Michael Baker
INTERNATIONAL

We Make a Difference

March 23, 2017

03/23/17 11:16:37
WV Purchasing Division

Ms. Jessica Chambers
West Virginia Department of Administration
Purchasing Division
2019 Washington Street, East
Charleston, West Virginia 25305

Subject: **CEOI 0603 ADJ1700000005**
Sullivan Tract Master Plan and Design

Dear Ms. Chambers:

The Charleston office of Michael Baker International, Inc. (Michael Baker) is pleased to respond to the subject Expression of Interest for the WV Army National Guard. We have relevant experience with many of the design elements necessary for this assignment from recent projects including HVAC and Architectural Renovations to the WVARNG Charleston Armory.

Michael Baker is well positioned to assemble a comprehensive design team (in-house) including: Site Planning, Mechanical, Electrical, Structural, Civil and Architectural expertise. Our diverse team of professionals are well versed in the preparation of construction documents, bid specifications, and the application of required construction permits. Michael Baker can also provide assistance during the Bidding process and the appropriate level of Construction Administration.

We thank you for your consideration and look forward to meeting with the selection committee in person in order to share our thoughts and ideas for this exciting opportunity!

Should you have any questions or require additional information, please feel free to contact me at (304) 769-2164 or by e-mail at Nicole.Riley@mbakerintl.com

Very truly yours,

Michael Baker International, Inc.

Nicole Riley

Enclosure

TABLE OF CONTENTS

MANDATORY PROPOSAL SUBMISSION FORMS

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: 291723

Doc Description: Sullivan Tract Master Plan Design Services Project

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-01-18	2017-02-14 13:30:00	CEOI 0603 ADJ1700000005	1

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

Michael Baker International, Inc.
400 Washington Street East, Suite 301
Charleston, West Virginia 25301
304.769.0821

FOR INFORMATION CONTACT THE BUYER

Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

Signature X Russell E. Hall FEIN # **25-1228638** DATE **March 23, 2017**

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

FORM ID : WV-PRC-CEOI-001

ADDITIONAL INFORMATION

Expression of Interest

The West Virginia Purchasing Division is soliciting Expression of Interest for the Agency, The West Virginia Army National Guard Construction and Facilities Management Office from qualified firms to provide architectural/engineering and other professional services for the development of a master Plan for the Sullivan Tract property near Beaver, WV. as defined herein.

* Online submissions are prohibited for Expression of Interest solicitation responses.*

INVOICE TO	SHIP TO
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV25311 US	DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Sullivan Tract EOI Design Services		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

Professional engineering design services to develop construction documents to provide a master plan for the Sullivan Tract, located near Beaver, WV, per the attached documentation.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

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: 291723

Doc Description: Addendum No.1 Sullivan Tract Master Plan Design Svcs Project

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-02-13	2017-02-23 13:30:00	CEOI 0603 ADJ1700000005	2

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

Michael Baker International, Inc.
400 Washington Street East, Suite 301
Charleston, West Virginia 25301
04.769.0821

FOR INFORMATION CONTACT THE BUYER

Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

Signature X FEIN # **25-1228638** DATE **March 23, 2017**

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

ADDITIONAL INFORMATION

Addendum

Addendum No.01 issued to publish and distribute the attached information to the vendor community.

****

Expression of Interest

The West Virginia Purchasing Division is soliciting Expression of Interest for the Agency, The West Virginia Army National Guard Construction and Facilities Management Office from qualified firms to provide architectural/engineering and other professional services for the development of a Master Plan for the Sullivan Tract property near Beaver, WV. as defined herein.

* Online submissions are prohibited for Expression of Interest solicitation responses.*

INVOICE TO	SHIP TO
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV25311 US	DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Sullivan Tract EOI Design Services		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

ofessional engineering design services to develop construction documents to provide a master plan for the Sullivan Tract, located near Beaver, V, per the attached documentation.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CEOI ADJ1700000005
Addendum Number: No.01

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

This addendum is issued to modify the solicitation per the attached documentation and the following:

1. Bid opening date was February 14, 2017 at 1:30 PM EST.
   Bid opening is now February 23, 2017 at 1:30 PM EST.

No other changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

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: 291723

Doc Description: Addendum No.2 Sullivan Tract Master Plan Design Svcs Project

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-02-21	2017-03-09 13:30:00	CEOI 0603 ADJ1700000005	3

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

Michael Baker International, Inc.
400 Washington Street East, Suite 301
Charleston, West Virginia 25301
04.769.0821

FOR INFORMATION CONTACT THE BUYER

Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

gnature X FEIN # **25-1228638** DATE **March 23, 2017**

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

FORM ID : WV-PRC-CEOI-001

ADDITIONAL INFORMATION:

Addendum

Addendum No.02 issued to publish and distribute the attached information to the vendor community.

****

Expression of Interest

The West Virginia Purchasing Division is soliciting Expression of Interest for the Agency, The West Virginia Army National Guard Construction and Facilities Management Office from qualified firms to provide architectural/engineering and other professional services for the development of a Master Plan for the Sullivan Tract property near Beaver, WV. as defined herein.

* Online submissions are prohibited for Expression of Interest solicitation responses.*

[illegible] TO	SHIP TO
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV25311 US	DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Sullivan Tract EOI Design Services		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

)fessional engineering design services to develop construction documents to provide a master plan for the Sullivan Tract, located near Beaver, √, per the attached documentation.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CEOI ADJ1700000005
Addendum Number: No.02

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[✓] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

This addendum is issued to modify the solicitation per the attached documentation and the following:

1. Bid opening date was February 23, 2017 at 1:30 PM EST.
   Bid opening is now March 9, 2017 at 1:30 PM EST.

No other changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

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: 291723

Doc Description: Addendum No.3 Sullivan Tract Master Plan Design Svcs Project

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-03-07	2017-03-23 13:30:00	CEOI 0603 ADJ1700000005	4

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

Michael Baker International, Inc.
400 Washington Street East, Suite 301
Charleston, West Virginia 25301
04.769.0821

FOR INFORMATION CONTACT THE BUYER

Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

Signature X Russell E. Hall FEIN # **25-1228638** DATE **March 23, 2017**

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

ADDITIONAL INFORMATION

Addendum

Addendum No.03 issued to publish and distribute the attached information to the vendor community.

****

Expression of Interest

The West Virginia Purchasing Division is soliciting Expression of Interest for the Agency, The West Virginia Army National Guard Construction and Facilities Management Office from qualified firms to provide architectural/engineering and other professional services for the development of a Master Plan for the Sullivan Tract property near Beaver, WV. as defined herein.

* Online submissions are prohibited for Expression of Interest solicitation responses.*

[illegible]	SHIP TO
DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV25311 US	DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Sullivan Tract EOI Design Services		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

ofessional engineering design services to develop construction documents to provide a master plan for the Sullivan Tract, located near Beaver, ✓V, per the attached documentation.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CRFQ 0313 ADJ1700000005
Addendum Number: No.03

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[ ] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[✓] Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. Bid opening date was: March 9, 2017 at 1:30 PM EST.
   Bid Opening is now: March 23, 2017 at 1:30 PM EST.

No other Changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

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

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

Proc Folder: 291723

Doc Description: Addendum No.4 Sullivan Tract Master Plan Design Svcs Project

Proc Type: Central Purchase Order

Date Issued	Solicitation Closes	Solicitation No	Version
2017-03-16	2017-03-23 13:30:00	CEOI 0603 ADJ1700000005	5

BID RECEIVING LOCATION

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

VENDOR

Vendor Name, Address and Telephone Number:

Michael Baker International, Inc.
400 Washington Street East, Suite 301
Charleston, West Virginia 25301
04.769.0821

FOR INFORMATION CONTACT THE BUYER

Jessica S Chambers
(304) 558-0246
jessica.s.chambers@wv.gov

Signature X [signature] FEIN # **25-1228638** DATE **March 23, 2017**

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

Addendum

Addendum No.04 issued to publish and distribute the attached information to the vendor community.

****

Expression of Interest

The West Virginia Purchasing Division is soliciting Expression of Interest for the Agency, The West Virginia Army National Guard Construction and Facilities Management Office from qualified firms to provide architectural/engineering and other professional services for the development of a Master Plan for the Sullivan Tract property near Beaver, WV. as defined herein.

* Online submissions are prohibited for Expression of Interest solicitation responses.*

DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV25311 US	DIVISION ENGINEERING & FACILITIES ADJUTANT GENERALS OFFICE 1707 COONSKIN DR CHARLESTON WV 25311 US

Line	Comm Ln Desc	Qty	Unit Issue
1	Sullivan Tract EOi Design Services		

Comm Code	Manufacturer	Specification	Model #
81101508			

Extended Description :

/fessional engineering design services to develop construction documents to provide a master plan for the Sullivan Tract, located near Beaver, √, per the attached documentation.

ADDITIONAL TERMS AND CONDITIONS

See attached document(s) for additional Terms and Conditions

SOLICITATION NUMBER: CRFQ 0313 ADJ1700000005
Addendum Number: No.04

The purpose of this addendum is to modify the solicitation identified as ("Solicitation") to reflect the change(s) identified and described below.

Applicable Addendum Category:

[ ] Modify bid opening date and time

[ ] Modify specifications of product or service being sought

[✓] Attachment of vendor questions and responses

[ ] Attachment of pre-bid sign-in sheet

[ ] Correction of error

[ ] Other

Description of Modification to Solicitation:

Addendum issued to publish and distribute the attached documentation to the vendor community.

1. To address all technical questions received.

No other Changes.

Additional Documentation: Documentation related to this Addendum (if any) has been included herewith as Attachment A and is specifically incorporated herein by reference.

Terms and Conditions:

1. All provisions of the Solicitation and other addenda not modified herein shall remain in full force and effect.

2. Vendor should acknowledge receipt of all addenda issued for this Solicitation by completing an Addendum Acknowledgment, a copy of which is included herewith. Failure to acknowledge addenda may result in bid disqualification. The addendum acknowledgement should be submitted with the bid to expedite document processing.

ATTACHMENT A

Vendor Questions for CEOI 0603 ADJ1700000005
Sullivan Tract Master Plan- Design Services

1. Is there a site plan available for this project at this time?

Answer) No. There is no site plan available for the project at this time.

2. Is this project to prepare just the master plan? Or are full construction documents anticipated in this scope?

Answer) Expression of Interest document pages 13 and 14, Projects and Goals 4.2, 4.3, 4.4, 4.5 Indicate the preparation of construction documents for the project.

3. Is there a budget/fee for this project?

Answer) We do not provide budget information on solicitations currently out for bid.

4. Do you anticipate needing a Phase 1 Environmental Site Assessment as part of this project?

Answer) The necessity and associated cost for a Phase 1 Environmental Site Assessment along with associated costs of other project associated permitting/inspections/etc. will be the responsibility of the Architect/Engineer

ADDENDUM ACKNOWLEDGEMENT FORM
SOLICITATION NO.: CEOI 0603 ADJ1700000005

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)

[X]	Addendum No. 1	[ ]	Addendum No. 6
[X]	Addendum No. 2	[ ]	Addendum No. 7
[X]	Addendum No. 3	[ ]	Addendum No. 8
[X]	Addendum No. 4	[ ]	Addendum No. 9
[ ]	Addendum No. 5	[ ]	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.

Michael Baker International, Inc.
Company

Authorized Signature

23March2017
Date

NOTE: This addendum acknowledgement should be submitted with the bid to expedite document processing.
Revised 6/8/2012

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

(Name, Title)

Nicole D. Riley, Project Manager

(Printed Name and Title)

400 Washington Street East, Suite 301, Charleston, WV 25301

(Address)

304.769.0821 / 304.769.0822

(Phone Number) / (Fax Number)

Nicole.Riley@mbakerintl.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.

Michael Baker International, Inc.

(Company)

(Authorized Signature) (Representative Name, Title)

Russell E. Hall, Vice President

(Printed Name and Title of Authorized Representative)

3/22/17

(Date)

304.769.0821 / 304.769.0822

(Phone Number) (Fax Number)

RFQ No. ADJ1700000005

STATE OF WEST VIRGINIA
Purchasing Division

PURCHASING AFFIDAVIT

MANDATE: 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 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: Michael Baker International, Inc.

Authorized Signature: Russell E. Hall Date: 3/22/17

State of West Virginia

County of Kanawha, to-wit:

Taken, subscribed, and sworn to before me this 23rd day of March, 2017.

My Commission expires April 14, 2023.

AFFIX SEAL HERE

NOTARY PUBLIC Stephanie A. Hensley

OFFICIAL SEAL
NOTARY PUBLIC
STATE OF WEST VIRGINIA
STEPHANIE A HENSLEY
MICHAEL BAKER JR. INC.
5088 WEST WASHINGTON ST.
CHARLESTON, WV 25313
My commission expires April 14, 2023

PROJECT LOCATION

The West Virginia Army National Guard, Joint Forces Headquarters, Construction and Facilities Management Office is located at 1707 Coonskin Drive, Charleston, West Virginia.

The approximately 200 acre property for the proposed planning and development is located near Beaver, West Virginia.

PROJECT BACKGROUND

West Virginia Department of Administration, is seeking a highly qualified architectural/engineering firm to provide comprehensive design services and bid documents for a project with the The West Virginia Army National Guard, Joint Forces Headquarters, Construction and Facilities Management Office (WVArNG). The firm will be responsible for Site Master Planning, Agency Coordination, Concept Proposals, Design Development and Construction Documents, as well as Construction Administration for the site preparation as specified in the Expression of Interest (EOI).

It is the WVArNG's desire to reserve an approximate 10 acre portion of site for a future 25,000 sf to 100,000 sf Repair Facility.

QUALIFICATIONS & EXPERIENCE

FIRM/TEAM QUALIFICATIONS

Michael Baker International, Inc. (Michael Baker) is a highly qualified firm with extensive experience in providing the type of services required for this project. Baker seeks to provide the necessary Planning, Architectural, Engineering and other professional services to design and provide construction administration for the site preparation, infrastructure and access road design and an approximately 25,000 to 100,000 square foot repair center on a dedicated 10-acre lot.

From the humble beginnings in roadway development to the design of the New River Gorge Bridge and beyond, Michael Baker International wishes to continue its relationship with the State of West Virginia.

Michael Baker's proposed team of experienced professionals has demonstrated the ability to deliver quality work products to our clients, on-time and within budget. Michael Baker can provide the entire depth of services necessary to complete the project without the need for costly sub-consultants. Each individual on this project team has extensive experience in their field of expertise and have demonstrated success on projects of similar size and scope.

The Principal-In-Charge will ensure that all required resources including staff and equipment are available to the project manager to execute the project successfully. Team resumes and project profiles provide a brief discussion of team member's experience base relevant to this project.

Management and Staffing

Russell Hall, Vice President | 400 Washington Street East, Suite 301, Charleston WV 25301 | 304-769-0821 | RHall@mbakerintl.com

Persons Assigned to the Project ***(Resumes Provided In Appendix 1)***

NAME	ROLE
PATRICK FOGARTY, P.E., P.S., LEED GA	Civil Engineer / Group Manager
STEVEN SAVICH, P.E.	Civil engineer / Planner / Land Development
NICOLE RILEY	Associate Architect / Project Manager
ROBERT HOLBERT, P.E.	Civil / Roadway Engineer
LAURA COX, L.A., LEED GA	Landscape Architect / Planner
JOE CHAFFIN, A.I.A., NCARB	Architect
DAVID HILLIARD, P.E., LEED AP BD+C	Mechanical Engineer
OWEN MILLIGAN, P.E.	Electrical Engineer
WAYNE AIRGOOD, P.E.	Structural Engineer
JOHN LASKO, P.G.	Geotechnical Engineer
STEVE FRAZER, P.S.	Surveyor

According to our understanding of the project scope as stated in the EOI, no additional sub-consultants will be required with the exception of drilling and soil testing as required. Michael Baker will execute the entire project including planning, design and construction oversite with our local staff.

FIRM CAPACITY

Michael Baker is a full service Architectural /Engineering firm. Our local office in Charleston WV is a "single-stop resource" capable of providing comprehensive professional services, from Architecture and Planning to Mechanical/Electrical and Structural Engineering to construction management through operational support. Michael Baker will provide the hands on services needed for this project, from Client meetings to site surveys, design and construction administration/Inspection.

With over 30 in house professionals locally and 6,000 nationally, Michael Baker prides itself on a legacy of returning clientele. Some of these local clients, whose projects encompass facilities development and renovation include, but are not limited to; the West Virginia Department of Transportation, General Services Division, West Virginia Air and Army National Guard, West Virginia University, West Virginia State University, the cities of Nitro, Dunbar, Winfield,, and many others. Numerous private sector clients fill out a broad resume of satisfied clientele. Michael Baker's central geographic location in the State Capitol and depth of experience nationally will enable us to respond quickly to wide-ranging scopes of service in order to meet needs of the WVArNG.

Nationally, Michael Baker, is a leading global provider of engineering and consulting services which includes planning, architectural, environmental, construction, program management, and full life cycle support services as well as information technology and communications services and solutions. Michael Baker provides its comprehensive range of services and solutions in support of U.S. federal, state, and municipal governments, foreign allied governments, and a wide range of commercial clients. With more than $1.3 billion in annual revenue, Michael Baker has more than 6,000 employees in over 90 offices located across the U.S. and internationally. Michael Baker seamlessly integrates architecture, planning, landscape architecture, engineering and management. Internationally recognized with a portfolio spanning over half a century, the team provides excellence in solutions: superior technical ability, creative design and collaborative integration.

The success of our multidisciplinary approach to ***built*** environments results from the expertise of our design professionals. We solve challenges from multiple vantage points providing unsurpassed holistic, sustainable and innovative solutions that benefit our diverse clients, including institutions, governmental agencies, corporations, developers and builders.

Michael Baker has extensive resources and the required qualifications to provide planning, architectural, and engineering services for the WVArNG on this important project. We have local and nationally recognized experts with the technical experience necessary for this assignment. In addition, Michael Baker's team of experienced professionals have an established record of delivering quality work products to our clients, on schedule and within budget.

In summary, Michael Baker's staff can provide documentation of our extensive experience in the following areas for this project:

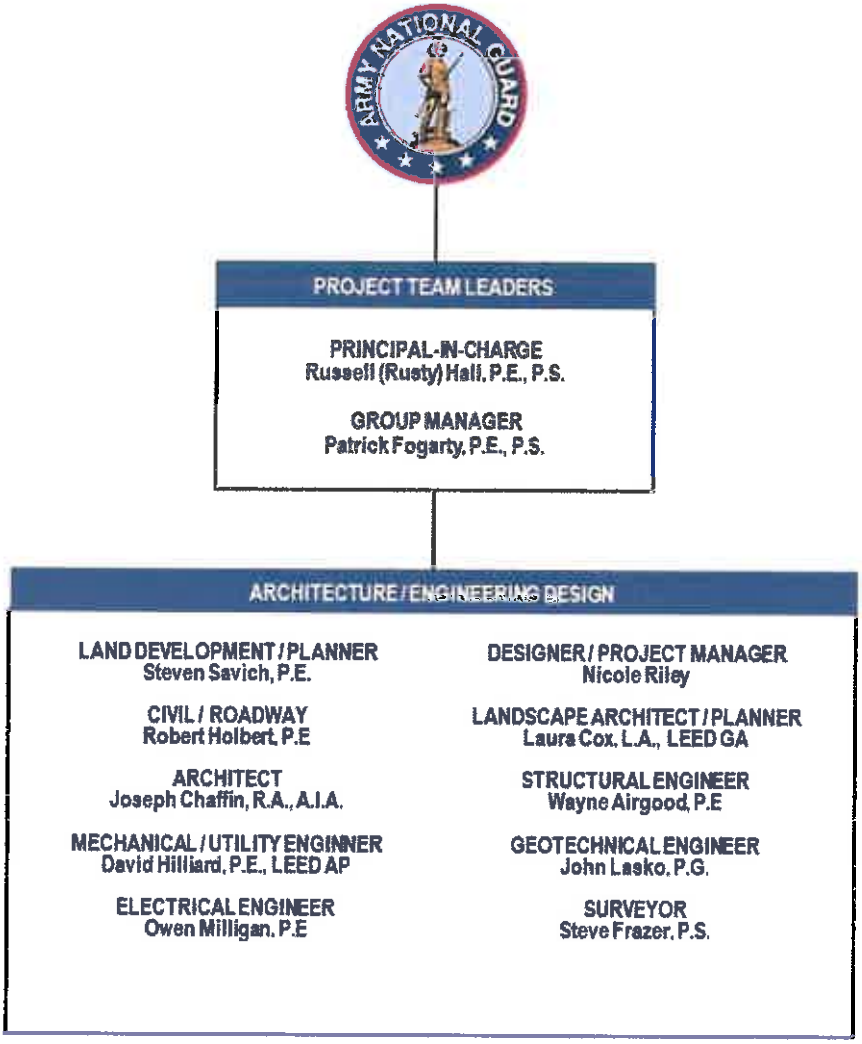
- Nationally recognized expertise in Assessing, Programing and Planning
- Innovative Architectural concepts and designs
- Facilities Engineering (Civil, Mechanical, Fire Protection, Plumbing and Electrical)
- Construction Administration and Construction Monitoring
- Coordination with State and Federal Agencies, as required

From small projects to major new or renovated building facilities, infrastructure and aviation, to oil and gas pipeline design, bridges and roadway designs, and water resource projects, Michael Baker has evolved into one of the leading engineering and energy services firms by consistently providing targeted solutions for its clients most complex challenges.

