


PROJECT No: 2018-120 ADDRESS: 195 TECUMSEH ST. SHEET TITLE: PARTIAL MAIN FLOOR PLAN - MECHANICAL SPECIFICATIONS & DETAILS DATE: 2020.06.12 FILE NAME: 2018120MWO.dwg/M3

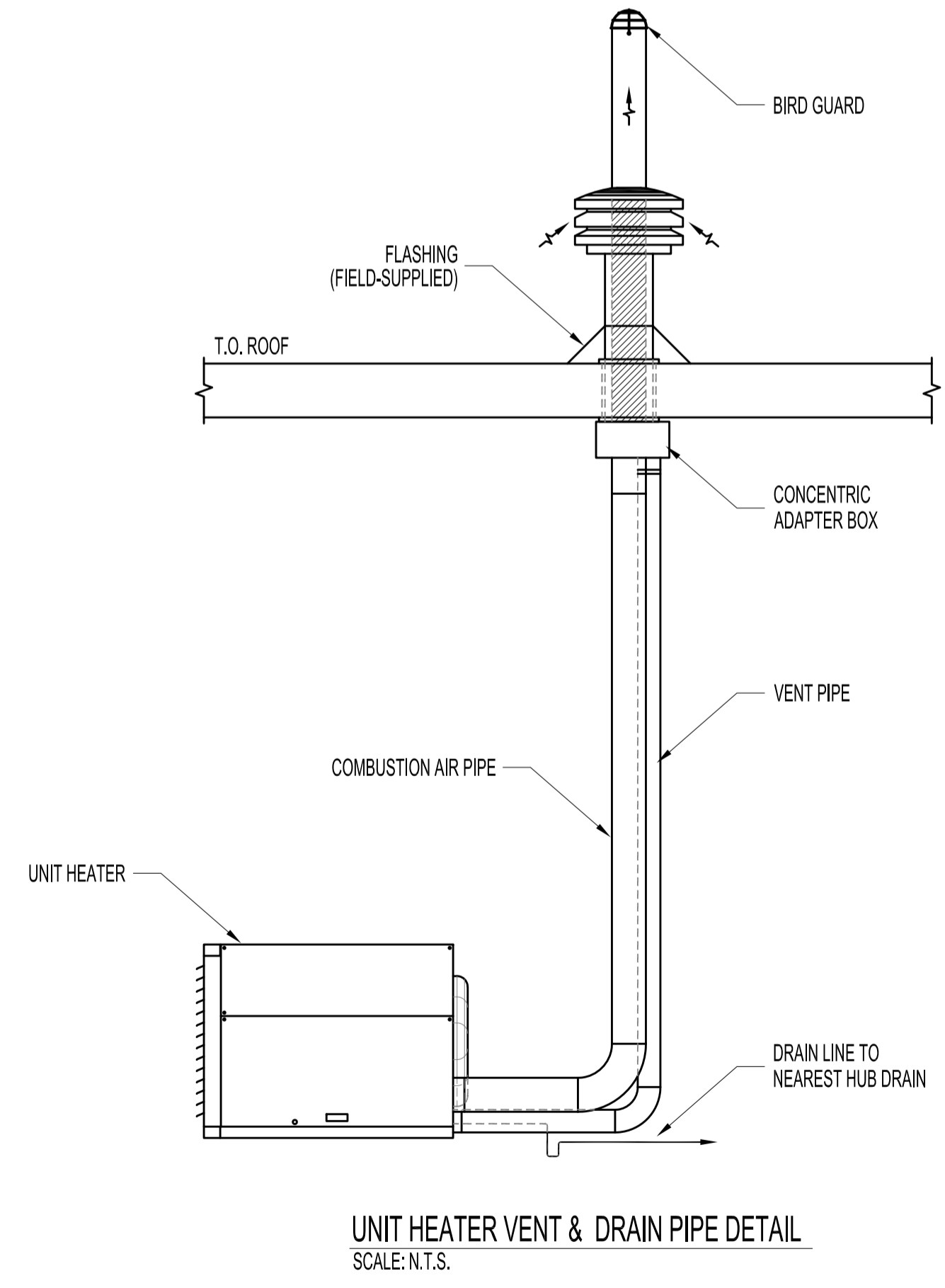
