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SPECIFICATIONS	
APPLICABLE CODES:	
INTERNATIONAL FIRE CODE (IFC), 2012 EDITION 2014 IFC GA AMENDMENTS INTERNATIONAL PLUMBING CODE (IPC), 2012 EDITION 2014 & 2015 IFC GA AMENDMENTS INTERNATIONAL MECHANICAL CODE (IMC), 2012 EDITION 2014 & 2015 IMC GA AMENDMENTS INTERNATIONAL FUEL GAS CODE (IFGC), 2012 EDITION 2014 & 2015 IFGC GA AMENDMENTS INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2009 EDITION 2011 SUPPLEMENTS AND AMENDMENTS 2012 SUPPLEMENTS AND AMENDMENTS	
EXISTING CONDITIONS:	
CONTRACTOR SHALL VISIT THE SITE AND UNDERSTAND JOB CONDITIONS BEFORE SUBMITTING A PROPOSAL. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY LOCATIONS AND SIZES OF ALL EXISTING UTILITY SERVICES PRIOR TO SUBMITTING HIS PROPOSAL. NO CONSIDERATION WILL BE GIVEN TO CLAIMS FOR EXTRA COST ARISING FROM CONTRACTOR'S FAILURE TO BE FULLY COGNIZANT OF JOB OR SITE CONDITIONS EXISTING AT TIME OF ACCEPTANCE OF BID.	
ACTIVE SERVICES: WHEN ENCOUNTERED IN WORK, PROTECT, BRACE, SUPPORT EXISTING ACTIVE SEWERS, GAS AND OTHER SERVICES REQUIRED FOR PROPER EXECUTION OF WORK. IF EXISTING ACTIVE SERVICES ARE ENCOUNTERED THAT REQUIRE RELOCATION, RELOCATE AS APPROVED. DO NOT PREVENT OR DISTURB OPERATION OF ACTIVE SERVICES THAT ARE TO REMAIN.	
INACTIVE SERVICES: WHEN ENCOUNTERED IN WORK, REMOVE, CAP OR PLUG INACTIVE SERVICES, AS INDICATED.	
INTERRUPTION OF SERVICES: WHERE WORK MAKES TEMPORARY SHUT-DOWNS OF SERVICES UNAVOIDABLE, SHUT DOWN AT NIGHT, OR AT SUCH TIMES AS APPROVED BY OWNER, WHICH WILL CAUSE LEAST INTERFERENCE WITH ESTABLISHED OPERATING ROUTINE. ARRANGE WORK TO ASSURE THAT SERVICES WILL BE SHUT DOWN ONLY DURING TIME ACTUALLY REQUIRED TO MAKE NECESSARY CONNECTION TO EXISTING WORK.	
WHERE EXISTING WALLS, CEILINGS, FLOORS, ETC., ARE CUT OR OTHERWISE DAMAGED DURING CONSTRUCTION, REPAIR ALL SURFACES TO THEIR ORIGINAL CONDITION.	
SHOP DRAWINGS:	
SUBMIT SHOP DRAWINGS FOR REVIEW. PDF FILES PREFERRED. SHOP DRAWINGS SHALL BE BOUND INTO VOLUMES (FILES), WITH EACH VOLUME (FILE) CONTAINING ONE COPY OF ALL SHOP DRAWINGS. ALL SHOP DRAWINGS SHALL BE SUBMITTED SIMULTANEOUSLY; NO SHOP DRAWINGS WILL BE CHECKED UNTIL ALL HAVE BEEN SUBMITTED.	
