

FILE NAME: 2004-1801M.dwg DATE: 2005.05.26 DESCRIPTION: SECOND FLOOR PLAN - MECH. & PLUMBING SPEC. PROJECT No: 2004-180 ADDRESS: 510 MAIN STREET

MECHANICAL SPECIFICATIONS

PART 1 - MECHANICAL GENERAL CONDITIONS

- 1. SCOPE
A. PROVIDE A FULLY FUNCTIONAL HEATING, VENTILATION, AND AIR CONDITIONING (HVAC) SYSTEM FOR THE SPACES NOTED.
B. MODIFY THE BUILDING TO PERMIT THE HVAC SYSTEM RENOVATION.
2. REFERENCE CODES AND STANDARDS
A. PERFORM ALL WORK IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS.
B. SMACNA HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE, 1985.
C. SMACNA HVAC DUCT LEAKAGE TEST MANUAL, 1985.
D. ANSI/ASHRAE INSTALLATION OF WARM AIR HEATING AND AIR COND. SYSTEMS.
E. ANSI/ASHRAE STANDARD 62.1 - 2004, "VENTILATION FOR ACCEPTABLE INDOOR AIR QUALITY".
3. SHOP DRAWINGS
A. SUBMIT SHOP DRAWINGS FOR ALL COMPONENTS PROVIDED, INCLUDING AIR HANDLING UNITS, CONTROLS, BUILDING PRODUCTS, ELECTRICAL COMPONENTS, ANY COMPONENTS SIGNIFICANT TO PROJECT SUCCESS.
B. FOR EACH SUBMISSION, SUBMIT FIVE SETS OF LETTER OR 11"x17" SHOP DRAWINGS. IF SHOP DRAWINGS ARE LARGER THAN 11"x17" SUBMIT ONE REPRODUCIBLE AND ONE PRINT.
4. DUCT WORK
A. SEAL CLASSIFICATION: USE SMACNA SEAL CLASS C. TRANSVERSE JOINT AND CONNECTIONS MADE AIR TIGHT WITH GASKETS SEALANT TAPE OR COMBINATION THEREOF. LONGITUDINAL SEAMS UNSEALED.
B. SEALANT: OIL RESISTANT, POLYMER TYPE FLAME RESISTANT DUCT SEALANT. TEMPERATURE RANGE OF MINUS 30C TO PLUS 93C TAPE: POLYIMYL TREATED, OPEN WEAVE FIBERGLASS TAPE 2" WIDE.
D. DUCT LEAKAGE: IN ACCORDANCE WITH SMACNA HVAC DUCT LEAKAGE TEST MANUAL.
E. FITTINGS:
1. FABRICATION: TO SMACNA.
2. RADIUS ELBOWS
1. RECTANGULAR: STANDARD RADIUS AND OR SHORT RADIUS WITH SINGLE TURNING VANES CENTRELIN RADIUS: 1.5 TIMES WIDTH OF DUCT.
2. ROUND: SMOOTH RADIUS 5 PIECE. CENTRELIN RADIUS: 1.5 TIMES DIAMETER.
3. MITERED ELBOWS, RECTANGULAR
1. TO 18" WITH SINGLE DOUBLE THICKNESS TURNING VANES.
2. OVER 18" WITH DOUBLE THICKNESS TURNING VANES.
4. BRANCHES:
1. RECTANGULAR MAIN AND BRANCH: WITH RADIUS ON BRANCH 1.5 TIMES WIDTH OF DUCT 45° ENTRY ON BRANCH
2. PROVIDE VOLUME CONTROL DAMPER IN BRANCH DUCT NEAR CONNECTION TO MAIN DUCT.
3. MAIN DUCT BRANCHES: WITH SPLITTER DAMPER
5. TRANSITIONS:
1. DIVERGING: 20° MAXIMUM INCLUDED ANGLE.
2. CONVERGING 30° MAXIMUM INCLUDED ANGLE.
6. GALVANIZED DUCTWORK:
1. LOCK FORMING QUALITY: TO ASTM A525M, Z80 ZINC COATING
