


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:	150
SD-30-1 Lot 150		Lot/con.	
Municipality	Bradford	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	hvac@gtadesigns.ca
Telephone number	Fax number	Cell number	
(905) 671-9800			
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]			
<input type="checkbox"/> House	<input checked="" type="checkbox"/> HVAC – House	<input type="checkbox"/> Building Structural	
<input type="checkbox"/> Small Buildings	<input type="checkbox"/> Building Services	<input type="checkbox"/> Plumbing – House	
<input type="checkbox"/> Large Buildings	<input type="checkbox"/> Detection, Lighting and Power	<input type="checkbox"/> Plumbing – All Buildings	
<input type="checkbox"/> Complex Buildings	<input type="checkbox"/> Fire Protection	<input type="checkbox"/> On-site Sewage Systems	
Description of designer's work		Model Certification	
		Project #:	PJ-00041
		Layout #:	JB-06123
Heating and Cooling Load Calculations	Main	X	Builder
Air System Design	Alternate		Project
Residential mechanical ventilation Design Summary	Area Sq ft:	2366	Model
Residential System Design per CAN/CSA-F280-12			SB-12
Residential New Construction - Forced Air			
		Bayview Wellington	
		Green Valley	
		SD-30-1 Lot 150	
		Package A1	
D. Declaration of Designer			
<p>I, <u>David DaCosta</u> declare that (choose one as appropriate):</p> <p style="text-align: center;">(print name)</p> <p><input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.</p> <p style="margin-left: 150px;">Individual BCIN: _____</p> <p style="margin-left: 150px;">Firm BCIN: _____</p> <p><input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code.</p> <p style="margin-left: 150px;">Individual BCIN: <u>32964</u></p> <p style="margin-left: 150px;">Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u></p> <p><input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.</p> <p style="margin-left: 150px;">Basis for exemption from registration and qualification: _____</p>			
<p>I certify that:</p> <ol style="list-style-type: none"> 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. 			
<p>February 11, 2020</p> <p>_____</p> <p>Date</p>		<p></p> <p>_____</p> <p>Signature of Designer</p>	

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 Bayview Wellington				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				JB-06123	
Building Location					
Address (Model): SD-30-1 Lot 150			Site: Green Valley		
Model:			Lot: 150		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on:			Bayview Wellington 14/Jan/2020		
Attachment: Semi		Front facing: East/West		Assumed? Yes	
No. of Levels: 3		Ventilated? Included		Air tightness: 1961-Present (ACH=3.57) Assumed? Yes	
Weather location: Bradford		Wind exposure: Sheltered			
HRV?		Internal shading: Light-translucent		Occupants: 5	
Sensible Eff. at -25C 71%		Apparent Effect. at -0C 84%		Units: Imperial Area Sq ft: 2366	
Sensible Eff. at -0C 75%					
Heating design conditions			Cooling design conditions		
Outdoor temp -9.4 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 OBC SB12 Package A1 R 22			Style A: As per OBC SB12 Package A1 R 20ci		
Style B:			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: As per Selected OBC SB12 Package A1			Style A: As per Selected OBC SB12 Package A1 R 60		
Style B:			Style B: As per Selected OBC SB12 Package A1 R 31		
Exposed floors			Style C:		
Style A: As per Selected OBC SB12 Package A1 R 31			Doors		
Style B:			Style A: As per Selected OBC SB12 Package A1 R 4.00		
Windows			Style B:		
Style A: As per Selected OBC SB12 Package A1 R 3.55			Style C:		
Style B:			Skylights		
Style C:			Style A: As per Selected OBC SB12 Package A1 R 2.03		
Style D:			Style B:		
Attached documents: As per Shedule 1		Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values			
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:		
City: Mississauga			E-mail hvac@gtadesigns.ca		

Builder: **Bayview Wellington**

Date: **February 11, 2020**

Project: **Green Valley**

Model: **SD-30-1 Lot 150**

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

Project # **PJ-00041**
Layout # **JB-06123**

Page 3

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:			BOILER/WATER HEATER DATA:			A/C UNIT DATA:	
Level 1 Net Load	11,892 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana		Make	Type	Amana	2.0 Ton	
Level 2 Net Load	13,867 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	AMEC960603ANA		Model		Cond.-----	2.0	
Level 3 Net Load	12,178 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	60000		Input Btu/h		Coil -----	2.0	
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	57600		Output Btu/h				
Total Heat Loss	37,937 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	23,382 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp		deg. F.	Blower DATA:				
		Heating Air Flow Proportioning Factor	0.0245 cfm/btuh	AFUE	96%		Blower Speed Selected:	W2	Blower Type	ECM	
Building Volume Vb	28149 ft³	Cooling Air Flow Proportioning Factor	0.0397 cfm/btuh	Aux. Heat					(Brushless DC OBC 12.3.1.5.(2))		
Ventilation Load	1,118 Btuh.	R/A Temp	70 deg. F.	SB-12 Package	Package A1		Heating Check	929 cfm	Cooling Check	929 cfm	
Ventilation PVC	79.5 cfm	S/A Temp	127 deg. F.								
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	57 deg. F.		Selected cfm>	929 cfm	Cooling Air Flow Rate	929 cfm	

