GENERAL MECHANICAL NOTES

1. ALL WORK SHALL COMPLY WITH THE LATEST CONNECTICUT STATE CODES AND SUPPLEMENTS. INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   A. 2003 INTERNATIONAL BUILDING CODE.
   B. 2003 INTERNATIONAL PLUMBING CODE.
   C. 2003 INTERNATIONAL MECHANICAL CODE.
   D. 2003 INTERNATIONAL EXISTING BUILDING CODE.
   E. 2003 NATIONAL ELECTRIC CODE NFIPA 70.
   F. IFGC
   G. 2004 CONNECTICUT STATE BUILDING CODE.
   H. APPLICABLE ASTM.
   I. APPLICABLE ANSI.
   J. APPLICABLE UL.

2. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR, AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK. THE CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS AND ARRANGE FOR ALL REQUIRED INSPECTIONS IN ACCORDANCE WITH ALL AND LOCAL GOVERNING AUTHORITIES.

3. DRAWINGS INDICATE STANDARD REQUIREMENTS. ADDITIONAL REQUIREMENTS BY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS ARE PART OF THE CONTRACTOR. THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS WITH NO INCREASE IN COSTS TO THE BUILDING OWNER, URS CORPORATION AES, OR THE ARCHITECT.

4. CONTRACTOR IS TO REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET THE CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE CONTRACT DOCUMENT SET WITH ALL OTHER TRADES FOR PROPER INSTALLATION OF WORK. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS COORDINATED WITH ARCHITECTURAL, STRUCTURAL, ELECTRICAL AND FIRE PROTECTION DRAWINGS FOR LOCATIONS OF OPENINGS, RECESSES, BUILT–IN WORK, CLEARANCE REQUIREMENTS, POWER REQUIREMENTS, SUPPORTS, ETC. TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.

5. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON–SITE AT ALL TIMES AND ENSURE THE DISTRIBUTION OF NEW DRAWINGS, UPDATED TO REFLECT "AS–BUILT" CONDITIONS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND SHALL BE REMOVED FROM THE CONTRACT AREA.

6. MECHANICAL DRAWINGS, PLANS, AND DETAILS ARE DIAGRAMMATIC AND DO NOT SHOW ALL INTERFERENCE'S AND CONDITIONS VISIBLE AND/OR HIDDEN THAT MAY EXIST. THE CONTRACTOR MUST VISIT THE JOB SITE TO BECOME FAMILIAR WITH EXISTING CONDITIONS AND ASSUME RESPONSIBILITY FOR CONDITIONS THEREOF, BEFORE BIDDING AND DURING THE CONDUCT OF WORK.

7. THE LOCATION OF EQUIPMENT AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND SHALL COORDINATE THE WORK OF ALL SUB–CONTRACTORS.

8. PROVIDE AIR TIGHT SEALING AND FIRE STOPPING (U.L. LISTED) AT ALL PENETRATION OF FIRE RATED PARTITIONS.

9. ANY AND ALL ERRORS, DISCREPANCIES, AND 'MISSED' ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE OWNER AND/OR ARCHITECT DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS WHICH ARE REQUIRED FOR COMPLETION, FUNCTIONALITY AND SERVICEABILITY OF ITEMS SPECIFIED.

10. IN THE EVENT OF ANY AMBIGUITY OR DISCREPANCY BETWEEN THE PLANS AND SPECIFICATIONS, THE SPECIFICATIONS SHALL GOVERN. HOWEVER, PRIOR TO COMMENCEMENT WITH THE WORK IN QUESTION, THE ENGINEER SHALL BE NOTIFIED FOR DETERMINATION.

11. CONTRACTOR SHALL SUBMIT COORDINATED SHOP DRAWINGS BEFORE START OF CONSTRUCTION AND ORDERING EQUIPMENT TO THE ARCHITECT FOR REVIEW. THE SHOP DRAWING SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, INCLUDING BUT NOT LIMITED TO "AS BUILT" DRAWING LAYOUTS OF EQUIPMENT, PIPING, DUCTWORK AND CONTROLS. SHOP DRAWINGS MUST BEAR THE CONTRACTORS APPROVAL STAMP BEFORE SUBMITTAL TO THE ARCHITECT FOR REVIEW.

12. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS AND ANGLES, PRIOR TO THE FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.

