HVAC GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL AND EQUIPMENT IN STRICT ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, AND PER MANUFACTURER'S DIRECTIONS.
2. THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS, LICENSE, INSPECTIONS, APPROVALS, AND FEES.
3. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES BEFORE INSTALLATION OF ANY MATERIALS OR EQUIPMENT.
4. THESE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATION AND ARRANGEMENT OF ALL MATERIALS AND EQUIPMENT. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT.
5. DO NOT SCALE DRAWINGS FOR MEASUREMENTS.
6. ALL DUCT DIMENSIONS SHOWN ARE INTERIOR DUCT DIMENSIONS. DUCT DIMENSIONS ON PLANS SHALL BE INCREASED ACCORDINGLY TO ALLOW FOR 1" LINER.
7. ALL PENETRATIONS THROUGH EXTERIOR WALLS SHALL BE FLASHED AND COUNTERFLASHED IN A WATERPROOF MANNER. (COLOR TO MATCH EXTERIOR).
8. SEAL ALL PENETRATIONS OF RATED WALLS WITH FIRE DAMPER, SEALANT MATERIAL APPROVED BY LOCAL CODE.
9. ALL SUSPENDED MATERIALS AND EQUIPMENT SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR ITS SUPPORT SYSTEM.
10. INSTALL ALL CONTROL DEVICES, INCLUDING THERMOSTATS AND SWITCHES, 4'-0" ABOVE FINISHED FLOOR. PROVIDE THE REQUIRED DEVICE(S) FOR ALL SYSTEMS WHETHER LOCATED ON THE PLANS OR NOT.
11. LOCATE CEILING DIFFUSERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS (IF PROVIDED).
12. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND MECHANICAL UNITS FOR MAINTENANCE AND FILTER REMOVAL.
13. ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED WITH WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.
14. REFER TO MECHANICAL DUCTWORK AND INSULATION NOTES ON MECHANICAL FLOOR PLAN FOR DUCTWORK INSULATION REQUIREMENTS.
15. CERTIFIED TEST AND BALANCE CONTRACTOR SHALL BALANCE SYSTEM TO AIR QUANTITIES INDICATED ON PLANS AND PROVIDE OWNER'S REPRESENTATIVE AND FD PROJECT MANAGER WITH COMPLETE BALANCE REPORT. IF BALANCING DAMPERS ARE NOT PROVIDED IN RETURN DUCTWORK, CONTRACTOR SHALL BALANCE SUPPLY SIDE TO AIR QUANTITIES INDICATED ON PLANS AND SHALL BALANCE OUTSIDE AIR AND RETURN AIR FLOWS AT THE AIR HANDLER TO AIR QUANTITIES INDICATED IN THE SCHEDULE. PROVIDE NEW AIR FILTERS FOR EACH UNIT.
16. AS REQUIRED BY LOCAL CODES, CONTRACTOR SHALL PROVIDE U.L. LISTED FIRE DAMPERS WHERE REQUIRED FOR FIRE PROTECTION REQUIREMENTS OF THE HVAC SYSTEM & THE UL ASSEMBLY.
17. PROVIDE 1 YEAR WARRANTY ON ALL EQUIPMENT AND 5 YEAR WARRANTY ON ALL COMPRESSORS.
18. ALL ACTUATORS ON MOTORIZED DAMPERS, SMOKE DAMPERS, AND FIRE-SMOKE DAMPERS SHALL BE LOW VOLTAGE UNLESS OTHERWISE NOTED.
19. REFER TO APPENDIX B FOR SITE SEISMIC CLASSIFICATION. A COMPLETE SYSTEM OF SEISMIC RESTRAINTS SHALL BE DESIGNED BY MASON INDUSTRIES (OR EQUAL) AND SEALED BY THEIR REGISTERED ENGINEER AND INSTALLED BY THIS CONTRACTOR AS REQUIRED BY APPLICABLE CODES FOR THE LOCALE OF THIS PROJECT. SEISMIC RESTRAINTS FOR SEISMIC CLASSES D, E, AND F SHALL BE SUBMITTED TO THE DESIGN PROFESSIONAL FOR REVIEW PRIOR TO INSTALLATION.
20. ALL MAIN DUCTWORK SHALL BE GALVANIZED SHEET METAL CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. RUNOUTS (CONCEALED ABOVE CEILINGS) FROM MAIN/BRANCH DUCTS MAY BE FLEXIBLE DUCT CONFORMING TO THE REQUIREMENTS OF UL 181 FOR CLASS 1 FLEXIBLE AIR DUCTS. MAXIMUM 10'-0" FLEX PER RUNOUT.
21. THE CONTRACTOR SHALL PROVIDE LOW VOLTAGE CONTROL LINES TO THE PACKAGE UNIT. COORDINATE ROUTING AND INSTALLATION.
23. CONTRACTOR SHALL VERIFY LOCATION OF ALL PENETRATIONS FOR WALL CAPS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
24. CONTRACTOR SHALL PAINT ALL VENT CAPS. CONFIRM COLOR WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
25. PENETRATIONS OF RATED WALLS, PARTITIONS AND FLOORS OF NON- COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH NONCOMBUSTIBLE MATERIALS. PENETRATIONS OF NONRATED WALLS, PARTITIONS AND FLOOR OF COMBUSTIBLE CONSTRUCTION SHALL BE FIRESTOPPED WITH MATERIALS EQUIVALENT TO TWO INCHES OF WOOD. FIRESTOPPING SHALL COMPLY WITH ASTM E-814.
26. CONTRACTOR RESPONSIBLE FOR ALL CUTTING AND PATCHING OF WALLS AND FLOORS FOR MECHANICAL EQUIPMENT.