SUBMITTALS SHALL BE SUPPORTED BY DESCRIPTIVE MATERIAL, SUCH AS CATALOG CUTS, DIAGRAMS, PERFORMANCE CURVES AND CHARTS PUBLISHED BY THE MANUFACTURER, TO SHOW CONFORMANCE TO SPECIFICATION AND DRAWING REQUIREMENTS; MODEL NUMBERS ALONE WILL NOT BE ACCEPTABLE. ALL LITERATURE SHALL CLEARLY INDICATE THE SPECIFIED MODEL NUMBER, DIMENSIONS, ARRANGEMENT, RATING AND CHARACTERISTICS OF THE PROPOSED EQUIPMENT. CAPACITIES AND RATINGS SHALL BE BASED ON CONDITIONS INDICATED OR SPECIFIED HEREIN. ANY DEVIATIONS FROM SPECIFIED EQUIPMENT (PARTICULARLY THOSE WHICH REQUIRE COORDINATION WITH OTHER TRADES) SHALL BE CLEARLY NOTED IN A CONCISE LIST ON A SEPARATE SHEET.	
TEST AND BALANCE:	
THE CONTRACTOR SHALL RETAIN THE SERVICES OF AN INDEPENDENT TEST AND BALANCE AGENCY THAT IS INDEPENDENT OF ANY CONTRACTOR, SUB-CONTRACTOR, OR MANUFACTURER TO PERFORM THE TESTING AND BALANCING AND PREPARE REPORTS TO THE GENERAL CONTRACTOR. THE INDEPENDENT TEST AND BALANCE AGENCY SHALL BE A CERTIFIED MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU.	
TEST AND BALANCE SHALL ALSO PROVIDE QUOTE TO PERFORM BALANCING FOR COMFORT SIX MONTHS AFTER THE SPACE IS OCCUPIED.	
GUARANTEE:	
GUARANTEE THAT EACH PIECE OF APPARATUS SHALL BE OF THE CUSTOMARY STANDARD AND QUALITY FURNISHED BY THE DESIGNED MANUFACTURER FOR THAT CATALOG NUMBER.	
GUARANTEE THAT THE AIR SYSTEMS SHALL OPERATE WITHOUT AERODYNAMIC NOISE GENERATED FROM THE FAULTY INSTALLATION OF DUCTWORK OR THE COMPONENT OF THE AIR DISTRIBUTION SYSTEM.	
GUARANTEE THAT ALL SYSTEMS AND COMPONENTS SHALL BE PROVIDED WITH A ONE YEAR WARRANTY FROM THE TIME OF DATE OF SUBSTANTIAL COMPLETION. THE WARRANTY SHALL COVER ALL MATERIALS AND WORKMANSHIP. DURING THIS WARRANTY PERIOD ALL DEFECTS IN MATERIALS AND WORKMANSHIP SHALL BE CORRECTED BY REPAIR OR REPLACEMENT WITHOUT INCURRING ADDITIONS TO THE CONTRACT.	
GENERAL NOTES:	
REFER TO ARCHITECTURAL REFERENCE PLANS FOR EXACT LOCATION OF ALL CEILING MOUNTED EQUIPMENT.	
ALL DUCT DIMENSIONS INDICATED IN THESE DOCUMENTS ARE INSIDE-CLEAR DIMENSIONS.	
EDGES OF DUCTWORK OR FINISH VISIBLE THROUGH GRILLES AND REGISTERS IN FINISHED AREAS SHALL BE FINISHED FLAT BLACK. PAINT BLACK BEHIND ALL GRILLES.	
ALL WIRING IN THE CEILING PLENUM SHALL BE PLENUM RATED CABLE.	
MOUNTING BRACKET OF CEILING MOUNTED AIR DISTRIBUTION DEVICES SHALL BE COMPATIBLE WITH CEILING TYPE. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPE.	
ALL FIRE SEPARATIONS MUST BE PROTECTED WHEN APPLICABLE.	
PROVIDE NEW FILTERS (MERV 7 OR BETTER PER OWNER) FOR ALL APPLICABLE HVAC EQUIPMENT AT THE END OF CONSTRUCTION.	
ALL MATERIAL IN PLENUM MUST MEET FIRE AND SMOKE SPREAD AS REQUIRED BY NFPA 90A.	
ALL ROOF PENETRATIONS TO BE 12" APART AND AT LEAST 12" AWAY FROM CURBS, WALLS, AND DRAIN SUMPS TO PROVIDE ROOFING CONTRACTOR WITH SUFFICIENT ACCESS FOR FLASHING EACH ROOF PENETRATION.	
