



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 <div style="text-align: center;">THWU-15E</div>				Lot: <div style="text-align: center;">Lot/con.</div>	
Municipality <div style="text-align: center;">Bradford</div>		Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities					
Name <div style="text-align: center;">David DaCosta</div>			Firm <div style="text-align: center;">gtaDesigns Inc.</div>		
Street address <div style="text-align: center;">2985 Drew Road, Suite 202</div>				Unit no.	Lot/con.
Municipality <div style="text-align: center;">Mississauga</div>		Postal code <div style="text-align: center;">L4T 0A4</div>	Province <div style="text-align: center;">Ontario</div>	E-mail <div style="text-align: center;">dave@gtadesigns.ca</div>	
Telephone number <div style="text-align: center;">(905) 671-9800</div>		Fax number <div style="text-align: center;">(647) 494-9643</div>		Cell number <div style="text-align: center;">(416) 268-6820</div>	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]					
<div style="display: flex; flex-wrap: wrap;"> <div style="width: 33%;"><input type="checkbox"/> House</div> <div style="width: 33%;"><input checked="" type="checkbox"/> HVAC – House</div> <div style="width: 33%;"><input type="checkbox"/> Building Structural</div> <div style="width: 33%;"><input type="checkbox"/> Small Buildings</div> <div style="width: 33%;"><input type="checkbox"/> Building Services</div> <div style="width: 33%;"><input type="checkbox"/> Plumbing – House</div> <div style="width: 33%;"><input type="checkbox"/> Large Buildings</div> <div style="width: 33%;"><input type="checkbox"/> Detection, Lighting and Power</div> <div style="width: 33%;"><input type="checkbox"/> Plumbing – All Buildings</div> <div style="width: 33%;"><input type="checkbox"/> Complex Buildings</div> <div style="width: 33%;"><input type="checkbox"/> Fire Protection</div> <div style="width: 33%;"><input type="checkbox"/> On-site Sewage Systems</div> </div>					
Description of designer's work		Model Certification		Project #: <div style="text-align: center;">PJ-00204</div>	
				Layout #: <div style="text-align: center;">JB-04878</div>	
Heating and Cooling Load Calculations		Main	X	Builder	Bayview Wellington
Air System Design		Alternate		Project	Green Valley
Residential mechanical ventilation Design Summary		Area Sq ft:	1922	Model	THWU-15E
Residential System Design per CAN/CSA-F280-12				SB-12	Package A1
Residential New Construction - Forced Air					
D. Declaration of Designer					
<p>I, <u>David DaCosta</u> declare that (choose one as appropriate):</p> <p style="text-align: center;">(print name)</p> <p><input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.</p> <p style="margin-left: 150px;">Individual BCIN: _____</p> <p style="margin-left: 150px;">Firm BCIN: _____</p> <p><input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code.</p> <p style="margin-left: 150px;">Individual BCIN: <u>32964</u></p> <p style="margin-left: 150px;">Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u></p> <p><input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code.</p> <p style="margin-left: 150px;">Basis for exemption from registration and qualification:</p>					
<p>I certify that:</p> <ol style="list-style-type: none"> The information contained in this schedule is true to the best of my knowledge. I have submitted this application with the knowledge and consent of the firm. 					
<u>December 12, 2023</u> Date			 Signature of Designer		

NOTE:

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

Heat loss and gain calculation summary sheet				CSA-F280-M12 Standard Form No. 1	
These documents issued for the use of Bayview Wellington				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				JB-04878	
Building Location					
Address (Model): THWU-15E			Site: Green Valley		
Model:			Lot:		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on:			VA3 DESIGN22/May/2018		
Attachment: Townhome			Front facing: East/West		Assumed? Yes
No. of Levels: 3		Ventilated? Included	Air tightness: 1961-Present (ACH=3.57)		Assumed? Yes
Weather location: Bradford			Wind exposure: Sheltered		
HRV? LifeBreath		RNC155	Internal shading: Light-translucent		Occupants: 5
Sensible Eff. at -25C 71%		Apparent Effect. at -0C 84%	Units: Imperial		Area Sq ft: 1922
Sensible Eff. at -0C 75%					
Heating design conditions			Cooling design conditions		
Outdoor temp -9.4 Indoor temp: 72 Mean soil temp: 48			Outdoor temp 86 Indoor temp: 75 Latitude: 44		
Above grade walls			Below grade walls		
Style A: As per OBC SB12 Package A1 R 22			Style A: As per OBC SB12 Package A1 R 20ci		
Style B: Existing Walls (When Applicable) R 12			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: As per Selected OBC SB12 Package A1			Style A: As per Selected OBC SB12 Package A1 R 60		
Style B:			Style B: As per Selected OBC SB12 Package A1 R 31		
Exposed floors			Style C:		
Style A: As per Selected OBC SB12 Package A1 R 31			Doors		
Style B:			Style A: As per Selected OBC SB12 Package A1 R 4.00		
Windows			Style B:		
Style A: As per Selected OBC SB12 Package A1 R 3.55			Style C:		
Style B: Existing Windows (When Applicable) R 1.99			Skylights		
Style C:			Style A: As per Selected OBC SB12 Package A1 R 2.03		
Style D:			Style B:		
Attached documents: As per Shedule 1		Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values			
Notes: Residential New Construction - Forced Air					
Calculations performed by					
Name: David DaCosta			Postal code: L4T 0A4		
Company: gtaDesigns Inc.			Telephone: (905) 671-9800		
Address: 2985 Drew Road, Suite 202			Fax: (416) 268-6820		
City: Mississauga			E-mail dave@gtadesigns.ca		

REVIEWED

Builder: Bayview Wellington

Date: December 12, 2023

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code.

