

MECHANICAL SYMBOLS AND ABBREVIATIONS

PIPING SYMBOLS

---	SOIL, WASTE OR SANITARY SEWER
- - - -	VENT
AW	ACID WASTE
AV	ACID VENT
D	INDIRECT DRAIN
---	COLD WATER
---	HOT WATER
---	HOT WATER RECIRCULATING
180	HOT WATER (TEMP. INDICATED)
SW	SOFT WATER
DI	DEIONIZED WATER
RC	REVERSE OSMOSIS
F	FIRE PROTECTION WATER SUPPLY
G	GAS - LOW PRESSURE
MG	GAS - MEDIUM PRESSURE
HG	GAS - HIGH PRESSURE
GV	GAS VENT
O	OXYGEN
LOX	LIQUID OXYGEN
A	COMPRESSED AIR
A30	COMPRESSED AIR (PRESSURE NOTED)
MA	MEDICAL COMPRESSED AIR
LA	LABORATORY COMPRESSED AIR
HWS	LOW TEMPERATURE HOT WATER SUPPLY
HWR	LOW TEMPERATURE HOT WATER RETURN
SP	AUTOMATIC SPRINKLER
---	EXISTING PIPE
---(NAME)---	PIPE TO BE REMOVED
CHS	CHILLED WATER SUPPLY
CHR	CHILLED WATER RETURN

DUCTWORK SYMBOLS

12/20	DUCT SIZE, FIRST FIGURE IS SIDE SHOWN
□ □	DUCT SECTION, SUPPLY AIR AND/OR OUTSIDE AIR: UP, DOWN
□ □	DUCT SECTION, RETURN AIR: UP, DOWN
□ □	DUCT SECTION, EXHAUST AIR: UP, DOWN
OS DN	CHANGE OF ELEVATION, OFFSET, UP OR DOWN (DN)
AD	ACCESS DOORS, VERTICAL OR HORIZONTAL
	FLEXIBLE CONNECTION
~~~~~	FLEXIBLE DUCT
---	TRANSITION
---	HIGH EFFICIENCY TAKE-OFF WITH DAMPER, WITHOUT DAMPER
OR	TURNING VANES
VD OBD OR	MANUAL VOLUME DAMPER (TYPE INDICATED)
M	MOTORIZED DAMPER
BDD	BACK DRAFT DAMPER
FD	FIRE DAMPER, VERTICAL
FD	FIRE DAMPER, HORIZONTAL
SFD	SMOKE FIRE DAMPER, VERTICAL
SFD	SMOKE FIRE DAMPER, HORIZONTAL

## DUCTWORK SYMBOLS (CONT.)

	OFFSET
	MANUAL SPLITTER
	STANDARD BRANCH, SUPPLY OR RETURN, NO SPLITTER
	TEE WITH SPLITTER DAMPER & PULL ROD
	SIDEWALL GRILL OR REGISTER (TYPE INDICATED)
	CEILING GRILL OR REGISTER (TYPE INDICATED)
	LOUVER (TYPE INDICATED)
	GRILLE IDENTIFICATION --- MARK --- AIR QUANTITY (CFM) (TYP. OF 2) --- GRILLE QUANTITY

## MECHANICAL SYMBOLS

	ANGLE VALVE
	BALL VALVE
	BALANCING VALVE (AS SPECIFIED)
	BUTTERFLY VALVE
	CHECK VALVE (AS SPECIFIED)
	GATE VALVE
	OSSY VALVE WITH TAMPER SWITCH
	GLOBE VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	SHUT OFF VALVE (AS SPECIFIED)
	THREE WAY VALVE
	REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTER
	DOUBLE CHECK BACKFLOW PREVENTER
G	GEAR (MANUAL)
L	LEVER (MANUAL)
T	STEM (MANUAL)
S	SOLENOID (ELECTRIC ACTUATOR)
M	MOTOR (ELECTRIC ACTUATOR)
M	MOTOR (PNEUMATIC ACTUATOR)
D	DIAPHRAGM (PNEUMATIC ACTUATOR)
F	FLANGED FITTING
f	SCREWED FITTING
w	WELDED FITTING
C	CAP

## MECHANICAL SYMBOLS (CONT.)

	PITCH OF PIPE, RISE (R) DROP (D)
	TURNED UP ELBOW
	TURNED DOWN ELBOW
	CONCENTRIC REDUCER
	ECCENTRIC STRAIGHT CROWN REDUCER
	ECCENTRIC STRAIGHT INVERT REDUCER
	CROSS
	TEE
	OUTLET DOWN TEE
	OUTLET UP TEE
	SCREWED UNION
	FLANGED UNION
	STRAINER W/ BLOW OFF
	AUTOMATIC AIR VENT
	MANUAL AIR VENT
	PUMP (INDICATE USE)
	ALIGNMENT GUIDE
	ANCHOR
	BALL JOINT
	EXPANSION JOINT
	EXPANSION LOOP
	FLEXIBLE CONNECTOR
	ORIFICE PLATE
	VENTURI FLOWMETER
	STEAM TRAPS (INDICATE TYPE)
	PRESSURE GAUGE AND COCK
	THERMOMETER
	THERMOMETER WELL, ONLY
	OUTLET, TYPE INDICATED
	WALL HYDRANT OR RECESSED BOX HOSE BIBB
	CLEANOUT PLUG
	FLOOR CLEANOUT
	WALL CLEANOUT
	YARD CLEANOUT OR CLEANOUT TO GRADE
	DOUBLE YARD CLEANOUT OR CLEANOUT TO GRADE

## MECHANICAL SYMBOLS (CONT.)

	FD	DRAIN (TYPE NOTED)
	HD	HEAT DETECTOR
	SD	SMOKE DETECTOR
		UPRIGHT FIRE SPRINKLER HEAD
		PENDANT FIRE SPRINKLER HEAD
		SIDEWALL FIRE SPRINKLER HEAD

## CONTROLS

	T	H	ROOM THERMOSTAT: TEMPERATURE, HUMIDITY
	T	H	ROOM SENSOR: TEMPERATURE, HUMIDITY
	T		REMOTE BULB THERMOSTAT
	T		DUCT OR PIPE THERMOSTAT ( PROVIDE 12" MIN. LENGTH IN DUCT WHEN SPACE PERMITS)
	T		DUCT THERMOSTAT WITH AVERAGING ELEMENT
	T		DUCT OR PIPE TEMP. SENSOR (PROVIDE 12" MIN. LENGTH IN DUCT WHEN SPACE PERMITS)
	H		DUCT HUMIDITY SENSOR
	Dp		DUCT DEWPOINT SENSOR
	SP		DUCT STATIC PRESSURE SENSOR
	T		DUCT TEMP. SENSOR WITH AVERAGING ELEMENT
	RS		REFRIGERANT SENSOR
	FS		FLOW SWITCH
	P		PRESSURE SWITCH
	SC		VARIABLE SPEED MOTOR CONTROLLER

## DRAWING SYMBOLS

	RE: 2M1	REFER TO DETAIL 2, SHT. M-1
	RE 1M3	SECTION REFERENCE
	AHU-12	EQUIPMENT MARK

NOTE: NOT ALL SYMBOLS OR ABBREVIATIONS MAY BE USED.



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## FINAL PLANS FOR BIDDING AND CONSTRUCTION



11/7/2014

## FORT SAM HOUSTON INDEPENDENT SCHOOL DISTRICT



## COLE HIGH SCHOOL BAND HALL SAN ANTONIO, TEXAS

CHECKED: DTA  
SCALE:  
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