

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:	
TH-2			Lot/con.	
Bradford	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for designment	gn activities	T		
Name David DaCosta		Firm	gtaDesigns Inc.	
Street address 2985 Drew Roa	d, Suite 202		Unit no.	Lot/con.
. ,	Postal code	Province	E-mail	
Mississauga	L4T 0A4	Ontario	dave@gtades	igns.ca
Telephone number (905) 671-9800	Fax number (647	') 494-9643	Cell number (416) 268-6	820
C. Design activities undertaken by individual identified in S	· · · · · ·	<u>′ </u>	· · · · · · · · · · · · · · · · · · ·	
☐ House ☑ HVAC – H	louse		☐ Building Structural	
☐ Small Buildings ☐ Building Se	ervices		☐ Plumbing – House	
☐ Large Buildings ☐ Detection,	Lighting and Po	wer	☐ Plumbing – All Building	S
☐ Complex Buildings ☐ Fire Protect	ction		On-site Sewage System	าร
Description of designer's work Mod	del Certification	1	Project #:	PJ-00204
			Layout #:	JB-04863
Heating and Cooling Load Calculations Main	Х	Builder	Bayview Wellingto	on
Air System Design Alternate Residential mechanical ventilation Design Summary Area Sq ft:	1815	Project	Green Valley	
Residential System Design per CAN/CSA-F280-12	1013	Model	TH-2	
Residential New Construction - Forced Air		SB-12	Package A1	
D. Declaration of Designer				
David DaCosta (print name) I review and take responsibility for to 3.2.4 Division C of the Building Coo	the design work	•	stered under subsection	
classes/categories. Individual BCIN: Firm BCIN:	·	,,	TOWN OF BRADFORD BUILDING DEPARTMEI PLANS EXAMINED ONTARIO BUILDING CO DATE: 04/22/2024	NT ODE APPLIES
	•		.	
Individual BCIN:	3296	64		
Basis for exemp	tion from registr	ation:	Division C 3.2.4.1. (4)	
☐ The design work is exempt from the	e registration an	d qualification requiren	nents of the Building Code.	
Basis for exemp	tion from registr	ation and qualification:		
I certify that:				
1. The information contained in this schedule is true to the best of m	ny knowledge.			
2. I have submitted this application with the knowledge and consent	of the firm.			
December 12, 2023		Mare A		
Date		Signature of De	signer	

NOTE:

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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.

2. Schedule 1 does not require to be completed a holder of a license, temporay license, or a certificate of authorization, issed 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.

REVIEWED



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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Heat loss and gain calcu	lation summary sheet CSA-F280-M12 Standard Form No. 1
These documents issued for the use of	ayview Wellington Layout No.
and may not be used by any other persons without authorization. Document	s for permit and/or construction are signed in red. JB-04863
Building	Location
Address (Model): TH-2	Site: Green Valley
Model:	Lot:
City and Province: Bradford	Postal code:
Calculation	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: 1815
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/G	ain Caculations based on CSA-F280-12 Effective R-Values
Notes: Residential New 0	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
	KEVIEWE



Builder:

Trunk

Bayview Wellington

Date:

Air System Design

SB-12 Package A1 December 12, 2023

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

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.

Page 3 PJ-00204

of the Building Code. Project # System 1 Mane 14CIN Green Valley TH-2 Individual BCIN: 32964 David DaCosta Lavout # JB-04863 Project: Model: A/C UNIT DATA: DESIGN LOAD SPECIFICATIONS AIR DISTRIBUTION & PRESSURE FURNACE/AIR HANDLER DATA: BOILER/WATER HEATER DATA: Level 1 Net Load 10,147 btu/h **Equipment External Static Pressure** 0.5 "w.c. Make 1.5 Ton Amana Make Туре Amana AMEC960403ANA Level 2 Net Load 9,745 btu/h **Additional Equipment Pressure Drop** 0.225 "w.c. Model Model Cond.--1.5 Level 3 Net Load 8.014 btu/h Available Design Pressure 0.275 "w.c. Input Btu/h 40000 Input Btu/h Coil 1.5 Return Branch Longest Effective Length 300 ft 38400 Level 4 Net Load 0 btu/h Output Btu/h Output Btu/h 0.50 " W C Min.Output Btu/h ΔWH Total Heat Loss 27.906 btu/h R/A Plenum Pressure 0 138 "w c E.s.p. Blower DATA: **Total Heat Gain** 15,899 btu/h S/A Plenum Pressure 0.14 "w.c. Water Temp deg. F. W2 Combo System HL + 10% 30,697 Btuh. Heating Air Flow Proportioning Factor 0.0277 cfm/btuh AFUE Blower Speed Selected: ECM 96% **Blower Type** 20563 ft³ Cooling Air Flow Proportioning Facter (Brushless DC OBC 12.3.1.5.(2)) **Building Volume Vb** 0.0486 cfm/btuh Aux. Heat Ventilation Load 895 Btuh. R/A Temp SB-12 Package Package A1 Heating Check 772 cfm Cooling Check 772 cfm 70 dea. F. Ventilation PVC 63.6 cfm S/A Temp 116 deg. F. Supply Branch and Grill Sizing Diffuser loss Temp. Rise>>> 772 cfm Cooling Air Flow Rate 772 cfm 0.01 "w.c. 46 deg. F. Selected cfm> Level 1 Level 2 S/A Outlet No. 2 5 6 Room Use BASE BASE BASE BASE FAM/KIT FAM/KIT **PWD** MUD FOY Btu/Outlet 2537 2537 2537 2537 2845 2845 360 1442 2252 **Heating Airflow Rate CFM** 70 70 70 70 79 79 10 40 62 Cooling Airflow Rate CFM 37 37 37 37 108 108 2 39 **Duct Design Pressure** 0.13 **Actual Duct Length** 26 15 22 36 26 11 18 29 **Equivalent Length** 110 120 100 100 70 70 70 70 70 70 70 70 70 70 100 90 90 110 70 70 70 70 70 70 70 70 70 Total Effective Length 136 135 108 122 70 70 70 70 70 70 70 70 70 136 106 101 108 139 70 70 70 70 70 70 70 70 70 70 Adjusted Pressure 0.10 0.10 0.12 0.11 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.10 0.12 0.13 0.12 0.09 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.19 5 **Duct Size Round** 6 **Outlet Size** 3x10 3x10 4x10 4x10 4x10 4x10 4x10 4x10 4x10 3x10 3x10 3x10 4x10 4x10 3x10 3x10 4x10 Trunk С C Level 3 Level 4 S/A Outlet No. 10 12 15 16 11 13 14 Room Use MAST MAST I AUN BFD 3 BFD 2 RATH FNS Btu/Outlet 1266 1266 113 2297 2432 268 372 **Heating Airflow Rate CFM** 35 35 3 67 10 57 57 Cooling Airflow Rate CFM 50 99 84 3 **Duct Design Pressure** 0.13 **Actual Duct Length** 49 38 42 52 28 **Equivalent Length** 130 90 160 130 130 120 140 70 179 202 158 70 70 70 70 70 70 70 Total Effective Length 128 182 170 70 70 70 70 70 70 70 70 70 70 70 148 70 70 70 Adjusted Pressure 0.07 0.10 0.06 0.07 0.08 0.09 0.08 0.19 **Duct Size Round** 5 6 3 3 Outlet Size 3x10 4x10 3x10 3x10 3x10 3x10 4x10 Trunk C C R Return Branch And Grill Sizing Grill Pressure Loss 0.02 "w.c **Return Trunk Duct Sizing** Supply Trunk Duct Sizing R/A Inlet No. CFM 1R 2R 3R 4R 5R 6R 7R 8R 9R 10R 11R Trunk CFM Press. Round Rect. Size Trunk Press. Round Rect. Size Inlet Air Volume CFM 140 377 105 150 **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 Drop 772 0.06 14.0 24x10 401 0.07 11.0 14x8 10x10 Α 772 263 0.07 5 18 41 30 z 0.06 14.0 22x8 R 9.5 10v8 127 **Actual Duct Length** 18x10 **Equivalent Length** 115 125 145 140 50 50 50 50 50 50 50 Υ c 371 0.06 11.0 14x8 10x10 50 50 50 50 Total Effective Length 120 143 186 170 50 50 50 Х D w Adjusted Pressure 0.10 0.08 0.06 0.07 0.24 0.24 0.24 0.24 0.24 0.24 0.24 Е Duct Size Round 6.0 10.5 6.0 7.5 ν F Inlet Size FLC G U Inlet Size 30 14 s R /IEW

