


Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

<b>A. Project Information</b>				
Building number, street name <div style="text-align: center;">50-1</div>			Lot:	
			Lot/con.	
Municipality <div style="text-align: center;">Brampton</div>	Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>				
Name <div style="text-align: center;">David DaCosta</div>		Firm <div style="text-align: center;">gtaDesigns Inc.</div>		
Street address <div style="text-align: center;">2985 Drew Road, Suite 202</div>			Unit no.	Lot/con.
Municipality <div style="text-align: center;">Mississauga</div>	Postal code <div style="text-align: center;">L4T 0A4</div>	Province <div style="text-align: center;">Ontario</div>	E-mail <div style="text-align: center;"><a href="mailto:dave@gtadesigns.ca">dave@gtadesigns.ca</a></div>	
Telephone number <div style="text-align: center;">(905) 671-9800</div>		Fax number <div style="text-align: center;">(647) 494-9643</div>	Cell number <div style="text-align: center;">(416) 268-6820</div>	
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]</b>				
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"> <input type="checkbox"/> House  <input type="checkbox"/> Small Buildings  <input type="checkbox"/> Large Buildings  <input type="checkbox"/> Complex Buildings         </div> <div style="width: 33%;"> <input checked="" type="checkbox"/> HVAC – House  <input type="checkbox"/> Building Services  <input type="checkbox"/> Detection, Lighting and Power  <input type="checkbox"/> Fire Protection         </div> <div style="width: 33%;"> <input type="checkbox"/> Building Structural  <input type="checkbox"/> Plumbing – House  <input type="checkbox"/> Plumbing – All Buildings  <input type="checkbox"/> On-site Sewage Systems         </div> </div>				
<b>Description of designer's work</b>		<b>Model Certification</b>		<b>Project #</b> PJ-00067
				<b>Layout #</b> JB-00856
Heating and Cooling Load Calculations		Builder	Highcastle Homes	
Air System Design		Project	Riverwalk Phase 2	
Residential mechanical ventilation Design Summary		Model	50-1	
Residential System Design per CAN/CSA-F280-12		SB-12	Package J	
Residential New Construction - Forced Air				
<b>D. Declaration of Designer</b>				
<p>I, <u>David DaCosta</u> declare that (choose one as appropriate):</p> <p style="text-align: center;">(print name)</p> <p><input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.</p> <p style="margin-left: 150px;">Individual BCIN: _____</p> <p style="margin-left: 150px;">Firm BCIN: _____</p> <p><input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code.</p> <p style="margin-left: 150px;">Individual BCIN: <u>32964</u></p> <p style="margin-left: 150px;">Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u></p> <p><input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.</p> <p style="margin-left: 150px;">Basis for exemption from registration and qualification:</p>				
<p>I certify that:</p> <ol style="list-style-type: none"> <li>The information contained in this schedule is true to the best of my knowledge.</li> <li>I have submitted this application with the knowledge and consent of the firm.</li> </ol>				
<u>July 31, 2015</u> Date		 Signature of Designer		

**NOTE:**

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d), of Division C, Article 3.2.5.1. of Division C and all other persons who are exempt from qualifications under Subsections 3.2.4 . and 3.2.5 of Division C.
- Schedule 1 does not require to be completed a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Heat loss and gain calculation summary sheet				CSA-F280-M12 Standard Form No. 1	
These documents issued for the use of <b>Highcastle Homes</b>				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				<b>JB-00856</b>	
Building Location					
Address (Model): <b>50-1</b>			Site: <b>Riverwalk Phase 2</b>		
Model:			Lot:		
City and Province: <b>Brampton</b>			Postal code:		
Calculations based on					
Dimensional information based on:			n/a		
Attachment: <b>Detached</b>		Front facing: <b>East/West</b>		Assumed? <b>Yes</b>	
No. of Levels: <b>3</b> Ventilated? <b>Included</b>		Air tightness: <b>1961- Present (ACH=3.57)</b>		Assumed? <b>Yes</b>	
Weather location: <b>Brampton</b>		Wind exposure: <b>Shelterd</b>			
HRV? <b>VanEE</b> <b>40H+</b>		Internal shading: <b>Light-translucent</b> Occupants: <b>5</b>			
Sensible Eff. at -25C <b>55%</b> Apparent Effect. at -0C <b>72%</b>		Units: <b>Imperial</b>		Area Sq. ft <b>3039</b>	
Heating design conditions			Cooling design conditions		
Outdoor temp <b>-2.2</b> Indoor temp: <b>72</b> Mean soil temp <b>48</b>			Outdoor temp <b>86</b> Indoor temp: <b>75</b> Latitude: <b>44</b>		
Above grade walls			Below grade walls		
Style A: <b>As per Selected OBC SB12 Package J R 22</b>			Style A: <b>As per Selected OBC SB12 Package J R 12</b>		
Style B: <b>Existing Walls (When Applicable) R 12</b>			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: <b>As per Selected OBC SB12 Package J</b>			Style A: <b>As per Selected OBC SB12 Package J R 50</b>		
Style B:			Style B: <b>As per Selected OBC SB12 Package J R 31</b>		
Exposed floors			Style C:		
Style A: <b>As per Selected OBC SB12 Package J R 31</b>			Doors		
Style B:			Style A: <b>As per Selected OBC SB12 Package J R 3.01</b>		
Windows			Style B:		
Style A: <b>As per Selected OBC SB12 Package J R 3.15</b>			Style C:		
Style B: <b>Existing Windows (When Applicable) R 1.99</b>			Skylights		
Style C:			Style A: <b>As per Selected OBC SB12 Package J R 2.03</b>		
Style D:			Style B:		
Attached documents: <b>As per Shedule 1</b>					
Notes: <b>Residential New Construction - Forced Air</b>					
Calculations performed by					
Name: <b>David DaCosta</b>			Postal code: <b>L4T 0A4</b>		
Company: <b>gtaDesigns Inc.</b>			Telephone: <b>(905) 671-9800</b>		
Address: <b>2985 Drew Road, Suite 202</b>			Fax: <b>(416) 268-6820</b>		
City: <b>Mississauga</b>			E-mail <b>dave@gtadesigns.ca</b>		

Builder: **Highcastle Homes**

2015

July 31, 2015

Project: **Riverwalk Phase 2**

Model: **50-1**

**System 1**

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code.

