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A

| HVAC LEGEND             |  |
|-------------------------|--|
| SYMBOL<br>(DOUBLE LINE) | DESCRIPTION  |
|                         | NEW WORK   |
|                         | EXISTING WORK  |
|                         | DEMO WORK  |
|                         | FLEXIBLE DUCT RUNOUT TO DIFFUSER   |
|                         | DUCT SIZE (WIDTH X DEPTH)  |
|                         | VOLUME DAMPER  |
|                         | SUPPLY DUCT UP   |
|                         | SUPPLY DUCT DOWN   |
|                         | EXHAUST DUCT UP  |
|                         | EXHAUST DUCT DOWN  |
|                         | RETURN DUCT UP   |
|                         | RETURN DUCT DOWN   |
|                         | CROSS SECTION OF SUPPLY DUCT   |
|                         | CROSS SECTION OF EXHAUST AIR DUCT  |
|                         | CROSS SECTION OF RETURN AIR DUCT   |
|                         | CROSS SECTION OF ROUND DUCT  |
|                         | DUCT ELBOW WITH TURNING VANES  |
|                         | DUCT ELBOW WITHOUT TURNING VANES   |
|                         | ACOUSTICAL LINING DUCT DIMENSION IS ID   |
|                         | TRANSFER DUCT (WITH LINER)   |
|                         | ROUND OR SQUARE CEILING SUPPLY DIFFUSER (SEE SCHEDULE) 4-WAY THROW UNLESS INDICATED OTHERWISE. |
|                         | ROUND OR SQUARE CEILING EXHAUST REGISTER (SEE SCHEDULE)  |
|                         | ROUND OR SQUARE CEILING RETURN REGISTER (SEE SCHEDULE)   |
|                         | ROUND OR SQUARE CEILING RETURN GRILLE (SEE SCHEDULE)   |
|                         | ROUND OR SQUARE CEILING RETURN GRILLE (SEE SCHEDULE)   |
|                         | ROUND OR SQUARE CEILING RETURN GRILLE (SEE SCHEDULE)   |
|                         | WALL SUPPLY/RETURN REGISTER (SEE SCHEDULE)   |
|                         | SOFFIT SUPPLY DIFFUSER (SEE DETAIL 2 ON M12.01)  |
|                         | COMBINATION FIRE/SMOKE DAMPER  |
|                         | OCCUPANCY SENSOR TIED TO BMS SYSTEM  |
|                         | DETAIL 1, DRAWING M-1  |
|                         | EQUIPMENT IDENTIFICATION HEAT PUMP UNIT #1   |
|                         | COLD WATER   |
|                         | HOT WATER (120°F)  |
|                         | HOT WATER CIRC (120°F)   |
|                         | BALL VALVE   |
|                         | WATER FLOW METER   |
|                         | METER TAG  |

