



City of Tacoma

Department of Public Works, Facilities Management

ADDENDUM NO. 1

DATE: January 26, 2023

REVISIONS TO:

Request for Bids Specification No. PW22-0287F

Beacon Activity Center HVAC Upgrade and Exterior Renovation

NOTICE TO ALL Bidders:

This addendum is issued to clarify, revise, add to or delete from, the original specification documents for the above project. This addendum, as integrated with the original specification documents, shall form the specification documents. The noted revisions shall take precedence over previously issued specification documents and shall become part of this contract.

REVISIONS TO THE SUBMITTAL DEADLINE:

- The submittal deadline remains the same.

REVISIONS TO THE GENERAL INFORMATION AND REQUIREMENTS:

- Attached is the sign in sheet and agenda from the pre-bid meeting held on Tuesday, January 24, 2023. The pre-bid meeting was not mandatory.
- Attached photos of the as-built roof condition.

REVISIONS TO THE PLANS:

- Revisions to the ELECTRICAL plans, will be issued by a future addendum.
- Attached MECHANICAL revisions are as follows:
 - REPLACE all MECHANICAL SHEETS. These revisions consist of additional detail to describe the scope of work. This deletes the mechanical plans marked "95% CD Set" and replaces them with "Bid Set".
 - SHEET M0.1 MECHANICAL LEGEND & NOTES
 - SHEET M0.2 MECHANICAL NOTES
 - SHEET M0.3 MECHANICAL SCHEDULES
 - SHEET M1.1 CRAWL SPACE PLAN - MECHANICAL DEMO
 - SHEET M1.2 FIRST FLOOR PLAN - MECHANICAL DEMO
 - SHEET M3.1 FIRST FLOOR PLAN – PLUMBING
 - SHEET 4.1 CRAWL SPACE PLAN – MECHANICAL
 - SHEET 4.2 FIRST FLOOR PLAN – HVAC
 - SHEET 4.3 ROOF PLAN – HVAC
 - SHEET M4.4 HVAC DETAILS
 - ADD SHEET M4-5 HVAC DETAILS

NOTE: Acknowledge receipt of this addendum by initialing the corresponding space as indicated on the SIGNATURE PAGE. Vendors who have already submitted their bid/proposal may contact the Purchasing Division at 253-502-8468 and request return of their bid/proposal for acknowledgment and re-submittal. Or, a letter acknowledging receipt of this addendum may be submitted in an envelope marked Request for Bids Specification No. PW22-0287F Addendum No. 1. The City reserves the right to reject any and all bids, including, in certain circumstances, for failure to appropriately acknowledge this addendum.

cc: Mina Zarelli, PW/FM

CITY OF TACOMA

Pre-Bid Meeting – Sign-in Sheet

Project: **Beacon Activity Center HVAC Upgrade and Exterior Renovation (PW22-0287F)**
 Date, Time: Tuesday, January 24, 2023 at 11:00 a.m., at 415 S 13th Street, Tacoma, WA 98402
 Attendees: **(PLEASE PRINT)**

Name	Company:	Email:	Phone #
Mina Zarelli, Project Manager	City of Tacoma, Public Works	mzarelli@cityoftacoma.org	253-208-8582
Todd Roy PM/Estimator	NCES	ToddR@Net-compliance.com	360-907-1099
Corey Maughan	NCES	Corey.m@net-compliance.com	360 914 7395
Dino Marzani	Blumbeck Painting	blumpaintingandwallcovering@gmail.com	253-394-6658
Bob Shelton	Miller sheet metal	DAVE@millersheetmetal.com	360 731 8173
Aaron White	PSF Mechanical	awhite@psfmech.com	206-880-3691
RALPH STICKELL	METCALF ELECTRIC	RALPH@METCALF84.COM	253 534-5010
Tyler Mortenson	Harper Winn / Carlisle	tyler@Harperwinn.com	253 266 5954
Tyler Schmidtke	Capital Heating & Cooling	Tyler@Capitalheatingandcooling.com	360.890.2737
Colton Reeves	Thompson electrical Constructors	Colton@Thompsonconstructors.com	253 281 0389
Gul Zumi	Air Fabric	Gul@AirFabric.com	206 259 0896
Dan Hauerstein	Snyder	DHauerstein@Snyder-Built.com	425-343-6252
Miles Johnson	Western Ventures	bids@westernventures.com	760-579-1380
Clayton Torgerson	Neeley Construction	bids@neeleycorp.com	253-720-4369
CURT GILDEA	TRS Mechanical	CURT@TRSMECH.COM	253-260-2594
Charles Weeks	Westmark Const	bids@westmarkconst.com	253 564 4620

Project: Beacon Activity Center HVAC Upgrade and Exterior Renovation (PW22-0287F)

Name	Company:	Email:	Phone #
STEVE NESS	RIVINS EDGE - DAND	SNESS@RIVINS.CITY	206 -425-584-7089
Paul Orth	JA Morris Construction	paul@jamarisconstruction.com	360-556-4439
Rebecca Reute	" " "	rebecca@jamarisconstruction.com	425-530-0116
Guy Hamilton	Crescent Mechanical	abby@crescentmechanical.com	

City of Tacoma
Beacon Activity Center HVAC Upgrade and Exterior Renovation
Specification No. PW22-0287F

PRE-BID MEETING

Agenda

Meeting Date: Tuesday, January 24, 2023

1) General

- a) Introductions – Sign Up Sheet
- b) Review project site
- c) Major components of the project include, but not limited to:
 - Building:
 - (1) Window replacement
 - (2) New siding/roofing
 - (3) New restroom finishes
 - (4) HVAC work, demo of gas-fired boiler and radiators
 - (5) Electrical work, including new underground electrical vault & 3ph transformer
- d) The estimate for the project is \$1.6 million
- e) Schedule for completion:
 - NTP anticipated April 2023
 - 100 Calendar Days for construction.
 - Anticipated substantial completion date August 2023.
- f) Permits
 - Paid for by Owner
 - (1) Building
 - (2) Tacoma Power -new electrical service costs
 - Paid for by Contractor
 - (1) Mechanical
 - (2) Electrical
 - (3) Other

2) Bid Period

- a) Bidder Questions & Substitution Requests are due by Friday January 27 at Noon. Must be e-mailed to Tina Eide, Senior Buyer. teide@cityoftacoma.org
- b) Final addenda for the project will be issued by Tuesday January 31st. Ensure that you are signed up on the Planholders List to receive notice of any addendums.
- c) Bid submittals are due 11 a.m. February 7th. Ensure all proposal forms included in the Project Manual are submitted with the bid. Ensure bids are submitted to the Purchasing Division located at the Tacoma Public Utilities Building.

3) City Programs

- a) Local Employment and Apprenticeship Training Program (LEAP) is 15%.
- b) EIC Program: 5% MBE, 2% WBE 5% SBE.

4) Tour building site

5) Questions?

BEACON ACTIVITY CENTER - AS-BUILT PHOTOS

1. SW corner of roof – facing South



2. SE corner of roof – facing East



BEACON ACTIVITY CENTER - AS-BUILT PHOTOS

3. West roof facing North



4. East roof facing North



BEACON ACTIVITY CENTER - AS-BUILT PHOTOS

5. Roof core sample from the SW corner (3 photos)



BEACON ACTIVITY CENTER - AS-BUILT PHOTOS



6. Exterior access to steam boiler room



BEACON ACTIVITY CENTER - AS-BUILT PHOTOS

7. Existing steam boiler



8. View of crawl space conditions accessible from the Stair to Boiler area



GENERAL DEMOLITION NOTES

1. DEMOLITION DRAWINGS ARE INTENDED TO ONLY GIVE A GENERAL REPRESENTATION OF THE DEMOLITION INVOLVED, AND DO NOT CONSTITUTE A FULL LISTING OF ALL ITEMS REQUIRING REMOVAL.

2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO REVIEW SITE CONDITIONS AND TO IDENTIFY ALL DEMOLITION WORK, AND INCLUDE IN HIS BID ALL COSTS FOR DEMOLITION & DISPOSAL..

3. EXIST. DUCTS, EQUIPMENT, PIPING, AIR INLETS/OUTLETS, PLUMBING FIXTURES SHOWN DASHED REPRESENT MAJOR MECHANICAL ITEMS TO BE REMOVED. SEE GENERAL NOTES, DRAWING NOTES & KEYED NOTES WHICH COVER ALL OTHER MISC. MECHANICAL ITEMS TO BE REMOVED.

4. ALL EXIST. ITEMS NOT BEING REUSED SHALL BE REMOVED. THIS INCLUDES SUCH ITEMS AS THERMOSTATS, CONTROL DEVICES, DUCTS, FANS, PIPING, GRILLES, SUPPORTS, VALVES, CURBS, AND RELATED ACCESSORIES.

5. ABANDONED ITEMS, ANCHORS, INSERTS, PIPE STUBS, AND OTHER PROJECTIONS NOT BEING CONCEALED BY NEW CONSTRUCTION SHALL BE REMOVED TO 1" BELOW THE ADJACENT FINISHED SURFACE, AND THE DISTURBED AREA PATCHED.

6. PATCH ALL WALL/FLOOR/CEILING OPENINGS LEFT BY REMOVAL OF EXIST. ITEMS. PATCH SO AS TO MATCH FINISH OF ADJACENT UNDISTURBED AREA.

7. REFERENCE ARCHITECTURAL DRAWINGS FOR WHERE CEILING/WALL AND OTHER GENERAL DEMOLITION WORK IS BEING DONE.

8. PROVIDE TEMPORARY CAP-OFF OF ALL EXIST. SYSTEMS TO ALLOW CONTINUED USE OF ALL SYSTEMS UNTIL THE FINAL SYSTEM COMPONENTS ARE INSTALLED AND CONNECTED.

MECHANICAL GENERAL NOTES

1. MECHANICAL WORK IS NOT LIMITED TO MECHANICAL DRAWINGS AND DIVISION 20, 21, 22, 23, AND 25 SPECIFICATIONS. THERE IS ADDITIONAL MECHANICAL WORK TO BE INCLUDED IN THE BID INDICATED ON OTHER DRAWINGS AND IN OTHER SPECIFICATION DIVISIONS. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL MECHANICAL WORK.

2. MECHANICAL EQUIPMENT 1/2 HP AND LESS SHALL HAVE ANY REQUIRED STARTER/CONTROL RELAY PROVIDED BY DIVISION 25 (EXCEPT WHERE SPECIFICALLY SHOWN OR SPECIFIED OTHERWISE).

3. PIPE ROUTING: ALL PIPING SHOWN IS SCHEMATIC. CONTRACTOR SHALL PROVIDE ALL OFFSETS/ELBOWS AS REQ'D TO ALLOW ROUTING AROUND STRUCTURE, ELECTRICAL, & OTHER INTERFERENCES. ALL PIPING SHALL BE RUN CONCEALED, UNO.

