

Nov 04 2023

PER:

CHIEF BUILDING OFFICIAL

MHP 23035

SITE NAME: ZADORRA ESTATES INC

BUILDER: GREENPARK HOMES

TYPE: VILLA 3

GFA: 2613

DATE: Jul-23

LO# 101807

WINTER NATURAL AIR CHANGE RATE 0.342 ✓

SUMMER NATURAL AIR CHANGE RATE 0.094

HEAT LOSS ΔT °F. 74

HEAT GAIN ΔT °F. 11

CSA-F280-12

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	HALL	ENS-2
			30	29	5	29	33	11	5	13	6
			9	9	9	9	9	9	9	9	9
FACTORS											
GRS.WALL AREA	LOSS	GAIN	273	264	46	264	300	100	46	118	55
GLAZING	LOSS	GAIN									
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0
EAST	20.8	41.0	0	0	0	52	1080	2134	41	852	1683
SOUTH	20.8	24.4	0	0	0	0	0	0	18	374	439
WEST	20.8	41.0	18	374	739	16	332	657	0	0	0
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0
DOORS	19.6	2.9	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.4	0.6	255	1111	165	233	1015	150	46	198	29
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	274	343	153	168	210	94	41	51	23
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	36	97	43
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	181	451	67
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1828	1869	250	2733	2350	958	409	1291	415
SUB TOTAL HT GAIN			1056	1267	52	2462	1977	593	86	678	229
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
AIR CHANGE HEAT LOSS	460		471	63	688	592	241	103	325	105	13
AIR CHANGE HEAT GAIN	62		74	3	143	115	35	5	39	0	0
DUCT LOSS	0		0	0	0	342	294	0	51	162	0
DUCT GAIN	0		0	0	0	347	296	0	9	72	0
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	0
HEAT GAIN APPLIANCES/LIGHTS			630	0	0	630	630	630	0	0	0
TOTAL HT LOSS BTU/H			2289	2340	312	3763	3236	1200	563	1778	520
TOTAL HT GAIN x 1.3 BTU/H			2896	1743	72	4969	4236	1946	131	1025	316

ROOM USE	EXP. WALL	CLG. HT.	DIN	KT/BF	FAM	LAUN	PWD	FOY	MUD	WOD	BAS
			21	36	36	9	7	49	22	38	170
			10	10	10	9	10	10	10	9	9
FACTORS											
GRS.WALL AREA	LOSS	GAIN	212	364	364	82	71	495	222	323	1049
GLAZING	LOSS	GAIN									
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0
EAST	20.8	41.0	0	0	0	0	0	22	457	903	0
SOUTH	20.8	24.4	25	519	610	0	0	0	0	0	0
WEST	20.8	41.0	0	0	0	61	1267	2504	22	457	903
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0
DOORS	19.6	2.9	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.4	0.6	187	815	121	303	1318	195	342	1488	221
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	86	108	48
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS			0	0	0	0	0	0	0	0	0
SLAB ON GRADE HEAT LOSS			0	0	0	0	0	0	0	0	0
SUBTOTAL HT LOSS			1335	2586	1945	465	308	2852	1288	801	7661
SUB TOTAL HT GAIN			731	2699	1124	101	46	1258	191	119	460
LEVEL FACTOR / MULTIPLIER	0.30	0.46	0.30	0.46	0.30	0.46	0.30	0.46	0.30	0.46	0.50
AIR CHANGE HEAT LOSS	614		1190	895	117	142	1313	593	7912	34	0
AIR CHANGE HEAT GAIN	43		157	65	6	3	73	11	0	0	0
DUCT LOSS	0		0	0	0	0	0	0	0	0	0
DUCT GAIN	0		0	0	0	0	0	0	0	0	0
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS			630	630	630	630	630	0	0	0	630
TOTAL HT LOSS BTU/H			1949	3776	2841	582	450	4165	1880	801	15573
TOTAL HT GAIN x 1.3 BTU/H			1824	4532	2364	957	63	1731	263	154	1460

TOTAL HEAT GAIN BTU/H:

30918

TONS: 2.58

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 48018

TOTAL COMBINED HEAT LOSS BTU/H: 49611

Michael O'Rourke



MHP 23035

SITE NAME: ZACORRA

BUILDER: GREENPARK HOMES INC. (PENDING OFFICIAL)

TYPE: VILLA 3

DATE: Jul-23

GFA: 2613

LO# 101807

HEATING CFM	928	COOLING CFM	928
TOTAL HEAT LOSS	48,018	TOTAL HEAT GAIN	30,682
AIR FLOW RATE CFM	19.33	AIR FLOW RATE CFM	30.25

furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
available pressure for s/a & r/a 0.35

plenum pressure s/a 0.18
max s/a dif press. loss 0.02
min adjusted pressure s/a 0.16

r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15

#GOODMAN
GMEC960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131

AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600

DESIGN CFM = 928
CFM @ .6" E.S.P.

