

MHP 23028SITE NAME: ZADORRA ESTATES INC
BUILDER: GREENPARK HOMES

CORPORATION OF THE CITY OF OSHAWA

TRUE COPY

OF PERMIT PLANS

Nov 15 2023

C. M. M. M.

PER 21

LOSS GAIN BUILDING LOSS GAIN

GFA: 3005

DATE: Jun-23

LO# 101734

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

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	S-BATH	FLEX	ENS-2
			34	24	27	27	36	18	6	14	6
			9	9	9	9	9	9	9	9	9
GRS.WALL AREA	LOSS	GAIN	309	21	246	328	164	55	127	55	
GLAZING	LOSS	GAIN		LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
NORTH	20.8	15.5	0	0	0	0	0	0	0	0	0
EAST	20.8	41.0	0	0	0	44	914	1806	49	1018	2011
SOUTH	20.8	24.4	0	0	0	7	145	171	0	0	0
WEST	20.8	41.0	22	457	903	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	287	1252	186	195	851	126	0	0	0
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	402	504	224	145	182	81	29	36	16
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			2213	1511	109	2470	2545	1221	447	1537	444
SUB TOTAL HT GAIN			1313	1035	27	2104	2330	594	243	914	86
LEVEL FACTOR / MULTIPLIER	0.20	0.28		0.20	0.28	0.20	0.28	0.20	0.28	0.20	0.28
AIR CHANGE HEAT LOSS			621	424	30	693	714	342	125	431	124
AIR CHANGE HEAT GAIN			79	62	2	126	140	36	15	55	5
DUCT LOSS			0	0	14	316	0	0	0	197	57
DUCT GAIN			0	0	3	331	0	0	0	97	9
HEAT GAIN PEOPLE	240	2	480	0	0	1	240	1	240	0	0
HEAT GAIN APPLIANCES/LIGHTS			839	0	0	839	839	839	0	0	0
TOTAL HT LOSS BTU/H			2834	1935	153	3480	3258	1563	572	2165	625
TOTAL HT GAIN x 1.3 BTU/H			3524	1426	41	4733	4614	2222	335	1385	131

ROOM USE	EXP. WALL	CLG. HT.	H-OFF	DIN	KT/BF	FAM	LAUN	PWD	FOY	MUD	WOD	BAS
			10	32	37	34	7	12	31	15	44	174
			10	10	10	10	9	10	10	10	9	9
GRS.WALL AREA	LOSS	GAIN	101	323	374	343	64	121	313	152	374	1089
GLAZING	LOSS	GAIN		LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS	LOSS
NORTH	20.8	15.5	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
SOUTH	20.8	24.4	22	457	537	29	603	707	0	0	0	0
WEST	20.8	41.0	0	0	0	52	1080	2134	22	457	903	0
SKYLT.	36.4	100.7	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
NET EXPOSED WALL	4.4	0.6	79	344	51	294	1282	190	322	1402	208	321
NET EXPOSED BSMT WALL ABOVE GR	3.5	0.5	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
NO ATTIC EXPOSED CLG	2.7	1.2	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
BASEMENT/CRAWL HEAT LOSS			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
SUBTOTAL HT LOSS			801	1684	2482	1857	353	709	1969	980	1083	7628
SUB TOTAL HT GAIN			588	897	2342	1111	75	523	1127	145	452	264
LEVEL FACTOR / MULTIPLIER	0.30	0.51		0.30	0.51	0.30	0.51	0.30	0.51	0.30	0.51	0.50
AIR CHANGE HEAT LOSS			406	954	1256	940	99	359	997	496	9012	43
AIR CHANGE HEAT GAIN			35	54	141	67	4	31	68	9	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	0
HEAT GAIN APPLIANCES/LIGHTS			839	839	839	839	839	839	0	0	0	839
TOTAL HT LOSS BTU/H			1207	2838	3738	2798	452	1067	2966	1476	1083	16640
TOTAL HT GAIN x 1.3 BTU/H			1901	2328	4319	2621	1194	720	1553	200	588	1490

TOTAL HEAT GAIN BTU/H:

35559

TONS: 2.96

LOSS DUE TO VENTILATION LOAD BTU/H: 1593

STRUCTURAL HEAT LOSS: 50849

TOTAL COMBINED HEAT LOSS BTU/H: 52442

Michael O'Rourke

MHP 23028SITE NAME: ZADORRA ESTATES INC. CORPORATION OF THE CITY OF OSHAWA
BUILDER: GREENPARK HOMES INC. TYPE: ROSE 2

DATE: Jun-23

GFA: 3005 LO# 101734

HEATING CFM 1131
TOTAL HEAT LOSS 50,849
AIR FLOW RATE CFM 22.24COOLING CFM 1131
TOTAL HEAT GAIN 35,323
AIR FLOW RATE CFM 3furnace pressure 0.6
furnace filter 0.05
a/c coil pressure 0.2
ilable pressure
for s/a & r/a 0.35#GOODMAN
GMEC960603BNA 60
FAN SPEED
LOWAFUE = 96 %
INPUT (BTU/H) = 60,000
OUTPUT (BTU/H) = **57,600**

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

CHIEF BUILDING OFFICIAL

plenum pressure s/a 0.18
max s/a diff press. loss 0.02
min adjusted pressure s/a 0.16r/a pressure 0.17
r/a grille press. Loss 0.02
adjusted pressure r/a 0.15MEDLOW
MEDIUM 928
MEDIUM HIGH 1017
HIGH 1131DESIGN CFM = **1131**
CFM @ .6" E.S.P.TEMPERATURE RISE 47 °F

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	S-BATH	FLEX	BED-2	MBR	ENS-2	H-OFF	DIN	KT/BF	KT/BF	FAM	LAUN	PWD	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.42	0.97	0.15	1.74	1.63	1.56	0.57	2.17	1.74	1.42	0.63	1.21	2.84	1.87	1.87	2.80	0.45	1.07	2.97	1.48	3.54	3.54	3.54	3.54
CFM PER RUN HEAT	32	22	3	39	36	35	13	48	39	32	14	27	63	42	42	62	10	24	66	33	79	79	79	79
RM GAIN MBH.	1.76	0.71	0.04	2.37	2.31	2.22	0.34	1.38	2.37	1.76	0.13	1.90	2.33	2.16	2.16	2.62	1.19	0.72	1.55	0.20	0.42	0.42	0.42	0.42
CFM PER RUN COOLING	56	23	1	76	74	71	11	44	76	56	4	61	75	69	69	84	38	23	50	6	13	13	13	13
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	0.16	0.17	0.17	0.17	0.17	0.17	0.17	0.17	0.17
ACTUAL DUCT LGH.	48	43	45	59	71	48	51	57	63	45	51	48	37	36	29	20	35	56	56	17	36	34	16	45
EQUIVALENT LENGTH	180	190	140	170	190	160	170	140	190	180	130	120	120	140	90	130	190	170	140	160	130	120	100	150
TOTAL EFFECTIVE LENGTH	228	233	185	229	261	208	221	197	253	225	181	168	157	176	119	150	225	226	196	177	166	154	116	195
ADJUSTED PRESSURE	0.08	0.07	0.09	0.08	0.07	0.08	0.08	0.09	0.07	0.08	0.1	0.1	0.11	0.1	0.14	0.11	0.08	0.08	0.09	0.1	0.1	0.11	0.15	0.09
ROUND DUCT SIZE	5	4	4	6	6	6	4	5	6	5	4	5	5	5	5	6	4	4	5	4	5	5	5	5
HEATING VELOCITY (ft/min)	235	252	34	199	184	178	149	352	199	235	161	198	463	308	308	316	115	275	485	379	580	580	580	580
COOLING VELOCITY (ft/min)	411	264	11	388	377	362	126	323	388	411	46	448	551	507	507	428	436	264	367	69	95	95	95	95
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	4X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10	3X10
TRUNK	C	D	C	B	A	D	C	B	B	D	C	B	C	D	E	E	C	A	A	C	D	D	E	B

RUN #	25	26	27
ROOM NAME	BAS	BED-3	ENS
RM LOSS MBH.	3.54	1.63	0.97
CFM PER RUN HEAT	79	36	22
RM GAIN MBH.	0.42	2.31	0.71
CFM PER RUN COOLING	13	74	23
ADJUSTED PRESSURE	0.17	0.17	0.17
ACTUAL DUCT LGH.	53	69	51
EQUIVALENT LENGTH	160	200	130
TOTAL EFFECTIVE LENGTH	213	269	181
ADJUSTED PRESSURE	0.08	0.06	0.1
ROUND DUCT SIZE	6	6	4
HEATING VELOCITY (ft/min)	403	184	252
COOLING VELOCITY (ft/min)	66	377	264
OUTLET GRILL SIZE	4X10	4X10	3X10
TRUNK	A	A	D

