

CORPORATION OF THE CITY OF OSHAWA

TRUE COPY

OF PERMIT PLANS

Nov 04 2023

MHP 23021

SITE NAME: ZADORRA ESTATES INC

BUILDER: GREENPARK HOMES

GFA: 2176

DATE: May-23

LO# 101172

WINTER NATURAL AIR CHANGE RATE 0.340

HEAT LOSS ΔT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.094

HEAT GAIN ΔT °F. 11

SB-12 PACKAGE A1

ROOM USE			MBR		ENS		BED-2		BED-3		BED-4		BATH														
EXP. WALL			37		21		27		37		19		8														
CLG. HT.			9		3		9		9		9		9														
FACTORS																											
GRS.WALL AREA			LOSS GAIN		337		191		246		337		173		73												
GLAZING			LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN												
NORTH			20.8	15.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
EAST			20.8	41.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SOUTH			20.8	24.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
WEST			20.8	41.0	22	457	903	14	291	575	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
SKYLT.			36.4	100.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
DOORS			19.6	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
NET EXPOSED WALL			4.4	0.6	315	1371	203	177	772	114	202	879	130	276	1201	178	156	679	101	73	317	47					
NET EXPOSED BSMT WALL ABOVE GR			3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED CLG			1.3	0.6	333	417	186	127	159	71	168	210	94	249	312	139	187	234	104	98	123	55					
NO ATTIC EXPOSED CLG			2.7	1.2	0	0	0	0	0	0	31	83	37	0	0	0	0	0	0	0	0	0	0	0	0	0	
EXPOSED FLOOR			2.5	0.4	0	0	0	0	0	0	199	495	73	0	0	0	0	0	0	12	30	4					
BASEMENT/CRAWL HEAT LOSS					0		0		0		0		0		0		0		0								
SLAB ON GRADE HEAT LOSS					0		0		0		0		0		0		0		0								
SUBTOTAL HT LOSS					2245		1222		2582		2781		1267		470												
SUB TOTAL HT GAIN						1292		760		2140		2737		620		106											
LEVEL FACTOR / MULTIPLIER			0.20	0.25			0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25	0.20	0.25									
AIR CHANGE HEAT LOSS					564		302		638		687		313		116												
AIR CHANGE HEAT GAIN					71		42		117		150		34		6												
DUCT LOSS					0		0		322		0		0		59												
DUCT GAIN					0		0		340		0		0		11												
HEAT GAIN PEOPLE			240	2	480	0	0		1	240	1	240	1	240	0	0											
HEAT GAIN APPLIANCES/LIGHTS					907		0			907		907		907		0											
TOTAL HT LOSS BTU/H					2800		1523		3542		3467		1580		644												
TOTAL HT GAIN x 1.3 BTU/H					3574		1042		4868		5244		2340		160												

ROOM USE			LV/DN			KT/BF			LAUN			PWD			FOY												WOD			BAS		
EXP. WALL			48			34			21			10			39												34			152		
CLG. HT.			10			10			10			10			10												8			8		
GRS.WALL AREA	FACTORS																															
GLAZING	LOSS	GAIN	475			337			208			99			386												282			908		
			LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN		LOSS	GAIN				
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
EAST	20.8	41.0	0	0	0	0	0	0	0	0	0	0	0	0	22	457	903	0	0	0	0	0	0	0	0	0	0	0	0			
SOUTH	20.8	24.4	22	457	537	0	0	0	0	0	0	8	166	195	0	0	0	0	0	0	0	0	0	5	104	12	0	0	0			
WEST	20.8	41.0	33	686	1355	40	831	1642	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	125	248	0	0	0				
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
DOORS	19.6	2.9	0	0	0	10	196	29	21	411	61	0	0	0	23	450	67	0	0	0	0	0	0	0	0	21	411	61				
NET EXPOSED WALL	4.4	0.6	420	1831	271	287	1249	185	187	814	121	91	396	59	341	1486	220	0	0	0	0	0	0	0	0	0	0	0	0			
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	198	696	103	354	1244	18	0	0	0	0	0	0			
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0														4907			
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0														
SUBTOTAL HT LOSS			2973			2276			1225			563			2394			820										6666				
SUB TOTAL HT GAIN					2163		1856				182		254				1190							349					36			
LEVEL FACTOR / MULTIPLIER	0.30	0.41				0.30	0.41		0.30	0.41		0.30	0.41		0.30	0.41										0.50	0.87					
AIR CHANGE HEAT LOSS			1234			944			509			233			993												6522					
AIR CHANGE HEAT GAIN					118		102				10		14				65												35			
DUCT LOSS			0			0			0			0			0												0					
DUCT GAIN					0		0				0		0				0										0					
HEAT GAIN PEOPLE	240		0	0	0	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
HEAT GAIN APPLIANCES/LIGHTS					907		907				0		0				0									0		90				
TOTAL HT LOSS BTU/H			4207			3220			1734			796			3387			820									13188					
TOTAL HT GAIN x 1.3 BTU/H					4144		3724				249		348				1632								454				170			

