

GENERAL NOTES:

- THESE NOTES ARE TO BE READ IN CONJUNCTION WITH THE PROJECT SPECIFICATIONS.
- DO NOT SCALE DRAWINGS.
- OBSERVE THE CITY OF WINNIPEG POLICIES AND STANDARDS REGARDING FIRE PREVENTION, SAFE WORK, SECURITY, ETC. AS WELL AS APPLICABLE STATUTORY ACTS AND REGULATIONS. PROVIDE ADEQUATE AND APPROPRIATE ACCESS TO WORK FOR WORKERS. PROVIDE ADEQUATE SAFETY BARRICADES AND OTHER PROTECTION AS REQUIRED FOR THE EXECUTION OF THIS WORK.
- THE CONTRACTOR IS REQUIRED TO VERIFY ALL DIMENSIONS AND ELEVATIONS PRIOR TO PROCEEDING WITH CONSTRUCTION / ERECTION OF SYSTEMS OUTLINED IN THESE DRAWINGS AND ASSOCIATED SPECIFICATIONS.
- WHERE THE CONTRACTOR'S INTERPRETATION SUGGESTS A CONFLICT BETWEEN THE PLANS, SPECIFICATION, AND THE ORIGINAL EQUIPMENT MANUFACTURER'S (OEM) RECOMMENDATIONS/REQUIREMENTS THE CONTRACTOR SHALL OBTAIN CLARIFICATION FROM THE CITY OF WINNIPEG BEFORE PROCEEDING WITH ANY WORK.
- THE CONTRACTOR SHALL KEEP RECORDS OF ANY AS-BUILT DIFFERENCES BETWEEN THE INSTALLATION AND THESE DRAWINGS. THESE RECORDS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR AT THE END OF THE JOB.
- THIS DRAWING IS ISSUED IN CONJUNCTION WITH A COMPLETE SET OF PROJECT DRAWINGS AND IS NOT INTENDED TO BE READ OUT OF CONTEXT OF THE REMAINING DRAWINGS OF THAT SET. THE CONTRACTOR SHALL ENSURE THAT A COMPLETE SET OF DRAWINGS AT THE LATEST REVISION IS READILY AVAILABLE AND HAS BEEN REVIEWED BY SUPERVISING PERSONNEL AT THE ONSET OF CONSTRUCTION.

MECHANICAL:

- MECHANICAL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH ORIGINAL EQUIPMENT MANUFACTURER (OEM) REQUIREMENTS AND RECOMMENDATIONS.
- MECHANICAL DEVICES AND EQUIPMENT COMPONENTS SHOWN ON THE DRAWINGS ARE DRAWN REPRESENTATIVE OF THE COMPONENTS SPECIFIED OR PROCURED FOR THIS PROJECT. DIMENSIONS AND DETAILS SHOWN FOR COMPONENTS ARE FOR REFERENCE PURPOSES ONLY.
- MATING CONNECTIONS ON EXISTING OR DISCIPLINE SYSTEMS SHALL BE FIELD VERIFIED TO CONFIRM COMPATIBILITY WITH NEW PIPING INTERFACE. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- COORDINATE CONSTRUCTION OF MECHANICAL WORK WITH OTHER TRADES (ARCHITECTURAL, STRUCTURAL, ELECTRICAL), SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATIONS AND SIZES OF WALL AND FLOOR PENETRATIONS. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF STRUCTURAL MEMBERS.
- WHEN MECHANICAL WORK (HVAC, SHEET METAL, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS.
- SIZES AND LOCATIONS OF ALL FLOOR AND WALL OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED AS REQUIRED.
- FOR CORE DRILL OF EXISTING CONCRETE FLOOR SLAB FOR NEW ROUND DUCTWORK, SCAN CONCRETE SLAB FOR EXISTING REINFORCING TO DETERMINE THE FINAL FLOOR PENETRATION LOCATION PRIOR TO DRILL. PROVIDE DUCTWORK REDUCER ON EACH SIDE OF THE FLOOR AS REQUIRED TO MATCH CORE SIZE.
- WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED. ALL MATERIAL SHALL BE NEW AND BEST OF ITS RESPECTIVE KIND.
- MAINTAIN A MINIMUM 2100mm CLEARANCE TO THE UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES ACROSS THE BUILDING.
- ADEQUATELY SUPPORTED AS AS REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.
- ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- SEAL ALL WALL OPENINGS FOR MECHANICAL EQUIPMENT WITH WEATHER RATED SEALANTS.
- WALL MOUNTED THERMOSTATS SHALL BE INSTALLED AT ELEVATION OF 1320mm ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED ON DRAWINGS.
- MIXING DAMPERS SHALL BE OPPOSITE-BLADE RIGHT ANGLE TYPE. BACKDRAFT AND OPEN-CLOSE SERVICE DAMPERS SHALL BE PARALLEL-BLADE TYPE.

