

SCOPE OF WORK

1. THE MECHANICAL PLANS INCLUDE THE ADDITION OF (1) 77 TON CHILLED WATER COOLED COMPUTER ROOM AIR HANDLING UNIT TO THE LEVEL 1 UPS ROOM, AND (1) TRANSFER FAN TO THE BATTERY ROOM. THE COMPUTER ROOM ENERGY CALCULATIONS WERE PROVIDED IN THE ORIGINAL PROJECT FOR THE TWO SPACES MECHANICAL WORK PERMIT NO. PRCTI20240275 THE TRANSFER FAN OPERATES TO PROVIDE COOLING ONLY IN AN EVENT THAT THE BATTERIES DISCHARGE AIR-COOLED CHILLERS, WHICH IS UNLIKELY AND THEREFORE DOES NOT IMPACT THE NORMAL COOLING OR ENERGY USE OF THE SPACES.

NOTE: NOT ALL SYMBOLS, SYSTEMS, AND

ABBREVIATIONS MAY BE USED ON THIS PROJECT

PROJECT DIRECTORY **VICINITY MAP** BENAROYA CAPITAL, LLC 9675 SE 36TH STREET, SUITE 115 MERCER ISLAND, WA 98040 MAIN PHONE: 253-200-4120 CONTACT: DAVID VRANIZAN PROJECT SITE 206-774-1011 DAVEV@BENAROYA.COM CASCADE MISSION CRITICAL, LLC 36TH AVENUE N.E. MAIN PHONE: 206-294-1288 CONTACT: LEONARD A. RUFF, AIA PHONE: 206-294-1288 EMAIL: LEONARD.RUFF@CASCADE MISSIONCRITICAL.COM 37TH AVE. SE STRUCTURAL ENGINEER
BRIENEN STRUCTURAL ENGINEERS 3. THERE IS NO CHANGE TO THE CONTINUOLUS OPERATION OF THE EXHAUST 1316 CENTRAL AVENUE SOUTH, SUITE 200 FAN(S) FOR THE BATTERY ROOM, AND NO CHANGES TO THE EXISTING FIRE SMOKE DAMPERS SEPARATING THE TWO ROOMS. MAIN PHONE: 206-397-0000 CONTACT: BRANDON BEAUDETTE, P.E. PHONE: 206-397-000 X104 EMAIL: BBAUDETTE@BSE-PS.COM 39TH AVE. SE NO SCALE

PROJECT INFORMATION

PROJECT ADDRESS 1023 39TH AVENUE SE PUYALLUP, WA 98374-2121 PARCEL NUMBER 0419034037 LEGAL DESCRIPTION SECTION 03 TOWNSHIP 19 RANGE 04 QUARTER 43 PARCEL "1" OF ROS 2007-04-30-5001 (AFF OF MIN OR CORR SURVEY 2007102600450) COM AT S $\frac{1}{4}$ COR OF SEC TH N 86 DEG 31 MIN 42 SEC W 2621.06 FT FROM SE COR TH N OO DEG OO MIN 24 SEC E 676.33 FT TO POB TH CONT N 00 DEG 00 MIN 24 SEC E 1923.18 FT TO A PT S 00 DEG 00 MIN 24 SEC W 30.21 FT TH S 87 DEG 44 MIN 17 SEC E 1258.61 FT TH S 00 DEG 13 MIN 45 SEC W 1391.90 FT TH S 42 DEG 55 MIN 23 W 659.07 FT TH S 07 DEG 42 MIN 49 SEC E 686.42 FT TH N 87 DEG 01 MIN 38 SEC W 169.45 FT TH N 00 DEG 52 MIN 42 SEC E 672.42 FT TH N 89 DEG 59 MIN 36 SEC W 736.66 FT TO POB APPROVED SUBD BY CY OF PUYALLUP PLANNING DEPT

04/03/07 OUT OF 4-028 SEG 2008-0246 10/23/07CL DC11/19/07CL

———— FLOW LIMITING VALVE 2-WAY CONTROL VALVE (GENERIC) FIRE DAMPER TWO-WAY ELECTRIC CONTROL VALVE, BUTTERFLY TYPE 3-WAY CONTROL VALVE (GENERIC) SMOKE DAMPER THREE-WAY ELECTRIC CONTROL VALVE, BUTTERFLY TYPE SMOKE AND FIRE DAMPER SOLENOID 2-WAY CONTROL VALVE SOLENOID 3-WAY CONTROL VALVE FLOAT OPERATED VALVE ACTUATOR SAFETY OR RELIEF VALVE ∞ △ ANGLE VALVE → BOILER STOP AND CHECK VALVE — QUANTIT DOUBLE CHECK VALVE ASSEMBLY SIZE (IN.) VOLUME (CFM) SUCTION DIFFUSER KO OPTIONAL ARROWS SHOW THE FLOW DIRECTION. Y-STRAINER (GENERIC) ——⊗—— STEAM TRAP (GENERIC) △ • • ✓ AUTOMATIC AIR VENT √ ∤ MANUAL AIR VENT VACUUM BREAKER ROUND DIFFUSER, SUPPLY SHOCK ABSORBER LINEAR DIFFUSER TEMPERATURE GAUGE PRESSURE GAUGE TEMPERATURE AND PRESSURE TRAP UNDERCUT DOOR SIGHT FLOW GLASS --------DOOR GRILLE OR LOUVER ☐ ☐ ○ — EXX FLEXIBLE CONNECTOR TRANSFER GRILLE OR LOUVER EXPANSION JOINT —= GUIDE QUANTITY —× ANCHOR —► FLOW ARROW ____ PIPING SLOPE CAPACITY (MBH) ——— PIPE CAP ———→ PIPE BREAK → PIPE CROSS O PIPING ELBOW UP C PIPING ELBOW DOWN ——— PIPING TEE UP — ÷ PIPING TEE DOWN ∘ ∘ • — | — UNION CONNECTION □ □ □ CONCENTRIC REDUCER □ □ ◎ —□ ECCENTRIC REDUCER

STANDARD CLEAN-OUT IN LINE END OF RUN

STANDARD CLEAN-OUT THROUGH FLOOR END OF RUN

STANDARD CLEAN-OUT THROUGH FLOOR IN LINE

Y-PATTERN MANUAL BALANCING/SHUT-OFF VALVE

DIFFERENTIAL PRESSURE CONTROL VALVE

PRESSURE INDEPENDENT CONTROL VALVE

———

⊸▼—

WORK DEFINITION

----- NEW WORK (N) ——— EXISTING (E) ---- REMOVE EXISTING (D) REMOVE EXISTING EQUIPMENT (D) — — — FUTURE — - - — TEMPORARY, AS NOTED RELOCATE (R) **KEY NOTE** ### **EQUIPMENT IDENTIFICATION** CONNECTION TO EXISTING DISCONNECT (CUT AND CAP) (HVAC)

PIPING SYSTEMS (HVAC)

______2 1/2"—_____ PIPE SIZE

BBD BOILER BLOWDOWN

BFW BOILER FEED WATER

CHWR——— CHILLED WATER RETURN

CHWS——— CHILLED WATER SUPPLY

CHWR(G)———— CHILLED WATER RETURN - GLYCOL

CHWR(P) CHILLED WATER RETURN - PROCESS

CHWS(G)——— CHILLED WATER SUPPLY - GLYCOL

CHWS(P) CHILLED WATER SUPPLY - PROCESS

CWR(CT)—CONDENSER WATER RETURN - COOLING TOWER

CWS(CT)——— CONDENSER WATER SUPPLY - COOLING TOWER

DTR—DUAL TEMPERATURE RETURN (HOT OR CHILLED)

DUAL TEMPERATURE SUPPLY (HOT OR CHILLED)

CWR—CONDENSER WATER RETURN

CSW——— CONDENSER WATER SUPPLY

FCFS—FLUID COOLER FILTRATION SUPPY

FCFR FLUID COOLER FILTRATION RETURN

HPWR—HEAT RECOVERY LOOP RETURN

HRR—HEAT RECOVERY LOOP RETURN

HRS—HEAT RECOVERY LOOP SUPPLY

HWR(G)——— HEATING WATER RETURN - GLYCOL

HWS(G)—HEATING WATER SUPPLY - GLYCOL

HEATING WATER SUPPLY

HEATING WATER RETURN

HPWS——— HEAT PUMP WATER SUPPLY

FOF—FUEL OIL FILL

FOR—FUEL OIL RETURN

FOS———FUEL OIL SUPPLY

FOV——— FUEL OIL VENT

G———— NATURAL GAS

RAD RADON GAS

RV—RELIEF VENT

r r BALL VALVE

→ D PLUG VALVE

GV——— NATURAL GAS VENT

REF(HG) REFRIGERANT HOT GAS

REF(L) REFRIGERANT LIQUID

REF(S) REFRIGERANT SUCTION

S(##) STEAM (NOMINAL PRESSURE)

CS(##) STEAM - CLEAN (NOMINAL PRESSURE)

STEAM VENT

REAL OBJECT SYMBOL PIPING COMPONENTS

GLOBE VALVE

—₩— NEEDLE VALVE

□ — BALANCING VALVE

☐ — CHECK VALVE (GENERIC)

BUTTERFLY VALVE NPS 6 AND LESS

PIPE INSULATION

→ ISOLATION VALVE (GENERIC)

STEAM CONDENSATE (NOMINAL PRESSURE)

BUTTERFLY VALVE NPS 8 AND MORE

PC(##) STEAM PUMPED CONDENSATE (NOMINAL PRESSURE)

REF(V) REFRIGERANT VENT

BR-BRINE RETURN

BS BRINE SUPPLY

*NOTE: ALL DUCT SIZES ARE INTERIOR, FREE DIMENSIONS

ALWAYS WIDTH (HORIZONTAL DIM.) x HEIGHT (VERTICAL DIM.) → AIR FLOW ARROW 18"x12"

→ 18"x12"
RECTANGULAR DUCT AND SIZE* --18"ø $--\frac{1}{3}$ ROUND DUCT AND SIZE* 18"x12" EXTERIOR DUCT TREATMENT* —18"x12"—— RECTANGULAR DUCT WITH ACOUSTIC LINING* DUCT SECTION, SUPPLY AIR. APPLIES TO RECT., ROUND AND OVAL DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL DUCT SECTION, RETURN AIR. APPLIES TO RECT., ROUND AND OVAL _{{\}}}_{}}}} FLEXIBLE DUCT

- UP

DUCT SECTION, EXHAUST AIR, APPLIES TO RECT., ROUND AND OVAL ELBOW TURN, SUPPLY DOWN. APPLIES TO RECT., ROUND AND OVAL DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL CHANGE IN DUCT ELEVATION RISING IN DIRECTION INDICATED CHANGE IN DUCT ELEVATION DROPPING IN DIRECTION INDICATED ELBOW, RECTANGULAR, SMOOTH RADIUS WITH SPLITTER VANES (0.25 R/W DEFAULT) ELBOW, RECTANGULAR, SMOOTH RADIUS WITHOUT VANES

ELBOW, ROUND, SMOOTH RADIUS (1.5 R/W DEFAULT) MITERED ELBOW, RECTANGULAR, WITHOUT VANES

MITERED ELBOW, RECTANGULAR, WITH TURNING VANES RECTANGULAR TO ROUND TRANSITION

DUCT ACCESS DOOR (TOP, SIDE, BOTTOM)

FLEXIBLE CONNECTION

BACKDRAFT DAMPER CABLE OPERATED DAMPER

MANUAL DAMPER

MOTORIZED DAMPER

PRESSURE INDEPENDENT REGULATOR

DUCT SILENCER/TRANSFER ELBOW CONTROL DEVICE (REFER TO CONTROLS LEGEND)

AIR FLOW MEASURING STATION (REFER TO CONTROLS LEGEND)

AIR OUTLET OR INLET TAG)REFER TO SCHEDULE RECTANGULAR DIFFUSER, SUPPLY.

RECTANGULAR REGISTER OR GRILLE, RETURN

RECTANGULAR REGISTER OR GRILLE, EXHAUST

SIDEWALL REGISTER OR GRILLE, SUPPLY SIDEWALL GRILLE, RETURN OR EXHAUST

COIL (REFER TO CONTROLS LEGEND)

LENGTH (FT.) RADIATION HEATING TAG (REFER TO SCHEDULE)

ABBREVIATIONS EQUIPMENT IDENTIFICATION

DIFF

DWG

DIFFERENTIAL

DIVISION

DRAWING

EXHAUST AIR

EA (D) EXHAUST AIR, DISHWASH

EA (G) EXHAUST AIR, GENERAL

EA (K) EXHAUST AIR, KITCHEN

EA (LAB) EXHAUST AIR, LABORATORY

EA (W) EXHAUST AIR, WASHROOM

EAV EXHAUST AIR VALVE

SYSTEM

FAIL CLOSED

FAIL OPEN

FOOT/FEET

GALLON (US)

GEODETIC

HOUR

INCHES

IN WG INCHES WATER GAUGE

KILOWATT HOUR

KILOWATT

POUNDS

METER

MAXIMUM

VALUES

MANUFACTURER

PROTECTION

NOT APPLICABLE

NOISE CRITERIA

NORMALLY CLOSED

NOT IN CONTRACT

NOMINAL PIPE SIZE

OWNER FURNISHED, CONTRACTOR

OWNER FURNISHED EQUIPMENT

OWNER FURNISHED / OWNER

PROPYLENE GLYCOL

POINT OF ENTRANCE

POINT OF SERVICE

PARTS PER MILLION

POLYVINYL CHLORIDE

RELATIVE HUMIDITY

REVOLUTIONS PER MINUTE

SEASONAL ENERGY EFFICIENCY

STAIR PRESSURIZATION AIR (*)

SAFETY RELIEF VALVE

TOTAL STATIC PRESSURE

UNDER CUT (DOOR)

VARIABLE AIR VOLUME

WET BULB TEMPERATURE

VARIABLE FREQUENCY DRIVE

UNDERGROUND

VERIFY IN FIELD

VENT-THRU-ROOF

TRANSFER AIR

TEMPERATURE

ABSOLUTE

RETURN AIR

RELIEF AIR

RATION

SP STATIC PRESSURE

TSTAT THERMOSTAT

TYPICAL

WITH

ZONE CELSIUS

WITHOUT

WATER GAUGE

FAHRENHEIT

REQD REQUIRED

RELA

SRV

TEMP

TSP

TYP

UC

VAV

VTR

W/O

WG

ZN-#

POUNDS PER SQUARE INCH

POUNDS PER SQUARE INCH.

