

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 Rideau 1 S42-1B WOB				Lot: Lot/con.	
Municipality Bradford		Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities					
Name David DaCosta			Firm gtaDesigns Inc.		
Street address 2985 Drew Road, Suite 202				Unit no.	Lot/con.
Municipality Mississauga		Postal code L4T 0A4	Province Ontario	E-mail dave@gtadesigns.ca	
Telephone number (905) 671-9800		Fax number (647) 494-9643		Cell number (416) 268-6820	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]					
☐ House ☒ HVAC – House ☐ Building Structural ☐ Small Buildings ☐ Building Services ☐ Plumbing – House ☐ Large Buildings ☐ Detection, Lighting and Power ☐ Plumbing – All Buildings ☐ Complex Buildings ☐ Fire Protection ☐ On-site Sewage Systems					
Description of designer's work				Model Certification	
				Project #:	PJ-00204
				Layout #:	JB-04605
Heating and Cooling Load Calculations		Main	Builder	Bayview Wellington	
Air System Design		Alternate	Project	Green Valley East	
Residential mechanical ventilation Design Summary		Area Sq ft: 1791	Model	Rideau 1	
Residential System Design per CAN/CSA-F280-12				S42-1B WOB	
Residential New Construction - Forced Air			SB-12	Package A1	
D. Declaration of Designer					
I, <u>David DaCosta</u> declare that (choose one as appropriate): (print name) ☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____ ☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code. Individual BCIN: <u>32964</u> Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u> ☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification:					
I certify that: 1. The information contained in this schedule is true to the best of my knowledge. 2. I have submitted this application with the knowledge and consent of the firm.					
<u>March 23, 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-04605	
Building Location					
Address (Model): S42-1B WOB			Site: Green Valley East		
Model: Rideau 1			Lot:		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on:			VA3 Design Jan/2018		
Attachment: Detached			Front facing: East/West		Assumed? Yes
No. of Levels: 2		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: 3
Sensible Eff. at -25C 71%		Apparent Effect. at -0C 84%	Units: Imperial		Area Sq ft: 1791
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		

Builder: **Bayview Wellington**

Date: **March 23, 2018**

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

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Project: **Green Valley East**

Model: **Rideau 1
S42-1B WOB**

System 1

Individual BCIN: 32964

David DaCosta

David DaCosta

Project # **PJ-00204**
Layout # **JB-04605**

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	19,823 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	2.0 Ton
Level 2 Net Load	22,279 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	AMEC960603BNA	Model		Cond.-----	2.0
Level 3 Net Load	0 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	60000	Input Btu/h		Coil -----	2.0
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	57600	Output Btu/h			
Total Heat Loss	42,101 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	23,295 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:			
Combo System HL + 10%	46,312 Btu/h	Heating Air Flow Proportioning Factor	0.0278 cfm/btuh	AFUE	96%	Blower Speed Selected:	W2	Blower Type	ECM
Building Volume Vb	29151 ft³	Cooling Air Flow Proportioning Factor	0.0413 cfm/btuh	Aux. Heat				(Brushless DC OBC 12.3.1.5.(2))	
Ventilation Load	671 Btu/h.	R/A Temp	70 deg. F.	SB-12 Package	Package A1	Heating Check	1170 cfm	Cooling Check	963 cfm
Ventilation PVC	47.7 cfm	S/A Temp	116 deg. F.						
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	46 deg. F.	Selected cfm>	1170 cfm	Cooling Air Flow Rate	963 cfm

	Level 1														Level 2												
S/A Outlet No.	1	2	3	4	5	6	20							7	8	9	10	11	12	13	14	15	16	17	18	19	
Room Use	BASE	BASE	BASE	BASE	BASE	BASE	BASE							MAST	MAST	LIV/DIN	LIV/DIN	LIV/DIN	KIT	KIT	LAUN	FOY	IB/BED2	IB/BED2	BATH	ENS	
Btu/Outlet	2832	2832	2832	2832	2832	2832	2832							1749	1749	1659	1659	1659	1750	1750	1398	2499	2059	2059	882	1407	
Heating Airflow Rate CFM	79	79	79	79	79	79	79							49	49	46	46	46	49	49	39	69	57	57	25	39	
Cooling Airflow Rate CFM	29	29	29	29	29	29	29							55	55	75	75	75	63	63	62	63	62	62	17	30	
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	55	33	26	15	26	64							60	51	49	56	67	53	46	35	26	34	30	9	24	
Equivalent Length	110	100	110	90	140	90	120	70	70	70	70	70	70	105	80	90	120	90	70	80	140	100	80	70	120	100	70
Total Effective Length	155	155	143	116	155	116	184	70	70	70	70	70	70	165	131	139	176	157	123	126	175	126	114	100	129	124	70
Adjusted Pressure	0.08	0.08	0.09	0.11	0.08	0.11	0.07	0.19	0.19	0.19	0.19	0.19	0.19	0.08	0.10	0.09	0.07	0.08	0.11	0.10	0.07	0.10	0.11	0.13	0.10	0.10	0.19
Duct Size Round	6	6	6	6	6	6	6							5	5	6	6	6	5	5	6	6	5	5	4	4	
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	3x10	3x10	3x10	3x10	4x10
Trunk	C	B	A	A	D	D	B							C	C	C	B	B	A	A	A	D	D	D	D	A	
	Level 3														Level 4												

S/A Outlet No.																			
Room Use																			
Btu/Outlet																			
Heating Airflow Rate CFM																			
Cooling Airflow Rate CFM																			
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
Actual Duct Length	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Equivalent Length	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70
Total Effective Length	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
Adjusted Pressure	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Duct Size Round																			
Outlet Size																			
Trunk																			

Return Branch And Grill Sizing						Grill Pressure Loss						0.02 "w.c						Return Trunk Duct Sizing						Supply Trunk Duct Sizing					
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R	Trunk	CFM	Press.	Round	Rect. Size	Trunk	CFM	Press.	Round	Rect. Size								
Inlet Air Volume CFM	275	190	190	415	100							Drop	1170	0.06	16.5	24x10	A	805	0.07	14.0	22x8 18x10								
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		Z	1170	0.06	16.5	32x8 24x10	B	250	0.07	9.0	8x8 10x7							
Actual Duct Length	18	32	39	20	21								Y	655	0.06	13.5	20x8 16x10	C	222	0.08	8.5	8x8							
Equivalent Length	150	180	135	135	105	50	50	50	50	50	50	X					D	366	0.08	10.0	12x8 10x10								
Total Effective Length	168	212	174	155	126	50	50	50	50	50	50	W					E												
Adjusted Pressure	0.07	0.06	0.07	0.08	0.09	0.24	0.24	0.24	0.24	0.24	0.24	V					F												
Duct Size Round	8.0	8.5	8.5	10.5	6.0							U					G												
Inlet Size	FLC	8	8	8	8							T					H												
" "	x	x	x	x	x	x	x	x	x	x	x	S					I												
Inlet Size	9x6	14	14	30	14							R					J												
												O					K												
Trunk	Y	Y	Y	Z	Z																								

