



MECHANICAL SPECIFICATIONS

GENERAL

- 1. ALL WORK, EQUIPMENT AND MATERIALS SHALL CONFORM TO THE LATEST APPLICABLE CODES OF THE AUTHORITY HAVING JURISDICTION, AND ALL APPLICABLE RULES, REGULATIONS, LAWS, AND ORDINANCES OF FEDERAL AND LOCAL AUTHORITIES. THEY INCLUDE THE FOLLOWING: LATEST EDITION OF NFPA-13 OWNERS INSURANCE UNDERWRITER THE SCOPE OF WORK INDICATED ON THESE DRAWINGS SHALL INCLUDE MECHANICAL AND FIRE PROTECTION SYSTEMS, FULLY TESTED AND READY FOR USE. CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY COMPONENTS, FITTINGS, HANGERS, SUPPORTS, AND ACCESSORIES NECESSARY FOR COMPLETE AND SAFE INSTALLATION AND USE OF ALL SYSTEMS INDICATED ON THE DRAWINGS. EXISTING CONDITIONS AND SITE EXAMINATIONS: PRIOR TO SUBMITTING A BID, CONTRACTOR SHALL VISIT THE SITE AND ACQUAINT HIMSELF WITH THE SITE CONDITIONS. LAYOUT SHOWN ON THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT FOR WORK AND SYSTEMS. PRIOR TO THE INSTALLATION, FABRICATION, REMOVAL OR RELOCATION OF ANY WORK, THE CONTRACTORS SHALL VERIFY ALL DIMENSIONS AND INVERTS IN THE FIELD AND COORDINATE WITH ALL OTHER TRADES, ARCHITECTURAL PLANS AND BUILDING STRUCTURE. WHERE CONFLICTS OCCUR, OR IF THE CONNECTIONS CANNOT BE MADE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO ANY INSTALLATION AND FABRICATION. COORDINATE ALL EQUIPMENT LOCATION WITH THE ARCHITECTURAL DRAWINGS. DO NOT SCALE THESE DRAWINGS. WAIVER OF RESPONSIBILITY OR REQUESTS FOR ADDITIONAL PAYMENT BASED ON LACK OF KNOWLEDGE OF CONDITIONS AT THE SITE WILL NOT BE ACCEPTED. CONTRACTOR SHALL VERIFY ALL DIMENSIONS IN THE FIELD AND REPORT EACH DISCREPANCY BEFORE START OF WORK. QUALITY OF MATERIALS: NEW, BEST OF THEIR KIND, FREE FROM DEFECTS. SHOP DRAWINGS: SUBMIT FOUR (4) COPIES OF SHOP DRAWINGS TO ENGINEERS FOR ALL MECHANICAL EQUIPMENT, PRIOR TO ORDER, BUILT, OR INSTALLED. CLEARANCES: CONTRACTOR SHALL COORDINATE EQUIPMENT LOCATION AS REQUIRED TO PROVIDE PROPER CLEARANCES FOR SERVICE AND OPERATION OF THE EQUIPMENT. WIRING: CONTRACTOR SHALL VERIFY ALL VOLTAGE AND POWER REQUIREMENTS AND COORDINATE WITH ELECTRICAL CONTRACTOR AS REQUIRED. SEE ELECTRICAL DRAWINGS FOR EQUIPMENT POWER REQUIREMENTS. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY WIRING, TRANSFORMERS, CONTROLS, HARDWARE, SAFETY DEVICES, AND ACCESSORIES FOR PROPER INSTALLATION AND OPERATION OF ALL SYSTEMS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. SLAB PENETRATIONS: ALL PENETRATIONS REQUIRED FOR NEW WORK. SLAB SHALL BE X-RAYED OR SCANNED WITH GROUND PENETRATING RADAR TO LOCATE REINFORCING BARS, POST TENSIONING CABLES, PIPING CONDUITS, ETC. ALL SUCH COMPONENTS SHALL BE CLEARLY MARKED ON SLAB SURFACE PRIOR TO DRILLING. CONTRACTOR SHALL NOT CUT BARS, CABLES, ETC. WITHOUT PRIOR WRITTEN AUTHORIZATION BY OWNER, AND SHALL REPAIR ANY DAMAGE CAUSED BY CORE DRILLING. NOTIFY THE OWNER PRIOR TO DRILLING TO ALLOW A FIELD INSPECTION OF CORE LOCATIONS. IN ADDITION ALL PENETRATIONS THROUGH FLOOR SLABS SHALL BE PROPERLY FIRE STOPPED. COORDINATE WITH STRUCTURAL ENGINEER AND BUILDING MANAGEMENT. PROVIDE ALL NECESSARY HANGERS FOR SUPPORT OF HORIZONTAL AND VERTICAL PIPING AND DUCTWORK IN ACCORDANCE WITH THE IMC SECTION 305 AND MANUFACTURERS RECOMMENDATIONS. PROVIDE SLEEVES AND ESCUTCHEONS FOR ALL PIPING PASSING THROUGH WALLS OR FLOORS. PIPING AND DUCTWORK IS TO BE SUPPORTED INDEPENDENTLY SO NO WEIGHT IS SUPPORTED BY THE EQUIPMENT. ACCESS PANELS: CONTRACTOR SHALL FURNISH AND INSTALL ACCESS PANELS AS REQUIRED PER FIELD CONDITIONS AND EQUIPMENT REQUIREMENTS. LOCATIONS SHALL BE APPROVED BY THE ARCHITECT. CONTRACTOR SHALL COORDINATE LOCATION OF CONTROLS, GAGES, THERMOMETERS, VALVES, AND SYSTEM COMPONENTS