13. THE CONTRACTOR SHALL VERIFY ALL MANUFACTURER'S CATALOG NUMBERS WITH MANUFACTURERS FOR CURRENT CONFIGURATIONS AND FUNCTIONS. ALL EQUIPMENT AND MATERIAL SHALL BE LABELED, LISTED, AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

14. SUBSTITUTION OF SPECIFIED EQUIPMENT IS SUBJECT TO THE OWNER'S AND ENGINEER'S REVIEW AND ACCEPTANCE. ALL DESIGN, INSTALLATION LABOR, MATERIALS AND WARRANTIES NECESSARY TO ACCOMMODATE SUBSTITUTION REQUIREMENTS MUST BE PROVIDED AT NO EXTRA COST TO THE OWNER. PHYSICAL DIMENSIONS AND WEIGHTS MUST BE MET ON ALL SUBMISSIONS.

15. CONTRACTOR SHALL PROTECT PEOPLE, BUILDINGS, EQUIPMENT, FURNISHINGS, GROUNDS, AND PLANTINGS FROM DAMAGE. PROVIDE PROTECTIVE COVERINGS AND BARRICADES AS REQUIRED. PROTECT FINISHED BUILDING SURFACES AS REQUIRED. LIMIT TRAFFIC AND STORAGE OF MATERIALS ON WATERPROOFED AND ROOFED SURFACES. SEE SPECIFICATIONS FOR ADDITIONAL PROTECTIVE MEASURES.

16. THE TERM "PROVIDE" SHALL MEAN FURNISH, INSTALL, CONNECT, AND MAKE OPERABLE.

17. THE TERM "INDICATED" SHALL MEAN AS SHOWN IN CONTRACT DOCUMENTS (DRAWINGS SPECIFICATIONS AND RELATED ATTACHMENTS).

18. BEFORE SELECTING MATERIALS AND/OR EQUIPMENT AND PROCEEDING WITH THE WORK, INSPECT ALL AREAS TO INSURE SUITABILITY, FIT, CLEARANCES, AND INTERCONNECTIONS.

19. FABRICATE AND INSTALL SUPPLY & RETURN DUCTWORK IN PREMEASURED LENGTHS SO THAT DUCT FLANGES AND DUCT SUPPORTS CLEAR LIGHT FIXTURES AND STRUCTURAL SUPPORT STEEL. TO MINIMIZE CLEARANCE REQUIREMENTS ABOVE CEILING SPACE. COORDINATE WORK WITH STRUCTURAL PLANS AND REFLECTIVE CEILING PLANS.

20. PROVIDE THE OWNER WITH ALL MANUFACTURER'S WARRANTIES FOR EQUIPMENT AND MATERIALS PROVIDED.

21. ALL PIPE AND DUCT DIMENSIONS ARE INSIDE DIMENSIONS. ALLOWANCE SHALL BE MADE FOR OVERALL DIMENSIONS AND FOR INSULATION SPACE REQUIREMENTS WHEN DETERMINING CLEARANCE REQUIREMENTS.

22. ALL DIMENSIONS SHOWN ARE TO FINISH FACE, UNLESS NOTED.

23. PROVIDE BALANCING DAMPERS AT ALL DUCT BRANCHES. DO NOT INSTALL DAMPERS AT REGISTERS OR DIFFUSERS.

24. PROVIDE ACCESS DOORS IN DUCTWORK AT ALL BALANCING DAMPERS AND AIR FLOW MONITORING STATIONS.

25. PROVIDE OPPOSED BLADE DAMPERS.

26. AIR HANDLING UNITS WITH COOLING COIL WILL BE SIZED BASED ON INDICATED MAXIMUM FACE VELOCITY OF 550 FPM ACROSS COIL. (SEE SCHEDULES)

27. AIR HANDLING UNIT SHALL HAVE BASE RAILS PROVIDED BY MANUFACTURER AND SHALL BE MOUNTED ON RAISED CONCRETE PAD.

28. COORDINATE LOCATION OF THERMOSTATS WITH ARCHITECTURAL FINISHES.

29. COORDINATE LOCATION & ROUTING OF DUCTWORK AND PIPING TO MAINTAIN CLG. HEIGHT AS SHOWN ON REFLECTED CEILING PLAN, MAKE CHANGES IN DIRECTION & FITTINGS TO MAINTAIN CLEARANCE ABOVE CEILING. PROVIDE DETAILED COORDINATION DRAWINGS IN AREAS OF CONGESTION.