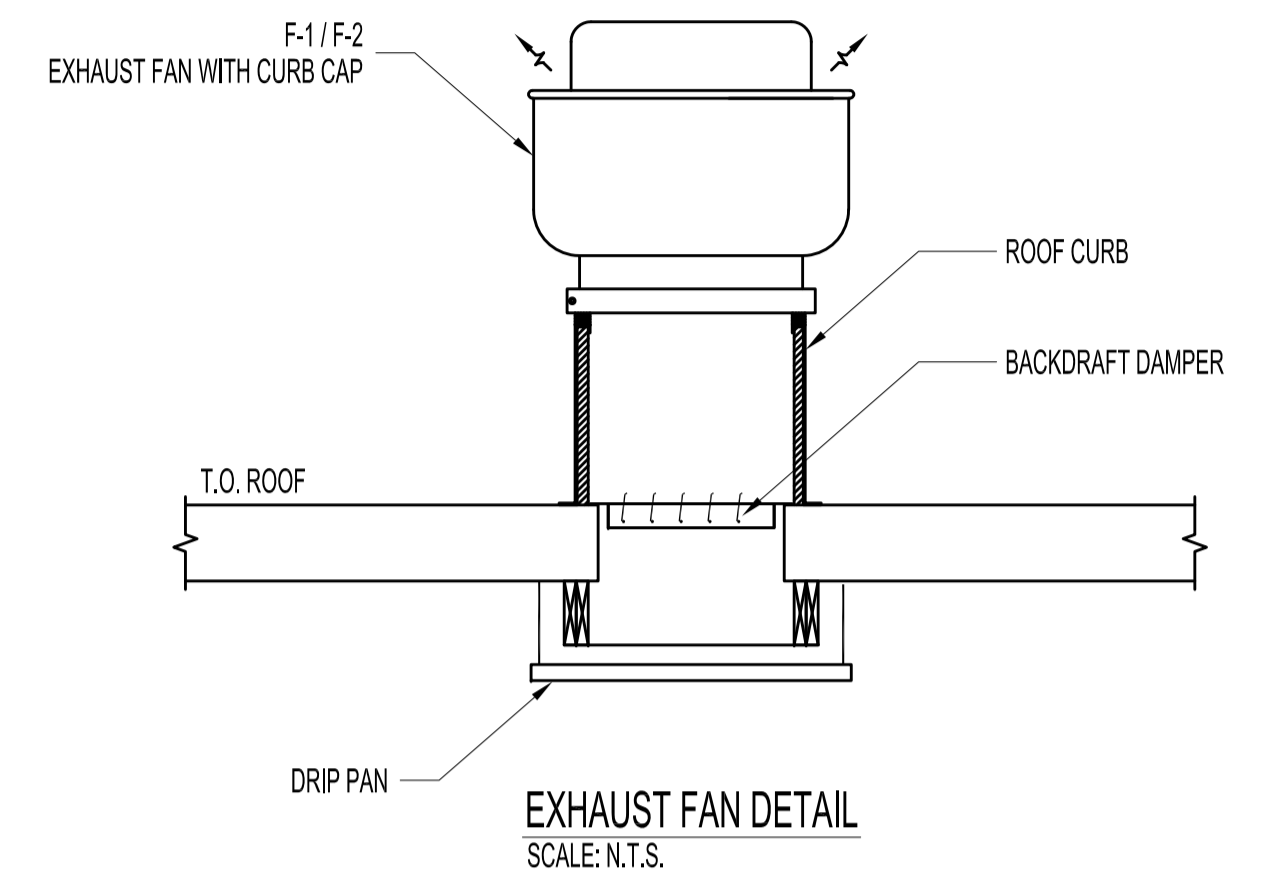
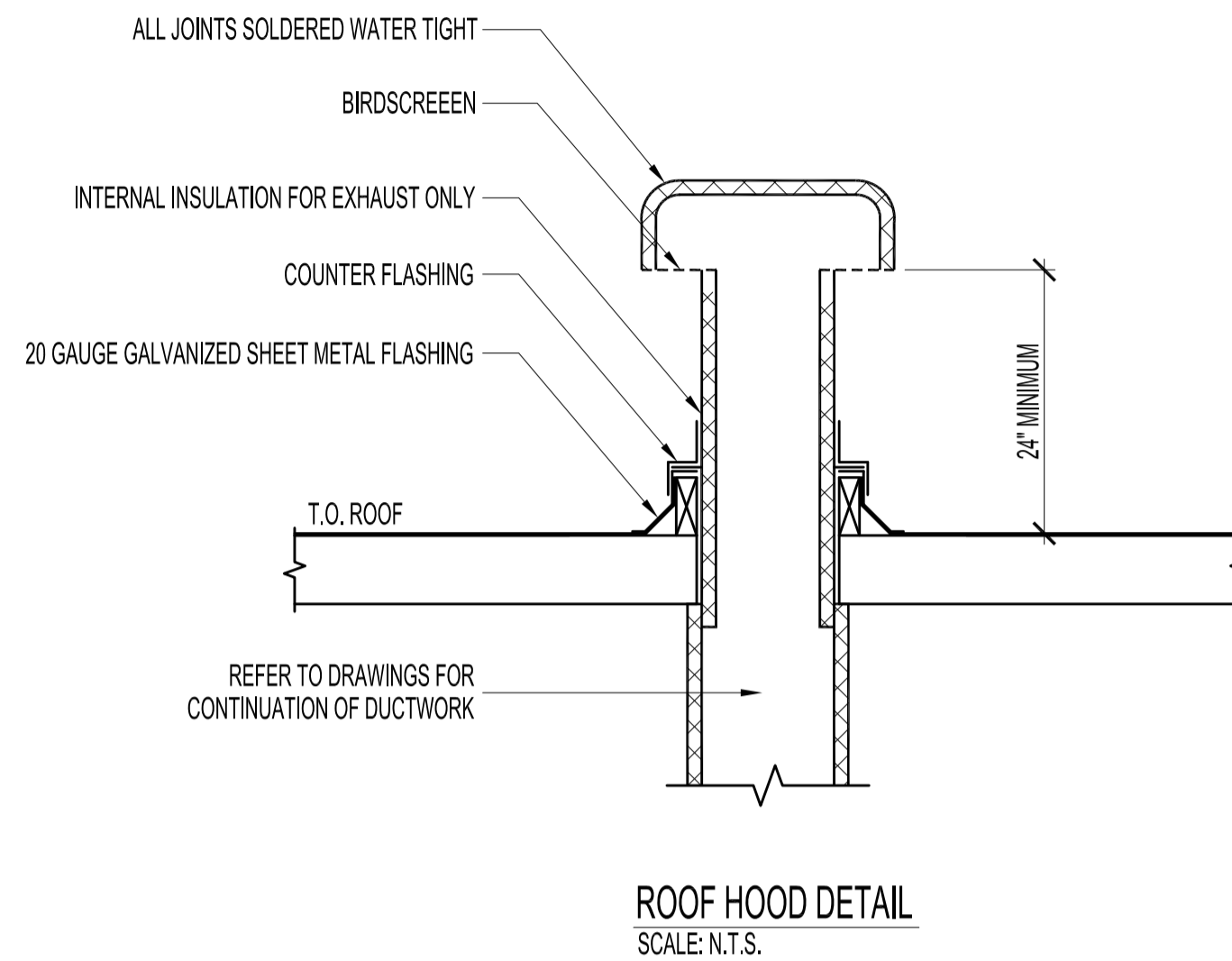
MECHANICAL SPECIFICATIONS

