


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.	
Municipality	Bradford	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities					
Name		David DaCosta			
Firm		gtaDesigns Inc.			
Street address		2985 Drew Road, Suite 202		Unit no.	Lot/con.
Municipality	Mississauga	Postal code	L4T 0A4	Province	Ontario
E-mail		dave@gtadesigns.ca			
Telephone number		(905) 671-9800		Fax number	(647) 494-9643
Cell number		(416) 268-6820			
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]					
<input type="checkbox"/> House		<input checked="" type="checkbox"/> HVAC – House		<input type="checkbox"/> Building Structural	
<input type="checkbox"/> Small Buildings		<input type="checkbox"/> Building Services		<input type="checkbox"/> Plumbing – House	
<input type="checkbox"/> Large Buildings		<input type="checkbox"/> Detection, Lighting and Power		<input type="checkbox"/> Plumbing – All Buildings	
<input type="checkbox"/> Complex Buildings		<input type="checkbox"/> Fire Protection		<input type="checkbox"/> On-site Sewage Systems	
Description of designer's work		Model Certification		Project #:	PJ-00204
				Layout #:	JB-04863
Heating and Cooling Load Calculations	Main	X	Builder	Bayview Wellington	
Air System Design	Alternate		Project	Green Valley East	
Residential mechanical ventilation Design Summary	Area Sq ft:	1815	Model	TH-2	
Residential System Design per CAN/CSA-F280-12			SB-12	Package A1	
Residential New Construction - Forced Air					
D. Declaration of Designer					
I, <u>David DaCosta</u> declare that (choose one as appropriate):					
(print name)					
<input type="checkbox"/> I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____					
<input checked="" type="checkbox"/> I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code. Individual BCIN: <u>32964</u> Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u>					
<input type="checkbox"/> The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification: _____					
I certify that:					
1. The information contained in this schedule is true to the best of my knowledge.					
2. I have submitted this application with the knowledge and consent of the firm.					
<u>June 18, 2018</u> Date		 Signature of Designer			

NOTE:

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

Heat loss and gain calculation summary sheet				CSA-F280-M12 Standard Form No. 1	
These documents issued for the use of Bayview Wellington				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				JB-04863	
Building Location					
Address (Model): TH-2			Site: Green Valley East		
Model:			Lot:		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on: VA3 DESIGN22/May/2018					
Attachment: Townhome			Front facing: East/West		Assumed? Yes
No. of Levels: 3		Ventilated? Included	Air tightness: 1961-Present (ACH=3.57)		Assumed? Yes
Weather location: Bradford			Wind exposure: Sheltered		
HRV? LifeBreath		RNC155	Internal shading: Light-translucent		Occupants: 4
Sensible Eff. at -25C 71%		Apparent Effect. at -0C 84%	Units: Imperial		Area Sq ft: 1815
Sensible Eff. at -0C 75%					
Heating design conditions			Cooling design conditions		
Outdoor temp -9.4 Indoor temp: 72 Mean soil temp: 48			Outdoor temp 86 Indoor temp: 75 Latitude: 44		
Above grade walls			Below grade walls		
Style A: As per OBC SB12 Package A1 R 22			Style A: As per OBC SB12 Package A1 R 20ci		
Style B: Existing Walls (When Applicable) R 12			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: As per Selected OBC SB12 Package A1			Style A: As per Selected OBC SB12 Package A1 R 60		
Style B:			Style B: As per Selected OBC SB12 Package A1 R 31		
Exposed floors			Style C:		
Style A: As per Selected OBC SB12 Package A1 R 31			Doors		
Style B:			Style A: As per Selected OBC SB12 Package A1 R 4.00		
Windows			Style B:		
Style A: As per Selected OBC SB12 Package A1 R 3.55			Style C:		
Style B: Existing Windows (When Applicable) R 1.99			Skylights		
Style C:			Style A: As per Selected OBC SB12 Package A1 R 2.03		
Style D:			Style B:		
Attached documents: As per Shedule 1		Heat Loss/Gain Caculations based on CSA-F280-12 Effective R-Values			
Notes: Residential New Construction - Forced Air					
Calculations performed by					
Name: David DaCosta			Postal code: L4T 0A4		
Company: gtaDesigns Inc.			Telephone: (905) 671-9800		
Address: 2985 Drew Road, Suite 202			Fax: (416) 268-6820		
City: Mississauga			E-mail: dave@gtadesigns.ca		

