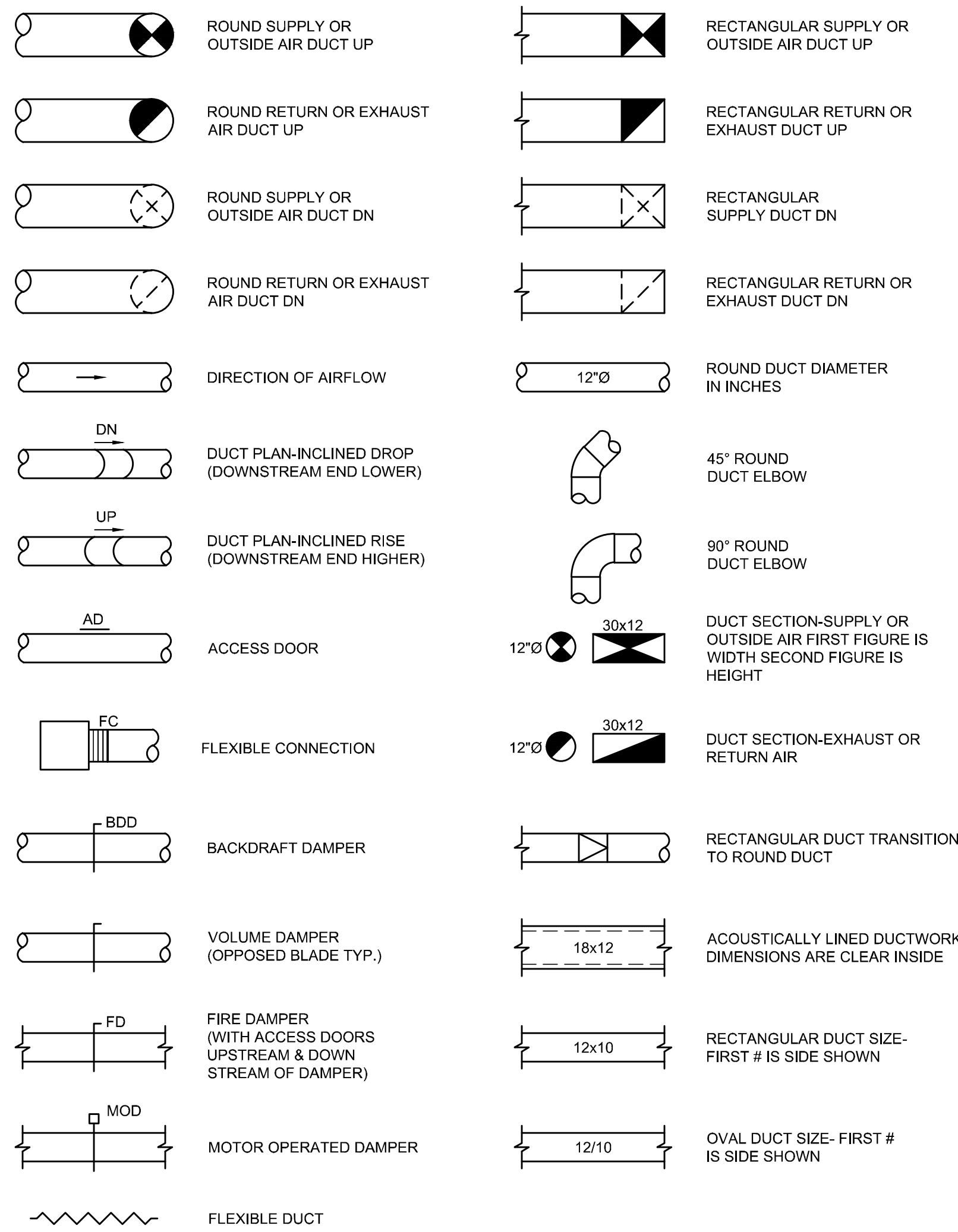


1/12/2017 9:45 PM T:\02 PROJECTS - MAINE V101-4200\112810 USM SCIENCE BLDG CONSOLIDATION\3 DESIGN\WORKS\BID\01 MECHANICAL LEGEND.DWG ANDREW BLUNDICK

