

0	ISSUED FOR CONSTRUCTION	2026-07-16	D.G.
Rev	Revision Description	Date	Issued by
Revision Schedule			

Part 1 GENERAL SPECIFICATION

1.1 CODES AND STANDARDS

- 1.1 COMPLY WITH AND ADHERE TO ALL APPLICABLE, CODES, STANDARDS AND APPLICABLE BYLAWS OF THE AUTHORITY HAVING JURISDICTION.
- 1.1 WHERE THERE IS A CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS AND APPLICABLE CODES OR STANDARDS OR REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION THE MORE RESTRICTIVE CONDITION SHALL APPLY.

1.2 SCOPE OF WORK

- 1.2 WORK TO INCLUDE ALL LABOUR, MATERIAL AND EQUIPMENT REQUIRED FOR INSTALLING, TESTING AND COMMISSIONING OF MECHANICAL UTILITIES SYSTEMS AS DETAILED IN THE DRAWINGS AND/OR SPECIFIED HEREIN. ALL MECHANICAL WORK TO BE BID AS A SINGLE COMPLETE CONTRACT EVEN THOUGH WORK OF VARIOUS MECHANICAL TRADES MAY BE SUBDIVIDED.
- 1.2 IT IS THE RESPONSIBILITY OF THE GENERAL MECHANICAL CONTRACTOR TO CO-ORDINATE THE WORK AMONG THE VARIOUS MECHANICAL SUB-TRADES TO ENSURE COMPLETE FUNCTIONING SYSTEMS.

1.3 EXISTING CONDITIONS

- 1.3 EXAMINE SITE, EXISTING ADJACENT BUILDINGS AND LOCAL CONDITIONS AFFECTING WORK UNDER THIS CONTRACT. EXAMINE MECHANICAL AND ALL OTHER CONTRACT DRAWINGS TO ENSURE WORK CAN BE PERFORMED WITHOUT CHANGES TO THE EXISTING AND NEW CONDITIONS AS SHOWN ON DRAWINGS. NO ALLOWANCE WILL BE MADE LATER FOR NECESSARY CHANGES, UNLESS NOTIFICATION OF INTERFERENCES HAVE BEEN BROUGHT TO THE CONTRACT ADMINISTRATOR'S ATTENTION, IN WRITING, PRIOR TO CLOSING OF TENDERS.
- 1.3 THE FOLLOWING ALLOWANCES SHALL BE CONSIDERED MINOR AND INCIDENTAL TO THE PRICE BID. NO CLAIMS FOR EXTRA WILL BE CONSIDERED BY THE ENGINEER FOR MODIFICATIONS REQUIRED TO ACCOMMODATE THESE MINOR CHANGES.
- 1.3 DUCT DIAMETER OR DUCT RECTANGULAR DIMENSIONS, ± 50 MM.
- 1.3 TIE-IN LOCATIONS TO EXISTING DUCTWORK, ± 3.0 M IN ALL DIRECTIONS,
- 1.3 DUCT ROUTING, DEVIATION FROM DUCT CENTRELINE SHOWN, ± 2.0 M IN ALL DIRECTIONS,
- 1.3 FITTINGS ADDITIONAL TO THAT SHOWN ON DRAWINGS,
- 1.3 FITTINGS REQUIRED TO ACHIEVE TEMPORARY, PARTIAL, OPERATION OF AN AIR MOVING SYSTEM IN ACCORDANCE WITH THE STATED PHASED CONSTRUCTION IMPLEMENTATION SCHEDULE.
- 1.3 THE FOLLOWING ALLOWANCES SHALL BE CONSIDERED MINOR AND INCIDENTAL TO THE PRICE BID. NO CLAIMS FOR EXTRA WILL BE CONSIDERED BY THE ENGINEER FOR MODIFICATIONS REQUIRED TO ACCOMMODATE THESE MINOR CHANGES.
- 1.3 PIPE DIAMETER DIMENSIONS, ± 40 MM.
- 1.3 TIE-IN LOCATIONS TO EXISTING PLUMBING AND PIPING, ± 3.0 M IN ALL DIRECTIONS,
- 1.3 PIPE ROUTING, DEVIATION FROM PIPE CENTRELINE SHOWN, ± 3.0 M IN ALL DIRECTIONS,
- 1.3 PIPE FITTINGS ADDITIONAL TO THAT SHOWN ON DRAWINGS,
- 1.3 FITTINGS REQUIRED TO ACHIEVE TEMPORARY, PARTIAL, OPERATION OF ANY PIPING SYSTEM IN ACCORDANCE WITH THE STATED PHASED CONSTRUCTION IMPLEMENTATION SCHEDULE.
- 1.3 THE GENERAL MECHANICAL CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO MAKE ANY AFFECTED SUB-TRADES OF THE RENOVATION ALLOWANCES STATED ABOVE AWARE OF THESE ALLOWANCES AND SHALL ENFORCE THESE ALLOWANCES; NO CHANGE ORDERS WILL BE CONSIDERED FOR RENOVATION ALLOWANCES STATED ABOVE, THE DECISION OF THE ENGINEER IS FINAL.

