

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

A. Project Information				
Building number, street name			Lot:	
65-1			Lot/con.	
Municipality	Brampton	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities				
Name		Firm		
David DaCosta		gtaDesigns Inc.		
Street address		Unit no.	Lot/con.	
2985 Drew Road, Suite 202				
Municipality	Postal code	Province	E-mail	
Mississauga	L4T 0A4	Ontario	dave@gtadesigns.ca	
Telephone number	Fax number	Cell number		
(905) 671-9800	(647) 494-9643	(416) 268-6820		
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]				
☐ House ☒ HVAC – House ☐ Building Structural ☐ Small Buildings ☐ Building Services ☐ Plumbing – House ☐ Large Buildings ☐ Detection, Lighting and Power ☐ Plumbing – All Buildings ☐ Complex Buildings ☐ Fire Protection ☐ On-site Sewage Systems				
Description of designer's work		Model Certification		Project #
				PJ-00067
				Layout #
				JB-00859
Heating and Cooling Load Calculations		Builder	Highcastle Homes	
Air System Design		Project	Riverwalk Phase 2	
Residential mechanical ventilation Design Summary		Model	65-1	
Residential System Design per CAN/CSA-F280-12		SB-12	Package J	
Residential New Construction - Forced Air				
D. Declaration of Designer				
I, <u>David DaCosta</u> declare that (choose one as appropriate): (print name) ☐ 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. Individual BCIN: _____ Firm BCIN: _____ ☒ 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. Individual BCIN: <u>32964</u> Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u> ☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____ I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm. <u>July 31, 2015</u> <u></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 Highcastle Homes				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				JB-00859	
Building Location					
Address (Model): 65-1			Site: Riverwalk Phase 2		
Model:			Lot:		
City and Province: Brampton			Postal code:		
Calculations based on					
Dimensional information based on:			n/a		
Attachment: Detached		Front facing: East/West		Assumed? Yes	
No. of Levels: 3 Ventilated? Included		Air tightness: 1961- Present (ACH=3.57)		Assumed? Yes	
Weather location: Brampton		Wind exposure: Shelterd			
HRV? VanEE 40H+		Internal shading: Light-translucent Occupants: 5			
Sensible Eff. at -25C 55%		Apparent Effect. at -0C 72%		Units: Imperial Area Sq. ft 3739	
Heating design conditions			Cooling design conditions		
Outdoor temp -2.2 Indoor temp: 72 Mean soil temp 48			Outdoor temp 86 Indoor temp: 75 Latitude: 44		
Above grade walls			Below grade walls		
Style A: As per Selected OBC SB12 Package J R 22			Style A: As per Selected OBC SB12 Package J R 12		
Style B: Existing Walls (When Applicable) R 12			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: As per Selected OBC SB12 Package J			Style A: As per Selected OBC SB12 Package J R 50		
Style B:			Style B: As per Selected OBC SB12 Package J R 31		
Exposed floors			Style C:		
Style A: As per Selected OBC SB12 Package J R 31			Doors		
Style B:			Style A: As per Selected OBC SB12 Package J R 3.01		
Windows			Style B:		
Style A: As per Selected OBC SB12 Package J R 3.15			Style C:		
Style B: Existing Windows (When Applicable) R 1.99			Skylights		
Style C:			Style A: As per Selected OBC SB12 Package J R 2.03		
Style D:			Style B:		
Attached documents: As per Shedule 1					
Notes: Residential New Construction - Forced Air					
Calculations performed by					
Name: David DaCosta			Postal code: L4T 0A4		
Company: gtaDesigns Inc.			Telephone: (905) 671-9800		
Address: 2985 Drew Road, Suite 202			Fax: (416) 268-6820		
City: Mississauga			E-mail dave@gtadesigns.ca		

Builder: Highcastle Homes 2015 July 31, 2015

Project: Riverwalk Phase 2 Model: 65-1

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* David DaCosta

Page 3
Project # PJ-00067
Layout # JB-00859

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	21,287 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	3.0 Ton
Level 2 Net Load	24,747 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	GMEC96-0803BNA	Model		Cond.-----	3.0
Level 3 Net Load	17,551 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	80000	Input Btu/h		Coil -----	3.0
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	76800	Output Btu/h			
Total Heat Loss	63,584 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	34,090 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:			
Total Heat Loss + 10%	69,943 Btu/h	Heating Air Flow Proportioning Factor	0.0184 cfm/btuh	AFUE	96%	Blower Speed Selected:	W2	Blower Type	ECM
Building Volume Vb	46991 ft³	Cooling Air Flow Proportioning Factor	0.0344 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	1172 cfm	Cooling Check	1172 cfm
Ventilation PVC	75 cfm	S/A Temp	131 deg. F.						
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	61 deg. F.	Selected cfm>	1172 cfm	Cooling Air Flow Rate	1172 cfm

	Level 1 Outlets													Level 2 Outlets															
S/A Outlet No.	23	24	25	26	27									12	13	14	15	16	17	18	19	20	21	22					
Room Use	BASE	BASE	BASE	BASE	BASE									LAUND	FAM	FAM	KIT	KIT	DIN	PWD	DEN	FOY	LIV	LIV					
Btu/Outlet	4257	4257	4257	4257	4257									2463	1966	1966	2501	2501	1741	684	3106	2798	2510	2510					
Heating Airflow Rate CFM	78	78	78	78	78									45	36	36	46	46	32	13	57	52	46	46					
Cooling Airflow Rate CFM	10	10	10	10	10									85	71	71	94	94	71	9	74	58	65	65					
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
Actual Duct Length	35	23	20	26	55									56	66	55	48	40	6	8	24	26	36	42					
Equivalent Length	130	90	110	110	150	90	90	90	90	90	90	90	90	160	140	130	160	90	130	150	120	100	110	120	90	90	90	90	
Total Effective Length	165	113	130	136	205	90	90	90	90	90	90	90	90	216	206	185	208	130	136	158	144	126	146	162	90	90	90	90	
Adjusted Pressure	0.08	0.12	0.10	0.10	0.06	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.06	0.06	0.07	0.06	0.10	0.10	0.08	0.09	0.10	0.09	0.08	0.14	0.14	0.14	0.14	
Duct Size Round	6	6	6	6	6									6	6	6	6	6	6	3	6	5	5	5					
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10		
Trunk	E	D	D	A	C									C	C	B	B	A	A	D	D	D	E	E					