2012 OBC	Builder: Bayview Wellington	Date: March 23, 2018	System 1	Weather Data	Bradford	44	-9.4	86	22	48.2	Heat Loss ^T	81.4 deg. F	Ht gain ^T	11 deg. F	GTA: 1791	Project # PJ-00204	Layout # JB-04605
	Project: Green Valley East	Model: Rideau 1 S42-1B WOB															

Level 1				BASE															
Run ft. exposed wall A	159	A		A		A		A		A		A		A		A		A	
Run ft. exposed wall B	47	B		B		B		B		B		B		B		B		B	
Ceiling height	4.3	AG		4.3	AG	4.3	AG	4.3	AG	4.3	AG	4.3	AG	4.3	AG	4.3	AG	4.3	AG
Floor area	1455	Area		Area		Area		Area		Area		Area		Area		Area		Area	
Exposed Ceilings A	A			A		A		A		A		A		A		A		A	
Exposed Ceilings B	B			B		B		B		B		B		B		B		B	
Exposed Floors	Flr			Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A	682																		
Gross Exp Wall B	423																		
Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.55	22.93	10.91																
East/West	3.55	22.93	27.35																
South	3.55	22.93	20.89	6	138	125													
WOB Windows	3.55	22.93	27.35	101	2316	2763													
Skylight	2.03	40.10	88.23																
Doors	4.00	20.35	2.75	21	427	58													
Net exposed walls A	21.12	3.85	0.52	655		341													
Net exposed walls B	14.49	5.62	0.76	322	1809	244													
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 ()			8668															
Total Conductive	Heat Loss			13357															
	Heat Gain				3531														
Air Leakage	Heat Loss/Gain	0.4625	0.0262	6177		93													
Ventilation	Case 1		0.03			0.05													
	Case 2		14.07			11.88													
	Case 3	x	0.02			0.05													
	Heat Gain People			288		161													
Appliances Loads	1 = .25 percent					239													
Duct and Pipe loss			10%																
Level 1 HL Total	19,823	Total HL for per room		19823															
Level 1 HG Total	4,921	Total HG per room x 1.3			4921														

Level 2																											
Run ft. exposed wall A				MAST		LIV/DIN		KIT		LAUN		FOY		LIB/BED2		BATH		ENS		A		A		A			
Run ft. exposed wall B				B		B		B		B		B		B		B		B		B		B		B			
Ceiling height				10.0		12.0		9.0		10.0		12.0		10.0		9.0		9.0		9.0		9.0		9.0			
Floor area				286 Area		300 Area		535 Area		52 Area		68 Area		151 Area		67 Area		154 Area		Area		Area		Area			
Exposed Ceilings A				286 A		300 A		535 A		52 A		68 A		151 A		67 A		154 A		A		A		A			
Exposed Ceilings 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			
Gross Exp Wall A				350		456		324		150		204		420		90		126									
Gross Exp Wall B																											
Components				R-Values		Loss		Gain		Loss		Gain		Loss		Gain		Loss		Gain		Loss		Gain			
North Shaded				3.55		22.93		10.91		40		917		1094		76		1743		2079		28		642		306	
East/West				3.55		22.93		27.35								33		757		903		59		1353		1614	
South				3.55		22.93		20.89								10		229		209		17		390		355	
Existing Windows				1.99		40.90		22.15																			
Skylight				2.03		40.10		88.23																			
Doors				4.00		20.35		2.75						21		427		58		21		427		58			
Net exposed walls A				17.03		4.78		0.65		310		1482		200		380		1816		245		296		1415		191	
Net exposed walls B				8.50		9.58		1.29																			
Exposed Ceilings A				59.22		1.37		0.64		286		393		184		300		412		193		535		735		343	
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						2792						3971						2792				1115	
				Heat Gain								1478						2517						840		174	
Air Leakage				Heat Loss/Gain		0.2317 0.0262				647		39				920		66				647		22		258	
Ventilation				Case 1		0.02 0.05																					
				Case 2		14.07 11.88																					
				Case 3		x 0.02 0.05																					
				Heat Gain People				239																			
				Appliances Loads		1 = .25 percent 3896										1.5		1461		1.5				1461		1.0	
				Duct and Pipe loss		10%																					
Level 2 HL Total				22.279		Total HL for per room				3499				4977				3499				1398				2499	
Level 2 HG Total				18.374		Total HG per room x 1.3				2681				5407				3070				1509				1534	

Total Heat Loss	42,101	btu/h
Total Heat Gain	23,295	btu/h

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under Division C subsection 3.2.5. of the Building Code. Individual BCIN: 32964

David DaCosta

SB-12 Package

Package A1

Site Copy

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: S42-1B WOB

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

Heating System		
x	Forced air	Non forced air
		Electric space heat (if over 10% of heat load)

House Type 9.32.3.1(2)		
I	x	Type a) or b) appliances only, no solid fuel
II		Type I except with solid fuel (including fireplace)
III		Any type c) appliance
IV		Type I or II either electric space heat
Other		Type I, II or IV no forced air

System Design Option		
1	x	Exhaust only / forced air system
2		HRV WITH DUCTING / forced air system
3		HRV simplified connection to forced air system
4		HRV full ducting/not coupled to forced air system
		Part 6 design

Total Ventilation Capacity 9.32.3.3(1)				
Bsmt & Master Bdrm	2 @	21.2 cfm	42.4	cfm
Other Bedrooms	1 @	10.6 cfm	10.6	cfm
Bathrooms & Kitchen	3 @	10.6 cfm	31.8	cfm
Other rooms	5 @	10.6 cfm	53	cfm
Total			137.8	

Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1 @	31.8 cfm	31.8	cfm
Other bedrooms	1 @	15.9 cfm	15.9	cfm
Total			47.7	

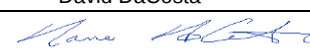
Principal Exhaust Fan Capacity				
Make	Model		Location	
LifeBreath	RNC155		Base	
132 cfm			Sones	or Equiv.

