major highlight of the project was that the team was able to complete the complicated and critical Rio Road Bridge 51 days ahead of schedule and have it opened to traffic. Similar to this proposed the project required roadway design with a mix of roadway rehabilitation, widening, and new construction, bridge/structures, regional transportation management plan (TMP), critical maintenance of traffic (MOT), environmental compliance, and Public Involvement/Public Relations, among other relevant aspects. **Additionally, Mr. Singh worked with Lane on this project.**

VDOT, Warrenton Southern Interchange, Fauquier County, VA (DESIGN-BUILD)

Name of Firm: CES Consulting, LLC	Project Role: Quality Assurance Manager
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Beginning Date: 02/2018	End Date: 10/2020
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Specific Responsibilities: Avtar managed QA services for the construction of an innovative interchange (using a modified barbell interchange Concept) with 2 roundabouts at each end of the precast-concrete bridge to replace a signalized intersection. The single-lane roundabouts can handle tractor-trailers up to 69 feet long. The project also features a 2,000-foot-long pedestrian path across the bridge. Avtar drafted the Construction Quality Management Plan; managed QA inspection, testing, and documentation to ensure all construction activities were inspected, tested and documented properly; reviewed and certified pay applications; coordinated OIA/IV testing with VDOT; and coordinated with the FHWA Area Engineer. Avtar recommended solutions to field challenges such as safety concerns due to extensive work in heavy traffic, limited staff to inspect day and night operations, and multiple MOT patterns to allow construction of the multiple ramps coming off the roundabouts, coordination. In a 2020 VDOT performance evaluation, Avtar's QA/QC plan as well as the QA materials testing and QA inspection services received an **'Exceeds Expectations' rating**. Due to Avtar's leadership and attention to detail, the QA team received a **CQIP score of 100%**. Avtar worked together with Mr. Beck (*proposed Design Manager*) on this project. **Project Relevance:** This \$19.6M D-B project involved constructing a grade-separated interchange where U.S. Route 15/17/29 intersects Business U.S. Route 15/17/29 to the west and Lord Fairfax Drive (Route 808) to the east. The limits of the project are from approximately 0.7 miles south of US 15/17/29 Business to approximately 0.8 miles north of the intersection, for a total length of approximately 1.5 miles. The proposed interchange will remove the existing traffic signal on the Eastern Bypass, allowing free flow of through traffic. One bridge with two (2) spans supported by two fully integral abutments is proposed to support Lord Fairfax Road over Route 15/17/29 Business over US 15/17/29. Abutment walls and wing walls will consist of MSE with maximum height of about 34.74 ft. *Construction was completed one month ahead of schedule.*

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. Albemarle Bundled Projects **Role:** Quality Assurance Manager (part time) **Duration of Project:** December 2022 | I-95 Express Lanes Fredericksburg Extension **Role:** Quality Assurance Manager (part time) **Duration of Project:** May 2023

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title: JEREMY BECK, PE, DBIA / VICE PRESIDENT	
b. Project Assignment: DESIGN MANAGER	
c. Name of the Firm with which you are employed at the time of submitting SOQ.: WSP USA Inc.	
d. Employment History: With this Firm <u>1</u> Years With Other Firms <u>19</u> Years 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): <u>WSP USA Inc., Vice President, Senior Alternative Delivery Project Director, 6/2021 – Present; and Dewberry Engineers Inc., Associate Vice President, Project Manager, 6/2002 – 6/2021:</u> Mr. Beck develops, manages, and successfully delivers design plans and permits for complex multi-phase design-build highway infrastructure projects within the mid-Atlantic region and has extensive VDOT experience. As a senior design manager, he is the single point of responsibility for design procedures/decisions, interacts regularly with Owners and Stakeholders, and manages multi-disciplined design teams. Mr. Beck is adept at working within compressed timeframes, conceiving, implementing innovative concepts, and identifying and managing risk. As Design Manger he coordinates all design and permitting disciplines, directs design subcontractors, and oversees design related utility and right-of-way activities. He reviews, examines, and interprets Contract Documents; as a Virginia registered Professional Engineer, he reviews, signs, and seals record drawings/specifications, engineering reports, and formal technical memorandums. He also establishes and oversees the design QA/QC program and is responsible for design schedules and budgets. His efforts also include coordinating with contractors, reviewing working plans and shop drawings, and ensuring the overall constructability of the work. Mr. Beck's career has been centered around design-build and alternate delivery projects, having performed as the Design Manager on projects that total more than \$6B.	
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: The Pennsylvania State University, State College, PA / BS / 2002 / Civil Engineering	
f. Active Registration: Year First Registered/ Discipline/VA Registration #: 2009 / Professional Engineer / VA 043254, 2019 / Professional Engineer / MD 54154, 2019 / Professional Engineer / NC 048512, 2021 / Design-Build Professional (DBIA) / D-3699, 2018 / Advanced Work Zone Traffic Control Training and Flagger Certification / 113018635	
g. Document the extent and depth of your experience and qualifications relevant to the Project. <ol style="list-style-type: none"><i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i><i>Note whether experience is with current firm or with other firm.</i><i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> (List only three (3) relevant projects* for which you have performed a similar function. If additional projects are shown in excess of three (3), the SOQ may be rendered non-responsive. In any case, only the first three (3) projects listed will be evaluated.) * On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.	
MDOT SHA, I-495 & I-270 Public Private Partnerships (P3) Program, Phase 1, Montgomery County, MD (P3)	
Name of Firm: Dewberry Engineers Inc.	Project Role: Technical Design Manager
Beginning Date: 05/2019	End Date: 06/2021
Specific Responsibilities: As the Technical Design Manager, Jeremy worked for the phase developer, while coordinating with VDOT, MDOT SHA, and FHWA. Jeremy assessed phase and section delivery requirements; directed the work of design discipline leads throughout five main sections and two subsections; led design-related portions of numerous virtual client meetings; interacted with executive management to ensure design, construction, finance, operations, and maintenance issues were accounted for and coordinated; and prepared various staffing plans, schedules, and budgets. He successfully formulated innovative concepts for the I-495 mainline and interchanges at George Washington Memorial Parkway (GWMP), Clara Barton Parkway, River Road/Cabin John Parkway, and at the I-495/I-270 West Spur merge with particular attention paid to the American Legion Bridge where environmental constraints, NEPA commitments, National Park Service concerns, and constructability issues were addressed. Jeremy was also involved with planning and coordinating work between MDOT SHA, the phase developer, VDOT, Transurban, the FHWA/EFL-HD, and the NPS at the I-495/GWMP interchange. He effectively created innovative concepts along the I-270 West Spur mainline and interchanges at Democracy Boulevard, Westlake Terrace, and the I-270/I-270 West Spur merge to maximize revenue. Jeremy was involved with the challenge of minimizing impacts to the Thomas Branch floodplain, located immediately adjacent to and parallel with portions of I-495 and the I-270 West Spur, while simultaneously widening and improving the mainlines and reconfiguring the River Road/Cabin John Parkway and I-495/I-270 West Spur merge interchanges. He competently balanced traffic volume and related interstate cross-sectional requirements, maintenance of traffic needs,	

hydrologic and hydraulic concerns and crossing restrictions, noise barrier locations, retaining wall needs, utility impacts, and constructability issues against extremely narrow project limits established in the NEPA document to blend improvements along one of I-495's most restrictive areas into a reasonable and feasible solution which minimized impacts to historic and cultural resources, utilities, right-of-way, and other sensitive locations while reduced costs and maximized value.

Project Relevance: This \$3B D-B project, now known as Op Lanes Maryland, reduces congestions by widening portions of I-495 and I-270 and providing two dynamically priced high-occupancy toll (HOT) lanes in each direction and improving I-495 from the vicinity of George Washington Memorial Parkway in Virginia, across and including the American Legion Bridge to the I-270 West Spur, and I-270 between I-495 and I-70. The work is being completed within highly restrictive corridors, within an accelerated timeframe, and under extensive public scrutiny.

