

Carlos A. Merino Calvo, P.E., M.S., ENV SP., A.M. ASCE

Address: 4 Park Street Unit 3, Brookline, MA 02446

Email: camerca91@gmail.com Cell phone: (816) 282-4290

OBJECTIVE

Structural Project Engineer with +4 years of experience working on transportation infrastructure projects for several East Coast (MA, CT, PA) and Midwest (MO, IL, IA, SD) clients. I am seeking a position as a Structural / Project Engineer in bridge design. I want to expand my knowledge in Bridge and Structural Design and areas such as Accelerated Bridge Construction, Scheduling, Project Management, Proposal Preparation, Risk Analysis, and Business Development.

PROFESSIONAL CERTIFICATIONS

- **Massachusetts Professional Engineering (PE) Certification** (No. 56023), December 2020
- **Missouri Engineering Intern (EI) Certification** (No. 2017015872), May 2017
- **Envision Sustainability Professional (ENV SP)**, March 2017

ACADEMIC INFORMATION

- **M.Sc. Civil / Structural Engineering, St. Louis University (ABET)**, May 2016, GPA: 4.0
- **B. Sc. Civil Engineering, Universidad Politécnica de Madrid (ABET)**, June 2014, Spain GPA: 7.17 Notable

SUMMARY OF SKILLS

- Strong skills in structural analysis, reinforced and prestressed concrete design, and steel design.
- Experience in bridge design in small to large projects in several states (MO, IL, IA, SD, CT, MA, PA).
- Experience with AASHTO LRFD and MassDOT.
- Experience using Microsoft Office, MathCAD, Structural Analysis (STAAD, ABAQUS), Bridge Design (LEAP, MDX, SIMON, AASHTOWare, BXLRFD, ABLRFD, LPile, FB Multiplier), and CADD (Microstation, AutoCAD) software.
- Experience mentoring junior staff. Excellent communication skills and ability for team work.

PROFESSIONAL EXPERIENCE

CDR Maguire Inc., Milton, MA (July 2018 – Present): **Structural Engineer II**, *Transportation Business Line*

- Structural Project Engineer responsible for design and project deliverable tasks with limited supervision and guidance, including design and checking of different superstructure and substructure elements, bridge ratings, quantities, cost estimates, special provisions, and report writing. Small to large structures.
- Application of bridge design (LEAP, BXLRFD, ABLRD, AASHTOWare) & CADD (AutoCAD & Microstation) software.
- Main projects and clients:
 - MassDOT (Turnpike), I-90 Superstructure Replacements, Southborough & Westborough, MA - Acted as Project Engineer responsible for preparation of draft technical memorandum with preliminary study of alternatives / preliminary draft BTC; preliminary design of the proposed abutments and superstructures for four bridges using ABLRFD and AASTHOWare; preparation of four Preliminary Structures Reports and Sketch Plans using AutoCAD.
 - Rehabilitation of Bridge No. 03023 Sigourney Street Bridge, Hartford, CT – Project Engineer responsible for design of proposed superstructure retrofits; modeling of all bridge single-span models with AASTHOWare; deck design; preparation of the Rating Report; execution of plans using CAD; preparation of quantities; and bearing design.
 - MassDOT, West Oxbow Rd. Bridge Replacement over Wider Brook, Charlemont, MA – Structural Engineer for one single span bridge with NEXT 32D beams and stub abutments. I was responsible for design of beams, abutments and bearings using LEAP. I was also responsible for plans preparation using AutoCAD.
 - ConnDOT, Bridge No. 05587 SR 528 (Turnpike Rd.) over Gillettes Brook, Somers, CT - Structural Engineer for one 30-ft x 10-ft clear opening precast concrete frame. The project included full design of the precast concrete frame using BXLRFD and C.I.P. concrete wingwalls using ABLRFD software. I was also responsible for preparation of plans using Microstation, quantities, and special provisions.
 - PennDOT, State Route 0356 Section F10 Culverts, District 12 - Structural Engineer for three precast concrete box culverts. I was responsible for the full design of the three precast concrete boxes using BXLRFD and precast concrete wingwalls using ABLRFD software. I was also responsible for preparation of construction plans for two of the three culverts using Microstation and quantities in one of the three culverts.

