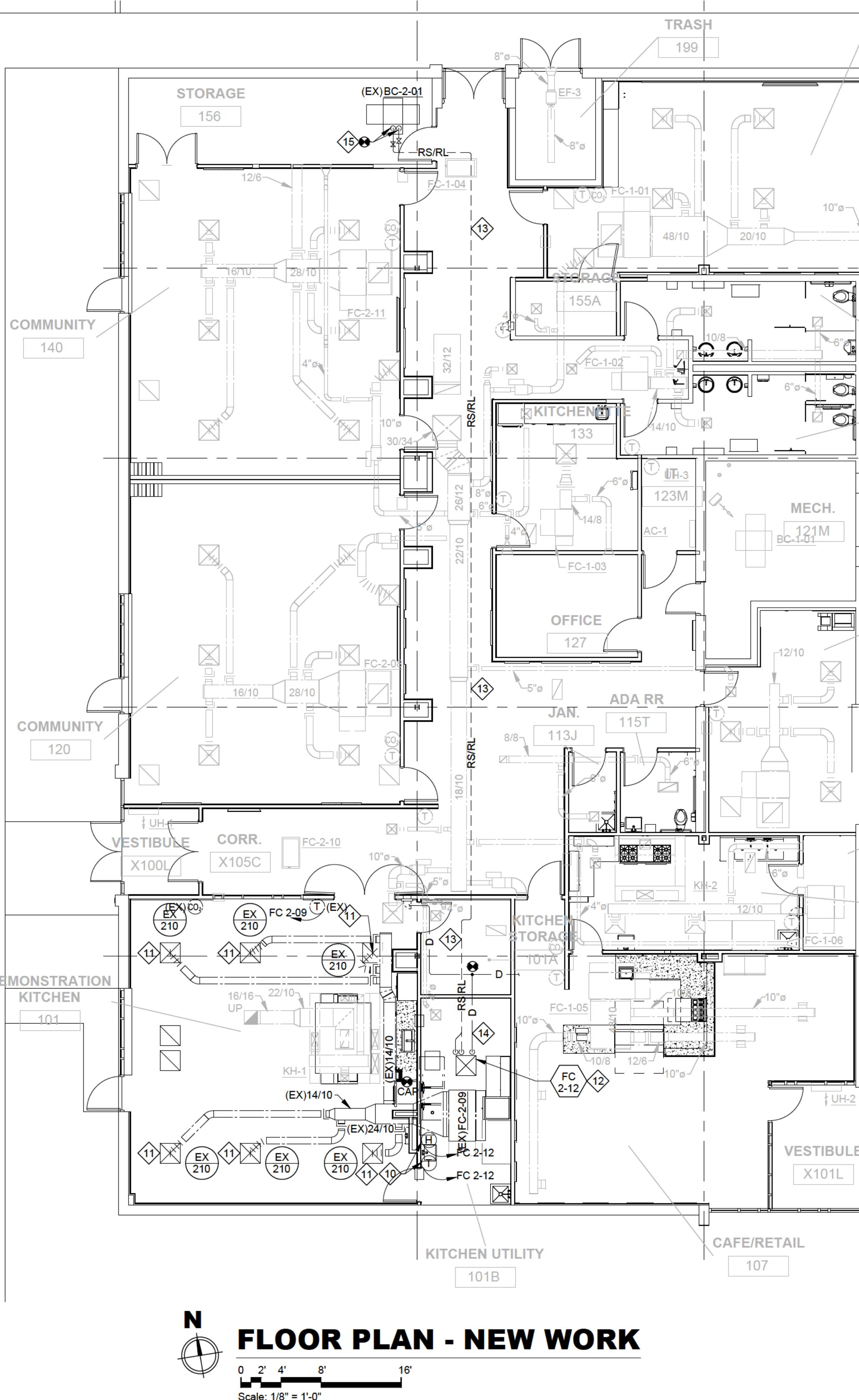


KEYNOTES

- 1 EXISTING TO REMAIN.
- 2 DEMOLISH EXISTING BRANCH DUCTWORK, FLEX DUCT, VOLUME DAMPER AND ALL ASSOCIATED HANGERS, SUPPORTS AND INSULATION.
- 3 DEMOLISH EXISTING DIFFUSER AND ALL ASSOCIATED HANGERS, SUPPORTS AND INSULATION.
- 10 PROVIDE MANUFACTURER'S WALL THERMOSTAT AND DISCRETE HUMIDITY SENSOR. MOUNT BOTH AT 44" CENTERLINE AFF. SPACE TEMPERATURE TO BE MEASURED AT THE THERMOSTAT.
- 11 BALANCE EXISTING DIFFUSER TO STATED AIRFLOW.
- 12 ALIGN NEW CEILING CASSETTE TO EXISTING CEILING GRID. MAINTAIN MANUFACTURER'S RECOMMENDED SERVICE CLEARANCES. PROVIDE VIBRATION ISOLATION HANGERS.
- 13 SIZE AND INSTALL REFRIGERANT LIQUID AND REFRIGERANT SUCTION PIPING PER MANUFACTURER'S REQUIREMENTS.
- 14 PROVIDE 1" CONDENSATE DRAIN PIPING. SLOPE TOWARDS CONDENSATE MAIN AT MINIMUM 1/8" PER FOOT.
- 15 CONNECT REFRIGERANT LIQUID AND SUCTION PIPING TO AVAILABLE PORTS ON EXISTING BRANCH CIRCUIT CONTROL BOX IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS. ADD ADDITIONAL CHARGE TO VRF SYSTEM AS REQUIRED BY MANUFACTURER. PROVIDE MANUAL REFRIGERANT ISOLATION VALVES.