4. CONDENSATE DRAINS: PROVIDE PRIMARY CONDENSATE DRAINS FOR UNITS GENERATING CONDENSATE IN ACCORDANCE WITH CODE REQUIREMENTS.

5. ALL DUCT PENETRATIONS THRU WALLS AND FLOORS SHALL BE PROVIDED WITH CLOSURE COLLARS (BOTH SIDES OF PENETRATION) AND BE TIGHTLY SEALED TO PREVENT THE TRANSMISSION OF NOISE.

6. CONTRACTOR SHALL CAREFULLY COORDINATE WORK W/ ALL OTHER TRADES, ESPECIALLY IN CEILING SPACES WHERE SPACE IS TIGHT. SHEET METAL CONTRACTOR SHALL HAVE PRIORITY OVER OTHER MECHANICAL TRADES IN CEILING SPACE WHERE CONFLICTS OCCUR.

7. ALL DUCTWORK SHOWN IS SCHEMATIC. CONTRACTOR SHALL PROVIDE ALL OFFSETS/ELBOWS AS REQ'D TO ALLOW ROUTING AROUND STRUCTURE, ELECTRICAL, & OTHER INTERFERENCES.

8. PROVIDE MANUAL VOLUME DAMPERS IN ALL BRANCH DUCTS AND SPLITS IN MAIN DUCTS AND WHERE REQUIRED BY BALANCERS; ONLY SOME OF THE REQUIRED DAMPERS ARE SHOWN ON THE PLANS.

9. UNSIZED DUCTS SHALL MATCH THE SIZE OF THE LARGEST ADJACENT DUCT THAT IS SIZED. WHERE THE ADJACENT DUCT SIZE IS NOT SHOWN, PROVIDE THE FOLLOWING SIZED DUCTS (OR EQUIVALENT RECTANGULAR).

CFM	DUCTS TO AIR INLETS/OUTLETS	OTHER DUCT
0 - 100	6" Ø	6" Ø
101 - 150	8" Ø	8" Ø
151 - 250	10" Ø	8" Ø
251 - 400	12" Ø	10" Ø
401 - 500	14" Ø	12" Ø
501 - 700	16" Ø	12" Ø
701 - 900	18" Ø	14" Ø
901 - 1200	20" Ø	16" Ø
1201 - 1500	----	18" Ø
1501 - 2000	----	20" Ø
2001 - 2400	----	22" Ø
>2401	SIZE BASED ON 500 FPM SIZE BASED ON 0.08"/100' P.D.	

10. VERIFY LOCATIONS OF ITEMS INSTALLED IN CEILINGS WITH ARCHITECTURAL REFLECTED CEILING PLANS PRIOR TO BEGINNING WORK. NOTIFY ARCHITECT/ENGINEER OF DISCREPANCIES.

11. SHIFT AIR INLETS/OUTLETS FROM LOCATIONS SHOWN AS REQ'D TO AVOID CONFLICTS W/STRUCTURE & OTHER ITEMS. SUCH SHIFTS SHALL MAINTAIN SYMMETRY OF AIR TERMINALS & SHALL HAVE PRIOR APPROVAL OF ARCHITECT/ENGINEER.

12. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE & SELECT FINAL LOCATIONS OF ALL AIR INLETS/OUTLETS. SHIFT AIR INLETS/ OUTLETS FROM LOCATIONS SHOWN AS REQ'D TO AVOID CONFLICTS W/ STRUCTURE, LIGHTS, & OTHER ITEMS. SUCH SHIFTS SHALL MAINTAIN SYMMETRY OF AIR TERMINALS & SHALL HAVE PRIOR APPROVAL OF ARCHITECT/ENGINEER.

13. LOCATE MOTORIZED DAMPERS TO BE ACCESSIBLE.

14. BALANCING NOTES: PROVIDE AIR BALANCING OF HVAC SYSTEM. SEE SECTION 20 05 93 FOR COMPLETE REQUIREMENTS.

15. ALL DUCTWORK SHALL BE RUN CONCEALED, UNO.

16. PROVIDE DUCT ACCESS DOORS AT ALL DAMPERS & BDD'S.

17. PROVIDE FLEX CONNECTORS IN DUCT CONNECTIONS TO ALL EQUIPMENT.

18. VERIFY MOUNTING HEIGHTS OF ALL EXPOSED DUCTWORK & WALL GRILLES/WALL CAPS W/ ARCHITECT PRIOR TO BEGINNING WORK.

19. PROVIDE TRANSITIONS FROM DUCT SIZES INDICATED TO CONNECTION SIZES AT EQUIPMENT TO MATCH UNIT CONNECTIONS. WHERE THE CONNECTING DUCT IS LINED, THE TRANSITION SHALL BE LINED.

20. EXHAUST DUCTS SHALL BE CONSTRUCTED TO -1" PRESSURE CLASS. SEAL DUCTS PER WSEC AND SPECIFICATIONS.

MECHANICAL LEGEND

SYMBOL	DESCRIPTION	ABBREV.	DESCRIPTION
	CONDENSATE (C)	AFF	ABOVE FINISHED FLOOR
	REFRIGERANT LIQUID (RL), WHERE SHOWN ON HVAC PLANS	AHJ	AUTHORITY HAVING JURISDICTION
	REFRIGERANT GAS (RG), WHERE SHOWN ON HVAC PLANS	APPROX	APPROXIMATELY
	PIPE UP	ARCH	ARCHITECTURAL
	PIPE DOWN	ASSY	ASSEMBLY
	PIPE TEE IN LINE, BRANCH PIPE DOWN	BDD	BACKDRAFT DAMPER
	UNION	BTUH	BRITISH THERMAL UNIT/HOUR
	DUCT (FIRST FIGURE, SIDE SHOWN)	BLDG	BUILDING
	LINED DUCT (DIM. FOR NET FREE AREA)	CAP	CAPACITY
	RISE (R) OR DROP (D) ARROW IN DIRECTION OF FLOW	CLG	CEILING
	DUCT SECTION (SUPPLY)	COP	COEFFICIENT OF PERFORMANCE
	DUCT SECTION (EXHAUST OR RETURN)	CONN	CONNECTION
	ROUND DUCT	CONT	CONTINUE, CONTINUATION
	VOLUME DAMPER (MANUAL)	CFH	CUBIC FEET PER HOUR
	MOTORIZED DAMPER	CFM	CUBIC FEET PER MINUTE
	FLEXIBLE CONNECTION	DEG F, °F	DEGREE FAHRENHEIT
	FLEXIBLE DUCT	DIA, Ø	DIAMETER
	ELBOW WITH TURNING VANES	DN	DOWN
	DUCT UP (RECTANGULAR)	DWG	DRAWING
	DUCT UP (RECTANGULAR)	DB	DRY BULB
	DUCT DOWN (RECTANGULAR)	EA	EACH
	DUCT DOWN (RECTANGULAR)	ECM	ELECTRONIC COMMUTATED MOTOR
	DUCT UP (ROUND)	EF	EXHAUST FAN
	DUCT DOWN (ROUND)	EFF	EFFICIENCY
	CEILING OUTLET	ELEC	ELECTRICAL, ELECTRIC
	CEILING INLET	EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
	WALL OUTLET (OR INLET)	EER	ENERGY EFFICIENCY RATIO
	THERMOSTAT G= WITH GUARD	EAT	ENTERING AIR TEMPERATURE
	CARBON DIOXIDE SENSOR	EWB	ENTERING WET BULB
	DETAIL/SECTION IDENTIFICATION NUMBER SHEET ON WHICH DETAIL IS SHOWN	EDB	ENTERING DRY BULB
		EOL	END OF LINING
		EXH	EXHAUST
		ESP	EXTERNAL STATIC PRESSURE
		FPM	FEET PER MINUTE
		FLEX	FLEXIBLE
		FL	FLOOR
		FLA	FULL LOAD AMPS
		IN	INCH
		KW	KILOWATT
		L	LINING
		LAT	LEAVING AIR TEMPERATURE
		LDB	LEAVING DRY BULB
		LWT	LEAVING WATER TEMPERATURE
		LWB	LEAVING WET BULB
		MAX	MAXIMUM
		MFR	MANUFACTURER
		MBH	THOUSAND BTUH
		MCA	MINIMUM CIRCUIT AMPACITY
		MECH	MECHANICAL
		MIN	MINIMUM
		NO.	NUMBER
		NTS	NOT TO SCALE
		OBD	OPPOSED BLADE DAMPER
		OA	OUTSIDE AIR
		PH	PHASE
		P.D.I.	PLUMBING AND DRAINAGE INST.
		RLA	RATED LOAD AMPS
		REF	REFERENCE
		RL	REFRIGERANT LIQUID
		RG	REFRIGERANT GAS
		REQ'D	REQUIRED
		RA	RETURN AIR
		RPM	REVOLUTIONS PER MINUTE
		RM	ROOM
		SA	SUPPLY AIR
		SCO	SURFACE CLEANOUT
		S.O.	SCREENED OPENING
		SS	STAINLESS STEEL
		TD	TRANSFER DUCT
		TG	TRANSFER GRILLE
		TYP	TYPICAL
		UNO	UNLESS NOTED OTHERWISE
		VFD	VARIABLE FREQUENCY DRIVE
		V	VOLTS, VOLTAGE, VENT
		WC	WATER COLUMN
		W	WASTE
		WA	WATT
		WB	WET BULB
		WSEC	WASHINGTON STATE ENERGY CODE
		WTG	WALL TRANSFER GRILLE
		W/	WITH

NOTE: FOR DESCRIPTION OF OTHER ABBREVIATIONS SEE SYMBOL LISTING TO THE LEFT, EQUIPMENT/ITEMS SCHEDULES, AND ABBREVIATIONS LISTED IN SPECIFICATIONS

CITY OF TACOMA

BEACON ACTIVITY CENTER - PHASE 2

415 SOUTH 13TH STREET, TACOMA, WA 98402

SIGNED
12-30-2022

SHEET TITLE: MECHANICAL LEGEND & NOTES

DRAWN: TP CHECKED: NRH DATE: 12/30/22

REVISIONS:

11/24/2023

M0.1

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

BID SET

1

2

3

4

5

6

7

8

9

10

A

B

C

D

E

F

G

H

J

K

MECHANICAL CHECKLIST

PERFORMANCE, CRITERIA & SYSTEM DESIGN

1. LOAD CALCULATIONS, C403.1.2: LOAD CALCULATIONS HAVE BEEN PERFORMED IN ACCORDANCE WITH WSEC.

2. EQUIPMENT/SYSTEM SIZING, C403.3.1: EQUIPMENT CAPACITIES ARE NO GREATER THAN THE SMALLEST AVAILABLE SIZE THAT EXCEEDS THE CALCULATED LOADS.

