

TRUE COPY
OF PERMIT PLANS

Oct 30 2023

PER:

SITE NAME: ZADORRA ESTATES INC

BUILDER: GREENPARK HOMES

WOB

TYPE: ROSE 6

GFA: 3175

DATE: Jul-23

LO# 101739

WINTER NATURAL AIR CHANGE RATE 0.365

SUMMER NATURAL AIR CHANGE RATE 0.100

HEAT LOSS AT °F. 74

HEAT GAIN AT °F. 11

CSA-F280-12

SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2	ENS-3	FLEX	ENS-4	WIC-2	
			35	27	5	25	36	17	9	8	5	8	12	
			9	9	9	9	9	9	9	9	9	9	10	
FACTORS														
GRS.WALL AREA	LOSS	GAIN	319	246	46	228	328	155	82	73	46	73	121	
GLAZING	LOSS	GAIN												
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	8	166	124	0
EAST	20.8	41.0	0	0	0	44	914	1806	47	976	1929	0	0	16
SOUTH	20.8	24.4	0	0	0	0	0	0	8	166	195	24	499	585
WEST	20.8	41.0	22	457	903	26	540	1067	0	0	0	0	0	0
SKYLT.	36.4	100.7	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
NET EXPOSED WALL	4.4	0.6	297	1292	192	220	957	142	46	198	29	184	800	119
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	350	439	195	202	253	113	50	63	28	210	263	117
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	210	523	78	8	20	3
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			2187	1751	261	2500	2706	1431	578	759	686	502	791	
SUB TOTAL HT GAIN			1290	1322	57	2119	2462	832	108	629	265	244	725	
LEVEL FACTOR / MULTIPLIER	0.20	0.30		0.20	0.30		0.20	0.30	0.20	0.30		0.20	0.30	0.30
AIR CHANGE HEAT LOSS			648	519	77	740	802	424	171	225	203	149	411	
AIR CHANGE HEAT GAIN			73	74	3	119	138	47	6	35	15	14	41	
DUCT LOSS			0	0	0	324	351	0	75	98	89	0	0	
DUCT GAIN			0	0	0	306	342	0	11	66	28	0	0	
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	0	0	0	
HEAT GAIN APPLIANCES/LIGHTS			583	0	0	583	583	583	0	0	0	0	0	
TOTAL HT LOSS BTU/H			2835	2269	338	3564	3859	1855	824	1082	978	651	1202	
TOTAL HT GAIN x 1.3 BTU/H			3152	1815	79	4377	4894	2211	162	950	400	336	995	

ROOM USE	EXP. WALL	CLG. HT.	DN/LV	H-OFF	KT/BF	FAM	LAUN	PWD	FOY	MUD			WOB	BAS
			21	24	40	31	6	11	35	5			41	137
			10	10	10	10	9	10	10	10			9	9
FACTORS														
GRS.WALL AREA	LOSS	GAIN	212	242	404	313	55	111	354	51			349	754
GLAZING	LOSS	GAIN												
NORTH	20.8	15.5	0	0	0	11	229	170	0	0	0	0	66	1371
EAST	20.8	41.0	0	0	0	0	0	0	22	457	903	0	0	0
SOUTH	20.8	24.4	30	623	732	0	0	0	0	0	0	0	0	6
WEST	20.8	41.0	0	0	0	62	1288	2545	30	623	1231	0	0	125
SKYLT.	36.4	100.7	0	0	0	0	0	0	0	0	0	0	0	146
DOORS	19.6	2.9	0	0	0	0	0	0	22	431	64	21	411	61
NET EXPOSED WALL	4.4	0.6	182	793	118	220	960	142	331	1442	214	283	1231	182
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	66	83	37	0	0	411
NO ATTIC EXPOSED CLG	2.7	1.2	0	0	0	0	0	0	0	0	0	0	0	1444
EXPOSED FLOOR	2.5	0.4	0	0	0	0	0	0	0	0	0	0	0	214
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			1417	1417	2959	1857	468	599	2236	540			515	2325
SUB TOTAL HT GAIN			849	483	2929	1414	205	238	1167	80			3117	4305
LEVEL FACTOR / MULTIPLIER	0.30	0.52		0.30	0.52		0.30	0.52	0.30	0.52			0.50	1.38
AIR CHANGE HEAT LOSS			737	737	1539	966	139	312	1163	281			10241	
AIR CHANGE HEAT GAIN			48	27	165	80	12	13	66	4			91	
DUCT LOSS			0	0	0	0	0	0	0	0			0	
DUCT GAIN			0	0	0	0	0	0	0	0			0	
HEAT GAIN PEOPLE	240	0	0	0	0	0	0	0	0	0			0	0
HEAT GAIN APPLIANCES/LIGHTS			583	583	583	583	583	583	0	0			0	583
TOTAL HT LOSS BTU/H			2153	2154	4498	2822	607	911	3399	820			3117	14547
TOTAL HT GAIN x 1.3 BTU/H			1924	1420	4779	2699	1039	327	1602	110			1565	1424

