

LEGEND	
	DUCT SIZE: FIRST DIMENSION ON S SIDE, DRAWN
	RIGID ROUND DUCTWORK OR FLUE PIPING
	BELLMOUTH TAKE-OFF COLLAR AT RUN-OUT W/BALANCING DAMPER, SEE BELLMOUTH AND 45° FITTING TAKEOFF DETAIL.
	45° FITTING TAKEOFF WITH BALANCING DAMPER, SEE BELLMOUTH AND 45° FITTING TAKEOFF DETAIL.
	RETURN OR EXHAUST AIR FLOW
	WALL MOUNTED FAN SWITCH (SEE ELECTRICAL DRAWINGS FOR TYPE)
FPM	FEET PER MINUTE
CFM	CUBIC FEET PER MINUTE
MBH	BTUHR x 1000
APPROX.	APPROXIMATELY
ESP IN WG	EXTERNAL STATIC PRESSURE INCHES WATER GAUGE
HP	HORSEPOWER
RPM	REVOLUTIONS PER MINUTE
UNO	UNLESS NOTED OTHERWISE
AFF	ABOVE FINISHED FLOOR
KW	KILOWATTS
ΔT	TEMPERATURE DIFFERENCE
B.E. / T.E.	BOTTOM ELEVATION, TOP ELEVATION

GENERAL NOTES	
1.	SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT BUILDING ARRANGEMENT, DIMENSIONS AND DETAILS. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE NOT TO BE SCALED.
2.	COORDINATE DUCT ROUTING AND EQUIPMENT LOCATION WITH PLUMBING AND ELECTRICAL INSTALLATIONS AND WITH BUILDING STRUCTURAL MEMBERS. OFF-SET DUCTS AND SHFT EQUIPMENT AS REQUIRED TO AVOID CONFLICTS WITH OTHER INSTALLATIONS.
3.	COORDINATE LOCATION OF CEILING MOUNTED EQUIPMENT WITH LIGHTING LAYOUT, SPRINKLER HEADS AND CEILING GRID SYSTEMS AND AFFURTANCES (AS APPLICABLE). REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION.
4.	DUCT SIZES INDICATED ON THE PLANS ARE CLEAR INSIDE DIMENSIONS REQUIRED, WHERE LINES IS INDICATED, INCREASE DUCT SIZE.
5.	REFER TO THE ELECTRICAL DRAWINGS FOR VOLTAGE, PHASE, MAXIMUM ALLOWABLE CURRENT DRAIN, AMPERAGE, AND CONNECTION ARRANGEMENT (SINGLE OR MULTI POINT CONNECTION, ETC.) OF ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING/INSTALLING EQUIPMENT.
6.	SUPPORT ALL DUCTS, PIPING AND EQUIPMENT FROM PRIMARY BUILDING STRUCTURAL MEMBERS AND PROVIDE SUPPLEMENTAL STRUCTURAL FRAMING AS REQUIRED BETWEEN PRIMARY BUILDING STRUCTURAL MEMBERS TO SUPPORT ALL SYSTEMS INSIDE THE BUILDING.

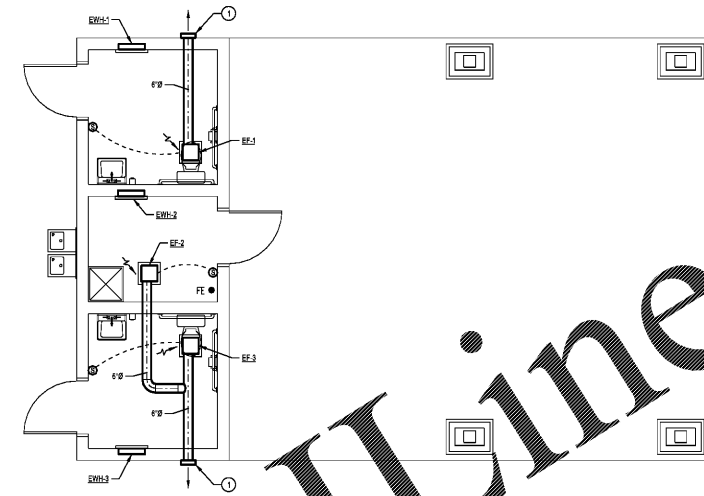
EXHAUST FANS						
TAG	GREENHECK MODEL NO.	CFM	FAN STATIC PRESSURE IN WG	FAN RPM	MOTOR HP	MAX. SIZES
EF-1	EP-B110	75	0.25	750	80W	0.8 12.3
EF-2	EP-B110	90	0.25	884	88W	1.3 12.3
EF-3	EP-B110	75	0.25	750	80W	0.8 12.3

