

Schedule 1: Designer Information

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

A. P	ro	ject Information					
Building	g n	umber, street name				Lot:	
			65-3 ALT	5 BED		Lot/con.	
Municip	ali	ty	Brampton	Postal code	Plan number/ other description		
B. In	di	vidual who reviews an	d takes responsibility for desig	gn activities			
Name			David DaCosta		Firm	gtaDesigns Inc.	
Street a	add	ress	2985 Drew Roa	d, Suite 202		Unit no.	Lot/con.
Municip	ali	ty		Postal code	Province	E-mail	
Tolonbo	an c	number	Mississauga	L4T 0A4	Ontario	dave@gtadesig	gns.ca
relepric	JHE	(905) 67	71-9800	Fax number (647	7) 494-9643	Cell number (416) 268-68	320
C. De	esi		en by individual identified in S				
	1	House	⊠ HVAC – F	louse		☐ Building Structural	
)	Small Buildings	☐ Building Se	ervices		☐ Plumbing – House	
	Ì	Large Buildings	Detection,	Lighting and Po	wer	☐ Plumbing – All Buildings	
)	Complex Buildings	☐ Fire Protect	ction		☐ On-site Sewage Systems	S
Descri	ipt	ion of designer's worl	K Mod	del Certification	1	Project #	PJ-00067
Haatina		nd Caaling Land Calaula	ation o		Duildor	Layout #	JB-01279
		nd Cooling Load Calcula n Design	ations		Builder Project	Highcastle Homes Brampton	i
-		al mechanical ventilation	n Design Summary		Model		
Reside	nti	al System Design per CA	AN/CSA-F280-12		Model	65-3 ALT 5 BED	
		al New Construction - Fo	orced Air		SB-12	Package J	
D. De	ec	aration of Designer					
		<u> </u>	David DaCosta	declare that (d	choose one as appro	opriate):	
			(print name)				
		۰	I review and take responsibility for 3.2.4 Division C of the Building Coclasses/categories.	de. I am qualified			
			Individual BCIN				
			Firm BCIN:			-	
		\boxtimes	I review and take responsibility for "other designer" under subsection	-			
			Individual BCIN	3296	64		
			Basis for exemp	tion from registr	ation:	Division C 3.2.4.1. (4)	
			The design work is exempt from the	e registration an	d qualification requiren	nents of the Building Code.	
			Basis for exemp	tion from registr	ation and qualification:		
I certify	tha	at:					
1.			n this schedule is true to the best of n	ny knowledge.			
2.	۱h	ave submitted this applica	ation with the knowledge and consent	t of the firm.			
		Novem	ber 17, 2015		Mane At	Contraction of the contraction o	
			Date		Signature of De	esigner	

NOTE:

1. 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, temporay license, or a certificate of authorization, issed by the
Ontario Associstion 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.



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

Page 2

Heat loss and gain calcul	ation summary sheet CSA-F280-M12 Standard Form No. 1
These documents issued for the use of	ighcastle Homes Layout No.
and may not be used by any other persons without authorization. Docum	ents for permit and/or construction are signed in red. JB-01279
Building	Location
Address (Model): 65-3 ALT 5 BED	Site: Brampton
Model:	Lot:
City and Province: Brampton	Postal code:
Calculation	ns based on
Dimensional information based on:	
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 68%	Units: Imperial Area Sq. ft 4013
Heating design conditions	Cooling design conditions
Outdoor temp -2.2 Indoor temp: 72 Mean soil tem 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



100

150

0.09

5

Equivalent Length

Adjusted Pressure

Duct Size Round

Total Effective Length

130

189

0.07

120

155

0.08

5

100

120

0.11

70

104

0.13

5

100

126

0.10

5

70

70

0.19

70

70

0.19

70

70

0.19

70

70

0.19

70

70

0.19

70

70

0.19

70

70

0.19

70

70

0.19

120

174

0.07

Air System Design

SB-12 Package J

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

90

134

0.10

6

70

70

0.19

70

70

0.19

70

70

0.19

70

70

0.19

80

117

6

0.11

I review and take responsibility for the design work and am qualified in the

Builder: Highcastle Homes 2015 November 17, 2015 Page 3 appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code. Project # PJ-00067 System 1 Man Aleto Brampton Model: 65-3 ALT 5 BED Individual BCIN: 32964 David DaCosta Layout # JB-01279 Project: AIR DISTRIBUTION & PRESSURE FURNACE/AIR HANDLER DATA: A/C UNIT DATA: DESIGN LOAD SPECIFICATIONS BOILER/WATER HEATER DATA: Level 1 Net Load 21,344 btu/h **Equipment External Static Pressure** 0.5 "w.c. Make Amana Make 3.0 Ton Type Amana Level 2 Net Load 26,575 btu/h 0.225 "w.c. Model GMEC960803BNA **Additional Equipment Pressure Drop** Model Cond.---3.0 Level 3 Net Load 19,499 btu/h Available Design Pressure 0.275 "w.c. Input Btu/h 80000 Input Btu/h Coil --3.0 Return Branch Longest Effective Length 76800 Level 4 Net Load 0 btu/h 300 ft Output Btu/h Output Btu/h " W.C. 0.50 Min.Output Btu/h ΔWH Total Heat Loss 67,418 btu/h R/A Plenum Pressure 0.138 "w.c. E.s.p. Blower DATA: **Total Heat Gain** 35,999 btu/h S/A Plenum Pressure 0.14 "w.c. Water Temp deg. F. W2 Total Heat Loss + 10% 74,160 Btuh. Heating Air Flow Proportioning Factor 0.0174 cfm/btuh AFUE 96% Blower Speed Selected: Blower Type ECM **Building Volume Vb** 49343 ft³ **Cooling Air Flow Proportioning Facter** 0.0326 cfm/btuh Aux. Heat (Brushless DC OBC 12.3.1.5.(2)) Package J Ventilation Load 3.580 Btuh. R/A Temp 70 dea. F. SB-12 Package Heating Check 1172 cfm Cooling Check 1172 cfm Ventilation PVC 95.4 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. 21 22 23 24 25 26 11 12 13 14 15 16 17 18 19 20 BASE BASE BASE BASE LAUND DFN FAM FAM KIT LIV LIV Room Use BASE BASE KIT DIN FOY Btu/Outlet 3557 3557 3557 3557 3557 3557 3583 2987 1697 1697 2281 2281 2296 2943 2943 3868 **Heating Airflow Rate CFM** 62 62 62 62 62 62 62 52 29 29 40 40 40 51 51 67 Cooling Airflow Rate CFM 10 10 10 10 10 10 92 50 69 69 86 86 108 68 68 62 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 0.13 **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 **Actual Duct Length** 50 59 35 20 34 26 54 59 58 68 37 30 27 37 44

Outlet Size	3x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	В	В	В	Α	D	E									В	С	С	С	Α	Α	D	E	E	E				
							Level 3 (Outlets													Level 4 (Outlets						
S/A Outlet No.	1	2	3	4	5	6	7	8	9	10																		
Room Use	MAST	MAST	BED 2	ENS 2/3	BED 3	BED 4	BED 4 E	NS 4&5	BED 5	ENS																		
Btu/Outlet	1806	1806	2338	768	2440	2659	2659	1356	1758	1909																		
Heating Airflow Rate CFM	31	31	41	13	42	46	46	24	31	33																		
Cooling Airflow Rate CFM	41	41	50	13	42	46	46	14	30	34																		
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
Actual Duct Length	76	89	67	26	34	61	66	67	74	72																		
Equivalent Length	160	140	90	140	100	110	120	130	130	110	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Total Effective Length	236	229	157	166	134	171	186	197	204	182	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Adjusted Pressure	0.06	0.06	0.08	80.0	0.10	0.08	0.07	0.07	0.06	0.07	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Duct Size Round	6	6	6	3	6	6	6	4	4	4																		
Outlet Size	4x10	4x10	4x10	3x10	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10										
Trunk	С	С	Α	Α	D	D	D	D	В	С																		

