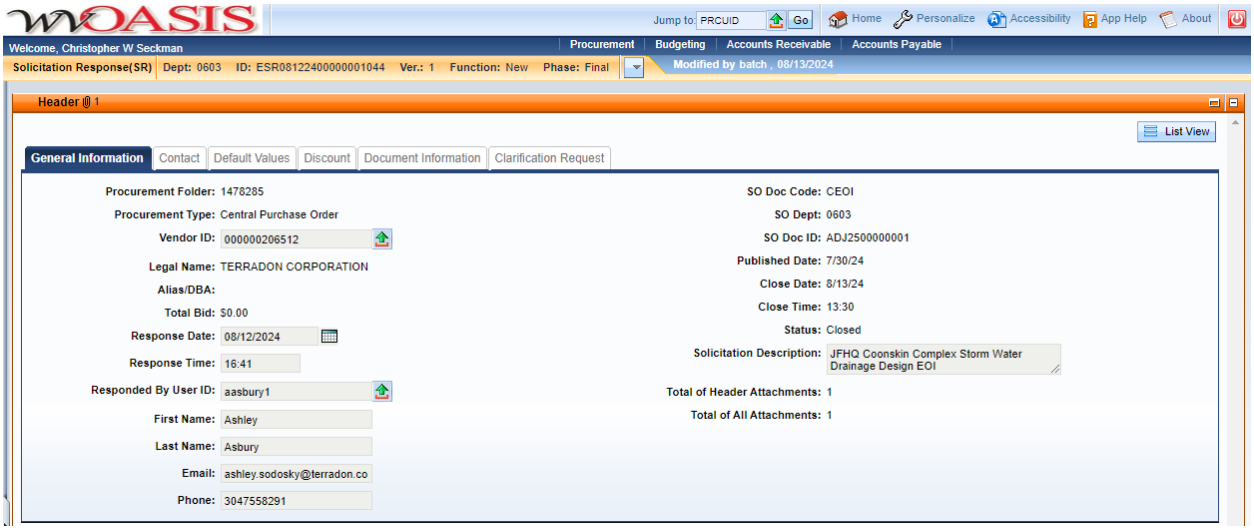
The following documentation is an electronically-submitted vendor response to an advertised solicitation from the *West Virginia Purchasing Bulletin* within the Vendor Self-Service portal at ***wvOASIS.gov***. As part of the State of West Virginia's procurement process, and to maintain the transparency of the bid-opening process, this documentation submitted online is publicly posted by the West Virginia Purchasing Division at ***WVPurchasing.gov*** with any other vendor responses to this solicitation submitted to the Purchasing Division in hard copy format.


WVOASIS
Jump to PRCUID Go
Home
Personalize
Accessibility
App Help
About
Welcome, Christopher W Seckman
Procurement
Budgeting
Accounts Receivable
Accounts Payable
Solicitation Response(SR) Dept: 0603 ID: ESR08122400000001044 Ver.: 1 Function: New Phase: Final
Modified by batch , 08/13/2024
Header 1
List View
General Information
Contact
Default Values
Discount
Document Information
Clarification Request
Procurement Folder: 1478285
Procurement Type: Central Purchase Order
Vendor ID: 000000206512
Legal Name: TERRADON CORPORATION
Alias/DBA:
Total Bid: $0.00
Response Date: 08/12/2024
Response Time: 16:41
Responded By User ID: aasbury1
First Name: Ashley
Last Name: Asbury
Email: ashley.sodosky@terradon.co
Phone: 3047558291
SO Doc Code: CEOI
SO Dept: 0603
SO Doc ID: ADJ2500000001
Published Date: 7/30/24
Close Date: 8/13/24
Close Time: 13:30
Status: Closed
Solicitation Description: JFHQ Coonskin Complex Storm Water Drainage Design EOI
Total of Header Attachments: 1
Total of All Attachments: 1

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

State of West Virginia
Solicitation Response

Proc Folder:	1478285
Solicitation Description:	JFHQ Coonskin Complex Storm Water Drainage Design EOI
Proc Type:	Central Purchase Order

Solicitation Closes	Solicitation Response	Version
2024-08-13 13:30	SR 0603 ESR08122400000001044	1

VENDOR

000000206512
TERRADON CORPORATION

Solicitation Number: CEOI 0603 ADJ2500000001

Total Bid: 0 **Response Date:** 2024-08-12 **Response Time:** 16:41:49

Comments:

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

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

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

Line	Comm Ln Desc	Qty	Unit Issue	Unit Price	Ln Total Or Contract Amount
1	JFHQ Coonskin Complex Storm Water Drainage Design EOI				0.00

Comm Code	Manufacturer	Specification	Model #
81101508			

Commodity Line Comments: N/A

Extended Description:

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

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

State of West Virginia
Centralized Expression of Interest

Proc Folder: 1478285			**Reason for Modification:**
Doc Description: JFHQ Coonskin Complex Storm Water Drainage Design EOI			
Proc Type: Central Purchase Order			
Date Issued	**Solicitation Closes**	**Solicitation No**	**Version**
2024-07-30	2024-08-13 13:30	CEOI 0603 ADJ2500000001	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Customer Code:

Vendor Name : TERRADON Corporation

Address : 409 Jacobson Drive

Street :

City : Poca

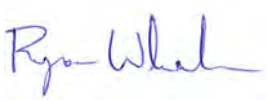
State : WV **Country :** US **Zip :** 25159

Principal Contact : Will Thornton - VP Engineering

Vendor Contact Phone: 304-755-8291 **Extension:**

FOR INFORMATION CONTACT THE BUYER

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

Vendor Signature X  **FEIN#** 55-0687626 **DATE** 08/12/2024

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

ADDITIONAL INFORMATION

The West Virginia Purchasing Division, for the agency, the West Virginia Army National Guard, Construction and Facilities Management Office, is soliciting Expressions of Interest from qualified firms to provide professional architectural and engineering design services to develop construction documents for the construction of a storm water drainage plan at the WV Army National Guard Base (Coonskin Complex), located in Charleston, Kanawha County, WV, per the attached documentation.