S/A Outlet No.	Level 3 Outlets											Level 4 Outlets												
	1	2	3	4	5	6	7	8	9	10	11													
Room Use	MAST	MAST	BED 2	S.ENS	BED 3	BED 4	BED 4	ENS 4	WIC	ENS	ENS													
Btu/Outlet	1353	1353	2387	999	2749	1692	1692	2186	494	1323	1323													
Heating Airflow Rate CFM	25	25	44	18	51	31	31	40	9	24	24													
Cooling Airflow Rate CFM	41	41	48	14	69	45	45	26	6	14	14													
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	60	54	42	20	33	48	60	57	59	73	64													
Equivalent Length	170	130	150	160	160	110	120	160	160	160	140	90	90	90	90	90	90	90	90	90	90	90	90	90
Total Effective Length	230	184	192	180	193	158	180	217	219	233	204	90	90	90	90	90	90	90	90	90	90	90	90	90
Adjusted Pressure	0.06	0.07	0.07	0.07	0.07	0.08	0.07	0.06	0.06	0.06	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
Duct Size Round	5	5	5	4	6	5	5	5	3	4	4													
Outlet Size	3x10	3x10	3x10	3x10	4x10	3x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	B	A	A	D	D	E	E	E	B	C	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	115	115	115	141	200	145	145	196			
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	42	39	6	51	17	11	13	16			
Equivalent Length	215	215	175	175	225	185	185	215	70	70	70
Total Effective Length	257	254	181	226	242	196	198	231	70	70	70
Adjusted Pressure	0.05	0.05	0.06	0.05	0.05	0.06	0.06	0.05	0.17	0.17	0.17
Duct Size Round	7.5	7.5	7.0	8.0	9.0	7.5	7.5	8.0			
Inlet Size	8	8	8	8	8	8	8	FLC			
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size	14	14	14	14	30	14	14				
Trunk	Y	Z	Z	Y	Z	Z	Y	Y			

Return Trunk Duct Sizing							
Trunk	CFM	Press.	Round	Rect. Size			
Drop	1172	0.05	17.0	24x12			
Z	1172	0.05	17.0	26x10	22x12		
Y	597	0.05	13.5	20x8	16x10		
X							
W							
V							
U							
T							
S							
R							
Q							

Supply Trunk Duct Sizing							
Trunk	CFM	Press.	Round	Rect. Size			
A	552	0.06	12.5	18x8	14x10		
B	326	0.06	10.5	12x8	10x10		
C	185	0.06	8.5	8x8	107		
D	621	0.06	13.0	18x8	14x10		
E	274	0.06	9.5	10x8	127		
F							
G							
H							
I							
J							
K							

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: 3739	Project # PJ-00067	Layout # JB-00859
	Project: Riverwalk Phase 2	Model: 65-1							

Level 1				BASE															
Run ft. exposed wall A	187	A		A		A		A		A		A		A		A		A	
Run ft. exposed wall B	B			B		B		B		B		B		B		B		B	
Ceiling height	2.0	AG		AG		AG		AG		AG		AG		AG		AG		AG	
Floor area	1703	Area		Area		Area		Area		Area		Area		Area		Area		Area	
Exposed Ceilings A	A			A		A		A		A		A		A		A		A	
Exposed Ceilings B	B			B		B		B		B		B		B		B		B	
Exposed Floors	Flr			Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A	374																		
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
North Shaded	3.15	23.56	11.31																
East/West	3.15	23.56	27.75	12	283	333													
South	3.15	23.56	21.28	9	212	192													
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	332		430													
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)			10235															
Total Conductive	Heat Loss			11247															
Air Leakage	Heat Loss/Gain	0.8531	0.0492	9595		51													
Ventilation	Case 1		0.07																
	Case 2		22.44																
	Case 3	x	0.04																
Heat Gain People			239	445		54													
Appliances Loads	1 =.25 percent		6401																
Duct and Pipe loss			10%																
Level 1 HL Total	21,287		Total HL for per room	21287															
Level 1 HG Total	1,477		Total HG per room x 1.3			1477													