STATEMENT OF FIRM'S ACCEPTANCE AND FULL UNDERSTANDING THAT ANY AND ALL WORK PRODUCED AS A RESULT OF THE CONTRACT WILL BECOME PROPERTY OF THE AGENCY AND CAN BE USED OR SHARED BY THE AGENCY AS DEEMED APPROPRIATE

Michael Baker will provide to the WVARNG or other appropriate agencies, electronic copies of all required submittals through the various design stages and will provide final AutoCAD drawings at the completion of the project if requested.

PROJECT ORGANIZATION



STATEMENT OR EVIDENCE OF THE FIRM OR TEAM'S ABILITY TO PROVIDE SERVICES

This team was selected based on the current Project understanding. Additional team support members will be engaged on an as needed basis. See Resumes for more details on team members in **Appendix 1**.

DEMONSTRATED EXPERIENCE IN COMPLETING PROJECTS OF A SIMILAR SIZE AND SCOPE

Project Profiles are included in **Appendix 2**. They were selected as a representative group of various kinds of related projects. These include local projects in the State of West Virginia, and other relevant projects around the country.

Seven (7) References are provided in **Appendix 3.**

PROJECT AND GOALS

METHODOLOGY FOR MEETING GOALS AND OBJECTIVES - GENERAL

GOAL/OBJECTIVE - GENERAL:

It is Michael Baker's understanding is that the West Virginia Army National Guard, Construction and Facilities Management Office (WVARNG) would like to develop a functional, yet state of the art Master Plan intended for a business/ industrial park which will include multiple options for entrance, including existing state/county/local roads. The Plan will include both utility and road infrastructure for the property, as well as proposed building placement. The approach of the entire project would be holistic in nature, taking into account the end user's needs to inform the planning process. Frequent and effective communication with the stake holders is critical to the successful of this project.

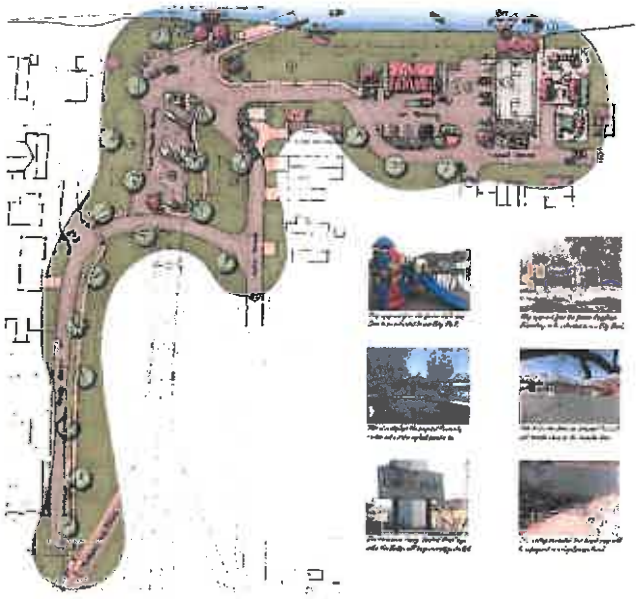
Michael Baker will employ a comprehensive team of professionals to develop the master plan. The team will consist of Planners, Architects, Landscape Architects and Engineers to ensure that the initial planning is informed by the needs of all aspects of the overall development. Additionally, the multi-discipline approach provides an initial proof of concept that allows the concept plan to be grounded in the reality of execution.

Some of the first steps of the project would be to prioritize tasks, develop submission schedules and budget requirements for the project. Any existing / available information would be gathered and reviewed prior to a visit to the property and any proposed building site. Once all the existing data was gathered and reviewed, a site visit to review the documents against the current field conditions would be conducted. In the event that insufficient existing data exists a topographical survey of existing site conditions would be developed, as well as subsurface investigation to analyze the existing geology for design development. Once a complete picture of the existing site conditions is obtained the Michael Baker Team would engage all the stakeholders to participate in a design charrette meeting to review the overall development program, requirements and goals. These will be converted into concept plans that will be reviewed and refined through a multi-day process to arrive at a final concept plan. This plan will form the basis of the development plan going forward. The project will be studied in a systematic way to analyze the existing conditions, client needs and budget considerations.

Based on the outcome of the previous steps, the Michael Baker staff will use the approved concept plan to develop preliminary cost opinions for review by the WVArNG.

After the Master Plan is established, the design team will then begin working on developing the roadway and WVArNG building concepts with the ultimate goal being Construction Documents for each. Michael Baker will again engage with WVArNG in the selection of materials and building program elements to provide the most cost effective system to achieve the project requirements.

Michael Baker will provide cost estimating services. When the different options pertaining to the project are identified from a technical standpoint, the cost estimating team would be engaged to provide the financial feasibility of each option.



A survey team will be responsible for identifying existing site conditions, topography and locating utilities and other components in the project area. This team will consist of Baker employees which are Licensed Professional Surveyors and Registered Professional Engineers. Drawings and documentation will be provided based on the site survey. This documentation will include the location of affected existing on-site utilities or service lines. Design documents will also include information regarding the limitations and requirements for any needed project demolition.

Michael Baker Architects and Engineers will be involved in all aspects of the master plan and project design. This is to ensure that the back end needs inform the front end planning. Depending on the final project scope, tasks may include: Site Planning, Civil Roadways and drainage, Architectural, Interior Design, Structural, Mechanical, Electrical, Plumbing, and Fire Protection engineering. The Architect / Engineer designer of record will be provide final sealed drawings and specifications for each portion of the project.

GOAL/OBJECTIVE 4.1:

Michael Baker will employ a planning philosophy to work with the **site constraints and the "lay of the land" to develop a** complementary design concept that respects the surroundings of the site and provides the appropriate visibility to the adjacent approaches. Critical concepts to be considered will be site access and usable acreage for future development, **low impact design techniques and suitability for the desired tenant mix. The Owner's desire for any specific type of** users or facilities will dictate the size of lot subdivisions, common amenities to be provided on the site, degree of infrastructure development and overall configuration of the park. The ultimate goal is to produce a plan that can be implemented in an efficient and cost effective manner while providing the highest value to the owner and surrounding community.

Master Plan concepts will be developed during a multi-day charrette process and reviewed and considered with all stakeholders present to arrive at an approved concept plan for further development. Once the plan is approved, it will be developed into plans for the first stage of development with the direction and approval of the Client. Prior to the charrette, a general code review would be undertaken to determine national, state and local codes that would affect development as well as any existing conditions that would either restrict or require mitigation in the development of the **overall plan. The concept will be tested against the Client's Project Requirements and would receive a preliminary cost** estimate to ensure that the concept works within the framework of the WVArNG. Once these plans and costs have been verified the plan can move forward into design development. Michael Baker will utilize the key staff listed as part of the charrette process to ensure that the team developing the concept plans represents a high level of expertise and experience. This approach provides a more informed and comprehensive concept and ultimately a more complete plan.

GOAL/OBJECTIVE 4.2:

Upon selection and approval of a Master Plan and entrance concept from the Client, plans and specifications for the entrance roadway will be developed into Bid Documents for permitting and construction.

GOAL/OBJECTIVE 4.3:

At this phase, construction plans and specifications will be developed in conjunction with the master plan, state agencies and utility companies for any planned roadways or utility infrastructure. These plans can be provided as independent or a combined Bid Documents for permitting and construction. In addition, plans and specifications will be developed for the construction of a 25,000 to 100,000 square foot building and site development for the WVArNG.

GOAL/OBJECTIVE 4.4:

Complete A/E services will be provided including: design, cost estimating, bid package assembly, bid assistance, analyzing and the evaluation of bids or proposals.

The site civil design will consist of an initial design development phase, an intermediate permit documents phase and the final construction documents phase. It is assumed that the master planning of the site will provide a schematic plan for the WVArNG site as well as the entrance road to the new facility. Baker will advance the Schematic Design Documents to Design Development (DD) level. The plans will include the following sheets:

Site Plan: This plan will detail the site improvements both graphically and with notes and labels. The information will detail paving types and limits, sidewalk locations, building locations, retaining wall and site stair locations as well as specific site appurtenances required (i.e. mailboxes).

Grading and Drainage Plan: The DD Grading Plan will illustrate the final grade elevations via two foot contours throughout the site. One line storm sewer will be shown with inlet locations and types detailed. Spot elevation information and specific size, depth and slope information for the storm sewer will not be included.

Erosion and Sediment Control Plan and Report: The Erosion and Sediment Control Plan that was developed during the Site Preparation Package will be included in this plan set.

Utility Plan: This plan will provide the single line layout of all utilities for the development. The plan will illustrate service runs for lots, mainlines, manholes, valves, fire hydrants, anticipated pull box and transformer locations. The plan will not include specific pipe lengths, depths or dimensions unless already verified with the utility service provider.

Site Details: Details for site features will be presented to ensure that the site design meets the requirements of the Releigh County Commission and other State and Federal reviewing Agencies.

Specifications: DD level technical specifications for all of the site improvements will be provided.

Once the DD level plans have been approved, the plans will be further developed to provide a permit level set of documents. These plans will be used to submit for the NPDES permit as well as any local permitting for the land development. This will include a complete Post Construction Storm Water Management Plan and the comprehensive Storm Water Pollution Prevention Plan.

Baker will advance the Design Development Plans to a level of detail for construction. The plans will include the following sheets:

Horizontal Control Plan: Baker will prepare a Horizontal Control Plan depicting the layout of the proposed drive aisles, parking areas, planting islands, etc. This plan will show the geometric configuration of the paving, curbs, islands, and other structures (i.e., coordinates, radii, etc.) within the construction area so the proposed improvements may be field located for construction.

Grading and Drainage Plan: Baker will prepare a Final Grading Plan at an appropriate scale with one foot contour intervals ("spot" elevations will be used where extra detail is needed). The site will be graded to transition into existing grades at the perimeter of the site. The proposed grading will be designed to not detrimentally impact the surrounding landscape. The Grading Plan will provide positive drainage away from proposed buildings where possible. Slopes and pavement grades will be clearly labeled on the plan to provide detailing of the proposed improvements.

Baker will also design the layout, depth and lengths of the proposed storm drainage system. Baker will incorporate the fully detailed storm drainage system into the grading plan to demonstrate the collection of runoff at low points and the effective conveyance of that runoff to the locations where the storm water will exit the site.

Erosion and Sediment Control Plan and Report: The Erosion and Sediment Control Plan that was developed during the Site Permit Package will be included in this plan set. Any updates to the plan based upon design changes during the site design process will be incorporated into the existing plans at this time.

Utility Plan: Baker will present the layout for construction of sanitary sewer lines, water lines, electric, communications and gas service from public facilities inside of the ROW and/or utility easement areas to within 5 feet of the area where unit construction is anticipated on each lot. This plan will present horizontal and vertical design for the sewer laterals, including necessary details, and horizontal layout for the water, electric, telephone, and gas service lines.

Site Details: Details for site features will be presented to ensure that the site design meets the requirements of the reviewing Agencies.

Specifications: Baker will prepare final Technical Specifications for the work depicted on the design drawings under this contract.

Building Design Package: Once the exact size of the Repair Facility is determined, Michael Baker will prepare the A/E design and construction documents for the building facility in similar fashion to the Industrial Park Site Preparation Package. We will coordinate with the WVArNG and provide all necessary design documents in accordance with UFC directives and all applicable codes for all aspects of the building design. Specifications for the installation of all required products or components will be provided as part of the Design submittals.

GOAL/OBJECTIVE 4.5:

Michael Baker will provide Construction Administration throughout the entire process of Bidding, Construction and Commissioning. The same team members that began the project will follow through to the end. All products intended to be installed on the project shall be submitted to and approved by the A/E of record. Shop drawings provided by the awarded contractor will be reviewed by the A/E of record to ensure they meet all code requirements, specification criteria and are appropriate for the project. The products will be approved based on meeting the prepared specifications, current code requirements and contract requirements.

After the system installations are complete, Baker will perform a final inspection and develop a corrective measure punch list. Michael Baker will also provide the WVArNG ongoing support through the manufacturer's warranty period

after the construction is completed. It is Michael Baker's desire to provide a successful design, but also a practical, functional and efficient Industrial Park suited to the needs of its patrons.

GOAL/OBJECTIVE 4.6:

Complete on site Construction Administration services can be provided to the client for each phase of the process if desired.

Michael Baker can provide all necessary planning, design and bidding documents for construction in accordance with West Virginia Purchasing Division for all aspects of the project. Specifications for the installation of all required products or components will be provided as part of the bid packages.

APPENDIX 1 – Resumes

Michael Baker
INTERNATIONAL

We Make a Difference

Russell E. Hall, P.E., P.S.

Assistant Vice President and Charleston Office Manager

Years with Michael Baker: 11
Years with Other Firms: 18

Degrees

B.S., 1985, Civil Engineering, West Virginia University Institute of Technology

Licenses/Certifications

Professional Engineer - Civil/Structural, West Virginia, 1990

Professional Surveyor, West Virginia, 1996

General Qualifications

Mr. Hall currently serves an Assistant Vice President of Michael Baker International as well as Office Manager of our Charleston, WV office. He is an experienced transportation engineer who has been involved in numerous bridge and highway design projects in West Virginia for over 28 years. His project management responsibilities involve overseeing staff from project inception through completion, and ensuring that the clients' needs and requirements are met.
He also has over nine years of office management experience. His office management responsibilities include financial oversight and accountability for a staff of over 30 engineers, scientists, and administrative personnel for Michael Baker's Charleston office. His major strengths include organizing and managing a project team, quality control and quality assurance, and problem resolution. He provides overall direction and maintains direct communications with all clients. Mr. Hall is very proud of the fact that he has been able to spend his entire career in West Virginia working to address West Virginia's transportation and infrastructure needs.

Experience

US 35/I-64 Interchange Post Design, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Principal-In-Charge. The design phase of this project provided for the preparation of construction and right of way plans for approximately three miles of 4-lane divided highway. The construction plans were separated into three construction contracts and included the design of two interchanges, two bridges, numerous box culverts and a vehicular underpass. The post design phase of this project provided for the review and approval of shop drawings and responding to Requests for Information. Michael Baker designed the original post-tensioned concrete box bridge. Contractor value engineered the superstructure to a steel girder bridge. Foundation for piers and abutments were as designed. Michael Baker reviewed pile testing, mass concrete results, and MSE wall calculations provided by the contractor.

Fort Pleasant Access Road Project, Moorefield, West Virginia. *Fort Pleasant Farms, Inc.* Principal-In-Charge. Responsible for oversight of project finances, schedules and quality control. Michael Baker prepared contract construction plans and related documents for a 3-lane access road connecting Corridor H to private property in Moorefield, WV.

WVDOH Six-Year Bridge Inspection Program, Various Locations, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Principal-In-Charge. Responsible for oversight of project finances, schedules and quality control. Michael Baker was responsible for performing the inspection services and report writing for the New River Gorge Bridge, Veteran's Memorial Bridge, Fort Hill Bridge, Fort Henry Bridge and Wheeling Tunnels.

Fort Pleasant Farms Two Lane Road Design, Moorefield. *Fort Pleasant Farms, Inc.* Principal-In-Charge. Responsible for oversight of project finances, schedules and quality control. This project involved the study, design and final construction plan development for a new two-lane access road approximately 1500' in length. This access road was designed to connect a commercial/residential development to the Moorefield Interchange on Corridor H in Moorefield, West Virginia.

Town of Moorefield-Maple Avenue Streetscape, Moorefield. *Town of Moorefield.* Principal-In-Charge. Responsible for oversight of Project Management. The Town of Moorefield was in need of a pedestrian-friendly way of connecting the downtown area with the highly utilized nearby community park. Maple Avenue was a secondary street connecting the two areas, but had no sidewalks and deep ditches along most of the corridor. Moorefield tasked Michael Baker with the planning and design of improvements that would both upgrade existing facilities and create a unified community linking the downtown with the community park.

Blennerhassett Island Bridge, Appalachian Corridor D, Washington County, Ohio and Wood County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Principal-In-Charge. Responsible for oversight of project finances, schedules and quality control. The 878' – 6" long network tied arch was ranked as the longest of its type in the United States and one of the longest in the entire world. Michael Baker provided project management, environmental and location studies, permitting, preliminary and final design as well as construction phase services.

City of Charleston Bridges-Engineering Consulting Services, Charleston, West Virginia. *City of Charleston, West Virginia.* Principal-In-Charge. Responsible for oversight of Project Management. Michael Baker's Charleston, West Virginia office provided various services for the City of Charleston. Michael Baker reviewed existing inspection reports, performed bridge inspections and recommended and prioritized repairs for 13 bridges owned by the city.

Kanawha-Putnam Bike/Pedestrian Plan, Phase I, South Charleston. Regional Intergovernmental Council. Principal-In-Charge. Responsible for oversight of Project Management. Michael Baker performed a cursory inventory of existing bicycle and pedestrian facilities, identified areas with a high level of bicycle and pedestrian activity, collected existing resources and performed a broad base public outreach effort to identify bicycle and pedestrian issues in Kanawha and Putnam Counties for the Regional Intergovernmental Council (RIC). All data, survey results and preliminary findings were compiled for analysis and incorporation into the final plan during Phase II of the study.

Michael Baker
INTERNATIONAL

We Make a Difference

Patrick W. Fogarty, P.E., P.S.

Civil Engineer

Years with Michael Baker: 12
Years with Other Firms: 19

Degrees

B.S., 1985, Civil Engineering, West Virginia University Institute of Technology

Licenses/Certifications

Professional Engineer - Civil/Structural, West Virginia, 1990, [redacted]

Professional Surveyor, West Virginia, 1993, [redacted]

Professional Surveyor, Kentucky, 2001, [redacted]

Professional Engineer, Kentucky, 2000, [redacted]

Professional Engineer, Ohio, 1996, [redacted]

Professional Surveyor, Ohio, 1996, [redacted]

Professional Engineer, North Carolina, 2008, [redacted]

Professional Engineer, Pennsylvania, 2003, [redacted]

LEED Green Associate, West Virginia, 2012, [redacted]

General Qualifications

Mr. Fogarty is an asset to the Michael Baker team with project design and management experience. He is responsible for technical and management aspects of civil design and surveying projects within the office. Mr. Fogarty has designed and managed projects in numerous disciplines including civil, structural and transportation engineering, site development, ecosystem restoration, planning and surveying. These projects have included retail/commercial site preparation, airports, streets/highways, bridges, parking lots, buildings, sanitary systems and structures, stream restoration as well as boundary and topographic and photogrammetric surveys. Duties included field surveying, drawings and specification preparation, design, design drafting, construction inspection, quality control testing, shop drawing review, project management, contract administration and report preparation. Management duties include financial planning, management and staff utilization, human resource planning, marketing, and strategic planning.

