

## Lot 170

SITE NAME: ROUNDEL HOMES INC  
BUILDER: GREENPARK HOMES

OPT 2ND  
TYPE: TERRACOTA 3

GFA: 3496

DATE: May-21  
LO# 90750

WINTER NATURAL AIR CHANGE RATE 0.352  
SUMMER NATURAL AIR CHANGE RATE 0.110

HEAT LOSS AT °F. 78  
HEAT GAIN AT °F. 13

CSA-F280-12  
SB-12 PACKAGE A1

ROOM USE	EXP. WALL	CLG. HT.	MBR	ENS	WIC	BED-2	BED-3	BED-4	ENS-2/3	BED-5	WIC-3	ENS-4/5		
			33	28	6	31	34	11	0	16	10	6		
			9	9	9	9	9	9	9	9	9	9		
GRS.WALL AREA	LOSS	GAIN	297	252	54	279	306	99	0	144	90	54		
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	21.8	16.0	0	0	0	0	0	0	0	0	0	0	0	0
EAST	21.8	41.6	0	0	0	0	0	0	0	0	0	0	0	0
SOUTH	21.8	24.9	0	0	0	7	152	174	0	0	0	7	152	174
WEST	21.8	41.6	32	697	1330	14	305	582	0	0	0	0	0	0
SKYLT.	38.1	101.5	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.8	4.3	0	0	0	0	0	0	0	0	0	0	0	0
NET EXPOSED WALL	4.6	0.8	265	1211	199	231	1055	174	54	247	41	232	1060	174
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	305	401	179	188	247	110	110	145	65	284	373	167
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	284	741	122	35	91	15
BASEMENT/CRAWL HEAT LOSS			0			0			0			0		
SLAB ON GRADE HEAT LOSS			0			0			0			0		
SUBTOTAL HT LOSS			2308			1760			391			3198		
SUB TOTAL HT GAIN				1708		1040		105		2416		3238		486
LEVEL FACTOR / MULTIPLIER		0.20	0.28		0.20	0.28		0.20	0.28		0.20	0.28		0.20
AIR CHANGE HEAT LOSS			651			496			110			901		904
AIR CHANGE HEAT GAIN				115		70		7		163		219		33
DUCT LOSS			0			0			410			411		0
DUCT GAIN			0			0			319			407		0
HEAT GAIN PEOPLE	240		2		480	0		0	1		240	1		240
HEAT GAIN APPLIANCES/LIGHTS					375			375			375			375
TOTAL HT LOSS BTU/H			2959			2256		501		4510		4524		1240
TOTAL HT GAIN x 1.3 BTU/H			3481			1931		633		4567		5821		1473

ROOM USE	EXP. WALL	CLG. HT.	LV/DN	FAM	KIT	LIB	LAUN	WIC-G	FOY	MUD			WOD	BAS
			50	35	39	11	9	13	17	23			47	188
			10	10	10	10	9	10	10	11			8	8
GRS.WALL AREA	LOSS	GAIN	500	350	390	110	81	130	170	253			376	1081
GLAZING	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN	LOSS	GAIN
NORTH	21.8	16.0	0	0	0	0	0	0	14	305	224	0	0	0
EAST	21.8	41.6	0	0	0	0	0	0	6	131	249	0	0	0
SOUTH	21.8	24.9	36	784	896	0	0	0	0	0	0	0	0	0
WEST	21.8	41.6	0	0	0	48	1046	1994	74	1612	3075	0	0	0
SKYLT.	38.1	101.5	0	0	0	0	0	0	0	0	0	0	0	0
DOORS	25.8	4.3	0	0	0	0	0	0	40	1034	170	20	517	85
NET EXPOSED WALL	4.6	0.8	464	2120	349	302	1380	227	307	1403	231	92	420	69
NET EXPOSED BSMT WALL ABOVE GR	3.7	0.6	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED CLG	1.3	0.6	0	0	0	0	0	0	150	197	88	0	0	0
NO ATTIC EXPOSED CLG	2.8	1.3	0	0	0	0	0	0	0	0	0	0	0	0
EXPOSED FLOOR	2.6	0.4	0	0	0	0	0	0	28	73	12	0	0	0
BASEMENT/CRAWL HEAT LOSS			0			0			0			0		
SLAB ON GRADE HEAT LOSS			0			0			0			0		
SUBTOTAL HT LOSS			2904			2425			3211			812		
SUB TOTAL HT GAIN				1245		2221		357		268		761		761
LEVEL FACTOR / MULTIPLIER		0.30	0.48		0.30	0.48		0.30	0.48		0.30	0.48		0.30
AIR CHANGE HEAT LOSS			1400			1169		1548		392		214		411
AIR CHANGE HEAT GAIN				84		150		238		24		18		48
DUCT LOSS			0			0			0			98		0
DUCT GAIN			0			0			66			0		0
HEAT GAIN PEOPLE	240		0		0	0		0	0		0	0		0
HEAT GAIN APPLIANCES/LIGHTS					375			375			375			375
TOTAL HT LOSS BTU/H			4304			3594		4758		1204		1073		1263
TOTAL HT GAIN x 1.3 BTU/H			2215			3570		5386		982		944		985

