

| 1                                 | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 3                    | 4                                                                          | 5                                | 6                                                      | 7                                | 8                                           | 9                                         | 10                                        |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------|----------------------------------|--------------------------------------------------------|----------------------------------|---------------------------------------------|-------------------------------------------|-------------------------------------------|
| <b>GENERAL NOTES - MECHANICAL</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <b>ABBREVIATIONS</b> |                                                                            | <b>ABBREVIATIONS (CONTINUED)</b> |                                                        | <b>ABBREVIATIONS (CONTINUED)</b> |                                             | <b>GENERAL SYMBOLS</b>                    |                                           |
| A.                                | COORDINATE THE LOCATION OF DRAINS, THERMOSTATS, GAS OUTLETS, ETC., WITH ALL CASEWORK EQUIPMENT, MECHANICAL ROOM EQUIPMENT, ETC., PRIOR TO COMMENCING INSTALLATION. WORK NOT SO COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE CONTRACTOR.                                                                                                                                                                                                                                                                                                                                                                    | AC                   | ALTERNATING CURRENT                                                        | FD                               | FIRE DAMPER                                            | NO                               | NORMALLY OPEN OR NUMBER                     | ⬡                                         | TAGGED NOTE DESIGNATOR                    |
| B.                                | THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN THE COURSE OF THEIR WORK SO AS TO ENSURE THAT THEY DO NOT INTERRUPT ANY EXISTING SERVICE. FOR SAFETY PURPOSES, PAY PARTICULAR ATTENTION TO THIS PRECAUTION RELATIVE TO NATURAL GAS AND ELECTRICAL LINES. VERIFY THE LOCATION, SIZE, TYPE, ETC., OF EACH UNDERGROUND OR OVERHEAD UTILITY. ALL WORK SHALL BE PERFORMED IN ACCORD WITH ALL FEDERAL, STATE AND/OR LOCAL RULES, REGULATIONS, STANDARD AND SAFETY REQUIREMENTS. UTILITIES SHALL BE INSTALLED IN ACCORD WITH THE APPLICABLE MUNICIPALITY OR UTILITY COMPANY STANDARDS. IN ALL CASES, THE MOST STRINGENT REQUIREMENT SHALL APPLY. | ADJ                  | ADJUSTABLE                                                                 | FL                               | FLOOR                                                  | NTS                              | NOT TO SCALE                                | △                                         | REVISION TRIANGLE                         |
| C.                                | WHERE WORK IS REQUIRED ABOVE EXISTING LAY-IN, PLASTER OR GYPSUM BOARD CEILINGS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND REINSTALLATION (OR REPLACEMENT, IF DAMAGED) OF ALL CEILING OR TILE AND GRID MEMBERS NECESSARY TO PERFORM HIS WORK. NEW TILE AND GRID SHALL MATCH THE SURROUNDING AREAS. ALL PATCHING WORK SHALL MATCH ADJACENT SURFACES. ALL NEW WORK SHALL BE HUNG FROM STRUCTURE, NOT FROM THE WORK OF OTHER TRADES, WHETHER EXISTING OR NEW.                                                                                                                                                                     | AFF                  | ABOVE FINISHED FLOOR                                                       | FLA                              | FULL LOAD AMPS                                         | OC                               | ON CENTER                                   | ROOM NAME (SEE E)                         | ROOM TAG                                  |
| D.                                | COORDINATE ALL WORK WITH PROJECT PHASING REQUIREMENTS. PATCH, REPAIR AND PAINT OR PROVIDE WALL COVERING FOR (TO OWNER'S STANDARDS) EXISTING WALLS, CEILINGS, ETC., THAT ARE TO REMAIN IF DAMAGED DURING CONSTRUCTION. REPAIRS SHALL MATCH ADJACENT SURFACES TO THE SATISFACTION OF THE ARCHITECT AND OWNER.                                                                                                                                                                                                                                                                                                                             | AFR                  | ABOVE FINISHED ROOF                                                        | FOB                              | FLAT ON BOTTOM                                         | OD                               | OUTSIDE DI (-AMETER, -MENSION)              | TAG INSTANCE                              | EQUIPMENT TAG                             |
| E.                                | OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT. (CITY, COUNTY, LOCAL, FEDERAL, MUNICIPALITY, UTILITY COMPANY, COMMONWEALTH OF KENTUCKY, ETC.)                                                                                                                                                                                                                                                                                                                                                                                                                                       | AFUE                 | ANNUAL FUEL UTILIZATION EFFICIENCY                                         | FOT                              | FLAT ON TOP                                            | CFCI                             | CONTRACTOR FURNISHED, CONTRACTOR INSTALLED  | POINT OF CONNECTION / CONNECT TO EXISTING | POINT OF CONNECTION / CONNECT TO EXISTING |
| F.                                | CONTRACTOR SHALL BE AWARE OF UNSEEN PLUMBING, HVAC AND ELECTRICAL WORK DURING DEMOLITION. IF ITEMS ARE UNCOVERED DURING DEMOLITION THEN FIELD VERIFY THE USE OF THE ITEMS AND PLAN AN ALTERNATE ROUTE TO RUN THESE ITEMS. THEN CONTACT THE ENGINEERS TO REVIEW THE ROUTING.                                                                                                                                                                                                                                                                                                                                                             | AHJ                  | AUTHORITY HAVING JURISDICTION                                              | FPC                              | FIRE PROTECTION CONTRACTOR                             | OFCI                             | OWNER FURNISHED, CONTRACTOR INSTALLED       | POINT OF DEMOLITION                       | POINT OF DEMOLITION                       |