SUBSTITUTIONS MUST BE APPROVED IN WRITING BY ARCHITECT PRIOR TO BID SUBMISSION.	
CONTRACTOR SHALL REVIEW ALL CONTRACT DOCUMENTS AND SHALL BE FAMILIAR WITH THE SCOPE AND REQUIREMENTS OF THIS PROJECT. ANY DISCREPANCIES OR LACK OF CLARITY IN THE DOCUMENTS SHALL BE IDENTIFIED TO THE ARCHITECT OR ENGINEER PRIOR TO THE SUBMISSION OF PRICING BIDS. WITH A SUBMITTED BID, CONTRACTOR IS ACCEPTING THESE DOCUMENTS AS SUFFICIENT DEFINITION OF THE SCOPE OF WORK, AND ANY ADDITIONAL COSTS BASED ON UNCLEARITY OF CONTRACT DOCUMENTS WILL NOT BE CONSIDERED.	
THE CONTRACTOR SHALL REFERENCE THE FULL SET OF CONSTRUCTION DOCUMENTS DURING PRICING AND CONSTRUCTION FOR COORDINATION BETWEEN DISCIPLINES RELATIVE TO THE MECHANICAL SCOPE.	

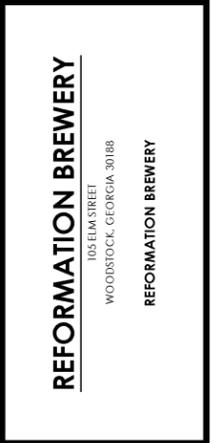
SPECIFICATIONS	
DUCTWORK AND ACCESSORIES:	
INDUSTRY STANDARDS: COMPLY WITH 5MAGNA (SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION) HVAC DUCT CONSTRUCTION STANDARDS, RECOMMENDATIONS FOR FABRICATION, GAUGES, CONSTRUCTION AND DETAILS, AND INSTALLATION PROCEDURES, EXCEPT AS OTHERWISE INDICATED.	
COMPLY WITH ASHRAE (AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS) FUNDAMENTALS HANDBOOK RECOMMENDATIONS, EXCEPT AS OTHERWISE INDICATED.	
DUCTWORK METAL AND GAUGES: EXCEPT AS OTHERWISE INDICATED, FABRICATE DUCTWORK FROM GALVANIZED SHEET STEEL COMPLYING WITH ASTM A527, LOCKFORMING QUALITY, WITH ASTM A525 G90 ZINC COATING, MILL PHOSPHATIZED. GAUGES TO COMPLY WITH 5MAGNA STANDARDS.	
DUCT SEALANT: NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT (TYPE APPLICABLE FOR THE FABRICATION/INSTALLATION DETAIL) AS COMPOUNDED AND RECOMMENDED BY THE MANUFACTURER SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK.	
DUCTWORK SUPPORT MATERIALS: EXCEPT AS OTHERWISE INDICATED, PROVIDE UPPER ATTACHMENT, HANGERS OF GALVANIZED STEEL STRAPS, OR STEEL RODS AND LOWER ATTACHMENT FOR SUPPORT OF DUCTWORK. HANGING/SUPPORT SYSTEMS SHALL BE IN ACCORDANCE WITH 5MAGNA REQUIREMENTS.	
EXPOSED DUCTWORK SHALL BE DOUBLE-WALL SPIRAL PIPE WITH PAINT GRIP UNLESS OTHERWISE NOTED OR SUBSTITUTION APPROVED BY OWNER.	
VOLUNTARY ALTERNATE EXPOSED DUCTWORK SHALL BE SINGLE-WALL SPIRAL PIPE UNLESS OTHERWISE NOTED OR SUBSTITUTION APPROVED BY OWNER. ALL EXPOSED DUCTWORK SHALL BE LINED IN LIEU OF WRAPPED. DUCT LINER THERMAL RESISTANCE SHALL MEET THE MINIMUM VALUES SPECIFIED IN PARAGRAPH DUCT INSULATION BELOW.	
