

COPY

Virginia Military Institute
Lexington, Virginia 24450-0304

REQUEST FOR QUALIFICATIONS

RFP# V211-24-023

Issue Date: 16 October 2023

Title: On-Demand Trades Pool for Renovation and Repair Services
SET-ASIDE FOR SBSO Certified SWaM VENDORS ONLY -- Limited to Area 103

Questions Due: 2 November 2023 at 2:00 PM EST

Due Date: 16 November 2023 at 2:00 PM EST (mailed or hand-delivered to VMI Procurement)

Services) Commodity Code: 91200 -- Construction Services, General

Issuing Agency: Virginia Military Institute
Procurement Services
330 Parade, Avenue
Smith Hall, Room 314
Lexington, VA 24450

Period of Contract: Date of Award through 31 December 2024, with four (4) optional renewals. VMI will also solicit for new vendors to add to the contract annually during an open enrollment period.

Proposals should be mailed or hand-delivered directly to the Issuing Agency shown above.

IDENTIFICATION OF BID ENVELOPE: The signed bid should be returned in a separate envelope or package, sealed and identified as instructed in Section XII, paragraph H. The envelope should be addressed as directed in the heading of this Page of the solicitation. No other correspondence or other bids should be placed in the envelope.

PRE-PROPOSAL CONFERENCE- No pre-proposal conference will be held for this solicitation.

All Inquiries for Information Should Be Directed To: LTC Lynn W. Carmack, VMI Procurement Services at carmacklw@vmi.edu. The Understanding of Requirement Form (Attachment A) must be used for questions concerning specifications or statement of needs.

In Compliance With This Request for Qualifications And To All The Conditions Imposed Therein And Hereby Incorporated By Reference, The Undersigned Offers And Agrees To Furnish The Goods/Services In Accordance With The Attached Signed Proposal Or As Mutually Agreed Upon By Subsequent Negotiation.

Name and Address Of Firm:

Date: 11/17/2023

The Carpentry and Painting Experts, LLC

By: 

(Signature In Ink)

3006 Lincoln Ave

Name: Hristo Katrev

(Please Print)

Richmond, VA Zip Code: 23228

Title: General Manager

EVA Vendor ID or DUNS number 0000035752

Phone: (804) 441-8278

E-mail: estimate@fixandpaint.net

Fax: (888) 592-5062

Note: This public body does not discriminate against faith-based organizations in accordance with the *Code of Virginia*, § 2.2-4343.1 or against a bidder or offeror because of race, religion, color, sex, national origin, age, disability, or any other basis prohibited by state law relating to discrimination in employment.

Ensure that the solicitation is thoroughly read and completed. Complete, sign and return the information requested below with your proposal. FAILURE TO FURNISH THIS DATA MAY RESULT IN REJECTING YOUR PROPOSAL.

NAME: The Carpentry and Painting Experts, LLC

ADDRESS: 3006 Lincoln Ave

CITY/STATE: Richmond, VA, 23228

TELEPHONE NUMBER: 804-441-8278

FEDERAL ID NUMBER(FIN): 20-1326541

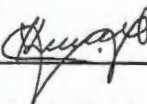
THE ABOVE FIRM IS A: (CHECK, AS APPLICABLE)

- | | |
|--|--|
| <input checked="" type="checkbox"/> SMALL BUSINESS | <input type="checkbox"/> INDIVIDUAL BUSINESS |
| <input type="checkbox"/> WOMAN-OWNED BUSINESS | <input type="checkbox"/> SOLE PROPRIETORSHIP |
| <input type="checkbox"/> MINORITY-OWNED BUSINESS | <input type="checkbox"/> PARTNERSHIP |
| <input type="checkbox"/> SHELTERED WORKSHOP | <input type="checkbox"/> CORPORATION |

RELATIONSHIP WITH THE COMMONWEALTH OF VIRGINIA:

IS ANY MEMBER OF THE FIRM AN EMPLOYEE OF THE COMMONWEALTH OF VIRGINIA WHO HAS A PERSONAL INTEREST IN THIS CONTRACT PURSUANT TO THE CODE OF VIRGINIA, SECTION 2.1-639.1-639.24? ☐ YES ☒ NO

IF YES, EXPLAIN:



SIGNATURE OF OFFEROR

11/16/2023

DATE

Please tell us how you received this solicitation:

- ☐ It was mailed to you directly.
☒ You requested a copy through the Virginia Business Opportunities.
☐ You obtained a copy from the Virginia Department of Small Business and Supplier Diversity
☐ Other (please specify) _____.

