MECHANICAL LEGENDS & ABBREVIATIONS

NOTE: NOT ALL SYMBOLS/ABBREVIATIONS SHOWN IN THE LEGEND ARE USED IN THIS DRAWING SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CONTENT SHOWN ON DRAWINGS.

DUCTWORK

- 20x12 — RECTANGULAR DUCT, FIRST NUMBER IS DIMENSION IN VIEW OF DRAWING
- 20'ø — ROUND RIGID DUCT
- SUPPLY/OUTSIDE AIR DUCT ELBOW UP/DOWN
- RETURN DUCT ELBOW UP/DOWN
- EXHAUST DUCT ELBOW UP/DOWN
- 20x20 — RECTANGULAR DUCT 90° MITERED ELBOW WITH TURNING VANES
- 20x20 — TYPICAL LONG RADIUS ELBOW, RECTANGULAR/ROUND DUCT
- 20x20 — TYPICAL BRANCH DUCT 45° TAKE-OFF W/ VOLUME DAMPER
- DUCT RISE
- DUCT SET DOWN
- FLEXIBLE DUCT
- FIRE DAMPER
- SMOKE DAMPER
- S — FIRE & SMOKE DAMPER
- FS — DUCT SMOKE DAMPER
- S — DUCT SOUND ATTENUATION LINING
- BDD — BACKDRAFT DAMPER
- BRD — BAROMETRIC RELIEF DAMPER
- FLEXIBLE DUCT CONNECTOR
- FC — EQUIPMENT FLEX CONNECTOR
- 13'-7" / 12'-3" — ELEVATION OF TOP OF DUCT (TOD) AFF / ELEVATION OF BOTTOM OF DUCT (BOD) AFF
- TG — TRANSFER GRILLE
- DIRECTION OF SUPPLY AIR FLOW
- DIRECTION OF RETURN OR EXHAUST AIR FLOW
- SF — SUPPLY FAN ROOF MOUNTED
- EF — EXHAUST FAN ROOF MOUNTED
- S — SMOKE DETECTOR
- FAN (SCHEMATIC)
- SUPPLY AIR DIFFUSER, REGISTER, OR GRILLE
- RETURN AIR REGISTER OR GRILLE
- EXHAUST AIR REGISTER OR GRILLE

PIPING SYSTEMS

- PC — PUMPED STEAM
- CD — CONDENSATE DRAIN
- L — REFRIGERATED LIQUID
- S — REFRIGERANT SUCTION
- CWR — CONDENSER WATER RETURN
- CWS — CONDENSER WATER SUPPLY
- GHR — GLYCOL HEATING RETURN
- GHS — GLYCOL HEATING SUPPLY
- LPS — LOW PRESSURE STEAM
- MPS — MEDIUM PRESSURE STEAM
- HPS — HIGH PRESSURE STEAM
- LPC — LOW PRESSURE CONDENSATE
- MPC — MEDIUM PRESSURE CONDENSATE
- HPC — HIGH PRESSURE CONDENSATE
- HWR — HEATING HOT WATER RETURN
- HWS — HEATING HOT WATER SUPPLY
- MU — MAKE-UP WATER
- CHWR — CHILLED WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- GCR — CHILLED GLYCOL RETURN
- GCS — CHILLED GLYCOL SUPPLY
- CTR — COOLING TOWER RETURN
- CTS — COOLING TOWER SUPPLY
- FOS — FUEL OIL SUPPLY
- FOR — FUEL OIL RETURN

PIPE FITTINGS

- UNION
- STRAINER
- STRAINER WITH BLOW DOWN VALVE
- FLOW DIRECTION
- PIPE TURNED UP
- PIPE TURNED DOWN
- TEE BOTTOM TAKE-OFF
- TEE TOP TAKE-OFF
- CONCENTRIC REDUCER
- ECCENTRIC REDUCER
- THERMOMETER
- AUTOMATIC AIR VENT
- CIRCULATOR PUMP
- F&T — FLOAT & THERMOSTATIC TRAP
- PIPE CAPPED
- PIPE ANCHOR

PIPE VALVES

- GATE VALVE
- GLOBE VALVE
- CHECK VALVE
- BACKFLOW PREVENTER RPZ ASSY
- BALL VALVE
- SAFETY RELIEF VALVE
- BUTTERFLY VALVE
- TRIPLE DUTY VALVE
- TRIPLE DUTY VALVE ANGLE
- TWO-WAY MOTORIZED VALVE
- THREE-WAY MOTORIZED VALVE
- PRESSURE REGULATING VALVE
- GAS COCK
- PRESSURE GAUGE WITH VALVE

CONTROLS & BALANCING

- CONTROLS WIRING
- T — H&C — WALL MOUNTED THERMOSTAT. SUBSCRIPTS: HEATING & COOLING. ARROW POINTS TO DEVICE CONTROLLED
- T — UNIT MOUNTED THERMOSTAT
- T — 120 — THERMOSTAT, LINE VOLTAGE
- S — FAN SPEED CONTROL
- H — HUMIDISTAT
- T — S — THERMAL SENSOR
- A — AQUASTAT
- PT — PRESSURE TRANSMITTER
- FS — FLOW SWITCH
- BALANCING VALVE
- DPS — DIFFERENTIAL PRESSURE SWITCH
- VD — MANUAL VOLUME DAMPER
- M — MOTOR OPERATED DAMPER
- FS — AIR FLOW SWITCH
- CO — CARBON MONOXIDE GAS SENSOR
- CO2 — CARBON DIOXIDE GAS SENSOR
- HVAC — CONTROL PANEL

DRAWING NOTATIONS

- ø — PHASE OR ROUND DIAMETER
- DEMO LINE
- EXISTING LINE
- 1 — REVISION CLOUD WITH REVISION NUMBER
- POINT OF CONNECTION
- POINT OF DISCONNECT
- XXX / ### — MOTORIZED EQUIPMENT ABBREVIATION / MOTORIZED EQUIPMENT NUMBER
- XXX / ### — NON-MOTORIZED EQUIPMENT ABBREVIATION / NON-MOTORIZED EQUIPMENT NUMBER
- SIM — NOTES WHEN SIMILAR TO SECTION
- 1 / A101 — DETAIL NUMBER / DRAWING NUMBER
- SIM — NOTES WHEN SIMILAR TO SECTION
- 1 / A101 — SECTION LETTER / SHEET NUMBER WHERE SECTION VIEW IS SHOWN
- XXX / ### — RADIATION TAG / LENGTH OF RADIATION ELEMENT
- XXX / ### — REGISTER, GRILLE & DIFFUSER TAG / CFM

