





Stamp and Signature

Revision table with columns for Date, Description, and Revision Number. Includes dates from 2019 to 2024 and descriptions like 'PLAN CHECK SUBMITTAL' and 'ISSUED FOR BID'.

Project Name and Location

PERIEMER, M A L L
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DUNWOODY, GA 30346

MECHANICAL SPECIFICATIONS

Project No.: Sheet No.:

M1.1
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DIVISION 15 - MECHANICAL
SECTION 1500
MECHANICAL GENERAL PROVISIONS

A. GENERAL CONDITIONS

- 1. DRAWINGS AND GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS AND ALL OTHER SPECIFICATION SECTIONS ARE A PART OF THIS CONTRACT AND APPLY TO THIS AND THE OTHER SECTIONS OF DIVISION 15.
2. THE CONTRACTOR FOR THIS WORK IS REQUIRED TO READ THE ENTIRE SPECIFICATIONS AND REVIEW DRAWINGS FOR ALL OTHER TRADES.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS SUBCONTRACTORS WITH A FULL SET OF BID SET DOCUMENTS INCLUDING SPECIFICATIONS AND THE COORDINATION OF HIS WORK AND INSPECTIONS AND THE WORK AND INSPECTIONS OF HIS SUBCONTRACTORS WITH ALL OTHER TRADES ON SITE CONFORMING TO THE GENERAL CONTRACTOR'S TIME SCHEDULE.
4. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO DETERMINE CONDITIONS AFFECTING THE WORK. BIDS SHALL BE BASED ON EVIDENCE OF KNOWLEDGE OF EXISTING CONDITIONS AND ANY MODIFICATIONS WHICH ARE REQUIRED TO MEET THE INTENT OF THE DRAWINGS SPECIFICATIONS. FAILURE TO VISIT THE SITE DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR KNOWLEDGE OF WORK.
5. WHEN USED, THE TERM "PROVIDED BY CONTRACTOR" SHALL BE INTERPRETED AS MEANING "FURNISHED AND INSTALLED" WITH THE EXCEPTION WHERE ITEMS ARE "SPECIFIED BY TENANT" WHICH MEANS "FURNISHED ONLY" (INSTALLED BY CONTRACTOR), EXCEPT AS PROVIDED NOTHERWISE.

B. GENERAL REQUIREMENTS

- 1. THE CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE AND FULL FUNCTIONAL MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. ALL WORK NOT SPECIFICALLY NOTED AS BEING BY THE LANDLORD SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR. CLOSELY COORDINATE THE ENTIRE INSTALLATION WITH THE LANDLORD, AS REQUIRED. FIELD VERIFY THE EXACT TYPE, SIZE AND LOCATION, ETC OF EXISTING PIPE AND DUCTS IN THE TENANT SPACE PRIOR TO BID.
2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE PROVIDED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH. ANY MATERIAL OR LABOR WHICH IS NEITHER SHOWN ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS, BUT WHICH IS OBVIOUSLY NECESSARY TO COMPLETE THE WORK, AND WHICH IS USUALLY INCLUDED IN WORK OF SIMILAR CHARACTER, SHALL BE PROVIDED AS PART OF CONTRACT.
3. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S TENANT CRITERIA, THE CONTRACTOR IS STILL RESPONSIBLE FOR PROVIDING THE SYSTEM AS DESIGNED AND DESCRIBED ON THESE DRAWINGS, UNLESS SPECIFICALLY NOTED OTHERWISE.
4. ALL MECHANICAL WORK SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT ACCESS TO ALL EQUIPMENT FOR SERVICE.
5. THE CONTRACTOR SHALL DO ALL CUTTING, CORE DRILLING, CHASING OR CHANNELING AND PATCHING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL BE MADE PRIOR APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER AND THE LANDLORD. PATCHING SHALL MATCH FINISH OF SURROUNDING AREA.

C. CODES

- 1. ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD ENGINEERING PRACTICES. ALL WORK SHALL CONFORM TO THE LANDLORD'S CRITERIA, THE STATE, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THE CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS. AFTER CONTRACT IS ISSUED, NO ADDITIONAL COST TO CODE ISSUES SHALL BE REIMBURSED BY THE TENANT TO THE CONTRACTOR.

D. LICENSES, PERMITS, INSPECTIONS & FEES

- 1. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS, APPROVALS AND FEES REQUIRED OR RELATED TO HIS WORK.
2. FURNISH TO THE TENANT'S CONSTRUCTION MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT SUBSTANTIAL COMPLETION DATE OF DRAWINGS.

E. DRAWINGS

- 1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO INDICATE ALL DUCT AND PIPING OFFSETS, FITTINGS AND ACCESSORIES THAT MAY BE REQUIRED.
2. THE LAYOUT SHOWN ON THE DRAWINGS IS BASED ON A PARTICULAR MAKE OF EQUIPMENT. IF ANOTHER MAKE OF EQUIPMENT IS USED WHICH REQUIRES MODIFICATION OR CHANGE OF ANY DESCRIPTION FROM THE DRAWINGS OR SPECIFICATIONS, THE CONTRACTOR SHALL BE RESPONSIBLE AS PART OF THIS WORK, FOR MAKING ALL SUCH MODIFICATIONS AND CHANGES, INCLUDING THOSE INVOLVING OTHER TRADES, AT HIS OWN EXPENSE. THIS INCLUDES HIS BID. IN SUCH CASE, CONTRACTOR SHALL SUBMIT DRAWINGS AND SPECIFICATIONS PRIOR TO STARTING WORK SHOWING ALL SUCH MODIFICATIONS AND CHANGES. HIS PROPOSAL SHALL BE SUBJECT TO THE APPROVAL OF THE TENANT'S CONSTRUCTION MANAGER.

F. EXISTING SHELL CONDITIONS

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING MECHANICAL WORK SHOWN ON THE MECHANICAL DRAWINGS AND THE MECHANICAL DEMOLITION SHOWN ON THE ARCHITECTURAL DRAWINGS.
2. THE CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING FIRE PROTECTION, PLUMBING FIXTURES, PIPING, HVAC UNITS, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC AND DISCONNECTED ROOF CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. THE CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED PIPES, DUCTWORK, AND EQUIPMENT PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED UNLESS NOTED FOR REUSE OR RECONSTRUCTION ON PLANS. ROOF PATCHING SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE BY A ROOFING CONTRACTOR APPROVED BY THE LANDLORD. ALL EXTENDED ITEMS IN THE SPACE OR ON THE ROOF (ARCHIVE THIS SPACE) NOT APPLICABLE TO THE LANDLORD OR ANOTHER TENANT'S SPACE SHALL BE REMOVED AND THE ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS, OR EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE, OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT. IF REQUIRED BY LANDLORD OR CODES, ABANDONED PIPING AND/OR DUCTWORK MUST BE REMOVED TO POINT OF ORIGIN, CONSIDERING THE EXTENT OF DEMOLITION PRIOR TO BID AND INCLUDE IN BID PROPOSAL.
3. ACTIVE LANDLORD OR OTHER TENANT SERVICES ENCOUNTERED IN WORK SHALL BE PROTECTED AND SUPPORTED. IF EXISTING SERVICES NOT ANTICIPATED REQUIRE RELLOCATION, CONTACT THE TENANT'S CONSTRUCTION MANAGER IMMEDIATELY. ALL COSTS FOR REPAIR OF DAMAGES TO ACTIVE LANDLORD OR OTHER TENANT SERVICES DURING CONSTRUCTION SHALL BE PAID FOR BY THE CONTRACTOR CAUSING THE DAMAGE.
4. THE -INS AND MODIFICATIONS TO EXISTING LANDLORD SERVICES MUST BE DONE WITH MINIMUM INTERRUPTION OF LANDLORD OPERATION AND DURING HOURS SPECIFIED BY THE LANDLORD. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING EXACT WORKING HOURS OF THIS WORK WITH THE LANDLORD PRIOR TO SUBMITTING HIS BID. THE CONTRACTOR SHALL INCLUDE IN HIS BID, ALL PREMIUM TIME REQUIRED TO PERFORM MODIFICATIONS DURING OTHER THAN NORMAL WORKING HOURS. ALL SUCH WORK MUST BE COORDINATED WITH THE LANDLORD.

G. DISCREPANCIES IN DOCUMENTS

- 1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. WHERE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTAL OF BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE THE TENANT'S CONSTRUCTION MANAGER, IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID. OTHERWISE, TENANT'S CONSTRUCTION MANAGER'S INTERPRETATION OF CONTRACT DOCUMENTS OR CONDITIONS SHALL BE FINAL WITH NO ADDITIONAL COMPENSATION PERMITTED.

H. TRADE NAMES AND MANUFACTURERS

- 1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM STANDARD FOR THE BASE BID. MANUFACTURERS CONSIDERED AN EQUAL OR BETTER IN ALL ASPECTS TO THAT SPECIFIED WILL BE SUBJECT TO APPROVAL IN WRITING BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO ACCEPTANCE. THE USE OF ANY UNAUTHORIZED EQUIPMENT SHALL BE SUBJECT TO REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.

I. SHOP DRAWINGS

- 1. SUBMIT SIX COPIES OF MATERIAL LISTS AND SHOP DRAWINGS FOR ALL EQUIPMENT AND DUCT FABRICATION DRAWINGS TO THE TENANT'S CONSTRUCTION MANAGER FOR APPROVAL PRIOR TO ORDERING. EQUIPMENT SUBMISSIONS MUST BE EARLY ENOUGH TO ALLOW THE TENANT'S CONSTRUCTION MANAGER EIGHT WORKING DAYS FOR REVIEW WITHOUT CAUSING DELAYS OR CONFLICTS TO THE JOB'S PROGRESS. SUBMITTALS SHALL BE IN ACCORDANCE WITH THE GENERAL CONDITIONS USING THE MANUFACTURER'S LISTS ON THE DRAWINGS. SHOP DRAWINGS SHALL INCLUDE ALL DATA THAT PERTAINS TO THE REQUIREMENTS SET FORTH ON THE DRAWINGS AND IN THE SPECIFICATIONS. THE SUBMITTAL SHALL INCLUDE BUT NOT LIMITED TO CUTS OR CATALOGS INCLUDING DESCRIPTIVE LITERATURE AND CHARACTERISTICS OF EQUIPMENT SHALL SHOW MAJOR DIMENSIONS, INCLUDING IN DATA, CAPACITY CURVES, PRESSURE DROP, CODE COMPLIANCE, MOTOR AND DRIVE DATA AND ELECTRICAL DATA. OBSERVE SPECIAL INSTRUCTIONS WHEN REQUIRED SUBMITTALS SHALL BEAR THE STAMP OF THE GENERAL AND SUBCONTRACTOR SHOWING THAT HE HAS REVIEWED AND CONFIRMED THAT THEY ARE IN CONFORMANCE WITH THE CONTRACT DRAWINGS AND SPECIFICATIONS OR INDICATE WHERE EXCEPTIONS TAKE PLACE. LACK OF SUCH CONTRACTOR REVIEW AND APPROVAL WILL BE CAUSE FOR REJECTION WITHOUT REVIEW BY TENANT'S CONSTRUCTION MANAGER. ALL SHOP DRAWINGS MUST APPEAR IN THE OPERATION AND MAINTENANCE MANUALS LEFT ON SITE AT JOB COMPLETION.
2. TENANT'S CONSTRUCTION MANAGER'S REVIEW OF SHOP DRAWINGS OR SCHEDULES SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY FOR ERRORS, OMISSIONS OR OTHER DEFICIENCIES OR DEVIATIONS IN THE SHOP DRAWING FROM THE CONTRACT DRAWINGS AND SPECIFICATIONS.

J. RECORD DRAWINGS

- 1. THE CONTRACTOR SHALL MAINTAIN ONE COPY OF DRAWINGS AND SPECIFICATIONS ON THE JOB SITE TO RECORD DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:
1.A. LOCATION OF CONCEALED PIPING VALVES AND DUCTS.
1.B. REVISIONS, ADDENDUMS, AND CHANGE ORDERS.
1.C. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, PROVIDE EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.
1.D. EXACT ROUTING OF ALL SANITARY AND DOMESTIC WATER PIPING UNDER FLOOR.
2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THE CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO THE DRAWINGS AND CERTIFY THE ACCURACY OF EACH POINT BY SIGNATURE THEREON. THE DRAWINGS ARE TO BE TURNED OVER TO TENANT.