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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:	Bayview Wellington	•				D000	ber 12, 20	23		_		Weath	er Data	Bradford	44	-9.4	86 22	48.2			Page
2012 OBC	Project:	Green Valley		M	odel:		7	TH-2				System 1	Heat	Loss ^T 81.4 d	g. F	Ht gain ^T	1	1 deg. F	GTA:	1815	Project # Layout #	PJ-0020 JB-0486
Level 1			BASE																			
Run ft. exposed wall A	1	84			Α		Α			Α		Α	А	А		Α		Α		Α		Α
Run ft. exposed wall B		•	В		В		В			В		В	В	В		В		В		В		В
Ceiling height		3.5	AG		3.5 AG		3.5 AC		3	3.5 AG		3.5 AG	3.5 AG	3.5 A	3	3.5 AG		3.5 AG		3.5 AG	3.5	AG
Floor area			Area		Are	a		rea		Area		Area	Area		ea	Area		Area		Area		Area
Exposed Ceilings A			Α		Α		Α			Α		Α	Α	A		Α		Α		Α		Α
Exposed Ceilings B			В		В		В			В		В	В	В		В		В		В		В
Exposed Floors			Flr		Flr		Fli	lr		Fir		Flr	Flr	F		Flr		Flr		Flr		Flr
Gross Exp Wall A		294																				
Gross Exp Wall B	R-Values Los	ss Gain	Loss	Gain		s Gain		oss Ga		Loss	0-1	Loss Gair	n Loss	O-i I	ss Gain		Gain		Gain		Gain	Loss Gain
North Shaded		22.93 10.91	LUSS	Gain	LUS	S Gain	1 [uss Ga	···	LUSS	Gain	LUSS Gail	LUSS	Gain L	SS Gaill	LUSS	Gain	LUSS	Gain	LUSS	Gain	LUSS Gaill
East/West	3.55	22.93 27.35 20	459	547																		
South	3.55	22.93 20.89	-100	0																		
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		3.85 0.52 253		132																		
Net exposed walls B	14.49	5.62 0.76																				
Exposed Ceilings A	59.22	1.37 0.64																				
Exposed Ceilings B Exposed Floors	22.86 29.80	3.56 1.66 2.73 0.17																				
Foundation Conductive Heatloss	29.60 On Grade ()		4117																			
1141	on Grade ()	OI ADO	5003																			
otal Conductive Heat Coss				737																		
Air Leakage Heat Loss/Gain		0.9750 0.0461	4878	34																		
Case 1		0.09 0.11																				
Ventilation Case 2		14.07 11.88																				
		0.05 0.11	266	80																		
Case 3	x																					
Case 3 Heat Gain People		239																				
Case 3 Heat Gain People Appliances Loads	1 =.25 perc	239 cent 2990 2.0		1495																		
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	1 =.25 perc	239 cent 2990 2.0 10%																				
Case 3 Heat Gain People Appliances Loads	1 =.25 per o	239 cent 2990 2.0	10147 FAM/KI	1495	P	WD		MUD		FOY												
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A	1 =.25 perc	239 2990 2.0 10% I HL for per room G per room x 1.3	FAM/KI A B Area A	1495	5 A B 10.0 34 Area A		11 A B 12.0 26 Ar A	rea	11	18 A B 1.0 82 Area A		A B B 10.0 Area A	A B 10.0 Area A	A	ea	A B 10.0 Area A		A B 10.0 Area A		A B 10.0 Area A	10.0	Area A
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A	1 =.25 perc	239 2990 2.0 10% I HL for per room G per room x 1.3	FAM/KI A B Area A	1495	5 A B 10.0 34 Area A B		11 A B 12.0 26 Ar A B	rea	11	18 A B 1.0 82 Area A B		B 10.0 Area A B	B 10.0 Area A B	10.0 A A B		B 10.0 Area A B		B 10.0 Area A B		B 10.0 Area A B	10.0	B Area A B
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A	1 =.25 perc	239 2990 2.0 10% I HL for per room G per room x 1.3	FAM/KI A B Area A B Fir	1495	5 A B 10.0 34 Area A		11 A B 12.0 26 Ar A	rea	11	18 A B 1.0 82 Area A		B 10.0 Area A	B 10.0 Area A	10.0 A A		B 10.0 Area A		B 10.0 Area A		B 10.0 Area A	10.0	B Area A
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Floors Gross Exp Wall B Gross Exp Wall B Gross Exp Wall B	1 =.25 perc	239 2.0 2.0 10% 10% 17% 17% 17% 17% 17% 17% 17% 17% 17% 17	FAM/KI A B Area A B Fir	1495 3049	5 A B 10.0 34 Area A B Fir 50	a	11 A B 12.0 26 Ar A B Fli	rea Ir	11	18 A B 1.0 82 Area A B Fir		B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir		B 10.0 Area A B Fir		B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run 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	1 =.25 perc Total Total Hi	239 2.0 10% 10% 1 HL for per room G per room x 1.3 51 10.0 553 510 ss Gain	FAM/KI A B Area A B Fir	1495	5 A B 10.0 34 Area A B Fir	a	11 A B 12.0 26 Ar A B Fli	rea	11	18 A B 1.0 82 Area A B Fir	Gain	B 10.0 Area A B	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B	Gain	B 10.0 Area A B Fir	10.0	B Area A B
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded	1 = .25 perc Total Hi Total Hi R-Values Lo: 3.55	239 2.0 1 0% 1 HL for per room G per room x 1.3 51 10.0 553 510 ss Gain 22.93 10.91	FAM/KI A B Area A B Fir	1495 3049	5 A B 10.0 34 Area A B Fir 50	a	11 A B 12.0 26 Ar A B Fli	rea Ir	11 1 in	18 A B 1.0 82 Area A B Fir 198	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest	Total H	239 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	FAM/KI A B Area A B Fir	1495 3049	5 A B 10.0 34 Area A B Fir 50	a	11 A B 12.0 26 Ar A B Fli	rea Ir	11 1 in	18 A B 1.0 82 Area A B Fir		B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest	1 = .25 perc Total Hi Total Hi R-Values Lo: 3.55 3.55 3.55	239 2.00 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.	FAM/KI A B Area A B Fir	1495 3049	5 A B 10.0 34 Area A B Fir 50	a	11 A B 12.0 26 Ar A B Fli	rea Ir	11 1 in	18 A B 1.0 82 Area A B Fir 198	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows	1 = .25 perc Total Hi Total Hi R-Values Lo. 3.55 3.55 1.99	239 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0 2.0	FAM/KI A B Area A B Fir	1495 3049	5 A B 10.0 34 Area A B Fir 50	a	11 A B 12.0 26 Ar A B Fli	rea Ir	11 1 in	18 A B 1.0 82 Area A B Fir 198	Gain	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest	1 = .25 perc Total Hi Total Hi R-Values Lo: 3.55 3.55 3.55 1.99 2.03 4.00	239 2.0 10% 1HL for per room G per room x 1.3 51 10.0 553 510 22.93 10.91 22.93 27.35 40.10 88.23 40.90 22.15 40.10 88.23 20.35 2.75	FAM/KI A B Area A B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B Fit 132 Lc	rea ir oss Ga	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss 14 321	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A	1 = .25 percent Total History R-Values Los 3.55 3.55 3.55 1.99 2.03 4.00 17.03	239 2.0 10% 1HL for per room G per room x 1.3 51 10.0 553 10.0 1 22.93 10.91 22.93 20.89 40.90 22.15 40.10 88.23 20.35 2.75 4.78 0.65 436 436	FAM/KI A B Area