Small Business Certification

Definitions

Small Business: "Small business " means an independently owned and operated business which, together with affiliates, has 250 or fewer employees, or average annual gross receipts of \$10 million or less averaged over the previous three years. Note: This shall not exclude SBSD-certified women- and minority-owned businesses when they have received SBSD small business certification.

Women-Owned Business: Women-owned business means a business concern that is at least 51% owned by one or more women who are citizens of the United States or non-citizens who are in full compliance with United States immigration law, or in the case of a corporation, partnership or limited liability company or other entity, at least 51% of the equity ownership interest is owned by one or more women who are citizens of the United States or non-citizens who are in full compliance with United States Immigration law, and both the management and daily business operations are controlled by one or more women who are citizens of the United States or non-citizens who are in full compliance with the United States immigration law.

Minority-Owned Business: Minority-owned business means a business concern that is at least 51% owned by one or more minority individuals or in the case of a corporation, partnership or limited liability company or other entity, at least 51% of the equity ownership interest in the corporation, partnership, or limited liability company or other entity is owned by one or more minority individuals and both the management and daily business operations are controlled by one or more minority individuals.

All small businesses must be certified by the Commonwealth of Virginia Department of Small Business and Supplier Diversity (SBSD) by the due date of the solicitation to participate in the SWaM program. Certification applications are available online at www.sbsd.virginia.gov.

Offeror Name: The Carpentry and Painting Experts, LLC

Preparer Name: Hristo Katrev

Date: 11/16/2023

Instructions

- A. Businesses certified by the Department of Small Business and Supplier Diversity (SBSD) as a small business must complete Section A of this form.

Section A

CERTIFICATION TYPE (check only one below):

☒ Small Business

☐ Small and Women-owned Business

☐ Small and Minority-owned Business

Certification Number: 672999 Certification Date: 12/16/2014

Expiration Date: 01/13/2028

NOTE: It is your responsibility to ensure that your certification is renewed and does not lapse. Should your certification expire, you will no longer be eligible to receive awards under this contract.

ATTACHMENT F

VMI CONTRACTOR / VENDOR STANDARDS OF CONDUCT

The contractor shall be responsible for controlling employee conduct, for assuring that its employees are not boisterous or rude, and are not engaging in any destructive or criminal activity.

Foul language of any kind will not be tolerated. Engaging in verbal or physical behavior that causes distress to cadets, faculty, staff and/or employees will result in immediate removal from the job site.

All employees of the contractor and subcontractors shall wear uniforms or other appropriate Institute approved attire at all times to designate their affiliation with the contractor.

Brandishing a firearm, whether threatening or non-threatening, will result in immediate removal from the job site.

Contractor's employees who appear to be under the influence of alcohol or other substance shall not be permitted on VMI property.

Contractor's employees shall not use VMI owned equipment without the distinct permission of the Director of Physical Plant or Director of Construction or their designees. This equipment includes but is not limited to telephones and computers, hand tools and operable equipment.

The contractor is also responsible for insuring that its employees do not disturb papers on desks, or open desk drawers, cabinets or briefcases, or use the Institute equipment and the like, except as authorized in the preceding paragraph.

Smoking is not permitted on Post or at other VMI owned property except in designated areas as indicated by **General Order 45**. Tobacco use in VMI-owned or leased buildings, covered walkways, temporary enclosed structures, trailers, and tents as well as structures placed on state-owned property by contractors or vendors is prohibited. Tobacco use in VMI provided vehicles is prohibited. Outside smoking or tobacco use will not be permitted within 50 feet of building entrances or exits. Smoking will not be permitted in outside areas identified as hazardous areas.