- 1.0 GENERAL**
- .1 VISIT JOBSITE DURING TENDER. 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.
 - .2 ALL WORK SHALL CONFORM TO MANITOBA BUILDING CODE AND LOCAL AUTHORITIES. APPLY FOR, OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
 - .3 COORDINATE INSTALLATION WITH ALL RELATED TRADES, INTERIOR DESIGN PLANS AND REFLECTED CEILING PLANS. VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING EQUIPMENT AND SERVICES PRIOR TO PROCEEDING WITH WORK.
 - .4 SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT TO CONTRACT ADMINISTRATOR.
 - .5 PROVIDE ONE YEAR GUARANTEE FOR ALL EQUIPMENT.
 - .6 ALL CONNECTIONS TO EXISTING BUILDING MECHANICAL SERVICES SHALL BE COORDINATED WITH THE CONTRACT ADMINISTRATOR.
 - .7 ALL NECESSARY CUTTING AND PATCHING SHALL BE PERFORMED BY CONTRACTOR. MECHANICAL SUBCONTRACTOR TO CO-ORDINATE ON SITE.
 - .8 REFER TO INSTRUCTIONS TO BIDDERS FOR REQUIREMENTS REGARDING PROJECT PHASING, WORKING HOURS, SHUT-DOWN PROCEDURES, ACCESS, ETC.
 - .9 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 ENGINEER 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.
 - .10 ALL INTERIOR SPACE POWER HAMMERING, DRILLING AND OTHER NOISY WORK SHALL BE PERFORMED BETWEEN HOURS OF 6:00 P.M. AND 8:00 A.M.
 - .11 BID QUOTATIONS SHALL BE BASED ON THE USE OF SPECIFIED EQUIPMENT. UNLESS ACCEPTANCE FOR THE USE OF EQUAL MANUFACTURERS IS OBTAINED FROM THE CONTRACT ADMINISTRATOR PRIOR TO SUBMISSION OF TENDERS. ALTERNATE MANUFACTURERS MAY BE QUOTED AS AN INCREASE OR DECREASE AMOUNT TO THE TENDER PRICE. WITHOUT PRIOR ACCEPTANCE OF THE CONTRACT ADMINISTRATOR. FURNISH TO THE CONTRACT ADMINISTRATOR THREE (3) COMPLETE SETS OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT REQUIRING MAINTENANCE. REVIEW INSTRUCTIONS WITH CONTRACT ADMINISTRATOR TO ENSURE A THOROUGH UNDERSTANDING OF THE EQUIPMENT AND ITS OPERATION.
 - .13 PROVIDE A MARK-UP OF THE CONTRACT DRAWINGS FOR RECORD "AS-BUILT" DRAWINGS, REVISED AS REQUIRED TO SHOW ANY CHANGES FROM THAT ORIGINALLY SHOWN.
 - .14 PROVIDE AS-BUILT DRAWING IN AUTOCAD FORMAT, COMPLETE WITH DISK PAID FOR BY MECHANICAL SUBCONTRACTOR.
 - .15 ALL DUCTWORK AND PIPING TO BE INSTALLED STRAIGHT, PARALLEL TO THE BUILDING WALLS.
 - .16 PIPE HANGERS SHALL BE GRINNELL FIG. 65 FOR STEEL PIPE AND FIG. C165 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.
 - .17 PROVIDE FIRE STOPPING FOR ALL OPENINGS IN FIRE SEPARATIONS FOR PASSAGE OF PIPES, DUCTS, ETC. TO MAINTAIN INTEGRITY OF FIRE SEPARATIONS AS PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
 - .18 INSTALLATION OF WORK SHALL BE COORDINATED WITH THE CONTRACTOR AND SHALL BE SCHEDULED SO AS NOT TO ENDANGER OR DISTURB THE USERS OF THE BUILDING. SHUTDOWN OF EXISTING BUILDING SYSTEMS SHALL BE COORDINATED WITH THE CONTRACT ADMINISTRATOR.
