

CORPORATION OF THE CITY OF OSHAWA

TRUE COPY
OF PERMIT PLANS

Nov 21 2023

MHP 23033

SITE NAME: ZADORRA ESTATES INC

BUILDER: GREENPARK HOMES

WINTER NATURAL AIR CHANGE RATE 0.342

HEAT LOSS ΔT °F. 74

CSA-F280-12

SUMMER NATURAL AIR CHANGE RATE 0.094 ✓

HEAT GAIN ΔT °F. 11

SB-12 PACKAGE A1

BUILDING CREW AIR HOMES										SUMMER DAYTIME AIR CHANGE RATE 0.004										HEAT GAIN BY TYPE										CO-2 EMISSIONS											
ROOM USE			MBR			PER: 			BED-2			BED-3			BED-4			BATH			HALL																				
EXP. WALL			32						13			29			30			6			14																				
CLG. HT.			9						9			9			9			9			9																				
FACTORS																																									
GRS.WALL AREA			291			191			64			118			264			273			55			127																	
LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN			LOSS GAIN																	
GLAZING																																									
NORTH			20.8	15.5	0	0	0	7	145	108	0	0	0	10	208	155	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	45	935	1847	39	810	1601	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	18	374	439	0	0										
WEST			20.8	41.0	20	416	821	16	332	657	0	0	0	0	0	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	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	0	0	0	0	0										
NET EXPOSED WALL			4.4	0.6	271	1182	175	168	732	109	64	278	41	108	472	70	219	954	141	234	1020	151	55	238	35	109	477	71	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	0	0	0	0	0	0	0	0	0	0	0	0										
EXPOSED CLG			1.3	0.6	278	348	155	158	198	88	66	83	37	146	183	81	129	162	72	140	175	78	90	113	50	237	297	132	0	0	0	0									
NO ATTIC EXPOSED CLG			2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0	51	137	61	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	180	448	66	27	67	10	64	159	24	52	129	19	0	0	0	0									
BASEMENT/CRAWL HEAT LOSS						0			0			0			0			0			0			0			0			0			0			0					
SLAB ON GRADE HEAT LOSS						0			0			0			0			0			0			0			0			0			0			0					
SUBTOTAL HT LOSS						1945			1408			360			863			2635			2072			510			1277														
SUB TOTAL HT GAIN						1151			962			78			306			2188			1840			109			661														
LEVEL FACTOR / MULTIPLIER			0.20			0.25			0.20			0.25			0.20			0.25			0.20			0.25			0.20			0.25											
AIR CHANGE HEAT LOSS						480			347			89			213			650			511			126			315														
AIR CHANGE HEAT GAIN						65			54			4			17			124			104			6			37														
DUCT LOSS						0			0			0			0			328			258			64			159														
DUCT GAIN						0			0			0			0			333			296			12			70														
HEAT GAIN PEOPLE			240			2			480			0			0			1			240			1			240			0			0			0			0		
HEAT GAIN APPLIANCES/LIGHTS									774			0			0			774			774			774			0			0			0			0			0		
TOTAL HT LOSS BTU/H						2425			1755			449			1075			3613			2842			699			1751														
TOTAL HT GAIN x 1.3 BTU/H						3211			1321			107			1738			4755			4230			165			999														