Agreed to by:

	SIGNATURE
Hristo Katraz	PRINTED NAME
The Carpentry and Painting Experts, LLC	COMPANY
11/16/2023	DATE

TRADE CONSIDERATION

Contractor Pool for Non-Capital Construction, Renovation and Repair Services for projects valued at less than \$50k

Check all trades for which your firm is proposing:

TRADE:	CHECK ALL THAT APPLY FOR CONSIDERATION
General Construction	
Asbestos Remediation	
Asphalt Repair	
Casework/Millwork	
Concrete Work	
Demolition	
Disaster Recovery	
Dry Wall Installation/Finishing	x
Electrical	
Elevator Inspections	
Excavation/Grading	
Exterior Waterproofing	
Fencing	
Fire System Services	
Flooring Installation/Refinishing	x
Guttering	
HVAC	
Insulation services	
Masonry	
Mechanical	
Metal Fabrication	
Mold Remediation	
Painting	x
Plumbing	
Roofing	
Tile and Grout Work	x
Water Mitigation	
Welding	
Window & Door Repair/Replacement	x
OTHER: (Describe)	



»OUR STORY

CPE Contractors was founded in Richmond, Virginia in 2004 and has quickly grown from a two-person organization to a team of dedicated and energetic employees. CPE Contractors is a family owned and operated business. We have been serving the Richmond Area for a number of years and we are your neighbor. We see our clients in the store, restaurant or at the coffee shop, almost every day and we are proud to say "Hi", because we are proud of the work that we did for this customer.

We offer variety of services to our residential and commercial/government customers. CPE Contractors LLC specializes in exterior/interior repairs and painting services, handyman service, tenant build-outs, Historical property renovations as well as small to mid-size ground-up structures.

We have established a reputation of being able to complete projects with difficult and compressed schedules, and concentrate on projects in the following areas: single family houses, corporate and high-end interiors, healthcare facilities, and state and government organizations. CPE Contractors adapts its management skills to meet the demanding needs of our customers and clients as the industry evolves. This company has the necessary expertise and support to complete a full-scope of critical and time-sensitive projects. At CPE Contractors a great deal of pride is taken in its long-standing customer relationships. As a result, more than 50% of its projects come from repeat clients and referrals.

»WHO WE ARE

We are a Local General Contractor specializing in Residential and Commercial Construction.

We maintain a commitment to excellence by holding true to our core values and we will always fight for our team, our clients and our integrity.



» FOCUS

We are committed to providing outstanding service and enhancing the success of our clients by turning over quality projects on time. We honor our commitments and focus on executing exceptional projects while practicing fiscal responsibility.

» INTEGRITY

We provide honest service, both internally and externally, upholding our high standard of excellence and ethical conduct in all decisions we make.

» TEAM SPIRIT

We work as a team towards a common goal. Our team environment promotes cooperation, accountability, collaboration and ingenuity.

» EXCELLENCE

We strive to excel in all areas of service, quality, safety and efficiency by empowering our team to make decisions and holding them accountable for producing Results.



»BRINGING YOU EXPERIENCE

» STANIMIR BOZHILOV, COMMERCIAL PROJECT MANAGER – PAINTING DIVISION



Stanimir, or how we call him—Stan serves as Commercial Project Manager for CPE Contractors, LLC where he is responsible for the strategic planning, management and execution of painting projects for our commercial customers.

Stan also manages CPE's compliance and fulfillment of the commitments made to commercial clients, subcontractors, employees and owners.

With an extensive background in all aspects of the painting industry, Stan fosters strong relationships with clients, subcontractors, industry agents and employees within CPE Contractors. Stan oversees commercial painting projects of various sizes and has great problem solving skills.



100% licensed and insured
**QUALIFIED TO GO WHEREVER YOU NEED US IN THE
STATE OF VIRGINIA**

»»OUR SERVICES

PAINTING

Exterior Painting * Interior Painting * Lead Abatement * Power Washing/Pressure Washing

GENERAL CONTRACTING

Additions and Renovations * Building Restorations * Investor Home Flips * Porches and Decks *
Historical Restoration * Kitchen Remodeling * Tenant Build-out * Fire and Water Damage * Custom
Finished Basements * Dry Wall- Ceilings and Walls * Demolition and Cleanup Services

REPAIRS

Exterior Repairs * Interior Repairs * Carpentry-wood or PVC Hardiplank Siding * Gutters Cleaning *
Masonite sidings repairs * PVC trim repairs * Deck repairs * Door frame repairs * Brick molding
repairs * Door Replacement Railings repairs and installation * Window repairs * Porch columns
repairs * Window sill replacement * Framing walls * Window replacement * Fire and Water damage
Window frame repairs * Subfloor repairs * Crown molding installation * General Maintenance * Chair
rail molding.

