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Header @ 1

List View

- General Information
- Contact
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- Document Information
- Clarification Request

Procurement Folder: 1039904

Procurement Type: Central Purchase Order

Vendor ID: 000000218570

Legal Name: GRW ENGINEERS INC

Alias/DBA:

Total Bid: \$0.00

Response Date: 05/17/2022

Response Time: 10:12

Responded By User ID: ksandino

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Phone: 859-223-3999

SO Doc Code: CEOI

SO Dept: 0603

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Solicitation Description: Huntington Tri-State Army
HVAC Renovation Design

Total of Header Attachments: 1

Total of All Attachments: 1



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

**State of West Virginia
 Solicitation Response**

Proc Folder: 1039904
Solicitation Description: Huntington Tri-State Armory HVAC Renovation Design
Proc Type: Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2022-05-17 13:30	SR 0603 ESR05172200000007193	1

VENDOR
 000000218570
 GRW ENGINEERS INC

Solicitation Number: CEOI 0603 ADJ2200000014
Total Bid: 0
Response Date: 2022-05-17
Response Time: 10:12:59
Comments:

FOR INFORMATION CONTACT THE BUYER
 David H Pauline
 304-558-0067
 david.h.pauline@wv.gov

Vendor Signature X **FEIN#** **DATE**

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	Huntington Tri-State Armory HVAC Renovation Design				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments: GRW's EOI for this HVAC renovation project at the Huntington Tri-State Armory is provided for your review. Thank you for this opportunity to share our qualifications.

Extended Description:

Provide professional architectural and engineering design services per the attached documentation.



EXPRESSION OF INTEREST

Huntington Tri-State Armory HVAC Renovation Design | Kenova, WV

WV Department of
Administration
WV Army National Guard
CEOI 0603 ADJ2200000014
May 17, 2022



engineering | architecture | geospatial



engineering | architecture | geospatial

Expression of Interest

Huntington Tri-State Armory HVAC Renovation Design | Kenova, WV CEOI 0603 ADJ2200000014

WV Department of Administration WV Army National Guard

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COVER LETTER



GRW | engineering | architecture | geospatial

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May 17, 2022

Mr. David Pauline, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street, East
Charleston, WV 25305

**RE: Huntington Tri-State Armory HVAC Renovation Design
Solicitation Number: CEOI 0603 ADJ220000014**

Dear Mr. Pauline and Selection Committee Members:

Achieving the goals established for the HVAC renovation project at the Huntington Tri-State Armory is greatly dependent upon selecting the right A/E design partner. We understand you're looking for a team to assist you with the design of the HVAC equipment and system to replace the current/outdated HVAC equipment and meet all mechanical system building codes. The updates will support elements of the WV ARNG Command, and spaces for training and personnel location. GRW would like to work with you on your project – and we believe we offer you the right experience and expertise to successfully delivery the results you require.

Experience & Familiarity

GRW is a full-service A/E design consulting firm that has been working with clients like you on similar projects throughout the region for more than 58 years. Our project team's experience with the National Guard in West Virginia is substantial and encompasses projects with West Virginia ARNG Martinsburg and Camp Dawson, the West Virginia ANG's 130th Airlift Wing, 167th Airlift Wing, and 167th Airlift Wing.

See Sections 2.0 and 3.0.

GRW and its subsidiary Chapman Technical Group (offices in St. Albans and Buckhannon, WV) also have experience developing projects through the WV Purchasing Division. For example, we have designed, bid, and constructed numerous, major Division of Natural Resources projects throughout the state, as well as projects for the Department of Highways. Although every agency has its own particulars regarding bidding projects, our experience with the WVARNG and the State's Purchasing Division will help ensure effective and efficient project delivery.

Our Team Offers HVAC Engineering Expertise

By selecting GRW, you will be working with knowledgeable mechanical and electrical engineers who regularly work on the design of heating and cooling system renovations for existing buildings, as well as new facilities. These professionals offer specialized experience with HVAC system renovations for state and educational facilities as well as municipal entities and government clients. **Section 2.0** includes more information about our HVAC project experience. You can read more about our team member qualifications in the resumes provided in **Section 3.0**.

A few of the projects featured our EOI include:

- West Virginia Division of Natural Resources Building 74 Renovation
- Clay County High School Renovation & Addition, Clay, WV
- WV ANG 130th Airlift Wing Building 107 Renovation, Charleston, WV
- WV ARNG Martinsburg Secure Facility Renovation, Charleston, WV
- Kentucky School for the Deaf and Kentucky School for the Blind Campus HVAC Upgrades, Danville & Louisville, KY

Our Project Manager Understands HVAC Replacements/Repairs

Our proposed Project Manager/Mechanical Engineer **Cory Sharrard** possesses more than 20 years' experience with mechanical engineering including design of traditional water source heat pump (WSHP), geothermal WSHP, hybrid geothermal WSHP, variable refrigerant flow systems, and traditional RTU/VAV systems.

For example, Cory served as Project Manager for these mechanical engineering/ HVAC system projects:

- West Virginia ARNG Martinsburg Secure Facility Renovation, Martinsburg, WV
- West Virginia Division of Natural Resources Building 74 Renovation, South Charleston, WV
- Clay County High School Renovation and Addition, Clay, WV
- Wayne County Schools Gymnasium Building HVAC Renovation, Monticello, KY
- West Virginia Department of Highways District 1 Vehicle Maintenance and Equipment Shops Building, Charleston, WV
- Fayette County Public Schools Henry Clay High School HVAC System Evaluation & Renovation, Lexington, KY
- Kentucky School for the Deaf and Kentucky School for the Blind HVAC Upgrade, Danville & Louisville, KY

We Are Committed to Your Success

Taking care to meet your goals for your budget and schedule is a priority, as it is on every GRW project. The ultimate measure of success is how well the completed projects meet your needs and aspirations. To this end, our project team is committed to establishing an inclusive, methodical, and logical approach to the design process. **See Sections 4.0 and 5.0.**

Thank you for your consideration and for the opportunity to work with you. We look forward to the next step in your selection process where we can present our additional ideas toward the successful completion of your project.

If you have questions about our qualifications or any other items, please feel free to call or email.

Respectfully submitted,



Monty Maynard, PE, LEED AP BD+C
GRW Vice President

859-223-3999, ext. 262
mmaynard@grwinc.com

SECTION 1.0 | GRW Introduction



1.0 GRW Introduction

About GRW

Founded more than 50 years ago, GRW is an employee-owned architectural, engineering, and geospatial services firm with more than 200 employees.

At GRW, we can address your projects from nearly every angle. Because of our in-house capabilities, we can more easily tailor our approach allowing our teams to deliver more quickly, with greater potential for more accurate cost estimates, and fewer change orders.

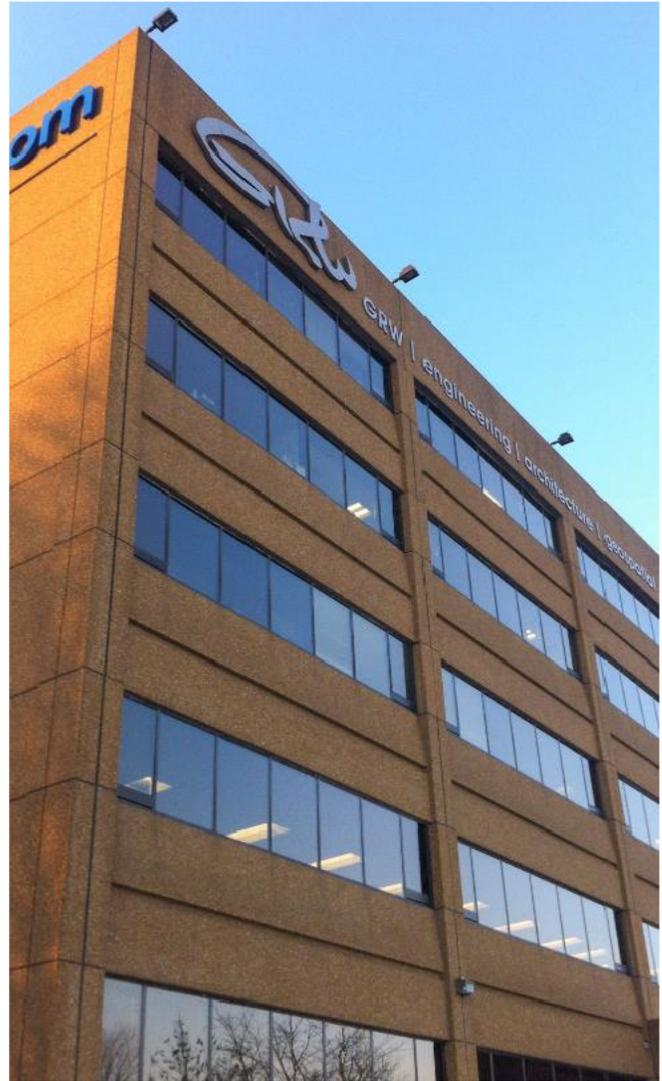
Among our achievements, GRW is listed in *Building Design and Construction's Giants 300* report as one of the nation's top Architecture-Engineering firms. Also, since 1972, GRW also has been recognized nationally as a top producing firm by *Engineering News-Record*.



Our Corporate Culture

Our corporate culture is one of close collaboration with an approach that gives our project managers and their project teams a hands-on approach, as needed, from planning through construction phases.

At GRW, we know that business relationships are built on trust – the ability to trust your business partner to deliver on their promises. By choosing GRW for your professional services, you are choosing a company that delivers on our promises. You can expect our full attention starting on day one, and extending to the day of project completion and beyond. **Listening diligently to your needs, and those of your stakeholders, is the hallmark of our approach.** Delivering projects that meet our clients' goals – honestly, reliably, and efficiently, time after time – is the reason why GRW has achieved a 90% rate of repeat business.



Department of Defense Experience

GRW brings to the table a wide-ranging body of military experience that includes work for the National Guard, U.S. Army, U.S. Air Force, the U.S. Army Corps of Engineers, and the Naval Facilities Engineering Command (NAVFAC). These projects include renovation and new construction work, as well as military master plans, and a broad range of geospatial services.

The map below provides a general geographic overview of where we have provided services to the military.



* U.S Army Corps of Engineers work encompasses multiple IDIQs and task orders in 18 Districts
OCONUS Locations: Kadena Air Base, Okinawa, Japan and Camp Lemonnier, Djibouti

GRW's Experience at Camp Dawson and with the West Virginia Army & Air National Guard - Partial List

GRW has a long history of experience with the West Virginia Army and Air National Guard. Examples of many of these projects are shown on these pages.

West Virginia ARNG Camp Dawson Ranges at Briery Mountain, Kingwood, WV

Project included design and construction of new Hand Grenade Familiarization Range and Live Fire Exercise Breach (LFEB) Training Range at Briery Mountain Training area to conform site to government standard Breach Range Design Requirements. Included design of access road to the remote site, electrical connections, breaching structures, open covered range operations and control shelter, storage building, dry latrine, covered viewing stands, and parking area. **Client Contact:** MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ARNG Camp Dawson Live Fire Exercise Shoot House, Kingwood, WV

Design for innovative re-use of a recently-acquired former industrial complex adjacent to Camp Dawson to provide a \$2 million Live Fire Exercise Shoot House, including shoot house to be housed in a metal warehouse, operations / storage, after action review (AAR) facility, ammunition breakdown facility, warehouse restroom renovation, access road and parking area, and utility services. Completed conceptual design for LFSH facility with final design and construction of LFSH completed by selected vendor

(design / build); balance of facilities delivered with traditional design / bid / build approach.

Client Contact: MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ARNG Relocation of Camp Dawson Electrical Power and Communications Lines, Kingwood, WV

Study and design for 4-phase construction program to relocate overhead electrical power lines and communications lines (telephone, data, etc) to underground duct banks in order to eliminate historic problems associated with overhead services. Phase 1: 3000 LF of power line relocation to new underground duct banks, with the associated replacement of pole-mounted transformers with pad-mounted transformers (1000 KVA to 50 KVA). Phase 2: Relocation of communications service to new underground duct banks along Phase 1 route. Phases 3 & 4: Relocation of approximately 2000 LF of overhead power lines and overhead communications lines to new duct banks, respectively.

