

**HVAC GENERAL NOTES**

- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT IN STRICT ACCORDANCE WITH APPLICABLE CODES AND STANDARDS, AND PER MANUFACTURER'S DIRECTIONS.
- THE CONTRACTOR SHALL SECURE AND PAY FOR ALL NECESSARY PERMITS, LICENSE, INSPECTIONS, APPROVALS, AND FEES.
- THE CONTRACTOR SHALL COORDINATE HIS WORK WITH ALL OTHER TRADES BEFORE INSTALLATION OF ANY MATERIALS OR EQUIPMENT.
- 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.
- DO NOT SCALE DRAWINGS FOR MEASUREMENTS.
- ALL PENETRATIONS THROUGH EXTERIOR WALLS & ROOF SHALL BE FLASHED & COUNTERFLASHED IN A WATERPROOF MANNER. (COLOR TO MATCH EXTERIOR).
- SEAL ALL PENETRATIONS OF RATED WALLS WITH FIRE DAMPER, SEALANT MATERIAL APPROVED BY LOCAL CODE.
- ALL SUSPENDED MATERIALS AND EQUIPMENT SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING STRUCTURE. DO NOT SUSPEND ITEMS FROM THE CEILING OR ITS SUPPORT SYSTEM.
- 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.
- LOCATE CEILING DIFFUSERS IN ACCORDANCE WITH ARCHITECTURAL REFLECTED CEILING PLANS (IF PROVIDED).
- PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCES AROUND MECHANICAL UNITS FOR MAINTENANCE AND FILTER REMOVAL.
- ALL PIPING AND DUCTWORK LOCATIONS SHALL BE COORDINATED W/ WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS, TO AVOID INTERFERENCE.
- PROVIDE 1 YEAR WARRANTY ON ALL EQUIPMENT AND 5 YEAR WARRANTY ON ALL COMPRESSORS.
- ALL INTAKE OPENINGS SHALL BE LOCATED A MINIMUM OF 10'-0" FROM ALL EXHAUST LOCATIONS.
- CONDENSATE DRAIN PIPING SHALL BE SCHEDULE 40 PVC PIPE AND FITTINGS. DRAINS FROM AIR HANDLING UNITS SHALL BE TRAPPED.
- THE MECHANICAL CONTRACTOR SHALL PROVIDE REFRIGERANT AND LOW VOLTAGE CONTROL LINES FROM THE CONDENSER TO THE AIR HANDLING UNIT. COORDINATE ROUTING AND INSTALLATION WITH THE GENERAL CONTRACTOR. SIZE REFRIGERANT LINES PER MANUFACTURER'S REQUIREMENTS.
- ELECTRICAL CONTRACTOR TO PROVIDE ALL HIGH VOLTAGE ELECTRICAL WIRING, CONDUIT, DISCONNECT SWITCHES, FUSES, ECT. TO SPLIT SYSTEM UNITS. ALL FINAL ELECTRICAL CONNECTIONS ARE BY ELECTRICAL CONTRACTOR.
- REFRIGERANT PIPING, NOT SHOWN ON PLANS, SHALL BE SIZED & INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, INSTALLATION INSTRUCTIONS AND LOCAL CODES.
- MECHANICAL CONTRACTOR SHALL VERIFY LOCATION OF ALL PENETRATIONS FOR RELIEF HOODS, OUTSIDE AIR HOODS, LOUVERS, AND WALL CAPS WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
- MECHANICAL CONTRACTOR SHALL PAINT ALL RELIEF HOODS, INTAKE HOODS, LOUVERS, AND VENT CAPS. CONFIRM COLOR WITH ARCHITECT & OWNER PRIOR TO INSTALLATION.
- THE MECHANICAL CONTRACTOR SHALL COORDINATE THE REQUIRED OPENINGS IN ROOF TRUSSES WITH THE G.C. IN ORDER TO PROVIDE ADEQUATE SPACE, ACCESS AND SUPPORT FOR THE MECHANICAL UNIT.
- THE GENERAL CONTRACTOR SHALL PROVIDE PLATFORMS AS REQUIRED FOR THE INSTALLATION OF THE MECHANICAL UNIT, AND SUITABLE WALKING SURFACES AND WORKING AREAS FOR ACCESS AND MAINTENANCE. THE MECHANICAL CONTRACTOR SHALL COORDINATE THE REQUIREMENTS FOR THESE ITEMS WITH THE GENERAL CONTRACTOR.