Page 3

Project: Green Valley

Model: THWU-15E

System 1

Individual BCIN: 32964

David DaCosta

Project # PJ-00204
Layout # JB-04878

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	10,856 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	2.0 Ton
Level 2 Net Load	12,066 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	AMEC960403ANA	Model		Cond.-----	2.0
Level 3 Net Load	10,393 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	40000	Input Btu/h		Coil -----	2.0
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	38400	Output Btu/h			
Total Heat Loss	33,315 btu/h	R/A Plenum Pressure	0.138 "w.c.	E.s.p.	0.50 " W.C.	Min.Output Btu/h	AWH		
Total Heat Gain	18,151 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:			
Combo System HL + 10%	36,646 Btu/h	Heating Air Flow Proportioning Factor	0.0232 cfm/btuh	AFUE	96%	Blower Speed Selected:	W2	Blower Type	ECM
Building Volume Vb	21801 ft³	Cooling Air Flow Proportioning Factor	0.0425 cfm/btuh	Aux. Heat				(Brushless DC OBC 12.3.1.5.(2))	
Ventilation Load	1,118 Btu/h.	R/A Temp	70 deg. F.	SB-12 Package	Package A1	Heating Check	772 cfm	Cooling Check	772 cfm
Ventilation PVC	79.5 cfm	S/A Temp	116 deg. F.	Temp. Rise>>>	46 deg. F.	Selected cfm>	772 cfm	Cooling Air Flow Rate	772 cfm
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.						

	Level 1														Level 2													
S/A Outlet No.	1	2	3												4	5	6	7	8	9								
Room Use	BASE	BASE	BASE												KIT	KIT	FAM	LAUN	PWD	FOY								
Btu/Outlet	3619	3619	3619												1722	1722	3718	609	474	3822								
Heating Airflow Rate CFM	84	84	84												40	40	86	14	11	89								
Cooling Airflow Rate CFM	14	14	14												97	97	114	47	3	54								
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13		
Actual Duct Length	30	15	21												37	42	27	3	20	41								
Equivalent Length	100	100	90	70	70	70	70	70	70	70	70	70	70	70	70	90	90	130	100	110	70	70	70	70	70	70		
Total Effective Length	130	115	111	70	70	70	70	70	70	70	70	70	70	70	107	132	117	133	120	151	70	70	70	70	70	70		
Adjusted Pressure	0.10	0.11	0.12	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.12	0.10	0.11	0.10	0.11	0.09	0.19	0.19	0.19	0.19	0.19	0.19		
Duct Size Round	6	6	6												6	6	6	5	3	6								
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10		
Trunk	B	A	C												B	B	A	C	C	C								

	Level 3						Level 4																			
S/A Outlet No.	10	11	12	13	14	15																				
Room Use	MAST	ENS	BED 4	BED 3	BED 2	BATH																				
Btu/Outlet	2008	1511	1246	3077	2404	147																				
Heating Airflow Rate CFM	47	35	29	71	56	3																				
Cooling Airflow Rate CFM	86	33	43	81	71	3																				
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13
Actual Duct Length	45	58	46	51	39	14																				
Equivalent Length	100	120	100	120	130	140	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	
Total Effective Length	145	178	146	171	169	154	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	
Adjusted Pressure	0.09	0.07	0.09	0.08	0.08	0.08	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Duct Size Round	6	4	5	6	6	2																				
Outlet Size	4x10	3x10	3x10	4x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	
Trunk	A	B	A	C	C	C																				

Return Branch And Grill Sizing	Grill Pressure Loss										0.02 "w.c.
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R
Inlet Air Volume CFM	126	316	105	105	120						
Duct Design Pressure	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12
Actual Duct Length	7	6	39	39	28						
Equivalent Length	155	175	155	150	135	50	50	50	50	50	50
Total Effective Length	162	181	194	189	163	50	50	50	50	50	50
Adjusted Pressure	0.07	0.06	0.06	0.06	0.07	0.24	0.24	0.24	0.24	0.24	0.24
Duct Size Round	6.0	10.0	6.0	6.0	7.0						
Inlet Size	FLC	8	8	8	8						
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size		30	14	14	14						
Trunk	Z	Z			Z						

Return Trunk Duct Sizing				
Trunk	CFM	Press.	Round	Rect. Size
Drop	772	0.06	14.0	24x10
Z	562	0.06	12.5	18x8 14x10
Y				
X				
W				
V				
U				
T				
S				
R				
Q				

Supply Trunk Duct Sizing				
Trunk	CFM	Press.	Round	Rect. Size
A	444	0.07	11.0	14x8 10x10
B	199	0.07	8.5	8x8 107
C	328	0.08	10.0	12x8 10x10
D				
E				
F				
G				
H				
I				
J				
K				

REVIEWED

2012 OBC

Builder: Bayview Wellington

Date: December 12, 2023

Project: Green Valley

Model: THWU-15E

System 1

Weather Data Bradford 44 -9.4 86 22 48.2

Heat Loss ^T 81.4 deg. F Ht gain ^T 11 deg. F GTA: 1922

Project # PJ-00204
Layout # JB-04878

Level 1

BASE

Run ft. exposed wall A	114 A	A	A	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG	3.5 AG
Floor area	769 Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	399												
Gross Exp Wall B													

