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Welcome, Robert M Ross Solicitation Response(SR) Dept: 0603 ID: ESR0728220000000408 Ver.: 1 Function: New Phase: Final Modified by batch , 07/28/2022	Procurement Budgeting Accounts Receivable Accounts Payable
Header () 1	
General Information Contact Default Values Discount Document Information Clarification Request	E List View
Procurement Folder: 1074594	SO Doc Code: CEOI
Procurement Type: Central Purchase Order	SO Dept: 0603
Vendor ID: 000000201753	SO Doc ID: ADJ230000001
Legal Name: ALPHA ASSOCIATES INC	Published Date: 7/15/22
Alias/DBA:	Close Date: 7/28/22
Total Bid: \$0.00	Close Time: 13:30
Response Date: 07/28/2022	Status: Closed
Response Time: 13:07	Solicitation Description: Structural Engineering Assessment
Responded By User ID: hailey.hill	Total of Header Attachments: 1
First Name: Hailey	Total of All Attachments: 1
Last Name: Hill	
Email: hailey.hill@thinkalphafirs	
Phone: 3042968216	



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

State of West Virginia Solicitation Response

Proc Folder:	1074594		
Solicitation Description:	Structural Engineering Assessment		
Proc Type:	Central Purchase Order		
Solicitation Closes		Solicitation Response	Version
2022-07-28 13:30		SR 0603 ESR07282200000000408	1

VENDOR					
00000201753 ALPHA ASSOCIATES INC					
Solicitation Number:	CEOI 0603 ADJ2300000001				
Total Bid:	0	Response Date:	2022-07-28	Response Time:	13:07:44
Comments:					

FOR INFORMATION CONTACT THE BUYER David H Pauline 304-558-0067 david.h.pauline@wv.gov			
Vendor Signature X	FEIN#	DATE	

ct to all terms and conditions contained in this solicitation All offers su

Line	Comm Ln Desc		Qty	Unit Issue	Unit Price	Ln Total Or Contract A	mount
1 WV Memorial Tunnel Structural Engineering Assessment		sessment				0.00	
Comm	Code	Manufacturer		Specifica	tion	Model #	
811000	00						

Commodity Line Comments:

Extended Description:

Provide professional engineering services per the attached documentation.



COLORADO | ILLINOIS | LOUISIANA | MISSOURI | NEW JERSEY | NEW YORK | NORTH CAROLINA | PENNSYLVANIA TEXAS | WASH NGTON, DC | WEST VIRG NIA

7/28/2022

Bid Clerk Department of Administration Purchasing Division 2019 Washington St E Charleston, West Virginia 25305

RE: WEST VIRGINIA MEMORIAL TUNNEL ASSESSMENT GALLAGHER, WV LETTER OF QUALIFICATION DUE JUNE 28, 2022

To Whom it May Concern:

In response to your advertisement, **Modjeski and Masters, Inc. (M&M)** wishes to express interest in providing consulting engineering services for the **West Virginia Memorial Tunnel** with this Expression of Interest having a due date of June 28, 2022. M&M is teaming with Alpha Associates Incorporated for the project.

M&M plans to utilize subcontractors for additional services as they are required.

Our team is prepared to provide the very best customer service, experience, and commitment to make this project a success. We are flexible, qualified, and trusted, and look forward to being there for you every step of the way with the highest quality of service and care.

Very truly yours,

Robert Shawn Branno

R. Shawn Brannon, P.E. Project Manager, Team Leader

encl.



Prepared for: West Virginia Army National Guard 1703 Coonskin Drive, Charleston, WV 25311 Prepared by: Modjeski and Masters, Inc. 1 Hillcrest Dr East, Suite 100, Charleston, WV 25311



STATEMENT OF QUALIFICATIONS

EXPRESSION OF INTEREST-MEMORIAL TUNNEL INSPECTION AND ASSESSMENT

July 28, 2022



www.modjeski.com

Introduction and Tunnel Expertise



About Modjeski and Masters, Inc. (M&M) M&M, a 100% employee-owned company, is a nationwide leader in the design, inspection, and rehabilitation of tunnels. Ranked #18 on the 2022 Engineering News-Record (ENR) Top 25 Bridge Firms list #343 on the 2022 ENR Top 500 Design Firms list, M&M primarily serves state transportation departments, port and turnpike authorities, and railroads. We understand the challenges associated with designing, inspecting, and constructing tunnels throughout the U.S. and abroad. We offer integrated in-house structural, electrical, and mechanical disciplines under a unified project management approach. Our staff consists of approximately 220 employees dedicated to bridge and tunnel engineering.

M&M proposes to team with Alpha Associates, Incorporated (Alpha) for this project. Alpha brings civil and construction inspection experience and familiarity with WV Army National Guard projects.

Project Understanding

M&M follows current industry inspection guidance when performing tunnel inspections and generating reports for those inspections. When necessary M&M subcontracts material and environmental testing services to a local to the project firm that meets the Client's approval, or if required by soliciting three bids and utilizing the low bidder. M&M is experienced in performing Damage Level Inspections and data collection during inspections following SNTI and TOMIE guidelines. This data will be collected for the structural, civil and functional systems of the Memorial Tunnel. We currently have on staff two engineers that assist in teaching the NHI 130110 Tunnel Safety Inspection course and the NHI 130125 Tunnel Safety Refresher course.

The inspection of the tunnel will be performed by trained inspectors under the guidance of a Team Leader that has tunnel inspection experience and is a National Certified Tunnel Inspector. We expect to utilize bucket trucks to provide access to all tunnel surfaces above arms reach. We will determine all required access based on previous inspections and design plans before the start of the inspection. Access plans will be made to ensure the inspection proceeds efficiently.

The inspection team will include Civil, Structural, Mechanical and Electrical enginner-inspectors that are experienced with tunnel inspection projects. M&M inspectors are experienced with data collection for the structural, civil and functional systems of tunnels. Functional systems including mechanical systems, electrical systems, lighting systems, fire, life, safety and security systems, signs and protective systems. M&M currently has two employees teaching the NHI Tunnel Inspection courses and are included in this Expression of Interest.





Tunnel-Related Services

Having performed tunnel and bridge projects for various agencies throughout the past 40+ years, we are fully aware of costs associated with completing design, evaluations, and inspections of these complex structures. Each tunnel structure presents unique challenges with respect to operations systems, mechanical and electrical systems, access needs, and overall structural complexity. Each of these factors can result in substantial costs; costs that must be balanced with the goal of providing comprehensive, accurate reporting of conditions and generation of effective contract documents.

Our staff have extensive knowledge of the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual, FTA, and FHWA Specifications for National Tunnel Inventory.

M&M's tunnel-related structural, mechanical, electrical, construction, and civil engineering services include but are not limited to:

- Design,
- Condition Inspection & Testing,
- Code Compliance,
- Repairs & Retrofits,
- Plumbing,
- Fire Protection,
- Ventilation,
- Pumping Systems,
- Commissioning,
- Communications, ITS, SCADA,
- Fire Alarm & Security Systems,

Expression of Interest for MEMORIAL TUNNEL INSPECTION AND ASSESSMENT

- General and Egress Lighting Design,
- Stand-by Power,
- Instrumentation Installation & Monitoring,
- Program/Project Management,
- Emergency Response,
- Permitting, and
- Drainage.

Statistics

We have experience with each major type of transportation tunnel including:

Tunnel Type	# of M&M Projects
Cut-and-Cover	114
Bored	20
Immersed	12

Testimonials

"Modjeski and Masters' staff are very knowledgeable and have helped guide BSD/Metro through a very difficult project design. The project has had numerous changes and Modjeski and Masters has been a huge help in developing revised designs on a very constrained schedule. Their structural design knowledge/staff is some of the best in the region."

 Tim Nittler, Director of Capital Projects, St. Louis Bi-State Development (Metro), (314) 982-1400

"The electrical, mechanical, and structural inspections were conducted by highly knowledgeable teams with extensive experience. Modjeski and Masters professional interaction with staff from MDOT maintenance crews and engineers aided in the resolution of several findings during the field work. The quality of the field inspections and resulting documentation exceeded any engineering vendor that I have previously hired."

 Andrew Bouvy, Bridge Inspection Engineer, Michigan DOT Bureau of Bridges and Structures, (517) 242-1164

Relevant Project Experience

Please refer to the following 4 pages for a listing of project experience that is relevant to this project.



Relevant Project Experience | Tunnel Design

Downtown Tunnel Repairs & Standpipe Rep.

St. Louis, Missouri



Client Bi-State Development (Metro)

Construction Cost \$2,000,000 (est.) Start/Comp. Dates 2019/Ongoing

Contact Name & Phone Number Tim Nittler, (314) 982-1400

Project Description

M&M is assisting Metro with repairs for the Downtown Tunnel. The project was coordinated with the FTA to obtain a Categorical Exclusion for this historic structure. M&M also coordinated with the City of St. Louis and the St. Louis Fire Department (AHJ).

M&M designed and detailed a new manual dry standpipe system in accordance with current NFPA codes and standards. M&M's reconfigured design includes support brackets and acceptable attachment to the historic structure, as well as staging details for the removal and replacement. The sequence of construction required takes into account life safety concerns during construction.

Additional tunnel repair services included drainage system assessment and improvements; isolated load capacity ratings; steel grating removal and ceiling inspection at the Old Post Office; and miscellaneous shotcrete, sandstone, brick masonry, and concrete repairs.

M&M is currently providing bidding assistance and will provide construction services once the contract is awarded.

Union Station Tunnel Rehabilitation

St. Louis, Missouri



Client

Bi-State Development (Metro)

Construction Cost	Start/Comp. Dates
\$50,000,000 (est.)	2016/Ongoing

Contact Name & Phone Number Tim Nittler, (314) 982-1400

Project Description

M&M is providing Phase I, II, and III engineering services to reconstruct the east and center portions of the Union Station Tunnel which consist of steel members and a concrete ceiling slab supported on concrete columns. The culvert section will remain.

M&M began the project collaborating with the Owner and Contractor using the CM/GC project delivery method, focusing on finding ways to reduce cost and expedite the schedule. M&M created several partial design packages allowing the Contractor to accelerate procurement of materials to meet a very tight construction schedule. The first phase of the project, including replacement of the catenary system through the tunnel limits; a new operational communications complex; and a new continuous fiber connection to Civic Center Station was completed under the CM/GC model. Design of the tunnel structure, a new dry standpipe system, and emergency egress lighting are currently being completed under a typical design/bid/build model.

As a part of the design process, M&M has focused on staging construction using accelerated construction methods to limit interruptions to the upper Union Station parking lot and the lower MetroLink light rail service. These methods have included low overhead construction which allows the substructure to be installed without removing the tunnel lid.



Relevant Project Experience | Tunnel Design

Union Station Tunnel Structural Repairs

St. Louis, Missouri



Client Bi-State Development (Metro)

Construction Cost \$1.5M +/- per Contract Start/Comp. Dates 2007/Ongoing

Contact Name & Phone Number Joni Korte, (314) 982-1400

Project Description

M&M was contracted to develop load capacity ratings for select members of the Union Station Tunnel as a result of the annual systemwide inspection findings. The load capacity ratings are updated yearly to reflect current section loss documentation. Ratings account for the current live load conditions above the various sections of the tunnel, including parking lot, pedestrian, and excursion track loading. A summary report and map of the current load capacity ratings are now provided annually.

Metro requested design and construction services to install repairs under five different repair contracts. M&M has designed repairs and developed contract plans and specifications as required for each contract. Repairs include shoring of the north and south abutments, shoring of the NE Bay Room, steel column encasements, partial deck replacement with precast hollow core deck panels in one bay, and various steel girder and column repairs.

M&M has provided construction services for each of the contracts which include review of RFIs and shop drawings, on-site construction oversight, and daily reporting.

Moffat Tunnel Ventilation

Moffat, Colorado



Client

Union Pacific Railroad

Construction Cost	Start/Comp. Dates
\$2,000,000	2019/2022

Contact Name & Phone Number Jerad Harmsen, (402) 544-3557

Project Description

M&M was contracted for this design/build of new control systems for a 6-mile RR tunnel. The overall project scope includes performing an as-built survey of the existing electrical control system. The project includes replacing the high voltage variable frequency drives for the ventilation fans, replacing the PLC (Programmable Logic Controller) based control system, developing a new PC based operator interface system, and upgrading the ventilation system's monitoring sensors.

A focus was placed on remote monitoring and control of the facility. M&M provided on-site technical assistance with the existing PLC hardware and with preliminary testing of new PLC components. M&M also reviewed the existing tunnel system details and assisted with the planning the sequence of work to ensure the tunnel ventilation system would remain fully functional throughout construction.

The next phase of the project also includes site visits and construction observation



Relevant Project Experience | Tunnel Inspection

MDTA Annual Facilities Inspection

Baltimore, Maryland



Client Maryland Transportation Authority

Construction Cost N/A Start/Comp. Dates 2005/Ongoing

Contact Name & Phone Number Dan Williams, (410) 537-7824

Project Description

This project involved the annual inspection of numerous tunnels and bridges at various locations in Maryland. Tunnels associated with these annual inspections include: the Baltimore Harbor Tunnel, which carries four lanes of I-895 below the Baltimore Harbor, is 1.2 miles long, and connects downtown Baltimore with Dundalk; and the Fort McHenry Tunnel which is eight-lanes, 1.5 miles long, and connects the Locust Point and Canton areas of Baltimore. Both structures cross under the Patapsco River. M&M completed the structural, electrical and mechanical inspection of the tunnel, pump room and ventilation buildings in various capacities starting in 2009 and continuing today.

Additionally, M&M performed structural rehabilitation plans for structural defects associated with the Baltimore Harbor Tunnel lining in 2015 through 2016. M&M also performed an element level quantity review for the Fort McHentry Tunnel in 2018.

Other structures associated with this contract include the I-95 JFK Memorial Highway, Seagirt Marine Terminal, Fort McHenry Tunnel, Francis Scott Key Bridge, Harry W. Nice Memorial Bridge, William Preston Lane Jr. Memorial Bridges, The Inner County Connector, and Point Breeze.

Metro Systemwide Inspections

St. Louis, Missouri



Client

Bi-State Development (Metro)

Construction Cost	Start/Comp. Dates
N/A	2005/Ongoing

Contact Name & Phone Number Joni Korte, (314) 982-1400

Project Description

M&M performs routine inspections of the Eads Bridge (annually), the Union Station Tunnel (annually), and the Metro Downtown Tunnel (biannually). Inspections are performed in accordance with Metro's Standard for Structures Inspection and Maintenance Manual. During the first inspections in 2005, M&M developed the inspection databases. Databases are updated for current deficiencies and inspection reports are prepared during each inspection cycle.

The Eads Bridge consists of three steel trussed arch main spans with stone arch approach arcades, and various steel multi-girder approach spans. The structure carries vehicular and pedestrian traffic on the upper deck maintained by the City of St. Louis, and commuter rail traffic on the lower deck maintained by Metro. Inspections include the rail deck and its supporting members.

The Downtown Tunnel is a double-chamber tunnel consisting of sandstone, brick masonry, and concrete components with a station at each end and two intermediate stations.

The Union Station Tunnel consists of a steel segment, a concrete ceiling slab segment with drop panels supported by concrete columns, and a two-cell reinforced concrete box tunnel.



Relevant Project Experience | Tunnel Inspection

Wawona Tunnel Inspection

Yosemite, California



Client Federal Highways Administration

Construction Cost N/A Start/Comp. Dates 2021

Contact Name & Phone Number

Charles Conrad (Collins Eng.), (757) 644-1318

Project Description

The Wawona Tunnel is a horseshoe shaped, single bore rock tunnel with sections of concrete lining and gunite/shotcrete lining that was constructed in 1930. The tunnel carries two (2) opposing lanes of traffic through a mountainside within the Yosemite National Park. The tunnel is 4,237.0' long and is the longest highway tunnel in California. Three ventilation/exhaust fans and a control room are located to the north of the main tunnel in a transverse tunnel at approximately mid-length of the tunnel. At approximately the quarter points of the tunnel, smaller fresh air bores also extend to the north of the main tunnel. Adjacent to the West Portal, an emergency backup diesel generator is housed in a small building to the north of the portal.

M&M performed an In-Depth inspection of the tunnel mechanical and electrical systems including ventilation, lighting, fire protection, variable message systems and signage. The M&M inspection teams monitored fan motor current. Machinery testing was performed monitoring temperature level of components during operation using a thermal imaging camera. The backup diesel generator was included in the inspection as well. Recommendations were generated and categorized into "Maintenance" level items and "Repair" level items. The National Tunnel Inventory Ratings database was updated with the findings of the inspection.

Spring Garden St. & Kelly Dr. Tunnel Insp

Philadelphia, Pennsylvania



Client City of Philadelphia

Construction CostStart/0N/A2017/2

Start/Comp. Dates 2017/2020

Contact Name & Phone Number Darin Gatti, (215) 686-5537

Project Description

The Kelly Drive Tunnel is owned and operated by the City of Philadelphia. The tunnel was originally constructed in 1871. The tunnel currently channels four opposing traffic lanes of Kelly Drive (2 lanes each direction), formerly known as East River Drive, through a rock promontory just North of Brewery Hill Drive and along the east bank of the Schuylkill River. The tunnel consists of rock portals and an unlined rock bore with an asphalt slab-on-grade travel way edged with granite block curbs. The total length of the bore is 140'-0" from portal-to-portal. The out-toout width of the structure is 41'-0". The clear roadway width is approximately 39'-0". A hands-on inspection was performed on the tunnel liner, portals, asphalt wearing surface and granite block curbs.

M&M developed a report which included documentation of element categories and quantities, discussion of all deficiencies observed in the tunnel ventilation systems and water draining systems, and documentation of element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory.



Key Staff Biographies

Project Managers (PMs)

R. Shawn Brannon, PE, CBSI, NCTI Tunnel Structural PM



Mr. Brannon is a Project Manager in the Charleston, West Virginia office. and has 30 years of professional experience performing in various capacities on transportation projects. Mr. Brannon has been responsible for the analysis, design, inspection, and rehabilitation of

highway, railroad and tunnel structures of various sizes and complexity levels. He currently manages the Charleston Office Field Services projects. He has completed the NHI 130110 Tunnel Safety Inspection course and the NHI 130125 Tunnel Safety Refresher course. He also completed NHI Course No. 130055, Bridge Safety Inspection of In-Service Bridges, and refresher courses and NHI Course No. 130078, Fracture Critical Inspection Techniques for Steel Bridges. He is also trained in various methods of NDT, including dye-penetrant and magnetic-particle testing. Mr. Brannon has participated in the inspection of several tunnel structures including several tunnels in Washington, D.C. and the Fort McHenry tunnel in Baltimore.

