



USUAL & CUSTOMARY JOB ANALYSIS/DESCRIPTION

JOB TITLE:	Collection Systems Technician/Equipment Operator
DEPARTMENT:	Field Operations
EMPLOYER:	Vallejo Sanitation and Flood Control District 450 Ryder Street, Vallejo, California 94590
DATE PREPARED:	1/15/2004
WORK SCHEDULE/HOURS:	9/80 work schedule; includes working 8 to 9 hours per shift, 4 to 5 days per week.
EMPLOYEE:	
D/I:	
CLAIM NUMBER:	

Employer's Business: The employer, Vallejo Sanitation and Flood Control District, is a government agency responsible for the collection and treatment of wastewater from the sanitary sewer system and the protection from storm water.

Job Functions

Overview:

The employee performs skilled work individually or as a member of a crew in the maintenance, installation and repair of collection systems. This class may be required to perform the task of Collection System Supervisor. This class may act as a working lead position. All duties are considered essential functions. There are no marginal job functions for this position.

The employee, as required, operates construction equipment including a backhoe, a dump truck to transport debris or materials, a loader, or bob-cat/skid-steer loader. Equipment operation varies, includes maneuvering a steering wheel, levers, pressing foot pedals, in conjunction with using a cushioned seat. The employee may operate equipment from 1-6 hours depending on the assignment. When not needed to operate construction equipment, this class shall work as a Collection System Technician II. The job title, Collections Systems Technician II, encompasses 4 different positions. The employee would perform any one of the positions described below on any given workday.

POSITION 1: CONSTRUCTION CREW

- The employee operates a pickup truck equipped with an automatic transmission to travel to and from field sites, includes ascending one step, maneuvering a steering wheel, pressing 2 foot pedals in conjunction with using a cushioned seat.
- The employee operates a dump truck to transport debris or materials to and from sites. Materials are loaded with a backhoe, loader, or bob-cat/skid-steer loader. Tractor operation varies, includes maneuvering a steering wheel, levers, pressing foot pedals, in conjunction with using a cushioned seat.
- The employee cleans ditches, removes debris and green waste. This includes cleaning inlets and out-falls, utilizing a variety of basic tools including pitch forks, rakes, shovels, etc. The employee operates tractor mower to mow weeds and grass, or alternatively operates a walk-behind push mower. As needed, a backhoe is utilized to remove debris.
- The employee utilizes a pull-start gas powered chainsaw to cut trees, branches and green waste.
- The employee utilizes a gas powered hedge trimmer to cut ivy and weeds.
- The employee utilizes a powered concrete horizontal/slab cutting saw to cut concrete. Includes unloading the saw with a lift gate or up/down a trailer ramp, utilizing a key start ignition to start the saw, utilizing a joy stick to control the self propelled

saw's movement. The employee maneuvers 2 extended handles to control the 4 wheeled saw's direction, when turning. Alternatively, the employee utilizes a smaller saw, includes pull starting the gas powered engine, and maneuvering the saw by 2 handles. The smaller saw is loaded/unloaded manually or with a winch.

- The employee utilizes basic tools including wrenches to make saw adjustments, change blades and blade guards.
- The employee, as needed, utilizes a pick or breaking bar to break concrete.
- The employee utilizes a square shovel and squeegee to relocate and retrieve concrete sludge or an automated vacuum wand with a hose attachment to retrieve the sludge.
- The employee, as needed, operates a jackhammer to break concrete. This includes pressing a trigger in conjunction with holding and maneuvering 2 handles to break concrete.
- The employee utilizes a push broom to sweep and clean hardscapes to maintain a clean work area.
- The employee utilizes a lute to spread and level asphalt material. The employee may operate a roller to compact asphalt, includes ascending 2 steps, maneuvering a steering wheel, joy stick in conjunction with using a cushioned seat
- The employee may operate a gas powered "whacker"/dirt compactor to compact dirt. This includes pressing a trigger in conjunction with maneuvering 2 handles.
- The employee retrieves, relocates and sets street signs around the work area.
- The employee loads/unloads a variety of items from the truck including a variety of tools, parts, equipment, generators, pumps etc.
- The employee repairs pipe, includes utilizing a backhoe in the absence of an operator to access the pipe, utilizing a pick, shovel or breaking bar to dig/clean around the pipe. The employee utilizes a variety of basic and power tools during a repair including a pipe cutter, pneumatic chisels, wrenches, pry bars, to cut, replace and repair pipe. Pipe material includes plastic, clay, concrete, and cast iron and may vary in diameter thickness including 3"-108". Includes ascending/descending in and out of the trench. May require the use of an extension ladder and utilizing a bucket with a rope attachment to lower or raise tools, equipment and parts.
- The employee performs pipe "bursting" activities to repair pipe, includes digging 2 holes at each pipe end, setting a winch and ¾" cable through and existing damaged pipe with a specialized "bursting" head attachment. Fusing equipment is positioned at the pipe joint, the winch is activated, the existing pipe "bursts"/breaks apart as the attachment moves through the pipe, and the new pipe is fed through the existing pipe and set in place. Includes loading/unloading a variety of equipment including a 4 wheeled fusing equipment or a smaller sized portable fusing equipment, pulleys, backing plates, a hydraulic ram, fusing clamps etc.
- The employee ascends/descends in and out of trenches. Depending on the depth, may utilize an extension ladder, up to 14'. Average trench depth is approx 6-8'. Includes setting shoring (steel walls to prevent earth cave-ins), the employee sets shoring equipment in the trench, one every 3-4', and utilizes a manual pump to expand the shoring in the trench while securing. The employee also sets 4 X 8' X 1 1/8" thick plywood sheets in the trench.
- The employee sets concrete. This includes utilizing a trowel or wood rods. Depending on the board length the employee and a co-worker will handle each end. The rod is used to level recently poured concrete, the trowel or hawk are used to finish the concrete.
- The employee sets forms. This includes retrieving/transporting and setting lumber pieces at ground level.
- The employee utilizes an electric circular saw to cut lumber.

- The employee utilizes a sledgehammer to drive lumber or metal stakes into the ground. The employee uses a carpenter's hammer to drive nails into lumber and secure to the boards.
- The employee, as needed, utilizes a steel tamper, to level fresh concrete. Includes utilizing the tamper in and upward/downward motion to even the concrete.
- The employee unloads and sets sand bags to prevent earth erosion and flooding during rainy weather.
- The employee utilizes a variety of basic or power tools to make adjustments or repairs to equipment, including pneumatic guns, grinders, saws, wrenches, pliers, screwdrivers, hammers etc.
- The employee performs traffic control duties. This includes unloading and setting street signs and as needed holding a flag or stop sign to guide traffic.
- The employee loads/unloads a variety of equipment and tools including generators, pumps, tools, parts etc.
- The employee unloads and sets sand bags to prevent earth deterioration and flooding, varies depending on the season.
- The employee operates, repairs, constructs and restores all collection systems and auxiliary components.
- The employee, at the District's discretion, may be required to operate an emergency standby vehicle on a fixed or rotating basis.
- The employee performs materials handling activities in connection with department activities.
- The employee maintains and lubricates equipment.
- The employee completes all forms and reports for work task assigned.
- The employee operates the computerized maintenance program.
- The employee enters data as required.
- The employee makes field investigations to determine the location and condition of pipes, manholes and other structures.
- The employee drives and operates light, medium and heavy duty pickup and dump trucks.
- The employee assists in the training of the Collection System Technician Entry level, Collection Systems Technician I and II's.
- The employee assists in the repair, preventative maintenance, operation, construction, restoration and C.C.T.V. inspection of all collection systems and auxiliary components as directed.
- The employee performs material handling activities in connection with loading and unloading materials, supplies and equipment and assists in inspecting them for defects, applying identification numbers, taking inventory, issuing from stock, preparing for delivery and maintaining storage runways.
- The employee performs maintenance of grounds and facilities, as assigned.

POSITION 2: PREVENTATIVE MAINTENANCE

- The employee utilizes a variety of equipment to perform preventative maintenance on district collection systems.