TOTAL HEAT GAIN BTU/H:

36496

TONS: 3.04

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 54487

TOTAL COMBINED HEAT LOSS BTU/H: 56080

Michael O'Rourke

INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE

PER: 

CHIEF BUILDING OFFICER

RRR ESTATES INC

BUILDER GREENPARK HOMES

WOB

TYPE: ROSE 6

DATE: Jul-23

GFA: 3175

LO# 101739

HEATING CFM 1122

TOTAL HEAT LOSS 54,487

AIR FLOW RATE CFM 20.59

COOLING CFM 1122

TOTAL HEAT GAIN 36,260

AIR FLOW RATE CFM 30.94

furnace pressure 0.6

furnace filter 0.05

a/c coil pressure 0.2

available pressure for s/a & r/a 0.35

GMCC960803BNA 80

FAN SPEED LOW

MEDLOW

MEDIUM 885

MEDIUM HIGH 1005

HIGH 1122

#GOODMAN

AFUE = 96 %

INPUT (BTU/H) = 80,000

OUTPUT (BTU/H) = 76,800

DESIGN CFM = 1122

CFM @ .6" E.S.P.

TEMPERATURE RISE 63 °F

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	15	10	6
R/A	0	0	5	2	1

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

plenum pressure s/a 0.18

max s/a dif press. loss 0.01

min adjusted pressure s/a 0.17

r/a pressure 0.17

r/a grille press. Loss 0.02

adjusted pressure r/a 0.15

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	ENS-2	ENS-3	FLEX	MBR	ENS-4	DN/LV	H-OFF	KT/BF	KT/BF	FAM	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.42	1.13	0.34	1.78	1.93	1.86	0.82	1.08	0.98	1.42	0.65	2.15	2.15	2.25	2.25	1.41	0.61	0.91	3.40	0.82	2.94	2.94	2.94	2.94
CFM PER RUN HEAT	29	23	7	37	40	38	17	22	20	29	13	44	44	46	46	29	13	19	70	17	61	61	61	61
RM GAIN MBH.	1.58	0.91	0.08	2.19	2.45	2.21	0.16	0.95	0.40	1.58	0.34	1.92	1.42	2.39	2.39	1.35	1.04	0.33	1.60	0.11	0.50	0.50	0.50	0.50
CFM PER RUN COOLING	49	28	2	68	76	68	5	29	12	49	10	60	44	74	74	42	32	10	50	3	15	15	15	15
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.	35	55	25	46	61	44	44	46	33	46	34	19	17	24	32	35	29	39	38	21	23	38	41	5
EQUIVALENT LENGTH	150	190	180	130	160	200	150	120	190	180	200	100	170	120	140	100	180	150	100	130	150	120	140	80
TOTAL EFFECTIVE LENGTH	185	245	205	176	221	244	194	166	223	226	234	119	187	144	172	135	209	189	138	151	173	158	181	85
ADJUSTED PRESSURE	0.09	0.07	0.08	0.1	0.08	0.07	0.09	0.1	0.08	0.08	0.07	0.14	0.09	0.12	0.1	0.13	0.08	0.09	0.12	0.11	0.1	0.11	0.1	0.2
ROUND DUCT SIZE	5	4	4	5	6	6	4	4	4	5	4	5	4	5	5	4	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	213	264	80	272	204	194	195	252	229	213	149	323	505	338	338	333	149	218	514	195	448	448	448	448
COOLING VELOCITY (ft/min)	360	321	23	499	388	347	57	333	138	360	115	441	505	543	543	482	367	115	367	34	110	110	110	110
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	A	B	C	E	D	B	E	E	C	A	B	C	C	A	A	B	C	D	D	E	A	B	B	C

RUN #	25	26	27	28	29	30	31
ROOM NAME	BAS	BED-2	BED-3	ENS	FAM	WIC-2	BAS
RM LOSS MBH.	2.94	1.78	1.93	1.13	1.41	1.20	2.94
CFM PER RUN HEAT	61	37	40	23	29	25	61
RM GAIN MBH.	0.50	2.19	2.45	0.91	1.35	1.00	0.50
CFM PER RUN COOLING	15	68	76	28	42	31	15
ADJUSTED PRESSURE	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	15	50	55	49	26	46	40
EQUIVALENT LENGTH	90	140	180	160	160	130	140
TOTAL EFFECTIVE LENGTH	105	190	235	209	186	176	180
ADJUSTED PRESSURE	0.16	0.09	0.07	0.08	0.09	0.1	0.1
ROUND DUCT SIZE	5	5	6	4	4	4	5
HEATING VELOCITY (ft/min)	448	272	204	264	333	287	448
COOLING VELOCITY (ft/min)	110	499	388	321	482	356	110
OUTLET GRILL SIZE	3X10	3X10	4X10	3X10	3X10	3X10	3X10
TRUNK	C	E	D	B	A	D	D

