

# MECHANICAL SPECIFICATION

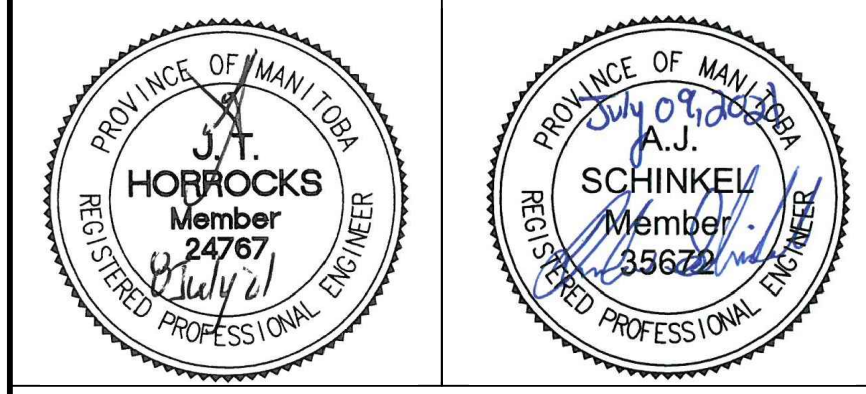
- 1.0 GENERAL
- CONTRACTOR TO VISIT JOBSITE DURING BID OPPORTUNITY. DRAWINGS INDICATE APPROXIMATE LOCATION OF EXISTING MECHANICAL EQUIPMENT AND SERVICES. VERIFY EXACT LOCATIONS OF EXISTING MECHANICAL EQUIPMENT AND SERVICES AND ALLOW FOR NECESSARY RELOCATING OF NOTED SERVICES (OR RECONNECTION TO EXISTING SERVICES) TO SUIT NEW CONSTRUCTION.
  - ALL WORK SHALL CONFORM TO MANITOBA BUILDING CODE AND LOCAL AUTHORITIES. APPLY FOR, OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
  - INSTALLATION OF WORK SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR AND SHALL BE SCHEDULED SO AS NOT TO ENDANGER OR DISTURB THE CITY OR USERS OF THE BUILDING. SHUTDOWN OF EXISTING BUILDING SYSTEMS SHALL BE COORDINATED WITH THE CITY'S REPRESENTATIVE.
  - MECHANICAL SUBCONTRACTOR SHALL PERFORM COORDINATION OF MECHANICAL DIVISION INSTALLATION WITH ALL RELATED GENERAL CONTRACTORS AND SUBCONTRACTORS. VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING EQUIPMENT AND SERVICES PRIOR TO PROCEEDING WITH WORK.
  - ALL INTERIOR SPACE POWER HAMMERING, DRILLING AND OTHER NOISY WORK SHALL BE COORDINATED WITH THE CITY PRIOR TO ROUGH-IN.
  - BID OPPORTUNITY SHALL BE BASED ON THE USE OF SPECIFIED EQUIPMENT, UNLESS ACCEPTANCE FOR THE USE OF EQUAL MANUFACTURERS IS IN ACCORDANCE WITH B7 AND OBTAINED FROM THE CONTRACT ADMINISTRATOR PRIOR TO BID SUBMISSION. ALTERNATE MANUFACTURERS MAY BE QUOTED AS AN INCREASE OR DECREASE AMOUNT TO THE BID SUBMISSION, WITHOUT PRIOR ACCEPTANCE OF THE CONTRACT ADMINISTRATOR.
  - SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT TO CONTRACT ADMINISTRATOR. FOR SHOP DRAWINGS SUBMITTED ELECTRONICALLY, INCLUDE CONTRACT ADMINISTRATOR PROJECT NAME AND NUMBER IN SUBJECT LINE OF E-MAIL TO CONTRACTADM@SMS.ENG.CM. ALLOW 10 BUSINESS DAYS FOR THE REVIEW AND PROCESSING OF SHOP DRAWINGS.
