

FILE NAME: 2013154-M&E-V01.DWG
 DATE: 2014.07.16
 SHEET TITLE: PLUMBING & HVAC SPECIFICATIONS
 PROJECT No: 2013-154
 ADDRESS: 6 FERMOR AVENUE

MECHANICAL SPECIFICATION

1.0 GENERAL

1.1 SCOPE OF WORK

1. MODIFY ROUTING OF PIPING AND DUCTING TO ACCOMMODATE ELEVATOR INSTALLATION.
2. SUPPLY AND INSTALL NEW ELECTRIC HEATING AND COOLING FOR NEW MEZZANINE AREA.
3. SUPPLY AND INSTALL NEW ELEVATOR PIT FLOOR DRAIN, SUMP, SUMP PUMP, AND SUMP DISCHARGE PIPING.
4. PROVIDE CONTROLS AND AIR BALANCING.
5. COMMISSION ALL HVAC AND PLUMBING EQUIPMENT AND CONTROLS.

1.2 SITE COORDINATION

ACCESS TO THE SITE SHALL BE COORDINATED WITH THE CONTRACT ADMINISTRATOR.

1.3 DESCRIPTION OF WORK

THE CONTRACTOR SHALL INCLUDE THE FURNISHING OF ALL LABOR, NEW MATERIALS, EQUIPMENT AND INSTALLATION OF EQUIPMENT AND SERVICES NECESSARY FOR AND INCIDENTAL TO THE COMPLETE INSTALLATION OF THE WORK AS SHOWN AND DESCRIBED ON THIS DRAWINGS AND TO THE SATISFACTION OF THE CONTRACT ADMINISTRATOR.

CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FOR REQUIRED WORK AND PAY ALL FEES.

WORK SHALL BE PERFORMED IN ACCORDANCE TO ALL APPLICABLE LOCAL CODES, STANDARDS, AND REGULATIONS.

CONTRACTOR TO COORDINATE ACCESS TO THE SITE WITH THE CONTRACT ADMINISTRATOR AND FOLLOW HIS INSTRUCTIONS.

1.4 SUBMITTALS

- SUBMIT SHOP DRAWINGS FOR APPROVAL FOR EQUIPMENT SPECIFIED.
- SUBMIT THREE (3) SETS OF O & M MANUALS.
- PROVIDE O & M TRAINING TO THE CONTRACT ADMINISTRATOR.

1.5 WORKMANSHIP

WORKMANSHIP SHALL BE OF BEST QUALITY, EXECUTED BY WORKERS EXPERIENCED AND SKILLED IN RESPECTIVE DUTIES FOR WHICH THEY ARE EMPLOYED.

1.6 EXECUTION

INSTALLATION OF EQUIPMENT

CONFORM TO NATIONAL PLUMBING CODE AND AUTHORITY HAVING JURISDICTION FOR DESIGN, SUPPLY AND INSTALLATION OF PLUMBING AND VENT SYSTEMS. CONCEAL VENT SYSTEM INSIDE WALLS ACCORDING TO CODE.

INSTALL ALL EQUIPMENT SPECIFIED OR INDICATED ON DRAWINGS IN A MANNER THAT WILL ENSURE ITS SATISFACTORY OPERATION UPON COMPLETION AND ACCORDING TO MANUFACTURER'S INSTRUCTIONS. FOLLOW APPROVED MANUFACTURER'S RECOMMENDATIONS FOR SAFETY, EASY ACCESS FOR INSPECTION, MAINTENANCE AND REPAIRS. BEFORE COMMENCING THE INSTALLATION, THE CONTRACTOR SHALL CONFIRM RECEIPT OF AN APPROVED COPY OF THE MANUFACTURER'S DRAWINGS AND INSTALLATION MANUAL FOR THE INSTALLATION THEREOF.

THE SAFE DELIVERY TO THE SITE OF ALL MATERIALS SHALL BE ENTIRELY THE CONTRACTOR'S RESPONSIBILITY. MATERIALS AND EQUIPMENT SHALL BE HANDLED AT ALL TIMES WITH CARE TO AVOID DAMAGE.

PERMIT EQUIPMENT MAINTENANCE AND DISASSEMBLY WITH MINIMUM DISTURBANCE TO ADJACENT EQUIPMENT AND WITHOUT INTERFERENCE WITH BUILDING STRUCTURE OR OTHER EQUIPMENT.

DISCREPANCIES OR IRREGULARITIES IN THE WORK OR DEFECTS OR DAMAGES TO THE EQUIPMENT, ATTRIBUTABLE TO FAULTY OR INCORRECT INSTALLATION, SHALL BE RECTIFIED BY THE CONTRACTOR AT HIS OWN EXPENSE.

