



## John M. Ludwig, PE

Vice President Engineering

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**Education:** B.S.A.E., Cornell University, 1981

**Registrations:** Professional Engineer: PA and 20 additional states

**Years of Experience:** 36      **Years with Firm:** 14

**Affiliations & Memberships:** AREMA  
American Society of Civil Engineers

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### ***Professional Experience:***

John's primary function is to provide expertise in the area of structural design and analysis for bridges and building structures.

During his years as a Professional Engineer, he has obtained diverse experience in project management, design, manufacturing and construction. Most of his extensive structural experience was gained while employed for ten years as the Senior Engineer for one of the country's largest bleacher and stadium contractors.

Mr. Ludwig is a registered Professional Engineer in 45 states.

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### ***Project Experience:***

#### **Berks County Redevelopment Authority – Reading, Pennsylvania**

*Bridge Inspections and Evaluation* – Provided inspection of all bridges and advised county, prior to purchase of railroad by Berks County Redevelopment Authority. Also inspected low overhead clearance bridge struck by tractor trailer and estimated repair cost for insurance settlement.

*Boyertown Grade Crossing Replacement* – Provided plans and specifications for key grade crossing replacement project. Conducted competitive bid process in conjunction with Berks County purchasing department.

#### **Western New York & Pennsylvania Railroad**

*Emergency Washout Bridge Replacement* - Designed and supervised the emergency replacement of a washed out bridge in Friendship, New York. Specific accomplishments include obtaining permits, design of new bridge abutment, procurement and evaluation of a used bridge and full construction. Bridge was replaced and in use within one week from start of construction.

*Keating Summit Bridge Rehabilitation* - evaluated Railroad owned highway overpass bridge closed down by Pennsylvania DOT, proposed rehabilitation plan including repairs to structure and replacement of concrete deck with lighter timber deck. Bridge re-opened within 6 months of involvement.

*Misc. Bridge Repair Projects*- Provided technical assistance to Railroad and bridge contractor on repairs to bridges in Corry, PA, Jamestown, NY and Falconer, New York.



### **West Virginia State Rail Authority, Moorefield, West Virginia**

John has performed the following services for this client:

*Elkins Tunnel Inspection and Repairs* – Provided engineering services to evaluate a 100 year old, 1800 feet long timber lined tunnel through mountain east of Elkins, WV and oversee repairs. Repairs included the design of steel support frames, use of rock anchors, super-lightweight concrete backfill and polyurethane grouting.

*2007 Bridge Inspections* - Inspection of all bridges which includes 34 (timber and steel) on the South Branch Valley Railroad and 35 (mainly steel) on the West Virginia Railroad.

*Clifford Run Bridge Endwall and Sidewall Replacement using Gabion Baskets* – Design replacement for failing timber walls using gabion basket construction.

*Durgoon Creek Bridge Repair Recommendations* – Provide cost estimate and repair recommendations to upgrade timber bridge over Durgoon Creek, Petersburg WV.

*Durbin Greenbrier Valley Railroad* – Construction observation of abutment replacement and overall bridge inspection for bridge over West Fork of Greenbrier River, Durbin WV.

### **Meridian Southern Railroad, Meridian Mississippi**

Inspection of 86 bridges, including timber, steel truss and concrete arch bridges. Inspections in 2005 and 2008 included reports and recommendations for repairs and upgrades.

### **Morristown and Erie Railroad, Morristown, New Jersey**

Provided detailed bridge inspection and component measurements required for bridge rating of a 100-year old bridge over the Amtrak Northeast Corridor. Constructed a computer model of the bridge using STAAD Pro structural software for in-depth analysis. Numerous locomotive and car sizes and configurations were run across the bridge in the computer model. Provided design for upgrading bridge to 286 ton capability.

### **Owego & Harford Railroad, Owego New York**

Provided New York State mandated annual inspections of all railroad bridges in 2003 thru 2006. Provided emergency inspection and evaluation of a partially washed out abutment and bridge approach over Owego Creek. Made recommendations for approach slope stabilization. Provided cost estimates to FEMA for permanent repairs.

### **Arcade & Attica Railroad, Arcade New York**

Provided yearly New York State mandated inspections of all railroad bridges from 2003 thru 2010. Evaluated the extent of damage of an old truss bridge that was struck by a vehicle. Provided emergency inspection and rating for a damaged bridge for continued use until repairs were made. Provided bridge rating for before and after conditions. Recommended bridge repairs.

### **Railroad Unloading Pits**

Designed rail car unloading pits for gravel and aggregate materials for Aggregate Industries in LaPlata, Maryland and S.J. Anderson Construction Company in Philadelphia, Pennsylvania. Design included the pit and abutments as well as bridge components over the pit. Provided designs and design calculations to Class 1 carriers for approval.

John has training and education in Part 237 “Bridges” through the following coursework and seminars:

### ***Specific Railroad Bridge Training:***

Railroad Bridge Rating Course, sponsored by AREMA in 2003

Railroad Bridge Engineering, sponsored by University of Wisconsin in 2003

Timber Railroad Bridges, sponsored by the University of Tennessee in 2006

Steel Railroad Load Rating, sponsored by AREMA in 2008



American Railway Engineering and Maintenance of Way Association (AREMA) Conferences – Attended in 2003, 2005, 2007 and 2009, attending the specific “Structures Track” seminars at these conferences. These conferences included speakers from the Federal Railroad Administration, updating the specific FRA requirements for bridge inspections and Bridge Management Programs before and during the implementation of the Railroad Safety Improvement Act of 2008 which eventually become known as 49 CFR Part 237.

American Short Line and Regional Railroad Association (ASLRRA) Annual Conventions 2012 and 2013 as an attendee and exhibitor. For the 2012 Annual Conference, John was honored with the request to be a speaker. John gave a presentation titled “Bridge Repair and Maintenance – Inexpensive, Simple and Safe Repairs”.

### ***General Bridge Training:***

The International Bridge Conference, held annually in Pittsburgh, PA. John has attended in 2004, 2006, 2008, 2010 and 2012, updating his knowledge and attending as many seminars as possible during the three-day events.

Federal Highway Administration (FHWA) National Bridge Inspection Standards two week course plus additional State of Pennsylvania supplemental requirements, sponsored by the Pennsylvania Department of Transportation in February 2011. **John is a Certified Bridge Safety Inspector (CBSI) in addition to being a Professional Engineer licensed in 45 states.**

Federal Highway Administration (FHWA) National Bridge Inspection Standards and State of Pennsylvania supplemental requirements refresher course, June 2013, required to keep CBSI certification current.

