ACEC Indiana Job Descriptions to Be Used for TMap Position Postings

ENTRY-LEVEL ENGINEERING JOB GROUP

01 Engineering Intern 1 (EI-1)
Entry-level graduate engineer with bachelor’s degree, E.I. certification. At the beginning level of engineering work, uses prescribed methods, standard techniques and practices to perform beginning level engineering assignments under the guidance of experienced engineers. Typically possesses 0 - 2 years' experience.

02 Engineering Intern 2 (EI-2)
In addition to EI-1, performs continuing development-level engineering work, requires application of standard techniques and procedures. Receives supervision from experienced engineers on non-routine, complex projects and assignments. Typically possesses +2 - 3 years' experience OR is entry-level graduate engineer with master's degree.

03 Engineering Intern 3 (EI-3)
In addition to EI-2; may coordinate the work of Aides or Technicians; Typically possesses 4+ years' experience.

04 Non-Licensed Engineering Staff
Holds an engineering degree but is not actively pursuing a professional engineering license. Performs engineering assignments under the general direction of a licensed professional engineer. If employed in a job included elsewhere in this survey, i.e., BIM / Designer, Construction Observer, report the employee’s information for that position, not as a match with this position.

PROFESSIONAL ENGINEER JOB GROUP

Secondary descriptor for this group for discipline specialty. These disciplines will be a “choose any that apply” option so that a candidate may be able to select “transportation” and “bridge”.

- **Transportation**- develop plans for surface transportation projects, according to established engineering standards and state or federal construction policy. Prepare designs, specifications, or estimates for transportation facilities. Plan modifications of existing streets, highways, or freeways to improve traffic flow.

- **Bridge**- experienced in structural engineering as it relates to bridges and temporary works and will have the organizational skills necessary to independently complete all types of bridge design projects.
**Water resources** - planning, design and management of various facilities that provide solutions for drinking water, sanitary sewer, stormwater/drainage and low impact development. Work includes preparation of environmental documentation for water resources, regulatory program compliance, data management and analysis, and field work.

**Structural** - experienced and primarily concerned with designing buildings and structures that are safe and capable of withstanding the elements to which they will be exposed, as well as improving the structural integrity of existing buildings. Work includes preparing reports, designs and drawings, making calculations about loads and stresses, selecting appropriate construction material and providing technical advice.

**M/E/P** -- practicing mechanical, plumbing, electrical engineering in vertical construction including the additional areas of specialization of Commissioning, fire protection, controls, security, life safety, alarm systems, medical gas systems, acoustics, technology, HVAC, design and operation of building systems.

**Geotechnical** – Engineer who uses principles of soil and rock mechanics to evaluate subsurface conditions and materials; determines the relevant engineering design properties of soil and rock; assess risks posed by site conditions; evaluates seepage and slope stability of embankments; analyzes and designs retaining walls; deep and shallow foundations for structures; experienced in earthwork and foundation construction; manages geotechnical engineering projects; prepares geotechnical reports; and provides general geotechnical consulting.

**05 Staff / Project Engineer (PE-1)**
P. E. working under general supervision, establishes basic design criteria and performs a variety of skilled professional engineering work in the office or field. Requires application of standard engineering techniques and procedures, professional judgment to make modifications or execute complex features or solutions. Typically possesses 4 - 7 years' experience.

**06 Senior Project Engineer (PE-2)**
P.E. with responsibility for technical performance on small to medium projects, designated tasks on large projects or serves as an office engineer. Work requires application of standard engineering techniques and procedures, professional judgment to make modifications or execute complex features or solutions. May direct other engineers and/or technicians assigned to project. Typically possesses 5 - 10 years' experience.

**07 Senior Project Engineer / Project Manager (PE-3)**
P.E. with major responsibility for technical performance. Possess diversified knowledge of engineering principles and practices. Applies advanced techniques, modifications and theories
and serves as technical liaison on matters pertaining to field of practice. May also manage work groups. Typically possesses 10+ years' experience.
08 Senior Engineer / Specialist (PE-4)
P.E. with major responsibility for technical performance. Possess advanced, specialized knowledge of engineering principles and practices. Applies advanced techniques, modifications and theories and serves as technical expert on matters pertaining to field of practice. Typically possesses 15 - 20+ years’ experience.