170

229

0.06

6

100

158

0.08

6

110

178

0.07

80

117

0.11

90

120

0.11

120

127

0.10

6

70

97

0.13

Return Branch And Grill Sizing		G	rill Press	ure Loss		0.02 "	w.c					Return Tru	nk Duct Sizing					Supply Tru	nk Duct Sizing				
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R	Trunk	CFM	Press.	Round	Re	ct. Size	Trunk	CFM	Press.	Round	Rect.	Size
Inlet Air Volume CFM	105	150	105	105	348		173	186															
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	Drop	1172	0.05	17.0	24x1	2	Α	680	0.06	13.5	20x8	16x10
Actual Duct Length	42	38	54	36	27		17	15				z	639	0.06	13.0	18)	8 14x10	В	485	0.06	12.0	16x8	12x10
Equivalent Length	200	155	155	195	125	50	205	115	50	50	50	Υ						С	207	0.06	8.5	8x8	107
Total Effective Length	242	193	209	231	152	50	222	130	50	50	50	X						D	491	0.07	11.5	14x8	12x10
Adjusted Pressure	0.05	0.06	0.06	0.05	0.08	0.24	0.05	0.09	0.24	0.24	0.24	w						E	231	0.10	8.5	8x8	107
Duct Size Round	6.0	8.0	6.0	6.0	2x8		8.0	8.0				V						F					
nlet Size	8	8	8	8	8		8	FLC				U						G					
	x	x	x	x	x	x	x	x	x	x	x	T						н					
Inlet Size	14	30	14	14	30		14					S						1					
												R						J					
Trunk			z		z			z				Q						K					



Total Heat Loss

Total Heat Gain

67,418 btu/h

35,999 btu/h

Heatloss/Gain Calculations CSA-F280-12

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643

e-mail dave@gtadesigns.ca

		Builder:	Higl	ncastle H	omes			Date:			Novem	nber 17,	2015			_				Weat	ther Data	ı	Bra	mpton	44	-2.2	86 20) 48	8.2				Page 4
2012 OBC		Project:		Brampto	n		N	/lodel:			65-3	ALT 5 B	ED				Sys	stem 1	1	Hea	t Loss ^	T 74.2	deg. F		Ht gain ^T	11	deg. F	G	TA:	4013	Project # Layout #		J-00067 3-01279
Run E	Level 1 Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B				2.0 1845	B AG Area A B			A B AG Area A		A A	3 AG Area A 3		A B Ar A B	ea		A B AG Are A B	ea		A B AG Area A			A B AG Area A		A B AG Area A B		A B	G rea		A B AG Area A B		A B AG Area A	
	Exposed Floors Gross Exp Wall A				410	Fir			Flr		-	Flr		Fir	r		Fir			Fir			Fir		Flr		FI	r		Flr		Flr	
	Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors	R-Values L 3.15 3.15 3.15 1.99 2.03 3.01	23.56 23.56 23.56 23.56 37.29 36.55 24.65	11.31 27.75 21.28 22.15 88.23 3.65	3 15 12 21	71 353 283 518	416 255		Loss	Gain	L	Loss	Gain	Lo	oss G	ain	Lo	ss Ga	ain	Loss	Gain		Loss	Gain	Loss	Gain	La	oss G	ain	Loss	Gain	Loss	Gain
No.	et exposed walls A et exposed walls B exposed Ceilings A exposed Ceilings B exposed Floors ductive Heatloss	8.50 8.50 50.00 22.86 22.05 Slab On G	8.73 8.73 1.48 3.25 3.37	1.29 1.29 0.76 1.66 0.23	359	9452	465																										
Total Conductive	Heat Loss Heat Gain					10677	1247																										
Air Leakage Ventilation	Heat Loss/Gain Case 1 Case 2		0.9436 0.11 25.64	0.0512 0.07 11.88		10075	64																										
	Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	1 =.25 pe	0.06 rcent	0.07 239 6974 10%		592	83																										
Level 1 HL Total Level 1 HG Total	21,344 1,812		al HL for p HG per roo		L	21344	1812																										
	Level 2 of the exposed wall A of the exposed wall B					LAUNI A B)		DEN A B		31 A			38 A B	KIT		21 A B	DIN		33 A B	1		В	•	A B		A B			A B		A B	
	Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors				- 1	Area A B Fir			Area A B Fir		11.0 365 A E	A		11.0 400 Ar A B			11.0 328 Are A B Fir		2	1.0 40 Area 40 A B Fir		108	Area		Area A B Fir		A A B FI			Area A B FIr		Area A B Fir	
	Gross Exp Wall A Gross Exp Wall B				352			319			341			418			231		4	62		300											
	Components North Shaded	R-Values L 3.15	23.56	11.31		Loss	Gain			Gain	L	oss (Gain	Lo	oss G		Lo	ss Ga	ain	Loss	Gain	7	Loss	Gain	Loss	Gain	Le	oss G	ain	Loss	Gain	Loss	Gain
	East/West South Existing Windows Skylight	3.15 3.15 1.99 2.03	23.56 23.56 37.29 36.55	27.75 21.28 22.15 88.23				30	707	832	40	942	1110	65	1531	1804	27	636	575	86 202	6 238	6 34	801	943									
N	Doors et exposed walls A et exposed walls B	3.01 14.49 8.50	24.65 5.12 8.73	3.65 0.76 1.29	42 310	1035 1587			1480	219	301	1541	229	353	1808	268	204	1045		76 192			1229	182									
	Exposed Ceilings A Exposed Ceilings B Exposed Floors	50.00 22.86 22.05	1.48 3.25 3.37	0.76 1.66 0.23															2	40 35	6 18	2 108	160	82									
Foundation Cond	luctive Heatloss	Slab On G		x																													
Total Conductive	Heat Loss Heat Gain					2623	389		2187	1052		2484	1338		3339	2072		1681	729	430	7 285	4	2831	1303									
Air Leakage Ventilation	Heat Loss/Gain Case 1 Case 2		0.3108 0.04 25.64	0.0512 0.07 11.88		815	20		680	54		772	69		1038	106		522	37	133	9 14	6	880	67									
	Case 3 Heat Gain People Appliances Loads	1 =.25 pe	0.06	0.07 239 6974	1.0	146	26 1743		121	70	1.0	138	1743	1.0	185	138 1743	1.0	93	49 1743	23	9 19	0	157	7 87									
	Duct and Directo																					1	i i	1		1	1 1	1				1	1
Level 2 HL Total	Duct and Pipe loss 26,575	Tot	al HL for p	10% er room		3583			2987			3393			4562			2296		588	5		3868	3									
	26,575		al HL for p	er room		3583	2831		2987	1528		3393	4211		4562	5277			3326	588	5 414	8	3868	1893									