TOTAL HEAT GAIN BTU/H:

29723

TONS: 2.48

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 40908

TOTAL COMBINED HEAT LOSS BTU/H: 42501

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Nov 04 2023

MHP 23021

SITE NAME: ZADORRA ESTATES INC
BUILDER: GREENPARK HOMES

TYPE: RIVER 1

DATE: May-23

GFA: 2176 LO# 101172

HEATING CFM 928
TOTAL HEAT LOSS 40,908
AIR FLOW RATE CFM 22.68COOLING CFM 928
TOTAL HEAT GAIN 29,407
AIR FLOW RATE CFM 31.47

CHIEF BUILDING OFFICIAL

face pressure 0.6
furnace filter 0.05
face pressure 0.2
coil pressure
available pressure
for s/a & r/a 0.35#GOODMAN
GMEC960603BNA
FAN SPEED 60
LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600DESIGN CFM = 928
CFM @ .6" E.S.P.

TEMPERATURE RISE 57 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	9	7	4
R/A	0	0	5	2	1

All S/A diffusers 4"x10" unless noted otherwise on layout.

All S/A runs 5"Ø unless noted otherwise on layout.

RUN #	1	2	4	5	6	7	8	9	10	13	14	15	16	17	18	19	21	22	23	24
ROOM NAME	MBR	ENS	BED-2	BED-3	BED-4	BATH	BED-2	BED-3	MBR	LV/DN	KT/BF	KT/BF	LV/DN	LAUN	PWD	FOY	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.40	1.52	1.77	1.73	1.58	0.64	1.77	1.73	1.40	2.10	1.61	1.61	2.10	1.73	0.80	3.39	3.50	3.50	3.50	3.50
CFM PER RUN HEAT	32	35	40	39	36	15	40	39	32	48	37	37	48	39	18	77	79	79	79	79
RM GAIN MBH.	1.79	1.04	2.43	2.62	2.34	0.16	2.43	2.62	1.79	2.07	1.86	1.86	2.07	0.25	0.35	1.63	0.54	0.54	0.54	0.54
CFM PER RUN COOLING	56	33	77	83	74	5	77	83	56	65	59	59	65	8	11	51	17	17	17	17
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	34	45	69	63	40	33	73	68	31	27	22	18	19	17	42	42	27	13	26	41
EQUIVALENT LENGTH	170	150	160	170	170	180	170	200	170	90	100	110	120	130	100	120	90	110	110	90
TOTAL EFFECTIVE LENGTH	204	195	229	233	210	213	243	268	201	117	122	128	139	147	142	162	117	123	136	131
ADJUSTED PRESSURE	0.08	0.09	0.08	0.07	0.08	0.08	0.07	0.06	0.09	0.15	0.14	0.13	0.12	0.12	0.12	0.11	0.15	0.14	0.13	0.13
ROUND DUCT SIZE	5	4	6	6	6	4	6	6	5	5	5	5	5	4	4	5	5	5	5	5
HEATING VELOCITY (ft/min)	235	402	204	199	184	172	204	199	235	352	272	272	352	447	207	565	580	580	580	580
COOLING VELOCITY (ft/min)	411	379	393	423	377	57	393	423	411	477	433	433	477	92	126	374	125	125	125	125
OUTLET GRILL SIZE	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	D	A	A	B	B	A	A	C	D	C	C	D	B	B	A	D	D	B	B

