



720 3rd Avenue Suite 1500
Seattle Washington 98104-1878
(206) 467-0555

MECHANICAL DRAWINGS

CENTERS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



2024-06-27

Table with 3 columns: Revision No., Description, Date. Contains revision history for the drawing.

CONTROLS

Table of mechanical controls including symbols and descriptions for items like air pressure gauge, air sampling point, carbon dioxide sensor, etc.

CONTROLS

Table of mechanical controls including symbols and descriptions for items like unitary heating coil, unitary cooling coil, unitary heat recovery coil, etc.

FIRE PROTECTION

Table of fire protection symbols and descriptions including fire antifreeze, clean agent, deluge, etc.

PLUMBING SYSTEMS

Table of plumbing systems symbols and descriptions including pipe size, piping routed below slab, acid vent, etc.

PIPING SYSTEMS (HVAC)

Table of HVAC piping systems symbols and descriptions including pipe size, boiler blowdown, boiler feed water, etc.

WORK DEFINITION

Table of work definition symbols and descriptions including new work, existing, remove existing, etc.

ABBREVIATIONS

Table of abbreviations for various mechanical components and systems.

EQUIPMENT IDENTIFICATION

Table of equipment identification symbols and descriptions for items like air blender, air compressor, etc.

DRAWING INDEX table listing drawing numbers and titles such as M.V.P.001 MECHANICAL LEGEND AND ABBREVIATIONS.

NOTE: NOT ALL SYMBOLS, SYSTEMS, AND ABBREVIATIONS MAY BE USED ON THIS PROJECT

The approved construction plans, documents, and all engineering must be posted on the job at all inspections in a visible and readily accessible location.
Approval of submitted plans is not an approval of omissions or oversights by this office or non compliance with any applicable regulations of local government.

City of Puyallup Building Reviewed for Compliance stamp, City logo, and mechanical legend and abbreviations.

MECHANICAL LEGEND AND ABBREVIATIONS table with symbols and descriptions for various mechanical components.



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2024-06-27

DEMO NOTES

1. NOT ALL EXISTING CONDITIONS HAVE BEEN SHOWN, CONTRACTOR TO FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO DEMO.
2. CONTRACTOR SHALL PROTECT ALL WORK AND EXISTING CONDITIONS ASSOCIATED WITH THIS CONTRACT FROM DAMAGE, COVER ENDS OF PIPING AND DUCTWORK NOT ACTIVELY BEING WORKED ON, IT IS THE CONTRACTOR RESPONSIBILITY TO REPAIR OR REPLACE ANY DAMAGED ITEMS THAT OCCURS DURING THIS CONSTRUCTION PROJECT AT NO COST TO THE OWNER.
3. DEMOLISH ALL REQUIRED EQUIPMENT, DUCTWORK, PIPING, HANGERS, CONTROLS AND ALL ASSOCIATED EXISTING SYSTEMS AS REQUIRED, TO REPLACE EACH SYSTEM, CONTRACTOR SHALL COORDINATE DEMOLITION WITH EXISTING SYSTEMS AND COMPONENTS TO REMAIN PRIOR TO WORK COMMENCING.
4. IT IS THE CONTRACTOR RESPONSIBILITY TO CLEAN UP ALL DEBRIS FROM SITE AT THE END OF EACH WORK DAY AND DISPOSE OFF EITHER IN LAY DOWN RECYCLE BINS PROVIDED BY THE CONTRACTOR OR OFFSITE ALL TOGETHER.
5. ALL DEMOLISHED EQUIPMENT SHALL BE TURNED OVER TO THE OWNER UNLESS DIRECTED OTHERWISE. IF NOT REQUIRED BY OWNER, DISPOSE AS REQUIRED.

GENERAL NOTES

1. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND ARE BASED ON ONE MANUFACTURERS EQUIPMENT, THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, EXACT DIMENSIONS, OR ALL OF THE DETAILS FOR THE EQUIPMENT. THE MECHANICAL CONTRACTOR SHALL VERIFY THE ACTUAL DIMENSIONS OF THE EQUIPMENT AND ENSURE THAT IT WILL FIT IN THE AVAILABLE SPACE.
2. MECHANICAL CONTRACTOR RESPONSIBLE FOR INSTALLATION OF COMPLETED AND OPERATIONAL SYSTEMS WITH DUE RESPECT TO ALL APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.
3. IT IS THE CONTRACTOR RESPONSIBILITY TO FIELD VERIFY ALL CONNECTION POINTS PRIOR TO INSTALL. NOT ALL CONNECTION SIZES ARE SHOWN, BUT THOSE THAT ARE APPROXIMATE AND TAKEN FROM EXISTING AS-BUILTS AND FIELD OBSERVATIONS.
4. COORDINATE PIPE ROUTING WITH DUCTWORK, SPRINKLER PIPING AND ELECTRICAL, POWERLIGHTING CIRCUITING AND STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
5. CONTRACTORS TO VERIFY ALL GRADES, DIMENSIONS AND EXISTING CONDITIONS AT THE SITE BEFORE PROCEEDING WITH WORK, NOTIFY PRIME CONSULTANT OF ANY DISCREPANCIES BETWEEN DRAWINGS AND ACTUAL CONDITIONS BEFORE INSTALLATION.
6. EQUIPMENT AND SYSTEMS SHALL COMPLY WITH 2018 WASHINGTON STATE ENERGY AND MECHANICAL CODES.
7. COORDINATE INSTALLATION OF PIPING AND DUCTWORK WITH ELECTRICAL CONTRACTOR AND OTHER TRADES.
8. CONTRACTOR IS RESPONSIBLE FOR ALL PERMITS NEEDED TO CONSTRUCT WORK SHOULD IN THE CONSTRUCTION DOCUMENTS AND ACCOMPANYING SPECIFICATIONS.
9. IF THERE IS A CONFLICT BETWEEN THE CONSTRUCTION DOCUMENTS AND SPECIFICATIONS, THE MOST STRINGENT WILL APPLY.
10. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURERS, CONTRACTOR TO PROVIDE ALL FITTINGS, TRANSITIONS, DAMPERS, VALVES, AND OTHER DEVICES REQUIRED FOR A COMPLETE WORKABLE INSTALLATION.
11. SYSTEMS ADHERE TO 2018 WSEC SECTION C403.2.3 VARIABLE FLOW CAPACITY FOR FAN AND PUMP MOTORS 7.5 HP AND GREATER, INCLUDING MOTORS IN OR SERVING CUSTOM AND PACKAGED AIR HANDLERS SERVING VARIABLE AIR VOLUME SYSTEMS, CONSTANT VOLUME FANS, HEATING AND COOLING HYDRONIC PUMPING SYSTEMS, AND OTHER PUMP OR FAN MOTORS WHERE VARIABLE FLOWS ARE REQUIRED SHALL BE EQUIPPED WITH VARIABLE SPEED DRIVES.
12. SYSTEMS ADHERE TO SECTION C403.3.2 HVAC EQUIPMENT PERFORMANCE REQUIREMENTS: EQUIPMENT SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C403.3.2(1) THROUGH C403.3.2(2) WHEN TESTED AND RATED IN ACCORDANCE WITH THE APPLICABLE TEST PROCEDURE.
13. SYSTEMS ADHERE TO C405.8 ELECTRIC MOTOR EFFICIENCY:
 - A. ALL ELECTRIC MOTORS, FRACTIONAL OR OTHERWISE, SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.8(1) THROUGH C405.8(4) WHEN TESTED IN ACCORDANCE WITH DOE 10 CFR UNLESS OTHER EXCEPTIONS ARE QUALIFIED AND MET BY THIS SECTION.
 - B. FRACTIONAL HP FAN MOTORS THAT ARE 1/2 HP OR GREATER AND LESS THAN 1 HP (BASED ON THE OUTPUT POWER) WHICH ARE NOT COVERED IN TABLES C405.8(3) AND C405.8(4) SHALL BE ELECTRONICALLY COMMUTATED MOTORS OR SHALL HAVE A MINIMUM MOTOR EFFICIENCY OF 70 PERCENT WHEN RATED IN ACCORDANCE WITH DOE 10 CFR 431.
14. PENETRATIONS OF DUCTS, PIPES, CONDUITS, ETC IN WALLS REQUIRING PROTECTED OPENINGS SHALL BE FIRE STOPPED, FIRE STOP MATERIAL SHALL BE A UL/ULC-LISTED ASSEMBLY APPROPRIATE FOR FIRE OR SMOKE PENETRATIONS AS APPLICABLE AND AS APPROVED BY THE FIRE MARSHAL.
15. THE MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL FIRE, SMOKE, OR COMBINATION SMOKE/FIRE DAMPERS AND ACCESS PANELS COMMENSURATE WITH THE RATING OF THE WALL IN ALL DUCTWORK THAT PENETRATES FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS AND SMOKE PARTITION IN ALL DUCTWORK THAT PENETRATES A HORIZONTAL OR VERTICAL FIRE PARTITION, OR AS OTHERWISE SHOWN ON THE DRAWINGS.
16. ALL BRANCH DUCTS SHALL HAVE VOLUME DAMPERS.
17. WHERE FLOW EXCEEDS 150 CFM, THE CONTRACTOR SHALL USE SMOOTH RADIUS ELBOWS OR TURNING VANES.
18. ALL DUCT JOINTS SHALL BE SEALED IN ACCORDANCE WITH SMACNA STANDARDS.
19. ALL DUCT DIMENSIONS ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED PROVIDED THAT THE NET FREE AREA IS MAINTAINED.
20. ALL CONCEALED DUCTWORK SHALL BE INSULATED WITH 1" FIBERGLASS INSULATING BLANKET WITH ALUMINUM FOIL FACING.
21. ALL DUCTWORK SHALL BE CONSTRUCTED, ERECTED AND TESTED IN ACCORDANCE WITH THE LOCAL REGULATIONS AND PROCEDURES DETAILED IN THE APPLICABLE STANDARDS ADOPTED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA).
22. ALL DUCTWORK SHALL BE CONSTRUCTED AND SEALED PER IMC.
23. DUCTWORK SHALL MEET THE AIR LEAKAGE REQUIREMENTS OF 2018 WSEC C402.5 AND VAPOR RETARDER REQUIREMENTS PER THE IBC.
24. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAPS TO SUPPORT PIPES WILL NOT BE PERMITTED. REFER TO SPECIFICATIONS FOR MINIMUM SPACING OF PIPE SUPPORTS.
25. ALL EQUIPMENT TO BE INSTALLED ON MIN 6" THICK CONCRETE HOUSEKEEPING PADS.
26. ALL EQUIPMENT, DUCTS PIPING, AND OTHER DEVICES AND MATERIALS INSTALLED OUTSIDE OF THE BUILDING OR OTHERWISE EXPOSED TO THE WEATHER SHALL BE COMPLETELY WEATHERPROOFED.
27. MECHANICAL EQUIPMENT, DUCTS AND PIPING ARE TO BE COORDINATED WITH STRUCTURAL JOISTS AND CROSS BRACING.
28. ALL EXPOSED PIPING IN OCCUPIED SPACES SUBJECT TO ARCHITECTURAL APPROVAL PRIOR TO INSTALLATION.
29. ALL DUCTWORK SHALL BE CONSTRUCTED AND SEALED PER IMC.
30. DUCTWORK SHALL MEET THE AIR LEAKAGE REQUIREMENTS OF 2018 WSEC C402.5 AND VAPOR RETARDER REQUIREMENTS PER THE IBC.
31. THE HVAC SYSTEMS SHALL BE TESTED AND BALANCED BY AN INDEPENDENT AGENCY, UNDER THE SUPERVISION OF A LICENSED PROFESSIONAL ENGINEER PRIOR TO COMMISSIONING. A SEALED TYPE WRITTEN REPORT SHALL BE SUBMITTED TO THE ARCHITECT/ENGINEER.
32. A BUILDING COMMISSIONING PROCESS AND FUNCTIONAL TESTING OF MECHANICAL SYSTEMS SHALL BE CARRIED OUT BY A CERTIFIED COMMISSIONING PROFESSIONAL IN ACCORDANCE WITH 2018 WSEC SECTION C408. THE MECHANICAL, ELECTRICAL, PLUMBING, AND CONTROL CONTRACTORS ARE REQUIRED TO PERFORM FUNCTIONAL PERFORMANCE TESTING OF ALL EQUIPMENT PRIOR TO TESTING BY THE COMMISSIONING AGENT. CONTRACTORS SHALL PROVIDE THE NECESSARY ASSISTANCE TO THE COMMISSIONING AGENT TO PERFORM COMMISSIONING DUTIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR TAKING CORRECTIVE ACTION IF ANY DEFICIENCIES ARE FOUND DURING COMMISSIONING.
33. SYSTEMS ADHERE TO 2018 WSEC SECTION C408 SYSTEM COMMISSIONING.
 - A. A CERTIFIED COMMISSIONING PROFESSIONAL (CCP) SHALL LEAD THE COMMISSIONING PROCESS. A CCP IS AN INDIVIDUAL WHO IS CERTIFIED BY AN ANSULAC-TESTED 2012 ACCREDITED ORGANIZATION TO LEAD, PLAN, COORDINATE, AND MANAGE COMMISSIONING TEAMS AND IMPLEMENT THE COMMISSIONING PROCESS.
 - B. A CERTIFIED COMMISSIONING PROFESSIONAL SHALL PERFORM THE FOLLOWING:
 - a. DEVELOP A COMMISSIONING PLAN.
 - b. REVIEW BUILDING DOCUMENTATION AND CLOSE-OUT SUBMITTALS.
 - c. PROVIDE A COMMISSIONING REPORT.
 - d. LIST SPECIFIC EQUIPMENT, APPLIANCES AND SYSTEMS COMMISSIONED.
 - C. FUNCTIONAL TESTING SHALL BE COMPLETED FOR THE FOLLOWING SYSTEMS AND THEIR ASSOCIATED CONTROL SYSTEMS:
 - a. MECHANICAL SYSTEMS
 - b. SERVICE WATER HEATING SYSTEMS
 - c. CONTROLLED RECEPTACLE AND LIGHTING SYSTEMS
 - d. EQUIPMENT APPLIANCE AND SYSTEMS
 - e. ENERGY METERING
 - D. A COMMISSIONING REPORT SHALL BE DELIVERED TO THE BUILDING OWNER AND INCLUDE:
 - a. RESULTS OF THE FUNCTIONAL PERFORMANCE TESTS
 - b. LIST OF DEFICIENCIES AND CORRECTIVE MEASURES IMPLEMENTED OR PROPOSED.
 - c. FUNCTIONAL PERFORMANCE TEST PROCEDURES.
 - d. COMMISSIONING PLAN.
 - e. TAB REPORT.
34. TESTING AND BALANCING: ALL HVAC SYSTEMS SHALL BE BALANCED BY A LICENSED CONTRACTOR IN ACCORDANCE WITH ACCEPTED ENGINEERING STANDARDS AND SPECIFICATIONS PRIOR TO COMMISSIONING.
35. OWNER TRAINING BY CONTRACTORS FOR EACH PIECE OF EQUIPMENT OR SYSTEM SHALL INCLUDE: SYSTEM/EQUIPMENT OVERVIEW (WHAT IT IS, WHAT IT DOES, AND WHICH OTHER SYSTEMS OR EQUIPMENT DOES IT INTERFACE WITH), REVIEW OF THE AVAILABLE O&M MATERIALS, REVIEW OF THE RECORD DRAWINGS ON THE SUBJECT SYSTEM/EQUIPMENT, HANDS-ON DEMONSTRATION OF ALL NORMAL MAINTENANCE PROCEDURES, NORMAL OPERATING MODES, AND ALL EMERGENCY SHUTDOWN AND START-UP PROCEDURES.

| Revision No. | Description | Date |
|--------------|-------------------------------|-----------|
| | PERMIT SET | 2/2/2024 |
| | UPS TABS EQUIPMENT PERMIT SET | 2/8/2024 |
| | DATA HALL PERMIT | 2/16/2024 |
| | UPS & BATTERY ROOM INTERIORS | 2/16/2024 |
| | UPS & BATTERY ROOM PERMIT | 2/23/2024 |

**City of Puyallup
Development & Permitting Services
ISSUED PERMIT**

| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

MECHANICAL GENERAL NOTES

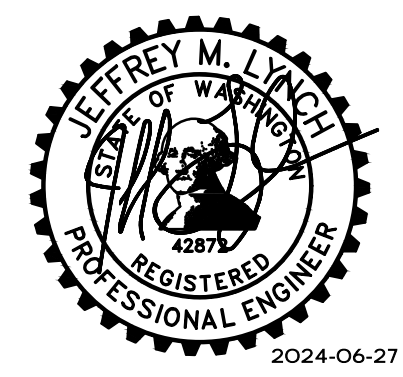
Sheet **M.VP.002**



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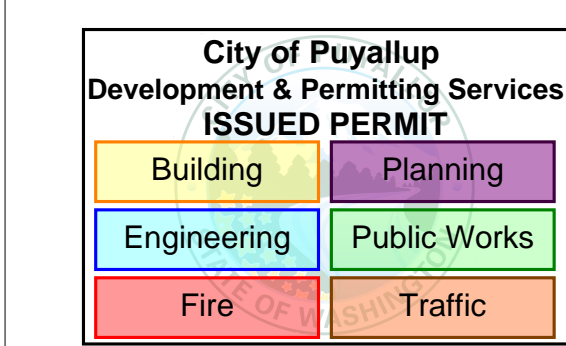
MECHANICAL DRAWINGS

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VOLTAGE PARK UPS
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2024-06-27

Revision No. Description Date
1 UPS 14AD EQUIPMENT PERMIT SET 2/8/2024
2 UPS & BATTERY ROOM INTERIORS 2/16/2024
3 UPS & BATTERY ROOM PERMIT 2/23/2024
4 UPS 14AD EQUIPMENT PERMIT 3/27/2024
5 UPS & BATTERY ROOM PERMIT R2 6/27/2024



Drawn By: JLV Checked By: BO

MECHANICAL SCHEDULES

HVAC CIRCULATION PUMP SCHEDULE table with columns: UNIT IDENTIFICATION, PUMP TYPE, COUPLING TYPE, CONTROL, FLUID TYPE, PUMP HEAD, MIN EFFICIENCY, PUMP MIN FLOW, PUMP MOTOR, ELECTRICAL, OPERATING WEIGHT, MANUFACTURER, MODEL NUMBER, NOTES.

COMPUTER ROOM AIR CONDITIONING UNIT table with columns: UNIT IDENTIFICATION, FAN, CHILLED WATER COOLING COIL, FILTER, PHYSICAL CHARACTERISTICS, ELECTRICAL, MANUFACTURER, MODEL NUMBER, NOTES.

AIR COOLED CHILLER SCHEDULE table with columns: UNIT IDENTIFICATION, CAPACITY AND PERFORMANCE, EVAPORATOR, COMPRESSOR, CONDENSERS, ELECTRICAL, PHYSICAL CHARACTERISTICS, MANUFACTURER, MODEL NUMBER, NOTES.

CLOSED CIRCUIT FLUID COOLERS SCHEDULE table with columns: TAG, MANUFACTURER, MODEL NUMBER, NOMINAL CAPACITY, CONDENSER WATER, AMBIENT AIR, FAN MOTOR, PUMP, HEATERS, UNIT SIZE, SPRAY PRESS., EVAP. RATE, OPER. WEIGHT, NOTES.

NEW EXHAUST FAN SCHEDULE table with columns: UNIT IDENTIFICATION, MAX AIRFLOW, MIN AIRFLOW, ESP, CONTROL, FAN WHEEL, FAN MOTOR, ELECTRICAL, OPERATING WEIGHT, MANUFACTURER, MODEL NUMBER, NOTES.

AIR AND DIRT SEPARATOR SCHEDULE table with columns: UNIT IDENTIFICATION, TYPE, CONNECTION SIZE, DIAMETER, HEIGHT, WEIGHT, FLOW, MAX WPD, MANUFACTURER, MODEL NUMBER, NOTES.

HVAC EXPANSION TANK SCHEDULE table with columns: UNIT IDENTIFICATION, TANK, SYSTEM, ASME CONSTRUCTION, TANK VOLUME, ACCEPTANCE VOLUME, DIAMETER, HEIGHT, WEIGHT, ESTIMATED SYSTEM VOLUME, FLUID TYPE, OPERATING TEMPERATURE, OPERATING PRESSURE, MANUFACTURER, MODEL NUMBER, NOTES.

BUFFER TANK SCHEDULE table with columns: UNIT IDENTIFICATION, VOLUME, ASME CONST, DIAMETER, HEIGHT, ARRANGEMENT, SYSTEM FLUID, SYSTEM TEMP, WEIGHT, MANUFACTURER, MODEL NUMBER, NOTES.

PIPING SYSTEM APPLICATION SCHEDULE table with columns: SYSTEM, PIPE SIZE, DESIGN, CONSTRUCTION, MATERIAL, JOINTS, HEAT TRACE, INSULATION, FACTORY JACKET, FIELD JACKET, NOTES.

FIRE SMOKE DAMPERS SCHEDULE table with columns: UNIT IDENTIFICATION, TYPE, MAX APD, FIRE RATING, LEAKAGE CLASS, BLADE TYPE, SIZE, FAIL POSITION, V/PH, MANUFACTURER, MODEL NUMBER, NOTES.

GRILLE, REGISTER, DIFFUSER SCHEDULE table with columns: UNIT IDENTIFICATION, DIFFUSER FACE SIZE, FLOW RANGE, DIFFUSER NECK SIZE, MOUNTING TYPE, MATERIAL, MANUFACTURER, MODEL NUMBER, NOTES.

DUCT SYSTEM APPLICATION SCHEDULE table with columns: SYSTEM, APPLICATION, LOCATION, DESIGN CRITERIA, CONSTRUCTION, PRODUCT, MATERIAL, LINER, INSULATION, FACTORY JACKET, FIELD JACKET, NOTES.



