

PER: 		1 ESTATES INC		BUILDER: GREENPARK HOMES		TYPE: ROSE 12		GFA: 3128		DATE: Jul-23		LO# 101742		WINTER NATURAL AIR CHANGE RATE 0.328 ✓		HEAT LOSS ΔT °F. 74		CSA-F280-12															
CHIEF BUILDING OFFICER														SUMMER NATURAL AIR CHANGE RATE 0.084		HEAT GAIN ΔT °F. 11		SB-12 PACKAGE A1															
ROOM USE				MBR		ENS		WIC		BED-2		BED-3		BED-4		ENS-2		ENS-3		WIC-2		ENS-4											
EXP. WALL				36		28		11		29		33		14		9		7		0		7											
CLG. HT.				9		9		9		9		9		9		9		9		9		9											
FACTORS																																	
GRS.WALL AREA		LOSS GAIN		328		255		100		264		300		127		82		64		0		64											
GLAZING				LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN		LOSS GAIN											
NORTH		20.8	15.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0										
EAST		20.8	40.1	0	0	0	0	0	0	0	40	831	1606	0	0	0	0	0	0	0	0	0	0										
SOUTH		20.8	23.9	0	0	0	31	644	741	0	0	0	0	27	519	597	26	540	621	0	0	0	13	270	311								
WEST		20.8	40.1	24	499	963	9	187	361	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									
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									
NET EXPOSED WALL		4.4	0.6	304	1323	196	215	936	139	91	397	59	224	976	145	228	995	147	101	442	65	65	283	42	54	234	35	0	0	0	51	221	33
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	0	0	
EXPOSED CLG		1.3	0.6	361	452	201	200	251	111	153	192	85	205	257	114	236	296	132	265	332	148	93	117	52	60	75	33	50	63	28	49	61	27
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	0	0	
EXPOSED FLOOR		2.5	0.4	0	0	0	0	0	0	0	0	0	205	510	76	26	65	10	0	0	0	28	70	10	0	0	0	28	70	10	0	0	0
BASEMENT/CRAWL HEAT LOSS				0		0		0		0		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		0		0		0		0	
SUBTOTAL HT LOSS				2274		2018		776		2574		2851		1314		822		517		132		552											
SUB TOTAL HT GAIN				1361		1352		281		1940		2773		834		362		307		38		371											
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		0.20 0.25		0.20 0.25		0.20 0.25		0.20 0.25											
AIR CHANGE HEAT LOSS		569		505		194		644		713		329		206		129		33		138													
AIR CHANGE HEAT GAIN		64		63		13		91		130		39		17		14		2		17													
DUCT LOSS		0		0		0		322		356		0		103		0		17		0													
DUCT GAIN		0		0		0		284		371		0		38		0		4		0													
HEAT GAIN PEOPLE		240		2		480		0		0		1		240		1		240		0		0		0		0		0		0		0	
HEAT GAIN APPLIANCES/LIGHTS				572		0		0		572		572		572		572		0		0													
TOTAL HT LOSS BTU/H		2842		2522		970		3539		3920		1643		1131		646		182		691													
TOTAL HT GAIN x 1.3 BTU/H		3219		1840		382		4065		5311		2190		542		418		57		504													

