

ISSUE RECORD

DATE	REV.	DESCRIPTION
05/20/2020		PERMIT SUBMISSION SET
08/07/2020	1	OUT TO BID SET

MANUFACTURING PLANT INSTALLATION NOTES: (FMM)

- FMM SHALL FURNISH AND INSTALL DUCTS, DIFFUSERS, EQUIPMENT, AND CONTROLS FOR THE COMPLETE H.V.A.C. AND REFRIGERATION SYSTEM AS SHOWN OR NOTED ON PLANS.
- METAL DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED SHEET STEEL WITH A MINIMUM THICKNESS AS SPECIFIED IN TABLE M-1. THE DUCT CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF THE SMACNA LOW PRESSURE DUCT CONSTRUCTION STANDARD, LATEST EDITION.
- ALL DUCTWORK JOINTS AND SEAMS SHALL BE SECURELY FASTENED AND MADE SUBSTANTIALLY AIR TIGHT. WHERE TAPE IS USED FOR SEALING JOINTS, IT SHALL BE MORE COMBUSTIBLE THAN FLAMEPROOF FABRIC.
- ALL DUCTWORK SHALL BE INSULATED WITH A MINIMUM OF 2" THICK, 3/4 POUND DENSITY FOIL FACED FIBERGLASS INSULATION, OR 1" THICK, 1 1/2 POUND DENSITY LINER, HAVING A FLAMESPREAD RATING OF NOT OVER 25, A SMOKE DEVELOPED RATING NOT OVER 50, AND AN R-VALUE OF NOT LESS THAN 6.
- METAL DUCTWORK SHALL BE SECURELY SUPPORTED, HUNG OR SUSPENDED BY METAL STRAPS AND HANGERS.
- FLEXIBLE DUCTS AND CONNECTORS SHALL CONFORM TO THE REQUIREMENTS OF U.L. 181 AND BE LABELED AS CLASS 0 OR CLASS 1 FLEXIBLE AIR DUCT.
- FLEXIBLE DUCTS SHALL BE LIMITED TO 5'-0" LENGTH.
- FLEXIBLE DUCTS AND CONNECTORS SHALL NOT BE INSTALLED WITHIN 6 FEET OF A HEATING ELEMENT.
- H.V.A.C. THERMOSTAT SHALL BE CAPABLE OF BEING SET FROM 56 DEGREES FAHRENHEIT TO 85 DEGREE FAHRENHEIT AND SHALL BE CAPABLE OF OPERATING THE SYSTEM HEATING AND COOLING IN SEQUENCE.
- WHERE H.V.A.C. DUCTS CROSS MODULE LINE, FMM SHALL INSTALL 1/2 INCH THICK X 3/4 INCH WIDE FOAM RUBBER, ADHESIVE BACKED SEALING GASKET.
- H.V.A.C. SYSTEM SHALL BE STARTED UP, BALANCED TO DESIGN SPECIFICATIONS AND OPERATED IN BOTH HEATING AND COOLING MODES. REFRIGERATION SYSTEMS SHALL BE STARTED UP AND BROUGHT DOWN TO DESIGN TEMPERATURE.
- ALL DUCTWORK SHALL BE PROPERLY SEALED AND INSULATED PER THE LATEST EDITION CODES AND STANDARDS TO PREVENT DUCTWORK FROM SWEATING.
- ALL DUCTWORK DIMENSIONS AS SHOWN ARE CLEAR DIMENSIONS.

