

BUILDING OUTLINE MECHANICAL SPECIFICATION

GENERAL

- 1. BASE BUILDING DRAWINGS AND LATEST REVISIONS ON CONTRACT DOCUMENTS FOR MECHANICAL WORK SHALL APPLY TO THESE DRAWINGS.
2. ALL WORK SHALL BE DONE IN COMPLIANCE WITH THE BUILDING TENTATIVE FINISH GUIDELINES (AVAILABLE IN MANAGEMENT OFFICE), DRAWINGS, AND LATEST REVISIONS ON CONTRACT DOCUMENTS FOR MECHANICAL WORK.
3. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. ALL EQUIPMENT SHALL BE INSTALLED PER MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS.
4. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR VERIFICATION OF EXISTING JOB CONDITIONS PRIOR TO BID. NO ADDITIONAL COSTS SHALL BE AWARDED TO THE SUCCESSFUL CONTRACTOR OR HIS SUBCONTRACTORS. AFTER BIDS HAVE BEEN SUBMITTED AND CONTRACTS AWARDED, FOR FAILURE TO VERIFY EXISTING JOB CONDITIONS. DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR ALTERNATIVE METHODS OF INSTALLATION THREE (3) DAYS MINIMUM PRIOR TO BIDDING THIS JOB.
5. DRAWINGS ARE NOT TO BE SCALED FOR ROUGH-IN MEASUREMENTS OR USED AS SHOP DRAWINGS. WHERE DRAWINGS ARE REQUIRED FOR SUCH PURPOSES OR MUST BE MADE FROM FIELD MEASUREMENTS, CONTRACTOR SHALL TAKE THE NECESSARY MEASUREMENTS AND PREPARE THE REQUIRED DRAWINGS.
6. THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC IN CHARACTER AND DO NOT NECESSARILY INDICATE VELOCITY, DUCTWORK, FITTING, VALVE, FITTINGS, ETC. FIELD VERIFY ALL MEASUREMENTS PRIOR TO ORDERING ANY EQUIPMENT, DUCTWORK, PIPING, ETC.
7. ALL BIDS SHALL INCLUDE ALL COSTS ASSOCIATED WITH THE PURCHASE AND DELIVERY OF NEW EQUIPMENT TO THE JOB SITE IN TIME TO MEET ALL DEADLINES. REPORT, PRIOR TO BID, ANY DELIVERY PROBLEMS WHICH MIGHT PREVENT TIMELY COMPLETION OF THIS PROJECT.
8. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR OBTAINING BUILDING DEPARTMENT PERMIT FOR HIS PORTION OF WORK PRIOR TO THE START OF CONSTRUCTION.
9. SUBMIT CUTS AND BROCHURES ON ANY EQUIPMENT FURNISHED UNDER THIS CONTRACT FOR ENGINEER'S REVIEW. PROVIDE TO THE ENGINEER A COPY OF THE MECHANICAL SUBMITTALS FOR REVIEW, PRIOR TO ORDERING ANY EQUIPMENT. (FACSIMILES OF SUBMITTALS WILL BE ACCEPTED.)
10. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES AND STRUCTURE.
11. FIELD ROUTE ALL DUCTWORK AND PIPING, AS REQUIRED, TO AVOID CONFLICTS WITH EXISTING STRUCTURE, DUCTWORK, PIPING, ELECTRICAL CONDUITS, LIGHTS, ETC. RELOCATE ANY ITEMS AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW DUCTWORK, PIPING AND EQUIPMENT WHILE MAINTAINING ORIGINAL INTEGRITY OF ALL SYSTEMS EXCEPT FOR DESIGNATED INTERVALS WHEN THE SHUTDOWN OF EXISTING SYSTEMS CAN BE ACCOMPLISHED DURING OFF-HOURS TO MAKE NEW CONNECTIONS TO OR RELOCATIONS OF EXISTING SYSTEMS. RUN ALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE AND SUSPEND FROM STRUCTURE ABOVE.
12. ALL EXISTING DUCTWORK, DIFFUSERS, GRILLES, THERMOSTATS, ETC. IN GOOD CONDITION SHALL BE RE-USED AFTER BEING THOROUGHLY CLEANED AND/OR REFINISHED TO MATCH NEW, UNLESS OTHERWISE NOTED ON DRAWINGS. ANY EQUIPMENT IN DETERIORATED CONDITION SHALL BE REPLACED WITH NEW EQUIPMENT.
13. ANY EXISTING EQUIPMENT, DUCTWORK, PIPING, PUMBLING, CONTROLS, ETC. NOT USED SHALL BE REMOVED AND DISCARDED, WITH THE EXCEPTION OF COPPER PIPING AND WIRING, WHICH SHALL BE DELIVERED TO THE BUILDING ENGINEER. PROPERLY CAP AND SEAL ALL DUCTWORK AND PIPING TAPS NOT USED.
14. BASE BUILDING MECHANICAL EQUIPMENT SHOWN ON THE MECHANICAL FLOOR PLAN(S) AND BASE BUILDING MECHANICAL SYSTEMS SHOWN OUTSIDE THE PROJECT AREA ARE EXISTING AND ARE SHOWN FOR REFERENCE PURPOSES ONLY.
15. ANY CONFLICTS DISCOVERED AFTER WORK HAS STARTED, NOT PREVIOUSLY BEING APPARENT AND NECESSITATING REVISIONS TO CONTRACT DOCUMENTS, SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR REVIEW AND APPROVAL OF ALTERNATIVE METHODS OF INSTALLATION.
16. CONTRACTOR SHALL REVIEW ELECTRICAL POWER REQUIREMENTS FOR ALL MECHANICAL EQUIPMENT PRIOR TO ORDERING. SUBMIT ONE COPY OF EQUIPMENT SUBMITTALS TO ELECTRICAL CONTRACTOR FOR COORDINATION.
17. MECHANICAL CONTRACTOR SHALL FURNISH STARTERS FOR ALL THREE-PHASE MECHANICAL EQUIPMENT EXCEPT FOR STARTERS THAT ARE SHOWN TO BE PROVIDED IN MOTOR CONTROL CENTERS. STARTERS SHALL HAVE THREE-LEG CLASS 3 TRIP-FREE OVERLOAD PROTECTION, WITH MANUAL RESET, AND SHALL BE NEMA RATED. STARTERS SHALL BE INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR EXCEPT WHERE SUPPLIED INTEGRAL WITH MECHANICAL EQUIPMENT. ALL MOTORS 1 HP AND ABOVE SHALL BE PROVIDED WITH SOFT-START (REDUCED CURRENT/VOLTAGE) STARTER OR VARIABLE FREQUENCY DRIVE (VFD).
18. MECHANICAL CONTRACTOR SHALL PROVIDE SAFETY DISCONNECT SWITCHES FOR ALL MECHANICAL EQUIPMENT WHERE NOT SPECIFICALLY INDICATED ON PLANS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.
19. MECHANICAL CONTRACTOR SHALL EMPLOY THE SERVICES OF A QUALIFIED TEMPERATURE CONTROLS CONTRACTOR FOR INSTALLATION OF ALL CONTROL WORK. SUBMIT CONTRACTOR'S QUALIFICATIONS TO ENGINEER FOR REVIEW.
20. TEMPERATURE CONTROLS CONTRACTOR SHALL PROVIDE ALL WIRING ASSOCIATED WITH THE AUTOMATIC TEMPERATURE CONTROL SYSTEM, INCLUDING 120V FOR CONTROL PANELS, CONTROL VALVES, AND CONTROL DAMPERS. ELECTRICAL WIRING SHOWN ON ELECTRICAL DRAWINGS SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. SUBMIT CONTROL DIAGRAMS TO ENGINEER FOR REVIEW.
21. ALL NEW AND RELOCATED MATERIALS INSTALLED IN CEILING RETURN AIR PLENUM SHALL BE U.L. 181 CLASS 1 RATED, WITH A MAXIMUM FLAME SPREAD INDEX OF 25 AND A MAXIMUM SMOKE-DEVELOPED INDEX OF 50. REMOVE AND REPLACE, AS NECESSARY, ALL MATERIALS NOT IN COMPLIANCE.
22. ALL ROOF PENETRATIONS SHALL BE SEALED WATER TIGHT. PROVIDE FLASHING AND COUNTER FLASHING AS REQUIRED. COORDINATE WITH GENERAL CONTRACTOR AND WITH STRUCTURAL ENGINEER.
23. ALL MOTORIZED EQUIPMENT SHALL BE PROVIDED WITH SUITABLE VIBRATION ISOLATION. FLEXIBLE CONNECTORS SHALL BE PROVIDED AT ALL DUCTWORK AND PIPING CONNECTIONS TO SUCH MOTORIZED EQUIPMENT.
24. PROVIDE SEISMIC RESTRAINTS FOR ALL MECHANICAL SYSTEMS AND EQUIPMENT AS REQUIRED BY THE APPLICABLE BUILDING CODE.
25. ALL FIRE DAMPERS, BALANCING DAMPERS, VALVES, EQUIPMENT, FILTERS AND CONTROLS SHALL BE ACCESSIBLE. MECHANICAL ACCESS PANELS SHALL BE PROVIDED TO FACILITATE MAINTENANCE, REPAIR AND ADJUSTMENT OF ANY CONCEALED EQUIPMENT, DAMPERS, VALVES, CONTROLS, ETC. COORDINATE LOCATIONS OF REQUIRED ACCESS PANELS WITH ARCHITECT.
26. ALL HVAC UNITS AND OTHER MECHANICAL EQUIPMENT SHALL BE FIELD LABELED WITH UNIT NUMBER AND AREA SERVED. ALL EQUIPMENT SHALL BE IDENTIFIED WITH LETTERS MINIMUM 1-1/2" HIGH. IDENTIFICATIONS SHALL MATCH THOSE ON THE EQUIPMENT SCHEDULES.
27. ALL PIPING, VALVES AND CONTROL DEVICES SHALL BE IDENTIFIED WITH LABELS. ALL PIPING SHALL BE IDENTIFIED WITH LETTERS MINIMUM 1-1/2" HIGH, 4" LONG FLOW ARROWS. PIPE IDENTIFICATION MARKERS SHALL BE SPACED AT A MAXIMUM OF 20 FEET ON CENTERS ALONG EACH PIPING RUN.
28. CHECK, VERIFY AND MAKE OPERABLE ALL NEW AND EXISTING EQUIPMENT TO COMPLY WITH MANUFACTURERS SPECIFICATIONS. PROVIDE SERVICE AND MAINTENANCE ON ALL ROOFTOP HVAC UNITS, FURNACES, CONDENSERS, AUX. AIR-CONDITIONING UNITS, ETC. AS REQUIRED TO BRING THEM TO PROPER OPERATING CONDITION, INCLUDING, BUT NOT LIMITED TO, CLEANING OF COILS AND ENCLOSURES, LUBRICATION, AND INSTALLATION OF NEW FILTERS.
29. CHECK, VERIFY AND MAKE OPERABLE ALL CONTROL WORK AND TUBING FOR ALL SYSTEMS ASSOCIATED WITH THE PROJECT AREA.
30. MECHANICAL CONTRACTOR SHALL CONTACT THE ENGINEER 48 HOURS PRIOR TO SUBSTANTIAL COMPLETION OF CONSTRUCTION OR INSTALLATION OF CEILING TILE, TO SCHEDULE A FINAL PUNCH LIST WALK-THROUGH.
31. SUBMIT OPERATING AND MAINTENANCE BROCHURES FOR ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.
32. SUBMIT COMPLETE AS-BUILT DRAWINGS FOR EACH FLOOR AREA ON ELECTRONIC FILES IN PDF FORMAT OR AUTOCAD VERSION 2010 OR LATER.
HVAC DUCTWORK
1. ALL DUCTWORK SHALL BE MINIMUM 26 GAUGE SHEET METAL UNLESS OTHERWISE INDICATED. REFER TO SMACNA GUIDE FOR REQUIRED GAUGES AND REINFORCEMENT REQUIREMENTS.
2. ALL ELBOWS OF RECTANGULAR DUCTWORK EXCEEDING 45 DEGREES SHALL HAVE DOUBLE THICKNESS TURNING VANES OR SHALL BE LONG RADIUS TIE.
3. PROVIDE ALL TRANSITIONS REQUIRED FOR INSTALLING DUCTWORK PER DRAWINGS AND AS REQUIRED TO AVOID OBSTRUCTIONS. ALL TRANSITIONS SHALL MAINTAIN MINIMUM OF EQUIVALENT FREE AREA OF DUCTWORK TO WHICH THEY ARE ATTACHED.
4. PROVIDE SPIN-IN FITTINGS WITH BUTTERFLY DAMPERS FOR ALL NEW AND EXISTING ROUND SUPPLY RUN-OUT DUCTS TO DIFFUSERS AND ALL ROUND RETURN/EXHAUST RUN-OUT DUCTS TO RETURN/EXHAUST GRILLES. ANY DIFFUSERS OR GRILLES INSTALLED WHERE SAID RETURN/EXHAUST RUN-OUTS WOULD BE INACCESSIBLE SHALL BE PROVIDED WITH INTEGRAL BALANCING DAMPERS.
5. ALL DUCTWORK (HIGH PRESSURE AND LOW PRESSURE), NEW AND EXISTING, SHALL BE SEALED AIR TIGHT. SEAL ALL DUCTWORK, JOINTS AND SEAMS WITH MASTIC NON-HARDENING DUCT SEALER. COORDINATE THIS WORK WITH THE BUILDING OPERATING PERSONNEL SO THAT THE MAIN HIGH AND MEDIUM PRESSURE DUCTWORK CAN BE SHUT OFF TO ALLOW MANUFACTURERS REQUIRED CURE TIME FOR THE DUCT SEALER.