- The employee along with co-workers operates various sized jet trucks/equipment. The employee operates the jet truck to a site, sets a ¾" hose in a manhole and into a sewer line. The hose is automatically fed by the equipment, however, the employee maneuvers/tugs on the hose during blockages. The employee may insert up to 800' of hose. The employee turns valves and levers, activates the water to clean sewer lines, up to 2000 psi. The employee handles/connects/disconnects fire hoses from a fire hydrant to the jet truck to re-fill the jet truck with water. Alternatively, the employee utilizes a gas powered "hand" jet equipment positioned on 4 wheels, the equipment is loaded with a lift gate, winch or with the assistance of a co-worker. The employee, as needed, ascends/descends an 8 step vertical stationary ladder to access the jet truck top to inspect the plumbing. The truck jetting equipment may or may not be positioned on a swiveling platform. Alternatively, the employee utilizes an electric "eel" positioned on 2 wheels to unplug sewer lines.
- The employee along with a co-worker operates a vacuum truck. This includes connecting 8' pipe attachments to one another, depending on the situation one to several attachments are secured. The vacuum truck is activated and the employee guides the tubing supported by a boom to suction debris from collection systems.
- The employee operates a rodder truck equipped with a 3/8" rod, reel and hydraulic system that automatically feeds and removes the rod in and out of the sewer line, up to 1200' of rod. As needed, or if a break occurs, the employee must manually remove the rod and utilize an electric 4" grinder to cut the rod every 4'.
- The employee removes stoppages and enact preventative maintenance of collection systems using hand, hydraulic and mechanical equipment.
- The employee utilizes a variety of basic or power tools to make adjustments or repairs to equipment, including pneumatic guns, grinders, saws, wrenches, pliers, screwdrivers, hammers etc.
- The employee performs traffic control duties. This includes unloading and setting street signs and as needed holding a flag or stop sign to guide traffic.
- The employee loads/unloads a variety of equipment and tools including generators, pumps, tools, parts etc.
- The employee unloads and sets sand bags to prevent earth deterioration and flooding, varies depending on the season.
- The employee operates, repairs, constructs and restores all collection systems and auxiliary components.
- The employee, at the District's discretion, may be required to operate an emergency standby vehicle on a fixed or rotating basis.
- The employee performs materials handling activities in connection with department activities.
- The employee maintains and lubricates equipment.
- The employee completes all forms and reports for work task assigned.
- The employee operates the computerized maintenance program.
- The employee enters data as required.
- The employee makes field investigations to determine the location and condition of pipes, manholes and other structures.
- The employee drives and operates light, medium and heavy duty pickup and dump trucks.
- The employee assists in the training of the Collection System Technician Entry level, Collection Systems Technician I and II's.
- The employee assists in the repair, preventative maintenance, operation, construction, restoration and C.C.T.V. inspection of all collection systems and auxiliary components as directed.

- The employee performs material handling activities in connection with loading and unloading materials, supplies and equipment and assists in inspecting them for defects, applying identification numbers, taking inventory, issuing from stock, preparing for delivery and maintaining storage runways.
- The employee performs maintenance of grounds and facilities, as assigned.

POSITION 3: CUSTOMER SERVICE

- The employee visits field sites, inspects and performs “smaller” sewer line repairs.
- The employee utilizes a thin metal rod that consists of a single 4-6’ rod or multiple rods to remove rags or debris from sewer lines. Includes connecting a key to the end of the rod and turning the key to manually spin the rod to remove debris, includes maneuvering and manipulating the rod. The employee may insert up to 100’ of rod or more. Alternatively, the employee utilizes an electric “eel” positioned on 2 wheels to unplug sewer lines.
- The employee utilizes a metal hook to remove and replace manhole lids.
- The employee utilizes a spray can to mark pavement, utilized with a trigger-operated extension.
- The employee operates hand jet equipment positioned on 4 wheels. This includes relocating to and from sites, sets a ¾” hose in a manhole and into a sewer line. The hose is automatically fed by the equipment, however the employee maneuvers/tugs on the hose during blockages. The employee turns valves and levers, activates the water to clean sewer lines. The equipment is loaded with a lift gate, winch or with the assistance of a co-worker.
- The employee utilizes a pick, shovel, breaking bar to dig and access sewer lines.
- The employee removes stoppages and enact preventative maintenance of collection systems using hand, hydraulic and mechanical equipment.
- The employee utilizes a variety of basic or power tools to make adjustments or repairs to equipment, including pneumatic guns, grinders, saws, wrenches, pliers, screwdrivers, hammers etc.
- The employee performs traffic control duties. This includes unloading and setting street signs and as needed holding a flag or stop sign to guide traffic.
- The employee loads/unloads a variety of equipment and tools including generators, pumps, tools, parts etc.
- The employee unloads and sets sand bags to prevent earth deterioration and flooding, varies depending on the season.
- The employee operates, repairs, constructs and restores all collection systems and auxiliary components.
- The employee, at the District’s discretion, may be required to operate an emergency standby vehicle on a fixed or rotating basis.
- The employee performs materials handling activities in connection with department activities.
- The employee maintains and lubricates equipment.
- The employee completes all forms and reports for work task assigned.
- The employee operates the computerized maintenance program.
- The employee enters data as required.

- The employee makes field investigations to determine the location and condition of pipes, manholes and other structures.
- The employee drives and operates light, medium and heavy duty pickup and dump trucks.
- The employee assists in the training of the Collection System Technician Entry level, Collection Systems Technician I and II's.
- The employee assists in the repair, preventative maintenance, operation, construction, restoration and C.C.T.V. inspection of all collection systems and auxiliary components as directed.
- The employee performs material handling activities in connection with loading and unloading materials, supplies and equipment and assists in inspecting them for defects, applying identification numbers, taking inventory, issuing from stock, preparing for delivery and maintaining storage runways.
- The employee performs maintenance of grounds and facilities, as assigned.

POSITION 4: TV INSPECTION

- The employee along with 3 workers operates a TV inspection truck, may include a variety of rotations. The employee may utilize an office chair and work at a desk station inside of the truck. The station is equipped with levers, joy sticks, monitors and a computer keyboard to remotely control the t.v. inspection equipment. The employee retrieves a "tractor"/camera equipment, connects to a reeled cable, lowers into a sewer line, utilizes pole extensions, and sets a bottom and top rollers to assist with the cable movement. Observes the monitor to detect sewer line blockages.
- The employee along with co-workers operates various sized jet trucks/equipment. The employee operates the jet truck to a site, sets a ¾" hose in a manhole and into a sewer line. The hose is automatically fed by the equipment, however the employee maneuvers/tugs on the hose during blockages. The employee may insert up to 800' of hose. The employee turns valves and levers, activates the water to clean sewer lines, up to 2000 psi. The employee handles/connects/disconnects fire hoses from a fire hydrant to the jet truck to re-fill the jet truck with water.
- The employee unloads, relocates and inserts overflow sewer plugs to prevent sewer overflows.
- The employee performs pipe "bursting" activities to repair pipe. This includes digging 2 holes at each pipe end, setting a winch and ¾" cable through an existing damaged pipe with a specialized "bursting" head attachment, fusing equipment is positioned at the pipe joint, the winch is activated, the existing pipe "bursts"/breaks apart as the attachment moves through the pipe, and the new pipe is fed through the fusing equipment and set in place. Includes loading/unloading a variety of equipment including a 4 wheeled fusing equipment or a smaller sized portable fusing equipment, pulleys, backing plates, a hydraulic ram, fusing clamps etc.
- The employee, as needed, performs confined space entries to inspect or perform manhole repairs. This includes working in a crew of 2-3 employees. Includes setting a tripod over an opening, wearing safety equipment and lowered with an automated winch and utilizing specialized testing equipment including gas detectors, lowering tools, parts and equipment to inspect, service or repair equipment. The employee may lower up to 30'. Once lowered the employee may perform a variety of tasks including patching deterioration spots, grouting pumps, utilizing a variety of tools, pouring and finishing concrete and possibly utilizing a pneumatic jackhammer. Includes wearing a self contained breathing apparatus.
- The employee removes stoppages and enact preventative maintenance of collection systems using hand, hydraulic and mechanical equipment.
- The employee utilizes a variety of basic or power tools to make adjustments or repairs to equipment, including pneumatic guns, grinders, saws, wrenches, pliers, screwdrivers, hammers etc.
- The employee performs traffic control duties. This includes unloading and setting street signs and as needed holding a flag or stop sign to guide traffic.

