

SECTION 23000: BASIC MECHANICAL REQUIREMENTS

- A. NOTICE
1. THE ABREVIATION LOGS WHEREVER IT APPEARS IN THESE MECHANICAL DRAWINGS AND/OR SPECIFICATIONS SHALL REFER TO "LIMITED STORE DESIGN AND CONSTRUCTION"...

- B. GENERAL REQUIREMENTS
1. THIS CONTRACTOR SHALL PROVIDE ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY TO PROVIDE A COMPLETE MECHANICAL SYSTEM...

- 2. THE DRAWINGS AND SPECIFICATIONS ARE INTENDED TO SUPPLEMENT EACH OTHER AND ANY MATERIAL OR LABOR CALLED FOR IN ONE SHALL BE FURNISHED AND INSTALLED EVEN THOUGH NOT SPECIFICALLY MENTIONED IN BOTH...

- 3. WHERE THE DRAWINGS OR SPECIFICATIONS CALL FOR ITEMS WHICH EXCEED CODES OR THE LANDLORD'S DESIGN CRITERIA, THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING THE SYSTEM WITH THE MORE STRINGENT REQUIREMENTS AS IDENTIFIED AND DESCRIBED ON THESE DRAWINGS...

- 4. ALL WORK IN THIS SECTION SHALL BE INSTALLED SO AS TO BE READILY ACCESSIBLE FOR OPERATING, SERVICING, MAINTAINING, AND REPAIRING. THIS CONTRACTOR IS RESPONSIBLE FOR PROVIDING SUFFICIENT SERVICE ACCESS TO ALL EQUIPMENT.

- 5. ALL WORK SHALL BE PERFORMED IN A NEAT PROFESSIONAL MANNER USING GOOD CONSTRUCTION PRACTICES. UNLESS SPECIFICALLY NOTED OTHERWISE, MATERIALS, PRODUCTS, AND EQUIPMENT, INCLUDING ALL COMPONENTS THEREOF, SHALL BE NEW, UNDERWRITER'S LABORATORIES/UNDERWRITER'S LABORATORIES OF CANADA LISTED AND LABELED AND SIZED IN CONFORMANCE WITH REQUIREMENTS OF STATE/PROVINCE AND LOCAL CODES...

- 7. THIS CONTRACTOR SHALL DO ALL CUTTING, CHASING AND CHANNELING REQUIRED FOR ANY WORK UNDER THIS DIVISION. CUTTING SHALL HAVE PROOF APPROVAL BY LSDBAC PROJECT MANAGER AND THE LANDLORD. ALL PATTERNS SHALL BE BY C.E. AND SHALL MATCH THE SURROUNDING SURFACES.

- 8. THE MECHANICAL CONTRACTOR SHALL MAKE ALL FINAL MECHANICAL CONNECTIONS AS REQUIRED FOR A COMPLETE AND OPERATING SYSTEM.

- a. THE MECHANICAL CONTRACTOR SHALL NOTIFY THE GENERAL CONTRACTOR TO CONTACT LSDBAC'S DESIGNATED COMPANY (EMC) FOR START-UP. (SEE SHEET M01.01).

- C. CODES
1. ALL WORK SHALL CONFORM TO THE LANDLORD'S CRITERIA, THE STATE'S/PROVINCE'S, COUNTY'S, CITY'S AND LOCAL CODES AND ORDINANCES, SAFETY AND HEALTH CODES, NFPA/IFC CODES, ENERGY CODES AND ALL OTHER APPLICABLE CODES AND REQUIREMENTS. THIS CONTRACTOR SHALL INQUIRE INTO AND COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS...

- D. LICENSES, PERMITS, INSPECTIONS & FEES
1. THIS CONTRACTOR SHALL OBTAIN AND PAY FOR ALL LICENSES, PERMITS, INSPECTIONS, AND FEES REQUIRED OR RELATED TO HIS WORK.