ABBREVIATIONS

ø	DIAMETER
A	AMPS/AMPERAGE
AA	ALL AROUND
ABV	AUTOMATIC BALANCE VALVE
ACV	MOTORIZED VALVE
AD	ACCESS DOOR
AFF	ABOVE FINISH FLOOR
AI	ANALOG INPUT
AO	ANALOG OUTPUT
APD	AIR PRESSURE DROP
ARCH	ARCHITECT(URAL)
ATC	AUTOMATIC TEMPERATURE CONTROL
AWT	AVERAGE WATER TEMPERATURE
BAS	BUILDING AUTOMATION SYSTEM
BF	BOILER FEEDWATER
BHP	BRAKE HORSEPOWER
BOD	BOTTOM OF DUCTWORK (ELEVATION)
BTU/H	BRITISH THERMAL UNITS PER HOUR
C	COMMON
CAP	CAPACITY
CFM	CUBIC FEET PER MINUTE
CKT	CIRCUIT
CM	CONSTRUCTION MANAGER
CONN.	CONNECTION
COP	COEFFICIENT OF PERFORMANCE
CP	CONTROL PANEL
db	DRY BULB TEMPERATURE
DCW	DOMESTIC COLD WATER
DDC	DIRECT DIGITAL CONTROL
DI	DIGITAL INPUT
DIA.	DIAMETER
DN	DOWN
DO	DIGITAL OUTPUT
DR	DRAIN
DWG	DRAWING
DWV	DRAIN, WASTE, VENT
DX	DIRECT EXPANSION
<E>	EXISTING
E/A	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
ECON	ECONOMIZER
EDB	ENTERING DRY BULB
EER	ENERGY EFFICIENCY RATIO
EFF	EFFICIENCY
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWT	ENTERING WATER TEMPERATURE
FA	FREE AREA
FLA	FULL LOAD AMPS
FOB	FLAT ON BOTTOM
FOT	FLAT ON TOP
FPI	FINS PER INCH
FPM	FEET PER MINUTE
FT	FEET
FVNR	FULL VOLTAGE ON-REVERSING
GAL	GALLON(S)
GC	GENERAL CONTRACTOR
GPM	GALLONS PER MINUTE
HOA	HAND-OFF-AUTOMATIC
HP	HORSEPOWER
Hz	HERTZ
ID	INSIDE DIAMETER
in	INCH(ES)
kW	KILOWATT(S)
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB
LF	LINEAR FEET
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MAX	MAXIMUM
MBH	1,000 BRITISH THERMAL UNITS PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCC	MOTOR CONTROL CENTER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MMBH	MILLIONS OF BTU/H
MOCP	MAXIMUM OVERCURRENT PROTECTION
MOD	MOTOR OPERATED DAMPER
MRE	MECHANICAL ROOM EQUIPMENT
MTD	MOUNTED
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACTOR
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
O/A	OUTDOOR AIR
OAT	OUTSIDE AIR TEMPERATURE
OD	OUTSIDE DIAMETER
OED	OPEN ENDED DUCT
OIT	OPERATOR INTERFACE TERMINAL
P	PUMP
PC	PLUMBING CONTRACTOR
PD	PRESSURE DROP
PH	ELECTRICAL PHASE
PSI	POUNDS PER SQUARE INCH
R/A	RETURN AIR
RH	RELATIVE HUMIDITY
RLA	RATED LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
S/A	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SF	SQUARE FEET
SP	STATIC PRESSURE
SS	STAINLESS STEEL
TEMP	DEGREES FAHRENHEIT (°F) UNLESS OTHERWISE NOTED
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UD	UNDERCUT DOOR
VB	VACUUM BREAKER
VFD	VARIABLE FREQUENCY DRIVE
VIF	VERIFY IN FIELD
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
WG	WATER GAUGE
WPD	WATER PRESSURE DROP

MECHANICAL GENERAL NOTES

A. QUALITY OF WORK

1. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT MUST BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR THE COMPLETE INSTALLATION ARE EXCLUDED. THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS, OR INTERFERENCE WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) IS TO BE RESPONSIBLE FOR THEIR INTERPRETATIONS.
2. "PROVIDE" MEANS "FURNISH AND INSTALL" AND MUST INCLUDE ALL EQUIPMENT (THAT INCLUDE THE ACCESSORIES, SUPPORTS, FITTINGS AND OTHER INCIDENTAL MATERIAL NEEDED FOR THE EQUIPMENT), DEVICES, HARDWARE, MOUNTS, LABOR, RIGGING, SUBCONTRACTS, ETC., THAT RESULT IN A COMPLETE AND FUNCTIONAL PROJECT INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE. MINOR ITEMS TO FINISH THE WORK SUCH AS PATCHING, BLOCKING, TRIM, TOUCH-UP PAINT, ETC., SHALL BE PROVIDED WHETHER OR NOT INDICATED IN THE CONTRACT DOCUMENTS.
3. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS IN STRAIGHT SECTIONS OF PIPE OR DUCT AS RECOMMENDED BY THE MANUFACTURER. NOTIFY ENGINEER FOR FIELD REVIEW IF CONFIGURATION WILL NOT ALLOW.
4. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER IS TO BE USED.
5. ALL WORKMANSHIP, MATERIALS, AND EQUIPMENT IS TO BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER.
6. PROVIDE IDENTIFICATION LABELS FOR NEW EQUIPMENT. AFFIX PERMANENT IDENTIFYING TAGS OR LABELS TO FANS, TERMINAL UNITS, AIR-HANDLERS ETC. IDENTIFY SYSTEM ON PIPING AND DUCTWORK MAINS AND INDICATE DIRECTION OF FLOW ON PIPING. INDICATE THE CONTROLLED EQUIPMENT ON WALL MOUNTED CONTROLS.

B. CODES/PERMITS

1. WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH STATE RECOGNIZED BUILDING CODES, NFPA, ASHRAE, UNDERWRITERS LABORATORIES AND ALL MUNICIPAL, STATE AND OTHER AUTHORITIES, PUBLIC AND PRIVATE, HAVING JURISDICTION. REPORT ALL DISCREPANCIES WITH SUCH REGULATIONS TO ENGINEER AND DO NOT PROCEED WITH ANY WORK UNTIL WRITTEN AUTHORIZATION IS RECEIVED FROM THE ENGINEER.
2. ALL NECESSARY FEES, PERMITS, AND APPROVALS AS REQUIRED BY THE WORK OF THESE DRAWINGS AND SPECIFICATIONS IS TO BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.
3. NOTHING CONTAINED IN THE SPECIFICATIONS OR INDICATED ON THESE DRAWINGS IS TO BE CONSTRUED TO CONFLICT WITH APPLICABLE PORTIONS OF ANY LAWS, ORDINANCES, REGULATIONS, OR CODES.

C. COORDINATION OF WORK

1. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, AND ELECTRICAL WORK - NEW OR EXISTING.
2. WHEN MECHANICAL WORK (HVAC, PLUMBING, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT IS TO BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT MUST BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION IS FINAL.
3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS ARE APPROXIMATE AND NOT DEFINITELY FIXED BY DIMENSIONS. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS. CASES WHERE THERE ARE MAJOR CONFLICTS THE CONTRACTOR MUST NOTIFY THE ENGINEER FOR FIELD REVIEW. DO NOT SCALE THE DRAWINGS.
4. PROVIDE LOCATIONS OF REQUIRED ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS TO SERVICE VALVES, DAMPERS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. GENERAL CONTRACTOR IS TO FURNISH & INSTALL ACCESS PANELS.
5. COORDINATE LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS WITH ALL OTHER TRADES INVOLVED. ALL OPENINGS IN FIRE WALLS, FLOORS AND RATED PARTITIONS FOR PIPING, CONDUIT, ETC., ARE TO BE FIRE STOPPED WITH A UL APPROVED SYSTEM.

