

**GENERAL NOTES**

- REFER TO ARCHITECTURAL, ELECTRICAL & STRUCTURAL DRAWINGS FOR COORDINATION PURPOSES.
- MECHANICAL CONTRACTOR SHALL CAREFULLY REMOVE & RELOCATE EXISTING EQUIPMENT AS PER OWNERS REQUIREMENTS.
- ALL CUTTING & PATCHING OF FLOOR SLABS, WALLS ETC. TO BE PERFORMED BY GENERAL CONTRACTOR.
- ALL WORK SHALL COMPLY IN EVERY RESPECT WITH ALL NATIONAL, PROVINCIAL AND LOCAL CODES AND BY-LAWS, WHICH SHALL BE CONSIDERED PART OF THE SPECIFICATION. IN THE CASE OF CONFLICTING REQUIREMENTS, BE GOVERNED BY THE MOST STRINGENT REGULATIONS.
- ALL INSULATING MATERIALS, METHODS, SIZES AND TYPES OF INSULATION FOR ALL DUCT WORK SHALL BE INSTALLED TO THE REQUIREMENTS OF THE ASHRAE STANDARDS 90.1-2010 "ENERGY STANDARD FOR BUILDING EXCEPT LOW-RISE RESIDENTIAL BUILDING", STANDARD 90.2 "ENERGY EFFICIENT DESIGN OF LOW-RISE RESIDENTIAL BUILDINGS" AND THERMAL INSULATION ASSOCIATION OF CANADA (TIAC) STANDARDS, AND NATIONAL ENERGY CODE OF CANADA (MANITOBA) REQUIREMENTS.

**GENERAL NOTES - PLUMBING**

- MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, INVERTS, ETC. PRIOR TO COMMENCEMENT OF WORK. VERIFY ALL CONNECTION POINTS ON SITE.
- MECHANICAL CONTRACTOR SHALL ALLOW IN HIS TENDER QUOTATION FOR ALL REQUIRED MODIFICATIONS TO EXISTING SYSTEMS (I.E.) RE-ROUTING OF EXISTING PIPING AS DEEMED NECESSARY DUE TO RENOVATION WORK.
- ALL VENT PIPING TO BE INSTALLED AS PER CODE.
- ALL DOMESTIC WATER LINES TO BE INSULATED TO MANITOBA HYDRO POWER SMART REQUIREMENTS AND NATIONAL ENERGY CODE OF CANADA REQUIREMENTS.
- THE MECHANICAL CONTRACTOR SHALL INSTALL PLUMBING SYSTEMS IN COMPLETE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NATIONAL/PROVINCIAL BUILDING CODE, LOCAL PLUMBING CODES, AND MANITOBA OFFICE OF THE FIRE COMMISSIONER REQUIREMENTS.
- PROVIDE APPROPRIATE FIRE-STOPPING MEASURES ON ALL PIPING PENETRATING FIRE SEPARATIONS SUBMIT SHOP DRAWINGS FOR REVIEW. ACCEPTABLE PRODUCT: HILTI, OR EQUAL.
- INSULATE VENT PIPING BACK 10'-0" (3.0 m) FROM ROOF PENETRATIONS IN ALL DIRECTIONS.
- COORDINATE MOUNTING HEIGHT OF ALL FIXTURES ARCHITECTURAL ELEVATIONS.
- ALL SANITARY WASTE & VENT PIPING AND DOMESTIC WATER PIPING SHALL BE CAPABLE OF MEETING OR EXCEEDING THE FLAME SPREAD RATING OF 25 AND DEVELOPED SMOKE RATING OF 50, AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.