RUN #	ROOM NAME	RM LOSS MBH.	CFM PER RUN HEAT	RM GAIN MBH.	CFM PER RUN COOLING	ADJUSTED PRESSURE	ACTUAL DUCT LGH.	EQUIVALENT LENGTH	TOTAL EFFECTIVE LENGTH	ADJUSTED PRESSURE	ROUND DUCT SIZE	HEATING VELOCITY (ft/min)	COOLING VELOCITY (ft/min)	OUTLET GRILL SIZE	TRUNK
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SUPPLY AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	235	0.06	8.8	10	x 8 423	TRUNK G	0	0.00	0	0 x 8 0
TRUNK B	501	0.06	11.6	16	x 8 564	TRUNK H	0	0.00	0	0 x 8 0
TRUNK C	138	0.08	6.7	8	x 8 311	TRUNK I	0	0.00	0	0 x 8 0
TRUNK D	427	0.08	10.2	12	x 8 641	TRUNK J	0	0.00	0	0 x 8 0
TRUNK E	0	0.00	0	0	x 8 0	TRUNK K	0	0.00	0	0 x 8 0
TRUNK F	0	0.00	0	0	x 8 0	TRUNK L	0	0.00	0	0 x 8 0

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	x 8 0	TRUNK X	928	0.05	15.3	28 x 8 597
TRUNK P	0	0.05	0	0	x 8 0	TRUNK Y	475	0.05	11.9	16 x 8 534
TRUNK Q	0	0.05	0	0	x 8 0	TRUNK Z	0	0.05	0	0 x 8 0
TRUNK R	0	0.05	0	0	x 8 0	DROP	928	0.05	15.3	24 x 10 557
TRUNK S	0	0.05	0	0	x 8 0					
TRUNK T	0	0.05	0	0	x 8 0					
TRUNK U	0	0.05	0	0	x 8 0					
TRUNK V	0	0.05	0	0	x 8 0					
TRUNK W	0	0.05	0	0	x 8 0					

RETURN AIR #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
AIR VOLUME	110	105	105	85	85	120	160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	62	51	53	65	41	48	34	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
EQUIVALENT LENGTH	225	180	175	185	135	270	265	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL EFFECTIVE LH	287	231	228	250	176	318	299	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
ADJUSTED PRESSURE	0.05	0.06	0.06	0.06	0.08	0.05	0.05	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80
ROUND DUCT SIZE	6.9	6.5	6.5	6	5.6	7	7.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

TYPE: RIVER 1
SITE NAME: ZADORRA ESTATES INC

CORPORATION OF THE CITY OF OSHAWA

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Nov 04 2023

MHP 23021

RESIDENT

VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES a) ☒ Direct vent (sealed combustion) only b) ☐ Positive venting induced draft (except fireplaces) c) ☐ Natural draft, B-vent or induced draft gas fireplace d) ☐ Solid Fuel (including fireplaces) e) ☐ No Combustion Appliances	SUPPLEMENTAL VENTILATION CAPACITY 9.32.3.5. Total Ventilation Capacity 148.4 cfm Less Principal Ventil. Capacity 79.5 cfm Required Supplemental Capacity 68.9 cfm
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HEATING SYSTEM
☒ Forced Air ☐ Non Forced Air
☐ Electric Space Heat

HOUSE TYPE 9.32.1(2)
☒ I Type a) or b) appliance only, no solid fuel
☐ II Type I except with solid fuel (including fireplaces)
☐ III Any Type c) appliance
☐ IV Type I, or II with electric space heat
☐ Other: Type I, II or IV no forced air

SYSTEM DESIGN OPTIONS O.N.H.W.P.
☐ 1 Exhaust only/Forced Air System
☐ 2 HRV with Ducting/Forced Air System
☒ 3 HRV Simplified/connected to forced air system
☐ 4 HRV with Ducting/non forced air system
☐ Part 6 Design