A B Fir Loss	1495 3049	5 A B 10.0 34 Are: A B Fir 50 Los	a	11 A B 12.0 26 Ar A B Fit 132 Lc	rea Ir oss Ga	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Ceilings B Exposed Ceilings B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed wall A	1 = .25 perc Total Hi Total Hi R-Values Lo: 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50	239 2ent 2990 10% 10% 1 HL for per room G per room x 1.3 51 10.0 553 510 88 22.93 10.91 22.93 27.35 22.93 20.89 40.90 22.15 40.10 88.23 20.35 2.75 4.78 0.65 4.36 4.36	FAM/KI A B Area A B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B Fit 132 Lc	rea ir oss Ga	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss 14 321	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall A Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Floors Gross Exp Wall A Gross Exp Wall A Gross Exp Wall A South Existing Windows Skylight Doors Net exposed walls A Net exposed walls A Net exposed walls A Net exposed valls A	1 = .25 perc Total Hi Total Hi R-Values Lo: 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22	239 2.0	FAM/KI A B Area A B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B Fit 132 Lc	rea ir oss Ga	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss 14 321	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Gellings A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Exposed Ceilings B Exposed Ceilings B	1 = .25 perc Total H: Total H: R-Values Lo: 3.55 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	239 2.0 10% 1HL for per room g per room x 1.3 51 10.0 553 510 553 10.91 22.93 10.91 22.93 27.35 22.93 20.89 40.90 22.15 40.10 88.23 20.35 2.75 40.10 88.23 20.35 2.75 4.78 0.65 9.58 1.29 1.37 0.64 3.56 1.66	FAM/KI A B Area A B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B Fit 132 Lc	rea ir oss Ga	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss 14 321	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed walls B Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Net exposed walls A Net exposed walls B Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A	1 = .25 percent Total Historia Total Historia R-Values Los 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	239 2.0 10% 1 HL for per room x 1.3 51 10.0 553 510 22.93 27.35 22.93 20.89 40.90 22.15 4.78 0.65 436 43.56 1.66 43.56 1.66 43.56 1.66 2.73 0.17	FAM/KI A B Area A B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B Fit 132 Lc	rea ir oss Ga	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss 14 321	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls B Exposed Ceilings A Net exposed walls B Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Clorings A Exposed Collings A	1 = .25 perc Total H: Total H: R-Values Lo: 3.55 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86	239 2.0 10% 1 HL for per room x 1.3 51 10.0 553 510 22.93 27.35 22.93 20.89 40.90 22.15 4.78 0.65 436 43.56 1.66 43.56 1.66 43.56 1.66 2.73 0.17	FAM/KI A B Area A B B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B Fit 132 Lc	rea	11 in 58	18 A B 1.0 82 Area A B Fir 198 Loss 14 321	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 Evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed walls B Exposed Ceilings A Net exposed walls A Net exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Exposed Floors Coundation Conductive Heatloss	1 = .25 percent Total Historia Total Historia R-Values Los 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80	239 2.0 10% 1 HL for per room x 1.3 51 10.0 553 510 22.93 27.35 22.93 20.89 40.90 22.15 4.78 0.65 436 43.56 1.66 43.56 1.66 43.56 1.66 2.73 0.17	FAM/KI A B Area A B Fir Loss	1495 3049 T	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain	11 A B 12.0 26 Ar A B B 132 Lc	rea ir oss Ga	11 in 58	18 A B B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 65 789	Gain 383	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 2,049 Level 2 Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls B Exposed Ceilings A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed Ceilings A Exposed Ceilings B Exposed Ceilings A Section Scott Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed Ceilings A Exposed Ceilings B Exposed Ceilings B Exposed Floors Foundation Conductive Heattoss	1 = .25 percent Total History R-Values Los 3.55 3.55 3.55 3.55 4.00 17.03 8.50 59.22 22.86 29.80 On Grade ()	239 2.0 10% 1 HL for per room x 1.3 51 10.0 553 510 22.93 27.35 22.93 20.89 40.90 22.15 4.78 0.65 436 43.56 1.66 43.56 1.66 43.56 1.66 2.73 0.17	FAM/KI A B Area A B B Fir Loss	1495 3049 T T Gain 2024	5 A B 10.0 34 Are: A B Fir 50 Los	s Gain 239 32	11 A B 12.0 26 Ar A B Fire 132 Lc 21 111	rea	11 1 in 58 72 1	18 A B B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 65 789	Gain 383 52 107	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Celling height Floor area Exposed Cellings B Exposed Cellings B Exposed Cellings B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed cellings A Exposed Cellings B Exposed Cellings B Exposed Cellings B Exposed Cellings A Exposed Cellings A North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Exposed Cellings A Exposed Cellings A Exposed Cellings A Exposed Cellings B Exposed Floors Foundation Conductive Heatloss Heat Loss Heat Gain Air Leakage Heat Loss/Gain	1 = .25 percent Total History R-Values Los 3.55 3.55 3.55 3.55 4.00 17.03 8.50 59.22 22.86 29.80 On Grade ()	239 2.0 10% 1HL for per room G per room x 1.3 51 10.0 553 510 22.93 10.91 22.93 27.35 40.90 22.15 40.10 88.23 20.35 2.75 4.78 0.65 4.78 0.65 1.66 2.73 0.17 or Abo x	10147 FAM/KI A B Area A B Filr Loss 1697	1495 3049 T T Gain 2024 282	5 A B 10.0 34 Are: A B Fir 50 Los	a s Gain 239 32	11 A B 12.0 26 Ar A B Fire 132 Lc 21 111	rea	11 1 in 58 72 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 789	Gain 383 52 107	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Research Case 3 Heat Gain People Appliances Loads Duct and Pipe loss Duct and Pipe loss Pour and Pipe	1 = .25 percent Total History R-Values Los 3.55 3.55 3.55 3.55 4.00 17.03 8.50 59.22 22.86 29.80 On Grade ()	239 2.0 10% 11HL for per