| ABBREVIATIONS |                                  |        |                             |
|---------------|----------------------------------|--------|-----------------------------|
| ARCH          | ARCHITECT                        | KW     | KILOWATT                    |
| BHP           | BRAKE HORSEPOWER                 | (L)    | ACOUSTICALLY LINED          |
| BTU           | BRITISH THERMAL UNIT             | MBH    | THOUSAND BTU PER HOUR       |
| BTUH          | BTU PER HOUR                     | MD     | MOTORIZED DAMPER            |
| BV            | BALL VALVE OR BALANCING VALVE    | MECH   | MECHANICAL                  |
| BYV           | BUTTERFLY VALVE                  | MFR    | MANUFACTURER                |
|               |                                  | MIN    | MINIMUM                     |
| CFM           | CUBIC FEET PER MINUTE            | (N)    | NEW                         |
| CFS           | CUBIC FEET PER SECOND            | NTS    | NOT TO SCALE                |
| CL            | CENTERLINE                       |        |                             |
| CLG           | CEILING                          | OA     | OUTSIDE AIR                 |
| CO            | CLEANOUT                         | OAD    | OUTSIDE AIR DAMPER          |
| COL           | COLUMN                           | OAT    | OUTSIDE AIR TEMPERATURE     |
| CONC          | CONCRETE                         | OBD    | OPPOSED BLADE DAMPER        |
| COND          | CONDENSATE                       | OD     | OUTSIDE DIAMETER            |
| CONN          | CONNECTION                       | OSA    | OUTSIDE AIR                 |
| CP            | CONDENSATE PUMP                  | OV     | OUTLET VELOCITY             |
| CR            | CONDENSATE RETURN                |        |                             |
| CS            | CIRCUIT SETTER                   | P      | PUMP OR PRESSURE OR POLE    |
| CTE           | CONNECT TO EXISTING              | PC     | PUMPED CONDENSATE           |
| CU FT         | CUBIC FEET                       | PD     | PRESSURE DROP               |
| CU IN         | CUBIC INCH                       | PF     | PREFILTER                   |
| CV            | CONSTANT VOLUME                  | PH     | PHASE (ELECTRICAL)          |
| CW            | COLD WATER                       | PLBG   | PLUMBING                    |
|               |                                  | POC    | POINT OF CONNECTION         |
| D             | DROP OR DRAIN                    | PRV    | PRESSURE REDUCING VALVE     |
| DBT           | DRY BULB TEMPERATURE             | PS     | PRESSURE SENSOR             |
| DDC           | DIRECT DIGITAL CONTROL           | PSI    | POUNDS PER SQUARE INCH      |
| DEFL          | DEFLECTION                       | PSIG   | PSI GAUGE                   |
| DGP           | DATA GATHERING PANEL             |        |                             |
| DIA           | DIAMETER                         | QTY    | QUANTITY                    |
| DIFF          | DIFFERENCE                       |        |                             |
| DN            | DOWN                             | RA     | RETURN AIR                  |
| DP            | DIFFERENTIAL PRESSURE            | RAD    | RETURN AIR DAMPER           |
| DPT           | DEW POINT TEMPERATURE            | REV.   | REUSE OR REVISION           |
| DSD           | DUCT SMOKE DETECTOR              |        | OR REVOLUTIONS              |
| DV            | DIAPHRAGM VALVE                  | RF     | RETURN FAN                  |
| DWG           | DRAWING(S)                       | RH     | RELATIVE HUMIDITY           |
| DX            | DIRECT EXPANSION                 | RM     | ROOM                        |
|               |                                  | RPM    | REVOLUTIONS PER MINUTE      |
| (E)           | EXISTING                         | S      | TEMPERATURE SENSOR          |
| EA            | EXHAUST AIR OR EACH              | SCFM   | STANDARD CONDITIONS         |
| EAD           | EXHAUST AIR DAMPER               | SD     | SMOKE DAMPER                |