WITH FIELD CONDITIONS TO PROVIDE PROPER CLEARANCES FOR SERVICE AND OPERATION OF EQUIPMENT. PROVIDE DIELECTRIC FITTINGS, COUPLINGS, OR FLANGE UNIONS ISOLATING JOINTS ON ALL FERROUS TO NONFERROUS PIPE CONNECTIONS TO PREVENT AN ELECTROLYTIC ACTION BETWEEN DISSIMILAR METALS. CONTRACTOR SHALL SEAL ALL UNFINISHED PENETRATIONS TO MATCH EXISTING FINISH. PROVIDE FIRE STOP WHERE REQUIRED. ALL LARGE PENETRATIONS THROUGH STRUCTURAL COMPONENTS SHALL BE SEALED PER THE ARCHITECTS AND STRUCTURAL ENGINEERS INSTRUCTIONS. ENGINEER OR ARCHITECT HAS NOT CONSIDERED THE POTENTIAL PRESENCE OF HAZARDOUS MATERIALS IN THE DESIGN. SHOULD THE CONTRACTOR DISCOVER ANY POTENTIALLY HAZARDOUS MATERIALS DURING THE PROCESS OF THE WORK, DO NOT DISTURB IT AND IMMEDIATELY NOTIFY THE OWNER. ALL MOTOR DRIVEN EQUIPMENT SHALL BE INSTALLED WITH VIBRATION ISOLATORS UNLESS OTHERWISE NOTED. FOLLOW MANUFACTURERS RECOMMENDED INSTRUCTIONS. PIPING CONNECTED TO VIBRATING EQUIPMENT SHALL BE ISOLATED BY RESILIENT HANGERS OR FLEXIBLE CONNECTORS. CONNECT MECHANICAL EQUIPMENT TO DUCTWORK USING RUBBERIZED CANVAS FLEXIBLE CONNECTIONS. UPON THE COMPLETION OF THE INSTALLATION OF EACH SYSTEM, DEMONSTRATE THAT THE SYSTEM OPERATES PROPERLY IN EACH MODE OF OPERATION. PROVIDE MAINTENANCE AND INSTRUCTION MANUALS TO THE USER. PIPING SYSTEM IDENTIFICATION: FOR ALL PIPING SYSTEMS WITHIN THE SCOPE OF WORK, IDENTIFY ALL NEW PIPING (CONCEALED OR EXPOSED) WITH PIPE MARKERS THAT LABEL THE DIRECTION OF FLOW AND SYSTEM TYPE. ON INSULATED PIPE, INSTALL LABELS OVER INSULATION. PROVIDE A LABEL @ A MINIMUM OF EVERY 20' AND AT EACH FITTING (BRANCH, VALVE, TEE, ETC). UNLESS OTHERWISE NOTED, INSTALL ALL NEW PIPING AND DUCTWORK AS HIGH AS POSSIBLE (TIGHT TO THE STRUCTURE). IN A PLENUM RETURN SYSTEM, CONTRACTOR TO VERIFY NO PVC PIPING IS LOCATED WITHIN THE PLENUM. IF PVC IS LOCATED, CONTRACTOR TO NOTIFY CLIENT PROJECT MANAGER AND REPLACE WITH PLENUM RATED MATERIAL. PROVIDE COMPLETE AND PROPERLY FUNCTIONING MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION SYSTEMS AS INTENDED IN THESE DESIGN DOCUMENTS. ALL COMPONENTS AND EQUIPMENT MUST BE FULLY TESTED, POWERED, INTERLOCKED, ADJUSTED, AND BALANCED BY THE CONTRACTOR TO ENSURE ALL EQUIPMENT FUNCTIONS THROUGH THEIR FULL OPERATING RANGE IN COMPLIANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND CONSTRUCTION DOCUMENTS. MAINTAIN ALL ARCHITECTURAL PARAMETERS INCLUDING CEILING HEIGHT, CHASE WALLS, EQUIPMENT SCREENS, ROOM SIZES, PARTITION TYPES, INSULATION, ETC. UNLESS PRIOR WRITTEN AUTHORIZATION IS PROVIDED BY THE ARCHITECT. COORDINATE THE INSTALLATION OF ALL EQUIPMENT AND TRADES TO MAINTAIN ALL MANUFACTURER REQUIRED SERVICE CLEARANCES AND CLEARANCES REQUIRED BY THE NEC (NATIONAL ELECTRIC CODE). PROVIDE FIRE AND SMOKE DAMPERS WHERE DUCTWORK PENETRATES FIRE AND SMOKE PARTITIONS AS NOTED ON DRAWINGS AND REQUIRED PER LOCAL JURISDICTION. DAMPERS SHALL BE UL LISTED. FIRE AND SMOKE DAMPERS: FIRE AND SMOKE DAMPERS SHALL BE PROVIDED WITH AN APPROVED MEANS OF ACCESS, LARGE ENOUGH TO PERMIT INSPECTION AND MAINTENANCE OF THE DAMPER AND ITS OPERATING PARTS. THE ACCESS SHALL NOT AFFECT THE INTEGRITY OF FIRE-RESISTANCE-RATED ASSEMBLIES. ACCESS POINTS SHALL BE PERMANENTLY IDENTIFIED ON THE EXTERIOR BY A LABEL HAVING LETTERS NOT LESS THAN 6/8 INCH. MANUFACTURERS AND MODEL NUMBERS INDICATED ON THE CONTRACT DRAWINGS SHALL BE FOR REFERENCE AND BASIS OF DESIGN ONLY. VERIFY ALL EQUIPMENT REQUIREMENTS, PERFORMANCE, AND ACCESSORIES PRIOR TO ORDERING OF EQUIPMENT. ENGINEER SHALL TAKE NO RESPONSIBILITY FOR EQUIPMENT THAT IS IMPROPERLY ORDERED OR INSTALLED OR FOR SUBSTITUTED EQUIPMENT WITHOUT REVIEWING SUBMITTED SHOP DRAWINGS.