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

None Alexa

David DaCosta

Package J



Total Heat Loss

Total Heat Gain

67,418

35,999

btu/h

Heatloss/Gain Calculations CSA-F280-12

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

		Builder:	Hial	ncastle Ho	mae		Date:			Novembe							v	Neather I	Data	Bram	nton	44	-2.	.2 86	20	48.2				
012 OBC		-				_				65-3 AL				Γ	Syst	m 1							-				4013	!	Project #	PJ-
712 OBC		Project:		Bramptor	1		Model:			65-3 AL	LISBE	U			-,			Heat Los	ss ^T 74.2	deg. F	'	It gain ^T		11 de	J. F	GIA:	4013		Layout #	JB-
Run	ft. exposed wall A				MA 34 A	ST	27	BED 2	!	E1 6 A	NS 2/3	29	BED 3		BE 29 A	4	12 A	NS 4&5	13	BED 5		E1 22 A	IS		Α		А			A
	ft. exposed wall B				В			В		В			В		В В		В.			В		В			В		В			В
	Ceiling height				8.0		8.0			8.0		8.0			8.0		8.0		8.0			8.0								
_	Floor area				549 Area			Area		145 Are	ea		Area		355 Area		108 Ar			Area		126 Area			Area			ea		Area
	xposed Ceilings A xposed Ceilings B				549 A B		178	S A B		145 A B		224	В		355 A B		108 A B		156	В		126 A B			A B		A B			A B
	Exposed Floors				Flr			Fir		Fir			Fir		355 Flr		58 FI	ır		Fir		Fir			Flr		FI			Fir
	Gross Exp Wall A				272		216			48		232			232		96		104			176								
	Gross Exp Wall B																													
	Components			ain	Loss	Gain	7	Loss	Gain	Lo	ss G	ain	Loss (Gain	Loss	Gain	Lo	oss Ga			Gain	Loss	Ga	ain	Loss	Gain		oss Gai	n	Loss
	North Shaded East/West	3.15 3.15	23.56 23.56	11.31 27.75	26 6	12 72	1 20	471	555						38 8	5 1054	4	94	111	377	181	18 4	24	499						
	South	3.15	23.56	21.28	20		. 20	7/1	333	6	141	128 16	377	340	30 0	1004	-	34	•••			.0 4		433						
	Existing Windows	1.99	37.29	22.15																										
	Skylight	2.03	36.55	88.23																										
	Doors	3.01	24.65	3.65						40			4400	404						454		450		400						
	et exposed walls A et exposed walls B	14.49 8.50	5.12 8.73	0.76 1.29	246 12	60 18	7 196	1004	149	42	215	32 216	1106	164	194 9	3 147	92	471	70 88	451	67	158 8	09	120						
	xposed Ceilings A	50.00	1.48	0.76	549 8	15 41	7 178	264	135	145	215	110 224	332	170	355 5	7 270	108	160	82 156	232	119	126 1	87	96						
	xposed Ceilings B	22.86	3.25	1.66																										
	Exposed Floors	22.05	3.37	0.23											355 11	5 80	58	195	13 40	135	9									
ındation Condi	luctive Heatloss															_														
Conductive	Heat Loss Heat Gain				26	132	5	1739	839		572	270	1815	675	36	1552		921	276	1194	375	14	20	715						
r Leakage	Heat Loss/Gain		0.2887	0.0512	7	76 6		502			165	14	524	35	10			266	14	345	19	4	10	37						
	Case 1		0.04	0.07																										
entilation	Case 2		25.64	11.88																										
	Case 3	x	0.06	0.07		49 8		96			32	18	101	45	2			51	18	66	25		79	48						
	Heat Gain People	4 05		239	2	47	8 1		239			1		239	1	239			1		239									
			oroont	6074																										
	Appliances Loads Duct and Pipe loss	1 =.25 p	ercent	6974 10%											1 4	5 179	1	119	28 1	154	61									
	Duct and Pipe loss 19,499 10,972	To	ercent otal HL for p HG per roo	10% er room	36	12 254	7	2338	1530		768	392	2440	1291	1 4		1	119 1356	28 1	154 1758	936	19		1039						
El 3 HL Total el 3 HG Total Run	19,499 10,972 Level 4 ft. exposed wall A	To	otal HL for p	10% er room	A		7	A	1530	A	768		A	1291	53 A	8	A	1356		1758 A		A		1039	A B		A			A R
El 3 HL Total el 3 HG Total Run	19,499 10,972 Level 4 ft. exposed wall A ft. exposed wall B	To	otal HL for p	10% er room			7				768			1291	53	8		1356		1758				1039	A B		A B			A B
El 3 HL Total Il 3 HG Total Run Run	Duct and Pipe loss 19,499 10,972 Level 4 ft. exposed wall A ft. exposed wall B Ceiling height Floor area	To	otal HL for p	10% er room	A		7	A B		A			A	1291	A B Area	8	A B	1356		1758 A		A		1039	B Area		B Ai	rea	I	
El 3 HL Total El 3 HG Total Run Run El	Duct and Pipe loss 19,499 10,972 Level 4 ft. exposed wall A ft. exposed wall B Celling height Floor area Exposed Cellings A	To	otal HL for p	10% er room	A B Area A		7	A B Area A		A B Are A			A B Area A	1291	A B Area A	8	A B Ar A	1356		A B Area A		A B Area A		1039	B Area A		B Ai A			B Area A
El 3 HL Total El 3 HG Total Run Run El	Duct and Pipe loss 19,499 10,972 Level 4 ft. exposed wall A ft. exposed wall B Celling height Floor area xxposed Cellings B	To	otal HL for p	10% er room	A B Area A B		7	A B Area A B		A B Are A B	ea		A B Area A B	1291	A B Area A B	8	A B Ar A B	1356		A B Area A B		A B Area A B		1039	B Area A B		B Ai A B			B Area A B
El 3 HL Total el 3 HG Total Run Run El	Level 4 ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors	To	otal HL for p	10% er room	A B Area A		7	A B Area A		A B Are A	ea		A B Area A	1291	A B Area A	8	A B Ar A	1356		A B Area A		A B Area A		1039	B Area A		B Ai A			B Area A
El 3 HL Total I 3 HG Total Run Run E:	Duct and Pipe loss 19,499 10,972 Level 4 ft. exposed wall A ft. exposed wall B Celling height Floor area xxposed Cellings B	To	otal HL for p	10% er room	A B Area A B		7	A B Area A B		A B Are A B	ea		A B Area A B	1291	A B Area A B	8	A B Ar A B	1356		A B Area A B		A B Area A B		1039	B Area A B		B Ai A B			B Area A B
El 3 HL Total I 3 HG Total Run Run E:	Level 4 ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings A xposed Ceilings A xposed Ceilings A xposed Floors Gross Exp Wall A Gross Exp Wall B Components	Tota Tota	otal HL for p	10% er room m x 1.3	A B Area A B	254	7	A B Area A B Fir		A B Are A B	ea		A B Area A B Fir	1291 Gain	A B Area A B	8 2799	A B Ar A B B	1356	437	A B Area A B Fir		A B Area A B			B Area A B	Gain	B A A B FI			B Area A B Fir
El 3 HL Total I 3 HG Total Run Run E:	Level 4 ft. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded	Tota Tota R-Values 3.15	btal HL for p HG per roo	10% er room m x 1.3	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
E I 3 HL Total I 3 HG Total Run Run E:	Level 4 ft. exposed wall A ft. exposed wall B Ceiling height Floor area xxposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West	Tota Tota R-Values 3.15 3.15	Loss G 23.56	10% er room m x 1.3	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total Run Run E	Level 4 ft. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded	Tota Tota R-Values 3.15	btal HL for p HG per roo	10% er room m x 1.3	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total Run Run E	Level 4 ft. exposed wall A ft. exposed wall A ft. exposed Wall B Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight	R-Values 3.15 3.15 3.15 3.15	Loss G 23.56 23.56 23.56 37.29 36.55	ain 11.31 27.75 21.28 22.15 88.23	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total Run Run E:	Level 4 ft. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings A xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors	R-Values 3.15 3.15 1.19 2.03	Loss G 23.56 23.56 37.29 36.55 24.65	ain 11.31 27.75 21.28 22.15 88.23 3.65	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Page 1 September 1 September 2	Level 4 If. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01	Loss G 23.56 23.56 23.56 23.56 24.65 5.12	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total 3 HG Total Run Run E:	Level 4 ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B	R-Values 3.15 3.15 1.19 2.03	Loss G 23.56 23.56 37.29 36.55 24.65	ain 11.31 27.75 21.28 22.15 88.23 3.65	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total Run Run E: E:	Level 4 If. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A at exposed Walls B Exposed walls A gross Exp Windows Skylight Existing Windows Skylight Exposed Walls B Exposed Walls B Exposed Ceilings B	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00	Loss G 23.56 23.56 23.56 23.56 24.65 5.12 8.73 1.48	ain 11.31 27.75 21.28 8.23 3.65 1.29 0.76	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total Run Run E E:	Level 4 ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A at exposed Ceilings A stexposed Ceilings A by constant of the constant o	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50	Loss G 23.56 23.56 23.56 37.29 36.55 5.12 8.73	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.29	A B Area A B Fir	254	z	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total Run Run E: E: Ned Ned Ned Net E: E: Indiation Condoi	Level 4 Ift. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skyllight Doors et exposed walls A exposed Ceilings B Exposed Floors Lexicology A Exposed Floors Lexicology A Exposed Ceilings B Exposed Ceilings B Exposed Floors Lexicology A Exposed Floors	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00	Loss G 23.56 23.56 23.56 23.56 24.65 5.12 8.73 1.48	ain 11.31 27.75 21.28 8.23 3.65 1.29 0.76	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
I 3 HL Total I 3 HG Total I 3 HG Total Run Run E: E: Nete	Level 4 Ift. exposed wall A Ift. exposed wall A Ift. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors at exposed walls A et exposed walls B exposed Ceilings B Exposed Floors Gross Exp Wall B Exp Wall	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00	Loss G 23.56 23.56 23.56 23.56 24.65 5.12 8.73 1.48	ain 11.31 27.75 21.28 8.23 3.65 1.29 0.76	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Run	Level 4 Ift. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skyllight Doors et exposed walls A exposed Ceilings B Exposed Floors Lexicology A Exposed Floors Lexicology A Exposed Ceilings B Exposed Ceilings B Exposed Floors Lexicology A Exposed Floors	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00	Loss G 23.56 23.56 23.56 23.56 24.65 5.12 8.73 1.48	ain 11.31 27.75 21.28 8.23 3.65 1.29 0.76	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Run	Level 4 Ift. exposed wall a ft. exposed wall a ft. exposed wall a ft. exposed ceilings a Exposed Ceilings B Exposed Floors Gross Exp Wall a Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B Exposed Ceilings A Exposed Floors Unctive Heatloss Heat Loss Heat Cosin Heat Casin	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00	Loss G 23.56 23.56 23.56 23.56 37.29 36.55 24.65 5.12 8.73 1.48 3.25 3.37	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.29 0.76 1.60	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Run	Level 4 ft. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded North Shaded Skylight Doors et exposed walls A exposed Ceilings B Exposed Ceilings B Exposed Floors Skylight Doors et exposed walls A exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors uctive Heatloss Heat Loss Heat Gain Heat Loss/Gain Case 2	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00 22.86 22.05	Loss G 23.56 23.56 23.56 23.56 37.29 36.55 5.12 8.73 1.48 3.25 3.37	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.66 0.23 0.0512 0.07 11.88	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Ne Ne Estandation Conductive r Leakage entilation	Level 4 11,499 10,972 Level 4 1ft. exposed wall A 1ft. exposed wall A 1ft. exposed wall B Ceiling height Floor area 1xposed Ceilings B 1xposed Walls B 1xposed Walls B 1xposed Ceilings A 1xposed Ceilings A 1xposed Ceilings A 1xposed Ceilings A 1xposed Ceilings B 1xposed Ceilings	R-Values 3.15 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00	Loss G 23.56 23.56 23.56 23.56 37.29 36.55 24.65 5.12 8.73 1.48 3.25 3.37	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.66 0.23 0.0512 0.07 11.88 0.07	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Ne Ne Ne Conductive r Leakage entilation	Level 4 ft. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area xposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls B xxposed Ceilings B Exposed Floors Under the State of the State Exposed Walls A et exposed walls B Exposed Floors uctive Heatloss Heat Loss Heat Gain Heat Loss/Gain Case 1 Case 2 Case 3 Heat Gain People	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00 22.86 22.05	Loss G 23.56 23.56 23.56 23.56 37.29 36.55 24.65 5.12 8.73 1.48 3.25 3.37	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.29 0.0512 0.07 11.88 0.07 239	A B Area A B Fir	254	7	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Run	Level 4 11,499 10,972 Level 4 1ft. exposed wall A 1ft. exposed wall A 1ft. exposed wall B Ceiling height Floor area 1xposed Ceilings B 1xposed Walls B 1xposed Walls B 1xposed Ceilings A 1xposed Ceilings A 1xposed Ceilings A 1xposed Ceilings A 1xposed Ceilings B 1xposed Ceilings	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00 22.86 22.05	Loss G 23.56 23.56 23.56 23.56 37.29 36.55 24.65 5.12 8.73 1.48 3.25 3.37	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.66 0.23 0.0512 0.07 11.88 0.07	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir
Run	Level 4 Ift. exposed wall A ft. exposed wall A ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors et exposed walls A Exposed Ceilings B Exposed Floors to the Existing Windows Skylight Doors et exposed walls B Exposed Ceilings B Exposed Ceilings B Exposed Floors tective Heatloss Heat Loss Heat Loss Heat Loss Heat Gain Case 2 Case 2 Leas 2 Leas Gain People Appliances Loads	R-Values 3.15 3.15 3.15 1.99 2.03 3.01 14.49 8.50 50.00 22.86 22.05	Loss G 23.56 23.56 23.56 23.56 37.29 36.55 24.65 5.12 8.73 1.48 3.25 3.37	ain 11.31 27.75 21.28 22.15 88.23 3.65 0.76 1.66 0.23 0.0512 0.07 11.88 0.07 239 6974 10% er room	A B Area A B Fir	254	77	A B Area A B Fir	2015	A B Are A B Fir	ea		A B Area A B Fir		A B Area A B Fir	8 2799	A B Ar A B B	1356	437	A B Area A B Fir	936	A B Area A B Fir			B Area A B Fir	Gain	B A A B FI	r		B Area A B Fir