Lee Lentz, PE Tunnel Mechanical PM



Mr. Lentz is a licensed professional engineer for mechanical design, rehabilitation, inspection, testing, and troubleshooting of industrial machinery. He is regularly engaged as the Mechanical Project Manager or overall Project

Manager for the inspection and rehabilitation of tunnels. Mr. Lentz is the Chairman of the Movable Bridges Subcommittee on AREMA Committee 15 – Steel Structures. He is an officer for Heavy Movable Structures, Inc., a global non-profit organization which shares movable bridge technical and

administrative information between consultants, owners, vendors, and contractors. Mr. Lentz is familiar with AASHTO LRFD Specification requirements, typical maintenance, testing and troubleshooting areas, and life cycle costs of tunnels. A majority of his design projects culminate with construction support services for the project during construction. These services include bidder questions, bid evaluation, RFI's, submittal review, and inspection at both the shop and in the field. Mr. Lentz has led the mechanical inspection and technical review of the Fort McHenry Tunnel (and ventilation buildings) and the Wawona Tunnel. He has also led mechanical tasks for the Metro Downtown Tunnel Repairs and the Union Station Tunnel Rehabilitation projects.

Joseph Strenkoski, PE Tunnel Electrical PM



Mr. Strenkoski joined M&M in 2013 and has 32 years of industrial control and power distribution design experience. He is Director of the firm's Electrical Engineering Section within the Movable Bridge Business Unit. His responsibilities include: Daily management of the

Electrical Section personnel and procedures, technical QA/QC for electrical engineering designs, project management on multi-discipline designs, and marketing electrical engineering services. He has been involved with a variety of projects dealing with inspection, testing, and design. His experience includes tunnels, movable and fixed bridges, and buildings. Mr. Strenkoski has led electrical engineering tasks for several tunnel projects including the Moffat Tunnel Ventillation project, the Harvey Canal Tunnel Rehabilitation project.



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Key Engineering & Inspection Staff

Bradly Croop, PE, CBSI, NCTI Tunnel Inspection Team Leader



Mr. Croop has 19 years of bridge / structure inspection experience. He has completed the NHI 130110 Tunnel Safety Inspection course and the NHI 130125 Tunnel Safety Refresher course. He also completed NHI Course No. 130055, Bridge Safety Inspection of In-

Service Bridges, and refresher courses, NHI Course No. 130078, Fracture Critical Inspection Techniques for Steel Bridges, and NHI Course No. 130087, Inspection and Maintenance of Ancillary Highway Structures. He is also trained in various methods of NDT, including dye-penetrant, magnetic-particle and ultrasonic material testing, and is certified for Level 2 UT Pin inspection. He is also certified as a Technical Access Supervisor. Mr. Croop has participated in the inspection of multiple tunnel structures across the country including the Wawona Tunnel in Yosemite National Park, the Spring Garden Street and Kelly Drive Tunnels in Philadelphia, and the Baltimore Harbor and Fort McHenry tunnels in Baltimore.

Billy Bolt, PE, CBSI, NCTI Tunnel Structural Engineer/Inspector



Since joining M&M in 2007, Mr. Bolt has assisted with the inspection, analysis, load capacity rating, design and rehabilitation of highway, railroad and tunnel structures. He has completed the NHI 130110 Tunnel Safety Inspection course and the NHI

130125 Tunnel Safety Refresher course. He has also led routine NBIS, fracture critical, and in-depth condition inspections of highway, railroad, radio tower and tunnel structures of various sizes, including the preparation of report documentation and repair recommendations. Mr. Croop has participated in the inspection of multiple tunnel structures across the country including the the Spring Garden Street and Kelly Drive Tunnels in Philadelphia, numerous tunnels in Washington, D.C. and the Baltimore Harbor and Fort McHenry tunnels in Baltimore.

Alexander Waardenburg, PE, NCTI





Mr. Waardenburg joined M&M in 2010 and has been assigned to the firm's Mechanical / Electrical Section. He has been involved in a variety of tunnel inspection and design projects and is currently teaching the NHI 130110 and NHI 130125 courses. Mr. Waardenburg

has experience in tunnel inspections, preliminary studies, final design and analysis. He has completed the NHI 130110 Tunnel Safety Inspection course and the NHI 130125 Tunnel Safety Refresher course. Mr. Waardenburg has participated in the inspection of multiple tunnel structures across the country including the Wawona Tunnel in Yosemite National Park, the Metro Downton and Union Station Tunnels in St. Louis, and the Baltimore Harbor and Fort McHenry tunnels in Baltimore.

Kyle Gable, PE, NCTI Tunnel Electrical Engineer/Inspector



Mr. Gable joined M&M in 2014 and has been assigned to the firm's Mechanical / Electrical Section. He has been involved in a variety of tunnel inspection and design projects and is currently teaching the NHI 130110 and NHI 130125 courses. Mr. Gable has performed

inspections and provided cost estimates for various tunnel electrical components. He has completed the NHI 130110 Tunnel Safety Inspection course and the NHI 130125 Tunnel Safety Refresher course. Mr. Gable has inspected several tunnels including the Fort McHenry Tunnel in Baltimore, the Spring Garden Street and Kelly Drive Tunnels in Philadelphia, and the Union Station Tunnel in St. Louis.

Additional Support Staff:

- Maxwell Fyrster, EIT, CBSI
- Shawn Yinger, PE, CBSI



Additional Information

How We Can Help You

With every service we offer, we apply our extensive technical knowledge and experience, giving our clients a complete understanding of the scope of work and project approach to successfully achieve the project goals.

M&M has integrated in-house engineering disciplines to provide our clients comprehensive expertise to solve their engineering challenges. Below is more information about each discipline in which our staff specialize:

Structural Engineering



We have honed the practice of structural engineering since the founding of our firm. From cut and cover, bored, and immersed tunnels to required tunnel facilities and

other structures, our expert structural engineers craft creative solutions that combine past experiences with the latest technology. The complexity of modern structures often requires a great deal of creativity to ensure that the structures support and resist loads. We embrace today's challenges and continue to evolve, searching for new and better engineering methods. Some examples include:

- **3D Modeling** With the use of 3D modeling supporting software, such as Adobe 3DS Max, Autodesk[®] Inventor, AutoCAD[®] Mechanical, and others, M&M has the ability to utilize 3D modeling and design tools to produce, document, and present complete 3D digital models that validate structural composition load and stress effects, fit, and interoperability of all components of a design.
- Maintainable Designs Considering the amount of infrastructure investment that is represented in tunnel projects, it is important that the design take into account the future maintenance needs, and if possible minimize their amount and cost. Items to consider include: durability, ease of access for inspection and future maintenance of the

structure, robust waterproofing systems which accommodate ideal behavior of expansion joints so that leakage will not cause irreparable harm, extensive drainage systems to ensure all water sources are accounted for and managed, accounting for future improvements and other similar issues which may increase the demands on the structure throughout its service life. M&M has a long history of including these concerns into the design process, to protect the long term interests of the owners.

 Accelerated Construction – M&M has been applying accelerated construction solutions for over 60 years, even before they became the subject of FHWA and other transportation agency endorsements. The benefits of these methods include not only reduced closure time and a compressed construction schedule, but enhanced quality and increased safety for facility users and construction workers.

Mechanical Engineering



The mechanical engineers at M&M have worked on a wide variety of bridge and tunnel projects. With specialized engineering services that include machinery design, testing

and construction support, our mechanical staff provides comprehensive mechanical services. We use both traditional and computer-aided methods for analysis and incorporate our considerable experience and engineering judgment to achieve optimized designs.

M&M routinely performs in-depth inspections and rehabilitation designs on mechanical systems. We frequently provide the full range of mechanical engineering assistance, from troubleshooting and problem definition through design and detailing of the solution, to providing field engineering support during implementation of the design.

Thermographic Imaging is a valuable tool M&M uses to quickly pin-point issues with ventilation or pump



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system machinery. Overlays of machinery photos with thermographic images can help to identify undue friction or misalignment in the system.

Special services include shop inspection and testing, on-site startup assistance, strain gage and accelerometer testing, and on-site emergency trouble-shooting.

Electrical Engineering



M&M offers state-of-the-art specialized engineering services to preserve and maintain the future safety and operating reliability of bridges and tunnels. For decades,

M&M has been respected as one of the leaders in providing electrical system design and inspection services for the transportation industry. We also provide electrical services for the lighting of tunnels, bridges, roadways, and plazas, as well as remote control and monitoring, and CCTV installations.

The firm maintains a staff of experienced electrical engineers in-house, competent in the use of the latest computer software for both lighting and electrical design and analysis. In addition to the electrical staff's numerical analytical competence, the firm's practice of regularly exposing electrical staff to both electrical field services and design ensures that common sense and practical judgment are also a strong part of the professional skills mix.

M&M is committed to the continued advancement of the state of current practice by linking emerging needs with technological advances, using our history of practical success and good, deliberate professional judgment.

Motor current testing is performed during in depth inspections. Our electrical engineers can evaluate the performance of the motor drives and control system. The data also helps understand what load amount is on the motors and if this is within the rating of the motors.

Other sensors and equipment are used to evaluate the ventilation system such as humidity sensors and CO sensors. Fire event ratings can be modelled to evaluate the sufficiency of ventilation.

Highway Engineering



Even before the beginning of the Federal Interstate Highway System, M&M had established itself as an expert in the planning and design of major expressways and

interchanges. M&M continues to be an invaluable partner to transportation agencies trying to keep pace with growing demands. We offer a full array of comprehensive highway and interchange services from alignment surveys and geometric designs to noise surveys and environmental impact studies. And we provide solutions that not only meet today's needs but accommodate future requirements as well.

Construction Engineering



We pride ourselves in our extensive experience working with contractors to deliver innovative engineering solutions that are both constructible and efficient. Equally skilled with cut

and cover, bored, and immersed tunnels, we apply our construction experience and engineering knowledge to create efficient and cost-effective designs for erection, demolition, and temporary works. Our services also include the design of falsework and formwork; development of erection procedures; analysis of construction loads; and much more.

Inspection Services



We stop at nothing to provide the industry's best inspections and assessments, whether that means exploiting the latest technology or rappelling from impossible heights.

Our field staff has been inspecting transportation assets well before the establishment of governing regulations and mandates. We diagnose ailments with instrumentation and testing, predict structural behavior with strain gauge sensors, and use technical and rope access to reduce the cost of inspections and their impact on travelers.



Contact Us



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Texas

1 Chisholm Trail, Suite 325 Round Rock, TX 78681 Phone: (512) 861-4446 With multiple office locations, M&M is a part of the communities we serve, but with a global outreach. Our reputation for responding to the needs of our clients — from planned strategies to emergency situations — has established M&M as one of the world's premier transportation engineering firms.

For more information on M&M's tunnel services, contact: Shawn Brannon, PE (304) 965-1870 x11202 | (304) 553-8757 (cell) | rsbrannon@modjeski.com

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West Virginia

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R. Shawn Brannon, PE, CTI

Project Manager/Senior Engineer – Field Services

Project Assignment

PROJECT MANAGER/INSPECTION TEAM LEADER/TUNNEL INSPECTOR

Education

 BS, Civil Engineering, West Virginia Institute of Technology (1992)

Professional Registration

 Professional Engineer: WV (1997); OH (2014)

Training Courses

- FHWA-NHI Course #130055, Safety Inspection of In-Service Bridges (2014)
- Bridge Inspection Refresher Training NHI Course # 130053A (2018)
- FHWA NHI Fracture Critical Inspection Techniques for Steel Bridges (2019)
- FHWA-NHI-130110 Tunnel Safety Inspection (2017)
- FHWA / WVDOT, Integral Abutment and Jointless Bridges FHW Conference (1/2005)
- ARC Adult First Aid (2015), Adult CPR (2020)
- ARC Bloodborne Pathogens (2020)
- e-Railsafe System Safety Training
- OSHA 10 Hour Training
- Railroad/Inspection Safety Training (1/2005)
- RWP On-track Safety Training (1/2005)
- Technical Access Training (2009)
- Permit Required Confined Space Entrant, Attendant, and Supervisors Training 29CFR1910.146 (2007)

Synopsis of Experience

Mr. Brannon joined M&M in 2003. He has experience in the design of fixed bridges, bridge inspections, bridge rehabilitation, truss structures, structural analysis, roadway design, sediment and erosion control design, and construction inspection and monitoring. Mr. Brannon is currently engaged in project management, design, and inspection on various projects in the West Virginia office.

Project History

Jennings Randolph Bridge Inspections. Chester, WV | WVDOH (Ongoing)

Mr. Brannon has been the Team Leader for the In-Depth Routine, Routine and Special Inspections of this welded steel plate I-girder and through truss structure supporting four lanes of US 30 over Ohio River, WV 2, and Ohio River Road.

Bridge of Honor Inspections. Mason, WV/Pomeroy, OH | WVDOH (Ongoing)

The Bridge of Honor is a four-lane structure which carries WV 62 Spur over the Ohio River, CSX railroad, and OH 833 between Mason, West Virginia and Pomeroy, Ohio. The main span unit is a three-span, symmetrical 1,163' concrete cable-stayed bridge. The cables are arranged in twin plane fan configurations. The two modified diamond or delta-shaped tower are over 175' tall. The total structure length, including approaches, is 1,852'. M&M is providing NBIS In-depth, Routine and Special Inspections for this bridge from 2019 to 2024. These inspections include a hands-on inspection of the full

length of the cable stays through use of equipment and technical and rope access methods.

Fort McHenry Tunnel. Baltimore, MD | MDTA (2019-2020)

The tunnel is 1.5 miles long with ventilation buildings and machinery at either end of the tunnel and consists of four-bores carrying 8-lanes of I-95 traffic underneath the Baltimore Harbor. M&M conducted detailed structural, mechanical, and electrical inspections of the tunnel, exhaust ducts, supply ducts and ventilation buildings on three separate occasions as part of the annual inspection contract with the MDTA.

Ohio River Lift Bridge Rehabilitation. Jeffersonville, IN | Louisville and Indiana Railroad (2015)

Mr. Brannon was the Team Leader for the structural inspection of the Ohio River Bridge owned by the Louisville and Indiana Railroad. The entire bridge was inspected to provide data on the deficiencies of the bridge to produce load capacity ratings and recommendations for immediate and future required repairs. Data was also collected to determine the feasibility for restoring the double track on the structure. The asbuilt and existing condition ratings were done for the current single track condition as well as for the proposed restoration of double track operations.



R. Shawn Brannon, PE, CTI

Project Manager/Senior Engineer - Field Services

Nick Joe Rahall II Bridge Inspection. Huntington, West Virginia | WVDOH (2013-2018)

Mr. Brannon was the Team Leader for the In-depth Routine, Routine and Special Inspection of this welded steel plate I-girder and through truss structure supporting two lanes of US 22 over Ohio River.

Bridge Facilities Open-End GEC Contract. Hudson Valley, NY | NYSBA (2005-2007)

M&M has been providing bridge engineering services to the NYSBA since 1959. These services have been provided through individual project specific and GEC contracts. The NYSBA owns and maintains the following facilities: Mid-Hudson Bridge (suspension bridge), Bear Mountain Bridge (suspension bridge), Kingston-Rhinecliff Bridge (deck truss bridge), Newburgh Beacon Bridges (through truss bridge and deck truss bridges), and Rip Van Winkle Bridge (through truss & deck truss bridge). Besides assisting the NYSBA with the development of their capital program and issuing certificates on the integrity of the structures and validity of the capital program to the bonding company, M&M has provided services for the following typical tasks: redecking studies and design, traffic and revenue forecasts, fatigue and fracture studies, main cable and suspender rope investigations, asset management plans, vulnerability studies, peer review, inspection and load capacity ratings, and construction support. Many of the inspection and construction projects have involved the design and/or OSHA compliance determination of platforms used to perform the inspection/construction. Mr. Brannon has served as a bridge inspector on several task orders.

DDOT Citywide Open-End for Bridges & Structures. Washington, DC | DDOT (Ongoing)

M&M provided bridge inspection services to assure DDOT's inventory of approximately 250 bridges and tunnels was in compliance with the National Bridge Inspection Standards. Special studies such as design of repairs, scour analysis and special investigations and monitoring were included. Mr. Brannon was a field inspector for several types of bridges within the DOT's inventory.

East Huntington Bridge Inspection. Huntington, WV | WVDOH (2004-2009)

The East Huntington Bridge is a two-lane structure which carries WV Route 106 over the Ohio River between Huntington, WV, and Proctorville, OH. The main span unit is a two-span, asymmetrical 1,535' concrete cable-stayed bridge. The cables are arranged in a twin plane fan configuration. The modified diamond or delta-shaped tower is over 300' tall. The total structure length, including approaches, is 1,994'. M&M provided NBIS In-depth, Periodic and Interim Inspections for this bridge. These inspections included evaluation of Cable Loads and Damper Effectiveness and a hands-on inspection of the full length of the cable stays through use of technical access methods. Mr. Brannon was Team Leader for several of these inspections, accessed Cable 31E for repairs using TA methods and oversaw the preparation of several inspection reports.

Man Bridges Inspections and Ratings. Man, West Virginia | WVDOH (2010-2012)

M&M provided a bridge inspection and structural evaluation of the Man Bridges located in Man, WV. M&M also provided an emergency rating of these bridges. Mr. Brannon was Team Leader for the initial field inspections, supervising a crew of six inspectors. Methods of measuring out the flatness for girder webs and flanges was developed by Mr. Brannon during the inspection.

WVDOH QA/QC Statewide Work Order. Statewide, West Virginia | WVDOH (2009-2010)

As part of this statewide project, MM is providing inspections and ratings of eight District 2 bridges. The bridges include two simple span steel girder bridges, one two-span steel girder bridge, two simple span steel girder bridge, and one simple span steel through truss bridge. Mr. Brannon was Team Leader of the two and three-man inspection crews.



Lee R. Lentz, PE

Senior Project Manager, Movable Bridges

Synopsis of Experience

Mr. Lentz is a licensed professional engineer for mechanical design, rehabilitation, inspection, testing, and troubleshooting of industrial machinery systems. He has been at M&M for over 24 years and is regularly engaged as the Mechanical Project Manager or overall Project Manager for the inspection and rehabilitation of tunnels. Mr. Lentz is the Chairman of the Movable Bridges Subcommittee on AREMA Committee 15 -Steel Structures. He is an officer for Heavy Movable Structures, Inc., a global non-profit organization which shares movable bridge technical and administrative information between consultants, owners, vendors, and contractors. Mr. Lentz is familiar with AASHTO LRFD Specification requirements, typical maintenance, testing and troubleshooting areas, and life cycle costs of tunnels. A majority of his design projects culminate with construction support services for the project during construction. These services include bidder questions, bid evaluation, RFI's, submittal review, and inspection and final testing verification at both the shop and in the field.

Project History

Wawona Tunnel Inspection. Yosemite, CA | Federal Highway Administration (2020)

Mr. Lentz was the mechanical project manager for the Mechanical and Electrical inspection team for the Wawona Tunnel in Yosemite National Park. In his role as mechanical project manager, he was responsible for coordinating the inspection schedule and testing and equipment needs. The inspection included ventilation, fire safety, and rainwater management systems as well as electrical inspection items related to the ventilation, emergency egress, fire protection, lighting and pumping systems. Mr. Lentz performed the QA/QC for the inspection report, discussing all deficiencies observed in the tunnel ventilation systems, fire safety systems, and water draining systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory.



