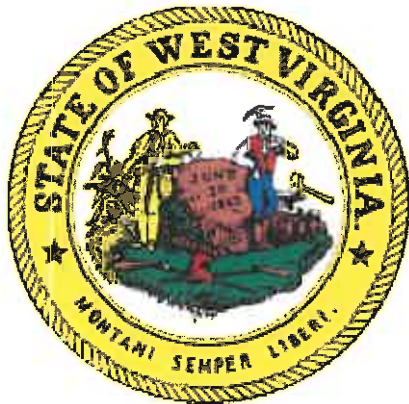




Expression of Interest
West Virginia - General Services Division
Capitol Campus Steam Distribution
CEOI 0211 GSD2000000002
August 19, 2019



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WV PURCHASING
DIVISION

Department of Administration
Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

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The Miller Engineering Difference



We are very pleased to submit our response for the Capital Complex Steam Distribution System. In many applications and areas, steam system design and operation is becoming a "lost art", as more and more facilities move to decentralized plants using condensing hot water boilers. However, in a campus environment, steam remains a highly effective and reliable manner to provide heating from a central plant. As steam has become less common, the work force has less practical knowledge of these systems. As such it is imperative that the facilities be operable and maintainable in a personnel safe manner. During my tenure at WVU, I provided engineering support to the maintenance staff in the form of real-time field assistance, as well as design of modifications to and repairs of the campus steams systems. These systems operate at 125 psi and 100 degrees of superheat with tremendous energy and potential for harm. The problems of employee access, limited outage availability, and aging infrastructure are likely similar to the problems faced by GSD. In addition to this experience, I operated a 90 psi central plant at Uniontown Hospital and, since founding Miller Engineering, have assisted clients with steam system evaluation, repair in both facilities and plant environments, and in some cases, decommissioning of their steam systems in favor of hot water.

We're not your typical MEP firm; we ensure our designs meet very specific, time-tested criteria, including but not limited to being constructible, operable and maintainable. We want to set up our clients to be self-sufficient, but we work to be available every step of the way.

Our hands-on staff takes great pride in their construction and operations backgrounds, which help us visualize the project as it would be built instead of just lines on paper. We don't sit clients down and lecture to them about what they're going to get; we listen to and interact with them so we can strive to deliver exactly what they want and need. It costs too much time and money (for both our clients and us) to not deliver exceptional service every single time, and we work tirelessly to keep projects on time and on budget. We're proud to say that our change order percentage over the last 11 years is less than 0.1%, and that's not just a statistic; it's a proclamation of our commitment and determination to make sure things are done right the first time, every time.

Miller Engineering has completed several successful projects for WV General Services Division in the previous two years. We currently have been retained to design renovations and ice storage at the campus chiller plant and replacement of the freight elevator in Building 5. We have experience with the requirements and processes of state procurement, and can deliver a successful project from design through close-out and warranty. I would like to personally thank you for affording Miller Engineering the opportunity to propose on the Capitol Campus Steam Distribution System for West Virginia General Services Division.

Best regards,



Craig Miller
President/Owner
Miller Engineering, Inc.

Tab 1



Firm Profile

MILLER ENGINEERING is a solely held (S) corporation owned by Craig Miller PE, President. The corporation maintains a Certificate of Authority with the WV State PE Board and has carried professional liability insurance since its inception. Neither the firm nor its professional engineers have ever faced disciplinary action in any form from the states in which they are registered.

Our engineered solutions involve a detailed assessment process: investigation, observation, communication with stakeholders, system analysis, building modeling and engagement from our entire team. We approach each and every project with this process and the guiding principle that buildings are designed to be livable and function in their intended purpose.

Over the past 14 years Miller Engineering, Inc. (MEI) has engineered solutions for over \$23.2M in MEP system upgrades, repairs and renovations for projects of all scopes and sizes, with clients ranging from private owners to local and state governments. With a strict attention to detail and commitment to delivering a job done well and done right the first time, every time, MEI has accumulated a change order percentage of less than 0.1% over the past 8 years.

Our team has unique skill-sets regarding engineered renovation solutions. Each member of the team has hands-on mechanical system experience including installation, construction, design and maintenance.

*Miller Engineering takes pride in being **different by design**, and that difference shines through in all phases of our work and continued relationships with our clients.*

- Experienced and Licensed Professional Engineers
- Quality, Value-Engineered Project Delivery
- Qualified Construction Representative on Staff
 - LEED-AP Certified
- Below Industry Change Order Status
- Building Information Modeling
- Emergency Facility Response

Engineering Design and Consultation

- Mechanical
- Electrical
- Plumbing
- HVAC Design
- Renovation
- New Construction
- Building Information Modeling

Aquatic Facility Design

- Public Pools & Areas
- ADA Compliance
- Indoor & Outdoor (air flow)
- Chlorination/Filtration

Construction Administration

- Maintenance/Facility Improvement Plans
- Contract Administration
- Code Observation

Communication System

- Intercomm & Public Address
- Voice/Data/CATV
- Urgent Response

Energy

- Power Supply (main & backup)
- Green & Renewable Consulting
- Systems Utilization & Upgrades
- Sustainable Solutions

Facility Utilization

- Systems Assessment & Solutions
- Adaptive Re-use
- Planning/Life-Cycle Control
- Engineered Replacement

Life Safety Inspection/Design

- Fire Protection & Alarm Systems
- Access Control
- Fire & Electrical Investigation

Industry Experience

- Education
- Local & State Government
- Commercial Development
- Healthcare





Montum Architecture

Montum Architecture, LLC was founded in 2017 to provide architectural design services to clients in West Virginia and western Maryland. Staff includes one licensed architect performing all tasks and duties. This ensures the utmost coordination of building plans and specifications with minimal potential for miscommunication. Extensive experience with projects of a historical nature and review and consent by both local historic AHJ's and the WV State historic Preservation Office.

Legal Organization

Montum Architecture is a Limited Liability Corporation initially filed in the State of West Virginia. The company is also registered in the State of Maryland as a foreign LCC.

Communication

Tom Pritts will be the primary point of contact for Montum's architectural services. Montum will serve as a sub-consultant to Miller Engineering.

Project Budget

Previous work experience has shown a consistent +/-2% bid-to-budget ratio.

Project Schedule

Montum will monitor and adjust the design tasks in order to complete the design work on the established timetables. They will also work diligently during project construction to maintain the contractual constraints placed as part of the contractor's bid.

Design Software

Montum utilizes Autodesk Revit for all design projects incorporating three-dimensional modeling and parametric reporting.



Firm Profile

CAS Structural Engineering, Inc. – CAS Structural Engineering, Inc. is a West Virginia Certified Disadvantaged Business Enterprise structural engineering firm located in the Charleston, West Virginia area.

Providing structural engineering design and/or analysis on a variety of projects throughout the state of West Virginia, CAS Structural Engineering has experience in excess of 30 years on the following types of building and parking structures:

- Governmental Facilities (including Institutional and Educational Facilities)
- Industrial Facilities
- Commercial Facilities

Projects range from new design and construction, additions, renovation, adaptive reuse, repairs and historic preservation (including use of The Secretary of the Interior's Standards for Rehabilitation) to evaluation studies/reports and analysis.

CAS Structural Engineering utilizes AutoCAD for drawing production and Enecalc and RISA 2D and 3D engineering software programs for design and analysis. Structural systems designed and analyzed have included reinforced concrete, masonry, precast concrete, structural steel, light gauge steel and timber.

Carol A. Stevens, PE is the firm President and will be the individual responsible for, as well as reviewing, the structural engineering design work on every project. Carol has over 30 years of experience in the building structures field, working both here in West Virginia and in the York, Pennsylvania vicinity. Carol is also certified by the Structural Engineering Certification Board for experience in the field of structural engineering.