ROOM USE	EXP. WALL	CLG. HT.	FACTORS	LOSS	GAIN	DIN	KT/BF	FAM	PWD	FOY	MUD	WOD	BAS
GRS.WALL AREA						303	323	293	101	333	232	323	961
GLAZING													
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0	0	3
EAST	20.8	41.0	0	0	0	0	0	0	0	22	457	903	0
SOUTH	20.8	24.4	25	519	610	0	0	0	7	145	171	0	3
WEST	20.8	41.0	0	0	0	58	1205	2381	0	0	0	0	6
SKYLT.	36.4	100.7	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	22	21
NET EXPOSED WALL	4.4	0.6	278	1211	180	265	1155	171	94	410	61	289	211
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	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
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0
BASEMENT/CRAWL HEAT LOSS						0			0			0	
SLAB ON GRADE HEAT LOSS						0			0			0	
SUBTOTAL HT LOSS						1731	2360	1637	555	2148	1332	905	6808
SUB TOTAL HT GAIN							789	2552		231	1154	362	362
LEVEL FACTOR / MULTIPLIER			0.30	0.42		0.30	0.42		0.30	0.42		0.30	0.42
AIR CHANGE HEAT LOSS						726	990	686	233	901	558		6822
AIR CHANGE HEAT GAIN						45	144	61		13	65		41
DUCT LOSS						0	0	0	0	0	0		0
DUCT GAIN						0	0	0	0	0	0		0
HEAT GAIN PEOPLE	240					0	0	0	0	0	0	0	0
HEAT GAIN APPLIANCES/LIGHTS						774	774	774	0	0	0		774
TOTAL HT LOSS BTU/H						2456	3350	2324	788	3049	1890	905	13630
TOTAL HT GAIN x 1.3 BTU/H						2090	4511	2487	318	1585	271	470	1529

TOTAL HEAT GAIN BTU/H:

30022

TONS: 2.50

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 43002

TOTAL COMBINED HEAT LOSS BTU/H: 44594



SITE NAME: ZADORRA ESTATES INC
BUILDER: GREENPARK HOMESCORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 21 2023
31.16
CHIEF BUILDING OFFICIAL

TYPE: FURNACE DATE: Jul-23

GFA: 2258 LO# 101803

HEATING CFM 928
TOTAL HEAT LOSS 43,002
AIR FLOW RATE CFM 21.58COOLING CFM
TOTAL HEAT GAIN
AIR FLOW RATE CFMfurnace loss 0.05
furnace filter 0.2
a/c coil pressure
available pressure
for s/a & r/a 0.35plenum pressure s/a 0.18
max s/a dif press. loss 0.01
min adjusted pressure s/a 0.17r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15#GOODMAN
GMCE960603BNA 60
FAN SPEED LOW
MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131AFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = 57,600
DESIGN CFM = 928
CFM @ .6" E.S.P.

TEMPERATURE RISE 57 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	12	8	4
R/A	0	0	5	1	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	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-3	MBR	BED-4	ENS	DIN	KT/BF	KT/BF	FAM	FAM	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.21	0.88	0.45	1.08	1.81	1.42	0.70	1.75	1.81	1.21	1.42	0.88	2.46	1.68	1.68	1.16	1.16	0.79	3.05	1.89	3.63	3.63	3.63	3.63
CFM PER RUN HEAT	26	19	10	23	39	31	15	38	39	26	31	19	53	36	36	25	25	17	66	41	78	78	78	78
RM GAIN MBH.	1.61	0.66	0.11	1.74	2.38	2.11	0.16	1.00	2.38	1.61	2.11	0.66	2.09	2.26	2.26	1.24	1.24	0.32	1.58	0.27	0.50	0.50	0.50	0.50
CFM PER RUN COOLING	50	21	3	54	74	66	5	31	74	50	66	21	65	70	70	39	39	10	49	8	16	16	16	16
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	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	43	49	39	32	45	52	43	38	47	28	65	31	16	16	23	31	20	35	36	20	27	21	16	38
EQUIVALENT LENGTH	160	160	150	160	120	140	170	130	140	100	180	140	140	110	110	160	130	140	110	140	150	140	120	130
TOTAL EFFECTIVE LENGTH	203	209	189	192	165	192	213	168	187	128	245	171	156	126	133	191	150	175	146	160	177	161	136	168
ADJUSTED PRESSURE	0.08	0.08	0.09	0.09	0.1	0.09	0.08	0.1	0.09	0.13	0.07	0.1	0.11	0.14	0.13	0.09	0.11	0.1	0.12	0.11	0.1	0.11	0.13	0.1
ROUND DUCT SIZE	5	4	4	6	5	6	4	4	5	4	6	4	5	5	5	4	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	191	218	115	117	286	158	172	436	286	298	158	218	389	264	264	287	287	195	485	470	573	573	573	573
COOLING VELOCITY (ft/min)	367	241	34	275	543	337	57	356	543	574	337	241	477	514	514	447	447	115	360	92	117	117	117	117
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	3X10	4X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	B	A	D	B	D	C	D	D	D	B	C	B	B	A	A	A	A	C	C	B	A	A	B	C

