

Tate Fairbanks

Civil/Structural PE

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Career summary

Mr. Fairbanks has 5 years of transportation engineering experience with a focus on civil and structural engineering. He has worked on projects in the \$10K to \$100M range from conceptual design to construction. Mr. Fairbanks has provided structural design and layout of bridge superstructures, substructures, retaining walls, concrete box culverts and miscellaneous structures for DOT and local municipality projects across the country. He is proficient in MicroStation, AutoCAD, Larsa 4D, Bridge Rating 6.7, L-Pile, PGSuper and Conspan.

Employment history

Wilson & Company, Inc. Engineers & Architects, Civil Engineer, Denver, Colorado, 2017 - 2018
Amec Foster Wheeler Environment & Infrastructure, Engineer Intern, Denver, Colorado, 2013 – 2017
CDOT Region 3, Bridge Enterprise, Engineer Intern, Eagle, Colorado, 2012

Education

MS, Civil Engineering, University of Colorado, Boulder, Colorado, 2013
BS, Architectural Engineering University of Colorado, Boulder, Colorado, 2011

Professional qualifications

Professional Engineer, Colorado, PE.0053434

Bridge Engineering

- ▶ **Bridge Engineer: Prior Firm Experience. Triumph Blvd Bridge over I-15, UDOT, Lehi City, Utah.** Project involvement included final design of two span extending Triumph Boulevard over I-15 as part of the Tech Corridor project in Lehi City, Utah. Design structure consisted of 154 foot wide by 270 foot long two span bulbtee girder bridge on stub abutments with pipe piles.
- ▶ **Engineering Intern: Prior Firm Experience. 27th Street Bridge, City of Glenwood Springs, Glenwood Springs Colorado.** Project involvement included alternatives analysis, preliminary design, final design and plan production. Replaced a structurally deficient and functionally obsolete 2-lane crossing over the Roaring Fork River in Glenwood Springs using bridge slide construction. Designed structure consisted of a 33 wide by 190 foot single span plate girder superstructure on stub abutments with micropiles.
- ▶ **Engineering Intern: Prior Firm Experience. Gillespie Gulch Realignment, Town of Jamestown, Jamestown Colorado.** Responsible for roadway realignment of the channel and connecting roads, cost estimates and shop drawing review. The FEMA funded project consisted of project management, design services, and construction management and inspection to permanently repair roads, drainage ways, stream restoration, 220 foot long culvert, bridge, micropile wall, water distribution and treatment system.
- ▶ **Engineering Intern: Prior Firm Experience. US 6 over Garrison Street, Region 1 of the Colorado DOT, Lakewood Colorado.** Responsible for drafting, cost estimates and shop drawing review. The project consisted of replacing a six lane, three span bridge with an 80-foot single span bridge comprised of adjacent prestressed box beams supported by integral abutments founded on H-piles. Phased construction was required to maintain six lanes of traffic during construction. To accomplish this the bridge was constructed in 3 phases with the use of temporary MSE Wall approaches and a temporary bridge
- ▶ **Engineering Intern: Prior Firm Experience. Grand Avenue Pedestrian Bridge, Region 3 of the Colorado DOT, Glenwood Springs Colorado.** Project involvement included drafting, preliminary structure design, final design, and construction phasing. Design consisted of a 16 foot wide by 600

foot 5 span steel box girder pedestrian bridge replacement spanning over a frontage road, UPRR, the Colorado River, I-70 and commercial developments. The project included an elevator tower, stair case, landing structure, and several retaining walls. The CMGC project required coordination with consultants and contractors for concurrent construction of the adjacent SH82 four lane bridge