VDOT, Route 606 Bridge Replacement over I-95 with Route 606 Improvements, Spotsylvania County, VA (DESIGN-BUILD)

Name of Firm: Dewberry Engineers Inc.

Project Role: Design Manager

Beginning Date: 10/2016

End Date: 09/2019

Specific Responsibilities: As the Design Manager, Jeremy led and coordinated all design disciplines, administered the design QA/QC program, ensured the design was in conformance with the Contract Documents, and signed and sealed record drawings. He managed the preparation and approval of an Interchange Modification Report, attended public hearings, and oversaw Limited Access adjustment processes. He attended regular stakeholder meetings and coordinated land acquisition processes with private developers and landowners. Jeremy studied and coordinated sub-surface and structural designs along with constructability items to address down drag, settlement, and construction vibration issues associated with erecting the new bridge immediately adjacent to the structurally deficient bridge. He formulated the innovative hybrid diamond interchange to enhance traffic operations, address congestion; and reduce overall impacts, costs, and duration. Jeremy was able to eliminate the need to obtain right-of-way from the Virginia Outdoor Foundation, facilitate Dominion Raceway expansion plans, and remain within the original project limits while addressing the high percentage of truck traffic utilizing the interchange and continuing to satisfy the purpose and need of the improvement. During construction he provided design support, shop drawing review, as well as RFI responses and conducted site visits, attended progress meetings, and ensured the completion of as-built plans.

Project Relevance: This \$16.5M D-B project included 1,700-feet of re-alignment and widening of Route 606 over I-95, including a new bridge over I-95, interchange ramp re-configurations, I-95 pavement and shoulder improvements, connections with and improvements to Mallard Road and Dominion Raceway Avenue, and three new signalized intersections. The work also included addressing acidic soil, implementing drainage improvements, utilizing two different stormwater management criteria, preparing multi-phase maintenance of traffic plans; and completing pavement, signing and marking, overhead and underground utility relocations and right-of-way plans.

MWAA, Dulles Corridor Metrorail Project, Silver Line Phase 2, Loudoun County, VA (DESIGN-BUILD)

Name of Firm: Dewberry Engineers Inc.

Project Role: West Segment Civil Design Manager

Beginning Date: 04/2013

End Date: 05/2015

Specific Responsibilities: As the Civil Design Manager, Jeremy was the single point of design contact, coordinated all design disciplines, administered the design QA/QC program, ensured the design was in conformance with the Contract Documents, and signed and sealed record drawings for approximately \$325M of construction. He led and coordinated civil design efforts with MWAA, WMATA, VDOT, Loudoun County, and Toll Road Investors Partnership II and attended weekly stakeholder meetings where project challenges were resolved in order to continuously advance the project. Jeremy coordinated land acquisition processes with private developers and landowners which involved acquiring property to accommodate the transition from Part II-C to Part II-B Virginia Stormwater Management Program requirements mid-way through design, several secondary road improvements, the Loudoun Gateway and Ashburn Stations as well as their park and ride facilities, wayside facilities including tie-breaker stations and traction power substations. By managing the creation and maintenance of a highly complex 3D design model, he was able to integrate multifaceted transit, highway, bridge, retaining wall, and drainage components at the interface between rail and highway facilities, immediately adjacent to the heavily traveled freeway thereby optimizing the design and minimizing construction issues. Jeremy identified and resolved complications associated with station access and functionality as well as geometric and sight distance issues along the freeway caused by the addition of track retaining walls while implementing Pier Protection Systems adjacent to existing and proposed bridges. During construction he provided design support, shop drawing review, as well as RFI responses. He also conducted site visits and attended progress meetings.

Project Relevance: The work on this \$1.2B D-B project encompassed 5.5-miles of freeway widening and reconstruction, numerous ramp tie-ins, 11-miles of track retaining walls within the median, three track bridges - one of which crossed the Broad Run floodplain between the existing mainline bridges, four concrete straddle bents, pedestrian bridges. The project retained and modified the existing Route 606 and Loudoun County Parkway overpass bridges, accounting for transit clearances, drainage improvements, complex, multi-phase maintenance of traffic plans, along with geotechnical, pavement, signing and marking, utility and right-of-way elements.

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. *N/A*

ATTACHMENT 3.3.1

KEY PERSONNEL RESUME FORM

Brief Resume of Key Personnel anticipated for the Project.	
a. Name & Title: JERZY MYCKOW / SENIOR PROJECT MANAGER	
b. Project Assignment: CONSTRUCTION MANAGER	
c. Name of the Firm with which you are employed at the time of submitting SOQ.: THE LANE CONSTRUCTION CORPORATION	
d. Employment History: With this Firm 3 Years With Other Firms 41 Years 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): Mr. Myckow has over 40 years of experience in heavy civil transportation construction industry and has worked on multiple projects of similar scope and complexity as this Project. As the Construction Manager on the proposed project, he will manage the construction process, including quality control, and will also collaborate in constructability reviews providing input on means and methods associated with the design. Mr. Myckow will be on the Project site for the duration of construction operations; and will hold all required certifications prior to commencing construction. The Lane Construction Corporation, 2019–Present: Mr. Myckow is a Senior Project Manager at Lane, his responsibilities include management of design, construction, quality, and contract administration. He has a proven track record in safety, quality, timeliness, and profitability. He is skilled in team building and implementing employee involvement and quality control programs to increase morale and performance. Demonstrates excellence under pressure and very demanding timelines. He provides strategic planning and execution for projects and works with design and construction teams on innovative techniques. His wide array of experience on alternative-delivery transportation projects makes him an asset to the proposed team. Mr. Myckow will ensure that his team meets and exceeds the contract requirements for this important Design-Build VDOT project. Tutor Perini, 2013–2019: As Senior Project Manager, Mr. Myckow’s responsibilities included the review and approval of contract documents, negotiation of subcontracts, schedule, cost control, change orders, supervision of craft employees, implementation of safety programs, maintain and establish a relationship with owners and stakeholders, among many other duties. Contract International, 2008–2013: Mr. Myckow worked as Sector Manager, in Abu Dhabi, UAE, where he supervised the construction of a tunnel/underpass structure and oversaw the infrastructure construction for a high-profile project. As Senior Construction Manager he was responsible for the final construction phase of a chemical polyolefin plant and managed a team of over 2,500 employees, construction of 53 structures, used over 150,000 C.M. of concrete, underground utilities, concrete trenches, pipes and drains, and roads. Cherry Hill Construction, 2007–2008: As Project Manager, Mr. Myckow’s responsibilities, since 1998, have included the review and approval of contract documents, negotiation of subcontracts, schedule, cost control, change orders, supervision of 150 craft employees, implementation of safety programs, and maintain/establish a relationship with owners and stakeholders, among his main duties.	
e. Education: Name & Location of Institution(s)/Degree(s)/Year/Specialization: Warsaw University of Technology, Warsaw, Poland / 1978 / Masters in Civil Engineering	
f. Active Registration: Year First Registered/ Discipline/VA Registration #: N/A Mr. Myckow will hold all required certifications prior to assignment to the project and commencement of construction.	
g. Document the extent and depth of your experience and qualifications relevant to the Project. 1. <i>Note your role, responsibility, and specific job duties for each project, not those of the firm.</i> 2. <i>Note whether experience is with current firm or with other firm.</i> 3. <i>Provide beginning and end dates for each project; projects older than fifteen (15) years will not be considered for evaluation.</i> (List only three (3) relevant projects* for which you have performed a similar function. If additional projects are shown in excess of three (3), the SOQ may be rendered non-responsive. In any case, only the first three (3) projects listed will be evaluated.) * On-call contracts with multiple task orders (on multiple projects) may not be listed as a single project.	
MSHA, US Route 1 Bridge Over CSX, Baltimore County, MD (BID-BUILD)	
Name of Firm: The Lane Construction Corporation	Project Role: Project Manager
Beginning Date: 08/2021	End Date: 12/2022
Specific Responsibilities: As the Senior Project Manager, Mr. Myckow is responsible for the review and approval of contract documents, negotiation of subcontracts, schedule, cost control, change orders, supervision of craft employees, implementation of safety programs, maintain and establish a relationship with owners and stakeholders. Mr. Myckow is responsible for the required daily coordination with CSX and Maryland State Highway Administration to ensure the	

work is performed according to the contract's requirements. All submittals for this bridge replacement being built over CSX go through CSX authorities for approval and compliance.