Client Contact: MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ARNG Camp Dawson Volkstone Training Area Utility Upgrade, Kingwood, WV

Expansion of sewer (1,996 LF), water (1,996 LF) and electric (1,797 LF) to all existing and future buildings, unit training equipment site (UTES) and wash rack locations. Also included design of Forward Operating Base (FOB) including 20 14' x 16' wooden buildings, new bath house for approximately 200 people and pavilion. **Client Contact:** MAJ Robert Kincaid, Jr., Range Operations Manager, (304) 791-4459, robert.j.kincaid.mil@mail.mil

West Virginia ANG 130th Airlift Wing Master Plan Update and CIP, Charleston, WV

Engineering consulting for preparation of a Web-Enabled Master Plan Update and GeoBase Common Installation Picture (CIP) for the 130th Airlift Wing in Charleston to evaluate benefits and impacts associated with acquiring additional airfield property for aircraft parking, operations, and maintenance facilities to meet current and future proposed missions. Identified constraints and opportunities that apply to the 130th AW aircraft parking, operations and maintenance areas, including Anti-Terrorism/Force Protection (AT/FP) measures; quantified existing and required airfield

facilities; developed new alternatives for long- and short-range plans; and created plan tabs that depict constraints and opportunities, long- and short-range development plans, land use and circulation plan, real estate plan, and facility utilization plan. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Communications Duct, Charleston, WV – Concept Development Report to select a preferred concept for a new duct system for routing the base’s communications network to a new Communications Facility. New fiber optic cable for base network to consist of two ITNs (Information Transfer Nodes); ITN-1 in the new Communications Facility and ITN-2 in new hangar, Building 407. Duct bank designed to carry fiber optic lines, television and coaxial cabling; allows looping of current system; and provides redundancy of assets. A 4-duct and a 12-duct PVC conduit system with inter-duct was proposed. **Client Contact:** LtCol Rick Thomas, Base Civil Engineer

West Virginia ANG 130th Airlift Wing Aboveground Fuel Storage Dispensing Facility, Charleston, WV – Design for a new aboveground fuel station for the installation’s government-owned vehicles, comprising two new aboveground tanks (1 diesel, 1 unleaded gasoline) and a new dispensing system, replacing an older fuel station that included underground fuel storage tanks. **Client Contact:** LtCol Rick Thomas, Base Civil Engineer

West Virginia ARNG Joint Armed Forces Reserve Center and Area Maintenance Support Activity, Ripley, WV – Preparation of a Program Planning Document Charrette (PPDC) for replacement of two local armories and a USAR center with aging facilities and site limitations, with a new, \$17 million Joint Armed Forces Reserve Center and support facilities on a 94-acre site. Resulting plans include an Armed Forces Reserve Center (60,927 SF), unheated storage (6,000 SF), area maintenance support (4,500 SF) and helipad. **Client Contact:** MG Melvin Burch, (304) 561-6458, melvin.burch@us.army.mil

West Virginia ARNG Readiness Center Commissioning Projects, WV – LEED Fundamental Commissioning for four building construction projects: Buckhannon AFRC - Phase I, 38,000 SF and \$13,150,000 construction cost; Morgantown Readiness Center, 58,520 SF and \$20,500,888 construction cost; Moorefield Readiness Center, 57,256 SF and \$17,725,351 construction cost; and Logan Readiness Center, 58,520 SF and \$14,296,326 estimated construction cost. Scope included all commissioning, coordination and documentation required for LEED certification on the HVAC systems and networked controls, the lighting control systems and the domestic hot water distribution systems. **Client Contact:** MAJ Daniel Clevenger, CFMO, (304) 561-6446, daniel.w.clevenger.mil@mail.mil

West Virginia ANG 130th Airlift Wing LOX Storage Relocation, Charleston, WV – Type A and B design and construction administration services to relocate LOX function to south end of flight line to meet operational and installation development plan requirements. Facility included covered storage facility with adjacent tank storage canopy; elevated pads and spill containment structure for storage tanks; paved entry road; protective fencing; and utilities (electric and communications). **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV – Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility with history of remodeling activities resulting in a building that inadequately serves its users (Administration and Operations, Base Operations, Command Post, and Life Support and Fitness Center). Work included Charrette to develop alternative floor plans. Selected design allows for efficient use of space; HVAC, electrical and fire protection systems upgrade; and roof repairs. Designed to achieve USGBC LEED Certified rating, meet all ANG Sustainable Design criteria and utilize MILCON/SRM split funding. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 167th Airlift Wing Basewide Sewer Line Repair, Martinsburg, WV –

Planning, design and construction administration services for replacement of sanitary sewer system, circa 1954. Pipe included combination of various construction materials including vitrified clay pipe (VCP) with dilapidated sections allowing high rates of inflow and infiltration during storm events. **Client Contact:** Col Rodney Neely, MSG Commander, (304) 616-5198

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV –

Concept Development Report for C-5 aircraft complex which requires electrical modifications to meet needs of current occupants' activities, and investigation/resolution of temperature control in numerous locations. Report included detailed discussion of current electrical, architectural and HVAC system problems; recommendations to resolve large-system problems, as well as particular solutions for small areas; conceptual level drawings; conceptual level outline specification; and construction cost estimate. **Client Contact:** Col Rodney Neely, MSG Commander, (304) 616-5198

West Virginia ANG 130th Airlift Wing Communications Facility Code / Criteria Review, Charleston, WV –

Code/Criteria Review and LEED Update Report for facility designed to 65% three years prior under separate GRW/NGB contract then put on hold pending funding. Twofold project goal included: 1) identify and delineate known codes/criteria that are either new or updated since 65% Design Submittal; and 2) describe revised LEED 3.0 criteria now in effect for project and outline points for LEED Silver certification, compared to LEED Silver 2.2 criteria in effect at the 65% design stage. **Client Contact:** LtCol Rick Thomas, Base Civil Engineer

West Virginia ANG 130th Airlift Wing Building 107 Consolidation Study, Charleston, WV –

Consolidation Study for historic hangar which will be renovated in phases to house Aero-Medical Evacuation Squadron, new Aerial Port Facility and Deployment Processing Center, and mobility storage for Security Forces Squadron. Work included floor plans for each phase as well as final floor plan and construction cost estimate. Major challenge involved consolidation of organizations with a total authorized area of over 50,000 SF into facility with 40,000 SF footprint - no additions were allowed. AT/FP, energy and ADA accessibility measures were incorporated, as well as current ANG guidelines. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Security Forces Squadron Facility Renovation and Expansion, Charleston, WV –

Complete architectural and engineering Type A, B and C services for \$2 million renovation of 5,395 SF SFS facility (B142) including addition of 2,500 SF administrative and training space to better serve unit. Project (MILCON/SRM split funded) increased space and improved mission performance and operational efficiency for command and administrative functions in ways that are energy efficient, code compliant and in accordance with current ANG policies. Project met LEED Silver design criteria, and all AT/FP and ADAAG requirements. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 130th Airlift Wing Building 107 Renovation, Charleston, WV –

Scope of work included design services (LEED Silver design criteria) for two separately funded (MILCON/SRM) sub-projects to repurpose existing unoccupied hangar into space for the Aeromedical Evacuation Squadron (AES). Repairs and building repurposing included: new interior spaces within existing facility to accommodate new functions; building exterior repairs, new interior finishes; mechanical and electrical systems upgrade; fire alarm and fire protection systems repair; and site/building revisions to meet ATRP standards. New functional areas include spaces for medical simulation training, maintenance,

operations, administration, storage, and other mission-related activities. **Client Contact:** Capt Harry Netzer, Deputy BCE, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-5 Apron Repair, Martinsburg, WV – Evaluation and design services to repair fractured/heaved C-5 apron caused by poorly draining base and sub base. Pavement repair of approximately 1,755 SY included demolition and removal of fractured and heaved pavement down to below original base and sub base, compaction of new material, placing of sub base and base and concrete pavement parking apron, asphalt shoulder stabilization, all constructed to support C-5 aircraft. Utility and site improvements were also included. **Client Contact:** LtCol John Poland, Base Civil Engineer, (304) 616-5198, john.r.poland4.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar Modifications, Martinsburg, WV – Fast-track design of fuel cell hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar Modifications, Martinsburg, WV – Fast-track design of maintenance hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV – Fast-track design of composite material shop to the existing corrosion control hangar required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar Modifications, Martinsburg, WV – Fast-track design of corrosion control hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ANG 167th Airlift Wing Munitions Storage, Martinsburg, WV – New munitions inspection building, five magazines (all pre-manufactured modular units), new concrete pads (2,865 SF), all-weather pavement (5,566 SF) for vehicular access, gate/fencing, utilities, exterior lot lighting, communications, and security for the munitions area. **Client Contact:** Major Emerson Slack, Deputy Base Civil Engineer, (304) 616-5233, emerson.c.slack.mil@mail.mil

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV – Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Included HVAC replacement; new interior finishes (including raised access flooring), structural roof deck and roofing system, elevator and fire stairs, building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage improvements. **Client Contact:** Matthew Reynolds, Deputy Branch Chief - Design & Construction, (304) 561-6568, matthew.t.reynolds18nfg@mail.mil



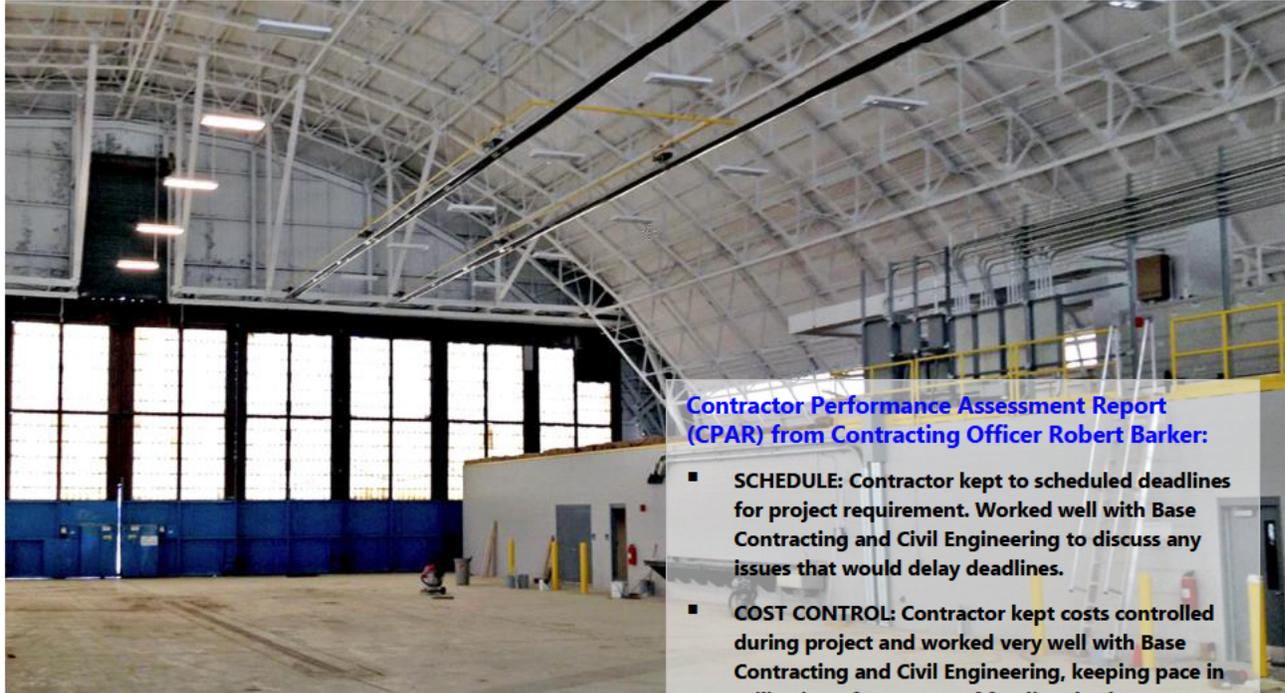
SECTION 2.0 | Project Experience

2.0 Project Experience

Within this section, we have included examples of our recent relevant project experience for your review. We encourage you to contact any of our references to verify our performance.