TOTAL HEAT GAIN BTU/H:

41915

TONS: 3.49

LOSS DUE TO VENTILATION LOAD BTU/H: 2004

STRUCTURAL HEAT LOSS: 62670

TOTAL COMBINED HEAT LOSS BTU/H: 64674

SITE NAME: ROUNDEL HOMES INC  
BUILDER: GREENPARK HOMES

OPT 2ND  
TYPE: TERRACOTA 3

DATE: May-21

GFA: 3496 LO# 90750

HEATING CFM 1504 COOLING CFM 1504  
TOTAL HEAT LOSS 62,670 TOTAL HEAT GAIN 41,585  
AIR FLOW RATE CFM 24 AIR FLOW RATE CFM 36.17

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

\*\*GOODMAN  
GMEC960804CNA 80

AFUE = 96 %  
INPUT (BTU/H) = 80,000  
OUTPUT (BTU/H) = 76,800

RUN COUNT	4th	3rd	2nd	1st	Bas
S/A	0	0	17	10	5
R/A	0	0	6	3	1

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

FAN SPEED  
LOW 868  
MEDLOW 978  
MEDIUM 1112  
MEDIUM HIGH 1504  
HIGH 1615

DESIGN CFM = 1504  
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	ENS-2/3	BED-5	WIC-3	MBR	ENS-4/5	LV/DN	FAM	KIT	KIT	LIB	LAUN	WIC-G	FOY	MUD	BAS	BAS	BAS	BAS
RM LOSS MBH.	1.48	1.13	0.50	2.25	1.51	1.24	0.18	1.49	1.69	1.48	0.61	2.15	1.80	2.38	2.38	1.20	1.07	1.26	2.92	2.34	4.21	4.21	4.21	4.21
CFM PER RUN HEAT	36	27	12	54	36	30	4	36	41	36	15	52	43	57	57	29	26	30	70	56	101	101	101	101
RM GAIN MBH.	1.74	0.97	0.63	2.28	1.94	1.47	0.32	1.51	2.79	1.74	0.84	1.11	1.79	2.69	2.69	0.98	0.94	0.98	1.01	0.85	0.39	0.39	0.39	0.39
CFM PER RUN COOLING	63	35	23	83	70	53	12	55	101	63	30	40	65	97	97	36	34	36	36	31	14	14	14	14
ADJUSTED PRESSURE	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.17	0.17	0.17	0.17	0.16	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.16	0.16	0.16
ACTUAL DUCT LGH.	29	46	22	65	67	49	44	34	56	36	45	35	26	31	24	19	49	53	46	23	15	22	33	33
EQUIVALENT LENGTH	190	140	160	150	200	190	170	150	160	120	180	120	110	140	130	100	180	140	130	120	140	120	120	180
TOTAL EFFECTIVE LENGTH	219	186	182	215	267	239	214	184	216	156	225	155	136	171	154	119	229	193	176	143	155	142	153	213
ADJUSTED PRESSURE	0.08	0.09	0.09	0.08	0.06	0.07	0.08	0.09	0.08	0.11	0.08	0.11	0.13	0.09	0.11	0.14	0.08	0.09	0.1	0.12	0.1	0.11	0.11	0.08
ROUND DUCT SIZE	5	4	4	6	6	6	4	6	6	5	4	4	5	6	6	4	4	4	5	5	6	6	6	6
HEATING VELOCITY (ft/min)	264	310	138	275	184	153	46	184	209	264	172	597	316	291	291	333	298	344	514	411	515	515	515	515
COOLING VELOCITY (ft/min)	463	402	264	423	357	270	138	280	515	463	344	459	477	495	495	413	390	413	264	228	71	71	71	71
OUTLET GRILL SIZE	3X10	3X10	3X10	4X10	4X10	4X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	4X10	4X10	3X10	3X10	3X10	3X10	3X10	4X10	4X10	4X10	4X10
TRUNK	F	D	F	C	A	C	B	C	B	F	C	B	F	D	D	F	C	A	A	F	F	D	C	A