**VENTILATION CALCULATIONS**

VENTILATION CALCULATIONS BASED ON ASHRAE 62.1-2009

**PTHP-1 OFFICE**  
 = (50 SQFT) X (5 PERSON/SQFT) X (5 CFM/PERSON) + (50 SQFT) X (0.06 CFM/SQFT)  
 = 2 CFM + 3 CFM  
 = 5 CFM

**PTHP-1 TOTAL:**  
 VBz = 5 CFM  
 VOz = VBz/0.8 = 6 CFM  
 SYSTEM PROVIDES 20 CFM TO SPACE.

**BACKROOM**  
 = (125 SQFT) X (0.75 CFM/SQFT)  
 = 94 CFM

**EF-2 EXHAUSTS A TOTAL OF 200 CFM FROM SPACES.**

**SERVICE BAYS = 1144 SQFT**  
 AE = 45.8 SQFT

**TOTAL OPERABLE AREA SUPPLIED:**  
 600 SQFT

**MECHANICAL LEGEND**

- X# ROUND METAL DUCT
- CEILING EXHAUST FAN
- C- CONDENSATE DRAIN
- XX-N MECHANICAL EQUIPMENT TYPE XX
- ⊥ 3/4" DOOR UNDER CUT
- THERMOSTAT WIRE

**PACKAGED THRU-WALL UNIT SCHEDULE**

UNIT NO.	AREA SERVED	SUPPLY - FAN DATA					HEATING CAPACITY		COOLING CAPACITY		ELECTRICAL DATA			MANUFACTURER & MODEL	UNIT TONNAGE	UNIT WEIGHT (LBS)	NOTES
		TOTAL CFM	O/A CFM	MIN. EXT. S.P. (IN.W.G.)	FAN RPM	MOTOR KW	TOTAL MBH	AUX. ELEC. KW	TOTAL MBH	SENSIBLE MBH	VOLT/PH	MAX FUSE	MCA				
PTHP-1	OFFICE	256	20	0.3	PER MFG	PER MFG	5.6	2.0	7.4	5.6	240V/1Ø	15	11.4	TRANE PTHED70	3/4 TON	98	1-8

**NOTES:**

- COOLING CAPACITIES ARE RATED IN ACCORDANCE WITH ARI STANDARD 210/210 AT 95°F AMBIENT OUTDOOR AIR TEMP., 80°F DRY BULB, 67°F WET BULB ENTERING AIR TEMP., AND NORMAL AIR QUANTITY LISTED.
- PROVIDE WITH UNIVERSAL POWER CORD (6-5P)
- PROVIDE WITH DISPLAY MODULE.
- PROVIDE WITH WALL SLEEVE AND SUBBASE INTERNAL DRAIN KIT (PIPE SECONDARY DRAIN TO OUTSIDE)
- PROVIDE CONDENSATION PUMP (PUMP PRIMARY CONDENSATE TO MOP SINK)
- PROVIDE ARCHITECTURAL ALUMINUM GRILLE. COLOR TO BE SELECTED BY OWNER.
- MINIMUM 13.0 SEER RATING.
- CATALOG NUMBERS AND MANUFACTURERS ARE TO INDICATE TYPE AND QUALITY OF UNIT DESIRED. SUBMIT CUTSHEETS OF THESE AND ALTERNATE MANUFACTURERS FOR ARCHITECT AND OWNER APPROVAL PRIOR TO PURCHASE OF ANY UNITS. INFORMATION ON ALTERNATE UNITS PROPOSED BY THE CONTRACTOR SHALL INCLUDE THE ADD/DUCT ASSOCIATED WITH ACCEPTANCE OF THAT UNIT (OR THE ALTERNATE PACKAGE AS A WHOLE).

