

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]			
☐ 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-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			SD-30-1 Lot 150
Residential New Construction - Forced Air			SB-12
			Package A1
D. Declaration of Designer			
I, <u>David DaCosta</u> declare that (choose one as appropriate): (print name) ☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____ ☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code. Individual BCIN: <u>32964</u> Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u> ☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification:			
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.			
<u>February 11, 2020</u> Date		<u>[Signature]</u> 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 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		

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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**

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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.			
Total Heat Gain	23,382 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp		deg. F.			
		Heating Air Flow Proportioning Factor	0.0245 cfm/btuh	AFUE	96%				
Building Volume Vb	28149 ft³	Cooling Air Flow Proportioning Factor	0.0397 cfm/btuh	Aux. Heat					
Ventilation Load	1,118 Btu/h.	R/A Temp	70 deg. F.	SB-12 Package	Package A1				
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.				

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

	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
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
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
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
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
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						Supply Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size		Trunk	CFM	Press.	Round	Rect. Size	
Drop	929	0.05	15.5	24x10		A	475	0.08	11.0	14x8	10x10
Z	929	0.05	15.5	28x8	22x10	B	261	0.08	9.0	8x8	10x7
Y	251	0.06	9.5	10x8	127	C	421	0.06	11.5	14x8	12x10
X						D	188	0.06	8.5	8x8	107
W						E					
V						F					
U						G					
T						H					
S						I					
R						J					
O						K					

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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
Run ft. exposed wall 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	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
Exposed Ceilings 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
Exposed Floors	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	0.08	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	A	A	A
Run ft. exposed wall 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	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	Area	Area	Area
Exposed Ceilings A	A	5 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
Exposed Floors	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		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss
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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 DiPasta

SB-12 Package

Package A1

SITE COPY

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

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	248	Flr	48	Flr	112	Flr	168	Flr	Flr		Flr		Flr		Flr			
Gross Exp Wall A				168				88								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			478			1	76	87	126	157			1	47	41		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 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				MAST		LAUND		BED 2		BED 3		BATH		BED 4		ENS									
Run ft. exposed wall 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	
Ceiling height																									
Floor 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	
Exposed Ceilings 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	
Gross Exp Wall A																									
Gross Exp Wall B																									
Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.55	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																						
Heat Gain People			239																						
Appliances Loads	1 =.25 percent		3994																						
Duct and Pipe loss			10%																						
Level 4 HL Total	0																								
Level 4 HG Total	0																								

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 Daposta

SB-12 Package

Package A1

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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	

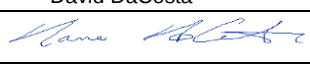
Principal Exhaust Fan Capacity			
Make	Model	Location	
LifeBreath	RNC155	Base	
132 cfm		Sones	or Equiv.

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 #	5150 BCIN # 32964
Date	February 11, 2020

SITE COPY



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		
☒ Zone 1 (< 5000 degree days)	☒ ≥ 92% AFUE	☒ Gas	☐ Propane	☐ Solid Fuel
☐ Zone 2 (≥ 5000 degree days)	☐ ≥ 84% < 92% AFUE	☐ Oil	☐ Electric	☐ 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>	☐ Log/Post&Beam	☐ ICF Above Grade	☐ ICF Basement
Area of W, S & G = <u>33.723</u> m ² or <u>363.0</u> ft ²	Utilize Window Averaging ☐ Yes ☒ No	☐ Slab-on-ground	☐ Walkout Basement	☒ Air Conditioning
		☐ Air Sourced Heat Pump (ASHP)	☐ Combo Unit	
		☐ Ground Source Heat Pump (GSHP)		

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

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

Form authorized by OHBA, OBOA, LMCBO. Revised December 1, 2016.

SITE COPY

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

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^{AT}	HL ^{leak}
0.018	0.309	28149	81.4	12740

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^{AT}	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 ^{AT}	(1-E) HRV	HL ^{bvent}
1.08	79.5	81.4	0.16	1118

Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG ^{AT}	HG ^{bvent}
1.1	79.5	11	944

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HL ^{bvent}	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
HG ^{bvent}	944	0.08
Building	11249	

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

C	HL ^{AT}	(1-E) HRV	Multiplier
1.08	81.4	0.16	14.07

Case 2

Ventilation Heat Gain (Direct Ducted Systems)

C	HG ^{AT}	Multiplier
1.08	11	11.88

Case 3

Ventilation Heat Loss (Forced Air Systems)

