

# GENERAL NOTES

- 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.
- COORDINATE WORK OF MECHANICAL SUBCONTRACTOR WITH WORK OF OTHER TRADES.
- DUCTWORK, PIPING AND EQUIPMENT ARE INDICATED DIAGRAMMATICALLY. FIELD-VERIFY LOCATIONS.
- 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.
- 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.
- VERIFY INSTALLATION OF EXISTING VOLUME DAMPERS AT EACH BRANCH IN EXISTING SUPPLY DUCT. PROVIDE ADDITIONAL VOLUME DAMPERS WHERE REQUIRED.
- 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.
- 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.
- PROVIDE 16 GAUGE SINGLE-THICKNESS TURNING VANES AT MITERED DUCT ELBOWS. VANE EDGES (LEADING AND TRAILING) SHALL BE TANGENTIAL TO AIRFLOW.
- FLEXIBLE DUCT LENGTHS SHALL NOT EXCEED 5'-0"
- PAINT DUCTWORK VISIBLE THRU CEILING OPENINGS, DUCT OPENINGS, AND REGISTERS, GRILLES, AND DIFFUSERS WITH BLACK PAINT IN ACCORDANCE WITH DIVISION 09 SECTION "PAINTING."
- MOUNT THERMOSTATS AND TEMPERATURE AND HUMIDITY SENSORS AT 48 INCHES AFF TO TOP OF ITEM. PROVIDE ELECTRICAL WALL BOX ATTACHED TO FRAMING.
- 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.
- 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.
- PIPING SHALL BE CONCEALED EXCEPT IN MECHANICAL ROOMS AND AS INDICATED. WHERE PIPES DROP IN BLOCK WALLS, PROVIDE 1/2" THICK INSULATION MINIMUM.
- SEAL DUCTWORK AND PIPING THRU MECHANICAL ROOM FLOORS AND PARTITIONS, AND THRU FIRE-RATED ASSEMBLIES, WITH FIRESTOP MATERIAL AS SPECIFIED.

## ABBREV

ABBREV	DESCRIPTION
AAV	AUTOMATIC AIR VENT
ACV	AUTOMATIC CONTROL VALVE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
ALD	ACOUSTICAL LINED DUCT
AMS	AIRFLOW MEASURING STATION
APD	AIR PRESSURE DROP
APPROX	APPROXIMATELY
ARC	AIR CURTAIN
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROL
AV	AIR VALVE
B	BOILER
BCP	BOILER CIRCULATING PUMP
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BOT	BOTTOM
BDP	BYPASS DAMPER
BSB	BRANCH SELECTOR BOX
BTU	BRITISH THERMAL UNITS
C	CONVECTOR
CBD	COUNTERBALANCED BACKDRAFT DAMPER
CC	COOLING COIL
CFD	CEILING FIRE DAMPER
CFM	CUBIC FEET PER MINUTE
CH	CHILLER
CHWC	CHILLED WATER COIL
CO	CLEANOUT
COND	CONDENSER
CT	CONDENSATED RECEIVER
CTE	CONNECT TO EXISTING
CU	CONDENSING UNIT
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME BOX
CVU	CONVECTION UNIT
CW	COLD WATER
CWP	CHILLED WATER PUMP
CWP	CONDENSER WATER PUMP
DAC	DUCTLESS AC
DEG F	DEGREES FAHRENHEIT
DF	DUCT FURNACE
DHW	DOMESTIC HOT WATER
DIA	DIAMETER
DWP	DOMESTIC WATER PUMP
EAH	EXHAUST AIR HOOD
EAT	ENTERING AIR TEMPERATURE
EBH	ELECTRIC BASEBOARD HEATER
EF	EXHAUST FAN
EL	EXPANSION LOOP
ERV	ENERGY RECOVERY VENTILATOR
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EU	VRF INDOOR UNIT
EUH	ELECTRIC UNIT HEATER
EUH	ELECTRIC UNIT HEATER
EWH	ELECTRIC WALL HEATER
EWT	ENTERING WATER TEMPERATURE
EX	EXHAUST
EXG	EXISTING
F&T	FLOAT & THERMOSTATIC TRAP
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FH	FUME HOOD
FL	FINNED LENGTH OF RADIATION
FM	FLOW METER
FOP	FUEL OIL PUMP
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FPF	FINS PER FOOT
FPI	FINS PERINCH
FPM	FEET PER MINUTE
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