PIPING SYSTEM REGULATIONS:

- PIPING FITTINGS, VALVES, AND RELATED COMPONENTS SHALL BE FABRICATED, TESTED, INSPECTED, REGISTERED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FOLLOWING:
 - WORKPLACE SAFETY AND HEALTH ACT & REGULATIONS
 - NATIONAL BUILDING CODE
 - NATIONAL PLUMBING CODE
- THE QUALITY MANUAL SHALL INCLUDE AS A MINIMUM COLLECTION OF RELEVANT CONSTRUCTION DATA FOR FINAL TURN OVER INCLUDING BUT NOT LIMITED TO:
 - ALL PIPING AND FITTING MATERIAL CERTIFICATES
 - HYDRO-TEST CERTIFICATES

PIPING:

- PIPE, VALVES, FITTINGS, SEALS, AND GASKETS SHALL BE STORED, HANDLED AND INSTALLED IN ACCORDANCE WITH THE ORIGINAL EQUIPMENT MANUFACTURER REQUIREMENTS / RECOMMENDATIONS AND MANITOBA PLUMBING CODE.
- PIPE, FITTINGS AND SOLVENT CEMENT TO BE PROVIDED IN ACCORDANCE WITH THE CSA B137: - RIGID POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS FOR PRESSURE APPLICATIONS.
- DOMESTIC WATER SUPPLY PIPE SHALL BE PVC SCHEDULE 80.
- DOMESTIC WATER SUPPLY FITTINGS SHALL BE PVC SCHEDULE 80 WITH SOLVENT WELD JOINTS.
- PIPING SHALL BE NON-DESTRUCTIVELY TESTED PER APPLICABLE CODE. TEST PRESSURE OF (1) ONE TIMES MAXIMUM SYSTEM OPERATING PRESSURE OR 862 kPa (125 psi).
- ASSEMBLE PIPING USING FITTINGS MANUFACTURED TO ANSI STANDARDS.
- ALL PIPING SHALL BE ADEQUATELY SUPPORTED AS NOTED IN THE PROJECT SPECIFICATIONS AND DRAWINGS.
- ALL VALVES SHALL BE INSTALLED SO AS TO AVOID PINCH POINTS AND OTHER SAFETY HAZARDS DURING ROUTINE OPERATION.
- ALL VALVES SHALL BE OF FULL SIZE OF THE PIPE PRIOR TO REDUCING IF REQUIRED FOR THE CONNECTIONS TO EQUIPMENT.
- A MANUAL SHUTOFF VALVE SHALL BE INSTALLED ON EACH SIDE OF A STRAINER.
- SPRING SUPPORTS SHALL BE PROVIDED WITH TEMPORARY SUPPLEMENTARY SUPPORTS DURING HYDROSTATIC TESTING.
- BACK FLOW PREVENTER WITH ASSOCIATED ISOLATION VALVES SHALL BE INSTALLED AT MAIN FLOOR FOR DOMESTIC COLD WATER SUPPLY AT LOCATION AS SHOWN ON DRAWING. THE LOCATION SHALL BE SUITABLE FOR SAFE ACCESS AND SERVICE.