Individual BCIN: 32964

David DaCosta

Page 3  
Project # PJ-00067  
Layout # JB-00856

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	17,871 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	2.5 Ton
Level 2 Net Load	19,685 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	GMEC96-0603BNA	Model		Cond.-----	2.5
Level 3 Net Load	17,218 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	60000	Input Btu/h		Coil -----	2.5
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	57600	Output Btu/h			
Total Heat Loss	54,773 btu/h	R/A Plenum Pressure	0.138 "w.c.	E.s.p.	0.50 " W.C.	Min.Output Btu/h	AWH		
Total Heat Gain	29,087 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:			
Total Heat Loss + 10%	60,251 Btu/h	Heating Air Flow Proportioning Factor	0.0214 cfm/btuh	AFUE	96%	Blower Speed Selected:	W2	Blower Type	ECM
Building Volume Vb	37053 ft³	Cooling Air Flow Proportioning Factor	0.0402 cfm/btuh	Aux. Heat				(Brushless DC OBC 12.3.1.5.(2))	
Ventilation Load	2,574 Btu/h.	R/A Temp	70 deg. F.	SB-12 Package	Package J	Heating Check	1170 cfm	Cooling Check	1170 cfm
Ventilation PVC	75 cfm	S/A Temp	116 deg. F.						
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	46 deg. F.	Selected cfm>	1170 cfm	Cooling Air Flow Rate	1170 cfm

	Level 1 Outlets													Level 2 Outlets																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
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Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13</

	Level 3 Outlets										Level 4 Outlets													
S/A Outlet No.	1	2	3	4	5	6	7	8	9															
Room Use	MAST	MAST	ENS	BED 2	ENS 2	BED 3	BED 3	S.ENS	BED 4															
Btu/Outlet	1883	1883	1470	2659	1859	2005	2005	1162	2291															
Heating Airflow Rate CFM	40	40	31	57	40	43	43	25	49															
Cooling Airflow Rate CFM	88	88	29	91	61	45	45	30	57															
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Actual Duct Length	42	35	28	62	57	46	48	55	61															
Equivalent Length	110	130	160	150	140	130	140	130	140	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Total Effective Length	152	165	188	212	197	176	188	185	201	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90
Adjusted Pressure	0.09	0.08	0.07	0.06	0.07	0.07	0.07	0.07	0.06	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14
Duct Size Round	6	6	4	6	5	6	6	4	6															
Outlet Size	4x10	4x10	3x10	4x10	3x10	4x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	A	A	A	D	C	C	C	B	B															

Return Branch And Grill Sizing		Grill Pressure Loss		0.02 "w.c.							
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R
Inlet Air Volume CFM	150	150	100	360	220	190					
Duct Design Pressure	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Actual Duct Length	45	24	44	19	25	15					
Equivalent Length	255	175	220	185	185	130	70	70	70	70	70
Total Effective Length	300	199	264	204	210	145	70	70	70	70	70
Adjusted Pressure	0.04	0.06	0.04	0.06	0.06	0.08	0.17	0.17	0.17	0.17	0.17
Duct Size Round	8.5	8.0	6.0	10.5	9.0	7.0					
Inlet Size	8	8	8	8	8	FLC					
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size	14	14	14	30	14						
Trunk	Z	Z	Y	Z	Y	Y					

Return Trunk Duct Sizing							
Trunk	CFM	Press.	Round	Rect. Size			
Drop	1170	0.04	18.0	24x12			
Z	1170	0.04	18.0	30x10 24x12			
Y	510	0.04	13.0	18x8 14x10			
X							
W							
V							
U							
T							
S							
R							
Q							

Supply Trunk Duct Sizing							
Trunk	CFM	Press.	Round	Rect. Size			
A	#####						
B	321						
C	#####						
D	220						
E							
F							
G							
H							
I							
J							
K							

2012 OBC

Builder: Highcastle Homes

Date: July 31, 2015

Project: Riverwalk Phase 2

Model: 50-1

System 1

Weather Data Brampton 44 -2.2 86 20 48.2

Heat Loss ^T 74.2 deg. F Ht gain ^T 11 deg. F GTA: 3039

Project # PJ-00067  
Layout # JB-00856

## Level 1

### BASE

Run ft. exposed wall A	170	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	2.0	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG
Floor area	1273	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	340															
Gross Exp Wall B																

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.15	23.56	11.31	3	71	34											
East/West	3.15	23.56	27.75	9	212	250											
South	3.15	23.56	21.28	3	71	64											
Existing Windows	1.99	37.29	22.15														
Skylight	2.03	36.55	88.23														
Doors	3.01	24.65	3.65	21	518	77											
Net exposed walls A	8.50	8.73	1.29	304		393											
Net exposed walls B	8.50	8.73	1.29														
Exposed Ceilings A	50.00	1.48	0.76														
Exposed Ceilings B	22.86	3.25	1.66														
Exposed Floors	22.05	3.37	0.23														
Foundation Conductive Heatloss	Slab On Grade (x)																
Total Conductive	Heat Loss																
	Heat Gain																
Air Leakage	Heat Loss/Gain	0.7670	0.0454														
Ventilation	Case 1	0.09	0.06														
	Case 2	22.44	11.88														
	Case 3	x	0.04	0.06													
Heat Gain People																	
Appliances Loads	1 =25 percent																
Duct and Pipe loss																	
Level 1 HL Total	17,871																
Level 1 HG Total	1,177																

## Level 2

### LAUND

### KIT

### FAM

### DIN

### LIV

### FOY

Run ft. exposed wall A	25	A	38	A	30	A	18	A	27	A	30	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	11.0		11.0		11.0		11.0		11.0		11.0					
Floor area	143	Area	304	Area	208	Area	253	Area	200	Area	136	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	Area	Area	Area	Area
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	275		418		330		198		297		330					
Gross Exp Wall B																

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.15	23.56	11.31	8	188	90											
East/West	3.15	23.56	27.75														
South	3.15	23.56	21.28														
Existing Windows	1.99	37.29	22.15														
Skylight	2.03	36.55	88.23														
Doors	3.01	24.65	3.65	21	518	77											
Net exposed walls A	14.49	5.12	0.76	246	1260	187	357	1828	271	290	1485	220	147	753	112	252	1290
Net exposed walls B	8.50	8.73	1.29														
Exposed Ceilings A	50.00	1.48	0.76														
Exposed Ceilings B	22.86	3.25	1.66														
Exposed Floors	22.05	3.37	0.23														
Foundation Conductive Heatloss	Slab On Grade (x)																
Total Conductive	Heat Loss																
	Heat Gain																
Air Leakage	Heat Loss/Gain	0.3131	0.0454														
Ventilation	Case 1	0.03	0.06														
	Case 2	22.44	11.88														
	Case 3	x	0.04	0.06													
Heat Gain People																	
Appliances Loads	1 =25 percent																
Duct and Pipe loss																	
Level 2 HL Total	19,685																
Level 2 HG Total	14,603																

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

Division C subsection 3.2.5. of the Building Code. Individual BCIN:

32964



David DaCosta

SB-12 Package

Package J

Total Heat Loss	54,773	btu/h
Total Heat Gain	29,087	btu/h

2012 OBC	Builder: Highcastle Homes	Date: July 31, 2015	System 1	Weather Data	Brampton	44	-2.2	86	20	48.2	Heat Loss ^T	74.2 deg. F	Ht gain ^T	11 deg. F	GTA: 3039	Project #	PJ-00067
	Project: Riverwalk Phase 2	Model: 50-1														Layout #	JB-00856

Level 3				MAST		ENS		BED 2		ENS 2		BED 3		S.ENS		BED 4		A		A		A		A	
Run ft. exposed wall A				41 A		17 A		25 A		17 A		30 A		6 A		29 A		A		A		A		A	
Run ft. exposed wall B				B		B		B		B		B		B		B		B		B		B		B	
Ceiling height				8.0		8.0		8.0		8.0		8.0		8.0		8.0									
Floor area				464 Area		135 Area		245 Area		117 Area		225 Area		90 Area		213 Area		Area		Area		Area		Area	
Exposed Ceilings A				464 A		135 A		245 A		117 A		225 A		90 A		213 A		A		A		A		A	
Exposed Ceilings B				B		B		B		B		B		B		B		B		B		B		B	
Exposed Floors				Flr		Flr		Flr		Flr		225 Flr		27 Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A				328		136		200		136		240		48		232									
Gross Exp Wall B																									
Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.15	23.56	11.31											8	188	90									
East/West	3.15	23.56	27.75	32	754	888				38	895	1054		30	707	832									
South	3.15	23.56	21.28											16	377	340									
Existing Windows	1.99	37.29	22.15																						
Skylight	2.03	36.55	88.23																						
Doors	3.01	24.65	3.65																						
Net exposed walls A	14.49	5.12	0.76	296	1516	225	122	625	93	162	830	123	104	533	79	210	1075	159	24	123	18	216	1106	164	
Net exposed walls B	8.50	8.73	1.29																						
Exposed Ceilings A	50.00	1.48	0.76	464	689	353	135	200	103	245	364	186	117	174	89	225	334	171	90	134	68	213	316	162	
Exposed Ceilings B	22.86	3.25	1.66																						
Exposed Floors	22.05	3.37	0.23											225	757	51	27	91	6						
Foundation Conductive Heatloss																									
Total Conductive																									
Heat Loss				2958				1155		2088		1460		2873		913		1799							
Heat Gain					1465			493		1364		1056		1214		524		770							
Air Leakage					676	67		264	22	477	62	334	48	656	55	209	24	411	35						
Heat Loss/Gain																									
Case 1																									
Case 2																									
Case 3																									
Heat Gain People																									
Appliances Loads																									
Duct and Pipe loss																									
Level 3 HL Total				17,218																					
Level 3 HG Total				13,307																					
Total HL for per room																									
Total HG per room x 1.3																									

Level 4				A		A		2015		A		A		A		A		A		A		A		A	
Run ft. exposed wall A				A		A				A		A		A		A		A		A		A		A	
Run ft. exposed wall B				B		B				B		B		B		B		B		B		B		B	
Ceiling height																									
Floor area				Area		Area				Area		Area		Area		Area		Area		Area		Area		Area	
Exposed Ceilings A				A		A				A		A		A		A		A		A		A		A	
Exposed Ceilings B				B		B				B		B		B		B		B		B		B		B	
Exposed Floors				Flr		Flr				Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A																									
Gross Exp Wall B																									
Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.15	23.56	11.31																						
East/West	3.15	23.56	27.75																						
South	3.15	23.56	21.28																						
Existing Windows	1.99	37.29	22.15																						
Skylight	2.03	36.55	88.23																						
Doors	3.01	24.65	3.65																						
Net exposed walls A	14.49	5.12	0.76																						
Net exposed walls B	8.50	8.73	1.29																						
Exposed Ceilings A	50.00	1.48	0.76																						
Exposed Ceilings B	22.86	3.25	1.66																						
Exposed Floors	22.05	3.37	0.23																						
Foundation Conductive Heatloss																									
Total Conductive																									
Heat Loss																									
Heat Gain																									
Air Leakage																									
Heat Loss/Gain																									
Case 1																									
Case 2																									
Case 3																									
Heat Gain People																									
Appliances Loads																									
Duct and Pipe loss																									
Level 4 HL Total				0																					
Level 4 HG Total				0																					
Total HL for per room																									
Total HG per room x 1.3																									

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

Division C subsection 3.2.5. of the Building Code. Individual BCIN:

32964



David DaCosta

SB-12 Package

Package J

Total
-------

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code.

Individual BCIN: 32964

*David DaCosta*

David DaCosta

Package:

Package J

Project:

Brampton

Model:

50-1

## RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O. Reg. 159/93

Location of Installation	
Lot #	Plan #
Township	Brampton
Roll #	Permit #
Address	

Builder	
Name	Highcastle Homes
Address	
City	
Tel	Fax

Installing Contractor	
Name	
Address	
City	
Tel	Fax

Combustion Appliances 9.32.3.1(1)	
a)	<input type="checkbox"/> Direct vent (sealed combustion) only
b)	<input checked="" type="checkbox"/> Positive venting induced draft (except fireplaces)
c)	<input type="checkbox"/> Natural draft, B-vent or induced draft fireplaces
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 (if over 10% of heat load)

House Type 9.32.3.1(2)	
I	<input checked="" type="checkbox"/> Type a) or b) appliances only, no solid fuel
II	<input type="checkbox"/> Type I except with solid fuel (including fireplace)
III	<input type="checkbox"/> Any type c) appliance
IV	<input type="checkbox"/> Type I or II either electric space heat
Other	<input type="checkbox"/> Type I, II or IV no forced air

System Design Option	
1	<input type="checkbox"/> Exhaust only / forced air system
2	<input type="checkbox"/> HRV WITH DUCTING / forced air system
3	<input checked="" type="checkbox"/> HRV simplified connection to forced air system
4	<input type="checkbox"/> HRV full ducting/not coupled to forced air system
Part 6 design	

Total Ventilation Capacity 9.32.3.3(1)				
Bsmt & Master Bdrm	2 @ 20	cfm	40	cfm
Other Bedrooms	3 @ 10	cfm	30	cfm
Bathrooms & Kitchen	5 @ 10	cfm	50	cfm
Other rooms	4 @ 10	cfm	40	cfm
Total			160	

Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1 @ 30	cfm	30	cfm
Other bedrooms	3 @ 15	cfm	45	cfm
Total			75	

Principal Exhaust Fan Capacity			
Make	Model	Location	
VanEE	40H+	Base	
80 cfm		Sones	

Heat Recovery Ventilator			
Make	VanEE		
Model	40H+		
	80 cfm high	40 cfm low	
Sensible efficiency @ -25 deg C	55%		
Sensible efficiency @ 0 deg C	63%		

Supplemental Ventilation Capacity		
Total ventilation capacity	160.0	
Less principal exhaust capacity	75.0	
REQUIRED supplemental vent. Capacity	85.0	cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
S.Ens	50	770	2.5
Pwd.	50	770	2.5
all fans HVI listed			
	Make	Broan	or Equiv.