» OUR CUSTOMERS



SHAHEEN LAW FIRM, P.C.



broadwaynational



MODERN ORTHODONTICS



» SAFETY

CPE Contractors, LLC has worked an unprecedented 1,698,721 man hours without a lost time injury. This has been realized through management commitment and safety leadership that reaches all supervisors and works. It is the policy of CPE Contractors to provide a place of employment free from hazards, which may cause illness or injury to our clients the general public or our on-site workers. Safety is our first priority. We believe that all injuries and accidents are preventable through establishing and complying with safe work practices during all phases of construction. CPE Contractors implement Site Specific Health and Safety Plans for all projects. This plan focus on identifying, preventing and controlling the hazards associated with each individual project. Subcontractors for this project will develop their open plans for any specialty work that are reviewed and approved by CPE. Such plans will be included in the CPE site specific plan. Compliance with the plan will be enforced and evaluates through jobsite inspection form all management staff. Selecting qualified subcontractors with a history of good safe performance will ensure the overall safe project performance by all parties. Subcontractors using lower tier contractors are required to certify that their subcontractors have been selected using an equivalent qualifications process. All subcontractors must meet the following health and safety criteria in order to be considered approved for work as a CPE subcontractor on the project. The subcontractor's EMR must be one or less The EMR must be substantiated with a letter from the subcontractor's insurance carrier or a letter from the subcontractor stating why an EMR is not established. Both the average of the EMRs listed and the most recent EMR should be less than or equal to 1.0. The OSHA total recordable incident rate, days away case rate and days away rate must be consistent with or less than the average rates for the industry classification. All approved subcontractors must have in place a health and safety program which contains the appropriate OSHA required programs for the proposed tasks. All competent persons, foremen, and management staff, including subcontractor personnel, will be responsible for constant jobsite monitoring. The safety performance of the project will be evaluated by Reviewing the following:

- Documented inspections of the jobsite with any inadequacies noted and corrective action taken.
- The accuracy of the deficiency tracking log.
- Subcontractor participation in safety meetings and site inspections.
- Documented competent person inspections when required (i.e. fall protection, excavations, equipment inspections etc.)
- Compliance with and accuracy of Activity Hazard Analysis plans.

It is the policy of CPE to provide a place of employment free from hazards, which may cause illness or injury to our clients, the general public or our on-site workers. Safety is our first priority. We believe that injuries and accidents are preventable through establishing a strong health and safety program. Some of our innovative and unique policies are:

- Mandated fall protection at heights of 6 feet or more, to include ladder work
- Safety glasses worn at all times on all projects (CPE offers full reimbursement to employees for prescription safety glasses.)
- Drug Free Work Place Policy
- Written steel erection, crane use and lift plans with use of rigging are reviewed and approved by CPE.
- All CPE superintendents/QC Managers are First Aid/CPR & OSHA 30 trained.

In order to create a safe work environment, CPE has established a process to conduct a review and evaluation of the health and safety of our employees and our subcontractors. CPE requires pre-employment "fit for duty physicals" for all employees and an incentive program for annual physicals, we believe this helps contribute to the health and safety of our employees thus improving jobsite safety. CPE provides an extensive safety orientation for all new employees. Each worker (including subcontractors) receives instruction from CPE's site superintendent prior to starting work on our jobsites. We anticipate the continued success of our safety program with this project.

»» APPROACH

The Carpentry and Painting Experts, LLC has over 18 years of experience in working on term contracts with government agencies and universities in Virginia. We have systems in place including proprietary software to track and project manage multiple projects simultaneously. Most of the contracts on which we have been in the past or currently are, have required mandatory bidding on each project requested by the clients. We have never failed to meet this requirement. Although, each organization has their own requirements as it relates to deadlines, submittals, invoicing etc. We have never failed to meet their expectations. We put a great emphasis on punctuality and professionalism. Our company culture has brought to live a team that is extremely careful and respectful when it comes to working in occupied spaces. Most of our long term clients will often praise us for blending in with the environment like we were not even there. All of our employees and subcontractors are expected to be respectful to the environment they are in, and experts in their respective trades. All of our employees are well trained craftsmen with more than sufficient experience in their respective trades. We have been rated by our customers in numerous websites, thank you letters and have A+ BBB rating.