| G.                                | IF AREA OF CONSTRUCTION HAS A POST TENSION FLOOR SLAB. CONTRACTOR SHALL USE ULTRA SOUND OR OTHER APPROVED METHODS TO SURVEY THE EXISTING FLOOR STRUCTURE BEFORE MAKING ANY AND ALL FLOOR PENETRATIONS.                                                                                                                                                                                                                                                                                                                                                                                                                                  | AMP                  | AMPERE (AMP, AMPS)                                                         | FPM                              | FEET PER MINUTE                                        | OFOI                             | OWNER FURNISHED, OWNER INSTALLED            |                                           |                                           |
| H.                                | WHERE FIRE PROOFING IS SPRAYED ON EXISTING STRUCTURE ALL EXISTING CONDUITS, WATER, HYDRONIC, STEAM, CHILLED WATER, FIRE PROTECTION LINES, MED GAS, ETC. SHALL BE LOWERED TO BE BELOW FULL THICKNESS OF FIRE PROOFING WITH NO INTERFERENCE. ALL PENETRATIONS OF FIRE AND SMOKE RATED ASSEMBLIES SHALL BE APPROPRIATELY FIRE STOPPED PER AN APPROVED U.L. LISTED STANDARD. CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO INSULATED PIPING PENETRATIONS.                                                                                                                                                                                    | ANSI                 | AMERICAN NATIONAL STANDARD INSTITUTE                                       | FPS                              | FEET PER SECOND                                        | OR                               | OPEN RECEPACLE                              |                                           |                                           |
| I.                                | ALL WORK REQUIRING DOWNTIME OF ANY AREA IN THE BUILDING SHALL BE SCHEDULED 2 WEEKS IN ADVANCE, AND SHALL COMPLY WITH INTERIM LIFE SAFETY MEASURES.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | APD                  | AIR PRESSURE DROP                                                          | FT                               | FEET OR FOOT                                           | OZ                               | OUNCE (-S)                                  |                                           |                                           |
| J.                                | ALL DUCTWORK, PIPING, CONDUITS, ETC. IN ROOMS WITH CEILINGS SHALL BE ABOVE CEILING EXCEPT AS NOTED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | ASHRAE               | AMERICAN SOCIETY OF HEATING, REFRIGERATION, AND AIR-CONDITIONING ENGINEERS | FUT                              | FUTURE                                                 | PC                               | PLUMBING CONTRACTOR                         |                                           |                                           |
| K.                                | INSTALL AIR VENTS AT HIGH POINTS IN PIPING AND DRAINS IN LOW POINTS. USE CARE TO AVOID FREEZING OF EXTERIOR VENTS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | ATU                  | AIR TERMINAL UNIT                                                          | FV                               | FACE VELOCITY                                          | PD                               | PRESSURE DROP                               |                                           |                                           |
| L.                                | LOCATIONS OF PIPING, DUCTS AND EQUIPMENT ARE APPROXIMATE AND SUBJECT TO MINOR ADJUSTMENTS IN THE FIELD. DO NOT SCALE THE DRAWINGS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | AVG                  | AVERAGE                                                                    | GAGE                             | GAGE/GAUGE                                             | PH                               | PHASE [ELECTRICAL]                          |                                           |                                           |
| M.                                | ALL OFFSETS IN DUCTS AND PIPING ARE NOT NECESSARILY SHOWN. PROVIDE ADDITIONAL OFFSETS WHERE NECESSARY.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | BAS                  | BUILDING AUTOMATION SYSTEM                                                 | GAL                              | GALLON (-S)                                            | PLBG                             | PLUMBING                                    |                                           |                                           |
| N.                                | COORDINATE ALL HVAC WORK WITH ELECTRICAL, PLUMBING AND OTHER TRADES TO AVOID INTERFERENCE WITH PIPING, DUCTS, CONDUIT AND OTHER EQUIPMENT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | BHP                  | BREAK HORSEPOWER                                                           | GC                               | GENERAL CONTRACTOR                                     | PPM                              | PARTS PER MILLION                           |                                           |                                           |
| O.                                | INSTALL ALL PIPING, DUCTWORK AND EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTION. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, ADVISE THE ENGINEERS PRIOR TO INSTALLATION FOR CLARIFICATION. PROVIDE RECOMMENDED ACCESS AND SERVICE CLEARANCES FOR ALL EQUIPMENT.                                                                                                                                                                                                                                                                                                                        | BTU                  | BRITISH THERMAL UNIT                                                       | GPD                              | GALLONS PER DAY                                        | PRS                              | PRESSURE REDUCING STATION                   |                                           |                                           |
| P.                                | SEAL AIRTIGHT AROUND ALL DUCTS AND PIPING PENETRATIONS THROUGH WALLS, FLOORS AND ROOF. PROVIDE FIRE STOPPING IN FIRE PARTITION.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CAP                  | CAPACITY                                                                   | GPH                              | GALLONS PER HOUR                                       | PRV                              | PRESSURE REDUCING VALVE (STEAM, WATER, GAS) |                                           |                                           |
| Q.                                | SEAL ALL NEW DUCTWORK JOINTS WITH UNITED MCGILL, IRONGRIP 601 OR EQUAL WATER BASED SEALANT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | CAV                  | CONSTANT AIR VOLUME                                                        | GPM                              | GALLONS PER MINUTE                                     | PSF                              | POUNDS PER SQUARE FOOT                      |                                           |                                           |