Project Assignment Project Manager – Tunnel Mechanical

Education

 B.S., Mechanical Engineering Technology, Pennsylvania State University (1998)

Professional Registration

 Professional Engineer: PA (2003), CT (2014), NC (2016), NY (2019), TX (2019), SC (2020), NJ (2020)

Professional Affiliations

- American Institute of Steel Construction
- Chairman Movable Bridges -American Railway Engineering and Maintenance-of-Way Association
- Executive Officer Heavy Movable Structures, Inc.

Training

- E-Railsafe System Safety Training
- Permit Required Confined Spaces Training
- MCASES Cost Software COE
- SPECSINTACT Software COE
- Level I & II MT & LT
- Lead Exposure in Construction

Lee R. Lentz, PE

Senior Project Manager

Metro Downtown Tunnel Repairs. St. Louis, MO | Bi-State Development (2019-2021)

Mr. Lentz was the mechanical project manager on this project. His duties involved guiding and reviewing the design to replace the fire suppression standpipe system in accordance with NFPA 14 and NFPA 130. M&M is assisting Metro with determining and implementing appropriate repairs for the Downtown tunnel which includes structural and mechanical (standpipe) repairs. The project is being coordinated with the FTA to obtain a Categorical Exclusion for this historic structure. The project included ventilation needs modelling performed by a subconsultant. M&M created an initial version of the fire standpipe operations and maintenance manual to be completed by the winning bidder following completion of construction. Final design has been submitted and M&M will perform construction inspection engineering.

Annual Facilities Inspection Open-End Contract. Statewide, MD | Maryland Transportation Authority (2019-ongoing)

Mr. Lentz has participated as mechanical lead inspector and mechanical project manager for the mechanical inspection of the Fort McHenry Tunnel and ventilation buildings. In his role as Mechanical Team Leader, he was responsible for locating mechanical deficiencies concerning ventilation, fire suppression, and rainwater management systems. Mr. Lentz also participated by performing technical reviews of the inspection data and reports. As part of a JV, M&M has been responsible for in-depth inspections, client liaisons, and QAQC for four successive, threeyear Open-End contracts. MDTA facilities include: Baltimore Harbor Tunnel Thruway and the Fort McHenry Tunnel.

Union Station Tunnel Rehabilitation. St. Louis, MO | Bi-State Development (2016-ongoing)

Mr. Lentz was the mechanical project manager on this project. His duties involved checking and reviewing the fire suppression standpipe system design in accordance with NFPA 14 and NFPA 130. Mr. Lentz coordinated a fire event modelling effort with a subconsultant to determine ventilation requirements of the tunnel. As part of an overall tunnel redesign for Metro M&M Mechanical and Electrical (ME) is responsible for the design of the new tunnel standard lighting, emergency egress lighting, emergency ventilation system as required, fan and motor selection as required, emergency stand-pipe design, and associated power and controls including utility coordination for all project components.

I-57 and IL Route 149 Pump Station Repair. Franklin County, Illinois | Illinois DOT (2015-2016) An emergency structural, mechanical, and electrical inspection was performed to document deficiencies and provide short term repair recommendations for the I-57 pump station. An onsite inspection and test was initially performed by M&M to evaluate the condition of the existing pump station equipment and to determine the required repairs. Final repair plans, specifications, and estimates were developed which included replacement of the structural pipe supports and motor repairs, and repair of the maintenance hoist and pressure transducer well pipe cleanout cover. Construction services were provided as requested. Mr. Lentz was the lead mechanical engineer and performed the site survey and inspection as well as the pump station repair design plans and specifications QA/QC.





Joseph G. Strenkoski, PE

Senior Project Manager / Director of Electrical Engineering

Synopsis of Experience

Mr. Strenkoski joined M&M in 2013 and has 34 years of industrial control and power distribution design experience. He is Director of the firm's Electrical Engineering Section within the Movable Bridge Business Unit. His responsibilities include Daily management of the Electrical Section personnel and procedures, technical QA/QC for electrical engineering designs, project management on multi-discipline designs, and marketing electrical engineering services. He has been involved with a variety of projects dealing with inspection, testing, and design. His experience includes tunnels, movable and fixed bridges, and buildings. Mr. Strenkoski has led electrical engineering tasks for several tunnel projects including the Moffat Tunnel Ventilation project, the Harvey Canal Tunnel Rehabilitation project, and the Union Station Tunnel Rehabilitation project.

Project History

Union Station Tunnel Rehabilitation. St. Louis, MO | Bi-State Development (Metro) (2016-Ongoing)

Mr. Strenkoski is accountable for all electrical engineering and design efforts for this complex rehabilitation project. M&M is providing Phase I, II, and III engineering services to reconstruct the east and center portions of the Union Station Tunnel which consist of steel members and a concrete ceiling slab supported on concrete columns. The culvert section will remain. M&M began the project collaborating with the Owner and Contractor using the CM/GC project delivery method, focusing on finding ways to reduce cost and expedite the schedule. M&M created several partial design packages allowing the Contractor to accelerate



Project Assignment Lead Electrical Engineer

Education

 BS, Electrical Engineering Technology, Pennsylvania State University (1988)

Professional Registration

 Professional Engineer: CA (2016); CT (2018); ID (2011), LA (2013); MA (2016); MD (2008); NC (2017); NJ (2012); NY (2017); PA (1997); TX (2012); VA (2009); WV (2011); AR (2020)

Professional Affiliations

• AISC - American Institute of Steel Construction

procurement of materials to meet a very tight construction schedule. The first phase of the project, including replacement of the catenary system through the tunnel limits; a new operational communications complex; and a new continuous fiber connection to Civic Center Station was completed under the CM/GC model. Design of the tunnel structure, a new dry standpipe system, and emergency egress lighting are currently being completed under a typical design/bid/build model. As a part of the design process, M&M has focused on staging construction using accelerated construction methods to limit interruptions to the upper Union Station parking lot and the lower MetroLink light rail service. These methods have included low overhead construction which allows the substructure to be installed without removing the tunnel lid.

Harvey Canal Tunnel Rehabilitation. New Orleans, LA | Louisiana DOTD (2014)

Mr. Strenkoski served as an Electrical QA/QC reviewer for this project. As part of the Bridge Preservation Open End with the LADOTD, M&M developed a rehabilitation scope of work and prepared preliminary plans for the rehabilitation of the Harvey Canal Tunnel. Data was collected at the site to determine the

Joseph G. Strenkoski, PE

Associate – Electrical Engineering

types of repairs and locations of those repairs along with development of preliminary plans detailing repairs to the tile, drainage grates and pit, roadway joints and pavement and the tunnel entrance.

Moffat Tunnel Ventilation Project. Moffat, CO | Union Pacific Railroad (2019-2020)

Mr. Strenkoski served as the Project Manager for this project which involved ventilation system controls upgrades and updating associated electrical drawings. M&M was contracted for this design/build of new control systems for a 6-mile RR tunnel. The overall project scope includes performing an as-built survey of the existing electrical control system. The project includes replacing the high voltage variable frequency drives for the ventilation fans, replacing the PLC (Programmable Logic Controller) based control system, developing a new PC based operator interface system, and upgrading the ventilation system's monitoring sensors. A focus was placed on remote monitoring and control of the facility. M&M provided on-site technical assistance with the existing PLC hardware and with preliminary testing of new PLC components. M&M also reviewed the existing tunnel system details and assisted with the planning the sequence of work to ensure the tunnel ventilation system would remain fully functional throughout construction. The next phase of the project also includes site visits and construction observation

Belle Chasse Bridge & Tunnel P3 20% Electrical & Structural Design and Structural Checking. Belle Chasse, LA | Louisiana DOTD (2018-2022)

Mr. Strenkoski served as the Electrical Task Leader on this major P3 design build fixed bridge project. He oversaw the design of the new roadway lighting and navigation lighting system. The Judge Perez Bridge, also known as the Belle Chasse Bridge, is a vertical-lift bridge which carries northbound Louisiana Highway 23 over the Gulf Intracoastal Waterway between Belle Chasse and Terrytown. The bridge is paired with the Belle Chasse Tunnel which carries southbound LA 23. This P3 project will replace the existing bridge and tunnel with two lanes of travel in each direction.

George Washington Bridge Main Cable & Anchorage Dehumidification & Rehabilitation. New York, NY | PANYNJ (2014-2016)

Mr. Strenkoski was an electrical engineer and assisted with the final design and contract plans. As a subconsultant, M&M performed the engineering design services related to the dehumidification of the GWB Anchorage Chambers. M&M also performed engineering design services related to the replacement of suspender ropes and the rehabilitation of the main cables and cable strands.

Mid Hudson Bridge East Tower and Anchorage Modification. Poughkeepsie, NY | New York State Bridge Authority (2013-2015)

Mr. Strenkoski was a Senior Electrical Engineer on this project and oversaw the electrical repairs to the existing dehumidification systems. M&M was selected to inspect the east anchorage chamber and tower top location to determine the cause of the poor performance of the existing dehumidification system. The scope of work included in-depth inspection of the east anchorage chamber and tower top location to verify wiring and other variables necessary for the design and installation of a new system. This inspection included determining the existing interface and equipment necessary for monitoring the dehumidification system from the Mid-Hudson Bridge administrative building, collecting previously complete contract plans necessary for detailing the new dehumidification systems. Based on the site conditions, M&M produced calculations to size the new dehumidification systems to reduce the humidity in the east anchorage and tower top to below that at which corrosion takes place. Duct work was sized for all portions of the dehumidification systems with calculation of the appropriate Reynolds Number, friction factor, and appropriate loss coefficients and other factors and determined the required capacity for the addition of an air conditioning module to the existing dehumidification system in the east anchorage. A monitoring system with remote access using existing optical fiber cable was evaluated. A new control system which allowed for the periodic cycling of the equipment was designed as was the addition of condensate pumps to remove water to existing drains as needed.





Bradly C. Croop, PE, CTI

Northeast Regional Manager | Field Services / Inspection | Repair Group Leader

Project Assignment QUALITY MANAGER

Education

 B.S., Civil Engineering, Pennsylvania State University (2001)

Professional Registration

 Professional Engineer: WV (2015), DE (2018), IN (2020), MD (2012), MI (2017), OH (2018), PA (2009), SC (2017), TX (2020), WY (2017)

Professional Affiliations

AISC

Engineers Society of Pennsylvania

Training Courses

- NHI 130055 Safety Insp. of In-service Bridges (2003)
- Bridge Safety Inspection Refresher (2017)
- NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges (2014, 2019)
- NHI 130110 Tunnel Safety Insp. (2014, 2018)
- NHI 130087 Insp. and Maint. of Ancillary Highway Structures (2011)
- E-Railsafe System Safety Training (2016)
- Amtrak Contractor Safety Training (2015)
- Ultrasonic Insp. Level I&II Training (2008)
- Technical and Rope Access Technical Access Supervisor (2015)
- American Red Cross Adult First Aid (2015)
- Non-destructive Testing (2010)
- OSHA 10 Hour Training (2010)
- OSHA 30 Hour Training (2011)
- Confined Space Entry Training (2003)
- American Red Cross Adult CPR (2015)
- Contractor Orientation, UPRR (2003)
- FRA Railroad Workplace Safety (2003)
- SPRAT Level 2 Certification (2011)
- Fall Protection Training (2010)
- Fall Protection (2010)
- American Red Cross Bloodborne Pathogens(2015)
- TWIC Card(2015)
- SWAC Card (2017)

Synopsis of Experience

Mr. Croop joined Modjeski and Masters, Inc. in 2002 as a Field Services Engineer. He is assigned to the inspection of bridges and subsequent preparation of condition reports. Trained in technical access climbing methods, Mr. Croop is invaluable to M&M's clients by minimizing the impacts and unwanted traffic disruptions due to the necessary routine inspections of their structural inventory and assets. He is also well versed in a variety of Non-Destructive Testing (NDT) methods providing clients with in-house material testing and condition assessment services.

Project History

Jennings Randolph Bridge Inspections, Chester, WV | West Virginia Division of Highways (2018) Mr. Croop provided TARA inspection of Ohio River

piers for this welded steel plate I-girder and through truss structure supporting four lanes of US 30 over Ohio River, WV 2 and Ohio River Road.

Annual Facilities Inspection O-E GEC Contract. Various Locations, MD | MDTA (2008 - Ongoing)

Mr. Croop is the Project Manager and Team Leader for various bridge and tunnel inspections under this contract. M&M performed inspections of the structural, mechanical, and electrical components of these bridges and tunnels. His duties included managing multiple simultaneous inspection projects, leading the inspection of interstate tunnels, suspension bridges, truss bridges and movable bridges; performing UT tests; writing inspection reports; performing quality assurance inspections and reports; uploading inspection notes to online databases; and error checking the database. He also assisted with the Tunnel Inspection Guidelines for inclusion in the facilities inspection manual.

East Huntington Bridge Inspection. Huntington, WV | West Virginia Department of Transportation-Division of Highways (2004 - 2009)

Mr. Croop was the Bridge Inspection Team Leader for this project. The East Huntington Bridge is a two-lane structure which carries WV Route 106 over the Ohio River between Huntington, WV and Proctorville, OH. The main span unit is a two-span, asymmetrical

1,535' concrete cable-stayed bridge. The cables are arranged in a twin plane fan configuration. The modified diamond or delta-shaped tower is over 300' tall. The total structure length, including approaches, is 1,994'. M&M is providing NBIS In-depth, Periodic and Interim Inspections for this bridge from 2004 to



Bradly C. Croop, PE, CTI

Northeast Regional Manager | Field Services / Inspection | Repair Group Leader

2009. These inspections included evaluation of Cable Loads and Damper Effectiveness and a hands-on inspection of the full length of the cable stays through use of technical access methods.

DDOT 2010 & 2006 Citywide Consultant Bridge Inspections, Washington, DC | DDOT (2007-Ongoing)

Mr. Croop was a team leader and performed the hands-on inspection of various structure types including tunnels, segmental concrete bridges, and steel girder bridges. From 2006 to the present, M&M has inspected the District's 17 tunnels and underpasses including I-395 Mall Tunnel, Air Rights Tunnel, 9th Street Tunnel, and 12th Street Tunnel (North and South).. DDOT's inventory includes approximately 250 highway and pedestrian bridges and 17 tunnels and underpasses. M&M provided bridge and tunnel inspection services to assure DDOT's inventory is in compliance with the NBIS and NTIS. This requires extensive planning and coordination to ensure all schedules would be met. Special studies such as design of repairs, scour analysis and special investigations and monitoring were included.

Spring Garden Street and Kelly Drive Tunnel Inspections. Philadelphia, PA | City of Philadelphia (2017 - 2020)

Mr. Croop served as the Tunnel Inspection Team Leader for the inspection of the Spring Garden St. Tunnel and Project Manager for the Kelly Drive Tunnel Inspection. The inspection was performed in accordance with the National Tunnel Inspection Standards, the Tunnel Operations, Maintenance, Inspection and Evaluation Manual and the Specifications for the National Tunnel Inventory. The 2017 inspections required element level quantity calculations, inventory, inspection and reporting forms to be set up for the initial inspections of these tunnels.

Goethals Cable-Stay Bridge. Port District, NY & NJ | PANYNJ (2017 - 2020)

Mr. Croop served as the Project Manager and Inspection Team Leader for this project, including the rope access inspections. M&M was selected as part of the team to perform the initial, inventory and routine inspections for the newly constructed Goethals Bridges in New York City. The bridges consist of two parallel cable stayed bridges with a total length per bridge of 7,110-feet with a 1,635-foot cable stayed portions (900-foot main spans). Initial and inventory inspections of the eastbound bridge was performed prior to opening to traffic in June, 2017 to ensure the bridge was constructed according to plans and was safe for traffic. The westbound was inspected in April, 2018. Routine inspections in 2019 and 2020 to evaluate the condition of each bridge were also included in this project. Technical and rope access climbing techniques were used extensively on this project to provide a hands-on inspection to the full-height of the 268-foot tall towers and stay cables.

Ambassador Bridge Inspections. Detroit, MI | DIBC (2001 - Ongoing)

Mr. Croop has served as the Project Manager on this project since 2015. Prior to that he served as both Team Leader and Bridge Inspector. The Ambassador Bridge crosses the Detroit River and links Detroit with Windsor, Ontario, Canada. The crossing features a suspension bridge with a 1,850' main span. The total length of the structure including approaches is 7,478'. The approach spans consist of steel multi-girder and deck truss spans. The structure carries a 47' roadway and 8' sidewalk. M&M has performed annual inspections, special inspections, in-depth inspections, construction inspections and cable inspections since 2001. M&M has also been retained by the DIBC to develop rehabilitation plans, asset management plans and special investigations.



William R. Bolt, PE, CTI

Engineer - Field Services | Northeast Region

Project Assignment TEAM LEADER/INSPECTOR/CTI

Education

 B.S., Civil Engineering Technology, Pennsylvania State University (2007)

Professional Registration

Professional Engineer: MD (2018), PA (2017)

Professional Affiliations

American Institute of Steel Construction

Training

- NHI 130055 and 130053 Safety Inspection of In-Service Bridges Certification (2008), Refresher Course (2019)
- NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges (2019)
- NHI 130087 Inspection and Maintenance of Ancillary Hwy Structures (2011)
- NHI 130110 Tunnel Safety Inspection (2014)
- NHI 130101A Prerequisite Assessment for Safety Inspection of In-Service Bridges (2014)
- NHI 130125 Tunnel Safety Inspection Refresher (2018)
- Amtrak Contractor Safety Training (2020)
- Level I & II Liquid Penetrant (2010) Level I & II Magnetic Particle (2010)
- Confined Space Entry Training (2008)
- American Red Cross Adult First Aid (2019)
- American Red Cross Adult CPR (2019)
- e-RAILSAFE System Safety Training (2019)
- Cocciardi & Associates, Inc.: OSHA & Fall Protection Training (2010)
- ACI Concrete Field Testing Technician, Grade One Certified (2006)

Synopsis of Experience

Mr. Bolt is a registered professional engineer with over 13 years' experience in field inspection and evaluation services and over 10 years of movable bridge inspections. He has significant experience performing inspections on various movable (bascule, vertical lift and swing), suspension, truss, girder and beam bridges for numerous authorities. DOT's and railroads. He is a Certified Bridge Safety Inspector (CBSI) having completed the FHWA-NHI Course No. 130055 - Safety Inspection of In-Service Bridges, FHWA-NHI Course No. 130078 - Fracture Critical Member Inspection Techniques for Steel Bridges and is up-to-date with refresher courses. Mr. Bolt will be on-site serving as a Structural Inspection Team Leader. He is trained in various methods of nondestructive testing including Magnetic Particle and Dve Penetrant.

Project History

Jennings Randolph Bridge Inspections. Chester, WV West Virginia DOH (2016 - 2020)

Mr. Bolt was a Team Leader for these inspections and performed the work utilizing technical and rope access methods as needed. As part of a six-year agreement, M&M performed an in-depth periodic inspection of the Jennings Randolph Bridge, the largest Pratt truss bridge in North America. The structure spans the Ohio River between Chester, WV, and East Liverpool, OH. The inspection included a hands-on inspection of all components, members and connections including gusset plates above the waterline.