- 20. CONTRACTOR SHALL INSTALL CONSTRUCTION FILTERS ON ALL RETURN AIR INLETS DURING ALL CONSTRUCTION ACTIVITY. COORDINATE WITH BUILDING MANAGEMENT. PROVIDE ROOF PAVERS TO MATCH BUILDING STANDARD (WHERE APPLICABLE) IN ALL SERVICE AND MAINTENANCE AREAS FOR NEW ROOF EQUIPMENT AND PIPING. FOR ALL NEW AND RELOCATED EQUIPMENT COORDINATE THE INSTALLATION, MOUNTING REQUIREMENTS, AND STRUCTURAL MODIFICATIONS REQUIRED WITH A STRUCTURAL ENGINEER LICENSED IN THE LOCAL JURISDICTION. CONTRACTOR IS RESPONSIBLE FOR THE INSTALLATION OF THE EQUIPMENT AS NOTED ON THE DRAWINGS. WHEN REQUIRED, CONTRACTOR MUST RELOCATE ANY EXISTING EQUIPMENT, WIRING, DUCTWORK, CONTROLS, CIRCUITS, PIPING, COMPONENTS, ETC AS NEEDED TO INSTALL NEW EQUIPMENT AND COMPONENTS. THE DESIGN INTENT OF THE DRAWINGS MUST BE FOLLOWED. ALL NEW MECHANICAL EQUIPMENT AND PIPING SHALL BE PROVIDED WITH A PERMANENT IDENTIFICATION TAG, COORDINATE IDENTIFICATION WITH BUILDING ENGINEER. IF BUILDING ENGINEER HAS NO PREFERENCE OR IS NOT PRESENT, TAG SHALL BE A MINIMUM OF 2" HIGH, CLEARLY LEGIBLE WITH EQUIPMENT OR PIPE ID AND FLOW DIRECTION INDICATED.