RUN #	25	26	27	28	29	30	31	32
ROOM NAME	BED-2	BED-3	ENS	ENS-2/3	FAM	LV/DN	BAS	BED-3
RM LOSS MBH.	2.25	1.51	1.13	0.18	1.80	2.15	4.21	1.51
CFM PER RUN HEAT	54	36	27	4	43	52	101	36
RM GAIN MBH.	2.28	1.94	0.97	0.32	1.79	1.11	0.39	1.94
CFM PER RUN COOLING	83	70	35	12	65	40	14	70
ADJUSTED PRESSURE	0.16	0.17	0.17	0.17	0.17	0.17	0.16	0.17
ACTUAL DUCT LGH.	60	74	47	40	14	49	46	70
EQUIVALENT LENGTH	180	200	200	180	150	170	160	200
TOTAL EFFECTIVE LENGTH	240	274	247	220	164	219	206	270
ADJUSTED PRESSURE	0.07	0.06	0.07	0.08	0.1	0.08	0.08	0.06
ROUND DUCT SIZE	6	6	4	4	5	5	6	6
HEATING VELOCITY (ft/min)	275	184	310	46	316	382	515	184
COOLING VELOCITY (ft/min)	423	357	402	138	477	294	71	357
OUTLET GRILL SIZE	4X10	4X10	3X10	3X10	3X10	4X10	4X10	4X10
TRUNK	B	A	C	B	F	A	A	A

**SUPPLY AIR TRUNK SIZE**

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK A	462	0.06	11.3	14	594
TRUNK B	617	0.06	12.6	18	617
TRUNK C	906	0.06	14.5	24	680
TRUNK D	242	0.09	8	8	545
TRUNK E	1148	0.06	15.9	30	689
TRUNK F	356	0.08	9.5	10	641

**RETURN AIR TRUNK SIZE**

	TRUNK CFM	STATIC PRESS.	ROUND DUCT	RECT DUCT	VELOCITY (ft/min)
TRUNK O	0	0.05	0	0	8
TRUNK P	0	0.05	0	0	8
TRUNK Q	0	0.05	0	0	8
TRUNK R	0	0.05	0	0	8
TRUNK S	0	0.05	0	0	8
TRUNK T	0	0.05	0	0	8
TRUNK U	0	0.05	0	0	8
TRUNK V	585	0.05	12.9	20	527
TRUNK W	150	0.05	7.8	8	338
TRUNK X	919	0.05	15.3	28	591
TRUNK Y	685	0.05	13.7	22	560
TRUNK Z	535	0.05	12.5	18	535
DROP	1504	0.05	18.4	24	645

RETURN AIR #	1	2	3	4	5	6	7	8	9	BR
AIR VOLUME	75	75	135	115	75	75	185	400	135	0
PLENUM PRESSURE	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15
ACTUAL DUCT LGH.	68	68	57	74	67	69	21	23	38	1
EQUIVALENT LENGTH	245	235	215	235	220	215	155	160	285	0
TOTAL EFFECTIVE LH	313	303	272	309	287	284	176	183	323	1
ADJUSTED PRESSURE	0.05	0.05	0.05	0.05	0.05	0.05	0.08	0.08	0.05	14.80
ROUND DUCT SIZE	6	6	7.5	7	6	6	7.5	9.9	7.5	0
INLET GRILL SIZE	8	8	8	8	8	8	8	8	8	0
INLET GRILL SIZE	X	X	X	X	X	X	X	X	X	X
INLET GRILL SIZE	14	14	14	14	14	14	14	30	14	0

TYPE: TERRACOTA 3  
SITE NAME: ROUNDEL HOMES INC

LO # 90750  
OPT 2ND

**RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY**

COMBUSTION APPLIANCES		9.32.3.1(1)
a)	<input checked="" type="checkbox"/> Direct vent (sealed combustion) only	
b)	<input type="checkbox"/> Positive venting induced draft (except fireplaces)	
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft gas fireplace	
d)	<input type="checkbox"/> Solid Fuel (including fireplaces)	
e)	<input type="checkbox"/> No Combustion Appliances	

