

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:	
87-1			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-00863
Heating and Cooling Load Calculations		Builder	Highcastle Homes	
Air System Design		Project	Riverwalk Phase 2	
Residential mechanical ventilation Design Summary		Model	87-1	
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: - The information contained in this schedule is true to the best of my knowledge. - I have submitted this application with the knowledge and consent of the firm.				
<u>August 6, 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 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-00863	
Building Location					
Address (Model): 87-1			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 60H		Internal shading: Light-translucent Occupants: 6			
Sensible Eff. at -25C 55% Apparent Effect. at -0C 72%		Units: Imperial		Area Sq. ft 4825	
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

August 6, 2015

Project: **Riverwalk Phase 2**

Model: **87-1**

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-00863

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	29,402 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	4.0 Ton
Level 2 Net Load	32,149 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	GMEC96-1004CNA	Model		Cond.-----	4.0
Level 3 Net Load	26,223 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	100000	Input Btu/h		Coil -----	4.0
Level 4 Net Load	2,537 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	96000	Output Btu/h			
Total Heat Loss	90,312 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	45,941 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:			
Total Heat Loss + 10%	99,343 Btu/h	Heating Air Flow Proportioning Factor	0.0183 cfm/btuh	AFUE	96%	Blower Speed Selected:	W2	Blower Type	ECM
Building Volume Vb	57705 ft³	Cooling Air Flow Proportioning Factor	0.0360 cfm/btuh	Aux. Heat		(Brushless DC OBC 12.3.1.5.(2))			
Ventilation Load	3,089 Btu/h.	R/A Temp	70 deg. F.	SB-12 Package	Package J	Heating Check	1653 cfm	Cooling Check	1653 cfm
Ventilation PVC	90 cfm	S/A Temp	124 deg. F.						
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	54 deg. F.	Selected cfm>	1653 cfm	Cooling Air Flow Rate	1653 cfm

	Level 1 Outlets														Level 2 Outlets											
S/A Outlet No.	27	28	29	30	31	32									16	17	18	19	20	21	22	23	24	25	26	
Room Use	BASE	BASE	BASE	BASE	BASE	BASE									KIT	KIT	FAM	FAM	DIN	LIV	FOY	DEN	DEN	PWD	MUD	
Btu/Outlet	4900	4900	4900	4900	4900	4900									2662	2662	2521	2521	2887	3818	2033	3365	3365	1631	4684	
Heating Airflow Rate CFM	90	90	90	90	90	90									49	49	46	46	53	70	37	62	62	30	86	
Cooling Airflow Rate CFM	8	8	8	8	8	8									115	115	84	84	101	83	86	83	83	23	78	
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			
Actual Duct Length	33	27	21	41	29	48									43	42	40	51	48	37	26	35	39	14	25	
Equivalent Length	130	120	130	90	130	150	90	90	90	90	90	90	90	90	110	90	110	140	100	110	150	100	130			
Total Effective Length	163	147	151	131	159	198	90	90	90	90	90	90	90	90	153	132	150	191	148	147	176	185	139			
Adjusted Pressure	0.08	0.09	0.09	0.10	0.08	0.07	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.08	0.10	0.09	0.07	0.09	0.09	0.07	0.07	0.08			
Duct Size Round	6	6	6	6	6	6									6	6	6	6	6	6	6	6	6	4	6	
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	4x10			
Trunk	F	G	G	C	B	D									B	B	C	D	D	G	G	F	F	A	A	

	Level 3 Outlets													Level 3 Outlets													
S/A Outlet No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15												
Room Use	MAST	MAST	ENS 2	BED 2	BED 3	ENS 3	BED 4	BED 4	ENS 4	LAUND	BED 5	BED 5	ENS 5	ENS	ENS												
Btu/Outlet	2257	2257	713	2666	2884	823	2325	2325	2629	821	2088	2088	2347	1269	1269												
Heating Airflow Rate CFM	41	41	13	49	53	15	43	43	48	15	38	38	43	23	23												
Cooling Airflow Rate CFM	69	69	14	61	75	10	54	54	38	60	40	40	26	29	29												
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	
Actual Duct Length	60	65	57	75	51	47	59	54	54	28	44	55	61	58	63												
Equivalent Length	130	150	130	140	120	160	160	130	140	150	140	120	110	90	140	120	90	90	90	90	90	90	90	90	90	90	
Total Effective Length	190	215	187	215	171	207	219	184	194	178	184	175	171	90	198	183	90	90	90	90	90	90	90	90	90	90	
Adjusted Pressure	0.07	0.06	0.07	0.06	0.08	0.06	0.06	0.07	0.07	0.07	0.07	0.07	0.08	0.14	0.07	0.07	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	3	6	6	3	6	6	5	5	6	6	5	4	4												
Outlet Size	4x10	4x10	3x10	4x10	4x10	3x10	4x10	4x10	3x10	3x10	4x10	4x10	3x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	
Trunk	C	D	D	D	G	G	F	F	F	A	A	A	A	B	B												