- The employee loads/unloads a variety of equipment and tools including generators, pumps, tools, parts etc.
- The employee unloads and sets sand bags to prevent earth deterioration and flooding, varies depending on the season.
- The employee operates, repairs, constructs and restores all collection systems and auxiliary components.
- The employee, at the District's discretion, may be required to operate an emergency standby vehicle on a fixed or rotating basis.
- The employee performs materials handling activities in connection with department activities.
- The employee maintains and lubricates equipment.
- The employee completes all forms and reports for work task assigned.
- The employee operates the computerized maintenance program.
- The employee enters data as required.
- The employee makes field investigations to determine the location and condition of pipes, manholes and other structures.
- The employee drives and operates light, medium and heavy duty pickup and dump trucks.
- The employee assists in the training of the Collection System Technician Entry level, Collection Systems Technician I and II's.
- The employee assists in the repair, preventative maintenance, operation, construction, restoration and C.C.T.V. inspection of all collection systems and auxiliary components as directed.
- The employee performs material handling activities in connection with loading and unloading materials, supplies and equipment and assists in inspecting them for defects, applying identification numbers, taking inventory, issuing from stock, preparing for delivery and maintaining storage runways.
- The employee performs maintenance of grounds and facilities, as assigned.

Minimum Qualifications

EDUCATION & EXPERIENCE

- Graduation from high school or equivalent
- 2 years as a Collection Systems Technician II plus one year experience operating construction equipment, such as a backhoe.

KNOWLEDGE, SKILLS & ABILITIES

- Knowledge of basic computer skills including keyboard are preferred
- Work well with others including customers is required
- Communicate well both orally and written
- Listen and follow instructions
- Operation of hydraulic and mechanical equipment.
- Must be able to lift, pull, or push 100 pounds
- Must be able to climb/pull oneself up into and out of cab of large truck using 2 to 3 steps
- Must be able to walk on uneven surfaces
- Must be able to wear a respirator
- Must be able to enter and perform work in a confined space
- Must be able to work in inclement weather
- Must be able to communicate with irate or difficult people
- Must be able to accept constructive criticism from supervisors, coworkers and subordinate employees

LICENSE(S)

- A current Grade II Collection Systems Certificate from the California Water Environment Association at the time of employment.
- Must acquire within 120 days of employment in this position a valid Class A California Driver's License including a tanker endorsement. Ability to drive district vehicles is a specific requirement for this position. For that reason it is at the employee's responsibility to maintain a driving record that is acceptable to the district's insurance carrier or be subject to dismissal.

	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
WEIGHED ITEMS	<ul style="list-style-type: none"> • Cement sack – 60 to 80 lbs. • 6” clean out box – 80 lbs. • Whacker/dirt compactor – 140 lbs. • 6” boring rod – 20 lbs. • Viber plate – 200 lbs. includes loading/ unloading on/off truck bed • Variety of basic tools, shovels, rakes, pitch forks, hawks, trowels – less than 5 lbs. • Hydraulic ram – 70 lbs. • Portable pump – estimated 150 pounds • Material containers – 30 to 50 lbs. • Submersible pump – 82 lbs. • 4 X 8 plywood sheet – 70 lbs. • Cut off saw – 42 lbs. • Shoring – 45 to 90 lbs. • Y-pipe – 85 lbs. • Pole scoop – 10 lbs. • Portable generator – 54 to 150 lbs. • Sandbags – 50 lbs. • 24” manhole lid – 150 lbs. • 36” manhole lid – 200 lbs. • Manhole frame – 150 lbs 	<ul style="list-style-type: none"> • Portable pump – estimated 150 pounds • 4’ tube utilized for vacuum truck – 15 lbs. • 8’ tube utilized for vacuum truck – 30 lbs. • Material containers – 30 to 50 lbs. • Submersible pump – 82 lbs. • Variety of basic tools, shovels, rakes, pitch forks, hawks, trowels – less than 5 lbs. • Portable generator – 54 to 150 lbs. • Sandbags – 50 lbs. • 24” manhole lid – 150 lbs. • 36” manhole lid – 200 lbs. • Manhole frame – 150 lbs 	<ul style="list-style-type: none"> • Portable pump – estimated 150 pounds • Material containers – 30 to 50 lbs. • Submersible pump – 82 lbs. • Portable generator – 54 to 150 lbs. • Variety of basic tools, shovels, rakes, as needed – less than 5 lbs. • Sandbags – 50 lbs. • 24” manhole lid – 150 lbs. • 36” manhole lid – 200 lbs. • Manhole frame – 150 lbs 	<ul style="list-style-type: none"> • Portable pump – estimated 150 pounds • Material containers – 30 to 50 lbs. • Submersible pump – 82 lbs. • Cement sack – 60 to 80 lbs. • Cut off saw – 42 lbs. • “Tractor”/camera equipment – 50 lbs. • Tri-pod for human lowering – 42 lbs. • Winch – 40 to 60 lbs. • Large overflow plug – 138 lbs. • Portable generator – 54 to 150 lbs. • Variety of basic tools, shovels, rakes, as needed – less than 5 lbs. • Sandbags – 50 lbs. • 24” manhole lid – 150 lbs. • 36” manhole lid – 200 lbs. • Manhole frame – 150 lbs

Bulky equipment or equipment heavier than 100 pounds is lifted by 2 to 3 people or a mechanical means is used to aid in the lift, except in rare instances. Lifting protocol for employees of this department: 100 pounds.

Physical Demands

For the purpose of determining frequency of activity, this job analyst refers to an eight-hour workday.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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STANDING				
Frequency:	2 to 4 hours.	2 to 4 hours.	2 to 4 hours.	2 to 4 hours.
Duration:	Seconds to less than 1 hour at a time.	Seconds to less than 1 hour at a time.	Seconds to less than 1 hour at a time.	Seconds to less than 1 hour at a time.
Surfaces:	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.
Associated Tasks:	Cleaning ditches, removing debris and green waste, utilizing pitch forks, rakes, shovels, utilizing a chain saw, hedge trimmer, utilizing a concrete cutting saw, a variety of basic tools for repairs and adjustments, utilizing a pick, breaking bar, square shovel or squeegee, cleaning, operating a jackhammer, sweeping, spreading asphalt with a lute, operating a dirt compactor, working in trenches, operating fusing equipment, pipe bursting equipment including setting wrenches, cables, hydraulic ram, fusing clamps, backing plates, pulleys, setting shoring, setting sand bags, loading/ unloading tools, equipment, parts, traffic control tasks includes holding a stop sign or flag to guide traffic.	Operating the jet truck equipment including maneuvering and handling hoses, turning valves, levers, operating the vacuum truck equipment including maneuvering, connecting/ disconnecting pipe attachments, operating the water truck equipment including inserting rods into sewer lines, traffic control tasks includes holding a stop sign or flag to guide traffic, utilizing a shovel.	Traffic control tasks includes holding a stop sign or flag to guide traffic, operating hand jet equipment including maneuvering hoses during blockages, utilizing manual metal rodding equipment, utilizing a hook to remove or replace manhole lids, spraying pavement with a spray can and an attachment, utilizing a shovel.	Traffic control tasks includes holding a stop sign or flag to guide traffic, observing t.v. monitors, lowering the "tractor" / t.v. equipment into the sewer line utilizing pole extensions, setting top and bottom rollers, operating jet equipment including setting hoses into a sewer line, turning valves, levers, setting overflow sewer plugs, operating pipe bursting equipment including setting winches, cables, hydraulic ram, fusing clamps, backing plates, pulleys, setting the equipment utilized for confined space entries, utilizing a jack hammer, pouring finishing concrete, patching deterioration spots, grouting pumps, utilizing a shovel.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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WALKING				
Frequency:	2 to 4 hours.	2 to 4 hours.	2 to 4 hours.	2 to 4 hours.
Duration:	Seconds to less than 15 minutes at a time.	Seconds to less than 15 minutes at a time.	Seconds to less than 15 minutes at a time.	Seconds to less than 15 minutes at a time.
Surfaces:	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.
Associated Tasks:	To and from construction sites, transporting equipment, tools, parts, hoses, general cleaning, operating a slab cutting saw, jack hammering, operating a dirt compactor.	Retrieving and relocating tools, parts, equipment, maneuvering vacuum truck pipe attachments, hand jetting equipment including hoses.	Operating rodding equipment to unplug sewer lines, spraying pavements/asphalt, transporting tools, parts, equipment, hoses.	Transporting tools, parts, equipment, hoses, utilizing jetting equipment including handling hoses.

