

ABBREVIATIONS

ACU	AIR CONDITIONING UNIT
ACUJ	AIR COOLED CONDENSING UNIT
AAF	AUTOMATIC AIR VENT
AD	ACCESS DOOR (1" DWGS), AREA DRAIN (1" DWGS)
ADA	AMERICAN DISABILITIES ACT
ADJ	ADJUSTABLE
AFF	ABOVE FINISHED FLOOR
AFM	AIR FLOW MONITORING
AHU	AIR HANDLING UNIT
ALTER	ALTERNATE
AMP	AMPERE (AMP, AMPS)
APPROX	APPROXIMATE (E, LY)
ARCH	ARCHITECT (URAL)
AS	AIR SEPARATOR
APD	AIR PRESSURE DROP (IN WG)
AV	AUTOMATIC VENT
BBD	BOILER BLOW DOWN
BDD	BACKDRAFT DAMPER
BFC	BELOW FINISHED CEILING
BFW	BOILER FEED WATER
BFWP	BOILER FEED WATER PUMP
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BDO	BOTTOM OF DUCT
BOP	BOTTOM OF PIPING
BSB	BRANCH SELECTOR BOX
BTUH	BRITISH THERMAL UNIT PER HOUR
C	COMMON
CD	CONDENSATE DRAIN
CAB	CABINET
CAV	CONSTANT AIR VOLUME
CF	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CFOI	CONTRACTOR FURNISHED/OWNER INSTALLED
CH	CHILLER
CHP	CHILLED WATER PUMP
CHCF	CHILLED WATER CHEMICAL FEED
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CI	CAST IRON
CO	CLEANOUT
CONV	CONNECTION
CONV	CONVECTOR
COP	COEFFICIENT OF PERFORMANCE
CP	CONDENSATE PUMP
CT	COOLING TOWER
CUH	CABINET UNIT HEATER
CUV	CLASSROOM UNIT VENTILATOR
CV	CONTROL VALVE
CWCF	CONDENSER WATER CHEMICAL FEED
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DRAIN
DB	DRAIN BOX
DN	DOWN
DWG	DRAWING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE (°F)
EC	ELECTRICAL CONTRACTOR
EDR	EQUIVALENT DIRECT RADIATION
EER	ENERGY EFFICIENCY RATIO
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
ELEC	ELECTRIC
ELEV	ELEVATION
EMER	EMERGENCY
ENCL	ENCLOSURE
END	END OF MAIN DRIP
EQUIP	EQUIPMENT
ESP	EXTERNAL STATIC PRESSURE (IN WG)
ET	EXPANSION TANK
EUH	ELECTRIC UNIT HEATER
EVAP	EVAPORATIVE (ING, ED), (OR)
EWT	ENTERING WATER TEMPERATURE (°F)
EXP	EXPANSION
EX	EXISTING
°F	DEGREES FAHRENHEIT
F&B	FACE AND BY-PASS
F&T	FLOAT & THERMOSTATIC STEAM TRAP
FCP	FLUID COOLER PUMP
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLR	FLOOR
FLM	FEET PER MINUTE
FT	FOOT/FEET
FTG	FOOTING
FTR	FINNED TUBE RADIATION
GA	GAUGE
GAL	GALLON
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFS	GLYCOL FILL STATION
GIV	GRAVITY INTAKE VENTILATOR
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GR	GLYCOL RETURN
GS	GLYCOL SUPPLY
GRV	GRAVITY RELIEF VENTILATOR
H	HUMIDITY/HUMIDIFIER
HD	HEAD (FT.)
HE	HEAT EXCHANGER
HORIZ	HORIZONTAL
HP	HORSEPOWER/HEAT PUMP
HPWR	HEAT PUMP WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HPWP	HEAT PUMP WATER PUMP
HPS	HIGH PRESSURE STEAM
HPC	HIGH PRESSURE CONDENSATE
HR	HOUR
HRP	HEAT RECOVERY PUMP
HTR	HEATER
HSPF	HEATING SEASONAL PERFORMANCE FACTOR
HWCF	HEATING HOT WATER CHEMICAL FEED
HWV	HEATING HOT WATER PUMP
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HZ	FREQUENCY (MEGAHERTZ)
IB	INVERTED BUCKET STEAM TRAP
ID	INSIDE DIAMETER
IN	INCH/INCHES
INCN	INCINERATOR
INCL	INCLUDES, (ED)
INDIC	INDICATOR
INSLA	INSULATE, (ED), (ION)
INT	INTERIOR
KEC	KITCHEN EQUIPMENT CONTRACTOR
KW	KILOWATT