1.4 SITE SERVICE INFORMATION

- 1.4 LOCATION, ROUTING AND HEIGHT OF CEILING CLEARANCES SHOWN ON DRAWINGS ARE BASED ON FIELD RECORDED INFORMATION AND ARE APPROXIMATE ONLY. CONTRACTOR AND/OR SUB-TRADES SHALL VERIFY EXACT LOCATION AT JOBSITE.
- 1.4 OBTAIN OWNER APPROVAL BEFORE COMMISSIONING SYSTEMS AND PUTTING INTO SERVICE.

1.5 PERMITS AND REGULATIONS

- 1.5 OBTAIN ALL PERMITS AND PAY ALL FEES FOR PERFORMING THE WORK.
- 1.5 REVIEW DRAWINGS WITH AUTHORITIES HAVING JURISDICTION TO ENSURE COMPLIANCE WITH ALL APPLICABLE CODES AND BYLAWS.

1.6 EXECUTION OF WORK

- 1.6 INSTALL WORK IN ADVANCE OF CONCRETE POURING OR SIMILAR WORK. PROVIDE AND SET PIPE SLEEVES AND EQUIPMENT ANCHORS AS REQUIRED.
- 1.6 INSTALL CONCEALED PIPES AND DUCTS NEATLY, CLOSE TO BUILDING STRUCTURE SO FURRING IS MINIMUM SIZE. PIPES, DUCTS AND EQUIPMENT INSTALLED IMPROPERLY, TO BE REMOVED AND REPLACED AT NO ADDITIONAL COST.
- 1.6 PROTECT AND MAINTAIN WORK UNTIL WORK HAS BEEN COMPLETED AND ACCEPTED. PROTECT WORK AGAINST DAMAGE DURING INSTALLATION. COVER WITH TARPULINS IF NECESSARY AND USE HOARDING WHEN/WHERE REQUIRED. REPAIR ALL DAMAGE TO FLOOR AND WALL SURFACES RESULTING FROM CARRYING OUT WORK, WITH NO ADDITIONAL COST.
- 1.6 DURING WELDING OR SOLDERING ENSURE NEW EQUIPMENT AND EXISTING STRUCTURE IS PROTECTED AGAINST FIRE BY SHIELDING, USING FIRE-RATED SHEETS OR GALVANIZED IRON SHEETS. CONTRACTOR SHALL PROVIDE TRAINED PERSONS ARMED WITH SUITABLE TYPE FIRE EXTINGUISHERS, TO WATCH FOR AND EXTINGUISH SPARKS, ETC.
- 1.6 CO-ORDINATE WORK WITH OTHER SECTIONS TO AVOID CONFLICT AND ENSURE PROPER INSTALLATION OF ALL EQUIPMENT. REVIEW ALL CONTRACT DRAWINGS FOR REFERENCE TO MECHANICAL WORK.
- 1.6 ON COMPLETION OF WORK, REMOVE TOOLS, SURPLUS AND WASTE MATERIAL AND LEAVE WORK IN CLEAN, PERFECT CONDITION.