  - REQUEST FOR INTERPRETATION (RFI)
    - FOR RFIS SUBMITTED ELECTRONICALLY, INCLUDE CONTRACT ADMINISTRATOR PROJECT NAME AND NUMBER IN THE SUBJECT LINE OF E-MAIL TO CONTRACTADM@SMS.ENG.CM.
    - CONTENT OF THE RFI INCLUDE A DETAILED DESCRIPTION OF THE ITEM NEEDING INTERPRETATION AND PROPOSED SOLUTION.
    - ALLOW 10 BUSINESS DAYS FOR THE REVIEW AND PROCESSING OF RFIS.
  - UNLESS NOTED OTHERWISE PROVIDE ONE YEAR GUARANTEE (FROM PROJECT SUBstantial COMPLETION) FOR ALL EQUIPMENT AND WORKMANSHIP.
  - ALL CONNECTIONS TO EXISTING BUILDING MECHANICAL SERVICES SHALL BE COORDINATED WITH THE CITY REPRESENTATIVE.
  - ALL NECESSARY CUTTING AND PATCHING SHALL BE PERFORMED BY COMPETENT SUBCONTRACTORS EMPLOYED BY MECHANICAL CONTRACTOR TO SATISFACTION OF THE CITY REPRESENTATIVE.
  - ALL DUCTWORK AND PIPING TO BE INSTALLED STRAIGHT, PARALLEL TO THE BUILDING WALLS.
  - WHERE PIPES OR DUCTS GO THROUGH AN EXTERIOR ROOF OR WALL, THEY SHOULD BE BOXED-IN, FLASHED AND WATERPROOFED. ALLOW FOR EXPANSION AND CONTRACTION OF PIPE.
  - PIPE HANGERS SHALL BE ANVIL FIG. 65 FOR STEEL PIPE AND FIG. C765 FOR COPPER PIPE. ALL WITH FIG. 140 THREADED ROD ATTACHED TO FIG. 117 EXPANSION CASE SET IN HOLES DRILLED IN CONCRETE, OR ATTACHED TO FIG. 225 OR 227 CLAMP ATTACHED TO JOISTS OR BEAMS.
  - TREATED WOOD SLEEPERS (4" X 4") AND FLASHING FOR EQUIPMENT INSTALLED ON ROOF TO BE PROVIDED BY THE GENERAL CONTRACTOR.
  - PRIOR TO DRILLING HOLES AND/OR OPENINGS IN EXISTING STRUCTURE, CONTRACTOR SHALL RETAIN SERVICES OF NATIONAL TESTING LABORATORIES LIMITED TO LOCATE AND MARK ALL STRUCTURAL REINFORCING STEEL LOCATED IN AREA WHERE CUTTING OR DRILLING IS PROPOSED. AT NO TIME SHALL REINFORCING STEEL BE CUT WITHOUT PRIOR WRITTEN APPROVAL FROM STRUCTURAL CONTRACT ADMINISTRATOR QUALIFIED AND LICENSED TO PRACTICE IN PROVINCE OF MANITOBA. NO HOLES OR OPENINGS WILL BE PERMITTED WITHIN AREA OF STRUCTURAL DROP PANELS LOCATED AT COLUMNS.
  - FURNISH TO THE CITY THREE (3) COMPLETE SETS OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT REQUIRING MAINTENANCE. REVIEW INSTRUCTIONS WITH THE CITY REPRESENTATIVE TO ENSURE A THOROUGH UNDERSTANDING OF THE EQUIPMENT AND ITS OPERATION.
  - PROVIDE A MARK-UP OF THE CONTRACT DRAWINGS FOR RECORD "RECORD DRAWINGS", REVISED AS REQUIRED TO SHOW ANY CHANGES FROM THAT ORIGINALLY SHOWN. RECORD DRAWINGS TO BE KEPT ON SITE AND UPDATED WEEKLY. CONTRACT ADMINISTRATOR WILL REVIEW PROGRESS DURING SITE OBSERVATIONS.