INVOICE TO	SHIP TO
ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US	ADJUTANT GENERALS OFFICE 1703 COONSKIN DR CHARLESTON WV 25311-1085 US

Line	Comm Ln Desc	Qty	Unit Issue
1	JFHQ Coonskin Complex Storm Water Drainage Design EOI		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description:

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

SCHEDULE OF EVENTS

Line	Event	Event Date

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.

(Printed Name and Title) Will Thornton, PE, PS - VP Engineerin

(Address) 409 Jacobson Drive, Poca, WV 25159

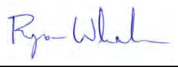
(Phone Number) / (Fax Number) 304-755-8291 / 304-755-2636

(email address) will.thornton@terradon.com

CERTIFICATION AND SIGNATURE: By signing below, or submitting documentation through *wv*OASIS, I certify that: I have reviewed this Solicitation/Contract in its entirety; that I understand the requirements, terms and conditions, and other information contained herein; that this bid, offer or proposal constitutes an offer to the State that cannot be unilaterally withdrawn; that the product or service proposed meets the mandatory requirements contained in the Solicitation/Contract for that product or service, unless otherwise stated herein; that the Vendor accepts the terms and conditions contained in the Solicitation, unless otherwise stated herein; that I am submitting this bid, offer or proposal for review and consideration; that this bid or offer was made without prior understanding, agreement, or connection with any entity submitting a bid or offer for the same material, supplies, equipment or services; that this bid or offer is in all respects fair and without collusion or fraud; that this Contract is accepted or entered into without any prior understanding, agreement, or connection to any other entity that could be considered a violation of law; that I am authorized by the Vendor to execute and submit this bid, offer, or proposal, or any documents related thereto on Vendor's behalf; that I am authorized to bind the vendor in a contractual relationship; and that to the best of my knowledge, the vendor has properly registered with any State agency that may require registration.

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

TERRADON Corporation

(Company) 

(Signature of Authorized Representative)

Ryan Wheeler - VP Business Development

(Printed Name and Title of Authorized Representative) (Date)

304-755-8291 / 304-755-2636

(Phone Number) (Fax Number)

ryan.wheeler@terradon.com

(Email Address)

TERRADON

terradon.com

Corporate:
PO. Box 519
Nitro, WV 25143
Tel: 304-755-8291

August 12, 2024

Subject: CEOI 0603 ADJ2500000001—WV Purchasing Division—WV Army National Guard, Construction and Facilities Management Office—JFHQ Coonskin Complex Storm Drainage Design EOI

Attn: David H. Pauline, Buyer
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

TERRADON is pleased to submit the enclosed package to provide engineering consulting services to develop construction documents for the construction of a storm water drainage plan at the WV Army National Guard Base (Coonskin Complex), located in Charleston, WV. The included package details the TERRADON team's qualifications, expertise, management and staffing capabilities, prior experience related to the proposed, and required documentation for consideration.

The TERRADON Team will be the agency's partner through every phase of the proposed project. As your design team, our goal is to provide the full realm of consulting services that the agency needs to successfully complete this project. TERRADON is a full-service civil engineering firm headquartered in Poca, WV with offices in Lewisburg, WV and Fayetteville, WV, Washington, PA, and Salem, VA. TERRADON maintains qualified civil engineers and designers, as well as ancillary services that may be needed for this contract.

The TERRADON team plans to lead these projects under the management of William S. Thornton, PE, PS. Thornton has more than 30 years' experience providing quality consulting services on various storm water design projects throughout West Virginia. Additionally, TERRADON will utilize subconsultant services at the agency's approval for any mechanical, electrical or plumbing (MEP) design services.

Upon your review of the enclosed, please do not hesitate to contact me at 304-755-8291 with any questions or concerns. I look forward to hearing from you soon.

Sincerely,

Ryan Wheeler, Director of Business Development

TERRADON

SUBMITTED BY:
TERRADON Corporation
102 East Maple Avenue
Fayetteville, WV 25840
304-755-8291

PROJECT MANAGER &
POINT OF CONTACT
Will Thornton, PE, PS
VP Civil Engineering
Will.thornton@terradon.com
304-541-7655

STATEMENT OF QUALIFICATIONS

JFHQ Coonskin Complex Storm Drainage Design EOI

WV Purchasing Division

WV Army National Guard, Construction and Facilities Management Office

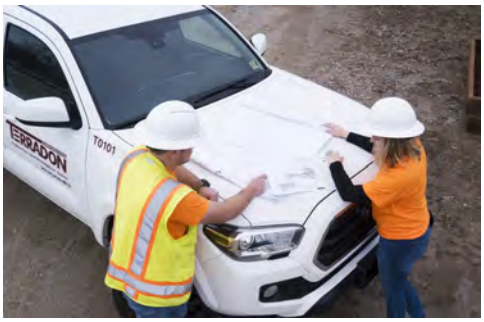
CEOI 0603 ADJ2500000001

David H. Pauline, Buyer
Department of Administration, Purchasing Division
2019 Washington Street East
Charleston, WV 25305-0130

Table of Contents

1 Corporate Overview

TERRADON Services & Qualifications | 1



FOUNDED: 1989

EMPLOYEES: 95

LOCATIONS:
Poca, WV
Lewisburg, WV
Fayetteville, WV
Clarksburg, WV

SERVICES:
Civil Engineering
Environmental Engineering
Environmental Inspection
Testing & Inspection
Construction Monitoring
Construction Administration
Geotechnical Engineering
Transportation Engineering
Structural Engineering
Cultural Resources
Archaeological Assessment
Geotechnical Engineering
Land Planning & Design
Survey & Mapping
Water & Utility Design

TERRADON is the largest, woman-owned engineering firm in West Virginia and is a certified Women's Business Enterprise.

TERRADON Corporation offers a multi-faceted approach to design engineering and consulting services. For more than 30 years TERRADON staff has provided a wealth of engineering solutions blanketing West Virginia and surrounding states with successful projects. The company built its reputation on expert personnel and quality, time-sensitive service. Those same founding principles hold true today.

The firm has been recognized through numerous awards from professional organizations and agencies including the American Society of Civil Engineers, State Highway Departments, the Department of Environmental Protection and the American Institute of Architects.

TERRADON's diverse team of professionals work together on projects to offer a wide range of services in house to keep project centrally focused. By providing this range of services, TERRADON is able to work completely as a team to offer clients the most rewarding design.

