



**Disability Services
Safety and Claims Management**
Department of Executive Services
Human Resources Division
500 4th Avenue, Room 500
Seattle, WA 98104
(206) 477-3350
(206) 296-0514 FAX

Employee :

Claim # :

JOB ANALYSIS

Job Title:	Plumbing and Mechanical II		
Department:	Executive Services	Division:	Facilities
DOT Title:	Plumber	DOT #:	862.381-030
SVP:	7	Requestor:	Teresa Fager
Worksite Address:	516 Third Ave Seattle, WA 98104	Office Contact Name/ Phone/ Email:	Janine Purdue 206-477-9513 janine.purdue@kingcounty.gov
Original Analyst:	Kyle Pletz, VRC, CDMS	Analysis Date:	9/19/18
Update Analyst:		Update Date:	

☒ On-Site ☐ Interview ☐ Representative

JOB DUTIES:

The position will supervise a group of journey-level plumbing and mechanical workers; This position is also responsible for planning, and executing the crews' work maintaining, repairing and new installations of mechanical and plumbing systems and components including, pipes, storm and sanitary sewers, wet and-dry fire sprinkler systems, valves, steam valves, traps, drains, basins, tubs, faucets, sinks, hydrants, heating, ventilation, air conditioning (HVAC), refrigeration systems, and kitchen and laundry installations typically found in various types of commercial buildings as well as secure detention facilities.

Essential Functions according to the employer:

All King County jobs require ability/essential function to:

Demonstrate predictable, reliable, and timely attendance.

Follow written and verbal directions to complete assigned tasks on schedule.

Read, write, and communicate in English & understand basic math.

Learn from directions, observations, and mistakes and apply procedures using good judgment.

Work independently or as part of a team and interact appropriately with others.

- Model best practices in supervising skilled and semi-skilled journey-level plumbing and mechanical workers on a variety of multiple discipline projects by plan, organize, schedule and coordinate daily work activities of assigned work unit; prepare work schedules and staffing plans; evaluate and monitor work quality and quantity;
- Provide input and/or prepare performance feedback for subordinates, investigate and address performance and conduct issues in a timely and appropriate manner. May participate in discussions regarding disciplinary actions with higher level supervisors
- Monitor for safety hazards and unsafe personnel practices; recommend corrective actions as appropriate;
- Foster a model of every employee being accountable for high-quality service delivery.
- Develop strategies and/or mechanical solutions for new installations and existing systems. Perform systems analysis; troubleshoot problems;
- Estimate material and labor, equipment rental charges, permit fees and subcontractor costs for various disciplines within pre-determined project scope Procure necessary tools, parts and material for projects,
- Maintain accurate personnel, building and vendor files, and records on projects Monitor and track material and labor expenditures Receive and respond to correspondence Organize and assemble project owner equipment manuals;
- Interpret existing conditions and drawings in relationship to client's objectives and current codes. Translate



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- concepts into visual systems and components using illustrations for estimating and construction,
- Review project specifications and drawings for material standards and constructability. Determine sequence of tasks, coordinate and schedule tasks with clients and other crafts and contractors;
- Perform plumbing and mechanical I duties when necessary.
- Perform other duties as assigned.

EXPERIENCE, QUALIFICATIONS, KNOWLEDGE, SKILLS:

- Completed an apprenticeship program for a plumber, steamfitter or refrigeration mechanic, and at least three years of experience as a journey-level plumber, steamfitter or refrigeration mechanic;
- Demonstrated skills in a leadership role and at least one year, experience;
- Knowledge of installation and maintenance of pipe, plumbing, refrigeration, and duct systems, including domestic water, wastewater, vent, irrigation, fire sprinkler, pumping, and HVAC open and closed loop systems;
- Knowledge of maintaining and repairing heat exchangers, compressors heat recovery units and makeup air units;
- Knowledge of maintaining and repairing fan motor systems including belts, sheaves, bearings, shafts;
- Demonstrated knowledge of Uniform Plumbing Code and other related codes, and Americans with Disabilities Act (ADA) requirements;
- Ability to clearly communicate orally and in writing, and read and interpret blueprints, specifications and manufacturer's bulletins;
- Demonstrated ability to use a computer and various programs including Word, Excel, Outlook, Email, and a work order management system;
- Demonstrated skill in the use, operation, and care of tools, machinery, and equipment used in the plumbing and mechanical trades;
- Most qualified candidates will have demonstrated experience in preparing cost estimates and have strong administrative skills.

NECESSARY SPECIAL REQUIREMENTS:

At the time of appointment the candidate must have one or more of the following licenses/certificates:

- Washington State Plumber's License
- Certification Federal Class 1 and 2
- Certified Welder Card
- Backflow Testing License (highly desired)
- Journey-level Steamfitter (Pipefitter) Card • City of Seattle Refrigeration License, or
- City of Seattle Fire Director's Certificate
- Must also possess a valid Washington State driver's license or the ability to travel throughout King County in a timely manner in a variety of County vehicles.
- Successfully pass a thorough Facilities Management Division and Department of Adult and Juvenile Detention (DAJD) background investigations, and a pre-employment physical examination.

Preferred:

- Must possess a City of Seattle's Certification of Competency for installing, inspecting, testing and maintaining fire protection systems.



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Machines, Tools, Special Equipment, Personal Protective Equipment Used:

Pen, paper, computer, smart phone, King County vehicle, backflow test kits/apparatus, telephone, high lift, scissors lift, pipes, brazing welder, wire feed welder, stick welder, grinder, solder, wrenches, torch, port-a-power, pipe threading machines, roto-hammer, ladders, putty, grinders, air compressor, utility knives and razor blades, putty knife, 2-way radio, pipe camera, core driller, small hoist, drop cloths, screw gun, screwdriver, and various hand and power tools. The Plumber also uses caustic materials for cleaning pipes, various pipe cleaners and pipe sealant.

Soft and leather gloves, eye protection, hearing protection, respirator, gas monitor, reinforced boots, knee pads, hard hat, welders helmet, face shield and reflective vests.

PHYSICAL REQUIREMENTS

Frequency Scale	Strength	Work Pattern
N = Never	<input type="checkbox"/> Sedentary	<input checked="" type="checkbox"/> Full-time
S = Seldom (1-10 %, up to 48 min)	<input type="checkbox"/> Light	<input type="checkbox"/> Part-time
O = Occasional (11-33%, 49 min. – 2 hr 40 min)	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> Seasonal
F = Frequent (34-66%, 2 hr 41 min – 5 hr 20 min)	<input type="checkbox"/> Heavy	Hours Per Day
C = Constant (67-100%, more than 5 hr 20 min)	<input type="checkbox"/> Very Heavy	Days Per Week
		FLSA Exempt <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Work Pattern (continued)

This is classified as a MEDIUM job by the US Department of Labor.

Job Demand	Frequency and Weight (lbs.)					Activity Description
	N	S	O	F	C	
Lifting floor – waist		31-50	11-30	1-10		Up to 10 sec./time, 10 min total with 50 lbs. while manipulating core driller, tool bag, large pipe, toilets (30-50 lbs.), large wrenches, pumps, motors, ladders (40 lbs.), etc.. Up to 1 hr./time, 4 hrs. total with fixtures, hand tools, power tools, materials, valves, fittings, snakes, etc. Up to 5 min./time, 2 hrs. total while manipulating under counter hot water tanks, power tools, auger, pro press gun, cast iron fittings, various snakes, wall mount toilets, bag of tools, etc.



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Job Demand	Frequency and Weight (lbs.)					Activity Description
Lifting waist-shoulder		31-50	11-30	1-10		Up to 10 sec./time, 10-min total with 50 lbs. while manipulating core driller, tool bag, large pipe, toilets (30-50 lbs.), large wrenches, pumps, motors, ladders (40 lbs.), etc.. Up to 1 hr./time, 4 hrs. total with fixtures, hand tools, power tools, materials, valves, fittings, snakes, etc. Up to 5 min./time, 2 hrs. total while manipulating under counter hot water tanks, power tools, auger, pro press gun, cast iron fittings, various snakes, wall mount toilets, bag of tools, etc.
Lifting above shoulder		1-30				Up to 1-2min./time, 10 min total with up to 30 lbs. while manipulating pipe, HVAC mixing box and fittings in upper locations such as ceilings.
Carry (Distance/Surface)			1-30			Up to 100'/time, 1 hr. total while carrying a tool bag, power snake, welder, materials etc.
Pushing/Pulling (Distance/Surface)		31-100	1-30			Up to 15 min/time, 2 hrs. total while using a tool cart (20 lbs.; 50 lbs. with incline), wrenches 100 lbs., pipes, screw gun, hand tools, etc.

Physical Demands	Frequency					Activity Description
	N	S	O	F	C	
Sitting				X		Up to 2 hrs./time, 4 hrs. total while driving, completing work orders and timesheets; performing computer work and attending meetings.
Standing					X	Up 30 min./time, 6 hrs. total constructing or rebuilding new or old plumbing, maintenance duties such as running a snake.
Walking				X		Up to 15 min/time, 4 hrs. total traversing to and from worksites, County Buildings etc.
Perform Work on Ladders						Up to 1 hr./time, 6 hrs. total while working on upper areas.
Climbing			X			4-25' ladders; 15x total.
Balancing				X		Up to 1 hr./time, 8 hrs. total while on wet floors (pipe breaks etc.), working on ladders.
Stooping / Bending				X		Repetitively up to 30 min./time, 6 hrs. total on cement, grass, vegetation, uneven ground, crawlspaces, mud, gravel surfaces etc. On most occasions the employee can alternate bending/stooping with kneeling and squatting; Under sinks, floor drains, low pipes, irrigation. On most occasions the employee can alternate bending/stooping with kneeling and squatting.
Twisting at Neck					X	Up to 15 min./time, 6 hrs. total while installing, troubleshooting, and repairing plumbing systems in awkward areas.



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Physical Demands	Frequency					Activity Description
	N	S	O	F	C	
Twisting at Waist					X	Up to 15 min./time, 6 hrs. total while installing, troubleshooting, and repairing plumbing systems in awkward areas.
Squatting / Kneeling					X*	Repetitively up to 30 min./time, 6 hrs. total while working under sinks, floor drains, low pipes, irrigation. etc. *On most occasions the employee can alternate bending/stooping with kneeling and squatting in accordance with preference.
Crawling			X			On cement, grass, vegetation, uneven ground, crawlspaces, mud, gravel surfaces for up to 15 min./time, 2 hrs. total while accessing lower, hard to reach areas such as crawlspaces and irrigation systems.
Reach waist to shoulder				X	X	Repetitively up to 1 hr./time 5-6 hrs. total while driving a truck as well as threading and cutting pipe. The employee also reaches at waist to shoulder height while troubleshooting, installing, repairing, and replacing plumbing and mechanical systems and system components
Reach above shoulder			X	X		Up to 5 min./time, 2-4 hrs. total in a shift while installing, troubleshooting and repairing plumbing systems.
Reach below waist					X	Repetitive on cement, grass, vegetation, uneven ground, crawlspaces, mud, gravel, etc. surfaces for up to 30 min./time, 6 hrs. total while installing, troubleshooting and repairing plumbing systems in lower areas such as vaults or irrigation systems.
Keyboarding					X	Up to 30 min./time, 6 hrs. total performing computer duties.
Wrist Flexion/Extension				X		Up to 2 min./time, 4 hr. total while using various hand and power tools; manipulating materials.
Handle/Grasp					X	Up to 1 hour at a time for up to 7 hours total in a work shift while using various hand and power tools as well as when driving, manipulating pipe, etc.
Forceful Grasp			X			Up to 1 min./time, 2 hr. total while using various hand and power tools; manipulating materials.
Fine Finger Manipulation					X	Up to 2 hrs./time, 8 hrs. total while operating a computer via the keyboard and mouse as well as manipulating hand tools, small pipes, small valves, pipe tape, pipe dope; writing and control panel operation.
Hand Controls					X	Up to 1 hr./time, 6 hrs. total while using a computer mouse, driving, operating a power snake, power tools, valve exercising and hydrant exercising.
Foot Controls				X		Up to 1 hr./time, 5 hrs. total while operating a truck, power snake, pipe machine and high lift.
Repetitive Motion			X			Body Part: Arms hands to install hangers Cycles/hr: 200+
Vibratory Tasks – High						Up to 10 min./time, 2 hrs. total while using a demo gun.
Vibratory Tasks – Low				X		Up to 10 min./time, 4 hrs. total while using an impact wrench, saws-all, grinder, roto-hammer, screw gun, portaband.

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Physical Demands	Frequency					Activity Description
	N	S	O	F	C	
Talking				X		Up to 10 min./time, 4 hrs. total while conversing about duties, receiving directions and instructions, and communicating with co-workers/vendors/supervisors in person and via cellphone.
Hearing					X	Up to 2.5 hrs./time, 8 hours total while identifying potential hazards such as moving machinery. The employee also utilizes hearing when conversing about duties, receiving directions and instructions, and communicating with co-workers, vendors and supervisors in person, cellular phone and via 2-way radio. The employee also utilizes hearing when operating tools and equipment to ensure proper operation; Performing troubleshooting.
Visual – Near Acuity					X	Trouble shooting, performing repairs and reading meters, using testing equipment and identifying manufactures part numbers, computers duties.
Visual – Far Acuity					X	Performing pre and post inspections; driving. Identifying safety hazards.
Visual – Depth Perception					X	Performing pre and post inspections; driving. Identifying safety hazards.
Visual – Color Discrimination				X		Identifying systems, lock-out-tag out, pipe colors, wiring, inspecting welds and identifying safety hazards.
Visual – Accommodation				X		Trouble shooting, performing repairs and reading meters, using testing equipment and driving.
Visual – Field of Vision				X		Driving. Identifying safety hazards.
Exposure to Weather			X			
Extreme Cold		X				Coolers, freezing temperatures.
Extreme Hot				X		Hot water lines and heaters, steam headers, welding, soldering, torches, grinding, drilling, etc.
Wet and / or Humidity					X	This is a plumbing position.
Proximity to Moving Mechanical Parts					X	Power tools, machinery, equipment, gang boxes, pipe machine.
Exposure to Explosives		X				Fuels and gasses
Atmospheric Conditions				X		Welding, fumes, smoke, dust.
Exposed Heights				X		Ladders, rooftops, lifts etc.
Exposure to Electricity				X		Water heaters, panels etc.
Exposure to Toxic / Caustic Chemicals			X			ABS glue, pipe cleaning solutions.
Exposure to Radiation		X				X-ray machines (job is based in a courthouse with security screening).
Noise Intensity	<input checked="" type="checkbox"/> Very Quiet <input type="checkbox"/> Quiet <input type="checkbox"/> Moderate <input type="checkbox"/> Loud <input checked="" type="checkbox"/> Very Loud					Noise intensity greatly varies. The employee can be in a quiet environment and can also be around loud machinery such as sanders, construction equipment, pressure washers etc.
Other:						



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Analyst's Comments:

Activities vary on a daily basis depending on the project. Some projects may require increased ladder use and reaching above the shoulder when dealing with pipes in the ceiling, while other projects such as working on floor drains and under sinks will require more bending/stooping, kneeling, crawling, twisting etc.

Possible Employer Modifications:

Lifting equipment is available for heavy items such as pumps, equipment and materials. Tool carts are available to reduce lifting and carrying to/from work sites.

Update Comments (if applicable):

Note: The information for this job analysis was gathered by either on-site observation, interview and / or is representative of the labor market as indicated on page one. Additional data may have been obtained from standardized industry resources such as the DOT, GOE, COJ, OOH, WOIS and O-NET. On occasion, practicality and feasibility prevent the direct observation and/or gathering of objective, quantifiable data. For this reason, a "best estimate" may have been used.

Analyst:

Update (if applicable):

Vocational Consultant

Date

Vocational Consultant

Date

Employer Verification:

Employee Verification: (optional)

Name

Date

Name

Date



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MEDICAL PROVIDER:

- ☐ I agree that the employee can perform the physical activities described in this job analysis and can return to work. Date employee is released to return to work if different from today's date: _____
- ☐ I agree the employee can perform the described job but only with modifications (describe in comments section). Modifications are needed on a ☐ permanent basis or ☐ temporary basis.
- ☐ The employee **temporarily** cannot perform this job based on the following physical limitations:

Anticipated release date: _____

Treatment plan: _____

- ☐ The employee is **permanently** restricted from performing the physical activities described in this job analysis based on the following physical limitations (state objective medical findings):

Comments:

Signature

Date

Print Name

- | | | | |
|--|---|---|--|
| <input type="checkbox"/> Attending Physician | <input type="checkbox"/> Consulting Physician | <input type="checkbox"/> Pain Program Physician | |
| <input type="checkbox"/> IME Physican | <input type="checkbox"/> PCE Therapist | <input type="checkbox"/> OT / PT Therapist | <input type="checkbox"/> PEP Physician |