# MECHANICAL GENERAL NOTES

1. DO NOT SCALE DRAWINGS. DRAWINGS ARE DIAGRAMMATIC AND SCHEMATIC IN NATURE.
2. ARCHITECTURAL DRAWINGS SHALL BE REVIEWED FOR PROJECT SCOPE AND AREA OF WORK.
3. THE OWNER SHALL BE NOTIFIED, IN WRITING OF SHUTDOWN OF SYSTEMS REQUIRED BY THE EXECUTION OF THIS CONTRACT. COORDINATE SHUT-DOWN OF SYSTEMS WITH OTHER DIVISIONS OF WORK AND PROVIDE PRIOR NOTICE IN WRITING AS MAY BE REQUIRED.
4. CONTRACTOR SHALL VISIT PROJECT SITE AND VERIFY EXISTING CONDITIONS.
5. CONTRACTOR SHALL COORDINATE WORK INDICATED HEREON WITH PLUMBING, ELECTRICAL, STRUCTURAL AND FIRE PROTECTION DIVISIONS OF WORK. SUBMIT 1/4" SCALE SHOP DRAWINGS FOR THIS DIVISION OF WORK DIMENSIONED TO INCORPORATE THE WORK OF OTHER TRADES. INDICATE SPACES RESERVED FOR FIRE SPRINKLER, PIPING AND ELECTRICAL CONDUIT MAINS AS REQUIRED.
6. UNLESS NOTED OTHERWISE, FLEXIBLE DUCTS TO TERMINAL UNITS, DIFFUSERS AND GRILLES SHALL BE SAME SIZE AS NECK.
7. MECHANICAL EQUIPMENT SHALL BE SECURED AND INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE SECTIONS OF THE INTERNATIONAL BUILDING CODE (IBC) AND INTERNATIONAL MECHANICAL CODE (IMC).
8. ELECTRICAL CHARACTERISTICS OF MECHANICAL EQUIPMENT SHALL BE VERIFIED WITH ELECTRICAL DRAWINGS AND ELECTRICAL CONTRACTOR PRIOR TO EQUIPMENT ORDER RELEASE. ADDITIONAL ELECTRICAL WORK RESULTING FROM EQUIPMENT SUBSTITUTION IS THE RESPONSIBILITY OF THIS CONTRACTOR.
9. LENGTH OF FLEXIBLE DUCTWORK SHALL BE LIMITED TO 5'-0" MAXIMUM HORIZONTAL RUN WITH ONLY ONE 90° BEND. SECURE FLEXIBLE DUCTWORK WITH SCREWS AND DRAWBANDS.
10. DUCT SIZES INDICATED ARE NET INSIDE CLEAR DIMENSIONS.
11. PROVIDE GEAR OPERATED CEILING OPERATORS FOR INACCESSIBLE MANUAL VOLUME DAMPERS. OPERATOR SHALL BE EQUAL TO YOUNG REGULATOR WITH CEILING ESCUTCHEON AND COVER PLATE. COORDINATE EXACT LOCATION OF COVER PLATE WITH ARCHITECT.
12. ITEM DESIGNATIONS INDICATED ARE FOR PURPOSES OF THESE DOCUMENTS ONLY. CONTRACTOR SHALL VERIFY WITH OWNER ACTUAL "TAGGING" INFORMATION TO BE PROVIDED FOR EACH ITEM OF MECHANICAL EQUIPMENT PRIOR TO NAMEPLATE ORDER RELEASE.
13. CEILING DIFFUSERS SHALL BE 36" MIN. FROM CEILING MOUNTED SMOKE DETECTORS. COORDINATE WITH ELECTRICAL AND FIRE ALARM CONTRACTOR.
14. SECURE DIFFUSERS AND GRILLES TO T-BAR CEILINGS, WHERE APPLICABLE. SUBMIT SHOP DRAWING FOR APPROVAL PRIOR TO BEGINNING WORK.
15. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR ACTUAL LOCATION OF GRILLES, DIFFUSERS AND ACCESS PANELS IN CEILING AND FOR DIMENSIONED LENGTHS OF LINEAR DIFFUSERS. COORDINATE DIFFUSER BORDER TYPES WITH CEILING TYPE SCHEDULED IN ARCHITECTURAL REFLECTED CEILING PLANS.