30. DUCT RUN OUTS CONNECTING TO AIR OUTLETS SHALL MATCH CONNECTING COLLAR SIZES UNLESS NOTED OTHERWISE.

31. ALLOW 6" MINIMUM CLEAR SPACE IN FRONT OF VCD IN CEILING PLENUMS.

32. PROVIDE ISOLATION VALVES AT ALL BRANCH PIPING CONNECTIONS TO MAINS.

33. PROVIDE FLEX CONNECTORS AT PIPE RUNS BETWEEN BUILDINGS AND AT CONNECTIONS TO CHILLER.

34. INSTALL PIPING AND VALVED CONNECTIONS TO COILS WITH UNIONS AND ELBOWS TO ALLOW COIL REMOVAL. PROVIDE CLEARANCE TO OTHER EQUIPMENT AND PIPING TO ALLOW COIL REMOVAL.

35. PROVIDE MANUAL AIR VENTS AND DRAINS IN HYDRONIC PIPING AT THE TOP OF EACH PIPE RISE AND AT THE BOTTOM OF EACH PIPE DROP.

36. DO NOT ATTACH SUPPORTS TO METAL ROOF DECK. PROVIDE ADDITIONAL STEEL BRACING AS REQUIRED TO SPAN STRUCTURAL STEEL.

37. PROVIDE TEMPORARY SERVICES INCLUDING TEMPORARY HEATING AND AIR CONDITIONING AS REQUIRED DURING CONSTRUCTION.

38. PROVIDE MINIMUM 30 FEET OF ACOUSTIC LINING AT ALL SUPPLY FAN DISCHARGE AND RETURN FAN DISCHARGE DUCTWORK.

39. PROVIDE FULL RADIUS ELBOWS OR TURNING VANES ON PRESSURIZED DUCTWORK.

40. PROVIDE FLEXIBLE CONNECTORS TO ALL AIR OUTLETS. FLEXIBLE DUCTWORK SHALL HAVE A MAXIMUM LENGTH OF 5 FEET.

41. NO SYSTEM OTHER THAN THOSE SERVING DEDICATED EQUIPMENT INSIDE STAIRWELLS WILL BE ALLOWED TO PASS THROUGH STAIRWELL ENCLOSURES.

42. PROVIDE UL LISTED FIRE STOPPING AT PIPING PENETRATIONS OF FLOOR.

43. PROVIDE FIRE DAMPER AT PENETRATION OF WALLS RATED IN EXCESS OF ONE HOUR PER CODE. FIRE DAMPER PERFORMANCE SHALL MATCH OR EXCEED RATING OF WALL. REFER TO ARCHITECTURAL CODE SHEETS.

44. DIVISION 15 TO PROVIDE DDC PANELS, COORDINATE LOCATIONS WITH DRAWINGS. REFER TO ELECTRICAL DRAWINGS FOR POWER CIRCUITING AND PROPOSED LOCATIONS. CONTROL POWER TRANSFORMER SHALL BE PROVIDED BY DIV. 15

45. COORDINATE LOCATION OF AIR OUTLETS WITH REFLECTED CEILING PLANS.

46. PROVIDE SWING JOINTED CONNECTIONS TO HOT WATER MAINS.

47. PROVIDE ONE YEAR MATERIALS, EQUIPMENT AND LABOR WARRANTIES FROM DATE OF PROJECT COMPLETION. ALL WARRANTIES WILL TAKE EFFECT UPON PROJECT ACCEPTANCE

MECHANICAL MATERIALS & EQUIPMENT NOTES

1. CONDENSATE PIPING SHALL BE SCHEDULE 80 PVC.

2. PROVIDE HANGERS & SUPPORTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES. PROVIDE VIBRATION ISOLATION, SEISMIC RESTRAINTS ON FANS, AIR HANDLING UNIT AND DUCT WORK AS REQUIRED. SUBMIT DRAWINGS AND CALCULATIONS, SIGNED AND SEALED BY PROFESSIONAL ENGINEER LICENSED IN CONNECTICUT.

3. PROVIDE INSULATION (2" THICK) FOR CHILLED WATER AND HEATING HOT WATER PIPING. PIPING INSULATION SHALL BE MINERAL FIBER BANDED WITH THERMOSETTING RESIN COMPLYING WITH ASTM C547, TYPE 1. ADHESIVE SHOULD BE AS RECOMMENDED BY INSULATION MANUFACTURES. PROVIDE PVC JACKET. OUTDOOR MOUNTED JACKET SHALL BE HIGH IMPACT, ULTRAVIOLET – RESISTANT PVC; 30 MILS THICK. PROVIDE ADHESIVE AS RECOMMENDED BY MANUFACTURER.

