

POSITION DESCRIPTION						
1. Position Number			2. Explanation (show any positions replaced)			
3. Reason for Submission <input type="checkbox"/> New <input type="checkbox"/> Redescription <input type="checkbox"/> Reestablishment <input type="checkbox"/> Standardized PD <input type="checkbox"/> Other						
4. Service <input type="checkbox"/> HQ <input type="checkbox"/> Field	5. Subject to Identical Addition (IA) Action <input type="checkbox"/> Yes (multiple use) <input type="checkbox"/> No (single incumbent)					
6. Position Specifications Subject to Random Drug Testing <input type="checkbox"/> Yes <input type="checkbox"/> No Subject to Medical Standards/Surveillance <input type="checkbox"/> Yes <input type="checkbox"/> No Telework Suitable <input type="checkbox"/> Yes <input type="checkbox"/> No Fire Position <input type="checkbox"/> Yes <input type="checkbox"/> No Law Enforcement Position <input type="checkbox"/> Yes <input type="checkbox"/> No		7. Financial Statement Required <input type="checkbox"/> Executive Personnel-OGE-278 <input type="checkbox"/> Employment and Financial Interest-OGE-450 <input type="checkbox"/> None required		10. Position Sensitivity and Risk Designation <u>Non-Sensitive</u> <input type="checkbox"/> Non-Sensitive: Low-Risk <u>Public Trust</u> <input type="checkbox"/> Non-Sensitive: Moderate-Risk <input type="checkbox"/> Non-Sensitive: High-Risk <u>National Security</u> <input type="checkbox"/> Noncritical-Sensitive: Moderate-Risk <input type="checkbox"/> Noncritical-Sensitive: High-Risk <input type="checkbox"/> Critical-Sensitive: High-Risk <input type="checkbox"/> Special Sensitive: High-Risk		
		8. Miscellaneous Functional Code: -- BUS: --	9. Full Performance Level Pay Plan: Grade:			
11. Position is <input type="checkbox"/> 2-Supervisory <input type="checkbox"/> 4-Supervisor (CSRA) <input type="checkbox"/> 5-Management Official <input type="checkbox"/> 6-Leader: Type I <input type="checkbox"/> 7-Leader: Type II <input type="checkbox"/> 8-Non-Supervisory		12. Position Status <input type="checkbox"/> Competitive <input type="checkbox"/> SES <input type="checkbox"/> Excepted (specify in remarks) <input type="checkbox"/> SL/ST		15. Fair Labor Standards Act <input type="checkbox"/> Exempt <input type="checkbox"/> Nonexempt		
	13. Duty Station	14. Employing Office Location	16. Cybersecurity Code #1:                    #2: --                    #3: --			
18. Classified/Graded by	Official Title of Position		Pay Plan	Occupational Code	Grade	Initial      Date
a. Department, Bureau, or Office						
b. Second Level Review			--		--	
19. Organizational Title of Position (if different from, or in addition to, official title)			20. Name of Employee (if vacant, specify)			
21. Department, Agency, or Establishment U.S. Department of the Interior			c. Third Subdivision			
a. Bureau/First Subdivision			d. Fourth Subdivision			
b. Second Subdivision			e. Fifth Subdivision			
22. Supervisory Certification. I certify that this is an accurate statement of the major duties and responsibilities of this position and its organizational relationships and that the position is necessary to carry out Government functions for which I am responsible. This certification is made with the knowledge that this information is to be used for statutory purposes relating to, but not limited to: FLSA determinations; position sensitivity and requirements; and appointment/payment of public funds. False or misleading statements may constitute violations of such statutes or their implementing regulations.						
a. Typed Name and Title of Immediate Supervisor			b. Typed Name and Title of Higher-Level Supervisor or Manager (optional)			
Signature		Date	Signature		Date	
23. Classification/Job Grading Certification. I certify that this position has been classified/graded as required by Title 5, U.S. Code, in conformance with standards published by the U.S. Office of Personnel Management or, if no published standards apply directly, consistently with the most applicable published standards.			24. Position Classification Standards Used in Classifying/Grading Position			
Typed Name and Title of Official Taking Action						
Signature		Date				
25. Position Review	Initials	Date	Initials	Date	Information for Employees. The standards, and information on their application, are available in the personnel office. The classification of the position may be reviewed and corrected by the agency or the U.S. Office of Personnel Management. Information on classification/job grading appeals, and complaints on exemption from FLSA, is available from the personnel office or the U.S. Office of Personnel Management.	
a. Supervisor						
b. Classifier						
26. Remarks						