MDTA Annual Facilities Inspections Open-End Contract. Baltimore MD | MDTA (2010 - Ongoing) Mr. Bolt participated as a field inspector, as well as a

structural team leader on the various bridge and tunnel inspections, including the Curtis Creek Bascule Bridges. Subsequently, Mr. Bolt prepared the reports and or assisted in completing the reports for each structure, including quantification and calculations of the element level quantities and ratings of the structures. This project involved the annual inspection of numerous bridges and tunnels at various locations in Maryland. M&M performed inspections of fixed bridges and the structural, mechanical, and electrical components of movable bridges. The inspections included the approach and bascule spans, including superstructure, machinery support frames, above water portion of substructures, and fenders of the Curtis Creek Bascule Bridges. Ultrasonic testing of pins was included in the work. M&M, as part of the RK&K team, additionally provided visual inspections of 14 I-95 and I-395 structures and bridges in Baltimore County. M&M also performed a hands-on inspection of all portions of the suspended spans of the William Preston Lane Jr. Memorial Suspension Bridges and the substructure and superstructure components of the Millard E. Tydings Memorial Truss Bridge.



William R. Bolt, PE, CTI

Engineer - Field Services | Northeast Region

Citywide Bridge Inspections. Washington, DC | District DOT (DDOT) (2007 - Ongoing)

Mr. Bolt is involved with this project providing general inspections as a structural team leader, report writings, and soundings. DDOT's bridge inventory consists of more than 250 highway overpass bridges, highway tunnels and pedestrian bridges. The bridges consist of a variety of types and configurations: stone masonry, concrete and steel; arch and girder. They traverse other highways, waterways, rail properties and the natural variations in terrain. M&M provided bridge inspection services to assure DDOT's inventory was in compliance with the National Bridge Inspection Standards. This required extensive planning and coordination to ensure all schedules would be met.

NJDOT Movable Bridge Structural, Mechanical, and Electrical Inspections. New Jersey | NJDOT (2018 - Ongoing)

Mr. Bolt participated as a field inspector, as well as a structural team leader in the inspection of one of the double-leaf bascule bridges and both vertical lift bridges. M&M, as part of the JM&T team, provided the structural, mechanical, and electrical inspections for 3 double-leaf bascule bridges and 2 vertical lift bridges. Additionally, the preparation of the reports was included as part of the project.

Wayne County – Dix Avenue and Jefferson Street Inspections. Detroit, MI | Wayne County (2019 - Ongoing)

Mr. Bolt assisted in report development, element level quantifying and calculations, and updating the data in the MiBRIDGE database. M&M provided the structural, mechanical, and electrical inspection of the Dix Avenue Bridge and the Jefferson Street Bridge. The Dix Avenue bascule bridge over the Rouge River was built in 1926. The bridge carries (4) lanes of Dix Avenue across the Rouge River. The 291'-3" long structure consists of a double leaf bascule truss spans over the Rouge River with (2) fixed approach girder spans on each end. The Jefferson Avenue Bascule Bridge was constructed in 1922, was rehabilitated and painted in 1982, and the north leaf was rehabilitated again in 2016/2017. It is a double leaf simple trunnion bascule bridge with a length of 170'-1 1/2" from heel to heel and a clear channel width of 125'.

Sunrail Lake Monroe Draw Bridge Quarterly Inspections. Sanford, FL | Bombardier (2015 - 2018)

Mr. Bolt served as a structural inspection team leader for the project, prepared the structural inspection report and recommendations. Under this project, M&M provided the structural, mechanical, and electrical quarterly inspections, and provided detailed repair recommendations for Bridge MP A763.1, also known as the Lake Monroe Drawbridge, which carries one railroad track across the St. Johns River. The bridge consists of 18 spans and is oriented north-to-south with a total length of 563' (from abutment-to-abutment). There are 12 prestressed concrete box beam spans (Spans 1 through 5 and 12 through 18) totaling 265' in length. Spans 10 and 11 form the rolling lift bascule span consisting of the channel span (Span 10) and the support track girder span (Span 11) with a total length of 143'. Spans 6 through 9 consist of the steel two girder system with a total length of 155'.

Livingston Avenue Railroad Bridge Design Engineering Services. Albany, NY | NYSDOT (2010)

Mr. Bolt served as an inspection team member for the project, additionally assisting in preparing the structural inspection report. M&M provided preliminary engineering work to further refine the replacement alternative of the Livingston Avenue Bridge. The Livingston Avenue Bridge is a critical rail link crossing the Hudson River between the cities of Albany and Rensselaer. The railroad bridge is a 1272' structure which includes a 260' movable swing span, 4 truss spans, and 4 girder spans. M&M was responsible for structural, electrical and mechanical inspections of the existing bridge, load rating of the bridge members and gusset plates, development of design alternatives, cost estimating and managing survey, track design, environmental reviews and public outreach tasks being performed by subconsultants.



Alexander F. Waardenburg, PE, CTI

Engineer - Mechanical | Tunnels

Project Assignment

Mechanical Inspector/CTI

Education

 BS, Mechanical Engineering, Messiah College, 2010

Professional Registration

 Professional Engineer: LA (2020), MD (2020), PA (2016), TX (2020)

Training Courses

- NHI-130110 Tunnel Safety Inspection (2014)
- NHI-130125 Tunnel Safety Refresher (2018)
- American Red Cross Adult First Aid (2019)
- Confined Space Entry Training (2015)
- Secure Workers Access Consortium Security Clearance (2021)
- Transportation Workers Identification Credential (2019)
- PATH Safety Training (2021)
- NFPA 70E/OSHA Electrical Safety & Arc Flash Training

Synopsis of Experience

Mr. Waardenburg joined Modjeski and Maters in 2010 and has been assigned to the firm's Electrical / Mechanical Section. He has been involved in a variety of movable and fixed bridge design and inspection projects. Mr. Waardenburg has experience in bridge inspections, preliminary studies, final design, and analysis. He has completed the FHWA-NHI 130110 Tunnel Safety Inspection course.

Project History

Annual Facilities Inspection Open-End Contract. Statewide, MD | Maryland Transportation Authority (2019-ongoing)

Mr. Waardenburg participated in the mechanical inspection of the Fort McHenry Tunnel and ventilation buildings. In his role as Mechanical Team Leader, he was responsible for locating mechanical deficiencies concerning ventilation, fire suppression, and rainwater management systems. He completed bearing vibration measurements on ventilation motors and bearings. Mr. Waardenburg also participated in the strain gage installation used to measure strain at critical fatigue locations at the Chesapeake Bay Bridge. As part of a JV, M&M has been responsible for in-depth inspections, client liaisons, and QAQC for four successive, three-year Open-

End contracts. MDTA facilities include: Baltimore Harbor Tunnel Thruway, Fort McHenry Tunnel, and numerous additional structures.

Metro Downtown Tunnel Repairs. St. Louis, MO | Bi-State Development (2019-ongoing)

Mr. Waardenburg was the lead mechanical engineer on this project. His duties involved designing a replacement fire suppression standpipe system in accordance with NFPA 14 and NFPA 130. M&M is assisting Metro with determining and implementing appropriate repairs for the Downtown tunnel which includes structural and mechanical repairs. The project is being coordinated with the FTA to obtain a Categorical Exclusion for this historic structure.

Spring Garden Street and Kelly Drive Tunnel Inspection. Philadelphia, PA | City of Philadelphia (2017 and 2019)

Mr. Waardenburg performed the Mechanical Inspection and developed the report for this project. Report development included documenting element categories and quantities, discussing all deficiencies observed in the tunnel ventilation systems and water draining systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory. The Kelly Drive Tunnel is owned and operated by the City of Philadelphia. The tunnel was originally constructed in 1871. The tunnel currently channels four opposing traffic lanes of Kelly Drive (2 lanes each direction), formerly known as East River Drive, through a rock promontory just North of Brewery Hill Drive and along the east bank of the Schuylkill River. The tunnel consists of rock portals and an unlined rock bore with an asphalt slab-on-grade travel way edged with granite block curbs. The total length of the bore is 140'-0" from portal-to-portal. The out-to-out width of the structure is 41'-0". The clear roadway width is approximately 39'-0". A hands-on inspection was performed on the tunnel liner, portals, asphalt wearing surface and granite block curbs.

Union Station Tunnel Rehabilitation. St. Louis, MO | Bi-State Development (2016-ongoing)



Alexander F. Waardenburg, PE, CTI

Engineer - Mechanical | Tunnels

Mr. Waardenburg was the lead mechanical engineer on this project. His duties involved designing a fire suppression standpipe system in accordance with NFPA 14 and NFPA 130. As part of an overall tunnel redesign for Metro, M&M Mechanical and Electrical (ME) was responsible for the design of the new tunnel standard lighting, emergency egress lighting, emergency ventilation system, fan and motor selection, emergency stand-pipe design, and associated power and controls including utility coordination for all project components.

Wawona Tunnel Inspection. Yosemite, CA | Federal Highway Administration (2020-ongoing)

Mr. Waardenburg led the Mechanical and Electrical inspection team for the Wawona Tunnel in Yosemite National Park. In his role as Team Leader, he was responsible for locating mechanical deficiencies concerning ventilation, fire safety, and rainwater management systems as well as coordination of equipment and access for the electrical inspection, and report development. He completed bearing vibration measurements on ventilation motors and bearings and air speed measurements. Report development included documenting element categories and quantities, discussing all deficiencies observed in the tunnel ventilation systems, fire safety systems, and water draining systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory.

I-57 and IL Route 149 Pump Station Repair. Franklin County, IL | Illinois DOT (2015-2016)

Mr. Waardenburg was the lead mechanical engineer for the design, and he was on the inspection team who performed the site survey and inspection. An emergency structural, mechanical, and electrical inspection was performed to document deficiencies and provide short term repair recommendations for the I-57 pump station. An on-site inspection and test was initially performed by M&M to evaluate the condition of the existing pump station equipment and to determine the required repairs. Final repair plans, specifications, and estimates were developed which included replacement of the structural pipe supports and motor repairs, and repair of the maintenance hoist and pressure transducer well pipe cleanout cover. Construction services were provided as requested.

Rockport Strauss Trunnion Bascule Inspection. Rockport, KY | Paducah and Louisville Railroad (2017)

Mr. Waardenburg led the mechanical inspection of the mechanical systems and wrote the inspection report. M&M was selected to perform a structural, electrical, and mechanical inspection, strain gage balance testing and survey for this strauss heel trunnion bascule and several truss style approach spans.

Mankato Sub Bridge 15 Upgrades. St. Paul, MN | Union Pacific Railroad (2017)

Mr. Waardenburg assisted the inspection of the mechanical components and created preliminary repair designs. UPRR contracted M&M to perform an evaluation and repair of their Mankato Sub Bridge 15.

Movable Bridge Inspections. Statewide, CT | Connecticut DOT (2015-2016)

As a Mechanical Inspector, Mr. Waardenburg assisted the inspection of the mechanical components for multiple structures. Modjeski and Masters, Inc. provided movable bridge engineering services for the electrical and mechanical inspections with reports and prioritized repair recommendations for each movable bridge. This project involved the thirteen electrical-mechanical inspections of movable bridges at various locations in Connecticut. The thirteen roadway bridges included two single-leaf bascule bridges, four double-leaf bascule bridges, five swing bridges, and two vertical lift bridges located in the southwest and southeast regions of Connecticut (2000, 2002, 2006, and 2008, 2012). Both in-depth and routine inspections were involved with this project as per the AASHTO Movable Bridge Inspection Evaluation, and Maintenance Manual. Semi-final construction inspection was also involved. All inspections included "hands-on" and audio/visual monitoring.



Kyle M. Gable, PE, CTI

Engineer - Electrical | Tunnels

Project Assignment

Electrical Inspector/CTI

Education

 BS, Electrical Engineering, Elizabethtown College, 2014

Professional Registration

- Professional Engineer: PA (2019)
- Training Courses
- FHWA NHI 130101A: Prerequisite Assessment for Safety Inspection of In-Service Bridges (2016)
- UPRR Conráil (2016)
- FHWA NHI 130110 Tunnel Safety Inspection (2016)
- Amtrak Contractor Safety Training (2019)
- American Red Cross Adult CPR (2017)
- American Red Cross Adult First Aid (2017)
- American Red Cross Bloodborne Pathogens (2016)
- e-Railsafe System Safety Training (2018)

Synopsis of Experience

Mr. Gable joined Modjeski and Masters, Inc. in 2014 where he was assigned to the Electrical division of M&M's movable bridge unit. Mr. Gable has provided electrical engineering on various types and styles of bridges.

Project History

Annual Facilities Inspection Open-End. Baltimore, MD | Maryland Transportation Authority (2014-Ongoing)

Mr. Gable is assisting with the inspection of the electrical components for the Chesapeake Bay Bridge (WB) and Fort McHenry Tunnels, and Biennial Inspections of 9 overpass structures. He also assisted with the electrical inspection of the Francis Scott Key Bridge. This project involves the annual inspection of more than 150 bridges and tunnels throughout Maryland. Bridge types include fracture critical, deck truss, thru truss, steel and concrete multi-beam, steel and concrete girder, suspension, steel and concrete box, bascule bridges and two complex, long tunnels.

Union Station Tunnel Rehabilitation. St. Louis, MO |

Metro (2016-Ongoing)

Mr. Gable provided cost estimates for various electrical components as part of the overall electrical design. M&M was selected to perform engineering services required for the rehabilitation and replacement of the oldest portions of the Union Station Tunnel in St. Louis, MO. The work will help to maintain a viable alignment for Bi-State Development's MetroLink commuter rail services and provide continued access to 18th and Clark Streets and surrounding destinations such as the St. Louis Union Station, the Peabody Opera House and the Scottrade Center. The project will employ a construction manager/general contractor (CM/GC) delivery model where the preliminary design team works with the CM/GC to complete contract documents and oversee construction.

Spring Garden Street and Kelly Drive Tunnel Inspections. Philadelphia, PA | City of Philadelphia (2017-2018)

Mr. Gable performed the Electrical Inspection and developed the report for this project. Report development included documenting element categories and quantities, discussing all deficiencies observed in the tunnel electrical and lighting systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory. The Kelly Drive Tunnel is owned and operated by the City of Philadelphia. The tunnel was originally constructed in 1871. The tunnel currently channels four opposing traffic lanes of Kelly Drive (2 lanes each direction), formerly known as East River Drive, through a rock promontory just North of Brewery Hill Drive and along the east bank of the Schuylkill River. The tunnel consists of rock portals and an unlined rock bore with an asphalt slab-on-grade travel way edged with granite block curbs. The total length of the bore is 140'-0" from portal-to-portal. The out-to-out width of the structure is 41'-0". The clear roadway width is approximately 39'-0". A hands-on inspection was performed on the tunnel liner, portals, asphalt wearing surface and granite block curbs.

Bascule Bridge Automations. Joliet, IL | Illinois DOT (2014-Ongoing)

Mr. Gable performed the Electrical Inspection and was an Electrical Engineer for the design on this project. He designed camera layouts, CCTV, SCADA, PA, and wireless systems, the fiber optic backbone communication topology, and upgrade repairs to the movable bridges electrical and control



Kyle M. Gable, PE, CTI

Engineer - Electrical | Tunnels

systems to facilitate the centralized control of the six movable bridges in Joliet, Illinois. The design team of M&M is providing engineering services related to a preliminary investigation and design to convert six bascule bridges on the Des Plaines River in Joliet, Illinois to remote control operations. Each bridge is to be fitted with a new PLC based control system designed to provide remote control capability through a SCADA (Supervisory Control and Data Acquisition) system at IDOT's Joliet Bridge Office building. New bridge CCTV camera systems and a dedicated fiber optic communications network with a backup wireless network are also to be provided.

Grand Haven Bridge. Grand Haven, MI | MDOT (Ongoing)

Mr. Gable was the lead Electrical Engineer for this rehabilitation project. As lead electrical engineer, Mr. Gable developed contract design plans, details, specifications, and construction cost estimate for the movable bridge submarine cable replacement, main drive system upgrade to programmable logic control, the replacement of conduit, wiring, maintenance lighting, and CCTV system, and addition of pedestrian lighting. Mr. Gable calculated electrical load and conduit fill for the addition of pedestrian lighting and other power distribution systems.

Memorial Lift Bridge. Wilmington, NC | NCDOT (2018)

Mr. Gable was the lead Electrical Engineer for the movable bridge approach roadway lighting circuit upgrade. In his role as Lead Electrical Engineer, he designed the roadway lighting power distribution, control, and feeders.

UPRR Martinez Bridge. Martinez, CA | UPRR (2017)

Mr. Gable was an Electrical designer of the Security Lighting on this project. As Electrical designer, Mr. Gable calculated illuminance and uniformity for the walkway security lighting, calculated electrical load, voltage drop, and conduit fill for the security lighting power system, sized and selected electrical power equipment, lighting controls, conduit, conductors, and lighting fixtures based on the calculations. Mr. Gable developed contract design plans, details, specifications, and construction cost estimate.

Mid-Hudson Bridge Sidewalk Lighting. Poughkeepsie, NY | NYSBA (2017)

Mr. Gable was a lead Electrical designer on this project. As lead Electrical Engineer, Mr. Gable performed a site verification survey and inspection of existing lighting and power systems, calculated illuminance and uniformity for the sidewalk lighting, calculated electrical load, voltage drop, and conduit fill for the addition of the sidewalk lighting onto the existing lighting power system, sized and selected conduit, conductors, and lighting fixtures based on calculations. Mr. Gable developed contract design plans, details, specifications, and construction cost estimate as the lead design engineer.

RFK Bridge. New York, NY | TBTA (2017)

Mr. Gable was the lead Electrical designer of the lighting replacement on this project. During design, Mr. Gable calculated illuminance and uniformity for the approach roadway lighting, calculated electrical load, voltage drop, and conduit fill for the power distribution system for the approach roadway lighting, sized and selected raceways, conductors, pull boxes, and lighting fixtures based on the calculations. Mr. Gable also developed staging plans and details for temporary power to the roadway lighting during construction. Mr. Gable developed contract design plans, details, specifications, and construction cost estimate as the lead design engineer. During construction, he reviewed electrical submittals.



Maxwell Fyrster, EIT, CBSI

Engineer In Training - Field Services | Northeast Region

Synopsis of Experience

Mr. Fyrster joined Modjeski and Masters, Inc. (M&M) in 2014. He is assigned to the Field Services Business Unit. He has inspection experience on complex bridges, as well as smaller bridges. Certifications: SPRAT Level I Rope Access Technician; NHI 130053 - Safety Inspection of In-service Bridges (2020); NHI 130078 - Fracture Critical Inspection Techniques for Steel Bridges (2014, 2019); Non-destructive Testing (2020) Level I & II Liquid Penetrant (2020); Level I & II Magnetic Particle (2020). Member: AISC – American Institute of Steel Construction

Project History

MDTA, Fort McHenry Tunnel Inspections. Baltimore, MD | Maryland Transportation Authority (2017-2018)

As an inspection team member, Mr. Fyrster was responsible for the condition inspection of the Fort McHenry Tunnel, a fourtube, bi-directional tunnel that carries traffic on Interstate 95 (I-95) underneath the Baltimore Harbor. Due to traffic and safety concerns, the roadways of each bore of the tunnel were inspected while closed to traffic at night. The upper and lower air plenums located above and below the roadway were also inspected. Following the inspection, Mr. Fyrster assisted in entering element condition data and compiling the tunnel inspection reports in ASIR, MDTA's online bridge management database.