Return Branch And Grill Sizing												Return Trunk Duct Sizing					Supply Trunk Duct Sizing					
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R	Trunk	CFM	Press.	Round	Rect. Size	Trunk	CFM	Press.	Round	Rect. Size	
Inlet Air Volume CFM	150	150	150	150	381	200	200	272				Drop	1653	0.05	19.5	24x14	A	953	0.06	15.5	28x8	22x10
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	Z	1653	0.05	19.5	36x10	B	234	0.07	9.0	8x8	
Actual Duct Length	39	30	50	55	9	26	33	26				Y	1122	0.05	17.0	26x10	C	469	0.06	12.0	16x8	12x10
Equivalent Length	175	175	205	190	185	160	165	150	70	70	70	X	472	0.06	12.0	16x8	D	292	0.06	10.0	12x8	10x10
Total Effective Length	214	205	255	245	194	186	198	176	70	70	70	W	350	0.05	11.0	14x8	E	700	0.06	13.5	20x8	16x10
Adjusted Pressure	0.05	0.06	0.05	0.05	0.06	0.06	0.06	0.07	0.17	0.17	0.17	V					F	346	0.06	10.5	12x8	
Duct Size Round	8.0	8.0	8.0	8.0	11.0	8.5	8.5	8.0				U					G	354	0.06	10.5	12x8	
Inlet Size	8	8	8	8	8	8	8	FLC				T					H					
" "	x	x	x	x	x	x	x	x	x	x	x	S					I					
Inlet Size	14	14	14	14	30	14	14					R					J					
Trunk	Y	Z	Y	W	Z	X	W	X				O					K					

2012 OBC

Builder: Highcastle Homes

Date: August 6, 2015

Project: Riverwalk Phase 2

Model: 87-1

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: 4825

Project # PJ-00067
Layout # JB-00863

Level 1

BASE

Run ft. exposed wall A	242	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
Ceiling height	2.0	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG
Floor area	2027	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	484																
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	6	141	68											
East/West	3.15	23.56	27.75	3	71	83											
South	3.15	23.56	21.28	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											
Net exposed walls A	8.50	8.73	1.29	448		580											
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)			13211													
Total Conductive	Heat Loss			14082													
	Heat Gain				935												
Air Leakage	Heat Loss/Gain	1.0528	0.0560	14825	52												
Ventilation	Case 1		0.07		0.05												
	Case 2		22.44		11.88												
	Case 3	x	0.04		0.05												
Heat Gain People				495	44												
Appliances Loads	1 =.25 percent				239												
Duct and Pipe loss					8205												
					10%												
Level 1 HL Total	29,402			29402													
Level 1 HG Total	1,341				1341												

Level 2

KIT

FAM

DIN

LIV

FOY

DEN

PWD

MUD

Run ft. exposed wall A	32	A	38	A	26	A	31	A	9	A	56	A	15	A	32	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
Ceiling height	11.0		11.0		11.0		11.0		11.0		11.0		11.0		11.0			
Floor area	427	Area	290	Area	510	Area	197	Area	130	Area	160	Area	97	Area	167	Area	Area	Area
Exposed Ceilings A	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	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	352		418		286		341		99		616		165		352			
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	30	707	339											
East/West	3.15	23.56	27.75	74	1743	2053											
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	248	1270	188	343	1756	260	256	1311	194	291	1490	221	51	261
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			3720				3523			2018			2668		1420	
	Heat Gain				2581			2341			1027			1608		744	
Air Leakage	Heat Loss/Gain	0.3960	0.0560	1473	144			1395	131		799	57		1056	90	562	42
Ventilation	Case 1		0.03		0.05												
	Case 2		22.44		11.88												
	Case 3	x	0.04		0.05												
Heat Gain People				131	121			124	109		71	48		94	75	50	35
Appliances Loads	1 =.25 percent				239												
Duct and Pipe loss					8205												
					10%												
Level 2 HL Total	32,149			5323				5042			2887			3818		2033	
Level 2 HG Total	25,985				6366			4690			2805			2305		2400	

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	90,312	btu/h
Total Heat Gain	45,941	btu/h

