HVAC GENERAL NOTES

DESCRIPTIONS

1. ALL HVAC GENERAL NOTES, SYMBOLS LISTS & DETAILS ARE TO BE CONSIDERED AS APPLICABLE TO ALL HVAC DRAWINGS FOR THIS PROJECT.
2. THE DRAWINGS ARE DIAGRAMMATIC IN NATURE AND EXACT LOCATIONS AND ARRANGEMENTS OF EXIST./NEW EQUIPMENT, DUCTWORK, PIPING AND OTHER COMPONENTS SHALL BE DETERMINED IN THE FIELD WITH DUE CONSIDERATION OF STRUCTURAL, ELECTRICAL AND ARCHITECTURAL SYSTEMS. EXISTING STRUCTURAL SYSTEMS SHALL NOT BE MODIFIED WITHOUT THE EXPRESS PERMISSION OF THE ENGINEER.
3. THE PROJECT SHALL BE PHASED IN ACCORDANCE WITH THE APPROVED PHASING PLAN. THE CONTRACTOR SHALL OBTAIN APPROVAL FOR THE SEQUENCING AND TIMING OF OPERATIONS PRIOR TO COMMENCING WORK. SEE SPECIFICATIONS.
4. CONTRACTOR IS TO MAINTAIN SERVICE TO ROOMS OUTSIDE THE PROJECT SCOPE OF WORK AND PHASING SCHEDULE. IF INTERRUPTION OF SERVICE IS REQUIRED COORDINATE SHUTDOWN.
5. CARE SHALL BE TAKEN BY THE CONTRACTOR TO PROTECT EXISTING SYSTEMS AND SURFACES TO REMAIN. RESTORE DAMAGED AREAS THAT ARE BEYOND THE SCOPE OF THIS CONTRACT TO THEIR ORIGINAL CONDITION.
6. WHERE INDICATED ON THE DRAWINGS, REMOVE OR RELOCATE EXISTING COMPONENTS AS REQUIRED TO ACCOMMODATE THE NEW WORK. REMOVALS SHALL INCLUDE ALL ASSOCIATED OFF-SITE DISPOSAL COSTS.
7. COORDINATE REMOVALS AND RELOCATIONS INCLUDING SELECTIVE CUTTING AND PENETRATIONS WITH ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL CONTRACTORS.
8. MOST PARTITIONS ARE FULL HEIGHT AND REQUIRE UTILITIES PENETRATIONS TO BE SEALED. SEE ARCHITECTURAL PLANS FOR PARTITION HEIGHTS. UTILITIES SHOWN FOR CLARITY THAT MAY RUN PARALLEL TO WALL PARTITIONS WILL REQUIRE LOCATING IN THE FIELD TO MINIMIZE CONFLICT WITH PARTITIONS.
9. COORDINATE THE LOCATIONS OF ALL WALL MOUNTED TEMPERATURE SENSORS WITH FINAL EQUIPMENT/FURNITURE LAYOUT.
10. MANUFACTURERS NAME & MODEL NUMBER ARE USED FOR DESCRIPTIVE PURPOSES ONLY & ARE INTENDED TO INDICATE THE STANDARD OF MATERIAL OR ARTICLES REQUIRED.
11. INSTALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND GOOD PRACTICE NORMAL TO THE TRADE. INSTALLATION SHALL INCLUDE PROVISIONS FOR ACCESS TO NORMAL MAINTENANCE ITEMS SUCH AS BELTS, BEARINGS, FILTERS AND MOTORS. PROVIDE ADEQUATE STRUCTURAL SUPPORTS AND SECURE MOUNTING METHODS WITH PROVISIONS FOR VIBRATION ISOLATION AND EXPANSION WHERE REQUIRED.
12. PROVIDE VOLUME DAMPERS DOWN STREAM OF VAV BOXES AT EACH BRANCH FROM MAIN DUCTWORK AND DUCT RUNNOUTS. PROVIDE OPPOSED BLADE DAMPERS AT EACH NECK TO AN INDIVIDUAL REGISTER OR DIFFUSER IN SUPPLY, RETURN AND EXHAUST DUCTS IRRESPECTIVE OF WHETHER OR NOT A DAMPER IS INDICATED ON THE PLANS.
13. DIFFUSER SIZES INDICATED ARE NECK SIZES. REGISTERS & GRILLES ARE INDICATED AS NOMINAL SIZES.
