

Schedule 1: Designer Information

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:	
	THWU-		· · · · · · · · · · · · · · · · · · ·		Lot/con.	
Municipality Bradford		Postal code	Plan number/ description	other		
B. Individual who reviews and takes responsibility f	for desig	n activities				
Name David DaCosta	1		Firm		gtaDesigns Inc.	
		I, Suite 202				Lot/con.
Municipality Mississauga	F	Postal code L4T 0A4	Province Ontari	•	E-mail dave@gtadesi	ions ca
Telephone number	F	ax number	Ontan	•	Cell number	<u>gno.oa</u>
(905) 671-9800) 494-9643		(416) 268-6	820
C. Design activities undertaken by individual identif	fied in Se	ection B. [Bu	ilding Code	Table 3	.5.2.1 of Division C]	
☐ House	HVAC – Ho	ouse			■ Building Structural	
☐ Small Buildings ☐ B	Building Ser	rvices			☐ Plumbing – House	
☐ Large Buildings ☐ D	Detection, L	ighting and Po	wer		☐ Plumbing – All Buildings	3
☐ Complex Buildings ☐ F	ire Protect	ion			☐ On-site Sewage System	s
Description of designer's work	Mode	el Certification	ı		Project #:	PJ-00204
Heating and Ocaling Land Orlandations	Main	X	Duildes		Layout #:	JB-04876
Heating and Cooling Load Calculations Air System Design	wain Alternate	Α	Builder Project		Bayview Wellingto Green Valley East	
, .	rea Sq ft:	1762	Model		Groom valley Last	
Residential System Design per CAN/CSA-F280-12			Model		THWU-12	
Residential New Construction - Forced Air D. Declaration of Designer			SB-12		Package A1	
David DaCosta (print name) I review and take respons 3.2.4 Division C of the Bui classes/categories. Individu	sibility for th	declare that (c ne design work e. I am qualified	on behalf of a	TOW	IN OF BRADFORD WEST	
Firm B	BCIN:			INSF	PECTOR: BG	
☑ I review and take respon: "other designer" under su	ubsection 3	.2.5 of Division	C, of the Build			
Individu	lual BCIN:	3296	64			
Basis for	for exempti	ion from registra	ation:	D	ivision C 3.2.4.1. (4)	
☐ The design work is exemp	pt from the	registration and	d qualification	requirem	ents of the Building Code.	
	for exempti	ion from registra	ation and quali	ification:		
I certify that:	hoet of m	v knowledge				
 The information contained in this schedule is true to the I have submitted this application with the knowledge and 	-	-				
June 21, 2018	G CONSCIR	o. u.o	Lane	160	260	
Date	-		Signat	ure of Des	igner	
Date			Oigilat	0 01 000	···	

NOTE:

1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1) d), of Division C, Article 3.2.5.1. of Division C and all other persons who are exempt from qualifications under Subsections 3.2.4. and 3.2.5.of Division C.

Schedule 1 does not require to be completed a holder of a license, temporay license, or a certificate of authorization, issed by the
Ontario Associstion of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited licence to
practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.





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Heat loss and gain calcul	ation summary sheet CSA-F280-M12 Standard
These documents issued for the use of	yview Wellington Layout No.
and may not be used by any other persons without authorization. Documents	s for permit and/or construction are signed in red. JB-04876
Building I	ocation
Address (Model): THWU-12	Site: Green Valley East
Model:	Lot:
City and Province: Bradford	Postal code:
Calculations	s 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: 1762
Sensible Eff. at -0C 75%	
Heating design conditions	Cooling design conditions
Outdoor temp -9.4 Indoor temp: 72 Mean soil tem; 48	Outdoor temp 86 Indoor temp: 75 Latitude: 44
Above grade walls	Below grade walls
Style A: As per 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/Ga	in Caculations based on CSA-F280-12 Effective R-Values
Notes: Residential New C	construction - Forced Air
Calculations p	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



Builder:

Trunk

Bayview Wellington

Date:

Air System Design

SB-12 Package A1

June 21, 2018

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

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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. Project # PJ-00204 System 1 Mane 14CIN THWU-12 David DaCosta JB-04876 Project: **Green Valley East** Model: Individual BCIN: Layout # A/C UNIT DATA: DESIGN LOAD SPECIFICATIONS AIR DISTRIBUTION & PRESSURE FURNACE/AIR HANDLER DATA: BOILER/WATER HEATER DATA: Level 1 Net Load 9,604 btu/h **Equipment External Static Pressure** 0.5 "w.c. 1.5 Ton Make Туре Amana Level 2 Net Load 8,672 btu/h **Additional Equipment Pressure Drop** 0.225 "w.c. Model AMEC960403ANA Model Cond.--1.5 Level 3 Net Load 7.639 btu/h **Available Design Pressure** 0.275 "w.c. Input Btu/h 40000 Input Btu/h Coil -1.5 Return Branch Longest Effective Length Output Btu/h 38400 Level 4 Net Load 0 btu/h 300 ft Output Btu/h Total Heat Loss 25 914 htu/h " W C Min.Output Btu/h ΔWH R/A Plenum Pressure 0 138 "w c 0.50 E.s.p. Blower DATA: **Total Heat Gain** 15,714 btu/h S/A Plenum Pressure 0.14 "w.c. Water Temp deg. F. W2 28,506 Btuh. Heating Air Flow Proportioning Factor 0.0298 cfm/btuh **AFUE** Blower Speed Selected: Blower Type ECM Combo System HL + 10% 96% Cooling Air Flow Proportioning Factor 20307 ft³ (Brushless DC OBC 12.3.1.5.(2)) **Building Volume Vb** 0.0491 cfm/btuh Aux. Heat Ventilation Load 895 Btuh. R/A Temp SB-12 Package Package A1 Heating Check Cooling Check 70 dea. F. 772 cfm 772 cfm Ventilation PVC 63.6 cfm S/A Temp 116 deg. F. Supply Branch and Grill Sizing Diffuser loss Temp. Rise>>> Cooling Air Flow Rate 772 cfm 0.01 "w.c. 46 deg. F. Selected cfm> 772 cfm Level 1 Level 2 S/A Outlet No. 2 5 6 Room Use BASE BASE BASE BASE FAM/KIT FAM/KIT **PWD** FOY Btu/Outlet 2401 2401 2401 2401 2635 2635 456 2945 **Heating Airflow Rate CFM** 72 72 72 72 79 79 14 88 Cooling Airflow Rate CFM 37 37 37 37 112 112 3 42 **Duct Design Pressure** 0.13 **Actual Duct Length** 33 24 15 35 37 34 **Equivalent Length** 70 80 120 110 70 70 70 70 70 70 70 70 70 70 80 110 110 130 70 70 70 70 70 70 70 70 70 70 Total Effective Length 103 104 124 125 70 70 70 70 70 70 70 70 70 115 147 114 164 70 70 70 70 70 70 70 70 70 70 70 Adjusted Pressure 0.13 0.13 0.10 0.10 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.11 0.09 0.11 0.08 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 **Duct Size Round** 5 6 **Outlet Size** 3x10 3x10 3x10 4x10 4x10 4x10 4x10 4x10 4x10 3x10 4x10 4x10 4x10 4x10 3x10 4x10 Trunk Level 3 Level 4 S/A Outlet No. 10 13 14 15 9 11 12 Room Use MAST MAST I AUN BFD 3 BFD 2 BATH FNS Btu/Outlet 1294 1294 121 2164 2208 353 205 **Heating Airflow Rate CFM** 39 39 11 Cooling Airflow Rate CFM 59 50 100 59 80 -5 **Duct Design Pressure** 0.13 **Actual Duct Length** 55 54 30 39 36 29 25 **Equivalent Length** 130 120 120 120 120 140 110 70 135 70 70 70 Total Effective Length 185 174 150 159 156 70 70 70 70 70 70 70 70 70 70 70 70 70 169 70 70 70 70 70 Adjusted Pressure 0.07 0.07 0.09 0.08 0.08 0.08 0.10 0.19 **Duct Size Round** 5 6 2 Outlet Size 4x10 3x10 3x10 3x10 3x10 3x10 4x10 Trunk R R C C Return Branch And Grill Sizing Grill Pressure Loss 0.02 "w.c **Return Trunk Duct Sizing** Supply Trunk Duct Sizing R/A Inlet No. 1R 2R 3R 4R 5R 6R 7R 8R 9R 10R 11R Trunk CFM Press. Round Rect. Size Trunk CFM Press. Round Rect. Size Inlet Air Volume CFM 143 374 105 150 **Duct Design Pressure** 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 0.12 772 0.06 14.0 24x10 400 0.07 11.0 10x10 Drop 14x8 667 234 0.07 5 13 36 31 z 0.06 13.5 R ٩n 848 10y7 **Actual Duct Length** 20x8 16x10 **Equivalent Length** 110 170 125 180 50 50 50 50 50 50 50 Υ 372 0.08 10.0 12x8 50 50 50 **Total Effective Length** 115 183 161 211 50 50 50 50 Х SITE COPY 0.07 w Adjusted Pressure 0.10 0.06 0.06 0.24 0.24 0.24 0.24 0.24 0.24 0.24 **Duct Size Round** 7.0 11.0 6.0 8.0 v Inlet Size FLC 6 Inlet Size 30 14 s R