4. PROVIDE VAPOR BARRIER ON CHILLED WATER PIPING.

5. PROVIDE HOT AND CHILLED WATER PIPING COMPLETE WITH INSULATION, SUPPORTS AND SEISMIC RESTRAINTS. PIPING SHALL BE ASTM A53, TYPE S, GRADE A, SCHEDULE 40, BLACK STEEL, THREADED ENDS FOR PIPES 2" AND SMALLER. PROVIDE PIPING ASTM A53, TYPE E, GRADE A SCHEDULE 40, BLACK STEEL, WELDED AND FLANGED JOINTS SHALL BE FOR 2–1/2" PIPE AND LARGER. PROVIDE DIELECTRIC FITTINGS AT CONNECTIONS TO DISSIMILAR MATERIALS.

6. PROVIDE DUCTWORK AS REQUIRED MADE OF SHEET METAL (GALVANIZED) PER SMACNA STANDARDS.
   DUCT GAUGE SHALL BE FURNISHED AS FOLLOWS:
   DUCT 8 TO 30 INCH – 24GA
   DUCT 31 TO 60 INCH – 22GA

7. ALL FITTINGS JOINTS, SEAMS AND CONNECTIONS SHALL BE MADE UP IN ACCORDANCE WITH STANDARD RECOMMENDED PRACTICE PER THE LATEST ASHRAE GUIDES AND SMACNA LOW AND MEDIUM PRESSURE STANDARDS AS APPLICABLE PER SYSTEM.

8. PROVIDE AN AIR COOLED PACKAGE CHILLER WITH ALL ACCESSORIES AND OPTIONS AS SPECIFIED ON DRAWINGS. REFER TO SCHEDULE. PHYSICAL DIMENSIONS AND WEIGHTS MUST BE MET ON ALL SUBMISSIONS. PROVIDE 5 YEAR WARRANTY ON COMPRESSOR(S).
   MANUFACTURES:
   TRANE
   CARRIER
   YORK

9. PROVIDE MODULAR AIR HANDLING UNIT WITH ALL ACCESSORIES AND OPTIONS AS SPECIFIED ON DRAWINGS. REFER TO SCHEDULE. PHYSICAL DIMENSIONS AND WEIGHTS MUST BE MET ON ALL SUBMISSIONS.
   MANUFACTURES:
   MAGIC AIRE
   CARRIER
   YORK

10. PROVIDE INLINE, MIXED FLOW EXHAUST FAN.

11. PROVIDE A COMPLETE DDC BASED BUILDING MANAGEMENT SYSTEM WITH ALL ACCESSORIES AND OPTIONS AS SPECIFIED ON DRAWINGS. SYSTEM SHALL BE WEB ACCESSIBLE AND COMPATIBLE WITH PACKAGED EQUIPMENT CONTROLS. REFER TO CONTROL SPECIFICATION DIAGRAM DRAWING AND SEQUENCE OF OPERATION SHEET.
   MANUFACTURES:
   TRANE
   JOHNSON CONTROLS

12. PROVIDE VALVES, CIRCUIT SETTER, STRAINERS, FITTINGS, PRESSURE AND TEMPERATURE GAGES PER HYDRONIC DETAILS.

13. PROVIDE 1 1/2" BLANKET INSULATION ON SUPPLY AND RETURN DUCT WORK AND 2" RIGID BOARD ON OUTDOOR AIR DUCT WORK.

14. PROVIDE ELECTROSTATIC PRECIPITATION FILTER AS LISTED ON SCHEDULES.

15. REFER TO DRAWING M–002 FOR ADDITIONAL NOTES

HVAC LEGENDS AND SYMBOLS

DUCT SYMBOLS

SINGLE | DOUBLE

- PROPOSED DUCTWORK
- EXISTING DUCTWORK
- DUCT TO BE REMOVED
- ACOUSTICALLY LINED OR DOUBLE WALLED DUCT (ALSO SEE SPECIFICATIONS)
- DUCT RISE/DROP W/90° ELBOWS (RETANGULAR DUCTS)
- SUPPLY AIR (SA) SUPPLY DUCT RISE & DROP (SOLID LINE UP, BROKEN LINE DOWN)
- RETURN AIR (RA), RELIEF AIR OR EXHAUST AIR (EA) (SOLID LINE UP, BROKEN LINE DOWN)
- TURNING VANES
- VD — VOLUME CONTROL DAMPER
- FLEXIBLE CONNECTION
- SUPPLY DUCT SECTION
- EXHAUST OR RETURN DUCT SECTION
- SUPPLY DIFFUSER
- RET/EXH DIFFUSER
- BLANKED OFF DIFFUSER
- LINEAR SLOT DIFFUSER
- SIDEWALL SUPPLY
- SIDEWALL RET/EXH GRILLE
- FLEXIBLE DUCT
- F/S — COMBINATION FIRE/SMOKE DAMPER IN DUCT W/ ACCESS DOOR
- SD — SMOKE DAMPER IN DUCT W/ ACCESS DOOR
- FD/AD — FIRE DAMPER IN DUCT W/ ACCESS DOOR
- SUPPLY AIR FLOW
- RET/EXH AIR FLOW
- ACCESS DOOR
- U — UNDERCUT DOOR
- SOUND ATTENUATOR (SUPPLY AND RETURN)
- CO — DUCT CLEAN OUT

