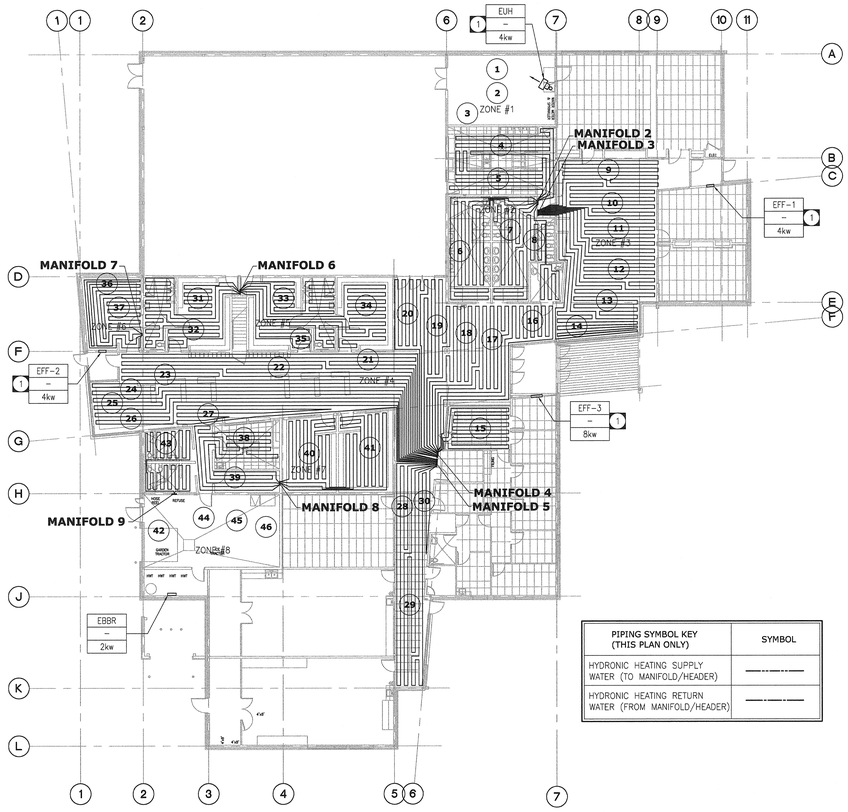
DATE: 2007.11.12 FILE NAME: 6150 M4-1 heating.dwg

ADDRESS: WINNIPEG, MANITOBA PROJECT No: PP&D 2006-065 DESCRIPTION: MAIN FLOOR HEATING



PIPING SYMBOL KEY (THIS PLAN ONLY)	SYMBOL
HYDRONIC HEATING SUPPLY WATER (TO MANIFOLD/HEADER)	
HYDRONIC HEATING RETURN WATER (FROM MANIFOLD/HEADER)	

