MECHANICAL ABBREVIATIONS

```
INTERNATIONAL BUILDING CODE
                                                                       INDUSTRIAL COLD WATER
          AIR CONDITIONING
          AIR CHANGES PER HOUR
                                                                       INSIDE DIAMETER/DIMENSION
          ACOUSTICAL CEILING TILE
                                                                       INVERT ELEVATION
          ACCESS DOOR
                                                                       INTEGRATED ENERGY EFFICIENCY RATIO
           ADDITIONAL
                                                                       INTERNATIONAL MECHANICAL CODE
                                                                       INCHES
          ABOVE FINISHED FLOOR
                                                                       INCHES WATER GAUGE
          ABOVE FINISHED GRADE
                                                                       INTEGRATED PART LOAD VALUE
          AIR HANDLING UNIT
                                                             IPLV
ALUM
          ALUMINUM
                                                                       KILOWATTS
AMP/AMPS AMPERAGE
                                                                       LEAVING AIR TEMPERATURE
          ACCESS PANEL
                                                                      POUND/POUNDS
          ARCHITECT
                                                             LF/LIN FT LINEAL FOOT/FEET
          BEADED COLLAR
                                                                       LIQUID PROPANE GAS
          BACKDRAFT DAMPER
                                                                       LOW PRESSURE STEAM
          BELOW FLOOR
                                                                       LEAVING
                                                                       SOUND POWER RATING LEVEL (IN DB)
          BRAKE HORSEPOWER
                                                                       LOW WALL GRILLE
          BOTTOM OF DUCT
                                                                       LEAVING WATER TEMPERATURE
          BOTTOM OF PIPE
                                                             MAX
                                                                       MAXIMUM
          BOTTOM
                                                                       MAKE UP AIR UNIT
          BIRD SCREEN / BLACK STEEL
                                                                       1000 BRITISH THERMAL UNITS/HOUR
                                                                       MINIMUM CIRCUIT AMPACITY
          BRITISH THERMAL UNIT
          BRITISH THERMAL UNITS PER HOUR
                                                                       MOTORIZED DAMPER
          CAPACITY
                                                                       MANUFACTURER
                                                                       MISCELLANEOUS
          CALIBRATED BALANCING DAMPER
          CONTROLS CONTRACTOR
                                                                       MINIMUM/MINUTE
          CEILING DIFFUSER/CONDENSATE DRAIN
                                                                       MEDIUM PRESSURE STEAM
          CONDENSER WATER RETURN
                                                                       MOUNT
                                                                       MOUNTED
          CONDENSER WATER SUPPLY
          CUBIC FEET PER MINUTE
                                                                       MAKE-UP WATER
                                                                       NOT APPLICABLE
          CHILLED WATER RETURN
          CHILLED WATER SUPPLY
                                                                       NORMALLY CLOSED/NOISE CRITERIA
          CEILING
                                                             NG/NGAS
                                                                      NATURAL GAS
          COLUMN
                                                                       NOT IN CONTRACT
          CONCRETE
                                                                       NORMALLY OPEN/NUMBER
          CONDENSATE
                                                                       NON-POTABLE WATER
          CONNECT/CONNECTED/CONNECTION
                                                                       NON-RESIDENTIAL
CONT
          CONTINUOUS/CONTINUATION
                                                                       OUTSIDE AIR
                                                             OA/OSA
CONTR
          CONTRACTOR
                                                                       OPPOSED BLADE DAMPER
          COORDINATE
                                                                       OUTSIDE DIAMETER/DIMENSION
                                                                       POUNDS PER CUBIC FOOT
          COEFFICIENT OF PERFORMANCE
          COOLING TOWER
                                                                       PRESSURE DROP
          CUBIC/CONDENSER UNIT
                                                                       PHASE
          DOMESTIC COLD WATER/CONDENSER WATER
                                                                       POINT OF CONNECTION
          DUCTBOARD/DRY BULB/DECIBEL
                                                             P/PRESS
                                                                       PRESSURE
          DIRECT DIGITAL CONTROL
                                                                       POUNDS PER SQUARE INCH
          DEFLECTION
                                                                       POUNDS PER SQUARE INCH GAUGE
          DEGREE/DEGREES
                                                                       QUANTITY
          DIAMETER
                                                                       RETURN GRILLE/RELOCATED/RETURN
          DAMPER
                                                                       RETURN AIR
          DOWN
                                                             RD/RND
                                                                      ROUND
           DEDICATED OUTSIDE AIR SYSTEM
          DRAWING
                                                                       REQUIRED
          EXHAUST
                                                                       RESIDENTIAL
          EACH/EXHAUST AIR
                                                                       RELIEF
          ENTERING AIR TEMPERATURE
                                                                       REFRIGERANT DISCHARGE GAS
          EGGCRATE GRILLE/END CAP/ELEC CONTRACTOR
                                                                       REFRIGERANT LIQUID
          ENERGY EFFICIENT RATING
                                                                       REVOLUTIONS PER MINUTE
          EXHAUST FAN
                                                                       REFRIGERANT SUCTION
          EFFICIENCY
          ELEVATION
                                                                       SUPPLY AIR
                                                                       SATURATION/SUPPLY AIR TEMPERATURE
ELEC/ELECT ELECTRICAL/ELECTRIC
          ENERGY MANAGEMENT CONTROL SYSTEM
                                                                       SMOKE DETECTOR
                                                                       SLIP & DRIVE CONNECTION
                                                                       SEATTLE CODE
          EQUIPMENT
          EXTERNAL STATIC PRESSURE
                                                                        SEASONAL ENERGY EFFICIENCY RATING
          ENTERING WATER TEMPERATURF
                                                                       SENSIBLE
          EXISTING
                                                                       SOUND LINED
          EXHAUST
                                                                       SHEETMETAL
          FAHRENHEI
                                                                        SPECIFICATION
          FIRE ALARM CONTRACTOR
                                                                        SCREENED OPENING
                                                                       SLAB ON GRADE
          FIRE DAMPER
          FIRE DEPARTMENT CONNECTION
                                                                       STATIC PRESSURE
                                                                       SQUARE FEET
          FINISHED FLOOR
          FURNISHED AND INSTALLED BY CONTRACTOR
                                                                       STAINLESS STEEL
          FURNISHED AND INSTALLED BY OWNER
                                                                       STRUCTURAL
          FULL LOAD AMPS
                                                                        TRANSFER AIR
          FLEXIBLE
                                                                        TEMPERATURE/TEMPORARY
          FLOOR
                                                                       TO BE DETERMINED
          FLAT ON BOTTOM
                                                                       TOP OF DUCT
                                                                       TOP OF STEEL/TOP OF SLAB
          FURNISHED BY OTHERS.
          INSTALLED BY CONTRACTOR
          FLAT ON SIDE
                                                                        TOTAL STATIC PRESSURE
          FLAT ON TOP
                                                                        THERMOSTAT
          FIRE PROTECTION
                                                                        TYPICAL
          FEET PER MINUTE
                                                                       UNIT HEATER
                                                                       UNLESS NOTED OTHERWISE
          FIRE/SMOKE DAMPER
          FOOT/FEET
                                                                       VENTILATION AIR
                                                                       VOLUME DAMPER
          FACE VELOCITY
          GRILLE
                                                                        VELOCITY
          GAUGE/GALLON
                                                                        VERTICAL
          GALVANIZED
                                                                       VARIABLE FREQUENCY DRIVE
           GENERAL CONTRACTOR
                                                                       VOLUME
                                                                       WRAPPED DUCT
          GALLONS PER MINUTE
                                                                       WET BULB
          GRILLE/REGISTER/DIFFUSER
                                                                       WATER GAUGE
          GYPSUM WALL BOARD
          HORIZONTAL
                                                                       WITHOUT
                                                                       WATTS PER SQUARE FOOT
                                                                       WASHINGTON STATE ENERGY CODE
```

THE APPROVED CONSTRUCTION PLANS. DOCUMENTS AND ALL ENGINEERING MUST BE POSTED ON THE JOB AT ALL **INSPECTIONS IN A VISIBLE AND READILY** ACCESSIBLE LOCATION.

