

### Robert J. Firman III | Senior Associate



#### EDUCATION

- Bucknell University
  - Bachelor of Science, Civil Engineering, 2010
  - Bachelor of Management for Engineers, 2010
- Purdue University
  - Master of Science, Civil Engineering, 2011

#### PRACTICE AREAS

- Failure/Damage Investigations
- Concrete Structures
- Nondestructive Evaluation
- Instrumentation/Monitoring/Load Testing
- Bridges

#### REGISTRATIONS

- NHI Course 130056 - Safety Inspection of In-Service Bridges for Professional Engineers
- Professional Engineer in DC, LA, MD, MT, NJ, and VA

#### PROFESSIONAL AFFILIATIONS

- American Concrete Institute
- American Institute of Steel Construction
- American Society of Civil Engineers

#### CONTACT

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#### EXPERIENCE

Robert Firman joined the Washington, D.C. office in January 2012. Since that time, he has gained experience working on a broad range of projects, including condition assessments; instrumentation; materials testing; and structural analysis of structural steel buildings, light-gauge metal structures, and prestressed and post-tensioned concrete buildings and bridges. Prior to joining WJE, Mr. Firman gained work experience in structural dynamics, engineering, construction, steel fabrication, and erection.

#### REPRESENTATIVE PROJECTS

##### Failure/Damage Investigations

- Precast Parking Garage - Fairfax, VA: Investigation of spandrel cracking
- Wood Subfloor Assessment - Washington, D.C.: Investigation and materials testing of wood subfloor exposed to moisture during construction
- Glass Breakage - Washington, D.C.: Investigation of glass breakage during construction of curtain wall
- Springfield Town Center - VA: Investigation of partial collapse of elevated concrete slab during construction
- Underground Parking Garage - Washington, D.C.: Investigation of concrete structure collapse during construction
- File Storage Warehouse - Landover, MD: Structural analysis and investigation of warehouse progressive collapse

##### Concrete Structures

- Airport Roadway Tunnels - Buffalo, NY: Condition assessment and materials testing of tunnels located beneath airport runway
- Multistory Building - Denver, CO: Condition assessment, analysis, and repair design of precast concrete column connections
- Silver Spring Transit Center - MD: Field investigation and structural analysis related to the performance of a post-tensioned concrete structure

##### Nondestructive Evaluation

- Metrorail Station Platforms - Washington, D.C.: Ground penetrating radar and specialized inspections
- Elevated Structures - Washington, D.C.: Visual inspection, magnetic particle testing, and ultrasonic testing of fracture critical steel transverse box girders

##### Instrumentation/Monitoring/Load Testing

- Garage Monitoring - Tysons, VA: Installation and monitoring of environmental sensors at precast parking garage
- Balcony Railing Load Testing - Alexandria, VA: Assessment and load testing of balcony railings at apartment building
- Overhead Lift Anchor Testing - Washington, D.C.: Load testing of overhead anchors used for moving equipment within hospital
- Fall Protection Anchor Testing - Raleigh, NC: Load testing of roof fall protection anchors
- USS Maine Memorial - Arlington, VA: Installation of temperature and humidity monitoring equipment at Arlington National Cemetery
- Miller-Coors Brewery - Elkton, VA: Installation of tiltmeters on fermenting tanks in response to steel column failures
- Embassy Building - Washington, D.C.: Crack monitoring at concrete beams and columns

##### Bridges

- Multiple Timber Bridges - MS: Condition assessment of multiple timber pile bridges
- Nottoway Reservoir Bridge - Nottoway County, VA: Condition assessment, instrumentation, materials testing, and service life modeling of concrete substructure and steel superstructure
- Route 15/Interstate 66 Overpass - Haymarket, VA: Fire damage assessment of steel and concrete bridge components
- Commodore Barry Bridge - Bridgeport, NJ: Concrete materials testing of bridge piers to determine the potential for alkali-silica reaction