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

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

Proc Folder: 481522
Doc Description: Camp Dawson Underground Utilities Design
Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2018-08-07	2018-08-29 13:30:00	CEOI 0603 ADJ1900000006	1

BID RECEIVING LOCATION

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PURCHASING DIVISION
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CHARLESTON WV 25305
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VENDOR

Vendor Name, Address and Telephone Number:

ZMM, Inc.
222 Lee Street, West
Charleston, WV 25302
304-342-0159

RECEIVED
2018 AUG 29 AM 11:08
WV PURCHASING DIVISION

FOR INFORMATION CONTACT THE BUYER

Stephanie L Gale
(304) 558-8801
stephanie.l.gale@wv.gov

Signature X [signature] **FEIN #** 55-0676608 **DATE** 8-29-2018

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

FORM ID : WV-PRC-CEOI-001

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.

ARK, PRINCIPAL
(Name, Title)
Adam R. Krason, AIA, Principal
(Printed Name and Title)
222 Lee Street, West, Charleston, WV 25302
(Address)
304-342-0159 304-345-8144
(Phone Number) / (Fax Number)
ark@zmm.com
(email address)

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contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation for that product or service, unless otherwise stated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

ZMM, Inc., Architects and Engineers
(Company)

ARK, PRINCIPAL
(Authorized Signature) (Representative Name, Title)

Adam R. Krason, AIA, Principal
(Printed Name and Title of Authorized Representative)

8-29-2018
(Date)

304-342-0159 304-345-8144
(Phone Number) (Fax Number)

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: ADJ190000000006

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

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

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

- ☐ Addendum No. 1
- ☐ Addendum No. 2
- ☐ Addendum No. 3
- ☐ Addendum No. 4
- ☐ Addendum No. 5
- ☐ Addendum No. 6
- ☐ Addendum No. 7
- ☐ Addendum No. 8
- ☐ Addendum No. 9
- ☐ Addendum No. 10

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

ZMM, Inc., Architects and Engineers
Company

Authorized Signature

8-29-2018
Date

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

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

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

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

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

DEFINITIONS:

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

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

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

Authorized Signature: _____ Date: 8-29-2018

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 29th day of August, 2018.

My Commission expires 10/6, 2018.

AFFIX SEAL HERE

OFFICIAL SEAL
STATE OF WEST VIRGINIA
NOTARY PUBLIC
Lisa E. Bowles
ZMM, Inc.
222 Lee St., W.
Charleston, WV 25302
My Commission Expires October 6, 2018

NOTARY PUBLIC Lisa E. Bowles

West Virginia Ethics Commission

Disclosure of Interested Parties to Contracts

(Required by *W. Va. Code* § 6D-1-2)

Contracting Business Entity: ZMM, Inc. **Address:** 222 Lee Street, West Charleston, WV 25302

Authorized Agent: Adam R. Krason **Address:** Same as Above

Contract Number: ADJ1900000006 **Contract Description:** Camp Dawson Underground Utilities Design

Governmental agency awarding contract: West Virginia Army National Guard

☐ **Check here if this is a Supplemental Disclosure**

List the Names of Interested Parties to the contract which are known or reasonably anticipated by the contracting business entity for each category below *(attach additional pages if necessary)*:

1. **Subcontractors or other entities performing work or service under the Contract**
   ☒ Check here if none, otherwise list entity/individual names below.

2. **Any person or entity who owns 25% or more of contracting entity (not applicable to publicly traded entities)**
   ☐ Check here if none, otherwise list entity/individual names below.
   ZMM, Inc., Robert Doeffinger
   ZMM, Inc., David E. Ferguson
   ZMM, Inc., Adam R. Krason

3. **Any person or entity that facilitated, or negotiated the terms of, the applicable contract (excluding legal services related to the negotiation or drafting of the applicable contract)**
   ☒ Check here if none, otherwise list entity/individual names below.

Signature: _____ Date Signed: 8-29-2018

Notary Verification

State of West Virginia, County of Kanawha

I, Adam R. Krason, the authorized agent of the contracting business entity listed above, being duly sworn, acknowledge that the Disclosure herein is being made under oath and under the penalty of perjury.

Taken, sworn to and subscribed before me this 29th day of August, 2018.

_____
Notary Public's Signature

To be completed by State Agency:

Date Received by State Agency: _____

Date submitted to Ethics Commission: _____

Governmental agency submitting Disclosure: _____

Revised October 7, 2017

August 28, 2018

Ms. Stephanie Gale, Senior Buyer
Department of Administration, Purchasing Division
2019 Washington Street, East
PO Box 50130
Charleston, West Virginia 25305-0130

Subject: Camp Dawson Underground Facilities Design (CEOI ADJ1900000006)

Dear Ms. Gale:

ZMM Architects and Engineers is pleased to submit the attached information to demonstrate our experience and our qualifications to provide professional architectural and engineering services for the Camp Dawson Underground Utilities Design project. Established in 1959, ZMM is a West Virginia based, full service A/E firm, and is noted for design excellence and client focus. Our integrated design approach makes ZMM unique among design firms in West Virginia, and will help to ensure the quality of the services that we will provide.

ZMM's in-house A/E team will be supplemented on this engagement with the specialized expertise of Potesta & Associates. Potesta was founded in Charleston in 1997 to provide quality engineering and environmental consulting services to a wide variety of private and public clients in West Virginia, and has grown to include a large and very diverse staff. Their employees include civil, geotechnical, environmental, mining and chemical engineers, licensed remediation specialists, site designers, surveyors, CADD designers, biologists, toxicologists, ecologists, geologists, hydrogeologists, foresters, stream restoration design specialists, occupational safety and health specialists, field technicians, a land management team and support personnel. ZMM and Potesta recently collaborated on the STF Building project at Camp Dawson – a project that involved the location of underground utilities.

The members of our proposed team have provided design and construction phase services on multiple West Virginia Army National Guard (WVARNG) projects including several projects at Camp Dawson - the STF Buildings (mentioned above), the Camp Dawson Building 202 Renovation, the Joint Interagency Training and Education Center (JITEC), the Regional Training Institute (RTI), the Access Control Point (ACP), and the Kingwood AFRC. Many of these projects impacted campus utility systems at Camp Dawson, and this experience will help us to facilitate the project, and improve both the design and construction process for the WVARNG. Additional underground utilities experience includes two efforts completed by Potesta for two of the largest sanitary boards in the State of West Virginia – the Charleston Sanitary Board and the Huntington Sanitary Board. Both of these projects involved locating and mapping their existing underground utilities and manholes. Potesta also provided services for Union Carbide at the South Charleston facility where we identified and located over 300,000 LF of their underground process lines.

Thank you for taking the time to review the attached information, which has been formatted to meet the requirements of the EOI. Additionally, please visit our websites at www.zmm.com and www.potesta.com to see the full range of projects that we have designed, and to learn about working with our team from a client's perspective. We appreciate your consideration for this important assignment.

Respectfully submitted,
ZMM Architects and Engineers

Adam R. Krason, AIA, NCARB, LEED-AP
Principal

222 Lee Street, West ▪ Charleston, West Virginia 25302
304.342.0159 office ▪ 304.345.8144 fax

zmm.com

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ZMM ARCHITECTS ENGINEERS

Firm Profile

ZMM
ARCHITECTS
ENGINEERS

LOCATION:
222 Lee Street, West
Charleston, WV

CONTACT:
Phone 304.342.0159
Fax 304.345.8144
www.zmm.com

ZMM was founded in 1959 in Charleston, West Virginia by Ray Zando, Ken Martin, and Monty Milstead. Since the inception of the firm, ZMM has been dedicated to providing an integrated approach to building design for our clients. ZMM delivers this integrated approach by providing all building related design services, including architecture, engineering (civil, structural, mechanical, and electrical), interior design, and construction administration from our office in Charleston. Our integrated design approach makes ZMM unique among architectural firms in West Virginia, and helps to ensure the quality of our design solutions by providing more thoroughly coordinated construction documents.

Over the last decade, ZMM has become a leader in sustainable or 'green' design in West Virginia. In addition to participating in sustainable design and construction seminars throughout the State (Beckley, Fayette County, Morgantown, Charleston, and Parkersburg), ZMM designed one of the first sustainable educational facilities in West Virginia (Lincoln County High School). ZMM's unique design approach has proven invaluable on projects that employ sustainable design principles, which often require a more integrated approach to building design.

As ZMM enters our second half-century providing professional design services in West Virginia, we remain committed to the ideal of providing high quality, client focused, design solutions that meet budget and schedule requirements. This commitment to quality has been recognized through both State and National design awards, as well as through the long-term client relationships that we have developed.

ZMM has been dedicated to the integrated approach to building design which is unique to architectural firms of our size. Our past successful experience demonstrates that providing multi-disciplined services within one organization results in a fully coordinated project. ZMM has the qualified professionals available to provide services throughout the duration of a project from the initial planning phases through post-occupancy evaluations and beyond.

Advantages of an integrated Design Approach:

- The Owner has a Single Point of Design Responsibility
- Improved Design Schedule
- Improved Coordination of Documents
- Improved Construction Phase Services
- Well Coordinated Documents Lead to Better Bids for the Owner

Additionally, ZMM is constantly working to improve the services we offer by addressing emerging and evolving trends that impact the design and construction market. ZMM has seven LEED accredited Professionals on staff to address the needs of our clients who are interested in designing buildings that meet the US Green Building Council's standards. This continues ZMM's active implementation of sustainable design principles on our projects.

Services

Pre-Design
Educational Facility Planning
Programming
Space Planning
Feasibility Studies
Existing Building Evaluation
Site Evaluation and Analysis
Master Planning
Construction Cost Estimating

Design
Architectural Design
Sustainable Design
Interior Design
Landscape Architecture
Civil Engineering
Structural Engineering
Engineering (MEP)
Energy Consumption Analysis
Net Zero Design

Post Design
Construction Administration
Value Engineering
Life Cycle Cost Analysis
Post-Occupancy Evaluation

Firm Profile

POTESTA
Engineering and Environmental Consultants

LOCATIONS:
Charleston
7012 MacCorkle Ave, SE
Charleston, WV
304.342.1400

Morgantown
125 Lakeview Drive
Morgantown, WV
304.225.2245

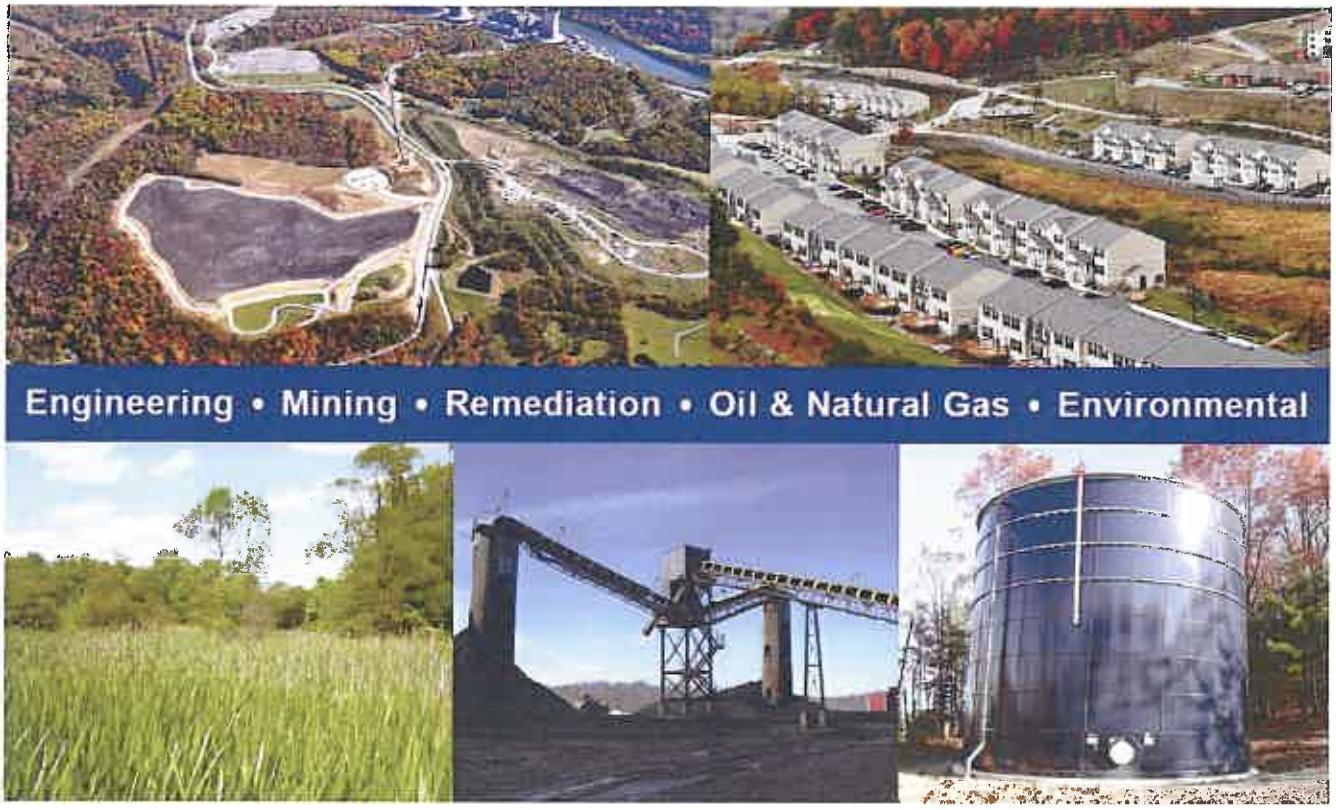
Winchester
15 South Braddock Street
Winchester, VA
540.450.0180

Providing Innovative, Timely, Cost-Effective Engineering and Environmental Solutions

Potesta & Associates, Inc. (POTESTA) was founded in 1997 as a full service engineering and environmental consulting firm headquartered in Charleston, West Virginia. We have now expanded to a diverse staff of more than 81 experienced engineers, scientists, and support personnel with branch offices in Morgantown, West Virginia, and Winchester, Virginia. Our clients include mining, manufacturing and chemical companies; utility companies; waste management companies; colleges/universities; land developers; attorneys; financial institutions; insurance companies; local, state and federal agencies; construction companies and architects.