HEATING SEASONAL PERFORMANCE FACTOR

HIGH WALL TRANSFER GRILLE

HOT WATER RETURN

HOT WATER SUPPLY

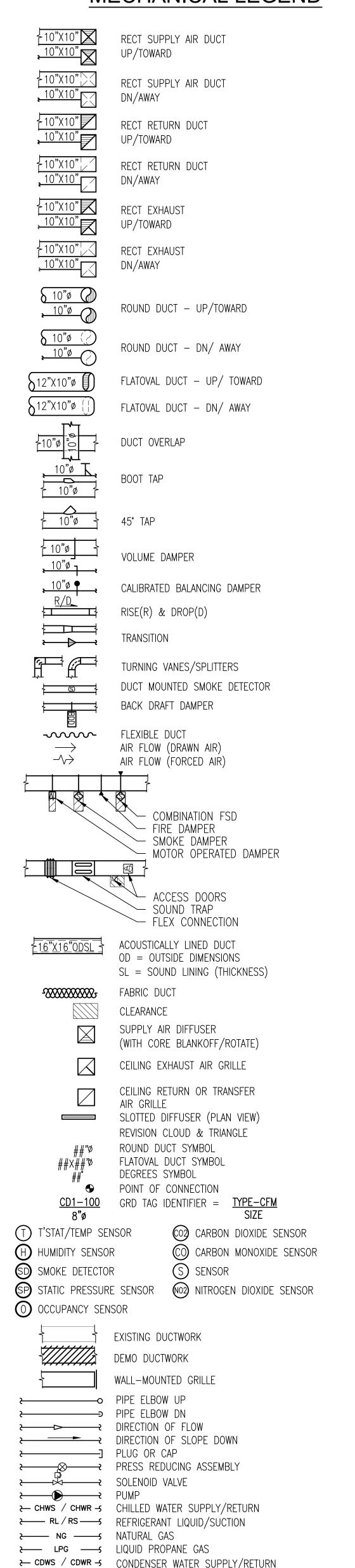
HEAT EXCHANGER

HERTZ

FULL SIZED LEDGIBLE 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 noncompliance 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.

MECHANICAL LEGEND



→ HWS / HWR → HEATING WATER SUPPLY/RETURN

FUEL OIL SUPPLY/RETURN

RDG ----- REFRIGERANT DISCHARGE GAS

CONDENSATE

FUEL OIL VENT

MECHANICAL GENERAL NOTES

- WORK SHALL CONFORM TO APPLICABLE CODES AND REGULATIONS, INCLUDING, BUT NOT LIMITED TO THE 2018 IBC, 2018 WSEC, 2018 IMC, & SIMILAR YEAR WAC 296-104 BOILER RULES
- DO NOT SCALE DRAWINGS, DIMENSIONS GOVERN. DIMENSIONS ARE TO FACE OF STUD, CONCRETE, OR MASONRY UNO.
- LOCATION AND DETAILS OF EQUIPMENT, DUCT ROUTING, AND CONNECTIONS ARE APPROXIMATE. COORDINATE FINAL LOCATIONS WITH OTHER TRADES. INSTALL IN ACCORDANCE WITH APPROVED SUBMITTALS AND DETAIL DRAWINGS WHEN APPLICABLE.
- 4. VERIFY EXISTING CONDITIONS, DIMENSIONS, DETAILS, ETC. NOTIFY ENGINEER OF ANY DISCREPANCIES PRIOR TO PROCEEDING WITH WORK.
- WHEN CONSTRUCTION DETAILS ARE NOT SHOWN OR NOTED FOR ANY PART OF THE WORK, DETAILS SHALL BE THE SAME AS FOR OTHER SIMILAR WORK. IF ADDITIONAL QUESTIONS REMAIN, CONTACT THE ENGINEER PRIOR TO PROCEEDING.
- 6. ALL STRUCTURAL OPENINGS AND PLATFORMS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR UNO.

WATER TEMPERATURES BY REPRESENTATIVE BUILDING LOADS WHERE REQUIRED IN C403.4.

- DUCT SEALING AND CONSTRUCTION TO MEET SMACNA AND ENERGY CODE REQUIREMENTS. UNO: LOW PRESSURE DUCTWORK (DOWNSTREAM OF VAV BOXES, CONSTANT VOLUME AC SYSTEMS, TOILET EXHAUSTS, ETC.) TO MEET 2" CONSTRUCTION CLASS WITH SEAL CLASS C. MEDIUM PRESSURE DUCTWORK (UPSTREAM OF VAV BOXES, HIGH VELOCITY EXHAUSTS, ETC.) TO MEET 2" CONSTRUCTION CLASS WITH SEAL CLASS ((UNO IN SCHEDULES AT 3" WITH SEAL CLASS B, >4" WITH SEAL CLASS A). DUCT RISERS IN SHAFTS WITH DAMPERED PENETRATIONS TO MEET 6" CONSTRUCTION CLASS WITH SEAL CLASS A. OUTDOOR INSTALLED SUPPLY & RETURN DUCTS TO HAVE SEAL CLASS A.
- 8. ALL CEILING DIFFUSERS ARE 4-WAY THROW UNLESS NOTED OTHERWISE.
- 9. ALL DUCT DIMENSIONS ARE OUTSIDE DIMENSIONS BEFORE SOUND LINING HAS BEEN ACCOUNTED FOR (SOUND LINING @ 1", UNO)
- 10. OUTSIDE AIR INTAKES ON ALL AIR HANDLING UNITS SHALL BE 10 FEET AWAY FROM ANY VENTS, STREETS, LOADING DOCK, NEIGHBORING LOT LINES & FUEL BURNING EQUIPMENT OR 3 FEET BELOW OR 25' ABOVE ANY CONTAMINANT SOURCE WITHIN 10 FEET.
- 11. ALL AIR ECONOMIZERS SHALL BE CAPABLE OF THE FOLLOWING PER C403.5.1 & C403.5.5:

 -0% TO 100% OF THE DESIGN SUPPLY AIR WITH FAULT DETECTION & DIAGNOSTIC REPORTING.