SITTING				
Frequency:	1 to 6 hours.	1 to 6 hours.	1 to 6 hours.	1 to 6 hours. (operation of camera equipment may include sitting up to 4 hours.)
Duration:	Less than ½ hour at a time.	Less than ½ hour at a time.	Less than ½ hour at a time.	Less than ½ hour at a time.
Surfaces:	Cushioned vehicle seat.	Cushioned vehicle seat.	Cushioned vehicle seat.	Cushioned vehicle seat or office chair.
Associated Tasks:	Operating equipment in conjunction with sitting and maneuvering a steering wheel, foot pedals, levers.	Operating equipment in conjunction with sitting and maneuvering a steering wheel, foot pedals, levers.	Operating equipment in conjunction with sitting and maneuvering a steering wheel, foot pedals, levers.	Operating equipment in conjunction with sitting and maneuvering a steering wheel, foot pedals, levers, working at a desk station to operate camera equipment including joysticks, viewing monitors, utilizing a keyboard.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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KNEELING/CROUCHING/SQUATTING				
Frequency:	1 to 3 hours.	Less than 1 hour.	Less than 1 to 2 hours.	1 to 2 hours.
Duration:	Seconds to less than ½ hour at a time.	Seconds to less than ½ hour at a time.	Seconds to less than ½ hour at a time.	Seconds to less than ½ hour at a time.
Surfaces:	Inclined terrain, dirt, gravel, grass, mud, concrete, asphalt, sand, all possible.	Dirt, gravel, asphalt, concrete.	Dirt, gravel, asphalt, concrete.	Dirt, gravel, asphalt, concrete.
Associated Tasks:	Retrieving or setting items on and off lower areas, during repairs, cleaning ditches, utilizing pitch forks, rakes, shovels, basic tools to make adjustments, operating pipe bursting equipment, setting shoring, finishing concrete, setting or retrieving sand bags, performing repairs, repairing pipe.	Operating jetting equipment including maneuvering hoses, operating vacuum truck attachments or water truck equipment, retrieving or setting items on and off lower areas.	Retrieving or setting items on and off lower areas, utilizing a thin metal rod with a key attachment to unplug sewer lines, possibly spray painting asphalt, pavement, operating hand jetting equipment to clean sewer lines, operating an electric eel/equipment to unplug sewer lines.	Working in a manhole, retrieving or setting items on and off lower areas, operating pipe bursting equipment, operating t.v. inspection equipment including lowering a pole extension, setting top and bottom rollers over a manhole opening, retrieving hoses, utilizing a variety of tools in conjunction with working in a manhole.

CRAWLING				
Frequency:	Less than 15 minutes.	Less than 15 minutes per month.	10 to 15 minutes.	Less than 15 minutes per month.
Duration:	Seconds to less than 5 minutes at a time.	Seconds to less than 5 at a time.	Seconds to less than 10 minutes at a time.	Seconds to less than 5 minutes at a time.
Surfaces:	Dirt, mud, sand, concrete, asphalt.	Concrete, dirt, asphalt.	Concrete, asphalt, dirt.	Concrete, asphalt, dirt.
Associated Tasks:	Working in a ditch, repairing pipe, inspecting equipment, may perform in conjunction with utilizing tools.	Equipment inspection.	Crawling underneath homes or structures during investigations, equipment inspection.	Performing equipment inspection

LAYING ON BACK/STOMACH				
Frequency:	0 to less than 15 minutes per shift.	Less than 15 minutes per month.	10 to 15 minutes.	Less than 15 minutes per month.
Duration:	Seconds to less than 5 minutes at a time.	Seconds to less than 5 minutes at a time.	Seconds to less than 10 minutes at a time.	Seconds to less than 15 minutes at a time.
Surfaces:	Dirt, mud, trenches.	Concrete, dirt, asphalt.	Concrete, asphalt, dirt.	Concrete, asphalt, dirt.
Associated Tasks:	Repairing pipe, equipment inspection.	Equipment inspection.	Crawling underneath homes or structures during investigations, equipment inspection.	Equipment inspection.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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CLIMBING/BALANCING

Frequency:	Less than 10 to 20 times.	Less than 10 times.	Less than 10 times.	Less than 10 times.
Duration:	Seconds at a time.	Seconds at a time.	Seconds at a time.	Seconds at a time.
Surfaces:	Ladder, stair steps.	Ladder, stair steps.	Ladder, stair steps.	Ladder, stair steps.
Associated Tasks:	Ascending or descending stair steps, ladders, on and off equipment, trenches, in and out of vehicle cabs.	Ascends or descends on and off equipment steps including cab, ladders, stair steps, vehicle cab.	Ascending or descending on and off equipment including vehicle cab.	Ascending or descending on and off equipment including vehicle cab.