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.55	22.93	10.91														
East/West	3.55	22.93	27.35	13	298	356											
South	3.55	22.93	20.89	6	138	125											
WOB Windows	3.15	25.84	28.32														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75														
Net exposed walls A	21.13	3.85	0.52	380		198											
Net exposed walls B	14.49	5.62	0.76														
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	22.86	3.56	1.66														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss	On Grade () or Above ()			4970													
Total Conductive	Heat Loss			5405													
	Heat Gain				679												
Air Leakage	Heat Loss/Gain	0.9567	0.0414	5171	28												
Ventilation	Case 1	0.10	0.11														
	Case 2	14.07	11.88														
	Case 3	x	0.05	279	78												
Heat Gain People			239														
Appliances Loads	1 = .25 percent		3156														
Duct and Pipe loss			10%														
Level 1 HL Total	10,856			10856													
Level 1 HG Total	1,020				1020												

Level 2

KIT

FAM

LAUN

PWD

FOY

Run ft. exposed wall A	30 A	39 A	9 A	7 A	28 A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	10.0	10.0	10.0	10.0	13.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
Floor area	217 Area	376 Area	75 Area	32 Area	68 Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	300	390	90	70	364								
Gross Exp Wall B													

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.55	22.93	10.91														
East/West	3.55	22.93	27.35	55	1261	1504				13	298	356					
South	3.55	22.93	20.89				42	963	877	9	206	188					
Existing Windows	1.99	40.90	22.15														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75														
Net exposed walls A	17.03	4.78	0.65	245	1171	158	348	1663	225	90	430	58	70	335	45	306	1463
Net exposed walls B	8.50	9.58	1.29														
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	22.86	3.56	1.66														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss	On Grade () or Above ()		x														
Total Conductive	Heat Loss			2432				2626			430			335		2700	
	Heat Gain				1663			1102			58			45		840	
Air Leakage	Heat Loss/Gain	0.3640	0.0414	885	69			956	46		157	2		122	2	983	35
Ventilation	Case 1	0.04	0.11														
	Case 2	14.07	11.88														
	Case 3	x	0.05	126	191			136	127		22	7		17	5	139	97
Heat Gain People			239														
Appliances Loads	1 = .25 percent		3156														
Duct and Pipe loss			10%														
Level 2 HL Total	12,066			3443				3718			609			474		3822	
Level 2 HG Total	9,677				4551			2682			1113			68		1263	

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

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

32964

David DaCosta

SB-12 Package

Package A1

Total Heat Loss	33,315	btu/h
Total Heat Gain	18,151	btu/h

REVIEWED



I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code.

Individual BCIN: 32964

David DaCosta

Package: **Package A1**
Project: **Bradford** Model: **THWU-15E**

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O.reg 332/12

Location of Installation

Lot #	Plan #
Township	
Bradford	
Roll #	Permit #
Address	

Builder

Name	
Bayview Wellington	
Address	
City	
Tel	Fax

Installing Contractor

Name	
Address	
City	
Tel	Fax

Combustion Appliances 9.32.3.1(1)

- | | | |
|----|-------------------------------------|--|
| a) | <input checked="" type="checkbox"/> | Direct vent (sealed combustion) only |
| b) | <input type="checkbox"/> | Positive venting induced draft (except fireplaces) |
| c) | <input type="checkbox"/> | Natural draft, B-vent or induced draft fireplaces |
| d) | <input type="checkbox"/> | Solid fuel (including fireplaces) |
| e) | <input type="checkbox"/> | No combustion Appliances |

Heating System

- | | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Forced air |
| <input type="checkbox"/> | Non forced air |
| <input type="checkbox"/> | Electric space heat (if over 10% of heat load) |

House Type 9.32.3.1(2)

- | | | |
|-------|-------------------------------------|---|
| I | <input checked="" type="checkbox"/> | Type a) or b) appliances only, no solid fuel |
| II | <input type="checkbox"/> | Type I except with solid fuel (including fireplace) |
| III | <input type="checkbox"/> | Any type c) appliance |
| IV | <input type="checkbox"/> | Type I or II either electric space heat |
| Other | <input type="checkbox"/> | Type I, II or IV no forced air |

System Design Option

- | | | |
|---------------|-------------------------------------|---|
| 1 | <input type="checkbox"/> | Exhaust only / forced air system |
| 2 | <input type="checkbox"/> | HRV WITH DUCTING / forced air system |
| 3 | <input checked="" type="checkbox"/> | HRV simplified connection to forced air system |
| 4 | <input type="checkbox"/> | HRV full ducting/not coupled to forced air system |
| Part 6 design | | |

Total Ventilation Capacity 9.32.3.3(1)

Bsmt & Master Bdrm	2 @ 21.2 cfm	42.4 cfm
Other Bedrooms	3 @ 10.6 cfm	31.8 cfm
Bathrooms & Kitchen	4 @ 10.6 cfm	42.4 cfm
Other rooms	3 @ 10.6 cfm	31.8 cfm
Total		<u>148.4</u>

Principal Ventilation Capacity 9.32.3.4(1)

Master bedroom	1 @ 31.8 cfm	31.8 cfm
Other bedrooms	3 @ 15.9 cfm	47.7 cfm
Total		<u>79.5</u>

Principal Exhaust Fan Capacity

Make	Model	Location
LifeBreath	RNC155	Base
132 cfm		Sones or Equiv.

