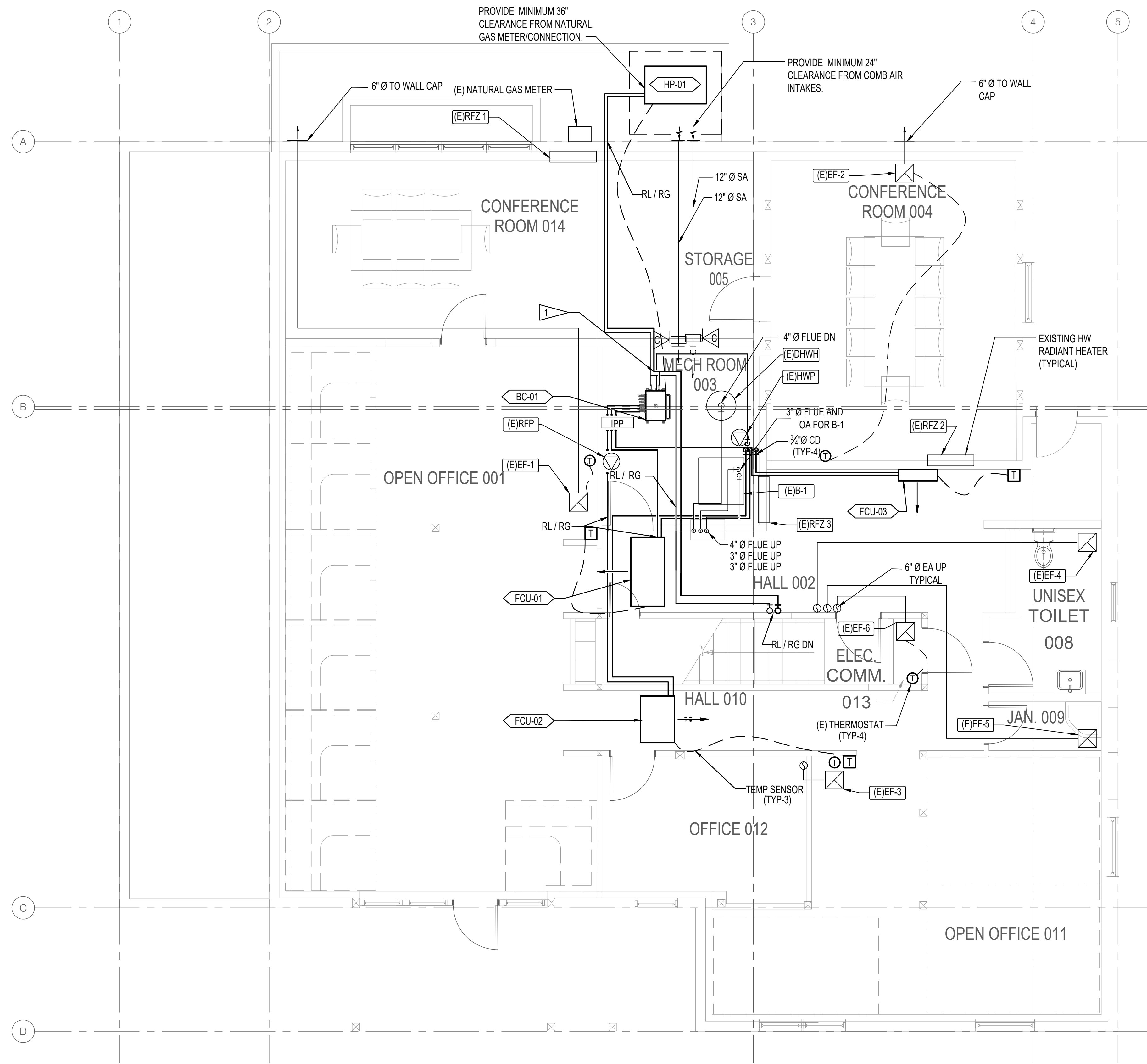


[illegible]