3. EQUIPMENT AND SYSTEM SIZING, C403.3.1: OUTPUT CAPACITIES OF HEATING AND COOLING EQUIPMENT AND SYSTEMS ARE NO GREATER THAN THE SMALLEST AVAILABLE EQUIPMENT SIZE THAT EXCEEDS THE CALCULATED LOADS.

4. ELECTRIC MOTOR EFFICIENCY, C405.8: ALL ELECTRIC MOTORS SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.8(1) THROUGH (4) . FRACTION HP FAN MOTORS 1/12HP OR GREATER UP TO 1HP NOT COVERED BY THE TABLES SHALL BE ECM TYPE OR SHALL HAVE A MINIMUM EFFICIENCY OF 70% OR GREATER AND HAVE THE MEANS TO ADJUST MOTOR SPEED.

5. PACKAGED ELECTRIC EQUIPMENT, C403.3.2.4: ALL PACKAGED ELECTRIC HEATING AND COOLING EQUIPMENT WITH TOTAL COOLING CAPACITY GREATER THAN 6,000 BTU/H SHALL BE A HEAT PUMP CONTROLLED BY OCCUPANCY DEVICE OR TIME SCHEDULE.

DEDICATED OUTDOOR AIR SYSTEMS (DOAS)

6. DEDICATED OUTDOOR AIR SYSTEMS, C403.3.5: FOR BUILDINGS WITH OCCUPANCIES SHOWN IN TABLE 403.3.5, OUTDOOR AIR SHALL BE PROVIDED TO EACH OCCUPIED SPACE BY A DEDICATED OUTDOOR AIR SYSTEM (DOAS).

7. DOAS ENERGY RECOVERY METHOD & EFFECTIVENESS, C403.3.5.1: ALL DOAS UNITS SHALL BE PROVIDED WITH EXHAUST HEAT RECOVERY WITH MINIMUM RATED EFFECTIVENESS OF 50% SENSIBLE OR 60% ENTHALPY BASED ON DELTA BETWEEN OUTDOOR AIR AND RETURN AIR ENTHALPIES AT DESIGN CONDITIONS.

8. DOAS FAN POWER, C403.5.1: FOR DOAS WITH TOTAL SYSTEM FAN HORSEPOWER LESS THAN 5 HP, THE TOTAL SYSTEM FAN POWER SHALL NOT EXCEED 1 WATT PER CFM. FOR DOAS WITH TOTAL SYSTEM FAN HORSEPOWER OF 5 HP OR GREATER, THE TOTAL SYSTEM FAN POWER SHALL COMPLY WITH FAN POWER LIMITATIONS PER C403.8.1.

9. HEATING/COOLING SYSTEM CONTROLS WITH DOAS, C403.3.5.2: HEATING AND COOLING EQUIPMENT FANS, HEATING AND COOLING PUMPS, AND TERMINAL UNIT FANS SHALL CYCLE OFF AND TERMINAL UNIT PRIMARY COOLING AIR SHALL BE SHUT OFF WHEN THERE IS NO CALL FOR HEATING OR COOLING IN THE CORRESPONDING ZONE.

10. DECOUPLED DOAS SUPPLY AIR, C403.3.5.3: DOAS SUPPLY AIR SHALL BE DELIVERED DIRECTLY TO THE OCCUPIED SPACE OR DOWNSTREAM OF THE TERMINAL HEATING/COOLING COILS.

11. MULTIPLE ZONE DOAS, C403.6.1: FOR DOAS SERVING MULTIPLE ZONES, SYSTEM SHALL COMPLY WITH C403.3.5 (DOAS) AND C403.2.2 (VENTILATION) REQUIREMENTS OR SHALL HAVE ZONE CONTROLS CONFIGURED TO REDUCE THE VOLUME OF OUTSIDE AIR INDEPENDENTLY WHEN ZONES ARE UNOCCUPIED.

FANS AND FAN CONTROL

12. ELECTRIC MOTOR EFFICIENCY, C405.8: ALL ELECTRIC MOTORS SHALL MEET THE MINIMUM EFFICIENCY REQUIREMENTS OF TABLES C405.8(1) THROUGH (4) . FRACTION HP FAN MOTORS 1/12HP OR GREATER UP TO 1HP NOT COVERED BY THE TABLES SHALL BE ECM TYPE OR SHALL HAVE A MINIMUM EFFICIENCY OF 70% WITH THE ABILITY TO ADJUST MOTOR SPEED.

ADDITIONAL EFFICIENCY PACKAGE OPTION - MORE EFFICIENT HVAC & FANS

13. HVAC SYSTEM SELECTION, C406.2.1: AT LEAST 90 PERCENT OF THE TOTAL HVAC OUTPUT CAPACITY SERVING THE BUILDING SHALL BE PROVIDED BY EQUIPMENT LISTED IN TABLES C403.3.2(1) THROUGH C403.3.2(12).

14. MINIMUM EQUIPMENT EFFICIENCY, C406.2.2: EQUIPMENT EFFICIENCY SHALL EXCEED ALL MINIMUM REQUIREMENTS IN TABLES C403.3.2(1) THROUGH C403.3.2(12) BY 15 PERCENT OR THE CALCULATED WEIGHTED AVERAGE PERCENTAGE SHALL EXCEED 15% AND EACH INDIVIDUAL PIECE OF EQUIPMENT SHALL EXCEED THE TABLE REQUIREMENTS BY AT LEAST 5%.

VENTILATION, EXHAUST & ENERGY RECOVERY

15. VENTILATION, C403.2.2.1: MECHANICAL VENTILATION AIR SYSTEMS SHALL BE CONFIGURED TO PROVIDE NOT MORE THAN 150%, BUT AT LEAST THE MINIMUM REQUIRED VOLUME OF OUTDOOR AIR TO EACH ZONE PER IMC. SEE MECHANICAL EQUIPMENT SCHEDULES FOR MINIMUM OUTSIDE AIR VALUES.

16. EXHAUST, C403.2.2.2: EXHAUST SYSTEMS ARE CONFIGURED TO PROVIDE NO MORE THAN 150% OF CODE MINIMUM.

17. DEMAND CONTROLLED VENTILATION, C403.7.1: FOR SPACES > 500 SF WITH AN OCCUPANT LOAD OF 25 PEOPLE PER 1000 SF OR GREATER, PROVIDE OCCUPANCY-BASED OSA CONTROL TO REDUCE OUTSIDE AIR

DAMPER WHEN SPACE IS UNOCCUPIED.

18. OCCUPANCY SENSORS, C403.7.2: CLASSROOMS, GYMS, AUDITORIUMS, AND CONFERENCE ROOMS > 500 SF SHALL HAVE OCCUPANCY CONTROL TO CLOSE OUTSIDE AIR DAMPER OR TURN OFF EQUIPMENT WHEN SPACE IS UNOCCUPIED EXCEPT WHERE EQUIPPED WITH ANOTHER MEANS TO AUTOMATICALLY REDUCE OUTSIDE AIR INTAKE BELOW DESIGN RATES WHEN PARTIALLY OCCUPIED.

19. VENTILATION AIR HEATING CONTROL, C403.7.3: UNITS PROVIDING VENTILATION AIR TO MULTIPLE ZONES WITH SEPARATE ZONE HEATING/COOLING SHALL NOT HEAT THE VENTILATION AIR (VIA ADDED HEAT OR HEAT RECOVERY) TO A TEMPERATURE GREATER THAN 60 DEG F WHEN THE BUILDING LOADS OR OUTSIDE AIR TEMPERATURE INDICATE THAT THE MAJORITY OF THE ZONES ARE IN COOLING.

20. SHUTOFF DAMPERS FOR RETURN AIR, C403.7.8.2: PROVIDE RETURN AIR OPENINGS WITH CLASS 1 MOTORIZED DAMPER WHERE USED FOR AIRSIDE ECONOMIZER. WHERE INSTALLED IN UNITARY PACKAGED EQUIPMENT DAMPER, PROVIDE DAMPERS WITH LOWEST LEAKAGE RATE AVAILABLE FROM THE EQUIPMENT MANUFACTURER.

21. DAMPER ACTUATION, C403.7.8.4: OUTSIDE AIR INTAKE, RELIEF AND EXHAUST DAMPERS SHALL AUTOMATICALLY CLOSE WHEN SYSTEM OR SPACES SERVED ARE NOT IN USE OR DURING WARM-UP AND SET BACK.

HVAC SYSTEM CONTROLS

22. THERMOSTATIC CONTROLS, C403.4.1: WHERE ADJACENT ZONES CONNECTED BY PERMANENT OPENINGS WITH AREA GREATER THAN 10% OF EITHER ZONE SF, PROVIDE CONTROL TO PREVENT ADJACENT ZONES FROM OPERATING IN CONFLICTING MODES. WHERE A NON-PERIMETER ZONE IS ADJACENT TO A PERIMETER ZONE, PROVIDE CONTROLS TO ONLY ALLOW COOLING IN THE NON-PERIMETER ZONE WHEN IT IS 5 DEGREES HIGHER THAN THE PERIMETER ZONE.

23. DEADBAND, C403.4.1.2: THERMOSTATIC CONTROLS SHALL BE CONFIGURED WITH 5°F MINIMUM DEADBAND FOR SYSTEMS THAT CONTROL BOTH HEATING AND COOLING.

24. SETPOINT OVERLAP RESTRICTION, C403.4.1.3: WHERE SEPARATE HEATING AND COOLING SYSTEMS WITH SEPARATE THERMOSTATIC CONTROL DEVICES SERVE A ZONE, PROVIDE A LIMIT SWITCH, MECHANICAL STOP, OR DDC CONTROL TO PREVENT SIMULTANEOUS HEATING AND COOLING.

25. AUTOMATIC SETBACK AND SHUTDOWN, C403.4.2: HVAC SYSTEMS SHALL BE EQUIPPED WITH AUTOMATIC CONTROLS CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES, AND SHALL HAVE MANUAL OVERRIDE CONFIGURED TO OPERATE THE SYSTEM FOR 2 HOURS.

26. AUTOMATIC START, C403.4.2.3: AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM, AND BE CAPABLE OF AUTOMATICALLY ADJUSTING DAILY START TIME IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

DUCTING SYSTEMS

27. DUCT CONSTRUCTION, C403.10.2: DUCTWORK SHALL BE CONSTRUCTED AND SEALED PER IMC. OUTSIDE AIR DUCTWORK SHALL MEET AIR LEAKAGE REQUIREMENTS OF C402.5 AND VAPOR RETARDER REQUIREMENTS OF THE IBC.

