					HVAC SYMBO	12 LI21					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION		SYMBOL	DESCRIPTION		SYMBOL	DESCRIPTION
AAD	AUTOMATIC AIR DAMPER	<u>ו</u>	CONNECTION - TOP	(DBL)	DOUBLE WALL LINED DUCT		<u>Г</u>		74		ELECTRIC/PNEUMATIC SWITCH OR RELAY
ACC	AIR-COOLED CONDENSING UNIT			20/10			24X12	SUDDLY / DETUDN /	- 1-1/2 TIMES BRANCH SIZE	₽Z	
AD	ACCESS DOOR			20/10				EXHAUST AIR			
AFF	ABOVE FINISHED FLOOR		DIRECTION OF FLOW	20/10	DUCT SECTION - RETURN/EXHAUST		VD	TAKEOFFS	VD		CURRENT TRANSDUCER
AHU	AIR HANDLING UNIT]⊳	REDUCER	 A"	DUCT SECTION - ROUND DUCT IN INCHES		<u>ل</u>				OPEN/CLOSED
BBD	BOILER BLOW DOWN	;	CAP OR PLUG		DUCT SECTION - FLAT OVAL DUCT IN INCHES		24X12		1-1/2 TIMES BRANCH SIZE		START/STOP
BD	BACKDRAFT DAMPER	с	ELBOW DOWN		ACOUSTIC THERMAL LINING			SUPPLY / RETURN /		ß	ENABLE/DISABLE
СА	COMPRESSED AIR	ю	ELBOW UP		FLEXIBLE DUCTWORK	fund		TAKEOFFS		T	TEMPERATURE SENSOR (DUCT OR PIPE MOUN
CD	COOLING COIL CONDENSATE DRAIN		TEE OUTLET - UP							$\overline{\mathbb{W}}$	HUMIDITY SENSOR (DUCT MOUNTED)
CFM			TEF OUTLET - DOWN		FLEXIBLE CONNECTION		<u>Г</u>		\sim	↓ \F/	
CHWR							14"Ø		CONICAL TEE		
CR					FIRE DAMPER			TAKEOFFS			
CS			GATE VALVE								DIFFERENTIAL PRESSURE TRANSMITTER
CW			BALL VALVE		SMOKE DAMPER						ELECTRIC/PNEUMATIC TRANSDUCER
D	DRAIN		BALANCING VALVE				14"Ø		LATERAL		ELECTRIC/ELECTRONIC TRANSDUCER
(E)	EXISTING		STRAINER							ک	DUCT SMOKE DETECTOR
EA	EXHAUST AIR] — <u> </u>			COMBINATION FIRE AND SMOKE DAMPER		VD VD	IAKEOFFS		Ţ	SPACE THERMOSTAT
EC	ELECTRICAL CONTRACTOR		SIKAINER WITH BLOW-DOWN						6	T	SPACE TEMPERATURE SENSOR
EF	EXHAUST FAN	ſ	BUTTERFLY VALVE		VOLUME DAMPER		24X12				SPACE CARBON DIOXIDE SENSOR
ERHC	ELECTRIC REHEAT COIL		BUTTERFLY CONTROL VALVE,		DAMPER CONTROL, PARALLEL BLADE			SUPPLY AIR			SPACE NATURAL GAS SENSOR
ETR		0.1873	BUTTERFLY CONTROL VALVE,		DAMPER CONTROL OPPOSED BLADE			TAKEOFFS	6X12		SPACE CARBON MONOXIDE SENSOR
EUH							20X12		20X12	∇_{co}	
FCII					AUTOMATIC AIR DAMPER				74-	VG E	
FPM	FEET PER MINUTE						24X12	SUPPLY/RETURN			
FT	FIN-TUBE		TRIPLE DUTY VALVE	AAD		AAD	┥┝┶┷┫	EXHAUST AIR TAKEOFFS W/	24X12	FS	WATER FLOW SENSOR
GC	GENERAL CONTRACTOR	- ♥	GAS COCK, PLUG VALVE		BACK DRAFT DAMPER		VD	REGISTER/GRILLE/	VD		PNEUMATIC ACTUATOR
GR	GLYCOL RETURN		UNDERCUT DOOR 1"	BDD		BDD	<u>ل</u>	DITOSER		EA.	ELECTRIC ACTUATOR
GS	GLYCOL SUPPLY	φφ	LOUVERED DOOR W/ SQ. FT. OF FREE AREA		BLAST GATE		<u> </u>		VD	VSD VFD	VARIABLE SPEED / FREQUENCY DRIVE
НС	HVAC CONTRACTOR	<u></u> <u> </u>	AIR VENT - MANUAL	BG		BG		SUPPLY/RETURN EXHAUST AIR		\sim	COOLING COIL