1 GROUND FLOOR HVAC PLAN
SCALE: 1/4"=1'-0"

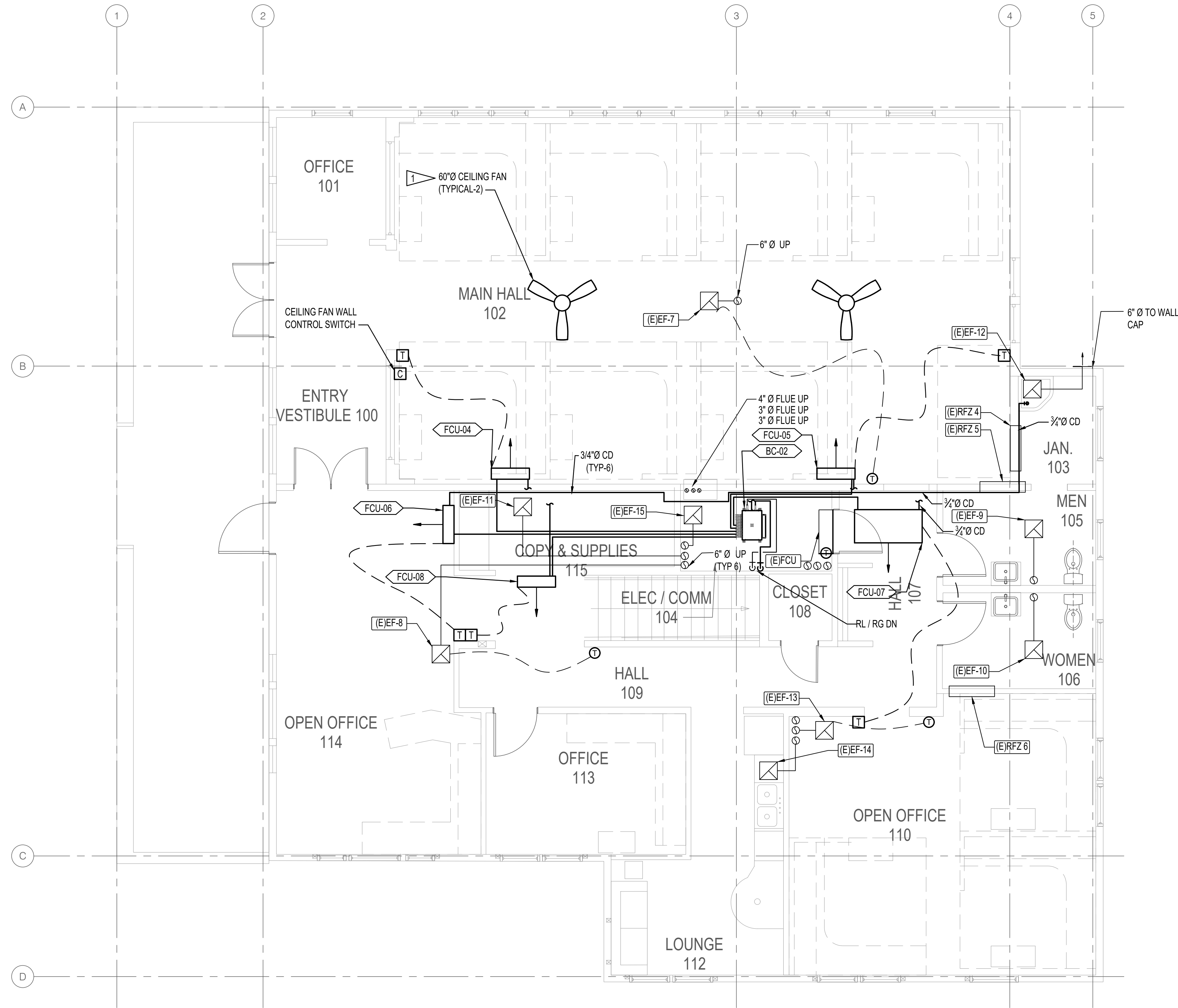
GENERAL NOTES:

- COORDINATE ALL SHUTDOWNS WITH OWNER PRIOR TO START OF WORK.
- PROVIDE NECESSARY CUTTING, PAINTING, PATCHING, ETC., TO FACILITATE MECHANICAL WORK.
- TAB WORK: PERFORM PRE-CONSTRUCTION TAB OF EXISTING EXHAUST FANS PER SPECIFICATIONS. PERFORM TAB AFTER ALL DUCTWORK HAS BEEN CLEANED PER SPECIFICATIONS.
- CLEAN ALL EXISTING DUCTWORK AND EXHAUST FANS PER SPECIFICATIONS.
- PROVIDE COMMISSIONING FOR NEW VRF SYSTEM PER SPECIFICATIONS.