- 6. ALL SUPPLY, RETURN AND OUTSIDE AIR DUCTWORK, NEW AND EXISTING, SHALL BE INSULATED. ALL SUPPLY AIR AND OUTSIDE AIR INTAKE DUCTWORK SHALL BE VAPOR TIGHT. NEW RECTANGULAR DUCTWORK SHALL BE GALVANIZED SHEET METAL, INTERNALLY LINED WITH 1" THICK, 2.0 LB/CU FT DENSITY DUCT LINER EQUAL TO MANVILLE "LINAUCOUSTIC." ALL NEW ROUND DUCTWORK AND ALL EXISTING UNINSULATED RECTANGULAR DUCTWORK SHALL BE WRAPPED WITH 1-1/2" THICK, 1.0 LB/CU FT DENSITY DUCT WRAP EQUAL TO MANVILLE "MICROULTE." ALL WAP INSULATION SEAMS AND JOINTS SHALL BE SEALED VAPOR-TIGHT WITH FOIL-SCRIM-KRAFT TAPE. ALL SUPPLY AIR AND OUTSIDE AIR DUCTWORK LOCATED WITHIN BUILDING SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION. ALL SUPPLY AIR AND RETURN AIR DUCTWORK LOCATED OUTSIDE THE BUILDING SHALL BE INSULATED WITH A MINIMUM OF R-12 INSULATION AND COVERED WITH 22-GAUGE ALUMINUM JACKET SCREWED IN PLACE WITH ALL JOINTS CAULKED WATER TIGHT. EXCEPTION: ALL EXPOSED ROUND DUCTWORK (WITHIN CONDITIONED SPACE) SHALL BE UNINSULATED METAL SPIRAL TIE.
7. ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR DIMENSIONS IN INCHES.
8. USE OF FLEXIBLE INSULATED DUCTWORK SHALL NOT EXCEED 6'-0" IN LENGTH FOR CONNECTING ANY INDIVIDUAL SUPPLY DIFFUSER OR RETURN GRILLE. SUPPORT FLEXIBLE DUCTWORK AT NO GREATER THAN 3 FEET ON CENTERS WITH 1" WIDE 2X-GAUGE GALVANIZED STEEL LOOPS. CONNECTIONS TO EXHAUST GRILLES SHALL BE MADE WITH RIGID DUCTWORK ONLY.
9. ALL NEW LOW PRESSURE/LOW VELOCITY (2" W.G. S.P. OR LESS) FLEXIBLE DUCTWORK SHALL BE U.L. 181 CLASS 1 RATED, WITH INNER CORE OF POLYMER FILM SUPPORTED BY HELICALLY WOUND SPRING STEEL WIRE, R-4 FIBERGLASS INSULATION, AND FIBERGLASS SCRIM REINFORCED ALUMINIZED POLYESTER FILM OUTER VAPOR BARRIER/JACKET. MINIMUM PRESSURE RATINGS: 4" W.G. POSITIVE, 0.5" W.G. NEGATIVE. MINIMUM AIR VELOCITY RATINGS: 4:000 FPM.
10. ALL NEW HIGH PRESSURE/HIGH VELOCITY (2'-4" W.G. S.P. MAX) FLEXIBLE DUCTWORK, WHERE ALLOWED BY CODE, SHALL BE U.L. 181 CLASS 1 RATED, WITH INNER CORE OF FLEXIBLE ALUMINUM DUCT, R-4 FIBERGLASS INSULATION, AND FIBERGLASS SCRIM REINFORCED ALUMINIZED POLYESTER FILM OUTER VAPOR BARRIER/JACKET. MINIMUM PRESSURE RATINGS: 8" W.G. POSITIVE, 3" W.G. NEGATIVE. MINIMUM AIR VELOCITY RATINGS: 5:000 FPM. LENGTH OF CONNECTION SHALL NOT EXCEED 6'-0".
11. 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.
12. FINAL CONNECTION OF FLEXIBLE DUCTWORK TO RIGID RUN-OUT DUCTS AND TO CEILING DIFFUSERS SHALL BE MADE WITH 0.5" WIDE, POSITIVE-LOCKING STEEL STRAPS AND ADHESIVE. (APPLIES TO NEW FLEXIBLE DUCTWORK AND EXISTING FLEXIBLE DUCTWORK WHICH REMAINS.)
13. FIELD ROUTE ALL DUCTWORK AND PIPING, AS REQUIRED, TO AVOID CONFLICTS WITH EXISTING STRUCTURE, DUCTWORK, PIPING, ELECTRICAL CONDUITS, LIGHTS, ETC. RELOCATE ANY ITEMS AS REQUIRED TO ACCOMMODATE INSTALLATION OF NEW DUCTWORK, PIPING AND EQUIPMENT WHILE MAINTAINING ORIGINAL INTEGRITY OF ALL SYSTEMS EXCEPT FOR DESIGNATED INTERVALS WHEN THE SHUTDOWN OF EXISTING SYSTEMS CAN BE ACCOMPLISHED DURING OFF-HOURS TO MAKE NEW CONNECTIONS TO OR RELOCATIONS OF EXISTING SYSTEMS. RUN ALL DUCTWORK AND PIPING AS HIGH AS POSSIBLE AND SUSPEND FROM STRUCTURE ABOVE.
14. PROVIDE AND INSTALL U.L. LISTED TYPE "B" FIRE DAMPERS AT ALL PENETRATIONS IN NEW AND EXISTING FIRE RATED WALLS AS REQUIRED. FIELD VERIFY ALL EXISTING DUCTWORK TO VERIFY FIRE DAMPER LOCATION REQUIREMENTS. PROVIDE COMBINATION FIRE/SMOKE DAMPERS AS SHOWN ON DRAWINGS. CLASS B FOR VELOCITIES UP TO 1,500 FPM. CLASS F FOR VELOCITIES ABOVE 1,500 FPM. FIRE/SMOKE DAMPERS SHALL BE DYNAMIC RATED. PROVIDE INSTALLATION INSTRUCTIONS FOR FIRE/SMOKE DAMPERS TO FIELD INSPECTOR AT TIME OF INSPECTION.
15. MECHANICAL CONTRACTOR SHALL INSTALL DUCT SMOKE DETECTORS IN MAIN AIR DUCT OF ALL MECHANICAL AIR-MOVING SYSTEMS WHERE REQUIRED BY CODE OR LOCAL AUTHORITIES. DETECTORS SHALL BE FURNISHED, CONNECTED TO FIRE ALARM SYSTEM (WHERE APPLICABLE), AND HARD-WIRED TO FAN UNIT (FOR AUTOMATIC SHUTDOWN) BY ELECTRICAL/FIRE ALARM CONTRACTOR.)
16. TYPE B DOUBLE-WALL FLUE VENTS (UL LISTED) SHALL BE PROVIDED FOR ALL GAS-FIRED EQUIPMENT WITH ATMOSPHERIC BURNERS. DOUBLE-WALL PRESSURIZED SYSTEMS SHALL BE PROVIDED FOR FORCED-DRAFT TYPE BURNERS.

