



JOSEPH K. RIDDLE, P.E., S.E.
SENIOR CONSULTANT

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Mr. Riddle is a Senior Consultant at ESi. He specializes in structural analysis and design, and the assessment, investigation, and repair of damaged or distressed structures. Mr. Riddle has worked on a wide variety of projects including residential, commercial, and industrial buildings, with a variety of material types including wood, steel, heavy timber, light gage metal, conventional reinforced concrete, precast concrete, and masonry. In many cases, Mr. Riddle has designed retrofits or repairs for structures that he has assessed. He has extensive experience in the detailing of repairs to fit unique or complex situations. Additionally, Mr. Riddle has performed numerous investigations related to various components of the building envelope. He has also performed research involving long term structural monitoring of integral abutment bridges and detailed finite element modeling.

Mr. Riddle also volunteers his time as a judge at the annual regional and national level Student Steel Bridge Competitions sponsored by the American Institute of Steel Construction (AISC). He also actively pursues opportunities to speak to students about possible careers in the field of engineering. Mr. Riddle is a member of multiple committees related to the field of structural engineering, including the ASTM International Committee on the Performance of Buildings and ASCE Committees on the Structural Condition Assessment of Existing Structures and on Design Loads on Structures during Construction.

Areas of Specialization

- Structural Analysis
- Structural Design
- Repair Design
- Retrofit and Strengthening Design
- Structural Condition Assessment
- Damage Assessment
- Evaluation of Cause and Extent of Damage
- Building Envelope Assessment
- Emergency Response and Shoring Design
- Building Code Analysis
- Structural Health Monitoring
- Construction Administration

Education

M.S., Civil Engineering (Structural), University of Illinois at Urbana-Champaign, 2014
B.S., Civil Engineering (Structural/Transportation), University of Illinois at Urbana-Champaign, 2012

Licensed Professional Engineer (P.E.)

State of Illinois	License No. 062.069542
State of Indiana	License No. PE11800640
State of Wisconsin	License No. E-46836
State of Florida	License No. 87574

January 2020



Licensed Structural Engineer (S.E.)

State of Illinois License No. 081.008109

Professional Affiliations

American Society of Civil Engineers (ASCE)

Member of ASCE 11 Guideline for Structural Condition Assessment of Existing Buildings Committee

Member of ASCE 37 Design Loads on Structures during Construction Committee

American Institute of Steel Construction (AISC)

Volunteer Judge for Regional and National Student Steel Bridge Competitions

ASTM International

Member of ASTM E06 Technical Committee on Performance of Buildings

Member of ASTM E06.13 Technical Subcommittee on Structural Performance of Connections In Building Construction

Training and Certifications

OSHA 30-hour Construction Safety Training

OSHA Suspended and Supported Scaffold Training

Positions Held

Engineering Systems Inc., Aurora, Illinois

Senior Consultant – Civil/Structural Engineering, 2018 - Present

Senior Staff Consultant – Civil/Structural Engineering, 2017 - 2018

Staff Consultant – Civil/Structural Engineering, 2014 – 2017

University of Illinois, Urbana, Illinois

Graduate Research Assistant – Dept. of Civil & Environmental Engineering, 2012 – 2014

Engineering Systems Inc., Aurora, Illinois

Engineering Intern – Civil/Structural Engineering, Summer 2012

Technical Publications and Presentations

Mesyef, K., **Riddle, J.**, et. al. "Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant." Eighth Congress of Forensic Engineering Conference Proceedings. November 2018.

Mesyef, K. and **Riddle, J.** "Evaluation and Repair of Tornado Damage to a Large Manufacturing Plant." Presented at Eighth Congress of Forensic Engineering. November 2018.

LaFave, J., Fahnestock, L., Brambila, G., **Riddle, J.**, et. al. "Integral Abutment Bridges under Thermal Loading: Field Monitoring and Analysis." Illinois Center for Transportation Research Report No. FHWA-ICT-17-017, August 2017.

LaFave, J., **Riddle, J.**, Jarrett, M., Wright, B., Svatora, J., An, H., and Fahnestock, L., 2016 "Numerical Simulations of Steel Integral Abutment Bridges Under Thermal Loading." *Journal of Bridge Engineering*. Volume 21, Issue 10, October 2016.

LaFave, J., Fahnestock, L., Wright, B., **Riddle, J.**, et. al. "Integral Abutment Bridges under Thermal Loading: Numerical Simulations and Parametric Study." Illinois Center for Transportation Research Report No. FHWA-ICT-16-014, June 2016.

Riddle, J. "Integral Abutment Bridges: Behavior, Design, and Ongoing Research." Presented at SEI Day 2015, Structural Engineering Institute, St. Louis Chapter, October 16, 2015.

LaFave, J., Fahnestock, L., Jarrett, M., Wright, B., **Riddle, J.**, Svatora, J., 2015. "Numerical Simulations and Field Monitoring of Integral Abutment Bridge Behavior." ASCE Structures Congress Proceedings, April 2015.

LaFave, J., Fahnestock, L., Brambila, G., **Riddle, J.**, et. al. "Integral Abutment Bridges under Thermal Loading: Field Monitoring and Analysis." Research Report No. FHWA-ICT-17-017, August 2017.