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	241	0.06	8.8	10	x	8	434		TRUNK G	0	0.00	0	0	x	8
TRUNK B	473	0.06	11.4	16	x	8	532		TRUNK H	0	0.00	0	0	x	8
TRUNK C	641	0.06	12.8	20	x	8	577		TRUNK I	0	0.00	0	0	x	8
TRUNK D	311	0.07	9.4	10	x	8	560		TRUNK J	0	0.00	0	0	x	8
TRUNK E	494	0.07	11.1	14	x	8	635		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	0.05	0	0	x	8	0
TRUNK P	0	0.05	0	0	x	8	0
TRUNK Q	0	0.05	0	0	x	8	0
TRUNK R	0	0.05	0	0	x	8	0
TRUNK S	0	0.05	0	0	x	8	0
TRUNK T	0	0.05	0	0	x	8	0
TRUNK U	0	0.05	0	0	x	8	0
TRUNK V	0	0.05	0	0	x	8	0
TRUNK W	195	0.05	8.6	8	x	8	439
TRUNK X	1131	0.05	16.5	32	x	8	636
TRUNK Y	933	0.05	15.4	28	x	8	600
TRUNK Z	375	0.05	10.9	14	x	8	482
DROP	1131	0.05	16.5	24	x	10	679

RETURN AIR #	1	2	3	4	5	6	7								BR
AIR VOLUME	115	95	85	85	95	100	358	0	0	0	0	0	0	0	198
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
ACTUAL DUCT LGH.	43	66	66	48	73	46	37	1	1	1	1	1	1	1	14
EQUIVALENT LENGTH	175	195	235	190	210	205	230	0	0	0	0	0	0	0	135
TOTAL EFFECTIVE LH	218	261	301	238	283	251	267	1	1	1	1	1	1	1	149
ADJUSTED PRESSURE	0.07	0.06	0.05	0.06	0.05	0.06	0.06	14.80	14.80	14.80	14.80	14.80	14.80	14.80	0.10
ROUND DUCT SIZE	6.5	6	6	6	6.5	6.4	10.3	0	0	0	0	0	0	0	7
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	14	30	0	0	0	0	0	0	0	14

MHP 23028

LO # 101734

TYPE: ROSE 2
SITE NAME: ZADORRA ESTATES INC

CORPORATION OF THE CITY OF OSHAWA

TRUE COPY
ON THE MECHANICALS

Nov 15 2023

RESIDENTIAL MECHANICAL 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

PER: 
CHIEF BUILDING OFFICIAL

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	5	@ 10.6 cfm	53	cfm
Other Rooms	5	@ 10.6 cfm	53.0	cfm
Table 9.32.3.A.	TOTAL		180.2	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	180.2	cfm
Less Principal Ventil. Capacity	79.5	cfm
Required Supplemental Capacity	100.7	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
S-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: VANEV V150H

150 cfm high 35 cfm low

75 % Sensible Efficiency @ 32 deg F (0 deg C) ☒ HVI Approved

LOCATION OF INSTALLATION

Lot: Concession

Township: Plan:

Address:

Roll # Building Permit #

BUILDER: GREENPARK HOMES

Name:

Address:

City:

Telephone #:

Fax #:

INSTALLING CONTRACTOR

Name:

Address:

City:

Telephone #:

Fax #:

DESIGNER CERTIFICATION

I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.

Name: HVAC Designs Ltd.

Signature:



HRAI #

001820

Date:

June-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



MHP 23028

CORPORATION OF THE CITY OF OSHAWA
TRUE COPY
OF PERMIT PLANS
Nov 15 2023

CHIEF BUILDING OFFICIAL

80-2 Residential Heat Loss and Heat Gain Calculations

Formula Sheet (For Air Leakage / Ventilation Calculation)

LO#: 101734

Model: ROSE 2

Builder: GREENPARK HOMES

Date: 2023-06-30

Volume Calculation
House Volume

Level	Floor Area (ft ²)	Floor Height (ft)	Volume (ft ³)
Bsmt	1308	9	11118
First	1308	10	13210.8
Second	1687	9	15351.7
Third	0	9	0
Fourth	0	9	0
Total:			39,680.5 ft ³
Total:			1123.6 m ³

Air Change & Delta T Data

WINTER NATURAL AIR CHANGE RATE	0.342
SUMMER NATURAL AIR CHANGE RATE	0.094

Design Temperature Difference				
	T _{in} °C	T _{out} °C	ΔT °C	ΔT °F
Winter DTD _h	22	-19	41	74
Summer DTD _c	24	30	6	11