130th Airlift Wing Building 107 Renovation

West Virginia Air National Guard | Charleston, WV



Contractor Performance Assessment Report (CPAR) from Contracting Officer Robert Barker:

- **SCHEDULE:** Contractor kept to scheduled deadlines for project requirement. Worked well with Base Contracting and Civil Engineering to discuss any issues that would delay deadlines.
- **COST CONTROL:** Contractor kept costs controlled during project and worked very well with Base Contracting and Civil Engineering, keeping pace in utilization of 2 sources of funding, both MILCON and SRM.
- **QUALITY:** Firm worked a difficult task order with 2 project task order numbers, utilizing 2 designs for one project. Quality of work benefited the government by providing a thorough final design for the project.
- **MANAGEMENT:** Contractor met contractual requirements and worked well with the 130th Airlift Wing Base Contracting Office and Civil Engineering office. No major management issues were noted and GRW engineers and team continued to communicate regularly to ensure all aspects of the project were on track.
- **REGULATORY COMPLIANCE:** Performed all necessary environmental testing and occupational health requirements; kept base personnel informed of findings or issues that would significantly delay completion.
- **ADDITIONAL/OTHER:** Good team to work with; maintains very professional standards and conduct.

This project included two separately funded (MILCON/SRM) sub-projects. These two companion projects were designed to **re-purpose an existing unoccupied hangar into administrative, simulation training, and storage spaces** for the Aeromedical Evacuation Squadron (AES). Both projects were designed to meet LEED Silver design criteria. The project scope included:

- **Upgrade of mechanical and electrical systems** to meet current building codes and standards
- **Replacement of inadequate restrooms** and locker rooms
- **Replacement of fire alarm and fire protection systems**
- **Hardening of the front façade, replacement of windows**, and elimination of on-street parking to achieve ATRP compliance
- Construction of **new interior spaces and renovation of existing shop areas to create necessary office, training, and support spaces**

Client Contact: Capt. Harry Netzer, Deputy BCE, WV ANG, (304) 341-6649, harry.g.netzer.mil@mail.mil

West Virginia Division of Natural Resources Building 74 Renovation

West Virginia Department of Administration | Charleston, WV

GRW was selected by the State of West Virginia, Division of Natural Resources (DNR) to complete an evaluation of the building systems in Building 74. Services also have included making recommendations for possible improvements and upgrades needed to ensure continued suitability, improved energy efficiency, and code updates.

The three-story, 37,000 SF, masonry-construction facility was built sometime in the late 1970s. Following the purchase of the building by the State in 2009, extensive renovations were completed to create spaces suitable for the functions of DNR.

At that time, no upgrades were made to the primary mechanical and electrical systems – and it is believed the rooftop mechanical units are at least fifteen (15) years old.

The building is occupied by several sections of DNR including DNR Administration, State Parks, Wildlife Resources, Land and Streams, and Law Enforcement. There are approximately 100 employees in the building.

Based on GRW's evaluation of the building systems, the following recommendations have been selected by the State and are being designed by GRW:

- Replacement of existing heating and cooling systems, including all ductwork and all rooftop equipment, with new energy efficient rooftop units with electric heating VAV boxes
- New DDC controls throughout building
- Replacement of existing single-pane windows with energy-efficient double-pane windows
- Replacement of existing T5 light fixtures with energy-efficient LED fixtures
- Updated security system and fire alarm modifications as needed for the updated building layout
- Minor reconfiguration of office space on the second floor to address code egress issue
- Replacement of existing ceilings and floor finishes

Client Contact: Mark Crites, Building Project Management Specialist, (304) 957-7142, Mark.A.Crites@wv.gov



Clay County High School Renovation and Addition

Clay County Schools | Clay, WV

GRW, working with its subsidiary Chapman Technical Group, was contracted by the Clay County School District to provide design and construction administration phase services to upgrade the existing high school building. The scope of work includes replacing all of the existing windows with new energy efficient windows, building a new addition to the front of the school to provide a new commons/lobby area, and reconfiguring the existing gymnasium and existing restrooms throughout the building. A portion of the construction will occur during summer months, but much of the work will be completed while school is in session.

The entire existing HVAC system is being replaced. The new HVAC system includes stand-alone heat pump units for each classroom, new Rooftop Units for common areas such as the lobby, gymnasium, cafeteria, etc., and Variable Refrigerant Volume (VRF) systems for the two office areas. Outside air is being brought into the building through each of the pieces of equipment as well as new energy recovery ventilators. New direct digital controls (DDC) will be installed throughout the

building to control all of the new equipment. Back up heating for the stand alone units and various unit heaters will be connected back to the existing hot water hydronic heating system in the building that is being fed by two existing gas fired boilers.

New plumbing fixtures and piping will be installed in the newly configured restroom areas. The plumbing piping will connect back to the existing main piping and existing hot water heating system for the building. The existing fire protection system will remain in place and be reconfigured as needed to accommodate floor plan changes.

New power will be provided for all of the new HVAC equipment being installed. New LED lighting will be installed in the new commons/lobby addition as well as the gymnasium. New clocks and intercoms will be installed throughout the building as well as new security cameras. The fire alarm system will be upgraded as needed for the new systems and layouts.

Client Contact: Joe Paxton, Superintendent, Clay County Schools, (304) 587-4266



WV Martinsburg Secure Facility Renovation

West Virginia Army National Guard | Charleston, WV

GRW is designing renovations for a secure facility located adjacent to the Eastern WV Regional Airport in Martinsburg, WV. The purpose of the renovation is to provide new secure office space, and related support spaces, for a specific using agency. The main renovated area is on two upper levels, containing approximately 6,200 SF per level. The scope includes:

- Demolition of existing interior finishes and other improvements within the renovation area
- Complete replacement of the existing non-operational HVAC system with a new energy-efficient system. New system consists of water source heat pumps (WSHP) connected to a new boiler and closed loop fluid cooler. A new water-cooled dedicated outside air unit with heat recovery was designed for required outside air to the building.
- Redundant HVAC systems for secure IT room and non-secure IT room. Each room is served by the WSHP system as well as ductless split systems.

- New DDC control system for all new equipment
- New interior finishes throughout the areas, including raised access flooring throughout the renovated areas
- New structural roof deck and roofing system
- New elevator and fire stairs
- New site security fencing, sliding vehicular security gates, exterior parking, walkways, site utility improvements, and storm drainage improvements
- New building security and cameras

Client Contact: Matthew Reynolds, Deputy Branch Chief - Design & Construction, West Virginia Army National Guard, (304) 561-6568, matthew.t.reynolds18nfg@mail.mil

KYARNG Readiness Centers HVAC Replacement

Commonwealth of Kentucky Division of Engineering & Contract Administration | Frankfort, KY

This project involved the renovation of the HVAC systems for two Readiness Centers occupied by the Kentucky Army National Guard in the cities of Jackson and Williamsburg, Kentucky. The two facilities total approximately 32,000 SF. The project included changes in the electric services and miscellaneous lighting and ceiling replacement, as required by the HVAC work. The existing HVAC systems were hydronic heating throughout, with dual-fuel hot water boilers, averaging 20-25 years old, and miscellaneous residential split DX cooling units.

Replacement systems include new high efficiency air-cooled heat pumps for both heating and cooling in many areas, such as offices and classrooms, and new duct work, ceilings, light fixtures and finish repair. The equipment utilizes Variable Refrigerant Volume technology for efficiency

enhancement and zonal control. The large drill halls, previously ventilated only and heated by hydronic unit heaters, are heated by low-intensity gas infrared units with cooling and ventilation provided by high-efficiency packaged air-cooled DX units. Ancillary spaces, generally unoccupied, are handled by discrete ventilation systems and electric heaters. Both buildings are provided with new web-based DDC control networks, allowing the monitoring, troubleshooting and adjustment of the HVAC equipment from the headquarters of the National Guard in Frankfort, KY.

Both projects included new lighting which was designed to meet IECC 2006 watt/sf limits, and utilized low mercury T5 lamps (LEED-EB).

U.S. Federal Courthouse Renovation, Lexington, KY

U.S. General Services Administration



GRW was part of the design-build team selected by the U.S. General Services Administration (GSA) to design and construct improvements for the federal courthouse in Lexington, KY. Built in 1934 and listed on the National Register of Historic Places, the four-story building, plus basement, contains 84,000 SF of rentable space and currently houses both the U.S. District Court (79% of the building) as well as the U.S. Marshals Service (USMS), U.S. Attorneys and the U.S. General Services Administration.

GRW's role on the design-build team was to provide civil/site engineering, and mechanical and electrical engineering. The project involved a phased construction schedule; work was completed while the building was occupied.

HVAC Renovation & Energy Efficiency

Sustainability was a key factor as the addition achieved a 33% energy efficiency improvement over code, exceeding EPA requirements for federal buildings. HVAC systems included the addition of variable refrigerant volume systems, as well as modifications to existing variable volume air-handling

system. Included were state-of-the-art ventilation systems for the parking garage, loading dock, and sallyport controlled by occupancy, temperature, and hazardous gas (CO & NOx) levels. LED lighting was added in all new spaces.

A few of the major components included:

- Site work, storm water/drainage, **HVAC, plumbing, and electrical rewiring for all affected spaces**
- Emergency generator serves entire building (350 KW)
- Additions and modifications to IDS, CCTV system and access control systems
- Ballistic protection of courts security booth
- USMS vehicular sallyport
- Prisoner elevator, judge's elevator, freight elevator & overhaul of two public elevators
- Addition of a new fire exit stairwell
- Secure 4th floor corridor to judge's chambers

Client Contact: Kevin Dunham, Architect, U.S. General Services Administration, (404) 331-2998, kevin.dunham@gsa.gov



130th Airlift Wing Security Forces Squadron Facility Renovation & Expansion West Virginia Air National Guard | Charleston, WV

GRW was retained to provide complete architectural and engineering Type A, B and C services for renovating the existing 5,395 SF Security Forces Squadron facility and adding 2,500 SF of administrative and training space to the facility. This project uses MILCON/SRM split funding to deliver a renovated and expanded SFS facility, which provides increased space for command and administrative functions.

A few relevant spaces and features include:

- Expanded command/administrative space
- Arms vault
- Training rooms
- SIPRNet
- ATFP building/site security
- ADA compliance

- Geothermal
- Split MILCON/SRM funding
- Extensive communications infrastructure

This project meets LEED Silver measures for sustainable design.

Contractor Performance Assessment Report (CPAR) from Contracting Officer Matthew Corcoran:

- **Quality: Exceptional/Outstanding Overall Job**
- **Schedule: Exceptional/Outstanding Overall Job**
- **Cost Control: Exceptional/Outstanding Overall Job**
- **Management: Exceptional/Outstanding Overall Job**
- **Regulatory Compliance: Exceptional/Outstanding Overall Job**

Client Contact: Capt. Harry Netzer, Deputy BCE, WV ANG, (304) 341-6649, harry.g.netzer.mil@mail.mil

130th Airlift Wing Squadron Operations Facility Repair

West Virginia Air National Guard | Charleston, WV

GRW provided multi-discipline design services for renovations and energy-efficient improvements to the 25,765 SF Squadron Operations Facility at the WV Air National Guard Base at Yeager Field, Charleston, WV.

This facility was built in 1977 as a three-story, 18,265 SF building, and housed the Base Operations and Dining Area. In 1990, a two-story addition of 7,500 SF was constructed on the east end of the facility to increase space needed for airfield operations. The Dining Area was later relocated to another facility and its space was renovated for a Fitness Center and an Intelligence/Tactics unit. Other renovations and relocations made within the facility over the years have resulted in a building that now inadequately serves its current users, which include Administration and Operations, Base Operations, Command Post, and Life Support and Fitness Center.

The facility size met the ANG facility space requirements, but the user spaces were not efficiently arranged; the HVAC and electrical systems were inadequate; roofs were in need of repair; and the fire protection system did not comply with current codes. All of these factors contributed to a degradation of mission completion.

GRW began the project with a charrette to review the facility requirements with a Design Working Group, consisting of user groups and other key stakeholders, to confirm the authorized functional space requirements of each activity in the facility, develop alternative floor plans that overcome the current deficiencies, and validate the Government's

construction cost estimate. A Concept Proposal Report and a Concept Development Report were prepared following the Charrette.

After considering the alternative floor plans, a plan was selected that met the goals of the project while also achieving a more energy-efficient, sustainable facility. The final design allows for the efficient use of space for squadron personnel to perform their operations, maintenance and training activities in a modern, comfortable environment that is conducive to effective mission execution.