09 Senior Project Manager (PE-5)
P.E. with full responsibility for large, complex projects or a number of large projects. Generally reports to the firm's highest level Professional Engineer or directly to the Principal - President. Possesses administrative qualifications needed to develop the project or projects with clients. May also manage work groups. Typically possesses 15 - 20+ years’ experience.

10 Engineering Department Manager
P.E. directing an engineering or technical services department of the firm. Supervises staff in carrying out plans, programs and services. Provides technical expertise on projects. May serve as project manager on select department projects. Manages department / division budget, assures quality control and optimized use of resources. May participate in marketing / business development activities to secure clients. Typically reports to a higher-level engineering executive or to the Principal - President. Possesses 10+ years' related experience. Also see (13) Principal - Vice President if position is considered part of the firm's top executive team.

11 Engineering Director / Chief Engineer (Second-Level Supervisor over Department Managers)
Found in large engineering firms, this is the top engineering official is responsible for directing multi-disciplinary engineering and professional teams and/or departments. Oversees progress of multiple concurrent engineering projects and procurement of sub-consultants. Provides strategic planning and delivery on key client projects. Interacts with executive-level government or public officials and/or executive-level clients on significant project matters. Possesses a P.E. and 15 + years of related project and client management experience. Also see (13) Principal - Vice President if position is considered part of the firm's top executive team.
**TOP EXECUTIVE JOB GROUP**

13 Principal - Vice President
Non-president of the organization. May or may not be an owner and/or officer of the organization. Negotiates critical issues with top managers and clients. Assures technical, administrative staffing, scheduling requirements are met.

14 Regional / Branch / Division Manager
Manages and directs all activities (administrative and technical) of a firm’s branch office. This includes profit / loss management, project management, marketing and business development and staff management.

15 Principal - President
Top executive with final responsibility for planning and direction of all aspects of the firm’s operations including business development, client relations, profitability and collections. Decisions and recommendations impact firm’s engineering activities. If surveying firm, review (45) Principal Surveyor as possible match.

**PLANNING/ RIGHT-OF-WAY JOB GROUP**

16 Planner 1
Urban and regional planners identify community needs and develop short- and long-term solutions to improve and revitalize communities and areas. As an area grows or changes, planners assist project teams to help communities manage related economic, social, and environmental issues, such as planning new parks, sheltering the homeless, and making the region more attractive to businesses. Typically possesses 2-5 years’ experience.

17 Planner 2 Senior
Senior planner works closely with public officials, developers, and the community members and other groups regarding development plans and land use. Gather and analyze economic and environmental studies, censuses, and market research data. Typically requires a bachelor's degree in planning or a related field and 5+ years’ of professional planning experience.

18 Right-of-Way (ROW) Agent
As part of the project team, supports managers and/or client’s attorneys in the negotiation and acquisition of real estate properties and land. May provide property management or/oversee relocation planning and implementation, demolitions and removal, and arrange for assistance to displaced businesses or individuals. Typically requires a bachelor’s degree in business administration or related field, state real estate license and 2 - 5+ years’ ROW acquisition experience.
CAD OPERATORS & DESIGNERS JOB GROUP

19 CAD Operator 1
Under general supervision, carries out a variety of drafting assignments using independent judgment and initiative. Prepares layouts, drawings and designs according to engineering specifications using, AutoCAD and/or related software. Retrieves information from files, edits, produces hardcopies and updates drawings/designs. Reviews engineering drawings and documentation, resolves undefined details. Typically possess 2 - 5 years' experience.

20 CAD Operator 2
In addition to CAD Operator 1, creates and modifies 2D and 3D drawings, carrying out a variety, and sometimes novel or complex, drafting assignments using independent judgment and initiative. Works as part of BIM model / CAD drawing project team AutoCAD and/or Microstation. May use MEP software to support design/build projects. May have knowledge of piping design software. May provide guidance and/or review work of lower-level drafter/operators. Typically possess +5 - 10 years' experience.

21 GIS Analyst
GIS analysts use geographic information system methods to identify variables and trends in different project locations. Their work supports a project team and involves collaborating with computer-aided design (CAD) technicians, developing web apps and tools, and integrating GIS with other technologies.

