

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 15				Lot:	
S42-15 Alt. 2nd FLR WOB				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-04617
Heating and Cooling Load Calculations		Main		Builder	Bayview Wellington
Air System Design		Alternate x		Project	Green Valley East
Residential mechanical ventilation Design Summary		Area Sq ft: 3316		Model	Rideau 15
Residential System Design per CAN/CSA-F280-12					S42-15 Alt. 2nd FLR 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>April 3, 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-04617	
Building Location					
Address (Model): S42-15 Alt. 2nd FLR WOB			Site: Green Valley East		
Model: Rideau 15			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: 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: 6
Sensible Eff. at -25C 71%		Apparent Effect. at -0C 84%		Units: Imperial Area Sq ft: 3316	
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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PJ-00204

Layout # JB-04617

Supply Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size	
A	1173	0.05	17.0	26x10	22x12
B	941	0.05	16.0	30x8	22x10
C	528	0.05	13.0	18x8	14x10
D	257	0.05	10.0	12x8	10x10
E	247	0.06	9.5	10x8	
F	124	0.12	6.5	8x8	8x7
G					
H					
I					
J					
K					

2012 OBC	Builder: Bayview Wellington	Date: April 3, 2018	System 1	Weather Data	Bradford	44	-9.4	86	22	48.2		Page 4
	Project: Green Valley East	Model: Rideau 15 S42-15 Alt. 2nd FLR WOB		Heat Loss ^T	81.4 deg. F	Ht gain ^T	11 deg. F	GTA:	3316	Project # Layout #	PJ-00204 JB-04617	

Level 1											
BASE											
Run ft. exposed wall A	140	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	41	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
Floor area	1232	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings 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
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	486										
Gross Exp Wall B	369										
Components	R-Values	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								
WOB Windows	3.55	22.93	27.35	103	2362	2817					
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	459		239					
Net exposed walls B	14.49	5.62	0.76	266	1494	202					
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 ()			7346							
Total Conductive	Heat Loss			11767							
	Heat Gain				3441						
Air Leakage	Heat Loss/Gain	0.7874	0.0339	9265		117					
Ventilation	Case 1	0.06	0.06								
	Case 2	14.07	11.88								
	Case 3	x	0.03	385		213					
Heat Gain People			239								
Appliances Loads	1 = .25 percent		5484								
Duct and Pipe loss			10%								
Level 1 HL Total	21,417	Total HL for per room		21417							
Level 1 HG Total	4,903	Total HG per room x 1.3			4903						

Level 2											
KIT GRT STUDY LAUN FOY LIV/DIN											
Run ft. exposed wall A	44	A	35	A	11	A	23	A	28	A	41
Run ft. exposed wall B		B		B		B		B		B	
Ceiling height	10.0		10.0		10.0		13.0		11.0		10.0
Floor area	432	Area	261	Area	173	Area	108	Area	88	Area	313
Exposed Ceilings A	A	A	5	A	A	A	A	A	A	A	A
Exposed Ceilings B	B	B		B		B		B		B	
Exposed Floors	Flr	Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A	440		350		110		299		308		410
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								
East/West	3.55	22.93	27.35								
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	368	1759	238	270	1291	174	86	411
Net exposed walls B	8.50	9.58	1.29							56	266
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			3410				3132		961	
	Heat Gain				2207				1840		317
Air Leakage	Heat Loss/Gain	0.3692	0.0339	1259	75			1156	62	355	11
Ventilation	Case 1	0.03	0.06								
	Case 2	14.07	11.88								
	Case 3	x	0.03	112	137			102	114	31	20
Heat Gain People			239								
Appliances Loads	1 = .25 percent		5484								
Duct and Pipe loss			10%								
Level 2 HL Total	21,109	Total HL for per room		4780				4390		1348	
Level 2 HG Total	17,639	Total HG per room x 1.3			4927				4403		1343

Total Heat Loss	61,408	btu/h
Total Heat Gain	35,342	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

