MECHANICAL SYMBOLS

PIPING / PLUMBING

PLUMBING

- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- DOMESTIC HOT WATER RECIRC. PIPING
- SAN — SANITARY PIPING
- V — VENT PIPING
- G — NATURAL GAS PIPING
- PIPING ELBOW UP
- PIPING ELBOW DOWN
- PIPING TEE UP
- PIPING TEE DOWN
- VTR — VENT THRU ROOF
- FS-1 — FLOOR SINK, SIZE AND TYPE
- FD-1 — FLOOR DRAIN, SIZE AND TYPE
- HB / WH — HOSE BIBB / WALL HYDRANT
- GATE (SHUT OFF) VALVE
- GAS COCK
- CO / WCO — LINE CLEANOUT / WALL CLEANOUT
- FCO — FLOOR CLEANOUT

NOTE:

THIS IS A MASTER SYMBOLS LIST. ALL SYMBOLS, ABBREVIATIONS, ETC. MAY NOT NECESSARILY BE USED ON ALL DRAWINGS.

DUCT SUMMARY

A. SUPPLY DUCTS:
   1. DUCTS CONNECTED TO FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS:
      a. PRESSURE CLASS: POSITIVE 1-INCH WG.
      b. MINIMUM SMACNA SEAL CLASS: B.
      c. SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.
      d. SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 12.
   2. DUCTS CONNECTED TO CONSTANT-VOLUME & VARIABLE-VOLUME AIR-HANDLING UNITS:
      a. PRESSURE CLASS: POSITIVE 4-INCH WG.
      b. MINIMUM SMACNA SEAL CLASS: A.
      c. SMACNA LEAKAGE CLASS FOR RECTANGULAR: 6.
      d. SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 6.

B. RETURN DUCTS:
   1. DUCTS CONNECTED TO FAN COIL UNITS, FURNACES, HEAT PUMPS, AND TERMINAL UNITS:
      a. PRESSURE CLASS: POSITIVE OR NEGATIVE 1-INCH WG.
      b. MINIMUM SMACNA SEAL CLASS: C
      c. SMACNA LEAKAGE CLASS FOR RECTANGULAR: 12.
      d. SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 12.
   2. DUCTS CONNECTED TO AIR-HANDLING UNITS:
      a. PRESSURE CLASS: POSITIVE OR NEGATIVE 3-INCH WG (750 PA)
      b. MINIMUM SMACNA SEAL CLASS: B.
      c. SMACNA LEAKAGE CLASS FOR RECTANGULAR: 6.
      d. SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 6.

C. EXHAUST DUCTS:
   1. DUCTS CONNECTED TO FANS EXHAUSTING AIR:
      a. PRESSURE CLASS: NEGATIVE 1-INCH WG.
      b. MINIMUM SMACNA SEAL CLASS: C IF NEGATIVE PRESSURE, AND A IF POSITIVE PRESSURE.
      c. SMACNA LEAKAGE CLASS FOR RECTANGULAR: 24.
      d. SMACNA LEAKAGE CLASS FOR ROUND AND FLAT OVAL: 24.

HVAC EQUIP. AND DUCTWORK

NOTE: ALL DUCT DIMENSIONS SHOWN ON DRAWINGS ARE INSIDE DIMENSIONS.

- INSULATED FLEXIBLE DUCT (MAXIMUM 4'-0" LONG)
- BRANCH DUCT WITH CONICAL FITTING AND MANUAL VCD
- D-1 / 10x10 / 250 — TYPE, NECK SIZE, CFM AT SUPPLY DIFFUSER OR REGISTER
- G-1 / 24/24 — TYPE, SIZE AT EXHAUST GRILLE
- MANUAL VOLUME CONTROL DAMPER
- SQUARE TO ROUND TRANSITION
- T — THERMOSTAT
- 12x6 — RECTANGULAR DUCT (1ST FIG. SIDE SHOWN)
- 12"Ø — ROUND DUCT (1ST FIG. = DIAMETER)

MISCELLANEOUS

- CONNECTION POINT OF NEW WORK TO EXISTING
- 1 / M1 — DETAIL REFERENCE: UPPER NUMBER INDICATES DETAIL NUMBER, LOWER NUMBER INDICATES SHEET NUMBER
- 1 — NOTE REFERENCE SYMBOL

STANDARD MOUNTING HEIGHTS

MECHANICAL

THERMOSTAT	48" (ADA) / 60"
CONTROLS	48" (ADA) / 60"

PLUMBING

DRINKING FOUNTAINS (SPOUTS)	36"
WATER CLOSETS	17"-19"
URINALS	17"
LAVATORIES	34"

CONTROLS GENERAL NOTES

1. PROVIDE ALL NECESSARY HARDWARE, SOFTWARE, RELAYS, CONTACTS, WIRING AND CONDUITS TO ACCOMPLISH THE INDICATED CONTROL AND CONTROL SEQUENCES FOR THE HEATING, VENTILATING AND AIR CONDITIONING SYSTEM.
2. CONTROLS SHALL BE DIRECT DIGITAL (DDC). ACTUATORS FOR VALVES, DAMPERS AND TERMINAL CONTROLLERS SHALL BE ELECTRIC/ELECTRONIC CONTROL.
3. CONTRACTOR SHALL COORDINATE ALL INTERFACE REQUIREMENTS. SET POINTS, AND CONTROL STRATEGIES. ALL SETPOINTS SHALL BE FULLY ADJUSTABLE THROUGH THE INTERFACE.

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AP	ACCESS PANEL
BD	BACKDRAFT DAMPER, BLOWDOWN
BFF	BELOW FINISHED FLOOR
BOD	BOTTOM OF DUCT
BOS	BOTTOM OF STRUCTURE
BTU	BRITISH THERMAL UNIT
CA	COMPRESSED AIR
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
D	DEMOLISH
DN	DOWN
E	EXISTING
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EC	ELECTRICAL CONTRACTOR
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EPO	EMERGENCY POWER OFF
ETR	EXISTING TO REMAIN
EWB	ENTERING WET BULB
FACP	FIRE ALARM CONTROL PANEL
FCO	FLOOR CLEANOUT
FD	FIRE DAMPER, FLOOR DRAIN
FF	FINISHED FLOOR
FSD	FIRE/SMOKE DAMPER
GCO	GRADE CLEANOUT
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HOA	HANDS OFF AUTOMATIC
HTG	HEATING
IE	INVERT ELEVATION
IN WC	INCHES OF WATER COLUMN
LAT	LEAVING AIR TEMPERATURE
LDB	LEAVING DRY BULB
LP	LOW PRESSURE
LRA	LOCKED ROTOR AMPS
LWB	LEAVING WET BULB
LWT	LEAVING WATER TEMPERATURE
MBH	1000 BTU PER HOUR
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MD	MOTORIZED DAMPER
MFR	MANUFACTURER
MTD	MOUNTED
NA	NOT APPLICABLE
NC	NOISE CRITERIA
NIC	NOT IN CONTRACT
NO, NC	NORMALLY OPEN, NORMALLY CLOSED
OA	OUTSIDE AIR
PHØ	PHASE
QTY	QUANTITY
RA	RETURN AIR
RH	RELATIVE HUMIDITY
RL	RELOCATE
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SD	SMOKE DETECTOR
SF	SQUARE FEET
SP	STATIC PRESSURE
TA	TRANSFER AIR
TSTAT	THERMOSTAT
UC	UNDERCUT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES, INC.
VCD	VOLUME CONTROL DAMPER
W, W/O	WITH, WITHOUT
WB	WET BULB
WCO	WALL CLEANOUT
WC	WATER COLUMN

MECHANICAL/PLUMBING GENERAL NOTES

1. REFER TO PLANS FOR ADDITIONAL NOTES.
2. THE PLANS ARE, TO A GREAT EXTENT, DIAGRAMMATIC IN NATURE. DRAWING SCALES SHOULD BE VERIFIED FROM DIMENSIONS ON ARCH. PLANS. THE INFORMATION PRESENTED IS AS EXACT AS COULD BE SECURED. THE CONTRACTOR SHALL OBTAIN EXACT LOCATION, MEASUREMENTS LEVELS, ETC. AT THE SITE AND SHALL SATISFACTORILY ADAPT THE WORK TO THE ACTUAL CONDITIONS AT THE PROJECT SITE.
3. CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO SUBMITTING A BID TO COVER THE CONDITIONS AT THE SITE, INFORMING THEMSELVES OF ALL DETAILS.
4. ALL WORK SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES, LAWS, ACTS, AND ORDINANCES, AND ALL AUTHORITIES HAVING JURISDICTION.
5. THE COMPLETED INSTALLATION SHALL BE IN ACCORDANCE WITH ALL ENGINEERING REQUIREMENTS, THE OWNER'S DESIGN CRITERIA, UTILITY COMPANY REQUIREMENTS, APPLICABLE INDUSTRY STANDARDS OF GOOD PRACTICE AND SAFETY, AND THE MANUFACTURER'S STRICTEST RECOMMENDATIONS FOR EQUIPMENT,PRODUCT APPLICATION, AND INSTALLATION.
6. MANUFACTURERS' NAMES ON WHICH THIS SPECIFICATION IS BASED INDICATE THE MINIMUM QUALITY OF PRODUCT REQUIRED BY ARCHITECT/ENGINEER. SUBSTITUTIONS MAY BE MADE TO THOSE SPECIFIED IF DEEMED EQUIVALENT BY THE ARCHITECT/ENGINEER DURING SUBMITTAL REVIEW.
7. RECORD DRAWINGS - PREPARE AND SUBMIT TO THE OWNER RECORD DRAWINGS INDICATING THE EXACT LOCATION OF ALL EQUIPMENT INCLUDING THE EQUIPMENT'S "AS INSTALLED" SIZE(S), MANUFACTURER, MODEL NUMBERS, AND PERFORMANCE RATINGS.
8. SUPPORTS - EQUIPMENT, PIPING, DUCTWORK, OR ANY OTHER ACCESSORY SHALL NOT BE SUPPORTED FROM OTHER PIPING, DUCTWORK, METAL ROOF DECK, LATERAL BRACING BRIDGING, OR CONDUIT. ITEMS SHALL ONLY BE SUPPORTED FROM BUILDING STRUCTURE.
9. COORDINATE EXACT LOCATION OF ALL DUCTWORK, AIR TERMINAL UNITS, PIPING, ETC., WITH STRUCTURAL, ARCHITECTURAL, ELECTRICAL, AND OTHER MECHANICAL SYSTEMS.
10. WHERE MOUNTING HEIGHTS ARE NOT DETAILED OR DIMENSIONED, INSTALL MECHANICAL SERVICES AND OVERHEAD EQUIPMENT TO PROVIDE THE MAXIMUM HEADROOM POSSIBLE.
11. ALL DUCTWORK, PIPING, AND TEMPERATURE CONTROL CONDUIT TO VIBRATING EQUIPMENT SHALL HAVE FLEXIBLE CONNECTORS.
12. IF ASBESTOS IS ENCOUNTERED OR SUSPECTED, HALT WORK IMMEDIATELY IN THESE AREAS AND NOTIFY CONTRACTING OFFICERS REPRESENTATIVE BEFORE PROCEEDING. DO NOT DAMAGE OR DISTURB SUSPECTED ASBESTOS CONTAINING MATERIAL. COORDINATE ALL REMOVAL WITH THE CONSTRUCTION MANAGER AND OWNER.
13. COORDINATE ALL ROOF AND CHASE PENETRATIONS WITH STRUCTURAL DRAWINGS AND ROOF INSTALLER.
14. CONTRACTOR TO BE RESPONSIBLE FOR PROTECTION OF THEIR EMPLOYEES FROM ANY LEAD DUST THAT MAY BE ENCOUNTERED.
15. THE LOCATION OF UNDERGROUND UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK.
16. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
17. CONTRACTOR TO COORDINATE DUCTWORK WITH FIRE RATED WALLS AND FLOORS SHOWN ON ARCHITECTURAL DRAWINGS, MAINTAINING NECESSARY RATING OF WALLS. CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTIONS TO SMOKE-FIRE DAMPERS.
18. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
19. MECHANICAL CONTRACTOR IS COMPLETELY RESPONSIBLE FOR PROVIDING ALL PRESSURE AND/OR TEMPERATURE TAPS IN PIPING AS REQUIRED FOR PROPER BALANCING OF ALL SYSTEMS.
20. BEFORE INSTALLATION, EQUIPMENT CONTRACTOR SHALL VERIFY THAT COILS CAN BE REMOVED WITHOUT INTERFERENCE. CONTRACTOR SHALL PROVIDE ADEQUATE ACCESS AND COIL REMOVAL SPACE FOR ALL EQUIPMENT.
21. ACCESS PANELS ARE REQUIRED (MIN. 18"X18") FOR ACCESS TO EVERY VALVE, DAMPER, AIR TERMINAL UNIT, AND CONTROL SENSOR IF NOT OTHERWISE ACCESSIBLE. ACCESS PANEL SHALL BE APPROVED BY ARCHITECT/ENGINEER.
22. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE ELECTRICAL DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.

LANDLORD COORDINATION

- PROTECT IN PLACE INCLUDING AND NOT LIMITED TO ROOFING, WALLS, STRUCTURE, AND OTHER SHELL AND ADJACENT TENANT BUILDING COMPONENTS.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE CAUSED BY CONSTRUCTION ON/TO EXISTING DEMISING WALLS WITH NEIGHBORING TENANTS.
- LOCATE, CLEAN, AND INSPECT SANITARY SEWER.
- COORDINATE ALL UTILITY SHUTDOWNS WITH LANDLORD AND ADJACENT TENANTS PRIOR TO START OF WORK.

SCOPE OF WORK

MECHANICAL

- REMOVE MECHANICAL SYSTEMS TO INCLUDE FAN COILS, EVAP COOLERS, AND FANS
- DEMOLISH EXISTING HEATING WATER PIPING. CAP HOT WATER SUPPLY AND RETURN FOR RE-USE
- NEW HOT WATER FAN COILS, VALVES, AND CIRCULATOR PUMPS. DRAIN AND FILL SYSTEM AS REQUIRED.
- REPLACE TWO EVAPORATIVE COOLERS. NEW NEW VENTILATION WITH CO2 MONITORING AND CONTROL.
- NEW DDC CONTROL SYSTEM

PLUMBING

- DEMOLISH EXISTING PIPING. CAP WATER AND SEWER ENTRY FOR RE-USE
- NEW DOMESTIC WATER DISTRIBUTION
- NEW SANITARY WASTE AND VENT PIPING FROM EXISTING SANITARY SEWER
- NEW NATURAL GAS FROM UTILITY METER TO SERVE VENTILATION UNIT.

PIPING APPLICATION SCHEDULE

SERVICE	LOCATION	PIPE	FITTING	NOTES
DOMESTIC COLD/HOT WATER	OUTDOOR (BELOW GRADE)	TYPE K COPPER	COPPER SOLDER JOINT FITTINGS ASME B16.22	
DOMESTIC COLD/HOT WATER	INDOOR (ABOVE GRADE)	TYPE L OR TYPE M COPPER	WROUGHT COPPER SOLDER JOINT FITTINGS ASME B16.23	
DOMESTIC COLD/HOT WATER	INDOOR (ABOVE GRADE)	TYPE A PEX DISTRIBUTION SYSTEM ASTM F 876, CROSSLINKED POLYETHYLENE (ENGEL METHOD), SDR 9 TUBING	ASTM F 1960, COLD EXPANSION FITTINGS WITH PEX REINFORCING RINGS.	PERMISSIBLE FOR CONCEALED BRANCH PIPING, 3/4" AND LESS ONLY.
SANITARY WASTE	BELOW GRADE	SOLID WALL PVC	PVC SOCKET FITTING ASTM D 2665	
SANITARY WASTE AND VENT	ABOVE GRADE	CAST IRON HUBLESS	HEAVY DUTY, SHIELDED, STAINLESS STEEL COUPLINGS	
		SOLID WALL PVC	PVC SOCKET FITTING ASTM D 2665	PERMISSIBLE ONLY IN NON-PLENUM APPLICATIONS
CONDENSATE AND EQUIPMENT DRAINS	ABOVE GRADE	TYPE M OR DWV COPPER	WROUGHT COPPER JOINT FITTINGS	
HEATING WATER SUPPLY AND RETURN (HWS AND HWR)	ABOVE GRADE	ASTM B 88, TYPE L	WROUGHT COPPER JOINT FITTINGS	
REFRIGERANT PIPING	ABOVE GRADE	TYPE K OR L COPPER ASTM B88, TYPE ACR	WROUGHT COPPER FITTINGS, ASME B16.22	-COORDINATE LINESET COVERS WITH ARCHITECT AND INTERIORS. -SIZING PER EQUIPMENT MANUFACTURER INSTRUCTIONS -TRANSITION TO FLEXIBLE LINESETS IS PERMISSIBLE WHERE ALLOWED BY EQUIPMENT MANUFACTURER AND ARCHITECT.
FUEL GAS	ABOVE GRADE	SCH 40 BLACK STEEL	150 LB MALLEABLE IRON THREADED OR WELDED	PAINT ALL PIPING EXPOSED TO OUTDOORS

PIPING INSULATION SCHEDULE

SERVICE	NOMINAL PIPE SIZE	
	< 1-1/2"	1-1/2" < 4"
	INSULATION THICKNESS	
REFRIGERANT SUCTION	1"	1-1/2"
DOMESTIC HOT WATER / HW RECIRC	1"	1-1/2"
DOMESTIC COLD WATER	1/2"	1"
HEATING WATER SUPPLY/RETURN	1"	1"

NOTES:
1. ALL PIPING SHALL BE INSULATED AS REQUIRED BY APPLICABLE IECC.
2. INSULATION NOT REQUIRED FOR PIPING CONVEYING FLUIDS WITH A DESIGN OPERATING TEMPERATURE BETWEEN 60°F AND 105°F.
3. INSULATION THICKNESS BASED ON CONDUCTIVITY (K-VALUE) NOT EXCEEDING 0.27.
4. PROVIDE WITH JACKET
5. INSULATION EXPOSED TO WEATHER SHALL BE JACKETED WITH 0.016" ALUMINUM.

Reviewed for Code Compliance
08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

PROFESSIONAL SEAL:
COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MECHANICAL AND PLUMBING LEGEND AND NOTES

SHEET: MP000

TIME STAMP:

MECHANICAL AND PLUMBING SPECIFICATIONS

A. GENERAL:

1. WHILE ALL WORK IS IN PROGRESS, EXCEPT FOR SHORT DESIGNATED INTERVALS DURING WHICH CONNECTIONS ARE TO BE MADE, CONTINUITY OF SERVICE TO ALL EXISTING SYSTEMS SERVING OCCUPIED SPACES SHALL BE MAINTAINED. PROVIDE TEMPORARY PIPING SERVICES WHERE REQUIRED TO MAINTAIN EXISTING AREAS OPERABLE.
2. ANY WORK WHICH WILL AFFECT THE BUILDING OCCUPANTS, INCLUDING, BUT NOT LIMITED TO, WORK WHICH GENERATES EXCESSIVE NOISE, DUST, SMOKE, OR INCONVENIENCE TO BUILDING OCCUPANTS, SHALL BE PERFORMED AFTER BUSINESS HOURS, UNLESS PRIOR APPROVAL HAS BEEN OBTAINED FROM THE BUILDING MANAGER.
3. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH ARCHITECT AND OWNER AT ALL TIMES FOR ALL NEW-TO-EXISTING CONNECTIONS, SYSTEM SHUTDOWNS, RESTART-UP, AND FLUSHING AND FILLING OF BOTH NEW AND EXISTING AFFECTED SYSTEMS.
4. THE CONTRACTOR SHALL VISIT AND EXAMINE THE PREMISES AND/OR JOB SITE SO AS TO ASCERTAIN, PRIOR TO BIDDING, THE EXISTING CONDITIONS IN WHICH THEY WILL BE OBLIGED TO OPERATE IN PERFORMING THEIR PART OF THE CONTRACT. NO EXTRAS WILL BE ALLOWED DUE TO LACK OF KNOWLEDGE OF THESE CONDITIONS.
5. REPORT ANY EXISTING DAMAGED EQUIPMENT OR SYSTEMS TO THE OWNER PRIOR TO ANY WORK.
6. INSTALL ALL EQUIPMENT AND MATERIALS IN SUCH A MANNER AS TO PROVIDE REQUIRED ACCESS FOR SERVICING AND MAINTENANCE. ALLOW AMPLE SPACE FOR REMOVAL OF ALL PARTS THAT REQUIRE REPLACEMENT OR SERVICING.
7. FURNISH HINGED STEEL ACCESS DOORS WITH CONCEALED LATCH, WHETHER SHOWN ON DRAWINGS OR NOT, WHERE REQUIRED FOR ACCESS TO ALL CONCEALED VALVES, SHOCK ABSORBERS, MOTORS, FANS, BALANCING COCKS, AND OTHER OPERATING DEVICES REQUIRING ADJUSTMENT OR SERVICING. ACCESS DOORS IN FIRE-RATED WALLS AND CEILINGS SHALL HAVE EQUIVALENT UL LABEL AND FIRE RATING.
8. IT IS THE INTENTION OF THESE SPECIFICATIONS AND DRAWINGS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION. WHEREVER THE WORD "PROVIDE" IS USED, IT SHALL MEAN "FURNISH AND INSTALL COMPLETE AND READY FOR USE."
9. SECURE AND PAY FOR ALL PERMITS, TAP FEES, TAXES, ROYALTIES, LICENSES, AND INSPECTIONS IN CONNECTION WITH THE WORK SPECIFIED UNDER DIVISION 23.
10. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS.
11. DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND DO NOT NECESSARILY INDICATE EVERY REQUIRED OFFSET, VALVE, FITTING, ETC.
12. DRAWINGS SHALL NOT BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SHOP DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED IN FIELD.
13. ALL NEW, RELOCATED, AND EXISTING MATERIALS, IN CEILING PLENUMS SHALL BE CLASS 1 RATED, NOT EXCEEDING RATING OF 25 FLAME SPREAD AND 50 SMOKE DEVELOPED. REMOVE AND REPLACE ALL EXISTING MATERIALS NOT IN COMPLIANCE.
14. BEFORE ANY EQUIPMENT IS ORDERED AND/OR INSTALLED, DETERMINE THAT SAID EQUIPMENT WILL PROPERLY FIT WITHIN THE SPACE ALLOCATED; THAT REQUIRED PIPING GRADES CAN BE MAINTAINED; AND THAT DUCTWORK CAN BE RUN AS INTENDED.
15. COORDINATE THE INSTALLATION OF MECHANICAL MATERIALS AND EQUIPMENT ABOVE AND BELOW CEILINGS, LIGHT FIXTURES, AND OTHER BUILDING COMPONENTS. ALL COMPONENTS SHALL BE LOCATED AS TIGHT TO STRUCTURE AS POSSIBLE. COORDINATE CEILING CAVITY SPACE CAREFULLY WITH ALL TRADES.
16. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS PRIOR TO SUBSTANTIAL COMPLETION OF CONSTRUCTION OR INSTALLATION OF CEILING TILE, TO SCHEDULE A FINAL PUNCH LIST WALKTHROUGH.
17. ALL MATERIALS AND EQUIPMENT SHALL BE NEW, FREE OF DEFECTS, AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S CURRENT PUBLISHED RECOMMENDATIONS.
18. CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER ELECTRONIC (PDF) COPIES OF ALL SHOP DRAWINGS AND DESCRIPTIVE EQUIPMENT DATA/SUBMITTALS REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL IDENTIFY ANY "LONG LEAD TIME" ITEMS WHICH MAY IMPACT THE OVERALL PROJECT SCHEDULE. ALL BIDS SHALL INCLUDE COSTS ASSOCIATED WITH THE PURCHASE AND DELIVERY OF EQUIPMENT TO MEET THE PROJECT SCHEDULE.
19. QUIET OPERATION AND VIBRATION: MECHANICAL EQUIPMENT PROVIDED UNDER THIS CONTRACT SHALL OPERATE UNDER ALL LOAD CONDITIONS WITHOUT NOISE OR VIBRATION.
20. KEEP A COMPLETE SET OF RECORD DOCUMENT PRINTS IN CUSTODY DURING ENTIRE PERIOD OF CONSTRUCTION AT THE CONSTRUCTION SITE. AT THE COMPLETION OF THE PROJECT, TURN THESE DRAWINGS OVER TO THE GENERAL CONTRACTOR FOR HIS SUBMISSION TO THE ARCHITECT.
21. THE CONTRACTOR FOR THIS WORK SHALL EXAMINE THE DRAWINGS AND SPECIFICATIONS FOR OTHER PARTS OF THE WORK, AND IF HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE OR IF ANY DISCREPANCIES OCCUR BETWEEN THE PLANS FOR HIS WORK AND THE PLANS FOR THE WORK OF OTHERS, HE SHALL REPORT SUCH DISCREPANCIES TO THE ARCHITECT/ENGINEER AND SHALL OBTAIN WRITTEN INSTRUCTIONS FOR ANY CHANGES NECESSARY TO ACCOMMODATE HIS WORK WITH THE WORK OF OTHERS. ANY CHANGES IN THE WORK COVERED BY THIS SPECIFICATION MADE NECESSARY BY THE FAILURE OR NEGLECT OF THE CONTRACTOR TO REPORT SUCH DISCREPANCIES SHALL BE MADE BY AND AT THE EXPENSE OF THIS CONTRACTOR.
22. OPERATING AND MAINTENANCE DATA: THE CONTRACTOR SHALL PREPARE AN OPERATING AND MAINTENANCE MANUAL COVERING ALL SYSTEMS AND EQUIPMENT INSTALLED UNDER THIS DIVISION. SUBMIT AN OUTLINE OF A PREVENTATIVE MAINTENANCE PROGRAM FOR EACH SYSTEM. CONTRACTOR SHALL PROPERLY LUBRICATE ALL MECHANICAL PIECES OF EQUIPMENT, WHICH HE HAS PROVIDED BEFORE TURNING THE BUILDING OVER TO THE OWNER.
23. DEMOLITION:
    a. DURING THE DEMOLITION PHASE REMOVE EXISTING EQUIPMENT, PIPING, DUCTWORK, AND RELATED ITEMS, EITHER AS SHOWN ON THE DEMOLITION DRAWINGS AS BEING REMOVED, OR AS REQUIRED FOR THE WORK.
    b. PROPERLY CAP AND SEAL ALL DUCTWORK AND PIPING NOT USED.
    c. EXISTING THERMOSTATS, DIFFUSERS, DUCTWORK, ETC., NOTED ON DRAWINGS TO BE RE-USED SHALL BE THOROUGHLY CLEANED AND/OR REFINISHED TO MATCH NEW.
    d. THE LOCATION OF EXISTING EQUIPMENT, PIPING, DUCTWORK, ETC., SHOWN ON THE DRAWINGS HAS BEEN TAKEN FROM EXISTING DRAWINGS AND IS, THEREFORE, ONLY AS ACCURATE AS THAT INFORMATION.
24. WARRANTIES:
    a. PROVIDE COMPLETE WARRANTY INFORMATION FOR EACH ITEM, INCLUDING, NAME OF PRODUCT OR EQUIPMENT; DATE OF BEGINNING OF WARRANTY OR BOND; DURATION OF WARRANTY OR BOND; AND NAMES, ADDRESSES, AND TELEPHONE NUMBERS OF MANUFACTURING/SERVICING PERSONNEL, AS WELL AS PROCEDURES FOR FILING A CLAIM AND OBTAINING WARRANTY SERVICES.
    b. THE CONTRACTOR SHALL WARRANT ALL MATERIALS, WORKMANSHIP AND THE SUCCESSFUL OPERATION OF ALL EQUIPMENT AS IDENTIFIED IN THE GENERAL CONDITIONS, OR DIVISION 1.
25. ANY FILTERS USED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW FILTERS DURING FINAL CLEANUP.
26. EXISTING EQUIPMENT; CHECK, VERIFY AND MAKE OPERABLE ALL EXISTING EQUIPMENT THAT IS NOTED TO BE REUSED. PROVIDE SERVICE ON ALL FAN COILS, AIR CONDITIONING UNITS, ETC., AS REQUIRED TO BRING THEM TO PROPER OPERATING CONDITION. CLEAN COILS AND ENCLOSURE, LUBRICATE, CHECK MOTORS AND REPLACE FILTERS.
27. RESPONSIBILITY OF CONTRACTOR: THE CONTRACTOR IS RESPONSIBLE FOR THE COMPLETE AND SATISFACTORY INSTALLATION OF THE WORK IN ACCORDANCE WITH THE TRUE INTENT OF THE DRAWINGS AND SPECIFICATIONS. HE SHALL PROVIDE, WITHOUT EXTRA CHARGE, ALL INCIDENTAL ITEMS REQUIRED, AS A PART OF HIS WORK. THE INSTALLATION SHALL BE SO MADE THAT ITS SEVERAL COMPONENT PARTS WILL FUNCTION TOGETHER AS A WORKABLE SYSTEM AND SHALL BE LEFT WITH ALL PARTS ADJUSTED AND IN WORKING ORDER.

B. MECHANICAL/ELECTRICAL REQUIREMENTS FOR MECHANICAL EQUIPMENT:

1. CONTRACTOR SHALL REVIEW ELECTRICAL POWER REQUIREMENTS FOR MECHANICAL EQUIPMENT THAT ARE SCHEDULED ON THE ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. DO NOT PURCHASE MOTORS OR ELECTRICAL EQUIPMENT UNTIL POWER CHARACTERISTICS AVAILABLE AT BUILDING SITE LOCATION HAVE BEEN CONFIRMED BY CONTRACTOR.
2. PROVIDE SAFETY DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT, UNLESS SPECIFICALLY SHOWN ON DIVISION 16 REQUIREMENTS.
3. FURNISH COMBINATION TYPE FULL NEMA RATED STARTERS WITH FUSED DISCONNECT SWITCH FOR ALL MOTORS PROVIDED.
4. ELECTRICAL WIRING IN CONNECTION WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, INCLUDING INTERLOCK WIRING, WHERE SHOWN ON THE DIVISION 16 DRAWINGS, SHALL BE PERFORMED BY THE ELECTRICAL CONTRACTOR. ALL OTHER WIRING, INCLUDING 120V REQUIRED FOR PROPER OPERATION OF THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, SHALL BE PERFORMED BY THE MECHANICAL CONTRACTOR.

C. MECHANICAL SYSTEMS FIRESTOPPING:

1. PROVIDE FIRE-STOPPING MATERIAL AND SYSTEMS AS LISTED IN THE U.L. FIRE RESISTANCE DIRECTORY EQUAL TO THE FIRE RESISTANCE RATING OF THE RESPECTIVE WALL OR FLOOR ASSEMBLY FOR ALL PENETRATIONS OF PIPING, DUCTWORK, AND OTHER MECHANICAL ITEMS THROUGH FIRE-RATED CORRIDOR WALLS, FIRE RESISTIVE WALLS, FIRE RESISTIVE SHAFTS, AND FLOOR PENETRATIONS.

D. PIPING APPLICATION:

1. ALL PIPING SHALL CONFORM TO APPLICABLE NATIONAL, STATE, AND LOCAL CODES.
2. REFER TO PIPING APPLICATION SCHEDULE FOR ADDITIONAL INFORMATION.

E. PIPING INSTALLATION:

1. GENERAL: INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY LEAK-PROOF PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH MINIMUM JOINTS AND COUPLINGS, BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY AND MAINTENANCE/REPLACEMENT OF VALVES AND EQUIPMENT.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONNECTIONS TO THE EXISTING PIPING SYSTEM. COORDINATE SHUTDOWNS WIHT TENANT AND BUILDING OWNER AND ASSOCIATED CENTRAL PLANT. PROVIDE DRAIN, FILL, AND WATER TESTING AS REQUIRED TO MATCH EXISTING CONDITIONS AND GLYCOL MIXTURES.
3. SANITARY WASTE AND VENT; ROOF DRAIN; AND STORM DRAIN PIPING:
    a. VERIFY ALL INVERT ELEVATIONS OF EXISTING WASTE AND STORM DRAIN PIPING PRIOR TO ANY NEW WORK.
    b. INSTALL PLUMBING DRAINAGE PIPING WITH MINIMUM 1/4" PER FOOT (2%) DOWNWARD SLOPE IN DIRECTION OF DRAIN FOR PIPING 2-1/2" AND SMALLER. INSTALL 3" AND LARGER PIPING WITH MINIMUM 1/8" PER FOOT (1%) DOWNWARD SLOPE UNLESS OTHERWISE INDICATED ON DRAWINGS AND WHEN APPROVED BY ADMINISTRATIVE AUTHORITIES.
    c. GRADE VENT PIPING FOR PROPER VENTILATION (MINIMUM 1/8" PER FOOT) AND TO ALLOW PIPING TO FREE ITSELF QUICKLY OF CONDENSATION OF WATER.
3. CONTRACTOR SHALL FIELD VERIFY ALL PIPING AND PLUMBING LOCATIONS AND INVERTS PRIOR TO TRENCHING OR INSTALLATION OF NEW PIPING. ALLOW FOR COST OF X-RAYING FLOOR FOR LOCATING BURIED PIPING AND PRIOR TO MAKING FLOOR PENETRATIONS.
4. INSTALL HANGERS AND GUIDES AS NECESSARY TO PROVIDE PIPING SYSTEMS, WHICH ARE SELF SUPPORTING AND NOT DEPENDENT UPON CONNECTIONS TO EQUIPMENT. ALL PIPING SHALL BE ADEQUATELY SUPPORTED FROM THE BUILDING STRUCTURE WITH ADJUSTABLE HANGERS TO MAINTAIN UNIFORM GRADING WHERE REQUIRED AND TO PREVENT SAGGING AND POCKETING.
5. ALLOW FLEXIBILITY IN THE ERECTION OF THE PIPING SYSTEM IN ORDER TO PREVENT EXCESSIVE STRESSES IN MATERIALS AND JOINTS DUE TO THERMAL EXPANSION OR EQUIPMENT VIBRATION. PROVIDE SUFFICIENT SWING JOINTS, ANCHORS, EXPANSION LOOPS, EXPANSION JOINTS AND/OR OTHER DEVICES AS NECESSARY AND INSTALL SO AS TO PERMIT FREE EXPANSION AND CONTRACTION WITHOUT CAUSING UNDUE STRESSES.
6. PROVIDE SHUTOFF VALVES AND UNIONS OR FLANGES TO ISOLATE EACH ITEM OF EQUIPMENT.
7. PROVIDE DIELECTRIC NIPPLES AT ALL JUNCTIONS OF DISSIMILAR METALS.
8. PROVIDE SHEET METAL SHIELDS FOR PIPING 2' AND SMALLER (EXCEPT WHERE REQUIRED TO BE CLAMPED) AND CALCIUM SILICATE THERMAL INSERT WITH SHEET METAL SHIELDS FOR PIPING LARGER THAN 2" AND FOR ALL SIZES OF INSULATED PIPING REQUIRED TO BE CLAMPED.
9. PROVIDE ELECTROLYSIS ISOLATORS AT ALL HANGERS AND SUPPORTS FOR DOMESTIC WATER AND OTHER WATER LINES WHICH ARE NOT INSULATED.
10. TEST ALL PIPING SYSTEMS. CORRECT LEAKS BY REMAKING JOINTS. GIVE A MINIMUM OF TWENTY FOUR (24) HOURS NOTICE TO ENGINEER OF DATES WHEN ACCEPTANCE TEST WILL BE CONDUCTED.
11. ALL PIPING SHALL BE CLEANED AND FLUSHED PRIOR TO SERVICE.
12. DOMESTIC WATER SUPPLY AND DISTRIBUTION SYSTEM SHALL BE STERILIZED WITH LIQUID CHLORINE OR HYPOCHLORITE BEFORE ACCEPTANCE FOR OPERATION, IN ACCORDANCE WITH AMERICAN WATER WORKS ASSOCIATION G601 "STANDARD FOR DISINFECTING WATER MAINS". INSTALL PIPING WITHIN CONDITIONED SPACE UNLESS NOTED OTHERWISE.

F. MECHANICAL IDENTIFICATION:

1. LABEL ALL DUCT ACCESS DOORS, PIPING, EQUIPMENT, AND THERMOSTATS. PIPING AND EQUIPMENT SHALL BE IDENTIFIED WITH 2" HIGH TEXT LABELS AND 6" FLOW ARROWS.
2. PROVIDE BRASS VALVE TAGS STAMPED WITH ASSOCIATED PUMP MARK NUMBER.
3. LABEL EACH THERMOSTAT WITH THE ASSOCIATED FAN COIL UNIT MARK NUMBER USING MINIMUM 1/4" LETTERING.

G. VIBRATION CONTROL:

1. ALL MECHANICAL EQUIPMENT, PIPING AND DUCTWORK AS NOTED OR IN THE SPECIFICATION, SHALL BE MOUNTED ON VIBRATION ISOLATORS TO PREVENT THE TRANSMISSION OF VIBRATION AND MECHANICALLY TRANSMITTED SOUND TO THE BUILDING STRUCTURE. VIBRATION ISOLATORS SHALL BE SELECTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND THE WEIGHT DISTRIBUTION, SO AS TO PRODUCE REASONABLY UNIFORM DEFLECTION.

H. WATER DISTRIBUTION SYSTEM:

1. ALL EQUIPMENT AND FIXTURES WHICH ARE CONNECTED TO A POTABLE WATER SUPPLY, SHALL BE INSTALLED IN SUCH A MANNER AS TO ELIMINATE THE POSSIBILITY OF ANY PHYSICAL OR POTENTIAL CROSS-CONNECTION. VACUUM BREAKERS SHALL BE PROVIDED FOR ALL SUBMERGED/ENCLOSED OUTLETS AND INSTALLED A MINIMUM OF 6" ABOVE OVERFLOW RIM.
2. INSTALL BACKFLOW PREVENTERS ON PLUMBING LINES WHERE CONTAMINATION OF DOMESTIC WATER MAY OCCUR.
3. INSTALL PRESSURE REDUCING VALVES TO LIMIT MAXIMUM PRESSURE AT PLUMBING FIXTURES TO 65 PSIG.
4. INSTALL WATER HAMMER ARRESTERS IN DOMESTIC WATER PIPING SYSTEM AT EACH SET OF FLUSH VALVES AND IN OTHER LOCATIONS WHERE HYDROSTATIC SHOCK PRESSURES COULD OCCUR.

I. METAL DUCTWORK:

1. NEW RECTANGULAR SUPPLY DUCTWORK SHALL BE GALVANIZED SHEET METAL, WRAPPED WITH FIBERGLASS INSULATION.
2. ALL DUCT DIMENSIONS ARE INSIDE CLEAR DIMENSIONS IN INCHES.
3. FABRICATE DUCTWORK OF GAUGES AND REINFORCEMENT COMPLYING WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS". MEDIUM PRESSURE DUCT, PRESSURE CLASS 4" W.G. POSITIVE OR NEGATIVE, SEAL CLASS A. LOW PRESSURE DUCT, DOWNSTREAM OF FAN COIL UNITS - PRESSURE CLASS 2" W.G. POSITIVE OR NEGATIVE, SEAL CLASS B.
4. USE MINIMUM 26 GA. WHERE DUCTS ARE WITHIN CORRIDORS.
5. SMACNA STANDARDS: COMPLY WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE" FOR FABRICATION AND INSTALLATION OF METAL DUCTWORK. COMPLY WITH SMACNA "HVAC AIR DUCT LEAKAGE TEST MANUAL" FOR TESTING OF DUCT SYSTEMS.
6. ALL RECTANGULAR DUCTWORK WITH 45 DEG. ELBOWS OR GREATER SHALL HAVE SINGLE WALL TURNING VANES OR LONG RADIUS ELBOWS. PROVIDE LONG RADIUS ELBOWS FOR ROUND DUCTWORK.
7. FLEXIBLE AIR DUCTS SHALL BE LISTED UNDER U.L.-181 STANDARDS AS CLASS I AIR DUCT MATERIAL. MINIMUM OPERATING PRESSURE RATING SHALL BE 6" W.C. WITH MINIMUM WORKING VELOCITY RATING SHALL BE 4000 F.P.M.
8. ALL INSULATED FLEXIBLE DUCTS SHALL BE CONSTRUCTED OF A METALIZED RIPSTOP REINFORCED LAMINATE INNER CORE; 1-1/2" THICK, 3/4" LB./CU.FT. DENSITY FIBERGLASS INSULATION WITH "C" FACTOR OF 0.23 OR LESS; AND AN OUTER JACKET MADE EXCLUSIVELY OF FIRE RETARDANT REINFORCED ALUMINIZED MATERIAL. EQUAL TO FLEXMASTER TYPE 5M.
9. EXISTING FLEXIBLE DUCTWORK, WHICH REMAINS IN PLACE, MAY BE REUSED IF IT IS PROPERLY LABELED WITH U.L. 181 TAG. EXISTING FLEXIBLE DUCTWORK NOT U.L. APPROVED SHALL BE REMOVED AND REPLACED WITH THAT SPECIFIED IN NOTES ABOVE.
10. FINAL CONNECTION OF FLEXIBLE DUCTWORK TO RUN-OUT DUCTS AND CEILING DIFFUSERS SHALL BE MADE WITH 0.5" WIDE POSITIVE-LOCKING STEEL STRAPS (APPLIES TO ALL FLEXIBLE DUCTWORK NEW AND EXISTING).
11. MAXIMUM LENGTH: FOR ANY DUCT RUN USING FLEXIBLE DUCTWORK, SHALL NOT EXCEED 5'-0".
12. CONNECTIONS TO EXHAUST GRILLES SHALL BE MADE WITH RIGID DUCTWORK ONLY.
13. SEAL ALL DUCTWORK WITH NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT, OF TYPE APPLICABLE FOR FABRICATION/INSTALLATION DETAIL, AS COMPOUNDED AND RECOMMENDED BY MANUFACTURER, SPECIFICALLY FOR SEALING JOINTS AND SEAMS IN DUCTWORK.
14. DUCT TAKEOFF FITTINGS: PROVIDE SPIN-IN FITTINGS AT FLEXIBLE OR ROUND SHEET METAL DUCT TAKEOFFS TO AIR DEVICES. FITTINGS DOWNSTREAM OF AIR TERMINALS SHALL INCLUDE BUTTERFLY TYPE MANUAL VOLUME DAMPER WITH END BEARINGS, REGULATOR, AND LOCKING DEVICE.
15. PROVIDE DUCT HANGERS IN ACCORDANCE WITH SMACNA HVAC DUCT MANUALS.

J. COMBINATION FIRE/SMOKE DAMPERS:

1. PROVIDE AND INSTALL U.L. LABELED, CLASS II (FOR VELOCITIES UP TO 1,500 FPM) OR CLASS I (FOR VELOCITIES ABOVE 1500 FPM), MOTOR-DRIVEN COMBINATION FIRE/SMOKE DAMPERS AT ALL FIRE RATED WALLS, FULL DUCT SIZE, WITH TYPE 304 STAINLESS STEEL SIDE SEALS, COMBINATION SILICONE/GALVANIZED STEEL EDGE SEALS, BRONZE OILITE OR STAINLESS STEEL SLEEVE BEARINGS, AIRFOIL SHAPED GALVANIZED STEEL PARALLEL ACTING BLADES ALONG WITH OUT-OF-AIRSTREAM IN-JAMB LINKAGE WITH STAINLESS STEEL PIVOTS AND FACTORY SLEEVE, RED ENAMEL FINISH, CAULKED AND ATTACHED TO DAMPER IN ACCORDANCE WITH U.L. FIRE DAMPER REQUIREMENTS.

K. AIR OUTLETS AND INLETS:

1. CEILING COMPATIBILITY: PROVIDE DIFFUSERS WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO CEILING MODULE WITH ACCURATE FIT AND ADEQUATE SUPPORT. REFER TO ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR TYPES OF CEILING SYSTEMS, WHICH WILL CONTAIN EACH TYPE OF CEILING AIR DIFFUSER.