ROOM USE			H-OFF		LV/DN		KT/BF		FAM		LAUN		PWD		FOY		MUD					WOD		BAS		
EXP. WALL			43		25		38		33		5		5		15		19					43		180		
CLG. HT.			10		10		10		10		9		10		10		10					9		9		
FACTORS																										
GRS.WALL AREA	LOSS	GAIN	434		253		384		333		46		51		152		192					366		1119		
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN				LOSS	GAIN	LOSS	GAIN	
NORTH	20.8	15.2	0	0	0	0	0	56	1163	850	0	0	0	0	0	0	0	0	0	0	0	0	0	12	249	182
EAST	20.8	40.1	44	914	1766	0	0	0	0	0	0	0	10	208	401	0	0	0	0	0	0	0	0	0	0	0
SOUTH	20.8	23.9	28	582	669	42	873	1003	0	0	0	42	873	1003	0	0	0	14	291	334	0	0	0	0	0	0
WEST	20.8	40.1	0	0	0	0	0	0	28	582	1124	28	582	1124	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	
DOORS	19.6	2.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	30	587	87	21	411	61	0	411	61	
NET EXPOSED WALL	4.4	0.6	362	1579	234	211	917	136	300	1306	194	263	1147	170	36	155	23	44	190	28	108	468	69	171	745	110
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	
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	0	0	0	79	99	44	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	
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	67	167	25	0	0	0	0	0	0	0	0	0	0	0	
BASEMENT/CRAWL HEAT LOSS			0			0			0			0			0			0								
SLAB ON GRADE HEAT LOSS			0			0			0			0			0			0							6055	
SUBTOTAL HT LOSS			3074			1790			3051			2602			628			1347			1156			906		8159
SUB TOTAL HT GAIN				2669		1139			2167			2297			493			134			491			171		457
LEVEL FACTOR / MULTIPLIER		0.30 0.41			0.30 0.41		0.30 0.41		0.30 0.41		0.20 0.25		0.30 0.41		0.30 0.41		0.30 0.41						134		0.50 1.00	
AIR CHANGE HEAT LOSS			1249			727			1239			1057			157			547			469					9040
AIR CHANGE HEAT GAIN				125		53			101			108			23			23			8					28
DUCT LOSS			0			0			0			79			0			0			0					0
DUCT GAIN				0		0			0			109			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
HEAT GAIN APPLIANCES/LIGHTS				572		572			572			572			572			0			0			0		572
TOTAL HT LOSS BTU/H			4323			2517			4291			3658			864			1894			1625			906		17199
TOTAL HT GAIN x 1.3 BTU/H				4376		2293			3693			3870			1556			668			233			175		1373

TOTAL HEAT GAIN BTU/H:

37184

TONS: 3.10

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 55834

TOTAL COMBINED HEAT LOSS BTU/H: 57427



MHP 23032

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Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

PER: CHIEF BUILDING OFFICIAL ZADORRA ESTATES INC GREENPARK HOMES TYPE: ROSE 12 DATE: Jul-23 GFA: 3128 LO# 101742

COOLING CFM 1122 TOTAL HEAT LOSS 55,834 AIR FLOW RATE CFM 20.1

COOLING CFM 1122 TOTAL HEAT GAIN 36,948 AIR FLOW RATE CFM 30.37

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
GMEC960803BNA 80
FAN SPEED LOW
MEDLOW
MEDIUM
MEDIUM HIGH
HIGH 885 1005 1122

AFUE = 96 %
INPUT (BTU/H) = 80,000
OUTPUT (BTU/H) = 76,800
DESIGN CFM = 1122
CFM @ .6" E.S.P.

TEMPERATURE RISE 63 °F

ROOM NAME	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	ENS-3	WIC-2	MBR	ENS-4	H-OFF	LV/DN	KT/BF	KT/BF	FAM	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.42	1.26	0.97	1.77	1.96	1.64	1.13	0.65	0.18	1.42	0.69	2.16	2.52	2.15	2.15	1.83	0.86	0.47	1.89	1.63	3.62	3.62	3.62	3.62
CFM PER RUN HEAT	29	25	19	36	39	33	23	13	4	29	14	43	51	43	43	37	17	9	38	33	73	73	73	73
RM GAIN MBH.	1.61	0.92	0.38	2.03	2.66	2.19	0.54	0.42	0.06	1.61	0.50	2.19	2.29	1.85	1.85	1.93	1.56	0.18	0.67	0.23	0.31	0.31	0.31	0.31
CFM PER RUN COOLING	49	28	12	62	81	67	16	13	2	49	15	66	70	56	56	59	47	6	20	7	9	9	9	9
ADJUSTED PRESSURE	0.17	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	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	39	55	22	60	64	37	60	48	49	40	49	52	31	23	22	31	56	22	43	30	29	16	22	34
EQUIVALENT LENGTH	120	200	170	140	190	130	160	150	190	170	200	120	140	90	160	120	130	120	90	140	90	170	100	160
TOTAL EFFECTIVE LENGTH	159	255	192	200	254	167	220	198	239	210	249	172	171	113	182	151	186	142	133	170	119	186	122	194
ADJUSTED PRESSURE	0.11	0.07	0.09	0.09	0.06	0.1	0.08	0.09	0.07	0.08	0.07	0.1	0.1	0.15	0.09	0.11	0.09	0.12	0.13	0.1	0.14	0.09	0.14	0.09
ROUND DUCT SIZE	5	4	4	5	6	6	4	4	4	5	4	5	5	5	5	5	5	4	4	4	5	5	5	5
HEATING VELOCITY (ft/min)	213	287	218	264	199	168	264	149	46	213	161	316	374	316	316	272	125	103	436	379	536	536	536	536
COOLING VELOCITY (ft/min)	360	321	138	455	413	342	184	149	23	360	172	485	514	411	411	433	345	69	229	80	66	66	66	66
OUTLET GRILL SIZE	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	E	C	E	B	A	C	B	B	B	E	C	A	C	E	E	C	B	E	B	E	D	E	D	B