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Builder: **Bayview Wellington**

Date: **June 18, 2018**

Project: **Green Valley East**

Model: **TH-2**

System 1

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* David DaCosta

Page 3
Project # **PJ-00204**
Layout # **JB-04863**

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	10,147 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	1.5 Ton
Level 2 Net Load	9,745 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	AMEC960403ANA	Model		Cond.-----	1.5
Level 3 Net Load	7,991 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	40000	Input Btu/h		Coil -----	1.5
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	38400	Output Btu/h			
Total Heat Loss	27,882 btu/h	R/A Plenum Pressure	0.138 "w.c.	E.s.p.	0.50	" W.C.			
Total Heat Gain	15,894 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp		deg. F.			
Combo System HL + 10%	30,671 Btu/h	Heating Air Flow Proportioning Factor	0.0277 cfm/btuh	AFUE	96%				
Building Volume Vb	20563 ft³	Cooling Air Flow Proportioning Factor	0.0486 cfm/btuh	Aux. Heat					
Ventilation Load	895 Btu/h	R/A Temp	70 deg. F.	SB-12 Package	Package A1				
Ventilation PVC	63.6 cfm	S/A Temp	116 deg. F.						
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	46 deg. F.				

	Level 1														Level 2													
S/A Outlet No.	1	2	3	4											5	6	7	8	9									
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	9	39									
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	26	15	8	22											36	26	11	18	29									
Equivalent Length	110	120	100	100	70	70	70	70	70	70	70	70	70	100	80	90	90	110	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		
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	0.10	0.12	0.13	0.12	0.09	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19		
Duct Size Round	5	5	5	5											6	6	3	4	5									
Outlet Size	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10		
Trunk	C	C	A	B											C	C	A	A	B									

	Level 3								Level 4																								
S/A Outlet No.	10	11	12	13	14	15	16																										
Room Use	MAST	MAST	LAUN	BED 3	BED 2	BATH	ENS																										
Btu/Outlet	1266	1266	113	2297	2432	245	372																										
Heating Airflow Rate CFM	35	35	3	64	67	7	10																										
Cooling Airflow Rate CFM	57	57	50	100	84	3	7																										
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	49	38	42	52	40	28	18																										
Equivalent Length	130	90	160	130	130	120	140	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70							
Total Effective Length	179	128	202	182	170	148	158	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70							
Adjusted Pressure	0.07	0.10	0.06	0.07	0.08	0.09	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	5	5	5	6	6	2	3																										
Outlet Size	3x10	3x10	3x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10							
Trunk	C	C	C	B	B	A	A																										

Return Branch And Grill Sizing		Grill Pressure Loss									
		0.02 "w.c.									
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R
Inlet Air Volume CFM	140	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
Actual Duct Length	5	18	41	30							
Equivalent Length	115	125	145	140	50	50	50	50	50	50	50
Total Effective Length	120	143	186	170	50	50	50	50	50	50	50
Adjusted Pressure	0.10	0.08	0.06	0.07	0.24	0.24	0.24	0.24	0.24	0.24	0.24
Duct Size Round	6.0	10.5	6.0	7.5							
Inlet Size	FLC	6	8	8							
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size		30	14	14							
Trunk	Z	Z	Z	Z							

Return Trunk Duct Sizing				
Trunk	CFM	Press.	Round	Rect. Size
Drop	772	0.06	14.0	24x10
Z	772	0.06	14.0	22x8 18x10
Y				
X				
W				
V				
U				
T				
S				
R				
Q				

Supply Trunk Duct Sizing				
Trunk	CFM	Press.	Round	Rect. Size
A	401	0.07	11.0	14x8 10x10
B	264	0.07	9.5	10x8 127
C	371	0.06	11.0	14x8 10x10
D				
E				
F				
G				
H				
I				
J				
K				

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2012 OBC

Builder: Bayview Wellington

Date: June 18, 2018

Project: Green Valley East

Model: TH-2

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: 1815

Project # PJ-00204
Layout # JB-04863

Level 1

Run ft. exposed wall A	84	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
Floor area	681	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	294												
Gross Exp Wall B													