14. PERFORM ALL TESTS BEFORE INSULATING.
15. PIPING AND DUCTWORK SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
16. INSTALLATION SHALL PERMIT ACCESSIBILITY FOR SERVICE AND/OR REPLACEMENT OF EQUIPMENT PROVIDED. PROVIDE ACCESS PANELS TO GAIN ACCESS TO SYSTEMS COMPONENTS THAT REQUIRE MAINTENANCE ACCORDING TO MANUFACTURER'S LITERATURE.
17. PROVIDE DUCTWORK WITH OFFSETS AND TRANSITIONS AS REQUIRED TO FIT UNDER STRUCTURAL STEEL OR OTHER OBSTRUCTIONS. FLAT OVAL OR ROUND SIZES MAY BE USED INTERCHANGEABLY BY THE CONTRACTOR. MAINTAIN DUCT CROSS SECTIONAL AREA. CHANGES SHALL BE ONLY IN ACCORDANCE WITH APPROVED SHOP DRAWINGS OR WRITTEN PERMISSION OF THE PROJECT ENGINEER.
18. PROVIDE CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS & GUIDES AS NECESSARY TO PREVENT UNDUE STRAIN ON PIPING.
19. SEE DETAILS & PIPING DIAGRAMS FOR ADDITIONAL VALVES & FITTINGS NECESSARY FOR COMPLETE PIPING SYSTEM.
20. MECHANICAL CONTRACTOR TO COORDINATE ALL WORK WITH OTHER BUILDING TRADES. SOME RELOCATION OF EXISTING UTILITIES MAY BE NECESSARY TO ACCOMMODATE INSTALLATION OF NEW EQUIPMENT OR DUCTWORK.
21. PROVIDE FIRE OR FIRE/SMOKE DAMPERS WHERE INDICATED ON PLANS & WHERE REQUIRED BY APPLICABLE CODES FOR DUCTS & OPENINGS THROUGH FLOORS, FIRE WALLS & FIRE PARTITIONS. DAMPERS SHALL BE ENCLOSED IN #14 GAUGE STEEL SLEEVE. PROVIDE ACCESS DOORS LOCATED SO THAT FUSIBLE LINK & OTHER DAMPER COMPONENTS MAY BE INSPECTED REPLACED AND/OR SERVICED.
22. SEE SPECIFICATIONS FOR OTHER REQUIREMENTS.
23. AT THE END OF EACH WORKING DAY, THE CONSTRUCTION SITE SHALL BE LEFT IN A CLEAN AND NEAT CONDITION.
24. FIELD VERIFY EXISTING EQUIPMENT, DUCTWORK AND PIPING PRIOR TO REMOVAL OR REUSE. CONFIRM WITH OWNER THAT ALL EQUIPMENT, DUCTWORK AND PIPING DESIGNATED TO BE REMOVED IS NO LONGER IN SERVICE PRIOR TO ITS REMOVAL.
25. EXISTING EQUIPMENT, DUCTWORK AND PIPING TO REMAIN IN SERVICE SHALL BE INSPECTED. ANY EQUIPMENT FOUND TO BE INOPERABLE SHALL BE REPORTED TO THE PROJECT ENGINEER.
26. INFILL ALL NEW OR EXISTING ABANDONED FLOOR SLAB PENETRATIONS WITH GROUT, FULL THICKNESS OF SLAB. MAINTAIN 2 HR. FIRE RATING. ALL EXISTING CONCRETE FLOORS AND CHASES ARE 2 HOUR FIRE RATED.
27. FILL AND PATCH ALL OPENINGS IN WALLS WHERE CONDUITS, PIPES, DUCTS ETC. ARE OR HAVE BEEN REMOVED WITH UL LISTED FIRE ASSEMBLY APPROVED BY THE ARCHITECT. MAINTAIN 2 HR FIRE RATING WHERE APPLICABLE.
28. ALL UNUSED (ABANDONED) DUCTWORK, PIPING AND EQUIPMENT INDICATED TO BE REMOVED SHALL BE REMOVED AND CAPPED.
29. TIE-IN POINT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL DETERMINE EXACT LOCATIONS IN THE FIELD BASED ON EXISTING CONDITIONS.