We self-perform a number of trades with in house employees. Our company is a Class A licensed Commercial and Residential Builder in Virginia, and we are licensed Lead Paint Abatement contractor, Electrical, Plumbing, HVAC, Carpentry, Painting, Building, Commercial Renovations, Gas fitting. We have a vast and comprehensive group of subcontractors as well, with which we work on permanent basis. Our team is proficient in all facets of construction and all of our superintendents and key personal are selected based on their problem solving abilities and consistently responsible behavior. Having the ability to do in-house all trades, allows us the unique ability to be flexible and efficient in meeting our client needs whatever they may be. We are not dependent on third parties to get the job done and we can take a project from start to finish in-house.

We regularly do business with a number of local universities as well as a multiple private organizations and non-profits. We are experienced in providing an ongoing construction services for many State contracts. We are currently contracted on 1 year renewable contracts with Department of Military Affairs. We are also contracted on a renewable term contracts for contraction services with the following agencies: Culpeper County, Hanover County, Louisa County, Albemarle County- Public Schools, Virginia Commonwealth University, and Virginia Community College System. We are on term contracts for General Construction and Skilled Trade Services with a number of local universities -VCU, Longwood University, College of William and Mary, James Madison University, Richard Bland College, George Mason University. We are contracted on 1 year renewable contracts with Virginia Department of Transportation -VDOT Fredericksburg, Virginia Department of Aviation, Goochland County and Department of Corrections. Having this experience with state/government contracts helps us and our employees to be familiar with the work requirements for state agencies

including: invoicing requirements, work order compliance, payment structure and payment methods.

By selecting us as one of your contractors you can expect that each project will be assessed and bid, based on the needs of the customer, including timelines, scope, work outside of business hours or during etc. We have been known to make impossible deadlines, by being creative and also using multiple shift crews to achieve the needed goal. Our philosophy is that every problem has a solution and when in need, our teams always creates a solution when faced with a problem. Renovation projects often present unexpected situations, but we pride ourselves in always being able to present a quick and effective resolution to our customers in a timely fashion without compromise to quality.

When assessing a job to bid, we would like to be able to observe the existing conditions, need for permits, submittal requirements and scheduling requirements. Our estimators and project managers will closely work with the agent of the client responsible for each job to make sure that all of their needs are covered. We will also work closely with the customers' agents to clarify any scope inconsistencies and clarify and eliminate misunderstandings. Each project has an assigned project manager who is the point of contact with the customer. The project manager is in charge of making sure all submittals, change order requests, schedules are submitted properly and within the time frame that the deadlines allow for. The project manager is also in charge of ensuring that the project schedule is being followed and the deadlines are met. In the case that this is not happening as expected project manager along with the general manager of the company will create a solution to get back on track.

Plan and methodology for providing the goods/services

- Once an award is received we will contact the project representative to schedule a pre-construction meeting to discuss specifications and requirements.
- Contractor will address safety questions and concerns with the customer and come up with procedures acceptable by OSHA. Safety Data Sheets will be provided on all materials used on campus.
- Contractor will discuss emergency procedures and protocol with contract administrator to ensure best response, in case of emergency.
- Contractor will discuss parking of work vehicles locations.
- Contractor will discuss methods of protecting and preserving all surroundings including plants masonry, shrubs, irrigation etc.