28. DUCT PRESSURE CLASS, C403.10.2.1: ALL DUCTWORK SHOWN IS LOW PRESSURE DUCT, OPERATING AT STATIC PRESSURE LESS THAN OR EQUAL TO 3 INCHES WATER GAUGE (W.G.).

29. DUCT INSULATION, C403.10.1: MINIMUM DUCT INSULATION PER WSEC IS AS FOLLOWS:

SERVICE

INSULATION LEVEL

OUTSIDE AIR DUCT SERVING INDIVIDUAL SUPPLY UNIT WITH LESS THAN 2,800 CFM OF SUPPLY AIR

R-7

SUPPLY & RETURN DUCTS IN UNCONDITIONED SPACES

R-6

SUPPLY DUCTS WITHIN CONDITIONED SPACE WHERE SUPPLY AIR IS < 55 DEG F. OR > 105 DEG F.

R-3.3

EXPOSED DUCTWORK WITHIN A ZONE THAT SERVES THAT ZONE

NO INSULATION REQUIRED

EXHAUST & RELIEF DUCTS DOWNSTREAM OF AUTO SHUTOFF DAMPER

R-16

COMMISSIONING

30. SCOPE OF MECHANICAL SYSTEMS COMMISSIONING, C408.1: ALL MECHANICAL SYSTEMS, EQUIPMENT AND CONTROLS ARE REQUIRED TO BE COMMISSIONED. FOR BUILDINGS WITH COOLING CAPACITY > 240 MBH OR HEATING OUTPUT > 300 MBH ALL SYSTEMS ARE TO BE COMMISSIONED REGARDLESS OF INDIVIDUAL CAPACITY.

31. COMMISSIONING REQUIREMENTS IN CONSTRUCTION DOCUMENTS, C408.1.1: COMMISSIONING PLAN SHALL BE DEVELOPED BY A COMMISSIONING PROFESSIONAL AND CONSIST OF A NARRATIVE DESCRIPTION OF ACTIVITIES, ROLES & RESPONSIBILITIES OF THE COMMISSIONING TEAM, SCHEDULE OF ACTIVITIES INCLUDING TAB, FUNCTIONAL PERFORMANCE TESTING AND VERIFICATION OF PROJECT CLOSE OUT DOCUMENTATION PER C103.6, AND SUBMIT COMPLIANCE CHECKLIST TO THE BUILDING OFFICIAL UPON SUBSTANTIAL COMPLETION. A PRELIMINARY COMMISSIONING REPORT AND/OR COMMISSIONING COMPLIANCE CHECKLIST SHALL BE AVAILABLE FOR AHJ REVIEW PRIOR TO THE FINAL MECHANICAL INSPECTION.

32. FUNCTIONAL PERFORMANCE TESTING CRITERIA, C408.4.1: FUNCTIONAL PERFORMANCE TESTING SHALL BE PERFORMED IN ACCORDANCE WITH WSEC C408.4.1.

33. AIR SYSTEM BALANCING, C408.2.2: HVAC AIR AND WATER SYSTEMS SHALL BE BALANCED IN ACCORDANCE WITH THE SPECIFICATIONS AND THESE WSEC NOTES. SEE SPECIFICATIONS FOR FLOW RATE TOLERANCES.

34. AIR SYSTEM BALANCING DEVICES, C408.2.2.1: PROVIDE ALL SUPPLY AIR OUTLETS AND TERMINAL DEVICES WITH MEANS OF BALANCING AIRFLOW. BALANCE TO FIRST MINIMIZE THROTTLING LOSSES, THEN ADJUST TO MEET DESIGN AIR FLOWS.

PROJECT CLOSE OUT DOCUMENTATION

35. DOCUMENTATION SUBMITTAL REQUIREMENTS, C103.6: SUBMIT ALL CLOSEOUT DOCUMENTATION INCLUDING AS-BUILTS AND O&M'S TO OWNER WITHIN 180 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY.

36. THESE "ENERGY CODE NOTES" ARE LISTED TO SATISFY THE BUILDING DEPARTMENT'S REQUIREMENT THAT CERTAIN INFORMATION BE PLACED ON THE PLANS, BUT DO NOT DIMINISH THE FULL PROJECT REQUIREMENTS. PROVIDE ITEMS IN EXCESS OF CODE WHERE NOTED ON DRAWINGS AND IN SPECIFICATIONS. FOR OTHER ADDED REQUIREMENTS, SEE SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

ITEM

SECTION#

AS-BUILT DOCUMENTS

20 05 00

O&M MANUALS

20 05 00

PIPING & DUCT INSULATION

20 07 00

DUCTWORK SEALING & TESTING

23 31 00

CONTROLS

DIVISION 25

CITY OF TACOMA

BEACON ACTIVITY CENTER - PHASE 2

415 SOUTH 13TH STREET, TACOMA, WA 98402

RICARD A. HULTZ

ENGINEER

PROFESSIONAL ENGINEER

SIGNED

12-30-2022

SHEET TITLE: MECHANICAL NOTES

DRAWN: TP

CHECKED: NRH

DATE: 12/30/22

REVISIONS:

11/24/2023

M0.2

0"1"2"

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

BID SET

AIR INLET & OUTLET SCHEDULE			
SYMBOL	TYPE	BASIS OF DESIGN MANUFACTURER AND SERIES NO.	REMARKS
CEG	CEILING EXHAUST GRILLE	TITUS 50F	1/2"x1/2"x1/2" CUBE CORE
WSG	WALL SUPPLY GRILLE	KRUEGER SERIES 5880H	DOUBLE DEFLECTION, HORIZ. FACE BARS, VERT. REAR BARS 3/4"o.c.
WSR	WALL SUPPLY REGISTER	KRUEGER SERIES 5880H	DOUBLE DEFLECTION, HORIZ. FACE BARS, VERT. REAR BARS 3/4"o.c.
WRR	WALL RETURN REGISTER	KRUEGER SERIES 5880H	HORIZ. FACE BARS 3/4" O.C., 35° DEFLECTION
WRG	WALL RETURN GRILLE	KRUEGER SERIES 5880H	HORIZ. FACE BARS 3/4" O.C., 35° DEFLECTION
WRG-A	WALL RETURN GRILLE TYPE A	KEES GHD40 RETURN	HORIZ. FACE BARS 1/2" O.C., 40° DEFLECTION

NOTES:

- CEILING DIFFUSERS (CD) SHALL HAVE NO. & DIRECTION OF THROWS AS INDICATED ON PLANS.
(E.G. CD-3 = 3 WAY THROW)
- ALL AIR TERMINALS SHALL HAVE FACTORY FINISH, COLOR AS SELECTED BY ARCHITECT.
- SEE LEGEND FOR TERMINOLOGY USED IN AIR TERMINAL CALL-OUTS ON DRAWINGS.
- SEE ARCH. FINISH SCHEDULE FOR CEILING TYPES, PROVIDE AIR TERMINALS TO MATCH CEILING CONSTRUCTION INSTALLED IN.

VRF INDOOR HEAT PUMP SCHEDULE														
SYMBOL	BASIS OF DESIGN MANUFACTURER AND SERIES NO.	TYPE	AREA SERVED	SERVED BY	CAPACITY (MBH)		MAX CFM	ESP	MIN OA	FILTERS	UNIT ELECTRICAL		MAX WEIGHT LBS	REMARKS
					COOLING	HEATING				TYPE	MCA	VOLT/PH		
HP-1	MITSUBISHI PKFY-P24	WALL MOUNTED	MULTIPURPOSE 1	CU-1	24	27	708	-	-	MFR STD	0.63	208/1	50	
HP-2	MITSUBISHI PKFY-P06	WALL MOUNTED	OFFICE	CU-1	6	6.7	208	-	-	MFR STD	0.2	208/1	50	
HP-3	MITSUBISHI PKFY-P06	WALL MOUNTED	OFFICE	CU-1	6	6.7	208	-	-	MFR STD	0.2	208/1	50	
HP-5	MITSUBISHI PKFY-P18	WALL MOUNTED	KITCHEN	CU-1	18	20	424	-	-	MFR STD	0.2	208/1	50	
HP-7A	MITSUBISHI PCFY-P36	CEILING SUSPENDED	MULTIPURPOSE 7	CU-1	36	40	1095	-	-	MFR STD	1.22	208/1	90	
HP-7B	MITSUBISHI PCFY-P36	CEILING SUSPENDED	MULTIPURPOSE 7	CU-1	36	40	1095	-	-	MFR STD	1.22	208/1	90	
HP-8	MITSUBISHI PKFY-P24	WALL MOUNTED	MULTIPURPOSE 8	CU-1	24	27	706	-	-	MFR STD	0.63	208/1	50	
HP-9	MITSUBISHI PKFY-P12	WALL MOUNTED	MULTIPURPOSE 9	CU-1	12	13.5	388	-	-	MFR STD	0.24	208/1	50	
HP-23A	MITSUBISHI PKFY-P15	WALL MOUNTED	MULTIPURPOSE 23	CU-1	15	17	406	-	-	MFR STD	0.2	208/1	50	
HP-23B	MITSUBISHI PKFY-P15	WALL MOUNTED	MULTIPURPOSE 23	CU-1	15	17	406	-	-	MFR STD	0.2	208/1	50	
HP-25	MITSUBISHI PKFY-P06	WALL MOUNTED	OFFICE 25	CU-1	6	6.7	208	-	-	MFR STD	0.2	208/1	50	
HP-26A	MITSUBISHI PVFY-P54	MULTI - POSITION AIR HANDLER	MULTIPURPOSE 15	CU-1	54	60	1485	0.8"	550	2" PTA MERV 13	5.6	208/1	200	
HP-26B	MITSUBISHI PVFY-P54	MULTI - POSITION AIR HANDLER	MULTIPURPOSE 15	CU-1	54	60	1485	0.8"	550	2" PTA MERV 13	5.6	208/1	200	
BC-1	MITSUBISHI CMB-P1016	BRANCH CONTROLLER	INDOOR UNITS	CU-1	-	-	-	-	-	-	1.57	208/1	150	W/ 16 PORTS
NOTES: 1. PROVIDE INDOOR UNITS WITH CONDENSATE PUMPS. 2. PROVIDE BACNET INTERFACE. 3. PROVIDE INDOOR UNITS WITH SMART ME CONTROLLER, W/ OCCUPANCY SENSOR.														


VRF OUTDOOR HEAT PUMP SCHEDULE											
SYMBOL	BASIS OF DESIGN MANUFACTURER AND SERIES NO.	AREA SERVED	COOLING CAP		HEATING CAPACITY		MAX. WEIGHT LBS	UNIT ELECTRICAL			REMARKS
			TOTAL MBH	EFF	MBH	EFF		MCA	MOP	VOLTS/PH	
CU-1	DAIKIN PHEX-P288	INDOOR UNITS	288	22.7 IEER	320	3.32 COP	1250	52 48	80 70	208/3 208/3	TWO MODULES TWINNED, AE-200A CONTROLLER & BACNET INTERFACE
* COOLING CAPACITY IS AHRI RATING: AT 80°F DB; 67°F WB INDOOR COIL EAT AND 95°F OUTDOOR COIL EAT. ** HEATING CAPACITY IS AHRI HI-TEMP RATING: AT 70°F DB INDOOR COIL EAT AND 47°F DB; 43°F WB OUTDOOR COIL EAT.											

