

HARRIMAN

AUBURN PORTLAND MANCHESTER

UNIVERSITY OF SOUTHERN MAINE DEPARTMENT REORGANIZATION PROJECT 2015-011

PORTLAND, MAINE

Harriman Project No.	15457
Key Plan	Proj North

GENERAL NOTES

- 1 VISIT THE BUILDING SITE PRIOR TO BIDDING TO BECOME FAMILIAR WITH EXISTING CONDITIONS. AND TO TAKE MEASUREMENTS AS NECESSARY FOR COMPLETION OF THE WORK ASSOCIATED WITH THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
- 2 COORDINATE WORK OF MECHANICAL SUBCONTRACTOR WITH WORK OF OTHER TRADES.
- 3 DUCTWORK, PIPING AND EQUIPMENT ARE INDICATED DIAGRAMMATICALLY. FIELD-VERIFY LOCATIONS.
- 4 PRIOR TO FABRICATING DUCTWORK, COORDINATE WITH OTHER TRADES TO ENSURE THAT THE DUCTWORK CAN BE INSTALLED WITH THE INDICATED SIZES AND LOCATIONS. FIELD-VERIFY EXISTING DUCT SIZES AND CONDITIONS. SUBMIT ANY DISCREPANCIES OR PROPOSED CHANGES.
- 5 REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATIONS OF CEILING DIFFUSERS AND REGISTERS. PROVIDE VOLUME DAMPERS SO THAT EVERY REGISTER, GRILLE AND DIFFUSER (SUPPLY, RETURN, AND EXHAUST) CAN BE INDIVIDUALLY BALANCED.
- 6 VERIFY INSTALLATION OF EXISTING VOLUME DAMPERS AT EACH BRANCH IN EXISTING SUPPLY DUCT. PROVIDE ADDITIONAL VOLUME DAMPERS WHERE REQUIRED.
- 7 LOCATE VOLUME DAMPERS AS FAR AWAY FROM REGISTERS, GRILLES AND DIFFUSERS AS POSSIBLE TO MINIMIZE NOISE. LOCATE TO BE UNOBSTRUCTED AND EASILY ACCESSIBLE FOR TESTING AND BALANCING. LOCATE POSSIBLE, WHERE VOLUME DAMPERS MUST BE LOCATED ABOVE HARD CEILINGS SUCH AS GYPSUM WALLBOARD, PROVIDE ACCESS PANELS AS SPECIFIED, AND NOTIFY THE ARCHITECT OF SUCH LOCATIONS VERBALLY AND IN WRITING. OBTAIN PERMISSION FROM THE ARCHITECT BEFORE INSTALLING ACCESS PANELS.
- 8 DUCT ELBOWS SHALL BE LONG-RADIUS TYPE (THROAT RADIUS EQUAL TO OR GREATER THAN DUCT WIDTH IN THE PLANE OF THE TURN) WHEREVER SPACE ALLOWS. IF SPACE IS NOT ADEQUATE, PROVIDE MITERED ELBOWS WITH TURNING VANES.
- 9 PROVIDE 16 GAUGE SINGLE-THICKNESS TURNING VANES AT MITERED DUCT ELBOWS. VANE EDGES (LEADING AND TRAILING) SHALL BE TANGENTIAL TO AIRFLOW.
- 10 FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 5'-0"
- 11 PAINT DUCTWORK VISIBLE THRU CEILING OPENINGS, DUCT OPENINGS, AND REGISTERS, GRILLES, AND DIFFUSERS WITH BLACK PAINT IN ACCORDANCE WITH DIVISION 09 SECTION "PAINTING."
- 12 MOUNT THERMOSTATS AND TEMPERATURE AND HUMIDITY SENSORS AT 48 INCHES AFF TO TOP OF ITEM. PROVIDE ELECTRICAL WALL BOX ATTACHED TO FRAMING.
- 13 WHERE THERMOSTATS/TEMPERATURE SENSORS ARE LOCATED NEAR LIGHT SWITCHES, INSTALL SO THAT LIGHT SWITCHES ARE NEARER TO THE DOOR JAMBS. THE INTENT IS TO LOCATE THERMOSTATS/TEMPERATURE SENSORS SO THEY WILL NOT INTERFERE WITH ACCESSIBILITY OF LIGHT SWITCHES.
- 14 PIPING INDICATED IN OUTSIDE WALLS SHALL BE RUN ON THE WARM SIDE OF BUILDING INSULATION AND VAPOR BARRIER. BUILDING INSULATION BEHIND SUCH PIPING SHALL BE CONTINUOUS, WITHOUT JOINTS OR GAPS.
- 15 PIPING SHALL BE CONCEALED EXCEPT IN MECHANICAL ROOMS AND AS INDICATED. WHERE PIPES DROP IN BLOCK WALLS, PROVIDE 1/2" THICK INSULATION MINIMUM.
- 16 SEAL DUCTWORK AND PIPING THRU MECHANICAL ROOM FLOORS AND PARTITIONS, AND THRU FIRE-RATED ASSEMBLIES, WITH FIRESTOP MATERIAL AS SPECIFIED.