| R.                                | ALL MOTOR DRIVEN EQUIPMENT SHALL BE INSTALLED WITH FLEXIBLE CONNECTIONS TO DUCTWORK, PIPING, ETC., UNLESS OTHERWISE NOTED.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CD                   | CONDENSATE DRAIN                                                           | GR                               | GRAINS                                                 | PSI                              | POUNDS PER SQUARE INCH                      |                                           |                                           |
| S.                                | THE CONTRACTOR SHALL RELOCATE OR AVOID ANY EXISTING EQUIPMENT APPURTENANCES, ETC., THAT CONFLICT WITH NEW WORK. WHERE MOUNTING HEIGHTS ARE NOT INDICATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEERS BEFORE INSTALLATION. REFER ALSO TO ARCHITECTURAL WALL INTERIOR AND EXTERIOR WALL ELEVATIONS, CEILING HEIGHTS AND OTHER DETAIL OF THESE DOCUMENTS.                                                                                                                                                                                                                                                     | CFM                  | CUBIC FEET PER MINUTE                                                      | H                                | HUMIDITY                                               | PSIG                             | PPSI GAUGE                                  |                                           |                                           |
| T.                                | DOUBLE WIDTH TURNING VANES SHALL BE INSTALLED IN ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK ELBOWS. TURNING VANES NOT REQUIRED FOR KITCHEN EXHAUSTS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | C.I.                 | CAST IRON                                                                  | HD                               | HEAD                                                   | RH                               | RELATIVE HUMIDITY [%]                       |                                           |                                           |
| U.                                | ANY VIBRATING, OSCILLATING OR OTHER NOISE OR MOTION PRODUCING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER. NOISY OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTOR'S EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION'S ACCEPTABILITY SHALL BE THAT OF THE ENGINEER.                                                                                                                                                                                                                                           | CLG                  | CEILING                                                                    | HG                               | MERCURY                                                | RLA                              | RUNNING LOAD AMPS                           |                                           |                                           |
| V.                                | DEVIATIONS IN SIZE, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT USED AS BASIS OF DESIGN SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ENGINEERS OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.                                                                                                                                                                                                                                                                                                                           | CLR                  | CLEAR                                                                      | HORIZ                            | HORIZONTAL                                             | RPM                              | REVOLUTIONS PER MINUTE                      |                                           |                                           |
| W.                                | VALVES, BALANCING DAMPERS OR ANY MECHANICAL/ELECTRICAL ITEM REQUIRING ACCESS SHALL NOT BE LOCATED ABOVE A HARD CEILING. IF THIS IS NOT POSSIBLE, THEN AN APPROPRIATELY SIZED ACCESS DOOR SHALL BE PLACED UNDER THE ITEM TO ALLOW EASY MAINTENANCE AND ADJUSTMENT. ADDITIONALLY ALL SUCH ITEMS SHALL NOT BE LOCATED AN UNREASONABLE DISTANCE ABOVE THE CEILINGS. IN GENERAL ALL SUCH ITEMS UNLESS INDICATED OTHERWISE SHALL BE MOUNTED SIX TO TWELVE INCHES ABOVE THE CEILING. IF IN DOUBT, CONTACT ENGINEER PRIOR TO INSTALLING.                                                                                                        | CO                   | CARBON MONOXIDE                                                            | HP                               | H (-ORSEPOWER, -EAT PUMP)                              | SD                               | SMOKE DAMPER                                |                                           |                                           |
| X.                                | ALL MANHOLES, VAULTS AND SIMILAR UNDERGROUND STRUCTURES SHALL HAVE THE TOP ELEVATION SET FLUSH WITH FINISHED GRADE UNLESS SPECIFICALLY NOTED OTHERWISE.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CO2                  | CARBON DIOXIDE                                                             | HR                               | HOUR (-S)                                              | SP                               | STATIC PRESSURE                             |                                           |                                           |
| Y.                                | WHEN RUNNING ANY TYPE OF PIPING BELOW A FOOTER, OR IN THE ZONE OF INFLUENCE THE PIPING SHALL BE BACKFILLED WITH CEMENTITIOUS FLOWABLE FILL PER SPECIFICATIONS. WHENEVER POSSIBLE, LOCATE PIPING OUTSIDE OF THE ZONE OF INFLUENCE. THE ZONE OF INFLUENCE IS THE AREA UNDER THE FOOTER WITHIN A 45 DEGREE ANGLE PROJECTING DOWN FROM THE BOTTOM EDGE OF THE FOOTER OF ALL SIDES OF THE FOOTER. ADDITIONALLY, GREASE TRAPS, MANHOLES, VAULTS AND OTHER UNDERGROUND STRUCTURES SHALL BE HELD AWAY FROM BUILDING WALLS FAR ENOUGH TO BE OUTSIDE OF THE ZONE OF INFLUENCE.                                                                    | COND                 | CONDENS (-ER, -ING, -ATION, -ATE)                                          | HVAC                             | HEATING, VENTILATING, & AIR-CONDITIONING               | SQ                               | SQUARE                                      |                                           |                                           |
| Z.                                | WORK IN CONFINED AREAS SHALL BE IN ACCORDANCE WITH THE OWNER'S SAFETY POLICY REQUIREMENTS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CONT                 | CONTINU (-ED, -OUS)                                                        | Hz                               | HERTZ                                                  | SQ FT                            | SQUARE FEET OR FOOT                         |                                           |                                           |
| AA.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CU FT                | CUBIC FEET                                                                 | ID                               | I (-IDENTIFICATION, -NSIDE DIAMETER, -NSIDE DIMENSION) | SQ IN                            | SQUARE INCH OR INCHES                       |                                           |                                           |
| BB.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CU IN                | CUBIC INCHES                                                               | IN                               | INCH (-ES)                                             | TAB                              | TESTING AND BALANCING                       |                                           |                                           |