Project Relevance: This \$26M project will replace the US 1 (Washington Boulevard) Bridge over the CSX Transportation rail line in Halethorpe, Baltimore County. Approximately 18,200 vehicles travel on this section of US 1 each day. The new structure will be 120 feet longer and 4 feet higher to enable CSX Transportation to add future rail lines; will accommodate wider shoulders for traffic on the bridge, will also include new retaining walls, and reconstruction of the Clarke Blvd. intersection to accommodate new left turn traffic. A major component for this project is the maintenance of traffic (MOT), that entails temporary and long-term lane closures; and traffic pattern shifts along the corridor. Crews work overnight performing lane closures to avoid traffic flow disruption, and work along the side of the roadway on the shoulders during the day without the need for temporary lane closures.

VDOT I-66 Widening Inside the Beltway, Alexandria, VA to Washington, DC (DESIGN-BUILD)

Name of Firm: The Lane Construction Corporation	Project Role: Construction Manager
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Beginning Date: 3/2019	End Date: 08/2021
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Specific Responsibilities: As the Construction Manager, Mr. Myckow was responsible for managing the construction process, including all Quality Control (QC) activities to ensure the materials used and work performed meet the contract requirements and the "approved for construction" plans and specifications. His duties include Supervision of all Lane crews and subcontractors, coordination and supervision of roadway and utility installation, environmental compliance, traffic control plan review and compliance, weekly meetings with public relations, meetings with VDOT and plan-ahead scheduling. Mr. Myckow was on the project site for the duration of construction operations. His team received Lane's Safety Performance Award in 2019.

Project Relevance: This \$88.6M project will provide an additional lane for eastbound traffic on I-66 from west of Great Falls Street (Route 694) to just east of George Mason Drive for a distance of approximately 3.6 miles. The project includes interstate roadway widening, drainage and stormwater management, and full corridor lighting. The project replaces approximately 4,300 feet of dilapidated noise walls along eastbound I-66. In addition, another 5,100 feet of new noise walls along the eastbound and westbound roadway are being provided based on our team's noise analysis and design. The project includes ramp modifications at Exits 69 and 71 and bridge widening, rehabilitations and/or repairs on I-66. The project upgrades several sections of the W&OD Trail and provides (design and construction) a new W&OD Trail bridge over Route 29, which was challenged by high tension power lines overhead and large underground utility duct banks near proposed foundations. This project, part of the I-66 Inside the Beltway improvements, will provide direct access from eastbound I-66 to the West Falls Church Metro station by constructing a new ramp connection between two existing ramps (eastbound I-66 to Route 7 and the eastbound I-66 collector distributor road adjacent to the station's parking garage) along with widening of an existing bridge. Currently, vehicles exit from I-66, turn right to head south on Route 7, turn left at the signalized intersection at Haycock Road, and then turn left onto Falls Church Drive. These movements have operational and safety issues due to maneuvering, especially during morning and evening peak periods. Our direct access design will save motorists bound for the Metro station time and reduce traffic on already congested Route 7 in these two intersections.

PennDOT, I-83 Interchange at Route 124, York, PA (BID-BUILD)

Name of Firm: Tutor Perini or Cherry Hill	Project Role: Project Manager
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Beginning Date: 01/2017	End Date: 12/2017
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Specific Responsibilities: As Project Manager, Mr. Myckow was responsible for the management of the project engineering and construction staff, survey and quality; also developed project schedule and created progress reports to track cost, coordinated subcontractors, and engineers' activities on site, monitored contract progress, and maintained an effective relationship with the owner and stakeholders. Mr. Myckow ensured all contract obligations were met successfully and avoided and resolved disputes to comply with contract documents. The project was completed safely.

Project Relevance: This \$60M project, located on I-83 at Route 124 in York, PA, reconstructed and widened 1.3 miles of I-83 and rebuilt the Exit 18 interchange. The reconfigured ramps included two new loop ramps on the south side of the interchange, which eliminated the existing left turns from Route 124 East to I-83 North and from I-83 South to Route 124 East. This project involved construction of seven new bridges, two noise walls, two culverts, excavation, paving, new street lighting and traffic signalization.

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. US Route 1 Bridge Over CSX Project,

Role: Senior Project Manager **Duration of Assignment:** 08/2021-12/2022

The page features a white background with blue geometric shapes in the top-left and bottom-right corners. Two horizontal orange lines cross the page, each ending in a solid orange circle. The top line starts from the left edge and ends with a circle at the point where the top-left blue corner meets the white background. The bottom line starts from the left edge and ends with a circle at the point where the bottom-right blue corner meets the white background.

Attachment 3.4.1(a)
LEAD CONTRACTOR WORK HISTORY FORMS

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: 95 Express Lanes Location: Fairfax, Prince William & Stafford Counties, VA (DESIGN-BUILD)	Name: HNTB/HDR	Name of Client./ Owner: VDOT Phone: 571.483.2651 Project Manager: Charlie Warraich, PE Phone: 571.273.8229 Email: H.S.Warraich@virginia.gov	12/2014	11/2014*	\$691,147	\$734,646**	\$326,850

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. The Work History Form shall include only one singular project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be considered a single project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be claimed as a single project on this form. If the Offeror chooses to submit work performed as a Joint Venture or Partnership, identify how the Joint Venture or Partnership was structured and provide a description of the portion of the work performed only by the Offeror's firm.