PLUMBING/PIPING

- 1. COORDINATE ACTUAL LOCATION OF PLUMBING FIXTURES AND ROUGH-INS WITH ARCHITECTURAL DRAWINGS PRIOR TO BEGINNING WORK.
2. CONTRACTOR SHALL FIELD VERIFY ALL PIPING AND PLUMBING LOCATIONS AND INVERTS PRIOR TO TRENCHING FOR OR INSTALLATION OF NEW PIPING. ALLOW FOR COST OF X-RAYING FLOORS AS REQUIRED FOR LOCATING ANY BURIED PIPING AND PRIOR TO MAKING ANY FLOOR PENETRATIONS.
3. PROVIDE ISOLATION VALVES AT ALL PLUMBING FIXTURES REQUIRING HOT AND/OR COLD WATER.
4. ALL DOMESTIC HOT AND COLD WATER PIPING ABOVE GRADE SHALL BE TYPE L COPPER WITH 95/S SOLDERED FITTINGS. TYPE K SOFT COPPER SHALL BE USED BELOW GRADE.
5. ALL INTERIOR ABOVE-GRADE WASTE, VENT AND STORM DRAIN PIPING SHALL BE CAST IRON WITH NO HUB FITTINGS. NEOPRENE GASKETS, AND 300 SERIES STAINLESS STEEL CLAMPS. ALL INTERIOR BELOW-GRADE WASTE, VENT AND STORM DRAIN PIPING SHALL BE SCHED 40 CAST IRON, HUB-AND-SPIGOT TYPE, WITH NEOPRENE COMPRESSION GASKETS. ALL HORIZONTAL WASTE, VENT, AND STORM DRAIN PIPING SHALL BE SLOPED AT A MINIMUM OF 1/8" PER FOOT OR AS OTHERWISE REQUIRED BY CODE. PIPING INSTALLED BELOW GRADE SHALL BE COATED.
6. ALL HEATING, CHILLED AND CONDENSER WATER PIPING 2" AND SMALLER SHALL BE TYPE L COPPER WITH SOLDERED FITTINGS. 2-1/2" AND LARGER SHALL BE SCHEDULE 40 WELDED BLACK STEEL.
7. ALL REFRIGERANT PIPING SHALL BE TYPE K HARD DRAWN COPPER TUBING WITH WROUGHT COPPER SILVER SOLDERED FITTINGS AND COUPLINGS OR TYPE L COPPER. REFRIGERANT GRADE, COLOR CODED AND MARKED ACR. SOFT-ANNEALED COPPER TUBING MAY BE USED IN SIZES UP TO 1-3/8" AND, WHEN USED, SHALL BE ENCLOSED IN IRON OR STEEL PIPING OR IN CONDUIT, MOLDING OR RACEWAY WHICH WILL PROTECT SAID TUBING AGAINST DAMAGE. INSULATE ALL NEW AND EXISTING REFRIGERANT SUCTION AND HOT GAS PIPING IN SAME MANNER AS SPECIFIED FOR DOMESTIC HOT AND COLD WATER PIPING. WITH THICKNESS IN ACCORDANCE WITH PIPING INSULATION SCHEDULE. PROVIDE JACKET WITH VAPOR BARRIER FOR SUCTION LINES.
8. ALL CONDENSATE DRAIN PIPING SHALL BE TYPE M COPPER.
9. PROVIDE DIELECTRIC COUPLINGS AT ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
10. INSULATE ALL NEW AND EXISTING DOMESTIC HOT AND COLD WATER PIPING WITH FIBERGLASS HEAVY DENSITY PIPE INSULATION WITH FIRE RESISTANT JACKET AND SELF SEALING LAP. INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH PIPING INSULATION SCHEDULE. INSULATE FITTINGS AND VALVE BODIES WITH MITERED SECTION FOR PIPE INSULATION OR WITH CEMENT TO A THICKNESS EQUAL TO ADJOINING PIPE INSULATION. FINISH FITTINGS AND VALVE BODIES WITH CANVAS AND SEIZE WITH LACING ADHESIVE. FLANGES AND UNIONS SHALL NOT BE COVERED. COVERING SHALL BE NEATLY TERMINATED ON EACH END OF SCREWED UNIONS WITH INSULATING CEMENT.
11. INSULATE ALL NEW AND EXISTING HEATING, CHILLED AND CONDENSER WATER PIPING IN SAME MANNER AS SPECIFIED FOR DOMESTIC HOT AND COLD WATER PIPING, WITH THICKNESS IN ACCORDANCE WITH PIPING INSULATION SCHEDULE. PROVIDE JACKET WITH VAPOR BARRIER FOR CHILLED WATER PIPING.
12. ALL INTERIOR ABOVE-GRADE GAS PIPING 2" AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE WITH 150 PSI O.W.G. BLACK BANDED MALLEABLE IRON SOLDERED FITTINGS. ALL INTERIOR ABOVE-GRADE GAS PIPING 2-1/2" AND LARGER, AND ALL BELOW-GRADE INTERIOR GAS PIPING (ALL SIZES), SHALL BE WELDED SCHEDULE 40 BLACK STEEL. ALL BELOW-GRADE INTERIOR BLACK STEEL GAS PIPING SHALL BE COATED. ALL BELOW-GRADE GAS PIPING OUTSIDE OF BUILDING SHALL BE SCHEDULE 80 CPVC PIPING AND FITTINGS. ALL GAS PIPING INSTALLED ON ROOF SHALL BE SUPPORTED AT A MINIMUM OF EVERY 8 FEET, WITH 6" MIN. CLEARANCE FROM ROOF. EXCEPT WHERE GOVERNED BY MORE STRINGENT LOCAL CODES OR SPECIFICATIONS. ALL VERIBLE GAS PIPING SHALL BE LABELED WITH PRESSURE AT 6'-0" ON CENTERS. ALL PIPING EXPOSED TO WEATHER SHALL BE PAINTED.
13. PROVIDE FULL-SIZED SHUT-OFF VALVE AND 6" DIRT LEG AT ALL CONNECTIONS TO GAS-FIRED EQUIPMENT.
14. 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-CONTAMINATION. VACUUM BREAKERS SHALL BE PROVIDED FOR ALL SUBMERGED/FLOODED OUTLETS, DISH MACHINE LINES, HOSE CONNECTIONS, ETC. VACUUM BREAKERS SHALL BE INSTALLED A MINIMUM OF 6" ABOVE THE OVERFLOW RIM AND LOCATED ON THE DISCHARGE SIDE OF THE LAST VALVE ON THE EQUIPMENT. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED ON ALL CONTINUOUS PRESSURE LINES SUPPLYING EQUIPMENT SUCH AS SODA CARBONATORS, ICE MACHINES, ETC.
15. ALL FLOOR DRAINS AND FLOOR SINKS SHALL BE FLUSH-MOUNTED, PROPERLY SEALED, AND EASILY ACCESSIBLE FOR CLEANING AND MAINTENANCE.
16. ALL WATER LINES, WASTE AND VENT LINES, ETC. SHALL BE CONCEALED WITHIN THE WALL, BELOW FLOOR, OR ABOVE CEILING SURFACES.
17. ALL PIPING SHALL BE PROPERLY SUPPORTED, WITH PROVISIONS FOR HORIZONTAL BRACING AND EXPANSION/CONTRACTION AS REQUIRED. FOR INSULATED PIPING, AT EACH SUPPORT LOCATION, PROVIDE SHEET METAL SHIELDS FOR PIPING 2" AND SMALLER (EXCEPT WHERE REQUIRED TO BE CLAMPED) AND CALCIUM SILICATE THERMAL INSERTS WITH SHEET METAL SHIELDS FOR PIPING LARGER THAN 2" AND FOR ALL SIZES OF INSULATED PIPING REQUIRED TO BE CLAMPED.
18. SEAL ALL PIPING PENETRATIONS THROUGH FIRE-RATED WALLS WITH U.L. APPROVED FIRESTOPPING MATERIAL. SUBMIT SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL, INCLUDING DETAILS OF CONSTRUCTION AND PROPOSED FIRE-RATED ASSEMBLIES, MATERIALS AND PRODUCTS USED, AND VERIFICATION OF OVERALL SYSTEM COMPLIANCE.
19. ALL PIPING SYSTEMS SHALL BE TESTED AND PROVEN TIGHT PRIOR TO CONCEALMENT. THE TEST SHALL BE WITNESSED BY OWNER'S REPRESENTATIVE.
20. ALL PIPING SHALL BE CLEANED AND FLUSHED PRIOR TO SERVICE. (DOMESTIC WATER PIPING SHALL BE STERILIZED.)