SHEET NOTES

- 1 PROVIDE Y-BRANCH TO EACH REFRIGERATION LINE

| REVISION | DATE |
|--|------------|
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| 929 108th Ave NE Suite 1000 Bellevue WA 98004 425.628.6000 woodharbinger.com | |
| Wood Harbinger | |
| | |
| CITY HALL ANNEX BUILDING VRF HVAC INSTALLATION CITY OF KIRKLAND 310 First Street, Kirkland, WA 98033 | |
| GROUND FLOOR HVAC PLAN | |
| SHEET TITLE | |
| DATE | 12/06/2023 |
| SCALE | 1/4"=1'-0" |
| ENGR | ML |
| DRWN | AL |
| CHKD | NRB |
| APPR | NRB |
| JOB | 23018 |
| M-3.1 | |
| SHEET | 2 OF 5 |



1 FIRST FLOOR HVAC PLAN
SCALE: 1/4"=1'-0"

GENERAL NOTES:

- COORDINATE ALL SHUTDOWNS WITH OWNER PRIOR TO START OF WORK.
- PROVIDE NECESSARY CUTTING, PAINTING, PATCHING, ETC., TO FACILITATE MECHANICAL WORK.
- TAB WORK: PERFORM PRE-CONSTRUCTION TAB OF EXISTING EXHAUST FANS PER SPECIFICATIONS. PERFORM TAB AFTER ALL DUCTWORK HAS BEEN CLEANED PER SPECIFICATIONS.
- CLEAN ALL EXISTING DUCTWORK AND EXHAUST FANS PER SPECIFICATIONS.
- PROVIDE COMMISSIONING FOR NEW VRF SYSTEM PER SPECIFICATIONS.

SHEET NOTES

- 1 PROVIDE TWO CEILING FANS WITH WALL MOUNTED CONTROL PER SPECIFICATION.

| REVISION | DATE |
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CITY HALL ANNEX BUILDING VRF HVAC INSTALLATION
CITY OF KIRKLAND
310 First Street, Kirkland, WA 98033

SHEET TITLE
FIRST FLOOR HVAC PLAN

| | |
|-------|------------|
| DATE | 12/06/2023 |
| SCALE | 1/4"=1'-0" |
| ENGR | ML |
| DRWN | AL |
| CHKD | NRB |
| APPR | NRB |
| JOB | 23018 |