 -CONTROLLED BY A CONTROL SYSTEM DETERMINING IF THE OUTSIDE AIR CAN MEET PART OR ALL OF THE BUILDING COOLING LOADS.
- -INTEGRATED TO PROVIDE PARTIAL COOLING EVEN WHEN MECHANICAL COOLING IS REQUIRED 12. OUTSIDE AIR INTAKE, RELIEF, AND EXHAUST OPENINGS SHALL BE EQUIPPED WITH MOTORIZED CLASS 1 LOW LEAK (<4 CFM/SF @ 1"WG) DAMPERS (OR GRAVITY PER EXCEPTIONS IN C403.7.8) DAMPERS WHICH CLOSE AUTOMATICALLY WHEN SYSTEM IS OFF OR UPON POWER FAILURE,
- UNO FOR SMOKE CONTROL SYSTEM OPERATION 13. THE CONTROL SYSTEM SHALL MEET C403 AND BE PROGRAMMABLE, CAPABLE OF BEING SET FOR DIFFERENT DAY TYPES PER WEEK. DEADBAND SETTING OF AT LEAST 5°F (10°F FOR RESIDENTIAL), BETWEEN THE HEATING AND COOLING SETPOINTS AND SETBACK TEMPERATURES WITH OPTIMAL START CONTROL. CONTROL SYSTEM SHALL INCLUDE A MICROPROCESSOR AND BE CAPABLE OF VARYING FLOWS AND RESETTING SUPPLY AIR &
- 14. WHERE REQUIRED BY C408, RECORD DRAWINGS OF THE ACTUAL INSTALLATION SHALL BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF THE DATE OF SYSTEM ACCEPTANCE PER THE ENERGY CODE. AN OPERATING MANUAL AND MAINTENANCE MANUAL SHALL BE PROVIDED TO THE BUILDING OWNER. ALL HVAC SYSTEMS SHALL BE BALANCED AND A WRITTEN BALANCING REPORT SHALL BE PROVIDED TO THE OWNER. HVAC CONTROL SYSTEMS SHALL BE TESTED TO ENSURE THAT THEY OPERATE IN ACCORDANCE WITH APPROVED PLANS. A PRELIMINARY COMMISSIONING REPORT OF TEST PROCEDURES AND RESULTS SHALL BE PREPARED PRIOR TO ISSUANCE OF A FINAL CERTIFICATE OF OCCUPANCY. A COMPLETE FINAL COMMISSIONING REPORT OF TEST PROCEDURES AND RESULTS SHALL BE PROVIDED TO THE OWNER.
- 15. MECHANICAL SYSTEMS SHALL COMPLY WITH SEISMIC RESTRAINT REQUIREMENTS OF THE BUILDING CODE, SMACNA AND ASCE 7. ALL LIFE SAFETY OR HAZARDOUS MATERIAL RELATED SYSTEMS SHALL BE DEEMED AN Ip=1.5 FOR RESTRAINT METHODS OR AS NOTED ON THE DRAWINGS. REFER TO CODES FOR INSTALLATION REQUIREMENTS AND EXCEPTIONS BASED ON SIZING, WEIGHTS AND MOUNTING HEIGHTS.
- 16. PROVIDE EARTHQUAKE RESTRAINTS FOR HVAC EQUIPMENT AS REQUIRED BY SMACNA SEISMIC RESTRAINT MANUAL, SEISMIC HAZARD B. WIRES FOR CEILING SYSTEM ETC. SHALL NOT BE HUNG OFF HVAC EQUIPMENT OR HVAC EQUIPMENT SUPPORTS.
- 17. PROVIDE FIRE AND COMBINATION FIRE/SMOKE DAMPERS WHERE SHOWN ON PLANS AND WHERE REQUIRED PER CODE, AT 1-1/2 HR RATING
- 18. ALL PIPING PENETRATIONS THROUGH RATED ASSEMBLIES SHALL BE SEALED WITH AN UL APPROVED FIRE CAULKING. ALL MATERIALS EXPOSED WITHIN PLENUMS SHALL BE NON-COMBUSTIBLE OR SHALL BE UL LISTED AND LABELED FOR INSTALLATION IN PLENUMS OR AS HAVING A FLAME
- SPREAD INDEX \leq 25 AND A SMOKE-DEVELOPED INDEX OF \leq 5 19. SMOKE DETECTORS PROVIDING AUTOMATIC SHUTDOWN SHALL BE PROVIDED IN THE RETURN AIR. PER MECH CODE. SUCH AS HVAC EQUIPMENT
- DELIVERING (NOT EXHAUST) >2000 CFM (INCLUDING MULTIPLE UNITS DUCTED INTO COMMON DISTRIBUTION OR RETURN, WITH A TOTAL SUPPLY >2000 CFM) OR EACH STÓRY OF RETURN SYSTEMS OVER 15,000 CFM IN A MULTI-STORY INSTALLATION, NOT IN SYSTEMS SERVING SINGLE ROOMS/SPACES. SMOKE DETECTORS SHALL BE FIC (ELEC) UNO. POWER-WIRING AND INTERLOCK TO FIRE ALARM SYSTEM BY ELECTRICAL CONTRÁCTOR AS APPLICABLE. VAV BOX (WITH FAN) SHUTDOWN CAN BE THROUGH CONTROLS SYSTEM.
- 20. ARCHITECTURAL ACCESS PANELS SHALL BE PROVIDED AND INSTALLED BY GC AT ALL CONCEALED EQUIPMENT AND DEVICE LOCATIONS, UNLESS
- 21. ALL MOTOR STARTERS NOT SHOWN IN EQUIPMENT SCHEDULES SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. MOTOR EFFICIENCIES TO MEET OR EXCEED CODE MINIMUM.
- 22. FOR ALL "SEALED AIR TIGHT" OR PRESSURIZED SHAFTS/ROOMS AND PRESSURE/TEMPERATURE/HUMIDITY CONTROLLED ROOMS, THE FOLLOWING SHALL OCCUR:
 —USE SECTION 909.5 OF THE 2018 IBC FOR MAX ALLOWABLE LEAKAGE AREA, FOLLOWING THE GUIDELINES FOR TIGHT STAIR SHAFT -ALL VERTICAL JOINTS. CORNERS AND WALL TRACKS (TOP AND BOTTOM) SHALL BE PROVIDED WITH A CONTINUOUS SEAL FOR THE LENGTH OF -ANY FLOOR DECKING PERPENDICULAR TO THE CONSTRUCTION SHALL BE CAULKED (BY GC). FILLING WITH ROCK WOOL IS NOT ACCEPTABLE. -ANY PENETRATIONS OF THE CONSTRUCTION (DUCTWORK, CONDUIT, PIPING, ...) SHALL BE SEALED ON BOTH SIDES
 -ALL DOORS SHALL BE PROVIDED WITH TIGHT FITTING GASKETS AND THRESHOLD SWEEPS, AND OPEN AGAINST THE DIRECTION OF PRESSURE.
 -IN ADDITION TO ABOVE, ROOM ENVELOPE TO HAVE VAPOR BARRIER FOR HUMIDITY CONTROLLED ROOMS -ROOM ENVELOPE TO BE INSULATED (R-11 MIN) IF TEMPERATURE DIFFERENCE EXCEEDS 10°F TO ADJACENT AREAS
- 23. ALL ADHESIVES, SEALANTS, PAINTS AND COATINGS USED DURING THE INSTALLATION/FINISH WORK SHALL MEET THE LEED REQUIREMENTS FOR IEQ 24. MAXIMUM STANDARD LENGTH OF FLEXIBLE DUCT SHALL BE PER BUILDING STANDARDS OR 12' MAX; UP TO 25' MAXIMUM LENGTH IS ACCEPTABLE F; FLEX DUCT (UL-181 TESTED & NOT "CONNECTOR") IS USED, DUCT Ø IS INCREASED BY 1 NOMINAL SIZE & BENDS DO NOT EXCEED 235° TOTAL. REFER TO INSTALLATION DETAILS FOR SUPPORT REQUIREMENTS. FLEXIBLE DUCT FLAME SPREAD RATING SHALL BE < 25 AND SMOKE DEVELOPED RATING SHALL BE < 50. USE THERMAFLEX MODEL G-KM FOR LOW AND MEDIUM PRESSURE APPLICATIONS OR APPROVED EQUAL
- 25. ELECTRICAL METERING OF SYSTEMS AS REQUIRED BY ENERGY CODE SECTION C409 IS BY ELECTRICAL. THE ELECTRICAL DESIGN & CONTRACTOR TEAM WILL FURNISH THE NECESSARY ELECTRICAL DISTRIBUTION AND METERING COMPONENTS SEE ELECTRICAL DRAWINGS. THE MECHANICAL CONTRACTOR WILL FURNISH A BUILDING MANAGEMENT SYSTEM CAPABLE OF COLLECTING AND STORING THE INFORMATION WITH A VISIBLE DISPLAY/NOTIFICATION READILY ACCESSIBLE TO OPERATION AND MANAGEMENT PERSONNEL AS REQUIRED
- 26. THE PROJECT TEAM IS COLLECTIVELY RESPONSIBLE FOR COMPLIANCE WITH [C412][APPENDIX E], "RENEWABLE ENERGY SYSTEMS." AS WELL AS C406 "EFFICIENCY PACKAGES" AS APPLICABLE TO THE PROJECT AND AS COORDINATED DURING DESIGN WITH ENTIRE DESIGN/CONSTRUCTION

???????? ??? ?????????

This is not an extension. This is to provide an alternative path for the water to be delivered to existing units. No new capacity is being added. This will only be serving units that have already been installed and are currently operating.

	DRAWING INDEX				
SHEET NO.	SHEET TITLE	CURRENT			
		REVISION			
MP0.00	COVER SHEET - HVAC				
MP0.01	CONSTRUCTION STANDARDS — HVAC				
MP2.03WD	PARTIAL 3RD FLOOR PIPING DEMO PLAN — HVAC				
MP2.03ED	PARTIAL 3RD FLOOR PIPING DEMO PLAN — HVAC				
MP2.01	PARTIAL 1ST FLOOR PIPING PLAN — HVAC				
MP2.03W	PARTIAL 3RD FLOOR PIPING PLAN - HVAC				
MP2.03E	PARTIAL 3RD FLOOR PIPING PLAN - HVAC				
MP5.01	DETAILS SHEET — HVAC				
MP6.01	EVAPORATIVE PIPING DIAGRAM — HVAC				

City of Puyallup

ACCEPTED

JMontgomery

08/25/2022

7:27:36 AM



Hermanson Company LLP 1221 2nd Avenue North Kent, Washington 98032 Tel: (206) 575-9700 Fax: (206) 575-9800 www.hermanson.com

Contractor Reg #: HERMACL005BJ

PRMH20221277 City of Puyallup Development & Permitting Services **ISSUED PERMIT** Planning Building Engineering Public Works Traffic Fire