INSULATION:

- 1. TEST RATINGS: SHALL BE IN ACCORDANCE WITH ASTM E84, NFPA # 225 OR UL 723. DUCT INSULATION (PER IECC): INSULATE ALL NEW SUPPLY AIR DUCTWORK WITH 2" THICK 1/2 LB (R-8 MINIMUM). ALL OTHER DUCTWORK SHALL BE INSULATED WITH 2" THICK 1/2 LB (R-8 MINIMUM, DENSITY FIBERGLASS BLANKET WITH VAPOR BARRIER JACKET. SEAL ALL VAPOR BARRIER SEAMS WITH A FLEXIBLE SEALANT. ALL DUCTWORK IN OPEN CEILING (EXPOSED) SHALL BE INTERNALLY INSULATED (INCLUDING SUPPLY TAPS). DUCTWORK THAT IS INTERNALLY LINED DOES NOT REQUIRE EXTERNAL INSULATION. DUCT LINING (BOUND LINING): PROVIDE 1" THICK LINING WITH AN AVERAGE DENSITY OF NOT LESS THAN 2" LBFT WHERE SHOWN ON THE DRAWINGS. INSULATION SHOULD BE TREATED WITH AN EPA-REGISTERED ANTI-MICROBIAL AGENT. PROVIDE SOUND LINING A MINIMUM OF 20' DOWNSTREAM OF ANY FAN-POWERED VAV BOX OR AHU.