1.7 WARRANTY

- 1.7 WARRANTY SATISFACTORY OPERATION OF ALL WORK AND APPARATUS INSTALLED UNDER THIS CONTRACT. REPLACE, AT NO ADDITIONAL COST, ALL ITEMS WHICH FAIL OR PROVE DEFECTIVE WITHIN A PERIOD OF ONE YEAR AFTER FINAL ACCEPTANCE OF COMPLETE CONTRACT, PROVIDED SUCH FAILURE IS NOT DUE TO IMPROPER USAGE. MAKE GOOD ALL DAMAGE TO BUILDING INCURRED AS A RESULT OF FAILURE OR REPAIR OF MECHANICAL WORK.

1.8 INSTALLATION

- 1.8 SPACE FOR SERVICING, DISASSEMBLY AND REMOVAL OF EQUIPMENT AND COMPONENTS: PROVIDED AS RECOMMENDED BY MANUFACTURER OR AS INDICATED.
- 1.8 DETERMINE AND FOLLOW MANUFACTURERS RECOMMENDATIONS FOR STORAGE AND INSTALLATION OF PIPING, DUCTWORK AND MECHANICAL EQUIPMENT.

1.9 MATERIALS - EQUALS AND ALTERNATES

- 1.9 THE TENDER PRICE SHALL BE BASED ON THE USE OF MATERIALS AND EQUIPMENT AS SPECIFIED.
- 1.9 MATERIALS OF SAME GENERAL TYPE ARE TO BE FROM THE SAME MANUFACTURE (EG: ALL AIR SUPPLY UNITS SHALL BE SAME MANUFACTURER). THE CONTRACTOR SHALL ENSURE THAT ALL SUB-TRADES PROVIDE PRODUCTS OF SAME MANUFACTURER.
- 1.9 EQUIPMENT LISTED AS "EQUAL" IN SPECIFICATIONS OR SUBMITTED AS ALTERNATE BY CONTRACTOR MUST MEET ALL SPACE REQUIREMENTS, SPECIFIED CAPACITIES AND MUST HAVE EQUIPMENT CHARACTERISTICS OF SPECIFIED EQUIPMENT AS INTERPRETED BY CONSULTANT. INSTALL EQUIPMENT IN STRICT ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS. ANY VARIATIONS TO INSTALLATION, ADDITIONAL WORK REQUIRED OR ADDITIONAL EQUIPMENT REQUIRED TO MEET THE SPECIFIED AND DESIGNED DRAWING OF THE "EQUAL" EQUIPMENT THAT IS NOT REQUIRED FOR THE SPECIFIED PRODUCT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND/OR SUPPLIER.
- 1.9 EQUIPMENT AND MATERIAL SHOWN ON DRAWINGS AND NOT SPECIFIED HEREIN, OR SPECIFIED HEREIN AND NOT SHOWN ON DRAWINGS, SHALL BE INCLUDED IN THIS CONTRACT AS THOUGH BOTH SHOWN AND SPECIFIED.