BENDING

Waist				
Frequency:	2 to 6 hours.	Less than 1 to 3 hours.	2 to 4 hours.	1 to 3 hours.
Duration:	Seconds to less than 15 minutes at a time.	Seconds to less than 15 minutes at a time.	Seconds to less than 15 minutes at a time.	Seconds to less than 15 minutes at a time.
Associated Tasks:	Cleaning ditches, removing debris and green waste, utilizing pitch forks, rakes, shovels, utilizing a chain saw, hedge trimmer, utilizing a concrete cutting saw, a variety of basic tools for repairs and adjustments, utilizing a pick, breaking bar, square shovel or squeegee, cleaning, operating a jackhammer, sweeping, spreading asphalt with a lute, operating a dirt compactor, working in trenches, operating fusing equipment, pipe bursting equipment setting shoring, setting sand bags, loading/unloading tools, equipment, parts, utilizing tools to make equipment adjustments, pouring and finishing concrete. The motion is in a forward direction between 5 and 65-degrees.	Handling hoses, operating jetting equipment, vacuum truck attachments, water truck equipment to maintain sewer lines, utilizing tools to make equipment adjustments, utilizing a shovel. The motion is in a forward direction between 5 and 65-degrees.	Shoveling, accessing sewer lines, utilizing a manual rod to unplug sewer lines, utilizing an electric eel to unplug sewer lines, jetting equipment, utilizing tools to make equipment adjustments, utilizing a shovel. The motion is in a forward direction between 5 and 65-degrees.	Inserting cameras into the sewer lines, cleaning manholes, operating jet truck equipment, setting hoses, utilizing pipe bursting equipment including repairing pipe, digging, utilizing tools to make equipment adjustments, connecting/disconnecting hoses, working in confined spaces including repairing deterioration spots, grouting pumps, pouring and finishing concrete, possibly in a manhole, utilizing a shovel. The motion is in a forward direction between 5 and 65-degrees.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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<p>BENDING (cont.) Head/Neck Frequency: Duration: Associated Tasks:</p>	<p>4 to 6 hours. Seconds to less than 15 minutes at a time. Cleaning ditches, removing debris and green waste, utilizing pitch forks, rakes, shovels, utilizing a chain saw, hedge trimmer, utilizing a concrete cutting saw, a variety of basic tools for repairs and adjustments, utilizing a pick, breaking bar, square shovel or squeegee, cleaning, operating a jackhammer, sweeping, spreading asphalt with a lute, operating a dirt compactor, working in trenches, operating fusing equipment, pipe bursting equipment setting shoring, setting sand bags, loading/unloading tools, equipment, parts, retrieving or setting items on and off lower areas, during repairs, cleaning ditches, utilizing pitch forks, rakes, shovels, basic tools to make adjustments, finishing concrete, setting or retrieving sand bags, performing repairs, repairing pipe, during normal body mechanics.</p>	<p>4 to 5 hours. Seconds to less than 15 minutes at a time. Operating the jet truck equipment including maneuvering and handling hoses, turning valves, levers, operating the vacuum truck including maneuvering, connecting/disconnecting pipe attachments, operating the jet truck equipment including inserting rods into sewer lines, traffic control tasks, during normal body mechanics, utilizing basic tools to make adjustments.</p>	<p>4 to 5 hours. Seconds to less than 15 minutes at a time. Traffic control tasks, operating hand jet equipment including maneuvering hoses during blockages, utilizing manual metal rodding equipment, utilizing a hook to remove or replace manhole lids, spraying pavement with a spray can and extension, during normal body mechanics., utilizing basic tools to make adjustments.</p>	<p>4 to 5 hours. Seconds to less than 15 minutes at a time. Aiding visually, operating equipment, during normal body mechanics, utilizing basic tools to make adjustments, lowering television equipment into manhole lids, setting equipment, operating a jackhammer, operating fusing equipment, pipe bursting equipment, digging inspection tasks, working in manhole lids, operating jackhammers, power tools, basic hand tools.</p>
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CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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<p>BENDING (cont.) <u>Wrists</u> Dominant Hand: Frequency <i>Dominant:</i> <i>Non-Dominant:</i> <i>Bilateral:</i> Duration: Associated Tasks:</p>	<p>3 to 6 hours. <1 to 2 hours. <1 hour. 3 to 5 hours. Seconds to less than ½ hour at a time. Utilizing a variety of tools including pitch forks, rakes, shovels, chain saws, hedge trimmers, basic tools, wrenches, screw drivers, pliers, breaking bars, picks, square shovels, squeegee, jack hammering, push broom, operating a dirt compactor, operating fusing equipment, pipe bursting equipment, setting concrete in conjunction with utilizing trowels, sledgehammers, operating equipment in conjunction with maneuvering steering wheel.</p>	<p>3 to 6 hours. 1 to 2 hours. Less than 1 hour. 3 to 5 hours. Seconds to less than 15 minutes at a time. Operating equipment in conjunction with utilizing a steering wheel, utilizing a variety of basic tools including wrenches, screwdrivers, pliers, hammers to make equipment adjustments or repairs, handling and maneuvering hoses including jetting equipment hoses to remove blockages, maneuvering vacuum truck pipe attachments.</p>	<p>3 to 6 hours. 1 to 2 hours. Less than 1 hour. 3 to 5 hours. Seconds to less than 15 minutes at a time. Operating equipment in conjunction with utilizing a steering wheel, utilizing a variety of basic tools including wrenches, screwdrivers, pliers, hammers to make equipment adjustments or repairs, shoveling/ digging, utilizing hand rodding equipment including turning a key to turn a rod and unplug a sewer line, operating hand jet equipment including manipulating, maneuvering and tugging on hoses to remove blockages.</p>	<p>3 to 6 hours. 1 to 2 hours. Less than 1 hour. 3 to 5 hours. Seconds to less than 15 minutes at a time. Operating equipment in conjunction with utilizing a steering wheel, utilizing a variety of basic tools including wrenches, screwdrivers, pliers, hammers to make equipment adjustments or repairs, utilizing a jackhammer, utilizing pipe bursting equipment, power tools, assembling, inserting or removing television inspection equipment.</p>
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TWISTING/ROTATING				
Waist				
Frequency:	Less than 1 to 3 hours.	Less than 1 hour.	Less than 1 hour.	Less than 1 to 2 hours.
Duration:	Seconds to less than 10 minutes at a time.	Seconds at a time.	Seconds at a time.	Seconds to less than 15 minutes at a time.
Associated Tasks:	Performing pipe repair work in conjunction with working in a trench or manhole, general cleaning, performing construction tasks, while driving. The motion is center to right back to center or center left back to center less than 20 degrees.	Retrieving and relocating items, operating equipment, utilizing digging tools, while driving. The motion is center to right back to center or center left back to center less than 20 degrees.	To perform described job duties including shoveling, hand rodding, unplugging sewer lines, while driving. The motion is center to right back to center or center left back to center less than 20 degrees.	Inserting camera equipment, working in manholes, confined spaces, performed in conjunction with utilizing a variety of tools, utilizing digging tools, while driving. The motion is center to right back to center or center left back to center less than 20 degrees.

	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
<p>TWISTING/ROTATING (cont.) <u>Head/Neck</u> Frequency: 3 to 5 hours. Duration: Seconds to less than 5 minutes at a time. Associated Tasks: During normal body mechanics performing a variety of construction tasks, driving in conjunction with viewing the mirrors, driving in reverse, utilizing a variety of tools to perform repair work, operating equipment, driving in conjunction with viewing mirrors, driving in reverse. The motion is from center to right back to center or center left back to center up to 45-degrees.</p>	<p>2 to 4 hours. Seconds to less than 5 minutes at a time. Aiding visually to perform described job duties, operating equipment, driving in conjunction with viewing mirrors, driving in reverse. The motion is from center to right back to center or center left back to center up to 45-degrees.</p>	<p>2 to 4 hours. Seconds to less than 5 minutes at a time To perform described job duties including operating equipment, driving in conjunction with viewing mirrors, driving in reverse. The motion is from center to right back to center or center left back to center up to 45-degrees.</p>	<p>2 to 4 hours. Seconds at a time. Aiding visually, driving, operating equipment, driving in conjunction with viewing mirrors, driving in reverse. The motion is from center to right back to center or center left back to center up to 45-degrees.</p>	
<p><u>Wrists</u> Dominant Hand: Frequency Dominant: Less than 1 to 3 hours. Less than 1 to 2 hours. Non-Dominant: Less than 15 minutes. Bilateral: Less than 15 minutes. Duration: Seconds to less than 15 minutes at a time. Associated Tasks: Setting concrete, utilizing hammer, clamps, utilizing basic tools including screwdrivers, pliers, hand starting bolts, nuts to make equipment adjustments, utilizing a shovel, digging, utilizing trowels to finish concrete.</p>	<p>Less than 1 to 2 hours. Less than 1 hour. Less than ½ hour. Less than 1 hour. Seconds to less than 15 minutes at a time. Tightening tools, connecting or disconnecting hoses to hydrants, utilizing the electrical eel equipment including maneuvering rods, utilizing basic tools including screwdrivers, pliers, hand starting bolts, nuts to make equipment adjustments, utilizing a shovel.</p>	<p>Less than 1 to 2 hours. Less than 1 hour. Less than ½ hour. Less than 1 hour. Seconds to less than 15 minutes at a time. Utilizing basic tools including screwdrivers, pliers, hand starting bolts, nuts to make equipment adjustments, utilizing a manual rod including turning a key to turn a rod in conjunction with power grasping to unplug a sewer line, utilizing a shovel.</p>	<p>2 to 3 hours. Less than 1 to 2 hours. Less than 1 hour. 1 to 2 hours. Seconds to less than 15 minutes at a time. Utilizing basic tools including screwdrivers, pliers, hand starting bolts, nuts to make equipment adjustments, assembling camera equipment, handling nuts, bolts, small parts, digging in conjunction with utilizing a shovel, utilizing trowels to finish concrete.</p>	

UPPER EXTREMITY USE: **Dominant Hand:** [indicate LEFT or RIGHT]

