PERSONNEL QUALIFICATIONS

Faraj Shahrstan | Associate III

EDUCATION

- Dalhousie University
  - Bachelor of Engineering, Civil Engineering, 2020
  - Master of Applied Science, Structural Engineering, 2022

PRACTICE AREAS

- Bridges and Civil Infrastructure
- Structural Analysis
- Nondestructive Evaluation
- Corrosion Assessment
- Repair and Rehabilitation

REGISTRATIONS

- Professional Engineer in MI, NS and ON
- NHI Course 130056 - Safety Inspection/In-Service Bridges for PEs
- NHI Course 130078 - Bridge Inspection Techniques for NSTMs
- FAA-Licensed Remote Pilot

PROFESSIONAL AFFILIATIONS

- American Concrete Institute (ACI)

TECHNICAL COMMITTEES

- ACI 345 - Concrete Bridge Construction and Preservation
- ACI 440 - Fiber-Reinforced Polymer Reinforcement
- ACI 440-01 - FRP-Prestressed Concrete, voting member
- ACI SYPAC Board Committee

CONTACT

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EXPERIENCE

Faraj Shahrstan is engaged in the inspection, load rating, and rehabilitation of steel and concrete structures. He performs nondestructive testing and emergency repairs on in-service bridges. Mr. Shahrstan has participated in bridge inspections and load ratings involving several bridge types. He has also worked on several special inspections requiring subsequent analysis, design, retrofit fabrication, and installation of components for bridge structures.

Before joining WJE, Mr. Shahrstan was a graduate research assistant focusing on the structural rehabilitation of post-tensioned (PT) concrete bridge cantilever wing slabs with near-surface-mounted, post-tensioned, carbon fiber reinforced polymer rods. Along with his graduate research work, he worked as a bridge maintenance engineer with the Nova Scotia Department of Transportation.

REPRESENTATIVE PROJECTS

Bridges and Civil Infrastructure

- I-469 Over I-69 Bridge - Fort Wayne, IN: Condition assessment of PT transverse bars, in-depth investigation, and evaluation and repair of deteriorated grout pourbacks
- US 61 Over the Mississippi River - Dubuque, IA: Routine and fracture critical inspection of tied-arch bridge with PPC girder approaches
- INDOT Pin and Hanger and Pinned Hinge Connection Inspections - Various Locations, IN: In-depth evaluation and ultrasonic testing of pin connections
- Light Rail East Link Extension Plinth Reconstruction - Seattle, WA: Bridge deck overlay pull-off bond testing and GFRP bar pull-out testing
- US 77 Over the Missouri River - Sioux City, IA: Routine and fracture critical inspection of tied-arch bridge with PPC girder approaches
- IA 92 Over the Mississippi River - Muscatine, IA: Routine and fracture critical inspection of truss, two-girder, and precast multibeam superstructure systems
- INDOT Bascule Bridge Inspections - Various Locations, IN: Routine and fracture critical inspection of three bascule bridges
- CN Rail - Fort Frances, ON: Emergency collapse investigation of Strauss Bascule Bridge
- Chicago Skyway - IL: Service life assessment of high-performance concrete bridge deck overlay, condition assessment of concrete substructure piers, and inspection of steel deck truss members and gusset plates
- Iowa Highway Research Board Project TR-791 Bridges Designed for Minimal Maintenance - Ames, IA
- Illinois State Capitol Parking Garage - Springfield: Design and construction observation of repairs with near-surface mounted reinforcement

Structural Analysis

- INDOT Bridges - Various Locations, IN: Load ratings of multiple steel, prestressed concrete, and reinforced concrete structures for new construction, rehabilitation, or deterioration
- Indiana Toll Road - Hammond: CSI bridge modeling of thermal effects on built-up steel substructure bents to evaluate elimination of deck joints and replacement of bearings
- Dickey Road Bascule Bridge - South Bend, IN: Load Rating of two-leaf bascule bridge constructed in 1992
- Franklin Street Bascule Bridge - Michigan City, IN: Load Rating of two-leaf bascule bridge constructed in 1932

Nondestructive Evaluation

- San Luis Overpass - Galveston, TX: Condition assessment of concrete bridge deck and piles using ground penetrating radar, half-cell potential, and infrared drone thermography
- Champlain Towers - Miami, FL: Failure investigation of collapse of twelve-story south condominium
- Indiana Toll Road - Hammond: Condition assessment of latex-modified concrete overlay
- Iowa 9 Over the Mississippi River - Lansing, IA: Magnetic particle testing and evaluation of impact damage to deck truss bottom chord
- Chicago Skyway - IL: Ultrasonic thickness testing of steel deck truss gusset plates