TOTAL VENTILATION CAPACITY				9.32.3.(1)
Basement + Master Bedroom	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	4	@ 10.6 cfm	42.4	cfm
Other Rooms	3	@ 10.6 cfm	31.8	cfm
Table 9.32.3.A.	TOTAL			148.4 cfm

PRINCIPAL VENTILATION CAPACITY REQUIRED				9.32.3.4.(1)
1	Bedroom	31.8	cfm	
2	Bedroom	47.7	cfm	
3	Bedroom	63.6	cfm	
4	Bedroom	79.5	cfm	
5	Bedroom	95.4	cfm	
TOTAL		79.5	cfm	

PRINCIPAL EXHAUST FAN CAPACITY
Model: VANEE V150H Location: BSMT
79.5 cfm ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	X 74 F	X 1.08	X 0.25

SUPPLEMENTAL FANS		BY INSTALLING CONTRACTOR		
Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	☒	3.5
BATH	BY INSTALLING CONTRACTOR	50	☒	3.5
PWD	BY INSTALLING CONTRACTOR	50	☒	3.5

HEAT RECOVERY VENTILATOR 9.32.3.11.
Model: VANEE V150H
150 cfm high 35 cfm low
75 % Sensible Efficiency @ 32 deg F (0 deg C) ☒ HVI Approved

LOCATION OF INSTALLATION
Lot: Concession
Township: Plan:
Address:
Roll # Building Permit #

BUILDER: GREENPARK HOMES
Name:
Address:
City:
Telephone #: Fax #:

INSTALLING CONTRACTOR
Name:
Address:
City:
Telephone #: Fax #:

DESIGNER CERTIFICATION
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.
Name: HVAC Designs Ltd.
Signature: *Michael O'Rourke*
HRAI # 001820
Date: May-23



MHP 23021

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 101172		Model: RIVER 1		Builder: GREENPARK HOMES			Date: 2023-05-08																																																										
Volume Calculation					Air Change & Delta T Data																																																												
House Volume <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> </thead> <tbody> <tr><td>Bsmt</td><td>997</td><td>8</td><td>8275.1</td></tr> <tr><td>First</td><td>997</td><td>10</td><td>9870.3</td></tr> <tr><td>Second</td><td>1179</td><td>9</td><td>10728.9</td></tr> <tr><td>Third</td><td>0</td><td>9</td><td>0</td></tr> <tr><td>Fourth</td><td>0</td><td>9</td><td>0</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>28,874.3 ft³</td></tr> <tr><td colspan="3" style="text-align: right;">Total:</td><td>817.6 m³</td></tr> </tbody> </table>					Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	997	8	8275.1	First	997	10	9870.3	Second	1179	9	10728.9	Third	0	9	0	Fourth	0	9	0	Total:			28,874.3 ft³	Total:			817.6 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width: 20%;">0.340</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.094</td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th colspan="5" style="text-align: center;">Design Temperature Difference</th> </tr> <tr> <th></th> <th>Tin °C</th> <th>Tout °C</th> <th>ΔT °C</th> <th>ΔT °F</th> </tr> <tr> <td>Winter DTDh</td> <td>22</td> <td>-19</td> <td>41</td> <td>74</td> </tr> <tr> <td>Summer DTDc</td> <td>24</td> <td>30</td> <td>6</td> <td>11</td> </tr> </table>					WINTER NATURAL AIR CHANGE RATE	0.340	SUMMER NATURAL AIR CHANGE RATE	0.094	Design Temperature Difference						Tin °C	Tout °C	ΔT °C	ΔT °F	Winter DTDh	22	-19	41	74	Summer DTDc	24	30	6	11
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)																																																														
Bsmt	997	8	8275.1																																																														
First	997	10	9870.3																																																														
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5.2.3.1 Heat Loss due to Air Leakage $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.340 x 227.12 x 41 °C x 1.2 = 3823 W = 13044 Btu/h					6.2.6 Sensible Gain due to Air Leakage $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ 0.094 x 227.12 x 6 °C x 1.2 = 156 W = 532 Btu/h																																																												
5.2.3.2 Heat Loss due to Mechanical Ventilation $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 74 °F x 1.08 x 0.25 = 1593 Btu/h					6.2.7 Sensible heat Gain due to Ventilation $HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 80 CFM x 11 °F x 1.08 x 0.25 = 236 Btu/h																																																												
5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)																																																																	
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																																	
<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Level</th> <th>Level Factor (LF)</th> <th>HLairve Air Leakage + Ventilation Heat Loss (Btu/h)</th> <th>Level Conductive Heat Loss: (HL_{clevel})</th> <th>Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)</th> </tr> </thead> <tbody> <tr><td>1</td><td>0.5</td><td rowspan="5" style="text-align: center; vertical-align: middle;">13,044</td><td>7,486</td><td>0.871</td></tr> <tr><td>2</td><td>0.3</td><td>9,431</td><td>0.415</td></tr> <tr><td>3</td><td>0.2</td><td>10,566</td><td>0.247</td></tr> <tr><td>4</td><td>0</td><td>0</td><td>0.000</td></tr> <tr><td>5</td><td>0</td><td>0</td><td>0.000</td></tr> </tbody> </table>										Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{clevel})	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)	1	0.5	13,044	7,486	0.871	2	0.3	9,431	0.415	3	0.2	10,566	0.247	4	0	0	0.000	5	0	0	0.000																														
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*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																																	
								Michael O'Rourke BCIN# 19669 																																																									