1.10 TRIAL USAGE

- 1.10 OWNER RESERVES THE RIGHT TO USE ANY PIECE OF MECHANICAL EQUIPMENT, DEVICE OR MATERIAL INSTALLED UNDER THIS CONTRACT, FOR SUCH REASONABLE LENGTHS OF TIME AND AT SUCH TIMES AS CONSULTANT MAY REQUIRE, TO MAKE COMPLETE AND THOROUGH TEST OF SAME, BEFORE FINAL COMPLETION AND ACCEPTANCE OF ANY PART OF CONTRACT. IT IS AGREED AND UNDERSTOOD, THAT NO CLAIM FOR DAMAGE WILL BE MADE FOR ANY INJURY OR BREAKAGE TO ANY PARTS OF THE ABOVE DUE TO AFOREMENTIONED TESTS, WHETHER CAUSED BY WEAKNESS OR INACCURACY OF PARTS, OR BY DEFECTIVE MATERIALS OR WORKMANSHIP OF ANY KIND WHATSOEVER. SUPPLY ALL LABOUR AND EQUIPMENT FOR SUCH TESTS.

1.11 EQUIPMENT WARRANTIES AND ACCEPTANCE

- 1.11 QUALITY WARRANTY
- 1.11 MANUFACTURER WARRANTIES THAT EQUIPMENT FURNISHED SHALL CONFORM TO DESCRIPTION AND SPECIFICATIONS CONTAINED HEREIN AND SHALL BE FREE FROM ALL DEFECTIVE MATERIALS AND WORKMANSHIP AND ALL DEFECTS DUE TO DESIGN. UPON OWNER'S REQUEST, MANUFACTURER SHALL, AT ITS SOLE EXPENSE, PROMPTLY REPAIR OR REPLACE, ALL OR ANY PART OF SAID EQUIPMENT WHICH IS DEFECTIVE IN ANY RESPECTS, WITHIN 1 YEAR FROM THE DATE OF ACCEPTANCE BY OWNER AFTER ALL TESTS HAVE BEEN COMPLETE TO SATISFACTION OF CONSULTANT. THIS DOES NOT APPLY TO FAILURE OF EQUIPMENT DUE TO IMPROPER USAGE.

1.12 IDENTIFICATION

- 1.12 MANUFACTURER'S EQUIPMENT NAMEPLATES
- 1.12 METAL OR PLASTIC LAMINATE NAMEPLATE MECHANICALLY FASTENED TO EACH PIECE OF EQUIPMENT BY MANUFACTURER.
- 1.12 LETTERING AND NUMBERS RAISED OR RECESSED.
- 1.12 INFORMATION TO INCLUDE, AS APPROPRIATE:
- 1.12 EQUIPMENT: MANUFACTURER'S NAME, MODEL, SIZE, SERIAL NUMBER, CAPACITY.
- 1.12 MOTOR: VOLTAGE, HZ, PHASE, POWER FACTOR, DUTY, FRAME SIZE.
- 1.12 EXISTING IDENTIFICATION SYSTEMS
- 1.12 APPLY EXISTING IDENTIFICATION SYSTEM TO NEW WORK.
- 1.12 WHERE EXISTING IDENTIFICATION SYSTEM DOES NOT COVER FOR NEW WORK, USE IDENTIFICATION SYSTEM SPECIFIED THIS SECTION.
- 1.12 BEFORE STARTING WORK, OBTAIN WRITTEN APPROVAL OF IDENTIFICATION SYSTEM FROM CONSULTANT.

