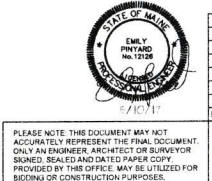
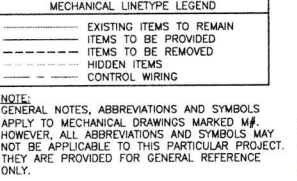
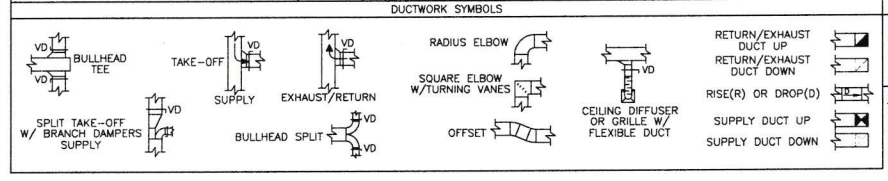


ABBREVIATIONS			MECHANICAL SYMBOLS			PIPING SYMBOLS			GENERAL NOTES		
<p>A AMP ABV ABOVE AC AIR-CONDITIONING ACH AIR CHANGES PER HOUR AD ACCESS DOOR ADA AMERICANS WITH DISABILITIES ACT AF AIR FILTER, AIR FLOW AFF ABOVE FINISHED FLOOR AFM AIR FLOW MEASURING STATION AHU AIR-HANDLING UNIT AL ACOUSTICAL LINER AMB AMBIENT ACC ACCESS PANEL APD AIR PRESSURE DROP APPROX APPROXIMATELY AS AIR SEPARATOR ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS ATC AUTOMATIC TEMPERATURE CONTROL ATT ACOUSTICAL ATTENUATOR AV AUTOMATIC VENT B BOILER BBD BACKDRAFT DAMPER BHP BRAKE HORSEPOWER BLDD BUILDING BT BOTTOM BTUH BTU PER HOUR CC CENTERLINE, CONVECTOR, CELSIUS CA COMPRESSED AIR CAP CAPACITY CD CONDENSATE DRAIN CF CIRCULATING FAN CFM CUBIC FEET PER MINUTE CH CHILLER CHWP CHILLED WATER PUMP CHWR CHILLED WATER RETURN CHWS CHILLED WATER SUPPLY CLS CEILING CO CLEAN UP/CARBON MONOXIDE COL COLUMN CONC CONCRETE COND CONDENSATE CONN CONNECTION CONT CONTINUATION CONV CONVECTOR CP CONTROL PANEL, CONDENSATE PUMP CR CONDENSATE RETURN CSEA CONFINED SPACE, EXHAUST AIR CU CONDENSING UNIT CUH CABINET UNIT HEATER CW COLD WATER CWR COLD WATER RETURN CWS COLD WATER SUPPLY CV CONTROL VALVE D DRAIN DB DECIBELS DB DRY BULB DDC DIRECT DIGITAL CONTROL DEG DEGREE Ø DIA DIAMETER DIFF DIFFERENTIAL DHWH DOMESTIC HW HEATER DISCH DISCHARGE DN DOWN DOM DOMESTIC DP, DPS DIFFERENTIAL-PRESSURE SENSOR DTWR DUAL TEMPERATURE WATER RETURN DTWS DUAL TEMPERATURE WATER SUPPLY DWG DRAWING EA EACH, EXHAUST AIR EAT ENTERING AIR TEMPERATURE EC ELECTRICAL CONTRACTOR EDR EQUIVALENT DIRECT RADIATION EF EXHAUST FAN EFF EFFICIENCY EGT ENTERING GYCOL TEMPERATURE ELEC ELECTRIC ELEV ELEVATION ENT ENTERING EPDM ETHYLENE PROPYLENE DIENE MEMBRANE EQUIP EQUIPMENT ERV ENERGY RECOVERY VENTILATOR ESP EXTERNAL STATIC PRESSURE ET EXPANSION TANK EVAP EVAPORATOR EW ENTERING WATER TEMPERATURE EWT ENTERING WATER TEMPERATURE EXH EXHAUST EXIST EXISTING EXP EXPANSION</p>	<p>EXT EXPANSION TANK F FAN, DEGREES FAHRENHEIT FA FRESH AIR FAI FRESH AIR INTAKE FC FLEX CONNECTOR, FCO FORWARD CURVED FCU FLOOR CLEANOUT FCU FAN COIL UNIT FD FIRE DAMPER, FLOOR DRAIN FL FLOOR FIX FIXTURE FLA FLAT LOAD AMPS FLOOR FLOOR FOB FLAT ON BOTTOM FOR FUEL OIL RETURN FOS FUEL OIL SUPPLY FOT FLOW SWITCH FS FLOW SWITCH FSD FIRE/SMOKE DAMPER FTR, FR FIN TUBE RADIATION GA GAUGE GAL GALLONS GALV GALVANIZED GMU GYCOL MAKE-UP UNIT GC GENERAL CONTRACTOR GF GYCOL FUMES GPH GALLONS PER HOUR GPM GALLONS PER MINUTE GR