HEAT LOSS AND GAIN SUMMARY SHEET
MHP 23021
MODEL: RIVER 1

SFQT: 2176

LO#
PER: *C. Moran*
CHIEF BUILDING OFFICIAL

BUILDER: GREENPARK HOMES

SITE: ZADORRA ESTATES INC

DESIGN ASSUMPTIONS

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-2	OUTDOOR DESIGN TEMP.	86
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75
		WINDOW SHGC	0.50

BUILDING DATA

ATTACHMENT:	DETACHED	# OF STORIES (+BASEMENT):	3
FRONT FACES:	EAST	ASSUMED (Y/N):	Y
AIR CHANGES PER HOUR:	3.57	ASSUMED (Y/N):	Y
AIR TIGHTNESS CATEGORY:	AVERAGE	ASSUMED (Y/N):	Y
WIND EXPOSURE:	SHELTERED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	28874.3	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	2.00	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.3 ft
LENGTH: 52.0 ft	WIDTH: 24.0 ft	EXPOSED PERIMETER:	152.0 ft

2012 OBC - COMPLIANCE PACKAGE
Component
**Compliance Package
A1**
Nominal Min. Eff.

Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below grade Minimum RSI (R)-Value	-	-
Edge of Below Grade Slab ≤ 600 mm Below Grade Minimum RSI (R)-Value	10	10
Heated Slab or Slab ≤ 600 mm below grade Minimum RSI (R)-Value	10	11.13
Windows and Sliding Glass Doors Maximum U-Value	0.28	-
Skylights Maximum U-Value	0.49	-
Space Heating Equipment Minimum AFUE	96%	-
HRV/ERV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

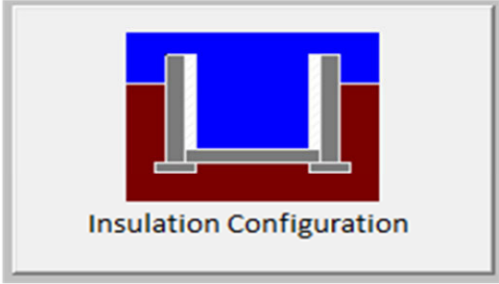
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

Michael O'Rourke

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Oshawa	
Site Description		
Soil Conductivity:	Normal conductivity: dry sand, loam, clay	
Water Table:	Normal (7-10 m, 23-33 ft)	
Foundation Dimensions		
Floor Length (m):	15.8	 Insulation Configuration
Floor Width (m):	7.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.5	
Depth Below Grade (m):	1.62	
Window Area (m ²):	1.0	
Door Area (m ²):	2.0	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1438