1.13 IDENTIFICATION OF PIPING SYSTEMS

- 1.13 IDENTIFY CONTENTS BY BACKGROUND COLOUR MARKING, PICTOGRAM (AS NECESSARY), LEGEND; DIRECTION OF FLOW BY ARROWS. TO CAN/CSGB 24.3 EXCEPT WHERE SPECIFIED OTHERWISE.
- 1.13 PICTOGRAMS:
- 1.13 WHERE REQUIRED: WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) REGULATIONS.
- 1.13 LEGEND:
- 1.13 BLOCK CAPITALS TO SIZES AND COLOURS LISTED IN CAN/CSGB 24.3.
- 1.13 ARROWS SHOWING DIRECTION OF FLOW:
- 1.13 OUTSIDE DIAMETER OF PIPE OR INSULATION LESS THAN 75 MM: 100 MM LONG X 50 MM HIGH.
- 1.13 OUTSIDE DIAMETER OF PIPE OR INSULATION 75 MM AND GREATER: 150 MM LONG X 50 MM HIGH.
- 1.13 USE DOUBLE-HEADED ARROWS WHERE FLOW IS REVERSIBLE.
- 1.13 EXTENT OF BACKGROUND COLOUR MARKING:
- 1.13 TO FULL CIRCUMFERENCE OF PIPE OR INSULATION.
- 1.13 LENGTH TO ACCOMMODATE PICTOGRAM, FULL LENGTH OF LEGEND AND ARROWS.
- 1.13 MATERIALS FOR BACKGROUND COLOUR MARKING, LEGEND, ARROWS:
- 1.13 PIPES AND TUBING 20 MM AND SMALLER: WATERPROOF AND HEAT-RESISTANT PRESSURE SENSITIVE PLASTIC MARKER TAGS.
- 1.13 OTHER PIPES: PRESSURE SENSITIVE [PLASTIC-COATED CLOTH] [VINYL] WITH PROTECTIVE OVERCOATING, WATERPROOF CONTACT ADHESIVE UNDERCOATING, SUITABLE FOR AMBIENT OF 100% RH AND CONTINUOUS OPERATING TEMPERATURE OF 150 DEGREES C AND INTERMITTENT TEMPERATURE OF 200 DEGREES C.
- 1.13 COLOURS AND LEGENDS:
- 1.13 IF FACILITY HAS EXISTING COLOURS AND LEGENDS, MATCH EXISTING.
- 1.13 WHERE NOT LISTED, OBTAIN DIRECTION FROM CONSULTANT.
- 1.13 COLOURS FOR LEGENDS, ARROWS: TO FOLLOWING TABLE:

BACKGROUND COLOUR:	LEGEND ARROWS:
YELLOW	BLACK
GREEN	WHITE
RED	WHITE

1.14 BACKGROUND COLOUR MARKING AND LEGENDS FOR PIPING SYSTEMS:

CONTENTS:	BACKGROUND COLOUR MARKING:	LEGEND:
DOMESTIC HOT WATER SUPPLY	GREEN	DOM. HW SUPPLY
DOMESTIC COLD WATER	GREEN	DOM. CWS
SUPPLY		
SANITARY		SAN
PLUMBING VENT		SAN. VENT

