



## **CIVIL ENGINEER, SENIOR**

**780**

Jamestown  
1607

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

### **DEFINITION OF WORK:**

Performs advanced level engineering work, which includes the design, construction, and administration of capital improvement projects or programs, or in the approval and review of development projects; does related work as required such as: oversees the commercial and residential site plan review for water/wastewater design; studies and analyses for the water/wastewater systems; designs for water/wastewater projects; studies and analysis for the James City Service Authority (JCSA) operations; and inspections for development and capital improvement projects (private and public) related to water/wastewater facilities. Uses experience and judgement to plan goals. Work is performed under the general supervision of the JCSA Chief Engineer(s) and is reviewed through conferences, reports, and analyses of results obtained.

### **ESSENTIAL FUNCTIONS OF THE JOB:**

Coordinates, directs, and participates in highly technical and complex engineering areas such as construction and development administration, water works design, wastewater collection and transmission, environmental impacts, hydraulics and similar areas.

Reviews and revises complex construction plans for water and sanitary sewer projects for compliance with standards, codes and ordinances and for adherence to acceptable engineering principles.

Reviews and recommends revisions to complex construction plans for subdivisions and site plans for compliance with standards, codes and ordinance, and for adherence to acceptable engineering principles.

Develops and implements ordinances, regulations, and standards to ensure sewer and water service and systems are operated in accordance with applicable State and Federal regulations.

Provides technical response to citizen inquiries concerning specific projects in order to properly inform them as well as incorporate their input.

Represents the County in conferences/committees to resolve important regional questions and to plan and coordinate regional efforts as assigned.

Plans, supervises, and reviews the engineering, inspection, and materials testing functions associated with assigned projects.

Develops and implements computer applications for modeling of water and wastewater systems.

Coordinates the work of consulting engineers, County departments, and governmental agencies affected by, or assigned to, the designated project.

Prepare budgets, records, and reports related to assigned projects.

Provides comprehensive engineering support in all areas of civil engineering for development of the JCSA Capital Improvement Projects, including cost estimates, and related items in development of the JCSA budget for the Capital Improvement Program.

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

Assist in planning goals for water and wastewater infrastructure.

Prepare report presentations to relay findings or support a position for an assigned project.

Evaluate project progress and recommend changes if needed in procedures or practices.

Provide work leadership and training to lower level professional and technical staff when required.

Performs related work as required.

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

Duties are primarily performed in an office setting. Operates computer keyboard and telephone. Drives County vehicle to construction or other work sites. Requires occasional walking over rough terrain.

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

Thorough knowledge of the principles, practices, and methods of civil engineering as applied to planning, location, design, construction, inspection, and maintenance of water and wastewater facilities and related projects.

Considerable knowledge of the State and Federal regulations pertaining to public health, public water, and wastewater systems.

Considerable knowledge of land and engineering survey systems, methods, and techniques.

Considerable knowledge of job site safety standards and regulations.

Thorough knowledge of departmental policies, procedures, and technical standards.

Thorough knowledge of computer hardware and software needed for modeling of water supply, storage, and transmission systems; wastewater systems; database applications; and spreadsheet applications.

Some knowledge of principles, practices, and techniques of supervision and management.

Ability to coordinate the work of project personnel.

Ability to analyze, plan, and design complex water works and sanitary sewer facilities.

Ability to manage complex public engineering projects.

Ability to establish and maintain effective working relationships with County and State officials, employees, contractors, and the public.

Ability to communicate effectively, both orally and in writing.

Ability to prepare complex technical reports.

**MINIMUM QUALIFICATIONS:**

- Bachelor's Degree in Civil Engineering or related field, and extensive professional engineering experience in a related field, which shall have included complex project management experience.
- A minimum of three years experience with James City County or equivalent engineering experience as determined by the department manager.
- Registration as a Professional Engineer required.
- Demonstrated competence performing all functions of the JCSEA Civil Engineer as evaluated by the department manager.

Revised: June 2006

CivilEngrSr781\_103\_3

# IDENTIFICATION OF GENERAL APTITUDES AND PHYSICAL REQUIREMENTS

Position Title: Civil Engineer, Senior Position Number: 780  
Department: James City Service Authority Division: Engineering

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:**

- 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**

- Step stool
- 8' to 10' step ladder
- Extension ladder
- Other \_\_\_\_\_
- Not essential to job function

**Stairways**

- 1 flight
- 2 flights
- 3 or more flights
- Other \_\_\_\_\_
- Not essential to job function

**Steps**

- 1-2
- 2-3
- 3-4
- Other \_\_\_\_\_
- 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)

**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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Van	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Small Truck	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Medium Truck	<input 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 type="checkbox"/>
Other (list) _____			

Revised: June 2006  
CivilEngrSr781\_103\_3