Experience

Planning Services, Winfield, West Virginia. *Town of Winfield.* Project Manager. Responsible for the financial management of the project and the coordination of all activities. Under an on-call planning agreement, Michael Baker is providing a wide range of planning, architectural, and engineering services. Acting as city planner, Michael Baker attends city council meetings and planning and zoning committee meetings on an as-needed basis, and receives planning assignments at those meetings. Assignments include review of planned development, zoning appeals, and proposed changes to the zoning ordinance.

Parsons City-Wide Comprehensive Parks and Recreation Master Plan, Parsons, West Virginia. *Parsons Park Board, Inc.* Project Manager. Responsible for the financial management cost estimating and submittal reviews for the project. Michael Baker prepared a Master Plan of improvements and recommendations for existing and proposed parks and recreation amenities for the City of Parsons, WV. The City, over time, had acquired many parcels of FEMA-condemned properties due to the flood-prone topography of Parsons; in an effort to properly manage existing facilities, yet prepare for the future of the additional facilities scattered throughout the community, this master planning effort was begun. Through a series of public meetings and stakeholder meetings, a final plan was developed with recommendations for ball fields, hiking and biking trails, recreation center, miniature golf course, play structures, picnic facilities, ADA-compliant fishing access, interpretive signage, and landscaping improvements for existing and new park areas.

Army National Guard Headquarters Renovations, Charleston, West Virginia. *State Army National Guard Headquarters.* Project Engineer. Michael Baker performed complete planning, design, and construction management services for renovations to the Office of the Adjutant General at the State Army National Guard Headquarters in Charleston, West Virginia. The Owner requested the need for modernization of approximately 12,000 square feet of existing outdated office space - project elements included new acoustical ceilings, flooring, energy-saving light fixtures, duplex outlets, communications jacks, alterations to the existing floor plan, exterior door replacements, new interior doors and hardware, new wall finishes and asbestos removal. Michael Baker provided Construction Administration and inspection services as well as periodic site review during construction.

Ararat River Restoration, Greenway, and Parks Project, Mount Airy, North Carolina. *City of Mount Airy, North Carolina.* Civil Engineer. Responsible for the park improvements along the greenway. Michael Baker prepared construction documents and construction administration and inspection services for three parks along the Ararat River in North Carolina: the first park, Riverside Park, includes basketball courts, playground structures, parking areas, a premier soccer field, picnic shelters, nature trails, canoe launch facility, restrooms, fencing, signage and landscaping. Rowe Environmental Park will showcase environmental issues in the park design and construction including an outdoor amphitheater/classroom, picnic facilities, nature trails, parking area, pedestrian bridge to nearby middle school, fishing access and canoe launch facility. The final park, Tharrington Park, includes a premier soccer field, additional soccer fields to create a soccer complex, access road and parking, fitness trail, restroom facility, concessions, and maintenance building.

Campus Master Planning and Architectural and Engineering Services for State Capitol Complex, Charleston, West Virginia. *State of WV General Services Division.* Project Manager. Responsibilities included project management of the planning and infrastructure analysis and the coordination of six (6) specialized subconsultants. Michael Baker is providing comprehensive master planning services, plans and construction specifications, and construction administration for improvements to the historic West Virginia state capitol campus. Master planning services include plans for expansion, location of new buildings, pedestrian and traffic circulation, landscaping, utilities, and site security. Michael Baker is also providing construction plans and contract administration services for some of the security and landscaping improvements.

Big Sandy River Site Screening, Boyd, Greenup, and Lawrence Counties, Kentucky. *Commonwealth of Kentucky.* Project Manager. Michael Baker provided site selection for ecosystem preservation and restoration services in the Big Sandy River Service Area. Michael Baker's services included geographic information system database development, mapping, tool development, and modeling; global positioning system mapping verification; water sampling; visual utility location; and property owner coordination.

Little Kanawha Bus Facility, Calhoun County, West Virginia. *WV Division of Public Transit.* Project Engineer. Responsible for the civil, site and structural engineering components of the project. Baker is providing architectural and engineering services, landscape architecture, and construction-phase support for a new, 9,900-square foot, pre-engineered, metal and brick bus maintenance and transit operations facility. The 5,100-square-foot administrative area will include offices, a conference room, a money-counting room, and a driver-training room, and the 4,800-square-foot bus maintenance area will include storage for seven buses. The facility will be ADA-compliant and is being designed to achieve LEED® certification. Services include site survey and design, geotechnical testing, environmental compliance, utility coordination, bid documents, bid-phase support, and as-built drawings.

West Virginia Army National Guard – Temporary Maintenance Facility, Charleston, West Virginia. *Construction and Facilities Management Office.* Project Engineer. Michael Baker performed complete planning, design, and construction management services for a new Maintenance Facility for the Kanawha County Parks and Recreation Commission. The facility is to be used as the primary maintenance and storage building for Coonskin Park until a new facility is constructed adjacent to the new bridge over Elk River. The Owner requested the need for an approximately 6,000 square foot pre-engineered metal building for storage and maintenance on a 3 acre site. Project elements included new site access, on-site parking, utility service, storm drainage facilities, four bays (two with drive-through capability) with automatic garage doors, restroom facilities and provisions for future shower/locker rooms. Michael Baker provided Construction Administration and inspection services as well as periodic site review during construction.

West Virginia Army National Guard – Coonskin Complex Perimeter Fence, Charleston, West Virginia. *Construction and Facilities Management Office.* Project Manager. Engineer of Record responsible for the coordination of all activities. Michael Baker performed complete planning, design, and construction management services for the installation of approximately 5,000 linear feet of chain link security fence including gates, cable reinforcement, removable vehicle barriers, card reader access points, security lighting, and road widening for the Coonskin Complex in Charleston, West Virginia. Michael Baker provided Construction Administration and inspection services as well as periodic site review during construction.

130th Airlift Wing West Virginia Air National Guard – Force Protection/Relocate Coonskin Drive, Charleston, West Virginia. *USPFO for West Virginia.* Project Engineer. Michael Baker performed complete planning, design, and construction management services for the relocation of Coonskin Drive which will serve as the new entry point into the Joint Forces National Guard Base in Charleston, WV. The project includes concrete and asphalt pavement roadway and parking areas, designated vehicle inspection area, guardhouse, lighting, signage, landscaping, site utilities, chain link security fence including gates, cable reinforcement, ornamental gate, vehicle barriers, and card reader access points. Michael Baker provided Construction Administration and inspection services as well as periodic site review during construction.

Nitro Bank Street Streetscape Improvements, Nitro, West Virginia. *City of Nitro.* Project Manager. Responsible for concept planning, detailed design, construction document generation, and construction administration. Michael Baker provided design, bid-phase support, and construction services for streetscape improvements to Bank Street, located in the city's business district. Michael Baker's services include base mapping, background data collection, design plans, construction document preparation, bid-phase support, construction management, and construction inspection.

Michael Baker
INTERNATIONAL

We Make a Difference

Steven Savich, P.E.

Land Development Manager

Years with Michael Baker: 10
Years with Other Firms: 12

Degrees

M.S., 2003, Civil Engineering, Youngstown State University

B.S., 1995, Civil Engineering, Youngstown State University

Licenses/Certifications

Professional Engineer, Pennsylvania, 2005, [redacted]

Professional Engineer, Ohio, 2000, [redacted]

OSHA 40-Hour HAZWOPER Certification

General Qualifications

Mr. Savich's experience has included performing a wide variety of projects in multiple states and countless municipalities. He has worked in many areas of the Civil Engineering practice with his primary areas of experience focused in land development and planning, municipal services, and local transportation projects. He has managed and designed the improvements and infrastructure for urban redevelopment, industrial parks and sites, residential subdivisions, commercial development, military/U.S. Government, local streets, and educational facilities. In addition to land development experience, he has designed and directed a number of transportation projects varying from interstate routes to local streets including the design of traffic circles and other traffic calming techniques. He has also performed municipal engineering designs that included water distribution extensions, sewer modeling/design, drainage studies and flood abatement designs. Mr. Savich works to integrate the principles of Low Impact Development into the design of all projects with an interest in functional and economically feasible applications. In all areas of his experience, he has been involved in every aspect of the design and construction document preparation, as well as management of design teams, project management and construction administration.

Experience

Industrial Warhouse and Laydown Spaces – 5 sites, Hopewell Township, Pennsylvania. *CJ Betters Enterprises. Project Manager.* Responsible for QA/QC review. Michael Baker served as the designer of record for the design-build delivery of a new 200,000 SF industrial warehouse and associated 130 acre laydown yard. Primary facilities included a pre-engineered building, all utilities, associated paving and grading with stormwater controls. Michael Baker provided all site planning and engineering for the project. In addition to the main site the project also master planned 4 additional parcels for future use. The parcels included additional laydown yard space, material handling yards and contractor parking and work spaces. Common to all sites was the upfront planning work with the end user to determine the needs for each site based upon projected use and the iterative layout process to best allocate the space on site and coordinate vehicle movements to accommodate all projected uses while maximizing available space and limiting costs.

Starpointe Mixed-Use Development Master Plan, Washington County, Pennsylvania. *Fourth River Development LLC.* Engineer. Provided limited technical design assistance to the overall project team. Work included design reviews and outline specification preparation. Michael Baker teamed with another firm to form a multi-disciplinary team that developed a master plan for the re-use of over 1,000 acres of vacant brownfield land in Washington County, Pennsylvania. The design for this project incorporates an ecologically friendly approach to the development of a mixed-use business, industrial, and commercial center. The project attempt to mitigate the impacts of the development through the use of low impact design elements and ecologically sensitive site

planning. The project involved the preparation of a "Smart Growth" mixed use master development plan for the 1200 acre site.

Hopewell Business and Industrial Park Phase II, Commerce Way, Hopewell, Pennsylvania. *Beaver County Corporation for Economic Development.* Engineer. Responsible for utility coordination. The Beaver County Corporation for Economic Development (BCCED) desired to proceed with mass grading operations to extend an on-going Business and Industrial Park project to an area behind a recently constructed cul-de-sac (Commerce Way) and "pad-ready" development sites. Michael Baker designed the mass grading to be performed in such a way as to allow for the future extension of Commerce Drive and adjacent building pads. Michael Baker's responsibilities included a Survey Update, preparation of Grading Plans and NPDES Permitting, Bid Phase Services, and Construction Inspection.

Middletown Station Relocation Analysis, Middletown, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Technical Lead. Responsibilities included production of site development options during the planning phase of the project. As the project evolves Mr. Savich will provide all civil engineering for the project including design of the site pavements, geometrics, grading, stormwater, and utility services. Michael Baker is performing an alternatives analysis of potential new locations for the Middletown Station and identifying the program and preferred alternatives for design development and construction. The feasibility study and alternatives analysis include efforts to identify opportunities to maximize the benefits of these investments through land-use and development strategies in the surrounding community.

Design of Armed Forces Reserve Center, Tyler, Texas. *U.S. Army Corps of Engineers, Louisville District.* Engineer. Responsible for the being the engineer of record for all civil engineering. Michael Baker served as the designer-of-record for the design-build delivery of a new 800-member Armed Forces Reserve and Texas National Guard center on a 20-acre site. The complex consists of a new 97,365-square-foot, two-story training center, a 13,403-square-foot organizational maintenance shop, a 4,961-square-foot unheated storage building, and a covered wash rack in a campus setting. The facility achieved a Gold LEED® rating.

Container-Loading Facility Design, Fort McCoy, Wisconsin. *U.S. Army Corps of Engineers, Louisville District.* Technical Lead. Provided technical oversight of the design team preparing the Civil engineering plan and specification documents. Also responsible for all design and permitting documentation as well as coordination with all relevant agencies. As designer of record, Michael Baker provided architectural and engineering services for the construction of a 30,862-square-foot Container-Loading Facility; a two-acre, concrete-paved container storage yard; and a 19-space parking lot under an indefinite delivery-indefinite quantity contract. The Container-Loading Facility achieved LEED® Silver certification. Tasks ranged from site and civil engineering to building architecture and interior design and facility engineering, including structural, mechanical, plumbing, fire protection, and electrical and telecommunications systems design, and LEED® certification administration.

Dock Facility Design and Construction Management, Ohio River, Hopewell, Pennsylvania. *Betters Corporation/CJ.* Project Manager. Provided technical oversight of the design team preparing the plan and specification documents. He was responsible for all design and permitting documentation as well as coordination with all relevant agencies. After design and bidding, Mr. Savich provided Construction Phase administration of the project until it's completion. Michael Baker updated and completed plans on an accelerated schedule for a 1,000-linear-foot fixed dock at Ohio River Mile 21 in Hopewell to serve the proposed Beaver County Multimodal Facility. Michael Baker reviewed the schematic dock design, developed the design and details for a 1,000-linear-foot sheet-pile retaining wall and anchoring, produced bid documents, assisted in evaluating bids and made

recommendations for award, and provided technical recommendations for a substitution in sheet piling type to expedite materials delivery and maintain the project construction schedule.

Dick's Sporting Goods Corporate Headquarters Campus Site Design and Aircraft Hangar Taxiway and Ramp Design, Pittsburgh International Airport (PIT), Findlay Township, Pennsylvania. *Horizon Properties.* Engineer. Responsible for the design of all site engineering with the exception of Erosion and Sediment Control. Michael Baker performed complete site design, environmental permitting, traffic forecasting and highway permitting, access roadway design, taxiway and ramp design, and construction-phase support services to develop a 670,000-square-foot corporate headquarters campus for Dick's Sporting Goods near the main runway at Pittsburgh International Airport.

Larimer East Liberty Redevelopment Phase 1 & 2. *McCormack, Baron Salazar.* Project Manager. Managed a multi-firm, multi-disciplinary team tasked with the redevelopment of multiple phases of a public housing redevelopment to create mixed income properties. In each phase, the team was responsible for both a site preparation and site design package. The site preparation plans covered the demolition, rough grading and erosion and sediment control for the entire site. In addition to the site preparation a complete public infrastructure package was developed for the public roads and utility design. The site design components consisted of site layout, grading, paving, utility and storm water collection and management. Additional design and permitting responsibilities included NPDES permitting, erosion and sediment control permitting, as well as design approvals from Pittsburgh Water and Sewer Authority, Allegheny County Health Department Plumbing Division and the City of Pittsburgh Planning Department. Non-design work functions included various project meetings and reviews conducted with the Housing Authority, developer and City agencies to coordinate all aspects of design. After design and permitting, Baker was retained for construction phase services to ensure the project is constructed in accordance with the approved design drawings.

Addison Terrace Redevelopment Master Plan, Pittsburgh Pennsylvania, *KBK Enterprises.* Project Manager. Served as Project Manager for Baker as part of a multi-firm, multi-disciplinary team tasked with creating a new master plan for the Addison Terrace Public Housing site in Pittsburgh. The project property is 40 acres overall with a total of 26 acres developable due to sever grade change. The site is part of a larger community referred to as the Hill District. The team convened on the project site for a three day design charrette that resulted in a preliminary master plan for the overall development. The plan seeks to re-integrate the project site into the neighborhood by extension of the street grid into the property. The plan also focused on residential scale within the community by creating a mix of housing types and densities with all units creating a defined sense of public and private space.

Baker's role in the team was that of Site and Infrastructure Engineer. During the charrette, Mr. Savich was tasked with examining the site grading and infrastructure to "proof" design concepts on the fly with the planners and architects. Steven examined the existing utility infrastructure and developed a conceptual strategy to provide service to the new neighborhood street network. Additionally, Steven provided grading studies for the multiple design options in an effort to evaluate the feasibility and earth moving implications of each. After the charrette, Baker provided a final schematic utility plan as well as an overall grading concept with projected earthwork for the selected plan. A conceptual cost estimate was provided for the infrastructure and earthmoving work projected by the master plan.

Garfield Heights Redevelopment, Pittsburgh Pennsylvania. *KBK Enterprises.* Project Manager.
Served as the Project Manager for this multi-phase public housing redevelopment within the City of Pittsburgh. Baker provided full site development services for the project and was a member of the Project Planning Team that developed a new master plan for the overall form and design standards to be used throughout the phases of

development. The project scope is to develop up to 250 housing units on approximately 100 acres of rolling to severely sloped terrain in Pittsburgh's Garfield Neighborhood. The first phase was completed in December of 2009 with Phase 2 scheduled for completion in December of 2010 and Phase 3 with an anticipated completion date in the fall of 2011. Phase 4 will complete the full redevelopment of the full project and is anticipated for completion in 2013.

In each phase, Baker was responsible for both a site preparation and site design package. The site preparation plans covered the demolition, rough grading and erosion and sediment control for the entire site. The site design components consisted of site layout, grading, paving, utility and storm water collection and management. Additional design and permitting responsibilities included NPDES permitting, erosion and sediment control permitting, as well as design approvals from Pittsburgh Water and Sewer Authority, Allegheny County Health Department Plumbing Division and the City of Pittsburgh Planning Department. Non-design work functions included various project meetings and reviews conducted with the Housing Authority, developer and City agencies to coordinate all aspects of design. After design and permitting, Baker has been retained for construction phase services to ensure the project is constructed in accordance with the approved design drawings.

Federal Street Redevelopment, Youngstown, Ohio (previous employment). *City of Youngstown.* Civil Engineering Project Manager. Responsible for managing the planning, engineering design and permitting for the redevelopment of the Federal Street corridor. The central business district corridor had been converted to a pedestrian plaza 26 years prior to the project. With the life cycle of the plaza improvements up and in need of significant repair, the City of Youngstown wanted to explore alternatives for the Federal Street right of way. Initial planning efforts were performed to establish several alternatives ranging from rehabilitating the plaza to a traffic circle. The initial alternates all involved reopening the street to traffic. Public involvement meetings were held to introduce the alternates to the public and the stakeholders and to provide a forum for public input. At the conclusion of the process, a specific plan was developed that met the needs of the City and was responsive to the public input. The resulting project reestablished vehicular traffic and add angled on street parking to much of the central business district. The project involved accommodating several constraints related to the mid-rise buildings located on either side of the roadway and the numerous utilities within the project limits. The success of the project can be measured in the numerous businesses opened after the completion of the project. The project responsibilities included site planning and alternate development, site demolition plan and coordination, full roadway construction plan development and public meeting presentation.

Michael Baker
INTERNATIONAL

We Make a Difference

Nicole D. Riley, Associate A.I.A.

Architectural Technician

Years with Michael Baker: 1
Years with Other Firms: 16

Degrees

B Arch., 1998, Architecture, Virginia Polytechnic Institute and State University

Licenses/Certifications

American Institute of Architects, Associate

General Qualifications

Ms. Riley brings many years of design and project coordination experience to projects. While at Michael Baker, Ms. Riley focuses on design and coordination with the client while maintaining a close relationship with the design team, from the early assessment of project planning stages to the construction administration. Ms. Riley's project design experience includes facilities for entrepreneurs, correctional, educational, institutional, military installations, commercial, residential, and religious facilities. She is experienced with the submittal and construction process for various state agencies including West Virginia State Fire Marshal and West Virginia State Police.

Experience

City of Nitro. *City of Nitro.* Architectural Designer. Responsible for architectural design and detailing of bandstand in conjunction with landscape architecture design of new town park.

U341-RTA/TV-2.00. *West Virginia Department of Transportation, Division of Highways.* Architectural Designer. Responsible for technical corrections and materials selection for the architectural portion of project.