Similar Scope of Work:	PROJECT SCOPE
<ul style="list-style-type: none"> • Design-Build • Roadways • Survey • Structures and Bridges • Extensive MOT • Environmental • Geotechnical • Drainage, ESC&SWM • Traffic Control Devices • Transportation Management Plan • Soundwalls • Right-of-way • Utilities • Public Involvement/ Relations • Signage, Lighting, Variable Message Board and Cameras • QA/QC • Construction Engineering & Inspection • Overall Project Management 	<p>Lane, as a Construction Joint Venture (CJV) member, shared responsibility for the design and construction of the \$735 million 95 Express Lanes project. The project created approximately 29 miles of Express Lanes on I-95 from Alexandria, VA at the northern terminus to Route 610, Stafford, VA at the southern terminus. The scope of work included a 9-mile roadway extension beginning at the southern end of the existing HOV lanes, consisting of major clearing and earthwork, an extensive ITS and signing system, sound walls, asphalt mill and overlay, shoulder reconstruction, and additionally, structural bridge work (29 bridges and rehabilitated flyovers including 9 new structures). Although only a 35% Fluor-Lane 95, LLC CJV member, Lane provided nearly all of the project supervision and workforce for the CJV. Additionally, Lane performed bridgework and 20 miles of existing HOV lane renovation and widening; as well as, all of the asphalt paving, soundwall construction and some roadway signage. Only Lane of Fluor-Lane LLC will be involved on this I-81 project.</p> <p style="background-color: #0070c0; color: white; padding: 2px;">RELEVANT PROJECT ELEMENTS TO I-81 WIDENING MM 221 TO MM 225</p> <p>Innovative Design Solutions and Construction Techniques: The team established an electronic survey control network for Robotic Controlled Paving to provide high quality pavements. This process utilized 3D models installed in a computer module for the asphalt paver. Several Trimble robotic total survey stations were set up on control stations at approximate 500' intervals along the paving sections. Throughout the paving process the total stations continuously locate a prism target that is mounted on the screed of the paving machine. The horizontal and vertical positions are continuously controlled by the computer module and sent to the paver via a radio connection. The computer module processes this data and makes adjustments to the paver screed based on its location within the project. This process has allowed for a high quality (+/-0.25") and consistent final paving product while assuring quantity yields are very close to design volumes.</p> <p>Limiting Impacts/Commitments to Minimize Congestion: The I-95 Corridor is part of the National Highway System and a Corridor of Statewide Significance. The 95 Express Lanes Project presented numerous site ingress and egress challenges and very tight work areas due to the heavy traffic conditions particularly during morning and afternoon rush hours. The I-95 project corridor carries average daily traffic volumes of nearly 250,000 vehicles per day on one of the most heavily travelled and congested urban corridors in the United States requiring extensive MOT. The D-B team helped mitigate this challenge by working closely with their designers and VDOT to establish MOT plans and developed an extensive orientation and training program to assist with the implementation.</p> <p>Implementing and Maintaining an Effective QA/QC Plan: The team utilized a 'just-in-time' inspection protocol (which was developed on the 495 Express Lanes) such that inspections were planned over the last 18 months of the project instead of the last month. This helped the team achieve substantial completion ahead of schedule, with confidence the work had been properly inspected by the contractor's quality control as well as VDOT. VDOT was updated each week with the quantities placed and the tests required and performed.</p> <p>Developing/Managing Effective Communication Strategies with Stakeholders: A dynamic public information program was implemented which provided advanced notifications to VDOT and the public. This was facilitated through meetings, website access, email blasts, flyers, and door to door calls promoting awareness of construction operations and lane closures in order to provide better travel planning through the corridor. The team held over 415 public meetings and the project site had visits from former Governor McDonnell and VDOT Secretary of Transportation Aubrey Layne as well as accolades from former Governor Terry McAuliffe. Additionally, the team was responsible for coordinating with other contractors regarding their anticipated schedules to complete their adjacent projects. Lane coordinated with over 14 other active contracts during construction. Bridge and Structures: Nine new bridges have been constructed along the project corridor. The new bridges include two each with steel curved girders, two each two span flyovers near Garrisonville Road and Joplin Road, three single span bridges with steel girders over Aquia and Chopawamsic Creeks and Russell Road, one two-span concrete girder bridge over Joplin Road and replacement of the existing Telegraph Road bridge across I-95 with a new two-span steel girder bridge. ROW: Right of Way Acquisition Services. Responsible for right of way acquisition services for all four segments. Environmental: The D-B Team led the efforts to restore Swan's Creek—a tributary to the Potomac River and Chesapeake Bay by installing erosion and sediment controls, placing stone along the creek bed, and micro-grading to allow for habitats and improvements to the overall water quality. The stream, which was identified more than seven years ago by Prince William County officials, had been severely eroded and degraded. With the completed restoration, the stream is now feeding higher quality water into the region's waterways. In addition, nearly 7,500 new trees and shrubs were planted near Swan's Creek as part of the stream restoration effort. Project leaders worked with Prince William County to determine the highest stream improvement priority, resulting in its restoration. TMP/MOT: The 95 Express Lanes project presented numerous work zone ingress/egress challenges and very tight work areas due to the heavy traffic and median work zone conditions. The I-95 project corridor carries an ADT of nearly 250,000 vehicles per day. The Lane Team mitigated this challenge by working with construction and engineering personnel to devise the best MOT schemes; over 1,000 MOT plan sheets were developed and approved. The need for an innovative work zone traffic control and access plan was particularly critical on this project due to the severe deterioration of some of the mainline and surrounding road pavements. Unimpeded access to the existing median was necessary to improve safety, minimize impacts to traffic, reduce stress on existing infrastructure, and accelerate the project schedule. Utility Coordination/Relocation: Extensive utility relocation efforts included identification and data gathering, review of design concepts against existing utility locations (pavement, structures, and signs), determination of mitigation measures, and ongoing coordination with numerous utility companies for both aerial and underground facilities took place during the first year of the project. DBE Efforts: Over \$193M was committed to more than 131 DBE/SWaM firms. Additionally, the team surpassed the On the Job Training Program goal of 24 trainees set by VDOT (31 trainees graduated the program). Safety: The project recorded nearly 4,000,000 manhours worked with 0 Lost Time Accidents. The project OSHA Recordable Incident Rate was 0.44, well below the industry average. A Safety Orientation course was mandatory and provided to all project employees, and daily pre-shift meetings prior to starting work. A Safety Assurance program was also implemented for safety supervisors, this program involved segment safety managers and staff using internally developed Lane computer software on a handheld device to conduct periodic safety audits; any deficiencies were noted and corrected.</p>
Proposed Personnel on Project:	
Jan Sherman (Lane) John Ecker, PE (Lane)	
EVIDENCE OF PERFORMANCE	
<p>Project Awards: "Construction Management Association of America 2013 Project Achievement Award"; ENR's 2015 Project of the Year in the Mid-Atlantic"; "ARTBA's 2015 Safest Project of the Year"; "Excellence in Virginia Government Public Private Partnership Award"; "P3 Highway Project of the Year finalist"; "VDOT and Transportation DBE Advisory Committee 2014 Prime Contractor of the Year"; "ARTBA and Transportation Builders Association Transportation Development Foundation 2014" for substantial completion two weeks ahead of schedule. *The project was completed one month ahead of schedule. **Value was increased by the Owner as a result of increased scope of work. The Owner exercised all contract allowance items which included landscaping, additional ramps, and additional I-395 gate integration work.</p>	



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: I-66 Eastbound Widening Inside the Beltway Location: Arlington and Fairfax Counties, VA (DESIGN-BUILD)	Name: RDA	Name of Client./ Owner: VDOT Phone: 703.259.2960 Project Manager: Mark Gibney P.E. Phone: 703.259.2743 Email: mark.gibney@vdot.virginia.gov	10/01/2021	09/24//2021	\$85,655	\$88,802 (includes interim and early completion milestone incentives)	\$51,619

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. The Work History Form shall include only one singular project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be considered a single project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be claimed as a single project on this form. If the Offeror chooses to submit work performed as a Joint Venture or Partnership, identify how the Joint Venture or Partnership was structured and provide a description of the portion of the work performed only by the Offeror's firm.