MAINTAIN ADEQUATE ACCESS TO PROJECT SITE. COORDINATE WORK TO MINIMIZE INTERFERENCE OR DISRUPTION TO THE CONTRACT ADMINISTRATOR'S OPERATIONS. MAINTAIN THE WORK IN TIDY CONDITION, FREE FROM ACCUMULATION OF WASTE PRODUCTS AND DEBRIS. PROTECT EQUIPMENT AND DUCTWORK FROM ACCUMULATION OF DUST ETC. SEAL ALL DUCT OPENINGS DURING DUST PRODUCING ACTIVITIES.

EQUIPMENT LOCATIONS, DUCT, AND PIPE ROUTING INDICATED ON THE DRAWINGS IS APPROXIMATE ONLY. CONFIRM IN THE FIELD. REROUTE DUCTWORK AND PIPING AS REQUIRED TO ELIMINATE FIELD INTERFERENCES WITH BUILDING STRUCTURES, ELECTRICAL, ETC. CONFIRM CHANGES WITH CONSULTANT. COORDINATE WORK WITH ALL SUBTRADES. WHERE DIMENSIONS ARE INDICATED FOR PIPING, DUCTWORK, DUCT SIZES, EQUIPMENT SIZES, ETC. THESE ARE FOR BIDDING PURPOSES ONLY. THE CONTRACTOR IS RESPONSIBLE TO VERIFY ALL DIMENSIONS IN THE FIELD PRIOR TO ORDERING EQUIPMENT AND COMMENCING INSTALLATION WITHOUT EXTRA CHARGES TO THE PROJECT. THE CONTRACTOR IS RESPONSIBLE TO ENSURE ALL EQUIPMENT, DUCTWORK, AND PIPING FITS IN THE SPACE AVAILABLE AND TO MAINTAIN THE GENERAL DESIGN INTENT FOR THE SYSTEMS.

INSPECTION AND TESTING

THE WORK SHALL BE AT ALL TIMES AVAILABLE FOR INSPECTION BY THE CONTRACT ADMINISTRATOR'S REPRESENTATIVE. ALL WORK SHALL BE IN ACCORDANCE WITH AND SHALL BE INSPECTED TO MEET THE REQUIREMENTS OF THIS SPECIFICATION.

ALL STARTUP AND TESTING SHALL BE PERFORMED IN THE PRESENCE OF THE CONTRACT ADMINISTRATOR. NOTICE OF THE DATE OF WHEN TESTS SHALL BE PERFORMED MUST BE RECEIVED BY THE CONTRACT ADMINISTRATOR.

WORK SHALL NOT BE INSULATED OR CONCEALED PRIOR TO BEING TESTED OR APPROVED.

OPERATE SYSTEM FOR A SUFFICIENT PERIOD OF TIME TO ENSURE COMPLETE ACCEPTANCE; DEFECTS SHALL BE REMEDIATED AT CONTRACTOR'S EXPENSE.

USE OF NEW HVAC SYSTEMS DURING CONSTRUCTION

- NEW HVAC SYSTEMS SHALL NOT BE USED DURING CONSTRUCTION UNLESS APPROVED OTHERWISE BY THE CONTRACT ADMINISTRATOR. (OBTAIN WRITTEN APPROVAL FROM THE CONTRACT ADMINISTRATOR)

- IF THE CONTRACT ADMINISTRATOR APPROVES USE OF HVAC SYSTEMS, THE CONTRACTOR SHALL:
 - ENSURE THAT HVAC SYSTEM IS OPERATED AS PER MANUFACTURER'S RECOMMENDATIONS AND INSTRUCTIONS.
 - CONTINUOUSLY MONITOR SYSTEM
 - PROTECT DUCTWORK BY INSTALLING MINIMUM 60% FILTERS ON ALL SUPPLY AND EXHAUST POINTS. FILTERS SHALL BE REMOVED UPON COMPLETION OF CONSTRUCTION. ALL FILTERS SHALL BE CHANGED EVERY WEEK OR MORE FREQUENTLY AS REQUIRED.
 - PERFORM REGULAR PREVENTATIVE AND OTHER MANUFACTURER'S RECOMMENDED MAINTENANCE ROUTINES AT CONTRACTOR'S OWN EXPENSE.
 - NOT RELAX WARRANTIES AND GUARANTEES.
 - REFURBISH ENTIRE SYSTEM BEFORE STATIC COMPLETION, CLEAN ALL DUCTWORK AND ALL AIR HANDLING EQUIPMENT INTERNALLY AND EXTERNALLY, RESTORE TO "AS NEW" CONDITION, REPLACE AIR FILTERS.

2.0 HVAC

2.1 PRODUCTS

DUCTWORK
CONFORM TO SMACNA STANDARDS FOR SUPPLY AND INSTALLATION OF DUCTWORK. PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS. USE TURNING VANES FOR RECTANGULAR ELBOWS.