DUCT INSULATION:	
R-5 SUPPLY, OUTSIDE AND RETURN AIR DUCT INSULATION IN UNCONDITIONED SPACES	
R-8 SUPPLY AND RETURN AIR DUCT INSULATION OUTSIDE THE BUILDING	
R-8 INSULATION BETWEEN DUCTS AND THE BUILDING EXTERIOR WHEN DUCTS ARE PART OF A BUILDING ASSEMBLY.	
DIFFUSERS, GRILLES, & REGISTERS:	
EGGCRATE GRILLE:	
RETURN GRILLES SHALL BE TITUS MODEL 50F FOR THE SIZES AND MOUNTING TYPES AS SHOWN ON THE PLANS AND OUTLET SCHEDULE. RETURN GRILLES MUST PROVIDE A FREE AREA OF AT LEAST 90%. OUTER BORDERS SHALL BE CONSTRUCTED OF HEAVY EXTRUDED ALUMINUM WITH A THICKNESS OF 0.040-0.050 INCH. GRILLES SHALL HAVE COUNTERSUNK SCREW HOLES FOR A NEAT APPEARANCE. BORDER WIDTH SHALL BE 1/8 INCHES ON ALL SIDES AND SHALL BE INTERLOCKED AT THE FOUR CORNERS AND MECHANICALLY STAKED TO FORM A RIGID FRAME. CHOICE OF THREE SIZES OF ALUMINUM GRID: 24 X 24 INCH, 1/2 X 1/2 X INCH, OR 1 X 1 X 1 INCH SHALL BE AVAILABLE.	
OPTIONAL OPPOSED-BLADE VOLUME DAMPER SHALL BE CONSTRUCTED OF HEAVY GAUGE STEEL OR ALUMINUM. DAMPER MUST BE OPERABLE FROM THE FACE OF THE GRILLE.	
DOUBLE DEFLECTION REGISTERS:	
ALUMINUM SHUTTER GRILLES SHALL BE OF THE SIZES AND MOUNTING TYPES SHOWN ON THE PLANS AND OUTLET SCHEDULE. OPPOSED BLADES SHALL BE AVAILABLE PARALLEL TO THE LEG OR PERPENDICULAR TO THE GRILLE OR REGISTER. CONSTRUCTION SHALL BE OF ALUMINUM WITH A THICKNESS OF 0.032 INCH ON ALL SIDES. SIZES 24 X 24 INCHES AND BELOW SHALL HAVE ROLL-FORMED BORDERS WITH A MINIMUM THICKNESS OF 0.032 INCH. LARGER SIZES SHALL BE CONSTRUCTED USING CONTINUOUS ALUMINUM EXTRUSIONS WITH A NOMINAL THICKNESS OF 0.040 INCH OR 0.050 INCH AND SHALL BE INTERLOCKED AT THE FOUR CORNERS AND MECHANICALLY STAKED TO FORM A RIGID FRAME. SCREW HOLES SHALL BE COUNTERSUNK FOR A NEAT APPEARANCE.	
EXHAUST GRILLES SHALL BE CONTOURED TO A SPECIFICALLY DESIGNED AND TESTED CROSS SECTION TO MEET PUBLISHED TEST PERFORMANCE DATA. BLADES SHALL BE SPACED ON 24 INCH CENTERS. BLADES SHALL HAVE FRICTION PIVOTS ON BOTH SIDES TO ALLOW INDIVIDUAL BLADE ADJUSTMENT WITHOUT LOOSENING OR RATTLING OR BE INSERTED THROUGH THE FRAME AND HELD TIGHT WITH STEEL WIRE INTERLOCKED TO THE FRAME ON BOTH ENDS OF EACH SIDE. PLASTIC BLADE PIVOTS ARE NOT ACCEPTABLE.	
OPTIONAL OPPOSED BLADE VOLUME DAMPER SHALL BE CONSTRUCTED OF HEAVY GAUGE STEEL OR ALUMINUM. DAMPER MUST BE OPERABLE FROM THE FACE OF THE GRILLE.	