Designed to achieve a USGBC LEED Certified rating and to meet other ANG Sustainable Design Policy, the **renovated facility design includes new, efficient HVAC, lighting, and other support systems.** This design also meets the AT/FP requirements of UFC 4-010-01, and other applicable current ANG requirements and building

"From the Communications Building to the Master Plan, GRW has shown many of the traits that we look for in an A/E Firm. They have offered us outstanding solutions. They have shown their commitment to our unit by always going above and beyond; I know that I am extremely proud to have had them on our projects."

Comment from Lt. Col John Dulin 130th AW/CES

Client Contact: Capt Harry Netzer, Deputy BCE, West Virginia Air National Guard, (304) 341-6649, harry.g.netzer.mil@mail.mil

167th Airlift Wing: Multiple Projects

West Virginia Air National Guard | Martinsburg, WV

Client Contact: Major Emerson Slack, Deputy Base Civil Engineer, West Virginia Air National Guard, (304) 616-5233, emerson.c.slack.mil@mail.mil

C-17 Composite Material Shop

The West Virginia Air National Guard selected GRW to design modifications to the 167 Air Wing's 2,744 SF **Composite Material Shop** to support its mission change from C-5 to C-17 aircraft.

The existing facility is designed to repair fiberglass and aluminum parts. The new C-17 is composed of carbon fiber materials, and the shop requires new technologies and environmental controls to meet the sensitive temperature requirements and reduce microscopic airborne fibers associated with carbon fiber. **The following systems will also be modified or upgraded: HVAC, electrical, lighting, communications, security, and sprinklers.**

Contractor Performance Assessment Report (CPAR) from Deputy Base Civil Engineer Major Emerson Slack:

QUALITY: Very complex system performs as designed. No significant weaknesses identified.

MANAGEMENT: Management is professional, well-organized, and responsive. No significant weaknesses identified.

C-17 Corrosion Control Hangar Modifications

The West Virginia Air National Guard selected GRW to design modifications to the 167 Air Wing's 79,421 SF **Corrosion Control Hangar** to support its mission change from C-5 to C-17 aircraft.



C-17 Fuel Cell Hangar Modifications

The West Virginia Air National Guard selected GRW to design modifications to the 167th Air Wing's 80,700 SF **Fuel Cell Hangar** to support its mission change from C-5 to C-17 aircraft.

Contractor Performance Assessment Report (CPAR) from Deputy Base Civil Engineer Major Emerson Slack:

QUALITY: Design had no significant weaknesses. Contractor was able to adjust to add a complex system modification within their design

COST CONTROL: Construction costs were kept well under budget.

C-17 Maintenance Hangar Modifications

The West Virginia Air National Guard selected GRW to design modifications to the 167 Air Wing's 80,751 SF **Maintenance Hangar** to support its mission change from C-5 to C-17 aircraft.

KSD & KSB Campus HVAC Assessments & Upgrades (Multiple Buildings)

Kentucky Division of Engineering & Contract Administration | Frankfort, KY

The Kentucky School for the Deaf (KSD) located in Danville, Kentucky and the Kentucky School for the Blind (KSB) located in Louisville, Kentucky, have multiple buildings on campus with varying HVAC system types/ages in need of replacement or upgrades. Heating, ventilation and air conditioning are critical to the school's learning and living environment. The campuses are typically occupied 24 hours a day Monday – Friday during the school year. Systems need to accommodate school schedules for occupancy differences from school session to summer break. Design experience in phasing work for construction to coordinate with school occupancy timeframes is important. E

The work for this project includes assessment of existing mechanical systems for multiple buildings, recommendations for upgrades with current cost estimates, and design of projects chosen by the client.

KSD school buildings have been recently removed from the central steam plant by adding independent boilers in each building. KSB is still currently on a central boiler plant and part of this study is to review the possibility of removing part of the campus from the boiler plant. Both campuses would like to have a central control system BACNet to better control and monitor buildings. Electrical systems and piping will also need to be reviewed for any possible upgrades that may be necessary in order to upgrade HVAC systems.

Possible projects at KSD include:

- Separate HVAC system for Argo Classroom Building art room
- New roof top units, exhaust fans, air compressor as well as adding air conditioning to the gym portion of the Thomas Athletic Building
- Upgrade of chilled water air handlers with electric strip heat system at Middleton Dorm Building
- Replacement of water source heat pumps and a cooling tower to alleviate humidity issues and negative building pressure issues at Brady Administration/Dorm bBuilding



- Chiller replacement at Kerr Classroom Building
- Fan coil units upgrades at Grow Hall cafeteria/kitchen building
- Complete replacement of HVAC boiler, unit ventilators, piping at Beauchamp Building

Possible projects at KSB include:

- HVAC systems full upgrade at Evans Hall
- Addition of controls through a BACNet at Scoggan and McDaniel Classroom Buildings
- HVAC system full replacement along with electrical upgrade at Langan Gym Building
- HVAC renovation for a portion of Howser Dorm Building along with upgrade of controls in all of the building to connect to a new campus wide system
- HVAC upgrade including repair of controls and update of electrical infrastructure for Richie Hall Auditorium/Music Building
- HVAC improvements includes replacement of air distribution system at Hartford Cafeteria/Kitchen
- HVAC upgrades including replacement of steam piping, valves, and controls at Gregory-Ries Student Center
- HVAC improvements include replacement of controls and roof top AC unit at Begley Central Plant Building
- HVAC replacement for KSB Foundation Building
- HVAC replacement for three residential houses

Client Contact: Tony Yates, Kentucky Division of Engineering & Contract Administration, (502) 564-3155, tony.yates@ky.gov



OPERATIONS

SECTION 3.0 | Staff Qualifications

3.0 Staff Qualifications

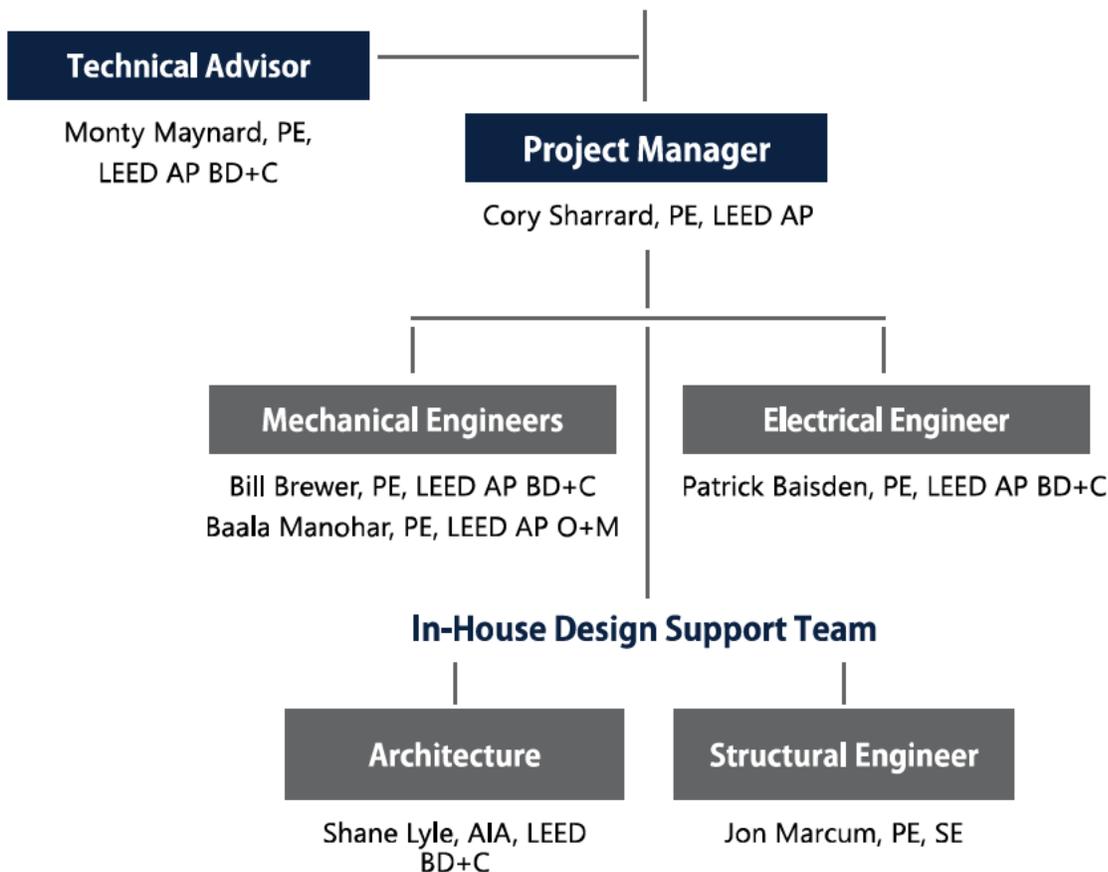
To assist you with the design of HVAC system renovation project at project at the Huntington Tri-State Armory in Kenova, WV, we’ve selected GRW team members with the relevant experience and availability. Our clients also directly benefit from **GRW’s one-stop business model and**

multidiscipline staff who specialize in architecture, engineering (mechanical, electrical, structural, transportation, civil/site), interior design, and landscape architecture. These capabilities allow our teams to **collaborate** more efficiently with you, which

can make a significant positive impact on your project experience. **Resumes** are on the following pages. Read more about our **approach** and **methodology**, including an overview of key team member responsibilities in **Section 4.0**.



West Virginia Department of Administration and West Virginia Army National Guard



Cory Sharrard, PE, LEED AP | GRW Project Manager



YEARS OF EXPERIENCE:

With GRW: 3

Total: 23

EDUCATION

B.S., Industrial Technology, 1996,
Murray State University

B.S., Mechanical Engineering,
1998, University of Kentucky

REGISTRATION

Professional Engineer:

WV (# [REDACTED] KY, IN, OH, NY, FL

NCEES Member allows

reciprocity with other states

LEED AP

PROFESSIONAL AFFILIATIONS AND TRAINING

Kentucky Local Correctional
Facilities Construction Authority
Board (through 2023)

American Society of Heating,
Refrigerating and Air-

Conditioning Engineers

(ASHRAE) - Board of Governors,
Bluegrass Chapter

Kentucky Society of Professional
Engineers (KSPE) - Professional
Development Committee (Vice
Chair), Bylaws & Operational
Procedures Committee, Ethical
Practices Committee

Society of American Military
Engineers (SAME)

Society of Marketing

Professional Services (SMPS) -

Past President

RELEVANT PROJECT EXPERIENCE

West Virginia Division of Natural Resources Building 74 Renovation, South Charleston, WV – Project Manager. Evaluation and

recommendations for possible improvements and upgrades to building systems in three-story, 37,000 SF, masonry-construction facility that houses approximately 100 employees. Among the improvements selected for design are the replacement of the following: heating and cooling systems, windows, T5 lighting with LED fixtures, and replacement of ceilings and floor finishes.

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV –

Mechanical Engineer. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Includes HVAC replacement; new interior finishes (including raised access flooring), structural roof deck and roofing system, elevator and fire stairs, building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage improvements.

Clay County BOE Clay County High School Renovations, Clay, WV –

Mechanical Engineer. Design and construction administration phase services for gymnasium and locker rooms, commons area, and HVAC system renovations; door/window replacement; and security/communications system improvements. Portion of construction will occur during summer months, but much will be completed while school is occupied.

West Virginia Department of Highways District 1 Vehicle Maintenance and Equipment Shops Building, Charleston, WV – Mechanical Engineer.

Approximate 35,000 SF facility includes: 8 heavy vehicle repair bays; 6 light vehicle repair bays; 2 welding bays; wash bay; small engine shop; parts and tire storage areas; offices; 2 cranes serving repair bays; 1 crane serving entire weld shop area; freight elevator; perimeter fencing; keycard entry system; and generator.

Kentucky School for the Deaf and Kentucky School for the Blind HVAC Upgrade, Danville & Louisville, KY – Project Manager. Work for project

includes assessment of existing mechanical systems for multiple buildings, recommendations for upgrades with current cost estimates, and design of projects chosen by client.

Fayette County Public Schools Henry Clay High School HVAC System Evaluation & Renovation, Lexington, KY – Project Manager. Mechanical

engineering design and construction administration services to replace all major HVAC equipment on the roof of approximately 250,000-SF high school. Current HVAC system, evaluated by GRW prior to this assignment, consists of 26 multi-zone units and several additional split-system air handling units with air-cooled DX coils for cooling and hot water heating coils for heating. Project to include replacement of units, new DDC controls, and testing and balancing for both the air and water sides of the system.