TEMPERATURE RISE 57 °F

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

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

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	14	8	4
R/A	0	0	5	1	1

RUN #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	BATH	HALL	BED-2	MBR	ENS-2	BED-3	DIN	KT/BF	KT/BF	FAM	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.14	1.17	0.31	1.88	1.62	1.20	0.56	1.78	1.88	1.14	0.52	1.62	1.95	1.89	1.89	1.42	0.58	0.45	4.17	1.88	4.09	4.09	4.09	4.09
CFM PER RUN HEAT	22	23	6	36	31	23	11	34	36	22	10	31	38	36	36	27	11	9	81	36	79	79	79	79
RM GAIN MBH.	1.45	0.87	0.07	2.48	2.12	1.95	0.13	1.03	2.48	1.45	0.32	2.12	1.82	2.27	2.27	1.18	0.96	0.06	1.73	0.26	0.40	0.40	0.40	0.40
CFM PER RUN COOLING	44	26	2	75	64	59	4	31	75	44	10	64	55	69	69	36	29	2	52	8	12	12	12	12
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	35	48	30	48	56	38	44	36	51	39	34	60	18	23	30	36	36	20	37	12	32	26	16	33
EQUIVALENT LENGTH	180	210	150	130	170	170	170	120	140	180	180	200	90	130	130	160	140	150	100	130	90	100	80	130
TOTAL EFFECTIVE LENGTH	215	258	180	178	226	208	214	156	191	219	214	260	108	153	160	196	176	170	137	142	122	126	96	163
ADJUSTED PRESSURE	0.08	0.07	0.1	0.1	0.08	0.08	0.08	0.11	0.09	0.08	0.08	0.07	0.16	0.11	0.11	0.09	0.1	0.1	0.12	0.12	0.14	0.14	0.18	0.11
ROUND DUCT SIZE	5	4	4	6	6	6	4	4	6	5	4	6	5	5	5	4	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	162	264	69	184	158	117	126	390	184	162	115	158	279	264	264	310	126	103	595	413	580	580	580	580
COOLING VELOCITY (ft/min)	323	298	23	382	326	301	46	356	382	323	115	326	404	507	507	413	333	23	382	92	88	88	88	88
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	A	A	C	E	D	B	E	E	E	A	B	D	C	A	A	A	C	E	D	C	B	B	C	D

RUN #	26	27
ROOM NAME	FAM	ENS
RM LOSS MBH.	1.42	1.17
CFM PER RUN HEAT	27	23
RM GAIN MBH.	1.18	0.87
CFM PER RUN COOLING	36	26
ADJUSTED PRESSURE	0.17	0.17
ACTUAL DUCT LGH.	27	36
EQUIVALENT LENGTH	150	160
TOTAL EFFECTIVE LENGTH	177	196
ADJUSTED PRESSURE	0.1	0.09
ROUND DUCT SIZE	4	4
HEATING VELOCITY (ft/min)	310	264
COOLING VELOCITY (ft/min)	413	298
OUTLET GRILL SIZE	3X10	3X10
TRUNK	A	B

SUPPLY AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY		TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)		CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK A	193	0.07	7.8	10	x	8	347		TRUNK G	0	0.00	0	0	x	8
TRUNK B	407	0.07	10.4	14	x	8	523		TRUNK H	0	0.00	0	0	x	8
TRUNK C	577	0.07	11.8	18	x	8	577		TRUNK I	0	0.00	0	0	x	8
TRUNK D	222	0.07	8.3	8	x	8	500		TRUNK J	0	0.00	0	0	x	8
TRUNK E	348	0.07	9.8	12	x	8	522		TRUNK K	0	0.00	0	0	x	8
TRUNK F	0	0.00	0	0	x	8	0		TRUNK L	0	0.00	0	0	x	8