- 2. FURNISH TO THE LSDBAC'S PROJECT MANAGER ALL CERTIFICATES OF INSPECTION AND FINAL INSPECTION APPROVAL AT COMPLETION OF PROJECT.

- E. TRADE NAMES, MANUFACTURERS AND SHOP DRAWINGS
1. WHERE TRADE NAMES AND MANUFACTURERS ARE USED ON THE DRAWINGS OR IN THE SPECIFICATIONS, THE EXACT EQUIPMENT SHALL BE USED AS A MINIMUM FOR THE BASE...

- 2. GENERAL CONTRACTOR SHALL SUBMIT ALL EQUIPMENT AND DEVICES TO LSDBAC PROJECT MANAGER FOR APPROVAL. SUBMISSIONS SHALL BE MADE EARLY ENOUGH IN PROJECT TO ALLOW FOUR (4) WORKING DAYS FOR LSDBAC PROJECT MANAGER'S REVIEW WITHOUT CAUSING DELAYS OR CONTACTS TO THE JOBS PROGRESS...

- F. GUARANTEE
1. THIS CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORK PROVIDED UNDER HIS CONTRACT AND SHALL MAKE GOOD, REPAIR OR REPLACE AT HIS OWN EXPENSE, ANY DEFECTIVE WORK, MATERIAL, OR EQUIPMENT WHICH MAY BE DISCOVERED WITHIN A PERIOD OF 12 MONTHS FROM THE DATE OF ACCEPTANCE...

- 2. THE EQUIPMENT MANUFACTURER SHALL GUARANTEE AND PROVIDE A 12 MONTH GUARANTEE TO LSDBAC FROM THE DATE OF ACCEPTANCE. THIS CONTRACTOR SHALL WARRANTY THE INSTALLATION OF THIS EQUIPMENT AND WILL BE RESPONSIBLE FOR ANY DAMAGE AND/OR MALFUNCTION CAUSED BY THE INSTALLATION. THIS CONTRACTOR SHALL NOT BEAR ADDITIONAL WARRANTIES BEYOND A COMPLETE WORKING SYSTEM.

- G. RECORD DRAWINGS
1. THIS CONTRACTOR SHALL MAINTAIN ONE SET OF DRAWINGS ON THE JOB SITE UPDATED WEEKLY TO RECORD ALL DEVIATIONS FROM CONTRACT DRAWINGS, SUCH AS:

- a. LOCATION OF CONCEALED PIPING VALVES AND DUCTS.
b. REVISIONS, ADDENDUM, AND CHANGE ORDERS.

- c. SIGNIFICANT DEVIATIONS MADE NECESSARY BY FIELD CONDITIONS, APPROVED EQUIPMENT SUBSTITUTIONS, AND CONTRACTOR'S COORDINATION WITH OTHER TRADES.

- 2. AT COMPLETION OF THE PROJECT AND BEFORE FINAL APPROVAL, THIS CONTRACTOR SHALL MAKE ANY FINAL CORRECTIONS TO DRAWINGS AND CERTIFY THE ACCURACY OF EACH COPY BY SIGNATURE THEREON, FAILURE TO DO THESE RECORDS WILL ALLOW LSDBAC TO OBTAIN THE GENERAL CONTRACTOR TO PROVIDE THESE RECORDS AT HIS EXPENSE PRIOR TO FINAL PAYMENT.

- H. DISCREPANCIES IN DOCUMENTS
1. DRAWINGS (PLANS, SPECIFICATIONS, AND DETAILS) ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION AND INTENT OF THE MECHANICAL SYSTEMS. THESE DRAWINGS, EXISTING SITE CONDITIONS, SPECIFICATIONS OR OTHER TRADES CONFLICT OR ARE UNCLEAR, ADVISE THE GENERAL CONTRACTOR IN WRITING, PRIOR TO SUBMITTING A BID. THE GENERAL CONTRACTOR IS RESPONSIBLE TO ADVISE LSDBAC'S PROJECT MANAGER, IN WRITING, OF VARIATIONS TO CONTRACT DOCUMENTS PRIOR TO SUBMISSION OF BID...