Designer Certification			
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.			
Name	David DaCosta		
Signature	<i>David DaCosta</i>		
HRAI #	5190	BCIN #	32964
Date	July 31, 2015		

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643  
e-mail dave@gtadesigns.ca

Page 7  
Project # PJ-00067  
Layout # JB-00856

This form is used to summarize the energy efficiency design of the project. Information on completing this form is on the reverse

For use by Principal Authority

Application No:	Model/Certification Number
-----------------	----------------------------

## A. Project Information

Building number, street name <b>50-1</b>		Unit number	Lot/Con
Municipality <b>Brampton</b>	Postal code	Reg. Plan number / other description	

## B. Compliance Option

<input checked="" type="checkbox"/> SB-12 Prescriptive [SB-12 - 2.1.1.]	Table: Package: A B C D E F G H I J K L M	<b>Package J</b>
<input type="checkbox"/> SB-12 Performance* [SB-12 - 2.1.2.]	* Attach energy performance calculations using an approved software	
<input type="checkbox"/> Energy Star®* [SB-12 - 2.1.3.]	* Attach BOP form	
<input type="checkbox"/> EnerGuide 80® *	* House must be evaluated by NRCAN advisor and meet a rating of 80	

## C. Project Design Conditions

Climatic Zone (SB-1):	Heating Equipment	Space Heating Fuel Source		
<input checked="" type="checkbox"/> Zone 1 (< 5000 degree days)	<input checked="" type="checkbox"/> ≥ 90% AFUE	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Propane	<input type="checkbox"/> Solid Fuel
<input type="checkbox"/> Zone 2 (≥ 5000 degree days)	<input type="checkbox"/> ≥ 78% < 90% AFUE	<input type="checkbox"/> Oil	<input type="checkbox"/> Electric	<input type="checkbox"/> Earth Energy

Windows+Skylights+Glass Doors		Other Building Conditions			
Gross Wall Area =	326 m²	% Windows+ 11%	<input type="checkbox"/> ICF Basement	<input type="checkbox"/> Walkout Basement	<input type="checkbox"/> Log/Post&Beam
Gross Window+ Area =	37 m²		<input type="checkbox"/> ICF Above Grade	<input type="checkbox"/> Slab-on-ground	

## D. Building Specifications [provide values and ratings of the energy efficiency components proposed, or attach Energy Star BOP form]


Building Component	RSI / R values	Building Component	Efficiency Ratings
<b>Thermal Insulation</b>		<b>Windows &amp; Doors<sup>1</sup></b>	
Ceiling with Attic Space	50	Windows/Sliding Glass Doors	1.8
Ceiling without Attic Space	31	Skylights	2.8
Exposed Floor	31	<b>Mechanicals</b>	
Walls Above Grade	22	Space Heating Equip. <sup>2</sup>	94%
Basement Walls	12	HRV Efficiency (%)	60%
Slab (all >600mm below grade)	x	DHW Heater (EF)	0.67
Slab (edge only ≤600mm below grade)	10	NOTES	
Slab (all ≤600mm below grade, or heated)	10	1. Provide U-Value in W/m2.K, or ER rating	
		2. Provide AFUE or indicate if condensing type combined system used	

## E. Performance Design Verification [complete applicable sections if SB-12 Performance, Energy Star or EnerGuide80 options used]

**SB-12 Performance:**  
The annual energy consumption using Subsection 2.1.1. SB-12 Package \_\_\_\_\_ is \_\_\_\_\_ Gj (1 Gj =1000Mj)  
The annual energy consumption of this house as designed is \_\_\_\_\_ Gj  
The software used to simulate the annual energy use of the building is: \_\_\_\_\_  
The building is being designed using an air leakage of \_\_\_\_\_ air changes per hour @50Pa.

**Energy Star:** BOP form attached. The house will be labeled on completion by:  
**Energy Star and EnerGuide80:**  
Evaluator/Advisor/Rater Name: \_\_\_\_\_ Evaluator/Advisor/Rater Licence #: \_\_\_\_\_

## F. Designers [names of designers who are responsible for the building code design and whose plans accompany the permit application]

Architectural	Mechanical <b>David DaCosta</b> 
---------------	--

Package: Package J System: System 1  
Project: Brampton Model: 50-1

## Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL <sup>^</sup> T	HL <sub>leak</sub>
0.018	0.306	37053	74.2	15131

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG <sup>^</sup> T	HG Leak
0.018	0.089	37053	11	654

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air	Level Conductive Heat Loss	Air Leakage Heat Loss Multiplier
1	0.5	15131	9864	0.7670
2	0.3		14497	0.3131
3	0.2		13246	0.2285
4	0		0	0.0000

Levels			
1	2	3	4
(LF)	(LF)	(LF)	(LF)
1.0	0.6	0.5	0.4
	0.4	0.3	0.3
		0.2	0.2
			0.1

HG LEAK		Air Leakage Heat Gain	
	654		
BUILDING CONDUCTIVE HEAT GAIN	14401		0.0454

Levels this Dwelling	
3	

## Ventilation Calculations

Vent	Ventilation Heat Loss					Ventilation Heat Gain				Vent	
	Ventilation Heat Loss					Ventilation Heat Gain					
	C	PVC	HL^T	(1-E) HRV	HLbvent	C	PVC	HG^T	HGbvent		
	1.08	75	74.2	0.28	1683	1.1	75	11	891		
Case 1						Case 1					
Case 1	Ventilation Heat Loss (Exhaust only Systems)					Ventilation Heat Gain (Exhaust Only Systems)					Case 1
	Case 1 - Exhaust Only					Case 1 - Exhaust Only		Multiplier			
	Level	LF	HLbvent	LVL Cond. HL	Multiplier	HGbvent	891	0.06			
	1	0.5	1683	9864	0.09	Building	14401				
	2	0.3		14497	0.03						
	3	0.2		13246	0.03						
4	0	0		0.00							
Case 2						Case 2					
Case 2	Ventilation Heat Loss (Direct Ducted Systems)					Ventilation Heat Gain (Direct Ducted Systems)					Case 2
				Multiplier				Multiplier			
	C	HL^T	(1-E) HRV	22.44		C	HG^T	11.88			
	1.08	74.2	0.28			1.08	11				
Case 3						Case 3					
Case 3	Ventilation Heat Loss (Forced Air Systems)					Ventilation Heat Gain (Forced Air Systems)					Case 3
			HLbvent	Multiplier				Vent Heat Gain	Multiplier		
	Total Ventilation Load		1683	0.04		HGbvent		HG*1.3	891	0.06	
						891		1			