DDOT, Citywide Consultant Bridge Inspections. Washington, DC | District DOT (2014-Ongoing)

Since joining M&M, Mr. Fyrster has taken part in the inspection of the majority of DDOT's approximately 250 highway and pedestrian bridges, tunnels, underpasses, culverts. Each structure is inspected on a biennial basis in compliance with the National Bridge Inspection Standards. Mr. Fyrster has performed several special inspections of structures in advanced stages of deterioration requiring replacement and an emergency inspection following damage to one pedestrian bridge which crosses the Anacostia Freeway. Following inspections, Mr. Fyrster prepared bridge condition reports to be submitted to DDOT including coding information to be entered into the National Bridge Inventory. DDOT's inventory includes



Project Assignment

Bridge Inspection Team Member

Education

 B.S., Civil Engineering, Pennsylvania State University (2012)

Professional Registration

• Engineer-In-Training: PA (2013)

Professional Affiliations

 AISC – American Institute of Steel Construction

Training

- NHI 130053 Safety Inspection of In-service Bridges (2020)
- NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges (2014, 2019)
- Non-destructive Testing (2020) Level I & II Liquid Penetrant (2020)
- Level I & II Magnetic Particle (2020)
- SPRAT Level I Rope Access Technician (2018)
- Confined Space Entry Training (2015)

Maxwell Fyrster, EIT, CBSI

Engineer In Training - Field Services | Northeast Region

approximately 250 highway and pedestrian bridges, tunnels, underpasses, culverts and overhead sign structures. M&M is providing bridge inspection services to assure DDOT's inventory is in compliance with the National Bridge Inspection Standards. This includes scheduling and conducting the inspections in accordance with the schedule, preparing inspection reports, providing access to all portions of the structure, traffic control and other miscellaneous tasks to ensure all schedules will be met.

Ambassador Bridge Annual Inspections. Detroit, MI | Detroit International Bridge Co. (2014-Ongoing) Mr. Fyrster acted as an inspection team member, taking part in the hands-on and visual inspection of components of the Ambassador Bridge for several annual inspections, a tolled suspension bridge across the Detroit River that connects Detroit, Michigan, United States, with Windsor, Ontario, Canada. Mr. Fyrster utilized specialized sling-protected climbing to access parts of the structure for inspection, verifying and documenting deficiencies. Following the inspection, Mr. Fyrster assisted in compiling the final inspection report, using the inspection notes and photographs collected by the inspection team.

Benjamin Franklin Bridge-2018 Biennial Inspection and Load Rating. Philadelphia, PA | Delaware River Port Authority (2018-2019)

Mr. Fyrster was an inspection team member performing the 2018 Biennial Inspection and Load Rating of the Ben Franklin Bridge, a suspension bridge over the Delaware River in Philadelphia, PA. Mr. Fyrster evaluated primary and secondary structural components of the deck, superstructure, and substructure elements in accordance with all FHWA and NBIS requirements. All section loss on the primary structural members was documented during this inspection in order to complete the load rating post-inspection. Mr. Fyrster wrote portions of the final inspection report and compiled section loss notes and photographs for the load rating of the structure. Mr. Fyrster returned with a small team several times to conduct monthly monitoring of deteriorated wind bracing of the suspension spans and recent retrofits, preparing special monitoring reports on these components. M&M performed a close, visual, hands-on inspection of the Benjamin Franklin Bridge facility. The goal was to update the condition of all fracture-critical members and fatigue-sensitive evaluations. M&M also wrote a bridge-specific load rating manual for the bridge and performed a subsequent load rating on the bridge according to that manual.

Rip Van Winkle Bridge Inspection. Catskill, NY | New York State Bridge Authority (2015-2016)

Mr. Fyrster was part of the inspection team performing the 2015 Maintenance Inspection of the Rip Van Winkle Bridge, a cantilever bridge spanning the Hudson River between Hudson, New York and Catskill, New York. Mr. Fyrster evaluated primary and secondary structural components of the deck, superstructure, and substructure elements in accordance with all FHWA and NBIS requirements. Mr. Fyrster subsequently authored the 2015 Maintenance Inspection Report on the current condition of the bridge, reviewing the inspection teams notes and photographs and organized the information into a technical report detailing the current condition of the structure and providing repair recommendations to the client. The Rip Van Winkle Bridge is a 5,041-foot long steel cantilever through truss bridge across the Hudson River. M&M completed the biennial inspection which included a 100% hands-on visual inspection of all fatigue sensitive and fracture critical members.

MDTA, Bridge Element Level Data Collection. Baltimore, MD | Maryland Transportation Authority (2014-2015)

Mr. Fyrster served as a Bridge inspector for multiple tasks under this contract. As a sub, M&M provided visual inspections of 14 I-95 and I-395 structures and bridges in Baltimore County. M&M also performed a hands-on inspection of all portions of the suspended spans of the Westbound William Preston Lane Jr. (WPL) Memorial Bridge and the substructure and superstructure components of the Millard E. Tydings Memorial Bridge. M&M developed inspection element level data for both WPL bridges.





Shawn Yinger, PE, CBSI

Engineer – Field Services

Project Assignment INSPECTION TEAM LEADER/TUNNEL INSPECTOR

Education

 BS, Civil Engineering, Pennsylvania State University (2013)

Professional Registration

Professional Engineer: PA (2019); MD (2021)

Training Courses

- FHWA-NHI-130055, Safety Inspection of In-Service Bridges (2014)
- Bridge Inspection Refresher Training NHI Course # 130053 (2020)
- FHWA NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges (2019)
- FHWA-NHI-130110 Tunnel Safety Inspection (2021)
- ARC Adult First Aid (2015), Adult CPR (2020)
- e-Railsafe System Safety Training
- OSHA 10 Hour Training
- Railroad/Inspection Safety Training (1/2005)
- Technical Access Training (2020)

Synopsis of Experience

Mr. Yinger joined M&M in 2014 as a Field Services Engineer, assigned to the inspection of bridges and subsequent preparation of condition reports. He has experience in the inspection of all structural and nonstructural components of short-, medium- and longspan steel and concrete bridges.

Project History

Jennings Randolph Bridge Inspections. Chester, WV | WVDOH (Ongoing)

Mr. Yinger serves as a member of the inspection team, as well as TARA Technician. As part of our second consecutive six-year agreement for the West Virginia Department of Highways, M&M performed an in-depth periodic inspection of the Jennings Randolph Bridge. M&M performed inspection services, per the National Bridge Inspection Standards. The inspection included a hands-on inspection of all components, members and connections including gusset plates above the waterline. Element level inspections were included in the 2016 and 2018 inspections.

Bridge of Honor Inspections. Mason, WV/Pomeroy, OH | WVDOH (Ongoing)

Mr. Yinger serves as a member of the inspection team. The Bridge of Honor is a four-lane structure which

carries WV 62 Spur over the Ohio River, CSX railroad, and OH 833 between Mason, West Virginia and Pomeroy, Ohio. The main span unit is a three-span, symmetrical 1,163' concrete cable-stayed bridge. The cables are arranged in twin plane fan configurations. The two modified diamond or delta-shaped tower are over 175' tall. The total structure length, including approaches, is 1,852'. M&M is providing NBIS In-depth, Routine and Special Inspections from 2019 to 2024. These inspections include a hands-on inspection of the full length of the cable stays through use of equipment and technical and rope access methods.

Bridge Facilities Open-End GEC Contract. Hudson Valley, NY | NYSBA (2005-2007)

Mr. Yinger serves as a member of the inspection team, as well as TARA Technician. M&M has been providing bridge engineering services to the NYSBA since 1959. These services have been provided through individual project specific and GEC contracts. The NYSBA owns and maintains the following facilities: Mid-Hudson Bridge (suspension bridge), Bear Mountain Bridge (suspension bridge), Kingston-Rhinecliff Bridge (deck truss bridge), Newburgh Beacon Bridges (through truss bridge and deck truss bridges), and Rip Van Winkle Bridge (through truss & deck truss bridge). Besides assisting the NYSBA with the development of their capital program and issuing certificates on the integrity of the structures and validity of the capital program to the bonding company, M&M has provided services for the following typical tasks: redecking studies and design, traffic and revenue forecasts, fatigue and fracture studies, main cable and suspender rope investigations, asset management plans, vulnerability studies, peer review, inspection and load capacity ratings, and construction support. Many of the inspection and construction projects have involved the design and/or OSHA compliance determination of platforms used to perform the inspection/construction.



EMPLOYMENT HISTORY 1992-Current | Alpha Associates, Inc.

1988-1992 | Reimer, Muegge, & Associates, Inc.

EDUCATION

West Virginia University Bachelor- Civil Engineering; 2000

Fairmont State College Bachelor- Architectural Engineering Technology; 1988

QUALIFICATIONS

License: Professional Engineer; West Virginia

AFFILIATIONS

WV Society of Professional Engineers National Society of Professional Engineers

CHARLES B. BRANCH

PE; SENIOR PRINCIPAL & CIVIL ENGINEER

304-296-8216 | 800-640-8216

C chuck.branch@thinkalphafirst.com

SUMMARY

As Chief Engineer for site development and planning projects, Mr. Branch is a vital part of the design process at Alpha. His involvement spans from strictly civil engineering projects, to the design of large scale educational projects and medical facilities. Mr. Branch acts as peer review for young engineers in the firm on issues ranging from storm water management to site design. Mr. Branch is also involved in commercial and residential development design, roadway and bridge design and utilities layout.

PROFILE

Broad-based responsibilities in the following areas: Highway Design Municipal Engineering Wastewater Collection Storm Sewer System Design Storm Water Management Site Engineering Project Management

PROFESSIONAL HIGHLIGHTS

Civil Engineer/Project Manager: Jane Lew Truck Stop; Jane Lew, WV Clarksburg State Office Building; Clarksburg, WV WVU Reedsville Farm Redevelopment; Morgantown, WV Freedom Automotive Group Dealerships: Morgantown, WV Freedom Kia; Clarksburg, WV WVU Parking Lot 81 Renovations; Morgantown, WV WVU Doll's Run Burn Room; Morgantown, WV WVU Alumni Center Parking Lot; Morgantown, WV WVU Alumni Center Storm Water Management; Morgantown, WV WVU Health Sciences Center Eastern Division: Martinsburg, WV WVDOH Martinsburg Train Station Corridor Streetscape; Martinsburg, WV WVDOH I-77 Welcome Center; Williamstown, WV WV Medal of Honor Recipients Plaza; Hazleton, WV Lewis County High School Bridge; Weston, WV Wyoming County Route 10 Relocation; Wyoming County, WV Fairmont Federal Credit Union; Bridgeport, WV Queen St Underpass; Martinsburg, WV Martinsburg Little League Fields: Martinsburg, WV



EMPLOYMENT HISTORY

1985-Current | Alpha Associates, Inc. 1983-1985 | Charles Townes & Associates, P.C.

1983 | US Army Corps of Engineers

EDUCATION

West Virginia University Masters of Business Administration; 1999 Bachelor- Civil Engineering; 1982

QUALIFICATIONS

License: Professional Engineer: West Virginia, Maryland, Pennsylvania, Virginia

Professional Surveyor: West Virginia

Certified Private Pilot

AFFILIATIONS

Former NSPE/PEPP Governor of WV

American Red Cross- State Board

University High School Foundation; Charter Member; President

Morgantown Area Chamber of Commerce; Past Chairman

WVU College of Civil and Environmental Engineering Visiting Committee

WVU College of Business and Economics MBA Advisory Committee

RICHARD A. COLEBANK

PE,PS; PRESIDENT & COO

2 304-296-8216 | 800-640-8216

rick.colebank@thinkalphafirst.com

SUMMARY

Mr. Colebank is President and Chief Operating Officer at Alpha. He has been with Alpha Associates, Inc. since 1985. He began his career with Alpha as a staff engineer and progressed through the ranks from Project Manager to his current position. Mr. Colebank has worked with diverse clients such as WVU, City of Morgantown, WVDOH, WVU Foundation, and the Morgantown Municipal Airport, as well as numerous other public and private clients. Since 1988, Mr. Colebank has been the Principal-In-Charge of the Civil Engineering projects developed by Alpha. In his current capacity, Mr. Colebank provides financial and administrative guidance for the day to day operations of the company while continuing to manage projects.

PROFILE

Broad-based responsibilities in the following areas: Project Management Business Operations and Financial Management Quality Assurance/Quality Control Civil Engineering Project Management and Design New Business Development Expert Testimony and Investigation

PROFESSIONAL HIGHLIGHTS

Project Principal:

Morgantown Municipal Airport Access Road; Morgantown, WV Mon General Access Road; Morgantown, WV WVU Reedsville Farm Redevelopment; Reedsville, WV Monongalia General Hospital Access Road; Morgantown, WV WVDOH Martinsburg Train Station Corridor Streetscape; Martinsburg, WV WV State Office Building; Parkersburg, WV College of Physical Activity & Sports Science; Morgantown, WV WVDOH Open End Engineering Contract; WV WVDOH Deckers Creek Pedestrian Bridge; Morgantown, WV Clarksburg State Office Building; Clarksburg, WV Jane Lew Truck Stop; Jane Lew, WV Grant County Bank Addition & Renovation; Petersburg, WV South Berkeley Fire Station; Inwood, WV


EMPLOYMENT HISTORY

2016-Current | Alpha Associates, Inc. 2010-2015 | Echard ingenieurBüro 2006-2009 | Buro Happold Consulting Engineers 2003-2006 | RISA Technologies, Inc. 2000-2003 | Zaldastani Associates, Inc.

EDUCATION

Massachusetts Institute of Technology Masters- Engineering & Environmental Mechanics, 2002

West Virginia University Bachelors of Science- Civil Engineering, 2000

QUALIFICATIONS

License: Professional Engineer: West Virginia, California

California OES SAP Evaluator

AFFILIATIONS

American Concrete Institute (ACI) American Institute of Steel Construction (AISC) American Society of Civil Engineers (ASCE)

American Wood Council (AWC)

PUBLICATIONS

Echard, M. and Tonis, D. Convergent Design Methodology for Bio-Science Labs: Architectonic and Performative Structural Considerations Using the Geilinger Composite Column Solution. Proceedings of ICSA2010-First International Conference on Structures and Architecture Guimaraes, Portugal, July 2010, Taylor & Francis.

Echard, M. Structural Analysis and Design Within a BIM Framework. EASEC 10- East Asia Structural Conference, Bangkok, Thailand, August 2006.

MATTHEW T. ECHARD

PE; PRINCIPAL & STRUCTURAL ENGINEER

304-296-8216 | 800-640-8216

matthew.echard@thinkalphafirst.com

SUMMARY

Mr. Echard joined Alpha Associates, Inc. in early 2016 with a strong belief that his clients deserve intelligent, performance-based and value-oriented solutions. Drawing on experience working across in the United States, Europe, and the Middle-East, Mr. Echard returned to West Virginia to provide world-class service in a historically unde-served region while making positive contributions to the future growth of his home state. Mr. Echard places a large value on the collaborative work process, believing that a building's form and function are derived from many contexts. Mr. Echard's office is located in the corporate office in Morgantown, WV.

PR**O**FILE

Broad-based responsibilities in the following areas:

Structural Engineering Structural Forensics Project Management

PROFESSIONAL HIGHLIGHTS

Project Manager & Structural Engineer:

Westover Goodwill Structural Design; Morgantown, WV

Weyerhaeuser Roof Evaluation; Heaters, WV

Los Mariachis UTC; Morgantown, WV

WVU Creative Arts Center Performance Access; Morgantown, WV

WVU Mountain Lair Grid Iron Assessment; Morgantown, WV

Martinsburg Queen Street Underpass; Martinsburg, WV

Charles Town Water Plant Clearwell Emergency Repair; Charles Town, WV



Federal Highway Administration

National Highway Institute



Certificate of Training

Robert Shawn Brannon

has participated in

FHWA-NHI-130053 Bridge Inspection Refresher Training

hosted by

West Virginia Department of Transportation

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November 27-29, 2018

Hours of Instruction: 18

Location:

Charleston, WV

Instructor

Instructor

Local Coordinator

Valerie Briggs, Director **National Highway Institute**



Federal Highway Administration National Highway Institute



Certificate of Training

Robert Shawn Brannon

has Successfully Completed

FHWA-NHI-130125 Tunnel Safety Inspection Refresher ILT

hosted by

West Virginia Department of Transportation

Date: Location:

May 24-26, 2022 Charleston, WV

Instructor

Instructor

Hours of Instruction: 17 PDH

Local Coordinator

homas Harman

Thomas Harman, Director National Highway Institute



National Highway Institute

Certificate of Training

Robert Shawn Brannon

has participated in

FHWA-NHI-130055 Safety Inspection of In-Service Bridges

hosted by

West Virginia Department of Transportation

Date: Location: March 17 – 28, 2014

Huntington, WV

Hours of Instruction: 67

Instructor

Instructor

Coll flb=

Richard Barnaby, Director National Highway Institute





National Highway Institute



Certificate of Training

Robert Shawn Brannon

hasparticipated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

March 12-15, 2019

Hours of Instruction: 25

Location:

Mechanicsburg, PA

Instructor

Instructor

Michael

Michael Davies, Director National Highway Institute

-	

Federal Highway Administration

National Highway Institute

Certificate of Training



Robert Brannon

has participated in

NHI Course No. FHWA-NHI-130101A

Prerequisite Assessment for Safety Inspection of In-Service Bridges - WEB-BASED

hosted by

National Highway Institute

Location: Web-Based Course

Hours of Instruction:

1 hours

Date: <u>3/5/2014</u>

Richard J. Barnaby, Director National Highway Institute



-	

Federal Highway Administration

National Highway Institute

Certificate of Training



Robert Brannon

has participated in

NHI Course No. FHWA-NHI-130101A

Prerequisite Assessment for Safety Inspection of In-Service Bridges - WEB-BASED

hosted by

National Highway Institute

Location: Web-Based Course

Hours of Instruction:

1 hours

Date: <u>3/5/2014</u>

Richard J. Barnaby, Director National Highway Institute



NUT ON NUT ON NUT O

157 2nd Avenue, South Charleston, WV 25303 (304) 348-1346

This is to certify that

Robert Brannon

Student ID Number:

March are march are

has met the attendance requirements and successfully completed the course in accordance with OSHA 1910.146

Permit Required Confined Space Entry

December 6, 2011 Date

Instructor



R. Shawn Brannon, PE, CTI

Project Manager/Senior Engineer – Field Services

Project Assignment

PROJECT MANAGER/INSPECTION TEAM LEADER/TUNNEL INSPECTOR

Education

 BS, Civil Engineering, West Virginia Institute of Technology (1992)

Professional Registration

 Professional Engineer: WV (1997); OH (2014)

Training Courses

- FHWA-NHI Course #130055, Safety Inspection of In-Service Bridges (2014)
- Bridge Inspection Refresher Training NHI Course # 130053A (2018)
- FHWA NHI Fracture Critical Inspection Techniques for Steel Bridges (2019)
- FHWA-NHI-130110 Tunnel Safety Inspection (2017)
- FHWA / WVDOT, Integral Abutment and Jointless Bridges FHW Conference (1/2005)
- ARC Adult First Aid (2015), Adult CPR (2020)
- ARC Bloodborne Pathogens (2020)
- e-Railsafe System Safety Training
- OSHA 10 Hour Training
- Railroad/Inspection Safety Training (1/2005)
- RWP On-track Safety Training (1/2005)
- Technical Access Training (2009)
- Permit Required Confined Space Entrant, Attendant, and Supervisors Training 29CFR1910.146 (2007)

Synopsis of Experience

Mr. Brannon joined M&M in 2003. He has experience in the design of fixed bridges, bridge inspections, bridge rehabilitation, truss structures, structural analysis, roadway design, sediment and erosion control design, and construction inspection and monitoring. Mr. Brannon is currently engaged in project management, design, and inspection on various projects in the West Virginia office.