HL ^{bvent}		Multiplier
Total Ventilation Load	1118	0.05

Case 3

Ventilation Heat Gain (Forced Air Systems)

Vent Heat Gain		Multiplier
HG ^{bvent}	HG ^{*1.3}	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

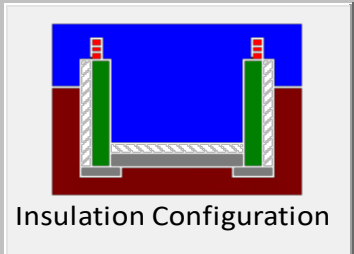
Supplemental tool for CAN/CSA-F280

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				

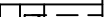
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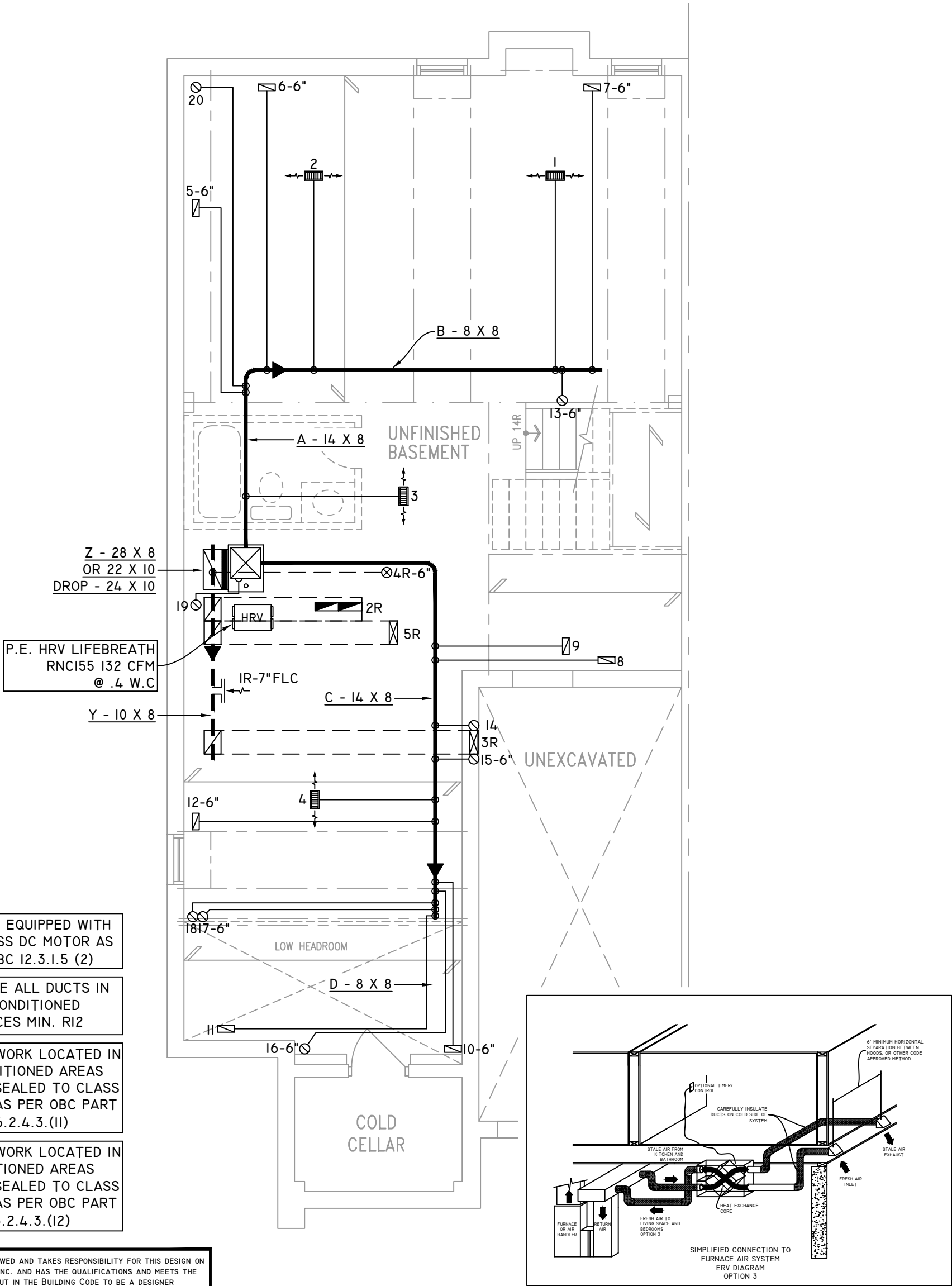
Residential Foundation Thermal Load Calculator

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	 Insulation Configuration
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

SITE COPY

	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR RISER UP TO FLOOR ABOVE	S.A. R.A. T \$ F PE	SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR FROM BASEMENT SECOND FLOOR		
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER VOLUME DAMPER		RETURN ROUND DUCT				



- 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

SITE COPY

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.