M-3.2

SHEET 3 OF 5

ROOM DESIGN CRITERIA

| ROOM NO. | ROOM NAME | AREA (SF) | HEIGHT CEILING | HEIGHT | HVAC | | | | | | | | | | | | | | NOTES |
|-------------------|-----------------|-----------|-------------------|--------|-------------------------|-------------------------|-----------------------------|---|--------------------------|---|-----------------------------|--------|-----------------------|-------------------------|--------------------------------|----------------------------|--|-----|-------|
| | | | | | ROOM TEMPERATURE | | | MINIMUM EXHAUST CFM/SF [ACH] [4] | FUME HOOD EXHAUST CFM | OCCUPANCY [PEOPLE] PEOPLE/ SF [2] | HEAT GAIN [BTUH/PERSON] [2] | | WORKSTATIONS COUNT | EQUIPMENT W/SQFT [W] | RECEPTACLE LOAD W/SF [W] | LIGHTING[3] W/SF [W] | MAX NOISE DESIGN CRITERIA [2] NC | | |
| | | | | | HEATING SETPOINT (F) | COOLING SETPOINT (F) | RELATIVE HUMIDITY [%] | | | | SENSIBLE | LATENT | | | | | | | |
| GROUND FLOOR PLAN | | | | | | | | | | | | | | | | | | | |
| 001 | OPEN OFFICE | 815 | 7.75 | 8.66 | 70 | 75 | - | - | - | [7] | 250 | 200 | 7 | - | 0.5 | 0.66 | 45 | | |
| 002 | HALL | 63 | 7.75 | 8.66 | 70 | 75 | - | - | - | - | - | - | - | - | 0.25 | 0.84 | 45 | | |
| 003 | MECH ROOM | 138 | 7.75 | 8.66 | 70 | - | - | - | - | - | - | - | - | - | 1 | 0.71 | - | | |
| 004 | CONFERENCE ROOM | 365 | 7.75 | 8.66 | 70 | 75 | - | - | - | [12] | 250 | 200 | 1 | - | 0.5 | 0.66 | 35 | | |
| 005 | STORAGE | 143 | 7.75 | 8.66 | 70 | - | - | - | - | - | - | - | - | - | 0.25 | 0.49 | 45 | | |
| 006 | VESTIBULE | 49 | 7.75 | 8.66 | 70 | 75 | - | - | - | - | 250 | 200 | - | - | - | 0.84 | 45 | | |
| 007 | HALL | 184 | 7.75 | 8.66 | 70 | 75 | - | - | - | - | - | - | - | - | 0.25 | 0.84 | 45 | | |
| 008 | UNISEX TOILET | 89 | 7.75 | 8.66 | 70 | 75 | - | 75 | - | - | - | - | - | - | - | 0.74 | 45 | | |
| 009 | JANITOR | 31 | 7.75 | 8.66 | 70 | - | - | 75 | - | [1] | 250 | 200 | 1 | - | 0.25 | 0.51 | 45 | | |
| 010 | HALL | 85 | 7.75 | 8.66 | 70 | 75 | - | - | - | - | - | - | - | - | 0.25 | 0.84 | 45 | | |
| 011 | OPEN OFFICE | 453 | 7.75 | 8.66 | 70 | 75 | - | - | - | [7] | 250 | 200 | 7 | - | 0.5 | 0.66 | 45 | | |
| 012 | OFFICE | 151 | 7.75 | 8.66 | 70 | 75 | - | - | - | [1] | 250 | 200 | 1 | - | 0.5 | 0.66 | 35 | | |
| 013 | ELEC / COMM | 13 | 7.75 | 8.66 | 70 | 75 | - | - | - | - | - | - | - | [xxx] | 2 | 0.71 | - | [6] | |
| 014 | CONFERENCE ROOM | 300 | 7.75 | 8.66 | 70 | 75 | - | - | - | [8] | 250 | 200 | 8 | - | 0.5 | 0.66 | 35 | | |
| FIRST FLOOR | | | | | | | | | | | | | | | | | | | |
| 100 | ENTRY VESTIBULE | 138 | 9 | 13.00 | 70 | 75 | - | - | - | - | 250 | 200 | - | - | - | 0.84 | 45 | | |
| 101 | OFFICE | 75 | 9 | 13.00 | 70 | 75 | - | - | - | [1] | 250 | 200 | 1 | - | 0.5 | 0.66 | 35 | | |
| 102 | MAIN HALL | 832 | 9 | 13.00 | 70 | 75 | - | - | - | [7] | 250 | 200 | 7 | - | 0.5 | 0.66 | 45 | | |
| 103 | JANITOR | 50 | 9 | 13.00 | 70 | - | - | 75 | - | [1] | 250 | 200 | 1 | - | 0.25 | 0.51 | 45 | | |
| 104 | ELEC/ COMM | 64 | 9 | 13.00 | 70 | 75 | - | - | - | - | - | - | - | [xxx] | 2 | 0.71 | - | [6] | |
| 105 | MEN | 79 | 9 | 13.00 | 70 | 75 | - | 75 | - | - | - | - | - | - | - | 0.74 | 45 | | |
| 106 | WOMEN | 78 | 9 | 13.00 | 70 | 75 | - | 75 | - | - | - | - | - | - | - | 0.74 | 45 | | |
| 107 | HALL | 103 | 9 | 13.00 | 70 | 75 | - | - | - | - | - | - | - | - | 0.25 | 0.84 | 45 | | |
| 108 | CLOSET | 26 | 9 | 13.00 | 70 | - | - | - | - | - | - | - | - | - | 0.25 | 0.49 | 45 | | |
| 109 | HALL | 108 | 9 | 13.00 | 70 | 75 | - | - | - | - | - | - | - | - | 0.25 | 0.84 | 45 | | |
| 110 | OPEN OFFICE | 408 | 9 | 13.00 | 70 | 75 | - | - | - | [3] | 250 | 200 | 3 | - | 0.5 | 0.66 | 45 | | |
| 112 | LOUNGE | 175 | 9 | 13.00 | 70 | 75 | - | - | - | [4] | 250 | 200 | - | - | 2 | 0.84 | 45 | | |
| 113 | OFFICE | 137 | 9 | 13.00 | 70 | 75 | - | - | - | [1] | 250 | 200 | 1 | - | 0.5 | 0.66 | 35 | | |
| 114 | OPEN OFFICE | 367 | 9 | 13.00 | 70 | 75 | - | - | - | [3] | 250 | 200 | 3 | - | 0.5 | 0.66 | 45 | | |
| 115 | COPY / SUPPLIES | 95 | 9 | 13.00 | 70 | 75 | - | 75 | - | - | 250 | 200 | - | - | 1 | 0.56 | 45 | | |