Level 2				LAUND		FAM		KIT		DIN		PWD		DEN		FOY		LIV		A		A		A					
Run ft. exposed wall A				25 A		37 A		41 A		13 A		7 A		25 A		10 A		29 A		A		A		A					
Run ft. exposed wall 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		16.0		18.0											
Floor area				163 Area		235 Area		380 Area		351 Area		76 Area		127 Area		124 Area		200 Area		Area		Area		Area					
Exposed Ceilings A				A		55 A		A		A		A		A		A		75 A		A		A		A					
Exposed Ceilings 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					
Gross Exp Wall A				275		407		451		143		77		275		160		522											
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				
North Shaded			3.15	23.56	11.31																								
East/West			3.15	23.56	27.75			40	942	1110	75	1767	2081					48	1131	1332	34	801	943	56	1319	1554			
South			3.15	23.56	21.28							30	707	638	6	141	128												
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												26	641	95							
Net exposed walls A			14.49	5.12	0.76	254	1301	193	367	1879	279	376	1925	285	113	579	86	71	364	54	227	1162	172	100	512	76	466	2386	354
Net exposed walls B			8.50	8.73	1.29																								
Exposed Ceilings A			50.00	1.48	0.76				55	82	42																		
Exposed Ceilings B			22.86	3.25	1.66																								
Exposed Floors			22.05	3.37	0.23																								
Foundation Conductive Heatloss			Slab On Grade (x)		x																								
Total Conductive		Heat Loss				1818			2903			3692			1285			505			2293			2065			3705		
		Heat Gain					270			1430			2366			724			182			1504			1171			1908	
Air Leakage		Heat Loss/Gain	0.3151 0.0492			573	13		915	70		1164	116		405	36		159	9		723	74		651	58	1168	94		
Ventilation		Case 1	0.03 0.05																										
		Case 2	22.44 11.88																										
		Case 3	x 0.04 0.05																										
Heat Gain People						72	14		115	76		146	125		51	38		20	10		91	80		82	62	147	101		
Appliances Loads			1 =.25 percent										1600	0.5		800										0.5		800	
Duct and Pipe loss			10%																										
Level 2 HL Total		24,747	Total HL for per room			2463			3933			5002			1741			684			3106			2798			5020		
Level 2 HG Total		22,011	Total HG per room x 1.3				2466			4129			5471			2078			260			2155			1678			3773	

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	63,584	btu/h
Total Heat Gain	34,090	btu/h

2012 OBC

Builder: Highcastle Homes

Date: July 31, 2015

Project: Riverwalk Phase 2

Model: 65-1

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: 3739

Project # PJ-00067
Layout # JB-00859

Level 3

	MAST	BED 2	S.ENS	BED 3	BED 4	ENS 4	WIC	ENS					
Run ft. exposed wall A	20 A	29 A	11 A	29 A	30 A	21 A	A	31 A	A	A	A	A	A
Run ft. exposed wall B	B	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	8.0					
Floor area	466 Area	206 Area	126 Area	190 Area	252 Area	98 Area	136 Area	207 Area	Area	Area	Area	Area	Area
Exposed Ceilings A	466 A	206 A	126 A	190 A	252 A	98 A	136 A	207 A	A	A	A	A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	25 Flr	90 Flr	50 Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	160	232	88	232	240	168		248					
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
North Shaded	3.15	23.56	11.31																		
East/West	3.15	23.56	27.75	28	660	777	16	377	444												
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	132	676	100	216	1106	164	82	420	62	200	1024	152	194	993	147	158	809	120
Net exposed walls B	8.50	8.73	1.29																		
Exposed Ceilings A	50.00	1.48	0.76	466	692	354	206	306	157	126	187	96	190	282	144	252	374	192	98	145	74
Exposed Ceilings B	22.86	3.25	1.66																		
Exposed Floors	22.05	3.37	0.23													25	84	6	90	303	20
Foundation Conductive Heatloss																					
Total Conductive																					
Heat Loss				2027				1789		748			2060			2535				1493	
Heat Gain					1231			764		286			1184			1621				492	
Air Leakage	Heat Loss/Gain	0.2951	0.0492	598	61			528	38	221	14		608	58		748	80			441	24
Ventilation	Case 1		0.03																		
Case 2			22.44																		
Case 3	x		0.04																		
Heat Gain People			239	2	80	65	1	71	40	30	15		82	63		100	86			59	26
Appliances Loads	1 =.25 percent		6401										1	239							
Duct and Pipe loss			10%																		
Level 3 HL Total	17,551			2705				2387		999			2749			3384				2186	49
Level 3 HG Total	10,602				2385			1406		409			2007			2633				769	

Level 4

Run ft. exposed wall A	A	A	2015	A	A	A	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	B	B	B
Ceiling height																					
Floor area	Area	Area		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	A
Exposed Ceilings B	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	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
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	0.0000	0.0492																		
Ventilation	Case 1		0.00																		
Case 2			22.44																		
Case 3	x		0.04																		
Heat Gain People			239																		
Appliances Loads	1 =.25 percent		6401																		
Duct and Pipe loss			10%																		
Level 4 HL Total	0																				
Level 4 HG Total	0																				

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	63,584	btu/h
Total Heat Gain	34,090	btu/h

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:

65-1

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O.geg 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)	☐ Direct vent (sealed combustion) only
b)	☒ Positive venting induced draft (except fireplaces)
c)	☐ Natural draft, B-vent or induced draft fireplaces
d)	☐ Solid fuel (including fireplaces)
e)	☐ No combustion Appliances

Heating System	
☒	Forced air
☐	Non forced air
☐	Electric space heat (if over 10% of heat load)

House Type 9.32.3.1(2)	
I	☒ Type a) or b) appliances only, no solid fuel
II	☐ Type I except with solid fuel (including fireplace)
III	☐ Any type c) appliance
IV	☐ Type I or II either electric space heat
Other	☐ Type I, II or IV no forced air

System Design Option	
1	☐ Exhaust only / forced air system
2	☐ HRV WITH DUCTING / forced air system
3	☒ HRV simplified connection to forced air system
4	☐ 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	5 @ 10	cfm	50 cfm
Total			<u>170</u>

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

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	<u>55%</u>
Sensible efficiency @ 0 deg C	<u>63%</u>

Supplemental Ventilation Capacity	
Total ventilation capacity	170.0
Less principal exhaust capacity	<u>75.0</u>
REQUIRED supplemental vent. Capacity	<u>95.0</u> 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-00859

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	Unit number	Lot/Con
65-1		
Municipality	Postal code	Reg. Plan number / other description
Brampton		