| CC.                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | CV                   | VALVE FLOW COEFFICIENT                                                     | INSUL                            | INSULAT (-ED, -ION)                                    | TBD                              | TO BE DETERMINED                            |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | dB                   | DECIBEL                                                                    | INT                              | INTER (-IOR, -ERVAL)                                   | TE                               | TOP ELEVATION                               |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DBT                  | DRY BULB TEMPERATURE                                                       | IPS                              | IRON PIPE SIZE                                         | TEMP                             | TEMPERATURE                                 |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DC                   | DIRECT CURRENT                                                             | kW                               | KILOWATT                                               | TSP                              | TOTAL STATIC PRESSURE                       |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DD                   | DUCT SMOKE DETECTOR                                                        | kWh                              | KILOWATT HOUR                                          | TYP                              | TYPICAL                                     |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DDC                  | DIRECT DIGITAL CONTROLS                                                    | LAT                              | LEAVING AIR TEMPERATURE                                | UNO                              | UNLESS NOTED OTHERWISE                      |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DEG                  | DEGREE (-S)                                                                | LBS                              | POUNDS                                                 | V                                | VOLT (-AGE, -S)                             |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DIA                  | DIAMETER (-S)                                                              | LF                               | LINEAR FEET/FOOT                                       | VAR                              | VARI (-ABLE, -IES)                          |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DN                   | DOWN                                                                       | LRA                              | LOCKED ROTOR AMPS                                      | VAV                              | VARIABLE AIR VOLUME                         |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | DWG                  | DRAWING                                                                    | LWT                              | LEAVING WATER TEMPERATURE                              | VEL                              | VELOCITY                                    |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EAT                  | ENTERING AIR TEMPERATURE                                                   | MAX                              | MAXIMUM                                                | VFD                              | VARIABLE FEQUENCY DRIVE                     |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EC                   | ELECTRICAL CONTRACTOR                                                      | MBH                              | BTU PER HOUR [THOUSANDS]                               | W                                | WATT (-AGE, -S)                             |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ELEV                 | ELEVA (-TION, -TOR)                                                        | MCA                              | MINIMUM CIRCUIT AMPS                                   | WB                               | WET BULB                                    |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ENGR                 | ENGINEER                                                                   | MFG                              | MANUFACTURER                                           | WBT                              | WET BULB TEMPERATURE                        |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EQ                   | EQUAL                                                                      | MIN                              | MIN (-IMUM, -UTE)                                      | WPD                              | WATER PRESSURE DROP                         |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ESP                  | EXTERNAL STATIC PRESSURE                                                   | MISC                             | MISCELLANEOUS                                          | WT                               | WEIGHT                                      |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | ETR                  | EXISTING TO REMAIN                                                         | MOC                              | MAXIMUM OVERCURRENT PROTECTION [AMPS]                  | W/                               | WITH                                        |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EVAP                 | EVAPORAT (-E, -ING, -ED, -OR, -ION)                                        | MTG                              | MOUNTING                                               | W/O                              | WITHOUT                                     |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EWT                  | ENTERING WATER TEMPERATURE                                                 | N/A                              | NOT APPLICABLE                                         | %                                | PERCENT                                     |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EXP                  | EXPANSION                                                                  | NC                               | NOISE CRITERIA OR NORMALLY CLOSED                      | ΔP                               | DIFFERENTIAL PRESSURE                       |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | EXT                  | EXTERIOR                                                                   | NEBB                             | NATIONAL ENVIRONMENTAL BALANCING BUREAU                | ΔT                               | TEMPERATURE DIFFERENCE                      |                                           |                                           |
|                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | FA                   | FREE AREA                                                                  | NIC                              | NOT IN CONTRACT                                        | ℓ                                | CENTERLINE                                  |                                           |                                           |