K. GUARANTEE

- 1. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORK UNDER HIS CONTRACT AND SHALL MAKE GOOD, REPAIR OR REPLACE AT HIS OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT WHICH IS DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE IN WRITING OF THE INSTALLATION BY THE TENANT'S CONSTRUCTION MANAGER. PROVIDE EXTENDED WARRANTIES AS SPECIFIED WITH INDIVIDUAL EQUIPMENT. IN CASE OF REPLACEMENT OR REPAIR OF EQUIPMENT DUE TO FAILURE WITHIN GUARANTEE PERIOD, GUARANTEE ON THAT PORTION OF WORK SHALL BE EXTENDED FOR A PERIOD OF ONE (1) YEAR FROM DATE OF SUCH REPAIR OR REPAIR.

L. OPERATIONS MANUAL

- 1. ONE COPY OF EACH OPERATION AND MAINTENANCE MANUAL FOR ALL EQUIPMENT FURNISHED ON JOB SHALL BE COLLECTED AND INSERTED IN A 3" THREE RING BINDER AND TURNED OVER TO THE TENANT. EACH NOTEBOOK SHALL INCLUDE BUT NOT BE LIMITED TO INSTALLATION, MAINTENANCE AND OPERATING INSTRUCTIONS, PARTS LISTS OR BROCHURES APPROVED SHOP DRAWINGS AND WARRANTIES OBTAINED FROM EACH MANUFACTURER OF PRINCIPAL ITEMS OF EQUIPMENT.

M. SLEEVES

- 1. THE CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR.
2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SULFATE, SILICONE "RTV" FOAM, "SM" FIRE RATED SEALANTS OR EQUAL, SO AS TO RETAIN THE FIRE RATING OF THE FLOOR OR WALL CONFORM TO U. L. ASSEMBLY RATING OF FLOOR OR WALL.
3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL PIPE FINISHED WITH SMOOTH EDGES FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL PIPING, SLEEVES SHALL BE NO. 22 U.S.G. GALVANIZED MINIMUM.
4. DUCT SLEEVES TO BE MINIMUM 1/4" GALVANIZED STEEL.

N. HANGERS

- 1. HANGERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS CHANNELS, HANGER RODS, ETC., NECESSARY FOR THE INSTALLATION OF WORK.
2. HANGERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING OR DUCTWORK. HANGING FROM METAL DECK IS NOT PERMITTED. HANGERS MUST BE ATTACHED TO UPPER CHORD OF BAR JOIST, WHERE INTERFERENCES OCCUR, IN ORDER TO SUPPORT DUCTWORK OR PIPING, THE CONTRACTOR MUST INSTALL TRAPEZOID TYPE HANGERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO DAMPERS, VALVES, ACCESS DOORS AND OTHER EQUIPMENT SERVICE REQUIREMENTS AND/OR OTHER TRADES. HANGER TYPES AND INSTALLATION METHODS ARE SUBJECT TO LANDLORD CRITERIA.
3. HANGERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6" LONG SPURT CIRCL GALVANIZED SADDLE BETWEEN THE HANGER AND THE PIPE.
4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED FROM ONE ANOTHER.

O. ACCESS DOORS

- 1. FURNISH STEEL ACCESS DOORS AND FRAMES, MIN. 16" X 20" OR AS SHOWN ON DRAWINGS, TO GENERAL CONTRACTOR FOR ALL LOCATIONS WHERE NECESSARY TO PROVIDE ACCESS TO CONCEALED VALVES AND OTHER EQUIPMENT REQUIRING SERVICE OR INSPECTION. LOCATION, TYPE, SIZE AND NUMBER AS DETERMINED BY CONTRACTOR AND APPROVED BY TENANT ANNT CONSTRUCTION MANAGER TO SUIT EQUIPMENT REQUIREMENTS. GENERAL CONTRACTOR SHALL MEET ALL REQUIREMENTS AS DEFINED IN THE ELECTRICAL DIVISION OF THE SPECIFICATIONS.
2. ACCESS DOORS LOCATED IN FIRE RATED WALLS, FLOORS, CEILING-FLOOR OR CEILING-ROOF ASSEMBLIES SHALL BE FIRE RATED, UNDERWRITER'S LABORATORIES, INC., LISTED AND LABELED.
3. ACCESS DOORS SHALL BE FLUSH TYPE, MANUFACTURED FROM NO. 16 GAUGE STEEL, COMPLETE WITH FLUSH PLANE TYPE FRAMES MANUFACTURED FROM NO. 16 GAUGE STEEL, PROVIDED WITH ANCHORS. ACCESS DOORS SHALL BE SUITABLE FOR INSTALLATION IN WALL OR CEILING MATERIALS SHOWN IN ROOM FINISH SCHEDULES.

P. ELECTRICAL MOTORS

- 1. FURNISH, INSTALL AND ALIGN ALL MOTORS REQUIRED FOR THIS EQUIPMENT, UNLESS THEY ARE FACTORY INSTALLED ON THE UNIT, ALL STARTERS AND ASSOCIATED WIRING AND SAFETY SWITCHES FOR SUCH MOTORS SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR. STARTERS SHALL MEET ALL REQUIREMENTS AS DEFINED IN THE ELECTRICAL DIVISION OF THE SPECIFICATIONS.
2. DESIGN, CONSTRUCTION AND PERFORMANCE CHARACTERISTICS OF MOTORS SHALL CONFORM TO ALL APPLICABLE PROVISIONS OF LATEST NEMA AND NICE STANDARDS FOR ELECTRICAL EQUIPMENT. ALL MOTORS SHALL BE RATED FOR OPERATION AT VOLTAGE VARIATION OF PLUS OR MINUS 10%, 40 DEGREES AMBIENT TEMPERATURE, HAVE A SERVICE FACTOR OF NOT LESS THAN 1.15.
3. LOW VOLTAGE (24 VDC) WIRING
1. THE CONTRACTOR IS TO INSTALL ALL LOW VOLTAGE WIRING REQUIRED FOR HIS EQUIPMENT. THIS WORK INCLUDES ALL TRANSFORMERS AND DEVICES TO MAKE THIS A COMPLETE FUNCTIONAL SYSTEM.
2. ALL WORK IS TO CONFORM TO THE LATEST ADDITION N.E.C. AND TO DIVISION 16 OF MECHANICAL SPECIFICATIONS.
3. ANY CONDUIT REQUIRED BY CODE OR THE LANDLORD WILL BE INSTALLED BY THE ELECTRICAL SUBCONTRACTOR.

DIVISION 15 - MECHANICAL
SECTION 1500
HEATING, VENTILATION, AND AIR CONDITIONING

A. SCOPE OF WORK

- 1. THE HVAC CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION AND FACILITIES NECESSARY FOR, REASONABLY IMPLIED AND INCIDENTAL TO, THE FURNISHING, INSTALLATION, COMPLETION AND TESTING OF ALL THE WORK FOR THE MECHANICAL SYSTEM AS SHOWN ON THE DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS. TO INCLUDE, BUT NOT BE LIMITED TO THE FOLLOWING: (REFER TO RESPONSIBILITY SCHEDULE FOR DETAILED RESPONSIBILITIES)
1.A. HVAC UNITS, EQUIPMENT, AND APPURTENANCES.
1.B. DUCTWORK, FITTINGS, DAMPERS, AND INSULATION.
1.C. HYDRONIC PIPING AND INSULATION (AS APPLICABLE REFER TO PLANS).
1.D. REFRIGERANT PIPING AS APPLICABLE, REFER TO PLANS.
1.E. DIFFUSERS, GRILLES, AND REGISTERS.
1.F. CURBS AND STEEL FRAMING FOR SUPPORT (AS APPLICABLE, REFER TO PLANS).
1.G. TESTING, ADJUSTING, AND BALANCING.
1.H. OPERATIONS MANUALS.
1.I. SECURITY CONTROLS AND RELATED DIAGRAMS.
1.J. SEQUENCES OF OPERATION.
1.K. CONNECTION TO ANY LANDLORD ENERGY MANAGEMENT SYSTEM.
2. BEFORE STARTING WORK, THIS CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS TO IDENTIFY, COORDINATE, AND INTEGRATE THE VARIOUS ELEMENTS OF THE HVAC SYSTEM, MATERIALS, AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCES AND CONFLICTATIONS.

B. HVAC EQUIPMENT

- 1. PRIMARY HEATING, VENTILATION AND AIR CONDITIONING UNITS.
21.A. PRIMARY HEATING, VENTILATION, AND AIR CONDITIONING UNITS ARE TO BE AS SCHEDULED. ALL COMPRESSORS ARE TO INCLUDE A 5-YEAR EXTENDED WARRANTY.
21.B. EQUALS EQUIPMENT AS MANUFACTURED BY Carrier, Trane or YORKS ACCEPTABLE.
21.C. ALL EQUIPMENT SHALL BE COMPLETE IN EXTERIOR REFLECT WITH ALL ACCESSORIES, APPURTENANCES, AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEMS SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN.
10. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS, ALL AIR CONDITIONING EQUIPMENT MUST HAVE A CONDENSATE DRAIN AND BE TRAPPED IN ACCORDANCE WITH MANUFACTURERS DATA SEE DRAWINGS FOR ADDITIONAL DETAILS.
2. SECONDARY DRAIN PANS ARE REQUIRED TO BE INSTALLED BENEATH ALL INDOOR AIR CONDITIONING EQUIPMENT WITH THE EXCEPTION OF VAN BOXES. SECONDARY PANS ARE TO PROTECT ENTIRE UNIT. PROVIDE CONDENSATE PUMPS, AS REQUIRED. CONDENSATE SHALL BE DIRECTED TO MOP SINK OR AS SPECIFIED ON PLANS.
2. TOILET EXHAUST FANS
2.A. WHERE SHOWN ON DRAWINGS, PROVIDE A TOILET EXHAUST FAN UNIT COMPLETE WITH GRAVITY BACK DRAFT DAMPERS, ALL DUCTWORK, ROOF OPENINGS AND CAPS NECESSARY TO PROVIDE A COMPLETE EXHAUST SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR. REFER TO PLANS FOR APPLICABILITY.
3. BASEBOARD, CABINET, AND UNIT HEATERS
3.A. WHERE SHOWN ON DRAWINGS, PROVIDE ELECTRIC HEATERS COMPLETE WITH ELECTRIC HEATING COIL, CONTROLS, AND INTERNAL THERMOSTAT.
4. VIBRATION ISOLATION DEVICES
4.A. VIBRATION ISOLATION DEVICES SHALL BE PROVIDED IN ALL SUPPORTS BETWEEN VIBRATING EQUIPMENT (FANS, ROOFTOP UNITS, AIR HANDLERS, FAN POWERED VAN BOXES, ETC.) AND STRUCTURE.
4.B. EXHAUSTING EQUIPMENT HUNG FROM STRUCTURE SHALL BE ISOLATED WITH RUBBER AND SPRING DEVICES, VIBRATING EQUIPMENT SUPPORTED FROM FLOOR OR DECK SHALL BE ISOLATED WITH HOUSING SPRING MOUNT DEVICES.
4.C. EXAMINE DEAD LOAD AND OPERATING LOAD CONDITIONS WHEN SELECTING DEVICES. ADJUST FOR PROPER ALIGNMENT AND LOADING. AVOID "SHOCKING" THE ISOLATOR.
4.D. CHECK HANGER ROD SIZE FOR ALLOWABLE LOADS AT THE ISOLATING DEVICE AND AT THE UPPER AND LOWER ATTACHMENTS TO STRUCTURES, DUCTS, EQUIPMENT, ETC.
4.E. CONSULT MANUFACTURER FOR APPLICATION DATA.