ROOM NAME	BAS	BED-2	BED-3	ENS	FAM	H-OFF
RM LOSS MBH.	3.62	1.77	1.96	1.26	1.83	2.16
CFM PER RUN HEAT	73	36	39	25	37	43
RM GAIN MBH.	0.31	2.03	2.66	0.92	1.93	2.19
CFM PER RUN COOLING	9	62	81	28	59	66
ADJUSTED PRESSURE	0.17	0.17	0.16	0.17	0.17	0.17
ACTUAL DUCT LGH.	50	63	62	52	30	51
EQUIVALENT LENGTH	110	150	170	170	110	110
TOTAL EFFECTIVE LENGTH	160	213	232	222	140	161
ADJUSTED PRESSURE	0.11	0.08	0.07	0.08	0.12	0.11
ROUND DUCT SIZE	5	5	6	4	5	5
HEATING VELOCITY (ft/min)	536	264	199	287	272	316
COOLING VELOCITY (ft/min)	66	455	413	321	433	485
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	3X10	3X10
TRUNK	A	B	A	C	D	A

SUPPLY AIR TRUNK SIZE																RETURN AIR TRUNK SIZE											
	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)			TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)					
TRUNK A	237	0.06	8.8	10	x	8	427			TRUNK G	0	0.00	0	0	x	8	0			TRUNK O	0	0.06	0	0	x	8	0
TRUNK B	477	0.06	11.4	16	x	8	537			TRUNK H	0	0.00	0	0	x	8	0			TRUNK P	0	0.06	0	0	x	8	0
TRUNK C	185	0.07	7.7	8	x	8	416			TRUNK I	0	0.00	0	0	x	8	0			TRUNK Q	0	0.06	0	0	x	8	0
TRUNK D	368	0.07	10	12	x	8	552			TRUNK J	0	0.00	0	0	x	8	0			TRUNK R	0	0.06	0	0	x	8	0
TRUNK E	1123	0.06	15.7	28	x	8	722			TRUNK K	0	0.00	0	0	x	8	0			TRUNK S	0	0.06	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			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				
RETURN AIR #	1	2	3	4	5	6	7									BR				TRUNK X	1122	0.06	15.7	30	x	8	673
AIR VOLUME	115	90	90	85	95	379	85	0	0	0	0	0	0	0	0	0				TRUNK Y	360	0.06	10.3	12	x	8	540
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				TRUNK Z	175	0.06	7.8	8	x	8	394
ACTUAL DUCT LGH.	30	68	65	49	61	16	46	1	1	1	1	1	1	1	1	1				DROP	1122	0.06	15.7	24	x	10	673
EQUIVALENT LENGTH	135	195	190	215	185	175	200	0	0	0	0	0	0	0	0	0											
TOTAL EFFECTIVE LH	165	263	255	264	246	191	246	1	1	1	1	1	1	1	1	1											
ADJUSTED PRESSURE	0.09	0.06	0.06	0.06	0.06	0.08	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80	14.80											
ROUND DUCT SIZE	6	6	6	6	6	9.7	6	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											
	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	14	0	0	0	0	0	0	0	0	0											