SYMBOL KEY

DIFFUSER

- X — DIFFUSER TYPE
- XXX — THROW
- XXX — CFM

CONTROL SYMBOLS

- S_D — SMOKE DETECTOR (DUCT MOUNTED)
- T — THERMOSTAT
- P — PRESSURE DIFFERENTIAL TRANSDUCER
- T — TEMPERATURE SENSOR
- G — NATURAL GAS SENSOR
- CO_2 — CARBON DIOXIDE SENSOR
- H — HUMIDITY SENSOR
- M — MOTORIZED ACTUATOR
- M — MOTOR ACTUATED DAMPER (PLAN VIEW)
- AI — ANALOG INPUT
- AO — ANALOG OUTPUT
- BI — BINARY INPUT
- BO — BINARY OUTPUT
- T_R — REVERSE ACTING THERMOSTAT

EQUIPMENT SYMBOLS

- CENTRIFUGAL FAN (DIAGRAM)
- FILTER (DIAGRAM)
- DAMPER, OPPOSED BLADE (DIAGRAM)
- DAMPER, PARALLEL BLADES (DIAGRAM)
- DAMPER, GRAVITY (DIAGRAM)

HVAC PIPING SYMBOLS

- PROPOSED PIPING LINE WEIGHT
- EXISTING PIPING LINE WEIGHT
- PIPING TO BE REMOVED
- HHWS — HEATING HOT WATER SUPPLY
- HHWR — HEATING HOT WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CHWR — CHILLED WATER RETURN

PIPING SYSTEM SYMBOLS

- AUTOMATIC AIR VENT
- ANCHOR
- ANGLE VALVE
- BALL VALVE
- BUTTERFLY VALVE
- CIRCUIT SETTER OR BALANCING COCK
- CHECK VALVE
- CONTROL VALVE (PNEUMATIC)
- DIRECTION OF FLOW
- DIRECTION OF PITCH (DOWN)
- DRAIN WITH HOSE BIBB.
- E.C. — EXPANSION COMPENSATOR
- FLANGE
- FLEXIBLE CONNECTION
- GATE VALVE
- GAS SHUTOFF VALVE
- GLOBE VALVE
- H — HUMIDITY SENSOR
- MANUAL AIR VENT
- PIPE GUIDES
- PIPE SLEEVE
- STRAINER
- PLUG VALVE
- P — PRESSURE GAUGE
- PRESSURE REDUCING VALVE
- PRESSURE RELIEF VALVE
- REDUCED PRESSURE BACKFLOW PREVENTOR
- THERMOMETER
- TRIPLE DUTY VALVE
- UNION
- M — WATER METER
- 2" AND SMALLER, CAP OR PLUG; 2 1/2" AND LARGER, BLIND FLANGE
- 2–WAY CONTROL VALVE
- 3–WAY CONTROL VALVE
- 3–WAY MIXING VALVE WITH ARROW INDICATING FAIL POSITION
- 3–WAY DIVERTING VALVE WITH ARROW INDICATING FAIL POSITION
- PIPE DOWN
- PIPE UP
- TEE DOWN

