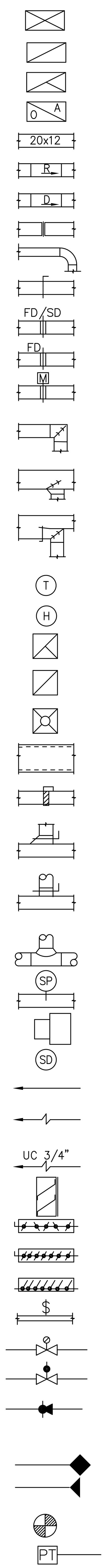
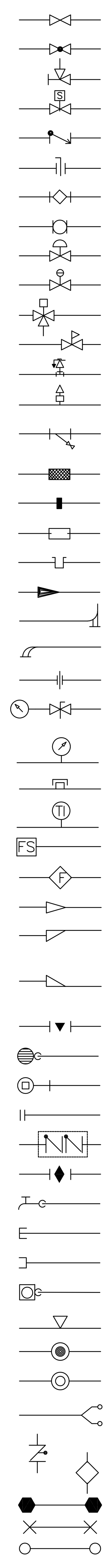
MECHANICAL



- SUPPLY AIR DUCT, SECTION
- RETURN AIR DUCT, SECTION
- EXHAUST AIR DUCT, SECTION
- OUTDOOR AIR INTAKE, SECTION
- DUCT, WIDTH X DEPTH, PLAN
- INCLINE DUCT RISE
- INCLINE DUCT DROP
- FLEXIBLE CONNECTION
- LONG RADIUS ELBOW
- VOLUME DAMPER
- AUTOMATIC FIRE AND SMOKE DAMPER
- AUTOMATIC FIRE DAMPER
- MOTORIZED DAMPER
- SQUARE ELBOW W/ TURNING VANES
- BRANCH TAKEOFF WITH ADJUSTABLE EXTRACTOR
- SPLITTER DAMPER
- THERMOSTAT
- HUMIDISTAT
- EXHAUST AIR INLET
- CEILING RETURN INLET
- CEILING DIFFUSER
- DUCT WITH INTERNAL LINING
- ELECTRIC DUCT HEATER
- SQUARE OR RECTANGULAR BRANCH TAKEOFF WITH MANUAL BALANCING DAMPER
- ROUND BRANCH TAKEOFF WITH SCOOP EXTRACTOR AND MANUAL BALANCING DAMPER
- CONICAL TEE WITH ROUND DUCTWORK
- STATIC PRESSURE SENSOR
- UNIT HEATER
- SMOKE DETECTOR
- SUPPLY AIR FLOW
- RETURN AIR OR EXHAUST AIR FLOW
- DOOR UNDER CUT
- FIXED LOUVER W/BIRD SCREEN
- OPPOSED BLADE DAMPER
- PARALLEL BLADE DAMPER
- BACKDRAFT DAMPER
- WALL SWITCH ON/OFF
- SUPERVISORY GATE VALVE
- POST INDICATOR VALVE
- FIRE HYDRANT – TWO HOSE CONNECTION W/ PUMPER
- HORIZONTAL FIRE DAMPER
- VERTICAL FIRE DAMPER
- POINT OF CONNECTION
- PRESSURE TRANSMITTER