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MECHANICAL DRAWINGS

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2024-06-27

Mech_Energy25% Calculation

Table with 30 columns: IT Load, Ambient Temperature WB, Ambient Temperature DB, ASHRAE TMY Hours, Chiller Capacity, Chiller Energy Usage, Number of Operating Fluid Coolers, Fluid Cooler Operating Capacity, Fluid Cooler Fan (hp), Fluid Cooler Fan Energy, Fluid Cooler Fan (kW), Fluid Cooler Pump (hp), Fluid Cooler Pump Energy, Fluid Cooler Pump (kW), Fluid Cooler Chilled Water Primary Pumps (gpm), Fluid Cooler Chilled Water Primary Pumps (hp), Fluid Cooler Chilled Water Primary Pumps (kW), Fluid Cooler Chilled Water Primary Pumps (kW), Total Air Handler Fan Energy, Heat Rejection Fan Energy, Number of pumps, Pump Capacity, Primary Pump Flow, Pump Motor Efficiency, Pump Drive Efficiency, Pump Variable Speed Drive Efficiency, Pump Energy (kW), Pump Energy (kWh), Number of pumps, Pump Capacity, Secondary Pump Flow, Pump Variable Speed Drive Efficiency, Pump Energy (kW), Pump Energy (kWh).

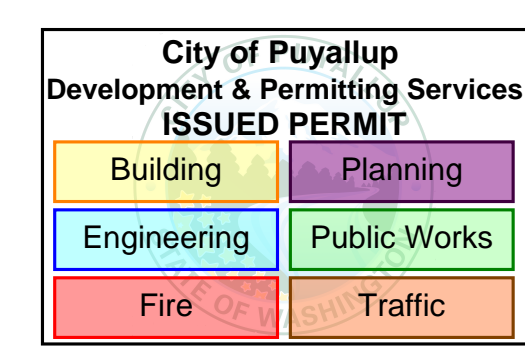
Mech_Energy50% Calculation

Table with 30 columns: IT Load, Ambient Temperature WB, Ambient Temperature DB, ASHRAE TMY Hours, Chiller Capacity, Chiller Energy Usage, Number of Operating Fluid Coolers, Fluid Cooler Operating Capacity, Fluid Cooler Fan (hp), Fluid Cooler Fan Energy, Fluid Cooler Fan (kW), Fluid Cooler Pump (hp), Fluid Cooler Pump Energy, Fluid Cooler Pump (kW), Fluid Cooler Chilled Water Primary Pumps (gpm), Fluid Cooler Chilled Water Primary Pumps (hp), Fluid Cooler Chilled Water Primary Pumps (kW), Fluid Cooler Chilled Water Primary Pumps (kW), Total Air Handler Fan Energy, Heat Rejection Fan Energy, Number of pumps, Pump Capacity, Primary Pump Flow, Pump Motor Efficiency, Pump Drive Efficiency, Pump Variable Speed Drive Efficiency, Pump Energy (kW), Pump Energy (kWh), Number of pumps, Pump Capacity, Secondary Pump Flow, Pump Variable Speed Drive Efficiency, Pump Energy (kW), Pump Energy (kWh).

Mech Energy Summary table with 5 columns: Cooling, Heat Rejection, Pump Energy, Total Energy. Rows include 25% ITE Load Mech Energy, 50% ITE Load Mech Energy, 75% ITE Load Mech Energy, 100% ITE Load Mech Energy, and a Total row.

MLC Check 100% = Full Capacity table with 5 columns: ITE load (%), ITE load (kW), Annualized ITE Load (kWh), Project Annualized MLC, 2018 WSEC Max Allowable Annualized MLC. Rows include 25%, 50%, 75%, 100% ITE load and a Total row.

Revision No. Description Date
1 UPS & BATTERY ROOM PERMIT 02/23/2024
UPS & BATTERY ROOM PERMIT #2 6/27/2024



Drawn By: JLV Checked By: BO

MECHANICAL CALCULATIONS

Sheet M.VP.014



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MECHANICAL DRAWINGS

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Mech Energy75% Calculation table with columns for IT Load, Ambient Temperature, ASHRAE TMY Hours, Chiller Capacity, Chiller Energy, Number of Operating Fluid Coolers, Fluid Cooler Operating Capacity, Fluid Cooler Fan (hp), Fluid Cooler Fan (kW), Fluid Cooler Fan (kWh), Fluid Cooler Pump (hp), Fluid Cooler Pump (kW), Fluid Cooler Pump (kWh), Number of Fluid Cooler Pumps, Fluid Cooler Total (kW), Fluid Cooler Total (kWh), Fluid Cooler Chilled Water Primary Pumps (gpm), Fluid Cooler Chilled Water Primary Pumps (hp), Fluid Cooler Chilled Water Primary Pumps (kW), Total Air Handler Fan Energy (kW), Heat Rejection Fan Energy (kWh), Number of pumps, Pump Capacity (%), Primary Pump Flow (gpm), Pump Motor Efficiency (%), Pump Drive Efficiency (%), Pump Variable Speed Drive Efficiency (%), Pump Energy (kW), Pump Energy (kWh), Number of pumps, Pump Capacity (%), Secondary Pump Flow (gpm), Pump Variable Speed Drive Efficiency (%), Pump Energy (kW), Pump Energy (kWh).

Mech Energy100% Calculation table with columns for IT Load, Ambient Temperature, ASHRAE TMY Hours, Chiller Capacity, Chiller Energy, Number of Operating Fluid Coolers, Fluid Cooler Operating Capacity, Fluid Cooler Fan (hp), Fluid Cooler Fan (kW), Fluid Cooler Fan (kWh), Fluid Cooler Pump (hp), Fluid Cooler Pump (kW), Fluid Cooler Pump (kWh), Number of Fluid Cooler Pumps, Fluid Cooler Total (kW), Fluid Cooler Total (kWh), Fluid Cooler Chilled Water Primary Pumps (gpm), Fluid Cooler Chilled Water Primary Pumps (hp), Fluid Cooler Chilled Water Primary Pumps (kW), Total Air Handler Fan Energy (kW), Heat Rejection Fan Energy (kWh), Number of pumps, Pump Capacity (%), Primary Pump Flow (gpm), Pump Motor Efficiency (%), Pump Drive Efficiency (%), Pump Variable Speed Drive Efficiency (%), Pump Energy (kW), Pump Energy (kWh), Number of pumps, Pump Capacity (%), Secondary Pump Flow (gpm), Pump Variable Speed Drive Efficiency (%), Pump Energy (kW), Pump Energy (kWh).

City of Puyallup Development & Permitting Services ISSUED PERMIT. Building, Planning, Engineering, Public Works, Fire, Traffic.

MECHANICAL CALCULATIONS

**MECHANICAL
DRAWINGS**

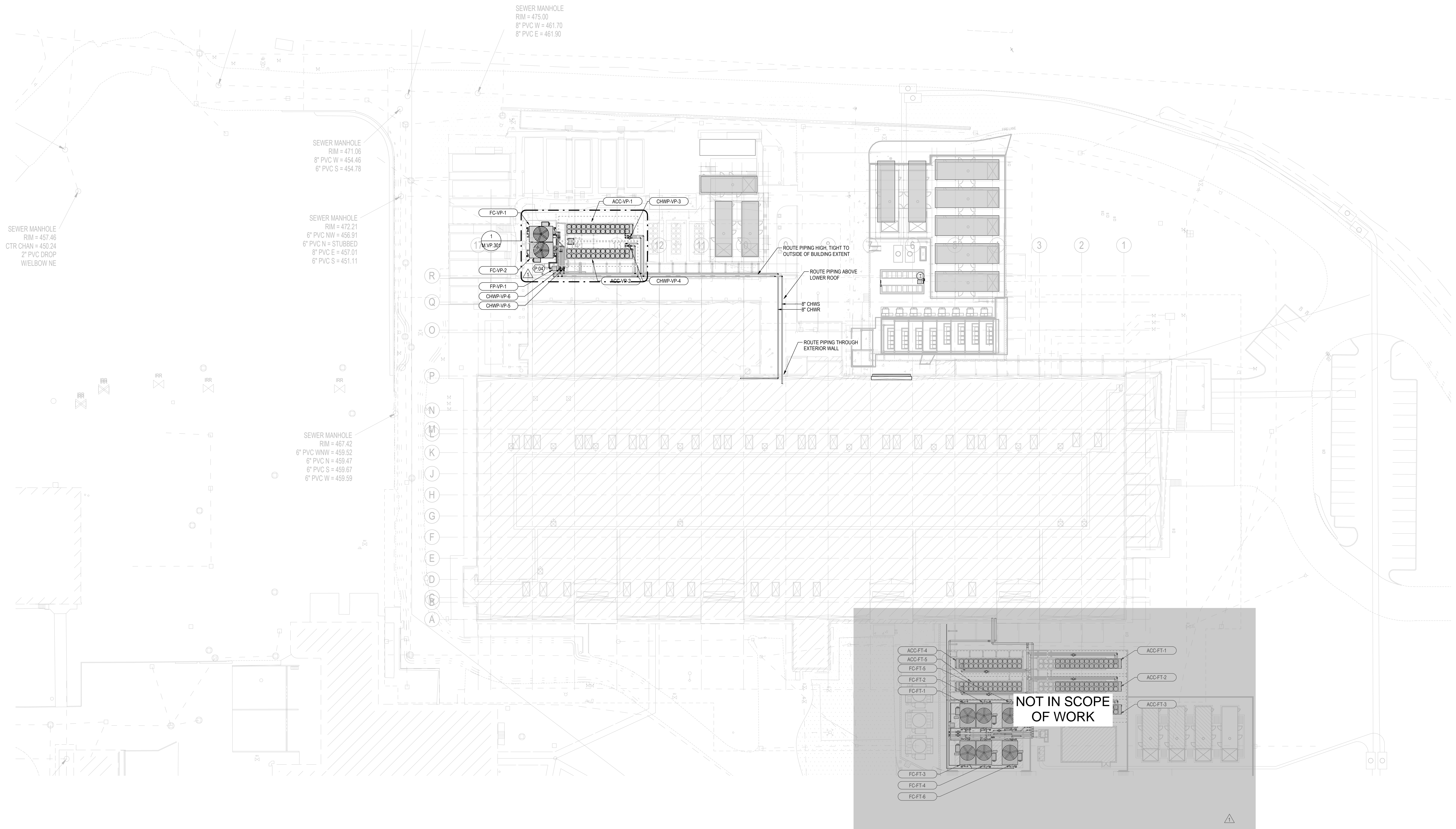
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2024-06-27

KEY NOTES

P.04 PRIOR TO CONSTRUCTION, THE GENERAL CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF ALL EXISTING UTILITIES, INCLUDING STORM DRAINAGE, SEWER LINES, WATER LINES, AND ELECTRICAL CONDUIT IN THE VICINITY OF THE PROJECT FOOTPRINT. THE GENERAL CONTRACTOR/CIVIL CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OR RELOCATING THE STORM DRAIN AS NECESSARY AND AS DESIGNED UNDER THE APPROVED CIVIL PLANS FILED UNDER PERMIT PRCP20240183 AND SHALL MAINTAIN UTILITY SEPARATION FROM ALL OTHER EXISTING AND PROPOSED UTILITIES PRIOR TO POURING FOUNDATIONS AND EQUIPMENT PADS AND PRIOR TO INSTALLATION OF FLUID COOLERS OR OTHER MECHANICAL EQUIPMENT. ANY CONFLICTS BETWEEN THE PROPOSED PLANS AND THE APPROVED CIVIL PLANS MUST BE COORDINATED AND MITIGATED AS NECESSARY PRIOR TO CONSTRUCTION.



| Revision No. | Description | Date |
|--------------|---|------------------------------------|
| 1 | UPS YARD EQUIPMENT PERMIT SET UPS & BATTERY ROOM PERMIT UPS YARD EQUIPMENT PERMIT REV1 | 2/8/2024 2/23/2024 3/27/2024 |

City of Puyallup
Development & Permitting Services
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| | |
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| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

MECHANICAL SITE
PLAN

Sheet **M.VP.101**

MECHANICAL
DRAWINGS

CENTERIS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



| Revision No. | Description | Date |
|--------------|------------------------------|-----------|
| | PERMIT SET | 2/2/2024 |
| | DATA HALL PERMIT | 2/16/2024 |
| | UPS & BATTERY ROOM INTERIORS | 2/16/2024 |
| | UPS & BATTERY ROOM PERMIT | 2/23/2024 |
| | UPS & BATTERY ROOM PERMIT EC | 4/27/2024 |

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Development & Permitting Services
ISSUED PERMIT

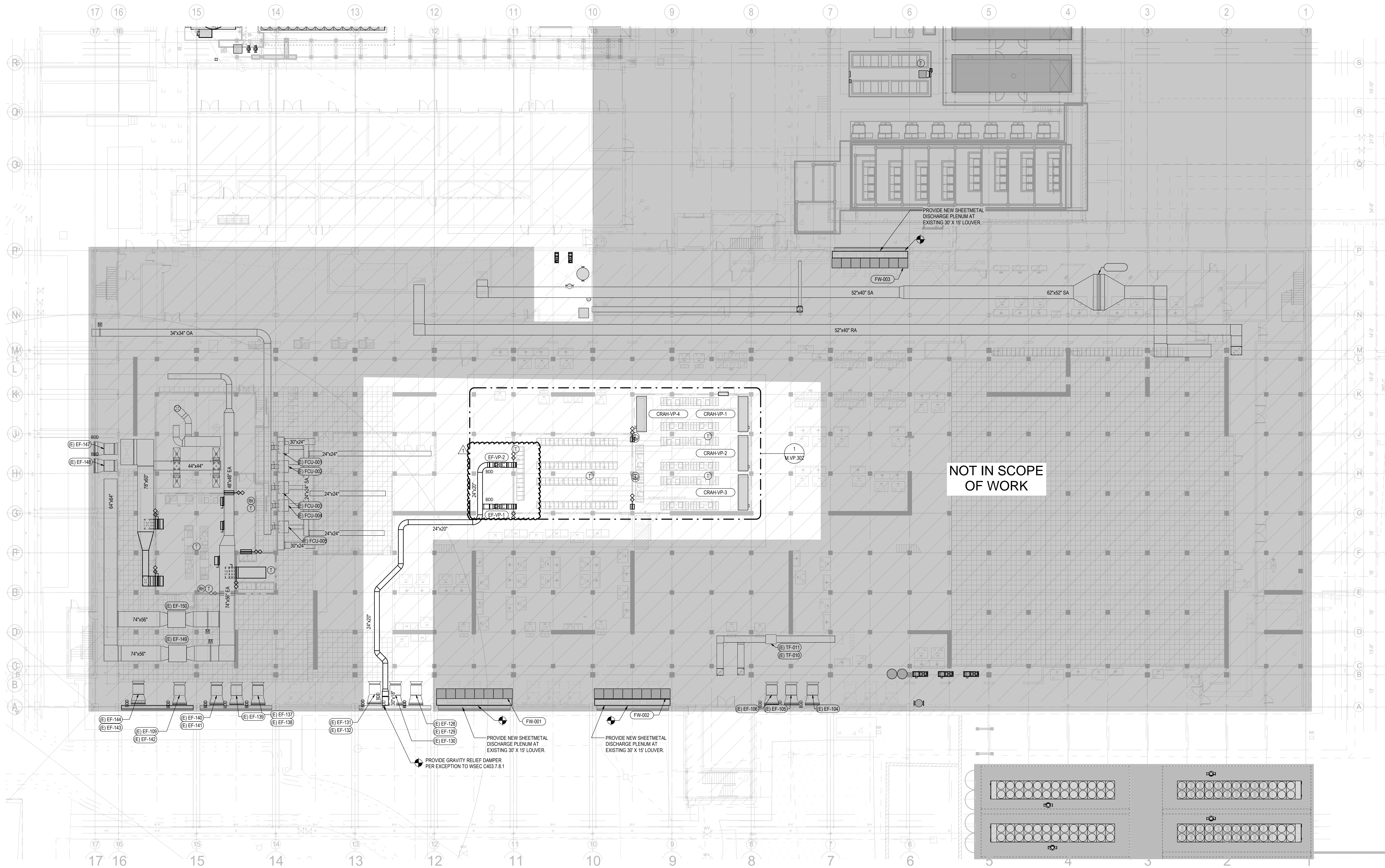
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| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

MECHANICAL LEVEL
1 PLAN

M.VP.102

KEY NOTES



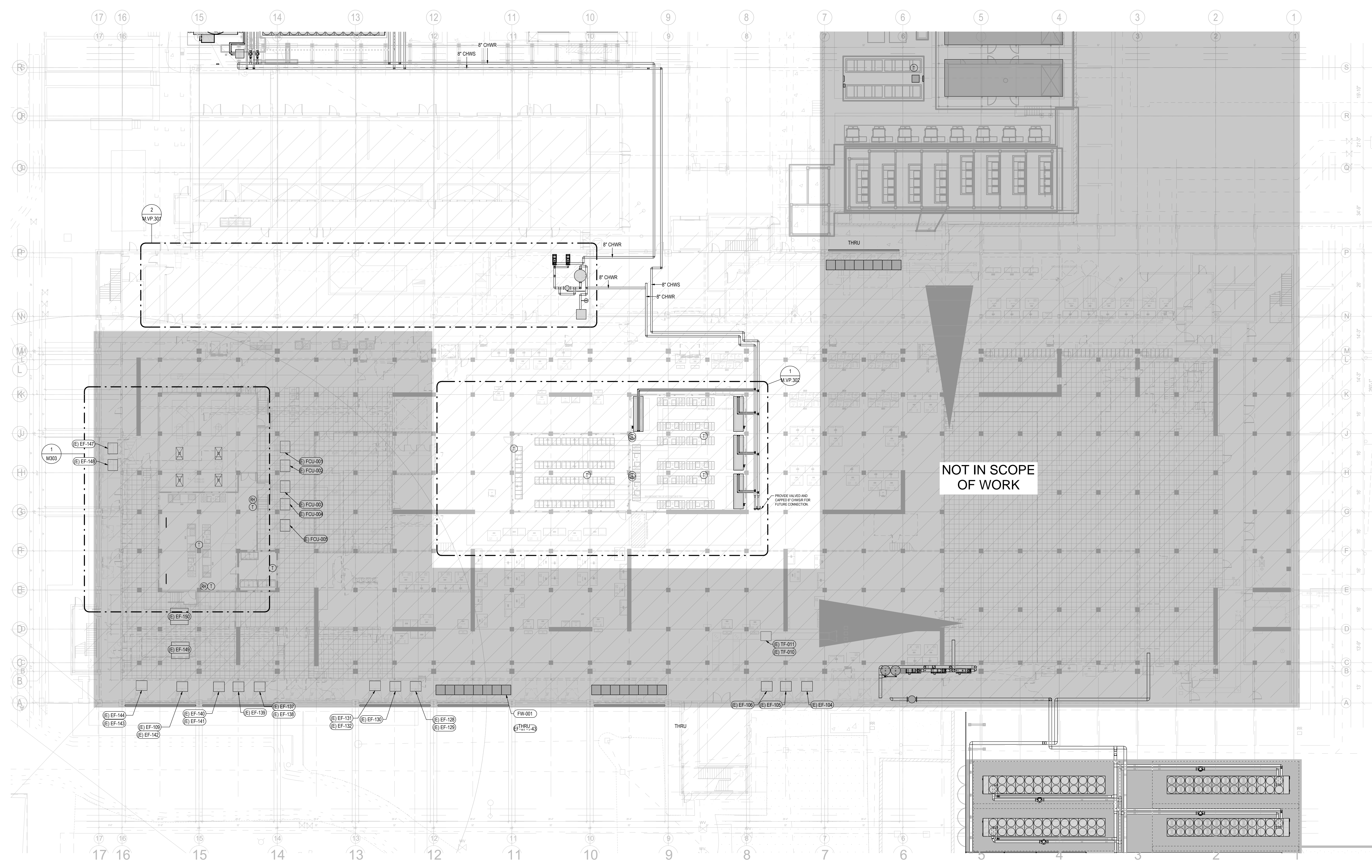
1 LEVEL 1 MECHANICAL PLAN
M.VP.102 1/16" = 1'-0"

**MECHANICAL
DRAWINGS**

CENTERIS
VOLTAGE PARK UPS
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PUYALLUP, WA 98374



KEY NOTES



1 LEVEL 1 MECHANICAL PLAN
M.VP.202 1/16" = 1'-0"

| Revision No. | Description | Date |
|--------------|------------------------------|-----------|
| 1 | UPS & BATTERY ROOM INTERIORS | 2/14/2024 |
| 2 | UPS & BATTERY ROOM PERMIT | 2/23/2024 |

City of Puyallup
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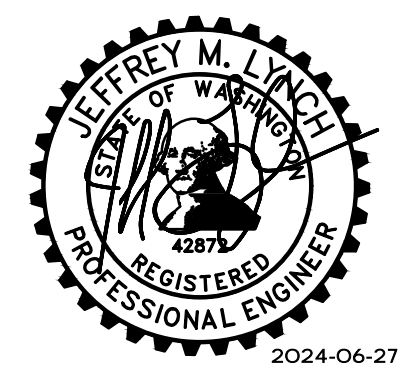
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**MECHANICAL LEVEL
1 PIPING PLAN**