NOTE: NOT ALL SYMBOLS AND ABBREVIATIONS MAY BE USED ON THIS PROJECT

**HVAC LEGEND**

|   |                                                      |
|---|------------------------------------------------------|
| ⬡ | SUPPLY AIR DIFFUSER                                  |
| ⬡ | RETURN AIR DIFFUSER                                  |
| ⬡ | EXHAUST AIR DIFFUSER                                 |
| ⬡ | TRANSFER AIR DIFFUSER W/ SOUND ATTENUATING BOOT      |
| ⬡ | SIDEWALL DIFFUSER/GRILLE                             |
| ⬡ | SIDEWALL DIFFUSER/GRILLE                             |
| ⬡ | AIR DEVICE TAG (REGISTER, GRILLE, DIFFUSER, LOUVER)  |
| ⬡ | RECTANGULAR DUCT                                     |
| ⬡ | ROUND/SPIRAL DUCT                                    |
| ⬡ | FLAT OVAL DUCT                                       |
| ⬡ | SUPPLY AIR DUCT                                      |
| ⬡ | RETURN AIR DUCT                                      |
| ⬡ | EXHAUST AIR DUCT                                     |
| ⬡ | OUTSIDE AIR DUCT                                     |
| ⬡ | TRANSFER AIR DUCT                                    |
| ⬡ | COMBUSTION AIR EXHAUST DUCT                          |
| ⬡ | COMBUSTION AIR INTAKE DUCT                           |
| ⬡ | SA AIR DUCT TURNING UP                               |
| ⬡ | SA AIR DUCT TURNING DOWN                             |
| ⬡ | RA AIR DUCT TURNING UP                               |
| ⬡ | RA AIR DUCT TURNING DOWN                             |
| ⬡ | EA AIR DUCT TURNING UP                               |
| ⬡ | EA AIR DUCT TURNING DOWN                             |
| ⬡ | EXISTING DUCT - (XXX) DENOTES SYSTEM                 |
| ⬡ | DUCT TO BE DEMOLISHED - (XXX) DENOTES SYSTEM         |
| ⬡ | DUCT TO BE ABANDONED IN PLACE - (XXX) DENOTES SYSTEM |
| ⬡ | MITERED ELBOW WITH TURNING VANES                     |
| ⬡ | FLEXIBLE DUCT                                        |
| ⬡ | THERMOSTAT                                           |
| ⬡ | TEMPERATURE SENSOR                                   |
| ⬡ | HUMIDITY SENSOR                                      |
| ⬡ | CARBON DIOXIDE SENSOR                                |
| ⬡ | TEMPERATURE & CARBON DIOXIDE SENSOR                  |
| ⬡ | MANUAL BALANCING/VOLUME DAMPER                       |
| ⬡ | MOTORIZED DAMPER                                     |
| ⬡ | FIRE DAMPER                                          |
| ⬡ | SMOKE DAMPER                                         |
| ⬡ | COMBINATION FIRE & SMOKE DAMPER                      |