TYPE: RIVER 1
LO# 101172

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Oshawa			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	817.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1089.9 cm ²		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	37.5	37.5		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.340			
Cooling Air Leakage Rate (ACH/H):	0.094			

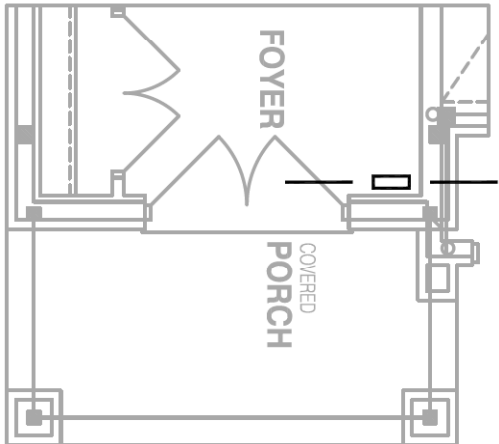
TYPE: RIVER 1

LO# 101172

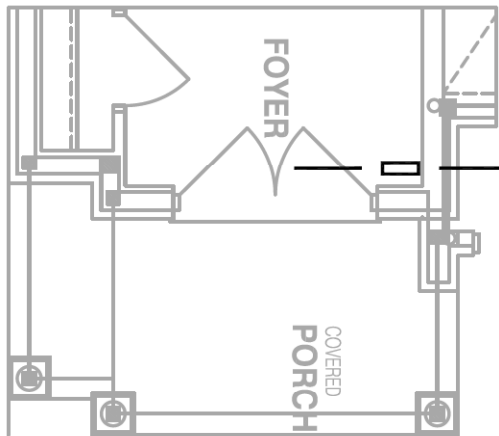
Sheet Title	
BASEMENT HEATING LAYOUT	
Date	MAY/2023
Scale	3/16" = 1'-0"
BCIN# 19669	
LO#	101172

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 04 2023
PER: *CM*
CHIEF BUILDING OFFICIAL