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			47.7	
REQUIRED supplemental vent. Capacity			90.1	cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Ens	50	XB50	0.3
Bath	50	XB50	0.3
<i>all fans HVI listed</i>	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	March 23, 2018		



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)

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 Project # PJ-00204
 Layout # JB-04605

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 Rideau 1 S42-1B WOB		Unit number	Lot/Con
Municipality Bradford	Postal code	Reg. Plan number / other description	

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

SB-12 Prescriptive (input design package):

Package A1

Table: 3.1.1.2.A

C. Project Design Conditions

Climatic Zone (SB-1):	Heat. Equip. Efficiency	Space Heating Fuel Source		
☒ Zone 1 (< 5000 degree days) ☐ Zone 2 (≥ 5000 degree days)	☒ ≥ 92% AFUE ☐ ≥ 84% < 92% AFUE	☒ Gas ☐ Oil	☐ Propane ☐ Electric	☐ Solid Fuel ☐ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area		Other Building Characteristics		
Area of Walls = <u>299.61</u> m ² or <u>3225.0</u> ft ²	W, S & G % = <u>11%</u>	☐ Log/Post&Beam ☐ Slab-on-ground ☒ Air Conditioning ☐ Air Sourced Heat Pump (ASHP) ☐ Ground Source Heat Pump (GSHP)		
Area of W, S & G = <u>34.373</u> m ² or <u>370.0</u> ft ²	Utilize Window Averaging ☐ Yes ☒ No	☐ ICF Above Grade ☒ Walkout Basement ☐ Combo Unit		

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

Energy Efficiency Substitutions			
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5)) ☐ Combined space heating and domestic water heating systems (3.1.1.2(7) / 3.1.1.3.(7))			
☐ Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached)	☐ Table 3.1.1.4.B Required:		Permitted Substitution:
	☐ 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
------------------------------	----------------------	---------------

Package: Package A1 System: System 1
Project: Bradford Model: S42-1B WOB

Air Leakage Calculations

<table><tr><th colspan="5">Building Air Leakage Heat Loss</th></tr><tr><th>B</th><th>LRairh</th><th>Vb</th><th>HL^AT</th><th>HLleak</th></tr><tr><td>0.018</td><td>0.241</td><td>29151</td><td>81.4</td><td>10295</td></tr></table>					Building Air Leakage Heat Loss					B	LRairh	Vb	HL^AT	HLleak	0.018	0.241	29151	81.4	10295	<table><tr><th colspan="5">Building Air Leakage Heat Gain</th></tr><tr><th>B</th><th>LRairh</th><th>Vb</th><th>HG^AT</th><th>HG Leak</th></tr><tr><td>0.018</td><td>0.056</td><td>29151</td><td>11</td><td>326</td></tr></table>					Building Air Leakage Heat Gain					B	LRairh	Vb	HG^AT	HG Leak	0.018	0.056	29151	11	326
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<table><tr><th colspan="5">Air Leakage Heat Loss/Gain Multiplier Table (Section 11)</th></tr><tr><th>Level</th><th>Level Factor (LF)</th><th>Building Air</th><th>Level Conductive Heat Loss</th><th>Air Leakage Heat Loss Multiplier</th></tr><tr><td>Level 1</td><td>0.6</td><td rowspan="4">10295</td><td>13357</td><td>0.4625</td></tr><tr><td>Level 2</td><td>0.4</td><td>17778</td><td>0.2317</td></tr><tr><td>Level 3</td><td>0</td><td>0</td><td>0.0000</td></tr><tr><td>Level 4</td><td>0</td><td>0</td><td>0.0000</td></tr></table>					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	0.6	10295	13357	0.4625	Level 2	0.4	17778	0.2317	Level 3	0	0	0.0000	Level 4	0	0	0.0000	<table><tr><th colspan="4">Levels</th></tr><tr><th>1</th><th>2</th><th>3</th><th>4</th></tr><tr><th>(LF)</th><th>(LF)</th><th>(LF)</th><th>(LF)</th></tr><tr><td>1.0</td><td>0.6</td><td>0.5</td><td>0.4</td></tr><tr><td></td><td>0.4</td><td>0.3</td><td>0.3</td></tr><tr><td></td><td></td><td>0.2</td><td>0.2</td></tr><tr><td></td><td></td><td></td><td>0.1</td></tr></table>				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
Air Leakage Heat Loss/Gain Multiplier Table (Section 11)																																																															
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Levels this Dwelling											
2											

Ventilation Calculations

Vent	Ventilation Heat Loss					Ventilation Heat Gain				Vent	
	Ventilation Heat Loss					Ventilation Heat Gain					
	C	PVC	HL^T	(1-E) HRV	HLbvent	C	PVC	HG^T	HGbvent		
	1.08	47.7	81.4	0.16	671	1.1	47.7	11	567		
Case 1						Case 1					
Case 1	Ventilation Heat Loss (Exhaust only Systems)					Ventilation Heat Gain (Exhaust Only Systems)					Case 1
	Case 1 - Exhaust Only					Case 1 - Exhaust Only		Multiplier			
	Level	LF	HLbvent	LVL Cond. HL	Multiplier	HGbvent	567	0.05			
	Level 1	0.6	671	13357	0.03	Building	12413				
	Level 2	0.4		17778	0.02						
	Level 3	0		0	0.00						
Level 4	0	0		0.00							
Case 2						Case 2					
Case 2	Ventilation Heat Loss (Direct Ducted Systems)					Ventilation Heat Gain (Direct Ducted Systems)					Case 2
				Multiplier				Multiplier			
	C	HL^T	(1-E) HRV	14.07	C	HG^T	11.88				
	1.08	81.4	0.16		1.08	11					
Case 3						Case 3					
Case 3	Ventilation Heat Loss (Forced Air Systems)					Ventilation Heat Gain (Forced Air Systems)					Case 3
			HLbvent	Multiplier				Vent Heat Gain	Multiplier		
	Total Ventilation Load		671	0.02		HGbvent		HG*1.3	567	0.05	
					567		1				