## ABBREV

ABBREV	DESCRIPTION
LAT	LEAVING AIR TEMPERATURE
LPCR	LOW PRESSURE CONDENSATE RETURN
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LSGV	LOCK & SHIELD GATE VALVE
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS
MCA	MINIMUM CIRCUIT AMPS
MD	MOTORIZED DAMPER
MIN	MINIMUM
MOPD	MAXIMUM OVERCURRENT PROTECTIVE DEVICE
MPCR	MEDIUM PRESSURE CONDENSATE RETURN (16-30 PSIG)
MPS	MEDIUM PRESSURE STEAM (16-30 PSIG)
MUA	MAKE-UP AIR UNIT
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAHU	OUTDOOR AIR HANDLING UNIT ON CENTER
OC	ON CENTER
OED	OPEN END DUCT
OSSY	OUTSIDE SCREW & YOKE GATE VALVE
OU	VRF OUTDOOR UNIT
PD	PRESSURE DROP
PRD	PRESSURE RELIEF DAMPER
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
RET	RETURN
RF	RETURN AIR FAN
RFM	RADIANT FLOOR MANIFOLD
RFP	RADIANT FLOOR PUMP
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID
RLA	RATED LOAD AMPERES
RP	RADIANT PANEL
RFM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RTU	ROOFTOP UNIT
SA	SOUND ATTENUATOR
SD	SMOKE DAMPER
SDIFD	SMOKE AND FIRE COMBINATION DAMPER
SF	SUPPLY FAN
SG	SUPPLY GRILLE
SIP	SOURCE INJECTION PUMP
SP	STATIC PRESSURE
SP	SUMP PUMP
SS	STAINLESS STEEL
TEMP	TEMPERATURE
TF	TRANSFER FAN
TS	THERMOSTAT
TT	THERMOSTATIC TRAP
TYP	TYPICAL
UH	UNIT HEATER
UV	UNIT VENTILATOR
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VFD	VARIABLE FREQUENCY DRIVE
VRF	VARIABLE REFRIGERANT FLOW
VV	VARIABLE AIR VOLUME BOX
W	WITH
W/O	WITHOUT
WC	WATER COLUMN
WCP	WSHP CIRCULATING PUMP
WG	WATER GAUGE
WP	WELL PUMP
WPD	WATER PRESSURE DROP
WSHP	WATER SOURCE HEAT PUMP
ZD	ZONE DAMPER

## SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION
(Grey box)	EXISTING EQUIPMENT TO REMAIN
(Black box)	NEW EQUIPMENT
(Thin grey line)	EXISTING SUPPLY PIPING TO REMAIN
(Thin black line)	EXISTING RETURN PIPING TO REMAIN
(Double thin grey line)	EXISTING DUCTWORK TO REMAIN
(Double thin black line)	NEW DUCTWORK
(Thin grey line)	NEW SUPPLY PIPING
(Thin black line)	NEW RETURN PIPING
(Thin black line)	ACOUSTICALLY LINED DUCT
(Two lines with cross)	ACV 2 - WAY
(Two lines with cross)	ACV 3 - WAY
(A circle with 'A')	AIRFLOW MONITORING SYSTEM
(Circle with 'X')	BALANCE VALVE
(BDD symbol)	BACKDRAFT DAMPER
(Line with 'T')	CAP - PIPE
(Line with 'V')	CHECK VALVE
(Line with 'X' and 'V')	COMBINATION BALANCING, FLOW MEASURING & TIGHT SHUT-OFF VALVE
(CBD symbol)	COUNTERBALANCED DAMPER
(Ø)	DUCT DIAMETER
(Line with 'S')	DUCT SECTION - SUPPLY
(Line with 'R')	DUCT SECTION - RETURN/EXHAUST
(Line with 'V')	DUCT TURNING VANES
(FD symbol)	FIRE DAMPER (1 1/2 HOUR RATED)
(FD 3 HR symbol)	FIRE DAMPER (3 HOUR RATED)
(Line with 'F')	FLEXIBLE DUCT
(Line with 'T')	FLOAT & THERMOSTATIC TRAP
(Line with 'I')	ISOLATION VALVE
(Line with 'G')	GLOBE VALVE
(H)	HUMIDISTAT
(HS)	HUMIDITY SENSOR
(Line with 'L')	LOCKSHIELD GATE VALVE
(Line with 'L')	LOUVER
(Line with 'M')	MANUAL AIR VENT
(MD symbol)	MOTORIZED DAMPER
(Line with 'OS')	OS&Y GATE VALVE
(Line with 'T')	PETCOCK FOR GAUGE CONNECTION
(Line with 'A')	PIPE ANCHOR
(Line with 'G')	PIPE GUIDE
(DN)	PITCH DOWN
(Line with 'P')	PLUG VALVE
(P)	PRESSURE GAUGE
(Line with 'R')	PRESSURE REDUCING VALVE
(Line with 'R')	PRESSURE RELIEF VALVE
(PRD symbol)	PRESSURE RELIEF DAMPER
(Line with '1')	RADIATION I.D. ( TYPE A, 10'-0" FINNED LENGTH, 10,000 BTU/HR) WITH DAMPER
(Line with '1')	RADIATION I.D. ( TYPE A, 10'-0" FINNED LENGTH, 10,000 BTU/HR) WITHOUT DAMPER

