

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: --	17. Competitive Area Code: Competitive Level Code:		
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		
a. Supervisor				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.		
b. Classifier						
26. Remarks						

**DOI Standard PD**  
**PD# DI00200**

**Classification: Civil Engineer, GS-0810-11**

**INTRODUCTION**

This position is located in an operating office (Office) within a bureau or bureau equivalent office (Bureau) within the Department of the Interior (Department). This position serves as an engineer providing civil engineering expertise for a variety of projects and activities throughout the Office which typically include combinations of complex features. 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 in one or more specialties of hydraulic, hydrologic, geotechnical, structural, highway, and construction management. Complex features 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 engineering analyses to include performing and/or coordinating technical planning activities; data collection to include validation and management; 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 engineering aspects of state and federal regulatory and permitting programs, conducting bond adequacy reviews, oversight reviews, and reviews on federal lands and in states with resource extraction programs under direct federal. Specialty area analyses can include:

- **Construction Management:** Work primarily involves the performance and/or oversight of on-site construction work, including inspection and acceptance 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 construction sequencing, researching and preparing appropriate levels of cost estimates, and reviewing and evaluating third party cost estimates through all phases of the planning and final design process.
- **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; 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; determining modeling boundary conditions; determining adequacy of sampling and testing for field investigations and changes needed based on field conditions; determining soil and rock engineering

properties based on field and laboratory testing; making foundation treatment and improvement recommendations.

- **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. Hydraulic engineering 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 including: 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). Plans, performs, coordinates and directs comprehensive hydrologic civil engineering 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 and/or reviews engineering designs to include: 1) planning and conducting engineering studies or evaluations such as preliminary, appraisal, feasibility, final design, and value planning/value engineering; 2) creating, performing, reviewing, checking, and/or modeling engineering designs; 3) developing/drafting design criteria, procedures, and instructions; 4) contributing to 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 instrumentation systems to provide engineering data for analysis and/or operational decision support.

**Documentation and Presentation:** Prepares and reviews technical documentation 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 oral presentations of technical documentation at coordination meetings, design briefings, or other technical briefings, in some cases in support of enforcement activities as part of federal oversight of regulatory programs.

**Investigations, Assessments, and/or Inspections:** Plans, schedules, coordinates, and conducts 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; coordinating with internal and external partners; documenting and presenting 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.

**Reviewing and Mentoring:** Provides technical reviews, peer reviews, and checking of designs, drawings, engineering analysis, and technical documents, specifications, and contract correspondence, ensuring documents are accurate and quality assurance processes were followed. Provides technical guidance, training, and advice to lower graded engineers and technicians and other internal and external stakeholders.

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

**Project Management:** Develops, monitors, and manages project plans that outline the scope, schedule, and budget of assigned projects to include: coordinating and communicating with other groups and offices throughout the organization such as program and project managers, engineering, finance, maintenance, permit compliance, and acquisition; managing changes to the project plans with external stakeholders, tribes, and regulatory authorities; identifying and addressing issues prior to adverse impacts to the schedule and budget; and participating on and/or leading technical teams.

**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 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. Coordinates development and operation of engineering data collection systems directly and/or in coordination with other government agencies and non-federal sources. Ensures necessary data is collected, transmitted, downloaded, decoded, and received for its intended purpose.

**Technical Working Groups:** Participates on and/or leads technical work groups or teams. May collaborate on teams external to the organization, including external stakeholders and partners.

Performs other duties as assigned.

## **FACTORS**

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

**Level 1-7 1250 pts**

Broad professional knowledge of, and skill in applying, a wide range of engineering theories, concepts, principles, standards, and methods sufficient to provide advisory services in engineering analyses, documentation, and investigations, and in the planning and/or design process; and to provide engineering design, analyses, review, inspection, and/or documentation for a wide range of civil engineering assignments involving combinations of complex features which require adaptation of precedents and existing strategies to meet the special demands of the specific assignment.

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 engineering problems or needs, and skill in planning and conducting studies and reviews and developing technical documents such as site reviews, feasibility through final designs, and associated guidance criteria, procedures, and instructions. Ability to develop new insights into situations and knowledge of new and emerging engineering methods and technology to apply when addressing engineering problems and needs.

