

**Paul D. Izzo** | Structural Engineer, P.E.

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### Professional Summary:

Mr. Izzo has 11 years of experience in the civil and structural engineering fields that includes design and forensic investigation. Mr. Izzo's investigative experience includes many aspects of structural engineering of residential and commercial structures to determine causation and extent of structural damage. Investigations include foundation movement and cracking, building envelope failures, truss failures and repairs, structural failures, code compliance and evaluation, construction errors and omissions, roof inspections, and others. Mr. Izzo has performed over 500 forensic inspections. Mr. Izzo has experience in bridge design including bridge replacements, deck replacements, steel and concrete beams, retaining walls, substructure designs and preventative maintenance projects. He has also performed load rating calculations and bridge inspections, and has experience in roadway and bridge construction inspection. He has been involved in numerous bridge replacement and rehabilitation projects. He has been trained in Load and Resistance Factor Design (LRFD) and hydraulics, and understands both state and federal standards for bridge design.

### Licenses and Certifications:

Professional Engineer, MI, #6201060401

Professional Engineer, FL, #82737

Professional Engineer, IL, #062068167

Professional Engineer, TX, #122675

Professional Engineer, MO, #2016005486

Certified Bridge Inspection Team Leader, FHWA, NHI & MDOT, MI

Certified Bridge Inspection Team Leader, FHWA, NHI & INDOT, IN, IN000449-2023-ATL

### Project Experience:

#### **Forensic Structural**

##### **Islamic Village Market, Dearborn, MI**

Forensic Structural Engineering

There was a structural collapse of a two-story warehouse with masonry exterior load bearing walls and interior steel columns and floor beams. The cause of failure and extent of repairs had to be determined.

**Stornante, Inc., Plymouth, MI**

Forensic Structural Engineering

The brick veneer attached to a 7 year old retaining wall broke loose and failed. The cause of the damage and repair recommendations had to be determined.

**Miller, Augusta, MI**

Forensic Structural Engineering

The basement wall of the insured's structure collapsed. The cause of the damage and repair recommendations had to be determined.

**Consolidated Building Systems, Inc., Lansing, MI**

Forensic Structural Engineering

The exterior walls were severely out of plumb, interior wall studs were bowing, and floors were not level throughout a four-story hotel that was in the process of being constructed. The cause of the damages had to be determined.

**Aurora Andrews Offices, Lansing, MI**

Forensic Structural Engineering

There was a collapse of a wooden lattice truss roof structure. The cause of the collapse had to be determined.

**Peyton Properties, Clare, MI**

Forensic Structural Engineering

There were cracks in the concrete masonry unit foundation wall and in the interior walls of the insured structure. The cause of the damage had to be determined.

**Bennett Motor Express, St. Clair, MI**

Forensic Structural Engineering

An overloaded truck crossed a county bridge. It had to be determined if the truck structurally damaged the superstructure of the bridge.

**Sundance Chevrolet, Grand Ledge, MI**

Forensic Structural Engineering

There was a fire event at the insured's property. The extent of structural damages had to be determined and repair recommendations had to be provided.

**Clarkston Village Dental, Clarkston, MI**

Forensic Structural Engineering

The structure was impacted by a semi-truck. The extent of structural damages had to be determined and repair recommendations had to be provided.

**First Presbyterian Church, Adrian, MI**

Forensic Structural Engineering

A 43 foot mortise and tenon roof truss that was constructed in 1842 collapsed. The causation of the failure had to be determined.

**Davison Richfield Senior Center, Davison, MI**

Forensic Structural Engineering

There were multiple locations of interior water intrusion throughout the structure. The causation and origin of the water intrusion had to be determined.

## Roof Evaluation

### **Texas Truck Centers, San Antonio, TX**

Forensic Engineering

There was a severe hail storm in San Antonio, Texas on April 12, 2018. Several different types of metal roofs had to be examined and determined whether or not functional hail damage occurred at the sites because of the events on the date of loss.

### **Jose and Norma Alcala, San Antonio, TX**

Forensic Engineering

There was a severe hail storm in San Antonio, Texas on April 12, 2016. A concrete tile roof had to be examined and determined whether or not functional hail damage occurred at the site because of the events on the date of loss.