EVAPORATOR LINES

SOUTH HILL BUSINESS & TECHNOLOGY CENTER 1111 39TH AVE. SE PUYALLUP, WA 98374



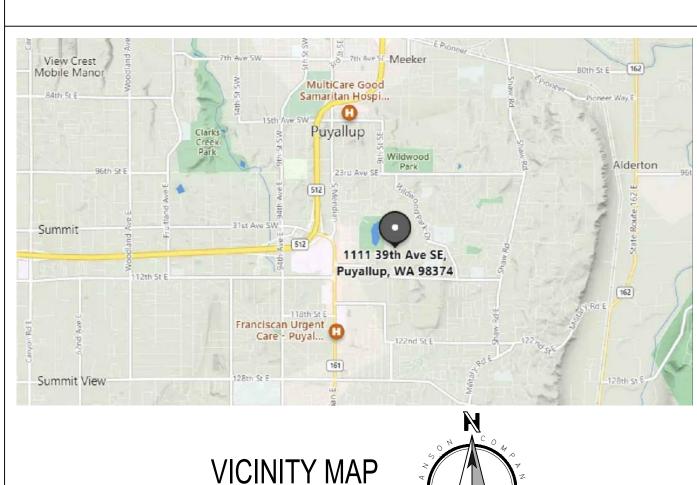


LEGAL DESCRIPTION

SECTION 03 TOWNSHIP 19 RANGE 04 QUARTER 42 LOT 3 OF BLR 2022-03-22-5003 / POR OF BLR 2019-05-22-5002 LY IN CY OF PUYALLUP MORE PARTICULARLY DESC AS FOLL COM AT STONE MON MARKING S 1/4 COR OF SEC 3 SD STONE MON LIES N 86 DEG 31 MIN 42 SEC E 2621.06 FT FROM SÉ COR OF SD SEC 3 TH N 00 DEG 00 MIN 24 SEC E 2599.51 FT TH S 87 DEG 44 MIN 17 SEC E 496.53 FT TO POB TH S 00 DEG 04 MIN W 132.96 FT TH S 16 DEG 29 MIN 57 SEC E 15.96 FT TH S 00 DEG 00 MIN 36 SEC 28.82 FT TH S 82 DEG 14 MIN 13 SEC E 58.63 FT TH S 53 DEG 48 MIN 38 SEC E 13.69 FT TO POB TH CONT S 53 DEG 48 MIN 38 SEC E 65.21 FT TH S 89 DEG 41 MIN 48 SEC E 274.77 FT TH S 00 DEG 00 MIN 36 SEC W 860.97 FT TH S 547.26 FT TH N 00 DEG 00 MIN 36 SEC E 489.96 FT TH N 89 DEG TH N 00 DEG 15 MIN 12 SEC W 225.75 FT TH N 37 DEG 10 MIN 59 SEC E 232.64 TO POB EASE OF REC OUT OF 04-19-03-4-034 SEG 2019-0472 05/30/19 JP 20190652DC 03/31/22 JP

ISSUE FOR PERMIT

Revisions



08/17/22 JMH ISSUE FOR PERMIT

Design

Drawn





FOR CITY USE:

COVER

SHEET

- HVAC

MP0.00

Design Team

Pre-Construction Number

Construction Number

Issue Date

FVP

DTN

14-22-22334

08/17/22





PLUMBING AND PIPING HANGER MATRIX BY PIPE MATERIAL

Material: Steel Pipe		Conditions: Mild Tempe	Conditions: Mild Temperature Systems		
Schedule 40	/ 80 / Standard: Threa	ded, Buttwelded, Socket We	ed, Buttwelded, Socket Welded, Grooved		
Pipe Size	Hanger Type	Rod Diameter	Hanger Spacing		
0-1/2" - 2"	Clevis	3/8	10 Feet O.C.		
2-1/2" - 4"	Clevis	1/2	10 Feet O.C.		
6"	Clevis	5/8	10 Feet O.C.		
8" - 10"	Clevis	3/4	10 Feet O.C.		
12" - 14"	Clevis	7/8	10 Feet O.C.		
16" - 36"	Clevis	1	10 Feet O.C.		

Pipe Material: Steel Pip	e	Conditions: High Temperature Systems ed, Buttwelded, Socket Welded, Grooved		
Schedule 40	/ 80 / Standard: Thread			
Pipe Size	Hanger Type	Rod Diameter	Hanger Spacing	
0-1/2" - 2"	Clevis	3/8	10 Feet O.C.	
2-1/2" - 4"	Clevis	1/2	10 Feet O.C.	
6"	Roller-Clevis	5/8	10 Feet O.C.	
8" - 10"	Roller-Clevis	3/4	10 Feet O.C.	
12" - 14"	12" - 14" Roller-Clevis		10 Feet O.C.	
16" - 36"	16" - 36" Roller-Clevis		10 Feet O.C.	

ipe Material: Cast Iron		Conditions: All Systems			
No-Hub					
Pipe Size	Hanger Type	Rod Diameter	Hanger Spacing		
2"	Clevis	3/8	8 Feet O.C. (12" from Couplings)		
3" - 4"	Clevis	1/2	8 Feet O.C. (12" from Couplings)		
6"	Clevis	5/8	8 Feet O.C. (12" from Couplings)		
8" - 10"	Clevis	3/4	8 Feet O.C. (12" from Couplings)		
12" - 14"	Clevis	7/8	8 Feet O.C. (12" from Couplings)		
16" - 36"	Clevis	1	8 Feet O.C. (12" from Couplings)		

Pipe Material: ABS/PVC	C/CPVC	Conditions: All Systems		
Solvent Weld, Threaded				
Pipe Size	Hanger Type	Rod Diameter	Hanger Spacing	
1-1/2" - 3"	Clevis or Loop	3/8	4 Feet O.C.	
3-1/2" - 6"	Clevis	1/2	4 Feet O.C.	
8" - 10"	Clevis	5/8	4 Feet O.C.	

ipe Material: Copper		Conditions: All Systems		
	Pressed, Sol	ldered, Grooved		
Pipe Size	Hanger Type	Rod Diameter	Hanger Spacing	
0-1/2" - 0-3/4"	Clevis or Loop	3/8	6 Feet O.C.	
1" - 1-1/4"	Clevis or Loop	3/8	8 Feet O.C.	
1-1/2" - 2"	Clevis or Loop	3/8	10 Feet O.C.	
2-1/2" - 3"	Clevis	1/2	10 Feet O.C.	
4" - 6"	Clevis	1/2	10 Feet O.C.	
8"	Clevis	5/8	10 Feet O.C.	
10"	Clevis	3/4	10 Feet O.C.	

P-H-MAT

TABLE 305.4

PIPING MATERIAL	MAXIMUM HORIZONTAL SPACING (feet)	MAXIMUM VERTICAL SPACING (feet)	
ABS pipe	4	10°	
Aluminum pipe and tubing	10	15	
Cast-iron pipe ^b	5	15	
Copper or copper-alloy pipe	12	10	
Copper or copper-alloy tubing	8	10	
CPVC pipe or tubing, 1 inch and smaller	3	10°	
CPVC pipe or tubing, 1 ¹ / ₄ inches and larger	4	10°	
Lead pipe	Continuous	4	
PB pipe or tubing	$2^{2}/_{3}$ (32 inches)	4	
PE-RT 1 inch and smaller	$2^{2}/_{3}$ (32 inches)	10°	
PE-RT 1 ¹ / ₄ inches and larger	4	10°	
PEX tubing 1 inch and smaller	$2^{2}/_{3}$ (32 inches)	10°	
PEX tubing 1 ¹ / ₄ inches and larger	4	10°	
Polypropylene (PP) pipe or tubing, 1 inch and smaller	2 ² / ₃ (32 inches)	10°	
Polypropylene (PP) pipe or tubing, 1 ¹ / ₄ inches and larger	4	10°	
PVC pipe	4	10°	
Steel tubing	8	10	
Steel pipe	12	15	

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

- a. See Section 301.18.
- b. The maximum horizontal spacing of cast-iron pipe hangers shall be increased to 10 feet where 10-foot lengths of pipe are installed.
- c. Mid-story guide.

DUCT CONSTRUCTION STANDARDS

STANDARD INSERT METHODS NEW AND EXISTING CONDITIONS





Building Today, Defining Tomorrow Hermanson Company LLP 1221 2nd Avenue North Kent, Washington 98032

Tel: (206) 575–9700 Fax: (206) 575–9800 www.hermanson.com Contractor Reg #: HERMACL005BJ

