SYMBOL LEGEND

HVAC PIPING

LPS	LOW PRESSURE STEAM
LPR	LOW PRESSURE RETURN
MPS	MEDIUM PRESSURE STEAM
MPR	MEDIUM PRESSURE RETURN
HPS	HIGH PRESSURE STEAM
HPR	HIGH PRESSURE RETURN
PC	PUMPED CONDENSATE
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HPWR	HEAT PUMP WATER RETURN
GHWS	GLYCOL HOT WATER SUPPLY
GHWR	GLYCOL HOT WATER RETURN
BBD	BOILER BLOW DOWN
ES	EXHAUST STEAM
CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
GCWS	GLYCOL CHILLED WATER SUPPLY
GCWR	GLYCOL CHILLED WATER RETURN
RL	REFRIGERANT LIQUID LINE
RS	REFRIGERANT SUCTION LINE
RDL	REFRIGERANT DISCHARGE
CS	CONDENSER WATER SUPPLY
CR	CONDENSER WATER RETURN
HCWS	HOT/CHILLED WATER SUPPLY
HCWR	HOT/CHILLED WATER RETURN
CD	CONDENSATE DRAIN
G	NATURAL GAS
FOS	FUEL OIL SUPPLY
FOR	FUEL OIL RETURN
FOV	FUEL OIL VENT
FOF	FUEL OIL FILL
FOG	FUEL OIL GAGE
LPG	LIQUEFIED PETROLEUM GAS

PLUMBING PIPING

	SANITARY DRAIN (ABOVE FLOOR)
	SANITARY DRAIN (BELOW FLOOR)
ST/OST	STORM DRAIN
ST/OST	STORM DRAIN (BELOW FLOOR)
	SANITARY VENT
AW	ACID WASTE
AV	ACID VENT
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	DOMESTIC HOT WATER RECIRCULATING (DHWR)
TW	TEPID WATER
TWR	TEPID WATER RECIRCULATING
DSCW	SOFTENED COLD WATER
DSHW	SOFTENED HOT WATER
W	BURIED EXTERIOR WATER
DS	DISTILLED WATER
DI	DEIONIZED WATER
RO	REVERSE OSMOSIS WATER
A	COMPRESSED AIR
VAC	VACUUM
OX	OXYGEN
N	NITROGEN
WAGD	WASTE AND ANESTHETIC GAS DISPOSAL
MA	MEDICAL AIR

FIRE PROTECTION

D	SPRINKLER DRAIN
F	FIRE SUPPRESSION PIPING
	FIRE DEPARTMENT CONNECTION
FS	FLOW SWITCH
TS	TAMPER SWITCH

VALVES

	MANUAL BALANCING VALVE
	ISOLATION VALVE
	CHECK VALVE
M	CONTROL VALVE (2 WAY)
M	CONTROL VALVE (3 WAY)
	AUTO FLOW CONTROL VALVE
	HOSE END DRAIN VALVE
	PRESSURE REDUCING VALVE
S	SOLENOID VALVE
	TEMP & PRESS RELIEF (OR) SAFETY VALVE-STEAM
	THERMOSTATIC MIXING VALVE

PIPING SPECIALTIES AND FITTINGS

CO —WCO	CLEANOUT / WALL CLEANOUT
GCO	GRADE CLEANOUT
DGCO	DOUBLE - GRADE CLEANOUT
VTR	PLUMBING VENT THRU ROOF
FD_	FLOOR DRAIN
FS_	FLOOR SINK
RD_	ROOF DRAIN
ORD_	OVERFLOW ROOF DRAIN
	TRENCH DRAIN
MH	MANHOLE
X	OXYGEN OUTLET
V	VACUUM OUTLET
A	AIR OUTLET
N	NITROGEN OUTLET
W	WASTE AND ANESTHETIC GAS DISPOSAL OUTLET
MA	MEDICAL AIR OUTLET
	PIPE CAP
	ELBOW UP
	ELBOW DOWN
	TEE
	TEE UP
	TEE DOWN
	STRAINER
	UNION
	AIR VENT
	FLEXIBLE PIPE CONNECTION
	EXPANSION JOINT
	PIPE ANCHOR
	PIPE GUIDE
	THERMOMETER
	PRESSURE GAUGE
HB	HOSE BIBB
RHY	ROOF HYDRANT
WH	WALL HYDRANT
	STEAM TRAP

MISCELLANEOUS SYMBOLS

DEMO / EXISTING	DEMO TO EXISTING CONNECTION
NEW / EXISTING	NEW TO EXISTING CONNECTION

HVAC DUCTWORK AND SPECIALTIES

18x10	RECT DUCT-1ST FIG IS SIDE SHOWN
18 Ø	ROUND DUCT
18/10	FLAT OVAL DUCT-1ST FIG IS SIDE SHOWN
	ACOUSTICAL DUCT LINER

HVAC DUCTWORK AND SPECIALTIES (CONT.)

