MECHANICAL SYMBOL LIST

DUCTWORK

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

- SINGLE LINE DUCTWORK OR EQUIPMENT - NEW
- SINGLE LINE DUCTWORK OR EQUIPMENT - EXISTING
- DUCTWORK TO BE REMOVED
- DUCTWORK WITH ACOUSTIC LINING
- DUCT UNDER POSITIVE PRESSURE (SUPPLY AIR OR FAN DISCHARGE)
- DUCT UNDER NEGATIVE PRESSURE (RETURN, EXHAUST OR OUTSIDE AIR)
- VD — VOLUME DAMPER
- FD — FIRE DAMPER AND ACCESS DOOR
- BDD — BACK DRAFT DAMPER
- M FSD — COMBINATION SMOKE & FIRE DAMPER W/ACCESS DOOR
- M — AUTOMATIC DAMPER
- M SD — AUTOMATIC SMOKE DAMPER
- R — RISE IN DUCTWORK (IN DIRECTION OF AIR FLOW)
- D — DROP IN DUCTWORK (IN DIRECTION OF AIR FLOW)
- ℄ — CENTER LINE
- § OR CFM — CUBIC FEET PER MINUTE
- Ø — DIAMETER
- ⌀ — SQUARE FEET
- POINT OF CONNECTION
- POINT OF DISCONNECTION
- 12x12 CD, 400 § — RECTANGULAR CEILING DIFFUSER WITH 12" X 12" NECK, 400 CFM SUPPLY AIR
- CD-A, 400 § — TYPE A CEILING DIFFUSER, 400 CFM SUPPLY AIR
- 10x8 CR(CG), 300 § — 10" BY 8" CEILING REGISTER (CEILING GRILLE), 300 CFM RETURN AIR
- RECTANGULAR DIFFUSER WITH BLANKING PLATE
- 10x6 TR, 150 § — 10" BY 6" TOP REGISTER, 150 CFM SUPPLY AIR
- 10x6 TR(TG), 150 § — 10" BY 6" TOP REGISTER (TOP GRILLE), 150 CFM RETURN AIR
- 10x6 BR(BG), 150 § — 10" BY 6" BOTTOM REGISTER (BOTTOM GRILLE), 150 CFM RETURN AIR
- VANED ELBOW (SEE DETAIL) OR RADIUS ELBOW
- FLEXIBLE DUCT
- DUCT FLEXIBLE CONNECTION
- VERTICAL DUCT DROP (IN DIRECTION OF AIRFLOW)
- VERTICAL DUCT RISE (IN DIRECTION OF AIRFLOW)
- SLOTTED LINEAR DIFFUSER WITH PLENUM

- T — THERMOSTAT
- H — HUMIDISTAT
- SD — SMOKE DETECTOR
- H — HUMIDIFIER
- UC — DOOR UNDERCUT
- SECTION DESIGNATION
- SHEET NO. WHERE SECTION IS SHOWN
- DETAIL DESIGNATION
- SHEET NO. WHERE DETAIL IS SHOWN

XXX-XX-XX
- EQUIPMENT TAG NUMBER
- FLOOR DESIGNATION
- EQUIPMENT DESIGNATION (REFER TO SPECIFIC TRADE LIST)

HVAC EQUIPMENT DESIGNATIONS

ACU-2-3
- UNIT NUMBER 3
- SECOND FLOOR
- AIR CONDITION UNIT (REFER TO LIST)

PIPING

(NOT ALL SYMBOLS ARE NECESSARILY USED ON THIS PROJECT)

- NEW PIPE WITH DIRECTION OF FLOW
- EXISTING PIPING
- EXISTING PIPING TO BE REMOVED
- EXISTING PIPING TO BE ABANDONED
- PIPE DROP
- PIPE RISE
- U — PITCH UP IN DIRECTION OF FLOW
- D — PITCH DOWN IN DIRECTION OF FLOW
- UNION
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER - FLAT BOTTOM
- ECCENTRIC REDUCER - FLAT TOP
- FLANGED CONNECTION
- FLANGED END
- EXPANSION LOOP
- PIPE EXPANSION JOINT
- PIPE ALIGNMENT GUIDE
- PIPE ANCHOR
- GATE VALVE
- ANGLE VALVE
- GLOBE VALVE
- ANGLE GLOBE VALVE
- NEEDLE VALVE COCK
- DRAIN VALVE
- LOCK SHIELD VALVE
- CHECK VALVE, SWING OR LIFT
- SILENT CHECK VALVE
- FLEXIBLE CONNECTOR
- BUTTERFLY VALVE
- BALL VALVE
- SQUARE HEAD COCK
- BALANCING VALVE
- PLUG VALVE (TYPE AS NOTED)
- AUTOMATIC CONTROL VALVE
- THREE-WAY AUTOMATIC CONTROL VALVE
- "Y" TYPE STRAINER W/BLOW OFF VALVE
- THERMOMETER AND WELL
- PRESSURE GAUGE
- CWS — CONDENSER WATER SUPPLY
- CWR — CONDENSER WATER RETURN
- DW — DOMESTIC WATER
- D — DRAIN