<p>Similar Scope of Work:</p> <ul style="list-style-type: none"> • Design-Build • Roadways • Survey • Structures and Bridges • Environmental • Geotechnical • Hydraulics • Drainage, ESC&SWM • Traffic Control Devices • ITS • Transportation Management Plan • Maintenance of Traffic • Soundwalls • Right-of-way • Utilities • Public Involvement/ Relations • Signage, Lighting, Variable Message Board and Cameras • QA/QC • CEI • Railroad Coordination • Overall Project Management 	<p>PROJECT SCOPE</p> <p>This \$85.6M D-B project provided an additional lane for eastbound traffic on I-66 from west of Great Falls Street (Route 694) to just east of George Mason Drive for a distance of approximately 3.6 miles. The project included interstate roadway widening, drainage and stormwater management, and full corridor lighting. In addition, another 5,100 feet of new noise walls along the eastbound and westbound roadway were provided based on our team's noise analysis and design. The project included ramp modifications at Exits 69 and 71 and bridge widening, rehabilitations and/or repairs on I-66. The project upgraded several sections of the W&OD Trail and provided (design and construction) a new W&OD Trail bridge over Route 29, which was challenged by high tension power lines overhead and large underground utility duct banks near proposed foundations. This project created direct access from eastbound I-66 to the West Falls Church Metro station through a new ramp connection between two existing ramps along with widening of an existing bridge. Our direct access design saves motorists bound for the Metro station time and reduces traffic on already congested Route 7 in these two intersections. Additionally the corridor was constrained by barrier walls along the outside and WMATA in the median which created constricted spaces to build the widening – in some cases, as little as one foot of space to other facilities in the corridor.</p>	
<p>Proposed Personnel on Project:</p> <p>Jerzy Myckow (Lane) John Ecker, PE (Lane)</p>	<p>RELEVANT PROJECT ELEMENTS TO I-81 WIDENING MM 221 TO MM 225</p> <p>Innovative Design Solutions and Construction Techniques: Innovation on the project focused on numerous small items rather than big ones due to the nature of the work and the constraints of the project. Our Team worked with Dominion Energy to revamp their policy on clearance from our bridge fencing to their high-tension power lines. Generally stated, their policy identified a distance in plan view. Through detailed discussions, we got them to accept the clearance based on the 3D perspective. This allowed our design to eliminate all bridge fencing that would have needed to have been constructed of composite materials to avoid conductive materials within the “clear zone” and utilize the architectural fencing used along the remainder of the pedestrian bridge over US Route 29. Limiting Impacts/Commitments to Minimize Congestion: Lane coordinated with numerous stakeholders on this project, including VDOT, WMATA, Arlington County, utility companies, and the general public. The Team worked with VDOT to modify the allowable work hours associated with the project to facilitate the construction schedule while maintaining no increased impacts on the traveling public. Furthermore, our team performed an increased amount of nightwork (originally scheduled as daywork) to minimize congestion along the corridor. Implementing and Maintaining an Effective QA/QC Plan: The Lane Team comprised of design and construction staff, QC inspectors, and independent QAM (CES Consulting) and QA unit, worked side-by side with VDOT to ensure the project met and/or exceeded the requirements established by the RFP. The QA/QC Plan was based on the VDOT's Minimum Requirements and updated as needed. The QA/QC Plan not only included roles, responsibilities, authorities, and organizational structure; but it also provided mechanisms to address and report nonconforming (NCR) workmanship, materials, and equipment and auditing and recovery plans (AR) to control and repair deficient items. The same sound approach was implemented by Lane to develop, execute, and update several other QA/QC plans for successful VDOT D-B projects. The Team provided a well-structured, easily audited plan that minimized the need to expand VDOT's contract administration efforts. The processes/procedures defined in the QA/QC Plan were strictly enforced and thoroughly documented to minimize VDOT reviews. Weekly design meetings were held during construction led by the DM to review plans. VDOT and key stakeholders were invited to participate in reviews to review process and express their needs and preferences. Developing/Managing Effective Communication Strategies with Stakeholders: The Project was based on effective partnering and coordination efforts between the Lane Team, VDOT, the City of Falls Church, Fairfax County, Arlington County, the adjacent active contracts, and all other stakeholders. The Team held public meetings; coordinated with VDOT to provide updates to surrounding jurisdictions and public agencies and supported meetings with stakeholders; assisted the NOVA District Communications Office and Traffic Operations Center with a work plan and an overall schedule to support VDOT's webpage and “Messaging to Travelers”; assisted the Communications Office and Public Relations Office as needed in conducting project tours for media and stakeholders; managed social media campaigns to inform residents of project news, milestones, detours, start of new phases of work, completion of phases of work, lane closures, etc. Roadways: Constructed roadway widening, through a sequenced construction plan, which took place simultaneously with bridge and ramp widenings to minimize phasing and disruption to traveling public. On I-66 EB widening constructed relocation of the Hiking and Biking pedestrian bridge over I-66; demolished, mill and overlay old roadway; reconstructed and widened outside shoulders. On I-66 WB constructed WO&D trail and Pedestrian Bridge, trail realignment, bridge widening and new connector; and constructed roadway widening for Route 7 southbound entrance, exit and flyover ramp. Bridge and Structures: The project contains ten bridges – five inside/outside widening or reconstruction, three outside widening for sound walls, one relocation of a pier, and one new. Four of the five widening/reconstruction bridges abut up to WMATA tracks and structures carrying WMATA over the same side roads as the VDOT structures. The proximity of the WMATA structures to the widen bridges is on the average about six feet. The closest is one and half feet. ROW: The Team developed the schedule and sequence of construction in such manner as to permit adequate time to obtain the land rights needed for the project. Our plan constructs Phase 1A, the shoulder strengthening activities (all within VDOT right-of-way) and Phase 1B, the widening of I-66 towards the median, in the Base Scope, all within existing VDOT right-of-way. Environmental: Preliminary environmental activities began shortly after NTP. The Team prepared a comprehensive environmental management plan that included a matrix of environmental commitments and compliance requirements; identified milestone dates integrating those into the project schedule; identified the responsible party; and summarized requirements. E&S Systems were installed and maintained by Lane at all times working with VDOT and DEQ to keep the project within the permits and specs required by the state. Railroad Coordination: Coordination with WMATA was required for bridge and drainage repairs in the vicinities of the railroads. MOT/TMP: The development of MOT/TMP steered the design changes/efficiencies that were implemented into the project, which allowed our team to eliminate the reconstruction of significant retaining wall structures. The initial phase of MOT provided shoulder strengthening along the outside to allow a preliminary shift of traffic to facilitate future phases of construction. A major concern and challenge during MOT was to ensure that previously constructed (by others) ITS/tolling facilities were unaffected by construction. Utility Coordination/Relocation: The utilities presented several challenges. Although the roadway widening was not filled with significant utilities, the side road improvements were inhibited by the potential impact of numerous overhead and underground utilities. As part of our design, a pedestrian bridge was designed to span US Route 29 along the southside of I-66. The location of the bridge was under high tension power lines and over a large duct bank. To resolve the concerns with the power lines, our Team worked with Dominion Energy to revamp their policy on clearance from our bridge fencing to their high-tension power lines. Generally stated, their policy identified a distance in plan view. Through detailed discussions, we got them to accept the clearance based on the 3D perspective. This allowed our design to eliminate all bridge fencing that would have needed to have been constructed of composite materials to avoid conductive materials within the “clear zone” and utilize the architectural fencing used along the remainder of the pedestrian bridge over US Route 29. Our strategy to avoid the ductbank was to create a foundation design that allowed the ductbank to pass through it without impacting or adding undue stresses to the conduits.</p>	
<p>EVIDENCE OF PERFORMANCE</p> <p><i>“I would like to take a moment to thank you all, the Design-Build team, for the successful completion of the I-66 Eastbound Widening Project, which could not have been accomplished without your expertise, commitment, and teamwork.” Mark Gibney VDOT DBPM.</i></p>		

ATTACHMENT 3.4.1(a)

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					Original Contract Value	Final or Estimated Contract Value	
Name: I-85 Widening Location: Cabarrus, NC (DESIGN-BUILD)	Name: HDR	Name of Client./ Owner: NCDOT Phone: 919.707-2400 Project Manager: Boyd Tharrington, PE Phone: 919.796.6034 Email: btharrington@ncdot.gov	10/2014	06/2015	\$125,000	\$149,618*	\$149,618