room G per room x 1.3 51 10.0 553 510 22.93 10.91 22.93 27.35 40.10 88.23 40.90 22.15 40.10 88.23 40.90 22.15 40.10 88.23 40.90 22.15 40.10 88.23 60.65 1.66 2.73 0.64 3.56 1.66 2.73 0.64 3.56 1.66 2.73 0.17 or Abo x	10147 FAM/KI A B Area A B Filr Loss 1697 2084	1495 3049 T T Gain 2024 282 2306 106	5 A B 10.0 34 Area A B Fir 50 Los	239 32 239 32 108 1	11 A B 12.0 26 Ar A B Fire 132 Lc 21 111	rea	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 789 1496 676	Sain 383 52 107 542 25	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings B Exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls B Exposed Ceilings A Run ft. exposed Floors Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed ceilings A Net exposed Ceilings A Net exposed Ceilings B Exposed Ceilings B Exposed Ceilings A Net exposed ceilings A Net exposed ceilings A Heat East Conductive Heatloss Heat Cain Air Leakage Heat Loss/Cain Case 2 Case 3	R-Values Lo: 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.5	239 2ent 2990 10% 10% 1HL for per room G per room x 1.3 51 10.0 553 510 88 Gain 22.93 10.91 22.93 20.89 40.90 22.15 40.10 88.23 20.35 2.75 40.10 88.23 20.35 2.75 40.10 88.23 20.35 2.75 40.10 88.23 20.35 2.75 40.90 22.15 40.10 88.23 20.35 2.75 40.90 22.15 40.10 88.23 20.35 2.75 40.90 22.15 40.10 88.23 20.35 2.75 40.90 32.15 40.90 22.15 40.9	10147 FAM/KI A B Area A B Filr Loss 1697	1495 3049 T T Gain 2024 282	5 A B 10.0 34 Area A B Fir 50 Los	a s Gain 239 32	11 A B 12.0 26 Ar A B Fire 132 Lc 21 111	rea	11 1 in 58 72 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 789	Gain 383 52 107	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall B Celling height Floor area Exposed Cellings B Exposed Cellings B Exposed Cellings B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls B Exposed Cellings A Net exposed walls B Exposed Cellings B Exposed Floors Foundation Conductive Heat Loss Heat Gain Air Leakage Case 1 Case 2 Case 3	1 = .25 percipate Total Historia R-Values Lo: 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 2.86 29.80) On Grade ()	239 2-ent 2990 10% 10% 1HL for per room G per room x 1.3 51 10.0 553 510 22.93 10.91 22.93 27.35 22.93 27.35 4.78 0.65 4.78 0.65 4.78 0.65 4.78 0.65 4.78 0.65 4.78 0.65 4.79 0.65 4.79 0.65 4.79 0.65 4.70 0.65 4.70 0.65 4.71 0.64 4.71 1.81 0.04 0.11 14.07 11.88 0.05 0.11 14.07 11.88 0.05 0.11	10147 FAM/KI A B Area A B Filr Loss 1697 2084 3781 1709	1495 3049 T T Gain 2024 282 2306 106	5 A B 10.0 34 Area A B Fir 50 Los	239 32 239 32 108 1	11 A B 12.0 26 Ar A B Fire 132 Lc 21 111	rea	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 789 1496 676	Sain 383 52 107 542 25	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Gross Exp Wall A Gross Exp Wall A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed walls B Exposed Ceilings A Exposed Ceilings A Exposed Ceilings B Exposed Ceilings A Exposed Ceilings A Exposed Ceilings A Net exposed walls A Net exposed walls A Net exposed Walls A Net exposed Ceilings A Exposed Floors Foundation Conductive Heatloss otal Conductive Heat Cass Heat Gain Ventilation Case 2 Case 3 Heat Gain People Appliances Loads	1 = .25 perc Total Hi Total Hi R-Values Lo: 3.55 3.55 3.55 1.99 2.03 4.00 17.03 8.50 59.22 22.86 29.80 On Grade ()	239 2.0 2.0 1.0 2.0	10147 FAM/KI A B Area A B Filr Loss 1697 2084 3781 1709	1495 3049 T T Gain 2024 282 2306 106	5 A B 10.0 34 Area A B Fir 50 Los	239 32 239 32 108 1	11 A B 12.0 26 Ar A B Fire 132 Lc 21 111	rea	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 789 1496 676	Sain 383 52 107 542 25	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Case 3 Heat Gain People Appliances Loads Duct and Pipe loss evel 1 HL Total 10,147 evel 1 HG Total 3,049 Level 2 Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed Ceilings A Exposed Ceilings A Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed walls A Net exposed Ceilings A Exposed Floors Foundation Conductive Heatloss Heat Gain Air Leakage Heat Loss/Gain Air Leakage Heat Gain Case 1 Ventilation Case 2 Case 3 Heat Gain People Appliances Loads Duct and Pipe loss	1 = .25 percent Total Historia R-Values Los 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.55 3.5	239 2ent 2990 10% 1HL for per room G per room x 1.3 51 10.0 553 510 88 Gain 22.93 10.91 22.93 20.89 40.90 22.15 40.10 88.23 20.35 2.75 40.10 88.23 20.35 2.75 40.10 88.23 20.35 2.75 40.90 22.15 40.10 88.23 20.35 2.75 40.90 22.15 40.10 18.82 20.35 2.75 40.10 88.23 20.35 2.75 40.90 22.15 40.10 88.23 20.35 2.75 40.90 22.15 40.10 18.82 20.35 2.75 40.90 22.15 40.90 20.91 1.37 0.64 3.56 1.66 2.73 0.17 0.74 0.64 3.56 1.66 2.73 0.17 0.74 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75	10147 FAM/KI A B Area A B Fir Loss 1697 2084 3781 1709	1495 3049 T T Gain 2024 282 2306 106	5 A B 10.0 34 Are: A B Fir 50 Los	32 Gain 239 32 239 32 108 1	11 A B 12.0 26 Ar A B Fil 132 Lc	rea lir 427 531 958 433	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 165 789 1496 676 80	Sain 383 52 107 542 25	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir
Run ft. exposed wall A Gross Exp Wall B Exposed Cellings B Exposed Cellings A Exposed Colors Gross Exp Wall B Gross Exp Wall B Components North Shaded EastWest South Existing Windows Skylight Doors Net exposed Walls A Net exposed Cellings A Exposed Floors oundation Conductive Heatloss Heat Gain Heat Gain Heat Gain People Appliances Loads Heat Gain People Appliances Loads	1 = .25 percent Total Historia Total Historia R-Values Los 3.55 3.55 3.55 3.55 4.00 17.03 8.50 59.22 22.86 29.80 On Grade () x 1 = .25 percent Total Historia Total Historia	239 2.0 2.0 1.0 2.0	10147 FAM/KI A B Area A B Filr Loss 1697 2084 3781 1709	1495 3049 T T Gain 2024 282 2306 106	5 A B 10.0 34 Are: A B Fir 50 Los	239 32 239 32 108 1	11 A B 12.0 26 Ar A B File 132 Lc	rea	11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18 A B 1.0 82 Area A B Fir 198 Loss 14 321 19 387 789 1496 676	Sain 383 52 107 542 25	B 10.0 Area A B Fir	B 10.0 Area A B Fir	10.0 A A B F		B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	Gain	B 10.0 Area A B Fir	10.0	B Area A B Fir