**GENERAL NOTES - HVAC**

- MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, ETC. PRIOR TO COMMENCEMENT OF WORK. VERIFY ALL CONNECTION POINTS ON SITE.
- MECHANICAL CONTRACTOR SHALL ALLOW IN HIS TENDER QUOTATION FOR ALL REQUIRED MODIFICATIONS TO EXISTING HVAC SYSTEMS AND EQUIPMENT (I.E.) RE-ROUTING AND RE-BALANCING OF EXISTING DUCTWORK AS DEEMED NECESSARY DUE TO RENOVATION WORK.
- COORDINATE THE EXACT LOCATION OF THE GRILLES AND DIFFUSERS ON SITE WITH THE ELECTRICAL CONTRACTOR, GENERAL CONTRACTOR, ARCHITECTURAL CEILING PLAN, LIGHTING LAYOUT, ETC. TO ENSURE THAT THERE ARE NOT ANY CONFLICTS DURING INSTALLATION.
- PROVIDE BALANCE DAMPER FOR EACH SUPPLY/EXHAUST AIR GRILLE OR DIFFUSER TO ALLOW FOR THE PROPER BALANCING OF THE SYSTEM. PROVIDE OPPOSED BLADE DAMPERS WITH THE DIFFUSER AND ADJUSTABLE FROM THE DIFFUSER FACE WHEN A DUCT MOUNTED BALANCE DAMPER WOULD NOT BE ACCESSIBLE.
- ALL DUCT DIMENSIONS DENOTE INTERNAL "OPEN" AREA OF THE DUCT.
- ALL DUCTWORK PENETRATING THE BUILDING THERMAL ENVELOPE SHALL BE INSULATED A MINIMUM 10'-0" (3.0 m) BACK FROM THE BUILDING PENETRATION, UNLESS OTHERWISE INDICATED.
- REFER TO ARCHITECTURAL DRAWINGS AND PROVIDE FIRE DAMPERS IN ALL WALLS DENOTED AS FIRE SEPARATIONS.
- COORDINATE THE EXACT LOCATIONS OF EQUIPMENT, DUCT OPENINGS, AND DUCT LOCATIONS WITH THE EXISTING STRUCTURE AND THE STRUCTURAL CONSULTANT.
- THE MECHANICAL CONTRACTOR SHALL INSTALL HEATING, VENTILATION, AND AIR CONDITIONING SYSTEMS IN COMPLETE ACCORDANCE WITH THE RECOMMENDATIONS OF THE NATIONAL/PROVINCIAL BUILDING CODE, ASHRAE, SMACNA LATEST EDITION DUCT STANDARDS, AND MANITOBA DEPT. OF LABOUR REQUIREMENTS.
- VENTILATION CONTRACTOR SHALL ENSURE THAT ALL DUCTWORK THAT MAY CONVEY OUTSIDE AIR BE LOCATED A MINIMUM OF 6" (150 MM) AWAY FROM ANY SPRINKLER PIPING. DUCTWORK IN SUCH LOCATIONS SHALL BE PROTECTED WITH A MINIMUM OF 2" (50MM) RIGID DUCT INSULATION WITH VAPOR RETARDING FOIL FINISH. ALTER LOCATION OF DUCTWORK TO SUIT.
- ALL CONTROL / ELECTRICAL WIRING TO MEET OR EXCEED FLAME SPREAD RATING OF 25 AND DEVELOPED SMOKE RATING OF 50 AND BE SUITABLE FOR INSTALLATION IN AIR PLENUMS.
- PROVIDE FLEXIBLE DUCT CONNECTIONS ON ALL CONNECTIONS TO FANS, FURNACES, HRVS, ETC - MINIMUM 4" NEOPRENE.
- PROVIDE ACCESS DOORS IN ALL DUCTWORK AT FIRE DAMPERS, COILS, AND SIMILAR DEVICES TO FACILITATE INSPECTION/TESTING.