Foundation Conductive Heatloss Level 1

2540 Watts 8668 Btu/h

Foundation Conductive Heatloss Level 2

Watts 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

David DaCosta

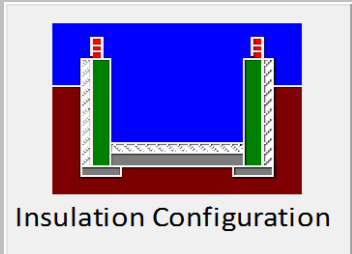
Envelope Air Leakage Calculator

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):	4.05			
Building Configuration				
Type:	Detached			
Number of Stories:	One			
Foundation:	Full			
House Volume (m ³):	825.56			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57)			
Custom BDT Data:	ELA @ 10 Pa. ▼ 322.44 cm ²			
	3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	23.85		23.85	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H):		0.241		
Cooling Air Leakage Rate (ACH/H):		0.056		

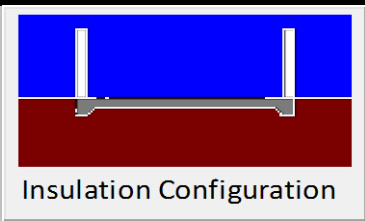
Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

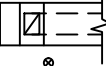
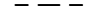
Weather Station Description		
Province:	Ontario ▼	
Region:	Bradford ▼	
Site Description		
Soil Conductivity:	High conductivity: moist soil ▼	
Water Table:	Normal (7-10 m, 23-33 Ft) ▼	
Foundation Dimensions		
Floor Length (m):	23.71	 Insulation Configuration
Floor Width (m):	5.70	
Exposed Perimeter (m):	48.46	
Wall Height (m):	2.74	
Depth Below Grade (m):	1.44	
Window Area (m ²):	0.56	
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):		2319

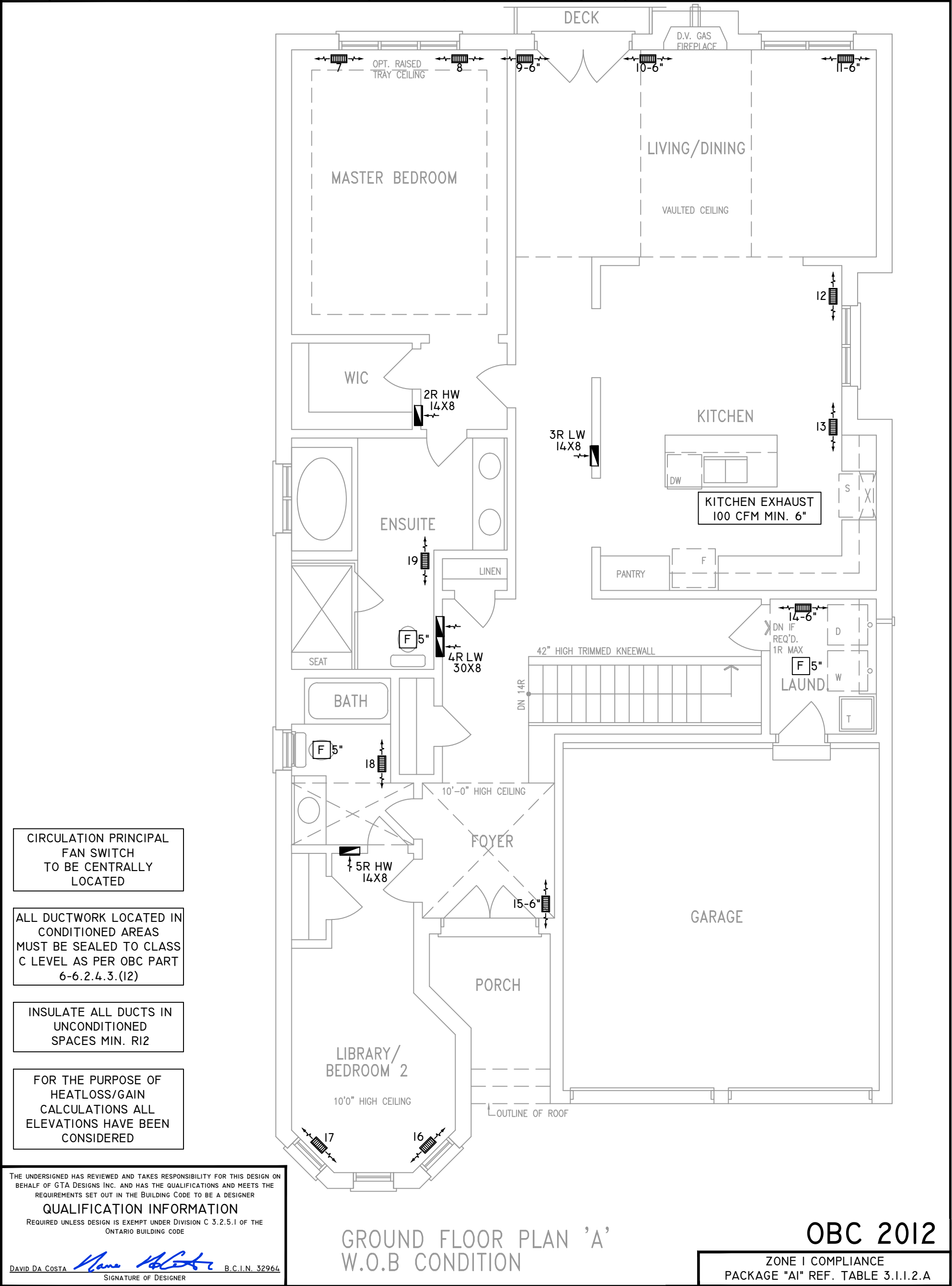
Residential Slab on Grade Thermal Load Calculator

