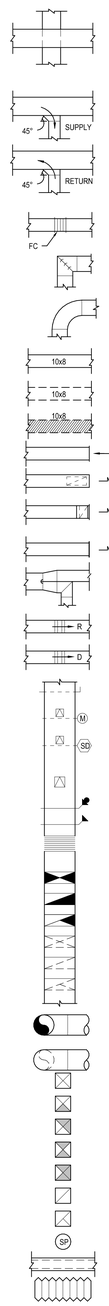
STANDARD ABBREVIATIONS

A			G	GAL	GALLON	P	PD	PRESSURE DROP
A	A	AMPS	G	GALV	GALVANIC OR GALVANIZED	P	PF	PENETRATE
A	A/E	ARCHITECT/ENGINEER	G	GC	GENERAL CONTRACTOR	P	PFHX	PLATE AND FRAME HET EXCHANGER
A	ACH	AIR CHANGES PER HOUR	G	GS	GALVANIZED STEEL	P	PG	PENDANT
A	ACS	AIR CONDITIONING SYSTEM	G	GYP BD	GYPSUM BOARD	P	PLBG	PLUMBING
A	AD	ACCESS DOOR				P	PNEU	PNEUMATIC
A	AF	AFTER FILTER	H			P	PRESS	PRESSURE
A	AFF	ABOVE FINISHED FLOOR	H	HAC	HOUSEKEEPING AID CLOSET	P	PRV	PRESSURE REGULATING VALVE
A	AFG	ABOVE FINISHED GRADE	H	HC	HEATING COIL	P	PSF	POUNDS PER SQUARE FOOT
A	AFMD	AIR FLOW MEASURING DEVICE	H	HD	HEAD	P	PSI	POUNDS PER SQUARE INCH
A	AHU	AIR HANDLING UNIT	H	HEPA	HIGH EFFICIENCY PARTICULATE AIR (FILTER)	P	PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
A	AL	ACOUSTIC LINING	H	HOA	HAND/OFF/AUTOMATIC	P	PSIG	POUNDS PER SQUARE INCH - GAUGE
A	ALD	AUTOMATIC LOUVER DAMPER	H	HORIZ	HORIZONTAL			
A	ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	H	HP	HORSEPOWER	R		
A	AP	ACCESS PANEL	H	HWP	HOT WATER PUMP	R	RA	RETURN AIR
A	APD	AIR PRESSURE DROP	H	HWR	HOT WATER RETURN	R	RAT	RETURN AIR TEMPERATURE
A	ARCH	ARCHITECT	H	HWS	HOT WATER SUPPLY	R	RD	REFRIGERANT DISCHARGE
A	ARI	AIR CONDITIONING AND REFRIGERATIONS	H	HX	HEAT EXCHANGER	R	RET	RETURN
A	AS	AIR SEPARATOR	H	HZ	HERTZ	R	RG	RETURN GRILLE
A	ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS				R	RH	RELATIVE HUMIDITY
			I			R	RLA	RUN LOAD AMPERE
B			I	I/O	INPUT/OUTPUT	R	RP	RADIANT CEILING PANEL
B	B	BOILER	I	IBST	INVERT BUCKET STEAM TRAP	R	RPM	REVOLUTIONS PER MINUTE
B	BDD	BACKDRAFT DAMPER	I	ID	INSIDE DIAMETER			
B	BHP	BRAKE HORSEPOWER	I	IN	INCHES	S		
B	BLDG	BUILDING	I	IN WG	INCHES WATER GAUGE	S	SA	SUPPLY AIR
B	BRD	BAROMETRIC RELIEF DAMPER	I	IN-LB	INCH-POUND	S	SAD	SUPPLY AIR DIFFUSER
B	BTUH	BRITISH THERMAL UNIT PER HOUR				S	SAG	SUPPLY AIR GRILLE
			K			S	SAR	SUPPLY AIR REGISTER
C			K	kg	KILOGRAM	S	SAT	SUPPLY AIR TEMPERATURE
C	C	CENTIGRADE (CELSIUS)	K	kPa	KILOPASCAL	S	SD	SMOKE DETECTOR
C	C	CONVERTER	K	KPL	KICKPLATE	S	SDPR	SMOKE DAMPER