  - AT COMPLETION OF PROJECT PROVIDE RECORD DRAWINGS IN AUTOCAD 2013 FORMAT, COMPLETE WITH DISK PAID FOR BY MECHANICAL CONTRACTOR.
  - ALL EXTRANEOUS MATERIAL IN SPACE UNRELATED TO NEW AND REVISED WORK SHOWN, INCLUDING PIPING, CONTROL TUBING, DUCTWORK, ETC. SHALL BE REMOVED.
  - PROVIDE FIRESTOPPING FOR ALL OPENINGS IN FIRE SEPARATIONS FOR PASSAGE OF PIPES, DUCTS, ETC. TO MAINTAIN INTEGRITY OF FIRE SEPARATION. PROVIDE MANUFACTURER'S PRINTED RECOMMENDATIONS.
  - ALL WIRING FOR EQUIPMENT SPECIFIED HEREIN SHALL BE BY THE ELECTRICAL SUB-CONTRACTOR, UNLESS OTHERWISE NOTED.
  - MECHANICAL CONTRACTOR SHALL REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL CONNECTION WITH ELECTRICAL SUBCONTRACTOR AND DIVISION 26 DRAWINGS PRIOR TO ORDERING EQUIPMENT. ENSURE PROPER ELECTRICAL CHARACTERISTICS ARE DETERMINED FOR ALL AFFECTED AND RELATED WORK.
  - WHERE MECHANICAL SERVICES ARE CONCEALED WITHIN WALLS, FLOORS OR CEILINGS AND CANNOT BE VISUALLY IDENTIFIED, PROVIDE ELECTRONIC SCANNING DEVICES OR OTHER APPROVED MEANS TO LOCATE AND IDENTIFY CONCEALED SERVICES PRIOR TO WORK START. MAKE GOOD ANY DAMAGE TO EXISTING MECHANICAL SERVICES AT NO COST TO THE CONTRACTOR.
- 2.0 INSULATION
- VAPOUR BARRIER FLEXIBLE DUCT EXTERNALLY INSULATED WITH FIBREGLAS RFRK REINFORCED FOIL-FACED VAPOUR SEAL DUCT INSULATION PF335, 340 G. (3/4 LB./CU. FT.) DENSITY.
    - 50MM (2") THICKNESS
      - ALL ROUND EXHAUST DUCTS FROM TO EXHAUST FAN NOT SHOWN ACOUSTICALLY LINED FROM ROOF FOR A LENGTH OF 1.8M (6'-0") OR FROM ROOF DISCHARGE BACK TO DAMPER, WHICHEVER IS GREATER.
      - ALL ROUND ROOF DUCTING TO CENTRIFUGAL EXHAUST FANS LOCATED ON ROOFS.
      - ROUND DUCT: ADHERE TO DUCT SURFACE APPLIED STRIPS (150MM (6") WIDE, 300MM (12") O.C. BUTT ALL EDGES OF INSULATION, STAPLE AND SEAL ALL JOINTS WITH TAPE ADHERED OVER THE JOINT. SEAL ALL BREAKS WITH VAPOR BARRIER TYPE.
      - EXPOSED DUCT: RECOVER DUCTS EXPOSED TO VIEW WITH 170 G. (6 OZ.) CANVAS SECURED WITH BAKOR 120-16 WHITE FIRE RETARDANT LAGGING ADHESIVE. FINISH WITH BRUSH COAT OF SAME ADHESIVE.
      - OUTDOOR DUCT: ON ROOF AND OTHER DUCTWORK LOCATED OUTSIDE OF BUILDING, PROVIDE 26 GA. G.I. SHEET METAL COVER TO PROTECT INSULATION. SEAL ALL JOINTS AND MAKE WEATHERTIGHT.
    - VAPOUR BARRIER RIGID DUCT EXTERNALLY INSULATED WITH FIBREGLAS RFRK REINFORCED FOIL-FACED VAPOUR SEAL DUCT INSULATION TYPE FF 340 G. (4.5 LB./CU.FT.) DENSITY.