**DOI Standard PD**  
**PD# DI00300**

**Classification: Civil Engineer, GS-0810-09**

## **INTRODUCTION**

This position is located in an operating office (Office) within a bureau or bureau equivalent (Bureau) within the Department of the Interior (Department). This position serves as an engineer carrying out conventional or routine civil engineering assignments throughout the Office. Work can include design, studies, analyses, construction administration, documentation, inspections, assessments, investigations, reviews, cost estimating, specifications writing, compliance evaluations, and evaluating facility capacities and operations. The purpose of this position is to perform work that may involve one or more specialties in hydraulic, hydrologic, geotechnical, structural, highway, and construction management that have features to include bridges, oil and gas producing facilities, concrete and embankment dams, roads, levees, canals, pipelines, tunnels, pumping plants, power plants, waterways, reservoirs, water and wastewater systems, buildings, irrigation systems, recreation sites, and related appurtenant systems.

## **MAJOR DUTIES**

Performs the first major duty (Engineering Analysis) a minimum of 25% of the work time.

**Engineering Analysis:** Performs conventional and routine engineering analyses assignments associated with technical planning activities; data collection; modeling and data analyses; analyses of site location and/or conditions; risk estimation and analyses; or analyses of instrumentation data. Analysis may also include evaluating conventional and routine engineering aspects of state and federal regulatory and permitting programs and participating in bond adequacy reviews, oversight reviews, and reviews on federal lands and in states with resource extraction programs under direct federal jurisdiction. Provides engineering recommendations based on engineering analysis; analysis is for conventional or routine assignments or for portions of more complex engineering projects. Specialty area analyses can include:

- **Construction Management:** Work primarily involves the performance and/or oversight of on-site construction work, including inspection of facility or utility construction work performed by a contractor. Duties may include serving as a Contracting Officer's Representative (COR), reviewing designs for constructability, drafting specifications, determining and evaluating conventional and routine construction sequencing, researching and preparing appropriate levels of cost estimates, and reviewing and evaluating third party cost estimates.
- **Geotechnical:** Work primarily involves: analysis for seepage, static, and dynamic stability for issue evaluations, design, construction, operation, and rehabilitation for embankment dams, concrete structures, and underground structures; and stability and deformation of dynamic loadings from wave action, earthquake ground motions, grouting analysis of structure foundations, dewatering, foundation bearing capacity, and stability analysis for soil, rock, manmade, and natural slopes. Participating in analysis for determining modeling boundary conditions; determining adequacy of sampling and testing for field investigations and changes needed based on field conditions; and determining soil and rock engineering properties based on field and laboratory testing.
- **Highway:** Work primarily involves the planning, design, construction, and maintenance of highways, road structures, and highway systems, including transportation facilities, considering factors such as economics, route location, traffic behavior, and vehicle characteristics.

- **Hydraulics:** Work primarily involves the application of hydraulics and principles of fluid mechanics, including application of engineering concepts and practices in hydraulics and sediment transport, erosion, and deposition. Work also includes analysis of waterway response to management actions and environmental disturbances such as climate change, floods, fires, landslides, and earthquakes.
- **Hydrologic:** Work primarily involves applying the science of hydrology to include analyzing and calculating flow characteristics; designing drainage structures (e.g., bridges and canals); and evaluating facility or waterway capacities and operations (e.g., reservoirs, canals, pipelines, pumping plants). Performs hydrologic studies of regulated and unregulated river systems and infrastructure in accordance with applicable authorizations, policy, and regulatory requirements. Develops, utilizes, and maintains various models to conduct and simulate engineering analysis.
- **Structural:** Work primarily involves the application of applied mechanics, including the distribution of loads, stresses resulting from static and dynamic loads, and strength of materials and structural dynamics.