DOUBLE BACKFLOW PREVENTER:

- CONTRACTOR TO CHECK THE EXISTING BACKFLOW PREVENTER FOR POSSIBLE RE-USE. PROVIDE A NEW ITEM IF THE EXISTING CONDITION AND PERFORMANCE ARE UNSATISFACTORY.
- THE ASSEMBLY SHALL CONSIST OF TWO POSITIVE SEATING CHECK MODULES WITH CAPTURED SPRINGS AND RUBBER SEAT DISCS. THE CHECK MODULE SEATS AND SEAT DISCS SHALL BE REPLACEABLE. SERVICE OF ALL INTERNAL COMPONENTS SHALL BE THROUGH A SINGLE ACCESS COVER SECURED WITH STAINLESS STEEL BOLTS. THE DOUBLE CHECK VALVE ASSEMBLIES SHALL BE CONSTRUCTED USING LEAD FREE CAST COPPER SILICON ALLOY. THE ASSEMBLY SHALL ALSO INCLUDE TWO RESILIENT SEATED ISOLATION VALVES: FOUR TOP MOUNTED, RESILIENT SEATED TEST COCKS. THE ASSEMBLY SHALL MEET THE REQUIREMENTS OF ASSE STD. 1015 AND AWWA STD. C510.
- PRESSURE/TEMPERATURE RATING 1206 kPa (175 psi) AT 40°C (110°F).

PRESSURE REGULATOR:

- REPLACE EXISTING WATER PRESSURE REDUCING VALVE WITH NEW 25mm WATTS SERIES USB MODEL 5M3-Z6 WATER PRESSURE REDUCING VALVE.
- ABLE TO ADJUST INCOMING WATER PRESSURE FROM 172-517 Kpa (25-75 psi).
- STANDARD BRONZE BODY CONSTRUCTION WITH INTEGRAL STAINLESS STEEL STRAINER, REPLACEABLE SEAT MODULE.
- PRESSURE RATING 2068 kPa (300 psi).

SOLENOID VALVE:

- INSTALL NEW 13mm SOLENOID VALVE AT EACH PUMP MECHANICAL SHAFT SEAL DOMESTIC WATER SUPPLY LINE.
- 2 WAY, 2/2 NORMALLY CLOSED (CLOSED WHEN DE-ENERGIZED), VOLTAGE 120 AC.
- MAXIMUM OPERATING PRESSURE 1034 kPa (150 psi).
- THE VALVE TO BE EXPLOSION PROOF.

DRY WELL SUMP PUMP REPLACEMENT:

- EXPLOSION-PROOF HEAVY CAST IRON WITH AN EPOXY POWDER COAT FINISH AND STAINLESS STEEL FASTENERS CONSTRUCTION FOR USE IN CLASS 1, DIV. 1 HAZARDOUS LOCATIONS.
- THE PUMP HP, MAXIMUM CAPACITY, AND MAXIMUM SOLIDS HANDLING SHALL MATCH THE EXISTING SUMP PUMP IN PLACE.

FLOW SWITCH:

- INSTALL NEW 13mm FLOW SWITCH AT EACH PUMP MECHANICAL SHAFT SEAL DOMESTIC WATER SUPPLY LINE.
- 316 STAINLESS STEEL BODY, 13mm (1/2") NPT CONNECTION.
- ADJUSTABLE WITH ADJUSTING SCREW.
- MAXIMUM OPERATING PRESSURE 1034 Kpa (150 psi) AT 21°C (70°F).
- EXPLOSION PROOF NEMA ENCLOSURE, UL LISTED AND CSA APPROVED.
- STANDARD 16 Amp AT 120 VAC SWITCH RATING.
- FLOW SWITCH TO BE EXPLOSION PROOF.