Sheet **M.VP.202**

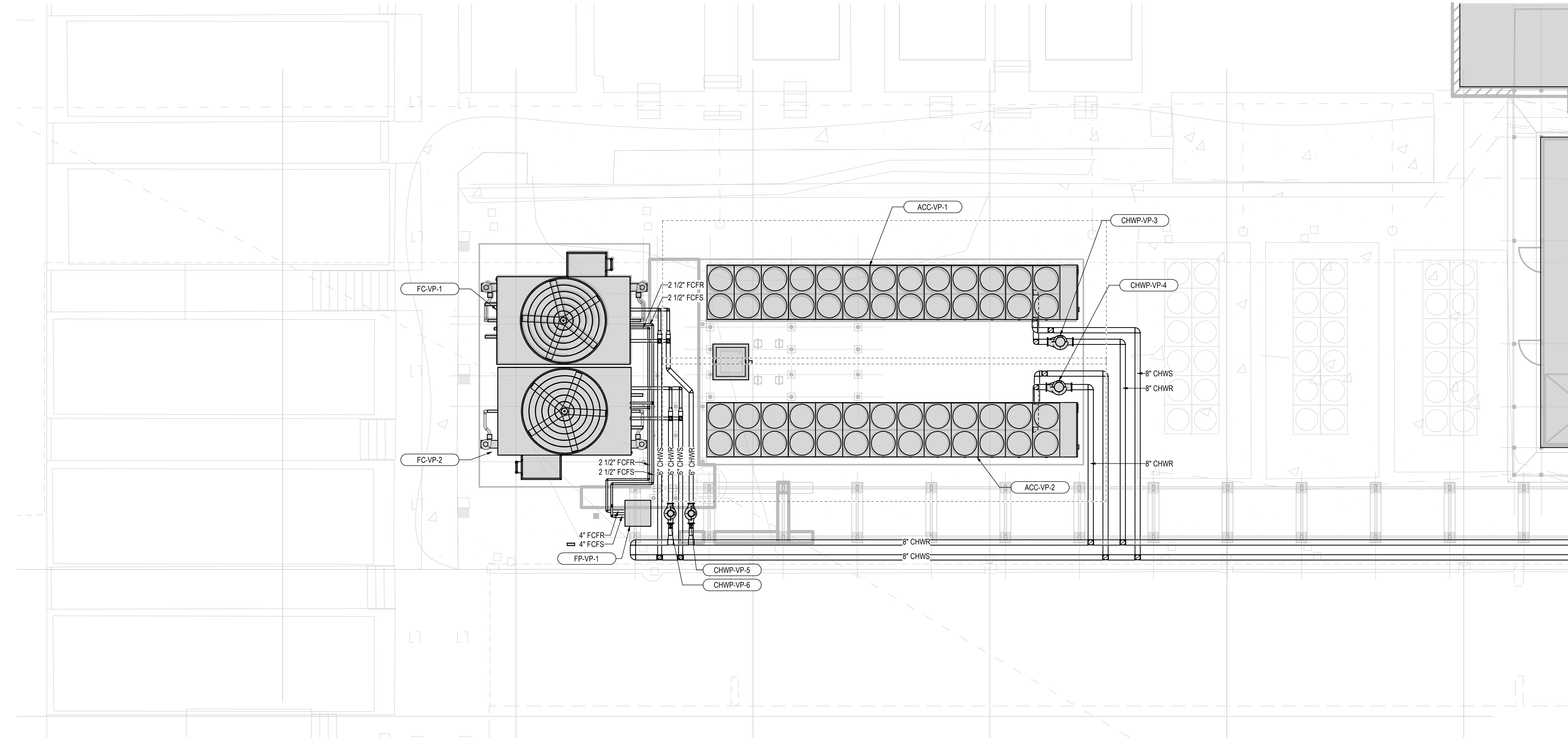
MECHANICAL DRAWINGS

CENTERIS
 VOLTAGE PARK UPS
 1019 39th AVENUE SE
 PUYALLUP, WA 98374



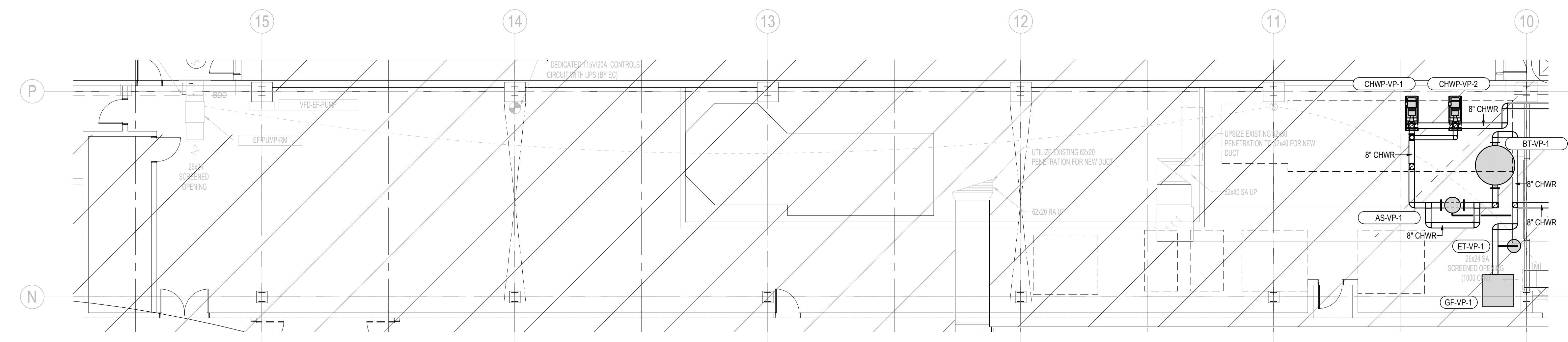
2024-06-27

KEY NOTES



1 MECHANICAL SITE PLAN
 M.VP.301 1/8" = 1'-0"

| Revision No. | Description | Date |
|--------------|-------------------------------|-----------|
| 1 | UPS YARD EQUIPMENT PERMIT SET | 2/8/2024 |
| 2 | UPS & BATTERY ROOM PERMIT | 2/23/2024 |



2 LEVEL 1 ENLARGED PLAN - MECHANICAL ROOM
 M.VP.301 1/8" = 1'-0"

City of Puyallup
 Development & Permitting Services
ISSUED PERMIT

| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

LEVEL 1
 MECHANICAL
 ENLARGED PLANS

Sheet **M.VP.301**

MECHANICAL DRAWINGS

CENTERIS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



2024-06-27

| Revision No. | Description | Date |
|--------------|---|-------------------------------------|
| 1 | UPS & BATTERY ROOM INTERIORS UPS & BATTERY ROOM PERMIT UPS & BATTERY ROOM PERMIT R2 | 2/14/2024 2/23/2024 6/27/2024 |

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

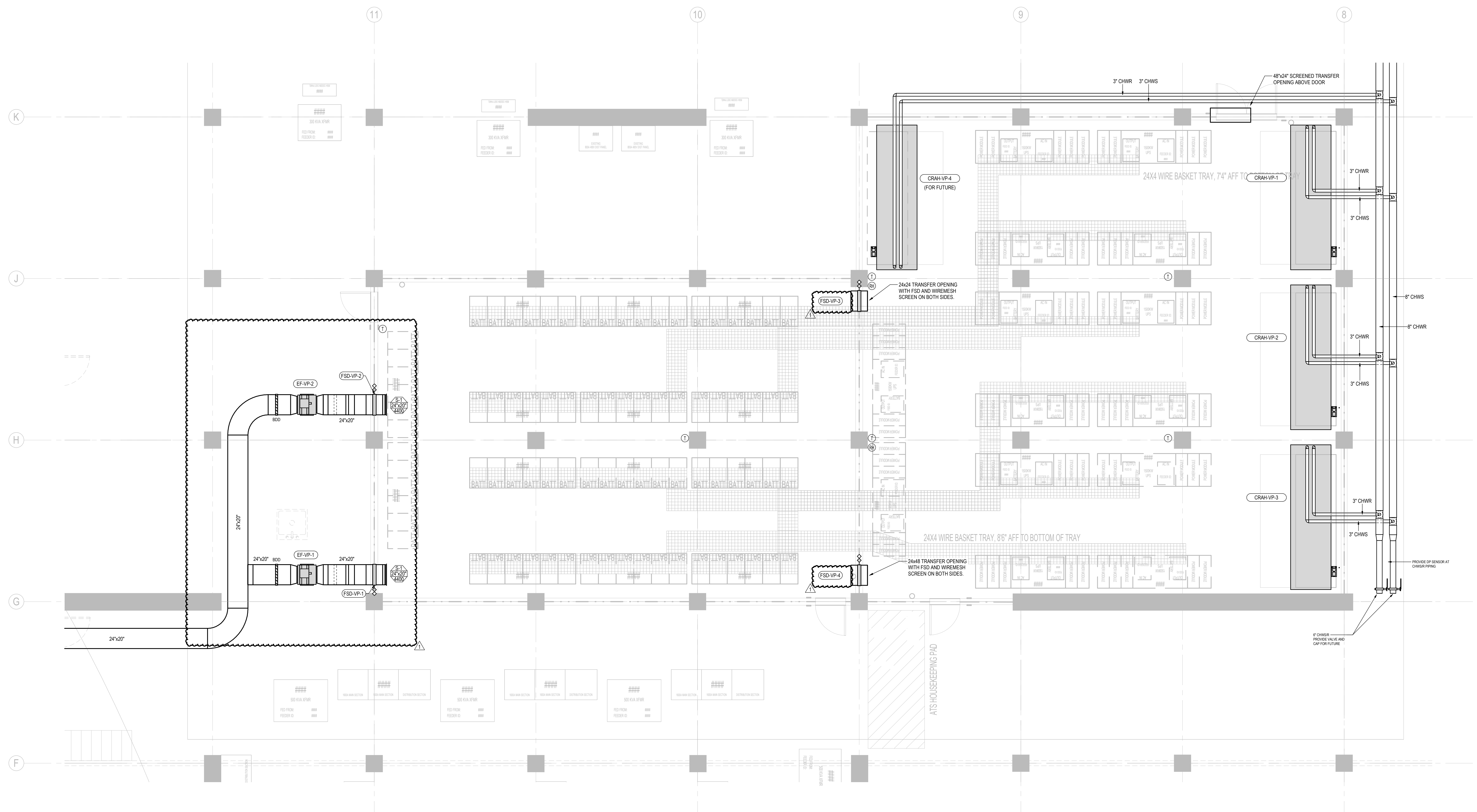
| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

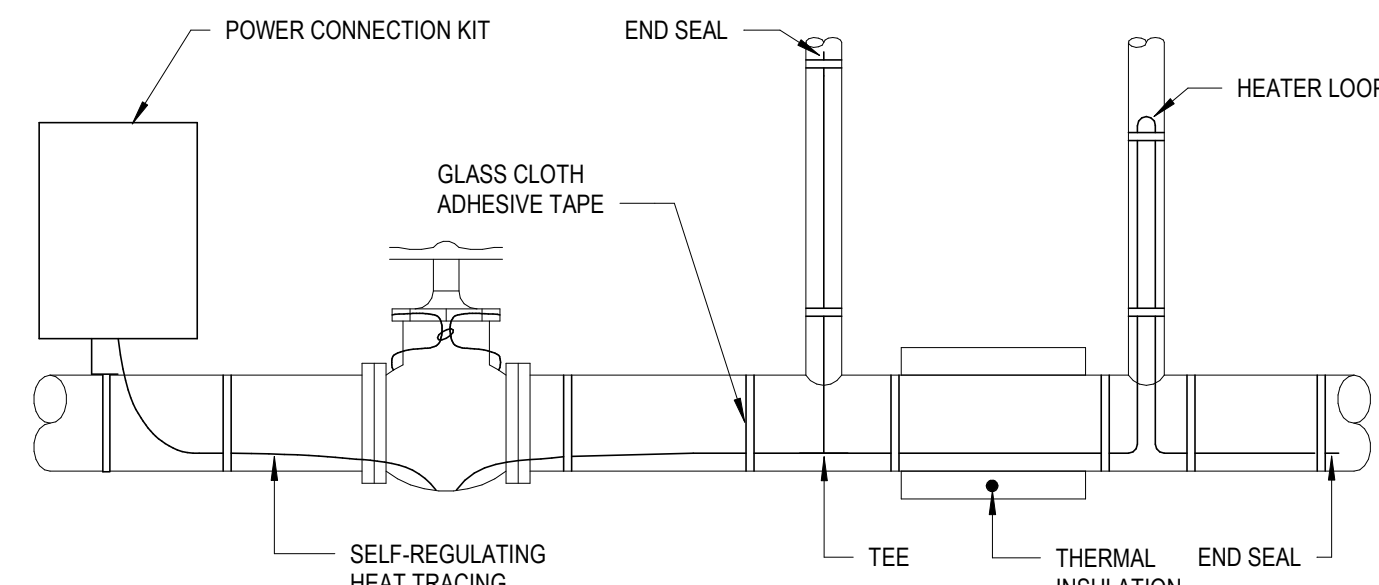
Drawn By: JLV Checked By: BO

LEVEL 1
MECHANICAL
ENLARGED PLANS

M.VP.302

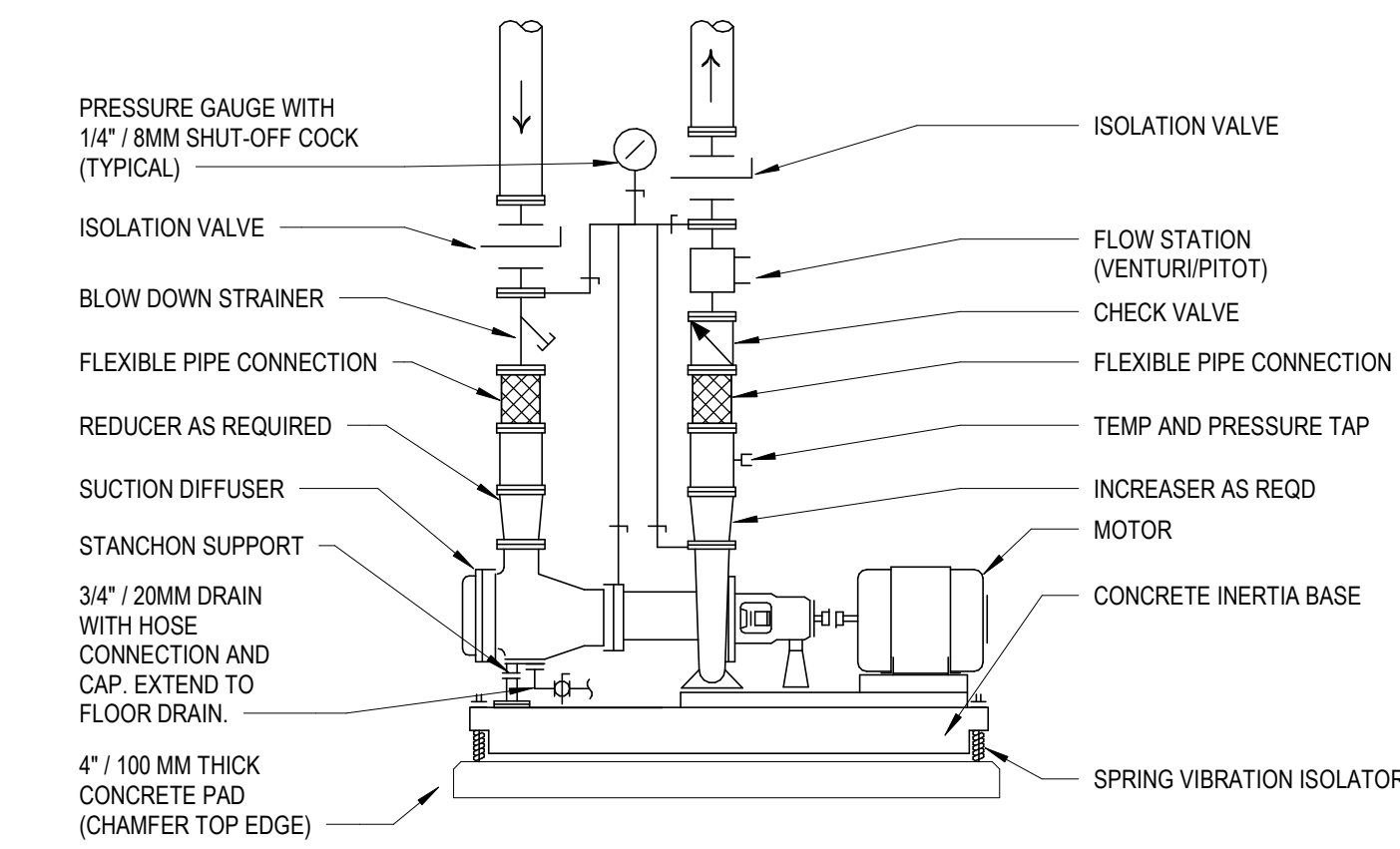
KEY NOTES





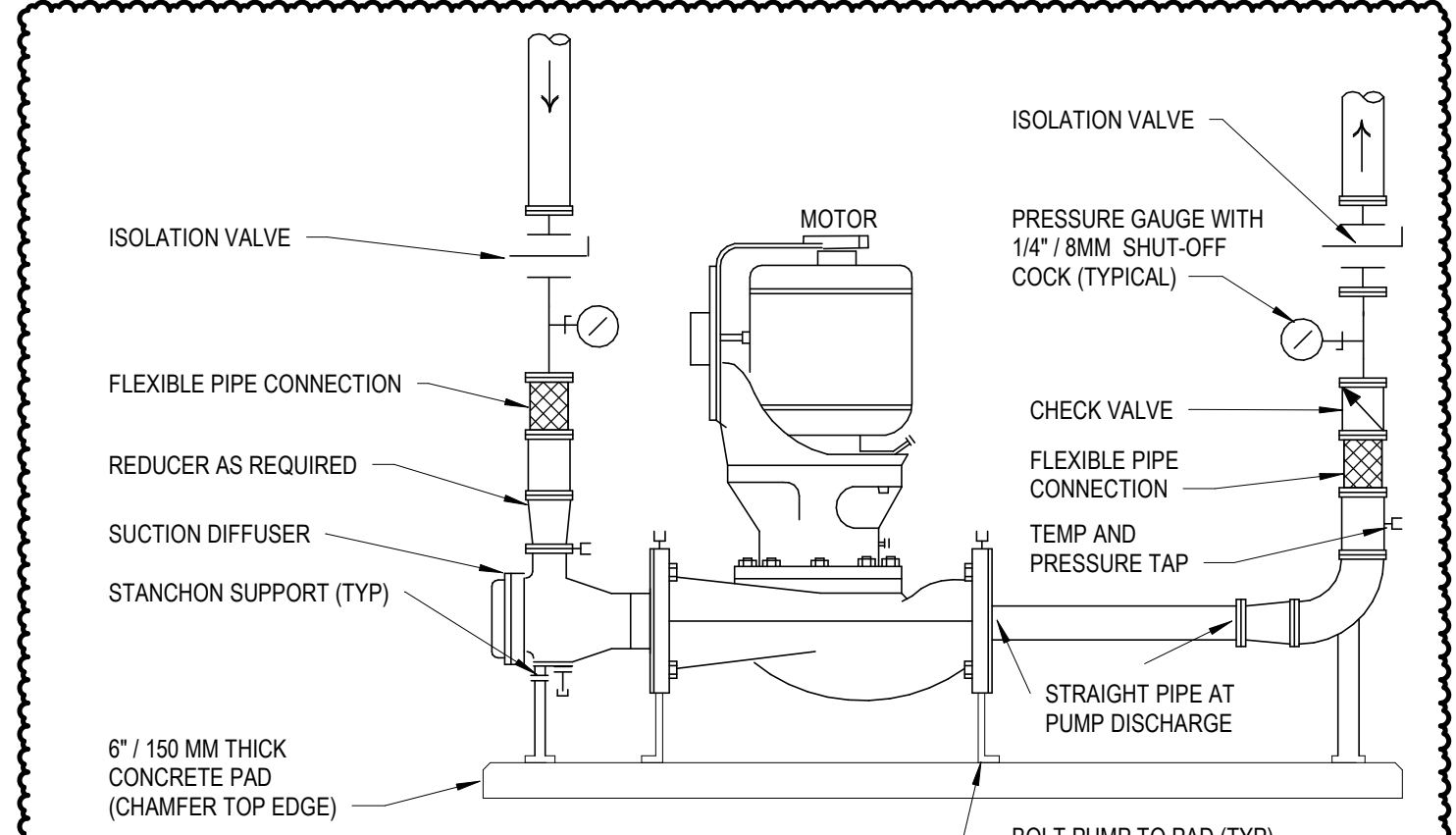
- NOTES:**
1. PROVIDE HEAT TRACE FOR ALL WATER PIPING LOCATED OUTDOORS
 2. INSULATE THE PIPING.
 3. REFER TO THE CONTRACT DOCUMENTS FOR PIPE MATERIAL AND INSULATION REQUIREMENTS.
 4. FOLLOW MFRS INSTALLATION DETAILS FOR THE REQUIRED CABLE COVERAGE TO FULLY PROTECT THE SYSTEM.