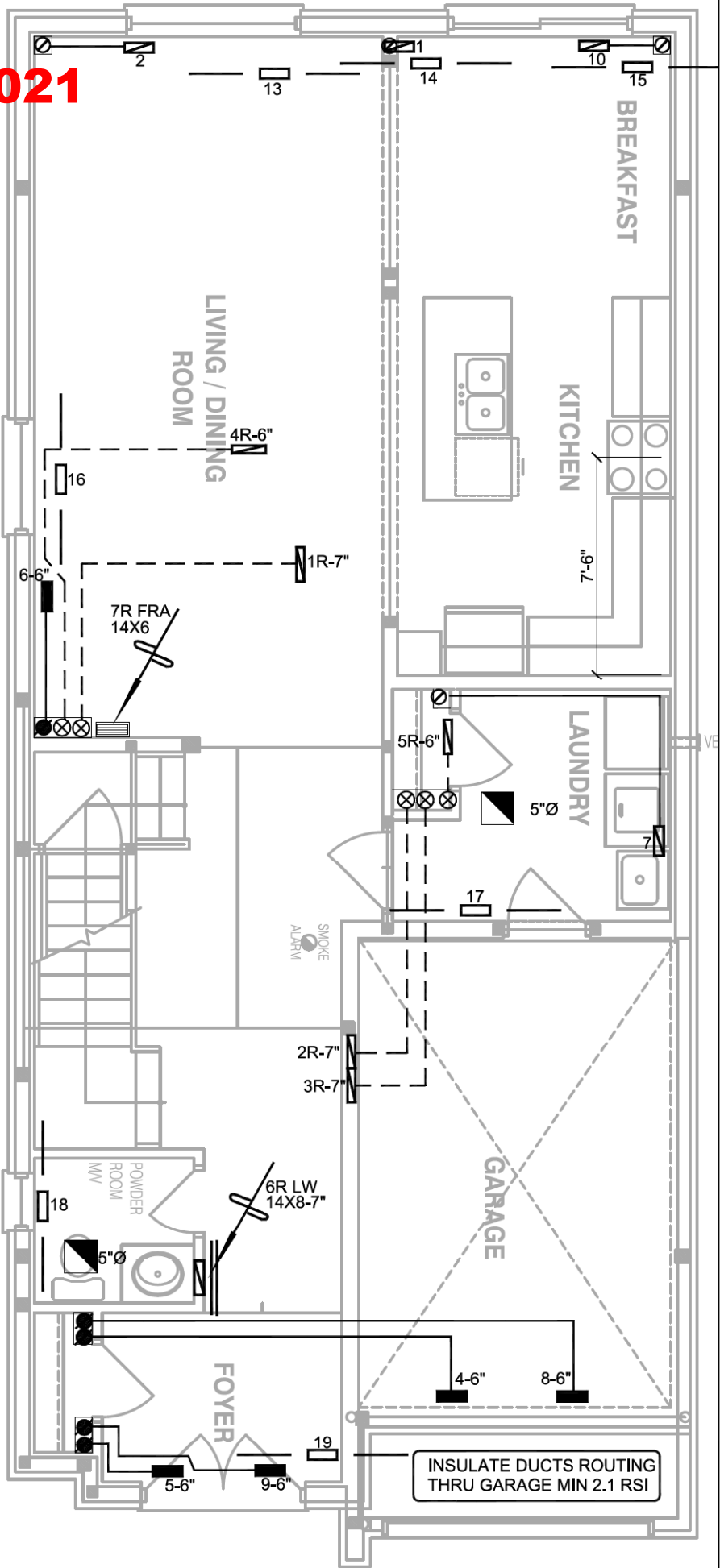
MHP 23021



FIRST FLOOR PLAN-3



FIRST FLOOR PLAN-2

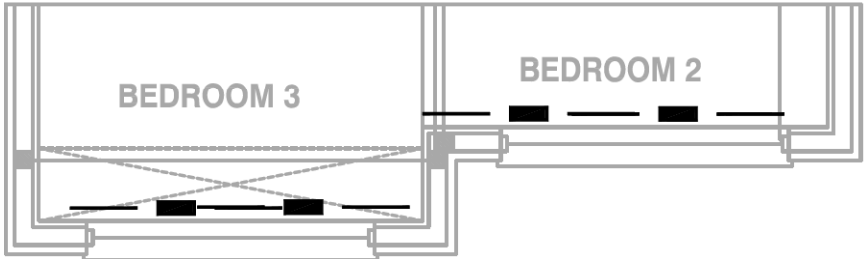


FIRST FLOOR PLAN-1

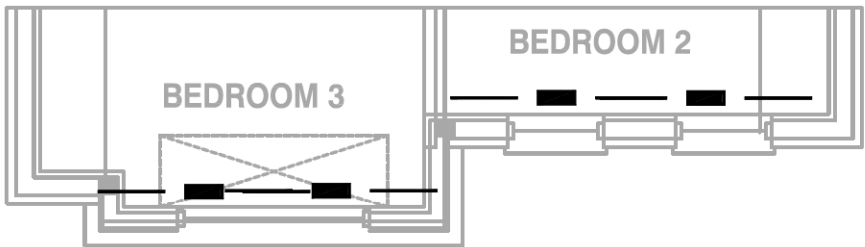
HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS			
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Client		375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: Info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing In Residential Mechanical Design Services Installation to comply with the latest Ontario Building Code. All supply branch outlets shall be equipped with a manual balancing damper. Ductwork which passes through the garage or unheated spaces shall be adequately insulated and be gas-proofed.				Michael O'Rourke BCIN # 19669 HVAC Designs Ltd.				Sheet Title	
Project Name										FIRST FLOOR HEATING LAYOUT	
ZADORRA ESTATES INC OSHAWA, ONTARIO										Date	MAY/2023
										Scale	3/16" = 1'-0"
						BCIN# 19669					
RIVER 1		2176 sqft						LO#	101172		

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 04 2023
PER: *C. Mura*
CHIEF BUILDING OFFICIAL