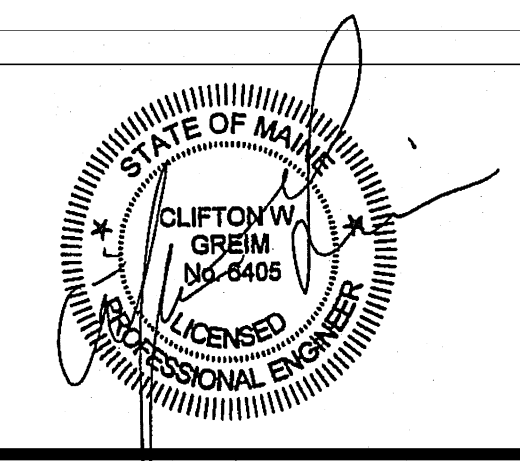
ABBREV	DESCRIPTION	ABBREV	DESCRIPTION
AAV	AUTOMATIC AIR VENT	LAT	LEAVING AIR TEMPERATURE
ACV	AUTOMATIC CONTROL VALVE	LPCR	LOW PRESSURE CONDENSATE RETURN
AD	ACCESS DOOR	LPS	LOW PRESSURE STEAM
AFF	ABOVE FINISHED FLOOR	LRA	LOCKED ROTOR AMPS
AFG	ABOVE FINISHED GRADE	LSGV	LOCK & SHIELD GATE VALVE
AHU	AIR HANDLING UNIT	LWT	LEAVING WATER TEMPERATURE
ALD	ACOUSTICAL LINED DUCT	MAX	MAXIMUM
AMS	AIRFLOW MEASURING STATION	MBH	1000 BRITISH THERMAL UNITS
APD	AIR PRESSURE DROP	MCA	MINIMUM CIRCUIT AMPS
APPROX	APPROXIMATELY	MD	MOTORIZED DAMPER
ARC	AIR CURTAIN	MIN	MINIMUM
AS	AIR SEPARATOR	MOPD	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
ATC	AUTOMATIC TEMPERATURE CONTROL	MPCR	MEDIUM PRESSURE CONDENSATE RETURN (16-30 PSIG)
AV	AIR VALVE	MPS	MEDIUM PRESSURE STEAM (16-30 PSIG)
B	BOILER	MUA	MAKE-UP AIR UNIT
BCP	BOILER CIRCULATING PUMP	NA	NOT APPLICABLE
BD	BAROMETRIC DAMPER	NC	NOISE CRITERIA
BDD	BACKDRAFT DAMPER	NIC	NOT IN CONTRACT
BHP	BRAKE HORSEPOWER	NO	NORMALLY OPEN
BOT	BOTTOM	NTS	NOT TO SCALE
BPD	BYPASS DAMPER	OA	OUTSIDE AIR
BSB	BRANCH SELECTOR BOX	OAHU	OUTDOOR AIR HANDLING UNIT ON CENTER
BTU	BRITISH THERMAL UNITS	OC	OPEN END DUCT
C	CONVECTOR	OED	OPEN END DUCT
CBD	COUNTERBALANCED BACKDRAFT DAMPER	OSSY	OUTSIDE SCREW & YOKE GATE VALVE
CC	COOLING COIL	OU	VRF OUTDOOR UNIT
CFD	CEILING FIRE DAMPER	PD	PRESSURE DROP
CFM	CUBIC FEET PER MINUTE	PRD	PRESSURE RELIEF DAMPER
CH	CHILLER	PRV	PRESSURE REDUCING VALVE
CHWC	CHILLED WATER COIL	PSF	POUNDS PER SQUARE FOOT
CO	CLEANOUT	PSI	POUNDS PER SQUARE INCH
COND	CONDENSER	RET	RETURN
CT	CONDENSATED RECEIVER	RF	RETURN AIR FAN
CTE	CONNECT TO EXISTING	CW	COLD WATER
CU	CONDENSING UNIT	RFM	RADIANT FLOOR MANIFOLD
CUH	CABINET UNIT HEATER	RFP	RADIANT FLOOR PUMP
CV	CONSTANT VOLUME BOX	RHC	REHEAT COIL
CVU	CONVECTION UNIT	RL	REFRIGERANT LIQUID
EW	ENTERING WATER TEMPERATURE	RLA	RATED LOAD AMPERES
CWP	CHILLED WATER PUMP	RP	DUCT FURNACE
CWP	CONDENSER WATER PUMP	RPM	REVOLUTIONS PER MINUTE
DAC	DUCTLESS AC	RS	REFRIGERANT SUCTION
DEG F	DEGREES FAHRENHEIT	RTU	ROOFTOP UNIT
DF	DUCT FURNACE	SA	SOUND ATTENUATOR
DHW	DOMESTIC HOT WATER	SD	SMOKE DAMPER
DIA	DIAMETER	SDIFD	SMOKE AND FIRE COMBINATION DAMPER
DWP	DOMESTIC WATER PUMP	SF	SUPPLY FAN
EAH	EXHAUST AIR HOOD	SG	SUPPLY GRILLE
EAT	ENTERING AIR TEMPERATURE	SIP	SOURCE INJECTION PUMP
EBH	ELECTRIC BASEBOARD HEATER	SP	STATIC PRESSURE
EF	EXHAUST FAN	SP	STATIC PRESSURE
EL	EXPANSION LOOP	SS	STAINLESS STEEL
ERV	ENERGY RECOVERY VENTILATOR	TEMP	TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE	TF	TRANSFER FAN
ET	EXPANSION TANK	TS	THERMOSTAT
EU	VRF INDOOR UNIT	TT	THERMOSTATIC TRAP
EUH	ELECTRIC UNIT HEATER	TYP	TYPICAL
EUH	ELECTRIC UNIT HEATER	UH	UNIT HEATER
EW	ELECTRIC WALL HEATER	UV	UNIT VENTILATOR
EWT	ENTERING WATER TEMPERATURE	VAV	VARIABLE AIR VOLUME
EX	EXHAUST	VD	VOLUME DAMPER
EXG	EXISTING	VFD	VARIABLE FREQUENCY DRIVE
F&T	FLOAT & THERMOSTATIC TRAP	VRF	VARIABLE REFRIGERANT FLOW
FCU	FAN COIL UNIT	VV	VARIABLE AIR VOLUME BOX
FD	FIRE DAMPER	W	WITH
FH	FUME HOOD	WO	WITHOUT
FL	FINNED LENGTH OF RADIATION	WC	WATER COLUMN
FM	FLOW METER	WCP	WSPH CIRCULATING PUMP
FOP	FUEL OIL PUMP	WG	WATER GAUGE
FOR	FUEL OIL RETURN	WP	WELL PUMP
FOS	FUEL OIL SUPPLY	WPD	WATER PRESSURE DROP
FPF	FINS PER FOOT	WSPH	WATER SOURCE HEAT PUMP
FPI	FINS PER INCH	WV	WATER SOURCE HEAT PUMP
FPM	FEET PER MINUTE	ZD	ZONE DAMPER
FPP	FREEZE PROTECTION PUMP		
FT	FEET		
FTR	FIN TUBE RADIATOR		
FTWG	FEET WATER GAUGE		
GAL	GALLONS		
GLYP	GLYCOL PUMP		
GPM	GALLONS PER MINUTE		
GUH	GAS UNIT HEATER		
H	HOOD		
HP	HORSEPOWER		
HPCR	HIGH PRESSURE CONDENSATE RETURN (OVER 30 PSIG)		
HPS	HIGH PRESSURE STEAM (OVER 30PSIG)		
HRC	HEAT RECOVERY COIL		
HRP	HEAT RECOVERY PUMP		
HRR	HEAT RECOVERY RETURN		
HRS	HEAT RECOVERY SUPPLY		
HUM	HUMIDIFIER		
HV	HEATING AND VENTILATING UNIT		
HWC	HOT WATER COIL		
HWP	HOT WATER PUMP		
HWR	HOT WATER RETURN		
HWS	HOT WATER SUPPLY		
HX	HEAT EXCHANGER		
IAH	INTAKE AIR HOOD		
IN	INCHES		
IRH	INFRARED HEATER		
L	LOUVER		