ABBREVIATIONS

LAB	LABORATORY
LAD	LAMINAR AIR DIFFUSER
LAF	LAMINAR AIR FLOW
LAT	LEAVING AIR TEMPERATURE (°F)
LBS	POUND
LD	LINEAR DIFFUSER
LEC	LABORATORY EQUIPMENT CONTRACTOR
LFC	LABORATORY FURNISHINGS CONTRACTOR
LFD	LAMINAR FLOW DIFFUSER
LP	LIQUID PETROLEUM
LPS	LOW PRESSURE STEAM
LPC	LOW PRESSURE CONDENSATE
LWT	LEAVING WATER TEMPERATURE (°F)
MAT	MIXED AIR TEMPERATURE (°F)
MAX	MAXIMUM
MBH	THOUSANDS OF BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MCC	MOTOR CONTROL CENTER
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MIN	MINIMUM
MISC	MISCELLANEOUS
MPS	MEDIUM PRESSURE STEAM
MPC	MEDIUM PRESSURE CONDENSATE
MTD	MOUNTED
MV	MANUAL VENT
NA	NOT APPLICABLE
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE (°F)
OB	OPPOSED BLADE DAMPER
OCFI	OWNER FURNISHED/CONTRACTOR INSTALLED
OFOI	OWNER FURNISHED/OWNER INSTALLED
P	PUMP
PBD	PARALLEL BLADE DAMPER
PCHR	PANEL CHILLED WATER RETURN
PCHS	PANEL CHILLED WATER SUPPLY
PD	PRESSURE DROP (IN OR WG AS NOTED)
PE	PNEUMATIC-ELECTRIC
PER (%)	PERCENT
PH	PHASE
PHC	PREHEAT COIL
PHWR	PERIMETER HEATING HOT WATER RETURN
PHWS	PERIMETER HEATING HOT WATER SUPPLY
PI	PRESSURE INDICATOR
PNEU	PNEUMATIC
PPM	PARTS PER MILLION
PREFAB	PREFABRICATED
PRESS	PRESSURE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PT	PNEUMATIC TUBE
PTS	PNEUMATIC TUBE STATION
R	THERMAL RESISTANCE
R#	REFRIGERANT (NUMBER)
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE (°F)
RECIR	RECIRCULATE, (OR), (ING)
RES	RELATIVE HUMIDITY
RF	RETURN FAN
RG	RETURN GRILLE
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RHG	REFRIGERANT HOT GAS
RL	REFRIGERANT LIQUID
RM	ROOM
RP	RADIANT PANEL, (CEILING-MOUNTED)
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RV	REFRIGERANT VENT
SA	SUPPLY AIR
SF	SUPPLY FAN
SAT	SUPPLY AIR TEMPERATURE (°F)
SCC	STEAM CONDENSATE COOLER
SD	SUPPLY DIFFUSER
SECT	SECTION
SEER	SEASONAL ENERGY EFFICIENCY RATIO
SF	SQUARE FOOT
SG	SUPPLY GRILLE
SHR	SENSIBLE HEAT RATIO
SHT	SHEET
SPEC	SPECIFICATIONS
SRV	SAFETY RELIEF VALVE
SS	STAINLESS STEEL
ST	STORAGE TANK
STD	STANDARD
STP	STORAGE TANK PUMP
STR	STORAGE TANK RETURN
STS	STORAGE TANK SUPPLY
STRUCT	STRUCTURE, (E), (AL)
SUCT	SUCTION
SV	STEAM VENT
TB	TERMINAL BOX
TC	TEMPERATURE CONTROL
TCC	TEMPERATURE CONTROL CONTRACTOR
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TONS	TONS OF REFRIGERATION
TSP	TOTAL STATIC PRESSURE (IN WG)
TTST	THERMOSTAT
TY	TYPICAL
U	HEAT TRANSFER COEFFICIENT
UC	UNDER CUT
UH	UNIT HEATER
UNO	UNLESS NOTED OTHERWISE
UV	UNIT VENTILATOR
VA	VOLT AMPERE
VAC	VACUUM
VAR	VARIABLE
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VC	VACUUM CLEANING
VD	VOLUME DAMPER
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
VRV	VARIABLE REFRIGERANT VOLUME
W	WITH
WG	WATER GAUGE
WO	WITHOUT
WPD	WATER PRESSURE DROP
WTR	WATER
ZN	ZONE