Hermanson

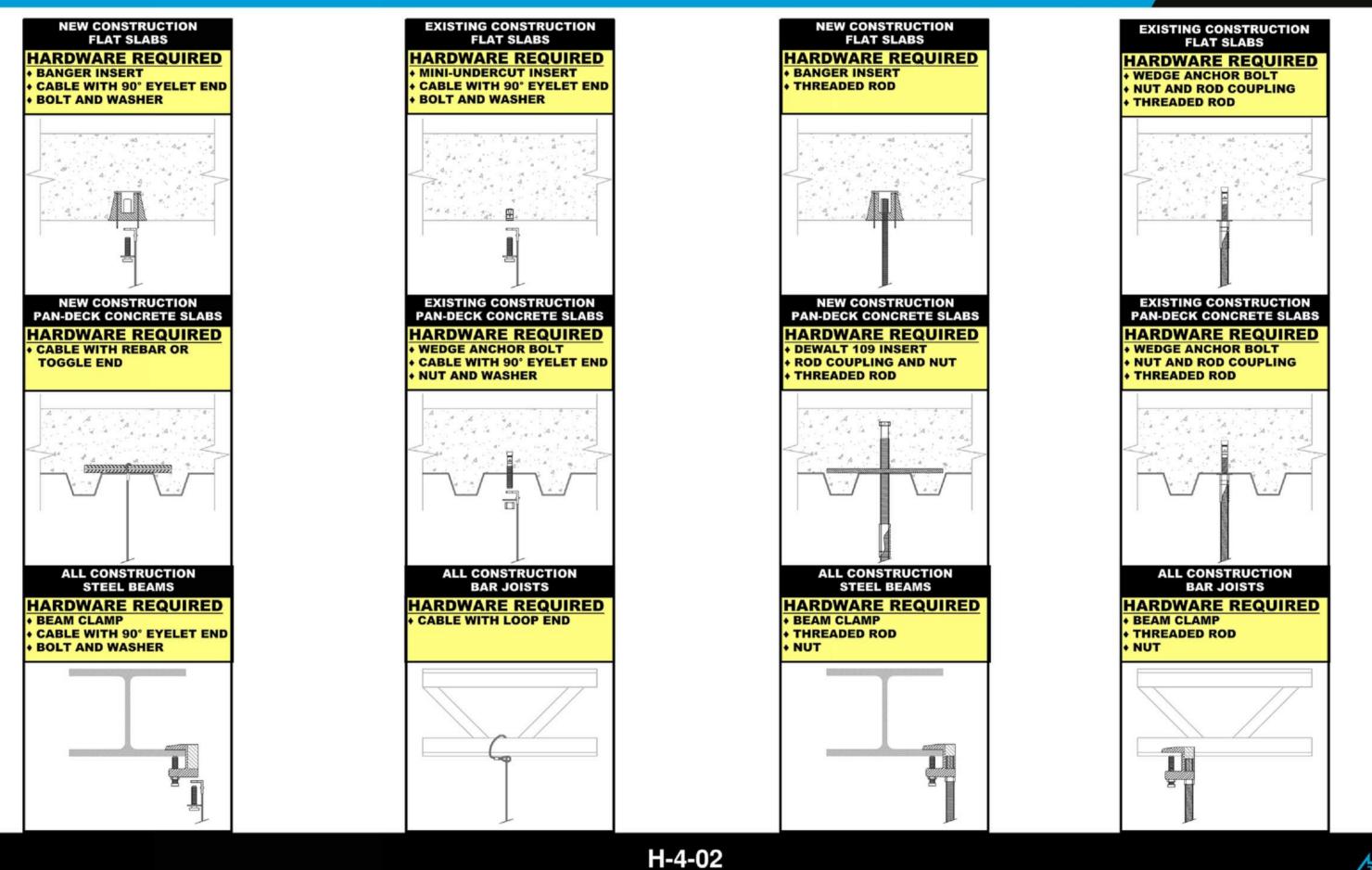
EVAPORATOR LINES

SOUTH HILL BUSINESS & TECHNOLOGY CENTER 1111 39TH AVE. SE PUYALLUP, WA 98374



ISSUE FOR PERMIT

Revisions



MI	NIMUM P	PIPE INSU	ILATIO	N		LAST UPDATED:	02/21/22
FLUID DESIGN	INSULATION C	ONDUCTIVITY		NOMINA	L PIPE DIAMET	ER (INCH)	
OPERATING	CONDUCTIVITY	MEAN TEMP		1 TO	1-1/2 TO	4 TO	p
TEMP °F	RANGE	RATING °F	<14	<1-1/2 ⁴	<4	<8	≥8
HEATING SYSTEMS	1 (STEAM, CONDENSA	TE, HYDRONIC HOT	WATER)				
>350	0.32-0.34	250	4.5	5.0	5.0	5.0	5.0
251-350	0.29-0.32	200	3.0	4.0	4.5	4.5	4.5
201-250	0.27-0.30	150	2.5	2.5	2.5	3.0	3.0
141-200	0.25-0.29	125	1.5	1.5	2.0	2.0	2.0
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5
DOMESTIC HOT WA	ATER ³ , DOMESTIC HO	OT WATER RECIRCULA	ATION ³	750.		12	
NA	0.21-0.28	100	0.5, 0.75 5	1.0, 1.25 5	1.5, 2.0 ⁵	2.0	2.0
DOMESTIC COLD W	ATER ³ AND HORIZ RA	AIN LEADERS TO VERT	ICAL RAIN LEAD	ER (TO PREVENT	CONDENSATI	ON ONLY)	-
NA	0.21-0.27	75	0.5	0.5	0.5	0.5	0.5
COOLING SYSTEMS	(CHILLED WATER, B	RINE AND REFRIGERA	NT, WATERSIDE	ECONOMIZER S	YSTEMS ²)		77
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0
<40	0.20-0.26	75	0.5	1.0	1.0	1.0	1.5
UNLINED	_						
STORAGE TANKS	ALL SIZES	R-12.5 ⁶	-	-	-	-	-

Commercial Building

REPLACEMENT OF PIPING IN CONDITION SPACE. MEET 2018 WSEC TABLE C403.10.3 footnote a.

NOT REQUIRED FOR STRAINERS, CONTROL VALVES & BALANCING VALVES ASSOCIATED WITH PIPING 1" OR LESS IN DIA. TYPICAL CONDENSER WATER PIPE IN NON-ECONOMIZER SYSTEMS IS NOT INSULATED SEE R403 FOR RESIDENTIAL INSTALLATIONS

FOR PIPING SMALLER THAN 1-1/2 INCH AND LOCATED IN PARTITIONS WITHIN CONDITIONED SPACES, REDUCTION OF INSULATION THICKNESSES BY 1 INCH SHALL BE PERMITTED, BUT NOT TO A THICKNESS OF LESS THAN 1 INCH DOMESTIC HOT WATER PIPE INSULATION SHALL HAVE A MINIMUM WALL THICKNESS OF NOT LESS THAN THE DIAMETER OF THE PIPE FOR PIPE UP TO 2 INCHES IN DIAMETER. INSULATION WALL THICKNESS SHALL NOT BE LESS THAN 2 INCHES FOR A PIPE OF 2 INCHES OR MORE IN DIAMETER. NOTE THAT THIS IS PER UPC SECTION 609.11.2. IN JURISDICTIONS THAT REQUIRE DOMESTIC HOT WATER PIPING TO BE INSULATED PER THE ENERGY CODE, USE THE 105-140 ROW

FROM HEATING SYSTEMS ABOVE. SEATTLE ONLY: UNFIRED TANKS USED TO STORE WATER AT TEMPERATURES ABOVE 130°F SHALL INCLUDE A MINIMUM OF R-2 ADDITIONAL INSULATION FOR EVERY 10°F INCREASE IN STORED WATER TEMPERATURE OVER 130°F. SEATTLE ONLY: FOR HEATED WATER CIRCULATION SYSTEMS, BOTH SUPPLY AND RETURN PIPE INSULATION SHALL BE AT MINIMUM 1 INCH THICKER THAN ROW 105-140 FROM HEATING SYSTEMS, ABOVE, EXCEPT WHERE PIPING IS CENTERED WITHIN A FRAMING CAVITY 4" DEEPER THAN THE PIPE THAT IS COMPLETELY FILLED WITH BATT OR

BLOW IN INSULATION.