ABBREVIATIONS

(NOT ALL ABBREV ARE NECESSARILY USED ON THIS PROJECT)

AC	AIR CONDITIONING
ACU	AIR CONDITIONING UNIT
ACU	AD ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AHU	AIR HANDLING UNIT
BHP	BRAKE HORSEPOWER
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CLG	CEILING
COND	CONDENSATE
CR	CEILING REGISTER
CUH	CABINET UNIT HEATER
CV	CONSTANT VOLUME
DB	DRY BULB
DIA	DIAMETER
DMPR	DAMPER
DX	DIRECT EXPANSION
(E)	EXISTING TO REMAIN
(ER)	EXISTING TO BE REMOVED
EA	EACH
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB TEMPERATURE
EF	EXHAUST FAN
EL	ELEVATION
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
EXH	EXHAUST
°F	DEGREES FAHRENHEIT
FA	FREE AREA (SQ.FT.)
FC	FLEXIBLE CONNECTION
FD	FIRE DAMPER
FIN FL	FINISHED FLOOR
FLA	FULL LOAD AMPERES
FPM	FEET PER MINUTE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HT	HEIGHT
HR	HOUR
HV	HEATING AND VENTILATING
HX	HEAT EXCHANGER
HZ	FREQUENCY
IN	INCH OR INCHES
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LF	LINEAR FEET
LWB	LEAVING WET BULB TEMPERATURE
MBH	THOUSAND BTU PER HOUR
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINIMUM
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAI	OUTSIDE AIR INTAKE
OED	OPEN END DUCT
PSI	POUNDS PER SQUARE INCH
PSIA	PSI ABSOLUTE
PSIG	PSI GAUGE
RA	RETURN AIR
(RE)	RELOCATED EXISTING
RF	RETURN FAN
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RLA	RUNNING LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SD	SMOKE DAMPER
SF	SUPPLY FAN
SP	STATIC PRESSURE
SPEC	SPECIFICATION
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TG	TOP GRILLE
TR	TOP REGISTER
TYP	TYPICAL
UH	UNIT HEATER
VFD	VARIABLE FREQUENCY DRIVE
VIV	VARIABLE INLET VANES
W	WIDTH
w/	WITH
WB	WET BULB
WMS	WIRE MESH SCREEN

GENERAL NOTES

1. GENERAL NOTES, SYMBOL LIST AND DETAILS ARE APPLICABLE TO ALL HVAC/MECHANICAL DRAWINGS.
2. ALL WORK IS NEW UNLESS OTHERWISE NOTED.
3. DRAWINGS ARE DIAGRAMMATIC. DETERMINE LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD. RELOCATE EXISTING WORK THAT INTERFERES WITH WORK OF THIS CONTRACT.
4. COORDINATE THIS WORK WITH THAT OF OTHER TRADES.
5. DIMENSIONS SHOWN ON PLAN ARE HORIZONTAL. DIMENSIONS SHOWN IN ELEVATION ARE VERTICAL EXCEPT IN WAY OF STRUCTURAL STEEL. DIMENSIONS ARE MEASURED PERPENDICULAR TO FLANGE.
6. NEITHER ACCURACY NOR COMPLETION OF SERVICES AND UTILITY LOCATIONS SHOWN ON DRAWINGS IS GUARANTEED. DETERMINE EXACT LOCATIONS OF EXISTING SERVICES AND UTILITIES IN FIELD, WHETHER OR NOT SHOWN ON DRAWINGS. EXERCISE CAUTION AND IDENTIFY LOCATIONS OF UNMARKED UTILITY LINES AS NECESSARY TO PERFORM WORK OF THIS SECTION.
7. MANUFACTURERS MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH STANDARDS OF QUALITY FOR PERFORMANCE AND MATERIALS.
8. PRODUCT INSTALLATION SHALL ADHERE TO MANUFACTURERS RECOMMENDATIONS.
9. PROVIDE ACCESS PANELS FOR EQUIPMENT THAT REQUIRES PERIODIC SERVICE.
10. PROVIDE HANGERS, INSERTS, ANCHORS, SUPPLEMENTAL STEEL & SUPPORTS AS REQUIRED TO SUPPORT DUCTWORK, PIPING AND EQUIPMENT FROM STRUCTURE.
11. SCHEDULE WORK OF THIS SECTION TO AVOID INTERFERING WITH EXISTING OPERATIONS IN THE FACILITY.
12. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS. MECHANICAL CONTRACTOR TO NOTIFY OWNER PRIOR TO STARTING WORK TO VERIFY COMPLIANCE WITH BOND AND WARRANTY OF EXISTING ROOF.
13. RUN DUCTS AND PIPING CONCEALED, UNLESS OTHERWISE SPECIFIED AND CLEAR OF CEILING INSERTS.
14. INSTALL THERMOSTATS 4'-10" ABOVE FINISHED FLOOR OR AS DIRECTED OTHERWISE BY ARCHITECT.
15. STRUCTURAL WELDING SHALL BE CONTINUOUS 1/4" FILLET UNLESS REQUIRED OTHERWISE.