2012 OBC

Builder: Highcastle Homes

Date: August 6, 2015

Project: Riverwalk Phase 2

Model: 87-1

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: 4825

Project # PJ-00067
Layout # JB-00863

Level 3

	MAST	ENS 2	BED 2	BED 3	ENS 3	BED 4	ENS 4	LAUND	BED 5	ENS 5	
Run ft. exposed wall A	37 A	6 A	27 A	30 A	9 A	32 A	20 A	7 A	33 A	24 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	8.0	8.0	8.0	
Floor area	544 Area	100 Area	247 Area	251 Area	173 Area	300 Area	100 Area	103 Area	293 Area	102 Area	Area
Exposed Ceilings A	544 A	100 A	247 A	251 A	173 A	300 A	100 A	103 A	293 A	102 A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	117 Flr	100 Flr	Flr	175 Flr	102 Flr	Flr
Gross Exp Wall A	296	48	216	240	72	256	160	56	264	192	
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	60	1413	1665		8	188	170	30	707	638		32	754	888				18	424	204	40	942	1110	10	236	277	10	236	113		28	660	777	8	188	222				
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	3.85	236	1209	179	40	205	30	186	952	141	208	1065	158	72	369	55	198	1014	150	132	676	100	46	236	35	236	1209	179	184	942	140											
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	544	807	413	100	148	76	247	367	188	251	372	191	173	257	131	300	445	228	100	148	76	103	153	78	293	435	223	102	151	78											
Foundation Conductive HeatLoss																																															
Total Conductive																																															
Heat Loss																																															
Heat Gain																																															
Air Leakage							964	126		152	15	569	54	616	69	176	10		905	96	512	38	175	13		813	68	457	26																		
Case 1						0.02																								0.05																	
Case 2						22.44																								11.88																	
Case 3				x		0.04																								0.05																	
Heat Gain People																														239																	
Appliances Loads				1 =.25 percent		8205	2	121	105	478	19	13	71	45	239	1	77	58	239		22	9	1	113	80	239	64	32	22	11	1	102	57	239	57	22											
Duct and Pipe loss						10%																																									
Level 3 HL Total				26,223	Total HL for per room																																4513										
Level 3 HG Total				17,020	Total HG per room x 1.3																																3857										
																																					713	2666	1697	2884	823	267	4649	3028	2629	1063	821

Level 3

	ENS																				
Run ft. exposed wall A	24 A		A	2015	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
Ceiling height	8.0																				
Floor area	243 Area		Area		Area		Area		Area		Area		Area		Area		Area		Area		Area
Exposed Ceilings A	243 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
Exposed Floors	Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr
Gross Exp Wall A	192																				
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	29	683	805															
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	163	835	124															
Net exposed walls B	8.50	8.73	1.29																		
Exposed Ceilings A	50.00	1.48	0.76	243	361	185															
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		0.3157	0.0560	593	62															
Ventilation	Case 1		0.02	0.05																	
Case 2			22.44	11.88																	
Case 3	x		0.04	0.05																	
Heat Gain People				239																	
Appliances Loads	1 =.25 percent		8205																		
Duct and Pipe loss			10%																		
Level 4 HL Total	2,537		Total HL for per room		2537																
Level 4 HG Total	1,596		Total HG per room x 1.3			1596															

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	90,312	btu/h
Total Heat Gain	45,941	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:

87-1

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	4 @ 10 cfm	40 cfm	
Bathrooms & Kitchen	7 @ 10 cfm	70 cfm	
Other rooms	5 @ 10 cfm	50 cfm	
Total		<u>200</u>	

Principal Ventilation Capacity 9.32.3.4(1)			
Master bedroom	1 @ 30 cfm	30 cfm	
Other bedrooms	4 @ 15 cfm	60 cfm	
Total		<u>90</u>	

Principal Exhaust Fan Capacity		
Make	Model	Location
VanEE	60H	Base
107 cfm		Sones

Heat Recovery Ventilator	
Make	VanEE
Model	60H
	107 cfm high
	40 cfm low
Sensible efficiency @ -25 deg C	55%
Sensible efficiency @ 0 deg C	63%

Supplemental Ventilation Capacity	
Total ventilation capacity	200.0
Less principal exhaust capacity	90.0
REQUIRED supplemental vent. Capacity	<u>110.0</u> cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Ens.	50	770	2.5
Ens. 2	50	770	2.5
Ens.3	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	August 6, 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-00863

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
87-1		
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 = 474 m²	☐ ICF Basement ☐ Walkout Basement ☐ Log/Post&Beam
Gross Window+ Area = 65 m²	☐ ICF Above Grade ☐ Slab-on-ground
% Windows+ 14%	

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/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
	David DaCosta 

Package: Package J System: System 1
Project: Brampton Model: 87-1

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^{AT}	HL _{leak}
0.018	0.385	57705	74.2	29650

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^{AT}	HG _{Leak}
0.018	0.112	57705	11	1281