HEATING SYSTEM	
<input checked="" type="checkbox"/> Forced Air	<input type="checkbox"/> Non Forced Air
<input type="checkbox"/> Electric Space Heat	

HOUSE TYPE		9.32.1(2)
<input checked="" type="checkbox"/> I	Type a) or b) appliance only, no solid fuel	
<input type="checkbox"/> II	Type I except with solid fuel (including fireplaces)	
<input type="checkbox"/> III	Any Type c) appliance	
<input type="checkbox"/> IV	Type I, or II with electric space heat	
<input type="checkbox"/>	Other: Type I, II or IV no forced air	

SYSTEM DESIGN OPTIONS		O.N.H.W.P.
<input type="checkbox"/> 1	Exhaust only/Forced Air System	
<input type="checkbox"/> 2	HRV with Ducting/Forced Air System	
<input checked="" type="checkbox"/> 3	HRV Simplified/connected to forced air system	
<input type="checkbox"/> 4	HRV with Ducting/non forced air system	
<input type="checkbox"/>	Part 6 Design	

TOTAL VENTILATION CAPACITY		9.32.3.3(1)
Basement + Master Bedroom	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	4 @ 10.6 cfm	42.4 cfm
Kitchen & Bathrooms	6 @ 10.6 cfm	63.6 cfm
Other Rooms	8 @ 10.6 cfm	84.8 cfm
Table 9.32.3.A.	TOTAL	233.2 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		95.4 cfm

SUPPLEMENTAL VENTILATION CAPACITY		9.32.3.5.
Total Ventilation Capacity	233.2	cfm
Less Principal Ventil. Capacity	95.4	cfm
Required Supplemental Capacity	137.8	cfm

PRINCIPAL EXHAUST FAN CAPACITY	
Model: VANE V150H	Location: BSMT
95.4 cfm	3.0 sones
<input checked="" type="checkbox"/> HVI Approved	

PRINCIPAL EXHAUST HEAT LOSS CALCULATION			
CFM	ΔT °F	FACTOR	% LOSS
95.4 CFM	78 F	1.08	0.25

SUPPLEMENTAL FANS		PANASONIC	
Location	Model	cfm	HVI
ENS	FV-05-11VK1	50	✓
ENS-2/3	FV-05-11VK1	50	✓
ENS-4/5	FV-05-11VK1	50	✓
WIC-G	FV-05-11VK1	50	✓

HEAT RECOVERY VENTILATOR		9.32.3.11.
Model: VANE V150H		
150 cfm high	35 cfm low	
75 % Sensible Efficiency	<input checked="" type="checkbox"/> HVI Approved	
@ 32 deg F ( 0 deg C)		

LOCATION OF INSTALLATION	
Lot:	Concession
Township	Plan:
Address	
Roll #	Building Permit #

BUILDER: GREENPARK HOMES	
Name:	
Address:	
City:	
Telephone #:	Fax #:

INSTALLING CONTRACTOR	
Name:	
Address:	
City:	
Telephone #:	Fax #:

DESIGNER CERTIFICATION	
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.	
Name:	HVAC Designs Ltd.
Signature:	<i>Michael O'Rourke</i>
HRAI #	001820
Date:	May-21

**CSA F280-12 Residential Heat Loss and Heat Gain Calculations**
**Formula Sheet (For Air Leakage / Ventilation Calculation)**

LO#: 90750

Model: TERRACOTA 3

Builder: GREENPARK HOMES

Date: 2021-05-11

**Volume Calculation**

House Volume			
Level	Floor Area (ft²)	Floor Height (ft)	Volume (ft³)
Bsmt	1519	8	12152
First	1519	10	15190
Second	1977	9	17793
Third	0	9	0
Fourth	0	9	0
Total:			45,135.0 ft³
Total:			1278.1 m³

**Air Change & Delta T Data**

WINTER NATURAL AIR CHANGE RATE	0.352
SUMMER NATURAL AIR CHANGE RATE	0.110

Design Temperature Difference				
	Tin °C	Tout °C	ΔT °C	ΔT °F
Winter DTDh	22	-21	43	78
Summer DTDc	24	31	7	13