HVAC EQUIPMENT

- 1. DUCTWORK: ALL DUCTWORK SHALL CONFORM TO THE LATEST ASHRAE AND SMACNA REQUIREMENTS TYPE: PRESSURE CLASS SEAL CLASS LOW PRESSURE 2" B MEDIUM PRESSURE 4" A RETURN 2" C OUTSIDE 2" A EXHAUST 1" B TRANSFER 1" C SHALL BE THE SAME SIZE AS THE DIFFUSER INLET. FLEXIBLE DUCTWORK AND CONNECTIONS SHALL BE UL CLASS 1 AND NOT BE OVER 8' IN LENGTH. FLEXIBLE DUCTWORK SHALL BE PRE-INSULATED WITH 1" THICK FIBERGLASS INSULATION. FLEXIBLE DUCT SHALL CONFORM TO NFPA 90A AND 90B. FURNISH AND INSTALL DUCT MOUNTED SMOKE DETECTORS AS SHOWN ON DRAWINGS AND AS REQUIRED PER CODE. ANY DETECTORS SHOWN ON THE PLAN ARE SHOWN FOR CODE COMPLIANCE. IT IS THE CONTRACTORS RESPONSIBILITY DURING BIDDING TO DETERMINE IF DUCT SMOKE CAN BE USED OR IF PLENUM SMOKE DETECTORS MUST BE USED. IF PLENUM SMOKE DETECTORS MUST BE USED, THE CONTRACTOR SHALL PROVIDE THE DETECTORS TO MEET THE CODE OF THE AHJ. DETECTORS SHALL BE PROVIDED BY THE ELECTRICAL/FIRE ALARM CONTRACTOR AND FIRE ALARM CONTRACTOR. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL ASSOCIATED WORK. DETECTORS SHALL SHUT DOWN RESPECTIVE UNIT UPON ACTIVATION AND BE WIRED INTO THE BUILDING FIRE ALARM SYSTEM WHERE APPLICABLE. PROVIDE ANNUNCIATOR AND STATUS/RESET STATION AS REQUIRED PER NFPA 90A IN A LOCATION APPROVED BY THE LOCAL FIRE MARSHAL AND ARCHITECT. STATION SHALL BE CEILING MOUNTED CENTERED IN A CEILING TILE (PREFERRED) OR WALL MOUNTED. EQUIPMENT VENDOR SHALL PROVIDE ALL CONTROLS AND ACCESSORIES NECESSARY TO MEET REQUIREMENTS AND SEQUENCES. BMS SEQUENCING (IF APPLICABLE) SHALL BE COORDINATED WITH BUILDING PROJECT MANAGER. CONTRACTOR SHALL UPDATE THE BMS GRAPHICS FOR ALL NEW AND MODIFIED VAVS AS APPLICABLE. CONTROL WIRING SHALL BE CONCEALED AND RUN IN CONDUIT. CONDUIT AND FITTINGS EXPOSED TO THE WEATHER SHALL BE WEATHERPROOF. INSTALL THERMOSTATS @ 48" AFF WHERE ANY OPERABLE PARTS OF THE THERMOSTAT DO NOT EXCEED 48" AFF, UNLESS OTHERWISE NOTED. THERMOSTAT LOCATIONS PROVIDED FOR REFERENCE ONLY. THERMOSTATS SHALL NOT BE LOCATED BEHIND CUBES, FURNITURE, OR DOORS WHEN OPEN. COORDINATE FINAL LOCATIONS WITH FURNITURE AND ARCHITECTURAL PLANS. LOCATE THERMOSTATS ADJACENT TO SWITCHES IF ON THE SAME WALL. PROVIDE AN INSULATED SUB-BASE FOR ANY THERMOSTAT MOUNTED ON AN EXTERIOR WALL/PARTITION. ALL CONTROLS TO BE COMPATIBLE WITH ANY EXISTING BUILDING MANAGEMENT/CONTROLS SYSTEMS. COORDINATE WITH BUILDING ENGINEER. IF EXISTING THERMOSTATS ARE NOT BEING REUSED, CONTRACTOR SHALL PROVIDE A NEW WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH HEATING AND COOLING OPTION (AS REQUIRED), % PROGRAMMABLE CLOCK, & TEMPERATURE DISPLAY. EXTENDING WIRING TO EXISTING OR NEW THERMOSTATS SHALL BE INCLUDED IN THE BID. COORDINATE THERMOSTAT CONTROL REQUIREMENTS WITH FINAL EQUIPMENT SELECTION. THERMOSTATS BE CAPABLE OF HAVING A MINIMUM 5' DEADBAND BETWEEN HEATING AND COOLING. CEILING DIFFUSERS/REGISTERS: ALL DIFFUSERS MUST MEET A MAXIMUM OF NC-30. PROVIDE APPROPRIATE MOUNTING HARDWARE/FRAME PER CEILING TYPE. PROVIDE VOLUME DAMPERS ON ALL SUPPLY, RETURN, AND EXHAUST TAPS. DIFFUSERS SHALL MATCH BUILDING STANDARD, FINISH TO MATCH OR PROVIDED BY ARCHITECT. BASIS OF DESIGN: (SR) SUPPLY REGISTER TITUS MODEL: 300FS (UNLESS OTHERWISE NOTED). (RR) RETURN REGISTER TITUS MODEL: 350R (UNLESS OTHERWISE NOTED). TAG: NECK SIZE: CFM: TYPE: SIZE: 18x8 18x8 0-530 LOUVERED 19"x8" 12x10 12x10 0-350 LOUVERED 12"x10" 48x18 48x18 0-300 LOUVERED 48"x18"

HVAC SEQUENCE OF OPERATION:

- 1. SPLIT SYSTEMS: SYSTEMS SHALL OPERATE 24/7 TO MAINTAIN SPACE SET POINTS. SYSTEMS SHALL AUTOMATICALLY CHANGEOVER FROM HEATING TO COOLING MODES AS NEEDED. SUPPLY FANS SHALL OPERATE CONTINUOUSLY DURING OCCUPIED HOURS. SUPPLY FANS SHALL CYCLE WHEN FACILITY IS NOT OCCUPIED. WHEN SYSTEM IS ENERGIZED, OUTSIDE AIR DAMPERS SHALL ENERGIZE AND OPEN. WHEN SYSTEM IS DE-ENERGIZED, OUTSIDE AIR DAMPERS SHALL CLOSE. SYSTEMS SHALL BE CONTROLLED BY WALL MOUNTED THERMOSTATS. EXHAUST FANS: CEILING MOUNTED EXHAUST FAN(S) SHALL BE CONTROLLED BY A WALL MOUNTED ON/OFF SWITCH. UPON ENERGIZING WALL SWITCH FAN SHALL RUN. UPON DE-ENERGIZING WALL SWITCH FAN SHALL BE TURNED OFF.

SYMBOLS LIST

NOTE: SYMBOLS ARE FOR REFERENCE ONLY. NOT ALL ARE USED IN THIS PROJECT.

- NEW DUCTWORK, DUCT WITH CAPPED END, DUCTWORK W/ SOUND LINING (DIMENSIONS SHOWN = INSIDE CLEAR AREA), MITERED ELBOW WITH TURNING VANES, FIRE DAMPER, VOLUME DAMPER, SMOKE DAMPER, AUTO DAMPER, MOTORIZED DAMPER, FLEXIBLE DUCT, AIR TIGHT FITTING, AIR TIGHT FITTING WITH ROUND HARD DUCT, CEILING FAN, THERMOSTAT, HUMIDISTAT, ZONE SENSOR, SWITCH, SWITCH (VARIABLE SPEED), DUCT MTD SMOKE DETECTOR, CLG MTD SMOKE DETECTOR, NOTE DESIGNATION, SUPPLY DIFFUSER/REGISTER, RETURN/EXHAUST GRILLE, LINEAR SLOT DIFFUSER, DIRECTION OF AIR FLOW, CONDENSATE DRAIN (CD), PUMPED COND. DRAIN (PCD), SANITARY DRAIN PIPE (SAN), STORM DRAIN (ST), VENT PIPE (V), COLD WATER PIPE (CW), FILTER WATER (FW), HOT WATER PIPE (HW), HOT WATER RECIRC (HWR), GAS PIPE (G), GLYCOL SUPPLY (GS), GLYCOL RETURN (GR), BACKFLOW PREVENTER, BALL VALVE, PIPE TURNING UP, PIPE TURNING DOWN, CLEAN OUT (CO), UNDERCUT, DOOR LOUVER, DUCT RISE, DUCT DROP, DIAMETER, AIR FLOW QUANTITY, EXISTING TO REMAIN ITEM, DEMOLISH ITEM, NEW ITEM, NEW TO EXISTING CONNECTION

ABBREVIATIONS LIST

NOTE: ABBREVIATIONS ARE FOR REFERENCE ONLY. NOT ALL ARE USED IN THIS PROJECT.