C. CURBS AND STEEL FRAMING FOR SUPPORT

- 1. THIS CONTRACTOR WILL PROVIDE ALL NECESSARY CURBS AND STEEL FRAMING REQUIRED TO INSTALL ALL HVAC EQUIPMENT AS DESCRIBED OR IMPLIED ON THE DRAWINGS. CURBS SHALL BE A MINIMUM OF 24" HIGH, OR THE SAME MANUFACTURER OF THE EQUIPMENT SUPPORTED. INSULATE UNDER THE COMPRESSOR SECTION TO PREVENT CONDENSATION. ALL CURBS MUST BE INSTALLED SO THAT TOP OF CURBS ARE "FLUSH" WITH PENETRATIONS OF EXISTING STRUCTURE SHALL BE DONE IN ACCORDANCE TO THE LANDLORD'S GUIDELINES AT THIS CONTRACTOR'S EXPENSE.

C. METAL DUCTWORK - NO FIBERGLASS DUCT ALLOWED

- 1. NO DUCTWORK SHALL BE FABRICATED PRIOR TO APPROVAL BY THE TENANT'S CONSTRUCTION MANAGER. SIGNIFICANT DEVIATIONS FROM DESIGN MUST BE APPROVED BY TENANT'S CONSTRUCTION MANAGER PRIOR TO FABRICATION OR INSTALLATION. ALL DUCT MAINS ARE TO BE RECTANGULAR UNLESS NOTES OTHERWISE. ALL DUCT BRANCHINGS MUST BE TO BE RIGID ROOF DUCT. FLEXIBLE DUCT CONNECTIONS TO THE DIFFUSER ARE NOT ALLOWED ON THE SALES FLOOR.
2. EXCEPT AS OTHERWISE INDICATED, FABRICATE AND INSTALL RECTANGULAR DUCTS WITH GALVANIZED SHEET STEEL IN ACCORDANCE WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" OF THE LATEST EDITION, CONFORM TO THE REQUIREMENTS IN THE REFERENCED STANDARD FOR METAL THICKNESS, REINFORCING TYPES AND INTERVALS, THE ROOF APPLICATIONS, AND JOINT TYPES AND INTERVALS.
3. EXCEPT WHERE OTHERWISE INDICATED, CONSTRUCT DUCT SYSTEMS TO THE FOLLOWING PRESSURE CLASSIFICATIONS: (VERIFY WHETHER RETURN OR EXHAUST DUCT IS POSITIVE OR NEGATIVE PRESSURE).
3.A. SUPPLY DUCTS: 2 INCHES WATER GAUGE, POSITIVE PRESSURE.
3.B. RETURN AND EXHAUST DUCTS: 2 INCHES WATER GAUGE, NEGATIVE PRESSURE. PRESSURE TEST DUCTS FOR LEAKAGE. REMAKE LEAKING JOINTS AND APPLY SEALANTS AS REQUIRED TO FABRICATE A SYSTEM THAT DOES NOT EXCEED 3% LEAKAGE OR LESS AS STATED BY PRESSURE CLASS RATINGS IN SMACNA STANDARDS.
4. AS A MINIMUM, CROSSBREE ALL FLAT SURFACES OR REINFORCE WITH A BEAD APPROXIMATELY 3/8" WIDE X 3/16" DEEP ON 12" CENTERS TO PREVENT VIBRATIONS.
5. INSTALL DOUBLE THICKNESS TURNING VANES IN ALL RIGHT ANGLE ELBOWS.
6. INSTALL HIGH RIGID ROOF AND RECTANGULAR METAL DUCT WITH SUPPORT SYSTEMS INDICATED IN SMACNA STANDARDS. SUPPORT HORIZONTAL DUCTS WITHIN 2 FEET OF EACH ELBOW AND WITHIN 4 FEET OF EACH BRANCH INTERSECTION USING DOUBLE STRAP HANGERS ON EACH SIDE OF FITTING. SUPPORT VERTICAL DUCTS AT A MAXIMUM INTERVAL OF 36 FEET AND AT EACH FLOOR. NO WOOD SHALL BE USED TO SUPPORT OR BRACE DUCTS. PROVIDE SWAY AND SEISMIC BRACING AS REQUIRED BY STATE AND LOCAL CODES OR BY LANDLORD.
7. WHERE DUCTS PASS THROUGH ROOFS AND FLOORS, PROVIDE AS MINIMUM 1/2" X 1 1/2" X 27" X 1 1/2" STEEL ANGLE FRAMES AT EACH SIDE OF OPENING. THE ANNULAR SPACE BETWEEN DUCT AND ANGLE FRAMES SHALL BE CALKED WITH SILICONE SEALANT OR FIREPROOFED AS REQUIRED BY ASSEMBLY FIRE RATING.
8. ALL TRVERSE JOINTS AND SEAMS IN SUPPLY AIR SHALL BE SEALED AIR TIGHT WITH DAP CMK DUCT SEALER. JOINTS ALSO SHALL BE REINFORCED OR CONNECTED WITH SHEET METAL SCREWS.
9. SOFT EXHAUST BUTYL GASKET WITH ADHESIVE BACKING SHALL BE USED TO SEAL FLANGED JOINTS.
10. DUCT TRANSITIONS SHALL NOT EXCEED 30 DEGREE SLOPE EXCEPT AS SPECIFICALLY NOTED OTHERWISE.
11. PROVIDE ACCESS TO ALL MOTORIZED DAMPERS, FIRE DAMPERS, CONTROLS, AND OTHER ITEMS IN DUCTWORK THAT REQUIRE SERVICE OR INSPECTION. IF THE ACCESS PANEL LOCATION IS SPECIFIED ON THE SALES AREA, IT MUST BE APPROVED BY THE TENANT'S CONSTRUCTION MANAGER PRIOR TO INSTALLATION. LAY-IN SUPPLY AND RETURN AIR DIFFUSERS, GRILLES AND REGISTERS WITH ACCESS DOORS ARE ALLOWED AS ACCESS LOCATIONS.

D. FLEXIBLE CONNECTIONS

- 12.A. FLEXIBLE COLLARS SHALL BE PROVIDED ON ALL CONNECTIONS BETWEEN VIBRATING EQUIPMENT (FANS, ROOF TOP UNITS, AIR HANDLERS, FAN POWERED VAN BOXES, ETC.) AND ROOFS OR CASINGS. ALSO, PROVIDE FLEXIBLE CONNECTIONS WHERE DUCTS CROSS BUILDING EXPANSION JOINTS.
12.B. FLEXIBLE CONNECTIONS SHALL CONSTRUCTED OF NEOPRENE-COATED FLAMEPROOF PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW EQUIPMENT MOVEMENT AND PREVENT THE TRANSMISSION OF VIBRATION.
12.C. THE FLEXIBLE CONNECTION IS TO BE RATED FOR THE OPERATING PRESSURE OF THE SYSTEM.

E. FIRE DAMPERS

- 13.A. PROVIDE PRIMARY FIRE DAMPERS WHERE INDICATED OR REQUIRED BY CODES DAMPERS SHALL BE DESIGNED FOR HORIZONTAL OR VERTICAL FLOW OF AIR AS REQUIRED. FIRE DAMPERS SHALL BE UL LABELED.
13.B. FIRE DAMPERS SHALL HAVE THE BLADES OUT OF THE AIRSTREAM AND A 150°F FUSIBLE LINK, TYPE A, 45 MINIMUM.
13.C. PROVIDE ALL NECESSARY FRAMING AND SLEEVES FOR DAMPER MOUNTING PER UL AND CODE REQUIREMENTS.
13.D. PROVIDE DUCT ACCESS DOORS IN AN ACCESSIBLE LOCATION FOR ALL FIRE DAMPERS. DOORS IS TO BE 20 GA GALVANIZED DUCT WITH QUICK-OPENING LATCH AND

F. FLEXIBLE AIR DUCT

- 14.A. FLEXIBLE AIR DUCT SHALL BE TYPE 1 INSULATED CLASS 1 AND RATED FOR THE OPERATING PRESSURE OF THE SYSTEM. DUCT CONSTRUCTION MATERIAL (PLASTIC, CLOTH, ALUMINUM) MUST ADHERE TO LOCAL CODES AND LANDLORD'S REQUIREMENTS AND BE INCLUDED AS SUCH IN THE BID.
14.B. FLEXIBLE AIR DUCT MAY ONLY BE USED IN VERTICAL APPLICATIONS WITH PRIOR APPROVAL FROM TENANT'S CONSTRUCTION MANAGER.
14.C. FLEXIBLE AIR DUCT SHALL NOT EXTEND OVER 5'-0" IN LENGTH AT ANY ONE LOCATION.
15. SUPPLY AIR TAKE-OFF FITTINGS
15.A. PROVIDE ORIGINAL OR "BELL-MOUTH" TAKE-OFFS FROM MAIN DUCTWORK TO ROUND BRANCHES. INSTALL PER MANUFACTURER'S INSTRUCTION.
15.B. PROVIDE 45° RECTANGULAR TAKE-OFFS FROM MAIN DUCTWORK TO RECTANGULAR BRANCHES.

DAMPERS

- 16.A. PROVIDE MANUAL LOCKING EQUIPMENT VOLUME CONTROL DAMPERS WITH HANDLE OPERATORS, IN EACH BRANCH AND ALL INDOOR, RECTANGULAR AND SQUARE AIR DUCTWORK THAT IS NOT EXPOSED SHALL BE EXTERNALLY INSULATED WITH A MINIMUM OF 1" THICK, 1.5 LB/FT DENSITY (R-5) DUCT INSULATION WITH RUBBER VAPOR BARRIER. VAPOR BARRIER IS TO BE MAINTAINED THROUGHOUT DUCT SYSTEM. ALL JOINTS MUST BE TAPED SO THAT NO INSULATION FIBER IS VISIBLE. EXTEND DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, AND SIMILAR PENETRATIONS.
16.C. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM C 411, OR AS REQUIRED BY LOCAL CODES.
17. DIFFUSERS, GRILLES, AND REGISTERS
17.A. PROVIDE DIFFUSERS GRILLES AND REGISTERS AS SCHEDULED. DEVICES TO BE COMPLETE WITH DAMPERS FRAMES AND ALL ACCESSORIES. FINISH AS INDICATED.
17.B. INSTALL ALL AIR DUCT ACCESS DOORS IN THE ARCHITECTURAL REFLECTED CEILING PLAN.
17.C. APPROVED MANUFACTURERS, TITLE IS SPECIFIED, EQUALS BY METALARE OR KRUEGER IS ACCEPTABLE.

MEDIUM PRESSURE DUCT

- 18.A. WHERE DUCTWORK IS SPECIFICALLY NOTED AS MEDIUM PRESSURE, IT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS FOR A FIRE RATED OF 3 INCHES WATER COLUMN MINIMUM OR LARGER AS REQUIRED BY MEDIUM PRESSURE DUCT AND WITH THE LANDLORD'S CRITERIA.
18.C. ALL OTHER ITEMS FROM METAL DUCTWORK SPECIFICATION SECTION APPLY TO THIS SECTION.

DUCTWORK INSULATION

- 19.A. INSTALL INSULATION PRODUCTS IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS, AND IN ACCORDANCE WITH RECOMMENDED INSTALLATION PRACTICES. INSULATION MUST COMPLY WITH ALL RELEVANT CODES.
19.B. ALL INDOOR, RECTANGULAR AND SQUARE AIR DUCTWORK THAT IS NOT EXPOSED SHALL BE EXTERNALLY INSULATED WITH A MINIMUM OF 1" THICK, 1.5 LB/FT DENSITY (R-5) DUCT INSULATION WITH RUBBER VAPOR BARRIER. VAPOR BARRIER IS TO BE MAINTAINED THROUGHOUT DUCT SYSTEM. ALL JOINTS MUST BE TAPED SO THAT NO INSULATION FIBER IS VISIBLE. EXTEND DUCTWORK INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS, AND SIMILAR PENETRATIONS.
19.C. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM C 411, OR AS REQUIRED BY LOCAL CODES.