GENERAL ABBREVIATIONS

ABBREVIATIONS	DESCRIPTIONS
AD	DUCT ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
AS	AIR SEPARATOR
ATC	AUTOMATIC TEMPERATURE CONTROL
BFP	BACK FLOW PREVENTER
BOD	BOTTOM OF DUCT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
C	CONVECTOR
C&HW	COLD & HOT WATER
CAP	CAPACITY
CC	COOLING COIL
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
COL	COLUMN
CONN	CONNECT
CV	CONTROL VALVE
DB	DRY BULB TEMPERATURE
DDC	DIRECT DIGITAL CONTROL
DIA	DIAMETER
DN	DOWN
DO	DIGITAL OUTPUT
DWG.OR DWGS	DRAWINGS
E, EX OR (E)	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECU	EVAPORATIVE CONDENSING UNIT
EF	EXHAUST FAN
EG	EXHAUST AIR GRILLE
EL	EXPANSION LOOP
EMS	ENERGY MANAGEMENT SYSTEM
ER	EXHAUST AIR REGISTER
ERV	EXHAUST ON ROOF
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
ETO	EXISTING TO BE REMOVED
ETR	ETHYLENE OXIDE
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
FA	FREE AREA
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FLR	FLOOR
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FSD	COMBINATION FIRE AND SMOKE DAMPER
FT	FEET
FTR	FIN TUBE RADIATION
GAL	GALLONS
GC	GENERAL CONTRACTOR
GE	GENERAL EXHAUST
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HC	HEATING COIL
HP	HORSE POWER
HVAC	HEATING, VENTILATION AND AIR COND.
HW	HOT WATER
ID	INSIDE DIAMETER
IH	INTAKE HOOD
IN	INCHES
KW	KILOWATTS
L	LOUVER
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
MBH	THOUSANDS OF B.T.U.'S PER HOUR
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MTD	MOUNTED
N.C. OR NC	NORMALLY CLOSED
N.O. OR NO	NORMALLY OPEN
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTS	NOT TO SCALE
O.A. OR OA	OUTSIDE AIR
OAT	OUTSIDE AIR TEMPERATURE
OBD	OPPOSED BLADE DAMPER
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH
PRV	PRESSURE REDUCING VALVE
RA	RETURN AIR
REF	RETURN EXHAUST FAN
RF	RETURN FAN
RG	RETURN AIR GRILLE
RHWR	REHEAT WATER RETURN
RHWS	REHEAT WATER SUPPLY
RM	ROOM
RR	RETURN AIR REGISTER
RV	RELIEF VALVE
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SF	SQUARE FEET
SP	STATIC PRESSURE
SPD	SPEED
SPEC	SPECIFICATION
SR	SUPPLY AIR REGISTER
SS	STAINLESS STEEL
TG	TRANSFER AIR GRILLE
TOD	TOP OF DUCT
TSTAT	THERMOSTAT
TYP	TYPICAL
U.G.	UNDER GRADE
U.S.	UNDER SLAB
UC	UNDERCUT DOOR
V	VENT
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THROUGH ROOF
W	WASTE
W/	WITH
WB	WET BULB TEMPERATURE (°F)
WMS	WIRE MESH SCREEN