RETURN AIR TRUNK SIZE

	TRUNK	STATIC	ROUND	RECT			VELOCITY
	CFM	PRESS.	DUCT	DUCT			(ft/min)
TRUNK O	0	0.06	0	0	x	8	0
TRUNK P	0	0.06	0	0	x	8	0
TRUNK Q	0	0.06	0	0	x	8	0
TRUNK R	0	0.06	0	0	x	8	0
TRUNK S	0	0.06	0	0	x	8	0
TRUNK T	0	0.06	0	0	x	8	0
TRUNK U	0	0.06	0	0	x	8	0
TRUNK V	0	0.06	0	0	x	8	0
TRUNK W	0	0.06	0	0	x	8	0
TRUNK X	928	0.06	14.7	26	x	8	642
TRUNK Y	580	0.06	12.3	18	x	8	580
TRUNK Z	170	0.06	7.8	8	x	8	383
DROP	928	0.06	14.7	24	x	10	557

RETURN AIR #	1	2	3	4	5	6										BR
AIR VOLUME	90	85	85	100	85	325	0	0	0	0	0	0	0	0	0	158
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
ACTUAL DUCT LGH.	49	61	60	31	61	33	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	135	195	200	135	190	185	0	0	0	0	0	0	0	0	0	140
TOTAL EFFECTIVE LH	184	256	260	166	251	218	1	1	1	1	1	1	1	1	1	154
ADJUSTED PRESSURE	0.08	0.06	0.06	0.09	0.06	0.07	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	5.7	6	6	5.7	6	9.5	0	0	0	0	0	0	0	0	0	6.6
INLET GRILL SIZE	8	8	8	8	8	8	0	0	0	0	0	0	0	0	0	8
	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	30	0	0	0	0	0	0	0	0	0	14

Nov 04 2023

PER: VILLA 3
CHIEF BUILDING OFFICIAL

ZADORRA ESTATES INC

MHP 23035

TYPE:
SITE NAME:

LO # 101807

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

COMBUSTION APPLIANCES		9.32.3.1(1)
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	

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		9.32.3.3(1)
Basement + Master Bedroom	<u>2</u> @ 21.2 cfm	<u>42.4</u> cfm
Other Bedrooms	<u>3</u> @ 10.6 cfm	<u>31.8</u> cfm
Kitchen & Bathrooms	<u>5</u> @ 10.6 cfm	<u>53</u> cfm
Other Rooms	<u>4</u> @ 10.6 cfm	<u>42.4</u> cfm
Table 9.32.3.A.	TOTAL	<u>169.6</u> 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		<u>79.5</u> ✓ cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	<u>169.6</u>	cfm
Less Principal Ventil. Capacity	<u>79.5</u> ✓	cfm
Required Supplemental Capacity	<u>90.1</u>	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model:	VANEE V150H
Location:	BSMT
<u>79.5</u> 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
ENS-2	BY INSTALLING CONTRACTOR	50	✓	3.5
PWD	BY INSTALLING CONTRACTOR	50	✓	3.5

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

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:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	July-23

I REVIEW AND TAKE RESPONSIBILITY FOR THE DESIGN WORK AND AM QUALIFIED IN THE APPROPRIATE CATEGORY AS AN "OTHER DESIGNER" UNDER DIVISION C, 3.2.5 OF THE BUILDING CODE.

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 101807		Model: VILLA 3		Builder: GREENPARK HOMES			Date: 2023-07-11																																																										
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>1147</td> <td>9</td> <td>9749.5</td> </tr> <tr> <td>First</td> <td>1147</td> <td>10</td> <td>11584.7</td> </tr> <tr> <td>Second</td> <td>1484</td> <td>9</td> <td>13504.4</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="2" style="text-align: right;">Total:</td> <td></td> <td>34,838.6 ft³</td> </tr> <tr> <td colspan="2" style="text-align: right;">Total:</td> <td></td> <td>986.5 m³</td> </tr> </tbody> </table>					Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1147	9	9749.5	First	1147	10	11584.7	Second	1484	9	13504.4	Third	0	9	0	Fourth	0	9	0	Total:			34,838.6 ft³	Total:			986.5 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%;">0.342</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">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	0.342	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	1147	9	9749.5																																																														
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5.2.3.1 Heat Loss due to Air Leakage $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.342 x 274.03 x 41 °C x 1.2 = 4638 W = 15824 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 274.03 x 6 °C x 1.2 = 189 W = 645 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;">15,824</td> <td>8,462</td> <td>0.935</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>10,314</td> <td>0.460</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>12,569</td> <td>0.252</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> *HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0										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	15,824	8,462	0.935	2	0.3	10,314	0.460	3	0.2	12,569	0.252	4	0	0	0.000	5	0	0	0.000																														
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					Michael O'Rourke BCIN# 19669 																																																												

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: VILLA 3
SFQT: 2613
LO# 101807

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):	34838.6	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.50	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.5 ft
LENGTH: 56.0 ft	WIDTH: 29.0 ft	EXPOSED PERIMETER:	170.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component

Compliance Package A1

Nominal Min. Eff.