**MECHANICAL PIPING LEGEND**

|   |                                                   |
|---|---------------------------------------------------|
| ⬡ | PIPE ELBOW TURNING UP                             |
| ⬡ | PIPE ELBOW TURNING DOWN                           |
| ⬡ | PIPE TEE; CONNECTION ON TOP                       |
| ⬡ | PIPE TEE; CONNECTION ON BOTTOM                    |
| ⬡ | PIPE CAP                                          |
| ⬡ | BOILER FEEDWATER                                  |
| ⬡ | COMBUSTION AIR INTAKE/EXHAUST                     |
| ⬡ | CHILLED BEAM SUPPLY/RETURN                        |
| ⬡ | CONDENSATE DRAIN                                  |
| ⬡ | CHILLED WATER SUPPLY/RETURN                       |
| ⬡ | CLEAN STEAM PIPING                                |
| ⬡ | CONDENSER WATER SUPPLY/RETURN                     |
| ⬡ | DUAL TEMP. WATER SUPPLY/RETURN                    |
| ⬡ | GEO THERMAL WATER SUPPLY/RETURN                   |
| ⬡ | HIGH PRESSURE STEAM CONDENSATE                    |
| ⬡ | HIGH PRESSURE STEAM; (#) DENOTES PRESSURE         |
| ⬡ | HEAT PUMP WATER SUPPLY/RETURN                     |
| ⬡ | HEAT RECOVERY SUPPLY/RETURN PIPING                |
| ⬡ | HEATING WATER SUPPLY/RETURN                       |
| ⬡ | LOW PRESSURE STEAM CONDENSATE                     |
| ⬡ | LOW PRESSURE STEAM; (#) DENOTES PRESSURE          |
| ⬡ | MEDIUM PRESSURE STEAM RETURN                      |
| ⬡ | MEDIUM PRESSURE STEAM; (#) DENOTES PRESSURE       |
| ⬡ | STEAM CONDENSATE PUMPED DISCHARGE                 |
| ⬡ | STEAM VENT PIPING                                 |
| ⬡ | PIPING TO BE DEMOLISHED - (XXX) DENOTES SYSTEM    |
| ⬡ | EXISTING PIPING - (XXX) DENOTES SYSTEM            |
| ⬡ | ABANDONED IN PLACE PIPING - (XXX) DENOTES SYSTEM  |
| ⬡ | TWO-WAY CONTROL VALVE                             |
| ⬡ | THREE-WAY CONTROL VALVE                           |
| ⬡ | AUTOMATIC AIR VENT (AAV)                          |
| ⬡ | MANUAL AIR VENT (MAV)                             |
| ⬡ | MANUAL BALANCING VALVE (BV)                       |
| ⬡ | BALL VALVE                                        |
| ⬡ | BUTTERFLY VALVE                                   |
| ⬡ | TRIPLE DUTY VALVE (TDV)                           |
| ⬡ | STRAINER                                          |
| ⬡ | MANUAL ISOLATION VALVE                            |
| ⬡ | GLOBE VALVE                                       |
| ⬡ | OS&Y (GATE) VALVE                                 |
| ⬡ | PRESSURE REDUCING VALVE (STEAM, GAS, WATER, ETC.) |
| ⬡ | AUTO-FLOW CONTROL VALVE                           |
| ⬡ | CHECK VALVE                                       |
| ⬡ | DOUBLE CHECK VALVE ASSEMBLY                       |
| ⬡ | FLEXIBLE PIPE CONNECTION                          |
| ⬡ | FLOW METER (VENTURI)                              |
| ⬡ | PIPING UNION                                      |
| ⬡ | FLOW SWITCH                                       |
| ⬡ | PRESSURE SWITCH                                   |
| ⬡ | TAMPER SWITCH                                     |
| ⬡ | THERMOMETER                                       |
| ⬡ | PETE'S PLUG; TEMPERATURE/PRESSURE PORT            |

**EMERSON DESIGN**  
ARCHITECTURE  
INTERIORS  
SUSTAINABILITY  
PLANNING  
ENGINEERING

emersondesignllc.com  
316 Culvert St Suite 100  
Cincinnati, Ohio 45202  
513.841.9100

UNIVERSITY PAVILION LEVEL 100 / 200 RENOVATION

2816 UNIVERSITY CIRCLE  
CINCINNATI, OHIO 45219

MECHANICAL LEGEND

DESIGNED BY: K.WAYMEYER  
DRAWN BY: K.WAYMEYER  
CHECKED BY: B.ROSE  
PROJECT MANAGER:

DATE: AUGUST 2022  
PROJECT NO.: 05204

SHEET SIZE: 22x34  
PLOT SCALE: 1/8" = 1'-0"