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<ul style="list-style-type: none"> • Design-Build • Roadways • Survey • Structures and Bridges • Environmental • Geotechnical • Extensive MOT • Drainage, ESC&SWM • Traffic Control Devices • Transportation Management Plan • Right-of-way • Utilities • Public Involvement/ Relations • Signage, Lighting, Variable Message Board and Cameras • QA/QC • Construction Engineering & Inspection • Overall Project Management 	<p>The widening of the heavily traveled I-85 was needed to accommodate additional traffic and reduce congestion. This \$145 million DB project included the widening of approximately seven miles of I-85 from four to eight lanes starting south of Bruton Smith Boulevard/Concord Mills Boulevard to north of NC 73. Lane (as Lead Contractor) removed the existing deteriorated pavement and replaced it with eight lanes of new concrete pavement. Improvements to area roads and interchanges were also performed, including two diverging diamond intersections and a super street. This I-85 project included many tourist attractions including the popular Charlotte Motor Speedway and Concord Mills Mall (North Carolina's No. 1 visitor attraction) which are both accessed by this route. Specific project related elements included; major interstate corridor widening in the median of existing high traffic volumes, shoulder strengthening, structures, MOT, drainage/ hydraulics/SWM, geotechnical (poor soils mitigations), earthwork, permitting, demolition, noise walls, and pavement markings/signage.</p> <p style="background-color: #0056b3; color: white; padding: 2px;">RELEVANT PROJECT ELEMENTS TO I-81 WIDENING MM 221 TO MM 225</p> <p>Innovative Design Solutions and Construction Techniques: This project exemplified our Team's ability to collaborate and devise innovations in a major way. The majority of the new roadway capacity was constructed in the existing 70-foot median, which had the potential to create difficult access for construction equipment and personnel. The need for an innovative work zone traffic control and access plan was particularly critical due to the severe state of deterioration of existing facilities and a high Average Daily Traffic count of 118,000 vehicles. Unimpeded access to the existing median was critical to improve safety, minimize impacts to traffic, reduce stress on existing infrastructure, accelerate the project schedule, and save costs. Lane staff determined that the construction of a temporary bridge with direct median access would solve their needs for unimpeded access. This concept was developed by Lane on previous D-B projects utilizing an existing bridge and a temporary access ramp – Lane used a temporary ramp off an existing bridge for direct median access on the I-95 Widening at Dumfries, VA for VDOT that greatly increased safety, schedule and other impacts. Lane was able to accelerate the schedule during the proposal phase by 11 months ahead of the owner's schedule. The I-85 temporary bridge was the first time a dedicated temporary bridge was constructed along with temporary access ramps. The safety improvements resulting from this concept were significant. The need to haul 40,000 loads of material across interstate traffic into the median was completely eliminated. Thousands of trips by construction and NCDOT inspection staff were also made safely and without entering traffic.</p> <p>Limiting Impacts/Commitments to Minimize Congestion: As previously mentioned, a temporary access bridge with an access ramp was constructed, construction vehicles can access the median areas by traversing this ramp, eliminating any conflict with the normal flow of traffic on these heavily traveled interstate highways. Upon completion of the work, the ramps are removed and existing facilities restored to their original condition or better. The Lane Team owns all necessary structural components to build this bridge. The project won multiple awards for this innovative access concept. By leveraging the efficiency afforded by the access bridge and ramp system, Lane provided the NCDOT and FHWA with a very aggressive schedule and highly competitive cost proposal. Utilizing this concept, Lane was able to submit a project completion date 11 months earlier than the required final completion and a bid price \$8.5 million below the engineers' estimate at bid time.</p> <p>To our knowledge, this was only the fourth time a temporary median access ramp had been implemented in the US, <i>all implemented by Lane.</i></p> <p>Implementing and Maintaining an Effective QA/QC Plan: The use of the temporary median access bridge and ramps provided a significant quality improvement for not only the temporary traffic control measures but also for the new concrete pavement. This concept allowed the concrete pavement to be placed continuously, without the need for "breaks" in the paving, because there was no need for multiple traditional median ingress/egress points. The result was superior concrete pavement quality and exceptional ride smoothness.</p> <p>Developing/Managing Effective Communication Strategies with Stakeholders: Lane coordinated with several stakeholders including two (2) municipalities, over 60 business owners, six (6) utility owners, and multiple local residential communities, and participated in Chamber of Commerce and other public meetings with the client. This was one of the largest D-B projects in the region and involved interstate maintenance of traffic plans, as well as concrete paving, which Lane was highly experienced in.</p> <p>Interstate Widening/Roadway: The project included the widening of approximately seven miles of I-85 from four to eight lanes. Bridge and Structures: Six existing bridges were replaced with new structures, two major interchanges were replaced with DDIs, and another major interchange was improved. The project also included the improvement of several miles of crossing streets with a superstreet arrangement. Environmental: There were major and extensive environmental permit modifications on this project which involved 2,000 feet of stream and wetland impacts. There were bridges over a major river and creek as part of the project. Adopt a Stream program was implemented, the project adopted the "Irish Buffalo Creek" located near the project. Utility Coordination: Responsibilities included coordinating the relocation of multiple major utilities. These included power distribution (two separate owners), natural gas transmission and distribution, water, sanitary sewer, and extensive communication utilities. To successfully resolve the utility conflicts, the team assigned a Lane engineer to that task exclusively as well as a utility coordination subconsultant. Environmental: There were major and extensive environmental permit modifications on this project which involved 2,000 feet of stream and wetland impacts. There were bridges over a major river and creek as part of the project. Safety: The safety improvements resulting from this concept were significant. The need to haul 40,000 loads of material across interstate traffic into the median was completely eliminated and, while hauling is critical, thousands of trips by construction and NCDOT inspection staff were made safely and without entering traffic.</p> <p style="background-color: #0056b3; color: white; padding: 2px;">EVIDENCE OF PERFORMANCE</p> <p>This project received the 2012 "TransOvation" Award and "Roadway Work Zone Safety Awareness" award from the American Road & Transportation Builders Association (ARTBA). Lane also received an award for "Asphalt Operations Safety Innovation" in 2012 from The National Asphalt Pavement Association (NAPA); in addition to the "Top Ten Project" award given by the Roads and Bridges Magazine in 2014. * Owner requested incorporation of alternative design concepts; including the introduction of DDI concepts at two interchanges, the addition of a roundabout intersection, and the implementation of a Superstreet concept on a major crossing road.</p>





Attachment 3.4.1(b)
LEAD DESIGNER WORK HISTORY FORMS



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 Start Date	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)
					Original Contract Value (Original)	Construction Contract Value (Actual or Estimated)	
Name: I-3819B/U-6039 I-40/I-77 Interchange Location: Iredell County, NC (DESIGN-BUILD)	Name: The Lane Construction Corporation	Name of Client: NCDOT Phone: 919.707.6615 Project Manager: Tim McFadden Phone: 919.707.6615 Email: tmcfadden@ncdot.gov	11/2018	6/2024 (Estimated) Design Complete	\$260,290	\$279,705	\$18,778

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. The Work History Form shall include only one singular project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be considered a single project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be claimed as a single project on this form.

Similar Scope of Work:	PROJECT SCOPE
<ul style="list-style-type: none"> • Design-Build • Interstate (and Bridge) Widening • Interstate MOT • Survey/Mapping • Roadways/Structures/Bridges • Environmental/Permitting • Geotechnical • Drainage, SWM, and Phased ESC • Traffic Control Devices • Transportation Management Plan • Soundwalls • Right-of-way • Utilities • Public Involvement/Relations • Signage and ITS • QA/QC • Design Management 	<p>WSP USA Inc. (WSP) is the prime designer for the I-40/I-77 Interchange project with the Design-Build Contractor, the Lane Construction Corporation. The completed design was performed, and construction support is being performed, from offices in Charlotte and Raleigh NC as well as Herndon VA. WSP was responsible for overall design management, coordinating with NCDOT, local communities and stakeholders, preparing innovative design solutions, and implementing an effective design QA/QC program. Specific design and permitting work performed included traffic analysis, the design of interstate, primary, and secondary roadways, 13 bridges, 10 retaining walls, storm sewer systems, minor and major culverts, stormwater management facilities, erosion and sediment control features, multi-stage maintenance of traffic schemes, signing and pavement marking, lighting, electrical, traffic signals, ITS, and soundwalls. WSP completed environment investigations and reports and acquired permits and performed utility coordination oversight. As part of the design scope, WSP implemented DBE requirements, managed design subcontractors responsible for survey and mapping activities, utility designations and test pitting, geotechnical investigations and reporting, noise analysis, and is currently providing construction support.</p> <p>The I-40/I-77 Interchange project reduces congestion and enhances safety by widening I-40 for approximately 4 miles, including bridge widening and a new bridge over Fourth Creek Tributary, widening I-77 for approximately 3.6 miles, and re-constructing the existing system-to-system cloverleaf interchange to a turbine interchange. The project provides collector-distributor lanes on I-40 East for I-77, replaces bridges on I-77 over Fourth Creek, US-64 over I-77, and Broad Street over I-77, rebuilds the I-77/Broad Street interchange, and implements access management strategies on Broad Street through median installations, signal upgrades, and roadway realignments.</p>
Proposed Personnel on Project:	RELEVANT PROJECT ELEMENTS TO I-81 WIDENING MM 221 TO MM 225
Jason Gorrie, PE, PMP, DBIA (WSP)	<p>Innovative Design Solutions and Construction Techniques: The Lane/WSP team implemented innovated solutions on the project through the submittal of two approved Alternative Technical Concepts (ATCs) known as the Turbine Interchange and the Geotechnical Fabric Inter-Layer which received the highest technical score during the design-build selection process. The Turbine Interchange ATC eliminated 3rd level structures, improved constructability, optimized structures, reduced costs, and expedited construction while remaining within the established right-of-way and identified environmental impacts. The Geotechnical Fabric Inter-Layer ATC provided a debonding layer between the existing substrate and new concrete to minimize reflective cracking. To address the aggressive construction schedule, on-site concrete plants were provided to mitigate potential delivery delays due to heavy traffic congestion. Utility relocation concerns were strategically managed by the Lane/WSP team through proactive coordination with the utility owners to advance reviews and secure approvals, determine and acquire permanent utility easements before construction, and then phasing overall construction activities in conjunction with utility relocations.</p>