PIPING INSULATION SCHEDULE table with columns: PIPING SYSTEM TYPE, MINIMUM INSULATION THICKNESS (IN.) FOR PIPE SIZES (UP TO 3/4", 1" TO 1-1/4", 1-1/2" TO 3", 4" & LARGER)

- 1. ALL PIPING SYSTEMS LISTED ABOVE SHALL BE INSULATED WITH INSULATION THICKNESS AS INDICATED (BASED ON INSULATION HAVING A THERMAL CONDUCTIVITY (K) RATING NOT EXCEEDING 0.27 BTU PER (HR) (FT) (F DELTA-T PER IN. THICKNESS)).
2. FOR ANY PIPING NOT NOTED ABOVE TO BE EXPOSED TO OUTDOOR AMBIENT TEMPERATURES, INCREASE INSULATION THICKNESS BY 0.5 INCHES WHEN INSTALLED IN SUCH EXPOSED LOCATIONS.
3. ALL INSULATED PIPING EXPOSED TO WEATHER SHALL BE PROTECTED WITH WEATHER-PROOF ALUMINUM JACKET.

TESTING AND BALANCING

- 1. ALL SYSTEMS SHALL BE TESTED AND BALANCED BY AN INDEPENDENT, APPROVED TEST AND BALANCE COMPANY (SEE BELOW). GENERAL CONTRACTOR/CONSTRUCTION MANAGER SHALL ACCEPT BIDS FROM PROSPECTIVE TEST & BALANCE COMPANIES TO PERFORM TEST & BALANCE SCOPE OF WORK AS INDICATED ON THE CONTRACT DOCUMENTS. TEST & BALANCE WORK SHALL NOT BE BID THROUGH THE MECHANICAL SUBCONTRACTOR. PROSPECTIVE TEST & BALANCE SUBCONTRACTORS SHALL SUBMIT BIDS DIRECTLY TO THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER, WHICH SHALL CONTRACT DIRECTLY WITH THE SUCCESSFUL BIDDING TEST & BALANCE CONTRACTOR. COMPLY WITH BASE BUILDING SPECIFICATIONS. SUBMIT TWO (2) COMPLETE REPORTS FOR REVIEW BY ENGINEER.
2. PRIOR TO PERFORMING ANY TEST AND BALANCE WORK, VERIFY THAT DUCTWORK IS SEALED AND CLEAN OF DEBRIS; NEW FILTERS ARE INSTALLED AND CLEAN; AIR COILS ARE CLEANED AND COMBED; AIR OUTLETS ARE INSTALLED AND CONNECTED; FIRE, SMOKE AND OTHER AUTOMATIC CONTROL DAMPERS ARE INSTALLED, OPERABLE AND 100% OPEN; MANUAL VOLUME DAMPERS ARE INSTALLED AND 100% OPEN; FANS AND PUMPS HAVE CORRECT ROTATION; EQUIPMENT VIBRATION IS MINIMIZED; HYDRONIC SYSTEMS ARE FLUSHED, FILLED AND PROPERLY VENTED; ISOLATION VALVES, CONTROL VALVES AND BALANCING VALVES ARE INSTALLED, OPERABLE AND 100% OPEN; CHECK VALVES ARE INSTALLED; STRAINERS ARE INSTALLED AND CLEAN; AND FLOW METERS ARE INSTALLED AND OPERABLE, AS APPLICABLE TO SYSTEMS BEING TESTED AND BALANCED. REPORT TO THE GENERAL CONTRACTOR ANY DEFECTS OR DEFICIENCIES THAT MAY PREVENT PROPER SYSTEM TESTING AND BALANCING.
3. VERIFY AND SUBMIT VERIFICATION FOR EACH ZONE FILL COOLING, MINIMUM COOLING AND FULL HEATING CAPACITY AS REQUIRED. SUBMIT AIR QUANTITIES AT MINIMUM DESIGN STATIC PRESSURES AND ENTERING AND LEAVING TEMPERATURES FOR COOLING AND HEATING MODES. MAXIMUM DESIGN COOLING CFM IS WHAT IS SHOWN ON DRAWINGS AT ALTITUDE CONDITIONS.
4. MINIMUM COOLING CFM FOR VAV ZONES SHALL BE SET AT 15% OF MAXIMUM DESIGN CFM, EXCEPT FOR CONFERENCE ROOM AND MEETING ROOM DEDICATED COOLING-ONLY ZONES, WHICH SHALL HAVE MINIMUM CFM SET TO ZERO.
5. HEATING CFM FOR PARALLEL FAN-POWERED VAV TERMINALS SHALL BE SET AT 75% OF MAXIMUM COOLING (PRIMARY AIR) CFM SETTING. FAN CFM FOR SERIES FAN-POWERED VAV TERMINALS SHALL BE SET AT 100% OF MAXIMUM PRIMARY AIR CFM SETTING.
6. ALL SUPPLY AIR DIFFUSERS AND EXHAUST REGISTERS SHALL BE BALANCED TO CFM SHOWN ON PLANS.
7. PROVIDE TEST AND BALANCE AND START-UP REPORT FOR ALL HVAC UNITS, AUX. AIR CONDITIONING SYSTEMS, AND EXHAUST FANS. REPORT SHALL INCLUDE ALL NAMEPLATE DATA, DESIGN DATA, MEASURED MOTOR AMP DRAW, VOLTAGE, CFM, SUCTION AND DISCHARGE STATIC PRESSURES, SUCTION AND DISCHARGE DRY BULB AND WET BULB TEMPERATURES, AND ENTERING AND LEAVING CONDENSER/CHILLED/HEATING WATER TEMPERATURES (AS APPLICABLE).
8. PROVIDE TEST AND BALANCE AND START-UP REPORT FOR ALL PUMPS. REPORT SHALL INCLUDE ALL NAMEPLATE DATA, DESIGN DATA, MEASURED MOTOR AMP DRAW, VOLTAGE, GPM, AND SUCTION AND DISCHARGE PRESSURES.
9. CHECK AND VERIFY ACTIVATION OF ELECTRICAL, GAS OR HOT WATER HEAT, AND SUBMIT CFM AND DELTA-TS AS APPLICABLE.
10. ALL AIR AND WATER FLOWS AT TERMINALS SHALL BE BALANCED TO WITHIN +10% TO -5% OF DESIGN FLOW QUANTITIES.
11. MINIMUM OUTSIDE AIR CFM FOR ROOFTOP HVAC UNITS AND OTHER AIR HANDLING UNITS SHALL BE SET AS SCHEDULED.
12. TEST AND RECORD PRIMARY AIR DRY BULB AND WET BULB TEMPERATURES AND AMBIENT AIR DRY BULB AND WET BULB TEMPERATURES AT THE TIME TESTING IS BEING PERFORMED.
13. CHECK AND CALIBRATE ALL THERMOSTATS. PROVIDE NOTIFICATION OF ANY MALFUNCTIONING THERMOSTATS TO THE MECHANICAL SUBCONTRACTOR, WHO SHALL REPAIR OR REPLACE THERMOSTATS AS REQUIRED.
HEATING MODE - SET AND LOCK AT 72°F R + 1/2" - 2°F
COOLING MODE - SET AND LOCK AT 75°F R + 1/2" - 2°F