2012 OBC	Builder: Bayview Wellington	Date: April 3, 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: 3316	Project #	PJ-00204
	Project: Green Valley East	Model: Rideau 15 S42-15 Alt. 2nd FLR WOB														Layout #	JB-04617

Level 3				MAST		BED 2		BATH		BED 3		WIC		BED 4		BATH 2		BED 5		WC		ENS		HERS													
Run ft. exposed wall A				33 A		15 A		7 A		28 A		6 A		29 A		7 A		13 A		3 A		21 A		8 A													
Run ft. exposed wall B				B		B		B		B		B		B		B		B		B		B		B													
Ceiling height				9.0		8.0		8.0		9.0		9.0		9.0		8.0		8.0		8.0		8.0		8.0													
Floor area				309 Area		233 Area		79 Area		206 Area		25 Area		258 Area		84 Area		179 Area		17 Area		127 Area		47 Area													
Exposed Ceilings A				309 A		233 A		79 A		206 A		25 A		258 A		84 A		179 A		17 A		127 A		47 A													
Exposed Ceilings B				B		B		B		B		B		B		B		B		B		B		B													
Exposed Floors				Flr		Flr		58 Flr		199 Flr		25 Flr		42 Flr		Flr		Flr		Flr		Flr		Flr													
Gross Exp Wall A				297		120		56		252		54		261		56		104		24		168		64													
Gross Exp Wall B																																					
Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain												
North Shaded	3.55	22.93	10.91			16	367	175		8	183	87																									
East/West	3.55	22.93	27.35	32	734	875				36	825	985	16	367	438	48	1101	1313					21	482	574	5	115	137									
South	3.55	22.93	20.89													9	206	188	8	183	167	16	367	334	8	183	167	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	265	1267	171	104	497	67	48	229	31	216	1032	140	38	182	25	204	975	132	48	229	31	88	421	57	16	76	10	138	660	89	59	282	38	
Net exposed walls B	8.50	9.58	1.29																																		
Exposed Ceilings A	59.22	1.37	0.64	309	425	198	233	320	150	79	109	51	206	283	132	25	34	16	258	355	166	84	115	54	179	246	115	17	23	11	127	175	81	47	65	30	
Exposed Ceilings B	22.86	3.56	1.66																																		
Exposed Floors	29.80	2.73	0.17							58	158	10	199	544	33	25	68	4	42	115	7																
Foundation Conductive Heatloss																																					
Total Conductive	Heat Loss			2425			1184			680			2685			651			2751			528			1034			283			1522			461			
	Heat Gain				1245		391				179			1290			482			1805			252			506			188			933			205		
Air Leakage	Heat Loss/Gain	0.2609	0.0339	633	42		309	13		177	6		700	44		170	16		718	61		138	9		270	17		74	6		397	32		120	7		
Ventilation	Case 1		0.02		0.06																																
	Case 2		14.07		11.88																																
	Case 3	x	0.03		0.06																																
Heat Gain People				2	79	77	1	39	24			22	11		88	80		21	30		90	112		17	16		34	31		9	12		50	58		15	13
Appliances Loads		1 =.25 percent																																			
Duct and Pipe loss										1	86	18	1	339	153	1	82	48																			
Level 3 HL Total		18,882		3137		1532		965					3811		2347		924		750		3559		683		359		1337		366		1969		597				
Level 3 HG Total		12,800			2395		868		278																						1329				292		

	Level 4																			
Run ft. exposed wall A				A		A		A		A		A		A		A		A		A
Run ft. exposed wall B				B		B		B		B		B		B		B		B		B
Ceiling height																				
Floor area				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																				
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														
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														
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																				
Total Conductive	Heat Loss																			
	Heat Gain																			
Air Leakage	Heat Loss/Gain			0.0000	0.0339															
Ventilation	Case 1			0.00	0.06															
	Case 2			14.07	11.88															
	Case 3			x	0.03	0.06														
Heat Gain People						239														
Appliances Loads				1 =.25 percent		5484														
Duct and Pipe loss						10%														
Level 4 HL Total	0			Total HL for per room																
Level 4 HG Total	0			Total HG per room x 1.3																