Package A1



Heatloss/Gain Calculations CSA-F280-12

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e-mail dave@gtadesigns.ca

	Builder: Bayvi	ew Wellington	Date:	December 12, 2023			Weather Data	Bradford	44 -9.4 86	22 48.2		Page 5
2012 OBC	Project: G	reen Valley	Model:	TH-2		System 1	Heat Loss ^T	81.4 deg. F	Ht gain ^T 11 de	g. F GTA: 1815	Project # Layout #	PJ-00204 JB-04863
Run ft. exposed wall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A		MAST 19 A B 8.0 312 Area 312 A B 18 Fir 152	LAUN A B 8.0 58 Area 58 A B Fir	124 A B	BED 2 9 A B 8.0 289 Area 289 A B 155 Fir 72	BATH A B 8.0 58 Area 58 A B 34 Fir	ENS A B 8.0 137 Area 137 A B 27 Fir	A B 8.0 Area A B Fir	A B 8.0 Area A B Fir	B 8.0 8.0 Area A B		rea
Gross Exp Wall B Components	R-Values Loss G: 3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73 0.3653 0.03 14.07 x 0.05	10.91 27.35 32 734 20.89 22.15 88.23 2.75 0.65 120 574 1.29 0.64 312 429 1.66 0.17 18 49 1785 0.0461 0.52 0.11 11.88 0.11 11.88 0.11 239 2 2990 10% r (room 2533 2533 253.89 253	78 200 58 80 37 3 4 4 4 478 1.0 747 2357 1027	49 134 8 1477 1047 540 48 79 114 1 239 1 202 129 2297	Loss Gain 22 504 603 50 239 33 289 397 188 155 423 26 1564 844 571 33 1 214 100 2432 172	2 5 58 80 37 6 34 93 6 6 43 9 63 2 9 5 9 5 8 1 24 4 268	27 74 5 262 92 96 4 14 10	Loss Gain	Loss Gain	Loss Gain	Loss Gain L	oss Gain
Run ft. exposed vall A Run ft. exposed wall B Ceiling height Floor area Exposed Ceilings A Exposed Ceilings B Exposed Floors Gross Exp Wall A		A B Area A B Fir	A B Area A B Fir	A B Area A B Fir	A B Area A B Fir	A B Area A B Fir	A B Area A B Fir	A B Area A B Fir	A B Area A B Fir	B Area A B	A A B B A A A A A B B B Fir F	rea
Gross Exp Wall B	R-Values Loss G 3.55 22.93 3.55 22.93 3.55 22.93 1.99 40.90 2.03 40.10 4.00 20.35 17.03 4.78 8.50 9.58 59.22 1.37 22.86 3.56 29.80 2.73	10.91 27.35 20.89 22.15 88.23 2.75 0.65 1.29 0.64 1.66 0.17	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain	Loss Gain L	oss Gain
Case 1 Case 2 Case 3	14.07 x 0.05 1 = .25 percent	11.88 0.11 239 2990 10% or room		e responsibility for the de				designati under	RE	VIE	E W	ΕC

27,906 Total Heat Loss btu/h Total Heat Gain 15,899 btu/h

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

ategory as an "other designer" u

David DaCosta

Package A1



System Design Option

HRV WITH DUCTING / forced air system

HRV simplified connection to forced air system

HRV full ducting/not coupled to forced air system

Exhaust only / forced air system

Part 6 design

2

3

4

Χ

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Page 6 PJ-00204

Project # e-mail dave@gtadesigns.ca Layout # JB-04863 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 flame of the Ent-David DaCosta Package A1 Package: **Bradford** Project: Model: TH-2 RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY For systems serving one dwelling unit & conforming to the Ontario Building Code, O.reg 332/12 **Total Ventilation Capacity 9.32.3.3(1)** Location of Installation Lot # Plan # Bsmt & Master Bdrm 2 @ 21.2 cfm 42.4 cfm Township Other Bedrooms 21.2 cfm @ 10.6 cfm Bradford Bathrooms & Kitchen @ 10.6 cfm 42.4 cfm 4 Roll# Permit # Other rooms 10.6 cfm 31.8 cfm Total 137.8 Address Principal Ventilation Capacity 9.32.3.4(1) Builder Master bedroom @ 31.8 cfm 31.8 cfm Name 1 **Bayview Wellington** Other bedrooms @ 15.9 cfm 31.8 cfm Address 63.6 Total City **Principal Exhaust Fan Capacity** Tel Fax Make Model Location LifeBreath **RNC155** Base **Installing Contractor** Name 132 cfm Sones or Equiv. Address **Heat Recovery Ventilator** Make LifeBreath City Model RNC155 132 cfm high 80 cfm low Tel Fax Sensible efficiency @ -25 deg C 71% Sensible efficiency @ 0 deg C 75% Note: Installer to balance HRV/ERV to within 10 percent of PVC Combustion Appliances 9.32.3.1(1) **Supplemental Ventilation Capacity** Direct vent (sealed combustion) only a) b) Positive venting induced draft (except fireplaces) Total ventilation capacity 137.8 Natural draft, B-vent or induced draft fireplaces Less principal exhaust capacity 63.6 c) Solid fuel (including fireplaces) REQUIRED supplemental vent. Capacity d) 74.2 cfm No combustion Appliances e) Supplemental Fans 9.32.3.5. **Heating System** Location cfm Model Sones XB50 Forced air Ens 50 0.3 Bath 50 XB50 0.3 Non forced air Electric space heat (if over 10% of heat load) House Type 9.32.3.1(2) 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) Ш Any type c) appliance Ш Designer Certification Type I or II either electric space heat IV I hereby certify that this ventilation system has been designed Type I, II or IV no forced air in accordance with the Ontario Building Code. Othe