**Design:** Completes conventional and routine engineering designs to include: 1) participating in engineering studies or evaluations such as preparing portions of preliminary, appraisal, feasibility, final design, and value planning/value engineering; 2) creating, performing, reviewing, checking, and/or modeling conventional or routine engineering designs; 3) drafting design criteria, procedures, and instructions; 4) participating in the design and/or modifications of new or existing features to mitigate static, dynamic, and hydrologic/hydraulic loadings; or 5) design, installation, and maintenance of routine instrumentation systems to provide engineering data for analysis and/or operational decision support.

**Documentation and Presentation:** Drafts technical documentation for conventional or routine engineering assignments or for assigned portions of complex projects such as technical memorandums and reports, engineering study analyses and results, correspondence, publications, design criteria, calculations, design summaries, design standards, designer's operating criteria, operating procedures, evaluation and oversight reports, value studies reports, inspection and assessment reviews, impact assessments, permit applications, emergency action plans and exercises, construction plans and reports, quantity estimate worksheets, specifications, constructability reviews, solicitation packages, required planning, final design, and procurement construction cost estimates such as Independent Government Cost Estimates (IGCE) and contract correspondence including responses to submittals and Request for Information (RFI). Makes internal presentations of technical documentation, in some cases in support of enforcement activities as part of Federal oversight of regulatory programs.

**Investigations, Assessments, and/or Inspections:** Participates in civil engineering facility examinations, reviews, and/or inspections which include conducting condition assessments and construction and transfer inspections; identifying deficiencies relative to design criteria, applicable codes and standards, or state or Federal statutes or regulations; calculating preliminary estimates for repairs; documenting results; identifying future needs for the asset investment such as extraordinary maintenance and rehabilitation; and project management planning. Assignments may also include hydrologic analyses and investigations such as flow studies and statistical hydraulic studies.

**Other Duties:** (non-grade controlling/non-series controlling work)

**Project Management:** Drafts and/or monitors project plans that outline the scope, schedule, and budget of assigned projects. This includes collaboration and communication; participating on teams; and identifying issues prior to adverse impacts to the schedule and budget.

**Contracting Officer's Representative (COR)/Grants Officer's Technical Representative (GOTR)/Awarding Official Technical Representative (AOTR):** Works with Contracting Officer/Grants Officer/Awarding Official to implement and administer a variety of assigned conventional and routine contracts, including construction contracts, service or supply contracts, P.L. 93-638 Indian Self Determination and Education Assistance Act as amended contracts/agreements, interagency agreements, and financial assistance agreements. Initiates timely actions and technically monitors the contract/agreement to ensure that they are carried out to completion as outlined in the contract/agreement. Researches the background on problems, identifies and devises courses of action in coordination with the Contracting Officer, Grants Officer, or Awarding Official as appropriate, and prepares recommendations for decision by management.

**Compliance:** Provides engineering support in connection with regulatory program oversight, policy and rulemaking efforts, review of regulatory compliance issues, and resolution of engineering related issues as they are encountered. This may include review of lands unsuitable for mining petitions.

**Database Operation:** Develops, modifies, and utilizes relational databases to maintain engineering data for conducting operational and planning analyses. Participates in the development and operation of engineering data collection systems. Ensures necessary data is collected, transmitted, downloaded, decoded, and received for its intended purpose.

Performs other duties as assigned.