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	29650	14082	1.0528
2	0.3		22464	0.3960
3	0.18		18994	0.2810
4	0.02		1878	0.3157

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	
	1281		0.0560
BUILDING CONDUCTIVE HEAT GAIN		22894	

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	90	74.2	0.28	2019	1.1	90	11	1069		
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	1069	0.05			
	1	0.5	2019	14082	0.07	Building	22894				
	2	0.3		22464	0.03						
	3	0.18		18994	0.02						
	4	0.02		1878	0.02						
Case 2						Case 2					
Case 2	Ventilation Heat Loss (Direct Ducted Systems)					Ventilation Heat Gain (Direct Ducted Systems)					Case 2
					Multiplier						
	C	HL^T	(1-E) HRV	22.44		C	HG^T	Multiplier			
	1.08	74.2	0.28			1.08	11	11.88			
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		2019	0.04		HGbvent 1069		HG*1.3 1	1069	0.05	

Foundation Conductive Heatloss Level 1	3872	Watts	13211	Btu/h
--	------	-------	-------	-------

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

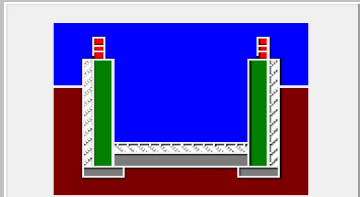
Envelope Air Leakage Calculator

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):	8.84			
Building Configuration				6.4
Type:	Detached ▼			
Number of Stories:	Two ▼			
Foundation:	Full ▼			
House Volume (m ³):	566.3 1634.21			
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:	
	45		45	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Envelope Air Leakage Rate				
Heating Air Leakage Rate (ACH/H):		0.385		
Cooling Air Leakage Rate (ACH/H):		0.112		

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):	30.76	 Insulation Configuration
Floor Width (m):	6.12	
Exposed Perimeter (m):	73.76	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.39	
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):		3872

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 SUPPLY DIFFUSER
HRV EXHAUST GRILL
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIDIT ROUND DUCT
SUPPLY DIFFUSER

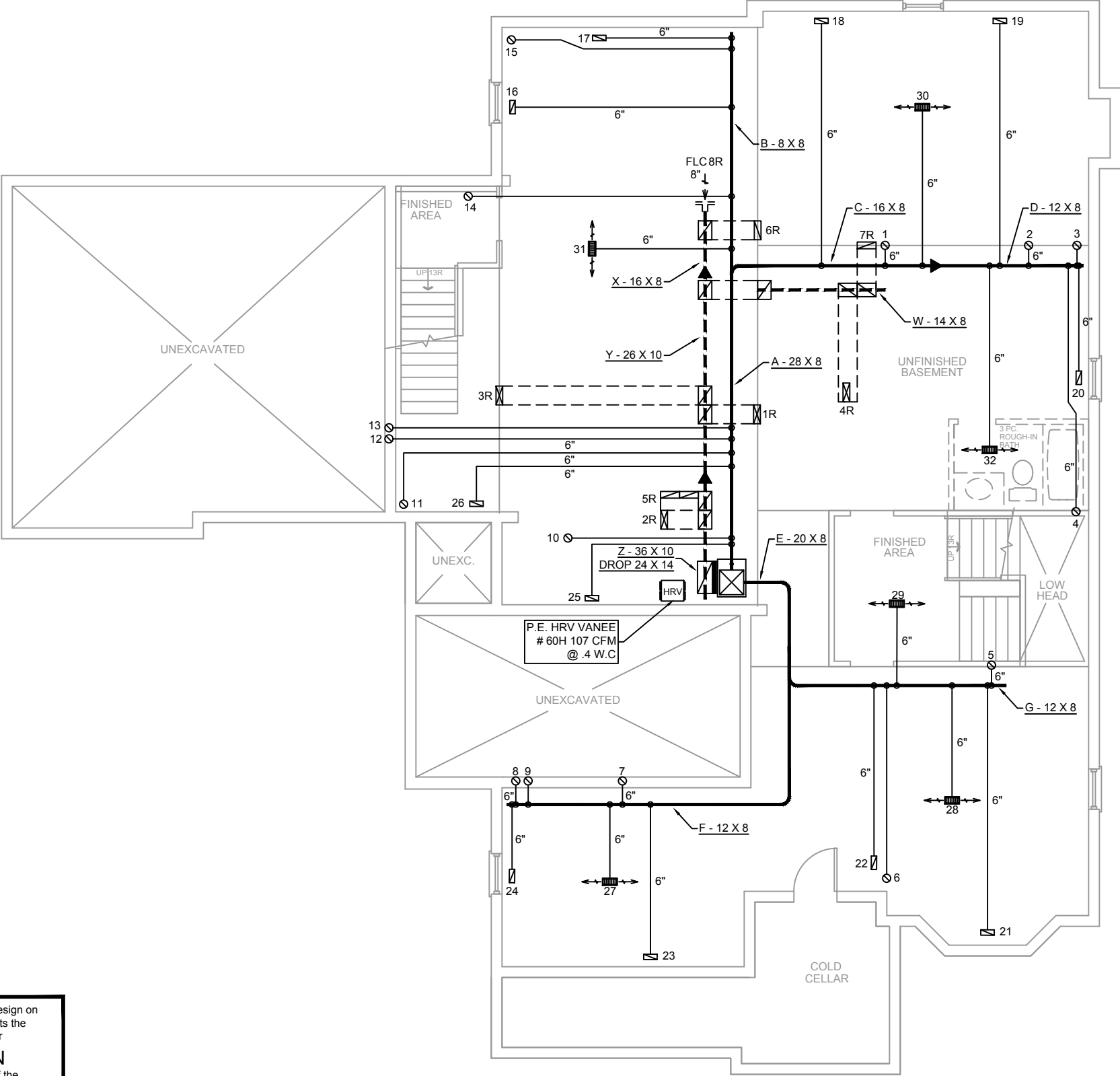
The undersigned has reviewed and takes responsibility for this design on behalf of GTA Designs Inc. and has the qualifications and meets the requirements set out in the Building Code to be a designer