SYMBOL	DESCRIPTION
[Grey Box]	EXISTING EQUIPMENT TO REMAIN
[Solid Black Box]	NEW EQUIPMENT
[Dashed Line]	EXISTING SUPPLY PIPING TO REMAIN
[Dotted Line]	EXISTING RETURN PIPING TO REMAIN
[Double Line]	NEW DUCTWORK
[Single Line]	NEW SUPPLY PIPING
[Dashed Line]	NEW RETURN PIPING
[Line with Diagonal Hatching]	ACOUSTICALLY LINED DUCT
[Line with X Hatching]	ACV 2 - WAY
[Line with Y Hatching]	ACV 3 - WAY
[Line with Z Hatching]	AIRFLOW MONITORING SYSTEM
[Line with Circle]	BALANCE VALVE
[Line with Square]	BACKDRAFT DAMPER
[Line with Triangle]	CAP - PIPE
[Line with Diamond]	CHECK VALVE
[Line with Circle and X]	COMBINATION BALANCING, FLOW MEASURING & TIGHT SHUT-OFF VALVE
[Line with Square and X]	COUNTERBALANCED DAMPER
[Line with Circle and X]	DUCT DIAMETER
[Line with Square and X]	DUCT SECTION - SUPPLY
[Line with Square and X]	DUCT SECTION - RETURN/EXHAUST
[Line with Square and X]	DUCT TURNING VANES
[Line with Square and X]	FIRE DAMPER (1 1/2 HOUR RATED)
[Line with Square and X]	FIRE DAMPER (3 HOUR RATED)
[Line with Square and X]	FLEXIBLE DUCT
[Line with Square and X]	FLOAT & THERMOSTATIC TRAP
[Line with Square and X]	ISOLATION VALVE
[Line with Square and X]	GLOBE VALVE
[Line with Square and X]	HUMIDISTAT
[Line with Square and X]	HUMIDITY SENSOR
[Line with Square and X]	LOCKSHIELD GATE VALVE
[Line with Square and X]	LOUVER
[Line with Square and X]	MANUAL AIR VENT
[Line with Square and X]	MOTORIZED DAMPER
[Line with Square and X]	OS&Y GATE VALVE
[Line with Square and X]	PETCOCK FOR GAUGE CONNECTION
[Line with Square and X]	PIPE ANCHOR
[Line with Square and X]	PIPE GUIDE
[Line with Square and X]	PITCH DOWN
[Line with Square and X]	PLUG VALVE
[Line with Square and X]	PRESSURE GAUGE
[Line with Square and X]	PRESSURE REDUCING VALVE
[Line with Square and X]	PRESSURE RELIEF VALVE
[Line with Square and X]	PRESSURE RELIEF DAMPER
[Line with Square and X]	RADIATION I.D. (TYPE A, 10'-0" FINNED LENGTH, 10,000 BTU/HR) WITH DAMPER
[Line with Square and X]	RADIATION I.D. (TYPE A, 10'-0" FINNED LENGTH, 10,000 BTU/HR) WITHOUT DAMPER
[Line with Square and X]	10'-0" FL 10.0 GPM
[Line with Square and X]	10'-0" FL 10.0 GPM