[illegible]

FAN SCHEDULE												
SYMBOL	SPECIFIED MANUFACTURER AND SERIES NUMBER	TYPE	AREA SERVED	CFM	ESP	MAX RPM	ELECTRICAL		DRIVE	CONTROL	MAX WEIGHT (LBS)	REMARKS
							HP	VOLTS / PH				
EF-10	GREENHECK G SERIES	ROOFTOP	MEN'S RESTROOM	345	.375"	1550	1/4	115/1	DIRECT	TIME SCHEDULE	25	W/ CURB
EF-13	GREENHECK G SERIES	ROOFTOP	WOMEN'S RESTROOM	175	.375"	1550	1/6	115/1	DIRECT	TIME SCHEDULE	25	W/ CURB
NOTES: 1. PROVIDE ALL FANS CONFIGURED TO MEET ENERGY CODE, I.E. PROVIDE WITH PROPER MOTOR EFFICIENCY OR PROVIDE WITH EC MOTOR. MOTOR HP SIZE SCHEDULED IS PRELIMINARY; FINAL EQUIPMENT AND MOTOR SIZE SHALL VARY TO MEET ENERGY CODE REQUIREMENTS. 2. PROVIDE ALL EC MOTORS WITH MANUAL SPEED CONTROLS FOR BALANCING. 3. SEE DIVISION 25 FOR MOTORIZED DAMPERS AT EF'S (UNO).												

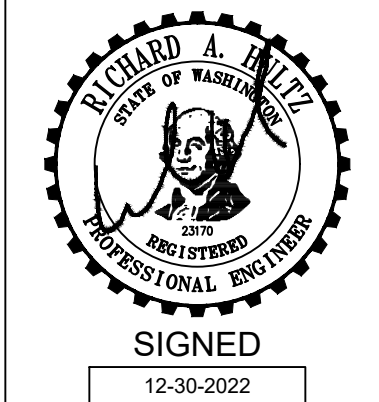
Miscellaneous Equipment Schedule							
Symbol	Item Description	Basis of Design Manufacturer and Series No.	Area Served	Equipment Capacity (BTU/h)	Electrical		Remarks
					Power	Volts / Ph	
DH-1A	Duct Heater	Renewiaire EK Series	DOAS-1	47,768	14 kW	208/3	W/ SCR Control
DH-1B	Duct Heater	Renewiaire EK Series	DOAS-1	13,648	4 kW	208/3	W/ SCR Control
DH-2	Duct Heater	Renewiaire EK Series	DOAS-2	10,236	3 kW	208/3	W/ SCR Control

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Job Number: 22-016

CITY OF TACOMA
BEACON ACTIVITY CENTER - PHASE 2
415 SOUTH 13TH STREET, TACOMA, WA 98402

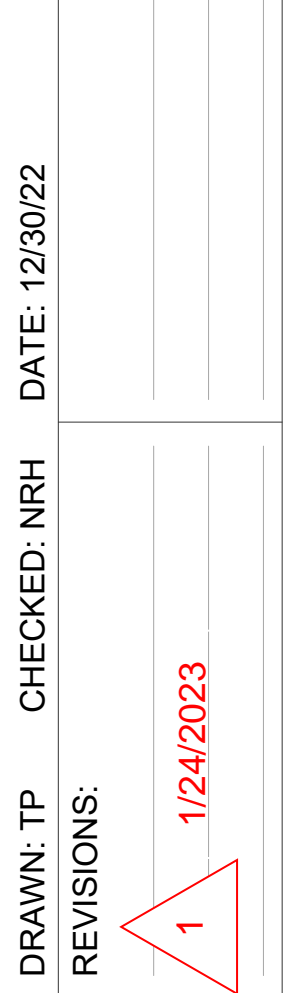


SHEET TITLE: MECHANICAL SCHEDULES
DRAWN: TP CHECKED: NRH DATE: 12/30/22

M0.3

0' 1' 2'

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED



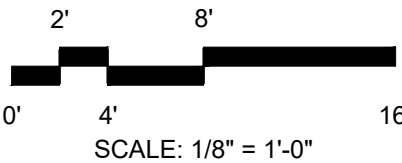
SIZE IS TRUE SCALE WHEN THE LINE MEASURES AS NOTED

KEYED NOTES:

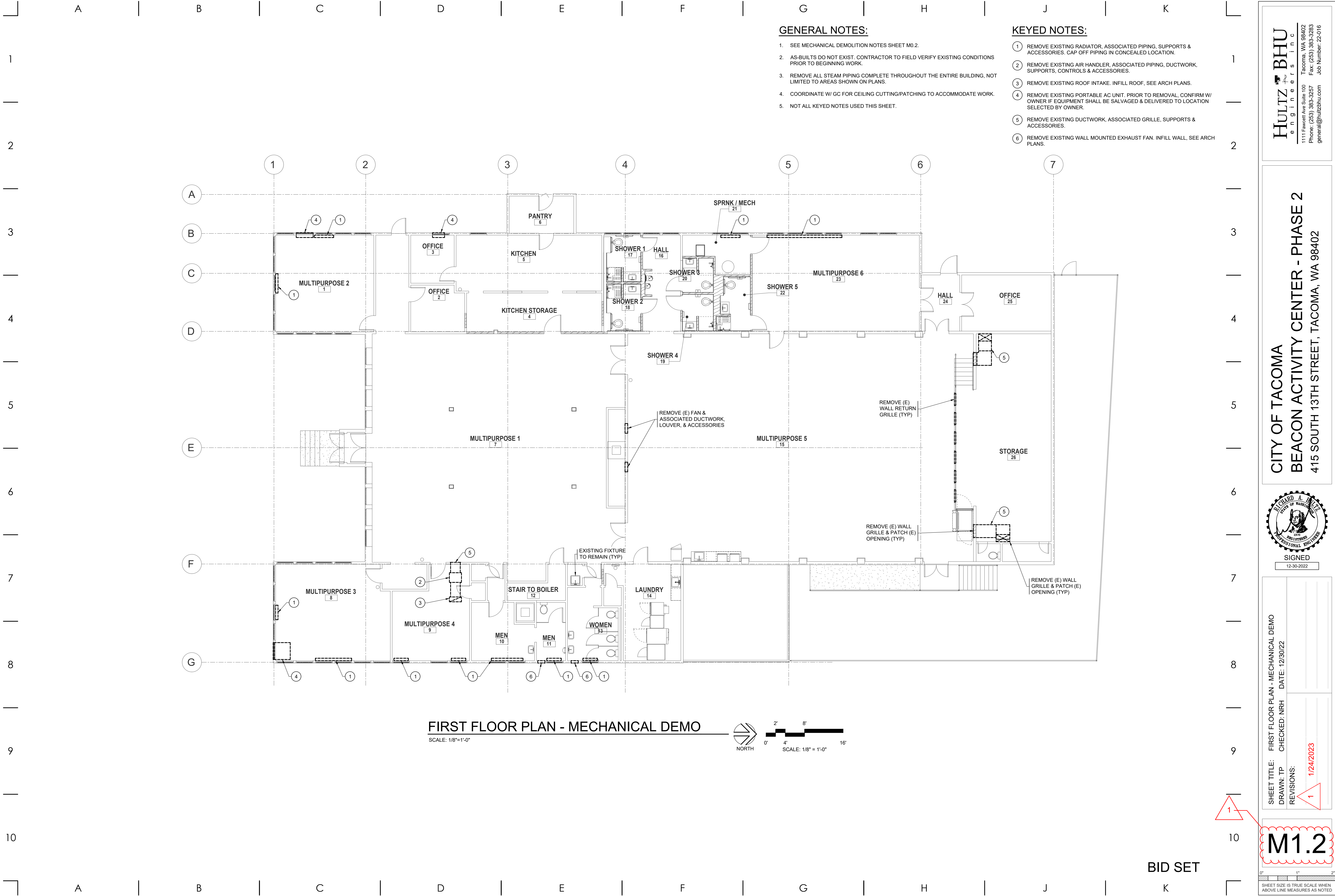
- 1 REMOVE EXISTING RADIATOR, ASSOCIATED PIPING, SUPPORTS & ACCESSORIES. CAP OFF PIPING IN CONCEALED LOCATION.
- 2 REMOVE EXISTING AIR HANDLER, ASSOCIATED PIPING, DUCTWORK, SUPPORTS, CONTROLS & ACCESSORIES.
- 3 REMOVE EXISTING ROOF INTAKE. INFILL ROOF, SEE ARCH PLANS.
- 4 REMOVE EXISTING PORTABLE AC UNIT. PRIOR TO REMOVAL, CONFIRM W/ OWNER IF EQUIPMENT SHALL BE SALVAGED & DELIVERED TO LOCATION SELECTED BY OWNER.
- 5 REMOVE EXISTING DUCTWORK, ASSOCIATED GRILLE, SUPPORTS & ACCESSORIES.
- 6 REMOVE EXISTING WALL MOUNTED EXHAUST FAN. INFILL WALL, SEE ARCH PLANS.