PIPING SYSTEMS

CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CD	CONDENSATE DRAIN
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
HPR	HEAT PUMP RETURN
HPS	HEAT PUMP SUPPLY
HHWR	HEATING HOT WATER RETURN
HHWS	HEATING HOT WATER SUPPLY
HPSR	HIGH PRESSURE STEAM RETURN
HPSS	HIGH PRESSURE STEAM SUPPLY
LPSS	LOW PRESSURE STEAM RETURN
LPSS	LOW PRESSURE STEAM SUPPLY
MPSS	MEDIUM PRESSURE STEAM RETURN
MPSS	MEDIUM PRESSURE STEAM SUPPLY
RR	REFRIGERANT RETURN
RS	REFRIGERANT SUPPLY
RSGR	REFRIGERANT SUCTION GAS RETURN
CPD	STEAM CONDENSATE PUMP DISCHARGE
SV	STEAM VENT

GENERAL DUTY VALVES & FITTINGS

	RISE IN PIPING
	DROPPED PIPING
	CAPPED PIPE
	PIPE CONTINUED ON ANOTHER DRAWING
	CHECK VALVE
	PRESSURE REGULATING VALVE
	PLUG VALVE
	VALVE - SEE SPECIFICATIONS FOR VALVE TYPE
	BUTTERFLY VALVE
	RELIEF VALVE
	TRIPLE DUTY VALVE
	GATE VALVE
	BALL VALVE
	VALVE IN RISER
	ANGLE VALVE
	MANUAL BALANCING VALVE
	AUTOMATIC BALANCING VALVE
	TWO-WAY CONTROL VALVE
	THREE-WAY CONTROL VALVE
	UNION
	THERMOMETER WELL
	THERMOMETER & WELL
	GAUGE CONNECTION(S) & WELL
	MANUAL AIR VENT
	AUTOMATIC AIR VENT
	PETE'S PLUG
	Y-STRAINER W/BLOWDOWN VALVE & CAP
	PIPE GUIDES
	PIPE ANCHORS
	FLEXIBLE PIPING CONNECTOR
	PIPE EXPANSION JOINT
	STEAM TRAP DESIGNATION
	EXPANSION LOOP (SIZE INDICATED ON DRAWINGS)
	GAS COCK
	CONCENTRIC REDUCER
	ECCENTRIC REDUCER
	PRESSURE REDUCING VALVE

DRAWING NOTATIONS

	DEMO
	NEW
	DETAIL REFERENCE
	SECTION REFERENCE
	NEW TO EXISTING
	DEMO TO THIS POINT
	EQUIPMENT TAG - (SEE SCHEDULE SHEETS)
	DIFFUSER, REGISTER, GRILLE TAG - (SEE SCHEDULE SHEETS)

NOTE:
ALL SYMBOLS AND ABBREVIATIONS
MAY NOT BE USED FOR THIS PROJECT

DUCTWORK SYSTEMS

EA	EXHAUST AIR
EA/RL	EXHAUST/RELIEF AIR
KEA	KITCHEN EXHAUST AIR
OA	OUTSIDE AIR
RLA	RELIEF AIR
RA	RETURN AIR
SA	SUPPLY AIR
TA	TRANSFER AIR