ROSE 12
ZADORRA ESTATES INC

LO # 101742

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	2	@ 21.2 cfm	42.4	cfm
Other Bedrooms	3	@ 10.6 cfm	31.8	cfm
Kitchen & Bathrooms	7	@ 10.6 cfm	74.2	cfm
Other Rooms	5	@ 10.6 cfm	53.0	cfm
Table 9.32.3.A.	TOTAL		201.4	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	201.4	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	121.9	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	74 F	1.08	0.25

SUPPLEMENTAL FANS BY INSTALLING CONTRACTOR

Location	Model	cfm	HVI	Sones
ENS	BY INSTALLING CONTRACTOR	50	✓	3.5
ENS-2	BY INSTALLING CONTRACTOR	50	✓	3.5
ENS-4	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 ☒ 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: *Michael O'Rourke*

HRAI # 001820

Date: July-23

MHP 23032

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 101742		Model: ROSE 12		Builder: GREENPARK HOMES			Date: 2023-07-05																																																										
Volume Calculation					Air Change & Delta T Data																																																												
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5.2.3.1 Heat Loss due to Air Leakage $HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.328 x 326.50 x 41 °C x 1.2 = 5299 W = 18080 Btu/h					6.2.6 Sensible Gain due to Air Leakage $HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.084 x 326.50 x 6 °C x 1.2 = 202 W = 690 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;">18,080</td> <td>9,065</td> <td>0.997</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>13,354</td> <td>0.406</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>14,458</td> <td>0.250</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	18,080	9,065	0.997	2	0.3	13,354	0.406	3	0.2	14,458	0.250	4	0	0	0.000	5	0	0	0.000																														
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MHP 23032

HEAT LOSS AND GAIN SUMMARY SHEET

375 Finley Ave. Suite 202 Ajax, ON L1S 2E2

Tel: 905.619.2300 Fax: 905.619.2375

Web: www.hvacdesigns.ca E-mail: info@hvacdesigns.ca

SFQT: 3128

LO# 101742

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:	UNSHelterED	ASSUMED (Y/N):	Y
HOUSE VOLUME (ft³):	41508.3	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.5 ft
LENGTH: 57.0 ft	WIDTH: 33.0 ft	EXPOSED PERIMETER:	180.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component

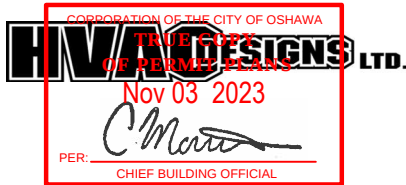
Compliance Package A1

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

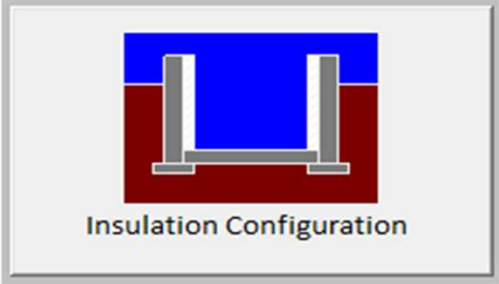


MHP 23032

HVAC Designs Ltd.
 375 Finley Ave, Suite 202
 Ajax ON, L1S 2E2
 905-619-2300

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):	17.4	 Insulation Configuration
Floor Width (m):	10.1	
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):		1774