DATE

DESCRIPTION

MARK

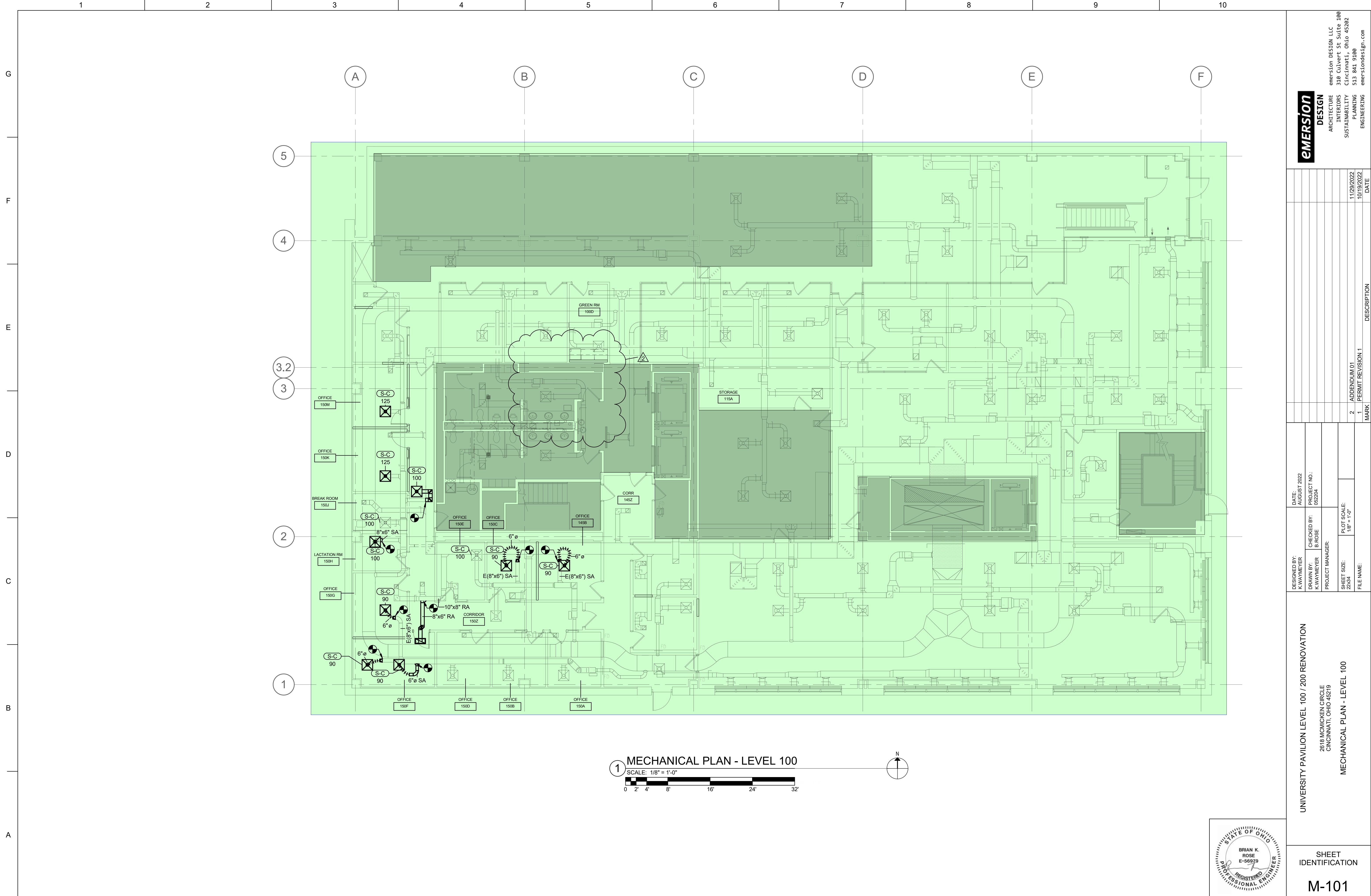
SHEET IDENTIFICATION

M-001

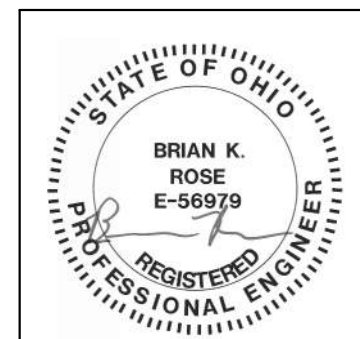








1 MECHANICAL PLAN - LEVEL 100  
 SCALE: 1/8" = 1'-0"  
 0 2' 4' 8' 16' 24' 32'



**EMERSON DESIGN**  
 ARCHITECTURE  
 INTERIORS  
 SUSTAINABILITY  
 PLANNING  
 ENGINEERING

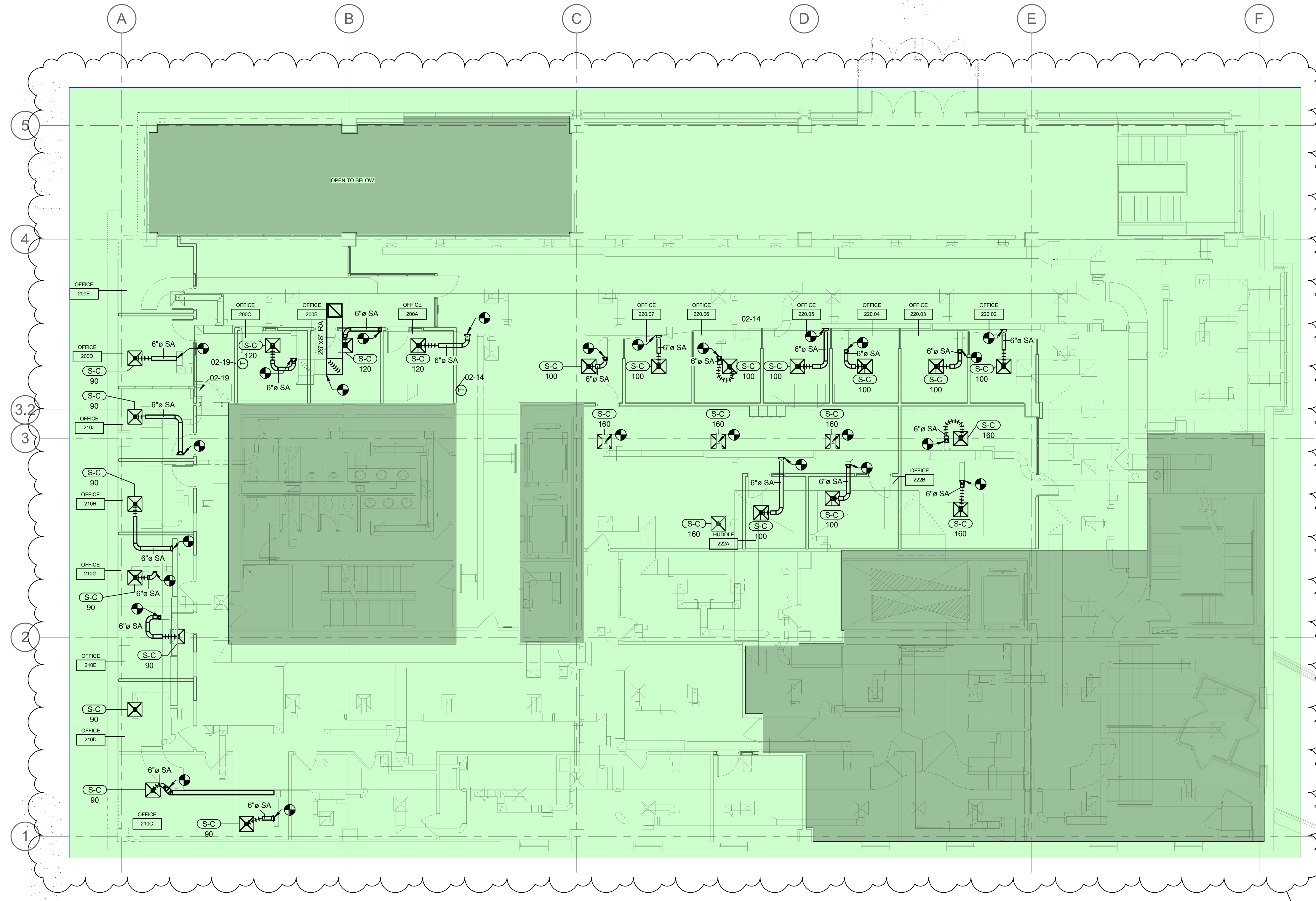
emersondesignllc.com  
 316 Culvert St Suite 100  
 Cincinnati, Ohio 45202  
 513.841.9100

| DATE       | DESCRIPTION       | MARK |
|------------|-------------------|------|
| 11/29/2022 | ADDENDUM 01       | 2    |
| 10/19/2022 | PERMIT REVISION 1 | 1    |

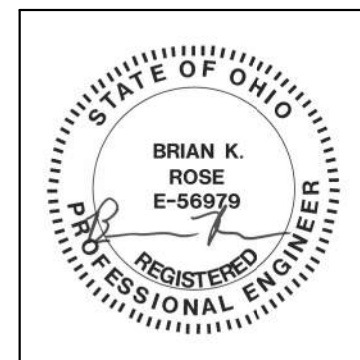
|                            |                             |
|----------------------------|-----------------------------|
| DESIGNED BY:<br>K.WAYMEYER | DATE:<br>AUGUST 2022        |
| DRAWN BY:<br>K.WAYMEYER    | PROJECT NO.:<br>052204      |
| PROJECT MANAGER:           | PLOT SCALE:<br>1/8" = 1'-0" |
| SHEET SIZE:<br>24x4        | FILE NAME:                  |