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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REACHING				
Primary Reach Zone: <small>(elbows bent at waist level, hands in forward extension)</small>				
Frequency	Not a job requirement.	Not a job requirement.	Not a job requirement.	Not a job requirement.
Dominant:				
Non-Dominant:				
Bilateral:				
Duration:				
Associated Tasks:				
Above Shoulder Level				
Frequency	0 to 2 hours.	Less than 15 minutes to ½ hour.	Less than 15 minutes.	Less than 5 minutes.
Dominant:	0 to less than 1 hour.	Less than 15 minutes.	Less than 5 to 10 minutes.	0
Non-Dominant:	Alternated with dominant.	0	0	0
Bilateral:	0 to less than 1 hour.	Less than 15 minutes.	Less than 5 to 15 minutes.	Less than 5 minutes
Duration:	Seconds to less than 10 minutes at a time.			Seconds at a time.
Associated Tasks:	Retrieving or setting items on and off racks, guiding a pipe into a trench (pipe is lowered or elevated with crane), working in a manhole and grouting equipment, patching manholes, ascending or descending ladders in conjunction with grasping ladder steps.	Preventative maintenance, retrieving or setting items and off upper shelves or truck racks, maintaining equipment, ascending or descending ladders in conjunction with grasping ladder steps or rails.	Ascending or descending ladders in conjunction with grasping ladder steps or rails, retrieving or setting items and off upper shelves or truck racks, maintaining equipment.	Ascending or descending ladders in conjunction with grasping ladder steps or rails, working in a manhole and grouting equipment, patching manholes, repair tasks, retrieving or setting items and off upper shelves or truck racks, maintaining equipment.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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REACHING (cont.)			
<u>Between Waist and Shoulder Level</u>			
Frequency	3 to 6 hours.	3 to 6 hours.	3 to 6 hours.
<i>Dominant:</i>	Less than 1 hour.	Less than 1 hour.	Less than 1 hour.
<i>Non-Dominant:</i>	Less than 1 hour.	Less than 1 hour.	Less than 1 hour.
<i>Bilateral:</i>	2 to 4 hours.	2 to 4 hours.	2 to 4 hours.
Duration:	Seconds to less than ½ hour at a time.	Seconds to less than ½ hour at a time.	Seconds to less than ½ hour at a time.
Associated Tasks:	Operating equipment in conjunction with maneuvering a steering wheel, utilizing a variety of tools including pitch forks, rakes, shovels, chain saw, hedge trimmers, concrete horizontal slab cutting saw, utilizing a variety of tools to make adjustments, breaking bar, shovels, squeegee, dirt compactor, push broom, lute to spread asphalt, ascending/ descending in and out of trenches, jack hammering, utilizing a hook to replace or remove manhole lids.	Operating equipment in conjunction with maneuvering a steering wheel, operating jet truck equipment including maneuvering and tugging on the hose during blockages, connecting and disconnecting fire hoses, transporting equipment, utilizing the electric eel equipment, maneuvering pipe attachments for the vacuum truck and water truck equipment, utilizing a hook to replace or remove manhole lids.	Operating equipment in conjunction with maneuvering a steering wheel, shoveling, utilizing a hook to remove or replace manhole lids, spray can with a trigger-operated extension to spray pavement/asphalt, operating hand jet equipment, rodding equipment.
			Operating equipment in conjunction with maneuvering a steering wheel, performing t.v. inspections including retrieving and relocating pole extensions, top and bottom rollers, maneuvering hoses, utilizing a hook to replace or remove manhole lids, operating a jack hammer.

	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
<p>REACHING (cont.) <u>Below Waist Level</u></p> <p>Frequency <i>Dominant:</i></p> <p><i>Non-Dominant:</i> <i>Bilateral:</i></p> <p>Duration:</p> <p>Associated Tasks:</p>	<p>2 to 6 hours. Less than 1 hour.</p> <p>Less than 1 hour. 2 to 5 hours.</p> <p>Seconds to less than 15 minutes at a time.</p> <p>Cleaning ditches, removing debris and green waste, utilizing pitch forks, rakes, shovels, utilizing a chain saw, hedge trimmer, utilizing a concrete cutting saw, a variety of basic tools for repairs and adjustments, utilizing a pick, breaking bar, square shovel or squeegee, cleaning, operating a jackhammer, sweeping, spreading asphalt with a lute, operating a dirt compactor, working in trenches, operating fusing equipment, pipe bursting equipment setting shoring, setting sand bags, loading/unloading tools, equipment, parts</p>	<p>Less than 1 to 3 hours. Less than 1 hour.</p> <p>Less than 15 minutes. Less than 1 to 3 hours.</p> <p>Seconds to less than 15 minutes at a time.</p> <p>Handling hoses, operating jetting equipment, vacuum truck attachments, jet truck equipment to maintain sewer lines.</p>	<p>2 to 4 hours. Less than 1 to 2 hours. Less than 1 hour. 2 to 4 hours.</p> <p>Seconds to less than 15 minutes at a time.</p> <p>Shoveling, accessing sewer lines, utilizing a manual rod to unplug sewer lines, utilizing an electric eel to unplug sewer lines, jetting equipment, utilizing tools to make equipment adjustments</p>	<p>1 to 3 hours. Less than 1 hour.</p> <p>Less than 15 minutes. Less than 1 to 3 hours.</p> <p>Seconds to less than 15 minutes at a time.</p> <p>Inserting cameras into the sewer lines, cleaning manholes, operating jet truck equipment, setting hoses, utilizing pipe bursting equipment including repairing pipe, digging, utilizing tools to make equipment adjustments, connecting/disconnecting hoses, working in confined spaces including repairing deterioration spots, grouting pumps, pouring and finishing concrete, operating a jack hammer.</p>

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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PUSHING/PULLING				
<p>Frequency <i>Dominant:</i></p> <p><i>Non-Dominant:</i></p> <p><i>Bilateral:</i></p> <p>Duration:</p> <p>Associated Tasks:</p>	<p>2 to 4 hours. Less than ½ hour.</p> <p>Less than 15 minutes.</p> <p>2 to 4 hours.</p> <p>Seconds to less than ½ hour at a time.</p> <p>Utilizing pitch forks, rakes, shovels, retrieving and relocating fire hoses with or without water, breaking bars, picks, wrenches, squeegees, square shovels, while cleaning, digging, operating a jack hammer, includes a combination of lifting, partial lifting, guiding, pushing, pulling, retrieving or relocating cable, utilizing a trowel, lumber rods while setting concrete, utilizing a circular saw, sledgehammer, steel tamper, relocating hoses, operating the vacuum pipes, operating a concrete saw, shoveling, utilizing a hook to remove or replace manhole lids including partial lifting, pushing, pulling, utilizing pipe bursting equipment, lowering tools with a bucket in and out of manholes.</p>	<p>Less than 1 hour. Less than 15 minutes. Less than 15 minutes.</p> <p>Less than 1 hour.</p> <p>Seconds to less than ½ hour at a time.</p> <p>Maneuvering the jet truck hoses including tugging and maneuvering the hoses during blockages, connecting/disconnecting transporting fire hoses with or without water, utilizing a wrench or hammer to make equipment adjustments, utilizing hand rods to unplug sewer lines including turning a wrench with force to manually spin the rods and unplug a line in conjunction with power grasping, maneuvering electric eel rods as needed, maneuvering the vacuum truck attachments while cleaning, utilizing a hook to remove or replace manhole lids including partial lifting, pushing, pulling.</p>	<p>2 to 3 hours. Less than 1 hour.</p> <p>Less than 15 minutes.</p> <p>2 to 2 ½ hours.</p> <p>Seconds to less than ½ hour at a time.</p> <p>Utilizing a wrench or hammer to make equipment adjustments, utilizing thin metal rods connected to a key attachment and turning the key in conjunction with power grasping to unplug a sewer line, utilizing a hook to remove or replace manhole lids including partial lifting, pushing, pulling, operating hand jet equipment including maneuvering hoses, tugging, pushing and pulling, transporting hoses,</p>	<p>2 to 3 hours. Less than 1 hour.</p> <p>Less than 15 minutes.</p> <p>2 to 2 ½ hours.</p> <p>Seconds to less than 15 minutes at a time.</p> <p>Utilizing a wrench or hammer to make equipment adjustments, transporting hoses, utilizing pole extensions to lower or raise the camera in and out of manholes, digging in conjunction with utilizing a shovel, removing or replacing manhole lids including partial lifting, pushing and pulling, utilizing jackhammer including pushing, pulling, partial lifting, guiding, utilizing a trowel or rods to finish concrete, lowering tools with a bucket in and out of manholes, utilizing a hook to remove or replace manhole lids including partial lifting, pushing, pulling, utilizing pipe bursting equipment.</p>