D. PIPING

1. SEE PIPING PLAN SHEETS FOR PIPING GENERAL NOTES.

E. DUCTWORK

1. SEE DUCTWORK PLANS SHEETS FOR DUCTWORK GENERAL NOTES.

F. TESTING, ADJUSTING, AND BALANCING

1. WORK IS TO BE PERFORMED BY AN INDEPENDENT TESTING AND BALANCING AGENCY SPECIALIZING IN TESTING, ADJUSTING, AND BALANCING OF HEATING, VENTILATION, AND COOLING SYSTEMS. TESTING AND BALANCING CONTRACTOR MUST BE AABC OR NEBB CERTIFIED.
2. TOLERANCE OF HYDRONIC SYSTEMS: ADJUST FLUID FLOW RATES AT BALANCE VALVES AND ALL EQUIPMENT TO PLUS/MINUS 10% OF DESIGN FLOW RATES.
3. TOLERANCE OF AIR SYSTEMS: ADJUST AIR FLOW RATES AT AIR HANDLING UNITS TO PLUS/MINUS 5% OF DESIGN FOR SUPPLY SYSTEMS AND PLUS/MINUS 10% OF DESIGN FOR RETURN AND EXHAUST SYSTEMS. ADJUST AIR FLOW RATES AT AIR INLETS AND OUTLETS TO PLUS/MINUS 10% OF DESIGN TO THE SPACE. IN ALL CASES MAINTAIN REQUIRED FLOW OR SPACE PRESSURIZATION CRITERIA.
4. SCHEDULED EQUIPMENT IS TO BE BALANCED AND A PRELIMINARY REPORT SUBMITTED TO THE ENGINEER FOR REVIEW. PROVIDE ALLOWANCE FOR (2) RETURN TRIPS FOR ADDITIONAL REBALANCE WORK AFTER ENGINEER REVIEW OF INITIAL REPORTS. PROVIDE THE FINAL REPORT TO ENGINEER.

G. WARRANTY

1. GUARANTEE ALL WORK PERFORMED AND MATERIALS AND EQUIPMENT INSTALLED TO THE FULL EXTENT REQUIRED BY THE DRAWINGS AND SPECIFICATIONS TO BE FREE FROM INHERENT DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE.
2. REPLACE ANY MATERIAL AND EQUIPMENT PRIOR TO THE FINAL ACCEPTANCE WHICH IS CORRODED OR OTHERWISE DAMAGED THROUGH THE MECHANICAL CONTRACTOR'S FAILURE TO PROPERLY OPERATE AND MAINTAIN THE INSTALLATION DURING CONSTRUCTION OR RETESTING.
3. KEEP THE WORK IN REPAIR AND REPLACE ANY DEFECTIVE MATERIALS, EQUIPMENT, OR WORKMANSHIP UPON NOTICE FROM THE ENGINEER OR OWNER'S REPRESENTATIVE FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.

H. INSURANCE

1. THE CONTRACTOR MUST, DURING THE LIFE OF THE CONTRACT, MAINTAIN IN FORCE, SUCH INSURANCE AS IS REQUIRED OF THE PRIME CONTRACTOR IN THE GENERAL CONDITIONS OF THE CONTRACT; AND IS TO FURNISH THE PRIME CONTRACTOR AND THE OWNER WITH CERTIFICATION OF SUCH INSURANCE BEFORE BEGINNING WORK ON THIS SECTION OF CONTRACT.

I. DOCUMENTATION

1. PROVIDE AN ENTIRE SET OF PROJECT CLOSE-OUT DOCUMENTS TO OWNER PER CONTRACT DOCUMENTS. PACKAGE MUST CONTAIN ENTIRE O&M MANUALS WITH PROJECT SUBMITTALS AND SUBMITTAL COMMENTS, TAB REPORTS, TEST REPORTS, AND RECORD DRAWINGS, PLUS ADMINISTRATIVE DOCUMENTS.

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Project #530419

SEAL:

CITY OF CARIBOU, MAINE
CARIBOU POLICE DEPARTMENT

PROJECT NUMBER: 21-000

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LEGENDS & NOTES

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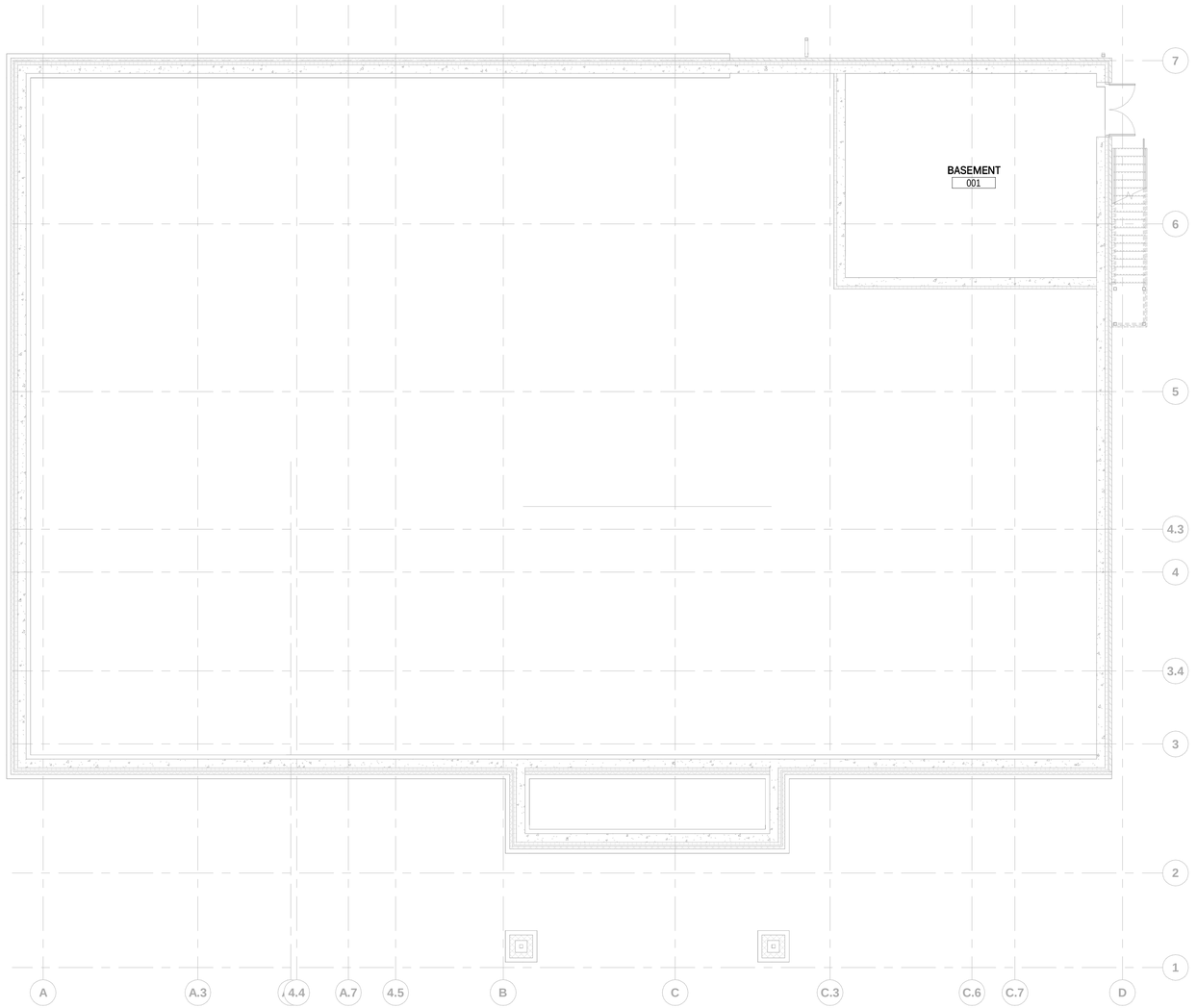