	Level 1												Level 2											
	1	2	3	4									5	6	7	8	9	10	11	12				
S/A Outlet No.	BASE	BASE	BASE	BASE									KIT	KIT	FAM	PWD	MUD	FOY	WIC 2	DIN				
Room Use	2973	2973	2973	2973									2104	2104	2233	345	887	2328	1127	2738				
Btu/Outlet	73	73	73	73									52	52	55	8	22	57	28	67				
Heating Airflow Rate CFM	6	6	6	6									90	90	120	2	5	74	26	95				
Cooling Airflow Rate CFM	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	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	34	22	10	26									19	24	42	22	19	33	42	35				
Actual Duct Length	100	110	100	80	70	70	70	70	70	70	70	70	110	70	80	110	120	110	120	70	70	70	70	70
Equivalent Length	134	132	110	106	70	70	70	70	70	70	70	70	129	94	122	132	139	143	162	105	70	70	70	70
Total Effective Length	0.10	0.10	0.12	0.12	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.10	0.14	0.11	0.10	0.09	0.09	0.08	0.12	0.19	0.19	0.19	0.19
Adjusted Pressure	5	5	5	5									6	6	6	3	4	6	4	6				
Duct Size Round	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10
Outlet Size	B	B	A	C									A	A	B	C	C	D	D	C				
Trunk																								

	Level 3													Level 4													
S/A Outlet No.	13	14	15	16	17	18	19	20																			
Room Use	MAST	LAUND	BED 2	BED 3	BED 3	BATH	BED 4	ENS																			
Btu/Outlet	2467	188	2375	1792	1792	639	1347	1578																			
Heating Airflow Rate CFM	60	5	58	44	44	16	33	39																			
Cooling Airflow Rate CFM	89	31	79	61	61	14	40	30																			
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	51	34	42	54	53	57	16	40																			
Equivalent Length	110	120	110	120	150	170	110	120	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70		
Total Effective Length	161	154	152	174	203	227	126	160	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70		
Adjusted Pressure	0.08	0.08	0.09	0.07	0.06	0.06	0.10	0.08	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	4	6	6	6	3	5	4																			
Outlet Size	4x10	3x10	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10		
Trunk	B	C	C	D	D	D	PTO	A																			

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	146	423	105	105	150						
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	7	8	41	29	35						
Equivalent Length	110	175	145	140	200	50	50	50	50	50	50
Total Effective Length	117	183	186	169	235	50	50	50	50	50	50
Adjusted Pressure	0.10	0.06	0.06	0.07	0.05	0.24	0.24	0.24	0.24	0.24	0.24
Duct Size Round	7.0	11.5	6.0	6.0	8.0						
Inlet Size	FLC	8	8	8	8						
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size		30	14	14	14						
Trunk	Y	Z	Y	Z	Z						

Return Trunk Duct Sizing	Trunk	CFM	Press.	Round	Rect. Size
Drop		929	0.05	15.5	24x10
Z		929	0.05	15.5	28x8 22x10
Y		251	0.06	9.5	10x8 12x7
X					
W					
V					
U					
T					
S					
R					
Q					

Supply Trunk Duct Sizing	Trunk	CFM	Press.	Round	Rect. Size
A		475	0.08	11.0	14x8 10x10
B		261	0.08	9.0	8x8 10x7
C		421	0.06	11.5	14x8 12x10
D		188	0.06	8.5	8x8 10x7
E					
F					
G					
H					
I					
J					
K					

2012 OBC

Builder: Bayview Wellington

Date: February 11, 2020

Project: Green Valley

Model: SD-30-1 Lot 150

System 1

Weather Data Bradford 44 -9.4 86 22 48.2

Heat Loss ^T 81.4 deg. F Ht gain ^T 11 deg. F GTA: 2366

Project # PJ-00041
Layout # JB-06123

Level 1

BASE

Run ft. exposed wall A	121	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	2.0	AG	2.0	AG	2.0	AG	2.0	AG	2.0	AG	2.0	AG	2.0	AG	2.0	AG
Floor area	1001	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	242															
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	3.55	22.93	10.91														
East/West	3.55	22.93	27.35	6	138	164											
South	3.55	22.93	20.89	3	69	63											
WOB Windows	3.55	22.93	11.42														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75	21	427	58											
Net exposed walls A	21.12	3.85	0.52	212		110											
Net exposed walls B	17.03	4.78	0.65														
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	27.65	2.94	1.37														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss	On Grade () or Above ()			4641													
Total Conductive	Heat Loss			5275													
	Heat Gain				395												
Air Leakage	Heat Loss/Gain	1.2076	0.0376	6370	15												
Ventilation	Case 1	0.11	0.08														
	Case 2	14.07	11.88														
	Case 3	x	0.05	247	33												
	Heat Gain People		239														
Appliances Loads	1 = 25 percent		3994														
Duct and Pipe loss			10%														
Level 1 HL Total	11,892		Total HL for per room	11892													
Level 1 HG Total	576		Total HG per room x 1.3		576												

