

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:	
TH-1				Lot/con.	
Municipality Bradford		Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities					
Name David DaCosta			Firm gtaDesigns Inc.		
Street address 2985 Drew Road, Suite 202			Unit no.	Lot/con.	
Municipality Mississauga		Postal code L4T 0A4	Province Ontario	E-mail dave@gtadesigns.ca	
Telephone number (905) 671-9800		Fax number (647) 494-9643		Cell number (416) 268-6820	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]					
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings		☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection		☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems	
Description of designer's work			Model Certification		Project #:
					PJ-00204
					Layout #:
					JB-04845
Heating and Cooling Load Calculations		Main	X	Builder	
Air System Design		Alternate		Project	
Residential mechanical ventilation Design Summary		Area Sq ft:	1660	Model	
Residential System Design per CAN/CSA-F280-12				TH-1	
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>June 8, 2018</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 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-04845	
Building Location					
Address (Model): TH-1			Site: Green Valley East		
Model:			Lot:		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on: VA3 DESIGN22/May/2018					
Attachment: Townhome			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? LifeBreath		RNC155	Internal shading: Light-translucent		Occupants: 4
Sensible Eff. at -25C 71%		Apparent Effect. at -0C 84%	Units: Imperial		Area Sq ft: 1660
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: Existing Walls (When Applicable) R 12			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: As per Selected OBC SB12 Package 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: Existing Windows (When Applicable) R 1.99			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: (416) 268-6820		
City: Mississauga			E-mail: dave@gtadesigns.ca		

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Builder: **Bayview Wellington**

Date: **June 8, 2018**

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.

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Project: **Green Valley East**

Model: **TH-1**

System 1

Individual BCIN: 32964

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.			
Total Heat Gain	15,040 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp		deg. F.			
Combo System HL + 10%	28,905 Btu/h	Heating Air Flow Proportioning Factor	0.0294 cfm/btuh	AFUE	96%				
Building Volume Vb	18911 ft³	Cooling Air Flow Proportioning Factor	0.0513 cfm/btuh	Aux. Heat					
Ventilation Load	895 Btu/h	R/A Temp	70 deg. F.	SB-12 Package	Package A1				
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.				

	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																								

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					

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2012 OBC

Builder: Bayview Wellington

Date: June 8, 2018

Project: Green Valley East

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 #
Layout #

Level 1

BASE

Run ft. exposed wall A	83 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
Ceiling height	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	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	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													
	Heat Gain				735												
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		Total HL for per room	9648													
Level 1 HG Total	2,888		Total HG per room x 1.3		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	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	10.0	10.0
Floor area	567 Area	32 Area	56 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	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		x														
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		561	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		Total HL for per room	5997				1497			1974						
Level 2 HG Total	5,405		Total HG per room x 1.3		4417				206			783					

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

SB-12 Package

Package A1

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2012 OBC	Builder: Bayview Wellington	Date: June 8, 2018	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
	Project: Green Valley East	Model: TH-1														Layout #	JB-04845

Level 3				MAST		BED 3		BED 2		BATH		LAUN		ENS											
Run ft. exposed wall A				12	A	14		A	10	A	A		A		7		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				237	Area	116		Area	254	Area	64		Area	83		Area	109		Area	Area		Area		Area	
Exposed Ceilings A				237	A	116		A	254	A	64		A	83		A	109		A	Area		Area		Area	
Exposed Ceilings B				B		B		B		B		B		B		B		B		B		B		B	
Exposed Floors				Flr		14		Flr	135	Flr	28		Flr	13		Flr	27		Flr	Flr		Flr		Flr	
Gross Exp Wall A				96		112		80								56									
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	24	550	656		22	504	602	22	504	602			13	298	356							
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	72	344	47	90	430	58	58	277	37				43	206	28							
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	22.86	3.56	1.66																						
Exposed Floors	29.80	2.73	0.17																						
Foundation Conductive Heatloss																									
Total Conductive	Heat Loss																								
	Heat Gain																								
Air Leakage	Heat Loss/Gain	0.3667	0.0440	2	67	96	1	63	83	83	93	9	5		8	6		40	52						
Ventilation	Case 1	0.04	0.11																						
	Case 2	14.07	11.88																						
	Case 3	x	0.06																						
Heat Gain People			239	1735	1907		1610	1418	2337	1689	234	69		213	975	1034	688								
Appliances Loads	1 =.25 percent	2743																							
Duct and Pipe loss		10%																							
Level 3 HL Total	7,163	Total HL for per room																							
Level 3 HG Total	6,747	Total HG per room x 1.3																							

Level 4				A	A	A	A	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall 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
Ceiling height																	
Floor 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
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																	
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														
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	22.86	3.56	1.66														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss																	
Total Conductive																	
Heat Loss																	
Heat Gain																	
Air Leakage	Heat Loss/Gain	0.0000	0.0440														
Case 1		0.00	0.11														
Case 2		14.07	11.88														
Case 3	x	0.06	0.11														
Heat Gain People			239														
Appliances Loads	1 =.25 percent		2743														
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	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

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:
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) | ☒ | Direct vent (sealed combustion) only |
| b) | ☐ | Positive venting induced draft (except fireplaces) |
| c) | ☐ | Natural draft, B-vent or induced draft fireplaces |
| d) | ☐ | Solid fuel (including fireplaces) |
| e) | ☐ | No combustion Appliances |

Heating System

- | | |
|-------------------------------------|--|
| ☒ | Forced air |
| ☐ | Non forced air |
| ☐ | Electric space heat (if over 10% of heat load) |

House Type 9.32.3.1(2)

- | | | |
|-------|-------------------------------------|---|
| I | ☒ | Type a) or b) appliances only, no solid fuel |
| II | ☐ | Type I except with solid fuel (including fireplace) |
| III | ☐ | Any type c) appliance |
| IV | ☐ | Type I or II either electric space heat |
| Other | ☐ | Type I, II or IV no forced air |

System Design Option

- | | | |
|---|-------------------------------------|---|
| 1 | ☐ | Exhaust only / forced air system |
| 2 | ☐ | HRV WITH DUCTING / forced air system |
| 3 | ☒ | HRV simplified connection to forced air system |
| 4 | ☐ | HRV full ducting/not coupled to forced air system |
| | | Part 6 design |

Total Ventilation Capacity 9.32.3.3(1)

Bsmt & Master Bdrm	2 @ 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		<u>137.8</u>

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		<u>63.6</u>

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	<u>74.2</u> cfm

Supplemental Fans 9.32.3.5.

Location	cfm	Model	Sones
Ens	50	XB50	0.3
Bath	50	XB50	0.3

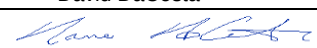
all fans HVI listed Make Broan or Equiv.

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

June 8, 2018

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

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: ☐ Table 3.1.1.4.C Required:	Permitted Substitution: Permitted Substitution: Permitted Substitution:	
Building Component	Minimum RSI/R-Values or Maximum U-Value ¹		Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ 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		Mechanicals
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/(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.

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

Envelope Air Leakage Calculator

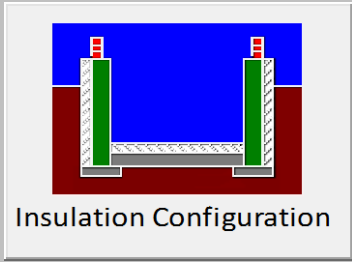
Supplemental tool for CAN/CSA-F280

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 ³):	535.56			
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:	
	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				

SITE COPY

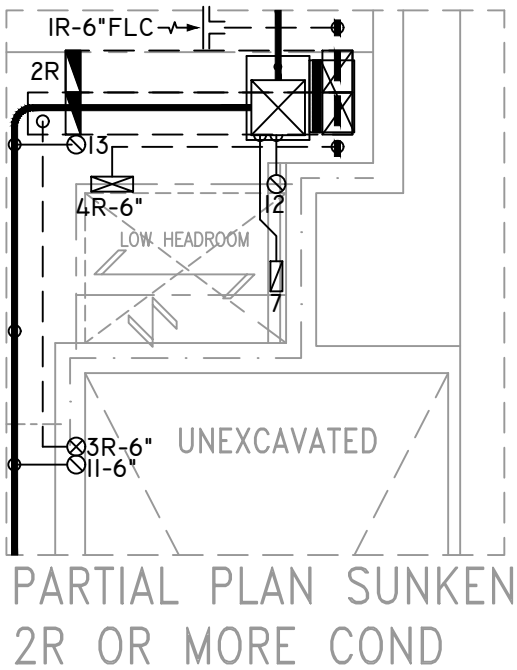
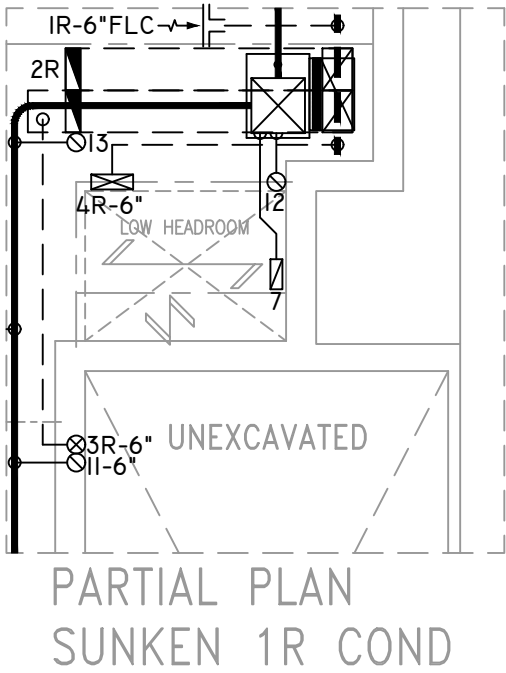
Residential Foundation Thermal Load Calculator

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 ²):	1.86	
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):		1174

SITE COPY

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



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

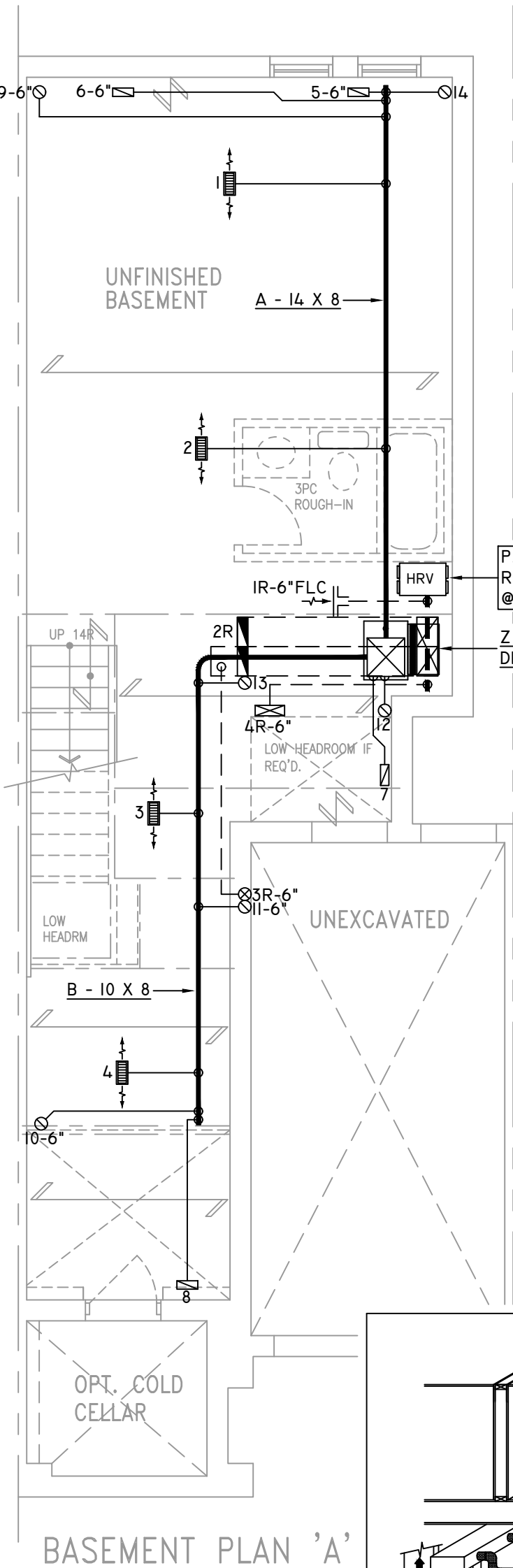
FURNACE EQUIPPED WITH
BRUSHLESS DC MOTOR AS
PER OBC 12.3.1.5 (2)

INSULATE ALL DUCTS IN
UNCONDITIONED
SPACES MIN. R12

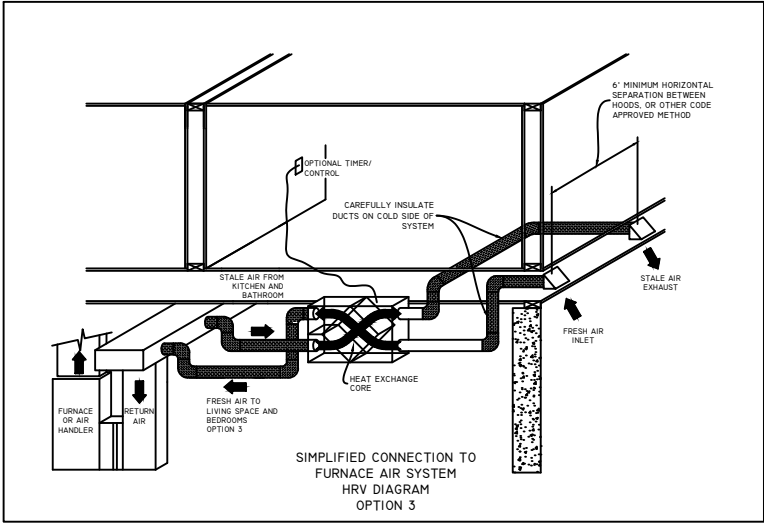
ALL DUCTWORK LOCATED IN
CONDITIONED AREAS
MUST BE SEALED TO CLASS
C LEVEL AS PER OBC PART
6-6.2.4.3.(12)

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



P.E. HRV LIFE BREATH
RNC155 132 CFM
@ .4 W.C
Z - 20 X 8
DROP - 24 X 10



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	26,278	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	DRAWING NO. MI
sqft 1660	

DATE:	JUNE 8, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-I
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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)

SITE COPY

OBC 2012

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

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

QUALIFICATION INFORMATION

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

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

INSULATE DUCTS IN UNCONDITIONED SPACES RIZ 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.

 **GTADESIGNS**

2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.

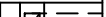
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

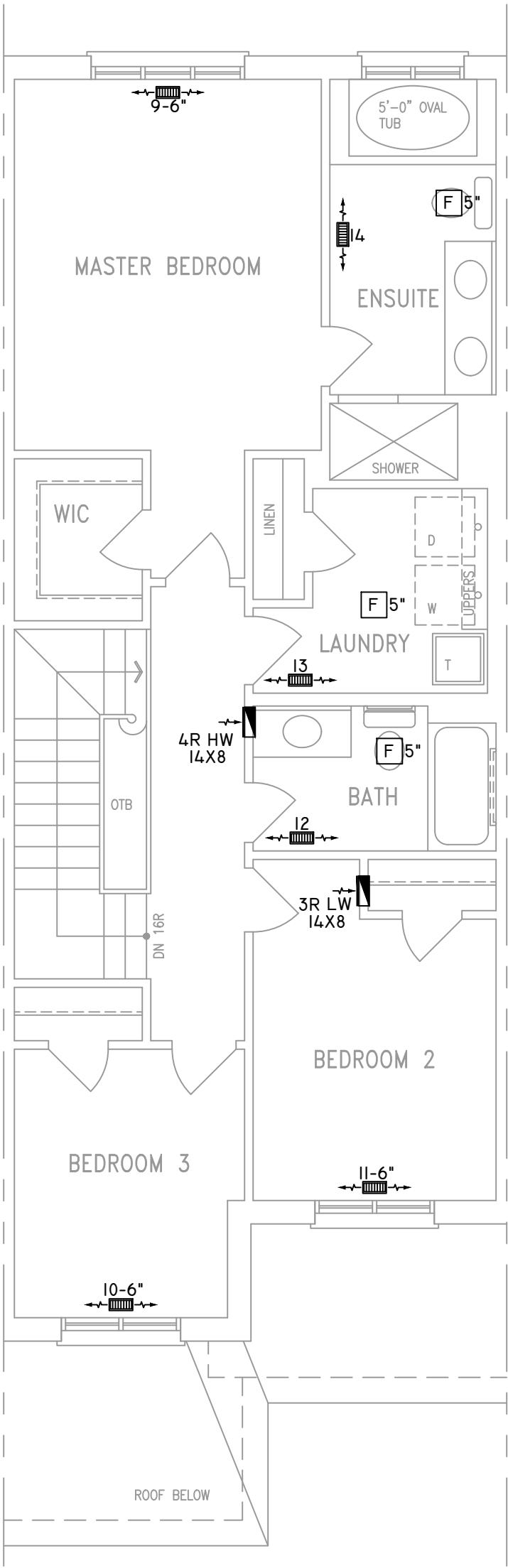
HEAT-LOSS	26,278	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

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

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

DATE:	JUNE 8, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-1
PROJECT:	GREEN VALLEY EAST 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



SECOND FLOOR PLAN 'A'

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)

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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

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.
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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.



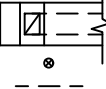
2985 DREW ROAD
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L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
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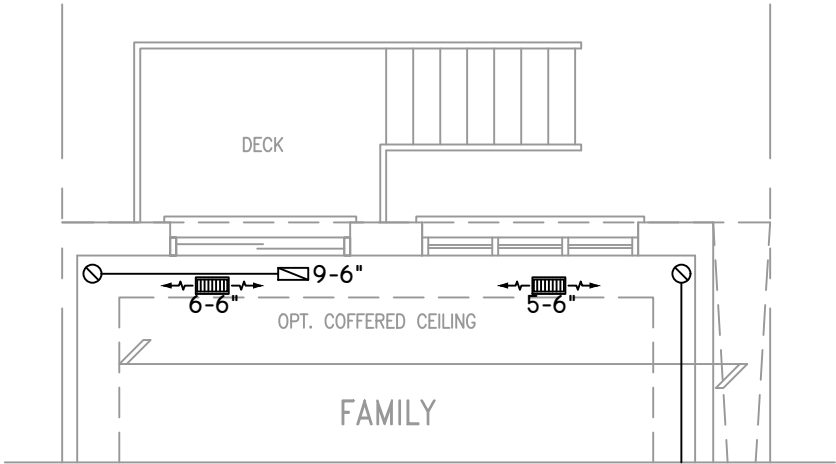
HEAT-LOSS	26,278	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

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

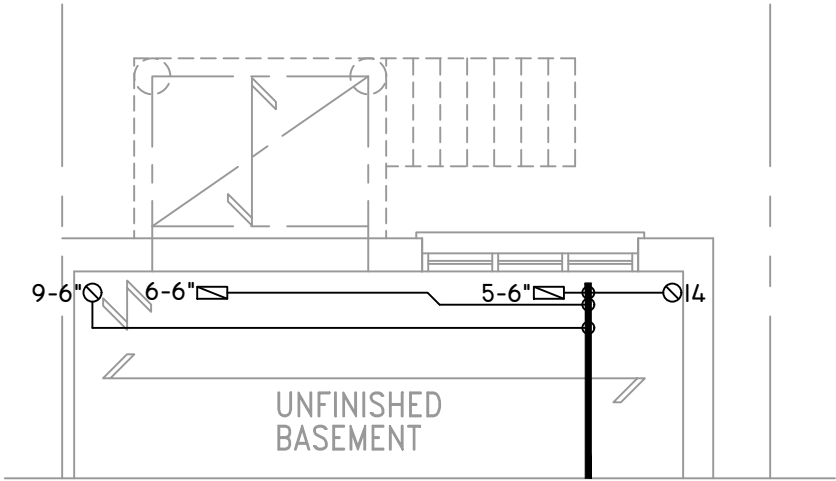
FLOOR PLAN: SECOND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 1660
LAYOUT NO. JB-04845	DRAWING NO. M3	

DATE:	JUNE 8, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-I
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

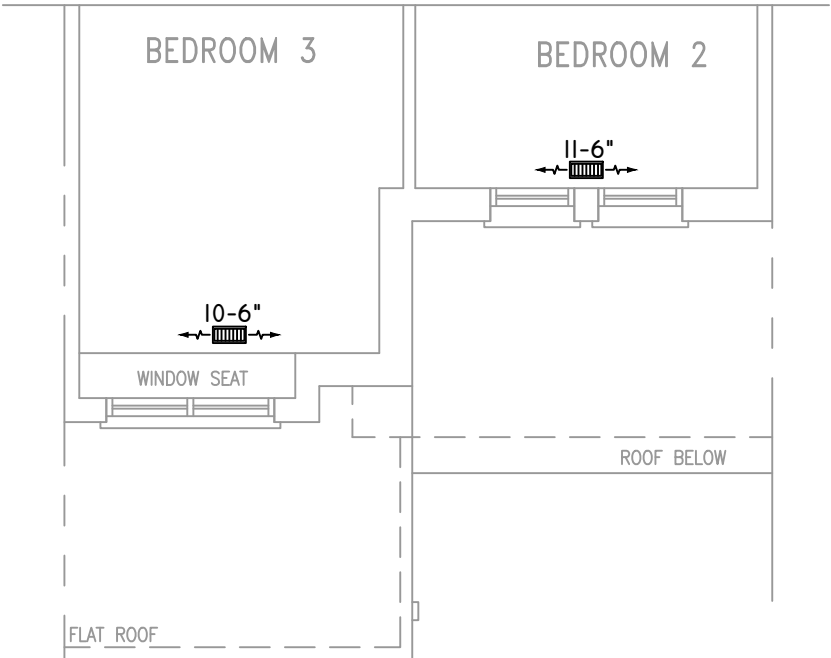
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



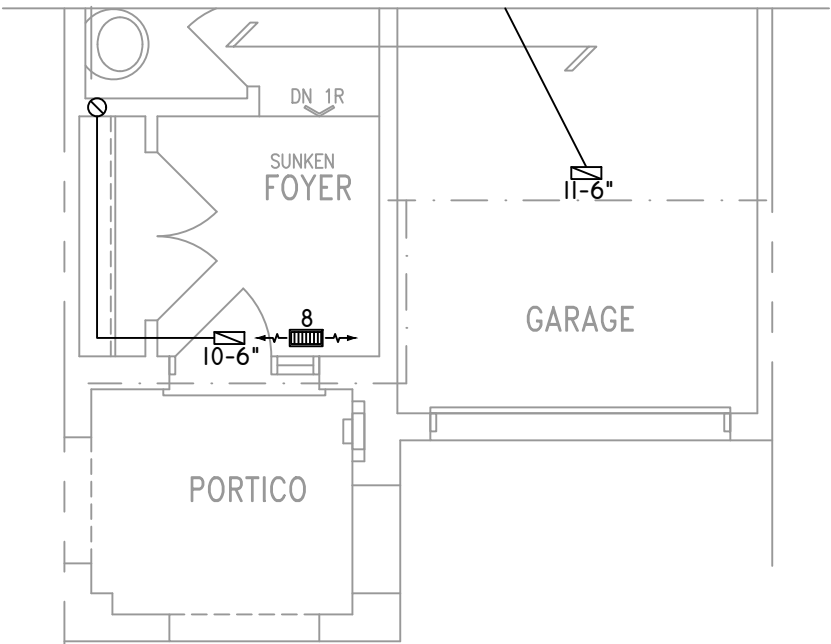
PARTIAL GROUND FLOOR
PLAN WOD 9R COND.



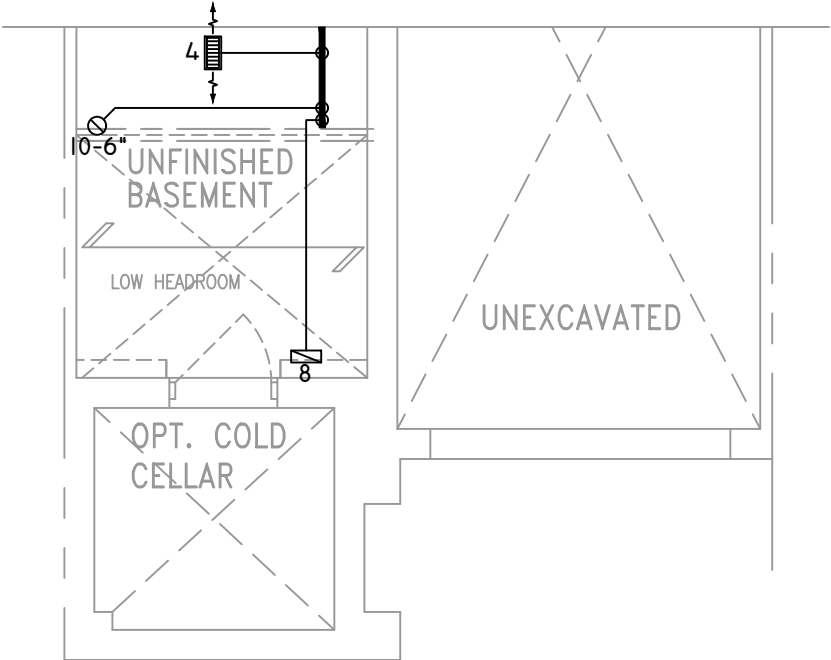
PARTIAL BASEMENT FLOOR
PLAN WOD 9R COND.



PART. SECOND FLOOR PLAN 'B'



PART. GROUND FLOOR PLAN 'B'



PART. BASEMENT PLAN 'B'

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.

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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.



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

HEAT-LOSS	26,278	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: PARTIAL PLAN(S)		
DRAWN BY: JL	CHECKED: DD	SQFT 1660
LAYOUT NO. JB-04845	DRAWING NO. M4	

DATE: JUNE 8, 2018
CLIENT: BAYVIEW WELLINGTON
MODEL: TH-I
PROJECT: GREEN VALLEY EAST BRADFORD,ONT.
SCALE: 3/16" = 1'-0"