**5.2.3.1 Heat Loss due to Air Leakage**

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

0.352 x 355.02 x 43 °C x 1.2 = 6479 W

= 22106 Btu/h

**6.2.6 Sensible Gain due to Air Leakage**

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

= 0.110 x 355.02 x 7 °C x 1.2 = 333 W

= 1135 Btu/h

**5.2.3.2 Heat Loss due to Mechanical Ventilation**

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

95 CFM x 78 °F x 1.08 x 0.25 = 2004 Btu/h

**6.2.7 Sensible heat Gain due to Ventilation**

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

95 CFM x 13 °F x 1.08 x 0.25 = 330 Btu/h

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

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

Level	Level Factor (LF)	HLairve Air Leakage + Ventilation Heat Loss (Btu/h)	Level Conductive Heat Loss: (HL <sub>clevel</sub> )	Air Leakage Heat Loss Multiplier (LF x HLairbv / HLlevel)
1	0.5	22,106	10,014	1.104
2	0.3		13,758	0.482
3	0.2		15,686	0.282
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

**HEAT LOSS AND GAIN SUMMARY SHEET**

<b>MODEL:</b> TERRACOTA 3	<b>OPT 2ND</b>	<b>BUILDER:</b> GREENPARK HOMES
<b>SFQT:</b> 3496	<b>LO#</b> 90750	<b>SITE:</b> ROUNDEL HOMES INC

**DESIGN ASSUMPTIONS**

HEATING	°F	COOLING	°F
OUTDOOR DESIGN TEMP.	-6	OUTDOOR DESIGN TEMP.	88
INDOOR DESIGN TEMP.	72	INDOOR DESIGN TEMP. (MAX 75°F)	75

**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):	45135.0	ASSUMED (Y/N):	Y
INTERNAL SHADING:	BLINDS/CURTAINS	ASSUMED OCCUPANTS:	6
INTERIOR LIGHTING LOAD (Btu/h/ft²):	1.27	DC BRUSHLESS MOTOR (Y/N):	Y
FOUNDATION CONFIGURATION	BCIN_1	DEPTH BELOW GRADE:	5.0 ft
LENGTH: 57.0 ft	WIDTH: 37.0 ft	EXPOSED PERIMETER:	188.0 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	0.96	-
HRV Minimum Efficiency	75%	-
Domestic Hot Water Heater Minimum EF	0.8	-

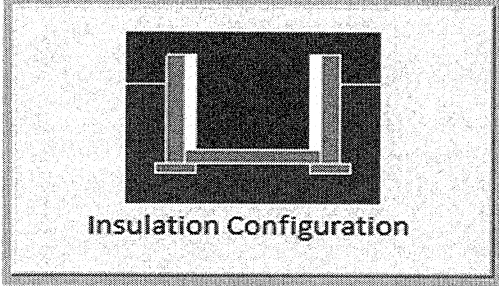
INDIVIDUAL BCIN: 19669

MICHAEL O'ROURKE



## Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	
Region:	Richmond Hill	
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):	11.3	
Exposed Perimeter (m):	0.0	
Wall Height (m):	2.4	
Depth Below Grade (m):	1.52	
Window Area (m <sup>2</sup> ):	1.8	
Door Area (m <sup>2</sup> ):	1.9	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1908