## **FACTORS**

### **Factor 1. Knowledge Required by the Position**

**Level 1-6 950 pts**

Professional knowledge of, and skill in applying civil engineering theories, concepts, principles, standards, and methods sufficient to perform conventional or routine engineering analyses and design; prepare engineering documentation and participate in investigations and in the planning process; and to provide engineering design, analyses, review, inspection, and/or documentation for conventional and routine civil engineering assignments, selecting the best solution from several precedented alternatives.

Familiarity with the principles and practical concepts and processes of other related engineering and physical and biological/environmental science disciplines in order to ensure connection, contribution, or inclusion of the multiple disciplines involved in civil engineering assignments.

Skill in identifying, conceptualizing, and developing solutions to conventional engineering problems or needs, and skill in conducting routine studies and reviews and developing associated technical documents. Ability to perform and interpret calculations, analyses, and computations involving well-understood mechanisms.

Knowledge of common engineering data collection methods. Knowledge of data sources within the Bureau and industry. Skill in identifying and assessing the data needed for engineering assignments.

Knowledge of automated engineering systems and applications in order to plan, gather the appropriate data for input into the system, and assess, interpret, and analyze the validity of the generated results. Skill in using computers, software applications, databases, and automated systems to accomplish conventional engineering assignments which may include programming, scripting, and/or coding

Skill in effectively conveying information to individuals or groups, taking into account the nature of the information (e.g., technical). Skill in writing in a clear, concise, and organized manner. Ability to establish collaborative working relationships; identify and analyze problems; and determine relevancy of information to make logical decisions and develop solutions.

Knowledge of Bureau and Office mission, structure, projects, and facilities. Understanding of project benefits, authorities, stakeholders, and their governing laws, statutes, regulations, compacts, and treaties. Understanding of asset criticality and risk assessment methodology and processes.

Knowledge of and skill in applying qualitative and quantitative analytical techniques and project management principles, methods, tools, and techniques in order to monitor project plans and resources.

Knowledge of administrative activities associated with administration of contracting and agreement actions, procedures, and options, and working knowledge of the associated documents and contract and agreement actions in order to assist the Contracting Officer/Grants Officer/Awarding Official in performing contract administration functions. Knowledge of and skill in applying Federal Acquisition Regulation (FAR) requirements and Construction Specifications Institute (CSI) guidelines for drafting contract documents. COR, GOTR, or AOTR responsibilities may require specific training and/or certification.

**Factor 2. Supervisory Controls**

**Level 2-3 275 pts**

The supervisor discusses potential problem areas and defines objectives, priorities, and deadlines. The supervisor or higher graded engineer provides assistance to the incumbent on controversial or unusual situations without clear precedents. The incumbent independently plans and carries out assignments in conformance with policies and practices and adheres to instructions and precedents when exercising judgment to resolve commonly encountered work problems. The supervisor or higher graded engineer reviews completed work for conformity with policy, technical soundness, adherence to deadlines, and accomplishment of objectives. Methods for completing assignments are not typically reviewed.

**Factor 3. Guidelines**

**Level 3-3 275 pts**

Guidelines include applicable Bureau and Department instructions, policies, and procedures; national and state codes, standards, and regulations on engineering matters; manufacturers' literature; precedents for similar situations; applicable federal, state, and tribal resource laws and regulations; and applicable construction management regulations/guidelines such as the FAR, applicable Code of Federal Regulations (CFR), and CSI. Such guidelines are not always directly applicable and may have gaps in specificity; however, precedents are available outlining preferred approaches to more general problems or issues. The incumbent uses judgement to consider precedents and to research, select, interpret, modify, adapt, and apply the guidelines to the specific problems or issues at hand.

**Factor 4. Complexity**

**Level 4-3 150 pts**

Engineering projects and activities involve the following complicating factors: there is a large amount of data to work through when determining the most relevant data to work with for the assigned project; the need to develop representative and accurate cost estimates; diversity of the design; balancing creativity and engineering judgment to best address the needs of the activity; the need to stay informed regarding the latest technology; aging infrastructure and dealing with existing footprints require engineering solutions and designs that incorporate existing conditions; incorporating accessibility, cultural resource or environmental considerations; addressing diverse factors, situations, and conditions. Analyzes and

evaluates phases, conditions, and problems related to the conventional engineering assignment; assess implemented and planned actions for accuracy, feasibility, and adequacy in meeting the objectives of the engineering assignment; and select the most appropriate course of action from many acceptable alternatives.