Pulaski County Schools Bus Maintenance Garage, Somerset, KY –

Mechanical Engineer. New 11,036 SF, pre-engineered metal building with three drive-through maintenance bays equipped with motorized, vertical lift sectional doors with space for six buses; tire room; work room; parts room; toilets; break room; waiting area; office; and mezzanine storage/mechanical area. Also included 3 in-ground, adjustable bus lifts; concrete floor with trench drains and oil/water separator; fire suppression system; centralized vehicle fluids system piped to 4 central dispensing locations; compressed air system; vehicle exhaust systems; overhead radiant system and ventilation in bus bays; and complete HVAC in office areas.

Berea College Facilities Maintenance and Auxiliary Maintenance

Buildings, Berea, KY – Mechanical Engineer. New 37,445 SF pre-engineered metal Facilities Maintenance (FM) and 15,504 SF pre-engineered metal Auxiliary Maintenance (AM) buildings to unify and improve efficiency for Facilities Maintenance Departments. FM building includes office space; office support spaces; maintenance work areas for each department; multipurpose lunchroom/classroom for 60+ staff; toilet/shower/locker area; general work/storage area; additional mezzanine storage area with freight service elevator access; unit heaters and exhaust/air circulation systems in shop areas; HVAC in office areas via one central roof top unit; and building wide fire suppression. AM building includes: vehicle repair area with two, slab-supported lifts; vehicle wash bay; bus storage; campus recycling center with industrial cardboard bailer and paper shredder; offices; bathrooms; additional overflow storage area; and 30 electric cart maintenance vehicle charging/parking spaces. Both buildings have card reader access, motorized overhead doors, man doors, concrete floors with trench drains where applicable, and oil/water separator systems.

Cory served as Project Manager for these additional mechanical engineering/HVAC system projects:

- Berea Independent Schools HVAC Renovation, Berea, KY
- Greenbo Lake State Resort Park Lodge Kitchen HVAC, Greenup, KY
- Capital Plaza Complex HVAC Renovation, Frankfort, KY
- Multiple Bluegrass Station Projects, Avon, KY including:
 - ✓ Building 3 Design
 - ✓ Buildings 101 & 195 Sprinkler System Upgrade,
 - ✓ Building 28 Renovation, Avon, KY
 - ✓ Building 221 Addition, Avon, KY
 - ✓ Building 4 Bays F & G HVAC Installation, Avon, KY
 - ✓ Buildings 3, 5, 220 & 221 Sprinkler Repairs, Avon, KY
 - ✓ Buildings 17 & 135 Radiant Heat Installation, Avon, KY

Monty Maynard, PE, LEED AP BD+C | Technical Advisor



YEARS OF EXPERIENCE:

With GRW: 26

Total: 45

EDUCATION

B.S., Electrical Engineering, 1978,
University of Kentucky

REGISTRATION

Professional Engineer

(Electrical): WV (# [REDACTED] KY, IN,
GA, TN, TX, NV, NC, MS, MI, AL,
CA, DC, FL

NCEES Member allows
reciprocity with other states

LEED Accredited Professional,
Building Design + Construction

PROFESSIONAL AFFILIATIONS AND TRAINING

Design-Build Institute of
America

National Fire Protection
Association

International Society of
Automation

American Institute of Architects

American Council of
Engineering Companies

National Council of Examiners
for Engineering and Surveying

Air National Guard Civil
Engineering Association Life
Member (Associate)

Society of American Military
Engineers

American Water Works
Association

RELEVANT PROJECT EXPERIENCE

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV – Electrical Engineer. Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility with history of remodeling activities resulting in a building that inadequately serves its users (Administration and Operations, Base Operations, Command Post, and Life Support and Fitness Center). Work included Charrette to develop alternative floor plans. Selected design allows for efficient use of space; HVAC, electrical and fire protection systems upgrade; and roof repairs. Designed to achieve USGBC LEED Certified rating, meet all ANG Sustainable Design criteria and utilize MILCON/SRM split funding.

West Virginia Division of Natural Resources Building 74 Renovation, South Charleston, WV – Principal. Evaluation and recommendations for possible improvements and upgrades to building systems in three-story, 37,000 SF, masonry-construction facility that houses approximately 100 employees. Among the improvements selected for design are the replacement of the following: heating and cooling systems, windows, T5 lighting with LED fixtures, and replacement of ceilings and floor finishes.

West Virginia ARNG Joint Armed Forces Reserve Center and Area Maintenance Support Activity, Ripley, WV – Electrical Engineer. Preparation of a Program Planning Document Charrette (PPDC) for replacement of two local armories and a USAR center with aging facilities and site limitations, with a new, \$17 million Joint Armed Forces Reserve Center and support facilities on a 94-acre site. Resulting plans include an Armed Forces Reserve Center (60,927 SF), unheated storage (6,000 SF), area maintenance support (4,500 SF) and helipad.

Kentucky ARNG Readiness Centers HVAC Replacement, Jackson and Williamsburg, KY – Electrical Engineer. Design for HVAC systems renovation for two small Army National Guard Readiness Centers in different Kentucky cities (Jackson and Williamsburg), totaling 32,000 SF, involving lighting (low mercury T5 lamps) and ceiling replacement and changes in electric services providing new high-efficiency air-cooled heat pumps for heating and cooling high-use areas and low-intensity gas infrared units for heating large drill halls cooled by air-cooled DX units, new duct work, and interior finish repair. Included web-based DDC control networks allowing monitoring, troubleshooting and adjustment of HVAC equipment from Frankfort HQ of KY ARNG.

West Virginia ANG 130th Airlift Wing Communications Facility, Charleston, WV – Electrical Engineer. Design (Type A and B, 65%) for a new \$3.6 million, 13,100 SF Communications Facility at Yeager Airport in Charleston for West Virginia Air National Guard, designed for LEED Silver rating, to provide a centrally located common user communications system for both intra-base and off-base communications, with ground control of all ground point-to-point contact and air to ground point-to-point contact (such as radio, telephone, DISNET, etc.). Design paused at 65% to enable base's master plan and re-prioritize new capital improvements.

West Virginia Division of Corrections Lakin Correctional Center

Lightning Protection Improvements, West Columbia, WV – Project Manager. Lightning protection system ground study and improvements at 166,000 SF, medium-security, women's correctional facility in West Columbia, WV. Services included study of power distribution deficiencies, grounding study, as well as design and construction administration services for recommended new system.

Blue Grass Army Depot Building 550 HVAC Renovation, Richmond, KY –

Electrical Engineer. Engineering design for design-build of complete fabrication area HVAC renovation for an aged munitions assembly building. Design involved a controlled temperature/humidity environment for all spaces (many of which had never before been cooled) and 100% outside air supply system from ground-mounted custom air handling unit and packaged electric make-up air unit. Major upgrades to electrical service into the building were required due to large increase in electric power required for equipment.

VA Medical Center, Leestown Road Division, Fire Alarm and HVAC

Controls Replacement, Lexington, KY – Principal-in-Charge. Designed fire alarm system and HVAC facilities management system for 20 major buildings, encompassing 432,000 SF, at VA Medical Center. Fire alarm system includes modern, addressable-module system with new detection and alarm devices connected to the various buildings by a dedicated fiber-optic network. HVAC system is a state-of-the-art, direct digital control system, using a wired network within the building and an Ethernet LAN on the dedicated fiber-optic connections between buildings. Each system has a head-end computer/monitor station in the boiler house for 24-hour supervision.

Kentucky ARNG Joint Armed Forces Reserve Center and Field

Maintenance Shop, Paducah, KY – Engineering Manager. Engineering design for design / build delivery of a \$14.7 million complex of over 83,300 SF total in three buildings, meeting LEED Silver sustainable design rating, serving both Kentucky Army National Guard and U.S. Army Reserves. Provided: administrative areas; education space, 6 vehicle maintenance bays; assembly hall with kitchen; storage for general, flammable material, and controlled waste; security systems; and energy management and control systems. Site work included new grading and drainage improvements, stormwater detention, entry control point, roads, parking areas, vehicle wash rack, perimeter fencing and barriers, and AT/FP measures.

Kentucky ARNG Joint Armed Forces Reserve Center and Field

Maintenance Shop Complex, Bluegrass Army Depot, Richmond, KY – Project Manager. Design Criteria Consultant for design-build delivery of a new \$19.2 million complex encompassing a 63,250 SF Armed Forces Reserve Center (AFRC) and a 31,725 SF Field Maintenance Shop (FMS), both designed to meet LEED Silver sustainable design rating. Provided RFQ and RFP development, assistance in short-listing and final selection of the design/build team, construction administration and commissioning of the new facilities that included administrative, training, assembly, storage, and vehicle workbays.

Bill Brewer, PE, LEED AP BD+C | GRW Mechanical Engineer



YEARS OF EXPERIENCE:

With GRW: 23

Total: 50

EDUCATION

B.S., Mechanical Engineering,
1967, Case Western Reserve
University

REGISTRATION

Professional Engineer:

WV (# [REDACTED] KY, CA, OH, NC,
TN, NH, IN, TX, MS, GA, VA, MI,
PA, KS

NCEES Member, allows

reciprocity with other states

LEED Accredited Professional,
Building Design + Construction

PROFESSIONAL AFFILIATIONS AND TRAINING

American Society of Mechanical
Engineers

American Society of Heating,
Refrigeration and Air
Conditioning Engineers,
Bluegrass Chapter

American Institute of
Aeronautics and Astronautics

International Code Council

Society of Fire Protection
Engineers

International Ground Source
Heat Pump Association

U.S. Green Building Council

American Council of
Engineering Companies

Certified Energy Auditor

Simplex-Grinnell Clean Agent

Training: "Clean and Green -

Ansul Sapphire and Inergen Fire
Suppression Agents"

RELEVANT PROJECT EXPERIENCE

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV – Project Manager. Concept Development Report for C-5 aircraft complex which requires electrical modifications to meet needs of current occupants' activities, and investigation/resolution of temperature control in numerous locations. Report included detailed discussion of current electrical, architectural and HVAC system problems; recommendations to resolve large-system problems, as well as particular solutions for small areas; conceptual level drawings; conceptual level outline specification; and construction cost estimate.

West Virginia ANG 130th Airlift Wing Communications Facility, Charleston, WV – Mechanical Engineer. Design (Type A and B, 65%) for a new \$3.6 million, 13,100 SF Communications Facility at Yeager Airport in Charleston for West Virginia Air National Guard, designed for LEED Silver rating, to provide a centrally located common user communications system for both intra-base and off-base communications, with ground control of all ground point-to-point contact and air to ground point-to-point contact (such as radio, telephone, DISNET, etc.). Design paused at 65% to enable base's master plan and re-prioritize new capital improvements.

West Virginia ARNG Readiness Center Commissioning Projects, WV – Project Manager. LEED Fundamental Commissioning for four building construction projects: Buckhannon AFRC - Phase I, 38,000 SF and \$13,150,000 construction cost; Morgantown Readiness Center, 58,520 SF and \$20,500,888 construction cost; Moorefield Readiness Center, 57,256 SF and \$17,725,351 construction cost; and Logan Readiness Center, 58,520 SF and \$14,296,326 estimated construction cost. Scope included all commissioning, coordination and documentation required for LEED certification on the HVAC systems and networked controls, the lighting control systems and the domestic hot water distribution systems.

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar Modifications, Martinsburg, WV – Mechanical Engineer. Fast-track design of maintenance hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar Modifications, Martinsburg, WV – Mechanical Engineer. Fast-track design of fuel cell hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar Modifications, Martinsburg, WV – Mechanical Engineer. Fast-track design of corrosion control hangar modifications required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV – Mechanical Engineer. Fast-track design of composite material shop to the existing corrosion control hangar required to meet 167AW's change in mission from C-5 to C-17 aircraft.

Kentucky School for the Deaf and Kentucky School for the Blind HVAC Upgrade, Danville & Louisville, KY – Project Manager. Work for project includes assessment of existing mechanical systems for multiple buildings, recommendations for upgrades with current cost estimates, and design of projects chosen by client.