SYSTEM CLEANOUT

- 20.A. DUCTWORK AND AIR HANDLING EQUIPMENT IS TO BE CLEANED OUT AND BLOWN OUT BEFORE PAINTING IS STARTED BY THE GENERAL CONTRACTOR.
20.B. FILTERS MUST BE IN UNITS AT ANY TIME FANS ARE OPERATED.

GREASE EXHAUST CLEANOUT

- 21.A. GREASE DUCT CONSTRUCTION AND INSTALLATION SHALL BE IN ACCORDANCE WITH CHAPTER 5 2016 CMC.
21.A.1. CMK SLO LISTED GREASE DUCTS.
21.A.1.A. LISTED GREASE DUCT SHALL BE INSTALLED IN ACCORDANCE WITH THE TERMS OF THE LISTING AND THE MANUFACTURER'S INSTRUCTIONS.
21.A.2. CMK SLO OTHER GREASE DUCTS.
21.A.2.A. OTHER GREASE DUCTS SHALL COMPLY WITH THE REQUIREMENTS OF THIS SECTION.
21.A.1. MATERIALS (SLO 5.1) DUCTS SHALL BE CONSTRUCTED OF AND SUPPORTED BY CARBON STEEL NOT LESS THAN 0.04 INCH 1.37MM NO. 16 905 IN THICKNESS OR STAINLESS STEEL NOT LESS THAN 0.043 INCH 1.09MM NO. 18 905 IN THICKNESS.
21.B. INSTALLATION (SLO 5.2).
21.B.1. ALL SEAMS, JOINTS, PENETRATIONS, AND DUCT-TO-COLLAR CONNECTIONS SHALL HAVE A LIQUID-TIGHT CONTINUOUS EXTERNAL WEED.

EXCEPTIONS

- 21.C.1. DUCT-TO-HOOD COLLAR CONNECTIONS AS SHOWN IN FIGURE 5-2 (2016 CMK) SHALL BE PERMITTED.
21.C.2. PENETRATIONS SHALL BE PERMITTED TO BE SEALED BY OTHER LISTED DEVICES THAT ARE TESTED TO BE GREASE-TIGHT AND ARE EVALUATED UNDER THE SAME CONDITIONS OF FIRE SEVERITY AS THE HOOD OR INCLUDING OR LISTED GREASE EXTRACTORS AND WHERE PRESENCE DOES NOT DETRACT FROM THE HOOD'S OR DUCT'S STRUCTURAL INTEGRITY.
21.C.3. INTERNAL WELDING SHALL BE PERMITTED, PROVIDED THE JOINT IS FORMED OR GROUND SMOOTH AND IS READILY ACCESSIBLE FOR INSPECTION.

(SLO 5.2.3) WELDED DUCT CONNECTION, DUCT-TO-DUCT CONNECTION SHALL BE AS FOLLOWS:

- (I) TELESCOPING JOINT, AS SHOWN IN FIGURE 510.521 (I). (CMC 2016)
21.D.1. (II) BELL-TYPE JOINT, AS SHOWN IN FIGURE 510.521 (II). (CMC 2016)
21.D.3. (III) FLANGE WITH EDGE WELD, AS SHOWN IN FIGURE 51052-1E1)
21.D.4. (IV) FLANGE WITH WELDED WELD, AS SHOWN IN FIGURE 510.52-2 (IV) (CMC 2016)(NFA 96.7.5.5.1)
21.E. (SLO 5.2.2) BUTT WELDED CONNECTIONS, BUTT WELDED CONNECTIONS SHALL BE INSULATED (NFA 96.7.5.5.1)
21.F. (SLO 5.2.2) INSIDE DUCT SECTION, FOR TELESCOPING AND BELL-TYPE CONNECTIONS, THE INSIDE DUCT SECTION SHALL BE UPHILL OF THE OUTSIDE DUCT SECTION. (NFA 96.7.5.5.1)

D. GENERAL INSTALLATION

- 1. INSTALL WATER MAINS WITHOUT PITCH. USE CENTRIFUGAL REDUCING COUPLERS AS CHANGES IN SIZE WITH THE TOP OF PIPES AT SAME ELEVATION. MAKE CHANGES IN DIRECTION WITH FITTINGS.
2. BRANCHES TO UNITS BELOW MAINS TO BE TAKEN FROM BOTTOM OF MAINS AT A 45 DEGREE SINGLE PITCH DOWNWARD TOWARD UNITS. BRANCHES TO UNITS ABOVE MAINS TO BE TAKEN FROM TOP OF MAINS AT A 45 DEGREE ANGLE PITCHED UPWARD TOWARD PITCH NOT LESS THAN 1 TO 10 FEET.
3. HANGERS SHALL BE SIZED AND INSTALLED FOR THE OUTSIDE DIAMETER OF THE INSULATED PIPE. INSTALL 6" LONG SPURT CIRCL GALVANIZED SADDLE BETWEEN THE HANGER AND PIPE INSULATION.
4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE DI-ELECTRICALLY SEPARATED FROM ONE ANOTHER.
5. SEE PLANS FOR APPLICABLE DETAILS.
6. ALL PRESSURE PIPING SYSTEMS INSTALLED SHALL CONFORM TO THE REQUIREMENTS OF THE STATE PIPING AND WELDING CODES. INSTALL VALVES AT LOW POINTS FOR DRAINING EACH SYSTEM AND INSTALL MANUAL VENTS AT ALL HIGH POINTS OF EQUIPMENT AND PIPING IN THE SYSTEM TO PROPERLY REMOVE TRAPPED AIR.

E. INSULATION

- 1. ALL HYDRONIC PIPING FOR CHILLED WATER AND/OR HEATING WATER, VALVES, FITTINGS, AND ACCESSORIES SHALL BE INSULATED ON PIPE SIZES UP TO 2 INCHES, INSULATE WITH 1 INCH THICK (K=0.23 @ 75°F) FIBERGLASS INSULATION WITH ALL SERVICE JACKET AND VAPOR BARRIER. FOR PIPE SIZES 2-3/2 INCHES AND LARGER, INSULATE WITH 1 1/2 INCH THICK (K=0.23 @ 75°F) FIBERGLASS INSULATION WITH ALL SERVICE JACKET AND VAPOR BAR.
2. INSULATION AT ALL HANGERS FOR PIPING 2-1/2 INCHES AND LARGER SHALL BE HARD AND NON-COMPRESSIBLE.
3. ALL INSULATION SHALL HAVE A FLAME SPREAD RATING OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING OF NO HIGHER THAN 50 TO CONFORM WITH THE REQUIREMENTS OF THE NFPA.

F. REFRIGERANT PIPING

- 1. PROVIDE A COMPLETE REFRIGERANT PIPING SYSTEM BETWEEN INDOOR FAN UNITS OUTDOOR CONDENSING UNITS, IF A APPLICABLE. PROVIDE OIL, REFRIGERANT CHARGE AND TEST SYSTEM. REFER TO PLANS TO DETERMINE IF A REFRIGERANT PIPING SYSTEM IS REQUIRED.

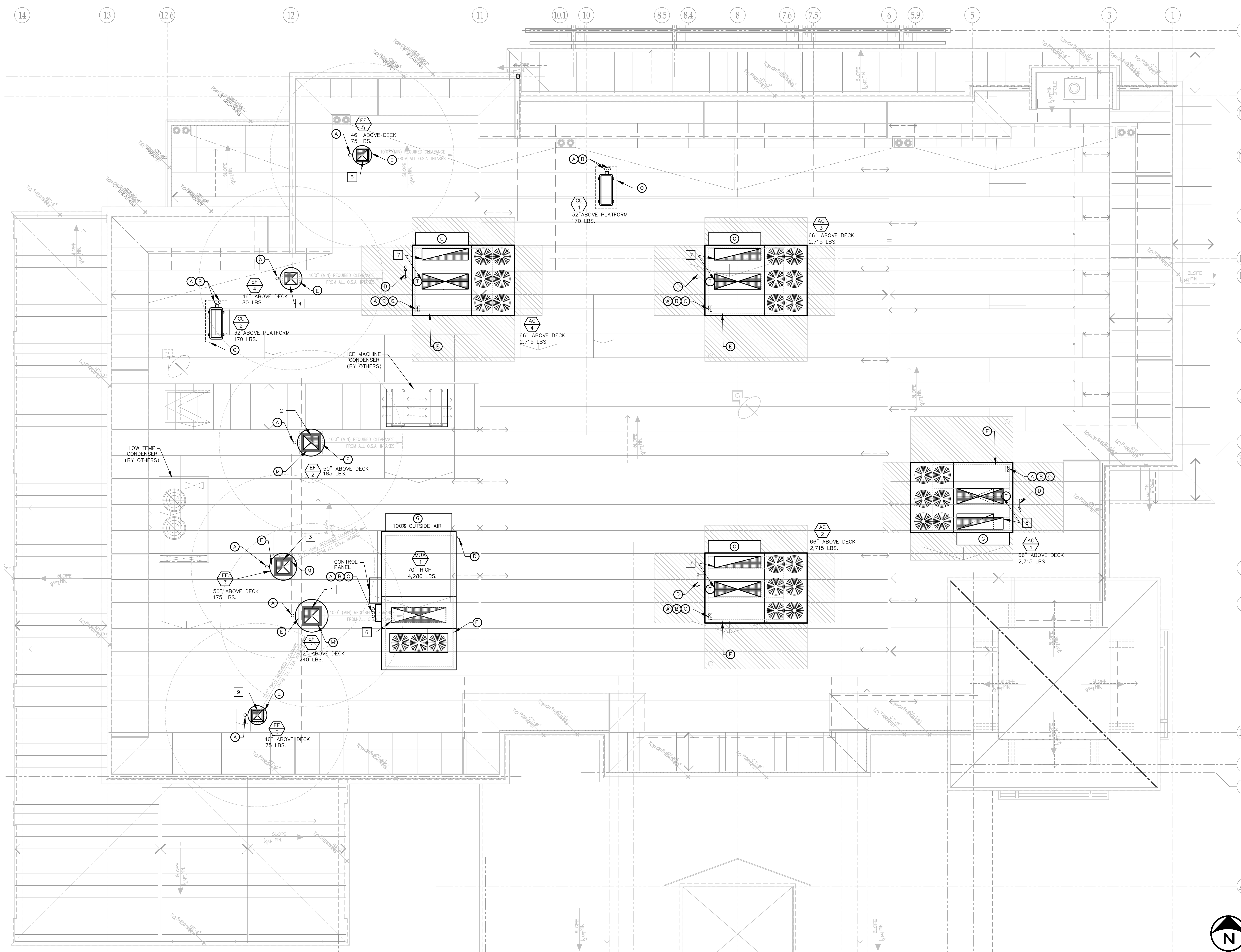
2. MATERIALS

- A. REFRIGERANT PIPING SHALL BE TYPE "L" DRAWN COPPER TUBING (ASTM88), WROUGHT COPPER OR CAST BRONZE FITTINGS (ANSI B16.22), WITH SIFOS-5 SOLDERED.
B. SERVICE VALVES, CHARGING PORTS, FILTER-DRIER, SIGHT GLASS, AND A THERMOSTATIC EXPANSION VALVE (TXV) SHALL BE INSTALLED FOR EACH SYSTEM AS A MINIMUM.

3. INSTALLATION

- A. SIZE LINES WITH ADEQUATE LIFT TRAPS AND DOUBLE SUCTION REERS AS NECESSARY TO MEET THE NEEDS OF EQUIPMENT SPECIFIED, FIELD CONDITIONS, AND EQUIPMENT MANUFACTURER





- ### PLAN NOTES
- 20"x20" 16 GA. WELDED D.T.R. (5,000 CFM @ 1,800 FPM).
  - 20"x18" 16 GA. WELDED D.T.R. (4,200 CFM @ 1,680 FPM).
  - 18"x18" 16 GA. WELDED D.T.R. (3,800 CFM @ 1,688 FPM).
  - 16"x16" SEALED ALUMINUM D.T.R. (1,400 CFM).
  - 14"x14" GENERAL EXHAUST D.T.R. (750 CFM).
  - 71"x21" MUA D.T.R. (10,790 CFM).
  - 60"x20"(L) SA & 60"x18"(L) RA D.T.R.
  - 60"x20"(L) SA & 60"x18"(L) RA, TRANSITION TO 48"x20"(L) SA & 48"x20"(L) RA D.T.R.
  - 12"x12" GENERAL EXHAUST D.T.R. (300 CFM).