NOTES:
[1] EQUIPMENT LOAD ON COORDINATION, 5850 W TYPICAL HEAT REACTION FROM TRANSFORMERS X 3.
[2] ASHRAE APLICATIONS 2015 CHAPTER 48 TABLE 1
[3] ASHRAE 90.1-2022 TABLE 9.5.2.1-1 SPACE BY SPACE LPD...
[4] ASHRE 62.1-2022 TABLE 6.1
[5] 2018 INTERNATIONAL MECHANICAL CODE WAC CHAPTER 51-52
[6] THESE ROOMS ARE EXISTING SPLIT AC SYSTEM

FAN COIL UNIT, VRF (FCU'S)

| EQUIPMENT NUMBER | FCU-01 | FCU-02 | FCU-03 | FCU-04 | FCU-05 | FCU-06 | FCU-07 | FCU-08 |
|---------------------------------------|---|---|---|-----------------------------|------------------|----------------------------------|---|------------------------------------|
| INDIRECTLY AREA SERVED | OPEN OFFICE-001 CONFERENCE-014 OFFICE-012 | OPEN OFFICE-011 HALL-010 HALL-002 | CONFERENCE-004 VESTIBULE-006 HALL-007 | MAIN HALL-102 OFFICE-101 | MAIN HALL-102 | OPEN OFFICE-114 VESTIBULE-100 | HALL-107 OPEN OFFICE-110 LOUNGE-112 | HALL-109 OFFICE-113 COPY-115 |
| LOCATION | HALL 002 | HALL 010 | HALL 002 | MAIN HALL 102 | MAIN HALL 102 | OPEN OFFICE 114 | HALL 107 | HALL 109 |
| TYPE | CEILING SUSPENDED | CEILING SUSPENDED | WALL MOUNTED | WALL MOUNTED | WALL MOUNTED | WALL MOUNTED | CEILING SUSPENDED | WALL MOUNTED |
| REFRIGERANT TYPE | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A | R-410A |
| FAN | | | | | | | | |
| AIRFLOW CFM | 600 | 340 | 260 | 240 | 240 | 250 | 300 | 160 |
| AIRFLOW RATE CFM | 710-600 | 410-340 | 300-180 | 300-180 | 300-180 | 300-180 | 710-600 | 300-18 |
| COOLING | | | | | | | | |
| NOMINAL CAPACITY - TON | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 | 1.0 |
| NOMINAL CAPACITY - BTUH | 24000 | 12000 | 12000 | 12000 | 12000 | 12000 | 24000 | 12000 |
| TOTAL CAPACITY - BTUH | 17000 | 8200 | 9200 | 7500 | 7500 | 11200 | 11200 | 3600 |
| SENS CAPACITY - BTUH | 5700 | 3000 | 2800 | 2450 | 2450 | 4100 | 4000 | 1200 |
| EAT-DEG F DB | 75 | 75 | 75 | 75 | 75 | 75 | 75 | 75 |
| EAT-DEG F WB | 67 | 67 | 67 | 67 | 67 | 67 | 67 | 67 |
| LAT-DEG F DB | 55 | 55.3 | 55.70 | 55.40 | 55.40 | 56.70 | 55.60 | 55.50 |
| HEATING | | | | | | | | |
| NOMINAL CAPACITY - BTUH | 27000 | 9000 | 13500 | 13500 | 13500 | 13500 | 13500 | 13500 |
| CAPACITY - BTUH | 15200 | 7600 | 8600 | 7600 | 7600 | 12800 | 12800 | 4300 |
| EAT-DEG F DB | 70 | 70 | 70 | 70 | 70 | 70 | 70 | 70 |
| LAT-DEG F DB | 88 | 88.1 | 88.5 | 88 | 88 | 88 | 88 | 88 |
| PIPE CONNECTIONS | | | | | | | | |
| LIQUID - IN | 3/8 | 1/4 | 1/4 | 1/4 | 1/4 | 1/4 | 3/8 | 1/4 |
| GAS - IN | 5/8 | 1/2 | 1/2 | 1/2 | 1/2 | 1/2 | 5/8 | 1/2 |
| CONDENSATE DRAIN - IN | 1 | 1 | 2/3 | 2/3 | 2/3 | 2/3 | 1 | 2/3 |
| FILTER | | | | | | | | |
| FILTER TYPE | RESIN NET WASHABLE | | | | | | | |
| THICKNESS - INCHES | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| ALLOWANCE FOR DIRTY FILTER -APROX HRS | 200 | 200 | 200 | 200 | 200 | 200 | 200 | 200 |
| SOUND PRESSURE - dBA | 44 | 42 | 31-38 | 31-38 | 31-38 | 31-38 | 44 | 31-38 |
| ELECTRICAL | | | | | | | | |
| VOLTS - PHASE - HERTZ | 230-160 | 230-160 | 230-160 | 230-160 | 230-160 | 230-160 | 230-160 | 230-160 |
| MCA | 1.0 | 0.8 | 0.4 | 0.4 | 0.4 | 0.4 | 1.0 | 0.4 |
| MOCP | 15 | 15 | 15 | 15 | 15 | 15 | 15 | 15 |
| DESIGN BASIS | | | | | | | | |
| MAKE | DAIKIN | DAIKIN | DAIKIN | DAIKIN | DAIKIN | DAIKIN | DAIKIN | DAIKIN |
| MODEL | FXHQ-24MVJU | FXHQ-12MVJU | FXAQ12PVJU | FXAQ12PVJU | FXAQ12PVJU | FXAQ12PVJU | FXHQ-24MVJU | FXAQ12PVJU |
| MAX OPERATING WEIGHT-LBS | 80 | 55 | 26.5 | 26.5 | 26.5 | 26.5 | 80 | 26.5 |
| REMARKS. | | | | | | | | |