POTESTA's staff is committed to delivering innovative, cost-effective solutions to meet our client's complex requirements. The firm's environmental department consists of biologists, geologists, chemists, environmental scientists and environmental engineers, many with advanced degrees (Masters and Ph.D. level). POTESTA's engineering department includes civil, geotechnical, environmental, mining and mechanical engineers. Our registered professional engineers have over 300 years experience among them and are supported by a capable team of engineers, designers, and surveyors.

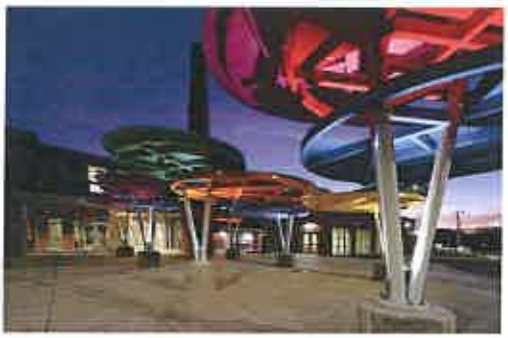
Our firm is managed by two principals driving POTESTA forward with their experience and emphasis on exceeding expectations. Ronald R. Potesta, President, is a former Director of the West Virginia Division of Natural Resources and Dana L. Burns, P.E., Vice President of Engineering, has more than 39 years experience with civil, geotechnical, mining, and environmental engineering projects.



Award Winning Design

ZMM ARCHITECTS ENGINEERS

2018
AIA West Virginia Chapter: Citation Award
Unbuilt Project
Charleston EDGE
Charleston, West Virginia



2017
AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Explorer Academy
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Sustainability
Logan - Mingo Readiness Center
Holden, West Virginia

2016
AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interior Design
Christ Church United Methodist
Charleston, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Gauley River Elementary School
Craigsville, West Virginia

2015
AIA West Virginia Chapter: Honor Award
Achievement in Architecture in Sustainable Design
Edgewood Elementary School
Charleston, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Kenna Pk-5 School
Kenna, West Virginia

Award Winning Design

ZMM ARCHITECTS ENGINEERS

2014

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Sustainable Design
Huntington East Middle School
Huntington, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture
Southern West Virginia Community & Technical College
Williamson, West Virginia

AIA West Virginia Chapter: Merit Award
Achievement in Architecture in Interiors/Graphics
Girl Scouts of Black Diamond Council
Charleston, West Virginia

2012

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
West Virginia Housing Development Fund Building
Charleston, West Virginia

2011

AIA West Virginia Chapter: Honor Award
Excellence in Architecture in Historical Preservation
Southside Elementary/Huntington Middle School
Huntington, West Virginia

AIA West Virginia Chapter: Honor Award
Excellence in Architecture
Joint Interagency Training & Education Center
Kingwood, West Virginia

AIA West Virginia Chapter: Merit Award
Excellence in Architecture in Interiors
WV State Office Building #5, 10th Floor Renovation
Charleston, West Virginia

Camp Dawson Underground Utilities Design: Project Approach, Management Plan, Quality Control Plan, Cost Control Plan

CAMP DAWSON UNDERGROUND UTILITIES DESIGN APPROACH

The ZMM/Potesta approach to the Camp Dawson Underground Utilities design project will include the following:

1. Initial meeting with representatives from the WVARNG to obtain available mapping of the project areas. During this meeting, the design team also anticipates discussion related to the desire of the WVARNG to provide various services to building/facilities that are not currently served or "problem" areas that need to be addressed as part of the scope of this project.

2. Site "Walk-Through" along with representatives from the WVARNG that are familiar with the area to compare the available mapping to the actual locations of observable utilities.

3. Review of Site Plans from recent major construction projects including the Joint Interagency Training and Education Center (JITEC) to determine locations and conditions of existing campus wide utility systems.

4. Once a preliminary map has been prepared that merges the available mapping along with the observations made during the site visit, the design team will assess the findings and based on the level of comfort of the accuracy of the information, we will make recommendations as to whether or not certain areas warrant additional studies related to underground utility locations. POTESTA recently completed a site survey and geotechnical project for ZMM for the two areas for the proposed STF buildings (see images below). During that project, the accuracy of the existing underground utilities could not be verified by reviewing existing mapping and a site visit, therefore, POTESTA subcontracted with Master Locators, Inc. to provide private utility locating services using geophysical methods including Electromagnetic (EM) scanning and Ground Penetrating Radar (GPR). These services provided the horizontal designation of buried utilities in accordance with the ASCE 38-02: Standard Guidelines for the Collection and Depiction of Subsurface Utility Data for any engineering, design, construction or excavation project. In accordance with this standard (ASCE 38-02), the geophysical services were used to provide Quality Level B data. The ZMM/Potesta team anticipates at least a portion of the more developed areas of the facility may require geophysical methods to locate existing utilities to avoid interference with the proposed conversion of the overhead utilities to underground.

5. The ZMM/Potesta team will compile the information obtained from the 1st three tasks above onto a final existing utilities map. This map will then be utilized to develop construction documents to move the existing overhead utilities to underground. During this process, the ZMM/Potesta team will be mindful of providing the necessary services to existing structures and/or proposed structures if indicated by WVARNG staff, solving existing issues with services such as poor drainage conditions, and also limiting as many conflicts with existing underground utilities as possible. ZMM and Potesta will work with WVARNG staff to develop the appropriate phasing plans for the project based priorities, funding, access, etc. The design team intends to provide drawings and specifications at 35%, 65%, 95%, and 100% completions phases and will also provide updated opinions of probable construction costs with each of the submittals.

6. If necessary, Potesta will provide geotechnical related services during the design phase.

Below are two utility locations sketches prepared by Master Locators, Inc. as a sub-consultant to the ZMM/Potesta during a previous project completed at the Camp Dawson facility for ZMM during the

planning/design phase for two separate areas. Potesta's field survey crew following the utility location and surveyed the utility location markers and transferred that information to the design plans.

STF Building "B" Site

STF Building "A" Site

The members of our proposed team have provided design and construction phase services on multiple West Virginia Army National Guard (WVARNG) projects including several projects at Camp Dawson - the STF Buildings (noted above - a previous ZMM/Potesta collaboration), the Camp Dawson Building 202 Renovation, the Joint Interagency Training and Education Center (JITEC), the Regional Training Institute (RTI), the Access Control Point (ACP), and the Kingwood AFRC. Additional underground utilities projects include two efforts completed by Potesta for two of the largest sanitary boards in the State of West Virginia – the Charleston Sanitary Board and the Huntington Sanitary Board. Both of these projects involved locating and mapping their existing underground utilities and manholes. Potesta also provided services for Union Carbide at the South Charleston facility where we identified and located over 300,000 LF of their underground process lines.

CAMP DAWSON UNDERGROUND UTILITIES PROJECT MANAGEMENT PLAN

The ZMM/Potesta team proposes to provide services on the project with a team of design professionals that have worked together on a variety of WVARNG facilities throughout the state, including several projects at Camp Dawson. The team will be led by Adam Krason, an architect and principal of the firm, and Mr. Nathan Spencer, an architect and project manager. Mr. Krason and Mr. Spencer have led ZMM's effort on all of the firm's recent work for the WVARNG. Potesta will staff the project out of their Morgantown, West Virginia Office. Mr. David Sharp, PE will serve as the project manager and primary contact for ZMM and the WVARNG. Mr. Tim Rice, EIT and Mr. Jeremi Stowovy, EIT of Potesta's Morgantown office will be involved with the day-to-day activities of the project.

The proposed breakdown of the work for the ZMM/Potesta team is identified below:

Project Management	ZMM Architects and Engineers
Surveying	Potesta
Environmental and Wetland Delineation	Potesta
Utility Investigation	Potesta

ZMM ARCHITECTS ENGINEERS

Geotechnical Analysis	Potesta
Bidding Phase Services	ZMM/Potesta
Construction Phase Services	ZMM
Estimating	ZMM/Potesta
QA/QC	ZMM/Potesta

Our team has successfully collaborated on multiple projects for the WVARNG, and each team member is familiar with the standards, requirements, and processes that are utilized by the Guard.

QUALITY CONTROL PLAN

Quality control during the design phase begins with the selection of team members with experience working on projects that are similar to the current effort. Our team possesses the WVARNG design experience to ensure the success of the project. Quality control during the design phase will occur through regular, documented, project meetings between the design team and the Guard. In addition to the regular design phase meetings more formal QA/QC will occur at the end of each design phase. A more detailed description of the design phase quality control plan is noted below:

1. Selecting the Project Team
   Our team's diverse staff ensures that each project team is made up of highly qualified members, each dedicated to the project's success. Project team members are selected based upon relevant experience, and ability to help achieve the client's vision.

2. Identifying Project Requirements
   Project team members are fully integrated in each phase of the design process, ensuring a quality project from the commencement. The project requirements are included in a 'Basis of Design' that each member of the project team can access. The 'Basis of Design' helps guide important project decisions.

3. Identifying Client Expectations
   Knowing and understanding our clients' expectations is our goal. This knowledge gives our team a baseline for exceeding expectations. We will commence the design effort with a planning session to help identify your vision for the project.

4. Ongoing Project Reviews
   As part of the ongoing project reviews, we conduct quality assurance evaluations during each stage of the project:

   Schematic Design Phase (35%)
   Design Development Phase (65%)
   Construction Documents Phase (95%)
   Construction Administration Phase

   The ZMM/Potesta team has developed a series of QA/QC review documents that are completed during each phase, and include a programmatic review, technical review, and review of the project schedule and budget.

5. Post Project Review
   At the completion of the project our design team members participate in a learning session to gain insight useful for future projects.

6. Staff Training, Assessment and Enhancement
   Ongoing staff development and training is very important to both ZMM and Potesta, and providing increased opportunities for learning and advancement leads to improved employee performance and more successful projects for our clients.

COST CONTROL PLAN

Due to the unique nature of the project, the ZMM/Potesta team anticipates providing estimating services with our in-house team members. As part of our effort to ensure our ability to meet the WVARNG's budget, ZMM and Potesta will rely on previous experience, industry standards, and historic bidding data to validate the project budget. Our team has a history of working to successfully deliver projects under challenging budget and schedule constraints for the WVARNG. We commit to working with you to meet the budget and schedule for the Camp Dawson Underground Utilities Design project.

Joint Interagency Training & Education Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Kingwood, WV

SIZE:
285,000 SF

COMPLETION:
2013

COST:
$78.4M

OWNER:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

AWARD:
2011 AIA Honor Award
West Virginia Chapter
Excellence in Architecture

ZMM Architects and Engineers, in association with AECOM, is providing architectural and engineering design services for the Joint Interagency Training and Education Center (JITEC), an Army National Guard campus-style facility for training and operational mission support. Sited on 30 acres at the northern end of Camp Dawson between the Cheat River and the foot of Brier Mountain, this 283,000-SF project includes the design of a new operations building; expansion of the billeting facility; renovation of the training facility; creation of a new base entry checkpoint and visitor center; and design for walkway connectors between all the facilities.

The project began with a review of the existing base master plan, followed by a revision of the master plan concept. JITEC is a training and educational facility – the vision behind the site design and updated master plan is that of a college campus atmosphere. The clients goal was to create a campus environment that integrates existing buildings with new ones, which was accomplished by using compatible, yet distinct building materials.

The new facilities are designed to meet all anti-terrorism/force protection criteria and are slated for LEED-NC Gold Certification from the U.S. Green Building Council. The new 82,000-SF operations building is prominently sited as the main focal point upon entering Camp Dawson through the secure access control point and visitor's center, also designed by AECOM. The building's exterior complements its West Virginia setting. The entire building front, composed of glass and pre-cast concrete walls, is open and inviting with glazing that reflects the surrounding trees and hills.