## SYMBOL DESCRIPTION

SYMBOL	DESCRIPTION
(Line with 'R')	REDUCER - CONCENTRIC
(Line with 'E')	REDUCER - ECCENTRIC
(Line with 'R')	RETURN AIR
(Line with 'R')	RETURN AIR DUCT
(A M10.1)	SECTION I.D. ( SECTION A SHOWN ON DWG. M10.1)
(SD symbol)	SMOKE DAMPER
(SD+ symbol)	DUCT MOUNTED SMOKE DETECTOR
(Line with 'S')	STRAINER
(Line with 'S')	SUPPLY AIR
(Line with 'S')	SUPPLY AIR DUCT
(S <sub>OU</sub> )	SWITCH, OCCUPIED/UNOCCUPIED
(S <sub>P</sub> )	SWITCH WITH PILOT LIGHT
(S <sub>T</sub> )	SWITCH, TIMER
(S <sub>V</sub> )	SWITCH, VARIABLE SPEED W/ OFF "POSITION"
(Line with 'S')	TAKE - OFF FROM BOTTOM OF PIPE
(Line with 'S')	TAKE - OFF FROM TOP OF PIPE
(TS)	TEMPERATURE SENSOR
(T)	THERMOMETER
(Line with 'T')	THERMOMETER WELL
(T)	THERMOSTAT
(T)	THERMOSTAT COOLING
(T)	THERMOSTAT HEATING
(T)	THERMOSTAT - NIGHT
(T)	THERMOSTAT - HEATING/COOLING
(T)	THERMOSTATIC TRAP
(Line with 'U')	UNION
(VD symbol)	VOLUME DAMPER
(S)	S (SUPPLY) R (RETURN)
(E)	E (EXHAUST) T (TRANSFER)
(D)	DIFFUSER DESCRIPTION (SEE REG., GRILLES & DIFF SCHEDULE)
(Q)	QUANTITY
(400)	400 CFM EA

**HARRIMAN**

AUBURN PORTLAND MANCHESTER

UNIVERSITY OF SOUTHERN MAINE DEPARTMENT REORGANIZATION PROJECT 2015-011  
PORTLAND, MAINE

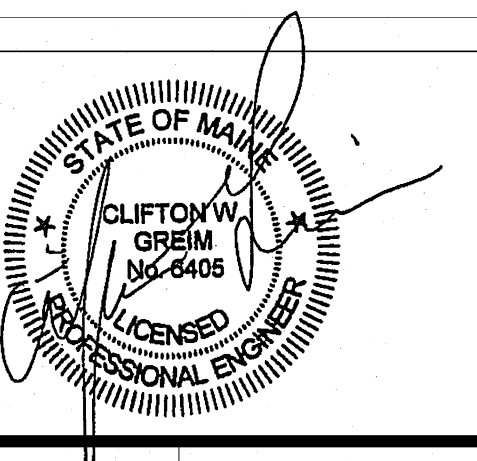
Harriman Project No. 15457

Key Plan Proj North



## 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	



Drawing Scales: NO SCALE

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LEGEND AND GENERAL NOTES

**M00.1**