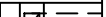
Supplemental tool for CAN/CSA-F280

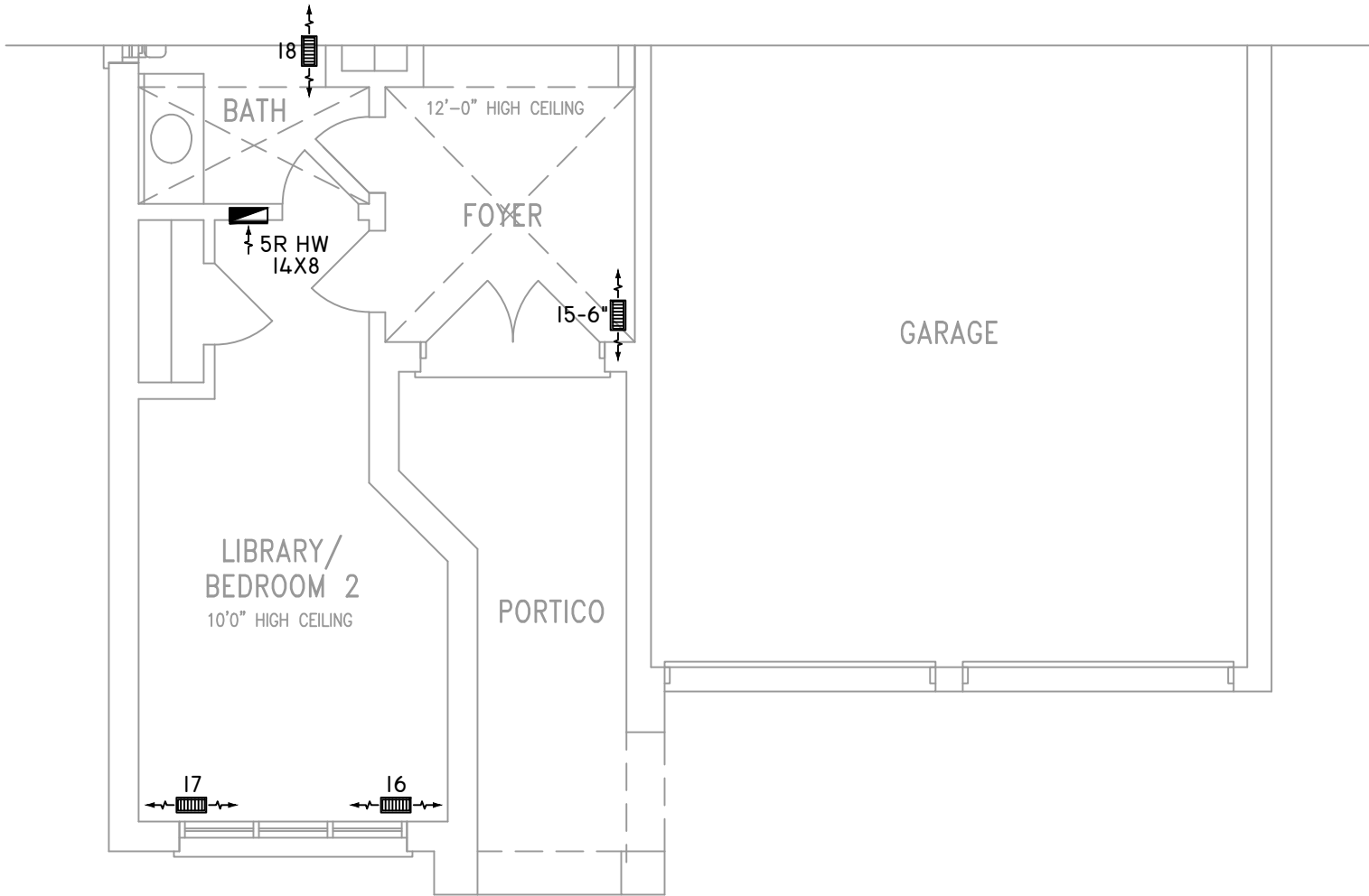
Weather Station Description		
Province:	Ontario	▼
Region:	Bradford	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Floor Dimensions		
Length (m):	10.88	 Insulation Configuration
Width (m):	1.46	
Exposed Perimeter (m):	14.33	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		221

Site Copy

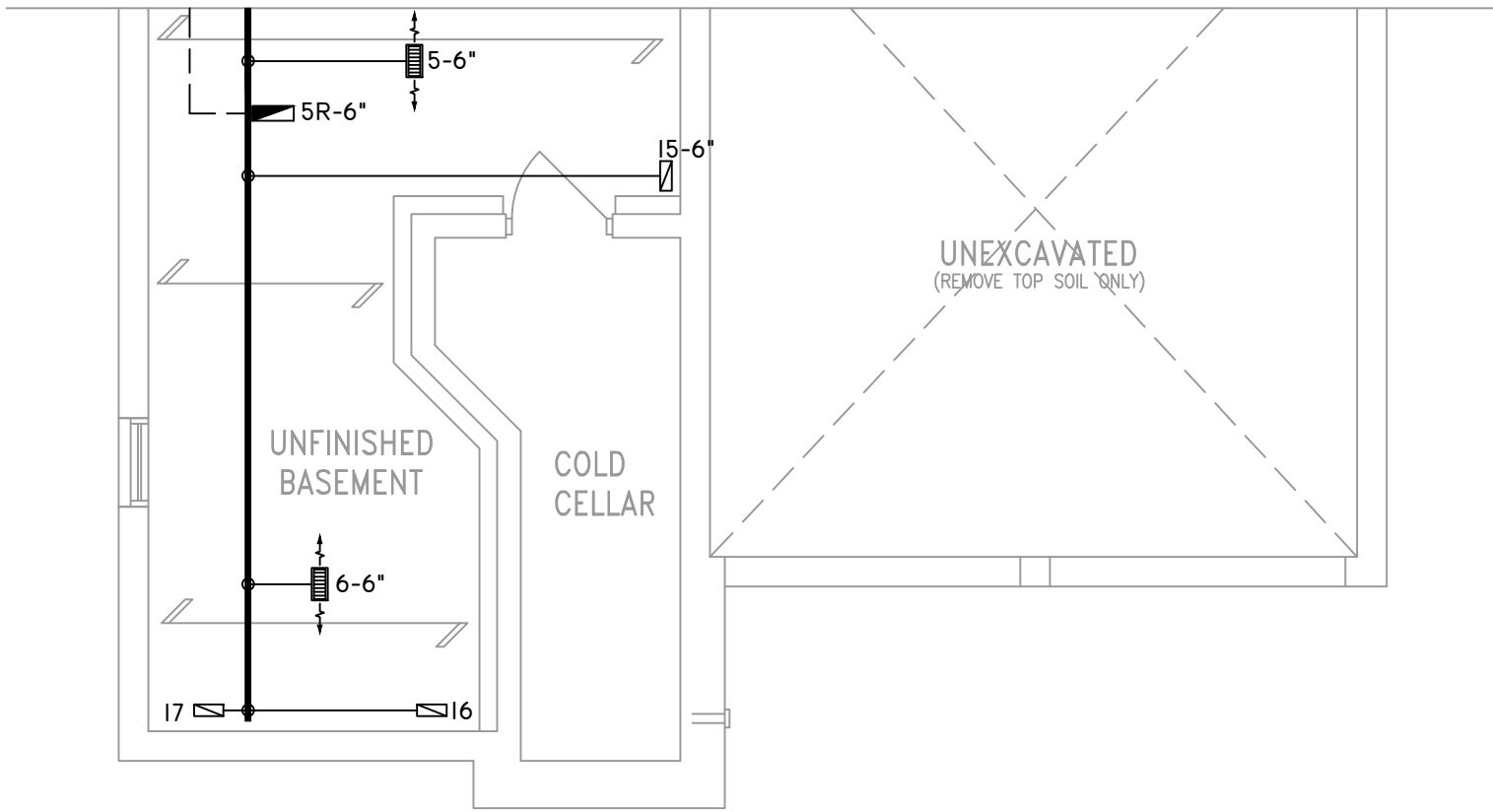
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