      - 50MM (2") THICKNESS

- ALL ROUND EXHAUST DUCTS FROM TO EXHAUST FAN NOT SHOWN ACOUSTICALLY LINED FROM ROOF FOR A LENGTH OF 1.8M (6'-0") OR FROM ROOF DISCHARGE BACK TO DAMPER, WHICHEVER IS GREATER.
  - ALL ROUND ROOF DUCTING TO CENTRIFUGAL EXHAUST FANS LOCATED ON ROOFS.
  - INSULATION APPLIED WITH EDGES TIGHTLY BUTTED AND SECURED BY IMPALING ON PINS WELDED TO DUCT. PINS TO BE STAGGERED, MINIMUM 300MM (12") O.C. IN EVERY DIRECTION. THIS APPLIES TO ALL SIDES. SECURE INSULATION TO PINS WITH METAL FASTENERS. PINS SHALL BE LONG ENOUGH TO BEND AFTER FASTENERS HAVE BEEN APPLIED. INSTALL TWO FASTENERS TO ALL INSULATION ON ROOF. DAB ADHESIVE OVER PINS AND FASTENERS.
  - SEAL ALL JOINTS, EDGES AND BREAKS IN VAPOR SEAL JACKET WITH VAPOR BARRIER FOIL OF THE SAME QUALITY AS THAT OF DUCT MEMBRANE 100MM (4") WIDE WITH BRUSH COATING ADHESIVE.
  - EXPOSED DUCT: RECOVER DUCTS EXPOSED TO VIEW WITH 170 G. (6 OZ.) CANVAS SECURED WITH BAKOR 120-16 WHITE FIRE RETARDANT LAGGING ADHESIVE. FINISH WITH BRUSH COAT OF SAME ADHESIVE.
  - OUTDOOR DUCT: ON ROOF AND OTHER DUCTWORK LOCATED OUTSIDE OF BUILDING, PROVIDE 26 GA. G.I. SHEET METAL COVER TO PROTECT INSULATION. SEAL ALL JOINTS AND MAKE WEATHERTIGHT.
- 3.0 VENTILATION
- DUCTWORK
    - DUCTWORK SHALL BE CONSTRUCTED AS RECOMMENDED IN SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE (LATEST REVISION) AND SMACNA HVAC AIR DUCT LEAKAGE TEST MANUAL (LATEST REVISION).
    - DUCT PRESSURE CLASS:
      - REFER TO FAN SCHEDULE FOR EXTERNAL STATIC PRESSURE (ESP) PRODUCED BY FANS AND AIR HANDLING UNITS.
      - DUCTWORK SHALL BE CONSTRUCTED TO THE PRESSURE CLASS ADEQUATE FOR THE ESP PRODUCED BY FANS.
    - DUCT SEAL CLASSIFICATION TAILPIPE
      - SEAL CLASS A
        - SEALING REQUIRED: ALL TRANSVERSE JOINTS LONGITUDINAL SEAMS AND APPLICABLE DUCT WALL PENETRATIONS.
        - STATIC PRESSURE CONSTRUCTION CLASS: 4" WC AND UP (1000PA).
      - SEAL CLASS B
        - SEALING REQUIRED: ALL TRANSVERSE JOINTS LONGITUDINAL SEAMS.
        - STATIC PRESSURE CONSTRUCTION CLASS: 3" WC AND UP (750PA).
      - SEAL CLASS C
        - SEALING REQUIRED: TRANSVERSE JOINTS.
        - STATIC PRESSURE CONSTRUCTION CLASS: 2" WC AND UP (500PA).
    - SEALANT
      - HIGH TEMPERATURE INDOOR DUCT SEALANT
        - TYPE: RTV SILICONE.
        - SERVICE TEMPERATURE: -86F TO 500F.
        - STANDARD OF ACCEPTANCE: BRAMECC HI-TEMP SILICONE SEALANT.
    - TAPE
      - TAPE: POLYVINYL TREATED, OPEN WEAVE FIBERGLAS TAPE, 50 MM WIDE.