GENERAL NOTES

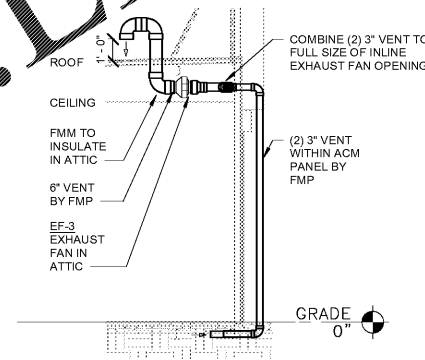
- ALL MECHANICAL EQUIPMENT SHALL BEAR THE U. L. LABEL.
- ALL EQUIPMENT IS TO BE STARTED UP AND RUN IN SHOP BEFORE BUILDING SHIPMENT.
- HVAC EQUIPMENT SHALL BE TESTED IN ACCORDANCE WITH APPLICABLE MECHANICAL CODE (REF. SHEET CS1).
- HVAC DUCTING MATERIAL IS TO BE GALVANIZED METAL OR INSULATED FLEX DUCT WITH A FLAME SPREAD INDEX NOT TO EXCEED 25 AND A SMOKE DEVELOPED INDEX OF NOT OVER 50.
- REFERENCE SHEET EL1 FOR ELECTRICAL EQUIPMENT REQUIREMENTS.
- ALL SUPPLY DIFFUSERS TO HAVE VOLUME DAMPERS.
- ALL SUPPLY AND RETURN GRILLES TO BE WHITE.
- HVAC RETURN AIR FILTERS IN UNIT ON ROOF.
- ALL DUCT TAPE MUST CONFORM TO UL 181.
- ALL SUPPLY DIFFUSER SHALL BE HAVE 4-WAY THROW UNLESS NOTED OTHERWISE ON PLAN.

TABLE M-1 DUCT CONSTRUCTION MINIMUM SHEET METAL GAGES			
RECTANGULAR DUCTS			
MAX. SIZE (INCHES)	STEEL (MIN. GALV. SHT. GAGE)	ALUMINUM (MIN. B&S GAGE)	
THRU 12	26 (0.022")	24 (0.020")	
13 THRU 18	24 (0.028")	22 (0.025")	
19 THRU 28	22 (0.034")	20 (0.032")	
29 THRU 36	20 (0.040")	18 (0.040")	
37 THRU 52	18 (0.052")	16 (0.051")	

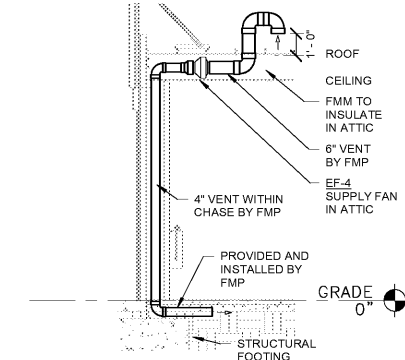
DIAMETER (INCHES)	STEEL (MIN. GALV. SHT. GAGE)		
	SPIRAL SEAM DUCT	LONGITUDINAL SEAM DUCT	FITTINGS
THRU 12	28 (0.019")	26 (0.022")	26 (0.022")
13 THRU 18	26 (0.022")	24 (0.028")	24 (0.028")
19 THRU 28	24 (0.028")	22 (0.034")	22 (0.034")
29 THRU 36	22 (0.034")	20 (0.040")	20 (0.040")
37 THRU 52	20 (0.040")	18 (0.052")	18 (0.052")