POUNDS PER SQUARE INCH, GAGE PNEUMATIC TUBE STATION

NORMALLY OPEN

NOT TO SCALE

OUTSIDE AIR

INSTALLED

THOUSAND OF BTUH

MINIMUM CIRCUIT AMPS

MAXIMUM OVERCURREN

MEAN WATER TEMPERATUR

LINEAR FEET

GAUGE

GEO

GPM

HEPA

kWh

FEET PER MINUTI

FEET PER SECOND

GENERAL CONTRACTO

GALLONS PER MINUTE

HORSEPOWER

CONDITIONING

INVERT ELEVATION

INTEGRATED PART LOAD VALUE

LEAVING AIR TEMPERATURE

LEAVING WATER TEMPERATURE

MINIMUM EFFECIENCY REPORTING

FP FIRE PROTECTION

EAT ENTERING AIR TEMPERATURE

(DEMOLITION PLANS)

ETHELYENE GLYCOL

ENERGY EFFICIENCY RATIO

CONSTRUCTION PLANS)

(DEMOLITION PLANS)

FULL LOAD AMPERAGE

DOWN

A/C AIR CONDITIONING UNIT AB-# AIR BLENDER AUTOMATIC AIR VENT AC-# AIR COMPRESSOR ACU-# AIR CONDITIONING UNIT AMERICANS WITH DISABILITIES ACT ADS-# AIR AND DIRT SEPARATOR **ADJUSTABLE** AF-# AIR FILTER ABOVE FINISHED CEILING ABOVE FINISHED FLOOR AHU-# AIR HANDLING UNIT ABOVE FINISHED GRADE AS-# AIR SEPARATOR ATU-# AIR TERMINAL UNIT ABOVE FINISH ROOF **AUTHORITY HAVING JURISDICTION** BOILER ACCESS PANEL BCU-# BLOWER COIL UNIT BT-# BATH TUB AIR PRESSURE DROP CB-# CHILLED BEAM **BUILDING AUTOMATION SYSTEM** CC-# COOLING COIL BACKDRAFT DAMPER CH-# CHILLER CONV-# CONVECTOR BRAKE HORSEPOWER BUILDING MANAGEMENT SYSTEM CRU-# CONDENSATE RETURN UNIT BOD BOTTOM OF DUCT CT-# COOLING TOWER CU-# CONDENSING UNIT BOTTOM OF PIPE BRITISH THERMAL UNIT CUH-# CABINET UNIT HEATER BRITISH THERMAL UNIT PER HOUR CV-# CONTROL VALVE COMPLETE WITH DAC-# DOOR AIR CURTAIN DC-# DUST COLLECTOR CONSTANT AIR VOLUME CIRCUIT BALANCING VALVE DCT-# DECONTAMINATION TANK **CUBIC FEET PER MINUTE** DCVA-# DOUBLE CHECK VALVE ASSEMBLY DRY BULB TEMEPRATURE DF-# DRINKING FOUNTAIN DECIBEL(S) A-WEIGHTED DECIBLES DDC DIRECT DIGITAL CONTROL DEG DEGREE DIA./Ø DIAMETER

DG-# DOOR GRILLE DS-# DUCT SILENCER DU-# DEHUMIDIFICATION UNIT DWH-# DOMESTIC WATER HEATER E-# EXHAUST GRILLE / REGISTER / DIFFUSER EL-# EXPANSION LOOP ERC-# ENERGY RECOVERY COIL ERU-# ENERGY RECOVERY UNIT EMERGENCY SHOWER ETU-# EXHAUST TERMINAL UNIT EWC-# ELECTRIC WATER COOLER EWS-# EYE WASH STATION F(C)-# FAN CEILING

F(E)-# FAN EXHAUST EA (LD) EXHAUST AIR, LAUNDRY/DRYER F(LE)-# FAN LABORATORY EXHAUST F(R)-# FAN RETURN F(S)-# FAN SUPPLY F(T)-# FAN TRANSFER ELECTRONICALLY COMMUNICATED F-# FAN FCU-# FAN COIL UNIT EXISTING TO BE DEMOLISHED

FLOOR DRAIN FFU-# FAN FILTER UNIT FPP-# FIRE PROTECTION PUMP FPTU-# FAN POWERED TERMINAL UNIT ENERGY MANAGMENT CONTROL FTR-# FINNED TUBE RADIATOR FUR-# FURNACE

EXISTING RELOCATED (NEW GFS-# GLYCOL FEED SYSTEM GSG-# GAS-FIRED STEAM GENERATOR(*) EXISTING TO BE RELOCATED H(C)-# HOOD (CANOPY) H(HC)-# HOOD (HEAT AND CONDENSATE) EXTERNAL STATIC PRESSURE H(I)-# HOOD (INTAKE) EWT ENTERING WATER TEMPERATURE H(K)-# HOOD (KITCHEN) EXIST / E EXISTING (DEMOLITION PLANS) H(R)-# HOOD (RELIEF) H(RH)-# HOOD (RANGE)

H-# HUMIDIFIER HC-# HEATING COIL HEAT PUMP HRU-# HEAT RECOVERY UNIT HT-# HYDROPNEUMATIC TANK HX-# HEAT EXCHANGER LATU-# LAB AIR TERMINAL UNIT

LAV-# LAVATORY MAC-# MEDICAL AIR COMPRESSOR MAU-# MAKEUP AIR UNIT MD-# MOTORIZED DAMPER HIGH EFFICIENCY PARTICULATE AII MSK-# MOP SINK MV-# MIXING VALVE MVP-# MEDICAL VACUUM PUMP HEATING / VENTILATING / AIR

PDU-# POOL DEHUMIDIFICATION UNIT PRV-# PRESSURE REDUCING VALVE PTAC-# PACKAGED TERMINAL AIR CONDITIONER INTEGRATED ENERGY EFFECIENCY RETURN AIR GRILLE / REGISTER / DIFFUSER RD-# ROOF DRAIN RH-# RANGE HOOD

RP-# RADIANT PANEL RPBP-# REDUCED PRESSURE BACKFLOW PREVENTER RTU-# ROOFTOP UNIT S-# SUPPLY GRILLE / REGISTER / DIFFUSER SH-# SHOWER

SPC-# SOLAR PANEL COLLECTOR SSF-# SIDE STREAM FILTER T(B)-# TANK (BUFFER TANK) T(E)-# TANK (EXPANSION TANK)

TANK (HYDRO PNEUMATIC TANK) T(S)-# TANK (STORAGE TANK) TRANSFER AIR GRILLE UH-# UNIT HEATER UR-# URINAL USG-# UNFIRED STEAM GENERATOR

UV-# UNIT VENTILATOR VA-# VALVE VFD-# VARIABLE FREQUENCY DRIVE WC-# WATER CLOSET WS-# WATER SOFTENER L-# LOUVER

> City of Puyallup Building **REVIEWED FOR** COMPLIANCE **BSnowden** 11/01/2024 7:52:13 AM

The approved construction plans, documents, and all engineering must be posted on the job at all inspections in a visible and readily accessible location.

Full sized legible color plans are required to be provided by the permitee on site for inspection.

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. The contractor is responsible for making sure that the building complies with all applicable codes and regulations of the local government.



PRCTI20240275 - Revision 2

Transfer Fan Between UPS

This set does not replace the

Room and Battery Room.

originally approved set.

Stantec 720 3rd Avenue Suite 1500 Seattle Washington 98104-1878

(206) 667-0555

MECHANICAL DRAWINGS

City of Puyallup evelopment & Permitting Services **ISSUED PERMIT** Building Planning Public Works Engineering Traffic

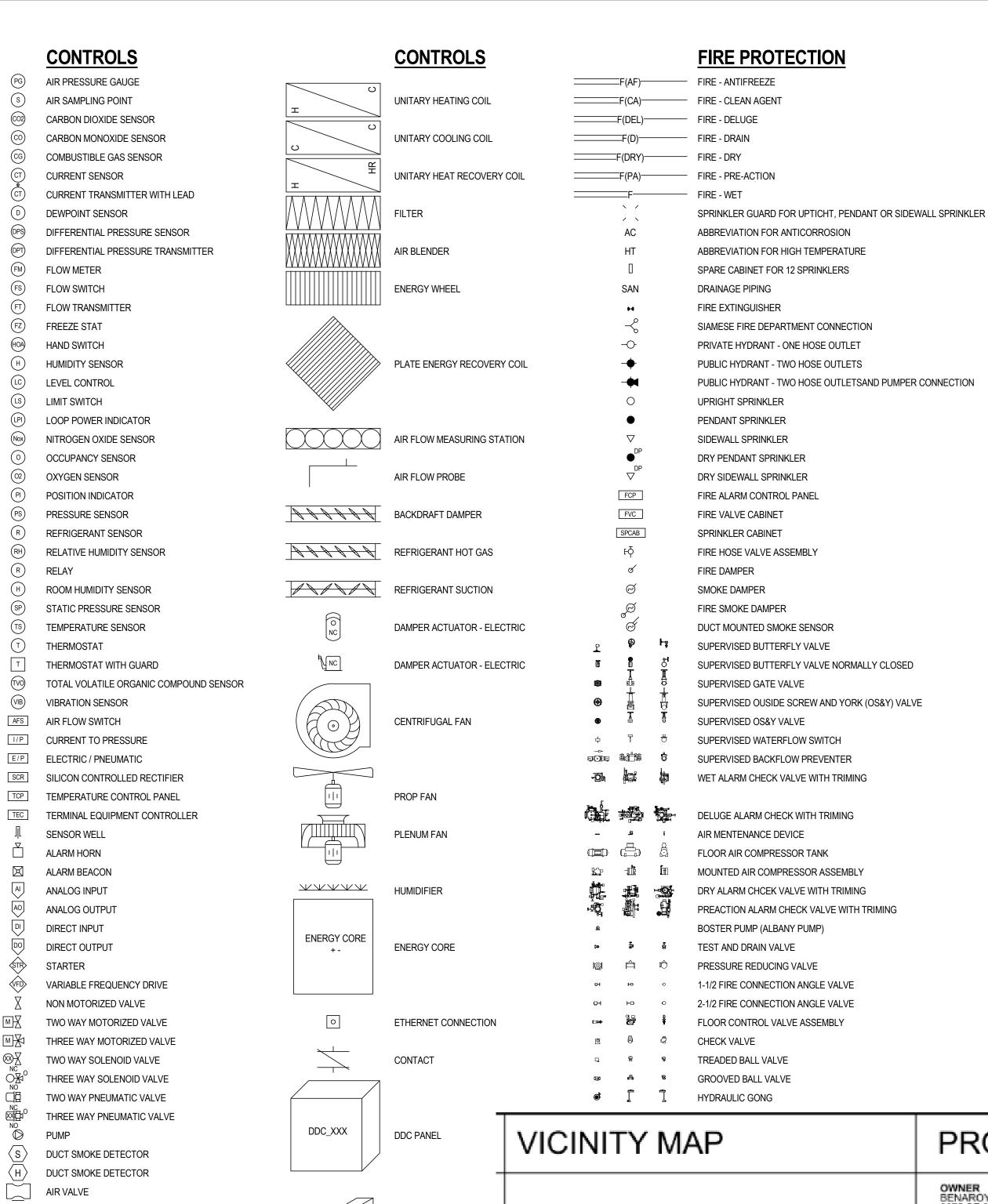


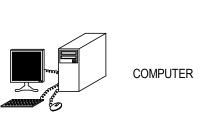
Revision No. Description VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

ABBREVIATIONS

MECHANICAL

LEGEND AND





DRAWING INDEX M.VP2.001 MECHANICAL LEGEND AND ABBREVIATIONS M.VP2.010 MECHANICAL SCHEDULES & GENERAL NOTES M.VP2.102 MECHANICAL LEVEL 1 PLAN M.VP2.202 MECHANICAL LEVEL 1 PIPING PLAN M.VP2.301 MECHANICAL LEVEL 1 ENLARGED PLAN M.VP2.501 MECHANICAL DETAILS

