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ISSUANCE	
ISSUED FOR CONSTRUCTION	
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PROFESSIONAL	DRH
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MECHANICAL SPECIFICATIONS
 M-001

MECHANICAL SPECIFICATIONS

GENERAL
 THIS SPECIFICATION IS PRESENTED IN ABBREVIATED FORM TO COMPLIMENT THE GENERAL INTENT OF THE PLANS.

SCOPE
 THE INTENT OF THIS SPECIFICATION AND THE CONTRACT DRAWINGS IS TO DESCRIBE THE FURNISHING OF ALL LABOR, MATERIALS, TOOLS, TRANSPORTATION, SERVICES, AND EQUIPMENT FOR THE PROPER COMPLETION OF ALL MECHANICAL WORK DESCRIBED HEREIN.

CODES
 ALL WORK SHALL BE INSTALLED IN COMPLETE ACCORDANCE WITH LOCAL, MUNICIPAL, AND STATE CODES. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, LICENSES, ETC. THE CONTRACTOR SHALL PAY FOR ALL INSPECTIONS REQUIRED BY AGENCIES HAVING JURISDICTION AND AUTHORITY ASSOCIATED WITH THIS WORK.

WORKMANSHIP
 THE TOTAL INSTALLATION SHALL BE MADE BY SKILLED AND EXPERIENCED WORKMEN FOLLOWING THE BEST ACCEPTED PRACTICES OF THIS PROFESSION. THE ENGINEER SHALL RESERVE THE RIGHT IN DETERMINING IF WORKMANSHIP IS SUB-STANDARD WHERE CODES AND PROCEDURES ARE NOT SPECIFIC AS TO THE WORKMANSHIP.

DRAWINGS
 THE DRAWINGS SHOW THE INTENT OF THE SYSTEM DESIRED AND SHALL BE FOLLOWED AS CLOSELY AS PRACTICAL. DUE TO THE SMALL SCALE OF THE DRAWINGS, NOT ALL BENDS AND OFFSETS CAN BE SHOWN. THESE SHALL BE WORKED OUT ON THE PROJECT WITHOUT EXTRA CHARGE IN ORDER TO FULLY COMPLETE THE INTENT OF THE PLANS.

MATERIALS AND EQUIPMENT
 SHALL BE NEW AND AS SPECIFIED OR APPROVED EQUAL AS DETERMINED BY THE ENGINEER. REQUESTS FOR MATERIAL AND PRODUCT SUBSTITUTION FOR THOSE SPECIFIED, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR APPROVAL. REQUESTS FOR SUBSTITUTION MUST BE SUBMITTED WITH DRAWINGS, CATALOG CUTS, PERFORMANCE SPECIFICATIONS, PHOTOGRAPHS, AND ANY OTHER PERTINENT INFORMATION NECESSARY TO FULLY EVALUATE THE PRODUCT.

SHEET METAL
 THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL DUCTWORK SHOWN ON THE PLANS IN ACCORDANCE WITH THE LATEST RECOMMENDATIONS/REQUIREMENTS OF ASHRAE AND SMACNA PUBLICATIONS. ALL METAL SHALL BE GALVANIZED IRON OR STEEL SHEETS WITH MANUFACTURER'S NAME AND GAUGE STAMPED ON EACH SHEET. GAUGE AND JOINT CONNECTION SHALL BE IN ACCORDANCE WITH RECOMMENDATIONS AS SET FORTH IN SMACNA AND ASHRAE GUIDE FOR MEDIUM AND LOW PRESSURE DUCT.

BALANCING OF AIR DISTRIBUTION SYSTEM
 UPON COMPLETION OF THE INSTALLATION OF THE SYSTEM AND BEING PLACED IN OPERATION, THE CONTRACTOR SHALL BALANCE THE SYSTEM, SETTING DAMPERS AND VOLUME CONTROL AS REQUIRED TO PROVIDE PROPER AIR QUANTITIES. THE CONTRACTOR SHALL TAKE TEST READINGS OF ALL GRILLE AND DIFFUSER OUTLETS AND READINGS AT THE VARIABLE VOLUME BOX. READINGS SHALL BE TAKEN WITH AIR FLOW MEASURING DEVICES SUCH AS AN ANEMOMETER OR VELOMETER. THE WRITTEN REPORT MUST BE SUBMITTED TO ARCHITECT/ENGINEER FOR APPROVAL.

DUCT INSULATION
 DUCT INSULATION SHALL BE PROVIDED TO MEET STATE ENERGY CODE AND MECHANICAL CODE REQUIREMENT. INSULATION SHALL HAVE MINIMUM INSTALLED R-VALUE OF 5.0 FOR INTERIOR OF BUILDING, UNCONDITIONED SPACES.

DUCTWRAP
 DUCT WRAP SHALL BE FIBERGLASS INSULATION, MINIMUM 2" THICK. INSULATION SHALL HAVE VAPOR BARRIER.