Level 2

KIT

FAM

PWD

MUD

FOY

WIC 2

DIN

Run ft. exposed wall A	37	A	17	A	5	A	6	A	17	A	11	A	29	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	10.0		10.0		10.0		10.0		10.0		10.0		10.0		10.0		10.0
Floor area	275	Area	342	Area	27	Area	34	Area	59	Area	32	Area	225	Area	Area	Area	Area
Exposed Ceilings A	A	A	5	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	370		170		50		60		170		110		290				
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	3.55	22.93	10.91														
East/West	3.55	22.93	27.35	39	894	1067				44	1009	1204					
South	3.55	22.93	20.89	24	550	501							28	642	585		
Existing Windows	1.99	40.90	22.15														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75					21	427	58							
Net exposed walls A	17.03	4.78	0.65	307	1467	198		130	621	84		50	239	32		126	602
Net exposed walls B	8.50	9.58	1.29					39	186	25		96	459	62		262	1252
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	27.65	2.94	1.37														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss	On Grade () or Above ()		x														
Total Conductive	Heat Loss			2912													
	Heat Gain				1766												
Air Leakage	Heat Loss/Gain	0.3983	0.0376	1160	66												
Ventilation	Case 1	0.03	0.08														
	Case 2	14.07	11.88														
	Case 3	x	0.05	137	148												
	Heat Gain People		239														
Appliances Loads	1 = 25 percent		3994	1.5		1498		1.0		999							
Duct and Pipe loss			10%														
Level 2 HL Total	13,867		Total HL for per room	4208													
Level 2 HG Total	12,631		Total HG per room x 1.3		4523												

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

Handwritten signature

David DaCosta

SB-12 Package

Package A1

Total Heat Loss	37,937	btu/h
Total Heat Gain	23,382	btu/h

Builder: Bayview Wellington
Date: February 11, 2020

Weather Data
Bradford
44
-9.4
86
22
48.2

2012 OBC
Project: Green Valley
Model: SD-30-1 Lot 150
System 1
Heat Loss ^T 81.4 deg. F
Ht gain ^T 11 deg. F
GTA: 2366
Project # PJ-00041
Layout # JB-06123

Level 3				MAST		LAUND		BED 2		BED 3		BATH		BED 4		ENS											
Run ft. exposed wall A				21	A	A		11	A	31	A	6	A	14	A	21	A	A		A		A		A			
Run ft. exposed wall B					B	B			B		B		B		B		B	B		B		B		B			
Ceiling height				8.0		8.0		8.0		8.0		8.0		8.0		8.0		8.0		8.0		8.0		8.0			
Floor area				395	Area	58		191	Area	186	Area	77	Area	136	Area	107	Area	Area		Area		Area		Area			
Exposed Ceilings A				395	A	58		191	A	186	A	77	A	136	A	107	A	A		A		A		A			
Exposed Ceilings B					B	B			B		B		B		B		B	B		B		B		B			
Exposed Floors					Flr	18		140	Flr		Flr		Flr		Flr		Flr	Flr		Flr		Flr		Flr			
Gross Exp Wall A				168				88		248		48		112		168											
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				3.55	22.93	10.91					15	344	164														
East/West				3.55	22.93	27.35	28	642	766		31	711	848	54	1238	1477	8	183	167	16	367	334	13	298	356		
South				3.55	22.93	20.89																					
Existing Windows				1.99	40.90	22.15																					
Skylight				2.03	40.10	88.23																					
Doors				4.00	20.35	2.75																					
Net exposed walls A				17.03	4.78	0.65	140	669	90		57	272	37	179	856	116	40	191	26	96	459	62	155	741	100		
Net exposed walls B				8.50	9.58	1.29																					
Exposed Ceilings A				59.22	1.37	0.64	395	543	253	58	80	37	191	263	123	186	256	119	77	106	49	136	187	87	107	147	69
Exposed Ceilings B				27.65	2.94	1.37																					
Exposed Floors				29.80	2.73	0.17				18	49	3	140	382	23												
Foundation Conductive Heatloss																											
Total Conductive	Heat Loss						1854			129		1628		2693		480		1013		1186							
	Heat Gain							1110		40		1031		1876		242		483		524							
Air Leakage	Heat Loss/Gain			0.2836	0.0376		526	42		37	2	462	39	764	71	136	9	287	18	336	20						
Ventilation	Case 1				0.02	0.08																					
	Case 2				14.07	11.88																					
	Case 3			x	0.05	0.08																					
Heat Gain People						239	2	87	93		6	3	1	76	87	126	157	239	23	20	1	47	41	239	56	44	
Appliances Loads				1 =.25 percent		3994				0.5		499															
Duct and Pipe loss						10%				1	17	54	1	209	127												
Level 3 HL Total		12,178		Total HL for per room				2467				2375		3584		639		1347		1578							
Level 3 HG Total		10,175		Total HG per room x 1.3					2240		778		1979		3046		353		1016		765						