PIPING SYMBOLS

SYMBOLS	ABBREVIATIONS	DESCRIPTIONS
G	G	GAS PIPING
GS	GS	GLYCOL SUPPLY
GR	GR	GLYCOL RETURN
RS	RS	REFRIGERANT SUCTION
RL	RL	REFRIGERANT LIQUID
RHG	RHG	REFRIGERANT HOT GAS
D	D	A.C. CONDENSATE DRAIN
MUW	MUW	MAKE UP WATER
PC	PC	PUMPED CONDENSATE
HPC	HPC	HIGH-PRESSURE CONDENSATE
BBD	BBD	BOILER BLOWDOWN
FOD	FOD	FUEL OIL DISCHARGE
FOG	FOG	FUEL OIL GAGE
FOS	FOS	FUEL OIL SUCTION
FOR	FOR	FUEL OIL RETURN
FOV	FOV	FUEL OIL TANK VENT
MTWS	MTWS	MEDIUM-TEMPERATURE HOT WATER SUPPLY
HTWS	HTWS	HIGH-TEMPERATURE HOT WATER SUPPLY
MTWR	MTWR	MEDIUM-TEMPERATURE HOT WATER RETURN
HTWR	HTWR	HIGH-TEMPERATURE HOT WATER RETURN
SAN	SAN	SANITARY DRAIN ABOVE FLOOR OR GRADE
CHEM	CHEM	CHEMICAL SUPPLY PIPES
CHWS	CHWS	CHILLED WATER SUPPLY PIPING
CHWR	CHWR	CHILLED WATER RETURN PIPING
CWS	CWS	CONDENSER WATER SUPPLY
CWR	CWR	CONDENSER WATER RETURN
HPS	HPS	HIGH PRESSURE STEAM
HWS	HWS	HOT WATER SUPPLY PIPING
HWR	HWR	HOT WATER RETURN PIPING
RHWS	RHWS	REHEAT HOT WATER SUPPLY PIPING
RHWR	RHWR	REHEAT HOT WATER RETURN PIPING
LPC	LPC	LOW PRESSURE CONDENSATE RETURN
LPS	LPS	LOW PRESSURE STEAM
MPC	MPC	MEDIUM PRESSURE CONDENSATE RETURN
MPS	MPS	MEDIUM PRESSURE STEAM
	DCW	DOMESTIC COLD WATER PIPING
	DHW	DOMESTIC HOT WATER PIPING
	DHWR	DOMESTIC HOT WATER RECIRCULATION PIPING
	V	VENT PIPING
		PIPE DROP
		PIPE RISER
		PIPE TEE - DOWN
		PIPE TEE - UP
		PIPE CONNECTION
		PIPE BREAK - TO CONTINUE
		DIRECTION OF FLOW
	ANCHOR	PIPE ANCHOR
		PIPE CAP
	GUIDE	PIPE GUIDE
		EXPANSION JOINT
	U	UNION
	BLV	BALL VALVE
	BFV	BUTTERFLY VALVE
	SCV	SWING CHECK VALVE
	CBV	CIRCUIT BALANCE VALVE
	ACV	2-WAY AUTOMATIC CONTROL VALVE
	ACV	3-WAY AUTOMATIC CONTROL VALVE (MIXING PATTERN)
	GV	GATE VALVE
	GLV	GLOBE VALVE
MPV	MPV	MULTIPURPOSE VALVE
	PRV	PRESSURE REGULATING VALVE
	T	THERMOMETER
	FLG	FLANGE
		STRAINER W/DRAIN VALVE AND CAP
	RSV	RELIEF OR SAFETY VALVE
	PGV	PLUG VALVE
	RPBP	REDUCED PRESSURE BACKFLOW PREVENTOR
		PIPE SLOPE