Stamp and Signature

Revision	Date	Description
20	SEPT 2019	PLAN CHECK SUBMITTAL
01	NOV 2019	PLAN CHECK RESUBMITTAL
22	FEB 2021	ISSUED FOR BD
30	JAN 2021	ISSUED FOR CONSTRUCTION
05	DEC 2019	PLAN CHECK RESUBMITTAL
30	JAN 2020	ISSUED FOR CONSTRUCTION
26	MAR 2020	PLAN CHECK RESUBMITTAL
24	APR 2021	ISSUED FOR CONSTRUCTION #2

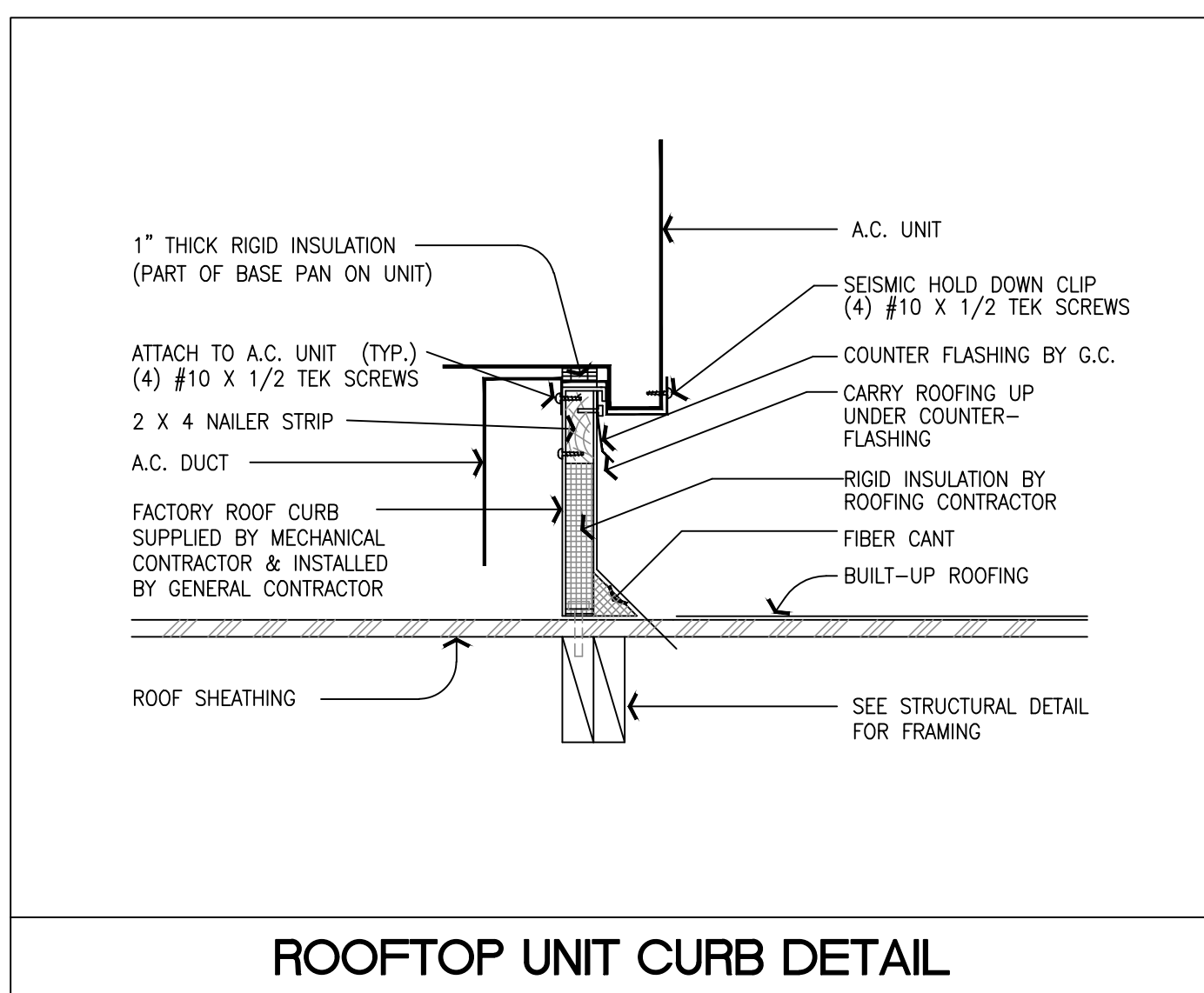
**SPARE PARTS - STORED INSIDE BOX ON ROOF**

**GREENHECK FANS -**  
 1 OF 3 HP & MATCHING BELTS FOR EF-1 & EF-2  
 1 OF 1 1/2 HP & MATCHING BELTS FOR EF-3

**DAIKIN - MUA-1**  
 1 OF 10 HP & MATCHING BELTS

- ### ROOF EQUIPMENT LEGEND
- (A) INDICATES LINE VOLTAGE CONDUIT AND WIRING STUB-UP LOCATION CONNECTION TO EQUIPMENT BY ELECTRICAL CONTRACTOR. AC-X UNITS CONNECT INSIDE ROOF CURB.
  - (B) INDICATES LOW VOLTAGE CONDUIT AND WIRING STUB-UP LOCATION CONNECTION TO EQUIPMENT BY ELECTRICAL CONTRACTOR. AC-X UNITS CONNECT INSIDE ROOF CURB.
  - (C) INDICATES GAS PIPING STUB-UP LOCATION AND CONNECTION TO EQUIPMENT BY THE PLUMBING CONTRACTOR. COMPLETE WITH DIRT LEG AND SHUT-OFF VALVE.
  - (D) INDICATES TRAPPED AND VENTED CONDENSATE DRAIN PIPE WITH DISCHARGE TO AN APPROVED RECEPTOR BY THE PLUMBING CONTRACTOR.
  - (E) INDICATES FACTORY CURB, FURNISHED AND SET IN PLACE BY THE MECHANICAL CONTRACTOR, SECURED TO ROOF BY THE GENERAL CONTRACTOR.
  - (F) INDICATES FIELD FABRICATED LEVEL WOOD ROOF CURB FROM NOMINAL 2" X LUMBER BY THE GENERAL CONTRACTOR, COMPLETE WITH CANT STRIP.
  - (G) INDICATES FACTORY ECONOMIZER OSA INTAKE OR MINIMUM OSA WEATHER HOOD WITH BACKDRAFT DAMPER, MANUAL VOLUME DAMPER AND BIRDSCREEN, AS APPLICABLE.
  - (H) INDICATES 3/4" DRAIN PIPE TO APPROVED RECEPTOR BY THE PLUMBING CONTRACTOR.
  - (I) INDICATES APPLIANCE FLUE VENT DISCHARGE.
  - (J) INDICATES "GREASE EXHAUST CLEAN-OUT" ACCESS.
  - (K) INDICATES APPROVED TYPE SMOKE DETECTOR, LOCATED UP STREAM OF UNIT OSA INTAKE.
  - (L) INDICATES CONNECTION OF 3/4" CONDENSATE DRAIN LINE BY PLUMBING CONTRACTOR, ROUTED TO AN APPROVED RECEPTOR. NO TRAP OR VENT REQUIRED.
  - (M) INDICATES GREASE EXHAUST DUCTWORK TO FAN CONNECTION WRAPPED WITH 2-LAYERS FIRE WRAP. SEE SHEET M2.0 FOR SPECIFICATION.
  - (N) INDICATES 1/2" DOMESTIC CITY WATER SUPPLY STUB-UP LOCATION AND 1/4" CONNECTION TO EQUIPMENT COMPLETE WITH SHUT-OFF VALVE.
  - (O) INDICATES FACTORY PLATFORM, FURNISHED AND SET IN PLACE BY THE MECHANICAL CONTRACTOR, SECURED TO ROOF BY THE GENERAL CONTRACTOR.
  - (P) INDICATES ANGLE IRON SUPPORT SET ON ERICO PIPE BASE PIER.
  - (Q) INDICATES DUCT MOUNTED SMOKE DETECTOR IN SUPPLY AIR PLENUM INSIDE UNIT. ACCESSIBLE THROUGH UNIT ACCESS DOOR - LABEL ON UNIT ACCESS DOOR SHALL INDICATE "SMOKE DETECTOR INSIDE THIS ACCESS PANEL".