AIR SYSTEMS

16. AIR SYSTEMS REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF AIR DEVICES.
17. INTERNAL AIRFLOW DIMENSIONS ARE SHOWN FOR DUCTS. INCREASE DUCT SIZE AS NECESSARY TO MAINTAIN FREE FLOW AREA INDICATED.
18. USE FLAT TRANSVERSE SEAM FOR DUCTWORK WHERE SPACE AVAILABLE DICTATES.
19. DIFFUSER SIZES SHOWN ARE NECK SIZES. REGISTERS AND GRILLE SIZES ARE NOMINAL.
20. PROVIDE VOLUME DAMPERS OR OTHER APPROVED BALANCING DEVICES AT DUCT BRANCHES AND RUN OUTS, AND AT REGISTER GRILLE AND DIFFUSER NECKS IN SUPPLY, RETURN AND EXHAUST DUCTWORK WHETHER SHOWN OR NOT.
21. DUCTWORK DOWNSTREAM OF ALL VAV AND FAN POWERED VAV BOXES SHALL BE ACOUSTICALLY LINED WITH 1" ACOUSTICAL LINING FOR A MINIMUM OF 15 FEET.
22. PROVIDE 36" CLEARANCE IN FRONT OF ALL ELECTRIC CONTROL PANELS PER N.E.C. AND MFG. REQUIREMENTS.
23. PROVIDE DUCT TRANSITIONS FROM VAV BOX INLET/OUTLET DUCT WORK AT SIZES INDICATED TO VAV BOX INLET/OUTLET UNIT CONNECTIONS.

