

Signal Design

Coast to Coast Signal Engineering's highly experienced engineering staff allows us to provide custom design solutions for any type of signal project, including anything from rather simple designs to some of the most complex interlockings in the country. The signal engineering services we provide our customers helps ensure the safe and expeditious movement of trains across networks of thousands of miles of railroad tracks. Our services include the engineering of both wayside signaling and at-grade highway crossing warning devices. We have provided services to most of North America's Class 1 railroads including the Burlington Northern Santa Fe Railway, CSX Transportation, Santa Fe Railroad and Union Pacific Railroad. Additionally, we have provided services to numerous short-line railroads and several large engineering firms. Coast to Coast Signal Engineering is rated number one against the competition by the Class 1 railroads that have a grading system in place.



COAST TO COAST SIGNAL ENGINEERING IS A FULL SERVICE RAILROAD SIGNAL ENGINEERING FIRM. OTHER SERVICES PROVIDED ARE:

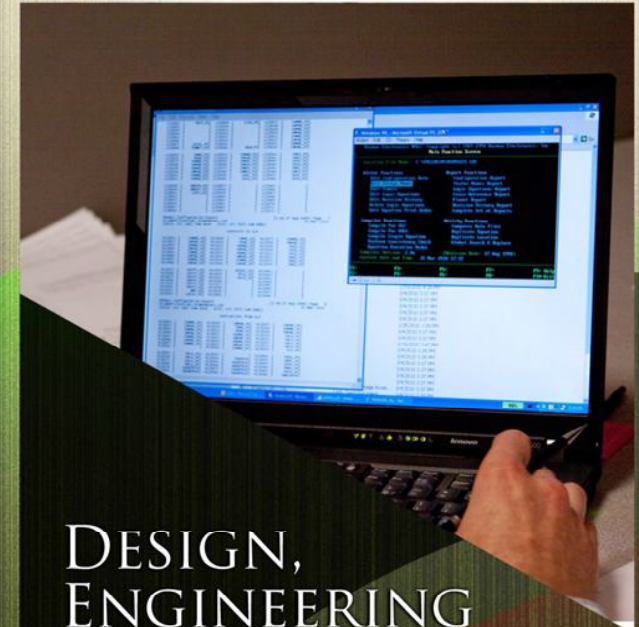
- Railroad yard design.
- Vital & Non-vital programming & simulation.
- Full service wiring shop.
- Construction management.
- Wayside & crossing installation & maintenance.
- Custom Local Control Panels.
- PTC Test Unit/Signal Lamp Simulator.
- Test Lab Simulator.
- Signalman training.
- Signal cutover support.
- Software testing racks.
- Complete test lab facilities for testing all hardware & software applications.
- Hot Box Detector design, engineering & support.



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DESIGN, ENGINEERING & SOFTWARE

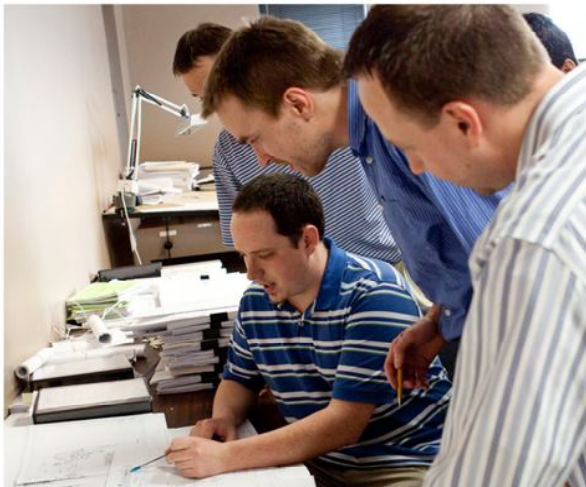


"WHERE QUALITY IS A STANDARD"

PRELIMINARY PROCESS

Signal Design

As with any successful project, Coast to Coast Signal Engineering starts each design with a thorough understanding of the customer's needs and requirements. Before the engineering process even begins we consult with our customers and make recommendations, where applicable, and assist them in determining the best overall approach to ensure the desired end result.



Surveys

Coast to Coast Signal Engineering provides many types of field surveys including Wayside Signal Surveys, New, Existing and Proposed Crossing Surveys, As-Constructed or As-In-Service field surveys, updates and plan markups for both crossing projects and wayside signal design projects. Surveys of existing locations and their compatibility with

CUSTOM SOLUTIONS

the newly mandated PTC systems can also be provided. All information and current field conditions are recorded in order to develop preliminary engineering data sufficient to determine the exact scope of the work needed.

In-Service Testing and Commissioning

Coast to Coast Signal Engineering offers complete testing and commissioning services. From preliminary tests to in-service testing and commissioning of a single location or an entire signal system, our experienced staff of test engineers can help ensure all FRA and railroad rules and regulations are complied with and the system is functioning as designed and intended. We can also provide detailed, step by step cutover (test) sheets for use by the customer or by our own test engineers during cutover. These test sheets also provide a permanent record of all tests made during the preliminary testing as well as during the cut over process.

Material Procurement and Delivery

Our materials group can develop complete bills of materials for any signal project, large or small. We can develop highly accurate estimated bills of material for projects seeking funding and we can provide complete materials listings from approved signal plans. Coast to Coast Signal Engineering can procure materials, perform all pre-assembly and deliver them to the project site ready for installation by either Coast to Coast Signal Engineering personnel or railroad field forces.

PLAN MAINTENANCE



As-Constructed / As-In-Service Plan Revisions

Our as-constructed or as-in-service department can ensure the customer remains in compliance with FRA regulations by ensuring legible and correct signal plans are maintained. By maintaining plans that are up-to-date and accurate, successful future projects are ensured by capturing any changes necessitated during the construction and post-installation life of the signal system.