3 HEAT TRACE DETAIL
M.V.P.503 NTS



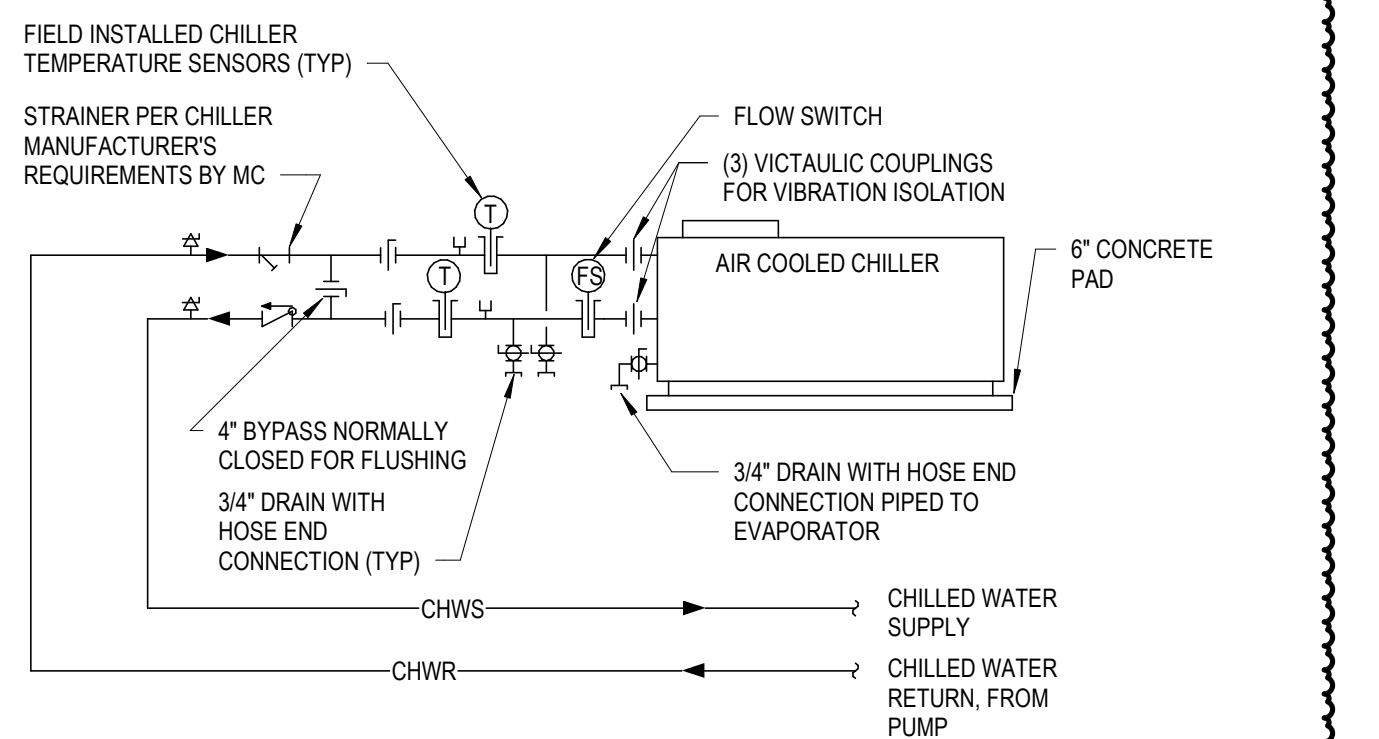
- NOTES:**
1. SHUT OFF VALVES AND ACCESSORIES SHALL BE THE SAME SIZE AS SYSTEM PIPING.
 2. PROVIDE A SPOOL SECTION BETWEEN THE SUCTION DIFFUSER AND PUMP INLET AS REQUIRED.
 3. AFTER START-UP AND THE COMPLETION OF THE SYSTEM FLUSHING, REMOVE THE START-UP STRAINER FROM THE SUCTION DIFFUSER.
 4. PROVIDE REMOVABLE INSULATION FOR CHILLED WATER PUMPS TO PREVENT CONDENSATION.
 5. ISOLATION VALVES ARE SHOWN AS BUTTERFLY VALVES. REFER TO THE SPECIFICATIONS FOR THE SPECIFIC VALVE TYPE BASED ON THE PIPE SIZE AND APPLICATION.
 6. PIPING ASSOCIATED WITH THE PRESSURE GAUGES SHALL BE RUN SO AS TO NOT BLOCK THE REMOVAL OF THE PUMP OR BLOCK ACCESS TO ANY COMPONENT. PROVIDE ADDITIONAL SHUT OFF VALVES AS REQUIRED TO FACILITATE THE REMOVAL AND RE-INSTALLATION OF THE SENSING LINES AS NEEDED.

2 BASE MOUNT PUMP DETAIL - VARIABLE SPEED
M.V.P.503 NTS



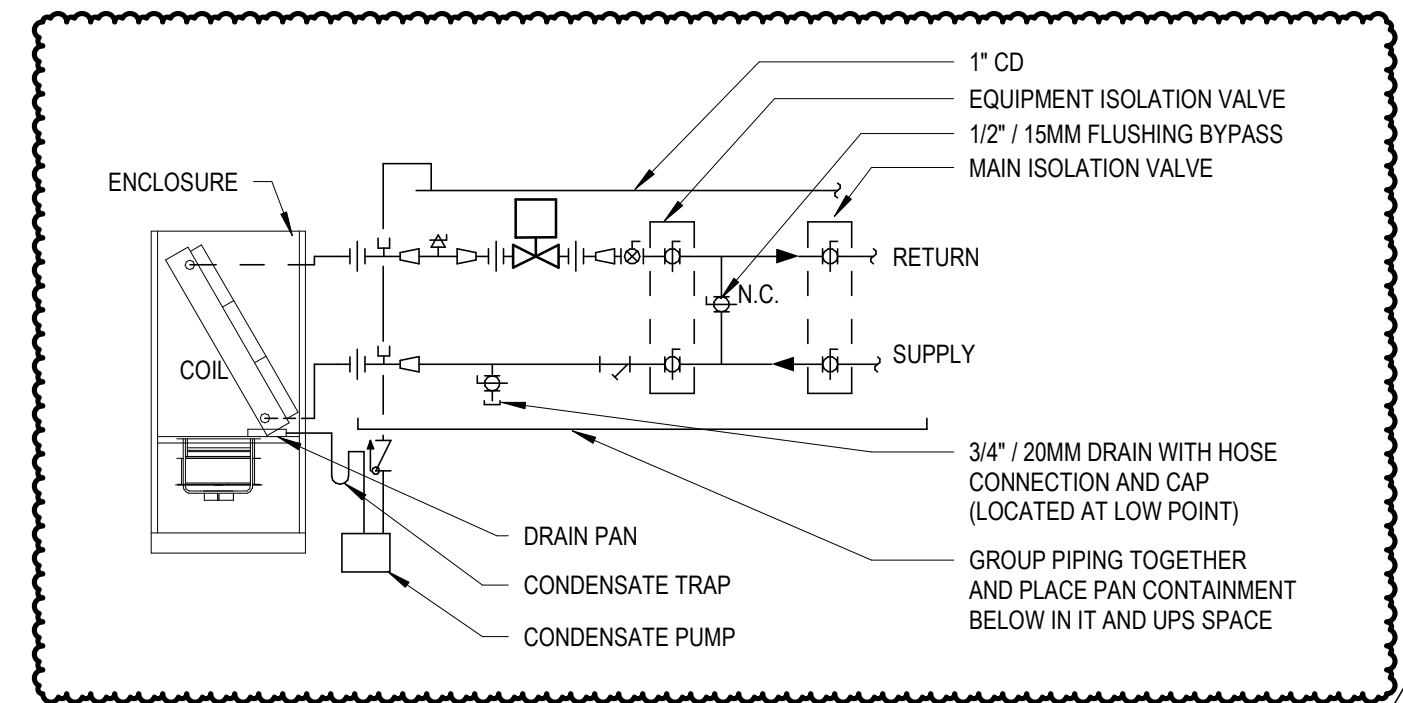
- NOTES:**
1. SHUT OFF VALVES AND ACCESSORIES SHALL BE THE SAME SIZE AS SYSTEM PIPING.
 2. PROVIDE A SPOOL SECTION BETWEEN THE SUCTION DIFFUSER AND PUMP INLET AS REQUIRED.
 3. AFTER START-UP AND THE COMPLETION OF THE SYSTEM FLUSHING, REMOVE THE START-UP STRAINER FROM THE SUCTION DIFFUSER. CLEAN THE STRAINER, AND THEN REINSTALL.
 4. PROVIDE REMOVABLE INSULATION FOR CHILLED WATER PUMPS TO PREVENT CONDENSATION.
 5. ISOLATION VALVES ARE SHOWN AS BUTTERFLY VALVES. REFER TO THE SPECIFICATIONS FOR THE SPECIFIC VALVE TYPE BASED ON THE PIPE SIZE AND APPLICATION.
 6. SMALL BORE PIPING SHALL BE ENCASED IN INSULATION AND HEAT TRACE. PIPE LENGTHS SHALL BE LIMITED 2'-3'.
 7. PROVIDE MINIMUM LENGTH OF STRAIGHT PIPE AT PUMP DISCHARGE AS PER MANUFACTURER'S RECOMMENDATIONS.

1 LARGE INLINE PUMP DETAIL - VARIABLE SPEED
M.V.P.503 NTS



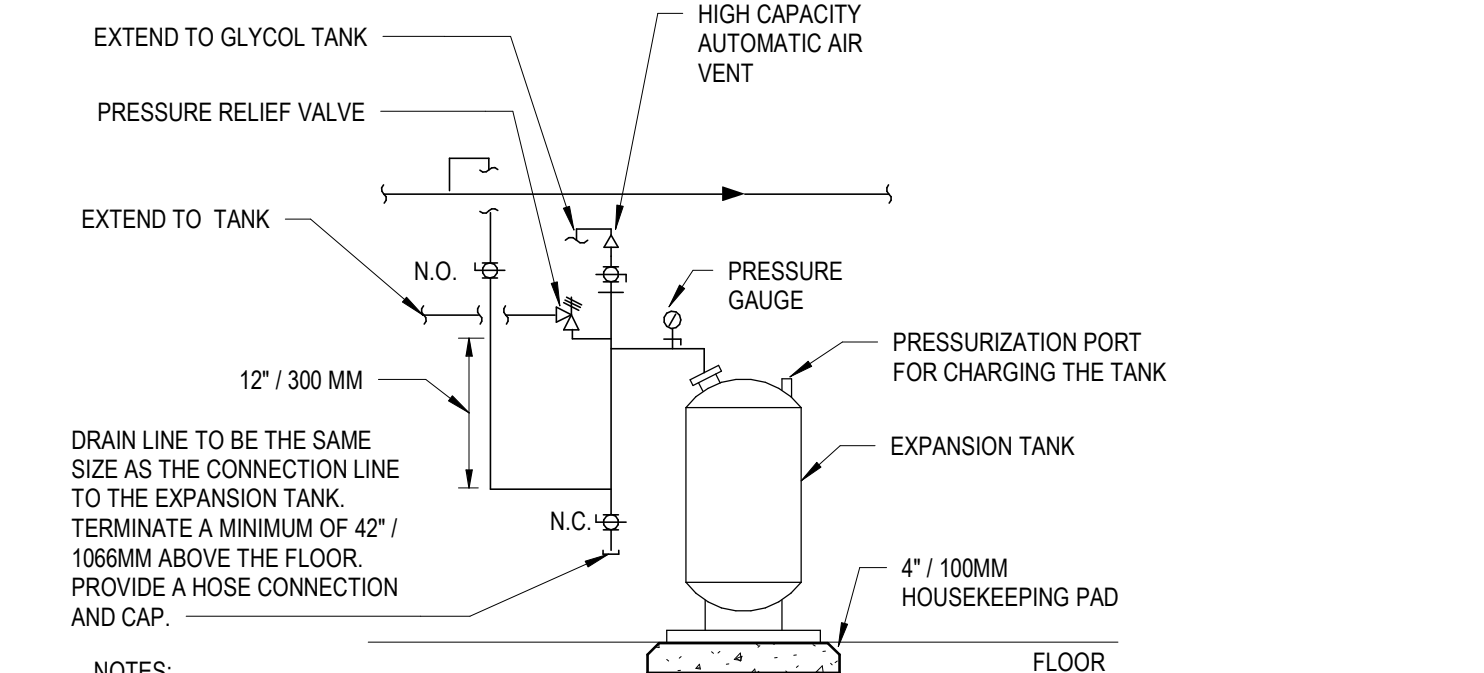
- NOTES:**
1. HEAT TRACE ALL EXTERIOR CHILLED WATER PIPING AND CHILLER BUNDLE.
 2. LOCATE PIPING TO FACILITATE THE REQUIRED ACCESS AND REMOVAL OF CHILLER COMPONENTS.
 3. COORDINATE THE COIL PULL SIDE WITH THE PIPING LAYOUT AND ALLOCATED ACCESS AREAS.
 4. SHUT OFF VALVES AND ACCESSORIES SHALL BE THE SAME SIZE AS THE SYSTEM PIPING. TRANSITION TO THE CHILLER INLET/OUTLET SIZES AT THE CHILLER.
 5. QUICK CONNECT KITS ARE NOT TO BE USED. ALL VALVES SHALL BE INDEPENDENT COMPONENTS.
 6. CHILLER AUXILIARY COOLING AND PUMPING SYSTEM SHALL BE FILLED WITH MIN PERCENTAGE GLYCOL FOR FREEZE-PROTECTION AS REQUIRED BY CHILLER MANUFACTURER.
 7. CHILLER SHALL BE INSTALLED PER MANUFACTURERS INSTRUCTIONS, AND ALL CHILLER CHECKS MADE TO PREVENT VOID OF CHILLER WARRANTY BY MC.
 8. SMALL BORE PIPING SHALL BE ENCASED IN INSULATION AND HEAT TRACE. PIPE LENGTHS SHALL BE LIMITED 2'-3'.

6 AIR COOLED CHILLERS DETAIL
M.V.P.503 NTS



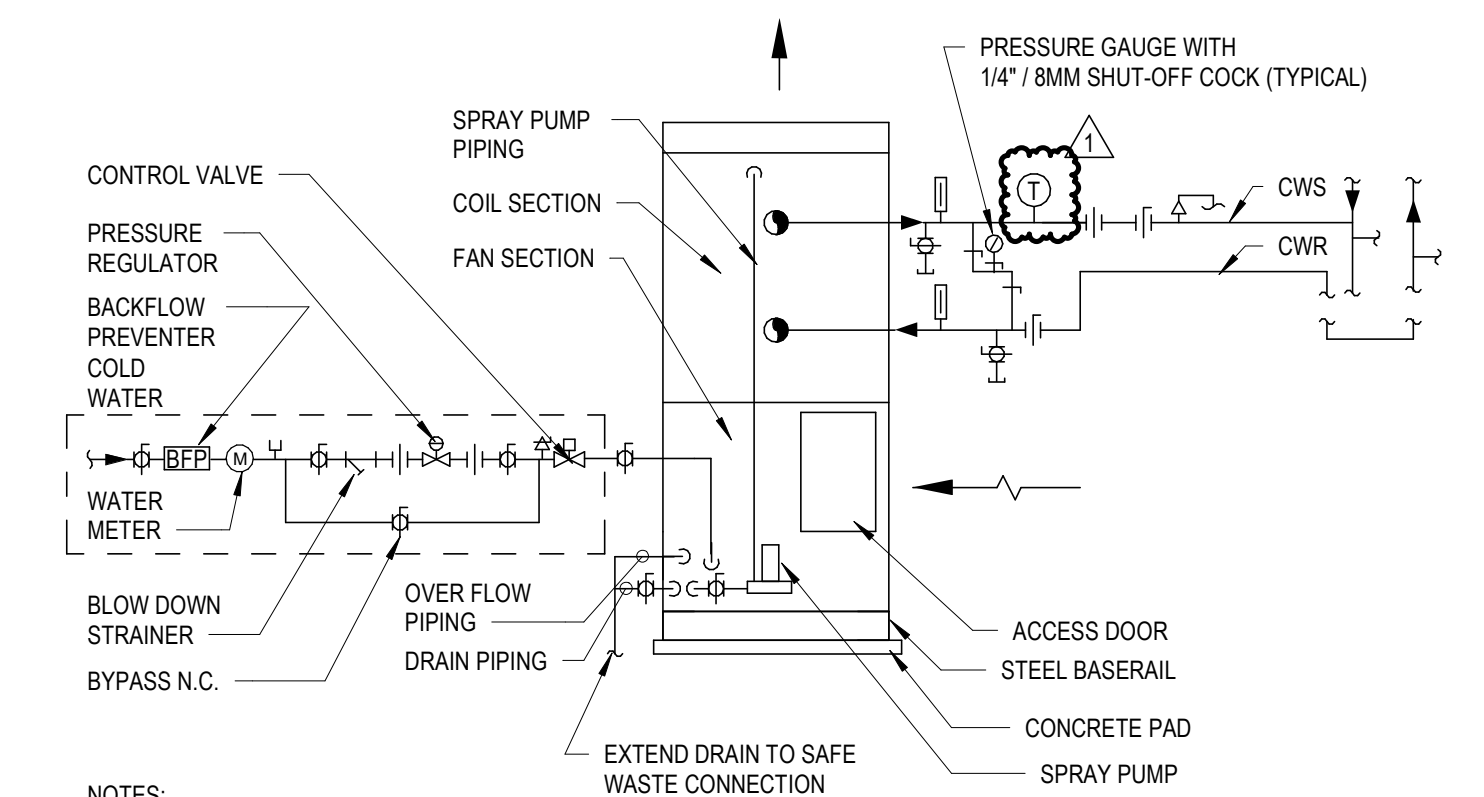
- NOTES:**
1. INSULATE THE HEATING COIL TO PREVENT HEAT LOSS / CONDENSATION.
 2. THE EQUIPMENT DRAIN IS SEPARATE FROM THE BLOW DOWN STRAINER DRAIN.
 3. PIPE TAPS FROM THE MAIN SHALL BE OFF OF THE TOP OF THE MAIN EXCEPT WHERE NOTED OTHERWISE.
 4. THE EQUIPMENT ISOLATION VALVES SHALL BE CLOSED WHEN INSTALLED AND THE FLUSHING BYPASS VALVE SHALL BE OPEN. AFTER THE INITIAL FLUSHING, THE FLUSHING BYPASS VALVE SHALL BE CLOSED AND THE HANDLE REMOVED. THE EQUIPMENT ISOLATION VALVES SHALL BE OPENED.
 5. ALL CONTROL VALVES SHALL BE 2-WAY VALVES EXCEPT THOSE NOTED IN THE CONTRACT DOCUMENTS TO BE 3-WAY VALVES.
 6. IF THE MECHANICAL CONTRACTOR USES QUICK CONNECT KITS, WHERE THE EQUIPMENT ISOLATION VALVE IS PART OF ANOTHER COMPONENT, THEN PROVIDE THE MAIN ISOLATION VALVES (OTHERWISE THEY ARE NOT REQUIRED).
 7. ISOLATION VALVES ARE SHOWN AS BALL VALVES. REFER TO THE CONTRACT DOCUMENTS FOR THE SPECIFIC VALVE TYPE BASED ON THE PIPE SIZE AND APPLICATION.
 8. SHUT OFF VALVES AND ACCESSORIES SHALL BE THE SAME SIZE AS THE SYSTEM PIPING. TRANSITION TO THE COIL CONNECTION SIZE AT THE COIL.
 9. ALL STRAINERS SHALL BE BLOW DOWN TYPE WITH AN ISOLATION VALVE AND CAP.
 10. PROVIDE A HIGH LIMIT DRAIN PAN SENSOR AND HARD WIRE TO THE FAN / CONTROLLER TO SHUT OFF THE UNIT BASED ON A HIGH LEVEL LIMIT.
 11. FOR 4-PIPE UNITS, THE ASSEMBLY FOR THE SECOND SET IS THE SAME AS THE SINGLE ASSEMBLY SHOWN IN THE DETAIL.

5 CRAH PIPING DETAIL
M.V.P.503 NTS



- NOTES:**
1. PITCH ALL PIPING FOR PROPER DRAINAGE.
 2. ISOLATION VALVES ARE SHOWN AS BALL VALVES. REFER TO THE SPECIFICATIONS FOR THE SPECIFIC VALVE TYPE BASED ON THE PIPE SIZE AND APPLICATION.
 3. PROVIDE INSULATION FOR EXPANSION TANK FOR CHILLED WATER APPLICATIONS TO PREVENT CONDENSATION.
 4. PROVIDE A 55 GALLON DRUM AND LOCATE UNDER THE DRAIN LINE. PROVIDE A SHORT HOSE TO EXTEND FROM THE HOSE CONNECTION TO THE DRUM.
 5. IF IT IS NOT POSSIBLE TO EXTEND THE PRESSURE RELIEF PIPING TO THE GLYCOL FILL STATION, EXTEND IT TO THE DRAIN DRUM.
 6. THE PIPING TO THE EXPANSION TANK SHALL BE A MINIMUM OF 1" / 25MM. REFER TO THE PIPE SIZE SHOWN IN THE CONTRACT DOCUMENTS.
 7. PROVIDE A STAND FOR THE EXPANSION TANK AS REQUIRED TO ACHIEVE THE REQUIRED ELEVATIONS.
 8. THE CONTRACTOR SHALL LEAVE (1) EMPTY 55 GALLON GLYCOL CONTAINER IN THE MECHANICAL ROOM TO USE TO CONTAIN ANY DRAINED GLYCOL SOLUTION.

4 EXPANSION TANK W/ FILL
M.V.P.503 NTS



- NOTES:**
1. PROVIDE HEAT TRACE ON ALL OUTDOOR PIPING AS SPECIFIED, INCLUDING COLD WATER MAKE-UP, SPRAY PUMP AND SPRAY PIPING AND CONDENSER WATER PIPING.
 2. LOCATE PIPING TO FACILITATE THE REQUIRED ACCESS AND REMOVAL OF COMPONENTS.
 3. SHUT OFF VALVES AND ACCESSORIES SHALL BE THE SAME SIZE AS THE SYSTEM PIPING. TRANSITION TO THE COOLER INLET/OUTLET SIZES AT THE EQUIPMENT CONNECTION.
 4. ISOLATION VALVES ARE SHOWN AS BUTTERFLY VALVES. REFER TO THE SPECIFICATIONS FOR THE SPECIFIC VALVE TYPE BASED ON THE PIPE SIZE AND APPLICATION.
 5. LOCATE THE COLD WATER MAKE-UP ASSEMBLY IN A HEATED SPACE UNLESS SHOWN OTHERWISE ON THE CONTRACT DOCUMENTS.
 6. PIPE MULTIPLE UNITS IN REVERSE RETURN FOR SELF BALANCING. REFER TO THE CONTRACT DOCUMENTS FOR THE QUANTITY OF UNITS.
 7. QUICK CONNECT KITS ARE NOT TO BE USED. ALL VALVES SHALL BE INDEPENDENT COMPONENTS.

