



STATE OF NEVADA
Department of Administration
Division of Human Resource Management

CLASS SPECIFICATION

<u>TITLE</u>	<u>GRADE</u>	<u>EEO-4</u>	<u>CODE</u>
ENGINEERING TECHNICIAN V	35	C	6.305
ENGINEERING TECHNICIAN IV	33	C	6.308
ENGINEERING TECHNICIAN III	30	C	6.313
ENGINEERING TECHNICIAN II	27	C	6.328
ENGINEERING TECHNICIAN I	25	C	6.334

SERIES CONCEPT

Engineering Technicians perform a broad range of duties involving technical engineering work in support of professional engineers including drafting, engineering calculations, surveying, materials and soils testing, construction inspection, roadway design, right-of-way engineering, planning, permitting and inspection, water rights appropriation and land acquisition in support of civil or related professional engineering work. Work requires the application of technical engineering skills, methods, and practices in compiling technical data, drafting, computer aided software, operating specialized equipment and preparing engineering related documents.

Assist engineers in performing field and laboratory tests and setting up equipment; gather and compile data, analyze technical problems, conduct research, and analyze data gathered to ensure accuracy and conformance to policies, procedures, guidelines, and standards.

Assist engineers, contractors, department staff, other agencies, the public and private business regarding water rights ownership, bid documents, contract plans, right-of-way plans, acquisition and disposal documentation, contract specifications, test results and federal and State guidelines and procedures; review, prioritize, research and prepare information in appropriate format.

Perform technical research to ensure department programs, testing methods, policies and procedures comply with federal and State requirements; review technical documents, analyze and interpret data and note discrepancies; verify areas of noncompliance against agency records and contact appropriate parties when discrepancies arise; make recommendations to correct problems and/or revise existing policies, procedures or methods.

Maintain records and contract documents in accordance with established filing system; enter data into computer system for analysis and review construction, water rights and contract documents and/or plan specifications; check applications and technical reports for completeness, clarity and conformance to department guidelines and federal and State policies and procedures.

Perform field inspections of construction projects, well locations and water use, material equipment, property lines and boundaries, right-of-way mapping and safety barriers; review and interpret construction plans, water rights records of survey and specifications to determine compliance; perform field measurements and record data; provide information, discuss problems and recommend solutions to contractors, professionals, property owners, department personnel and the general public; make recommendations and document the inspection process for future reference, payment of contract billings and to meet federal and State requirements.

Perform manual and computer aided drafting assignments by preparing maps, charts, graphs, tables, slopes and contours for construction projects, right-of-way location and water rights ownership, water rights data, data analysis, water quality data and federal, State and private property location.

Conduct surveying work including staking alignments, structures, fence lines and cross sections to set control points, locate wells and establish right-of-way lines, government survey and property boundaries; perform vertical

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SERIES CONCEPT (cont'd)

and horizontal measurements and topographical mapping by operating transits, levels, rods, computerized surveying equipment, compasses, and calculators.

Perform material and soil testing in a laboratory setting involving a variety of design and quality control testing including acceptance testing, design mix, proficiency and advance testing; research material properties, new or proposed specifications and test procedures.

Maintain and calibrate equipment to ensure proper operation, accuracy and reliability of test results and data collection; maintain equipment inventory, repair and maintenance records; document calibration results, repairs and problems encountered and make recommendations for repair and/or replacement of existing equipment.

Research city, county and federal records to determine property ownership, boundaries, encumbrances and condition of title.

Perform calculations establishing government survey and property boundaries, right-of-way lines, slopes and contours, horizontal and vertical alignments, traverses, construction limits and material quantities.

Perform related duties as assigned.