Non-Michael Baker Project Experience

Multi-Purpose Facility, West Virginia. *West Virginia State Police Academy.* Design and Project Manager. Responsibilities included site investigation, cost estimate, architectural design and collaboration with geotechnical engineer as well as overseeing the client's staff overseeing the project. The facility employs a skylight system in the main gym, intended to provide natural light to the user as well as lowering electricity expense. Special consideration was given to the underground foundation and location of the facility at the academy.

Glen Jean Armed Forces Reserve Center/ Military Entrance Processing Station, Glen Jean, West Virginia. *West Virginia Army National Guard/ U.S. Department of Defense.* Designer and Project Manager. Responsibilities included complete design package and collaboration with staffs from both the state and federal entities for the 110,000 square foot facility. Special consideration given to force protection, geotechnical challenges, helipad design and location, vehicle repair and petroleum storage, adequate mustering space, as well as medical office spaces.

Economic Development Center, Charleston, West Virginia. *West Virginia State University Gus R. Douglass Extension.* Designer and Project Manager. Responsibilities included: feasibility study, budget development and construction documents and construction administration services for total renovation of a 5,000 square foot facility. Diverse use of facility lent to consideration for recording studios, digital green studio, office space for entrepreneurs, and public gathering space.

Previous Work History

Project Manager, McKinley & Associates, 2005 - 2012. Lead designer and manager of design teams responsible for various types of construction of projects ranging from $500,000 to $19,000,000. Responsible for budget

creation and adherence to School Building Authority Financial Structure and Standards. Developed and presented multi-media expositions to procure clients, as well as to keep current clients apprised of design progress. Developed designs and protocol to adhere to U.S. Green Building Council resulting in building certification. Team leader in state-wide school audits for Safe Schools Act as well as CEEFP development.

Project Manager, Williamson Shriver Architects, 2002 - 2005. Collaborated in design with staff architects on a myriad of projects. Lead designer for projects ranging from $125,000-$2,000,000. Lead mentor for drafters as they joined the staff.

Project Manager, ZMM, Inc., 1999 - 2002. Original duties included drafting and construction document preparation; evolved to team leader for several projects ranging from $500,000- $15,800,000. Assisted Interior Design team with presentation and proposals.

Community Activities

Young Life Kanawha Valley, Committee member. 2006 - 2013

WyldLife Leader, Sissonville WyldLife. 2010 - Present

Virginia Tech Alumni Association: 2009 - Present. Chair Scholarship Committee; Chair, West Virginia/ Virginia Tech License Plate Clearinghouse. 2013 - Present

YMCA Developmental Swim Coach. 2013 - Present

References

Tommy L. Young, Deputy Director for Marketing West Virginia Lottery

Shawna Sigmon, Associate Professor of Interior Design, University of Charleston

Matt Santen, Head Pastor, River Ridge Church, 304-347-8585

Robert S. Kimball, President, Robert Kimball & Associates

Lisa Godwin, Agent, State Farm Insurance, 304-984-0000

Betsy Shaak, Director, Family Ministry at River Ridge Church, 304-347-8585

Deborah Blakeman, Interior Designer @ McKinley & Associates

Ron Baker, P.E. Project Manager/Professional Engineer at Wood Group Mustang

Michael Baker
INTERNATIONAL

We Make a Difference

Robert D. Holbert III, P.E.

Civil Engineer

Years with Michael Baker: 18
Years with Other Firms: 1

Degrees

B.S., 1998, Civil Engineering, West Virginia University Institute of Technology

Licenses/Certifications

FHWA - NBIS Safety Inspection of In-Service Bridges Training, 2006, NHI Course 130055

Professional Engineer, West Virginia, 2003, [redacted]

General Qualifications

Mr. Holbert's civil engineering experience includes three summer internships with the West Virginia Department of Transportation as a construction inspector. He has experience doing various types of structure inspections, as well as multiple components of highway design and plan preparation. He also has experience with water resources, including major and minor drainage design and hydraulic modeling using Hec-Ras. He is very proficient with MicroStation and Geopak design software.

Experience

Appalachian Corridor H. *West Virginia Department of Transportation, Division of Highways.* Civil Engineer. Responsible for the major and minor final drainage design for three different alternates within the Panther Run watershed. The purpose was to avoid any effects to a sensitive plant species found on the original centerline. Also responsible for the major drainage design for the remainder of Section 01. Total length is approximately six miles. Other duties included roadway work utilizing geopak design software and alternative analysis.

Design-Build Coonskin Park Access Road Bridge, Charleston, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Highway Engineer. Responsible for the roadway portion of the design-build project. Prior to contractor's bid, work was done to generate the bid. After project was won, responsible for all aspects of the roadway in finalizing plan documents and acquiring the NPDES permit. Michael Baker provided engineering services for the design-build construction of a new three-span girder bridge spanning the Elk River and providing access to Coonskin Park. Michael Baker's services included preliminary and final design, construction cost and quantities estimates, and shop drawing reviews.

Preliminary Roadway Design, Confidential Location, West Virginia. *Confidential Client.* Highway Engineer. Responsibilities included the development of preliminary construction plans to maximize the use of a future strip mine on a proposed highway. Duties included drainage, earthwork, and setting line and grade. The purpose of this project was for the study and the development of a preliminary alignment for an eight mile section of a four-lane divided highway.

Fort Pleasant Farms Two Lane Road Design, Moorefield, West Virginia. *Fort Pleasant Farms, Inc.* Highway Engineer. Prepared construction plans for an access from the Moorefield interchange to Renick William's property. Duties included setting line and grade, drainage, earthwork analysis, cost estimates, and signing and pavement marking plans. This project involved the study, design and final construction plan development for a new two-lane access road approximately 1500' in length. This access road was designed to connect a commercial/residential development to the Moorefield Interchange on Corridor H in Moorefield, West Virginia.

Corridor H, Section 15 Design, Tucker County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Responsibilities included deed research and right-of-way questionnaires for affected properties. This project involved the study and preliminary design of approximately 3.2 miles of Corridor H

in Tucker County, West Virginia. This section of Corridor H included the 4000' long Pleasant Run Bridge and the 2500' long Shaver's Fork River Bridge Crossing.

Moorefield Bypass, Moorefield, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Part of team to study various components of highway design. As part of this project, Michael Baker prepared a Purpose and Need Study to construct an approximate 5-mile roadway to serve as a bypass of the center of Moorefield in Hardy County, West Virginia. The project was developed to address the region's increasing transportation demands and growing traffic safety concerns.

Fort Pleasant Access Road Project, Moorefield, West Virginia. *Fort Pleasant Farms, Inc.* Highway Engineer. Worked on revision to original Fort Pleasant project. Duties included setting line and grade, drainage, earthwork analysis, cost estimates, signing and pavement markings and obtaining a NPDES permit. Michael Baker prepared contract construction plans and related documents for a 3-lane access road connecting Corridor H to private property in Moorefield, WV.

City of Charleston Bridges-Engineering Consulting Services, Charleston, West Virginia. *City of Charleston, West Virginia.* Civil Engineer. Duties included researching and gathering information including previous bridge inspection reports, ownership issues, and as built plans for numerous bridges owned by the city of Charleston. Part of team to perform a cursory type bridge inspection on 13 city of Charleston bridges. Michael Baker did a report to summarize and prioritize the possible rehabilitation and repairs to the city owned bridges as well as maintenance recommendations. Michael Baker's Charleston, West Virginia office provided various services for the City of Charleston. Michael Baker reviewed existing inspection reports, performed bridge inspections and recommended and prioritized repairs for 13 bridges owned by the city. The project included rehabilitation of a Deck Truss, Through Truss, Plate Girder and Concrete Arch Bridge. Michael Baker was also selected to inspect and rehabilitate a historic Whipple Railroad Bridge to be converted into a Rail to Trails Bridge. As a supplement to the contract, Michael Baker inspected a 4,000 ft long Railroad Bridge that the City considered buying from CSX. Michael Baker developed a report and cost estimate for restoring the structure.

WVDOH-PENNSYLVANIA AVENUE TUNNEL. *West Virginia Department of Transportation, Division of Highways.* Highway Engineer. Responsibilities included the preparation of the roadway portion the construction plans. Duties included setting line and grade, earthwork, drainage, and quantity calculations.

I-64/U.S. 35 Interchange Study, I-64 to WV 34 Interchange, Putnam County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Civil Associate. Part of the team that prepared construction and right-of-way plans for 2.5 miles of divided highway which included two interchanges and a flyover, earthwork quantities, setting horizontal and vertical control for the project. Required coordination with Right-of-Way, Stream Mitigation and CADD work. This project under first phase was for the study of two interchange sites on I-64, Cow Creek and Crooked Creek. This project under the final phase was for the complete preparation of right of way plans and construction plans for a new location of US 35 from I-64 (Crooked Creek location) to and including an interchange with WV 34.

Route I-78 Intelligent Transportation System Infrastructure Improvements, Essex County, New Jersey. *New Jersey Department of Transportation (NJDOT).* Water Resources Engineer. Part of team responsible for minor drainage on Contract A. Michael Baker designed regional intelligent transportation system infrastructure enhancements to improve the monitoring of traffic flow, detection of incidents, and dissemination of traveler information for the multimillion-dollar Route I-78 pavement rehabilitation-reconstruction project. Michael Baker's tasks included developing design plans to install closed-circuit television cameras, remote traffic microwave sensors, dynamic message signs, and a fiber-optic communications network. The project involved the preliminary

and final design for the reconstruction of 3.73 miles of I-78, a ten-lane rigid pavement roadway in Union and Essex County, NJ. The main purpose of the project was to rehabilitate the rigid pavement and implement safety improvements.

Construction Plans for I-64 Widening, Cabell County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Highway Engineer. Responsibilities included the development of contract plans to construct approximately 1 mile of median barrier and an additional lane in each direction on I-64. Due to a construction change order, Michael Baker prepared contract construction plans for a one-mile section of the upgrade of I-64 to six lanes from the 16th Street interchange to Bridge #2096 over County Route 35. The project included drainage analysis, permitting support, and maintenance of traffic, signing, and pavement marking plans.

Vehicle Fence 300 Program Engineering Services, El Paso and Tucson Sectors, Border States with Mexico. *U.S. Army Corps of Engineers, Fort Worth District.* Civil Engineer. Responsibilities included the preparation of construction plans, setting line and grade, and cross sections. Michael Baker was responsible for providing engineering services for the border fence and associated tactical infrastructure, such as lighting, vehicle barriers, checkpoints, and technology, between Mexico and the United States. The project included design, editing, surveys, meetings and conferences, geotechnical services, hydrologic and hydraulic studies, identification of related environmental issues and impacts, and cost estimating.

I-64 Entrance and Exit Ramp Bridges at the 16th Street Interchange, Cabell County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Highway Engineer. Development of roadway portion of plans. Duties included setting line and grade with development of cross sections. Michael Baker provided engineering services for the replacement of I-64 eastbound exit ramp and westbound entrance ramp bridges at the 16th Street Interchange. Michael Baker's services included surveys, right-of-way plans, hydrology and hydraulic analyses, oversight of a geotechnical investigation, preliminary and final roadway and bridge design plans, permits, traffic signal design, lighting design, and signing and pavement marking plans.

ADM_Coalfields Expresswy-WVDOH. *Vecellio & Grogan, Inc.* Highway Engineer. Duties included roadway engineering, drainage, erosion and quantity estimates for the contractor's bid.

Ararat River Restoration and Greenway Design, Surry County, North Carolina. *Resource Institute, Inc.* Civil Engineer. Responsibilities included the preparation of construction plans for the 3 segments of the greenway that crossed under bridges. Duties included setting line and grade, cross sections, and quantity calculations. Michael Baker prepared a stream restoration design, permit documents, plan sheets, provided construction oversight and as-built report for the Ararat River Restoration Project, located in Surry County, North Carolina. This scope of work included tasks to assess the stream conditions of an approximately four mile section of the Ararat River and to restore stream channel dimension and profile for approximately 10,000 cumulative feet within the project area. A final report was completed describing all project information required by the Clean Water Management Trust Fund as part of the grant agreement.

Dick Henderson Memorial Bridge Replacement, Kanawha County, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Highway Engineer. Duties included roadway design, drainage, NPDES permit applications, and right of way review. Michael Baker provided engineering services for the replacement of the Dick Henderson Memorial Bridge; the steel truss bridge that carries the WV 25 spur over the Kanawha River between the cities of Nitro and St. Albans. Michael Baker's services included an environmental assessment, a Phase II archaeological investigation, preparation of National Environmental Policy Act documentation, public outreach support, alternatives analysis, structural analysis, preliminary and final design, and shop drawing review.

Michael Baker
INTERNATIONAL

We Make a Difference

Laura Cox, PLA, ASLA, LEED Green Associate

Years with Michael Baker: 9
Years with Other Firms: 30

Degrees

B.S., 1978, Landscape Architecture, West Virginia University

Certificate, 1995, Computer Aided Drafting, Putnam County Technical Center

Licenses/Certifications

Landscape Architect, Virginia, 1987

NICET III Transportation-Highway Construction, West Virginia, 1983
Registered Landscape Architect, West Virginia, 2008
Licensed Landscape Architect, New Jersey, 2010
LEED Green Associate, 2010

Landscape Architect/Planner

General Qualifications

Ms. Cox is a Registered Landscape Architect with over 30 years of experience in the fields of landscape architecture and land planning. She has knowledge of all phases of design from site analysis and conceptual planning through construction documentation, permitting and administration. Her design experience includes large scale site preparation and grading, drainage analysis, storm water conveyance and detention, and utility and infrastructure design.

Ms. Cox has an extensive background in site and land use planning for counties and municipalities including, feasibility studies, review and evaluation of preliminary and final subdivision plans, special exceptions, rezoning applications, yield studies, special use permits and client representation at public hearings and meetings with civic groups.

Experience

WV AIA Livable Communities Committee. Laura currently serves as the chairman of this community which assists West Virginia communities to realize their dreams of downtown revitalization by beginning the process of identifying their needs and assessing design possibilities. They are currently working on a plan for an overlay district in Parkersburg. Streetscape improvement recommendations will include creation of ADA compliant crosswalks and curb ramps.

West Virginia Capitol Complex Master Plan, Charleston, West Virginia. *WV Department of Administration.* Project Planner, Ms. Cox assisted in providing the State of West Virginia General Services Division a comprehensive campus-wide master plan for the 55+ acre state capitol campus. Ms. Cox was part of the Baker Team which worked in conjunction with the owner and a team of specialized consultants providing planning elements including master planning, public involvement, document management, facilities planning, and document preparation. Ms. Cox also performed a campus level ADA Compliance report with recommendations on necessary upgrades.

Winfield On-Call Planning Services, Winfield, West Virginia. *Town of Winfield.* Project Planner, Laura has served as the Planning Director of the City for the last six years, where she staffs subdivision, special exception, and rezoning applications. She meets with the public and serves as Town Staffing to the Planning Commission and Board of Zoning Appeals.

Winfield Comprehensive Plan, Winfield, West Virginia. In 2011 Laura spearheaded the City's first long range land use document which was adopted in February 2012. Since its initial approval the Plan has undergone three amendments and she has prepared and delivered several annual reports.

Marshall University 2012 Master Plan. Michael Baker International Incorporated was involved with Smith Group JJR and a team of specialized firms to provide a comprehensive Campus Master Plan for Marshall University. The Master Plan provided a framework for long- and short-term planning that is clear and flexible – responding to changing needs and conditions as the University continues to evolve. Ms. Cox was part of the Baker Team which worked on various portions of the plan including; Transportation Planning, Existing Building Assessment, Utility Infrastructure, Community Involvement and Site / Civil Support. The Master Plan was completed in December of 2013.

KYOVA Long Range Transportation Plan. Laura worked with the Baker team on area wide land use topology and growth pattern documents for the plan update. She also participated in a design charrette held in Huntington where various redevelopment and streetscape improvement scenarios including such criteria as ADA compliance were explored as well as methodologies to accommodate the needs of the City of Huntington and Marshall University.

Parsons City-Wide Comprehensive Parks and Recreation Master Plan, Parsons, West Virginia. *Parsons Park Board, Inc.* Landscape Architect. Assisted in the plan preparation and public outreach for this project. Baker prepared a Master Plan of improvements and recommendations for existing and proposed parks and recreation amenities for the City of Parsons, WV. The City, over time, had acquired many parcels of FEMA-condemned properties due to the flood-prone topography of Parsons; in an effort to properly manage existing facilities, yet prepare for the future of the additional facilities scattered throughout the community, this master planning effort was begun. Through a series of public meetings and stakeholder meetings, a final plan was developed with recommendations for ball fields, hiking and biking trails, recreation center, miniature golf course, play structures, picnic facilities, ADA-compliant fishing access, interpretive signage, and landscaping improvements for existing and new park areas.

Ararat River Restoration, Greenway, and Parks Project, Mount Airy, North Carolina. *City of Mount Airy, North Carolina.* Landscape Architect. Assisted in the preparation of construction documents and provided construction administration and construction inspection for three (3) parks along the Ararat River in North Carolina. Baker prepared construction documents and construction administration and inspection services for three parks along the Ararat River in North Carolina: the first park, Riverside Park, includes basketball courts, playground structures, parking areas, a premier soccer field, picnic shelters, nature trails, canoe launch facility, restrooms, fencing, signage and landscaping. Rowe Environmental Park will showcase environmental issues in the park design and construction including an outdoor amphitheater/classroom, picnic facilities, nature trails, parking area, pedestrian bridge to nearby middle school, fishing access and canoe launch facility. The final park, Tharrington Park, includes a premier soccer field, additional soccer fields to create a soccer complex, access road and parking, fitness trail, restroom facility, concessions, and maintenance building.

Valley Park Sidewalk Improvements, Hurricane, West Virginia. *Putnam County Parks.* Landscape Architect. Assisted in complete planning, design, and construction management services for new sidewalks and streets improvements for access into Valley Park, Putnam County. Baker performed complete planning, design, and construction management services for new sidewalks and street improvements for access into Valley Park, Putnam County. The improvements included concrete sidewalks with integral concrete curbs, driveway curb cuts, ADA accessible curb ramps with truncated domes, crosswalks, and storm water improvements. The park sidewalks now

have a unique colored stamping of natural elements found in West Virginia, such as bear and raccoon tracks, leaves and flowers. Baker also provided construction administration and periodic inspection services.

US 33 Streetscape Improvement Project - Phase II, Mason, West Virginia. *Town of Mason.* Landscape Architect. Assisted in the preparation of construction documents. Baker performed complete detailed design, construction document preparation and construction management services for new sidewalks and storm sewer improvements the Mason Phase II Streetscape Project. The improvements included concrete sidewalks with integral concrete curbs, driveway curb cuts, ADA accessible curb ramps with truncated domes, ladder-style crosswalks, storm sewer improvements, benches and trash receptacles. Baker provided construction administration and inspection services.

North Bend Rail Trail Historic Depot and Trailhead Improvements, Pennsboro, West Virginia. *City of Pennsboro.* Landscape Architect. Assisted in the preparation of construction documents. Baker is providing engineering, bid support, and construction management services for the construction of improvements to the parking area of the historic B&O train depot and the Pennsboro trailhead to the North Bend Rail Trail, a 72-mile hiking, biking, and horseback-riding trail. Improvements include drainage, handicapped accessibility, drinking fountains, and landscaping.

Previous Work History

Fauquier County Department of Community Development. Chief of Planning Division. Supervisor of the processing of land use applications. Supervision of a design review team; Organization and implementation of office procedures; Enforcement of subdivision and zoning ordinances; Review and evaluation of preliminary and final subdivision plans, special exceptions and rezonings; Answering public inquiries; Representing the county at public meetings. Providing reports and recommendations directly to the Fauquier County Planning Commission and Board of Supervisors. August 1990 - December 1993.