- 14. PRE-APPROVED TEST AND BALANCE COMPANIES:
CERTIFIED BALANCING & COMMISSIONING, LLC 720-201-6274
COMPLETE MECHANICAL BALANCING, INC. 303-946-5429
CONTROLLED AIR, INC. 303-889-4688
UNITED TEST AND BALANCE 720-333-3601
GREG BARNES
CARL CATELEY
CURTIS HOHAR
JEREMY MERRILL
ONLY THE PRE-APPROVED AND RECOMMENDED TEST AND BALANCE COMPANY LISTED ABOVE SHALL BE ALLOWED TO SUBMIT A BID ON THIS PROJECT.
15. TEST AND BALANCE REPORTS SHALL BE TYPEWRITTEN OR COMPUTER PRINTER GENERATED.
16. TEST AND BALANCE PERSONNEL SHALL INFORM OUR OFFICE TWO (2) DAYS IN ADVANCE OF TIME OF TESTING AND BALANCING OF THE SYSTEM. AT THE TIME OF TESTING AND BALANCING, A REPRESENTATIVE OF OUR OFFICE WILL DO A FIELD OBSERVATION OF THE MECHANICAL PORTION OF THIS PROJECT.

FIRE PROTECTION

- 1. GENERAL CONTRACTOR SHALL SOLICIT BIDS FROM QUALIFIED FIRE PROTECTION CONTRACTORS FOR DESIGN AND INSTALLATION OF AN APPROVED FIRE SPRINKLER SYSTEM WHICH SHALL COMPLY WITH NFPA 13 AND ALL APPLICABLE CODES AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING MATERIALS REQUIRED AND METHODS OF INSTALLATION.
2. FIRE PROTECTION CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND EXISTING EQUIPMENT RELATED TO THE FIRE PROTECTION SYSTEM, INCLUDING, BUT NOT LIMITED TO, SPRINKLER SYSTEM SHUT-OFF VALVES AT EACH FLOOR, TAMPER SWITCHES, FIRE VALVE CABINETS, AND FLOW SWITCHES. ANY EQUIPMENT WHICH DOES NOT EXIST, WHICH IS SHOWN ON THESE CONTRACT DOCUMENTS OR OTHERWISE REQUIRED, SHALL BE PROVIDED BY THE FIRE PROTECTION CONTRACTOR.
3. FIRE PROTECTION CONTRACTOR SHALL COORDINATE LOCATION OF ALL PIPING WITH EXISTING STRUCTURE, NEW AND RELOCATED LIGHT FIXTURES, DIFFUSERS, RETURN AIR GRILLES, CEILING HEIGHTS AND CONFIGURATIONS, AND ALL EQUIPMENT RELATED TO REVIEW AND APPROVAL, INCLUDING DETAILS OF OFFSETS, RELOCATION OF PIPING, AND PROPER PIPE SIZING AS REQUIRED TO COMPLY WITH DESIGN CRITERIA, SPRINKLER HEAD LOCATIONS, IF SHOWN ON THESE DRAWINGS, ARE APPROXIMATE AND ARE SHOWN FOR COORDINATION PURPOSES ONLY. CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING ACTUAL HEAD LOCATIONS AND PIPING ROUTING AND FOR PROVIDING FULL SPRINKLER COVERAGE COMPLYING WITH ALL APPLICABLE FIRE PROTECTION CODE REQUIREMENTS.
4. FIRE PROTECTION CONTRACTOR SHALL PREPARE AND SUBMIT ALL SHOP DRAWINGS TO ALL AUTHORITIES HAVING JURISDICTION, SUCH AS FIRE DEPARTMENT, BUILDING DEPARTMENT, ETC., AS REQUIRED. FOR REVIEW AND APPROVAL, CONTRACTOR SHALL PROVIDE THE FIRE DEPARTMENT AND THE ENGINEER WITH ONE (1) SET OF DRAWINGS, HYDRAULIC CALCULATIONS AND EQUIPMENT SUBMITTALS FOR REVIEW AND APPROVAL.
5. ALL NEW AND RELOCATED SPRINKLER HEADS SHALL BE INSTALLED IN CENTER OF 2" X 2" CEILING TILES OR AT QUARTER POINTS, ALONG THE CENTERLINE LENGTHWISE, OF 2" X 4" CEILING TILES, WHERE POSSIBLE.
6. ALL NEW SPRINKLER HEADS SHALL MATCH EXISTING, EXCEPT AS OTHERWISE NOTED OR REQUIRED.

CONTRACTOR SHALL COMPLY WITH NOTES AS APPLICABLE TO PROJECT. NOTES ON INDIVIDUAL DRAWINGS TAKE PRECEDENCE.

