

MATTHEW J. MOYER, PE

Senior Project Manager



Education: Master of Science, Civil Engineering, 2001
North Carolina State University

Bachelor of Science, 1998,
Agriculture and Environmental Technology
North Carolina State University

Registration: Professional Engineer: North Carolina License 032129
Professional Engineer: Virginia License 046632
Professional Engineer: South Carolina 28531
National Council of Examiners for Engineering and Surveying 36999

Certifications: FHWA-NHI-130055 Safety Inspection of In-Service Bridges (2009)
FHWA-NHI-130053 Bridge Inspection Refresher Training (2016)
FHWA-NHI-130078 Fracture Critical Techniques for Steel Bridges
FHWA-NHI-130110 Tunnel Safety Inspection

Professional Summary:

Seeing bridge preservation as a way to save money over time, Matthew's focus is to serve clients by providing NBIS bridge inspections, condition assessments, and maintenance and rehabilitation solutions to extend the life of bridges.

With 20 years of experience as a professional engineer, Matthew has been certified as an NBIS (National Bridge Inspection Standards) team leader since 2009. He has inspected more than 1,000 highway bridges, 1,000 railroad bridges, and 400 signal poles. He has conducted 49 bridge rehabilitation projects, three tunnel rehabilitation projects and 50 in-depth condition assessments for bridges. In addition to bridge preservation Matthew has also designed steel, prestressed concrete and cored slab bridges.

Experience:

City of Raleigh Reinforced Concrete Box Culvert Inspection, Raleigh, NC, SCS Engineers, 2021

The inspection of a single span reinforced box culvert and load rating to determine if the culvert has the capacity to carry traffic for a proposed change in the roadway alignment over the culvert.

City of Greensboro Culvert Inspections, Greensboro, NC 2020-2021

Inspection of 1,100 culverts in Greensboro to document structural defects and performance issues such as drift and sediment accumulation. Survey123 and Collector mobile application were used to collect inspection data in junction of ArcGIS for the culverts/pipes for the City of Greensboro.

Booz Allen Hamilton (EPA Breezeway Condition Assessment), Durham, 2020

The inspection of three breezeways for the Environmental Protection Agency. The breezeways were elevated walkways that carried pedestrian traffic from the parking decks to the office building. The team performed a visual and destructive inspection of the concrete walkway and the steel canopy covering the walkway. A final report detailed the inspection findings, provided repair recommendations, estimated construction cost for repairs and a preventative maintenance program.

Laurel Ridge Property Owners Association Culvert Inspection, Black Mountain, 2020

The inspection and load rating of two precast concrete culverts. The team also developed a cost estimate to replace the culverts.

City of Greenville Bridge Inspection, Pitt County, The East Group, 2019

The inspection of an old highway truss that had been moved to a greenway trail. The inspection consisted of inspecting the timber deck, rails and joist. The team also inspected the truss and verified the member sizes for the load rating analysis.

City of Fayetteville Bridge Management Program, Cumberland County, City of Fayetteville, 2018

The development of a bridge program for the City of Fayetteville that addresses the priority maintenance repairs from the biannual inspection. The program also creates a database of the bridge inventory and defines a direction to continue to improve the bridges and extend their useful life.

American Tobacco Trail Pedestrian Bridge Inspection (three bridges), Wake County, 2020 & 2018

The routine inspection of three bridges on the American Tobacco Trail in Wake County. The bridges are timber decks on steel beams with timber substructure.

Hurricane Florence Response and FEMA Inspection and Assessments, City of Fayetteville, 2018

Bridge inspection project manager and team lead for recording data, photos, and water levels post-hurricane to record damages that have occurred or have worsened due to the storm.

Highway Bridge Inspection:

NCDOT State Inspection: Hurricane Florence Emergency Response, Sampson and Brunswick Counties, 2018

Following Hurricane Florence in 2018, led team to perform 24-hour monitoring of two bridges for scour. The scour was approaching the critical elevation and the bridges were on a primary route into Wilmington. The inspection team checked the scour every hour for four days straight. After the emergency response, the inspection teams went on to inspect another 160 bridges for storm damage.