Heat Recovery Ventilator

Make	LifeBreath
Model	RNC155
	132 cfm high
	80 cfm low
Sensible efficiency @ -25 deg C	71%
Sensible efficiency @ 0 deg C	75%

Note: Installer to balance HRV/ERV to within 10 percent of PVC

Supplemental Ventilation Capacity

Total ventilation capacity	148.4
Less principal exhaust capacity	79.5
REQUIRED supplemental vent. Capacity	<u>68.9</u> cfm

Supplemental Fans 9.32.3.5.

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

all fans HVI listed Make Broan or Equiv.

Designer Certification

I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.

Name David DaCosta

Signature

HRAI # 5190 BCIN # 32964

Date December 12, 2023

REVIEWED



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

Energy Efficiency Design Summary: Prescriptive Method (Building Code Part 9, Residential)

Page 7
Project # PJ-00204
Layout # JB-04878

This form is used by a designer to demonstrate that the energy efficiency design of a house complies with the building code using the prescriptive method described in Subsection 3.1.1. of SB-12. This form is applicable where the ratio of gross area of windows/sidelights/skylights/glazing in doors and sliding glass doors to the gross area of peripheral walls is not more than 22%.

For use by Principal Authority

Application No:

Model/Certification Number

A. Project Information

Building number, street name THWU-15E		Unit number	Lot/Con
Municipality Bradford	Postal code	Reg. Plan number / other description	

B. Prescriptive Compliance [indicate the building code compliance package being employed in the house design]

SB-12 Prescriptive (input design package): Package A1 Table: 3.1.1.2.A

C. Project Design Conditions

Climatic Zone (SB-1):	Heat. Equip. Efficiency	Space Heating Fuel Source
<input checked="" type="checkbox"/> Zone 1 (< 5000 degree days) <input type="checkbox"/> Zone 2 (≥ 5000 degree days)	<input checked="" type="checkbox"/> ≥ 92% AFUE <input type="checkbox"/> ≥ 84% < 92% AFUE	<input checked="" type="checkbox"/> Gas <input type="checkbox"/> Propane <input type="checkbox"/> Solid Fuel <input type="checkbox"/> Oil <input type="checkbox"/> Electric <input type="checkbox"/> Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area	Other Building Characteristics	
Area of Walls = <u>302.53</u> m ² or <u>3256.4</u> ft ²	W, S & G % = <u>7%</u>	<input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> ICF Above Grade <input type="checkbox"/> ICF Basement <input type="checkbox"/> Slab-on-ground Walkout Basement <input checked="" type="checkbox"/> Air Conditioning Combo Unit
Area of W, S & G = <u>22.389</u> m ² or <u>241.0</u> ft ²	Utilize Window <input type="checkbox"/> Yes Averaging <input checked="" type="checkbox"/> No	<input type="checkbox"/> Air Sourced Heat Pump (ASHP) <input type="checkbox"/> Ground Source Heat Pump (GSHP)

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

Energy Efficiency Substitutions				
<input type="checkbox"/> ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5)) <input type="checkbox"/> Combined space heating and domestic water heating systems (3.1.1.2(7) / 3.1.1.3.(7))				
<input type="checkbox"/> Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached)	<input type="checkbox"/> Table 3.1.1.4.B Required: Permitted Substitution: <input type="checkbox"/> Table 3.1.1.4.C Required: Permitted Substitution:			
Building Component	Minimum RSI/R-Values or Maximum U-Value ¹		Building Component	Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating	
Ceiling with Attic Space	60		Windows/Sliding Glass Doors	1.6
Ceiling without Attic Space	31		Skylights	2.8
Exposed Floor	31		Mechanicals	
Walls Above Grade	22		Heating Equip.(AFUE)	96%
Basement Walls	20.0ci		HRV Efficiency (SRE% at 0°C)	75%
Slab (all >600mm below grade)	x		DHW Heater (EF)	0.80
Slab (edge only ≤600mm below grade)	10		DWHR (CSA B55.1 (min. 42% efficiency))	#Showers 2
Slab (all ≤600mm below grade, or heated)	10		Combined Heating System	

(1) U value to be provided in either W/(m²·K) or Btu/(h·ft²·F) but not both.

E. Designer(s) [name(s) & BCIN(s), if applicable, of person(s) providing information herein to substantiate that design meets building code]

Name David DaCosta	BCIN 32964	Signature
------------------------------	----------------------	---------------

Package: Package A1 System: System 1
Project: Bradford Model: THWU-15E

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.324	21801	81.4	10343

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.079	21801	11	341

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air	Level Conductive Heat Loss	Air Leakage Heat Loss Multiplier
Level 1	0.5	10343	5405	0.9567
Level 2	0.3		8523	0.3640
Level 3	0.2		7715	0.2681
Level 4	0		0	0.0000

Levels			
1	2	3	4
(LF)	(LF)	(LF)	(LF)
1.0	0.6	0.5	0.4
	0.4	0.3	0.3
		0.2	0.2
			0.1

HG LEAK		Air Leakage Heat Gain	
	341		0.0414
BUILDING CONDUCTIVE HEAT GAIN		8220	

Levels this Dwelling	
3	

Ventilation Calculations

Ventilation Heat Loss

Ventilation Heat Loss				
C	PVC	HL^T	(1-E) HRV	HLbvent
1.08	79.5	81.4	0.16	1118

Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG^T	HGbvent
1.1	79.5	11	944

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HLbvent	LVL Cond. HL	Multiplier
Level 1	0.5	1118	5405	0.10
Level 2	0.3		8523	0.04
Level 3	0.2		7715	0.03
Level 4	0		0	0.00

Case 1

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier	
HGbvent	944	0.11	
Building	8220		