Foundation Conductive Heatloss Level 1	2636	Watts	8993	Btu/h
--	------	-------	------	-------

Foundation Conductive Heatloss Level 2		Watts		Btu/h
--	--	-------	--	-------

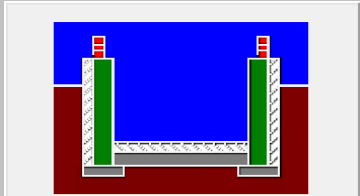
# Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

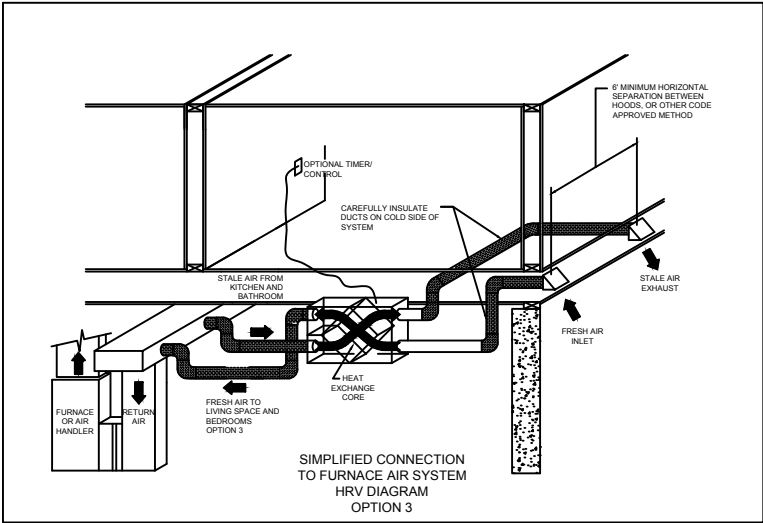
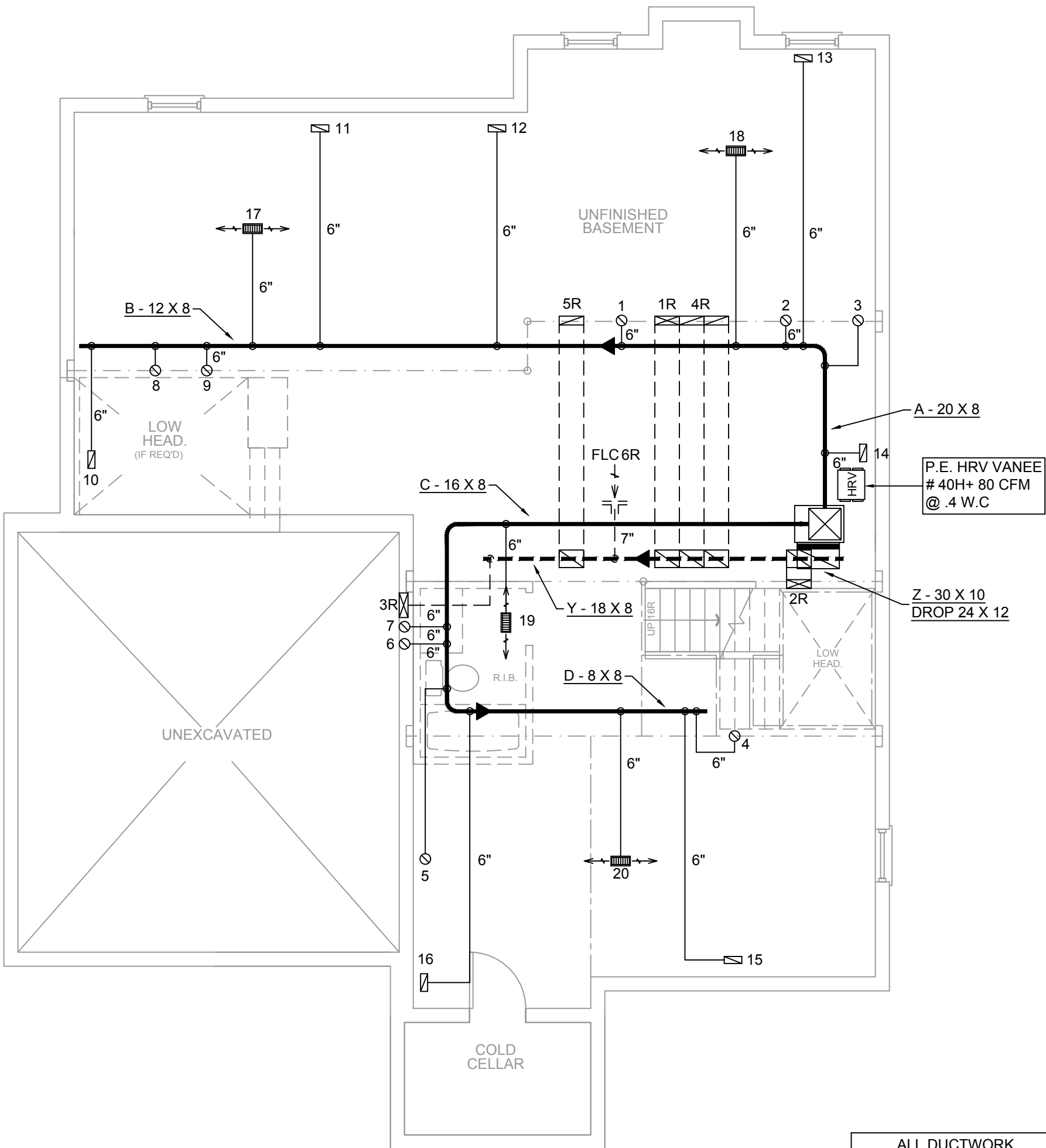
Weather Station Description				
Province:	Ontario ▼			
Region:	Brampton ▼			
Weather Station Location:	Open flat terrain, grass ▼			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest ▼			
Walls:	Heavy ▼			
Flue:	Heavy ▼			
Highest Ceiling Height (m):	6.40			
Building Configuration				6.4
Type:	Detached ▼			
Number of Stories:	Two ▼			
Foundation:	Full ▼			
House Volume (m <sup>3</sup> ):	566.3 1049.34			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57) ▼			
Custom BDT Data:	ELA @ 10 Pa. ▼ 185.83 cm <sup>2</sup> 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
Envelope Air Leakage Rate				
Heating Air Leakage Rate (ACH/H):		0.306		
Cooling Air Leakage Rate (ACH/H):		0.089		

# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	▼
Region:	Brampton	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	19.99	 <p>Insulation Configuration</p>
Floor Width (m):	5.92	
Exposed Perimeter (m):	51.82	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	
Window Area (m <sup>2</sup> ):	1.39	
Door Area (m <sup>2</sup> ):	1.95	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	23	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		2636