MECHANICAL LEGEND table with columns: SYMBOL, DESCRIPTION, AIR DEVICES, DUCTWORK AND ACCESSORIES, PLUMBING, PIPING & COMPONENTS, DIFFUSER NECK SIZE SCHEDULE



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Job# 191T-24001

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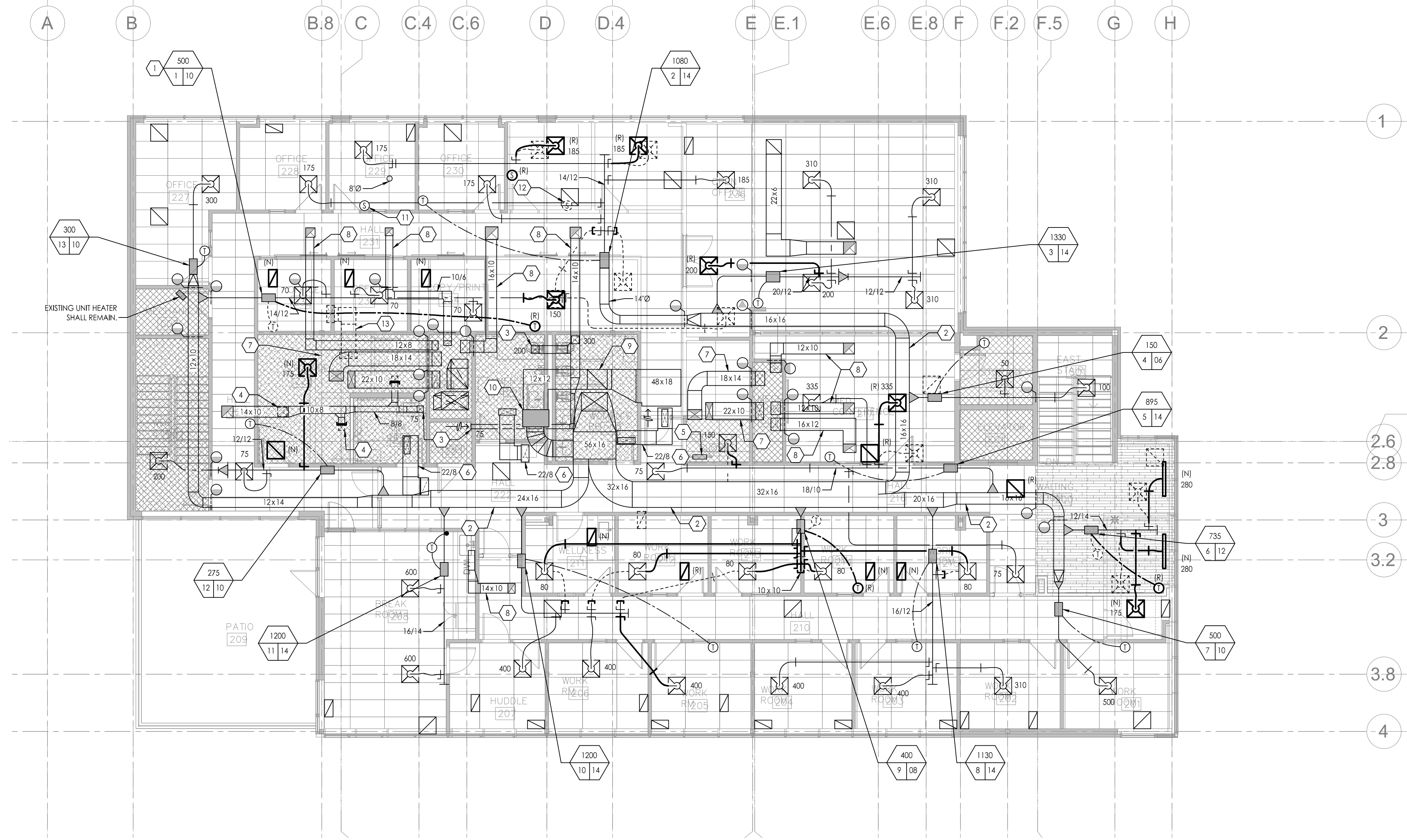
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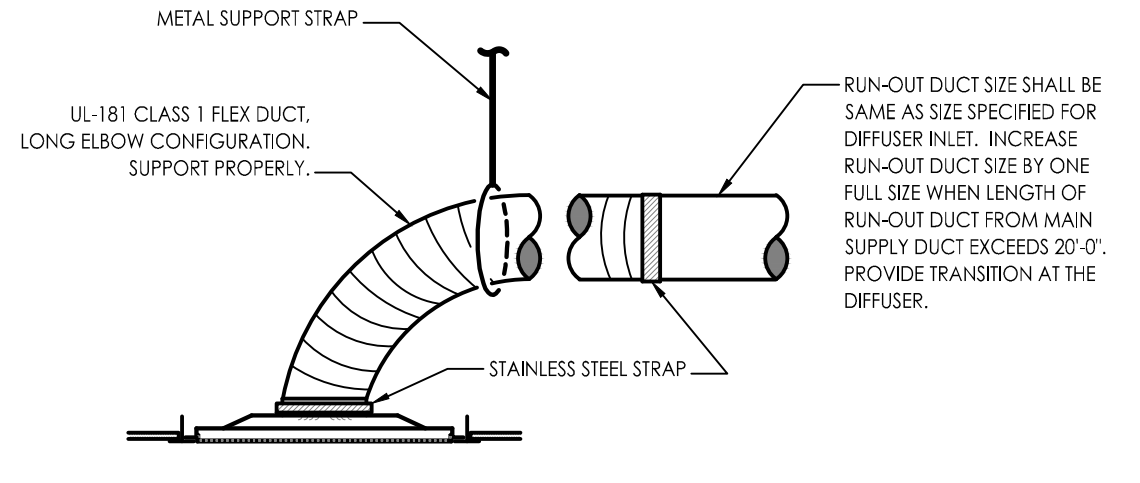
PROJECT NUMBER: 191T-24001

SHEET TITLE: SPECIFICATIONS & LEGEND
SHEET NUMBER:

MP.0



1 PARTIAL 2ND FLOOR MECHANICAL PLAN
SCALE: 1/8" = 1'-0"
0 2 4 8 16 32



2 TYPICAL 24" x 24" LAY-IN DIFFUSER INSTALLATION DETAIL
SCALE: NO SCALE

- MECHANICAL DETAIL NOTES:**
- EXISTING VVT ZONE DAMPER TO REMAIN AND BE REUSED, (TYP), BALANCE TO CFM INDICATED ON PLAN.
 - EXISTING SUPPLY DUCT FROM EXISTING ROOFTOP HVAC UNIT SHALL REMAIN. EXISTING HVAC UNIT BE ADJUSTED TO PROVIDE A MINIMUM OF 20% OUTSIDE AIR.
 - EXISTING EXHAUST GRILLE SHALL REMAIN. BALANCE TO MINIMUM OF CFM INDICATED (WHERE SHOWN).
 - EXISTING EXHAUST GRILLE SHALL BE REMOVED AND PLACED IN BUILDING STOCKPILE. CAP EXHAUST DUCTWORK AS REQUIRED.
 - EXISTING 1'6" X 1'3" DOOR GRILLE SHALL REMAIN.
 - EXISTING TRANSFER DUCTS AND ASSOCIATED CEILING GRILLES TO REMAIN.
 - EXISTING SUPPLY AND RETURN AIR DUCTWORK FROM FIRST FLOOR UP TO ROOFTOP HVAC UNIT.
 - EXISTING EXHAUST DUCTWORK FROM FIRST FLOOR UP TO ROOFTOP EXHAUST FAN.
 - EXISTING RETURN AIR DUCT UP TO EXISTING ROOFTOP HVAC UNIT WHICH SHALL REMAIN.
 - EXISTING BYPASS DAMPER TO REMAIN.
 - EXISTING STATIC PRESSURE SENSOR SHALL REMAIN.
 - EXISTING STATIC PRESSURE SENSOR SHALL BE REMOVED AND RELOCATED AS INDICATED WITH AN 'R' ON PLAN.
 - EXISTING TRANSFER DUCTS AND ASSOCIATED CEILING GRILLES SHALL BE REMOVED AND PROPERLY DISPOSED OF.
 - EXISTING 8" Ø DUCT SHALL BE REMOVED. PATCH AND SEAL EXISTING OPENING WATER TIGHT.
 - EXISTING EXHAUST DUCTWORK UP TO ROOFTOP EXHAUST FAN SHALL REMAIN.

OUTSIDE AIR VENTILATION REQUIREMENTS										
2021 IMC CALCULATION										
ROOM NAME	AREA (SQ. FT.)	OCCUPANT DENSITY (NO. OF PEOPLE PER 1000 SQ. FT.)	NUMBER OF PEOPLE *	PEOPLE OUTDOOR AIR VENTILATION RATE (CFM/PERSON)	AREA OUTDOOR AIR VENTILATION RATE (CFM/SQ. FT.)	ZONE AIR DISTRIBUTION EFFECTIVENESS **	TOTAL OUTDOOR VENTILATION AIR CFM REQUIRED	SUPPLY AIR MIN. O.A. PERCENTAGE	SUPPLY AIR CFM REQUIRED	SUPPLY AIR CFM PROVIDED
Huddle 207	116	50	6	5	0.06	0.8	45	20%	225	400
Break Room 208	375	50	19	5	0.06	0.8	145	20%	727	1200
Med Conference 217	344	50	17	5	0.06	0.8	133	20%	667	670

NOTES:
* "NUMBER OF PEOPLE" MAY BE BASED IN A CHAIR/PEOPLE COUNT IN ACCORDANCE WITH 2021 IMC SECTION 403.3.
** EFFECTIVENESS OF 0.8 IS USED FOR HEATED SUPPLY AIR FROM CEILING DIFFUSERS. SPACE SETPOINT 72 DEGREES. HEATING SUPPLY AIR 95 DEGREES. EFFECTIVENESS OF 1.0 IS BASED ON SUPPLY OF 55 DEGREES COOL AIR THAT IS DELIVERED THROUGH CEILING DIFFUSERS.

