



**DEPARTMENT:** James City Service Authority/Engineering

**NATURE OF WORK:**

Performs advanced technical work in construction observations and inspection of: water production, water storage, transmission mains, and distribution facilities; sanitary sewer pumping stations, collection, and transmission facilities for compliance with contract documents as well as James City Service Authority (JCSA) and HRPDC Regional Standards and Virginia Department of Health Regulations and Standards. Perform advanced technical work in administering the Wellhead Protection Program, Water Storage Tank Painting and Rehabilitation, Miss Utility Program, and other JCSA programs. Duties are performed under the general supervision of the JCSA Engineering Specialist.

**ESSENTIAL FUNCTIONS OF THE JOB:**

Provides construction observation of complex construction projects such as: water facilities, water storage, transmission mains, and distribution facilities; sanitary sewer pumping stations, collection and transmission facilities to ensure compliance with local and State regulations, standards, and approved construction documents. Advises engineers and contractors of problems or conflicts and develops corrective action plans.

Provides construction observation and witnesses testing of water and wastewater facilities by private developers for compliance with JCSA standards and other applicable construction standards and regulations.

Aids in the maintenance of the computer database of all inspections, testing, record drawings and devices in compliance with JCSA and HRPDC standards. Documents inspections and prepares construction reports. Maintains project activity and progress records.

Reviews water and wastewater facility construction plans for compliance with JCSA standards and other applicable construction standards and regulations.

Performs minor site plan and subdivision plan review, shop drawing and submittal review of materials for construction and Specification compliance.

Conducts field conferences and inspections with developers, contractors, zoning, public works, and health department personnel; informs developers and contractors of deviations or errors and advises corrective action. Issues violation notices or specifies corrective actions required for disapproved inspections or projects not in accordance with plans and specifications.

Uses engineering drawings, computers, GIS program, and specialized electronic equipment to locate traceable and untraceable existing JCSA underground utilities, as required by State Miss Utility Law.

Provides input and suggestions for revisions to JCSA and the new HRPDC Regional standards and specifications.

Assists utility companies, contractors, developer representatives, JCSA personnel, and the general public in locating existing JCSA underground utilities.

Uses independent judgement, knowledge, experience, and analysis as to possible methods of installation and pipe placement to locate plastic pipe which cannot be traced.

Coordinates and documents requests for markings from “Miss Utility Tickets” within the specified time frame of 48 hours. Maintains computerized “Miss Utility” system.

Assists in the final punchlist preparation and updating of record drawings, as required or based on field observations. Performs final inspections as projects are completed to ensure compliance with plans, contracts, standards, and specifications.

Reviews all new products, materials, and contractor submittals for compliance with JCSA standards and specifications.

Performs inspections on repairs and renovations on existing JCSA water and sewer facilities to ensure compliance with codes, regulations, plans, specifications and standards.

Assists in the review of subdivision plans, site plan, construction plans and specifications, when required.

Inspects the grouting of public and private wells installed in James City County, per the JCC Well Ordinance and Virginia Department of Health. Monitors well head protection and well abandonment programs in accordance with State and local criteria.

Inspects the construction and abandonment of public and private groundwater wells.

Measures and computes actual quantities of materials installed and reviews contractors monthly estimates for accuracy as required. Requires special knowledge of soils and trench conditions to make field decisions regarding unsuitable soils and subgrade materials that must be removed and replaced with select materials.

Inspects water meter boxes to assure boxes/connections JCSA standards and specifications before meter is installed.

Monitors testing of groundwater wells and tanks and measurement of groundwater levels during testing and coating thicknesses on water tanks. Inspects, monitors, and approves coatings on 50,000 gallon and less water storage facilities.

Uses water system maps and specialized electronic equipment to locate and check lines for leaks, cracks, blockages, etc.

Samples materials for quality assurance and assists laboratory personnel at construction site as required.

Meets with developers, contractors, engineers, builders and citizens as necessary. Meets with contractors at time of excavation to advise and create drawings, if required. Is the point of contact for public during construction of all JCSA CIP projects.

Performs work safely in accordance with departmental safety procedures and the JCSA Safety Program. Operates equipment safely and reports any unsafe work condition or practice to supervisor.

Performs related work as required.

## **JOB LOCATION AND EQUIPMENT OPERATED:**

Duties are performed at various construction sites and JCSA facilities located throughout the County. Drives County vehicle to work sites. Requires extensive walking, frequently over rough terrain with equipment. Requires climbing up and down ladders to manholes and water tanks. Operates computer, telephone, utility locating equipment and the "Miss Utility" system. Duties are primarily performed outdoors in all weather conditions.

## **REQUIRED KNOWLEDGE, SKILLS, AND ABILITIES:**

Considerable knowledge of the principles and practices of engineering and construction as applied to the electrical, mechanical, hydraulics, and structural systems that make up water and wastewater facilities.