	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
LIFTING/CARRYING				
0 to 10 lbs.				
Objects:	Basic hand tools, wrenches, screwdrivers, pliers, sockets to perform repairs and adjustments, pitch forks, rakes, shovels, pick, breaking bar, squeegee, hedge trimmer, lute, hand trowels, variety of parts.	Basic hand tools, wrenches, screwdrivers, pliers, sockets to perform repairs and adjustments, individual rods, parts.	Basic hand tools, wrenches, screwdrivers, pliers, sockets to perform repairs and adjustments, hook, shovel, individual metal rods, key.	Basic hand tools, wrenches, screwdrivers, pliers, sockets to perform repairs and adjustments,
Frequency	4 to 6 hours.	3 to 4 hours.	4 to 6 hours.	3 to 4 hours.
Dominant:	Less than 1 to 2 hours.	Less than 1 to 2 hours.	Less than 1 to 2 hours.	Less than 1 to 2 hours.
Non-Dominant:	Less than 1 hour.	Less than ½ hour.	Less than 1 hour.	Less than ½ hour.
Bilateral:	3 to 5 hours.	2 to 3 hours.	3 to 5 hours.	2 to 3 hours.
Distance:	0 to less than 200 feet.	0 to less than 200 feet.	0 to less than 200 feet.	0 to less than 200 feet.
Height:	Ground to shoulder or above.	Ground to shoulder or above.	Ground to shoulder or above.	Ground to shoulder or above.
Associated Tasks:	Utilizing a variety of basic tools to make equipment adjustments or repairs, utilizing shovels, picks, rakes, while cleaning, utilizing a lute/rake to spread asphalt, retrieving and relocating a variety of parts, miscellaneous tools, during pipe repairs, utilizing push broom while cleaning, trowel to finish concrete.	Utilizing a variety of basic tools to make equipment adjustments or repairs, connecting rods, operating jet truck equipment, as needed utilizing a 4" grinder to cut rods.	Utilizing a variety of basic tools to make equipment adjustments or repairs, utilizing a key attached to metal rods to unplug lines, shoveling dirt, utilizing a hook to remove manhole lids.	Utilizing a variety of basic tools to make equipment adjustments or repairs.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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LIFTING/CARRYING (cont.)				
11 to 25 lbs.				
Objects:	Chain saw, shovel with dirt, circular saw, lumber, variety of miscellaneous parts, pipe, hoses.	4' pipe attachment for the vacuum truck, hoses.	Multiple metal rods, hoses, shovel with dirt.	Hoses, shovel with dirt.
Frequency	Less than 1 to 3 hours.	Less than 1 hour.	Less than 1 hour.	Less than 1 hour.
Dominant:	0	0	0	0
Non-Dominant:	0	0	0	0
Bilateral:	Less than 1 to 3 hours.	Less than 1 hour.	Less than 1 hour.	Less than 1 hour.
Distance:	0 to less than 100 feet.	0 to less than 100 feet.	0 to less than 100 feet.	0 to less than 100 feet.
Height:	Ground to shoulder level or above.	Ground to shoulder or above.	Ground to shoulder level.	Ground to shoulder level.
Associated Tasks:	Utilizing a chain saw, shoveling dirt, utilizing an electric circular saw, shoveling dirt, utilizing an electric circular saw, retrieving and relocating miscellaneous parts, pipes, hoses.	Retrieve and relocate hoses, connect/disconnect 4' pipe attachments to equipment.	Utilizing a shovel while digging, transporting hoses, inserting or removing metal rods while unplugging lines.	Retrieving and relocating hoses, utilizing a shovel while digging.
26 to 50 lbs.				
Objects:	Pipe, cut off saw, miscellaneous parts, hoses, sand bags, shoring.	8' pipe attachments, fire hoses, sand bags.	Sand bags, hoses.	Sand bags, hoses.
Frequency	10 to 30 times.	10 to 30 times.	0 to less than 5 times.	0 to less than 5 times.
Dominant:	0	0	0	0
Non-Dominant:	0	0	0	0
Bilateral:	10 to 30 times.	10 to 30 times.	0 to less than 5 times.	0 to less than 5 times.
Distance:	0 to less than 100 feet.	0 to less than 100 feet.	0 to less than 100 feet.	0 to less than 100 feet.
Height:	Ground to chest level.	Ground to chest level.	Ground to chest level.	Ground to chest level.
Associated Tasks:	Retrieve and relocate pipe, cut off saw, miscellaneous parts, hoses, sand bags, shoring.	Retrieve and relocate 8' pipe attachments, fire hoses, sand bags.	Retrieve and relocate sand bags, hoses.	Retrieve and relocate sand bags, hoses.

	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
LIFTING/CARRYING (cont.) 51 to 75 lbs. Objects: Concrete sack, sand bag, hydraulic ram, pipe, plywood sheeting 4 X 8, equipment. Frequency 10 to 30 times. Dominant: 0 Non-Dominant: 0 Bilateral: 10 to 30 times. Distance: 0 to less than 35 feet. Height: Ground to waist level. Associated Tasks: Retrieve and relocate concrete sack, sand bag, hydraulic ram, pipe, plywood sheeting.	Pipes, multiple vacuum truck tubes, equipment. 5 times. 0 0 5 times. 0 to less than 25 feet. Ground to waist level. Retrieve, relocate and maneuver pipe attachments.	Equipment. Less than 5 times. 0 0 Less than 5 times. 0 to less than 25 feet. Ground to waist level. Loads and unloads equipment.	Equipment, t.v. inspection equipment, pole extensions, hydraulic ram. 10 to 15 times. 0 0 10 to 15 times. 0 to less than 25 feet. Ground to waist level. Lowers or raises t.v. inspection equipment and pole extensions in and out of manholes, loading/unloading hydraulic ram.	
75 to 100 lbs. Objects: Hydraulic ram, cement sacks, pipe, shoring, submersible pump, pipe. Frequency 10 to 30 times. Dominant: 0 Non-Dominant: 0 Bilateral: 10 to 30 times. Distance: 0 to less than 25 feet. Height: Ground to waist level. Associated Tasks: Load and unload hydraulic ram, cement sacks, pipe, shoring, submersible pump, pipe.	Submersible pump, pipe attachments. Less than 5 times. 0 0 Less than 5 times. 0 to less than 25 feet. Ground to waist level. Retrieve and relocate a pump or pipe attachments.	Submersible pump. 0 to less than 5 times. 0 0 Less than 5 times. 0 to less than 25 feet. Ground to waist level. Loads and unloads a pump.	Submersible pump, t.v. inspection equipment, hydraulic ram. 10 to 15 times. 0 0 10 to 15 times. 0 to less than 25 feet. Ground to waist level. Lowers t.v. inspection equipment in and out of manholes, retrieve and relocate pumps, loading/unloading hydraulic ram.	

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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LIFTING/CARRYING (cont.)			
100+ lbs.			
Objects:	Dirt compactor/whacker (utilized 2 months per year), manhole lid or frame, generator, water pumps, dirt compactor.	Manhole lid or frame, generator, water pumps, hoses.	Manhole lid or frame, generator, water pumps, sewer plugs, camera equipment including camera with pole.
Frequency	Less than 10 to 30 times.	10 to 40 times.	10 to 20 times.
Dominant:	0	0	0
Non-Dominant:	0	0	0
Bilateral:	Less than 10 to 30 times.	10 to 40 times.	10 to 20 times.
Distance:	Less than 5 feet.	Less than 5 feet.	0 to less than 5 feet.
Height:	Ground to waist level.	Ground to waist level.	Ground to waist level.
Associated Tasks:	Utilizes a dirt compactor includes partial lifting, lifting, guiding, pushing or pulling, removing or replacing a manhole lid, including utilizing a hook to push, pull and maneuver, relocating a generator, hoses.	Retrieves and relocates a manhole lid, generator, water pumps, hoses.	Removing or replacing manhole lids, retrieving or relocating water pumps, sewer plugs, camera equipment.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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HAND DEMANDS				
<p><u>Simple Grasping</u> Frequency: <i>Dominant:</i> <i>Non-Dominant:</i> <i>Bilateral:</i> Duration: Associated Tasks:</p>	<p>2 to 6 hours. Less than 1 to 2 hours. Less than 1 hour. Less than 2 to 3 hours. Seconds to less than 1 hour at a time. Retrieving and relocating pitch forks, rakes, shovels, retrieving and relocating fire hoses with or without water, breaking bars, picks, wrenches, squeegees, square shovels, while cleaning, digging, retrieving or relocating cable, utilizing a trowel, lumber rods while setting concrete, relocating hoses, operating the vacuum pipes, loading/unloading equipment, driving in conjunction with maneuvering a steering wheel, retrieving and relocating tools, parts, utilizing a flag to perform traffic control activities.</p>	<p>3 to 6 hours. Less than 1 to 2 hours. Less than 1 hour. 2 to 4 hours. Seconds to less than 1 hour at a time. Driving in conjunction with maneuvering a steering wheel, retrieving and relocating tools, parts, handling a variety of parts, miscellaneous items while operating equipment, utilizing a flag to perform traffic control activities.</p>	<p>2 to 6 hours. Less than 1 to 2 hours. Less than 1 hour. Less than 2 to 3 hours. Seconds to less than 1/2 hour at a time. Driving in conjunction with maneuvering a steering wheel, retrieving and relocating tools, parts, utilizing a flag to perform traffic control activities.</p>	<p>3 to 6 hours. Less than 1 to 2 hours. Less than 1 hour. 2 to 4 hours. Seconds to less than 1 hour at a time. Driving in conjunction with maneuvering a steering wheel, retrieving and relocating tools, parts, utilizing a flag to perform traffic control activities, handling t.v. inspection equipment, miscellaneous parts, as needed utilizing a trowel to finish cement.</p>