	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



PART. GROUND FLOOR PLAN 'B'



PART. BASEMENT PLAN 'B'

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

QUALIFICATION INFORMATION

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

DAVID DA COSTA



B.C.I.N. 32964

SIGNATURE OF DESIGNER

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.



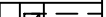
2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

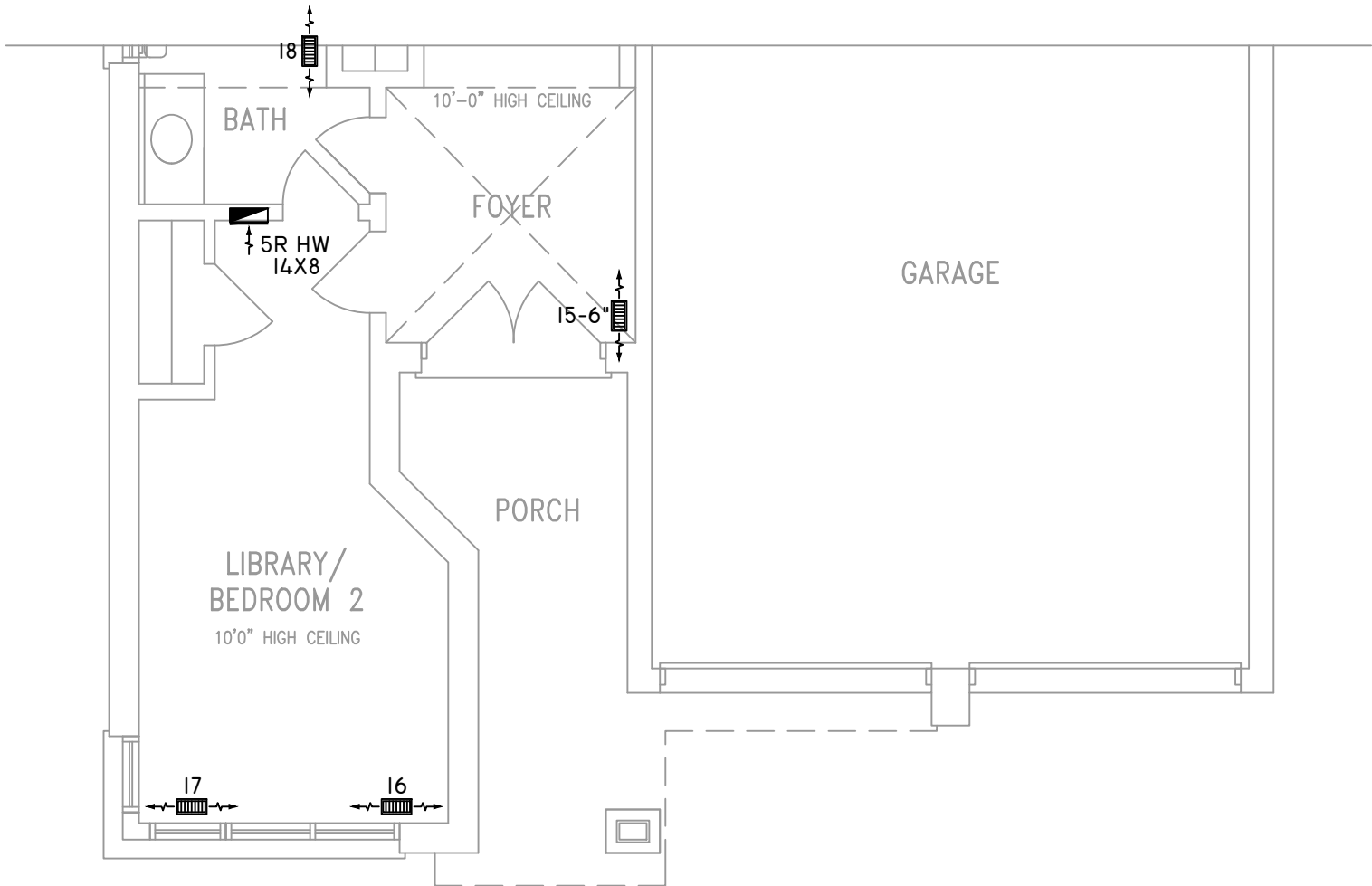
HEAT-LOSS	42,101	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960603BNA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR			
1ST FLOOR	13	4	4
BASEMENT	7	1	

