

North Marin Water District

ENGINEERING TECHNICIAN IV

*This class description is only intended to present a summary of the range of duties and responsibilities associated with the positions. Descriptions **may not include all duties** performed by individuals within the class. In addition, descriptions outline the minimum qualifications necessary for entry into the class and do not necessarily convey the qualifications of incumbents within the position.*

DEFINITION

Performs technical engineering duties in the office and in the field related to surveying, designing, drafting, office research and construction inspection of District water and wastewater infrastructure projects.

DISTINGUISHING CHARACTERISTICS

The Engineering Technician IV is the advanced working senior-level position in the Engineering Technician series performing technical engineering work with a high degree of difficulty, providing an advanced level of support to engineering activities primarily related to office engineering duties such as computer aided drafting (CAD), geographic information system (GIS), and Asset Management and/or construction inspection in the field.

This classification is distinguished from the Engineering Technicians I – III in that Engineering Tech IV performs more complex work and work with a greater degree of independence with focus in one of the two focus areas:

Engineering Technician IV (Mapping and Computer-aided Drafting) is the advanced working level in the series. Incumbents perform technical engineering work with an advanced degree of difficulty. This upper-level position in the Engineering Technician series provides a high level of support to engineering activities primarily related to engineering drawings, engineering records and GIS layers, as well as expertise in AutoCAD and Asset Management systems. This class is distinguished from the lower-level Engineering Technician classes (I – III) in that the latter class performs the most difficult and complex technical assignments on a continuing basis, with minimal supervision.

Engineering Technician IV (Construction Inspection and Survey) is the advanced working level in the series. Incumbents perform technical engineering work with an advanced degree of difficulty. This upper-level position in the Engineering Technician series provides a high level of support to engineering activities primarily related to soils and materials testing and inspections. This class is distinguished from the lower-level Engineering Technician classes (I – III) in that the latter class performs the most difficult and complex technical assignments on a continuing basis, with minimal supervision.

SUPERVISION RECEIVED

Receives supervision from the Chief and/or Senior Engineer and general direction from the Associate and Assistant Engineers.

ESSENTIAL DUTIES (include but are not limited to the following)

Engineering Technician IV (Mapping and Computer-aided Drafting)

Layout and prepare drawings for the design, installation, improvement, replacement and location of District water and sewer facilities including tanks, pumping stations, transmission mains and typical subdivision water system networks and sewer collection systems. Gather information required for field location of District facilities, making field measurements and sketches. Using AutoCAD Civil 3D, complete computer aided drafting of as-built drawings, mapping and easement drawings; drafting of

special projects both engineering and non-engineering; assists in algebraic, trigonometric and geometric calculations; data collection; land survey work; operates computers including use of spread sheet, computer aided drafting software, GIS software and operates other engineering devices such as plotters and other office equipment; updates District water facilities in GIS; contacts and coordinates with other utility companies regarding location of existing utilities as needed for design of main replacement and other capital improvement projects; utilizes Asset Management software proficiently; deals courteously with and provides information to the general public when required.

Engineering Technician IV (Construction Inspection and Survey)

Reviews construction plans for transmission or distribution pipelines, tanks, pumps and associated facilities; prepares lists of materials required for construction, inspects trenching operations, installation of pipe, services and hydrants, backfilling and testing, reviews progress payments and final acceptance of satisfactory work; makes field sketches of completed work; makes inspection of materials in manufacturer's plant; maintains job records; under supervision, operates testing equipment in connection with pipe material, painting, cathodic and other materials; assists in pipe flow testing, right-of-way and construction layout and surveying; prepares materials requisitions and keeps accurate job material records.

OTHER DUTIES

Does layouts and final drawings of right-of-way and topographic maps, plots surveyor's notes, draws profiles and sections; reduces field notes, determines areas and volumes; prepares working drawings for installation of pipelines and related facilities.