- I. PLUMBING REQUIREMENTS
1. THIS CONTRACTOR IS TO INCLUDE IN HIS BID ALL NECESSARY SERVICE REQUIRED TO KEEP THE OPERATING PHASE OF THE STORE'S HVAC, PLUMBING AND SPRINKLER SERVICE IN OPERATION. CONTRACTOR MUST SCHEDULE IN WRITING WITH LSDBAC'S PROJECT MANAGER AND THE LANDLORD ONE WEEK PRIOR TO ANY SHUT DOWN OF THE HVAC, PLUMBING OR FIRE PROTECTION SYSTEMS.

- J. DEMOLITION
1. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF THE DEMOLITION OF EXISTING WORK AND THE DEMOLITION PROVIDED BY THE GENERAL CONTRACTOR WITH THE GENERAL CONTRACTOR'S DEMOLITION CONTRACTOR TO BE LEFT INTACT.

- 2. THIS CONTRACTOR SHALL INCLUDE, AND WILL BE HELD RESPONSIBLE FOR, THE REMOVAL OF ALL EXISTING HVAC UNITS, HYDRONIC PIPING, REFRIGERANT RECAPTURE, EXHAUST FANS, ETC. AND ASSOCIATED POOR CURBS NOT TO BE REUSED ON THIS PROJECT, UNLESS SPECIFICALLY NOTED OTHERWISE. CONTRACTOR MUST VERIFY WITH THE LANDLORD ALL PRESUMED ABANDONED EQUIPMENT, PIPES, AND DUCTWORK PRIOR TO REMOVAL. ROOF CURBS SHALL BE REMOVED AND THE ROOF PATCHED. ALL EXHAUST/VENTILATION DEVICES IN THE SPACE OR ON THE ROOF NOT APPLICABLE TO THE NEW WORK MUST BE REMOVED AND ROOF/WALL/FLOOR PATCHED/REPAIRED TO MATCH EXISTING STRUCTURE. EXISTING ABANDONED PIPES, DUCTS, AND EQUIPMENT IN THE FLOOR, EMBEDDED IN CONCRETE OR OTHERWISE INACCESSIBLE ARE TO BE CUT OFF AND SEALED BELOW OR WITHIN FLOOR OR WALL LEVEL WHEN THEY ARE NOT TO BE REUSED IN THIS PROJECT...

- K. SLEEVES
1. THIS CONTRACTOR SHALL PROVIDE SLEEVES TO PROTECT EQUIPMENT OR FACILITIES IN THE INSTALLATION. EACH SLEEVE SHALL EXTEND THROUGH ITS RESPECTIVE FLOOR, WALL OR PARTITION AND SHALL BE CUT FLUSH WITH EACH SURFACE EXCEPT SLEEVES THAT PENETRATE THE FLOOR, WHICH SHALL EXTEND 2" ABOVE THE FLOOR. CONTRACTOR MUST COORDINATE THROUGH THE LANDLORD ANY CORE DRILLING OR CUTTING OF OPENINGS IN MASONRY FLOORS OR WALLS.

- 2. ALL SLEEVES AND OPENINGS THROUGH FIRE RATED WALLS AND/OR FLOORS SHALL BE FIRE SEALED WITH CALCIUM SILICATE, SILICONE PUTTY, FOAM, FIRE RATED SEALANTS OR EQUAL, SO AS TO RETURN THEIR FIRE RATED RATING.

- 3. SLEEVES IN BEARING AND MASONRY WALLS, FLOORS, AND PARTITIONS SHALL BE STANDARD WEIGHT STEEL, REINFORCED SMOOTH SURFACE FOR OTHER THAN MASONRY PARTITIONS, THROUGH SUSPENDED CEILINGS, OR FOR CONCEALED VERTICAL PIPING. SLEEVES SHALL BE 22 LBS. GALVANIZED STEEL MINIMUM.