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		VELOCITY (ft/min)	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT			VELOCITY (ft/min)		
TRUNK A	240	0.08	8.2	8	x	8	540	TRUNK G	0	0.00	0	0	x	8	0	TRUNK O	0	0.05	0	0	x	8	0
TRUNK B	488	0.07	11.1	14	x	8	627	TRUNK H	0	0.00	0	0	x	8	0	TRUNK P	0	0.05	0	0	x	8	0
TRUNK C	738	0.07	12.9	20	x	8	664	TRUNK I	0	0.00	0	0	x	8	0	TRUNK Q	0	0.05	0	0	x	8	0
TRUNK D	255	0.07	8.7	10	x	8	459	TRUNK J	0	0.00	0	0	x	8	0	TRUNK R	0	0.05	0	0	x	8	0
TRUNK E	385	0.07	10.1	14	x	8	495	TRUNK K	0	0.00	0	0	x	8	0	TRUNK S	0	0.05	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	0.05	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	BR							TRUNK X	1122	0.05	16.5	32	x	8	631	
AIR VOLUME	115	85	85	85	105	363	101	0	0	0	0	0	0	0	183	TRUNK Y	618	0.05	13.2	20	x	8	556
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	TRUNK Z	255	0.05	9.5	10	x	8	459
ACTUAL DUCT LGH.	28	54	75	48	48	30	14	1	1	1	1	1	1	1	14	DROP	1122	0.05	16.5	24	x	10	673
EQUIVALENT LENGTH	175	235	240	195	215	185	135	0	0	0	0	0	0	0	220								
TOTAL EFFECTIVE LH	203	289	315	243	263	215	149	1	1	1	1	1	1	1	234								
ADJUSTED PRESSURE	0.07	0.05	0.05	0.06	0.06	0.07	0.10	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.06								
ROUND DUCT SIZE	6.5	6	6	6	6.5	9.9	5.6	0	0	0	0	0	0	0	8								
INLET GRILL SIZE	8	8	8	8	8	8	8	0	0	0	0	0	0	0	8								
	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	24								

LO # 101739
WOB

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	6 @ 10.6 cfm 63.6 cfm
Other Rooms	6 @ 10.6 cfm 63.6 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:	
HRAI #	001820
Date:	July-23

CSA F280-12 Residential Heat Loss and Heat Gain Calculations																																																																	
Formula Sheet (For Air Leakage / Ventilation Calculation)																																																																	
LO#: 101739		Model: ROSE 6		Builder: GREENPARK HOMES			Date: 2023-07-06																																																										
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>1399</td> <td>9</td> <td>11891.5</td> </tr> <tr> <td>First</td> <td>1399</td> <td>10</td> <td>14129.9</td> </tr> <tr> <td>Second</td> <td>1789</td> <td>9</td> <td>16279.9</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>42,301.3 ft³</td> </tr> <tr> <td colspan="3" style="text-align: right;">Total:</td> <td>1197.8 m³</td> </tr> </tbody> </table>					Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)	Bsmt	1399	9	11891.5	First	1399	10	14129.9	Second	1789	9	16279.9	Third	0	9	0	Fourth	0	9	0	Total:			42,301.3 ft³	Total:			1197.8 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%;">0.365</td> </tr> <tr> <td>SUMMER NATURAL AIR CHANGE RATE</td> <td>0.100</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	0.365	SUMMER NATURAL AIR CHANGE RATE	0.100	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	1399	9	11891.5																																																														
First	1399	10	14129.9																																																														
Second	1789	9	16279.9																																																														
Third	0	9	0																																																														
Fourth	0	9	0																																																														
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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																																																												
$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$ 0.365 x 332.73 x 41 °C x 1.2 = 6003 W = 20483 Btu/h					$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$ = 0.100 x 332.73 x 6 °C x 1.2 = 245 W = 834 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)																																																																	
$HL_{airr} = Level\ Factor \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agclevel} + HL_{bgclevel})\}$ <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">20,483</td> <td>7,422</td> <td>1.380</td> </tr> <tr> <td>2</td> <td>0.3</td> <td>11,815</td> <td>0.520</td> </tr> <tr> <td>3</td> <td>0.2</td> <td>13,829</td> <td>0.296</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	20,483	7,422	1.380	2	0.3	11,815	0.520	3	0.2	13,829	0.296	4	0	0	0.000	5	0	0	0.000																														
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375 Finley Ave. Suite 202 Ajax, ON L1S 2E2