HHWR	HEATING HOT WATER RETURN	^ ^	AIR VENT - AUTOMATIC	20/10						ΗC	HEATING COIL
HHWS			FLANGE		AIR DUCT			BRANCH TAKEOTTS	VD	G	GAS FURNACE
			CONTROL/SOLENOIND VALVE, ELECTRIC 2-WAY	12X10	(FIRST FIGURE IS DUCT WIDTH/TOP,				TTIVD	H	HUMIDIFIER
HPS	HIGH PRESSURE STEAM		CONTROL VALVE, ELECTRIC 3-WAY					SUPPLY/RETURN			ALARM
LF	LINEAR FOOTAGE OF FIN-TUBE RADIATION			10/20 7				EXHAUST AIR END OF MAIN		 	STATUS
LPC	LOW PRESSURE CONDENSATE	┨────────────────────────────	CONTROL VALVE, PNEUMATIC 2-WAY					BRANCH TAKEOFFS	L VD		
LPG	LIQUEFIED PROPANE GAS	┨───┣───	CONTROL VALVE, PNEUMATIC 3-WAY								
LPS	LOW PRESSURE STEAM		RELIEF / SAFETY VALVE				-	LONG RADIUS			
МВН	1,000 BTU/HR	<u>↓</u>					_ 、	90° ELBOW		ĸ	RELAY
мс	MECHANICAL CONTRACTOR	₩	PRESSURE REDUCING VALVE		POINT OF CONNECTION			R/W=1.5			PRESSURE GAUGE
MPC		<u>↓</u>			POINT OF DISCONNECTION				I	FZ	FREEZE-STAT
MPS			FLEXIBLE PIPE CONNECTOR		AIR FLOW SENSOR		_		W R X.		DIGITAL INPUT (TO BUILDING MANAGEMENT
MKD			EXPANSION COMPENSATOR W/ GUIDES	B	FILTER			LONG RADIUS 45° ELBOW			DIGITAL OUTPUT (FROM BUILDING MANAGEM
MUW	MAKE-UP WATER		EXPANSION JOINT					R/W=1.5			ANALOG OUTPUT (FROM BUILDING MANAGE
NC	NORMALLY CLOSED	×	PIPE ANCHOR		TRANSITION SQUARE TO ROUND					1	
NG	NATURAL GAS		PIPE GUIDE	, , , , , , , , , , , , , , , , , , ,							ANALOG INPUT (TO BUILDING MANAGEMENT
NO	NORMALLY OPEN		THERMOSTATIC TRAP		HUMIDIFIER DISPERSION TUBE		\sim	90° ELBOW	TT	\square	ELECTRICAL INTERFACE
NTS	NOT TO SCALE			RISE				WITH TURNING VANES	¥	SE	
OA	OUTSIDE AIR				RISE IN DUCT				,		
PC	PLUMBING CONTRACTOR										
PD					DROP IN DUCT		18X16 - 18X8	90 VERTICAL	18X8	14	POSITION FEEDBACK
PHWK		 	THERMOMETER					SPLIT OFF		<u>~</u>	TRAVERSE AVERAGING SENSOR
RA	RETURN AIR		WELL		SQUARE CEILING DIFFUSER (4 WAY)			(rlan VIEW)	18X16 18X8	•	PROBE SENSOR
RD	REFRIGERANT DISCHARGE		PRESSURE GAUGE	©	ROUND CEILING DIFFUSER						FREEZE STAT SENSOR
RHC	HOT WATER REHEAT COIL	1	STEAM PRESSURE GAUGE		SQUARE OR RECTANGULAR CEILING GRILLE		20X10 20X10	DUCT TURNING	20X10		
RLL	REFRIGERANT LIQUID PIPE	1	WITH 1/4" NEEDLE VALVE		SUPPLY REGISTER, RETURN OR EXHAUST GRILLE			UP OR DOWN			
RSL	REFRIGERANT SUCTION PIPE		PRESSURE GALLOF					AIR TERMINAL UNIT-DUC U - UNIT TYPE	TWORK		
RTU	ROOFTOP UNIT		WITH 1/4" NEEDLE VALVE	1-WAY 2-WAY 3-WAY	SUPPLY DIFFUSER, 1-WAY, 2-WAY, 3-WAY		U MIN	MAX = MAXIMUM CFM MIN = MINIMUM CFM			
RV	ROOF VENT		PNEUMATIC (CONTROL) TUBING		CEILING DIFFUSER			AIR TERMINAL UNIT-DUC	TWORK		