TERRADON maintains professionally registered engineers, landscape architects, and surveyors as well as a competitive team of highly certified inspectors and environmental specialists.

TERRADON has experience working on projects funded by various agencies. Because of the variety of funding options for projects, TERRADON offers client support to help make funding projects easier.

TERRADON's corporate culture promotes innovation and progressive thinking. Project leaders strive to sustain customers through a wide-range of engineering offerings. TERRADON employees understand the purpose behind their services and work to cultivate lasting relationships with clients through honest, hard work.

Land Development Services



TERRADON's Land Planning and Development department offers creative and innovative site design plans that have been brought to life throughout the region. Land Planning and Development engineers, landscape architects and CAD designers work closely with other TERRADON departments to deliver the most efficient design for each project.

TERRADON's Land Development department works with public and private entities and has remained a strong presence in the commercial, educational and, parks and recreational development sectors.

The Land Planning and Development group is focused on retaining lasting relationships with it's customers and prides itself on repeat clientele and referrals.

The Land Planning and Development department provides all services in-house from schematic design through construction drawings.

TERRADON maintains LEED accredited professionals in the Land Planning and Development department who remain on the forefront of sustainable design initiatives that aid clients in reducing significant energy costs on projects. TERRADON's Land Development department has more than 25 years experience working on industrial, commercial, parks and recreational, and other projects.

TERRADON has performed engineering and landscape design services for various monuments and plazas throughout the state. TERRADON has ample experience incorporating thematic design elements to achieve honorable memorial and monument plaza sites.

TERRADON has also worked on various renovation and addition projects ranging in sizes from small commercial gas stations, to large industrial sites. TERRADON has specialty staff that have worked on building renovation and additions comparable in size to the proposed project.

TERRADON maintains LEED accredited professionals on staff.

Services

- Site Civil Engineering
- Master Planning
- Site Feasibility Studies
- Schematic Design
- Layout Plans
- Grading Plans
- Utilities Design
- Preliminary Designs
- Storm Water Management Plans
- Erosion Control
- Presentation Drawings
- Renderings
- Graphic Design
- Construction Observation
- Bidding
- Construction Review
- Building Renovations & Additions Design
- Cost Estimating
- Project Management
- Site Assessments

TERRADON's Roadway and Bridge Design group is one of the most respected in the region. The department is well-known for its structural design capabilities and expert knowledge in bridge erection planning. Whether the job requires project planning, preliminary engineering studies or detailed roadway design, TERRADON maintains the resources needed to successfully complete transportation projects. Success on each project is achieved by using advanced technology to produce innovative, pragmatic design. TERRADON engineers are among leading professionals experienced in an array of transportation and quality & assurance measuring services.

TERRADON's certified staff is trained to work under unique and changing task orders and to maintain quality work to clientele that creates a maintained respected relationship between TERRADON and it's client.

TERRADON provides a diverse staff of professionals capable of providing project planning and preliminary engineering services, as well as final roadway and bridge designs (plans, specifications, and estimates). The firm's transportation engineers and technicians apply the latest technology to innovative, award-winning projects. TERRADON's transportation staff has a wide range of experience that includes preparing maintenance of traffic plans, signing and pavement marking plans, utility coordination, drainage design, and right-of-way plans.

TERRADON's Transportation sector has enjoyed a long-standing relationship with several states' Departments of Transportation including the WVDOT. TERRADON has performed successful engineering design for the agency for more than 20 years. The group is led by an experienced transportation engineer and includes veteran staff with demonstrated experience.

TERRADON routinely works on transportation projects, including survey, right-of-way, utilities, and specification design and review with WVDOT personnel. Additionally, TERRADON has been recognized for outstanding engineering work on several occasions with engineering excellence nominations and awards.

Services

- Structural Engineering
- Bridge Design
- Roadway Planning & Review
- Structural Planning & Review
- Roadway Design
- Maintenance of Traffic
- Traffic Analysis
- Right of Way Plans
- Grading Studies
- Survey
- Materials Testing
- Construction Inspection
- Materials Certification

Geotechnical Services

TERRADON offers some of the most experienced staff in the region for local geotechnical expertise. This team of experts brings a distinctive, specialized understanding of the difficult soil and groundwater conditions found in the Ohio Valley and Appalachian Regions of the United States. The Geotechnical group has provided investigations associated with earthen dams, mining, waste disposal, new building construction, landslides analysis and remedial design, cell and high mast towers, landfill permitting and cap design, flexible/rigid pavement design, and environmental remediation.

Services

- Test Borings
- Test Pit Excavations
- Monitoring Well and Piezometer Installation
- Soil and Rock Logging, Sampling & Testing
- Landslide Analysis and Remedial Design
- Stability Analysis
- Retaining Structure Design
- Earthen Dams
- Foundation Design
- Municipal and Industrial Landfills
- Flexible and Rigid Pavement Design
- Complete Removal for Landslide Repair
- Buttressing and Regrading
- Subsurface Drainage
- Structural Corrections
- Retaining Walls
- MSE Walls and Other Gravity Walls
- H-Piles and Lagging
- Anchors (Rock or Soil Nailing)
- Geotechnical Design

TERRADON Corporation has provided design, analysis, and construction inspection on more than 300 slip repair projects across the Appalachian Region. TERRADON is well versed in providing test boring services to slip projects and also provides other methods of slip analysis and design.

TERRADON is qualified to provide Ground Penetrating Radar (GPR) and Resistivity testing to evaluate landslides and ascertain information such as: potential failure surface, mapping bedrock, locating subsurface voids, determining the amount of displacement, subsurface anomalies, locating groundwater, and determining stratigraphy layering.

TERRADON personnel are also experienced in various hand sampling techniques such as hand auguring, dynamic and static cone penetrometer tests, and hand dug test holes. These sampling and testing techniques are beneficial for determining subsurface stratigraphy, locating groundwater, collecting soil samples for laboratory analysis, locating failure surface, and determining the landslides boundary.

Constantly changing federal and state environmental requirements are difficult to track and can have a serious impact on businesses and other organizations. TERRADON offers a strong environmental services team to manage issues in a complex environment. Staff is well-versed on environmental permitting processes and regulations as well as site assessment and reporting.