Figure 1: Interchange Rendering (source: NCDOT)

Limiting Impacts/Commitments to Minimize Congestion: Because of the high traffic volumes on I-40 and I-77 at the system-to-system interchange and the potential for serious crashes, the Lane/WSP team identified the need to limit impacts to the traveling public and expedite construction operations in a safe manner, through the implementation of median crossovers to shift traffic away from bridge construction. Smart Work Zone technology was applied to enhance safety and traffic flow by providing real-time information to motorists regarding traffic delays, incidents, and construction activities. The creative design and construction work strategy, which included early and consistent design and construction integration, ensured that a well-conceived Transportation Management Plan was prepared to minimize the potential for incidents and crashes, facilitate expedited construction, and keep affected businesses, communities, and other stakeholder abreast of planned on-going activities.

Implementing and Maintaining an Effective QA/QC Plan: During design and construction, across multiple offices, disciplines, and subcontractors, WSP completed design QA/QC activities in accordance with the established Quality Management Program as well as with our International Organization for Standardization (ISO) 9001-certified methods and means for establishing, monitoring, and ensuring quality. A key element of the Quality Management Program was the successful integration of the design-build team (Lane/WSP) through regular and over-the-shoulder interdisciplinary constructability reviews which reduced conflicts and maximized construction efficiency. The established design QA/QC program also minimized NCDOT's oversight actions while helping to ensure quality infrastructure.

Developing/Managing Effective Communication Strategies with Stakeholders: WSP developed a Communication Management Plan in coordination with NCDOT to provide project specific information on upcoming road/lane closures, traffic shifts, new traffic patterns, and other relevant construction activities to keep the local community and stakeholders informed through various press releases, fact sheets, community meetings, and the project website. WSP prepared for and attended public involvement meetings, provided exhibits/roll plots for public consumption, and advised stakeholders and the local community of project details, impacts, and overall schedule. The Lane/WSP team also provided a stakeholder manager who coordinated with NCDOT, regularly interacted with stakeholders and the local citizens, distributed project information, responded to questions, and managed expectations. These efforts ultimately established trust with the public and ensured project support through its lifecycle.

EVIDENCE OF PERFORMANCE
The Lane/WSP team received the highest technical score during the short list phase of the D-B procurement.

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 Start Date	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)
					Original Contract Value (Original)	Construction Contract Value (Actual or Estimated)	
Name: Transform 66 Outside the Beltway, Segment 2 Location: Fairfax County, VA (DESIGN-BUILD)	Name: FAM Construction (a joint venture of Ferrovial Construction and Allan Myers, VA)	Name of Client: VDOT Phone: 800.367.7623 (Northern Virginia District) Project Manager: Susan Shaw (VDOT Megaprojects Director) Phone: 703.259.1995 Email: Susan.Shaw@VDOT.Virginia.gov	12/2016	12/2022 (Estimated)	\$3,700,000 *Entire project	\$3,700,0008 *Entire project	\$18,885 *Segment 2 design and construction support


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. The Work History Form shall include only one singular project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be considered a single project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be claimed as a single project on this form.

Similar Scope of Work:	PROJECT SCOPE	 <p align="center"><i>Figure 1: Route 28 Interchange (source: VDOT)</i></p> 
<ul style="list-style-type: none"> • Design-Build • Interstate (and Bridge) Widening • Interstate MOT • Pavement Recycling • Survey/Mapping • Roadways/Structures/Bridges • Environmental/Permitting • Geotechnical • Drainage, SWM, and Phased ESC • Traffic Control Devices • Transportation Management Plan • Soundwalls • Right-of-way • Utilities • Public Involvement/Relations • Signage, Lighting, ITS, and Electrical • QA/QC • Rail Coordination • Design Management 	RELEVANT PROJECT ELEMENTS TO I-81 WIDENING MM 221 TO MM 225	
Proposed Personnel on Project:	Innovative Design Solutions and Construction Techniques:	<p>WSP USA Inc. (WSP) (formerly Louis Berger) is the prime designer for Transform 66 Outside the Beltway, Segment 2 (I-66 between and including the Route 28 interchange and the Waples Mill Road overpass). The completed design was performed, and construction support is being performed, from offices in Richmond, Virginia Beach, and Herndon VA, Washington DC, and Exton PA. WSP was responsible for overall design management, coordinating with VDOT, DRPT, WMATA, local communities, and stakeholders, preparing innovative design solutions, and implementing an effective design QA/QC program. Specific design and permitting work performed included the design of interstate, primary, and secondary roadways, 27 bridges, 129 retaining walls, storm sewer systems, minor and major culverts, stormwater management facilities, erosion and sediment control features, multi-stage maintenance of traffic schemes, signing and marking, lighting, electrical, traffic signals, ITS, and over 6 miles of soundwalls. WSP completed environment activities and acquired permits, implemented DBE requirements, managed subcontractors responsible for survey/mapping activities, pipe video inspections, utility designations/test pitting, geotechnical exploration, testing, and reporting, noise analysis, and is currently providing construction support.</p> <p>Located within a highly restrictive combination of rural and urban areas where secondary options are limited, Segment 2 reduces congestion by widening approximately 7 miles of I-66 to provide two dynamically priced express lanes, three general purpose lanes, as well as nearly continuous auxiliary lanes in each direction while retaining a future rail corridor within the median. Several interchange improvements enhance safety, operations, and access along the corridor while new bike and pedestrian trails, including a shared-use path along I-66, integrate with local facilities, provide enhanced connectivity, and expand bicycle and pedestrian routes.</p> <p>to the E.C. Lawrence Park athletic fields while avoiding other impacts to the Park and delivering on an accelerated schedule. Innovation at the Route 50 interchange includes adding express lane access to/from the east, new bridges over I-66 to improve traffic flow and create room for future rail, and the inclusion of shared-use paths through the interchange while simultaneously facilitating all existing traffic movements and remaining within the NEPA identified limits. Elsewhere in Segment 2, innovations include re-constructing the existing median depressed ramps at Stringfellow Road to provide express lane access while simultaneously building new mainline bridges immediately adjacent to the existing live traffic bridges which required extensive use of 'top-down' temporary sheeting and shoring. Three existing I-66 mainline bridges at Fairfax County Parkway are retained and widened under traffic and the existing overpass bridges at West Ox Road and Monument Drive are retained and adjusted under live traffic. The Waples Mill Road bridge over I-66 is being re-built in phases to keep the bridge open during construction while accommodating the I-66 widening beneath. All along the I-66 widening, numerous existing ramp tie-ins are being strategically modified to accommodate the mainline widening and the existing concrete pavement is being rubblized and recycled as asphalt pavement subbase.</p> <p>Limiting Impacts/Commitments to Minimize Congestion: To reduce impacts to the traveling public and to minimize congestion, an extensive transportation management plan along with complex, multi-phase temporary traffic control plans were prepared and coordinated with construction activities to safely maintain all existing travel lanes during peak hours. Efforts were coordinated with Segments 1 and 3 to ensure seamless operations along I-66 during construction. Off-peak lane closures were coordinated with VDOT and the local communities to facilitate certain construction activities such as material deliveries and girder placements while minimizing noise and light disruptions. Details of upcoming construction activities, lane closures, and traffic operations changes were prepared and posted on the project website and various information outreach processes were undertaken to keep the public informed at all times.</p> <p>Implementing and Maintaining an Effective QA/QC Plan: During design and construction WSP executed comprehensive design QA/QC activities across multiple offices, disciplines, and subcontractors in accordance with the Contract Documents as well as with the International Organization for Standardization (ISO) for quality, utilizing our ISO 9001-certified methods and means for ensuring quality. A key element of design quality focused on the preparation and upkeep of a highly complex 3D design model, integrating highway, pavement, grading, bridge, retaining wall, drainage, utility, and right-of-way components into a single source of information, facilitating conflict identification and resolution, design optimization and quality, as well as construction planning and execution.</p> <p>Developing/Managing Effective Communication Strategies with Stakeholders: Formal partnering was utilized to foster an atmosphere of trust and transparency between VDOT, the Design-Builder, and stakeholders. WSP coordinated and developed public engagement and communication strategies with VDOT, provided timely/proactive information including various digital and print media for use in project newsletters, press releases, fact sheets, community meetings, and the project specific website. We also prepared for and attended community outreach meetings while keeping WMATA and other stakeholders informed about the project. WSP developed and executed an effective Communication Plan as part of the Traffic Management Plan focusing on keeping the public and stakeholders informed.</p>
Robin Huelsbeck, PE (WSP) David Leone, PE (WSP)	EVIDENCE OF PERFORMANCE	