16. PROVIDE MINIMUM 18" X 18" ACCESS DOOR IN GYPSUM BOARD CEILINGS AND INACCESSABLE WALLS FOR EQUIPMENT REQUIRING ACCESS OR ADJUSTMENT. COORDINATE LOCATIONS WITH ARCHITECT AND INTERIOR DESIGNER PRIOR TO INSTALLATION.
17. TURNING VANE RUNNERS SHALL HAVE A VANE IN EVERY SLOT IN STRICT CONFORMANCE WITH MANUFACTURER'S INSTRUCTIONS AND SMACNA DUCT CONSTRUCTION STANDARDS.
18. FIELD VERIFY FIT OF DUCTWORK AND PIPING PRIOR TO FABRICATION.
19. DUCTWORK LOCATED BELOW 7'-6" IN MECHANICAL ROOMS SHALL BE EQUIPPED WITH PADDING MATERIAL ON CORNERS, EDGES AND OTHER SURFACES THAT MAY BE HAZARDOUS.
20. COORDINATE AND VERIFY ACTUAL APPROVED EQUIPMENT DIMENSIONS PRIOR TO POURING CONCRETE EQUIPMENT PADS. COORDINATE EQUIPMENT PAD DIMENSIONS WITH VIBRATION ISOLATION REQUIREMENTS.
21. BACKDRAFT DAMPERS FOR EXHAUST FANS, ETC. SHALL HAVE NEOPRENE EDGES (NO METAL ON METAL CONTACT).
22. PIPE PENETRATIONS THROUGH SOUND RATED GYPSUM BOARD PARTITIONS SHALL BE SEALED WITH ACOUSTICAL CAULK.
23. SLOPE CONDENSATE DRAIN PIPING AT MINIMUM 1%.
24. CONDENSATE DRAIN PIPING FROM MECHANICAL EQUIPMENT SHALL BE ROUTED SO AS NOT TO CREATE A TRIPPING HAZARD. COORDINATE ACTUAL DRAIN CONNECTIONS WITH PLUMBING DIVISION OF WORK. COORDINATE FLOOR SINK LOCATIONS ACCORDINGLY.
25. CONDENSATE DRAIN TRAPS SHALL BE 3" DEEP, MINIMUM.
26. COORDINATE CHASE, SLEEVE AND SLAB BLOCKOUT REQUIREMENTS BEFORE CONCRETE IS POURED OR BLOCK IS SET.
27. DUCTWORK VISIBLE BEHIND DIFFUSERS, REGISTERS, OR GRILLES SHALL BE PAINTED FLAT BLACK.
28. REFER TO EQUIPMENT DRAWINGS, SPECIFICATIONS AND SHOP DRAWINGS FOR CONNECTION REQUIREMENTS TO EQUIPMENT.
29. MANUAL VOLUME DAMPERS AND VALVES ON INSULATED DUCTWORK AND PIPING SHALL HAVE EXTENDED STEMS TO ALLOW FOR THE INSULATION THICKNESS. PROVIDE MINIMUM 12" LONG RED RIBBON LOCATOR ON VOLUME DAMPER AND VALVE HANDLES.
30. OPEN END DUCTWORK SHALL BE COVERED WITH SCREEN PROTECTION HAVING OPENINGS THROUGH WHICH A 1/2" SPHERE CANNOT PASS. ATTACH SCREEN WITH ANGLE AROUND PERIMETER AND REINFORCE AT 24" ON CENTER.
31. COORDINATE ROUTING OF DUCTWORK AND PIPING TO MAINTAIN CLEARANCES ABOVE ELECTRICAL PANELS AND EQUIPMENT PER NEC REQUIREMENTS. MAINTAIN REQUIRED CLEARANCES WITHIN ELEVATOR EQUIPMENT ROOMS.
32. PROVIDE HEAT TRAPS FOR ALL WATER HEATING EQUIPMENT.
33. EQUIPMENT START-UP SHALL BE BY MANUFACTURER'S AUTHORIZED REPRESENTATIVE.