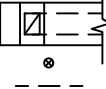
2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

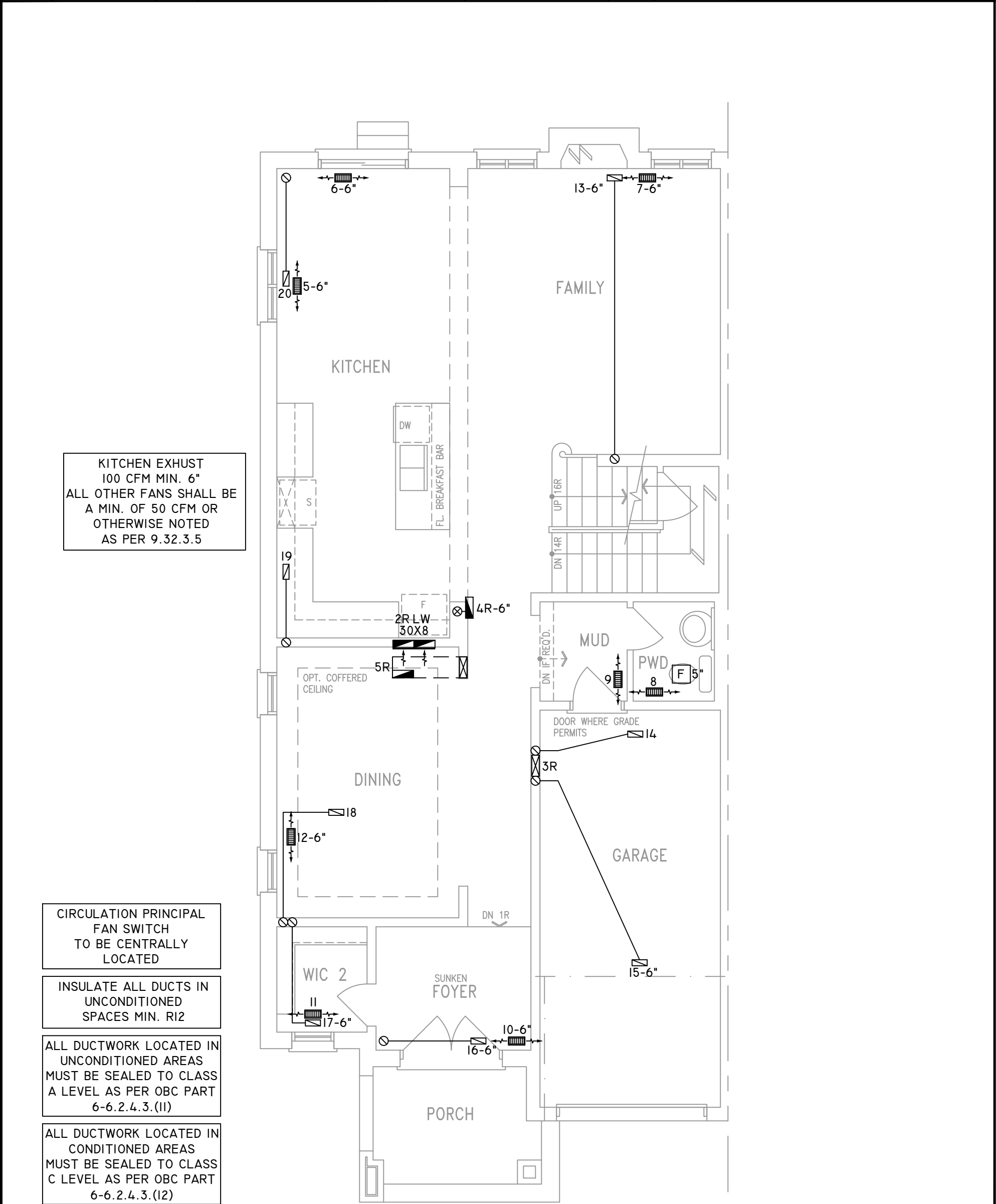
HEAT-LOSS	37,937	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960603ANA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	929	CFM

# 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
SQFT	2366
LAYOUT NO.	JB-06123
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

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DAVID DA COSTA  B.C.I.N. 32964
SIGNATURE OF DESIGNER

SITE COPY

OBC 2012

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

NOTES

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

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CONTRACTOR MUST WORK FROM APPROVED PLANS.