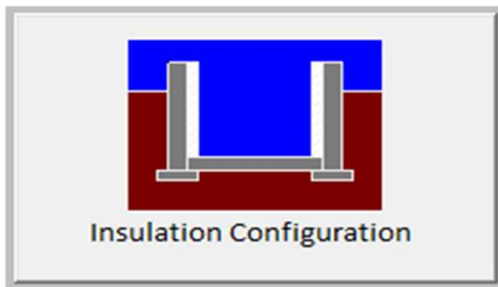
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below 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):	17.1	 Insulation Configuration
Floor Width (m):	8.8	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.68	
Window Area (m ²):	0.8	
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):		1662

TYPE: VILLA 3
 LO# 101807

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):	7.68		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	986.5		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1315.1 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
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.342		
Cooling Air Leakage Rate (ACH/H):	0.094		

TYPE: VILLA 3

LO# 101807

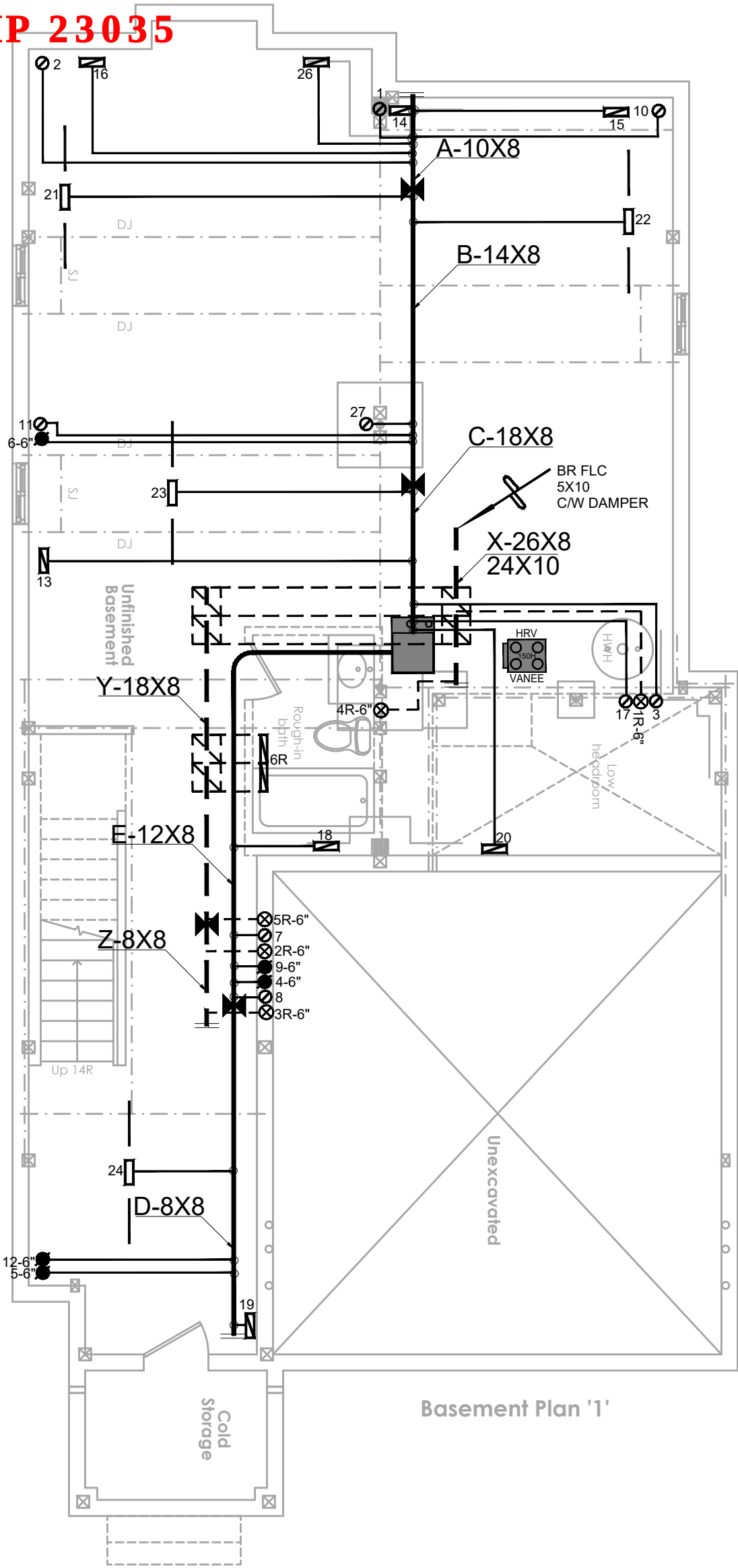
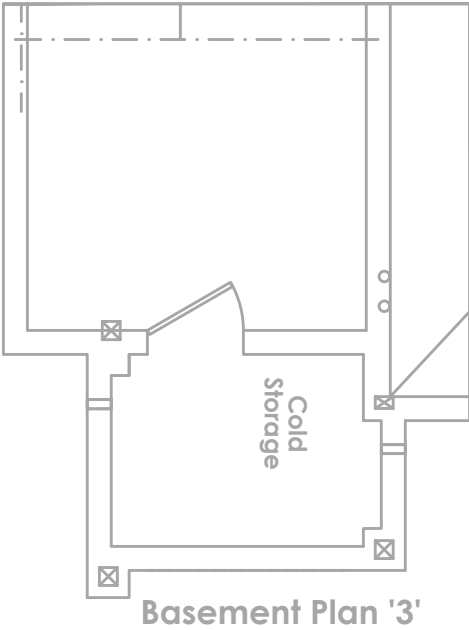
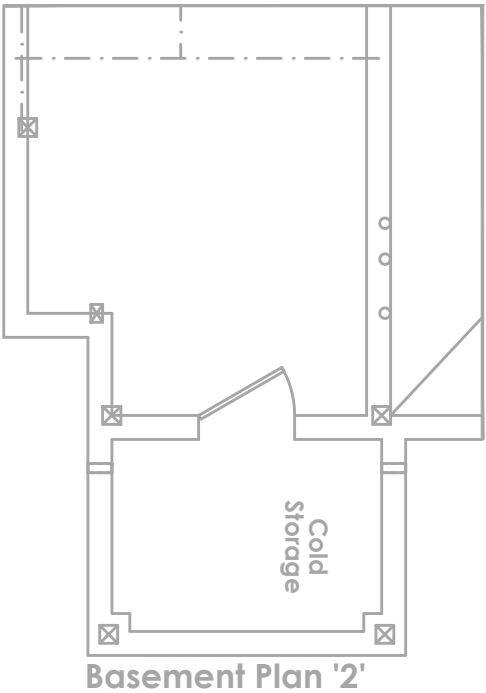
Michael O'Rourke BCIN# 19669