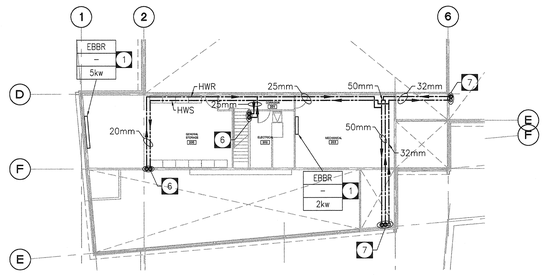
1 M-4.1 MAIN FLOOR PLAN - INFLOOR HEATING SYSTEM PIPING IN FLOOR
SCALE: 1:200

1 M-4.2 MAIN FLOOR PLAN - INFLOOR HEATING SYSTEM PIPING TO MANIFOLDS
SCALE: 1:200

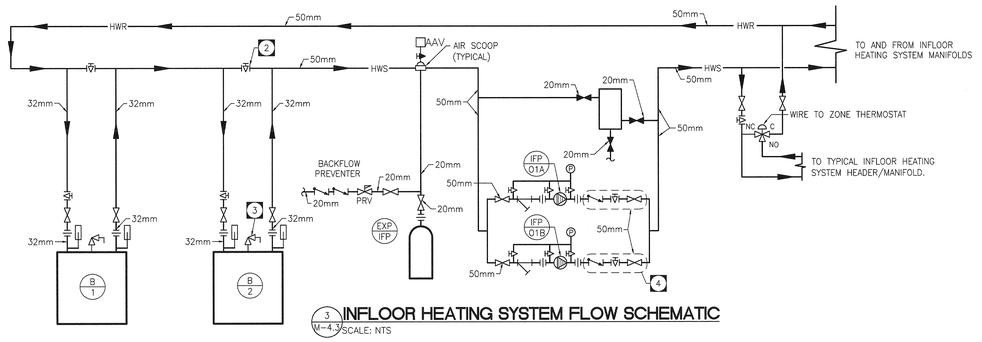
COIL SCHEDULE - ½" hePEX PLUS

MANIFOLD #	LOOP #	LENGTH (FT)	ZONE #	COIL #	HEADER FLOW (USGPM)	HEAD LOSS (FEET)	RADIANT TO ROOM (MBH)	FLOOR DOWNWARD (MBH)	TOTAL ROOM LOAD
1	1	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
	2	N/A		N/A					
	3	N/A		N/A					
2	4	205	2	11	4.1 (1"Ø)	8	15.6	3.9	19.5
	5	201		2					
	6	241		2					
	7	248		2					
	8	254		2					
3	9	234	3	3	5.0 (1"Ø)	8	19.1	4.8	23.9
	10	235		3					
	11	241		3					
	12	246		3					
	13	248		4					
	14	248		4					
4	15	226	4	4	6.8 (1"Ø)	9.4	51.9	13	64.9
	16	233		4					
	17	241		5					
	18	244		5					
	19	235		5					
	20	243		5					
	21	281		6					
	22	283		6					
5	23	281		7	6.8 (1"Ø)	9.4	16.1	4.0	20.1
	24	274		7					
	25	278		8					
	26	281		8					
	27	296		9					
	28	197		6					
	29	197		6					
	30	198		7					
6	31	213	5	7	4.2 (1"Ø)	8	4.6	1.2	5.8
	32	199		8					
	33	193		8					
	34	241		9					
	35	242		9					
7	36	179	6	9	1.2 (3/4"Ø)	3.2	12.1	3.0	15.1
	37	178		10					
8	38	173	7	10	3.2 (3/4"Ø)	8.1	14.5	3.6	18.1
	39	171		10					
	40	278		11					
	41	278		10					
9	42	N/A	8	N/A	0.8 (3/4"Ø)	8.3	4.0	1.0	5.0
	43	304		11					
	44	N/A		N/A					
	45	N/A		N/A					
	46	N/A		N/A					
TOTAL	46	9,652	8	11	32.1	-	137.9	34.5	172.4

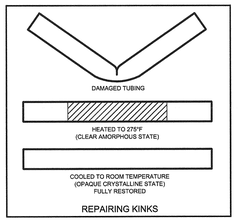
COIL #	LENGTH (FT)
1	N/A
2	1000
3	1000
4	1000
5	1000
6	1000
7	1000
8	1000
9	1000
10	800
11	787
N/A	N/A
TOTAL	9,678



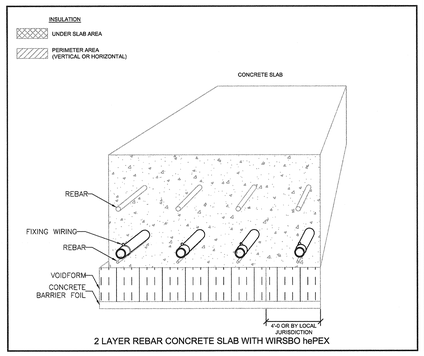
1 M-4.2 PARTIAL MEZZANINE FLOOR HYDRONIC PIPING PLAN
SCALE: 1:200



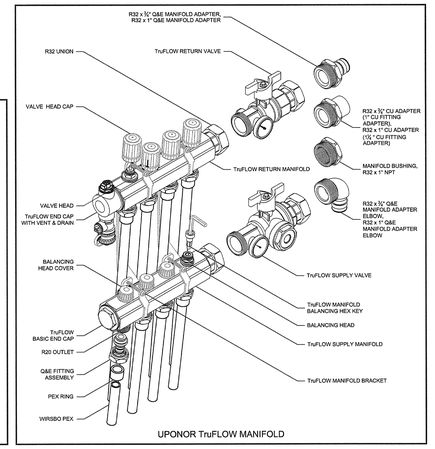
3 M-4.3 INFLOOR HEATING SYSTEM FLOW SCHEMATIC
SCALE: NTS



REPAIRING KINKS



2 LAYER REBAR CONCRETE SLAB WITH WIRSBO hePEX



UPONOR TruFLOW MANIFOLD

GENERAL NOTES:

1) CONTRACTOR SHALL COORDINATE THE LOCATION OF THE HYDRONIC HEATING/COOLING PIPING WITH THE ARCHITECTURAL REFLECTED CEILING PLAN, THE ELECTRICAL LIGHTING PLAN, THE STRUCTURAL PLANS, THE SPRINKLER PLANS, THE CONTRACT ADMINISTRATOR, ETC. TO AVOID CONFLICT ON SITE.
2) PIPE CONDENSATE DRAINS FROM FAN COIL UNITS TO THE NEAREST SUITABLY SIZED DRAIN.
3) THIS FLOW SCHEMATIC IS DIAGRAMMATIC/FUNCTIONAL IN NATURE AND IN SOME CASES SHOWS THE REQUIRED FUNCTIONS AS OPPOSED TO THE ACTUAL DEVICES REQUIRED.
4) INSTALL PIPING TO THE REQUIREMENTS OF THE CURRENT EDITION OF THE UPONOR RADIANT FLOOR HEATING INSTALLATION MANUAL.
5) ALL TUBING SHALL BE WIRSBO HEPEX(TM) PLUS CROSS-LINKED POLYETHYLENE PEX-A TUBING WITH OXYGEN DIFFUSION BARRIER.
6) WIRSBO 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.
7) ALL TUBING RUNS TYPICALLY START AT 6" FROM WALLS OR NAILING SURFACES AND ARE NORMALLY SPACED AT 12" ON CENTRES. SOME AREAS MAY REQUIRE TIGHTER TUBE SPACING DEPENDING ON HEAT LOSS REQUIREMENTS. TUBING RUNS AT 6" ON CENTRES ARE PLACED NEAR EXTERIOR WALLS TO IMPROVE RESPONSE TIME OF THE RADIANT FLOOR SYSTEM. REFER TO SCALED LOOP LAYOUT FOR ACTUAL TUBE SPACING.
8) INSULATION IS CRUCIAL FOR PROPER AND EFFICIENT OPERATION OF THE RADIANT FLOOR SYSTEM. MINIMUM INSULATION VALUES USED TO DESIGN THIS PROJECT ARE AS FOLLOWS: SLAB - R5. EDGE - R5.
9) FOR INSTALLATIONS IN CONCRETE FLOORS, A MINIMUM CONCRETE COVERING OF 3/4" OVER THE TUBING IS ACCEPTABLE. THE MAXIMUM CONCRETE COVER OVER THE TUBING TYPICALLY MUST NOT EXCEED 4".
10) MANIFOLDS SHALL 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.
11) MANIFOLDS MAY BE INSTALLED IN EITHER A VERTICAL OR HORIZONTAL POSITION. DO NOT INSTALL THE MANIFOLD UPSIDE-DOWN.
12) CONTRACTOR IS TO MEASURE AND RECORD ACCURATE LENGTHS OF TUBING DURING INSTALLATION FOR INITIAL BALANCING PURPOSES.
13) FINAL SYSTEM BALANCING IS TO BE DONE WHEN FACILITY IS OCCUPIED DURING HEATING SEASON.
14) THE SYSTEM SHALL BE PRESSURIZED TO AT LEAST 60 PSIG USING WATER OR AIR PRIOR TO AND DURING, THE FINAL FLOOR INSTALLATION. IF PRESSURIZING WITH WATER, PREVENT FREEZING BY USING A SUITABLE PROPYLENE GLYCOL SOLUTION.

NOTES :

THIS DRAWING MUST NOT BE SCALED.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, DATUMS, AND LEVELS PRIOR TO COMMENCEMENT OF WORK. ALL ERRORS AND OMISSIONS TO BE REPORTED TO THE CONTRACT ADMINISTRATOR BEFORE PROCEEDING.

VARIATIONS AND MODIFICATIONS TO WORK SHOWN ON THESE DRAWINGS SHALL NOT BE CARRIED OUT WITHOUT WRITTEN PERMISSION OF THE CONTRACT ADMINISTRATOR.

GENERAL NOTES (CONTINUED):