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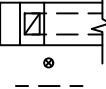
2985 DREW ROAD
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L4T 0A4 TEL: 905-671-9800
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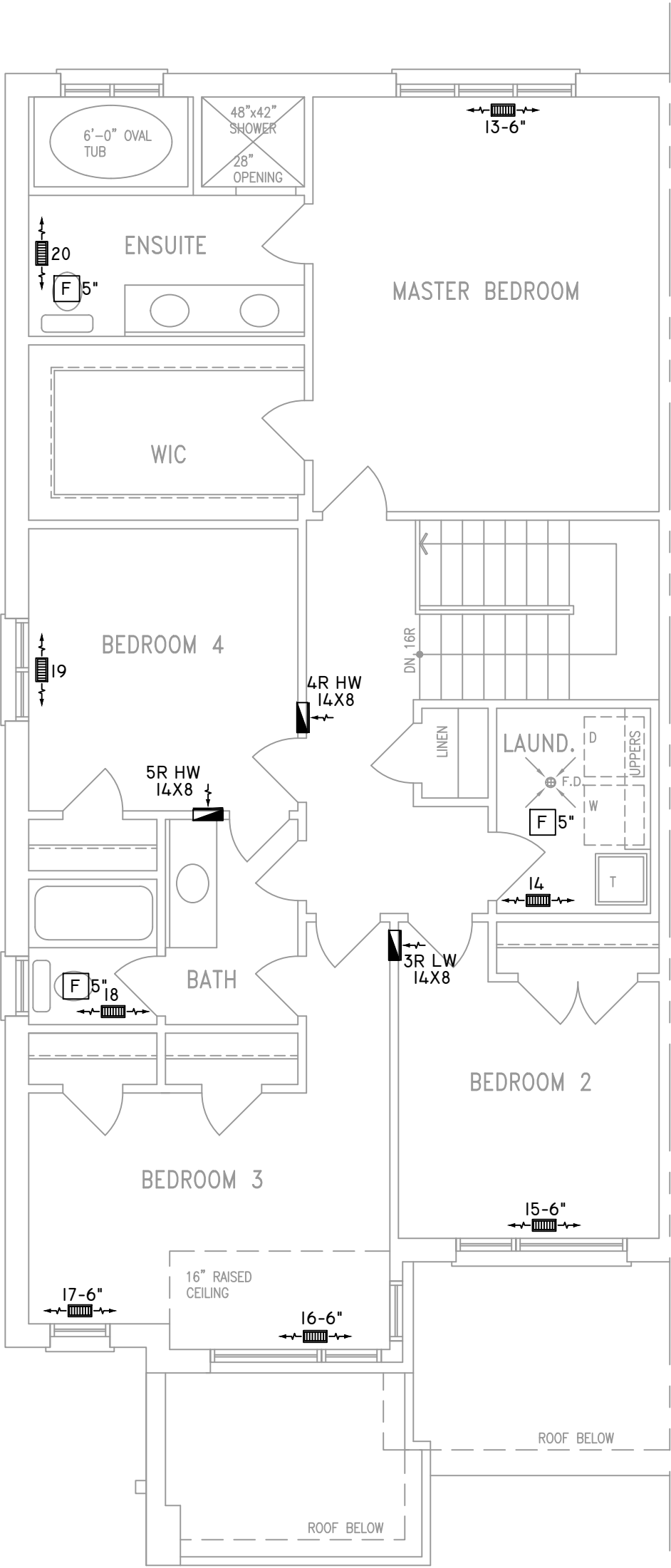
HEAT-LOSS	37,937	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960603ANA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	929	CFM

# 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
LAYOUT NO. JB-06123	DRAWING NO. M2

DATE:	FEBRUARY 10, 2020
CLIENT:	BAYVIEW WELLINGTON
MODEL:	SD-30-1 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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SIGNATURE OF DESIGNER

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OBC 2012

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UNIT MAKE	AMANA	OR EQUAL.
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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"