	FLEX DUCT RIDIT ROUND DUCT SUPPLY DIFFUSER		LOW/HIGH WALL/KICK SUPPLY DIFFUSER HRV EXHAUST GRILL SUPPLY AIR PIPE RISER VOLUME DAMPER		DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR	S.A. R.A. ① \$ E PE	SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN
--	--	--	---	--	---	--	--	---------------------------------	---



- ALL DUCTWORK  
MUST BE SEALED TO  
CLASS A LEVEL AS PER  
OBC PART 6-6.2.4.3. (11)
- FURNACE EQUIPPED WITH  
BRUSHLESS DC MOTOR AS  
PER OBC 12.3.1.5 (2)
- FOR THE PURPOSE OF  
HEATLOSS/GAIN  
CALCULATIONS ALL  
ELEVATIONS HAVE BEEN  
CONSIDERED

The undersigned has reviewed and takes responsibility for this design on behalf of GTA Designs Inc. and has the qualifications and meets the requirements set out in the Building Code to be a designer

QUALIFICATION INFORMATION  
Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

David Da Costa  
  
Signature of Designer

B.C.I.N. 32964

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE SPECIFIED.

ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)

INSULATE DUCTS IN UNCONDITIONED SPACES R12 UNDERCUT ALL DOORS 1" MIN.

HEATING CONTRACTOR MUST WORK FROM APPROVED PLANS.

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSABILITY OF GTA DESIGNS.

GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING

**gtaDesigns**

2985 DREW ROAD  
SUITE 202,  
MISSISSAUGA, ONT.  
L4T 0A4 TEL: 416-268-6820  
email: dave@gtadesigns.ca  
web: www.gtadesigns.ca

HEAT-LOSS	54,773	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	GMEC96-0603BNA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.5	TONS.
FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	3	3
1ST FLOOR	7	2	2
BASEMENT	4	1	

FLOOR PLAN: BASEMENT	
DRAWN BY: RB	CHECKED: DD
LAYOUT NO. JB-00856	DRAWING NO. M1
SQFT 3039	

DATE:	JULY 30, 2015
CLIENT:	HIGHCASTLE HOMES
MODEL:	50-I
PROJECT:	RIVERWALK PHASE 2 BRAMPTON, ONT.
SCALE:	3/16" = 1'-0"

FOR THE PURPOSE OF  
HEATLOSS/GAIN  
CALCULATIONS ALL  
ELEVATIONS HAVE BEEN  
CONSIDERED

B.C.I.N. 32964

ZONE 1 COMPLIANCE  
PACKAGE "J" REF. TABLE 2.1.1.2.A

NOTES

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HEAT-LOSS	BTU/HR.
54,773	
UNIT MAKE	OR EQUAL
AMANA	
UNIT MODEL	OR EQUAL
GMEC96-0603BNA	
UNIT HEATING INPUT	BTU/HR.
60,000	
UNIT HEATING OUTPUT	BTU/HR.
57,600	
A/C COOLING CAPACITY	TONS.
2.5	
FAN SPEED	CFM
1170	

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	3	3
1ST FLOOR	7	2	2
BASEMENT	4	1	

FLOOR PLAN:

GROUND FLOOR

DRAWN BY: RB

CHECKED: DD

3039

LAYOUT NO.

JB-00856

DRAWING NO.

M2



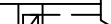



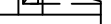









DATE: JULY 30, 2015

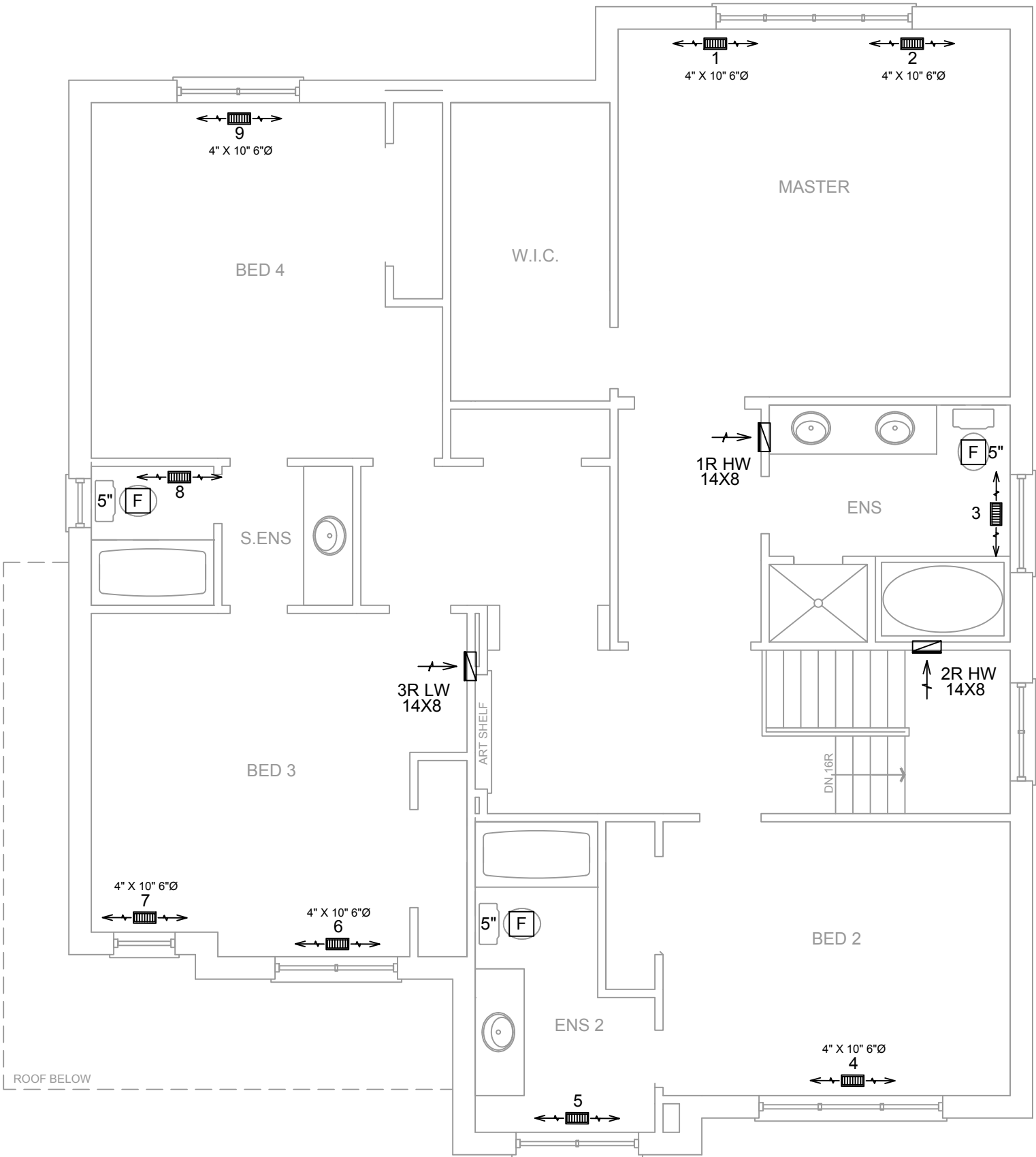
CLIENT: HIGHCASTLE HOMES

MODEL: 50-I

PROJECT: RIVERWALK PHASE 2  
BRAMPTON,ONT.