7 CLOSED CIRCUIT EVAPORATIVE COOLER DETAIL
M.V.P.503 NTS

| Revision No. | Description | Date |
|--------------|-------------------------------|-----------|
| | PERMIT SET | 2/2/2024 |
| | UPS YARD EQUIPMENT PERMIT SET | 2/8/2024 |
| | DATA HALL PERMIT | 2/16/2024 |
| | UPS & BATTERY ROOM INTERIORS | 2/16/2024 |
| | UPS & BATTERY ROOM PERMIT | 2/20/2024 |
| | UPS & BATTERY ROOM PERMIT R2 | 6/27/2024 |

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

MECHANICAL
DETAILS

Sheet **M.V.P.503**



720 3rd Avenue Suite 1500
Seattle Washington 98104-1878
[206] 667-0555

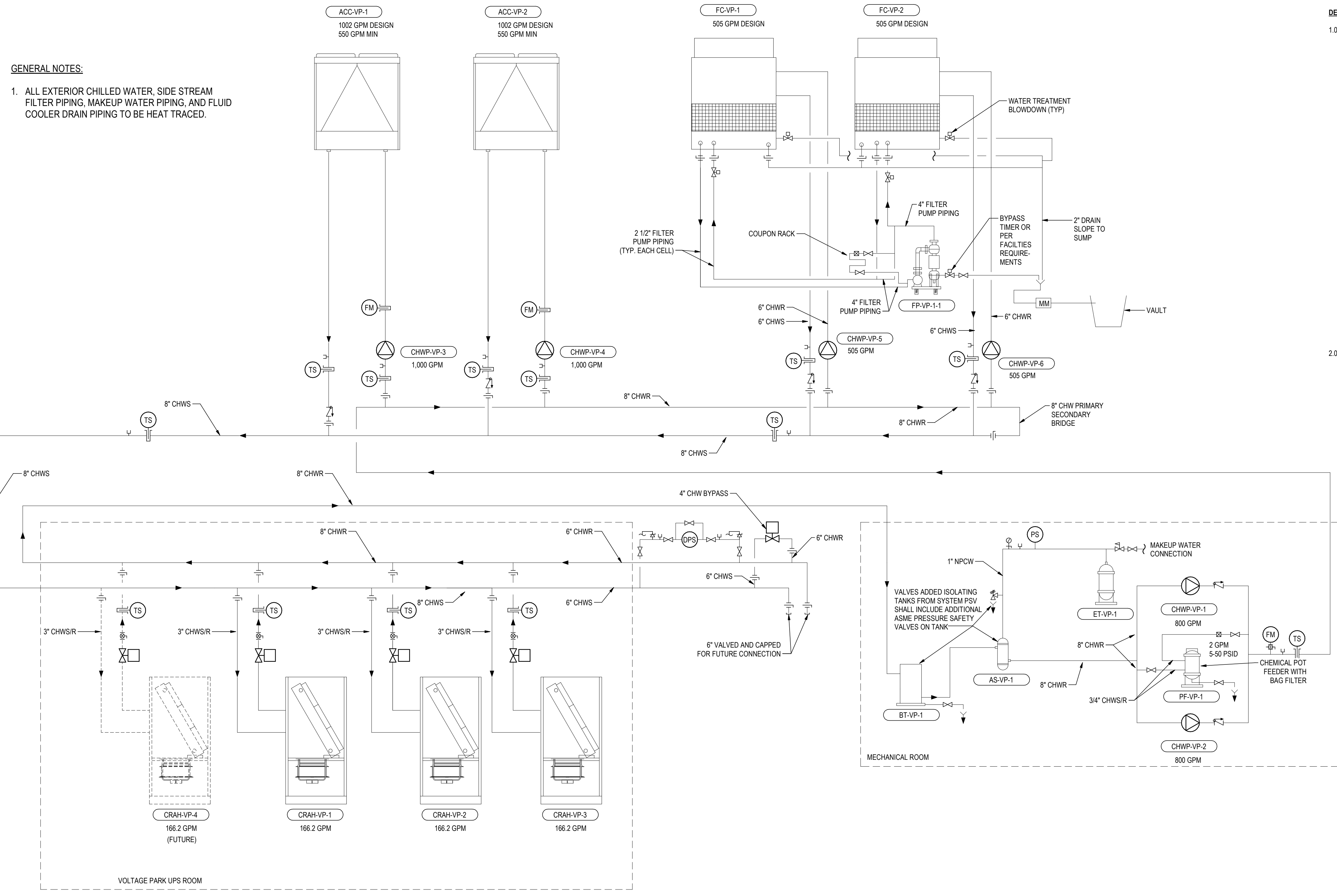
MECHANICAL DRAWINGS

CENTERS
VOLTAGE PARK UPS
1019 30th AVENUE SE
PUYALLUP, WA 98374



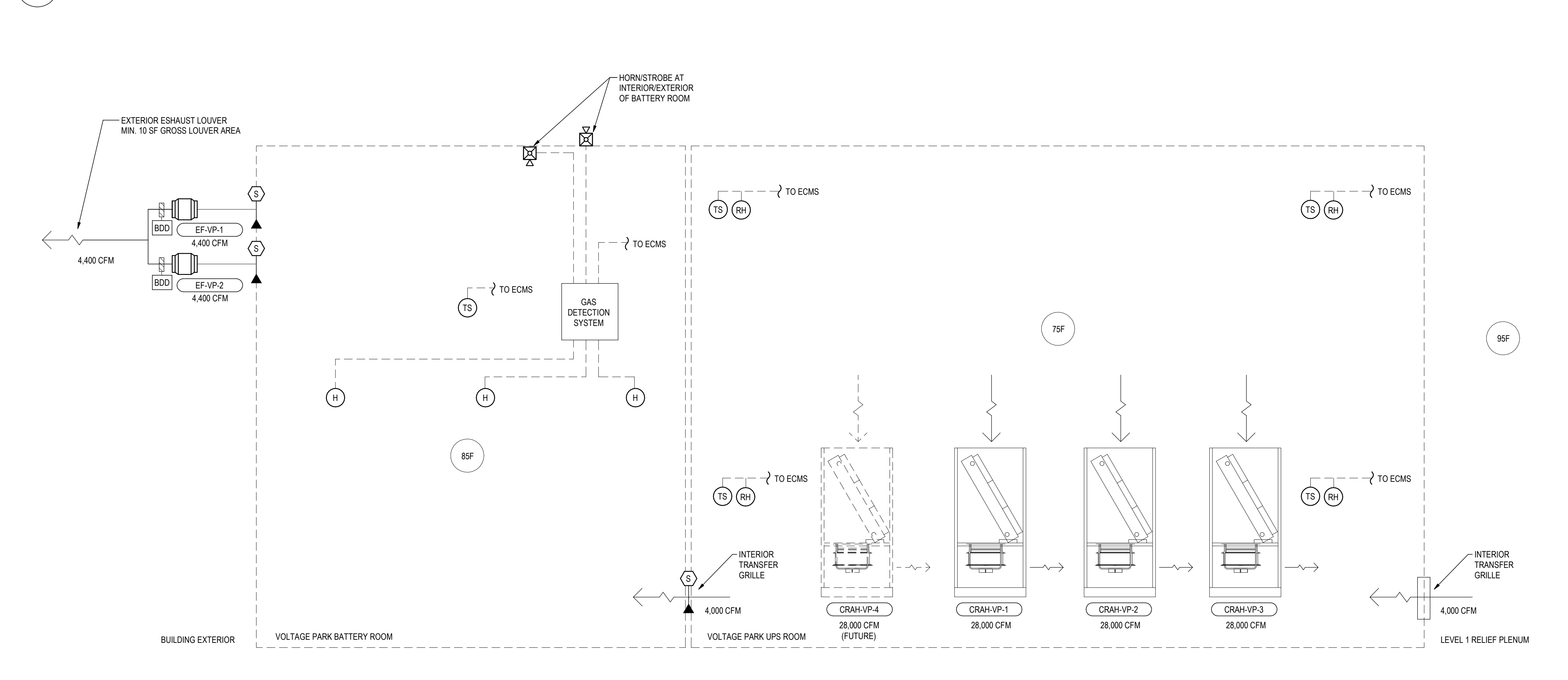
2024-06-27

| Revision No. | Description | Date |
|--------------|------------------------------|-----------|
| 1 | UPS 15KW EQUIPMENT PERM SET | 2/8/2024 |
| 2 | UPS & BATTERY ROOM INTERIORS | 2/16/2024 |
| 3 | UPS & BATTERY ROOM PERMIT | 2/23/2024 |
| 4 | UPS & BATTERY ROOM PERMIT | 6/27/2024 |



- DESCRIPTION OF OPERATIONS**
- 1.0 CONTROLS GENERAL**
THIS SEQUENCE OF OPERATION IS WRITTEN FOR CONTROLLING THE CENTERS FUTURE TENANT HEATING VENTILATING AND AIR CONDITIONING (HVAC) SYSTEMS BEING EXTERIOR AT 1915 39TH AVE. PUYALLUP, WA.
- 2.0 CHILLED WATER SYSTEM (VOLTAGE PARK)**
- 2.1 GENERAL**
- a. THE CHILLED WATER SYSTEM FOR VOLTAGE PARK INCLUDES (2) 337 TON AIR COOLED CHILLERS, PROVIDING N-1 COOLING, (2) FLUID COOLERS PROVIDING N COOLING, WATER SIDE ECONOMIZER OPERATION. ASSOCIATED PUMPS INCLUDE (2) SECONDARY DISTRIBUTION PUMPS PROVIDING N-1, AND (1) PUMP FOR EACH CHILLER AND EACH FLUID COOLER.
 - b. THE CHILLED WATER SYSTEM IS INTENDED TO MATCH OTHER CHILLED WATER SYSTEMS FOR THE FACILITY, AND USE WATER AS THE HEAT TRANSFER MEDIUM. PROVISIONS TO PROVIDE FREEZE PROTECTION SHALL BE INCORPORATED BY THE DESIGN, CONTRACTING AND CONTROLS TEAMS. SEE FREEZE PROTECTION SEQUENCES BELOW.
 - c. CHILLED WATER DISTRIBUTION SYSTEM
 - 1. THE CHILLED WATER PRODUCED IS DISTRIBUTED TO THE UPS ROOM CRAH'S. CHILLED WATER DISTRIBUTION PUMPS (CHWP-VP-1-1 AND CHWP-VP-1-2) ARE PIPED IN A PARALLEL ARRANGEMENT. EACH MAIN DISTRIBUTION PUMP HAS THE SAME FLOW CAPACITY, AND THE ARRANGEMENT IS DESIGNED TO PROVIDE MAXIMUM FLOW CAPACITY TO THE BUILDING WITH ONE DISTRIBUTION PUMP OPERATING IN A LEAD STANDBY SEQUENCE. AT LEAST ONE PUMP SHALL OPERATE CONTINUOUSLY. A BUFFER TANK SEPARATES THE CHILLED WATER PRIMARY LOOP FROM THE CHILLED WATER SECONDARY DISTRIBUTION SYSTEM.
 - 2. THE SECONDARY DISTRIBUTION PUMPS ARE CONTROLLED BY THE BAS. THE BAS MODULATES THE SPEED OF THE LEAD SECONDARY PUMP TO MAINTAIN A CONSTANT DIFFERENTIAL PRESSURE SETPOINT INITIALLY 15 PSI (ADJ) ACROSS THE CHILLED WATER LOOP OR OPERATES AT MINIMUM SPEED PER BELOW.
 - d. THE DIFFERENTIAL PRESSURE SETPOINT SHALL BE ADJUSTABLE AND DETERMINED BY THE TEST AND BALANCE TECHNICIAN THROUGH A FLOW TEST, AND THE BYPASS FULLY CLOSED.
 - e. IF ONE SECONDARY DISTRIBUTION PUMP IS AT MINIMUM SPEED (30% 50% FULL SPEED). THE BAS MODULATES THE BYPASS TO MAINTAIN THE PRIMARY DIFFERENTIAL PRESSURE SETPOINT ACROSS THE CHILLED WATER LOOP.
 - 1. THE MINIMUM PUMP SPEED SETPOINT SHALL BE THE SPEED AT WHICH (1) PUMP MAINTAINS THE SCHEDULED MINIMUM PUMP FLOW AS TESTED IN THIS CONDITION.
 - 2. IF THE LEAD PUMP FAILS THE BAS WILL ENABLE THE LAG PUMP AS THE LEAD PUMP. PUMP FAILURE SHALL BE DETERMINED BY THROUGH THE PARAMETER AND SIGNALS ON THE VFD. OR IF THE COMMAND ON CONDITION DOES NOT MATCH STATUS. AN IN-HAND ALARM SHALL BE GENERATED IF NOT IN AUTO.
 - f. LOW LOAD BYPASS OPERATION
 - 1. THE BYPASS VALVE SHALL OPEN BY AN INCREMENT OF 5% IF THE ENTERING WATER TEMPERATURE ON THE OPERATING CHILLER IS LESS THAN 5°F (ADJ) FOR 5 MINUTES (ADJ) ABOVE THE SUPPLY CHILLED WATER TEMPERATURE SETPOINT.
 - 2. THE BYPASS VALVE SHALL CLOSE BY AN INCREMENT OF 5% IF THE SUPPLY CHILLED WATER TEMPERATURE IS MORE THAN 2°F (ADJ) ABOVE SETPOINT OR IF THE OPERATING CHILLER HAS AN ENTERING WATER TEMPERATURE OF GREATER THAN 8°F ABOVE THE SUPPLY CHILLED WATER TEMPERATURE SETPOINT.
 - g. CHILLERS (ACC-VP-1-1 & ACC-VP-1-2)
 - a. THE TWO CHILLERS SHALL OPERATE IN LEAD STANDBY OPERATION.
 - b. START PUMP ASSOCIATED WITH EACH CHILLER 5 MINUTES (ADJ) PRIOR TO OPERATING CHILLER, AND FOR 5 MINUTES (ADJ) AFTER DISABLING THE CHILLER.
 - c. THE BAS SHALL START THE LEAD CHILLER IF ANY OF THE FOLLOWING ARE TRUE FOR 15 MINUTES (ADJ):
 - 1. IF THE SECONDARY CHILLED WATER TEMPERATURE DOWNSTREAM OF THE FLUID COOLERS IS GREATER THAN 4°F (ADJ), AND BOTH FLUID COOLER FANS ARE ABOVE 90% (ADJ).
 - 2. IF THE MEASURED AMBIENT WET BULB TEMPERATURE IS GREATER THAN 53°F (ADJ).
 - 3. IF AN ALARM HAS OCCURRED WITH THE FLUID COOLERS.
 - d. THE BAS SHALL STOP THE LEAD CHILLER AFTER A 15 MINUTE DELAY IF ANY OF THE FOLLOWING ARE TRUE FOR 15 MINUTES (ADJ):
 - 1. THE CHILLER HAS NOT OPERATED ANY COMPRESSORS FOR 30 MINUTES, AND THE CHILLED WATER SUPPLY TEMPERATURE IS WITHIN 1°F OF SETPOINT.
 - 2. IF THE MEASURED AMBIENT WET BULB TEMPERATURE IS BELOW THAN 50°F (ADJ), AND THERE IS NO ACTIVE FLUID COOLER ALARM.
 - e. THE BAS SHALL MAKE THE STANDBY CHILLER THE LEAD CHILLER IF AN ALARM IS ACTIVE WITH THE LEAD CHILLER OR ITS ASSOCIATED PUMP.
 - f. THE BAS SHALL OPERATE CHILLERS TO MAINTAIN THE SUPPLY WATER SETPOINT AT A CONSTANT CHILLED WATER TEMPERATURE OF 44°F.
 - g. THE BAS SHALL COMMUNICATE WITH EACH CHILLER, WITH AN RS485 MSTRP CONNECTION.
 - h. FLUID COOLER (FC-VP-1-1 & FC-VP-1-2)
 - a. THE FLUID COOLER SHALL HAVE STANDALONE CONTROLS THAT MONITOR WATER LEVEL AND FILL THE SYSTEM, AND ALSO OPEN A THIS SYSTEM HIGH CONDUCTIVITY LEVEL. THIS SYSTEM SHALL BE COORDINATED WITH THE CHEMICAL TREATMENT SYSTEM PROVIDED WITH THE FLUID COOLERS TO OPERATE WITHOUT BAS.
 - b. THE BAS SHALL OPERATE THE TWO FLUID COOLERS IN LEAD LAG OPERATION, AND TO START/STOP BASIN PUMPS AND MODULATE FLUID COOLER FAN SPEED.
 - c. START AND STOP EACH PRIMARY PUMP ASSOCIATED WITH EACH FLUID COOLER SIMULTANEOUSLY WITH ENABLING THE FLUID COOLER FANS, AND BASIN PUMP. PRIMARY PUMPS OPERATE AT A CONSTANT SPEED.
 - d. THE BAS SHALL START THE BASIN PUMP AND MODULATE THE FLUID COOLER FAN SPEED.
 - e. THE BAS SHALL MONITOR LEAVING CHILLED WATER TEMPERATURE, AND BASIN WATER LEVEL ON EACH FLUID COOLER.
 - f. THE BAS SHALL START THE LEAD FLUID COOLER IF ANY OF THE FOLLOWING ARE TRUE FOR 15 MINUTES (ADJ):
 - 1. IF THE SECONDARY CHILLED WATER TEMPERATURE UPSTREAM OF THE FLUID COOLERS IS 5°F (ADJ) GREATER THAN AMBIENT WETBULB TEMPERATURE.
 - 2. IF THE MEASURED AMBIENT WET BULB TEMPERATURE IS LESS THAN 53°F (ADJ).
 - 3. IF AN ALARM HAS OCCURRED WITH BOTH CHILLERS.
 - g. THE BAS SHALL START THE LAG FLUID COOLER AND ASSOCIATED PUMP IF ANY OF THE FOLLOWING ARE TRUE FOR 15 MINUTES (ADJ):
 - 1. IF THE SECONDARY CHILLED WATER TEMPERATURE UPSTREAM OF THE FLUID COOLERS IS ABOVE 45°F (ADJ) AND THE LEAD FLUID COOLER FAN IS ABOVE 90% FULL SPEED.
 - 2. THE BAS SHALL STOP THE LAG FLUID COOLER AND ITS ASSOCIATED PUMP AFTER A 15 MINUTE DELAY IF ANY OF THE FOLLOWING ARE TRUE FOR 15 MINUTES (ADJ):
 - 1. THE FAN SPEED OF FLUID COOLERS IS LESS THAN 40% (ADJ), AND THE CHILLED WATER SUPPLY TEMPERATURE IS LESS THAN 46°F.
 - 3. THE BAS SHALL STOP THE LEAD FLUID COOLER AFTER A 15 MINUTE DELAY IF ANY OF THE FOLLOWING ARE TRUE FOR 15 MINUTES (ADJ):
 - 1. IF THE MEASURED AMBIENT WET BULB TEMPERATURE IS ABOVE THAN 53°F (ADJ), AND BOTH CHILLERS DO NOT HAVE AN ACTIVE ALARM.
 - h. THE BAS SHALL MAKE THE STANDBY FLUID COOLER THE LEAD FLUID COOLER IF AN ALARM IS ACTIVE WITH THE LEAD FLUID COOLER OR ITS ASSOCIATED PUMP.
 - i. THE BAS SHALL OPERATE THE LEAD AND THE LAG FLUID COOLER USING EQUIVALENT SIGNALS TO MAINTAIN THE SECONDARY SUPPLY WATER SETPOINT DOWNSTREAM OF THE FLUID COOLERS AT A CONSTANT CHILLED WATER TEMPERATURE OF 44°F (ADJ) USING THE FOLLOWING STAGES:
 - 1. ENABLE THE BASIN WATER PUMP.
 - 2. AFTER 5 MINUTE DELAY AND A CONTINUED RISE IN CHILLED WATER TEMPERATURE START FLUID COOLER FANS AT 4 Hz.
 - 3. UTILIZE A PI LOOP TO FURTHER RAMP UP FANS WITH A CONTINUED RISE IN SUPPLY SECONDARY CHILLED WATER TEMPERATURE.
 - 4. IF THE PI LOOP HAS THE FLUID COOLER FAN AT 6 Hz FOR 15 MINUTES, DISABLE FAN.
 - j. THE BAS SHALL COMMUNICATE WITH EACH FLUID COOLER'S VFD OVER AN RS485 BACNET CONNECTION.
 - k. THE BAS MONITORS SYSTEM PRESSURE. IF SYSTEM PRESSURE FALLS BELOW 10 PSI (ADJ) OR IS ABOVE 20 PSI (ADJ), THE BAS ACTIVATES A LOW OR HIGH LOOP PRESSURE ALARM.
 - l. THE OPERATION OF THE SIDE STREAM FILTER PUMP AND PUMP SHALL OPERATE ON A TIMER. THE SYSTEM THAT WOULD OPEN THE DRAIN VALVE ON THE ASSOCIATED FILTER ASSEMBLY SHALL BE MANUAL.
 - m. FREEZE PROTECTION SEQUENCE
 - a. IF THE OUTSIDE AIR TEMPERATURE IS BELOW 32°F (ADJ) OR IF THE CHILLER INITIATES A PUMP RUN LOW EVAPORATOR TEMPERATURE SEQUENCE, THE BAS SHALL OPERATE ALL PUMPS EXCEPT FLUID COOLER SPRAY PUMPS THAT WERE TO BE CONTROLLED OFF PER ABOVE AT 30 Hz/50% (ADJ) FULL SPEED. ENABLE FILTER FEEDER PUMPS AT FULL SPEED.
 - b. THE FLUID COOLER SHALL HAVE STANDALONE CONTROLS THAT MONITOR BASIN WATER TEMPERATURE, AND CONTROL THE STAGES AND SAFETIES ON THE ELECTRIC BASIN HEATERS. THIS SYSTEM SHALL OPERATE WITHOUT BAS.
 - c. EACH HEAT TRACE SYSTEM CIRCUIT SHALL BE PROVIDED WITH A FAULT DETECTION MONITOR. IF A CURRENT SENSOR IS USED, IT SHALL BE CALIBRATED FOR A LINEAR RESPONSE IF ALSO AUTOREGULATING HEAT TRACE IS USED. AN ALARM AT LOW CURRENT SIGNAL SHALL BE GENERATED AT 20°F (ADJ) AT LOW SIGNAL AND AT A HIGHER LOW CURRENT SIGNAL AT 20°F (ADJ) AMBIENT FOR EACH CIRCUIT.

