

**ENGINEERING FIELD AIDE
CONSTRUCTION INSPECTOR 1
CONSTRUCTION INSPECTOR 2**

CLASS DESCRIPTION

General Responsibilities:

This class series describes field work performed in a public works construction environment. Incumbents serve as a member of a survey crew, assist or perform construction inspections, and prepare appropriate documentation. This series is structured to provide career progression from an Engineering Field Aide to a Construction Inspector 1 based on increased skill and responsibility in performing public works engineering activities, including inspection, drafting, surveying and/or design. Employees may be hired at the Construction Inspector 1 level based on education and experience in performing public works engineering activities, including inspection, drafting, surveying, and/or design as described herein. Progression to a Construction Inspector 2 is normally contingent upon budgeted vacancies and is accomplished by competition.

The various levels in this series are structured as follows:

Engineering Field Aide

This is routine entry-level paraprofessional construction inspection and documentation work serving as a member of a survey crew, assisting in construction inspection and documentation, collecting field data, marking utilities and performing other related tasks. The work is performed under the direct supervision of higher level technical or professional staff and may be led by a Construction Inspector, and work is normally reviewed in progress and upon completion.

Construction Inspector 1

This is paraprofessional intermediate-level construction inspection and documentation work, serving as a member of a survey crew or as the resident inspector on varied concurrent public works projects, or assisting a Construction Inspector 2 on multi-inspector or complex, large projects. This work is characterized by independent initiative and judgment in the resolution of complex construction problems such as those encountered in high density, multi-use/commercial areas, and/or situations requiring the integration of a large number of public works, utilities, or disruption of services considerations. The work is performed under the general supervision of an engineer or other supervisor.

Construction Inspector 2

This is responsible advanced level paraprofessional inspection work serving as resident construction inspector on a large number of concurrent, varied and complex public works projects, and as a leadworker over lower-level staff. Work may require leading subordinate construction inspectors on individual projects or multi-inspector/large projects, or as

members of a survey crew. This work is characterized by independent initiative and judgment in the resolution of complex construction problems such as those encountered in high density, multi-use/commercial areas, and/or situations requiring the integration of a large number of public works, utilities, or disruption of services considerations. The work is performed under the general supervision of an engineer or other supervisor with only the most unusual or technical inspection problems requiring supervisor involvement.

Examples of Duties and Responsibilities:

Engineering Field Aide

Work on survey crews to obtain readings for preliminary surveys including baseline topography and cross sections; and construction layout, measurements or quantities, and vertical and horizontal control work. Act as a rod, chain (steel tape), or instrument person, including operation of total station automatic level or GPS. Take readings manually or by computer. Plot cross-sections, profiles and plans from survey notes. Drive stakes to stakeout various types of construction projects.

Perform and/or assist with the inspection of construction activities at a limited number of construction sites to ensure compliance with contract plans, specifications and other requirements. Work includes checking lines and grades, correct use of materials, equipment and techniques. Test construction materials. Inspect all work practices relating to the construction of curbs, pavements, subgrade, crushed aggregate base course, sidewalks, retaining walls, bridges, building foundations, sewers and sewer structures, and other types of public works projects, private utility installation, and other requirements such as management of storm water runoff, erosion control and site safety. Inspect grading and restoration projects. Verify traffic control set ups according to approved plans and monitor their effectiveness. Notify lead inspector of potential problems so that the necessary action can be taken.

Take measurements and record information to be used by lead inspector to determine quantities for partial and final payments and creation of "as built" drawings of completed construction projects. Assist lead inspector in project finalization.

Maintain communication with Engineering and other City staff by radio and other assigned means. Communicate with contractors. Respond to inquiries from businesses, property owners, tenants, private utilities, contractors and the general public regarding inspection and construction considerations related to assigned projects, and work with these individuals and groups to resolve the problems which the construction may cause them. Notify lead inspector of potential problems so that the necessary action can be taken.

Use Digger's Hotline software to track active one-call tickets. Perform inspection and documentation of permits to completion, including inspection of final patch or mill and overlay. Perform inspection and documentation of sewer plugging permits from application to completion. Utilize databases to verify contractors are pre-qualified and permitted to perform work in the "right of way."

Using plans and records as a reference, locate and mark sewer and drain systems with paint, flags, stakes, or other physical means. Organize the locations to be marked to accomplish the task in an efficient manner.

Assist engineer or inspector in support work to include: plan review, quantity computations, plotting cross-sections and profiles from survey notes, checking survey plans. Calculate area and quantities. Compile office and field data. Create and maintain project records. Participate in review, evaluation, development and planning of the reconstruction, new plat, redevelopment, sidewalk and resurfacing repair and replacement program.

Perform related work as required.

Construction Inspector 1

Perform all the duties of an Engineering Field Aide as required.

Inspect construction activities at a large number of diverse construction sites to ensure compliance with contract plans, specifications, schedules and other requirements. Coordinate terrace tree inspection with City Forestry. Resolve Right of Way issues with contractors.

Exercise judgment in identifying potential problems, and taking necessary corrective action while serving as resident inspector at a large number of projects.

Work with other City agencies to coordinate all phases of the construction, including ensuring permit compliance including Right of Way Permits, Occupancy Permits and Terrace Permits, coordinating "right of way" issues, and other issues which may arise.

Verify and track all permits from application to completion and approve for return of deposit.

Evaluate properties for assessable work and record information for plan preparation.

Make measurements and maintain records to determine quantities for partial and final payments. Prepare "as built" drawings of completed construction projects. Finalize projects for final payment.

