

### AIR DISTRIBUTION SYMBOLS

- RECTANGULAR DUCT. (FIRST NUMBER IS SIDE SHOWN) DIMENSIONS IN INCHES
- 12" 12 INCH ROUND DUCT
- MDM MOTORIZED DAMPER
- FLEXIBLE DUCT
- DUCT FLEXIBLE CONNECTOR (FC)
- D R DUCT DROPS AND RISES IN DIRECTION OF AIR FLOW
- RETURN DUCT TURNED UP OR DOWN (DASHED)
- SUPPLY DUCT TURNED UP OR DOWN (DASHED)
- EXHAUST DUCT TURNED UP OR DOWN (DASHED)
- ACOUSTICAL LINING (DUCT DIM. FOR NET FREE AREA)
- ROUND DUCT ELBOW DOWN
- ROUND DUCT ELBOW UP
- SQUARE TO ROUND TRANSITION
- CAP (DUCT AND/OR PIPE)
- INDICATES DUCT, PIPING, EQUIPMENT TO BE REMOVED.
- EA EXHAUST AIR
- RA RETURN AIR
- SA SUPPLY AIR
- VOLUME DAMPER
- FIRE DAMPER
- SMOKE DAMPER TAG NO.
- COMBINATION SMOKE/FIRE DAMPER TAG NO.
- RECTANGULAR ELBOW W/TURNING VANES
- DIRECTION OF AIR FLOW (IN)
- DIRECTION OF AIR FLOW (OUT)
- HUMIDISTAT OR HUMIDITY SENSOR
- THERMOSTAT (T\*STAT) OR TEMP. SENSOR
- SMOKE DETECTOR
- S-3 DIFFUSER, REGISTER OR GRILLE TAG  
300 CFM AIR FLOW QUANTITY  
TYP. 3
- FTR-2 FINNED TUBE TAG  
20 LENGTH OF FINNED ELEMENT
- A1 DETAIL NO.  
M1401 SHEET NO. WHERE DETAIL IS LOCATED
- CUH EQUIPMENT TAG  
2 EQUIPMENT NO.
- LIMITS OF DEMOLITION
- CONNECT TO EXISTING

### PIPING SYMBOLS

- UNION
- FLANGE
- PIPE ANCHOR
- PIPE GUIDE OR SLEEVES
- PIPE ELBOW TURNED DOWN
- PIPE ELBOW TURNED UP
- PIPING TEE-DOWN
- PIPING TEE-UP
- PIPE RISER
- PIPE PITCHES DOWN
- GENERIC VALVE, SEE SPECIFICATIONS FOR TYPE
- GATE VALVE
- BALL VALVE
- BUTTERFLY VALVE (MANUAL)
- 2-WAY CONTROL VALVE
- 3-WAY CONTROL VALVE
- BALANCING VALVE (CIRCUIT SETTER)
- CHECK VALVE
- PLUG VALVE
- GLOBE VALVE
- NEEDLE VALVE
- BACK FLOW PREVENTER
- SOLENOID VALVE
- PRESSURE REDUCING OR REGULATING VALVE
- PRESSURE RELIEF VALVE
- STRAINER
- STRAINER W/BLOWDOWN
- MANUAL AIR VENT
- AUTOMATIC AIR VENT
- PPS PRESSURE SWITCH
- FFS FLOW SWITCH
- PFG PRESSURE GAUGE AND COCK
- THERMOMETER AND WELL
- TEMPERATURE & PRESSURE TAP (PETE'S PLUG)
- HOSE END DRAIN VALVE WITH CAP
- ORIFICE FLOWMETER
- FLEXIBLE PIPE CONNECTOR
- EXPANSION JOINT
- F&T STEAM TRAP (FLOAT AND THERMOSTATIC INDICATED T.T. THERMOSTAT, B.T. BUCKET TRAP, T.D. THERMODYNAMIC TRAP)
- CONCENTRIC REDUCER/INCREASER
- ECCENTRIC REDUCER/INCREASER
- DIRECTION OF FLOW
- PUMP
- FINNED TUBE BASEBOARD
- H HUMIDIFIER
- DP DIFFERENTIAL PRESSURE TRANSMITTER