LEGEND

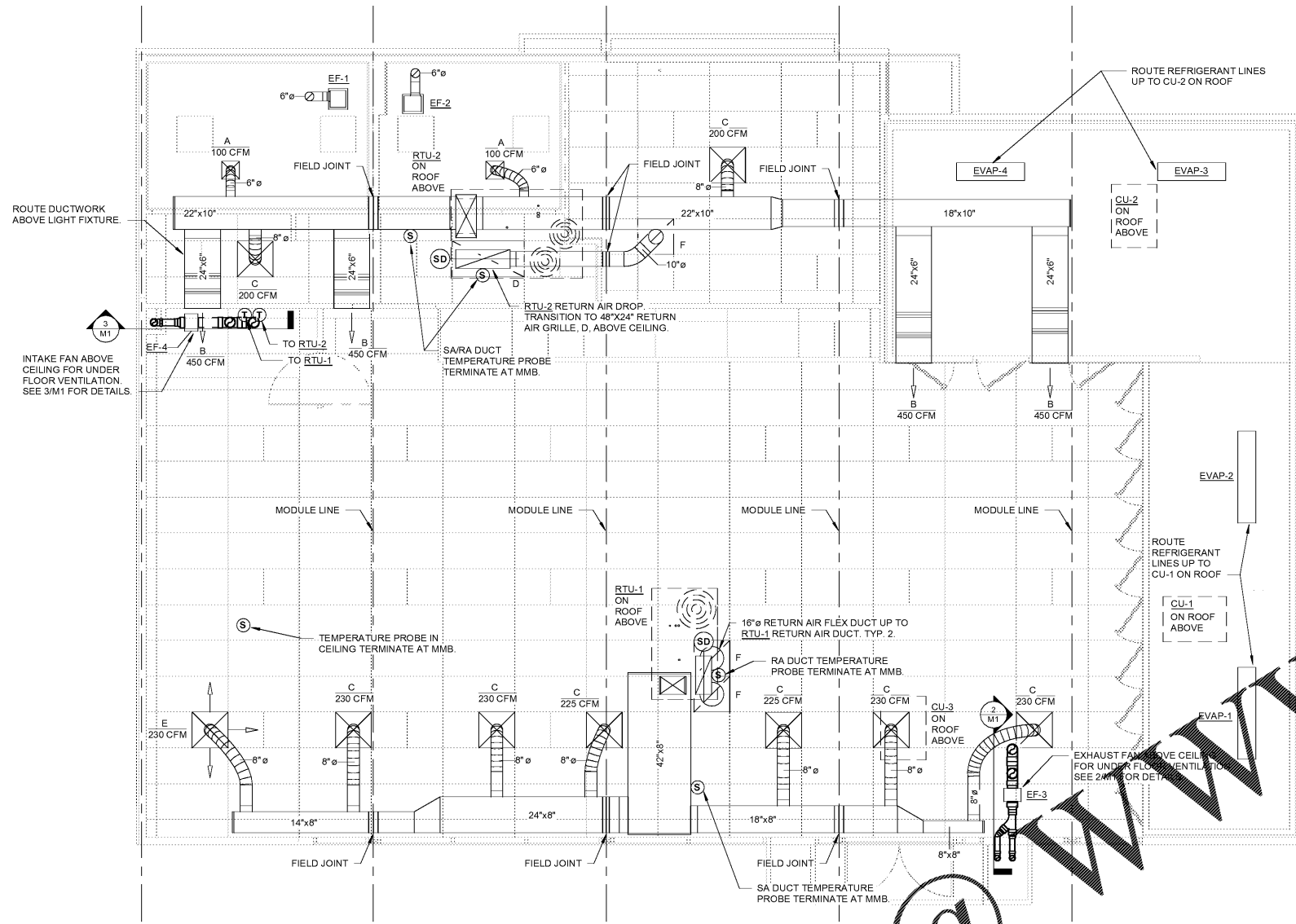
- (S) TEMPERATURE SENSOR
- (SD) SMOKE DETECTOR
- (T) THERMOSTAT



2 UNDER FLOOR - EXHAUST
M1 1/4" = 1'-0"



3 UNDER FLOOR - INTAKE
M1 1/4" = 1'-0"



1 MECHANICAL PLAN
M1 1/4" = 1'-0"

OUTDOOR AIR VENTILATION CALCULATION

ZONE	OCCUPANCY CATEGORY	AREA (net) Az (sf)	OCCUPANCY Rp	OCCUPANCY Ra (cfm/sf)	OCCUPANCY Pz	# OF PEOPLE	# OF PEOPLE Pz	CFM	TOTAL REQ. Ra*Az	EFFECTIVENESS Ez	ZONE CFM Vo=Vb/Ez	ZONE PRIMARY CFM Vpz	ZONE PRIMARY OUTDOOR Zp=Voz/Vpz	PROVIDED O/A CFM
SALES	SALES	1734	7.5	0.12	15	26.01	202	38.1	410.58	1	410.58	1600	0.26	520
UTILITY	STORAGE/PREP	244	0	0.12	0	0	0	26.28	29.28	1	29.28	200	0.15	30