GYCOL RETURN GRH GRAVITY RELIEF HOOD GS GYCOL SUPPLY GSM GALVANIZED SHEET METAL GYP GYPSUM WALLBOARD HC HEATING COIL H HEATING HHWR HEATING HOT WATER RETURN HHWS HEATING HOT WATER SUPPLY HP HORSEPOWER, HIGH PRESSURE HR HOUR HT HEIGHT HV HEATING AND VENTILATING UNIT HVAC HEATING, VENTILATING AND AIR CONDITIONING (UNIT) HW HOT WATER HWC HOT WATER COIL HWR HOT WATER RETURN HWS HOT WATER SUPPLY HX HEAT EXCHANGER HZ HERTZ IBR HYDRONICS INSTITUTE ICU INTENSIVE CARE UNIT ID INSIDE DIAMETER IN INCHES INDIR INDIRECT WASTE INDOOR INDOOR UNIT KW KILOWATT L LENGTH, LOUVER LAT LEAVING AIR TEMPERATURE LB POUND LD LINEAR DIFFUSER LDB LEAVING DRY BULB LF LINEAR FEET LONG LONG LGT LEAVING GYCOL TEMPERATURE LOC LOCATION/LOCATED LPS LOW PRESSURE STEAM LRA LOCKED ROTOR AMPS L/S LITERS PER SECOND LVC LEAVING LWB LEAVING WET BULB LWT LEAVING WATER TEMPERATURE MANUF MANUFACTURER MAX MAXIMUM MAX PD MAXIMUM PRESSURE DROP MBH 1000 BTU PER HOUR MBU 1000 BTU MCC MECHANICAL CONTRACTOR MCA MAXIMUM CIRCUIT AMPS MCC MOTOR CONTROL CENTER MD MOTORIZED DAMPER MECH MECHANICAL MEZZ MEZZANINE MANUF MANUFACTURER MFG MINIMUM, MINUTES MIN MINIMUM, MINUTES M METER m2 METER SQUARED mm MILLIMETER MNTD MOUNTED MU MAKE-UP-AIR MUW MAKE-UP-WATER</p>	<p>N/A NOT APPLICABLE NC NORMALLY CLOSED, NOISE CRITERIA NOISE CRITERIA NFPA NATIONAL FIRE PROTECTION ASSOCIATION NIC NOT IN CONTRACT NIS NOT IN SCOPE NO NORMAL, OPEN, NUMBER NO2 NITROGEN DIOXIDE NOT TO SCALE NOT TO SCALE OUTSIDE OUTSIDE OAT OUTSIDE AIR INTAKE OBD OPPOSED BLADE DAMPER OC ON CENTER OD OUTSIDE DIAMETER OED OPEN ENDED DUCT OSV OIL SAFETY VALVE OUTSIDE AIR TEMPERATURE OUTSIDE AIR TEMPERATURE P PUMP, PITCH PA PASCAL PL PLUMBING CONTRACTOR PD PRESSURE DROP PH PHASE PL PLUMBING PRESS PRESSURE PRV PRESSURE REDUCING VALVE PSIG POUNDS PER SQUARE INCH PSIG POUNDS PER SQUARE INCH GAUGE PT PRESSURE TREATED PVS COMBINATION PRECIPITATION OA PT TEMPERATURE SENSITIVE PVC POLY VINYL CHLORIDE QTY QUANTITY R RETURN RA RETURN AIR RAD RADIATOR RAF, RF RETURN AIR FAN RAT RETURN AIR TEMPERATURE REL RELIEF REQ'D REQUIRED RET, R RETURN RH RELATIVE HUMIDITY RM REFRIGERANT LIQUID ROOM ROOM RPM REVOLUTIONS PER MINUTE RFT REFRIGERANT SUCTION RTU ROOFTOP UNIT SA SUPPLY AIR SA SUPPLY AIR SCR SCREEN SD SMOKE DAMPER SF SQUARE FOOT SI SIMILAR SM SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION SOV SHUT OFF VALVE SP STATIC PRESSURE SPL STATIC PRESSURE HIGH LIMIT SPL STATIC PRESSURE LOW LIMIT SPS STATIC PRESSURE SENSOR SQ SQUARE SRV SAFETY RELIEF VALVE SS STAINLESS STEEL ST STEEL STM STEAM SUP, S SUPPLY T TEMPERATURE SENSOR, THERMOSTAT