C	CC	COOLING COIL	K	kW	KILOWATT	S	SE	SOUTH EAST
C	CCD	COOLING COIL CONDENSATE DRAIN	K	kWh	KILOWATT HOUR	S	SENS	SENSIBLE HEAT
C	CD	CEILING DIFFUSER	K	KX	KITCHEN EXHAUST	S	SF	SQUARE FOOT (FEET)
C	CFM	CUBIC FEET PER MINUTE				S	SF	SUPPLY FAN
C	CFS	CUBIC FEET PER SECOND	L			S	SP	STATIC PRESSURE
C	CH	CHILLER	L	LAT	LEAVING AIR TEMPERATURE	S	SP GR	SPECIFIC GRAVITY
C	CHR	CHILLED WATER RETURN	L	LBS	POUND	S	SPEC	SPECIFICATION
C	CHS	CHILLED WATER SUPPLY	L	LBS/HR	POUNDS PER HOUR	S	SPS	STATIC PRESSURE SENSOR
C	COD	CABLE OPERATED DAMPER	L	LF	LINEAR FOOT (FEET)	S	SQ	SQUARE
C	CT	COOLING TOWER	L	LWT	LEAVING WATER TEMPERATURE	S	SQ FT	SQUARE FOOT (FEET)
C	CV	CONSTANT VOLUME				S	SQ IN	SQUARE INCH
C	CVR	CONSTANT VOLUME RETURN	M			S	SS	STAINLESS STEEL
C	CVS	CONSTANT VOLUME SUPPLY	M	M	METER OR MOTOR	S	STHX	SHELL AND TUBE HEAT EXCHANGER
			M	MA	MIXED AIR	S	STL	STEEL
D			M	MAINT	MAINTAIN, MAINTENANCE	S	STRUCT	STRUCTURAL
D	DA	DENTAL AIR	M	MAN	MANUAL	S	SW	SOUTH WEST
D	DB	DRY BULB	M	MAT	MIXED AIR TEMPERATURE	S	SWSI	SINGLE WIDTH SINGLE INLET
D	dB	DECIBELS	M	MAX	MAXIMUM	S	SYS	SYSTEM
D	DC	DIRECT CURRENT	M	MBH	1000 BTUH			
D	DDC	DIRECT DIGITAL CONTROLS	M	MCA	MINIMUM CIRCUIT AMPACITY	T		
D	DEG	DEGREE	M	ME	MECHANICAL ENGINEER	T	TAB	TESTING, ADJUSTING, BALANCE
D	DEMO	DEMOLITION	M	MEAS	MEASURE	T	TD	TRANSFER DUCT
D	DF	DIFFUSER	M	MECH	MECHANICAL	T	TEMP	TEMPERATURE OR TEMPORARY
D	DIA	DIAMETER	M	MECH RM	MECHANICAL ROOM	T	TF	TRANSFER FAN
D	DIAG	DIAGONAL DIAGRAM OR DIAGRAM DIAGONAL	M	MER	MECHANICAL EQUIPMENT ROOM	T	TG	TRANSFER GRILLE
D	DIM	DIMENSION	M	MERV	MINIMUM EFFICIENCY REPORTING VALUE	T	THERM	THERMAL
D	DIST	DISTANCE	M	MEZZ	MEZZANINE	T	THK	THICKNESS
D	DIV	DIVIDE OR DIVISION	M	MFG	MANUFACTURING	T	THRU	THROUGH
D	DN	SET OR TURN DOWN	M	MFR	MANUFACTURER	T	TP	TRAP
D	DP	DEWPOINT	M	MFR REC	MANUFACTURER'S RECOMMENDATION	T	TSP	TOTAL STATIC PRESSURE
D	DPS	DIFFERENTIAL PRESSURE SENSOR	M	MH	MANHOLE	T	TSTAT	THERMOSTAT
D	DWDI	DOUBLE WIDTH DOUBLE INLET	M	MIN	MINIMUM	T	TU	TERMINAL UNIT
D	DWG	DRAWING	M	MISC	MISCELLANEOUS	T	TX	TOILET EXHAUST