DUCTWORK SHALL BE RATED FOR 2" W.C. SEAL ALL DUCTWORK JOINTS USING "DURO-DYNE" DUCT SEALER. SEAL ALL JOINTS IN DUCT INSULATION VAPOR BARRIER USING TAPE AND DUCT SEALER.

BALANCING DAMPERS

BALANCING DAMPERS TO BE CONSTRUCTED TO SMACNA STANDARDS C/W LOCKING LEVER.

GRILLES

GRILLES AS PER MECHANICAL EQUIPMENT SCHEDULE (SEE DRAWING M1)

AC-1 AND CU-1 SPLIT SYSTEM AIR CONDITIONER

1 1/2 TON DUCTLESS SPLIT SYSTEM PACKAGED AIR CONDITIONER, CONSISTING OF WALL MOUNT INDOOR UNIT, OUTDOOR CONDENSING UNIT AND PROGRAMMABLE REMOTE CONTROLLER. 208V/1PH/60HZ, AUTOMATIC FAN SPEED CONTROL, 15.3 SEER, R-410A REFRIGERANT, VARIABLE COMPRESSOR SPEED INVERTER TECHNOLOGY, SELF-DIAGNOSTIC FEATURE, AUTO VANE & SWING MODE WITH 3-NOTCH FAN SPEEDS, AUTO RESTART AFTER POWER FAILURE, WIND BAFFLE FOR LOW AMBIENT COOLING AT 0°F, LEAD-LAG AND BACKUP FUNCTION, HIGH-PERFORMANCE DRAIN PUMP. THE UNITS SHALL BE RATED IN ACCORDANCE WITH AIR-CONDITIONING REFRIGERATION INSTITUTE'S (ARI) STANDARD 210 AND BEAR THE ARI CERTIFICATION LABEL.

ACCEPTABLE PRODUCT: "MITSUBISHI" MR. SLIM PKA-A18HA C/W PROGRAMMABLE THERMOSTAT AND DRAIN LIFT MECHANISM AND PUZ-A18NH43

UH-1 UNIT HEATER

FORCED AIR ARCHITECTURAL WALL HEATER. 208V/1PH/60HZ, 1125W, ALUMINUM FRONT GRILLE, BOTTOM AIR OUTLET, HIGH-LIMIT TEMPERATURE CONTROL WITH AUTOMATIC RESET, TUBULAR FINNED HEATING ELEMENTS. SINGLE FAN WITH FACTORY-LUBRICATED MOTOR. FAN DELAY TO PURGE RESIDUAL HEAT. BUILT-IN TAMPERPROOF THERMOSTAT. PROVIDE SURFACE MOUNTING ADAPTER. CSA APPROVED. FINISH AND COLOUR BY THE CONTRACT ADMINISTRATOR.

ACCEPTABLE PRODUCT: "QUELLET" QAWH01500 C/W SURFACE MOUNTING ADAPTER

2.2 AIR BALANCING

SCOPE OF WORK

- CONTACT CONSULTANT PRIOR TO COMMENCEMENT OF AIR BALANCING FOR FINAL INSTRUCTIONS.
- TEST, ADJUST, AND BALANCE AIR FLOWS BEFORE AND AFTER DUCT MODIFICATION
- ADJUST DAMPERS ON GRILLES AND/OR BALANCING DAMPERS TO ACHIEVE THE SPECIFIED AIR FLOW RATE

GENERAL

FOLLOW START-UP PROCEDURES AS RECOMMENDED BY THE CONTRACT ADMINISTRATOR, UNLESS OTHERWISE SPECIFIED

INSTALL SHEAVES SUPPLIED BY EQUIPMENT SUPPLIERS IF REQUIRED TO ACHIEVE FINAL AIR BALANCE. QUALIFICATIONS: PERSONNEL PERFORMING AIR BALANCING TO BE CURRENT MEMBER IN GOOD STANDING OF AABC.

QUALITY ASSURANCE: PERFORM AIR BALANCE UNDER DIRECTION OF SUPERVISOR QUALIFIED BY AABC. REFERENCE STANDARDS: DO TAB OF COMPLETE MECHANICAL SYSTEMS OVER ENTIRE OPERATING RANGE IN ACCORDANCE WITH MOST STRINGENT CONDITIONS OF SELECT STANDARD:

- AABC (ASSOCIATED AIR BALANCE COUNCIL)
- SMACNA (SHEET METAL & AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION)

ACCURACY: DO TAB TO WITHIN ±5% OF DESIGN VALUES.
INSTRUMENT CALIBRATION: TO BE IN ACCORDANCE WITH TAB REF. STANDARD, BUT WITHIN 3 MONTHS OF COMMENCEMENT

REPORT: FORMAT TO BE IN ACCORDANCE WITH TAB SCHEMATICS SHOWN RESULTS OF TAB. SUBMIT ONE COPY OF DRAFT TAB REPORT FOR VERIFICATION AND APPROVAL OF THE CONTRACT ADMINISTRATOR. SUBMIT THREE FINAL COPIES WITH REVIEW COMMENTS INCORPORATED.