PIPE AND FITTINGS



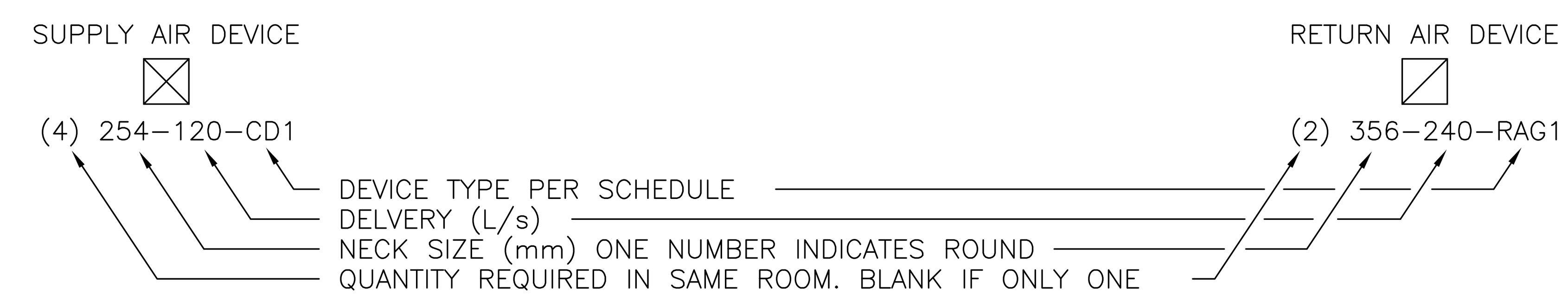
- GATE VALVE
- GLOBE VALVE
- ANGLE GATE VALVE
- SOLENOID VALVE
- NON SLAM CHECK VALVE
- BUTTERFLY VALVE
- PLUG VALVE
- BALL VALVE
- TWO WAY CONTROL VALVE
- PRESSURE REGULATOR
- THREE WAY CONTROL VALVE
- PRESSURE REDUCING VALVE
- SAFETY OR RELIEF VALVE
- AUTOMATIC AIR VENT
- STRAINER, Y TYPE W/GATE VALVE OR HOSE BIBB
- FLEXIBLE CONNECTION
- JOINT
- EXPANSION JOINT
- THERMOMETER WELL
- FLOW DIRECTION
- ELBOW BASE
- ELBOW REDUCING
- UNION
- PRESSURE GAUGE W/TRI-COCK
- PRESSURE INDICATOR
- TEST PLUG
- TEMPERATURE INDICATOR
- FLOW SWITCH
- FLOW INDICATOR
- REDUCER, CONCENTRIC
- REDUCER, ECCENTRIC STRAIGHT CROWN
- REDUCER, ECCENTRIC STRAIGHT INVERT
- AUTO FLOW BALANCING VALVE
- FLOOR DRAIN W/P-TRAP
- FLOOR CLEANOUT
- WALL CLEANOUT
- BACKFLOW PREVENTER
- LUBRICATED PLUG COCK
- HOSE BIBB W/VACUUM BREAKER
- CAPPED END
- QUICK DISCONNECT
- EQUIPMENT DRAIN
- SIDEWALL SPRINKLER HEAD
- PENDENT SPRINKLER HEAD
- UPRIGHT SPRINKLER HEAD
- SIAMESE FIRE DEPARTMENT CONNECTION
- ALARM CHECK VALVE
- DELUGE VALVE
- PIPE SWAY BRACING
- PIPE ANCHOR SUPPORT
- PIPE 1-WAY SLIDE SUPPORT
- PIPE 2-WAY SLIDE SUPPORT

PIPE LINES

—— – ——	COLD DOMESTIC WATER – CW
—— – – ——	HOT DOMESTIC WATER – HW
—— – – – ——	DOMESTIC HOT WATER RECIRCULATING – HWR
————	SANITARY SEWER
—ARW—	ACID RESISTANT WASTE
————	VENT
—S—	STORM SEWER
—C—	CONDENSATE DRAIN
—A—	COMPRESSED AIR
—DR—	DRAIN
—NG—	NATURAL GAS
—HS—	HEATING WATER SUPPLY
—HR—	HEATING WATER RETURN
—CHS—	CHILLED WATER SUPPLY
—CHR—	CHILLED WATER RETURN
—CWS—	CONDENSER WATER SUPPLY
—CWR—	CONDENSER WATER RETURN
—L—	REFRIGERANT LIQUID
—RS—	REFRIGERANT SUCTION
—HG—	REFRIGERANT HOT GAS
—HWRS—	HOT WATER RECOVERY SUPPLY
—HWRR—	HOT WATER RECOVERY RETURN
—CHDR—	CHEMICAL DRAIN
—F—	FIRE SERVICE MAIN
—I—	IRRIGATION PIPING