CLASS CONCEPTS

Engineering Technician V: Under general direction of an engineer or section head, incumbents perform the full range of duties in the series concept and in addition, function as a first-line supervisor directing and reviewing the work of lower-level engineering technicians and oversee an engineering function or operation of considerable importance to the agency. Work involves independent decision-making and accountability for the accuracy of the final work products of subordinates. Projects are assigned in terms of general program goals and are not specified in detail. Completed work is reviewed by an engineer or section head for conformance with engineering principles and practices, applicable policies and procedures as well as federal and State requirements. Incumbents oversee major projects and exercise functional supervision over engineering related programs; apply concepts, theories and practices utilizing considerable judgment and ingenuity in carrying out assignments. Work includes the supervision and coordination of technical engineering work such as water rights ownership determination, field and other critical investigations, interpretation of legal documents and descriptions, data analysis, permitting and water rights and land acquisitions. Incumbents supervise lower-level engineering technicians or personnel assigned to specific projects or functions and ensure the quality and quantity of work assigned to a squad or section; establish work performance standards; evaluate employee performance; assign and review work; make recommendations in the hiring, firing and disciplinary actions of assigned employees; and determine work priorities, procedures and techniques within existing standards and controls.

Engineering Technician IV: Under general direction, incumbents function independently at the advanced journey level performing technical work requiring knowledge of engineering theories, principles, concepts and practices in a specialized area. Incumbents plan and execute assignments, independently coordinate projects with engineers and other technicians and coordinate engineering functions within the office. Work assignments cover a wide range of technical engineering duties requiring considerable judgment and ingenuity.

Incumbents determine individual work priorities and apply established procedures, techniques, standards, process flows, project reporting requirements and guidelines set forth by management. Incumbents perform specialized technical engineering work of an advanced nature and function under minimal supervision; use considerable judgment in making independent decisions; may act as a first-line supervisor and have technical or leadworker responsibility for a project and staff of lower-level engineering technicians.

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CLASS CONCEPTS (cont'd)

Engineering Technician III: Under general supervision incumbents perform one or more of the duties described in the series concept at the journey level. Incumbents perform technical engineering work such as project coordination, cost estimating, material and soil analysis, quality assurance testing and sampling, construction inspection activities, data gathering and research, maintaining data files, surveying, drafting, right-of-way engineering duties, relocation inspections, review of legal transfer documents and water rights ownership and land acquisition research by applying a variety of methods and practices in compiling technical data, using computer aided software, operating specialized equipment and preparing technical engineering documents. Incumbents are accountable for the accuracy of the final work product and the correct application and interpretation of office policy and statutory requirements, testing procedures, completed construction work, design plans, engineering data, cost estimates and survey results. Work assignments are not completely standardized requiring the incumbent to use a variety of references, guidelines and precedents that may require making modifications in work procedures, data and equipment; apply judgment and knowledge in selecting and evaluating data and adapting methods to accomplish work assignment; contribute to the actual design development phase of an engineering function. Incumbents assist in training lower-level staff as assigned.

Engineering Technician II: Under general supervision, incumbents continue to receive training in technical engineering methods and practices in preparation for progression to the journey level and performing more specialized and technical engineering related work. Work includes basic elements of engineering work such as, cost estimating, material and soil analysis, construction planning and inspections, data interpretation, permit preparation, technical report preparation, proofreading, survey work, drafting and research of federal, State, department, city and county records. Work involves testing, measurement, calculations, data collection and analysis by applying technical engineering practices and concepts. Incumbents exercise limited judgment when applying guidelines and specifications regarding the course of action to accomplish assignments.

Engineering Technician I: Under close supervision of a higher-level technician or engineer, incumbents learn to perform technical engineering tasks at the entry level. This is the trainee level in the series and incumbents may progress to the next level upon meeting the minimum qualifications, satisfactory performance and with the approval of the appointing authority.

MINIMUM QUALIFICATIONS

SPECIAL REQUIREMENTS:

- * Some positions require a valid driver’s license at the time of appointment and as a condition of continuing employment.
- * Pursuant to NRS 284.4066, some positions in this series have been identified as affecting public safety. Persons offered employment in these positions must submit to a pre-employment screening for controlled substances. In addition, federal statute requires random testing for controlled substances during employment.