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.55	22.93	10.91														
East/West	3.55	22.93	27.35	20	459	547											
South	3.55	22.93	20.89														
WOB Windows	3.15	25.84	28.32														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75	21	427	58											
Net exposed walls A	21.13	3.85	0.52	253		132											
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			4117													
Total Conductive	Heat Loss			5003													
	Heat Gain				737												
Air Leakage	Heat Loss/Gain	0.9750	0.0461	4878		34											
Ventilation	Case 1		0.09														
	Case 2		14.07														
	Case 3	x	0.05														
Heat Gain People			239														
Appliances Loads	1 = .25 percent		2990	2.0		1495											
Duct and Pipe loss	10%																
Level 1 HL Total	10,147			10147													
Level 1 HG Total	3,049				3049												

Level 2

Run ft. exposed wall A	51	A	5	A	11	A	18	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	10.0		10.0		12.0		11.0		10.0		10.0		10.0		10.0		10.0
Floor area	553	Area	34	Area	26	Area	82	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	510		50		132		198										
Gross Exp Wall B																	

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.55	22.93	10.91														
East/West	3.55	22.93	27.35	74	1697	2024				14	321	383					
South	3.55	22.93	20.89														
Existing Windows	1.99	40.90	22.15														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75														
Net exposed walls A	17.03	4.78	0.65	436	2084	282	50	239	32	111	531	72	165	789	107		
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																
Total Conductive	Heat Loss			3781				239		958			1496				
	Heat Gain				2306				32		129		542				
Air Leakage	Heat Loss/Gain	0.4520	0.0461	1709		106		108		433		6	676		25		
Ventilation	Case 1		0.04														
	Case 2		14.07														
	Case 3	x	0.05														
Heat Gain People			239														
Appliances Loads	1 = .25 percent		2990	1.0		747											
Duct and Pipe loss	10%																
Level 2 HL Total	9,745			5691				360		1442			2252		813		
Level 2 HG Total	5,488				4432				48		194						

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

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

32964

Dave DaCosta

Dave DaCosta

SB-12 Package

Package A1

Total Heat Loss	27,882	btu/h
Total Heat Gain	15,894	btu/h

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

Individual BCIN: 32964



David DaCosta

Package: Package A1

Project: Bradford

Model:
TH-2

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

Principal Ventilation Capacity 9.32.3.4(1)

Master bedroom	1	@	31.8	cfm	31.8	cfm
Other bedrooms	2	@	15.9	cfm	31.8	cfm
Total					63.6	

Principal Exhaust Fan Capacity

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

Heat Recovery Ventilator

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

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

Supplemental Ventilation Capacity

Total ventilation capacity	137.8
Less principal exhaust capacity	63.6
REQUIRED supplemental vent. Capacity	74.2

Supplemental Fans 9.32.3.5.

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

all fans HVI listed Make Broan or Equiv.

Designer Certification

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

Name David DaCosta

Signature 

HRAI # 5190 BCIN # 32964

Date June 18, 2018

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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-04863

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

For use by Principal Authority

Application No:

Model/Certification Number

A. Project Information

Building number, street name TH-2		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"/> Oil	<input type="checkbox"/> Propane <input type="checkbox"/> Electric	<input type="checkbox"/> Solid Fuel <input type="checkbox"/> Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		Other Building Characteristics		
Area of Walls = <u>275.77</u> m ² or <u>2968.4</u> ft ²	W,S & G % = <u>7%</u>	<input type="checkbox"/> Log/Post&Beam <input type="checkbox"/> Slab-on-ground <input checked="" type="checkbox"/> Air Conditioning <input type="checkbox"/> Air Sourced Heat Pump (ASHP) <input type="checkbox"/> Ground Source Heat Pump (GSHP)		
Area of W, S & G = <u>18.116</u> m ² or <u>195.0</u> ft ²	Utilize Window Averaging <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> ICF Above Grade <input type="checkbox"/> Walkout Basement <input type="checkbox"/> Combo Unit		

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

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

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

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

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

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

SITE COPY

Package: Project: Package A1 Bradford System: Model: System 1 TH-2

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.324	20563	81.4	9755

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.079	20563	11	321

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	9755	5003	0.9750
Level 2	0.3		6474	0.4520
Level 3	0.2		5341	0.3653
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	
	321		0.0461
BUILDING CONDUCTIVE HEAT GAIN			6967