1.14 TAB OF MECHANICAL SYSTEMS

- 1.14 SCOPE OF WORK
- 1.14 COMPLETE AIR BALANCE OF THE FOLLOWING SYSTEMS AS SHOWN ON THE DRAWINGS. REFER TO DRAWINGS FOR AIR AND FLOW SCHEMATICS SUMMARIZING EACH SYSTEM:
- 1.14 F-1, BALANCE OUTSIDE AIR TO BE 15% AND RETURN AIR TO BE 85% AS A MINIMUM POSITION SETPOINT.
- 1.14 OUTDOOR AIR SHALL MODULATE TO MAXIMUM 30% AND RETURN AIR TO 70% IN RESPONSE TO THE CARBON DIOXIDE MEASURED BY THE EXISTING CO2 DETECTOR. CONTROLS CONTRACTOR SCOPE TO MODULATE FROM MINIMUM POSITION IN RESPONSE TO MEASURED CO2.
- 1.14 BALANCE AIRFLOWS AT HEADER DISTRIBUTION FOR BOTH FLOORS AND ALL MAIN FLOOR DIFFUSERS.
- 1.14 VERIFICATION OF ANY LIFE-SAFETY DEVICES INCLUDING FIRE-SMOKE DAMPERS.
- 1.14 ALLOW FOR A FOLLOW UP VISIT AFTER BALANCING REPORT IS SUBMITTED TO ADDRESS PROJECT MANAGER'S COMMENTS.
- 1.14 GENERAL
- 1.14 TAB TO BE PERFORMED BY BALANCING COMPANY WHO IS A REGISTERED MEMBER OF AABC AND FINAL TAB REPORT SHALL BEAR SEAL AND CERTIFICATION NUMBER OF AABC REGISTRATION.
- 1.14 ADJUST AND REGULATE EQUIPMENT AND SYSTEMS SO AS TO MEET SPECIFIED PERFORMANCE REQUIREMENTS AND TO ACHIEVE SPECIFIED INTERACTION WITH OTHER RELATED SYSTEMS UNDER NORMAL AND EMERGENCY LOADS AND OPERATING CONDITIONS.
- 1.14 BALANCE SYSTEMS AND EQUIPMENT TO REGULATE FLOW RATES TO MATCH DESIGN CONDITIONS.
- 1.14 FOLLOW START-UP PROCEDURES AS RECOMMENDED BY EQUIPMENT MANUFACTURER UNLESS SPECIFIED OTHERWISE.
- 1.14 OPERATE SYSTEMS FOR LENGTH OF TIME REQUIRED FOR TAB AND AS REQUIRED BY CONTRACT ADMINISTRATOR FOR VERIFICATION OF TAB REPORTS.
- 1.14 STANDARD TAB TO BE TO MOST STRINGENT OF TAB STANDARDS OF AABC OR ASHRAE.
- 1.14 START OF TAB
- 1.14 NOTIFY CONTRACT ADMINISTRATOR 7 DAYS PRIOR TO START OF TAB.
- 1.14 START TAB ONLY WHEN BUILDING IS ESSENTIALLY COMPLETED INCLUDING:
- 1.14 INSTALLATION OF CEILINGS, DOORS, WINDOWS, OTHER CONSTRUCTION AFFECTING TAB.

- 2 APPLICATION OF WEATHER STRIPPING, SEALING, CAULKING.
- 3 ALL PRESSURE, LEAKAGE, OTHER TESTS SPECIFIED ELSEWHERE IN DIVISIONS 21 & 23.
- 4 ALL PROVISIONS FOR TAB INSTALLED AND OPERATIONAL.
- 5 START-UP, VERIFICATION FOR PROPER, NORMAL AND SAFE OPERATION OF ALL MECHANICAL AND ASSOCIATED ELECTRICAL AND CONTROL SYSTEMS AFFECTING TAB INCLUDING BUT NOT LIMITED TO:
- 1.1 PROPER THERMAL OVERLOAD PROTECTION IN PLACE FOR ELECTRICAL EQUIPMENT.
- 2 AIR SYSTEMS:
- 1.1 FILTERS IN PLACE, CLEAN.
- 2 DUCT SYSTEMS CLEAN.
- 3 DUCTS, AIR SHAFTS, CEILING PLENUMS ARE AIRTIGHT TO WITHIN SPECIFIED TOLERANCES.
- 4 CORRECT FAN ROTATION.
- 5 FIRE, SMOKE, VOLUME CONTROL DAMPERS INSTALLED AND OPEN.
- 6 COIL, FINS COMBED, CLEAN.
- 7 ACCESS DOORS, INSTALLED, CLOSED.
- 8 ALL OUTLETS INSTALLED, VOLUME CONTROL DAMPERS OPEN.
- 4 APPLICATION TOLERANCES
- 1.1 DO TAB TO FOLLOWING TOLERANCES OF DESIGN VALUES:
- 2 HVAC SYSTEMS: PLUS 5%, MINUS 5%.
- 5 ACCURACY TOLERANCES
- 1.1 MEASURED VALUES TO BE ACCURATE TO WITHIN PLUS OR MINUS 2% OF ACTUAL VALUES.
- 6 TAB REPORT
- 1.1 TAB REPORT TO SHOW ALL RESULTS IN S.I. UNITS AND TO INCLUDE:
- 1.1 PROJECT RECORD DRAWINGS.
- 2 SYSTEM SCHEMATICS.
- 3 DATE OF TAB, DATE OF REPORT.
- 2 SUBMIT ONE COPY OF TAB REPORT TO CONTRACT ADMINISTRATOR FOR VERIFICATION AND APPROVAL, IN ENGLISH IN D-RING BINDERS, COMPLETE WITH INDEX TABS.
- 3 INCORPORATE REVIEW COMMENTS AND SUBMIT 3 COPIES OF FINAL REPORT.
- 7 SETTINGS
- 1.1 AFTER TAB IS COMPLETED TO SATISFACTION OF CONTRACT ADMINISTRATOR, REPLACE DRIVE GUARDS, CLOSE ALL ACCESS DOORS, LOCK ALL DEVICES IN SET POSITIONS, ENSURE SENSORS ARE AT REQUIRED SETTINGS.
- 2 PERMANENTLY MARK ALL SETTING TO ALLOW RESTORATION AT ANY TIME DURING LIFE OF FACILITY. MARKINGS NOT TO BE ERADICATED OR COVERED IN ANY WAY.
- 8 COMPLETION OF TAB
- 1.1 TAB TO BE CONSIDERED COMPLETE ONLY WHEN FINAL TAB REPORT RECEIVED AND APPROVED BY CONTRACT ADMINISTRATOR.