L. CONTROLS:

1. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE A COMPLETE NEW OR MODIFIED CONTROL SYSTEM USING NEW CONTROL DEVICES AS REQUIRED FOR THE MECHANICAL SYSTEMS TO OPERATE AS REQUIRED. THE CONTRACTOR SHALL INSPECT THE EXISTING CONDITIONS PRIOR TO SUBMITTING A PROPOSAL.
2. THE EXISTING TEMPERATURE CONTROL SYSTEM CONTROL DEVICES, DAMPERS, OPERATORS, WIRING, CONDUIT, AIR PIPING, VALVES, ETC. NOT BEING MODIFIED, AND WHICH ARE NO LONGER UTILIZED, SHALL BE REMOVED, AND NOT ABANDONED IN PLACE.
4. CHECK AND MAKE OPERABLE ALL WIRING AND PNEUMATIC CONTROL TUBING FOR ALL THE SYSTEMS ASSOCIATED WITH THE PROJECT AREA.
5. THE CONTROL CONTRACTOR WILL BE RESPONSIBLE FOR ALL INSTALLATION, PROGRAMMING, COMMISSIONING, TESTING AND PERFORMANCE VERIFICATION.
6. THE CONTROLS CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING ALL DEVICES REQUIRED FOR A COMPLETE OPERATING CONTROL SYSTEM.
7. PROVIDE 120V WIRING AS REQUIRED FOR THE TEMPERATURE CONTROL SYSTEMS, UNLESS SPECIFICALLY INDICATED ON ELECTRICAL DRAWINGS.
8. ALL THERMOSTAT CONTROLS SHALL HAVE A 5°F DEADBAND.
9. ALL THERMOSTATIC CONTROLS SHALL BE PROGRAMMED TO MIN 55°F (HEATING) AND 85°F (COOLING) SETBACK DURING THE UNOCCUPIED MODE.
10. AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. CONTROLS SHALL BE CAPABLE OF AUTOMATICALLY ADJUSTING THE DAILY START TIME AS REQUIRED TO REACH THE OCCUPIED SETPOINT JUST PRIOR TO ENTERING THE SCHEDULED OCCUPIED TIME.
11. EQUIPMENT WITH INSTALLED ECONOMIZER SHALL HAVE THE FOLLOWING POINTS PERMANENTLY MONITORED:
    - 11.1. OUTSIDE AIR TEMPERATURE
    - 11.2. SUPPLY AIR TEMPERATURE.
    - 11.3. RETURN AIR TEMPERATURE.
12. MEASURING DEVICES TO OPERATE PROPERLY TO WITHIN FOLLOWING RANGES:
    - 12.1. TEMPERATURE SENSORS SHALL HAVE AN ACCURACY OF ±2°F(1.1°C) OVER THE RANGE OF 40°F TO 80°F(4°C TO 26.7°C).
    - 12.2. REFRIGERANT PRESSURE SENSORS, WHERE USED, SHALL HAVE AN ACCURACY OF ±3% OF FULL SCALE.
13. EQUIPMENT CONTROLLER TO REPORT THE FOLLOWING SYSTEM STATUS:
    - 13.1. FREE COOLING AVAILABLE.
    - 13.2. ECONOMIZER ENABLED.
    - 13.3. COMPRESSOR ENABLED.
    - 13.4. HEATING ENABLED.
    - 13.5. MIXED AIR LOW LIMIT CYCLE ACTIVE.
    - 13.6. THE CURRENT VALUE OF EACH SENSOR.
14. EQUIPMENT CONTROLLER TO BE CAPABLE OF MANUALLY INITIATING EACH MODE INDEPENDENTLY FOR TESTING PURPOSES.
15. EQUIPMENT CONTROLLER TO REPORT FOLLOWING FAULTS TO FAULT MANAGEMENT APPLICATION ACCESSIBLE BY SERVICE PERSONNEL OR ANNUNCIATED LOCALLY ON ZONE THERMOSTATS:
    - 15.1. AIR TEMPERATURE SENSOR FAILURE/FAULT.
    - 15.2. NOT ECONOMIZING WHEN UNIT SHOULD BE ECONOMIZING.
    - 15.3. ECONOMIZING WHEN UNIT SHOULD NOT BE ECONOMIZING.
    - 15.4. DAMPER NOT MODULATING.
    - 15.5. EXCESS OUTDOOR AIR.

M. PIPING INSULATION:

1. ALL NEW AND EXISTING PIPING SHALL BE INSULATED WITH FIBERGLASS PIPING INSULATION: "K" FACTOR SHALL BE MAXIMUM OF 0.27 AT 75° F MEAN TEMPERATURE. INSULATION SHALL HAVE JACKET WITH TENSILE STRENGTH OF 35 LBS/IN AND FACTORY APPLIED VAPOR BARRIER JACKET WITH PERMEABILITY OF 0.02 PERM WITH ADHESIVE SELF-SEALING LAP JOINT. SEE PIPING INSULATION SCHEDULE FOR MINIMUM INSULATION THICKNESS REQUIRED.

N. DUCTWORK SYSTEM INSULATION:

1. ALL NEW AND EXISTING UN-INSULATED DUCTWORK SHALL BE WRAPPED WITH FLEXIBLE FIBERGLASS DUCTWORK INSULATION, 1-1/2" THICK, TYPE I, 1.0 LB. PER CU. FT. DENSITY. MINIMUM INSULATION VALUE SHALL BE R-6. ALL WRAP INSULATION SEAMS AND JOINTS SHALL BE SEALED WITH VAPOR-TIGHT FOIL-SCRIM-KRAFT TAPE. OMIT INSULATION WHERE DUCTWORK IS SPECIFIED TO BE LINED.
2. RECTANGULAR DUCTWORK EXPOSED TO WEATHER OR UNCONDITIONED SPACES SHALL BE INSULATED TO MINIMUM R-12 BY ONE OF THE FOLLOWING METHODS:
    - 2.1. LINE WITH RIGID FIBERGLASS INSULATION BOARD, 2" THICK (DENSITY OF 3 LBS. PER CU. FT. AND FACTORY APPLIED VAPOR BARRIER FACING) AND WRAP WITH 2" FLEXIBLE FIBERGLASS BLANKET INSULATION (DENSITY OF 1 LBS. PER CU. FT.)
    - 2.2. WRAP WITH TWO LAYERS OF 2" FLEXIBLE FIBERGLASS BLANKET INSULATION (DENSITY OF 1.0 LBS. PER CU. FT.)
3. ROUND DUCTWORK EXPOSED TO WEATHER AND UNCONDITIONED SPACES SHALL BE INSULATED TO MINIMUM R-12 AS FOLLOWS:
    - 3.1. WRAPPED WITH TWO LAYERS OF 2" FLEXIBLE FIBERGLASS BLANKET INSULATION (DENSITY OF 1 LBS. PER CU. FT.).
4. DUCTWORK ON WHICH INSULATION IS NOT REQUIRED: LINED DUCTWORK MEETING THE INSULATION REQUIREMENTS ABOVE, EXHAUST AIR DUCTWORK, EXCEPT AS SPECIFICALLY NOTED ON DRAWINGS, PRE-INSULATED FLEX DUCT, AND DUCTWORK WITHIN THE BUILDING ENVELOPE.

O. EXISTING INSULATION REPAIR:

1. REPAIR DAMAGED SECTIONS OF EXISTING MECHANICAL INSULATION, BOTH PREVIOUSLY DAMAGED OR DAMAGED DURING THIS CONSTRUCTION PERIOD. USE INSULATION OF SAME THICKNESS AS EXISTING INSULATION; INSTALL NEW JACKET LAPPING AND SEAL OVER EXISTING.

TESTING, ADJUSTING AND BALANCING:

A. GENERAL:

1. THE CONTRACTOR SHALL TEST, ADJUST AND BALANCE ALL AIR SIDE SYSTEMS AND EQUIPMENT THROUGHOUT THE BUILDING, INCLUDING UNMODIFIED SYSTEMS AND EQUIPMENT; SUPPLY/RETURN AIR SYSTEMS, AIR TERMINALS, DIFFUSERS AND GRILLES, GENERAL EXHAUST/SUPPLY FANS, AIR HANDLING UNITS, TERMINAL UNITS, ETC.

B. QUALIFICATIONS OF CONTRACTOR:

1. THE MECHANICAL CONTRACTOR SHALL PROCURE THE SERVICES OF AN INDEPENDENT TESTING AND BALANCING AGENCY (NOT ENGAGED IN ENGINEERING DESIGN AND IS NOT A DIVISION OF A MECHANICAL CONTRACTING) ENTITY, SPECIALIZING IN THE TESTING, ADJUSTING AND BALANCING OF ENVIRONMENTAL SYSTEMS TO PERFORM THE ABOVE-MENTIONED WORK. WORK SHALL BE PERFORMED BY QUALIFIED TECHNICIANS WHO ARE CURRENTLY CERTIFIED BY THE TESTING, ADJUSTING AND BALANCING BUREAU (TABB), THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB), OR THE ASSOCIATED AIR BALANCE COUNCIL (AABC).

C. APPROVAL OF CONTRACTOR:

1. ANY TESTING AND BALANCING FIRM DESIRING TO OFFER THEIR SERVICES FOR THIS WORK SHALL SUBMIT THEIR QUALIFICATIONS TO THE ENGINEER PRIOR TO BEGINNING WORK.

D. TESTING PROCEDURES:

1. TESTING AND BALANCING SHALL NOT BEGIN UNTIL THE SYSTEM HAS BEEN COMPLETED AND IS IN FULL WORKING ORDER.
2. BEFORE ANY AIR BALANCE WORK IS DONE, CHECK THE SYSTEM FOR DUCT LEAKAGE; ASSURE THAT NEW FILTERS ARE INSTALLED; CHECK FOR CORRECT FAN ROTATION; FOR EQUIPMENT VIBRATION; AND AUTOMATIC DAMPERS FOR PROPER OPERATION. ALL VOLUME CONTROL DAMPERS AND OUTLETS SHALL BE WIDE OPEN AT THIS TIME.
3. BEFORE ANY HYDRONIC, DOMESTIC WATER OR APPLICABLE SYSTEM BALANCING WORK IS DONE, THE SYSTEMS SHALL BE CHECKED FOR PLUGGED STRAINERS, PROPER PUMP ROTATION, CONTROL VALVE INSTALLATION AND OPERATION, AIR LOCKS, SYSTEM STATIC PRESSURE, FLOW METER; AND CHECK VALVE INSTALLATION. ALL THROTTLING DEVICES AND CONTROL VALVES SHALL BE OPEN AT THIS TIME.

E. GENERAL SYSTEM AND EQUIPMENT PROCEDURES:

1. BALANCE ALL AIR AND WATER FLOWS AT TERMINALS TO WITHIN +10% TO -5% OF DESIGN FLOW QUANTITIES. NOTIFY CONTRACTOR/ENGINEER IN WRITING OF CONDITIONS DETRIMENTAL TO THE PROPER COMPLETION OF THE TEST AND BALANCE WORK.
2. MINIMUM COOLING CFM FOR VAV TERMINALS SHALL BE SET AT 10% OF MAXIMUM DESIGN.
3. RECORD PRIMARY AND AMBIENT AIR, DRY BULB AND WET BULB TEMPERATURES AT THE TIME OF TESTING.
4. CHECK AND CALIBRATE ALL THERMOSTATS AND TEMPERATURE SENSORS. REPORT TO THE GENERAL CONTRACTOR ANY MALFUNCTIONING THERMOSTAT AND SENSORS AND REPAIR OR REPLACE AS REQUIRED. THERMOSTATS OR SENSORS SHALL BE SET FOR:

   HEATING MODE-SET AND LOCK AT 72 DEGREES F +/- 2 DEGREES F.

   COOLING MODE-SET AND LOCK AT 75 DEGREES F +/- 2 DEGREES F.

F. TEST AND BALANCE REQUIREMENTS:

1. GENERAL EXHAUST/SUPPLY FANS:
    a. ADJUST CFM TO SYSTEM REQUIREMENTS. FOR BELT DRIVE, INCLUDE SHEAVE AND BELT EXCHANGE TO DELIVER AIRFLOW WITHIN LIMITS OF INSTALLED MOTOR HORSEPOWER AND MECHANICAL STRESS LIMITS OF THE FAN.
    b. MEASURE AND REPORT STATIC PRESSURES UPSTREAM AND DOWNSTREAM OF FANS (DUCTED UNITS ONLY)
    c. MEASURE AND REPORT FAN RPM.
    d. REPORT DESIGN FAN INLET AND OUTLET SIZES, ACTUAL INLET AND OUTLET SIZES, AND DESIGN AND ACTUAL VELOCITIES THROUGH THE ORIFICE.
2. HYDRONIC SYSTEMS: THE SYSTEM SHALL BE BALANCED PROPORTIONALLY USING THE FLOW METERS. ON COMPLETION OF THE BALANCE, THE FOLLOWING INFORMATION SHALL BE RECORDED IN THE REPORT: FLOW METER SIZE AND BRAND, REQUIRED FLOW RATE AND PRESSURE DROP; VALVE SETTINGS ON METERS WITH A READABLE SCALE; AND FLOW RATE IN BOTH FULL COIL FLOW AND FULL BYPASS MODES.
3. EQUIPMENT: PROVIDE START-UP REPORT FOR ALL NEW AND EXISTING HVAC UNITS, AUX, AIR CONDITIONING SYSTEMS, ETC. REPORT SHALL INCLUDE NAMEPLATE DATA, DESIGN DATA, MEASURED MOTOR AMP DRAW, VOLTAGE, DISCHARGE AND SUCTION STATIC PRESSURE AND TEMPERATURE. MEASURE ADJUST AND REPORT AIRFLOWS. SET VFD SPEEDS OF VARIABLE-SPEED FAN SYSTEM. CHECK AND VERIFY ACTIVATION OF ELECTRIC AND GAS FIRED EQUIPMENT.

G. REPORT OF WORK:

1. THE TESTING AND BALANCING CONTRACTOR SHALL SUBMIT ELECTRONIC (PDF) COPIES OF THE FINAL TESTING AND BALANCING REPORT AT LEAST FIFTEEN (15) CALENDAR DAYS PRIOR TO THE DATE FOR WHICH THE MECHANICAL CONTRACTOR REQUESTS FINAL INSPECTION.
2. A COMPLETE REDUCED SET OF MECHANICAL CONTRACT DRAWINGS (SHOWING EACH SYSTEM) SHALL BE INCLUDED IN THE REPORT, WITH ALL EQUIPMENT, FLOW MEASURING DEVICES, TERMINALS, CLEARLY MARKED AND ALL EQUIPMENT DESIGNATED. THE TEST AND BALANCE CONTRACTOR CAN OBTAIN DRAWING FILES FROM THE ENGINEER FOR DEVELOPMENT OF THESE DRAWINGS.
3. THE REPORT SHALL INCLUDE A LIST OF ALL EQUIPMENT USED IN THE TESTING AND BALANCING WORK.
4. THIS PROJECT WILL NOT BE CONSIDERED SUBSTANTIALLY COMPLETE UNTIL A SATISFACTORY REPORT IS RECEIVED. THE TESTING & BALANCING CONTRACTOR SHALL RESPOND TO AND CORRECT ALL DEFICIENCIES WITHIN SEVEN (7) DAYS OF RECEIVING THE ENGINEER'S WRITTEN REVIEW OF THE BALANCING REPORT. FAILURE TO COMPLY WILL RESULT IN HOLDING RETAINAGE OF THE FINAL PAYMENT UNTIL ALL ITEMS HAVE BEEN CORRECTED TO THE SATISFACTION OF THE ENGINEER.

H. GUARANTEE OF WORK:

1. THE TESTING & BALANCING CONTRACTOR SHALL GUARANTEE THE ACCURACY OF THE TESTING AND BALANCING FOR A PERIOD OF 90 DAYS FROM THE DATE OF FINAL ACCEPTANCE OF THE TEST AND BALANCE REPORT. DURING THIS PERIOD, THE TESTING & BALANCING CONTRACTOR SHALL MAKE PERSONNEL AVAILABLE AT NO COST TO THE OWNER TO CORRECT DEFICIENCIES THAT MAY BECOME APPARENT IN THE SYSTEM BALANCE.

Reviewed for Code Compliance 08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 200, GOLDEN CO 80401
PHONE: 303.458.9600 FAX: 303.458.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:
COLORADO LICENSED PROFESSIONAL ENGINEER
SCOTT K. ZIMMERMAN
51662
07/28/2022

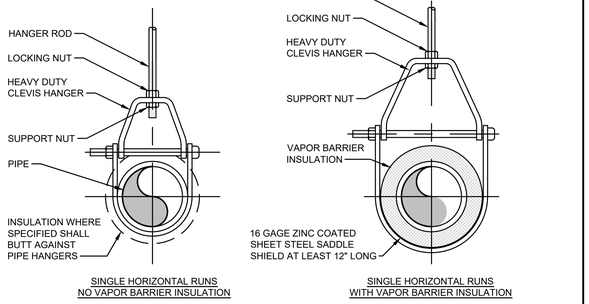
REV. #	ISSUED FOR	DATE
0	PERMIT	2022-04-30
1	OWNER CHANGES	2022-07-28

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MECHANICAL AND PLUMBING SPECIFICATIONS

SHEET: MP001

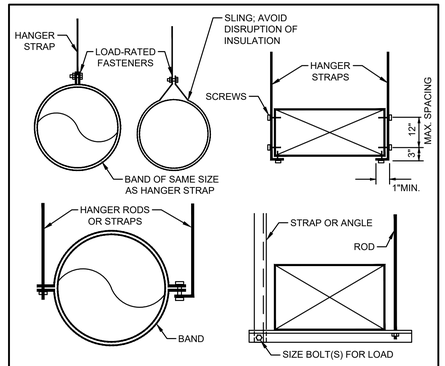
TIME STAMP:



HANGER ROD SCHEDULE			
PIPE SIZE	ROD SIZE	PIPE SIZE	ROD SIZE
UP TO 2"	3/8" DIA.	4" - 5"	5/8" DIA.
2 1/2 - 3"	1/2" DIA.	6" - 12"	7/8" DIA.

1 PIPE SUPPORT DETAIL

SCALE: NO SCALE



2 DUCT SUPPORT DETAIL

SCALE: NO SCALE

2018 IMC VENTILATION RATE PROCEDURE CALCULATIONS - BASEMENT

SYSTEM	Space	Class	A_z	Density	P_z	R_P	R_A	Ex. Rate	Exhaust	V_{BZ}	E_Z	V_{OZ}	V_{PZ}	Z_P
FC-B-2	Basement - Rental Storage North	Storage Rooms	450	-	-	-	0.12	0	0	54	0.8	68	380	0.00
FC-B-4	Basement - Rental Storage South	Storage Rooms	450	-	-	-	0.12	0	0	54	0.8	68	380	0.00
FC-B-2	Basement - Rental Sales North	Sales	400	0.015	6	7.5	0.12	0	0	93	0.8	116	760	0.00
FC-B-3	Basement - Rental Sales Middle	Sales	400	0.015	6	7.5	0.12	0	0	93	0.8	116	760	0.00
FC-B-5	Basement - Rental Sales South	Sales	400	0.015	6	7.5	0.12	0	0	93	0.8	116	760	0.00
FC-B-2	Basement - Corridor North	Corridors	290	-	-	-	0.06	0	0	17	0.8	22	100	0.00
FC-B-5	Basement - Corridor South	Corridors	290	-	-	-	0.06	0	0	17	0.8	22	100	0.00

GENERAL NOTES:
REFER TO EQUIPMENT SCHEDULES FOR EQUIPMENT SIZING.

System	V_{OU}	MAX Z_P	E_V	V_{OT}	Type
FC-B-2	206	0.00	1.00	206	Single Zone
FC-B-3	116	0.00	1.00	116	Single Zone
FC-B-4	68	0.00	1.00	68	Single Zone
FC-B-5	138	0.00	1.00	138	Single Zone

2018 IMC VENTILATION RATE PROCEDURE CALCULATIONS - MAIN FLOOR

SYSTEM	Space	Class	A_z	Density	P_z	R_P	R_A	Ex. Rate	Exhaust	V_{BZ}	E_Z	V_{OZ}	V_{PZ}	Z_P
FCU-1-1 thru FCU-1-7	Main Level Retail Sales	Sales	4600	0.015	69	7.5	0.12	0	0	1070	0.75	1426	4295	0.33
FCU-1-1 thru FCU-1-7	Main Level Corridor	Corridors	350	-	-	-	0.06	0	0	21	0.75	28	300	0.09
FCU-1-1 thru FCU-1-7	Main Level Manager	Office Spaces	55	0.005	1	5	0.06	0	0	8	0.75	11	100	0.11
FCU-1-1 thru FCU-1-7	Main Level Office	Office Spaces	70	0.005	1	5	0.06	0	0	9	0.75	12	125	0.10
FCU-1-1 thru FCU-1-7	Main Level Storage 1 and 2	Corridors	105	-	-	-	0.06	0	0	6	0.75	8	200	0.04
FCU-1-1 thru FCU-1-7	Fitting 102	Sales	45	0.015	1	7.5	0.12	0	0	13	0.75	17	100	0.17
FCU-1-1 thru FCU-1-7	Fitting 103	Sales	40	0.015	1	7.5	0.12	0	0	12	0.75	16	100	0.16
FCU-1-1 thru FCU-1-7	Fitting 104	Sales	35	0.015	1	7.5	0.12	0	0	12	0.75	16	100	0.16

GENERAL NOTES:
REFER TO EQUIPMENT SCHEDULES FOR EQUIPMENT SIZING.

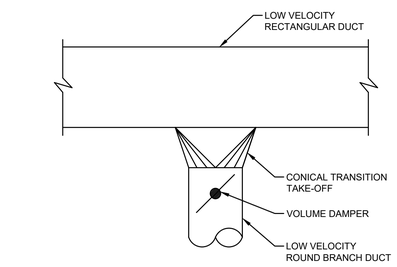
System	V_{OU}	MAX Z_P	E_V	V_{OT}	Type
FCU-1-1 thru FCU-1-7	1535	0.33	0.82	1876	Multiple Zone

2018 IMC VENTILATION RATE PROCEDURE CALCULATIONS - UPPER FLOOR

SYSTEM	Space	Class	A_z	Density	P_z	R_P	R_A	Ex. Rate	Exhaust	V_{BZ}	E_Z	V_{OZ}	V_{PZ}	Z_P
DOAS-1	Upper Level Retail Sales	Sales	2625	0.015	40	7.5	0.12	0	0	615	0.75	820	1200	0.00
FCU-2-3	Upper Level Corridor	Corridors	200	-	-	-	0.06	0	0	12	0.75	16	760	0.02
FCU-2-5	Upper Level Tech Shop	Warehouses	805	-	3	10	0.06	0	0	78	0.75	50	760	0.07
FCU-2-6	Upper Level Stock Room	Storage Rooms	575	-	-	-	0.12	0	0	69	0.75	92	760	0.12

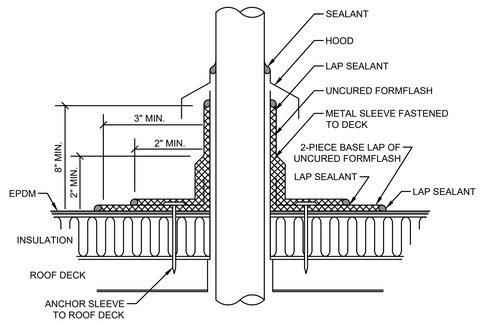
GENERAL NOTES:
REFER TO EQUIPMENT SCHEDULES FOR EQUIPMENT SIZING.