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

Mana Matte

David DaCosta

Package J



Non forced air

Any type c) appliance

Part 6 design

Type I, II or IV no forced air

Ш Ш

IV Othe

> 2 3

4

Х

Electric space heat (if over 10% of heat load)

House Type 9.32.3.1(2) Type a) or b) appliances only, no solid fuel Type I except with solid fuel (including fireplace)

System Design Option Exhaust only / forced air system HRV WITH DUCTING / forced air system

HRV simplified connection to forced air system

HRV full ducting/not coupled to forced air system

Type I or II either electric space heat

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643

Project #

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42.4 cfm

42.4 cfm

53 cfm

53 cfm 190.8

31.8 cfm

63.6 cfm 95.4

53 cfm low

55%

65%

190.8

95.4

95.4 cfm

e-mail dave@gtadesigns.ca Layout # 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 Package: Package J Project: **Brampton** Model: 65-3 ALT 5 BED RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY For systems serving one dwelling unit & conforming to the Ontario Building Code, O.geg 159/93 Location of Installation Total Ventilation Capacity 9.32.3.3(1) Lot # Plan # Bsmt & Master Bdrm @ 21.2 cfm Township Other Bedrooms @ 10.6 cfm Brampton Bathrooms & Kitchen 5 @ 10.6 cfm Roll# Permit # Other rooms @ 10.6 cfm Total Address Principal Ventilation Capacity 9.32.3.4(1) Builder Name Master bedroom @ 31.8 cfm 1 Highcastle Homes Other bedrooms @ 15.9 cfm Address Total City Principal Exhaust Fan Capacity Tel Fax Make Model Location 60H VanEE Base Installing Contractor Name 107 cfm Sones **Heat Recovery Ventilator** Address Make VanEE 60H City Model 107 cfm high Fax Sensible efficiency @ -25 deg C Tel Sensible efficiency @ 0 deg C Combustion Appliances 9.32.3.1(1) **Supplemental Ventilation Capacity** Direct vent (sealed combustion) only Positive venting induced draft (except fireplaces) Total ventilation capacity b) Natural draft, B-vent or induced draft fireplaces Less principal exhaust capacity c) Solid fuel (including fireplaces) REQUIRED supplemental vent. Capacity d) No combustion Appliances e) **Heating System** Forced air

Supp	lemental	Fans 9.32.3.5.	
Location	cfm	Model	Sones
Ensuite	50	770	2.5
Ens 2/3	50	770	2.5
all fans HVI listed	Make	Broan	or Equiv.