**ROOF PLAN** SCALE 1/4" = 1'-0" 1

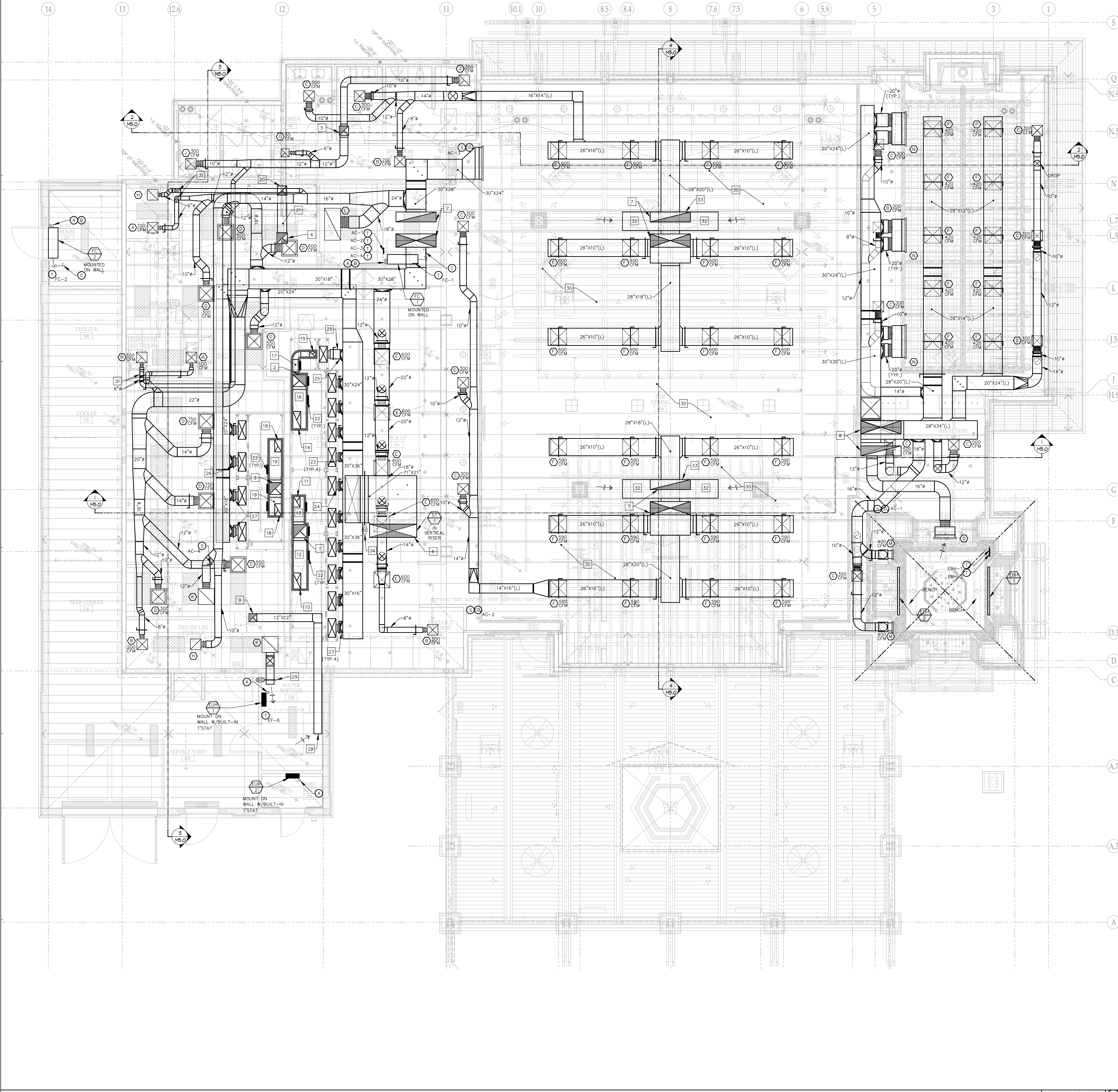


Project Name and Location

**Lazy Dog**  
 PERIMETER MALL  
 4532 ASHFORD DUNWOODY ROAD  
 DUNWOODY, GA 30346

MECHANICAL ROOF PLAN

Sheet No.: **M3.0**  
 Print Date: 26 April 2021



**PLAN NOTES**

- 1 20"x20" 16 GA. WELDED U.T.R. TO EF-1 (5,000 CFM @ 1,800 FPM).
- 2 20"x18" 16 GA. WELDED U.T.R. TO EF-2 (4,200 CFM @ 1,680 FPM).
- 3 18"x18" 16 GA. WELDED U.T.R. TO EF-3 (3,800 CFM @ 1,688 FPM).
- 4 16"x16" SEALED ALUMINUM U.T.R. TO EF-4 (1,400 CFM).
- 5 14"x14" GENERAL EXHAUST U.T.R. TO EF-5 (750 CFM)
- 6 71"x21" MUA U.T.R. TO MUA-1 (10,790 CFM).
- 7 60"x20"(L) SA & 60"x18"(L) RA U.T.R. TO AC-UNIT.
- 8 48"x20"(L) SA & 48"x20"(L) RA, TRANSITION TO 60"x20"(L) SA & 60"x18"(L) RA U.T.R. TO AC-1.
- 9 12"x12" GENERAL EXHAUST U.T.R. TO EF-6 (300 CFM).
- 10 12"x24" 16 GA WELDED INTO HOOD (3,200 CFM @ 1,600 FPM).
- 11 10"x16" 16 GA WELDED INTO HOOD (1,800 CFM @ 1,620 FPM).
- 12 20"x14" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (3,200 CFM @ 1,646 FPM).
- 13 16"x10" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (1,800 CFM @ 1,620 FPM).
- 14 12"x26" 16 GA WELDED INTO HOOD (3,400 CFM @ 1,569 FPM).
- 15 9"x8" 16 GA WELDED INTO HOOD (800 CFM @ 1,600 FPM).
- 16 20"x14" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (3,400 CFM @ 1,749 FPM).
- 17 8"x9" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (800 CFM @ 1,600 FPM).
- 18 10"x18" 16 GA WELDED INTO HOOD (1,900 CFM @ 1,520 FPM).
- 19 18"x10" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (1,900 CFM @ 1,520 FPM).
- 20 14"x14" SEALED ALUMINUM INTO HOOD (1,400 CFM).
- 21 14"x14" SEALED ALUMINUM, SLOPE DN. TOWARDS HOOD (1,400 CFM).
- 22 GREASE EXHAUST CLEAN OUT ACCESS DOOR.
- 23 14" MUA INTO 28"x12" MAKE UP AIR PLENUM (650 CFM).
- 24 14" MUA INTO 28"x12" MAKE UP AIR PLENUM (800 CFM).
- 25 14" MUA INTO 24"x12" MAKE UP AIR PLENUM (640 CFM).
- 26 14" MUA INTO 28"x12" MAKE UP AIR PLENUM (825 CFM).
- 27 14" MUA INTO 28"x12" MAKE UP AIR PLENUM (850 CFM).
- 28 12"x12" EXHAUST INTAKE WITH BIRDSCREEN, B.O.D. @ 15"-6" A.F.F. (300 CFM).
- 29 12"x12" TRANSFER AIR WITH BIRDSCREEN AND BACKDRAFT DAMPER, B.O.D. @ 15"-6" A.F.F.
- 30 EXPOSED DUCT IN THIS AREA - DUCT AND DIFFUSERS TO BE PAINT READY.
- 31 6" DUCT DROP DOWN THROUGH PLATFORM TO CEILING BELOW.
- 32 12'-0" LONG 24"x28" (L) R.A. PLENUM, WITH BIRDSCREEN AT OPENINGS ON BOTH SIDES, TIGHT TO UNDERSIDE OF ROOF IN BETWEEN STRUCTURE.
- 33 RETURN AIR DROP FROM UNIT ON ROOF FULL SIZE OF UNIT CONNECTION.
- 34 SMOKE DETECTOR, LOCATED IN SUPPLY AIR STREAM OF MAKE UP AIR DUCT.



Stamp and Signature

Revision	Date	Description
20	SEP 2019	PLAN CHECK SUBMITTAL
01	NOV 2019	PLAN CHECK RESUBMITTAL
22	FEB 2021	ISSUED FOR BID
30	JAN 2023	ISSUED FOR CONSTRUCTION

**DUCTWORK NOTES:**

1. NO DUCTWORK SHALL PASS OVER ELECTRICAL PANELS IN PREPARATION KITCHEN AREA
2. ALL MVD'S SHALL HAVE RED TAG FOR IDENTIFICATION
3. DUCTS ADJACENT TO HOOD SHALL BE RUN AS HIGH AS POSSIBLE TO ALLOW HOOD ACCESS.

**NOTES:**

1. PROVIDE SPN IN FITTING WITH EXTRACTOR AT ALL ROUND TO RECTANGULAR DUCT TAPS

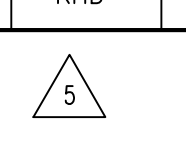
**EQUIPMENT LEGEND**

- (C) INDICATES LINE VOLTAGE CONDUIT AND WIRING STUB-UP LOCATION CONNECTION TO EQUIPMENT BY ELECTRICAL CONTRACTOR.
- (E) INDICATES LOW VOLTAGE CONDUIT AND WIRING STUB-UP LOCATION CONNECTION TO EQUIPMENT BY ELECTRICAL CONTRACTOR.
- (D) INDICATES 3/4" CONDENSATE DRAIN (BY P.C.)

**DIFFUSER SCHEDULE**

TAG	SIZE	TYPE	MAKE	MODEL	MOUNTING	REMARKS
(A)	10"x10"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
(B)	12"x12"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
(C)	16"x16"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
(D)	20"x20"	MODULAR CORE	METAL-AIRE	90006	T-BAR CEILING	LAY-IN
(E)	20"x20"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
(F)	20"x20"	MODULAR CORE	METAL-AIRE	90001	EXPOSED	PAINT-READY
(G)	10"x10"	FIX. BLD.	METAL-AIRE	RHD	GYP. BD. CEILING	-
(H)	12"x12"	FIX. BLD.	METAL-AIRE	RHD	GYP. BD. CEILING	-
(I)	16"x16"	FIX. BLD.	METAL-AIRE	RHD	GYP. BD.	-
(K)	22"x22"	FIX. BLD.	METAL-AIRE	RHD	T-BAR CEILING	LAY-IN
(L)	46"x22"	FIX. BLD.	METAL-AIRE	RHD	T-BAR CEILING	LAY-IN
(M)	16"x10"	DOUBLE REFLECTION	METAL-AIRE	-	SIDEWALL	SUPPLY
(N)	48"x30"	FIX. BLD.	METAL-AIRE	RHD	SIDEWALL	RETURN
(P)	28"x18"	FIX. BLD.	METAL-AIRE	-	SIDEWALL	SUPPLY
(Q)	30"x14"	FIX. BLD.	METAL-AIRE	RHD	SIDEWALL	RETURN

**KEY NOTES:**



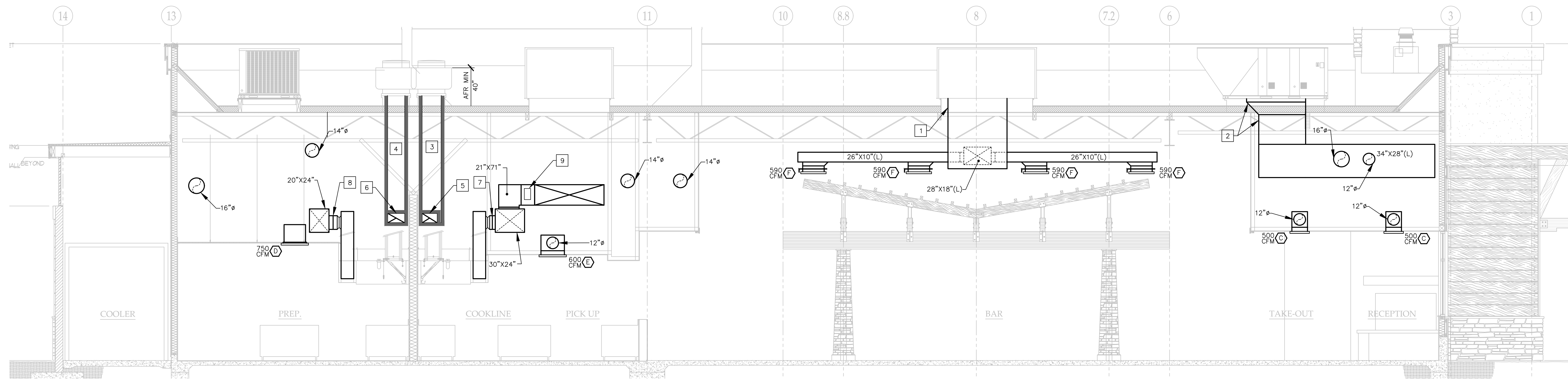
Project Name and Location

**Lazy Dog**  
 PERIMETER MALL  
 4532 ASHFORD DUNWOODY ROAD  
 DUNWOODY, GA 30346

MECHANICAL FLOOR PLAN

Sheet No.:

M4.0  
 Print Date: 26 April 2021



MECHANICAL SECTION - BOH, BAR, AND RECEPTION

SCALE 1/4" = 1'-0"

PLAN NOTES

- 1 60"x20"(L) SA & 60"x18"(L) RA U.T.R. TO AC-UNIT.
- 2 48"x20"(L) SA & 48"x20"(L) RA TRANSITION TO 60"x20"(L) SA & 60"x18"(L) RA U.T.R. TO AC-1.
- 3 20"x20" 16 GA WELDED U.T.R. TO EF-1 (5,000 CFM @ 1,800 FPM).
- 4 18"x18" 16 GA WELDED U.T.R. TO EF-3 (3,800 CFM @ 1,658 FPM).
- 5 16"x10" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (1,800 CFM @ 1,520 FPM).
- 6 18"x10" 16 GA WELDED, SLOPE DN. TOWARDS HOOD (1,900 CFM @ 1,520 FPM).
- 7 14"ø MUA INTO 28"x12" MAKE UP AIR PLENUM (650 CFM).
- 8 14"ø MUA INTO 28"x12" MAKE UP AIR PLENUM (825 CFM).
- 9 SMOKE DETECTOR IN MUA AIR STREAM.