_______ 08/17/22 JMH ISSUE FOR PERMIT No. Date By Description

Pre-Construction Number 14-22-22334 Construction Number

> CONSTRUCTION STANDARDS - HVAC

Design Team

FVP

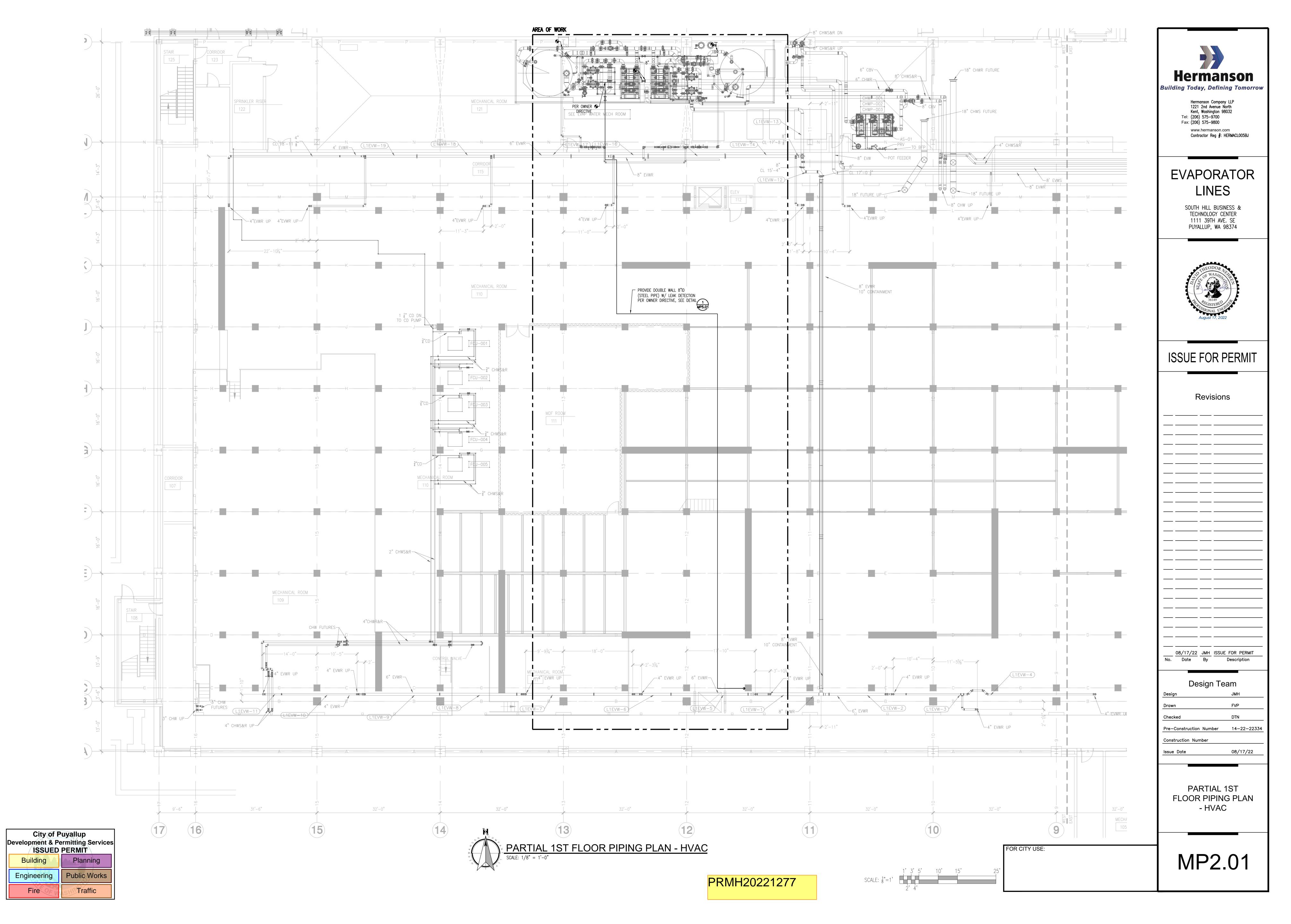
DTN

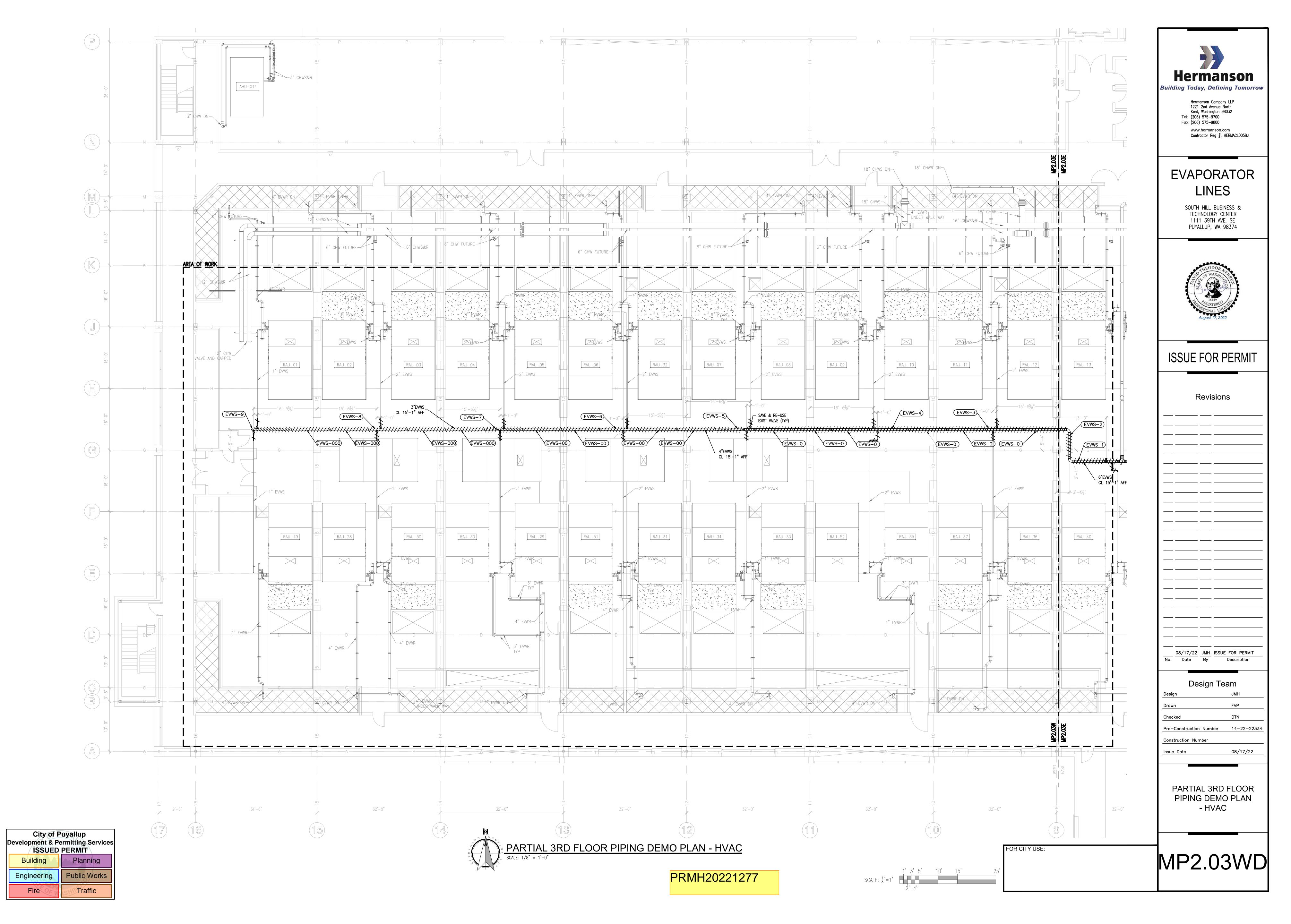
08/17/22