Q



Heatloss/Gain Calculations CSA-F280-12

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e-mail dave@gtadesigns.ca

	Builder:	Bayview W	ellington	Date	te:	June 21	, 2018			Weather Data	Bradford	44	-9.4 86 22	48.2			Page 4
2012 OBC	Project:	Green Vall	ey East	Mode	el:	THWU	J-12		System 1	Heat Loss ^	Γ 81.4 deg. F	Ht gain ^T	11 deg. F	GTA:	1762	Project # Layout #	PJ-00204 JB-04876
Level	1		BASE														
Run ft. exposed wall			62 A	=	Α	Α		Α	Α	Α	Α	Α	Α		Α		A
Run ft. exposed wall			В		В	В		В	В	В	В	В	В		В		3
Ceiling heig			3.5 AG	3	3.5 AG	3.5 AG		3.5 AG		3.5 AG	3.5	AG					
Floor are			704 Area		Area	Area		Area	Area	Area	Area	Area	Area	a	Area		Area
Exposed Ceilings	A		Α		Α	Α		Α	Α	Α	Α	Α	Α		Α		A
Exposed Ceilings	В		В		В	В		В	В	В	В	В	В		В		3
Exposed Floor	s		Flr		Fir	Flr		Flr	Flr	Flr	Flr	Flr	Fir		Flr	1	Flr
Gross Exp Wall	A		217														
Gross Exp Wall	В		_														
Componen				Gain	Loss	Gain Loss	Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss	Gain Loss	s Gain	Loss	Gain I	oss Gain
North Shade																	
East/We				629													
Sou																	
WOB Window																	
Skylig	nt 2.03																
Door																	
Net exposed walls				101													
Net exposed walls																	
Exposed Ceilings																	
Exposed Ceilings																	
Exposed Floor Foundation Conductive Heatloss		2.73 0.1 e () or Abo	3990														
Heat Lea	e J Oli Grade	E () OF ADO	4517														
Total Conductive Heat Ga			4017	730													
Air Leakage Heat Loss/Ga		1.0663 0.046	1 4817														
Case		0.10 0.1		34													
Ventilation Case		14.07 11.8															
Case		0.06 0.1		80													
Heat Gain Peop	е	23															
Appliances Load		percent 294	3 2.0	1471													
Duct and Pipe los		10															
Level 1 HL Total 9,604	1	Total HL for per rooi	n 9604	ı													
Level 1 HG Total 3,010	Tota	al HG per room x 1.	3	3010													
	_																
Lovel	2		EAM/V	(IT	BWD												
Level			FAM/K		PWD		ρΥ										
Run ft. exposed wall	A		39 A		6 A	17 A	ργ	A	A	A	A	A	A		A		
Run ft. exposed wall Run ft. exposed wall	A B		39 A B		6 A B	17 A B	ρΥ	В	В	В	В	В	В		В	1	A 3
Run ft. exposed wall Run ft. exposed wall Ceiling heig	A B nt		39 A B 10.0	10	6 A B 0.0	17 A B 13.0		B 10.0	B 10.0	B 10.0	B 10.0	B 10.0	B 10.0		B 10.0	10.0	3
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are	A B nt		39 A B 10.0 573 Area	10	6 A B 0.0 36 Area	17 A B 13.0 100 Area		B 10.0 Area	B 10.0 Area	B 10.0 Area	B 10.0 Area	B 10.0 Area	B 10.0 Area	a	B 10.0 Area	10.0	3 Area
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings	A B nt a A		39 A B 10.0 573 Area A	10	6 A B 0.0 36 Area A	17 A B 13.0 100 Area A		B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	a	B 10.0 Area A	10.0 10.0	3 Area A
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings	A B nt a A B		39 A B 10.0 573 Area A B	10	6 A B 0.0 36 Area A B	17 A B 13.0 100 Area A B		B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	a	B 10.0 Area A B	10.0 10.0	3 Area A 3
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floo	A B nt aa A B		39 A B 10.0 573 Area A B Fir	10 3	6 A B 0.0 36 Area A B Fir	17 A B 13.0 100 Area A B Fir		B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	B 10.0 Area A	1	B 10.0 Area A	10.0 10.0	3 Area A
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floo Gross Exp Wall	A B B nt a A B S S A		39 A B 10.0 573 Area A B	10 3	6 A B 0.0 36 Area A B	17 A B 13.0 100 Area A B		B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	B 10.0 Area A B	a	B 10.0 Area A B	10.0 10.0	3 Area A 3
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floo Gross Exp Wall Gross Exp Wall	A B nt a A B s S A B	lLoss Gain	39 A B 10.0 573 Area A B Fir	10	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B FIr 221		B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen	A B nt a A B s A B s A B R R B R R B R R R R R R R R R R R R		39 A B 10.0 573 Area A B Fir 390	10 3	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B Fir		B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B	10.0 10.0 1	3 Area A 3
Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade	A B Int a A B B S S R-Values d 3.55	22.93 10.9	39 A B 10.0 573 Area A B Fir 390	10 S Gain	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B Fir 221 Gain Loss	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Cuiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floo Gross Exp Wall Componen North Shade	A B B Int a A B B B B B B B B B B B B B B B B B B	22.93 10.9 22.93 27.3	39 A B 10.0 573 Area A B Fir 390 Loss 1 5 80 1834	10 S Gain	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B FIr 221	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
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Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou	A B B S A B S S A B S S R-Values d 3.55 St 3.55 S S S S S S S S S S S S S S S S S S	22.93 10.9 22.93 27.3 22.93 20.8 40.90 22.1	39 A B 10.0 573 Area A B Fir 390 Loss 1 5 80 1834	10 S Gain	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B Fir 221 Gain Loss	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Culing heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Floo Gross Exp Wall Gross Exp Wall Componen North Shade EastWe	A B B S S A B S S R-Values d 3.55 St 3.55 S 1.99 nt 2.03	22.93 10.9 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2	39 A B 10.0 573 Area A B Fir 390 Loss 1 80 1834	10 S Gain	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B Fir 221 Gain Loss	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heig Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shadde EastWe Sou Existing Window	A B B B B B B B B B B B B B B B B B B B	22.93 10.9 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7	39 A B 10.0 573 Area A B Fir 390 Loss 1 5 80 1834	Gain 2188	6 A B 0.0 36 Area A B FIr	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2	Gain 98 356	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou Existing Window Skylig	A B B B B B B B B B B B B B B B B B B B	22.93 10.9 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2	39 A B 10.0 573 Area A B Fir 390 Loss 1 5 80 1834 9 9 5 310 1482	Gain 2188	6 A B	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2	Gain 98 356	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou Existing Window Skylig Door Net exposed walls Net exposed walls Exposed Ceilings	A B B B B S R-Values d J S S R-Values d J S S S R-Values d J S S S S S S S S S S S S S S S S S S	22.93 10.9 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6	39 A B 10.0 573 Area A B Fir 390 Loss 1 1834 9 5 310 1482	Gain 2188	6 A B	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2	Gain 98 356	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Cuiling heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade EastWe Sou Existing Window Skylig Doo	A B B B B S R-Values B B S S A B B S S R-Values S S S S S S S S S S S S S S S S S S S	22.93 10.9 22.93 27.3 22.93 22.81 40.90 22.1 40.10 88.2.2 20.35 2.7 4.78 0.6.6 9.58 1.2 1.37 0.6.6 3.56 1.6	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 1 5 5 80 1834 6 1482	Gain 2188	6 A B	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2	Gain 98 356	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floo Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou Existing Window Skylig Doo Net exposed walls Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Ceilings	A B B B S S R-Values S S I S S S S I S S S I S S S I S S S I S S S I S S S S I S S S S I S S S S S I S S S S I S S S S S I S S S S S I S S S S I S S S S I S S S S I S S S S I S S S S I S S S S I S S S I S S S I S S S I S S S I S S S I S S I S S I S S I S S I S S I S S I S S I S I S S I	22.93 10.9 22.93 27.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6 3.56 1.6 2.73 0.1	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 1 5 5 80 1834 6 1482	Gain 2188	6 A B	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2	Gain 98 356	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou Existing Window Skylig Dooo Net exposed walls Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive Heatloss	A B B B B B B B B B B B B B B B B B B B	22.93 10.9 22.93 27.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6 3.56 1.6 2.73 0.1	39 A B 10.0 573 Area A B Fir 390 Loss 1 80 1834 6 7 7	Gain 2188	6 A B B .0.0 36 Area A B Fir 60 Loss	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2 36 7 39 172 8	Gain 98 356 33 99 22 111	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade EastWe Sou Existing Window Skylig Doo Net exposed walls Ret exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive HeatLoss Total Conductive Verilings Fexposed Veilings Foundation Conductive HeatLoss	A B B B B B B B B B B B B B B B B B B B	22.93 10.9 22.93 27.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6 3.56 1.6 2.73 0.1	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 1 5 5 80 1834 6 1482	Gain 2188	6 A B	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2 36 7 39 172 8	98 356 33 99 22 111	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floo Gross Exp Wall Componen North Shade Existing Window Sou Existing Window Skylig Doo Net exposed walls Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive Heatloss Total Conductive	A B B B S S R-Values S I 1.99 tt 2.03 s s 4.000 A 17.03 B B 8.50 A 5.92 E B 2.286 B 2.286 S 1.99 to C S S S S S S S S S S S S S S S S S S	22.93 10.9 22.93 27.3 22.93 27.3 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 3.56 1.2 1.37 0.6 2.73 0.1 e () or Abo x	39 A B 10.0 573 Area A B Fir 390 Loss 1 5 80 1834 5 310 1482 9 4 6 6 7 7 3316	Gain 2188 2200 6	6 A B B.0.0 36 Area A B Fir 60 Loss	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8	Gain 98 356 33 99 22 111 53 566	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall	A B B S R-Values d 3.55 st 3.55 st 3.55 st 1.99 st 1.90 st 1.9	22.93 10.9 22.93 27.3 22.93 27.3 22.93 20.9 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6 3.56 1.6 2.73 0.1 e () or Abox x	39 A B 10.0 573 Area A B Fir 390 Loss 1 80 1834 5 310 1482 6 7 7 3316	Gain 2188 2200 6	6 A B B .0.0 36 Area A B Fir 60 Loss	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8	98 356 33 99 22 111	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shadde EastWe Sou Existing Window Skylig Doo Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Fexposed Ceilings Fexposed Floor Foundation Conductive Heat Loss/ Total Conductive Heat Ca Air Leakage Heat Loss/Ga	A B B B S R-Values S S R-Values S S R-Values S S R-Values S S S S S S S S S S S S S S S S S S S	22.93 10.9 22.93 27.8 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.8 3.56 1.6 2.73 0.1 e () or Abo x	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 1	Gain 2188 2200 6	6 A B B.0.0 36 Area A B Fir 60 Loss	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8	Gain 98 356 33 99 22 111 53 566	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Calling height Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Gross Exp Gross Exp Gross Exp Gross Exp Gross Exp Gross Gross Exp Gross Gross Exp Gross	A B B B S S R-Values S S I 1.99 I I 2.03 S S I 1.99 I I 2.03 S S I 1.99 I I 2.03 S S I 1.90 I I I 1.03 S S S I 1.03 S S I	22.93 10.9 22.93 27.8 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 3.56 1.6 2.73 0.1 e () or Abo x 0.5297 0.046 11.87 13.8	39 A B 10.0 573 Area A B Fir 390 Loss 1 5 80 1834 5 310 1482 9 9 4 6 6 7 7 3316	Gain 4 2188 2 200 6 3 2389 7 110	6 A B B.0.0 36 Area A B Fir 60 Loss 287 152	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8 39 2 9	98 356 33 99 22 111 53 566 82 26	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall	A B B S R-Values S A B B S S A B B S S A B B S S A B B S S A B B S A B B S A B A B	22.93 10.9 22.93 27.3 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6 3.56 1.6 2.73 0.1 e () or Abo x 0.5297 0.046 0.05 0.1 14.07 11.8 0.06 0.1	39 A B 10.0 573 Area A B Fir 390 Loss 1 1	Gain 2188 2200 6	6 A B B.0.0 36 Area A B Fir 60 Loss	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8 39 2 9	Gain 98 356 33 99 22 111 53 566	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Celling height Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shadde FastWe Sou Existing Window Skylig Doo Net exposed walls Exposed Ceilings Exposed Ceilings	A B B tt t a A A B B S R-Values S S R-Values S S R-Values S S S S S S S S S S S S S S S S S S S	22.93 10.9 22.93 27.8 22.93 27.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.8 3.56 1.6 2.73 0.1 e () or Abo x 0.5297 0.046 0.05 0.1 14.07 11.8.8 0.06 0.1 0.06 0.1	39 A B 10.0 573 Area A B Fir 390 Loss 1 1	Gain 2188 2200 6	6 A B B.0.0 36 Area A B Fir 60 Loss 287 152	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8 39 2 9	98 356 33 99 22 111 53 566 82 26	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade EastWe Sor Existing Window Skylig Dooo Net exposed walls Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive Heatloss Total Conductive Heat Los Air Leakage Heat Loss/Ga Ventilation Case Ventilation Case Heat Gain Peop Appliances Load Air Leat Again Peop Appliances Load	A B B B R-Values S R-Values S S R-Values S S S R-Values S S S R-Values S S S R-Values S S R-Values	22.93 10.9 22.93 27.3 22.93 27.3 22.93 20.8 40.90 22.1 40.10 882. 20.35 2.7 4.78 0.6 3.56 1.6 2.73 0.1 e () or Abox x 0.5297 0.046 0.05 0.1 14.07 11.8 0.06 0.1 14.07 12.8 percent 294	39 A B 10.0 573 Area A B Fir 390 Loss 1 80 1834 6 7 7 3316 1 1757 8 1 198 9 3 1.0	Gain 4 2188 2 200 6 3 2389 7 110	6 A B B.0.0 36 Area A B Fir 60 Loss 287 152	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8 39 2 9	98 356 33 99 22 111 53 566 82 26	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigh Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou Existing Window Skylig Door Net exposed walls Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive Heatloss Total Conductive Air Leakage Heat Loss/Ga Ventilation Case Heat Gan Peop Appliances Loac Duct and Pipe los	A B B B B B B B B B B B B B B B B B B B	22.93 10.9 22.93 27.3 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 12.7 1.37 0.6 3.56 1.6 2.73 0.1 e () or Abo x 0.5297 0.046 0.05 0.1 14.07 11.8 0.06 0.1 23 percent 294	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 1 1482 5 5 310 1482 9 1 1 1757 1 1 1 198	Gain 2188 2 200 6 2389 7 110 3 262 736	6 A B B Fir 600 Loss 287 152 17	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2 36 7 39 172 8 39 2 9 4 1	Gain 98 356 33 99 22 111 53 566 82 26 11 62	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Calling height Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exposed Gross Gross Exposed Walls Return Gross Exposed Gross Gross Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Gross Gr	A B B B S R-Values S B B S R-Values S B B S R-Values S B R-Values S B R-Values S S	22.93 10.9 22.93 20.8 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 1.2 1.37 0.6 2.73 0.1 e () or Abo x 0.5297 0.046 0.05 0.1 14.07 11.8 0.06 0.1 23 percent 294 percent 294 for total HL for per root	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 5 80 1834 9 4 6 6 7 7 3316 1757 1 1 9 9 1 198 9 1 1 198 9 1 1 198	Gain 2188 2200 6 6 2389 110 3 262 736	6 A B B	17 A B 13.0 100 Area A B Fir 221 Gain Loss 36 7 39 172 8 39 2 9 4 1	Gain 98 356 33 99 22 111 53 566 82 26 11 62	B 10.0 Area A B Fir Loss Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3
Run ft. exposed wall Run ft. exposed wall Run ft. exposed wall Ceiling heigi Floor are Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Gross Exp Wall Gross Exp Wall Gross Exp Wall Componen North Shade East/We Sou Existing Window Skylig Door Net exposed walls Net exposed walls Exposed Ceilings Exposed Ceilings Exposed Ceilings Exposed Floor Foundation Conductive Heatloss Total Conductive Heat Loss/Ga Air Leakage Heat Loss/Ga Ventilation Case Heat Gain Peop Appliances Loac Duct and Pipe los	A B B B S R-Values S B B S R-Values S B B S R-Values S B R-Values S B R-Values S S	22.93 10.9 22.93 27.3 22.93 27.3 22.93 20.8 40.90 22.1 40.10 88.2 20.35 2.7 4.78 0.6 9.58 12.7 1.37 0.6 3.56 1.6 2.73 0.1 e () or Abo x 0.5297 0.046 0.05 0.1 14.07 11.8 0.06 0.1 23 percent 294	39 A B 10.0 573 Area A B Fir 390 Loss 1 1 5 80 1834 9 4 6 6 7 7 3316 1757 1 1 9 9 1 198 9 1 1 198 9 1 1 198	Gain 2188 2 200 6 2389 7 110 3 262 736	6 A B B Fir 600 Loss 287 152 17	17 A B 13.0 100 Area A B Fir 221 Gain Loss 13 2 36 7 39 172 8 39 2 9 4 1	Gain 98 356 33 99 22 111 53 566 82 26 11 62	B 10.0 Area A B Fir Loss Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir	B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0 10.0 1	3 Area A 3 3

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Man 16Cot 2

David DaCosta

SB-12 Package Package A1



Heatloss/Gain Calculations CSA-F280-12

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

e-mail dave@gtadesigns.ca

		Builder:	Bay	yview Welli	ngton		Date:			June 21, 2	2018					Weath	ner Data	Bradford	44	-9.4 86	6 22	48.2				Page 5
2012 OBC		Project:		een Valley		_	Model:			THWU-1	12			System	1	Heat	Loss ^T 8	1.4 dea. F	Ht gain ^T	11 de	lea. F	GTA:	1762	Proj Lav	ect # out #	PJ-00204 JB-04876
		i roject.		cen vancy			nouci											uog	gu							
	Level 3				MAST	Г		LAUN		BED	3	BED 2	!	BATH		ENS										
	n ft. exposed wall A				19 A			A		14 A		10 A		Α		Α		Α	Α		Α		Α		Α	
Run	n ft. exposed wall B				В			В	_	В		В		В		В		В	В		В		В		В	
	Ceiling height				8.0		8.0	_		.0		8.0		8.0		8.0		8.0	8.0		8.0		8.0		8.0	
_	Floor area				352 Area			Area		23 Area		203 Area		61 Area		103 Area		Area	Area		Area		Area		Area	3
<u> </u>	Exposed Ceilings A				352 A B		61	A B	1	23 A B		203 A B		61 A B		103 A B		A B	A B		A B		A B		A B	
E	Exposed Ceilings B Exposed Floors				B Flr			В Fir		B 23 Flr		В 122 Flr		51 Flr		В Fir		B Flr	B Fir		B Flr		B Flr		B Flr	
	Gross Exp Wall A				152			FII		23 FII 12		80 80		31 FII		FII		FII	FII		FII		FII		FII	
	Gross Exp Wall B				132					12		ou														
	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	Los	s Gain
	North Shaded	3.55		10.91	2000	Juin	n f	2000		2000	T T			2000	- Cum		T 1	2000 00			2000	- Cu	1			Juni
	East/West	3.55		27.35	32 734	875				33 757	903	22 504	602													
	South	3.55			02 .0.	0.0																				
	Existing Windows	1.99																								
	Skylight	2.03																								
	Doors	4.00		2.75																						
Ne	let exposed walls A	17.03	4.78	0.65	120 574	78				79 378	51	58 277	37													
Ne	let exposed walls B	8.50	9.58	1.29																						
E	Exposed Ceilings A	59.22	1.37	0.64	352 484	226	61	84	39 1	23 169	79	203 279	130	61 84	39	103 142	66									
	Exposed Ceilings B	22.86		1.66																						
	Exposed Floors	29.80		0.17						23 63	3 4	122 333	20	51 139	9											
Foundation Cond																										
Total Conductive	Heat Loss				1791			84		1366		1394		223		142	!									
	Heat Gain					1179			39		1036		790		48		66									
Air Leakage	Heat Loss/Gain		0.3854	0.0461	690	54		32	2	526	48	537	36	86	2	55	3									
	Case 1		0.04	0.11																						
Ventilation	Case 2		14.07	11.88																						
	Case 3	х	0.06	0.11	107			5	4	82		83		13	5	8	7									
	Heat Gain People			239	2	478				1	239	1	239													
	Appliances Loads	1 =.25	percent	2943			1.0		736						_											
	Duct and Pipe loss			10%	0500			404		1 189		1 193	103	1 31	5											
Level 3 HL Total Level 3 HG Total	7,639 7,250		Total HL for al HG per ro		2588	2393		121	1015	2164	2034	2208	1632	353	78	205	99									
Level 3 HG Total																							1			
		1010	а о ро о	1.0	L									-			1									
		1011	ш 110 рол 10	4 1.0														L								
			a. 110 po. 10	41.0																						
	Level 4		а. 1.0 ро. 10	41.0								L														
Run	Level 4		а. 110 ро. 10	A 1.0	A			A		A		A		A		A		A	A		A		A		A	
Run	Level 4 n ft. exposed wall A n ft. exposed wall B		ш. то рог то	4 1.0	A B			A B		A B		A B		A B		A B		A B	A B		A B		A B		A B	
Run	Level 4 n ft. exposed wall A n ft. exposed wall B Ceiling height		а. то ро. то	4 1.0	В		,	В		В		В		В		В		В	В		В		В		В	
Run Run	Level 4 n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area			A 10	B Area			B Area		B Area		B Area		B Area		B Area		B Area	B Area		B Area		B Area		B Area	a
Run Run E	Level 4 n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area Exposed Ceilings A			A 110	B Area A	,		B Area A		B Area A		B Area A		B Area A		B Area A		B Area A	B Area A		B Area A		B Area A		B Area A	
Run Run E	Level 4 n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B			A 110	B Area A B	,	,	B Area A B		B Area A B		B Area A B		B Area A B		B Area A B		B Area A B	B Area A B		B Area A B		B Area A B		B Area A B	a
Run Run E E	Level 4 In ft. exposed wall A Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors			4 100	B Area A		,	B Area A		B Area A		B Area A		B Area A		B Area A		B Area A	B Area A		B Area A		B Area A		B Area A	3
Run Run E E	Level 4. In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A				B Area A B		,	B Area A B		B Area A B		B Area A B		B Area A B		B Area A B		B Area A B	B Area A B		B Area A B		B Area A B		B Area A B	a
Run Run E E	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall B				B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E	Level 4 n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components	R-Values	Loss	Gain	B Area A B	Gain	,	B Area A B Fir	Gain	B Area A B	Gain	B Area A B		B Area A B FIr	Gain	B Area A B FIr	Gain	B Area A B	B Area A B	Gain	B Area A B Fir	Gain	B Area A B	Gain	B Area A B Fir	s Gain
Run Run E E	Level 4. In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded	R-Values 3.55	Loss 22.93	Gain 10.91	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E	Level 4 n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components	R-Values 3.55 3.55	Loss 22.93 22.93	Gain 10.91 27.35	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run E E	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South	R-Values 3.55 3.55 3.55	Loss 22.93 22.93 22.93	Gain 10.91 27.35 20.89	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run E E	Level 4, n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows	R-Values 3.55 3.55 3.55 1.99	Loss 22.93 22.93 22.93 40.90	Gain 10.91 27.35 20.89 22.15	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run E E	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight	R-Values 3.55 3.55 3.55 1.99 2.03	Loss 22.93 22.93 22.93 40.90 40.10	Gain 10.91 27.35 20.89 22.15 88.23	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run E E	Level 4, n ft. exposed wall A n ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows	R-Values 3.55 3.55 3.55 1.99	Loss 22.93 22.93 22.93 40.90 40.10 20.35	Gain 10.91 27.35 20.89 22.15	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run	Level 4. In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A	R-Values 3.55 3.55 3.55 1.99 2.03 4.00	Loss 22.93 22.93 40.90 40.10 2.35 4.78	Gain 10.91 27.355 20.89 22.15 88.23 2.75	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Let exposed walls A let exposed walls A Exposed ceilings A	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03	Loss 22.93 22.93 22.93 40.90 40.10 20.35 4.78	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Let exposed walls A let exposed walls B	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22	Loss 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	Loss 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Foundation Cond	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	Loss 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Net Net E E Foundation Cond Total Conductive	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors idet exposed walls A let exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors ductive Heatloss Heat Loss Heat Gain	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Foundation Cond	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors ductive Heatloss Heat Loss Heat Cain Heat Loss/Gain	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E Ne Ne Ne Toundation Cond Total Conductive Air Leakage	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors Ide texposed walls A let exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors ductive Heatloss Heat Loss Heat Gain Heat Loss/Gain	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Net Net E E Foundation Cond	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings B Exposed Ceilings A Exposed Ceilings A Exposed Floors ductive Heatloss Heat Loss Heat Casi Heat Casi Heat Loss/Gain Case 2	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0461 0.11 11.88	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Ne Ne Ne Total Conductive Air Leakage	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls B Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors ductive Heatloss Heat Loss Heat Case 1 Case 1 Case 2 Case 2	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0461 0.11 11.88 0.11	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Net Net E E Foundation Cond Total Conductive Air Leakage Ventilation	Level 4 In ft. exposed wall A In ft. exposed wall A Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A let exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors ductive Heatloss Heat Loss/Gain Heat Loss/Gain Heat Loss/Gain Case 1 Case 2 Case 2 Case 3 Heat Gain People	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 0.0000 0.00 14.07	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0461 0.11 11.88 0.11 239	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E Ne Ne Ne E E Foundation Cond Total Conductive Air Leakage Ventilation	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Exposed Floors ductive Heatloss Heat Loss Heat Loss Heat Gain Case 2 Case 3 Less 2 Less 2 Less 4 Les Gain People Appliances Loads	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0461 0.11 11.88 0.11 239	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E No No No No Total Conductive Air Leakage Ventilation	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings B Exposed Floors Let exposed Geilings A Exposed Ceilings A Exposed Geilings A Exposed Floors Heat Loss Heat Loss Heat Cain Floor Loss 1 Case 1 Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 0.0000 0.00 14.07 0.06	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.645 1.66 0.17 0.0461 0.11 11.88 0.11 239 2943	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E E Note Note E E Foundation Cond Total Conductive Air Leakage Ventilation	Level 4 In ft. exposed wall A In ft. exposed wall A Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Floors ductive Heatloss Heat Loss/Gain Heat Loss/Gain Heat Loss/Gain Heat People Appliances Loads Duct and Pipe loss 0	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 x 1 = .25	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 0.0000 14.07 0.06 percent	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0461 0.11 11.88 0.11 239 2943 10% per room	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	
Run Run E E No No No No No E E E Foundation Cond Total Conductive Air Leakage Ventilation	Level 4 In ft. exposed wall A In ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded East/West South Existing Windows Skylight Doors let exposed walls A let exposed walls A Exposed Ceilings B Exposed Floors Let exposed Geilings A Exposed Ceilings A Exposed Geilings A Exposed Floors Heat Loss Heat Loss Heat Cain Floor Loss 1 Case 1 Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	R-Values 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 x 1 = .25	22.93 22.93 40.90 40.10 20.35 4.78 9.58 1.37 3.56 2.73 0.0000 0.00 14.07 0.06	Gain 10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17 0.0461 0.11 11.88 0.11 239 2943 10% per room	B Area A B Fir		,	B Area A B Fir		B Area A B Fir		B Area A B Fir		B Area A B FIr		B Area A B FIr		B Area A B Fir	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	Gain	B Area A B Fir	

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

25,914 Total Heat Loss btu/h Total Heat Gain 15,714

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

Mane Maleta

David DaCosta

SB-12 Package Package A1



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

Project # Layout #

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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 David DaCosta

Individual BCIN: 32964 Division C subsection 3.2.5. of the Building Code. Mana Aleta

Package:	Package A1			
Project:	Bradford	Model:	THWU-12	
	RESIDENTIAL MECHANICAL For systems serving one dwelling unit & co			
	Location of Installation	Total Ve	ntilation Capacity 9.32.3.	3(1)
Lot #	Plan #	Bsmt & Master Bdrm	2 @ 21.2 cfr	m 42.4 cfm
Township	Bradford	Other Bedrooms Bathrooms & Kitchen	2 @ 10.6 cfr 4 @ 10.6 cfr	m 21.2 cfm
Roll #	Permit #	Other rooms	3 @ 10.6 cfr Total	m 31.8 cfm 137.8
Address				
		Principal \	Ventilation Capacity 9.32.	3.4(1)
	Builder	-		
Name	Bayview Wellington	Master bedroom Other bedrooms	1 @ 31.8 cfr 2 @ 15.9 cfr	m <u>31.8</u> cfm
Address			Total	63.6
City				
Tel	Fax	Princi Make	ipal Exhaust Fan Capacit Model	y Location
Tei	ГФЛ	LifeBreath	RNC155	Base
	Installing Contractor	Liiobicatii	INIO 100	Dase
Name	<u> </u>	132 cfm		Sones or Equiv.
Address		Не	eat Recovery Ventilator	
		Make	LifeBreath	
City		Model	RNC155	OO of molecus
Tel	Fax	Sensible efficiency @ -	32 cfm high 25 dea C	80 cfm low 71%
_		Sensible efficiency @ 0) deg Č	<u>75%</u>
			nce HRV/ERV to within 10	
0) 4	Combustion Appliances 9.32.3.1(1) Direct vent (sealed combustion) only	Supple	mental Ventilation Capac	eity
a) <u>x</u> b)	Positive venting induced draft (except fireplaces)	Total ventilation capaci	tv	137.8
c)	Natural draft, B-vent or induced draft fireplaces	Less principal exhaust	capacity	63.6
d)	Solid fuel (including fireplaces)	REQUIRED supplement	ntal vent. Capacity	74.2 cfm
e)	No combustion Appliances			
		Sup	plemental Fans 9.32.3.5.	
	Heating System	Location	cfm Model	Sones
х	Forced air	Ens	50 XB50	0.3
	Non forced air Electric space heat (if over 10% of heat load)	Bath	50 XB50	0.3
	House Type 9.32.3.1(2)			
l x	Type a) or b) appliances only, no solid fuel	all fans HVI listed	Make Broan	or Equiv.
	Type I except with solid fuel (including fireplace) Any type c) appliance		Designer Certification	
III IV	Type I or II either electric space heat		s ventilation system has be	en designed
Other	Type I, II or IV no forced air	in accordance with the		o doorgriod

III Any type c) appliance IV Type I or II either electric space heat ther Type I, II or IV no forced air	Designer Certification I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.
System Design Option	Name David DaCosta
1 Exhaust only / forced air system 2 HRV WITH DUCTING / forced air system	Signature Hans Alexander
3 x HRV simplified connection to forced air system 4 HRV full ducting/not coupled to forced air system Part 6 design	HRAI # 3190 BCIN # 32964
	Date June 21, 2018

Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

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Project # PJ-00204 Layout # JB-04876

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

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 Princip	oal Author	rity						
Application No:					Model/Ce	rtification Nu	mber					
A. Project Information					I.							
Building number, street name							Unit numb	er	Lot/Con			
			THWU-	12								
Municipality Bradford			Postal cod	de	Reg. Plan number / other description							
B. Prescriptive Compliance [indica	ilding code	e complia	nce packa	ge being	employed in	the house	design]					
SB-12 Prescriptive (input design pa	SB-12 Prescriptive (input design package): Pac							Table:	3.1.1.2.	<u>A</u>		
C. Project Design Conditions												
Climatic Zone (SB-1):		Heat. E	quip. Ef	ficiency			Spac	e Heating F	uel Sourc	e		
✓ Zone 1 (< 5000 degree days)		√ ≥ 92	% AFUE		V	Gas		Propane		Solid Fuel		
Zone 2 (≥ 5000 degree days)		□ ≥8	4% < 92%	6 AFUE		Oil		Electric		Earth Energy		
Ratio of Windows, Skylights & Glas	s (W, S	& G) to \	Nall Area	a			Other I	Building Ch	aracteris	tics		
Anna of Walls 200 02 m2 on 2027 0	412				☐ Log/l	Post&Beam		ICF Above	Grade	☐ ICF Basement		
Area of Walls = <u>282.23</u> m ² or <u>3037.9</u>	ft²	W,S &	G % =	<u>7%</u>	☐ Slab	-on-ground	П	Walkout Ba	sement			
					☑ Air C	Conditioning	П	Combo Unit	t			
Area of W, S & G = <u>18.859</u> m ² or <u>203.0</u>	ft²	Utilize V	Vindow	☐ Yes	☐ Air S	Sourced Hea	t Pump (A	SHP)				
		Averaging				☐ Ground Source Heat Pump (GSHP)						
D. Building Specifications [provide	values a	nd ratings	of the en	ergy effici	ency com	ponents prop	posed]					
Energy Efficiency Substitutions												
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5))												
☐ Combined space heating and domestic	water he	ating syst	ems (3.1.	1.2(7) / 3.	1.1.3.(7))							
☐ Airtightness substitution(s)		☐ Table 3.1.1.4.B Required:				ed: Permitted Substitution:						
Airtightness test required		Table 3.1	1.4.0	Required:	ed: Permitted Substitution:							
(Refer to Design Guide Attached)		Table 3.1		Required:	: Permitted Substit					n:		
Building Component		mum RS //aximum			Building Component					Efficiency Ratings		
Thermal Insulation	Non	ninal	Effe	ctive	Windo	ws & Doo	rs Provide	e U-Value ⁽¹⁾ o	r ER rating	,		
Ceiling with Attic Space	6	0			Window	s/Sliding G	lass Doo	rs		1.6		
Ceiling without Attic Space	3	1			Skylight	S				2.8		
Exposed Floor	3	1			Mecha	nicals						
Walls Above Grade	22				Heating	Equip.(AFL	JE)			96%		
Basement Walls		20.0ci			HRV Eff	ficiency (SR	E% at 0°C	C)		75%		
Slab (all >600mm below grade)	1	x			DHW H	eater (EF)				0.80		
Slab (edge only ≤600mm below grade)	1	0			DWHR	(CSA B55.1	(min. 42%	efficiency))		#Showers 2		
Slab (all ≤600mm below grade, or heated)	1	0			Combin	ed Heating	System					
(1) U value to be provided in either W/(m²·K) or Bt	u/(h·ft·F) l	out not bot	h.							•		
E. Designer(s) [name(s) & BCIN(s), if	applicable	e, of perso	n(s) provi	iding infor	mation he	rein to subst	antiate tha	at design mee	ts building	code]		
Name				BCIN		Signature						
David DaCosta				329	964			Mane	14C=	/		
Form authorized by OHRA OROA IMCRO Revised December 1, 20					- ·							





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

Page

Vent

Case

PJ-00204 Project # JB-04876 Layout #

Package: Package A1 System: System 1 Project: **Bradford** Model: THWU-12

Air Leakage Calculations **Building Air Leakage Heat Loss Building Air Leakage Heat Gain** LRairh Vb HLleak Vb HG^T HG Leak В В LRairh 0.018 0.324 20307 81.4 9634 0.018 0.079 20307 11 317

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)									
Laval	Level	Building	Level Conductive	Air Leakage Heat Loss					
Level	Factor (LF)	Air	Heat Loss	Multiplier					
Level 1	0.5		4517	1.0663					
Level 2	0.3	9634	5456	0.5297					
Level 3	0.2	9034	5000	0.3854					
Level 4	0		0	0.0000					

		Air Leakage Heat Gain
HG LEAK	317	0.0461
BUILDING CONDUCTIVE HEAT GAIN	6881	0.0401

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						

Levels this Dwelling
3

Ventilation Calculations

			V	entilation I	Нe				
C	PVC	HL^T	(1-E) HRV	HLbvent		С	PVC	HG^T	
1.08	63.6	81.4	0.16	895		1.1	63.6	11	

Ventilation Heat Gain						
С	PVC	HG^T	HGbvent			
1.1	63.6	11	756			
55.5						

Ventilation Heat Gain

Case 1

Case 2

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exh	aust Only	Multiplier
HGbvent 756		0.11
Ruilding 6991		0.11

Case 1 - Exhaust Only						
Level LF HLbvent LVL Cond. HL Multiplier						
Level 1	0.5		4517	0.10		
Level 2	0.3	895	5456	0.05		
Level 3	0.2	093	5000	0.04		
Level 4	0		0	0.00		

Case 2

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Ventilation Heat Loss

ent

Case

Ventilation Heat Loss (Direct Ducted Systems)	Ventilation Heat Gain (Direct Ducted Systems)

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

		Multiplier
С	HG^T	11.88
1.08	11	11.00

Case 3	Case 3
--------	--------

	HLbvent	Multiplier
Total Ventilation Load	895	0.06

Ventilation Heat Loss (Forced Air Systems)

		Vent Heat Gain	Multiplier	ĺ
HGbvent	HG*1.3	756	0.11	Ī
756	1	750	0.11	

Ventilation Heat Gain (Forced Air Systems)

Foundation Conductive Heatloss Level 1	1169	Watts	3990	Btu/h	
	1				•
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 Shiel	ding		
Building Site:	Suburban, forest		
Walls:	Heavy ▼		
Flue:	Heavy ▼		
Highest Ceiling Height (m):	6.55		
Building Config	guration		
Туре:	Semi-Detached		
Number of Stories:	Two		
Foundation:	Shallow		
House Volume (m³):	575.08		
Air Leakage/Ve	entilation		
Air Tightness Type:	Present (1961-) (ACH=3.57)		
	ELA @ 10 Pa. 322.44 cm²		
Custom BDT Data:	3.57 ACH @ 50 Pa		
Mechanical Ventilation (L/s):	Total Supply: Total Exhaust:		
	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		

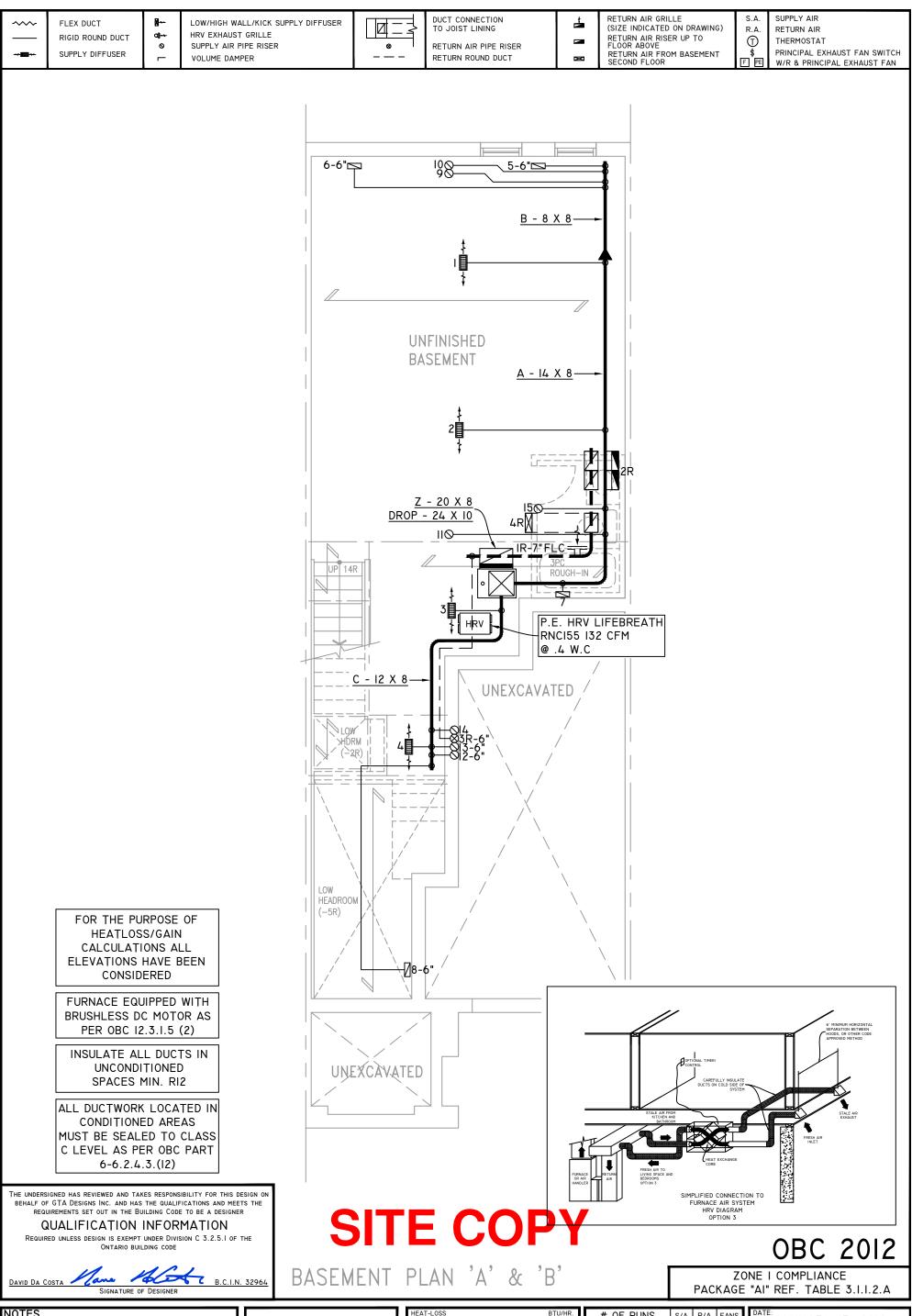


Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description			
Province:		Ontario	
Region:		Bradford	
	Site D	escription	
Soil Conductivity:		High conductivity: moist soil	
Water Table:		Normal (7-10 m, 23-33 Ft) ▼	
For	undatio	on Dimensions	
Floor Length (m):	17.62		
Floor Width (m):	3.72		
Exposed Perimeter (m):	18.90		
Wall Height (m):	2.59		
Depth Below Grade (m):		Insulation Configuration	
Window Area (m²):	2.14		
Door Area (m²):	0.00		
	Radi	ant Slab	
Heated Fraction of the Slab:	0		
Fluid Temperature (°C):	33		
	Desig	n Months	
Heating Month	1		
	Founda	ation Loads	
Heating Load (Watts):		1169	





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 RI2 UNDERCUT

ALL DOORS I" 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	BTU/HR.
25,914	·
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
AMEC960403AN	IΑ
UNIT HEATING INPUT	BTU/HR.
40,000	
UNIT HEATING OUTPUT	BTU/HR.
38,400	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
772	

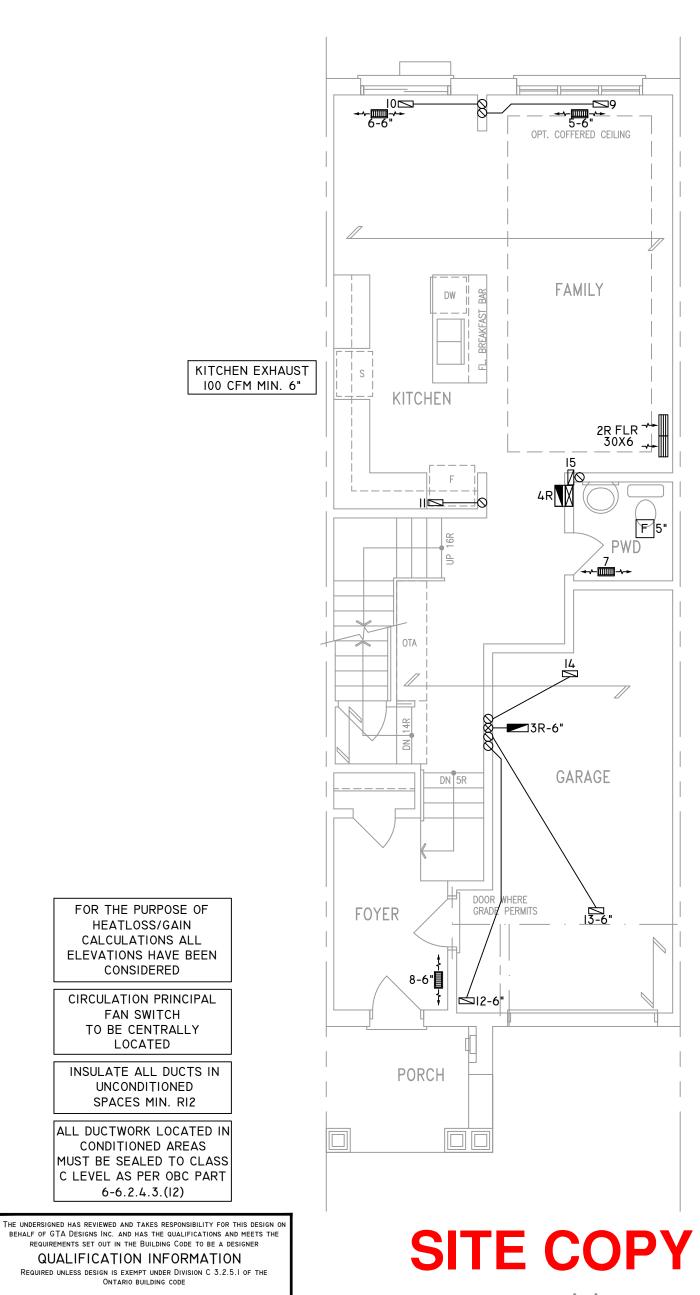
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	2	3
IST FLOOR	4	I	2
BASEMENT	4		
FLOOR PLAN: BASEM	IFNT	-	

DRAW

	4	I NI III	DASE
PROJECT:		BASEI	LOOR PLAN
BF	1762	CHECKED:	RAWN BY:
SCALE:	DRAWING NO.		JB-0

JANUARY 15, 2019 BAYVIEW WELLINGTON MODEL: THWU-I2

EN VALLEY EAST RADFORD,ONT. 3/16" = 1'-0"



GROUND FLOOR PLAN 'A'

OBC 2012

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

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

FLEX DUCT

RIGID ROUND DUCT

SUPPLY DIFFUSER

0

LOW/HIGH WALL/KICK SUPPLY DIFFUSER

HRV EXHAUST GRILLE

VOLUME DAMPER

SUPPLY AIR PIPE RISER

BUILDING CODE. ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

PROVIDE BALANCING DAMPERS ON ALL BRANCHES. ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY) INSULATE DUCTS IN UNCONDITIONED SPACES RIZ UNDERCUT ALL DOORS I* 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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MISSISSAUGA, ONT. L4T 0A4 TEL: 905-671-9800 EMAIL: DAVE@GTADESIGNS.CA WEB: WWW.GTADESIGNS.CA

25,914	5 7 6 7 11 11
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
AMEC960403AN	
UNIT HEATING INPUT	BTU/HR.
40,000	
UNIT HEATING OUTPUT	BTU/HR.
38,400	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
772	

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	2	3
IST FLOOR	4	I	2
BASEMENT	4		
FLOOR PLAN:			

RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)

RETURN AIR FROM BASEMENT SECOND FLOOR

RETURN AIR RISER UP TO FLOOR ABOVE

DUCT CONNECTION TO JOIST LINING

8

RETURN AIR PIPE RISER

RETURN ROUND DUCT

SUPPLY AIR

RETURN AIR

THERMOSTAT

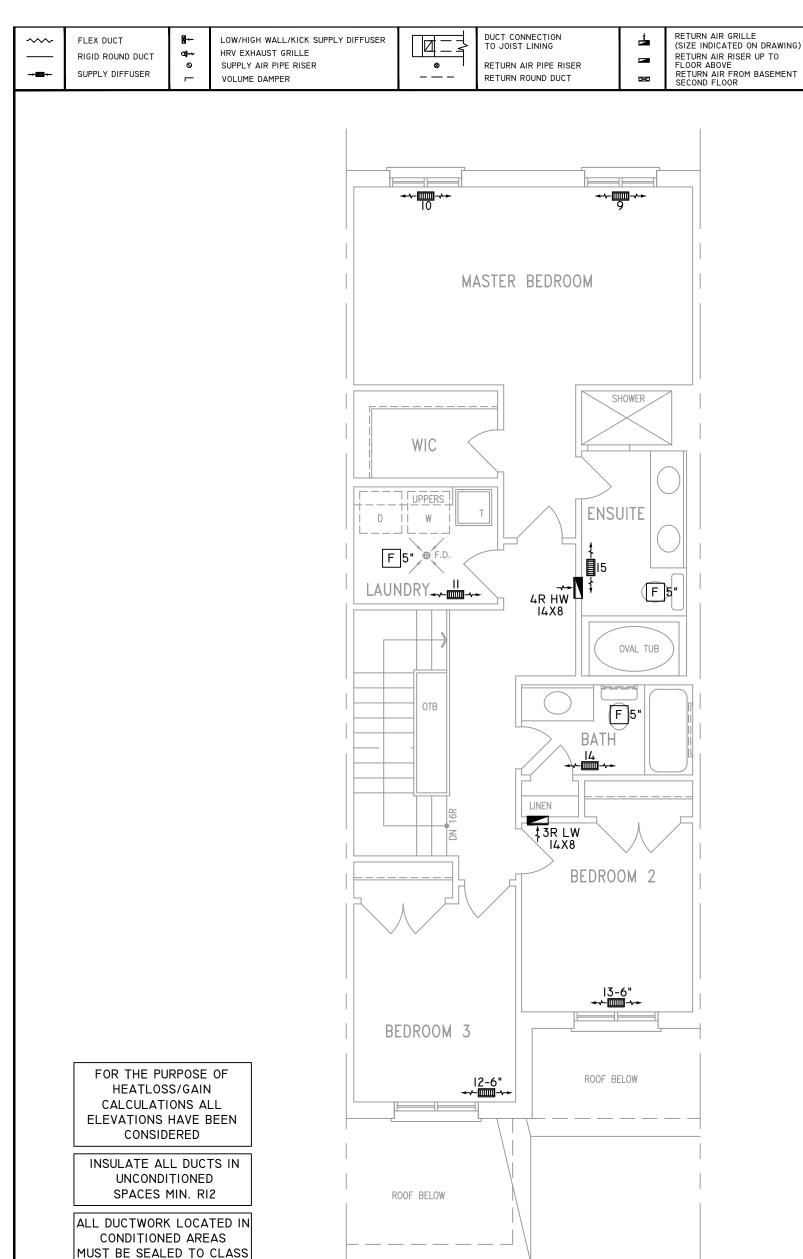
PRINCIPAL EXHAUST FAN SWITCH

R.A

1

BAGETTETT	- ' '			
FLOOR PLAN: GROUND		PROJECT: GREEN VALLEY EAST		
DRAWN BY: CHECKED: JL DD	1762	BRADFORD,ONT.		
JB-04876	DRAWING NO. M2	SCALE: 3/16" = 1'-0"		

JANUARY 15, 2019 BAYVIEW WELLINGTON THWU-I2



SITE COPY

SECOND FLOOR PLAN 'A'

OBC 2012

ZONE I COMPLIANCE PACKAGE "AI" REF. TABLE 3.I.I.2.A

SUPPLY AIR

RETURN AIR

THERMOSTAT

PRINCIPAL EXHAUST FAN SWITCH

R.A.

1

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO

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

BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.
ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT
ALL DOORS I" MIN.

ALL DOORS I' 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.

MISSISSAUGA, ONT. L4T 0A4 TEL: 905-671-9800 email: dave@gtadesigns.ca web: www.gtadesigns.ca

UEAT 1 000	0.711.010
HEAT-LOSS	BTU/HR.
25,914	
,	
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
AMEC960403AN	Α
UNIT HEATING INPUT	BTU/HR.
40,000	
UNIT HEATING OUTPUT	BTU/HR.
38,400	
A/C COOLING CAPACITY	TONS.
1.5	
FAN SPEED	CFM
772	

				_
# OF RUNS	S/A	R/A	FANS	
3RD FLOOR				lŀ
2ND FLOOR	7	2	3	
IST FLOOR	4	I	2	
BASEMENT	4	-		
				ìt
FLOOR PLAN: SECOND				Ш
SECOND	FI O	OK		П

The state of the s			
OOR PLAN	l·		
	SECOND		0R
RAWN BY:	CHECKED:	SQFT	
. 11	DD		1762
OL.			
AYOUT NO.		DRAWIN	G NO.
JB-04	48/6	1	M.5

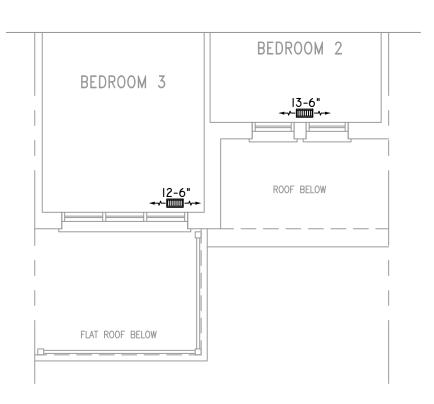
JANUARY 15, 2019
BAYVIEW WELLINGTON
MODEL:
THWU-I2
PROJECT:

GREEN VALLEY EAST BRADFORD,ONT. DUCT CONNECTION
TO JOIST LINING
RETURN AIR PIPE RISER
RETURN ROUND DUCT

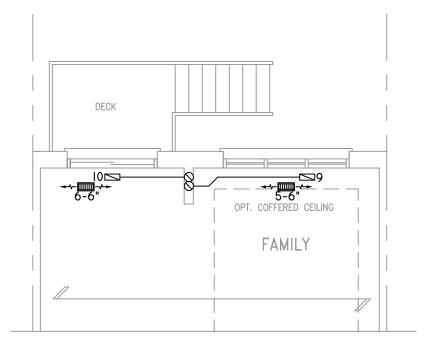
ING PIPE RISER ID DUCT RETURN AIR GRILLE
(SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE
RETURN AIR FROM BASEMENT
SECOND FLOOR

S.A. R.A. T

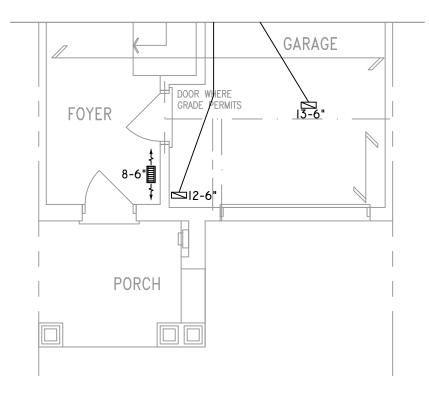
SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH



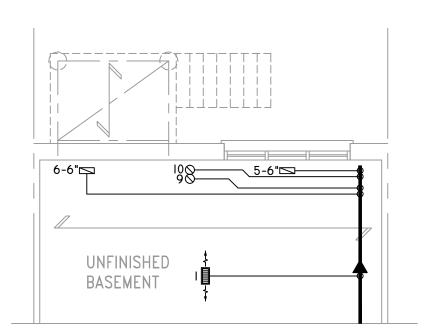
PART. SECOND FLOOR PLAN 'B'



PARTIAL GROUND FLOOR PLAN WOD COND 9R AND MORE



PART. GROUND FLOOR PLAN 'B'



PARTIAL BASEMENT PLAN WOD COND 9R AND MORE

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

SITE COPY

OBC 2012

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE

SPECIFIED.

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ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES RI2 UNDERCUT
ALL DOORS I" MIN.

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EMAIL: DAVE@GTADESIGNS.CA

WEB: WWW.GTADESIGNS.CA

HEAT-LUSS	25,914	BTU/HR.
	20,714	
UNIT MAKE		OR EQUAL.
	AMANA	
UNIT MODEL		OR EQUAL.
	C960403A	
UNIT HEATING INP	JT	BTU/HR.
	40,000	
UNIT HEATING OUT	PUT	BTU/HR.
	38,400	
A/C COOLING CAPA	CITY	TONS.
	1.5	
FAN SPEED		CFM
	772	

DΑ					
DΑ	FANS	R/A	S/A	RUNS	# OF
CL				FLOOR	3RD F
В	3	2	7	FLOOR	2ND F
МО	2	ı	4	LOOR	IST F
		- 1	4	MENT	BASE
PR	一			ı.	FLOOR PLAN
(1(S)		ARTIAL	P
		176	SQFT	CHECKED:	DRAWN BY:
SC	4	IG NO.	DRAWIN		JB-04

_	AI NEI: JABEE GIIIIEIA
	JANUARY 15, 2019
	CLIENT: BAYVIEW WELLINGTON
	MODEL: THWU-12
	GREEN VALLEY EAST BRADFORD,ONT.

3/16" = 1'-0"