5.2.3.1 Heat Loss due to Air Leakage

$$HL_{airb} = LR_{airh} \times \frac{V_b}{3.6} \times DTD_h \times 1.2$$

$$0.342 \times 312.12 \times 41^\circ\text{C} \times 1.2 = 5282 \text{ W}$$

$$= 18023 \text{ Btu/h}$$

6.2.6 Sensible Gain due to Air Leakage

$$HG_{salb} = LR_{airc} \times \frac{V_b}{3.6} \times DTD_c \times 1.2$$

$$0.094 \times 312.12 \times 6^\circ\text{C} \times 1.2 = 215 \text{ W}$$

$$= 735 \text{ Btu/h}$$

5.2.3.2 Heat Loss due to Mechanical Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 74^\circ\text{F} \times 1.08 \times 0.25 = 1593 \text{ Btu/h}$$

6.2.7 Sensible heat Gain due to Ventilation

$$HL_{vairb} = PVC \times DTD_h \times 1.08 \times (1 - E)$$

$$80 \text{ CFM} \times 11^\circ\text{F} \times 1.08 \times 0.25 = 236 \text{ Btu/h}$$

5.2.3.3 Calculation of Air Change Heat Loss for Each Room (Floor Multiplier Section)

$$HL_{airr} = \text{Level Factor} \times HL_{airbv} \times \{(HL_{agcr} + HL_{bgcr}) \div (HL_{agcleve} + HL_{bgcleve})\}$$

Level	Level Factor (LF)	HL _{airve} Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL _{cleve})	Air Leakage Heat Loss Multiplier (LF x HL _{airbv} / HL _{level})
1	0.5	18,023	8,711	1.034
2	0.3		10,682	0.506
3	0.2		12,849	0.281
4	0		0	0.000
5	0		0	0.000

*HL_{airbv} = Air leakage heat loss + ventilation heat loss

*For a balanced or supply only ventilation system HL_{airve} = 0

Michael O'Rourke
BCIN# 19669



HEAT LOSS AND GAIN SUMMARY SHEET
MHP 23028
MODEL: ROSE 2

SFQT: 3005

LO# 101734
101735 2023

PER:
CHART BUILDING OFF-HOME
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 (ft ³):	39680.5	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	5
INTERIOR LIGHTING LOAD (Btu/h/ft ²):	1.95	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.5 ft
LENGTH: 53.0 ft	WIDTH: 34.0 ft	EXPOSED PERIMETER:	174.0 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



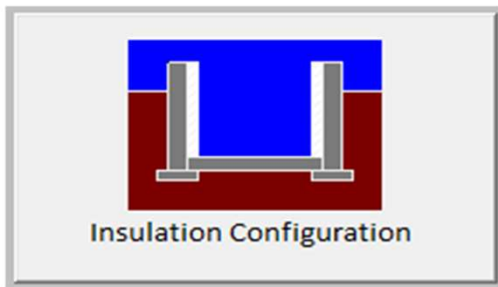
MHP 23028

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Nov 15 2023

C. M. O'Rourke
CHIEF BUILDING OFFICIAL

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):	16.2	 Insulation Configuration
Floor Width (m):	10.4	
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):		1713