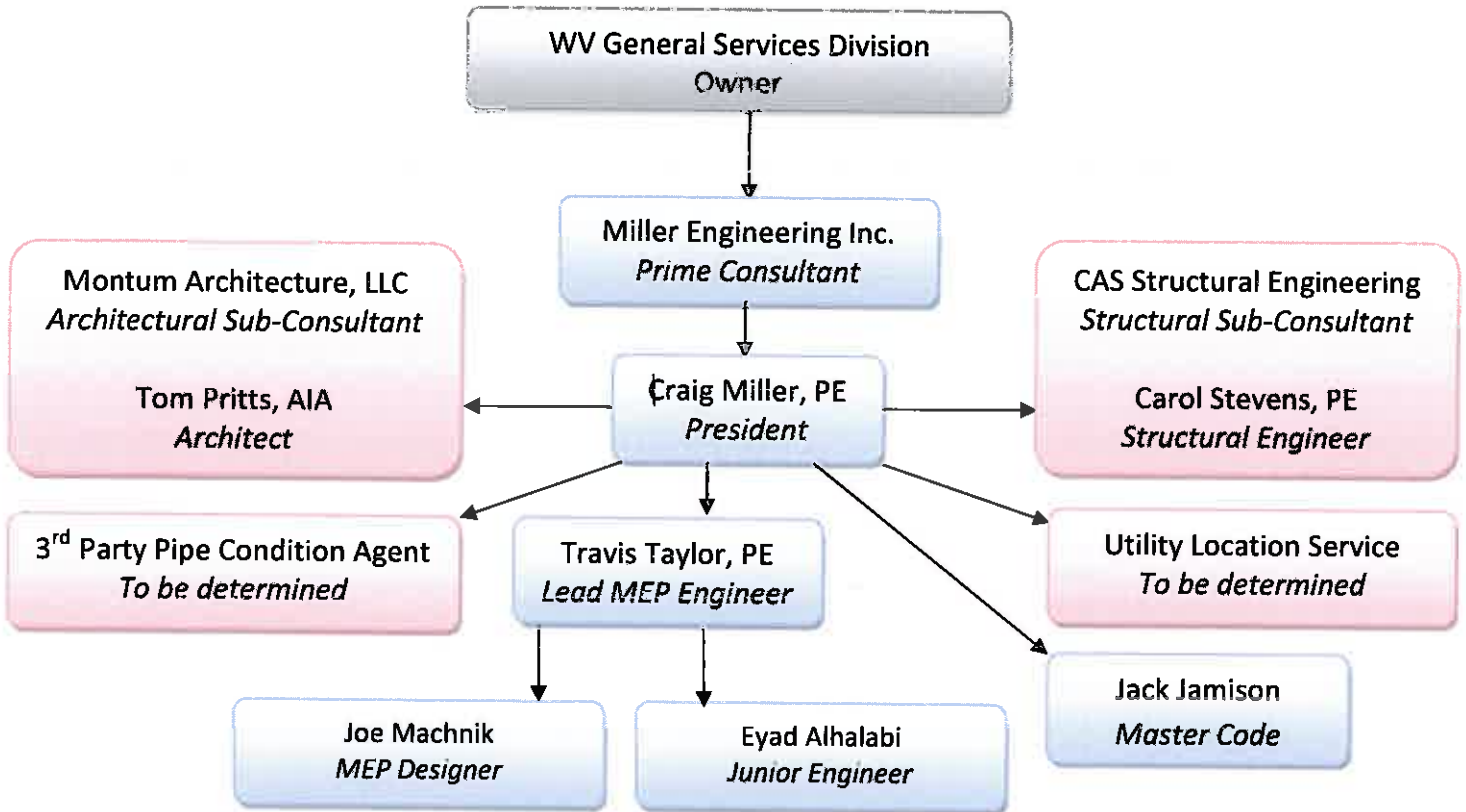
CAS Structural Engineering, Inc. maintains a professional liability insurance policy.

PO Box 469 • Alum Creek, WV 26003-0469 PHONE 304-756-2564 FAX 304-756-2565 WWW www.casstruceng.com

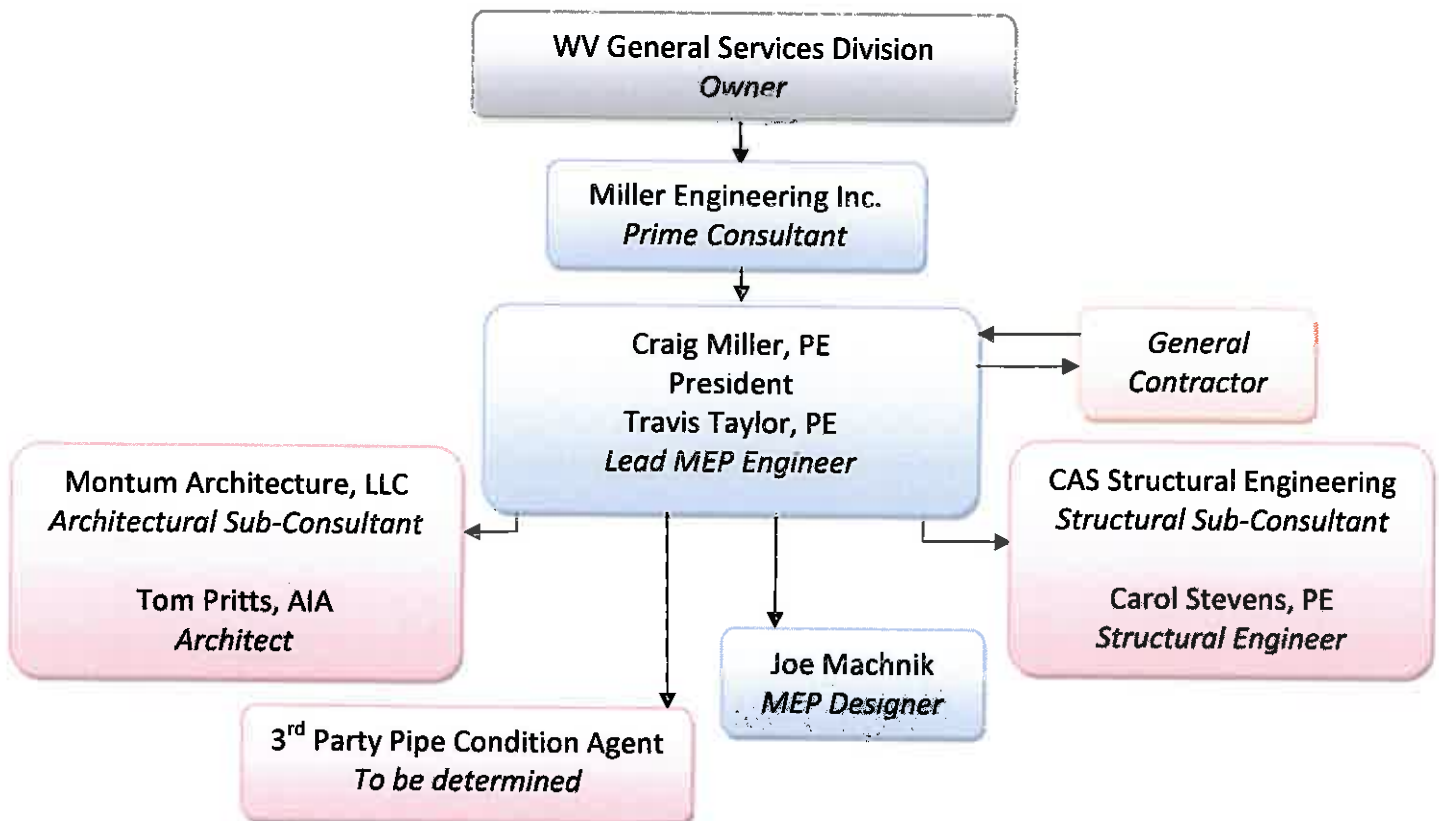
PROVIDING STRUCTURAL ENGINEERING SOLUTIONS FOR YESTERDAY, TODAY AND TOMORROW
COMMERCIAL, GOVERNMENTAL AND INDUSTRIAL STRUCTURAL DESIGN, ANALYSIS AND RESTORATION
A WEST VIRGINIA CERTIFIED DISADVANTAGED BUSINESS ENTERPRISE • CERTIFIED IN THE PRACTICE OF STRUCTURAL ENGINEERING

WE ARE COMMITTED TO EXCELLENCE

Organization Chart – Design



Organization Chart – Construction



Tab 2

WVGSD CAPITAL CAMPUS STEAM SYSTEM REPAIR/ REPLACEMENT Project Goals

PROJECT GOALS

Miller Engineering has reviewed the project description under Section Three of the Expression of Interest and offers the following outline of project approach concepts, methodologies, core-values, and prior pertinent experience. Note that the project data sheets in section four (4) further describe many of the projects referenced in this section.

GOAL ONE – Steam System Repairs and Replacement

EXPERIENCE

As can be seen in the resumes and information included in this proposal, MEI has performed many similar projects in the past. Miller, Montum, and CAS previously have performed projects for GSD in several occasions in recent years. Craig has many years of engineering and operational steam system experience of the type required by the project.

PREVIOUS EVALUATION

It is not uncommon to begin a project with information and evaluations prepared by previous consultants to the Owner. MEI has been retained to extend such work performed by others and design and manage a completed project. The first step in such a situation is a thorough and careful review of the available information to determine its accuracy, timeliness, and completeness. We have found that the process works best if an initial site review is followed by a study of the information. This affords a physical reference to the written reports and allows for a better understanding from the beginning, strengthening our confidence in the previous conclusions. This is followed with a detailed Owner review of our findings and concerns, and a review of the Owner's needs, issues, and concerns. This information is tracked in a project matrix that is a "living document", growing and changing as information and project scope/ strategy is developed. The matrix becomes the road map to the project design and follows the design through to the completion of construction documents.

DESIGN AND TECHNICAL DOCUMENTATION

Our design approach for the project will be as a technical resource to the Owner in the review and decision-making regarding the findings resulting from the evaluation review. We follow an interactive process of verbal, email, and formal written communications to allow the Owner to drive the decision process. We use the recommendation-based decisions of the Owner as our guidance on the project. Design review meetings, where the progress of the project is reviewed and verification of our assumptions and design path, are crucial to the effort. This involves stakeholders selected by the Owner and includes meeting minutes and post meeting feedback and follow by our team. We develop a list of potential and outstanding issues and concerns on both the technical and stakeholder sign and track them to resolution. We update estimates as project

requirements change as we proceed through design. We used this process in the Building 36 design with great success, due to the complexity and nature of the renovation. A final review meeting, the decision matrix, and a written report result from this work.

MEI initiates construction documents as part of the design process. As the documents relay the design intent to the bidders and eventually the performing contractor, we believe documenting the design intent as clearly and concisely as possible is a Day One design goal. We have found this approach tends to identify concerns or issues sooner rather than later and allows us to more efficiently iterate and solidify the design. Our design efforts and drawings center around the Owner's goals and constructability – can it be built the way we show it? At each document submission phase, the product is peer reviewed three times prior to release. Enlarged views, sections, elevations, isometrics are all added as the design progresses. Details and schedules are developed and revised throughout the process. We will often note areas of concern or items requiring Owner input on the progress prints to call attention to the situation, we have found this very helpful in meetings.