	Designer (Certification	
I hereby certify t	hat this ventilatio	n system has beer	designed
in accordance w	rith the Ontario B	uilding Code.	
Name	David D	aCosta	
	11	166	
Signature	- cana	4000	-
HRAI#	5190	BCIN #	32964
Date	November	17, 2015	

gtaDesigns

Energy Efficiency Design Summary

(Part 9 Residential)

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643

Page 7 Project # PJ-00067

e-mail dave@gtadesigns.ca This form is used t	o summarize th	ne energy	efficiency	design of t	he project. Information	on on completing this	form is on	the reverse
			Foi	r use by Prir	ncipal Authority			
Application No:					Model/Certification Nun	nber		
A. Project Informatio	n							
Building number, street name	••					Unit number	Lot/Con	
			65-3	ALT 5 BE	:D			
Municipality Brampto	n		Postal code	е	Reg. Plan number / oth	er description	ı	
•								
B. Compliance Option								
☑ SB-12 Prescriptive				Table:		CDEFGHI		Package J
☐ SB-12 Performand		1.2.]			energy performance	e calculations using	an appro	ved software
☐ Energy Star®* [SE	3-12 - 2.1.3.]				BOP form			
☐ EnerGuide 80® *		must be evaluated	by NRCan advisor	and meet	a rating of 80			
C. Project Design Co		Цося	ing Faulr	mon4		Space Heating F	ual Saura	•
✓ Zone 1 (< 5000 degree	•		ing Equip ≥ 90% AF		☑ Gas	□ Propane		Solid Fuel
☐ Zone 2 (≥ 5000 degree			≥ 90% AF		☐ Gas	☐ Fropane	_	Earth Energy
				70 70 AI OL				
	+Skylights+Gl	ass Doors	8		□ ICE Decement	Other Building		
Gross Wall Area =	391 m²	%	Windows+	11%	☐ ICF Basement ☐ ICF Above Grade	☐ Walkout B☐ Slab-on-gr		☐ Log/Post&Beam
Gross Window+ Area =	42 m²							Year DOD formal
Building Spe		ovide value		gs of the er	nergy efficiency compor	ing Component	cn <i>Energy</i> S	Efficiency Ratings
Thermal Insulation	пропен		KOI7 K	values	Windows & Door			Efficiency Ratings
Ceiling with Attic Space				50	Windows/Sliding (1.8
Ceiling without Attic Space				31	Skylights			2.8
Exposed Floor				31	Mechanicals		l	2.0
Walls Above Grade				22	Space Heating Eq	uip. ²		94%
Basement Walls				 12	HRV Efficiency (%			60%
Slab (all >600mm below gra	de)			Х	DHW Heater (EF)			0.67
Slab (edge only ≤600mm be	low grade)		,	10	NOTES	M/m O.K. on ED notice		
Slab (all ≤600mm below gra	de, or heated)		10	1. Provide U-Value in	dicate if condensing ty	no combino	d evetom usod
-			<u> </u>		ctions if SB-12 Performa			
SB-12 Performance:		[-				,g,		
The annual energy consumption	n using Subse	ction 2.1.1	. SB-12 Pa	ackage	is	Gj (1 Gj =1000Mj)	
The annual energy consumption	_			Gi				
The software used to simulate		_		ng is:				
The building is being designed	using an air lea	akage of _	air	changes p	er hour @50Pa.			
Energy Star: BOP form attach		will be lab	eled on co	mpletion b	y:			
Energy Star and EnerGuide80):							
Evaluator/Advisor/Rater Name:					Evaluator/Advisor/Rate	r Licence #:		
F. Designers [n	ames of designe	ers who are	responsible	e for the bu	ilding code design and Mechanical	wnose plans accompa	ny the permi	t application]
					David DaCo	eta ///	ane La	46 4
					Tuaviu uau0	งเล <i>- 6</i> °		0 0



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

Page 8 PJ-00067 Project #

JB-01279 Layout #

Pac	kage: ject:		Package Bramptoi			/stem: Model:			Syste 65-3 ALT		Layout #	JB-01279
				Ai	r Leakage (Calcula	tions					
		Decilalia ar	Nim I aalkawa	Heat Lass			D. il dia	. A:- !!	U O-	•		
	В	LRairh	Air Leakage Vb	HL^T	HLleak		Building	Air Leakag	ge Heat Ga Vb	IN HG^T	HG Leak	
	0.018	0.306	49343	74.2	20150		0.018	0.089	49343	11	871	
									Lev	/els		
	Δir I e	akane He	at Loss/Gai	n Multinlier	Table (Section 11)		1	1	2	3	4	
	Level	Building	Level Co		Air Leakage H		+					
	Factor (LF)	Air	Heat		Multipli	er	1	(LF)	(LF)	(LF)	(LF)	
	1 0.5 2 0.3		106 194		0.9436 0.3108		4	1.0	0.6 0.4	0.5 0.3	0.4	
	3 0.2	20150	139		0.2887		<u> </u>		0.4	0.2	0.2	
	4 0		C)	0.0000	1					0.1	
					Air Leakage H	eat Gain	1		Levels this	s Dwelling		
		LEAK	TAT CAIN	871	0.0512		1			3		
	BUILDING CONDU	JCTIVE HE	EAT GAIN	17011								
Щ				V	entilation C	alculati	ons					
		Ventil	ation Heat Lo	oss				Ventila	ation Heat G	ain		_
Vent		Ventilat	ion Heat Lo	ss			٧	entilation l	Heat Gain]	Vent
>	C PVC	HL^T	(1-E) HRV		bvent	С	PVC	HG^T		vent		>
	1.08 95.4	74.2	0.32	2	446	1.1	95.4	11	11	33		
		C	ase 1						Case 1			
	Ventila	ation Heat I	oss (Exhaust	only System	s)		Ventil	ation Heat G	ain (Exhaust	Only Syster	ns)	_
_		Case 1 -	Exhaust O	nly		Ca	se 1 - Exh	aust Only	Multi	iplier]	-
ase	Level LF	HLbvent	LVL Co		Multiplier		Gbvent	1133	0	07		Case
Sa	1 0.5 2 0.3		106 194		0.11 0.04	В	uilding	17011	0.			Sa
	3 0.2	2446	139		0.04							
	4 0		O)	0.00							
		C	ase 2						Case 2			•
2	Ventila	tion Heat L	oss (Direct D	ucted Systen	ns)		Ventil	ation Heat G	ain (Direct D	ucted Syste	ms)	
ase			Multi	plier					Multi	iplier]	Se
Ca	C HL^T 1.08 74.2	(1-E) HRV 0.32	25.	64			C 1.08	HG^T	11	.88		Case
	1.00 14.2						1.00				J	
	34		ase 3	Air Custons	1		Varia	ilation Hast	Case 3	I Ain Cuata	٥١	
3	Venti	iation Heat	Loss (Forced	Air Systems)		vent	tilation Heat	Gain (Forced	Air System	s)	<u>ო</u>
Case	T-(-1)/ (*) (*)	HLb	vent	Mul	tiplier		O l '	110*1.5	Vent He	at Gain	Multiplier	Case
ပိ	Total Ventilation Load	24	46	0	.06	Н	Gbvent 1133	HG*1.3	11	33	0.07	ပိ
						<u> </u>						
	Foundation	Condu	ctive Hea	Hose Lav	ol 1	277	'n	Watts	0.4	52	Btu/h	

Foundation Conductive Heatioss Level 1	2770	Watts	9452	Btu/h	
Foundation Conductive Heatloss Level 2		Watts		Btu/h	

Envelope Air Leakage Calculator

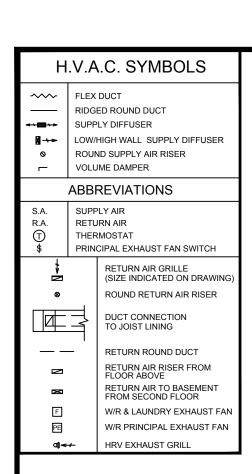
Supplemental tool for CAN/CSA-F280

Weather Sta	tion 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 (m³):	566.3	1397.39
Air Leakag	ge/Ventilation	
Air Tightness Type:	Present (1961-) (ACH=3.57)	¥
Custom BDT Data:	ELA @ 10 Pa. 185,83	cm ²
Custom BDT Data.	3.57 ACH @ 50 I	
Mechanical Ventilation (L/s):	Total Supply: Total Exhau	st:
	45 45	
Flu	ue Size	
Flue #:	#1 #2 #3	#4
Diameter (mm):	0 0 0	0
Envelope A	ir 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

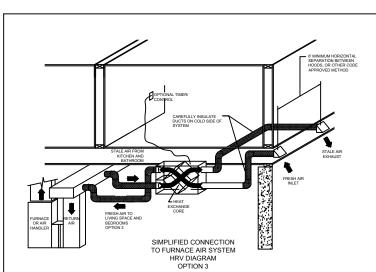
Weather Station Description				
Province:	Ontario	▼		
Region:	Brampton	▼		
	Site D	escription		
Soil Conductivity:	High cond	uctivity: moist soil		
Water Table:	Normal (7	7-10 m, 23-33 Ft)		
Fou	undatio	n Dimensions		
Floor Length (m):	24.14			
Floor Width (m):	7.10			
Exposed Perimeter (m):	62.48			
Wall Height (m):	2.44			
Depth Below Grade (m):	2.13	Insulation Configuration		
Window Area (m²):	2.79			
Door Area (m²):	1.95			
	Radi	ant Slab		
Heated Fraction of the Slab:	0			
Fluid Temperature (°C):	33			
	Design Months			
Heating Month	1			
	Founda	tion Loads		
Heating Load (Watts):	Heating Load (Watts): 2770			