System	V_{OU}	MAX Z_P	E_V	V_{OT}	Type
DOAS-1	820	0.00	1.00	820	100% Outdoor Air
FCU-2-3	16	0.02	1.00	16	Multiple Zone
FCU-2-5	50	0.07	1.00	50	Multiple Zone
FCU-2-6	92	0.12	1.00	92	Multiple Zone



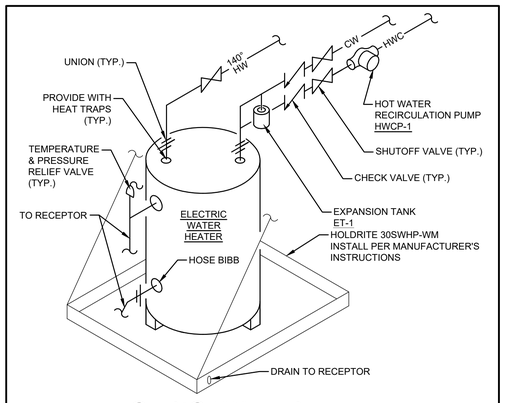
3 ROUND FROM RECTANGULAR TAKE-OFF

SCALE: NO SCALE



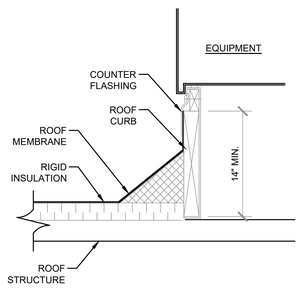
4 PIPE THROUGH ROOF DETAIL

SCALE: NO SCALE



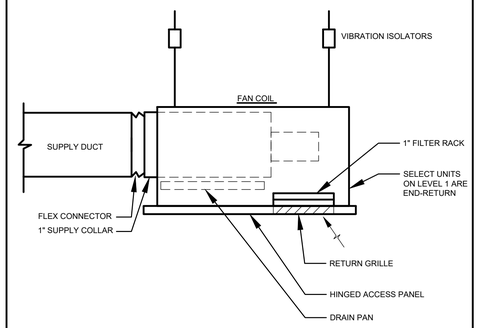
5 ELECTRIC WATER HEATER INSTALLATION DETAIL

SCALE: NO SCALE



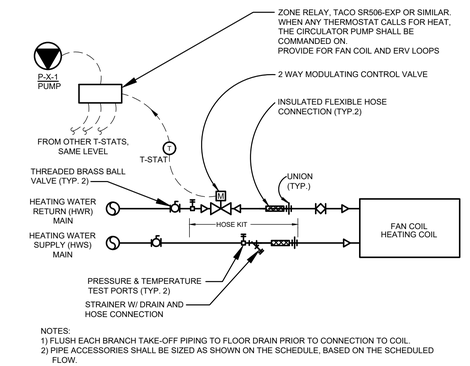
6 ROOF CURB DETAIL

SCALE: NO SCALE



7 FAN COIL DETAIL

SCALE: NO SCALE



NOTES:
1) FLUSH EACH BRANCH TAKE-OFF PIPING TO FLOOR DRAIN PRIOR TO CONNECTION TO COIL.
2) PIPE ACCESSORIES SHALL BE SIZED AS SHOWN ON THE SCHEDULE, BASED ON THE SCHEDULED FLOW.

8 FAN COIL HYDRONIC DETAIL

SCALE: NO SCALE

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:
COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MECHANICAL AND PLUMBING DETAILS AND SCHEDULES

SHEET: MP002

TIME STAMP:

LOUVER SCHEDULE

MARK	MANUFACTURER & MODEL OR EQUAL	TYPE	MODULE SIZE	FREE AREA	NOTES
L-1	GREENHECK ESD-635	ALUMINUM	12x12	50% MIN	1,2
L-2	GREENHECK ESD-635	ALUMINUM	18x12	50% MIN	1,2
L-3	GREENHECK ESD-635	ALUMINUM	12x12	50% MIN	1,2
L-4	GREENHECK ESD-635	ALUMINUM	36x36	50% MIN	1,2,3
L-5	GREENHECK ESD-635	ALUMINUM	36x36	50% MIN	1,2,3

1. PROVIDE BIRD SCREEN.
2. COORDINATE FINISH AND COLOR W/ ARCHITECT/OWNER.
3. INSTALL MOTORIZED DAMPER. REFER TO PLANS

DEDICATED OUTDOOR AIR SYSTEM - NATURAL GAS, INDIRECT HEATING ONLY

ITEM	MANUFACTURER & MODEL NO.	SUPPLY FAN			NATURAL GAS HEATING		ELECTRICAL 1		ELECTRICAL 2		WEIGHT (LBS)	NOTES
		MAX AIRFLOW (CFM)	ESP (IN.WC)	HP	MBH INPUT SEA LEVEL	EFF	MCA	V/PH/HZ	MCA	V/PH/HZ		
DOAS-1	MODINE HDP350	2,800	0.5	1	280	81%	3.5	480/3/60	12	120/1/60	1600	ALL

NOTES:
1. DEDICATED OUTDOOR AIR UNIT. DOWN-DISCHARGE. INDIRECT FIRED, SUPPLY AND RETURN.
2. PROVIDE ELECTRICAL DISCONNECTS.
3. PROVIDE UNPOWERED CONVENIENCE OUTLET WITH UNIT.
4. PROVIDE SUPPLY FAN WITH VFD.
5. MOTORIZED DAMPERS.
6. DIRTY FILTER SWITCH. PROVING SWITCH
7. MERV 8 FILTERS PRE-FILTERS, AND MERV 13 FINAL FILTERS ON SUPPLY AND MERV 8 FILTERS ON EXHAUST.
8. STAINLESS STEEL HEAT EXCHANGER.
10. FACTORY PACKAGED CONTROLS WITH USER-INTERFACE.
11. DEMAND CONTROL VENTILATION WITH CO2 SENSORS (QTY 2). SUPPLY FAN SHALL MODULATE AND OUTSIDE AIR AND RETURN AIR DAMPERS SHALL TRACK VIA FACTORY CONTROLS.
12. RETURN AIR SMOKE DETECTOR AND CO2 SENSOR
13. INTERLOCK WITH RELIEF DAMPER (SHARED WITH EC-1). PROVIDE RELAY SO DAMPER OPENS WHEN EC-1 AND/OR DOAS-1 IS ENABLED.

FAN SCHEDULE

MARK	MANUFACTURER & MODEL OR EQUAL	SERVES	FAN INFORMATION		MOTOR			NOTES
			CFM	E.S.P (" wg)	POWER	VOLTS/PH/HZ	DRIVE	
EF-B-1	GREENHECK SPA-110	RESTROOM	90	0.25	30W	120/1/60	DIRECT	1,2,4
(RL)EF-B-2	LOREN COOK DB-10	BASEMENT - GENERAL	800	0.40	3/4 HP	120/1/60	BELT	1,3,5
EF-1-1	GREENHECK SPA-110	RESTROOM	90	0.25	30W	120/1/60	DIRECT	1,2
EF-1-2	GREENHECK SPA-110	IT ROOM TRANSFER	90	0.25	30W	120/1/60	DIRECT	1,6
EF-2-1	GREENHECK SPA-110	RESTROOM	90	0.25	30W	120/1/60	DIRECT	1,2
EF-2-2	GREENHECK CSP-A1050	TECH SHOP- GENERAL	900	0.30	150 W	120/1/60	DIRECT	1,3

NOTES:
1. COORDINATE ELECTRICAL DISCONNECTING MEANS WITH ELECTRICAL CONTRACTOR.
2. INTERLOCK WITH LIGHTING, REFER TO ELECTRICAL
3. WALL SWITCH
4. PROVIDE WITH INTEGRAL BACKDRAFT DAMPER.
5. RE-LOCATED FAN (PREVIOUSLY-SERVING RESTROOMS). PROVIDE NEW BELT/SHEAVE AND REBLANCE. SEE ELECTRICAL FOR DISCONNECT AND NEW WALL SWITCH
6. PROVIDE REVERSE-ACTING THERMOSTAT. FAN SHALL ENERGIZE WHEN ROOM EXCEEDS 80 DEG F.

PUMP SCHEDULE

MARK	MANUFACTURER & MODEL OR EQUAL	SERVES	TYPE	GPM	HEAD FT	GLYCOL [%]	ELECTRICAL		NOTES
							PWR	V/PH/HZ	
P-B-1	B&G ECOCIRC XL 36-45	BASEMENT HEATING WATER LOOP	IN-LINE	9.5	8.0	35%	1/4	120/1/60	ALL
P-1-1	B&G ECOCIRC XL 36-45	FIRST FL HEATING WATER LOOP	IN-LINE	7.0	8.0	35%	1/4	120/1/60	ALL
P-2-1	B&G ECOCIRC XL 36-45	SECOND FL HEATING WATER LOOP	IN-LINE	6.0	7.0	35%	1/4	120/1/60	ALL

NOTES:
1. FURNISH DISCONNECT. REFER TO ELECTRICAL PLANS
2. DRAIN AND FILL SYSTEM AS REQUIRED FOR NEW WORK. PROVIDE NEW GLYOL SOLUTION MIXED TO EXISTING BUILDING CONDITIONS.
3. PROVIDE RELAY. HONEYWELL SR502-4 OR EQUAL. ENERGIZE PUMP WHEN ANY THERMOSTAT CALLS FOR HEATING. PROVIDE ADDITIONAL 120/1/60 POWER FOR RELAY - REFER TO ELECTRICAL PLANS. ONCE ENABLED, THE INTEGRAL PUMP CONTROLLER SHALL MODULATE TO MAINTAIN DIFFERENTIAL PRESSURE (DP). THE CONTRACTOR SHALL ADJUST DP SETPOINT DURING INITIAL TEST AND BALANCE. DOCUMENT SETPOINTS IN TAB REPORT.

SPLIT-SYSTEM SCHEDULE - HEAT PUMP

OUTDOOR UNIT

ITEM	SERVICE	COOLING / HEATING				ELECTRICAL DATA			OP. WT. LBS.	MANUFACTURER & MODEL NO.	NOTES
		TOTAL (MBH)	SENS. (MBH)	COND. EAT °F DB	SEER	V/Ø/HZ	MCA	MOCP			
HP-1	REPAIR SHOP	24.0	22.0	85	19	208/1/60	22.1	25	120	MITSUBISHI TRUYA024	ALL

1. INDOOR UNIT IS POWERED FROM THE OUTDOOR UNIT. COORDINATE DISCONNECTING MEANS WITH ELECTRICAL.
2. PROVIDE WITH LOW AMBIENT COOLING CAPABILITY AND CONTROLS.
3. PROVIDE WALL MOUNT KIT AND INSTALL AT ACCESSIBLE HEIGHT IN PARKING GARAGE.

INDOOR UNIT

ITEM	SERVICE	CAPACITY				ELECTRICAL DATA	OP. WT. LBS.	MANUFACTURER & MODEL NO.	NOTES
		TOTAL (MBH)	SENS. (MBH)	EVAP. EAT °F DB	WB	MAX CFM			
WM-1	REPAIR SHOP	24.0	22.0	80	62	800	POWERED BY OUTDOOR UNIT	40	MITSUBISHI TPKA0A024	ALL

1. PROVIDE REFRIGERANT PIPING AND POWER/CONTROL WIRING FOR CONNECTION TO EACH INDOOR UNIT. SIZE PIPING PER MANUFACTURER RECOMMENDATION FOR EACH UNIT.
2. PROVIDE WITH CONDENSATE PUMP
3. PROVIDE UL-508 CONDENSATE OVERFLOW SWITCH.
4. INSTALL LINESET COVERS. COORDINATE CONDENSATE AND REFRIGERANT PIPING CONNECTIONS WITH ARCHITECTURAL AND INTERIORS
5. PROVIDE A WIRED 7-DAY PROGRAMMABLE THERMOSTAT

DIFFUSER, REGISTER, AND GRILLE SCHEDULE

MARK	MANUFACTURER & MODEL OR EQUAL	TYPE	MODULE SIZE	PERFORMANCE		NOTES
				MAX. NC	MAX. APD	
D-1	PRICE 520	DOUBLE DEFLECTION	SEE PLANS	25	0.1" WC	1,2,3,4
D-2	PRICE SDGE	SPIRAL DUCT DIFFUSER	SEE PLANS	25	0.1" WC	1,2,5
D-3	PRICE SPD	PLAQUE	24x24	25	0.1" WC	1,2,3
D-4	PRICE SDS	SLOT DIFFUSER	48"	25	0.1" WC	1,2,3,6
G-1	PRICE 500	LOUVERED FACE RETURN	SEE PLANS	25	0.1" WC	1,2,3
G-2	PRICE 10	PERFORATED RETURN	24x12	25	0.1" WC	1,2,3
G-3	PRICE 10	PERFORATED RETURN	24x24	25	0.1" WC	1,2,3

1. SEE PLANS FOR CFM AND NECK SIZE.
2. COLOR AND FINISH TO BE COORDINATED WITH ARCHITECT.
3. MATERIAL IS STEEL UNLESS OTHERWISE NOTED.
4. PROVIDE OPPOSED BLADE DAMPER
5. PROVIDE AIR SCOOP
6. PROVIDE PLENUM ACCESSORY BY FACTORY OR FABRICATE PLENUM IN FIELD.

FAN COIL SCHEDULE (HOT WATER HEAT)

ITEM	MANUFACTURER & MODEL NO.	AREA SERVED	CFM	O.A. CFM	SUPPLY AIR FAN DATA					HEATING							OP. WT. LBS.	NOTES
					FAN DRIVE	E.S.P. IN. W.C.	MOTOR DATA			CAP. MBH	E.A.T. °F DB	L.A.T. °F DB	HEATING WATER						
							HP	FLA AMPS	V/PH/HZ				GPM	E.W.T. °F	L.W.T. °F	GLY %	WATER P.D. FT. W.C.		
FC-B-1	CARRIER 42CK-10	BASEMENT	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	35	68	100	1.5	170	140	35	0.30	150	1-12
FC-B-2	CARRIER 42CK-10	BASEMENT	760	210	DIRECT	0.15	1/6 (2)	1.38	277/1/60	42	60	100	2.0	170	140	35	0.30	150	1-12
FC-B-3	CARRIER 42CK-10	BASEMENT	760	120	DIRECT	0.15	1/6 (2)	1.38	277/1/60	42	60	100	2.0	170	140	35	0.30	150	1-12
FC-B-4	CARRIER 42CK-10	BASEMENT	760	70	DIRECT	0.15	1/6 (2)	1.38	277/1/60	42	60	100	2.0	170	140	35	0.30	150	1-12
FC-B-5	CARRIER 42CK-10	BASEMENT	760	140	DIRECT	0.15	1/6 (2)	1.38	277/1/60	12	60	100	2.0	170	140	35	0.30	150	1-12
FC-1-1	CARRIER 42CE-12	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.80	277/1/60	46	68	100	1.0	170	140	35	0.20	170	1, 3-12
FC-1-2	CARRIER 42CK-10	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-1-3	CARRIER 42CK-10	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-1-4	CARRIER 42CE-10	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1, 3-13
FC-1-5	CARRIER 42CE-10	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1, 3-13
FC-1-6	CARRIER 42CE-10	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1, 3-13
FC-1-7	CARRIER 42CK-10	MAIN LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-2-1	CARRIER 42CK-10	UPPER LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-2-2	CARRIER 42CK-10	UPPER LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-2-3	CARRIER 42CK-10	UPPER LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-2-4	CARRIER 42CK-10	UPPER LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-2-5	CARRIER 42CG-10	UPPER LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12
FC-2-6	CARRIER 42CG-10	UPPER LEVEL	760	0	DIRECT	0.15	1/6 (2)	1.38	277/1/60	27	68	100	1.0	170	140	35	0.20	150	1-12

1. FAN COIL, HEATING ONLY.
2. HORIZONTAL UNIT WITH FACTORY INSULATED PLENUM, BOTTOM-RETURN WITH STAMPED GRILLE, AND 1" FILTER RACK.
3. MERV 8 FILTER.
4. ECM MOTOR OPTION
5. 24 V THERMOSTAT OPTION, 7-DAY DIGITAL PROGRAMMABLE THERMOSTAT.
6. PROVIDE HOSE KIT WITH 2-WAY MODULATING VALVE.
7. MANUAL AIR VENT.
8. SUPPLY AND RETURN DUCT COLLARS
9. AUX DRAIN PAN
10. VIBRATION ISOLATORS
11. FLEX DUCT CONNECTOR
12. CONTRACTOR TO PAINT UNIT IN FIELD. REFER TO ARCHITECTURAL
13. HORIZONTAL UNIT, DRAIN PAN, END RETURN WITH FILTER GRILLE AND 1" FILTER

EVAPORATIVE COOLER SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	FAN INFORMATION			COOLING SECTION			ELECTRICAL						WEIGHT WET (LBS)	NOTES
		AIRFLOW (CFM)	ESP (IN.WC)	HP	TYPE	# INLET	MEDIA	FAN			PUMP				
								MCA	MOCP	V/PH/HZ	MCA	MOCP	V/PH/HZ		
EC-1 & 2	PHOENIX MANUFACTURING FRIGIKING UFD-650	4,000	0.30	3/4	EVAP	SINGLE	8" ASPEN	10.5	15	120/1/60	1.7	15	120/1/60	350	ALL

NOTES:
1. DOWN DISCHARGE
2. GALVANIZED SHEET METAL CASE CONSTRUCTION
3. UNIT SHALL BE UL STANDARD 507 COMPLIANT
4. PROVIDE MOTORIZED DAMPER.
5. PROVIDE WALL MOUNTED 6 POSITION CONTROLLER (PUMP ONLY, LOW VENT, HIGH VENT, LOW COOL, HIGH COOL, OFF).

PLUMBING FIXTURE SCHEDULE

MARK	MANUFACTURER & MODEL OR EQUAL	DESCRIPTION	CW	HW	SAN	V
EWH-1	AO SMITH DEL	ELECTRIC LOWBOY WATER HEATER, 15 GALLON, 1500 KW. PROVIDE HEAT TRAPS AND T&P RELIEF VALVE. PROVIDE STAND - REFER TO DETAIL	3/4"	3/4"	-	-
ET-1	AMTROL ST-5	INLINE THERMAL EXPANSION TANK, TANK VOLUME 2.3 GAL WITH 0.59 GAL ACCEPTANCE FACTOR.	3/4"	-	-	-
HWCP-1	BELL & GOSSETT E3	HOT WATER RECIRCULATION PUMP WITH INTEGRAL TIMER/THERMOSTAT CONTROL, 2 GPM AT 2.5FT H20. 120/1, 10W.	-	1/2"	-	-
FS-1	JOSAM 49320	12"X12"X6" CAST IRON FLOOR SINK WITH 1/2 GRATE, PORCELAIN COATING WITH DOME STRAINER. PROVIDE SURE SEAL TRAP GUARD.	-	-	3"	-
FD-1	JOSAM 30000	5" ROUND FLOOR DRAIN, ADJUSTABLE C.I. BODY WITH NICKEL ALLOY TOP. PROVIDE SURE SEAL TRAP GUARD.	-	-	2"	2"
BFP-1	WATTS LF7R	DUAL CHECK VALVE	1/2"	-	-	-
TMV-1	WATTS LFUSGB	THERMOSTATIC MIXING VALVE FOR POINT OF USE, ASSE 1070 LISTED.	3/8"	3/8"	-	-
MS-1	MUSTEE 63M	24"X24"X10" MOLDED FIBERGLASS MOP SINK WITH 63.600A FAUCET W/ VACUUM BREAKER, STAINLESS STEEL WALL GUARDS AND MOP HOOKS	3/4"	3/4"	3"	2"
HB-1	T&S B-0665	HOT AND COLD HOSE CONNECTION FOR SKI TUNING EQUIP. PROVIDE FAUCET WITH WALL BRACE, THREADED HOSE CONNECTION, AND VACUUM BREAKER.	3/4"	-	-	-
WC-1	TOTO CST744EFN	ADA, VITREOUS CHINA FLOOR MOUNTED FLUSH TANK WATER CLOSET, 1.28 GPF	1/2"	-	4"	2"
L-1	TOTO LT307 SLOAN EBF-650	WALL HUNG LAVATORY, VITREOUS CHINA 21"X18"X5.5". PROVIDE 1/4 TURN VALVE STOPS AND TMV-1. ELECTRONIC 0.5GPM HAND WASHING FAUCET, BATTERY POWERED	1/2"	1/2"	1-1/2"	1-1/4"
DF-1	ELKAY EZSDWSLK	WALL MOUNTED SINGLE LEVEL ADA DRINKING FOUNTAIN WITH BOTTLE FILLER. PROVIDE WALL BRACKET.	1/2"	-	1-1/2"	1-1/4"
AAV-1	STUDOR MINI-VENT	AIR ADMITTANCE VALVE WITH RECESSED ROUGH-IN BOX AND GRILLE.	-	-	-	SEE PLANS

SIZES SHOWN ARE MINIMUM PIPE SIZES TO A SINGLE FIXTURE. MINIMUM PIPE SIZE TO 2 OR MORE FIXTURES IS 3/4". ALL FIXTURES LISTED ARE NOT NECESSARILY USED ON THIS PROJECT.
* WASTE PIPES BELOW SLABS ON GRADE ARE A MINIMUM OF 3".

DESTRATIFICATION FAN SCHEDULE

MARK	MANUFACTURER & MODEL NO.	TYPE	ELECTRICAL			NOTES
			V/PH/HZ	AMP	MOP	
DF-1	AIRIUS D-45-EC	DESTRATIFICATION	120/1/60	1.5	15	ALL

NOTES:
1. COORDINATE WITH ELECTRICAL CONTRACTOR FOR RECEPTACLE LOCATION
2. PROVIDE COVER PLATE FOR CONTROL WIRING.
3. COORDINATE COLOR WITH ARCHITECTURAL
4. SUPPLY WITH CEILING BRACKET.
5. PROVIDE WITH CONTROLS PACKAGE WITH WALL CONTROLLER..

ELECTRIC HEATER SCHEDULE

ITEM	MANUFACTURER & MODEL NO.	AIRFLOW (CFM)	AMPS	WATTS	V/PH/HZ	NOTES
CUH-B-1	QMARK CDF-547	300	14.4	4000	277/1/60	ALL
EH-1-1	QMARK CWH1208DSF	150	9.6	2000	208/1/60	ALL
EH-1-2	QMARK CWH1207DSF	150	7.3	2000	277/1/60	ALL

NOTES:
1. PROCURE WITH INTEGRAL ELECTRICAL DISCONNECTING MEANS CONCEALED BEHIND PANEL
2. PROVIDE WITH INTEGRAL THERMOSTAT.
3. COORDINATE COLOR AND STYLE WITH ARCHITECT AND INTERIORS.