BRANCH CIRCUIT CONTROLLER (BC)

| | | |
|-------------------------------|--------------|------------|
| EQUIPMENT NUMBER | BC-01 | BC-02 |
| EQUIPMENT SERVED | HP-01 | HP-01 |
| AREA SERVED | GROUND LEVEL | LEVEL1 |
| LOCATION | | |
| PERFORMANCE | | |
| HP-01 NOMINAL CAPACITY - TONS | 8 | 8 |
| HP-01 CAPACITY - MBH | 75.6 | 75.6 |
| INDOOR UNITS CAPACITY - MBH | 34.5 | 40.8 |
| NUMBER OF BRANCHES | 8 | 8 |
| REFRIGERANT | R-410A | R-410A |
| BRANCH PIPE CONNECTIONS | | |
| LIQUID - IN | 3/8 | 3/8 |
| GAS - IN | 5/8 | 5/8 |
| DISCHARGE - IN | 1/2 | 1/2 |
| SOUND PRESSURE (DBA) | | |
| ELECTRICAL | | |
| VOLTS-PHASE-HERTZ | 208-1-60 | 208-1-60 |
| MCA | 0.8 | 0.8 |
| STANDARD OF ACCEPTANCE | | |
| MAKE | DAIKIN | DAIKIN |
| MODEL | BSF8064TVJ | BSF8064TVJ |
| MAX. OPERATING WEIGHT-LBS | 81.6 | 81.6 |
| REMARKS | | |
| [1] | | |
| [2] | | |
| [3] | | |

AIR COOLED CONDENSING UNITS (HP-01)

| | |
|--|---------------|
| EQUIPMENT NUMBER | HP-01 |
| EQUIPMENT SERVED | BC-01 / BC-02 |
| AREA SERVED | BLDG |
| LOCATION | GROUND LEVEL |
| COMPRESSOR | |
| NOMINAL CAPACITY - TONS | 8.0 |
| TOTAL CAPACITY - MBH | 100 COOL |
| TOTAL CAPACITY - MBH | 100 HEAT |
| EER NON- DUCTED | 15.8 |
| IEER NON- DUCTED | 27.8 |
| COP47 NON- DUCTED | 4.23 |
| COP17 NON-DUCTED | 2.63 |
| TEST PROCEDURE | AHRI 1230 |
| REFRIGERANT | |
| TYPE | R-410A |
| FACTORY CHARGE - LBS | 25.79 |
| MAX ADDITIONAL CHARGE - LBS | 14.91 |
| MAX TOTAL CHARGE - LBS | 40.7 |
| PIPE CONNECTIONS | |
| LIQUID - IN | 3/8 |
| GAS - IN | 3/4 |
| DISCHARGE - IN | 5/8 |
| SOUND PRESSURE (DBa) | 61 |
| ELECTRICAL | |
| VOLTS-PHASE-HERTZ | 208/3/60 |
| MCA | 34.1 |
| MOP | 35 |
| STANDARD OF ACCEPTANCE | |
| MAKE | DAIKIN |
| MODEL | REYQ96AATJA |
| MAX. OPERATING WEIGHT-LBS | 725.3 |
| REMARKS | |
| [1] PROVIDE WITH MANUFACTURER'S COATING FOR MARINE ENVIRONMENTS. | |
| [2] PROVIDE WITH LOW AMBIENT KIT. | |