VENTILATION CALCULATIONS

CALCULATIONS BASED ON THE 2015 INTERNATIONAL MECHANICAL CODE TABLE 403.3

RTU-1,2,3,4 SERVING SALES FLOOR:
SALES FLOOR {SUPERMARKET}
= (7931 SQFT X 0.06 CFM/SF) + (7931 SQFT X 8 PERSON/1000 SF X 7.5 CFM/PERSON)
= 952 CFM
TOTAL
= 952 CFM / 0.8 ZONE EFFECTIVENESS = 1190 CFM
1200 CFM OUTSIDE AIR SHALL BE PROVIDED PROPORTIONATELY BETWEEN RTU'S-1,2,3,4.

RTU-5 SERVING STOCK ROOM, OFFICE AND HALL:
STOCK ROOM {RECEIVING}
= (1047 SQFT) X (0.12 CFM/SQFT)
= 126 CFM
OFFICE {OFFICE SPACE}
= (64 SQFT X 0.06 CFM/SF) + (64 SQFT X 5 PERSON/1000 SF X 5 CFM/PERSON)
= 5 CFM
HALL {CORRIDOR}
= (93 SQFT) X (0.06 CFM/SQFT)
= 6 CFM
TOTAL
= 137 CFM / 0.8 ZONE EFFECTIVENESS = 171 CFM
175 CFM OUTSIDE AIR SHALL BE PROVIDED FOR RTU-5.

HVAC UNITS AND ACCESSORIES SHALL BE SUPPLIED BY FAMILY DOLLAR AND INSTALLED BY CONTRACTOR. REFER TO HVAC SCHEDULE NOTES FOR ADDITIONAL CONTRACTOR RESPOSIBILITIES.

PACKAGED DX COOLING / GAS HEATING ROOFTOP UNIT SCHEDULE

	UNIT NO.	SUPPLY - FAN DATA					HEATING CAPACITY			COOLING CAPACITY			ELECTRICAL DATA				CONTROL SCHEME	MANUFACTURER & MODEL	NOTES	WEIGHT LBS
		TOTAL CFM	O/A CFM	MIN.EXT. S.P. (IN.WG)	FAN RPM	MOTOR H.P.	INPUT MBH	OUTPUT MBH	EFF. %	TOTAL MBH	SENSIBLE MBH	SEER EER IEER	VOLT/PH	MCA	MAX FUSE	FLA/ LRA				
EXIST.	RTU-1 (4 TONS)	1600	200	0.8			100						208/3ϕ	25.0	35				EXISTING TO REMAIN	
EXIST.	RTU-2 (4 TONS)	1600	200	0.8			100						208/1ϕ	34.0	50				EXISTING TO REMAIN	
	RTU-3 (7.5 TONS) (MED HEAT)	3000	400	0.8	795	2.4 BHP (BELT)	180/125	144/100	80.0	98.4	72.2	12.0 EER 14.0 IEER	208/3ϕ	42.2	50	45/ 246	THERMOSTAT	YORK ZYG08E	1 2 3 4 5 6 7 8 9 10 11 18 19 20	1136
	RTU-4 (7.5 TONS) (MED HEAT)	3000	400	0.8	795	2.4 BHP (BELT)	180/125	144/100	80.0	98.4	72.2	12.0 EER 14.0 IEER	208/3ϕ	42.2	50	45/ 246	THERMOSTAT	YORK ZYG08E	1 2 3 4 5 6 7 8 9 10 11 18 19 20	1136
	RTU-5 (4 TONS) (MED HEAT)	1600	175	0.8	1190	2.4BHP (BELT)	112/82	90/66	80.0	54.8	38.4	15.4 SEER 12.0 EER	208/3ϕ	23.7	35	23/ 109	THERMOSTAT	YORK ZYG05E	1 2 3 4 5 6 7 8 9 10 11 19 21	860