	FLEXIBLE DUCTWORK CONNECTION
	VOLUME DAMPER
	TURNING VANES
	HIGH EFFICIENCY TAKEOFF
	HIGH EFFICIENCY TAKOFF WITH VOLUME DAMPER
	SUPPLY AND FRESH AIR DUCT UP
	SUPPLY AND FRESH AIR DUCT DOWN
	RETURN DUCT UP
	RETURN DUCT DOWN
	EXHAUST DUCT UP
	EXHAUST DUCT DOWN
	ROUND DUCT UP (DOUBLE LINE PIPE ROUND DUCT DOWN / DOUBLE LINE PIPE
SIZE/TYPE FLOW	AIR TERMINAL (VERTICAL MOUNTING)
SIZE/TYPE FLOW	ROUND AIR TERMINAL (HORIZONTAL MOUNTING)
SIZE/TYPE FLOW	RECTANGULAR SUPPLY AIR TERMINAL (HORIZONTAL MOUNTING)
SIZE/TYPE FLOW	RECTANGULAR RETURN AIR TERMINAL (HORIZONTAL MOUNTING)
SIZE/TYPE FLOW	RECTANGULAR EXHAUST AIR TERMINAL (HORIZONTAL MOUNTING)
AFS	AIR FLOW STATION
	MOTORIZED DAMPER-PARALLEL BLADE
	MOTORIZED DAMPER-OPPOSED BLADE
	GRAVITY DAMPER
F	FIRE DAMPER-HORIZ FIRE SEPARATION
S	SMOKE DAMPER
FS	FIRE/SMOKE DAMPER
	FLEXIBLE DUCT
T	THERMOSTAT
H	HUMIDISTAT
T	TEMPERATURE SENSOR
CO	CARBON MONOXIDE SENSOR
CO2	CARBON DIOXIDE SENSOR
NO2	NITROGEN DIOXIDE SENSOR
S	SENSOR WITH GUARD

REFERENCE LEGEND

DUCT SIZE	X"Ø	DIAMETER
	X"xX"	WIDTH x HEIGHT
	X"/X"	WIDTH / HEIGHT
PIPE SIZE	X"	PIPE SIZE (DIAMETER)
PLUMBING FIXTURES	XXX-1	PLUMBING FIXTURE DESIGNATION
ROOM / SPACE NUMBER	ROOM NAME	ROOM NAME DESIGNATION
	101	ROOM NUMBER DESIGNATION
EQUIPMENT NUMBER	XX-1	EQUIPMENT NUMBER
REFERENCE DEMOLITION NOTE	X	DEMOLITION DESIGNATION
REFERENCE NOTE	X	REFERENCE DESIGNATION
PLAN DETAIL	X / XXXX	DETAIL NUMBER / SHEET NUMBER
SECTION/ DETAIL	SIM/OPP, X / XXXX	SECTION/DETAIL NUMBER / SHEET NUMBER / INDICATES DIRECTION OF VIEW
NEW COLUMN	X	LETTER/NUMBER INDICATES NEW COLUMN LINE
EXISTING COLUMN	X	LETTER/NUMBER INDICATES EXISTING COLUMN LINE
MATCHLINE	AREA A / AREA B	
LEVEL	NAME, ELEVATION	LEVEL CALLOUT DESIGNATION; ELEVATION DESIGNATION
TITLE MARKER	1, VIEW NAME, SCALE: 1/8" = 1'-0"	GRAPHIC AREA FOR DRAWING; DRAWING/DETAIL NUMBER; TITLE; SCALE OF THE DRAWING
NORTH ARROW		NORTH; PLAN NORTH; TRUE NORTH