1.15 FIRE STOPPING

- 1.15 MANUFACTURER
- 1.15 STANDARD OF ACCEPTANCE: PRODUCTS BY HILTI (CANADA) LTD., OR APPROVED EQUAL.
- 2 MATERIALS
- 1.1 FIRE STOPPING AND SMOKE SEAL SYSTEMS: IN ACCORDANCE WITH ULC 115.
- 1.1 ASBESTOS-FREE MATERIALS AND SYSTEMS CAPABLE OF MAINTAINING EFFECTIVE BARRIER AGAINST FLAME, SMOKE AND GASES IN COMPLIANCE WITH REQUIREMENTS OF ULC 115 AND NOT TO EXCEED OPENING SIZES FOR WHICH THEY ARE INTENDED.
- 2 FIRE STOP SYSTEM RATING: REFER TO DRAWINGS.
- 2 SERVICE PENETRATION ASSEMBLIES: SYSTEMS TESTED TO ULC 115.
- 2 SERVICE PENETRATION FIRE STOP COMPONENTS: CERTIFIED BY TEST LABORATORY TO ULC 115.
- 4 FIRE-RESISTANCE RATING OF INSTALLED FIRE STOPPING ASSEMBLY IN ACCORDANCE WITH NBC.
- 5 FIRE STOPPING AND SMOKE SEALS AT OPENINGS INTENDED FOR EASE OF RE-ENTRY SUCH AS CABLES: ELASTOMERIC SEAL. DO NOT USE CEMENTITIOUS OR RIGID SEAL MATERIALS AT THESE LOCATIONS.
- 6 FIRE STOPPING AND SMOKE SEALS AT OPENINGS AROUND PENETRATIONS FOR PIPES, DUCTWORK AND OTHER MECHANICAL ITEMS REQUIRING SOUND AND VIBRATION CONTROL: ELASTOMERIC SEAL. DO NOT USE CEMENTITIOUS OR RIGID SEAL MATERIALS AT THESE LOCATIONS.
- 7 PRIMERS: TO MANUFACTURER'S RECOMMENDATION FOR SPECIFIC MATERIAL, SUBSTRATE, AND END USE.
- 8 WATER (IF APPLICABLE): POTABLE, CLEAN AND FREE FROM INJURIOUS AMOUNTS OF DELETERIOUS SUBSTANCES.
- 9 DAMMING AND BACKUP MATERIALS, SUPPORTS AND ANCHORING DEVICES: TO MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE WITH TESTED ASSEMBLY BEING INSTALLED AS ACCEPTABLE TO AUTHORITIES HAVING JURISDICTION.
- 10 SEALANTS FOR VERTICAL JOINTS: NON-SAGGING.