Levels this Dwelling	
3	

Ventilation Calculations

Ventilation Heat Loss

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

Ventilation Heat Gain

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

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HLbvent	LVL Cond. HL	Multiplier
Level 1	0.5	895	5003	0.09
Level 2	0.3		6474	0.04
Level 3	0.2		5341	0.03
Level 4	0		0	0.00

Case 1

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier	
HGbvent	756	0.11	
Building	6967		

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

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

Case 2

Ventilation Heat Gain (Direct Ducted Systems)

C	HG^T	Multiplier
1.08	11	11.88

Case 3

Ventilation Heat Loss (Forced Air Systems)

HLbvent		Multiplier
Total Ventilation Load	895	0.05

Case 3

Ventilation Heat Gain (Forced Air Systems)

Vent Heat Gain		Multiplier
HGbvent	HG*1.3	0.11
756	1	

Foundation Conductive Heatloss Level 1

1207 Watts 4117 Btu/h

Foundation Conductive Heatloss Level 2

Watts Btu/h

Envelope Air Leakage Calculator

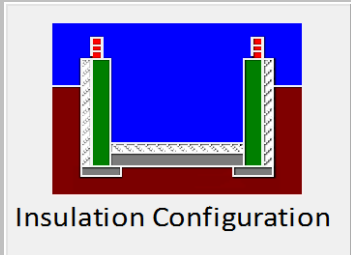
Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario			