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	297	0.08	8.9	10	x	8	535		TRUNK G	0	0.00	0	0	8
TRUNK B	563	0.08	11.3	14	x	8	724		TRUNK H	0	0.00	0	0	8
TRUNK C	223	0.07	8.3	8	x	8	502		TRUNK I	0	0.00	0	0	8
TRUNK D	364	0.07	9.9	12	x	8	546		TRUNK J	0	0.00	0	0	8
TRUNK E	0	0.00	0	0	x	8	0		TRUNK K	0	0.00	0	0	8
TRUNK F	0	0.00	0	0	x	8	0		TRUNK L	0	0.00	0	0	8

RETURN AIR TRUNK SIZE

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT		VELOCITY (ft/min)
TRUNK O	0	0.06	0	0	x	8
TRUNK P	0	0.06	0	0	x	8
TRUNK Q	0	0.06	0	0	x	8
TRUNK R	0	0.06	0	0	x	8
TRUNK S	0	0.06	0	0	x	8
TRUNK T	0	0.06	0	0	x	8
TRUNK U	0	0.06	0	0	x	8
TRUNK V	0	0.06	0	0	x	8
TRUNK W	0	0.06	0	0	x	8
TRUNK X	928	0.06	14.7	26	x	8
TRUNK Y	575	0.06	12.2	18	x	8
TRUNK Z	170	0.06	7.8	8	x	8
DROP	928	0.06	14.7	24	x	10

RETURN AIR

	1	2	3	4	5	6										BR
AIR VOLUME	98	99	85	85	85	320	0	0	0	0	0	0	0	0	0	156
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.	33	29	55	64	52	31	1	1	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	135	140	195	200	190	185	0	0	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	168	169	250	264	242	216	1	1	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.09	0.09	0.06	0.06	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	5.7	6	6	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

TYPE: VILLA 1
SITE NAME: ZADORRA ESTATES INC

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 21 2023
RESIL
CHIEF BUILDING 9.32.3.1(1)

MHP 23033

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

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	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

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

PRINCIPAL EXHAUST FAN CAPACITY

Model: VANEV V150H Location: BSMT

79.5 cfm ☒ HVI Approved

PRINCIPAL EXHAUST HEAT LOSS CALCULATION

CFM	ΔT °F	FACTOR	% LOSS
79.5 CFM	74 F	1.08	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: VANEV V150H	
150 cfm high	35 cfm low
75 % 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:

HRAI #

001820

Date:

July-23



MHP 23033

CSA F280-12 Residential Heat Loss and Heat Gain Calculations Formula Sheet (For Air Leakage / Ventilation Calculation)																																																												
LO#: 101803	Model: VILLA 1	Builder: GREENPARK HOMES	Date: 2023-07-10																																																									
Volume Calculation			Air Change & Delta T Data																																																									
House Volume <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Level</th> <th>Floor Area (ft²)</th> <th>Floor Height (ft)</th> <th>Volume (ft³)</th> </tr> <tr> <td>Bsmt</td> <td>980</td> <td>9</td> <td>8330</td> </tr> <tr> <td>First</td> <td>980</td> <td>10</td> <td>9898</td> </tr> <tr> <td>Second</td> <td>1298</td> <td>9</td> <td>11811.8</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>30,039.8 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>850.6 m³</td> </tr> </table>			Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	980	9	8330	First	980	10	9898	Second	1298	9	11811.8	Third	0	9	0	Fourth	0	9	0	Total:			30,039.8 ft³	Total:			850.6 m³	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:70%;">WINTER NATURAL AIR CHANGE RATE</td> <td style="width:30%;">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" 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	0.342	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	980	9	8330																																																									
First	980	10	9898																																																									
Second	1298	9	11811.8																																																									
Third	0	9	0																																																									
Fourth	0	9	0																																																									
Total:			30,039.8 ft³																																																									
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Winter DTDh	22	-19	41	74																																																								
Summer DTDc	24	30	6	11																																																								
5.2.3.1 Heat Loss due to Air Leakage			6.2.6 Sensible Gain due to Air Leakage																																																									
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.342 x 236.29 x 41 °C x 1.2 = 3999 W = 13644 Btu/h			$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.094 x 236.29 x 6 °C x 1.2 = 163 W = 556 Btu/h																																																									
5.2.3.2 Heat Loss due to Mechanical Ventilation			6.2.7 Sensible heat Gain due to 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			$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$ 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)																																																												
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$																																																												
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 / HL _{clevel})																																																								
1	0.5	13,644	7,713	0.885																																																								
2	0.3		9,764	0.419																																																								
3	0.2		11,071	0.246																																																								
4	0		0	0.000																																																								
5	0		0	0.000																																																								
*HLairbv = Air leakage heat loss + ventilation heat loss *For a balanced or supply only ventilation system HLairve = 0																																																												
				Michael O'Rourke BCIN# 19669 																																																								

