



MAIN FLOOR PLAN
SCALE: 1:100

GENERAL NOTES:

- MECHANICAL CONTRACTOR SHALL VERIFY EXACT LOCATIONS, SIZES, INVERTS, ETC. PRIOR TO TENDER CLOSE AND COMMENCEMENT OF WORK.
- COORDINATE DUCTS RUNS WITH PIPING AND ALL OTHER TRADES. COORDINATE WITH THE HVAC DRAWINGS & ALL OTHER DISCIPLINES.
- MECHANICAL CONTRACTOR SHALL REFER TO ARCHITECTURAL, STRUCTURAL, ELECTRICAL DRAWINGS, EQUIPMENT SUPPLIER SHOP DRAWINGS, ETC... FOR EXACT LOCATIONS OF ALL FIXTURES, EQUIPMENT, ETC...
- ALL INSTALLATIONS ETC. SHALL BE PERFORMED IN ACCORDANCE WITH ALL CODES, REGULATIONS AND AUTHORITIES HAVING JURISDICTION.
- VISIT THE SITE PRIOR TO TENDER CLOSING. ALL CONDITIONS SHALL BE SITE CONFIRMED PRIOR TO START OF ANY NEW MECHANICAL WORK. NO EXTRA COST WILL BE CONSIDERED FOR WORK WHICH WOULD REASONABLY HAVE BEEN ASCERTAINED BY A SITE.
- MINIMUM HEATING/COOLING RUNOUTS SHALL BE 20mm (3/4") UNLESS NOTED OTHERWISE. REFER ALSO TO FAN COIL SCHEDULE.
- THERMOSTATS ARE TO CONTROL MECHANICAL EQUIPMENT FOR THEIR RESPECTIVE ZONES AS SHOWN UNLESS NOTED OTHERWISE.
- REFER TO DETAILS & HEATING SCHEMATIC FOR FURTHER INFORMATION.
- ALL HOUSE KEEPING PADS FOR MECHANICAL EQUIPMENT SHALL EXTEND 100mm (4") FROM EDGE OF MOUNTED EQUIPMENT. COORDINATE FINAL REQUIREMENTS WITH STRUCTURAL.
- COORDINATE WITH THE IN-FLOOR HEATING SUPPLIER FOR ZONE VALVING, MANIFOLDS, INSTALLATION DETAILS, ETC. TO ENSURE A COMPLETE AND FUNCTIONING SYSTEM.
- THIS DRAWING IS TO BE USED AS A GUIDE ONLY. CONTRACTOR AND IN-FLOOR HEATING SUPPLIER SHALL PROVIDE A DETAIL SYSTEM SHOP DRAWINGS FOR REVIEW BY THE ENGINEER PRIOR TO INSTALLATION.

IN-FLOOR PIPING NOTES:

- REFER TO UPONOR RADIANT FLOOR HEATING INSTALLATION MANUAL, CURRENT EDITION.
- THIS DRAWING IS TO BE READ WITH ALL OTHER CONTRACT DOCUMENTS & SPECIFICATIONS.
- ALL TUBING IS WIRSBO hePEX, CROSS-LINKED POLYETHYLENE PEX-a TUBING WITH OXYGEN DIFFUSION BARRIER, UNLESS OTHERWISE NOTED.
- PEX TUBING IS VERY FLEXIBLE. BENDS LESS THAN 12" IN DIAMETER SHOULD BE MADE SLOWLY AND CAREFULLY TO AVOID OVER-BENDING AND POSSIBLY KINKING. BEND SUPPORTS SHOULD BE USED TO MAKE 90° RIGID BENDS THAT ARE OTHERWISE NOT SUPPORTED.
- ALL TUBING RUNS TYPICALLY START AT 4"-6" FROM WALLS OR NAILING SURFACES AND ARE SPACED AT 6" ON CENTRES. REFER TO SCALED LOOP LAYOUT FOR ACTUAL TUBE SPACING.
- INSULATION IS CRUCIAL FOR PROPER AND EFFICIENT OPERATION OF THE RADIANT FLOOR SYSTEM. A MINIMUM INSULATION VALUE OF R10 IS RECOMMENDED IN SLAB ON GRADE APPLICATIONS COMBINED WITH A HIGH WATER TABLE OR MOIST SOIL CONDITIONS AND/OR BEDROCK. SEE NOTE 14 FOR INFORMATION REGARDING THE INSULATION VALUES USED TO DESIGN THIS PROJECT.
- FOR INSTALLATIONS IN CONCRETE FLOORS, A MINIMUM CONCRETE COVERING OF 1 1/2" OVER THE TUBING IS REQUIRED IF THE SLAB IS EXPOSED TO EARTH OR WEATHER. IF THE SLAB IS NOT EXPOSED TO EARTH OR WEATHER, A MINIMUM CONCRETE COVERING OF 3/4" OVER THE TUBING IS ACCEPTABLE. THE MAXIMUM CONCRETE COVER OVER THE TUBING TYPICALLY SHOULD NOT EXCEED 4". FOR CONCRETE SLABS THICKER THAN 4", SPECIAL DESIGN CONSIDERATIONS MAY BE REQUIRED.
- MANIFOLDS SHOULD BE INSTALLED ON AN INTERIOR WALL WHENEVER POSSIBLE. A MANIFOLD INSTALLED ON AN EXTERIOR WALL MAY ENCOUNTER SIGNIFICANT HEAT LOSS. ON AN INTERIOR WALL, TUBING CAN BE ROUTED TO THE FLOOR IN FRONT OF, OR BEHIND THE MANIFOLD.
- MANIFOLDS MAY BE INSTALLED IN EITHER A VERTICAL OR HORIZONTAL POSITION. DO NOT INSTALL THE MANIFOLD UPSIDE-DOWN.
- CONTRACTOR IS TO MEASURE AND RECORD ACCURATE LENGTHS OF TUBING DURING INSTALLATION FOR INITIAL BALANCING PURPOSES.
- FINAL SYSTEM BALANCING IS RECOMMENDED WHEN FACILITY IS OCCUPIED DURING HEATING SEASON.
- HANDLING GUIDELINES: DO NOT USE PEX TUBING WHERE TEMPERATURES AND PRESSURES EXCEED RATINGS. DO NOT USE OR STORE PEX TUBING WHERE IT WILL BE EXPOSED TO DIRECT SUNLIGHT FOR MORE THAN 30 DAYS. DO NOT WELD, GLUE OR USE ADHESIVES OR ADHESIVE TAPES WITH PEX TUBING. DO NOT APPLY OPEN FLAME TO PEX TUBING. DO NOT SOLDER WITHIN 18" OF ANY PEX TUBING IN THE SAME WATER LINE. DO NOT INSTALL PEX TUBING WITHIN 6" OF ANY GAS APPLIANCE VENTS, WITH THE EXCEPTION OF DOUBLE-WALL B-VENTS, WHICH HAVE A MINIMUM CLEARANCE OF 1". DO NOT INSTALL PEX WITHIN 12" OF ANY RECESSED LIGHT FIXTURES, UNLESS THE PEX LINE IS PROTECTED WITH SUITABLE INSULATION. DO NOT SPRAY ON OR ALLOW ORGANIC CHEMICALS, PESTICIDES, STRONG ACIDS OR STRONG BASES TO COME INTO CONTACT WITH PEX TUBING. DO NOT USE PETROLEUM OR SOLVENT-BASED PAINTS ON PEX TUBING. USE ONLY APPROVED AND APPROPRIATE FIRESTOP MATERIALS WITH PEX TUBING.
- MINIMUM INSULATION VALUES USED TO DESIGN THIS PROJECT WERE BASED ON INFORMATION SUBMITTED.

DRAWING NOTES:

- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #1 FOR IN-FLOOR HEATING/COOLING ZONE#1. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #2 FOR IN-FLOOR HEATING/COOLING ZONE#2. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #3 FOR IN-FLOOR HEATING/COOLING ZONE#3. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #4 FOR IN-FLOOR HEATING/COOLING ZONE#4. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #5A/B FOR IN-FLOOR HEATING/COOLING ZONE#5A/B. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #6 FOR IN-FLOOR HEATING/COOLING ZONE#6. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- C/HWS & C/HWR LINES DROPPING DOWN IN WALL TO MANIFOLD #7 FOR IN-FLOOR HEATING/COOLING ZONE#7. INSTALL MANIFOLD RECESSED IN WALL W/ LOCKABLE COVER. PROVIDE FLOOR SLAB SENSOR PER MANIFOLD/IN-FLOOR ZONE. COORDINATE FINAL LOCATION ON SITE WITH ALL OTHER DISCIPLINES.
- REFER TO MANIFOLD SCHEDULE FOR FURTHER INFORMATION. IN-FLOOR HEATING/COOLING IN THIS ZONE TO BE SPACED @ 150mm (6") O.C.
- REFER TO MANIFOLD SCHEDULE FOR FURTHER INFORMATION. IN-FLOOR HEATING/COOLING IN THIS ZONE TO BE SPACED @ 300mm (12") O.C.
- ACTIVE CHILLED BEAM TO BE SUSPENDED EXPOSED FROM STRUCTURE. COORDINATE FINAL LOCATION ON SITE W/ ARCHITECT, INTERIOR DESIGNER, LIGHTING, & ALL OTHER DISCIPLINES.
- ACTIVE CHILLED BEAM TO BE SUSPENDED WITHIN T-BAR CEILING. COORDINATE FINAL LOCATION ON SITE W/ ARCHITECT, INTERIOR DESIGNER, LIGHTING, & ALL OTHER DISCIPLINES.
- ACTIVE CHILLED BEAM TO BE SUSPENDED WITHIN BULKHEAD DRYWALL CEILING. COORDINATE FINAL LOCATION ON SITE W/ ARCHITECT, INTERIOR DESIGNER, LIGHTING, & ALL OTHER DISCIPLINES.
- RADIANT HEATING/COOLING PANEL TO BE SUSPENDED EXPOSED FROM STRUCTURE. COORDINATE FINAL LOCATION ON SITE W/ ARCHITECT, INTERIOR DESIGNER, LIGHTING, & ALL OTHER DISCIPLINES.
- RADIANT HEATING/COOLING PANEL TO BE SUSPENDED WITHIN T-BAR CEILING. COORDINATE FINAL LOCATION ON SITE W/ ARCHITECT, INTERIOR DESIGNER, LIGHTING, & ALL OTHER DISCIPLINES.
- OFFSET IN-FLOOR HEATING PIPING APPROX. 20", OR MORE, FROM TOILET FLANGE WAX RING. CONFIRM FINAL INSTALL ON SITE. TYPICAL FOR ALL WC.
- ELECTRIC FORCE FLOW HEATER TO BE INSTALLED RECESSED IN WALL. ELECTRIC HEATER SHALL BE SUPPLIED & INSTALLED BY ELECTRICAL DIVISION. SIZE SHALL BE AS NOTED. ELECTRIC HEATERS SHALL BE SUPPLIED W/SUITABLE CONTROL/POWER RELAY SO THAT UNIT CAN BE CONTROLLED BY THE BUILDING DDC SYSTEM. COORDINATE W/ ELECTRICAL.
- UNIT HEATER TO BE SUSPENDED FROM STRUCTURE AT HIGH LEVEL C/W VIBRATION ISOLATORS.
- FAN COIL UNIT TO BE SUSPENDED FROM STRUCTURE AT HIGH LEVEL C/W VIBRATION ISOLATORS.
- C/HWS & C/HWR LINES TO BE RUN EXPOSED WITHIN SPACE @ HIGH LEVEL. COORDINATE FINAL LOCATION ON SITE W/ ARCHITECT/INTERIOR DESIGNER.
- PROVIDE RADIANT FLOOR SLAB SURFACE TEMPERATURE & CONDENSATE SENSORS BENEATH CARPET TILE AND CONNECTED TO DDC SYSTEM. COORDINATE FINAL LOCATIONS ON SITE WITH ALL OTHER DISCIPLINES, MECH ENGINEER, ARCHITECT, & OWNER. PROVIDE DETAILED AS-BUILT DRAWINGS AT END OF PROJECT WITH FINAL LOCATIONS & DIMENSIONS TO SENSORS.
- TS & HS FOR ZONE #3 TO BE MOUNTED ON EAST SIDE OF COLUMN OUT OF DIRECT SUNLIGHT.
- DOOR CONTACT SHALL BE USED IN CONJUNCTION W/ DDC SYSTEM TO PROVIDE ALARM IF DOOR IS LEFT OPEN & STOP FLOW TO IN-FLOOR RADIANT COOLING. COORDINATE FINAL REQUIREMENTS W/ ELECTRICAL AND ALL DISCIPLINES.
- DOOR CONTACT SHALL BE USED IN CONJUNCTION W/ DDC SYSTEM TO PROVIDE ALARM IF DOOR IS LEFT OPEN & STOP FLOW TO IN-FLOOR RADIANT COOLING. COORDINATE FINAL REQUIREMENTS W/ ELECTRICAL AND ALL DISCIPLINES.
- DOOR CONTACT SHALL BE USED IN CONJUNCTION W/ DDC SYSTEM TO PROVIDE ALARM IF DOOR IS LEFT OPEN & STOP FLOW TO ACTIVE CHILLED BEAMS IN SPACE. COORDINATE FINAL REQUIREMENTS W/ ELECTRICAL AND ALL DISCIPLINES.
- WINDOW CONTACT SHALL BE USED IN CONJUNCTION W/ DDC SYSTEM TO PROVIDE ALARM IF WINDOW IS OPENED (OR LEFT OPEN) & STOP FLOW TO ACTIVE CHILLED BEAMS IN SPACE. COORDINATE FINAL REQUIREMENTS W/ ELECTRICAL AND ALL DISCIPLINES.
- REFER TO MECHANICAL HEATING SCHEMATIC FOR FURTHER INFORMATION AND PIPING SIZES.
- EXPANSION TANK TO BE SUSPENDED FROM STRUCTURE AT HIGH LEVEL C/W VIBRATION ISOLATORS.
- TEMPERATURE SENSOR LOCATED IN OVERHANG/SOFFT AREA FOR CONTROL OF TF-3 & HC-TF-3.
- TEMPERATURE SENSOR LOCATED IN OVERHANG/SOFFT AREA FOR CONTROL OF TF-4 & HC-TF-4.

TOWER PROJECT NO.: 181335
TOWER ENGINEERING GROUP
 UNIT 11-1140 Waverley St. Winnipeg, MB R3T 0P4
 TEL: (204) 925-1150 FAX: (204) 925-1155
 EMAIL: towereng@towereng.ca WEB: www.towereng.ca
 • WINNIPEG • CALGARY

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MAIN FLOOR - HYDRONIC LAYOUT

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