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9966

Reviewed for Code Compliance
08/05/2022

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

PROFESSIONAL SEAL:
COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MECHANICAL AND PLUMBING DETAILS AND SCHEDULES

SHEET: MP003

TIME STAMP:

Reviewed for Code Compliance

08/05/2022

COM*check* Software Version 4.1.5.3

Mechanical Compliance Certificate

Project Information

Energy Code:	2018 IECC
Project Title:	GONDOLA SQUARE BUILDING D RENOVATION
Location:	Steamboat Springs, Colorado
Climate Zone:	7
Project Type:	Addition

Construction Site:
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

Owner/Agent:

Designer/Contractor:

Mechanical Systems List

Quantity	System Type & Description
1	HP-1 / WM-1 (Single Zone): Split System Heat Pump Heating Mode: Capacity = 24 kBtu/h, Proposed Efficiency = 8.20 HSPF, Required Efficiency = 8.20 HSPF Cooling Mode: Capacity = 24 kBtu/h, Proposed Efficiency = 16.00 SEER, Required Efficiency: 14.00 SEER Fan System: Wall Mount Fan -- Compliance (Motor nameplate HP method) : Passes Fans: Wall Mount Supply, Single-Zone VAV, 800 CFM, 0.3 motor nameplate hp, 60.0 fan efficiency grade
1	DOAS (Single Zone): Heating: 1 each - Central Furnace, Gas, Capacity = 280 kBtu/h Proposed Efficiency = 81.00% Et, Required Efficiency: 80.00 % Et Fan System: DOAS Fan -- Compliance (Motor nameplate HP method) : Passes Fans: Supply Supply, Single-Zone VAV, 2800 CFM, 1.5 motor nameplate hp, 60.0 fan efficiency grade
1	CUH-B-1 (Single Zone): Heating: 1 each - Unit Heater, Electric, Capacity = 12 kBtu/h No minimum efficiency requirement applies Fan System: CUH FAN -- Compliance (Motor nameplate HP method) : Passes Fans: CUH Supply, Constant Volume, 300 CFM, 0.3 motor nameplate hp, 60.0 fan efficiency grade
1	EH-1-1 AND EH-1-2 (Single Zone): Heating: 1 each - Unit Heater, Electric, Capacity = 6 kBtu/h No minimum efficiency requirement applies Fan System: EH FAN -- Compliance (Motor nameplate HP method) : Passes Fans: EH Supply, Constant Volume, 150 CFM, 0.1 motor nameplate hp, 60.0 fan efficiency grade
18	HVAC System 5 (Single Zone): Heating: 1 each - Hydronic or Steam Coil, Hot Water, Capacity = 42 kBtu/h No minimum efficiency requirement applies Fan System: FAN COIL -- Compliance (Motor nameplate HP method) : Passes Fans: FC Supply, Constant Volume, 760 CFM, 0.3 motor nameplate hp, 60.0 fan efficiency grade

---

Quantity	System Type & Description
	Fans: FC Supply, Constant Volume, 760 CFM, 0.3 motor nameplate hp, 60.0 fan efficiency grade

Mechanical Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2018 IECC requirements in COM*check* Version 4.1.5.3 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Scott K. Zimmerman		2022-04-29
Name - Title	Signature	Date

COM*check* Software Version 4.1.5.3

Inspection Checklist

Energy Code: 2018 IECC

Requirements: 92.0% were addressed directly in the COM*check* software

Text in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section # & Req.ID	Plan Review	Complies?	Comments/Assumptions
C103.2 [PR2][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the mechanical systems and equipment and document where exceptions to the standard are claimed. Load calculations per acceptable engineering standards and handbooks.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C406 [PR9][1]	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the additional energy efficiency package options.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Footing / Foundation Inspection	Complies?	Comments/Assumptions
C403.12.2, C403.12.3 [FO9][3]	Snow/ice melting system and freeze protection systems have sensors and controls configured to limit service for pavement temperature and outdoor temperature. future connection to controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.5, C404.5.1, C404.5.2 [PL6][3]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.5, C404.5.1, C404.5.2 [PL6][3]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.5, C404.5.1, C404.5.2 [PL6][3]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.5, C404.5.1, C404.5.2 [PL6][3]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.5, C404.5.1, C404.5.2 [PL6][3]	Heated water supply piping conforms to pipe length and volume requirements. Refer to section details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.3 [PL7][3]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.6.3 [PL7][3]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.6.3 [PL7][3]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.6.3 [PL7][3]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.6.3 [PL7][3]	Pumps that circulate water between a heater and storage tank have controls that limit operation from startup to <= 5 minutes after end of heating cycle.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C404.7 [PL8][3]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Plumbing Rough-In Inspection	Complies?	Comments/Assumptions
C404.7 [PL8][3]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.7 [PL8][3]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.7 [PL8][3]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C404.7 [PL8][3]	Demand recirculation water systems have controls that start the pump upon receiving a signal from the action of a user of a fixture or appliance and limits the temperature of the water entering the cold-water piping to 104°F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C402.2.6 [ME41][3]	Thermally ineffective panel surfaces of sensible heating panels have insulation >= R-3.5.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.11.3 [ME61][2]	HVAC piping insulation insulated in accordance with Table C403.11.3. Insulation exposed to weather is protected from damage and is provided with shielding from solar radiation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.4 [ME142][2]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.4 [ME142][2]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.4 [ME142][2]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.4 [ME142][2]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.8.4 [ME142][2]	Motors for fans that are not less than 1/12 hp and less than 1 hp are electronically commutated motors or have a minimum motor efficiency of 70 percent. These motors have the means to adjust motor speed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.5 [ME143][2]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.5 [ME143][2]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.8.5 [ME143][2]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.8.5 [ME143][2]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.8.5 [ME143][2]	Each DX cooling system > 65 kBtu and chiller water/evaporative cooling system with fans > 1/4 hp are designed to vary the indoor fan airflow as a function of load and comply with detailed requirements of this section.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.12.1 [ME71][2]	Systems that heat outside the building envelope are radiant heat systems controlled by an occupancy sensing device or timer switch.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.3 [ME55][2]	HVAC equipment efficiency verified.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	*See the Mechanical Systems list for values.*
C403.5.5 [ME113][2]	Fault detection and diagnostics installed with air-cooled unitary DX units having economizers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.2 [ME59][1]	Natural or mechanical ventilation is provided in accordance with International Mechanical Code Chapter 4. Mechanical ventilation has capability to reduce outdoor air supply to minimum per IMC Chapter 4.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.7.1 [ME59][1]	Demand control ventilation provided for spaces >500 ft2 and >25 people/1000 ft2 occupant density and served by systems with air side economizer, auto modulating outside air damper control, or design airflow >3,000 cfm.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1	High Impact (Tier 1)	2	Medium Impact (Tier 2)	3	Low Impact (Tier 3)

STUDIO DH
architecture

1300 JACKSON STREET, SUITE 200, GOLDEN CO 80401
PHONE: 303.458.9600 FAX: 303.458.9666

Ramirez,
Johnson, &
Associates

3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D

2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED PROFESSIONAL ENGINEER
SCOTT K. ZIMMERMAN
51662
07/28/2022

REV. #	ISSUED FOR	DATE
0	PERMIT	2022-04-30
1	OWNER CHANGES	2022-07-28

JOB NUMBER:	102201
DRAWN BY:	NM / SKZ
APPROVED BY:	DWR
DATE:	2022-07-28

SHEET TITLE:
ENERGY COMPLIANCE DOCUMENTATION

1

SHEET:
MP004

TIME STAMP:

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.7.2 [ME115]^{3}	Enclosed parking garage ventilation has automatic contaminant detection and capacity to stage or modulate fans to 50% or less of design capacity.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.7.6 [ME141]^{3}	HVAC systems serving guestrooms in Group R-1 buildings with > 50 guestrooms: Each guestroom is provided with controls that automatically manage temperature setpoint and ventilation (see sections C403.7.6.1 and C403.7.6.2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.7.4 [ME57]^{1}	Exhaust air energy recovery on systems meeting Table C403.7.4(1) and C403.7.4(2).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.7.5 [ME116]^{3}	Kitchen exhaust systems comply with replacement air and conditioned supply air limitations, and satisfy hood rating requirements and maximum exhaust rate criteria.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.11.1, C403.11.2 [ME60]^{2}	HVAC ducts and plenums insulated in accordance with C403.11.1 and constructed in accordance with C403.11.2, verification may need to occur during Foundation Inspection.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5, C403.5.1, C403.5.2 [ME62]^{1}	Air economizers provided where required, meet the requirements for design capacity, control signal, ventilation controls, high-limit shut-off, integrated economizer control, and provide a means to relieve excess outside air during operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5.3.3 [ME124]^{1}	Air economizers automatically reduce outdoor air intake to the design minimum outdoor air quantity when outdoor air intake will not reduce cooling energy usage. See Table C403.5.3.3 for applicable device types and climate zones.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5.3.4 [ME125]^{1}	System capable of relieving excess outdoor air during air economizer operation to prevent overpressurizing the building. The relief air outlet located to avoid recirculation into the building.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5.3.5 [ME126]^{1}	Return, exhaust/relief and outdoor air dampers used in economizers have motorized dampers that automatically shut when not in use and meet maximum leakage rates. Reference section C403.7.7 for details.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.3.1 [ME50]^{2}	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.3.1 [ME50]^{2}	Three-pipe hydronic systems using a common return for hot and chilled water are not used.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 9 of 16

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C403.4.3.3.2 [ME121]^{3}	Closed-circuit cooling tower within heat pump loop have either automatic bypass valve or lower leakage positive closure dampers. Open-circuit tower within heat pump loop have automatic valve to bypass all heat pump water flow around the tower. Open- or closed-circuit cooling towers used in conjunction with a separate heat exchanger have heat loss by shutting down the circulation pump on the cooling tower loop. Open- or closed circuit cooling towers have a separate heat exchanger to isolate the cooling tower from the heat pump loop, and heat loss is controlled by shutting down the circulation pump on the cooling tower loop.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.4.5 [ME26]^{3}	Chilled water plants with multiple chillers have capability to reduce flow automatically through the chiller plant when a chiller is shut down. Boiler plants with multiple boilers have the capability to reduce flow automatically through the boiler plant when a boiler is shut down.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.5 [ME26]^{3}	Chilled water plants with multiple chillers have capability to reduce flow automatically through the chiller plant when a chiller is shut down. Boiler plants with multiple boilers have the capability to reduce flow automatically through the boiler plant when a boiler is shut down.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.4 [ME63]^{2}	Heating for vestibules and air curtains with integral heating include automatic controls that shut off the heating system when outdoor air temperatures > 45F. Vestibule heating and cooling systems controlled by a thermostat in the vestibule with heating setpoint <= 60F and cooling setpoint >= 80F.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.9.5 [ME31]^{3}	Condenser heat recovery system that can heat water to 85 ºF or provide 60% of peak heat rejection is installed for preheating of service hot water.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.9.5 [ME31]^{3}	Condenser heat recovery system that can heat water to 85 ºF or provide 60% of peak heat rejection is installed for preheating of service hot water.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.3.3 [ME35]^{1}	Hot gas bypass limited to: <=240 kBtu/h – 50% >240 kBtu/h – 25%	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.2.1 [ME53]^{3}	Air outlets and zone terminal devices have means for air balancing.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 10 of 16

Section # & Req.ID	Mechanical Rough-In Inspection	Complies?	Comments/Assumptions
C408.2.2.2 [ME54]^{3}	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.2.2 [ME54]^{3}	HVAC hydronic heating and cooling coils have means to balance and have pressure test connections.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.5, C403.5.1, C403.5.2 [ME123]^{3}	Refrigerated display cases, walk-in coolers or walk-in freezers served by remote compressors and remote condensers not located in a condensing unit, have fan-powered condensers that comply with Sections C403.5.1 and refrigeration compressor systems that comply with C403.5.2..	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 11 of 16

Section # & Req.ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
C405.6 [EL26]^{2}	Low-voltage dry-type distribution electric transformers meet the minimum efficiency requirements of Table C405.6.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.7 [EL27]^{2}	Electric motors meet the minimum efficiency requirements of Tables C405.7(1) through C405.7(4). Efficiency verified through certification under an approved certification program or the equipment efficiency ratings shall be provided by motor manufacturer (where certification programs do not exist).	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.8.2, C405.8.2.1 [EL28]^{2}	Escalators and moving walks comply with ASME A17.1/CSA B44 and have automatic controls configured to reduce speed to the minimum permitted speed in accordance with ASME A17.1/CSA B44 or applicable local code when not conveying passengers.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C405.9 [EL29]^{2}	Total voltage drop across the combination of feeders and branch circuits <= 5%.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 12 of 16

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C303.3, C408.2.5.3 [FI8]^{3}	Furnished O&M manuals for HVAC systems within 90 days of system acceptance.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.2 [FI27]^{3}	HVAC systems and equipment capacity does not exceed calculated loads.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1 [FI47]^{3}	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1 [FI47]^{3}	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1 [FI47]^{3}	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1 [FI47]^{3}	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1 [FI47]^{3}	Heating and cooling to each zone is controlled by a thermostat control. Minimum one humidity control device per installed humidification/dehumidification system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1.1 [FI42]^{3}	Heat pump controls prevent supplemental electric resistance heat from coming on when not needed.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.4.1.2 [FI38]^{3}	Thermostatic controls have a 5 °F deadband.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.1.3 [FI20]^{3}	Temperature controls have setpoint overlap restrictions.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2 [FI39]^{3}	Each zone equipped with setback controls using automatic time clock or programmable control system.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 13 of 16

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.4.2.1, C403.2.4.2.2 [FI40]^{3}	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57]^{1}	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.1 [FI28]^{1}	Commissioning plan developed by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.1 [FI31]^{1}	HVAC equipment has been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.2 [FI10]^{1}	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.3 [FI32]^{1}	Economizers have been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.4 [FI29]^{1}	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 14 of 16

Section # & Req.ID	Final Inspection	Complies?	Comments/Assumptions
C403.2.4.2.1, C403.2.4.2.2 [FI40]^{3}	Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	**Exception:** Requirement does not apply.
C403.2.4.2.3 [FI41]^{3}	Systems include optimum start controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.1.1 [FI57]^{1}	Building operations and maintenance documents will be provided to the owner. Documents will cover manufacturers' information, specifications, programming procedures and means of illustrating to owner how building, equipment and systems are intended to be installed, maintained, and operated.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.1 [FI28]^{1}	Commissioning plan developed by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	Requirement will be met.
C408.2.3.1 [FI31]^{1}	HVAC equipment has been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.2 [FI10]^{1}	HVAC control systems have been tested to ensure proper operation, calibration and adjustment of controls.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.3.3 [FI32]^{1}	Economizers have been tested to ensure proper operation.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	
C408.2.4 [FI29]^{1}	Preliminary commissioning report completed and certified by registered design professional or approved agency.	☐Complies ☐Does Not ☐Not Observable ☐Not Applicable	

1 High Impact (Tier 1) 2 Medium Impact (Tier 2) 3 Low Impact (Tier 3)

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 14 of 16

Project Title: GONDOLA SQUARE BUILDING D RENOVATION Report date: 04/28/22
Data filename: G:\Shared drives\Projects\Studio DH Architecture\2022-048 Christy Sports Steamboat Springs\Mechanical\Comcheck.cck Page 16 of 16

Reviewed for Code Compliance
08/05/2022

STUDIO DH
architecture

1300 JACKSON STREET, SUITE 200, GOLDEN CO 80401
PHONE: 303.458.9600 FAX: 303.458.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

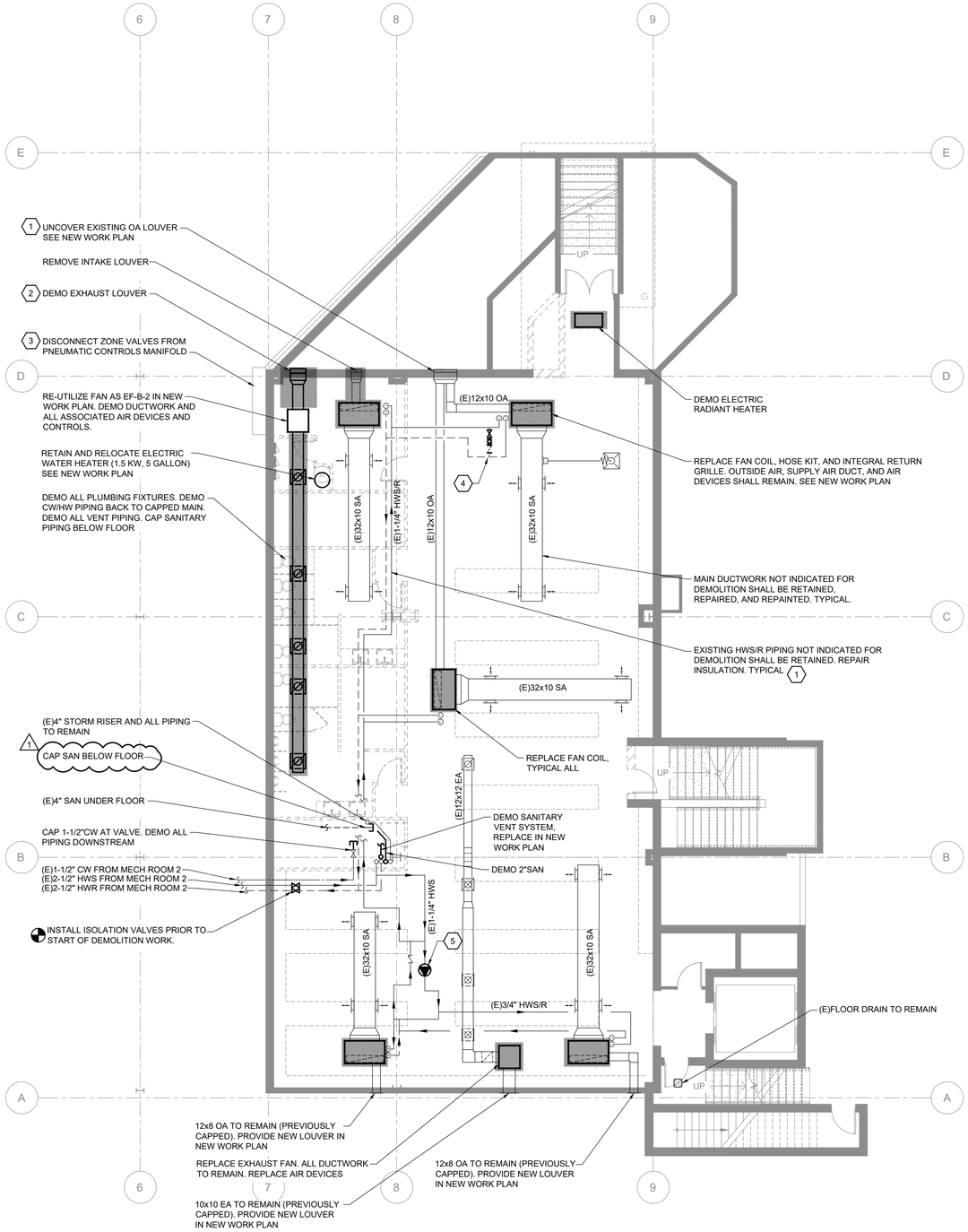
PROFESSIONAL SEAL:
SCOTT K. ZIMMERMAN
51662
07/28/2022

REV #	ISSUED FOR	DATE
0	PERMIT	2022-04-30
1	OWNER CHANGES	2022-07-28

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE:
ENERGY COMPLIANCE DOCUMENTATION

SHEET:
MP005



BASEMENT DEMOLITION PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARE DISCOVERED.

D. EXISTING HEATING WATER SUPPLY AND RETURN BRANCH PIPING IS ROUTED WITHIN THE FLOOR. PROTECT THIS PIPING DURING CONSTRUCTION AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF 2-WAY VALVES AND REPAIR/REPLACE IF REQUIRED.

E. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

F. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL CONDUCT A SEWER SCOPE TO VERIFY SIZES, INVERT ELEVATIONS, AND CONDITION OF EXISTING SANITARY PIPING BELOW THE FLOOR AND BELOW GRADE. PROVIDE AN ANNOTATED PLAN NOTING LOCATIONS AND SIZES WITH THE SHOP DRAWING DOCUMENTATION.

G. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

KEY NOTES (#)

1. EXISTING LOUVERS WERE COVERED IN A PREVIOUS PROJECT. UNCOVER LOUVERS OR EXTEND DUCTWORK AS NECESSARY AND PROVIDE NEW LOUVER ON EXTERIOR WALL.
2. RE-UTILIZE PENETRATION IN NEW WORK PLAN.
3. THE PNEUMATIC CONTROLS MANIFOLD AND AIR COMPRESSOR SERVING GONDOLA SQUARE IS LOCATED IN MECHANICAL ROOM #3 (MEZZANINE MECHANICAL ROOM IN THE PARKING GARAGE). THE MANIFOLD IS LOCATED ON THE OPPOSITE SIDE OF THE WALL FROM THIS PROJECT. COORDINATE CONTROLS WORK WITH STEAMBOAT SKI CORP.
4. VERIFY OPERATION OF CHECK VALVES AND BALANCING VALVES DISCOVERED AS PART OF THIS PROJECT.
5. REPLACE HEATING WATER CIRCULATOR PUMP. PUMP IS ON THE HEATING WATER SUPPLY BRANCH (VERIFY-IN-FIELD)

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS. SEE NEW WORK PLAN FOR DIGITAL CONTROLS
- RECONNECT PNEUMATIC CONTROLS TO 3-WAY VALVES AS REQUIRED.
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

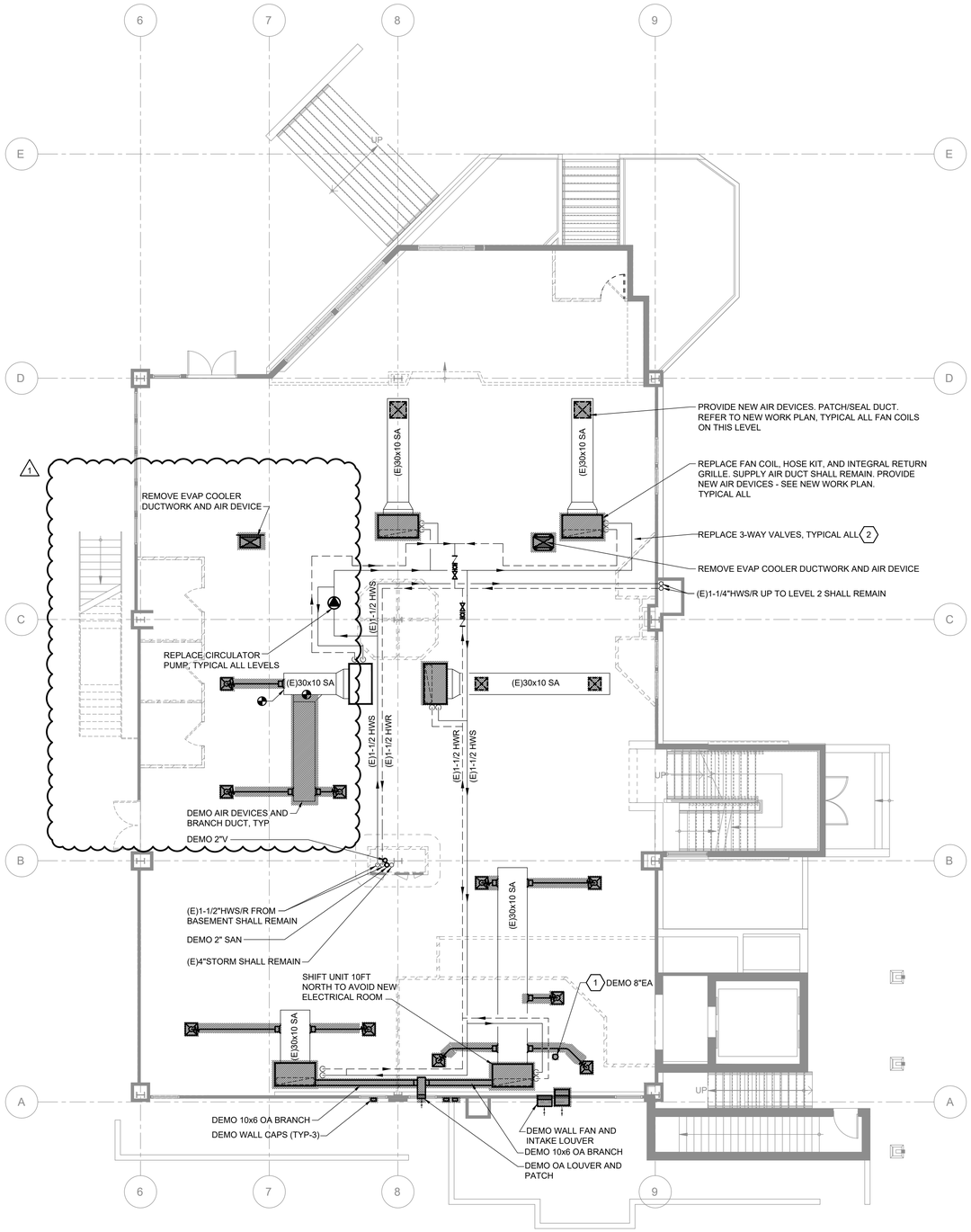
COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
08/02/2022
PROFESSIONAL ENGINEER

REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28
SHEET TITLE: BASEMENT DEMOLITION PLAN

SHEET: MD100

TIME STAMP:



MAIN LEVEL DEMOLITION PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. PROTECT EXISTING HEATING WATER SUPPLY AND RETURN PIPING AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF VALVES AND REPAIR/REPLACE IF REQUIRED.

D. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

C. VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARE DISCOVERED.

D. PRIOR TO DEMOLITION, THE CONTRACTOR SHALL CONDUCT A SEWER SCOPE TO VERIFY SIZES, INVERT ELEVATIONS, AND CONDITION OF EXISTING SANITARY PIPING BELOW THE FLOOR AND BELOW GRADE. PROVIDE AN ANNOTATED PLAN NOTING LOCATIONS AND SIZES WITH THE SHOP DRAWING DOCUMENTATION.

E. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.\

F. REMOVE PNEUMATIC CONTROLS PIPING AND CAP.

G. COORDINATE ALL SYSTEM SHUTDOWNS WITH LANDLORD AND ADJACENT TENANTS.

KEY NOTES (#)

1. DEMOLISH 8" EXHAUST AIR SYSTEM PREVIOUSLY SERVING SKI TUNING EQUIPMENT. RETURN FANS AND EQUIPMENT TO OWNER.
2. REPLACE ALL 3-WAY VALVES DISCOVERED AS PART OF THIS PROJECT. RECONNECT PNEUMATIC CONTROLS.

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS. SEE NEW WORK PLAN FOR DIGITAL CONTROLS
- RECONNECT PNEUMATIC CONTROLS TO 3-WAY VALVES AS REQUIRED.
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

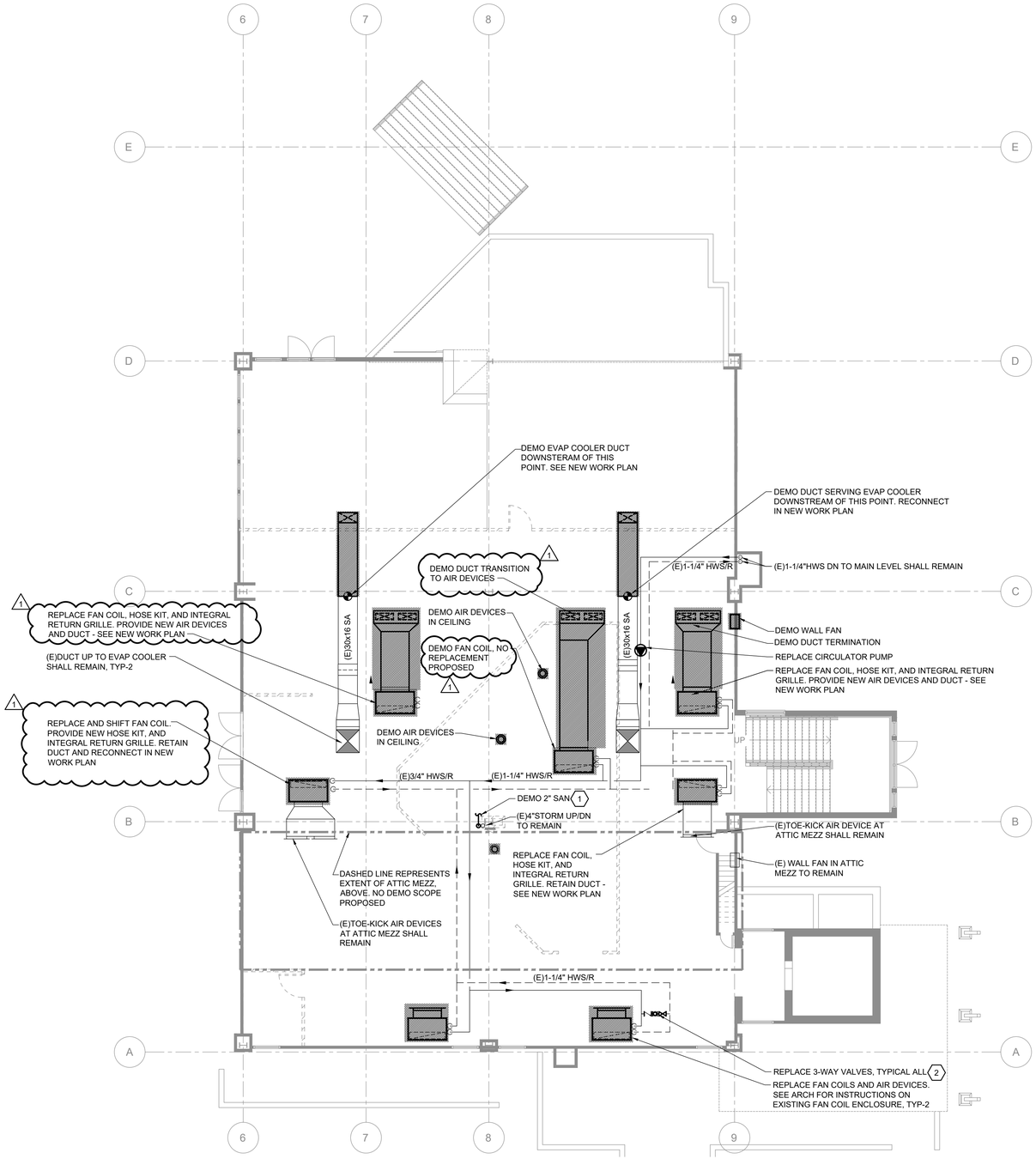
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MAIN LEVEL DEMOLITION PLAN

SHEET: MD101

TIME STAMP:



UPPER LEVEL DEMOLITION PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. PROTECT EXISTING HEATING WATER SUPPLY AND RETURN PIPING AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF VALVES AND REPAIR/REPLACE IF REQUIRED.

D. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

E. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

F. REMOVE PNEUMATIC CONTROLS PIPING AND CAP.

G. COORDINATE ALL SYSTEM SHUTDOWNS WITH LANDLORD AND ADJACENT TENANTS.

KEY NOTES (#)

1. DEMO SINK IN THIS AREA. REMOVE AIR ADMITTANCE VALVE AND SANITARY BRANCH. DEMO SANITARY PIPING DOWN THROUGH FLOOR. DEMO CW AND HW
2. REPLACE ALL 3-WAY VALVES DISCOVERED AS PART OF THIS PROJECT. RECONNECT PNEUMATIC CONTROLS.

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS. SEE NEW WORK PLAN FOR DIGITAL CONTROLS
- RECONNECT PNEUMATIC CONTROLS TO 3-WAY VALVES AS REQUIRED.
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

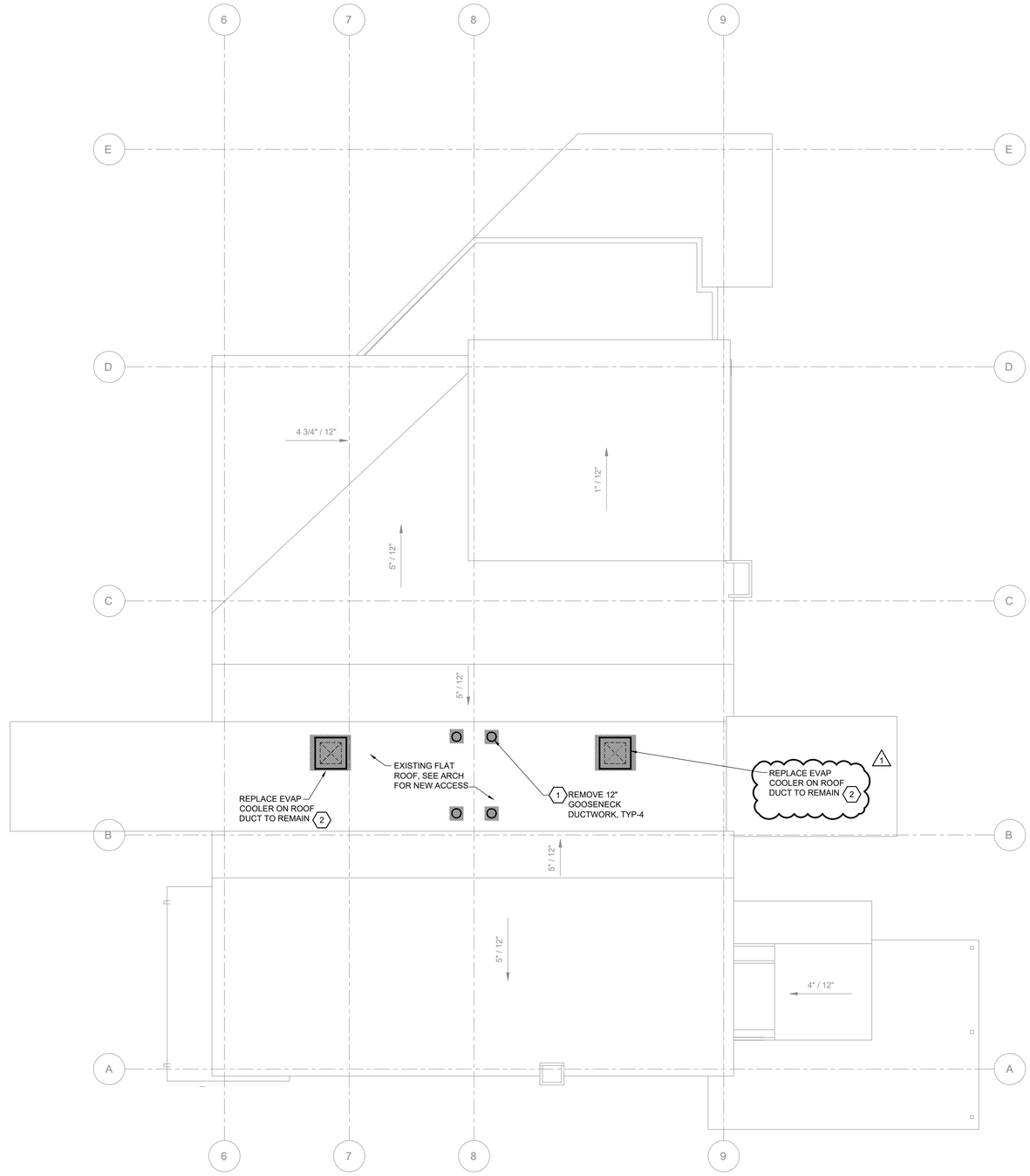
REV #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: UPPER LEVEL DEMOLITION PLAN

SHEET: MD102

TIME STAMP:



ROOF DEMOLITION PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. PROTECT EXISTING HEATING WATER SUPPLY AND RETURN PIPING AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF VALVES AND REPAIR/REPLACE IF REQUIRED.

D. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

E. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

F. REMOVE PNEUMATIC CONTROLS PIPING AND CAP.

G. COORDINATE ALL SYSTEM SHUTDOWNS WITH LANDLORD AND ADJACENT TENANTS.

KEY NOTES (#)

1. AFTER DEMOLITION OF THE UPPER LEVEL CEILING, NOTIFY THE ARCHITECT OF THE ROUTING OF THESE DUCTS. OBTAIN APPROVAL PRIOR TO DUCTWORK DEMOLITION.

2. RETAIN 3/4"CW BRANCH THRU ROOF. RE-FEED IN NEW WORK PLAN..

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D

2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201

DRAWN BY: NM / SKZ

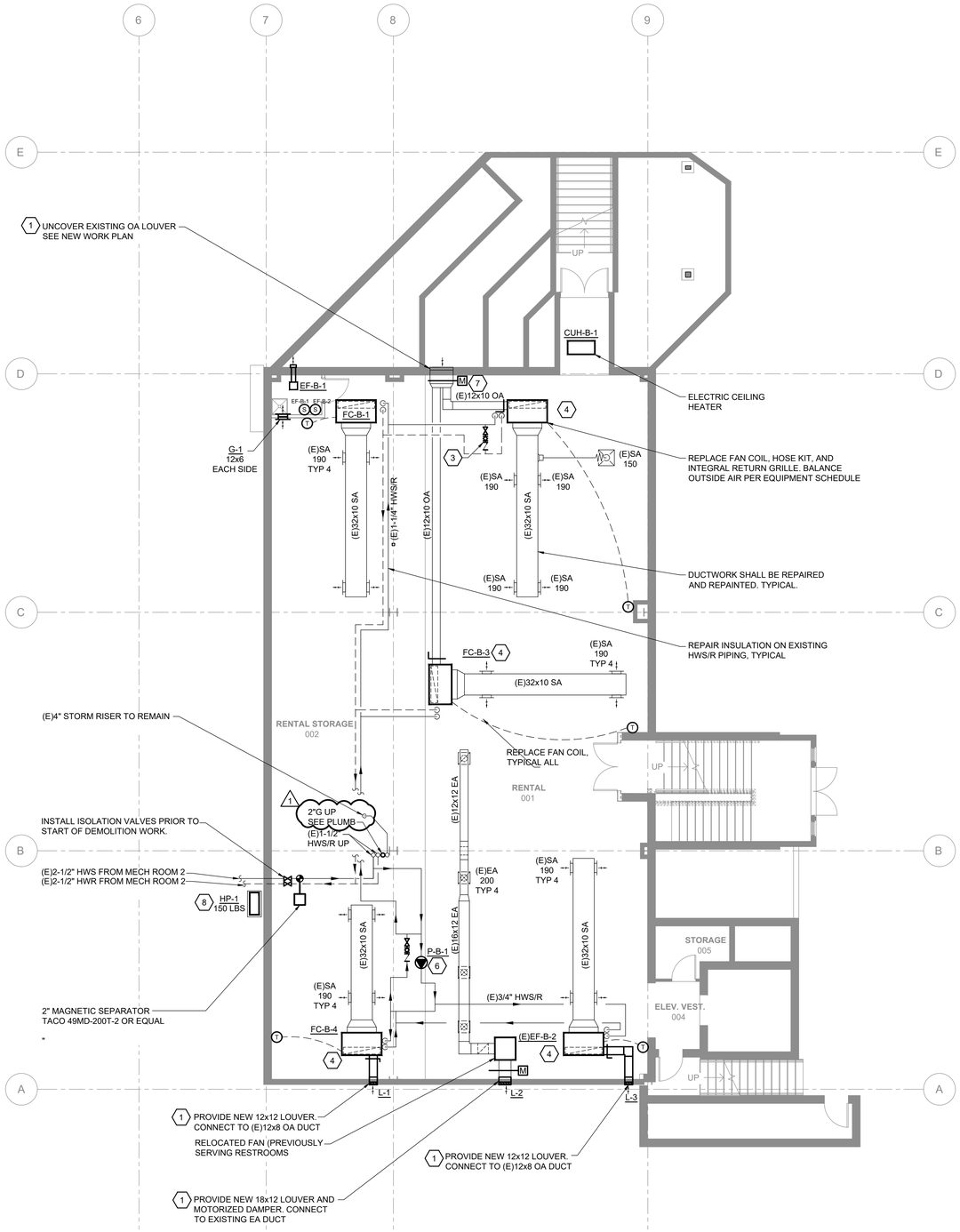
APPROVED BY: DWR

DATE: 2022-07-28

SHEET TITLE: ROOF DEMOLITION PLAN

SHEET: MD103

TIME STAMP:



BASEMENT MECHANICAL PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARE DISCOVERED.

D. EXISTING HEATING WATER SUPPLY AND RETURN BRANCH PIPING IS ROUTED WITHIN THE FLOOR. PROTECT THIS PIPING DURING CONSTRUCTION AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF 2-WAY VALVES AND REPAIR/REPLACE IF REQUIRED.

E. REFRIGERATION PIPING LINESET SHALL BE SIZED PER THE MANUFACTURER'S INSTRUCTIONS. FLASH ALL PENETRATIONS AND SEAL WEATHERTIGHT. REFER TO ARCHITECTURAL FOR PENETRATION DETAILS.

F. PROVIDE NEW HOSE KITS, VALVES, AND STRAINERS, REFER TO DETAILS FOR CONNECTION TO FAN COILS AND CONTROLS INSTRUCTIONS

G. CLEAN AIR DEVICES AS RE-UTILIZE ON THIS LEVEL. BALANCE PER PLAN.

H. PROVIDE BRASS VALVE TAGS STAMPED WITH ASSOCIATED PUMP MARK NUMBER.

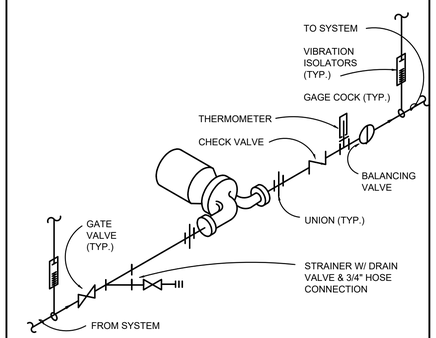
I. LABEL EACH THERMOSTAT WITH THE ASSOCIATED FAN COIL UNIT MARK NUMBER USING MINIMUM 1/4" LETTERING.

KEY NOTES (#)

1. LOUVERS WERE CAPPED IN A PREVIOUS SCOPE OF WORK. UNCOVER EXISTING LOUVERS OR PROVIDE NEW LOUVERS AS REQUIRED.
2. NOT USED.
3. NEW BALANCING VALVE, CHECK VALVE, AND ISOLATION VALVE.
4. FAN COIL WITH DUCTED OUTSIDE AIR CONNECTION: RE-CONNECT OUTSIDE AIR DUCT AND PROVIDE BALANCING DAMPER. MAINTAIN ACCESS TO FACTORY-PROVIDED FILTER RACK.
5. HWS/R PROVIDED BY LANDLORD ORIGINATES AT HEAT EXCHANGERS IN MECHANICAL ROOM #2 AND #5, AND 2 HP BUILDING HEATING PUMP AND MECHANICAL ROOM #2. NO CHANGES ARE PROPOSED TO LANDLORD'S HEATING WATER PIPING OUTSIDE OF THIS TENANT SPACE.
6. REPLACE EXISTING ZONE CIRCULATOR PUMP IN PLACE. INSTALL PUMP AND CONTROLS PER DETAILS
7. NEW MOTORIZED DAMPER. INTERLOCK WITH FC-B-2 AND FC-B-3. DAMPER SHALL OPEN WHEN EITHER UNIT IS COMMANDED ON.
8. INSTALL HEAT PUMP ON WALL, MAX 8'-0" AFF OF GARAGE. UTILIZE MANUFACTURER-PROVIDED WALL BRACKET. ROUTE REFRIGERANT PIPING TO UPPER LEVEL PER MANUFACTURER'S INSTRUCTIONS.

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS. SEE NEW WORK PLAN FOR DIGITAL CONTROLS
- RECONNECT PNEUMATIC CONTROLS TO 3-WAY VALVES AS REQUIRED.
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.