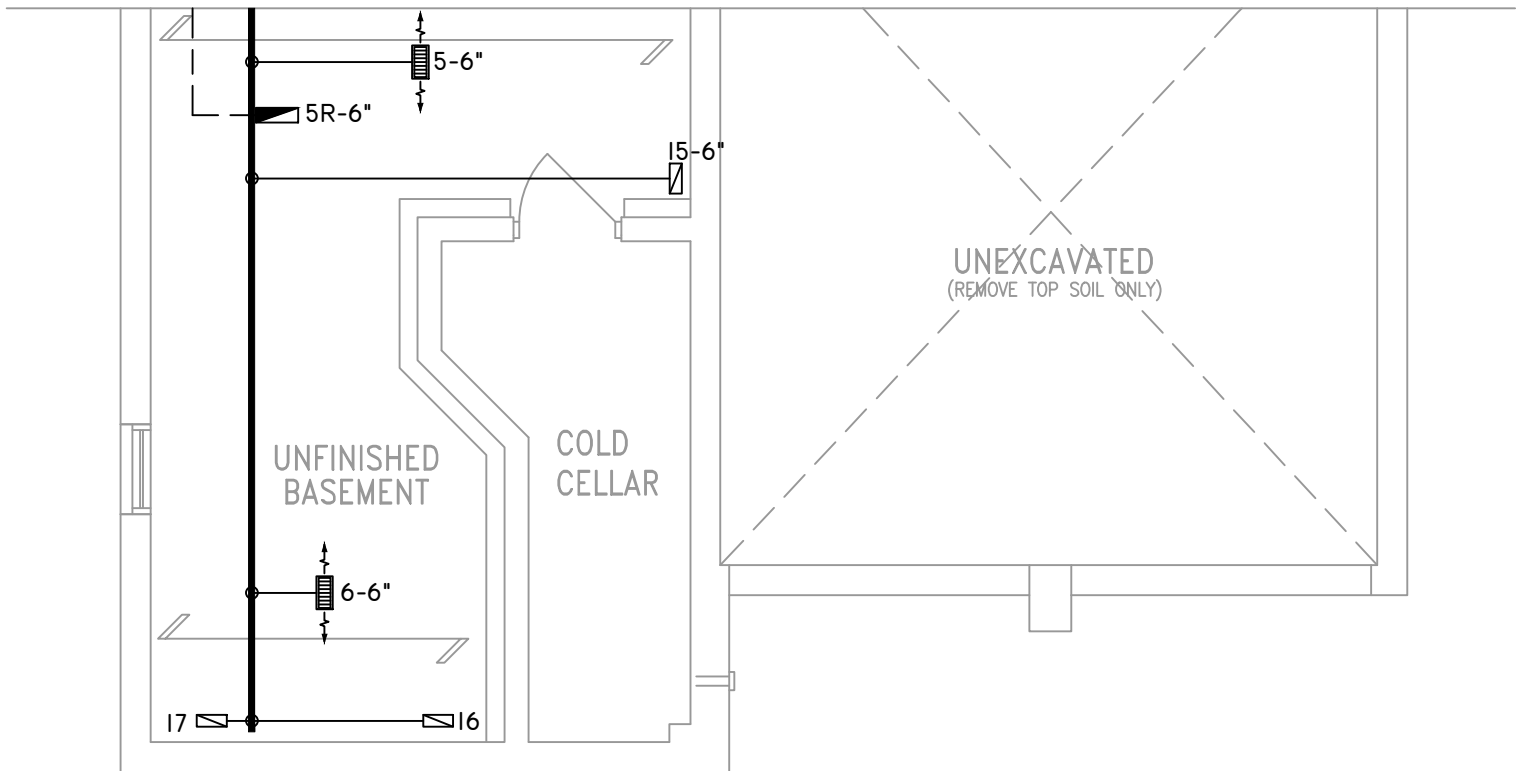
FLOOR PLAN: PARTIAL PLAN(S)	
DRAWN BY: AM	CHECKED: DD
LAYOUT NO: JB-04605	DRAWING NO: M3

DATE:	MARCH 23, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-IB WOB RIDEAU I
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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



PART. GROUND FLOOR PLAN 'C'



PART. BASEMENT PLAN 'C'

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QUALIFICATION INFORMATION

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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

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

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

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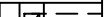
2985 DREW ROAD
SUITE 202,
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L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
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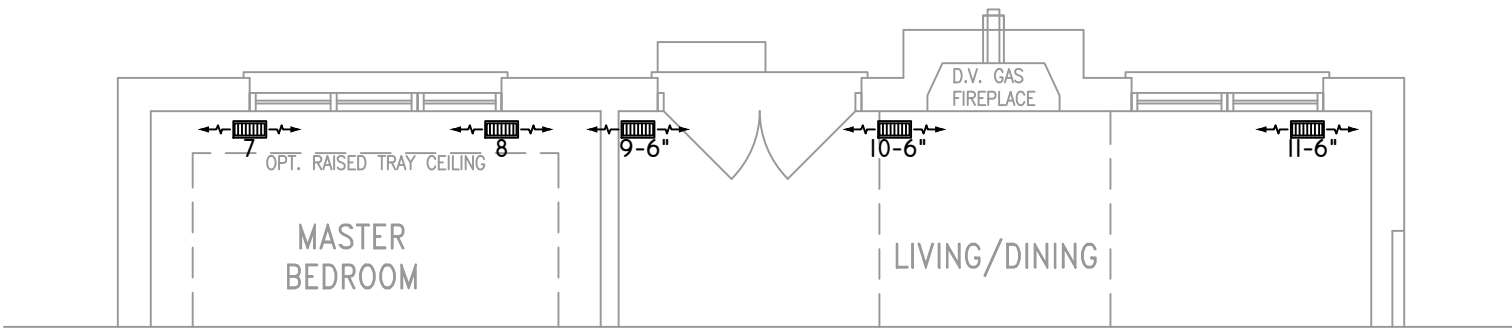
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# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR			
1ST FLOOR	13	4	4
BASEMENT	7	1	

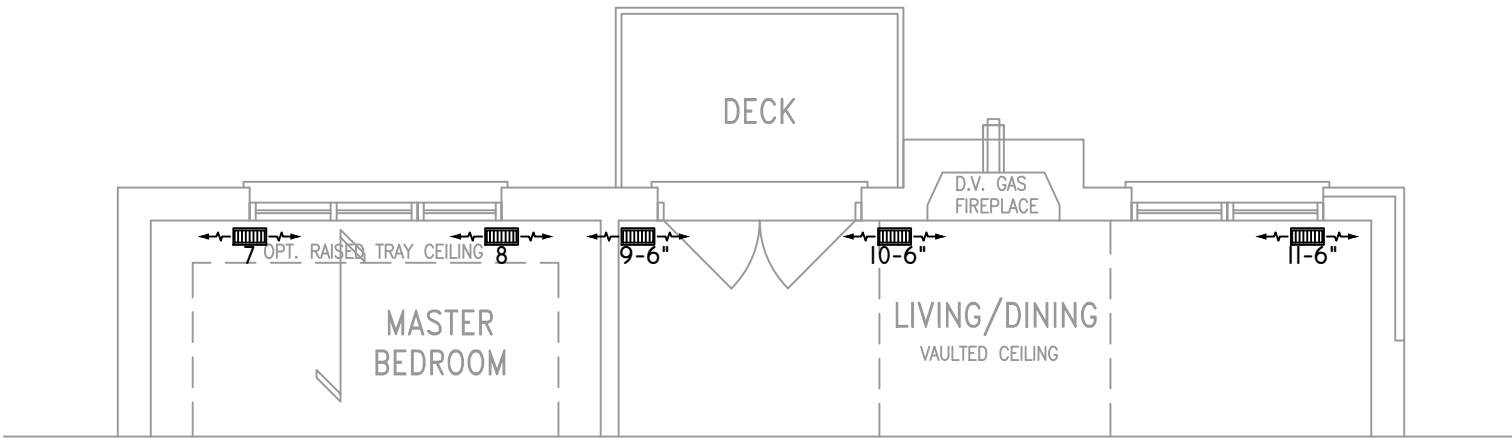
FLOOR PLAN:	
PARTIAL PLAN(S)	
DRAWN BY:	CHECKED:
AM	DD
LAYOUT NO:	DRAWING NO:
JB-04605	M4