- CENTRIFUGAL CEILING EXHAUST FAN WITH INTEGRAL GRILLE, FLAPPER BACKDRIFT DAMPER, PLUG AND COORD SET AND MOUNTING BRACKETS.
- DIRECT DRIVE.
- PROVIDE FACTORY MOUNTED DISCONNECT SWITCH.

ELECTRIC WALL HEATERS					
TAG	Q-MARK MODEL NUMBER	CFM	B.E. AFF MOUNTING HEIGHT	HEATING OUTPUT KW	NOTES
EMH-1	AWH-4800	100	12"	1.5	1.2.3
EMH-2	AWH-4800	100	12"	1.5	1.2.3
EMH-3	AWH-4800	100	12"	1.5	1.2.3

- WALL MOUNTED FAN FORCED ELECTRIC HEATER WITH BRONZED HEAVY DUTY ARCHITECTURAL GRILLE.
- UNIT TO BE RECESS MOUNTED IN WALL.
- PROVIDE INTEGRAL TAMPER PROOF THERMOSTAT, DISCONNECT AND HIGH TEMPERATURE LIMIT CUT-OFF.

NOTES: (THIS SHEET ONLY)
 ① 18 BRONZE DUCT (380-4885) THRU GREENHECK MODEL, INC. 4 HOODED ALUMINUM WALL CAP WITH INTEGRAL BRIDGES AND BACKDRIFT DAMPER.



MECHANICAL NEW WORK FLOOR PLAN
 SCALE: 1/4\"/>

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MECHANICAL SPECIFICATIONS AND REQUIREMENTS

1.1 REGULATORY REQUIREMENTS

- All work installed under Division 23 shall conform to the current adopted Edition of Building/Mechanical Codes and their appropriate amendments.
 - Life Safety Code: NFPA 101
 - International Building Code with Georgia Amendments
 - International Mechanical Code with Georgia Amendments
 - Standard for the Installation of Air Conditioning and Ventilating Systems, NFPA 90A
 - City of Macon and Bibb County Codes
 - Requirements of the State of Georgia Fire Marshal's Office
 - GA State Minimum Standard Energy Code
- Obtain and pay for all permits, and request inspectors from all authorities having jurisdiction, in a timely manner.

1.2 SUBMITTALS

Propose HVAC submittals as follows: Contractor shall provide a sufficient number of copies of manufacturer's data for review so that the Architect, Engineer and Owner may each retain one copy, plus any additional copies as required for contractor's and contractor's affiliate (subcontractor, supplier, etc.) usage. In no event, shall the contractor provide less than six (6) copies for review. Submittal data shall be assembled hard cover commercial grade 3 ring binder with sheet protectors at the front and back of the binder and submitted or electronically submitted and emailed to Owner and Architect. All submittal data for a trade shall be submitted at one time except as noted herein. The submittal shall include an index sheet listing each tag number and contents. Submittals not conforming to any of the above requirements shall be rejected/reworked.