2. THICKNESS, FABRICATION AND REINFORCEMENT: TO ASHRAE AND SMACNA
3. JOINTS: TO ASHRAE AND SMACNA AND OR PROPRIETARY MANUFACTURED DUCT JOINT. PROPRIETARY MANUFACTURED FLANGED DUCT JOINT SHALL BE CONSIDERED TO BE A CLASS "A" SEAL.
F. DUCT HANGERS AND SUPPORTS:
1. STRAP HANGERS: OF SAME MATERIAL AS DUCT BUT NEXT SHEET METAL THICKNESS HEAVIER THAN DUCT. MAXIMUM SIZE DUCT SUPPORTED BY STRAP HANGER 18".
2. HANGER CONFIGURATION: TO ASHRAE AND SMACNA STD.
G. EXECUTION:
1. DO WORK IN ACCORDANCE WITH ANSI/NFPA 90A ANSI/NFPA 90B ASHRAE CSA B228.1 AND SMACNA.
2. DO NOT BREAK CONTINUITY OF INSULATION VAPOUR BARRIER WITH HANGERS OR RODS. INSULATE STRAP HANGERS 100mm BEYOND INSULATED DUCT.
3. SUPPORT RISERS IN ACCORDANCE WITH ASHRAE AND SMACNA.
4. INSTALL BREAKAWAY JOINTS IN DUCTWORK ON EACH SIDE OF FIRE SEPARATION.
5. INSTALL PROPRIETARY MANUFACTURED FLANGED DUCT JOINTS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
6. MANUFACTURE DUCT IN LENGTHS TO ACCOMMODATE INSTALLATION OF ACOUSTIC DUCT LINING.
7. APPLY SEALANT TO OUTSIDE OF JOINT TO MANUFACTURER'S RECOMMENDATIONS.
8. BED TAPE IN SEALANT AND RECOAT WITH MINIMUM OF 1 COAT OF SEALANT TO MANUFACTURERS RECOMMENDATIONS.
9. SUPPLY AIR DUCTS SHALL BE INSULATED WITH MINIMUM 1-1/2" FIBERGLASS ALUMINUM FOIL JACKETS OR AS NOTED ON DRAWINGS.
5. DUCT ACCESSORIES
A. GENERAL MANUFACTURE IN ACCORDANCE WITH CSA B228.1
B. FLEXIBLE CONNECTIONS:
1. FRAME: GALVANIZED SHEET METAL FRAME WITH FABRIC CLENCHED BY MEANS OF DOUBLE LOCKED SEAMS.
2. MATERIAL: FIRE RESISTANT, SELF-EXTINGUISHING, NEOPRENE COATED FABRIC, TEMPERATURE RATED AT MINUS 40°F TO PLUS 190°F DENSITY OF 0.08 LB/FT
C. EXECUTION:
1. INSTALL FLEXIBLE CONNECTIONS IN FOLLOWING LOCATIONS
1. INLETS AND OUTLETS TO SUPPLY AIR UNITS AND FANS.
2. INLETS AND OUTLETS TO EXHAUST AND RETURN AIR FANS.
3. AS INDICATED.
4. LENGTH OF CONNECTION: 4"
5. MINIMUM DISTANCE BETWEEN METAL PARTS WHEN SYSTEM IN OPERATION: 3"
6. INSTALL IN ACCORDANCE WITH RECOMMENDATIONS OF SMACNA.
7. WHEN FAN IS RUNNING: DUCTING ON EACH SIDE OF FLEXIBLE CONNECTION TO BE IN ALIGNMENT AND ENSURE SLACK MATERIAL IN FLEXIBLE CONNECTION.
2. INSTRUMENT TEST PORTS: INSTALL IN ACCORDANCE WITH RECOMMENDATIONS OF SMACNA AND IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
3. TURNING VANES: INSTALL IN ACCORDANCE WITH RECOMMENDATIONS OF SMACNA AND AS INDICATED.

