

DUCTWORK SYMBOLS

| DOUBLE LINE | SINGLE LINE | ABBREVIATION | DESCRIPTION | DOUBLE LINE | SINGLE LINE | ABBREVIATION | DESCRIPTION |
|-------------|-------------|--------------|---|-------------|-------------|--------------|--|
| | | | EXISTING DUCTWORK | | | | EXISTING TO BE REMOVED |
| | | | NEW DUCTWORK | | | | FLEXIBLE DUCTWORK |
| | | | FLEXIBLE CONNECTION | | | | SQUARE ELBOW WITH TURNING VANES |
| | | | RADIUS ELBOW | | | | TRANSITION |
| | | | SQUARE TO ROUND TRANSITION | | | | RISE IN DIRECTION OF ARROW |
| | | | DROP IN DIRECTION OF ARROW | | | | BRANCH |
| | | | END DOUBLE BRANCH WITH TURNING VANES | | | | DUCT END CAP |
| | | | DUCT SIZE - FIRST NUMBER IS SIDE SHOWN | | | SD | SPLITTER DAMPER |
| | | BD | BALANCING DAMPER | | | VD | VOLUME DAMPER (OPPOSED BLADE) |
| | | BDD | BAROMETRIC OR BACKDRAFT DAMPER | | | FD | FIRE DAMPER WITH ACCESS DOOR |
| | | MSD | SMOKE DAMPER WITH ACCESS DOOR (MOTORIZED) | | | SFD | SMOKE/FIRE DAMPER WITH ACCESS DOOR (MOTORIZED) |
| | | | SMOKE DETECTOR IN AIR STREAM | | | | |

PIPING SYMBOLS

| | | | | | | | | | |
|--|----------------------------------|--|--|--|--------------------|--|-------------------------------|--|---------------------|
| | BUTTERFLY VALVE | | TEMPERATURE CONTROL VALVE | | GAUGE COCK | | RISE IN PIPE | | TEMPERATURE SENSOR |
| | MOTORIZED VALVE (BUTTERFLY TYPE) | | CHECK VALVE | | VALVE IN RISER | | PIPE TEE | | DROP IN PIPE |
| | GATE VALVE | | DOUBLE CHECK VALVE | | TEST PLUG | | PIPE TEE DOWN | | SENSOR WELL |
| | MOTORIZED VALVE (GATE TYPE) | | BALANCING VALVE | | PRESSURE GAUGE | | PIPE TEE UP | | 3-WAY CONTROL VALVE |
| | SOLENOID VALVE (GATE TYPE) | | STRAINER AND BLOW-DOWN VALVE W/ HOSE END AND CAP | | THERMOMETER | | PIPE CAP | | METER |
| | BALL VALVE | | MOTORIZED BY-PASS VALVE ASSEMBLY | | FLEX CONNECTION | | DIRECTION OF FLOW | | UNDERGROUND PIPING |
| | ACTUATED BALL VALVE | | PRESSURE RELIEF VALVE | | HOSE BIBB | | EXISTING PIPING TO BE REMOVED | | |
| | GLOBE VALVE | | OS&Y VALVE | | CONCENTRIC REDUCER | | NEW PIPING | | |
| | MOTORIZED GLOBE VALVE | | | | ECCENTRIC REDUCER | | | | |

PIPING ABBREVIATIONS

| | |
|------|---------------------------------|
| B | BRINE |
| BBD | BOILER BLOWDOWN |
| BF | BOILER FEEDWATER |
| CA | COMPRESSED AIR |
| CD | CONDENSATE DRAIN |
| CF | CHEMICAL FEED |
| CR | CONDENSATE RETURN |
| CW | DOMESTIC COLD WATER |
| CDR | CONDENSER WATER RETURN |
| CDS | CONDENSER WATER SUPPLY |
| CHWR | CHILLED WATER RETURN |
| CHWS | CHILLED WATER SUPPLY |
| D | DRAIN |
| DP | PUMPED DRAIN |
| DSP | DRY STAND PIPE |
| FO | FUEL OIL |
| FOR | FUEL OIL RETURN |
| FOV | FUEL OIL VENT |
| FS | FIRE SPRINKLER PIPE |
| HCR | HEATING/COOLING WATER RETURN |
| HCS | HEATING/COOLING WATER SUPPLY |
| HPC | HIGH PRESSURE CONDENSATE |
| HPS | HIGH PRESSURE STEAM |
| HRR | HEAT RECOVERY RETURN |
| HRS | HEAT RECOVERY SUPPLY |
| HW | DOMESTIC HOT WATER |
| HWR | HEATING WATER RETURN |
| HWS | HEATING WATER SUPPLY |
| IA | INSTRUMENT AIR |
| LP | LIQUID PROPANE GAS |
| LPC | LOW PRESSURE CONDENSATE |
| LPS | LOW PRESSURE STEAM |
| MA | MEDICAL AIR |
| MAV | MANUAL AIR VENT |
| MU | MAKEUP WATER |
| N | NITROGEN |
| NG | NATURAL GAS |
| NO | NITROUS OXIDE |
| O | OXYGEN |
| OF | OVERFLOW |
| PD | PUMPED DISCHARGE |
| RD | ROOF DRAIN |
| RHW | RECIRCULATED DOMESTIC HOT WATER |
| SCW | SOFT COLD WATER |
| SD | SANITARY DRAIN |
| STD | STORM DRAIN |
| SV | STEAM VENT |
| V | VENT |
| VFD | VARIABLE FREQUENCY DRIVE |
| VT | EQUIPMENT AND VALVE VENT RELIEF |
| VTR | VENT THRU ROOF |