SCALE: 1/8"=1'-0"



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CITY OF TACOMA
BEACON ACTIVITY CENTER - PHASE 2
415 SOUTH 13TH STREET, TACOMA, WA 98402

RICHARD A. HULTZ
PROFESSIONAL ENGINEER
SIGNED
12-30-2022

SHEET TITLE: FIRST FLOOR PLAN - MECHANICAL DEMO
DRAWN: TP CHECKED: NRH DATE: 12/30/22
REVISIONS:
1 1/24/2023

M1.2

0' 1' 2'
SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

BID SET

A | B | C | D | E | F | G | H | J | K

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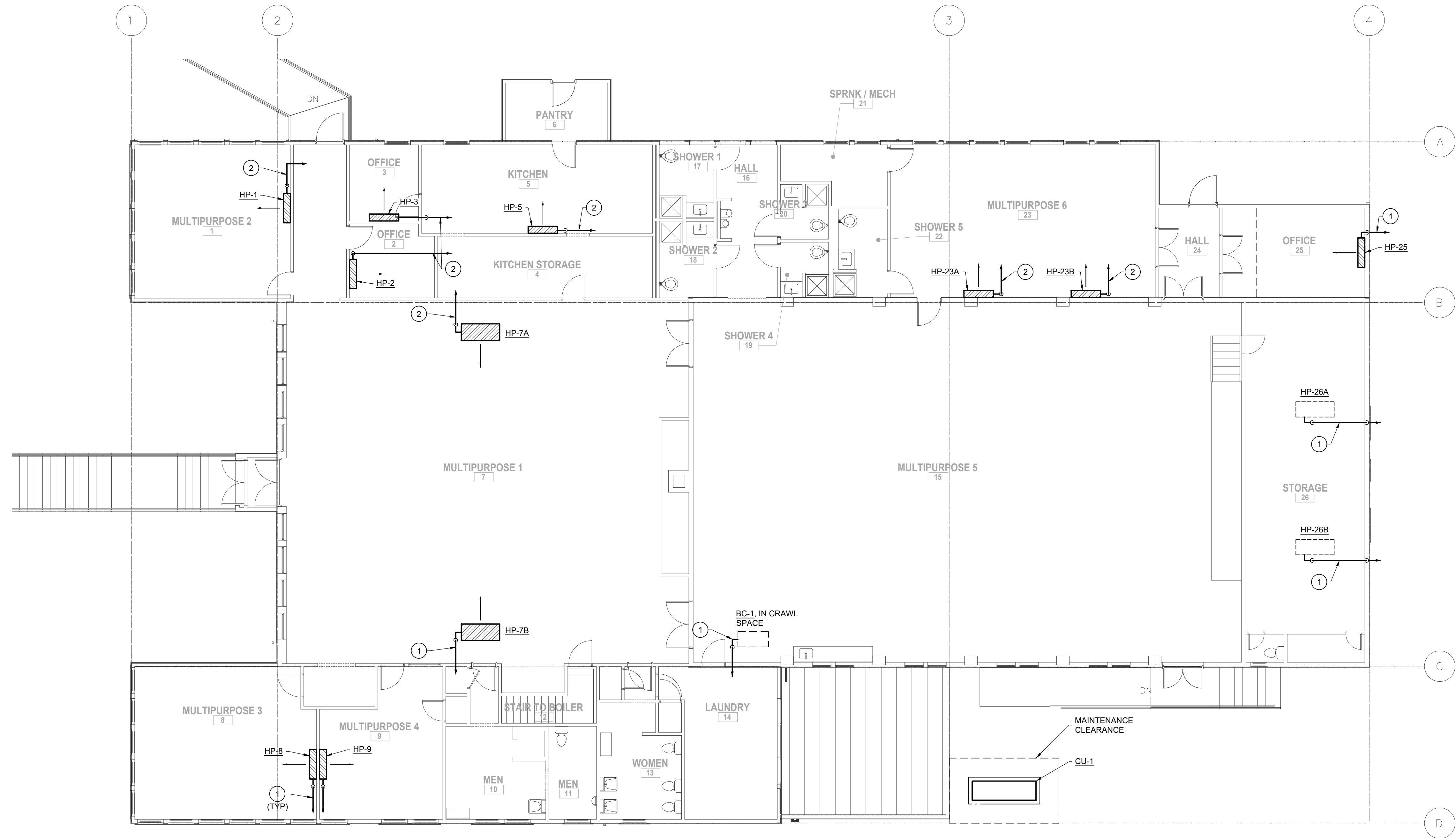
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GENERAL NOTES:

1. SEE GENERAL MECHANICAL NOTES, SHEET M0.1.
2. ROUTE PIPING SO AS NOT TO OBSTRUCT EQUIPMENT ACCESS .

KEYED NOTES:

- 1 3/4" C, ROUTE TO NEAREST POINT OF DISCHARG, 2" PAST BUILDING SIDING.
2 3/4" C, ROUTE TO DRAIN IN SPRNK/MECH ROOM.



FIRST FLOOR PLAN - PLUMBING

SCALE: 1/8"=1'-0"



SCALE: 1/8" = 1'-0"

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CITY OF TACOMA
BEACON ACTIVITY CENTER - PHASE 2
415 SOUTH 13TH STREET, TACOMA, WA 98402



SIGNED
12-30-2022

SHEET TITLE: FIRST FLOOR PLAN - PLUMBING
DRAWN: TP CHECKED: NRH DATE: 12/30/22

REVISIONS:

1/24/2023

1

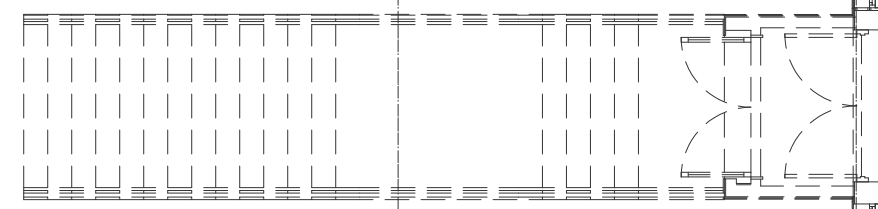
M3.1

0" 1" 2"

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

BID SET

A | B | C | D | E | F | G | H | J | K

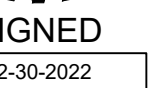


SCALE: 1/8"=1'-0"



- 1 DUCTWORK RUNS EXPOSED IN THIS ROOM. CAREFULLY FABRICATE & ASSEMBLE DUCTWORK TO PROVIDE BEST FINISHED APPEARANCE.
- 2 12x6 WTG W/ 12/6 TD.
- 3 HEAT PUMP LOCATED IN CRAWL SPACE UNDER STAGE.
- 4 LOCATE DUCTWORK AS HIGH AND TIGHT TO EXTERIOR WALL AS POSSIBLE.
- 5 LOCATION IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION PRIOR TO BEGINNING WORK.
- 6 RE-USE (E) FLOOR PENETRATIONS. PATCH FLOOR AS NECESSARY.
- 7 INTERLOCK W/ HP-26A & HP-26B, TO BE OPEN WHEN UNITS ARE IN THE OCCUPIED MODE.
- 8 RE-USE (E) WALL OPENING. MODIFY AS REQUIRED TO ACCOMMODATE NEW LOUVER.
- 9 REFRIGERANT PIPING ROUTED EXPOSED. ARRANGE PIPING FOR BEST APPEARANCE, AND PROVIDE WITH PVC JACKETING. CONFIRM FINAL ROUTING WITH ARCHITECT PRIOR TO BEGINNING WORK.

CITY OF TACOMA
BEACON ACTIVITY CENTER - PHASE 2
415 SOUTH 13TH STREET, TACOMA, WA 98402



1
1/24/2023

SIZE IS TRUE SCALE WHEN
THE LINE MEASURES AS NOTED

BID SET

A | B | C | D | E | F | G | H | J | K

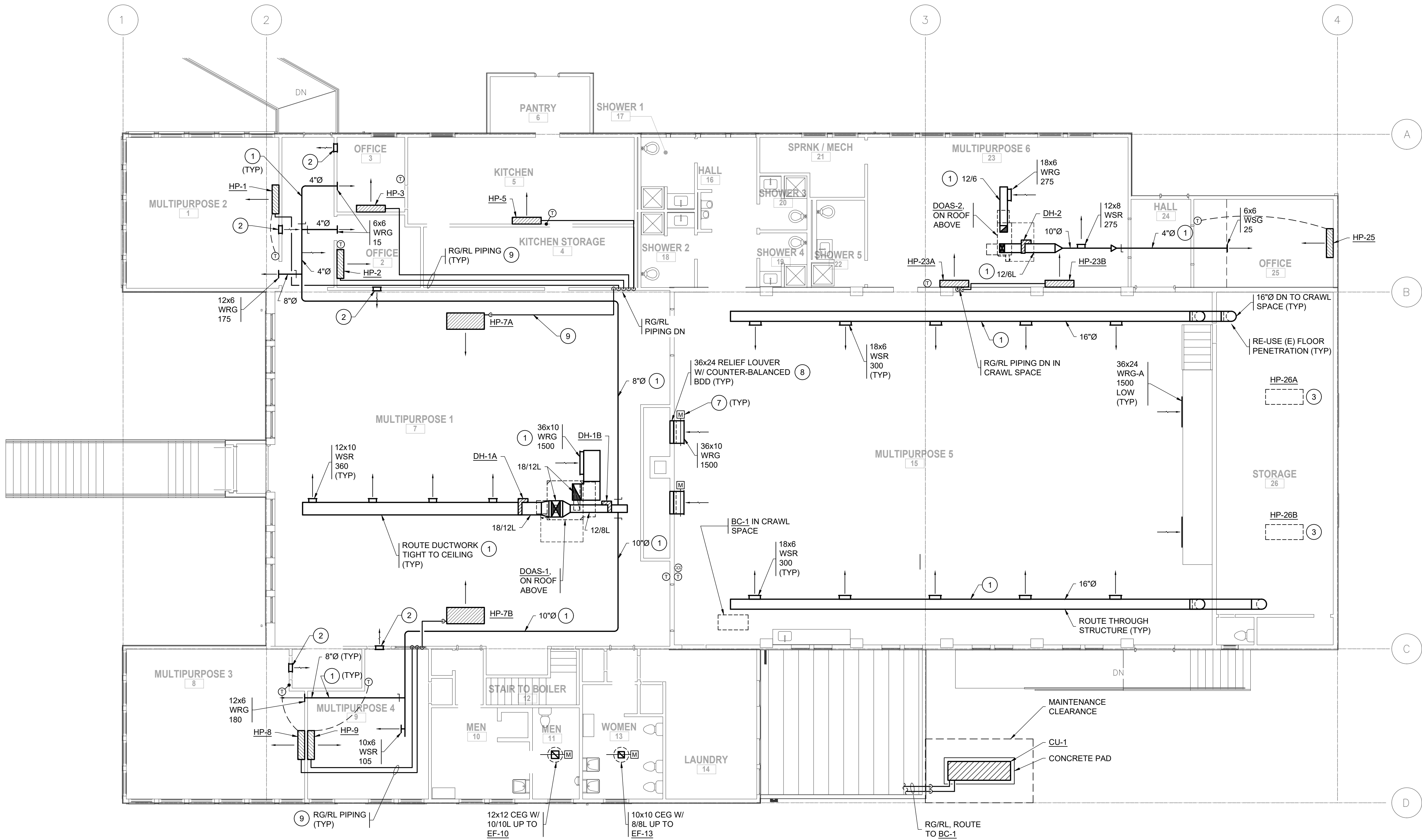
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GENERAL NOTES:

- SEE GENERAL MECHANICAL NOTES, SHEET M0.1.
- AS-BUILTS DO NOT EXIST. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO BEGINNING WORK.
- COORDINATE DUCTWORK LAYOUT WITH EXISTING ELEMENTS, INCLUDING BUT NOT LIMITED TO, FIRE SPRINKLER PIPING, LIGHTING, AND STRUCTURE.
- LOCATE MOTORIZED DAMPERS, ACTUATORS TO BE ACCESSIBLE. PROVIDE DUCT ACCESS DOORS TO ALLOW ACCESS TO DAMPERS.
- VERIFY HEIGHTS OF ALL WALL OUTLETS/INLETS W/ ARCHITECT PRIOR TO CONSTRUCTION.
- VERIFY MOUNTING HEIGHTS OF ALL EXPOSED DUCTWORK W/ ARCHITECT PRIOR TO CONSTRUCTION.
- PROVIDE TRANSITIONS AT DUCT CONNECTIONS TO EQUIPMENT TO MATCH UNIT CONNECTION SIZES.
- SEE VRF SCHEMATIC ON SHEET M4.4 FOR RG/RL PIPE SIZES.
- NOT ALL KEYED NOTES MAY BE USED ON ALL SHEETS.