B. Compliance Option

☒ SB-12 Prescriptive [SB-12 - 2.1.1.]	Table: Package: A B C D E F G H I J K L M	Package J
☐ SB-12 Performance* [SB-12 - 2.1.2.]	* Attach energy performance calculations using an approved software	
☐ Energy Star®* [SB-12 - 2.1.3.]	* Attach BOP form	
☐ 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
☒ Zone 1 (< 5000 degree days)	☒ ≥ 90% AFUE	☒ Gas ☐ Propane ☐ Solid Fuel
☐ Zone 2 (≥ 5000 degree days)	☐ ≥ 78% < 90% AFUE	☐ Oil ☐ Electric ☐ Earth Energy

Windows+Skylights+Glass Doors	Other Building Conditions
Gross Wall Area = 376 m ²	☐ ICF Basement ☐ Walkout Basement ☐ Log/Post&Beam
Gross Window+ Area = 44 m ²	☐ ICF Above Grade ☐ Slab-on-ground
% Windows+ 12%	

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
Thermal Insulation		Windows & Doors¹	
Ceiling with Attic Space	50	Windows/Sliding Glass Doors	1.8
Ceiling without Attic Space	31	Skylights	2.8
Exposed Floor	31	Mechanicals	
Walls Above Grade	22	Space Heating Equip. ²	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/m ² .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
	David DaCosta 

Package: Package J System: System 1
Project: Brampton Model: 65-1

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^{AT}	HL _{leak}
0.018	0.306	46991	74.2	19189

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^{AT}	HG Leak
0.018	0.089	46991	11	830

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	19189	11247	0.8531
2	0.3		18267	0.3151
3	0.2		13005	0.2951
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	
	830		
BUILDING CONDUCTIVE HEAT GAIN	16857		0.0492

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	0.05			
	1	0.5	1683	11247	0.07	Building	16857				
	2	0.3		18267	0.03						
	3	0.2		13005	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	0.05	
						891		1			

Foundation Conductive Heatloss Level 1	3000	Watts	10235	Btu/h
--	------	-------	-------	-------

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

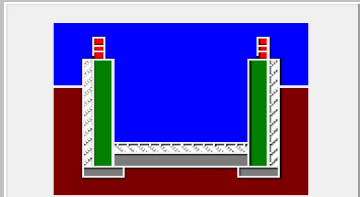
Envelope Air Leakage Calculator

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 ³):	566.3 1330.79			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57) ▼			
Custom BDT Data:	ELA @ 10 Pa. ▼ 185.83 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
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):	20.95	 Insulation Configuration
Floor Width (m):	7.55	
Exposed Perimeter (m):	57.00	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.95	
Door Area (m ²):	1.95	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	23	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		3000

SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
WIR & PRINCIPAL EXHAUST FAN

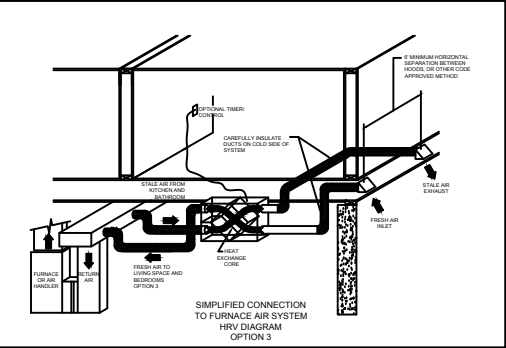
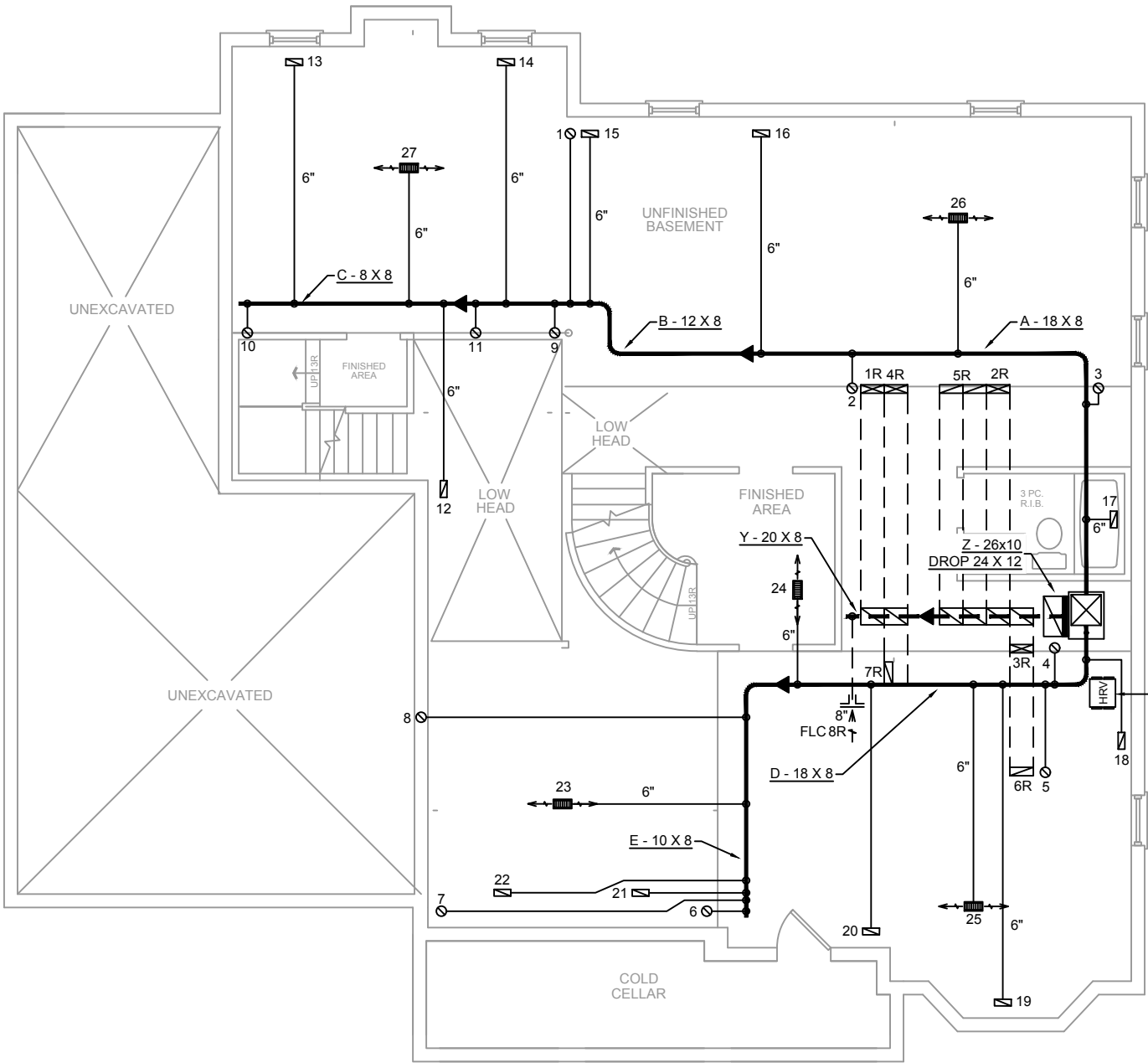
S.A.
R.A.
T
F