As project drawings are developed, so are specifications. We have worked as prime consultant on many projects and are quite familiar with developing not just the technical specifications, but the full project manual. Our manuals include all the CSI Divisions required for the project plus supplemental information related to project delivery, conditions, and scope of work. We regularly work with Owners to incorporate their requirements in the “front end” sections of the manual. As the documents near completion, we conduct a final constructability review on the bidding documents and incorporate final Owner comments.

As previously stated, renovations are at the core of our work. Renovations involve an evaluation and recommendation phase being followed by design, detailing, and construction documents. We believe this is where the emphasis on understanding the Owner's needs and goals, along with a detailed understanding of the facility, benefit the project. The interactive nature of the evaluation and the documentation prepared result in a smooth transition from Evaluation to implementation. We never assume we have all the answers and there is a great deal of design and detailing work that must be accomplished. The recommendations will be broken down with such items as “mandates” and others as “options” for further evaluation. We review these in detail with the Owner and utilize the Owner's decisions to prepare documents for competitively bidding the renovation. The following projects were all performed using this methodology:

Building 36 HVAC Renovations
WV State Building 25 Piping
Monongalia County Schools - MTEC and Mountainview HVAC Renovations
Alderson Broaddus Withers Hall HVAC Evaluation and Renovations
Pipestem State Park Lodge Chilled Water Piping
Graftech Steam System

GOAL TWO – Evaluation, Utility Location, and Repair/ Relocation

The team, led by Craig and Travis, will review the previous evaluations while making their own field reviews of the systems in question. The existing evaluations are a roadmap but must be coupled with professional diligence by our team. The reviews include not only the mechanics of the steam system, but the condition of steam specialties, piping, and industry safety realities in the operation of steam systems. Our team will meet with GSD and review the previous findings, along with our findings, to determine the best path for the renovation work. The condition of any existing component may be a factor in the phasing of the work with more critical needs prioritized higher than others. This is one of the most important aspects of the schematic design phase. Another is ensuring that the existing building systems are capable of supporting the renovations, and if not, recommend and implement the changes to the building systems in a clear, concise manner.

MEI will review the existing utility documents for locations of existing utilities, but plans to supplement that information utilizing a utility location service/ consultant to locate and map the existing utilities in the areas of the existing steam lines and the proposed paths of new steam distribution. Our preference is to consult with the Owner in the selection of this consultant as we feel the Owner's confidence of this consultant or potential previous knowledge of the campus is critical. Our general requirements for the consultant will be demonstrated experience over a period of many years, technical capability in control surveying of the locations utilizing a GPS based approach, subsurface investigation capabilities such as sonar, ground penetrating radar, and magnetic location below grade in addition to older techniques. Craig or Travis will be on site throughout the location process to have a firsthand understanding of what the process has determined.

The repair, replacement, and relocation of steam lines will be based on our analysis of the condition of the existing systems. MEI will likely utilize a third-party testing agency to perform nondestructive and destructive testing on piping systems. The most likely methods are visual survey of the piping interior and exterior, hydrostatic testing, and wall thickness assessment utilizing traditional drill and plug methods. The results of the testing will be incorporated into the goals matrix and becomes a factor in the feasibility to repair or need to replace piping.

The references to vault updates and parallel piping lead us to believe that the Owner desires an increase in reliability and system maintainability. The existing piping can be used in parallel if it has a reasonable remaining life with reasonable repair cost. It could be incorporated into either a parallel system which is end connected or into a "loop" type system where and single section can be taken out of service for maintenance and repair. Most campus systems now live with the reality of limited or no outages, which leads to a lack of maintenance and shortens the life of the system. In many cases, items such as exercising a valve, opening and closing it periodically, cannot be performed and the valves will not work when needed. Incorporating a loop or back feed capability into

the steam system including proper isolation valving and work space in vaults is crucial to the long-term health of the system. The design of such system requires a holistic approach where the age, condition of the piping and size, configuration, and condition of intersections in buildings, and system vaults all are factored into the result. Personnel safety is crucial due to the nature of the energies that must be isolated and controlled. MEI has relationships with third party industrial hygienists should personnel or OSHA accommodations be part of the solutions.

GOAL THREE – Multi-Phase Construction and Owner-Occupied Facilities during Construction

MEI has designed many phased projects to permit the Owner to use part of a facility while the rest was renovated. A district plant represents a challenging but executable continued use. It requires a very high level of discussion, coordination, and planning with the Owner to address the Owner's operational realities. The detailed evaluation of the systems in goal number one is an important piece of this process. It helps us understand what is needed and when in terms of project phasing technical concerns and helps highlight and spot the windows of opportunity to perform work requiring partial shutdowns or outages. By interacting with the stakeholders and incorporating the phased construction plan into the documents, the risk of change orders due to use and occupancy concerns can be reduced.

Renovations by nature tend to have multiple phases of construction. In this project we believe that the need to keep certain areas, parts, and pieces on line at different times will start with a base understanding of the Owner's needs, resulting from sit down interaction and discussions of operational realities. These realities will then be incorporated into our design matrix as project goals. We will design the project to meet those realities using phased construction and items such as temporary routings of piping or utilities to create a "work around" the concern. In utility infrastructure projects, such circumstances can necessitate the need for what we refer to as "changeover outages"; outages of relatively short duration and impact resulting in a change to allow other work to take place. We typically are in attendance as such events to provide real time monitoring and input. The design incorporation of these items leads to details and phase drawings which delineate the "what and when" that make such work possible while maintaining services. MEI's uses written words in addition to the drawings to relay the need and timing of the project phasing. This is followed up with careful contract administration and interactions with the contractor to ensure they follow the requirements and meet the intent during construction.

Many of MEI's projects are retrofits or renovations which have required a phased approach, by either multiple bid projects or phased scheduling. McKeever Lodge in Pipestem State Park utilized both methods. The HVAC piping replacement was designed and documented in a manner in which only a small portion of guest rooms were unavailable at any given time. Each phase of construction was clearly documented to indicate the sequence of work flow. MEI was involved during construction acting as a

communication conduit between the contractor and owner to coordinate any disruptions and maintain the lodge's utilization.

MEI will review each of the facilities to document existing conditions, challenges, and possible solutions for each location. MEI has reviewed the initial phasing plan put forth in these documents. We will review our findings with the owner after performing initial site visits to verify if the initial sequencing is the best option. A similar approach was used during the Building 36 HVAC and Building 5 Elevator renovations project. Extensive site review and discussions with the facilities staff provided an understanding of several possible approaches to performing an extensive renovation while minimizing occupant disruption. MEI reviewed our recommendations with WV General Services Division, and prepared documents which show a specific phased approach. The documents were organized and labeled by phase, with a project narrative in the specifications to supplement and help clearly state the sequencing of construction.

Both of the above-mentioned projects required the contractor to clearly prepare a schedule and the documents contained language pertaining to staying on the prepared schedule. MEI will regularly verify that the projects remain on schedule and will help communicate to the building's staff the sequencing of construction and help devise methods to keep both the construction flow and maintain building utilization.

Further examples of projects which used either phased construction or multiple phased bids include:

- Building 22 2nd Floor Renovations
- Building 25 HVAC Piping
- Building 25 Facade & 6th Floor Renovation
- Building 5 Elevator Replacement
- Morgantown High School Area 4 HVAC Renovations
- Bartlett House Phases I & II
- Blackwater Falls Lodge Boiler Replacement

In terms of continued occupancy, our current project at WV Bldg. 5 to replace the service elevator is being performed with continued Owner occupancy. At the Dominion Post Building, MEI's design incorporated multiple separate projects that were not funded at the time of design but had to coordinate to achieve the desired result in the end in a facility that operates 24 hours a day, seven days per week. The work at Pipestem State Park was broken down into a large electrical repair, a fire alarm upgrade, pool HVAC repair, and a large piping replacement (some 10,800 feet of HVAC piping was replaced while keeping the facility operational and under reasonable HVAC control). Projects at WV Buildings 25 and 22 had continuous owner occupancy with minimal negative effect on operations.

CONSTRUCTION CONTRACT ADMINISTRATION

MEI does not disappear once the Owner has bidding documents in hand. We will conduct the pre-bid meeting, working with the Owner, and answer bidder questions, vendor substitution requests; creating addenda as needed. We will evaluate the bids

and make recommendations for acceptance or rejection of the bids. Once under construction, MEI will make frequent site visits, both formal and informal, to ensure the project work is on track. We call this our "boots on the ground" approach. This is coupled with the normal regimen of meetings and documented project communications. MEI will involve and communicate with the Owner throughout the construction to ensure everyone remains "on the same page". We see this as even more crucial when the Owner retains occupancy of parts of the building during construction, as indicated in the EOI.

Since most of the staff at MEI have construction backgrounds, we understand that delays cost both the contractor and the project money. RFIs from contractors take precedence in the office, and are often answered within 24 hours to ensure the project stays on schedule and to minimize change orders. We will witness many aspects of the installation such as: startup and testing of equipment, testing and balancing, and personnel training. We will require and review all record "red line" drawings and O&M Manuals for accuracy and completeness. We will remain involved to help resolve and enforce any warranty concerns that might arise.

As demonstrated during construction of the Building 22 2nd floor HVAC project, which had ongoing issues with the computer room air conditioning units, MEI stayed involved as the design engineer, and pressed for a resolution involving the contractor, subcontractors, suppliers, and factory; and ensured that the project concerns were resolved. Our change order rate is significantly below industry average, and we believe our aggressive construction administration is part of the reason.