SYMBOL	DESCRIPTION
[Triangle]	REDUCER - CONCENTRIC
[Triangle]	REDUCER - ECCENTRIC
[Circle]	RETURN AIR
[Square]	RETURN AIR DUCT
[Circle]	SECTION I.D. (SECTION A SHOWN ON DWG. M10.1)
[Square]	SMOKE DAMPER
[Square]	DUCT MOUNTED SMOKE DETECTOR
[Triangle]	STRAINER
[Triangle]	SUPPLY AIR
[Triangle]	SUPPLY AIR DUCT
[Square]	SWITCH, OCCUPIED/UNOCCUPIED
[Square]	SWITCH WITH PILOT LIGHT
[Square]	SWITCH, TIMER
[Square]	SWITCH, VARIABLE SPEED W/ OFF "POSITION"
[Triangle]	TAKE - OFF FROM BOTTOM OF PIPE
[Triangle]	TAKE - OFF FROM TOP OF PIPE
[Triangle]	TEMPERATURE SENSOR
[Triangle]	THERMOMETER
[Triangle]	THERMOMETER WELL
[Triangle]	THERMOSTAT
[Triangle]	THERMOSTAT COOLING
[Triangle]	THERMOSTAT HEATING
[Triangle]	THERMOSTAT - NIGHT
[Triangle]	THERMOSTAT - HEATING/COOLING
[Triangle]	THERMOSTATIC TRAP
[Triangle]	UNION
[Triangle]	VOLUME DAMPER
[Triangle]	S (SUPPLY) R (RETURN) E (EXHAUST) T (TRANSFER) SUPPLY DIFFUSER (TYPE 2)
[Triangle]	DIFFUSER DESCRIPTION (SEE REG., GRILLES & DIFF SCHEDULE)
[Triangle]	QUANTITY
[Triangle]	400 CFM EA

Issues and Revisions

Mark	Date	Description
07-09-15	75% REVIEW	
07-23-15	100% REVIEW	
08-03-15	OWNER REVIEW	
08-10-15	ISSUED FOR BID	
1	09-25-15	ISSUED FOR PERMIT



Drawing Scales	NO SCALE
PA / PE	CG
Drawn By	JSL
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LEGEND AND GENERAL NOTES

M00.1

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