Total Heat Loss	61,408	btu/h
Total Heat Gain	35,342	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

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: S42-15 Alt. 2nd FLR 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	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	4 @	10.6 cfm	42.4	cfm
Bathrooms & Kitchen	5 @	10.6 cfm	53	cfm
Other rooms	6 @	10.6 cfm	63.6	cfm
Total			201.4	

Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1 @	31.8 cfm	31.8	cfm
Other bedrooms	4 @	15.9 cfm	63.6	cfm
Total			95.4	

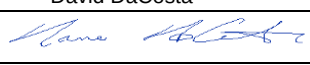
Principal Exhaust Fan Capacity				
Make	Model		Location	
LifeBreath	RNC155		Base	
132 cfm			Sones	or Equiv.

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	201.4	
Less principal exhaust capacity	95.4	
REQUIRED supplemental vent. Capacity	106.0 cfm	

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Ens	50	XB50	0.3
Bath	50	XB50	0.3
Bath 2	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	April 3, 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-04617

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 15 S42-15 Alt. 2nd FLR 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>392.76</u> m ² or <u>4227.7</u> ft ²	W, S & G % = <u>15%</u>	☐ Log/Post&Beam ☐ Slab-on-ground ☒ Air Conditioning ☐ Air Sourced Heat Pump (ASHP) ☐ Ground Source Heat Pump (GSHP)	☐ ICF Above Grade ☒ Walkout Basement ☐ Combo Unit	☐ ICF Basement
Area of W, S & G = <u>57.319</u> m ² or <u>617.0</u> ft ²	Utilize Window Averaging ☐ Yes ☒ No			

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		Building Component
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating
Ceiling with Attic Space	60		Windows/Sliding Glass Doors
Ceiling without Attic Space	31		Skylights
Exposed Floor	31		Mechanicals
Walls Above Grade	22		Heating Equip. (AFUE)
Basement Walls	20.0ci		HRV Efficiency (SRE% at 0°C)
Slab (all >600mm below grade)	x		DHW Heater (EF)
Slab (edge only ≤600mm below grade)	10		DWHR (CSA B55.1 (min. 42% efficiency))
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: S42-15 Alt. 2nd FLR WOB

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^Δ T	HL _{leak}
0.018	0.316	39996	81.4	18531

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^Δ T	HG _{Leak}
0.018	0.078	39996	11	621

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	18531	11767	0.7874
Level 2	0.3		15057	0.3692
Level 3	0.2		14205	0.2609
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	
	621		0.0339
BUILDING CONDUCTIVE HEAT GAIN			18296

Levels this Dwelling	
3	

Ventilation Calculations

Ventilation Heat Loss

Ventilation Heat Loss				
C	PVC	HL ^Δ T	(1-E) HRV	HL _{bvent}
1.08	95.4	81.4	0.16	1342

Ventilation Heat Gain

Ventilation Heat Gain			
C	PVC	HG ^Δ T	HG _{bvent}
1.1	95.4	11	1133

Case 1

Ventilation Heat Loss (Exhaust only Systems)

Case 1 - Exhaust Only				
Level	LF	HL _{bvent}	LVL Cond. HL	Multiplier
Level 1	0.5	1342	11767	0.06
Level 2	0.3		15057	0.03
Level 3	0.2		14205	0.02
Level 4	0		0	0.00

Case 1

Ventilation Heat Gain (Exhaust Only Systems)

Case 1 - Exhaust Only		Multiplier	
HG _{bvent}	1133	0.06	
Building	18296		

Case 2

Ventilation Heat Loss (Direct Ducted Systems)

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

Case 2

Ventilation Heat Gain (Direct Ducted Systems)

C	HG ^Δ T	Multiplier
1.08	11	11.88

Case 3

Ventilation Heat Loss (Forced Air Systems)

HL _{bvent}		Multiplier
Total Ventilation Load	1342	0.03

Case 3

Ventilation Heat Gain (Forced Air Systems)