RTU SCHEDULE

MARK	MANUFACTURER	MODEL	SUPPLY AIRFLOW	OUTDOOR AIRFLOW	TOTAL CAPACITY	ELECTRIC HEAT	VOLTAGE	PHASE	MCA	MCCP	SEER	EER	NOTES
RTU-1	CARRIER	50GC-M06B1A5-6F0A0 W. CRHEATER331A00	1600 CFM	220 CFM	60	15.8 KW	208 V	3	63 A	70 A	16.0	--	ALL
RTU-2	CARRIER	50GC-M06B1A5-6F0A0 W. CRHEATER117A*117A00	2400 CFM	330 CFM	72	15.8 KW	208 V	3	62 A	70 A	--	12.2	ALL

- RTU SCHEDULE NOTES:**
- PROVIDE CARRIER MODELS AS SPECIFIED IN SCHEDULE.
 - COIL CAPACITIES BASED ON 80 F DB / 67 F WB ENTERING COIL, 95 F DB ENTERING CONDENSER.
 - RECORDING SHALL BE BY FMM.
 - MECHANICAL CONTRACTOR SHALL PROVIDE A SECOND SET OF FILTERS TO BE INSTALLED PRIOR TO STORE OPENING.
 - UNIT SHALL USE R-410A REFRIGERANT (NO EXCEPTIONS).
 - INSTALLATION OF HVAC BY FMM.
 - HOOK UP AND START UP OF HVAC BY G.C.
 - PROVIDE CARRIER PROGRAMMABLE THERMOSTAT, MODEL 33CSCPACHP-01 OR EQUAL, @ 48" AFF.
 - PROVIDE FACTORY INSTALLED RETURN AIR SMOKE DETECTOR TO DETECT THE PRESENCE OF SMOKE AND SHUT DOWN THE UNIT UPON ACTIVATION. PROVIDE CEILING MOUNTED AUDIBLE/VISUAL ANNUNCIATOR.
 - PROVIDE ENTHALPY ECONOMIZER WITH BAROMETRIC RELIEF.
 - PROVIDE WITH CONVENIENCE OUTLET.
 - PROVIDE WATER LEVEL MONITORING DEVICE, LITTLE GIANT ACS-2, OR EQUIVALENT OVERFLOW SAFETY SWITCH, WITH 72" LEADS.

CONDENSING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL	VOLTS	PHASE	POWER (HP)	QUANTITY	NOTES
CU-1	LARKIN	LZT045M6C	208-230	3	4	1	1-4,5,8,9
CU-2	LARKIN	MOZ030M63C	208-230	3	3	1	1-4,6,8,9
CU-3	HEATCRAFT	MOH032X6	208-230	3	3	1	1-4,7,8,9

- COOLER CONDENSING UNIT SCHEDULE NOTES:**
- PROVIDE MANUFACTURER AND MODEL AS SPECIFIED OR EQUAL.
 - INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDE SUPPORTS, DO NOT MOUNT DIRECTLY TO ROOF.
 - UNIT INSTALLED ON ROOF, REFER TO M2 FOR LOCATION.
 - SERVES EVAPORATOR COILS 1 & 2.
 - SERVES EVAPORATOR COILS 3 & 4.
 - SERVES SANDWICH MERCHANDISER.
 - UNITS MUST MEET ASHRAE 90.1 6.4.5 STANDARDS FOR FAN TYPE.
 - UNITS MUST MEET ASHRAE 90.1 6.8 REFRIGERATION EQUIPMENT EFFICIENCY STANDARDS.