DUCTWORK SYMBOLS

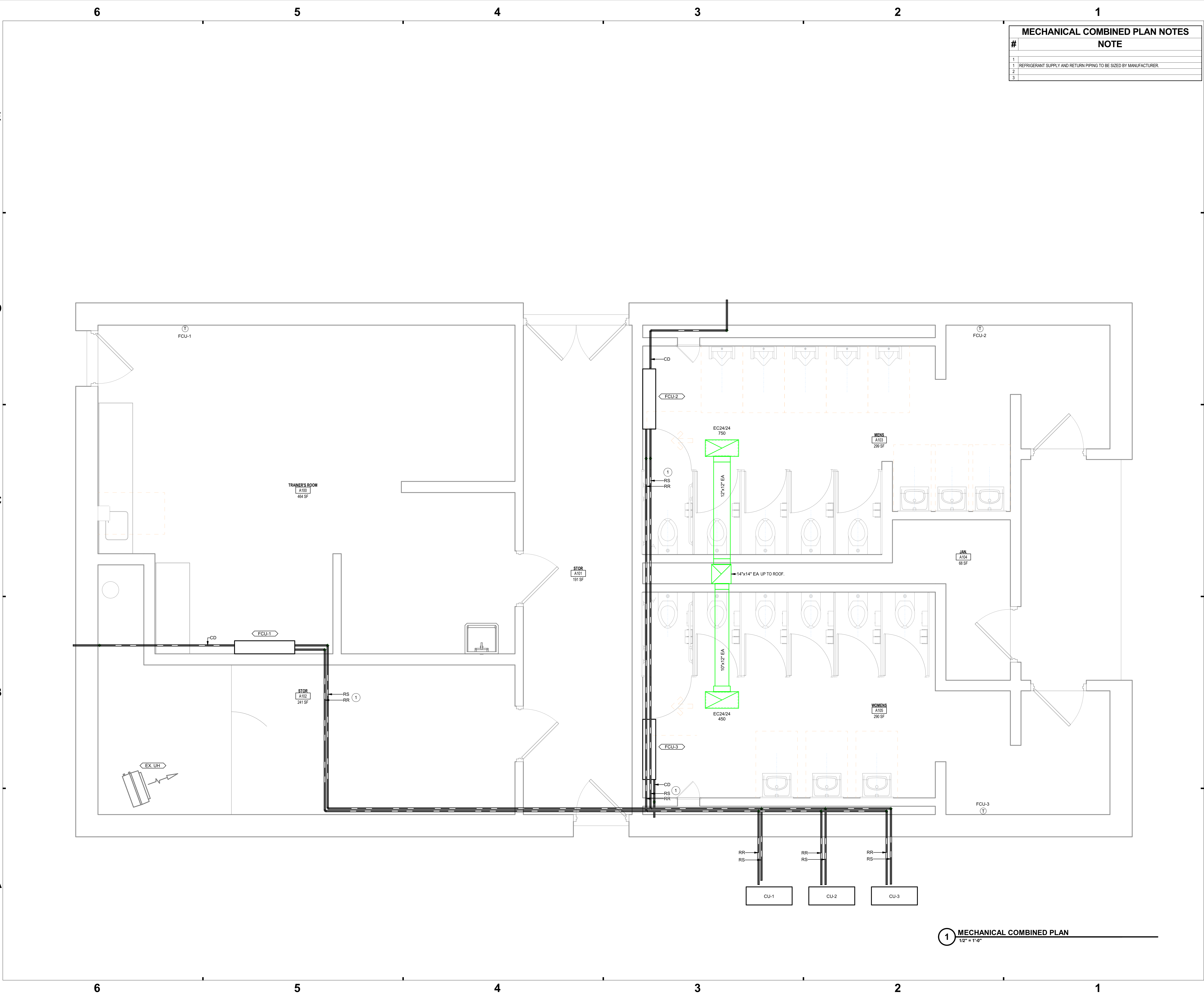
	DROP IN DUCTWORK (SUPPLY ONLY)
	DROP IN DUCTWORK (EXHAUST, RETURN, ETC.)
	RISE IN DUCTWORK (SUPPLY ONLY)
	RISE IN DUCTWORK (EXHAUST, RETURN, ETC.)
	OFFSET IN DUCTWORK (R = RISE D = DROP)
	RECTANGULAR DUCTWORK
	ROUND SPIRAL DUCTWORK
	OVAL DUCTWORK
	INSULATED FLEXIBLE DUCTWORK
	STANDARD RADIUS ELBOW, CENTER RADIUS 1-1/2 TIMES WIDTH OF DUCT
	90° ELBOW WITH TURNING VANES
	DUCT TRANSITION
	SHOETAP WITH SQUARE TO ROUND TRANSITION
	CONICAL FITTING
	90° TEE FITTING
	45° LATERAL FITTING
	BELLMOUTH FITTING
	SHOETAP (OR 45° ENTRY) FITTING
	MANUAL VOLUME DAMPER
	BDD = BACKDRAFT DAMPER OBD = OPPOSED BLADE DAMPER PBD = PARALLEL BLADE DAMPER
	SD = SMOKE DAMPER
	FSD = FIRE/SMOKE DAMPER
	FD-(AB) = FIRE DAMPER (TYPE A OR TYPE B)
	MOTORIZED CONTROL DAMPER
	ACCESS DOOR
	INTERNALLY INSULATED DUCTWORK
	FLEXIBLE CONNECTION
	DUCT-MOUNTED REHEAT COIL (HYDRONIC)
	NEW TO EXISTING
	COUNTERBALANCED BACKDRAFT DAMPER
	MOTORIZED BACKDRAFT DAMPER