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

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

Case 2

Ventilation Heat Gain (Direct Ducted Systems)

C	HG^T	Multiplier
1.08	11	11.88

Case 3

Ventilation Heat Loss (Forced Air Systems)

HLbvent		Multiplier
Total Ventilation Load	1118	0.05

Case 3

Ventilation Heat Gain (Forced Air Systems)

Vent Heat Gain		Multiplier
HGbvent	HG*1.3	0.11
944	1	

Foundation Conductive Heatloss Level 1

1457 Watts 4970 Btu/h

Foundation Conductive Heatloss Level 2

Watts Btu/h

Envelope Air Leakage Calculator

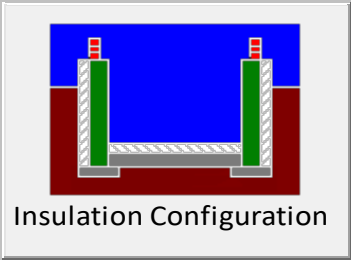
Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Bradford			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest			
Walls:	Heavy			
Flue:	Heavy			
Highest Ceiling Height (m):	6.55			
Building Configuration				
Type:	Semi-Detached			
Number of Stories:	Two			
Foundation:	Shallow			
House Volume (m ³):	617.39			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57)			
Custom BDT Data:	ELA @ 10 Pa. 322.44 cm ²			
	3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	39.75		39.75	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H):		0.324		
Cooling Air Leakage Rate (ACH/H):		0.079		

REVIEWED















Residential Foundation Thermal Load Calculator

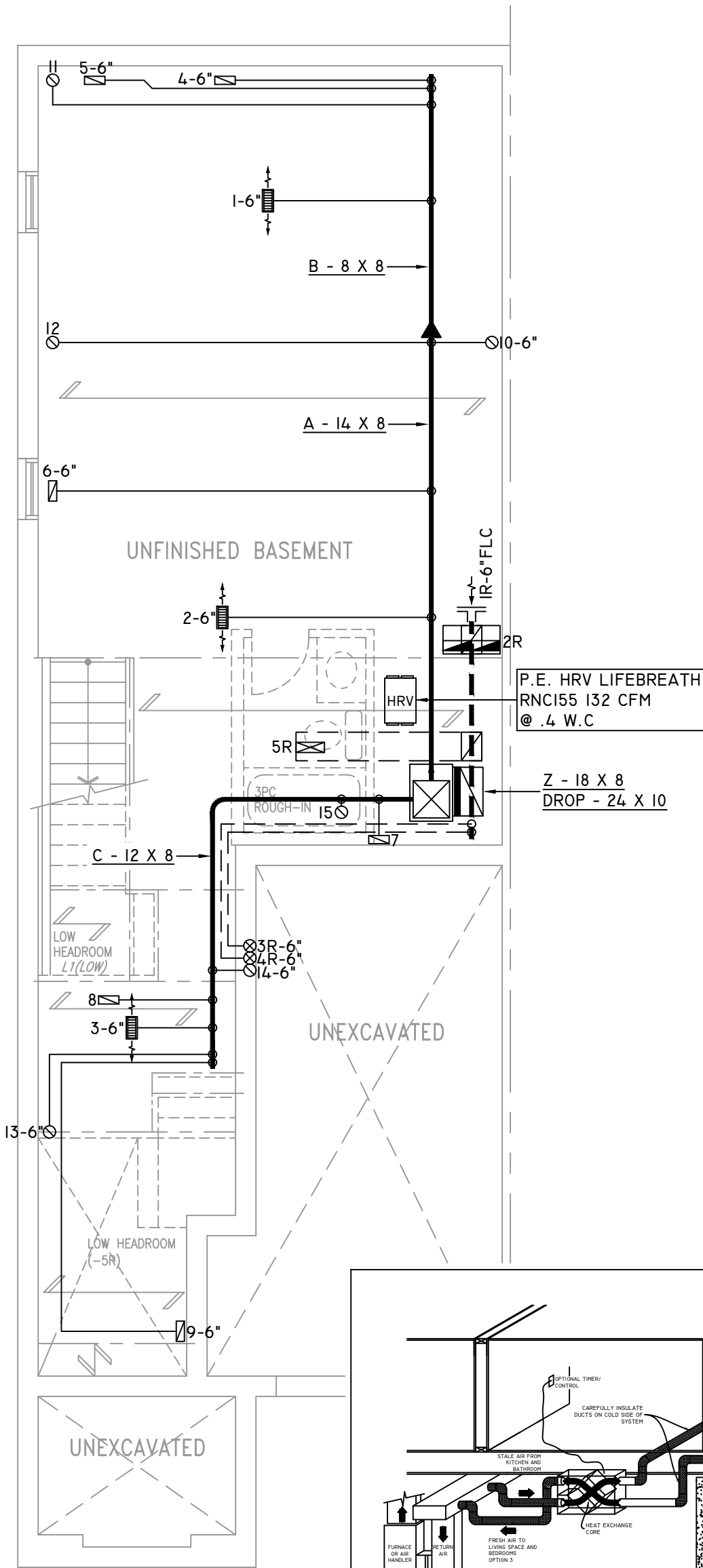
Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario ▼	
Region:	Bradford ▼	
Site Description		
Soil Conductivity:	High conductivity: moist soil ▼	
Water Table:	Normal (7-10 m, 23-33 Ft) ▼	
Foundation Dimensions		
Floor Length (m):	18.17	 <p>Insulation Configuration</p>
Floor Width (m):	3.93	
Exposed Perimeter (m):	34.75	
Wall Height (m):	2.59	
Depth Below Grade (m):	1.52	
Window Area (m ²):	1.77	
Door Area (m ²):	0.00	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1457