Level 4				A		A		A		A		A		A		A		A		A		A		A			
Run ft. exposed wall A				B		B		B		B		B		B		B		B		B		B		B			
Run ft. exposed wall B																											
Ceiling height																											
Floor 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			
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																											
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				3.55	22.93	10.91																					
East/West				3.55	22.93	27.35																					
South				3.55	22.93	20.89																					
Existing Windows				1.99	40.90	22.15																					
Skylight				2.03	40.10	88.23																					
Doors				4.00	20.35	2.75																					
Net exposed walls A				17.03	4.78	0.65																					
Net exposed walls B				8.50	9.58	1.29																					
Exposed Ceilings A				59.22	1.37	0.64																					
Exposed Ceilings B				27.65	2.94	1.37																					
Exposed Floors				29.80	2.73	0.17																					
Foundation Conductive Heatloss																											
Total Conductive				Heat Loss																							
				Heat Gain																							
Air Leakage				Heat Loss/Gain	0.0000	0.0376																					
Ventilation				Case 1	0.00	0.08																					
				Case 2	14.07	11.88																					
				Case 3	x	0.05	0.08																				
Heat Gain People						239																					
Appliances Loads				1 =.25 percent		3994																					
Duct and Pipe loss						10%																					
Level 4 HL Total				0	Total HL for per room																						
Level 4 HG Total				0	Total HG per room x 1.3																						

Total Heat Loss	37,937	btu/h
Total Heat Gain	23,382	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

SB-12 Package

Package A1

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 A1
Project: Bradford
Model: SD-30-1 Lot 150

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O.reg 332/12

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

Builder	
Name	Bayview Wellington
Address	
City	
Tel	Fax

Installing Contractor	
Name	
Address	
City	
Tel	Fax

Combustion Appliances 9.32.3.1(1)		
a)	x	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		
x	Forced air	
	Non forced air	
	Electric space heat (if over 10% of heat load)	

House Type 9.32.3.1(2)		
I	x	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 @	21.2 cfm	42.4 cfm	
Other Bedrooms	3 @	10.6 cfm	31.8 cfm	
Bathrooms & Kitchen	4 @	10.6 cfm	42.4 cfm	
Other rooms	4 @	10.6 cfm	42.4 cfm	
Total			159	

Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1 @	31.8 cfm	31.8 cfm	
Other bedrooms	3 @	15.9 cfm	47.7 cfm	
Total			79.5	

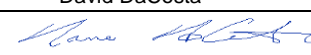
Principal Exhaust Fan Capacity				
Make	Model	Location		
LifeBreath	RNC155	Base		
132 cfm		Sones	or Equiv.	

Heat Recovery Ventilator	
Make	
Model	
	cfm high 80 cfm low
Sensible efficiency @ -25 deg C	71%
Sensible efficiency @ 0 deg C	75%

Note: Installer to balance HRV/ERV to within 10 percent of PVC

Supplemental Ventilation Capacity	
Total ventilation capacity	159.0
Less principal exhaust capacity	79.5
REQUIRED supplemental vent. Capacity	79.5 cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Ens	50	XB50	0.3
Bath	50	XB50	0.3
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	
HRAI #	5190
BCIN #	32964
Date	February 11, 2020



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

Energy Efficiency Design Summary: Prescriptive Method (Building Code Part 9, Residential)

Page 7
 Project # PJ-00041
 Layout # JB-06123

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

For use by Principal Authority

Application No:

Model/Certification Number

A. Project Information

Building number, street name SD-30-1 Lot 150		Unit number	Lot/Con
Municipality Bradford	Postal code	Reg. Plan number / other description	

B. Prescriptive Compliance [indicate the building code compliance package being employed in the house design]

SB-12 Prescriptive (input design package):

Package A1

Table: 3.1.1.2.A

C. Project Design Conditions

Climatic Zone (SB-1):	Heat. Equip. Efficiency	Space Heating Fuel Source		
<input checked="" type="checkbox"/> Zone 1 (< 5000 degree days)	<input checked="" type="checkbox"/> ≥ 92% AFUE	<input checked="" type="checkbox"/> Gas	<input type="checkbox"/> Propane	<input type="checkbox"/> Solid Fuel
<input type="checkbox"/> Zone 2 (≥ 5000 degree days)	<input type="checkbox"/> ≥ 84% < 92% AFUE	<input type="checkbox"/> Oil	<input type="checkbox"/> Electric	<input type="checkbox"/> Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		Other Building Characteristics		
Area of Walls = <u>278.14</u> m ² or <u>2993.9</u> ft ²	W,S & G % = <u>12%</u>	<input type="checkbox"/> Log/Post&Beam	<input type="checkbox"/> ICF Above Grade	<input type="checkbox"/> ICF Basement
Area of W, S & G = <u>33.723</u> m ² or <u>363.0</u> ft ²	Utilize Window Averaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Slab-on-ground	<input type="checkbox"/> Walkout Basement	<input checked="" type="checkbox"/> Air Conditioning
		<input type="checkbox"/> Air Sourced Heat Pump (ASHP)	<input type="checkbox"/> Combo Unit	<input type="checkbox"/> Ground Source Heat Pump (GSHP)