ABBREVIATIONS

A	COMPRESSED AIR
AC	AIR COMPRESSOR
ACC	AIR COOLED CONDENSER
ACCU	AIR COOLED CONDENSING UNIT
AD	AIR DOOR
AFCV	AUTO FLOW CONTROL VALVE
AHU	AIR HANDLING UNIT
AMP	AMPERE
APD	AIR PRESSURE DROP
ARU	AIR ROTATION UNIT
AS	AIR SEPARATOR
ASHP	AIR SOURCE HEAT PUMP
AV	ACID VENT
AW	ACID WASTE
B	BOILER
BC	BLOWER COIL
BD	BIDET
BFP	BACKFLOW PREVENTER
BFV	BUTTERFLY VALVE
BHP	BRAKE HORSEPOWER
BLKG	BLOCKING
BLV	BALANCING VALVE
BT	BATHTUB
BV	BALL VALVE
BW	BEDPAN WASHER
CH	CHILLER
CC	COOLING COIL
CD	CONDENSATE DRAIN
CFM	CUBIC FEET PER MINUTE
CI	CAST IRON
CMU	COMBINATION UNITS
CR	CONDENSER WATER RETURN
CRAC	COMPUTER ROOM AIR CONDITIONER
CS	CONDENSER WATER SUPPLY
CSS	CLINICAL SERVICE SINKS
CT	COOLING TOWER
CU	CONDENSING UNIT - SPLIT SYSTEM
CUH	CABINET HEATER
CWR	CHILLED WATER RETURN
CWS	CHILLED WATER SUPPLY
DB	DRY-BULB TEMPERATURE
DCW	DOMESTIC COLD WATER
DEG	DEGREE
DF	DRINKING FOUNTAIN
DGCO	DOUBLE GRADE CLEANOUT
DH	EMERGENCY DRENCH HOSES
DHW	DOMESTIC HOT WATER
DHWR	DOMESTIC HOT WATER RECIRCULATING
DHWP	DOMESTIC HOT WATER RECIRCULATING PUMP
DI	DEIONIZED WATER
DOAS	DEDICATED OUTDOOR AIR SYSTEM
DS	DISTILLED WATER
DSA	DUCT SOUND ATTENUATORS
DSCW	DOMESTIC SOFT COLD WATER
DSHW	DOMESTIC SOFT HOT WATER
DSHWR	DOMESTIC SOFT HOT WATER RECIRCULATING
DSS	DUCTLESS SPLIT SYSTEM
DST	DOMESTIC STORAGE TANK
DTW	DOMESTIC TEPID WATER
DTWR	DOMESTIC TEPID WATER RECIRCULATING
DWET	DOMESTIC WATER EXPANSION TANK
EA.	EACH
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDH	ELECTRIC DUCT HEATER
EEW	EMERGENCY EYE WASH
EEWS	EMERGENCY EYE WASH/SHOWER
EF	EXHAUST FAN
EFF	EFFICIENCY
EFW	EMERGENCY FACE WASH
EH	EXHAUST HOOD
ERV	ENERGY RECOVERY VENTILATOR
ES	EMERGENCY SHOWER
ESP	EXTERNAL STATIC PRESSURE
ET	EXPANSION TANK
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EWT	ENTERING WATER TEMPERATURE
F	FIRE SUPPRESSION PIPING
F-_	FURNACE
FC	FLUID COOLER
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLA	FULL LOAD AMPS
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FSD	FIRE/SMOKE DAMPER
FT	FINNED TUBE
G	GAS
GCWR	GLYCOL CHILLED WATER RETURN
GCWS	GLYCOL CHILLED WATER SUPPLY
GD	GARBAGE DISPOSAL
GDH	GAS DUCT HEATER
GHCR	GLYCOL HOT/CHILLED WATER RETURN
GHCS	GLYCOL HOT/CHILLED WATER SUPPLY
GHWR	GLYCOL HOT WATER RETURN
GHWS	GLYCOL HOT WATER SUPPLY
GI	GREASE INTERCEPTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GAS VENT