	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
Power Grasping				
Frequency:	2 to 4 hours.	Less than 1 hour.	2 to 4 hours.	2 to 4 hours.
Dominant:	Less than 1 hour.	Less than 15 minutes.	Less than 1 hour.	Less than 1 hour.
Non-Dominant:	Less than ½ hour.	Less than 15 minutes.	Less than 15 minutes.	Less than ½ hour.
Bilateral:	2 to 4 hours.	Less than 1 hour.	1 ½ to 2 hours.	2 to 4 hours.
Duration:	Seconds to less than ½ hour at a time.	Seconds to less than 1 hour at a time.		Seconds to less than ½ hour at a time.
Associated Tasks:	Loading/unloading equipment, operating a jack hammer includes a combination of lifting, partial lifting, guiding, pushing, pulling, retrieving, relocating and utilizing pipe bursting equipment, utilizing pitch forks, rakes and shovels, retrieving and relocating charged fire hoses, utilizing breaking bars, picks, wrenches, square shovels, general cleaning, operating circular saws, utilizing a sledgehammer, steel tamper.	Maneuvering the jet truck hoses including tugging and maneuvering the hoses during blockages, connecting/disconnecting transporting fire hoses with or without water, utilizing a wrench or hammer to make equipment adjustments, utilizing hand rods to unplug sewer lines including turning a wrench with force to manually spin the rods and unplug a line in conjunction with power grasping, maneuvering electric eel rods as needed, maneuvering the vacuum truck attachments while cleaning, loading/unloading equipment.	Utilizing a wrench or hammer to make equipment adjustments, utilizing thin metal rods connected to a key attachment and turning the key in conjunction with power grasping to unplug a sewer line, utilizing a hook to remove or replace manhole lids including partial lifting, pushing, pulling, operating hand jet equipment including maneuvering hoses, tugging, pushing and pulling, transporting hoses, loading/unloading equipment.	Loading/unloading equipment, jack hammering, utilizing bursting equipment, shoveling, operating jetting equipment, loading/unloading and setting t.v. inspection equipment, utilizing a hook to remove or replace manhole lids.

CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
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<p><u>Fine Manipulation</u> Frequency:</p> <p><i>Dominant:</i></p> <p><i>Non-Dominant:</i></p> <p><i>Bilateral:</i></p> <p>Duration:</p> <p>Associated Tasks:</p>	<p>Less than 1 hour.</p> <p>Less than ½ hour. Less than 15 minutes. Less than 15 minutes.</p> <p>Seconds to less than 5 minutes at a time.</p> <p>Making equipment adjustments, turning knobs, bolts, nuts, screws, small parts.</p>	<p>Less than 1 hour.</p> <p>Less than ½ hour. Less than 15 minutes. Less than 15 minutes.</p> <p>Seconds to less than 5 minutes at a time.</p> <p>Making equipment adjustments, turning knobs, bolts, nuts, screws, small parts.</p>	<p>Less than 1 hour.</p> <p>Less than ½ hour. Less than 15 minutes. Less than 15 minutes.</p> <p>Seconds to less than 5 minutes at a time.</p> <p>Making equipment adjustments, turning knobs, bolts, nuts, screws, small parts.</p>	<p>Less than 1 to 4 hours. (if working at the t.v. inspection station up to 4 hours.) Less than 1 hour. Less than ½ hour</p> <p>Less than 1 to 3 hours.</p> <p>Seconds to less than 15 minutes at a time.</p> <p>Making equipment adjustments, turning knobs, bolts, nuts, screws, small parts, utilizing a keyboard, joystick, pointing device at the t.v. inspection workstation.</p>
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<p>SPECIAL ENVIRONMENT</p>	<ul style="list-style-type: none"> • Outdoors, exposed to all weather conditions • Indoors • Vehicle cab, climate controlled • Possible exposure to fumes, odors, dust, noise • Manhole entries and confined spaces 	<ul style="list-style-type: none"> • Outdoors, exposed to all weather conditions • Indoors • Vehicle cab, climate controlled • Possible exposure to fumes, odors, dust, noise 	<ul style="list-style-type: none"> • Outdoors, exposed to all weather conditions • Indoors • Vehicle cab, climate controlled • Possible exposure to fumes, odors, dust, noise 	<ul style="list-style-type: none"> • Outdoors, exposed to all weather conditions • Indoors • Vehicle cab, climate controlled • Possible exposure to fumes, odors, dust, noise • Manhole entries and confined spaces
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	CONSTRUCTION CREW	PREVENTATIVE MAINTENANCE	CUSTOMER SERVICE	T.V. INSPECTION
MACHINES/TOOLS	<ul style="list-style-type: none"> • pitch fork • rakes • shovels • tractor mower • gas powered chain saw • gas powered hedge trimmer • horizontal/slab cutting saw • variety of tools, wrenches, screwdrivers, pliers, hammer • shovel • writing utensil • pick • breaking bar • square shovel • squeegee • jack hammer • push broom • lute • dirt compactor/whacker • generators • pumps • compressors • pipe bursting equipment • shoring • end pump • trowel • hawk • circular saw • sledgehammer • steel tampers • tractors • variety of trucks 	<ul style="list-style-type: none"> • variety of tools, wrenches, screwdrivers, pliers, hammer • pumps • compressors • 4" grinder • water truck equipment • vacuum truck equipment • jet truck or hand jet equipment • shovel • pick • writing utensil 	<ul style="list-style-type: none"> • variety of tools, wrenches, screwdrivers, pliers, hammer • pumps • compressors • shovel • breaking bar • pick • manual metal rodding equipment • electric eel • hook • spray can • hand jetting equipment • shovel • pick • writing utensil 	<ul style="list-style-type: none"> • variety of tools, wrenches, screwdrivers, pliers, hammer • pumps • compressors • jackhammer • t.v. inspection equipment • pipe bursting equipment • jetting equipment • monitors • computer • keyboard • mouse • writing utensil

ADDITIONAL REQUIREMENTS:

- The employee, as needed and depending on the exposure, is required to wear foot, hand, respiratory, eye, face, hearing, head and fall protection equipment and for confined space entries wears a self contained breathing apparatus, and fall protection equipment.

EMPLOYER COMMENTS:	
This Job Analysis accurately represents the duties of a Collections Systems Technician/Equipment Operator to the best of my knowledge.	
EMPLOYER CONTACT NAME:	
EMPLOYER SIGNATURE:	DATE:

EMPLOYEE COMMENTS:	
This Job Analysis accurately represents the duties of a Collections Systems Technician/Equipment Operator to the best of my knowledge. I understand that I cannot add hours to the physical demands breakdown if the total would then be greater than the number of hours in an average workday.	
EMPLOYEE NAME:	
EMPLOYEE SIGNATURE:	DATE: