

SECTION 22 05 10
PLUMBING-GENERAL

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The requirements of this Section shall apply to all sections of Division 22. All Division 1 sections shall apply to the Division 22 Plumbing sections as applicable.

1.2 RELATED WORK

- A. Section 01 00 00, GENERAL REQUIREMENTS
- B. Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES
- C. Section 07 84 00, FIRESTOPPING
- D. Section 07 92 00, JOINT SEALANTS
- E. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING
- F. Section 22 07 23, GENERAL-DUTY VALVES FOR PLUMBING PIPING
- G. Section 22 07 11, PLUMBING INSULATION
- H. Section 22 11 00, FACILITY WATER DISTRIBUTION
- I. Section 22 40 00, PLUMBING FIXTURES

1.3 SUBMITTALS

- A. Submittals shall be submitted in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES and individual Plumbing sections as required.
- B. Contractor shall make all necessary field measurements and investigations to assure that the equipment and assemblies will meet contract requirements.
- C. Prior to developing shop drawings and coordination plans, the Contractor shall submit his drawings to all other trades for review.

1.4 REQUIREMENTS

- B. All drawings and portions of the drawings, floor plans, risers, details, schematics and specifications indicated shall apply and are part of the plumbing contract. All other trades of work (Architectural, Structural, Hazardous Material Abatement, HVAC, Electrical) shall be used in the coordination and layout of the new plumbing work. The Contractor's failure to properly coordinate his work with the work of the other disciplines shall not be grounds for additional costs.
- C. Any discrepancy or conflict noted between or within the above referenced documents shall be brought to the attention of the VA and Engineer, in writing, a minimum of fourteen (14) days prior to submittal of bids. The

VA and Engineer shall resolve issues prior to bid submittal.

D. Demolition and Phasing:

1. **Demolition/Relocation:** Demolition and/or relocations of existing plumbing, HVAC, sprinkler, and electrical infrastructure including but not necessarily limited to fixtures, piping, fittings, valves, supports, conduit, lights, sprinklers, speakers, insulation, and plumbing equipment as shown or indicated in the Contract Documents. Demolition activities shall include sealing and firestopping of existing floor/wall/ceiling penetrations where piping and equipment has been removed. ***Incidental demolition shall be anticipated and required in order to install the new work. For instance, existing abandoned piping, conduit, wiring, ductwork, and other items which are no longer used shall be removed to provide more space for the new piping, and shall be anticipated and included in the Contractor's bid.***
2. **Phasing of Work:** Work shall be coordinated and phased as required to meet the logistical needs of the VA while minimizing impact to the Medical Center's operations and maintaining patient/staff safety. Contractor shall coordinate phasing and work sequencing requirements with the Medical Center and schedule the execution of work accordingly. Generally, all work within the ***ALL corridors and means of egress***, shall be restricted to the hours between 6 PM and 5 AM with the means of egress maintained at all times. Contractor shall refer to the notes on the drawings which limit the number of toilet/shower rooms to be taken out of service at any given time, as well as specific limitations on the duration of the outage. Additionally, specific areas of the facility will require work to be done during the day between 7 and 3 pm (refer to drawing notes for identification of these areas).

E. This Contractor shall carefully read the above mentioned documents and study the drawings of all trades. He shall be responsible for neglect to read, or attend to, any paragraph or items contained therein. Failure to bring any conflicts or discrepancies to the attention of the Engineer, in writing, prior to bid submittal shall not constitute grounds for extras and/or change orders. Costs resultant from this failure shall be borne by this Contractor.

F. This section applies to all Division sections and all Contract Drawings and Documents.

1.5 WORK INCLUDED

- A. These specifications and accompanying drawings are intended to cover the furnishing by the Contractor of all labor, material and all equipment of every kind necessary for the complete installation of the various systems, and such other materials and equipment as hereinafter specified, and shall include, but not be limited to the following:

3. **Definition of Scope of Work:** The scope of work for the various areas in the facility, have been defined by the VA based on the following nomenclature:

BUILDING 1 - BASEMENT WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and extend as listed below.
- Extend stubs provided under previous basement west and center project to new mixing valve station. Verify existing locations in field.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

BUILDING 1 - BASEMENT EAST:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide sensors for floor HW, CW, and HWR and pumps. Interface into building management system.

BUILDING 1 - FIRST FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide temperature sensors for floor HW, CW, and HWR piping. Interface into building management system.

BUILDING 1 - FIRST FLOOR EAST: (NO WORK)

BUILDING 1 - SECOND FLOOR- WEST:

- Prepare and implement IRCA measures and containment in work area.

- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - SECOND FLOOR CENTER/EAST:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - THIRD FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to Phase I piping risers. Extend piping from new mixing valve station to stubs provided under previous basement third floor project 693-12-104.
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - THIRD FLOOR EAST:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - FOURTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and

equipment. Interface into building management system.

BUILDING 1 - FOURTH FLOOR EAST:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - FIFTH FLOOR- WEST, CENTER and EAST:

- Prepare and implement IRCA measures and containment in work area
- Incidental wall patching necessary for the work.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor for extension as listed below.
- Extend HW, HWR, CW, CWR piping from 5th floor mixing valve station above corridor ceilings for future extension to toilet room fixtures, sinks etc.. Cap HW, CW, CWR, and HWR above ceiling for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - SIXTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans for extension.
- Extend stubs provided under previous 6th floor west and center engineering department renovation project to new mixing valve station piping stubs under Phase II project (listed above).
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - SIXTH FLOOR EAST: (NO WORK)

BUILDING 1 - SEVENTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Extend stubs provided under previous 7th floor west sleep lab project to mixing valve station under Phase II project.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - SEVENTH FLOOR EAST: (NO WORK)

BUILDING 1 - EIGHTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - EIGHTH FLOOR EAST: (NO WORK)

BUILDING 1 - NINTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - NINTH FLOOR EAST: (NO WORK)

BUILDING 1 - TENTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - TENTH FLOOR EAST: (NO WORK)

BUILDING 1 - ELEVENTH FLOOR- WEST AND CENTER:

- Prepare and implement IRCA measures and containment in work area.
- Install new mixing valve station and connect to existing Phase I piping risers. Extend piping from new mixing valve station into corridor as indicated on plans and valve/cap for future extension.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide BAS sensors for floor HW, CW, and HWR piping and equipment. Interface into building management system.

BUILDING 1 - ELEVENTH FLOOR EAST: (NO WORK)

BUILDING 1 - TWELTFH FLOOR:

- Connect existing 8" day tank outlet piping on 12th floor to existing 6" cold water riser installed under Phase I project. Provide isolation gate valve and maintain existing facility piping. Connect new 6" piping to Victaulic joint near main gate valve on 12th floor.
- Extend existing 6" day tank fill piping from Phase I piping installed and terminated within the 12th floor space up through the 13th floor and continue up to and including the existing day tank (see plans and details). Provide (2) new drops to the day tank with individual gate valve shutoffs.
- Provide a new 2" cold water supply from the new 6" day tank discharge piping on the 12th floor and extend into the existing 2" drinking fountain water distribution risers on the 12th floor. Piping connections into the existing (abandoned drinking fountain water chiller) shall be capped and abandoned. New piping shall be extended into the existing filter bank and dual drinking fountain water pumps. Replace all existing valves and piping specialties

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with new.

- Remove, abate, and disposal of existing ACM fitting insulation on drinking fountain water system piping in accordance with Section 02 82 11- Traditional Asbestos Abatement.
- Provide BAS sensors for piping and equipment. Interface into building management system.

BUILDING 1 - THIRTEENTH FLOOR:

- Provide BAS sensors and controllers for daytank piping and equipment. Interface into building management system.
- Provide (2) ultrasonic level sensor/controllers for tank and interface into Johnson Controls BAS and new house pump control.
- Provide extension of Johnson Controls building management system including control wiring, conduit, controllers, and power supply.

BUILDING 1- NORTH BASEMENT:

- Prepare and implement ICRA measures and containment in work area.
- Incidental wall demolition and patching necessary for the work.
- Remove ceilings as required for extension of water line. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Remove and replace existing 5" water service that enters in Bulk Storage Room NB-125 with new water service including dual backflow preventers, piping, gauges, strainers, valves, fittings, hangers and insulation to the point of connection to the existing 5" water service and riser to the 5th floor mechanical room.
- Remove existing recessed wall water cooler, standpipe/ fire extinguisher cabinet, fob door access, wall rail, switches, fire alarm pull stations and modify wall construction as necessary to accept new 4" cold water feed pipe to 5th floor. Reinstall all wall items listed (as applicable) and water cooler, including plumbing and electrical connections as part of the wall restoration work. Install new fire extinguisher cabinet. Paint/finish wall restoration area to match existing.
- Extend hot water supply, hot water return and cold water supply from 5th floor to basement level chase.
- Provide mixing valve station w/ circulator, and valve/cap hot water, cold water and hot water return to basement level for future extension.
- Provide cold water return piping stub with bronze circulator for future extension to basement level.
- Provide building automation system interface to JCI system for sensors and alarms for mixing valve station and CWR circulator.

BUILDING 1- NORTH FIRST FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Incidental wall demolition and patching necessary for the work.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Remove existing recessed wall water cooler, standpipe/ fire extinguisher cabinet, fob door access, wall rail, switches, fire alarm pull stations and modify wall construction as necessary to accept new cold water feed pipe to 5th floor. Reinstall all wall items listed (as applicable) and water cooler, including plumbing and electrical connections as part of the wall restoration work. Install new fire extinguisher cabinet. Paint/tile finish wall restoration area to match existing.
- Extend hot water supply, hot water return and cold water supply from 5th floor to 1st floor level chase.
- Provide mixing valve station w/ circulator, and valve/cap hot water, cold water and hot water return to 1st floor level for future extension.
- Provide cold water return piping stub with bronze circulator for future extension to 1st floor level.
- Provide building automation system interface to JCI system for sensors and alarms for mixing valve station and CWR.

BUILDING 1- NORTH SECOND FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Incidental wall demolition and patching necessary for the work.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Remove existing recessed wall water cooler, standpipe/ fire extinguisher cabinet, fob door access, wall rail, switches, fire alarm pull stations and modify wall construction as necessary to accept new cold water feed pipe to 5th floor. Reinstall all wall items listed (as applicable) and water cooler, including plumbing and electrical connections as part of the wall restoration work. Install new fire extinguisher cabinet. Paint/tile finish wall restoration area to match existing.
- Extend hot water supply, hot water return and cold water supply from 5th floor to 2nd level chase.
- Provide mixing valve station w/ circulator, and valve/cap hot water, cold water and hot water return to 2nd floor level for future extension.
- Provide cold water return piping stub with bronze circulator for future extension to 2nd floor level.
- Provide building automation system interface to JCI system for

sensors and alarms for mixing valve station and CWR circulator.

BUILDING 1- NORTH THIRD FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Incidental wall demolition and patching necessary for the work.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Remove existing recessed wall water cooler, standpipe/ fire extinguisher cabinet, fob door access, wall rail, switches, fire alarm pull stations and modify wall construction as necessary to accept new cold water feed pipe to 5th floor. Reinstall all wall items listed (as applicable) and water cooler, including plumbing and electrical connections as part of the wall restoration work. Install new fire extinguisher cabinet. Paint/ tile finish wall restoration area to match existing.
- Extend hot water supply, hot water return and cold water supply from 5th floor to 3rd floor level chase.
- Provide mixing valve station w/ circulator, and valve/cap hot water, cold water and hot water return to 3rd floor level for future extension.
- Provide cold water return piping stub with bronze circulator for future extension to 3rd floor level.
- Provide building automation system interface to JCI system for sensors and alarms for mixing valve station and CWR circulator.

BUILDING 1- NORTH FOURTH FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Incidental wall demolition and patching necessary for the work.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to existing faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Remove existing recessed wall water cooler, standpipe/ fire extinguisher cabinet, fob door access, wall rail, switches, fire alarm pull stations and modify wall construction as necessary to accept new cold water feed pipe to 5th floor. Reinstall all wall items listed (as applicable) and water cooler, including plumbing and electrical connections as part of the wall restoration work. Install new fire extinguisher cabinet. Paint/tile finish wall restoration area to match existing.
- Extend hot water supply, hot water return and cold water supply from 5th floor to 4th floor level chase.
- Provide mixing valve station w/ circulator, and valve/cap hot water, cold water and hot water return to 4th floor level for

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future extension.

- Provide cold water return piping stub with bronze circulator for future extension to 4th floor level.
- Provide building automation system interface to JCI system for sensors and alarms for mixing valve station and CWR circulator.

BUILDING 1- NORTH FIFTH FLOOR:

- Extend new 4-inch cold water supply from basement level.
- Provide residual chlorine sensor on main water service.
- Provide new 1-micron FDA water filtration system on water supply. Filtration system to match units used elsewhere in the Hospital,
- Provide water connections for future chlorine dioxide water treatment unit (Unit provided by VA in future).
- Provide semi-instantaneous steam-water hot water generator with controls. Provide gateway as necessary for Modbus control integration with Johnson Controls system.
- Provide triplex packaged water pressure booster unit with pumps and hydropneumatic tank and controls.
- Extend medium steam from existing utility steam riser in 5th floor mechanical room into pilot operated pressure reducing valve and extend low pressure steam piping to hot water generator. Piping to include all necessary hangers, supports, expansion compensation, traps, and insulation. Provide relief valve, drip pan elbow and vent to exterior.
- Provide duplex condensate transfer unit with low NPSH pumps, cast iron receiver, gauges, strainers, vent, and control panel.
- Provide DDC bus extension, sensors, and controllers to JCI building management system for full real-time telemetry of temperature/pressure/status functions as specified.

BUILDING 1-BASEMENT MIXING VALVE STATION ROOM AND BOILER PLANT AREA:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve stations with circulators. Provide full size HW bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from phase I piping. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-FIRST FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-SECOND FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-THIRD FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other

items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.

- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-FOURTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-FIFTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and extended as shown.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-SIXTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and connected to existing.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-SEVENTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator from Phase I piping risers. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and connected to existing as indicated.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-EIGHTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other

items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.

- Extend HWS, HWR, and CW piping to mixing valve station from phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and connected to existing as shown.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-NINTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-TENTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping to mixing valve station from Phase I piping risers. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into JCI building management system.

BUILDING 1-ELEVENTH FLOOR MIXING VALVE STATION ROOM:

- Prepare and implement IRCA measures and containment in work area
- Install new mixing valve station with circulator. Provide full size bypass with connections as detailed for thermal/hyperchlorination eradication procedures.
- Extend electrical normal/emergency power to equipment as indicated.
- Remove existing ceilings as required for extension of water lines. Elements including but not limited to lights, speakers, smoke detectors, wireless communication transmitters, and any other items, shall be removed as necessary for the work and re-installed in full working order at the conclusion of work.
- Extend HWS, HWR, and CW piping from Phase 1 piping risers to mixing valve station. Include fittings, valves, hangers, insulation and piping identification. Provide cold water return and circulator with piping connection. Extend HW, CW, HWR, and CWR piping into adjoining corridor valved and capped.
- Provide sensors as scheduled and interface into building management system.

BUILDING 1-BASEMENT LEVEL WATER SERVICE (BOILER PLANT AREA):

- Remove existing house pumps, supports, valves, fittings, piping, electrical feed, and insulation.
- Install new bronze body inline, split coupled centrifugal inline pumps.
- Furnish new pumps with normal and emergency power, variable frequency drives, and disconnects.
- Provide sensors as scheduled and interface into JCI BAS system.
- Provide residual chlorine sensor on water service.
- Replace existing 10 micron cartridge filters media with 1 micron filter media.
- Provide emergency power feed to existing domestic HW booster pump package (installed under phase 1)
- Provide connection for future chlorine dioxide unit.
- Provide valved connections to the existing piping terminations (including those provided under Phase I project) including domestic cold water connection (after main POS filters) to booster pump suction line, connection of new house pumps to domestic cold water, existing hot water heater cold water feed, daytank cold water feed, domestic hot water, and domestic hot water return

CLC-FIRST FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Provide new FDA compliant 1-micron water filtration media in existing point of service filtration.
- Replace existing lavatory faucets with dual-powered sensor operated faucet.
- Provide electrical modifications/renovations for faucet electrical receptacle.