TEMP TEMPERATURE TEMP TEMPERATURE TO TRANSFER GRILLE TOT TOTAL STATIC PRESSURE TSP TYPICAL UH UNIT HEATER UHL UNDERWRITERS LABORATORY V VENT VAV VARIABLE AIR VOLUME VAV VOLUME DAMPER VEL VELOCITY VFD VARIABLE FREQUENCY DRIVE VIF VERIFY IN FIELD VTR VENT THRU ROOF W WIDTH, WATT W WITH WB WET-BULB WC WATER COLUMN WC WALL CLEAN OUT WEA WELDING EXHAUST AIR WF WALL FAN WG WATER GAUGE WH WATER HEATER WMS WIRE MESH SCREEN WPD WATER PRESSURE DROP WT WEIGHT</p>	<p>SECTION NUMBER SECTION NUMBER DRAWING WHERE SECTION IS REFERENCED DRAWING WHERE SECTION IS REFERENCED DETAIL NUMBER DETAIL NUMBER DRAWING WHERE DETAIL IS REFERENCED DRAWING WHERE DETAIL IS REFERENCED DRAWING WHERE DETAIL IS DRAWN DRAWING WHERE DETAIL IS DRAWN SYMBOL PER ABBREVIATION LIST SYMBOL PER ABBREVIATION LIST EQUIPMENT SEQUENCE NUMBER EQUIPMENT SEQUENCE NUMBER DIFFUSER, REGISTER OR GRILLE SEQUENCE NUMBER DIFFUSER, REGISTER OR GRILLE SEQUENCE NUMBER GPM SETTING FOR BALANCING VALVE GPM SETTING FOR BALANCING VALVE DEMOLITION KEYED NOTE (NUMBER) DEMOLITION KEYED NOTE (NUMBER) KEYED NOTE (NUMBER) KEYED NOTE (NUMBER) PASCAL PASCAL REVISION (LETTER OR NUMBER) REVISION (LETTER OR NUMBER) RETURN OR EXHAUST GRILLE, REGISTER RETURN OR EXHAUST GRILLE, REGISTER SUPPLY DIFFUSER, REGISTER, GRILLE SUPPLY DIFFUSER, REGISTER, GRILLE ACCESS DOOR ACCESS DOOR UNIT HEATER UNIT HEATER PROPELLER FAN PROPELLER FAN CIRCULATING FAN CIRCULATING FAN ROOFTOP EXHAUST FAN ROOFTOP EXHAUST FAN DIRECTION OF AIR FLOW DIRECTION OF AIR FLOW DIRECTION OF AIR FLOW EXHAUST DIRECTION OF AIR FLOW EXHAUST DOOR LOUVER DOOR LOUVER VOLUME DAMPER VOLUME DAMPER FIRE DAMPER FIRE DAMPER MOTORIZED DAMPER, PARALLEL BLADE MOTORIZED DAMPER, PARALLEL BLADE MOTORIZED DAMPER, OPPOSED BLADE MOTORIZED DAMPER, OPPOSED BLADE FIRE DAMPER FIRE DAMPER SMOKE DAMPER SMOKE DAMPER THERMOSTAT THERMOSTAT HUMIDITY SENSOR HUMIDITY SENSOR CO & NO2 GAS SENSOR CO & NO2 GAS SENSOR FAN OVERRIDE SWITCH FAN OVERRIDE SWITCH SQUARE ELBOW WITH TURNING VANES SQUARE ELBOW WITH TURNING VANES FLEXIBLE DUCT FLEXIBLE DUCT FLEXIBLE CONNECTOR FLEXIBLE CONNECTOR DISCONNECT DISCONNECT STARTER/DISCONNECT STARTER/DISCONNECT PUMP PUMP DIFFERENTIAL PRESSURE CONTROLLER DIFFERENTIAL PRESSURE CONTROLLER PRESSURE SENSOR PRESSURE SENSOR TEMPERATURE SENSOR TEMPERATURE SENSOR CEILING SUPPLY DIFFUSER W/ DIRECTION SHOWN BY ARROWS CEILING SUPPLY DIFFUSER W/ DIRECTION SHOWN BY ARROWS DUCT TRANSITION FROM RECTANGULAR TO ROUND DUCT TRANSITION FROM RECTANGULAR TO ROUND CONNECT TO EXISTING CONNECT TO EXISTING INLINE CENTRIFUGAL FAN INLINE CENTRIFUGAL FAN</p>	<p>BALANCING