DATE:	MARCH 23, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-IB WOB RIDEAU I
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

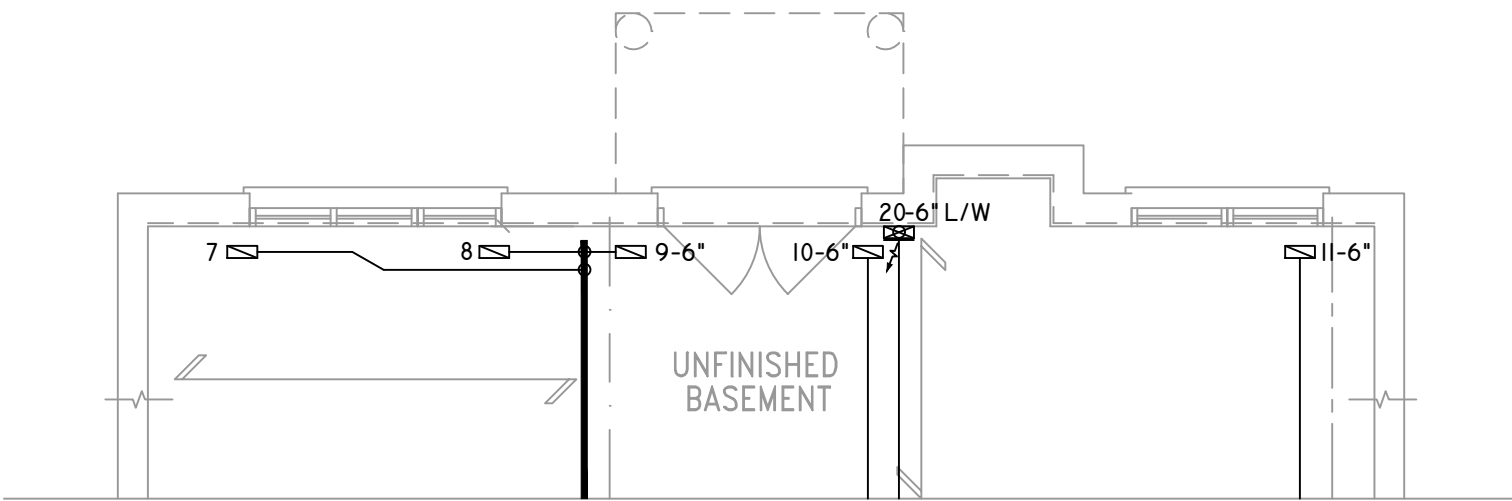
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									W/R & PRINCIPAL EXHAUST FAN



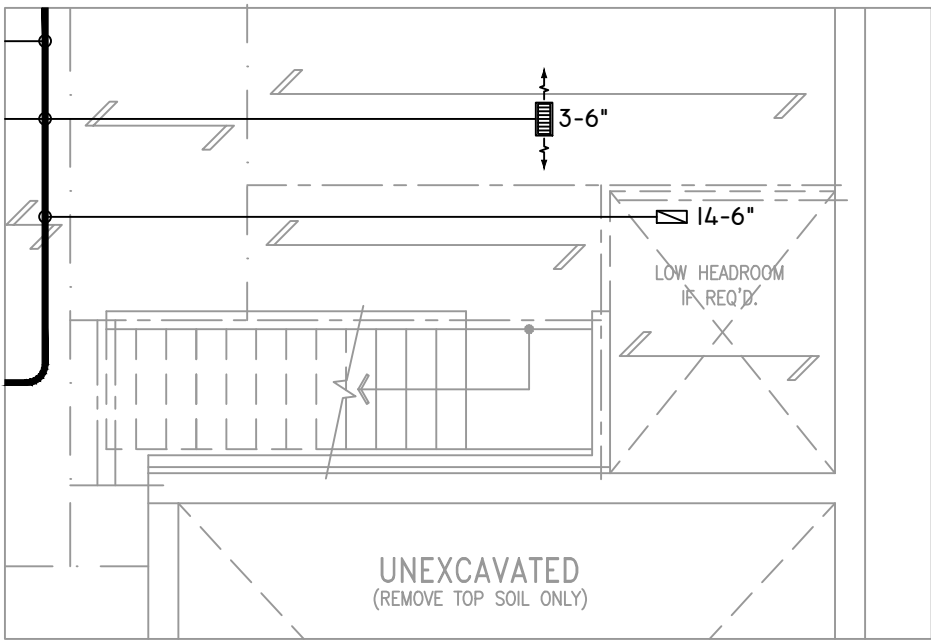
PARTIAL GROUND FLOOR PLAN ELEVATION 'C' REAR UPGRADE



PARTIAL GROUND FLOOR PLAN ELEVATION 'C' REAR UPGRADE WOB COND.



PART. BASEMENT PLAN 'C' REAR UPG W.O.B. CONDITION



PARTIAL BASEMENT PLAN W/ 1R SUNKEN MUD AREA ABOVE

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

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

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3RD FLOOR			
2ND FLOOR			
1ST FLOOR	13	4	4
BASEMENT	7	1	

FLOOR PLAN: PARTIAL PLAN(S)	
DRAWN BY: AM	CHECKED: DD
LAYOUT NO. JB-04605	SQFT 1791
DRAWING NO. M5	

DATE:	MARCH 23, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-IB WOB RIDEAU I
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"