NCDOT Bridge Deck Evaluation, 15BPR.21, Montgomery County – 2018

For bridge 6 in Montgomery County, took powdered samples of concrete to test for chloride content. The samples were split into three samples and one sample was tested by NCDOT Testing and Materials Unit using X-Ray Fluorescence and the second sample was sent to the CTL Group to be tested using the AASHTO T-260 water soluble titration method. The third sample was kept in case additional testing was needed. The results of the two different tests showed a slight variation in the chloride content but was consistently different amongst each sample.

NCDOT State Inspection – Virginia Dare Bridge, Dare County – 2018

NBIS inspection of the five-mile, 268 span Virginia Dare Memorial Bridge crossing the Croatan Sound in the Outer Banks of North Carolina. The superstructure consists of seven lines of prestressed, precast concrete girders supporting a reinforced concrete deck on cast-in-place reinforced concrete substructure with integral bent diaphragms.

***NCDOT Statewide Bridge Inspection, 2005-present, throughout NC**

Project manager and team lead for field inspections, analysis ratings and report preparation for more than 1,000 structures in various counties. Bridge types included culverts, system bridges, through girders, curved girders and interstate bridges. Performed work in full compliance with FHWA and NCDOT guidelines, including NBIS certification requirements. The team also performed field inspections and reports for more than 400 metal signal poles, in full compliance with NCDOT Signal Unit guidelines and the latest FHWA publication.

***NCDOT, 2016 Dan Cameron Segmental Box Bridge Inspection, 2016, Wilmington, NC**

Project manager and team lead for the Dan Cameron Bridge inspection. Constructed in 2007, the Dan Cameron Bridge carries Interstate 140 around Wilmington and connects to US 421. The 1.4-mile bridge consists of 59 pre-stressed concrete girder spans. The main span of the structure is a cast-in-place segmental box girder with a variable depth from 11 feet deep at each end to 26 feet deep at the interior bents. Supervised the tracing, measuring, labeling, recording and reporting of 2.7 miles of cracks on the segmental spans alone.

***NCDOT, 2010 Bonner Bridge Inspection**

***NCDOT, 2006 Bonner Bridge Inspection**

Tunnel Inspection and Preservation:

***NCDOT Division 14 Tunnel Rehabilitation and Lighting 17BP.14.P.10, Haywood County, NC**

Engineer of record for the inspections and structure repair plans for three tunnels on Interstate 40. Rehabilitation plans included shotcrete repairs to cracks, spalls, and delaminations; an epoxy coating for the entire wall surface of the tunnel; and updates to the lighting systems. Developed traffic control to minimize impact of construction on the public. Designed roadway repairs, along with replacement of guardrail at tunnel approaches.

Highway Bridge Preservation:

***NCDOT Bridge Deck Evaluations, 2011, throughout NC**

The engineer of record for 21 bridge deck evaluations in multiple counties throughout North Carolina, including non-destructive testing of concrete bridge decks (using chain drags, swiss hammers, and chloride sampling) to determine the condition of the bridge deck and the chloride content in the concrete. In order to perform the bridge deck evaluation, traffic control and at times police were used to maintain traffic. Also, to decrease the impact on the traveling public, some work was done at night. We also coordinated with local transportation authorities for information.

***NCDOT Bridge Preservation, 2011, various counties, NC**

The engineer of record of 49 bridge preservations in multiple counties throughout North Carolina. Preservation techniques included latex modified concrete overlays, epoxy overlays, methacrylate deck seals, concrete repairs, shotcrete repairs, structural steel repair, bearing replacement, painting bearings, structural steel repair, joint replacement, deck replacement, approach roadway resurfacing, epoxy resin injections, and traffic control plans.