ABBREVIATIONS

A	AMPERES
AD	ACCESS DOOR IN DUCT
AFF	ABOVE FINISH FLOOR
AHU	AIR HANDLING UNIT
AP	ACCESS PANEL IN WALL OR CLG.
APD	AIR PRESSURE DROP
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROLS
B	BOILER
BB	BASEBOARD
BC	BOOSTER COIL
BMS	BUILDING MANAGEMENT SYSTEM
BDD	BACKDRAFT DAMPER
BOD	BOTTOM OF DUCT ELEVATION
BOP	BOTTOM OF PIPE ELEVATION
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CONVECTOR
CC	COOLING COIL
CD	CONDENSATE DRAIN
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CP	CONDENSATE PUMP
C/S	CIRCUIT SETTER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CM	CONSTRUCTION MANAGER
COND	CONDENSATE
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
DB	DRY BULB TEMPERTURE
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DIV.	DIVISION
DIFF	DIFFUSER
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	EXPANSION COMPENSATORS
EF	EXHAUST FAN
EUH	ELECTRIC UNIT HEATER
EWT	ENTERING WATER TEMPERATURE
F	FILTER, FUSED, OR FARENHEIT
FBO	FURNISHED BY OTHERS
FCU	FAN COIL UNIT
F/D	FIRE DAMPER
FI	FLOW INDICATOR
FLA	FULL LOAD AMPERES
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FPS	FEET PER SECOND/FIRE PROTECTION SYSTEM
FPVB	FAN POWERED VARIABLE VOLUME BOX
FPVBR	FAN POWERED VARIABLE VOLUME BOX WITH REHEAT
F/S	FIRE / SMOKE DAMPER
FSC	FOOD SERVICE CONTRACTOR
FT	FEET
FTR	FIN TUBE RADIATION
G	GAS, NATURAL
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HC	HEATING COIL
HP	HORSEPOWER
HW	HIGH WALL
GR	GRILLE
HHWR	HEATING HOT WATER RETURN
HHWRR	HEATING HOT WATER REVERSE RETURN
HHWS	HEATING HOT WATER SUPPLY
HRHW	HEAT RECOVERY HOT WATER
H.P.	HORSEPOWER
HRC	HEAT RECOVERY COIL
HVAC	HEATING VENTILATION & AIR CONDITIONING
HZ	HERTZ
IN.	INCHES
KW	KILOWATTS
LBS	POUNDS
LF	LINEAR FOOT
LV	LOUVER
LW	LOW WALL
LAT	LEAVING AIR TEMPERTURE
LWT	LEAVING WATER TEMPERATURE
MD	MOTORIZED DAMPER
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MIN.	MINIMUM
N/A	NOT APPLICABLE
NC	NORMALLY CLOSED OR NOICE CRITERIA
NF	NON–FUSED
NO	NORMALLY OPEN OR NUMBER
NFA	NET FREE AREA
NPT	NATIONAL PIPE THREAD
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OV	OUTLET VELOCITY
P	PUMP
PLC	PLUMBING CONTRACTOR
PTAC	PACKAGED TERMINAL AIR COND. UNIT
PRV	PRESSURE RELIEF VALVE
PSC	PERMANENT SPLIT CAPACITOR
RA	RETURN AIR
RAH	RELIEF AIR HOOD
RAF	RETURN AIR FAN
REF	ROOF EXHAUST FAN OR REFERENCE
REG	REGISTER
RHP	RADIANT HEATING PANEL
RPM	REVOLUTIONS PER MINUTE
RPZBFP	REDUCED PRESSURE ZONE BACK FLOW PREVENTER
RTU	ROOF TOP UNIT
RV	RELIEF VENT
SA	SUPPLY AIR
SAD	SOUND ATTENUATING DEVICE
SAF	SUPPLY AIR FAN
SAN	SANITARY
SD	SMOKE DAMPER
SP	STATIC PRESSURE
SPIL	SMOKE PURGE INTAKE LOUVER
SPEC	SPECIFICATION
SPR	SPRINKLER
TCC	TEMPERATURE CONTROL CONTRACTOR
TD	TRANSFER DUCT
TOP	TOP OF PIPE ELEVATION
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
TXV	THERMAL EXPANSION VAVLE
UST	UNDER–GROUND FUEL OR STORAGE TANK
UH	UNIT HEATER
V	VALVE/VENT/VOLTS
VAC	VOLTAGE (ALTERNATING CURRENT)
VAV	VARIABLE AIR VOLUME BOX
VCD	VOLUME CONTROL DAMPER
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
WMS	WIRE MESH SCREEN
W.P.D.	WATER PRESSURE DROP
WTD	WATER TEMPERATURE DROP

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REVISIONS

NUMBER	DATE	REMARKS

CONTROL ROOM HVAC SYSTEMS IMPROVEMENT

300 MAXIM ROAD
HARTFORD, CT.

PROJECT NO:	36937520.00001
DRAWN BY:	DEP
CHECKED BY:	VMD
DATE:	04/28/08
CADD FILE:	AS NOTED

MECHANICAL SYMBOLS, ABBREVIATIONS AND NOTES

M-001

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