			M	MM	MILLIMETER	T	TYP	TYPICAL
E			M	MTD	MOUNTED			
E	EA	EXHAUST AIR	M	MTG	MOUNTING	U		
E	EAT	ENTERING AIR TEMPERATURE	M	MVD	MANUAL VOLUME DAMPER	U	U.N.O.	UNLESS NOTED OTHERWISE
E	EF	EXHAUST FAN				U	U.O.N.	UNLESS OTHERWISE NOTED
E	EG	EXHAUST GRILLE	N			U	UH	UNIT HEATER
E	EL	ELEVATION	N	NA	NOT APPLICABLE	U	UP	SET OR TURN UP
E	ELEC	ELECTRIC, ELECTRICAL	N	NATL	NATIONAL			
E	ELEVS	ELEVATIONS	N	NC	NOISE CRITERIA	V		
E	EMR	ELEVATOR MACHINE ROOM	N	NC	NORMALLY CLOSED	V	V	VALVE
E	ENGR	ENGINEER	N	NE	NORTH EAST	V	VAV	VARIABLE AIR VOLUME
E	ENT	ENTERING	N	NEC	NATIONAL ELECTRICAL CODE	V	VENT	VENTILATION
E	EQ	EQUAL	N	NEG	NEGATIVE	V	VERT	VERTICAL
E	EQUIP	EQUIPMENT	N	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION	V	VFD	VARIABLE FREQUENCY DRIVE
E	EQUIV	EQUIVALENT				V	VI	VIBRATION ISOLATOR
E	ERD	EXISTING ROOF DRAIN	N	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	V	VP	VELOCITY PRESSURE
E	ESMT	EASEMENT	N	NO	NORMALLY OPEN	V	VSD	VARIABLE SPEED DRIVE
E	ESP	EXTERNAL STATIC PRESSURE	N	NOM	NOMINAL			
E	ET	EXPANSION TANK	N	NPSH	NET POSITIVE SUCTION HEAD	W		
E	ETC	AND SO FORTH OR ET CETERA	N	NRCA	NATIONAL ROOFING CONTRACTORS ASSOCIATION	W	WB	WET BULB
E	EWT	ENTERING WATER TEMPERATURE				W	WMS	WIRE MESH SCREEN
E	EX	EXISTING	N	NS	NARROW STILE			
E	EXH	EXHAUST	N	NTS	NOT TO SCALE			
E	EXIST	EXISTING	N	NW	NORTH WEST			
			O					
F			O	OA/OSA	OUTSIDE AIR			
F	F	FAHRENHEIT OR FEMALE	O	OAI	OUTSIDE AIR INTAKE			
F	FA	FREE AREA	O	OBD	OPPOSED BLADE DAMPER			
F	FC	FLEXIBLE CONNECTION	O	OD	OUTSIDE DIAMETER OR OUTSIDE DIMENSION			
F	FD	FLOOR DRAIN OR FIRE DAMPER	O	OV	OXYGEN VACUUM			
F	FM	FLOW METER						
F	FP	FIRE PROTECTION OR FIREPROOF	P					
F	FPB	FAN-POWERED BOX	P	P	PUMP			
F	FPM	FEET PER MINUTE	P	PA	PASCAL			
F	FPS	FEET PER SECOND	P	PC	PUMPED CONDENSATE			
F	FR	FIRE RATING, FIRE RESISTANT, OR FRAME						
F	FREQ	FREQUENCY						
F	FS	FLOW SWITCH						
F	FSD	COMBINATION FIRE SMOKE DAMPER						
F	FSTAT	FREEZESTAT						
F	FT	FEET OR FOOT						
F	FTST	FLOAT & THERMOSTATIC STEAM TRAP						
G								
G	GA	GAUGE						