MODEL: VILLA 1

SFQT: 2258

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):	30039.8	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.90	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.5 ft
LENGTH: 49.0 ft	WIDTH: 28.0 ft	EXPOSED PERIMETER:	154.0 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

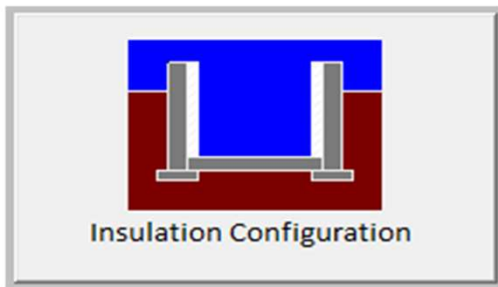
MICHAEL O'ROURKE

Michael O'Rourke

**MHP 23033**

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):	14.9	 Insulation Configuration
Floor Width (m):	8.5	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.68	
Window Area (m ²):	1.1	
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):		1480✓

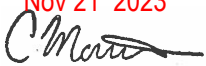
TYPE: VILLA 1
LO# 101803

Air Infiltration Residential Load Calculator

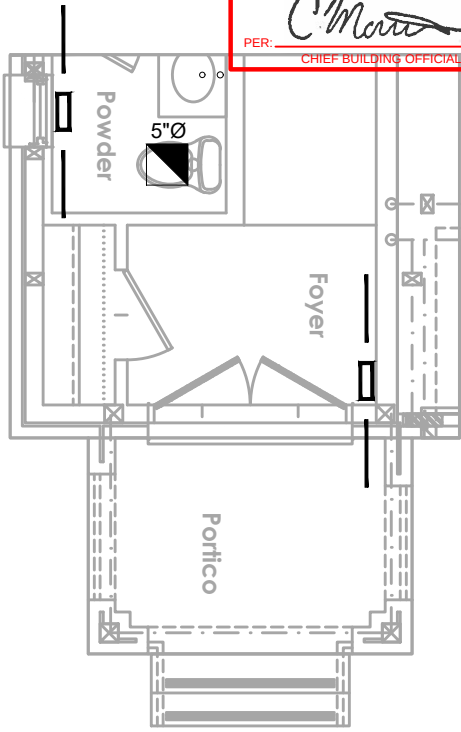
Supplemental tool for CAN/CSA-F280

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):	850.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1133.9 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):	0.342			
Cooling Air Leakage Rate (ACH/H):	0.094 ✓			

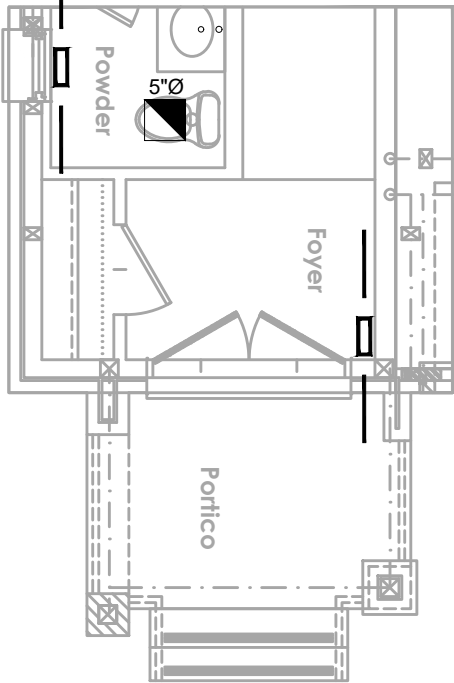
TYPE: VILLA 1
LO# 101803

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 21 2023
PER: 
CHIEF BUILDING OFFICIAL