Joint Interagency Training & Education Center

Security requirements for the command center influenced the design of the attached, copper-clad "black box" that is an homage to the native rock stratification seen throughout the state.

The building consists of four distinct areas: the Joint Operations Center; a suite of secure training rooms; base headquarters and JITEC administrative offices; and a 6,000 SF server and telecommunications room.

Entry to the Joint Operations Center (JOC) is provided by a secure mantrap adjacent to a dedicated security office. Built to SCIF standards, the JOC contains a state of the art command center housing 48 permanent work stations in a theater-style configuration facing a large video wall, flanked by conference rooms and offices for both officers and support staff. Within the JOC is a secure area consisting of workstations, offices, and two divisible conference rooms with secure video conferencing capabilities. The secure area construction dictates a windowless environment, requiring proper lighting and creative use of materials to create an agreeable work atmosphere.

The 180,000-SF billeting (hotel) expansion more than triples the facility size and increases the total capacity from 189 guest rooms to 600 guest rooms and suites. Designed to relate to the existing architecture with similar scale, materials, textures, and massing, the addition also brings in new elements, such as iconic glazed building corner elements, to integrate the design of the new operations building. A new dedicated lobby with terrazzo tile flooring leads to a monumental stair with terrazzo treads, open risers, and a glass/stainless steel railing for access to the open lounge areas on the second and third floors.

The lobby's design provides a hotel atmosphere, underscored by the new Liberty Lounge, an upscale bar and restaurant area, with wood finishes salvaged from the gymnasium floor in the existing headquarters building. The new six "executive suites", are designed to the full amenities of corporate hotels.

Morgantown Readiness Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Morgantown, WV

SIZE:
54,000 SF

COMPLETION:
2013

COST:
$18.5M

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The Morgantown Readiness Center is a unique military facility for several reasons. While the Readiness Center supports traditional military functions including the 1-201st Field Artillery, a significant portion of the Morgantown Readiness Center supports the 249th Army Band. To support the band, the Readiness Center contains a performance hall, pre-function spaces, as well as a variety of training and rehearsal areas.

To efficiently create the stage and performance area the design team utilized a variety of dual function spaces. The stage is actually a large rehearsal space with an adjacent elevated recording area. Two large operable partitions are used – one to separate the rehearsal area from the remainder of the stage and the auditorium – while the other separates the auditorium from the Drill Hall. This configuration allowed the design team to maximize the West Virginia Army National Guard's investment by utilizing federally authorized space to also function as a large performance area. Acoustically, this challenge was met by creating a Drill Hall with an irregular shape that was contained within a rectilinear sloped barrel arch form. The geometry was complimented by acoustically engineered interior surfaces and finishes to create a vibrant and rich auditorium.

The facility is also unique due to its location on an abandoned airport runway at the Morgantown Municipal Airport. The 54,000 SF Readiness Center occupies a 35 acre tract at the airport. Additionally, the Readiness Center is located approximately twenty (20) miles from Camp Dawson, a large State and Federal training campus. As troops will often be travelling to Camp Dawson through the Morgantown Readiness Center, the facility needed to function as a 'gateway.'

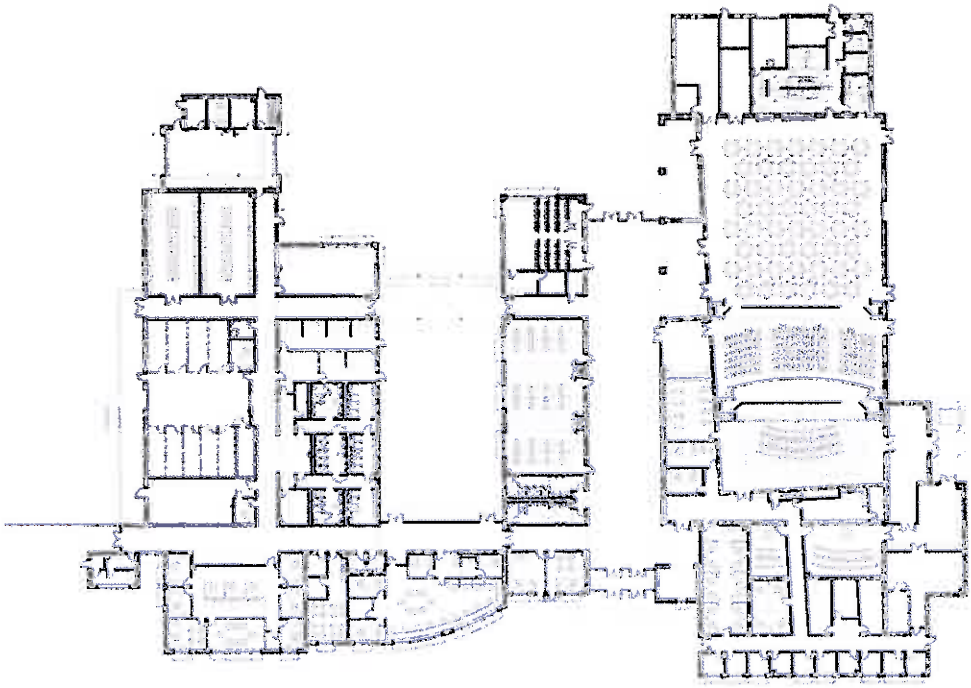
Morgantown Readiness Center

WVARNG

The creation of a 'gateway' facility was accomplished through exterior material choices (compatible with Camp Dawson), as well as the decision to utilize a tower-like feature to mark entry – a very prominent feature of the Regional Training Institute (RTI) at Camp Dawson. Where the RTI utilized a large cylindrical mass, the tower at the Morgantown Readiness Center respects the context of the former runway by reflecting the aesthetic of an airport control tower.

The Morgantown Readiness Center is also a sustainable building, and is in the process of pursuing LEED Certification from the USGBC. The 'U' shaped layout of the facility improves access to daylighting and views, while also limiting public access to the Guard's administrative and storage areas. Additional sustainable features include a reflective roof, the use of regional materials, and efficient lighting and HVAC systems.

While many features are addressed in the design of the Morgantown Readiness Center, the final result is a harmonious composition that reflects both its function and the environment, while deferring to its location on an abandoned runway.



Jackson County Armed Forces Reserve Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Millwood, WV

SIZE:
75,000 SF

COST:
$20M

COMPLETION:
Fall 2011

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The new facility houses both the West Virginia Army National Guard (WVARNG) and the United States Army Reserves (USAR). The primary user for the WVARNG will be DET 1 821st Engineering Company, who will be supported by a FSC of the 1092nd. USAR occupants will include PLT AMMO 261 OD and PLT 1 (Postal) and PLT 6 (Postal) of the 44th Personnel Company. The facility also includes an expanded Drill Hall that can serve as a convention and meeting space, which is being funded by the Jackson County Commission, additional federal appropriations, and the State of West Virginia National Guard.

The relationship between the structures became crucial to the site layout. The new facility is centered on the existing house, increasing the exposure of the facility from Route 2 - the major route of vehicular travel that parallels the Ohio River. Once the aesthetic of the building was established, the massing of the new facility was defined by breaking-down the facility into smaller mass elements that more closely reflected the Georgian Style, and that of many Army posts, such as Fort Meyer in Northern Virginia. The larger programmatic elements such as the Drill Hall and the storage areas employ an aesthetic that more closely implies their function.

The layout of the facility includes a main entry with the USAR and WVARNG Recruiting, Family Support, and Administrative areas located on separate sides (USAR to the left, WVARNG to the right). A transverse wing on the left houses all functions that have the potential for public use, such as the Drill Hall and the Educational component, while all primary military spaces developed along a similar perpendicular wing on the right. This allows for separate entries to be developed for public functions, while the remainder of the facility can be secured. The layout also creates a large central courtyard or parade field that would be located at lower grade to define the edge facing the river. This edge is defined by a canopy that connects storage and locker areas to the expanded Drill Hall.

Glen Jean Armed Forces Reserve Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Glen Jean, WV

SIZE:
110,000 SF

COST:
$17M

COMPLETION:
2004

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The Glen Jean Armed Forces Center contains three distinct military functions: a facility for routine maintenance of over-the-road and tracked military vehicles, an armory housing four West Virginia National Guard units, and the Southern West Virginia Military Entrance Processing Station, where new recruits officially enter the military system.

The brick exterior walls are highlighted with limestone and metal trim accents. A large assembly hall, plus classroom and training space, enhance the ability of the armory building to provide training for military personnel to provide space for community functions.

Tackett Family Readiness Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Charleston, WV

SIZE:
7,400 SF

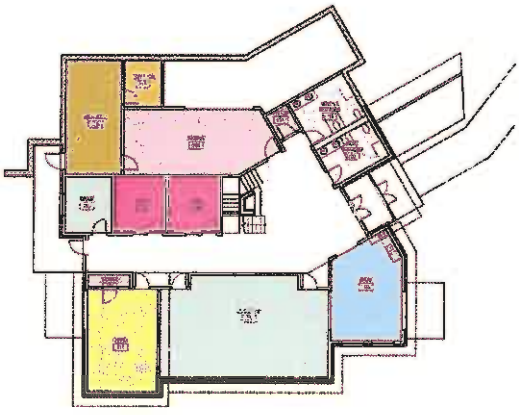
COMPLETION:
February 2011

COST:
$1.57M

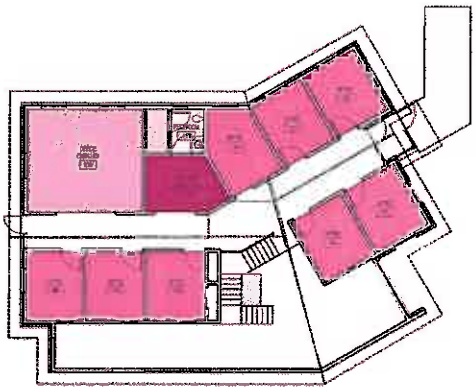
CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The Family Support Center is a two - story brick building with a sloped roof stepped into the wooded hillside adjacent to the Army National Guard facilities in Charleston. Due to the existing slopes, several analyses to determine the optimal finished floor elevations of the building. The building was set into the hillside to allow for on-grade access to both entrances. The building is designed to provide for a multitude of military family assistance, guidance, education, training, and mentoring programs.

The support center contains 11 office spaces, a chapel, and a variety of classroom and meeting spaces for various programs. The building provides an abundance of natural light and a central fireplace to project a warm, comforting and supportive atmosphere.



Lower Level



Upper Level

Robert C. Byrd - Regional Training Institute

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Kingwood, WV

SIZE:
148,000 SF

COMPLETION:
2002

COST:
$21M

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The Robert C. Byrd Regional Training Institute at Camp Dawson is a 148,000 SF facility designed to provide training, dormitory, dining, and recreational facilities for the West Virginia Army National Guard. The facility, which includes 183 private dormitory rooms in addition to a wide range of training spaces is designed to accommodate a variety of both military and civilian training functions.

The goal of the owner was to provide a campus within a building, with clear circulation and for various uses. ZMM accomplished this objective by employing a large cylindrical mass that marks the main entry where guests can coordinate both their housing and educational needs.

Additionally, the housing wing is joined to the recreational and educational components with a large gathering/transitional space that often serves as an informal meeting area. Due to the success of the project, and growing use of the facilities, ZMM is currently assisting the West Virginia Army National Guard with training and dormitory expansions.

Construction & Facilities Management Office

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Charleston, WV

SIZE:
19,935 SF

COST:
$3.5M

COMPLETION:
2008

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6539

AWARD:
2009 AIA Merit Award,
West Virginia Chapter,
Achievement in Architecture

The Construction and Facilities Management Office (CFMO) Expansion project will bring all of the operations of the CFMO together under one roof. The branches that will occupy this facility include: Director of Engineering, Environmental, Planning and Programming, Facility Operations & Maintenance, Business Management, Resource Management, and Design and Construction. This new facility is located slightly to the front, and adjacent to the existing facility, lending prominence to the new construction, and providing a new aesthetic to the entire complex.

This transitional space was designed to connect the two structures, while maintaining a connection to the outside through use of natural light, direct visual connections to the exterior, large volumes, irregular geometries, and the use of natural materials.

The entry design was coordinated with the Recruiting and Retention building to create an outdoor courtyard, along with new sidewalks, stairs and signage. The entry roof is sloped to provide a greater massing, while a lower canopy provides scale and protection from the elements. Large gathering and work spaces were located on the north elevation to take advantage of large expanses of glazing located to capture indirect light and views of Coonskin Park.

Kingwood Armed Forces Reserve Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Camp Dawson, WV

SIZE:
56,200 SF

COMPLETION:
2000

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

The Armed Forces Reserve Center will house five National Guard and Army Reserve Units and their support personnel. Its mission is twofold: first, to maintain readiness for its attached units and second, to serve as a resource to the surrounding community.

The primary readiness mission for the center's attached units is accomplished by providing designated spaces for each unit as well as general educational and gathering spaces that can be shared among the units. The building's community mission is to provide a gathering space for social functions, a shelter-in-place in times of natural disaster, and a community education resource with distance learning network capabilities. It also includes kitchen and dining facilities and physical fitness areas.