SCALE: 3/16" = 1"-0"

	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIDIT ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN ROUND DUCT		RETURN AIR FROM BASEMENT SECOND FLOOR		THERMOSTAT
			VOLUME DAMPER						PRINCIPAL EXHAUST FAN SWITCH
									W/R & PRINCIPAL EXHAUST FAN

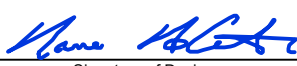


- INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12
- ALL DUCTWORK MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3. (11)
- FOR THE PURPOSE OF HEATLOSS/GAIN CALCULATIONS ALL ELEVATIONS HAVE BEEN CONSIDERED

The undersigned has reviewed and takes responsibility for this design on behalf of GTA Designs Inc. and has the qualifications and meets the requirements set out in the Building Code to be a designer

QUALIFICATION INFORMATION

Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

David Da Costa  B.C.I.N. 32964

Signature of Designer

OBC 2012

ZONE 1 COMPLIANCE

PACKAGE "J" REF. TABLE 2.1.1.2.A

NOTES

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
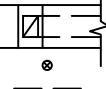













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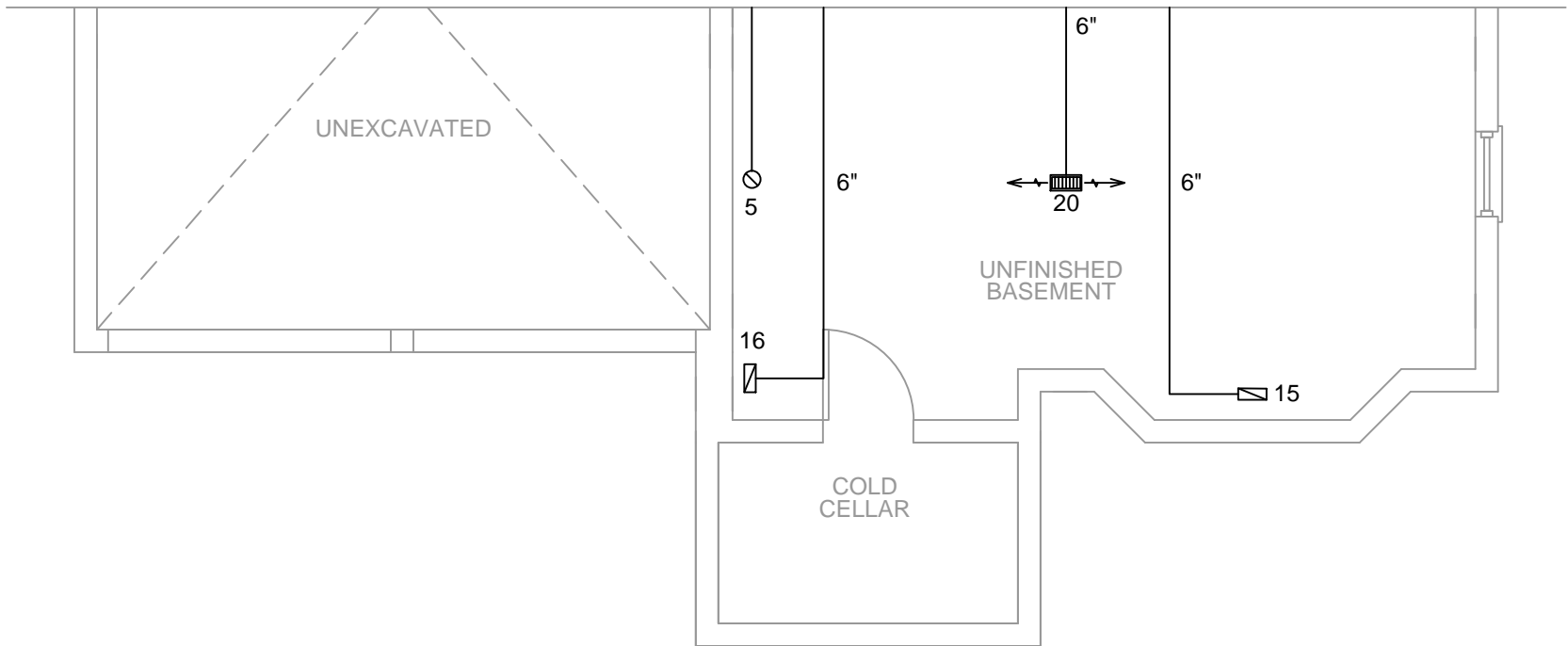
HEAT-LOSS	54,773	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	GMEC96-0603BNA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.5	TONS.
FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	3	3
1ST FLOOR	7	2	2
BASEMENT	4	1	