EQUIPMENT SYMBOLS

	LINEAR DIFFUSER W/TYPE AND CFM (TWO-WAY SIDE TYPE)
	SUPPLY DIFFUSER W/TYPE AND CFM (FOUR-WAY TYPE)
	SUPPLY DIFFUSER W/TYPE AND CFM (TWO-WAY SIDE TYPE)
	SUPPLY DIFFUSER W/TYPE AND CFM (ONE-WAY SIDE TYPE)
	RETURN GRILLE W/TYPE AND CFM
	EXHAUST GRILLE W/TYPE AND CFM
	SIDEWALL GRILLE W/TYPE AND CFM
	AT ROOF
	AT CEILING
	CARBON DIOXIDE SENSOR
	HUMIDITY SENSOR
	THERMOSTAT

GENERAL NOTES

- THESE GENERAL NOTES APPLY TO M-SERIES DRAWINGS. ADDITIONAL GENERAL NOTES SPECIFIC TO A PARTICULAR DRAWING ARE NOTED ON THOSE SHEETS.
- IT IS THE INTENT OF THESE DOCUMENTS TO PROVIDE MECHANICAL SYSTEMS THAT ARE FULLY FUNCTIONAL. PROVIDE ALL ITEMS SPECIFIED AND REQUIRED FOR COMPLETE OPERATIONAL SYSTEMS.
- ON MECHANICAL "M" SERIES DRAWINGS, DARK LINE ITEMS INDICATE NEW WORK. LIGHT LINE ITEMS ARE ITEMS THAT SHALL REMAIN.
- THESE DRAWINGS INDICATE REQUIRED SIZE AND POINTS OF TERMINATION FOR PIPING, DUCTWORK, CONDUIT, ETC. THE EQUIPMENT SHOWN IS TO BE USED FOR THE INDICATED ROUTING, BUT ALL NECESSARY OFFSETS MAY NOT BE SHOWN. DIVISION 23 SHALL INSTALL HIS WORK IN A MANNER THAT WILL CONFORM WITH THE STRUCTURE. DIVISION 23 SHALL AVOID OBSTRUCTIONS, PRESERVE HEADROOM AND MAINTAIN MAXIMUM CLEARANCE WITHOUT FURTHER INSTRUCTION FROM THE ARCHITECT/ENGINEER OR ADDITIONAL COST TO THE OWNER.
- ALL DUCTWORK, PIPING, AND VALVES SHALL BE CONCEALED ABOVE CEILING AND WITHIN WALLS IN FINISHED AREAS UNLESS OTHERWISE INDICATED.
- ALL VALVES, ETC., SHALL BE INSTALLED ALLOWING EASY ACCESS BETWEEN LIGHT FIXTURES AND NO HIGHER THAN 12" ABOVE THE CEILING. FITTINGS IN DUCTWORK AND PIPING AS REQUIRED SO THAT NO PIPING REMAINS TIGHT TO ROOF STRUCTURE. PROVIDE ACCESS PANELS AS REQUIRED. AREA ADJACENT TO THE ACCESS PANELS SHALL BE CLEAR OF ANY OBSTRUCTIONS. PROVIDE HANDLES OR PROTRUSERS FOR INSULATED PIPING.
- DIVISION 23 SHALL BE GUIDED BY THE ARCHITECT/ENGINEER'S REFLECTED CEILING PLAN FOR LOCATION OF DIFFUSERS, REGISTERS, GRILLES SHOWN OR COVERED BY THESE PLANS. RETURN GRILLES SHALL NOT ALIGN WITH SUPPLY AIR THROW.
- CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL GRILLES, REGISTERS AND DIFFUSERS IN CEILINGS WITH THE CEILING SYSTEM AND LIGHT FIXTURES. PROVIDE FLEXIBLE DUCT UPSTREAM OF EACH DIFFUSER WHERE SHOWN.
- ARROWS ON THE HOT WATER COLD WATER MAINS INDICATE THE DIRECTION OF FLOW. PITCH MAINS UPWARD A MINIMUM OF 1" PER 10' IN THE DIRECTION OF FLOW. ARROWS ON STEAM AND CONDENSATE PIPING AND DRAIN LINE INDICATE THE DOWNDRAFT PITCH OF THE PIPING.