Vent Heat Gain		Multiplier
HG _{bvent}	HG*1.3	0.06
1133	1	

Foundation Conductive Heatloss Level 1

2153 Watts 7346 Btu/h

Foundation Conductive Heatloss Level 2

Watts Btu/h

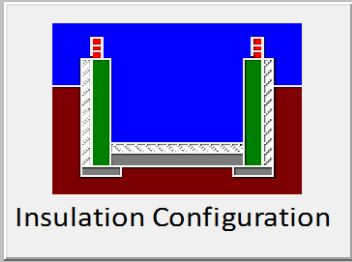
Envelope Air Leakage Calculator

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):	6.54			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1132.69			
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:	
	47.7		47.7	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H):		0.316		
Cooling Air Leakage Rate (ACH/H):		0.078		

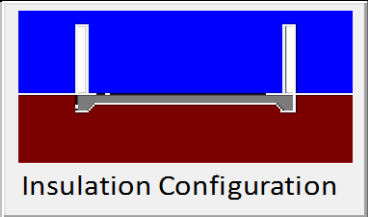
Residential Foundation Thermal Load Calculator

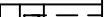
Supplemental tool for CAN/CSA-F280

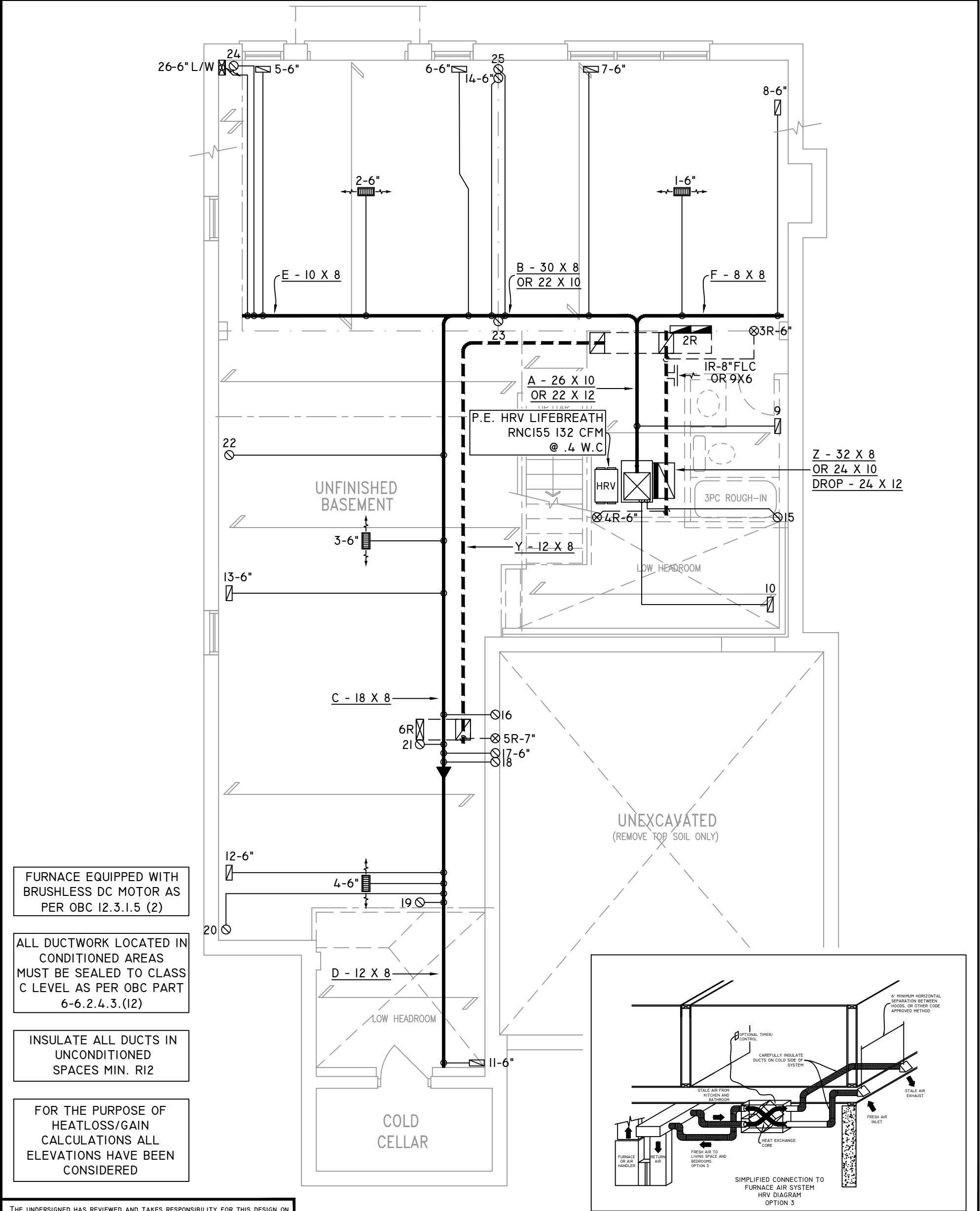
Weather Station Description		
Province:	Ontario	▼
Region:	Bradford	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	21.88	 Insulation Configuration
Floor Width (m):	5.85	
Exposed Perimeter (m):	42.67	
Wall Height (m):	2.74	
Depth Below Grade (m):	1.69	
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):		1962