Name

Signature

HRAI#

Date



David DaCosta



Energy Efficiency Design Summary: Prescriptive Method

(Building Code Part 9, Residential)

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Project # PJ-00204 Layout # JB-04863

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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 Authority					
Application No:					Model/Certification Number					
A. Project Information										
Building number, street name						Unit number	Lot/Con			
			TH-2							
Municipality Bradford			Postal cod	de	Reg. Plan number / o	other description				
B. Prescriptive Compliance [indica	ate the bu	ilding cod	e complia	nce packa	ge being employed	in the house design]				
SB-12 Prescriptive (input design pa	ckage):			<u>Pack</u>	age A1	Table:	3.1.1.2.	<u>A</u>		
C. Project Design Conditions										
Climatic Zone (SB-1):		Heat. E	quip. Eff	ficiency		Space Heating F	uel Sourc	e		
Zone 1 (< 5000 degree days)		√ ≥ 92	2% AFUE			☐ Propane		Solid Fuel		
Zone 2 (≥ 5000 degree days)		□ ≥8	34% < 92%	6 AFUE	☐ Oil	☐ Electric		Earth Energy		
Ratio of Windows, Skylights & Glas	s (W, S	& G) to \	Wall Area	a		Other Building Cha	aracterist	ics		
A () Malla 275 77 2000 A	412				Log/Post&Bear	n	Grade	☐ ICF Basement		
Area of Walls = $\frac{275.77}{m^2}$ m ² or $\frac{2968.4}{m^2}$	ft²	W,S &	G % =	<u>7%</u>	☐ Slab-on-ground	d Walkout Ba	sement			
					☑ Air Conditionin	g Combo Unit	:			
Area of W, S & G = <u>18.116</u> m ² or <u>195.0</u>	ft²	Utilize V	Vindow	☐ Yes	☐ Air Sourced He	eat Pump (ASHP)				
		Avera	aging	☑ No	☐ Ground Source	e Heat Pump (GSHP)				
D. Building Specifications [provide	values a	nd ratings	of the en	ergy effici	ency components pr	roposed]				
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	I.1.4.B	Required:	ed: Permitted Substitution:					
Airtightness test required		Table 3.1	1110	Required:		Permitted S	Substitution	:		
(Refer to Design Guide Attached)		Table 3.1		Required:	d: Permitted Substitution:					
Building Component			il/R-Valu n U-Valu		Bu	Efficiency Ratings				
Thermal Insulation	Non	ninal	Effe	ctive	Windows & Do	ors Provide U-Value ⁽¹⁾ o	r ER rating			
Ceiling with Attic Space	6	0			Windows/Sliding	Glass Doors		1.6		
Ceiling without Attic Space	3	1			Skylights			2.8		
Exposed Floor	3	1			Mechanicals					
Walls Above Grade	22				Heating Equip.(Al	FUE)		96%		
Basement Walls		20.0ci			HRV Efficiency (S	SRE% at 0°C)		75%		
Slab (all >600mm below grade)	1	x			DHW Heater (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			Combined Heatin	g System				
(1) U value to be provided in either W/(m²·K) or Bt	u/(h·ft·F) b	out not bot	.h.							
E. Designer(s) [name(s) & BCIN(s), if	applicable	e, of perso	on(s) provi	iding infori	mation herein to sub	stantiate that design meet	s building	code]		
Name				BCIN	Signatu					
David DaCosta				329	964	Mane	14C=	₹ 7		
Form authorized by OHRA OROA IMCRO Revised December 1, 20										





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e-mail dave@gtade	esigns.ca										Layout #	JB-048
Package: Project:							ystem: System 1 Model: TH-2					
				Air	Leakag	je Calcula	tions					
		Building A	ir Leakage	Heat Loss				Building	ı Air Leakaç	je Heat Ga	in	
	B 0.018	LRairh 0.324	Vb 20563	HL^T 81.4	HLleak 9755		0.0°		Vb 20563	HG^T	HG Leak 321	-1
									Le	vels		П
	Air Lea	kage Heat	Loss/Gain	Multiplier T	able (Section	n 11)		1	2	3	4	- 1
Level	Level Factor (LF)	Building Air		nductive Loss		kage Heat Loss //ultiplier		(LF)	(LF)	(LF)	(LF)	-
Level 1	0.5			03		0.9750		1.0	0.6	0.5	0.4	_
Level 2	0.3	9755		74		0.4520			0.4	0.3	0.3	_
Level 3	0.2			41		0.3653				0.2	0.2	_
Level 4	0		(0		0.0000					0.1	_
					Air Leal	kage Heat Gain			Levels th	is Dwelling	1	- 1
BUILD	HG L ING CONDU		T GAIN	321 6967		0.0461				3		
				Ve	entilation	n Calculat	ions					
		Ventilati	ion Heat Los					Vent	ilation Heat G	iain		
Vent		Ventilation	Heat Loss	3				Ventilation	Heat Gain			tao/
 	PVC	HL^T	(1-E) HRV	HLI	ovent	 	C PV	C HG^T	HGI	ovent		

	Ventilation Ca	lculations					
	Ventilation Heat Loss	Ventilation Heat Gain					
Vent	Ventilation Heat Loss C PVC HL^T (1-E) HRV HLbvent 1.08 63.6 81.4 0.16 895	Ventilation Heat Gain C PVC HG^T HGbvent 1.1 63.6 11 756					
	Case 1	Case 1					
	Ventilation Heat Loss (Exhaust only Systems)	Ventilation Heat Gain (Exhaust Only Systems)					
ase 1	Case 1 - Exhaust Only Level LF HLbvent LVL Cond. HL Multiplier	Case 1 - Exhaust Only Multiplier HGbvent 756 0.11					
Ca	Level 1 0.5 Level 2 0.3 Level 3 0.2 Level 4 0 5003 0.09 6474 0.04 5341 0.03 0 0.00	HGbvent 756					
	Case 2	Case 2					
2	Ventilation Heat Loss (Direct Ducted Systems)	Ventilation Heat Gain (Direct Ducted Systems)					
Case 2	C HL^T (1-E) HRV 1.08 81.4 0.16 14.07	Multiplier 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					
	Case 3	Case 3					
3	Ventilation Heat Loss (Forced Air Systems)	Ventilation Heat Gain (Forced Air Systems)					
Case 3	Total Ventilation Load 895 0.05	Vent Heat Gain Multiplier 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0					
	Foundation Conductive Heatless Level 1	1207 Watte 4447 Ptu/h					

Foundation Conductive Heatloss Level 1	1207	Watts	4117	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 Shiel	ding
Building Site:	Suburban, forest
Walls:	Heavy ▼
Region: Weather Station Location: Anemometer height (m): Local Shielding Building Site: Walls: Heavy Highest Ceiling Height (m): Semi-Detached Number of Stories: Foundation: House Volume (m³): Air Leakage/Ventilation Air Tightness Type: Custom BDT Data: Mechanical Ventilation (L/s): Flue #: #1 #2 #3 #4 Diameter (mm): Do 0 0 0	
Highest Ceiling Height (m):	6.55
Building Config	guration
Туре:	Semi-Detached
Number of Stories:	Two
Foundation:	Shallow
House Volume (m³):	582.33
Air Leakage/Ve	ntilation
revince: degion: deather Station Location: deather Station Location Location deather Station Location Location deather Station Location dea	
0 : DDT D-1-	ELA @ 10 Pa. 322.44 cm ²
Custom BDT Data:	
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

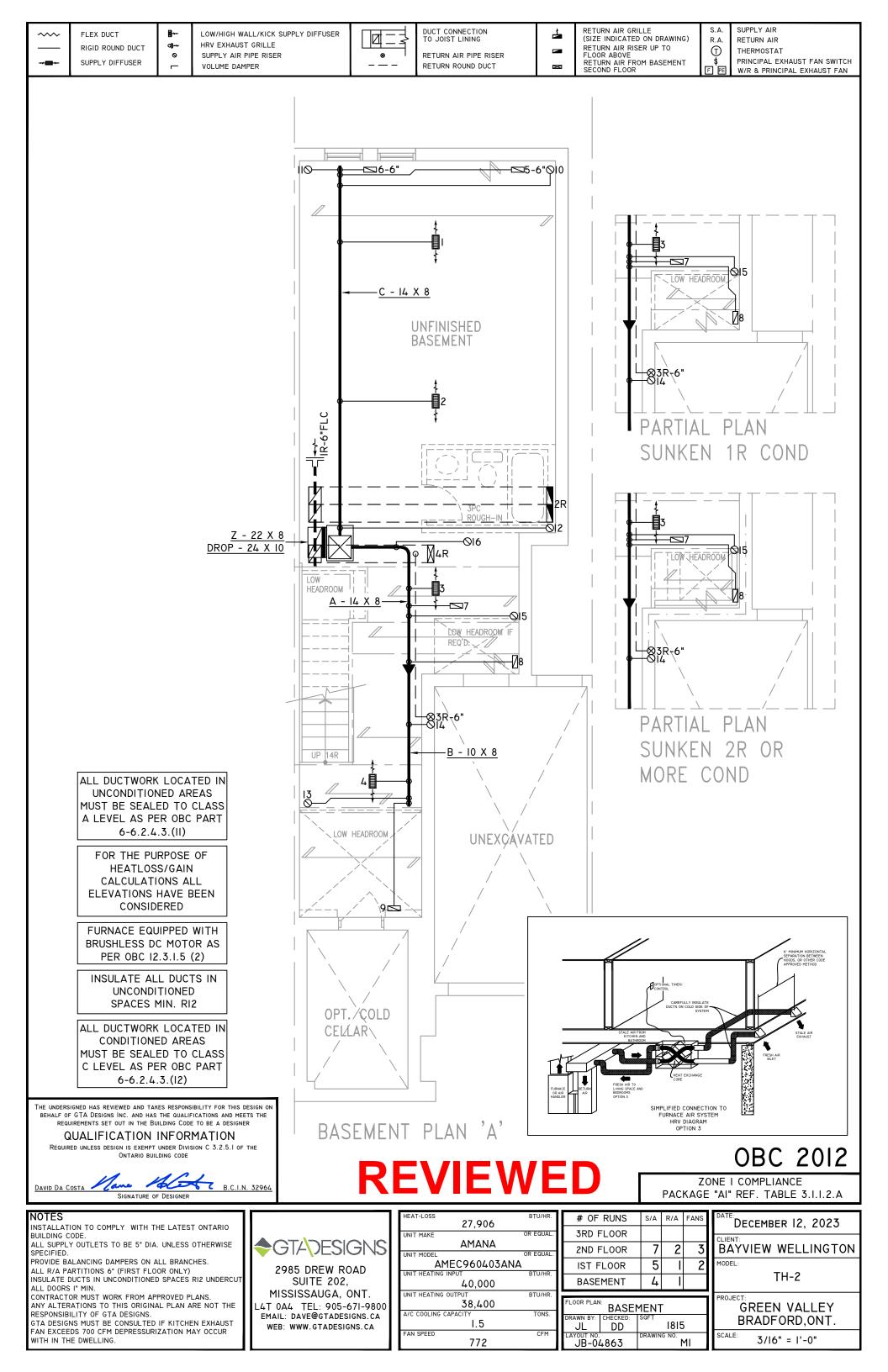


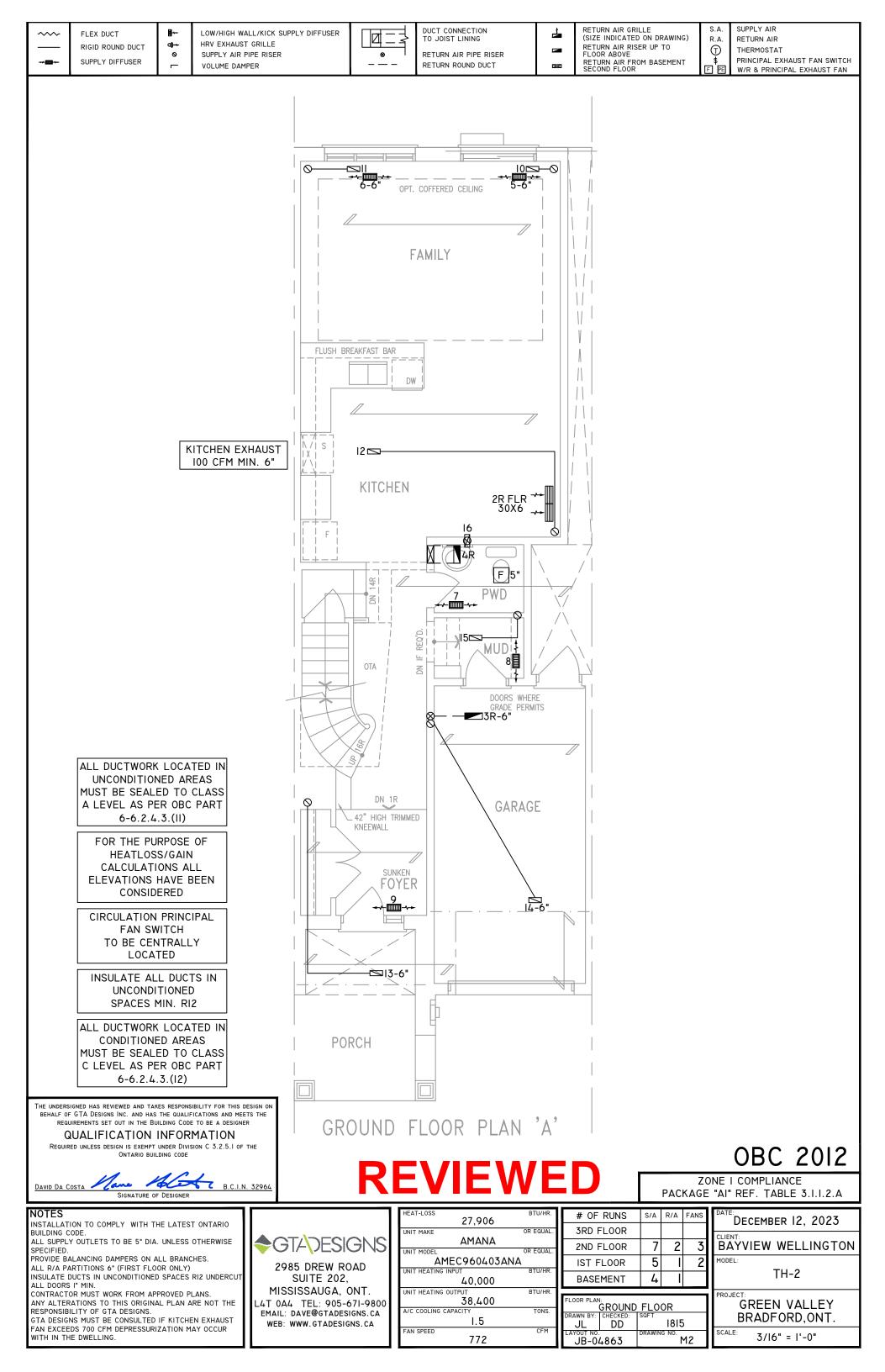
Residential Foundation Thermal Load Calculator