TYPE: TERRACOTA 3  
LO# 90750

OPT 2ND

## Air Infiltration Residential Load Calculator

Supplemental tool for CAN/CSA-F280

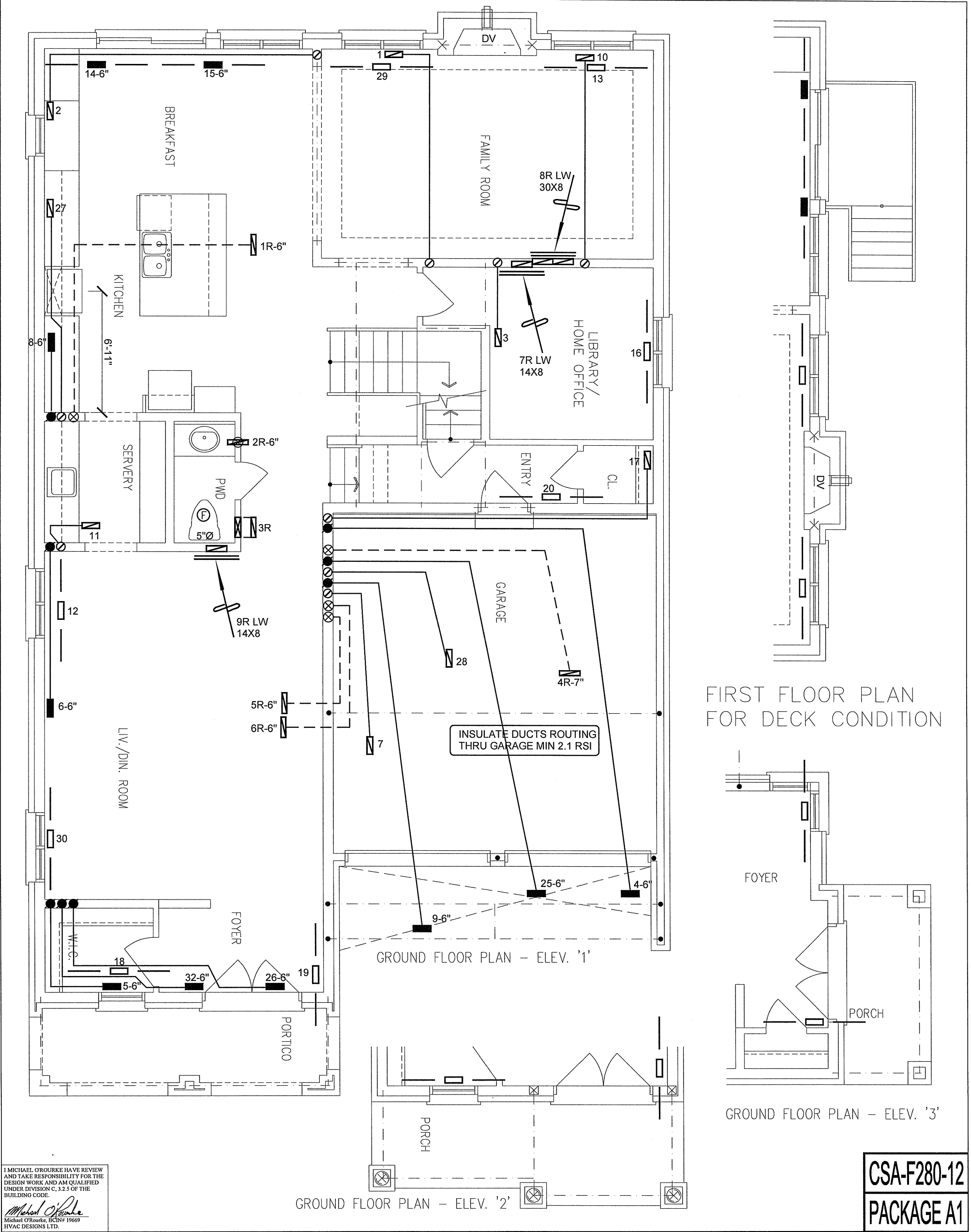
Weather Station Description				
Province:	Ontario			
Region:	Richmond Hill			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	7.62			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m <sup>3</sup> ):	1278.1			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (3.57 ACH)			
Custom BDT Data:	ELA @ 10 Pa.	1703.7 cm <sup>2</sup>		
	3.57	ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply	Total Exhaust		
	45.0	45.0		
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Natural Infiltration Rates				
Heating Air Leakage Rate (ACH/H):	0.352			
Cooling Air Leakage Rate (ACH/H):	0.110			

TYPE: TERRACOTA 3  
LO# 90750

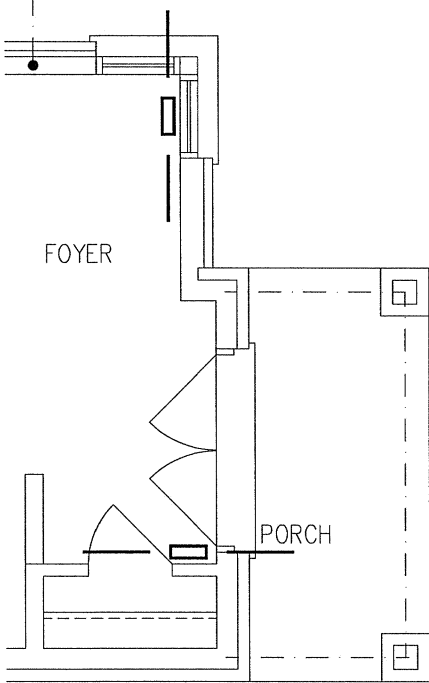
OPT 2ND







FIRST FLOOR PLAN  
FOR DECK CONDITION



GROUND FLOOR PLAN - ELEV. '3'

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.