 - .19 ALL WIRING FOR EQUIPMENT SPECIFIED HEREIN SHALL BE BY THE ELECTRICAL SUBCONTRACTOR, UNLESS OTHERWISE NOTED.
 - .20 CONTRACTOR SHALL REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK-UP WITH ELECTRICAL SUBCONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. ENSURE PROPER ELECTRICAL CHARACTERISTICS ARE DETERMINED FOR ALL AFFECTED AND RELATED WORK.
 - .21 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 CONTRACT.
- 2.0 INSULATION**
- .1 ALL EXHAUST DUCTS FOR DISTANCE OF 6'-0" BACK FROM WALL OR ROOF OUTLET TO HAVE 2" FIBERGLASS RFFRK.
 - .2 INSULATE FRESH AIR INTAKE DUCTWORK WITH 2" FIBERGLASS RFFRK DUCT INSULATION INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- 3.0 PLUMBING**
- .1 PROVIDE LABOUR, MATERIAL, EQUIPMENT AND SERVICES NECESSARY FOR AND INCIDENTAL TO SUPPLY AND INSTALLATION OF SYSTEMS SHOWN ON DRAWINGS.
 - .2 GAS PIPING
 - .1 THE MECHANICAL CONTRACTOR SHALL ARRANGE WITH MANITOBA HYDRO GAS DIVISION FOR REVISION TO GAS SERVICE INCLUDING PRESSURE REGULATOR. THE COST OF THIS SERVICE SHALL BE INCLUDED IN THE COST OF THIS CONTRACT.
 - .2 GAS PIPING SHALL BE BLACK STEEL PIPE, EQUAL TO ASTM A-53 SCHEDULE 40 WITH 150 LB STANDARD BLACK MALLEABLE IRON SCREWED FITTINGS. ALL WORK SHALL COMPLY WITH CANCSA, A NATIONAL STANDARD OF CANADA, NATURAL GAS AND PROPANE INSTALLATION CODE B149.1-05, COMPLETE WITH MANITOBA DEPARTMENT OF LABOUR GAS NOTICES, AND SHALL BE PERFORMED BY FULLY QUALIFIED GAS FITTERS AND/OR WELDERS LICENSED TO PRACTICE IN THE PROVINCE OF MANITOBA.
 - .3 JOINTING
 - .1 MAKE ALL JOINTS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
 - .2 BRACE FITTINGS NECESSARY TO PREVENT JOINTS FROM COMING APART UNDER PRESSURE.
 - .3 MAKE JOINTS IN DOMESTIC WATER AND DRAINAGE SYSTEMS WITH SOLDER CONTAINING NO LEAD. SOLDER MATERIAL SHALL BE SILVERBRITTE 100 OR EQUAL CONSISTING OF COMBINATION OF TIN, COPPER AND SILVER.
 - .4 CLEANING AND FLUSHING
 - .1 ON COMPLETION, FLUSH OUT PIPING SYSTEM TO REMOVE ANY FOREIGN MATERIAL IN PIPING.
 - .5 TESTING
 - .1 PRESSURE TEST ALL PIPING SYSTEMS AS FOLLOWS:
 - .1 PLUMBING SYSTEM - IN ACCORDANCE WITH LOCAL REGULATIONS.
 - .2 WATER SUPPLY PIPING - TEST WITH WATER TO 100 PSIG AT HIGHEST POINT OF SYSTEM. MAINTAIN PRESSURE WITHOUT LOSS FOR 4 HOURS.
 - .3 CONTRACT ADMINISTRATOR'S REPRESENTATIVE SHALL WITNESS TESTS. GIVE 48 HOURS NOTICE IN ADVANCE OF TESTS.
 - .4 NATURAL GAS SYSTEM - IN ACCORDANCE WITH LOCAL REGULATIONS.
 - .6 HANGERS
 - .1 WATER - GRINNELL CT65 PLATED CLEVIS.
 - .2 DRAINAGE - GRINNELL 260 CLEVIS.
 - .3 INSTALL HANGERS 6 FT. ON CENTRE FOR PIPES UP TO 1", 8 FT. ON CENTRE FOR PIPES 1 1/4" AND LARGER.