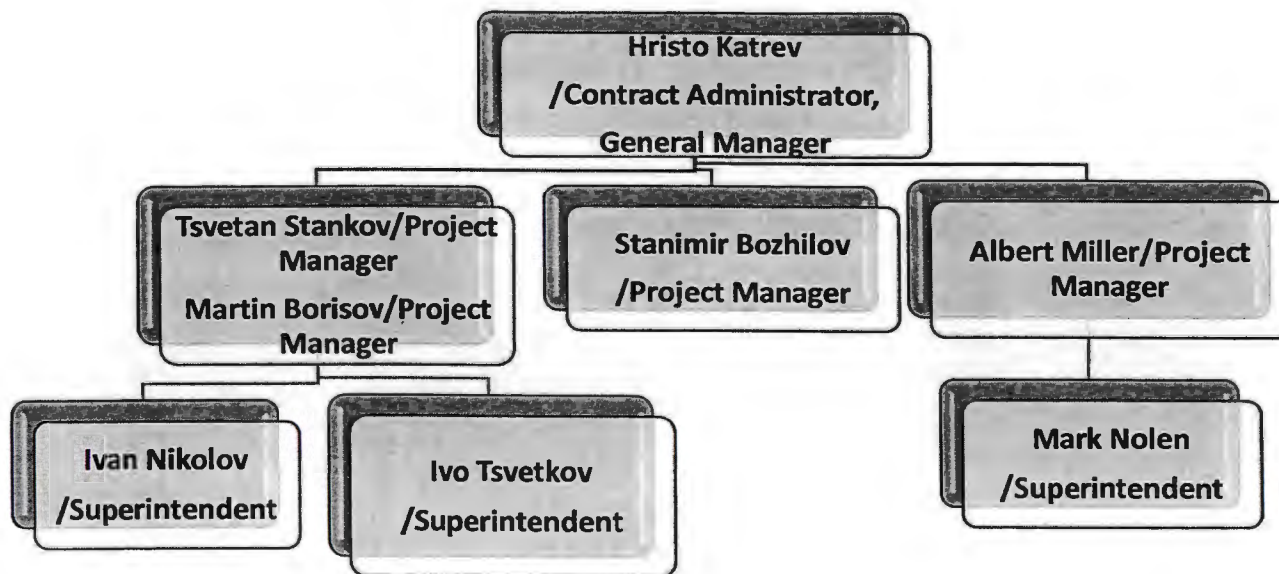
- Contractor will discuss their plan for usage of aerial equipment.
- Contractor will establish strict start date and performance schedule with the customer.
- Contractor will assign a Project manager and a Superintendent and introduce them to the customer representative.
- Contractor will always assign the appropriate number of employees needed to complete the project within the prospected timeframe by customer.
- The project will have one assigned employee, who is the onsite point of contact and in charge of the work process in the field. This person will always be aware of the entire scope of the project and available on site. Project managers will be the administrative point of contact for this job.
- Once at jobsite all employees will follow instructions specified depending on the requirements and specs provided by contract officer.
- All employees are expected to behave professionally and look clean and presentable, while on jobsite. They will wear name tags as requested.
- All employees will be held accountable for maintaining the order and cleanliness of the jobsite on a daily basis.
- All work will be done in accordance with all applicable laws, ordinances, rules, regulations and codes including Virginia OSHA requirements and the Virginia Uniform Statewide Building Code issued by the department of housing and Community Development.
- Contractor will perform all work in a fire-safe manner.
- Employees will have on them or in their van all necessary and adequate tools and equipment for the job.
- The work being performed will be done to meet and exceed industry standards
- The contractor will check in with University's designated representative daily while project lasts.
- Close out procedures:

Contractor and Contract Administrator to inspect the job site and create a punch list if necessary

Contractor will complete any punch list items expeditiously

Contractor to send invoice to customers upon completion

Organizational Chart





ADDENDUM 1 V211-24-023

330 VMI Parade Lexington, VA 24450
Phone: 540-464-7323 Fax: 540-464-7669

Project: *On Demand Trades Pool, Project Values to \$50K
Set-Aside for SBS Certified SWaM Vendors*

Date: *31 October 2023*

To: Prospective Offerors

This Addendum forms a part of the Contract Documents and modifies, corrects or supplements the original Request for Proposal dated 16 October 2023.

Additional Scope:

This addendum is provided to add Solar Panel Design, Manufacturing and Installation Services to the trades that are being solicited for contract. This scope is detailed in Additional Requirements Attachment O included as part of this addendum. The Trade Consideration, Attachment G, document has been updated and the new version is also attached.

The solicitation schedule is also amended:

Questions Due: 2:00 PM, 8 November 2023
Proposals Due: 2:00 PM, 17 November 2023

Proposals are due at 330 VMI Parade Avenue, Room 314 by the posted deadline. Late proposals will not be accepted. Please note that VMI is not in a guaranteed delivery zone and vendors should plan accordingly.

Submitted by: LTC Lynn W. Carmack
Assistant Director of Procurement Services
540-464-7223
carmacklw@vmi.edu

**ADDITIONAL REQUIREMENTS FOR
SOLAR PANEL DESIGN, MANUFACTURING & INSTALLATION SERVICES**

Objective. Contractor shall provide a total “turnkey” project including all necessary equipment, materials, design, manufacturing, and installation services for the installation of a [Roof-Mounted, Ground-Mounted, and Carport-Mounted Grid-Tied PV System] utility-interactive photovoltaic (PV) system. The contractor should prepare a system summary detailing each location, applicable equipment/size, and predicted system energy production (kWh). With regard to any building-mounted system, the contractor shall evaluate roof conditions and may remove the existing roof system and replace it with either an integrated roof/PV system or a new roof with a PV system installed. See roofing specification for these requirements. The project shall meet all requirements of this statement of work and other specifications included that apply.