DUCTLINER
 DUCTLINER SHALL BE INSTALLED PER MANUFACTURER RECOMMENDATIONS AND AS SHOWN ON THE PLANS. DUCTLINER SHALL 1" THICK, FLEXIBLE DUCT LINER WITH REINFORCED COATING EQUAL TO JOHNS MANVILLE LINACOUSTIC RG. ALL JOINTS SHALL BE TIGHTLY BUTTED AND TIGHTLY SEALED WITH ADHESIVE TO FORM A CONTINUOUS SEALED LINER. LINER SHALL BE SECURED WITH STICK-CLIPS OR WELD-PINS, MINIMUM 12" O.C. BOTH DIRECTIONS.

GAS PIPING
 ALL GAS PIPING ABOVE GROUND SHALL BE SCH.40, BLACK STEEL, ASTM 120. FITTINGS SHALL BE 150 POUND BLACK MALLEABLE SCREW TYPE FOR ALL SIZES 2" AND SMALLER, STEEL WELDED FITTINGS WITH BUTT WELDED JOINTS SHALL BE USED FOR PIPE SIZED 2-1/2" AND LARGER.
 ALL GAS PIPING SHALL BE INSTALLED IN ACCORDANCE WITH NFPA RECOMMENDATIONS AND THE NORTH CAROLINA GAS CODE. ALL PIPING SHALL BE COMPLETE WITH ALL NECESSARY COMPONENTS TO SATISFY THESE REQUIREMENTS.
 THE CONTRACTOR SHALL PROVIDE AND INSTALL GAS COCKS BEFORE EACH PIECE OF EQUIPMENT CONNECTED TO THE GAS PIPING SYSTEM. LUBRICATED TYPE WILL BE USED ON ALL GAS COCKS OVER 2".

WARRANTY AND TEST
 UPON SATISFACTORY COMPLETION OF ALL WORK, THE CONTRACTOR SHALL PERFORM A COMPLETE CHECK OF THE SYSTEM TO INSURE SATISFACTORY OPERATION AND FUNCTION OF THE SYSTEM AND ALL COMPONENTS INCLUDING CONTROLS IN ACCORDANCE TO THE DRAWINGS AND SPECIFICATIONS. THE CONTRACTOR SHALL ALSO BALANCE THE AIR DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY MAINTENANCE ITEMS REQUIRED ON THE SYSTEM OR SERVICE CALLS DURING THE 12 MONTH WARRANTY PERIOD. THE CONTRACTOR SHALL GUARANTEE WORK PERFORMED FOR THIS PROJECT FOR A PERIOD OF 12 MONTHS AFTER ACCEPTANCE.

GUARANTEE
 THE CONTRACTOR SHALL GUARANTEE THE COMPLETE MECHANICAL SYSTEM INSTALLED PER THESE PLANS AND SPECIFICATIONS AGAINST DEFECTS DUE TO FAULTY MATERIALS, WORKMANSHIP OR FAILURE DUE TO NEGLIGENCE OF THE CONTRACTOR. THIS GUARANTEE SHALL INCLUDE A 12 MONTH WARRANTY BY THE MANUFACTURER ON ALL MATERIAL AND EQUIPMENT PROVIDED ON THE PROJECT EXCEPT WHERE LONGER PERIODS OF TIME IS SPECIFICALLY NOTED.

MECHANICAL DEMOLITION NOTES

1. THE MECHANICAL CONTRACTOR SHALL VISIT SITE PRIOR TO BEGINNING WORK TO DETERMINE THE LEVEL OF DEMOLITION REQUIRED.
2. IT IS THE MECHANICAL CONTRACTORS RESPONSIBILITY TO FIELD VERIFY ALL EXISTING DUCTWORK. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND MECHANICAL PLANS SHOULD BE BROUGHT TO THE ATTENTION OF THE MECHANICAL ENGINEER.
3. THE MECHANICAL CONTRACTOR SHALL FIELD VERIFY ALL EXISTING FIRE DAMPERS ARE LOCATED WHERE INDICATED ON DRAWINGS. ALL DUCTWORK PENETRATING DEMISING WALLS SHALL BE PROVIDED WITH A 1-HOUR FIRE DAMPER WHETHER INDICATED ON PLANS OR NOT.
4. ANY EXISTING MECHANICAL EQUIPMENT BEING REUSED SHALL BE SERVICED AND VERIFIED TO BE IN GOOD WORKING CONDITION.
5. EXISTING GRILLES AND RUN OUTS MAY BE REUSED IF SIZED ADEQUATELY TO PROVIDE THE AIR QUANTITIES INDICATED. ANY GRILLE BEING REUSED SHALL BE CLEANED AND VERIFIED TO BE IN GOOD WORKING CONDITION.

MECHANICAL LEGEND

SYMBOLS	(NOT ALL SYMBOLS SHOWN ARE USED)
#x# (L)	RECTANGLE DUCT W/ 1"LINER
##"	ROUND DUCT W/ 1-1/2"WRAP
S.A.	SUPPLY AIR
R.A.	RETURN AIR
E.A.	EXHAUST AIR
☒	R.A. DIFFUSER
☒	S.A. DIFFUSER
☒	CEILING MOUNTED EXHAUST FAN
⊙	WALL MOUNTED THERMOSTAT
⊙	CEILING MOUNTED REMOTE TEMPERATURE SENSOR
⊙	24-VOLT MOTORIZED BALANCING DAMPER
☐	EXISTING GAS FURNACE
⊙	SEE AIR DISTRIBUTION SCHEDULE AIR QUANTITY REQUIRED

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