(ALL SYMBOLS SHOWN ARE NOT NECESSARILY USED ON THE DRAWINGS)

CONTROLS SYMBOLS

SEQUENCE OF OPERATIONS, PROGRAMMING, AND ALL CONTROL DEVICES PROVIDED BY L&H AIRCO. ALL CONTROL DEVICES SHALL BE INSTALLED BY CONTROLS CONTRACTOR UNLESS OTHERWISE NOTED. EXCEPTION: CONTROL DEVICES FOR MDU-1 AND CH-1 PUMP SKID SHALL BE INSTALLED AT EQUIPMENT FACTORY.

CONTROLS SYMBOLS

- CENTRIFUGAL FAN
- PLENUM FAN
- PUMP
- HYDRONIC COIL
- GAS COIL
- DX COIL
- ELECTRIC COIL
- EVAPORATIVE COOLING COIL
- DIFFERENTIAL PRESSURE SWITCH
- DIFFERENTIAL PRESSURE TRANSMITTER
- LOUVER
- DAMPER
- DAMPER OPPOSED BLADE
- FILTER
- WALL THERMOSTAT
- TEMPERATURE SENSOR
- PIPE WELL TEMPERATURE SENSOR
- AIRFLOW SENSOR
- AIRFLOW MEASURING STATION
- SMOKE DETECTOR
- FREEZE STAT
- HUMIDIFIER
- DX WITH CONDENSER REHEAT

CONTROLS SYMBOLS

CONTROLS SYMBOLS

- ROOM THERMOSTAT
- ROOM HUMIDISTAT
- TEMPERATURE SENSOR
- HUMIDITY SENSOR
- DUCT SMOKE DETECTOR
- FLOW SENSOR
- FREEZESTAT
- FLOW SWITCH
- RELAY
- ELECTRIC MOTOR
- PRESSURE SENSOR

CONTROLS SYMBOLS (CON'T)

- LEVEL TRANSMITTER
- VIBRATION SWITCH
- DUCT HUMIDITY SENSOR/TRANSMITTER
- PRESSURE TRANSMITTER
- MOTOR STARTER (LOCAL OR MCC)
- STATIC PRESSURE SENSOR/TRANSMITTER
- DIFFERENTIAL PRESSURE SENSOR/TRANSMITTER
- DIFFERENTIAL PRESSURE SWITCH (DIGITAL)
- AQUASTAT
- DUCT AVERAGING TEMPERATURE ELEMENT
- LIQUID FLOW METER
- VENTURI FLOW METER
- RECEIVER PRESSURE GAUGE (PANEL MTD.)
- CURRENT SENSING RELAY
- ELECTRIC DAMPER ACTUATOR
- CARBON DIOXIDE (C02) SENSOR
- CARBON MONOXIDE (C0) SENSOR
- FIRESTAT
- REFRIGERANT DETECTOR/SENSOR
- MANUALLY ACTIVATED SWITCH (PULL STAT., PUSH STAT., ETC)
- VARIABLE FREQUENCY DRIVE
- SILICON CONTROLLED RECTIFIER HEAT CONTROL

NORMAL OPEN	NORMAL CLOSED	
		GATE VALVE
		VALVE W/ REDUCERS (GATE VALVE SHOWN)
		GLOBE VALVE
		BUTTERFLY VALVE
		NEEDLE VALVE/INSTRUMENT VALVE
		3-WAY VALVE
		BALL VALVE
		PLUG VALVE
		ANGLE VALVE
		PRESSURE REGULATOR

CONTROL VALVE SYMBOLS:

- ELECTRIC ACTUATOR
- PNEUMATIC ACTUATOR
- SOLENOID ACTUATOR

GENERAL INSTRUMENT SYMBOLS

SHARED DISPLAY, SHARED CONTROL		COMPUTER SYSTEMS AND SOFTWARE	DISCRETE	LOCATION AND ACCESSIBILITY
PRIMARY CHOICE OR BASIC PROCESS CONTROL SYSTEM	ALTERNATE CHOICE OR SAFETY INSTRUMENT SYSTEM			
				1. LOCATED IN FIELD. 2. NOT PANEL, CABINET, OR CONSOLE MOUNTED. 3. VISIBLE AT FIELD LOCATION. 4. NORMALLY OPERATOR ACCESSIBLE.
				1. LOCATED IN OR ON FRONT OF CENTRAL OR MAIN PANEL OR CONSOLE. 2. VISIBLE ON FRONT PANEL OR ON VIDEO DISPLAY. 3. NORMALLY OPERATOR ACCESSIBLE AT PANEL FRONT OR CONSOLE.
				1. LOCATED IN REAR OF CENTRAL OR MAIN PANEL. 2. LOCATED IN CABINET BEHIND PANEL. 3. NOT VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY. 4. NOT NORMALLY OPERATOR ACCESSIBLE AT PANEL OR CONSOLE.
				1. LOCATED IN OR IN FRONT OF SECONDARY OR LOCAL PANEL OR CONSOLE. 2. VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY. 3. NORMALLY OPERATOR ACCESSIBLE AT PANEL FRONT OR CONSOLE.
				1. LOCATED IN REAR OF SECONDARY OR LOCAL PANEL. 2. LOCATED IN FIELD CABINET. 3. NOT VISIBLE ON FRONT OF PANEL OR ON VIDEO DISPLAY. 4. NOT NORMALLY OPERATOR ACCESSIBLE AT PANEL OR CONSOLE.

INSTRUMENT IDENTIFICATION LETTERS

	FIRST LETTER		SUCCEEDING LETTERS		
	MEASURED OR INITIATING VARIABLER	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, FLAME, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE (TYPICALLY CONDUCTIVITY - ELECTRICAL)			CONTROL	CLOSED
D	USER'S CHOICE (TYPICALLY DENSITY OR SPEC.GRAVITY)	DIFFERENCE, DIFFERENCIAL			DIVERT, DEVIATION
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW, FLOW RATE	RATION (FRACTION)			
G	USER'S CHOICE OR GAUGING (DIMENSIONAL)		GLASS, GAUGE, VIEWING DEVICE		
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE (TYPICALLY MOISTURE OR HUMIDITY)	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		OPEN
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY OR HEAT DUTY	INTEGRATE, TOTALIZE			
R	RADIATION		RECORD		
S	SPEED OR FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	THROUGH
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION, MECHANICAL ANALYSIS			VALVE, DAMPER, LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, SOLENOID COMPUTE, CONVERT	
Z	POSITION, DIMENSION	Z AXIS, SIS		DRIVER, ACTUATOR, UNCLASSIFIED FINAL CONTROL ELEMENT	

NO.	DATE	DESCRIPTION	BY	APVD
0	09/18/2024	100% ISSUED FOR CONSTRUCTION - EXPANSION	JWG	SJG

DSGN: DR JWG | CHK: AMP JWG | APVD: JWG APVD | SJG

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214.638.0145 Fax: 214.638.0447
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STATE OF ARKANSAS
STEVE J. GOODELL
ENGINEER
No. 9593
REGISTERED PROFESSIONAL
09/18/2024
SEAL

Grinder
Camden OSD
Calhoun County, Arkansas
Aerojet Rocketdyne

Jacobs NABHOLZ

MECHANICAL
CONTROL SYMBOLS AND
ABBREVIATIONS

SHEET NO
MI-001

SCALE	12" = 1'-0"
DATE	09/18/2024
PROJ	D3754502
DWG	CMDN-OSD_Grinder_MI-001

PLOT DATE/TIME: 9/17/2024 9:15:03 PM

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