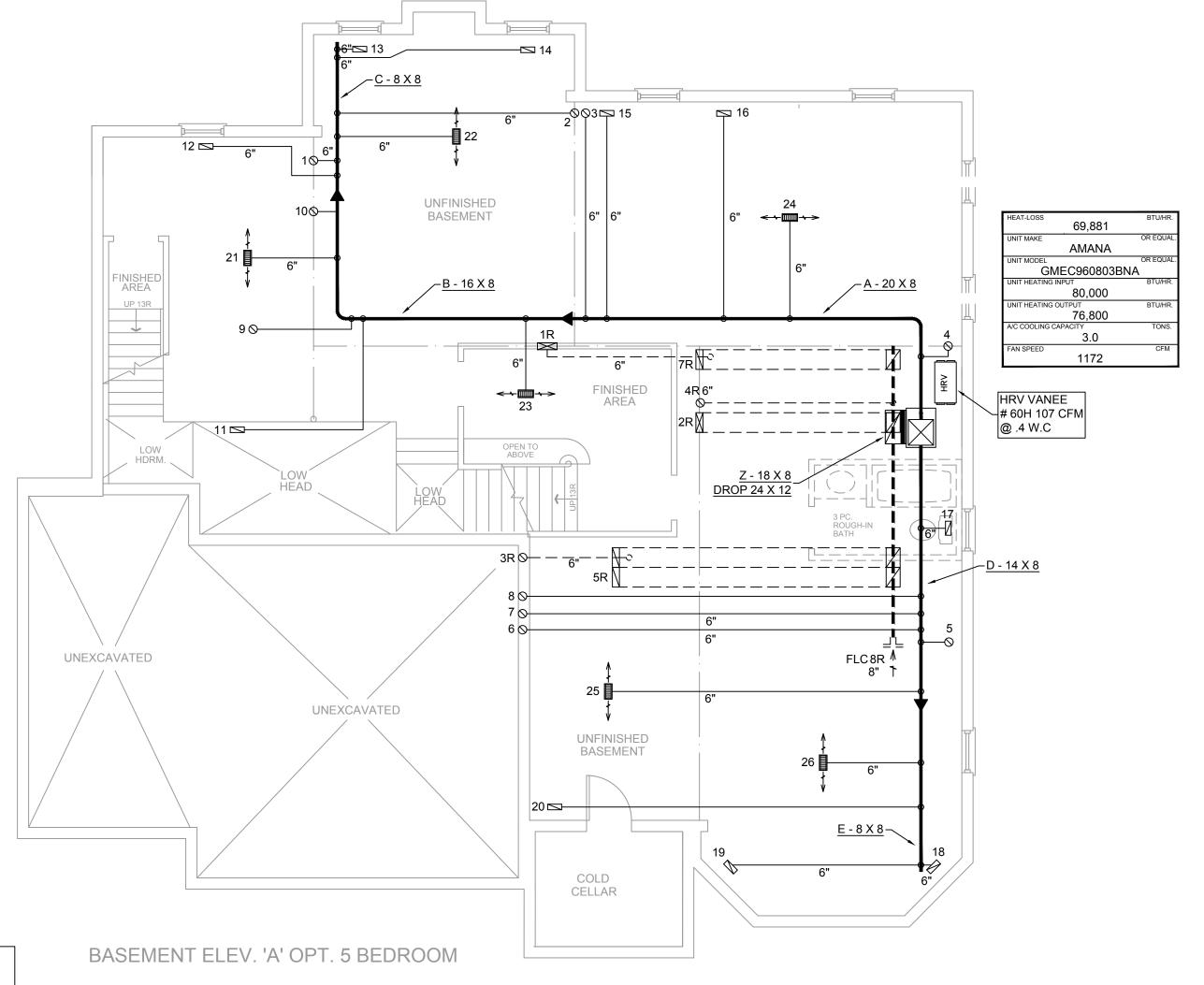


INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

ALL DUCTWORK MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3. (11)

FURNACE EQUIPPED WITH BRUSHLESS DC MOTOR AS PER OBC 12.3.1.5 (2)





- UNITS SHALL BE CSA APPROVED AND THE INSTALLATION SHALL MEET CSA STANDARDS.
- DUCTWORK SHALL BE CONSTRUCTED OF GALVANIZED U.S. STANDARD GAUGES SHALL BE NOT LESS THAN THE FOLLOWING:
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No.	DATE	REVISION / ISSUE
ı	NOV. 16, 2015	SUBMITTED FOR BUILDING PERMIT

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



2985 DREW ROAD, SUITE 202 MISSISSAUGA, ONTARIO L4T 0A4 TEL: 416-268-6820 FAX: 905-230-7134 email: dave@gtadesigns.ca website: www.gtadesigns.ca

OBC 2012

SQFT:

4013

NOVEMBER 16, 2015

HIGHCASTLE HOMES

65-3 ALT. 5 BED

PROJECT:

RIVERWALK BRAMPTON, ONTARIO

DRAWING TITLE:

HVAC DESIGN

RB

CHECKED BY:

SCALE:

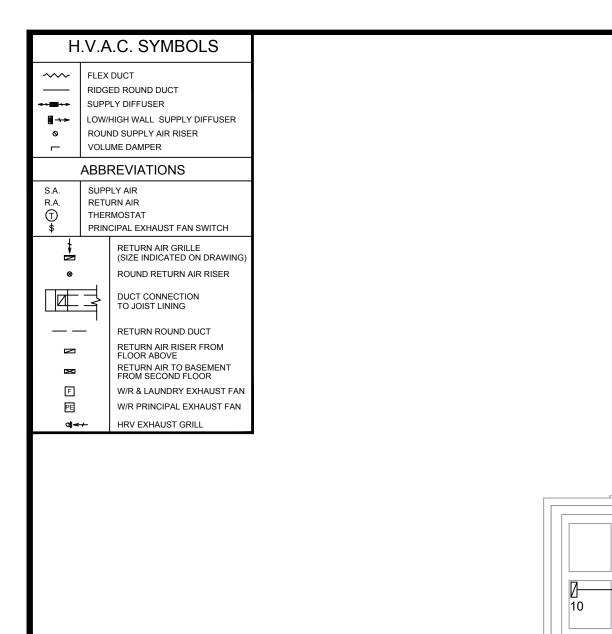
3/16" = 1"-0"

PROJECT NO.

JB-01279

SHEET NO.