Considerable knowledge of paint applications, pertaining to buildings and tanks. Ability to test subsurface preparation with respect to coating application for water storage tanks and sanitary sewer wastewater wet wells and manholes.

Advanced knowledge of construction projects and inspection procedures in James City County.

Knowledge of backflow prevention devices proper selection, and installation.

Thorough knowledge of local and State codes relating to cross connection control and backflow prevention.

Knowledge of the Uniform Statewide Building Code, BOCA Code, and Health Department regulations and the operation of the code enforcement agencies.

Considerable knowledge of hydrostatic, low pressure air, lamping, deflection and vacuum testing as relating to water and wastewater pipelines and manholes.

Considerable knowledge of flushing, disinfections, and sampling practices.

Knowledge of CCTV inspection practices and how to interpret observations.

Considerable knowledge of Well Head Protection programs.

Ability to communicate effectively, both orally and in writing.

Ability to maintain records and prepare clear and concise reports.

Knowledge of computer programs: WordPerfect, Excel, database program, GIS, and Arc View.

Considerable knowledge of State and industry standards regarding construction projects.

Ability to operate specialized electronic and audio equipment, and computer equipment.

Ability to detect poor workmanship and inferior materials and recommend corrective actions.

Ability to perform Certificate of Occupancy inspection, as requested by Code Compliance.

Ability to assist code compliance, when requested, in the inspection of water and sewer mains in private systems.

Ability to establish effective working relationships with County officials, contractors, property owners, and the general public.

Ability to read and interpret blueprints, engineering plans, and specifications.

Ability to make accurate mathematical calculations.

Ability to conduct on-site tests and to analyze results.

Ability to spot defective gauges during air or water testing.

Ability to perform taxing physical activity, including walking, climbing, stooping, and bending.

**MINIMUM QUALIFICATIONS:**

Graduation from high school or equivalent, with a minimum of five years experience in the Construction and/or Inspection of water and/or wastewater field or approved equivalent experience, which shall include experience in contract administration; and demonstrated competency in the performance of the essential functions of the job as evaluated by the JCSA General Manager.

**NECESSARY SPECIAL QUALIFICATIONS:**

Must possess a valid Virginia driver's license and have an acceptable driving record based upon James City County's criteria.

Must possess valid certification by the State of Virginia in the Miss Utility Program.

Must possess valid certification in Well Drilling.

Pass and maintain all certifications of the JCSA safety program, including but not limited to:

1. Blood Borne Pathogens
2. Confined Space Entry
3. CPR
4. Fire Protection
5. First Aid
6. Hazardous Communication
7. Lockout/Tagout
8. Personal Protection Equipment
9. Back Injury Prevention

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Date: June 2003

# IDENTIFICATION OF GENERAL APTITUDES AND PHYSICAL REQUIREMENTS

Position Title Construction Inspector I Position Number 761  
Department James City Service Authority Division \_\_\_\_\_

The Americans with Disabilities Act requires that we identify the general aptitudes and physical requirements needed to perform the job listed above. Individuals who have the position must be able to perform all essential job functions unaided or with reasonable accommodation.

**I. Mental Abilities:** General learning ability. The ability to “catch on” or understand instructions and underlying principles.

- Ability to understand and follow oral instruction
- Ability to understand and follow written instruction
- Ability to guide and/or give instructions
- Ability to make decisions in accordance with established procedures and policies
- Not essential to job function

**II. Verbal Abilities:** Ability to understand meanings of words and ideas associated with them and to use them effectively. To comprehend language, to understand relationships between words, and to understand meanings of whole sentences and paragraphs. To present information or ideas clearly.

## 1. Speaking/Talking:

- Answering telephone, radio, or switchboard
- Communicating with County officials
- Communicating with general public
- Communicating with vendors
- Communicating with supervisors and/or with other employees
- Communicating with others \_\_\_\_\_
- \_\_\_\_\_
- Not essential to job function

## 2. Hearing/Listening:

- Ability to distinguish between different tones.
- For communication with County officials, public, vendors, supervisors and/or other employees
- Not essential to job function

## 3. Reading: (ability to read and understand text)

- Essential to job function
- Not essential to job function

**III. Numerical:** Ability to perform arithmetic operations quickly and accurately.

- Ability to mentally perform accurate two digit calculations
- Ability to perform accurate calculations aided by a calculator, adding machine or measurement device

**IV. Spatial Abilities:** Ability to comprehend forms in space and understand relationships of plane and solid objects. May be used in such tasks as blue print reading and in solving geometry problems. Frequently described as the ability to “visualize” objects of two or three dimensions, or to think visually of geometric forms.