SA	SUPPLY AIR	i	BUTTERFLY VALVE WITH PNEUMATIC	8"Ø, D-3 300 CFM	WITH NECK SIZE, TYPE, & CFM			GPM = GALLONS PER M	IN		
SHWR								FAN POWERED AIR			
2WIIC 122	SPLIT SYSTEM INDOOR SECTION (FVAPORATOR SECTION)	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		10"x10", G-3 ,	CEILING RETURN OR EXHAUST GRILLE WITH SIZE, TYPE, & CFM		MAX	TERMINAL UNIT U - UNIT TYPE			
SSO	SPLIT SYSTEM OUTDOOR SECTION (CONDENSING UNIT)			300 CFM			FAN	MAX = PRIMARY MAX C MIN = PRIMARY MIN CF	FM M		
TC	TEMPERATURE CONTROLS CONTRACTOR		BASE MOUNTED PUMP	10"x8", R-2	SUPPLY REGISTER WITH SIZE, TYPE. & CFM			FAN = FAN CFM			
UH	UNIT HEATER	<u> </u>	IN-LINE PUMP	300 CrM	······		TYPE	TYPE = VALANCE TYPE			
UV	UNIT VENTILATOR		AIR TERMINAL UNIT WITH REHEAT COIL AND SOUND	10"x8", G-2			COIL SIZE CLNG GPM	COIL SIZE = COIL LENGT CLNG GPM = COOLING	H GPM		
v	VENT		ATTENUATOR	300 CFM V	wiin Size, ITPE, & CFM		HTNG GPM	HTNG GPM = HEATING	GPM		
WAHP	WATER-TO-AIR HEAT PUMP		AIR TERMINAL UNIT WITH		AIR FLOW		(X)	X = DIFFUSER OR GRILL	ТҮРЕ		
WWHP	WATER-TO-WATER HEAT PUMP			ii	ACOUSTIC/THERMAL DUCTWORK LINING - 1 INCH THICK			XX = AIR FLOW VALUE	(CFM)		
			REHEAT COIL	L2	ACOUSTIC/THERMAL DUCTWORK LINING -			1		I	
			AIR TERMINAL UNIT	PI 1	ACOUSTIC/THERMAL DUCTWORK PLENUM		1				
					LINING - 1 INCH THICK ACOUSTIC/THERMAL DUCTWORK PLENUM		-				
	1	W/W ENCL.	WALL IN WALL FIN TUBE ENCLOSURE	PL2	LINING - 2 INCH THICK						

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SYMBOLS GENERAL NOTES:

1) VALVE AND DAMPER ACTUATOR TYPES (ELECTRIC OR PNEUMATIC) WHICH ARE INDICATED IN HVAC TEMPERATURE CONTROL DRAWINGS SHALL SUPERSEDE TYPE INDICATED ON ALL OTHER HVAC DRAWINGS.

HVAC CONTRACTOR GENERAL NOTES:

- A. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS WITHIN THE BUILDING PRIOR TO COMMENCEMENT OF ALL DEMOLITION AND NEW WORK.
- B. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REMOVE AND REPLACE EXISTING CEILINGS, UNLESS OTHERWISE NOTED ON THE ARCHITECTURAL DRAWINGS, FOR PERFORMING DEMOLITION OR NEW WORK WITHIN THE BUILDING. THE EXISTING CEILINGS SHALL BE REMOVED IN A MANNER TO AVOID DAMAGE TO THE CEILING SYSTEMS. STORAGE OF CEILING SYSTEM COMPONENTS FOR REINSTALLATION IS THE RESPONSIBILITY OF THE CONTRACTOR. THE STORAGE OF ALL MATERIAL SHALL BE IN AREAS OR LOCATIONS APPROVED BY THE OWNER. THE OWNER WILL NOT COMPENSATE FOR ANY DAMAGED OR LOST MATERIAL WHILE IN STORAGE. AFTER COMPLETION OF ALL DEMOLITION OR NEW WORK, THE CONTRACTOR SHALL REINSTALL THE CEILING SYSTEMS TO MATCH THE ORIGINAL INSTALLATION.