TERRADON closely follows environmental activities on the local, state and federal levels. TERRADON has a thorough understanding of state and federal environmental permitting processes and regulations. This expertise applies to both the initial permit preparations, as well as subsequent negotiations affecting the permit. The firm's strength in addressing environmental issues is built on the diversity of its staff with credentials in chemistry, civil engineering, geotechnical engineering and geology.

SERVICES

- Environmental Inspections
- Phase I ESA
- Phase II ESA
- Phase III ESA
- Hazardous Waste Management
- Wastewater Management
- Storm Water Planning
- Air Permitting
- Risk Management Plans
- Wetland Delineation
- Tier II Reporting
- Emergency Response Plans
- Environmental Audits
- Environmental Remediation
- NEPA Compliance
- Asbestos and Lead Inspection
- Underground Storage Tanks
- Above Ground Storage Tanks
- Impoundment Stabilization & Closure
- SPCC Planning
- BMP Planning

TERRADON's experienced environmental staff routinely performs Environmental Site Inspections during construction, as well as post rainfall events to ensure compliance with current WVDPE construction stormwater NPDES Permits. TERRADON provides Waters of the US determinations, wetland delineations, Nationwide Permits as well as Individual 404/401 Permits with the Army Corps of Engineers and West Virginia Department of Environmental Protection (WVDEP). TERRADON has performed hundreds of wetland delineations using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region* (Corps, 2012).

Construction Services



TERRADON offers materials testing and construction monitoring services to document compliance with project design specifications and regulatory requirements. The firm provides construction monitoring for utility, highway, and commercial construction projects. TERRADON also provides laboratory and field testing of construction materials. Engineers and technicians at TERRADON are West Virginia Department of Highways certified in Portland Cement Concrete, Hot-mixed Asphalt, Compaction and Aggregates.

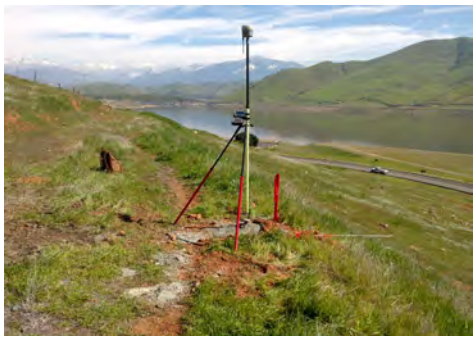
Additionally, TERRADON proved Construction Management services including construction oversight, documentation, and safety procedure implementation. TERRADON has more than 35 qualified and certified construction inspectors and more than 5 qualified construction management representatives. TERRADONs team also includes environmental field inspectors, geotechnical inspectors, and geological field inspectors.

TERRADON Corporation Construction Testing and Inspection Department maintains a full service laboratory testing facility on site at the Poca, WV office. The laboratory is and staffed by qualified and certified construction inspection technicians.

Services

- Slump of Portland Cement Concrete (AASHTO-T119)
- Air Content of Freshly Mixed Concrete (AASHTO-T196 and T152)
- Unit Weight and Yield (AASHTO-T121)
- Making and Curing of Concrete Test Specimens (AASHTO-T23)
- Compressive Strength of Concrete Specimens (AASHTO-T22)
- Fine and Course Aggregate Gradations (AASHTO-T11 and T27)
- Specific Gravity of Aggregates (AASHTO-T84 and T85)
- Atterberg Limits (ASSHTO-T89 and T90)
- Moisture Content of Soil (ASTM-D2216)
- Nuclear Compaction Testing of Soil, Stone, and Hot Mixed Asphalt
- Preparation of Certification Forms and Construction Reports
- Welder Certification
- Agency Compliance
- Floor Flatness Testing
- Fireproofing
- Masonry Testing
- Structural Steel Inspection Certified
- Welding Inspection
- Dye Penetrant Testing
- Bolt Testing
- Project Safety Monitoring
- FAA Eastern Regional Laboratories
- Steel Institute AST Inspections

Surveying & Mapping Services



TERRADON has been a leader in West Virginia and the surrounding region for the land surveying industry since 1989. The team has developed an extensive resume of successful surveying and mapping projects performed for a diverse group of repeat private and public sector clients. TERRADON's experienced staff of licensed professional surveyors and mappers bring expertise and proficiency to every project task.

The company is committed to staying ahead of the industry's pace by investing in state-of-the-art equipment and technology. That commitment enables TERRADON to overcome unique and challenging project conditions or obstacles, and efficiently provide the most accurate and complete information available to clients.

TERRADON has a long history of providing design and construction survey services for numerous transportation projects. Efficient and accurate results are ensured by prioritizing the use of modern technology, including state of the art GPS and robotic total stations, with the latest design software.

TERRADON maintains full-time Professional Surveyors on staff. The firm services projects through the use of in-house field survey crews who are backed by corporate staff members, including an experienced team of CAD designers. TERRADON's transportation survey group is experienced in

Services

- Mapping
- Construction Layout
- ALTA survey
- Topographic Survey
- GPS Network Control Surveys
- Aerial Mapping
- LiDAR Mapping
- Ground Penetrating Radar
- 3D Mapping

2 Similar Experience

Similar Project Experience

USAE Delafield Ave Stream Inflow Removal

Allegheny County, PA

This project is a stream diversion design that will manage the Delafield Avenue open channel stream inflow currently connected to the Aspinwall combined sewer system. Construction of a new stream management system to assist in re-directing flow away from the Aspinwall combined sewer system into the Allegheny River. The project is located within the municipalities of the Borough of Aspinwall, the Borough of Fox Chapel, and the Township of O'Hara, Allegheny County, Pennsylvania.

TERRADON's design required the following:

- Design of the stream diversion
- Layout and coordination of the proposed sanitary sewer system design
- Permit applications for:
  Norfolk Southern Railway; Allegheny Valley Railway; Pennsylvania Department of Environmental Protection (PADEP); Allegheny County Conservation District (ACCD); PennDOT; SHPO Coordination; Borough of Aspinwall; Borough of Fox Chapel; Township of O'Hara
- Development of construction plans, project specifications, Design Documentation Report (DDR), construction cost estimate, estimated construction period of performance, bid schedule, submittal register
- SWMM Hydraulic and Hydrology Model for the proposed storm system with the required storm events
- 30% and 60% design stage site visits
- Review conferences following the 30%, 60%, and 95% design submissions
- Monthly progress meetings
- Coordination with the following entities:

USACE, Pittsburgh District; Non-Federal Sponsor, Allegheny County Sanitary Authority (ALCOSAN); Borough of Aspinwall; Borough of Fox Chapel; Township of O'Hara; PennDOT; PADEP; Norfolk Southern Railway; Allegheny Valley Railroad; Pittsburgh Water and Sewer Authority (PWSA); Multiple utility companies

Project Owner	Project Manager Contact	Year Completed
USACE Pittsburgh District	Tim Sturm, PE 412-395-7560 Timothy.e.sturm@usace.army.mil	2023 - Current

TERRADON consistently provides various engineering design and survey services for architects and home builders at The Greenbrier Sporting Club including but not limited to topographic surveys, construction stakeout, foundation design, and storm drainage design.