Land Design Concepts, Incorporated. Senior Planner/Office Manager. Oversight of office procedures and performed and supervised a broad spectrum of planning tasks. Staffing, organizing, marketing and supervising the equipping of an office for a new planning firm; Management of both office and planning staff; Overseeing all client contacts; Preparation and negotiation of contracts and billing; Preparing and processing rezoning applications, preliminary plans, feasibility studies, site and land use analysis, yield studies and conceptual design in Stafford and Spotsylvania Counties. June 1989 - August 1990.

Kidde Consultants. Chief, Planning & Landscape Architecture Section. Supervisor of all phases of planning and landscape architecture. Responsibilities included: Management of a planning team involved in various planning functions; Coordinating with and assisting clients' attorneys in obtaining rezonings, special exceptions and special use permits; Involved in contract preparation, negotiation and billings; Representing clients at public hearings and meetings with civic groups in Arlington, Fairfax, Prince William and Stafford Counties. August 1986 - May 1989.

WVDOT Division of Highways. Highway Design Technician. Responsible for highway design including repair and improvement. Horizontal and vertical layout of roads, quantity calculations, report graphics and drafting. December 1980 - April 1984.

Michael Baker
INTERNATIONAL

We Make a Difference

R. Joseph Chaffin, A.I.A.

Practice Manager, Architecture

Years with Michael Baker: 10
Years with Other Firms: 17

Degrees

B.Arch., 1990, Architecture, University of Cincinnati

Certificate, 1988, Architecture, Ecole d'Art Americaines - Ecole des Beaux Arts

Licenses/Certifications

Registered Architect, Illinois, 2015, [redacted]

Registered Architect, Minnesota, 2015, [redacted]

Registered Architect, Michigan, 2012, [redacted]

Registered Architect, West Virginia, 2011, [redacted]

Registered Architect, Pennsylvania, 2001, [redacted]

NCARB, 1999, [redacted]

Registered Architect, Ohio, 1994, [redacted]

General Qualifications

In balancing creative, organizational, and technical strengths, Mr. Chaffin's professional experience demonstrates a broad practice of architecture from residential through complex institutional projects. He challenges current capabilities, cultivates leadership, and develops new strengths through his position at Michael Baker. As a Practice Leader, Mr. Chaffin provides leadership for Michael Baker's multi-disciplinary Architecture and Engineering (AE) Practice, including direction and oversight of day-to-day operations for the Pittsburgh (Moon Township), Pennsylvania office and the regional practice area; responsible for enhancing internal organization processes that focus on operational effectiveness and profitability. Specific responsibilities encompass strategic and operational planning, multi-disciplinary production oversight, financial performance and business planning, human resource activities, marketing and proposal development, contract preparation and negotiations, and oversight of legal and liability issues, as well as managing technical teams of architects and engineers, emphasizing creative design solutions, technical execution, and performance excellence for architectural projects worldwide.

Experience

Planning and Logistics Services, Worldwide. *Naval Facilities Engineering Command, Atlantic Division.* Principal-In-Charge. Responsible for leadership, design/technical quality, and project execution provided by planning resources. Role also included assurance of interdisciplinary technical reviews for all design/construction documents. Michael Baker is providing a broad range of planning services and technical support under a five-year, indefinite delivery, and indefinite quantity agreement. Michael Baker's services include project management, oversight of facilities management planning, encroachment action planning, installation master planning, specialized planning studies, and development of policy documents and guidance.

Renovations of 2 existing buildings at the WVUTech Campus. *West Virginia University.* Architect of Record. Responsible for leadership, design/technical quality, and project execution provided by architecture and engineering resources. Role also included quality assurance of interdisciplinary technical reviews for all design/construction documents.

City of Oberlin Site Survey and Master Plan, Oberlin, Ohio. *City of Oberlin, Ohio.* Architect. Responsible for the assessment and programming of a former lumberyard site situated on Main Street into a proposed municipal facility, while prioritizing sensitivity to contextual issues for the historic town center. Michael Baker prepared a Site-Wide Master Plan for the City of Oberlin's General Maintenance Division and the Municipal Light and Power Division.

Design of Tactical Equipment Maintenance Facility and Equipment Concentration Site Warehouse, Fort McCoy, Wisconsin. *U.S. Army Corps of Engineers, Louisville District.* Architect. Responsible for leadership, design/technical quality, and project execution provided by architecture, interiors, and engineering resources. Role also included assurance of interdisciplinary technical reviews for all design/construction documents. Michael Baker was the designer of record for the design-bid-build delivery of an approximately 58,000-square-foot, two-story modified large Tactical Equipment Maintenance Facility (TEMF) and an approximately 44,000-square-foot, one-story Equipment Concentration Site Warehouse, along with 30 acres of gravel hardstand designated for organizational parking. Tasks were performed under an indefinite quantity-indefinite delivery engineering agreement. Both structures were designed to achieve LEED® Silver certification and the TEMF warehouse has achieved certification. Michael Baker's services included architecture, surveys, environmental investigation, geotechnical oversight, all site and building engineering, cost estimating, value engineering, and LEED® certification administration.

Economy Borough Planning Consulting Services. *Economy Borough.* Principal-In-Charge. Responsible for leadership, design/technical quality, and project execution provided by architecture and engineering resources. Role also included quality assurance of interdisciplinary technical reviews for design and construction documents.

Hartford Hub Parking Expansion, Willington, Connecticut. *Confidential Client.* Principal-In-Charge. Responsible for leadership, design/technical quality, and project execution provided by architecture and engineering resources. Role also included quality assurance of interdisciplinary technical reviews for all design/construction documents. Michael Baker provided engineering services for the expansion of the parking facilities at the Hartford Hub. Michael Baker's services included project management, civil engineering, utilities and fire protection design, stormwater management design, hydrologic analysis, preliminary and final design, permitting, traffic impact analysis, regulatory agency coordination, bidding-phase support, and construction administration.

Blennerhassett Island Bridge, Appalachian Corridor D, Wood County, West Virginia and, Washington County, Ohio. *West Virginia Department of Transportation, Division of Highways.* Architect. Responsible for the design of a conceptual tower/beacon woven into the proposed bridge span over the Ohio River at historic Blennerhassett Island. Michael Baker provided engineering services for the Blennerhassett Island Bridge; the "missing link" final segment of Appalachian Highway Corridor D. Michael Baker's services included project management, environmental engineering and location studies, permitting, preliminary and final design, and construction services for this network tied-arch bridge that carries U.S. 50 over the Ohio River. The bridge is 100 feet, six inches wide, and the total length of the structure is 4,008 feet, nine inches. It has an 878-foot, six-inch-long main span, network tied arch with a rise of 175 feet and is ranked as the longest of its type in the United States and one of the longest in the world.

U.S. Armed Forces Reserve Center, Rutland, Vermont. *U.S. Army Corps of Engineers, Louisville District.* Architect. Responsible for design/technical quality and project execution provided by the architectural and interior design staff. Responsibilities also included detailed interdisciplinary reviews of the RFP design criteria documents with an emphasis on architecture. Michael Baker developed design-build RFP documents for a new 600-member Armed Forces Reserve Center meeting Silver LEED® standards. A 97,634-square-foot training building (AFRC), a 14,600-square-foot multi-use classroom, a 7,302-square-foot Organized Maintenance Shop (OMS), and a 3,113-square-foot unheated storage (UHS) building were included in the RFP package. The center accommodates training and mobilization, and provides for the storage, inspection, maintenance, and repair of combat and tactical vehicles and equipment associated with the regional deployment of Vermont Army National Guard and Army

Reserve units. RFP development consisted of conducting a design charrette; providing a topographical survey and geotechnical investigation; performing a utility survey; developing conceptual site plans, floor plans, and building elevations; developing RFP specifications; preparing DD Form 1354 – Transfer of Real Property; and providing a PACES construction cost estimate.

Area Maintenance Support Activity and Organizational Maintenance Shop Full Facility Assessment, Fort Totten, Queens, New York. *U.S. Army Corps of Engineers, Louisville District.* Principal-In-Charge. Responsible for design/technical quality and project execution provided by the architecture/engineering staff. Role also included interdisciplinary technical reviews for all design/construction documents. Michael Baker performed a technical assessment for the full facility restoration of the Ernie Pyle 22,800 square feet Area Maintenance Support Activity and 18,900 square feet Organizational Maintenance Shop at Fort Totten, New York. Michael Baker's services included site investigations and data collection; physical inspections and assessments of site features, interior and exterior building characteristics, building systems, and utilities; comparison of the facility conditions with code requirements; and development of a full facility restoration technical assessment report.

Renovation Feasibility Study and Conceptual through Final Design Development, Slippery Rock University, Slippery Rock, Pennsylvania. *Slippery Rock University.* Project Manager. Responsible for leadership, design/technical quality, and project execution provided by architecture, interiors, and engineering resources. Role also included assurance of interdisciplinary technical reviews for all design/construction documents. Under a professional design services open-end contract, Michael Baker performed a feasibility study and space planning, developed conceptual through final designs, and performed construction procurement and administration for the renovation of two primary interior areas of the Eisenberg Building, comprising approximately 3,300 square feet.

Design-Bid-Build and Design-Build Packages for Airfield Facilities and Infrastructure, Cairo West Air Base, Cairo, Egypt. *U.S. Army Corps of Engineers, Middle East District (formerly TAC).* Principal-In-Charge. Responsible for design/technical quality and project execution provided by the architectural and interior design staff. Role also included interdisciplinary technical reviews for all design/construction documents. Michael Baker developed design-build request for proposal (RFP) documents and served as designer of record on select full-design packages, including Maintenance Hanger J, for the construction of facilities and infrastructure to support F-16 Fighting Falcon jet fighter aircraft deployment at Cairo West Air Base. Michael Baker's services included coordinating the on-site planning charrette, developing architecture and building system designs, preparing design submittals, and conducting design reviews.

Consulting Engineering Services for the Pennsylvania Turnpike, Statewide, Pennsylvania. *Pennsylvania Turnpike Commission.* Principal-In-Charge. Responsibilities included detailed interdisciplinary reviews of the design/construction documents, with an emphasis on architecture, and technical management of assigned resources. Michael Baker has served as the consulting engineer for the Pennsylvania Turnpike continuously since 1956. Michael Baker's engineering services include program management; transportation planning; geospatial services; multidiscipline engineering reviews, design management; environmental regulatory compliance monitoring; geotechnical engineering; and construction management and oversight; Michael Baker also provides architectural, engineering, and construction oversight for the renovation of toll plazas, maintenance facilities, state police barracks, and service plaza rest-stop facilities along the turnpike.

Michael Baker
INTERNATIONAL

We Make a Difference

David J. Hilliard, P.E., LEED AP BD+C

Mechanical Engineer

Years with Michael Baker: 8
Years with Other Firms: 19

Degrees

B.S.M.E., 2005, Mechanical Engineering, West Virginia University Institute of Technology

B.S., 2002, Mathematics and Science, West Virginia State College

Licenses/Certifications

Professional Engineer - Mechanical, West Virginia, 2011, [redacted]

Professional Engineer - Mechanical, Mississippi, 2016, [redacted]

Professional Engineer - Mechanical, Louisiana, 2016, [redacted]

LEED Accredited Professional BD+C, West Virginia, 2012, [redacted]

General Qualifications

Mr. Hilliard has a wide range of "hands on" design, engineering, and construction experience. From his beginnings as a carpenter he has expanded his professional abilities to a senior designer for Michael Baker. His recent design experience has included the complex mechanical design of such projects as a large Charleston, West Virginia hospital, a Bus Maintenance Garage and office building for the West Virginia Department of Transportation, an Army National Guard Armory HVAC/Electrical renovation, planning and engineering at the West Virginia Capitol Complex including plumbing renovation design on the historic State Capitol Building. His resume covers over 30 years of real world work in engineering, design, fabrication and construction in both the mechanical and general trades.

Over the years, while practicing his profession, Mr. Hilliard continued his education by studying mathematics, civil and mechanical engineering, finally taking degrees in both mathematics and mechanical engineering. He has continued his professional development through his involvement with ASHRAE, ASME, ASPE, USGBC, and other pertinent organizations.

Experience

Marshall University Campus Master Plan, Huntington, West Virginia. *Marshall University.* Mechanical Engineer. Michael Baker provided engineering services for the update of the campus master plan. Michael Baker's services included traffic analysis, transit system review, concept development for pedestrian and bicycle facilities, and facility and utility assessments. Mr. Hilliard performed building assessment and infrastructure analysis. In addition to providing site utility and building research and assessment for the 2013 Master Plan.

Campus Master Planning and Architectural and Engineering Services for State Capitol Complex, Charleston, West Virginia. *State of WV General Services Division.* Planner. Currently providing the State of West Virginia General Services Division a comprehensive campus-wide master plan for the 55+ acre state capitol campus. Working in conjunction with a team of specialized consultants, currently providing programming, cost estimating and facilities planning support. Services included HVAC Loads as well as utility evaluation and planning for future growth. Michael Baker is providing comprehensive master planning services, plans and construction specifications, and construction administration for improvements to the historic West Virginia state capitol campus. Master planning services include plans for expansion, location of new buildings, pedestrian and traffic circulation, landscaping, utilities, and site security. Michael Baker is also providing construction plans and contract administration services for some of the security and landscaping improvements.

Open-End Architectural and Engineering Services, West Virginia State University, Institute, West Virginia. *West Virginia State University.* Mechanical Engineer. Oversaw investigative and design services for the university on various projects. Duties included utility infrastructure assessment and design and building component repair. Michael Baker provided architectural and multidisciplined engineering services under a ten-year open-end agreement to design renovations, alterations, reconstruction, or extensions of facilities. Michael Baker's services included programming, planning, design development, construction documentation, evaluations, feasibility studies, cost estimating, and construction contract administration.

Design of Three PEMB T-Hangars, Morgantown Municipal Airport (MGW), Morgantown, West Virginia. *Morgantown Municipal Airport.* Mechanical Engineer. Provided mechanical, electrical, and plumbing engineering for T-hangars and medium Voltage Ductbank to supply the facility. Michael Baker provided design and engineering services for three pre-engineered metal building (PEMB) t-hangars west of the West Virginia Army National Guard Readiness Center known as the East Side Development. Phase 1 of the project encompassed development of infrastructure, including site grading, drainage, bituminous taxilanes, pavement markings, vehicle parking, and fencing for the three t-hangars. Phase 2 encompassed the t-hangars on the east side of the airfield and included site civil, structural, architectural, interior, mechanical, plumbing, fire protection, and electrical utilities design. Michael Baker also provided bidding phase support and construction management services.

Coonskin Maintenance Facility. *WV Army National Guard.* Mechanical Engineer. Provided site utility, plumbing, HVAC, and electrical design and construction documents.

GNMG Facility. *Good news Mountaineer Garage.* Mechanical Engineer. Provided plumbing, HVAC, and electrical design and construction documents for an office, event center, and maintenance garage facility.

Architectural and Engineering Services for U.S. Army Reserve and Military Construction Projects, Various Locations. *U.S. Army Corps of Engineers, Louisville District.* Mechanical Engineer. Field inspection and commissioning oversight. Under a third consecutive indefinite delivery-indefinite quantity contract, Michael Baker is providing architectural design and engineering services for a variety of mission-critical projects that serve the U.S. Army Reserve's expanding needs for personnel training and equipment maintenance and support the activation of additional brigade combat teams. Infrastructure projects include equipment concentration site warehouses; tactical equipment maintenance facilities; and central-issue, container-loading, billeting, and dining facilities.

Design-Build Community-Based Outpatient Clinic, Lake Charles, Louisiana. *SDA, Inc.* Mechanical Engineer. Responsible for mechanical engineering for the VA Clinic. Michael Baker provided architecture and engineering services for a new 32,000-square-foot, design-build, community-based outpatient clinic for military veterans. Michael Baker's services included design management; conceptual, preliminary, and final architectural design; structural design; landscape design; interior design; mechanical, electrical, plumbing, and fire protection engineering; and construction administration and inspection.

Design-Build Coonskin Park Access Road Bridge, Charleston, West Virginia. *West Virginia Department of Transportation, Division of Highways.* Project Engineer. Provided concept design, project management, and MEP engineering for the WVANG military base main Access Control Facility. Michael Baker provided engineering services for the design-build construction of a new three-span girder bridge spanning the Elk River and providing access to Coonskin Park. Michael Baker's services included preliminary and final design, construction cost and quantities estimates, and shop drawing reviews.

DODDRIDGE COUNTY EDA-WEST UNION STREETSCAPE. *Doddridge County EDA.* Electrical Designer. Provided electrical design and budget estimates for streetscape lighting.

Renovations of 2 existing buildings at the WVUTech Campus. *West Virginia University.* Mechanical Engineer. Provided project management, mechanical, electrical, and plumbing engineering for the renovation of a 31,000 SF building for engineering labs and a 21,000 SF building for offices and student government.

Terminal Building Improvements, Greenbrier Valley Airport (LWB), Greenbrier County, Lewisburg, West Virginia. *Greenbrier Valley Airport Authority.* QA/QC Engineer. Analyzed problem areas of HVAC system installed by contractor. Proposed solutions and repairs. Michael Baker provided services for improvements to the airport terminal building. Services included project management, an existing facilities inventory and survey; schematic, preliminary, and final design; bidding phase services, construction-phase services; and grant administration support. The terminal improvements included heating and air conditioning system upgrades; restroom modifications and additions; new windows and exterior doors; flooring, ceiling, wall upgrades; vestibules at entrances; and modifications to the access roadway in front of the terminal to accommodate the new vestibule and parking lot expansion.

Phase I & 2 Streetscape Improvements Design and Construction Services, Nitro, West Virginia. *City of Nitro.* Electrical Designer. Provided electrical design services for the client's streetscape project. Michael Baker provided design, bid-phase support, and construction services for streetscape improvements to Bank Street, located in the city's business district. Michael Baker's services included base mapping, background data collection, design plans, construction document preparation, bid-phase support, construction management, and construction inspection.

Little Kanawha Bus Facility, Calhoun County, West Virginia. *West Virginia Division Of Public Transit.* Mechanical Designer. Responsible for the Mechanical, Electrical and Plumbing Design, MEP Document Preparation, and Construction Administration for a new bus maintenance and office facility for Gilmer County. Duties include the design of the vehicle storage, cleaning and maintenance mechanical systems, as well as oil pumping and collection systems. The design of an energy efficient HVAC system for the entire building is also part of his responsibilities. Michael Baker is providing architectural and engineering services, landscape architecture, and construction-phase support for a new, 9,900-square foot, pre-engineered, metal and brick bus maintenance and transit operations facility. The 5,100-square-foot administrative area will include offices, a conference room, a money-counting room, and a driver-training room, and the 4,800-square-foot bus maintenance area will include storage for seven buses. The facility will be ADA-compliant and is being designed to achieve LEED® certification. Services include site survey and design, geotechnical testing, environmental compliance, utility coordination, bid documents, bid-phase support, and as-built drawings.

Design of U.S. Army Reserve Center Renovation and Expansion, Homewood, Illinois. *U.S. Army Corps of Engineers, Louisville District.* Mechanical Engineer. Responsible for field inspection and commissioning oversight. As designer of record, Michael Baker provided architectural and engineering services for the renovation of a 400-member U.S. Army Reserve Center (ARC) and construction of two single-story additions totaling 35,694 square feet–a 34,294-square-foot Training Building and a 1,400-square-foot ancillary structure–along with a 3,500-square-foot Unheated Storage Building. The new construction includes a 22,000-square-foot parking area for military equipment and 140 parking spaces for privately owned vehicles. Tasks were performed under an indefinite quantity-indefinite delivery engineering agreement. Michael Baker designed the training facility to meet LEED® Silver certification. Michael Baker's services included architecture, surveys, environmental and geotechnical investigation, all site and building engineering, cost estimating, value engineering, and LEED® credit template documentation. Administrative and training 60,500-square-foot building. This project has achieved LEED certification.

Michael Baker
INTERNATIONAL

We Make a Difference

Owen Milligan, P.E.