SCOPE OF WORK

M.VP2.601 MECHANICAL DIAGRAMS

- 1. THE MECHANICAL PLANS INCLUDE THE ADDITION OF (1) 77 TON CHILLED WATER COOLED COMPUTER ROOM AIR HANDLING UNIT TO THE LEVEL 1 UPS ROOM, AND (1) TRANSFER FAN TO THE BATTERY ROOM. THE COMPUTER ROOM ENERGY CALCULATIONS WERE PROVIDED IN THE ORIGINAL PROJECT FOR THE TWO SPACES PR#### . THE TRANSFER FAN OPERATES TO PROVIDE COOLING ONLY IN AN EVENT
- THAT THE BATTERIES DISCHARGE AIR-COOLED CHILLERS, WHICH IS UNLIKELY AND THEREFORE DOES NOT IMPACT THE NORMAL COOLING OR ENERGY USE OF THE SPACES. 3. THERE IS NO CHANGE TO THE CONTINUOLUS OPERATION OF THE EXHAUST

| OMPUTER | PROJECT SITE PR | MAIN PHONE: 253-200-4120 CONTACT: DAVID VRANIZAN 206-774-1011 DAVEV@BENAROYA.COM ARCHITECT CASCADE MISSION CRITICAL, LLC 6210 36TH AVENUE N.E. SEATTLE, WA 98115 MAIN PHONE: 208-294-1288 CONTACT: LEONARD A. RUFF, AIA PHONE: 206-294-1288 EMAIL: LEONARD.RUFF@CASCADE MISSIONCRITICAL.COM STRUCTURAL ENGINEER BRIENEN STRUCTURAL ENGINEERS 1316 CENTRAL AVENUE SOUTH, SUITE 200 KENT, WA 98032 MAIN PHONE: 208-397-0000 CONTACT: BRANDON BEAUDETTE, P.E. PHONE: 206-397-000 X104 EMAIL: BBAUDETTE@BSE-PS.COM |
|---------|--|--|
| | PROJECT INFORMATION | SCOPE OF WORK |
| | PROJECT ADDRESS 1023 39TH AVENUE SE PUYALLUP, WA 98374-2121 PARCEL NUMBER 0419034037 LEGAL DESCRIPTION SECTION 03 TOWNSHIP 19 RANGE 04 QUARTER 43 PARCEL "1" OF ROS 2007-04-30-5001 (AFF OF MIN OR CORR SURVEY 2007102600450) COM AT S ½ COR OF SEC TH N 86 DEG 31 MIN 42 SEC W 2621.06 FT FROM SE COR TH N 00 DEG 00 MIN 24 SEC E 676.33 FT TO POB TH CONT N 00 DEG 00 MIN 24 SEC E 1923.18 FT TO A PT S 00 DEG 00 MIN 24 SEC W 30.21 FT TH S 87 DEG 44 MIN 17 SEC E 1258.61 FT TH S 00 DEG 13 MIN 45 SEC W 1391.90 FT TH S 42 DEG 55 MIN 23 W 859.07 FT TH S 07 DEG 42 MIN 49 SEC E 686.42 FT TH N 87 DEG 01 MIN 38 SEC W 169.45 FT TH N 00 DEG 52 MIN 42 SEC E 672.42 FT TH N 89 DEG 59 MIN 36 SEC W 736.66 FT TO POB APPROVED SUBD BY CY OF PUYALLUP PLANNING DEPT 04/03/07 OUT OF 4-028 SEG 2008-0246 10/23/07CL DC11//19/07CL | WORK UNDER THIS PERMIT INTERIOR TENANT IMPROVEMENTS TO CONSTRUCT 1,474 S.F. BATTERY ROOM AND 2,223 S.F. UPS ELECTRICAL ROOM. WORK UNDER SEPARATE PERMITS ELECTRICAL WORK MECHANICAL WORK FOR THIS AREA SUBMITTED UNDER PERMIT NO. PRCT120240275 |

FAN(S) FOR THE BATTERY ROOM, AND NO CHANGES TO THE EXISTING FIRE SMOKE DAMPERS SEPARATING THE TWO ROOMS.

MAN HOLE **ROOF DRAIN** FD 🕖 FLOOR DRAIN FFD Ø FUNNEL FLOOR DRAIN TRAP PRIMER HOSE BIBB PLUMBING FIXTURES PROJECT DIRECTORY BENAROYA CAPITAL, LLC 9675 SE 36TH STREET, SUITE 115 MERCER ISLAND, WA 98040

PLUMBING SYSTEMS

______2 1/2"———— PIPE SIZE

ACID VENT

ACID WASTE

BBD———BOILER BLOWDOWN

CD———— CONDENSATE DRAIN

DIONIZED WATER

DISTILLED WATER

DCW— - — DOMESTIC COLD WATER

DHW— - - — DOMESTIC HOT WATER

DRAIN

GREASE WASTE

LABORATORY VENT

LABORATORY WASTE

GV———— NATURAL GAS VENT

MPG MEDIUM PRESSURE GAS

NPCW NON-POTABLE COLD WATER

NPHW NON-POTABLE HOT WATER

PTS——PNEUMATIC TRANSPORT

RO—RO REVERSE OSMOSIS

SAMPLING LINE

SAN SANITARY DRAIN

SAN(O)———— SANITARY DRAIN (OIL)

SAN(RAD)———— SANITARY RADIOACTIVE

ST(O) STORM DRAIN OVERFLOW

ST(P)———— STORM DRAIN PUMPED

VAC(EX)——— VACUUM PUMP EXHAUST

V(SE) VENT (SEWAGE EJECTOR)

PIPE INSULATION

FIXTURE TRAP

CATCH BASIN

SAN(P)———— SANITARY PUMPED

ST—STORM DRAIN

VAC VACUUM (AIR)

_____V—____VENT

CB \bigcirc

______PG-

G NATURAL GAS (LOW PRESSURE)

—— GARAGE DRAINAGE

NPCW(S)—NON-POTABLE COLD WATER SOFTENED

NPHW(S)——— NON-POTABLE HOT WATER SOFTENED

PROPANE GAS

ROR——— REVERSE OSMOSIS RECIRCULATION

PIPING ROUTED BELOW SLAB OR GRADE

CA(##) COMPRESSED AIR (NOMINAL PRESSURE)