A CIRCULATING PUMP DETAIL

SCALE: NO SCALE

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

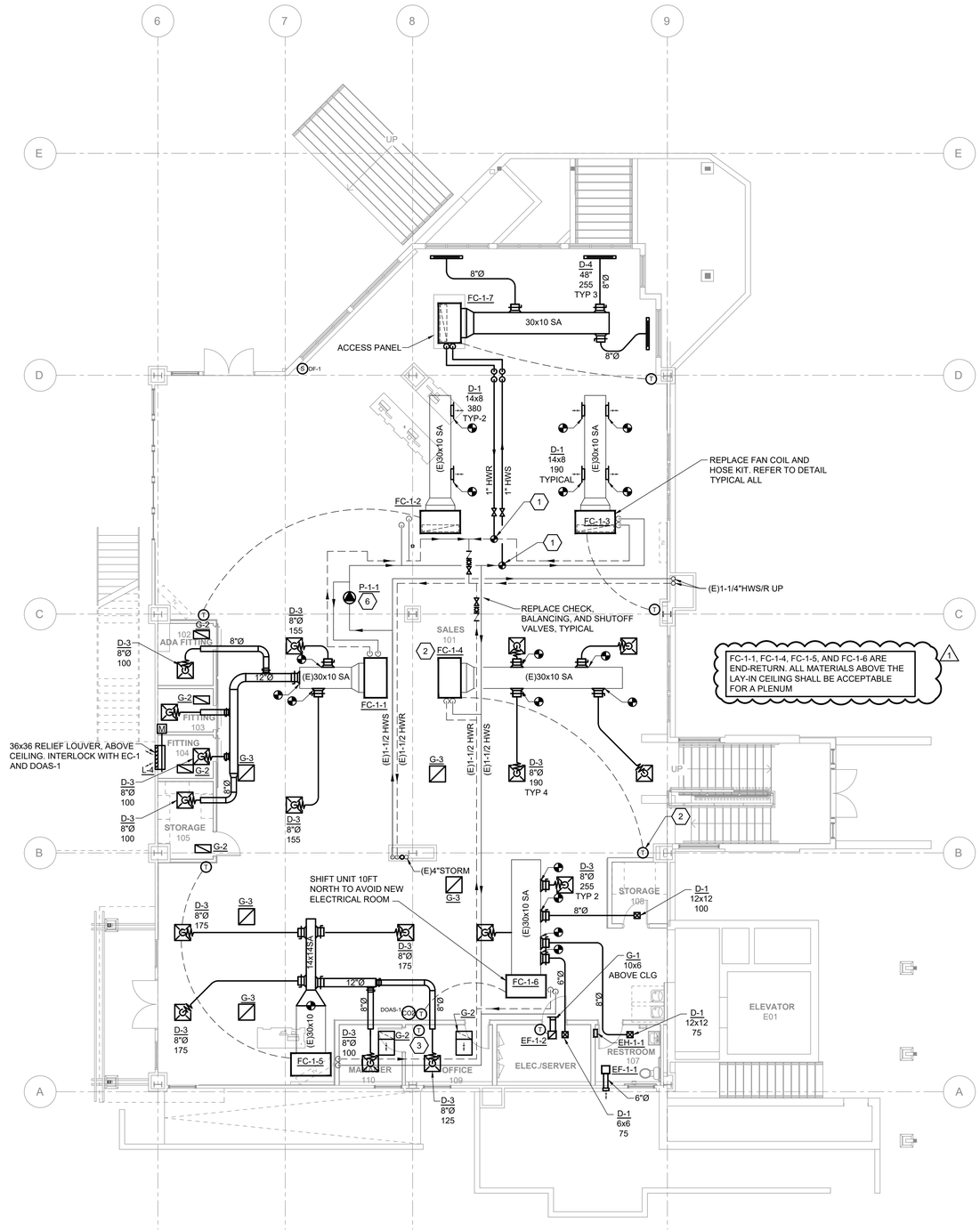
COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV. #	ISSUED FOR	DATE
0	PERMIT	2022-04-30
1	OWNER CHANGES	2022-07-28

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28
SHEET TITLE: BASEMENT MECHANICAL PLAN

SHEET: M100

TIME STAMP:



1 MAIN LEVEL MECHANICAL PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARE DISCOVERED.

D. REFRIGERATION PIPING LINESET SHALL BE SIZED PER THE MANUFACTURER'S INSTRUCTIONS. SEAL ALL PENETRATIONS WEATHERTIGHT.

E. PROVIDE NEW HOSE KITS, VALVES, AND STRAINERS, REFER TO DETAILS FOR CONNECTION TO FAN COILS AND CONTROLS INSTRUCTIONS

F. PROVIDE BRASS VALVE TAGS STAMPED WITH ASSOCIATED PUMP MARK NUMBER.

G. LABEL EACH THERMOSTAT WITH THE ASSOCIATED FAN COIL UNIT MARK NUMBER USING MINIMUM 1/4" LETTERING

KEY NOTES (#)

1. PROVIDE NEW HWS/R BRANCHES FROM EXISTING MAIN SERVING THIS LEVEL
2. INTERIOR FAN COIL FC-1-4 IS NOT REQUIRED TO BE CONNECTED TO THE CIRCULATOR PUMP RELAY.
3. PROVIDE WIRED AVERAGING THERMOSTAT FOR MANAGER OFFICE.

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS. SEE NEW WORK PLAN FOR DIGITAL CONTROLS
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.
- CIRCULATOR PUMPS SHALL ENERGIZE WHEN ANY THERMOSTAT ON THE ASSOCIATED LEVEL CALLS FOR HEAT.

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

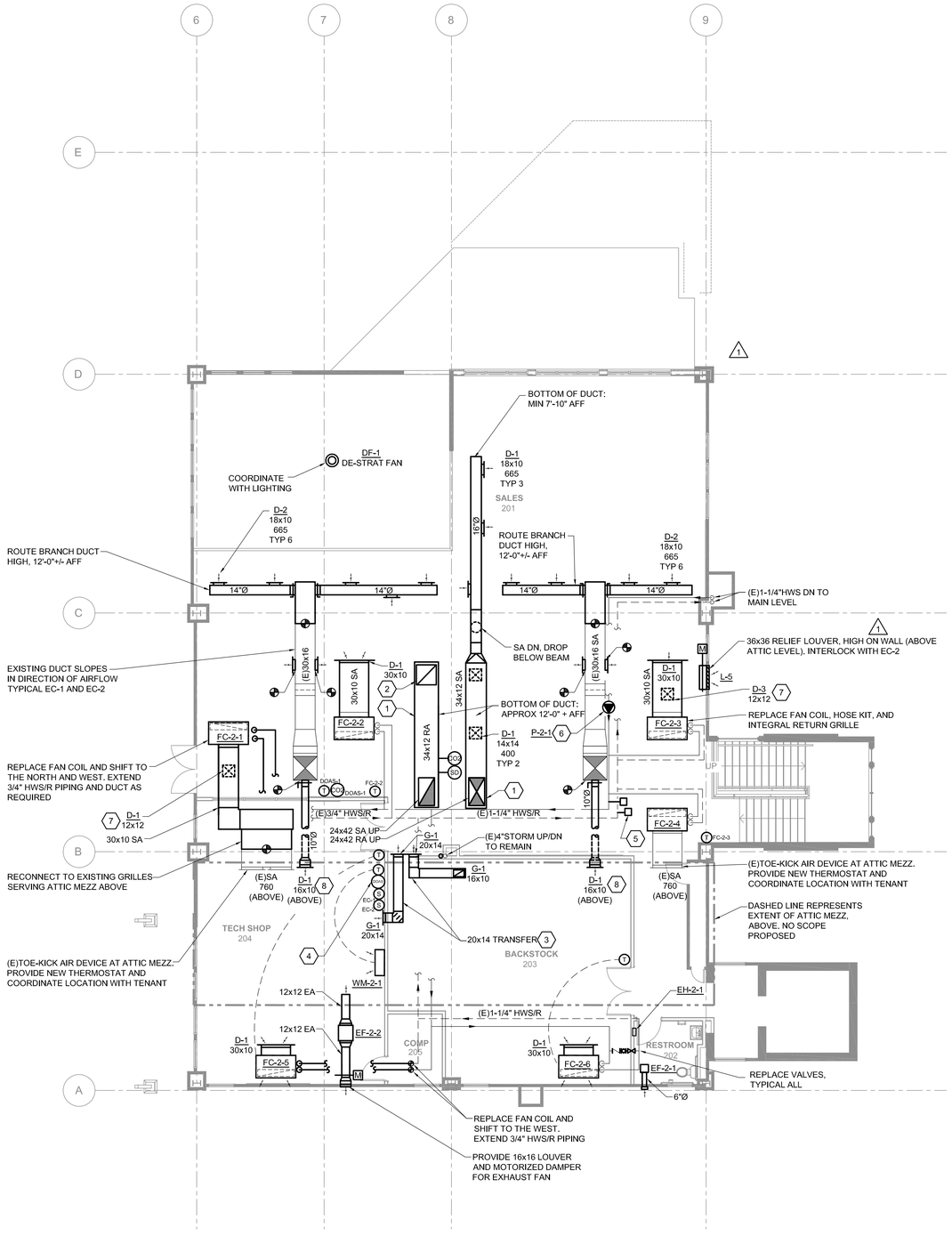
REV #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MAIN LEVEL MECHANICAL PLAN

SHEET: M101

TIME STAMP:



1 UPPER LEVEL MECHANICAL PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARE DISCOVERED.

D. EXISTING HEATING WATER SUPPLY AND RETURN BRANCH PIPING IS ROUTED WITHIN THE FLOOR. PROTECT THIS PIPING DURING CONSTRUCTION AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF 2-WAY VALVES AND REPAIR/REPLACE IF REQUIRED.

E. REFRIGERATION PIPING LINESET SHALL BE SIZED PER THE MANUFACTURER'S INSTRUCTIONS. SEAL ALL PENETRATIONS WEATHERTIGHT.

F. AT DUCTLESS WALL-MOUNT UNITS, COORDINATE POWER, CONDENSATE, AND REFRIGERANT PIPING CONNECTIONS WITH ARCHITECT AND INTERIORS. PROVIDE LINESET COVERS.

G. PROVIDE NEW HOSE KITS, VALVES, AND STRAINERS. REFER TO DETAILS FOR CONNECTION TO FAN COILS AND CONTROLS INSTRUCTIONS

H. PROVIDE BRASS VALVE TAGS STAMPED WITH ASSOCIATED PUMP MARK NUMBER.

I. LABEL EACH THERMOSTAT WITH THE ASSOCIATED FAN COIL UNIT MARK NUMBER USING MINIMUM 1/4" LETTERING

J. PROVIDE DUCT COLLARS OR ESCUTCHEONS WHERE DUCTS PASS THROUGH CEILING FEATURES.

KEY NOTES (#)

1. LINE THE FIRST 10 FEET OF SUPPLY AND RETURN DUCT SERVING THE VENTILATION UNIT WITH 1" ACOUSTICAL INSULATION.
2. 24x24 OPENING ON TOP OF DUCT. COVER OPENING WITH 1" STEEL MESH.
3. LINE TRANSFER AIR DUCT WITH 1" ACOUSTICAL INSULATION. PROVIDE TURNING VANES IN ELBOWS.
4. INSTALL DOAS USER INTERFACE IN TECH SHOP.
5. AIR VENT AT HIGH POINT OF SYSTEM
6. REPLACE EXISTING ZONE CIRCULATOR PUMP IN PLACE. INSTALL PUMP AND CONTROLS PER DETAILS. PROVIDE ACCESS PANEL
7. PROVIDE HIGH-PERFORMANCE BEVELED TAP ON BOTTOM OF DUCT. INSTALL 18X18 AIR DEVICE ON BOTTOM OF TAP
8. PROVIDE NEW 10" BRANCH. ROUTE TO MEZZANINE, ABOVE THIS LEVEL.

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS.
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.
- PROVIDE NEW THERMOSTATS AND ZONE VALVES WITH DIGITAL CONTROLS
- CIRCULATOR PUMPS SHALL ENERGIZE WHEN ANY THERMOSTAT ON THE ASSOCIATED LEVEL CALLS FOR HEAT.

STUDIO DH architecture
1300 JACKSON STREET, SUITE 201, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P. 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT F. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

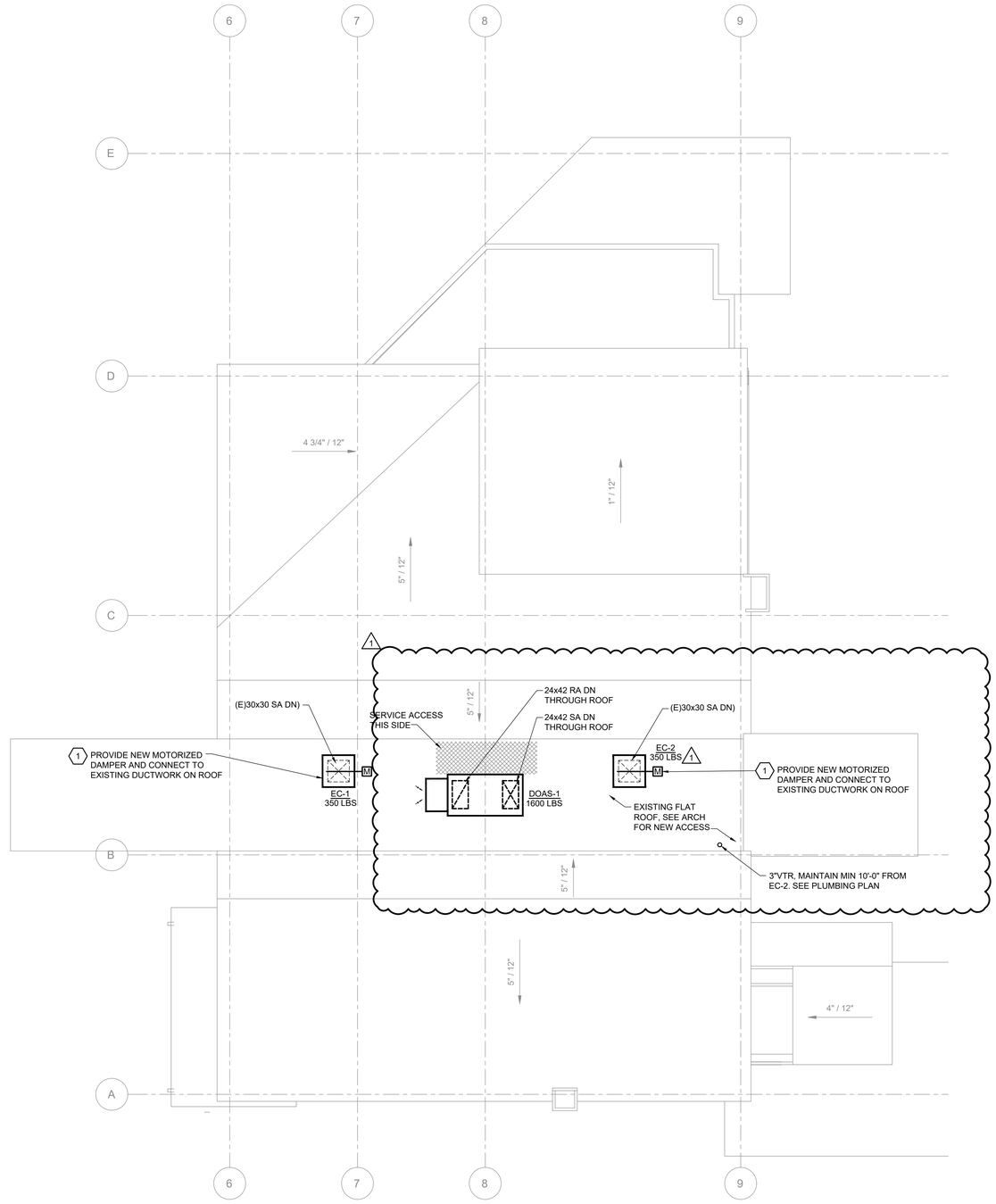
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: UPPER LEVEL MECHANICAL PLAN

SHEET: M102

TIME STAMP:



ROOF MECHANICAL PLAN

1

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. VERIFY EXISTING CONDITIONS PRIOR TO START OF WORK. NOTIFY ARCHITECT IF DISCREPANCIES ARE DISCOVERED.

D. EXISTING HEATING WATER SUPPLY AND RETURN BRANCH PIPING IS ROUTED WITHIN THE FLOOR. PROTECT THIS PIPING DURING CONSTRUCTION AND CORRECT ANY DEFICIENCIES DISCOVERED. VERIFY OPERATION OF 2-WAY VALVES AND REPAIR/REPLACE IF REQUIRED.

E. REFRIGERATION PIPING LINESET SHALL BE SIZED PER THE MANUFACTURER'S INSTRUCTIONS. SEAL ALL PENETRATIONS WEATHERTIGHT.

F. AT DUCTLESS WALL-MOUNT UNITS, COORDINATE POWER, CONDENSATE, AND REFRIGERANT PIPING CONNECTIONS WITH ARCHITECT AND INTERIORS. PROVIDE LINESET COVERS.

KEY NOTES ⟨#⟩

1. DOWN-DISCHARGE EVAPORATIVE COOLER. PROVIDE A MOTORIZED DAMPER AND INTERLOCK WITH UNIT. RECONNECT 3/4" CW BRANCH. PITCH PIPE BACK TOWARD STOP-AND-WASTE VALVE AT LEVEL 2 CEILING.

CONTROLS SCOPE OF WORK

- REMOVE PNEUMATIC CONTROLS TO 2-WAY ZONE VALVES AND THERMOSTATS.
- COORDINATE SHUTDOWNS WITH LANDLORD AND STEAMBOAT SKI CORP.
- PROVIDE NEW THERMOSTATS AND ZONE VALVES WITH DIGITAL CONTROLS
- CIRCULATOR PUMPS SHALL ENERGIZE WHEN ANY THERMOSTAT ON THE ASSOCIATED LEVEL CALLS FOR HEAT.

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

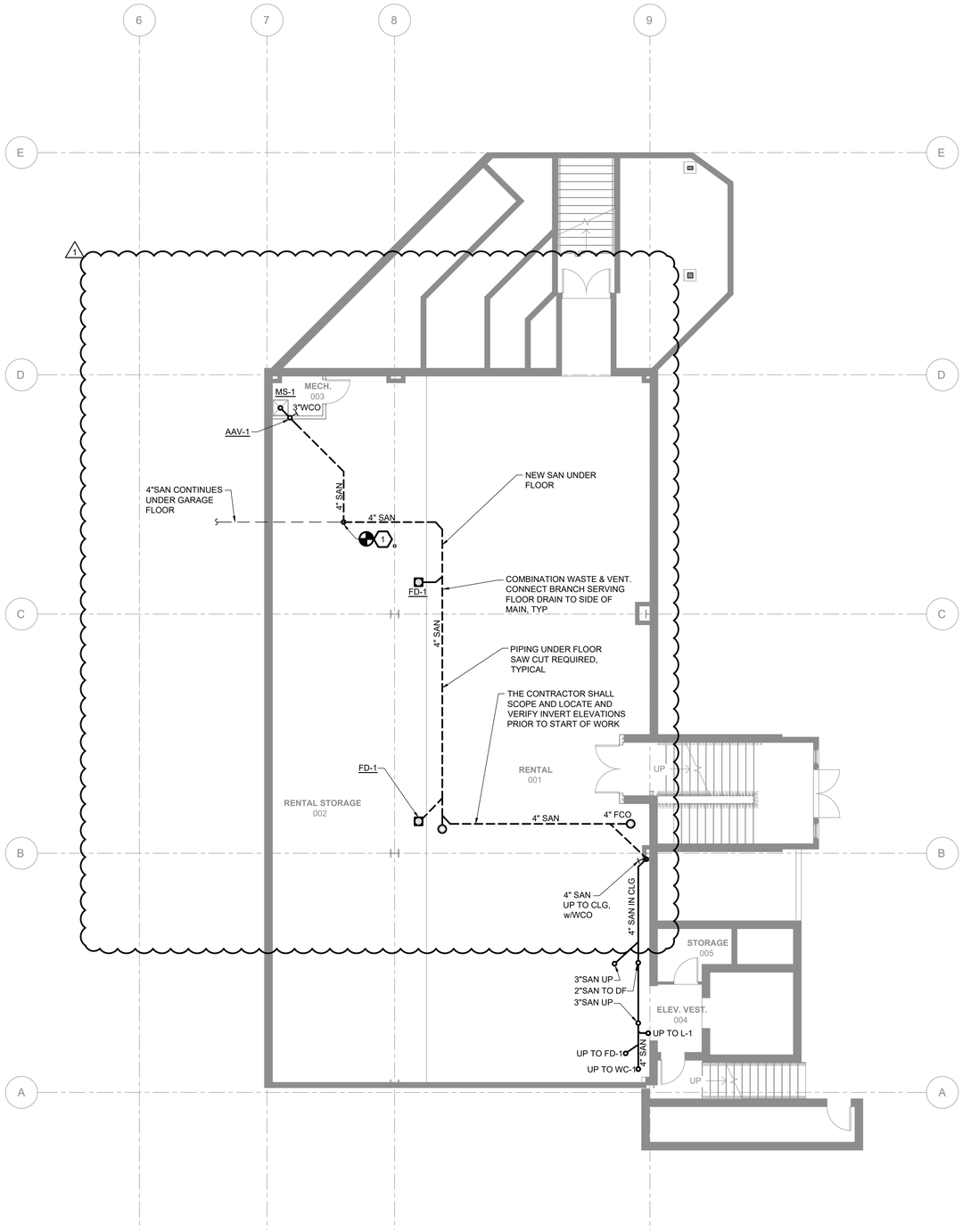
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: ROOF MECHANICAL PLAN

SHEET: M103

TIME STAMP:



BASEMENT WASTE AND VENT PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

D. ALL NEW PIPING SHALL BE PER THE PIPING APPLICATION SCHEDULE AND INSTALLED PER THE SPECIFICATIONS. PROVIDE UNIONS AND TRANSITIONS FOR CONNECTION TO EXISTING PIPING

E. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

KEY NOTES (#)

1. CONNECT AT THIS LOCATION. EXISTING SANITARY DROPS APPROXIMATELY 6'-0" AND CONTINUES WEST UNDER THE FLOOR OF THE PARKING GARAGE.