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 Start Date	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)
					Original Contract Value (Original)	Construction Contract Value (Actual or Estimated)	
Name: TDOT I-440 Reconstruction From I-40 to I-24 Location: Nashville, TN (DESIGN-BUILD)	Name: Kiewit Infrastructure South Company	Name of Client: TDOT Phone: 615.350.4300 (Region 3) Project Manager: Lia O'Baid Phone: 615.532.7522 Email: lia.obaid@tn.gov	08/2018	07/2020	\$153,000	\$154,800	\$8,600

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. The Work History Form shall include only one singular project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be considered a single project. Projects/contracts with multiple phases, segments, elements (projects), and/or contracts shall not be claimed as a single project on this form.

<p align="center">Similar Scope of Work:</p> <ul style="list-style-type: none"> • Design-Build • Interstate (and Bridge Widening) • Interstate MOT • Pavement Reconstruction • Survey/Mapping • Roadways/Structures/Bridges • Environmental/Permitting • Geotechnical • Drainage, SWM, and Phased ESC • Traffic Control Devices • Transportation Management Plan • Soundwalls • Utilities • Public Involvement/ Relations • Signage, Lighting, Variable Message Board and Cameras • QA/QC • Railroad Coordination • Design Management 	<p align="center">PROJECT SCOPE</p> <p>WSP USA Inc. (WSP) was the prime designer for the I-440 Reconstruction From I-40 to I-24 project with Kiewit Infrastructure South Company, the Design-Build Contractor. Design and construction support was performed from offices in Nashville, TN and Virginia Beach, Richmond, and Herndon, VA. WSP was responsible for overall design management, coordination with TDOT, conducting local community and stakeholder outreach, railroad coordination, creating innovative design solutions, and implementing the design QA/QC program. Specific work performed included traffic analysis, the design of interstate, primary, and secondary roadways, bridge widenings and deck repairs, several retaining walls, storm sewer systems, minor and major culverts, stormwater management facilities, erosion and sediment control features, multi-stage maintenance of traffic schemes, signing and pavement marking, lighting, electrical, traffic signals, ITS, and soundwall replacements and repairs. WSP also completed utility coordination oversight, performed environmental and permitting activities, managed subcontractors performing survey/mapping, utility designations and test pitting, noise analysis, as well as geotechnical investigations and reporting, and provided design support for construction. The project achieved the aggressive 2-year completion schedule and WSP helped deliver the largest transportation project in TDOT's history ahead of schedule with zero claims for additional cost or time.</p>	
<p align="center">Proposed Personnel on Project:</p> <p>Rex Gilley, PE (WSP) Chris Peltier, PE (WSP)</p>	<p align="center">RELEVANT PROJECT ELEMENTS TO I-81 WIDENING MM 221 TO MM 225</p> <p>Innovative Design Solutions and Construction Techniques: Innovative design solutions included working closely with the Design-Build Contractor during the bid phase to determine the most viable construction techniques for the I-440 over I-65 pair of bridges. Given the length of each bridge, the 80-foot clearance below, and limited access within the interchange, rolling gantry cranes proved to be advantageous for construction activities. To achieve success, girder field splice locations and erection sequences were coordinated with the rolling gantry load rating and existing bridge load rating. Top and bottom lateral bracing in the longest span was implemented to maintain stability of each girder pair, avoiding the need to connect to the existing steel box beams. Permanent overhang brackets for deck placement that were stiff enough to support the deck but flexible enough to shed impact loadings from traffic barriers were designed and detailed. Innovation also included preparing and implementing a phased interstate construction maintenance of traffic plan that facilitated leaving the existing two lanes in operation during construction. This was achieved by strategically strengthening the existing shoulder, shifting traffic, and providing temporary concrete barrier to protect the work zone while ensuring safety and mobility along the I-440 mainline.</p> <p>Limiting Impacts/Commitments to Minimize Congestion: Minimizing impacts to the traveling public was a critical aspect of this congested corridor and the work required maintaining two lanes of traffic in both directions of I-440 during peak morning and afternoon travel times. WSP developed a two-phase MOT scheme to minimize traffic shifts through the project corridor and shorten the construction duration for the project which helped minimize risk to the traveling public and construction workers. As an alternative to complete removal and reconstruction of the pavement along the corridor, the existing concrete slabs were rubblized in-place and used as a base course for the new flexible asphalt pavement. Using rubblization to recycle and reuse the existing concrete slabs maintained the integrity of the subgrade, reduced the duration of impacts to users and businesses, reduced costs, and minimized the hauling and disposal of materials. To minimize the need to close traffic beneath the I-440 over I-65 bridge, the plate girder pairs were assembled in the median off the bridge and then placed using the rolling gantry crane system which also allowed the placement of the span over I-65 to be completed in less than one full weekend closure.</p> <p>Implementing and Maintaining an Effective QA/QC Plan: WSP prepared and implemented a Design Quality Management Program (DQMP) that addressed the need to complete all 21 design packages within 7 months of Notice to Proceed (NTP), several of which were accelerated to allow the contractor to start on critical path items within 3 months of NTP. The DQMP was prepared in accordance with the Contract Document, utilized our Organization for Standardization (ISO) 9001-certified approaches, and accounted for 35 Full time Equivalents across several offices at peak design production. Streamlining file sharing via ProjectWise and facilitating quality control checks and reviews via Bluebeam, allowed WSP to maintain the aggressive design schedule. Effective design/construction QA/QC included the preparation of machine-ready 3D surface design models for use in excavation and grading operations. Additionally, design information for the concrete median barrier features was prepared using Openroads technologies, cross-checked by the contractor, and then utilized for construction. The finished median barriers were verified to ensure daily construction reflected the latest design, providing the highest level of quality assurance. Design Services During Construction (Shop Drawing reviews and RFI responses) followed the same approach to ensure design quality.</p> <p>Developing/Managing Effective Communication Strategies with Stakeholders: WSP coordinated and developed public engagement and communication strategies with TDOT, provided specific information relating to design and construction progress, particularly for the TDOT project Newsroom website, prepared timely/proactive information for and attended community outreach meetings keeping the public and other stakeholders informed about the project.</p>	
<p align="center">EVIDENCE OF PERFORMANCE</p> <p>Tennessee Department of Transportation Commission Clay Bright said, "I want to commend the entire project team for their hard work and dedication to meeting the aggressive completion date." ACEC Tennessee 2021 Engineering Excellence Grand Award</p>		