Part 2 HVAC REQUIREMENTS

2.1 ERV UNIT (ERV-1)

- 2.1 SCOPE OF WORK
- 1.1 PROVIDE AND INSTALL ERV C/W HANGER SUPPORTS AND SYSTEM CONTROLS.

2.2 DUCTWORK

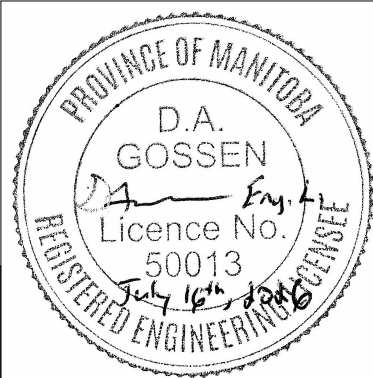
- 2.2 SCOPE OF WORK
- 1.1 SUPPLY AND INSTALLATION OF SUPPLY AIR, RELIEF AIR, OUTSIDE AIR AND RETURN AIR DUCTWORK RELATED TO THE F-1 SYSTEM AND GRAVITATIONAL AIR INTAKES.
- 2 SEAL CLASSIFICATION
- 1.1 CLASSIFICATION AS FOLLOWS:
- MAXIMUM SMACNA
- PRESSURE SEAL
- PA CLASS
- 500 A
- 2 CLASS A: LONGITUDINAL SEAMS, TRANSVERSE JOINTS, DUCT WALL PENETRATIONS AND CONNECTIONS MADE AIRTIGHT WITH SEALANT AND TAPE.
- 3 SEALANT
- 1.1 SEALANT: OIL RESISTANT, POLYMER TYPE FLAME RESISTANT DUCT SEALANT. TEMPERATURE RANGE OF MINUS 30° C TO PLUS 93° C.
- 2 ACCEPTABLE MATERIAL: DUCTMATE PROSEAL/FIBRESEAL OR APPROVED EQUAL.
- 4 FITTINGS
- 1.1 FABRICATION: TO SMACNA.
- 2 RADIUS ED ELBOWS:
- 1.1 RECTANGULAR: STANDARD RADIUS OR SHORT RADIUS WITH SINGLE THICKNESS TURNING VANES STANDARD (1.5 TIMES WIDTH OF DUCT).
- 2 ROUND: SMOOTH RADIUS (1.5 TIMES DIAMETER).
- 3 MITRED ELBOWS, RECTANGULAR:
- 1.1 TO 400 MM: WITH SINGLE THICKNESS TURNING VANES.
- 2 OVER 400 MM: WITH DOUBLE THICKNESS TURNING VANES.
- 4 BRANCHES:
- 1.1 RECTANGULAR MAIN AND BRANCH: WITH RADIUS ON BRANCH 1.5 TIMES WIDTH OF DUCT 45° ENTRY ON BRANCH.
- 2 ROUND MAIN AND BRANCH: ENTER MAIN DUCT TO 45° WITH CONICAL CONNECTION.
- 3 PROVIDE VOLUME CONTROL DAMPER IN BRANCH DUCT NEAR CONNECTION TO MAIN DUCT.
- 4 MAIN DUCT BRANCHES: WITH SPLITTER DAMPER.
- 5 TRANSITIONS:
- 1.1 DIVERGING: 20° MAXIMUM INCLUDED ANGLE.
- 2 CONVERGING: 30° MAXIMUM INCLUDED ANGLE.
- 6 OFFSETS:



Certificate of Authorization

Alliance Engineering Services Inc.

No.2906



DESIGN R.D.

CHECKED D.G.

DRAWN R.D.

APPROVED D.G.



CITY OF WINNIPEG

2777 Portage Avenue, Winnipeg, MB, R3J 0R3

GRANT'S OLD MILL
MAINTENANCE BUILDING RENOVATION
MECHANICAL SPECIFICATIONS

SIZE

DWG. NO.

M4.2

SCALE

AS NOTED

SHEET

REV 0