D. Building Specifications [provide values and ratings of the energy efficiency components proposed]

Energy Efficiency Substitutions				
<input type="checkbox"/> ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5)) <input type="checkbox"/> Combined space heating and domestic water heating systems (3.1.1.2(7) / 3.1.1.3.(7))				
<input type="checkbox"/> Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached)	<input type="checkbox"/> Table 3.1.1.4.B Required:		Permitted Substitution:	
	<input type="checkbox"/> Table 3.1.1.4.C Required:		Permitted Substitution:	
Building Component	Minimum RSI/R-Values or Maximum U-Value ¹		Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating	
Ceiling with Attic Space	60	59.22	Windows/Sliding Glass Doors	1.6
Ceiling without Attic Space	31	27.65	Skylights	2.8
Exposed Floor	31	29.80	Mechanicals	
Walls Above Grade	22	17.03	Heating Equip.(AFUE)	96%
Basement Walls	20.0ci	21.12	HRV Efficiency (SRE% at 0°C)	75%
Slab (all >600mm below grade)	x	x	DHW Heater (EF)	0.80
Slab (edge only ≤600mm below grade)	10	11.13	DWHR (CSA B55.1 (min. 42% efficiency))	#Showers 2
Slab (all ≤600mm below grade, or heated)	10	11.13	Combined Heating System	

(1) U value to be provided in either W/(m²·K) or Btu/(h·ft²·F) but not both.

E. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets building code]

Name David DaCosta	BCIN 32964	Signature
------------------------------	----------------------	---------------

Package: Project: Package A1 Bradford System: Model: System 1 SD-30-1 Lot 150

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.309	28149	81.4	12740

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.076	28149	11	423

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air	Level Conductive Heat Loss	Air Leakage Heat Loss Multiplier
Level 1	0.5	12740	5275	1.2076
Level 2	0.3		9596	0.3983
Level 3	0.2		8984	0.2836
Level 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	
	423		0.0376
BUILDING CONDUCTIVE HEAT GAIN		11249	

Levels this Dwelling	
3	

Ventilation Calculations

Ventilation Heat Loss

Ventilation Heat Loss				
C	PVC	HL^T	(1-E) HRV	HLbvent
1.08	79.5	81.4	0.16	1118

Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG^T	HGbvent
1.1	79.5	11	944

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HLbvent	LVL Cond. HL	Multiplier
Level 1	0.5	1118	5275	0.11
Level 2	0.3		9596	0.03
Level 3	0.2		8984	0.02
Level 4	0		0	0.00

Case 1

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier
HGbvent	944	0.08
Building	11249	

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

C	HL^T	(1-E) HRV	Multiplier
1.08	81.4	0.16	14.07

Case 2

Ventilation Heat Gain (Direct Ducted Systems)

C	HG^T	Multiplier
1.08	11	11.88

Case 3

Ventilation Heat Loss (Forced Air Systems)

		HLbvent	Multiplier
Total Ventilation Load		1118	0.05

Case 3

Ventilation Heat Gain (Forced Air Systems)