CD(P) CONDENSATE DISCHARGE PUMPED

DIR DIONIZED WATER RECIRCULATING

DCW(S)—DOMESTIC COLD WATER SOFTENED

DHWR- - - - DOMESTIC HOT WATER RECIRCULATION

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

WORK DEFINITION PIPING SYSTEMS (HVAC) **ABBREVIATIONS EQUIPMENT IDENTIFICATION** ______2 1/2"—_____ PIPE SIZE ----- NEW WORK (N) BBD BOILER BLOWDOWN ——— EXISTING (E) A/C AIR CONDITIONING UNIT AB-# AIR BLENDER ---- REMOVE EXISTING (D) BFW BOILER FEED WATER AUTOMATIC AIR VENT AC-# AIR COMPRESSOR ACU-# AIR CONDITIONING UNIT AMERICANS WITH DISABILITIES ACT BR-BRINE RETURN REMOVE EXISTING EQUIPMENT (D) ADS-# AIR AND DIRT SEPARATOR **ADJUSTABLE** BS—BRINE SUPPLY — — — FUTURE AF-# AIR FILTER ABOVE FINISHED CEILING CHWR——— CHILLED WATER RETURN — - - — TEMPORARY, AS NOTED ABOVE FINISHED FLOOR AHU-# AIR HANDLING UNIT ABOVE FINISHED GRADE AS-# AIR SEPARATOR CHWR(G)———— CHILLED WATER RETURN - GLYCOL RELOCATE (R) ATU-# AIR TERMINAL UNIT ABOVE FINISH ROOF CHUR(P) CHILLED WATER RETURN - PROCESS **KEY NOTE** AUTHORITY HAVING JURISDICTION BOILER ACCESS PANEL BCU-# BLOWER COIL UNIT ### CHWS——— CHILLED WATER SUPPLY **EQUIPMENT IDENTIFICATION** BT-# BATH TUB AIR PRESSURE DROP CHWS(G)——— CHILLED WATER SUPPLY - GLYCOL CONNECTION TO EXISTING CB-# CHILLED BEAM CHUS(P)——— CHILLED WATER SUPPLY - PROCESS DISCONNECT (CUT AND CAP) **BUILDING AUTOMATION SYSTEM** CC-# COOLING COIL BACKDRAFT DAMPER CH-# CHILLER CWR—CONDENSER WATER RETURN (HVAC) CONV-# CONVECTOR BRAKE HORSEPOWER CWR(CT)—CONDENSER WATER RETURN - COOLING TOWER BUILDING MANAGEMENT SYSTEM CRU-# CONDENSATE RETURN UNIT *NOTE: ALL DUCT SIZES ARE INTERIOR, FREE DIMENSIONS CSW——— CONDENSER WATER SUPPLY BOD BOTTOM OF DUCT CT-# COOLING TOWER ALWAYS WIDTH (HORIZONTAL DIM.) x HEIGHT (VERTICAL DIM.) CU-# CONDENSING UNIT BOTTOM OF PIPE CWS(CT)———— CONDENSER WATER SUPPLY - COOLING TOWER BRITISH THERMAL UNIT CUH-# CABINET UNIT HEATER → AIR FLOW ARROW DUAL TEMPERATURE RETURN (HOT OR CHILLED) BRITISH THERMAL UNIT PER HOUR CV-# CONTROL VALVE 18"x12" → 18"x12" RECTANGULAR DUCT AND SIZE* COMPLETE WITH DAC-# DOOR AIR CURTAIN DUAL TEMPERATURE SUPPLY (HOT OR CHILLED) DC-# DUST COLLECTOR CONSTANT AIR VOLUME --18"ø---18"ø---ROUND DUCT AND SIZE* FCFS—FLUID COOLER FILTRATION SUPPY CIRCUIT BALANCING VALVE DCT-# DECONTAMINATION TANK FCFR FLUID COOLER FILTRATION RETURN **CUBIC FEET PER MINUTE** DCVA-# DOUBLE CHECK VALVE ASSEMBLY DRY BULB TEMEPRATURE DF-# DRINKING FOUNTAIN 18"x12" EXTERIOR DUCT TREATMENT* FOF—FUEL OIL FILL DG-# DOOR GRILLE DECIBEL(S) ├─18"x12" RECTANGULAR DUCT WITH ACOUSTIC LINING* FOR—FUEL OIL RETURN A-WEIGHTED DECIBLES DS-# DUCT SILENCER DUCT SECTION, SUPPLY AIR, APPLIES TO RECT., ROUND AND OVAL DDC DIRECT DIGITAL CONTROL DU-# DEHUMIDIFICATION UNIT FOS———FUEL OIL SUPPLY DEG DEGREE DWH-# DOMESTIC WATER HEATER DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL FOV——— FUEL OIL VENT DIA./Ø DIAMETER E-# EXHAUST GRILLE / REGISTER / DIFFUSER DUCT SECTION, RETURN AIR, APPLIES TO RECT., ROUND AND OVAL HPWR—HEAT RECOVERY LOOP RETURN DIFF DIFFERENTIAL EL-# EXPANSION LOOP DUCT SECTION, EXHAUST AIR. APPLIES TO RECT., ROUND AND OVAL DIVISION ERC-# ENERGY RECOVERY COIL HPWS——— HEAT PUMP WATER SUPPLY DN DOWN ERU-# ENERGY RECOVERY UNIT _{{\}}}_{}}}} FLEXIBLE DUCT HRR—HEAT RECOVERY LOOP RETURN DWG DRAWING ES-# EMERGENCY SHOWER ELBOW TURN, SUPPLY DOWN. APPLIES TO RECT., ROUND AND OVAL HRS—HEAT RECOVERY LOOP SUPPLY EXHAUST AIR ETU-# EXHAUST TERMINAL UNIT EA (D) EXHAUST AIR, DISHWASH EWC-# ELECTRIC WATER COOLER DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL HEATING WATER RETURN EA (G) EXHAUST AIR, GENERAL EWS-# EYE WASH STATION DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL HWR(G)——— HEATING WATER RETURN - GLYCOL EA (K) EXHAUST AIR, KITCHEN F(C)-# FAN CEILING DUCT SECTION, OUTSIDE AIR. APPLIES TO RECT., ROUND AND OVAL HEATING WATER SUPPLY EA (LAB) EXHAUST AIR, LABORATORY F(E)-# FAN EXHAUST - UP EA (LD) EXHAUST AIR, LAUNDRY/DRYER F(LE)-# FAN LABORATORY EXHAUST CHANGE IN DUCT ELEVATION RISING IN DIRECTION INDICATED HWS(G)—HEATING WATER SUPPLY - GLYCOL EA (W) EXHAUST AIR, WASHROOM F(R)-# FAN RETURN - DN: -CHANGE IN DUCT ELEVATION DROPPING IN DIRECTION INDICATED G———— NATURAL GAS EAT ENTERING AIR TEMPERATURE F(S)-# FAN SUPPLY EAV EXHAUST AIR VALVE F(T)-# FAN TRANSFER GV——— NATURAL GAS VENT ELBOW, RECTANGULAR, SMOOTH RADIUS WITH SPLITTER VANES ELECTRONICALLY COMMUNICATED F-# FAN RAD RADON GAS (0.25 R/W DEFAULT) FCU-# FAN COIL UNIT REF(HG) REFRIGERANT HOT GAS EXISTING TO BE DEMOLISHED FLOOR DRAIN FD-# ELBOW, RECTANGULAR, SMOOTH RADIUS WITHOUT VANES (DEMOLITION PLANS) FFU-# FAN FILTER UNIT REF(L) REFRIGERANT LIQUID ENERGY EFFICIENCY RATIO FPP-# FIRE PROTECTION PUMP REF(S) REFRIGERANT SUCTION ETHELYENE GLYCOL FPTU-# FAN POWERED TERMINAL UNIT ELBOW, ROUND, SMOOTH RADIUS EMCS ENERGY MANAGMENT CONTROL FTR-# FINNED TUBE RADIATOR REF(V) REFRIGERANT VENT (1.5 R/W DEFAULT) SYSTEM FUR-# FURNACE RV—RELIEF VENT EXISTING RELOCATED (NEW GFS-# GLYCOL FEED SYSTEM CONSTRUCTION PLANS) MITERED ELBOW, RECTANGULAR, WITHOUT VANES S(##) STEAM (NOMINAL PRESSURE) GSG-# GAS-FIRED STEAM GENERATOR(*) EXISTING TO BE RELOCATED H(C)-# HOOD (CANOPY) CS(##) STEAM - CLEAN (NOMINAL PRESSURE) (DEMOLITION PLANS) H(HC)-# HOOD (HEAT AND CONDENSATE) EXTERNAL STATIC PRESSURE MITERED ELBOW, RECTANGULAR, WITH TURNING VANES STEAM CONDENSATE (NOMINAL PRESSURE) H(I)-# HOOD (INTAKE) EWT ENTERING WATER TEMPERATURE PC(##) STEAM PUMPED CONDENSATE (NOMINAL PRESSURE) H(K)-# HOOD (KITCHEN) EXIST / E EXISTING (DEMOLITION PLANS) RECTANGULAR TO ROUND TRANSITION H(R)-# HOOD (RELIEF) FAIL CLOSED STEAM VENT H(RH)-# HOOD (RANGE) FULL LOAD AMPERAGE PIPE INSULATION H-# HUMIDIFIER FAIL OPEN DUCT ACCESS DOOR (TOP, SIDE, BOTTOM) HC-# HEATING COIL FP FIRE PROTECTION REAL OBJECT SYMBOL PIPING COMPONENTS HP-# HEAT PUMP FEET PER MINUTE HRU-# HEAT RECOVERY UNIT FEET PER SECOND FPS FLEXIBLE CONNECTION — ISOLATION VALVE (GENERIC) HT-# HYDROPNEUMATIC TANK FOOT/FEET HX-# HEAT EXCHANGER —── GATE VALVE GAUGE LATU-# LAB AIR TERMINAL UNIT GALLON (US) BACKDRAFT DAMPER GAL —**□□** GLOBE VALVE LAV-# LAVATORY GENERAL CONTRACTOR GC BUTTERFLY VALVE NPS 6 AND LESS MAC-# MEDICAL AIR COMPRESSOR GEO GEODETIC MAU-# MAKEUP AIR UNIT CABLE OPERATED DAMPER ───────── BUTTERFLY VALVE NPS 8 AND MORE GPM GALLONS PER MINUTE MD-# MOTORIZED DAMPER HEPA HIGH EFFICIENCY PARTICULATE AIF r r ■ 8 — Ф— BALL VALVE MSK-# MOP SINK MANUAL DAMPER → D PLUG VALVE HORSEPOWER MV-# MIXING VALVE MVP-# MEDICAL VACUUM PUMP HOUR → NEEDLE VALVE HEATING / VENTILATING / AIR ☐ ☐ ☐ CHECK VALVE (GENERIC) MOTORIZED DAMPER PDU-# POOL DEHUMIDIFICATION UNIT CONDITIONING I国 I出 BALANCING VALVE HERTZ PRV-# PRESSURE REDUCING VALVE INVERT ELEVATION PTAC-# PACKAGED TERMINAL AIR CONDITIONER PRESSURE INDEPENDENT REGULATOR — ─────── FLOW LIMITING VALVE INTEGRATED ENERGY EFFECIENCY R-# RETURN AIR GRILLE / REGISTER / DIFFUSER ■ ■ ♣ ₽ ₽ PRESSURE REDUCING VALVE RD-# ROOF DRAIN 2-WAY GENERIC) INCHES RH-# RANGE HOOD FIRE DAMPER IN WG INCHES WATER GAUGE RP-# RADIANT PANEL TWO-WAY ELECTRIC CONTROL VALVE, BUTTERFLY TYPE INTEGRATED PART LOAD VALUE RPBP-# REDUCED PRESSURE BACKFLOW PREVENTER 3-WAY CONTROL VALVE (GENERIC) SMOKE DAMPER KILOWATT RTU-# ROOFTOP UNIT kWh KILOWATT HOUR S-# SUPPLY GRILLE / REGISTER / DIFFUSER THREE-WAY ELECTRIC CONTROL VALVE, BUTTERFLY TYPE LEAVING AIR TEMPERATURE SH-# SHOWER SMOKE AND FIRE DAMPER POUNDS SK-# SINK LINEAR FEET SPC-# SOLAR PANEL COLLECTOR SOLENOID 3-WAY CONTROL VALVE LEAVING WATER TEMPERATURE SSF-# SIDE STREAM FILTER DUCT SILENCER/TRANSFER ELBOW FLOAT OPERATED VALVE ACTUATOR METER T(B)-# TANK (BUFFER TANK) CONTROL DEVICE (REFER TO CONTROLS LEGEND) MAX MAXIMUM ■ B SAFETY OR RELIEF VALVE T(E)-# TANK (EXPANSION TANK) THOUSAND OF BTUH MBH T(H)-# TANK (HYDRO PNEUMATIC TANK) ∞ AIR FLOW MEASURING STATION (REFER TO CONTROLS LEGEND) △ ANGLE VALVE MINIMUM CIRCUIT AMPS T(S)-# TANK (STORAGE TANK) → BOILER STOP AND CHECK VALVE — QUANTITY MINIMUM EFFECIENCY REPORTING T-# TRANSFER AIR GRILLE DOUBLE CHECK VALVE ASSEMBLY VALUES UH-# UNIT HEATER MANUFACTURER UR-# URINAL SIZE (IN.) AIR OUTLET OR INLET TAG)REFER TO SCHEDULE) MINIMUM USG-# UNFIRED STEAM GENERATOR VOLUME (CFM) MOP MAXIMUM OVERCURREN UV-# UNIT VENTILATOR PROTECTION VA-# VALVE ▼ — SUCTION DIFFUSER MEAN WATER TEMPERATURE RECTANGULAR DIFFUSER, SUPPLY. VFD-# VARIABLE FREQUENCY DRIVE PUMP (GENERIC) NOT APPLICABLE OPTIONAL ARROWS SHOW THE FLOW DIRECTION. WC-# WATER CLOSET NOISE CRITERIA ₩ ₩ Y-STRAINER (GENERIC) WS-# WATER SOFTENER NORMALLY CLOSED RECTANGULAR REGISTER OR GRILLE, RETURN L-# LOUVER ⊗ ☐ ☐ ——⊗—— STEAM TRAP (GENERIC) NOT IN CONTRACT △ • • ~ AUTOMATIC AIR VENT NORMALLY OPEN NOMINAL PIPE SIZE NPS RECTANGULAR REGISTER OR GRILLE, EXHAUST <u>~ </u>} MANUAL AIR VENT NOT TO SCALE VACUUM BREAKER OUTSIDE AIR OWNER FURNISHED, CONTRACTOR — U SHOCK ABSORBER ROUND DIFFUSER, SUPPLY INSTALLED LINEAR DIFFUSER TEMPERATURE GAUGE OWNER FURNISHED EQUIPMENT SIDEWALL REGISTER OR GRILLE, SUPPLY OWNER FURNISHED / OWNER PRESSURE GAUGE SIDEWALL GRILLE, RETURN OR EXHAUST TEMPERATURE AND PRESSURE TRAP PROPYLENE GLYCOL UNDERCUT DOOR POINT OF ENTRANCE —— SIGHT FLOW GLASS POINT OF SERVICE DOOR GRILLE OR LOUVER ☐ ☐ ○ ────── FLEXIBLE CONNECTOR PARTS PER MILLION TRANSFER GRILLE OR LOUVER EXPANSION JOINT POUNDS PER SQUARE INCH COIL (REFER TO CONTROLS LEGEND) POUNDS PER SQUARE INCH, − GUIDE ABSOLUTE — QUANTITY —×— ANCHOR POUNDS PER SQUARE INCH. GAGE TYPE PNEUMATIC TUBE STATION ── FLOW ARROW POLYVINYL CHLORIDE LENGTH (FT.) RADIATION HEATING TAG (REFER TO SCHEDULE) PIPING SLOPE RETURN AIR ____ CAPACITY (MBH) RELA RELIEF AIR REQD REQUIRED ———→ PIPE BREAK \longrightarrow RELATIVE HUMIDITY → Tipe cross RPM REVOLUTIONS PER MINUTE O——— PIPING ELBOW UP SUPPLY AIR SEER SEASONAL ENERGY EFFICIENCY C PIPING ELBOW DOWN ——— PIPING TEE UP SP STATIC PRESSURE SP STAIR PRESSURIZATION AIR (*) — J PIPING TEE DOWN SRV SAFETY RELIEF VALVE ∘ • • —II— UNION CONNECTION TA TRANSFER AIR Ф Ф © ——||—— FLANGED CONNECTION TEMP TEMPERATURE TSP TOTAL STATIC PRESSURE D © ——D— CONCENTRIC REDUCER TSTAT THERMOSTAT □ □ □ ECCENTRIC REDUCER TYP TYPICAL UC UNDER CUT (DOOR) ——II STANDARD CLEAN-OUT IN LINE END OF RUN UNDERGROUND ——O STANDARD CLEAN-OUT THROUGH FLOOR END OF RUN ———— STANDARD CLEAN-OUT THROUGH FLOOR IN LINE VARIABLE AIR VOLUME VARIABLE FREQUENCY DRIVE —— DIFFERENTIAL PRESSURE CONTROL VALVE VIF VERIFY IN FIELD ———— Y-PATTERN MANUAL BALANCING/SHUT-OFF VALVE VTR VENT-THRU-ROOF

WITH

WG WATER GAUGE

WB WET BULB TEMPERATURE

W/O WITHOUT

ZN-# ZONE °C CELSIUS °F FAHRENHEIT centeris

PRCTI20240275 - Revision 2

Transfer Fan Between UPS

This set does not replace the

Room and Battery Room.

originally approved set.



MECHANICAL DRAWINGS

City of Puyallup evelopment & Permitting Services ISSUED PERMIT Building Planning Public Works Engineering Traffic



Revision No. Description

VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

MECHANICAL LEGEND AND Title ABBREVIATIONS

| | | | | | | | | | | | | | | CON | MPUTER F | ROOM AIF | R CONDIT | IONING | UNIT | | | | | | | | | | | | | |
|------|-----------|-----------------------|-------------------------------|-----------------------------|----------------|------------|---------------|----------------------------|-------------------------------|-------|------|----------|------------|------------|------------|------------|-------------|--------|----------------------|--------------|----------|-------------|---------------|-------------|-------------------------------|-------|-------|-------|-----|--------------|-----------------|-------------|
| | UNIT IDEN | TIFICATION | | | F | AN | | | | | CHIL | LED WATE | R COOLING | COIL | | | | | FILTER | | | Р | HYSICAL C | HARACTERI | STICS | | ELECT | RICAL | | | | |
| MARK | NUMBER | ROOM SERVED | NOMINAL CAPACITY (TONS) | AIRFLOW PER FAN (CFM) | ESP (IN-WG) | HP | NO OF FANS | TOTAL CAPACITY (MBH) | SENSIBLE CAPACITY (MBH) | GPM | ROWS | FPI | EDB (F) | EWB (F) | LDB (F) | LWB (F) | WPD (FT) | TYPE | EFFICIENCY (MERV) | SIZE (IN) | CONFIG | HEIGHT (IN) | WIDTH (IN) | LENGTH (IN) | OPERATING WEIGHT (LBS.) | VOLTS | PHASE | MCA | МОР | MANUFACTURER | MODEL NUMBER | NOTES |
| CRAH | 1 | VOLTAGE PARK UPS ROOM | 77.0 | 7,000 | 1.7 | 2.5-3.9 KW | 5 | 923.0 | 795.7 | 197.0 | 4 | 11 | 78.0 | 63.3 | 57.3 | 54.3 | 23.7 | PANEL | 13 | 4 | DOWNFLOW | 100 | 172 | 48 | 1,078 | 480 | 3 | 19.4 | 20 | SEMCO | CWG04C11 | 1,2,3,4,5,6 |
| CRAH | 2 | VOLTAGE PARK UPS ROOM | 77.0 | 7,000 | 1.7 | 2.5-3.9 KW | 5 | 923.0 | 795.7 | 197.0 | 4 | 11 | 78.0 | 63.3 | 57.3 | 54.3 | 23.7 | PANEL | 13 | 4 | DOWNFLOW | 100 | 172 | 48 | 1,078 | 480 | 3 | 19.4 | 20 | SEMCO | CWG04C11 | 1,2,3,4,5,6 |
| CRAH | 3 | VOLTAGE PARK UPS ROOM | 77.0 | 7,000 | 1.7 | 2.5-3.9 KW | 5 | 923.0 | 795.7 | 197.0 | 4 | 11 | 78.0 | 63.3 | 57.3 | 54.3 | 23.7 | PANEL | 13 | 4 | DOWNFLOW | 100 | 172 | 48 | 1,078 | 480 | 3 | 19.4 | 20 | SEMCO | CWG04C11 | 1,2,3,4,5,6 |
| CRAH | 4 | VOLTAGE PARK UPS ROOM | 77.0 | 7,000 | 1.7 | 2.5-3.9 KW | 5 | 923.0 | 795.7 | 197.0 | 4 | 11 | 78.0 | 63.3 | 57.3 | 54.3 | 23.7 | PANEL | 13 | 4 | DOWNFLOW | 100 | 172 | 48 | 1,078 | 480 | 3 | 19.4 | 20 | SEMCO | CWG04C11 | 1,2,3,4,5 |

1. ELECTRONICALLY COMMUNICATED MOTORS ARE PROVIDED WITH 4-20MA CONTROL INPOUT, SPEED STATUS FEEDBACK, ALARM OUTPUT, AND SAFETY CIRCUIT AS HARDWIRED CONNECTIONS. BAS SHALL CONNECT TO MODBUS RTU VIA RS485 CONNECTION. SINGLE POINT ELECTRICAL CONNECTION. DISCONNECT SWITCH AND OVER CURRENT PROTECTION DEVICE SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR (EC). DUCT SMOKE DETECTOR SHALL BE FURNISHED AND WIRED BY THE EC AND INSTALLED/MOUNTED BY THE MC. DUCT SMOKE DETECTOR POWER AND INTERLOCK WIRING/CIRCUITS TO THE BUILDING FIRE ALARM SYSTEM SHALL BE PROVIDED BY THE EC.