TERRADON's survey crew has performed numerous existing conditions topographic surveys at the request of an architect, and construction stakeouts at the request of the home builder. The architect utilizes the topographic survey to locate the proposed house within the property lines and required setbacks; and to establish the finished floor elevation of the proposed home. Construction stakeout is typically performed twice: once for the review and approval of the Sporting Club's Architectural Review Board and a second time for the construction of the home's foundation.

Several of these residential projects also require a foundation design as a requirement of the building permit acquired from Greenbrier County. TERRADON'S engineer takes the architectural plans and then develops a foundation plan applicable to locate, state, and federal building codes.

TERRADON has also evaluated numerous stormwater drainage issues at various Sporting Club residences. Due to the mountainous terrain of the area, establishment of the finished floor elevation; driveway grades; and a perimeter drainage collection and conveyance system are often required either during the homes construction or after a specific drainage problem is discovered during a heavy rain event.

Project Owner	Project Manager Contact	Year Completed
The Greenbrier Resort Sporting Club & Private Residences	Larry Klein, VP & GM 304-647-6440	2010 - Current

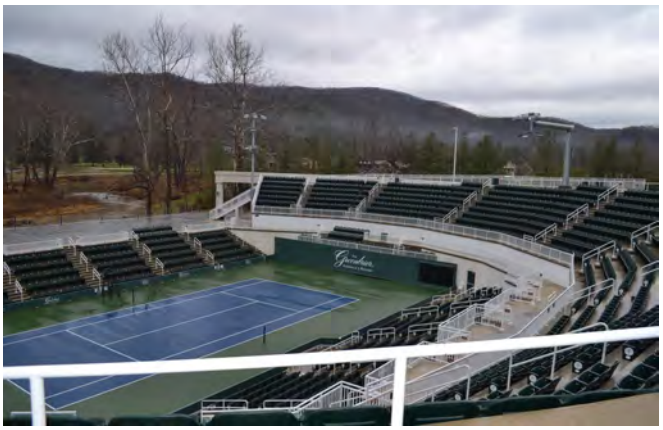
TERRADON designed a new stormwater collection and conveyance system for the Creekside Village Neighborhood. Creekside is the oldest neighborhood development within The Greenbrier Resort and pre-dates the creation of The Greenbrier Sporting Club. The neighborhood was developed within a low area adjacent to The Old White Golf Course. The area has always experienced surface water drainage problems during periods of heavy rain.

TERRADON utilized an aerial survey of the neighborhood to design a new storm drainage system. The new system contained new stormwater collection inlets in low lying areas; connected all roof drains/downspouts to the new piping system in order to remove the roof area runoff from the surface runoff; and several existing ditches and swales were converted to an enclosed piped network in order to collect and convey surface water runoff away from homes and low lying areas.

Project Owner	Project Manager Contact	Year Completed
The Greenbrier Resort Sporting Club	Larry Klein, VP & GM 304-647-6440	2010 - Current

The Greenbrier Resort—Center Court at Creekside

White Sulphur Springs, West Virginia



Center Court at Creekside is a 2,500 seat outdoor tennis stadium at the historic Greenbrier Resort. TERRADON acted as the civil-site engineer of record on this project. Our responsibilities began with a topographic survey of the proposed court location for the creation of the Existing Conditions Mapping.

Utilizing the existing topographic mapping and architectural layout of the proposed stadium, TERRADON then performed the site grading of the bowl stadium, which required of 30,000 cy of fill material. TERRADON also designed the re-routing of the City of White Sulphur's sanitary sewer trunk line, which if left in place would have been directly under the proposed tennis stadium. This re-routed line is the main sewer line collecting the City's sewage and directing it to the wastewater treatment plan.

In addition, other design responsibilities included the re-routing of the Greenbrier Resort's water main system within the project limits; the layout and sizing of the proposed storm drainage collection and conveyance system associated with the new stadium; and the design of an underdrain system beneath the tennis court proper to collect and convey the water table away from the court.

Project Owner	Project Manager Contact	Year Completed
The Greenbrier Resort	Ryan McClung Director of Engineering, The Greenbrier 304-536-1110	2017

TERRADON performed the civil-site engineering for the new warehouse site of Smooth Ambler Spirits. Smooth Ambler purchased a large tract of property near their existing distillery for the construction of 5 new warehouses to age and store their numerous products. The property is located in the industrial area of the Lewisburg Airport.

TERRADON utilized an aerial survey of the property to design an entrance road to the rear of the property where the warehouses are located. In addition, TERRADON graded the site to contain 5 building pads, 3 on one side of the entrance road and 2 on the other side. Grading of the site included earthen berms between each building, due to the highly flammable contents being aged/stored in the warehouses.

TERRADON also design a stormwater detention pond at the rear of the warehouses as required by Greenbrier County.

Project Owner	Project Manager Contact	Year Completed
Smooth Ambler Spirits	John Little, Smooth Ambler 304-497-3123	2017

Schoenbaum Tennis Courts Drainage Repairs

Kanawha County, West Virginia

TERRADON designed a new storm drainage underdrain system for the existing tennis courts. The courts were experiencing weeping from beneath the courts of trapped storm water runoff/ ground water. As the existing courts were nearing the end the existing asphalt surface course's useful life, the Parks and Recreation Department decided that this was the appropriate time to install the needed underdrain system and re-surface the course, as the new underdrain system would require the demolition of the existing asphalt surface course. TERRADON also developed the Contract Documents and Construction Specifications in coordination with the City of Charleston for the public bidding of this project.