GWH	GAS WATER HEATER
H	HUMIDIFIER
HB	HOSE BIBB
HC	HEATING COIL
HCR	HOT/CHILLED WATER RETURN
HCS	HOT/CHILLED WATER SUPPLY
HP	HORSEPOWER
HP-_	HEAT PUMP
HPR	HIGH PRESSURE RETURN
HPS	HIGH PRESURE STEAM
HRC	HEAT RECOVERY COIL
HVLS	HIGH VOLUME LOW SPEED
HWR	HOT WATER RETURN (HEATING)
HWS	HOT WATER SUPPLY (HEATING)
HX	HEAT EXCHANGER
HY	HYDRANTS
IH	INTAKE HOOD
IRH	INFRARED RADIANT HEATER
KH	KITCHEN HOOD
KW	KILOWATT
KWH	KILOWATT HOURS
L	LAVATORY
LAT	LEAVING AIR TEMPERATURE
LPR	LOW PRESSURE RETURN
LPG	LIQUIFIED PETROLEUM GAS
LPS	LOW PRESSURE STEAM
LRA	LOCKED ROTOR AMPS
LS	LAUNDRY SINK
LV	LOUVER
LWT	LEAVING WATER TEMPERATURE
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	1000 BTUH
MCA	MINIMUM CIRCUIT AMPS
MD	MOTORIZED DAMPER
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
MPR	MEDIUM PRESSURE RETURN
MPS	MEDIUM PRESSURE STEAM
MS	MOP SINK
N	NITROGEN
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
NPCW	NONPOTABLE COLD WATER
NPHW	NONPOTABLE HOT WATER
NPHWR	NONPOTABLE HOT WATER RECIRCULATING
OA	OUTSIDE AIR
OB	OUTLET BOX
OI	OIL INTERCEPTOR
ORD	OVERFLOW ROOF DRAIN
OST	OVERFLOW STORM WATER
OX	OXYGEN
P	PUMP
PHC	PREHEAT COIL
PIV	POST INDICATING VALVE
PRV	PRESSURE REGULATING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH, GAUGE
PTAC	PACKAGED TERMINAL AIR CONDITIONER
RA	RETURN AIR
RCP	RADIANT CEILING PANEL
RD	ROOF AREA DRAINS
RL	REFRIGERANT DISCHARGE LINE
RF	RETURN FAN
RH	RELIEF HOOD
RHC	REHEAT COIL
RH	ROOF HYDRANT
RL	REFRIGERANT LIQUID LINE
RLA	RELIEF AIR
RLF	RELIEF FAN
RO	REVERSE OSMOSIS WATER
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION LINE
RTU	ROOF TOP UNIT
RV	RELIEF VALVE
S	SINK
SA	SUPPLY AIR
SAN	SANITARY SEWER
SD	SMOKE DAMPER
SF	SUPPLY FAN
SFU	SANITARY FIXTURE UNIT
SH	SHOWER
SOI	SAND OIL INTERCEPTOR
SP	STATIC PRESSURE
SP	SUMP PUMP
SSS	SURGICAL SCRUB SINK
ST	STORM WATER
T	THERMOSTAT
TD	TRENCH DRAIN
TMV	THERMOSTATIC MIXING VALVE
TONS	TONS OF REFRIGERATION
TSP	TOTAL STATIC PRESSURE
UH	UNIT HEATER
UR	URINAL
V	VENT
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VD	VOLUME DAMPER
VEL	VELOCITY
VFD	VARIABLE FREQUENCY DRIVE
VTR	VENT THRU ROOF
WB	WET BULB
WC	WATER CLOSETS
WCO	WALL CLEANOUT
WF	WASH FOUNTAINS
WFU	WATER FIXTURE UNITS
WH	WALL HYDRANT
WMB	WASHING MACHINE BOX
WPD	WATER PRESSURE DROP
WS	WATER SOFTENER
WSHP	WATER SOURCE HEAT PUMP
WWHP	WATER TO WATER HEAT PUMP
YH	YARD HYDRANT