Te: (416) 999-5000 Fax: (416) 999-1576

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

MHP 23030

HEAT LOSS AND GAIN SUMMARY SHEET

MODEL: ROSE 6 **WOB** **BUILDER:** GREENPARK HOMES
SFQT: 3175 **LO#** 101739 **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):	42301.3	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: 58.0 ft	WIDTH: 31.0 ft	EXPOSED PERIMETER:	137.0 ft
WOB INSULATION CONFIGURATION	SCB_9	WOB EXPOSED PERIMETER	41.0 ft

2012 OBC - COMPLIANCE PACKAGE

Component

Compliance Package A1

Nominal Min. Eff.

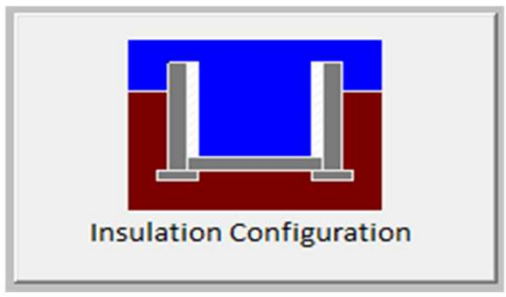
Ceiling with Attic Space Minimum RSI (R)-Value	60	59.22
Ceiling Without Attic Space Minimum RSI (R)-Value	31	27.65
Exposed Floor Minimum RSI (R)-Value	31	29.80
Walls Above Grade Minimum RSI (R)-Value	22	17.03
Basement Walls Minimum RSI (R)-Value	20 ci	21.12
Below Grade Slab Entire surface > 600 mm below 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):	4.6	 Insulation Configuration
Floor Width (m):	9.4	
Exposed Perimeter (m):	41.8	
Wall Height (m):	2.6	
Depth Below Grade (m):	1.40	
Window Area (m ²):	0.6	
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):		681

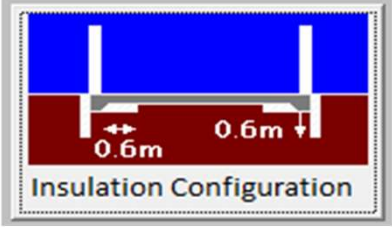
TYPE: ROSE 6
 LO# 101739

WOB

[Signature]

Residential Slab on Grade 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		
Length (m):	1.5	 Insulation Configuration
Width (m):	9.4	
Exposed Perimeter (m):	12.5	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Results		
Heating Load (Watts):		151

TYPE: ROSE 6
 LO# 101739

WOB



MHP 23030 HVA Design Ltd.
 375 Finley Ave, Suite 202
 Ajax ON, L1S 2E2
 905-619-2300