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):	9.90	 Insulation Configuration
Width (m):	1.38	
Exposed Perimeter (m):	12.50	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		191

	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



FURNACE EQUIPPED WITH
BRUSHLESS DC MOTOR AS
PER OBC 12.3.1.5 (2)

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

INSULATE ALL DUCTS IN
UNCONDITIONED
SPACES MIN. R12

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

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'

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.



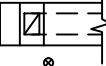
2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

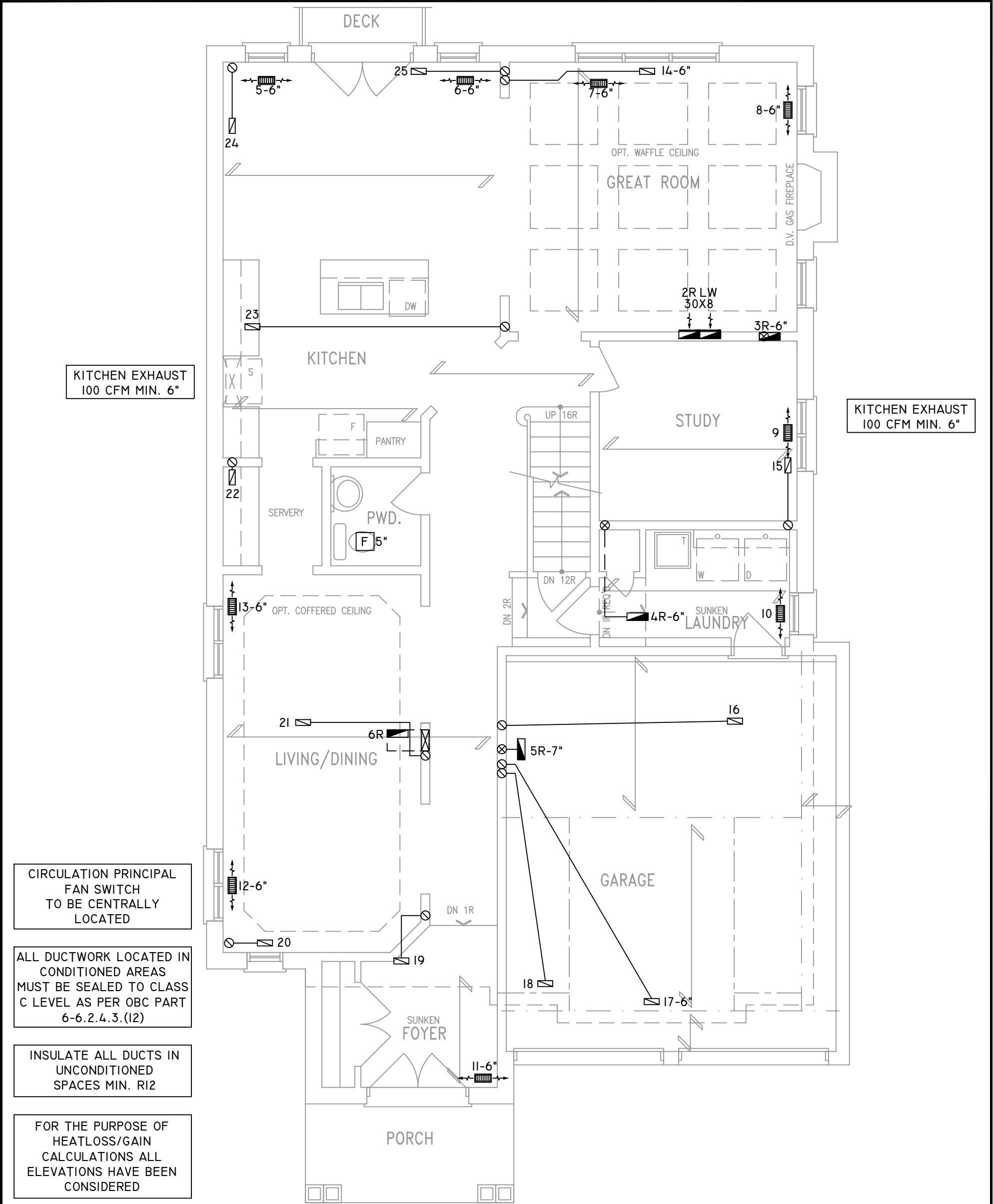
HEAT-LOSS	61,408	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960803BNA	OR EQUAL.
UNIT HEATING INPUT	80,000	BTU/HR.
UNIT HEATING OUTPUT	76,800	BTU/HR.
A/C COOLING CAPACITY	3.0	TONS.
FAN SPEED	1172	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	4	4
1ST FLOOR	11	1	2
BASEMENT	5	1	

FLOOR PLAN:	BASEMENT
DRAWN BY:	AM
CHECKED:	DD
LAYOUT NO.	JB-04618
sqft	3316
DRAWING NO.	MI

DATE:	APRIL 3, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-15 ALT. 2ND FLR WOB RIDEAU I5
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

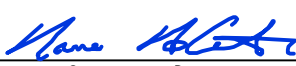
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



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QUALIFICATION INFORMATION

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

SIGNATURE OF DESIGNER

GROUND 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.
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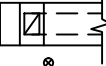
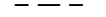
2985 DREW ROAD
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L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