Logan-Mingo Readiness Center

WVARNG

ZMM ARCHITECTS ENGINEERS

LOCATION:
Holden, WV

SIZE:
54,000 SF

COMPLETION:
2015

COST:
$12M

CONTACT:
MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

AWARD:
2017 AIA Merit Award,
West Virginia Chapter,
Achievement in Architecture
in Sustainable Design

The design of the Logan-Mingo Readiness center was developed by examining both the program and building site, and developing strategies to design a facility that is functional, responds to site, security, and aesthetic parameters, while requiring minimal maintenance.

The building layout was developed by working closely with the end-users to determine the appropriate configuration of building spaces to maximize the efficiency of the operations, and to respond to the unique missions of the 150th Armored Reconnaissance Squadron and the 156th Military Police (LNO) Detachment. Clear separation of "public" and "private" areas within the facility, unique office configurations related to training requirements, and the addition of State Funded additional spaces.

The exterior (and in many cases the interior) aesthetic of the facility was driven by the location of the Readiness Center within an industrial park on a reclaimed surface mined site. The decision led to the use of reinforced cast-in-place retaining walls that became both a functional and visual focus. Similar pre-cast walls are used to anchor the facility at the Distance Learning Center, while a cast-in-place retaining wall serves as a part of the Anti-Terrorism/Force Protection design.

West Run Student Housing

West Run Student Housing Associates, Inc.

LOCATION:
Morgantown, WV

Potesta & Associates, Inc. (POTESTA) was retained by West Run Student Housing Associates, Inc. of Pittsburgh, Pennsylvania to provide environmental consulting services, as well as civil and geotechnical engineering for the West Run Student Housing project located at Morgantown, West Virginia. This proved to be a complex grading/site design project, as it involved 944 student beds in 17 buildings and more than 1,000 parking spaces, plus a clubhouse and basketball courts.

The site is approximately 20 acres in size and most of the property is on a natural 20 percent slope. POTESTA's services included roadway design and permitting, including upgrade of approximately 1/4 mile of a county road; storm water management and permitting, including conveyance systems, a storm water management pond and erosion and sediment control; and site design, including building placement and conceptual design of more than 50,000 square feet of segmental retaining walls. The site also includes a reinforced soil slope that reaches more than 35 feet in height and is more than 800 feet in length.

Other project services performed by POTESTA included a Phase I Environmental Site Assessment, and evaluation of a coal seam located on the property, geotechnical drilling and recommendations, an ALTA survey, preparation of contract and bidding documents, and construction administration. The project design was completed on an accelerated schedule to allow the developer to secure financing and begin construction within a few months after receiving a purchase option on the project. The construction phase of the project has been sequenced to allow for occupancy of the first seven buildings within eight months after the contractor received notice to proceed.

Location of Main Interceptor Sewer Collection

Huntington Sanitary Board

LOCATION:
Huntington, WV

Potesta & Associates, Inc. (POTESTA) currently has a general agreement with the Huntington Sanitary Board (HSB) to perform services related to the Board's implementation of their Long Term Control Plan, Water Treatment Plant Modernization Plan, and Storm Water Management Utility Establishment/ Operation. This agreement has been comprised of multiple work orders for improvement of Huntington's combined sewer system.

POTESTA worked with the Huntington Sanitary Board staff to identify the location of the City of Huntington's main combined sewer interceptor line to locate manholes for access to clean out the interceptor. This interceptor was installed in the late 1950s and collects flow from approximately 90 percent of the system. Most of the interceptor line is located in excess of 20 feet below the surface and many of the manholes have been buried under material deposit by the Ohio river over the years and have never been located by the HSB. Some tops of manholes were buried over 10 feet in depth.

POTESTA and the HSB initially performed field work to locate manholes visually; however, with the overgrowth of brush and the amount of river sediment deposited, it became apparent that the line and manholes could not be located by conventional methods. Because of access problems, the use of HSB's camera truck was not possible.

POTESTA and the HSB used the SB Leica DidgiCat System and construction "as-built" record drawings, with excavation equipment, to locate the interceptor and manholes.

Wastewater Release Prevention

Union Carbide Corporation

POTESTA
Engineers and Environmental Consultants

LOCATION:
So. Charleston, WV
Institute, WV

Potesta & Associates, Inc. (POTESTA) was retained by Union Carbide Corporation (UCC) to physically locate and inventory storm and process sewers within its South Charleston and Institute, West Virginia production facilities. Locations of each identified sewer were then cross referenced with existing maps and engineering drawings to verify routes, inlet and discharge locations, materials of construction, and possible connections between the stormwater and process sewer.

POTESTA located and developed an inventory of approximately 300,000 feet of underground sewer pipe at the three production facilities. Research was completed to determine date of installation, history of the line, construction methods, potential risk of deterioration, leakage potential, and any upgrades, reroutes and repairs or replacements made. Research also included sampling and flow measurement to evaluate potential sources of excessive loading. Data was collected to determine waste stream characteristics based on chemistry and mechanical processes contributing waste to a particular sewer. Process sewer quality data was compiled from research and used to determine locations of hazardous waste streams and provide data in efforts to reduce loading at the treatment facility.

Documentation included development of a database, which included all historical data and waste stream information collected. Drawings were also generated showing data collected during the evaluation. Use of cameras, flow meters and automatic samplers aided in collection of necessary data. This project was the first within the corporation to collect and manage this type of information.

Sunnyside Commons

Paradigm Architecture/American Campus Communities University Ave.

LOCATION:
Morgantown, WV

Potesta & Associates, Inc. (POTESTA) was retained by the owner/developer and the architect to provide civil engineering design services for Sunnyside Commons in Morgantown, West Virginia. Sunnyside Commons will consist of three buildings for 134 apartments, housing 536 tenants along with a Community Center and Maintenance Building for a combined total of 208,686 square feet. The project includes three entrances from public roadways, multiple retaining walls, underground storm water retention systems, and landscaping.

Specific services provided by POTESTA on this project included:

Surveying – Topographic mapping, property and right-of-way boundaries, and utility locations.

Geotechnical recommendations evaluating the soil on site and providing suggestions concerning fill material and foundations.

Grading plan including cut/fill for the project site, integrated Civil 3D/Revit modeling, entrance/roadway design and compliant sidewalks.

Storm water collection system design including underground retention system, water quality units, curb inlets, catch basins, and connection to the City of Morgantown's existing storm water system.

Utility extension/connection designs including sanitary sewer, storm sewer, potable water, and fire services.

Permitting and coordination services including coverage of site development through WVDEP Construction Storm Water Permit, Morgantown Utility Board's MS4 Storm Water Permit, City of Morgantown right-of-way coordination, as well as coordination with the owner, architect, structural engineer, and contractors.

Technical Specifications including storm water piping, subdrainage, earthwork, concrete and asphalt paving.

Construction administration services including pre-bid meetings, pre-construction meetings, shop drawing submittal review, and site progress meetings.

Copper Beech Student Housing

Copper Beech Townhome Communities, LLC

LOCATION:
Morgantown, WV

Potesta & Associates, Inc. (POTESTA) was retained by Copper Beech Townhome Communities, LLC to prepare design plans and specifications for a proposed 40-acre student housing development, containing 31 proposed residential buildings, clubhouse, and parking. The project consisted of various constraints, such as a West Virginia County highway bordering the north side of the site, existing townhome development to the south, and an existing perennial stream bisecting the project. Also to be considered were related wetlands and ephemeral/intermittent stream channels.

In addition, many of the natural slopes on the project site in areas not affected by the stream/wetlands were two horizontal to one vertical.

POTESTA's work began with an existing layout provided by a previous design firm and moved through conceptual layout and grading activities to reduce impacts to the existing stream and wetland areas. Roughly 11,250 linear feet of retaining walls ranging up to 50 feet in height were proposed to aid in the creation of proposed roadway, parking, or building locations, while remaining out of the environmentally sensitive areas. POTESTA performed a geotechnical evaluation of the site's subsurface conditions to gather information for use with various aspects of POTESTA's scope of work. Specific services associated with POTESTA's scope included:

Stream and Wetland Delineation and Report
U.S. Army Corps of Engineers (USACE) Conceptual and Compensatory Mitigation Plan
USACE 404/WV State 401 Permit
WV Department of Environmental Protection WV/NPDES Construction Storm Water Permit
Preparation of Construction Drawings and Technical Specifications
Geotechnical Evaluation Through Field Underground Exploration and Report
Storm Water Design and Incorporation into WV/NPDES Permit
Utility Coordination-Including Sewer Main Line Relocations
Bridge Design Coordination for Project Onsite Crossing of Stream
Construction Stakeout of Retaining Walls, Roadways, Buildings, Utilities and Curbing
Construction Observation and Soils Testing for Walls
FEMA Letter of Map Revision Due to Fill (LOMR-F)
Floodplain Permit Through Monongalia County Planning Commission

University Place Parking Garage

Paradigm Architecture/University Place, LLC/WVU

LOCATION:
Morgantown, WV

Potesta & Associates, Inc. (POTESTA) was retained by the owner/developer and the architect to provide civil engineering design services for the University Place Parking Garage in Morgantown, West Virginia. The 6-story parking garage structure includes 390 parking spaces, 3 ground-level retail locations, and is situated on University Avenue. The Parking Garage will accommodate parking for the University Place/West Virginia University (WVU) Student Housing and includes two entrances from public roadways, multiple retaining walls, underground storm water retention system, as well as retail patios, pedestrian access, and landscaping. Specific services provided by POTESTA on this project included:

Surveying - topographic mapping, property and right-of-way boundaries, and utility locations.

Grading plan including cut/fill for the building site, integrated Civil 3D/Revit modeling, entrance/roadway design, retail patio and pedestrian access design, ADA compliant sidewalk ramp and crosswalk design.

Storm water collection system design including underground retention system, water quality units, curb inlets, catch basins, and connection to the City of Morgantown's existing storm water system.

Utility extension/connection designs including sanitary sewer, storm sewer, potable water, and fire service.

Permitting and coordination services including coverage of site development through WVDEP Construction Storm Water Permit, Morgantown Utility Board's MS4 Storm Water Permit, City of Morgantown right-of-way coordination, as well as coordination with the owner, architect, structural engineer, and contractors.

Technical Specifications including storm water piping, subdrainage, earthwork, concrete and asphalt paving.

Construction administration services including pre-bid meetings, pre-construction meetings, shop drawing submittal review, site progress meetings.

Construction observation/testing including concrete testing for caisson foundations and lightweight concrete decking, as well as density testing for subgrade soils.

Adam R. Krason, AIA, LEED AP, ALEP

ZMM ARCHITECTS ENGINEERS

Role
Principal

Professional Registrations
Registered Architect (WV, OH, KY, VA, MD, NJ)
LEED Accredited Professional
Accredited Learning Environment Professional
NCARB (55,984)
Construction Specifications Institute (CSI)
Construction Documents Technician (CDT)

Mr. Krason has served in the capacity of Architect and Project Manager for a variety of projects at ZMM. This experience includes Military, Educational (K-12 and Higher Education), Office, Justice (Courthouses, Correctional, Justice Centers), and Multi-Unit Residential projects. Mr. Krason's responsibilities include programming, design, documentation, coordination of the architectural and engineering team, as well as construction administration. Mr. Krason began his career in 1998, working on a variety of educational, commercial office, and correctional projects throughout Ohio, West Virginia, and North Carolina.

Mr. Krason has been an advocate of sustainable design in West Virginia, participating in a variety of sustainable design seminars throughout the State, and serving on the West Virginia School Building Authority Green Schools Sub-Committee. Recently, Mr. Krason helped coordinate the "Making the Business Case for Sustainability" conference at the University of Charleston that included speakers from Armstrong Industries, American Electric Power, CB Richard Ellis, and Interface Raise. Mr. Krason also assisted Habitat for Humanity Kanawha and Putnam County develop a commercial recycling program to fill a void in the sustainable design infrastructure in West Virginia. Mr. Krason has noted that, "I became a LEED Accredited Professional because I believe that good design has value, and the ability to impact our daily lives. Sustainable design showcases the value of design through demonstrated improvements in the performance of the students and employees who occupy our buildings." In addition to his design and project management responsibilities, Mr. Krason serves on the Board of Directors and is responsible for business development at ZMM.