REVIEWED

REVIEWED

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




- FOR THE PURPOSE OF HEATLOSS/GAIN CALCULATIONS ALL ELEVATIONS HAVE BEEN CONSIDERED
- FURNACE EQUIPPED WITH BRUSHLESS DC MOTOR AS PER OBC 12.3.1.5 (2)
- INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12
- ALL DUCTWORK LOCATED IN CONDITIONED AREAS MUST BE SEALED TO CLASS C LEVEL AS PER OBC PART 6-6.2.4.3.(12)

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

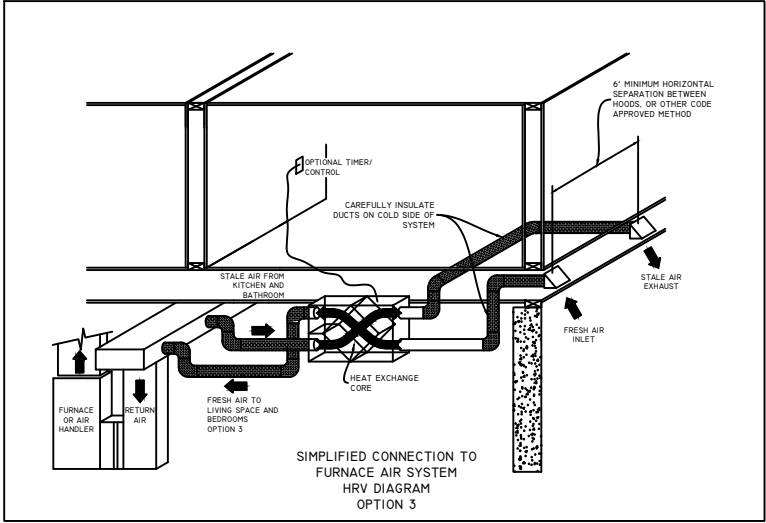
QUALIFICATION INFORMATION

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

DAVID DA COSTA  B.C.I.N. 32964

SIGNATURE OF DESIGNER

BASEMENT PLAN 'A' / 'B'



OBC 2012

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

INSULATE DUCTS IN UNCONDITIONED SPACES R12 UNDERCUT ALL DOORS 1" MIN.

CONTRACTOR MUST WORK FROM APPROVED PLANS.

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.

GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



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

















HEAT-LOSS	33,315	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	772	CFM

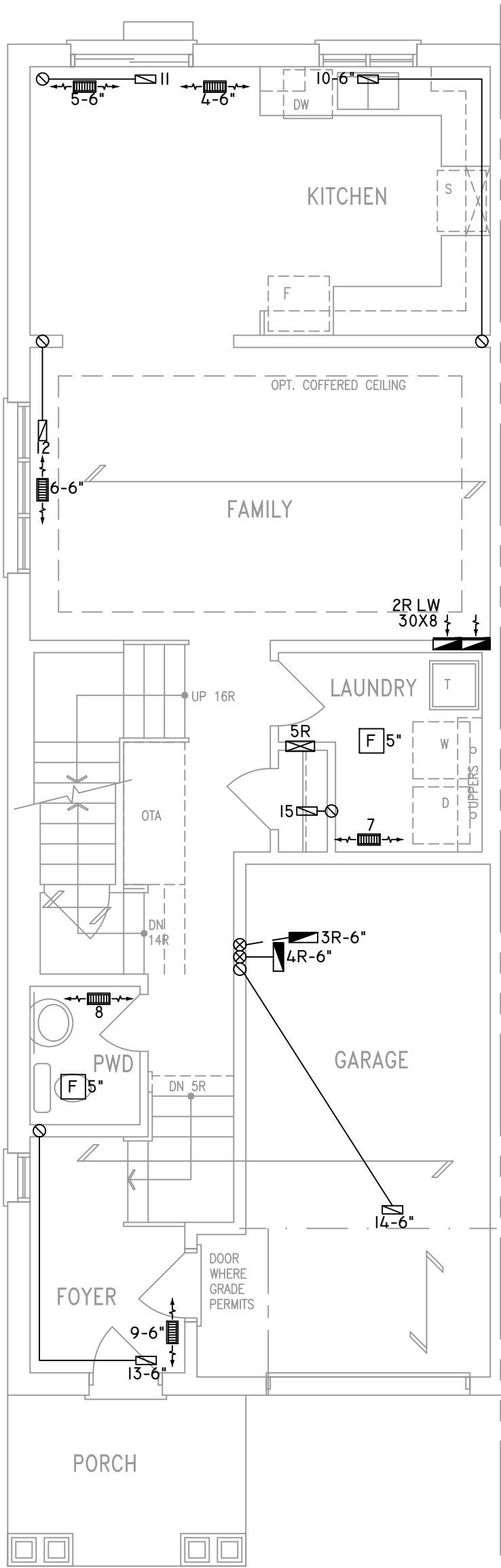
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	3	2
1ST FLOOR	6	1	3
BASEMENT	3	1	

FLOOR PLAN:	BASEMENT
DRAWN BY:	JL
CHECKED:	DD
LAYOUT NO.	JB-04878
SQFT	1922
DRAWING NO.	MI

DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	THWU-I5E
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

REVIEWED

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



KITCHEN EXHAUST
100 CFM MIN. 6"

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

CIRCULATION PRINCIPAL
FAN SWITCH
TO BE CENTRALLY
LOCATED

INSULATE ALL DUCTS IN
UNCONDITIONED
SPACES MIN. R12


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

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

QUALIFICATION INFORMATION

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

DAVID DA COSTA



SIGNATURE OF DESIGNER

B.C.I.N. 32964

GROUND FLOOR PLAN 'A' / 'B'

OBC 2012

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

INSULATE DUCTS IN UNCONDITIONED SPACES R12 UNDERCUT ALL DOORS 1" MIN.