Air Infiltration Residential Load Calculator

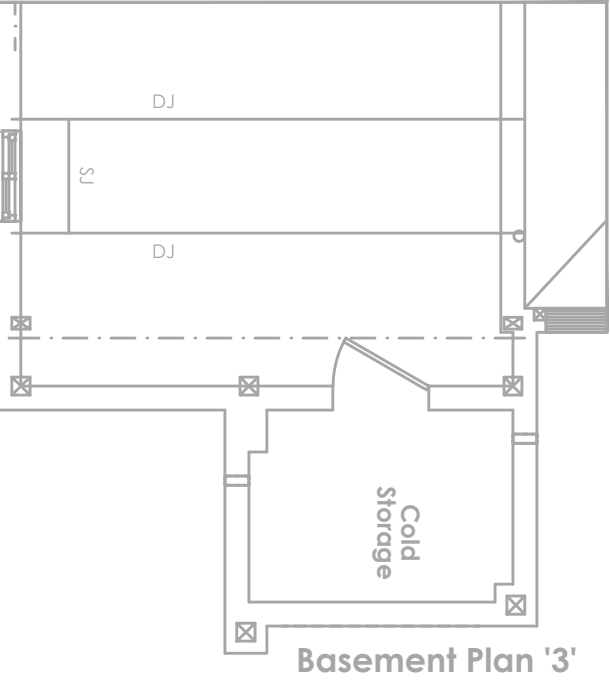
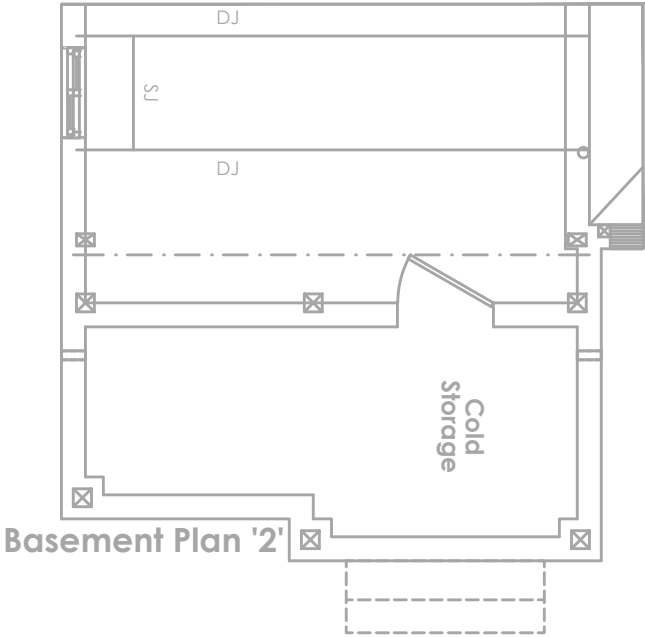
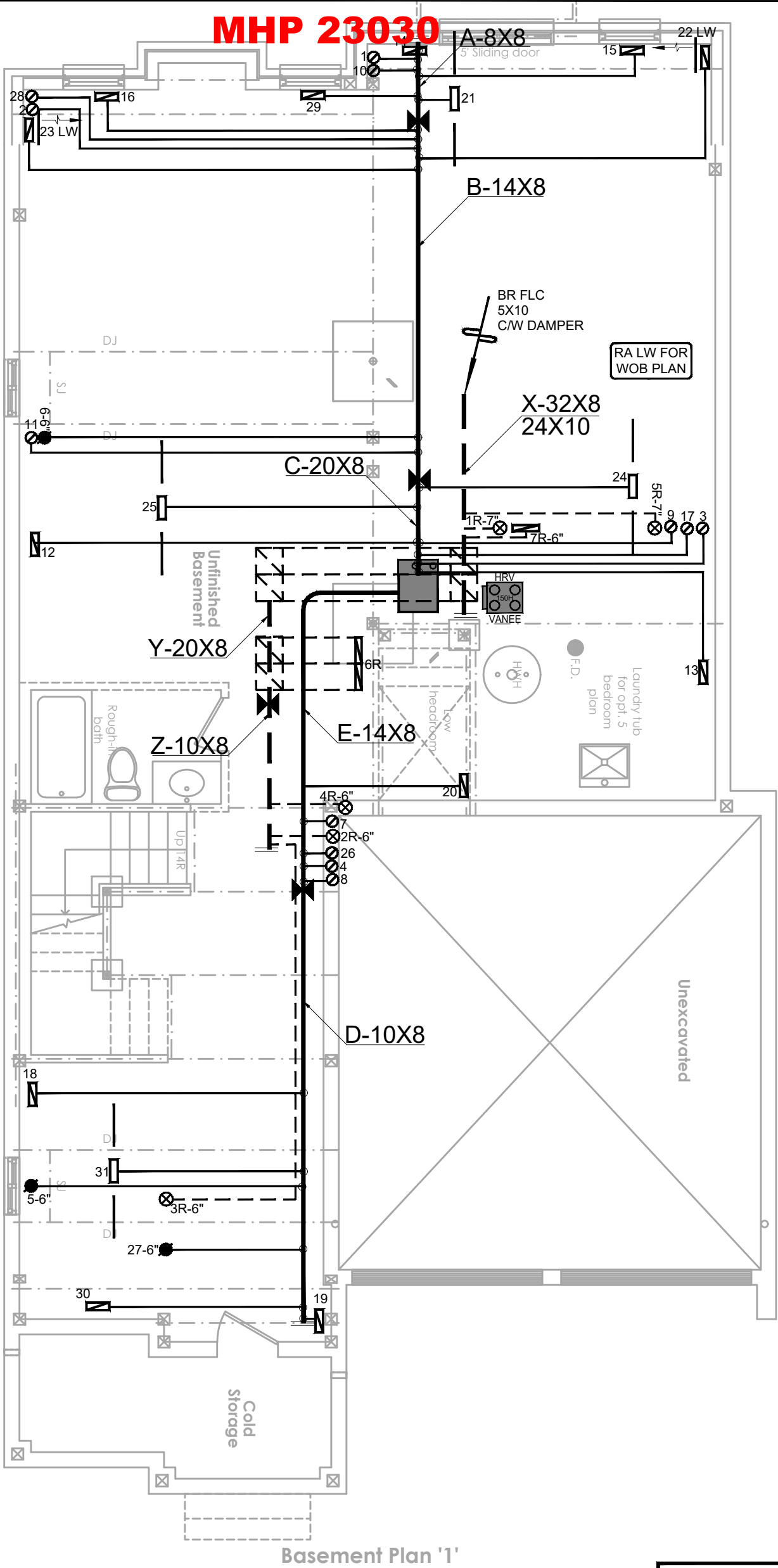
Supplemental tool for CAN/CSA-F280