DUCTWORK STANDARDS



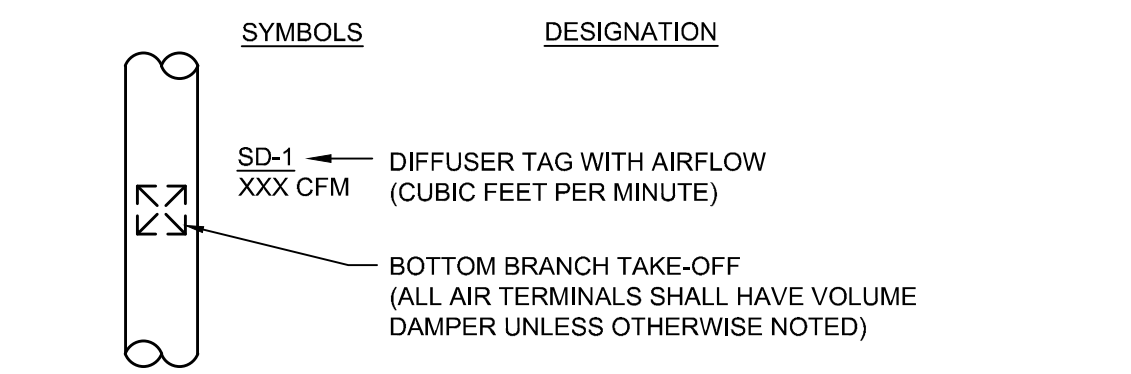
PIPING SERVICE LEGEND

PIPING LINE DESIGNATIONS		SERVICE DESIGNATION	
NEW	DESCRIPTION	EXISTING TO REMAIN	EXISTING TO BE REMOVED
—HWS—	HOT WATER SUPPLY	—EHWS—	—EHWS—X
---HWR---	HOT WATER RETURN	---EHWR---	---EHWR---X
—CWS—	CHILLED WATER SUPPLY	—ECWS—	—ECWS—X
---CWR---	CHILLED WATER RETURN	---ECWR---	---ECWR---X
—L—	A.C. REF. LIQUID	—EL—	—EL—X
—S—	A.C. REF. SUCTION (VAPOR)	—ES—	—ES—X
—FOS—	FUEL OIL BURNER SUPPLY	—EFOS—	—EFOS—X
---FO---	FUEL OIL VENT	---EFO---	---EFO---X
—FO—	FUEL OIL FILL	—EFO—	—EFO—X
—G—	NATURAL GAS PIPING	—EG—	—EG—X
—DCW—	DOMESTIC COLD WATER PIPING	—EDCW—	—EDCW—X
—DHW—	DOMESTIC HOT WATER PIPING	—EDHW—	—EDHW—X
—W—	WASTE PIPING	—EW—	—EW—X
—V—	VENT PIPING	—EV—	—EV—X

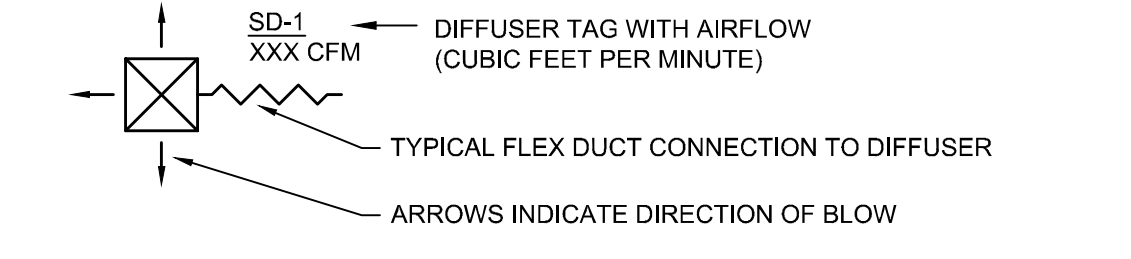
GRILLE, REGISTERS, DIFFUSERS & AIRFLOW

ABBREV.	DESIGNATION	ABBREV.	DESIGNATION
EG	EXHAUST GRILLE	EA	EXHAUST AIR
RD	RETURN DIFFUSER	OA	OUTDOOR AIR
RG	RETURN GRILLE	RA	RETURN AIR
RR	RETURN REGISTER	RLA	RELIEF AIR
SD	SUPPLY DIFFUSER	SA	SUPPLY AIR
LSD	LINEAR SUPPLY DIFFUSER		
TD	TRANSFER DIFFUSER		
TG	TRANSFER GRILLE		
TR	TRANSFER REGISTER		
VD	VOLUME DAMPER		