AIR TERMINAL SCHEDULE

MARK	DESCRIPTION	FACE SIZE	NECK SIZE	QUANTITY
A	LOUVERED 4-WAY THROW DIFFUSER & ADJUSTABLE VOLUME DAMPER	12"x12"	6"	2
B	WHITE WALL MOUNTED SUPPLY AIR REGISTER WITH ADJUSTABLE VOLUME DAMPER TIGHT TO BOTTOM OF CEILING	24"x6"	24"x6"	4
C	LOUVERED 4-WAY THROW DIFFUSER & ADJUSTABLE VOLUME DAMPER	24"x24"	8"	8
D	EGGCRATE RETURN GRILLE WITH HINGED FRAME FOR ACCESS TO FIRESTAT	48"x24"	PER PLANS	1
E	LOUVERED 3-WAY THROW DIFFUSER & ADJUSTABLE VOLUME DAMPER	24"x24"	8"	1
F	EGGCRATE RETURN GRILLE WITH HINGED FRAME FOR ACCESS TO FIRESTAT	24"x24"	PER PLANS	3

COOLER EVAPORATOR COIL SCHEDULE

MARK	MANUFACTURER	MODEL	CAPACITY (BTUH)		AIRFLOW	VOLTS	PHASE	AMPS	QUANTITY	NOTES
			TOTAL @ 10 DEGREE TD	TOTAL @ 12 DEGREE TD						
EVAP-1	LARKIN	LCA6135AB	12260	12615	2100	115	1	3.0	1	1-6
EVAP-2	LARKIN	LCA6135AB	12260	12615	2100	115	1	3.0	1	1-6
EVAP-3	LARKIN	LCE694BB	9905	10203	1300	208-230	1	1.0	1	1-6
EVAP-4	LARKIN	LCE694BB	9905	10203	1300	208-230	1	1.0	1	1-6

- COOLER EVAPORATOR COIL SCHEDULE NOTES:**
- PROVIDE MANUFACTURER AND MODEL AS SPECIFIED OR EQUAL.
 - MOUNT A MIN OF 22" OFF OF FREEZER / COOLER WALL.
 - INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
 - PROVIDED AND INSTALLED BY FREY-MOSS STRUCTURE.
 - UNITS MUST MEET ASHRAE 90.1 6.4.5 STANDARDS FOR FAN TYPE.
 - UNITS MUST MEET ASHRAE 90.1 6.8 REFRIGERATION EQUIPMENT EFFICIENCY STANDARDS.

FAN SCHEDULE

MARK	MANUFACTURER	MODEL	AIRFLOW	EXTERNAL STATIC	VOLTS	PHASE	AMPS	NOISE LEVEL	QUANTITY	NOTES
EF-1	BROAN	QT140E	140	0.1	120	1	1.6	1.5 SONES	1	1,4
EF-2	BROAN	QT140E	140	0.1	120	1	1.6	1.5 SONES	1	1,4
EF-3	FANTECH	FR160	200	0.801	120	1	1.0	-	1	3,5
EF-4	FANTECH	FR160	200	0.801	120	1	1.0	-	1	2,5

- EXHAUST FAN SCHEDULE NOTES:**
- CEILING MOUNTED RESTROOM FAN. PROVIDE WHITE METAL GRILLE KIT, 6" DUCT CONNECTION.
 - INLINE INTAKE FAN, MOUNTED IN ATTIC. REFER TO 3/M1.
 - INLINE EXHAUST FAN, MOUNTED IN ATTIC. REFER TO 2/M1.
 - FAN TO BE INTERLOCKED WITH LIGHTS.
 - FAN TO RUN CONTINUOUSLY.

PROFESSIONAL SEAL



PROFESSIONAL IN CHARGE

ROBERT BLAKE SMITH

PROJECT MANAGER

ERIC WONG

QUALITY CONTROL

ERIC WONG

DRAWN BY

AVERY LANE

PROJECT NAME

MURPHY EXPRESS

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FPM JOB NUMBER G20M00051

FMS MODEL NUMBER XXXXXX

PROJECT NUMBER

20181975.5

SHEET TITLE

MECHANICAL PLAN

SHEET NUMBER

M1

PROTO V2.0 11/01/2019