BASEMENT PLAN - MECHANICAL

SCALE: 1/8" = 1'-0"

MECHANICAL DUCTWORK NOTES

1. SEE SHEET M0.1 FOR MECHANICAL GENERAL NOTES.
2. FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
3. ALL DUCTWORK IS TO BE FABRICATED FROM G-90 GALVANIZED SHEET METAL IN LOCK-FORMING QUALITY, UNLESS SPECIFIED OTHERWISE.
4. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INTERNAL SIZES.
5. ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE FABRICATED AT A MINIMUM CLASS OF 2 INCH WATER GAGE SEAL CLASS 'A'.
6. ALL DUCT SEALANT TO BE WATER BASED LOW VOC.
7. ALL SUPPLY AND O/A DUCT WORK TO BE INSULATED TO MEET THE ENERGY CONSERVATION CODE ADOPTED BY THE STATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
8. COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH LIGHTS, SPRINKLER HEADS, AND LIFE SAFETY DEVICES.
9. PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFFS. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. FOR LOW FLOW BRANCHES, PROVIDE EDGE SEALED DAMPERS TO OBTAIN PROPER FLOW BALANCING.

MECHANICAL KEYNOTES

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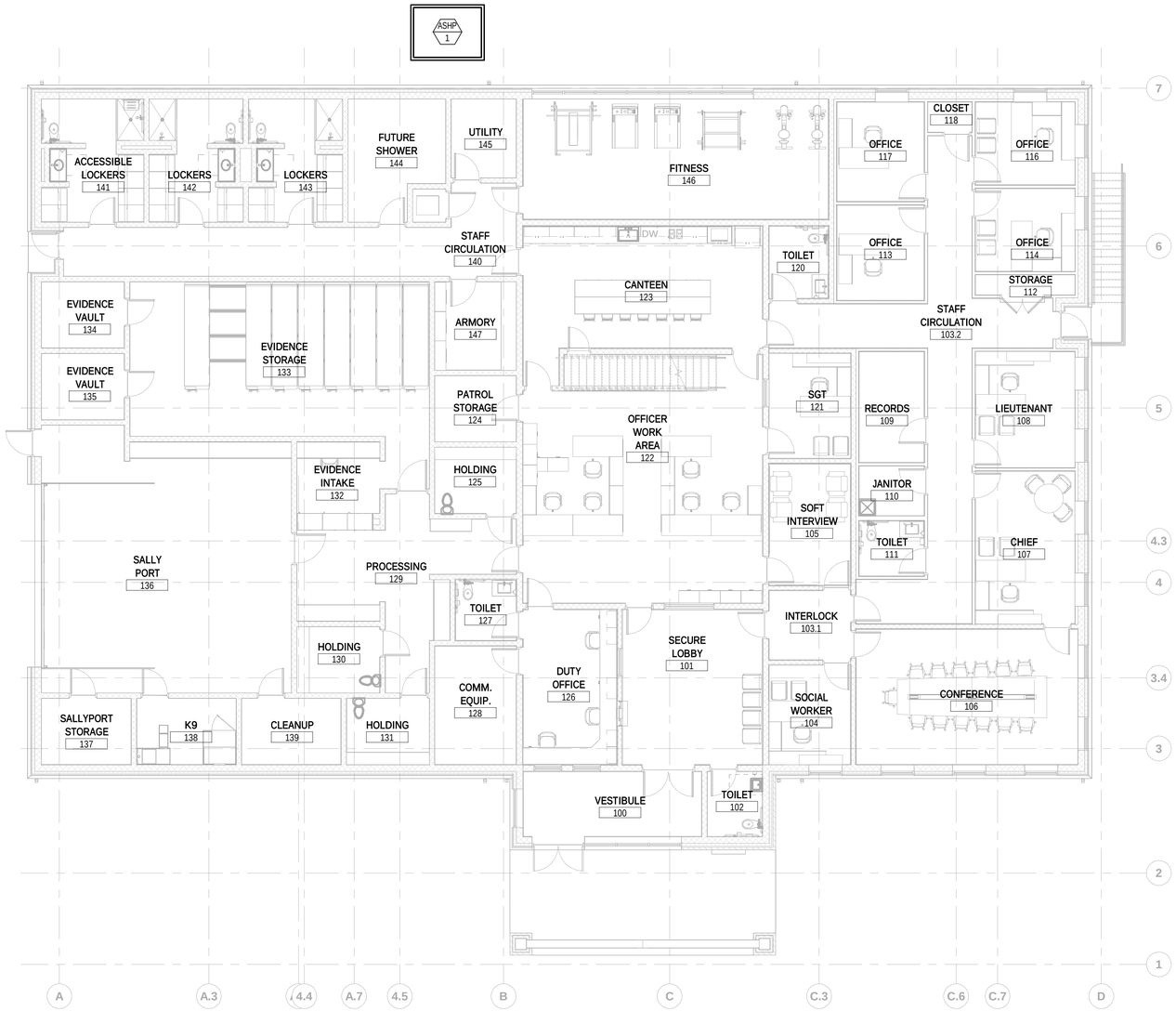

FIRST FLOOR PLAN - PIPING

SCALE: 1/8" = 1'-0"

MECHANICAL PIPING NOTES

1. SEE SHEET M0.1 FOR MECHANICAL GENERAL NOTES.
2. TAKE ALL NECESSARY MEASUREMENTS AT THE BUILDING AND FABRICATE THE PIPING ON THE SITE, IF REQUIRED, TO ENSURE AN APPROVED INSTALLATION.
3. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION.
4. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
5. ALL PIPING IS TO CLEAR DOORS AND WINDOWS.
6. COORDINATE ALL PIPING WITH EXISTING CONDITIONS. OFFSETS IN PIPING AROUND OBSTRUCTIONS ARE TO BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
7. PIPING PENETRATIONS OF ALL WALLS AND FLOORS ARE TO BE SEALED WITH FIRE CAULK.
8. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE. ALL VALVES ARE TO BE ADJUSTED FOR SMOOTH AND EASY OPERATION. ALL VALVES ARE TO BE MARKED WITH A PERMANENT TAG INDICATING THE EQUIPMENT SERVED. PROVIDE A TYPED VALVE SCHEDULE TO BE KEPT IN OWNER IDENTIFIED AREA.
9. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS ARE TO BE FULL SIZE OF PIPE. INSTALL VALVES AT ALL TAKEOFFS FROM THE MAIN AND PROVIDE EXTENDED STEMS TO CLEAR INSULATION.
10. UNIONS AND/OR FLANGES ARE TO BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERNATION AND REPAIRS.
11. PROVIDE FLEXIBLE CONNECTION IN ALL PIPING SYSTEMS CONNECTED TO PUMPS, CHILLERS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION EXCEPT WATER COILS. FLEXIBLE CONNECTIONS ARE TO BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON DRAWINGS.