Respond to inquiries from City Officials and the business community.

Perform support work to include: plan review, quantity computations, plotting cross-sections and profiles from survey notes, checking survey plans. Calculate area and quantities. Compile office and field data. Create and maintain project records. Participate in review, evaluation, development and planning of the reconstruction, new plat, redevelopment, sidewalk and resurfacing repair and replacement program.

Perform related work as required.

Construction Inspector 2

Perform all the work of a Construction Inspector 1 but with a higher degree of skill and independence.

Serve as lead inspector on complex or multi-inspector public works projects.

Lead assigned personnel in the performance of their duties as construction inspectors or members of a survey crew. Communicate assignments to crews, make daily reports to supervisor and revise assignments as needed throughout the day, monitor work of the crews and report performance to supervisor for any action needed. Observe the work of employees on a regular basis and provide feedback to both employees and supervisor.

Perform related work as required.

QUALIFICATIONS

Knowledge, Skills and Abilities:

Engineering Field Aide

Knowledge of standard engineering and public works construction nomenclature and mathematics including geometry and trigonometry. Knowledge of survey instruments and equipment and surveying principles, practices, procedures, nomenclature and symbols, including GPS. Knowledge of the methods and techniques for inspecting public works construction projects. Knowledge of underground sewer utility installations. Ability to make technical drawings. Ability to accurately perform mathematical computations quickly and accurately. Ability to read and understand detailed maps, plans, and specifications. Ability to read and interpret Sewer Utility records using field books and laptop computer. Ability to understand marking instructions from contractors and “one call” requests. Ability to prioritize work and make assignments to other staff. Ability to accurately mark locations and note problems. Ability to follow instructions and established procedures. Ability to establish and maintain effective working relationships, including with contractors, city staff, and the general public. Ability to participate in field work including observations, measurements, data collection, surveying and construction inspection activities. Ability to maintain adequate attendance.

Construction Inspector 1

All of the above, and

Working knowledge of practices, policies and procedures related to the inspection of a wide variety of public works projects. Working knowledge of survey instruments and equipment and surveying principles, practices, procedures, nomenclature and symbols, including GPS. Working knowledge of mathematics including geometry and trigonometry. Working knowledge of the principles and practices of engineering drawing and drafting. Working knowledge of underground sewer utility installations. Ability to keep construction records and prepare reports. Ability to exercise considerable judgment to identify potential problems and take the necessary corrective action. Ability to independently resolve complex construction problems such as those encountered in high density, multi-use/ commercial areas, and/or situations requiring the integration of a large number of public works, utility, or disruption of service considerations using sound judgment. Ability to work from oral and

written instructions and from engineering plans, specifications and sketches. Ability to perform the inspection of a large number of concurrent, varied and complex projects.

Construction Inspector 2

All of the above, and

Thorough knowledge of practices, policies and procedures related to the inspection of a wide variety of public works projects. Ability to coordinate and/or perform the inspection of a large number of concurrent, varied and complex projects. Ability to lead assigned personnel in the performance of their duties.

Training and Experience:

Generally, positions in this classification will require:

Engineering Field Aide

One year of experience performing technical field work in support of engineering and public works construction activities such as inspection, drafting, or surveying. Such experience would normally be gained after completion of high school or equivalent (including two years of math, mechanical drawing and/or related studies). Possession of an associate's degree in Civil Engineering Technology or closely related area may be substituted for the experience requirement. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of this position will also be considered.

Construction Inspector 1

Two years of progressively responsible experience in public works engineering activities, including inspection, drafting, surveying, and/or design. Such experience would normally be gained after completion of high school or equivalent supplemented by vocational school or college course work or military training in civil engineering technology, engineering design or a closely related area. Possession of a four year degree in civil engineering or a related field may be substituted for the experience requirements. Possession of a two year associate degree in Civil Engineering Technology, Engineering Design, or related field may be substituted for one year of required experience. Other combinations of training and/or experience which can be demonstrated to result in possession of the knowledge, skills and abilities necessary to perform the duties of this position will also be considered.

Construction Inspector 2

Three years of responsible and varied public works construction inspection experience similar to that gained as a Construction Inspector 1 for the City of Madison or in an equivalent position. Such experience would normally be gained after completion of high school or equivalent supplemented by vocational school or college course work or military training in civil engineering technology, engineering design or a closely related area. Possession of a four year degree in civil engineering or a related field may be substituted for two years of experience. Possession of a two year associate degree in Civil Engineering

Technology, Engineering Design, or related field may be substituted for one year of required experience. Other combinations of training and/or experience which can be demonstrated to result in the possession of the knowledge, skills and abilities necessary to perform the duties of this position will also be considered.

Specific training and experience requirements will be established at the time of recruitment.

Necessary Special Qualifications:

Possession of a valid driver's license or ability to meet the transportation requirements of the position.

Physical Requirements:

Generally, employees in this position must be able to lift/carry objects weighing up to 75 pounds (sewer access structure castings) and perform work while walking/standing for a large percentage of time. Employees must be able to walk over uneven terrain, including trench excavations, and must be able to bend, squat, and access construction sites. This position requires the incumbent to work outdoors in all types of weather.

| Department/Division | Classification | Comp. Group | Range |
|----------------------------|--------------------------|--------------------|--------------|
| Engineering Division | Engineering Field Aide | 15 | 07 |
| Engineering Division | Construction Inspector 1 | 15 | 09 |
| Engineering Division | Construction Inspector 2 | 15 | 11 |

Approved: _____
Brad Wirtz
Human Resources Director

Date