HDR Inc., Chicago, IL (August 2017 – June 2018): Bridge EIT, Bridges & Structures Business Line

- Structural Engineer responsible for structural design, plan development, and preparation of quantities and cost estimates for large bridge substructures & superstructures. Providing technical support to project and lead structural engineers.
- Application of structural design (MDX, LPILE, LEAP, FB Multiplier) and CADD (Microstation) software.
- Main projects and clients:
 - Mile-Long Bridge (MLB) Final Design (Illinois Tollway Authority) - Engineer responsible for the deck design and preliminary substructure design for the South Bound Bridge (multiple prestressed concrete beam spans on multi-column piers with drilled shafts). I developed FB Multiplier and LEAP models for multiple piers with and without crash walls. I also used Microstation for development of construction plans. Project was at first design submittal stage.
 - Eugene Sawyer Water Purification Plant (ESWPP) Façade & Roof Replacement- Structural engineer in charge of production of structural plans and details with Microstation, site inspections / visits, specifications, quantities, final cost estimate, and QA/QC of construction plans. Assisting directly the project PM for final submittal (100%) and cross-discipline coordination with architects and MEP. Project was at 100% design submittal stage.

HR Green Inc., St. Louis, MO & McHenry, IL (July 2016 - July 2017): Staff Engineer I, Highways Department

- Main responsibilities: structural design, plan development, and preparation of technical reports and cost estimates of large & medium size bridges and other small structures such as wingwalls, culverts, retaining walls, overhead sign trusses and light towers.
- Application of structural design (MDX, LPILE, RC Pier, STAAD PRO, SIMON) and CAD (Microstation) software.
- Main projects & clients:
 - Iowa Department of Transportation, I-35 / I-80 / Iowa 141 Interchange Corridor, Rider Corner Ramp B Flyover Bridge - Polk County, IA (construction cost > 15 mil.) - Structural Engineer responsible for design of continuous welded plate girders using MDX and SIMON and hammerhead piers (1 thru 5) using Iowa DOT spreadsheets and LEAP. I was responsible for preliminary design of the first unit (2 – 195 ft. spans). Analyzed fixity of piers along the structure based on global loads distribution analysis. Project was at first design submittal stage.
 - Louisa County, County Highway X99 Bridge over Iowa River - Wapello, IA - Structural engineer on this multi-span 1200 ft bridge project over the Iowa River responsible for preliminary analysis of girder type alternatives comparing prestressed and steel girder (using SIMON) options, span layouts, quantities and cost calculations. I was also responsible for preparation of bridge type-study for review by PM and final alternative selection by the client. Project was at type-study stage.
 - South Dakota Department of Transportation, S.D. 37 Bridge Reconstruction over James River - Beadle County, SD - Structural Engineer on this bridge replacement project with a new 4 –span bridge with prestressed beams of 290 ft overall length. My responsibilities included complete beam and deck design, preliminary design of abutments and piers using LEAP and preparation of preliminary engineering plans. Project was at first design submittal.

Saint Louis University, St. Louis, MO (August 2014 – May 2016): Graduate Assistant, Department of Civil Engineering

- Research Assistant - worked on the project "Effectiveness of Exterior Beam Rotation Prevention Systems for Bridge Deck Construction" (Illinois DOT) assisting on field, design, cost and project management activities; completed M.S. thesis within the scope of the project. Application of Abaqus software and AutoCAD.
- Teaching Assistant - Statics (Fall 2015), Foundation Engineering (Fall 2015), Geotechnical Engineering (Spring 2016); FE Review Course Instructor (Spring 2016).

PUBLICATIONS & CONFERENCE PAPERS

Ashiqzaman, Md., **Merino Calvo, C.**, Hui, L., Ibrahim, A., Lindquist, W., Hindi., R. (2017). "Effectiveness of Different Bracing Systems to Prevent Exterior Girder Rotation during Bridge Deck Construction." *Elsevier Journal of Engineering Structures*, Vol. 142, July 2017, pp 272-289.

Ashiqzaman, M., Hui, L., Schmeltz, J., **Merino C.**, Bozkurt, B., Ibrahim, A., Lindquist, W., Hindi., R (2016). "Effectiveness of Exterior Beam Rotation Prevention Systems for Bridge Deck Construction". *Rep. No. FHWA-ICT-16-015*, Illinois Dept. of Transportation, Springfield, IL 2016.

Merino, C., Ashiqzaman, Md., Ibrahim, A., Lindquist, W., Hindi., R (2015). "Overview on Exterior Girder Rotation Prevention Systems due to Overhang Construction Loads on Steel Girder Bridges". *Joint Meeting of Spanish Scientists in US*, Washington D.C., September 17-19.