Scope. The contractor shall perform all professional services as necessary to provide Virginia Military Institute with a complete design package, including the requirements outlined in this statement of work. The contractor shall install the project such that it is operational and compliant with all applicable standards, building codes, utility interconnection requirements, and Virginia requirements. The contractor shall include specifications, calculations, and drawings in the design package and submit it to VMI Construction Office for review and approval. After approval by Virginia Military Institute of the final design package, the contractor shall provide all necessary construction services to successfully complete the PV system installation.

Design Guidelines for [Roof Mounted, Ground Mounted, and Carport].

Design Guidelines for Rooftop PV. Contractor shall develop a design for a new PV system at [LOCATION]. See attached drawings indicating available areas for installation and existing roof structure plans. These drawings are meant for informational purposes only and must be field-verified by the contractor.

- The mounting system shall minimize roof penetrations and may include building-integrated roof PV or fully ballasted. The mounting system design needs to meet applicable local building code requirements with respect to snow, wind, and earthquake factors.
- Conduit penetrations shall be minimized.
- If the system is not building-integrated or membrane-sealed, the system shall be fixed-tilt (minimum 5-degree tilt for flat roof or flush mounted for sloped roof) with an orientation that maximizes annual energy production.
- All roof access points shall be securely locked at the end of each day.
- The system layout shall meet local fire department, code, and ordinance requirements for roof access.

Design Guidelines for Ground-Mounted PV. The contractor shall develop a design for a new PV system at [LOCATION]. See attached drawings indicating available areas for installation. Not all locations need to be used. It is the responsibility of the contractor to assess site topography and review geotechnical report to estimate costs related to project installation. The entity will provide geotechnical report as part of this request for proposal

- The mounting system shall be either directly anchored into the ground (driven piers, concrete footers, etc.) or ballasted on the surface without ground penetration. The mounting system design needs to meet applicable local building code requirements with respect to snow, wind, and earthquake factors.

- Panels' orientation or azimuth shall be within 20–30 degrees of due south.
- Panels' tilt shall be based on site latitude and wind conditions.
- Ground cover and vegetation management shall be included in the proposal.
- The stormwater management and erosion control management plan shall be included in the proposal.
- OPTIONAL. Chain link fencing and gate shall be included in the proposal.
- All lines interconnecting PV arrays to the point of interconnection (POI) shall be underground.

Design Guidelines for Carport PV. The contractor shall develop a design for a new PV system at [LOCATION]. See attached drawings indicating available areas for carport installation. Not all locations need to be used. It is the responsibility of the contractor to assess site topography and geotechnical attributes to estimate costs related to the project installation.

- Carport PV shall be tilted at a minimum of 5 degrees to allow for drainage and reduce soil buildup.
- The carport PV shall be at least 9 ft clear in all locations.
- Lighting shall be provided under each carport. This lighting shall be efficient (e.g., light-emitting diode, LED) and allow for adjustable times for illumination with photocell controls to turn the lights on at dusk and off in the morning prior to daylight.

All lines interconnecting PV arrays to the POI shall be underground.

Performance Criteria. The following performance criteria shall be met for all arrays:

- The power provided shall be three-phase compatible with the on-site distribution system. Winning bidder will be required to submit design drawings stamped (by a licensed professional engineer) specifying connection voltage and location.
- The proposal shall provide an estimated energy delivery for each array, for each month of the year, and for the total for the year at the delivered voltage.
- The standard test condition (STC)-rated power value, slope, and orientation will be entered into PVWatts (<http://pvwatts.nrel.gov/>) using the nearest weather file to determine estimated energy delivery in kWh AC. A default value for the system losses of 14% shall be used.
- The PV array shall mean one or more PV modules having the same orientation and on the same maximum power point tracking (MPPT) system. Every array with differing orientation shall have a separate MPPT system.
- All proposed/implemented PV array locations shall be shade-free from 9 a.m. to 3 p.m. (solar time). The contractor shall provide documentation of shading calculations for exterior extents for each proposed array. These calculations may be modified for shading obstructions that will be removed and mitigated as part of the project. Suggested documentation would include sun path diagrams for exterior array locations or SunEye measurements.
- All PV hardware components shall be either stainless steel or aluminum. PV structural components shall be corrosion-resistant (e.g., galvanized steel, stainless steel, composites, or aluminum).
- The project, including supports and power conductors, shall not interfere with roof drains, water drainage, expansion joints, air intakes, existing electrical and mechanical equipment, existing antennas, and planned areas for future installation of equipment shown on drawings.