		Vent Heat Gain	Multiplier
HGbvent	HG*1.3	944	0.08
944	1		

Foundation Conductive Heatloss Level 1

1360 Watts 4641 Btu/h

Foundation Conductive Heatloss Level 2

Watts Btu/h

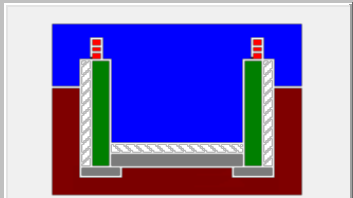
Envelope Air Leakage Calculator







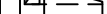









Supplemental tool for CAN/CSA-F280

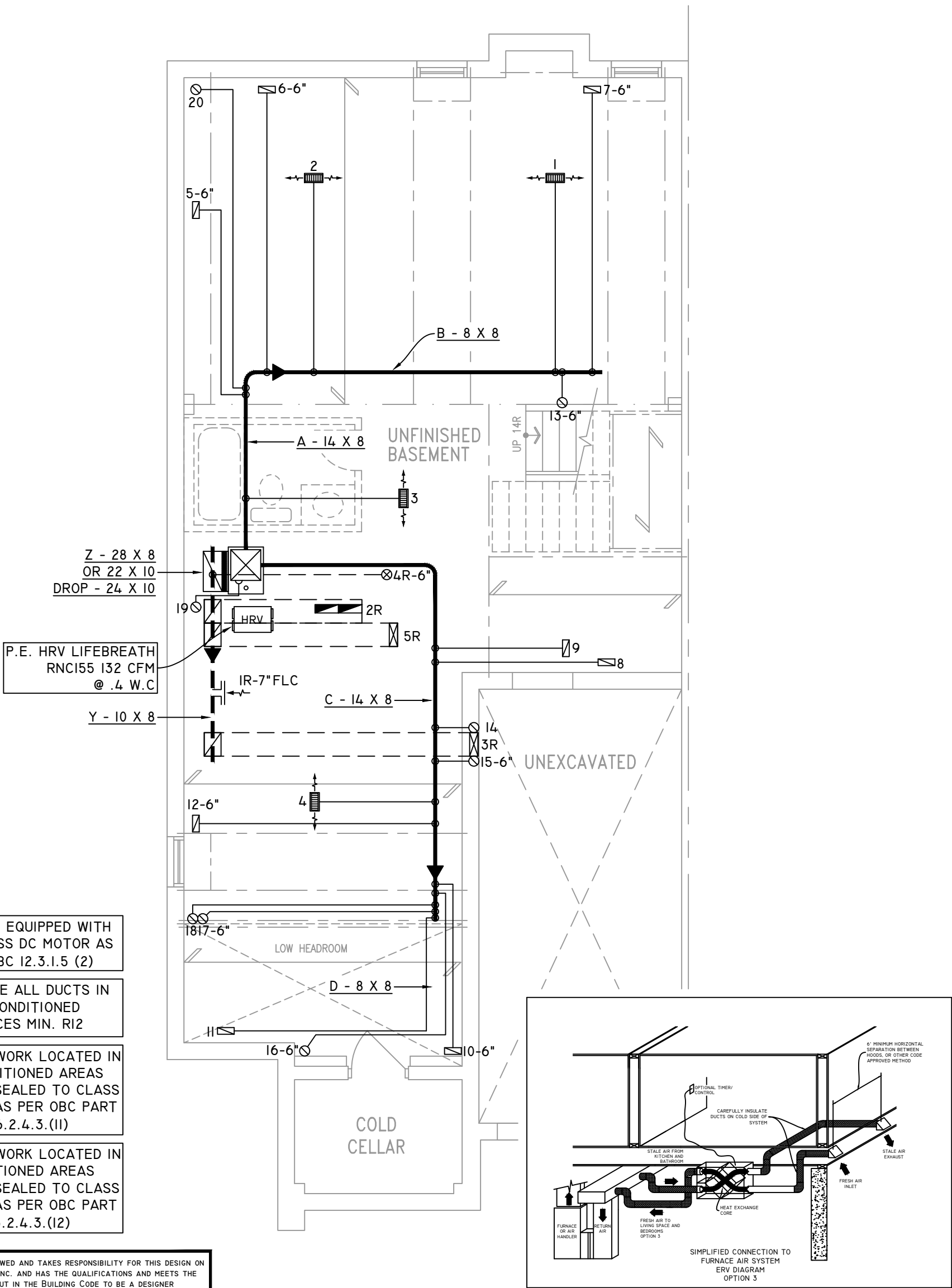
Weather Station Description				
Province:	Ontario ▼			
Region:	Bradford ▼			
Weather Station Location:	Open flat terrain, grass ▼			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest ▼			
Walls:	Heavy ▼			
Flue:	Heavy ▼			
Highest Ceiling Height (m):	6.10			
Building Configuration				
Type:	Semi-Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	797.18			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57)			
Custom BDT Data:	ELA @ 10 Pa. ▼ 322.44 cm ² 3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	39.75		39.75	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H):		0.309		
Cooling Air Leakage Rate (ACH/H):		0.076		

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	▼
Region:	Bradford	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	17.78	 <p>Insulation Configuration</p>
Floor Width (m):	5.23	
Exposed Perimeter (m):	36.88	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	
Window Area (m ²):	0.84	
Door Area (m ²):	1.95	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1360

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



- FURNACE EQUIPPED WITH BRUSHLESS DC MOTOR AS PER OBC 12.3.1.5 (2)
- INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12
- ALL DUCTWORK LOCATED IN UNCONDITIONED AREAS MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3.(II)
- ALL DUCTWORK LOCATED IN CONDITIONED AREAS MUST BE SEALED TO CLASS C LEVEL AS PER OBC PART 6-6.2.4.3.(I2)

THE UNDERSIGNED HAS REVIEWED AND TAKES RESPONSIBILITY FOR THIS DESIGN ON BEHALF OF GTA DESIGNS INC. AND HAS THE QUALIFICATIONS AND MEETS THE REQUIREMENTS SET OUT IN THE BUILDING CODE TO BE A DESIGNER

QUALIFICATION INFORMATION

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

DAVID DA COSTA  B.C.I.N. 32964

SIGNATURE OF DESIGNER

OBC 2012

ZONE I COMPLIANCE
PACKAGE "A1" REF. TABLE 3.1.1.2.A

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

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

CONTRACTOR MUST WORK FROM APPROVED PLANS.