RETURN AIR GRILLE
(SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE
RETURN AIR FROM BASEMENT
SECOND FLOOR

DUCT CONNECTION
TO JOIST LINING
RETURN AIR PIPE RISER
RETURN ROUND DUCT

LOW/HIGH WALL/KICK
HRV EXHAUST GRILL
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIDIT ROUND DUCT
SUPPLY DIFFUSER



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

OBC 2012

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

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 EXCEEDS 700 CFM
DEPRESSURIZATION MAY OCCUR
WITHIN THE DWELLING

gtaDesigns

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

HEAT-LOSS	63,584			BTU/HR.
UNIT MAKE	AMANA			
UNIT MODEL	GMEC96-0803BNA			
UNIT HEATING INPUT	80,000			BTU/HR.
UNIT HEATING OUTPUT	76,800			BTU/HR.
A/C COOLING CAPACITY	3.0			TONS.
FAN SPEED	1172			CFM
# OF RUNS	S/A	R/A	FANS	
3RD FLOOR				
2ND FLOOR	11	4	4	
1ST FLOOR	11	3	3	
BASEMENT	5	1		

DATE:	JULY 31, 2015		
CLIENT:	HIGHCASTLE HOMES		
MODEL:	65-I		
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.		
SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	BASEMENT		
DRAWN BY:	CHECKED:	SQFT	
RB	DD	3739	
LAYOUT NO.	DRAWING NO.		
JB-00859	M1		

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

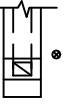
David Da Costa  B.C.I.N. 32964
Signature of Designer

SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN

S.A.
R.A.
Ⓢ
Ⓟ

RETURN AIR GRILLE
(SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE
RETURN AIR FROM BASEMENT
SECOND FLOOR

DUCT CONNECTION
TO JOIST LINING
RETURN AIR PIPE RISER
RETURN ROUND DUCT



LOW/HIGH WALL/KICK SUPPLY DIFFUSER
HRY EXHAUST GRILL
SUPPLY AIR PIPE RISER
VOLUME DAMPER



FLEX DUCT
RIDIT ROUND DUCT
SUPPLY DIFFUSER



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QUALIFICATION INFORMATION

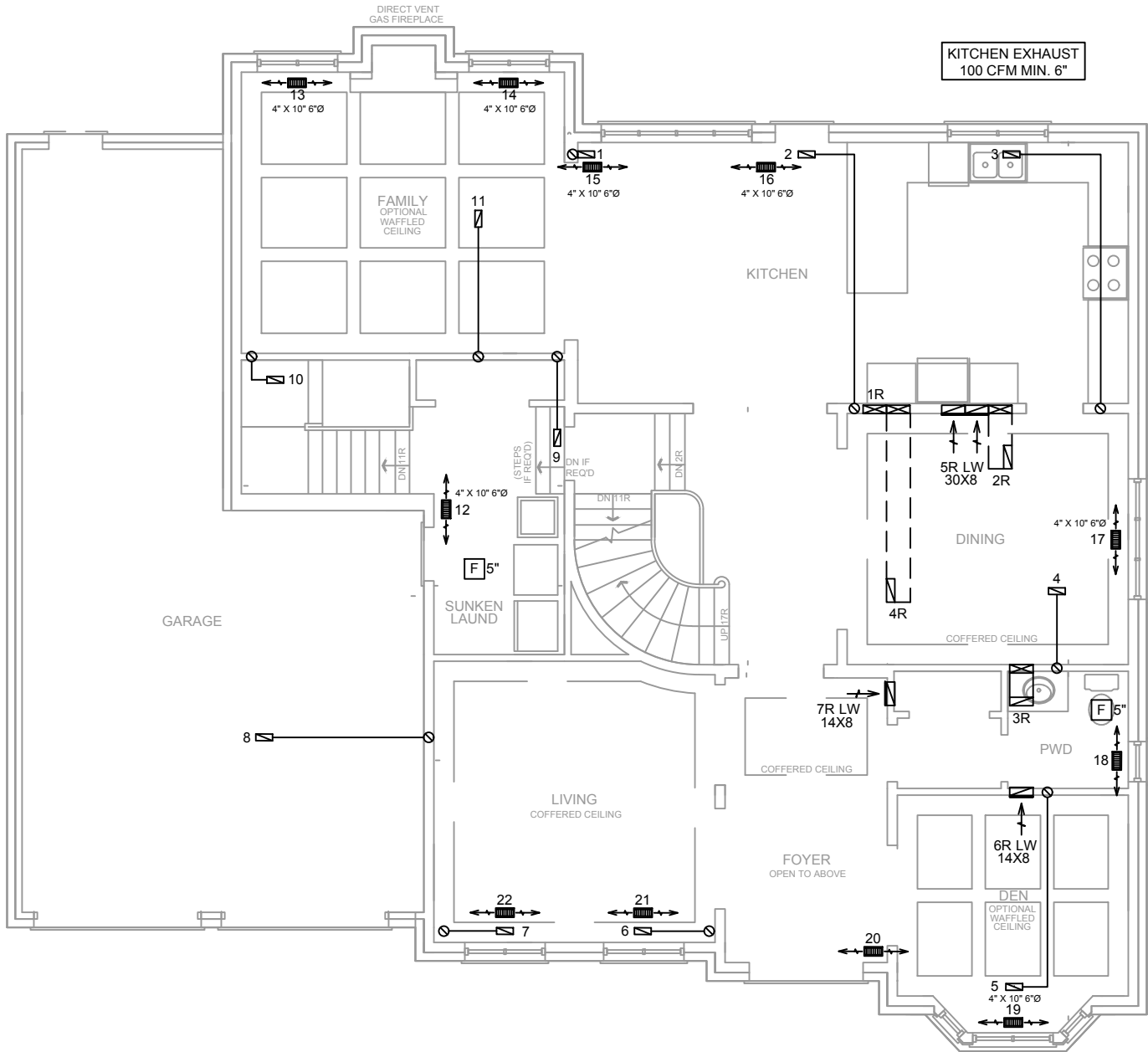
Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

David Da Costa



B.C.I.N. 32964

Signature of Designer



CIRCULATION PRINCIPAL
FAN SWITCH
TO BE CENTRALLY
LOCATED

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

OBC 2012

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

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 EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITHIN THE DWELLING



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HEAT-LOSS BTU/HR.
63,584

UNIT MAKE
AMANA

UNIT MODEL
GMEC96-0803BNA

UNIT HEATING INPUT BTU/HR.
80,000

UNIT HEATING OUTPUT BTU/HR.
76,800

A/C COOLING CAPACITY TONS.
3.0

FAN SPEED CFM
1172

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	11	4	4
1ST FLOOR	11	3	3
BASEMENT	5	1	

DATE:
JULY 31, 2015

CLIENT:
HIGHCASTLE HOMES

MODEL:
65-I

PROJECT:
RIVERWALK PHASE 2
BRAMPTON,ONT.

SCALE:
1/8" = 1"-0"

