



## **City of Phoenix**

# **INSTRUMENT TECHNICIAN**

**JOB CODE 19060**

Effective Date: 06/17

### **DISTINGUISHING FEATURES OF THE CLASS:**

The fundamental reason this classification exists is to perform technical survey work of average difficulty as part of a survey crew. Instrument Technicians operate electronic measuring and data collecting devices and other survey instruments in the performance of survey work. Work is performed under the direction and training of a Senior Party Chief or Party Chief who checks work for technical accuracy, completeness and production.

### **ESSENTIAL FUNCTIONS:**

- Operates various survey engineering instruments such as transit, level theodolite, and electronic distance measuring devices;
- Locates and establishes lines, critical points, and angles;
- Establishes relationship of surface features with each other by angles, elevations, and distances;
- Digs ground using a pick, shovel, and other hand tools to search for and locate survey monuments;
- Cuts and removes brush and undergrowth for line of sight;
- Compiles notes for level circuits, traverse closures, precise levels, property corners, topography notes, horizontal and vertical curves, cross-sections for earthwork, calculations, and building grades;
- Holds and plumbs rod in obtaining elevations and distances;
- Holds survey chain in measuring distances;
- Drives stakes to set grades on construction projects;
- Maintains regular and reliable attendance.
- Demonstrates superior seamless customer service, integrity, and commitment to innovation, efficiency, and fiscally responsible activity.

### **Required Knowledge, Skills and Abilities:**

Knowledge of:

- Civil engineering and survey terminology.
- Basic construction procedures and techniques.
- Procedures and techniques required for the accurate recording of survey data.



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Ability to:

- Read and understand plans, blueprints, and specifications.
- Understand and carry out written and oral instructions in the English language.
- Perform algebraic, geometric, and trigonometric calculations.
- Understand and follow standard surveying practices and procedures.
- Exercise sound judgment in completing assignments.
- Communicate orally with other City employees and the public in face-to-face, one-on-one settings.
- Travel across rough, uneven or rocky surfaces at construction sites.
- Measure distance using a tape measure or electronic distance measuring device.
- Comprehend and make inferences from written material in the English language.
- Make precise arm-hand positioning movements and maintains static arm-hand position to operate survey instruments.
- Coordinate the movement of more than one limb simultaneously.
- Drive stakes with up to a 16 pound sledge hammer to set grades on construction projects.
- Bend or stoop repeatedly or continually over time to use survey instruments.
- Make continuous or repetitive hand-arm movement to send signals to a survey crew.
- Move objects between 20-50 pounds long distances (20 feet or more).
- Work in a variety of weather conditions with exposure to the outdoor elements and dust.
- Review or check the work products of others for conformance with standards.
- Prepare accurate survey notes, records, and sketches on work performed or data secured.
- Use a hand held calculator to perform mathematical calculations.
- Remain in a standing position for extended periods of time.
- Walk distances up to a 1/2 mile at a time; up to five miles per day.
- Work cooperatively with other City employees and the public.
- Work safely without presenting a direct threat to self or others.

### Additional Requirements:

- Some positions will require the performance of other essential and marginal functions depending upon work location, assignment or shift.
- Some positions require the use of personal or City vehicles on City business. Individuals must be physically capable of operating the vehicles safely, possess a valid driver's license and have an acceptable driving record. Use of a personal vehicle for City business will be prohibited if the employee is not authorized to drive a City vehicle or if the employee does not have personal insurance coverage.



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### **ACCEPTABLE EXPERIENCE AND TRAINING:**

NSPS/ACSM Certified Survey Technician – Level 2 or two years of experience in survey engineering, including one year of field experience providing a knowledge of survey equipment and survey crew activities. Other combinations of experience and education that meet the minimum requirements may be substituted.