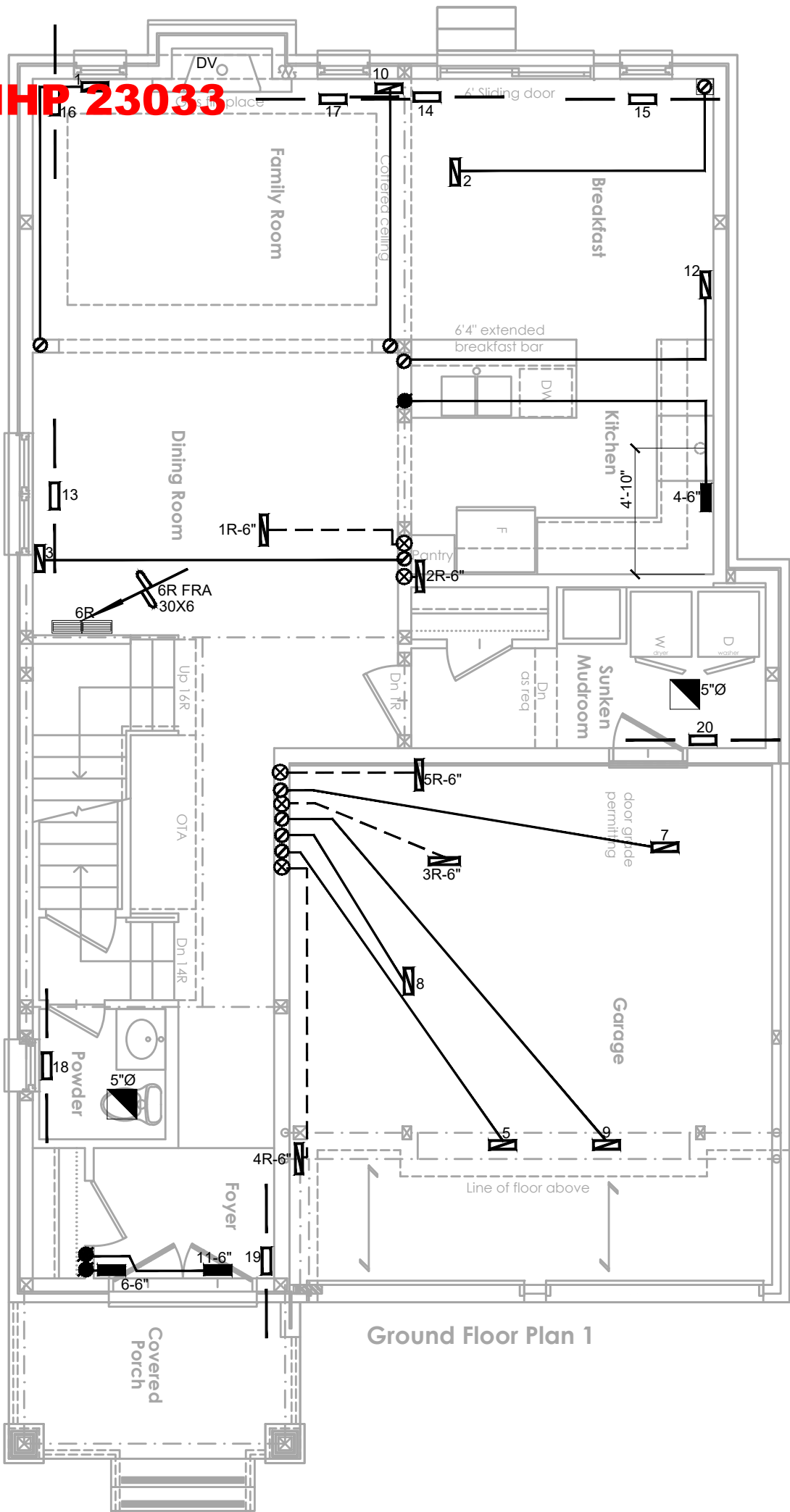
MHP 23033



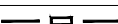
Ground Floor Plan 2



Ground Floor Plan 3



Ground 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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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.