TYPE: ROSE 2

LO# 101734



Air Infiltration Residential Load Calculator

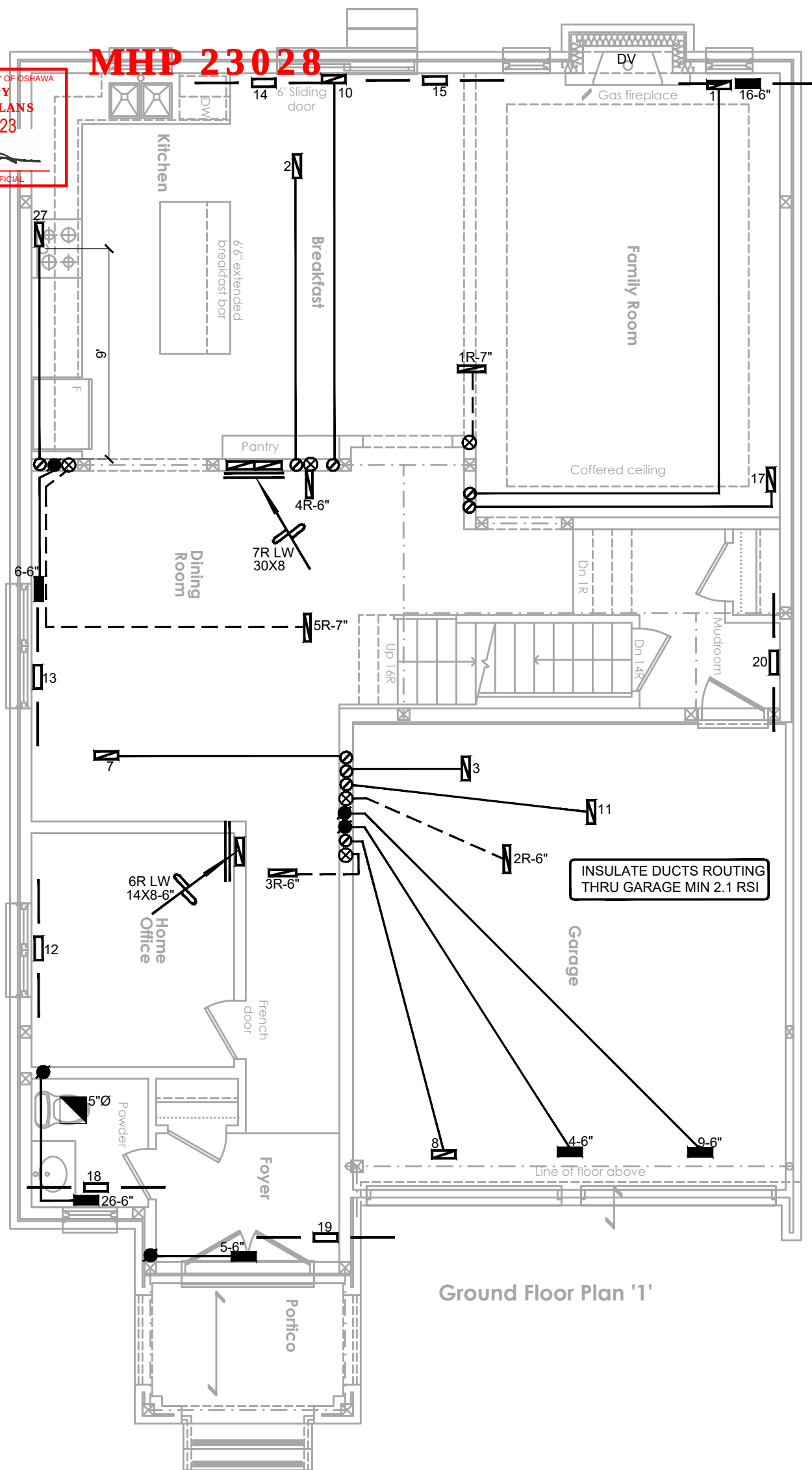
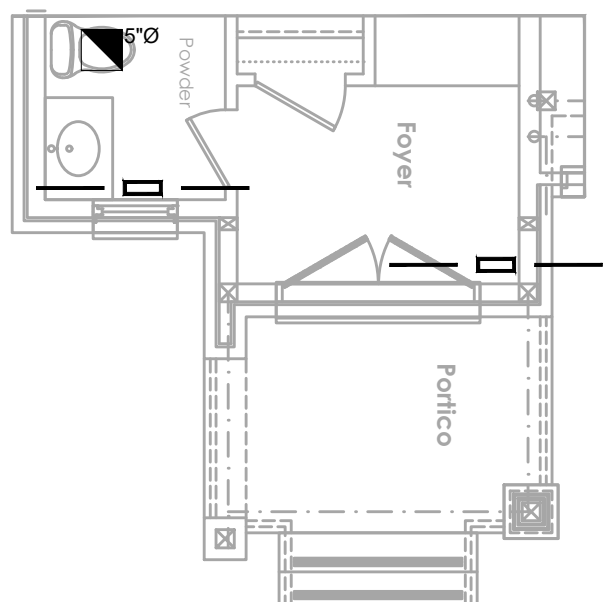
Supplemental tool for CAN/CSA-F280

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):	1123.6			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1497.8 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):	0.342			
Cooling Air Leakage Rate (ACH/H):	0.094			

TYPE: ROSE 2

LO# 101734

MHP 23028



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 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@hvacadesigns.ca Web: www.hvacadesigns.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	
Project Name										FIRST FLOOR HEATING LAYOUT	
ZADORRA OSHAWA, ONTARIO										Date JULY/2023	
ROSE 2 3005 sqft										Scale 3/16" = 1'-0"	
						BCIN# 19669		LO#	101734		

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PER: _____
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