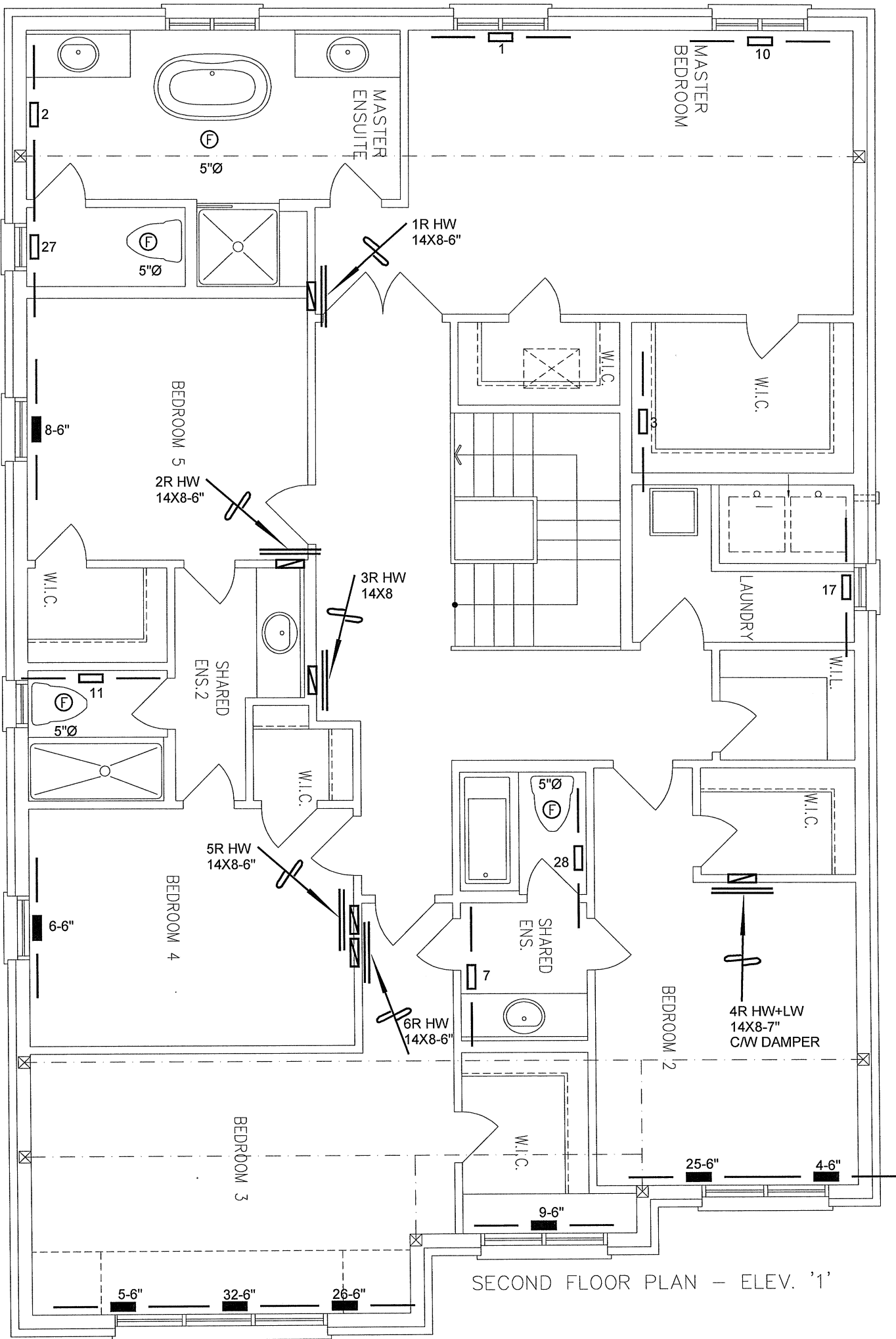
*Michael O'Rourke*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