22 BIM / Designer 1
Performs technical and para-professional engineering to support projects and operations. Assists professionals in designing, planning and execution of segments of projects and supports related research. Work varies in complexity and requires use of independent judgment, initiative and application of standard engineering principles. Possesses working knowledge of BIM / CAD, MEP software and has experience using 3D model programs. Typically possesses associate degree or advanced technical training and/or equivalent and 4 - 8 years' modelling / design production experience.

23 BIM / Designer 2
Establishes design criteria, performs necessary engineering calculations for design or complete systems with a minimum of supervision. May serve as mentor to others in design development and in preparing the technical portion of project specifications. Highly proficient in developing and delivering 3D / BIM models and 2D contract drawings and documents. Typically possesses associate degree or advanced technical training and/or equivalent and 8+ years' modelling / design production experience.
24 BIM / Designer 3 / Principal Designer
In addition to Designer 2, coordinates multidiscipline models, design and model changes. Develops plans and prepares drawing, design, and model requirements from conceptual information through construction documentation. Work may involve complex and/or conflicting design features or requirements. Typically possesses 10+ years of design, production and project experience.

25 CAD / BIM / Design Manager
Considered a second-level manager over projects and personnel to assure conformance to client, controlling agency, and engineering requirements. Manages overall design delivery, establishing design strategies, scope and timing of design deliverables. May have a bachelor's degree. Typically possesses advanced, specialized knowledge in design software with 15+ years' experience.
TECHNICIAN/ INSPECTION/ CONSTRUCTION MANAGEMENT JOB GROUP

26 Technician 1
Performs on-site observations, collects samples, and/or performs tests to monitor work procedures. Records observations/tests and reports results to professional or supervisors. May require nationally recognized certification (i.e.: NICET, ACT, AWS, ASNT [NDT], etc.). May possess technical training beyond high school. Typically possesses 0 - 2 years' experience.

27 Technician 2
Performs on-site observations, collects samples, and/or performs tests to monitor work procedures. Records observations/tests and reports results to professional or supervisors. May require nationally recognized certification (i.e.: NICET, ACT, AWS, ASNT [NDT], etc.). Typically completed technical training, maintains certification and possesses 3 - 5 years' experience.

28 Technician 3
Performs tests, records observations and maintains project records of a more complex nature. May provide guidance and direction for other technicians. Requires certifications, completed technical training, typically possesses 6 - 10 years' experience.

29 Technician, Leader/ Supervisor
Engineering technician supervisors may monitor the work conducted by a larger group of technicians either in office support of project teams to assist in analysis, plan development, or regulatory approvals or in the field to guide installation, troubleshooting, and materials testing. Technician supervisors work for and primarily report to upper-level managers. Technician supervisors manage teams of technicians in a supervisory capacity and may travel into the field to oversee workers and conduct inspections on completed work tasks. These personnel ensure that technical and administrative tasks are completed in a timely manner to support the technical personnel of a project team.

30 Construction Inspector / Observer 1
Provides oversight of construction projects, monitoring and documenting progress and ensures adherence to contract and subcontract terms, performance, quality requirements and engineering specification. May process change orders. Typically reports to Project Manager or Construction Manager and possesses +5 - 10 years' experience and required construction inspection certifications (INDOT Certified Technician Program, IWEA Water & Sewer Construction Observation Course, concrete testing certification, etc.).
31 Construction Inspector / Observer 2
Provides oversight of construction projects, monitoring progress and ensuring adherence to contract and subcontract terms, performance, quality requirements and engineering specification. Inspects difficult and complex phases of construction. Estimates and documents work completion. May process change orders. May confer on contract disputes. Typically reports to Project Manager or Construction Manager and possesses 10 - 15+ years’ experience.

32 Resident Construction Engineer / Construction Manager
Serves as liaison between Project Manager, field staff and client. Provides oversight of construction projects, ensuring adherence to contract and subcontract terms, performance, quality assurance, compliance requirements and engineering specifications. Assists with completing inspections, obtaining certifications. Prepares change orders. Typically requires an associates or bachelor’s degree and 15+ years’ experience OR equivalent combination, i.e., 20+ years of engineering / technical experience observing and monitoring construction projects.