DUCTWORK SYMBOLS



STANDARD BRANCH SUPPLY OR RETURN, HIDDEN LINES

STANDARD BRANCH SUPPLY OR RETURN, NO SPLITTER (45° TAP)

FLEXIBLE CONNECTION, EQUIPMENT, VIBRATION, OR SEISMIC

VANED ELBOW (PROVIDE ALL SQUARE OR RECTANGULAR ELBOWS WITH VANES EVEN IF SYMBOL IS MISSING)

STANDARD RADIUS ELBOW (LONG RADIUS)

NEW DUCT (INSIDE DIMENSIONS: WIDTH x DEPTH)

EXISTING DUCT TO REMAIN (INSIDE DIMENSIONS: WIDTH x DEPTH)

EXISTING DUCT TO BE DEMOLISHED (INSIDE DIMENSIONS: WIDTH x DEPTH)

SUPPLY TOP REGISTER OR GRILLE (WALL TYPE)

EXHAUST OR RETURN CEILING REGISTER OR GRILLE

EXHAUST OR RETURN BOTTOM REGISTER OR GRILLE (WALL TYPE)

EXHAUST OR RETURN REGISTER OR TOP GRILLE (WALL TYPE)

VANED ELBOW & AIR SPLIT TYPE DUCT TAKE-OFF

INCLINED RISE, IN DIRECTION OF AIR FLOW

INCLINED DROP, IN DIRECTION OF AIR FLOW

MANUAL VOLUME/BALANCING DAMPER (MBD)

MOTORIZED DAMPER WITH ACCESS DOOR

DUCT MOUNTED SMOKE DETECTOR WITH ACCESS DOOR

ACCESS DEVICE - SEE SPECIFICATIONS

COMBINATION FIRE/SMOKE DAMPER

FIRE DAMPER

FLEXIBLE DUCT CONNECTION (EQUIPMENT)

SUPPLY DUCT TURNING UP

RETURN DUCT TURNING UP

EXHAUST DUCT TURNING UP

SUPPLY DUCT TURNING DOWN

RETURN DUCT TURNING DOWN

EXHAUST DUCT TURNING DOWN

ROUND DUCT TURNING UP

ROUND DUCT TURNING DOWN

SUPPLY DIFFUSER (4-WAY)

SUPPLY DIFFUSER (3-WAY)

SUPPLY DIFFUSER (2-WAY, ADJACENT)

SUPPLY DIFFUSER (2-WAY, OPPOSITE)

SUPPLY DIFFUSER (1-WAY)

RETURN/TRANSFER GRILLE

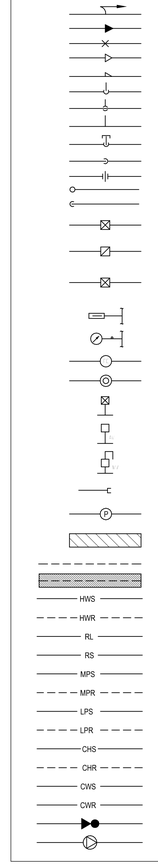
EXHAUST GRILLE

STATIC PRESSURE TRANSMITTER

ACOUSTICALLY LINED DUCT

FLEXIBLE DUCT

GENERAL PIPING SYMBOLS



DIRECTION OF PIPE PITCH (DOWN)