Project Owner	Project Manager Contact	Year Completed
City of Charleston, WV	Chris Knox, City Engineer	2015

TERRADON performed the civil-site engineering for the new location of MED EXPRESS and Fritz's Pharmacy on US Route 219 in Lewisburg, WV. Design services included the topographic survey of the existing conditions. Upon completion of the survey, TERRADON then sited the footprint of the new building within the existing site in accordance with the City of Lewisburg's setback and zoning requirements.

Also as part of the site design, TERRADON laid out the proposed parking and entrance/exit driveways. Once, the proposed layout was approved by the Client, TERRADON designed the site grading and storm drainage design to accommodate the new building, parking lot, and driveway. TERRADON also performed the Injection Well Design and Permitting as part of the storm drainage design.

Due to Lewisburg's karst-limestone substrata, Injection Wells for the disposal of stormwater runoff are often required. These wells must be permitted and approved through the State of West Virginia. Injection wells require constant monitoring and testing and the results submitted to the State. The permit must be renewed yearly.

Project Owner

Iron Rock, LLC

Greenbrier County Sports Complex

Greenbrier County, West Virginia

TERRADON Corporation was recently selected as the lead engineer and site designer for the new Greenbrier County Sports Complex in Greenbrier County, WV. TERRADON will perform over the duration of the project, initial site design, site planning, survey and mapping, utility design, construction inspection and other ancillary engineering services.

The site is roughly 40 acres of property which were donated to the county for development of a multi-use sporting complex to include baseball and softball fields, soccer fields, tennis courts, playgrounds, an amphitheater and walking and joggings trails that connect to the bordering Greenbrier River.

Project Owner

Greenbrier County Commission

TERRADON Corporation provided design services for the proposed Shawnee Park Multi-Sport Complex in Kanawha County, WV.

The park is used for a travel tournament destination for soccer, lacrosse, baseball and softball and include six artificial turf soccer/lacrosse fields and four artificial turf collegiate size baseball fields across the 100 acre location in Dunbar, WV. The park includes a parking lot to accommodate more than 600 spaces, restrooms and concessions located in a center location, and detailed landscaping.

TERRADON has provided preliminary design and grading plans for the project and final design, construction review, construction inspection services, survey and mapping, geotechnical engineering, quality assurance services, and construction documentation and reporting services.

Project Owner

Kanawha County Commission

Golden Corral Pipe Collapse Repair

Kanawha County, West Virginia

During a storm event in December 2015, a section of 120 inch pipe collapsed in the parking lot of the Golden Corral in Cross Lanes WV. TERRADON was retained by the restaurant owner, Platinum Corral, to determine the best method of repairing the pipe while ensuring the safety of the restaurants customers.

TERRADON performed a pipe inspection, hydraulic analysis and report, method of repair and construction estimate. TERRADON then worked with the Owner to secure a responsible contractor and performed inspection during construction.

The construction phase consisted of removing 52 feet of damaged pipe and replacing it with 120 inch pipe. Crushed aggregate was then used to fill subsidence; soil was placed over the crushed aggregate on the down slope side to allow for stabilization and germination. Proof rolling was completed after placement of crushed aggregate to allow for eventual pavement to be placed in the affected areas of the property owner parking lot.

Project Owner

Platinum Corral

3 Proposed Project Approach

Key Staff Organization Chart & Approach to Goals and Obejctives

Key Staff Organizational Chart

WV Army National Guard
Project Owner / Management

Will Thornton, PE, PS
Project Manager

Civil Engineering
Will Thornton, PE, PS
Dakota Smith, PE
Andrew Wagner, PE
Ben Prior, PE
Phil Reed, PE
Kristen McClung, .PE
Steve Young, PE

Surveying & Mapping
Robert Thaw, PS
Dave Brown PS
Brian Bakanas, PS
Robert Fuller, PS

Geotechnical Engineering
Joe Carte, PE
John James, PE
Chris Hancock
Brittany Beckwith

Construction Inspection & Management
Jason Asbury, CESSWI, TRETCNO
Tyler Bailey, TRET
Mike Sword, TRET

TERRADON will begin the project with a conference with all interested parties to fully understand the problems and concerns. We will then write a detailed Scope of Work to be used as a basis for the Project. The Project Team will also walk the site to completely understand the challenges associated with the project. The detailed project information obtained will allow TERRADON to establish a work plan and schedule. The schedule will include design tasks and milestone dates for completion. The milestone dates will include submittals of 35%, 65%, 95% and 100%. These submittals will include a Design Report detailing design assumptions, design calculations, quantity calculations and a construction cost estimate. The TERRADON project team will have weekly internal meeting to discuss the project and schedule and provide written updates to the WVANG.

A

Key Staff Resumes

Appendix A: Key Staff Resumes

WILLIAM S. THORNTON, PE, PS
VP Engineering

TERRADON

Thornton is an experienced project manager and design engineer for civil engineering design projects. Thornton has more than 15 years of experience with consulting engineering in West Virginia, and three years with a construction firm performing major concrete paving projects in West Virginia, Pennsylvania and Ohio. Thornton also provided consultant review for the WVDOT, Division of Highways.

The major design projects with which he has been involved included roadway design, drainage design, site design, mine land reclamation, permitting, property surveys, airport design, Right-of-Way Services, maintenance of traffic and construction administration and oversight. He provides analysis and design on the construction and rehabilitation of a variety of infrastructure utilities (water, wastewater and storm water), including streets, drainage, sidewalks, buildings, and traffic and other safety improvements.

Project Experience

Wolf Creek Trail Design, Fayette County, WV
Project Manager responsible for the design over more than 16 miles of mixed use trails in Wolf Creek Park, located in Fayette County, WV. The trail system is primarily single track mountain bike trail, with difficulty levels from beginning to expert. The design team provided all trail design services, including surveying, and inspection.

Babcock State Park—Sewell Trail, Fayetteville, WV
Project Manager responsible for survey and mapping for 4.5 miles of abandoned roadbed for an existing trail design in Babcock State Park. The project included conceptual design of the entire length. Additionally, the trail has The design team provided slip repair design services and provided the design of a pedestrian bridge along the trail.

