

North Marin Water District

Senior Engineering Technician

*This class description is only intended to present a summary of the range of duties and responsibilities associated with the position. 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

Under general supervision or direction, performs a variety of technical and paraprofessional duties depending on the respective assignment: 1) GIS/CAD and records management, or 2) design and construction.

The duties associated with the GIS/CAD and records management assignment generally involve producing documentation for new district facilities and ensuring proper documentation and management of existing facility asset information in both physical and digital formats. The duties associated with the design and construction assignment generally involve performing paraprofessional engineering work associated with planning, design, construction, and management in support of District water and wastewater infrastructure projects.

DISTINGUISHING CHARACTERISTICS

The Senior Engineering Technician is the lead specialist level position in the Engineering Technician series, distinguishing itself by the performance of more difficult and complex tasks within the particular assignment, often making advanced recommendations that assist decision making in civil and mechanical engineering, construction management, and facilities planning.

This classification is distinguished from the Junior and Assistant Engineer classifications which require possession of a Bachelor's degree in civil or mechanical engineering or equivalent, and/or a California Engineer-in-Training (EIT) certificate.

The incumbent of this classification may be assigned to one of the following independent assignments:

Senior Engineering Technician (GIS/CAD and Records Management) Administer the District's facility asset information through creation, modification, and organization, of engineering drawings, records, and maps using geographical information system (GIS), computer aided drafting (CAD), and other asset management systems. This class is distinguished from the Engineering Technician in that this classification includes responsibility for the ongoing implementation and improvement of the various mapping and records systems and assists in decision making for planned tasks.

Senior Engineering Technician (Design and Construction) The subject matter of the design work varies with each individual project and may include the design or construction management, or both, of one or more phases of a project. Scope of projects assigned typically include the design of water main extensions for services, improvements, relocation of water mains, fire, and other large services. This class is distinguished from the Engineering Technician in that this classification includes tasks similar to those often assigned to beginning level professional engineers and assists in decision making for planned tasks.

SUPERVISION RECEIVED

Receives direction and supervision from the Chief Engineer and/or Senior Engineer. The Senior Engineering Technician provides consultation and collaborates with all other classifications within the Engineering Department, as well as providing support to other departments within the District.

ESSENTIAL DUTIES

(include but are not limited to the following):

Engineering Assistant (GIS/CAD and Records Management)

Acts as lead specialist in the implementation and ongoing improvement of various mapping and records systems used by the District. Utilizes CAD to layout and prepare drawings for the design, installation, improvement, replacement and location of District water and sewer facilities from developer plans, engineering sketches and/or collaboration with engineering staff; prepares layouts and final drawings of District easement maps; utilizes GIS to maintain and update the District's distribution system network and attribute data attached to the network, creates and updates facility maps, and produces presentation figures and maps; provides users with technical assistance, training, and support relating to the operation of the GIS and CAD systems; coordinates and prioritizes mapping projects and prepares the layout and design of a variety of maps for presentations; analyzes user requirements to design and develop GIS application solutions; responds to GIS and CAD data requests for various departments and public and private agencies including but not limited to Marin & Sonoma LAFCo, City of Novato, County of Marin, MarinMap, Marin Water, Sonoma County Water Agency, Fire Protection Districts, Caltrans, and SMART; gathers information required for field location of District facilities and makes field measurements and sketches; develops and maintains GIS and CAD standards and procedures to ensure quality and consistency in work products; performs upgrades and maintains subscriptions for Autodesk and ESRI software; updates and maintains all District as-built documentation in both GIS and CAD.

Engineering Assistant (Design and Construction)

Designs and prepares construction documents for water and sewer facilities; including preparation of detailed construction estimates, material requisitions, and product specifications. Reviews construction plans for transmission and 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; under supervision, operates testing equipment in connection with pipe material, painting, cathodic and other materials; assist in pipe flow testing, right-of-way and construction layout and surveying; prepares materials requisitions and keeps accurate job material records; prepares daily construction inspection reports and final inspection punch lists; maintains general job records; assists in the collection, verification and documentation of information used by the District in GIS and as-built databases; establishes positive working relationships with representatives of community organizations, state/local agencies and associations, District management and staff and the public.

QUALIFICATIONS

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

Education/Experience

Senior Engineering Technician (GIS/CAD and Records Management)

Possession of a high school diploma, Associate Degree or its equivalent and supplemental courses in engineering, CAD, and/or GIS with a minimum of four (4) years' of increasingly responsible experience in engineering technician-related duties.

Senior Engineering Technician (Design and Construction)

Possession of a high school diploma or its equivalent, and supplemental courses in construction inspection, surveying, and/or college level trigonometry with a minimum of four (4) years' of increasingly responsible experience in engineering technician-related duties.

License/Certificate

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

Senior Engineering Technician (GIS/CAD and Records Management)

Minimum Qualifications – Possession and maintenance of an AutoDesk Certified User certificate and AutoDesk Certified Professional certificate and/or ArcGIS Foundation/Entry Level certificate or equal certification, within 12 months of employment.

Senior Engineering Technician (Design and Construction)

Minimum Qualifications – Possession and maintenance of a California State Water Resources Control Board Grade D2 Water Distribution Operator Certificate and at least one of the following construction-related certifications: Qualified SWPPP Practitioner (CA-QSP), Cal/OSHA for Construction, APWA Certified Public Infrastructure Inspector (CP II) or equal certification, within 12 months of employment.

Knowledge/Skill/Ability

Senior Engineering Technician (GIS/CAD and Records Management)

Knowledge of: District policies and procedures in areas of responsibility; principles, practices, methods, and equipment used in drafting, surveying, mapping, records retention, and management of facility asset information. AutoCAD Civil 3D experience required with skill in plans, profiles, and digital surface models. Esri ArcGIS Pro and ArcGIS Online experience required with skill in editing networks and design and maintenance of experience builder applications. Basic principles of mathematics including algebra, geometry, and trigonometry; office methods and procedures including use of computers and related software with basic knowledge of MS Office Suite;

Skill and Ability to: prioritize, organize, and set goals and objectives, identify and define technical problems, work independently and cooperatively with others; establish and maintain record keeping systems and facility asset information; analyze engineering documents such as maps, survey data, plans or specifications, adjust to workload changes and work under stress to meet deadlines; operate computerized design applications such as AutoCAD Civil 3D; operate spatial data and mapping applications such as ArcGIS Pro and ArcGIS Online; write clearly and concisely with technical accuracy, correspondence and records; coordinate work

and maintain effective working relationships with all levels of representatives from governmental and private agencies, construction and consultants, co-workers and the public; express ideas and provide feedback clearly and concisely, both orally and in writing; check maps and related survey data for accuracy and for consistency with as-built sketches and/or mark-ups; perform complex and precise drafting assignments and mapping work; prepare construction drawings and maps from field notes.

Senior Engineering Technician (Design and Construction)

Knowledge of: District policies and procedures in areas of responsibility; principles, practices, 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, utility locating service marking protocol and procedures (USA locating), both English and metric measuring systems, and basic report writing.

Skill and Ability to: prioritize, organize, and set goals and objectives, identify and define technical problems, apply engineering principles of logic and scientific reasoning to practical engineering problems to develop and review alternative courses of action and determine appropriate solutions; analyze engineering documents such as maps, survey data, plans or specifications; adjust to workload changes and work under stress to meet deadlines, express ideas and provide feedback clearly and concisely; 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; read and interpret plans and specifications and 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 and report writing.

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 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."

Approved	<i>EM</i>
Date	6/12/2024