DUCTWORKS:

- ALL CODES, STANDARDS AND REGULATIONS SHALL BE OF THE LATEST EDITION INCLUDING ADDENDA'S AND SUPPLEMENTS:
 - SMACNA HVAC DUCT CONSTRUCTION STANDARDS, METAL AND FLEXIBLE.
 - SMACNA ROUND INDUSTRIAL DUCT CONSTRUCTION STANDARDS.
 - SMACNA RECTANGULAR INDUSTRIAL DUCT CONSTRUCTION STANDARDS.
 - ANSI/NFPA 90A, INSTALLATION OF AIR-CONDITIONING AND VENTILATION SYSTEMS.
 - ANSI/NFPA 90B, INSTALLATION OF WARM AIR HEATING AND AIR-CONDITIONING SYSTEMS.
- FABRICATE ALL DUCTWORK UTILIZING ALUMINUM, TYPE 3003, H-14 TO ASTM B-209. THICKNESS, FABRICATION AND REINFORCEMENT TO SMACNA.
- JOINTS: TO SMACNA OR PROPRIETARY MANUFACTURED DUCT JOINT. PROPRIETARY MANUFACTURED FLANGED DUCT JOINT SHALL BE CONSIDERED A CLASS 'A' SEAL (ACCEPTABLE MATERIAL: DUCTMATE CANADA LTD, EXANNO NEXUS).
- FITTINGS:
 - FOR RECTANGULAR DUCTS RADIUS ED ELBOWS FOR ROUND DUCTS: CENTERLINE RADIUS 1.5 TIMES WIDTH OF DUCT UNLESS INDICATED OTHERWISE.
 - FOR ROUND DUCTS RADIUS ED ELBOWS FOR ROUND DUCTS: SMOOTH RADIUS OR FIVE-PIECE (FOR 90 DEGREES) AND THREE-PIECE (FOR 45 DEGREES. CENTERLINE RADIUS 1.5 TIMES DUCT DIAMETER.
- TRANSITION:
 - DIVERGING: 10° MAXIMUM ANGLE EACH SIDE, 20° MAXIMUM INCLUDED ANGLE FOR SYMMETRICAL FITTINGS.
 - CONVERGING: 22.5° MAXIMUM ANGLE EACH SIDE, 45° MAXIMUM INCLUDED ANGLE FOR SYMMETRICAL FITTINGS.
- AT DAMPER LOCATIONS PROVIDE ACCESS DOOR IN DUCTS: SANDWICH CONSTRUCTION OF SAME MATERIAL AS DUCT, ONE SHEET METAL THICKNESS HEAVIER, MINIMUM 0.6mm THICK. GASKETS: NEOPRENE.
- DUCTWORK SHALL BE INSULATED ACCORDING WITH CAN/ULC-S102:
 - MAXIMUM FLAME SPREAD RATING 25
 - MAXIMUM SMOKE DEVELOPED RATING 50.
 - INSULATION TIAC CODE C-2: GLASS FIBRE BLANKET (16 KG/m³ DENSITY) TO ASTM C553 WITH FOIL-SCRIM-KRAFT (FSK) FACTORY APPLIED VAPOUR RETARDER JACKET TO CGSB 51-GP-52Mg HAVING A MINIMUM PUNCTURE RESISTANCE OF 40 BEACH UNITS (ACCEPTED MATERIAL: KNAUF COMMERCIAL DUCT WRAP).
 - JACKETS: CANVAS, ULC LISTED, 220 g/m² COTTON, PLAIN WEAVE, TREATED WITH DILUTE FIRE RETARDANT LAGGING ADHESIVE TO ASTM C921 AND COMPATIBLE WITH INSULATION.
- SEALANT SHALL BE OIL AND FLAME RESISTANT, POLYMER TYPE. TEMPERATURE RANGE OF -30°C TO +93°C (ACCEPTABLE MATERIAL: DURO DYNE S-2, FOSTER 30-02).
- JOINT TAPE SHALL BE POLYVINYL TREATED, OPEN WEAVE FIBERGLASS, 50mm WIDE, MEETS THE FLAME-RESISTANCE REQUIREMENTS OF CAN/ULC-S109M (ACCEPTABLE MATERIAL DUNO DYNE FT-2).
- HANGERS AND SUPPORTS:
 - HANGER CONFIGURATION FOR RECTANGULAR DUCT: TRAPEZE HANGER TO SMACNA.
 - HANGER CONFIGURATION FOR ROUND DUCT: BAND HANGER PER SMACNA, WITH TOP AND BOTTOM HALVES AND A HANGER ROD ON EACH SIDE OF DUCT.
 - LOWER HANGER ATTACHMENTS FOR RECTANGULAR DUCT: 6061-T6 ALUMINUM ANGLE WITH 304 STAINLESS STEEL RODS TO SMACNA.
 - LOWER HANGER ATTACHMENTS FOR ROUND DUCT: 6061-T6 ALUMINUM BAND WITH 304 STAINLESS STEEL RODS TO SMACNA.
 - UPPER HANGER ATTACHMENTS: PROPRIETARY MANUFACTURED GALVANIZED STEEL STRUT CHANNEL SECURED TO ROOF TRUSS BOTTOM CHORDS OR SUPPLEMENTARY WOOD FRAMING WITH GALVANIZED STEEL LAG SCREWS (ACCEPTABLE MATERIAL: UNISTRUT, CANSTRUT).