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:	Heavy		
Flue:	Heavy		
Highest Ceiling Height (m):	8.44		
Building Configuration			
Type:	Detached		
Number of Stories:	Two		
Foundation:	Full		
House Volume (m ³):	1197.8		
Air Leakage/Ventilation			
Air Tightness Type:	Present (1961-) (3.57 ACH)		
Custom BDT Data:	ELA @ 10 Pa.	1596.8 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
Diameter (mm):	0	0	0
Natural Infiltration Rates			
Heating Air Leakage Rate (ACH/H):	0.365		
Cooling Air Leakage Rate (ACH/H):	0.100		

TYPE: ROSE 6
 LO# 101739

WOB

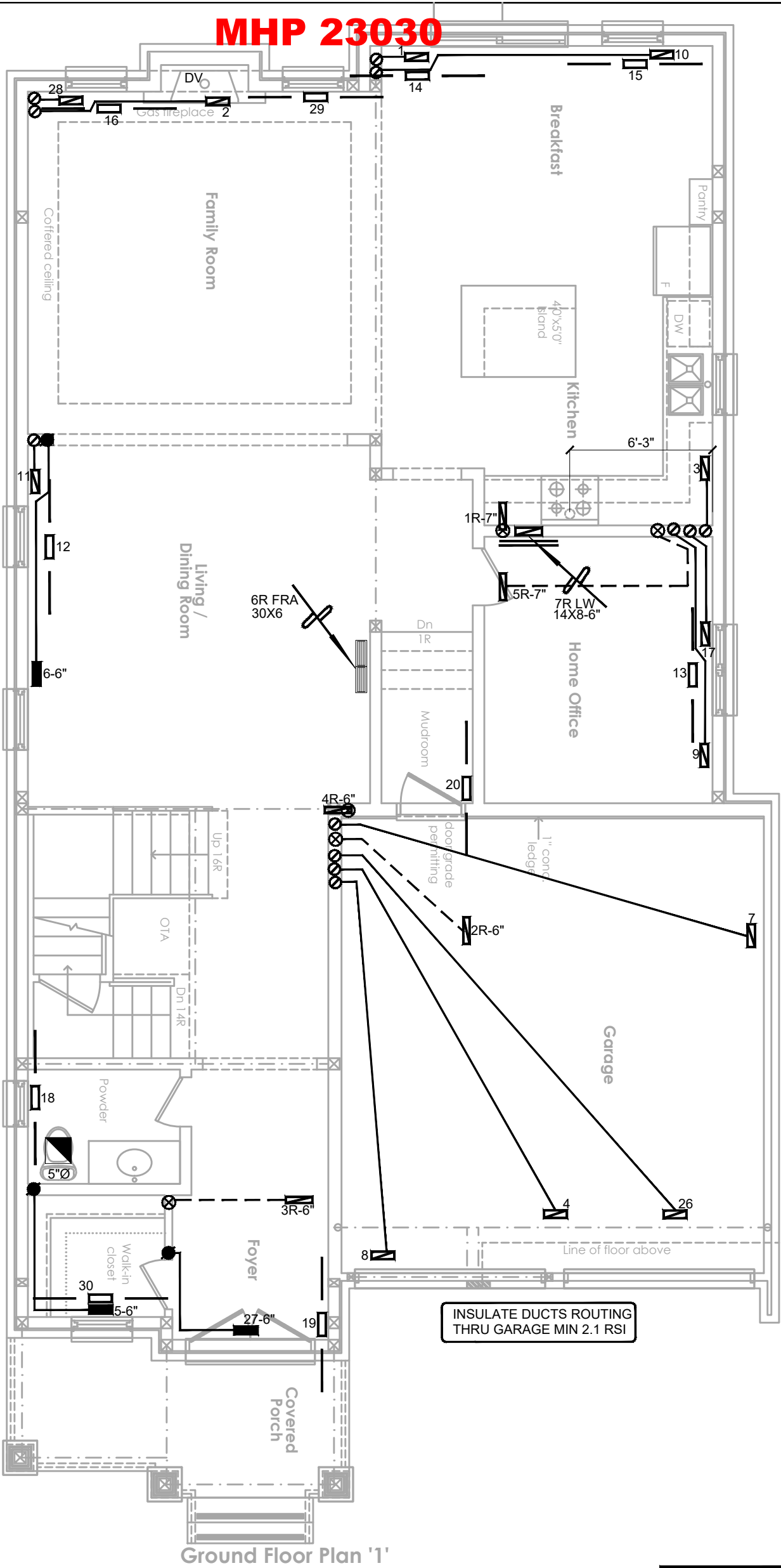
Michael O'Rourke BCIN# 19669



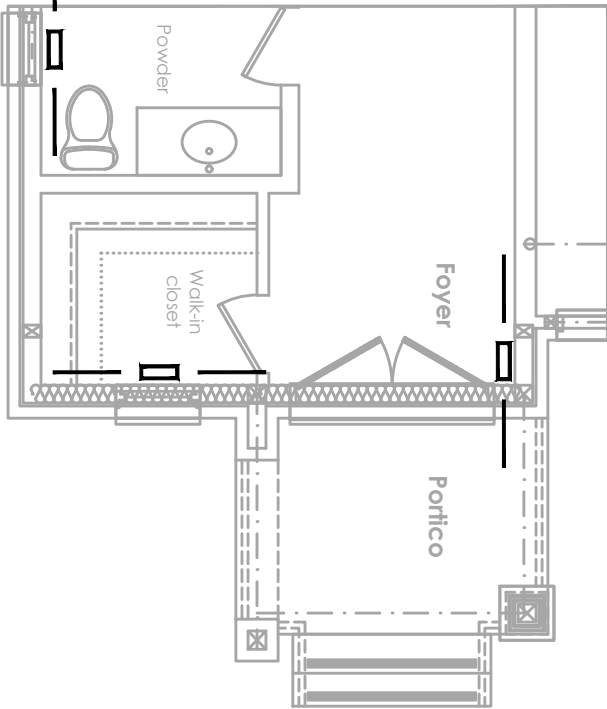
WOB