***NCDOT Division 11 Bridge Preservation 17BP.11.H.2, 2012, Division 11, NC**

Engineer of record for bridge preservation plans and deck replacement for bridges in Division 11. Preservation work included latex-modified concrete overlays, structural steel repairs, expansion bearing replacements, and deck expansion joint replacements.

***NCDOT Division 5 Bridge Preservation 17BP.5.P.4, 2012, Division 5, NC**

Engineer of record for bridge preservation plans and deck replacement for bridges in Division 5. The preservation work included latex-modified concrete overlays, epoxy overlays, concrete repairs to the substructure, and structural repairs.

***NCDOT Division 4 Bridge Preservation 17BP.4.P.2, 2012, Division 4, NC**

Engineer of record for bridge preservation plans for bridges in Division 4. The preservation work included latex-modified concrete overlays, epoxy overlays, substructure repairs, methacrylate deck seals and expansion bearing replacements.

***NCDOT Division 3 Bridge Preservation 17BP.3.H.4, 2012, Division 2, NC**

Engineer of record for bridge preservation plans for bridges in Division 3. The preservation work included latex-modified concrete overlays, substructure repairs, asphalt wearing surface and post-tensioning tendon replacement.

***NCDOT Division 3 Bridge Preservation 17BP.3.H.3, 2012, Division 3, NC**

Engineer of record for bridge preservation plans for bridges in Division 3. The preservation work included latex-modified concrete overlays, substructure repairs, deck expansion joint replacement and structural repairs.

***NCDOT Division 3 Bridge Preservation 17BP.3.H.2, 2012, Division 3, NC**

Engineer of record for bridge preservation plans for bridges in Division 3. The preservation work included latex-modified concrete overlays, substructure repairs and deck expansion joint replacement.

***NCDOT Division 5 Bridge Preservation TIP I-5205A, 2012, Division 5, NC**

Engineer of record for bridge preservation plans for bridges in Division 3. The preservation work included latex-modified concrete overlays, substructure repairs and deck expansion joint replacement.

Railroad Bridge Inspection:

***Duke Energy, In-Depth Bridge Inspection: Pond B Railroad Bridge, Lee Nuclear Site, Cherokee County, SC, 2012**

Engineer of record for the in-depth inspection of the bridge over Pond B spillway. Project included reconstructing a 7.8-mile single track rail spur to enable the rail transport of construction materials and provide for future maintenance for the Lee Nuclear Station. The project will connect to existing Norfolk Southern Railway. The design will include track reconstruction to accommodate current railroad design standards and changes in field conditions.

***Genesee and Wyoming, Inc, Annual Bridge Inspection, 2012, 2013**

Project manager and team leader for more than 300 bridges in the Southern Region for Genesee and Wyoming Railroad. The bridges consist of steel, timber and concrete superstructures supported on steel, concrete and timber substructures as well as concrete box culverts and corrugated metal pipes. Also prepared final reports.

***Arkansas-Midland Railroad, Annual Bridge Inspection, 2012**

Bridge Inspector. Assisted team leader on the annual inspection of the AKMD's bridges. The bridges consist of steel, timber and concrete superstructures supported on steel, concrete and timber substructures as well as concrete box culverts and corrugated metal pipes.

Bridge Design Experience:

***Construction Services**

A temporary bridge was designed for a contractor to move material over an existing interstate without disrupting traffic.

***VDOT Bridge Rehabilitation and Phase One Inspection**

Conducted and prepared phase one bridge inspections, reports, bridge rehabilitation plans and cost estimates.

***Bonner Bridge Inspection and Assessment**

As a part of the 2006 safety inspection of Bonner Bridge, substructure units from bent 167 through end bent 2 were analyzed and repair plans were produced.

***NCDOT Coddle Creek (for a private developer)**

The 266.5 foot long bridge is a tangent alignment over coddle creek. The two span bridge consist of a prestressed concrete girder superstructure.

***SCDOT US 601**

The 635 foot long bridge is a tangent alignment over Congaree Swamp. The five span bridge consist of a prestressed concrete girder superstructure. The bridge is designed in accordance with the SCDOT seismic design specifications for seismic category D.