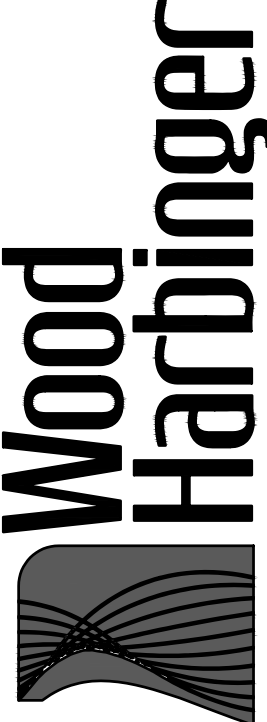
PIPING MATERIAL SCHEDULE


| SERVICE | MATERIAL | WEIGHT | TYPE | FITTINGS | JOINING METHOD |
|--------------------------|------------------|--------|-----------------|----------------------------|---|
| REFRIGERANT LIQUID (RL) | COPPER, ASTM B88 | TYPE L | HARD DRAWN TUBE | WRUGHT COPPER, ANSI B16.22 | SOLDER, THREADED ADAPTER WITH PTFE TAPE |
| REFRIGERANT SUCTION (RS) | COPPER, ASTM B88 | TYPE L | HARD DRAWN TUBE | WRUGHT COPPER, ANSI B16.22 | SOLDER, THREADED ADAPTER WITH PTFE TAPE |
| CONDENSATE DRAIN | PVC | SCH 40 | TUBE | PVC | SOLVENT CONNECTIONS |

REVISION

DATE

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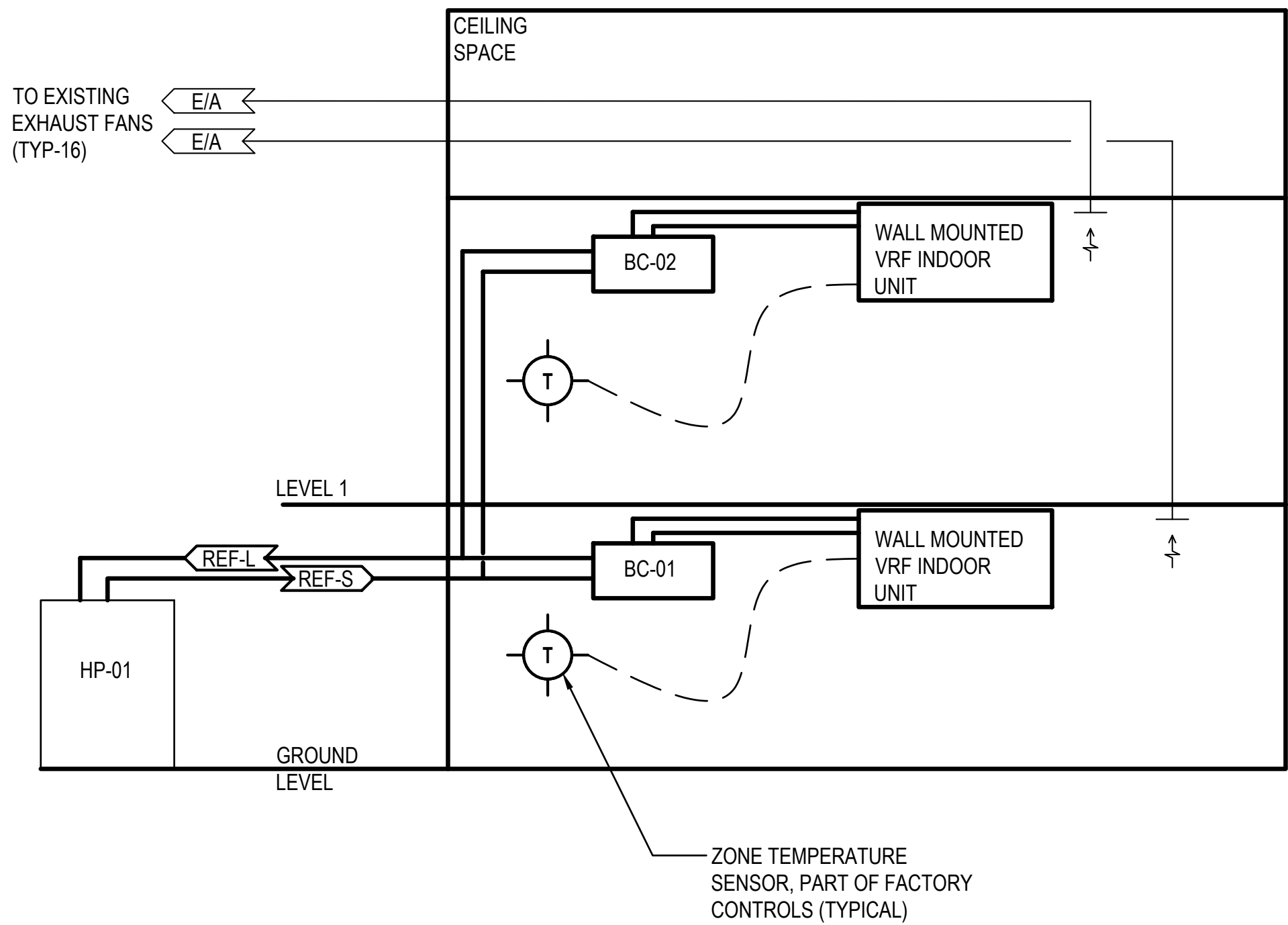