GENERAL NOTES

1. DRAWINGS SHOWING MECHANICAL WORK ARE IN PART DIAGRAMMATIC. THE CONTRACTOR SHALL REFER TO ARCHITECTURAL AND ENGINEERING DRAWINGS FOR GUIDANCE AS TO DIMENSIONS, CEILING HEIGHTS, DOOR SWINGS, ROOM FINISHES, ARCHITECTURAL DETAILS AND LOCATIONS OF EQUIPMENT, DUCTS, PIPES, MECHANICAL SYSTEM EQUIPMENT AND OUTLETS AND THE LIKE, AND SHALL INSTALL THE MECHANICAL SYSTEMS WITHOUT INTERFERENCE WITH OBSTRUCTIONS. LOCATION OF THERMOSTATS SHALL BE ON INTERIOR WALLS APPROXIMATELY 1524mm AFF AND SHALL BE COORDINATED WITH SWITCHES, ETC. AT LOCATION SHOWN ON DRAWING.
2. SYMBOLS IN THE LEGEND ARE APPLICABLE GENERALLY, FOR EXACT REQUIREMENTS SEE THE APPLICABLE SCHEDULES, LAYOUTS, DETAILS AND THE SPECIFICATIONS.
3. THE TERM "PROVIDE" USED IN THE PROJECT SPECIFICATIONS AND DRAWINGS SHALL MEAN TO FURNISH, INSTALL, CONNECT, AND PLACE IN SERVICE COMPLETELY IN THE SPECIFIED OR APPROVED MANNER THE ITEM AND/OR MATERIAL DESCRIBED.
4. ROUND AND FLEX DUCT TO DIFFUSER SHALL BE SAME SIZE AS DIFFUSER NECK SIZE.
5. PROVIDE MANUFACTURER'S RECOMMENDED CLEARANCE FOR OPERATION AND MAINTENANCE FOR EACH PIECE OF EQUIPMENT.
6. ALL SUPPLY AIR DUCTWORK SHALL BE LOW PRESSURE CONSTRUCTION (SMACNA 497.3 Pa CLASSIFICATION).
7. ALL OUTSIDE AIR DUCTWORK SHALL BE LOW PRESSURE CONSTRUCTION (SMACNA 497.3 Pa CLASSIFICATION).
8. ALL RETURN AIR AND EXHAUST AIR DUCTWORK SHALL BE LOW PRESSURE CONSTRUCTION (SMACNA -497.3 Pa CLASSIFICATION).
9. ALL VALVES SHALL BE INSTALLED IN SUCH A MANNER AS TO BE EASILY ACCESSIBLE AND OPERATEABLE BY THE OWNERS PERSONNEL. VALVE SHALL NOT BE INSTALLED WITH OPERATORS CLOSE TO WALL, CONCRETE DECK, PIPES, DUCTWORK, OR ANY OTHER OBSTRUCTION SUCH THAT THE OPERATORS HAND MAY BE BOUND OR PINCHED.
10. UNLESS OTHERWISE NOTED, ALL DUCT, EQUIPMENT AND PIPE SIZES AND DIMENSIONS ARE IN UNITS OF MILLIMETERS.