HVAC GENERAL NOTES

1. THE HVAC DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO SHOW THE APPROXIMATE LOCATIONS OF EQUIPMENT, PIPING, DUCTWORK AND ASSOCIATED SYSTEMS. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND COORDINATE THE INSTALLATION OF HVAC SYSTEMS WITH ACTUAL CONDITIONS IN THE FIELD.
 - A PIPE AND DUCT ELEVATIONS ARE FOR REFERENCE ONLY. FIELD VERIFY ALL DIMENSIONS AND ELEVATIONS
 - B DUCT SIZES ARE MINIMUM CLEAR INSIDE DIMENSIONS.
 - C COORDINATE INSTALLATION OF MECHANICAL WORK WITH ALL OTHER TRADES
 - D MAINTAIN MANUFACTURERS RECOMMENDED SERVICE CLEARANCES
2. THE CONTRACTOR SHALL COORDINATE THE SHUTDOWN AND REMOVAL OF EXISTING SYSTEMS AND EQUIPMENT AND THE INSTALLATION OF NEW SYSTEMS AND EQUIPMENT WITH THE PROJECT CONSTRUCTION PHASING SCHEDULE.
3. PRIOR TO ORDERING MECHANICAL EQUIPMENT, VERIFY CLEARANCE FOR RIGGING EQUIPMENT THROUGH EXISTING DOORS, HATCHES, WINDOWS, AND SIMILAR EXISTING SPACE CONSTRAINT CONDITIONS. DISASSEMBLE AND RE-ASSEMBLE EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS INSTRUCTIONS WHERE EQUIPMENT DOES NOT CLEAR EXISTING OPENINGS.
4. DO NOT RIG OR HOIST EQUIPMENT OR MATERIALS ABOVE OCCUPIED AREAS OF THE BUILDING.
5. PROVIDE ALL METHODS AND MATERIALS FOR SUPPORTING EQUIPMENT, PIPING, AND DUCTWORK. IN AREAS OF BAR JOIST CONSTRUCTION, SUPPORT LOADS FROM TOP CHORD OF BAR JOISTS AT PANEL POINTS.
6. UNLESS OTHERWISE INDICATED, THIS CONTRACTOR SHALL PERFORM ALL CUTTING AND PATCHING OF THE EXISTING FACILITY FOR HIS RESPECTIVE WORK. PATCHING SHALL MATCH EXISTING MATERIALS, FINISHES, AND METHODS OF CONSTRUCTION.
 - A PROVIDE LINTELS WHERE PENETRATING EXISTING MASONRY CONSTRUCTION; SUBMIT SHOP DRAWINGS ON LINTELS, INDICATING SIZE AND TYPE, FOR PENETRATIONS OF LOAD BEARING MASONRY WALLS.
 - B CUTTING AND PATCHING OF THE ROOF SHALL BE PERFORMED BY AN AUTHORIZED SUB-CONTRACTOR CERTIFIED BY THE ORIGINAL ROOFING MANUFACTURER; ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH EXISTING WARRANTY REQUIREMENTS.
 - C PROVIDE STEEL FRAMING ANGLES WHERE PENETRATING FLOOR AND ROOF DECKS; ANGLES SHALL BE MINIMUM 4" x 1/4" UNLESS NOTED OTHERWISE.
 - D MODIFY EXISTING ROOF, FLOOR, AND WALL OPENINGS TO ACCOMMODATE THE INSTALLATION OF NEW EQUIPMENT AND SYSTEMS; PROVIDE ANGLE FRAMING FOR ROOF AND FLOOR PENETRATIONS, SLEEVES AND LINTELS FOR WALL PENETRATIONS. PATCH EXISTING ROOF, FLOOR, AND WALL OPENINGS TO MATCH EXISTING MATERIALS AND METHODS WHERE PENETRATIONS ARE NOT UTILIZED FOR NEW EQUIPMENT AND SYSTEMS.
- E WHERE CUTTING AND PATCHING IS INDICATED TO BE PERFORMED BY THE GENERAL CONTRACTOR, COORDINATE THE SIZE AND LOCATION OF OPENINGS.
- F REMOVE AND REINSTALL EXISTING ACOUSTICAL CEILING TILES AND CEILING GRID TO FACILITATE THE INSTALLATION OF DUCTWORK, PIPING, EQUIPMENT, AND CONTROLS.
- G UNLESS OTHERWISE INDICATED, CUT AND PATCH EXISTING PLASTER CEILINGS TO FACILITATE THE INSTALLATION OF DUCTWORK, PIPING, EQUIPMENT, AND CONTROLS.
7. IMMEDIATELY NOTIFY THE ENGINEER, CONSTRUCTION MANAGER, AND OWNER IF ENVIRONMENTAL HAZARDS SUCH AS ASBESTOS IS ENCOUNTERED DURING CONSTRUCTION. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO AVOID DISTURBING EXISTING HAZARDOUS MATERIALS. THE MECHANICAL CONTRACTOR SHALL NOT PERFORM ABATEMENT WORK AS PART OF THIS CONTRACT.