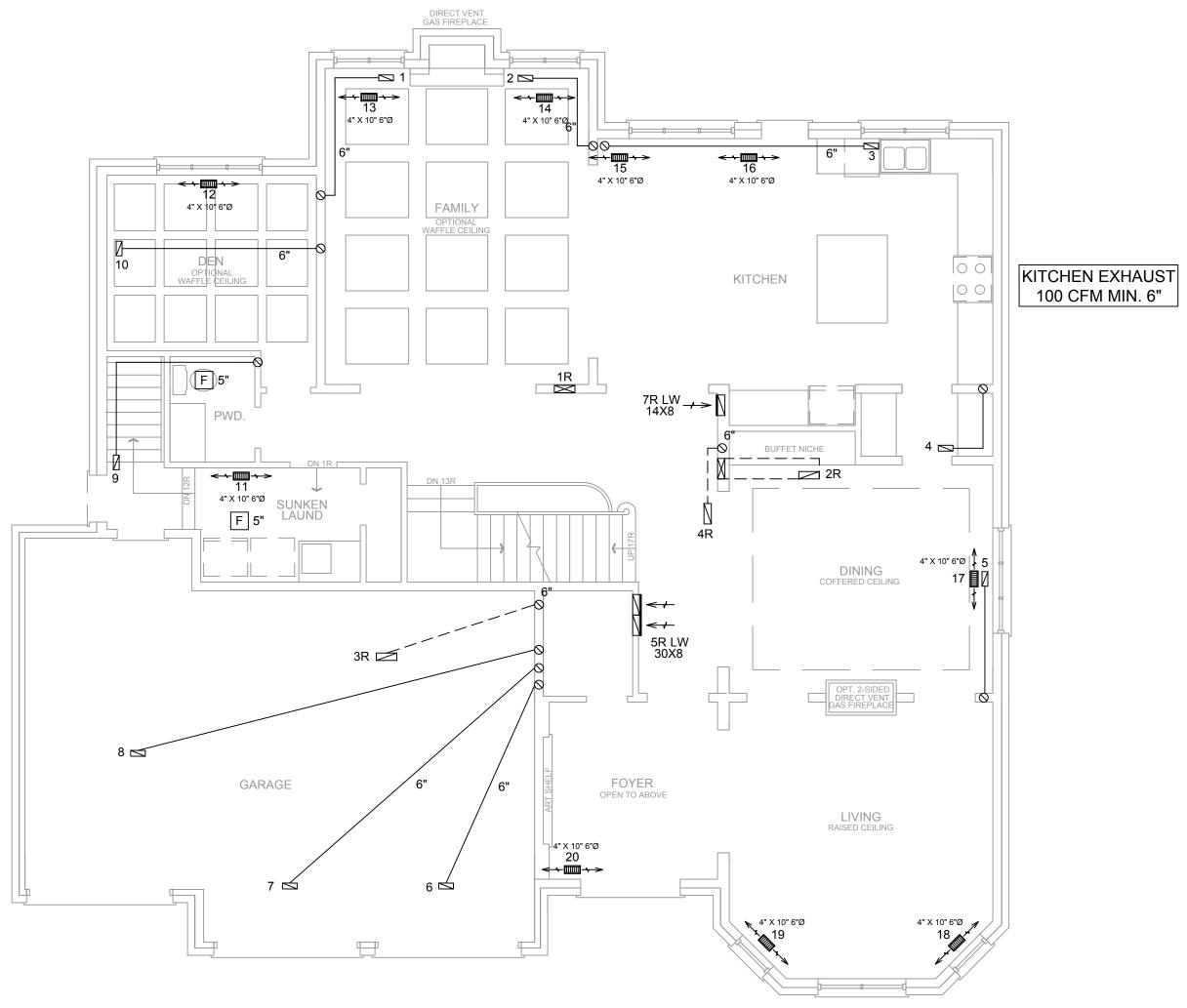
ZONE 1 COMPLIANCE PACKAGE "J" REF. TABLE 2.1.1.2.A



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)



GROUND FLOOR ELEV. 'A' OPT. 5 BEDROOM

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

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David Da Costa

Signature of Designer



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OBC 2012

SQFT:

4013

DATE:

NOVEMBER 16, 2015

CLIENT:

HIGHCASTLE HOMES

MODE

65-3 ALT. 5 BED

PROJECT:

RIVERWALK BRAMPTON,ONTARIO

DRAWING TITLE:

HVAC DESIGN

DRAWN BY:

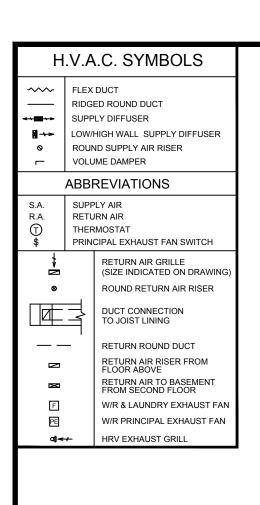
CHECKED BY:

3/16" = 1"-0"

PROJECT NO.

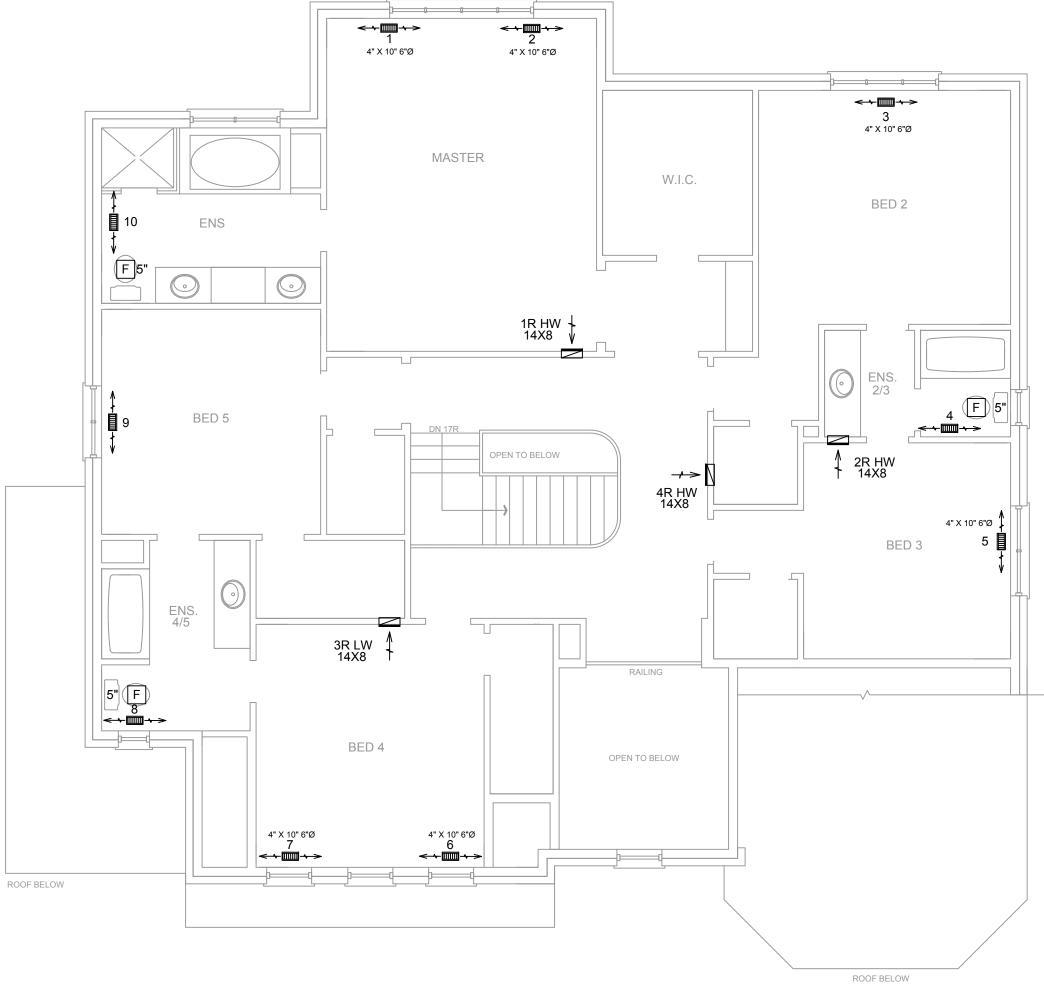
JB-01279 SHEET N

SHEET NO.



INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

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CLASS A LEVEL AS PER
OBC PART 6-6.2.4.3. (11)



SECOND FLOOR ELEV. 'A' OPT. 5 BEDROOM

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HIGHCASTLE HOMES

MODEL

65-3 ALT. 5 BED

PROJECT:

RIVERWALK BRAMPTON,ONTARIO

DRAWING TITLE:

HVAC DESIGN

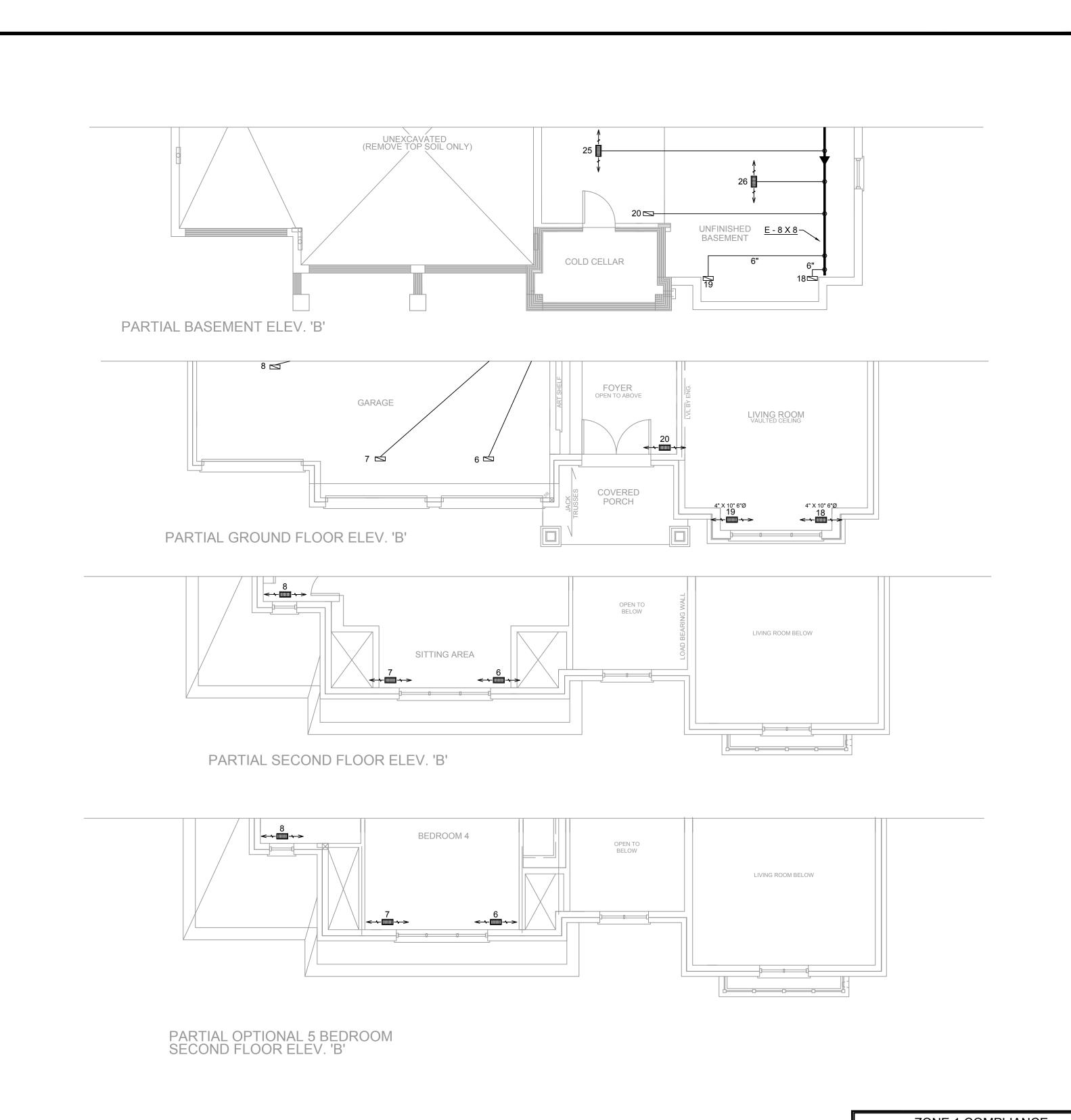
DRAWN BY:

CHECKED BY:

SCALE:

3/16" = 1"-0"

PROJECT NO. SHEET NO. JB-01279



H.V.A.C. SYMBOLS

ROUND SUPPLY AIR RISER

LOW/HIGH WALL SUPPLY DIFFUSER

PRINCIPAL EXHAUST FAN SWITCH

DUCT CONNECTION

RETURN ROUND DUCT

RETURN AIR RISER FROM FLOOR ABOVE

RETURN AIR TO BASEMENT FROM SECOND FLOOR

W/R & LAUNDRY EXHAUST FAN

W/R PRINCIPAL EXHAUST FAN

HRV EXHAUST GRILL

TO JOIST LINING

(SIZE INDICATED ON DRAWING

ROUND RETURN AIR RISER

RIDGED ROUND DUCT SUPPLY DIFFUSER

VOLUME DAMPER ABBREVIATIONS

SUPPLY AIR

RETURN AIR

THERMOSTAT

FLEX DUCT

4

S.A. R.A. T

PE

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

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HIGHCASTLE HOMES

65-3 ALT. 5 BED

PROJECT:

RIVERWALK BRAMPTON, ONTARIO

DRAWING TITLE:

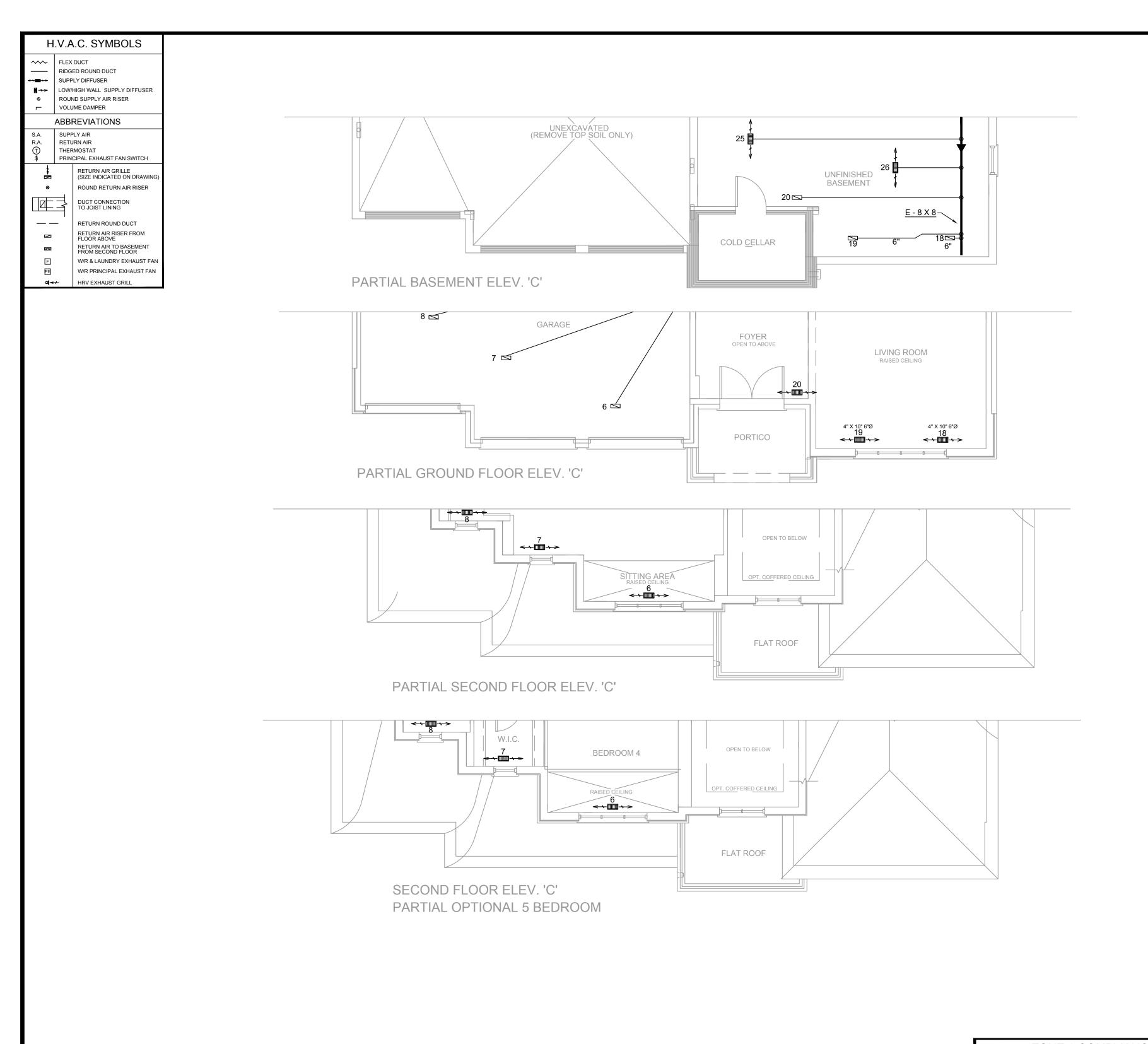
HVAC DESIGN

DRAWN BY: RB CHECKED BY:

SCALE:

3/16" = 1"-0"

JB-01279



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MOD

65-3 ALT. 5 BED

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DRAWING TITLE:

HVAC DESIGN

DRAWN BY:

CHECKED BY:

SCALE:

3/16" = 1"-0"

ROJECT NO. JB-01279 shi

SHEET NO.

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