15) HANDLING GUIDELINES:
- A) DO NOT USE WIRSBO PEX TUBING WHERE TEMPERATURES AND PRESSURES EXCEED RATINGS.
- B) DO NOT USE OR STORE WIRSBO PEX TUBING WHERE IT WILL BE EXPOSED TO DIRECT SUNLIGHT FOR MORE THAN 30 DAYS.
- C) DO NOT WELD, GLUE OR USE ADHESIVES OR ADHESIVE TAPES WITH WIRSBO PEX TUBING.
- D) DO NOT APPLY OPEN FLAME TO WIRSBO PEX TUBING.
- E) DO NOT SOLDER WITHIN 18" OF ANY WIRSBO PEX TUBING IN THE SAME WATER LINE.
- F) DO NOT INSTALL WIRSBO PEX TUBING WITHIN 6" OF ANY GAS APPLIANCE VENTS, WITH THE EXCEPTION OF DOUBLE-WALL B-VENTS WHICH HAVE A MINIMUM CLEARANCE OF 1".
- G) DO NOT INSTALL WIRSBO PEX WITHIN 12" OF ANY RECESSED LIGHT FIXTURES, UNLESS THE PEX LINE IS PROTECTED WITH SUITABLE INSULATION.
- H) DO NOT SPRAY ON OR ALLOW ORGANIC CHEMICALS, PESTICIDES, STRONG ACIDS OR STRONG BASES TO COME INTO CONTACT WITH WIRSBO PEX TUBING.
- I) DO NOT USE PETROLEUM OR SOLVENT-BASED PAINTS ON WIRSBO PEX TUBING.
- J) USE ONLY APPROVED AND APPROPRIATE FIRESTOP MATERIALS WITH WIRSBO PEX TUBING.

DRAWING NOTES:

1. ELECTRIC HEAT BY THE ELECTRICAL SUBCONTRACTOR. (TYPICAL)
2. PROVIDE CALIBRATED BALANCING VALVE WITH FLOW MEASURING PORTS WITH SHUT-OFF CAPABILITY. (TYPICAL)
3. PIPE THE DISCHARGE OF ALL RELIEF VALVES TO THE NEAREST SUITABLY SIZED FLOOR DRAIN (TYPICAL).
4. ARMSTRONG FLOW TREX VALVE (TYPICAL).
5. PIPING TO RISE UP IN WALL. COORDINATE EXACT LOCATION WITH ARCHITECTURAL. REFER TO MEZZANINE PLAN FOR CONTINUATION.
6. PIPING TO DROP DOWN IN WALL. COORDINATE EXACT LOCATION WITH ARCHITECTURAL. REFER TO MAIN PLAN FOR CONTINUATION.
7. PIPING TO DROP DOWN AND RUN IN LOWER CEILING SPACE. CONTRACTOR TO VERIFY ROUTING ON SITE PRIOR TO INSTALLATION. COORDINATE WITH ALL TRADES. REFER TO MAIN PLAN FOR CONTINUATION.
8. PIPING TO RISE UP AND RUN IN LOWER CEILING SPACE. CONTRACTOR TO VERIFY ROUTING ON SITE PRIOR TO INSTALLATION. COORDINATE WITH ALL TRADES. REFER TO MEZZANINE PLAN FOR CONTINUATION.
9. REFER TO FLOW SCHEMATIC FOR CONTINUATION.
10. CONNECT TO INFLOOR MANIFOLD/HEADER. EXACT LOCATION OF MANIFOLD/HEADER TO BE DETERMINED ON SITE WITH THE CONTRACT ADMINISTRATOR. (TYPICAL)
11. PUMP INSTALLED AT CEILING LEVEL.

TOWER PROJECT NO. : 6150
TOWER ENGINEERING GROUP
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architecture + interior design + graphic design

No.	REVISED/ ISSUED/ PLOTTED	DATE
1	DESIGN DEVELOPMENT SUBMISSION	31/AUG./07
2	ISSUED FOR 40% REVIEW	26/OCT./07
3	ISSUED FOR 80% REVIEW	07/DEC./07
4	ISSUED FOR 100% REVIEW	11/JAN./08
5	ISSUED FOR TENDER	18/JAN./08
6		

NO.	REVISION/DESCRIPTION	BY	DATE

SEALS

PROVINCE OF MANITOBA J. ABIUSI Jan 18/08 REGISTERED PROFESSIONAL ENGINEER

APEGM Certificate of Authorization Tower Engineering Group No. 1918 Expiry: April 30, 2008

DRAWN BY LR CHECKED BY LR APPROVED
DATE 2007.11.12 USER APPROVAL

Winnipeg CITY OF WINNIPEG
PLANNING, PROPERTY AND DEVELOPMENT DEPARTMENT
CIVIC ACCOMMODATIONS DIVISION
300 - 65 GARRY ST. R3C 4K4

PROJECT
BRONX PARK COMMUNITY CENTRE
HOME OF
GOOD NEIGHBOURS SENIOR CENTRE
WINNIPEG, MB.

SHEET TITLE
MAIN FLOOR PLAN
IN-FLOOR HEATING LAYOUT

SCALE	PROJECT NO.	SHEET NO.
AS SHOWN	PP&D 2006-065	M-4.1

DRAWING SHEET SIZE: ARCH E1 (42" x 30") PLOT 1:1