***NCDOT Bridge Management Unit Bridge Replacements**

Through the NCDOT Bridge Management Unit the North Carolina Moving Ahead (NCMA) program funded the replacement of bridges with cored slab bridge, reinforced concrete box culverts and metal pipes were designed designs to replace obsolete bridges.

***GDOT Improvements to I-75 at Robert Davis and Carter Road**

Final bridge plans were prepared using Georgia DOT design software and results were verified with Con-span and RC Pier.

***Minnesota I-494 Design Build**

Final construction plans were produced. Cad work consisted of drawing structural bridge components and producing final drawings.

***Charlotte Area Transit System (CATS Light Rail)**

Final design plans for light rail over Woodlawn Road. The Woodlawn Road bridge is a nine span bridge consisting of six curved simple span steel girders and one curved three span steel continuous unit.

***SCDOT US29**

The replacement bridge is 1,050 foot long with an 840 foot continuous unit. The seven span bridge consist of a steel girder superstructure. The substructure consisted of end bents and hammerhead bents. The bridge is designed in accordance with the SCDOT seismic design specifications for seismic category A.

***SCDOT S-488**

AASHTO LRFD Design of a 174 foot long single span steel replacement bridge with integral end bents. Stage construction was used in order to maintain traffic during construction. The bridge is designed in accordance with the SCDOT seismic design specifications for seismic category A.

***Charlotte Area Transit System (CATS)**

Preliminary plans were produced for nine bridge sites. Design work consisted of steel and prestressed concrete girder design, substructure design, and plan preparation for highway traffic, light and freight trains.

***Triangle Transit Authority Light Rail (TTA)**

Preliminary plans were produced for 50 bridge sites. Design work consisted of steel and prestressed concrete girder design, substructure design, and plan preparation for highway traffic, light and freight trains.

***U-2524AC Guilford County (Greensboro Western Loop)**

Site 1 bridges are dual structures with tangent over curve alignment. The two span bridges consist of a prestressed concrete girder superstructure. Site 2 bridge is a curved structure over tangent alignment. The two span bridge consist of a curved steel superstructure and integral end bents.

***NCDOT R-2547 Knightdale Bypass (Design Build)**

Project engineer for Preliminary plans that were produced for bidding. Design work consisted of modifications to Roger Lane, Mango Creek, Neuse River and other structural recommendations.

***NCDOT R-2248C Mecklenburg County**

Site 4 bridges are dual structures with curve over tangent alignments. The two span bridges consist of a curved steel superstructure with integral end bents. Site 5 bridges are dual structures with curve over tangent alignments. The single span bridges consist of a steel superstructure with integral end bents.

***NCDOT I-4410 Iredell County**

The bridge widening is for a tangent over curve alignment. The four span bridge consist of a steel girder superstructure with curtain wall.

***SCDOT Batesville Road**

The replacement bridge is a tangent over tangent alignment. The two span bridge consist of Type VI prestressed girders continuous for live load.

***SCDOT Cooper River Project**

The addition of Line 2 curved ramp off of existing I-26 curved bridge and widening of I-26 bridge in Charleston, South Carolina.

***SCDOT Tiger River Widening**

The widening of the bridge is tangent over tangent alignment. The widening consists of Bulb Tee 63 prestressed girders continuous for live load.

***SCDOT I-85 Phase II Improvements**

Preliminary plans for Batesville Road, DeYoung Road, and Brockman-Mclimon Road, the bridges are two span with Type VI prestressed girders continuous for live load.

Light Rail Bridge Design:

Project engineer. Developed final and preliminary plans for bridges that consisted of steel and prestressed concrete girder design, substructure design, and plan preparation for highway traffic, light and freight trains.

- *Charlotte Area Transit System (CATS)
- *Triangle Transit Authority Light Rail (TTA)

*Project experience prior to employment by A&O