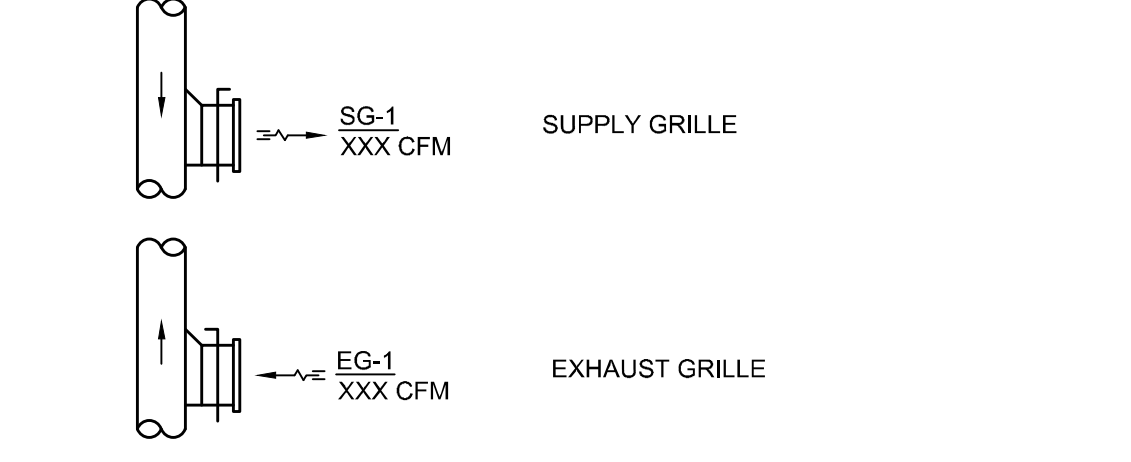
TYPICAL BOTTOM OF DUCT DIFFUSER DROP



TYPICAL CEILING DIFFUSER



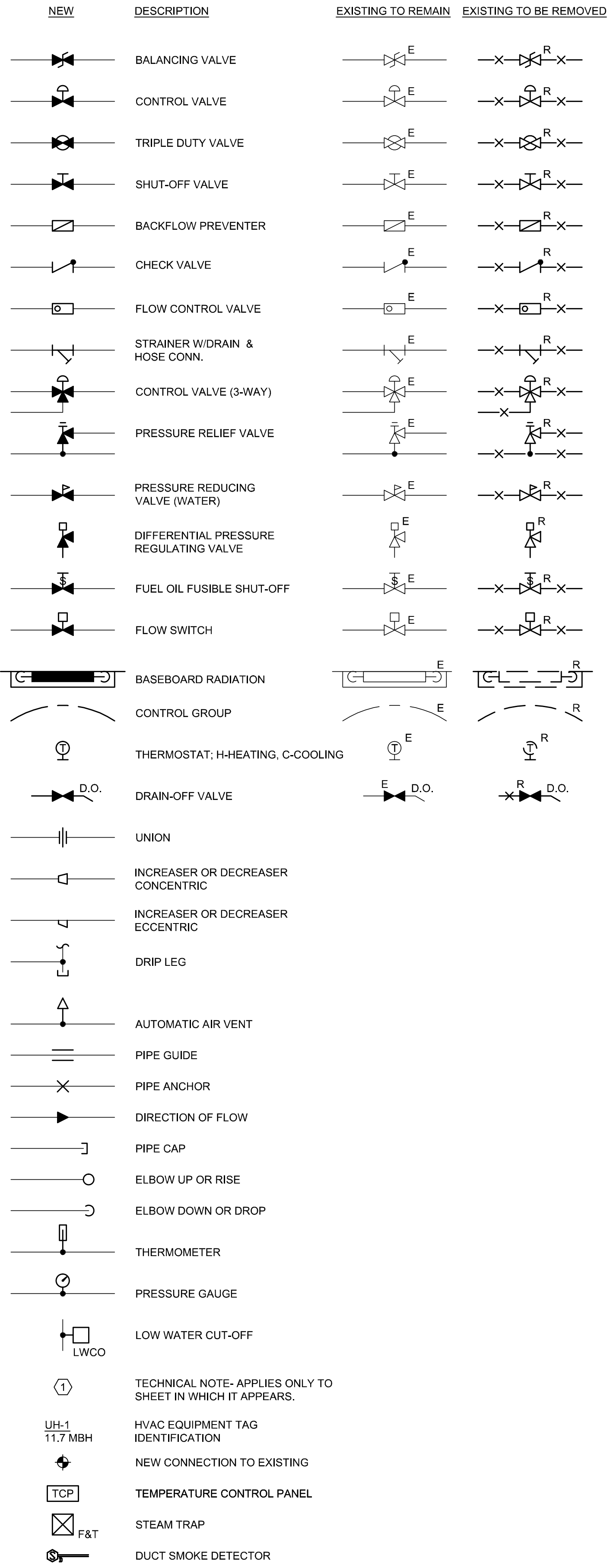
TYPICAL REGISTER/GRILLE



EQUIPMENT TAG LEGEND

TAG	DESIGNATION
AHU-1	AIR HANDLING UNIT DESIGNATION
B-1	BOILER DESIGNATION
BB-1	BASEBOARD DESIGNATION
CH-1	CHILLER UNIT DESIGNATION
CONV-1	CONVECTOR UNIT DESIGNATION
CUH-1	CABINET UNIT HEATER DESIGNATION
EAV-1	EXHAUST AIR VALVE DESIGNATION
EF-1	EXHAUST FAN DESIGNATION
EVU-1	EVAPORATOR UNIT DESIGNATION
FC-1	FAN COIL DESIGNATION
FTR-1	FINNED TUBE RADIATION DESIGNATION
HE-1	HEAT EXCHANGER DESIGNATION
HRU-1	HEAT RECOVERY UNIT DESIGNATION
HC-1	HEATING COIL DESIGNATION
P-1	PUMP DESIGNATION
RF-1	RETURN FAN DESIGNATION
SAV-1	SUPPLY AIR VALVE DESIGNATION
SF-1	SUPPLY FAN DESIGNATION
ISH-1	TOE SPACE HEATER DESIGNATION
UH-1	UNIT HEATER DESIGNATION
UV-1	UNIT VENTILATOR DESIGNATION
VAV-1	VARIABLE AIR VOLUME BOX DESIGNATION
XT-1	EXPANSION TANK DESIGNATION
ZD-1	ZONE DAMPER DESIGNATION

