



PAUL J. AXTELL, P.E., D.GE
Senior Principal Engineer



Professional Experience

Joined DBA 2007

Total years of experience: 19

Geotechnical Engineer, U.S. Army Corps of Engineers, Kansas City, Missouri (2002-2007)

Geotechnical Consultant, Fugro Consultants, Houston, Texas (2001-2002)

Education

M.S., Civil Engineering, University of Texas, 2001

B.S., Civil Engineering, University of Missouri, 1999

Professional Licensure and Certifications

Licensed Professional Engineer in Kansas, Missouri, Minnesota, Wisconsin, Illinois, and Montana

Diplomate, Geotechnical Engineering – The ASCE Academy of Geo-Professionals

Fields of Expertise

Design, construction, and load testing of driven piles, drilled shafts, and other deep foundations for bridges

Slope stability and excavation stability analyses in soil and/or rock

Ground improvement design

Major Projects

Gordie Howe International Bridge – Detroit, MI (2018-present) – Expert Foundation Design and Load Test Engineer representing the Owner. When completed, the cable-stayed bridge crossing the international boundary will have a 2,800-ft main span and will be one of the longest bridges in North America. Foundations include large diameter drilled shafts socketed into hard limestone bedrock, including two full-scale foundations load tests using the bi-directional method.

Rainey River Bridge – Baudette, MN (2017-2020) – Lead Foundation Designer for the large-diameter drilled shaft foundations supporting the plater girder bridge. This international border crossing bridge is founded in very dense glacial till and a full-scale bi-directional load test was performed.

US 52 – Illinois 64 Mississippi River Bridge – Savanna, IL (2012-2017) – Expert Foundation Consultant to structural engineer for design and construction of the large-diameter drilled shafts socketed into limestone bedrock and novel use of a waterline footing as opposed to a traditional cofferdam and submerged cap.

New Mississippi River Bridge – Red Wing, MN (2015-2018) – Lead Foundation Designer for the large-diameter drilled shaft foundations with sandstone rock sockets supporting a steel box girder bridge.

TH53 over Rouchleau Mine Pit – Virginia, MN (2014-2017) – Lead Geotechnical Designer for the large-diameter micropile foundations supporting a 250-ft tall plate girder bridge across the currently inactive and flooded iron ore pit. Large scale dynamic soil and rock stability analyses were performed as well as extensive rock fall investigation and mitigation.

Sellwood Bridge over Willamette River – Portland, OR (2013-2016) – Lead Geotechnical Designer for the drilled shaft foundations supporting a concrete arch bridge spanning the Willamette River. The temporary, full-length segmental casing utilizing the oscillator was used to construct the drilled shafts socketed into Troutdale Formation or hard basalt.

St. Croix River Bridge – Stillwater, MN (2012-2017) – Lead Geotechnical Designer for the pre-bid load test program and the foundation design of the extradosed bridge using large diameter drilled shafts socketed into sandstone bedrock.

Hurricane Deck Bridge – Lake of the Ozarks, MO (2011-2013) – Lead Geotechnical Designer for bridge replacement utilizing large drilled shafts socketed into dolostone bedrock through 80 feet of water.

PAUL J. AXTELL, P.E., D.GE

Senior Principal Engineer

New Mississippi River Bridge – Hastings, MN (2010-2013) – Lead Geotechnical Designer for the tied arch bridge foundations and column-supported embankment (CSE). Bridge foundations include large diameter open-ended pipe piles, drilled shafts with rock sockets, and spread footings bearing on dolostone bedrock.

I-70 Mississippi River Bridge – St. Louis, MO (2009-2012) – Geotechnical Designer of Alternate Technical Concept for cable-stayed river bridge employing large diameter drilled shafts socketed into hard limestone bedrock and full-scale axial static load test

Lafayette Bridge – St. Paul, MN (2009-2014) – Lead Geotechnical Designer for the steel girder Mississippi River Bridge utilizing large diameter driven pipe piles.

Christopher S. Bond Bridge – Kansas City, MO (2006-2009) – Geotechnical Designer for cable-stayed Missouri River crossing, with foundations including drilled shafts socketed into shale bedrock, base-grouted drilled shafts, and H-piles.

Professional Memberships

Deep Foundations Institute (DFI) - Chairman, Drilled Shaft Committee
ASCE Academy of Geo-Professionals - Board of Trustees (2020-2022)

Selected Publications and Presentations

Axtell, P.J., Graham, D.S., and Jackson, J (2018). "Drilled Shaft Difficulties and a Micropile Solution," *Proceedings: Deep Foundations Institute 43rd Annual Conference*, pp. 93-103.

Axtell, P.J., Graham, D.S., and Bailey, J.D. (2017). "Statnamic Load Testing on a 406 MM (16 IN) Diameter Micropile," *Proceedings: 13th International Workshop on Micropiles*, Vancouver, BC, pp. 1-13.

Glinski, N.E., Axtell, P.J., and Lopez, M. (2016). "Sellwood Bridge: Foundation Engineering to Optimize Construction," *Proceedings: The 33th International Bridge Conference*, IBC 16-53. National Harbor, MD.

Axtell, P.J., Muchard, M.K., and Lamb, R.A. (2015). "A Summary of Load Test Results on Large Diameter Open-Ended Pipe Piles in Minnesota," *Proceedings: Deep Foundations Institute 40th Annual Conference*, pp. 169-178.

Brown, D.A., Axtell, P.J., and Dapp, S.D. (2015). "A Foundation Engineering Trip Down the Mississippi," *GEOSTRATA*, Geo-Institute and the American Society of Civil Engineers, January/February 2016, pp. 28-33.

Axtell, P.J. and Siegel, T.S. (2014). "Sustainability and Consideration of the Re-Use of Foundations for the Hurricane Deck Bridge," *Proceedings: Deep Foundations Institute 39th Annual Conference*, pp. 163-170.

Axtell, P.J., Brown, D.A., Lamb, R.A., D.G., Lamb, R.L., Graham, D.S., and Ryan, W.G. (2013). "St. Croix Bridge, Minnesota: The Influence of Construction on the Axial Resistance of Drilled Shaft Foundations in Weak Sandstone," *Proceedings: Deep Foundations Institute 38th Annual Conference*, pp. 125-133.

Axtell, P.J. and Brown, D.A. (2011). "Case History: Foundations for the New Mississippi River Bridge, St. Louis," *J. of Deep Foundations Institute*, Vol. 5, No. 2, pp. 3-15.

Axtell, P.J., Brown, D.A., and Thompson, W.T (2009). "Drilled Shaft Foundations for the kcICON Missouri River Bridge," *Proceedings: Deep Foundations Institute 34th Annual Conference*, pp. 3-12.

Axtell, P.J. and Stark T.D. (2008). "Increase in Shear Modulus by Soil Mix and Jet Grout Methods," *J. of Deep Foundations Institute*, Vol. 2, No. 1, pp. 11-21.

Axtell, P.J., Loehr, J.E., and Jones, D.J. (2006). "Case History: Multiple Axial Statnamic Tests on a Drilled Shaft Embedded in Shale," *Proceedings: Deep Foundations Institute 31st Annual Conference*, pp. 201-210.