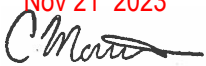

Michael O'Rourke BCIN # 19669
HVAC Designs Ltd.

PACKAGE A1

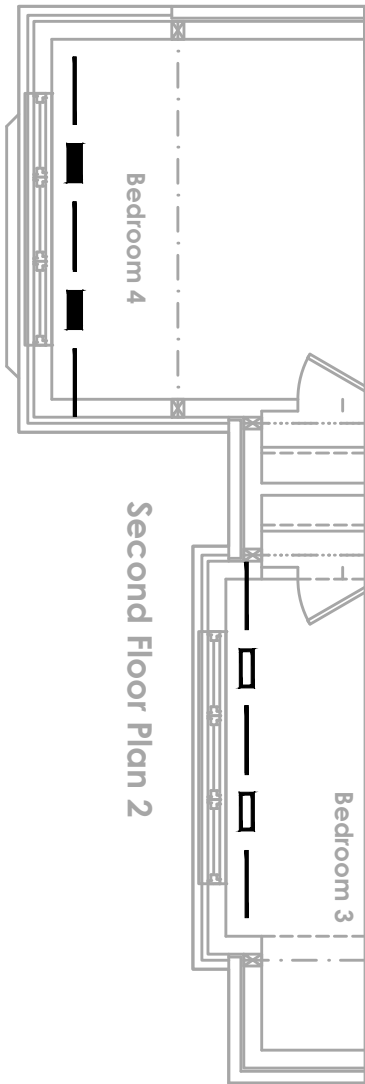
Client
GREENPARK HOMES
Project Name
ZADORRA
OSHAWA, ONTARIO
VILLA 1 2258 sqft

HVACDESIGNS LTD.
375 Finley Ave. Suite 202 - Ajax, Ontario
L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375
Email: info@hvacdsgns.ca
Web: www.hvacdsgns.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.