. PROVIDE CONDENSATE DRAIN PUMP SIZED TO REMOVE 2 GPM AND 25 FEET OF HEAD PER CRAH. EC TO PROVIDE SEPARATE 120V POWER CONNECTION ON STANDBY. 5. MECHANICAL CONTRACTOR SHALL PROVIDE SEISMIC RESTRAINT FOR EQUIPMENT PER JURISDICTION AND CONTRACT DOCUMENTS.

| | | | | | | | | | DUC | T SYST | EM APP | LICAT | ION SC | HEDULE | | | | | | | | | | | | | | | |
|-------------|-------------|-----------------|-----------------------|------------------------------|-----------------------------------|-----------------------------|-----------|---|--|--------------------|-------------------------------|---------------|--------|---------------------------------------|---------------|----------------|------------------|---------|------|------------------|-------------------------------|----------------|------------------|---------------|----------|--------|-------|-----------------------------|----------|
| | | | DESIGN | CRITERIA | CON | STRUCTION | PF | RODUCT | | M | ATERIAL | | | | LINER | | | | IN | SULATIO | N | | | FACTOR | Y JACKET | | FIELD |) JACKET | NOTE |
| SYSTEM | APPLICATION | LOCATION | MAX VELOCITY (FPM) | MAX FRICTION (IN-WG/100') | DESIGN SYSTEM PRESSURE (IN-WG) | SEAL CLASS MAX LEAKAGE RATE | SINGLE WA | DOUBLE WALL SOLID LINER DOUBLE WALL PERF LINER | G90 GALV SHEET STEEL G90 PVC COATED GALV SHEET STEEL | 16 GA CARBON STEEL | ALUMINUM 304 STAINI ESS STEEL | STAINLESS STE | FABRIC | FIBERGLASS FLEXIBLE FLASTOMFRIC | NATURAL FIBER | THICKNESS (IN) | DENSITY (LB/FT³) | LASS BC | _ II | FIRE RATED BOARD | INSULATION MINIMUM R-VALUE | THICKNESS (IN) | DENSITY (LB/FT³) | ASJ ASJ-SS | FSK | FABRIC | PVC | ALUMINUM STAINLESS STEEL | |
| | | CONCEALED | 1,000 | 0.10 | 2 | A 6 | Х | | Х | | | | | | | | 2 | (| | | R-3.3 | 1.5 | 1.5 | | Х | | | | 1 |
| SUPPLY AIR | ALL | EXPOSED | 1,000 | 0.10 | 2 | A 6 | Х | | Х | | | | | | | | | Х | | | R-3.3 | 1 | 2.25 | | Х | | | | 1 |
| | | MECHANICAL ROOM | 1,200 | 0.10 | 6 | A 6 | X | | X | | | | | | | | | Х | | | R-3.3 | 1 | 2.25 | | X | | | | 1 |
| RETURN AND | | CONCEALED | 1,000 | 0.10 | 2 | A 6 | X | | X | | | | | | | | | | | | | | | | X | | | | 1 |
| RANSFER AIR | ALL | EXPOSED | 1,000 | 0.10 | 2 | A 6 | X | | X | | | | | | | | | | | | | | | | X | | | | 1 |
| | | MECHANICAL ROOM | 1,200 | 0.10 | 6 | A 6 | X | | X | | | | | | | | | Х | | | R-8 | 2 | 2.25 | | X | | | | 1 |
| | | CONCEALED | 1,000 | 0.10 | 2 | A 6 | X | | X | | | | | | | | | | | | | | | | X | | | | 1 |
| GENERAL | ALL | EXPOSED | 1,000 | 0.10 | 2 | A 6 | X | | X | | | | | | | | | | | | | | | | X | | | | 1 |
| EXHAUST | , | LOUVER CAN | 1,200 | 0.10 | 6 | A 6 | X | | X | | | | | | | | | X | | | R-16 | 5 | 2.25 | | X | | | | 1 |
| | | MECHANICAL ROOM | 1,200 | 0.10 | 6 | A 6 | X | | X | | | | | | | | | Х | | | R-8 | 2 | 2.25 | | X | | | | 1 |
| OUTSIDE AIR | ALL | LOUVER CAN | 1,200 | 0.10 | 6 | A 6 | X | | X | | | | | | | | | X | | | R-16 | 5 | 2.25 | | X | | | | 1 1 |
| OTES: | | MECHANICAL ROOM | 1,200 | 0.10 | 6 | A 6 | X | | X | | | | | | | | | X | | | R-8 | 2 | 2.25 | | X | | | | 1 |

| NC | DIES: | |
|----|---|------|
| 1. | DUCT INSULATION THICKNESS BASED ON 2018 V | NSEC |

| | | | | | | | | | | | | | PIPI | NG S | YSTE | M AF | PLIC | IOITA | N SC | HED | ULE | | | | | | | | | | | | | | | | | | |
|--------------------|----------------|-----------------------|--------------|------------------------------------|--------------------------------|------------------------|-------------------------|--------------------|-----------------|---------------|---------------|-------------------|----------------|---------------------------|---------------------------|------|-------|----------|----------|--------|----------|--------|-------------------|---------|-------------------|----------------------------|--------------------------|----------------------|----------------|-----|--------|-------|-------|-----------|----------------|----------------------|----------|-----------------|-------|
| | | DES | SIGN | | CON | ISTRUC | TION | | | | | | MAT | ERIAL | | | | | | | JOIN | TS | | | HEAT | TRACE | IN | ISULATI | ON | F | ACTORY | JACKE | Ī | | FIE | LD JAC | KET | | |
| SYSTEM | PIPE SIZE (IN) | MAX VELOCITY (FPS) | MAX FRICTION | (F1/100') OPERATING TEMP (F) | MIN WORKING PRESSURE (PSIG) | MIN TEMP RATING (F) | TEST PRESSURE (PSIG) | TES DURATION (HRS) | LOCATION | COPPER TYPE K | COPPER TYPE L | A53 BS ERW SCH 40 | A53 BS ERW STD | SCH 10 TYPE 316 STAINLESS | SCH 10 TYPE 304 STAINLESS | HOPF | PEX.A | SOLDERED | SOLUENED | BRAZED | THREADED | WELDED | PRESSURE FITTINGS | GROOVED | QUANTITY OF WIRES | MIN WATTS PER LINEAR FT | MINERAL FIBER, PREFORMED | FLEXIBLE ELASTOMERIC | THICKNESS (IN) | ASJ | ASJ-SS | FSK | VINYL | PVC - ALL | PVC - FITTINGS | PVC - TO 10 FEET AFF | ALUMINUM | STAINLESS STEEL | NOTES |
| | | | | | | | | (| CONCEALED | | Х | | | | | | | Х | () | Х | | | | | | | | Х | 1 | | Х | | | | Х | | | | 1 |
| | | | | | | | | E | EXPOSED | | Х | | | | | | | Х | () | Х | | | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | 2 AND LESS | 4 | 4.0 | 44-56 | 125 | 200 | 125 | ^ F | MECHANICAL ROOM | | X | | | | | | | X | | Х | | | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | | | | | | | | | OUTDOOR | | X | | | | | | | X | | X | | | | | 1 | 5 | | X | 1 | | X | | | | Λ | | X | | 1,2 |
| | | | | | | | | | UNDERGROUND | | X | | | | | | | X | | X | | | | | ' | | | X | 1 | | X | | | | | | | X | 1 |
| | | | | | | | | | CONCEALED | | | X | | | | | | | ` ' | | | Х | | | | | | X | 1 | | X | | | | Х | | | , , | 1 |
| | | | | | | | | | EXPOSED | | | Х | | | | | | | | | | Х | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | 2-1/2 - 8 | 8 | 4.0 | 44-56 | 125 | 200 | 125 | 2.5 N | MECHANICAL ROOM | | | Х | | | | | | | | | | Х | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| CHILLED WATER & | | | | | | | | (| OUTDOOR | | | Х | | | | | | | | | | Х | | | 1 | 8 | | Х | 1 | | Х | | | | | | Х | | 1,2 |
| FLUID COOLER BASIN | | | | | | | | ī | UNDERGROUND | | | Х | | | | | | | | | | Х | | | | | | Х | 1 | | Х | | | | | | | Х | 1 |
| SWEEPER WATER | | | | | | | | (| CONCEALED | | | Х | | | | | | | | | | Х | | | | | | Х | 1 | | Х | | | | Х | | | | 1 |
| | | | | | | | | E | EXPOSED | | | Х | | | | | | | | | | Х | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | 9 - 10 | 8 | 4.0 | 44-56 | 125 | 200 | 125 | 2.5 N | MECHANICAL ROOM | | | Х | | | | | | | | | | Χ | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | | | | | | | | C | OUTDOOR | | | Х | | | | | | | | | | Χ | | | 1 | 10 | | Х | 1 | | Х | | | | | | Х | | 1,2 |
| | | | | | | | | ī | UNDERGROUND | | | Х | | | | | | | | | | Х | | | | | | Х | 1 | | Х | | | | | | | Х | 1 |
| | | | | | | | | | CONCEALED | | | Х | | | | | | | | | | Χ | | | | | | Х | 1 | | Х | | | | Х | | | | 1 |
| | | | | | | | | Ē | EXPOSED | | | Х | | | | | | | | | | Χ | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | 12 - 16 | 8 | 4.0 | 44-56 | 125 | 200 | 125 | 2.5 N | MECHANICAL ROOM | | | Х | | | | | | | | | | Χ | | | | | | Х | 1 | | Х | | | | Х | Х | | | 1 |
| | | | | | | | | _ | OUTDOOR | | | Х | | | | | | | | | | Χ | | | 2 | 5 | | Х | 1 | | Х | | | | | | X | | 1,2 |
| NOTES: | | | \perp | | | | | ī | UNDERGROUND | | | Х | | | | | | | | | | Χ | | | | | | Х | 1 | | Х | | | | | | | Х | 1 |

| | | | | | | | | NEW EX | HAUST FAN | SCHEDU | JLE | | | | | | | | |
|--|---|---|-------------------------|-------------------------|----------------|----------------|--------------|----------------|--------------------------|--------|-------|----------------|---------------|-------|-------|-------------------------------|--------------|-----------------|-------|
| | UNIT IDENT | TIFICATION | | | | | | FAN WHE | EL | | FAN M | 1OTOR | | ELEC1 | RICAL | | | | |
| MARK | NUMBER | UNIT/AREA SERVED | MAX AIRFLOW (CFM) | MIN AIRFLOW (CFM) | ESP (IN-WG) | CONTROL | TYPE | SPEED (RPM) | MIN WHEEL DIA (IN) | BHP | HP | SPEED (RPM) | DRIVE TYPE | VOLTS | PHASE | OPERATING WEIGHT (LBS.) | MANUFACTURER | MODEL NUMBER | NOTES |
| TF-VP | 1 | VOLTAGE PARK BATTERY ROOM | 10,000 | 3,000 | 0.5 | VFD | INLINE | 1,725 | 30 | 2.9 | 3 | 846 | BELT | 460 | 3 | 266 | COOK | 300SQN-HP | 1,2,3 |
| 2. PROVIDE FAN W 3. ALL EF'S HAVE A | TITH EZ OUT BELT DE A AMCA 205 FAN EFF | WIRED AND INSTALLED BY ELECTRI RIVE COVER AND ACCESSORIES. ICIENCY GRADE (FEG) OF 67% PER C RGE TO THE LEFT IN THE DIRECTION | 403.8.3. | | | ING DISCONNECT | . | | | | | | | | | | | | |

| JNIT IDEN | TIFICATION | | | , | ER, DIFFUS | _ | | | |
|-----------|------------|-------------------------------|------------------------|-------------------------------|------------------|----------|--------------|-----------------|-------|
| MARK | NUMBER | DIFFUSER FACE SIZE (IN) | FLOW RANGE (CFM) | DIFFUSER NECK SIZE (IN) | MOUNTING TYPE | MATERIAL | MANUFACTURER | MODEL NUMBER | NOTES |
| S | 1 | NOTE 3 | 10,000 | SEE PLANS | DUCT | NOTE 2 | TITUS | 122RS | 1,2,3 |

GENERAL NOTES

WILL FIT IN THE AVAILABLE SPACE.

This set does not replace the originally approved set. 1. THE MECHANICAL PLANS ARE DIAGRAMMATIC IN NATURE AND ARE BASED ON ONE MANUFACTURER'S EQUIPMENT. THEY ARE NOT INTENDED TO SHOW EVERY ITEM IN ITS EXACT LOCATION, THE 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

PRCTI20240275 - Revision 2

Room and Battery Room.

- 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 POWER/LIGHTING 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 2021 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 2021 WSEC SECTION C403.2.4 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(12) WHEN

TESTED AND RATED IN ACCORDANCE WITH THE APPLICABLE TEST

PROCEDURE.

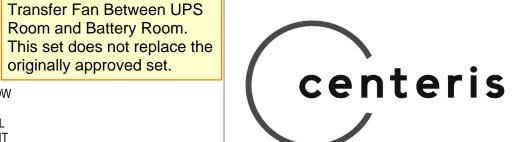
- 13. SYSTEMS ADHERE TO C405.8 ELECTRIC MOTOR EFFICIENCY: A. ALL ELECTRIC MOTORS, FRACTIONAL OR OTHERWISE, SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.8(1) THOUGH C405.8(4) WHEN TESTED IN ACCORDANCE WITH DOE 10 CFR UNLESS
- OTHER EXCEPTIONS ARE QUALIFIED AND MET BY THIS SECTION. B. FRACTIONAL HP FAN MOTORS THAT ARE 1/12 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 DUCT JOINTS SHALL BE SEALED IN ACCORDANCE WITH SMACNA
- 17. ALL DUCT DIMENSIONS ARE NET INSIDE VALUES. DIMENSIONS MAY BE CHANGED PROVIDED THAT THE NET FREE AREA IS MAINTAINED.
- 18. 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).
- AND WORKMANLIKE MANNER. THE USE OF WIRE OR METAL STRAPS TO SUPPORT PIPES WILL NOT BE PERMITTED. REFER TO SPECIFICATIONS FOR MINUMUM SPACING OF PIPE SUPPORTS.