New River Recreation Trail, Fayetteville, WV
Project Manager responsible for the design for a new trail through rural and urban areas in Fayetteville, WV. As part of a 'Share the Road' initiative, The design team designed 2 miles of trail along city streets, approximately 3 miles of new 10' wide trail through woods and school property, and the design of two structures; one 40' structure over Town Creek, and one 25' structure over a tributary of Town Creek. Staff surveyed and mapped all of the new trail and stream crossings and provided an archeological study of the trail area.

White Oak Trail Lighting, White Oak, WV
Project Manager responsible for survey and mapping of the existing White Oak Rail Trail from Fayco Avenue to Jones Avenue. Additionally, identified and designed the placement of period lighting with additional electrical outlets, conduits and junction boxes along the 1.1 mile trail.

Schoenbaum Tennis Courts Asphalt and Drainage Rehabilitation, City of Charleston Parks and Recreation, Charleston, WV
Management of design and renovation of an 8 court tennis complex located in the Kanawha City area of Charleston, WV. Subsurface drainage problems were solved by the installation of an open graded drainage layer under the courts. The entire court are was repaved with a construction cost of $500,000.

Education
B.S. Civil Engineering, West Virginia Institute of Technology

Certifications
WDOH Portland Cement Concrete Technician

WVDOT Asphalt Pavement Technician

Registration
Professional Engineer: WV, OH, VA

Professional Surveyor: WV

Total Years Experience
30

KRISTEN MCCLuNG, PE, MBA

Senior Civil Engineer

TERRADON

Kristen McClung serves as a Civil-Site Engineer for TERRADON Corporation and is based in the Lewisburg, WV office. She brings over 26 years of engineering practice to public and private sector clients. From conception through acceptance of projects, McClung offers experience in civil, environmental, land development, streetscapes, survey, permitting, water, wastewater, paving, storm drainage, transportation and erosion-sedimentation control.

Project Experience

USACE Section 219 Environmental Infrastructure Delafield Avenue Stream Inflow Removal Project – Allegheny County, PA
McClung was responsible for the QA/QC of the Conceptual Design Schematic Narrative, which included the hydrological analysis calculations and sizing of the proposed new stormwater collection system.

Smooth Ambler – New Aging Barns, Maxwelton, WV
Responsible for the design of a new entrance road and building pads for three (3) new bourbon aging barns at the Smooth Ambler facility in Maxwelton. Design responsibilities included developing the road profile and cross section to generate fill material for the building pads. The buildings pad are located in the lowest area of the site and needed to be at or above the finished floor elevation of the lowest existing barn, which did not flood during the 2016 flood event. McClung developed a full set of construction drawings, including but not limited to the the Site Layout Plant, the Grading & Drainage Plan, and Erosion & Sediment Control Plan. McClung oversaw the permitting of the project through the WVDEP.

Neathawk Lumber UIC Permit Renewal, Lewisburg, WV
McClung prepared the UIC Permit Renewal package for the existing, improved sinkhole located at the Neathawk Lumber site on Highway 219 North in Lewisburg, WV.

West Virginia School of Osteopathic Medicine New Testing Center, Lewisburg, WV
Responsible for the hydrolgical design associated with the O-school's New Testing Center. The new building is located between the Center for Technology and Rural Medicine and the Clinical Evaluation Center buildings. The construction of the Testing Center Building will join all three buildings to create one large space. McClung sized the proposed underground detention system to accommodate not only the impervious area being created by the new building and parking lots, but also existing impervious areas. Design responsibilities included storm water drainage design and permitting of the project through the WVDEP.

Tanyard Station Sanitary Sewer Design, Village of Barboursville, WV
McClung performed the Sanitary Sewer for this new commercial, out-door shopping mall. She performed the sanitary sewer calculations for the sizing of the trunk line through the development; for the new sewer pump station within the development for that area of the development that was too low for the primary gravity system; and for the new pumps associated with the Village's existing Pump Station #4. As part of the proposed development, the existing force main for Pump Station #4 had to be re-routed into the development's new sanitary sewer trunk line, resulting a new pump curve for the existing station.

Education

M.B.A. University of Georgia

M.S. Civil Engineering, Auburn University

B.C.E. Civil Engineering, Auburn University

Certifications

Georgia Soil & Water Conservation Commission

Level II Certified Design Professional

Professional Engineer: WV, GA, AL

Total Years Experience

+26

STEVE YOUNG, PE
Professional Engineer

TERRADON

Steve Young is an experienced project manager, design and maintenance engineer for civil engineering projects. Young had more than 30 years of experience working with the WVDOT Division of Highways in the Roadway Design Section and in District One serving as the Design and Maintenance Engineers. The major design projects with which he has been involved included roadway design, drainage design, safety improvements, maintenance of traffic, resurfacing and landslide analysis and repair. He provided review and analysis of streetscape projects in Charleston, Clay, Mason and St. Albans and review of the renovation and new construction of the District One Campus as well as site development in the construction of new headquarters in Clay, Mason and Putnam Counties.

Project Experience

Sidewalk Rehabilitation Projects, WVDOH Planning Division, Statewide, WV
Project Engineer for numerous sidewalk rehabilitation projects under a statewide contract agreement with the WVDOH planning division.

County Route 60/15 Appalachian – Grady Street, Chelyan, WV
Design and management of a new drainage system. Subsurface drainage problems were solved by the installation of a new pipe network that connected to an existing drainage system which flowed into the Kanawha River. The project was completed utilizing District Forces for construction.

WV 16 Drainage, Clay County, Clay, WV
Design and management of improvements to existing drainage structures and installation of additional drainage structures in the Town of Clay. Street and business flooding was greatly alleviated with the improved drainage system that allowed storm water to flow from WV 16 to Elk River through Permanent Drainage Easements.

WV 622 Drainage Martins Branch, Kanawha County, WV
Design and management of a drainage structure replacement along Martins Branch. A 12' X 12' concrete box culvert was used to replace a collapsing corrugated metal pipe.

California Street Parking Lot, Kanawha County, Charleston, WV
Design and management of the parking lot was a Special Project for Capitol Complex General Services. General Services had recently purchased land along California Avenue to provide additional parking for the Capital Complex. The parking lot design required that MS4 constraints of storm water management needed to be met. Design of the lot provided 30 additional parking spaces utilizing District Forces for construction.