Project Experience
Charleston Civic Center, Charleston, WV
Mr. Krason is serving as principal-in-charge of the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a

Education
Bachelor of Architecture, The Catholic University of America, 1998

Bachelor of Civil Engineering, The Catholic University of America, 1997

Employment History
2007 - Present, Principal, ZMM
2007 - Present, Board of Directors, ZMM
2003 - Present, Architect, Project Manager, ZMM
1998 - 2003, Architect, Project Manager, Charleston Area Architectural Firm

Civic Affiliations
- WV American Institute of Architects, President
- Habitat for Humanity Kanawha & Putnam County, Board of Directors 2011 - 2014
- WV Qualification Based Selections Council, President, 2012/2013
- Leadership WV 2010 - 2012
- Charleston Rotary
- West Side Main Street, Board of Directors 2008 - 2014
- City of Charleston Land Trust 2008 - 2014

collaboration with tvsdesign and BBL Carlton. Mr. Krason is responsible for the overall management of the design team, coordination with the client, and also has input critical project management decisions. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

State Office Building #5, 10th Floor Renovation (Office of Technology), Charleston, WV
Mr. Krason led an architectural and engineering team that completed a detailed assessment of State Office Buildings 5, 6, & 7. Once the assessment was complete, ZMM had the opportunity to implement the proposed improvements on the 10th Floor of State Office Building #5 for the Office of Technology. The renovations, aiming for LEED-CI Certification, re-oriented the layout by drawing all private offices into the building core, providing access to daylight and views for all employees. The design also utilized acoustical ceiling clouds and bulkheads to maximize the acoustical performance, while also increasing the volume of the space.

Joint Interagency Training & Education Center (WVARNG), Kingwood, WV Mr. Krason was responsible for the preliminary programming, and participated in the schematic design of the 180,000 SF addition to the Regional Training Institute at Camp Dawson. Mr. Krason was also responsible for managing the production effort for the billeting (hotel) expansion, which increased the total billeting capacity at the JITEC to 600 rooms. This project received LEED Gold Certification.

Morgantown Readiness Center (WVARNG), Morgantown, WV
Mr. Krason was the project architect on the new Morgantown Readiness Center. This facility is a unique due to its location on an abandoned airport runway at the Morgantown Municipal Airport. The 54,000 SF Readiness Center occupies a 35-acre tract at the airport. This center supports traditional military functions including the 1-201st Field Artillery. A significant portion of the Morgantown Readiness Center supports the 249th Army Band. The Readiness Center contains a performance hall, pre-function spaces, as well as a variety of training and rehearsal areas.

Construction and Facilities Management Office Expansion (WVARNG), Charleston, WV
Mr. Krason was responsible for the programming, architectural design, and project management of the office expansion. The project included the renovation and addition to an existing pre-engineered metal building. The design, which was honored with a 2009 AIA Merit Award, focused the client's resources on a new entry and corridor that separated the existing office space from the addition.

Bridgemont Community and Technical College - Davis Hall Renovation and Master Plan, Montgomery, WV Mr. Krason led an architectural and engineering investigation into the condition of Davis Hall to help Bridgemont Community and Technical College to develop a scope for the current renovation project, as well as a plan to undertake deferred maintenance at the facility. The project scope included remedying several life safety deficiencies, as well as improvements to the building envelope.

Edgewood Elementary School, Charleston, WV
Mr. Krason was the project manager on the new Kanawha County Elementary School on Charleston's West Side. The school is being designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school will also visibly integrate sustainable design principles to serve as a teaching tool for the students. Mr. Krason worked with students from Watts and Robbins Elementary Schools in Kanawha County, assisting them in an effort to actively participate in the design process

Participated on the team that won the following awards and acknowledgements:
2017 WV AIA Merit Award Logan-Mingo Readiness Center, Holden, WV
2016 WV AIA Merit Award Christ Church United Methodist, Charleston, WV
2015 WV AIA Merit Award Edgewood Elementary School, Charleston, WV
2014 WV AIA Merit Award Girl Scouts of Black Diamond Council, Charleston, WV
2011 WV AIA Honor Award Joint Interagency Training and Education Center (JITEC), Kingwood, WV
2011 AIA Honor Award State Office Building #5, 10th Floor Renovation, Charleston, WV
2009 AIA Merit Award WVARNG Construction and Facilities Management Office, Charleston, WV

David B. Sharp, PE

Role
Geotechnical Engineer

Professional Registrations
Professional Engineer (WV)

Areas of Specialization
Engineer responsible for performing subsurface investigations, preparation of geotechnical reports, coordinating laboratory analysis programs, providing recommendations for lateral earth pressures, bearing capacities, modulus of subgrade reactions, settlements, and construction specifications for multi-story structures. Foundations considered have included steel H-piles, auger-cast piles, drilled piers, spread footings, and mat foundations:

Project Experience
Family Dollar Store – Berkeley Springs, WV
WVU Transportation Center/Parking Garage, Morgantown, WV
4 West Water Treatment Plant, Greene County, PA
CA Ventures (9 story student housing building), Morgantown, WV
Copper Beech Student Housing (included 31 buildings, parking areas, and 11,250 linear feet of retaining walls), Morgantown, WV
Sunnyside Commons Student Housing (included three multi-story buildings, parking, and 43,000 sq. ft. of retaining walls) Morgantown, WV
WVU Engineering Building East Addition, Morgantown, WV
Potomac State College Admissions Building Addition, Mineral County, WV
Glenville State College Health & Sciences Building, Gilmer County, WV
Glenville State College Residence Hall, Gilmer County, WV
Christy Street Office Building, Morgantown, WV
Harry Green Nissan Dealership Building Addition Harrison County, WV
Elkins Dodge Dealership, Randolph County, WV
Sam's Club Fueling Station – Clarksburg, WV ▪
Cheat Lake Elementary School Building Addition, Monongalia County, WV
Wal-Mart Fueling Station – Connellsville, PA
Churchhill Village Housing Project – Monongalia County, WV
R.E. Michel HVAC Commercial Building, Monongalia County, WV
ICM Islamic Center, Morgantown, WV
Catlettsburg Refining Company, Alkylation and Wastewater Control Room, Catlettsburg, KY
WVARNG Camp Dawson Fueling System, Kingwood, WV

Education
M.S., Civil Engineering, West Virginia University, 1995

B.S., Civil Engineering, West Virginia University, 1993

Employment History
2003 - Present, Branch Manager/Senior Engineer, Potesta
2000 - 2003 - CTL Engineers, Inc

MEPCO Dock Expansion Project, Morgantown, WV
Marriott Hotel – Morgantown, WV
Bucks Tavern – Morgantown, WV
Stouts Run United Methodist Church Addition –Parkersburg, WV
Fairfield Inn Hotel – Fairmont, WV
Wendy's Restaurant – Morgantown, WV
Sunoco Service Station – Robinson Township, PA
Westside High School – Oceana, WV
WVARNG Readiness Center – Summersville, WV
Student Housing Facility, Parking Garage, Library/Information Center, Student Center Addition, Jomie Jazz Center, and Child Care Center for Marshall University – Huntington, WV
U.S. Equipment Distributors – Huntington, WV
PC WV #2 and #3 – Pace Carbon Fuels –Summersville and Eckman, WV
WVU Luxury Box for Mountaineer Field –Morgantown, WV
Marshall University Mid-Ohio Valley Center – Point Pleasant, WV

Robert Doeffinger, PE

Role
Engineering Principal

Professional Registrations
Professional Engineer (WV, VA, PA, OH, TN, KY, NY, NH, ME, NC, SC, FL, NJ, GA)

As ZMM's Principal Engineer, Mr. Doeffinger is in charge of the engineering disciplines, it is his responsibility to ensure that the mechanical and electrical engineering components of ZMM's design are coordinated and integrated into the final product.

After graduate school in Architectural Engineering, Mr. Doeffinger joined ZMM. He has over 35 years design experience in mechanical and electrical systems for buildings. He has a broad range of engineering experience in education, industrial and manufacturing facilities, large retail, correctional and jails, office buildings, and military facilities.

Mr. Doeffinger is responsible for new design and retrofit of chilled water systems for all building types including large regional shopping malls. He is involved daily with the firm's selection of appropriate systems for all building types and performs life-cycle cost analysis and energy studies.

Mr. Doeffinger is a member of the American Society of Heating, Ventilation and Air-Conditioning Engineers. He is the current national Chairman of the Technical Committee on Heating and Air-Conditioning Load Calculation. He is involved in writing the National Standard on the Method of Calculation, which will shape the nature of the future building energy use for the nation.

Project Experience

Charleston Civic Center, Charleston, WV
Mr. Doeffinger is the mechanical project engineer on the expansion and renovation to the Charleston Civic Center project. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018. The mechanical design is expected to reduce the energy requirements defined by ASHRAE 90.1-2013 by an estimated 25% and extensive water savings will be shown. The project includes a new chilled and hot water central plant with extensive replacement and upgrades to the facilities existing mechanical systems. Multiple phases of construction will allow the Civic Center to remain operational throughout the construction progress.

Education
Master of Science Architectural Engineering, Pennsylvania State University, 1976

Bachelor of Science Mechanical Engineering, West Virginia University, 1973

Employment History
2005 - Present, President, ZMM
1976 - 2005, Vice President and Engineering Principal, ZMM

Civic Affiliations
- ASHRAE – Member of the Technical Committee Load Calculations Data and Procedures for 15 years, serving as chairman. Presently Chairman of the Research Subcommittee
- Advisory Board for the Department of Electrical Engineering Technology, Bridgemont Community and Technical College
- City of Pt. Pleasant, WV – 2nd Ward Councilman for 20 years

State Office Buildings #5, 10th Floor Charleston, WV Mr. Doeffinger was the Project Engineer for this renovation project The renovation of the tenth floor of State Office Building #5 on the State of West Virginia Capitol Campus was recently completed for the Office of Technology. The renovation was designed to meet the United States Green Building Council's LEED for Commercial Interiors standard. The renovations also include a low profile cable management system which maximizes the flexibility of the space. To commence the project, ZMM conducted a detailed investigation of State Office Buildings 5, 6, & 7, which included recommendations for improvement of the facilities. The renovation of the 10th floor of Building #5 was the first major interior renovation project that responded to the recommendations.

West Virginia Capitol Complex - Buildings #5, 6, & 7, Charleston, WV Mr. Doeffinger was the Project Engineer for the in-depth analysis of Buildings #5,6,& 7 at the State Capitol Campus. The study included the preparation of as-built plans, as well as an analysis of all building systems, including: Life Safety; Vertical Transportation; Mechanical; Electrical; Data; Façade; Structure; and Roofing. The analysis also included a study related to potential hazardous materials in the facility.

West Virginia Regional Jails, Mr. Doeffinger was the Project Engineer on ten West Virginia Regional Jails. In 2009 he was responsible for the HVAC renovation on four regional jails, including the replacement of rooftop HVAC units and Building Automation Systems.

West Virginia Army National Guard, Joint Interagency Training & Education Center, Camp Dawson, WV Mr. Doeffinger was responsible for the mechanical engineering design of the 600 room billeting expansion to the Regional Training Institute at Camp Dawson. The project is served by a 4 - pipe hot and chilled water system with an energy recovery ventilation system. This project received LEED Gold Certification.

West Virginia Research, Education, and Technology – Building 704, South Charleston WV Mr. Doeffinger is the engineering principal-in-charge of preparing a life safety analysis of the building as well as design services to improve the exterior façade of Building 704 at the WV Research, Education, and Technology Park. Building 704 had previously been utilized as a campus maintenance facility by Union Carbide and DOW Chemical. Bridgemont began utilizing the facilities for instruction in the Spring of 2011.

West Virginia Regional Technology Park (WVRTP) - Building 740, South Charleston WV Mr. Doeffinger is the engineering principal-in-charge of the new Steam Plant for Building 740. This project involves designing and constructing the Interim Steam Heating System throughout Building 740.

Bridgemont (BridgeValley) Community and Technical College Davis Hall Renovation, Montgomery, WV Mr. Doeffinger led an architectural and engineering investigation into the condition of Davis Hall to help Bridgemont Community and Technical College to develop a scope for the current renovation project, as well as a plan to undertake deferred maintenance at the facility. The project scope included remedying several life safety deficiencies, as well as improvements to the building envelope.

NGK Oxygen Sensor and Spark Plug Plant, Sissonville, WV Mr. Doeffinger was in charge of engineering design of the 250,000 SF NGK facility. The most recent 130,000 SF expansion moved NGK's spark plug production for the west coast to West Virginia. For both the oxygen sensor plant and spark plug plant Mr. Doeffinger designed a cycle water system for the manufacturing equipment.

The Plaza at King of Prussia, Pittsburgh, PA One of the largest retail centers in the east. Mr. Doeffinger has performed engineering services for the past 20 years. The project consists of a 5,000 -ton chilled water plant and 1,500,000 cfm variable volume system for tenants and constant volume air system for common areas and an engineered smoke control system. The most recent project is a 2011, 100,000 square foot expansion of tenant spaces, a renovation of the food court, and a 1,250-ton chiller addition to the central chilled water plant.

Timothy M. Rice, E.I.T

Role
Senior Engineer

Professional Registrations
Engineer in Training (WV)

Areas of Specialization
Diversified experience with civil, environmental, surveying, and geotechnical engineering projects for public, state, and private clients with an emphasis on project management and coordination of engineering services and environmental services, to include: permitting and compliance, hydraulic and hydrological analysis, slope stability analysis, geotechnical design, Phase I Environmental Site Assessments, stormwater management, municipal water and sewer design, civil site design, water resources analysis/design, natural gas production well pads and roads, and construction monitoring/observation.