**Factor 5. Scope and Effect**

**Level 5-3 150 pts**

This position serves in carrying out conventional or routine civil engineering assignments throughout the Office to include design, studies, analyses, documentation, inspections, assessments, investigations, reviews, cost estimating, specifications writing, compliance evaluations, and evaluating facility capacities and operations. Assignments involve applying precedents and established techniques to resolve a variety of conventional problems, issues, or conditions. The work impacts the design, operation, or safety of the complex features. Due to the nature of the features, the work impacts the well-being of the general public in the immediate vicinity and impacts the Department's credibility with internal and external customers.

**Factors 6 & 7. Personal Contacts and Purpose of Contacts**

**Level 6-2 and 7B 75 pts**

Personal contacts include counterparts and employees within the immediate Office and other offices throughout the Bureau, as well as from industry such as architecture and engineering firms, mine operators, manufacturers' representatives, and contractors. Contacts are for the purpose of obtaining, clarifying, and exchanging information and data as part of engineering activities, as well as planning, coordinating, and advising on work efforts, and participating on teams.

**Factor 8. Physical Demands**

**Level 8-1 5 pts or Level 8-2 20 pts**

(Level 8-1) The work is typically performed in an office setting with no special physical demands. However, work is also performed in the field which involves periods of walking, bending, climbing, or driving motor vehicles to worksites. The work also involves some overnight travel for training, meetings, and site visits.

(Level 8-2) The work regularly combines both office and field assignments. Field work requires physical exertion, such as long periods of standing, or recurring and considerable walking, stooping, bending, crouching, crawling, and climbing such as in regular and periodic construction activities and field inspections. Work may also include frequent lifting of moderately heavy items weighing less than 50 pounds. Field assignments may also involve driving motor vehicles to work sites, some of which may be remote, and include overnight stays in remote locations.

**Factor 9. Work Environment**

**Level 9-1 5 pts or Level 9-2 20 pts**

(Level 9-1) The work is usually performed in an office setting. However, work time may also be spent periodically visiting field sites. Field site visits are typically performed in either an outdoor setting subject to weather changes, diverse terrain, and safety hazards associated with working around complex features and/or construction, or an industrial setting subject to noise, fumes, and moving machinery. Both settings may require the use of personal protective equipment. Safety precautions and protocols are observed at all times and the incumbent complies with safety instructions and regulations and ensures individual and others' safety by promptly reporting unsafe acts, unsafe conditions, and accidents to the supervisor.

(Level 9-2) The work involves regular and recurring exposure to moderate risks, discomforts, and unpleasantness such as: high noise levels, infectious materials, or toxic or irritating chemicals; travel in safety approved small aircraft and water craft; high winds and low or high temperatures; infestation of

dangerous reptiles or poisonous plants, snakes, or insects; adverse weather conditions; noxious fumes; flammable liquids; or radiation. The work involves performing tasks in close proximity to rotating heavy mechanical and electrical machinery and may involve working within confined spaces for extensive periods of time. Special safety precautions such as protective clothing and gear are necessary. Safety precautions and protocols are observed at all times and the incumbent complies with safety instructions and regulations and ensures individual and others' safety by promptly reporting unsafe acts, unsafe conditions, and accidents to the supervisor.

### **Total Points and Grade Conversion**

Total Points = 1885 (low) 1915 (high)

Point Range = 1855-2100

Grade = GS-09

### **OTHER SIGNIFICANT FACTS**

Functional Classification (FC): Completed by servicing human resources office and annotated on PD Cover Page.

Certification: Certification to serve as a Federal Acquisition Certification (FAC) COR or AOTR may be required as articulated in Department and/or Bureau policies.