QUALIFICATION INFORMATION

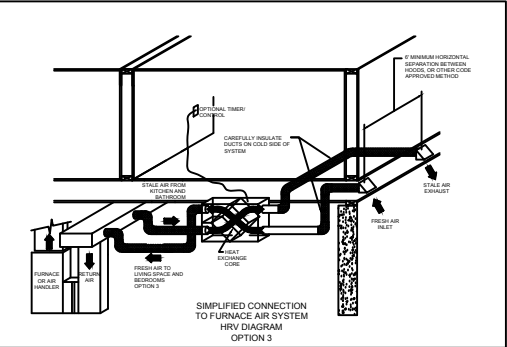
Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

David Da Costa
Signature of Designer

B.C.I.N. 32964



BASEMENT PLAN ELEV. A



- 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	90,312 BTU/HR.		
UNIT MAKE	AMANA		
UNIT MODEL	GMEC96-1004CNA		
UNIT HEATING INPUT	100,000 BTU/HR.		
UNIT HEATING OUTPUT	96,000 BTU/HR.		
A/C COOLING CAPACITY	4.0 TONS.		
FAN SPEED	1653 CFM		
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	15	4	6
1ST FLOOR	11	3	2
BASEMENT	5	1	

DATE:	AUGUST 06, 2015		
CLIENT:	HIGHCASTLE HOMES		
MODEL:	87-1		
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.		
SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	BASEMENT		
DRAWN BY:	CHECKED:	SQFT	
RB	DD	4825	
LAYOUT NO.	DRAWING NO.		
JB-00863	M1		