- Essential function
- Not essential function

**V. Motor Coordination:** Ability to coordinate eyes and hands or fingers rapidly and accurately in making precise movements with speed. Ability to make a movement response accurately and quickly.

**1. Manual Dexterity:** Ability to move the hands easily and skillfully. To work with the hands in placing and turning motions.

- |  |  |
|--|--|
| <input checked="" type="checkbox"/> Use telephone      | <input checked="" type="checkbox"/> Manipulate computer keyboard and mouse |
| <input type="checkbox"/> Use switchboard               | <input type="checkbox"/> Use postage machine                               |
| <input checked="" type="checkbox"/> Use radio/console  | <input checked="" type="checkbox"/> Use hand tools                         |
| <input checked="" type="checkbox"/> Use a calculator   | <input type="checkbox"/> Use power tools                                   |
| <input checked="" type="checkbox"/> Use a copy machine | <input type="checkbox"/> Other: _____                                      |
| <input checked="" type="checkbox"/> Use a fax machine  | <input type="checkbox"/> Not essential to job function                     |

**2. Finger Dexterity:** Ability to move the fingers and manipulate small objects with the fingers rapidly or accurately. For example: electrical wiring.

- Essential to job function
- Not essential to job function

Explain: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**VI. Physical Demands:**

**1. Strength:** The quality, state or property of being strong. The power to withstand strain, force or stress.

Please check (✓) in appropriate boxes below.

Ability to manipulate materials and/or equipment (lbs)						Frequency of Manipulation			
	5-	5-10	10-15	15-25	25-50	50+	Occasionally	Frequently	Continuously
<b>Lift</b>					✓		✓		
<b>Push/Pull</b>					✓		✓		
<b>Hold/Carry</b>					✓		✓		

Manipulation done from:  ground to waist       waist level       waist to shoulder       above shoulder  
(Check all that apply)

Not essential to job function:     Lift       Push/Pull       Hold/Carry    (Check all that apply)

**2. Climbing:** To move up or mount by using the hands or feet.

**Ladders**

**Stairways**

**Steps**

- |   |  |  |
|---|--|--|
| <input checked="" type="checkbox"/> Step stool            | <input type="checkbox"/> 1 flight                      | <input type="checkbox"/> 1-2                           |
| <input checked="" type="checkbox"/> 8' to 10' step ladder | <input type="checkbox"/> 2 flights                     | <input type="checkbox"/> 2-3                           |
| <input checked="" type="checkbox"/> Extension ladder      | <input checked="" type="checkbox"/> 3 or more flights  | <input checked="" type="checkbox"/> 4 or more steps    |
| <input type="checkbox"/> Other _____                      | <input type="checkbox"/> Other _____                   | <input type="checkbox"/> Other _____                   |
| <input type="checkbox"/> Not essential to job function    | <input type="checkbox"/> Not essential to job function | <input type="checkbox"/> Not essential to job function |

**3. Ability to Stand, Sit, Walk, and Run:**

Please check (✓) in appropriate boxes below.

	Duration (hours/day)						Occasionally	Frequently	Continuously
	0-1	1-3	3-5	5-7	7-9	9+			
<b>Stand</b>			✓					✓	
<b>Sit</b>	✓						✓		
<b>Walk</b>		✓					✓		
<b>Run</b>									

If walking or running, over what type of terrain?     flat       rough       both

Not essential to job function:     Stand     Sit     Walk     Run    (Check all that apply)

**4. Stooping, Kneeling, Crouching, and /or Crawling:**

To bend forward or down from the middle of the waist or the middle of the back, to bend downwards, to lower oneself and/or to move freely on hands and knees.

**Daily Amounts**

- 0-5x             5-20x             20-50x             50+x  
 Other \_\_\_\_\_             Not essential to job function

**5. Reaching, Handling, Fingering, and/or Feeling:**

To stretch out, extend, or put forth a bodily part. To touch or grasp something, by extending or stretching. To touch, lift, hold or operate with the hands.

**Daily Amounts**

- 0-5x             5-20x             20-50x             50+x  
 Other \_\_\_\_\_             Not essential to job function

**6. Seeing: To perceive or comprehend by the sense of sight.**

Essential to job function: These characteristics are necessary (Check all that apply)

- Peripheral vision
- Night vision
- Focus (distinctness or clarity)
- Color perception (discriminate between colors)
- Depth perception (determine distance relationship between objects)
- Not essential to job function

**VII. Driving: The ability to transfer or convey in a vehicle.**

<b>Transmission</b>	<b>Standard</b>	<b>Automatic</b>	<b>Multi-Gears</b>
Car	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Van	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Small Truck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Medium Truck	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Large Truck	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Truck w/Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Heavy Bus Equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Not essential to job function	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Other (list) _____			