ENGINEERING TECHNICIAN V

EDUCATION AND EXPERIENCE: Associate’s degree from an accredited college or university with major course work in engineering, physics, math or closely related field and two years of experience which involved the coordination of technical engineering projects; responsibility for a specialized engineering function or program area; and leadwork or supervisory responsibilities over technical engineering staff; **OR** graduation from high school or equivalent education and three years of experience as described above; **OR** one year of experience as an Engineering Technician IV in Nevada State service; **OR** an equivalent combination of education and experience as described above. (See *Special Requirements*)

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MINIMUM QUALIFICATIONS (cont'd)

ENGINEERING TECHNICIAN V (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):

Working knowledge of: technical aspects of highway materials testing, construction, maintenance and related areas; surveying practices and real estate law court decisions and legal opinions related to assigned functions. **Ability to:** work as a team leader and coordinate the work of others; communicate effectively both orally and in writing involving a variety of technical and legal work related topics; conduct inspections of complex structures such as bridges, retaining walls, wells and drilled shafts; perform complex technical tasks; evaluate technically correct engineering planning documents and inspection reports; logic and reasoning used to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to technical problems; *and all other knowledge, skills, and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):

General knowledge of: regulations applicable to State personnel administration. **Ability to:** develop and implement efficient work plans and approaches; recommend changes to forms, procedures and methods to improve workflow; plan, direct, supervise and evaluate the work of assigned staff; oversee a variety of complex technical operations.

ENGINEERING TECHNICIAN IV

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university with major course work in engineering, physics, math or closely related field and two years of experience in a specialized engineering function or program area which involved the application of work procedures, standards and controls; **OR** graduation from high school or equivalent education and three years of progressively responsible experience as described above; **OR** one year of experience as an Engineering Technician III in Nevada State service; **OR** an equivalent combination of education and experience as described above. (*See Special Requirements*)

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):

Detailed knowledge of: standard safety procedures when working in labs, on construction sites and setting up protective barriers. **Working knowledge of:** construction principles, practices and procedures; agency policies and procedures related to the assignment; standards, guidelines and criteria. **Ability to:** communicate effectively both orally and in writing; deal firmly and tactfully with others inside and outside the agency; work independently and lead the work activities of others; read and interpret parcel maps, subdivision plats, construction plans and specifications, engineering drawings, department policy and procedures and federal and State regulations and guidelines; identify problems and recommend appropriate solutions; make field adjustments in response to unusual circumstances; make independent decisions related to specific work assignments; *and all other knowledge, skills, and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):

(*These are identical to the Entry Level Knowledge, Skills, and Abilities required for Engineering Technician V.*)

ENGINEERING TECHNICIAN III

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university with major course work in engineering, physics, math or closely related field and one year of experience in a specialized engineering function or program area which involved the application of work procedures, standards and controls; **OR** graduation from high school or equivalent education and two years of experience as described above; **OR** one year of experience as an Engineering Technician II in Nevada State service; **OR** an equivalent combination of education and experience as described above. (*See Special Requirements*)

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MINIMUM QUALIFICATIONS (cont'd)

ENGINEERING TECHNICIAN III (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):

Working knowledge of: engineering maps and records; principles and practices of surveying; engineering drafting methods, conventional symbols and sources of information; materials, methods and techniques used in construction and inspection; testing and sampling procedures. **Ability to:** operate and manipulate civil engineering software; conduct tests and inspections of products, services or processes to evaluate quality or performance; perform all relevant certified testing procedures; read and comprehend legal and/or technical documents; read and understand references, guidelines and procedures related to technical documents; read and understand references, guidelines and procedures related to technical engineering work; understand and apply instructions from technical manuals to specific situations; organize material in a systematic way to optimize efficiency; determine and use correct mathematical procedures to accomplish job assignments; work independently with minimal supervision; research and locate technical information from various records and resources, public records and websites; operate, maintain and calibrate equipment and instruments applicable to the assignment; *and all other knowledge, skills, and abilities required at the lower levels.*

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):

(These are identical to the Entry Level Knowledge, Skills, and Abilities required for Engineering Technician IV.)