MECHANICAL SPEC' CONTINUED:

- 4.0 VENTILATION**
- .1 DUCTWORK
 - .1 GALVANIZED IRON SCHEDULE:

MAX. SIDE	GAUGES (USSG)	BRACING
UP TO 24"	24	NONE
25 TO 30"	24	1" X 1" X 1/8" ANGLE, 4' FROM JOINT.
31 TO 40"	22	1" X 1" X 1/8" ANGLE, 4' FROM JOINT.
ROUND DUCT UP TO 19"	26	NONE
 - .2 WHERE DUCT WIDTH EXCEEDS 18" IN LARGEST DIMENSION, STIFFEN BY BREAKING SHEETS DIAGONALLY. DUCT SIZES SHOWN ARE INSIDE DIMENSIONS. IF DUCTS ARE ACOUSTICALLY LINED, OUTSIDE DUCT SIZE TO BE INCREASED TO SUIT.
 - .3 DUCTWORK SHALL BE CONSTRUCTED AS RECOMMENDED IN ASHRAE GUIDE.
 - .4 SEAL ALL JOINTS (NEW AND EXISTING) AIRTIGHT WITH DURO-DYNE S-2 DUCT SEALER OR EQUAL, IN STRICT ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS. PRIOR TO APPLICATION, DUCTWORK TO BE DRY AND FREE OF GREASE, ETC. USE 1/4" BEAD OF MATERIAL ALONG JOINTS. MATERIAL, WHEN DRY, TO HAVE 1/8" DEPTH EXTENDING 1" ON EACH SIDE OF JOINT OR SEAM.
 - .5 SIZE ROUND DUCTS, INSTALLED IN PLACE OF RECTANGULAR DUCTS, FROM ASHRAE TABLE OF EQUIVALENT RECTANGULAR AND ROUND DUCTS.
 - .7 PRIOR TO FABRICATION OF DUCTWORK, CHECK ALL CEILING SPACES AND HEIGHTS FOR CONFLICTION WITH OTHER TRADES.
 - .8 DUCT AND EQUIPMENT SUPPORTS, HANGERS AND INSERTS
 - .1 SUPPORT HORIZONTAL DUCTS ON MAXIMUM 8'-0" CENTRES BY NON-PERFORATED GALV. STEEL, RIVETTED STRAP FOR DUCTWORK 36" (EITHER DIMENSION) OR LESS, AND MINIMUM 1" X 1" X 1/8" GALV. IRON PASSING UNDER DUCTS 37" OR OVER (EITHER DIMENSION) WITH 3/8" DIAM. THREADED RODS SUSPENDING ANGLES FROM STRUCTURE.
 - .2 FOR INSERTS IN EXISTING CONCRETE, USE HILTI H.K.D. STEEL ANCHORS.
 - .9 MANUAL VOLUME DAMPERS TO BE #16 GA. GALV. STEEL, STIFFENED. DAMPERS HARDWARE TO BE DURO-DYNE KS-145, KS-385 OR KS-12 AS RECOMMENDED BY MANUFACTURER.
 - .10 FIRE DAMPERS SHALL CONFORM TO MANITOBA FIRE CODE AND LOCAL AUTHORITIES. ALL FIRE DAMPERS TO BE TYPE 'B', I.E. BLADES OUT OF AIR STREAM.
 - .11 ALUMAVENT IS AN APPROVED MANUFACTURER OF THE MOTORIZED DAMPER. 
- 5.0 TESTING AND BALANCING**
- .1 AIR SYSTEMS SHALL BE BALANCED AND TESTED BY AN INDEPENDENT AIR BALANCE AGENCY (AABC) TO PROVIDE AIR QUANTITIES AS SHOWN. PROVIDE AIR BALANCE REPORT FOR REVIEW BY THE CONTRACT ADMINISTRATOR. SUBMIT TWO COPIES FOR REVIEW UPON COMPLETION. PROVIDE DAMPER STICKER UPON FINAL BALANCING COMPLETION.
 - .2 AIR BALANCE AGENCY SHALL TEST ALL FIRE DAMPERS AND PROVIDE A REPORT FOR REVIEW BY THE CONTRACT ADMINISTRATOR. SUBMIT TWO COPIES FOR REVIEW UPON COMPLETION. THIS WORK SHALL INCLUDE THE FOLLOWING:
 - .1 PROVIDE INSPECTION, VERIFICATION AND TESTING OF ALL FIRE DAMPERS, FIRE/SMOKE DAMPERS, SMOKE CONTROL DAMPERS AND CEILING FIRE STOPS AFTER INSTALLATION. COORDINATE THE WORK WITH VENTILATION AND CONTROLS CONTRACTOR(S).