CONTRACTOR MUST WORK FROM APPROVED PLANS.

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.

GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



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
















HEAT-LOSS	33,315	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC9604.03ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	772	CFM

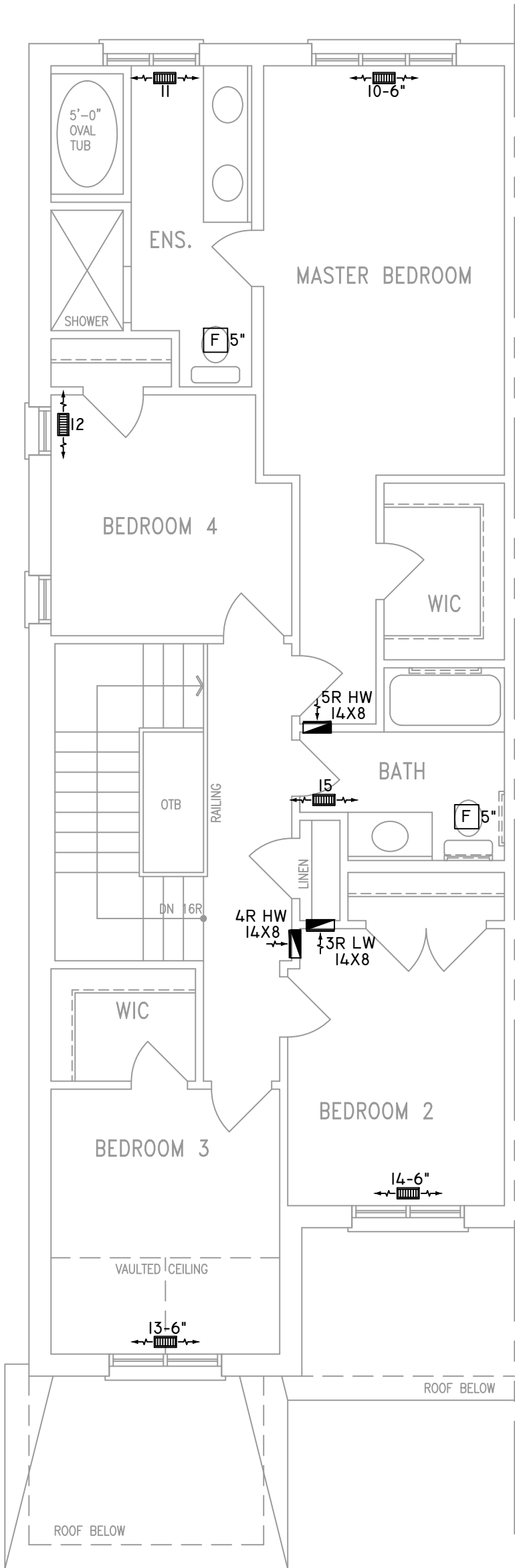
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	3	2
1ST FLOOR	6	1	3
BASEMENT	3	1	

FLOOR PLAN: GROUND FLOOR	
DRAWN BY: JL	CHECKED: DD
LAYOUT NO. JB-04878	SQFT 1922
	DRAWING NO. M2

DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	THWU-I5E
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

REVIEWED

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



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

INSULATE ALL DUCTS IN
UNCONDITIONED
SPACES MIN. R12

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

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

QUALIFICATION INFORMATION

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

DAVID DA COSTA



B.C.I.N. 32964

SIGNATURE OF DESIGNER

SECOND FLOOR PLAN 'A'

OBC 2012

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

NOTES
INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE SPECIFIED.
PROVIDE BALANCING DAMPERS ON ALL BRANCHES.
ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES R12 UNDERCUT ALL DOORS 1" MIN.
CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.
GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



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



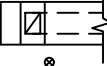










HEAT-LOSS	33,315	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC9604.03ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	772	CFM

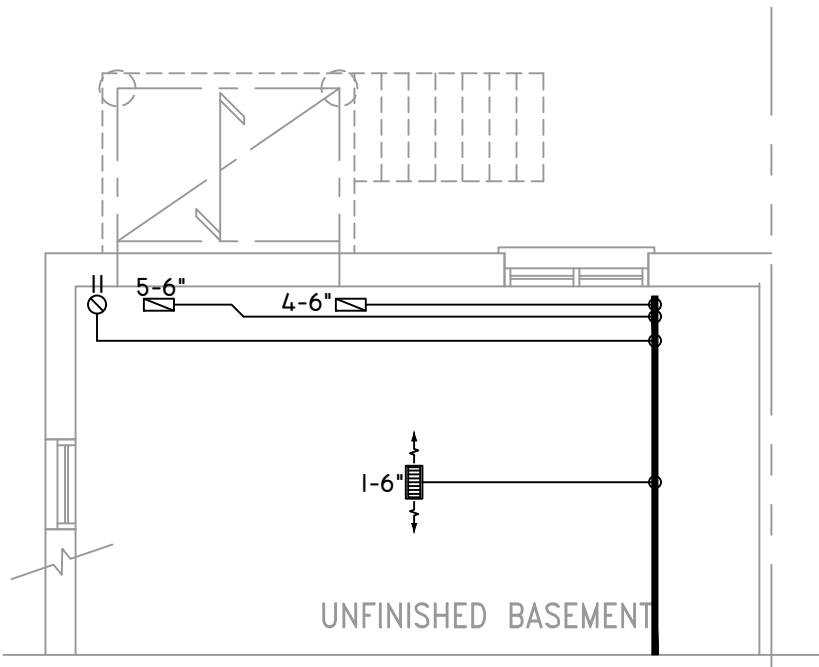
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	3	2
1ST FLOOR	6	1	3
BASEMENT	3	1	