8. ALL MATERIAL EXPOSED WITHIN THE CEILING RETURN AIR PLENUMS SHALL BE NONCOMBUSTIBLE OR HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND A MAXIMUM SMOKE-DEVELOPED RATING OF 50; ALL DUCT TYPE, MASTICS, AND VIBRATION ISOLATION CONNECTIONS SHALL HAVE A MAXIMUM FLAME SPREAD RATING OF 25 AND SMOKE SPREAD RATING OF 50 OR LESS. DUCT COVERING AND LININGS SHALL NOT FLAME, GLOW, SMOLDER, OR SMOKE WHEN TESTED IN ACCORDANCE WITH ASTM C411 AND UL 181. FLEXIBLE DUCTWORK SHALL COMPLY WITH UL 181.
9. PROVIDE UL LISTED FIRE PROOFING SEALANTS AROUND ALL DUCT, PIPING, AND CONDUIT PENETRATIONS OF RATED FIRE RESISTANT WALLS AND FLOORS. PROVIDE UL LISTED DRAFT STOPPING SEALANTS AROUND ALL DUCT, PIPING, AND CONDUIT PENETRATIONS OF NON-RATED FLOORS.
10. PROVIDE ACOUSTICAL SEALS AROUND DUCTWORK AND PIPING PENETRATIONS OF ACOUSTICALLY RATED PARTITIONS.
11. PRIME AND PAINT ALL FERROUS MATERIALS EXPOSED TO THE OUTDOORS. PRIME AND PAINT ADDITIONAL MATERIALS AS NOTED ON THE DRAWINGS. PRIMER AND PAINT SHALL BE SUITABLE FOR ITS INTENDED APPLICATION.
12. COORDINATE MOUNTING HEIGHTS OF LOUVERS, BRICK VENTS, SIDEWALL GRILLES, AND WALL MOUNTED EQUIPMENT WITH THE ARCHITECTURAL EXTERIOR AND INTERIOR ELEVATIONS.
13. PROVIDE AUTOMATIC AIR VENTS AT ALL HIGH POINTS IN HYDRONIC PIPING SYSTEMS; PROVIDE DRAIN VALVES AT ALL LOW POINTS.
14. VERIFY REFRIGERANT PIPE SIZES WITH AIR-CONDITIONING EQUIPMENT MANUFACTURER.
15. MOUNT THERMOSTATS AND SIMILAR CONTROL DEVICES 44" CENTERLINE AFF.
16. UNLESS OTHERWISE NOTED, SMOKE DETECTORS SHALL BE FURNISHED, WIRED, AND INSTALLED BY THE H.C. IN THE RETURN AIR DUCTS UPSTREAM OF ANY FILTERS, EXHAUST AIR CONNECTIONS, AND OUTDOOR AIR CONNECTIONS FOR ALL UNITS WITH A DESIGN CAPACITY OF 2000 CFM OR GREATER. SMOKE DETECTORS SHALL BE LABELED FOR INSTALLATION IN AIR DISTRIBUTION SYSTEM AND INSTALLED IN ACCORDANCE WITH NFPA 72.
17. OUTSIDE AIR INTAKE OPENINGS SHALL BE LOCATED A MINIMUM OF 10 FEET FROM LOT LINES, OTHER BUILDING, FUEL-FIRED APPLIANCE VENTS, PLUMBING VENTS, EXHAUST FAN DISCHARGE, OR FROM ANY OTHER SOURCE OF HAZARDOUS OR NOXIOUS CONTAMINATION.
18. PERFORM START-UP EQUIPMENT IN STRICT ACCORDANCE WITH THE MANUFACTURERS' WRITTEN START-UP INSTRUCTIONS OR IN CONJUNCTION WITH FACTORY AUTHORIZED TECHNICIANS. ADJUST AUTOMATIC TEMPERATURE CONTROLS TO ACHIEVE SATISFACTORY TEMPERATURE AND/OR HUMIDITY CONTROL AS APPLICABLE.
19. PROVIDE WRITTEN NOTICE AT LEAST 3 DAYS PRIOR TO PERFORMING PIPING LEAK TESTS AND 7 DAYS PRIOR TO EQUIPMENT START-UP AND OPERATIONAL TESTS.
20. UNLESS OTHERWISE INDICATED, ALL DUCTWORK SHALL BE OF SHEET METAL CONSTRUCTION WITH SEALED JOINTS. ROUND FLEXIBLE DUCTWORK SHALL BE LIMITED TO 8'-0" PER BRANCH DUCT.
21. DO NOT UTILIZE AIR HANDLING EQUIPMENT AND DUCTED SYSTEMS FOR TEMPORARY HEAT. OBTAIN WRITTEN APPROVAL FROM THE ENGINEER PRIOR TO PLACING EQUIPMENT INTO SUSTAINED OPERATION. CHANGE ALL AIR FILTERS 30 DAYS AFTER PROJECT COMPLETION.
22. PROVIDE ACCESS DOORS IN WALLS AND CEILINGS FOR ALL SERVICEABLE DEVICES INCLUDING FIRE DAMPERS, SHUT-OFF VALVES, CONTROL VALVES, CONTROL DAMPERS, AND VOLUME DAMPERS. PROVIDE UL-LISTED ACCESS DOORS IN FIRE RESISTANCE RATED CONSTRUCTION.
23. PROVIDE IDENTIFICATION OF MECHANICAL SYSTEMS AND EQUIPMENT INCLUDING DUCTWORK AND PIPING.
 - A PROVIDE LOCATION / IDENTIFICATION MARKERS ON CEILING GRID OR ACCESS PANELS FOR SHUT-OFF VALVES, CONTROL VALVES, FIRE DAMPERS, SMOKE DETECTORS, AND OTHER SERVICEABLE DEVICES.