Tab 3

Staff – Proposed Staffing Plan

Team Leader/ Primary Point of Contact	<i>Craig Miller, PE</i>
Engineer in Responsible Charge	<i>Craig Miller, PE</i>
Lead MEP Engineer	<i>Travis Taylor, PE</i>
Code Specialist	<i>Jack Jamison</i>
BIM Coordinator / Designer	<i>Joseph Machnik</i>
Junior Engineer	<i>Eyad Alhalabi</i>
Architectural Sub-Consultant	<i>Tom Pritts, AIA</i>
Structural Sub-Consultant	<i>Carol Stevens, PE</i>
Utility Location Service	<i>TBD</i>
Steam Pipe Testing Service	<i>TBD</i>

**Staff Resumes to Follow*



B. Craig Miller, PE

Craig founded Miller Engineering in 2003, and serves as President and Principal Engineer. He has more than 20 years experience in design, specification, operations and project management. During his employment with WVU, Craig was directly involved with approximately \$130 million in new capital construction and an equal value in infrastructure renovations. His experience with a wide range of projects including HVAC, electrical, plumbing, steam and chilled water central plants, infrastructure upgrades, building automation, energy efficiency and maintenance/renovation, among others,

allows him to serve in multiple capacities within a given project. Craig will serve as the main communication interface between the Owner, the design team, contractors, and end users.

Project Role: Relationship Manager – Primary Point of Contact

- *Engineer in Responsible Charge*
- *Design and Project Management of Mechanical, Electrical, Plumbing Projects*
- *Concept and Construction Design*
- *Business Operations and Financial Management Oversight*
- *Quality Assurance and Control*

Professional Project Highlights

- Morgantown High School Boiler Replacement/ HVAC Upgrades
- Graftek Steam System Improvements
- WVU Life Sciences Building and Student Recreation Center – Owner’s Engineer
- Hawks Nest/Twin Falls HVAC
- Mapletown High School HVAC Replacement Phase I & II
- Advanced Surgical Hospital
- WV State Building 25 HVAC Piping Replacement
- Cheat Lake Elementary & Middle School Renovations

Professional History

2003- Present	Miller Engineering, Inc.	President, Relationship Manager
2002-2003	Casto Technical Services	Existing Building Services Design Engineer
2001-2002	Uniontown Hospital	Supervisor of Engineering
1995-2001	West Virginia University	Staff Engineer
1990-1995	BOPARC	Caretaker – Krepps Park
1983-1988	University of Charleston	Electrician/HVAC Mechanic

Education

1995	West Virginia University	BS- Mechanical Engineering
1988	University of Charleston	BA- Mass Communications

Licenses and Certifications

- Professional Engineer (West Virginia, Pennsylvania, Maryland, and Ohio)
- Licensed Master Plumber
- LEED-AP Certified



Travis Taylor, PE

Experience in project management facilitates Travis's ability to create and design constructible projects. Prior to joining the Miller Engineering team he was directly responsible for managing \$10 million in electrical construction budgets. His experiences encompass both new construction and renovation. Travis maintains professional competencies by attending seminars and continuing education classes. These include local ASHRAE classes in addition to classes on electrical systems, and also steam systems through Shippenburg Pump Company. As lead engineer he provides HVAC, mechanical, plumbing, and electrical design solutions and services for our clients. In addition, he is part of our team's complete assessment process in both planning and MEP design through construction administration.

Project Role: Lead MEP Engineer

- *Design of Mechanical, Electrical, and Plumbing Systems*
- *Building Information Modeling - Revit*
- *Constructible Materials Evaluation*
- *Site Evaluation and Mechanical System Review*
- *Submittal and RFP Review*
- *RFI Coordination, Review, and Response*
- *Construction Observation*

Professional Project Highlights

- Blackwater Falls Lodge Boiler Replacement
- MTEC Welding Shop
- North Elementary Boiler Replacement
- WV State Building 36 HVAC Upgrades
- WV State Building 25 HVAC Piping Replacement
- Graftek Steam Systems Evaluations and Modifications
- Bobtown Elementary School HVAC Upgrades
- Holly River State Park Primary Electric Service Replacements Phase I & II
- Pipesstem Lodge McKeever Lodge HVAC Piping Replacement

Professional History

2011-Present	Miller Engineering, Inc.	Staff Engineer
2006-2011	Tri-County Electric, Co.	Project Manager
2006-2006	Schlumberger	Field Engineer Trainee - MWD

Education

2006 West Virginia University, BS – Mechanical Engineering

Licenses and Certifications

- Professional Engineer - State of West Virginia
- OSHA 10-hour Course: Construction Safety & Health

Staff – Qualifications and Experience



Jack Jamison

Jack brings 20 years as an electrical/building inspector and over 25 years of experience in the commercial electrical construction industry. His knowledge and experience are valuable resources to Miller's complete assessment process.

Project Role: Master Code Official

- Facility Review, Code Research, Field Observations, Issue Resolutions, and Project Evaluation

Professional History

2010- Present	Miller Engineering, Inc.	Code and Construction Specialist
1999-2010	Megco Inspections	Chief Inspector
1972-1998	Jamison Electrical Construction	Master Electrician

Education

1971 Fairmont State College, BS-Engineering Technology-Electronics

Licenses and Certifications

- Master Code Professional, IAEI Master Electrical Inspector, Class C Electrical Inspector – WV, PA, MD, & OH
- ICC Commercial Building, Building Plans, Commercial Plumbing, Residential Energy, and Accessibility Inspector/Examiner
- WV Master Electricians License
- NCPCCI-2B, 2C, 4B, 4C: Electrical & Mechanical General/Plan Review
- OSHA 30 Hour Course: General Industry
- NFPA Code Making Panel 14 – NEC 2014 Edition



Joseph Machnik

Joe has experience with AutoCAD, MEP and Revit MEP. He provides design modeling, drafting and supervised design services and construction support for Miller Engineering.

Project Role: MEP Designer

- *Revit/CADD Coordination of New Construction and Renovation Designs*
- *Building Information Modeling Specialist*

Professional Project Highlights

- Bobtown Elementary HVAC
- WV State Building 25 HVAC Piping Replacement
- Blackwater Falls Boiler Replacement
- Suncrest Middle Gym HVAC
- North Elementary Gym HVAC
- Graftek Steam Systems Evaluations and Modifications
- WV State Building 36 HVAC Upgrades
- Pipestem Lodge HVAC Piping Replacement
- Westwood Middle Cooling Tower

Professional History

2010 – Present Miller Engineering, Inc. MEP Designer

Education

2008 Penn State – Fayette, AS - Building Engineering Systems Technology: *Building Environmental Systems Technology*

2007 Penn State – Fayette, AS - Building Engineering Systems Technology: *Architectural Engineering Technology*

Additional Training

2016 – Shippenburg Pump Company – Steam Systems Training



Eyad Alhalabi

Eyad joined Miller Engineering in June 2019. A recent graduate of West Virginia University, he has been eager to learn the means and methods of MEP consulting. Eyad assists the MEP design team with design calculations and is rapidly learning design software such as Autodesk REVIT. He is also learning construction administrations along with building codes and standards. Eyad is currently preparing to take the Fundamentals of Engineering exam.

Project Role: Junior Engineer

- *Design Calculations*
- *Drafting of MEP Systems*
- *Assist with Construction Administration*

Professional Project Highlights

- Morgantown ALC

Professional History

2019- Present Miller Engineering, Inc. Junior Engineer

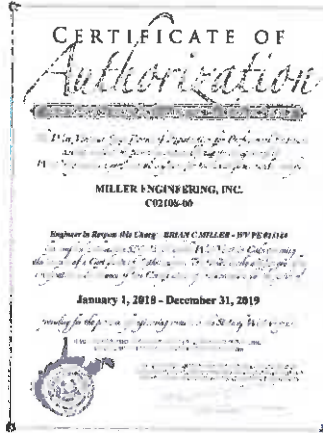
Education

2019 West Virginia University, BS - Mechanical Engineering

Licenses and Certifications

- ASHRAE Student Member

Licenses & Certifications



West Virginia State Board of Registration
for Professional Engineers

BRIAN C. MILLER
WV PE [REDACTED]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

8/27/2018 11:29:00 AM

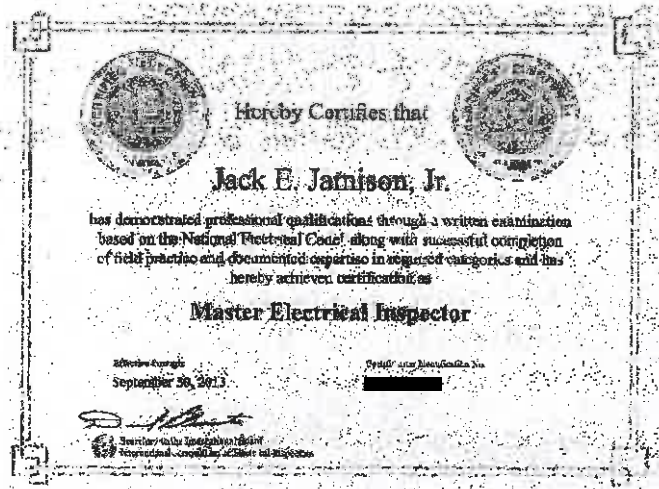


West Virginia State Board of Registration
for Professional Engineers

TRAVIS M. TAYLOR
WV PE [REDACTED]

This is to certify that the above named PROFESSIONAL ENGINEER has met the requirements of the law, is duly registered and is entitled to practice engineering in the State of West Virginia.