Civil and Site Design Experience
Project Manager/Senior Engineer with experience on numerous civil/site design projects involving various aspects of site development, permitting, and design of residential, commercial, and public development projects.
Lake Floyd Homeowners – Senior Engineer on dredging project for remediation of lake sedimentation at Lake Floyd in Harrison County, West Virginia. Project includes wetland and stream delineations, Section 404 Permitting, sediment disposal area design, and coordination of the most cost-effective method for construction.

Paradigm Architects – Project Manager for civil/site portion of the University Place Parking Garage project at West Virginia University, Morgantown, West Virginia. Project includes geotechnical investigations, surveying, permitting, construction specifications, design drawings, city planning and zoning, project coordination, and construction observation.

American Campus Communities – Project Manager for civil/site portion of Sunnyside Commons Student Housing project at West Virginia University, Morgantown, West Virginia. Project includes geotechnical investigations, surveying, permitting, construction specifications, design drawings, city planning and zoning, project coordination, and construction observation.

Mills Group – Project Manager for civil site design project at Davis and Elkins College in Elkins, West Virginia for the site development and permitting associated with a proposed amphitheater on campus.

Education
B.S., Civil Engineering, West Virginia University, 1982

Training/Relevant Course Work
Natural Stream Channel Design Levels I-IV

Employment History
2014 - Present, Senior Engineer, Potesta
2006 - 2014 – Hatch Mott MacDonald
1987 - 2006 CTL Engineering

Glenmark Corporation – Project Manager for the Greenbag Road project that included, surveying, mapping, geotechnical investigations and reccomendations, Phase 1 Enviromental Site Assessment, permitting, civil site design and storm water management.

Town of Granville – Project Manager for the Bowser Street Landslide Repair project that included surveying, mapping, geotechnical investigations/recommendations, and preparation of bid documents, contractor selection, and construction oversight.

Town of Granville – Project Manager for various engineering projects including surveying, street repaving, stormwater system evaluation, camera surveys, traffic studies, and mapping projects.

Cirrus Energy Group – Project Manager responsible for coordination and oversight of field and office activities associated with risk assessment study, environmental permitting, preliminary engineering studies, and conceptual planning for a 1,100-acre data center complex in Fox and Horton Townships in Elk County, Pennsylvania.

Harrison County Planning Commission – Project Manager responsible for the coordination and design of Phases 1 – 3 of the Rail Trail project in Harrison County, West Virginia. Project included engineering design, modeling, permitting, and construction observation services.

Water Lines, water Storage Tanks, and Water Treatment Plants

Preston County Public Service District No.1, Nine County Roads Waterline Extension Project – Project Director responsible for the coordination and oversight of a waterline extension project in Arthurdale, Preston County, West Virginia. Project included permitting, design, bidding, and construction coordination.

Short Line Public Service District, Ten Mile Waterline Extension Project – Project Director responsible for the coordination and oversight of a waterline extension project in Harrison County, West Virginia. This project also included the initial stages of cost analysis and feasibility evaluations, and system improvement analysis to help minimize water losses.

Construction Monitoring

Project Manager/Senior Engineer with an understanding of construction observation and testing, including concrete, mortar, grout, soils compaction, bearing capacity, bolt torque, and fireproofing testing on public, private and government construction projects.

Camp Dawson – Quality Control Manager during the construction phase of the Student Training Facility at Camp Dawson, Kingwood, West Virginia. The project included all quality control and construction monitoring for the six-building facility along the airstrip at Camp Dawson.

University Place, LLC – Project Manager responsible for construction monitoring and testing on the University Avenue Parking Garage at West Virginia University, Morgantown, West Virginia. Construction monitoring included the coordination, scheduling, and reporting of the concrete, soils, and fireproofing testing on site.

American Campus Communities – Project Manager responsible for the coordination, scheduling, and reporting of the construction monitoring and testing on the Sunnyside Commons Student Housing project at West Virginia University, Morgantown, West Virginia. Construction monitoring included concrete, mortar, soil compaction, and dynamic cone penetrometer testing.

Nathan Spencer, AIA

Role
Project Architect

Professional Registrations
Registered Architect (WV)

Mr. Spencer is responsible for coordinating the efforts of the design team in preparing thorough and clear design documents. He has experience in all phases of design working on a wide range of building types including; military, educational, office, justice, and residential.

He has worked on several projects that are currently pursuing LEED certification. In addition to production, Mr. Spencer, is also experienced in 3d modeling. He has worked on several preliminary concept study models as well as high quality renderings and 3d models later in the design process. Mr. Spencer is also experienced in high quality physical models.

Mr. Spencer began his career in architecture with ZMM in 2003, working as a summer intern. After graduating in 2003, he began working at ZMM full time.

Project Experience

Charleston Civic Center, Charleston, WV
Mr. Spencer is serving as project architect on the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

Edgewood Elementary School, Charleston, WV Mr.
Spencer participated on the design team that developed the new Kanawha County Elementary School on Charleston's West Side. The school was designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school integrates sustainable design principles to serve as a teaching tool for the students. A dental and health clinic is also on site for all enrolled students in the Kanawha County School District.

Logan-Mingo Readiness Center, Holden, WV

Education
Bachelor of Architecture, University of Tennessee, 2007

Employment History
2009 - Present, Architect, ZMM
2007 - 2009, Intern Architect, ZMM
2003 - 2007, Summer Intern, ZMM

Civic Affiliations
- American Institute of Architects, Member

Mr. Spencer was the architect on the new Logan-Mingo Readiness Center. The exterior aesthetic of the facility was driven by the location within an industrial park on a reclaimed surface mined site. The building layout was developed by working closely with the end-users to determine the appropriate configuration of building spaces to maximize the efficiency of the operations, and to respond to the unique missions of the 150th Armored Reconnaissance Squadron and the 156th Military Police (LNO) Detachment. Clear separation of "public" and "private" areas within the facility, unique office configurations related to training requirements, and the addition of State Funded additional spaces.

Cabell County Bus Transportation Complex, Huntington, WV Mr. Spencer was the project Architect on the Cabell County Transportation Complex is located on the site of the old Cox Landing Junior High School. Challenges on the project involved retrofitting the old school and site to accommodate the new use. The rear portion of the school was demolished to make room for the new maintenance portion of the building. The remaining front section of the school was renovated to include office space, storage areas, and a new staff development room. The new maintenance area includes a high-bay metal building with 14 back to back workbays, three of which have hydraulic bus lifts. A hand wash bay and a state of the art automatic wash bay were also included in the project. Extensive sitework was also involved in the retrofit project including a fueling station, bus parking, a sediment pond, and an extensive rework of the existing site utilities.

Highland Hospital, Charleston, WV
Mr. Spencer was the project architect on Highland Psychiatric Hospital. Mr. Spencer was responsible for coordinating the production effort for the 60,000+ SF mental health facility. Mr. Spencer also produced several 3-D models throughout the design process. This project consisted of 87,300 SF, $26M addition to Highland Hospital in Charleston. The addition will include: administrative offices, training spaces, 165 patient beds, nurses stations, an out-patient treatment department, pharmacy, laundry, and building service spaces. A pedestrian bridge will connect the new facility to the existing hospital.

Jackson County AFRC, Millwood, WV
Mr. Spencer participated in the schematic design of the 76,000 SF Reserve Center in Jackson County, West Virginia. Mr. Spencer was also responsible for coordinating the production effort for the project. Mr. Spencer also produced several 3D models throughout the design process. The project is aiming for LEED Silver Certification.

Joint Interagency Education and Training Center (WVARNG), Kingwood, WV Nate participated in the schematic design of the 180,000 SF addition to the Regional Training Institute at Camp Dawson. Mr. Spencer was also responsible for coordinating the production effort for the billeting (hotel) expansion, which increased the total billeting capacity at the JITEC to 600 rooms. This project received LEED Gold Certification.

Morgantown Readiness Center, Morgantown, WV
Mr. Spencer was a member of the production team for the 58,000 SF project, which housed the Army Band and associated performance spaces. Mr. Spencer also produced several 3d models throughout the design process. He also participated on all production work through all phases. The project is aiming for LEED Silver Certification.

Tucker County Courthouse Annex, Parsons, WV
Mr. Spencer was the project architect for the Courthouse Annex renovation project. The Annex is a 4-story 21,000 Square Foot building that is adjacent to the Tucker County Courthouse. The annex will house spaces for the Circuit Court, Circuit Clerk, Family Court, Magistrate Court, Prosecuting Attorney, County Commission, County Clerk, Community Corrections, and Probation Office.

Judge Black Courthouse Annex, Parkersburg, WV
Mr. Spencer assisted with the design and programming of the adaptive reuse of a former commercial space and movie theaters into a modern courthouse annex. The Judge Black Annex included two independent circulation paths – a secure entry and lobby for access to the Family Court and Prosecuting Attorney, and public access to the Assessor and Sheriff's Tax Department. The facility also houses several large public meeting rooms.

Jeremi J. Stawovy, E.I.T

Role
Engineer

Professional Registrations
Troxler Moisture – Density Gauge
OSHA Hazardous Waste Operations and Emergency Response Training – 40 hour

Areas of Specialization
Diversified experience with civil, environmental, surveying, and geotechnical engineering projects for public, state, and private clients with an emphasis on project management and coordination of engineering services and environmental services, to include: permitting and compliance, hydraulic and hydrological analysis, slope stability analysis, geotechnical design, Phase I Environmental Site Assessments, stormwater management, municipal water and sewer design, civil site design, water resources analysis/design, natural gas production well pads and roads, and construction monitoring/observation.

Professional Experience
Involved with many aspects of Civil Engineering including Civil Site Design, Permitting, Construction Monitoring, Laboratory Testing, and Construction with a special interest in the Geotechnical/Environmental aspects.

Responsibilities have included Geotechnical evaluations including management of subsurface explorations, settlement analysis, slope stability modeling, foundation analysis, landslide repairs, well pad construction, roadway improvements/repairs, and commercial/residential construction.

Stahl Sheaffer Engineering – Roadway improvement projects. Completion of multiple field explorations and geotechnical reports for bridge and roadway improvements for the gas industry in Roane, Wirt, Wetzel, Ritchie, and Jackson counties, West Virginia.

Stagg Land Resources – Completion of over forty (40) test borings, associated laboratory testing, and sonic drilling for hydraulic fracking sands in Monahans, Texas.

CA Ventures, WVU Housing – Completion of eight (8) test borings, associated laboratory testing, and geotechnical recommendations for a combined shallow and deep foundation system for a proposed 13-story student housing project in downtown Morgantown, West Virginia.

Education
M.S., Civil/Environmental Engineering, West Virginia University, 2011

B.S., Civil/Environmental Engineering, West Virginia University, 2009

Training/Relevant Course Work

Pennsylvania One Call Web Ticket Entry Training
Engineers Society of Western Pennsylvania – Simply Smart Writing Tools Training

Employment History
2013 - Present, Engineer, Potesta
2012 - 2013, Sci-Tek Consultants, Inc.
2009 - 2012, West Virginia University Geotechnical Department
1993-2009, Quality Construction, Quality Crane Services and Sons

EQT, Ohio River for Horizontal Directional Drilling (HDD) – Completion of 35 test borings, associated laboratory testing, and geotechnical recommendations at three sites in Ohio and West Virginia relating to a proposed pipeline and transmission pad projects.

American Campus Communities, Sunnyside Commons –Completion of 23 test borings, associated laboratory testing, geotechnical recommendations, civil site design, surveying, and construction phase geotechnical consulting/testing for a 5.4 Acre high-density student housing project in downtown Morgantown, West Virginia.

Glenmark Holding, LLC, Greenbag Road Development – Completion of four (4) borings, laboratory testing, geotechnical recommendations, civil site design, surveying, stakeout, and construction consulting on a commercial development in Morgantown, West Virginia.

EQT, Gemini Compressor Station and Interconnect – Completion of 11 borings, laboratory testing, wetland delineation, mine mapping/research, and preliminary geotechnical recommendations for a proposed compressor station and interconnect in Harrison County, West Virginia.

MEPCO, Marshall Portal – Completion of nine (9) borings and installation of one inclinometer, associated laboratory testing, geotechnical recommendations, and slope stability monitoring/analysis at a deep mine shaft site to assist with stabilization of mine portal pad and access road near Mount Morris, Pennsylvania.

Town of Granville – Completion of five (5) borings, laboratory testing, geotechnical recommendations, civil site design, contract document preparation, and construction monitoring/testing for the Bowser Street Landslide Repair in Granville, West Virginia.

Stone Energy, Weekly Pad – Completion of several subsurface borings, laboratory testing, geotechnical recommendations, and installation of an inclinometer to monitor slope stability/movement at a natural gas well pad in Wetzel County, West Virginia.

Greer Industries, Cheat River Quarry – Completion of several subsurface borings, laboratory testing, geotechnical recommendations, civil site design, and construction monitoring/testing for the landslide repair and drainage improvements at a limestone mine/quarry in Preston County, West Virginia.
Carmeuse Lime and Stone – Slope stability modeling for proposed slopes for a limestone mine/quarry in Clear Brook, Virginia.