- INSTALL AIR VENTS AT ALL HIGH POINTS AND DRAINS AT ALL LOW POINTS OF WATER PIPING SYSTEMS. DRAINS TO HAVE HOSE END THREADS WITH CLEARANCE TO ATTACH HOSE.
- PIPE "SWING" CONNECTIONS WITH UNIONS OR FLANGES SHALL BE MADE EXTERNAL TO COILS OR A TUBE BUNDLE TO FACILITATE REMOVAL OF THAT ITEM WITHOUT DISTURBING THE BRANCH VALVES AND/OR PIPING.
- DUCT AND PIPING PENETRATING FLOOR SLABS AND/OR WALLS SHALL BE SEALED WITH ACOUSTIC SEALANT, IF THE FLOOR OR WALL IS FIRE RATED. PROVIDE THE FIRE STOPPING OR FIRE DAMPER TO MAINTAIN THE FIRE RATING.
- ALL RECTANGULAR SHEET METAL DUCT SIZES ARE INSIDE DIMENSIONS. ALL ROUND DUCT SIZES SHOWN ARE INSIDE DIAMETERS. ALLOWANCE FOR ACOUSTICAL LINER WHERE INDICATED ON DRAWINGS MUST BE ADDED TO OBTAIN OUTSIDE SHEET METAL DIMENSION.
- ALL WALL THERMOSTATS, TEMPERATURE SENSORS, AND/OR HUMIDISTATS SHALL BE APPROXIMATELY 48" ABOVE FINISHED FLOOR TO CENTER AND LINED UP HORIZONTALLY WITH LIGHT SWITCHES UNLESS OTHERWISE NOTED OR DIRECTED BY THE ARCHITECT/ENGINEER.
- DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR HIS RESPECTIVE WORK FOR REPAIRING AND PATCHING TO MATCH EXISTING SURFACES. SIDEWALKS, STREETS, FLOORS, WALLS, ROOFS, CEILING AND FLOOR JOINTS IN BID PROPOSAL SHALL INCLUDE ALL COSTS FOR CUTTING AND PATCHING REQUIRED TO INSTALL NEW OR REMOVE EXISTING WORK, EQUIPMENT, OR SYSTEMS.
- DIVISION 23 CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL OF HIS WORK TO BE INSTALLED WITH ANY AND ALL OTHER CONTRACTORS TO BE AFFECTED BY SUCH WORK. PRIOR TO ORDERING ANY OF THE EQUIPMENT, THIS SHALL INCLUDE BUT NOT LIMITED TO ELECTRICAL CHARACTERISTICS, CONNECTIONS REQUIRED, PHYSICAL SIZE, COLOR AND FIT. ALSO REFER TO SPECIFICATIONS.
- ALL EQUIPMENT SHALL BE OF, AND CONSIST OF, AT LEAST MINIMUM SIZES SELECTED, AND SHALL PERFORM TO OR SURPASS THE MINIMUM REQUIREMENTS, SCHEDULES, NOTED AND SPECIFIED.
- COORDINATE INSTALLATION OF NEW WORK WITH ALL OTHER TRADES AND EXISTING CONDITIONS AS REQUIRED FOR A COMPLETE AND OPERABLE HVAC SYSTEM. CLEARANCES ABOVE CEILINGS ARE EXTREMELY TIGHT IN CERTAIN AREAS. RELOCATE PIPING, ELECTRICAL CONDUIT, STRUCTURAL BRACING, ETC., AS REQUIRED FOR A COMPLETE INSTALLATION OF HVAC WORK. COORDINATE ROUTING OF NEW DUCTWORK ABOVE CEILINGS WITH EXISTING ELECTRIC CABLE TRAY. TO COORDINATE ALL DUCTWORK ROUTING ABOVE CEILING, ELEVATIONS WITH STRUCTURAL STEEL SUPPORTS FOR FOLDING WALLS, REFERENCE STRUCTURAL DRAWINGS FOR SIZE AND LOCATIONS OF STEEL. FIELD VERIFY ALL EXISTING CONDITIONS.
- CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL VAV REHEAT BOXES AND DUCTWORK WITH THE CEILING SYSTEM AND LIGHT FIXTURES. FIELD VERIFY EXISTING CEILING SYSTEMS AND LOCATION OF EXISTING LIGHT FIXTURES. ALLOW REQUIRED CLEARANCES FOR SERVICE TO BOX AND CONTROLS.
- CONTRACTOR SHALL RELOCATE EXISTING LIGHT FIXTURE AND CEILING GRID SUPPORT HANGERS AS REQUIRED FOR INSTALLATION OF NEW VAV REHEAT BOXES, DUCTWORK AND PIPING.
- PROVIDE VOLUME DAMPERS IN ALL SUPPLY AIR BRANCH DUCTWORK AS REQUIRED TO BALANCE EACH SYSTEM. ALL VOLUME DAMPERS LOCATED ABOVE DRYWALL CEILINGS SHALL BE CABLE OPERATED WITH REMOTE REGULATOR. FIELD VERIFY THE CEILING WHERE REQUIRED. COORDINATE WITH GENERAL TRADES, SEAL AROUND DUCTWORK AND PIPING TO HELP REDUCE THE TRANSFER OF NOISE BETWEEN CLASSROOMS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING OF BID.
- ALL TRANSFER AIR DUCTS TO BE INTERNALLY INSULATED TO DETER NOISE TRANSFER. SIZE SHOWN ON PLANS INDICATES ACTUAL FREE AREA.
- ALL NEW PIPING AND DUCTWORK CROSSING THRU EXISTING CORRIDOR AND/OR CLASSROOM WALLS TO DECK. CUT WALLS AS REQUIRED. COORDINATE ALL OPENINGS THROUGH EXISTING WALL CONSTRUCTION WITH GENERAL TRADES. SEAL AROUND DUCTWORK AND PIPING TO HELP REDUCE THE TRANSFER OF NOISE BETWEEN CLASSROOMS. FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO SUBMITTING OF BID.
- ROUND DUCT SIZE TO BE THE SAME SIZE AS THE DIFFUSER NOCK, UNLESS OTHERWISE NOTED. MAXIMUM LENGTH OF FLEXIBLE DUCTWORK CONNECTED TO A DIFFUSER SHALL BE 5'-0".
- ALL DUCTWORK CONSTRUCTION SHALL BE FABRICATED SHEET METAL & BUILT IN ACCORDANCE WITH "SMACNA" STANDARDS.
- ALL SUPPLY, RETURN, RELIEF/EXHAUST, AND OUTDOOR AIR DUCTWORK SHALL BE EXTERNALLY INSULATED. SEE SPECIFICATION FOR ADDITIONAL INSULATION REQUIREMENTS.
- ALL ROUND DUCT TO BE EXTERNALLY INSULATED UNLESS NOTED OTHERWISE. SIZE SHOWN INDICATES ACTUAL DUCT FREE AREA. SEE SPECIFICATION FOR ADDITIONAL INSULATION REQUIREMENTS.
- ALL NEW ROOF WORK TO BE IN ACCORDANCE WITH OWNER'S EXISTING ROOF WARRANTY.
- ALL ROOF PENETRATIONS TO BE SEALED WATER TIGHT. PACK VOID BETWEEN DUCT PENETRATING ROOF AND STRUCTURE WITH FIBERGLASS INSULATION AND CAULK WATER TIGHT. FOR HIGH TEMPERATURE OR GREASE DUCTS UTILIZE MINERAL WOOL.
- TEMPERATURE CONTROL. CONTRACTOR SHALL PROVIDE ALL CONTROL WIRING COMPLETE FOR THIS PROJECT. ALL WIRING (AND INTERLOCK WIRING) TO THERMOSTATS, SPACE SENSORS, HUMIDISTATS, CARBON DIOXIDE MONITORS, ETC. ARE TO BE CONCEALED WITHIN THE WALL.
- ALL HARD 90° ELBOWS IN SUPPLY DUCTWORK ARE TO HAVE TURNING VANES PER SPECIFICATION AIR DUCT ACCESSORIES.
- REMOVE ALL WORK MADE OBSOLETE BY NEW CONSTRUCTION.