SPLIT SYSTEM HEAT PUMP SCHEDULE

TAG	MANUFACTURER	MODEL	SUPPLY CFM	MCA	MOCP	V/P/HZ	INDOOR UNIT				HEATING	OPER. WT. LBS	NOTES		
							TOT CAP MBH	SENS. CAP MBH	EAT/DB °F	EAT/WB °F	REFRIGERANT				
FC 2-12	DAIKIN	FXQ12TBVU	300	0.4	15	208/1/60	12.0	7.8	80	67	R410A	13.5	70	37	1,2,3,4,5,6,7

NOTES:

1. INTERFACE WITH EXISTING BMS. PROVIDE BACNET INTERFACE MODULE.
2. SIZE AND INSTALL ALL REFRIGERANT PIPING PER EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
3. H.C. SHALL PROVIDE ALL CONTROL WIRING BETWEEN FC 2-12, MANUFACTURER'S WALL THERMOSTAT, AND EXISTING VRF SYSTEM.
4. PROVIDE VIBRATION ISOLATION HANGERS.
5. PROVIDE INTEGRAL CONDENSATE PUMP AND CONDENSATE DRAIN PAN OVERFLOW SWITCH, SHUT OFF FAN IF OVERFLOW CONDITION IS SENSED.
6. EC TO PROVIDE DISCONNECT SWITCH AT INDOOR UNIT.
7. PROVIDE 1" BRANCH CONDENSATE PIPING.