**FAN SCHEDULE**

UNIT NO.	SERVICE	AREA SERVED	CFM	S.P.	RPM	TYPE & ARRANGEMENT	MIN. MOTOR HP & VOLTAGE	MANUFACTURER & MODEL NO.	DRIVE	CONTROL SCHEME	REMARKS
EF-1	EXHAUST	TOILET	75 MIN	0.25"	950	CEILING	29 WATTS/0.58A 120V/1Ø	GREENHECK SP-A10	DIRECT	A	1-5
EF-2	EXHAUST	BACK ROOM	150	0.25"	1400	CEILING	113 WATTS/1.3A 120V/1Ø	GREENHECK SP-A10	DIRECT	B	1-6, 8
CF-1	CIRCULATION	SERVICE AREA	1000	0.25"	1770	IN-LINE	1/3 HP 120V/1Ø	GREENHECK AX-31-160-0434-A3	DIRECT	B	1-6, 8

**NOTES:**

- SCREEN
- BACKDRAFT DAMPER
- COLOR BY ARCHITECT
- INTEGRAL DISCONNECT SWITCH
- SPEED CONTROLLER NEAR FAN
- PROVIDE STARTER AS REQUIRED
- U.L./CUL 705 LISTED
- PROVIDE W/GRAVITY DAMPER, WALL LOUVER AND MOTOR SIDE GUARD.

**CONTROL OPTIONS:**

- CONTROL W/ ROOM LIGHTS
- CONTROL W/ THERMOSTAT
- CONTROL W/ SWITCH
- CONTINUOUS OPERATION

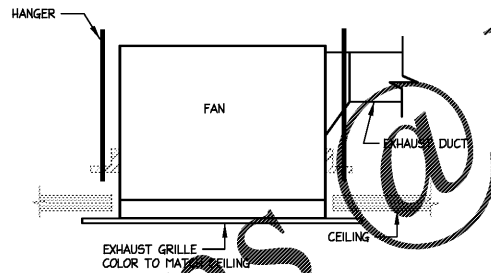
**UNIT HEATER SCHEDULE**

TAG	LOCATION	MOUNTING	CAPACITY MBH	EH	V	PH	HZ	MANUFACTURER & MODEL NO.	NOTES
ENH-1	TOILET	CEILING	2560	0.75	120	1Ø	60	QMARK GCHI151F	1-4
ENH-2	STORAGE RM	CEILING	6826	2.0	240	1Ø	60	QMARK GCHI202F	1-4
IRH-1	SERVICE BAYS	NOTE 5	20,473	6.0	240	1Ø	60	QMARK BRM 116043B	4-6