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PROJECT NUMBER: 191T-24001

SHEET TITLE: MECHANICAL PLAN

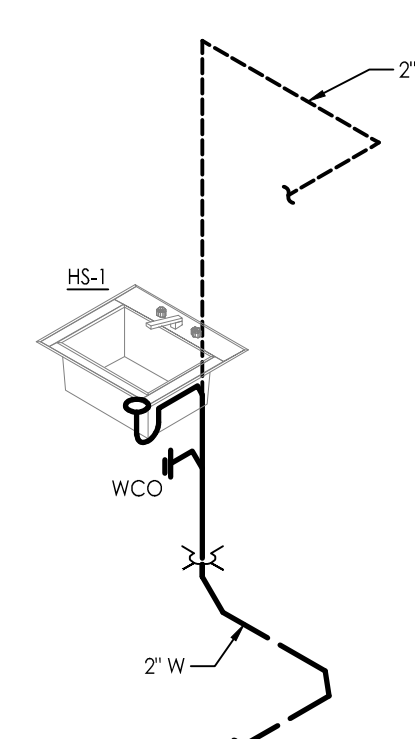
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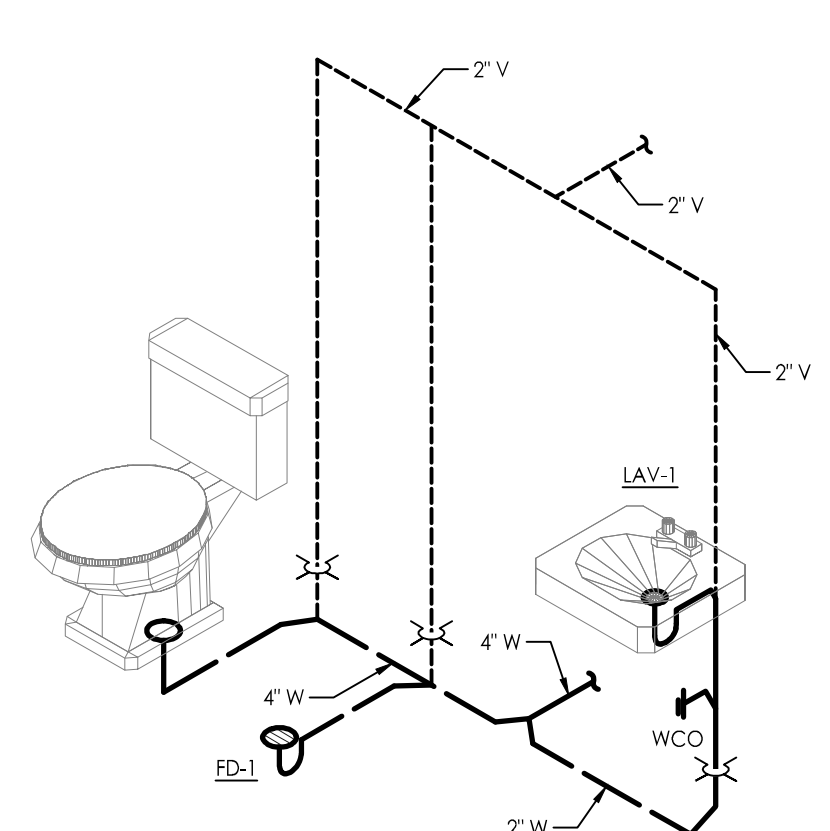
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PLAN LABEL	DESCRIPTION	CONNECTION SIZES				NOTES
		W	V	CW	HW	
WC-1	WATER CLOSET (TANK TYPE, A.D.A.) - KOHLER "HIGHLINE" K-3319, WHITE, VITREOUS CHINA, PRESSURE ASSISTED, 1.0 GALLON PER FLUSH, 17-1/2" HIGH ELONGATED BOWL, TANK AND FITTINGS, FLEXIBLE SUPPLY, ANGLE STOP, KOHLER K-4650 "LUSTRA" OPEN-FRONT SEAT WITH COVER. INSTALL PER A.D.A. REQUIREMENTS.	4"	2"	1/2"	-	
FD-1	FLOOR DRAIN (FINISHED AREAS) - JOSAM SERIES 3000-50 COATED CAST IRON FLOOR DRAIN, TWO-PIECE BODY WITH DOUBLE DRAINAGE FLANGE, INVERTIBLE NON-PUNCTURING FLASHING COLLAR, WEEPHOLES, BOTTOM OUTLET AND ADJUSTABLE 5" SATIN NIKALOY ROUND STRAINER.	2"	2"	-	-	
TP-1	TRAP PRIMER - PRECISION PLUMBING PRODUCTS MODEL P-1 OR P-2 TRAP PRIMER VALVE, AS APPLICABLE. PROVIDE FOR ALL FLOOR DRAINS AND WASTE STANDPIPES. INSTALL PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.	-	-	1/2"	-	
LAV-1	LAVATORY (COUNTERTOP, VITREOUS CHINA) - KOHLER "PENNINGTON" K-2194-4, WHITE, 20-1/4" X 17-1/2", VITREOUS CHINA, WITH 4" FAUCET CENTERS, COMPLETE WITH FLEXIBLE SUPPLIES INCLUDING STOPS, 1-1/4" CAST BRASS P-TRAP, AND CLEANOUT. PROVIDE DELTA MODEL 508LF SINGLE HANDLE LEVER FAUCET WITH CHROME FINISH, AND METAL GRID STRAINER DRAIN. INSULATE WASTE AND SUPPLY PIPING PER A.D.A. REQUIREMENTS (PROFLO TRAP COVER KIT).	2"	2"	1/2"	1/2"	
HS-1	HAND SINK (STAINLESS STEEL) - CLINTON INDUSTRIES MODEL 022, 18 GAUGE, TYPE 304 STAINLESS STEEL, 15X15X6" DEEP, DROP-IN SINK, COMPLETE WITH ANGLE STOPS WITH FLEXIBLE TUBE SUPPLIES, P-TRAP WITH CLEAN-OUT PLUG, CRUMB CUP/STOPPER, AND CHROME PLATED GOOSENECK FAUCET WITH AERATOR AND WING HANDLES.	2"	2"	1/2"	1/2"	
MV-1	MIXING VALVE - WATTS LF4MV SERIES OR EQUAL BRONZE BODY MIXING VALVE. PROVIDE FOR ALL LAVATORIES. INSTALL PER MANUFACTURER'S REQUIREMENTS AND RECOMMENDATIONS.	-	-	1/2"	1/2"	