GENERAL NOTES

A. EXISTING CONDITIONS ARE BASED ON DRAWINGS PROVIDED BY THE OWNER AND LIMITED FIELD VERIFICATION. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THOSE SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL ADJUST TO ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO THE OWNER.

B. ALL CONTRACTORS ARE RESPONSIBLE FOR REVIEWING ENTIRE SET OF DOCUMENTS TO DETERMINE THEIR FULL SCOPE OF WORK. CONTRACTOR SHALL NOT BE ALLOWED EXTRA COSTS DUE TO FAILURE TO REVIEW ENTIRE SET OF DOCUMENTS.

C. CONTRACTOR SHALL TAKE ALL MEASUREMENTS FOR WORK AND BE RESPONSIBLE FOR SAME. CONTRACTOR SHALL ADJUST FOR ACTUAL FIELD CONDITIONS AT NO ADDITIONAL EXPENSE TO OWNER. COORDINATE THE WORK AND SHOP DRAWINGS WITH ALL OTHER TRADES AFFECTED.

D. SCREENED HALF-TONE LINES INDICATE EXISTING CONSTRUCTION TO REMAIN. FULL-TONE LINES INDICATED NEW OR RELOCATED CONSTRUCTION.

E. IN VIEWING THESE DRAWINGS, THE CONTRACTOR SHALL PAY CLOSE ATTENTION TO THE MATCH LINES. SOME WORK AND NOTE REFERENCES MAY BE REPEATED, BUT DO NOT ALWAYS SHOW ON BOTH SIDES OF THE MATCH LINE

F. CONTRACTOR SHALL COORDINATE THE ROUTING OF ALL DUCTWORK WITH STRUCTURE, CEILING, LIGHTING, AND PIPING.

G. MAINTAIN MANUFACTURER'S REQUIRED CLEARANCE AROUND ALL EQUIPMENT TO ALLOW FOR MAINTENANCE ACCESS.

H. DO NOT ROUTE DUCTWORK OR PIPING ABOVE ELECTRICAL PANELS. MAINTAIN ALL CODE REQUIRED CLEARANCES.

I. IN THE EVENT THE CONTRACTOR ENCOUNTERS ON THE SITE, MATERIAL REASONABLY BELIEVED TO BE ASBESTOS, LEAD-BASED PAINT, OR ANY OTHER HAZARDOUS MATERIAL WHICH HAS NOT BEEN RENDERED HARMLESS, THE CONTRACTOR SHALL IMMEDIATELY STOP WORK IN THE AREA AFFECTED AND REPORT THE CONDITION TO THE OWNER AND ARCHITECT IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT THEREAFTER BE RESUMED EXCEPT BY WRITTEN AGREEMENT OF THE OWNER AND CONTRACTOR.

J. ALL RUNOUTS TO AIR TERMINALS SHALL MATCH INTLET SIZE UNLESS OTHERWISE NOTED.

K. ANY UTILITY OR SYSTEM DISRUPTIONS OR OUTAGES DURING CONSTRUCTION SHALL BE COORDINATED WITH THE OWNER AND GENERAL CONTRACTOR.

L. THIS PROJECT UTILIZES A RETURN AIR PLENUM. ALL MATERIALS INSTALLED IN RETURN AIR PLENUM SHALL BE NON-COMBUSTABLE OR SHALL HAVE A FLAME SPREAD INDEX NOT TO EXCEED 25 AND SMOKE DEVELOPED INDEX NOT TO EXCEED 50 IN ACCORDANCE WITH ASTM E84 OR UL 723.

M. SEE PHASING PLANS ON SHEET 0-PH. COORDINATE WORK WITH PHASING PLANS.

REF. NOTES (X)

PROJECT MECHANICAL REFERENCED NOTES

SEE INDIVIDUAL SHEETS FOR REFERENCE NOTES.

MECHANICAL SHEET LIST

M 00	MECHANICAL INFO SHEET
M101	FIRST FLOOR PLAN - AREA A - MECHANICAL
M102	FIRST FLOOR PLAN - AREA B - MECHANICAL - (SIM - AREA C)
M103	SECOND FLOOR PLAN - AREA A - MECHANICAL
M104	SECOND FLOOR PLAN - AREA B - MECHANICAL - (SIM - AREA C)
M105	THIRD FLOOR PLAN - AREA A - MECHANICAL
M106	THIRD FLOOR PLAN - AREA B - MECHANICAL - (SIM - AREA C)
M107	ROOF PLAN - AREA A - MECHANICAL
M108	ROOF PLAN - AREA B - MECHANICAL - (SIM - AREA C)
M201	FIRST FLOOR PLAN - AREA A - MECHANICAL PIPING
M202	FIRST FLOOR PLAN - AREA B - MECHANICAL PIPING - (SIM - AREA C)
M203	SECOND FLOOR PLAN - AREA A - MECHANICAL PIPING
M204	SECOND FLOOR PLAN - AREA B - MECHANICAL PIPING
M205	THIRD FLOOR PLAN - AREA A - MECHANICAL PIPING
M206	THIRD FLOOR PLAN - AREA B - MECHANICAL PIPING
M301	ENLARGED UNIT PLANS - MECHANICAL
M302	ENLARGED PLAN & SECTION - MECHANICAL
M401	DETAILS - MECHANICAL
M402	DETAILS - MECHANICAL
M501	SCHEDULE - MECHANICAL

DESIGNED:	AJP	ISSUE DATE:	11/20/2019
DRAWN:	AJP/MLB	REVISIONS: No.:	DATE: BY: DESCRIPTION:
CHECKED:	Checker		

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22ND AVENUE,
KEARNEY, NE 68845

MECHANICAL INFO SHEET

PROJECT NO.: 07435.002

M 00

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