VALVE BALANCING VALVE COMBINATION FLOW MEASURING/ BALANCING VALVE (CIRCUIT SETTER) COMBINATION FLOW MEASURING/ BALANCING VALVE (CIRCUIT SETTER) BUTTERFLY VALVE BUTTERFLY VALVE GATE VALVE GATE VALVE LUBRICATED PLUG VALVE LUBRICATED PLUG VALVE BALL VALVE BALL VALVE BALL VALVE IN VERTICAL BALL VALVE IN VERTICAL PLUG VALVE PLUG VALVE CHECK VALVE CHECK VALVE PRESSURE REDUCING VALVE PRESSURE REDUCING VALVE TWO-WAY AUTOMATIC CONTROL VALVE TWO-WAY AUTOMATIC CONTROL VALVE SAFETY RELIEF VALVE SAFETY RELIEF VALVE THREE-WAY AUTOMATIC CONTROL VALVE THREE-WAY AUTOMATIC CONTROL VALVE STRAINER W/BALL DRAIN VALVE, HOSE BIB AND CAP STRAINER W/BALL DRAIN VALVE, HOSE BIB AND CAP UNION OR FLANGE AS DICTATED BY PIPE SIZE UNION OR FLANGE AS DICTATED BY PIPE SIZE PIPE TEE FROM TOP PIPE TEE FROM TOP PIPE TEE FROM BOTTOM PIPE TEE FROM BOTTOM PIPE RISE PIPE RISE PIPE DROP PIPE DROP END CAP END CAP PRESSURE GAUGE W/BALL VALVE (GATE VALVE AND SIPHON FOR STEAM) PRESSURE GAUGE W/BALL VALVE (GATE VALVE AND SIPHON FOR STEAM) THERMOMETER/TEMPERATURE WELL THERMOMETER/TEMPERATURE WELL "PETE'S PLUG" "PETE'S PLUG" AUTOMATIC AIR VENT WITH ISOLATION VALVE AUTOMATIC AIR VENT WITH ISOLATION VALVE MANUAL AIR VENT MANUAL AIR VENT REDUCER (ECCENTRIC-FOB OR FOT) REDUCER (ECCENTRIC-FOB OR FOT) REDUCER (CONCENTRIC) REDUCER (CONCENTRIC) FLEXIBLE PIPE CONNECTION FLEXIBLE PIPE CONNECTION VIBRATION ISOLATOR VIBRATION ISOLATOR DIRT LEG DIRT LEG DIRECTION OF FLOW OF PIPE DIRECTION OF FLOW OF PIPE PIPE PITCH UP IN DIRECTION OF FLOW PIPE PITCH UP IN DIRECTION OF FLOW PIPE PITCH DOWN IN DIRECTION OF FLOW PIPE PITCH DOWN IN DIRECTION OF FLOW FUSOMATIC VALVE FUSOMATIC VALVE FLOW MEASURING STATION FLOW MEASURING STATION</p>	<p>1. PERFORM ALL WORK IN ACCORDANCE WITH MAINE UNIFORM ENERGY & BUILDING CODE, MAINE STATE FIRE CODE, MAINE STATE PLUMBING CODE, INTERNATIONAL MECHANICAL CODE, AND NFPA 13. CONTRACTOR SHALL MAKE ARRANGEMENTS TO VISIT THE SITE PRIOR TO BIDDING TO DETERMINE PRE-EXISTING CONDITIONS AND ALL WORK NECESSARY FOR THE PROJECT. 2. A LICENSED SPRINKLER CONTRACTOR SHALL MAKE ALL MODIFICATIONS TO THE SPRINKLER SYSTEM. 3. DRAWINGS ARE DIAGRAMMATIC, OFFSETS, OBSTRUCTIONS, AND EXISTING CONFIGURATIONS AND CONSTRAINTS MUST BE FIELD VERIFIED. 4. IT IS THE INTENT OF THESE CONTRACT DOCUMENTS TO PROVIDE SYSTEMS THAT ARE FULLY TESTED AND OPERATIONAL. ANY COMPONENTS OR LABOR NOT MENTIONED IN THE CONTRACT DOCUMENTS BUT REQUIRED FOR FUNCTIONING SYSTEMS SHALL BE PROVIDED. THE CONTRACTOR SHALL REFER TO THE ENGINEER FOR RESOLUTION BEFORE START OF ANY WORK THAT APPEARS TO HAVE DISCREPANCIES OR IF THERE IS ANY QUESTION OF INTENT. 