WV 817 Ludowici Industrial Access, Fraziers Bottom, WV
Design and management of Industrial Access Road Funds to implement a project to provide access to the Ludowici facility within the Putnam County Business Park. The design of the project includes the construction of Left Turn Lane (LTL) along WV 817 between County Route 35/29 and County Route 19.

Education
B.S. Civil Engineering, WV Institute of Technology

A.S. Surveying Technology, Glenville State College

A.S. Forest Technology, Glenville State College

Registrations
Professional Engineer (PE): WV, OH, PA, KY

Total Years Experience
+30

DAKOTA SMITH, PE
Project Engineer

TERRADON

Dakota Smith is a project engineer for TERRADON Corporation. Smith provides engineering design services on various projects ranging from land slips, sidewalk design, & highway design to deck replacements. Smith has performed various tasks from drafting & roadway/site design in MicroStation, OpenRoads, & AutoCAD, to preparing calculations for different structural components & highway quantities to using modeling software to analyze bridge superstructures. Smith also has experience in environmental permitting and bridge inspection coordination.

Project Experience

Shinnston Downtown 8.00, Shinnston, WV
Project Engineer for the design, and preparation of construction contract plans and related documents for the sidewalk construction along the both sides of US 19 (Pike Street) from Walnut Street to Rebecca Street (approx. 550 lf each side). Design tasks will include survey and mapping, minor grading, layout of ADA Ramps, cross walks, driveway openings, drainage design, sequence of construction notes and detailed Maintenance of Traffic plans and notes.

Shinnston Sidewalks 9.00, Shinnston, WV
Project Engineer for the design, and preparation of construction contract plans and related documents for the sidewalk construction along the north side of US 19 from Lincoln High School to the southside of the Wesbanco entrance (approx. 1520 lf). Design tasks will include survey and mapping, minor grading, layout of ADA Ramps, cross walks, driveway openings, drainage design, sequence of construction notes and detailed Maintenance of Traffic plans and notes.

Twin Branch Culverts, McDowell County, WV
Smith served as a staff designer for the Twin Branch Culverts design in Twin Branch, WV. The design included replacing the current culverts with improved, up to date culverts. Smith assisted in the preparation of drawings for the culverts.

WV 2 Design Build, Proctor to Kent, WV
Project engineer for the design of WV 2 Design Build project from Proctor to Kent, WV. Project involved teaming up with A.L.L. Construction as a design-build team to upgrade existing WV-2 (two-lane arterial) to a realigned four lane arterial and design drainage conveyances to divert water from the future WV-2 re-alignment project area directly to the Ohio River. Smith performed the design and calculations for the NPDES permit, along with design and production of maintenance of traffic plans and signing & pavement marking plans, and performed quantity calculations.

US 60 Preliminary Investigation & Engineering (PIE Study) – Chelyan to Montgomery, WV
Project designer for the PIE Study to identify sites to improve the operational performance of US 60 from Chelyan to Montgomery. Design study involved looking at twelve (12) different sites for improvements. Smith managed the design, design reporting, and plan set development for two (2) sites, along with preliminary quantity calculations for various sites.

Education
B.S. Civil Engineering, Virginia Polytechnic Institute & State University, Blacksburg, VA (2016)

Registrations
Registered Professional Engineer (PE): WV, PA

Certifications
Level II Erosion & Sediment Control NCDOT

First Aid / CPR

Total Years Experience
+6

ANDREW WAGNER, PE
Project Engineer

Andrew Wagner is a Project Designer and Engineer in Training at TERRADON Corporation. Wagner is responsible for design on civil and highway projects. Wagner has a background in mine engineering as well as oil and gas drilling and completions operations management and has served as the drill site manager in the Gulf of Mexico while with another firm. Wagner has experience in highway design and drainage design and has provided relevant services on various projects throughout West Virginia.

Project Experience

Sidewalk Rehabilitation Projects, WVDOH Planning Division, Statewide, WV
Project engineer for numerous sidewalk rehabilitation projects under a statewide contract agreement with the WVDOH planning division.

Mingo Logan Coal (Blair Slip), Logan, WV
The project was an emergency slip repair on CR 17. Approximately 1530 feet of roadway was realigned to locate the route on stable bedrock. Wagner served as Lead Designer on the project and consulted on selection of an appropriate and cost-effective long-term solution for stabilization of the length roadway in question. Wagner designed horizontal geometry, vertical geometry and typical section of the realignment, utilized geotechnical drilling reports to design a cut slope for the realigned roadway, performed drainage calculations to design the roadside ditch and drop inlets, and performed modeling and drafting work to produce a plan set for construction.

Twin Branch (Twin Branch Box Culverts), Twin Branch, WV
The project consisted of the study, design, and preparation of construction contract plans for the replacement of two bridges with two box culverts in Twin Branch near Davy, WV. Wagner served as a Project Designer and assisted with drafting and structural detailing of the box culvert designs, developed steel reinforcing schedules for the box culverts, drafted roadway plans, created a maintenance of traffic plan showing road closures, detours, and required signage, and calculated roadway and bridge quantities.

Chelyan to Montgomery, Kanawha County, WV
The Route 60 Design Study, following WVDOH guidance, divided approximately 12 miles of highway into 3 sections, with each section containing multiple study sites. A total of twelve sites were studied. Improvements studied included a roadway realignment, adding turning lanes, and slope stabilization. For each alternate at each site, roadway geometry, right-of-way impacts, environmental impacts, earthwork volumes, construction cost, etc. were assessed in order to recommend a preferred alternate. Wagner served as Design Team Lead for the design study, coordinating and managing work for all study sites. Wagner developed two alternates for realignment at "Site 1A" near Shrewsbury, WV. This included preliminary design of roadway geometry, cut and fill slopes, construction cost estimation, major drainage requirements, and assessment of right of way impact and utility relocation requirements. Wagner was responsible for a preliminary design and cost estimate for a pile and lagging wall to fix a slip at "Site 1AA" near Shrewsbury, WV.

Education
B.S. Mining Engineering, Virginia Polytechnic Institute & State University
Blacksburg, VA, 2013

Registrations
Registered Professional Engineer (PE): WV

Certifications
Corrosion Mitigation for Reinforced Structures

Bentley Accredited MicroStation Professional

Bentley Accredited Road Designer

Total Years Experience
+7

B References

Project References

Reference:
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