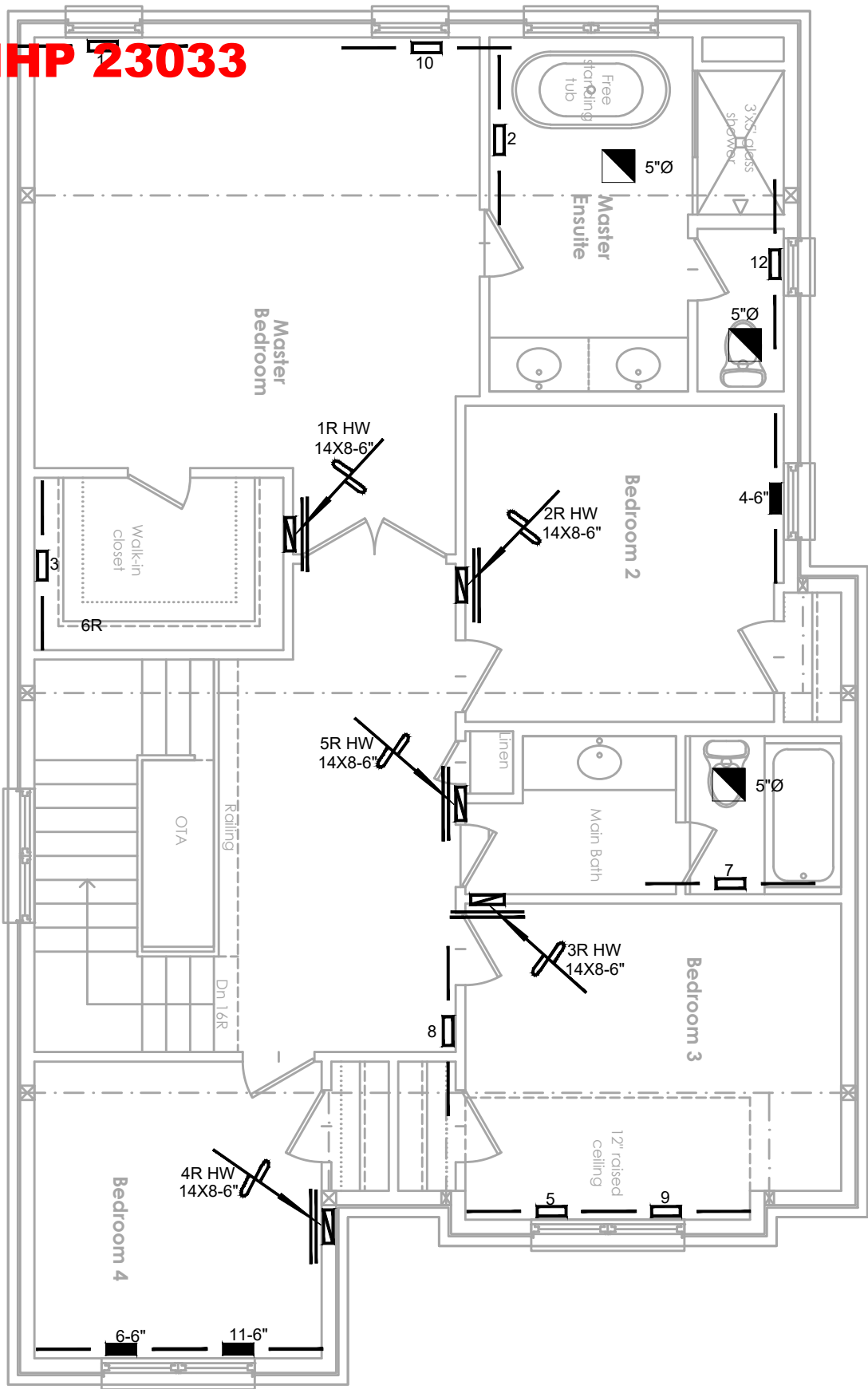
Sheet Title
FIRST FLOOR
HEATING
LAYOUT
Date JULY/2023
Scale 3/16" = 1'-0"
BCIN# 19669
LO# 101803

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 21 2023
PER: 
CHIEF BUILDING OFFICIAL

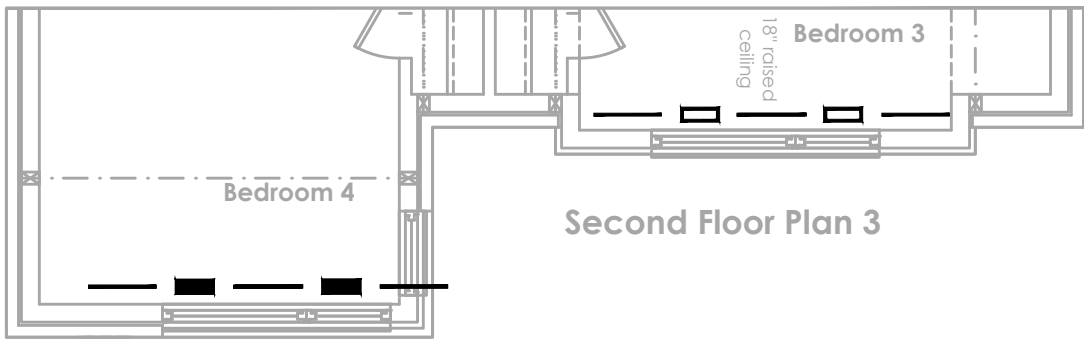
MHP 23033



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.		
	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 GREENPARK HOMES								 Michael O'Rourke BCIN # 19669 HVAC Designs Ltd.		
Project Name ZADORRA OSHAWA, ONTARIO								PACKAGE A1		
VILLA 1								Sheet Title SECOND FLOOR HEATING LAYOUT		
2258 sqft								Date JULY/2023		
								Scale 3/16" = 1'-0"		
								BCIN# 19669		
								LO# 101803		