19. ALL PIPE SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE IN A NEAT

- 20. MECHANICAL EQUIPMENT, DUCTS AND PIPING ARE TO BE COORDINATED WITH STRUCTURAL JOISTS AND CROSS BRACING.
- 21. ALL EXPOSED PIPING IN OCCUPIED SPACES SUBJECT TO ARCHITECTURAL
- APPROVAL PRIOR TO INSTALLATION. 22. ALL DUCTWORK SHALL BE CONSTRUCTED AND SEALED PER IMC.
- 23. DUCTWORK SHALL MEET THE AIR LEAKAGE REQUIREMENTS OF 2021 WSEC C402.5 AND VAPOR RETARDER REQUIREMENTS PER THE IBC.
- 24. 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.
- 25. A BUILDING COMMISSIONING PROCESS AND FUNCTIONAL TESTING OF MECHANICAL SYSTEMS SHALL BE CARRIED OUT BY A CERTIFIED COMMISSIONING PROFESSIONAL IN ACCORDANCE WITH 2021 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.
- 26. SYSTEMS ADHERE TO 2021 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 ANSI/ISO/IEC 17024:2012 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.

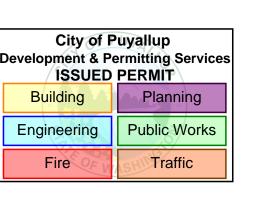
f. REFRIGERATION SYSTEMS

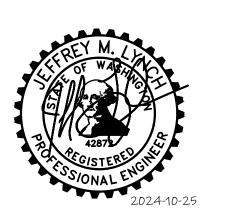
- 27. TESTING AND BALANCING: ALL HVAC SYSTEMS SHALL BE BALANCED BY A LICENSED CONTRACTOR IN ACCORDANCE WITH ACCEPTED ENGINEERING STANDARDS AND SPECIFICATIONS PRIOR TO COMMISSIONING.
- 28. OWNER TRAINING BY CONTRACTORS FOR EACH PIECE OF EQUIPMENT OR SYSTEM SHALL INCLUDE: SYSTEM/EQUIPMENT OVERVIEW (WHAT 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.





MECHANICAL





Revision No. Description

VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

MECHANICAL SCHEDULES & Title GENERAL NOTES

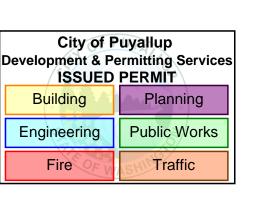


centeris

720 3rd Avenue Suite 1500 Seattle Washington 98104-1878 (206) 667-0555

MECHANICAL DRAWINGS

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





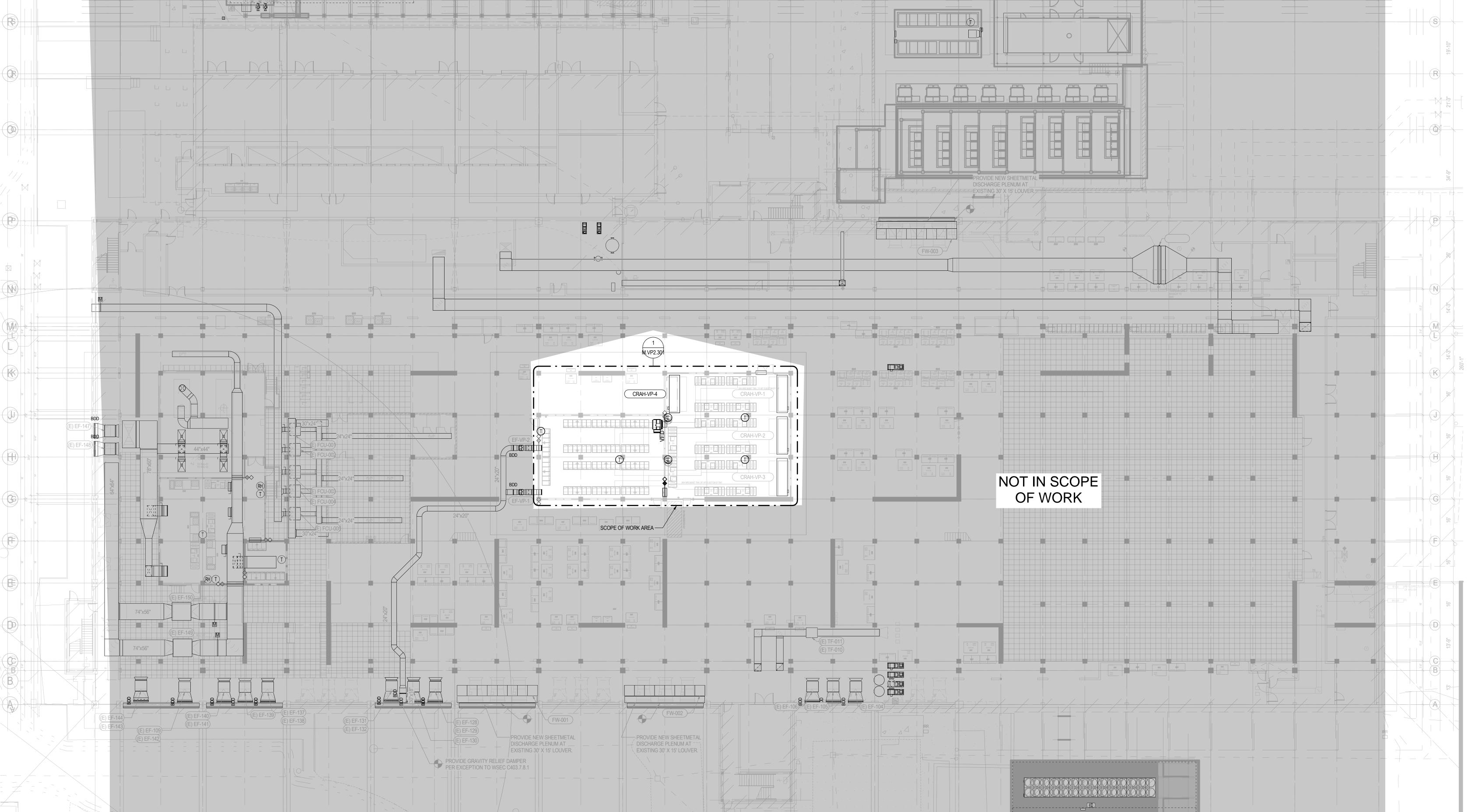
evision No. Description Date

By: Checked By: JL

MECHANICAL LEVEL
1 PLAN

M.VP2.102





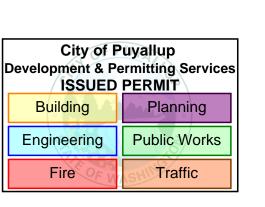




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MECHANICAL DRAWINGS

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





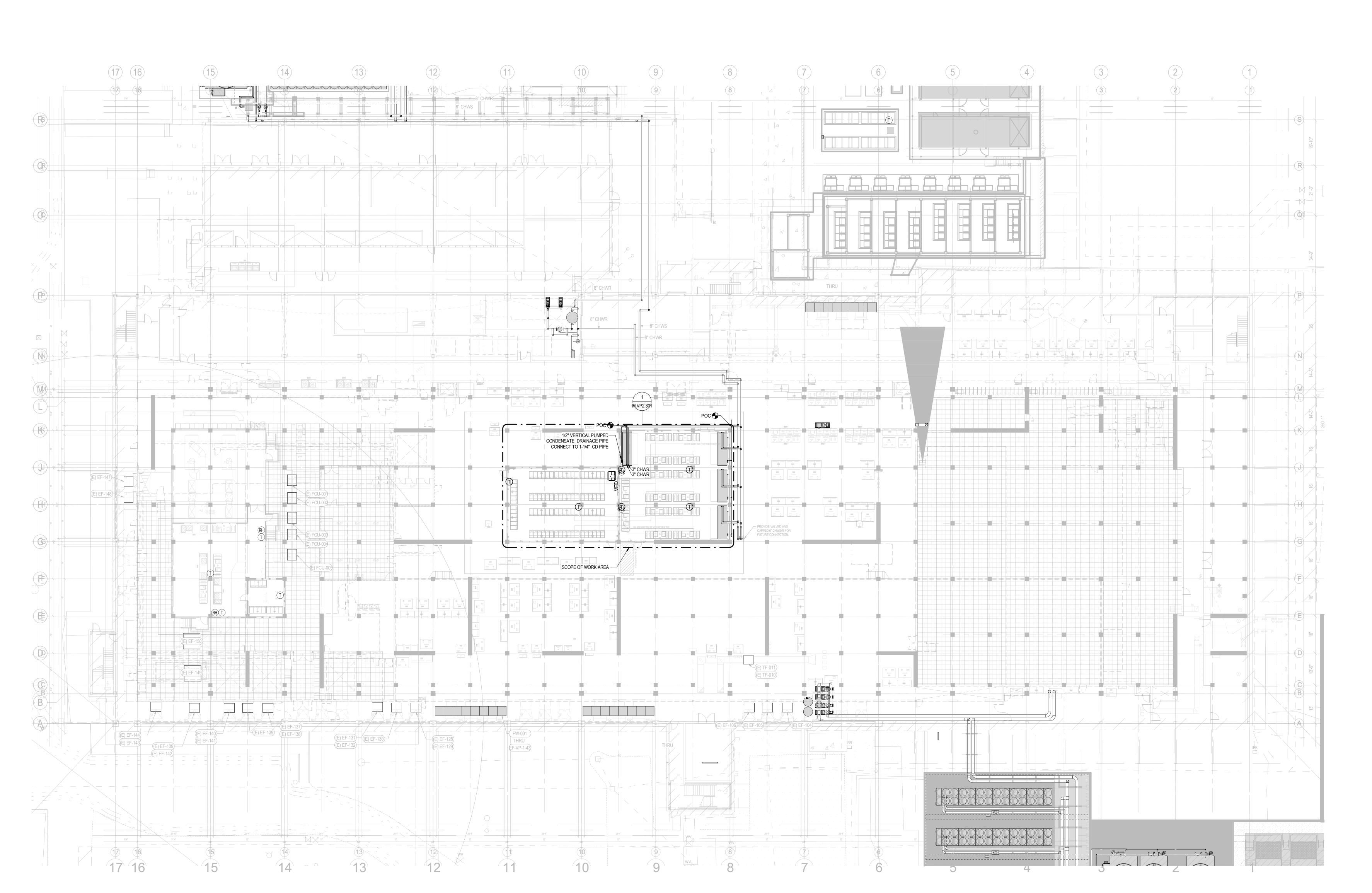
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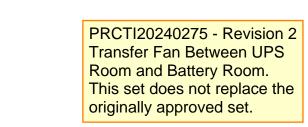
VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

MECHANICAL LEVEL

Title 1 PIPING PLAN







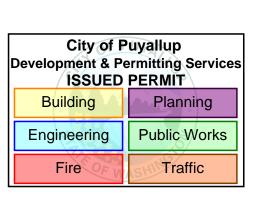
KEY NOTES



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MECHANICAL DRAWINGS

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





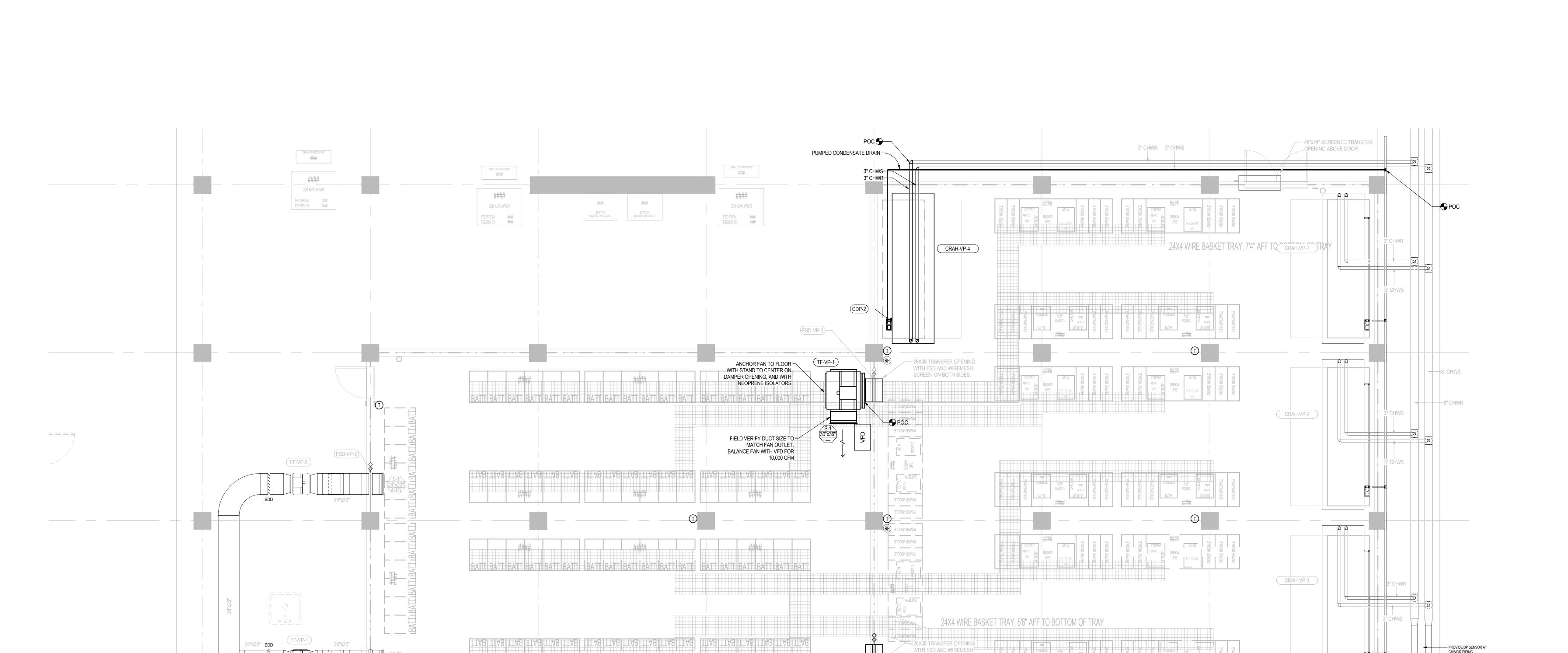
ion No. Description Date

VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

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MECHANICAL LEVEL
1 ENLARGED PLAN

M.VP2.301



1600A MAIN SECTION 1600A MAIN SECTION DISTRIBUTION SECTION

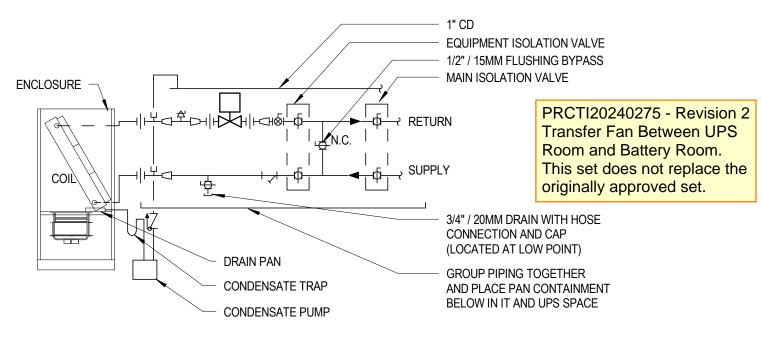
1600A MAIN SECTION 1600A MAIN SECTION DISTRIBUTION SECTION

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FED FROM: #### FEEDER ID: #### SCREEN ON BOTH SIDES.