1.3 ELECTRIC WALL HEATERS

- General: Furnish and install surface or recessed mounted, heavy-duty architectural electric wall heaters as indicated on the drawings. Unit shall be completely factory assembled consisting of a cabinet, electric heating element, fan and controls as specified below. All units shall be UL listed and meet the requirements of the National Electrical Code.
- Cabinet: The wall housing shall be fabricated from 20 gauge galvanized steel and the front panel shall be fabricated from 16 gauge steel with closely spaced down flow discharge bars. Finish shall be baked enamel. The front panel shall be secured with carefully concealed screws. All units shall be recessed mounted into wall which has been built up sufficiently to allow for correct unit, unless indicated otherwise.
- Heating Element: Electric heating element shall be copper clad steel with aluminum fins. Fan motor shall be factory installed and permanently lubricated, with the statically and dynamically balanced fan motor connected to the motor shaft.
- Controls: Operating and safety controls for each heater shall be thermostatically controlled and shall be provided with a control delay switch to energize fan motor only after element has reached its set point. The thermostat shall be adjustable and shall meet the requirements. The built-in control thermostat shall have a temperature range from 55 degrees to 100 degrees and shall be adjustable through the front grille. Thermostat shall be tamper resistant, require a screwdriver to adjust and shall be mounted on the wall above the front grille.
- Manufacturers: Electric wall heaters shall be of the capacitor start type and shall be manufactured by Q-Mark, Red-L, Inceco, Electrocode, Einorast, Chromast, Marlet, Raynor or Bell.

1.4 SHEET METAL MATERIALS

- Comply with SMACNA "HVAC Duct Construction Standards-Metal and Flexible" for acceptable materials, material thicknesses and duct construction methods, unless otherwise specified. Sheet metal shall be the type of piping, seam marks, roller marks, stains, discolorations, and other imperfections shall be removed.
- Galvanized Sheet Steel: Unless otherwise specified, complying with ASTM A 653, Type 35 and having G90 coating designation; all ducts shall have roll-embossed finish.

DUCT SEALING AND SUPPORT

- Water-Stop: Joint and sealant shall be adhesive sealed, resistant to UV light when cured, UL 723 listed and complying with NFPA requirements for Class 1 duct. The fan frame spread of 25 and smoke development rating of 30. Seal duct seams and joints according to SMACNA "HVAC Duct Construction Standards-Metal and Flexible" for duct pressure class indicated herein.
- DUCT HANGERS AND SUPPORTS
- Support Members: Galvanized steel or threaded steel rod. Strap and Rod Sizes: Comply with SMACNA "HVAC Duct Construction Standards-Metal and Flexible" for acceptable materials, material thicknesses and duct construction methods, unless otherwise specified.
- Fasteners: Screws, blind rivets, or self-tapping metal screws, compatible with duct materials.

17 RECESS MOUNTED DUCT FABRICATION

- Fabricate, install, allow, transform, offset, branch connections, and other construction according to SMACNA "HVAC Duct Construction Standards-Metal and Flexible" and comply with requirements for metal thickness, fastening types and intervals.

1.8 FLEXIBLE CONNECTORS

- Fabricate in accordance with SMACNA HVAC Duct Construction Standards, and as indicated. Flexible connectors must be in compliance with applicable NFPA 90A requirements.
- General Description: Flame-retardant or noncombustible fabric coverings, and adhesives complying with UL 191, Class 1

- Metal-Edged Connectors: Fabricate, install, allow, transform, offset, branch connections, and other construction according to SMACNA "HVAC Duct Construction Standards-Metal and Flexible" for acceptable materials, material thicknesses and duct construction methods, unless otherwise specified. Select metal compatible with ducts.
- In-situ System, Flexible Connector Fabric: Class fabric: 3000, coated with neoprene.
 - Maximum Working Pressure: 2 in. Hg
 - Temple Strength: 480 (ASTM) in the direction of the grain and 360 (ASTM) in the cross direction
 - Service Temperature: Minimum: -40 degrees F, Maximum: 150 degrees F

1.9 DUCT APPLICATIONS

- Galle: Pressure Classes: Unless otherwise indicated, construct conforming to the following:
 - Exhaust (Positive Pressure): 1-in.
 - All ducts shall be supported.