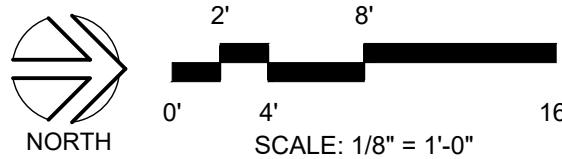
KEYED NOTES:

- DUCTWORK RUNS EXPOSED IN THIS ROOM. CAREFULLY FABRICATE & ASSEMBLE DUCTWORK TO PROVIDE BEST FINISHED APPEARANCE.
- 12x6 WTG W/ 12/6 TD.
- HEAT PUMP LOCATED IN CRAWL SPACE UNDER STAGE.
- LOCATE DUCTWORK AS HIGH AND TIGHT TO EXTERIOR WALL AS POSSIBLE.
- LOCATION IS APPROXIMATE. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION PRIOR TO BEGINNING WORK.
- RE-USE (E) FLOOR PENETRATIONS. PATCH FLOOR AS NECESSARY.
- INTERLOCK W/ HP-26A & HP-26B, TO BE OPEN WHEN UNITS ARE IN THE OCCUPIED MODE.
- RE-USE (E) WALL OPENING. MODIFY AS REQUIRED TO ACCOMMODATE NEW LOUVER.
- REFRIGERANT PIPING ROUTED EXPOSED. ARRANGE PIPING FOR BEST APPEARANCE, AND PROVIDE WITH PVC JACKETING. CONFIRM FINAL ROUTING WITH ARCHITECT PRIOR TO BEGINNING WORK.



FIRST FLOOR PLAN - HVAC

SCALE: 1/8"=1'-0"



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CITY OF TACOMA
BEACON ACTIVITY CENTER - PHASE 2
415 SOUTH 13TH STREET, TACOMA, WA 98402

RICHARD A. HULTZ
PROFESSIONAL ENGINEER
SIGNED
12-30-2022

SHEET TITLE: FIRST FLOOR PLAN - HVAC
DRAWN: TP
CHECKED: NRH
DATE: 12/30/22

REVISIONS:

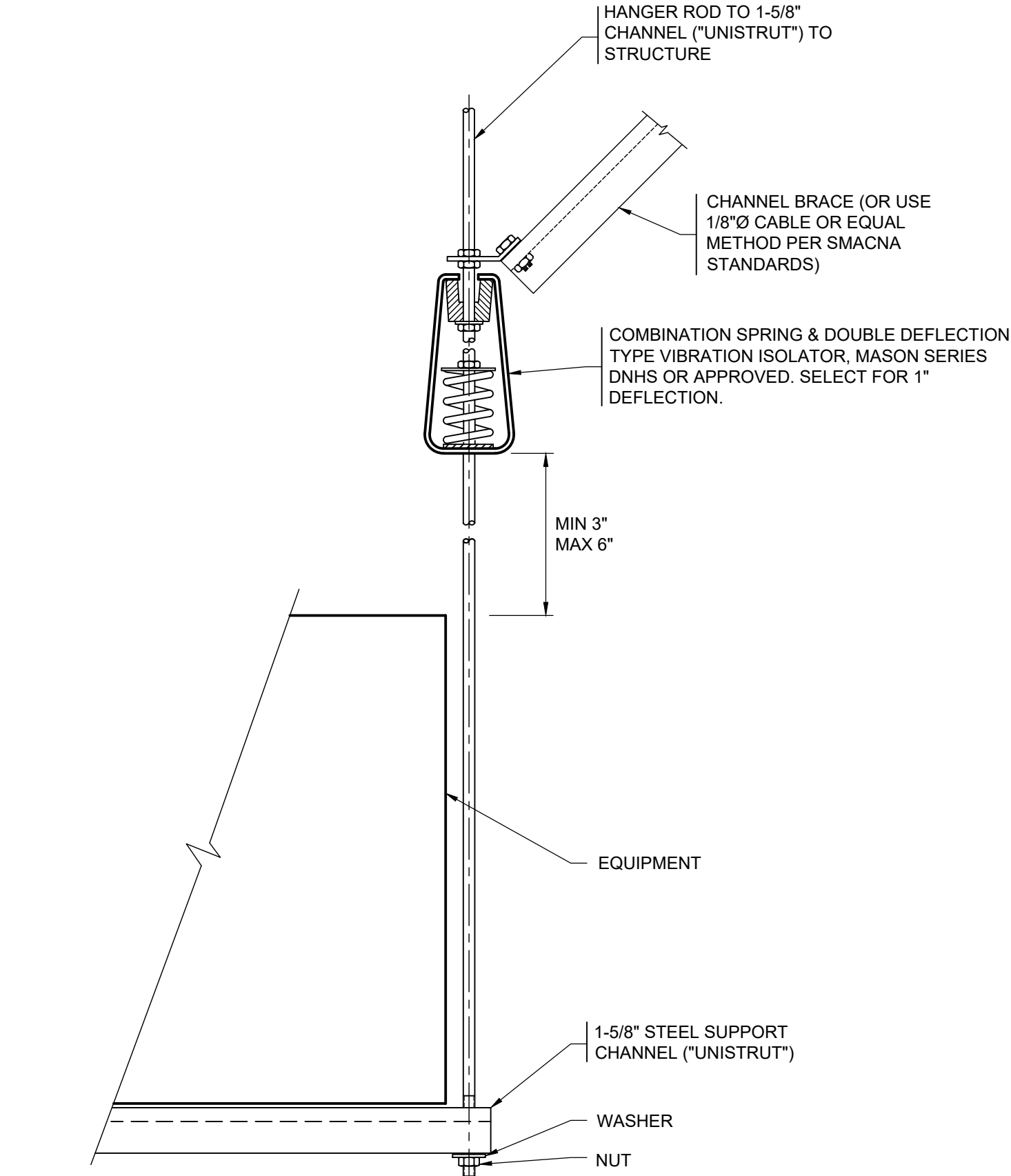
1/24/2023

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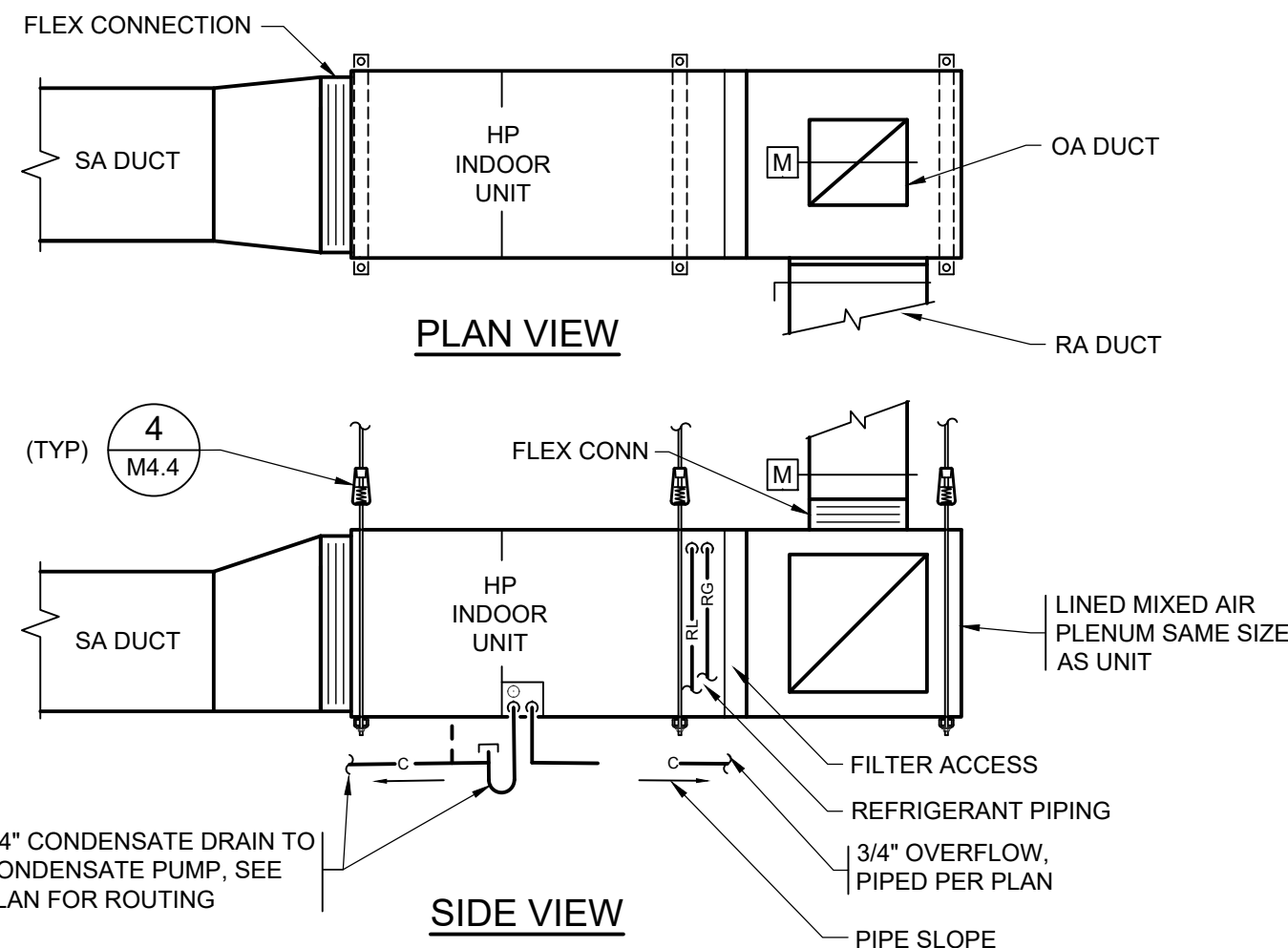
M4.2