West Virginia Department of Environmental Protection, AML – Subsurface evaluation for Lake Lynn Complex near Morgantown, West Virginia. Drilling included drilling into the mines and setting piezometers to monitor the water levels in the mine.

Civil/Site Design
Performed conceptual and final site designs which requiring roadways, erosion and sediment control, stormwater drainage and management West Virginia Department of Environmental Protection (WVDEP) construction stormwater permits, West Virginia Division of Highways (WVDOH) entrance permits, water line, sanitary sewer line and pump design for multiple commercial and residential developments.
Coombs Farm Development- Surveying, civil site design, construction stormwater permitting, entrance permits in Morgantown, West Virginia.

Construction Observation
Performed construction observation for ongoing construction projects. Tasks included but were not limited to compaction testing, bearing capacity testing, moisture level testing, construction method observation for site development, utility line placement, pond construction, retaining walls, etc.
Columbia Gas/Basic Systems – Construction monitoring of geotechnical recommendations (Geogrid system) at Waynesburg Compressor Station in Waynesburg, Pennsylvania.

Carly Chapman

Role
Interior Designer

Mrs. Chapman serves as the Interior Designer at ZMM. Mrs. Chapman takes pride in her work's originality and always strives to help the client's vision and intent come alive in the design process. Her experience at ZMM includes Education, Municipal, Residential, Healthcare, and Hospitality projects. In her past position she focused on both Corporate and Healthcare design. Mrs. Chapman's responsibilities include conducting design proposals and presentations, as well as producing design documents and specifications relating to all aspects of interior design.

Project Experience
Mrs. Chapman has served as the interior designer for a variety of projects. Projects range from renovations to new construction and is comprised of every industry. Her responsibilities include design concept, presentation, documentation, specification writing, and architectural drafting.

Fayette County Schools, PK-2 & New Collins Middle, Oak Hill, WV
These schools were designed as separate schools sharing the same site and are connected by a mechanical wing. This building called for a challenging design concept. The schools each had their own unique design theme, but were delicately connected in small aspects of color or architectural techniques, allowing the interiors to flow seamlessly.

Charleston Civic Center, Charleston, WV
Mrs. Chapman is currently assisting in the construction administration and interiors of the expansion and renovation to the Charleston Civic Center. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. Construction is scheduled for completion in 2018.

ARH Chemotherapy, Beckley, WV
This project was a renovation of a hospital wing to be redesigned for optimal health and wellness for patients undergoing chemotherapy treatment. Both aesthetics and general sanitary design requirements were crucial to making this project successful.

Valley Park Community Center, Hurricane, WV
The new community center will be replacing an existing structure that was recently demolished earlier this year. The

Education
Bachelor of Interior Design, University of Charleston, 2012

Employment History
2016 - Present, Interior Designer, ZMM
2012 - 2016, Project Manager/Interior Designer, Contemporary Galleries, Inc.
2003 - Present, Architect, Project Manager, ZMM
2010 - 2012, Interior Design Intern, ZMM

new building will house a commercial kitchen, administration wing, ballroom, and a locker room complex with administration quarters for the attached Wave Pool.

Charleston Edge, Charleston, WV
The Charleston Edge renovation focused on bringing life to an old existing structure in the heart of downtown Charleston. The concept of the design was to create contemporary living quarters for the young urbanites of the city, while also providing a communitive atmosphere by including a rooftop gathering space for locals to enjoy.

CAMC Post Op, Teays Valley, WV
This project was a renovation of a hospital wing to be redesigned for recovery of Post Operation patients. This project included patient rooms, nurse's stations, and designing the space for optimal health and wellbeing.

Clarksburg, Richmond, Huntington, Salem VA Hospitals
During previous employment, Mrs. Chapman was heavily involved with renovations to various VA hospitals. Renovations included redesign implementing DIRTT wall systems, renovations to nurse, admirative and patient areas, as well as common's areas.

FaLena Perry, CDT

Role
Construction Administrator

Professional Registrations
EIT

Mrs. Perry describes her role with ZMM as Construction Administrator as an exciting and invigorating opportunity with new experiences every day. From varying jobsite conditions to the differing professionals she encounters on a daily basis, Mrs. Perry approaches construction administration with a fresh set of eyes and desire to help provide the best outcomes possible for each project.

Mrs. Perry has nearly six years experience working as a Structural Engineer with two of those being a Project Manager. Structural engineering experience includes projects ranging from everything including $135M university buildings down to residential homes and even historic restoration projects. Project variety includes Educational (K-12 and university), Commercial, Military, Office, Justice (Courthouses, Justice Centers, Police Department and Correctional), Multi-Use Residential, Civic (WWTP), Healthcare (Health Departments), Fitness (Gyms), Religious, Historic Restoration and an Arena. These projects are spread over Kentucky, West Virginia and Ohio.

Project Experience

Valley Park Community Center, Hurricane, WV
Mrs. Perry is serving as Construction Administrator of the new Community Center building and renovation at Valley Park. The $15M construction project includes a new community building, ball fields and a playground. Mrs. Perry is responsible for the administrative duties, performing on-site observations and tracking construction progress. Mrs. Perry collaborates with the client, design team and contractors to confirm that project guidelines are satisfactorily met. Substantial completion for the project is set for May of 2018.

Ravenswood Middle School, Ravenswood, WV
Mrs. Perry is serving as Construction Administrator of the high school addition that will house the two-story Ravenswood Middle School making this the 20th facility in WV that will combine both high school and middle school students. This project is limited with available space as it is to fit into the existing high school footprint.

Midland Trail High School, Fayetteville, WV Mrs. Perry is serving as Construction Administrator of the six room high school addition that will include a STEM lab as well as other

Education
Bachelor of Science, Civil Engineering, University of Kentucky, 2003

Masters of Science, Civil Engineering, University of Kentucky, 2005

Employment History
2017 - Present, Construction Administrator, ZMM
2009 - 2010, Design Engineer, Moment Engineers, Charleston, WV
2004 - 2008, Engineer, Project Manager, BFMJ Inc., Lexington, KY
2003 – 2004, Graduate Assistant, University of Kentucky College of Engineering

Civic Affiliations
- Project Coordinator, Forrest Burdette UMC, Family Life Center
- Sunday School Teacher for Young Professionals
- Cub Scout Den Leader Pack 236

classrooms. The large space planned for the STEM lab will encourage hands-on exploration, learning, and technology integration. This addition will address the under utilization of Midland Trail as well as Anstead Middle.

Project Experience Other Firms

University of Kentucky Biopharmacy Building, Lexington, KY
Mrs. Perry worked as team member in the design the new $134M College of Pharmacy Biopharmacy research building. The research facility builds on the state's initiative to address health challenges and disparities in KY. The building featured expansive auditorium style classrooms and a self-supporting stair, of which Mrs. Perry modeled and designed.

Kentucky Transportation Cabinet, DOH, District Five Office Building, Louisville, KY
Mrs. Perry acted as the Project Manager for this new office space for the Department of Highways. This project consisted of concrete and steel structural members. Mrs. Perry coordinated design efforts with a team of engineers, architects and the owner.

Moses Residence, Huntington, WV
Mrs. Perry was responsible for the structural design of the Moses Residence which includes ICF walls, timber, steel and concrete. This home is a zero net energy home and has platinum LEED certification.

Samuel Butzer, PE, LEED AP BD+C

Role
Mechanical Project Engineer

Professional Registrations
Professional Engineer (WV, WI, IL)
LEED Accredited Professional

Mr. Butzer is a registered Professional Engineer with design experience in HVAC, Piping (Mechanical, Industrial, Laboratory, Medical Gas), Fire Protection and Plumbing systems. He has been responsible for an extensive range of projects that include Hospitals, Civic Complexes, Laboratories, Medical and Dental Office Buildings, Retail, Military Installations, Churches, Restaurants, K-12 Schools, Higher Education Facilities, Pharmaceutical Manufacturing, Natatoriums and Historical Renovations.

Mr. Butzer began his career in engineering with a mechanical contractor located in Wisconsin. His collective engineering experience includes projects that were design-build, design-assist and plan & spec. His background in engineering and 3D BIM design and coordination has provided him with extensive experience in the "real world" of HVAC and piping constructability. That experience has forged him into a leader at the integration of all construction disciplines into a multitude of building types and space constraints.

Mr. Butzer's dedication to the community and his civic affiliations demonstrates a strong connection to the engineering principles of energy efficiency, sustainability, occupant comfort and health.

Project Experience

Harrisville Elementary School, Harrisville, WV
Mr. Butzer was responsible for designing the HVAC systems for the renovation and additions to the elementary school. Initial design development consisted of variable refrigerant flow (VRF) systems coupled with dedicated outdoor air (DOAS) systems for the Classrooms and Administration areas. Roof mounted air conditioning and exhaust equipment were provided for the new Cafeteria, Kitchen and existing Gymnasium. Budget and space constraints forced the design to evolve into individual, self-contained, interior air handling units for each Classroom. The units were able to meet ASHRAE 62.1 requirements for ventilation, the Acoustical Society of America's (ASA) requirement for sound, and every other standard such as individual classroom temperature and

Education
Bachelor of Science, Mechanical Engineering, University of Wisconsin at Madison, 2007

Associate of Science, Madison Area Technical College, Madison, WI, 2004

Employment History
2018 - Present, Board of Directors, ZMM
2013 - Present, Project Engineer, ZMM
2007 - 2013, Mechanical Engineer, WI
2005 - 2007, Mechanical Engineer Intern, UW-Madison FP&M

Civic Affiliations
- American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE), President of West Virginia State Chapter
- United States Green Building Council (USGBC), Board Member of West Virginia State Chapter
- Marshall University Engineering Advisory Board Member
- Kanawha City Community Association Board Member

dehumidification control as set forth by the School Building Authority (SBA).

Charleston Civic Center, Charleston, WV
Mr. Butzer is the Mechanical Project Engineer on the expansion and renovation to the Charleston Civic Center project. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018. The mechanical design is expected to reduce the energy requirements defined by ASHRAE 90.1-2013 by an estimated 25% and extensive water savings will be shown. The project includes a new chilled and hot water central plant with extensive replacement and upgrades to the facilities existing mechanical systems. Multiple phases of construction will allow the Civic Center to remain operational throughout the construction progress.

Appalachian Regional Hospital, Beckley, WV
Mr. Butzer is the Mechanical Project Engineer currently working with the hospital on multiple renovations. The ICU and OR departments will undergo Mechanical and Architectural upgrades in a multiphase project while the hospital remains operational. The existing kitchen will receive a new make-up air unit, and fan coil units to improve pressure and air balance relationships within the hospital. A dedicated HVAC unit was provided for the endoscopy suite to improve thermal comfort and provide code-required ventilation, air-changes and humidity.

Glenwood Elementary School, Princeton, WV
Mr. Butzer was the Mechanical Project Engineer for this successful project that came in under budget, on-time and with zero change orders. The first phase was duct cleaning and sealing that improved indoor air quality and reduced system demand by 8 tons. The second phase was the HVAC improvements which replaced all existing constant volume, single compressor, multizone, air handling units (AHUs) with new variable speed, multi-compressor AHUs. VAV terminal units were installed to create separate zones for each classroom. A new building automation system was provided for system controls and to incorporate the facility into the existing county-wide controls network. All electric heating was abandoned to maximize use of the hot water heating system. Mechanical upgrades saved the school an estimated 18.5% in the electric usage and provided them with over $13,000 in rebates from the electric utility.

Nicholas County Courthouse, Summersville, WV
The Nicholas County Courthouse is a Historic building constructed in 1898 with an addition executed by the Works Progress Administration in 1940. The courthouse was added to the U.S. National Register of Historic Places in 1991. Mr. Butzer led a project team responsible for upgrading an existing 2-pipe fan coil system into a 4-pipe system to provide simultaneous heating and cooling and meet the climate and comfort needs of specific occupants. A new 4-pipe system, variable speed pumps and 3-way valves were provided in the basement to achieve integration of the new system into the existing. Construction had to be phased to allow installation of the new heating loop while the existing system remained in cooling operation; the new cooling loop would be installed once the building switched over to the new heating loop. Welding and soldering were not allowed so materials such as PEX, pressure-seal copper and mechanical joint steel piping were specified. A new Building Automation System with most of the communication occurring wirelessly was chosen to minimize disturbances to the historical architecture of the building.

Gestamp West Virginia, South Charleston, WV
Mr. Butzer led a design team that was tasked to provide a mechanical system to separate out, or divert hydraulic fluid collected along with chilled water released from immense, automobile component stamping machines. The design included an aboveground oil-water separator, density meters, 3-way valves, storage tanks and a controls system to monitor fluid flow and guarantee separation or storage of non-compliant sanitary discharges.

Scot Casdorph, PE

Role
Electrical Engineer

Professional Registrations
Professional Engineer (WV)

Mr. Casdorph serves as an Electrical Engineer with ZMM providing electrical design services for a vast number of projects consisting of commercial, educational, correctional, institutional, and military facilities.