TYPE: ROSE 12
 LO# 101742



MHP 23032

HVAC Designs Ltd.
375 Finley Ave, Suite 202
Ajax ON, L1S 2E2
905-619-2300

Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

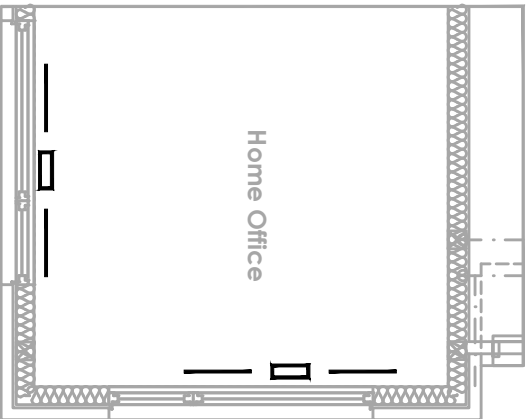
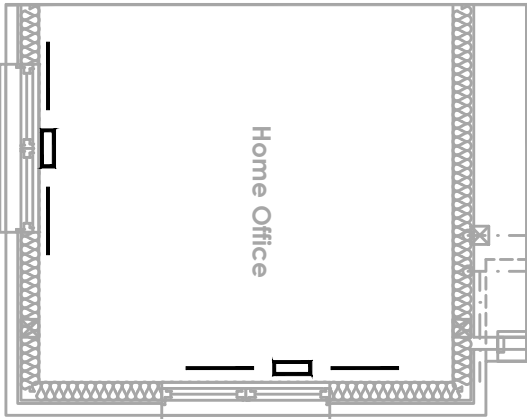
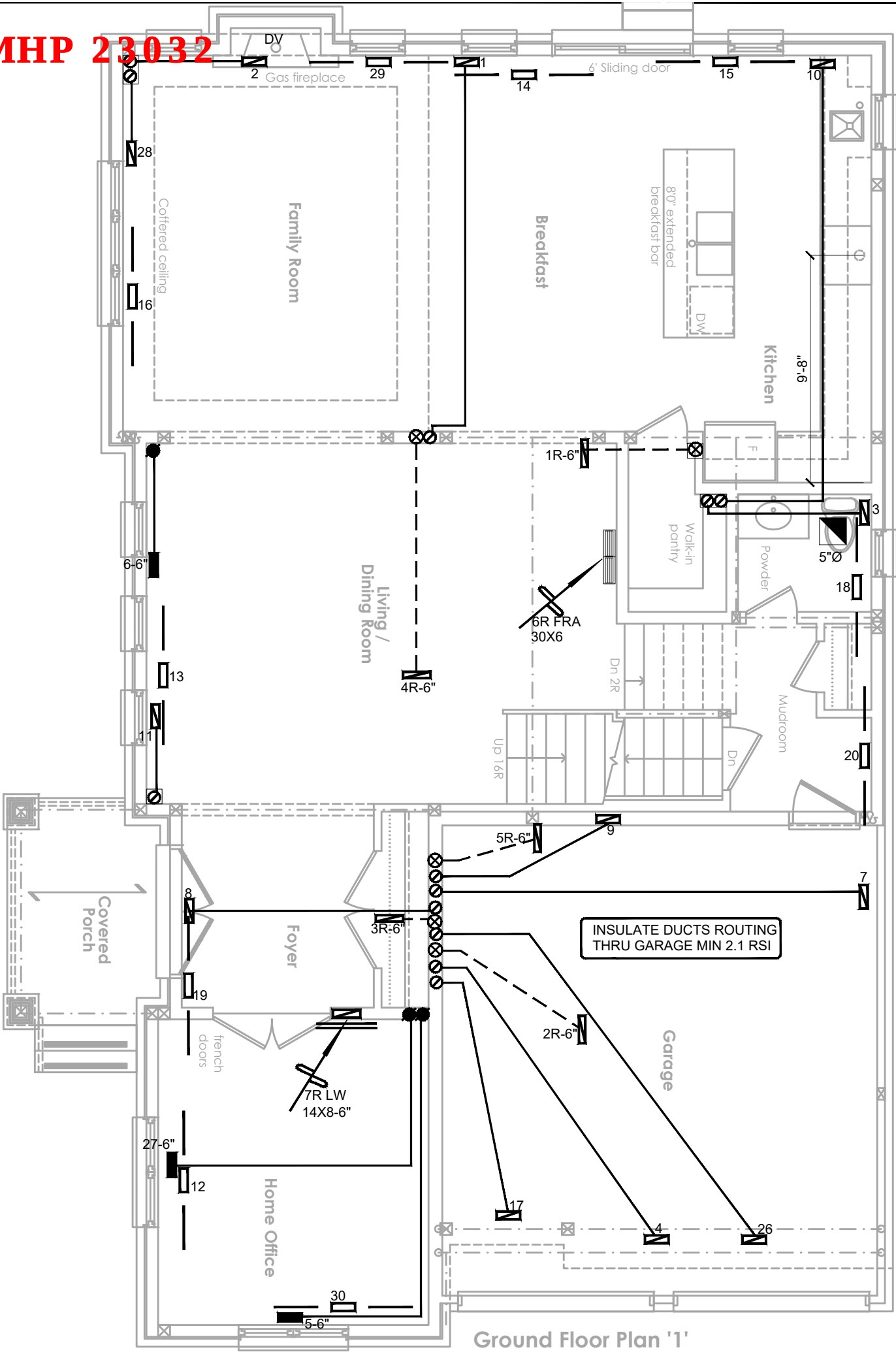
Weather Station Description				
Province:	Ontario			
Region:	Oshawa			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Very heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.68			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1175.4			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1566.8 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):	0.328			
Cooling Air Leakage Rate (ACH/H):	0.084			