HEATING AND VENTING SYMBOLS



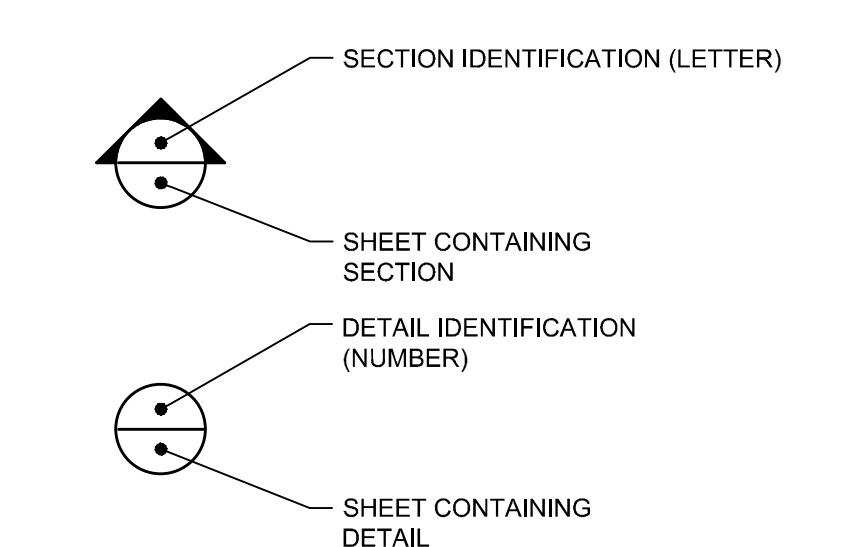
MISCELLANEOUS ABBREVIATIONS

ABBREV.	DESIGNATION
A	ANCHOR
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
APD	AIR PRESSURE DROP
AWT	AVERAGE WATER TEMPERATURE
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BOS	BOTTOM OF STEEL
BTU	BRITISH THERMAL UNITS
BV	BRICK VENT
CD	COOLING CONDENSATE DRAINAGE
CFM	CUBIC FEET PER MINUTE
D	DRAIN
DB	DRY BULB
EAT	ENTERING AIR TEMP.
ECC	ECCENTRIC
EL	ELEVATION
EWT	ENTERING WATER TEMPERATURE
FA	FRESH AIR
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
GPM	GALLONS PER MINUTE
HP	HORSEPOWER
HVAC	HEATING, VENTILATING & AIR CONDITIONING
HWBB	HOT WATER BASEBOARD
HZ	HERTZ
LAT	LEAVING AIR TEMP.
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LWCO	LOW WATER CUT-OFF
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BRITISH THERMAL UNITS PER HOUR
MD	MANUAL DAMPER
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
MV	MANUAL VENT
N.C.	NORMALLY CLOSED
OA	OUTSIDE AIR
OSV	OIL SAFETY VALVE
PD	PRESSURE DROP
RIC	RUN IN COVER
RPM	REVOLUTIONS PER MINUTE
SP	STATIC PRESSURE
TOS	TOP OF STEEL
TV	TURNING VANES
TYP.	TYPICAL
V	VENT
VD	VOLUME DAMPER
VTR	VENT THRU ROOF
W	WITH
WB	WET BULB
ZD	ZONE DAMPER
E	EXISTING TO REMAIN
ER	EXISTING RELOCATED
NR	NEW TO REPLACE EXISTING IN EXISTING LOCATION
R	EXISTING TO BE REMOVED
RR	REMOVE & RELOCATE EXISTING

GENERAL NOTES

- ALL NEW SPACE THERMOSTATS SHALL BE MOUNTED 4'-0" ABOVE FINISHED FLOOR (AFF).
- EQUIPMENT, DUCTWORK AND PIPING LOCATIONS SHOWN ARE APPROXIMATE EXCEPT WHERE DIMENSIONED. EXACT LOCATIONS SHALL BE DETERMINED BY THE CONTRACTOR TO AVOID INTERFERENCES.
- FLEXIBLE CONNECTIONS SHALL BE PROVIDED BETWEEN MOTORIZED UNITS AND DUCTWORK CONNECTIONS.
- PROVIDE ACCESS DOORS IN EQUIPMENT AND DUCTWORK FOR ACCESS TO DAMPERS, MOTORS, FILTERS, FANS AND ON BOTH SIDES OF HEATING COILS.
- PIPING SHALL BE RUN AS DIRECT AS POSSIBLE, PARALLEL TO & FORMING RIGHT ANGLES TO THE LINES OF THE BUILDING. SUPPORTED FROM THE STRUCTURE, FREE FROM POCKETS & SAGS & PITCHED TO LOW POINT DRAINS.
- LOCATE ALL VALVES FOR EASY ACCESS & OPERATION. DO NOT LOCATE VALVES SYSTEMS BELOW HORIZONTAL.
- ALL EXTERIOR WALL PENETRATIONS SHALL BE SEALED WEATHERTIGHT.
- ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
- DUCTWORK SHALL BE COORDINATED TO PREVENT ANY INTERFERENCES W/ PLUMBING, PIPING, ELECTRICAL, STRUCTURAL, FIRE PROTECTION, ARCHITECTURAL AND OTHER WORK.
- ALL DUCT SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS.
- CONTRACTOR TO FIELD VERIFY ALL EXISTING DUCT SIZES, PIPE SIZES, LOUVERS, ETC. INCLUDING LOCATIONS & ARRANGEMENTS OF SAME. COORDINATE NEW WORK WITH EXISTING CONDITIONS.

SECTION & DETAIL MARKERS



REV.	DESCRIPTION	DATE
0	BID DOCUMENTS	01-13-17

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USM SCIENCE BUILDING OFFICE RENOVATIONS
PROJECT: PORTLAND, ME
MECHANICAL LEGEND

SHEET TITLE:	4128.10 - M-001
WBRC CAD FILE:	4128.10
PROJECT No.:	4128.10
SCALE:	AS NOTED
PROJECT MANAGER:	MEJ
DRAWN BY:	AJR
CHECKED BY:	AJR

M-001