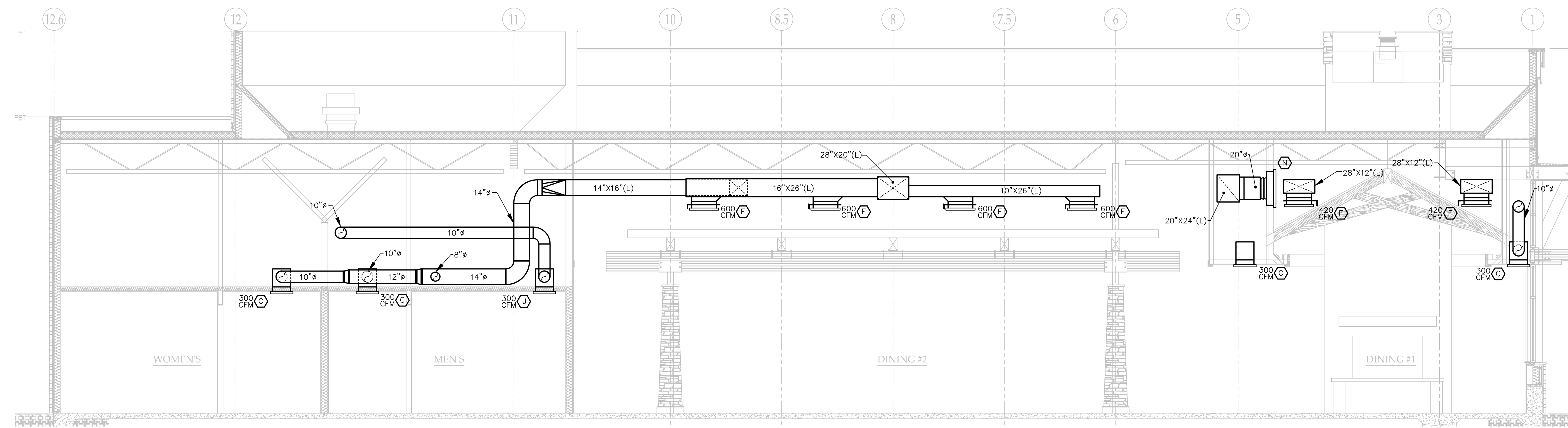
DIFFUSER SCHEDULE

TAG	SIZE	TYPE	MAKE	MODEL	MOUNTING	REMARKS
Ⓢ	16"x16"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
Ⓣ	20"x20"	MODULAR CORE	METAL-AIRE	90006	T-BAR CEILING	LAY-IN
Ⓥ	20"x20"	MODULAR CORE	METAL-AIRE	90001	EXPOSED	PAINT-READY
Ⓦ	20"x20"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-

KEY NOTES:

PLAN NOTES

- 1 xxxx.



MECHANICAL SECTION - RESTROOMS, DINING #1, AND DINING #2

SCALE 1/4" = 1'-0"

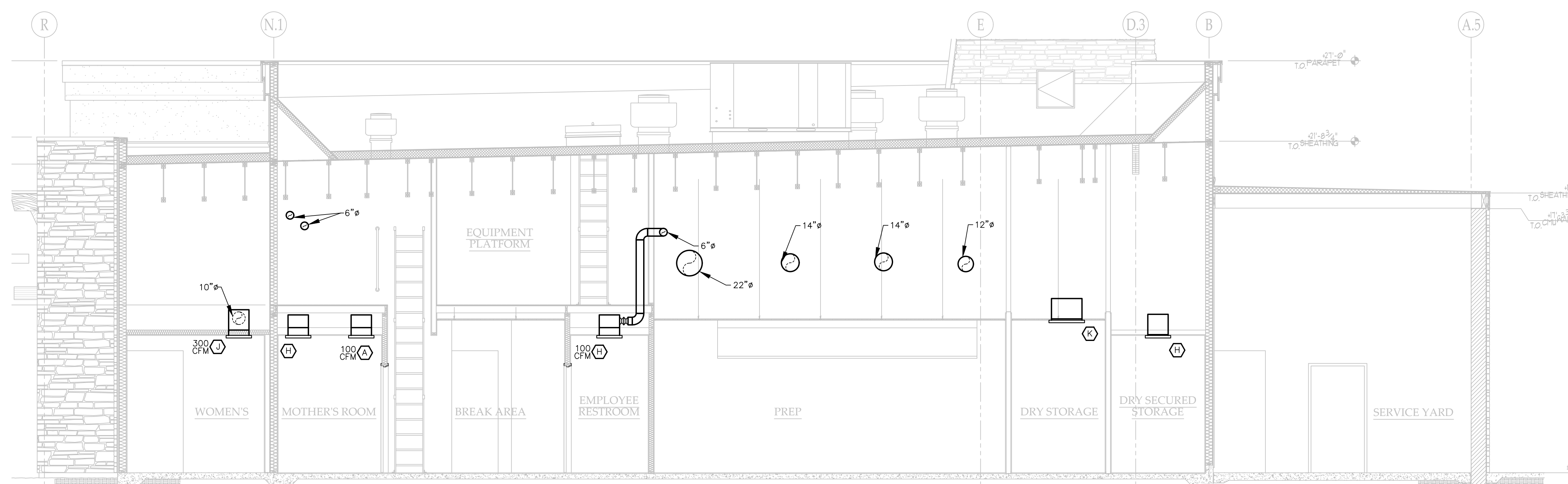
DIFFUSER SCHEDULE

TAG	SIZE	TYPE	MAKE	MODEL	MOUNTING	REMARKS
Ⓢ	16"x16"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
Ⓣ	20"x20"	MODULAR CORE	METAL-AIRE	90001	EXPOSED	PAINT-READY
Ⓥ	16"x16"	FIX. BLD.	METAL-AIRE	RHD	GYP. BD.	-
Ⓦ	48"x30"	FIX. BLD.	METAL-AIRE	RHD	SIDEWALL	RETURN

KEY NOTES:

PLAN NOTES

- 1 xxxx.



MECHANICAL SECTION - WOMEN'S RESTROOM, BOH, AND COOKLINE

SCALE 1/4" = 1'-0"

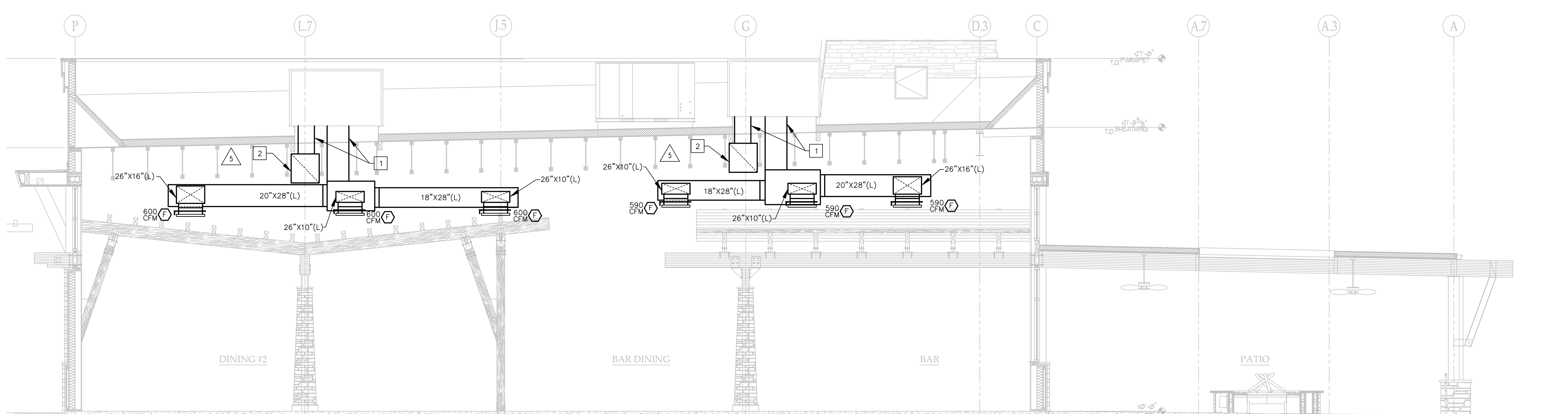
DIFFUSER SCHEDULE

TAG	SIZE	TYPE	MAKE	MODEL	MOUNTING	REMARKS
Ⓢ	10"x10"	MODULAR CORE	METAL-AIRE	90001	GYP. BD. CEILING	-
Ⓣ	12"x12"	FIX. BLD.	METAL-AIRE	RHD	GYP. BD. CEILING	-
Ⓥ	18"x16"	FIX. BLD.	METAL-AIRE	RHD	GYP. BD.	-

KEY NOTES:

PLAN NOTES

- 1 60"x20"(L) SA & 60"x18"(L) RA U.T.R. TO AC-UNIT.
- 2 12'-0" LONG 24"x28" (L) R.A. PLENUM, WITH BIRDSCREEN AT OPENINGS ON BOTH SIDES, TIGHT TO UNDERSIDE OF ROOF IN BETWEEN STRUCTURE.



MECHANICAL SECTION - DINING #2, BAR DINING, AND BAR

SCALE 1/4" = 1'-0"

DIFFUSER SCHEDULE

TAG	SIZE	TYPE	MAKE	MODEL	MOUNTING	REMARKS
Ⓢ	20"x20"	MODULAR CORE	METAL-AIRE	90001	EXPOSED	PAINT-READY

KEY NOTES:



Stamp and Signature

ISSUANCE	Date	Description
20	SEPT 2019	PLAN CHECK SUBMITTAL
01	NOV 2019	PLAN CHECK RESUBMITTAL
22	FEB 2021	ISSUED FOR BD
30	JAN 2023	ISSUED FOR CONSTRUCTION

REVISION	No	Description
05	DEC 2019	PLAN CHECK RESUBMITTAL
30	JAN 2020	ISSUED FOR CONSTRUCTION
26	MAR 2020	PLAN CHECK RESUBMITTAL
24	APR 2021	ISSUED FOR CONSTRUCTION #2

Project Name and Location

**Lazy Dog**  
 PERIMETER MALL  
 4532 ASHFORD DUNWOODY ROAD  
 DUNWOODY, GA 30346

MECHANICAL SCHEDULES & DETAILS

Project No.:  
 Sheet No.:  
**M5.0**  
 Print Date: 26 April 2021

COMcheck Software Version 4.1.1.0  
Envelope Compliance Certificate

**Project Information**  
 Energy Code: 90.1 (2007) Standard  
 Project Title: Lazy Dog Restaurant  
 Location: Dunwoody, Georgia  
 Climate Zone: 3a  
 Project Type: New Construction  
 Vertical Glazing / Wall Area: 18%

Construction Site: 4800 Ashford Dunwoody Road, Dunwoody, GA 30346  
 Owner/Agent: Designer/Contractor:

Building Area	Floor Area
1-Restaurant (Oving: Family): Nonresidential	8359

Envelope Assemblies	Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor
Roof 1: Insulation Entirely Above Deck, High Albedo Roof Required, (Bldg. Use 1 - Restaurant)		8359	---	30.0	0.032	0.048
Floor 1: Slab-On-Grade/Unheated, (Bldg. Use 1 - Restaurant) (c)		413	---	---	0.730	0.730
<b>NORTH</b>						
Exterior Wall 1: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		2461	19.0	0.0	0.087	0.089
Window 1: Metal Frame/Fixed, Perf. Specs., Product ID PPG Solartan, SHGC 0.40, (Bldg. Use 1 - Restaurant) (b)		314	---	---	0.270	0.600
<b>EAST</b>						
Exterior Wall 4: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		1610	19.0	0.0	0.087	0.089
Window 4: Metal Frame/Fixed, Perf. Specs., Product ID PPG Solartan, SHGC 0.40, (Bldg. Use 1 - Restaurant) (b)		597	---	---	0.270	0.600
<b>SOUTH</b>						
Exterior Wall 3: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		2461	19.0	0.0	0.087	0.089
Window 3: Metal Frame/Fixed, Perf. Specs., Product ID PPG Solartan, SHGC 0.40, (Bldg. Use 1 - Restaurant) (b)		533	---	---	0.270	0.600
<b>WEST</b>						
Exterior Wall 2: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		1610	19.0	0.0	0.087	0.089

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.  
 (b) Fenestration product performance must be verified in accordance with NFRC and requires supporting documentation.  
 (c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Project Title: Lazy Dog Restaurant Report date: 10/31/19  
 Data filename: V:\19017\Documents\EnergyLD-Perimeter COMcheck.cck Page 1 of 14

Section # & Req. ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.3.3.3 (FO1)	Below-grade wall insulation R-value.	R-___	R-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.3.3.3 (FO1)	Slab edge insulation R-value.	R-___ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	R-___ <input type="checkbox"/> Unheated <input type="checkbox"/> Heated	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (FO2)	Slab edge insulation installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.3.3.5 (FO5)	Slab edge insulation depth/length.	___ft	___ft	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.7 (FO7)	Insulation in contact with the ground has <= 3% water absorption rate per ASTM C272.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.8 (FO9)	Freeze protection and snowmelt sensing system sensors for freeze connection to controls.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.