CITY HALL ANNEX BUILDING VRF HVAC INSTALLATION
CITY OF KIRKLAND
310 First Street, Kirkland, WA 98033
MECHANICAL SCHEDULES

| | |
|-------|------------|
| DATE | 12/06/2023 |
| SCALE | NONE |
| ENGR | ML |
| DRWN | AL |
| CHKD | NRB |
| APPR | NRB |
| JOB | 23018 |

M-6.1



VRF OUTDOOR CONDENSER AND INDOOR FAN COIL UNIT (TYPICAL FOR HP-01, AND ACU-01 THROUGH 14) -CONTROL DIAGRAM

1 SCALE: N/A

M3.1 M3.2

SEQUENCE OF OPERATION - VRF OUTDOOR CONDENSER AND INDOOR FAN COIL UNITS.

1. GENERAL: PROVIDE FACTORY CONTROLS FOR VRF SYSTEM. PROVIDE CAPABILITY TO ENABLE/DISABLE TO THE UNIT BASED ON A PROGRAMMABLE SCHEDULE. VENTILATION AIR PROVIDED BY A SEPARATE EXHAUST AIR SYSTEM WHICH IS NOT PART OF THE VRF SYSTEM. VRF FAN COIL UNITS SHALL BE CONTROLLED TO CYCLE WITH LOAD. AN EXISTING HOT WATER RADIANT HEATING SYSTEM IS PROVIDED AND WILL PROVIDE THE BULK OF HEATING.
2. MORNING WARM-UP: THE HOT WATER HEATING SYSTEM WILL PERFORM MORNING WARMUP BASED ON EXISTING LOCAL CONTROL SYSTEM.
3. OCCUPIED MODE: VRF FAN COIL UNIT SHALL USE FACTORY PACKAGED CONTROLS TO SATISFY ROOM TEMPERATURE SETPOINT. PROVIDE HEATING SPACE TEMPERATURE SETPOINT OF 68°F (ADJUSTABLE) AND PROVIDE COOLING SPACE TEMPERATURE SETPOINT OF 76°F (ADJUSTABLE).
4. UNOCCUPIED MODE: DISABLE UNIT VIA SCHEDULE ON FACTORY CONTROLLER.

| REVISION | DATE |
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CITY OF KIRKLAND
310 First Street, Kirkland, WA 98033

MECHANICAL CONTROL

SHEET TITLE

| | |
|-------|------------|
| DATE | 12/06/2023 |
| SCALE | NONE |
| ENGR | ML |
| DRWN | AL |
| CHKD | NRB |
| APPR | NRB |
| JOB | 23018 |

M-7.1

SHEET 5 OF 5