### ABBREVIATIONS

- |       |                               |        |   |        |                                 |
|-------|-------------------------------|--------|---|--------|---------------------------------|
| AAV   | AUTOMATIC AIR VENT            | ENG    | ENCLOSURE                                 | PSE    | PROCESS SOLVENT EXHAUST         |
| ACC   | AIR COOLED CONDENSER          | ER     | EXHAUST REGISTER                          | PP     | POLY-PROPYLENE                  |
| ACU   | AIR CONDITIONING UNIT         | (E)    | EXISTING                                  | PPE    | PRE PURCHASED EQUIPMENT         |
| ACV   | AUTOMATIC CONTROL VALVE       | EXIST. | EXISTING                                  | PRS    | PRESSURE REDUCING STATION       |
| AD    | ACCESS DOOR                   | FBO    | FURNISHED BY OWNER                        | PRV    | PRESSURE REDUCING VALVE         |
| AE    | ACID EXHAUST                  | FBP    | FACE AND BYPASS                           | PVD    | PNEUMATIC VOLUME DAMPER         |
| AFF   | ABOVE FINISHED FLOOR          | FC     | FLEXIBLE CONNECTION                       | (R)    | REMOVE                          |
| AFMS  | AIR FLOW MEASURING STATION    | FD     | FIRE DAMPER                               | RA     | RETURN AIR                      |
| AHU   | AIR HANDLING UNIT             | FG     | FIBERGLASS                                | (REL.) | RELOCATED                       |
| ATC   | AUTOMATIC TEMPERATURE CONTROL | F & T  | FLOAT AND THERMOSTATIC                    | RF     | RETURN FAN                      |
| AV    | AIR VENT                      | FO     | FLAT OVAL                                 | RG     | RETURN GRILLE                   |
| BB    | BASEBOARD                     | FTR    | FINNED TUBE RADIATION                     | RHC    | REHEAT COIL                     |
| BDD   | BACKDRAFT DAMPER              | FS     | FLOW SWITCH                               | RM     | ROOM                            |
| BG    | BLAST GATE                    | GC     | GENERAL CONTRACTOR                        | RR     | RETURN REGISTER                 |
| BLDG  | BUILDING                      | GPM    | GALLONS PER MINUTE                        | RV     | RELIEF VALVE                    |
| BOD   | BOTTOM OF DUCT                | H      | HUMIDIFIER                                | SA     | SUPPLY AIR                      |
| BOP   | BOTTOM OF PIPE                | HB     | HOSE BIB                                  | SCV    | SELF CONTAINED VALVE            |
| BTU   | BRITISH THERMAL UNIT          | HRU    | HEAT RECOVERY UNIT                        | SD     | SMOKE DETECTOR                  |
| CBD   | COUNTER BALANCED DAMPER       | HTR    | HEATER                                    | SF     | SUPPLY FAN                      |
| CD    | CEILING DIFFUSER              | H & V  | HEATING AND VENTILATION                   | SG     | SUPPLY GRILLE                   |
| CFF   | CAPPED FOR FUTURE             | HVAC   | HEATING, VENTILATING AND AIR CONDITIONING | SR     | SUPPLY REGISTER                 |
| CFM   | CUBIC FEET PER MINUTE         | HW     | HOT WATER                                 | SS     | STAINLESS STEEL                 |
| CLG   | CEILING                       | HX     | HEAT EXCHANGER                            | TE     | TEMPERATURIZED ELEMENT (SENSOR) |
| CONT  | CONTINUATION                  | IN WG  | INCHES WATER GAUGE                        | TG     | TRANSFER GRILLE                 |
| COORD | COORDINATE                    | LD     | LINED DUCT                                | TOD    | TOP OF DUCT                     |
| CP    | CONDENSATE PUMP & RECEIVER    | MAU    | MAKE UP AIR UNIT                          | TOP    | TOP OF PIPE                     |
| CT    | COOLING TOWER                 | MAX    | MAXIMUM                                   | TTS    | TIGHT TO STEEL                  |
| CTE   | CONNECT TO EXISTING           | MBH    | 1000 BTU/HR.                              | TV     | TURNING VANE(S)                 |
| CU    | COPPER                        | ME     | MECHANICAL ENGINEER                       | TYP    | TYPICAL                         |
| CUH   | CABINET UNIT HEATER           | MFR    | MANUFACTURER                              | UH     | UNIT HEATER                     |
| CV    | CONTROL VALVE                 | MIN    | MINIMUM                                   | UIC    | UP IN CHASE                     |
| CW    | COLD WATER                    | MD     | MOTOR OPERATED DAMPER                     | UIW    | UP IN WALL                      |
| DC    | DOUBLE CONTAINED              | MPV    | MULTI-PURPOSE VALVE                       | UV     | UNIT VENTILATOR                 |
| DDC   | DIRECT DIGITAL CONTROL        | MTD    | MOUNTED                                   | VAV    | VARIABLE AIR VOLUME BOX         |
| DIA   | DIAMETER                      | MUA    | MAKE UP AIR                               | VB     | VACUUM BREAKER                  |
| DIC   | DOWN IN CHASE                 | NPW    | NON-POTABLE WATER                         | VTR    | VENT THRU ROOF                  |
| DIW   | DOWN IN WALL                  | NTS    | NOT TO SCALE                              | VD     | MANUAL VOLUME DAMPER            |
| DN    | DOWN                          | OA     | OUTSIDE AIR                               | VOFF   | VALVED AND CAPPED FOR FUTURE    |
| DT    | DROP AND TRANSITION           | OBD    | OPPOSED BLADE DAMPER                      | VFD    | VARIABLE FREQUENCY DRIVE        |
| DWG   | DRAWING                       | OED    | OPEN ENDED DUCT                           | VOC    | VOLATILE ORGANIC COMPOUNDS      |
| DWH   | DOMESTIC WATER HEATER         | PAE    | PROCESS ACID EXHAUST                      | W/     | WITH                            |
| EA    | EXHAUST AIR                   | PHE    | PROCESS HEAT EXHAUST                      | WMS    | WIRE MESH SCREEN                |
| EF    | EXHAUST FAN                   |        |   |        |                                 |