1 UPS AIR-COOLED CHILLER PIPING DIAGRAM



2 VOLTAGE PARK UPS AND BATTERY ROOM CONTROL DIAGRAM

VOLTAGE PARK UPS ROOM

| Type | Qty | Loading | Btuh ea | Btuh total |
|----------------------------|-----|---------|---------|------------|
| UPS, 1500 kVA | 12 | 85% | 158000 | 1,611,600 |
| Transformer/PDUs | 0 | 60% | 76815 | - |
| Stat Transfer Switch | 0 | 60% | 48000 | - |
| Gear | 0 | 100% | 50000 | - |
| Partition Heat Gain | | | | 84,800 |
| Lighting, misc. | | | | 3,299 |
| Sensible Gain Total (Btuh) | | | | 1,699,699 |
| Sensible Gain Total (kW) | | | | 498 |
| Sensible Gain Total (tons) | | | | 141.6 |

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

MECHANICAL DIAGRAMS

M.VP.601



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MECHANICAL DRAWINGS

CENTERS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



2024-06-27

Revision No. Description Date

City of Puyallup Development & Permitting Services ISSUED PERMIT

Drawn By: JLV Checked By: BO

PLUMBING LEGEND, GENERAL NOTES AND ABBREVIATION

NOTE: NOT ALL SYMBOLS, SYSTEMS, AND ABBREVIATIONS MAY BE USED ON THIS PROJECT

PLUMBING SHEET LIST

Table with 2 columns: Symbol, Description

PIPING COMPONENTS

Table with 3 columns: REAL OBJECT, SYMBOL, DESCRIPTION

PLUMBING

Table with 2 columns: SYMBOL, DESCRIPTION

GENERAL SYMBOLS

Table with 2 columns: SYMBOL, DESCRIPTION

ABBREVIATIONS

Table with 2 columns: ABBREVIATION, DESCRIPTION

SEISMIC NOTES

- 1. CONTRACTOR SHALL PROVIDE COMPLETE SEISMIC ANCHORAGE AND BRACING FOR ALL PLUMBING EQUIPMENT AND REQUIRED PIPING.

GENERAL NOTES

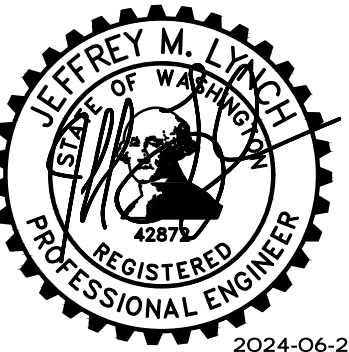
- 1. THE ENTIRE INSTALLATION SHALL CONFORM TO THE REQUIREMENTS OF THE 2018 WASHINGTON STATE FIRE CODE, 2018 UNIFORM PLUMBING CODE, 2018 WASHINGTON STATE BUILDING CODE AND ALL OTHER APPLICABLE CODES & REGULATIONS.



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(206) 667-0555

MECHANICAL DRAWINGS

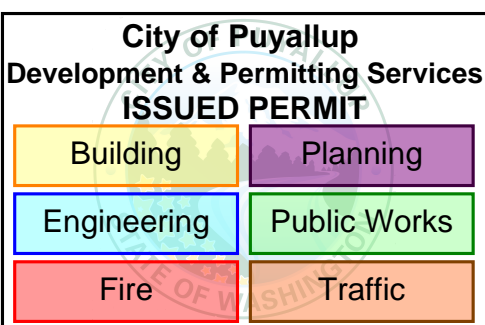
CENTERS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



2024-06-27

Revision No. Description Date

UPS FARD EQUIPMENT PERMIT SET 2/8/2024
UPS & BATTERY ROOM INTERIORS 2/16/2024
UPS & BATTERY ROOM PERMIT 2/23/2024
UPS FARD EQUIPMENT PERMIT REV1 3/27/2024



Drawn By: JLV Checked By: BO

PLUMBING SCHEDULES

Title

P.VP.010

Sheet

| SUMP PUMP SCHEDULE | | | | | | | | | | | | | | | | | |
|---------------------|--------|------------|--------|----------|------------|-----------|-----|-------------|---------------------|------------|-------------|-------------|------------|-------|--------------|--------------|-------|
| UNIT IDENTIFICATION | | | PUMP | | | | | | | | | | ELECTRICAL | | MANUFACTURER | MODEL NUMBER | NOTES |
| MARK | NUMBER | LOCATION | TYPE | QUANTITY | FLOW (GPM) | HEAD (FT) | HP | SPEED (RPM) | DISCHARGE PIPE (IN) | WIDTH (IN) | LENGTH (IN) | HEIGHT (IN) | VOLTS | PHASE | | | |
| SP | 1 | NORTH YARD | DUPLEX | 1 | 20 | 30 | 1.5 | 1750 | 3 | 48" | 48" | 48" | 460 | 3 | WEIL | 2526 | 1 |

NOTES
1. PROVIDED WITH AIR FILLED EXPLOSION PROOF MOTORS, MOISTURE SENSING AND TEMPERATURE LIMITER PROBES, 25 FT. POWER/SENSOR CABLES, 20 FT. STAINLESS STEEL LIFTING CABLE, MODEL 2613-2" DUPLEX BCB REMOVAL SYSTEM WITH DISCHARGE FLOOR ELBOWS, BRONZE SLIDING BRACKET AND BCB DUPLEX GUIDE BRACKET, MODEL 2613K01 SUB BASE FOR DUPLEX INSTALLATION, MODEL 2613K01 LEVEL CONTROL LIFTING ASSEMBLY, MODEL 8234-AS INTRINSICALLY SAFE FLOAT SWITCHES WITH 20 FT. CORD LENGTH, MODEL #185 NEMA 4 CONTROL PANEL, UL LISTED DOUBLE DOOR DEAD FRONT, LOCKABLE DISCONNECTS, MAG CONTACTORS, OVERLOAD PROTECTION, T-O-A SWITCHES, TRANSFORMER, PILOT LIGHTS, HOUR METERS, TEMPERATURE LIMITER CIRCUIT, INTRINSICALLY SAFE MOISTURE SENSOR RELAY FLOAT CIRCUITRY, HVA HORNLIGHT AND ISOLATED CONTACTS, INCLUDES NECESSARY INLET/OUTLET CONNECTIONS.

| PLUMBING MATERIAL STANDARDS MATRIX | | | | | | | |
|--|---------------------------------|-------------------|----------------------------------|--|--|--|-------------------|
| SERVICE ID | SERVICE DESCRIPTION | DESIGN... | SIZE | MATERIAL | JOINTS & FITTINGS | LOCATION FOR USE | REMARKS |
| DOMESTIC WATER - BELOW GRADE | | | | | | | |
| DCW | DOMESTIC COLD WATER UNDERGROUND | 125 | 2-1/2" AND SMALLER | HIGH DENSITY POLYETHYLENE (HDPE) | HEAT WELD | NO RESTRICTION | |
| | | 125 | 2-1/2" AND LARGER | SOLID WALL SCH. 80 PVC SCH 80 CPVC | SOLVENT WELD | NO RESTRICTION | 5,6,12 |
| DOMESTIC WATER - ABOVE GRADE | | | | | | | |
| DCW | DOMESTIC COLD WATER | 125 | 2" AND SMALLER | COPPER TUBING - TYPE L | SOLDERED, 95-5 SOLDER, LEAD-FREE OR COPPER SWEAT, COPPER PRO PRESS | NO RESTRICTION | |
| | | | | COPPER TUBING - TYPE L | PRESS-CONNECT JOINING, OR COPPER SWEAT, COPPER PRO PRESS | NO RESTRICTION | |
| | | | PEX TUBING ASTM F876 - ASTM F877 | PIPE INSERT & EXPANSION COLLAR ASTM F1807, ASTM F1960 | RUNOUT FROM MANIFOLD IN RESIDENCE | | |
| | | | COPPER TUBING - TYPE L | GROOVED OR COPPER VICTAULIC | NO RESTRICTION | | |
| | | 2 1/2" AND LARGER | COPPER TUBING - TYPE L | PRESS-CONNECT JOINING OR COPPER VICTAULIC | NO RESTRICTION | 1, 3, 5, 6, 7, 8, 9, 10, 12 | |
| | | | STAINLESS STEEL | GROOVED OR VICTAULIC FITTING | NO RESTRICTION | | |
| | | | COPPER TUBING - TYPE L | SOLDERED, 95-5 SOLDER, LEAD-FREE OR COPPER SWEAT, COPPER PRO PRESS | NO RESTRICTION | | |
| | | | COPPER TUBING - TYPE L | PRESS-CONNECT JOINING, OR COPPER SWEAT, COPPER PRO PRESS | NO RESTRICTION | | |
| 250 | ALL | STAINLESS STEEL | GROOVED OR VICTAULIC FITTING | NO RESTRICTION | | | |
| SANITARY WASTE & VENT - ABOVE GRADE | | | | | | | |
| SAN | SANITARY WASTE | 5 | ALL | CAST IRON NO HUB | NHCI FITTINGS | WASTE RISERS, FLOOR MOUNT FIXTURE TRAP ARMS & CLOSET BENDS, ABOVE UNIT CBLINGS, IN PLENUMS IN ALL COMMON AREAS | 4, 5, 6, 7, 8 |
| SV | SANITARY VENT | 5 | ALL | CAST IRON NO HUB (OFFICE ONLY) | NHCI FITTINGS | NO RESTRICTION | |
| P-SAN (PUMPED) | PUMPED WASTE | 120 | ALL | SCH 40 STEEL | VICTAULIC | NO RESTRICTION | |
| SANITARY WASTE & VENT - BELOW GRADE | | | | | | | |
| SAN | SANITARY WASTE | 5 | ALL | CAST IRON NO HUB/SOLID CORE PVC | NHCI FITTINGS | NO RESTRICTION | 4, 5, 6, 7, 8, 12 |
| SV | SANITARY VENT | 5 | ALL | CAST IRON NO HUB | NHCI FITTINGS | NO RESTRICTION | |
| P-SAN (PUMPED) | PUMPED WASTE | 120 | ALL | SCH 40 STEEL | VICTAULIC | NOT ALLOWED IN PLENUMS | |

REMARKS
1. PER 2018 UPC WITH WASHINGTON AMENDMENTS, PEX TUBING SHALL NOT BE INSTALLED WITHIN THE FIRST 18 INCHES OF PIPING CONNECTED TO A WATER HEATER.
2. NOT USED.
3. DOMESTIC COLD WATER SUPPLY PIPING SHALL NOT EXCEED 8 FPS. DOMESTIC HOT WATER PIPING SHALL NOT EXCEED 5 FPS.
4. ALL WASTE PIPES ARE TO BE ISOLATED FROM BUILDING STRUCTURE USING A CLOSED-CELL NEOPRENE SLEEVE.
5. EXPANSION COMPENSATION FOR PVC IS REQUIRED PER UPC 314.
6. CAST IRON OR PLENUM-RATED CPVC PIPE IS REQUIRED IN ALL RETURN AIR PLENUMS. PVC & ABS ARE NOT ALLOWED IN RETURN AIR PLENUMS.
7. CEILING CAVITIES SURROUNDING WASTE PIPES OR ROOF DRAIN LINES ARE TO BE FILLED WITH BATT INSULATION.
8. FLOOR PENETRATIONS ARE TO BE PACKED WITH ROCK WOOL OR FIBERGLASS INSULATION AND SEALED WITH A RESILIENT FIRE CAULK. PIPING SHALL BE PREVENTED FROM MAKING RIGID CONTACT WITH THE STRUCTURE AT THESE PENETRATIONS.
9. INSULATE ALL METALLIC COLD WATER LINES WITH 1/2" FIBERGLASS WRAP OR EQUIVALENT.
10. PIPE SHALL BE INSULATED PER WASHINGTON STATE ENERGY CODE 2019 REQUIREMENTS EXCEPT WHERE NOTED OTHERWISE. SEE INSULATION SCHEDULE.
11. NOT USED.
12. ALL BURIED PLASTIC PIPING INCLUDING PVC AND CPVC SHALL BE INSTALLED IN ACCORDANCE WITH ASTM 02321 AND ASTM F 1698 STANDARDS.
13. NOT USED.
14. 8" AND LARGER NATURAL GAS PIPING: STANDARD WEIGHT PIPE SCH 40 ASTM A53 B AND BUTT WELD FITTINGS ALLOWED.
15. SOCKET WELD FOR IN-SHAFT OR ENCLOSURES.
16. PEX PIPE ALLOWED FOR IN-WALL APPLICATIONS (EXCLUDES RISERS SPANNING MORE THAN ONE LEVEL).

| BACKFLOW PREVENTION | | | | | | | |
|---------------------|--------|---------------|--------|-----------------|--------------|--------------|---------|
| TAG | NUMBER | SERVICE | SIZE | ACCESSORIES | MANUFACTURER | MODEL NUMBER | NOTES |
| RFBP | 1 | MAKE-UP WATER | 1-1/2" | AIR GAP FITTING | WATTS | LF008-FS | 1,2,3,4 |

NOTES:
1. PROVIDE WITH AIRGAP FITTING.
2. ROUTE AIRGAP DRAIN FULL LINE SIZE TO NEAREST INDIRECT RECEPTOR.
3. PROVIDE FLOOD PROTECTION BACKFLOW SYSTEM PVS-7000.
4. PRODUCT SHALL BE LEAD FREE.

| TRAP PRIMER SCHEDULE | | | | | | | | | | | | | | |
|----------------------|--------|------------|----------|----------|--------------|-------|-------|-------|------------|--------|-------|--------------|--------------|-------|
| UNIT IDENTIFICATION | | | PUMP | | | | | | ELECTRICAL | | | MANUFACTURER | MODEL NUMBER | NOTES |
| MARK | NUMBER | LOCATION | TYPE | QUANTITY | CW PIPE (IN) | VOLTS | WATTS | PHASE | VOLTS | WATTS | PHASE | | | |
| TP | 1 | NORTH YARD | ELECTRIC | 1 | 1/2 | 115 | 16 | 1 | PPC INC | MP-500 | 1 | | | |

NOTES
1. INSTALL BEHIND AN ACCESS PANEL. PROVIDE DISTRIBUTION UNIT WHERE MULTIPLE TRAPS ARE SERVED. MAXIMUM 4 DRAINS SERVED.
2. RECESSED MOUNTED. MAXIMUM 4 DRAINS SERVED.

| PLUMBING DRAIN SCHEDULE | | | | | | | | |
|-------------------------|----------|-------|----------|-------|-------------|-------|--------------|-------|
| DRAIN TYPE: FLOOR SINK | | | | | | | | |
| UNIT IDENTIFICATION | BODY | | STRAINER | | VARIATIONS | MODEL | MANUFACTURER | NOTES |
| | MATERIAL | STYLE | MATERIAL | STYLE | | | | |
| FS-1 | - | - | - | - | TRAP PRIMER | 2390 | WADE | 1,2 |

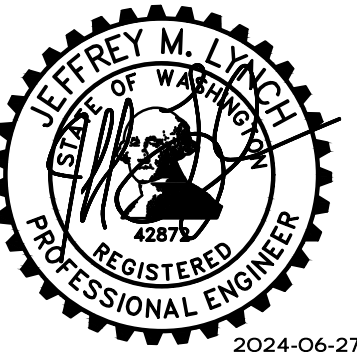
NOTES:
1. REFER TO PLUMBING PLANS FOR DRAIN, P-TRAP, SANITARY AND SANITARY VENT SIZING.
2. REFER TO ARCHITECTURAL DRAWING FOR EXACT LOCATION...

| PUMP SCHEDULE | | | | | | | | | | | | | | | |
|---------------------|--------|----------|-----------------------|------------|---------------|------------|-----------|---------------|-------|-------------|------------|-------|--------------|--------------|-------|
| UNIT IDENTIFICATION | | | PUMP | | | | | | MOTOR | | ELECTRICAL | | MANUFACTURER | MODEL NUMBER | NOTES |
| MARK | NUMBER | LOCATION | SYSTEM SERVED | TYPE | COUPLING TYPE | FLOW (GPH) | HEAD (FT) | SHUT-OFF (FT) | HP | SPEED (RPM) | VOLTS | PHASE | | | |
| CDP | 1 | | MECHANICAL CONDENSATE | BASE MOUNT | - | 200 | 30 | - | 1/5 | 2200 | 115 | 1 | LITTLE GIANT | VL-45ULS | 1 |
| CDP | 2 | | MECHANICAL CONDENSATE | BASE MOUNT | - | 200 | 30 | - | 1/5 | 2200 | 115 | 1 | LITTLE GIANT | VL-45ULS | 1 |
| CDP | 3 | | MECHANICAL CONDENSATE | BASE MOUNT | - | 200 | 30 | - | 1/5 | 2200 | 115 | 1 | LITTLE GIANT | VL-45ULS | 1 |

NOTES:
1. PROVIDE ALL LEAD FREE. BRONZE CONSTRUCTION.

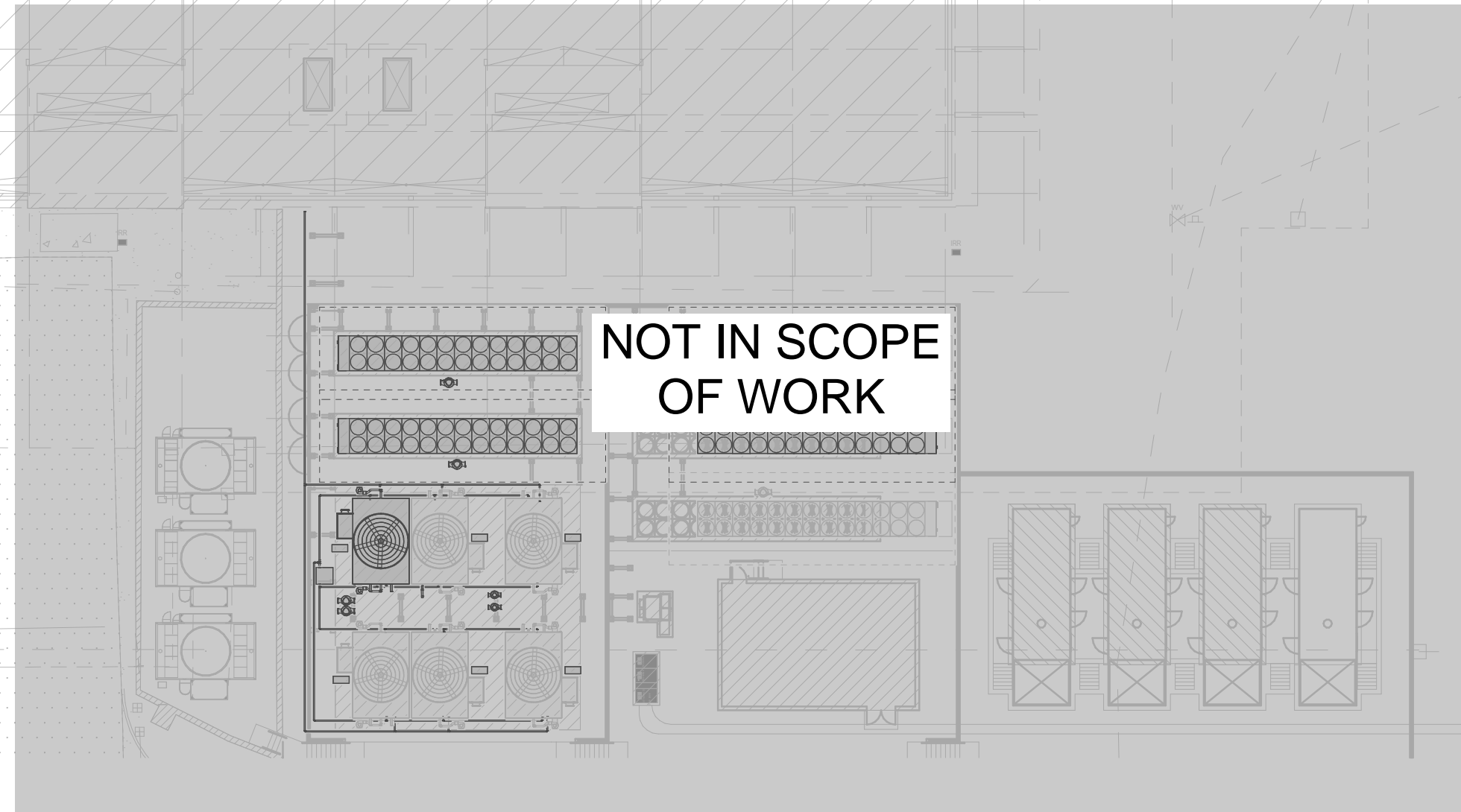
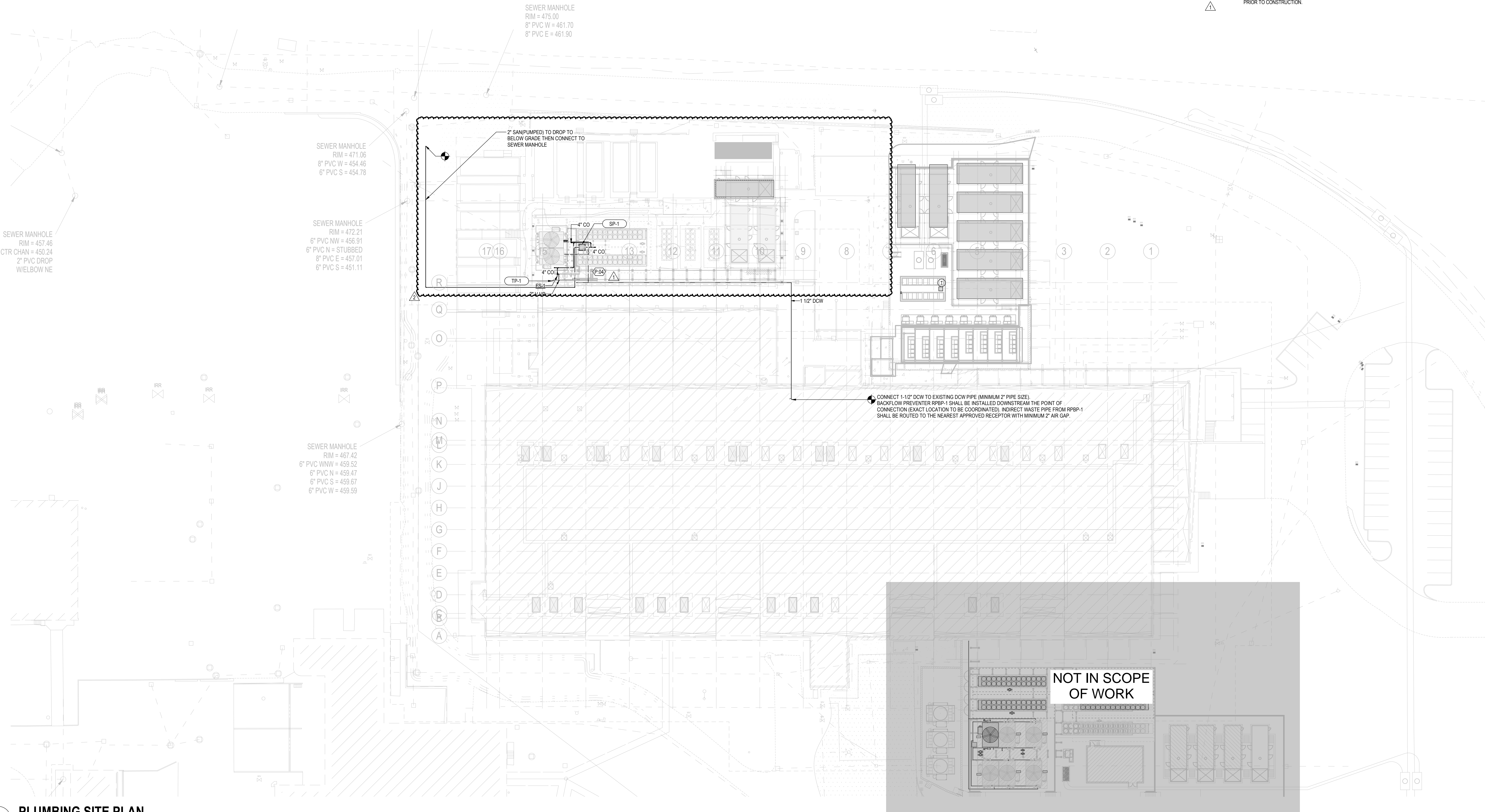
**MECHANICAL
DRAWINGS**

CENTERIS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



KEY NOTES

P.04 PRIOR TO CONSTRUCTION, THE GENERAL CONTRACTOR SHALL VERIFY THE LOCATION AND CONDITION OF ALL EXISTING UTILITIES, INCLUDING STORM DRAINAGE, SEWER LINES, WATER LINES, AND ELECTRICAL CONDUIT IN THE VICINITY OF THE PROJECT FOOTPRINT. THE GENERAL CONTRACTOR/CIVIL CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING OR RELOCATING THE STORM DRAIN AS NECESSARY AND AS DESIGNED UNDER THE APPROVED CIVIL PLANS FILED UNDER PERMIT PRCP20240183 AND SHALL MAINTAIN UTILITY SEPARATION FROM ALL OTHER EXISTING AND PROPOSED UTILITIES PRIOR TO POURING FOUNDATIONS AND EQUIPMENT PADS AND PRIOR TO INSTALLATION OF FLUID COOLERS OR OTHER MECHANICAL EQUIPMENT. ANY CONFLICTS BETWEEN THE PROPOSED PLANS AND THE APPROVED CIVIL PLANS MUST BE COORDINATED AND MITIGATED AS NECESSARY PRIOR TO CONSTRUCTION.