DIRECTION OF FLOW

ANCHOR

REDUCER OR INCREASER

ECCENTRIC REDUCER

TOP CONNECTION, 45° OR 90°

BOTTOM CONNECTION, 45° OR 90°

SIDE CONNECTION

CAPPED OUTLET

RISE OR DROP IN PIPE

UNION

PIPE UP

PIPE DOWN

INVERTED BUCKET TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL

FLOAT & THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL

THERMOSTATIC TRAP SET INCLUDING PIPING ACCESSORIES SEE DETAIL

THERMOMETER

PRESSURE GAGE

FLOW ELEMENT

REFRIGERANT SIGHT GLASS

TEST PLUG (PRESSURE/TEMPERATURE)

AUTOMATIC AIR VENT

MANUAL AIR VENT

QUICK-COUPLE HOSE CONNECTOR

DIFFERENTIAL PRESSURE SENSOR

PRESSURE REDUCING STATION

EXISTING PIPING

EXISTING PIPING TO BE DEMOLISHED

HOT WATER HEATING SUPPLY

HOT WATER HEATING RETURN

REFRIGERANT LIQUID LINE

REFRIGERANT SUCTION LINE

MEDIUM PRESSURE STEAM

MEDIUM PRESSURE STEAM CONDENSATE RETURN

LOW PRESSURE STEAM

LOW PRESSURE STEAM CONDENSATE RETURN

CHILLED WATER SUPPLY

CHILLED WATER RETURN

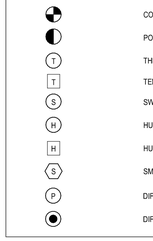
CONDENSER WATER SUPPLY

CONDENSER WATER RETURN

PUMPED CONDENSATE

PUMP

MECHANICAL SYMBOLS



CONNECT TO EXISTING

POINT OF DISCONNECT

THERMOSTAT

TEMPERATURE SENSOR

SWITCH

HUMIDISTAT

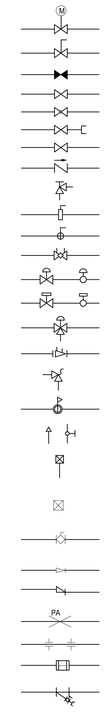
HUMIDITY SENSOR

SMOKE DETECTOR

DIFFERENTIAL PRESSURE MONITOR

DIFFERENTIAL PRESSURE SENSOR

VALVE SYMBOLS



MOTORIZED SHUT-OFF VALVE

BALANCING VALVE

SHUT-OFF VALVE - NORMALLY CLOSED

SHUT-OFF VALVE - SEE SPECIFICATIONS

GLOBE VALVE

GATE VALVE WITH 3/4 " HOSE ADAPTER

GATE VALVE

CHECK VALVE

ANGLE GLOBE VALVE

BUTTERFLY VALVE

BALL VALVE

CIRCUIT SETTER

STRAIGHT-THRU MODULATING CONTROL VALVE

STRAIGHT-THRU TWO POSITION CONTROL VALVE

THREE-WAY MODULATING CONTROL VALVE

AUTOMATIC FLOW CONTROL VALVE

SAFETY OR PRESSURE RELIEF VALVE

PRESSURE REDUCING VALVE

MANUAL AIR VENT

TEST PLUG (PRESSURE/TEMPERATURE)

STEAM TRAP

CIRCUIT SETTER (METERING AND BALANCING)

CONCENTRIC REDUCER

ECCENTRIC REDUCER

PIPE ANCHOR

PIPE GUIDES

FLEXIBLE CONNECTION

WYE STRAINER (WITH BALL VALVE & HOSE CONNECTION)