AIR MOVING SYSTEMS

GENERAL: MEASUREMENTS AS REQUIRED BY REFERENCED STANDARDS, INCLUDING BUT NOT LIMITED TO FOLLOWING MEASUREMENTS:

- AIR FLOW
- STATIC PRESSURE
- BHP

INSTRUCTIONS

1. MEASURE EXISTING TOTAL AIRFLOW RATE SUPPLIED BY F-1
2. MEASURE EXISTING AIRFLOW RATE SUPPLIED TO ROOM B-17/B-22
3. AFTER DUCT MODIFICATION, ENSURE AIRFLOW RATES FROM 1. AND 2. REMAIN THE SAME. ADJUST GRILLES AND/OR BALANCING DAMPERS AS NECESSARY TO ACHIEVE THE PRE-MODIFICATION AIRFLOW RATES.

3.0 PLUMBING

3.1 PRODUCTS

PIPING
INTERIOR DRAINAGE - DRAINAGE PIPING SHALL BE PVC-DWV
REFRIGERANT PIPING - REFRIGERANT PIPING SHALL BE ASTM B280 DRAWN COPPER TUBING

STEAM PIPING INSULATION
1" FIBERGLASS PIPE INSULATION WITH CANVAS OR ASJ

CHECK VALVES
NPS 2" AND UNDER, THREADED - IN-LINE VERTICAL CHECK VALVE, BRONZE BODY.

ACCEPTABLE PRODUCT: "CRANE" FIGURE 29

SUMP PUMP SP-1
AS PER MECHANICAL EQUIPMENT SCHEDULE (SEE DRAWING M1)

SUMP TANK
POLYETHYLENE PERFORATED SUMP TANK. ELEVATED PUMP PLATFORM, CORROSION RESISTANT TANK, C/W BOLT-DOWN LID AND NEOPRENE GASKET SEAL. 60 IMPERIAL GALLON CAPACITY.

ACCEPTABLE PRODUCT: "SABER" SSP-01 C/W EXTENSIONS AS REQUIRED TO MEET SPECIFIED CAPACITY

3.2 PLUMBING FIXTURES

FD-1 FLOOR DRAIN
AS PER MECHANICAL EQUIPMENT SCHEDULE (SEE DRAWING M1)

4.0 FIRE PROTECTION

4.1 PRODUCTS

FIRE STOPPING
INTUMESCENT-TYPE FIRESTOP SEALANT, -40°F TO 212°F CURED TEMPERATURE RESISTANCE, 0 FLAME SPREAD AND 5 SMOKE DEVELOPMENT RATINGS, 5% MOVEMENT CAPABILITY. HALOGEN, SOLVENT, ASBESTOS FREE. ULC LISTED.

ACCEPTABLE PRODUCT: "HILT" INTUMESCENT FIRESTOP SEALANT

FIRE DAMPERS

FIRE DAMPERS TO BE DYNAMIC CURTAIN TYPE C/W 74°C FUSIBLE LINK. ULC LISTED. MOUNTING AND COLLAR TYPE TO MATCH DESTINATION DUCT. PROVIDE MULTIPLE SECTION DAMPER WHERE NECESSARY. FIRE DAMPER RATING TO MATCH FIRE BARRIER RATING OF DUCT PENETRATION.

ACCEPTABLE PRODUCT: "NAILOR" CURTAIN FIRE DAMPERS

FIRE EXTINGUISHERS

10 LB. 3-A-40-B-C RED ABC-TYPE FIRE EXTINGUISHER, C/W WALL MOUNTING HARDWARE AND NOZZLE. ULC LISTED.

ACCEPTABLE PRODUCT: "PYRO-CHEM" 10 LB. ABC

NOTES:

0	ISSUED FOR CONSTRUCTION	DJ	AUG 18 2014
No.	REVISION/DESCRIPTION	BY	DATE

SEAL



DRAWN	JAW	CHECKED	DESIGNED	APPROVED
DATE	2014.07.16	USER	APPROVAL	

THE CITY OF WINNIPEG
PLANNING, PROPERTY AND
DEVELOPMENT DEPARTMENT
MUNICIPAL ACCOMMODATIONS DIVISION
3-65 GARRY STREET, R3C 4K4

PROJECT
ST. VITAL LIBRARY
NEW ELEVATOR INSTALLATION

6 FERMOR AVENUE		
SHEET TITLE		
MECHANICAL SPECIFICATIONS		
SCALE	PROJECT No:	SHEET No:
AS SHOWN	2013-154	M2

DRAWING SHEET SIZE: A1 (841mm x 594mm) PLOT 1:1