THE GRILLE FINISH SHALL BE #26 WHITE. THE FINISH SHALL BE AN ANODIC ACRYLIC PAINT, BAKED AT 315° F FOR 30 MINUTES. THE PENCIL HARDNESS MUST BE HB TO H. THE PAINT MUST PASS A 100-HOUR ASTM B117 CORROSIVE ENVIRONMENTS SALT SPRAY TEST WITHOUT CREEPAGE, BLISTERING OR DETRIORATION OF FILM. THE PAINT MUST PASS A 250-HOUR ASTM D870 WATER IMMERSION TEST. THE PAINT MUST ALSO PASS THE ASTM D2794 REVERSE IMPACT CRACKING TEST WITH A 50-INCH POUND FORCE APPLIED.	
THE MANUFACTURER SHALL PROVIDE PUBLISHED PERFORMANCE DATA FOR THE GRILLE. THE GRILLE SHALL BE TESTED IN ACCORDANCE WITH ANSI/ASHRAE STANDARD 70-2006.	
DUCTLESS SPLIT SYSTEM	
CEILING CASSETTE & DUCTED INDOOR UNIT STANDARD PREFILTER IS INCLUDED WITH INDOOR UNIT CHOICE OF FAN SPEEDS: LOW, MEDIUM, HIGH INDOOR UNIT POWERED FROM OUTDOOR UNIT AUTO RESTART FOLLOWING A POWER OUTAGE BASE HEATER LIMITED WARRANTY: FIVE YEARS ON PARTS AND DEFECTS AND SEVEN YEARS ON THE COMPRESSOR.	
ACCEPTABLE MANUFACTURERS: MITSUBISHI, DAIKIN, LG, LENNOX, SAMSUNG, FRIEDRICH, SANYO OR CARRIER.	
CEILING FAN:	
CEILING MOUNTED EXHAUST FANS SHALL BE OF THE CENTRIFUGAL DIRECT DRIVE TYPE. THE FAN HOUSING SHALL BE CONSTRUCTED OF STEEL. THE PLASTIC DUCT COLLAR SHALL BE A TAPERED SLEEVE FOR EASE OF CONNECTION TO 3 IN AND 4 IN ROUND DUCTWORK AND SHALL INCLUDE A BACKDRAFT DAMPER. THE GRILLE SHALL BE CONSTRUCTED OF NON-YELLOWING HIGH STRENGTH POLYMER AND ATTACHED TO THE HOUSING WITH TORSION SPRINGS. THE WHEELS SHALL BE CONSTRUCTED OF HIGH STRENGTH POLYMER. THE ACCESS FOR WIRING SHALL BE EXTERNAL. THE MOTOR DISCONNECT SHALL BE INTERNAL AND OF THE PLUG IN TYPE.	
ALL FANS SHALL BEAR THE AMCA CERTIFIED RATINGS SEALS FOR SOUND AND AIR PERFORMANCE AND SHALL BE U.L. LISTED.	
GREASE DUCT SYSTEM:	
GREASE EXHAUST DUCTWORK SHALL BE FACTORY FABRICATED EQUAL TO SELKIRK METALBESTOS ZEROCLEAR MODEL IPS-ZS. INSTALL DUCTWORK IN ACCORDANCE WITH UL 1978 AND UL 2221 INSTALLATION INSTRUCTIONS. COMPLETE SYSTEM, FROM HOOD OUTLETS TO FAN INLET SHALL, INCLUDE TRANSITIONS TO HOOD OUTLETS, ADJUSTABLE PIPE LENGTHS, SUPPORT PLATES, GUIDE RINGS, ACCESS DOORS, AND THRU WALL FIRE STOP PENETRATIONS. MODEL IPS-C1 OR MODEL G MAY BE USED WHERE CLEARANCES PERMIT.	