1 PLUMBING SITE PLAN
R.V.P.101 1" = 30'-0"

| Revision No. | Description | Date |
|--------------|-------------------------------|-----------|
| 1 | UPS YARD EQUIPMENT PERMIT SET | 2/8/2024 |
| REV1 | UPS YARD EQUIPMENT PERMIT | 3/27/2024 |
| 2 | UPS & BATTERY ROOM PERMIT R2 | 6/27/2024 |

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

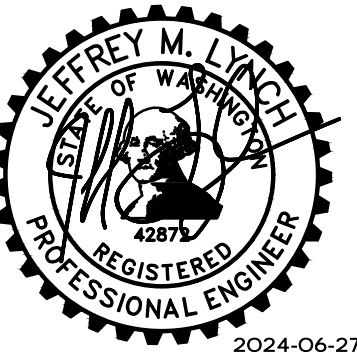
Drawn By: JLV Checked By: BO

Title: PLUMBING SITE PLAN

Sheet: **P.VP.101**

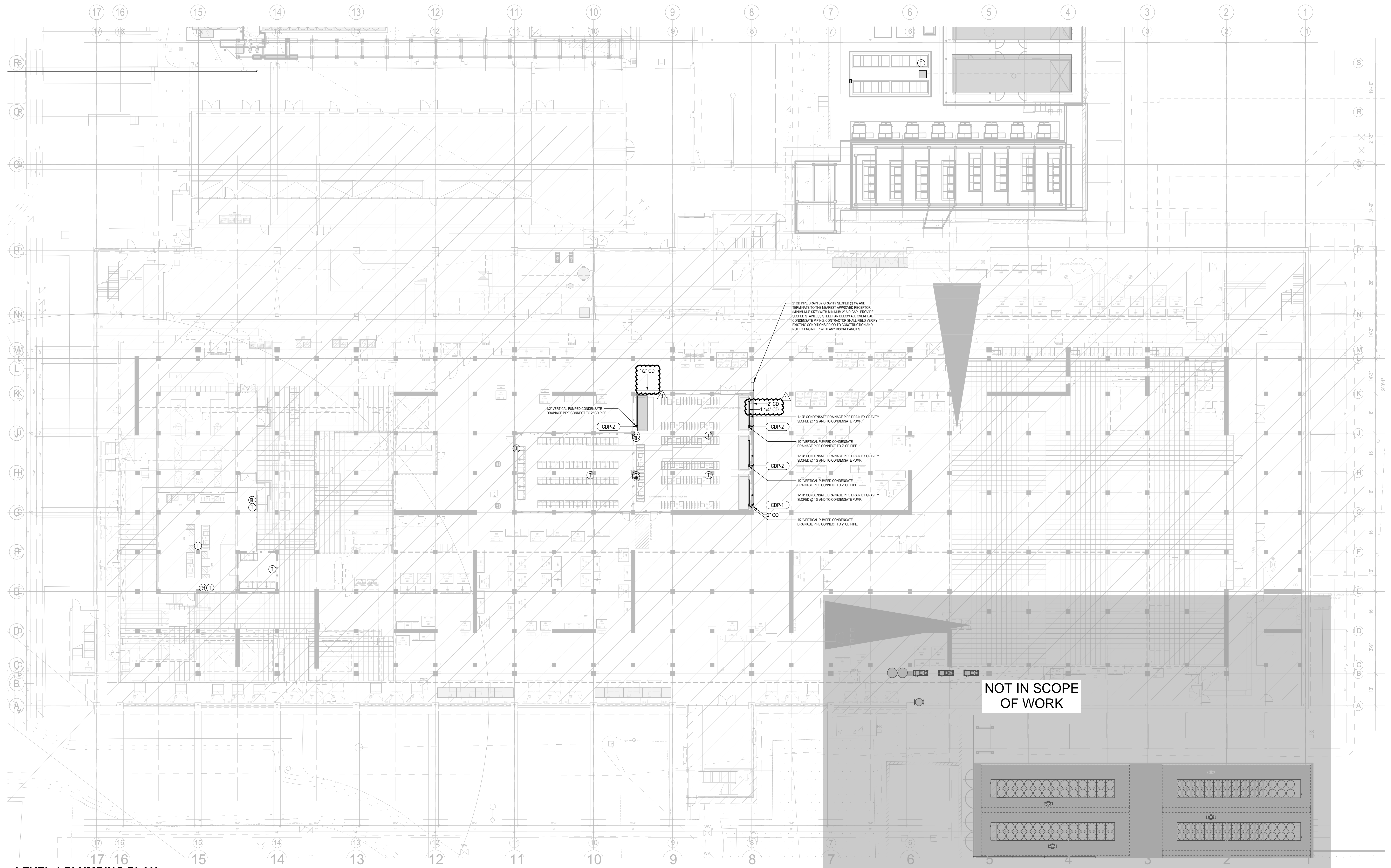
MECHANICAL
DRAWINGS

CENTERIS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



2024-06-27

| Revision No. | Description | Date |
|--------------|---|-------------------------------------|
| 1 | UPS & BATTERY ROOM INTERIORS UPS & BATTERY ROOM PERMIT UPS & BATTERY ROOM PERMIT R2 | 2/14/2024 2/23/2024 6/27/2024 |



1 LEVEL 1 PLUMBING PLAN
R.VP.102 1/16" = 1'-0"

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

| | |
|-------------|--------------|
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

Drawn By: JLV Checked By: BO

PLUMBING LEVEL 1
PLAN

**MECHANICAL
DRAWINGS**

CENTERS
VOLTAGE PARK UPS
1019 39th AVENUE SE
PUYALLUP, WA 98374



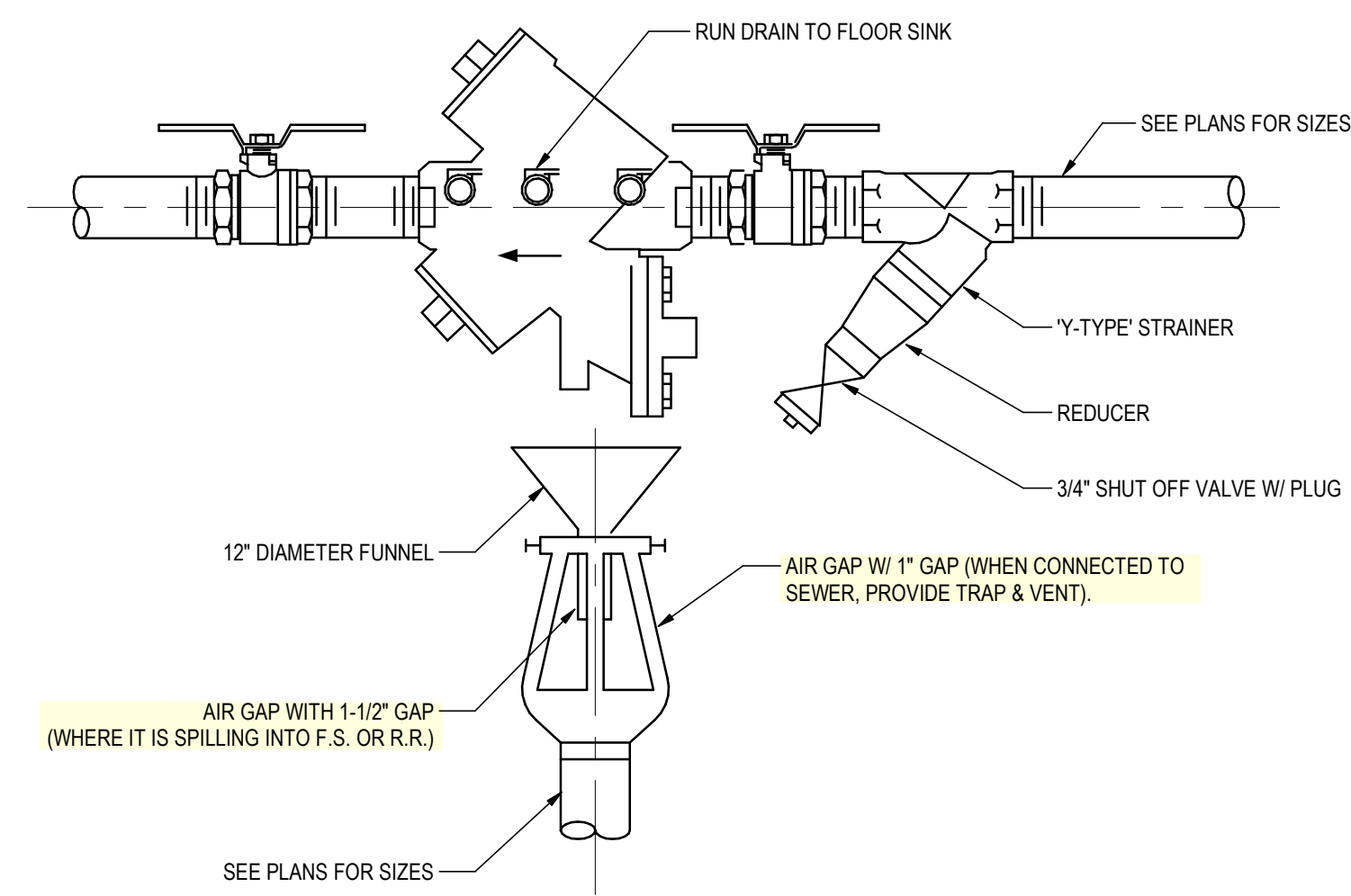
| Revision No. | Description | Date |
|-------------------------------|-------------|-----------|
| UPS 14RD EQUIPMENT PERMIT SET | | 2/8/2024 |
| UPS & BATTERY ROOM INTERIORS | | 2/16/2024 |
| UPS & BATTERY ROOM PERMIT | | 2/23/2024 |

| | |
|--|--------------|
| City of Puyallup Development & Permitting Services ISSUED PERMIT | |
| Building | Planning |
| Engineering | Public Works |
| Fire | Traffic |