### PIPING SYSTEMS

- |      |                                 |      |                                 |     |                               |
|------|---------------------------------|------|---------------------------------|-----|-------------------------------|
| CD   | CONDENSATE DRAIN                | HG   | HOT GAS                         | RL  | REFRIGERANT LIQUID            |
| CHWS | CHILLED WATER SUPPLY            | HPS  | HIGH PRESSURE STEAM             | RS  | REFRIGERANT SUCTION           |
| CHWR | CHILLED WATER RETURN            | HPR  | HIGH PRESSURE CONDENSATE RETURN | TWS | TEMPERED CHILLED WATER SUPPLY |
| CWS  | CONDENSER WATER SUPPLY          | HWS  | HOT WATER SUPPLY                | TWR | TEMPERED CHILLED WATER RETURN |
| CWR  | CONDENSER WATER RETURN          | HWR  | HOT WATER RETURN                | ZB  | ZONE VALVE BOX                |
| DB   | DISTRIBUTION VALVE BOX          | LPS  | LOW PRESSURE STEAM              |     |                               |
| FCS  | FREE COOLING SUPPLY             | LPR  | LOW PRESSURE RETURN             |     |                               |
| FCR  | FREE COOLING RETURN             | MPS  | MEDIUM PRESSURE STEAM           |     |                               |
| FOS  | FUEL OIL SUPPLY                 | MPR  | MEDIUM PRESSURE RETURN          |     |                               |
| FOR  | FUEL OIL RETURN                 | NPW  | NON POTABLE COLD WATER          |     |                               |
| FOV  | FUEL OIL VENT                   | PCWR | PROCESS COOLING WATER RETURN    |     |                               |
| GCR  | GRAVITY STEAM CONDENSATE RETURN | PC   | PUMPED STEAM CONDENSATE         |     |                               |
| GLY  | GLYCOL                          | PD   | PUMPED DISCHARGE                |     |                               |
| HCR  | HOT/ CHILLED WATER RETURN       | PW   | POTABLE WATER                   |     |                               |
| HCS  | HOT/ CHILLED WATER SUPPLY       | R    | RELIEF LINE                     |     |                               |

**GENERAL NOTE**  
 1. ALL GENERAL NOTES, SYMBOL LISTS, AND DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL HVAC AND PLUMBING DRAWINGS FOR THIS PROJECT. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET ARE FOR REFERENCE ONLY AND DO NOT INDICATE THEIR INCORPORATION INTO THE DESIGN.

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