5. CONTRACTOR SHALL NOTIFY THE OWNER OF ANY UTILITY OUTAGES AT LEAST TWO WEEKS PRIOR TO THE PROPOSED OUTAGE. 6. THE CONTRACTOR SHALL HOLD A LICENSE TO PERFORM THE WORK AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION. APPLY FOR AND OBTAIN ALL REQUIRED PERMITS AND INSPECTIONS AND PAY FEES AND CHARGES, INCLUDING SERVICE CHARGES. 7. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF 1-HR FIRE-RATED BARRIERS. PROVIDE FIRE CALULKING RATED FOR 1-HR FIRE RESISTANCE AT ALL PENETRATIONS. SEAL ALL PIPE PENETRATIONS THROUGH WALLS AND PROVIDE ESCUTCHEONS WHERE EXPOSED. 8. THE CONTRACTOR SHALL KEEP ALL CONSTRUCTION AREAS CLEAN AND FREE OF ACCUMULATION OF WASTE MATERIAL OR DEBRIS RELATED TO THIS PROJECT. OCCUPIED AREAS MUST MAINTAIN A CLEAN ENVIRONMENT AND THE CONTRACTOR MUST ADHERE TO THE OWNER'S REGULATIONS REGARDING PROCEDURES ON THE PREMISES. 9. ITEMS AND MATERIALS INDICATED FOR REMOVAL OR DEMOLITION SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER. 10. WORK SHALL BE COORDINATED WITH TRADES INVOLVED. 11. VERIFY EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION. 12. INSTALL WORK SO THAT ALL NEW ITEMS ARE OPERABLE AND SERVICEABLE. DO NOT OBSTRUCT EXISTING EQUIPMENT OR COMPONENTS THAT REQUIRE SERVICE. MAINTAIN ALL MANUFACTURER RECOMMENDED CLEARANCES. 13. INSTALL EQUIPMENT AND PIPING TO FACILITATE EQUIPMENT ACCESS AS REQUIRED BY EQUIPMENT MANUFACTURER. 14. PROVIDE REQUIRED SUPPORTS, ANGLES, HANGERS, RODS, BASES, BRACES, AND ALL OTHER ITEMS AS NEEDED TO PROPERLY SUPPORT THE CONTRACT WORK. PERFORM CUTTING, PATCHING AND PAINTING OF EXISTING SURFACES AS NEEDED TO ACCOMMODATE MECHANICAL REMOVALS AND INSTALLATION. 15. ALL WORK SHALL BE PERFORMED IN A MANNER THAT IS EQUAL TO INDUSTRY STANDARDS. 16. INSTRUCT DESIGNATED MAINTENANCE PERSONNEL ON PROPER OPERATION AND CARE OF THE NEW SYSTEMS AND EQUIPMENT. 17. CONTRACTOR SHALL WARRANTY WORKMANSHIP AND MATERIALS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM THE DATE OF PROJECT COMPLETION. 18. PROVIDE AS-BUILT DRAWINGS AT THE COMPLETION OF THE PROJECT.</p>						



REV	DESCRIPTION	M&D	ERP	SP/RTW	DATE
0	ISSUED FOR BID				

424 Oak Street
 Portland, Maine 04101
 colbyengineering.com
Colby Company
 engineering

PORTLAND HOUSING AUTHORITY
 PORTLAND, MAINE
 PHA RIVERTON HEAD START
 BUILDING 14, UNITS 102 AND 104
 MECHANICAL LEGEND NOTES
 ABBREVIATIONS

PROJECT NO: 216.021.001
 DRAWING NO: M-001
 12 OF 18

1/21/17 Portland Housing Authority 216.021.001 - Riverton Head Start Building 14 Units 102 and 104 - MECHANICAL LEGEND NOTES