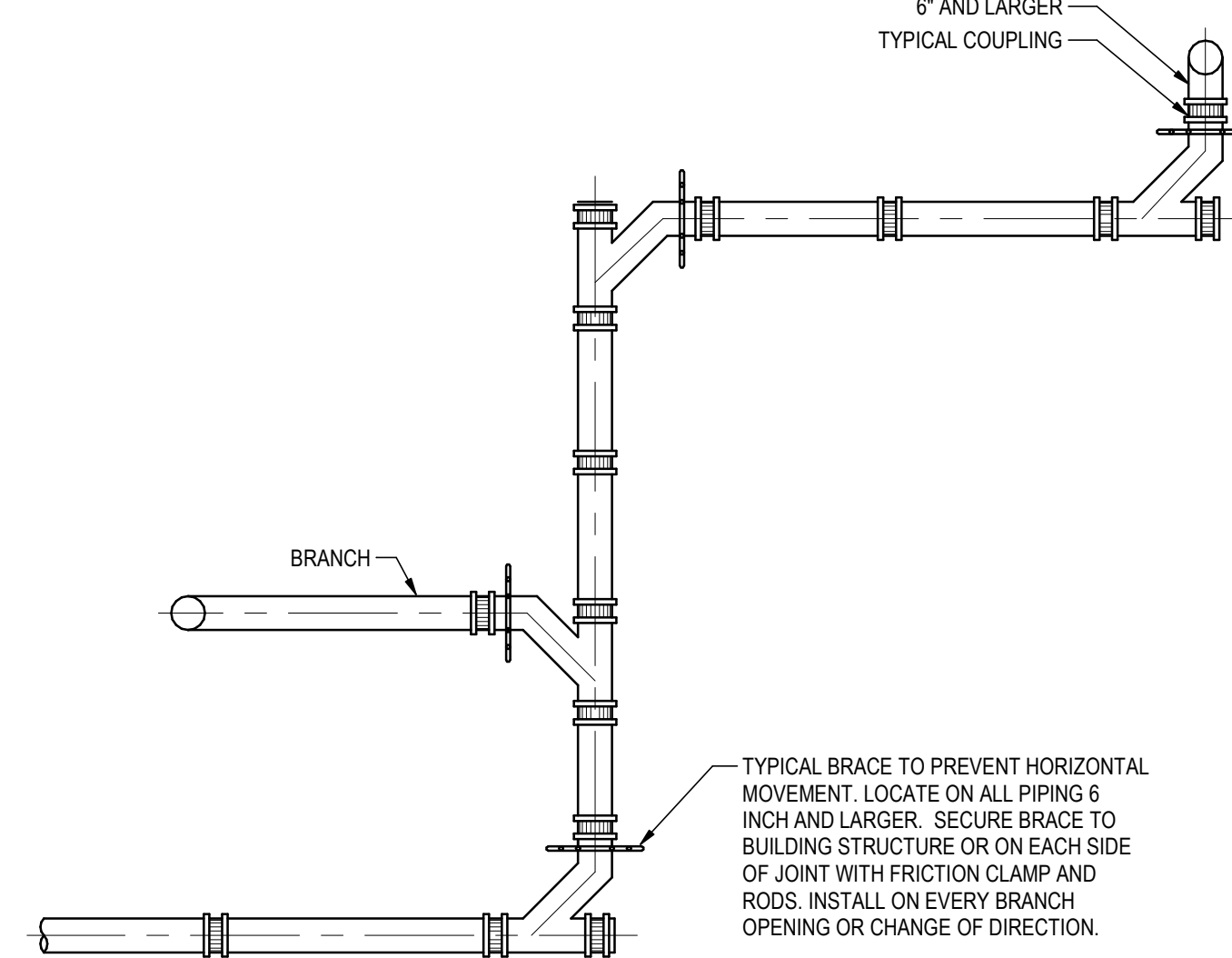
Drawn By: JLV Checked By: BO

Title: PLUMBING DETAILS

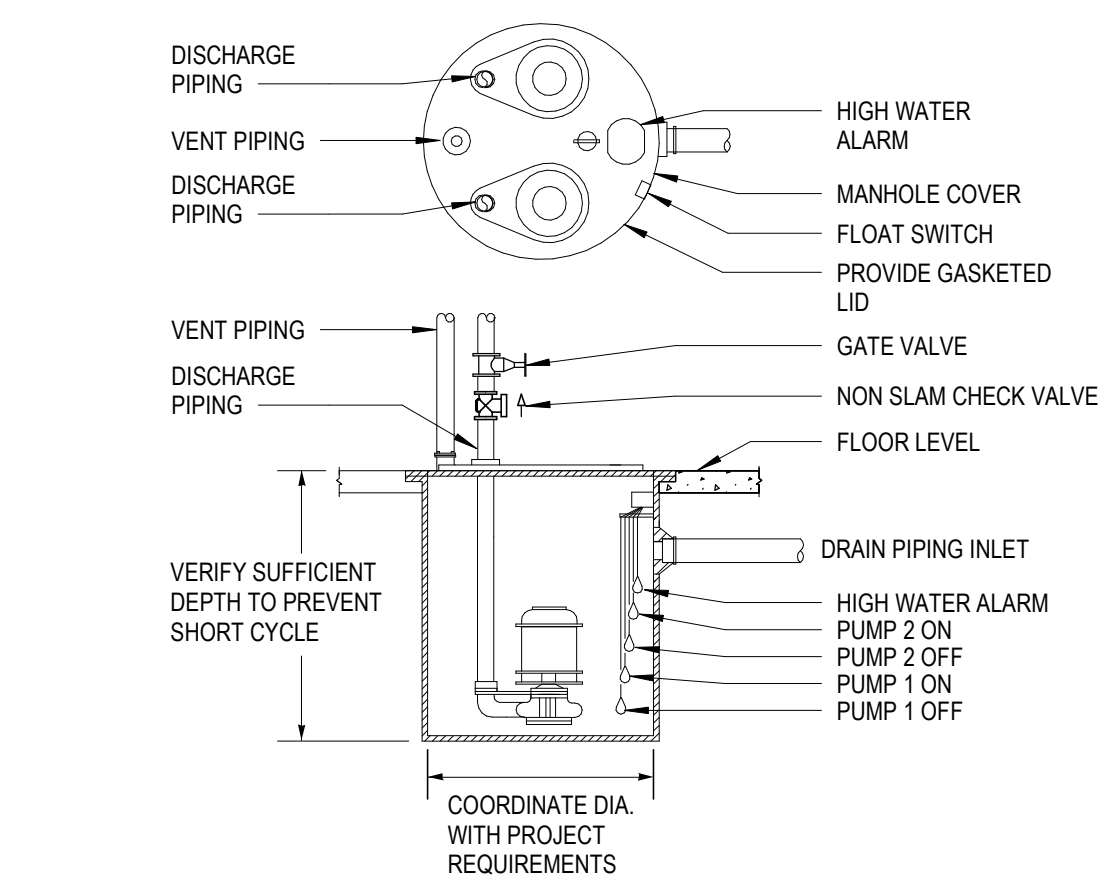
Sheet **P.VP.501**



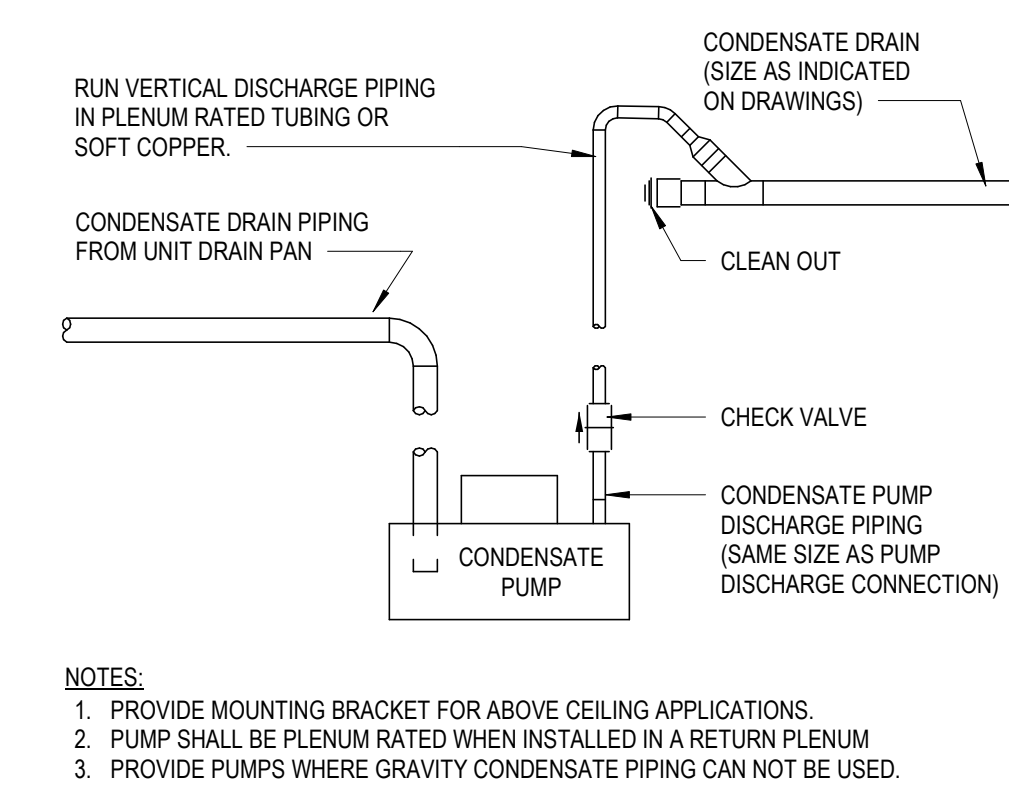
9 BACKFLOW PREVENTER DRAIN
NOT TO SCALE



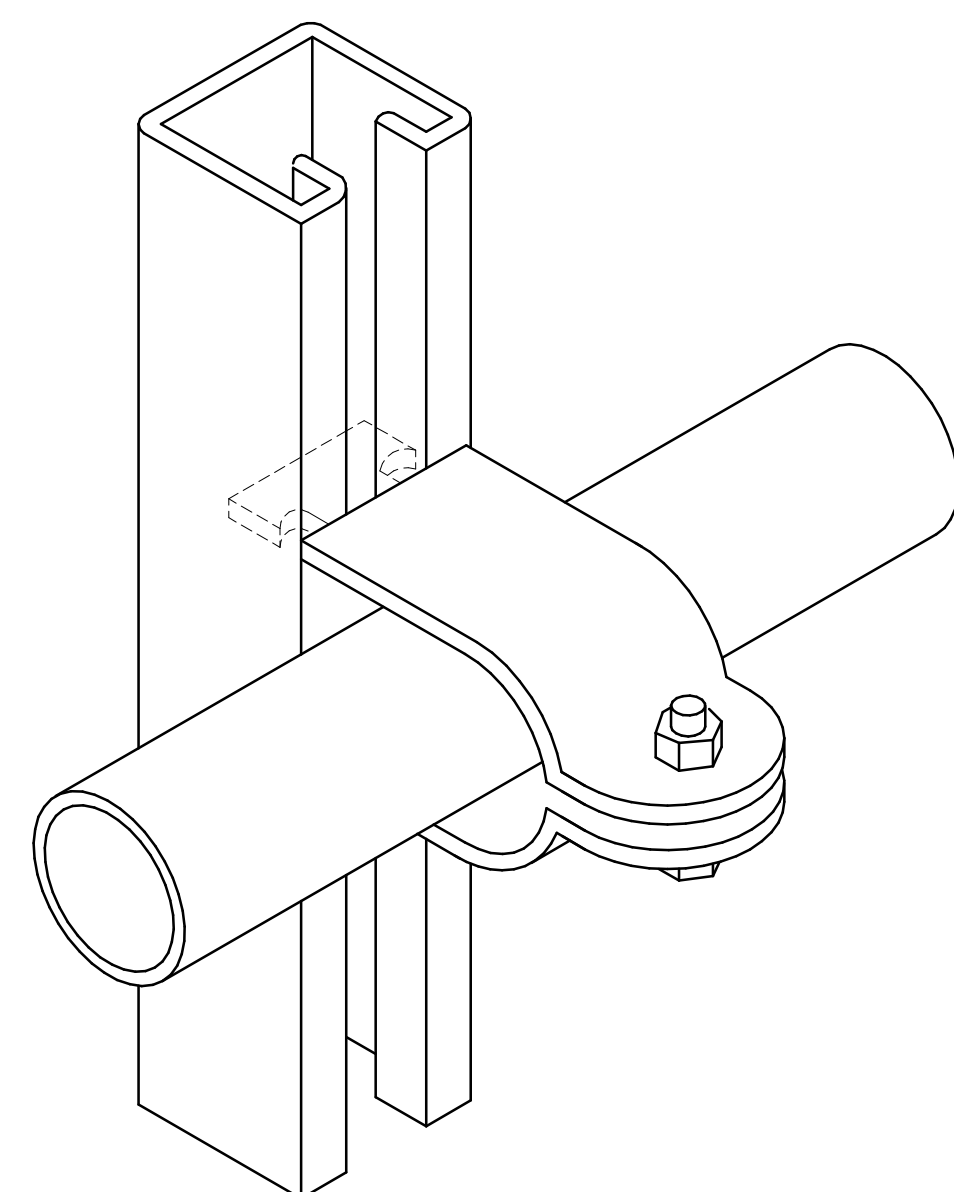
5 HUBLESS PIPE BRACING FOR HORIZONTAL PIPING
NOT TO SCALE



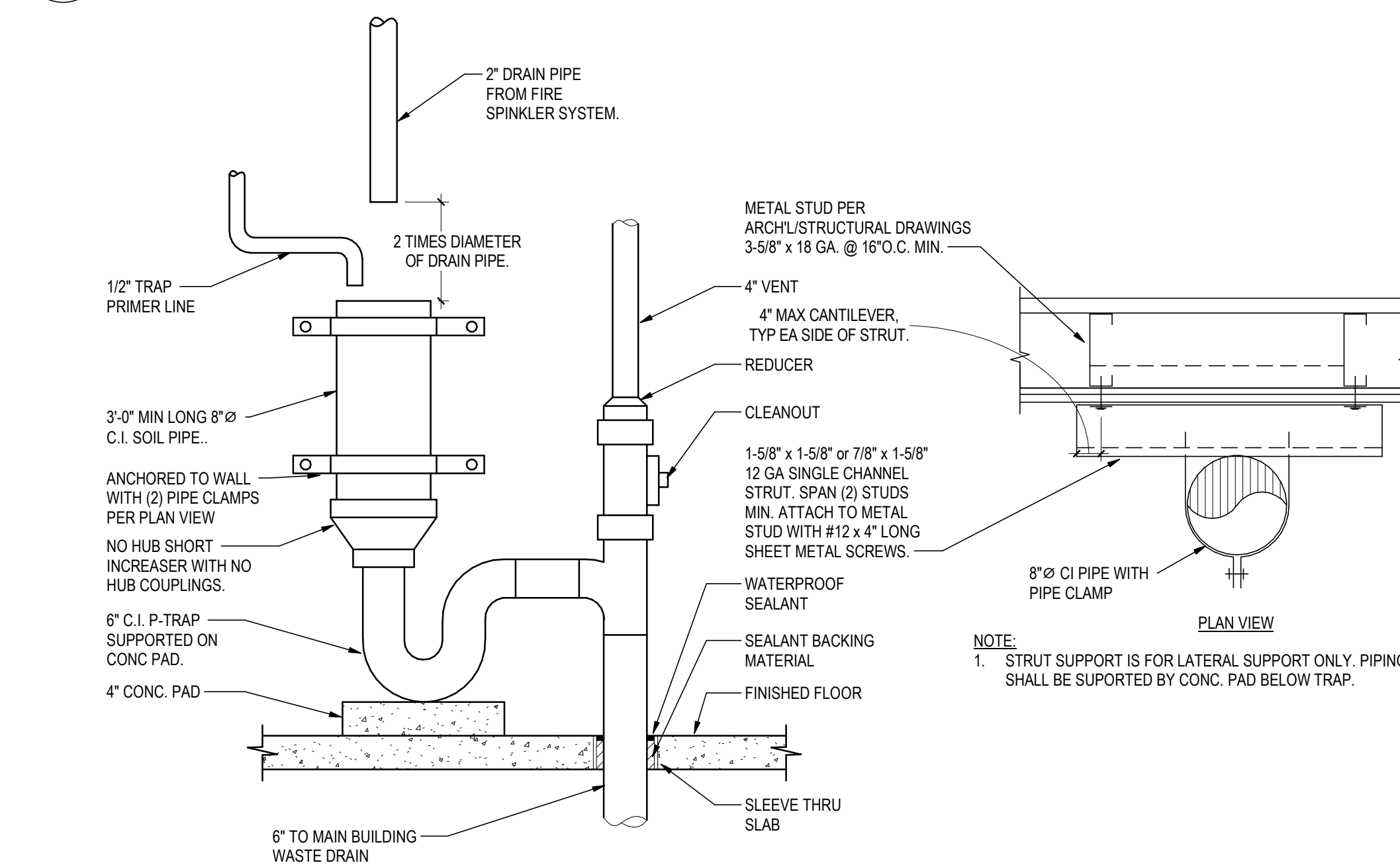
1 SUBMERSIBLE DUPLEX SUMP PUMP
1/8" = 1'-0"



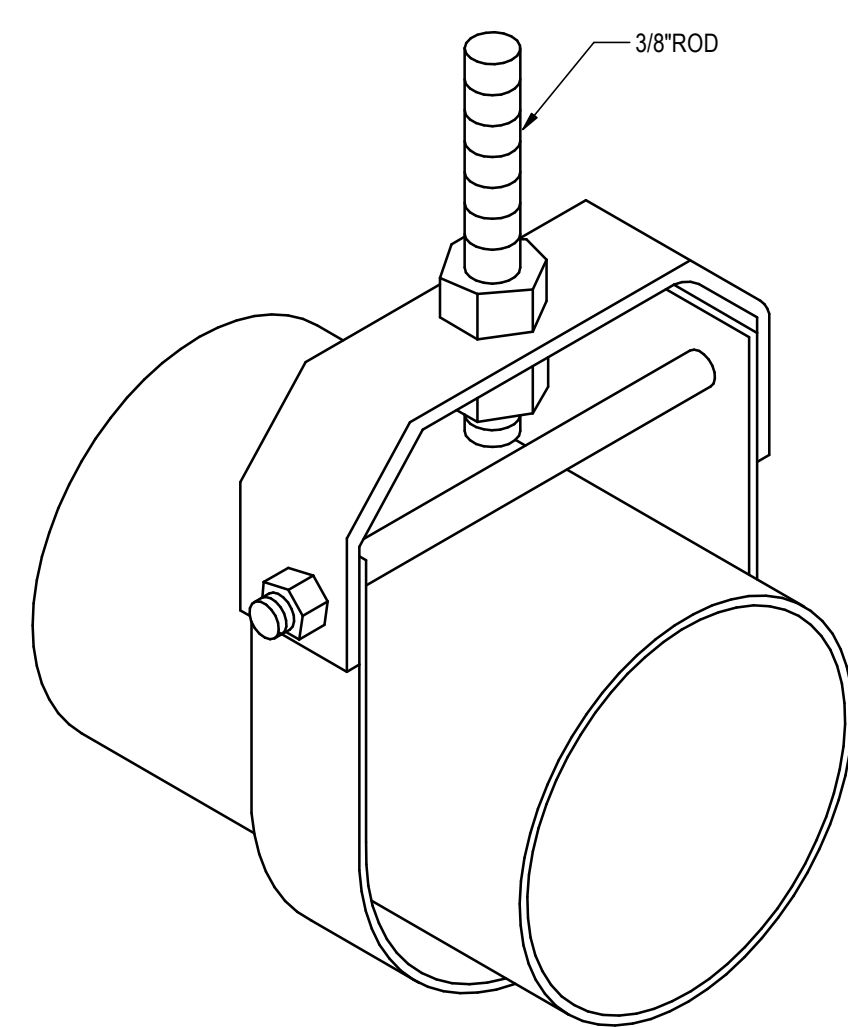
10 CONDENSATE PUMP PIPING DETAIL
12" = 1'-0"



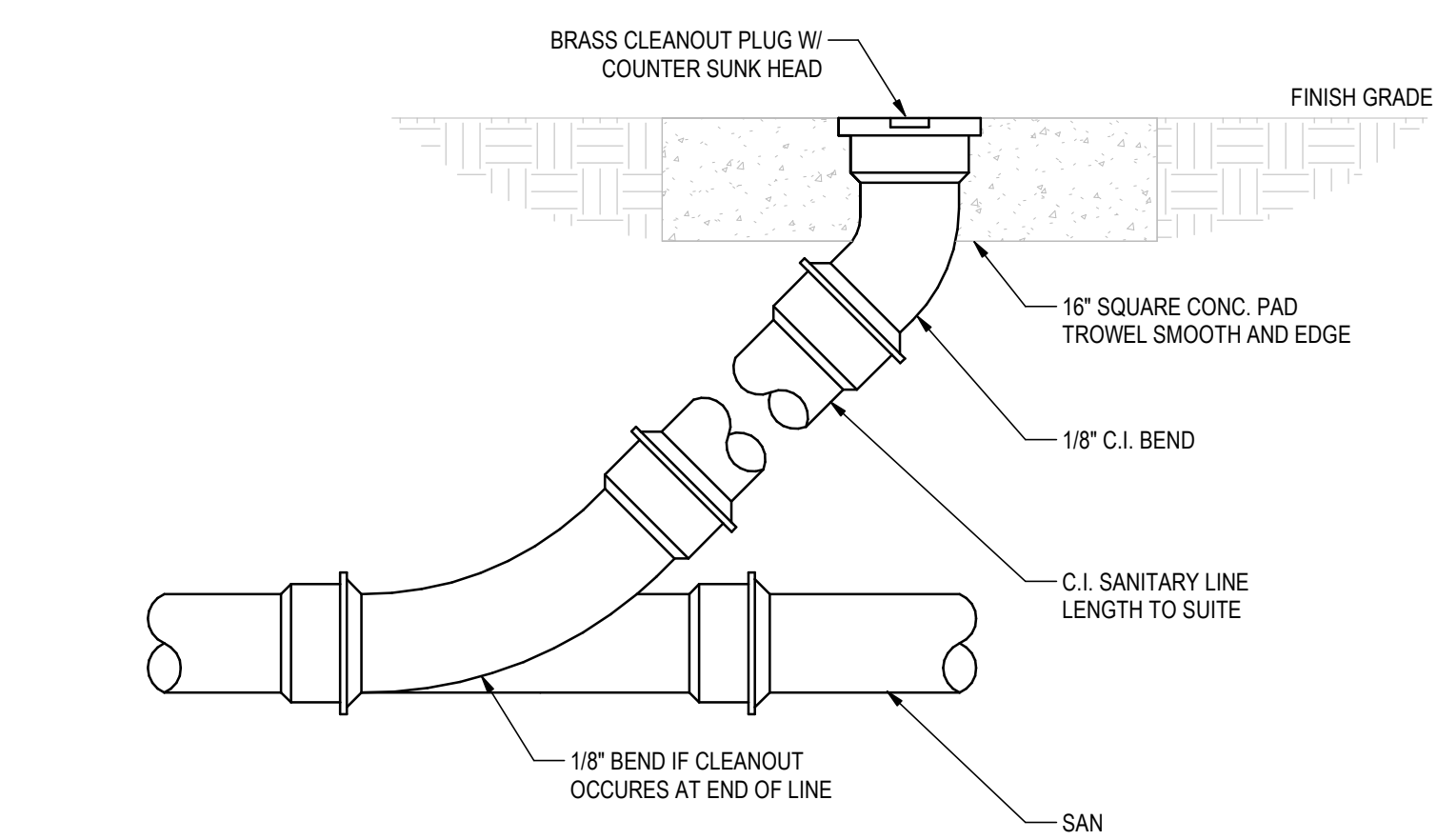
6 WALL BRACKET DETAIL
NOT TO SCALE



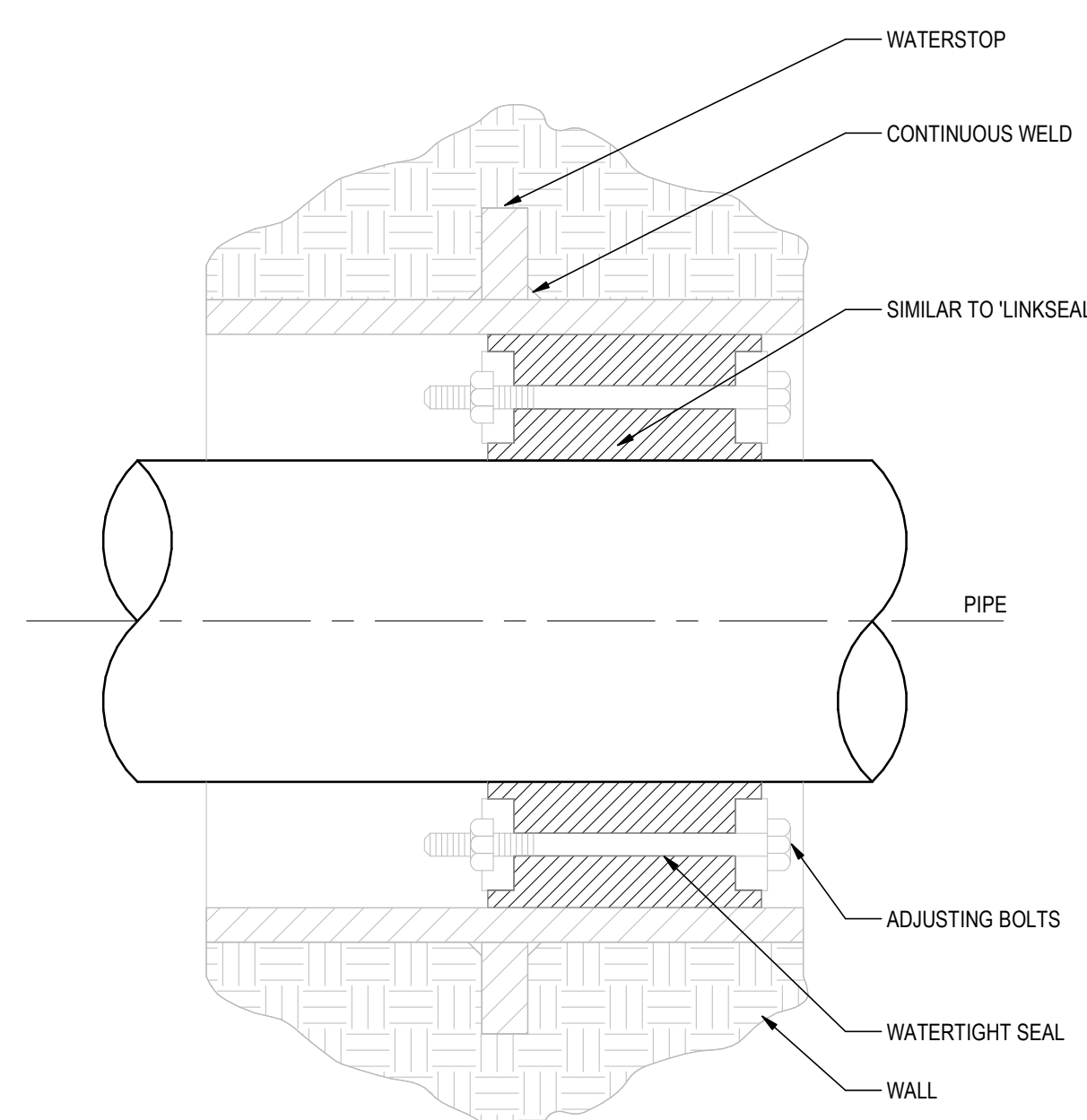
2 HUB DRAIN DETAIL (HD-1)
12" = 1'-0"



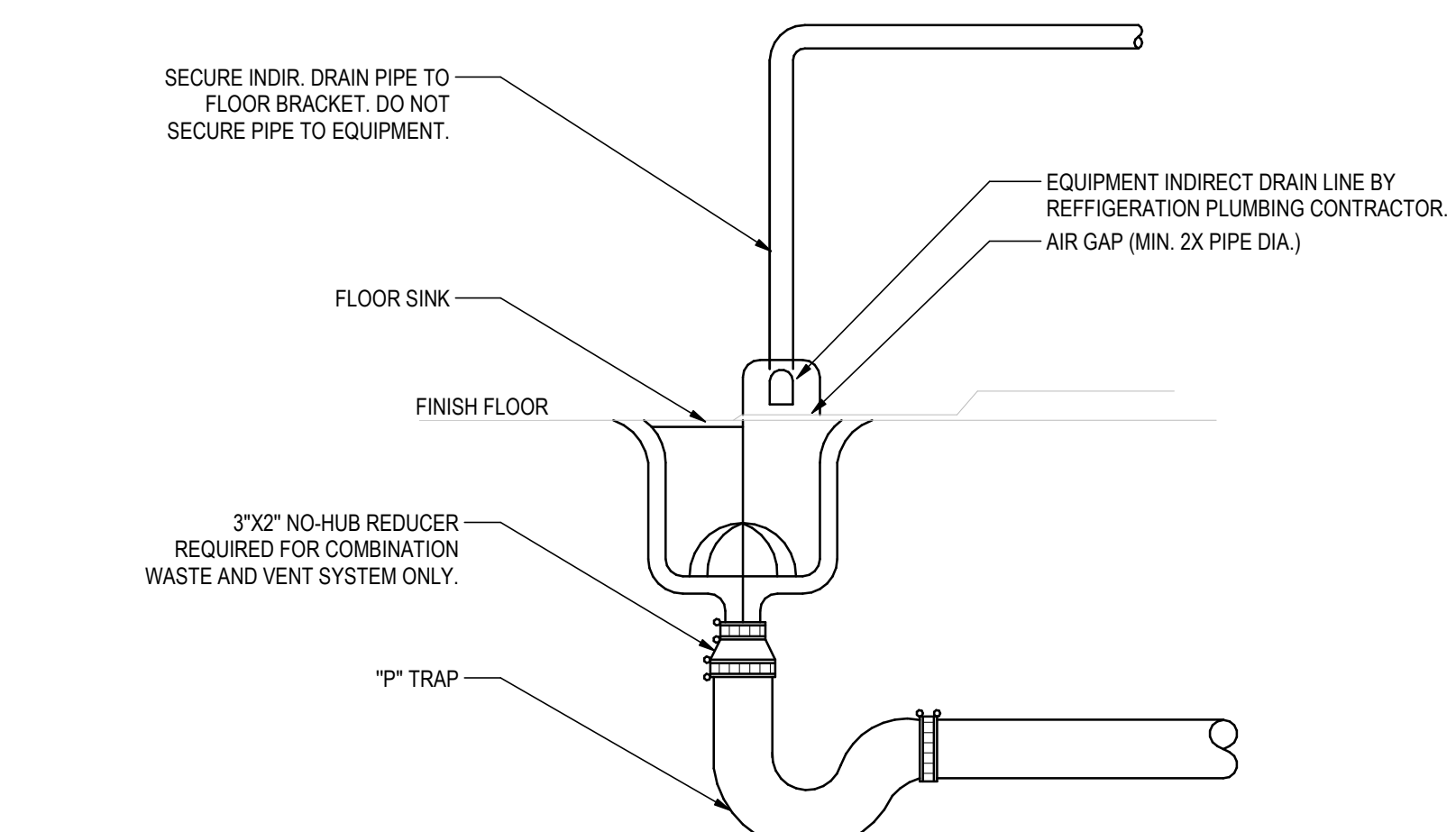
7 CEILING HANGER DETAIL
NOT TO SCALE



3 CLEANOUT TO GRADE
NOT TO SCALE



8 TYPICAL EXTERIOR WALL PENETRATION WALL GRADE
NOT TO SCALE



4 TYPICAL INDIRECT DRAIN DISCHARGE DETAIL
NOT TO SCALE