Kentucky ARNG Readiness Centers HVAC Replacement, Jackson and Williamsburg, KY – Project Manager. Design for HVAC systems renovation for two small Army National Guard Readiness Centers in different Kentucky cities (Jackson and Williamsburg), totaling 32,000 SF, involving lighting (low mercury T5 lamps) and ceiling replacement and changes in electric services providing new high-efficiency air-cooled heat pumps for heating and cooling high-use areas and low-intensity gas infrared units for heating large drill halls cooled by air-cooled DX units, new duct work, and interior finish repair. Included web-based DDC control networks allowing monitoring, troubleshooting and adjustment of HVAC equipment from Frankfort HQ.

Indiana ARNG 76th Brigade Combat Team Readiness Center, Lawrence, IN – Mechanical Engineer. Planning, design and construction administration services for a new 109,555 SF, 2-story Readiness Center and 8,300 SF unheated storage facility. Includes: administrative areas; classrooms, COMSEC training, library and training center, distance learning; assembly hall with fully functional kitchen; locker rooms, medical section room; heated unit storage and unheated storage rooms, facility maintenance, arms vault, tool rooms; RAPIDS, family support and recruiting offices; space for future indoor range or simulator; security lighting; energy management and control system, intrusion detection system, mass notification system.

Kentucky ANG 123rd Airlift Wing Renovation Projects, Louisville ANG Base, KY – Project Manager. Fast-track design for various upgrade and renovation projects under an indefinite delivery indefinite quantity National Guard Bureau contract, including fire suppression systems in two buildings, new lights in several rooms of two buildings.

VA Medical Center, Leestown Road Division, Fire Alarm and HVAC Controls Replacement, Lexington, KY – Project Manager. Designed fire alarm system and HVAC facilities management system for 20 major buildings, encompassing 432,000 SF, at VA Medical Center. Fire alarm system includes modern, addressable-module system with new detection and alarm devices connected to the various buildings by a dedicated fiber-optic network. HVAC system is a state-of-the-art, direct digital control system, using a wired network within the building and an Ethernet LAN on the dedicated fiber-optic connections between buildings. Each system has a head-end computer/monitor station in the boiler house for 24-hour supervision.

Indiana ANG 122nd Fighter Wing Security Forces Operations and Training Facility, Fort Wayne, IN – Mechanical Engineer. Conceptual design for design-build bridging document for a new \$3.86 million (FY07), 18,494 SF Security Forces Operations and Training Facility, including a Combat Arms Training and Simulator/Combat Arms Training Maintenance (CATS/CATM) area, providing offices for the Flight Chief, open office area for the base security forces, classrooms, workout room, locker room, weapons simulator room and weapons storage areas.

Baala Manohar, PE, LEED AP O+M | GRW Mechanical Engineer



YEARS OF EXPERIENCE:

With GRW: 4

Total: 6

EDUCATION

B.S., Mechanical Engineering,
2016, BITS Pilani Dubai Campus

M.S., Mechanical Engineering,
2018, University of Florida

REGISTRATION

Professional Engineer:

KY (# [REDACTED])

LEED Accredited Professional,
Operations + Maintenance

Baala has a wide variety of expertise including heat load calculation, design optimization of thermal systems, energy audits (ASHRAE Level 1 & 2), BACNET, head loss calculation, piping and duct design, weather data analysis, life cycle cost analysis, F-chart analysis for solar PV cells, ArcGIS for wind and solar analysis, energy audits, and LEED design/documentation. He is also proficient with several energy modeling programs (Trane Trace, EnergyPlus, and Carrier HAP) and design programs (AutoCAD, Revit MEP, ANSYS, and SOLIDWORKS).

RELEVANT PROJECT EXPERIENCE

West Virginia State Capitol East Campus Warehouse/Grounds Building, Charleston, WV – Mechanical Engineer. Planning, design, and bidding services for a 26,771-SF warehouse facility with surplus and receiving, a warehouse store, office area, maintenance shop with welding, grounds mechanic shop for vehicle maintenance, and equipment storage facility.

West Virginia Department of Highways District 1 State Road Commission Building, Charleston, WV – Mechanical Engineer. Renovation of historic 40,000 SF State Road Commission Building to house offices and support facilities for local highway district.

Fayette County Public Schools Henry Clay High School HVAC System Evaluation & Renovation, Lexington, KY – Mechanical Engineer. Services to replace all major HVAC equipment on the roof of approximately 250,000-SF high school. Current HVAC system, evaluated by GRW prior to this assignment, consists of 26 multi-zone units and several additional split-system air handling units with air-cooled DX coils for cooling and hot water heating coils for heating. Project to include replacement of units, new DDC controls, and testing and balancing for air and water sides of the system.

Clay County High School Renovation and Addition, Clay, WV – Mechanical Engineer. Design and construction administration phase services for gymnasium/locker rooms, HVAC system renovations; door/window replacement; and security/communications system improvements.

Crane NSA Building 2736 Renovation, Crane NSWC, IN – Mechanical Engineer. Design-build renovation of existing building into new air compressor facility to serve adjacent facilities. Building upgraded to meet energy, life safety code, new primary structure and façade elements, mechanical, and electrical systems to support one new air compressor system, and accommodations to expand to second.

East Kentucky Power Cooperative Headquarters Renovations, Winchester, KY – Mechanical Engineer. Architectural, as well as mechanical and electrical engineering design to renovate five areas -- totaling more than 20,600 SF -- at headquarters campus. Services involve items such as converting open/cubicle office to glass- or hard-walled offices, reconfiguring lighting and power, as well as providing new finishes and HVAC systems.

Kentucky School for the Deaf and Kentucky School for the Blind HVAC Upgrade, Danville & Louisville, KY – Mechanical Engineer. Assessment of existing mechanical systems for multiple buildings, recommendations for upgrades with cost estimates, and design of projects chosen by client.

Patrick Baisden, PE, LEED AP BD+C | GRW Electrical Engineer



YEARS OF EXPERIENCE:

With GRW: 13

Total: 25

EDUCATION

B.S., Electrical Engineering, 1997,
University of Kentucky

REGISTRATION

Professional Engineer, Electrical:
WV (# [REDACTED] KY, IN, OR, NM,
WV

LEED Accredited Professional,
Building Design + Construction

NCEES Member allows
reciprocity with other states

RELEVANT PROJECT EXPERIENCE

West Virginia ARNG Camp Dawson Ranges at Briery Mountain, Kingwood, WV

– Electrical Engineer. Project includes design and construction of new Hand Grenade Familiarization Range and Live Fire Exercise Breach (LFEB) Training Range at Briery Mountain Training area to conform site to government standard Breach Range Design Requirements. Included design of access road to the remote site, electrical connections, breaching structures, open covered range operations and control shelter, storage building, dry latrine, covered viewing stands, and parking area.

U.S. Federal Courthouse Renovation, Lexington, KY

– Electrical Engineer. Design-build improvements project to enhance security through renovation of existing space, as well as new construction. Improvements include upgraded security electronics, site blast protection, and circulation/control enhancements.

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV

– Electrical Engineer. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Includes HVAC replacement; new interior finishes (including raised access flooring), structural roof deck and roofing system, elevator and fire stairs, building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage.

West Virginia ANG 130th Airlift Wing Security Forces Squadron Facility Renovation and Expansion, Charleston, WV

– Electrical Engineer. Complete architectural and engineering Type A, B and C services for \$2 million renovation of 5,395 SF SFS facility (B142) including addition of 2,500 SF administrative and training space to better serve unit. Project (MILCON/SRM split funded) increases space and improves mission performance and operational efficiency for command and administrative functions in ways that are energy efficient, code compliant and in accordance with current ANG policies. Project meets LEED Silver design criteria, and all AT/FP and ADAAG requirements.

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV

– Electrical Engineer. Concept Development Report for C-5 aircraft complex which requires electrical modifications to meet needs of current occupants' activities, and investigation/resolution of temperature control in numerous locations. Report included detailed discussion of current electrical, architectural and HVAC system problems; recommendations to resolve large-system problems, as well as particular solutions for small areas; conceptual level drawings; conceptual level outline specification; and construction cost estimate.

Pulaski County Southwestern High School Addition and Renovation, Somerset, KY

– Electrical Engineer. Engineering design for new 28,000 SF, two-story classroom addition (new chiller and variable-volume air-handling system), as well as 1,980 SF renovation and expansion to existing cafeteria. Also, central plant was replaced with new high-efficiency gas boilers and pumping systems, and new fire pump to upgrade entire school's sprinkler system.

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV – Electrical Engineer. Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility with history of remodeling activities resulting in a building that inadequately serves its users (Administration and Operations, Base Operations, Command Post, and Life Support and Fitness Center). Work included Charrette to develop alternative floor plans. Selected design allows for efficient use of space; HVAC, electrical and fire protection systems upgrade; and roof repairs. Designed to achieve USGBC LEED Certified rating, meet all ANG Sustainable Design criteria and utilize MILCON/SRM split funding.

Indiana ARNG 76th Brigade Combat Team Readiness Center, Lawrence, IN – Electrical Engineer. Planning, design and construction administration services for a new 109,555 SF, 2-story Readiness Center and 8,300 SF unheated storage facility. Includes: administrative areas; classrooms, COMSEC training, library and training center, distance learning; assembly hall with fully functional kitchen; locker rooms, medical section room; heated unit storage and unheated storage rooms, facility maintenance, arms vault, tool rooms; RAPIDS, family support and recruiting offices; space for future indoor range or simulator; military and POV parking, wash platform, loading ramp and dock, helipad; site Antiterrorism / Force Protection (AT/FP) measures, security lighting; energy management and control system, intrusion detection system, mass notification system; stormwater bio-retention pond.

West Virginia Department of Highways District 1 Vehicle Maintenance and Equipment Shops Building, Charleston, WV – Electrical Engineer. Approximate 35,000 SF facility includes: 8 heavy vehicle repair bays; 6 light vehicle repair bays; 2 welding bays; wash bay; small engine shop; parts and tire storage areas; offices; 2 cranes serving repair bays; 1 crane serving entire weld shop area; freight elevator; perimeter fencing; keycard entry system; and generator. Structure features cavity walls with concrete panel backup, petroleum resistant concrete floors, and metal roofing over rigid insulation, metal decking, and bar joists.

West Virginia ANG 167th Airlift Wing Munitions Storage, Martinsburg, WV – Electrical Engineer. New munitions inspection building, five magazines (all pre-manufactured modular units), new concrete pads (2,865 SF), all-weather pavement (5,566 SF) for vehicular access, gate/fencing, utilities, exterior lot lighting, communications, and security for the munitions area.

Pulaski County Schools Eubank Elementary Renovation and Addition, Pulaski County, KY – Electrical Engineer. Mechanical and electrical engineering design, and construction administration services for renovation and addition of a 46,820-SF school. Scope includes a new kitchen and addition to the cafeteria, as well as a renovation of entire building. Mechanical work included HVAC systems involving rooftop VAV boxes with electrical reheat and energy recovery ventilation, as well as geothermal units. Electrical work included replacement of lighting, fire alarms, and communications, and new service for the addition.

Shane Lyle, AIA, LEED AP BD+C | GRW Architect



YEARS OF EXPERIENCE:

With GRW: 33

Total: 39

EDUCATION

Bachelor of Architecture (with honors), 1983, University of Kentucky

REGISTRATION

Registered Architect:

WV (# [REDACTED]) KY, TN, AL, GA, IN, TX, MS, SC, FL, MO, AZ, NM, CA, WA

National Council of Architectural Registration Boards (NCARB) Certification

LEED Accredited Professional, Building Design + Construction

Certified Interior Designer: Kentucky

PROFESSIONAL AFFILIATIONS AND TRAINING

American Institute of Architects

Past President - AIA East Kentucky Chapter Board of Directors

American Correctional Association (ACA)

Member / Past Officer - UK College of Architecture Alumni Association

Life Member - UK Alumni Association

RELEVANT PROJECT EXPERIENCE

West Virginia ARNG Camp Dawson Volkstone Training Area Utility Upgrade, Kingwood, WV – Principal. Expansion of sewer (1,996 LF), water (1,996 LF) and electric (1,797 LF) to all existing and future buildings, unit training equipment site (UTES) and wash rack locations.

West Virginia ANG 130th Airlift Wing Building 107 Renovation, Charleston, WV – Principal. Scope of work included design services (LEED Silver design criteria) for two separately funded (MILCON/SRM) sub-projects to repurpose existing unoccupied hangar into space for the Aeromedical Evacuation Squadron (AES).