- L. SCOPE OF WORK
1. THIS CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, SERVICES, TOOLS, TRANSPORTATION, INCIDENTALS AND DETAILS NECESSARY FOR, REPAIR, REPLACE AND MODERNIZE THE FURNISHING, INSTALLATION, COMMISSIONING AND TESTING OF ALL THE WORK IN THESE MECHANICAL SYSTEMS AS SHOWN ON DRAWINGS, CALLED FOR IN THE SPECIFICATIONS, AND AS REQUIRED BY JOB CONDITIONS, TO INCLUDE, BUT NOT LIMITED TO THE FOLLOWING:

- a. HVAC UNITS, ALL RELATED EQUIPMENT AND ACCESSORIES (UNLESS NOTED OTHERWISE).
b. DUCTWORK, FITTINGS, DAMPERS, AND INSULATION.

- c. REFRIGERANT PIPING (AS APPLICABLE, REFER TO PLANS).
d. HYDRONIC PIPING (AS APPLICABLE, REFER TO PLANS).

- e. CURBS, ROOFING, AND STEEL FLOOR SUPPORT (AS APPLICABLE, REFER TO PLANS).

- f. TESTING, ADJUSTING, AND BALANCING.
g. KEEPING A RECORD SET AND PREPARE AS-BUILT DRAWINGS.

- 2. BEFORE STARTING WORK, THIS CONTRACTOR SHALL VISIT THE JOB SITE AND EXAMINE THE ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL PLANS AND SPECIFICATIONS TO DETERMINE CODES, ORDINANCES, AND REGULATIONS AND IDENTIFY ALL CRITICAL ELEMENTS OF THE HVAC SYSTEM, MATERIALS, AND EQUIPMENT WITH OTHER CONTRACTORS TO AVOID INTERFERENCES AS FRONTIERS.

- 3. RELOCATION OF EXISTING WORK TO MEET STORE DESIGN CRITERIA MUST BE INCLUDED IN BID PROPOSAL.

- M. EQUIPMENT
1. ALL EQUIPMENT SHALL BE FURNISHED BY LSDBAC AS SCHEDULED UNLESS NOTED OTHERWISE, REFER TO PLANS FOR EQUIPMENT SCHEDULE. ALL EQUIPMENT SHALL BE (5) YEAR COMPRESSOR AND TEN (10) YEAR HEAT EXCHANGER WARRANTY PERIODS.

- 2. ALL EQUIPMENT SHALL BE COMPLETE IN EVERY RESPECT WITH ALL DEVICES AND ACCESSORIES PROVIDED TO MEET THE DESIGN INTENT AND OPERATION OF THE SYSTEM SHOWN ON DRAWINGS AND SPECIFIED HEREIN.

- 3. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

- N. EQUIPMENT INSTALLED BY LIMITED STORE DESIGN AND CONSTRUCTION
1. THE FOLLOWING EQUIPMENT IS FURNISHED BY LSDBAC AND INSTALLED BY THIS CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE, REFER TO EQUIPMENT SCHEDULE AND PLANS FOR APPLICABILITY.

- a. TEMPERATURE CONTROLS.

- 2. ALL DUCTWORK, ROOF OPENINGS AND CAPS, OFFICERS, FANS AND ACCESSORIES NECESSARY TO PROVIDE A COMPLETE FLEET EXHAUST SYSTEM SHALL BE FURNISHED AND INSTALLED BY THIS CONTRACTOR.

- O. CURBS FOR SUPPORT
1. THIS CONTRACTOR SHALL FURNISH AND INSTALL CURB ADAPTORS ON EXISTING CURBS WHERE ALLOWED BY LANDLORD. CURB ADAPTORS MUST BE MANUFACTURED BY THERMO MICROMETAL OR LSDBAC APPROVED EQUAL.