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# MECHANICAL SYMBOL LEGEND

(THIS IS A MASTER LEGEND, NOT ALL SYMBOLS MAY APPEAR ON DRAWING)

| ABBR | SYMBOL | DESCRIPTION |
|---|---|---|
| | | SHEET NOTE |
| | | REVISION NUMBER |
| | --ø | ROUND DUCTWORK (INCHES) |
| | --/-- | RECTANGLE DUCTWORK (INCHES) |
| SA | | SUPPLY AIR |
| RA | | RETURN AIR |
| EA | | EXHAUST AIR |
| OA | | OUTSIDE AIR |
| | | SUPPLY AIR DUCT UP |
| | | SUPPLY AIR DUCT DOWN |
| | | RETURN AIR DUCT UP |
| | | RETURN AIR DUCT DOWN |
| | | EXHAUST AIR DUCT UP |
| | | EXHAUST AIR DUCT DOWN |
| | | OUTSIDE AIR DUCT UP |
| | | OUTSIDE AIR DUCT DOWN |
| AD | | ACCESS DOOR |
| | | SIDEWALL |
| | | TURNING VANES |
| | | AIR FLOW DIRECTION |
| | | SINGLE LINE RIGID DUCT |
| | | SINGLE LINE RIGID DUCT WITH 1½" ACOUSTICAL LINER |
| | | DOUBLE LINE RIGID DUCT |
| | | DOUBLE LINE RIGID DUCT WITH 1½" ACOUSTICAL LINER |
| FD | F | FUSIBLE LINK FIRE DAMPER |
| DD | DD | DUCT MOUNTED SMOKE DETECTOR |
| | M | MOTORIZED DAMPER |
| MVD | | MANUAL VOLUME DAMPER |
| | | MVD WITH REMOTE CEILING OPERATOR |
| OBD | | OPPOSED BLADE DAMPER |
| BDD | BDD | BACKDRAFT DAMPER |
| CHS | CHS | CHILLED WATER SUPPLY |
| CHR | CHR | CHILLED WATER RETURN |
| HS | HS | HOT WATER SUPPLY |
| HR | HS | HOT WATER RETURN |
| D | D | DRAIN |
| ICW | ICW | INDUSTRIAL COLD WATER |
| RL | RL | REFRIGERANT LIQUID |
| RS | RS | REFRIGERANT SUCTION |
| | | CONTROL VALVE (2-WAY, 3-WAY) |
| SOV | | SHUT-OFF VALVE |
| | | THROTTLING VALVE |
| | | BALANCING VALVE |
| | | CHECK VALVE |
| | | RELIEF VALVE |
| | | STRAINER WITH BLOWDOWN VALVE |
| | | FLEXIBLE PIPE CONNECTION |
| | | UNION |
| AV | | AIR VENT |
| | | DUCT OR PIPE TRANSITION |
| PG | | PRESSURE GAUGE |
| TH | | THERMOMETER |
| TW | | TEST WELL (PETE'S PLUG) |
| | FS | FLOW SWITCH |
| | | PIPE DOWN |
| | | PIPE UP |
| | | PIPE TEE UP |
| | | PIPE TEE DOWN |
| | | ANCHOR |
| | | GUIDE |
| | | FLOW ARROW |
| | T | THERMOSTAT |
| | S | SPACE TEMPERATURE SENSOR WITH PLUG-IN PORT |

# SHEET INDEX

| ISSUE: 06-30-2010-BID SET | ISSUE: 06-14-2010-PERMIT SET | SHEET NO. | SHEET DESCRIPTION |
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| ● | ● | M0.00 | SHEET INDEX, LEGEND AND GENERAL NOTES |
| ● | ● | M0.01 | SCHEDULES |
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| ● | ● | M0.03 | AUTOMATIC TEMPERATURE CONTROLS/EMCS WIRING DIAGRAMS |
| ● | ● | M0.04 | AUTOMATIC TEMPERATURE CONTROLS/EMCS WIRING DIAGRAMS |
| ● | ● | M2.00 | FIRST FLOOR MECHANICAL PLAN |
| ● | ● | M2.01 | SECOND FLOOR MECHANICAL PLAN |
| ● | ● | M2.02 | MEZZANINE MECHANICAL PLAN |
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| ● | ● | M6.01 | DETAILS |
| ● | ● | M6.02 | DETAILS |