PLUMBING SPECIFICATIONS

- 1. GENERAL
A. SUB-CONTRACTOR SHALL SUPPLY ALL LABOUR AND MATERIAL FOR A COMPLETE PLUMBING PIPING INSTALLATION AS INDICATED ON THE MECHANICAL DRAWINGS.
B. THE APPLICABLE CODES ARE CONSIDERED TO BE MINIMUM STANDARD REQUIREMENTS. IT IS NOTED IN SOME CASES, THE CODE REQUIREMENTS ARE EXCEEDED, AS SHOWN ON DRAWINGS.
2. PRODUCTS
A. GENERAL
1. EQUIPMENT AND MATERIALS ARE TO BE NEW AND CSA CERTIFIED, WHERE APPLICABLE
2. EQUIPMENT SCHEDULES ARE SHOWN ON THE MECHANICAL DRAWINGS
B. SHOP DRAWINGS
1. SUBMIT FIVE (5) COPIES OF MANUFACTURERS' SHOP DRAWINGS FOR ALL NEW EQUIPMENT.
2. SUBMIT SHOP DRAWINGS FOR CONTRACT ADMINISTRATOR'S APPROVAL PRIOR TO PLACING ANY ORDER.
C. COLD, HOT WASTE AND VENT PIPING AND FITTINGS
PIPE APPLICATION PIPE MATERIAL FITTING MATERIAL
COLD, HOT AND HOT WATER RECIRC. ABOVE GROUND TYPE 'L' HARD COPPER TUBING 'STREAMLINE' OR EQUAL SOLDER JOINT CAST BRASS C/W SILVER SOLDERED JOINT
COLD WATER, BURIED TYPE 'K' SOFT COPPER TUBING FLARED TUBE U/G SERVICE
SOIL, WASTE & VENT ABOVE GROUND OR NOT MORE THAN 2' BELOW CAST IRON M.J. STAINLESS STEEL COUPLINGS
BURIED BELOW 2' DWV COPPER SOLDER JOINT
SOIL AND WASTE, BURIED PVC SCHED. 40 PVC-DWV SCHED. 40
D. VALVES (BASED ON CRANE NO.)
SIZE JOINT GATE GLOBE CHECK VERT. CHECK
UP TO 2" SOLDER 1320C 1310 1342
OVER 2" SCREW 428 5 41 29
E. HANGERS
1. COPPER PIPING HANGERS, GRINNELL.
2. DRAINAGE PIPING HANGER, GRINNELL.
3. GALVANISED HANGER ROD SIZE 1/4"
4. PIPE SUPPORT SPACING AS FOLLOWS:
SIZE (Inch diameter) COPPER C.I.
3/8", 1/2" 5 FEET
3/4", 1" 6 FEET
1 1/4" TO 2" 8 FEET
2" AND UP 6 FEET
F. SOLDER MATERIAL FOR COPPER SHALL BE LEAD FREE, SILVABRITE 100.
G. WATER HAMMER ARRESTORS SHALL BE ZURN #1700
3. EXECUTION
A. INSTALLATION
1. THE LATEST EDITION OF ALL CODES AND STANDARDS SHALL APPLY. OBTAIN ALL WORK PERMITS, APPROVALS, AND THE LIKE TO COMPLETE THE WORK READY FOR OPERATION.
2. SUB-CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOUR AND PLANT NECESSARY TO COMPLETE THE WORK AS SHOWN ON DRAWINGS OR HEREIN.
3. ALL WORKMANSHIP AND FABRICATION SHALL MEET STANDARDS SET FOR THIS TRADE. ALL WORK TO BE DONE BY COMPETENT AND EXPERIENCED WORKMEN.
4. IN THE CASE OF THE SUB-CONTRACTOR USING PRODUCTS OTHER THAN SPECIFIED, THIS WILL INCLUDE ALTERNATE AND/OR APPROVED EQUAL ITEMS THAT MAY INCUR ADDITIONAL COSTS DUE TO DIMENSION DIFFERENCE, MODIFICATION TO EXISTING STRUCTURES, POWER, AND CONTROL REQUIREMENTS. SUB-CONTRACTOR MUST BEAR ALL ADDITIONAL COSTS TO MAKE SYSTEMS FUNCTIONAL.
5. ALL EQUIPMENT AND PIPING REQUIRING SUPPORT SHALL BE SECURED TO THE BUILDING STRUCTURE.
6. WIRE HANGERS OR PERFORATED STRAPS WILL NOT BE PERMITTED.
7. HANGERS AND SUPPORTS SHALL NOT DAMAGE OR PIERCE INSULATION.
8. ALL HORIZONTAL PIPING SHALL BE SUPPORTED WITH GALV. HANGER ROD, "CANSTRUT" OR PAINTED IRON ANGLE MEMBERS, CLAMPS AND SADDLES.
9. PIPE LINES SHALL RUN PARALLEL AND GROUP CLOSELY TO EACH OTHER. VERTICAL AND HORIZONTAL PIPE RUNS SHALL BE PARALLEL ALONG BUILDING LINES.
10. ALL CHANGES IN DIRECTION SHALL BE MADE WITH FITTINGS.
11. ALL PIPES SHALL BE CUT ACCURATELY TO MEASUREMENTS TAKEN ON SITE
12. GRADE ALL WATER PIPE FOR PROPER DRAINAGE AND INSTALL 1/2" DRAIN VALVE WITH 1/2 THREADED HOSE END AT LOW POINT IN MECH. ROOM.
13. UNIONS AND FLANGES SHALL BE PROVIDED AT ALL EQUIPMENT REQUIRING DISCONNECTION FOR REPAIRS OR REPLACEMENT, LOCATED BETWEEN SHUT OFF VALVES AND EQUIPMENT. ALL UNIONS SHALL BE ACCESSIBLE.
14. INSTALL WATER HAMMER ARRESTOR AT PLUMBING RISES, FIXTURE GROUPS, AND QUICK SHUT OFF VALVE OUTLETS. AT COMPLETION OF WORK, WATER SYSTEM MUST BE WATER HAMMER FREE UNDER NORMAL OPERATION.
15. SHUT OFF VALVES SHALL BE PROVIDED WHERE INDICATED AND SPECIFIED. IF NOT INDICATED, OR SPECIFIED DIRECTLY, VALVES SHALL BE INSTALLED ON MAIN BRANCHES AT POINT OF TAKE OFF FROM SUPPLY MAIN, ON EACH INDIVIDUAL PIECE OF EQUIPMENT INLET AND OUTLET TO PERMIT UNIT REMOVAL WITHOUT AFFECTING OPERATION OF SYSTEM. LOCATE VALVES FOR ACCESS AND OPERATION. DO NOT LOCATE VALVE STEMS BELOW HORIZONTAL.
16. ALL FLOOR DRAINS SHALL HAVE A 18" X 18" CHLORINATED POLYETHYLENE(CPE) WATERPROOF MEMBRANE INSTALLED AROUND BODY OF DRAIN AND BURIED IN THE CONCRETE, TO FORM A WATER TIGHT BARRIER THE MEMBRANE MUST FORM A WATER TIGHT SEAL WITH DRAIN BODY.
17. PROVIDE CLEAN OUTS IN ALL DRAINS, AND SOIL PIPE WHERE OBSTRUCTIONS MIGHT OCCUR, AT THE BASE OF EACH STACK, AT CHANGE OF DIRECTION MORE THAN 45 DEGREES, AT THE END OF ALL HORIZONTAL PIPES, AND AT 50' INTERVALS ALONG STRAIGHT RUNS AS WHERE SHOWN ON DRAWINGS.