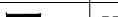


CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 04 2023
PER: 
CHIEF BUILDING OFFICIAL

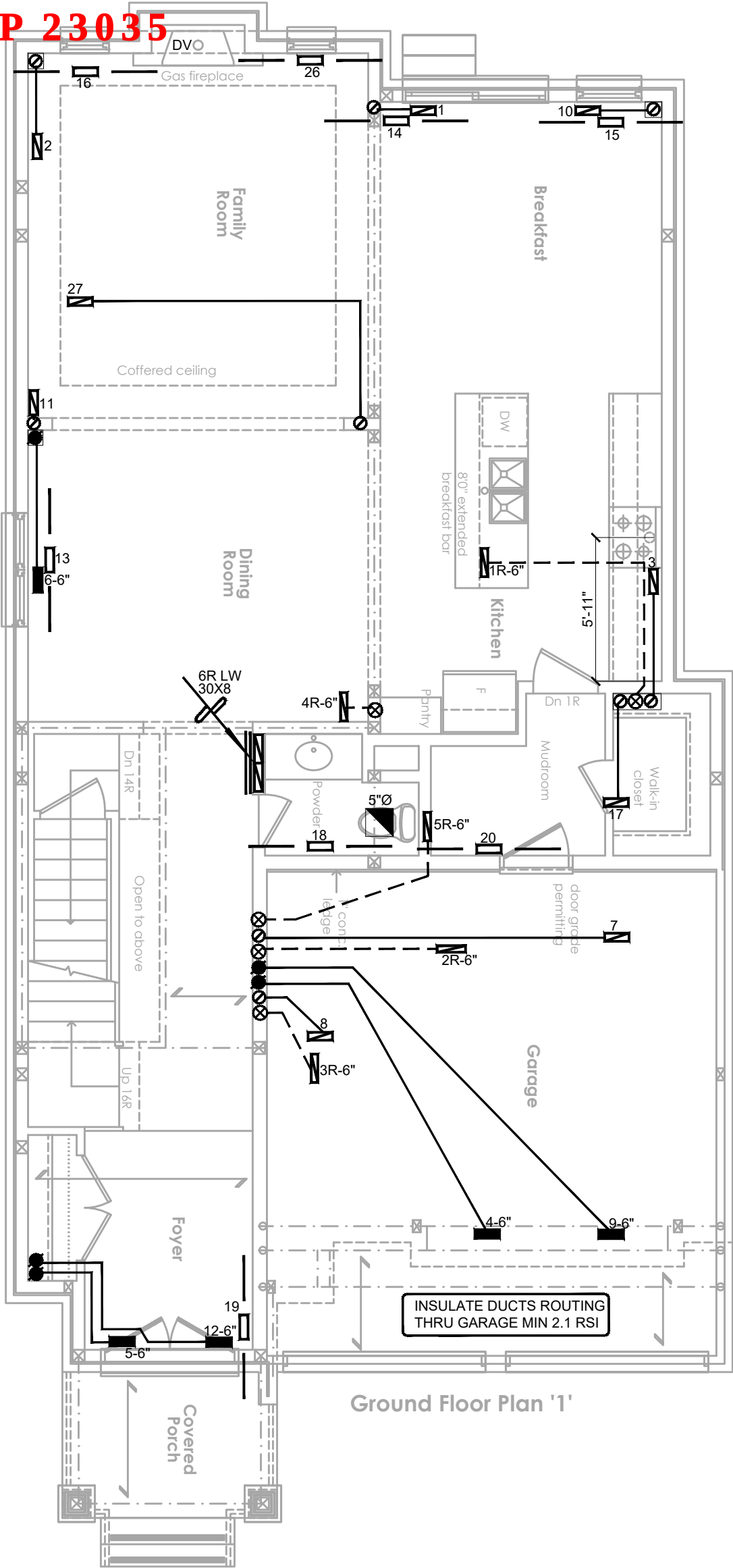
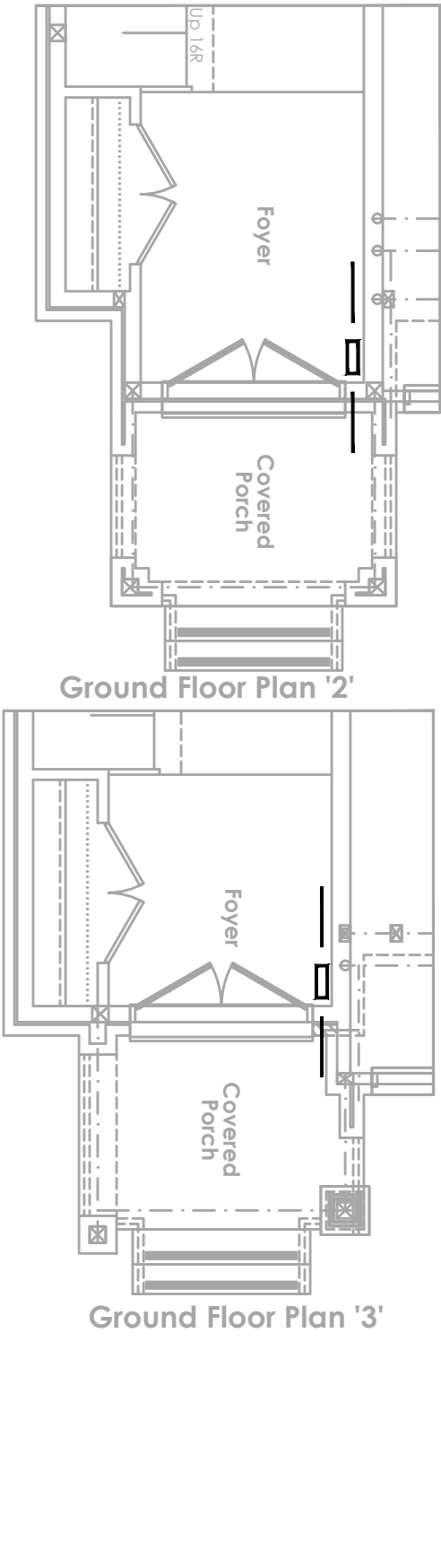
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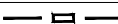
Partial Basement Plan For Deck Condition
Elevation 1, 2 and 3