Senior Electrical Engineer

Years with Michael Baker: 8
Years with Other Firms: 21

Degrees

B.S., 1988, Electrical Engineering, Gannon University

Licenses/Certifications

Professional Engineer - Electrical, Connecticut, 2015, [redacted]

Professional Engineer - Electrical, New York, 2014, [redacted]

Professional Engineer - Electrical, West Virginia, 2013, [redacted]

Professional Engineer, Ohio, 2011, [redacted]

Professional Engineer, California, 2003, [redacted]

Professional Engineer, Pennsylvania, 1999, [redacted]

General Qualifications

Mr. Milligan is an electrical engineer who is experienced working with consulting engineering firms in the study and design of electric distribution and control systems, emergency power for process plants and facilities, water/wastewater treatment plants, government and commercial projects, ASHRAE energy-efficient building design, coordination with vendor and contractors, and approval of vendor drawings. He has a strong knowledge of distribution equipment and designs, motor control center layouts and design, and start-up and services during construction. He is capable of handling multiple projects from conception to final design, working as a team member toward meeting project goals. His work has included management of Michael Baker's electrical engineering department, staff engineer, supervising and providing technical advice to designers and coordinating design and construction work with engineers, contractors, vendors, and clients. Mr. Milligan has participated in six-step SAVE International Process value engineering studies.

Experience

Little Kanawha Bus Facility, Calhoun County, West Virginia. *West Virginia Division Of Public Transit.* Electrical Engineer. Provided electrical engineering support to mechanical designer. Michael Baker is providing architectural and engineering services, landscape architecture, and construction-phase support for a new, 9,900-square foot, pre-engineered, metal and brick bus maintenance and transit operations facility. The 5,100-square-foot administrative area will include offices, a conference room, a money-counting room, and a driver-training room, and the 4,800-square-foot bus maintenance area will include storage for seven buses. The facility will be ADA-compliant and is being designed to achieve LEED® certification. Services include site survey and design, geotechnical testing, environmental compliance, utility coordination, bid documents, bid-phase support, and as-built drawings.

Design of Tactical Equipment Maintenance Facility and Equipment Concentration Site Warehouse, Fort McCoy, Wisconsin. *U.S. Army Corps of Engineers, Louisville District.* Technical Advisor. Responsible for lead electrical engineering. Michael Baker was the designer of record for the design-bid-build delivery of an approximately 58,000-square-foot, two-story modified large Tactical Equipment Maintenance Facility (TEMF) and an approximately 44,000-square-foot, one-story Equipment Concentration Site Warehouse, along with 30 acres of gravel hardstand designated for organizational parking. Tasks were performed under an indefinite quantity-indefinite delivery engineering agreement. Both structures were designed to achieve LEED® Silver certification and the TEMF warehouse has achieved certification. Michael Baker's services included architecture, surveys, environmental investigation, geotechnical oversight, all site and building engineering, cost estimating, value engineering, and LEED® certification administration.

N-358R10, Multimodal Public Transportation Open-End Agreement, Statewide, Pennsylvania. *Pennsylvania Department of Transportation, Central Office.* Technical Advisor. Responsible for lead electrical engineering. Michael Baker provided services for public transportation planning throughout the state under an open-end agreement for multimodal public transportation planning. Services included planning, architecture and engineering design, design management, financial assessments, quality assurance and quality control, policy development, construction management and inspection, agency coordination, budget and schedule monitoring, and grant administration services.

Materials Research Technology Center (MRTC) Preliminary Design, Confidential Location. *Confidential Client.* Senior Electrical Engineer. Responsible for the electrical design of a state-of-the-art Materials Research facility. Responsibilities included design of the 13,200-Volt incoming power feed, 480-Volt distribution system, indoor and outdoor lighting systems to meet ASHRAE 90.1 2004 energy guidelines, grounding, lightning protection, special electrical systems for radioactive areas, and special power distribution for laboratory equipment, as well as providing specifications. Provided field support for electrical coordination of existing laboratory equipment to be relocated to the new facility. Also responsible for the management of four electrical designers, coordination with the client, and coordination with process, mechanical, and plumbing disciplines.

Systems Integration Maintenance Office, Fort Campbell, Kentucky. *U.S. Army Corps of Engineers, Louisville District.* Electrical Engineer. Responsible for acting as the lead electrical engineer in charge of complete building and site electrical design. Duties ranged from lighting and power design to grounding and lightning protection design, to providing special power requirements (28 VDC and 115 VAC 400 Hz) for testing and maintenance labs. Other duties included site lighting and site power distribution, which incorporated a partial redesign of their medium voltage overhead power distribution system. Also, wrote specifications for building electrical and site electrical work.

Michael Baker was the designer of record for a 48,400-square-foot Systems Integration Maintenance Office (SIMO) facility. The facility includes administrative space (private offices and open office space); classrooms; conference rooms; laboratory spaces; storage spaces; metal fabrication shop; computer labs; flight lockers; showers and restrooms; mechanical, electrical and communication rooms; intrusion detection; surveillance; and electronic access control. Spaces support SIMO flight operations, mission planning, and pilot flight planning. This project complied with UFC 4-010-01 DoD Anti-Terrorism Force Protection requirements and per unified facilities criteria and Mission Planning spaces complied with ICS 705-1, 705- 2, and TER room were designed to comply with AR 380-5 requirements. Site design included parking, stormwater management/bio-retention, landscaping and site utilities. The project is designed to achieve a LEED Silver Certification.

Zelienople Water Supply, Zelienople, Pennsylvania. *Beaver Falls Municipal Authority.* Electrical Engineer. Designer of Record. Michael Baker's responsibility is for design and permitting of a 10-mile of a 12-inch water transmission pipeline, and a prefabricated package water booster station. The waterline is primarily within state highway right of ways in Beaver and Butler Counties. The water booster station will have three 650 gallon per minute pumps with a total dynamic head of 700 feet. The water booster station will have an emergency generator and a chlorination unit.

New Server Room and Computer Test Lab in 8-Pack Modular Building T06, U.S. Coast Guard TISCOM, Alexandria, Virginia. *U.S. Coast Guard TISCOM.* Electrical Engineer. Responsible for electrical drawing review. Michael Baker prepared design and construction documents for a 440-square-foot server room and computer test lab in the 8-Pack Modular Building T06. The existing space was comprised of an open floor plan with modular furniture adjacent to the computer servers and test lab. An approximate 33-linear-foot non-load bearing

wall is to be constructed in order to separate personnel from computer equipment. Consideration was given to electrical lighting configurations, telecommunication connectivity, power requirements, and HVAC issues.

Vehicle Maintenance Complex, Fort Bragg, North Carolina. *U.S. Army Corps of Engineers, Savannah District.* Electrical Engineer. Performed electrical engineering design and coordination for site utilities, power distribution, lighting, site communications, interior communications, hard stand power and communications, ground and lightning protection, and fire alarm/mass notifications. Designs were required to meet UFC and military design standards. Michael Baker was the designer of record for the design-build delivery of a vehicle maintenance complex that included six tactical equipment maintenance facilities (TEMF) at Fort Bragg. The project was performed under a multiple-award task-order contract for the design and construction of facilities to be used for the maintenance, repair, overhaul, and storage of military tactical vehicles and equipment.

Equipment Concentration Site Warehouse, U.S. Army Reserve Center, Lakehurst, New Jersey. *U.S. Army Corps of Engineers, Louisville District.* Electrical Engineer. Electrical Engineer responsible for design build RFP. Michael Baker prepared the request-for-proposal criteria documents for a design-build Equipment Concentration Site, including a 54,968-square-foot General Purpose Warehouse, and a 32,903-square-foot Vehicle Maintenance Facility based on a Tactical Equipment Maintenance Facility standard design. Michael Baker's services included topographical survey, geotechnical investigation, value engineering, cost estimates, sustainable design, and energy conservation criteria, including LEED® validation, and design-build compliance reviews. The project is designed to achieve LEED® Silver certification. With the absence of public and base utilities, specific coordination criteria were established with the adjacent New Jersey Army National Guard Combined Logistics Training Facility to utilize on-site well water and septic field systems rather than extend and burden existing public infrastructure. Michael Baker also provided extensive stormwater management design and permit applications in compliance with local regulations; specifically, the New Jersey Pinelands Commission, and Lakehurst NAES requirements to facilitate project schedule constraints mandated by the Base Realignment and Closure initiative.

Electrical Utility Company Multidisciplined Architectural, Engineering, and Construction Services, Allegheny and Beaver Counties, Pennsylvania. *Duquesne Light Company.* Electrical Engineer. Responsible for electrical drawing review. Michael Baker has been providing multidisciplinary services at multiple locations since 2009. Michael Baker's tasks include full-service design, surveying, cost estimating, scheduling, permitting, bid-phase support, construction management, and construction inspection. Assignments range from construction management and inspection for the crack-sealing of asphalt parking lot surfaces to turnkey design and construction services for the addition of covered truck sheds at multiple sites, to design of a three-story addition for an administrative office building.

CTSA Office Complex. *Brady's Run Sanitary Authority (Formerly Chippewa Township Sanitary Authority).* Electrical Engineer. Responsible for complete design of power, lighting, grounding, site lighting and site utilities for Township Municipal Building. Also responsible for the overseeing of junior engineer working on the project.

Michael Baker
INTERNATIONAL

We Make a Difference

Wayne Airgood, P.E.

Structural Engineer

Years with Michael Baker: 8
Years with Other Firms: 23

Degrees

B.S.C.E., 1984, Structural Engineering, Geneva College

Licenses/Certifications

Professional Engineer, Pennsylvania, 1999 [redacted]

Professional Engineer, Maryland, 2013, [redacted]

Professional Engineer, North Carolina, 2014, [redacted]

General Qualifications

Mr. Airgood is a practicing structural engineer with experience in the design of commercial, institutional, light industrial building structure, and foundation systems.

Experience

Design of Central Issue Facility, Fort McCoy, Wisconsin. *U.S. Army Corps of Engineers, Louisville District.* Mr. Airgood was the senior structural engineer of record responsible for design of the building structure and foundation systems from concept through construction of an approximate 62,553-square-foot large-sized Central Issue Facility (CIF) to expedite the shipping and receiving, distribution, processing, and exchange of soldier equipment. The structural system consisted of steel joist and girder framing supported by interior steel columns and exterior precast, insulated concrete load-bearing walls. Foundations were soil supported, isolated and continuous, reinforced spread footings.

Container-Loading Facility Design, Fort McCoy, Wisconsin. *U.S. Army Corps of Engineers, Louisville District.* Mr. Airgood was the senior structural engineer of record responsible for the design of a clear span steel roof framing system to achieve column-free interior warehouse space of a 30,862-square-foot Container-Loading Facility. Roof framing system is supported by interior steel columns and exterior precast, insulated concrete load-bearing walls. Foundations were soil supported, isolated and continuous, reinforced spread footings.

Montgomery County Public Schools Foodservices Facility. *Montgomery County, Department of General Services.* Mr. Airgood was the senior structural engineer of record responsible for the development and design of structural framing and foundation systems for 70,000-square-foot food production, warehouse and distribution facility. His responsibilities included coordination with owner/user and other engineering disciplines throughout design, performing and overseeing of production structural design calculations and documents and construction administration services such as review of structural product submittals and periodic site visits.

West Haven Commuter Rail Station Engineering Design, West Haven, Connecticut. *Connecticut Department of Transportation.* Mr. Airgood was the senior structural engineer responsible for the structural framing and foundation design of a two story passenger train station building. The station building featured a two story, glass curtain wall enclosed passenger waiting area with exposed to view curved roof structure. The design also included a 75 foot span, glass curtain wall enclosed pedestrian bridge spanning over the four rail line track bed to connect the station building with a new two story stair and elevator tower. His responsibilities included coordination with engineering and architectural disciplines during design, performing and overseeing of production structural design calculations and documents, and review of fabrication shop drawings and other construction administration services as related to the building structural systems.

Penn Hills Operations Center Addition, Penn Hills, Pennsylvania. *Duquesne Light Company.* Mr. Airgood was the senior structural engineer of record responsible for the development, design, and detailing of a load bearing masonry wall and steel framing addition to an existing facility.

Design-Build Tactical Equipment Maintenance Facilities, 31st ADA Brigade, Fort Sill, Oklahoma. *U.S. Army Corps of Engineers, Tulsa District.* Mr. Airgood was the senior structural engineer responsible for the design of the foundation systems to support an 18,000-square-foot, 35,200-square-foot, and 57,031-square-foot pre-engineered steel Tactical Equipment Maintenance Facilities (TEMF), and a 20,000-square-foot Supply Support Activity facility supply support activity warehouse (SSA). Because of existing expansive soil conditions, the ground floors of each building were designed as reinforced concrete floor systems with a void space between the expansive soil and floors. The concrete floor system and PEMB structural columns were supported by a deep foundation system of drilled concrete piers extending to rock. His responsibilities included review of structural fabrication drawings, attending design coordination meetings and periodic site visits during construction.

Buildings 200 & 250 of Imperial Business Park, Imperial, Pennsylvania. Mr. Airgood was the lead structural engineer responsible for the development and design of the structure and foundation systems for two, 250,000-square-foot warehouse facilities. Responsibilities also included construction administration services such as review of structural product submittals and periodic site visits. Each building consisted of steel joist and joist girder roof framing supported by interior steel columns and exterior precast concrete bearing and shear walls. Foundations were soil supported, isolated and continuous, reinforced spread footings.

ABB Manufacturing and Office Facility, Mt. Pleasant, Pennsylvania. Mr. Airgood was the lead structural engineer of a high-bay manufacturing, testing and warehouse facility for electric transformer equipment, including an attached two-story office area. The structural systems consisted of precast concrete wall panels enclosing a steel framed interior column and roof structure, including the support of numerous under-hung crane systems throughout the facility ranging from 5- to 20-ton capacities. The lateral framing system was a combination of steel braced and moment frames, and foundations were soil supported isolated and continuous, reinforced spread footings.

Fuel Cell Facility, Pittsburgh, Pennsylvania. *Siemens Westinghouse.* Mr. Airgood was the lead structural engineer of a high-bay manufacturing facility, warehouse and two-story attached office area. The structural systems consisted of precast concrete wall panels enclosing a steel framed interior column and roof structure. The lateral framing system was a combination of steel braced and moment frames, and the structural design included support of various top running bridge crane systems ranging from 10- to 40-ton capacities. The foundations were soil supported isolated and continuous, reinforced spread footings.

Michael Baker
INTERNATIONAL

We Make a Difference

John D. Lasko, P.G.

Senior Geologist

General Qualifications

Mr. Lasko's background encompasses a variety of geotechnical projects. His experience includes project task management, test boring layout, drilling inspection, geotechnical interpretation of subsurface geology, construction inspection and related project field work.

Experience

Rehabilitation of Five Pennsylvania Dams, Various Locations, Pennsylvania. *Pennsylvania Department of General Services.* Senior Geologist. Responsibilities included: test boring inspection, drilling contractor coordination, lab testing coordination, lab testing requisitions, boring contract administration, boring contract quantity tracking, subsurface findings interpretation, geologic literature review, and report writing. Michael Baker is providing engineering services for the rehabilitation of the Kyle Lake, Canonsburg Lake, Dutch Fork Lake, Donegal Lake, and Somerset Lake dams, which are owned by the Pennsylvania Fish and Boat Commission, to ensure compliance with Pennsylvania Department of Environmental Protection regulations. Michael Baker's tasks include reviewing drawings and reports; field-inspecting all elements, including spillways and gatehouses; performing hydrologic and hydraulic analyses; performing topographical surveys and geotechnical investigations to evaluate current conditions; identifying and analyzing rehabilitation alternatives; and providing construction management services. Designs included spillway replacements, outlet work modifications, overtopping protection, and post tensioned rock anchors.

Years with Michael Baker: 27
Years with Other Firms: 2

Degrees

M.S., 1989, Earth Science and Geology, California University of Pennsylvania

B.S., 1985, Geology, Juniata College

Coursework, 0, General Arts and Sciences, Saint Vincent College

Coursework, 0, Geotechnical Engineering, Geneva College

Licenses/Certifications

Professional Geologist, Pennsylvania, 1995, [redacted]

14.2.1 Geotechnical Testing, Pennsylvania

14.1.1 Soil Exploration, Pennsylvania

PennDOT Inspector, Level I, Pennsylvania, 1999, [redacted]

PennDOT Inspector, Level 2, Pennsylvania, 1999, [redacted]

NS Roadway Worker Protection Certification, 2015

Mon River Bridge, Pittsburgh, Pennsylvania. *Port Authority of Allegheny County.* Senior Geologist. Responsible for performance of field and office coordination during subsurface investigation. Michael Baker performed an environmental assessment, preliminary design, and final design for a new bridge to cross the Monongahela River in Pittsburgh, Pennsylvania. Numerous location and structural alternatives were considered. The recommended alternative was a single span steel basket handle arch.

Research and Development Facility, Institute for Scientific Research, Fairmont, West Virginia. *BE&K Building Group.* Senior Geologist. Responsible for providing site reconnaissance, geologic interpretation and cut slope design recommendations. Using a design-build delivery method, a new 263,000-square-foot, five-story Research and Development Facility was constructed for The Institute for Scientific Research (ISR). The facility was outfitted with advanced technology features and amenities that included: distance learning centers; voice/data systems; two-story exhibit hall; heavy research floor with high bay area; prototype workshop and 10-ton crane; fitness center; and full-service kitchen/restaurant. In addition to the environmentally sensitive design features, a number of unique energy-efficient strategies were used to accomplish LEED® certification.

Site Preparation and Improvements for North Fayette Township Community Park, Allegheny County, Pennsylvania. *North Fayette Township.* Senior Geologist. Responsible for providing geotechnical field services for landslides along township roads. Provided recommendations, alternatives and cost estimates to repair. Michael Baker, as a subcontractor, was responsible for the development of grading plans, stormwater management, site permitting, surveying, and utility design for a 34-acre park located off Donaldson Road. The project included three baseball fields sized for Little League play, a lighted soccer field, and a football field. Other amenities included an amphitheater, concession stand, pavilions, a 1.1-mile walking trail, and restroom facilities. Michael Baker designed roadways, parking facilities, potable water, electrical, and sanitary and storm sewers, and developed a complex stormwater management and E&S plan. Michael Baker also performed design and pre-construction surveying of the site.

Outside Plant Maintenance, Maryland, Virginia, and West Virginia, Washington, D.C. *AT&T Corp.* Geologist. Responsible for providing recommendations and cost estimates for cable river crossings. Michael Baker provided the knowledge and expertise needed to address the range of issues associated with on-going cable facility upgrades and rearrangements. A considerable number of existing cable facility upgrades and rearrangements are necessary in the continually growing urbanized areas located throughout the Northeastern part of the United States, specifically Maryland, Virginia, West Virginia, and Washington, D.C.

Brush Run Stream Restoration, Washington County, Pennsylvania. *Eighty Four Mining Company.* Senior Geologist. Responsible for providing construction services for soil amendment verification for stream restoration project, including review of contractors' mixing methods and materials, and conducting soil sampling and laboratory testing coordination for sample permeability and compaction verification. Michael Baker provided construction oversight for the restoration of Brush Run Stream. Michael Baker's services included daily contractor monitoring, quality assurance, quality control testing, project scheduling for the installation of a stable stream channel and channel liner. This project mitigated the effects of stream flow loss due to mine subsidence by incorporating a bentonite clay channel liner to prevent infiltration of runoff into the bedrock strata, and implemented natural channel design to establish a stable stream geometry and improve biological habitat.

Presentations

Landsliding in Pennsylvania J.V. Hamel. 46th Highway Geology Symposium, Charleston, West Virginia. Substitute presenter for J.V. Hamel (who could not attend), May 15, 1995.

Publications

Rock Slope Risk Assessment, Pittsburgh Airport Busway. James V. Hamel (GTECH, Inc., Pittsburgh, PA), Gordon M. Elliott (Consulting Engineer, Wexford, PA), John D. Lasko (Michael Baker, Beaver, PA), Chris A. Ruppen (Michael Baker, Beaver, PA). Published in The Proceedings for the Second International Conference on Environmental Management (ICEM2), February, 1998, Wollongong, Australia.

