Centennial Engineering, Inc.

Structural Engineering

Overview

Structural engineering requires much the same technical skill and discipline as do the other engineering disciplines, but it requires that the engineer design a project that is not only buildable, but also safe, stable, and affordable. In fact, structural design often entails the added requirement that the design be as pleasing to the eye as it is functional.

Our structural team has to its credit major highway, roadway, railroad, and bridge structures, as well as small stream and river crossings. Our structural design experience includes projects as complex as freeway interchanges, others as simple as pedestrian crossings, soundwalls, retaining walls, and drainage culverts. We have worked on new facilities, interchange reconstruction and improvements, bridge replacements, bridge widenings and rehabilitation.

At the core of Centennial's structural design team are two bridge professionals - Mark Post, and JR Mills - whose combined experience represents over 45 years of bridge engineering and design.

Mark Post, PE

Mr. Post has provided civil and structural engineering services for 25 years. This work includes feasibility studies, preliminary and final design, inspection, value engineering, and construction engineering. His design experience includes highway, railroad and pedestrian bridges utilizing a wide variety of structure types including steel box girders, plate girders and rolled beams, monotube support structures, concrete pre-cast pre-stressed girders and cast-in-place, post-tensioned construction. He has a broad based experience in all types of structures, including large multi-story industrial process facility buildings, commercial buildings, railroad facilities and earth retaining systems. Mr. Post also has extensive field experience including construction engineering and value engineering for highway, bridge, large industrial process facilities, and railroad projects.

JR Mills

Mr. Mills has 22 years experience in structural and roadway plans preparation and offers extensive familiarity with federal, state and local drafting standards, procedures, practices and guidelines. His experience includes an assortment of highway structure types, railroad bridges, monotube support structures, and retaining walls. He has contributed to CDOT Staff Bridge User's Group in their efforts to increase productivity and efficiency, and allow for a standardized project plan set output. Mr. Mills recently completed detailing the latest CDOT Standards for Static and Dynamic Sign Monotube Structures, S-614-50 and S-614-60.

Highway Bridges

- Structural Analysis & Design
- Final Bridge Design Plans, Specifications & Estimates
- Bridge Rehabilitation
- Bridge Widening
- Conceptual Design & Economic Analysis
- Structure Type Studies
- Bridge Inspection
- Bridge Condition Assessment
- Bridge Load Ratings
- Structural Evaluations
- Peer Review
- Pedestrian Bridges
- Railroad Bridges
- Construction Management

Special Structures

- DMS Support Structures
- Artwork Structural Analysis
- Mill Foundations
- Tunnel Rehabilitation
- Soil Nail Walls
- Ground Support

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Sample Projects

Skyway Skiway

Skyway Skiway Bridge / Underpass

Location: Breckenridge, CO

Client: Vail Resorts Development Corporation

Description: Working with Stan Miller, Inc. (SMI), Colorado Constructors, Inc. (CCI), and Big R Manufacturing (Big R), CEI brought value engineering to a Vail Resorts project that was over budget and behind schedule in the spring of 2005. Our designs and ability to work closely with our client and their contractor helped this project open a year ahead of schedule and within budget in December 2005. This project was a team success for all participants.

Goose Creek Bikeway/Underpass

Goose Creek Bikeway / Underpass at Foothills Parkway (SH 157)

Location: Boulder, CO

Client: City of Boulder

Description: Design for underpass structure for a multi-use path under State Highway 157 adjacent to a major urban drainage (Goose Creek) and an irrigation canal (Boulder & Left Hand Ditch). Project was developed with a shortened design schedule and required innovative design solution for a difficult site.

28th Street Soil Nail Wall

28th Street, Baseline to Arapahoe Road

Location: Boulder, CO

Client: City of Boulder

Description: Designed various structures including cast-in-place retaining walls, MSE retaining walls, soil-nail walls, a flared box culvert extension and a pedestrian bridge.

Vendette Crossing - SMCR

South Maryland Creek Ranch Bridges & Walls

Location: Silverthorne, CO

Client: Stan Miller, Inc.

Description: South Maryland Creek Ranch (SMCR) is a high visibility, 300-acre residential development intended for annexation into the Town of Silverthorne, CO. CEI is the engineer of record for all the project's civil structures. Our scope of work includes bridge design, retaining wall design and shop drawing review; our Construction Management role for the project includes inspection for pile driving, structural backfill, formwork, reinforcing steel and concrete placement. Key coordination issues involve a steady conveyance of structural requirements to the architect and owner to keep the project on track.

CONTACT

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