**JOB DESCRIPTION** FLSA Status - Non-exempt

 Payroll Classification - Engineer II

No job description for a position can possibly include all duties that may be requested by clients or required by the company. The objective of all positions is to effectively provide the services requested by our internal and external customers. The following is a summary of the major responsibilities of the position.

**Title of Position: Engineer II-Structures**

**General Summary:**

Performs a variety of engineering design functions.

**Essential Job Functions:**

* Perform structural engineering design functions with minimal supervision and guidance, including engineering computations, cost estimates, checking, report writing, etc.
* Participate in visits to project sites, project status meetings, and public meetings.
* Assist in developing the skills and knowledge of coworkers.
* Perform design tasks with minimal supervision and guidance.
* Prepare design sketches as required.
* Perform and check bridge-related geometry, including COGO.
* May perform bridge inspection as abilities permit.
* Perform bridge design utilizing computer program BRADD.
* Perform other duties as assigned.

**Knowledge, Skills, and Abilities:**

* Utilize all ASD, LFD, LRFD, and BRADD PennDOT computer programs.
* Knowledge of general structural engineering.
* Knowledge of PennDOT, AASHTO, and ACI codes.
* Knowledge of design manuals, standards, and specifications.
* Knowledge of SAI Design and Office Procedures.
* Knowledge of Bentley MicroStation design software.
* Knowledge of written communications techniques and composition.
* Ability to use computer software and other online resources.
* Skilled in using word processing, spreadsheet applications, Bluebeam, and “MATHCAD.”
* Ability to perform less complex structural engineering design tasks independently and more complex design tasks with supervision.
* Ability to communicate with coworkers, clients, and the public in a courteous and professional manner.
* Ability to work in a team-orientated setting, which includes supervision of others.
* Ability to utilize STAAD III computer program.
* Demonstrated skills in at least eight (8) of the following:
* Steel girder design and load rating
* Connection design (bolted and welded)
* Concrete superstructure design including prestressed concrete beams
* Bearing design
* Abutment and concrete retaining wall design
* Pier and foundation design and analysis
* Analysis of complex structures (trusses, arches, frames)
* Member strengthening, including beam and truss elements
* Finite element analysis
* Inspection of major bridges
* Report writing
* Highway geometric design
* Construction cost estimating including time and material estimates
* Construction scheduling
* Design of concrete and steel columns for bridges
* Use of computer programs for analysis, design, COGO
* Design of box culvert
* Hydraulic and hydrologic analysis/reports including HEC-2 analysis
* Construction specification writing
* Climbing structures

**Education and Experience Required:**

* BS degree in civil engineering.
* EIT certificate.
* Minimum three (3) years of experience.
* Attain training prerequisites according to SAI schedules.

**Relationship to Others:**

* Reports to Department Manager-Structures.
* Works with other Engineers, Designers, and Draftspersons.
* Receives assignments from Department Manager-Structures and Project Engineers.
* Receives guidance from Work Group Leaders and Project Engineers.
* Provides guidance to Engineers I and Draftspersons.