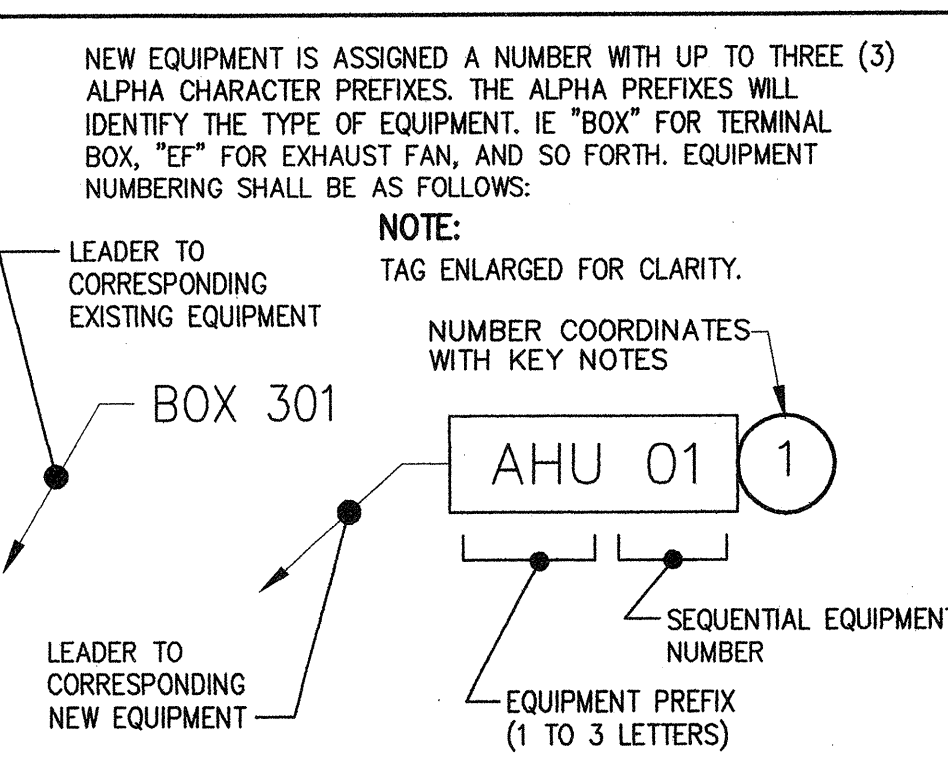
EQUIPMENT PREFIXES

| | |
|---------|------------------------------------|
| AD | AIR DRYER |
| ACU | AIR CONDITIONING UNIT |
| AHU | AIR HANDLING UNIT |
| AFD | ADJUSTABLE FREQUENCY DRIVE |
| AS | AIR SEPARATOR |
| BLR | BOILER |
| BOX | TERMINAL OR VAV BOX |
| CDR | CONDENSER |
| CFR | CHEMICAL FEEDER |
| CHR | CHILLER |
| CP | COMPRESSOR |
| CPL | CONTROL PANEL |
| CRU | CONDENSATE RETURN UNIT |
| CEG | CEILING EXHAUST GRILLE |
| CSD | CEILING SUPPLY DIFFUSER |
| CT | COOLING TOWER |
| DA | DEAERATOR |
| DPR | DAMPER |
| DS | DISCONNECT |
| DV | DRAIN VALVE |
| EF | EXHAUST FAN |
| EDH | ELECTRIC DUCT HEATER |
| EXP | EXPANSION TANK |
| FCV | FLOW CONTROL VALVE |
| FIT | FLOW INDICATING TRANSMITTER |
| FLD | FLOOR DRAIN |
| FLT, FF | AIR FILTER |
| FM | FLOW METER |
| FMS | FLOW MEASURING STATION |
| FS | FLOW SWITCH |
| GHU | GAS HEATER UNIT |
| HB | HOSE BIBB |
| HEX | HEAT EXCHANGER |
| HP | HEAT PUMP |
| HTT | HEAT TRACING TAPE |
| JS | JANITORS SINK |
| L | LAVATORY |
| LCV | LEVEL REGULATOR, SELF CONTAINED |
| OPS | OIL PUMP SYSTEM |
| P, PMP | PUMP |
| PCV | PRESSURE REGULATOR, SELF CONTAINED |
| PT | PRESSURE TRANSMITTER |
| PRV | PRESSURE REGULATING VALVE |
| PVL | PRESSURE VESSEL |
| P/T | PRESSURE/TEMPERATURE VALVE |
| SG | SUPPLY GRILLE |
| SH | SHOWER |
| SS | SERVICE SINK |
| TCV | TEMPERATURE CONTROL VALVE |
| TRV | TEMPERATURE REGULATING VALVE |
| U | URINAL |
| WC | WATER CLOSET |
| WCO | WALL CLEANOUT |
| WG | WALL GRILLE |