1.10 POWER VENTILATORS

- Cabinet-mounted centrifugal type with 1/2" acoustically lined steel cabinet, direct drive permanently lubricated motor and a single centrifugal blower and fan assembly. Cabinet shall be factory installed or installed with a gravity converted backdraft damper mounted in the discharge opening. The damper shall have a plug and set for easy disconnection and removal for service. Provide in line struts as required for ductwork. Provide removable metal panel or painted steel or aluminum grille.
- Provide the accessories mentioned in the schedule. Fan shall bear a permanently affixed manufacturer's nameplate containing the model number and individual identification number for the fan. Speed controllers shall be solid state type designed to reduce speed from 100% to 50%. Backdraft damper shall be of the gravity or resistance type.
- Manufacturer: Greenheck, Natco, Broan, Cook or Penn.

1.11 CONTROL WIRING/CONDUIT

- Control wiring/conduit (including but not limited to control, interlock, thermostat, etc.) shall be provided under this section of these specifications. All wiring shall be installed in accordance with applicable code.

1.12 SUBCONTRACTOR COORDINATION

- Trading, Adjusting and Balancing (TAB) work shall be performed by NEBB/ABC agent as described in this section of the specifications; however, all devices that the TAB agent will be required to perform work on, described in this section, shall be provided by the Contractor or Division 23 mechanical sub-contractors. These devices include, but are not limited to: balancing dampers, flow/pressure regulators, re-actuators of dampers, flow duct flow valves are acted by TAB agent, adjustable dampers, pliers, balls, balance valves, etc. and the labor to install these devices. Sub-contractors providing the Division 23 HVAC systems must provide labor to support the TAB Agent. The mechanical systems shall be fully operational and ready for TAB work to begin a minimum of four weeks prior to the Contractual date of "Substantial Completion". Additionally, the Division 23 contractor, shall furnish a qualified technician(s) to assist the TAB agent in the performance of the above work at work specified herein as accomplished. The Division 23 sub-contractor shall correct all deficiencies found by the TAB agent.
- Certified Final TAB Reports: Submit four copies of reports prepared, as specified in this Section, on approved forms certified by TAB firm.

1.13 QUALITY ASSURANCE

- TAB Firm Qualification: Engage a TAB firm certified by either AABC or NEBS. Test and balancing by non-AABC or non-NEBS firms is not allowed.

1.14 TOLERANCES

- Set HVAC system airflow rates within the following tolerances:
 - Supply, Return, and Exhaust Fans and Equipment with Duct: Plus 10 percent to minus 10 percent.
 - Air Ducts and Trunks: Plus 10 percent to minus 10 percent.

1.15 CERTIFIED FINAL TAB REPORT

- General: Typewritten, or computer printed in letter-quality font, on standard bond paper, in three-ring binder, tabulated and divided into sections by tested and balanced systems.
 - Include a list of instruments used for procedures, along with proof of calibration.
- Fans
 - Identification (Tag/Location)
 - Manufacturer
 - Model
 - Air flow design and actual
 - Static pressure (inlet/outlet), design and actual
 - Electric motor data (see later paragraph)
- Electric Heaters
 - Tag/Location
 - Manufacturer
 - CFM (Nameplate and Actual)
 - Electrical Data: Voltage, phase, full load amps (actual and nameplate)
 - Entering and leaving air bulb air temperatures
 - KW (nameplate and actual)



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 WISE AVENUE PARK
 MACON, GEORGIA 31201
 Project Number: 180402
 Drawn By: woo Ck'd By: wmm
 Date: 02/07/2018 Scale: AS SHOWN
 Rev. Description: Date:
 Issued For Permit 03/01/2018
 Sheet Title: MECHANICAL FLOOR PLAN, LEGEND, SCHEDULES AND SPECIFICATIONS
 Sheet Number: M101