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

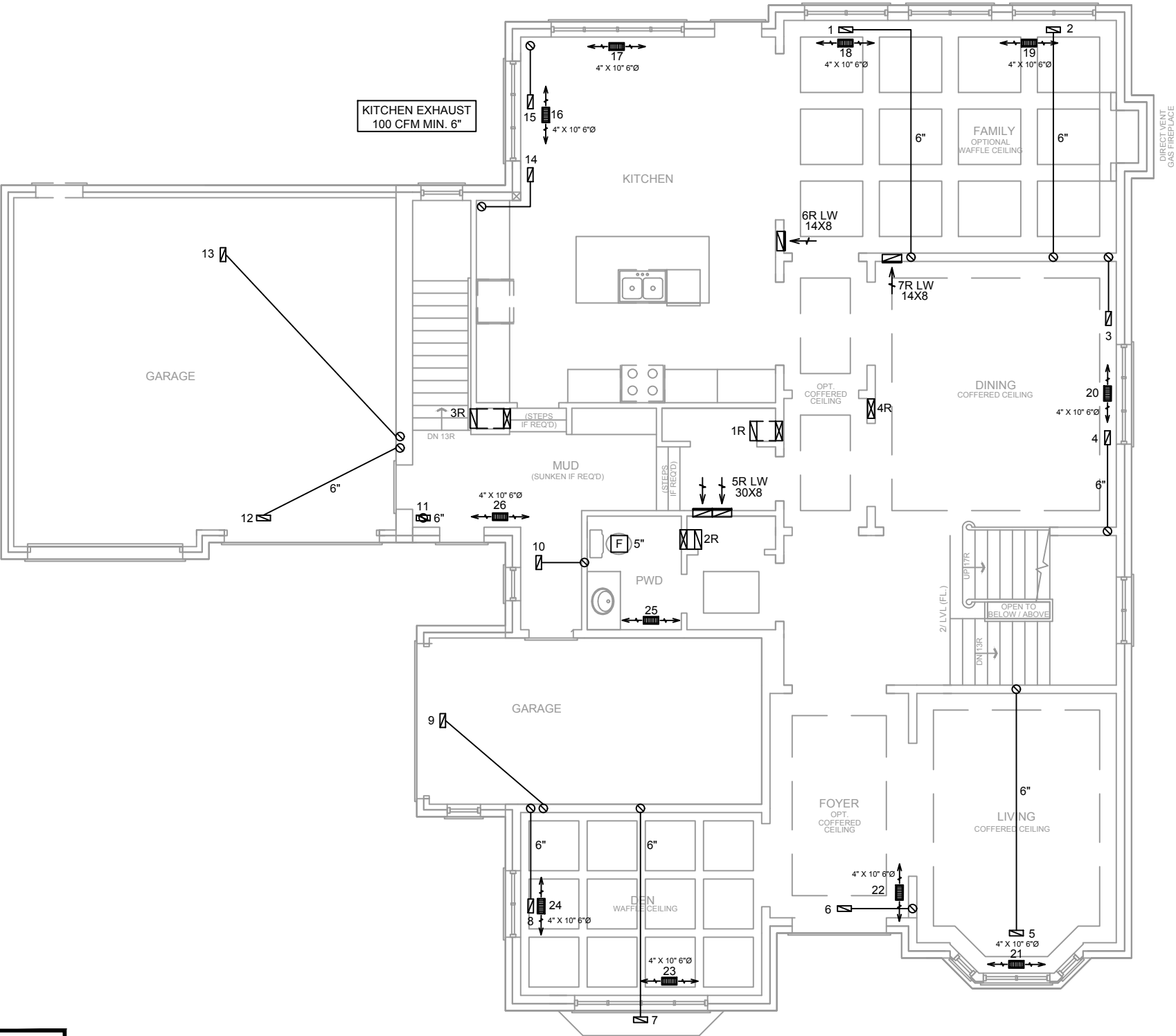
S.A.
R.A.
T
F

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
HRY EXHAUST GRILL
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIDIT ROUND DUCT
SUPPLY DIFFUSER



GROUND FLOOR PLAN ELEV. A

- 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
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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

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

HEAT-LOSS	90,312			BTU/HR.
UNIT MAKE	AMANA			
UNIT MODEL	GMEC96-1004CNA			
UNIT HEATING INPUT	100,000			BTU/HR.
UNIT HEATING OUTPUT	96,000			BTU/HR.
A/C COOLING CAPACITY	4.0			TONS.
FAN SPEED	1653			CFM
# OF RUNS	S/A	R/A	FANS	
3RD FLOOR				
2ND FLOOR	15	4	6	
1ST FLOOR	11	3	2	
BASEMENT	5	1		

DATE:	AUGUST 06, 2015		
CLIENT:	HIGHCASTLE HOMES		
MODEL:	87-1		
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.		
SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	GROUND FLOOR		
DRAWN BY:	CHECKED:	SQFT	
RB	DD	4825	
LAYOUT NO.	DRAWING NO.		
JB-00863	M2		

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
WIR & PRINCIPAL EXHAUST FAN

S.A.
R.A.
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
WIR & PRINCIPAL EXHAUST FAN

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

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

DUCT CONNECTION
TO JOIST LINING
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LOW/HIGH WALL/KICK SUPPLY DIFFUSER
HRV EXHAUST GRILL
SUPPLY AIR PIPE RISER
VOLUME DAMPER

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

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RIDIT ROUND DUCT
SUPPLY DIFFUSER