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

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





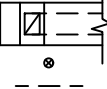













2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

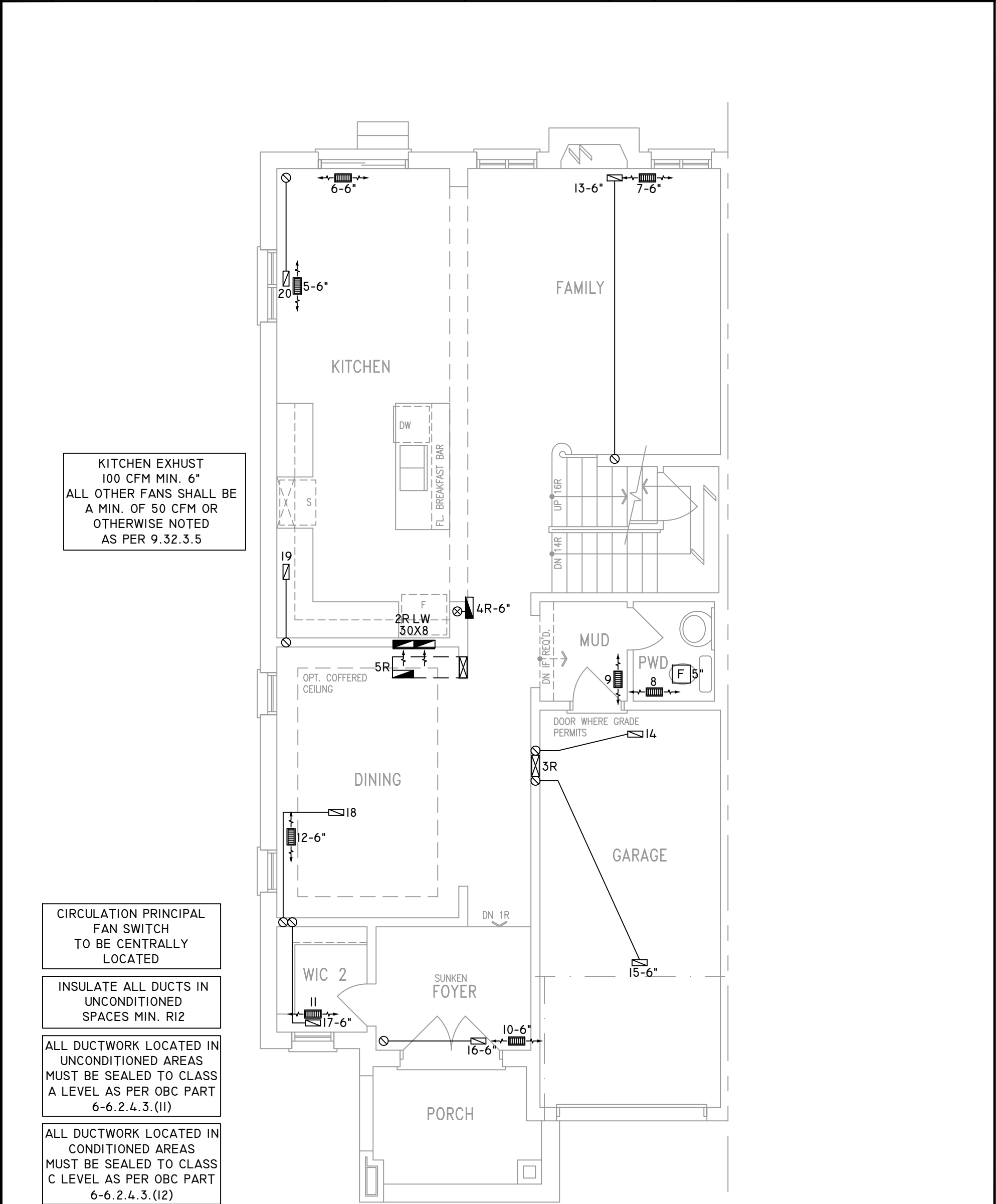
HEAT-LOSS	37,937	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960603ANA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	929	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	8	3	3
1ST FLOOR	8	1	2
BASEMENT	4	1	

FLOOR PLAN:	BASEMENT
DRAWN BY:	JL
CHECKED:	DD
LAYOUT NO.	JB-06123
SQFT	2366
DRAWING NO.	MI

DATE:	FEBRUARY 10, 2020
CLIENT:	BAYVIEW WELLINGTON
MODEL:	SD-30-I LOT 150
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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



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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

OBC 2012

ZONE I COMPLIANCE
PACKAGE "AI" REF. TABLE 3.1.1.2.A

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

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

CONTRACTOR MUST WORK FROM APPROVED PLANS.