TYPE: ROSE 12

LO# 101742

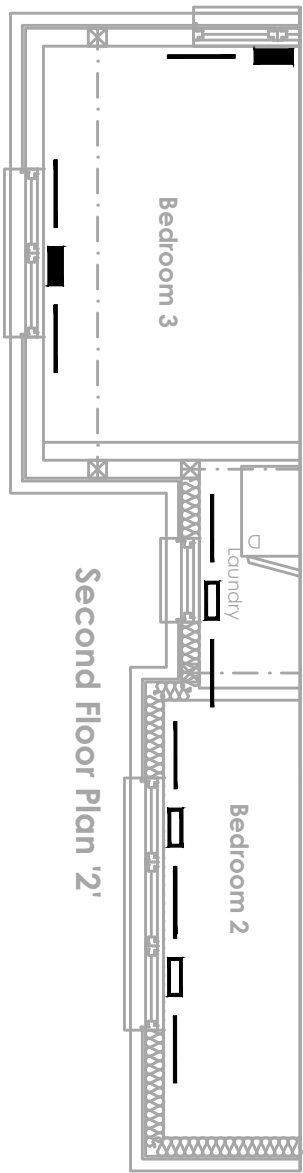
Michael O'Rourke BCIN# 19669

MHP 23032

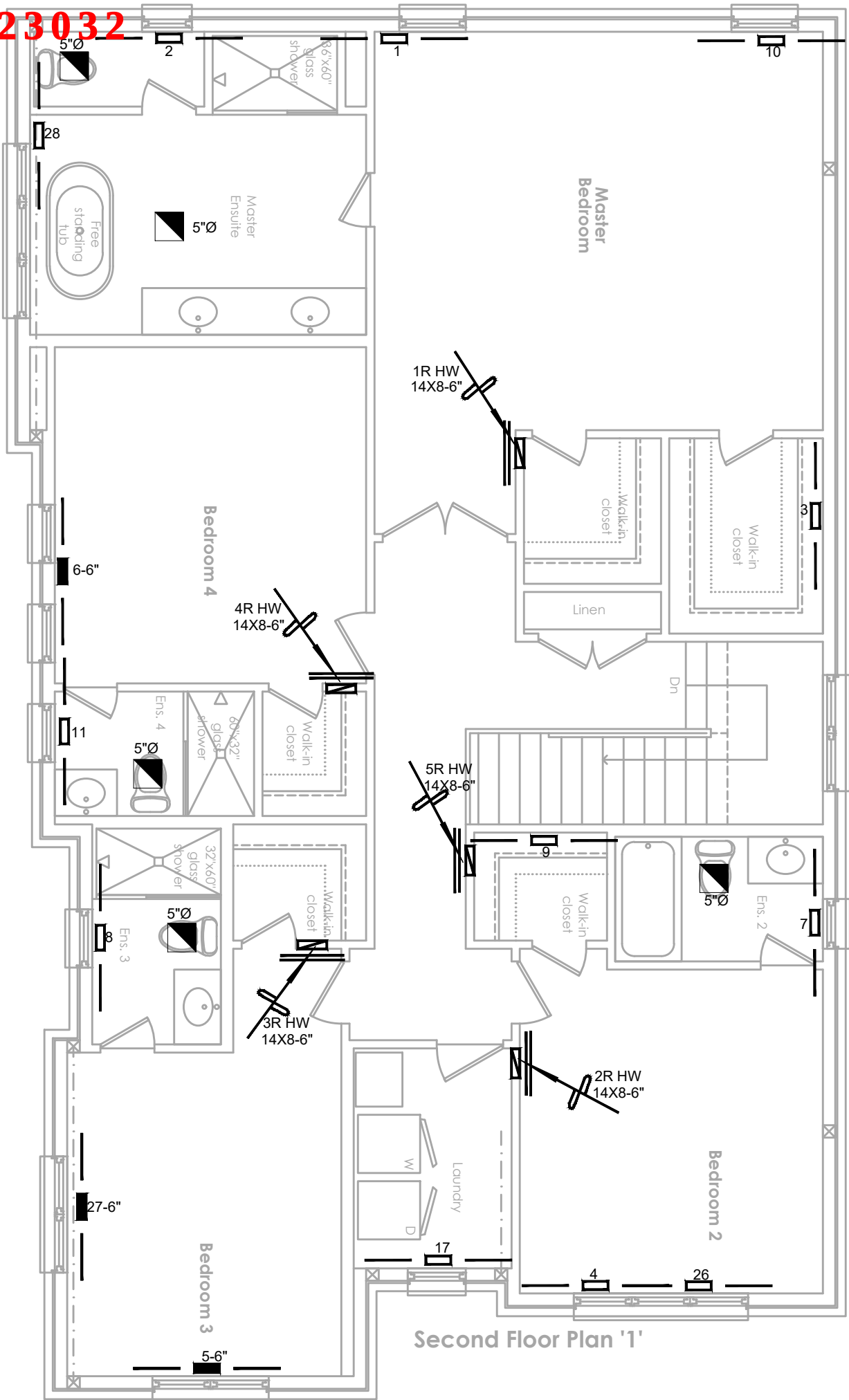


HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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@hvacdsgns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services				Sheet Title FIRST FLOOR HEATING LAYOUT				
Project Name										
ZADORRA										
OSHAWA, ONTARIO										
ROSE 12		3128 sqft		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.				Date JULY/2023		
								Scale 3/16" = 1'-0"		