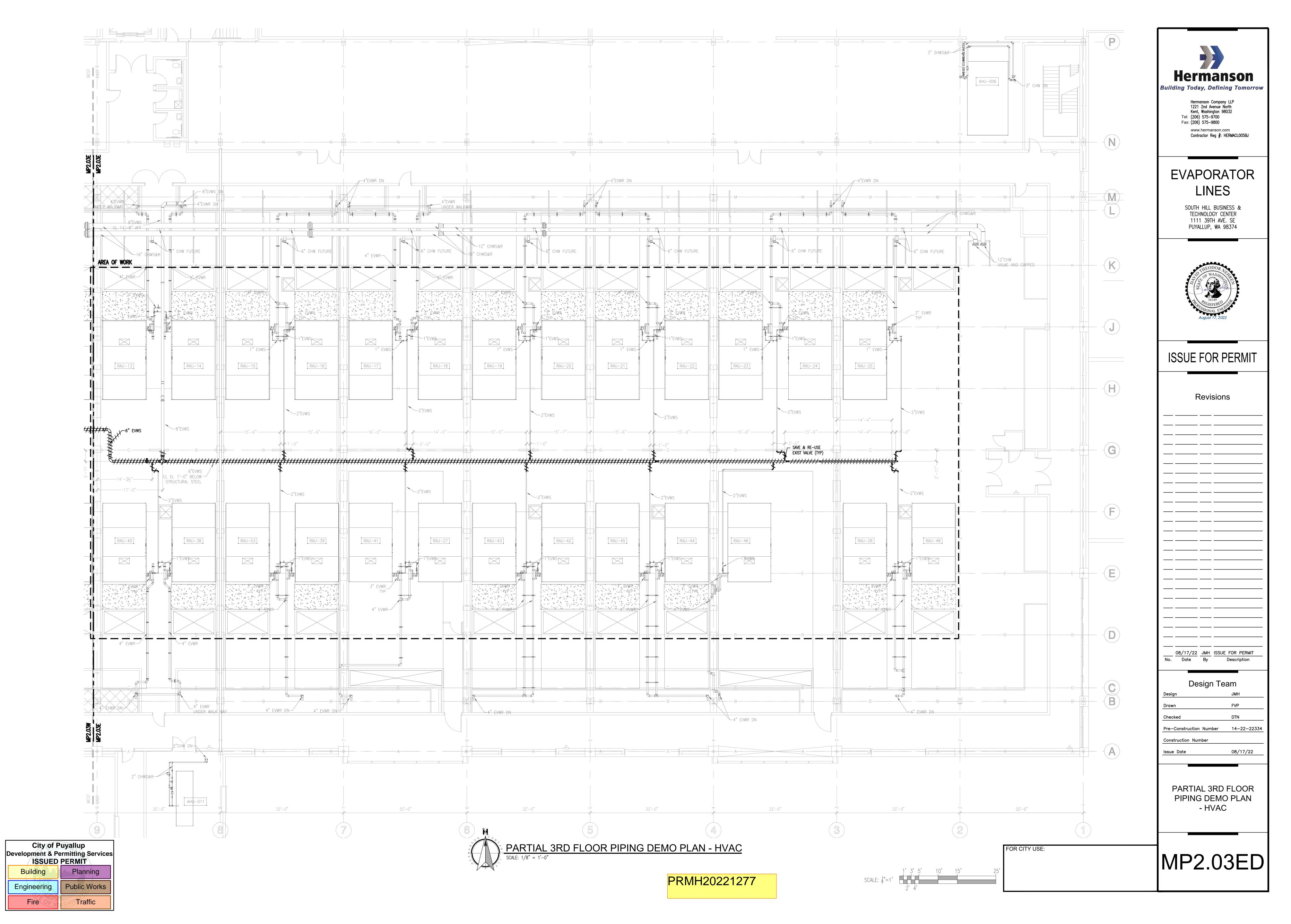
FOR CITY USE: MP0.01

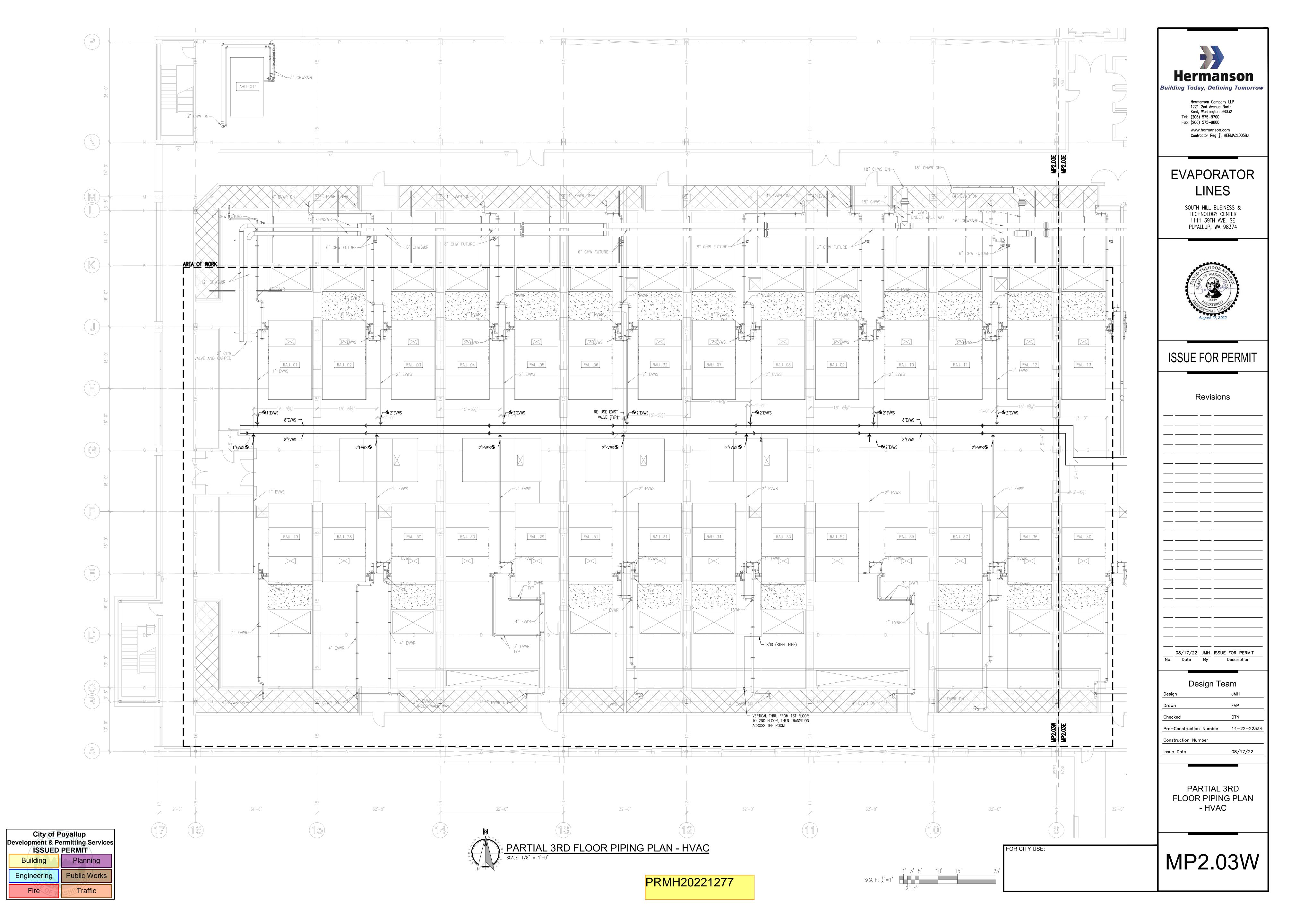
PRMH20221277

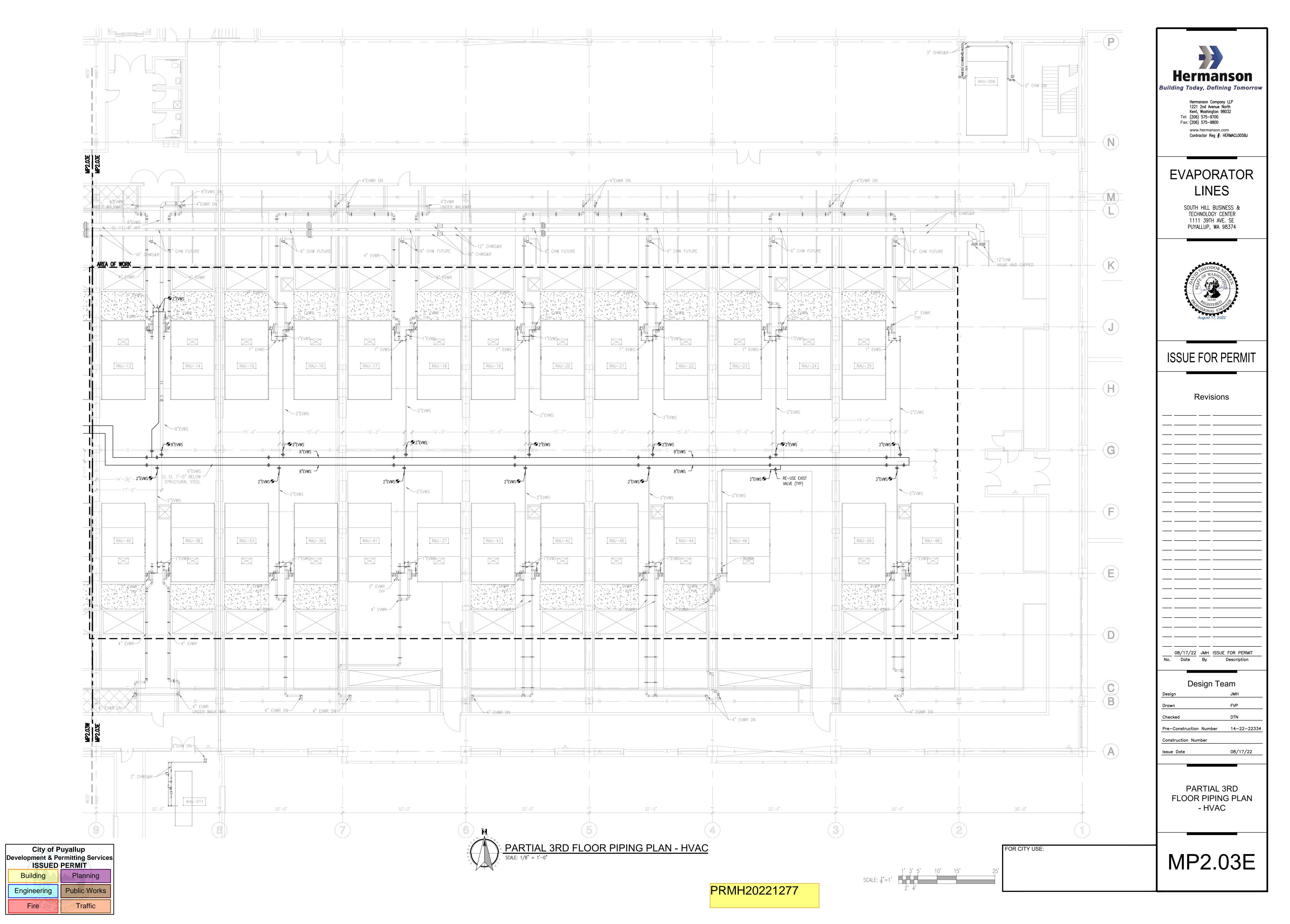
City of Puyallup Development & Permitting Services **ISSUED PERMIT** Building Planning Engineering Public Works Fire Traffic