CSA-F280-12  
PACKAGE A1

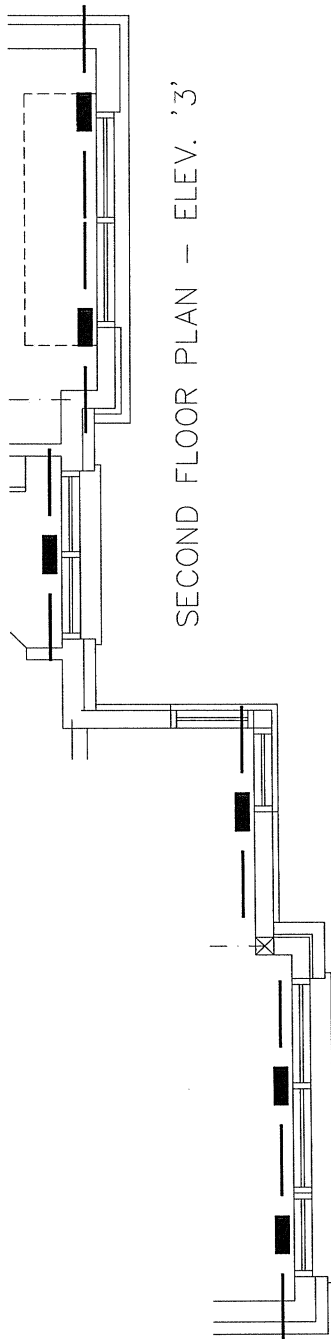
HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
	SUPPLY AIR GRILLE		6" SUPPLY AIR BOOT ABOVE		14"x8" RETURN AIR GRILLE		RETURN AIR STACK ABOVE	1.	
	SUPPLY AIR GRILLE 6" BOOT		SUPPLY AIR STACK FROM 2nd FLOOR		30"x8" RETURN AIR GRILLE		RETURN AIR STACK 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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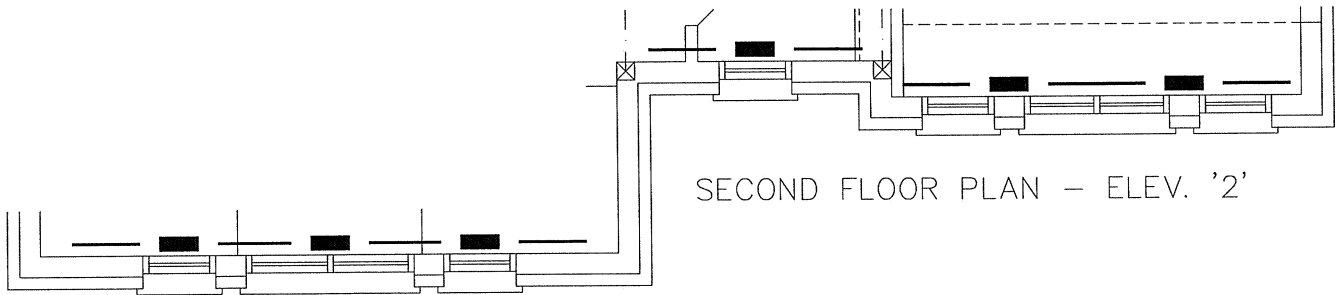
Client <b>GREENPARK HOMES</b>		 375 Finley Ave. Suite 202 - Ajax, Ontario L1S 2E2 Tel. 905.619.2300 - 905.420.5300 Fax 905.619.2375 Email: info@hvacdesigns.ca Web: www.hvacdesigns.ca Specializing in Residential Mechanical Design Services	Sheet Title <b>FIRST FLOOR HEATING LAYOUT</b>	
Project Name <b>ROUNDEL HOMES INC RICHMOND HILL, ONTARIO</b>			Date <b>MAY/2021</b>	Scale <b>3/16" = 1'-0"</b>
<b>Lot 170</b>		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.	<b>BCIN# 19669</b>	
<b>OPT 2ND</b>	<b>TERRACOTA 3      3496 sqft</b>		<b>LO#</b>	<b>90750</b>



SECOND FLOOR PLAN – ELEV. '1'



SECOND FLOOR PLAN – ELEV. '3'



SECOND FLOOR PLAN – ELEV. '2'

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*  
Michael O'Rourke, BCIN# 19669  
HVAC DESIGNS LTD.

CSA-F280-12  
PACKAGE A1

HVAC LEGEND							3.		
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	2.	
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	SUPPLY AIR BOOT ABOVE		6" SUPPLY AIR STACK 2nd FLOOR		FRA- FLOOR RETURN AIR GRILLE		REDUCER	REVISIONS	
							Description	Date	

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Client		<div></div> <div>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</div>	Sheet Title	
GREENPARK HOMES			SECOND FLOOR HEATING LAYOUT	
Project Name		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	MAY/2021
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OPT 2ND TERRACOTA 3      3496 sqft			LO#	90750