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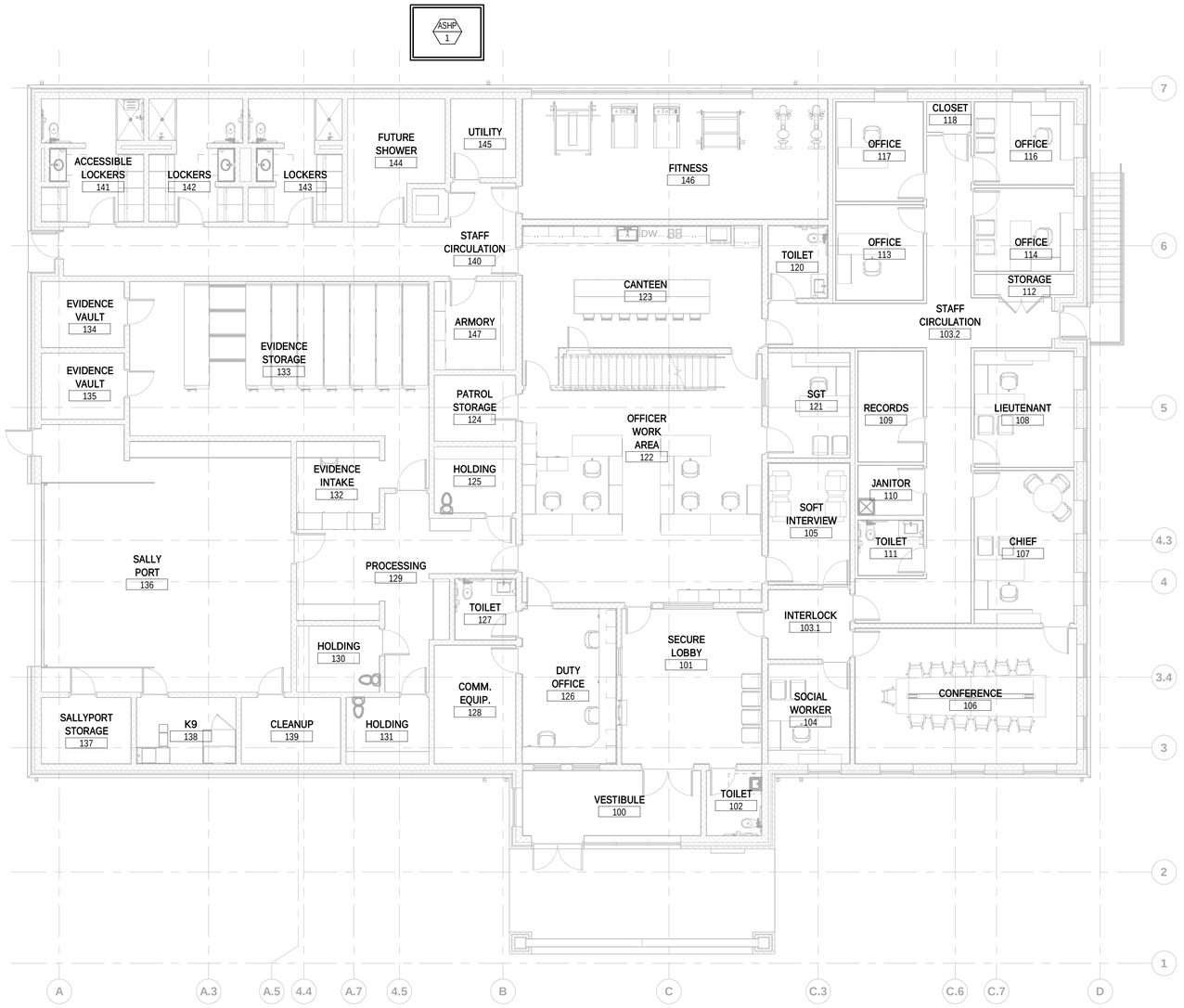

FIRST FLOOR PLAN - DUCTWORK

SCALE: 1/8" = 1'-0"

MECHANICAL DUCTWORK NOTES

1. SEE SHEET M0.1 FOR MECHANICAL GENERAL NOTES.
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3. ALL DUCTWORK IS TO BE FABRICATED FROM G-90 GALVANIZED SHEET METAL IN LOCK-FORMING QUALITY, UNLESS SPECIFIED OTHERWISE.
4. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INTERNAL SIZES.
5. ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE FABRICATED AT A MINIMUM CLASS OF 2 INCH WATER GAGE SEAL CLASS 'A'.
6. ALL DUCT SEALANT TO BE WATER BASED LOW VOC.
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8. COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH LIGHTS, SPRINKLER HEADS, AND LIFE SAFETY DEVICES.
9. PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFFS. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. FOR LOW FLOW BRANCHES, PROVIDE EDGE SEALED DAMPERS TO OBTAIN PROPER FLOW BALANCING.

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CONSULTANT:

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Building Services Division
Bedford, NH
MEP/FP Engineers
603.444.6578
Project #530419

SEAL:

CITY OF CARIBOU, MAINE
CARIBOU POLICE DEPARTMENT

PROJECT NUMBER: 21-000

SUBMISSION
PROGRESS

ORIGINAL ISSUE
11.06.24

SHEET REVISION SCHEDULE:
No. DATE

FIRST FLOOR PLAN - DUCTWORK

SHEET
M1.2

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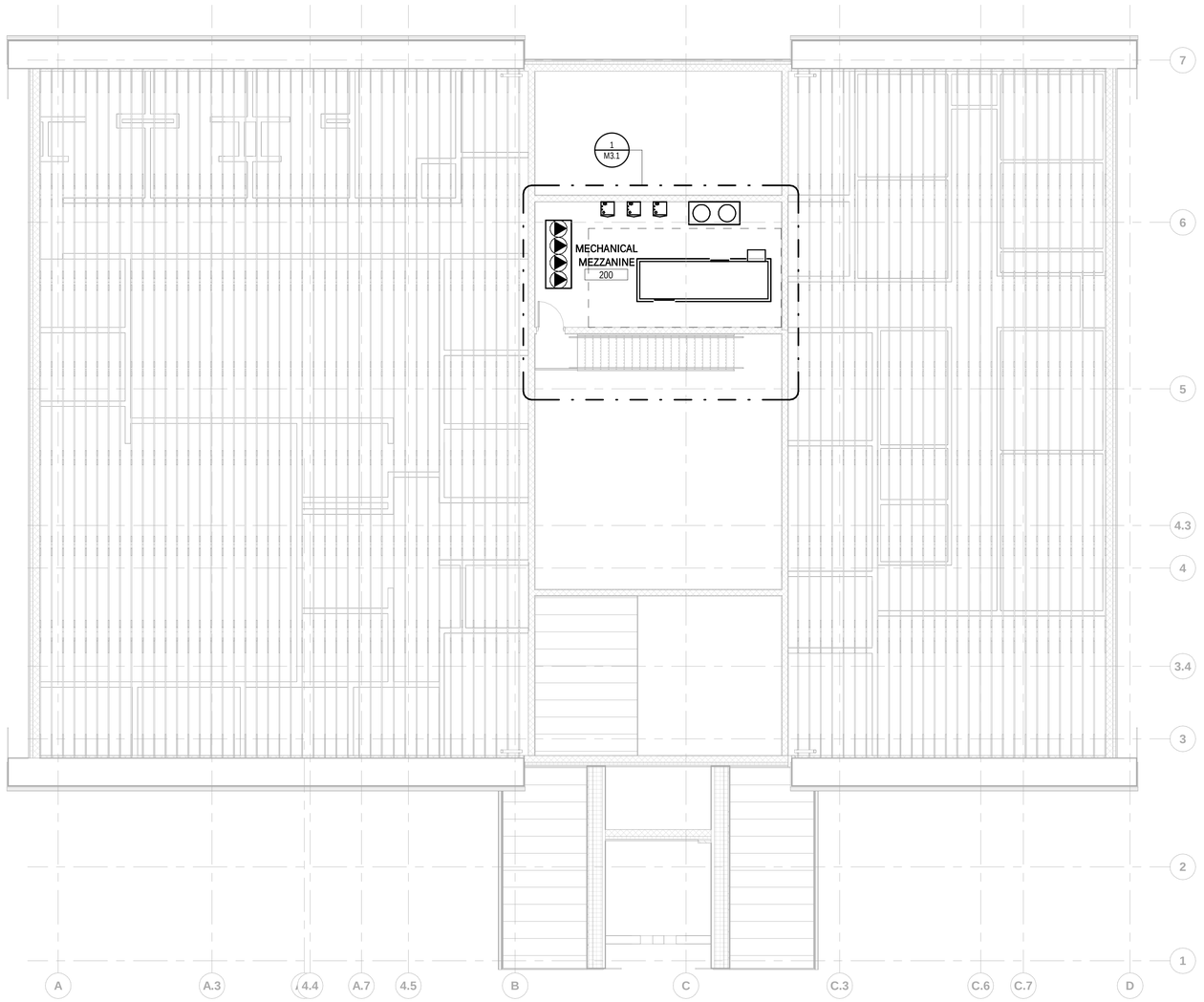
PRELIMINARY - NOT FOR CONSTRUCTION



ROOF PLAN - MECHANICAL

SCALE: 1/8" = 1'-0"

MECHANICAL DUCTWORK NOTES

1. SEE SHEET M0.1 FOR MECHANICAL GENERAL NOTES.
2. FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
3. ALL DUCTWORK IS TO BE FABRICATED FROM G-90 GALVANIZED SHEET METAL IN LOCK-FORMING QUALITY, UNLESS SPECIFIED OTHERWISE.
4. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INTERNAL SIZES.
5. ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE FABRICATED AT A MINIMUM CLASS OF 2 INCH WATER GAGE SEAL CLASS 'A'.
6. ALL DUCT SEALANT TO BE WATER BASED LOW VOC.
7. ALL SUPPLY AND O/A DUCT WORK TO BE INSULATED TO MEET THE ENERGY CONSERVATION CODE ADOPTED BY THE STATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
8. COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH LIGHTS, SPRINKLER HEADS, AND LIFE SAFETY DEVICES.
9. PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFFS. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. FOR LOW FLOW BRANCHES, PROVIDE EDGE SEALED DAMPERS TO OBTAIN PROPER FLOW BALANCING.

MECHANICAL KEYNOTES

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ROOF PLAN - MECHANICAL

SHEET

M1.3

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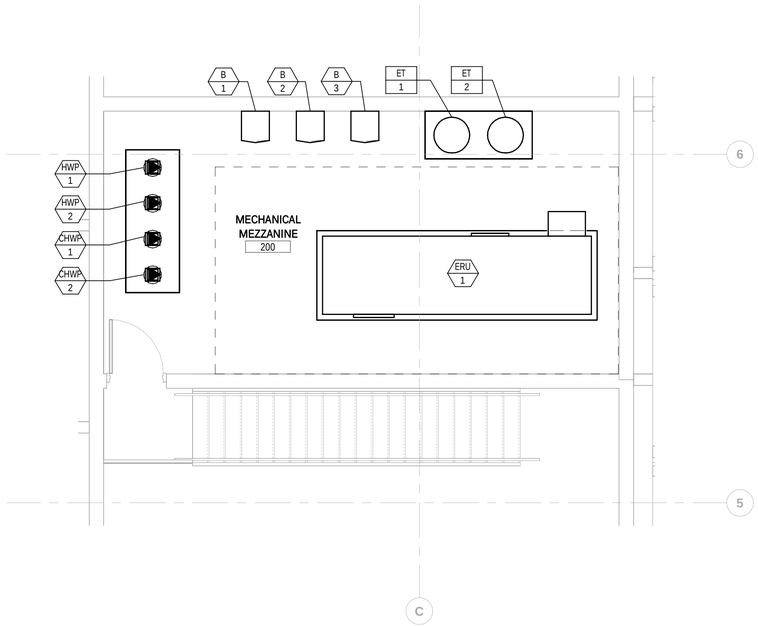
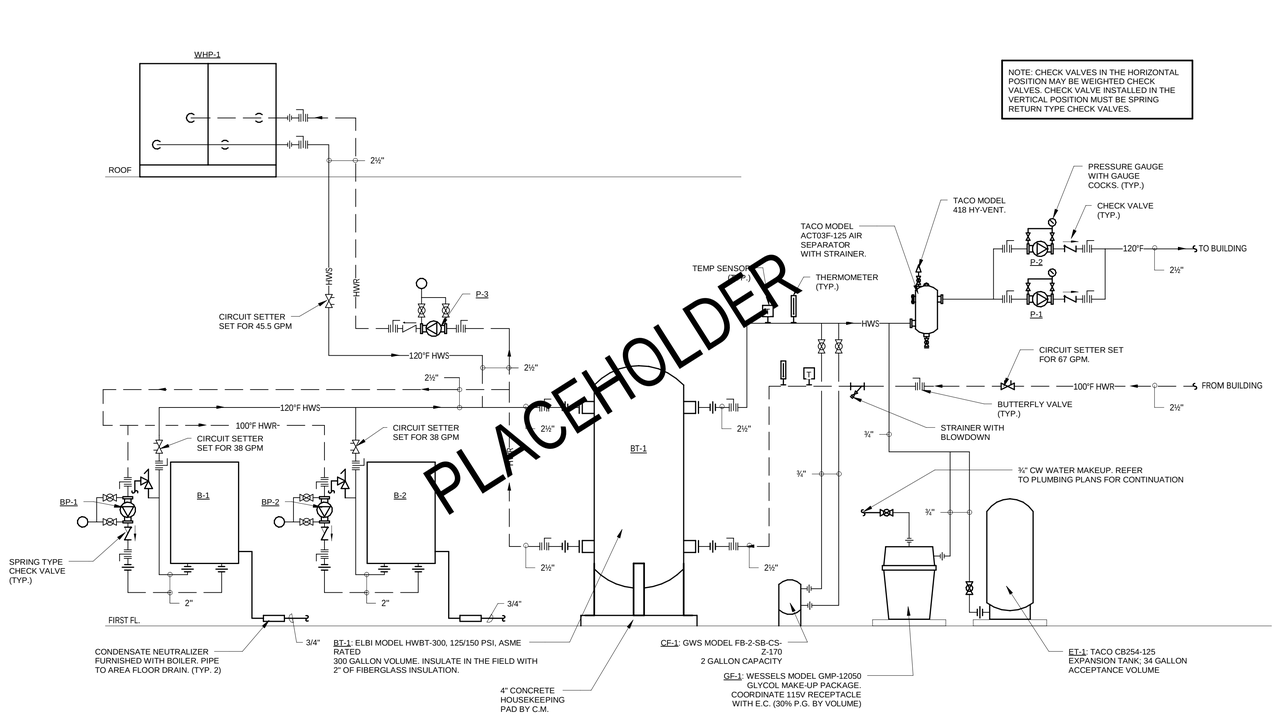