### **Urban Crest Apartments, San Antonio, TX**

Forensic Engineering

There was a severe hail storm in San Antonio, Texas on April 12, 2016. Two TPO (Thermoplastic Polyolefin) roofs had to be examined and determined whether or not functional hail damage occurred at the site because of the events on the date of loss.

### **City of Luna Pier, Luna Pier, MI**

Forensic Engineering

An EPDM (Ethylene Propylene Diene Monomer) roof had to be examined and determined whether or not functional wind or object impact damage occurred at the site because of the events on the date of loss.

### **Village of Edwardsburg, Edwardsburg, MI**

Forensic Engineering

Two composition asphalt shingles roofs had to be examined and determined whether or not functional wind or object impact damage occurred at the site because of the events on the date of loss.

### **Blue Lake Township, Mancelona, MI**

Forensic Engineering

A composition asphalt shingled roof and metal roof had to be examined and determined whether or not functional hail damage occurred at the site because of the events on the date of loss.

## Structural, Civil, and Geotechnical Engineer

**Design Engineer for bridge projects.** Duties include: performing economic analysis, scour countermeasure design, determining structure size and type, analyzing existing structural elements, designing superstructure elements, plan development, writing special provisions, cost estimating, and shop drawing review. Project types included retaining walls, new bridge construction, bridge replacement, partial bridge reconstruction and rehabilitation.

- **Webberville Road and Gramer Road Bridges over the Red Cedar River and Holt Road Bridge over Deer Creek, Ingham County, Michigan.** Bridge Engineer.

Preventive Maintenance items included in the design of the Webberville Road and Gramer Road Bridges included deep overlays, minor widening along both fascia's, bridge railing replacement, cleaning and coating of the structural steel, slopewall reconstruction and approach pavement reconstruction. The proposed superstructure at the Holt Road Bridge consisted of 18" deep rolled steel beams and a composite, reinforced concrete bridge deck.

- **Dexter-Pinckney Road Bridge over the Portage Lake Canal, Washtenaw County, Michigan.** Bridge Engineer. The design consisted of a single-span, 27" side-by-side box beam bridge. The bridge was designed in an extremely difficult location with residences very close to the bridge in all four quadrants. Micro-piles were used to reduce vibration. I checked and back-checked drawings for the project and created details where needed. I also assisted in the TS&L design, preliminary design, final design, cost estimates, hydraulics, analysis, programming application, use of ConSPAN and RC Pier software design, and acquiring MDEQ and U.S. Army Corps of Engineers construction permits.
- **Mt. Hope Avenue over Sycamore Creek, Lansing, Michigan.** Lead Bridge Engineer. The project consisted of a deck replacement and widening of a two-span bridge. Project tasks included bridge scoping, scour analysis, beam end repair design, link slab design, verifying the design of the existing steel beams, roadway reconfiguring, and acquiring MEDQ/U.S. Army Corps of Engineers Joint Construction Permits.
- **Canadian National Rail Corridor Overpass and New Roadway, St. Clair County, Michigan.** Bridge Engineer for two railroad grade separations over the CN Railroad. Michigan Road Bridge is a single-span, 39" adjacent box-beam bridge spanning three sets of railroad tracks and two maintenance roads. The Griswold Road Bridge is a single-span, 27" adjacent box-beam bridge spanning two sets of railroad tracks. This \$13 million road and bridge project includes intense public involvement, an expedited time schedule, right-of-way acquisition, utility relocations, bridge approach design, and pre-loading the site to consolidate the soils. I checked and back-checked drawings for the project and created details where needed. I created a LRFD spreadsheet to design cantilever abutments, assisted in the preliminary and final design, calculating cost estimates and used ConSPAN software design for the completion of this project.

**Bridge Inspection Assistant and Team Leader.** Duties include planning and performing the routine inspection of Local Agency bridges in Michigan and Indiana, small structure inspections in Indiana, assisting in fracture critical and special item inspections, preparing bridge inspection forms using MBIS in Michigan and Inspect-Tech in Indiana, and compiling the final reports. The final reports consisted of a written explanation of the structural condition, rating, geometrics, improvement recommendations and photo logs.