Project History

Jennings Randolph Bridge Inspections. Chester, WV | WVDOH (Ongoing)

Mr. Brannon has been the Team Leader for the In-Depth Routine, Routine and Special Inspections of this welded steel plate I-girder and through truss structure supporting four lanes of US 30 over Ohio River, WV 2, and Ohio River Road.

Bridge of Honor Inspections. Mason, WV/Pomeroy, OH | WVDOH (Ongoing)

The Bridge of Honor is a four-lane structure which carries WV 62 Spur over the Ohio River, CSX railroad, and OH 833 between Mason, West Virginia and Pomeroy, Ohio. The main span unit is a three-span, symmetrical 1,163' concrete cable-stayed bridge. The cables are arranged in twin plane fan configurations. The two modified diamond or delta-shaped tower are over 175' tall. The total structure length, including approaches, is 1,852'. M&M is providing NBIS In-depth, Routine and Special Inspections for this bridge from 2019 to 2024. These inspections include a hands-on inspection of the full

length of the cable stays through use of equipment and technical and rope access methods.

Fort McHenry Tunnel. Baltimore, MD | MDTA (2019-2020)

The tunnel is 1.5 miles long with ventilation buildings and machinery at either end of the tunnel and consists of four-bores carrying 8-lanes of I-95 traffic underneath the Baltimore Harbor. M&M conducted detailed structural, mechanical, and electrical inspections of the tunnel, exhaust ducts, supply ducts and ventilation buildings on three separate occasions as part of the annual inspection contract with the MDTA.

Ohio River Lift Bridge Rehabilitation. Jeffersonville, IN | Louisville and Indiana Railroad (2015)

Mr. Brannon was the Team Leader for the structural inspection of the Ohio River Bridge owned by the Louisville and Indiana Railroad. The entire bridge was inspected to provide data on the deficiencies of the bridge to produce load capacity ratings and recommendations for immediate and future required repairs. Data was also collected to determine the feasibility for restoring the double track on the structure. The asbuilt and existing condition ratings were done for the current single track condition as well as for the proposed restoration of double track operations.



R. Shawn Brannon, PE, CTI

Project Manager/Senior Engineer - Field Services

Nick Joe Rahall II Bridge Inspection. Huntington, West Virginia | WVDOH (2013-2018)

Mr. Brannon was the Team Leader for the In-depth Routine, Routine and Special Inspection of this welded steel plate I-girder and through truss structure supporting two lanes of US 22 over Ohio River.

Bridge Facilities Open-End GEC Contract. Hudson Valley, NY | NYSBA (2005-2007)

M&M has been providing bridge engineering services to the NYSBA since 1959. These services have been provided through individual project specific and GEC contracts. The NYSBA owns and maintains the following facilities: Mid-Hudson Bridge (suspension bridge), Bear Mountain Bridge (suspension bridge), Kingston-Rhinecliff Bridge (deck truss bridge), Newburgh Beacon Bridges (through truss bridge and deck truss bridges), and Rip Van Winkle Bridge (through truss & deck truss bridge). Besides assisting the NYSBA with the development of their capital program and issuing certificates on the integrity of the structures and validity of the capital program to the bonding company, M&M has provided services for the following typical tasks: redecking studies and design, traffic and revenue forecasts, fatigue and fracture studies, main cable and suspender rope investigations, asset management plans, vulnerability studies, peer review, inspection and load capacity ratings, and construction support. Many of the inspection and construction projects have involved the design and/or OSHA compliance determination of platforms used to perform the inspection/construction. Mr. Brannon has served as a bridge inspector on several task orders.

DDOT Citywide Open-End for Bridges & Structures. Washington, DC | DDOT (Ongoing)

M&M provided bridge inspection services to assure DDOT's inventory of approximately 250 bridges and tunnels was in compliance with the National Bridge Inspection Standards. Special studies such as design of repairs, scour analysis and special investigations and monitoring were included. Mr. Brannon was a field inspector for several types of bridges within the DOT's inventory.

East Huntington Bridge Inspection. Huntington, WV | WVDOH (2004-2009)

The East Huntington Bridge is a two-lane structure which carries WV Route 106 over the Ohio River between Huntington, WV, and Proctorville, OH. The main span unit is a two-span, asymmetrical 1,535' concrete cable-stayed bridge. The cables are arranged in a twin plane fan configuration. The modified diamond or delta-shaped tower is over 300' tall. The total structure length, including approaches, is 1,994'. M&M provided NBIS In-depth, Periodic and Interim Inspections for this bridge. These inspections included evaluation of Cable Loads and Damper Effectiveness and a hands-on inspection of the full length of the cable stays through use of technical access methods. Mr. Brannon was Team Leader for several of these inspections, accessed Cable 31E for repairs using TA methods and oversaw the preparation of several inspection reports.

Man Bridges Inspections and Ratings. Man, West Virginia | WVDOH (2010-2012)

M&M provided a bridge inspection and structural evaluation of the Man Bridges located in Man, WV. M&M also provided an emergency rating of these bridges. Mr. Brannon was Team Leader for the initial field inspections, supervising a crew of six inspectors. Methods of measuring out the flatness for girder webs and flanges was developed by Mr. Brannon during the inspection.

WVDOH QA/QC Statewide Work Order. Statewide, West Virginia | WVDOH (2009-2010)

As part of this statewide project, MM is providing inspections and ratings of eight District 2 bridges. The bridges include two simple span steel girder bridges, one two-span steel girder bridge, two simple span steel girder bridge, and one simple span steel through truss bridge. Mr. Brannon was Team Leader of the two and three-man inspection crews.



Federal Highway Administration National Highway Institute



Certificate of Training

Robert Shawn Brannon

has participated in

FHWA-NHI-130110

Tunnel Safety Inspection hosted by

West Virginia Department of Transportation

D	ate.
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June 05-09, 2017 Huntington, WV

Thomas A. Rya

Instructor

Location:

Inn mm

Instructor

Hours of Instruction: 32

Local Coordinator

alus

Valerie Briggs, Director National Highway Institute



Certificate of Completion

This certificate is awarded to

Brannon, R Shawn

Course Title: Date: Location: 2022 Bridge Inspection Workshop April 14, 2022 Online

Instructor: Continuing Education Value: Provider: FHWA and INDOT Staff 3 PDH INDOT

Michael Smith, Commissioner

Certificate of Attendance

Bradley Croop

HAS ATTENDED

BASIC BRIDGE SAFETY INSPECTION

SPONSORED BY THE BUREAU OF DESIGN, PENNDOT

FEBRUARY 3 - 20, 2003

Steven A. Davis

Project Manager



National Highway Institute



Certificate of Training Bradly Croop

has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

March 12-15, 2019

Hours of Instruction: 25

Location: Mechanicsburg, PA

Instructor

Instructor

Michae

Michael Davies, Director National Highway Institute



Federal Highway Administration National Highway Institute

Certificate of Training



has participated in

FHWA-NHI-130110 Tunnel Safety Inspection

hosted by

Maryland Transportation Authority

Date: July 28- August 01, 2014 Location: Baltimore, MD

Instructor

Instructor

Hours of Instruction: 31

aluis

Valerie Briggs, Director National Highway Institute





Federal Highway Administration National Highway Institute

Certificate of Training Bradly C. Croop

has participated in

FHWA-NHI-130125 Tunnel Safety Inspection Refresher

hosted by

STANTEC



September 17-19, 2018

Location:

Laurel, MD

Instructor

Kolm

Instructor

Hours of Instruction:18

Valerie Briggs, Director National Highway Institute





Certificate of Training

Brad Croop

On 12/9/2021 successfully completed the

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

Presented by: Michael Baker International With the score of: 86.66% Continuing Education Credits: 20 PDHs

Daryl R LA Clan

Daryl R. St. Clair Highway Administration Deputate

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc



Bradly C. Croop, PE, CTI

Northeast Regional Manager | Field Services / Inspection | Repair Group Leader

Project Assignment QUALITY MANAGER

Education

 B.S., Civil Engineering, Pennsylvania State University (2001)

Professional Registration

 Professional Engineer: WV (2015), DE (2018), IN (2020), MD (2012), MI (2017), OH (2018), PA (2009), SC (2017), TX (2020), WY (2017)

Professional Affiliations

AISC

Engineers Society of Pennsylvania

Training Courses

- NHI 130055 Safety Insp. of In-service Bridges (2003)
- Bridge Safety Inspection Refresher (2017)
- NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges (2014, 2019)
- NHI 130110 Tunnel Safety Insp. (2014, 2018)
- NHI 130087 Insp. and Maint. of Ancillary Highway Structures (2011)
- E-Railsafe System Safety Training (2016)
- Amtrak Contractor Safety Training (2015)
- Ultrasonic Insp. Level I&II Training (2008)
- Technical and Rope Access Technical Access Supervisor (2015)
- American Red Cross Adult First Aid (2015)
- Non-destructive Testing (2010)
- OSHA 10 Hour Training (2010)
- OSHA 30 Hour Training (2011)
- Confined Space Entry Training (2003)
- American Red Cross Adult CPR (2015)
- Contractor Orientation, UPRR (2003)
- FRA Railroad Workplace Safety (2003)
- SPRAT Level 2 Certification (2011)
- Fall Protection Training (2010)
- Fall Protection (2010)
- American Red Cross Bloodborne Pathogens(2015)
- TWIC Card(2015)
- SWAC Card (2017)

Synopsis of Experience

Mr. Croop joined Modjeski and Masters, Inc. in 2002 as a Field Services Engineer. He is assigned to the inspection of bridges and subsequent preparation of condition reports. Trained in technical access climbing methods, Mr. Croop is invaluable to M&M's clients by minimizing the impacts and unwanted traffic disruptions due to the necessary routine inspections of their structural inventory and assets. He is also well versed in a variety of Non-Destructive Testing (NDT) methods providing clients with in-house material testing and condition assessment services.

Project History

Jennings Randolph Bridge Inspections, Chester, WV | West Virginia Division of Highways (2018) Mr. Croop provided TARA inspection of Ohio River

piers for this welded steel plate I-girder and through truss structure supporting four lanes of US 30 over Ohio River, WV 2 and Ohio River Road.

Annual Facilities Inspection O-E GEC Contract. Various Locations, MD | MDTA (2008 - Ongoing)

Mr. Croop is the Project Manager and Team Leader for various bridge and tunnel inspections under this contract. M&M performed inspections of the structural, mechanical, and electrical components of these bridges and tunnels. His duties included managing multiple simultaneous inspection projects, leading the inspection of interstate tunnels, suspension bridges, truss bridges and movable bridges; performing UT tests; writing inspection reports; performing quality assurance inspections and reports; uploading inspection notes to online databases; and error checking the database. He also assisted with the Tunnel Inspection Guidelines for inclusion in the facilities inspection manual.

East Huntington Bridge Inspection. Huntington, WV | West Virginia Department of Transportation-Division of Highways (2004 - 2009)

Mr. Croop was the Bridge Inspection Team Leader for this project. The East Huntington Bridge is a two-lane structure which carries WV Route 106 over the Ohio River between Huntington, WV and Proctorville, OH. The main span unit is a two-span, asymmetrical

1,535' concrete cable-stayed bridge. The cables are arranged in a twin plane fan configuration. The modified diamond or delta-shaped tower is over 300' tall. The total structure length, including approaches, is 1,994'. M&M is providing NBIS In-depth, Periodic and Interim Inspections for this bridge from 2004 to



Bradly C. Croop, PE, CTI

Northeast Regional Manager | Field Services / Inspection | Repair Group Leader

2009. These inspections included evaluation of Cable Loads and Damper Effectiveness and a hands-on inspection of the full length of the cable stays through use of technical access methods.

DDOT 2010 & 2006 Citywide Consultant Bridge Inspections, Washington, DC | DDOT (2007-Ongoing)

Mr. Croop was a team leader and performed the hands-on inspection of various structure types including tunnels, segmental concrete bridges, and steel girder bridges. From 2006 to the present, M&M has inspected the District's 17 tunnels and underpasses including I-395 Mall Tunnel, Air Rights Tunnel, 9th Street Tunnel, and 12th Street Tunnel (North and South).. DDOT's inventory includes approximately 250 highway and pedestrian bridges and 17 tunnels and underpasses. M&M provided bridge and tunnel inspection services to assure DDOT's inventory is in compliance with the NBIS and NTIS. This requires extensive planning and coordination to ensure all schedules would be met. Special studies such as design of repairs, scour analysis and special investigations and monitoring were included.

Spring Garden Street and Kelly Drive Tunnel Inspections. Philadelphia, PA | City of Philadelphia (2017 - 2020)

Mr. Croop served as the Tunnel Inspection Team Leader for the inspection of the Spring Garden St. Tunnel and Project Manager for the Kelly Drive Tunnel Inspection. The inspection was performed in accordance with the National Tunnel Inspection Standards, the Tunnel Operations, Maintenance, Inspection and Evaluation Manual and the Specifications for the National Tunnel Inventory. The 2017 inspections required element level quantity calculations, inventory, inspection and reporting forms to be set up for the initial inspections of these tunnels.

Goethals Cable-Stay Bridge. Port District, NY & NJ | PANYNJ (2017 - 2020)

Mr. Croop served as the Project Manager and Inspection Team Leader for this project, including the rope access inspections. M&M was selected as part of the team to perform the initial, inventory and routine inspections for the newly constructed Goethals Bridges in New York City. The bridges consist of two parallel cable stayed bridges with a total length per bridge of 7,110-feet with a 1,635-foot cable stayed portions (900-foot main spans). Initial and inventory inspections of the eastbound bridge was performed prior to opening to traffic in June, 2017 to ensure the bridge was constructed according to plans and was safe for traffic. The westbound was inspected in April, 2018. Routine inspections in 2019 and 2020 to evaluate the condition of each bridge were also included in this project. Technical and rope access climbing techniques were used extensively on this project to provide a hands-on inspection to the full-height of the 268-foot tall towers and stay cables.

Ambassador Bridge Inspections. Detroit, MI | DIBC (2001 - Ongoing)

Mr. Croop has served as the Project Manager on this project since 2015. Prior to that he served as both Team Leader and Bridge Inspector. The Ambassador Bridge crosses the Detroit River and links Detroit with Windsor, Ontario, Canada. The crossing features a suspension bridge with a 1,850' main span. The total length of the structure including approaches is 7,478'. The approach spans consist of steel multi-girder and deck truss spans. The structure carries a 47' roadway and 8' sidewalk. M&M has performed annual inspections, special inspections, in-depth inspections, construction inspections and cable inspections since 2001. M&M has also been retained by the DIBC to develop rehabilitation plans, asset management plans and special investigations.



National Highway Institute



Certificate of Training

Bradly Croop

has participated in

FHWA-NHI-130087 Inspection and Maintenance of Ancillary Highway Structures

hosted by

Modjeski and Masters, Inc.

Date:

November 15 and 16, 2011

Hours of Instruction: 12

Location: Mechanicsburg, PA

Instructor

Instructor

Richard Barnaby, Director National Highway Institute



National Highway Institute



Certificate of Training William R. Bolt

has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date: March 12-15, 2019

Hours of Instruction: 25

Location: Mechanicsburg, PA

Instructor

Instructor

Michael Davies, Director National Highway Institute



National Highway Institute

Certificate of Training



has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

October 28 – 31, 2014

Mechanicsburg, PA

Location:

Instructor

STUR

Instructor

Hours of Instruction:

25

Local Coordinator

Valerie Briggs, Director National Highway Institute





Certificate of Training

Completed the class

BRIDGE INSPECTION REFRESHER COURSE NO. 163

Sponsored by the Highway Administration Deputate

DATE: September 15 – 17, 2015

LOCATION: Indiana, PA

TRAINING ORGANIZATION: Infrastructure Engineers Inc.

TEST SCORE: 86%

Randel Cill

Randall Shull Training Development Manager

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc. Students must receive a test score of 70% or higher to pass the course. Students who do not take the class test receive N/A in lieu of a test score and their training record is marked "Incomplete." Should you have any questions about this certificate or exam scores, please contact us at 717-787-6898.

*The inclusion of continuing education credits (PDH/CEU/CEH) on this certificate does not imply or guarantee that the training course is approved by the Pennsylvania State Registration Board of Professional Engineers, Geologists and Land Surveyors. According to Pennsylvania Act 25, "Credit determination for activities...shall be the responsibility of the licensee."

Rev. September 2014

INSTRUCTOR: Dustin Noel, Andrew Young

CONT. ED. CREDITS*: 20 PDHs



The holder of this card has successfully completed
PennDOT's Basic Bridge Safety Inspector's Training, a
HWA-approved course fulfilling the Department's
raining requirement and the NBIS requirements for
"an analytic bridge inspection training" He/she
comprehensive bridge inspection training. They she
must successfully complete a Refresher Course at
wo-year intervals to maintain a valid PA Bridge
Safety Inspector's certification.

An individual in charge of a bridge inspection team must also have a combination of experience and technical training that fulfills the NBIS requirements for a Team Leader. For more information, see Pub 238 and US CFR Sec.650.309.



William R. Bolt, PE, CTI

Engineer - Field Services | Northeast Region

Project Assignment TEAM LEADER/INSPECTOR/CTI

Education

 B.S., Civil Engineering Technology, Pennsylvania State University (2007)

Professional Registration

Professional Engineer: MD (2018), PA (2017)

Professional Affiliations

American Institute of Steel Construction

Training

- NHI 130055 and 130053 Safety Inspection of In-Service Bridges Certification (2008), Refresher Course (2019)
- NHI 130078 Fracture Critical Inspection Techniques for Steel Bridges (2019)
- NHI 130087 Inspection and Maintenance of Ancillary Hwy Structures (2011)
- NHI 130110 Tunnel Safety Inspection (2014)
- NHI 130101A Prerequisite Assessment for Safety Inspection of In-Service Bridges (2014)
- NHI 130125 Tunnel Safety Inspection Refresher (2018)
- Amtrak Contractor Safety Training (2020)
- Level I & II Liquid Penetrant (2010) Level I & II Magnetic Particle (2010)
- Confined Space Entry Training (2008)
- American Red Cross Adult First Aid (2019)
- American Red Cross Adult CPR (2019)
- e-RAILSAFE System Safety Training (2019)
- Cocciardi & Associates, Inc.: OSHA & Fall Protection Training (2010)
- ACI Concrete Field Testing Technician, Grade One Certified (2006)

Synopsis of Experience

Mr. Bolt is a registered professional engineer with over 13 years' experience in field inspection and evaluation services and over 10 years of movable bridge inspections. He has significant experience performing inspections on various movable (bascule, vertical lift and swing), suspension, truss, girder and beam bridges for numerous authorities. DOT's and railroads. He is a Certified Bridge Safety Inspector (CBSI) having completed the FHWA-NHI Course No. 130055 - Safety Inspection of In-Service Bridges, FHWA-NHI Course No. 130078 - Fracture Critical Member Inspection Techniques for Steel Bridges and is up-to-date with refresher courses. Mr. Bolt will be on-site serving as a Structural Inspection Team Leader. He is trained in various methods of nondestructive testing including Magnetic Particle and Dve Penetrant.