**Additional Comments/Assumptions:**

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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Section # & Req. ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.1.1 (NI1)	All sources of air leakage in the building thermal envelope are sealed, caulked, gasketed, weather stripped or wrapped with moisture vapor permeable wrapping material to minimize air leakage.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.3.3.1 (NI2)	Roof R-value. For some ceiling systems, verification may need to occur during framing inspection.	R-___ <input type="checkbox"/> Above deck <input type="checkbox"/> Metal <input type="checkbox"/> Attic	R-___ <input type="checkbox"/> Above deck <input type="checkbox"/> Metal <input type="checkbox"/> Attic	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (NI3)	Roof insulation installed per manufacturer's instructions. (Roof or poured loose-fill insulation is installed only where the ceiling slope is <= 3:12.)			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.3.3.1 (NI5)	High-albedo roofs meet solar reflectance of 0.79 and thermal emittance of 0.75 or SR1 of 82.	SR-___ SR1-___	SR-___ SR1-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.3.3.2 (NI6)	Above-grade wall insulation R-value.	R-___ <input type="checkbox"/> Mass <input type="checkbox"/> Metal <input type="checkbox"/> Steel <input type="checkbox"/> Wood	R-___ <input type="checkbox"/> Mass <input type="checkbox"/> Metal <input type="checkbox"/> Steel <input type="checkbox"/> Wood	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.2 (NI7)	Above-grade wall insulation installed per manufacturer's instructions.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.3.3.4 (NI8)	Floor insulation R-value.	R-___ <input type="checkbox"/> Mass <input type="checkbox"/> Steel <input type="checkbox"/> Wood	R-___ <input type="checkbox"/> Mass <input type="checkbox"/> Steel <input type="checkbox"/> Wood	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.1.1 (NI10)	Building envelope insulation is labeled with R-value or insulation certificate providing R-value and other relevant data.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.4 (NI11)	Eaves are baffled to deflect air to above the insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.5 (NI12)	Insulation is installed in substantial contact with the inside surface using conditioned space from unconditional space.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.6 (NI13)	Necessary equipment installed in building envelope assemblies does not compress the adjacent insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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Envelope PASSES: Design 5% better than code

Envelope Compliance Statement

Compliance Statement: The proposed envelope design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed envelope systems have been designed to meet the 90.1 (2007) Standard requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

**Project Information**  
 Name - Title: Signature: Date:

Construction Site: 4800 Ashford Dunwoody Road, Dunwoody, GA 30346  
 Owner/Agent: Designer/Contractor:

Building Area	Floor Area
1-Restaurant (Oving: Family): Nonresidential	8359

Envelope Assemblies	Assembly	Gross Area or Perimeter	Cavity R-Value	Cont. R-Value	Proposed U-Factor	Budget U-Factor
Roof 1: Insulation Entirely Above Deck, High Albedo Roof Required, (Bldg. Use 1 - Restaurant)		8359	---	30.0	0.032	0.048
Floor 1: Slab-On-Grade/Unheated, (Bldg. Use 1 - Restaurant) (c)		413	---	---	0.730	0.730
<b>NORTH</b>						
Exterior Wall 1: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		2461	19.0	0.0	0.087	0.089
Window 1: Metal Frame/Fixed, Perf. Specs., Product ID PPG Solartan, SHGC 0.40, (Bldg. Use 1 - Restaurant) (b)		314	---	---	0.270	0.600
<b>EAST</b>						
Exterior Wall 4: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		1610	19.0	0.0	0.087	0.089
Window 4: Metal Frame/Fixed, Perf. Specs., Product ID PPG Solartan, SHGC 0.40, (Bldg. Use 1 - Restaurant) (b)		597	---	---	0.270	0.600
<b>SOUTH</b>						
Exterior Wall 3: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		2461	19.0	0.0	0.087	0.089
Window 3: Metal Frame/Fixed, Perf. Specs., Product ID PPG Solartan, SHGC 0.40, (Bldg. Use 1 - Restaurant) (b)		533	---	---	0.270	0.600
<b>WEST</b>						
Exterior Wall 2: Wood-Framed, 16" o.c., (Bldg. Use 1 - Restaurant)		1610	19.0	0.0	0.087	0.089

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.  
 (b) Fenestration product performance must be verified in accordance with NFRC and requires supporting documentation.  
 (c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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Section # & Req. ID	Framing / Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.4.1.2 (FR1)	Factory-built fenestration and doors are labeled as meeting air leakage requirements.	Fenestration cfm/ft <sup>2</sup> Doors cfm/ft <sup>2</sup>	Fenestration cfm/ft <sup>2</sup> Doors cfm/ft <sup>2</sup>	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.4.3.4 (FR2)	Vertical fenestration U-factor.	U-___	U-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.4.3.4 (FR2)	Skylight fenestration U-factor.	U-___	U-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.4.4.1 (FR3)	Vertical fenestration SHGC value.	SHGC-___	SHGC-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.4.4.2 (FR3)	Skylight SHGC value.	SHGC-___	SHGC-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.
5.8.2.1 (FR4)	Fenestration products rated in accordance with NFRC.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.2.2 (FR4)	Fenestration products are certified as to performance labels or certificates provided.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.2.3 (FR4)	U-factor of opaque doors associated with the building thermal envelope meets requirements.	U-___ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging	U-___ <input type="checkbox"/> Swinging <input type="checkbox"/> Nonswinging	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Envelope Assemblies table for values.

**Additional Comments/Assumptions:**

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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Section # & Req. ID	Insulation Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
5.8.1.7 (NI14)	Exterior insulation is protected from damage with a protective material. Verification for rapped foundation insulation may need to occur during Foundation inspection.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7 (NI15)	Attics and mechanical rooms have insulation protected where adjacent to attic or equipment access.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7 (NI16)	Foundation vents do not interfere with insulation.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
5.8.1.7 (NI17)	Insulation intended to meet the roof insulation requirements cannot be installed on top of a suspended ceiling. Mark this requirement compliant if insulation is installed accordingly.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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COMcheck Software Version 4.1.1.0  
Mechanical Compliance Certificate

**Project Information**  
 Energy Code: 90.1 (2007) Standard  
 Project Title: Lazy Dog Restaurant  
 Location: Dunwoody, Georgia  
 Climate Zone: 3a  
 Project Type: New Construction

Construction Site: 4800 Ashford Dunwoody Road, Dunwoody, GA 30346  
 Owner/Agent: Designer/Contractor:

Building Area	Floor Area
1-Restaurant (Oving: Family): Nonresidential	8359

Quantity	System Type & Description
1	HVAC System 1 (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 360 kBtu/h Proposed Efficiency = 80.0% Ee, Required Efficiency: 80.00 % Ee Cooling: 1 each - Single Package DX Unit, Capacity = 228 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER Fan System: AC-1 (Entry & Dining 2 - Compliance (Motor nameplate HP method)) - Passes Fans: FAN 1 Supply, Constant Volume, 8000 CFM, 7.5 motor nameplate hp
1	HVAC System 2 (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 360 kBtu/h Proposed Efficiency = 80.0% Ee, Required Efficiency: 80.00 % Ee Cooling: 1 each - Single Package DX Unit, Capacity = 228 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER Fan System: AC-2 (Libr - Compliance (Motor nameplate HP method)) - Passes Fans: FAN 2 Supply, Constant Volume, 8000 CFM, 7.5 motor nameplate hp
1	HVAC System 3 (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 360 kBtu/h Proposed Efficiency = 80.0% Ee, Required Efficiency: 80.00 % Ee Cooling: 1 each - Single Package DX Unit, Capacity = 228 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER Fan System: AC-3 (Dining 1 - Compliance (Motor nameplate HP method)) - Passes Fans: FAN 3 Supply, Constant Volume, 8000 CFM, 7.5 motor nameplate hp
1	HVAC System 4 (Single Zone) Heating: 1 each - Central Furnace, Gas, Capacity = 360 kBtu/h Proposed Efficiency = 80.0% Ee, Required Efficiency: 80.00 % Ee Cooling: 1 each - Single Package DX Unit, Capacity = 228 kBtu/h, Air-Cooled Condenser Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER Fan System: AC-4 (BOH - Compliance (Motor nameplate HP method)) - Passes Fans: FAN 4 Supply, Constant Volume, 8000 CFM, 7.5 motor nameplate hp

(a) Budget U-factors are used for software baseline calculations ONLY, and are not code requirements.  
 (b) Fenestration product performance must be verified in accordance with NFRC and requires supporting documentation.  
 (c) Slab-On-Grade proposed and budget U-factors shown in table are F-factors.

Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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Section # & Req. ID	Mechanical Rough-In Inspection	Plans Verified Value	Field Verified Value	Complies?	Comments/Assumptions
6.4.1.4 (ME1)	HVAC equipment efficiency verified. Non-NACCA HVAC equipment labeled as meeting 90.1.	Efficiency-___	Efficiency-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	See the Mechanical Systems list for values.
6.4.1.4 (ME1)	Stair and elevator shaft vents have motorized dampers that automatically close.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.3.4 (ME5)	Ventilation fans >= 0.75 hp have automatic controls to shut off when not required.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Exception: HVAC systems intended to operate continuously.
6.4.3.9 (ME6)	Demand control ventilator provided for spaces >= 100 ft <sup>2</sup> and >= 40 people/1000 ft <sup>2</sup> occupant density and served by systems with air side economizer, auto modulating outside air dampers control, or design airflow >= 3,000 cfm.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.1 (ME7)	Insulation exposed to weather protected from damage. Insulation outside of the conditioned space and associated with cooling systems is vapor retardant.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.2 (ME7)	HVAC ducts and plenums insulated.	R-___	R-___	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.3 (ME9)	HVAC piping insulation thickness.	___in.	___in.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.1 (ME10)	Ducts and plenums sealed based on static pressure and location.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.4.2 (ME11)	Ductwork operating >= 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.4.2 (ME11)	Ductwork operating >= 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.4.2 (ME11)	Ductwork operating >= 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.4.2 (ME11)	Ductwork operating >= 3 in. water column requires air leakage testing.			<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Lazy Dog Restaurant Report date: 10/31/19  
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Section # & Req. ID	Final Inspection	Complies?	Comments/Assumptions
5.4.1.3 (FI1)	Weatherstrips installed on all loading dock cargo doors in Climate Zones 4-8.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Exception: Requirement does not apply.
6.4.3.1 (FI2)	Heating and cooling to each zone is controlled by a thermostat control.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.1.2 (FI3)	Thermostat controls have a 5 °F deadband.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.1.3 (FI3)	When humidification and dehumidification are provided to a zone, simultaneous operation is prohibited.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.7.2.1 (FI7)	Furnished HVAC as-built drawings submitted within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	
6.7.2.2 (FI8)	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	
6.7.2.3 (FI9)	An air and/or hydronic system balancing report is provided for HVAC systems serving zones >= 5,000 ft <sup>2</sup> of conditioned area.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	
6.7.2.4 (FI10)	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.2 (FI20)	Temperature controls have setpoint overlap restrictions.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.3.1 (FI21)	HVAC systems equipped with at least one automatic shutdown control.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Requirement will be met.
6.4.3.3.2 (FI22)	Setback controls allow automatic restart and temporary operation as required for maintenance.	<input type="checkbox"/> Complies <input type="checkbox"/> Does Not <input type="checkbox"/> Not Applicable	Exception: null.

**Additional Comments/Assumptions:**  
 1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)  
 Project Title: Lazy Dog Restaurant Report date: 10/31/19  
 Data filename: V:\19017\Documents\EnergyLD-Perimeter COMcheck.cck Page 13 of 14

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 90.1 (2007) Standard requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Project Title: Lazy Dog Restaurant Report date: 10/31/19  
 Data filename: V:\19017\Documents\EnergyLD-Perimeter COMcheck.cck Page 4 of 14

Section # & Req. ID	Plan Review	Complies?	Comments/Assumptions
4.2.2 (PR1)	Plans and/or specifications provide all information with which compliance can be determined for the building envelope and documents where exceptions to the standard are claimed.		