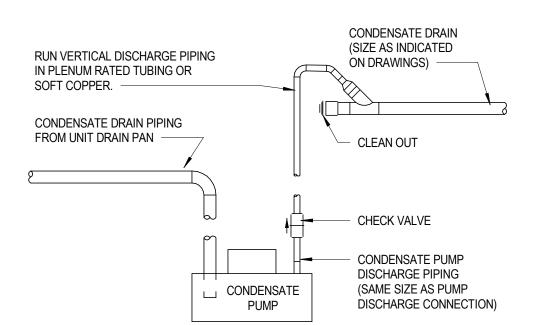
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- 1. INSULATE THE HEATING COIL TO PREVENT HEAT LOSS / CONDENSATION. 2. THE EQUIPMENT DRAIN IS SEPARATE FROM THE BLOW DOWN STRAINER DRAIN.
- 3. PIPE TAPS FROM THE MAIN SHALL BE OFF OF THE TOP OF THE MAIN EXCEPT WHERE NOTED OTHERWISE. 4. THE EQUIPMENT 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
- 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
- 11. FOR 4-PIPE UNITS, THE ASSEMBLY FOR THE SECOND SET IS THE SAME AS THE SINGLE ASSEMBLY SHOWN IN THE DETAIL.

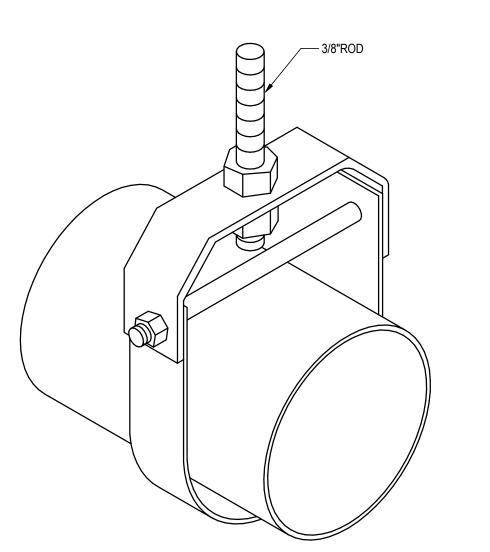




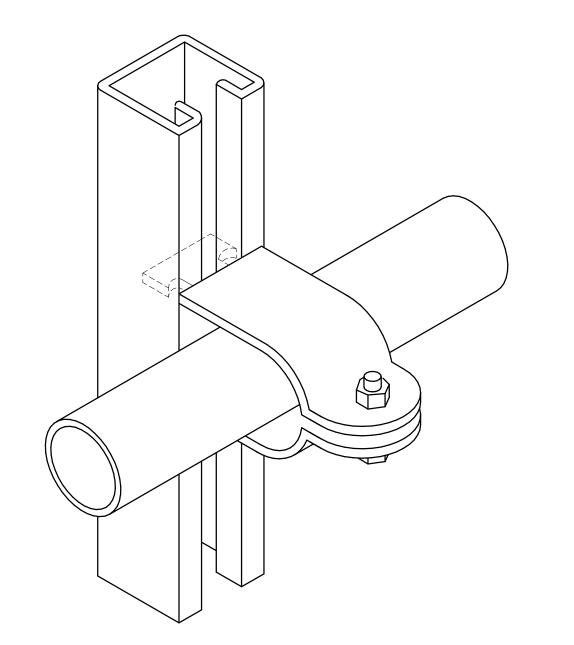
NOTES:

1. PROVIDE MOUNTING BRACKET FOR ABOVE CEILING APPLICATIONS.
2. PUMP SHALL BE PLENUM RATED WHEN INSTALLED IN A RETURN PLENUM
3. PROVIDE PUMPS WHERE GRAVITY CONDENSATE PIPING CAN NOT BE USED.

CONDENSATE PUMP PIPING DETAIL N.VP2.50/1 12" = 1'-0"



3 CEILING HANGER DETAIL M.VP2.501 NOT TO SCALE

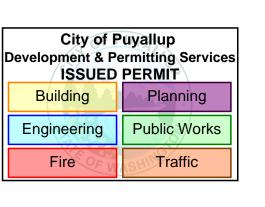


WALL BRACKET DETAIL
N.VP2.501 NOT TO SCALE





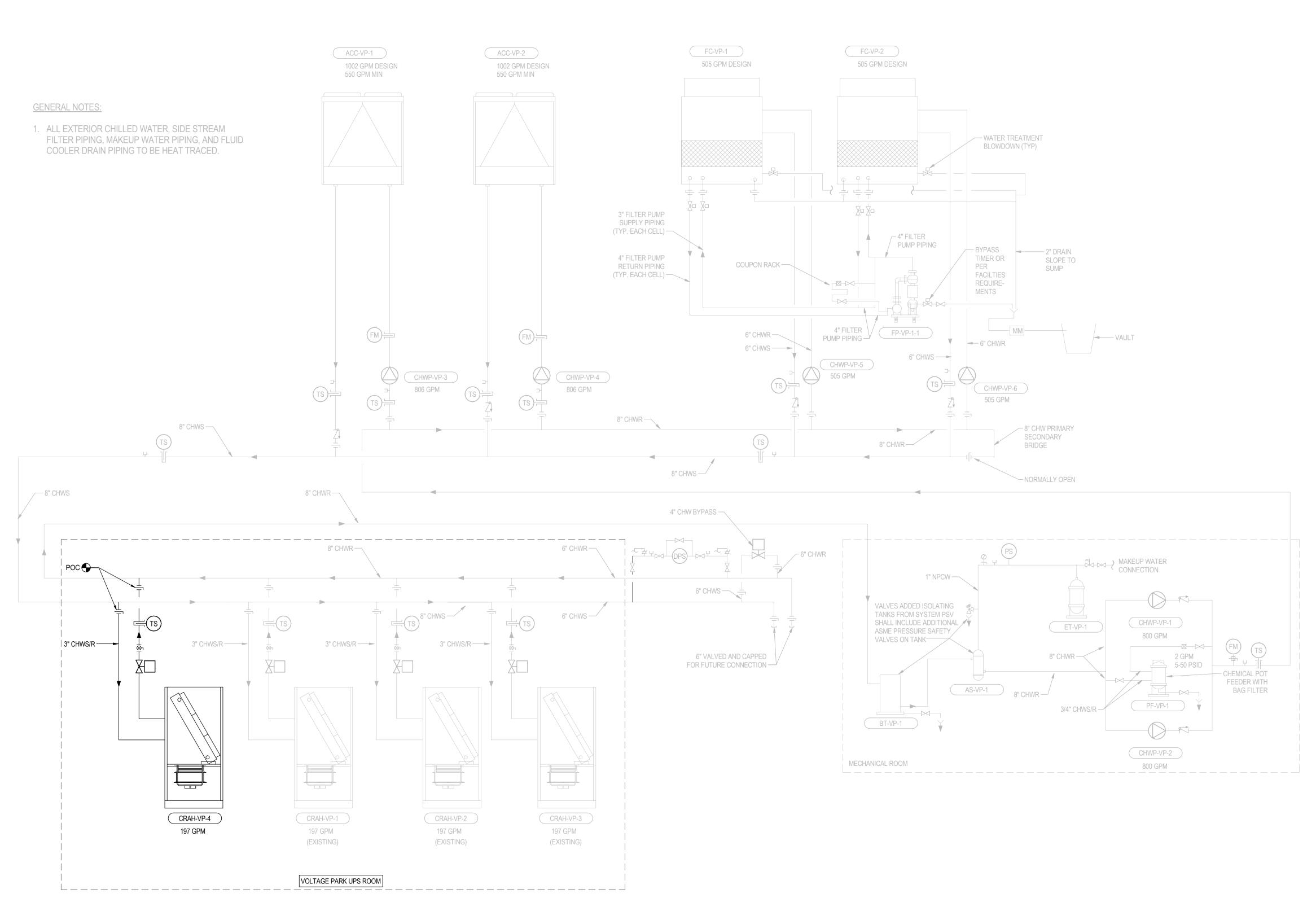
MECHANICAL DRAWINGS



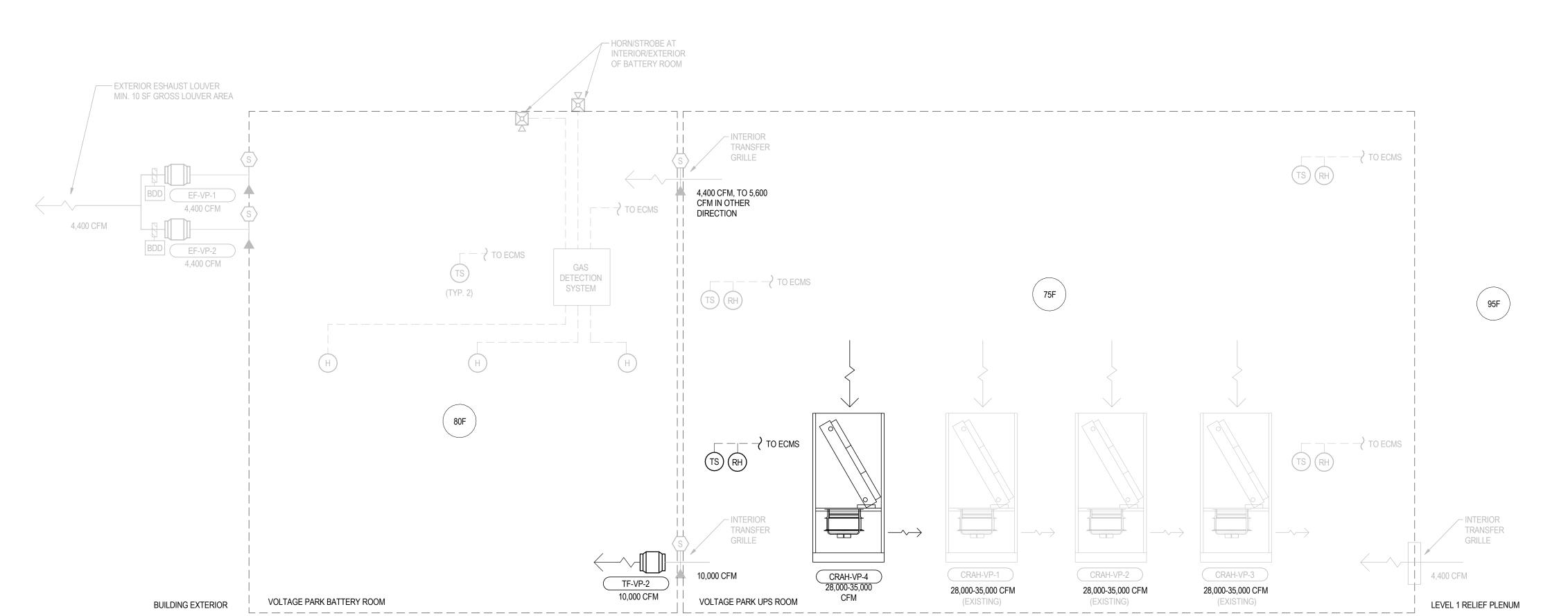


VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

MECHANICAL Title DETAILS



VP2-UPS AIR-COOLED CHILLER PIPING DIAGRAM



DESCRIPTION OF OPERATIONS

PRCTI20240275 - Revision 2 Transfer Fan Between UPS Room and Battery Room. This set does not replace the originally approved set.