GENERAL SYMBOLS

SYMBOLS	DESCRIPTIONS
	POINT OF CONNECTION TO EXISTING
	LIMIT OF DEMOLITION
VAV 3	EQUIPMENT, GRILLE, REGISTER OR DIFFUSER TAG
S-1 250	DIFFUSER, REGISTER OR GRILLE TAG, WITH CFM AIRFLOW
1	REVISION TAG
	REVISION CLOUD
1	NOTE CALL OUT
P	PRESSURE GAUGE W/PETCOCK
P	DUCT STATIC PRESSURE SENSOR
P/C	ISOLATION ROOM PRESSURIZATION CONTROLLER
S	DUCT MOUNTED SMOKE DETECTOR, MTD BY HVAC CONTR. SUPPLIED AND WIRED BY ELECTRICAL CONTR.
F	FLOW SWITCH
PS	PRESSURE SWITCH
T	THERMOSTAT
V	AUTOMATIC AIR VENT
V	MANUAL AIR VENT
PP	PRESSURE PORT ("PETE'S PLUG")
F&T	FLOAT & THERMOSTATIC TRAP
	HUMIDIFIER
	VARIABLE AIR VOLUME BOX
12 , 12x12	DUCT SIZE
12"	PIPE SIZE
12"S UP 14"DN 1-1/2"	PIPE SIZE, GANG
	ROOF EXHAUST - EXISTING
	ROOF EXHAUST - REMOVED
	ROOF EXHAUST - NEW
	MANUAL VOLUME DAMPER
FD	FIRE DAMPER
FSD	COMBINATION FIRE SMOKE DAMPER
SD	SMOKE DAMPER

DIFFUSER SYMBOLS

SYMBOLS	ABBREVIATIONS	DESCRIPTIONS
	RG, RR	RETURN AIR GRILLE, REGISTER
	EG, ER	EXHAUST AIR GRILLE, REGISTER
	SD, SR, SG	SUPPLY AIR 4 WAY DIFFUSER, REGISTER, GRILLE
	SD, SR, SG	SUPPLY AIR 3 WAY DIFFUSER, REGISTER, GRILLE
	SD, SR, SG	SUPPLY AIR 2 WAY DIFFUSER, REGISTER, GRILLE
	SD, SR, SG	SUPPLY AIR 2 WAY DIFFUSER, REGISTER, GRILLE
	SD, SR, SG	SUPPLY AIR 1 WAY DIFFUSER, REGISTER, GRILLE

DUCTWORK SYMBOLS

SYMBOLS	DESCRIPTIONS
	EXISTING RECTANGULAR DUCT RUN W/ SIZE DESIGNATION
	EXISTING CIRCULAR DUCT RUN W/ SIZE DESIGNATION
	EXISTING FLEX DUCT RUN W/ SIZE DESIGNATION
	DEMOLITION RECTANGULAR DUCT RUN W/ SIZE DESIGNATION
	DEMOLITION CIRCULAR DUCT RUN W/ SIZE DESIGNATION
	DEMOLITION FLEX DUCT RUN W/ SIZE DESIGNATION
	NEW RECTANGULAR DUCT RUN W/ SIZE DESIGNATION
	NEW CIRCULAR DUCT RUN W/ SIZE DESIGNATION
10x16	SHADED DUCTWORK SHALL BE 16 GAUGE SHEETMETAL
	NEW FLEX DUCT RUN W/ SIZE DESIGNATION
	NEW RECTANGULAR DUCT - UP
	NEW CIRCULAR DUCT RUN - UP
	NEW RECTANGULAR DUCT - DOWN
	NEW CIRCULAR DUCT RUN - DOWN
	ACOUSTICALLY LINED DUCT RUN
	RECTANGULAR TO RECTANGULAR DUCTWORK TRANSITION
	RECTANGULAR TO RECTANGULAR DUCTWORK TRANSITION
	RECTANGULAR TO CIRCULAR DUCTWORK TRANSITION
	ELEVATION CHANGE IN DUCTWORK - UP
	ELEVATION CHANGE IN DUCTWORK - DOWN
	DUCTWORK BREAK - TO CONTINUE

MECHANICAL ALTERNATE LIST

NUMBER	TITLE

NOTE:
REFER TO ARCHITECTURAL DOCUMENTS FOR DEDUCT ALTERNATE ITEMS.

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No.	Date	Description

Revision Schedule

STATE OF MAINE
CHRISTOPHER M. PIUK
No. 10695
3-18-2016
LICENSED PROFESSIONAL ENGINEER

JOB NO.
195210852

DRWN. CHK
ERD CMP

SCALE:

ISSUE
PERMIT SET
3/18/2016

TITLE
HVAC LEGEND AND GENERAL NOTES

SHEET
M001