FLOOR PLAN:
GROUND FLOOR

DRAWN BY:	CHECKED:	SQFT
RB	DD	3739
LAYOUT NO.	DRAWING NO.	
JB-00859	M2	

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

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

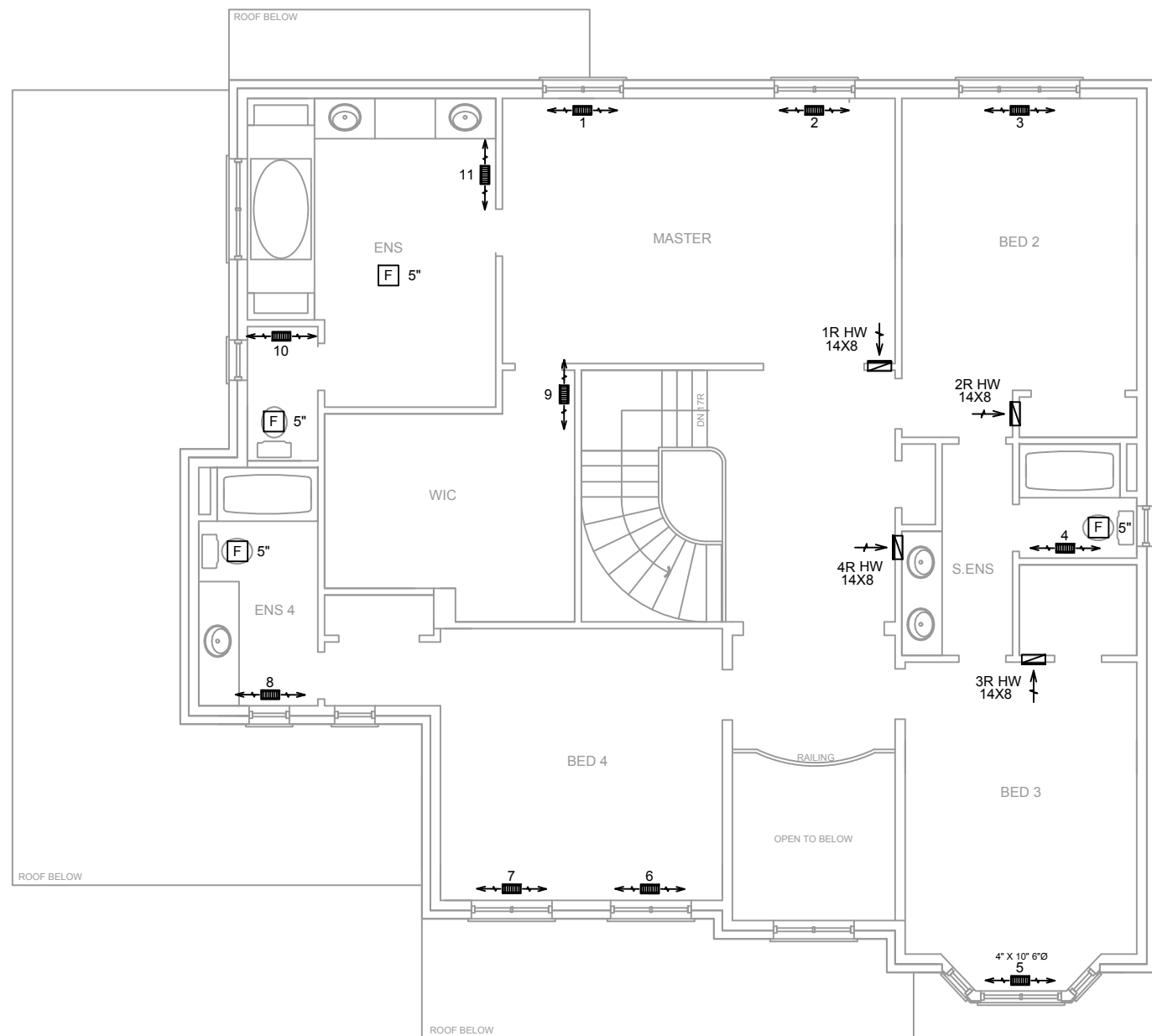
QUALIFICATION INFORMATION

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



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

OBC 2012

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

NOTES

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HEATING CONTRACTOR MUST WORK FROM APPROVED PLANS. ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSABILITY OF GTA DESIGNS.

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HEAT-LOSS		63,584		BTU/HR.
UNIT MAKE AMANA				
UNIT MODEL GMCE96-803BNA				
UNIT HEATING INPUT		80,000		BTU/HR.
UNIT HEATING OUTPUT		76,800		BTU/HR.
A/C COOLING CAPACITY		3.0		TONS.
FAN SPEED		I172		CFM
# OF RUNS	S/A	R/A	FANS	
3RD FLOOR				
2ND FLOOR	11	4	4	
1ST FLOOR	11	3	3	
BASEMENT	5	1		

DATE:

JULY 31, 2015

CLIENT:

HIGHCASTLE HOMES

MODEL:

65-1

PROJECT:

RIVERWALK PHASE 2
BRAMPTON, ONT.

SCALE:

$$1/8'' = 1'' - 0''$$

FLOOR PLAN:

SECOND FLOOR

DRAWN BY: RB	CHECKED: DD	SQFT 3739
LAYOUT NO. JB-00859		DRAWING NO. M3



OBC 2012

SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN

S.A.
R.A.
T
F

RETURN AIR GRILLE
(SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE
RETURN AIR FROM BASEMENT
SECOND FLOOR

DUCT CONNECTION
TO JOIST LINING
RETURN AIR PIPE RISER
RETURN ROUND DUCT

LOW/HIGH WALL/KICK
HRV EXHAUST GRILLE
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER

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

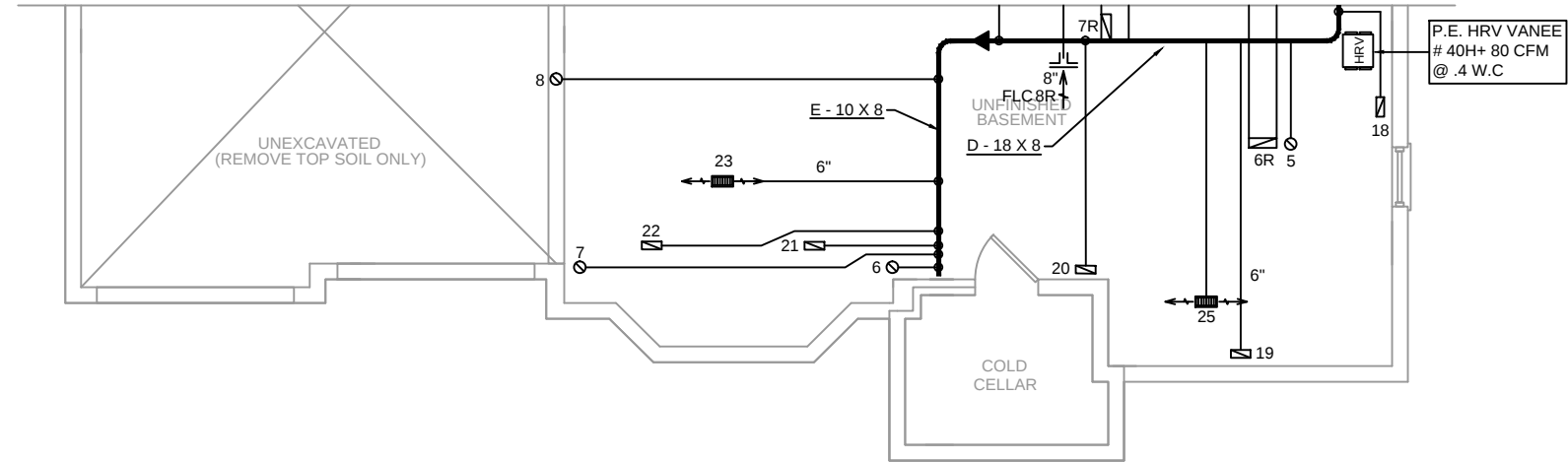
REQUIRED UNLESS DESIGN IS EXEMPT UNDER DIVISION C 3.2.5.1 OF THE ONTARIO BUILDING CODE