NOTES :

- 18. ALL WATER PIPING SHALL BE DEGREASED, FLUSHED, CLEANED AND PRESSURE TESTED BEFORE CONCEALING AND FILLING.
19. PROVIDE CHROME PLATED ESCUTCHEON PLATES FOR ALL EXPOSED PIPING THROUGH FINISHED WALLS AND FLOORS.
20. WHERE OPENINGS ARE MADE IN BUILDING STRUCTURE, SEAL OPENINGS TO PROVIDE WEATHER TIGHT WATER PROOF SEAL.
21. PROVIDE '3M' BRAND FIRE BARRIER CP-25WB CAULK FOR ALL PIPING THROUGH FIRE RATED WALLS AND FLOORS ASSEMBLIES.
22. BEFORE START OF WORK ON INSTALLATION OF PIPING AND SEWERS, CHECK ALL LEVELS TO ENSURE ADEQUATE FALL ON THE VARIOUS SEWERS AND PIPES. IN THE EVENT THE SUB-CONTRACTOR FAILS TO DO THESE CHECKS AND THEN NOTIFIES CONTRACT ADMINISTRATOR OF DISCREPANCIES, ANY SUBSEQUENT EXPENSE SHALL BE BORNE BY THE SUB-CONTRACTOR.
23. THE PLANS ARE CONSIDERED DIAGRAMMATIC ONLY AND THE CONTRACT ADMINISTRATOR RESERVES THE RIGHT TO CHANGE LOCATION OF EQUIPMENT OR PIPING WITHIN 10 FEET OF WHERE SHOWN ON PLANS, PROVIDED SUCH CHANGE IS MADE BEFORE INSTALLATION.
24. IF, IN THE OPINION OF THE CONTRACT ADMINISTRATOR, THE PIPING AND EQUIPMENT IS NOT ADEQUATELY BRACED OR SUPPORTED, ADDITIONAL BRACING OR SUPPORT MUST BE PROVIDED AT NO EXTRA COST TO THE CITY.
25. SYSTEM SCHEMATICS SHOWN ON THE DRAWINGS ARE MINIMUM REQUIREMENT. EQUIPMENT INSTALLATION, INCLUDING ALL CONTROLS, FITTINGS, AND ACCESSORIES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION. THE CONTRACTOR SHALL BEAR AND INCLUDE ALL COSTS FOR SUCH INSTALLATIONS.

ORIGINAL STAMPED BY: D. PALEY, P.ENG DATE: 2005.05.21

Table with 4 columns: NO., REVISION/DESCRIPTION, BY, DATE. Row 1: SEALS

Table with 3 columns: DRAWN BY, CHECKED BY, APPROVED. Row 1: DATE 2005.05.26 USER APPROVAL

CITY OF WINNIPEG PLANNING, PROPERTY & DEVELOPMENT DEPARTMENT CIVIC ACCOMMODATIONS DIVISION 300 - 65 GARRY ST. R3C 4K4

PROJECT ADMINISTRATION BUILDING 2nd FLOOR RENOVATIONS CONFERENCE ROOM RENOVATIONS 510 MAIN STREET

SHEET TITLE SECOND FLOOR PLAN MECHANICAL & PLUMBING SPECIFICATIONS

Table with 3 columns: SCALE, PROJECT NO., SHEET NO. Row 1: AS SHOWN 2004-180 M3