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

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





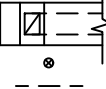













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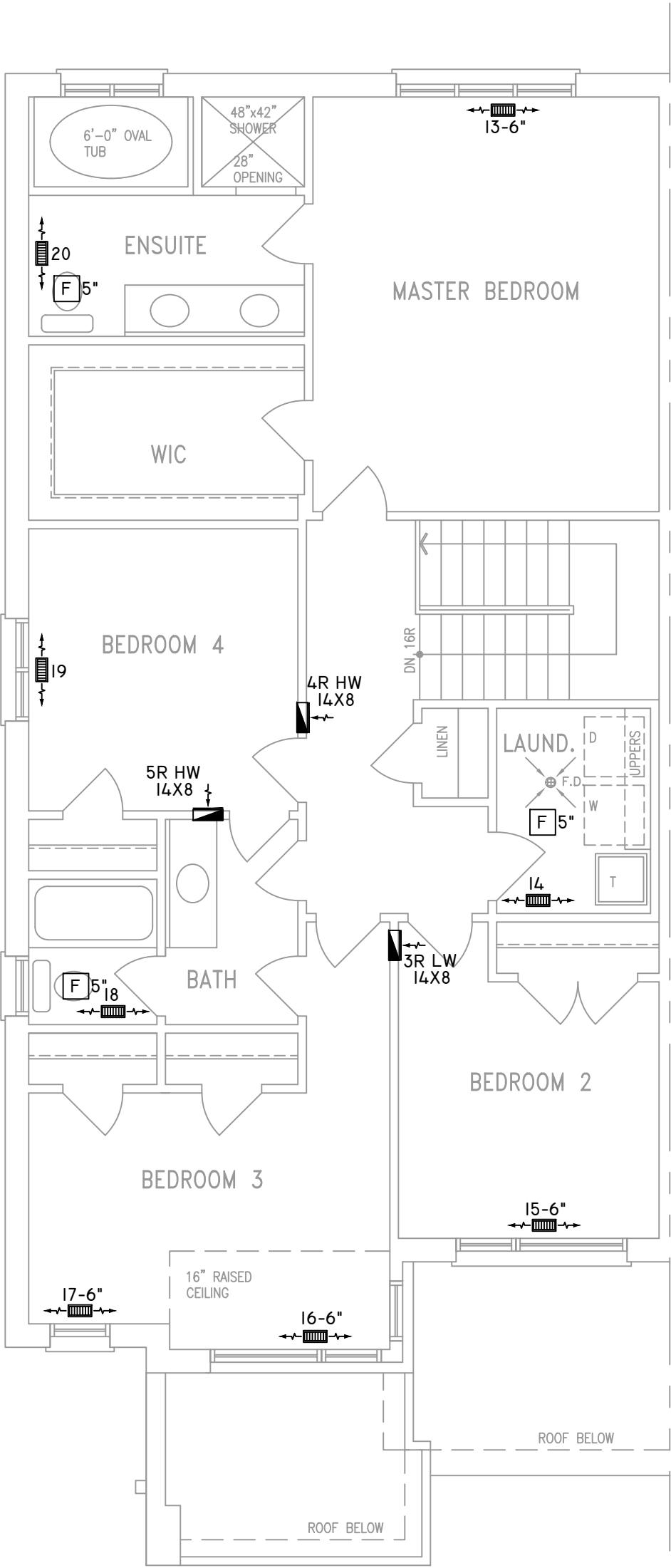
HEAT-LOSS	37,937	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960603ANA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	929	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	8	3	3
1ST FLOOR	8	1	2
BASEMENT	4	1	

FLOOR PLAN: GROUND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 2366
LAYOUT NO. JB-06123	DRAWING NO. M2	

DATE:	FEBRUARY 10, 2020
CLIENT:	BAYVIEW WELLINGTON
MODEL:	SD-30-I LOT 150
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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



INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

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

ALL DUCTWORK LOCATED IN CONDITIONED AREAS MUST BE SEALED TO CLASS C LEVEL AS PER OBC PART 6-6.2.4.3.(12)

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QUALIFICATION INFORMATION

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DAVID DA COSTA  B.C.I.N. 32964

SIGNATURE OF DESIGNER

OBC 2012

ZONE I COMPLIANCE
PACKAGE "A1" REF. TABLE 3.1.1.2.A

NOTES

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PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

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

CONTRACTOR MUST WORK FROM APPROVED PLANS.

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

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



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L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

HEAT-LOSS	37,937	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960603ANA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	929	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	8	3	3
1ST FLOOR	8	1	2
BASEMENT	4	1	

FLOOR PLAN: SECOND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 2366
LAYOUT NO. JB-06123	DRAWING NO. M3	

DATE:	FEBRUARY 10, 2020
CLIENT:	BAYVIEW WELLINGTON
MODEL:	SD-30-1 LOT 150
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"