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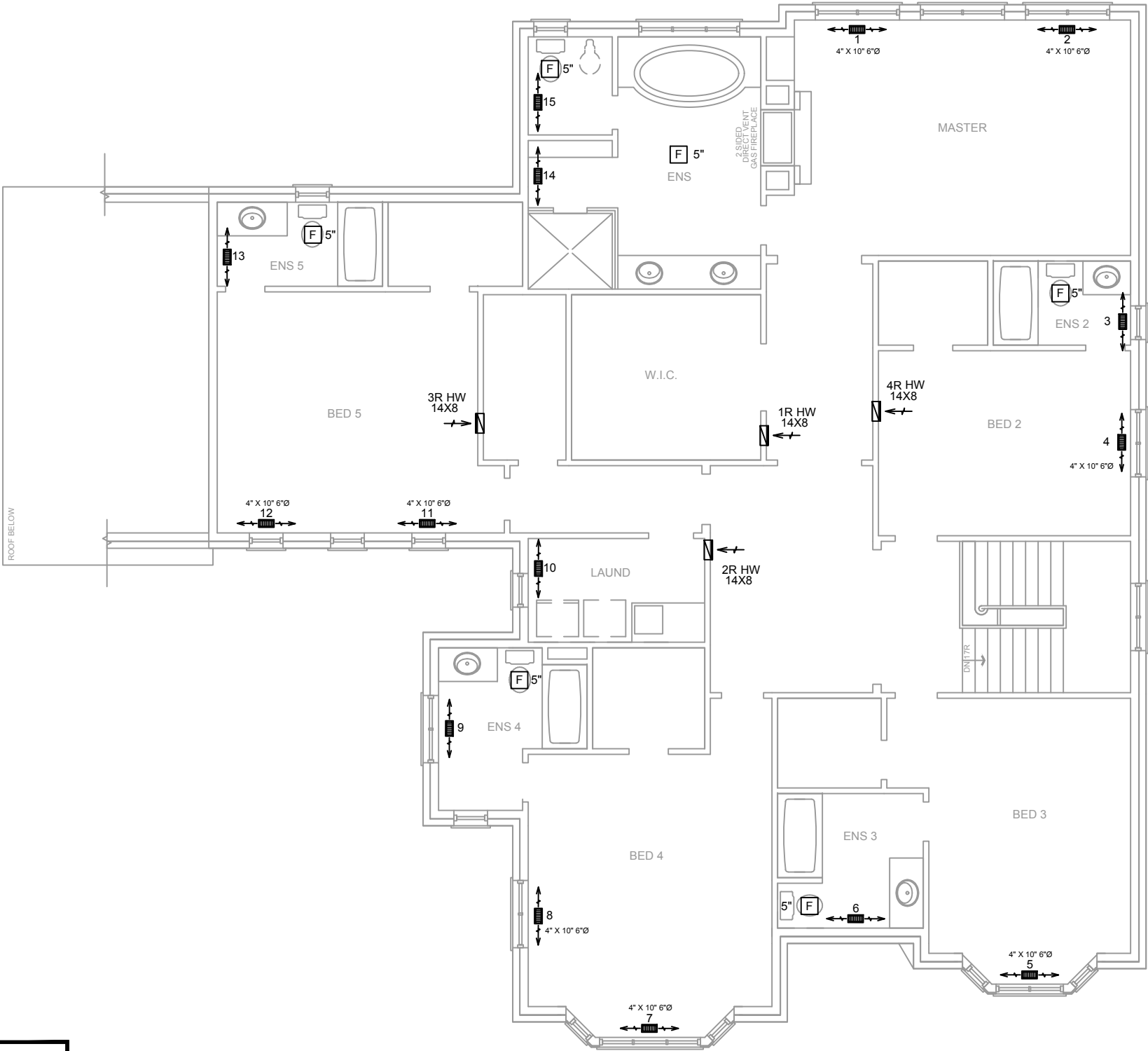
QUALIFICATION INFORMATION

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

David Da Costa

Signature of Designer

B.C.I.N. 32964



SECOND PLAN ELEV. A

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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web: www.gtadesigns.ca

HEAT-LOSS BTU/HR.

90,312

UNIT MAKE

AMANA

UNIT MODEL

GMEC96-1004CNA

UNIT HEATING INPUT

BTU/HR.

100,000

UNIT HEATING OUTPUT

BTU/HR.

96,000

A/C COOLING CAPACITY

TONS.

4.0

FAN SPEED

CFM

1653

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	15	4	6
1ST FLOOR	11	3	2
BASEMENT	5	1	

DATE:

AUGUST 06, 2015

CLIENT:

HIGHCASTLE HOMES

MODEL:

87-1

PROJECT:

RIVERWALK PHASE 2
BRAMPTON,ONT.

SCALE:

1/8" = 1'-0"

FLOOR PLAN:

SECOND FLOOR

DRAWN BY:	CHECKED:	SQFT
RB	DD	4825
LAYOUT NO.	DRAWING NO.	
JB-00863	M3	

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

S.A.
R.A.
THERM
FAN

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

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

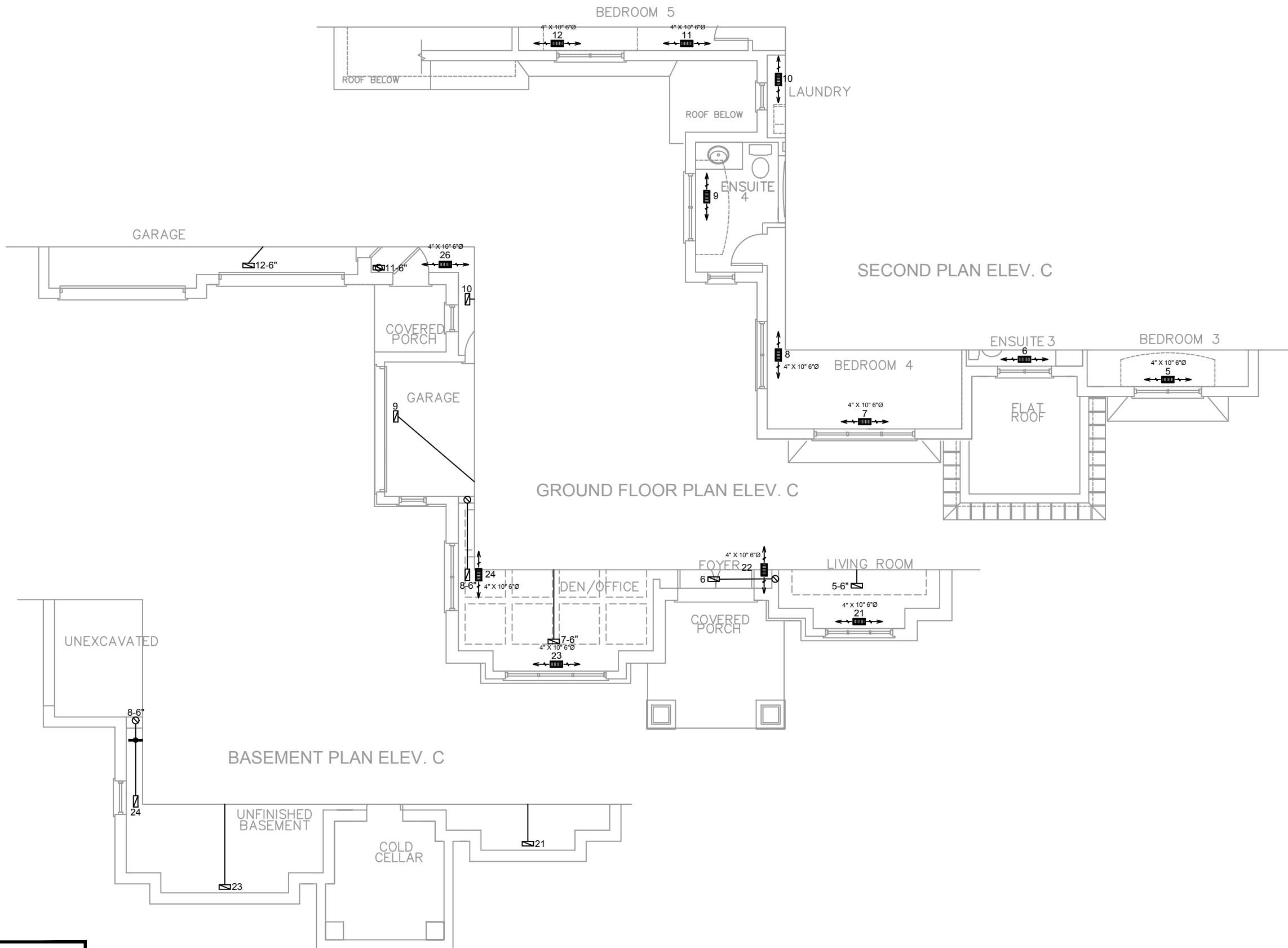
Required unless design is exempt under Division C 3.2.5.1 of the Ontario building code

David Da Costa



B.C.I.N. 32964

Signature of Designer



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

HEAT-LOSS	90,312			BTU/HR.
UNIT MAKE	AMANA			
UNIT MODEL	GMEC96-1004CNA			
UNIT HEATING INPUT	100,000			BTU/HR.
UNIT HEATING OUTPUT	96,000			BTU/HR.
A/C COOLING CAPACITY	4.0			TONS.
FAN SPEED	1653			CFM
# OF RUNS	S/A	R/A	FANS	
3RD FLOOR				
2ND FLOOR	15	4	6	
1ST FLOOR	11	3	2	
BASEMENT	5	1		

DATE:
AUGUST 06, 2015

CLIENT:
HIGHCASTLE HOMES

MODEL:
87-I

PROJECT:
RIVERWALK PHASE 2
BRAMPTON,ONT.

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

FLOOR PLAN:
PARTIALS PLAN

DRAWN BY: RB
CHECKED: DD
SQFT: 4825

LAYOUT NO. JB-00863
DRAWING NO. M5

OBC 2012

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