Michael Baker
INTERNATIONAL

We Make a Difference

John S. Frazer, P.S.

Professional Surveyor

Years with Michael Baker: 5
Years with Other Firms: 32

Degrees

B.S., 1986, Engineering Technology, West Virginia Institute of Technology

A.S., 1986, Civil Engineering Technology, West Virginia Institute of Technology

Licenses/Certifications

First Aid/CPR Training, 2017

Professional Land Surveyor, West Virginia, 1996, [redacted]

General Qualifications

Mr. Frazer has years of surveying experience. He is currently the Survey Manager for the Charleston, West Virginia office. Mr. Frazer has been involved with various types of surveying services on projects in Maine, New Hampshire, New York, Pennsylvania, Virginia, as well as throughout Kentucky and West Virginia. Mr. Frazer's experience includes geomatics, topographic surveys, aerial mapping control, research, boundary surveys and retracements, highway right-of-way acquisitions and reacquisitions, construction stakeout, residential and commercial site development surveys, volumetric surveys, industrial forensic surveys, gas transmission line surveys, industrial facilities surveys, technical services, project coordination, and client relationships.

Experience

Appalachian Corridor H. *West Virginia Department of Transportation, Division of Highways.* Project Professional. Responsibilities included providing technical advice on surveying practices and procedures; preparing project scope and labor cost budget; courthouse research; meeting with Forest Service land agent to discuss forest boundaries, easements, and rights-of-way; field survey locating boundary corner evidence, old power line right-of-way, existing gas line right-of-way, and utility and infrastructure identification; field survey data processing and management; deed plots and composites for right-of-way plan use utilizing AutoCAD Civil 3D, and for providing professional opinions as to property location in the field.

City of Nitro. *City of Nitro.* Project Professional. Responsible for technical advice on surveying practices and procedures, topographic site survey of project area, locating and identifying site utilities and infrastructure, processing and managing survey data, and oversight and quality assurance and quality control of existing site mapping for improvements design.

Madison Streetscape. *West Virginia Department of Transportation, Division of Highways.* Surveyor. Responsibilities included technical advice on surveying practices and procedures, topographic site survey of project area, locating and identifying site utilities and infrastructure, processing and managing survey data Leica Geo Office and AutoCAD Civil 3D, and oversight and quality assurance and quality control of existing site mapping for improvements design.

MGW Multi-Discipline On-Call Engineering and Planning Services (3 years plus two option years) billed by classifications. *Morgantown Municipal Airport.* Project Professional. Responsible for technical advice on surveying practices and procedures, providing courthouse research, identifying land parcels in runway expansion area, compiling deeds, and forming an accurate composite of land parcels in relationship to airport survey. Responsible for establishment of horizontal and vertical survey control for aerial mapping, the aerial mapping verification survey, processing and managing survey data, oversight and quality assurance, and quality control of field survey data. Responsible for providing professional certification of horizontal and vertical accuracies of aerial mapping.

Mobile LiDAR survey of WVU MPRT system. *Thales Canada, Transportation Solutions.* Project Professional. Responsible for survey crew coordination and management, establishing horizontal and vertical control for Mobil LiDAR mapping of the MPRT corridors, managing and processing survey data utilizing Leica Geo Office and MS Excel, providing oversight and quality control of processed survey data, providing survey data to LiDAR mappers, and for drafting quality assurance documentation for processed survey data and providing said documentation to client.

Open-End Architectural and Engineering Services, West Virginia State University, Institute, West Virginia. *West Virginia State University.* Project Professional. Responsibilities included technical advice on surveying practices and procedures, survey crew coordination and scheduling, field survey support, field data processing and management, quality assurance and quality control of the survey data, and professional supervision and certification. Michael Baker provided architectural and multidisciplined engineering services under a ten-year open-end agreement to design renovations, alterations, reconstruction, or extensions of facilities. Michael Baker's services included programming, planning, design development, construction documentation, evaluations, feasibility studies, cost estimating, and construction contract administration.

Terminal Apron and Taxiway F Pavement Rehabilitation, Mid-Ohio Valley Regional Airport (PKB), Wood County, West Virginia. *Wood County Airport Authority.* Project Professional. Responsibilities included providing technical advice on surveying practices and procedures, establishing horizontal and vertical control for mobile LiDAR mapping, performing a topographic and existing conditions survey of the project area which included the identification and location of structures, utilities and infrastructure, managing and processing survey data, overseeing quality assurance, as well as quality control of the survey data, and providing the survey data to the design team to aid them with their design. Michael Baker provided design, bidding, and construction management and inspection for rehabilitation of portions of pavement for the Terminal Apron and Taxiway F. The North and South Terminal Aprons were exhibiting joint reflective cracking, while the Transient Apron and Taxiway F were in extremely poor condition; both posed a threat of foreign object debris hazard. Michael Baker prepared design documents in accordance with the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5300-13A, Airport Design, and other current FAA requirements.

U320-DUN/BA-2.02. *West Virginia Department of Transportation, Division of Highways.* Project Professional. Responsibilities included providing technical advice on surveying practices and procedures, performing a topographic and existing conditions survey of the project area which included the location and identification of utilities and infrastructure, managing and processing survey data, providing oversight and quality assurance as well as quality control of the survey data for mapping and design, and review of the base mapping to be used by the design team.

West Milford Sidewalks 2013. *West Virginia Department of Transportation, Division of Highways.* Surveyor. Responsibilities included providing technical advice on surveying practices and procedures, performing a topographic and existing conditions survey of the project area which included the location and identification of utilities and infrastructure, managing and processing survey data, providing oversight and quality assurance as well as quality control of the survey data for mapping and design, and review of the base mapping to be used by the design team.

Boundary Survey. *Rice Energy, LP.* Surveyor. Responsibilities included providing technical advice on survey field practices and procedures, monumentation of land boundaries, and quality assurance and quality control checks for land boundary monumentation.

AEP - KAMMER MITCHELL. *American Electric Power (AEP).* Project Professional. Responsibilities included client relations, preparation of labor and ODC budget, development of project schedule, task order and project review process, work load delegation, courthouse research, providing boundary line opinions and professional review of previous boundary opinions, providing supervision over the drafting of legal descriptions for land boundaries, easements, rights-of-way, and survey plats, preparation of legal descriptions for land boundaries, easements, and rights-of-way. Also responsible for providing oversight quality assurance and quality control of deliverables, professional supervision, and professional certification of legal descriptions and survey plats.

Big Sandy River Site Screening, Boyd, Greenup, and Lawrence Counties, Kentucky. *Commonwealth of Kentucky.* Surveyor. Responsibilities included public relations, performing courthouse research, owner and residence interviews to aid in land boundary determinations, reviewing and compiling deeds, plotting deeds and compiling them into an accurate composite of land parcels, overlaying the deed composite onto topographic mapping for field reconnaissance for boundary evidence, performing a field survey for land boundary retracement, managing and processing survey data, evaluating field evidence and comparing it to record evidence, determining land boundaries from the results of the field survey, reviewing professional opinion regarding the boundary determination with resident registered KY professional, creating a stake out package and performing a boundary survey (the setting and marking corner monuments resulting from the boundary opinion), preparation of a legal description and report of survey, and oversight of the preparation of the survey plat. Michael Baker provided site selection for ecosystem preservation and restoration services in the Big Sandy River Service Area. Michael Baker's services included geographic information system database development, mapping, tool development, and modeling; global positioning system mapping verification; water sampling; visual utility location; and property owner coordination.

Ergon Property Lease to Campbell Transportation Co. *Ergon, Inc.* Project Professional. Responsibilities included client relations, contacting client and discussing project needs and priorities, preparing project scope and labor cost budget, online courthouse research, gathering and compiling previous Michael Baker survey data, professional supervision of the preparation of lease exhibit and survey plat revisions and additions, preparation of legal description of proposed lease area, quality assurance and quality control for lease exhibit and survey plat revisions, professional certification of the deliverables, and project follow up with client.

NiS Phase II - Clendenin Cobb. *NiSource Corporate Services Company.* Project Professional. Responsibilities included client relations; preparation of project scope and budget cost; coordination of project scope, facilities, and deliverables with client; progress reports; survey crew scheduling; performing existing facilities location survey; creating detailed sketches of road crossings, valve sets, and various other points of interest; processing and management of field data; preparation of CAD drawings and Esri files of survey results. Deliverables included CAD drawings and Esri files and review of survey results with client.

27JULY15 STANDARD AGREEMENT. *New River Gorge Development Authority.* Project Professional. Responsibilities included providing technical advice on surveying practices and procedures, performing a topographic and existing conditions survey of the project area which included the location and identification of utilities and infrastructure, processing and managing survey data, providing oversight and quality assurance as well as quality control of survey data for mapping and design, and review of the base mapping to be used by the design team.

ALTA AND PARTITION SURVEY. *Ergon, Inc.* Project Professional. Responsibilities included client relations, professional supervision of plat mapping, quality assurance and quality control of deliverables, and project follow up with client.

APPENDIX 2 – Project Profiles

Michael Baker
INTERNATIONAL

We Make a Difference

Starpointe Mixed Use Development Master Plan

Washington County, Pennsylvania

Client

Fourth River Development LLC
acting on behalf of the Washington County Council on Economic Development
116 Federal Street, Suite 260
Pittsburgh, PA 15212

Michael Baker's Role

- Site engineering
- Geotechnical engineering
- Traffic engineering
- Utility engineering

The Baker has teamed with LaQuatra Bonci Associates to form a multi-disciplinary team that has developed a master plan for the re-use of over 1,000 acres of vacant brownfield land in Washington County, Pennsylvania.

The design for this project will incorporate an ecologically friendly approach to the development of a mixed use, industrial, and commercial center. The project will attempt to mitigate the impacts of the development through the use of low impact design elements and ecologically sensitive site planning.

The project followed a three part process; exploratory phase, master plan development and final plan creation.

The exploratory phase was to investigate and assess all existing conditions and planning documents. Additionally, the team initiated a comprehensive public participatory process where community input was gathered and cataloged for consideration.

The master plan development phase prepared a program for the development of the site. Included in the site programming was a park and open space system in response to the community, design alternatives of potential park configurations that provided a mix of commercial, office and industrial land uses, and a set of development guidelines to be implemented for each land use type. The plan was then presented in a public forum for review and comment.

The final plan preparation consisted of taking the desired master plan configuration and refining it according to the owner and public commentary. The goal of the plan was to provide a guide for the development of the parcel that will be an economic engine for the region as well as a community supported development.

Michael Baker
INTERNATIONAL

We Make a Difference

West Virginia State Capitol Complex Master Plan

Charleston, West Virginia

The West Virginia Capitol Complex was created following the vision of Cass Gilbert, one of America's most significant architect of the first half or the 20th century. The Campus Plan and the Capitol Building represent his most mature work, as they were conceived and executed towards the end of his career and life.

Following his death in 1934, his son, Cass Gilbert Jr., continued his father's vision. Later additions and changes to the campus have shaped the site in different directions since the initial plan. A series of campus wide plans and recent additions and changes of the campus have attempted to address current needs on a piecemeal basis. Today, the State of West Virginia is facing a series of pressing needs and a new reality in a post 9-11 world, and is seeking to:

- Address the needs of the government and its important campus in a comprehensive and holistic manner
- Capture the essence of Cass Gilbert's original vision and design
- Create a framework for addressing future needs, and
- Recommend specific project that can begin to implement the recommendations of the plan.

Client

State of West Virginia
Department of Administration
General Services Division
Building 1, Room MB60
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305

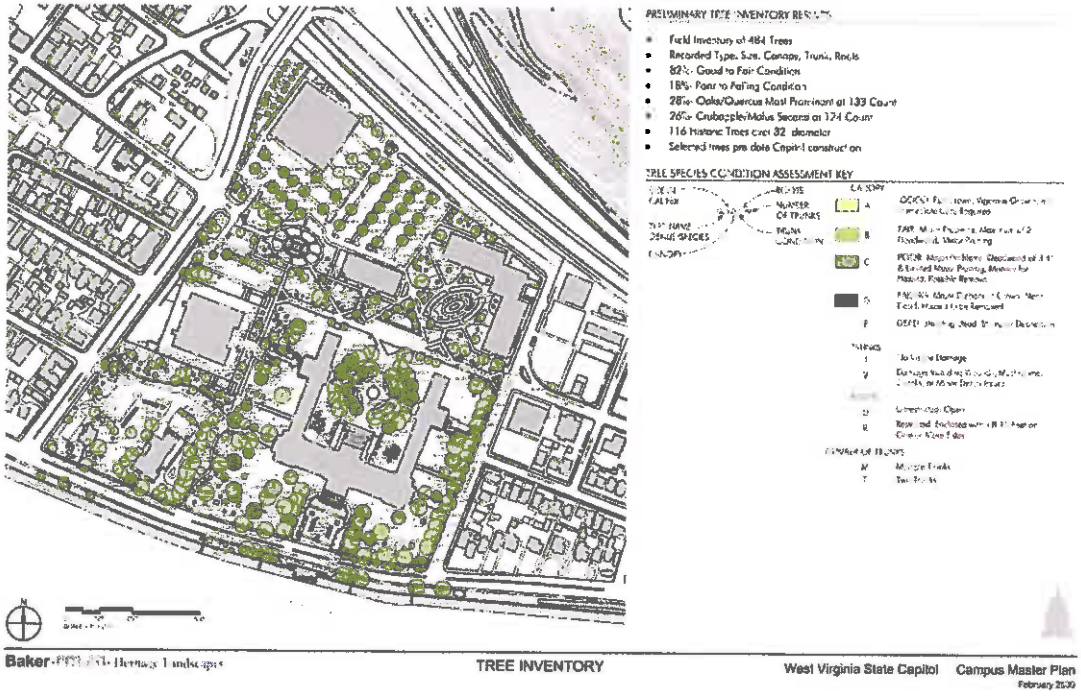
Mr. Michael Q. Evans
304-957-7145

Contract Completion Date

2013

Baker's Role

- Master Planning
- Architecture
- Engineering
- Cost Estimating



Michael Baker
INTERNATIONAL

We Make a Difference

The 2013 State Capital Complex Master Plan was prepared in a collaborative manner, engaging a wide range of government leaders, stakeholders, users and other entities. Items addressed in the Master Plan include:

- General Campus Planning
- Programming Planning
- Historic Research
- Pedestrian Flow & Accessibility
- Parking
- Security
- Utilities and Infrastructure
- Hazardous Materials
- Future Growth

Michael Baker
INTERNATIONAL

We Make a Difference

Hopewell Industrial Park, Phase II

Hopewell Township, Pennsylvania

Client

Beaver County Corporation for Economic Development (BCCED)
250 Insurance Street, Suite 300
Beaver, PA 15009

Michael Baker's Role

- Grading plans
- Soil erosion and sedimentation control
- NPDES and municipal permitting
- Surveying services

The Beaver County Corporation for Economic Development (BCCED) desired to proceed with mass grading operations to extend an on-going Business and Industrial Park project to an area behind a recently constructed cul-de-sac (Commerce Way) and "pad-ready" development sites. Baker designed the mass grading to be performed in such a way as to allow for the future extension of Commerce Drive and adjacent building pads. Baker's responsibilities included a Survey Update, preparation of Grading plans and NPDES Permitting, Bid Phase Services, and Construction Inspection. These four items are discussed in detail below.

Baker performed a field check of elevations on the adjacent properties for the purposes of determining "tie-in" grades. The field check was incorporated into an Existing Conditions Plan and was used to determine the limits of the proposed grading.

Baker prepared a Grading and Storm Drainage Plan with engineering details such as rock toes, underdrains, etc. An earthwork analysis was performed to "balance" cut and fill. The site was graded to recognize transitions into existing grades at the perimeter of the site.

An Erosion and Sedimentation Control Plan (E&SCP) was prepared and submitted to the Beaver County Conservation District. The plans were prepared in accordance with the requirements of Pennsylvania Code Title 25, Chapter 102, Rules and Regulations. The E&SCP required a Pennsylvania Department of Environmental Protection (PaDEP) National Pollutant Discharge Elimination System (NPDES) General Permit for the Discharge of Stormwater.

Baker also assisted BCCED in the preparation of the bidding documents, and opened and tabulated bids. During construction, Baker provided a full-time Resident Site Representative to observe construction activities, reviewed pay requests, and assisted BCCED in contract closeout procedures.

Michael Baker
INTERNATIONAL

We Make a Difference

Tin Mill Redevelopment

City of Aliquippa, Pennsylvania

The Beaver County Corporation for Economic Development (BCCED) desired to proceed with demolition and mass grading operations at a former Tin Mill site to create "pad-ready" development areas along the Ohio River in the City of Aliquippa. The existing site consists of the demolished (above ground only) Tin Mill, with one active railroad track and one active roadway. The below grade foundations and structures will be semi-demolished and abandoned in place.

For this project it is necessary to improve the existing Woodlawn Road from its southern end to the south end of the former Tin Mill property. Baker designed the proposed infrastructure such as water and sewer, and provided an area designated as a utility corridor for electric, telephone/data lines, and gas lines. Baker also provided coordination with the utilities located on the site, and with the adjacent railroad.

Client

Beaver County Corporation for Economic Development (BCCED)
250 Insurance Street, Suite 300
Beaver, PA 15009

Michael Baker's Role

- Grading
- Soil erosion and sedimentation control
- NPDES and municipal permitting
- Surveying services
- Utilities
- Railroad coordination
- Roadway reconstruction

An Erosion and Sedimentation Control Plan (E&SCP) was prepared and submitted to the Beaver County Conservation District (BCCD). The plans were prepared in accordance with the requirements of Pennsylvania Code Title 25, Chapter 102, Rules and Regulations. The E&SCP required a Pennsylvania Department of Environmental Protection (PaDEP) National Pollutant Discharge Elimination System (NPDES) General Permit for the Discharge of Stormwater, which Baker obtained.

Michael Baker
INTERNATIONAL

We Make a Difference

Design-Build Coonskin Park Access Road & Bridge

Charleston, West Virginia

Michael Baker provided engineering services for the design-build construction of a new entrance road off of State Route 119, a three-span girder bridge spanning the Elk River which provided access to Coonskin Park. Michael Baker's services included preliminary and final design, construction cost and quantities estimates, and shop drawing reviews.

Project Background

Coonskin Park occupies approximately 1,000 acres, and includes woodlands with a trail system, a golf course, a pool, a soccer field with seating for 2,000, an amphitheater, a clubhouse with banquet rooms, a pond with pedal boat rentals and fishing, and several types of courts, playgrounds, and picnic areas. The public entrance to the park, Coonskin Drive, ran through the middle of the West Virginia Air and Army National Guard base.

Client

West Virginia Department of Transportation, Division of Highways
Building 5
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305-0430

Completion Date

2015

Michael Baker's Role

- Preliminary and final design
- Construction cost and quantities estimates
- Shop drawing reviews

In 2005, the Base Realignment and Closure Commission advised that the National Guard base did not comply with U.S. Department of Defense security requirements, such as minimum allowable distances between military facilities and public roadways. Further, flooding on Greenbrier Street, which is adjacent to Coonskin Drive, has caused motorists to be stranded on Coonskin Drive.

The purpose of the project was to create a new public entrance and exit to Coonskin Park to enable the National Guard to comply with security requirements and provide an emergency entrance and exit from the park, the National Guard base, and nearby Yeager Airport in case of flooding along Greenbrier Street. The project was funded by the National Guard, Kanawha County, and Yeager Airport.

Michael Baker prepared complete design calculations, plans, specifications, cost and quantities estimates, and post-design services for the new bridge, using AASHTO load and resistance factor design specifications. No construction was permitted on the Elk River, so Michael Baker developed a complete erection sequence from land.