Mr. Casdorph is responsible for many facets of the project pertaining to electrical design such as interior and exterior lighting, power distribution, data system design, security, fire alarm, low voltage control systems, equipment specifications and performs electrical assessments during construction prior to the project's substantial completion date. Mr. Casdorph has participated on several LEED registered projects using energy conserving methods and utilizing lighting control systems and other means to meet or exceed ASHRAE 90.1, LEED, and energy code requirements.

Project Experience

Charleston Civic Center, Charleston, WV
Mr. Casdorph is the electrical engineer on the expansion and renovation to the Charleston Civic Center project. The $75M, 283,000 SF design-build project is being completed as a collaboration with tvsdesign and BBL Carlton. The design commenced in the spring of 2015, and construction is scheduled for completion in 2018.

Southside Elementary and Huntington Middle School, Huntington, WV Mr. Casdorph was the electrical engineer on this 156,000 SF facility. This project encompasses all phases of construction; demolition, major renovation and new construction. The original historic 26,000 SF three story school building was preserved and the remaining less than adequate facility was strategically removed to accommodate the new addition. The existing facility was completely renovated and brought up to new construction standards to blend with the new addition. The project consisted of two distinct school facilities existing on the same piece of property. The new construction blends seamlessly with the older historic structure.

Gauley River Elementary School, Craigsville, WV
Mr. Casdorph was responsible for the electrical design of the new elementary school. The project is consolidating Beaver

Education
Bachelor of Science, West Virginia Institute of Technology, 1995

Employment History
2000 - Present, Electrical Engineer, ZMM
1995 - 2000 Electrical Controls Systems Manager, WV Engineering Firm

Elementary School and Craigsville Elementary School into a new 375-student school. The school houses 3 Pre-Kindergartens, 3 Kindergartens, 2 first grade, 12 1st-5th grade classrooms, activity room, cafeteria, kitchen, media center, and administration spaces.

Lincoln County High School, Hamlin, WV Mr. Casdorph was responsible for the electrical power distribution throughout the 216,000 SF facility containing high school classes, vocational education, technical community college classes and a community health clinic. The project was a 2007 AIA Honor Award Winner.

Milton Middle School, Milton, WV Mr. Casdorph was responsible for the electrical design of the new 96,000 SF facility housing 700 middle school students grades 6 through 8.

Fort Gay PK-8 School, Fort Gay, WV
Mr. Casdorph was the electrical engineer and was responsible for the electrical power distribution and design. The New Fort Gay PK-8 School replaces the existing facility that has been in disrepair and lacking the spaces and technology delivery system required for 21st century learning skills. The total enrollment for the school is 603 Students. The new grade configuration separates the Elementary students from the Middle School students, but still allows use of the common spaces within the building. They share the Dining Room, Gymnasium, Media Center and a Stage.

Southern WV Community & Technical College, Williamson WV Mr. Casdorph was responsible for the electrical power and lighting distribution design of this 22,000 SF higher education facility. This project is being designed to meet the USGBC LEED Silver.

Joint Interagency Education and Training Center (WVARNG), Kingwood, WV Mr. Casdorph was responsible for the electrical design of the 180,000 SF 3-story billeting/hotel expansion for the Army National Guard campus style facility for training and operational mission support. The expansion more than triples the facility size and increases the total capacity from 189 guest rooms to 600 guest rooms and suites. This project reached LEED Gold Certification.

West Virginia Research, Education, and Technology – Building 704, South Charleston, WV
Mr. Casdorph is the electrical engineer for building 704 and responsible for electrical power and lighting distribution. Building 704 had previously been utilized as a campus maintenance facility by Union Carbide and DOW Chemical. Bridgemont began utilizing the facilities for instruction in the Spring of 2011.

West Virginia Housing Development Fund Office, Charleston, WV Mr. Casdorph was responsible for the electrical design of the 37,000 SF office building which provides natural daylighting into its interior spaces coupled with an automatic dimming system and motorized shade controls. This 2-story administrative facility houses approximately 95 to 100 employees with a flexible open office floor plan utilizing modular under-floor wiring to accommodate any future modifications of the workspace with minimal disruption to the employees. The project is targeted for LEED Silver Certification.

Jackson County Armed Forces Reserve Center, (WVARNG), Millwood, WV Mr. Casdorph was responsible for the electrical design of the 76,000 SF single story military reserve center which serves both the West Virginia Army National Guard and the United States Army Reserves (USAR) units. The multi-use facility provides educational spaces for classrooms, distance learning, physical training and a weapons simulation center. The project is targeted for LEED Silver Certification.

Glen Jean Armed Forces Reserve Center, (WVARNG), Glen Jean, WV Mr. Casdorph was responsible for the electrical design of the 102,000 SF military training facility which houses the Armed Forces Reserve Center (AFRC), Military Entrance Processing Station (MEPS), and an Organizational Maintenance Shop (OMS). The AFRC contains the administrative and training space for the 77th Brigade Troop Command, the 1863rd Transportation Company, and the 150th Armored Regiment Company. The MEPS houses their administrative, medical, headquarters, testing and storage functions at the facility. A comprehensive 8,500 SF OMS vehicle maintenance shop provides space for six large service workbays for maintaining the military fleet.

Mary Jo Cleland, PE

Role
Civil Engineer

Professional Registrations
Professional Engineer (WV)

Ms. Cleland is responsible for the site design for ZMM projects. She coordinates with the project architects and mechanical and electrical engineers to integrate the site layout with the building requirements. Ms. Cleland works with the client and the architect to plan the site circulation, parking, and green space. She is responsible for storm water management and utility layout. For sites with environmental concerns, Ms. Cleland coordinates with the appropriate agencies and assists in permit applications.

Ms. Cleland began her career as a 2nd Lieutenant in the US Air Force as a project engineer for aerospace projects. After serving four years in the Air Force, she moved back to West Virginia and began her career in civil engineering. She began assisting lead engineers at an environmental and engineering consultant firm with air quality permitting, utility extension projects, and site development projects. After gaining experience at the consultant firm, Ms. Cleland joined ZMM as the civil engineer for the firm. She has experience with urban and rural site, storm water management system, and site design.

Project Experience

General Services Division – Surplus Property, Dunbar, WV
Ms. Cleland was the civil engineer on the Surplus Property. This property consists of a new 20,000 SF metal building storage facility inclusive of 5,000 SF of new administrative offices. The new building replaces the existing structures currently located in the floodplain, and addressed several site issues including proper drainage, traffic flow, and correct floor elevations in regard to current floodplain requirements. The demolition of the existing structures along with the new construction will be phased to maintain continuous operation of the facility.

Tackett Family Readiness Center, Charleston, WV
Ms. Cleland was responsible for site design for a two story building located on a hillside. Due to the existing slopes, several analyses to determine the optimal finished floor elevations of the building. The building was set into the hillside to allow for on-grade access to both entrances. The access road was design with handicap parking at both entrances. The

Education
Bachelor of Science in Education, West Virginia State University, 2001

Bachelor of Science in Aerospace Engineering, United States Naval Academy, 1993

Employment History
2016 - Present, Civil, Engineer, Board of Directors, ZMM
2009 - Present, Civil Engineer, ZMM
2002 - 2009, Project Engineer, Potesta & Associates, Inc.
1993 - 1997, Aerospace Engineer, United States Air Force

Civic Affiliations
- National Society of Professional Engineers
- West Virginia Society of Professional Engineers

client wanted the building to have the least impact as practical for the site development. A large segmental block wall was utilized to limit disturbance of cut slopes.

Girl Scouts of Black Diamond Council, Charleston, WV
Ms. Cleland was the civil engineer on the new Volunteer Resource Center and Girl Zone/Urban Camp in Charleston, WV. The 18,000 SF project completely renovated an old car dealership into administrative offices, a community gathering space, and a small hotel (Urban Camp) for Girl Scouts visiting the Charleston area. This new main building brings all the operations of the Girl Scouts of the Black Diamond Council under one roof.

Mary C. Snow Elementary School, Charleston, WV
Ms. Cleland was responsible for the site design and stormwater management for this site located within a city block. The site utilities were readily available and minimal grading was required for this site. The challenge was the stormwater management requirements. The pre-construction site conditions were a small school building and a large play field took up most of the site. The post- construction site conditions were the opposite creating a significant increase in stormwater runoff rate. A stormwater retention system was designed to infiltrate the majority of the stormwater and recharge the groundwater.

Edgewood Elementary School, Charleston, WV
Ms. Cleland was the civil engineer on the new Edgewood Elementary School. Ms. Cleland was responsible for the site development including utility extensions and relocations, stormwater drainage design, site pedestrian and traffic circulation, and parking area layout. The school was designed as a 21st Century Learning Environment, with a focus on integrating technology into the delivery of the curriculum. Instructional areas will be located off of an open 'exploratorium' that is being designed to function like a children's museum, providing a variety of learning opportunities, and flexible educational spaces. The school integrates sustainable design principles to serve as a teaching tool for the students.

Harts PK-8 School, Harts, WV
Ms. Cleland was responsible for site design and permitting. The site was constrained by the Guyandotte River, State Route 10, and an unmarked cemetery in the middle of the site. The site was laid out to avoid disturbance of the cemetery and create a building pad and access roads to satisfy the client, State Fire Marshall, and vehicular circulation. The site preparation package included building pad grading, rough site grading, and storm water management. Ms. Cleland coordinated with the local utility agencies, WV Department of Transportation, the United States Army Corps of Engineers, the local floodplain manager, and the WV Department of Environmental Protection.

Bridgemont (BridgeValley) Community and Technical College - Master Plan, Montgomery, WV
Ms. Cleland was the civil engineer on the overall Master Plan services to Bridgemont CTC, ZMM worked with various stakeholders to develop a Master Plan for Bridgemont's current and future facilities at the Tech Park. The Master Plan incorporated the need to develop a consistency between Bridgemont's Montgomery and South Charleston campuses, while also integrating the Bridgemont brand into the Park. The final design included planning for a new classroom and laboratory building adjacent to Building 704, across from the Advanced Technology Center. Signage, site circulation, parking, and campus amenities were also included in this planning process.

Project Experience with Other Firms: Ms. Cleland assisted with site development projects, utility extensions, pump station design, outlet structure design, and wastewater treatment plant design prior to coming to ZMM. In the eastern panhandle of West Virginia, Ms. Cleland designed the site layout and utilities for a planned hill side community with phased development plans. She assisted on the site utilities and sanitary sewer extension project for a two schools in Southern West Virginia.

Ms. Cleland also has experience with environmental investigations and air quality permitting. She assisted industrial clients with preparation and assembly of air permit application to the West Virginia Department of Environmental Protection. Ms. Cleland coordinated with the agencies through to permit issuance.

Michael J. White, PE

Role
Structural Engineer

Professional Registrations
Professional Engineer (WV, KY, IN, TN, OH, SC)

Mr. White has more than 10 years of Civil/Structural design and engineering experience. Project experience includes new construction and renovation work involving the design and analysis of reinforced concrete, wood, structural steel, masonry and cold formed steel.

Project Experience
WVDNR Forks of Coal
Milton PK School
Midland Trail High School
Valley Park Community Center
Marshall County Readiness Center

Other Jobs from Past Employers:
Monongalia County Justice Center - Morgantown, WV
Lewis Co. Judicial Annex - Weston, WV
Charleston Correctional Work Release Center - Charleston, WV
Stevens Correctional Facility - Welch, WV
Marsh Fork Elementary School - Naoma, WV
WVANG Camp Dawson, Multi-Purpose Building - Kingwood, WV
BridgeValley Advanced Technology Center - South Charleston, WV
New River Community and Technical College Headquarters Building - Beaver, WV
Lewisburg Elementary School - Lewisburg, WV
Rainelle Elementary School - Rainelle, WV
Boone County Honors Academy Addition - Madison, WV
WVU Parkersburg Center for Early Learning - Parkersburg, WV
WVU Parkersburg Applied Technologies Center - Parkersburg, WV

Education
B.S., Civil Engineering, West Virginia University Institute of Technology, Montgomery, WV, 2006

Employment History
2016 - Present, Structural Engineer, ZMM
2016, Civil/Structural Lead, Jacobs Engineering Group
2013 - 2016, Structural Engineer, Chapman Technical Group
2010 - 2013, Structural Engineer/Project Manager, Moment Engineers
2007 - 2010, Structural Engineer/Project Manager, Advantage Group Engineers, Inc. (Cincinnati, OH)

References

Mr. David Molgaard, City Manager
City of Charleston
501 Virginia Street, E.
Room 101
Charleston, WV 25301
304.348.8014

Greg Melton, Director of General Services
Capitol Complex Building
Building 1, Room MB-60
1900 Kanawha Blvd., E.
Charleston, WV 25305
304.558.2317

Captain M.G. Corsaro, Director of Executive Services
West Virginia State Police
725 Jefferson Road
So. Charleston, WV 25309
304.746.2115

MAJ Dan Clevenger
WVARNG
1707 Coonskin Drive
Charleston, WV 25311
304.561.6446

ZMM ARCHITECTS ENGINEERS