ENGINEERING TECHNICIAN II

EDUCATION AND EXPERIENCE: Associate's degree from an accredited college or university with major course work in engineering, physics, math or closely related field and six months of experience in a specialized engineering function or program area which involved the application of work procedures, standards and controls; **OR** graduation from high school or equivalent education and eighteen months of experience as described above; **OR** eighteen months as an Engineering Technician I in Nevada State service; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements)*

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):

Working knowledge of: safety procedures when working in labs, construction sites or other work sites; trigonometry, algebra and geometry used in engineering calculations; construction plans and specifications; application of software, computer aided drafting and/or calculation programs; methods of compiling technical data; records maintenance. **General knowledge of:** engineering drafting methods, conventional symbols and sources of information; principles and practices of surveying; engineering maps and records. **Ability to:** operate and manipulate drawing/drafting software; work independently and follow through on routine assignments; perform technical engineering calculations applicable to typical tasks; establish and maintain documentation including records, manuals and inspection reports; convey technical information to others; write technically correct inspection reports, field notes and other documents; apply general rules to specific problems to generate solutions; *and all other knowledge, skills, and abilities required at the lower level.*

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):

(These are identical to the Entry Level Knowledge, Skills, and Abilities required for Engineering Technician III.)

ENGINEERING TECHNICIAN I

EDUCATION AND EXPERIENCE: Graduation from high school or equivalent education and one year of experience involving public contact; **OR** an equivalent combination of education and experience as described above. *(See Special Requirements)*

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MINIMUM QUALIFICATIONS (cont'd)

ENGINEERING TECHNICIAN I (cont'd)

ENTRY LEVEL KNOWLEDGE, SKILLS, AND ABILITIES (required at time of application):

Working knowledge of: personal computers and related ancillary equipment. **General knowledge of:** mathematics including algebra, geometry and trigonometry. **Ability to:** communicate effectively both orally and in writing; work with frequent interruptions; establish and maintain cooperative working relationships with coworkers and the public; follow oral and written instructions; convert mathematical data, quantities and measurements and calculate area, volume, length and proportion; read and understand policy and procedure; accurately copy, post or transcribe data; perform repetitive work according to prescribed procedures, sequence and pace; gather and compile data.

FULL PERFORMANCE KNOWLEDGE, SKILLS, AND ABILITIES (typically acquired on the job):

(These are identical to the Entry Level Knowledge, Skills, and Abilities required for Engineering Technician II.)

This class specification is used for classification, recruitment and examination purposes. It is not to be considered a substitute for work performance standards for positions assigned to this class.

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ESTABLISHED:	8/23/71	8/23/71	7/1/65	7/1/65	7/1/65
REVISED:					10/5/70
REVISED:			8/23/71	8/23/71	8/23/71
REVISED:				5/12/72	5/12/72
REVISED:	12/12/73				
REVISED:			4/26/74		
REVISED:			6/26/74		
REVISED:	7/1/74	7/1/74	7/1/74	7/1/74	
REVISED:		10/25/74	10/25/74	10/25/74	
REVISED:		4/4/75			
REVISED:				7/1/75	
REVISED:				2/26/76	
REVISED:	7/27/78-3				
REVISED:			9/11/78-3		
REVISED:		1/17/86	1/17/86		
REVISED:			4/14/87	4/14/87	
REVISED:			11/13/87-3	11/13/87-3	
REVISED:		8/19/88-3			
REVISED:		12/9/88-3			
REVISED:		2/21/89-12			
REVISED:	7/1/93P	7/1/93P	7/1/93P	7/1/93P	7/1/93P
REVISED:	8/31/92PC	8/31/92PC	8/31/92PC	8/31/92PC	8/31/92PC
REVISED:	1/13/95UC	1/13/95UC	1/13/95UC	1/13/95UC	1/13/95UC
REVISED:			11/26/96UC		
REVISED:	7/27/00UC	7/27/00UC	7/27/00UC	7/27/00UC	7/27/00UC
REVISED:	6/25/04PC	6/25/04PC	6/25/04PC	6/25/04PC	6/25/04PC
REVISED:	7/6/20UC	7/6/20UC	7/6/20UC	7/6/20UC	7/6/20UC
REVISED:					10/26/23UC