ABBREVIATIONS

A	A	AIR
	ABV	ABOVE
	ACCU	AIR COOLED CONDENSING UNIT
	ACL	ACETYLENE GAS
	ACU	AIR CONDITIONING UNIT
	AD	ACCESS DOOR
	AF	AIR FILTER
	AFF	ABOVE FINISHED FLOOR
	AFH	AIR FILTER, HIGH EFFICIENCY
	AHU	AIR HANDLING UNIT
	APD	AIR PRESSURE DROP
	AR	ACID RESISTANT
	ASSY	ASSEMBLY
	AUX	AUXILIARY
	AV	AUTOMATIC AIR VENT
B	BDD	BACKDRAFT DAMPER
	BHP	BRAKE HORSE POWER
	BP	BACKFLOW PREVENTER
	BS	BIRD SCREEN
C	C	CONDENSATE
	C/L	CENTER LINE
	CD	CEILING DIFFUSER
	CFM	CUBIC FEET PER MINUTE
	CH	CHILLER
	CHDR	CHEMICAL DRAIN
	CHP	CHILLED WATER PUMP
	CLG	CEILING
	CO	CLEANOUT
	CONC	CONCRETE
	CONN	CONNECTION
	CONT	CONTINUED/CONTINUATION/CONTINUOUS
	COTG	CLEAN OUT TO GRADE
	CU	CONDENSING UNIT/COPPER
	CV	CONSTANT VOLUME
	CW	COLD WATER
D	DDC	DIRECT DIGITAL CONTROL
	DG	DOOR GRILLE
	DIA	DIAMETER
	DIM	DIMENSION
	DMPR	DAMPER
	DN	DOWN
	DR	DRAIN
	DSD	DUCT SMOKE DETECTOR
	DSW	DISTILLED WATER
	DWG	DRAWING
E	EAT	ENTERING AIR TEMPERATURE
	ED	EQUIPMENT DRAIN
	EDB	ENTERING DRY BULB
	EER	ENERGY EFFICIENCY RATIO
	EF	EXHAUST FAN
	EFF	EFFICIENCY
	EG	EXHAUST GRILLE
	EL	ELEVATION
	ELEC	ELECTRICAL
	ENT	ENTERING
	ER	EXHAUST REGISTER
	EWB	ENTERING WET BULB
	EWC	ELECTRIC WATER COOLER
	EWT	ENTERING WATER TEMPERATURE
	EXH	EXHAUST
	EXST	EXISTING
F	FD	FIRE DAMPER/FLOOR DRAIN
	FH	FUME HOOD
	FL	FLOOR
	FLEX	FLEXIBLE
	FOR	FUEL OIL RETURN
	FOS	FUEL OIL SUPPLY
	FP	FIRE PUMP
	FPI	FINS PER INCH
	FPM	FEET PER MINUTE
	FT	FEET
	FV	FACE VELOCITY
G	GA	GAUGE
	GIV	GRAVITY INTAKE VENTILATOR
	GND	GROUND
	GPM	GALLONS PER MINUTE
	GRV	GRAVITY RELIEF VENTILATOR
H	HB	HOSE BIBB
	HORIZ	HORIZONTAL
	HP	HORSE POWER/HEAT PUMP
	HTG	HEATING
	HUMID	HUMIDISTAT
	HW	HOT WATER
	HWB	HOT WATER BOILER
	HWP	HOT WATER PUMP
	HWR	HOT WATER RETURN
I	ID	INSIDE DIAMETER
	IN	INCHES
	INV EL	INVERT ELEVATION
K	KW	KILOWATT
L	LAB	LABORATORY
	LAT	LEAVING AIR TEMPERATURE
	LAV	LAVATORY
	LB	POUND
	LD	LINEAR DIFFUSER
	LDB	LEAVING DRY BULB
	LF	LINEAR FEET
	LFD	LAMINAR FLOW DIFFUSER
	LP	LIQUID PROPANE
	L/S	LITERS PER SECOND
	LWB	LEAVING WET BULB
	LWT	LEAVING WATER TEMPERATURE
M	MAU	MAKE-UP AIR UNIT
	MAX	MAXIMUM
	MB	MIXING BOX/MOP BASIN
	MBH	THOUSAND BTU/HR
	MD	MOTORIZED DAMPER
	MECH	MECHANICAL
	MIN	MINUTE/MINIMUM
	MM	MILLIMETERS
	MS	MOTOR STARTER
N	N	NITROGEN
	NC	NORMALLY CLOSED
	NG	NATURAL GAS
	NIC	NOT IN CONTRACT
	NO	NUMBER
	NO2	NITROUS OXIDE
	NTS	NOT TO SCALE
O	O	OXYGEN
	OA	OUTSIDE AIR
	OAL	OUTSIDE AIR LOUVER
	OBD	OPPOSED BLADE DAMPER
	OC	ON CENTER
	OS	OVERFLOW SCUPPER
	OS&Y	OUTSIDE SCREW & YOKE
P	PD	PRESSURE DROP
	POC	POINT OF CONNECTION
	PRESS	PRESSURE
	PRV	PRESSURE REDUCING VALVE
	PSIG	POUNDS PER SQUARE INCH
	PVC	POLYVINYLCHLORIDE
R	RA	RETURN AIR
	RAG	RETURN AIR GRILLE
	RAR	RETURN AIR REGISTER
	RC	RAIN CONDUCTOR
	RD	ROOF DRAIN
	REF	REFERENCE
	RF	RETURN FAN
	RL	RAIN LEADER
	RM	ROOM
	RTN	RETURN
S	SA	SUPPLY AIR
	SAG	SUPPLY AIR GRILLE
	SAN	SANITARY
	SAR	SUPPLY AIR REGISTER
	SD	SMOKE DAMPER
	SD/FD	COMB. SMOKE DAMPER&FIRE DAMP.
	SF	SUPPLY FAN
	SH	SHEET
	SP	STATIC PRESSURE
	SQ FT	SQUARE FEET
	SST	STAINLESS STEEL
T	TCU	TERMINAL CONTROL UNIT
	TEMP	TEMPERATURE
	TG	TRANSFER GRILLE
	TP	TRAP PRIMER
	TYP	TYPICAL
U	UC	UNDERCUT
V	V	VENT
	VAV	VARIABLE AIR VOLUME
	VD	VOLUME DAMPER
	VEL	VELOCITY
	VERT	VERTICAL
	VFD	VARIABLE FREQUENCY DRIVE
	VSD	VARIABLE SPEED DRIVE
	VTR	VENT THRU ROOF
W	W/	WITH
	W/O	WITHOUT
	WCO	WALL CLEANOUT
	WC	WATER COLUMN
	WH	WALL HYDRANT
	WR	WATER RISER
	WTR	WATER

NOTE:
THIS IS A STANDARD SYMBOLS & ABBREVIATIONS SHEET. THEREFORE, SOME SYMBOLS & ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.

U.S. ARMY CORPS OF ENGINEERS
LITTLE ROCK DISTRICT

Mark	Description	Date	Appr.	Mark	Description	Date	Appr.

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LITTLE ROCK DISTRICT
LITTLE ROCK, ARKANSAS

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Submitted by: Atkins Benham, Inc.	Plot date: 02/04/03	Plot scale: 1:1
Invitation No.: DACA03-03-R-0021	Contract No.: DACA03-03-B-	

ADAL C-130J AIRCREW FUSELAGE TRAINER
LRAFB, LITTLE ROCK AR.
Project No. NKAK 043005

MECHANICAL SYMBOLS AND ABBREVIATIONS

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