- DEMOLITION OF EXISTING MECHANICAL EQUIPMENT TO INCLUDE ASSOCIATED PIPING AND DUCTWORK NECESSARY FOR NEW EQUIPMENT INSTALLATION.
- ALL EXISTING TO REMAIN AND NEW PVC PLUMBING VENT LINES LOCATED ABOVE CEILING IN RETURN PLENUM ARE TO BE EXTERNALLY WRAPPED WITH FLAME AND SMOKE SPREAD RATED INSULATION MATERIAL AS REQUIRED.
- REFERENCE SECTION DIVISION 01 "SUMMARY" (MULTIPLE CONTRACT SUMMARY) FOR CONSTRUCTION PHASING.
- CONTRACTOR SHALL THOROUGHLY EXAMINE THE CONTRACT DOCUMENTS, INCLUDING THE WORK OF OTHER CONTRACTORS PRIOR TO SUBMITTING A BID PROPOSAL.
- ALL EXHAUST FANS, RELIEF VENTS, FLUES, AND PLUMBING VENTS TO BE INSTALLED A MINIMUM OF 10' FT. FROM OUTDOOR AIR INTAKES.
- CONTRACTOR SHALL CLEAN ALL OF HIS WORK INSIDE AND OUT. AIR DISTRIBUTION SYSTEMS SHALL HAVE ALL DIRT AND FOREIGN MATERIAL REMOVED FROM INSIDE AND OUTSIDE OF DUCTS, PLENUMS, HOUSINGS, ETC. AS INSTALLATION PROGRESSES.
- PROTECT OPEN ENDS OF DUCTWORK AND INLETS AND OUTLETS OF EQUIPMENT AND DEVICES DURING CONSTRUCTION. CLEAN ALL ACCESSIBLE PARTS OF DUCTWORK AND AIR PASSAGES IN EQUIPMENT BEFORE FILTERS ARE INSTALLED OR REPLACED FOR SYSTEM BALANCING.
- FURNISH AND INSTALL ACCEPTABLE CONCRETE INSERTS, ANCHORS, CLAMPS, BRACKETS, HANGERS, STRUCTURAL MEMBERS (ANGLES, CHANNELS, ETC.) AND FRAMES, ETC., REQUIRED FOR SUPPORTING ALL RESPECTIVE WORKS, ASSEMBLIES AND ATTACHMENTS SHALL BE DESIGNED AND ARRANGED TO CARRY THE WEIGHT OF THE SUPPORTED ITEMS INCLUDING HANGER AND CONTAINMENT WITHOUT TRANSMITTING VIBRATION OR NOISE TO THE BUILDING CONSTRUCTION. DESIGNED, APPROPRIATE AND APPROVED FOR THE PURPOSE USED. HAVE A NEAT AND FINISHED APPEARANCE AND COMPLEMENT THE INSTALLATION. HAVE CORROSION PROTECTION SUITABLE FOR THE ATMOSPHERE WHERE INSTALLED. ADEQUATELY AND SAFELY ATTACHED TO THE BUILDING STRUCTURE OR STRUCTURAL MEMBERS. EXPOSED SUPPORTS SHALL BE PAINTED UNLESS OF NON-FERROUS MATERIAL OR PROVIDED WITH PLATED (RUSTPROOF) FINISH.
- PROVIDE NEC CLEARANCES AND SERVICE CLEARANCES FOR EQUIPMENT. COORDINATE EQUIPMENT SERVICE ACCESS. CLEARANCES INDICATED ARE BASED UPON BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY PIPING, DUCTWORK, ETC., ROUTING PRIOR TO SUBMITTING A BID PROPOSAL AND



MECHANICAL COMBINED PLAN NOTES	
#	NOTE
1	
2	
3	



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#	Revision	Date
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619 S Main Street
Tipton, IN 46072

KEY PLAN

Tipton Community
School Corporation



Outdoor Facility
Improvements

FIRST FLOOR HVAC PLAN

MH1A1.1

1 MECHANICAL COMBINED PLAN
1/2" = 1'-0"