Region:	Bradford			
Weather Station Location:	Open flat terrain, grass			
Anemometer height (m):	10			
Local 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):	582.33			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57)			
Custom BDT Data:	ELA @ 10 Pa. 322.44 cm ²			
	3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	31.8		31.8	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H): 0.324				
Cooling Air Leakage Rate (ACH/H): 0.079				



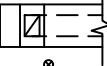








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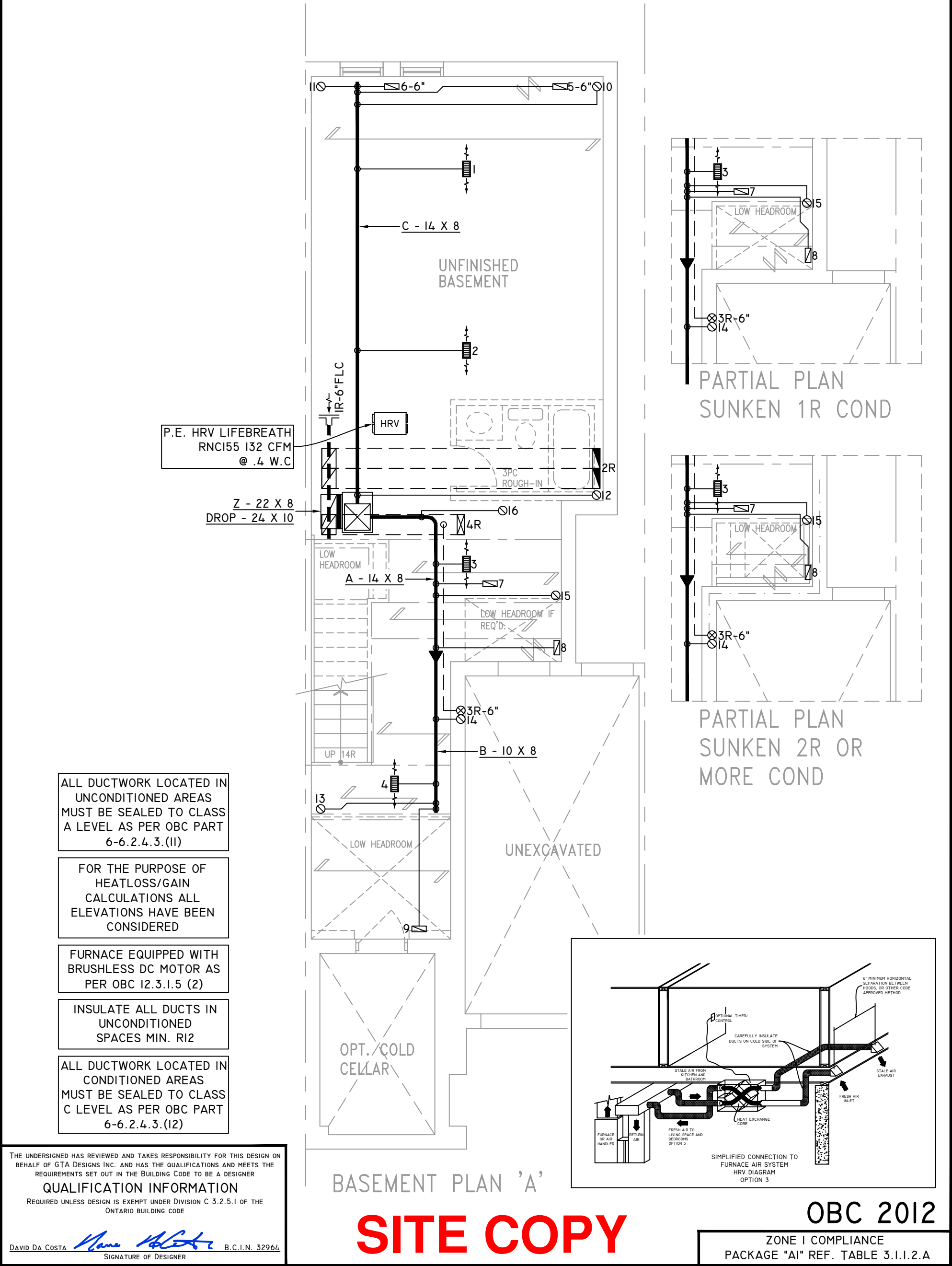
Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario ▼	
Region:	Bradford ▼	
Site Description		
Soil Conductivity:	High conductivity: moist soil ▼	
Water Table:	Normal (7-10 m, 23-33 Ft) ▼	
Foundation Dimensions		
Floor Length (m):	16.61	 <p>Insulation Configuration</p>
Floor Width (m):	3.81	
Exposed Perimeter (m):	25.60	
Wall Height (m):	2.59	
Depth Below Grade (m):	1.52	
Window Area (m ²):	1.86	
Door Area (m ²):	1.95	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1207

SITE COPY

	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR RISER UP TO FLOOR ABOVE	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 FROM BASEMENT SECOND FLOOR		
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER VOLUME DAMPER		RETURN ROUND DUCT				



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.

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

GTADESIGNS



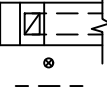













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EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

HEAT-LOSS	27,882	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	2	3
1ST FLOOR	5	1	2
BASEMENT	4	1	

FLOOR PLAN:	BASEMENT
DRAWN BY:	JL
CHECKED:	DD
LAYOUT NO:	JB-04863
SQFT	1815
DRAWING NO.	MI

DATE:	JUNE 18, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-2
PROJECT:	GREEN VALLEY EAST BRADFORD, ONT.
SCALE:	3/16" = 1'-0"

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

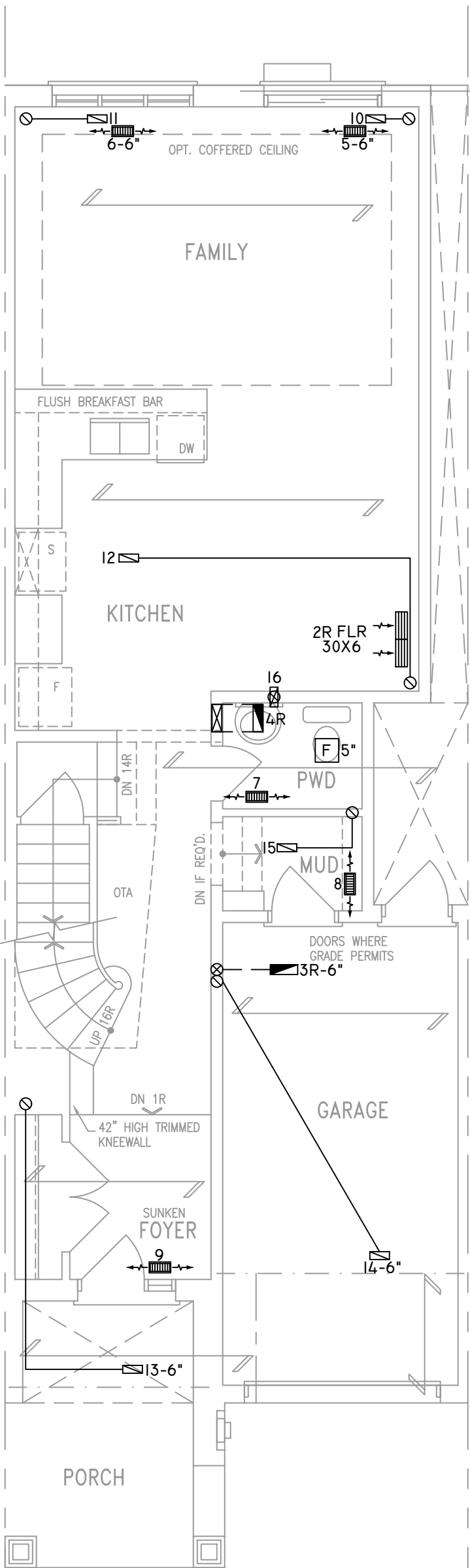
ALL DUCTWORK LOCATED IN UNCONDITIONED AREAS MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3.(II)

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.(I2)




GROUND FLOOR PLAN 'A'

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

QUALIFICATION INFORMATION

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

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

SIGNATURE OF DESIGNER

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.
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.
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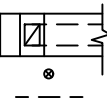













2985 DREW ROAD
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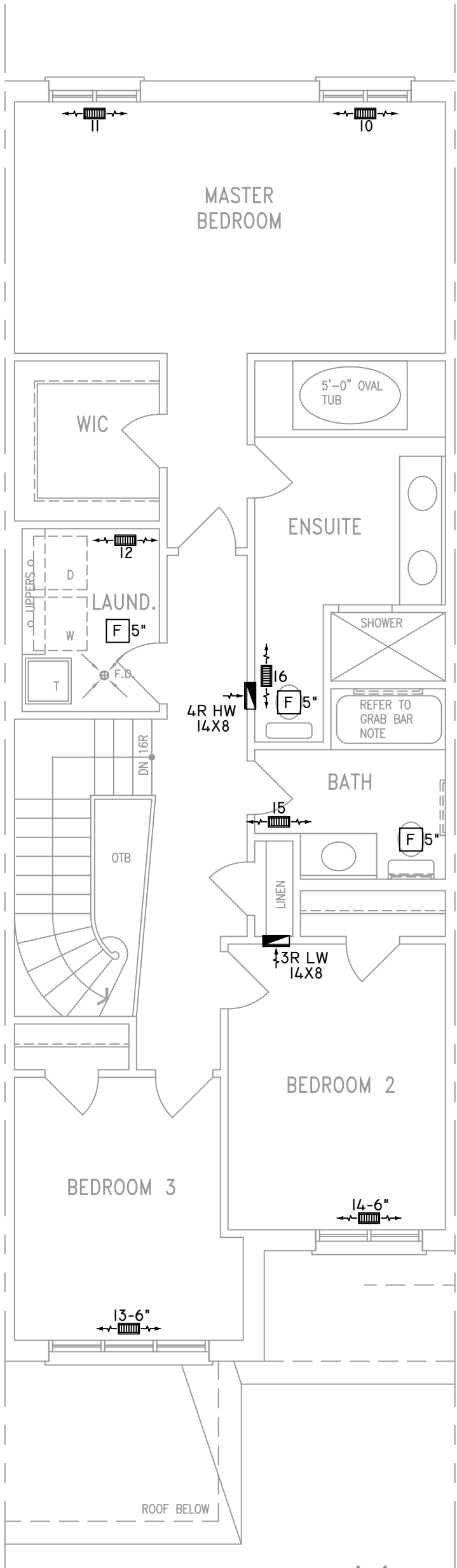
HEAT-LOSS	27,882	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960403ANA	OR EQUAL.
UNIT HEATING INPUT	40,000	BTU/HR.
UNIT HEATING OUTPUT	38,400	BTU/HR.
A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	2	3
1ST FLOOR	5	1	2
BASEMENT	4	1	