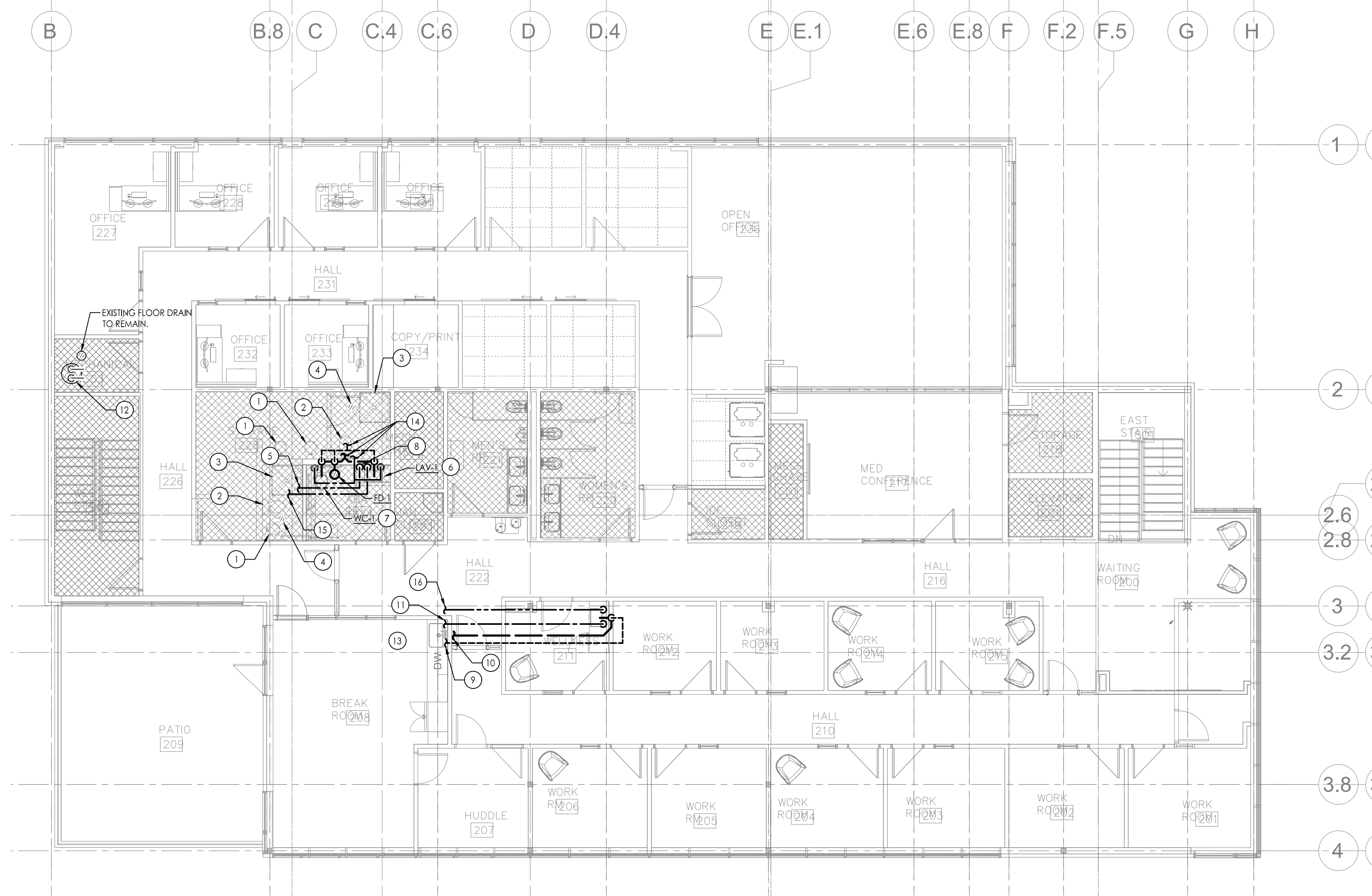
NOTE:
1. EXACT MANUFACTURER, MODEL AND ACCESSORIES OF ALL PLUMBING FIXTURES SHALL BE VERIFIED WITH ARCHITECT AND OWNER'S REPRESENTATIVE PRIOR TO PURCHASING.



2 WELLNESS ROOM #0020 WASTE & VENT ISOMETRIC VIEW
SCALE: NO SCALE



3 A.D.A. RESTROOM #0055 WASTE & VENT ISOMETRIC VIEW
SCALE: NO SCALE



1 2ND FLOOR PLUMBING PLAN
SCALE: 1/8" = 1'-0"
0 2 4 8 16 32

PLUMBING DETAIL NOTES:

- EXISTING LAVATORY AND UNUSED PIPING SHALL BE REMOVED FOR INSTALLATION OF NEW FIXTURE AS INDICATED. (TYP) EXISTING WASTE, VENT AND WATER PIPING SHALL BE REMOVED BACK TO ACTIVE SOURCE AS REQUIRED. CAP OFF ALL UNUSED PIPING AT SOURCE. (TYP) ACTUAL ROUTING OF PIPING SHALL BE VERIFIED IN FIELD. (TYP) PATCH FLOOR AS REQUIRED.
- EXISTING WATER CLOSET AND UNUSED PIPING SHALL BE REMOVED FOR INSTALLATION OF NEW FIXTURE AS INDICATED. (TYP) EXISTING WASTE, VENT AND WATER PIPING SHALL BE REMOVED BACK TO ACTIVE SOURCE AS REQUIRED. CAP OFF ALL UNUSED PIPING AT SOURCE. (TYP) ACTUAL ROUTING OF PIPING SHALL BE VERIFIED IN FIELD. (TYP) PATCH FLOOR AS REQUIRED.
- EXISTING SHOWER AND UNUSED PIPING SHALL BE REMOVED IN ITS ENTIRETY. (TYP) EXISTING WASTE, VENT AND WATER PIPING SHALL BE REMOVED BACK TO ACTIVE SOURCE AS REQUIRED. CAP OFF ALL UNUSED PIPING AT SOURCE. (TYP) ACTUAL ROUTING OF PIPING SHALL BE VERIFIED IN FIELD. (TYP) PATCH FLOOR AS REQUIRED.
- EXISTING FLOOR DRAIN AND UNUSED PIPING SHALL BE REMOVED FOR INSTALLATION OF NEW FIXTURE AS INDICATED. (TYP) EXISTING WASTE AND VENT PIPING SHALL BE REMOVED BACK TO ACTIVE SOURCE AS REQUIRED. CAP OFF ALL UNUSED PIPING AT SOURCE. (TYP) ACTUAL ROUTING OF PIPING SHALL BE VERIFIED IN FIELD. (TYP) PATCH FLOOR AS REQUIRED.
- CONNECT NEW 1/2" HOT WATER PIPING TO EXISTING 1/2" OR LARGER HOT WATER PIPING SERVING EXISTING RESTROOM. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING HOT WATER PIPING PRIOR TO INSTALLING NEW PIPE.
- INSTALL NEW LAVATORY (LAV-1) PER 'PLUMBING FIXTURE SCHEDULE' ON THIS SHEET. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE, LOCATION AND INVERT ELEVATION OF EXISTING WASTE AND VENT LINES PRIOR TO REMOVING OR INSTALLING NEW PIPE. REVISE EXISTING WASTE AND VENT PIPING FOR PROPER INSTALLATION AND OPERATION. (TYP)
- INSTALL NEW WATER CLOSET (WC-1) PER 'PLUMBING FIXTURE SCHEDULE' ON THIS SHEET. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE, LOCATION AND INVERT ELEVATION OF EXISTING WASTE AND VENT LINES PRIOR TO REMOVING OR INSTALLING NEW PIPE. REVISE EXISTING WASTE AND VENT PIPING FOR PROPER INSTALLATION AND OPERATION. (TYP)
- NEW 1/2" HOT WATER LINE SHALL DROP DOWN IN WALL AND RUN WITHIN 2 FEET OF LAVATORY FAUCET CONNECTIONS (FOR HOT WATER CIRCULATION PURPOSES). (TYP)
- CONNECT NEW 2" VENT PIPING TO EXISTING 2" OR LARGER VENT LINE SERVING EXISTING BREAK ROOM SINK. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING VENT LINE PRIOR TO INSTALLING NEW PIPE.
- CONNECT NEW 2" WASTE PIPING TO EXISTING 2" OR LARGER WASTE LINE SERVING EXISTING BREAK ROOM SINK. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE, LOCATION AND INVERT ELEVATION OF EXISTING WASTE LINE PRIOR TO INSTALLING NEW PIPE.
- CONNECT NEW 3/4" COLD WATER PIPING TO EXISTING 3/4" OR LARGER WATER LINE SERVING EXISTING BREAK ROOM SINK. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING COLD WATER LINE PRIOR TO INSTALLING NEW PIPE.
- EXISTING WATER HEATER TO REMAIN.
- EXISTING BREAK ROOM PLUMBING TO REMAIN. NO NEW PLUMBING REQUIRED UNLESS OTHERWISE INDICATED.
- CONNECT NEW 3/4" COLD WATER, 2" WASTE AND 2" VENT PIPING TO EXISTING 3/4" OR LARGER COLD WATER, 2" OR LARGER WASTE AND 2" OR LARGER VENT PIPING. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING PIPING PRIOR TO INSTALLING PIPE.
- CONNECT NEW 1/2" HOT WATER RE-CIRCULATION PIPING TO EXISTING 1/2" OR LARGER HOT WATER RE-CIRCULATION PIPING SERVING EXISTING RESTROOM. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING HOT WATER PIPING PRIOR TO INSTALLING NEW PIPE.
- CONNECT NEW 1/2" HOT WATER PIPING TO EXISTING 1/2" OR LARGER WATER LINE SERVING EXISTING BREAK ROOM SINK. CONTRACTOR SHALL FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING HOT WATER LINE PRIOR TO INSTALLING NEW PIPE.



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SHEET NUMBER: **P.1**

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