



**APPROVED BY: THE CHIEF  
ADMINISTRATIVE OFFICER**

**EFFECTIVE: March 2005**

### **ASSISTANT SURVEYOR I/II/III**

*Class specifications are intended to present a descriptive list of the range of duties performed by employees in the class. Specifications are not intended to reflect all duties performed within the job.*

#### **DEFINITION**

To perform a variety of technical work in support of property, construction, photogrammetric, right-of-way, and hydrographic survey activities, create, prepare, and modify electronic or computerized surveying and mapping data, operate a variety of survey equipment on a survey crew, to record notes and make calculations in the office, utilize a variety of technical engineering computer software/ hardware such as (CADD) Computer Aided Design and Drafting and (GIS) Geographic Information Systems, and to perform related work as assigned.

#### **DISTINGUISHING CHARACTERISTICS**

##### **Assistant Surveyor I**

This is the entry level, training class in the professional Surveyor series. This class is distinguished from the Assistant Surveyor II by the performance of the more routine tasks and duties assigned to positions within the series under general supervision. Incumbents with knowledge of engineering technical terminology and concepts perform the traditional rodperson/chainperson duties on a survey crew, or learn to gather and interpret such information as property ownerships, boundaries, and utility locations and use a computer aided drafting system (CADD) to prepare property maps. Advancement to the II level is based on demonstrated proficiency in performing the assigned functions, and is at the discretion of higher level supervisory or management staff.

##### **Assistant Surveyor II**

This is the experienced class within the professional Surveyor series. This class recognizes positions that require limited time on the job before an incumbent is capable of functioning at the full journey level. Positions at this level, are initially expected to perform under immediate supervision, progressing to general supervision as knowledge of operating procedures is gained. Positions in this class are flexibly staffed and are normally filled from by advancement from the I level, or when filled from the outside, have prior experience. Advancement to the “III” classification is dependent on organizational need for advanced level skills, as determined by higher level supervisory and management staff, and by demonstrating proficiency through passing a District test designed to measure advanced level skills specific to the assigned area.

### **Assistant Surveyor III**

This is the full journey level class within the professional Surveyor series. Employees at this level are distinguished from other levels within this classification by the performance of the full range of duties assigned. Employees at this level receive only occasional instruction or assistance as new or unusual situations arise, and are fully aware of the operating procedures and policies of the work unit.

Advancement to this level is dependent on organizational need for advanced level skill, as determined by higher level supervisory and management staff, and through passing a District test. This class is distinguished from the Senior Surveyor in that the latter performs the most difficult and responsible types of duties where assignments may include both technical and administrative responsibilities and considerable independent judgment.

## **SUPERVISION RECEIVED AND EXERCISED**

### **Assistant Surveyor I**

Receives immediate supervision from assigned supervisory staff.

### **Assistant Surveyor II**

Receives general supervision from assigned supervisory staff.

### **Assistant Surveyor III**

Receives direction from assigned supervisory or management personnel.

## **ESSENTIAL FUNCTION STATEMENTS**

*Essential responsibilities and duties may include, but are not limited to, the following:*

1. Research, collect, compile and analyze evidence and documentation for boundary determination, obtain all relevant documentation concerning the location, dimensions, areas, monumentation, and other aspects from public records, title reports, survey notes and format data for presentation materials and graphic displays.
2. Locate and set the alignment or elevation of monuments and points, assist in locating new or additional structures or equipment or in placing stakes or markers for District or contractor use, determine earth surface curvature, perform geodetic and cadastral surveying.
3. Prepare and review technical maps, drawings and visual aids, graphic presentations, drafting materials, and other items as needed for various District projects using computers and manual methods, amend or revise drawings during design and construction phases, prepare as built drawings.
4. Perform a variety of support activities related to survey task completion as assigned, clear brush and debris and ensure a clear line of sight, ensure that survey crew has adequate stocks of supplies.
5. Conduct field investigations to obtain and verify engineering data, make measurements and rough sketches, locate public utility lines, prepare limited design drafting, take field notes as assigned, and reduce field notes and calculations in the office.
6. Utilize survey equipment to determine points, lines, angles, elevations, and distances for property, boundary, construction, hydrographic, photogrammetric, and topographic surveys, run lines and grades for assigned projects, and may make field adjustments within specified limits.
7. Utilize a variety of technical engineering software such as Computer Aided Design and Drafting (CADD) and Geographic Information System programs (GIS), to produce maps, drawings, and other technical documents, provide assistance to engineering staff using engineering or graphic design hardware and software applications, create image files by scanning documents, and remain current on new hardware and software developments.
8. Set up, clean, adjust, and perform routine maintenance on manual and electronic surveying instruments such as electronic total stations, digital levels, inclinometers, data collectors, global positioning units, and distance measuring instruments as assigned.
9. Research maps and right of way records and respond to inquiries on flood hazard issues.
10. Assist with creation of graphic presentation materials.