8/27/2018 11:29:00 AM





Thomas Pritts, AIA, LEED-AP, CSI-CCS

Tom founded Montum Architecture in 2017. He has more than 15 years experience in design, specification, and project management. During his former employment, Tom has designed and managed dozens of built projects. His experience encompasses a wide range of projects including K-12 and higher education facilities, financial Institutions, emergency services buildings, and automotive dealerships. A native of Mineral County, Tom is member of the West Virginia Chapter of American Institute of Architects and was involved in the establishment of the US Green Building Council's West Virginia chapter. He is highly skilled in the design of complex building systems, technical construction detailing and specifying, and construction contract administration. These skills were critical in the development and maintaining of many multi-year, multi-project relationships with Clients in his previous employment.

Project Role: Relationship Manager – Primary Point of Contact

- Principal in Charge
- Design and Project Management
- Concept and Construction Design
- Quality Assurance and Control

Professional History

2017- Present	Montum Architecture	Architect
2004-2017	Alpha Associates	Associate and Architect
2003	Marshall Craft Associates	Architectural Intern

Education

2004	Virginia Tech	Bachelors of Architecture
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Licenses and Certifications

- Licensed Architect (West Virginia, Maryland)
- NCARB Certificate
- Construction Specifier Institute – Certified Construction Specifier
- LEED-AP Certified
- Part 107 Remote Pilot
- 30-hour OSHA Card

Associations and Memberships

- American Institute of Architects
- Mineral County Chamber of Commerce – 1st Vice President

Professional Project Highlights

- Potomac State College – Bachelor of Nursing Renovation
- Wyoming East High School HVAC Renovation – Wyoming County Schools, WV
- Mountainview and MTEC HVAC Renovation – Monongalia County Schools, WV
- Berkeley Springs State Park – Pool Bathhouse Roof Replacement
- Berkeley Springs State Park – Old Roman Bath Renovation
- Blackwater Falls State Park – Boiler Room Renovation
- Our Lady of the Mountains Parish – Bathroom Renovation
- Mountain View Assembly of God – Rec Hall Ceiling Design

Professional Project Highlights (former employment built projects)

Montum



- Potomac State College – ADA Connector Building, Church-McKee Plaza, Shipper Library Façade
- WVU Engineering Sciences Building – East Wing Addition, 10th Floor Fit-Out, Basement Renovation
- WVU Engineering Research Building – G07 & G08 Renovation
- WVU Equine Education Center
- WVU College of Physical Activities and Sports Sciences/ Student Health Center
- WVU Center for Alternative Fuel Engines and Emissions
- WVU Colson Hall Water Infiltration Repairs
- WVU Mountainlair Water Infiltration Repairs
- WVU Chemistry Research Laboratories Fit-Out
- WVU Creative Arts Center Wheelchair Lift
- Alderson Broaddus University – Pyles Arena Deck Replacement
- Glenville State College – Morris Stadium Skybox
- Washington High School, Jefferson County Schools, WV
- Pineville Elementary School, Wyoming County Schools, WV
- Huff Consolidated School, Wyoming County Schools, WV
- Aurora School Addition, Preston County Schools, WV
- Riverview High Field House Design-Build, McDowell County Schools, WV
- Safe School Entries, Monongalia County Schools, WV
- Morgantown High Elevator, Monongalia County Schools, WV
- 2010 Comprehensive Education Facilities Plan- Monongalia County Schools, Wyoming County Schools
- Clear Mountain Bank Branches, Oakland, MD - Reedsville, WV - Kroger-Sabraton, WV
- Grant County Bank, Petersburg, WV
- Fairmont Federal Credit Union, Bridgeport, WV
- Freedom Ford, Kia, and Volkswagen Automotive Dealerships, Morgantown and Clarksburg, WV
- Jenkins Subaru Addition, Bridgeport, WV
- Elkins Fordland Renovation - Elkins Chrysler Dealership, Elkins, WV
- Harry Green Nissan Design-Build, Clarksburg, WV
- Cool Green Automotive Addition and Renovation, Shepherdstown, WV
- Veteran's Affairs – OI&T Office Fit-Out, Shepherdstown, WV
- OPM, Eastern Management Development Center Addition, Shepherdstown, WV
- National Energy Technology Laboratory – Building B-8 Roof Replacement, Morgantown, WV
- US Coast Guard – Conference Room Renovation, Martinsburg, WV
- Eastern Panhandle Transit Authority Addition, Martinsburg, WV
- Cacapon State Park – Old Inn HVAC and Interior Renovation
- WV National Guard - Armory Office Fit-out, Parkersburg, WV
- South Berkeley Fire Station, Inwood, WV
- Jefferson County Emergency Services Agency – New Headquarters
- Berkeley County Ambulance Authority – South Station Renovation and Addition
- Poolhouse Renovation, McMechen, WV
- Community Center, Ridgeley, WV
- Wastewater Treatment Plant Renovations, Martinsburg, WV
- Public Works Building, Fairmont, WV
- Oatesdale Park Little League Fields, Martinsburg, WV
- St. Luke Canopy Replacement, Morgantown, WV
- Freshwater Institute – Aquaculture Building, Shepherdstown, WV
- Clarion Hotel Renovation, Shepherdstown, WV
- Shenandoah Village Apartments – Façade and Deck Replacement, Martinsburg, WV
- Regional Eye Associates/ Surgical Eye Center, Morgantown, WV
- Bavarian Inn – Infinity Pool/ Pool Bar, Shepherdstown, WV

Carol A. Stevens, PE, F.ASCE

Structural Engineer



EDUCATION

West Virginia University, BSCE, 1984
Chi Epsilon National Civil Engineering Honorary
The Pennsylvania State University, ME Eng Sci, 1989

PROFESSIONAL REGISTRATION

P.E. 1990 Pennsylvania
P.E. 1991 West Virginia
P.E. 1994 Maryland
P.E. 2008 Ohio
P.E. 2010 Kentucky
P.E. 2013 Virginia

BACKGROUND SUMMARY

2001 – Present President, Structural Engineer
CAS Structural Engineering, Inc.

1999 – 2001 Structural Engineer
Clingenpeel/McBrayer & Assoc, Inc.

1996 – 1999 Transportation Department Manager
Structural Engineer
Chapman Technical Group, Inc.

1995 – 1996 Structural Engineer
Alpha Associates, Inc.

1988 – 1995 Structural Department Manager
Structural Engineer
NuTec Design Associates, Inc.

1982 – 1988 Engineer
AAI Corporation, Inc.

PROFESSIONAL ASSOCIATIONS

American Society of Civil Engineers
National Society of Professional Engineers
American Concrete Institute
American Institute of Steel Construction
West Virginia University Department of Civil and
Environmental Engineering Advisory Committee
West Virginia University Institute of Technology
Department of Civil Engineering Advisory Committee

EXPERIENCE

West Virginia, Collett House Structural Repairs:
Structural renovations of 1770's log and framed structure to stabilize foundation and make repairs to log wall and floor. Building is on the National Register of Historic Places.

West Virginia, Job's Temple: Structural repairs to 1860's log structure. Building is on the National Register of Historic Places.

West Virginia, First Presbyterian Church Restoration:
Structural renovations of steel in lantern level and terra cotta cornice, overview of repairs to limestone and terra cotta façade of 1920's structure.

West Virginia, Hawks Nest State Park Lodge: Repairs to spandrel beams at roof level and analysis and repairs of structural cracks in stairtower.

West Virginia, State Capitol Complex, Governor's Mansion: Structural analysis and design in addition to evaluation report for modifications and renovations to several areas of mansion. Building is on the National Register of Historic Places and was constructed in the 1920's.

West Virginia, State Capitol Complex, Holly Grove Mansion: Structural evaluation report for preliminary condition assessment of building structure. Building is on the National Register of Historic Places and was constructed in 1815.

West Virginia, Lewis County Courthouse:
Structural investigation for work required to update structure and apply for grant monies through WVCFA.

West Virginia, State Capitol Complex, Main Capitol Building Parapet: Exploratory investigation of limestone/brick parapet/balustrade of Main Capitol Building to determine cause of movement/cracking/ leaks. Construction contract for repairs has been completed. Building is on the National Register of Historic Places and was constructed in the 1920's and 1930's.

PO Box 469 - Alum Creek, WV 25003-0469 304-756-2564 304-756-2585 www.casstrueng.com

COMMERCIAL, GOVERNMENTAL AND INDUSTRIAL STRUCTURAL DESIGN, ANALYSIS AND RESTORATION

WV 04/14/14 09/14/14 01/15/15 08/15/15 10/15/15

West Virginia, State Capitol Complex, Main Capitol Building Dome: Exploratory investigation of structural steel components of Lantern Level of dome and development of contract documents for repairs. Building is on the National Register of Historic Places and was constructed in the 1930's. Received a NYAIA Merit Award for Design Excellence.

West Virginia, Twin Falls Resort State Park: Structural evaluation of existing recreation building.

West Virginia, Pipestem Resort State Park: Structural evaluation of existing recreation building.

West Virginia, Historic Putnam-Houser House (Parkersburg): Designed system for stabilization and upgrades to floor framing of building that was constructed in the 1700's.

West Virginia, Upshur County Courthouse: Developed construction documents for structural repairs to main entrance, dome and monumental sandstone columns of 1899 structure. Work was recently completed and received a WVAIA Honor Award for Design Excellence.

Ohio, Mahoning County Courthouse: Completed preliminary structural observation report of exterior façade conditions to recommended phased repairs for terra cotta and granite façade. Building is on the National Register of Historic Places and was constructed in the early 1900's.