								BCIN# 19669		
								LO#	101742	

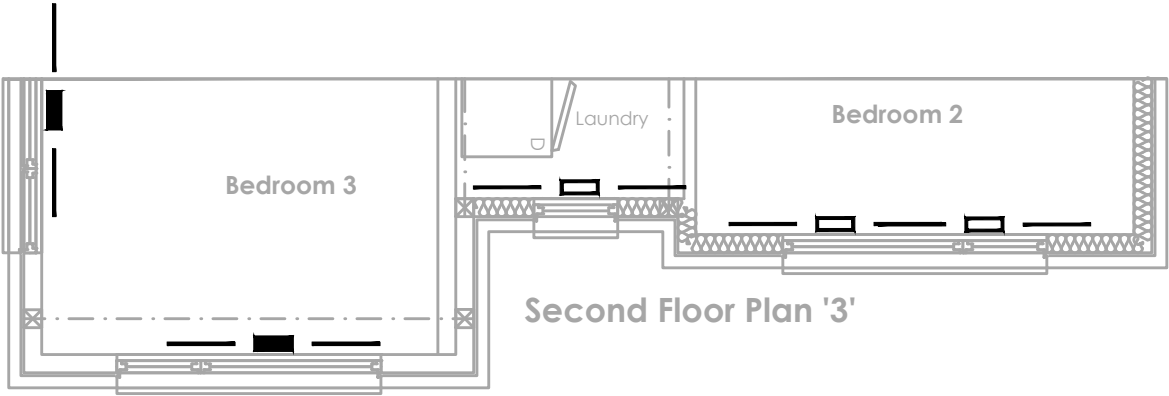
MHP 23032



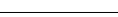
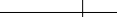
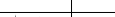
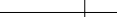
Second Floor Plan '2'



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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Project Name										
GREENPARK HOMES										
ZADORRA OSHAWA, ONTARIO										
ROSE 12		3128 sqft				Date		JULY/2023		
						Scale		3/16" = 1'-0"		
								BCIN# 19669		
								LO#	101742	