- ABV - ABOVE, AD - ACCESS DOOR, AFF - ABOVE FINISHED FLOOR, AHJ - AUTHORITY HAVING JURISDICTION, AHU - AIR HANDLING UNIT, AUTO-D - AUTO DAMPER, ATPV - AUTOMATIC TRAP PRIMER VALVE, BF - BOTTLE FILLER, BFP - BACKFLOW PREVENTER, BHP - BRAKE HORSEPOWER, BMS - BUILDING MANAGEMENT SYSTEM, BP - BYPASS DAMPER, BTUH - BRITISH THERMAL UNITS PER HOUR, BWV - BACK WATER VALVE, CFM - CUBIC FEET PER MINUTE, CLG - CEILING, CD - CEILING DIFFUSER/CONDENSATE DRAIN, CG - CEILING GRILLE, CHWR - CHILLED WATER RETURN, CHWS - CHILLED WATER SUPPLY, CO - CLEAN OUT, CU - CONDENSING UNIT, CW - COLD WATER, D - DOWN, DB - DRY BULB, DF - DRINKING FOUNTAIN, DFU - DRAINAGE FIXTURE UNIT, DI - INDIRECT WASTE RECEPTOR, EA - EACH, EAT - ENTERING AIR TEMPERATURE, EBB - ELECTRIC BASEBOARD HEATER, EDR - ENTERING DRY BULB TEMPERATURE, EER - ENERGY EFFICIENCY RATIO, EF - EXHAUST FAN, EG - EXHAUST AIR GRILLE, EH - ELECTRIC HEATER, ESP - EXTERNAL STATIC PRESSURE, EWB - ENTERING WET BULB TEMPERATURE, EWH - ELECTRIC WATER HEATER, EWT - ENTERING WATER TEMPERATURE, EX - EXISTING, FA - FREE AREA, FC - FLEXIBLE CONNECTION, FCO - FLOOR CLEAN OUT, FD - FIRE DAMPER/FLOOR DRAIN, FLD - FLOOR DRAIN, FPM - FEET PER MINUTE, FS - FLOOR SINK, GPM - GALLONS PER MINUTE, GT - GREASE TRAP, HP - HEAT PUMP/HORSEPOWER, HS - HAND SINK, HW - HOT WATER, HWS - HOT WATER SUPPLY, HWR - HOT WATER RETURN, HZ - HERTZ (CYCLES PER SECOND), KW - KILOWATTS, LAV - LAVATORY, LBS - POUNDS, LRA - LOCKED ROTOR AMPS, LT - LAUNDRY TUB/LIGHT TRAFFYOR DIFFUSER, MAX - MAXIMUM, MBH - 1000 BTUH, MHP - MOTOR HORSEPOWER, MIN - MINIMUM, N - NEW, OA - OUTDOOR AIR, OPD - OVERLOAD PROTECTION DEVICE, OWS - OPERATOR WORKSTATION, PD - PRESSURE DROP, PH - PHASE, PS - PREP. SINK, PSI - POUNDS PER SQUARE INCH, PSK - PANTRY SINK, REF - REFRIGERATOR, R - RELOCATED, RA - RETURN AIR, RD - ROOF DRAIN, RG - RETURN AIR GRILLE, RH - RELATIVE HUMIDITY, RPM - REVOLUTIONS PER MINUTE, RSM - SANITARY PIPE, SA - SUPPLY AIR, SD - SMOKE DAMPER, SH - SHOWER, SFU - SUPPLY FIXTURE UNITS, SP - STATIC PRESSURE, SS - SERVICE SINK, TA - TRANSFER AIR, TAD - TRANSFER AIR DUCT, TBV - TEMPERATURE BLENDING VALVE, TD - TRENCH DRAIN, TSP - TOTAL STATIC PRESSURE, TYP - TYPICAL, U - URINAL, UB - UTILITY BOX, UR - URINAL, V - VENT PIPE/VOLT, VAV - VARIABLE AIR VOLUME, VAVFP - FAN POWERED VARIABLE AIR VOLUME, VB - VACUUM BREAKER, VD - VOLUME DAMPER, VEL - VELOCITY, VLT - VOLTAGE, VTR - VENT THROUGH ROOF, WID - WASHER/DRYER, WB - WET BULB, WC - WATER CLOSET, WHA - WATER HAMMER ARRESTOR, WMS - WIRE MESH SCREEN

DRAWING INDEX

- M1 COVER SHEET - MECHANICAL, M2 FLOOR PLANS - MECHANICAL, M3 DETAILS AND SCHEDULES - MECHANICAL

Vertical project information strip including project name 'M1 ANEX BLDG', client 'MICA', architect 'ARIUM | AE', and other project details.

IDENTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME AND THAT I AM A DULY LICENSED ENGINEER UNDER THE LAWS OF THE STATE OF MARYLAND. LICENSE NUMBER: 3162 EXP. DATE: 3/31/2017