- C. DEMOLITION DRAWINGS SHOW MAJOR EQUIPMENT, PIPING, AND DUCTWORK REMOVALS. THE INTENT IS NOT TO IDENTIFY ALL MISCELLANEOUS PIPING, PIPING ACCESSORIES, DUCTWORK, DUCTWORK ACCESSORIES, SUPPORTS, CONTROLS, CONTROL ACCESSORIES, CONTROL WIRING, CONDUIT, AND PNEUMATIC CONTROL TUBING TO BE DISCONNECTED AND REMOVED, BUT IS THE REQUIREMENT UNDER THIS CONTRACT. NO EQUIPMENT, PIPING, OR DUCTWORK SHALL BE ABANDONED IN PLACE, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- D. ALL EQUIPMENT INDICATED TO BE TURNED OVER TO THE OWNER SHALL BE DISCONNECTED AND REMOVED FROM THE EXISTING SYSTEMS AND DELIVERED (INCLUDING LOADING AND UNLOADING) TO A STORAGE AREA WITHIN THE BUILDING AS SELECTED BY THE OWNER. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REPAIR ANY EQUIPMENT DAMAGED DURING REMOVAL AND DELIVERY. ANY DAMAGE TO EQUIPMENT PRIOR TO DISCONNECTING SHOULD BE REPORTED TO THE OWNER'S REPRESENTATIVE. IF NOT REPORTED, THE CONTRACTOR TAKES FULL RESPONSIBILITY FOR REPAIRS TO THE EQUIPMENT.
- E. BEFORE DISCONNECTING, REMOVING, OR SERVICING ANY AIR CONDITIONING EQUIPMENT OR SYSTEMS CONTAINING REFRIGERANTS, THE EQUIPMENT OR SYSTEMS SHALL BE EVACUATED OF ALL REFRIGERANT PER THE LATEST ADOPTED RULES AND REGULATIONS BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY (EPA). THE CONTRACTOR OR TECHNICIAN PERFORMING THE WORK SHALL BE CERTIFIED BY AN EPA APPROVED CERTIFYING AGENCY OR ORGANIZATION.
- F. ALL DUCTWORK, PIPING, AND CONDUIT PENETRATIONS THROUGH RATED WALLS OR FLOORS SHALL BE PROVIDED WITH FIRE/SMOKE STOPPINGS PER SPECIFICATION. REFER TO CODE ANALYSIS DRAWING FOR ALL RATED WALL LOCATIONS. ALL FLOORS SHALL BE CONSIDERED RATED.
- G. UNLESS SHOWN ON THE ARCHITECTURAL DRAWINGS, IT IS THE RESPONSIBILITY OF THIS CONTRACT TO PATCH AND FINISH ALL EXISTING DUCTWORK OR PIPE PENETRATIONS THROUGH FLOORS, ROOFS, INTERIOR WALLS, AND EXTERIOR WALLS AFTER DEMOLITION WORK. IN ADDITION, ALL NEW PENETRATIONS SHALL BE PROVIDED FOR INSTALLATION OF MECHANICAL SYSTEMS INCLUDING, BUT NOT LIMITED TO, EQUIPMENT, CURBING, DUCTWORK, PIPING, CONTROLS, ETC. PATCHING AND FINISHING SHALL MATCH EXISTING CONSTRUCTION INCLUDING FIRE RATINGS. PROVIDE LINTELS PER LINTEL SCHEDULE.
- H. IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL AIR VENTS AND DRAINS IN THE PIPING SYSTEMS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE AIR VENTS AT ALL SYSTEM HIGH POINTS AND AT AREAS WITHIN THE PIPING SYSTEMS THAT COULD ACCUMULATE OR TRAP AIR WHICH WOULD PREVENT PROPER VENTING OR OPERATION OF THE SYSTEMS. DRAINS SHALL BE PROVIDED AT ALL LOW POINTS WITHIN THE PIPING SYSTEM TO FACILITATE COMPLETE DRAINING OF THE SYSTEM.
- I. PROVIDE THERMAL EXPANSION COMPENSATORS AND THERMAL EXPANSION LOOPS IN PIPING SYSTEM PER INDUSTRY STANDARDS.