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9966

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
08/02/2022
PROFESSIONAL ENGINEER

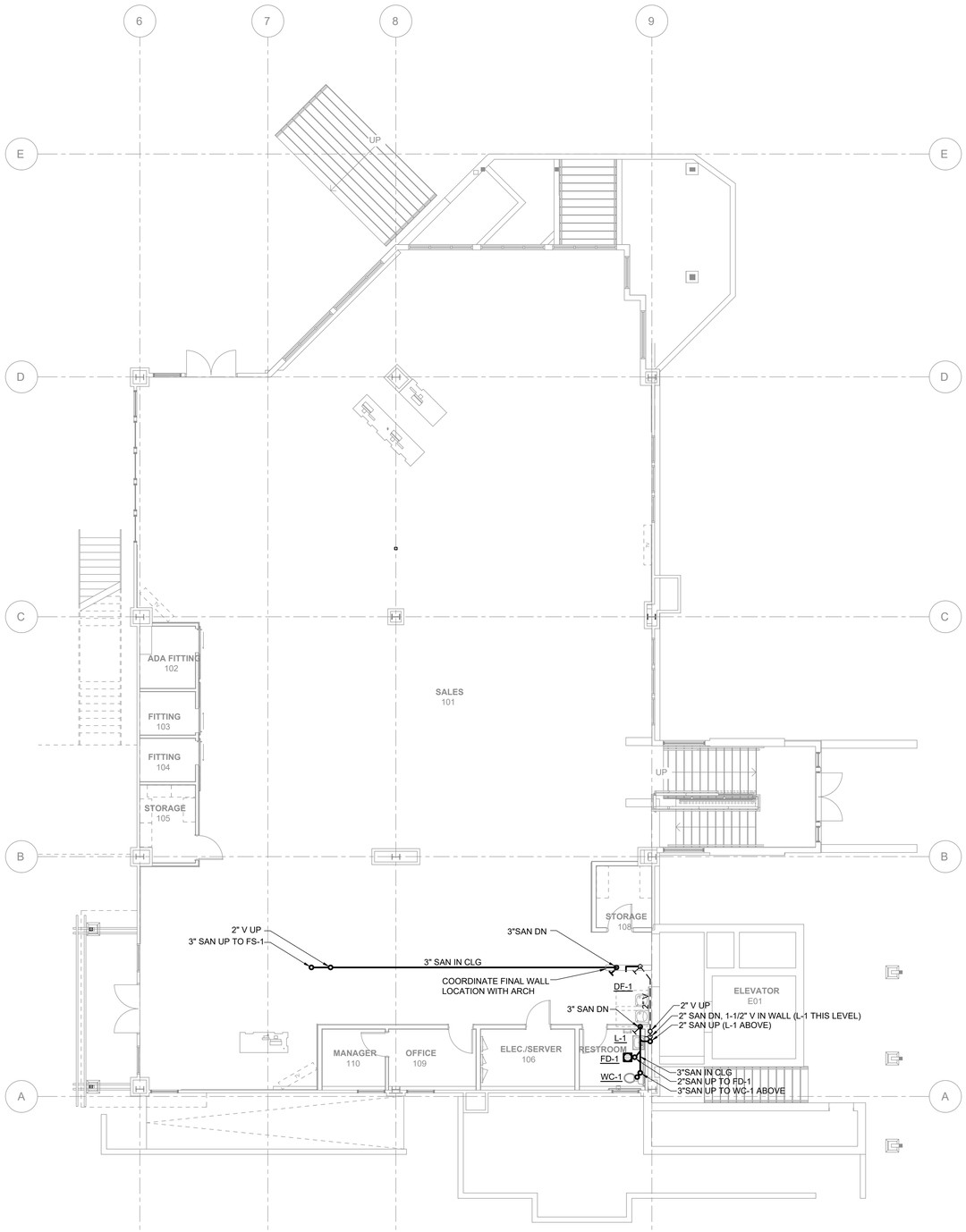
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: BASEMENT WASTE AND VENT PLAN

SHEET: P100

TIME STAMP:



MAIN LEVEL WASTE AND VENT PLAN

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

GENERAL NOTES

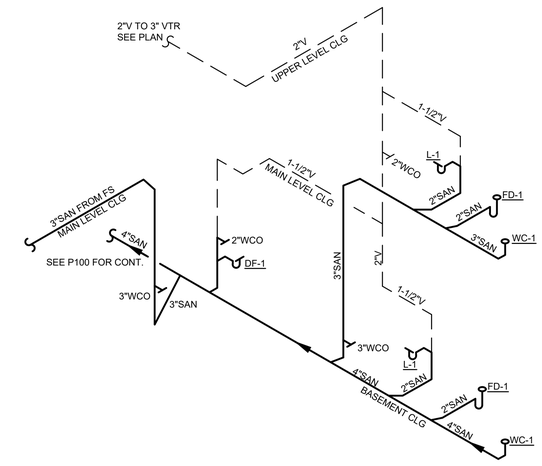
A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

D. ALL NEW PIPING SHALL BE PER THE PIPING APPLICATION SCHEDULE AND INSTALLED PER THE SPECIFICATIONS. PROVIDE UNIONS AND TRANSITIONS FOR CONNECTION TO EXISTING PIPING

E. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.



RESTROOM GROUP - WASTE AND VENT ISOMETRIC DIAGRAM

A SCALE: NO SCALE

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D

2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

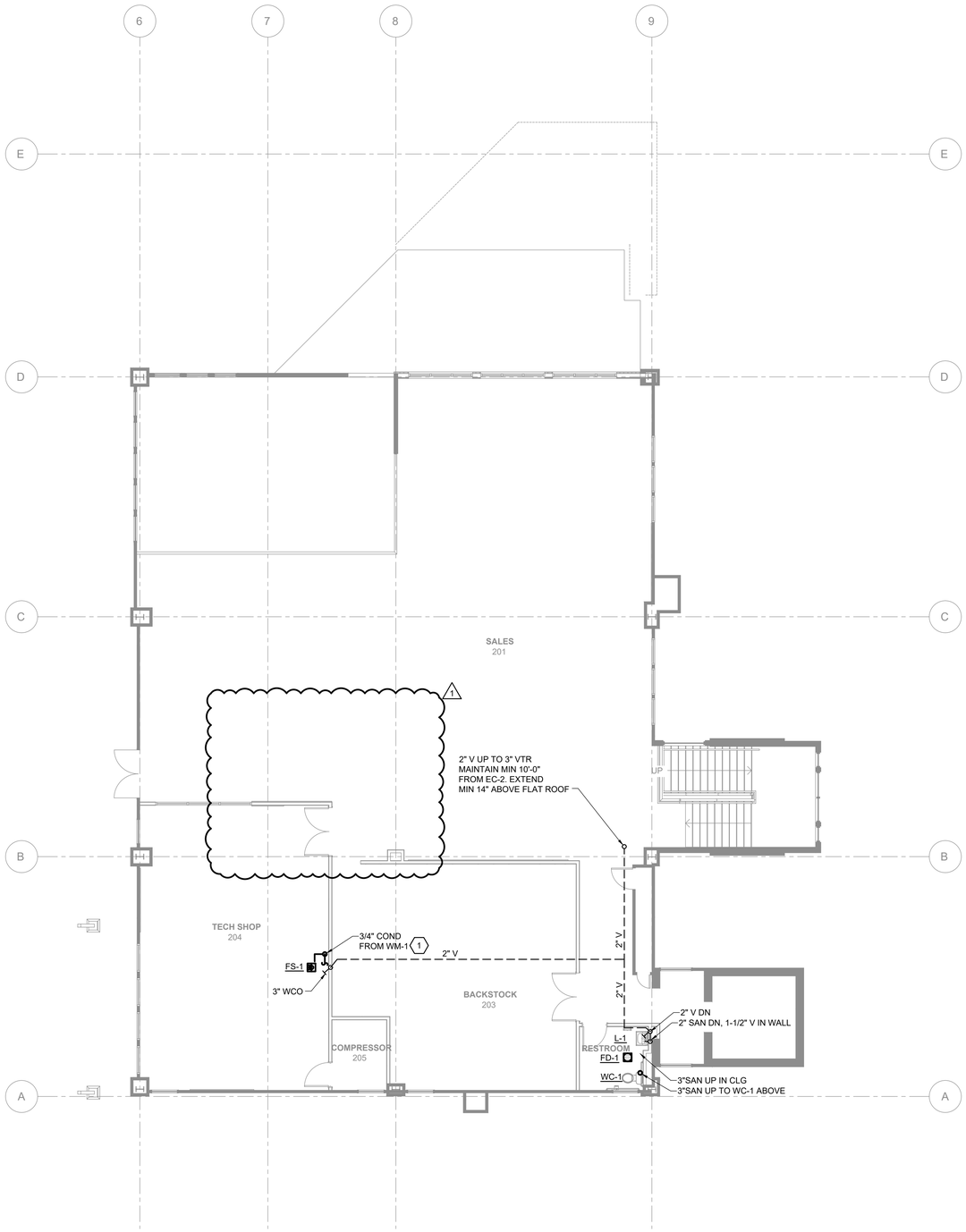
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE:
MAIN LEVEL
WASTE AND VENT PLAN

SHEET: P101

TIME STAMP:



UPPER LEVEL
WASTE AND VENT PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

D. ALL NEW PIPING SHALL BE PER THE PIPING APPLICATION SCHEDULE AND INSTALLED PER THE SPECIFICATIONS. PROVIDE UNIONS AND TRANSITIONS FOR CONNECTION TO EXISTING PIPING

E. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

KEY NOTES (#)

1. INSULATE CONDENSATE WITH 1" ARMAFLEX. TERMINATE AT FLOOR RECEPTOR WITH AIR GAP

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

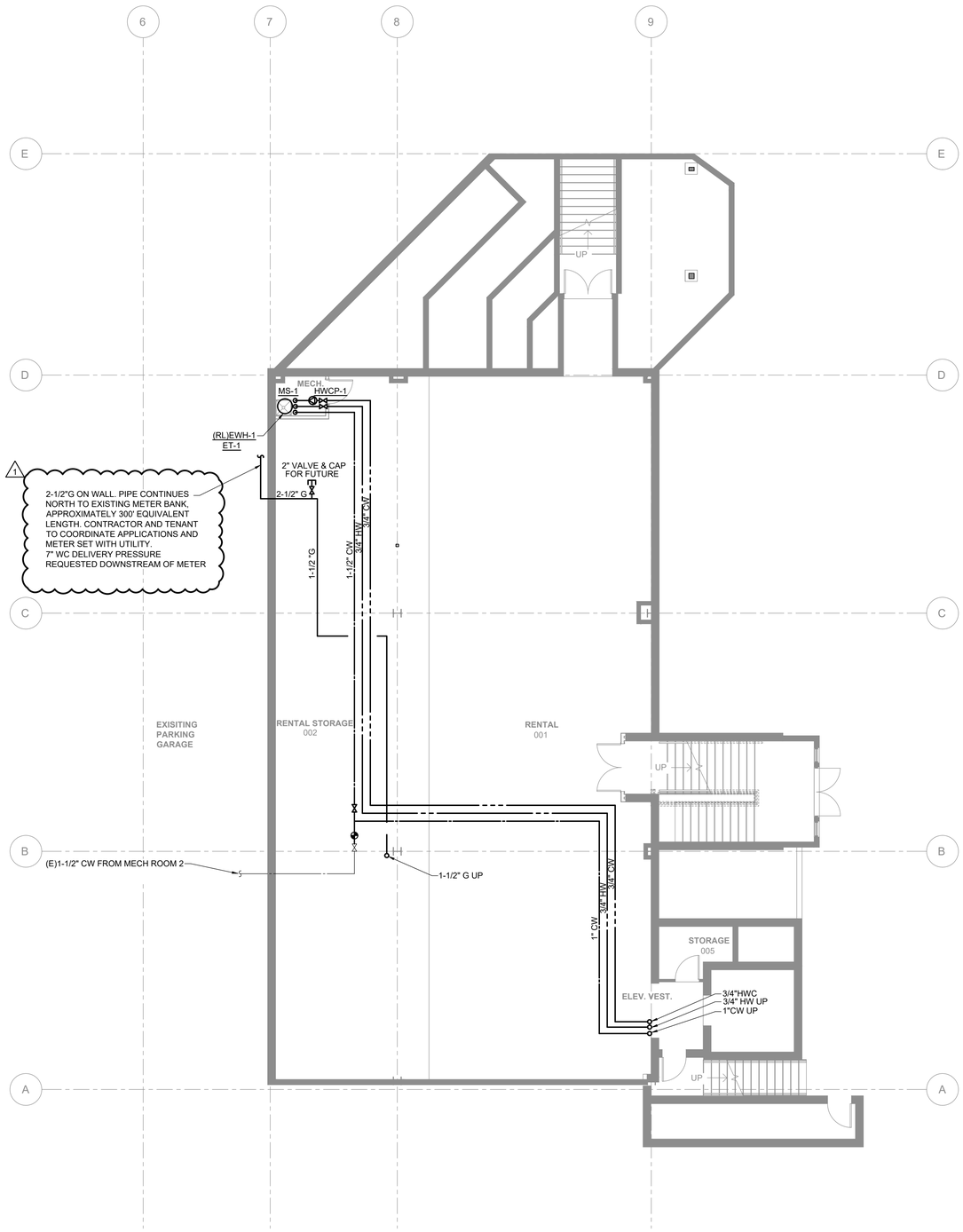
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: UPPER LEVEL WASTE AND VENT PLAN

SHEET: P102

TIME STAMP:



1 BASEMENT DOMESTIC WATER PLAN

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

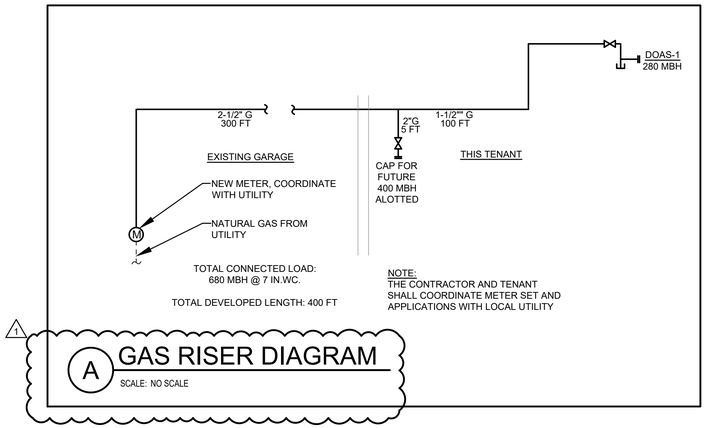
GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

D. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.



A GAS RISER DIAGRAM

SCALE: NO SCALE

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1300 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201

DRAWN BY: NM / SKZ

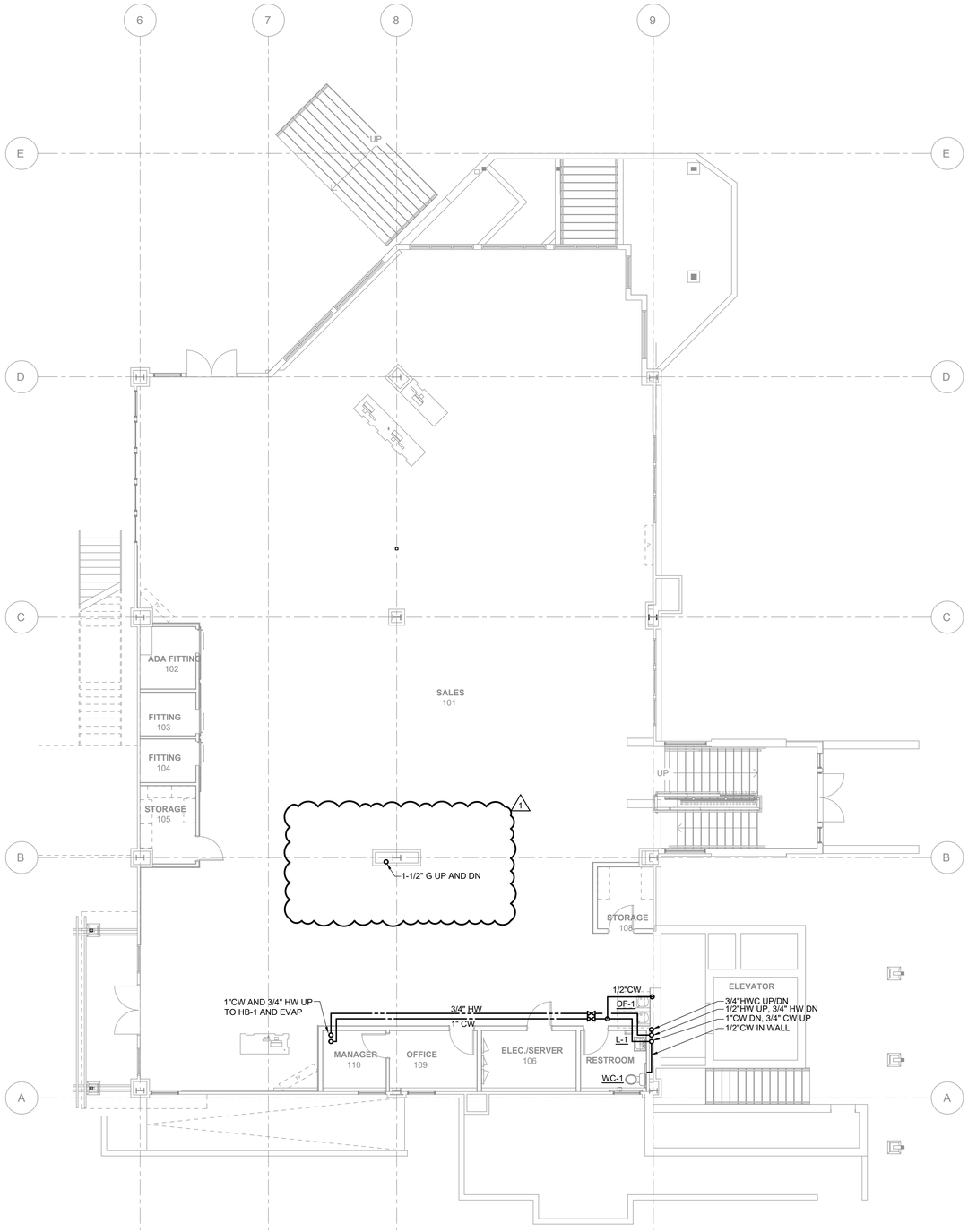
APPROVED BY: DWR

DATE: 2022-07-28

SHEET TITLE: BASEMENT DOMESTIC WATER PLAN

SHEET: P200

TIME STAMP:



MAIN LEVEL DOMESTIC WATER PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

D. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D
2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

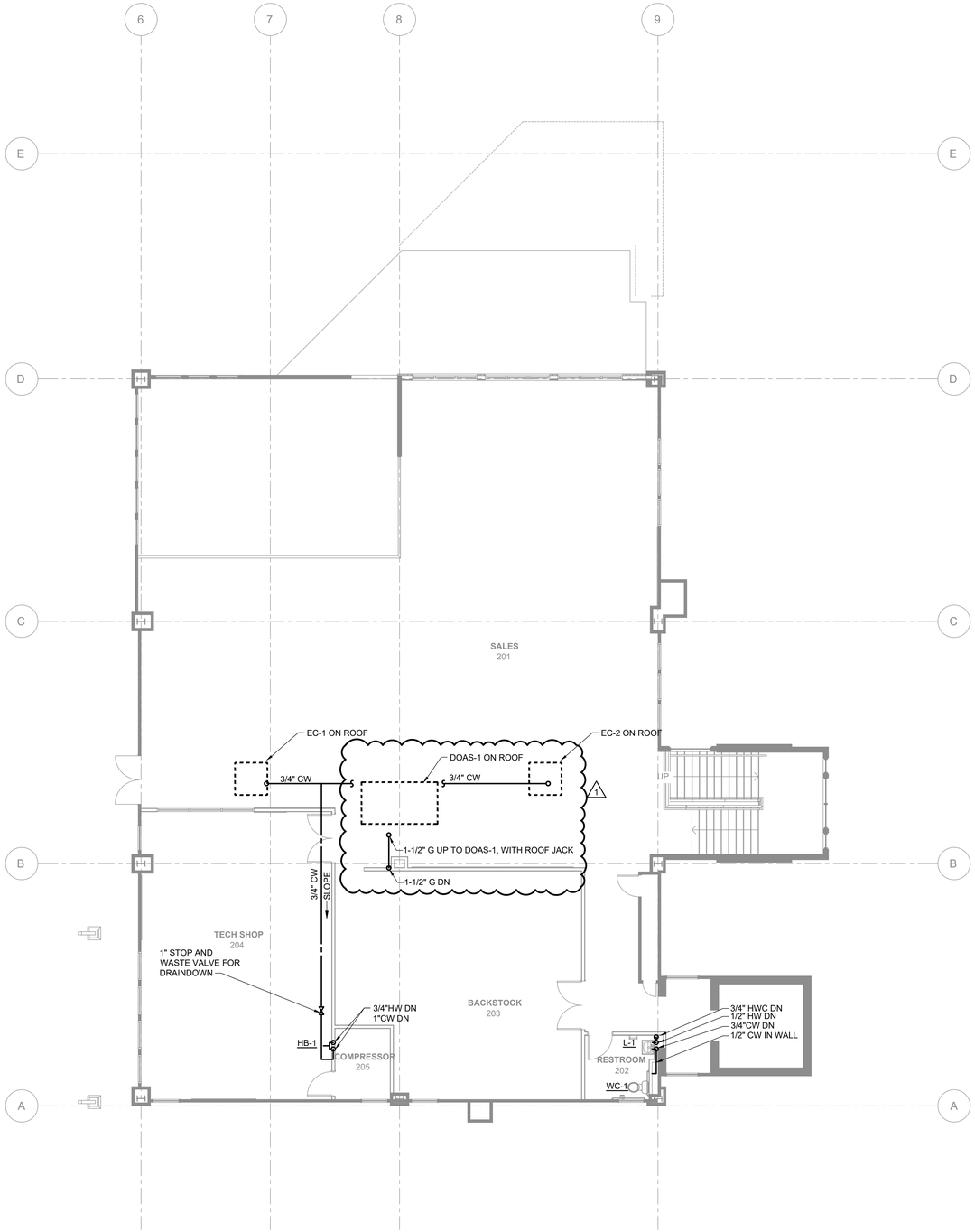
REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201
DRAWN BY: NM / SKZ
APPROVED BY: DWR
DATE: 2022-07-28

SHEET TITLE: MAIN LEVEL DOMESTIC WATER PLAN

SHEET: P201

TIME STAMP:



UPPER LEVEL DOMESTIC WATER PLAN

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

GENERAL NOTES

A. ALL WORK SHOWN SHALL COMPLY WITH ALL NATIONAL, STATE AND LOCAL CODES AND ORDINANCES.

B. REFERENCE ALL OTHER DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK OR CLARIFICATION OF NECESSARY WORK.

C. SAW CUT FLOOR FOR PIPING AS REQUIRED. PATCH AND REPAIR PER ARCHITECTURAL SPECIFICATIONS.

D. MAINTAIN FIRE RATING OF ALL PENETRATIONS USING A UL-LISTED SYSTEM.

1 GAS CONNECTION DETAIL

Reviewed for Code Compliance

08/05/2022

STUDIO DH architecture
1500 JACKSON STREET, SUITE 205, GOLDEN, COLORADO 80401
PHONE: 303.456.9600 FAX: 303.456.9666

Ramirez, Johnson, & Associates
3301 Lawrence St. Ste 2
Denver, CO 80205
P: 720.598.0774

GONDOLA SQUARE - BUILDING D

2305 MT. WERNER CIRCLE
STEAMBOAT SPRINGS, CO 80487

PROFESSIONAL SEAL:

COLORADO LICENSED
SCOTT K. ZIMMERMAN
51662
07/28/2022
PROFESSIONAL ENGINEER

REV. #	DATE	ISSUED FOR
0	2022-04-30	PERMIT
1	2022-07-28	OWNER CHANGES

JOB NUMBER: 102201

DRAWN BY: NM / SKZ

APPROVED BY: DWR

DATE: 2022-07-28

SHEET TITLE: UPPER LEVEL DOMESTIC WATER PLAN

SHEET: P202

TIME STAMP: