


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

<b>A. Project Information</b>					
Building number, street name				Lot: _____	
TH-1				Lot/con. _____	
Municipality <b>Bradford</b>		Postal code	Plan number/ other description		
<b>B. Individual who reviews and takes responsibility for design activities</b>					
Name <b>David DaCosta</b>			Firm <b>gtaDesigns Inc.</b>		
Street address <b>2985 Drew Road, Suite 202</b>			Unit no.	Lot/con.	
Municipality <b>Mississauga</b>		Postal code <b>L4T 0A4</b>	Province <b>Ontario</b>	E-mail <a href="mailto:dave@gtadesigns.ca">dave@gtadesigns.ca</a>	
Telephone number <b>(905) 671-9800</b>		Fax number <b>(647) 494-9643</b>	Cell number <b>(416) 268-6820</b>		
<b>C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]</b>					
<input type="checkbox"/> House <input type="checkbox"/> Small Buildings <input type="checkbox"/> Large Buildings <input type="checkbox"/> Complex Buildings		<input checked="" type="checkbox"/> HVAC – House <input type="checkbox"/> Building Services <input type="checkbox"/> Detection, Lighting and Power <input type="checkbox"/> Fire Protection		<input type="checkbox"/> Building Structural <input type="checkbox"/> Plumbing – House <input type="checkbox"/> Plumbing – All Buildings <input type="checkbox"/> On-site Sewage Systems	
Description of designer's work			Model Certification		Project #: <b>PJ-00204</b>
					Layout #: <b>JB-04845</b>
Heating and Cooling Load Calculations		Main	X	Builder	<b>Bayview Wellington</b>
Air System Design		Alternate		Project	<b>Green Valley</b>
Residential mechanical ventilation Design Summary		Area Sq ft:	<b>1660</b>	Model	<b>TH-1</b>
Residential System Design per CAN/CSA-F280-12				SB-12	<b>Package A1</b>
Residential New Construction - Forced Air					
<b>D. Declaration of Designer</b>					
I, <u>David DaCosta</u> declare that (choose one as appropriate): (print name)					
<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. Individual BCIN: _____ Firm BCIN: _____					
<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. Individual BCIN: <u>32964</u> Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u>					
<input type="checkbox"/> 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>December 12, 2023</u> Date			 Signature of Designer		

**NOTE:**

- For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d), of Division C, Article 3.2.5.1. of Division C and all other persons who are exempt from qualifications under Subsections 3.2.4 . and 3.2.5. of Division C.
- Schedule 1 does not require to be completed a holder of a license, temporary license, or a certificate of authorization, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

Heat loss and gain calculation summary sheet				CSA-F280-M12 Standard Form No. 1	
These documents issued for the use of <b>Bayview Wellington</b>				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				<b>JB-04845</b>	
Building Location					
Address (Model): <b>TH-1</b>			Site: <b>Green Valley</b>		
Model:			Lot:		
City and Province: <b>Bradford</b>			Postal code:		
Calculations based on					
Dimensional information based on: <b>VA3 DESIGN22/May/2018</b>					
Attachment: <b>Townhome</b>			Front facing: <b>East/West</b>		Assumed? <b>Yes</b>
No. of Levels: <b>3</b>		Ventilated? <b>Included</b>	Air tightness: <b>1961-Present (ACH=3.57)</b>		Assumed? <b>Yes</b>
Weather location: <b>Bradford</b>			Wind exposure: <b>Sheltered</b>		
HRV? <b>LifeBreath</b>		<b>RNC155</b>	Internal shading: <b>Light-translucent</b>		Occupants: <b>4</b>
Sensible Eff. at -25C <b>71%</b>		Apparent Effect. at -0C <b>84%</b>	Units: <b>Imperial</b>		Area Sq ft: <b>1660</b>
Sensible Eff. at -0C <b>75%</b>					
Heating design conditions			Cooling design conditions		
Outdoor temp <b>-9.4</b> Indoor temp: <b>72</b> Mean soil temp: <b>48</b>			Outdoor temp <b>86</b> Indoor temp: <b>75</b> Latitude: <b>44</b>		
Above grade walls			Below grade walls		
Style A: <b>As per OBC SB12 Package A1 R 22</b>			Style A: <b>As per OBC SB12 Package A1 R 20ci</b>		
Style B: <b>Existing Walls (When Applicable) R 12</b>			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: <b>As per Selected OBC SB12 Package A1</b>			Style A: <b>As per Selected OBC SB12 Package A1 R 60</b>		
Style B:			Style B: <b>As per Selected OBC SB12 Package A1 R 31</b>		
Exposed floors			Style C:		
Style A: <b>As per Selected OBC SB12 Package A1 R 31</b>			Doors		
Style B:			Style A: <b>As per Selected OBC SB12 Package A1 R 4.00</b>		
Windows			Style B:		
Style A: <b>As per Selected OBC SB12 Package A1 R 3.55</b>			Style C:		
Style B: <b>Existing Windows (When Applicable) R 1.99</b>			Skylights		
Style C:			Style A: <b>As per Selected OBC SB12 Package A1 R 2.03</b>		
Style D:			Style B:		
Attached documents: <b>As per Shedule 1</b>		<b>Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values</b>			
Notes: <b>Residential New Construction - Forced Air</b>					
Calculations performed by					
Name: <b>David DaCosta</b>			Postal code: <b>L4T 0A4</b>		
Company: <b>gtaDesigns Inc.</b>			Telephone: <b>(905) 671-9800</b>		
Address: <b>2985 Drew Road, Suite 202</b>			Fax: <b>(416) 268-6820</b>		
City: <b>Mississauga</b>			E-mail: <b>dave@gtadesigns.ca</b>		

**REVIEWED**

Builder: Bayview Wellington

Date: December 12, 2023

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.

Page 3

Project: Green Valley

Model: TH-1

System 1

Individual BCIN: 32964

*David DaCosta*

David DaCosta

Project # PJ-00204  
Layout # JB-04845

DESIGN LOAD SPECIFICATIONS				AIR DISTRIBUTION & PRESSURE				FURNACE/AIR HANDLER DATA:				BOILER/WATER HEATER DATA:				A/C UNIT DATA:			
Level 1 Net Load	9,648	btu/h		Equipment External Static Pressure	0.5	"w.c.		Make	Amana			Make	Type	Amana	1.5	Ton			
Level 2 Net Load	9,467	btu/h		Additional Equipment Pressure Drop	0.225	"w.c.		Model	AMEC960403ANA			Model		Cond.	-----	1.5			
Level 3 Net Load	7,163	btu/h		Available Design Pressure	0.275	"w.c.		Input Btu/h	40000			Input Btu/h		Coil	-----	1.5			
Level 4 Net Load	0	btu/h		Return Branch Longest Effective Length	300	ft		Output Btu/h	38400			Output Btu/h							
Total Heat Loss	26,278	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	15,040	btu/h		S/A Plenum Pressure	0.14	"w.c.		Water Temp		deg. F.		Blower DATA:							
Combo System HL + 10%	28,905	Btu/h		Heating Air Flow Proportioning Factor	0.0294	cfm/btuh		AFUE	96%			Blower Speed Selected:	W2			Blower Type	ECM		
Building Volume Vb	18911	ft³		Cooling Air Flow Proportioning Factor	0.0513	cfm/btuh		Aux. Heat								(Brushless DC OBC 12.3.1.5.(2))			
Ventilation Load	895	Btu/h		R/A Temp	70	deg. F.		SB-12 Package	Package A1			Heating Check	772	cfm		Cooling Check	772	cfm	
Ventilation PVC	63.6	cfm		S/A Temp	116	deg. F.													
Supply Branch and Grill Sizing				Diffuser loss	0.01	"w.c.		Temp. Rise>>>	46	deg. F.		Selected cfm>	772	cfm		Cooling Air Flow Rate	772	cfm	

	Level 1												Level 2											
	1	2	3	4									5	6	7	8								
S/A Outlet No.	BASE	BASE	BASE	BASE									FAM/KIT	FAM/KIT	MUD	FOY								
Room Use	2412	2412	2412	2412									2998	2998	1497	1974								
Btu/Outlet	71	71	71	71									88	88	44	58								
Heating Airflow Rate CFM	37	37	37	37									113	113	11	40								
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	24	15	15	26									22	32	4	32								
Actual Duct Length	110	120	110	90	70	70	70	70	70	70	70	70	70	100	100	100	70	70	70	70	70	70	70	70
Equivalent Length	134	135	125	116	70	70	70	70	70	70	70	70	92	132	104	132	70	70	70	70	70	70	70	70
Total Effective Length	0.10	0.10	0.10	0.11	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.14	0.10	0.13	0.10	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19
Adjusted Pressure	5	5	5	5									6	6	4	5								
Duct Size Round	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Outlet Size	A	A	B	B									A	A	PTO	B								
Trunk																								

	Level 3														Level 4													
S/A Outlet No.	9	10	11	12	13	14																						
Room Use	MAST	BED 3	BED 2	BATH	LAUN	ENS																						
Btu/Outlet	1735	1610	2337	234	213	1034																						
Heating Airflow Rate CFM	51	47	69	7	6	30																						
Cooling Airflow Rate CFM	98	73	87	4	50	35																						
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	
Actual Duct Length	50	50	40	18	21	43																						
Equivalent Length	130	120	120	100	150	110	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70		
Total Effective Length	180	170	160	118	171	153	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70		
Adjusted Pressure	0.07	0.08	0.08	0.11	0.08	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	0.19	0.19	0.19		
Duct Size Round	6	6	6	2	5	4																						
Outlet Size	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10		
Trunk	A	B	B	PTO	B	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	140	422	105	105								
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	5	7	43	29								
Equivalent Length	155	165	140	120	50	50	50	50	50	50	50	
Total Effective Length	160	172	183	149	50	50	50	50	50	50	50	
Adjusted Pressure	0.07	0.07	0.06	0.08	0.24	0.24	0.24	0.24	0.24	0.24	0.24	
Duct Size Round	6.0	11.0	6.0	6.0								
Inlet Size	FLC	8	8	8								
" "	x	x	x	x	x	x	x	x	x	x	x	
Inlet Size		30	14	14								
Trunk	Z	Z	Z									

Return Trunk Duct Sizing	Trunk	CFM	Press.	Round	Rect. Size
Drop		772	0.06	14.0	24x10
Z		667	0.06	13.5	20x8 16x10
Y					
X					
W					
V					
U					
T					
S					
R					
Q					

Supply Trunk Duct Sizing	Trunk	CFM	Press.	Round	Rect. Size
A		399	0.07	11.0	14x8 10x10
B		322	0.08	9.5	10x8 127
C					
D					
E					
F					
G					
H					
I					
J					
K					

**REVIEWED**

2012 OBC

Builder: Bayview Wellington

Date: December 12, 2023

Project: Green Valley

Model: TH-1

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: 1660

Project # PJ-00204  
Layout # JB-04845

## Level 1

### BASE

Run ft. exposed wall A	83	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
Ceiling height	3.5	AG	3.5	AG	3.5	AG	3.5	AG	3.5	AG	3.5	AG	3.5	AG
Floor area	642	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
Exposed Ceilings 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
Gross Exp Wall A	291													
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	20	459	547											
South	3.55	22.93	20.89														
WOB Windows	3.15	25.84	28.32														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75	21	427	58											
Net exposed walls A	21.13	3.85	0.52	250		130											
Net exposed walls B	14.49	5.62	0.76														
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	22.86	3.56	1.66														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss	On Grade ( ) or Above ( )			4006													
Total Conductive	Heat Loss			4892													
Air Leakage	Heat Loss/Gain	0.9170	0.0440	4486		32											
Ventilation	Case 1	0.09	0.11														
	Case 2	14.07	11.88														
	Case 3	x	0.06	270		83											
Heat Gain People			239														
Appliances Loads	1 = .25 percent		2743	2.0		1372											
Duct and Pipe loss	10%																
Level 1 HL Total	9,648			9648													
Level 1 HG Total	2,888					2888											

## Level 2

### FAM/KIT

### MUD

### FOY

Run ft. exposed wall A	57	A	12	A	15	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
Ceiling height	10.0		12.0		11.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Floor area	567	Area	32	Area	56	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
Exposed Ceilings 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
Gross Exp Wall A	570		144		165									
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	74	1697	2024											
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	496	2371	320	21	427	58	19	387	52					
Net exposed walls B	8.50	9.58	1.29				123	588	79	132	631	85					
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	22.86	3.56	1.66														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss	On Grade ( ) or Above ( )																
Total Conductive	Heat Loss			4068				1015		1339							
	Heat Gain				2345				137		520						
Air Leakage	Heat Loss/Gain	0.4191	0.0440	1705		103		426		6		23					
Ventilation	Case 1	0.04	0.11														
	Case 2	14.07	11.88														
	Case 3	x	0.06	225		264		56		15		74		59			
Heat Gain People			239														
Appliances Loads	1 = .25 percent		2743	1.0		686											
Duct and Pipe loss	10%																
Level 2 HL Total	9,467			5997				1497		1974		783					
Level 2 HG Total	5,405					4417				206							

REVIEWED

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

*Dave DaCosta*

Dave DaCosta

SB-12 Package

Package A1

Total Heat Loss	26,278	btu/h
Total Heat Gain	15,040	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

**Package:** Package A1

**Project:** Bradford

**Model:**
**TH-1**

## 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	2	@	10.6 cfm	21.2 cfm
Bathrooms & Kitchen	4	@	10.6 cfm	42.4 cfm
Other rooms	3	@	10.6 cfm	31.8 cfm
Total				137.8

Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1	@	31.8 cfm	31.8 cfm
Other bedrooms	2	@	15.9 cfm	31.8 cfm
Total				63.6

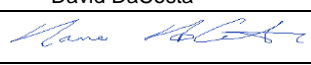
Principal Exhaust Fan Capacity				
Make	Model		Location	
LifeBreath	RNC155		Base	
132 cfm			Sones or Equiv.	

Heat Recovery Ventilator		
Make	LifeBreath	
Model	RNC155	
	132 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		137.8
Less principal exhaust capacity		63.6
REQUIRED supplemental vent. Capacity		74.2 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	December 12, 2023		

REVIEWED



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-00204  
 Layout # JB-04845

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 <b>TH-1</b>		Unit number	Lot/Con
Municipality <b>Bradford</b>	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 type="checkbox"/> Zone 2 (≥ 5000 degree days)	<input checked="" type="checkbox"/> ≥ 92% AFUE <input type="checkbox"/> ≥ 84% < 92% AFUE	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Oil	<input type="checkbox"/> Propane <input type="checkbox"/> Electric	<input type="checkbox"/> Solid Fuel <input type="checkbox"/> Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		Other Building Characteristics		
Area of Walls = <u>268.43</u> m <sup>2</sup> or <u>2889.4</u> ft <sup>2</sup>	W,S & G % = <u>7%</u>	<input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> Slab-on-ground <input checked="" type="checkbox"/> Air Conditioning <input type="checkbox"/> Air Sourced Heat Pump (ASHP) <input type="checkbox"/> Ground Source Heat Pump (GSHP)		
Area of W, S & G = <u>17.558</u> m <sup>2</sup> or <u>189.0</u> ft <sup>2</sup>	Utilize Window Averaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> ICF Above Grade <input type="checkbox"/> Walkout Basement <input type="checkbox"/> Combo Unit		

### 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 <sup>1</sup>		Efficiency Ratings
<b>Thermal Insulation</b>	Nominal	Effective	<b>Windows &amp; Doors</b> Provide U-Value <sup>(1)</sup> or ER rating
Ceiling with Attic Space	60		Windows/Sliding Glass Doors 1.6
Ceiling without Attic Space	31		Skylights 2.8
Exposed Floor	31		<b>Mechanicals</b>
Walls Above Grade	22		Heating Equip.(AFUE) 96%
Basement Walls	20.0ci		HRV Efficiency (SRE% at 0°C) 75%
Slab (all >600mm below grade)	x		DHW Heater (EF) 0.80
Slab (edge only ≤600mm below grade)	10		DWHR (CSA B55.1 (min. 42% efficiency)) #Showers 2
Slab (all ≤600mm below grade, or heated)	10		Combined Heating System

(1) U value to be provided in either W/(m<sup>2</sup>·K) or Btu/(h·ft<sup>2</sup>·°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 <b>David DaCosta</b>	BCIN <b>32964</b>	Signature 
------------------------------	----------------------	---------------

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

**REVIEWED**



Package: Project: Package A1 Bradford System: Model: System 1 TH-1

## Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.324	18911	81.4	8972

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.079	18911	11	295

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	8972	4892	0.9170
Level 2	0.3		6421	0.4191
Level 3	0.2		4893	0.3667
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	
	295		0.0440
BUILDING CONDUCTIVE HEAT GAIN			6713

Levels this Dwelling	
3	

## Ventilation Calculations

### Ventilation Heat Loss

Ventilation Heat Loss				
C	PVC	HL^T	(1-E) HRV	HLbvent
1.08	63.6	81.4	0.16	895

### Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG^T	HGbvent
1.1	63.6	11	756

### Case 1

#### Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HLbvent	LVL Cond. HL	Multiplier
Level 1	0.5	895	4892	0.09
Level 2	0.3		6421	0.04
Level 3	0.2		4893	0.04
Level 4	0		0	0.00

### Case 1

#### Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier	
HGbvent	756	0.11	
Building	6713		

### 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	895	0.06	

### Case 3

#### Ventilation Heat Gain (Forced Air Systems)

Vent Heat Gain		Multiplier	
HGbvent	HG*1.3	756	
756	1		

Foundation Conductive Heatloss Level 1

1174 Watts 4006 Btu/h

Foundation Conductive Heatloss Level 2

Watts 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

**REVIEWED**



# Envelope Air Leakage Calculator

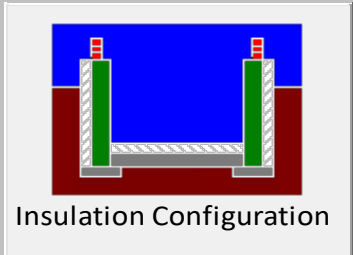
Supplemental tool for CAN/CSA-F280

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):	6.55			
Building Configuration				
Type:	Semi-Detached			
Number of Stories:	Two			
Foundation:	Shallow			
House Volume (m <sup>3</sup> ):	535.56			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57)			
Custom BDT Data:	ELA @ 10 Pa. 322.44 cm <sup>2</sup>			
	3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	31.8		31.8	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H): 0.324				
Cooling Air Leakage Rate (ACH/H): 0.079				

REVIEWED

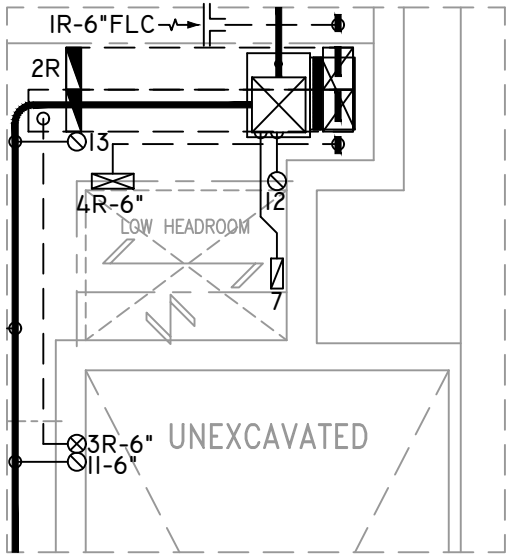
# Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

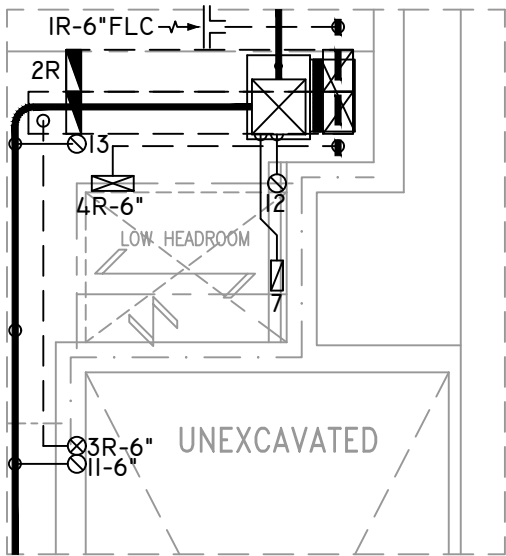
Weather Station Description		
Province:	Ontario ▼	
Region:	Bradford ▼	
Site Description		
Soil Conductivity:	High conductivity: moist soil ▼	
Water Table:	Normal (7-10 m, 23-33 Ft) ▼	
Foundation Dimensions		
Floor Length (m):	16.31	 Insulation Configuration
Floor Width (m):	3.66	
Exposed Perimeter (m):	25.30	
Wall Height (m):	2.59	
Depth Below Grade (m):	1.52	
Window Area (m <sup>2</sup> ):	1.86	
Door Area (m <sup>2</sup> ):	1.95	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1174

REVIEWED

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



PARTIAL PLAN  
SUNKEN 1R COND



PARTIAL PLAN SUNKEN  
2R OR MORE COND

FOR THE PURPOSE OF  
HEATLOSS/GAIN  
CALCULATIONS ALL  
ELEVATIONS HAVE BEEN  
CONSIDERED

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

INSULATE ALL DUCTS IN  
UNCONDITIONED  
SPACES MIN. R12

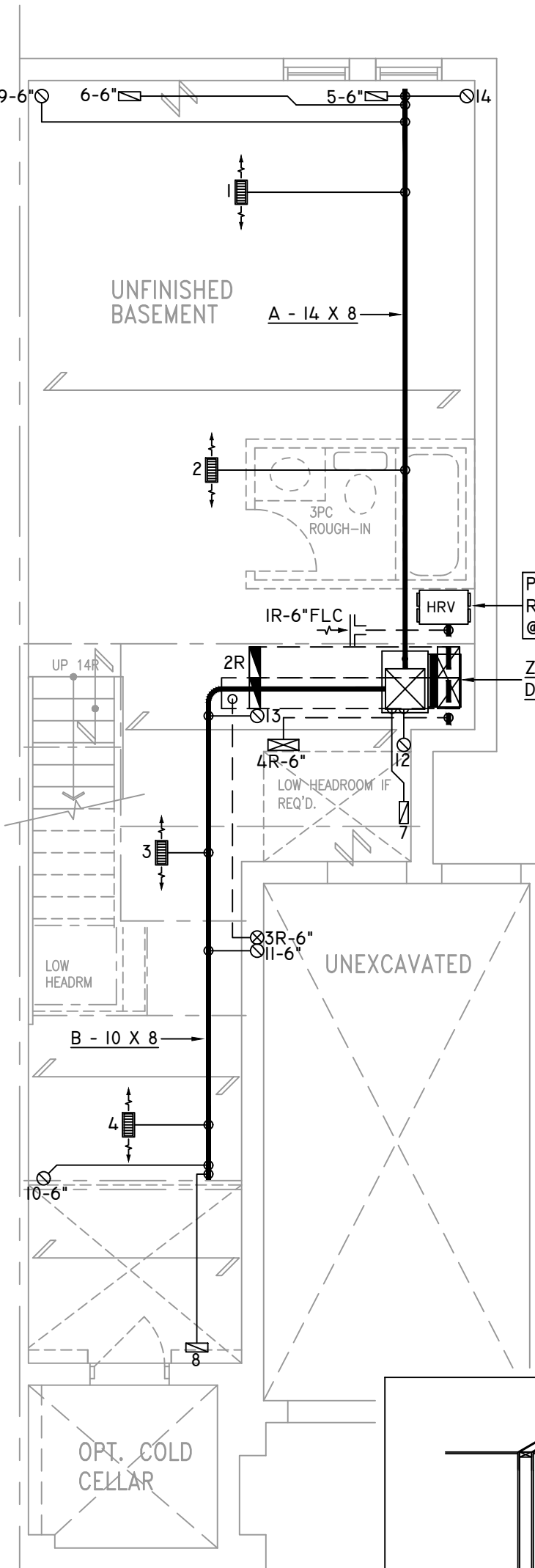
ALL DUCTWORK LOCATED IN  
CONDITIONED AREAS  
MUST BE SEALED TO CLASS  
C LEVEL AS PER OBC PART  
6-6.2.4.3.(12)

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

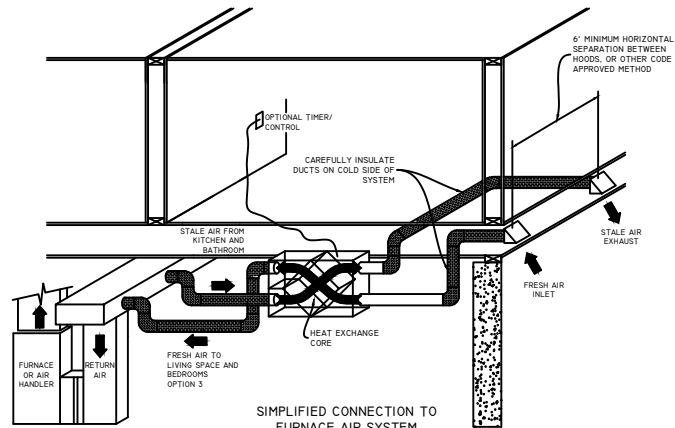
**QUALIFICATION INFORMATION**

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

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



BASEMENT PLAN 'A'



OBC 2012

REVIEWED

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.



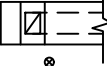












2985 DREW ROAD  
SUITE 202,  
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L4T 0A4 TEL: 905-671-9800  
EMAIL: DAVE@GTADESIGNS.CA  
WEB: WWW.GTADESIGNS.CA

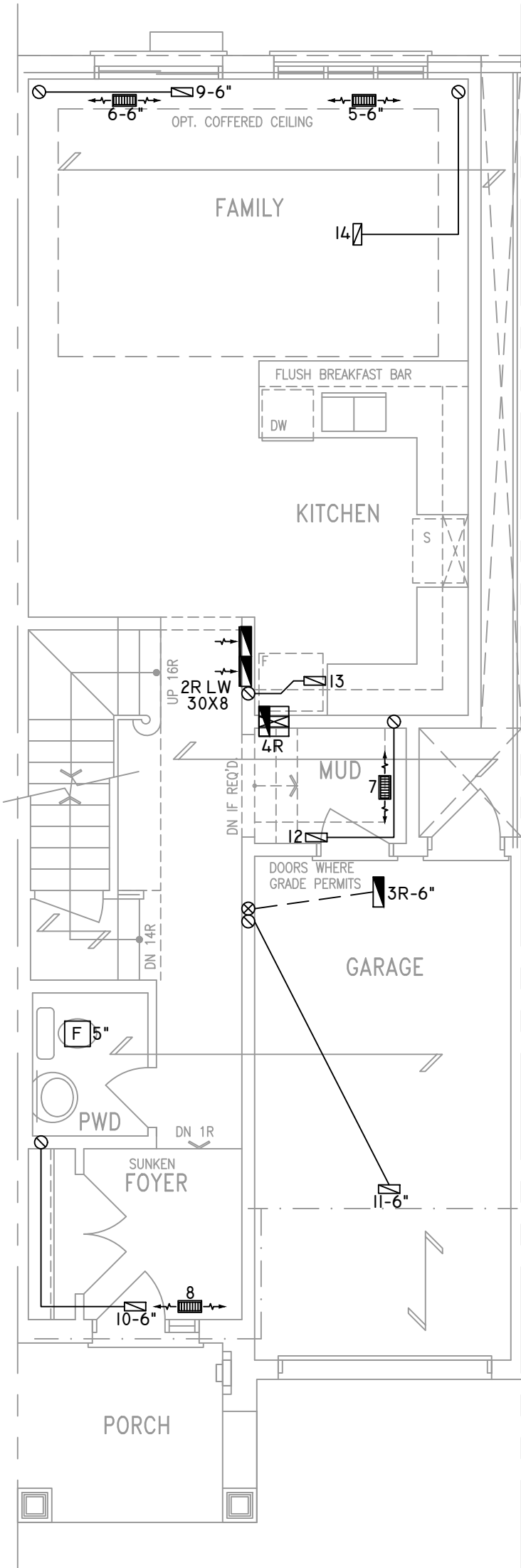
HEAT-LOSS	26,256	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

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

FLOOR PLAN:	BASEMENT
DRAWN BY:	JL
CHECKED:	DD
LAYOUT NO.	JB-04845
SQFT	1660
DRAWING NO.	MI

DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-I
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



GROUND FLOOR PLAN 'A'

- FOR THE PURPOSE OF HEATLOSS/GAIN CALCULATIONS ALL ELEVATIONS HAVE BEEN CONSIDERED
- CIRCULATION PRINCIPAL FAN SWITCH TO BE CENTRALLY LOCATED
- INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12
- ALL DUCTWORK LOCATED IN CONDITIONED AREAS MUST BE SEALED TO CLASS C LEVEL AS PER OBC PART 6-6.2.4.3.(12)

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

REVIEWED

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.





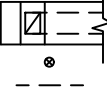













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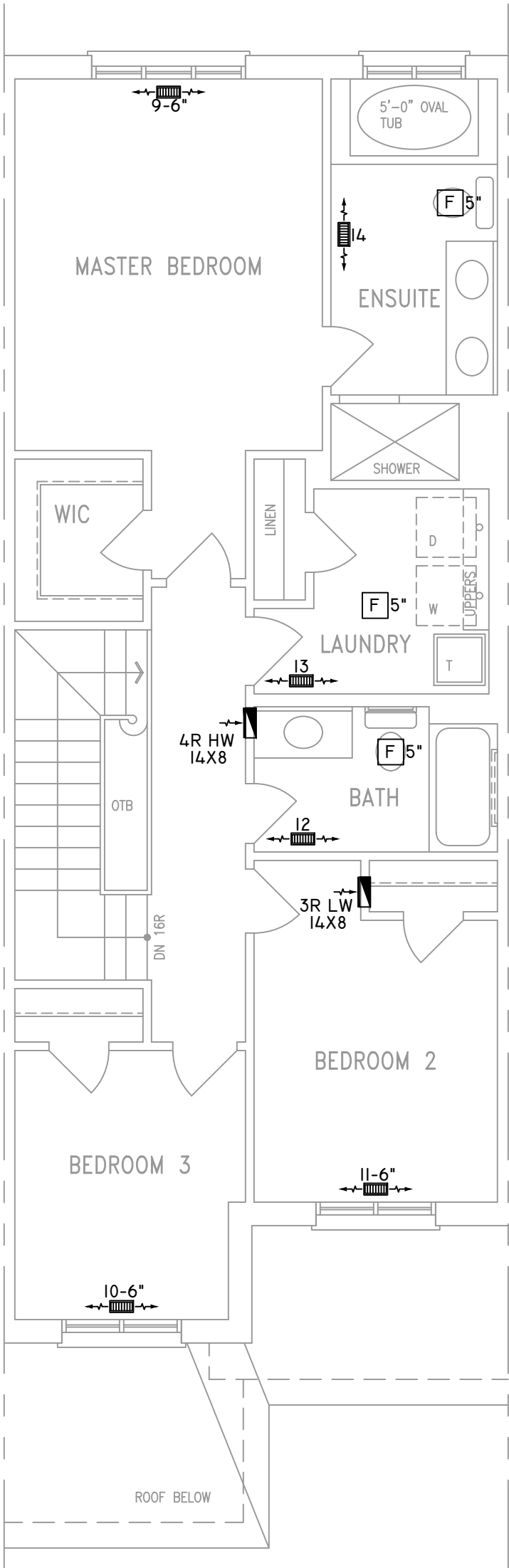
HEAT-LOSS	26,256	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC9604.03ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

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

FLOOR PLAN: GROUND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 1660
LAYOUT NO. JB-04845	DRAWING NO. M2	

DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-I
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



FOR THE PURPOSE OF  
HEATLOSS/GAIN  
CALCULATIONS ALL  
ELEVATIONS HAVE BEEN  
CONSIDERED

INSULATE ALL DUCTS IN  
UNCONDITIONED  
SPACES MIN. R12

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

SECOND FLOOR PLAN 'A'

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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

REVIEWED

OBC 2012

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

**NOTES**

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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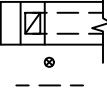













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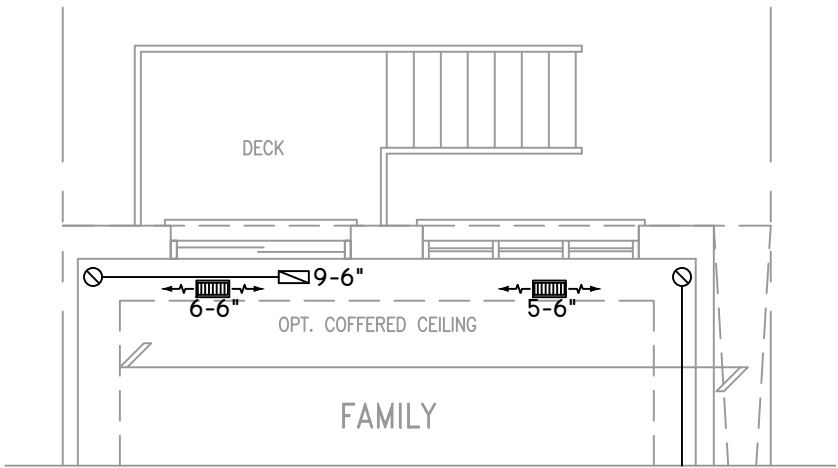
HEAT-LOSS	26,256	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC9604.03ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

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

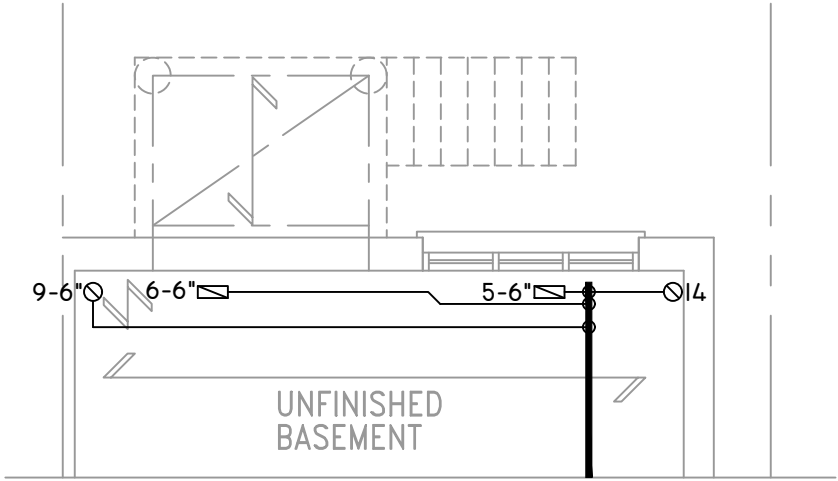
FLOOR PLAN: SECOND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 1660
LAYOUT NO. JB-04845	DRAWING NO. M3	

DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-I
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