West Virginia, State Capitol Complex, Building 5: Structural design and analysis for support of new boilers and other mechanical equipment to be placed in mechanical penthouse.

West Virginia, Hampshire County Courthouse: Structural design for new elevator for existing historic building.

West Virginia, State Capitol Complex, Building 3: Structural design and construction administration of repairs to limestone canopy. Building is eligible to be placed on National Register of Historic Places and was constructed in the 1950's.

West Virginia, State of West Virginia Office Building #21, Fairmont, WV: Preliminary structural observation report for condition assessment of building structure.

PREVIOUS EXPERIENCE

West Virginia, State Capitol Building, North Portico Steps: Designed structural system to replace deteriorated reinforced concrete slab at landing on north side of Capitol steps. Building is on the National Register of Historic Places and was constructed in the 1930's.

West Virginia, Beech Fork State Park Pool, Bathhouse and Cabins: Designed structure for new bathhouse, swimming pool and cabins.

West Virginia, Moncove Lake State Park Pool: Designed structure for new swimming pool.

West Virginia, Upshur County Courthouse Annex: Performed structural evaluation and design for repairs to existing multi-story Annex addition.

West Virginia, Farrel Law Building: Performed analysis of existing deteriorated structural sidewalk over parking area. Recommended repair solutions for reinforced concrete and aged terra cotta façade of 1920's building.

West Virginia, Canaan Valley Resort and Conference Center: Structural feasibility study to upgrade lodging units.

West Virginia, West Virginia University Masterplan: Investigated structural floor load capacity of several university buildings as a consultant to a large national architectural firm for masterplan.

West Virginia, Morgantown High School Additions: Designed steel framing and foundations for science classroom, cafeteria and gymnasium additions to existing education complex.

West Virginia, Grafton High School Addition: Designed steel framing and foundations for new science classroom addition to existing high school.

Pennsylvania, York County Government Center: Structural analysis and design of 1898 former department store converted to county government offices. Interior renovations included adding floor framing at mezzanine level, analyzing and redesigning deficient floor framing, and adding new elevators. Exterior renovations included complete façade rework to recreate original appearance.

Pennsylvania, Metropolitan Edison Company, Headquarters: Structural design for new 80,000 SF two-story office addition to existing complex.

What our satisfied customers have to say...

“Hard working, do-whatever-it-takes, diligent team that provides excellent customer service is what you can expect from Miller Engineering.”

--Chris Halterman

“As a design/build team, working with Miller Engineering, our project involving a private surgical hospital together was a success – completed ahead of schedule and on budget. Miller worked with us throughout the project to consult, engineer and inspect the mechanical systems. Craig Miller, PE and his staff are working with us again, and are very important members of our design/build team. I highly recommend their services.

--Richard J. Briggs

<p>Brad Leslie, PE <i>Assistant Chief WV Division of Natural Resources State Parks Section 324 4th Avenue South Charleston, WV 25303 (304) 558-2764 ext. 51823 Bradley.S.Leslie@wv.gov</i></p>	<p>Kerri J. Wade, MSW <i>Extension Agent - Kanawha County West Virginia University 4700 MacCorkle Avenue, SE Suite 101 Charleston, WV 25304 304.720.9573 Kerri.Wade@mail.wvu.edu</i></p>	<p>J. Douglas Carter <i>General Manager Potomac Valley Transit Authority 185 Providence Lane Petersburg, WV 26847 (304) 257-1414 jcarter@potomacvalleytransit.org</i></p>
<p>Bob Ashcraft <i>School Safety & Loss Coordinator Monongalia County Schools 533 East Brockway Street Morgantown, WV 26501 (304) 276-0152 rbashcraft@access.k12.wv.us</i></p>	<p>Mike Trantham <i>Program Administrator Senior WVU Environmental Health & Safety P.O. Box 6551 975 Rawley Avenue Morgantown, WV 26506 (304) 293-5785 Mike.Trantham@mail.wvu.edu</i></p>	<p>Richard J. Briggs <i>Vice President Lutz Briggs Schultz & Associates Inc. 239 Country Club Drive Ellwood City, PA 16117-5007 (724) 758-5455 lbsa@zoominternet.net</i></p>

From Jonathan Miller, Mechanical Project Manager, Nitro Mechanical:

“Miller Engineering is not your average engineering company; they work with the owner AND the contractor to solve all issues that arise throughout the project to make the process as fluid as possible.



P.O. Box 558
2155 Park Avenue
Washington, PA 15301

General Construction & Consulting

Phone 724/229-0119
Fax 724/225-1180

To whom it may concern,

As the Vice-President and Lead Project Manager of MacBracey Corporation, a commercial and industrial general contractor located in Washington, PA, I am writing to support and endorse Miller Engineering and their ability to provide construction design services as well as project management.

MacBracey has found Miller Engineering's drawings and specifications to be both thorough and accurate as to the in-field conditions. Any issues that have come about throughout a construction project Miller Engineering is quick to develop a corrective plan and ensured the project doesn't face delays.

I have found Miller Engineering to go above and beyond the industry standard throughout the entire construction process to make sure everything stayed on track. I have spoken with many members of Miller Engineering "after hours" to solve an issue that needed addressed by the following morning. This is a characteristic that you don't see with a lot of design teams.

I found the entire Miller Engineering team to be both knowledgeable and professional. We at MacBracey would enjoy the opportunity to work with Miller Engineering again in the future. It is truly refreshing to work with a design team that has a passion for the industry and is willing to work with everyone involved to ensure the project gets done correctly and in a timely manner.

Sincerely,

Patrick Bracey

Patrick Bracey
**Vice President,
MacBracey Corporation**

PENNINGTON PLUMBING & HEATING INC.

301 George St. Beckley WV 25801

License WV 001456

April 17, 2019

To Whom it May Concern,

Re: Miller Engineering Design Firm

Pennington Plumbing & Heating has worked with Miller Engineering on numerous projects throughout the years, ranging in size from several hundred thousand dollars to several million. We have always found their firm to be professional, competent, and helpful.

We have found that they are always available to help on challenging situations on different projects, and their designs have had great success on the projects that we have been involved with. They have the capability to handle MEP designs of any size and are always open to modifications that allow the owner to save time and money while maintaining the highest quality and design intent.

We would have no issue recommending their firm to building owners seeking design and construction administration.

Should you have any questions please do not hesitate to contact me.

Best Regards,

Eric Mahaffey
President.



June 6, 2018

RE: Miller Engineering

To Whom it May Concern,

I have worked on several project with Miller Engineering, over the last few years. Craig Miller and his staff are some of the most detail-oriented engineers I have met. They take extra time, and care, to ensure that their design meets the requirements set forth by the owner and that trades are coordinated properly. Their staff make routine visits to the jobsite to ensure the quality of installation meets their specified standards.

Miller Engineering is also willing to help with value engineering, if required, to meet budgets. However, they are not willing to sacrifice the quality, set forth, in their original design standards. This is an admirable trait in today's engineering world. Many times, value engineering is done without the original designer's review or they may allow substandard products and quality is sacrificed as a result.

In closing, Craig Miller always states that "working with them is different". He's correct. In a world where things are done with little input or involvement by the engineering firm during construction, they stand out as a firm who truly cares. They put thought into their design and the functionality of buildings and the results speak for themselves. Their designs are quality and built to last.

Brian D. Gaudiano

Vice President

Tab 4

Descriptions of Past Projects Completed – MEP

Graftech Steam System Evaluation and Upgrades

Services Provided:

- Steam System Evaluation
- Mechanical Design
- Prototyping
- HVAC Design

Project Budget: \$140k initial, \$2.4M estimated final cost

Owner: Graftech



The existing steam plant at the Graftech plant, in Clarksburg, WV had operated for some 70 years with many modifications and changes. The former Union Carbide Carbon (UCAR) plant manufacturers many products from elemental carbon, and has produced a majority of the nation's rocket and missile cones since the 1940's. Graftech began to have problems some 15 years ago as the quality standard for graphite castings increased. They needed better control of temperature in their steam fired mixers to meet those standards.

MEI reviewed the steam systems with the immediate need of establishing better control. Thought many had looked at the mixers, no one had been able to make them better. MEI looked at both the regulators as well as the condensate system and proposed changes to both. MEI then built a prototype regulating station and delivered to Graftech for installation. With the new station and condensate changes, the temperatures are "perfect". They have installed them on all of their 24 mixers. Our recommendations for the plant systems are being implemented as their budget allows.

Project Experience - HVAC Upgrade

Building 22 2nd Floor Upgrades

Charleston, WV

Services Provided:

- Mechanical
- Electric
- Telecommunications
- Architectural
- Construction Administration

Renovation Area: 7,400 sq ft

Contract Amount: \$398k

**Owner: State of West Virginia –
General Services Division**



PROJECT GOAL:

Revise the floor plan, HVAC, Electrical and Data for new check processing equipment, while Owner working in adjacent spaces.

Goal met by intensive field investigation, detailed documents, close monitoring of construction. Post substantial equipment issues pursued until fully resolved.

West Virginia State Building 22 required renovations to the 2nd floor, which houses the state tax office. New check processing equipment, which has specific cooling, power, and data requirements, was purchased by the state. The floor plan needed modifications to accept the equipment and improve work flow. This building is an extremely high security area. It houses the tax and revenue department for the State of WV. Approximately 2.5 million dollars is processed through the 2nd floor daily.

Miller Engineering, along with Montum Architecture, designed the renovations to the 2nd floor to accommodate the changes needed for the equipment. The existing space was served by a fan powered VAV AHU. The existing air distribution was modified to meet the requirements of the revised floor plan. The processing room and server rooms, which require year-around cooling, are being served with computer-room air conditioning (CRAC) units. The revised floor plan called for modifications to the power and telecommunications layouts for the integrated furniture systems. The grounding and bonding systems for the server room were upgraded as well. This project was completed in April, 2018. We followed and resolved some equipment issues related to initial startup until November 2018.

Project Contact:
David Parsons, Energy Manager
WV General Services
112 California Ave
Charleston, WV 25305
(304) 957-7122

Project Experience - HVAC Upgrade

West Virginia State Building 25

Parkersburg, WV

Services Provided:

- Mechanical Piping
- HVAC
- Electric
- Lighting
- Construction Administration

Estimated Budget: \$843k

Facility Area: 58,500 ft²

Owner: State of West Virginia –
General Services Division



PROJECT GOALS:

Piping - Evaluate and replace HVAC Piping.

6th Floor - Provide full MEP service for fit-out of office space in 6th floor.

The piping project goal was met by extensive evaluation into existing conditions and review of original design documents. Thorough discussions with maintenance and operations staff allowed MEI to develop a complete and phased approach.

The 6th floor is currently under design. MEI is part of a design team with Alpha Associates. Experience with the existing project allowed MEI to design a practical solution which integrates into the existing MEP systems.

The PVC piping system at Building 25 had a history of leaking, along with smaller piping sagging over time and breaking, prompting the owner to replace the entire system. The building was a logistic challenge to design due to offset multi-level mezzanines, resulting in low deck-to-deck heights in the lower levels. A new, rolled-groove piping system was installed, including a new cooling tower and supporting structure, and connected to the original boilers. To eliminate the problems associated with manganese, which forms solids and clogs piping, the system was converted from water to propylene glycol with the flow rates adjusted to accommodate the change. The water source heat pumps which serve the building were flushed and cleaned to prevent contamination of the new water. MEI designed a phased approach to accomplish the piping, which was adjusted in consultation with the owner and contractor during construction to minimize the impact on the building occupants, who remained in the building during the entire construction period. MEI worked on an almost daily basis with the contractor to accomplish the re-piping of the building, providing support and real-time answers to questions and to work around challenges.

Project Contact:

David Parsons, Operations and
Maintenance Manager
State Capitol, Room E-119
(304) 957-7122

Project Experience: Elevator

Building 5 Elevator Replacement

Charleston, WV

Services Provided:

- Mechanical
- Electrical
- General Trades

Contract Amount: \$483k

**Owner: State of West Virginia –
General Services Division**



Miller Engineering was retained by WV General Services Division to design the replacement of service elevator #6 in WV Building 5. The hoisting system including motor generator, cable drive & cabling, sheaves, gear drive, controls, safeties, & slings are to be replaced. The cars, doors, calls, and indicators will also be replaced. The existing rails and door frames remain in place and will be modified. An existing rail leader which was run inside of the elevator shaft will be concealed with a drywall chase to meet elevator code. The elevator chase will be upgraded with new sump pump, lighting, receptacles, and fire alarm. The HVAC system in the elevator penthouse will be modified to better meet the equipment requirements. The project has specific means and methods called out in order to keep the remaining elevators in operation while #6 is being replaced. The project has been bid and is scheduled to begin in the near future.

Project Contact:
*David Parsons, Operations and
Maintenance Manager
State Capitol, Room E-119
(304) 957-7122*

Descriptions of Past Projects Completed – HVAC

Blackwater Falls State Park Lodge Boiler Replacement

Davis, WV

Services Provided:

- General Trades
- Plumbing
- Electrical
- Mechanical

Contract Amount: \$598K

Facility Area: 46,000 ft²

**Owner: West Virginia Division of
Natural Resources**



The existing fuel fired boilers serving the Blackwater Falls Lodge had reached the end of their serviceable life. MEI was tasked with designing a boiler replacement which involved keeping existing boilers active as Davis, WV has an extensive heating season. New propane fired stackable modulating condensing boilers were used. These boilers had a small footprint which allow the new boilers to be installed without any demolition to the existing boilers. The large electric water heaters were replaced with indirect water heaters fed from the new boilers. The existing boilers were steam with heat exchangers to hot water for the HVAC systems. New hot water supply and return headers were installed and the existing water piping was tied in. The smaller footprint allowed for the construction of a boiler room, leaving the existing boiler space to become a maintenance shop.

Project Contact:
*Bradley S. Leslie, PE, Assistant Chief
State Parks Section
Phone: (304) 558-2764 ext. 51826*

Descriptions of Past Projects Completed – MEP

Morgantown High School Boiler Replacement/ Area 4 HVAC Renovation

Services Provided:

- Mechanical
- Electrical
- Plumbing
- Fire Alarm

Estimated Budget: \$1.0M

Contract Amount: \$1.038M

**Owner: Monongalia County Board of
Education**

Status: Complete



Project Contact:
 Robert Ashcraft
 Monongalia County Facilities
 Phone: (304) 276-0152

Morgantown High school, like others throughout the state, has seen many changes through the years. Unfortunately, the steam boiler plant remained in operation with little maintenance for a number of years. The 45 year old boilers had exceeded their operational life and were experiencing reliability issues. MEI evaluated the boilers and the associated 80 years old steam systems, recommending their replacement. Steam heating control was a significant issue, as were safety issues caused by failed traps and inoperable valves.

Previous projects installed split DX refrigerant based systems in several classrooms within the science and technology wing. These units were obsolete and required replacement with a more reliable system, which can meet current ventilation standards. Additionally, there were 3 classrooms, which were heating only with little or no control, that require addition to the overall solution for this section of the building. Based on the conditions of the steam systems piping and devices, new hot water boiler were installed.

This project was completed in late 2017.

Descriptions of Past Projects Completed – HVAC Piping

Pipestem McKeever Lodge

Pipestem, WV

Services Provided:

- HVAC
- Plumbing
- Electrical
- Accommodation of Existing Systems

Estimated Budget: \$1.7M

Facility Area: 63,000 ft²

Owner: West Virginia Division of Natural Resources



The original HVAC piping at McKeever Lodge had exceeded its lifespan and had been suffering from corrosion leading to multiple leaks, including one causing an electrical service outage. Miller Engineering was hired to investigate the existing piping, discovering all of the some 4,000 linear feet of piping required replacement. As this lodge is regularly occupied for larger conferences, the project had to be phased to minimize the amount of guest rooms taken out of service at one time. MEI also designed provisions to interconnect the lodge's two separate boiler/chiller plants so one plant could operate the entire lodge at a partial capacity while the other plant was replaced and re-piped. This interconnect also allows the lodge to operate in the event of a boiler or chiller outage.

Power was provided to new equipment, and motor control centers were added to control the building loop pumps. A new building controls system was installed to allow the plants to run at optimum efficiency while meeting the lodges heating and cooling needs.

Project Contact:

Carolyn Mansberger, Project Manager
State Parks Section
(304) 558-2764

Descriptions of Past Projects Completed – HVAC, Electric

Withers Brandon Hall

Philippi, WV

Services Provided:

- Electrical
- HVAC

MEP Budget: \$700k

Facility Area: 31,800 ft²

Owner: Alderson Broaddus
University

Status: In Construction



As part of renovations to Withers Brandon Hall at Alderson Broaddus University, MEI was brought in to evaluate and design upgrades to the HVAC system. The existing chiller and piping insulation had failed. The existing system was a two-pipe system with chiller and boilers serving fan coil units. MEI proposed to re-use the piping and replace the fan coil units with water source heat pumps (WSHP). This allows the existing piping to be re-used and piping insulation would not have to be replaced. The chiller will be replaced with a fluid cooler located outside the building. The three non-condensing boilers will be replaced with a much more efficient modulating condensing "double stack" boiler. The ventilation units are located in the unconditioned attic space and are difficult to perform maintenance on. New ducted heat pumps tied to energy recovery ventilators will tie into the existing fresh air duct to provide ventilation and relief air. The design limits the amount of modifications outside of the mechanical rooms which will aid with the compressed construction schedule. The project is currently substantially complete and is awaiting final completion.

Project Contact:
David Snider, AIA
Omni Associates, Inc
(304) 367-1417

WYOMING COUNTY SCHOOLS
WYOMING EAST HIGH SCHOOL
HVAC AND ROOF REPLACEMENT

Montum

Architecture



The West Virginia School Building Authority funded replacement of the HVAC systems and roofing at the existing Wyoming East High School in 2017. Montum Architecture is the architect-of-record for the HVAC project and integrated the roofing design consultant's information into bid package scenarios. Work is being performed within an occupied building with close coordination of school daily schedules and calendar of events. Many of the units are being replaced one-for-one with some zones being split into multiple units to allow flexibility of new curriculum within the spaces or needs for additional comfort control. Ceilings are being replaced to meet updated guidelines for educational facility acoustics.

COMPLETION: SUMMER 2019

BUDGET: \$3.2M

SIZE: 130,000 SF EXISTING

LOCATION: NEW RICHMOND, WV

CONTACT:
Donald Clay
Director of Facilities
304-732-6262

Montum Architecture, LLC

37 ER Path, Keyser, WV 26726 ● 304-276-7151 ● tom@montumarch.com ● montumarch.com

**NORTH PORTICO STEPS—MAIN CAPITOL BUILDING
CAPITOL COMPLEX
Charleston, West Virginia**

This project consisted of developing a method to repair or replace the deteriorated reinforced concrete stair landing on the north side of the Main Capitol Building. The area was enclosed, without ventilation, since its original construction in the 1930's.



The deteriorated concrete was removed, galvanized metal deck was put in place and a new reinforced concrete slab was poured.



Additional work included epoxy injection of brick masonry, removal and re-laying of brick at the cheek walls and cutting an opening in the brick and granite to install a grill to provide ventilation to the space.

Schedule was a factor due to the Governor's Inauguration that was due to take place in a relatively close time period.



This project was completed while working for a previous employer.



Budget and Timeline History

Project Name	Project Type	Budget	Cost	Notes
Bluestone State Park	Pool Replacement	\$1,000,000	\$935,600	On budget
West Virginia State	HVAC Piping Renovation	\$650,000	\$533,400	On budget
Canaan Valley Resort	Emergency Electrical Repairs	\$225,000	\$129,829	On budget
Holly Grove Manor	Renovation	\$885,000	N/A	On hold
Mapletown Jr/Sr High School	HVAC Renovation	\$1,050,000	\$1,105,900	5.19% over budget
Pipestem – McKeever Lodge	HVAC Piping Replacement	\$1,600,000	\$1,776,000	10.43% over budget
Tygart Lake State Park	Beach and Bathhouse	\$750,000	\$695,000	On budget



= Delivered on budget/on time

Budget and Timeline History

Project Name	Project Type	Contract Length	Contract Delivery	Notes
Blackwater Falls State Park	Boiler Replacement	120 days	180 days*	*Extended 60 days due to equipment delivery issues
Bluestone State Park	Pool Replacement	180 days	180 days	Delivered on time
Canaan Valley Resort	Construction Administration	3.5 years	3.5 years	Long-term project with varying facets – no direct schedule
Twin Falls/Hawks Nest Lodge	HVAC Renovation	90 days	90 days*	*Expedited delivery
Mapletown Jr/Sr High School	Boiler/ HVAC Renovation	180 days	180 days	Delivered on time
Pipestem – McKeever Lodge	HVAC Piping Replacement	365 days	365 days	Delivered on time
Tygart Lake State Park	Beach and Bathhouse	270 days	270 days	Delivered on time

Tab 5



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Expression of Interest
 02 - Architect/Engr

Proc Folder: 610233

Doc Description: EO: Capitol Campus Steam Distribution System

Proc Type: Central Contract - Fixed Armt

Date issued	Solicitation Closes	Solicitation No	Version
2019-08-06	2019-08-27 13:30:00	CEOI 0211 GSD2000000001	1

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

FOR INFORMATION CONTACT THE BUYER

Melissa Pettrey
 (304) 558-0094
 melissa.k.pettrey@wv.gov

Signature X

FEIN #

-1386

DATE

19 Aug 19

All offers subject to all terms and conditions contained in this solicitation



Purchasing Division
 2019 Washington Street East
 Post Office Box 50130
 Charleston, WV 25305-0130

State of West Virginia
 Centralized Expression of Interest
 02 - Architect/Engr

Proc Folder: 610233

Doc Description: Addendum No. 2 EOI: Capitol Campus Steam Distribution Syste

Proc Type: Central Contract - Fixed Amt

Date Issued	Solicitation Closes	Solicitation No	Version
2019-08-22	2019-08-27 13:30:00	CEOI 0211 GSD2000000001	3

BID RECEIVING LOCATION

BID CLERK
 DEPARTMENT OF ADMINISTRATION
 PURCHASING DIVISION
 2019 WASHINGTON ST E
 CHARLESTON WV 25305
 US

VENDOR

Vendor Name, Address and Telephone Number:

*Miller Engineering & Inc
 429 Hancock Rd
 Cranmichels PA 15320
 704 791 7234*

FOR INFORMATION CONTACT THE BUYER

Melissa Pettrey
 (304) 558-0094
 melissa.k.pettrey@wv.gov

Signature X

FEIN #


1386

DATE

7/28/19

All offers subject to all terms and conditions contained in this solicitation

DESIGNATED CONTACT: Vendor appoints the individual identified in this Section as the Contract Administrator and the initial point of contact for matters relating to this Contract.



(Name, Title)

Craig Miller, President

(Printed Name and Title)

240 Scott Avenue Suite 1 Morgantown, WV 26508

(Address)

(304) 291-2234

(Phone Number) / (Fax Number)


cmiller@millereng.net

(email address)

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that I have reviewed this Solicitation in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that I am authorized by the vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

Miller Engineering, Inc.

(Company)



(Authorized Signature) (Representative Name, Title)

Craig Miller, President

(Printed Name and Title of Authorized Representative)

19 Aug 19

(Date)

(304) 291-2234

(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CE01 GSD200000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:
(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
| <input type="checkbox"/> Addendum No. 4 | <input type="checkbox"/> Addendum No. 9 |
| <input type="checkbox"/> Addendum No. 5 | <input type="checkbox"/> Addendum No. 10 |

I understand that failure to confirm the receipt of addenda may be cause for rejection of this bid. I further understand that any verbal representation made or assumed to be made during any oral discussion held between Vendor's representatives and any state personnel is not binding. Only the information issued in writing and added to the specifications by an official addendum is binding.

Miller Engineering, Inc
Company

[Signature]
Authorized Signature

19 Aug 19
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI GSD2000000001

Instructions: Please acknowledge receipt of all addenda issued with this solicitation by completing this addendum acknowledgment form. Check the box next to each addendum received and sign below. Failure to acknowledge addenda may result in bid disqualification.

Acknowledgment: I hereby acknowledge receipt of the following addenda and have made the necessary revisions to my proposal, plans and/or specification, etc.

Addendum Numbers Received:

(Check the box next to each addendum received)

- | | |
|--|--|
| <input checked="" type="checkbox"/> Addendum No. 1 | <input type="checkbox"/> Addendum No. 6 |
| <input checked="" type="checkbox"/> Addendum No. 2 | <input type="checkbox"/> Addendum No. 7 |
| <input type="checkbox"/> Addendum No. 3 | <input type="checkbox"/> Addendum No. 8 |
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Miller Engineering Inc
Company
[Signature]
Authorized Signature
27 Aug 19
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

CONSTRUCTION CONTRACTS: Under W. Va. Code § 5-22-1(i), the contracting public entity shall not award a construction contract to any bidder that is known to be in default on any monetary obligation owed to the state or a political subdivision of the state, including, but not limited to, obligations related to payroll taxes, property taxes, sales and use taxes, fire service fees, or other fines or fees.

ALL CONTRACTS: Under W. Va. Code §5A-3-10a, no contract or renewal of any contract may be awarded by the state or any of its political subdivisions to any vendor or prospective vendor when the vendor or prospective vendor or a related party to the vendor or prospective vendor is a debtor and: (1) the debt owed is an amount greater than one thousand dollars in the aggregate; or (2) the debtor is in employer default.

EXCEPTION: The prohibition listed above does not apply where a vendor has contested any tax administered pursuant to chapter eleven of the W. Va. Code, workers' compensation premium, permit fee or environmental fee or assessment and the matter has not become final or where the vendor has entered into a payment plan or agreement and the vendor is not in default of any of the provisions of such plan or agreement.

DEFINITIONS:

"Debt" means any assessment, premium, penalty, fine, tax or other amount of money owed to the state or any of its political subdivisions because of a judgment, fine, permit violation, license assessment, defaulted workers' compensation premium, penalty or other assessment presently delinquent or due and required to be paid to the state or any of its political subdivisions, including any interest or additional penalties accrued thereon.

"Employer default" means having an outstanding balance or liability to the old fund or to the uninsured employers' fund or being in policy default, as defined in W. Va. Code § 23-2c-2, failure to maintain mandatory workers' compensation coverage, or failure to fully meet its obligations as a workers' compensation self-insured employer. An employer is not in employer default if it has entered into a repayment agreement with the Insurance Commissioner and remains in compliance with the obligations under the repayment agreement.

"Related party" means a party, whether an individual, corporation, partnership, association, limited liability company or any other form or business association or other entity whatsoever, related to any vendor by blood, marriage, ownership or contract through which the party has a relationship of ownership or other interest with the vendor so that the party will actually or by effect receive or control a portion of the benefit, profit or other consideration from performance of a vendor contract with the party receiving an amount that meets or exceeds five percent of the total contract amount.

AFFIRMATION: By signing this form, the vendor's authorized signer affirms and acknowledges under penalty of law for false swearing (W. Va. Code §61-5-3) that: (1) for construction contracts, the vendor is not in default on any monetary obligation owed to the state or a political subdivision of the state, and (2) for all other contracts, that neither vendor nor any related party owe a debt as defined above and that neither vendor nor any related party are in employer default as defined above, unless the debt or employer default is permitted under the exception above.

WITNESS THE FOLLOWING SIGNATURE:

Vendor's Name: Miller Engineering, Inc

Authorized Signature: _____

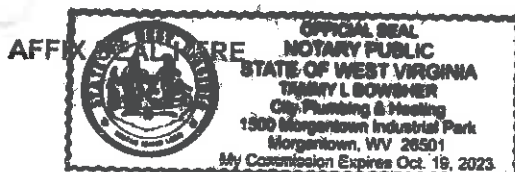
Date: 19 Aug 19

State of West Virginia

County of Monongalia, to-wit:

Taken, subscribed, and sworn to before me this 19 day of August, 2019.

My Commission expires 10-19, 2023



NOTARY PUBLIC Tammy Boushner

Purchasing Affidavit (Revised 01/19/2018)