      - STANDARD OF ACCEPTANCE: DURO DYNE FT-2.
    - DUCT TO BE GALVANIZED STEEL OF LOCK-FORMING GRADE TO ASTM A653 AND A924 STANDARDS, UNLESS OTHERWISE NOTED.
    - WHERE DUCT WIDTH EXCEEDS 18" IN LARGEST DIMENSION, STIFFEN BY BREAKING SHEETS DIAGONALLY.
    - SIZE ROUND DUCTS, INSTALLED IN PLACE OF RECTANGULAR DUCTS, FROM ASHRAE'S TABLE OF EQUIVALENT RECTANGULAR AND ROUND DUCTS.
    - THICKNESS, FABRICATION AND REINFORCEMENT TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
      - INDOOR DUCTWORK: TO SMACNA UNLESS NOTED BELOW.
      - OUTDOOR DUCT TO BE TWO GAUGES HEAVIER THAN DIRECTED ABOVE.
  - JOINTS
    - TO SMACNA HVAC DUCT CONSTRUCTION STANDARD.
  - PRIOR TO FABRICATION OF DUCTWORK, CHECK ALL SPACES AND HEIGHTS FOR CONFLICTING WITH OTHER CONTRACTORS.
  - DUCT FITTINGS: TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS
    - FABRICATION: TO SMACNA.
    - RADIUS ELBOWS:
      - RECTANGULAR: 1.5 TIMES WIDTH OF DUCT.
      - ROUND: 1.5 TIMES DIAMETER.
    - MITRED ELBOWS, RECTANGULAR:
      - SINGLE THICKNESS TURNING VANES. REFER TO MECHANICAL DETAILS. PROVIDE ADDITIONAL SUPPORT FOR SEGMENTS LARGER THAN 600 MM (24").
      - STANDARD OF ACCEPTANCE: DUCT MATE.
    - BRANCHES:
      - RECTANGULAR MAIN AND BRANCH: WITH 45 DEGREES ENTRY ON BRANCH.
      - ROUND MAIN AND BRANCH: ENTER MAIN DUCT AT 45 DEGREES WITH CONICAL CONNECTION.
      - PROVIDE VOLUME CONTROL DAMPER IN BRANCH DUCT NEAR CONNECTION TO MAIN DUCT.
      - MAIN DUCT BRANCHES: WITH SPLITTER DAMPER.
      - DUCT SIDEWALL GRILLES:
        - PROVIDE AIR VOLUME EXTRACTOR AT DUCT BRANCHES WITH HEX KEY OPERATOR ACCESSIBLE THROUGH THE FACE OF THE GRILLE.
        - STANDARD OF ACCEPTANCE: PRICE AET W/ TYPE 3 OPERATOR.
    - TRANSITIONS: TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
    - OFFSETS: TO SMACNA HVAC DUCT CONSTRUCTION STANDARDS.
    - EASEMENTS: SPLIT DUCT IN TWO WITH ORIGINAL DUCT CROSS SECTIONAL AREA BEING MAINTAINED PER SMACNA STANDARDS.
    - ROUND SPIRAL DUCT SHALL BE USED IN EXPOSED FINISHED AREAS.
    - SPIRAL DUCT BRANCH FITTINGS SHALL BE MACHINE-FABRICATED, NOT FILED-CONSTRUCTED.
  - DUCT LEAKAGE
    - SMACNA HVAC AIR DUCT LEAKAGE TEST AS FOLLOWS:
      - SEAL CLASS A
        - SEALING APPLICABLE: JOINTS, SEAMS AND ALL APPLICABLE DUCT WALL PENETRATIONS.
        - DUCT CLASS: 4" WC AND UP (1000PA), 6" WC AND UP (1500PA), 10" WC AND UP (2500PA).
        - LEAKAGE CLASS: RECTANGULAR METAL 4; ROUND METAL 2.
      - SEAL CLASS B
        - SEALING APPLICABLE: TRANSVERSE JOINTS AND SEAMS.