UNIVERSITY PAVILION LEVEL 100 / 200 RENOVATION  
 2618 MCMICKEN CIRCLE  
 CINCINNATI, OHIO 45219  
 MECHANICAL PLAN - LEVEL 100

SHEET IDENTIFICATION  
**M-101**



1 MECHANICAL PLAN - LEVEL 200  
 SCALE: 1/8" = 1'-0"



**EMERSON DESIGN**  
 ARCHITECTURE  
 INTERIORS  
 SUSTAINABILITY  
 PLANNING  
 ENGINEERING

emersondesignllc.com  
 316 Culvert St Suite 100  
 Cincinnati, Ohio 45202  
 513.841.9100

| DATE       | DESCRIPTION       | MARK |
|------------|-------------------|------|
| 10/19/2022 | PERMIT REVISION 1 | 1    |

|                            |                             |
|----------------------------|-----------------------------|
| DESIGNED BY:<br>K.WAYMEYER | DATE:<br>AUGUST 2022        |
| DRAWN BY:<br>K.WAYMEYER    | PROJECT NO.:<br>052204      |
| PROJECT MANAGER:           | PLOT SCALE:<br>1/8" = 1'-0" |
| SHEET SIZE:<br>24x34       | FILE NAME:                  |

UNIVERSITY PAVILION LEVEL 100 / 200 RENOVATION  
 2618 MCMICKEN CIRCLE  
 CINCINNATI, OHIO 45219  
 MECHANICAL PLAN - LEVEL 200

SHEET IDENTIFICATION  
**M-102**