 - .2 PROVIDE DETAILED VERIFICATION REPORT TO INCLUDE ALL FIRE PROTECTION DEVICES NOTED. REPORT SHALL LIST EACH DEVICE AND VERIFICATION OF ITS OPERATION AND INSTALLATION PER THE REQUIREMENTS SPECIFIED.
 - .3 PROVIDE TWO COPIES OF COMPLETED DRAFT VERIFICATION REPORT TO CONTRACT ADMINISTRATOR FOR REVIEW.
 - .4 INCORPORATE COMMENTS OR CHANGES REQUESTED BY CONTRACT ADMINISTRATOR AND PROVIDE SUFFICIENT NUMBER OF COPIES OF FINAL REPORT TO MECHANICAL SUBTRADE FOR INCLUSION IN OPERATING & MAINTENANCE MANUALS.
 - .5 TESTING SHALL BE PERFORMED AFTER AIR BALANCING HAS BEEN COMPLETED.
 - .6 TEST SHALL INCLUDE FOLLOWING:
 - .1 VISUAL INSPECTION OF EACH DEVICE:
 - .1 CONFIRM APPROPRIATELY RATED DEVICE INSTALLED AND CSA/ULC LABEL AFFIXED AND VISIBLE THROUGH DUCT/CEILING ACCESS DOOR.
 - .2 CONFIRM APPROPRIATE DUCT AND/OR CEILING ACCESS DOOR PROVIDED TO PERMIT SERVICING OF DEVICE. CONFIRM DUCT ACCESS DOOR OPENABLE WITHOUT INTERFERENCE FROM ADJACENT CEILING, PIPES, DUCTS, ETC.
 - .3 CONFIRM DEVICE HAS BEEN INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF THE SPECIFICATIONS, MANUFACTURER'S INSTRUCTIONS AND CODES.
 - .4 CONFIRM PROPER INSTALLATION, CLEARANCES, USE OF PROPER ANGLE FRAMING, USE OF PROPER FASTENERS, USE OF FIRE RATED MATERIAL IN WALL OPENING, LOCATION OF BREAKAWAY JOINTS ETC.
 - .5 CONFIRM THAT DEVICE HAS NOT BEEN PAINTED.
 - .2 OPERATIONAL INSPECTION OF EACH DEVICE TO INCLUDE:
 - .1 MANUAL RELEASE OF FUSIBLE LINK ALLOWING DEVICE TO CLOSE. CONFIRM TIGHT FIT CLOSURE WITHOUT BINDING.
 - .2 CONFIRM THAT APPROPRIATE FUSIBLE LINK IS INSTALLED.
 - .3 RE-OPEN DEVICE AND RESET FUSIBLE LINK CONNECTION.
 - .7 VERIFICATION REPORT SHALL INDICATE GENERAL LOCATION (E.G. ROOM NUMBER OR DESCRIPTION) AND SPECIFIC LOCATION (E.G. NORTH WALL ABOVE CEILING) OF ACCESS DOOR TO DEVICE. REPORT SHALL INCLUDE ITEMIZED VERIFICATION OF FOLLOWING, AS APPROPRIATE, FOR EACH DEVICE:
 - .1 DEVICE IS FULLY ACCESSIBLE.
 - .2 DEVICE HAS BEEN PROPERLY INSTALLED
 - .3 DEVICE HAS BEEN SUCCESSFULLY TESTED.
 - .4 DEVICE HAS BEEN RESET.
 - .5 NAME OF TESTER.
 - .6 DATE DEVICE TESTED SUCCESSFULLY.



NOTES:

1	ISSUED FOR ADDENDUM	EAG	JUNE 14 2021
0	ISSUED FOR CONSTRUCTION	EAG	JUNE 07 2021
No.	REVISION/DESCRIPTION	BY	DATE



DRAWN	EAG	CHECKED	XYW	DESIGNED	XYW	APPROVED	XYW
DATE	2020.06.12	USER	APPROVAL				

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

PROJECT
**VEHICLE REPAIR SHOP
VENTILATION SYSTEM UPGRADE**

195 TECUMSEH ST.
SHEET TITLE

**MECHANICAL SPECIFICATIONS
AND DETAILS**

SCALE	PROJECT No:	SHEET No:
AS SHOWN	2018-120	M3-R1

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