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				HEAT LOSS 56080 BTU/H UNIT DATA		# OF RUNS S/A R/A FANS		Sheet Title		
GREENPARK HOMES		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		MAKE GOODMAN		3RD FLOOR		BASEMENT HEATING LAYOUT		
Project Name		ZADORRA OSHAWA, ONTARIO		MODEL GMEC960803BNA		2ND FLOOR 15 5 5		Date JULY/2023		
WOB		3175 sqft		INPUT 80.0 MBTU/H		1ST FLOOR 10 2 2		Scale 3/16" = 1'-0"		
ROSE 6		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.		OUTPUT 76.8 MBTU/H		BASEMENT 6 1 0		BCIN# 19669		
				COOLING 3.0 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		LO# 101739		
				FAN SPEED 1122 cfm @ 0.6" w.c.						

MHP 23030



Ground Floor Plan '2'

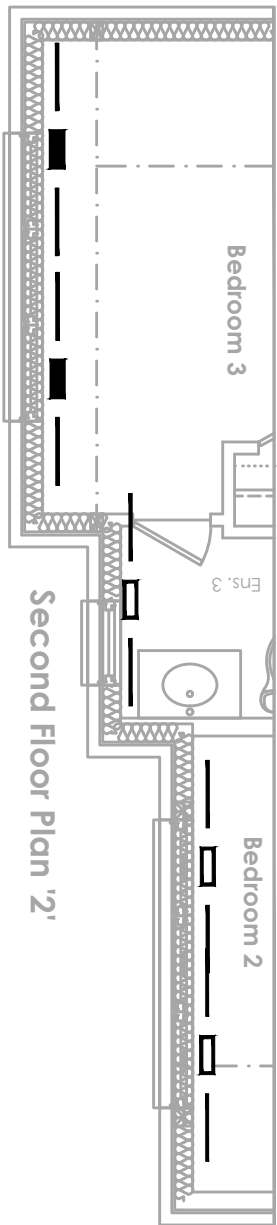


Ground Floor Plan '3'