NOTES:
1. COOLING CAPACITIES ARE RATED IN ACCORDANCE WITH AHRI STANDARDS 210/240 (3-5 TON UNITS) AND 340/360 (6-12.5 TON UNITS) AT 95°F AMBIENT OUTDOOR AIR TEMP., 80°F DRY BULB, 67° WET BULB ENTRANCE AIR TEMP., AND NOMINAL AIR QUANTITY LISTED.
2. CONTRACTOR SHALL PROVIDE NEW FILTERS IN EACH UNIT AT TURNOVER TO TENANT.
3. HVAC UNITS AND ACCESSORIES SHALL BE SUPPLIED BY FAMILY DOLLAR AND INSTALLED BY CONTRACTOR.
4. NOT USED.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL STARTUP AND WARRANTY WORK. VERIFY ELECTRICAL POWER PRIOR TO INSTALLING UNITS. FAILURE TO DO SO SHALL RESULT IN CONTRACTOR FURNISHING CORRECT UNITS OR POWER AT NO ADDITIONAL COST TO TENANT.

(ACCESSORIES/OPTIONS REQUIRED BY FD)
6. PROVIDE FIELD INSTALLED DIFFERENTIAL ENTHALPY ECONOMI$ER WITH 100% BAROMETRIC RELIEF CAPABILITY.
7. FACTORY INSTALLED DIFFERENTIAL ENTHALPY CONTROLS.
8. UNIT SHALL BE SUPPLIED WITH CONTROLS CAPABLE OF CO2 BASED DEMAND CONTROLLED VENTILATION.
9. PROVIDE FACTORY INSTALLED CONDENSOR COIL LOUVERED HAIL GUARDS.
10. PROVIDE FACTORY INSTALLED DISCONNECT SWITCH.
11. PROVIDE FACTORY INSTALLED NON-POWERED WEATHERPROOF GFCI CONVENIENCE OUTLET.
12 PROVIDE FIELD INSTALLED FLUE DISCHARGE DEFLECTOR WITH EXTENSION TO PROVIDE MINIMUM 3' VERTICAL SEPARATION BETWEEN TOP OF FLUE VENT DISCHARGE AND ADJACENT HVAC UNIT OUTSIDE AIR OPENING.

(AS NOTED IN SCHEDULE OR AS RECOMMENDED BY MANUFACTURER FOR STORE LOCATION)
13 PROVIDE FIELD INSTALLED PROPANE GAS CONVERSION KIT.
14. CONTRACTOR SHALL PROVIDE GAS PRESSURE REGULATOR. (2 PSI TO 11" W.C.)
15. PROVIDE FACTORY INSTALLED COATED EVAPORATOR AND CONDENSOR COILS FOR COASTAL/CORROSIVE ENVIRONMENTS.
16. PROVIDE FACTORY INSTALLED STAINLESS STEEL GAS HEAT EXCHANGER FOR COASTAL/CORROSIVE ENVIRONMENTS.
17. PROVIDE FIELD INSTALLED GAS HEAT HIGH ALTITUDE CONVERSION KIT FOR ALTITUDES 2000 FT TO 6000 FT.
18. PROVIDE VARIABLE FREQUENCY DRIVE (VFD) ON SUPPLY AIR FAN.
19. PROVIDE FACTORY INSTALLED THRU-THE-BASE ELECTRICAL CONNECTION.
20. CONTRACTOR SHALL PROVIDE "ADAPTA-CURB" TO MATE UP EXISTING ORIGINAL ROOF CURB TO NEW HVAC UNIT. CONTRACTOR SHALL VERIFY EXISTING ORIGINAL ROOF CURB PRIOR TO PROJECT START.
21. CONTRACTOR SHALL PROVIDE ROOF CURB AS MANUFACTURED BY LM CURBS COMPATIBLE WITH METAL BUILDING ROOF SYSTEM. SEE ROOFTOP UNIT CURB DETAIL 4/M3.