| EAT           | ENTERING AIR TEMPERATURE         | SF     | SUPPLY FAN                  |
| ECON          | ECONOMIZER                       | SN     | SHEET NOTE                  |
| ED            | EXTRACTOR DAMPER                 | SP     | STATIC PRESSURE             |
| EDB           | ENTERING DRY BULB TEMPERATURE    | SPEC   | SPECIFICATIONS              |
| EF            | EXHAUST FAN                      | SQ IN  | SQUARE INCH                 |
| EFF           | EFFICIENCY                       | ST     | STRAINER OR SOUND TRAP      |
|               |                                  | STD    | SPLITTER DAMPER OR STANDARD |
| ELEC          | ELECTRICAL                       | STRUCT | STRUCTURAL                  |
| EMS           | ENERGY MANAGEMENT SYSTEM         |        |                             |
| EQUIP         | EQUIPMENT                        | T      | THERMOMETER OR THERMOSTAT   |
| ESP           | EXTERNAL STATIC PRESSURE         | TCP    | TEMPERATURE CONTROL PANEL   |
| EWBT          | ENTERING WET BULB TEMPERATURE    | TD     | TRANSFER DUCT               |
| EW            | ENTERING WATER TEMPERATURE       | TDH    | TOTAL DYNAMIC HEAD          |
| EX            | EXISTING                         | TEMP   | TEMPERATURE                 |
| EXH           | EXHAUST                          | TI     | TENANT IMPROVEMENT          |
| EXT           | EXTERNAL                         | TRG    | TRANSFER GRILLE             |
|               |                                  | TS     | TEMPERATURE SENSOR          |
| F             | FAHRENHEIT OR FILTER             | TT     | TEST TAP OR TEST TEE        |
| FC            | FLEXIBLE CONNECTION              | TYP    | TYPICAL                     |
|               |                                  | V      | VENT OR VOLT OR VELOCITY    |
| FD            | FIRE DAMPER                      | VAV    | VARIABLE AIR VOLUME         |
| FF            | FINAL FILTER OR FINISHED FLOOR   | VD     | VOLUME DAMPER               |
| FLR           | FLOOR                            | VEL    | VELOCITY                    |
| FPM           | FEET PER MINUTE                  | VERT   | VERTICAL                    |
| FPS           | FEET PER SECOND                  | VFD    | VARIABLE FREQUENCY DRIVE    |
| FSD           | FIRE/SMOKE DAMPER                | VOL    | VOLUME                      |
| FT            | FOOT OR FEET                     |        |                             |
|               |                                  | W      | WASTE OR WIDTH OR WATTS     |
| G             | GAS                              | W/     | WITH                        |
| GA            | GAUGE, GAGE                      | W/O    | WITHOUT                     |
| GAL           | GALLONS                          | WBT    | WET BULB TEMPERATURE        |
| GALV          | GALVANIZED                       | WG     | WATER GAUGE                 |
| GPM           | GALLONS PER MINUTE               |        |                             |
| H             | HEIGHT                           |        |                             |
| HB            | HOSE BIB                         |        |                             |
| HC            | HEATING COIL                     |        |                             |
| HD            | HEAD                             |        |                             |
| HOR           | HORIZONTAL                       |        |                             |
| HP            | HORSEPOWER OR HEAT PUMP          |        |                             |
| HR            | HOUR(S)                          |        |                             |
| HVAC          | HEATING, VENTILATING & AIR COND. |        |                             |
| HW            | HOT WATER                        |        |                             |
| HWR           | HOT WATER RETURN                 |        |                             |
| HWS           | HOT WATER SUPPLY                 |        |                             |