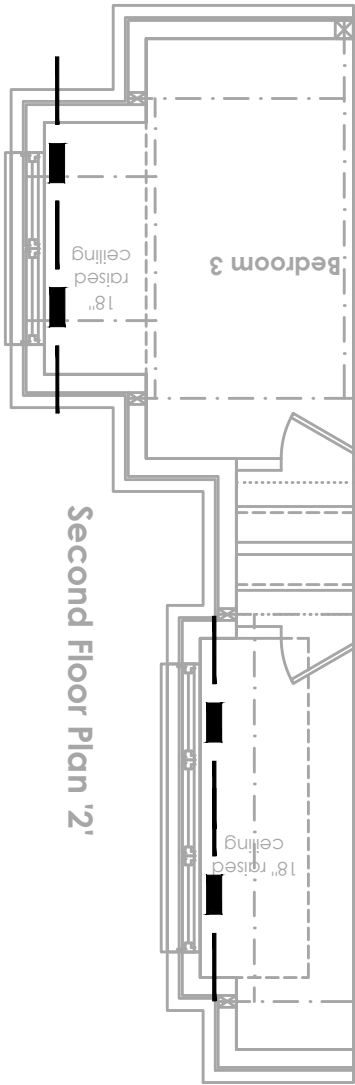


HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 2nd FLOOR	No.	Description	Date	
	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS			
ALL DRAWINGS, CALCULATIONS AND SPECIFICATIONS ARE THE PROPERTY OF HVAC DESIGNS LTD.© AND MAY NOT BE REPRODUCED, MODIFIED OR ALTERED WITHOUT EXPRESSED WRITTEN CONSENT. THE DRAWINGS ARE DATED AND USE OF THESE DRAWINGS AFTER ONE YEAR FROM THE DATED NOTED IS NOT AUTHORIZED. CONTRACTOR SHALL CHECK ALL CONDITIONS BEFORE PROCEEDING WITH WORK. LATEST MUNICIPAL APPROVED DRAWINGS ONLY TO BE USED DURING INSTALLATION OF HEATING SYSTEM. HVAC DESIGNS LTD. IS NOT LIABLE FOR ANY CLAIMS ARISING FROM UNAUTHORIZED USE OF THE DRAWINGS OR FROM ANY CHANGES TO ACCEPTED STANDARDS AND/OR THE ONTARIO BUILDING CODE.						I Michael O'Rourke have reviewed and take responsibility for the design work and am qualified under division C.3.2.5 of the building code.		 Michael O'Rourke BCIN # 19669 HVAC Designs Ltd.		PACKAGE A1	
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.				HEAT LOSS 49611 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title	
GREENPARK HOMES						MAKE GOODMAN		3RD FLOOR		BASEMENT HEATING LAYOUT	
						MODEL GMEC960603BNA		2ND FLOOR 14 5 3			
						INPUT 60.0 MBTU/H		1ST FLOOR 8 1 2			
						OUTPUT 57.6 MBTU/H		BASEMENT 4 1 0			
Project Name		COOLING 2.5 TONS		ALL S/A DIFFUSERS 4 "x10" UNLESS NOTED OTHERWISE ON LAYOUT. ALL S/A RUNS 5"Ø UNLESS NOTED OTHERWISE ON LAYOUT. UNDERCUT DOORS 1" min. FOR R/A		Date JULY/2023					
ZADORRA OSHAWA, ONTARIO		FAN SPEED 928 cfm @ 0.6" w.c.				Scale 3/16" = 1'-0"					
VILLA 3						BCIN# 19669					
2613 sqft						LO# 101807					