FLOOR PLAN: SECOND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 1922
LAYOUT NO. JB-04878	DRAWING NO. M3	

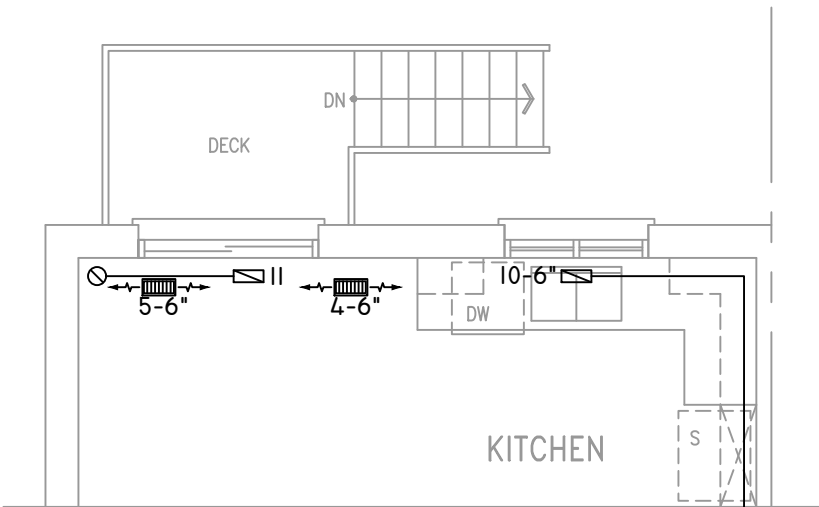
DATE:	DECEMBER 12, 2023
CLIENT:	BAYVIEW WELLINGTON
MODEL:	THWU-I5E
PROJECT:	GREEN VALLEY BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

REVIEWED

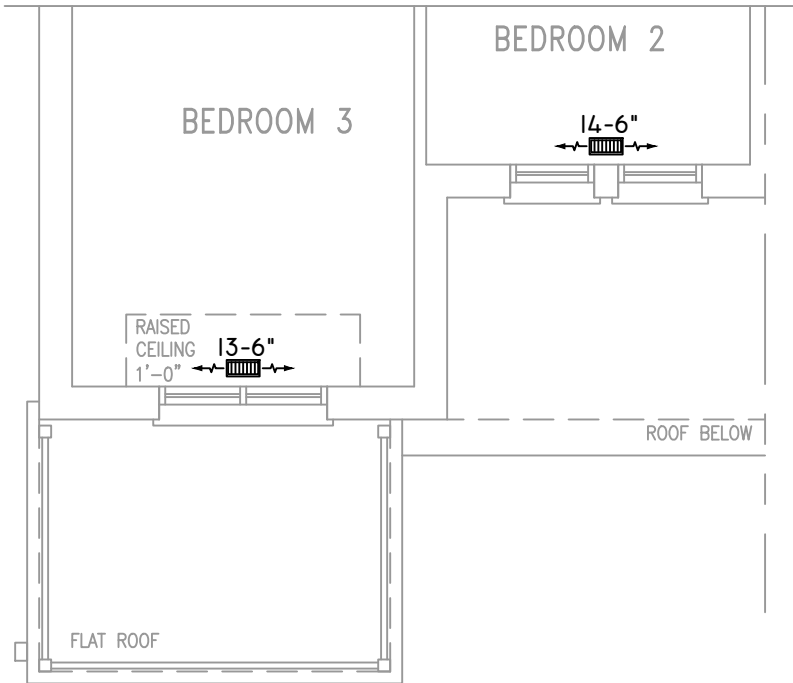
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR PIPE RISER		RETURN ROUND DUCT		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A. R.A. T \$ F PE	SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN
	RIGID ROUND DUCT		HRV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



PARTIAL BASEMENT PLAN
W.O.D. CONDITION (9R OR GREATER)



PARTIAL GROUND FLOOR PLAN
W.O.D. CONDITION (9R OR GREATER)




PARTIAL SECOND FLOOR PLAN 'B'

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

QUALIFICATION INFORMATION

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

DAVID DA COSTA



B.C.I.N. 32964

SIGNATURE OF DESIGNER

OBC 2012

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

NOTES
INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE SPECIFIED.
PROVIDE BALANCING DAMPERS ON ALL BRANCHES.
ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES R12 UNDERCUT ALL DOORS 1" MIN.
CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.
GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



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

HEAT-LOSS	33,315	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	772	CFM

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

FLOOR PLAN: PARTIAL PLAN(S)		
DRAWN BY: JL	CHECKED: DD	SQFT 1922
LAYOUT NO. JB-04878	DRAWING NO. M4	

DATE: DECEMBER 12, 2023
CLIENT: BAYVIEW WELLINGTON
MODEL: THWU-I5E
PROJECT: GREEN VALLEY BRADFORD,ONT.
SCALE: 3/16" = 1'-0"