NOTE TO MEP CONTRACTORS

1. RUN ALL ELECTRICAL CONDUITS, PLUMBING PIPING SO AS NOT TO INTERFERES WITH STORE FIXTURE EQUIPMENT LAYOUTS, OR ANY OTHER FAMILY DOLLAR EQUIPMENT.
2. MEP CONTRACTORS TO ROUTE ALL CONDUITS, PLUMBING PIPING TIGHT TO STRUCTURE AND PERPENDICULAR TO WALL IN AN ORDERLY MANNER.

FAN SCHEDULE

UNIT NO.	SERVICE	AREA SERVED	CFM	S.P.	RPM	TYPE & ARRANGEMENT	WATTS & VOLTAGE	MANUFACTURER & MODEL NO.	DRIVE	CONTROL SCHEME	NOTES
EF-1	EXHAUST	RESTROOMS	75 MIN.	0.25"	950	CEILING	19 WATTS 120/1ϕ	GREENHECK SP-A110	DIRECT	A	1,2,3,4,5

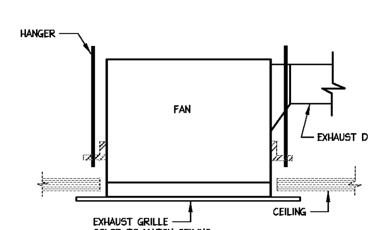
NOTES:
1. INTEGRAL BACKDRAFT DAMPER.
2. INTEGRAL DISCONNECT SWITCH
3. SPEED CONTROLLER LOCATED ABOVE CEILING NEAR FAN
4. MODEL RDC - ROUND DUCT CONNECTOR WITH DAMPER.
5. WC-6 HOODED WALL CAP WITH BUILT-IN BIRDSCREEN AND BACKDRAFT DAMPER. SEAL AND CAULK. PAINT TO MATCH EXTERIOR.

CONTROL OPTIONS:
A. CONTROL W/ ROOM LIGHTS

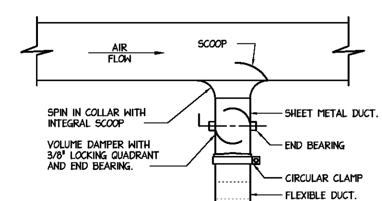
DIFFUSER SCHEDULE

SYMBOL	CFM	NECK SIZE	MODULE SIZE	FRAME TYPE	PATTERN	DAMPER	MATERIAL	SERVICE	FINISH	MANUFACTURER & MODEL NO.	NOTES
A	SEE PLANS	SEE PLANS	12x12	SURFACE	4-WAY	YES	ALUMINUM	SUPPLY	WHITE	METALAIRE 5700	1
B	SEE PLANS	SEE PLANS	24x24	LAY-IN	4-WAY	YES	ALUMINUM	SUPPLY	WHITE	METALAIRE 5700	1
C	SEE PLANS	SEE PLANS	SEE PLANS	SURFACE	DOUBLE DEFLECTION	YES	ALUMINUM	SUPPLY	WHITE	METALAIRE V4004D	1
D	SEE PLANS	SEE PLANS	SEE PLANS	LAY-IN	NA	NO	ALUMINUM	RETURN	WHITE	METALAIRE CC1	1
E	SEE PLANS	SEE PLANS	SEE PLANS	SURFACE	-	NO	ALUMINUM	TRANSFER	WHITE	METALAIRE RH	1
F	SEE PLANS	SEE PLANS	SEE PLANS	DOOR	-	NO	ALUMINUM	TRANSFER	WHITE	METALAIRE DG DF	1

NOTES:
1. DIFFUSER DESIGNATIONS ON PLANS AS FOLLOWS:
DIFFUSER OR NECK SIZE. — 8x4 / 75 (A) — DIFFUSER TYPE AS NOTED ABOVE
AIR QUANTITY

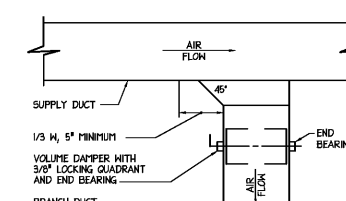


1 EXHAUST FAN DETAIL
NO SCALE



NOTES:
1. SEE FLOOR PLANS AND SPECIFICATIONS FOR DUCT INSULATION REQUIREMENTS.
2. TAP OFF TOP/SIDE/BOTTOM OF DUCT AS REQUIRED

2 BRANCH TAKEOFF TO SINGLE OUTLET
NO SCALE



NOTES:
1. SEE FLOOR PLANS AND SPECIFICATIONS FOR DUCT INSULATION REQUIREMENTS.
2. TAP OFF TOP/SIDE/BOTTOM OF DUCT AS REQUIRED

3 BRANCH TAKEOFF
NO SCALE

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sheet
M-1