| MECHANICAL DRAWING LIST |  |
|-------------------------|--|
| M-001                   | MECH INFORMATION AND DRAWING LIST - MECHANICAL |
| M-002                   | HVAC SCHEDULES                                 |
| M-003                   | HVAC CALCULATIONS                              |
| M-004                   | HVAC CALCULATIONS                              |
| M-110                   | OVERALL HVAC PLAN                              |
| M-111                   | PARTIAL FIRST FLOOR HVAC PLAN                  |
| M-112                   | PARTIAL FIRST FLOOR HVAC PLAN                  |
| M-120                   | BASEMENT HVAC PLAN                             |
| M-301                   | MECHANICAL DETAILS                             |
| M-901                   | SPECIFICATIONS - MECHANICAL                    |
| M-902                   | SPECIFICATIONS - MECHANICAL                    |
| M-903                   | SPECIFICATIONS - MECHANICAL                    |

- ### GENERAL NOTES - MECHANICAL
- VERIFY ALL CONNECTIONS TO EXISTING WORK.
  - CONTRACTORS SHALL VISIT SITE AND BE FULLY COGNIZANT OF ALL CONDITIONS PRIOR TO SUBMITTING PROPOSAL.
  - DURING ENTIRE CONSTRUCTION PERIOD, THE CONTRACTOR SHALL MAINTAIN ADEQUATE FIRE EXTINGUISHERS READY FOR USE IN CASE OF FIRE.
  - PROTECTION OF PUBLIC: THE CONTRACTOR SHALL PROTECT THE PUBLIC FROM INJURY DURING PROGRESS OF THE WORK BY POSTING WARNING SIGNS, GUARD LIGHTS AND BARRICADES.
  - THE CONTRACTOR SHALL COORDINATE ALL ELECTRICAL & PLUMBING CHARACTERISTICS WITH ALL SUB CONTRACTOR. ALL ELECTRICAL APPARATUS SERVING THE MECHANICAL EQUIPMENT SHALL FULLY COMPLY WITH ELECTRICAL AND CONTROL REQUIREMENTS.
  - OBTAIN WRITTEN PERMISSION OF ARCHITECT BEFORE PROCEEDING WITH ANY CUTTING OR PATCHING OF STRUCTURAL SYSTEMS.
  - FURNISH AND INSTALL MATERIALS, EQUIPMENT AND LABOR AS SHOWN AND AS NECESSARY FOR COMPLETE WORKABLE SYSTEMS.
  - RESTORE ALL DAMAGE RESULTING FROM YOUR WORK AND LEAVE PREMISES IN CLEAN CONDITION WHEN FINISHED WITH WORK.
  - PROVIDE TWO SETS OF "AS-BUILT" DRAWINGS AND TWO BOUND SETS OF ALL OPERATIONS MANUALS, DIAGRAMS, SERVICE CONTRACTS, GUARANTEES, ETC. TO THE PROPERTY MANAGER. PROVIDE ONE SET OF "AS-BUILT" DRAWINGS TO ARCHITECT.
  - WHERE APPLICABLE, THERMOSTATS SHALL BE ABLE TO:
    - MAINTAIN SPACE TEMPERATURE SET POINTS FROM 55 DEGREES TO 85 DEGREES.
    - SEQUENCE HEATING AND COOLING AND PROVIDE A 5 DEGREE DEADBAND IN WHICH NO HEATING OR COOLING IS PROVIDED TO THE SPACE.
  - PROVIDE THE MANUFACTURERS AND CODE REQUIRED CLEARANCES BETWEEN EQUIPMENT CONTROLS AND BEAMS, PIPES, DUCTS, LIGHT FIXTURES, CONDUITS, WALLS OR OTHER OBSTRUCTIONS.
  - THERMOSTAT HEIGHT SHALL BE 48" ABOVE FINISHED FLOOR IN MANAGER'S OFFICE. LOCATIONS OF REMOTE TEMPERATURE SENSORS IN SALES AREA ARE TO BE APPROVED BY PM.
  - ALL PIPE AND DUCT INSULATION SHALL MEET THE REQUIREMENTS OF THE LOCAL ENERGY CODE.
  - MECHANICAL SYSTEM CONTROLS SHALL MEET THE REQUIREMENT OF THE LOCAL ENERGY CODE AND BE ABLE TO INTERFACE WITH EXISTING BUILDING CONTROLS.
  - PROVIDE REQUIRED DUCT AND PIPING INSULATION PER THE LOCAL ENERGY CODE.
  - CONTRACTOR SHALL PROVIDE ALL CODE REQUIRED MECHANICAL EQUIPMENT AND PIPE SEISMIC RESTRAINT. THE SEISMIC RESTRAINTS SHALL BE DESIGNED AND STAMPED BY A LICENSED STRUCTURAL ENGINEER IN THE STATE OF THE PROJECT.
  - ALL RIGID ROUND OR OVAL DUCT SHALL BE SPIRAL WOUND, TYPICAL.

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 PROJECT #006-160335-00

| ISSUED / REVISED    | DATE     |
|---------------------|----------|
| PRELIMINARY SET     | 09/08/16 |
| LL COORDINATION SET | 11/08/16 |
| LL/PERMIT SET       | 11/21/16 |

MECH INFORMATION AND DRAWING LIST-MECHANICAL

**M-001**