VOLUNTARY ALTERNATE GREASE DUCT AND WRAP SYSTEM: INSTALL CARBON STEEL OF MINIMUM 1/8 GAUGE OR STAINLESS STEEL MINIMUM 1/8 GAGE IN STRICT ACCORDANCE WITH NFPA-96. THE ENTIRE DUCT SYSTEM, FROM HOOD OUTLETS TO FAN INLET, SHALL BE WRAPPED WITH ASTM-B14 CERTIFIED DUCT WRAP FOR ZERO CLEARANCE TO COMBUSTIBLES. FOLLOW DUCT WRAP MANUFACTURERS INSTRUCTIONS FOR INSTALLATION AND THROUGH WALL PENETRATIONS.	

ABBREVIATIONS			
AFF	ABOVE FINISHED FLOOR	MA	MAKE-UP AIR
AHU	AIR HANDLING UNIT	MAU	MAKE-UP AIR UNIT
CO2	CARBON DIOXIDE	MAV	MANUAL AIR VENT
D	CONDENSATE DRAIN	MBH	1,000 BTU PER HR
DB	DRY BULB	MFCU	MINI FAN COIL UNIT
EA	EXHAUST AIR	MHP	MINI HEAT PUMP
EAT	ENTERING AIR TEMPERATURE	MVD	MANUAL VOLUME DAMPER
EDH	ELECTRIC DUCT HEATER	NC	NORMALLY CLOSED
EF	EXHAUST FAN	NO	NORMALLY OPEN
ESP	EXTERNAL STATIC PRESSURE	OA	OUTSIDE AIR
EPWH	ELECTRIC WALL HEATER	OBD	OPPOSED BLADE DAMPER
F	DEGREES FAHRENHEIT	PIU	POWER INJECTION UNIT
FCU	FAN COIL UNIT	RA	RETURN AIR
FD	FIRE DAMPER	RH	RELIEF HOOD
FSD	COMBINATION FIRE/SMOKE DAMPER	RTU	ROOFTOP UNIT
H	HUMIDISTAT	SA	SUPPLY AIR
I	INTAKE HOOD	SP	STATIC PRESSURE
LAT	LEAVING AIR TEMPERATURE	UC	UNDER CUT DOOR
LWT	LEAVING WATER TEMPERATURE	VAV	VARIABLE AIR VOLUME
M	MOTOR	WB	WET BULB

LEGEND	
SYMBOLS	DESCRIPTION
X1 X2	DIFFUSER, GRILLE, REGISTER OR LOUVER TAG X1 = TYPE, X2 = CFM
☒	POSITIVE PRESSURE (AIR GOES OUT) DIFFUSER OR REGISTER, 4-WAY AIR PATTERN (UNLESS OTHERWISE NOTED)
☐	NEGATIVE PRESSURE (AIR GOES IN) GRILLE
→	POSITIVE PRESSURE AIRFLOW (TYP. SUPPLY)
←	NEGATIVE PRESSURE AIRFLOW (TYP. RETURN/EXHAUST)
	FLEXIBLE DUCT
┌	MANUAL VOLUME DAMPER (MVD)
└	VERTICAL (TYP. WALL) FIRE DAMPER
└	VERTICAL (TYP. WALL) COMBINATION FIRE/SMOKE DAMPER
└	HORIZONTAL (TYP. FLOOR/CEILING) FIRE DAMPER
└	HORIZONTAL (TYP. FLOOR/CEILING) COMBINATION FIRE/SMOKE DAMPER
⊖	THERMOSTAT
⊕	HUMIDISTAT
⊙	REMOTE TEMPERATURE SENSOR
▭	INTERNALLY LINED DUCT
●	DUCT UP
☒	DUCT UP
☐	DUCT DOWN
▭	SUPPLY DUCT



REV #	DATE	DESCRIPTION



PLACE MAKER DESIGN	
1000 CIRCLE 75 PARKWAY SUITE 400 ATLANTA, GEORGIA 30339 404.549.4499	
ISSUE DATE	12/29/17
DRAWN BY	ASL/JCC/JAL
CHECKED BY	JL
PWD PROJ #	17072
SHEET #	
GENERAL	
M0.1	