QUALIFICATIONS (The following minimum qualifications are necessary for entry into the class)

Education/Experience

Any combination of training and experience that would provide the required knowledge, skills, and abilities may be qualifying. A typical way to obtain the required qualifications would be:

Engineering Technician IV (Mapping and Computer-aided Drafting)

Possession of a high school diploma, Associate Degree or its equivalent and supplemental courses in engineering/CAD drafting/GIS with a minimum of (5) five years' experience in CAD drafting and other engineering technician III-related duties. Engineering technology experience beyond the 12th grade may be substituted for the required experience.

Engineering Technician IV (Construction Inspection and Survey)

Possession of a high school diploma or its equivalent and five years of construction inspection, surveying experience and/or other engineering technician III-related duties. Engineering technology experience beyond the 12th grade may be substituted for the required experience.

Knowledge/Skill/Ability

Engineering Technician IV (Mapping and Computer-aided Drafting)

Knowledge of: basic principles of algebra, geometry, and trigonometry; drafting, surveying, and mapping methods, techniques, and equipment; basic report writing; principles and practices of computer aided design systems. AutoCAD Civil 3D experience required, with skill in land development a plus.

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Skill to: perform routine manual and computer aided drafting, operate software (AutoCAD Civil 3D/GIS and Asset Management), basic surveying and other office and field work as needed.

Ability to: perform skilled computer aided drafting work in preparing maps, drawings, and layouts from existing drawings, notes, sketches and oral and written instructions; perform a variety of technical office and field engineering assignments; perform complex and precise drafting assignments and mapping work; prepare construction drawings and maps from field notes; use computer systems and programs related to engineering computations; read and interpret plans and maps; operate basic GIS software.

Engineering Technician IV (Construction Inspection and Survey)

Knowledge of: methods, materials, equipment and tests used in construction and proper installation of pipelines and structures, mechanical and electrical systems, water distribution and transmission systems and facilities, proper inspection techniques to examine construction workmanship and materials for defects and faults, materials sampling, testing and estimating procedures, surveying principles and methods as applied to construction work, basic principles of mathematics including algebra, geometry and trigonometry, relevant OSHA regulations and principles and practices of work safety, factors affecting water quality in a water distribution system, basic water quality sampling techniques and testing methodologies, both English and metric measuring systems, and basic report writing.

Skill and Ability to: make accurate mathematical calculations relative to construction and surveys; operate a surveying level, computer, mobile radio, cell phone/telephone and a variety of camera equipment; carry out thorough and complete field inspection activities; read and interpret plans and specifications and to prepare material lists; ability to detect flaws in construction methods and materials; ability to maintain records; ability to effectively represent the District while establishing and maintaining effective relationships with contractors, developers, other employees and the public; use computer systems and programs related to engineering computations; has developed skills in drafting; prepare clear and concise written reports and to perform the essential functions of the job without causing harm to self or others.

License/Certificate

Possession of a valid Class C California driver's license.

Engineering Technician IV (Construction Inspection and Survey)

A construction inspection related certification, is preferred but not required. It is desired for the incumbent to obtain a Grade 1 Water Distribution Operator Certification within 12 months of employment, but not required.

WORKING CONDITIONS/PHYSICAL REQUIREMENTS

Position requires prolonged sitting, standing, walking, reaching, twisting, turning, kneeling, bending, squatting, and stooping in the performance of daily activities. The position also requires grasping, repetitive hand movement, and fine coordination in preparing and reviewing construction plans, statistical reports and data, and using a computer keyboard. Additionally, the position requires near, far, and color vision in reading reports, reviewing plans and blueprints, and using the computer. When visiting construction sites or existing District facilities the position will require walking on

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uneven and slippery surfaces, climbing ladders or stairwells, exposure to all weather conditions, dust and pollen, and potential mechanical and heavy equipment hazards.

OTHER REQUIREMENTS

Per California Government Code, Title 1, Division 4, Chapter 8, Section 3100, "all public employees are hereby declared to be disaster service workers subject to such disaster service activities as may be assigned to them by their superiors or by law."

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