DRY WELL DEHUMIDIFIER:

- EXPLOSION-PROOF DESIGN, HIGH-PERFORMANCE AIR-COOLED DX PORTABLE DEHUMIDIFIER.
- MINIMUM WATER REMOVAL PER AHAM 50 PINTS/DAY (24 L/DAY).
- DRAIN HOSE SHALL BE ROUTED TOWARDS EXISTING SUMP PIT AND SAFELY SECURED.

SPACE PRESSURIZATION:

- IN DRY AND WET WELLS THE AIR PRESSURE TO BE MAINTAINED AS NEGATIVE AT APPROX. -25 Pa (-0.1 I.W.C.).
- THE SPACE PRESSURIZATION SHALL BE CONTROLLED THROUGH NEW PRESSURE DIFFERENTIAL TRANSMITTERS INSTALLED ON THE MAIN FLOOR AT DESIGNATED LOCATIONS, PROBING THE AIR PRESSURE FROM BELOW DRY AND WET WELLS. REFER TO HVAC SYSTEM P&ID.
- THE MAIN FLOOR SPACE TO BE KEPT AT POSITIVE PRESSURE OF APPROX. 25 Pa (0.1 I.W.C.) UNDER ALL OPERATING CONDITIONS.



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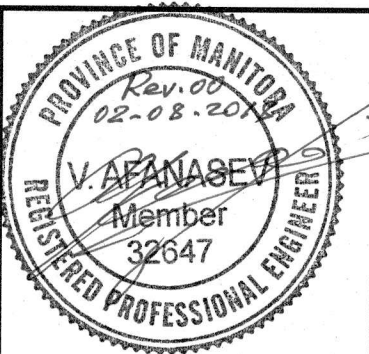
LOCATION APPROVED UNDERGROUND STRUCTURES

SUPR. U/G STRUCTURES DATE COMMITTEE

NOTE: LOCATION OF UNDERGROUND STRUCTURES AS SHOWN ARE BASED ON THE BEST INFORMATION AVAILABLE BUT NO GUARANTEE IS GIVEN THAT ALL EXISTING UTILITIES ARE SHOWN OR THAT THE GIVEN LOCATIONS ARE EXACT. CONFIRMATION OF EXISTENCE AND EXACT LOCATION OF ALL SERVICES MUST BE OBTAINED FROM THE INDIVIDUAL UTILITIES BEFORE PROCEEDING WITH CONSTRUCTION.

B.M. ELEV.	F.B.				
00	ISSUED FOR TENDER	18/08/02	VA		
NO	REVISIONS	DATE	BY	DATE	

DESIGNED BY SA	CHECKED BY SA
DRAWN BY DD	APPROVED BY
HOR. SCALE: N.T.S.	RELEASED FOR CONSTRUCTION
VERTICAL:	DATE



CONSULTANT DRAWING NO. 1800120700-DWG-M0001

		THE CITY OF WINNIPEG WATER AND WASTE DEPARTMENT	
BALTIMORE FLOOD PUMPING STATION UPGRADES		CITY DRAWING NUMBER	
MECHANICAL GENERAL NOTES AND SPECIFICATIONS		SHEET 9 OF 23	
		M0001	