

# Civil Engineering Design and Surveying

Coupled with our vast landfill engineering capabilities and amount of experience, EIL's civil engineering design team has provided services to many clients for infrastructure projects. Here's a brief list of our capabilities:

- **Civil and Infrastructure Engineering**
  - Site grading design and earthwork calculations
  - Geometric road design
  - Vertical and horizontal alignment
  - Cut and fill optimization
  - Remote, unpaved access roads for wind farms and other large-scale industrial applications
  - Municipal and subdivision roads and parking facilities
  - Hydraulic calculations including ditch, culvert, and pond sizing
  - Pavement design
  - Railroad crossing design
  
- **3D CAD Earthwork Design**
  - 3D CAD layout, design, and quantity summaries for civil engineering projects including roads, rail corridors, quarries, mines, and storm water management facilities
  
- **Surveying**
  - Topographic surveys
  - Layout staking for construction of roads, subdivisions, rail yards, buildings, water and sewer systems, landfills, and other civil engineering projects
  - Survey and data collection for as-built drawing preparation
  - CAD survey layout data generation and electronic transmission to contractors
  - Construction staking and surveying
  
- **Permitting**
  - Design drawings
  - Permit applications
  
- **Construction Level Drawings and Specifications**
  - Plan and profile layout drawings
  - Construction control data
  - Construction documents and technical specifications
  - 3D electronic design that can be loaded directly into surveyor's total station
  
- **Construction Oversight and Management**
  - Construction Quality Assurance (CQA) observation, inspection, and documentation
  - Certifying Engineer/Resident Engineer
  - Construction documentation reports
  - Coordinate construction activities