11. Maintain records of work performed as assigned.
12. Read, interpret and assist in preparing maps, drawings and diagrams as assigned.
13. Utilize a computer-based system to maintain databases and solve surveying problems as assigned.
14. Assist with other engineering technical work on a project or relief basis.
15. Assist in preparing and/or interpreting maps, legal, and property descriptions.
16. Perform related duties and responsibilities as assigned.

## **QUALIFICATIONS**

### **Assistant Surveyor I**

#### *Knowledge of:*

Basic principles and practices of Computer Aided Design and Drafting (CADD) and Geographic Information System programs (GIS).  
Basic research techniques of technical materials.  
Operational characteristics of equipment and materials in assigned program area.  
Proper English usage, grammar, spelling and punctuation.  
Algebra, geometry and plane trigonometry as applied to surveying and other technical drafting tasks.  
Basic principles and practices of surveying.  
Principles and practices of filing and record keeping.  
Methods and techniques of field note reduction.  
Pertinent federal, state, and local laws, codes, and regulations.

#### *Ability to:*

Perform field surveying and technical activities.  
Understand and carry out oral and written instructions.  
Make survey calculations accurately.  
Research, collect and analyze various topological data, and technical data.  
Perform mathematical calculations accurately.  
Use a variety of computer equipment and applications.  
Read and interpret maps, plans, and diagrams.  
Communicate clearly via two-way hand-held radio.

Read and interpret legal descriptions of real property.  
Determine property ownership.  
Maintain a variety of files and records.  
Interpret and apply federal, state, and local policies, laws, and regulations.  
Communicate clearly and concisely, both orally and in writing.  
Establish and maintain effective working relationships with those contacted in the course of work.

### *Experience and Training Guidelines*

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

#### Experience

No experience is required.

#### Training

Equivalent to completion of the twelfth grade supplemented by college level course work in engineering, geography, algebra, geometry, trigonometry or a related field.

### **License or Certificate**

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

## **Assistant Surveyor II**

In addition to the qualifications for Assistant Surveyor I

### *Knowledge of:*

Basic principles and practices of Computer Aided Design and Drafting (CADD) and Geographic Information System programs (GIS).

Principles and practices of boundary determination and land title research.

Right of Way procedures and principles.

Principles and practices of global positioning systems (GPS).

Principles and practices of surveying as applied to property, topographic, and

construction surveying.  
Use, adjustment, and maintenance of various surveying instruments.

*Ability to:*

Use a computer aided drafting system.  
Research, collect and analyze various topological data, and technical data.  
Perform various field surveying work activities.  
Use, adjust, and maintain various survey instruments.  
Work independently and make sound decisions in the field.

*Experience and Training Guidelines*

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

Experience

One year of practical field or office surveying and mapping related experience at the Assistant Surveyor I or Engineering Technician I level.

Training

Equivalent to completion of the twelfth grade supplemented by college level course work in engineering, geography, algebra, geometry, trigonometry or a related field.

**License or Certificate**

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

Possession of a Land Surveyor in Training certificate is desirable.

**Assistant Surveyor III**

In addition to the qualifications for Assistant Surveyor II:

*Knowledge of:*

Basic principles and practices of Computer Aided Design and Drafting (CADD) and Geographic Information System programs (GIS).

Principles and practices of surveying as applied to property, topographic, and construction surveying.

Use, adjustment, and maintenance of various surveying instruments.

*Ability to:*

Use a computer aided drafting system.

Perform various field surveying work activities.

Use, adjust, and maintain various survey instruments.

Work independently and make sound decisions in the field.

*Experience and Training Guidelines*

Any combination of experience and training that would likely provide the required knowledge and abilities is qualifying. A typical way to obtain the knowledge and abilities would be:

*Experience*

Two years of responsible practical field or office surveying and mapping related experience at the Assistant Surveyor II Level.

*Training*

Equivalent to completion of the twelfth grade supplemented by college level course work in engineering, geography, algebra, geometry, trigonometry or a related field.

**License or Certificate**

Possession of, or ability to obtain, an appropriate, valid California driver's license may be required with determinations made on a case-by-case basis at the time of job posting.

Possession of a Land Surveyor in Training certificate is desirable.

**WORKING CONDITIONS**

**Environmental Conditions**

Field and/or office environment; travel from site to site, work closely with others and alone, exposure to inclement weather, heat, cold, dampness, chilling, and dry atmospheric conditions, may be exposed to dirt, dust, fumes, smoke, gases, and poison oak, occasional irregular work hours; work with machinery; work around moving vehicles and around high traffic, work below ground, noise, slippery surfaces.

### **Physical Conditions**

Essential functions may require maintaining physical condition necessary for sitting, walking, and standing for extended periods of time, frequent kneeling, climbing, and repeated bending, heavy lifting and carrying, audiovisual acuity, manual dexterity, and must be able to operate assigned equipment.