- **2014 Biennial/Annual Bridge Inspections, City of Marshall, Michigan.** Team leader for biennial bridge inspections for four bridges. Project included planning, traffic control, field inspection, work recommendations, streambed cross-section profiles, and bridge inspection reports. Load Ratings and Scour Critical Bridge Action Plans were developed as required.
- **2010-2014 Biennial Bridge Inspections, Ann Arbor, Michigan.** Bridge Inspector. Biennial bridge inspections for 15 structures. Project includes planning, traffic control, field inspection, streambed cross-sections, developing bridge inspection reports with load ratings, repair recommendations, and cost estimates.
- **2009, 2011, and 2013 Bridge Inspections, City of Port Huron, Michigan.** Team Leader Assistant for the in-service inspection of three bridges under the jurisdiction of the City of Port Huron. Specific responsibilities included planning the inspections,

conducting the inspections, completing a Level One Scour Analysis, making repair recommendations, developing cost estimates, updating the bridge inspection forms using MDOT's MBIS, and compiling a report summarizing the condition of the structures. The inspections included a fracture critical inspection of the City's two bascule bridges.

**Bridge and Roadway Construction Inspection.** Duties include visually inspecting superstructure demolition, the placement of backfill, concrete and asphalt placement, concrete curb, general survey, quantity verification and writing daily reports.

**Field Technician for Construction Projects.** Duties included: performing construction inspection, soil and asphalt density testing, concrete testing, field sketches and daily project reports. Major project locations include Parker High School in Dexter, Sparrow Hospital in Lansing, Red Cedar and Wilson Ave. intersection on MSU Campus.

- **2007 MSU Red Cedar and Wilson Road Reconstruction, East Lansing, Michigan.** This project consisted on a new sewer system, road reconstruction, new driveway approaches, new sidewalks and landscaping. Tested soil density with a Troxler machine. Performed modified proctor compaction tests in the lab. Tested the concrete for slump, air entrainment, temperature, unit weight, and made concrete cylinders.

**Lab Technician.** Duties included: running compressive strength tests on concrete cylinders, sieve analysis tests and maximum density tests.

**Design Engineer for Road Projects.** Duties include: horizontal and vertical geometric design, developing typical sections, designing curb ramps per ADA standards, permanent pavement marking and permanent signing design, sign foundation design, plan development, and cost estimating.

**Performing Load Ratings of Bridges Based on MDOT, ODOT, INDOT and AASHTO Standards.** Bridge types included multi-beam concrete, steel and timber bridges, steel truss bridges, concrete arch bridges, masonry arch bridges and culverts.

### Professional Experience:

EFI Global, Inc., Owosso, MI, Structural Engineer, 2015 - Present  
DLZ, Inc., Lansing, MI, Structural Engineer I-III, 2008 – 2015  
Soil & Material Engineering, Inc. (SME) Lansing, MI, Engineering Technician (Intern) 2006-2007

### Specialized Education:

Building Envelope Specialist II, EFI Global, 2016  
Ladder and Lift Safety, EFI Global, 2016  
Materials Acceptance Process Training, American Council of Engineering Companies of Michigan, 2015  
Field Manager, RNS Consulting, 2015  
Introduction to Urban Green Stormwater Solutions, Contech Engineered Solutions, 2014  
AASHTO Design-Rating User Group Meeting, AASHTO & MDOT, 2014



Accelerated Bridge Construction/Structural Slide and Move Workshop, MDOT & WesternMichigan University, 2013

FHWA-NHI-130055 Safety Inspection of In-Service Bridges, FHWA & NHI, 2013

Accelerated Bridge Construction & Prefabricated Bridge Elements & Systems Exchange, Western Michigan University, 2012

Load Rating of Highway Bridges, ASCE, 2010

FHWA-NHI-130082 – LRFD for Highway Bridge Substructures and Earth Retaining Structures, FHWA, NHI & MDOT, 2009

**Education:**

Bachelor of Science, Civil Engineering, Michigan State University, East Lansing, MI, 2008