- 2. WHERE EXISTING CURBS ARE NOT AVAILABLE OR WHERE CURB ADAPTORS ARE NOT ALLOWED THIS CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY CURBS REQUIRED TO INSTALL ALL HVAC EQUIPMENT AS DESCRIBED ON THE DRAWINGS. CURBS SHALL BE A MINIMUM OF 14" HIGH (SEE M01.01 "LOCAL AREA REQUIREMENTS" ITEM # 5), OF THE SAME MANUFACTURER OF THE EQUIPMENT UNLESS NOTED OTHERWISE. CURBS SHALL ELEVATE THE UNITS(A) A MINIMUM OF 8" ABOVE ROOF LEVEL.

- 3. ALL CURBS AND CURB ADAPTORS SHALL BE INSTALLED SUCH THAT TOP OF CURBS ARE LEVEL. ALL PENETRATIONS OF EXISTING STRUCTURE SHALL BE MANUFACTURED BY THERMO MICROMETAL OR LSDBAC APPROVED EQUAL. THIS CONTRACTOR SHALL RECEIVE LSDBAC PROJECT MANAGER'S WRITTEN APPROVAL BEFORE ANY WORK TAKES PLACE. THIS CONTRACTOR IS ALSO RESPONSIBLE FOR ALL SEISMIC, HURRICANE OR OTHER SECURING DEVICES REQUIRED BY LOCAL OR OTHER CODES.

- P. LABELS/PIPE MARKERS
1. FURNISH AND INSTALL PIPE IDENTIFICATION MARKERS ON ALL PIPES INSTALLED UNDER THIS CONTRACT. MARKERS SHALL BE A MINIMUM OF 1-1/2" X 8" AND IDENTIFIED IN ACCORDANCE WITH THE BACKGROUND AND LETTER COLORS ISSUED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI).

- 2. PIPING SHALL BE IDENTIFIED AS FOLLOWS: CHILLED WATER RETURN, CHILLED WATER SUPPLY, CONDENSATE, HOT WATER RETURN, HOT WATER SUPPLY, CONDENSER WATER RETURN, CONDENSER WATER SUPPLY, REFRIGERANT LIQUID, REFRIGERANT SUCTION, AND DIRECTIONAL ARROWS. ALL IDENTIFICATIONS MUST BE VISIBLE AT EQUIPMENT.

- D. FINAL HVAC INSPECTIONS
1. ASIDE FROM NORMAL INSPECTIONS OF WORK IN PLACE, LSDBAC SHALL HAVE AN INDEPENDENT HVAC CONTRACTOR INSPECT THE FINISHED HVAC INSTALLATION UPON COMPLETION FOR COMPLIANCE WITH THE PLANS, SPECIFICATIONS AND CODES. THE INSTALLING CONTRACTOR WILL BE RESPONSIBLE TO BRING ALL ITEMS REPORTED BY THE INDEPENDENT HVAC CONTRACTOR UP TO PLANS AND SPECIFICATION REQUIREMENTS.

SECTION 23000: COMMON WORK RESULTS FOR HVAC

- A. HANDERS
1. HANDERS SHALL INCLUDE ALL MISCELLANEOUS STEEL SUCH AS ANGLE IRON, BANDS, C-CLAMPS WITH RETAINING CLIPS, CHANNELS, HANGER ROODS, ETC., NECESSARY FOR THE INSTALLATION OF STEEL.

- 2. HANDERS SHALL BE FASTENED TO BUILDING STEEL, CONCRETE, OR MASONRY, BUT NOT TO PIPING, HANGING FROM METAL DECK IS NOT PERMITTED. HANDERS SHALL BE INSTALLED TO UPPER CORNER OF BAR JOIST, WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT DUCTWORK OR PIPING. THE CONTRACTOR MUST ATTACH TRAFFIC TYPE HANDERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, AND OTHER EQUIPMENT. HANGER TYPES AND INSTALLATION METHODS ARE ALSO SUBJECT TO LANDLORD CRITERIA.