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- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide connection on hot water heater cold water feed for future chlorine dioxide unit.
- Provide residual chlorine sensor on main water service.

CLC-SECOND FLOOR (PATIENT AREAS):

- Prepare and implement IRCA measures and containment in work area
- Replace existing lavatory faucets with dual-powered sensor operated faucet.
- Provide electrical modifications/renovations for faucet electrical receptacle.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide new ADA compliant T/P thermostatic pressure balancing mixing valve on patient showers including cutting and patching of shower enclosure surfaces.
- Provide new hand held shower with stainless steel braided hose , swivel connection, vacuum breaker, and 24" slide bar
- Point of use 0.2 μ showerhead filter for Legionella protection (furnished by Government).
- Provide temperature sensors for existing floor HW, CW, and HWR piping. Interface into JCI building management system.

CLC- THIRD FLOOR (PATIENT AREAS):

- Prepare and implement ICRA measures and containment in work area
- Replace existing lavatory faucets with dual-powered sensor operated faucet.
- Provide electrical modifications/renovations for faucet electrical receptacle.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide new ADA compliant T/P thermostatic pressure balancing mixing valve on patient showers including cutting and patching of shower enclosure surfaces.
- Provide new hand held shower with stainless steel braided hose , swivel connection, vacuum breaker, and 24" slide bar
- Point of use 0.2 μ showerhead filter for Legionella protection (furnished by Government).
- Provide temperature sensors for existing floor HW, CW, and HWR

pipng. Interface into JCI building management system.

CLC- FOURTH FLOOR (CATERIZATION LAB):

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).
- Provide temperature sensors for floor HW, CW, and HWR piping. Interface into JCI building management system.

AMBULATORY CARE WING-BASEMENT LEVEL:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

AMBULATORY CARE WING-FIRST FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

AMBULATORY CARE WING-SECOND FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

AMBULATORY CARE WING-THIRD FLOOR MECHANICAL ROOM:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing 10 micron water filters with 1 micron water filters.
- Provide existing hot water heater cold supply with connections for future chlorine dioxide water treatment unit.
- Provide residual chlorine sensor on main water service.
- Provide sensors and alarms as scheduled and integrate into Johnson Controls BAS.

AMBULATORY CARE WING-FOURTH FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

AMBULATORY CARE WING-FIFTH FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

AMBULATORY CARE WING-SIXTH FLOOR: (NO WORK)

AMBULATORY CARE WING-SEVENTH FLOOR:

- Prepare and implement IRCA measures and containment in work area.
- Replace existing plumbing fixture hot and cold water supplies with new chrome supplies, chrome loose-key stops, ASSE 1070 point of use mixing valves with integral check valves, and tempered water supply with connection to new faucet on existing lavatories and sinks (do not install on utility and clinical sinks).

AMBULATORY CARE WING-EIGHTH FLOOR: (NO WORK)

AMBULATORY CARE WING-NINTH FLOOR: (NO WORK)

AMBULATORY CARE WING-TENTH FLOOR: (NO WORK)

- 1.6 The above list of work scope items is presented for general guidance to the Contractor and does not necessarily cover the entire requirement of the project as shown on the drawings and/or as specified hereinafter.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 Work described above shall include all required piping insulation, hangers and supports for new piping. Piping insulation shall include new piping and those portions of existing piping where asbestos containing materials have been removed and/or new connections made.

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3.2 Work described above shall include all required firestopping of wall and floor penetrations per the Contract Documents and VA requirements.

3.3 Work described above shall include all necessary valves and shutoffs and access panels as required.

3.4 Work described above shall include all piping, valve, and equipment identification for all new systems and equipment installed under this project.

3.5 Work described above shall include all flushing, testing and disinfecting of all new water piping.

3.6 Work described above shall include the setting of all sleeves and inserts in place.

END OF SECTION 22 05 10