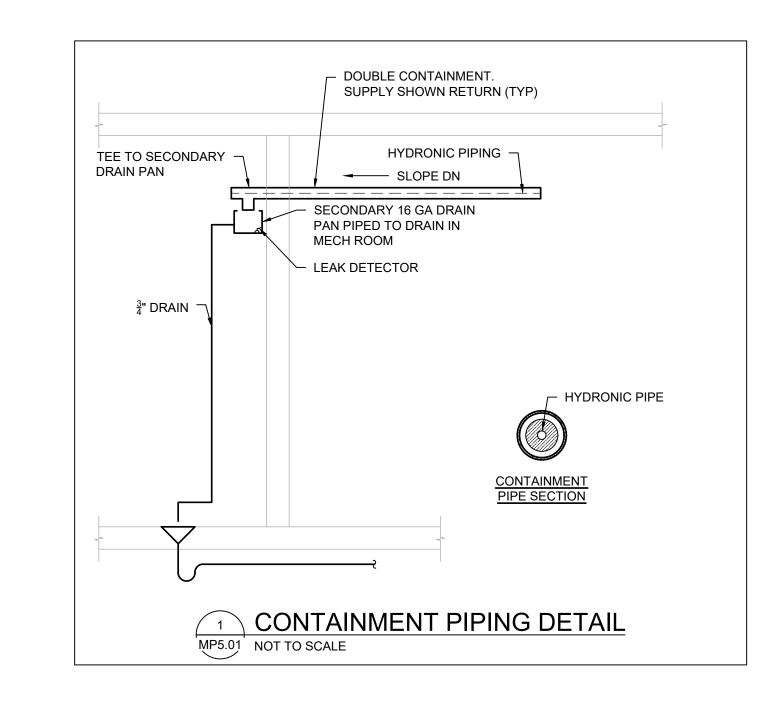














Hermanson Company LLP
1221 2nd Avenue North
Kent, Washington 98032
Tel: (206) 575-9700
Fax: (206) 575-9800
www.hermanson.com
Contractor Reg #: HERMACL005BJ

EVAPORATOR LINES

SOUTH HILL BUSINESS & TECHNOLOGY CENTER 1111 39TH AVE. SE PUYALLUP, WA 98374



ISSUE FOR PERMIT

Revisions

_		
_	 	

No. Date By Description

Design Team

Design JMH

Drawn FVP

Checked DTN

Pre-Construction Number 14-22-22334

Construction Number

Issue Date 08/17/22

DETAILS SHEET - HVAC

- TIVAC

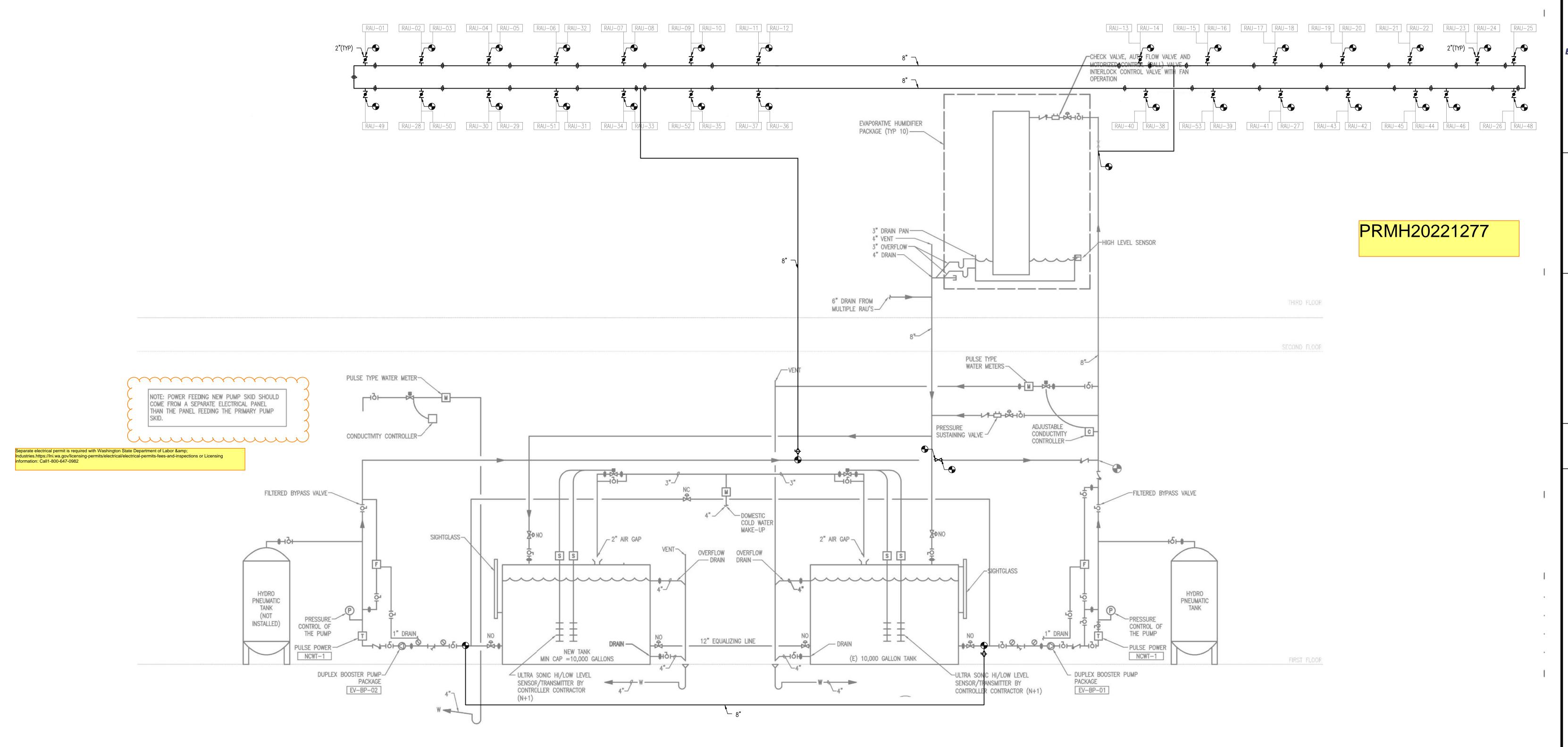
SHEET ADDED TO SET

FOR CITY USE:

MP5.01

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

PRMH20221277



EVAPORATIVE PIPING DIAGRAM - HVAC
SCALE: NONE

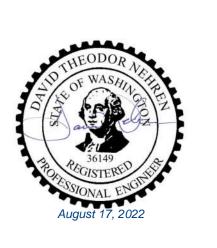
City of Puyallup Development & Permitting Services FOR CITY USE: **ISSUED PERMIT** Building Planning Engineering Public Works Fire Traffic



Hermanson Company LLP 1221 2nd Avenue North Kent, Washington 98032 Tel: (206) 575-9700 Fax: (206) 575-9800 www.hermanson.com Contractor Reg #: HERMACL005BJ

EVAPORATOR LINES

SOUTH HILL BUSINESS & TECHNOLOGY CENTER 1111 39TH AVE. SE PUYALLUP, WA 98374



ISSUE FOR PERMIT

Revisions

08/03/22 JMH PERMIT REVISION 07/14/22 JMH ISSUE FOR PERMIT No. Date By Description

Design Team FVP Drawn DTN Checked Pre-Construction Number 14-22-22334 Construction Number

Issue Date

EVAPORATIVE PIPING DIAGRAM - HVAC

07/14/22

SHEET ADDED TO SET

MP6.01