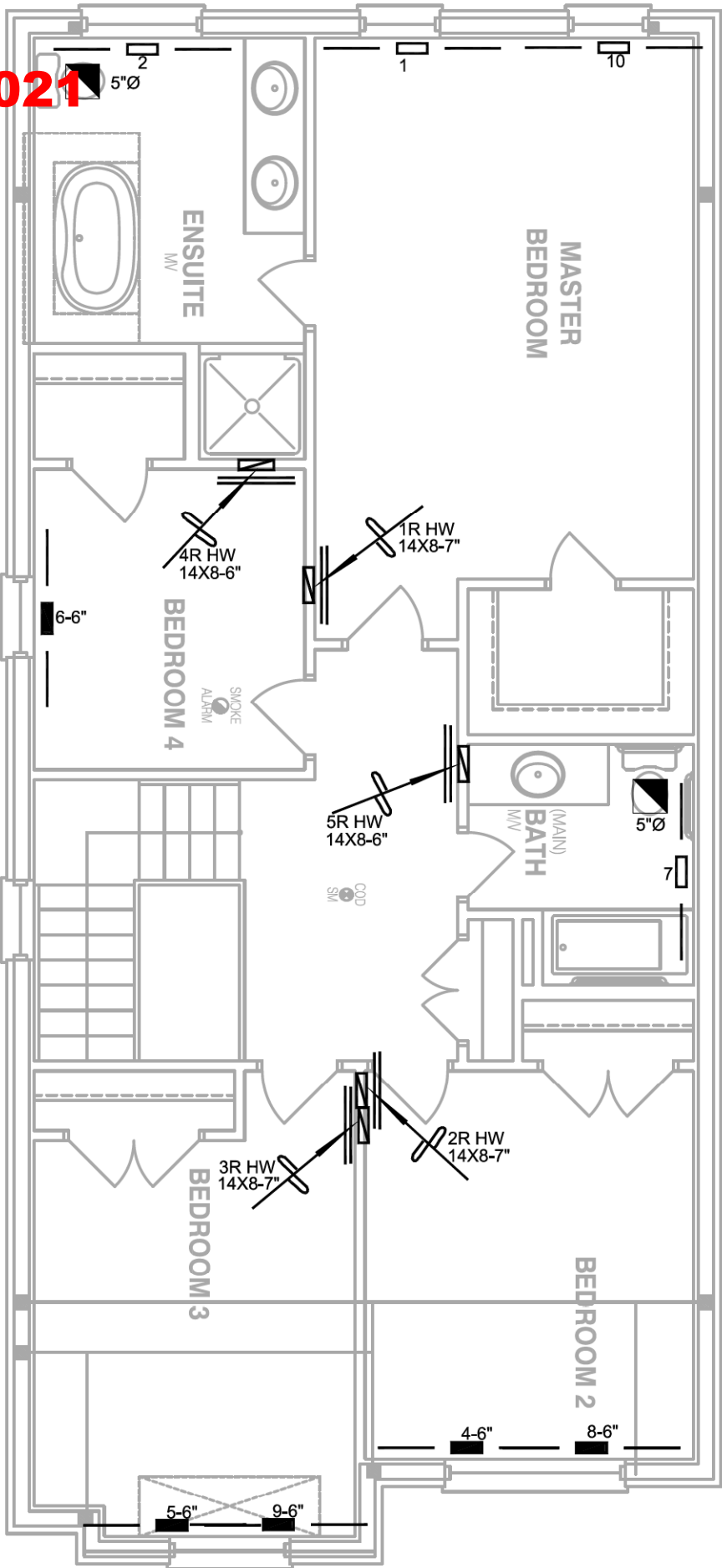
MHP 23021



SECOND FLOOR PLAN-3



SECOND FLOOR PLAN-2



SECOND FLOOR PLAN-1

HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date
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Project Name									SECOND FLOOR HEATING LAYOUT	
ZADORRA ESTATES INC OSHAWA, ONTARIO		Date MAY/2023								
RIVER 1 2176 sqft		Scale 3/16" = 1'-0"								
		BCIN# 19669								
						LO# 101172				