Project History

Jennings Randolph Bridge Inspections. Chester, WV West Virginia DOH (2016 - 2020)

Mr. Bolt was a Team Leader for these inspections and performed the work utilizing technical and rope access methods as needed. As part of a six-year agreement, M&M performed an in-depth periodic inspection of the Jennings Randolph Bridge, the largest Pratt truss bridge in North America. The structure spans the Ohio River between Chester, WV, and East Liverpool, OH. The inspection included a hands-on inspection of all components, members and connections including gusset plates above the waterline.

MDTA Annual Facilities Inspections Open-End Contract. Baltimore MD | MDTA (2010 - Ongoing) Mr. Bolt participated as a field inspector, as well as a

structural team leader on the various bridge and tunnel inspections, including the Curtis Creek Bascule Bridges. Subsequently, Mr. Bolt prepared the reports and or assisted in completing the reports for each structure, including quantification and calculations of the element level quantities and ratings of the structures. This project involved the annual inspection of numerous bridges and tunnels at various locations in Maryland. M&M performed inspections of fixed bridges and the structural, mechanical, and electrical components of movable bridges. The inspections included the approach and bascule spans, including superstructure, machinery support frames, above water portion of substructures, and fenders of the Curtis Creek Bascule Bridges. Ultrasonic testing of pins was included in the work. M&M, as part of the RK&K team, additionally provided visual inspections of 14 I-95 and I-395 structures and bridges in Baltimore County. M&M also performed a hands-on inspection of all portions of the suspended spans of the William Preston Lane Jr. Memorial Suspension Bridges and the substructure and superstructure components of the Millard E. Tydings Memorial Truss Bridge.



William R. Bolt, PE, CTI

Engineer - Field Services | Northeast Region

Citywide Bridge Inspections. Washington, DC | District DOT (DDOT) (2007 - Ongoing)

Mr. Bolt is involved with this project providing general inspections as a structural team leader, report writings, and soundings. DDOT's bridge inventory consists of more than 250 highway overpass bridges, highway tunnels and pedestrian bridges. The bridges consist of a variety of types and configurations: stone masonry, concrete and steel; arch and girder. They traverse other highways, waterways, rail properties and the natural variations in terrain. M&M provided bridge inspection services to assure DDOT's inventory was in compliance with the National Bridge Inspection Standards. This required extensive planning and coordination to ensure all schedules would be met.

NJDOT Movable Bridge Structural, Mechanical, and Electrical Inspections. New Jersey | NJDOT (2018 - Ongoing)

Mr. Bolt participated as a field inspector, as well as a structural team leader in the inspection of one of the double-leaf bascule bridges and both vertical lift bridges. M&M, as part of the JM&T team, provided the structural, mechanical, and electrical inspections for 3 double-leaf bascule bridges and 2 vertical lift bridges. Additionally, the preparation of the reports was included as part of the project.

Wayne County – Dix Avenue and Jefferson Street Inspections. Detroit, MI | Wayne County (2019 - Ongoing)

Mr. Bolt assisted in report development, element level quantifying and calculations, and updating the data in the MiBRIDGE database. M&M provided the structural, mechanical, and electrical inspection of the Dix Avenue Bridge and the Jefferson Street Bridge. The Dix Avenue bascule bridge over the Rouge River was built in 1926. The bridge carries (4) lanes of Dix Avenue across the Rouge River. The 291'-3" long structure consists of a double leaf bascule truss spans over the Rouge River with (2) fixed approach girder spans on each end. The Jefferson Avenue Bascule Bridge was constructed in 1922, was rehabilitated and painted in 1982, and the north leaf was rehabilitated again in 2016/2017. It is a double leaf simple trunnion bascule bridge with a length of 170'-1 1/2" from heel to heel and a clear channel width of 125'.

Sunrail Lake Monroe Draw Bridge Quarterly Inspections. Sanford, FL | Bombardier (2015 - 2018)

Mr. Bolt served as a structural inspection team leader for the project, prepared the structural inspection report and recommendations. Under this project, M&M provided the structural, mechanical, and electrical quarterly inspections, and provided detailed repair recommendations for Bridge MP A763.1, also known as the Lake Monroe Drawbridge, which carries one railroad track across the St. Johns River. The bridge consists of 18 spans and is oriented north-to-south with a total length of 563' (from abutment-to-abutment). There are 12 prestressed concrete box beam spans (Spans 1 through 5 and 12 through 18) totaling 265' in length. Spans 10 and 11 form the rolling lift bascule span consisting of the channel span (Span 10) and the support track girder span (Span 11) with a total length of 143'. Spans 6 through 9 consist of the steel two girder system with a total length of 155'.

Livingston Avenue Railroad Bridge Design Engineering Services. Albany, NY | NYSDOT (2010)

Mr. Bolt served as an inspection team member for the project, additionally assisting in preparing the structural inspection report. M&M provided preliminary engineering work to further refine the replacement alternative of the Livingston Avenue Bridge. The Livingston Avenue Bridge is a critical rail link crossing the Hudson River between the cities of Albany and Rensselaer. The railroad bridge is a 1272' structure which includes a 260' movable swing span, 4 truss spans, and 4 girder spans. M&M was responsible for structural, electrical and mechanical inspections of the existing bridge, load rating of the bridge members and gusset plates, development of design alternatives, cost estimating and managing survey, track design, environmental reviews and public outreach tasks being performed by subconsultants.

RKK

This certificate confirms that

William Bolt

has successfully completed the

Fracture Critical Member / Fatigue Sensitive Detail Refresher Training

facilitated by RK&K on 12/3/2021 earning 1 PDH credit

Evaluation, Instrumentation & Retrofit of Distortion-Induced Fatigue Cracking in I-95/I-395 Steel Box Girder Bridges. Presented by: Joseph Chalk, PE (RK&K) and Christopher Smith, PE (M & M)

Ausan Mognilian

Susan Moynihan Training and Development Coordinator RK&K

COURSE CERTIFICATE



Sertificate of Training

On 12/12/2019 successfully completed the

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

Presented by: Michael Baker International With the score of: 85.56% Continuing Education Credits: 20 PDHs

Daryl R. LA. Clan

Daryl R. St. Clair Highway Administration Deputate

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc



Federal Highway Administration National Highway Institute



Certificate of Training

William R. Bolt

has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

October 28 – 31, 2014 Mechanicsburg, PA Hours of Instruction: 25

Location:

Instructor

Stur Im

Instructor

Byn & But

Valerie Briggs, Director National Highway Institute



Certificate of Training

Attended

Bridge Inspection Refresher Course No. 116

Sponsored by the Highway Administration Deputate

DATE: May 17-19, 2011

LOCATION: Harrisburg, PA

TRAINING VENDOR: Infrastructure Engineers, Inc.

TEST SCORE: 93%

INSTRUCTORS: Dustin Noel, Frank Mayer

CONT. ED. CREDITS*: 20 PDHs

Mary Sharp

Mary Sharp Training Development Manager

Access the Technical Training and Development Section's Training Calendar for information on current program offerings <u>http://www.dot.state.pa.us/tc</u>. Students who do not take the class test receive N/A in lieu of a test score and their training record is marked "Incomplete." Should you have any questions about this certificate or exam scores, please contact us at 717-214-8754.

*The inclusion of continuing education credits (PDH/CEU/CEH) on this Certificate does not imply or guarantee that the training course is approved by the Pennsylvania State Registration Board of Professional Engineers, Geologists and Land Surveyors. According to Pennsylvania Act 25, "*Credit determination for activities...shall be the responsibility of the licensee.*"

Rev. December 2010



Certificate of Training

Attended

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

DATE: June 18-20, 2013

TRAINING VENDOR: Michael Baker Jr., Inc.

TEST SCORE: 91%

CONT. ED. CREDITS*: 20.0 PDHs

INSTRUCTOR: Thomas W. Ryan, Bryan Spangler

LOCATION: Harrisburg, PA

Mary Sharp

Mary Sharp Training Development Manager

Access the Technical Training and Development Section's Training Calendar for information on current program offerings <u>http://www.dot.state.pa.us/tc</u>. Students who do not take the class test receive N/A in lieu of a test score and their training record is marked "Incomplete." Should you have any questions about this certificate or exam scores, please contact us at 717-214-8754.

*The inclusion of continuing education credits (PDH/CEU/CEH) on this Certificate does not imply or guarantee that the training course is approved by the Pennsylvania State Registration Board of Professional Engineers, Geologists and Land Surveyors. According to Pennsylvania Act 25, "Credit determination for activities...shall be the responsibility of the licensee."

** This training certificate, issued by the Pennsylvania Department of Transportation, does <u>not</u> provide the listed individual with credentials as a certified bridge safety inspector.

Rev. November 2012



Sertificate of Training

On 12/9/2021 successfully completed the

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

Presented by: Michael Baker International With the score of: 88.88% Continuing Education Credits: 20 PDHs

Daryl R LA Clan

Daryl R. St. Clair Highway Administration Deputate

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc

-		
	23	

Federal Highway Administration

National Highway Institute

Certificate of Training

William Bolt



has participated in

NHI Course No. FHWA-NHI-130101A

Prerequisite Assessment for Safety Inspection of In-Service Bridges - WEB-BASED

hosted by

National Highway Institute

Location: Web-Based Course

Hours of Instruction:

1 hours

Date: <u>6/20/2014</u>

Richard J. Barnaby, Director National Highway Institute



National Highway Institute





has participated in FHWA-NHI-130055: Safety Inspection of In-Service Bridges

Pennsylvania Department of Transportation

Date:

September 29-October 16, 2008

Hours of Instruction: ⁶⁰

Location: Harrisburg, PA

Instructor

Instructor

Joseph S. Toole, Associate Administrator Office of Professional and Corporate Development



Federal Highway Administration

National Highway Institute

NATIONAL HIGHWAY INS

Certificate of Training

William R. Bolt

has participated in

FHWA-NHI-130110 Tunnel Safety Inspection

hosted by

Maryland Transportation Authority

Date: July 28- August 01, 2014

Location: Baltimore, MD

Instructor

Instructor

Hours of Instruction: 31

Local Coordinator

alie

Valerie Briggs, Director **National Highway Institute**




William R. Bolt

On 12/7/2017 successfully completed the

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

Presented by: Michael Baker International With the score of: 84.72% Continuing Education Credits: 20 PDHs



Daryl R. St. Clair Highway Administration Deputate

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc



Safety • Health • Environmental Consulting and Training

August 8, 2008

KULICKI WALDNER HUANG MCMEANS BRITT BORDEN IRWIN LITTLE MCKENNEY ESHENAUR WASSEF STRAIN NEWMAN CLANCY BORZOK DILLMAN JOHNS MURPHY EGENRIEDER

Mr. Richard A. Little, Senior Associate Modjeski and Masters, Inc. 4909 Louise Drive Mechanicsburg, PA 17055 OCT 2 7 2008

RECEIVED

MODJESKI AND MASTERS, INC.

RE: 8-HOUR PERMIT REQUIRED CONFINED SPACES ENTRANT, ATTENDANT, AND SUPERVISOR TRAINING August 7, 2008 Job #08-1320

Dear Mr. Little:

This correspondence certifies successful completion of 8-Hour Permit Required Confined Spaces Entrant, Attendant, and Supervisor Training (29CFR1910.146) including Respiratory Protection Training (29CFR1910.134) for the individuals listed below. Please find enclosed individual Cocciardi and Associates, Inc. certificates of training completion. The effective date of certification is August 7, 2008, and has no date of expiration.

> NAME Christopher P. Aalskog William R. Bolt Eric W. Harbeson Tyler J. Miller Timothy J. Stuffle Shawn J. Throne Cyle D. Vogt

CERTIFICATION



Thank you for allowing us the opportunity to supply your training needs. If I can be of further assistance, please feel free to contact me at (717) 766-4500.

Sincerely,

Steven C. Strayer, MEPC, CIH, CSF, REHS, RS Senior Professional Cocciardi and Associates, Inc.

Enclosures Copy: File



U.S. Department of Transportation

Federal Highway Administration National Highway Institute

Certificate of Training William Bolt



has participated in

FHWA-NHI-130125 Tunnel Safety Inspection Refresher

hosted by

STANTEC

Date:

September 17-19, 2018

Location:

Laurel, MD

Instructor

Instructor

Hours of Instruction:18

Local Coordinator

alue

Valerie Briggs, Director National Highway Institute



National Highway Institute



Certificate of Training

William Bolt

has participated in

FHWA-NHI-130087 Inspection and Maintenance of Ancillary Highway Structures

hosted by

Modjeski and Masters, Inc.

Date:

November 15 and 16, 2011

Hours of Instruction:

12

Location:

Mechanicsburg, PA

Instructor Instructor

Local Coordinator

Richard Barnaby, Director National Highway Institute



U.S. Department of Transportation

Federal Highway Administration

National Highway Institute

Certificate of Training

Lex Waardenburg

has participated in

FHWA-NHI-130110 Tunnel Safety Inspection

hosted by

Maryland Transportation Authority

Date: July 28- August 01, 2014

Location: Baltimore, MD

Instructor

Instructor

Hours of Instruction: 31

Local Coordinator

Valerie Briggs, Director National Highway Institute





U.S. Department of Transportation

Federal Highway Administration National Highway Institute

NATIONAL HIGHWAY

Certificate of Training

Alexandar Waardenburg

has participated in

FHWA-NHI-130125 Tunnel Safety Inspection Refresher

hosted by

STANTEC

Date:

September 17-19, 2018

Location:

Laurel, MD

Instructor

Conthe Min

Instructor

Hours of Instruction:18

Panela Cluri

Local Coordinator

alus

Valerie Briggs, Director National Highway Institute



Alexander F. Waardenburg, PE, CTI

Engineer - Mechanical | Tunnels

Project Assignment

Mechanical Inspector/CTI

Education

 BS, Mechanical Engineering, Messiah College, 2010

Professional Registration

 Professional Engineer: LA (2020), MD (2020), PA (2016), TX (2020)

Training Courses

- NHI-130110 Tunnel Safety Inspection (2014)
- NHI-130125 Tunnel Safety Refresher (2018)
- American Red Cross Adult First Aid (2019)
- Confined Space Entry Training (2015)
- Secure Workers Access Consortium Security Clearance (2021)
- Transportation Workers Identification Credential (2019)
- PATH Safety Training (2021)
- NFPA 70E/OSHA Electrical Safety & Arc Flash Training

Synopsis of Experience

Mr. Waardenburg joined Modjeski and Maters in 2010 and has been assigned to the firm's Electrical / Mechanical Section. He has been involved in a variety of movable and fixed bridge design and inspection projects. Mr. Waardenburg has experience in bridge inspections, preliminary studies, final design, and analysis. He has completed the FHWA-NHI 130110 Tunnel Safety Inspection course.

Project History

Annual Facilities Inspection Open-End Contract. Statewide, MD | Maryland Transportation Authority (2019-ongoing)

Mr. Waardenburg participated in the mechanical inspection of the Fort McHenry Tunnel and ventilation buildings. In his role as Mechanical Team Leader, he was responsible for locating mechanical deficiencies concerning ventilation, fire suppression, and rainwater management systems. He completed bearing vibration measurements on ventilation motors and bearings. Mr. Waardenburg also participated in the strain gage installation used to measure strain at critical fatigue locations at the Chesapeake Bay Bridge. As part of a JV, M&M has been responsible for in-depth inspections, client liaisons, and QAQC for four successive, three-year Open-

End contracts. MDTA facilities include: Baltimore Harbor Tunnel Thruway, Fort McHenry Tunnel, and numerous additional structures.

Metro Downtown Tunnel Repairs. St. Louis, MO | Bi-State Development (2019-ongoing)

Mr. Waardenburg was the lead mechanical engineer on this project. His duties involved designing a replacement fire suppression standpipe system in accordance with NFPA 14 and NFPA 130. M&M is assisting Metro with determining and implementing appropriate repairs for the Downtown tunnel which includes structural and mechanical repairs. The project is being coordinated with the FTA to obtain a Categorical Exclusion for this historic structure.

Spring Garden Street and Kelly Drive Tunnel Inspection. Philadelphia, PA | City of Philadelphia (2017 and 2019)

Mr. Waardenburg performed the Mechanical Inspection and developed the report for this project. Report development included documenting element categories and quantities, discussing all deficiencies observed in the tunnel ventilation systems and water draining systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory. The Kelly Drive Tunnel is owned and operated by the City of Philadelphia. The tunnel was originally constructed in 1871. The tunnel currently channels four opposing traffic lanes of Kelly Drive (2 lanes each direction), formerly known as East River Drive, through a rock promontory just North of Brewery Hill Drive and along the east bank of the Schuylkill River. The tunnel consists of rock portals and an unlined rock bore with an asphalt slab-on-grade travel way edged with granite block curbs. The total length of the bore is 140'-0" from portal-to-portal. The out-to-out width of the structure is 41'-0". The clear roadway width is approximately 39'-0". A hands-on inspection was performed on the tunnel liner, portals, asphalt wearing surface and granite block curbs.

Union Station Tunnel Rehabilitation. St. Louis, MO | Bi-State Development (2016-ongoing)



Alexander F. Waardenburg, PE, CTI

Engineer - Mechanical | Tunnels

Mr. Waardenburg was the lead mechanical engineer on this project. His duties involved designing a fire suppression standpipe system in accordance with NFPA 14 and NFPA 130. As part of an overall tunnel redesign for Metro, M&M Mechanical and Electrical (ME) was responsible for the design of the new tunnel standard lighting, emergency egress lighting, emergency ventilation system, fan and motor selection, emergency stand-pipe design, and associated power and controls including utility coordination for all project components.

Wawona Tunnel Inspection. Yosemite, CA | Federal Highway Administration (2020-ongoing)

Mr. Waardenburg led the Mechanical and Electrical inspection team for the Wawona Tunnel in Yosemite National Park. In his role as Team Leader, he was responsible for locating mechanical deficiencies concerning ventilation, fire safety, and rainwater management systems as well as coordination of equipment and access for the electrical inspection, and report development. He completed bearing vibration measurements on ventilation motors and bearings and air speed measurements. Report development included documenting element categories and quantities, discussing all deficiencies observed in the tunnel ventilation systems, fire safety systems, and water draining systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory.