FLOOR PLAN: GROUND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 1815
LAYOUT NO. JB-04863	DRAWING NO. M2	

DATE:	JUNE 18, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-2
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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



ALL DUCTWORK LOCATED IN UNCONDITIONED AREAS MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3.(II)

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


INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

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QUALIFICATION INFORMATION

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

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

SIGNATURE OF DESIGNER

SECOND FLOOR PLAN 'A'

SITE COPY

OBC 2012

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

NOTES

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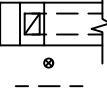












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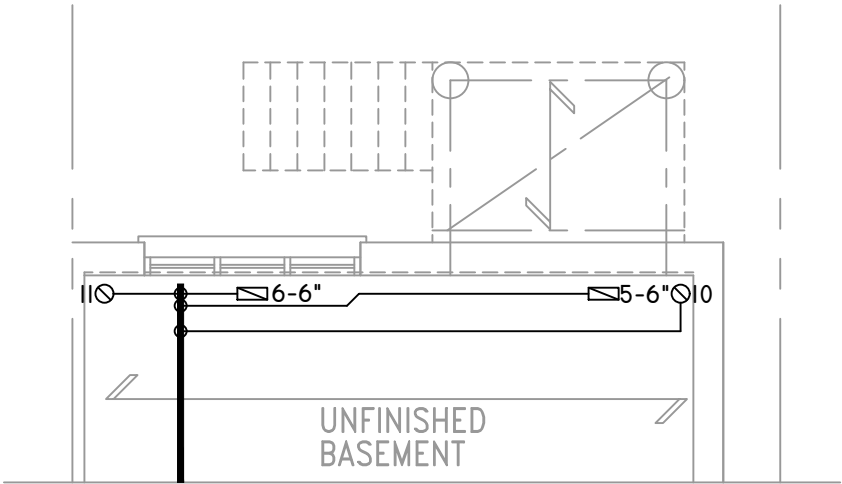
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UNIT MAKE	AMANA	OR EQUAL.
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A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	2	3
1ST FLOOR	5	1	2
BASEMENT	4	1	

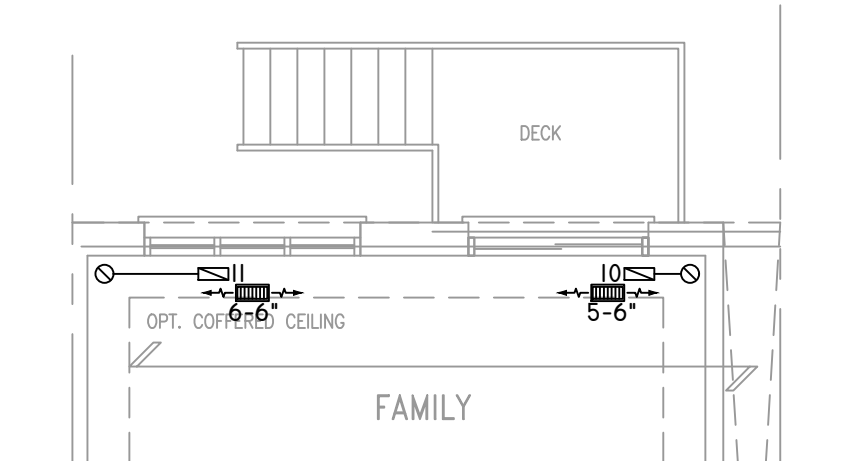
FLOOR PLAN: SECOND FLOOR		
DRAWN BY: JL	CHECKED: DD	SQFT 1815
LAYOUT NO. JB-04863	DRAWING NO. M3	

DATE:	JUNE 18, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-2
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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									PRINCIPAL EXHAUST FAN SWITCH
									W/R & PRINCIPAL EXHAUST FAN