33 Project Manager 1 (non-engineer)
Responsible for the overall direction, completion and financial outcome of one or more construction projects. Directs and supervises work of project administration, special inspectors, and construction materials/quality control technicians. Coordinates work with Department Engineers to establish priorities and maintain satisfactory relationships with owners, prime contractors, subcontractors, and other stakeholders. Is involved in preparing cost estimates and assisting in the development of submittals. Typically manages projects under $50 Million and/or possesses less than 10 years of experience.

34 Project Manager 2 (non-engineer)
See Project Manager 1 job description. Typically manages projects of $50 Million or more and/or has 10+ years of experience.

35 Drilling Assistant
Provides technical support to the drilling engineering team, managing a significant amount of operational / regulatory reporting, IT data, technical data, database, spreadsheet modelling and cost reporting information to keep the drilling team working efficiently.

36 Drilling Foreman
Drilling foreman will be responsible for directing drillers and locators to perform bores that optimize installation success. In this role, personnel must be proficient with specialized drilling equipment and its capabilities and limitations. Foreman must be very safety conscientious and involved with job site safety protocols.
SURVEYING JOB GROUP

37 Survey Technician / Operator 1
Entry-level, works under the immediate supervision and direction of the Project Surveyor and/or Party Chief to perform fieldwork tasks related to boundaries, construction, mapping requirements of survey projects. Assists with uploading/downloading data and maintaining related records. Typically possesses 0 - 2 years’ experience.

38 Survey Technician / Operator 2
Performs fieldwork including, but not limited to, adjusting and operating instruments, compiling notes and making sketches and under the direction of a Project Surveyor and/or Party Chief on a variety of project types. Has operational knowledge of survey instruments such as theodolites, total stations and GPS. Uploads / downloads data and maintains related records. Typically possesses 2-5 years’ experience.

39 Project Surveyor, Non-PLS
Responsible for technical performance on small projects and/or designated tasks on large projects. May serve as lead worker to less experienced Survey Technicians. Work requires application of standard surveying techniques and procedures. Not certified as Professional Land Surveyor. May be Land Surveyor Intern (LSI). Typically possesses 1-4 years’ experience.

40 Project Surveyor, PLS
Registered Professional Land Surveyor (PLS) with responsibility for technical performance on small projects or designated tasks on large projects. Work requires application of standard surveying techniques and procedures, professional judgment to make modifications or execute complex features or solutions. Typically possesses 5+ years’ experience.

41 Party Chief, Non-PLS
Supervises, assigns and reviews the work of staff responsible for technical survey services. Oversees and participates in fieldwork activities and performs a variety of related technical tasks. Not certified as Professional Land Surveyor. Typically possesses 5+ years’ experience.

44 Survey Manager, PLS
Registered Professional Land Surveyor (PLS) plans, manages and directs surveying / mapping activities and related projects. Supervises professional surveyors and technicians. Establishes and maintains project priorities, budgets, and staff assignments. Reviews projects for financial and legal implications. Typically possesses 10+ years’ experience.
ENVIRONMENTAL JOB GROUP

46 Environmental Specialist / Scientist 1 (entry)
Conducts field studies and technical analyses on smaller, less complex projects. As part of the environmental team, develops knowledge of and supports wetland, NEPA and other regulatory reporting/compliance, environmental planning and permitting. May provide recommendations for technical problems and mitigation strategies. Prepares formal documentation and reports. Typically requires bachelor’s degree in environmental discipline or scientific area with 0 - 4 years' experience.

47 Environmental Specialist / Scientist 2
 Performs a broad range of field studies and technical analyses. Manages projects involving wetland, NEPA and other regulatory reporting/compliance, environmental planning and permitting. Develops formulas, processes, or methods for solution of technical problems including mitigation strategies, etc. Prepares formal documentation and reports. Typically requires bachelor’s degree environmental discipline or scientific area and 4 - 8 years’ experience.

48 Environmental Specialist / Scientist 3
In addition to the duties of Environmental Specialist / Scientist, 2 this level is recognized as a technical expert, advising lower level Scientists, Specialists and Technicians. Identifies requirements, directs studies and leads investigations. Negotiates with agencies, supports clients in permit acquisition and compliance matters. May prepare wetland, NEPA and/or other regulatory compliance reports. Promotes effective client and regulatory agency communications and relations. Typically possesses master’s degree in scientific area and 8+ years’ experience or bachelor’s and 10+ years’ experience.