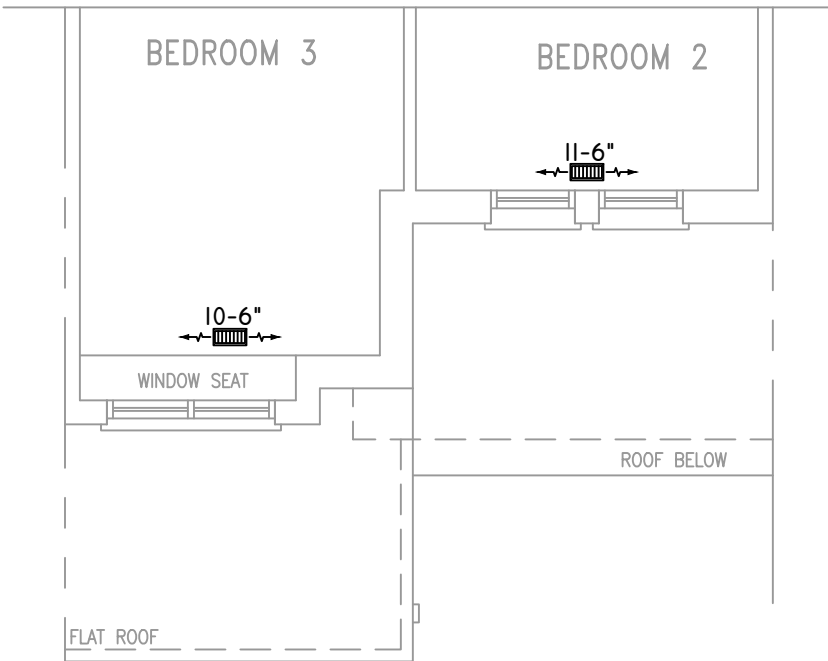
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



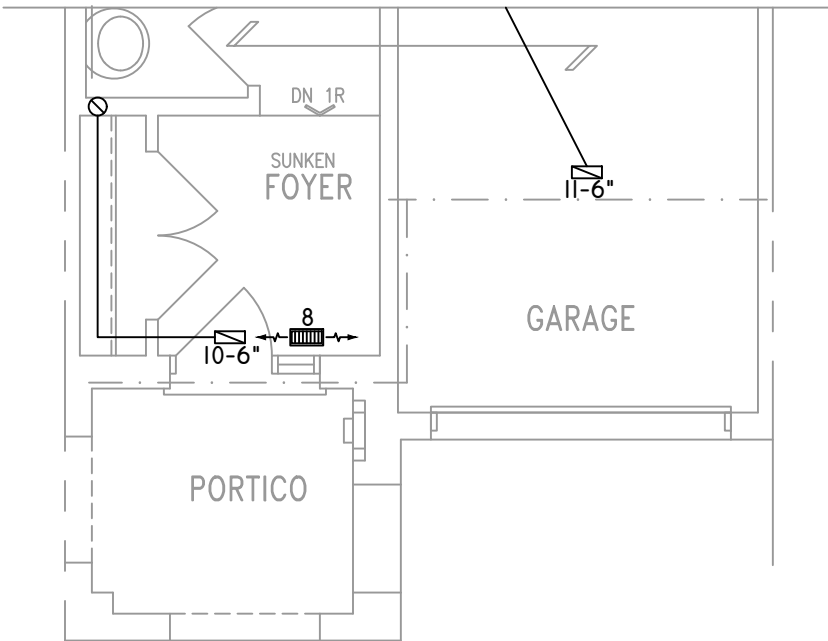
PARTIAL GROUND FLOOR  
PLAN WOD 9R COND.



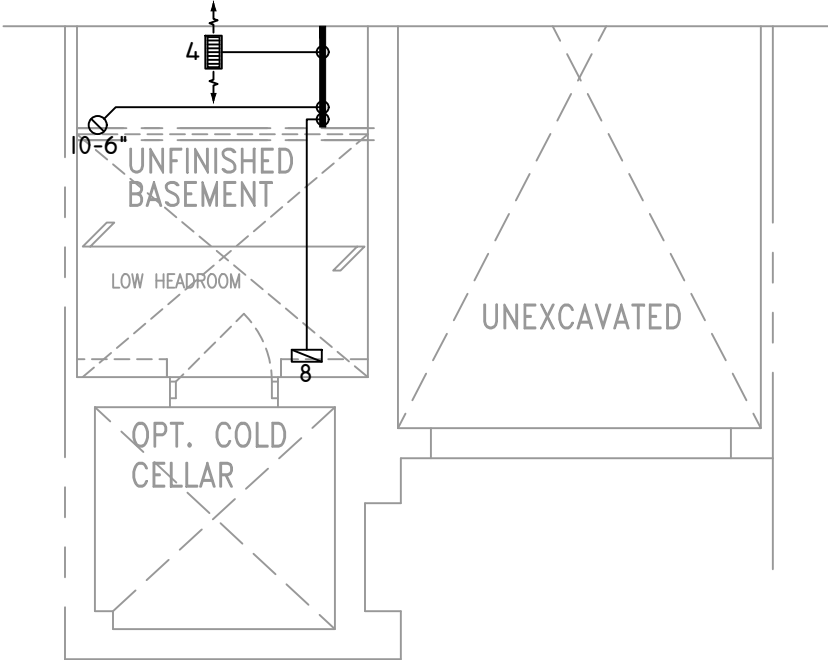
PARTIAL BASEMENT FLOOR  
PLAN WOD 9R COND.



PART. SECOND FLOOR PLAN 'B'



PART. GROUND FLOOR PLAN 'B'



PART. BASEMENT PLAN 'B'

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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

REVIEWED

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.

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HEAT-LOSS	26,256	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC9604.03ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

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

FLOOR PLAN:		
PARTIAL PLAN(S)		
DRAWN BY: JL	CHECKED: DD	SQFT 1660
LAYOUT NO. JB-04845	DRAWING NO. M4	

DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-I
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"