- ▶ **Engineering Intern: Prior Firm Experience. Bayfield Twin Bridges, Town of Bayfield, Bayfield Colorado.** Work involvement included substructure design check, cost estimates and drafting. The project consisted of replacing two bridges in series, phased to allow access for local residents during construction. The Los Pinos River bridge include a 42 foot wide by 200 foot long two span PS adjacent box girders on elastomeric bearing pads supported by semi-integral abutments on caissons. The overflow channel bridge consisted of a 42 foot wide by 100 foot single span bulbtee superstructure on elastomeric bearing pads supported by fully-integral abutments on caissons.
- ▶ **Engineering Intern: Prior Firm Experience. Various Bridges Rehabilitation, Region 3 of the Colorado DOT, Western Colorado.** The project consisted of investigate three structurally deficient bridges for rehabilitation including bridges over Interstate 70, UPRR and a river crossing. Performed drafting, plan review, quantities and cost estimates.
- ▶ **Engineering Intern: Prior Firm Experience. Brush Creek Bridge, Region 3 of the Colorado DOT, Eagle Colorado.** Work involvement included drafting, plan review, quantities and cost estimates. The existing structure was determined to be functionally obsolete due to narrow shoulders and inadequate vertical curve. The project consisted of replacing a two lane bridge over Brush Creek, concrete box culvert and MSE walls along US 6 near Eagle, Colorado. The 43 foot wide by 120 single span bulbtee superstructure on elastomeric bearing pads supported by fully-integral abutments on H-piles.
- ▶ **Engineering Intern: Prior Firm Experience. Willow Creek Box Culvert, Region 5 of the Colorado DOT, Craig Colorado.** Work involvement included drafting, structure selection, Accelerated Bridge Construction feasibility and quantities. The project consisted of replacing a functionally obsolete bridge with a phased concrete box culvert.
- ▶ **Engineering Intern: Prior Firm Experience. SR177 Haul Road Bridge, Asarco Ray Mine, Superior Arizona.** Work involvement included drafting and quantities for the preliminary design of a haul road bridge. The two lane bridge requested by Asarco measured 215 feet wide to permit two 660 ton haul trucks to cross over SH 177 with adjacent lanes for service traffic on either side. Project challenges included developing a barrier system to prevent haul trucks and debris from reaching the highway below.
- ▶ **Engineering Intern: Prior Firm Experience. East Lake Creek Bridge Replacement, Region 3 of the Colorado DOT, Edwards Colorado.** Work involvement included, preliminary structure selection, final design, drafting, detour phasing, cost estimating and shop drawing review. The project consisted of a 2-lane crossing over East Lake Creek near Edwards with an adjacent temporary bridge. Structure consisted of 43 foot wide by 100 foot single span bulbtee superstructure using elastomeric bearing pads supported by a fully integral abutment on H-piles.
- ▶ **Engineering Intern: Prior Firm Experience. Bridge Enterprise Faster Bridges, Region 3 & 5 of the Colorado DOT, Western Colorado.** Work involvement included cost estimates, drafting, detour phasing, and cost estimating. The project consisted of a 19 bridges across the western slope with repairs to each superstructure to prolong each structures serviceability.
- ▶ **Engineering Intern: Prior Firm Experience. Chacao Bridge, T.Y. Line International, Chacao Chile.** Work involvement included CAD drafting, quantity calculations and preliminary foundation design. The bridge, if completed would be the largest suspension bridge in South America. The structure has a total length of 2,635 m consisting of 3 spans with the longest span 1,100 m long. The bridge carries four lanes of traffic with utilities and a service trolley below the deck.
- ▶ **Engineering Intern: Prior Firm Experience. McCabe Creek Box Culvert, Region 5 of the Colorado DOT, Pagosa Springs.** Work involvement included drafting, utility coordination, preliminary design, quantities, structure selection, detour layout and construction phasing. The project consisted of replacing functionally obsolete culverts with a single span 2 lane bridge along Main Street. The project required extensive channel realignment with several retaining walls to minimize ROW impacts.

- ▶ **Engineering Intern: Prior Firm Experience. I-70 Frontage Road over Colorado River, Region 3 of Colorado DOT, Dotsero Colorado.** Responsible for reviewing plan sets, verifying cost estimates, site condition documentation and identify constructability concerns. A FASTER funded bridge located north of Dotsero along US 6 over the Colorado River. The structure improvements included a round-a-bout, pedestrian trail and a two-lane bridge to bring the structure up to current geometric standards.
- ▶ **Engineering Intern: Prior Firm Experience. US40 over East Elk River, Region 5 of the Colorado DOT, Steamboat Springs Colorado.** Responsible for reviewing plan sets, consultant reports and cost estimates. A faster funded bridge located US 40 west of Steamboat over East Elk River. The structure improvements included a two-lane bridge with an adjacent temporary detour structure. A meandering channel with increasing flow constraints resulted in hurried design and construction.