        - DUCT CLASS: 3" WC AND UP (750PA).
        - LEAKAGE CLASS: RECTANGULAR METAL 8; ROUND METAL 4.

- ACCEPTED.
- THE USE OF EITHER NZOPEN OR BACNET TO BE DETERMINED BASED ON TYPE OF BUILDING WHERE THE WORK IS BEING PERFORMED. THE NEW WORK IS TO BE TIED INTO THE EXISTING CONTROLS. THE CONTRACTOR SHOULD CONTACT CITY OF WINNIPEG TECHNICAL STAFF TO DETERMINE THE BEST PROTOCOL TO USE BASED ON EXISTING EQUIPMENT.
  - NO LOW PROTOCOLS ARE TO BE ACCEPTED.
  - THE BUILDING MANAGEMENT SYSTEM (BMS) SHALL BE A COMPLETE SYSTEM DESIGNED FOR USE WITH THE ENTERPRISE IT SYSTEMS. THIS FUNCTIONALITY SHALL EXTEND INTO THE EQUIPMENT ROOMS. DEVICES RESIDING ON THE AUTOMATION NETWORK LOCATED IN EQUIPMENT ROOMS AND SIMILAR SHALL BE FULLY IT COMPATIBLE DEVICES THAT MOUNT AND COMMUNICATE DIRECTLY ON THE IT INFRASTRUCTURE IN THE FACILITY. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE CITY'S IT STAFF TO ENSURE THAT THE FMS WILL PERFORM IN THE CITY'S ENVIRONMENT WITHOUT DISRUPTION TO ANY OF THE OTHER ACTIVITIES TAKING PLACE ON THAT LAN.
  - ALL POINTS OF USER INTERFACE SHALL BE ON STANDARD PCS THAT DO NOT REQUIRE THE PURCHASE OF ANY SPECIAL SOFTWARE FROM THE BMS MANUFACTURER FOR USE AS A BUILDING OPERATIONS TERMINAL. THE PRIMARY POINT OF INTERFACE ON THESE PCS WILL BE A STANDARD WEB BROWSER.
  - WHERE NECESSARY AND AS DICTATED ELSEWHERE IN THESE SPECIFICATIONS, SERVERS SHALL BE USED FOR THE PURPOSE OF PROVIDING A LOCATION FOR EXTENSIVE ARCHIVING OF SYSTEM CONFIGURATION DATA, AND HISTORICAL DATA SUCH AS TRENDS DATA AND OPERATOR TRANSACTIONS. ALL DATA STORED WILL BE THROUGH THE USE OF A STANDARD DATA BASE PLATFORM, MICROSOFT DATA ENGINE (MSDE) OR MICROSOFT SQL SERVER AS DICTATED ELSEWHERE IN THIS SPECIFICATION.
  - THE WORK OF THE SINGLE BMS CONTRACTOR SHALL BE AS DEFINED INDIVIDUALLY AND COLLECTIVELY IN ALL SECTIONS OF THIS DIVISION SPECIFICATIONS TOGETHER WITH THE ASSOCIATED POINT SHEETS AND DRAWINGS AND THE ASSOCIATED INTERFACING WORK AS REFERENCED IN THE RELATED DOCUMENTS.
  - THE BMS WORK SHALL CONSIST OF THE PROVISION OF ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, SOFTWARE, SOFTWARE LICENSES, SOFTWARE CONFIGURATIONS AND DATABASE ENTRIES, INTERFACES, WIRING, TUBING, INSTALLATION, LABELING, ENGINEERING, CALIBRATION, DOCUMENTATION, SAMPLES, SUBMITTALS, TESTING, COMMISSIONING, TRAINING SERVICES, PERMITS AND LICENSES, TRANSPORTATION, SHIPPING, HANDLING, ADMINISTRATION, SUPERVISION, MANAGEMENT, INSURANCE, TEMPORARY PROTECTION, CLEANING, CUTTING AND PATCHING, WARRANTIES, SERVICES, AND ITEMS, EVEN THOUGH THESE MAY NOT BE SPECIFICALLY MENTIONED IN THESE DIVISION DOCUMENTS WHICH ARE REQUIRED FOR THE COMPLETE, FULLY FUNCTIONAL AND COMMISSIONED BMS.