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

SHEET SIZE IS TRUE SCALE W
ABOVE LINE MEASURES AS N

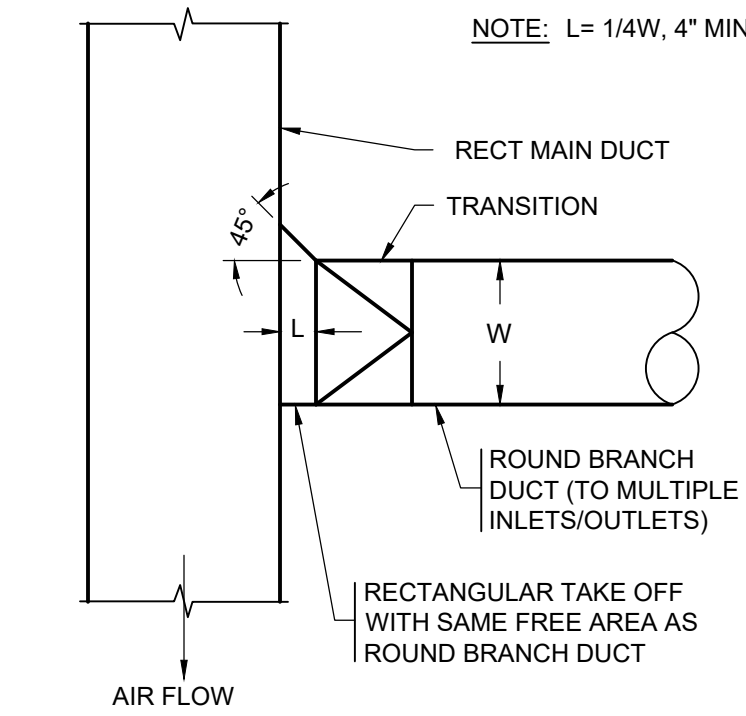


SUSPENDED EQUIP. SUPPORT 4
NTS M4.4



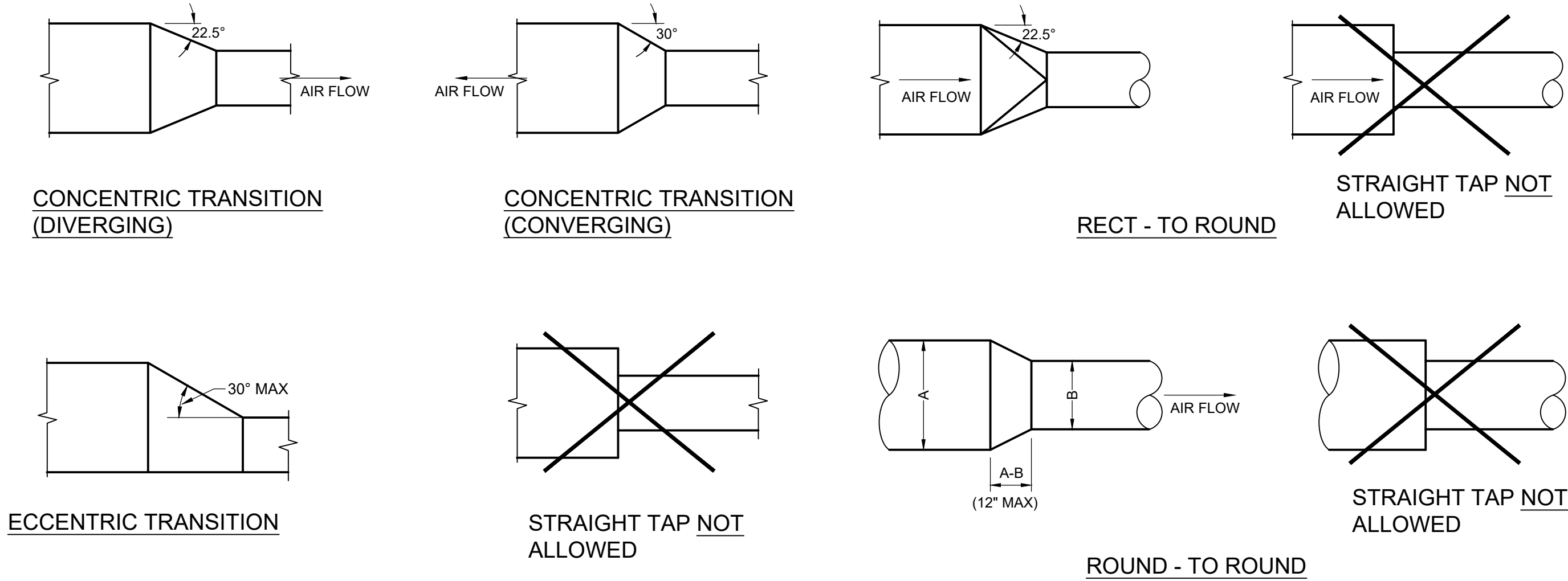
- NOTES:
- SEE PLANS FOR DUCT SIZES.
 - OA/RA DAMPERS SHALL BE SIZED TO MATCH THE CONNECTING DUCT SIZES.
 - LOCATE SUPPORTS SO AS NOT TO OBSTRUCT UNIT ACCESS DOORS/PANELS.

HEAT PUMP INDOOR UNIT 6
NTS M4.4



SERVING MULTIPLE INLET/OUTLET

**RECT-TO-ROUND
BRANCH DUCT CONNECTION** 3
NTS M4.4



RECT-TO-RECT TRANSITIONS 2
NTS M4.4

ROUND TRANSITIONS 1
NTS M4.4

City of Tacoma		
DIAGRAM	SYMBOL	LEGEND
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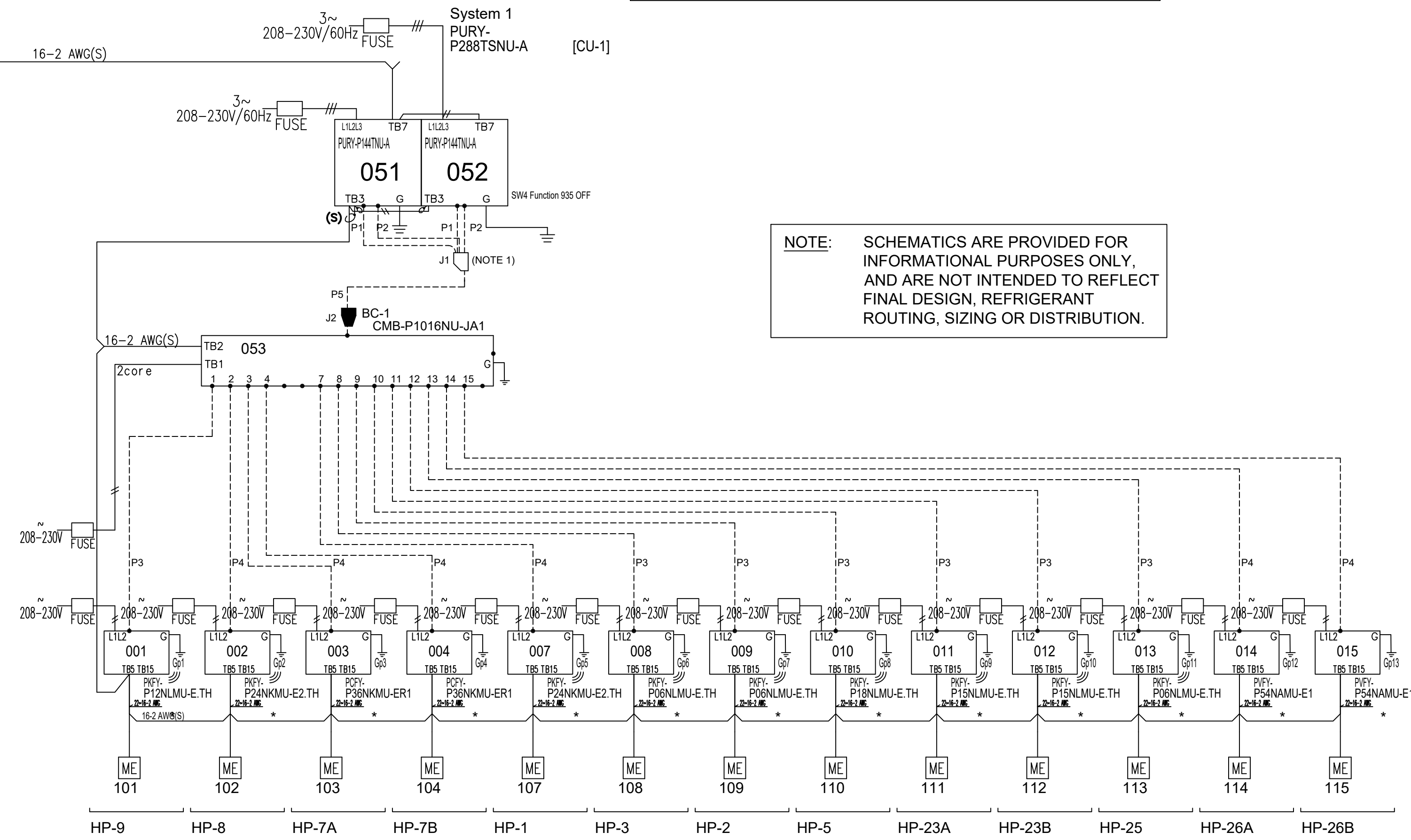
CITY MULTI
SYSTEM SCHEMATIC DWG.

This drawing is schematic in nature. Final routing of piping & wiring shall be determined by the installing contractor and/or designer of record. Additional refrigerant charge is needed depending on the size and length of extended piping. Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.

1.25mm²(16 AWG) : 1.25mm²(16 AWG) or more. 0.75mm²(20 AWG) : between 0.5mm²(24 AWG) and 0.75mm²(20 AWG).

Coded Notes:
NOTE 1: Install twinning Y's within 15 degrees of level and with 20 inches of straight pipe on converging connection - reference installation manual for additional details including but not limited to special tagging requirements when twinning, and pipe slope requirements

PIPING AND CONTROLS		
SYMBOL	BRANCH PIPE	MODEL NAME
J1	CMY-R300NCBK	
J2	CMY-R302S-G1	
SYMBOL LIQUID PIPE GAS PIPE SIZE		
P1	1/8	
P2	1/4	
P3	1/4	
P4	3/8	
P5	1/8	
NOTES		
* If the thermostat wiring greater than 32' then use 16-2 AWG only.		



VRF SCHEMATIC 5
NTS M4.4

BID SET

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CITY OF TACOMA
BEACON ACTIVITY CENTER - PHASE 2
415 SOUTH 13TH STREET, TACOMA, WA 98402



SHEET TITLE: HVAC DETAILS
DRAWN: TP
CHECKED: NRH
DATE: 12/30/22

REVISIONS:
1 1/24/2023

M4.4

SHEET SIZE IS TRUE SCALE WHEN ABOVE LINE MEASURES AS NOTED