GENERAL NOTES

1. COORDINATE ALL WORK WITH OTHER TRADES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES, PERMITS AND LICENSES FOR THE COMPLETE INSTALLATION OF THEIR WORK.
3. ALL DUCTWORK RUNS SHOWN ARE REPRESENTATIVE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONDITIONS IN THE FIELD (EXISTING, OR PREDICATED BY LOCATION OF NEW EQUIPMENT) THAT MAKE NECESSARY ALTERNATE ROUTING OF DUCTWORK.
4. ALL PIPING RUNS SHOWN ARE REPRESENTATIVE ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY CONDITIONS IN THE FIELD THAT MAKE NECESSARY ALTERNATE ROUTING OF PIPING.
5. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ELECTRICAL AND CONTROLS CONTRACTORS TO PROVIDING POWER CONNECTIONS AND DDC CONTROLS FOR ALL EQUIPMENT.
6. ALL DIFFUSERS NOT SHOWN AS A FULL CEILING MODULE (24"X24") SHALL BE A MINIMUM OF 12"X12".
7. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ANY ARCHITECTURAL WORK (INCLUDING, BUT NOT LIMITED TO: FLOORING, CEILING TILE AND GRID, SMOKE PARTITIONS ABOVE CEILING, GYPSUM WALL BOARD AND PAINTING, PLASTER, ETC.) THAT IS DAMAGED, DISTURBED, OR REMOVED INCIDENTAL TO THIS WORK.
8. ALL PIPING AND DUCTS IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE SUSPENDED CEILING.
9. THE FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF FACE SHOWN OR INDICATED.
10. ACCESS PANELS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CLEANOUTS, CONTROLS, ETC. THAT ARE LOCATED ABOVE HARD CEILINGS OR BEHIND WALLS. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.
11. TOTAL STATIC PRESSURE NOTED IN THE SCHEDULES INCLUDES DUCT SYSTEM, TERMINAL UNITS, FILTERS, COILS, ETC.
12. FOR TYPICAL WATER PIPING CONNECTIONS TO EQUIPMENT SEE STANDARD EQUIPMENT DETAILS.
13. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLANS ARE NECK SIZES.
14. PROVIDE INSULATED SUPPLY DIFFUSERS AND GRILLES.
15. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF CEILING DIFFUSERS, REGISTERS, AND GRILLES.
16. PROVIDE NEW DDC SYSTEM TO ACCOUNT FOR NEW ROOMS, THERMOSTATS AND VAV TERMINAL UNITS. PRIOR TO CONTROLS PROGRAMMING, MECHANICAL CONTRACTOR SHALL PROVIDE TO CONTROLS VENDOR THE ACTUAL ROOM NUMBERS, AS DETERMINED BY THE ARCHITECT AND OWNER.
17. MECHANICAL CONTRACTOR SHALL ENSURE THAT THE FLEXIBLE DUCTWORK IS FREE OF BENDS THAT WOULD RESTRICT AIRFLOW. PROVIDE HANGERS AND SUPPORTS TO ENSURE BENDS ARE SMOOTH RADIUS.
18. WHERE CONFLICTS WITH OTHER UTILITIES OR CONSTRUCTION OCCUR, CONTRACTOR SHALL PROVIDE DUCT TRANSITIONS (AND CHANGES IN DIMENSIONS) PER SMACNA GUIDELINES AS REQUIRED TO AVOID CONFLICT. DUCT OF DIFFERING SIZE TO THAT SHOWN ON PLANS SHALL HAVE A HYDRAULIC AREA EQUAL TO THE DUCT SIZE LISTED ON PLANS.
19. ALL AIR DISTRIBUTION DEVICES SHALL BE PROVIDED WITH MANUAL VOLUME DAMPERS FOR BALANCING PURPOSES. SEE DETAILS AND SPECIFICATIONS FOR MORE REQUIREMENTS, WHETHER SHOWN ON THE DRAWINGS OR NOT.

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DRAWING TITLE
GENERAL NOTES & LEGENDS

APPROVED

PHASE
CONSTRUCTION DOCUMENTS SUBMISSION

FULLY SPRINKLERED

PROJECT TITLE
RENOVATE SPACE FOR LOGISTICS (B-1)

LOCATION
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ISSUE DATE 11 APRIL 2024 | **CHECKED** WGG | **DRAWN** ANB

PROJECT NUMBER 564-24-104

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