- 3. HANDERS FOR ALL INSULATED PIPING SHALL BE SIZED AND INSTALLED FOR THE OUTER DIAMETER OF INSULATION. INSTALL 6" LONG SPIRE CIRCLE GALVANIZED SADDLE BETWEEN THE HANDED SHALL BE O-ELECTRICALLY SEPARATED.

- 4. HANGERS AND PIPING OF DISSIMILAR METALS SHALL BE O-ELECTRICALLY SEPARATED.

- B. VIBRATION ISOLATION DEVICES
1. SPRING VIBRATION ISOLATION DEVICES SHALL BE FURNISHED AND INSTALLED IN ALL SUPPORTS BENEATH VIBRATING EQUIPMENT (FANS, AIR HANDLERS, ETC.) AND STRUCTURES. ISOLATORS TO BE SIZED ACCORDING TO LOAD WITH A MIN. 1" DEFLECTION. VIBRATING EQUIPMENT HANG FROM STRUCTURE SHALL BE ISOLATED WITH RUBBER AND SPRING DEVICES. VIBRATING EQUIPMENT SUPPORTED FROM FLOOR OR DECK SHALL BE ISOLATED WITH HOLOGED SPRING MOUNT DEVICES.

- 2. EXAMINE DEAD LOAD AND OPERATING LOAD CONDITIONS WHEN SELECTING DEVICES. ADJUST FOR PROPER ALIGNMENT AND LOADING; AVOID "GROUNDING" THE ISOLATOR.

- 3. CHECK HANGER ROD SIZE FOR ALLOWABLE LOADS AT THE ISOLATING DEVICE AND AT THE UPPER AND LOWER ATTACHMENTS TO STRUCTURES, DUCTS, AND EQUIPMENT. HANGER RODS SHALL BE SIZED TO UPPER CORNER OF BAR JOIST, WHERE INTERFERENCES OCCUR, AND IN ORDER TO SUPPORT DUCTWORK OR PIPING. THE CONTRACTOR MUST ATTACH TRAFFIC TYPE HANDERS OR SUPPORTS WHICH SHALL BE LOCATED WHERE THEY DO NOT INTERFERE WITH ACCESS TO FIRE DAMPERS, VALVES, AND OTHER EQUIPMENT. HANGER TYPES AND INSTALLATION METHODS ARE ALSO SUBJECT TO LANDLORD CRITERIA.

- 4. THE BALANCE REPORT SHALL INCLUDE AS A MINIMUM THE FOLLOWING INFORMATION:
a. ABC OR NEBB CERTIFICATION NUMBER AND SIGNATURE OF BALANCING CONTRACTOR.
b. INSTRUMENTATION LIST WITH LAST CALIBRATION DATES.
c. MAKE AND MODEL NUMBERS OF ALL HVAC EQUIPMENT TESTED.

- d. AIR CFM AND STATIC PRESSURE READINGS (DISCHARGE AND SUCTION) AS MEASURED BY PTD TUBE DUCT TRAVERSE AT THE UNIT.
e. MOTOR NAMEPLATE DATA WITH ACTUAL FIELD VOLTAGE AND AMPERAGE READINGS FOR EACH LEAD.

- f. MOTOR AND FAN RPM, SHAFT SPEEDS, AND BELT SIZES.
g. OUTSIDE, RETURN, MIXED AND SUPPLY AIR TEMPERATURES AT FULL COOLING.

- h. WATER BALANCE DATA INCLUDING CFM WITH INLET AND OUTLET TEMPERATURE AND PRESSURE READINGS (WHERE APPLICABLE).
i. MAKE AND MODEL NUMBERS OF ALL AIR DISTRIBUTION EQUIPMENT.