  - PROVIDE A COMPLETE, NEAT AND WORKMANLIKE INSTALLATION. USE ONLY MANUFACTURER EMPLOYEES WHO ARE SKILLED, EXPERIENCED, TRAINED, AND FAMILIAR WITH THE SPECIFIC EQUIPMENT, SOFTWARE, STANDARDS AND CONFIGURATIONS TO BE PROVIDED FOR THIS PROJECT.
  - MANAGE AND COORDINATE THE BMS WORK IN A TIMELY MANNER IN CONSIDERATION OF THE PROJECT SCHEDULES. COORDINATE WITH THE ASSOCIATED WORK OF OTHER CONTRACTORS SO AS TO NOT IMPED OR DELAY THE WORK OF ASSOCIATED CONTRACTORS.
  - THE BMS AS PROVIDED SHALL INCORPORATE, AT MINIMUM, THE FOLLOWING INTEGRATED FEATURES, FUNCTIONS AND SERVICES:
    - OPERATOR INFORMATION, ALARM MANAGEMENT AND CONTROL FUNCTIONS.
    - ENTERPRISE-LEVEL INFORMATION AND CONTROL ACCESS.
    - INFORMATION MANAGEMENT INCLUDING MONITORING, TRANSMISSION, ARCHIVING, RETRIEVAL, AND REPORTING FUNCTIONS.
    - DIAGNOSTIC MONITORING AND REPORTING OF BMS FUNCTIONS.
    - OFFSITE MONITORING AND MANAGEMENT ACCESS.
    - ENERGY MANAGEMENT
  - SEQUENCES OF OPERATION
    - TAILPIECE EXHAUST FANS
      - EXHAUST FAN SHALL OPERATE BY BMS SCHEDULE.
      - ON START, EXHAUST DAMPER TO OPEN, WITH DAMPER PROVEN OPEN VIA END SWITCH. FAN SHALL START AND RUN CONTINUOUSLY. ON STOP, EXHAUST DAMPER TO CLOSE. IF DAMPER FAILS TO CLOSE AS SENSED BY END SWITCH, ALARM TO BE ON.
      - AT A MINIMUM THE FOLLOWING POINTS SHALL BE MONITORED/ALARMED FOR EACH FAN:
        - BINARY OUTPUTS
          - EIA DAMPER
          - BINARY INPUTS
          - FAN STATUS

Fan Schedule											
FAN NO.	SERVICE	FAN TYPE	LOCATION	FAN MODEL	CAP. (CFM)	E.S.P. (in.W.G.)	SPD. (rpm)	OUT. VEL. (fpm)	BRK. (HP)	MTR. (HP)	REMARKS
EF 1	Tailpipe Exhaust	Welded scroll universal single width fan	Roof	Greenheck USF-22 AF CW UB	6300	4.00	1725	2211	5.61	7.50	

0	ISSUED FOR CONSTRUCTION	JH/AS	09/07/21
NO.	Description	BY	DDMMYY



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## TRANSIT HOIST 10-18 VEHICLE EXHAUST

WINNIPEG MANITOBA

### Drawing Title

# MECHANICAL SPECIFICATION AND SCHEDULE

Drawn By	LP/WPD	Checked By	XZ/CRM	Approved By	JH/AS
Scale	AS NOTED	Date	JULY 2021	Project No.	21-083-01
Revision Number	0	Drawing Number	ME3.1	Sheet Order	3 OF 5



FILE NAME AND PATH: G:\PROJECTS\2021\21-083 Transit Hoist 10-18 Vehicle Exhaust\3.0 Mech\21-083-01\_Mech\_1\_031.dwg  
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