# MECHANICAL ABBREVIATION LIST

(THIS IS A MASTER LIST. NOT ALL ABBREVIATIONS MAY APPEAR ON DRAWINGS.)

| | | | |
|---|---|---|---|
| AFF | ABOVE FINISH FLOOR | NA | NOT APPLICABLE |
| AP | ACCESS PANEL | NC | NORMALLY CLOSED |
| AUTO | AUTOMATIC | NO | NORMALLY OPEN |
| AHU (AH) | AIR HANDLING UNIT | NTS | NOT TO SCALE |
| AD | ACCESS DOOR | | |
| APD | AIR PRESSURE DROP | PRV | PRESSURE REDUCING VALVE |
| AF | AIR FOIL | PSIA | POUND PER SQUARE INCH ABSOLUTE |
| ACU (AC) | AIR CONDITIONING UNIT | PSIG | POUND PER SQUARE INCH GAUGE |
| | | PD | PRESSURE DROP |
| B | BOILER | P | PUMP |
| BHP | BREAK HORSE POWER | | |
| BTU | BRITISH THERMAL UNIT | RPM | REVOLUTIONS PER MINUTE |
| | | RH | RELATIVE HUMIDITY |
| CFM | CUBIC FEET PER MINUTE | | |
| CU | CONDENSING UNIT | SP | STATIC PRESSURE |
| CV | CONSTANT VOLUME | SQ FT (□) | SQUARE FEET |
| CF | CHEMICAL POT FEEDER | SF | SUPPLY FAN |
| CD | CEILING DIFFUSER | | |
| | | T | TEMPERATURE |
| DIFF | DIFFUSER | TSP | TOTAL STATIC PRESSURE |
| DB | DRY BULB TEMPERATURE | TYP | TYPICAL |
| DDC | DIRECT DIGITAL CONTROL | TD | TEMPERATURE DIFFERENCE |
| DDCFP | DIRECT DIGITAL CONTROL FIELD PANEL | TDH | TOTAL DEVELOPED HEAD |
| DIA (ø) | DIAMETER | TU | TERMINAL UNIT |
| DN | DOWN | | |
| DX | DIRECT EXPANSION | VAV | VARIABLE AIR VOLUME |
| | | VD | VOLUME DAMPER (MANUAL) |
| EAT | ENTERING AIR TEMPERATURE | VFD | VARIABLE FREQUENCY DRIVE |
| EFF | EFFICIENCY | V | VOLT |
| EWT | ENTERING WATER TEMPERATURE | | |
| EXH | EXHAUST | WB | WET BULB TEMPERATURE |
| EF | EXHAUST FAN | WG | WATER GAUGE |
| ESP | EXTERNAL STATIC PRESSURE | WC | WATER COLUMN |
| ET | EXPANSION TANK | WPD | WATER PRESSURE DROP |
| °F | DEGREES FAHRENHEIT | | |
| FPM | FEET PER MINUTE | | |
| FT | FEET | | |
| FLA | FULL LOAD AMPS | | |
| GA | GAUGE | | |
| GAL | GALLONS | | |
| GC | GENERAL CONTRACTOR | | |
| GPM | GALLONS PER MINUTE | | |
| HD | HEAD | | |
| HP | HORSE POWER | | |
| HR | HOUR | | |
| HZ | HERTZ | | |
| IN (") | INCH | | |
| KW | KILOWATT | | |
| LAT | LEAVING AIR TEMPERATURE | | |
| LBS | POUNDS | | |
| LWT | LEAVING WATER TEMPERATURE | | |
| MBH | 1000 BRITISH THERMAL UNITS PER HOUR | | |
| MAX | MAXIMUM | | |
| MC | MECHANICAL CONTRACTOR | | |
| MCA | MAXIMUM CIRCUIT AMPS | | |

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SHEET INDEX, LEGEND AND GENERAL NOTES

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