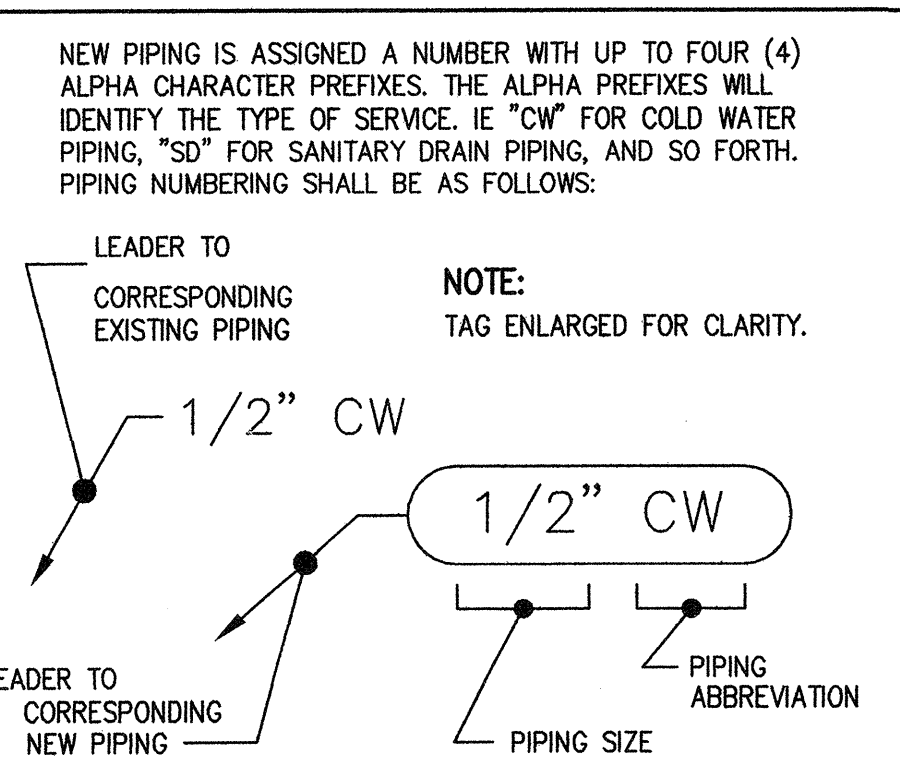
MISC. ABBREVIATIONS

| | |
|---------|---------------------------------|
| APD | AIR PRESSURE DROP |
| AFF | ABOVE FINISHED FLOOR |
| BD | BALANCING DAMPER |
| CFM | CUBIC FEET PER MINUTE |
| CH | CHILLED WATER |
| CMU | CONCRETE MASONRY UNIT |
| CO | CLEAN OUT |
| CONN | CONNECTION |
| CONT | CONTINUED |
| DET | DETAIL |
| DIA | DIAMETER |
| EADB | ENTERING AIR DRY BULB |
| EAT | ENTERING AIR TEMPERATURE |
| EAWB | ENTERING AIR WET BULB |
| EIN | EQUIPMENT IDENTIFICATION NUMBER |
| EMB | EMBEDMENT |
| EXAM | EXAMPLE |
| (E) | EXISTING |
| EXP | EXPANSION |
| F & T | FLOAT AND THERMOSTATIC |
| FCO | FLOOR CLEAN OUT |
| FF | FINISH FLOOR |
| FOR | FLUE GAS RETURN |
| FUT | FUTURE |
| GPM | GALLONS PER MINUTE |
| HP | HORSE POWER |
| ISO | ISOLATION |
| LADB | LEAVING AIR DRY BULB |
| LAT | LEAVING AIR TEMPERATURE |
| LAWB | LEAVING AIR WET BULB |
| LPG | LIQUID PETROLEUM GAS |
| MB | MACHINE BOLT |
| MBH | THOUSAND BRITISH THERMAL |
| MFR | MANUFACTURED |
| MH | MANHOLE |
| NC | NORMALLY CLOSED |
| NIC | NOT IN CONTRACT |
| NO | NORMALLY OPEN |
| PORT'BL | PORTABLE |
| REQ'D | REQUIRED |
| SEC | SECONDARY |
| SS | SERVICE STEEL |
| SUM | SUMMER |
| TSP | TOTAL STATIC PRESSURE |
| TYP | TYPICAL |
| WCO | WALL CLEAN OUT |
| WIN | WINTER |
| WPD | WATER PRESSURE DROP |
| W/ | WITH |
| △ | REVISION |

