



NOTES:
 1. EXTEND RIGID METAL DUCT SO THAT MAXIMUM FLEXIBLE DUCT LENGTH DOES NOT EXCEED 5'-0". PROVIDE RIGID 90° ELBOW WHERE REQUIRED TO KEEP FLEXIBLE DUCT WITHIN 5'-0" LENGTH LIMITATION.

NOTES:
 1. CUT METAL DECKING TO ALLOW CURB INSTALLATION ON STEEL FRAMING. AFTER CURB IS SET IN PLACE, TRIM REMAINING METAL DECKING AND INSTALL WITHIN CURB. TACK WELD DECKING TO SUPPORT STEEL. DO NOT WELD INTERIOR DECKING TO ROOF CURB. PROVIDE ADDITIONAL CROSS FRAMING TO SUPPORT INTERIOR DECKING AND FILL MATERIAL AS REQUIRED.

NOTES:
 1. PROVIDE OPENING THROUGH ROOF AND ROOF DECK INSULATION NO LARGER THAN REQUIRED TO ALLOW DUCTS TO PASS THROUGH. REFER TO PLANS FOR DUCT SIZES. TRANSITION REQUIRED IN ROOF CURB TO RTU SUPPLY AND RETURN OPENINGS.
 2. PROVIDE SLOPED ROOF CURB TO INSTALL ROOFTOP UNIT LEVEL TO ENSURE PROPER DRAINAGE. COORDINATE ROOF SLOPE WITH ARCHITECTURAL. FLASH AND WATER PROOF ROOF PENETRATIONS, ETC. TO ENSURE WEATHER TIGHT INSTALLATION.

LDI
 2000 SHAWNEE MISSION PARKWAY
 STE 100 MISSION WOODS, KS 66205
 TEL 816 502 1500 FAX 816 842 1878

Sprint
 #1641 WHITEHAVEN PLAZA
 4088 ELVIS PRESLEY BLVD.
 SUITE 104
 MEMPHIS, TENNESSEE 38116

HENDERSON ENGINEERS
 8345 LENEXA DRIVE, SUITE 300
 LENEXA, KS 66214
 TEL (913) 742-5000 FAX (913) 742-5001
 WWW.HENDERSONENGINEERS.COM
 1850001011
 TN. CORPORATE NUMBER: 3847

MECHANICAL SYMBOLS

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ETC. ARE NECESSARILY USED ON THE DRAWINGS.

PIPING	
CD	CONDENSATE DRAIN (CD)
ACD	AUXILIARY CONDENSATE DRAIN (ACD)
RL	REFRIGERANT LIQUID (RL)
RD	REFRIGERANT DISCHARGE (HOT GAS) (RD)
RS	REFRIGERANT SUCTION (RS)
HWS	HEATING HOT WATER SUPPLY (HWS)
HWR	HEATING HOT WATER RETURN (HWR)
CWS	CHILLED WATER SUPPLY (CWS)
CWR	CHILLED WATER RETURN (CWR)
HS	HEAT PUMP SUPPLY (HS)
HR	HEAT PUMP RETURN (HR)
LPS	LOW PRESSURE STEAM SUPPLY (LPS)
LPC	LOW PRESSURE STEAM CONDENSATE (LPC)
	EXISTING PIPING TO BE REMOVED
	EXISTING PIPING TO REMAIN
	DIRECTION OF FLOW
	BALL VALVE
	CONTROL VALVE
	THREE-WAY CONTROL VALVE
	SHUTOFF VALVE
	CHECK VALVE
	BALANCING VALVE WITH PRESSURE PORTS
	TRIPLE DUTY VALVE WITH PRESSURE PORTS
	WATER METER
	STRAINER
	SOLENOID VALVE
	PRESSURE GAUGE
	THERMOMETER
	PRESSURE AND TEMPERATURE TEST PLUG
	UNION
	FLANGE CONNECTION
	ELBOW UP
	ELBOW DOWN
	TEE UP
	TEE DOWN
	REDUCER

HVAC EQUIPMENT & DUCTWORK	
	EXISTING DUCTWORK OR EQUIPMENT TO REMAIN
	EXISTING DUCTWORK OR EQUIPMENT TO BE REMOVED
	BRANCH DUCT WITH 45° RECTANGLE-ROUND BRANCH FITTING AND MANUAL VOLUME DAMPER
	ELBOW WITH TURNING VANES
	RETURN, EXHAUST, OR OUTSIDE AIR DUCT UP
	RETURN, EXHAUST, OR OUTSIDE AIR DUCT DOWN
	SUPPLY AIR DUCT UP
	SUPPLY AIR DUCT DOWN
	EQUIPMENT WITH FLEXIBLE DUCT CONNECTION
	10" CSD-1 300 CFM NECK SIZE, TYPE, CFM OF SUPPLY DIFFUSER OR REGISTER
	MANUAL VOLUME DAMPER
	SQUARE TO ROUND TRANSITION
	DUCT MOUNTED SMOKE DETECTOR (SD=SUPPLY/RD=RETURN)
FD	FIRE DAMPER
FSD	FIRE SMOKE DAMPER
SD	SMOKE DETECTOR
VD	VOLUME DAMPER
MD	MOTORIZED DAMPER
BD	BACKDRAFT DAMPER
CS	CARBON MONOXIDE SENSOR
HS	HUMIDITY SENSOR
PS	PULL STATION
SP	STATIC PRESSURE SENSOR
TS	TEMPERATURE SENSOR
H	HUMIDISTAT
T	THERMOSTAT

STANDARD MOUNTING HEIGHTS	
MECHANICAL	(AFF. AFG, UNLESS NOTED OTHERWISE)
THERMOSTATS (USER ADJUSTABLE) (TOP OF DEVICE)	48"
CONTROLS (TOP OF DEVICE)	48"

ABBREVIATIONS	
AFF	ABOVE FINISHED FLOOR
BAS	BUILDING AUTOMATION SYSTEM
BD	BACKDRAFT DAMPER
CFM	CUBIC FEET PER MINUTE
CD	CONDENSATE DRAIN CONTROL
DX	DIRECT EXPANSION
EA	EXHAUST AIR
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
GPM	GALLONS PER MINUTE
IN WC	INCHES OF WATER COLUMN
MAXIMUM	1000 PER HOUR
M	MERIDIAN CONTRACTOR
MC	MECHANICAL CONTRACTOR
NC	NOISE CRITERIA
OA	OUTSIDE AIR
RA	RETURN AIR
SA	SUPPLY AIR
SD	SMOKE DETECTOR
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
W	WITH
W/O	WITHOUT

ANNOTATION	
1	MECHANICAL PLAN CALLOUT
CU 1	MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
1	CONNECTION POINT OF NEW WORK TO EXISTING
1	DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
1	SECTION CUT DESIGNATION

Order Plans

WWW.LDIPLANS.COM

DATE	1/5/17	DATE PLOTTED	1/5/17
PROJECT NUMBER	2017014-056	SHEET NUMBER	MEC
DESIGNED BY	ASK	CHECKED BY	
DATE	JANUARY 5, 2017		

MECHANICAL DETAILS

M-2