THIS SEQUENCE OF OPERATION IS WRITTEN FOR CONTROLLING THE CENTERIS FUTURE TENANT HEATING VENTILATING



Seattle Washington 98104-1878 (206) 667-0555

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MECHANICAL

City of Puyallup Development & Permitting Services ISSUED PERMIT Building Public Works Engineering



VOLTAGE PARK PHASE 2 - PERMIT 10/25/2024

Revision No. Description

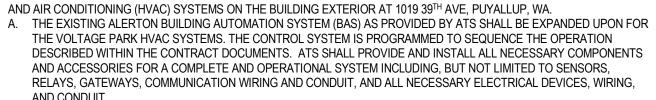
C. TEMPERATURE CONTROL. IF THE AVERAGE BATTERY ROOM TEMPERATURE IS ABOVE 90 °F, HIGH ZONE TEMPERATURE, THEN OPERATE NEW TRANSFER FAN AS WELL AS BOTH EXHAUST FANS UNTIL AVERAGE ZONE

SHUTDOWN THE FAN IF DAMPER END SWITCH IS NOT FULLY OPEN, AND GENERATE A FAN FAILURE ALARM.

 a. TRANSFER FAN FAILURE. b. TRANSFER FAN IN-HAND. c. LOSS OF COMMUNICATIONS WITH VFD.

MECHANICAL Title DIAGRAMS

M.VP2.601



AND CONDUIT.

RELAYS, GATEWAYS, COMMUNICATION WIRING AND CONDUIT, AND ALL NECESSARY ELECTRICAL DEVICES, WIRING, B. ALL POINTS IDENTIFIED IN THE CONSTRUCTION DOCUMENTS WILL BE DISPLAYED ON THE USER'S GRAPHIC INTERFACE. ALARMS AND OTHER SYSTEM NOTIFICATIONS REPORT TO SYSTEM USERS. C. THE ARCHITECTURE OF THE BAS SHALL BE SO THAT COMMUNICATION FAILURE WITH AN INDIVIDUAL EQUIPMENT

CONTROLLER SHALL NOT DISABLE EQUIPMENT FROM BEING ABLE TO OPERATE ON THE LOCAL CONTROLLER

SETPOINTS FOR STANDALONE OPERATION SHALL BE ESTABLISHED WITH ETH OWNER. D. SYSTEMS CONTROLLED a. THE CONTROL SYSTEM SHALL EXECUTE CONTROL FUNCTIONS OVER THE FOLLOWING NEW SYSTEMS:

COMPUTER ROOM AIR HANDLING UNITS (CRAH). BATTERY ROOM EXHAUST FANS (EF-VP). BATTERY ROOM TRANSFER FAN (TF-VP-1).

b. OTHER POINTS MONITORED BATTERY ROOM HYDROGEN GAS DETECTION.

UNIT SMOKE DETECTOR STATUS. STANDBY POWER STATUS.

NORMAL POWER STATUS. FIRE ALARM STATUS.

2.0 COMPUTER ROOM AIR HANDLING UNIT (EXISTING CRAH-VP-1-1 THRU CRAH-VP-1-3, AND NEW CRAH-VP-4) A. GENERAL

a. THE THREE (3) EXISTING AND (1) NEW COMPUTER ROOM AIR HANDLING UNITS SERVE THE UPS SPACE FOR VOLTAGE PARK. UNITS ARE SIZED FOR N+1 CAPACITY. COMPUTER ROOM AIR HANDING UNITS ARE VERTICAL DOWNFLOW UNITS WITH A DIAGONAL CHILLED WATER COIL IN DRAW-THRU CONFIGURATION. THE BAS SHALL INCLUDE NEW CONTROLS FOR THE VOLTAGE PARK COOLING SYSTEMS THAT INCLUDE TRANSFER AIR TO THE BATTERY ROOM THROUGH THE UPS SPACE.

B. COMPUTER ROOM AIR HANDLING UNIT FANS SHALL BE COMMANDED ON BY THE BAS CONTINUOUSLY. WHEN UNITS ARE SHUTDOWN FANS ARE OFF AND VALVES ARE CLOSED. CONDENSATE PUMPS AND CONDENSATE DETECTION SYSTEMS SHALL NOT BE DISABLED. SHUTDOWN CAN OCCUR FOR ANY OF THE FOLLOWING, AND GENERATES AN

a. MANUAL SHUTDOWN OF AN INDIVIDUAL UNIT. b. SCHEDULED MAINTENANCE.

c. SMOKE DETECTION OR FIRE ALARM SHUTDOWN. C. UPON ENABLING A CRAH UNIT THE FAN MINIMUM SPEED SHALL BE 75% (ADJ) TO PROVIDE 3/4rds OF THE PEAK UNIT AIRFLOW, OR 28,000 CFM EACH. FAN MINIMUM SPEED WITH THE VFD'S SHALL BE 12% (ADJ) OF FULL FLOW. D. THE BAS SHALL DEVELOP A COOLING DEMAND SIGNAL USED TO EQUALLY MODULATE THE CHILLED WATER VALVE ON ALL OPERATING CRAH UNITS TO MAINTAIN THE TEMPERATURE OF THE SPACE HIGHEST ABOVE SETPOINT AT 75°F (OR

a. EACH OF THE 5 TEMPERATURE SENSORS SHALL BE PROVDIED WITH AN INDIVIDUALLY ADJUSTABLE SETPOINT AT

THE BAS. SENSORS THAT HAVE FAILED OR ARE 15°F (ADJ) ABOVE OR BELOW THE AVERAGE IN THE UPS ROOM WILL NOT BE USED FOR CONTROL AND SHALL GENERATE AN ALARM.

AS INDIVIDUALLY SET AT THE BAS, ADJ) IN THE UPS ROOM AND 85°F (ADJ) IN THE BATTERY ROOM.

E. IF THE CHILLED WATER VALVE SETPOINT IS ABOVE 75% (ADJ) AND 3/4rds OF FULL OPEN FOR MORE THAN 10 MINUTES, THEN THE CRAH UNIT FANS SHALL MODULATE IN UNISON BETWEEN 75% AND 100%, 35,000 CFM, IN UNISON WITH THE VALVE COMMAND INCREASES. THIS CONDITION SHALL GENERATE A UPS ROOM UNABLE TO MAINTAIN REDUNDANT

UNIT OPERATION ALARM. F. HUMIDITY SENSORS ARE FOR MONITORING ONLY.

G. DISCHARGE AIR TEMPERATURE IS FOR MONITORING ONLY. H. LEAVING WATER TEMPERATURE IS FOR MONITORING ONLY.

I. THE BAS SHALL CLOSE THE CHILLED WATER CONTROL VALVE IF A DRAIN PAN OVERFLOW ALARM IS GENERATED ON THE SINGLE CRAH UNIT, AND RAISE THE SPEED OF OPERATING CRAH TO 100%. J. THE BAS SHALL PROVE A LEAK DETECTION CABLE AROUND THE PERIMETER OF EACH CRAH UNIT.

K. THE BAS SHALL CONNECT TO EACH CRAH WITH A RS485 MODBUS RTU CONNECTION. L. COMPUTER ROOM AIR HANDLING UNIT ALARM LIST

a. HIGH UPS TEMPERATURE ALARM, ABOVE 80°F (ADJ).

b. LOW UPS TEMPERATURE ALARM, BELOW 68°F (ADJ). c. HIGH BATTERY ROOM TEMPERATURE ALARM, ABOVE 90°F (ADJ).

LOW ZONE HUMIDITY RATIO, 28°F DEW POINT (ADJ).

d. LOW BATTERY ROOM TEMPERATURE ALARM, BELOW 72°F (ADJ). e. HIGH ZONE HUMIDITY RATIO, 69°F DEW POINT (ADJ).

a. TEMPERATURE SENSOR FAILURE. HUMIDITY SENSOR FAILURE.

SUPPLY FAN FAILURE. SUPPLY FAN IN-HAND.

k. SUPPLY FAN VOLTAGE OUT OF RANGE. I. SUPPLY FAN PHASE LOSS. m. CHILLED WATER VALVE FAILURE.

 n. REDUNDANT UNIT OPERATION ALARM. LOSS OF COMMUNICATIONS.

p. DRAIN PAN OVERFLOW. g. RH SENSOR OUT OF RANGE

r. FILTER CHANGE REQUIRED.

s. HIGH ZONE HUMIDITY, ABOVE 70% (ADJ). t. LOW ZONE HUMIDITY, BELOW 17% (ADJ). u. LEAK DETECTION ALARM.

3.0 EXISTING (FOR REFERENCE ONLY) BATTERY ROOM EXHAUST FAN (EF-VP-1-1 & EF-VP-1-2)

A. GENERAL a. TWO (2) EXHAUST FANS SERVE THE BATTERY ROOM SPACE FOR VOLTAGE PARK. FANS ARE SIZED FOR N+1 CAPACITY OF THE MINIMUM AIRFLOW REQUIRED FOR BATTERY ROOMS. FANS ARE INLINE BELT DRIVEN AXIAL FANS WITH VFD'S FOR SPEED CONTROL. THE BAS SHALL INCLUDE NEW CONTROLS FOR THE VOLTAGE PARK EXHUAST SYSTEMS THAT INCLUDE TRANSFER AIR TO THE BATTERY ROOM THROUGH THE UPS SPACE. B. ONE EXHAUST FAN SHALL BE COMMANDED ON CONTINUOUSLY BY THE BAS. SHUTDOWN CAN OCCUR FOR ANY OF

THE FOLLOWING: a. MANUAL SHUTDOWN.

b. SCHEDULED LEAD-LAG ROTATION. C. TEMPERATURE CONTROL. IF BATTERY ROOM TEMPERATURE IS ABOVE 77 °F, HIGH ZONE TEMPERATURE, THEN

OPERATE BOTH FANS AT 100% UNTIL ZONE TEMPERATURE IS 5 °F BELOW HIGH TEMP SETPOINT (85 °F). D. WHEN ONE FAN IS SHUTDOWN THE BAS SHALL START OTHER FAN FIRST, AND RAMP IT UP TO FULL SPEED AS THE OTHER FAN IS RAMPED DOWN. BE DONE IN UNISON FANS ARE OFF AND VALVES ARE CLOSED. AFTER CHANGE OVER

FANS SHALL BE COMMANDED TO PROVIDE CONSTANT AIRFLOW 100% (ADJ). E. THE BAS SHALL PROVIDE AND CONNECT TO A HYDROGEN GAS DETECTION SYSTEM. THE HYDROGEN GAS DETECTION SYSTEM SHALL HAVE SENSORS WITHIN 12 INCHES OF THE CEILING AT A MINIMUM OF FOUR (4) "APPROVED" LOCATIONS. AN HIGH HYDROGEN GAS ALARM SHALL BE GENERATED IF HYDROGEN GAS IS DETECTED

ABOVE 1% OF THE LOWER EXPOSIVITY LEVEL (LEL). F. HORN STROBES SHALL BE PROVIDED AT EACH BATTERY ROOM ENTRANCE AND AT A VISIBLE ELEVATION WITHIN THE BATTERY ROOM. HORN STROBES SHALL ACTIVATE UPON A HIGH HYDROGEN GAS ALARM.

G. THE BAS SHALL CONNECT TO EACH VFD WITH A RS485 BACNET CONNECTION. THE BAS SHALL CONNECT TO THE HYDROGEN GAS DETECTION SYSTEM WITH A RS485 BACNET CONNECTION, OR A HARDWIRED CONNECTION THAT INCLUDES HIGH GAS DETECTION AND SYSTEM FAILURE ALARM AS AN INPUT TO THE BAS. H. A HARD WIRED POSITION SWITCH FROM EACH FIRE SMOKE DAMPER ASSOCIATED WITH EACH FAN SHALL SHUTDOWN

THE FAN IF DAMPER END SWITCH IS NOT FULLY OPEN, AND GENERATE A FAN FAILURE ALARM. BATTERY ROOM ALARM LIST a. HIGH ZONE TEMPERATURE ALARM, ABOVE 90°F (ADJ).

b. LOW ZONE TEMPERATURE ALARM, BELOW 72°F (ADJ). c. TEMPERATURE SENSOR FAILURE.

d. EXHAUST FAN FAILURE. e. EXHAUST FAN IN-HAND. f. LOSS OF COMMUNICATIONS WITH VFD. g. HIGH HYDROGEN GAS, ABOVE 1% LEL.

4.0 BATTERY ROOM TRANSFER FAN (TF-VP-1-1) A. GENERAL a. ONE TRANSFER FAN SERVES THE BATTERY ROOM FOR ADDITIONAL TEMPERATURE CONTROL OF THE BATTERY ROOM SPACE FOR VOLTAGE PARK. FAN IS SIZED FOR TO REMOVE HEAT AFTER A 50% FULL BATTERY

h. HYDROGEN GAS SYSTEM DETECTION FAILURE.

DISCHARGE EVENT ENABLING RECHARGE OF BATTERIES 1 HOUR AFTERWARDS. THIS CONDITION IS PROVIDED ALL COOLING SYSTEMS IN THE UPS REMAIN ONLINE. FAN IS INLINE BELT DRIVEN AXIAL FANS WITH VFD'S FOR SPEED CONTROL. THE BAS SHALL INCLUDE NEW CONTROLS FOR THE VOLTAGE PARK TRANSFER FAN SYSTEMS THAT INCLUDE TRANSFER AIR BACK INTO THE UPS SPACE FROM THE BATTERY ROOM. B. THE TRANSFER FAN SHALL BE COMMANDED OFF CONTINUOUSLY BY THE BAS. SHUTDOWN CAN OCCUR FOR ANY OF THE FOLLOWING: a. MANUAL SHUTDOWN.

b. BATTERY ROOM TEMPERATURE IS BELOW 90 °F c. SCHEDULED LEAD-LAG ROTATION.

TEMPERATURE IS 5 °F BELOW HIGH TEMP SETPOINT (85 °F). D. MODULATE THE TRANSFER FAN TO MAINTAIN THE WORST CASE AVERAGE BATTERY ROOM TEMPERATURE AT 85 °F E. A HARD WIRED POSITION SWITCH FROM EACH FIRE SMOKE DAMPER ASSOCIATED WITH THE TRANSFER FAN SHALL

F. BATTERY ROOM TRANSFER FAN ALARM LIST

VP2-VOLTAGE PARK UPS AND BATTERY ROOM CONTROL DIAGRAM