MECHANICAL MEZZANINE - ENLARGED PLAN

SCALE: 1/4" = 1'-0"



PLACEHOLDER

HYDRONIC PLANT PIPING DIAGRAM

SCALE: NTS

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ENLARGED PLANS

SHEET
M3.1

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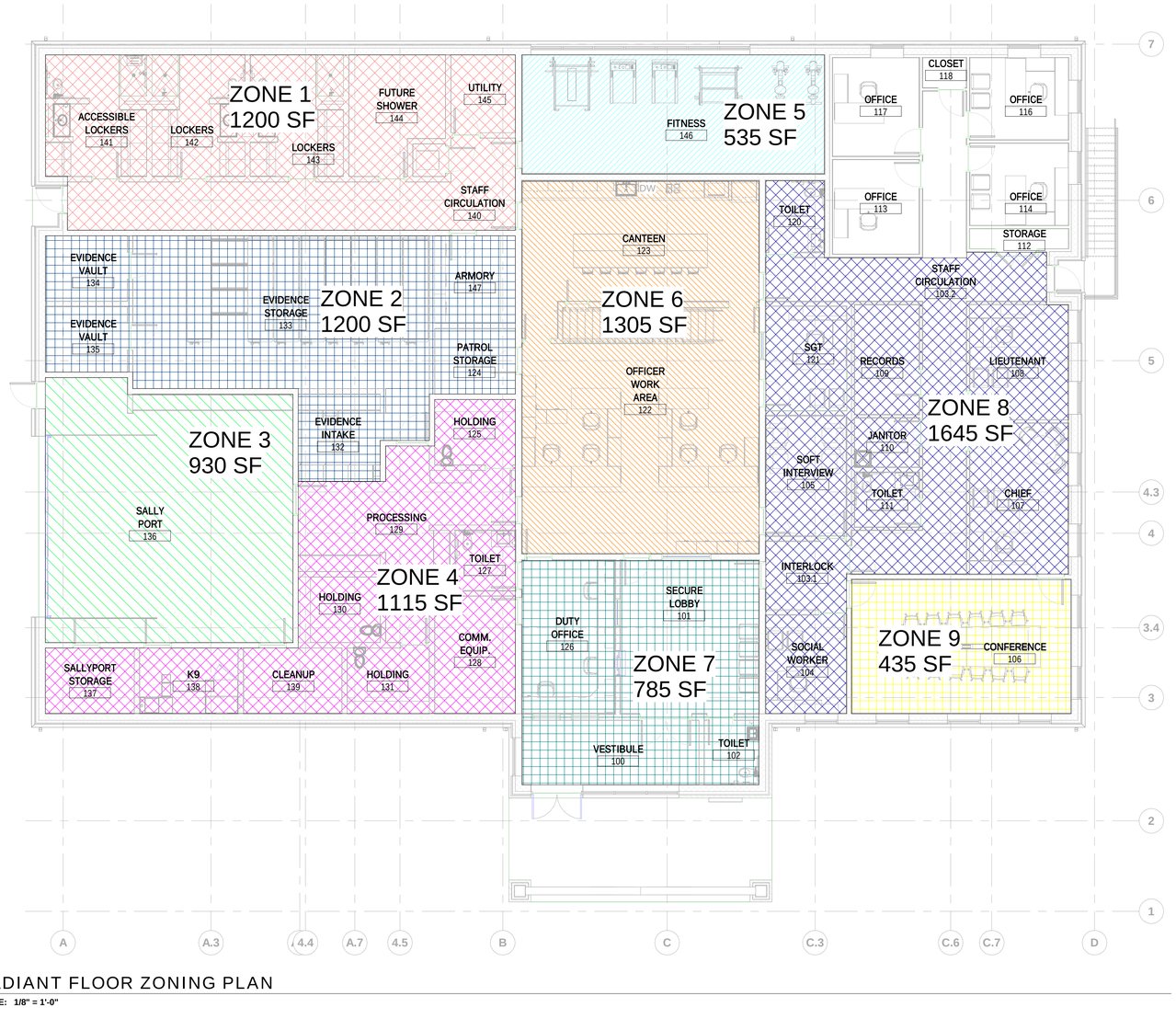

RADIANT FLOOR ZONING PLAN

SCALE: 1/8" = 1'-0"

PRELIMINARY - NOT FOR CONSTRUCTION

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RADIANT FLOOR ZONING PLAN

SHEET
M4.1

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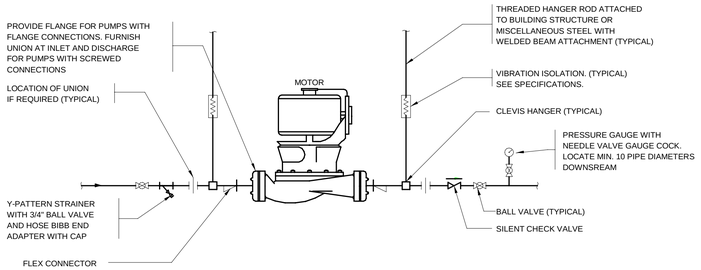
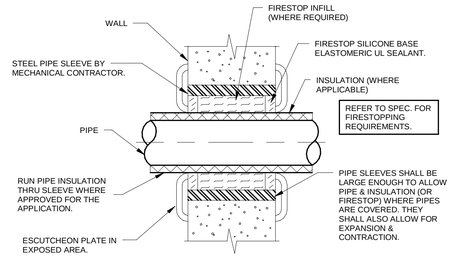