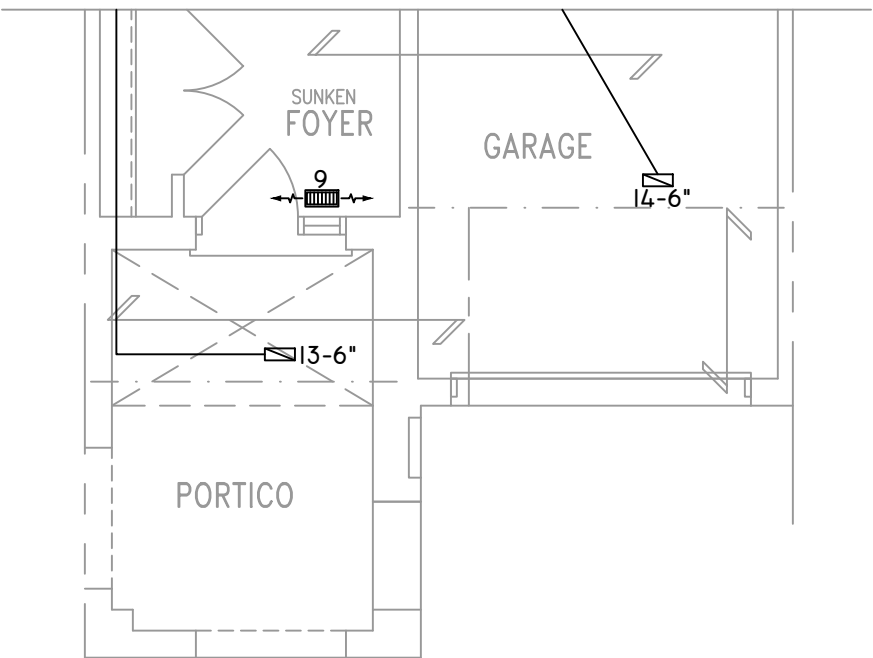
PARTIAL BASEMENT PLAN
WOD 9R COND.



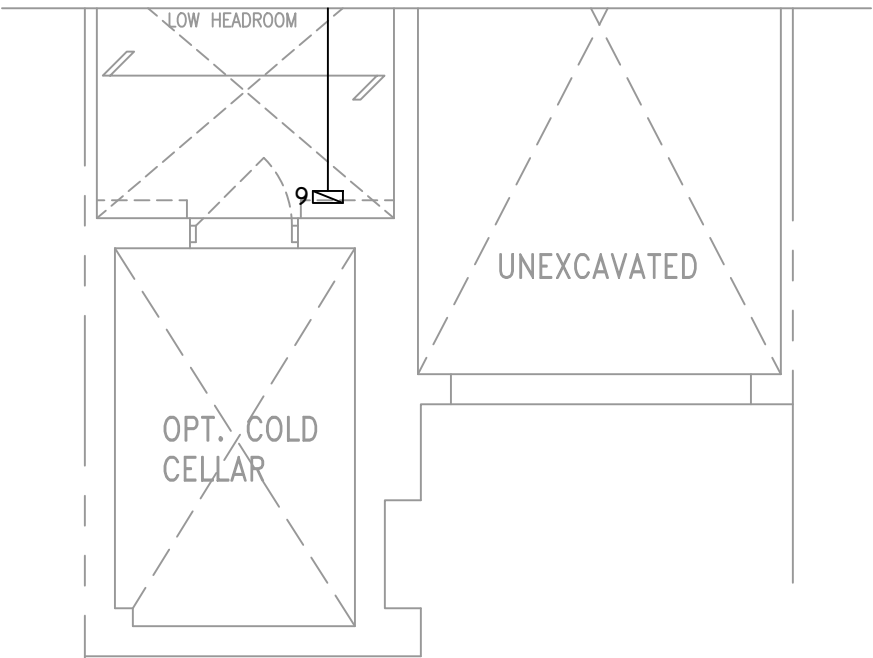
PARTIAL GROUND FLOOR PLAN
WOD 9R COND.



PARTIAL SECOND FLOOR PLAN 'B'



PARTIAL GROUND FLOOR PLAN 'B'



PARTIAL BASEMENT PLAN 'B'

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

SIGNATURE OF DESIGNER

SITE COPY

OBC 2012

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

NOTES

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A/C COOLING CAPACITY	1.5	TONS.
FAN SPEED	772	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	2	3
1ST FLOOR	5	1	2
BASEMENT	4	1	

FLOOR PLAN: PARTIAL PLAN(S)		
DRAWN BY: JL	CHECKED: DD	SQFT 1815
LAYOUT NO. JB-04863	DRAWING NO. M4	

DATE:	JUNE 18, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	TH-2
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"