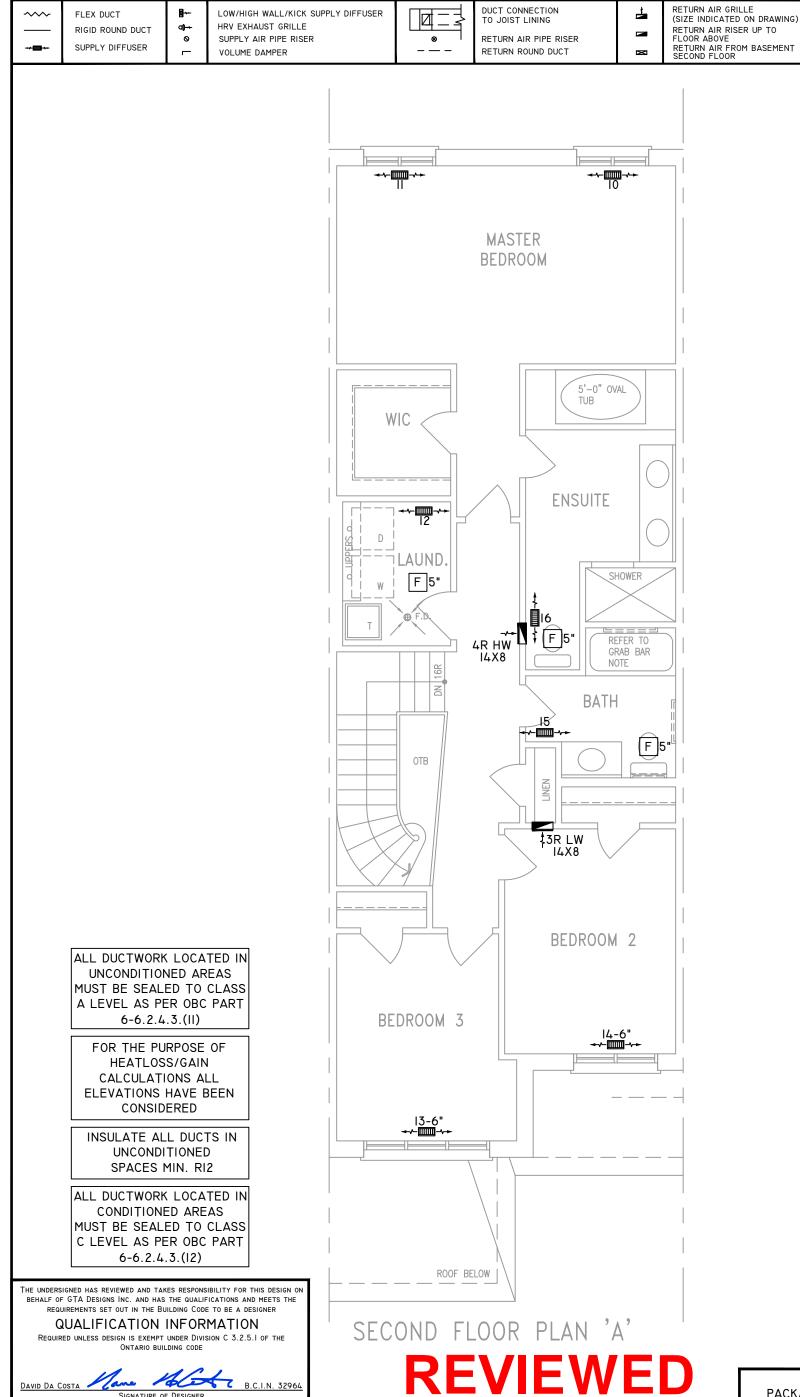
Supplemental tool for CAN/CSA-F280

Weat	her Sta	tion Description								
Province:		Ontario								
Region:		Bradford ▼								
	Site D	escription								
Soil Conductivity:		High conductivity: moist soil ▼								
Water Table:		Normal (7-10 m, 23-33 Ft) ▼								
Foundation Dimensions										
Floor Length (m):	16.61									
Floor Width (m):	3.81									
Exposed Perimeter (m):	25.60									
Wall Height (m):	2.59	<u> </u>								
Depth Below Grade (m):	1.52	Insulation Configuration								
Window Area (m²):	1.86									
Door Area (m²):	1.95									
	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):		1207								









OBC 2012

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

SUPPLY AIR

RETURN AIR

THERMOSTAT

PRINCIPAL EXHAUST FAN SWITCH

W/R & PRINCIPAL EXHAUST FAN

R.A

1

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 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.
27,906	
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
AMEC960403AN	IA AI
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	

		IAC	NAGL	-
# OF DUNO		D/4	E4110	ī
# OF RUNS	S/A	R/A	FANS	ı
3RD FLOOR				
2ND FLOOR	7	2	3	
IST FLOOR	5		2	
BASEMENT	4			
EL 0.00 BL AV				ì
FLOOR PLAN: SECOND	FLO	0R		l
DDAWN DV CHECKED	COET			

DD

JB-04863

1815

M3

DECEMBER 12, 2023 BAYVIEW WELLINGTON MODEL: TH-2 PROJECT **GREEN VALLEY** BRADFORD, ONT.

3/16" = 1'-0"