I-57 and IL Route 149 Pump Station Repair. Franklin County, IL | Illinois DOT (2015-2016)

Mr. Waardenburg was the lead mechanical engineer for the design, and he was on the inspection team who performed the site survey and inspection. An emergency structural, mechanical, and electrical inspection was performed to document deficiencies and provide short term repair recommendations for the I-57 pump station. An on-site inspection and test was initially performed by M&M to evaluate the condition of the existing pump station equipment and to determine the required repairs. Final repair plans, specifications, and estimates were developed which included replacement of the structural pipe supports and motor repairs, and repair of the maintenance hoist and pressure transducer well pipe cleanout cover. Construction services were provided as requested.

Rockport Strauss Trunnion Bascule Inspection. Rockport, KY | Paducah and Louisville Railroad (2017)

Mr. Waardenburg led the mechanical inspection of the mechanical systems and wrote the inspection report. M&M was selected to perform a structural, electrical, and mechanical inspection, strain gage balance testing and survey for this strauss heel trunnion bascule and several truss style approach spans.

Mankato Sub Bridge 15 Upgrades. St. Paul, MN | Union Pacific Railroad (2017)

Mr. Waardenburg assisted the inspection of the mechanical components and created preliminary repair designs. UPRR contracted M&M to perform an evaluation and repair of their Mankato Sub Bridge 15.

Movable Bridge Inspections. Statewide, CT | Connecticut DOT (2015-2016)

As a Mechanical Inspector, Mr. Waardenburg assisted the inspection of the mechanical components for multiple structures. Modjeski and Masters, Inc. provided movable bridge engineering services for the electrical and mechanical inspections with reports and prioritized repair recommendations for each movable bridge. This project involved the thirteen electrical-mechanical inspections of movable bridges at various locations in Connecticut. The thirteen roadway bridges included two single-leaf bascule bridges, four double-leaf bascule bridges, five swing bridges, and two vertical lift bridges located in the southwest and southeast regions of Connecticut (2000, 2002, 2006, and 2008, 2012). Both in-depth and routine inspections were involved with this project as per the AASHTO Movable Bridge Inspection Evaluation, and Maintenance Manual. Semi-final construction inspection was also involved. All inspections included "hands-on" and audio/visual monitoring.



Risk & Safety Management • Environmental Health Emergency Preparedness • Safety Engineering Consulting and Training

This is to certify that

Kyle Gable

has successfully completed a(n)8 hour training course entitled

PERMIT REQUIRED CONFINED SPACE ENTRANT, ATTENDANT, AND SUPERVISOR TRAINING (29CFR1910.146)

on September 20, 2017

4 Kacey Court Mechanicsburg, PA 17055 (717)766-4500

1337 Veterans Memorial Drive Jessup, PA 18434 (570)291-0030

CERTIFICATE #: Recommended Refresher Date: Sept. 20, 2018

Andrew Goodwin - Instructor

Jeseph A. Cocciardi, PhD, MS, CIH, CSP, REHS, RS

www.cocciardi.com

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U.S. Department of Transportation

Federal Highway Administration

National Highway Institute

Certificate of Training

Kyle Gable

has participated in

NHI Course No. FHWA-NHI-130101A

Prerequisite Assessment for Safety Inspection of In-Service Bridges - WEB-BASED

hosted by

National Highway Institute

Location: Web-Based Course

Hours of Instruction:

1 hours

Date: <u>2/2/2016</u>

Valerie Birgas

Valerie Briggs, Director National Highway Institute





U.S. Department of Transportation

Federal Highway Administration

National Highway Institute

Certificate of Training Kyle Gable

has participated in

FHWA-NHI-130110 Tunnel Safety Inspection

hosted by WSP | Parsons Brinkerhoff

Date:

August 29-September 2, 2016

Hours of Instruction: 30

Location:

Ephrata, PA

Instructor

Instructor

hn

Local Coordinator

Valerie Briggs, Director **National Highway Institute**





of Transportation Federal Highway

Administration

National Highway Institute





has participated in

130125V Tunnel Safety Inspection Refresher ILT

hosted by

Kentucky Transportation Cabinet

Date:

January 4-6, 2022

Location:

Online Delivery, KY

Monia M.

Instructor

Instructor

James Edmunds

Hours of Instruction: 17

Local Coordinator

Thomas Harman

Thomas Harman, Director National Highway Institute



Kyle M. Gable, PE, CTI

Engineer - Electrical | Tunnels

Project Assignment

Electrical Inspector/CTI

Education

 BS, Electrical Engineering, Elizabethtown College, 2014

Professional Registration

- Professional Engineer: PA (2019)
- Training Courses
- FHWA NHI 130101A: Prerequisite Assessment for Safety Inspection of In-Service Bridges (2016)
- UPRR Conráil (2016)
- FHWA NHI 130110 Tunnel Safety Inspection (2016)
- Amtrak Contractor Safety Training (2019)
- American Red Cross Adult CPR (2017)
- American Red Cross Adult First Aid (2017)
- American Red Cross Bloodborne Pathogens (2016)
- e-Railsafe System Safety Training (2018)

Synopsis of Experience

Mr. Gable joined Modjeski and Masters, Inc. in 2014 where he was assigned to the Electrical division of M&M's movable bridge unit. Mr. Gable has provided electrical engineering on various types and styles of bridges.

Project History

Annual Facilities Inspection Open-End. Baltimore, MD | Maryland Transportation Authority (2014-Ongoing)

Mr. Gable is assisting with the inspection of the electrical components for the Chesapeake Bay Bridge (WB) and Fort McHenry Tunnels, and Biennial Inspections of 9 overpass structures. He also assisted with the electrical inspection of the Francis Scott Key Bridge. This project involves the annual inspection of more than 150 bridges and tunnels throughout Maryland. Bridge types include fracture critical, deck truss, thru truss, steel and concrete multi-beam, steel and concrete girder, suspension, steel and concrete box, bascule bridges and two complex, long tunnels.

Union Station Tunnel Rehabilitation. St. Louis, MO |

Metro (2016-Ongoing)

Mr. Gable provided cost estimates for various electrical components as part of the overall electrical design. M&M was selected to perform engineering services required for the rehabilitation and replacement of the oldest portions of the Union Station Tunnel in St. Louis, MO. The work will help to maintain a viable alignment for Bi-State Development's MetroLink commuter rail services and provide continued access to 18th and Clark Streets and surrounding destinations such as the St. Louis Union Station, the Peabody Opera House and the Scottrade Center. The project will employ a construction manager/general contractor (CM/GC) delivery model where the preliminary design team works with the CM/GC to complete contract documents and oversee construction.

Spring Garden Street and Kelly Drive Tunnel Inspections. Philadelphia, PA | City of Philadelphia (2017-2018)

Mr. Gable performed the Electrical Inspection and developed the report for this project. Report development included documenting element categories and quantities, discussing all deficiencies observed in the tunnel electrical and lighting systems, and documenting element condition states using the FHWA Tunnel Operations, Maintenance, Inspection, and Evaluation (TOMIE) Manual and FHWA Specifications for National Tunnel Inventory. The Kelly Drive Tunnel is owned and operated by the City of Philadelphia. The tunnel was originally constructed in 1871. The tunnel currently channels four opposing traffic lanes of Kelly Drive (2 lanes each direction), formerly known as East River Drive, through a rock promontory just North of Brewery Hill Drive and along the east bank of the Schuylkill River. The tunnel consists of rock portals and an unlined rock bore with an asphalt slab-on-grade travel way edged with granite block curbs. The total length of the bore is 140'-0" from portal-to-portal. The out-to-out width of the structure is 41'-0". The clear roadway width is approximately 39'-0". A hands-on inspection was performed on the tunnel liner, portals, asphalt wearing surface and granite block curbs.

Bascule Bridge Automations. Joliet, IL | Illinois DOT (2014-Ongoing)

Mr. Gable performed the Electrical Inspection and was an Electrical Engineer for the design on this project. He designed camera layouts, CCTV, SCADA, PA, and wireless systems, the fiber optic backbone communication topology, and upgrade repairs to the movable bridges electrical and control



Kyle M. Gable, PE, CTI

Engineer - Electrical | Tunnels

systems to facilitate the centralized control of the six movable bridges in Joliet, Illinois. The design team of M&M is providing engineering services related to a preliminary investigation and design to convert six bascule bridges on the Des Plaines River in Joliet, Illinois to remote control operations. Each bridge is to be fitted with a new PLC based control system designed to provide remote control capability through a SCADA (Supervisory Control and Data Acquisition) system at IDOT's Joliet Bridge Office building. New bridge CCTV camera systems and a dedicated fiber optic communications network with a backup wireless network are also to be provided.

Grand Haven Bridge. Grand Haven, MI | MDOT (Ongoing)

Mr. Gable was the lead Electrical Engineer for this rehabilitation project. As lead electrical engineer, Mr. Gable developed contract design plans, details, specifications, and construction cost estimate for the movable bridge submarine cable replacement, main drive system upgrade to programmable logic control, the replacement of conduit, wiring, maintenance lighting, and CCTV system, and addition of pedestrian lighting. Mr. Gable calculated electrical load and conduit fill for the addition of pedestrian lighting and other power distribution systems.

Memorial Lift Bridge. Wilmington, NC | NCDOT (2018)

Mr. Gable was the lead Electrical Engineer for the movable bridge approach roadway lighting circuit upgrade. In his role as Lead Electrical Engineer, he designed the roadway lighting power distribution, control, and feeders.

UPRR Martinez Bridge. Martinez, CA | UPRR (2017)

Mr. Gable was an Electrical designer of the Security Lighting on this project. As Electrical designer, Mr. Gable calculated illuminance and uniformity for the walkway security lighting, calculated electrical load, voltage drop, and conduit fill for the security lighting power system, sized and selected electrical power equipment, lighting controls, conduit, conductors, and lighting fixtures based on the calculations. Mr. Gable developed contract design plans, details, specifications, and construction cost estimate.

Mid-Hudson Bridge Sidewalk Lighting. Poughkeepsie, NY | NYSBA (2017)

Mr. Gable was a lead Electrical designer on this project. As lead Electrical Engineer, Mr. Gable performed a site verification survey and inspection of existing lighting and power systems, calculated illuminance and uniformity for the sidewalk lighting, calculated electrical load, voltage drop, and conduit fill for the addition of the sidewalk lighting onto the existing lighting power system, sized and selected conduit, conductors, and lighting fixtures based on calculations. Mr. Gable developed contract design plans, details, specifications, and construction cost estimate as the lead design engineer.

RFK Bridge. New York, NY | TBTA (2017)

Mr. Gable was the lead Electrical designer of the lighting replacement on this project. During design, Mr. Gable calculated illuminance and uniformity for the approach roadway lighting, calculated electrical load, voltage drop, and conduit fill for the power distribution system for the approach roadway lighting, sized and selected raceways, conductors, pull boxes, and lighting fixtures based on the calculations. Mr. Gable also developed staging plans and details for temporary power to the roadway lighting during construction. Mr. Gable developed contract design plans, details, specifications, and construction cost estimate as the lead design engineer. During construction, he reviewed electrical submittals.



National Highway Institute



Certificate of Training

Maxwell Fyrster

has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

March 12-15, 2019

Hours of Instruction: 25

Location:

Mechanicsburg, PA

Instructor

Instructor

Local Coordinator

Nichae

Michael Daviés, Director National Highway Institute



National Highway Institute

Certificate of Training



has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

October 28 – 31. 2014

Mechanicsburg, PA

Location:

Instructor

Stu)

Instructor

Hours of Instruction:

25

Local Coordinator

Valerie Briggs, Director **National Highway Institute**





PARTICIPANT CONFIRMATION FORM

Complete this form to add the Professional Development Hours earned for participating in this activity to your personal record. Please note that your individual state board has the final authority on approving all Professional Development Hours for activities attended and other methods of earning credit.

COMMITTEE #:	15 - Stee	Structures			
MEETING DATE:	Octob	oer 23-24, 20	18		
MEETING LOCAT	ION:	Orlando, Fl			
NUMBER OF PRO	FESSIO	NAL DEV	/ELOPM	ENT HOU	RS: <u>\$4</u>
Please type or print th	ne follow	/ing inform	nation <u>for</u>	your record	<u>s</u> :
Name	[εε	R. LEA	UTZ		
Title	SENIO	R PROJE	CT MANA	GER	
Organization	MODJES	SKI AND	MASTERS	, INC ·	<u></u>
Address <u>110</u>	Ster ling	Parkway	Suite	302	
City <u>Mechanizes</u>	вигс		State	PA_Zip_	17050
Phone (7/7)	790-9	r565	Fax		
E-mail address	LRLen	tze Modj	eski, com		

En

Committee Chairman's Signature Committee # 15



PARTICIPANT CONFIRMATION FORM

Complete this form to add the Professional Development Hours earned for participating in this activity to your personal record. Please note that your individual state board has the final authority on approving all Professional Development Hours for activities attended and other methods of earning credit.

COMMITTEE #: <u>15</u>	- Steel Structures	;			
MEETING DATE:	February 5-6, 2	2019			
MEETING LOCATI	ON: New Or	leans, LA			
NUMBER OF PROF	ESSIONAL D	EVELOPN	MENT I	HOURS:	×6
Please type or print the	following info	rmation <u>fo</u>	r your r	ecords:	
Name LEE	R. LENTZ				
Title <u>Sevua</u>	R PROJECT M	AN AGER			
OrganizationM	ODJESKI AND	MASTERS	INC.		
Address 100	STERLING	PARKWI	+ Y	SHITE	302
City <u>mechanics</u>	BUZG	State	C A	Zip ⁄>	1050
Phone (7/7) 790-	- 9565	Fax			
E-mail address	LALENTZE	Mo STESKI,	Con		

n

Committee Chairman's Signature Committee # 15



Certificate of Training

Maxwell J. Fyrster

On 10/29/2020 successfully completed the

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

Presented by: Michael Baker International With the score of: 88.88% Continuing Education Credits: 20 PDHs

Daryl R LA Clan

Daryl R. St. Clair Highway Administration Deputate

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc



Certificate of Training

Maxwell J. Fyrster

Attended

Basic Course on Bridge Safety Inspection

Sponsored by the Highway Administration Deputate

DATE: September 29-October 16, 2014

LOCATION: Harrisburg, PA

TRAINING VENDOR: Michael Baker Jr., Inc.

INSTRUCTOR: Thomas Ryan, Michael Pichura, Dennis Baughman, Sr., Sumathi Ravindraraj, Harold Rogers, Jr.

TEST SCORE: 85%

CONT. ED. CREDITS*: 91 PDHs

Catherine T. Shoemaker (Acting) Training Development Manager

Access the Technical Training and Development Section's Training Calendar for information on current program offerings <u>http://www.dot.state.pa.us/tc</u>. Students must receive a test score of 70% or higher to pass the course. Students who do not take the class test receive N/A in lieu of a test score and their training record is marked "Incomplete." Should you have any questions about this certificate or exam scores, please contact us at 717-705-2209.

*The inclusion of continuing education credits (PDH/CEU/CEH) on this certificate does not imply or guarantee that the training course is approved by the Pennsylvania State Registration Board of Professional Engineers, Geologists and Land Surveyors. According to Pennsylvania Act 25, "*Credit determination for activities...shall be the responsibility of the licensee.*"

Rev. August 2013



BRIDGE SAFETY INSPECTOR TRAINING CARD

Maxwell J. Fyrster

Issued: 11/15/2018 Expires:11/14/2020

Three P. Mocioce Chief Bridge Engineer The holder of this card has successfully completed PennDOT's Basic Bridge Safety Inspector's Training, a FHWA-approved course fulfilling the Department's training requirement and the NBIS requirements for "comprehensive bridge inspection training." He/she must successfully complete a Refresher Course at two-year intervals to maintain a valid PA Bridge Safety Inspector's certification.

An individual in charge of a bridge inspection team must also have a combination of experience and technical training that fulfills the NBIS requirements for a Team Leader. For more information, see Pub 238 and CFR Sec.650.309.



Shawn A. Yinger

Issued: 11/29/2018 Expires:11/28/2020

Three P. Maciace Chief Bridge Engineer The holder of this card has successfully completed PennDOT's Basic Bridge Safety Inspector's Training, a FHWA-approved course fulfilling the Department's training requirement and the NBIS requirements for "comprehensive bridge inspection training." He/she must successfully complete a Refresher Course at two-year intervals to maintain a valid PA Bridge Safety Inspector's certification.

An individual in charge of a bridge inspection team must also have a combination of experience and technical training that fulfills the NBIS requirements for a Team Leader. For more information, see Pub 238 and CFR Sec.650.309.



National Highway Institute



Certificate of Training

Shawn Yinger

has participated in

FHWA-NHI-130110 Tunnel Safety Inspection

hosted by

Gannett Fleming

Date:	

September 20-24, 2021

Location:

Camp Hill, PA

Instructor

Instructor

Hours of Instruction: 32

lever

Local Coordinator

Thomas Harman

Thomas Harman, Director National Highway Institute



Sertificate of Training

Shawn A. Yinger

On 11/5/2020 successfully completed the

Bridge Inspection Refresher Course

Sponsored by the Highway Administration Deputate

Presented by: Michael Baker International With the score of: 89.44% Continuing Education Credits: 20 PDHs

Daryl R LA Clan

Daryl R. St. Clair Highway Administration Deputate

Access the Technical Training and Development Section's Training Calendar for information on current program offerings http://www.dot.state.pa.us/tc



National Highway Institute



Certificate of Training Shawn A. Yinger

has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

March 12-15, 2019

Hours of Instruction: 25

Location: Mechanicsburg, PA

Instructor

Instructor

Local Coordinator

Nichae

Michael Daviés, Director National Highway Institute



National Highway Institute

Certificate of Training

Shawn A. Yinger

has participated in

FHWA-NHI-130078 Fracture Critical Inspection Techniques for Steel Bridges

hosted by Modjeski and Masters, Inc.

Date:

October 28 – 31, 2014 Mechanicsburg, PA 25 *Hours of Instruction:*

Dule:

Location:

Instructor

Steven amille

Instructor

Byn E Bank

Local Coordinator

Valerie Briggs, Director National Highway Institute





Certificate of Training

Shawn A. Yinger

Attended

Basic Course on Bridge Safety Inspection

Sponsored by the Highway Administration Deputate

DATE: September 29-October 16, 2014

LOCATION: Harrisburg, PA

TRAINING VENDOR: Michael Baker Jr., Inc.

INSTRUCTOR: Thomas Ryan, Michael Pichura, Dennis Baughman, Sr., Sumathi Ravindraraj, Harold Rogers, Jr.

TEST SCORE: 88%

Catherine T. Shoemaker (Acting) Training Development Manager

CONT. ED. CREDITS*: 91 PDHs

Access the Technical Training and Development Section's Training Calendar for information on current program offerings <u>http://www.dot.state.pa.us/tc</u>. Students must receive a test score of 70% or higher to pass the course. Students who do not take the class test receive N/A in lieu of a test score and their training record is marked "Incomplete." Should you have any questions about this certificate or exam scores, please contact us at 717-705-2209.

*The inclusion of continuing education credits (PDH/CEU/CEH) on this certificate does not imply or guarantee that the training course is approved by the Pennsylvania State Registration Board of Professional Engineers, Geologists and Land Surveyors. According to Pennsylvania Act 25, "Credit determination for activities...shall be the responsibility of the licensee."

Rev. August 2013