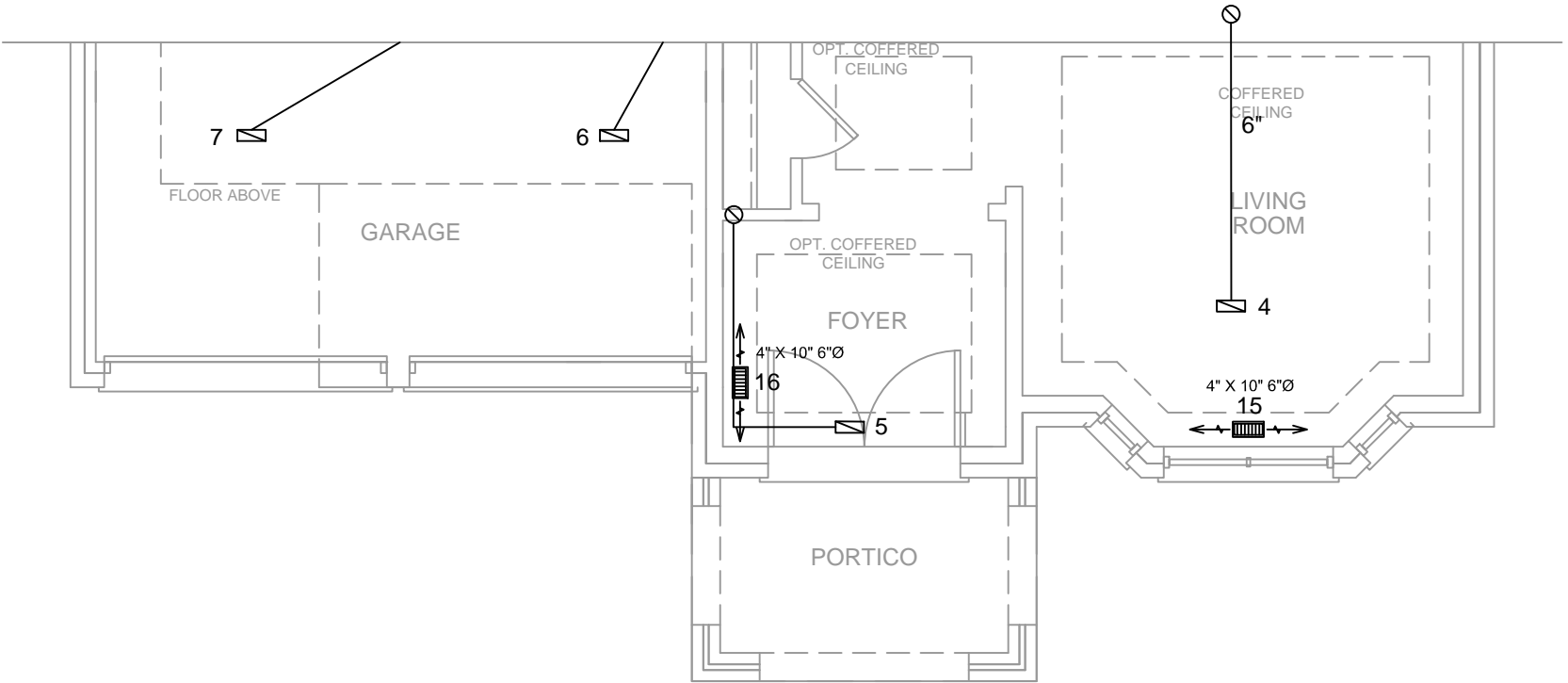
FLOOR PLAN: SECOND FLOOR		
DRAWN BY: RB	CHECKED: DD	SQFT 3039
LAYOUT NO. JB-00856	DRAWING NO. M3	

DATE:	JULY 30, 2015
CLIENT:	HIGHCASTLE HOMES
MODEL:	50-I
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.
SCALE:	3/16" = 1'-0"

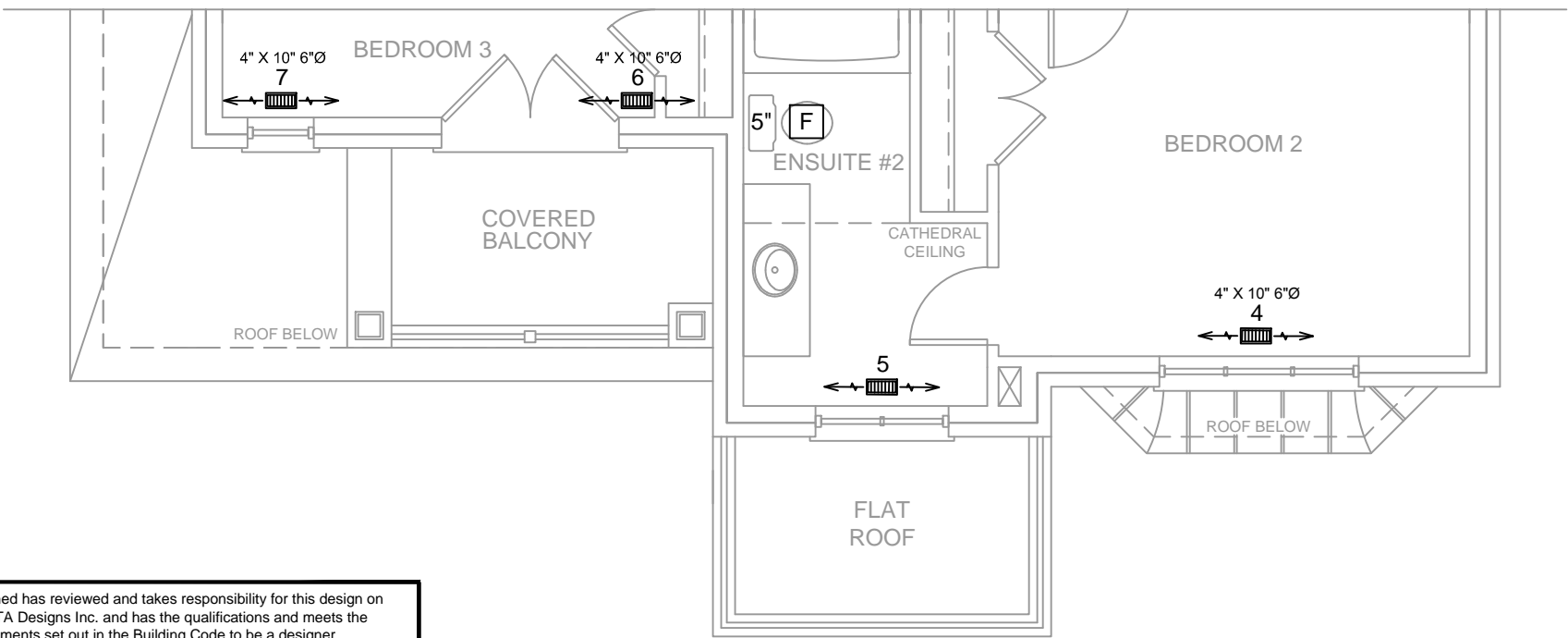
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	RIDIT ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN ROUND DUCT		RETURN AIR FROM BASEMENT SECOND FLOOR		THERMOSTAT
			VOLUME DAMPER						PRINCIPAL EXHAUST FAN SWITCH
									W/R & PRINCIPAL EXHAUST FAN



BASEMENT FLOOR ELEV. 'B'



GROUND FLOOR ELEV. 'B'



SECOND FLOOR ELEV. 'B'

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QUALIFICATION INFORMATION

Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

David Da Costa



Signature of Designer

B.C.I.N. 32964

OBC 2012

ZONE 1 COMPLIANCE  
PACKAGE "J" REF. TABLE 2.1.1.2.A

NOTES

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FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	9	3	3
1ST FLOOR	7	2	2
BASEMENT	4	1	

FLOOR PLAN:	
DRAWN BY: RB	CHECKED: DD
LAYOUT NO. JB-00856	DRAWING NO. M4

SQFT	3039
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DATE:	JULY 30, 2015
CLIENT:	HIGHCASTLE HOMES
MODEL:	50-I
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.
SCALE:	3/16" = 1'-0"