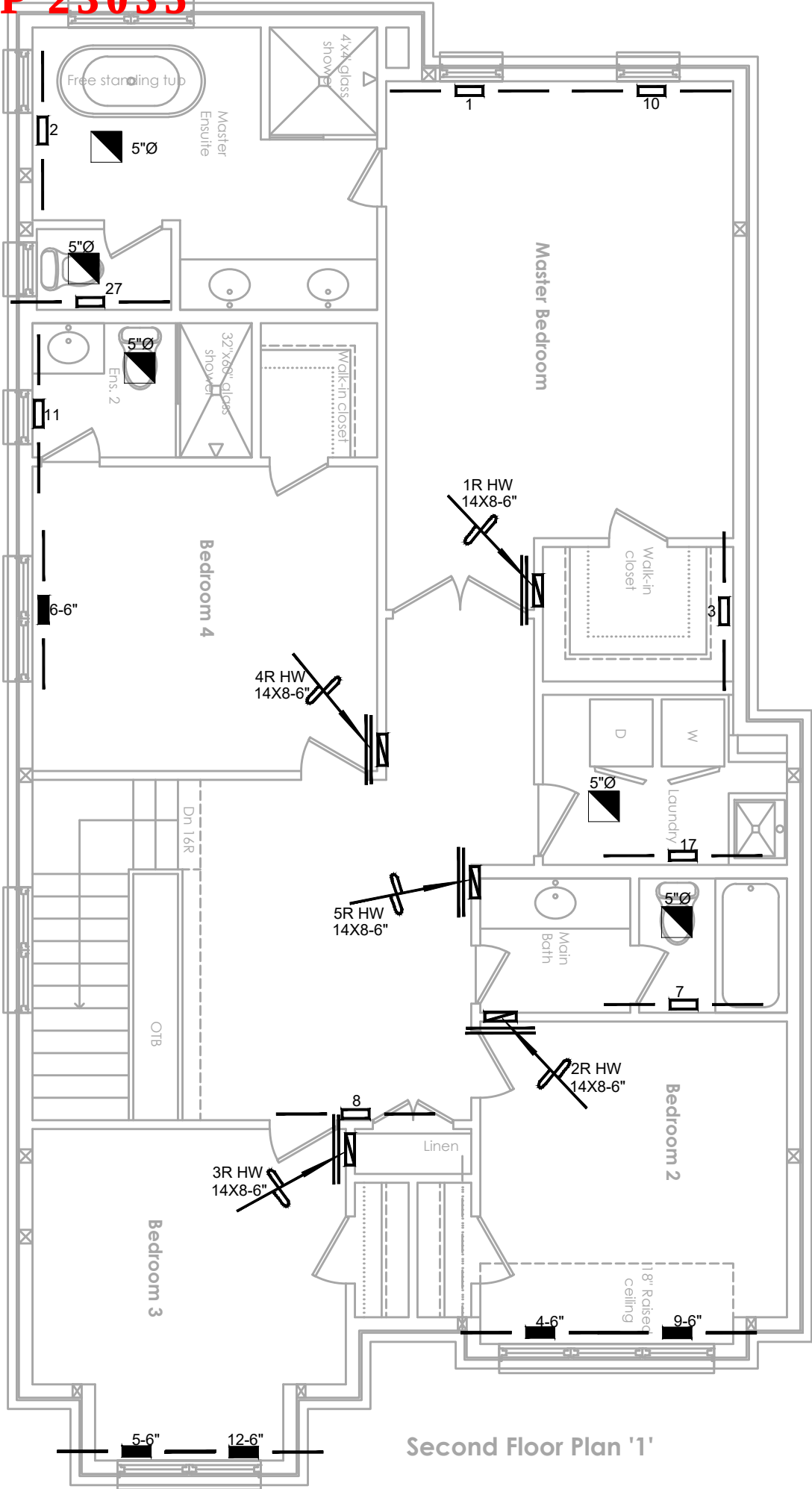
MHP 23035



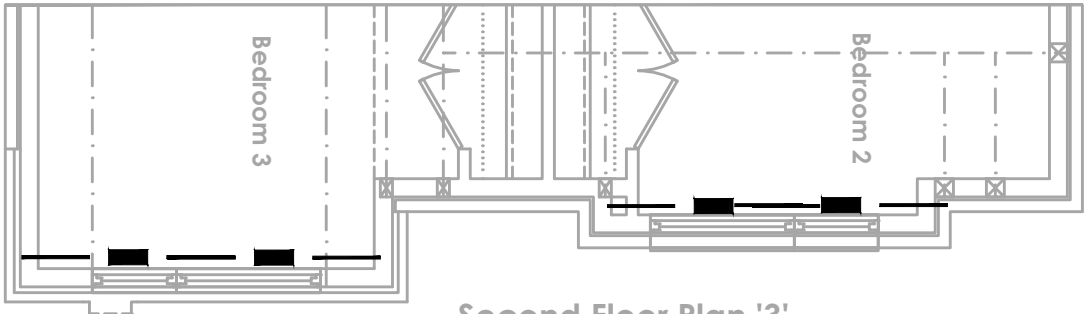
HVAC LEGEND								3.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.			
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.			
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Client		 375 Finley Ave. Suite 202 - Ajax, 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				 Michael O'Rourke BCIN # 19669 HVAC Designs Ltd.				Sheet Title	
GREENPARK HOMES										FIRST FLOOR HEATING LAYOUT	
Project Name										Date	
ZADORRA										JULY/2023	
OSHAWA, ONTARIO										Scale	
										3/16" = 1'-0"	
VILLA 3		2613 sqft		BCIN# 19669				LO# 101807			
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.											



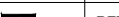
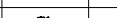
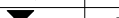
Second Floor Plan '2'



Second Floor Plan '1'



Second Floor Plan '3'

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.			
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Client GREENPARK HOMES		 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.				Sheet Title SECOND FLOOR HEATING LAYOUT	
Project Name ZADORRA OSHAWA, ONTARIO										Date JULY/2023	
VILLA 3 2613 sqft						Scale 3/16" = 1'-0"					
						BCIN# 19669					
						LO#		101807			