- j. FINAL BALANCED AIR VOLUMES AT ALL OUTLETS (INCLUDING RETURNS WHERE APPLICABLE).
k. INDEED PLAN WITH DIFFUSER AND RETURN LOCATIONS.

- l. MAXIMUM AND MINIMUM SET POINTS FOR DEMAND CONTROL VENTILATION SYSTEMS INCLUDING CFM, FAN SPEED, AND OUTDOOR AIR DAMPERS POSITIVE PRESSURE CONTROL ITEMS.

- 5. BALANCE ALL MEDIA QUANTITIES TO WITHIN 5% OF THAT INDICATED ON THE DRAWINGS WITH STORE IN OPERATING CONDITION (SILICOLES SHALL BE OPEN AND RETURN/DOORS CLOSED), ANY REQUIRED CHANGES TO NOZZLES, BELTS OR PULLEYS TO ACHIEVE SPECIFIED AIR FLOW SHALL BE PERFORMED BY THE HVAC CONTRACTOR WITH NO ADDITIONAL COST TO LSDBAC.

- 6. ALL CONTROL DEVICES SHALL BE TESTED (INTERLOCKED EQUIPMENT, SMOKE DETECTORS, SMOKE EVACUATION FANMER, ETC.) AND OPERATIONAL. ALL DEVICES SHALL BE TESTED IN BALANCE REPORT.

- 7. AIR BALANCING CONTRACTOR IS TO CONFIRM OVERIDE OF MINIMUM OUTSIDE AIR INTAKE UPON CO2 MONITORING CONTROL FOR COMFORT. SEE CONTACT INFORMATION ON SHEET M01.01.

- 8. THREE COPIES (ELECTRONIC COPIES ARE ACCEPTABLE) OF THE BALANCE REPORT SHALL BE SUBMITTED THROUGH THE GENERAL CONTRACTOR TO LSDBAC FOR APPROVAL. THE GENERAL CONTRACTOR SHALL VERIFY THE COMPLETENESS OF THE REPORTS PRIOR TO SUBMITTING TO LSDBAC. ONE COPY OF FINAL APPROVED AIR BALANCE REPORT TO MAIL GENERAL MANAGER.

- 9. EQUIPMENT SUPPLIER SHALL BE RESPONSIBLE FOR ENSURING PROPER SIZING TO ALL OUTDOOR AIR DAMPERS REFLECTS THE APPROVED CERTIFIED AIR BALANCE. CONTROL SENSOR SHALL PROVIDE REMOTE SUPPORT ASSESS TO TAB CONTRACTOR RESPONSIBLE EQUIPMENT SETPOINT.

- 10. THE BALANCING CONTRACTOR SHALL PERFORM ALL APPLICABLE TESTING AND BALANCING FUNCTIONS REQUIRED FOR THE SYSTEM DESCRIBED ON THESE DRAWINGS. ALL SYSTEMS UNABLE TO BE COMPLETELY BALANCED AT THE TIME OF THE BALANCE WILL BE BALANCED IN FUTURE AT NO ADDITIONAL EXPENSE TO LSDBAC. THE BALANCING CONTRACTOR SHALL KEEP ANY NEW TESTING DATA ITEMS NECESSARY AT NO ADDITIONAL COST TO LSDBAC.

- X. VALVES
1. GATE VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 2. GATE VALVES: 2-INCH AND LARGER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 3. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 4. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 5. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 6. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 7. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 8. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 9. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
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b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 10. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 11. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 12. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 13. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 14. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 15. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 16. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 17. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 18. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
d. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.

- 19. SWING CHECK VALVES: 2-INCH AND SMALLER: CLASS 150; 3-INCH AND LARGER: CLASS 250.
a. 150 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
b. 250 PSI RATED W/ 1/2" THROAT OR SLOPER BEND. INTERNAL SEAT. REINFORCED HEAD. BROWNS WEDGE GATE. ROUND STEM AND WELDED END.
c. 250 PSI RATED W/ 1/2