DAVID DA COSTA

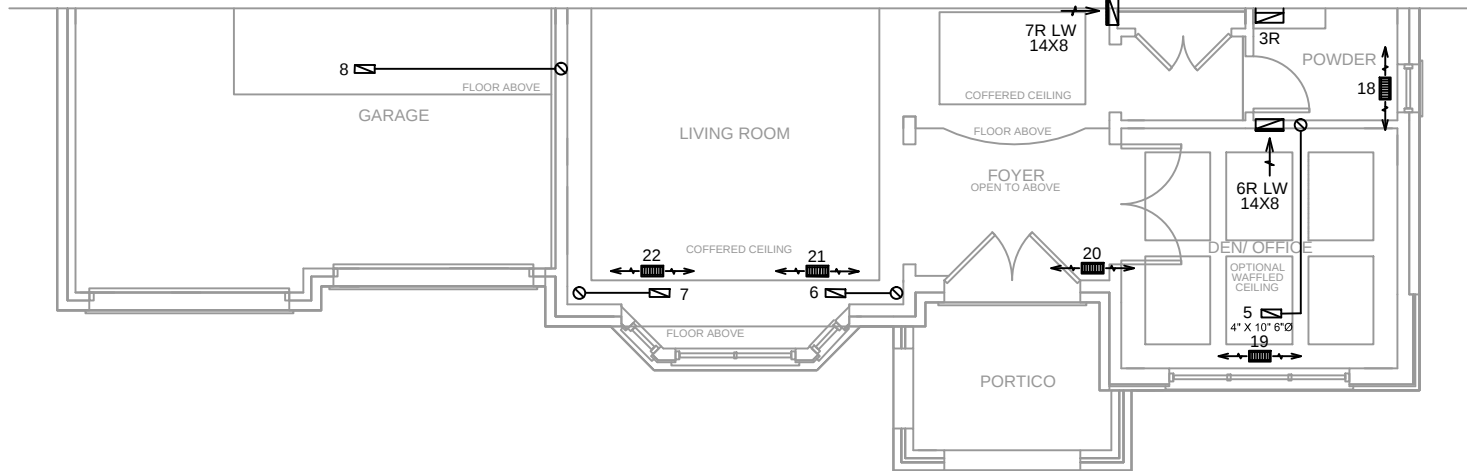


B.C.I.N. 32964

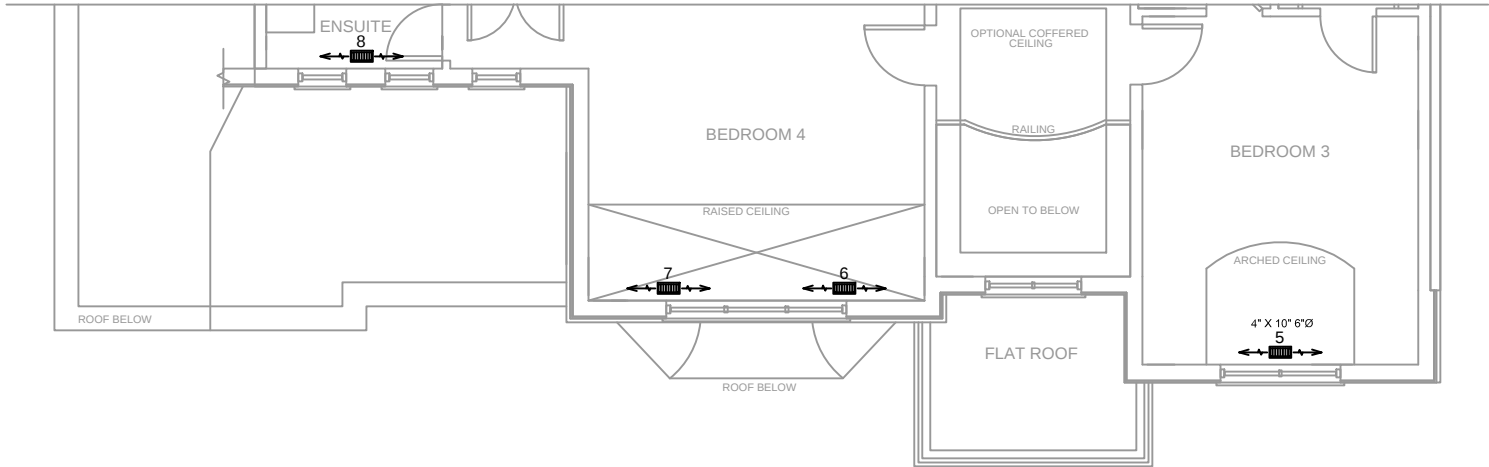
SIGNATURE OF DESIGNER



BASEMENT ELEV. 'C'



GROUND FLOOR ELEV. 'C'



SECOND FLOOR ELEV. 'C'

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 EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITHIN THE DWELLING



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MISSISSAUGA, ONT.
L4T 0A4 TEL: 416-268-6820
e-mail: dave@gtadesigns.ca
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HEAT-LOSS	BTU/HR.		
	63,584		
UNIT MAKE	AMANA		
UNIT MODEL	GMEC96-0803BNA		
UNIT HEATING INPUT	BTU/HR.		
	80,000		
UNIT HEATING OUTPUT	BTU/HR.		
	76,800		
A/C COOLING CAPACITY	TONS.		
	3.0		
FAN SPEED	CFM		
	1172		
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	11	4	4
1ST FLOOR	11	3	3
BASEMENT	5	1	

DATE:	JULY 31, 2015		
CLIENT:	HIGHCASTLE HOMES		
MODEL:	65-I		
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.		
SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	PARTIAL PLAN(S)		
DRAWN BY:	CHECKED:	SQFT	
RB	DD	3739	
LAYOUT NO.	DRAWING NO.		
JB-00859	M5		

OBC 2012

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