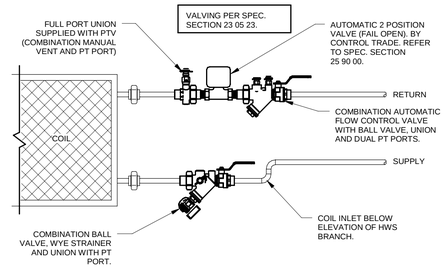
IN-LINE PUMP SUSPENDED INSTALLATION DETAIL

SCALE: 1/8" = 1'-0"



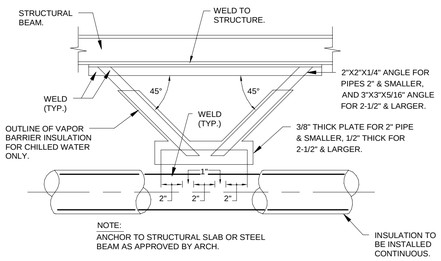
PIPE SLEEVE THRU WALL

SCALE: 1/8" = 1'-0"



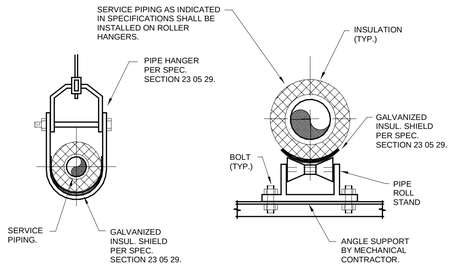
TYPICAL 2-WAY COIL PIPING DETAIL

SCALE: 1/8" = 1'-0"



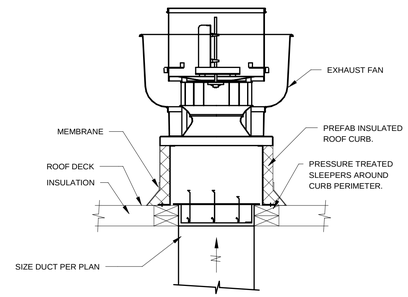
TYPICAL HORIZONTAL PIPE ANCHOR DETAIL

SCALE: 1/8" = 1'-0"



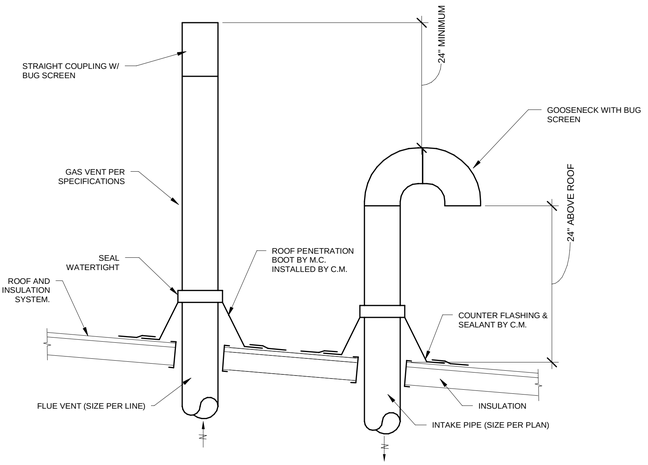
TYPICAL PIPE HANGER & ROLLER DETAIL

SCALE: 1/8" = 1'-0"



ROOF EXHAUST FAN DETAIL

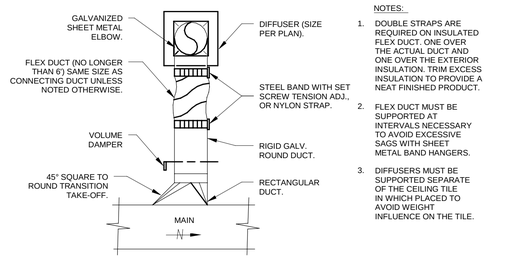
SCALE: 1/8" = 1'-0"



(FOR BOILERS)

THRU-ROOF BOILER FLUE AND INTAKE DETAIL

SCALE: 1/8" = 1'-0"

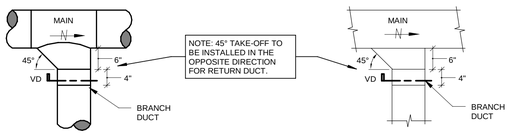


NOTES:

1. DOUBLE STRAPS ARE REQUIRED ON INSULATED FLEX DUCT. ONE OVER THE ACTUAL DUCT AND ONE OVER THE EXTERIOR INSULATION. TRIM EXCESS INSULATION TO PROVIDE A NEAT FINISHED PRODUCT.
2. FLEX DUCT MUST BE SUPPORTED AT INTERVALS NECESSARY TO AVOID EXCESSIVE SAGS WITH SHEET METAL BAND HANGERS.
3. DIFFUSERS MUST BE SUPPORTED SEPARATE OF THE CEILING TILE IN WHICH PLACED TO AVOID WEIGHT INFLUENCE ON THE TILE.

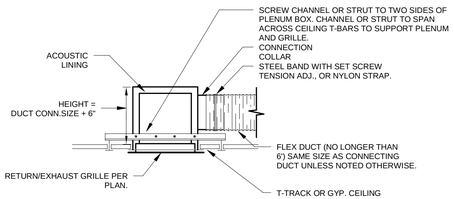
TYPICAL BRANCH TAKE-OFF DETAIL

SCALE: NTS

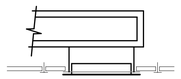


TYPICAL DUCT TAKE OFF DETAIL

SCALE: NTS



TYP. FLEX CONN.



TYP. HARD CONN.

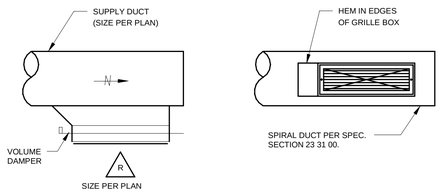
NOTES:

1. DOUBLE STRAPS ARE REQUIRED ON INSULATED FLEX DUCT. ONE OVER THE ACTUAL DUCT AND ONE OVER THE EXTERIOR INSULATION.

   TRIM EXCESS INSULATION TO PROVIDE A NEAT FINISHED PRODUCT.
2. FLEX DUCT MUST BE SUPPORTED AT INTERVALS NECESSARY TO AVOID EXCESSIVE SAGS WITH SHEET METAL BAND HANGERS.
3. GRILLES MUST BE SUPPORTED SEPARATE OF THE CEILING TILE IN WHICH PLACED TO AVOID WEIGHT INFLUENCE ON THE TILE.
4. ALL DUCTWORK THAT IS VISIBLE THROUGH THE GRILLE THAT DOES NOT HAVE ACOUSTIC LINING SHALL BE PAINTED FLAT BLACK.

TYPICAL RETURN/EXHAUST GRILLE DETAIL

SCALE: NTS



TOP VIEW SIDE VIEW

SPIRAL DUCT GRILLE INSTALLATION DETAIL

SCALE: 1/8" = 1'-0"

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