Production Metering. The project shall have at least one production meter at POI of the building.

Construction. Contractor (unless otherwise noted by Virginia Military Institute) shall perform all construction services necessary for the successful installation of the system based upon the design generated

Technical Requirements and Reference Materials

- **Code Compliance.** The installation and equipment shall comply with applicable building, mechanical, fire, seismic, structural, and electrical codes. Only products that are listed, tested, identified, or labeled by Underwriters Laboratories (UL), Factory Mutual (FM), Electrical Testing Laboratories (ETL), or another nationally recognized testing laboratory shall be used as components in the project. Non-listed products are only permitted for use as project components when a comparable useable listed component does not exist. Non-listed products proposed for use as components must be identified as such in all submittals.
- The contractor shall use project components that are or made of materials that are recyclable, that contain recycled materials, and that are or ENERGY STAR® rated if they are available on the market.
- The publications listed below form a part of this document and are hereby incorporated by reference:
 - National Electrical Code (NEC)
 - UL 1703 Flat – Plate PV Modules and Panels
 - UL 1741 – Standard for Static Inverters and Charge Controllers for Use in PV Power Systems
 - FM Approved – Fire Protection Tests for Solar Component Products
 - International Electrotechnical Commission (IEC) 62446 Grid-Connected PV Systems – Minimum Requirements for System Documentation, Commissioning Tests, and Inspections
- Other technical codes that shall apply include:
 - American Society of Mechanical Engineers (ASME) Performance Test Codes (PTC) 50 (solar PV performance)
 - American National Standards Institute (ANSI) Z21.83 (solar PV performance and safety)
 - National Fire Protection Association (NFPA) 853 (solar PV systems near buildings)
 - Institute of Electrical and Electronics Engineers (IEEE) 1547 (interconnections)
 - American Society of Civil Engineers/Structural Engineering Institute (ASCE/SEI)-7 – ASCE – “Minimum Design Loads for Buildings and Other Structures”
 - National Roofing Contractors Association (NRCA)

Roles and Responsibilities

Contractor. The contractor is required to provide:

- Conceptual Design Drawings
- Construction documents and engineering calculations that are signed and sealed by a licensed architect or professional engineer in the appropriate discipline of the subject design drawings (e.g. architectural, geotechnical, electrical, structural)
- Submittals for materials and products
- Construction materials, equipment, and labor
- Design and construction supervision/contract management
- A quality control plan (QCP)
- A safety plan
- Inspections and tests (per QCP)
- Manuals (e.g., design calculations, operation/maintenance, a shop drawing, etc.)

- Commissioning of the project
- Mentoring and training of building operating staff for operation and maintenance
- Operation and maintenance during the first year and an optional service plan after the first year
- A web-based monitoring system for 20 years

Virginia Military Institute will:

- Provide information and facility site visits per the contractor's request
- Review for approval design submittals and QCP
- Witness inspections to verify attainment of performance requirements
- Make progress payments for design/construction as agreed

TRADE CONSIDERATION

Contractor Pool for Non-Capital Construction, Renovation and Repair Services for projects valued at less than \$50k

Check all trades for which your firm is proposing:

TRADE:	CHECK ALL THAT APPLY FOR CONSIDERATION
General Construction	
Asbestos Remediation	
Asphalt Repair	
Casework/Millwork	
Concrete Work	
Demolition	
Disaster Recovery	
Dry Wall Installation/Finishing	x
Electrical	
Elevator Inspections	
Excavation/Grading	
Exterior Waterproofing	
Fencing	
Fire System Services	
Flooring Installation/Refinishing	x
Guttering	
HVAC	
Insulation services	
Masonry	
Mechanical	
Metal Fabrication	
Mold Remediation	
Painting	x
Plumbing	
Roofing	
Solar Panel Services	
Tile and Grout Work	x
Water Mitigation	
Welding	
Window & Door Repair/Replacement	x
OTHER: (Describe)	