West Virginia ANG 130th Airlift Wing Squadron Operations Facility Repair, Charleston, WV – Principal. Design services for \$3 million renovation and energy-efficient improvements to 25,765 SF facility. Selected design allows for efficient use of space; HVAC, electrical and fire protection systems upgrade; and roof repairs. Designed to achieve LEED Certified.

West Virginia ANG 167th Airlift Wing Maintenance Mall (Building 307) Repair, Martinsburg, WV – Principal. Concept Development Report for C-5 aircraft complex, including electrical modifications investigation/resolution of temperature control in numerous locations.

West Virginia ANG 130th Airlift Wing Security Forces Squadron Facility Renovation and Expansion, Charleston, WV – Principal. Complete architectural / engineering services for \$2 million renovation of 5,395 SF SFS facility (B142) including 2,500 SF administrative & training space addition.

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV – Project Manager. Renovations to 2-story area (6,200 SF per level) to provide secure office space and support. Includes HVAC replacement; utility and storm drainage improvements.

West Virginia ANG 167th Airlift Wing Munitions Storage, Martinsburg, WV – Architect. New munitions inspection building, new concrete pads (2,865 SF), all-weather pavement (5,566 SF) for vehicular access, gate/fencing, utilities, exterior lot lighting, and other items.

West Virginia ANG 167th Airlift Wing C-17 Maintenance Hangar Modifications, Martinsburg, WV – Project Manager. Fast-track design of required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Fuel Cell Hangar Modifications, Martinsburg, WV – Project Manager. Fast-track design to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Corrosion Control Hangar Modifications, Martinsburg, WV – Project Manager. Fast-track design of required to meet 167AW's change in mission from C-5 to C-17 aircraft.

West Virginia ANG 167th Airlift Wing C-17 Composite Material Shop, Martinsburg, WV – Project Manager. Fast-track design required to meet 167AW's change in mission from C-5 to C-17 aircraft.

Michigan ARNG Design & Renovation of 8 Facilities at Ft. Custer, Camp Grayling, Grayling Army Airfield and Midland, MI – Architect.

Jon Marcum, PE, SE | GRW Structural Engineer



YEARS OF EXPERIENCE:

With GRW: 5

Total: 24

EDUCATION

M.S., Civil Engineering, 1996,
University of Kentucky

B.S., Civil Engineering, 1995,
University of Kentucky

REGISTRATION

Professional Engineer/Structural
Engineer: KY

Professional Engineer:
WV (# [REDACTED] KY, IN, TN, GA,
NY, NC, WA, OH

NCEES Member allows
reciprocity with other states

RELEVANT PROJECT EXPERIENCE

West Virginia ARNG Martinsburg Secure Facility, Martinsburg, WV – Structural Engineer. Renovations to 2-story area (6,200 SF per level) to provide new secure office space and related support spaces for specific using agency. Includes HVAC replacement; new interior finishes (including raised access flooring), structural roof deck and roofing system, elevator and fire stairs, building security and cameras, and site security fencing, sliding vehicular security gates, exterior parking; and site utility and storm drainage improvements.

Pulaski County Schools Bus Maintenance Garage, Somerset, KY – Structural Engineer. New 11,036 SF, pre-engineered metal building with three drive-through maintenance bays equipped with motorized, vertical lift sectional doors with space for six buses; tire room; work room; parts room; toilets; break room; waiting area; office; and mezzanine storage/mechanical area. Also included 3 in-ground, adjustable bus lifts; concrete floor with trench drains and oil/water separator; fire suppression system; centralized vehicle fluids system piped to 4 central dispensing locations; compressed air system; vehicle exhaust systems; overhead radiant system and ventilation in bus bays; and complete HVAC in office areas.

Pulaski County Schools Area Technology Center Renovation, Somerset, KY – Structural Engineer. Design for 6,000 SF renovation of approximately 38,000 SF facility. Spaces include industrial technology classroom, robotics tech lab, hydraulics tech lab, weld tech lab, electronics tech lab, and support spaces.

CoreCivic Marion Adjustment Center Renovation, St. Mary, KY – Structural Engineer. Site, security, electrical, and architectural improvements including: roadway, parking, perimeter fencing, exterior lighting at fence line, sallyport and gate control system, security electronics control room, integrated alarm reporting system, IP video system, intercom systems, generator and interior finishes replacement within St. Mary's building (21,500 SF, 3-story structure).

Nicholasville Fire Station #4, Nicholasville, KY – Structural Engineer. Facility programming, facility needs assessments, architectural and engineering design, and construction phase services for new 6,825 SF fire station with two pull-through apparatus bays, and vehicle storage for up to six vehicles.

FibroTex Manufacturing Facility Renovation and Expansion, McCreary County, KY – Structural Engineer. Design-build project including addition/renovation of approximately 80,000 SF to textile manufacturing facility.

Commonwealth of Kentucky Central Lab Plant Boiler Upgrade, Frankfort, KY – Structural Engineer. Study for upgrade and/or replacement of three high pressure steam boilers at utility plant.

Commonwealth of Kentucky Central Lab Cooling Tower Replacement, Frankfort, KY – Structural Engineer.



SECTION 4.0

Approach & Methodology for Meeting Goals & Objectives

4.0 Approach & Methodology for Meeting Goals & Objectives

The West Virginia Department of Administration along with the West Virginia Army National Guard are embarking on an HVAC system renovation project at the Huntington Tri-State Armory in Kenova, WV. It's an important project because it will help ensure the current/outdated HVAC equipment system is properly updated and replaced – and will ensure it meets all mechanical system building codes. This is project that will support elements of the WV ARNG Command and serves as a training and personnel location.

We understand your current goals and objectives for this project include:

- Provision of all engineering and architectural design services required.
- Ensure key design elements focus on using energy-efficient, economically sustainable, and maintenance-friendly equipment.
- Research and investigate location of existing utilities and provide drawings/specifications for any utilities needed; fulfill all needed coordination and directed by owner/agency/authority.

We also understand we will be responsible for:

- Submitting drawings at 35%, 65%, 95% and 100%, as well as revising and submitting costs estimates at each phase, and divided into sustainment, restoration, and modernization categories.
- Providing construction administration and bidding services.

An Approach Based on Respect & Clarity

Our approach to accomplishing these goals and objectives for your project is straightforward:

- 1) assemble the best and brightest design talent with knowledge of the national guard/military projects;
- 2) bring an open mind and fresh perspectives; and
- 3) remain accountable to you throughout the process for cost control/budget.

The cornerstone of the GRW design approach is collaboration. Communicating in an open dialog helps to vest everyone in the project's success, and is a prerequisite to ensuring buy-in from all.

A Project Team You Can Count On

Our assigned project manager is key to our approach.



Leading you and our team as our project manager will be the director of GRW's mechanical engineering division, **Cory Sharrard**. She brings more than 22 years of experience with a variety of similar projects. We believe you will find her a

knowledgeable engineer, skilled leader, and a valuable partner throughout your upcoming project.

Cory's logical and methodical approach will provide a steady hand guiding the team and the WVARNG through the design process to a successful conclusion.

Closely supporting Cory to ensure efficiency, effectiveness, and code compliance of the HVAC systems will be **Bill Brewer** and **Baala Manohar**.

Our electrical engineer **Patrick Baisden** will evaluate the electrical systems in the building to ensure code compliance and ensure we provide power required for any HVAC upgrades. All are experienced engineers accustomed to working on complex, systems-oriented, code-oriented projects for the military including WVARNG projects. **Monty Maynard**, a GRW vice president and our firm's most senior electrical engineer, brings to the team a high familiarity with the West Virginia Army National Guard and other military projects. He will support Cory offering additional quality assurance/quality control, as well as technical advice. Our

in-house architect, **Shane Lyle** – who has worked on more than a dozen West Virginia ANG and ARNG projects – and our in-house structural engineer, **Jon Marcum**, are prepared to offer the support needed for those disciplines.





Kickoff/Charrette | A1 Design | 10%

As part of the first phase of the project, we'll hold an initial meeting with you and the primary project stakeholders to discuss in detail your project goals,

options for accomplishing those goals, and budget and schedule requirements for the work. Following this meeting, we issue a written record of our discussions.

Existing Conditions

After we gain a full understanding of your desires and goals through the kickoff, we also will complete an examination of the existing conditions. We will take stock of the existing equipment, reviewing existing documentation and making field observations.

At the conclusions of this step, we will create a report that outlines the condition of the existing building components and systems that will be affected by the work of this project. This information will include the identification of existing hazardous materials.

For your HVAC project we will also:

- Consider & identify equipment lifespan and functions.
- Identify existing conditions that are not in compliance with current codes and standards.
- Look at the performance of the systems and utility costs for an established time period.
- Ensure new equipment meets current force protection standards, and current building code.
- Formulate how they relate to all required, current codes and efficiencies

Again, we will meet with you to determine likes, dislikes, what working, and what's not. This will give us a foundation as we move forward.

We'll use all information we collect to begin an outline for recommendations – including initial cost estimates – divided into sustainment, restoration, and modernization categories – for your new, upgrade systems.



SECTION 5.0 | Project Management & Quality/Cost Control

SUPPLY AIR

5.0 Project Management & Quality/Cost Control

Project Management

Our straightforward approach continues throughout the management of the entire project.

Design Submittals | A1 & A2 | 10% & 35%

Using the information from the Kickoff/Charrette and analysis of existing conditions, we continue through the A1/10% phase – and move into the A2/35% design phase. At this time we present the **schematic design** concept to you through the use of drawings, product information sheets, written narratives and an initial cost estimate. After your review of the material, we will meet together to go over the design review comments, review the budget, and document any

desired revisions. We will repeat this process as needed to reach an acceptable solution that meets your goals and budget.

We will also discuss with you potential construction phasing opportunities, if/as needed. We will document each step of the process with thorough meeting minutes.

Design Dev., Pre-final & Final Construction Documents | B1, B2 & B3 | 65%, 95% & 100%

Using the approved **schematic design** documents, the design team will proceed with **design development** docs which likewise, are issued for Owner/User review and approval before proceeding to **pre-final construction documents** and completion of final construction documents for bidding.

remains within budget. We will also reconfirm final decisions on materials, equipment, and finishes.

If needed, we will incorporate a phasing plan into the final documents to minimize the impact of construction on the facility's day-to-day operations.

The **estimate of probable cost** is updated at each design review submittal to check the estimate against the drawings and specs, to make sure the work

The **final construction documents** will consist of drawings, specifications, and instructions to bidders. The completed documents are then ready for bidding.

Construction Bid Services | Construction Phase

The same Project Manager you worked with throughout design continues as your point of contact through the entire construction process. Also, the original designers are the team we use to review shop drawings, attend meetings and observe the work in progress. This provides a continuity that benefits the project, and is an integral part of our quality control process.



GRW manages and tracks our construction administration and resident inspection responsibilities using **Newforma®** Project Center (project information management software); this ensures that the process is transparent to all parties. Newforma has built-in modules specifically developed

GRW and its subsidiary Chapman Technical Group (offices in St. Albans and Buckhannon, WV) have extensive experience in developing projects through the WV Purchasing Division. For many years, we have designed, bid, and constructed numerous, major Division of Natural Resources projects throughout the state. The West Virginia Division of Highways (DOH) recently began working with the State's Purchasing Division for building projects, and our \$10 million equipment shop building for District One was the first project that the DOH bid through the WV Purchasing Division. Our knowledge and experience of the State's purchasing procedures made this an easy transition for all stakeholders. Although every agency has its own particulars with regard to bidding projects, our experience with the West Virginia Purchasing Division will help ensure effective and efficient project delivery.

for the A/E industry.

Using this system, Owners, Design Team, and Contractor/GC all have access to real-time logs showing the current status of all construction-related activities.

During project construction, GRW provides consultation and advice on construction matters including visits to the site to check work progress and quality and to evaluate general conformance with the contract documents.

In addition, we review equipment and materials related to the submittals. Once reviewed, copies of submittals, with comments, are distributed to the team members (Owner, Contractor, etc.) for appropriate action. A comprehensive submittal file is maintained in the Newforma software.

Our team members review and recommend progress payments to the construction contractor based on observation of the work in-place. Project costs automatically update for tracking of project budgets.