Knowledge of engineering data collection methods. Knowledge of and skill in evaluating data sources within the Bureau and industry. Skill in identifying and assessing the data needed for design development and engineering assignments, including site assessments.

Knowledge of automated engineering systems and applications in order to effectively and efficiently 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 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 technical/sensitive information. Skill in writing in a clear, concise, organized, and convincing manner for the intended audience. Ability to establish collaborative working relationships with stakeholders to ensure that their needs are heard and addressed; identify and analyze problems; distinguish between relevant and irrelevant information to make logical decisions and develop solutions and communicate effectively with all levels and types of organizations and audiences. Ability to use established partnerships to achieve collaborative solutions and resolve problems; utilize project management and/or team building, tools to achieve results in a collaborative spirit; and analyze diverse viewpoints to make planning decisions and solve work problems.

Knowledge of Bureau and Office mission, structure, projects, and facilities. Knowledge of project benefits, authorities, stakeholders, and their governing laws, statutes, regulations, compacts, and treaties. Knowledge 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 develop, schedule, coordinate, monitor, and manage projects 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 2-4 450 pts**

The supervisor outlines overall objectives and available resources and the incumbent and supervisor, in consultation, discuss scope of the assignment, methods, and time frames. The incumbent plans and carries out projects and assignments and resolves most conflicts independently and coordinates and collaborates with stakeholders to accomplish the work. The incumbent interprets policy and regulatory requirements in terms of established objectives and keeps the supervisor informed of progress and potentially controversial problems, concerns, issues, or other matters. Throughout the project or activity, the incumbent develops changes to plans and/or methodology and provides recommendations for improvements in order to meet program/project objectives. The supervisor reviews completed work for soundness and quality of overall approach, effectiveness in meeting requirements or producing expected results, the feasibility of recommendations, and adherence to requirements.

**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 4-4 225 pts**

Engineering projects and activities involve the following complicating factors: design data is not readily available or there is a large amount of data to work through when determining the most relevant data to work with for the specific project; the need to develop representative and accurate cost estimates; diversity of the design and review activities - the nature of the engineering assignment can vary significantly; integrating many systems into one project; high profile projects and projects that involve operational losses; balancing creativity and engineering judgment to best address the needs of the activity and stakeholders; the need to stay informed regarding the latest technology and/or methodologies and how it can be incorporated into

specific engineering solutions; aging infrastructure and dealing with existing footprints require well formulated engineering solutions and designs that incorporate existing conditions; incorporating accessibility, cultural resource or environmental considerations; addressing unanticipated problems; managing changes to the project scope, budget, and schedules. The incumbent must ensure application of sound engineering judgment and principles while addressing these complexities without compromising the engineering integrity of existing features and associated systems. The incumbent must recognize the relationships of the systems involved and exercise judgment and resourcefulness to ensure the design or engineering solutions and recommendations can be integrated into the existing systems. Some assignments may involve interpretation of engineering aspects of federal and state laws, regulations, or policy for engineering support in compliance assignments. Additional complexities include collaborating with multiple stakeholders with competing interests, goals, and objectives and coordinating projects for/with Federal, state, tribal governments, and/or local entities with overlapping roles and authorities.

**Factor 5. Scope and Effect**

**Level 5-3 150 pts**

This position serves as an engineer providing expertise for a variety of projects and activities throughout the office which typically include combinations of complex features. Civil engineering includes 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 6-3 and 7C 180 pts**

Personal contacts include counterparts and employees within the immediate Office and other offices throughout the Bureau, as well as other federal agencies. Contacts also include representatives from other local, state, tribal governments, water districts and commissions and 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 exchanging professional expertise and experience; planning, coordinating, and advising on work efforts; and participating on teams. Requires collaboration skill and skill in dealing with individuals with differing views.

**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 may also be performed in the field which involves periods of walking, bending, climbing, or driving motor vehicles to worksites. The work may also involve 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 = 2540 (low) 2570 (high)  
Point Range = 2355-2750  
Grade = GS-11

**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.