PIPING SYSTEMS

24. PITCH PIPING 1" IN 20' IN DIRECTION OF FLOW.
25. PROVIDE TRAPS IN CONDENSATE LINES THAT EXTEND OVER 2".

DEMOLITION NOTES

1. GENERAL
   - A. THIS CONTRACTOR SHALL VISIT THE SITE AND ADJOINING AREAS AND EXAMINE THE EXISTING CONDITIONS TO BECOME FAMILIAR WITH THEM AND TO DETERMINE THE DIFFICULTIES WHICH WILL AFFECT THE EXECUTION OF THE WORK OF THIS CONTRACT. THIS CONTRACTOR SHALL PERFORM THIS PRIOR TO THE SUBMISSION OF HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
   - B. THE DEMOLITION WORK SHALL INCLUDE, PROVIDING ALL MATERIALS, ALL NECESSARY EXTENSIONS, CONNECTIONS, CUTTING, REPAIRING, ADAPTING AND OTHER MECHANICAL WORK REQUIRED, TOGETHER WITH ANY REQUIRED TEMPORARY CONNECTIONS TO MAINTAIN SERVICE PENDING THE COMPLETION OF THE PERMANENT WORK. NOTES AND GRAPHIC REPRESENTATION SHALL NOT LIMIT THE EXTENT OF DEMOLITION REQUIRED. EXTENT OF DEMOLITION WORK SHALL BE COORDINATED WITH THE ARCHITECT AND BUILDING MANAGEMENT.
   - C. REFER TO ARCHITECTS PLANS FOR AREA OF WORK.
2. SCOPE OF WORK
   - A. EXISTING WORK INTERFERING WITH NEW.
     1) ALL EXISTING WORK REQUIRED TO REMAIN BUT INTERFERING WITH PROPOSED NEW MECHANICAL (AS WELL AS ELECTRICAL AND GENERAL CONSTRUCTION WORK) SHALL BE RELOCATED AND RECONNECTED USING MATERIALS CONFORMING TO STANDARDS OF THIS CONTRACT.
   - B. REMOVAL OF MECHANICAL EQUIPMENT DUCTWORK AND PIPING.
     1) REMOVE ALL EXISTING AIR AND WATER COOLED, CEILING AND FLOOR MOUNTED AIR CONDITIONING UNITS AND OUTDOOR HEAT REJECTION DEVICES WITH ALL ASSOCIATED DUCTWORK, TERMINAL BOXES, DIFFUSERS, GRILLES, HANGERS AND ACCESSORIES.
     2) REMOVE ALL EXHAUST, RETURN AND TRANSFER FANS AND ASSOCIATED DUCTWORK.
     3) REMOVE ALL PIPING, VALVING AND HANGERS ASSOCIATED WITH PIPING TO BE REMOVED BACK TO MAINS. IDENTIFY ALL PIPING BY SERVICE TYPE AND CAP AT MAINS.
     4) REMOVE ALL PUMPS, VALVES AND ASSOCIATED ACCESSORIES.
        a) REMOVE ALL STARTERS, DISCONNECT SWITCHES, MOTORS, CONTROL (BOTH TEMPERATURE AND SYSTEM CONTROL) BACK TO MAIN PANELS AND CAP AT PANEL. COORDINATE WITH ELECTRICAL CONTRACTOR BEFORE REMOVAL OF ANY ELECTRICAL POWERED EQUIPMENT. ELECTRICAL CONTRACTOR IS TO DISCONNECT ALL POWER TO SUCH EQUIPMENT.
   - C. REMOVAL OF DUCTWORK AND ACCESSORIES
     1) REMOVE ALL SUPPLY AIR, RETURN AIR AND EXHAUST AIR DUCTWORK WITH ALL ASSOCIATED DIFFUSERS, TERMINAL BOXES, CONTROLS, COLLARS, DAMPERS, RETURN/EXHAUST GRILLES AND CONTROLS BACK TO THE EXISTING SUPPLY AND RETURN AIR SHAFTS, OR AS NOTED ON DRAWINGS.
     2) CONTRACTOR TO CONTACT BUILDING MANAGEMENT AND TENANT REGARDING DUCTWORK REMOVAL SCOPE OF WORK TO ENSURE THAT OTHER TENANTS THAT ARE TO STAY OPERATIONAL ARE NOT AFFECTED BY REMOVALS OF THE BASE BUILDING DUCTWORK.
     3) ALL EXISTING BUILDING FIRE DAMPERS, FIRE/SMOKE DAMPERS, DUCT MOUNTED SMOKE DETECTORS AT SUPPLY AND RETURN AIR SHAFTS TO REMAIN.
   - D. PERIMETER SERVICES
     1) REMOVE PERIMETER AIR CONDITIONING UNITS AND/OR HEATING ELEMENTS, AS NOTED. REMOVE PIPING, FITTINGS, VALVES, DUCTS AND INSULATION FOR ALL EQUIPMENT TO BE REMOVED BACK TO MAIN AND CAP. PATCH AND CAP EXISTING AS REQUIRED FOR CONTINUED OPERATION.
     2) LEAVE ALL BUILDING FREEZE PROTECTION SPACE HEATING INTACT.
   - F. CONTRACTOR TO REPLACE/ PATCH WALLS AND FLOORS TO MATCH EXISTING.
   - G. PROVIDE ADDITIONAL SUPPORT FOR ALL EXISTING DUCTS AND PIPING TO REMAIN WHICH ARE AFFECTED BY DEMOLITION OF EXISTING CEILING AND PARTITIONS.
   - H. EQUIPMENT REQUIRED TO BE TURNED OVER TO THE OWNER SHALL BE PLACED IN A MUTUALLY ACCEPTABLE LOCATION. ALL MATERIALS AND EQUIPMENT REMOVED AS A RESULT OF DEMOLITION SHALL BE TAKEN FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS AND ENVIRONMENTAL REGULATIONS.
   - I. CONTRACTOR SHALL IDENTIFY ALL EXISTING WORK TO REMAIN BY ACCEPTABLE IDENTIFICATION MEANS TO CONFIRM PROPER SCOPE PRIOR TO COMMENCEMENT OF DEMOLITION.

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No.	Description	Date
1	ISSUED FOR BID	11/03/23

SPRING VALLEY POLICE LOCKER UPGRADES

DRAWING TITLE
MECHANICAL COVER SHEET

DRAWING NO.
M-000.00

SEAL & SIGNATURE

ISSUE DATE:	9-27-23
SCALE:	NTS
DWG BY:	DWN
CHK BY:	CHECK

JOB NUMBER
23025-00