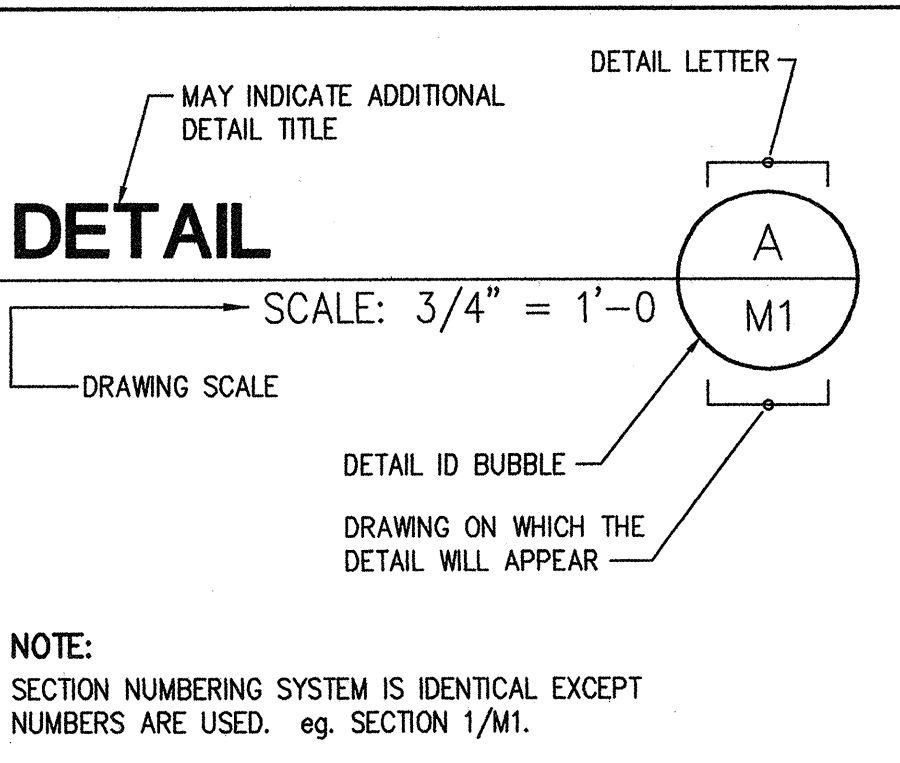
EQUIPMENT IDENTIFICATION



PIPING IDENTIFICATION



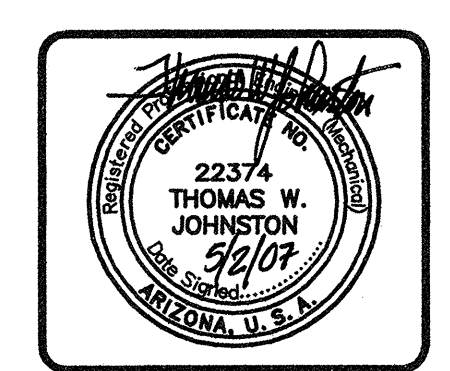
DETAIL NUMBERING SYSTEM



MECHANICAL DRAWING INDEX

| DWG. | DRAWING DESCRIPTION |
|-------|---|
| MP1 | SYMBOLS, ABBREVIATIONS AND DRAWING INDEX |
| MP2 | MECHANICAL AND PLUMBING DETAILS |
| MP3 | MECHANICAL AND PLUMBING SCHEDULES, RISER DIAGRAMS |
| M1 | MECHANICAL PLAN |
| P1 | PLUMBING PLAN |
| IECC1 | IECC CODE COMPLIANCE |

THE MECHANICAL SYMBOLS, EQUIPMENT PREFIXES, AND PIPING ABBREVIATIONS ARE COMPREHENSIVE. SOME EQUIPMENT PREFIXES, AND PIPING ABBREVIATIONS MAY NOT APPLY TO THIS PROJECT SEE GENERAL NOTES ALSO.



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title
SYMBOLS, ABBREVIATIONS AND DRAWING INDEX

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MP1