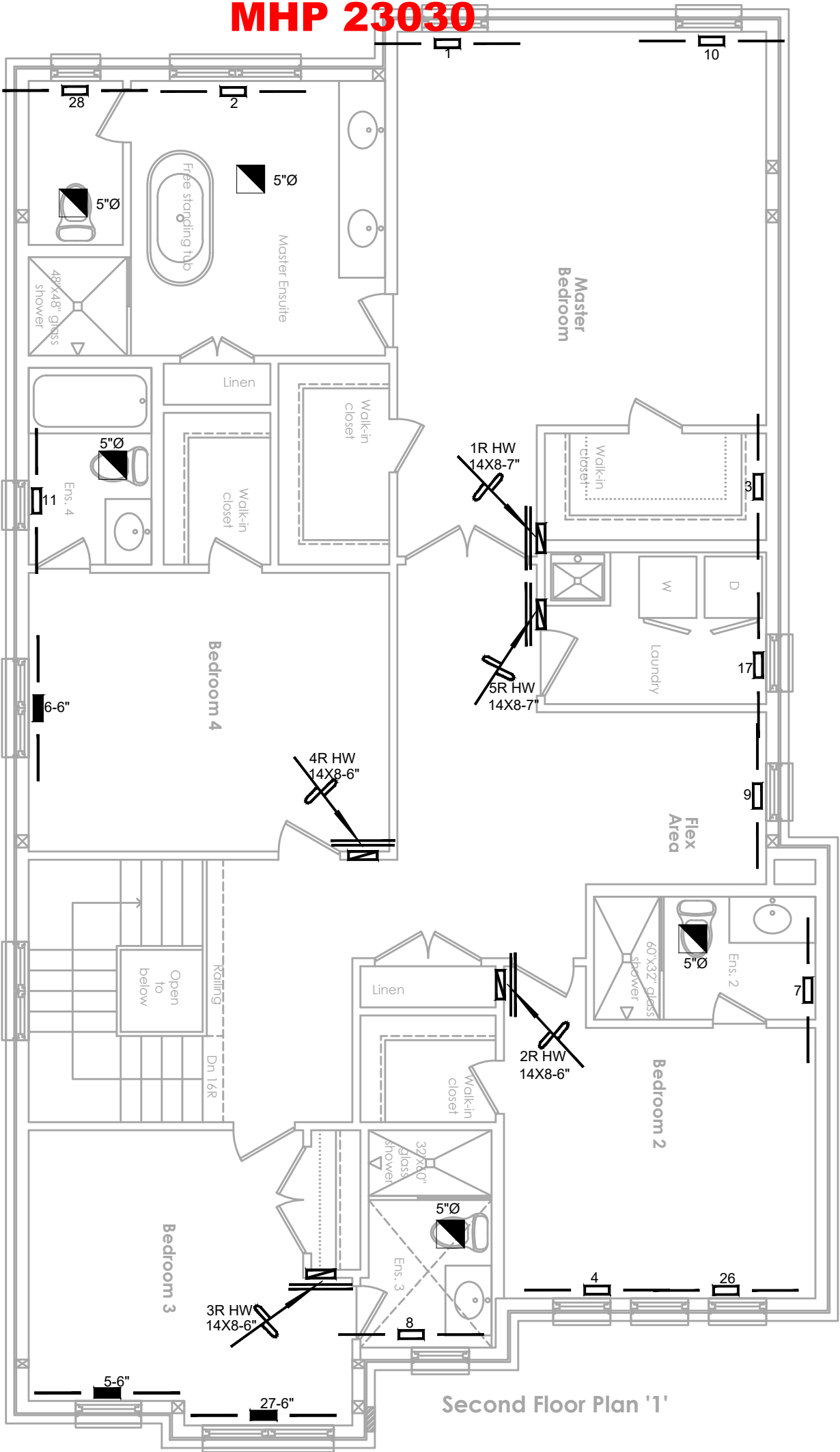
Ground Floor Plan '1'

WOB

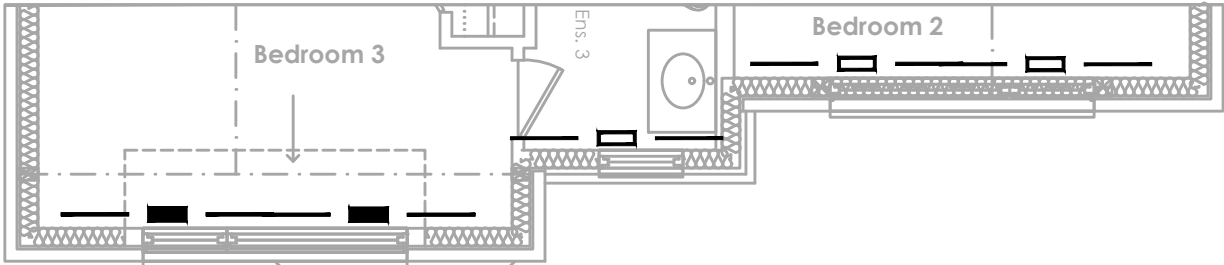
HVAC LEGEND								3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.		
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.		
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR 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.						Sheet Title		
GREENPARK HOMES								FIRST FLOOR HEATING LAYOUT		
Project Name								Date		
ZADORRA OSHAWA, ONTARIO								JULY/2023		
WOB ROSE 6								Scale		
3175 sqft		BCIN# 19669		LO#		101739				



Second Floor Plan '2'



Second Floor Plan '1'



Second Floor Plan '3'

WOB

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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GREENPARK HOMES										SECOND FLOOR HEATING LAYOUT	
Project Name										Date	
ZADORRA										JULY/2023	
OSHAWA, ONTARIO										Scale	
WOB						BCIN# 19669					
ROSE 6						LO#					
3175 sqft						101739					



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