Our team performs semifinal inspections of the project and creates a list of work yet to complete prior to the final technical inspection. Upon completion, we will provide a set of record drawings based on mark-ups from the contractor, to show field changes made



during construction. These drawings are reviewed by the Project Manager and serve as the record drawings for the project and are suitable for facility management.

Changes

The GRW project team will not approve any change that affects project cost, time or quality without your approval, and then only after a thorough discussion and vetting of the reasons for the change. Contractor cost proposals are carefully reviewed to ensure the proposed costs are fair and reasonable. When needed, GRW will negotiate on your behalf to reach an equitable solution.

Flexibility

These procedures are not cast in concrete, as GRW prides itself on being an organization which seeks

to simplify and expedite procedures that can impede the work and stifle creative people. Sometimes these procedures are streamlined for smaller projects, and sometimes they are more formalized for larger projects but at all times they remain flexible to accommodate the needs of our client's organizations. We want you to be satisfied with the quality of your facility: the bottom line is that GRW cares a great deal about securing repeat business with our clients.

Quality & Cost Control

At GRW, cost control, scheduling and value engineering are daily components of design rigor. Project planning decisions are assessed in weekly project meetings with all A/E disciplines to confirm budgets and schedules will be met. During these sessions, project status is discussed to direct adequate resources to meet the project schedule. The issues tracking list we create is reviewed to ensure problems are resolved before they impact the schedule or budget. Our vision as your full-service architectural and engineering design firm is to partner with you to simplify the design and construction process for the results you intend.

Quality Control

Cory Sharrard, Project Manager, has primary responsibility for the daily management and coordination of the project team. With over 20 years of experience, she has a clear understanding of the most effective methods for maintaining the programming, planning, and design schedule.

COMMUNICATION: At GRW, our highest project-management priority is focused on maintaining clear and effective communication throughout the entire project. This focus includes our communication with you and your stakeholders, with the Contractor, and with our internal design team members. Key to this effort is our use of Newforma project information management software, which allows the storage, sharing, and retrieval of project information both internally and externally.

PROJECT MANAGER: Our process begins initially with the assignment of an experienced Project Manager who is responsible for organizing the design effort and who manages the Quality Control process. While a project design team may involve many different departments or groups, the Project Manager has the ultimate authority over the project at all times.

A key element in effective Quality Assurance/Quality Control (QA/QC) is the use of regularly scheduled progress meetings. A kickoff meeting between key members of GRW's proposed project team and your management and staff will be held to ensure a common understanding of the goals and objectives among all project partners. These issues will be

reviewed and the work plan will be discussed in detail. Lines of communication and coordination will be established. Regular meetings will then be scheduled throughout the project to report on project progress and to review technical issues. These meetings provide a forum for discussing concerns and ideas. The assigned Project Manager is the primary conduit for communication between you and the design team.

TEAM MANAGEMENT: QA/QC is enhanced at GRW since most design disciplines are in-house. Because of this, scheduling internal team meetings or over-the-shoulder reviews is greatly simplified. On this project, the Project Manager will conduct weekly team meetings with the design team members to facilitate coordination of design issues. Any design problems are identified along with a path for their correct resolution. A checklist managed by the Project Manager is used to track the resolution of issues from meeting-to-meeting.

SCHEDULE MANAGEMENT: No QA/QC process can succeed without allocating sufficient time for internal review. The Project Manager will develop a proposed internal design schedule at the beginning of the project for appropriate time for internal review. These internal reviews typically occur prior to normal design submittal dates for the project.

QUALITY CONTROL REVIEWS: QC reviews at GRW includes desk-to-desk, task-to-task, and person-to-person crosschecking of work that takes place on a regular basis within the company. Impromptu meetings to discuss specific issues take place as often as needed. The peer review personnel are determined by the Project Manager at the beginning of the project, and remain consistent throughout the course of the project.

QUALITY ASSURANCE: A major advantage of providing all design disciplines within the same firm is the opportunity to streamline communication and work flow resulting in a well-coordinated set of construction documents. By close collaboration throughout the design stage, ideas can be quickly discussed and evaluated to understand impacts on cost, schedule and effectiveness.

PROGRAMMATIC OVERSIGHT: The Project Manager is tasked with maintaining oversight of the project as the design develops, to insure that the design decisions are in keeping with the programmatic criteria developed with you at the project's initiation. At each interim submittal, the Project Manager takes a step back, and looks at the project in broad terms to insure that the design is progressing in accordance with the original criteria.

Cost Control

PROJECT BUDGET ACCOUNTABILITY: Government officials are accountable to the public for the expenditure of public monies. The GRW team understands this obligation and develops a project design that is cost-effective and delivers an efficient and appropriate use of funds assigned to the military. Rarely do projects have sufficient budget to accommodate everything on the programmatic *wish list*. Reconciling the program against the project

budget is done early and often in order to guide the project to a successful conclusion. GRW approaches this process in a pragmatic and open manner. This subject will be on the agenda of every project meeting we have with you for open and frank discussion so that everyone is kept abreast of any potential concerns. Prioritizing the program relative to the budget can be a difficult task, with different stakeholders sometimes at odds over how to resolve differences of opinion. GRW excels at guiding this process and helping you to resolve these differences.

GRW has a strong history of successful estimating of projects, and our design experts will draw upon this knowledge during the development of our construction cost estimates.

We can also develop a list of possible value-engineering for consideration to help manage construction costs and give you the most construction value for your dollar.



GRW provided design and construction phase services for the WV ANG's 130th Airlift Wing Building 107 Renovation.

With a construction budget of \$5M, the awarded bid was \$4,941,290, and the final construction cost was \$4,991,876 (within 1% of awarded bid).



SECTION 6.0 | References



6.0 References

GRW understands that professional consulting begins as a relationship built on trust. We fully understand the importance of gaining your respect, proving our worth, and being there long after your successful project is completed. With repeat clients providing more than 90 percent of GRW's current workload, we believe this is a testament to our business philosophy of providing close, personal, high-quality service. We invite you to contact our references to verify GRW's performance.

West Virginia Army National Guard

MAJ Robert Kincaid, Jr.

(304) 791-4459

robert.j.kincaid.mil@mail.mil

Matthew T. Reynolds

(304) 561-6568c

matthew.t.reynolds18nfg@mail.mil

West Virginia Air National Guard

Capt. Harry Netzer, Deputy BCE

(304) 341-6649

harry.g.netzer.mil@mail.mil

Maj. Emerson C. Slack, Deputy BCE

(304) 616-5233

emerson.c.slack.mil@mail.mil

West Virginia, General Services Division

Mark Crites

Building Project Management Specialist

(304) 957-7142

Mark.A.Crites@wv.gov

Federal Bureau of Prisons

Judah Organic, Design Compliance Programs Manager

(202) 514-9566

jorganic@bop.gov





SECTION 7.0 | West Virginia EOI Forms



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

State of West Virginia
 Centralized Expression of Interest

Proc Folder: 1039904			Reason for Modification:
Doc Description: Huntington Tri-State Armory HVAC Renovation Design			
Proc Type: Central Purchase Order			
Date Issued	Solicitation Closes	Solicitation No	Version
2022-05-04	2022-05-17 13:30	CEOI 0603 ADJ2200000014	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code: 000000218570
Vendor Name : GRW
Address :
Street : 801 Corporate Drive
City : Lexington
State : KY **Country :** United States **Zip :** 40503
Principal Contact : Cory Sharrard, PE, GRW Director of Mechanical Engineering
Vendor Contact Phone: 859-223-3999 **Extension:** 214

FOR INFORMATION CONTACT THE BUYER

David H Pauline
 304-558-0067
 david.h.pauline@wv.gov

Vendor Signature X *William J Maynard* FEIN# 61-0665036 DATE 5/22/2022

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

ADDITIONAL INFORMATION

The West Virginia Purchasing Division, for the agency, the West Virginia Army National Guard, Construction and Facilities Management Office, is soliciting Expressions of Interest from qualified firms to provide professional engineering design services to develop construction documents to renovate all HVAC systems for the Huntington Tri-State Armory in Kenova, WV, per the attached documentation.

INVOICE TO	SHIP TO
ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US	KENOVA ARMED FORCES RESERVE CENTER 2194 BOOTH RD KENOVA WV 25530 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Huntington Tri-State Armory HVAC Renovation Design		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description:
 Provide professional architectural and engineering design services per the attached documentation.

SCHEDULE OF EVENTS

<u>Line</u>	<u>Event</u>	<u>Event Date</u>
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**ADDITIONAL TERMS AND CONDITIONS
(Architectural and Engineering Contracts Only)**

1. PLAN AND DRAWING DISTRIBUTION: All plans and drawings must be completed and available for distribution at least five business days prior to a scheduled pre-bid meeting for the construction or other work related to the plans and drawings.

2. PROJECT ADDENDA REQUIREMENTS: The Architect/Engineer and/or Agency shall be required to abide by the following schedule in issuing construction project addenda. The Architect/Engineer shall prepare any addendum materials for which it is responsible, and a list of all vendors that have obtained drawings and specifications for the project. The Architect/Engineer shall then send a copy of the addendum materials and the list of vendors to the State Agency for which the contract is issued to allow the Agency to make any necessary modifications. The addendum and list shall then be forwarded to the Purchasing Division buyer by the Agency. The Purchasing Division buyer shall send the addendum to all interested vendors and, if necessary, extend the bid opening date. Any addendum should be received by the Purchasing Division at least fourteen (14) days prior to the bid opening date.

3. PRE-BID MEETING RESPONSIBILITIES: The Architect/Engineer shall be available to attend any pre-bid meeting for the construction or other work resulting from the plans, drawings, or specifications prepared by the Architect/Engineer.

4. AIA DOCUMENTS: All construction contracts that will be completed in conjunction with architectural services procured under Chapter 5G of the West Virginia Code will be governed by the attached AIA documents, as amended by the Supplementary Conditions for the State of West Virginia, in addition to the terms and conditions contained herein. The terms and conditions of this document shall prevail over anything contained in the AIA Documents or the Supplementary Conditions.

5. GREEN BUILDINGS MINIMUM ENERGY STANDARDS: In accordance with West Virginia Code § 22-29-4, all new building construction projects of public agencies that have not entered the schematic design phase prior to July 1, 2012, or any building construction project receiving state grant funds and appropriations, including public schools, that have not entered the schematic design phase prior to July 1, 2012, shall be designed and constructed complying with the ICC International Energy Conservation Code, adopted by the State Fire Commission, and the ANSI/ASHRAE/IESNA Standard 90.1-2007: Provided, That if any construction project has a commitment of federal funds to pay for a portion of such project, this provision shall only apply to the extent such standards are consistent with the federal standards.

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) Cory Sharrard, PE, LEED AP, Director of Mechanical Engineering

(Printed Name and Title) Cory Sharrard, PE, LEED AP, Director of Mechanical Engineering

(Address) 801 Corporate Drive, Lexington, KY 40503

(Phone Number) / (Fax Number) 859-223-3999, ext. 214 / 859-223-8917

(email address) csharrard@grwinc.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through wvOASIS, I certify that: I have reviewed this Solicitation/Contract 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/Contract 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.

By signing below, I further certify that I understand this Contract is subject to the provisions of West Virginia Code § 5A-3-62, which automatically voids certain contract clauses that violate State law; and that pursuant to W. Va. Code 5A-3-63, the entity entering into this contract is prohibited from engaging in a boycott against Israel.

GRW

(Company) William J Maynard GRW Vice President

(Authorized Signatory) / Representative Name, Title
Monty (William) Maynard, PE, LEED AP BD+C GRW Vice President 5/16/2022

(Printed Name and Title of Authorized Representative) (Date)
859-223-3999 / 859-223-8917

(Phone Number) (Fax Number)
mmaynard@grwinc.com

(Email Address)

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: GRW

Authorized Signature: William J. Maynard Date: 5/11/2022

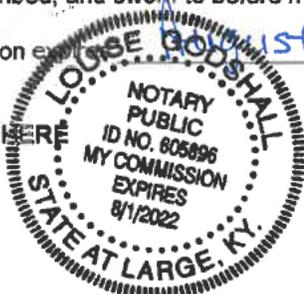
State of Kentucky

County of Fayette, to-wit:

Taken, subscribed, and sworn to before me this 11th day of May, 2022.

My Commission expires 1st day of August, 2022.

AFFIX SEAL HERE



NOTARY PUBLIC

Louise Godshall