VENTILATION SUMMARY (BASED ON ASHRAE STANDARD 62-2010 TABLES 6.1 & 6.4)						
A.) OUTSIDE AIR						
	AREA [m <sup>2</sup> ]	RATE [L/S/FT <sup>2</sup> ]	OCC	OCC RATE [L/S/P]	E <sub>r</sub>	OUTSIDE AIR [L/S]
FURNACE 1						
STAFF ROOM 108	23.23	0.3	4	2.5	0.8	21.2
STORAGE 107	4.64	0.6	0	2.5	0.8	3.5
						TOTAL 24.7
B.) OUTSIDE AIR PERCENTAGE						
	TOTAL OUTSIDE AIR [L/S]	UNIT TOTAL AIR [L/S]	OUTDOOR AIR PERCENTAGE [%]			
* FURNACE 1	274	472	58.1			
* FURNACE F-1 SERVED BY 550 CFM HRV.						
C.) EXHAUST AIR						
	AREA [m <sup>2</sup> ]	HEIGHT [m]	FIX [#]	EXHAUST RATE [L/S/FIX]	EXHAUST AIR [L/S]	
WASHROOM			9	23	212.4	
CRAWLSPACE	88	1.5	1	[ACH]	37.7	
REFER TO CONTROLS SECTION OF SPECIFICATIONS. MINIMUM O/A RATE EXCEEDS ABOVE ASHRAE STANDARD.						

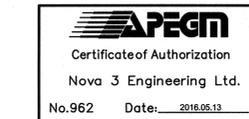
LEGEND - PLUMBING	
	SANITARY LINE ABOVE FLOOR/GRADE
	SANITARY LINE BELOW FLOOR/GRADE
	VENT LINE
	VENT LINE INSULATION
	PUMPED DISCHARGE LINE
	GAS LINE
	DOMESTIC COLD WATER (DCW)
	DOMESTIC HOT WATER (DHW)
	HOT WATER RECIRCULATION (DHWR)
	CLEANOUT
	FLOOR / HUB DRAIN
	PUMP
	SHUT-OFF VALVE
	BALL VALVE
	CHECK VALVE
	MANUAL BALANCING VALVE
	UNION
	PRESSURE REDUCING VALVE
	STRAINER
	PIPE ANCHOR
	WALL HYDRANT
	PRESSURE GAUGE
	THERMOMETER
	DIRECTION OF FLOW

LEGEND - HVAC	
	SUPPLY AIR DIFFUSER
	RETURN AIR GRILLE
	EXHAUST AIR GRILLE
	DOOR GRILLE
	THERMOSTAT
	HUMIDISTAT
	CARBON DIOXIDE DETECTOR
	ON / OFF SWITCH (BY ELECTRICAL)
	DUCTWORK LOCATED IN FLOOR
	BALANCING DAMPER
	FIRE DAMPER
	BACK DRAFT DAMPER
	MOTORIZED DAMPER
	FLEXIBLE DUCT CONNECTION
	THERMAL INSULATION
	ACOUSTIC INSULATION
	GRILLE / DIFFUSER TAG
	EQUIPMENT TAG
	ALTERNATE EQUIPMENT TAG
	DRAWING NOTE TAG

**GRILLES, DIFFUSERS AND LOUVRES SCHEDULE (BASED ON EH PRICE)**

TAG	SIZE	MODEL	NOTES
S1	AS SHOWN	620/F/L/A/B12	FACE SIZES ON DWGS
R1	AS SHOWN	80/F/A/B12	FACE SIZES ON DWGS
E1	AS SHOWN	80/F/A/B12	FACE SIZES ON DWGS
DC1	AS SHOWN	STG1/BF/B15	FACE SIZES ON DWGS

**ISSUED FOR CONSTRUCTION**



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Revision	Description	Date
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Project title: **THE FORKS NHS INFRASTRUCTURE UPGRADES**  
**THE FORKS WINNIPEG, MANITOBA**

Designed by: **MY** / Conçu par  
Drawn by: **MY** / Dessiné par  
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FWGSC Project Manager: **Christina Kovacs** / Administrateur de Projets TPSGC

Drawing title: **MAIN ORIENTATION NODE MECHANICAL CRAWLSPACE PLUMBING**

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