Michael Baker
INTERNATIONAL

We Make a Difference

I-64/U.S. 35 Interchange Study

I-64 to WV 34 Interchange,

Interchange study on Phase 1 consisted of two locations which were Crooked Creek and Cow Creek. Seven types of Interchanges were studied, three at Crooked Creek, and four at Cow Creek. Michael Baker also assisted in presentation of these interchange locations at Public Involvement Meetings with the West Virginia Department of Transportation, Division of Highways. Selection was to use Crooked Creek diamond interchange with a fifth movement consisting of a flyover from south bound U.S. 35 to east bound I-64.

Final construction plans were prepared for 3 miles of US 35 (four lanes), a new interchange with I-64 and a new diamond interchange at the north end of US 35 work with WV Route 34.

Client

West Virginia Department of Transportation, Division of Highways
1900 Kanawha Boulevard, East
Charleston, WV 25305-0430

Completion Date

2009

Michael Baker's Role

- Project Management
- Right-of-Way Plans
- Roadway Plans
- Drainage Design including Storm Water Management
- Geotechnical Overview
- Structures Design and Overview
- Cost Estimates

Project Features

- Surveys overview and incorporation
- Base Mapping and Right-of-Way research
- Preparation of Right-of-Way plans and Deed Descriptions
- Preparation of US 35 roadway plans for a three mile section (four lanes)
- Preparation of approximately 10 miles of side or frontage roads
- Preparation of two cast in place concrete bridges, one which is a four lane bridge over I-64 and the other is a 1200 foot long cast in place concrete flyover bridge
- Storm water management for three major drainage areas
- Preparation of a cast in place vehicular underpass with provision for two proprietary alternatives
- Bridges Load Ratings
- Breaking of the project into three construction projects (1) I-64/US 35 interchange grading which is complete, (2) the two cast in place concrete bridges for the I-64 Interchange, and (3) complete roadway project from North of I-64 to W.V. 34 interchange

Project Awards

2004 Engineering Excellence Award, Large Roadway Category, West Virginia Division of Highways.

Michael Baker
INTERNATIONAL

We Make a Difference

Coonskin Park Maintenance Facility

Kanawha County, WV

Baker provided general Architectural and Engineering services to the West Virginia Army National Guard on behalf of the Kanawha County Parks and Recreation Commission at Coonskin Park in Charleston. The new maintenance and storage facility was built to relocate exiting maintenance and storage services interrupted by the new bridge and entrance to Coonskin Park.

The West Virginia Army National Guard selected Baker to provide complete design and construction administration services. The project included the design of a pre-engineered metal building and the corresponding utility infrastructure. It was sited on the available property to allowing for future expansion. The site is approximately 3.5 acres. The facility has approximately 6,000 square feet of which 4,500 square feet house maintenance garage functions for the park. The remaining 1,500 square feet is dedicated to future locker/shower rooms for the adjacent soccer field. The garage has four automatic garage doors, two with drive-through capabilities. A restroom is included on the maintenance side, with roughed-in plumbing for the future shower/locker rooms.

Client

West Virginia Army National Guard
1707 Coonskin Drive
Charleston, WV 25311

LTC David P. Shafer
Construction and Facilities Management Office

Todd Reynolds, Project Manager

Completion Date

October 2014

Baker's Role

- Architecture
- Civil Engineering
- Mechanical Engineering
- Electrical Engineering
- Landscape architecture
- Structural Engineering
- Bid Phase Services
- Construction Inspection

This facility is the temporary home for park equipment and maintenance staff until the new park access bridge, entrance and new park maintenance complex is completed. The building is then planned to become part of the soccer complex.

Michael Baker
INTERNATIONAL

We Make a Difference

Design of Tactical Equipment Maintenance Facility and Equipment Concentration Site Warehouse

Fort McCoy, Wisconsin

Michael Baker was the designer of record for the design-build delivery of an approximately 58,000-square-foot, two-story modified large Tactical Equipment Maintenance Facility (TEMF) and an approximately 44,000-square-foot, one-story Equipment Concentration Site (ECS) Warehouse, along with 30 acres of gravel hardstand designated for organizational parking. Tasks were performed under an indefinite quantity-indefinite delivery engineering agreement.

The new TEMF, ECS Warehouse, and additional hardstand will enable ECS-67 at Fort McCoy, the largest ECS in the world, to support the Army Force Generation training initiative, including Warrior Exercises and the installation's Combat Support Training and Regional Training, by storing and maintaining more vehicles and furnishing all required equipment for training units. This will eliminate the need for training units to ship their own equipment to and from the installation and related costs.

Used for military vehicle maintenance and repair, the TEMF consists of two main types of functional areas: repair bays, which include repair and maintenance areas, and a core area. Spaces and features include an overhead bridge crane, equipment and parts storage rooms, secure arms and Comsec vaults, and administrative support and training areas.

Client

U.S. Army Corps of Engineers,
Louisville District
Room 972
600 Dr. Martin Luther King, Jr. Place
P.O. Box 59
Louisville, Kentucky 40202

Completion Date

2016

Michael Baker's Role

- Planning
- Sustainable design
- Site development
- Hazardous waste investigation
- Civil engineering
- Architecture
- Interior design-space planning
- Structural engineering
- Mechanical engineering
- Plumbing design
- Fire protection engineering
- Electrical engineering

The repair bays are single-story, ground-floor, column-free garage areas used to service and repair the full range of Army tactical equipment. They contain maintenance and repair work spaces, separate welding bays, a 10-ton traveling-bridge crane, and data connection points for NIPRNet and SIPRNet. A vehicle exhaust evacuation system serves each repair work area. Repair and maintenance areas are equipped with hose reels for the dispensing of oil and other lubricants and fluids required during inspection and maintenance procedures. The maintenance pit is designed with a removable cover and grated sections that are in place during periods of nonmaintenance to protect personnel from potential fall hazards, as well as to shorten access across the pit for personnel when the pit is not in use. Emergency stations for eye washing, hand washing, and showering that meet OSHA standards are provided.

The core area contains the following functional spaces: administrative and shop-control office space; a break-training room; production control area; storage areas; a supply area, which replaces the consolidated bench; a tool room; restrooms, showers, and locker rooms for men and women; an armory vault; a communications security vault; a nonsensitive secure storage room; a telecommunications equipment room for voice and data systems; common

circulation and waiting areas; mechanical and electrical rooms; a flammable storage room; and a fluid distribution room.

The ECS Warehouse consists of general warehouse space with a staging area; a receiving office; a classroom-breakroom; two vault areas to handle the separate U.S. Army Reserve and ECS missions; and a mechanical room, an electrical room, and a telecom room. The vaults and warehouse have a clear height of 25 feet. This clearance enables forklift access throughout the vaults–a unique design feature of this ECS facility. In addition, there is a tent-drying area that is accessed via an overhead door from the north side of the building.

Supporting project elements include field investigation for the presence of wild lupine, which attracts threatened-and-endangered species; grading, paving, fencing, and signage; force protection measures; exterior lighting; utility and storm drainage system connections; fire protection and fire alarm and mass notification systems; and security lighting. Structures provide access for disabled individuals. The project expanded existing parking facilities by approximately 30 acres to accommodate equipment and serve military personnel.

Michael Baker designed the new TEMF and ECS Warehouse to meet LEED® NC 2009 Silver certification. Tasks for which Michael Baker was responsible include architecture, surveys, hazardous waste investigation and remediation recommendation, geotechnical investigation oversight, all site and building engineering, cost estimating, value engineering, and LEED® certification administration. Charrette participation was critically important to project development. Michael Baker convened a design charrette and collaborated with the client in identifying needs and preferences and preferred design alternatives. In addition, Michael Baker held a special energy charrette to target materials and approaches to promote sustainability and conserve energy, with the goal to exceed ASHRAE 90.1 2007 performance criteria by 40 percent.

All designs comply with applicable federal, state, and local codes and standards, including the Unified Facilities Criteria (UFC; [UFC 4-171-05]); International Building Code; International Plumbing Code; International Mechanical Code; National Fire Protection Association (NFPA) standards; Uniform Federal Accessibility Standards; the Americans with Disabilities Act; the Environmental Protection Agency Clean Water and Clean Air acts; and ASHRAE, American National Standards Institute, American Society for Testing and Materials, and OSHA requirements.

Site Reconnaissance and Geotechnical Investigation

Before work commenced, Michael Baker and its team evaluated and documented existing surface and subsurface conditions. Tasks included conducting a geotechnical investigation to characterize subsurface conditions and a geophysical survey to verify results and identify underground utilities and subsurface anomalies.

Overall Building Construction

The TEMF and the ECS Warehouse are pre-engineered metal buildings of permanent construction, with reinforced concrete foundations and reinforced concrete floor slabs; structural steel framing; mechanical, electrical, information, security, and fire suppression sprinkler systems; automated building HVAC mechanical and lighting system controls; energy-efficient lighting; interior finishes; window systems; low-sloped roofing; and exterior finishes consisting of attractive masonry facades.

Exterior Systems

Building Envelope

The exterior building envelope of the TEMF and the ECS Warehouse constitutes a pre-engineered structural steel framing system, with steel columns, beams, and joists, to support gravity loads. The exterior wall systems consist of concrete masonry units (CMU) at variable heights and prefinished insulated metal panels. The foundation system of each structure is slab-on-grade concrete.

Structural Steel Framing System

The steel framing system of the buildings will resist lateral loads imposed by wind and seismic forces. The exterior walls are designed to distribute lateral forces to the roof and floor diaphragms and then to the foundation system. Both structures incorporate CMU exterior and partition walls in the lower wall areas to ensure durability and resist impacts.

The roofing system of each building consists of a modified bitumen membrane roof. The TEMF roof has a two-inch-per-foot pitch, and the ECS Warehouse has a inch-per-foot pitch; both roofs are sloped towards drains that are connected to the site stormwater system.

The exterior walls and roof heights for the TEMF correspond to the high-bay/low-bay configuration required for the building functions. The TEMF incorporates a ¬¬band of reinforced split-faced CMU at the base which varies in height, with insulated metal building system panels above.

The ECS Warehouse also has a base of four-inch split-faced CMU with insulated metal panels above. The metal wall portion includes a clerestory with a translucent insulated fiberglass system to optimize thermal performance and daylighting of work and storage areas. The thermal performance of the sectional overhead doors is superior to that of overhead coiling doors.

Insulation

Insulation was designed to comply with Energy Policy Act of 2005 requirements. Roof insulation for the TEMF and ECS Warehouse consists of fiberglass batt insulation that satisfies the ASHRAE 90.1 R-19 requirement for metal buildings. An air barrier was constructed in the TEMF that encompasses the mezzanine, but excludes the stairwells, which are separated by sealed doors. The air barrier consists of a drywall shell constructed at the exterior walls and the wall at the high-bay area and the roof, and masonry at the stair towers. Windows and other penetrations were also sealed. The team tested the air barrier when building construction was completed, using the depressurization method. The building performed above the minimum U.S. Army Corps of Engineers air barrier requirements.

Interior Systems

HVAC

The HVAC system includes an array of design solutions to serve a variety of spaces and building functions. Office space for typical administrative functions in both buildings is served with a DX cooling-hot water boiler system and a variable air volume air distribution system that provides airside recovery. Carbon dioxide (CO2) sensors are used to vary the outside air quantities based on real-time occupancies for energy savings.

Gas-fired infrared unit heaters paired with hot-water in-floor radiant heaters provide space heating, and gas-fired makeup units provide ventilation air for the high-bay area and maintenance corridor in the TEMF. Heating, cooling, and ventilation for TEMF second-floor offices, classrooms, and training-break-conference rooms is regulated by individual variable air volume boxes with hot water reheat coils to meet the unique ventilation and conditioning requirements of those spaces, based on actual occupancy and existing CO2 levels.

Hot-water unit heaters provide space heating, and direct gas-fired makeup air units provide ventilation for the ECS Warehouse storage area.

In electrical and fluids dispensing rooms, wall-mounted outdoor air intake louvers with motorized dampers and associated exhaust fans provide thermostatically controlled ventilation, and wall-mounted or ceiling-hung electric unit heaters provide heat for these spaces. Mechanical rooms are heated with hot water unit heaters.

The TEMF includes a direct digital-control automatic temperature control system to regulate and monitor all building HVAC systems.

As part of antiterrorism and force protection measures, an emergency shutdown pull-switch is provided in both buildings to disable all of the HVAC air distribution systems, in accordance with UFC-4-010, Appendix B-4.3.

Electrical Distribution System

Electrical distribution for the TEMF and ECS Warehouse includes power, lighting, fire alarm and mass notification, structured cabling raceway, public address, cable television distribution, telecommunications, and security systems. The main switchboard, distribution panelboards, and lighting and appliance panelboards were selected for high reliability, low maintenance, efficiency, and maximum flexibility. Step-down transformers were selected for low-energy loss and short-term overload capability.

Energy conservation was Michael Baker's design priority for interior and exterior building lighting. Building systems include occupancy sensors to turn off lights and conserve energy in office areas, corridors, and restrooms. Lighting design incorporates fluorescent fixtures with energy-efficient electronic ballasts and T8 lamps.

Plumbing and Fire Protection

The building plumbing systems provide connections for water, oily waste, and sanitary sewer services, including all pipes, fixtures, and equipment.

Domestic hot water for both buildings is produced by a single gas-fired water heater to reduce maintenance. The water heater incorporates multiple controllers, a temperature and pressure-relief valve, pressure regulators, shut-off valves, and drain valves. In compliance with manufacturer instructions, a small, electrically fired water heater was installed in the re-circulating water line to maintain loop water temperature at 120 degrees F. An in-line circulating pump controlled by a time clock and aqua stat maintains water temperature in the loop to the fixtures.

An industrial water system is provided for the TEMF vehicle repair and maintenance bays and is supplied from the domestic water system through a reduced pressure-type backflow preventer feed from the domestic water system. Compressed air and POL distribution systems are provided throughout the maintenance and repair areas.

To fully protect the TEMF and ECS Warehouse in the event of fire, Michael Baker's design integrated an automatic wet-pipe sprinkler system, designed in accordance with UFC 3-600-01, NFPA 13 and International Building Code 2006. Michael Baker specified a fully addressable, intelligent fire alarm and mass notification system to serve both facilities. The annunciated system is configured for manual as well as automatic operation and electronic supervision. Fire alarm circuit wiring is installed in conduit. Fire alarm system features for the TEMF passenger elevator include smoke detection and elevator recall.

In addition, the TEMF is served by two double-walled, 500-gallon aboveground storage tanks for waste engine oil and waste coolant, located adjacent to the structure.

Antiterrorism and Force Protection Measures

Michael Baker integrated protective measures into the project design that meet antiterrorism and force protection requirements. These include the locating of the TEMF and ECS Warehouse to meet setback requirements, the use of blast-resistant doors and windows, and the incorporation of an emergency shutdown switch to disable all HVAC air distribution systems, as previously described.

Energy Charrette and Sustainable Design

The energy charrette was a key part of project development. As mentioned previously, the overall goal was to reduce building energy consumption by 40 percent compared to ASHRAE 90.1 2007.

Michael Baker and its team identified potential initiatives and processes to promote energy efficiency, minimize environmental effects, and reduce immediate and long-term operating costs. Energy charrette participants evaluated renewable energy sources, including solar, wind-powered, and geothermal-ground source heating and cooling, as well as passive and active energy-saving measures. These included structure siting and physical orientation, internal layout, R-value enhancements, low-emissivity windows, daylight harvesting measures, energy-saving lighting options, and high-efficiency HVAC systems.

Building design and construction incorporated materials and approaches to achieve sustainability goals. Materials that are locally available and products with 20-percent recyclable content were used. Occupancy sensors reduce lighting energy consumption. Water-saving features, such as low-flow plumbing fixtures to reduce water consumption, are provided. Ozone-friendly refrigerants and refrigerant quantities will minimize ozone depletion.

Michael Baker also designed an 18-foot-high solar wall for the TEMF that captures heat from the sun and passes it into the building during the winter months.

The elimination of exterior light pollution was extremely important for this project. Michael Baker designed the perimeter security lighting to minimize light pollution and avoid disruption of night maneuver training, which is conducted on an adjacent site.

Landscaping includes native, low-maintenance, drought-tolerant plants and preserves existing trees. The landscaping design minimizes the use of potable water.

Michael Baker specified the use of measures during construction to prevent soil loss, sedimentation, and air pollution. In addition, construction waste was diverted from landfills to meet LEED® requirements

Michael Baker
INTERNATIONAL

We Make a Difference

Army Reserve 1222nd Engineer Company Readiness Center

Mechanicsburg, Pennsylvania

Michael Baker is providing architectural and engineering services for a new 100-member U.S. Army Reserve training center. Michael Baker's services include conducting a design charrette, developing the conceptual design, preparing full design documents, performing value engineering, and providing a design-bid-build package. Supporting tasks include land clearing, paving, fencing, general site improvements, and extension of utilities.

The new 23.8-acre site is being developed to include two structures with a total of 26,855 square feet, including a one-story 21,487-square-foot readiness training center, and an **organizational maintenance shop with a 5,368-square-foot integral unheated storage area.** The readiness center will include administrative, educational and assembly facilities; a library; a learning center; a vault; and a weapons simulator, for the newly formed Army Reserve 1222nd Engineer Company. The organizational maintenance shop will provide work bays and maintenance administrative support areas. Adequate organizational parking spaces for all military-owned vehicles will also be provided.

The buildings will be of permanent construction, with heating, ventilation, air conditioning, plumbing, mechanical, security, and electrical systems. The structures will be in compliance with Americans with Disabilities Act accessibility requirements.

Antiterrorism and force protection measures will include maximum standoff distances from roads, parking areas, and vehicle unloading areas. Berms, heavy landscaping, and bollards will be used to prevent access where standoff distances cannot be maintained.

Client

U.S. Army Corps of Engineers,
Louisville District
Room 972
600 Dr. Martin Luther King, Jr.
Place, P.O. Box 59
Louisville, Kentucky 40202

Completion Date

2014

Michael Baker's Role

- Design charrette
- Sustainable design
- Site/civil engineering
- Anti-terrorism and force protection
- Demolition design
- Architecture
- Comprehensive interior design
- Structural engineering
- Mechanical engineering
- Plumbing design
- Fire protection engineering
- Electrical engineering
- Communications design
- Cost estimating
- Full design-bid-build documents

Michael Baker is providing sustainable design and development and Energy Policy Act of 2005 features to achieve Silver LEED® certification. Designed to maximize energy efficiency, the readiness center exceeds current energy standards by as much as 30 percent. Featuring water-efficient landscaping that maximizes open space, this structure is designed to reduce its ecological footprint. In addition, many recycled, low-emitting materials and finishes help keep the interior healthy for occupants and the planet.

The new Reserve Center is being constructed as part of the "Grow the Army Initiative."

APPENDIX 3 – References

Each of the Project Profiles found in Appendix 2 lists Michael Baker's client and contact information for your use as a reference. Additionally, we offer the following diverse list of past or current clients and contact information:

- **130th Airlift Wing West Virginia Air National Guard**
  1679 Coonskin Drive, Unit 18
  Charleston, WV 25311-5005
  Captain Harry Netzer, P.E., Deputy Base Civil Engineer
  (304) 341-6649

- **West Virginia State University**
  P.O. Box 1000
  Institute, WV 25112-1000
  Mr. Marvin Smith, Facilities Director
  (304) 550-2839

- **West Virginia Department of Transportation – Division of Highways**
  1900 Kanawha Boulevard East,
  Building 5, Room A-450
  Charleston, WV 25305
  Mr. C. Elwood Penn, IV, P.E., Acting Director, Planning Division
  (304) 558-9618

- **City of Nitro**
  2009 20th Street
  Nitro, WV 25143
  Honorable David Casebolt, Mayor
  (304) 419-3322

- **City of Winfield**
  1 Main Street
  Winfield, WV 25213
  Honorable Randy Barrett, Mayor
  (304) 586-2122