**NOTES:**

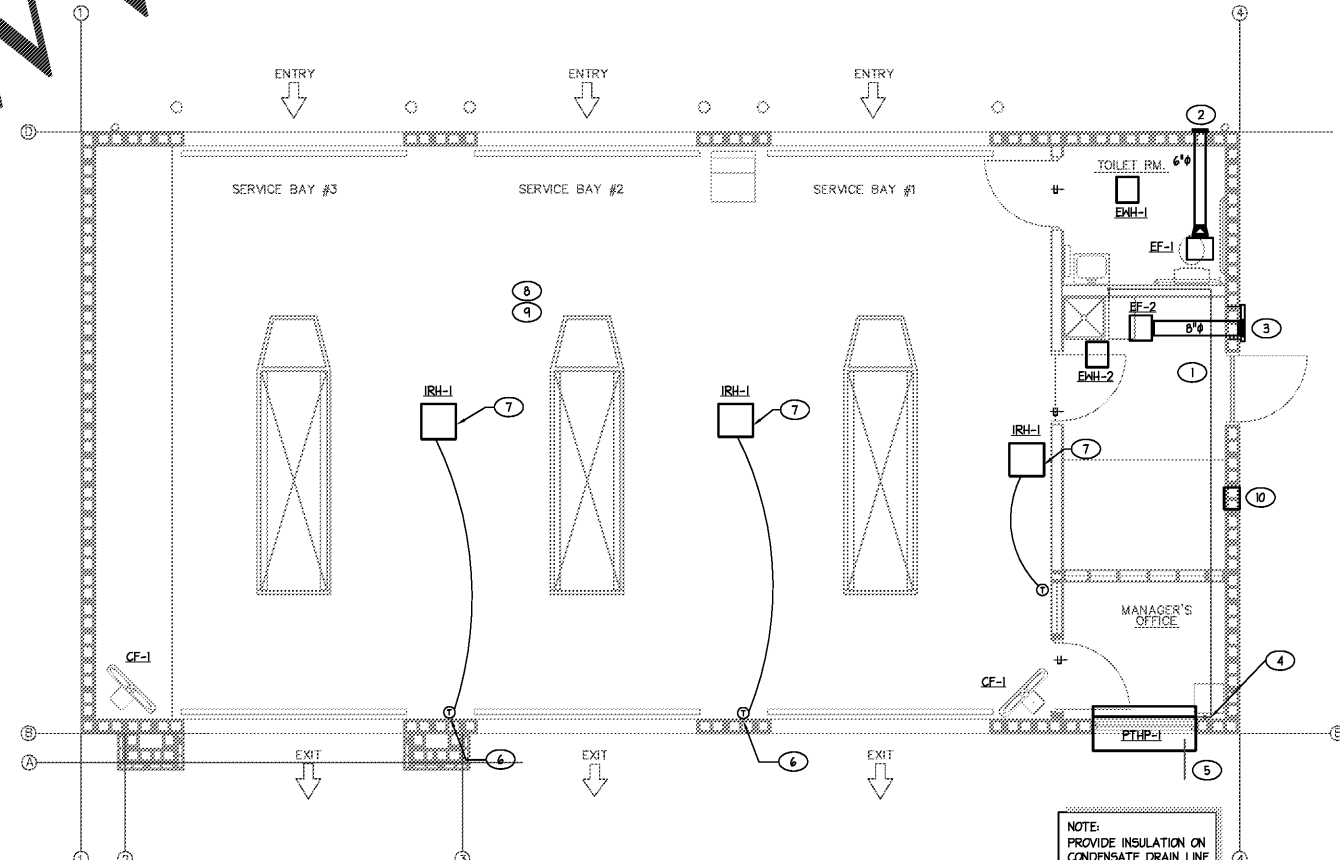
- INTERNAL THERMOSTAT
- MOUNT HEATER @ 24" A.F.F.
- UNIT DISCONNECT
- U.L. LISTED
- PROVIDE REMOTE WALL THERMOSTAT
- CHAIN MOUNT 12'-0" A.F.F. (FIELD COORD. FINAL MOUNTING HEIGHT WITH OWNER)

NOTE: COORDINATE EXACT BUILDING CONSTRUCTION TYPE PRIOR TO START OF CONSTRUCTION.

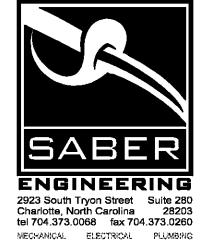


**TAGGED NOTES - THIS SHEET**

- ROUTE FULL SIZE CONDENSATE DRAIN LINE TO MOP SINK.
- 6" EXHAUST DUCT TO EXTERIOR WALL CAP BY FAN MANUFACTURER.
- FIELD COORDINATE EXACT LOCATION OF FAN WITH ARCHITECTURAL ELEVATIONS.
- CONDENSATE UP IN WALL TO ABOVE CEILING.
- SECONDARY CONDENSATE DRAIN TO OUTSIDE.
- PROVIDE INSULATED SUBBASE.
- COORDINATE HEATER LOCATION WITH TAKE 5 REPRESENTATIVE.
- CLASS I LIQUIDS ARE NOT USED OR STORED IN THIS BUILDING.
- VEHICLES ARE ONLY OPERATED FOR THE DURATION OF MOVING THEM IN AND OUT OF THE GARAGE.
- 12"x12" INTAKE LOUVER EQUIVALENT TO RUSKIN MODEL ELF6375DX WALL LOUVER WITH A MINIMUM OF 2.1 SQFT OF FREE AREA. PROVIDE WITH GRAVITY BACKDRAFT DAMPER.

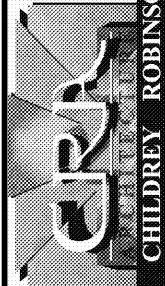


1 MECHANICAL FLOOR PLAN  
1/4"=1'-0"



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**SEALS**


**REVISIONS**

REV.	DESCRIPTION

**DATE**  
06-24-2019

**SHEET NAME**  
MECHANICAL PLAN

**SHEET NUMBER**  
M-1

M-1

22x44-1910-001.dwg, Plotted By: wjg  
 Jun 24, 2019 - 10:58am