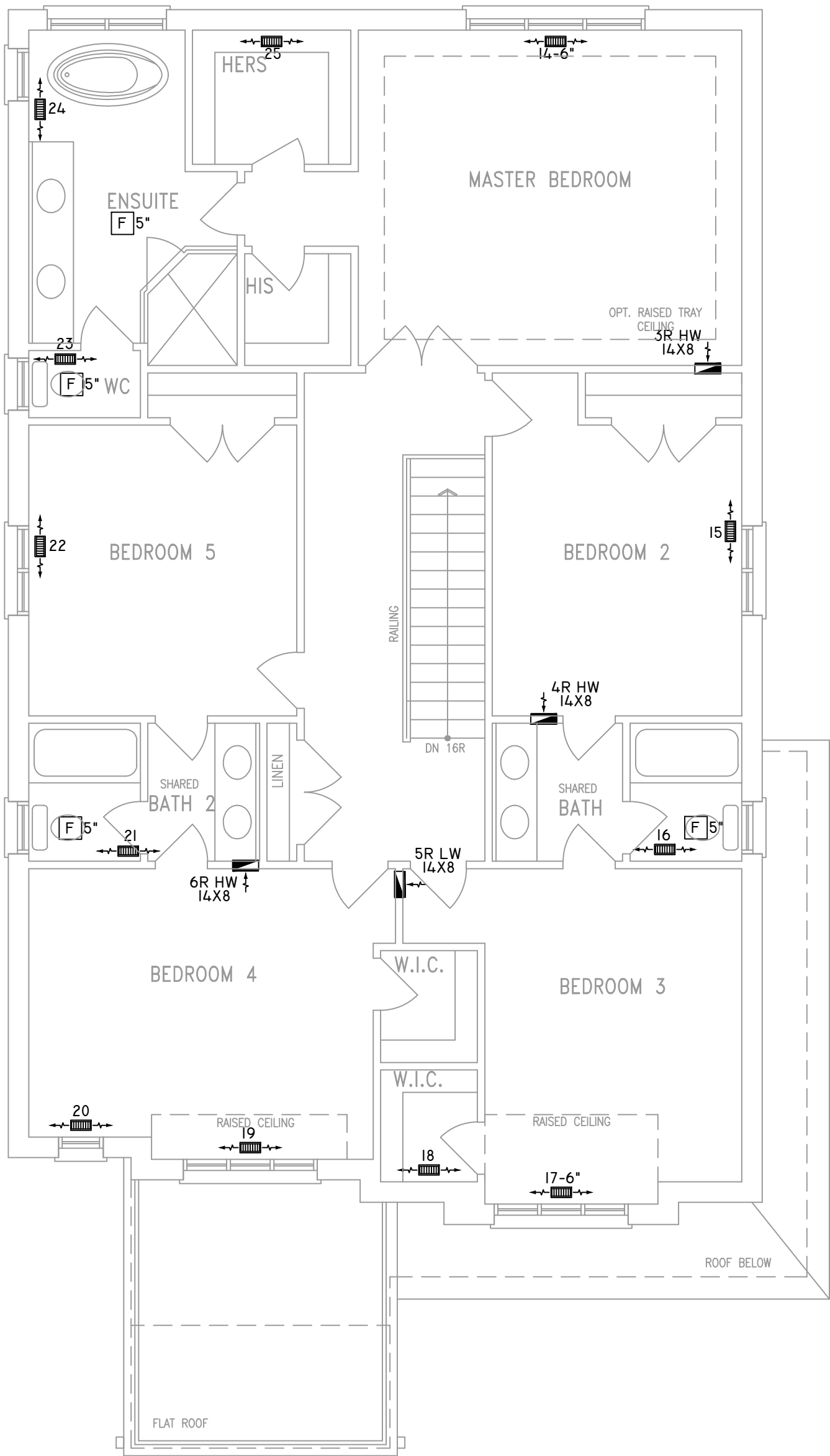
HEAT-LOSS	61,408	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960803BNA	OR EQUAL.
UNIT HEATING INPUT	80,000	BTU/HR.
UNIT HEATING OUTPUT	76,800	BTU/HR.
A/C COOLING CAPACITY	3.0	TONS.
FAN SPEED	1172	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	4	4
1ST FLOOR	11	1	2
BASEMENT	5	1	

FLOOR PLAN: GROUND FLOOR	
DRAWN BY: AM	CHECKED: DD
LAYOUT NO. JB-04618	SQFT 3316
	DRAWING NO. M2

DATE:	APRIL 3, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-15 ALT. 2ND FLR WOB RIDEAU I5
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
CONDITIONED AREAS
MUST BE SEALED TO CLASS
C LEVEL AS PER OBC PART
6-6.2.4.3.(12)

INSULATE ALL DUCTS IN
UNCONDITIONED
SPACES MIN. R12

FOR THE PURPOSE OF
HEATLOSS/GAIN
CALCULATIONS ALL
ELEVATIONS HAVE BEEN
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DAVID DA COSTA  B.C.I.N. 32964
SIGNATURE OF DESIGNER

OPT. SECOND FLOOR PLAN 'A' 5 BEDROOM

OBC 2012

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO
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PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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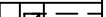

**2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA**

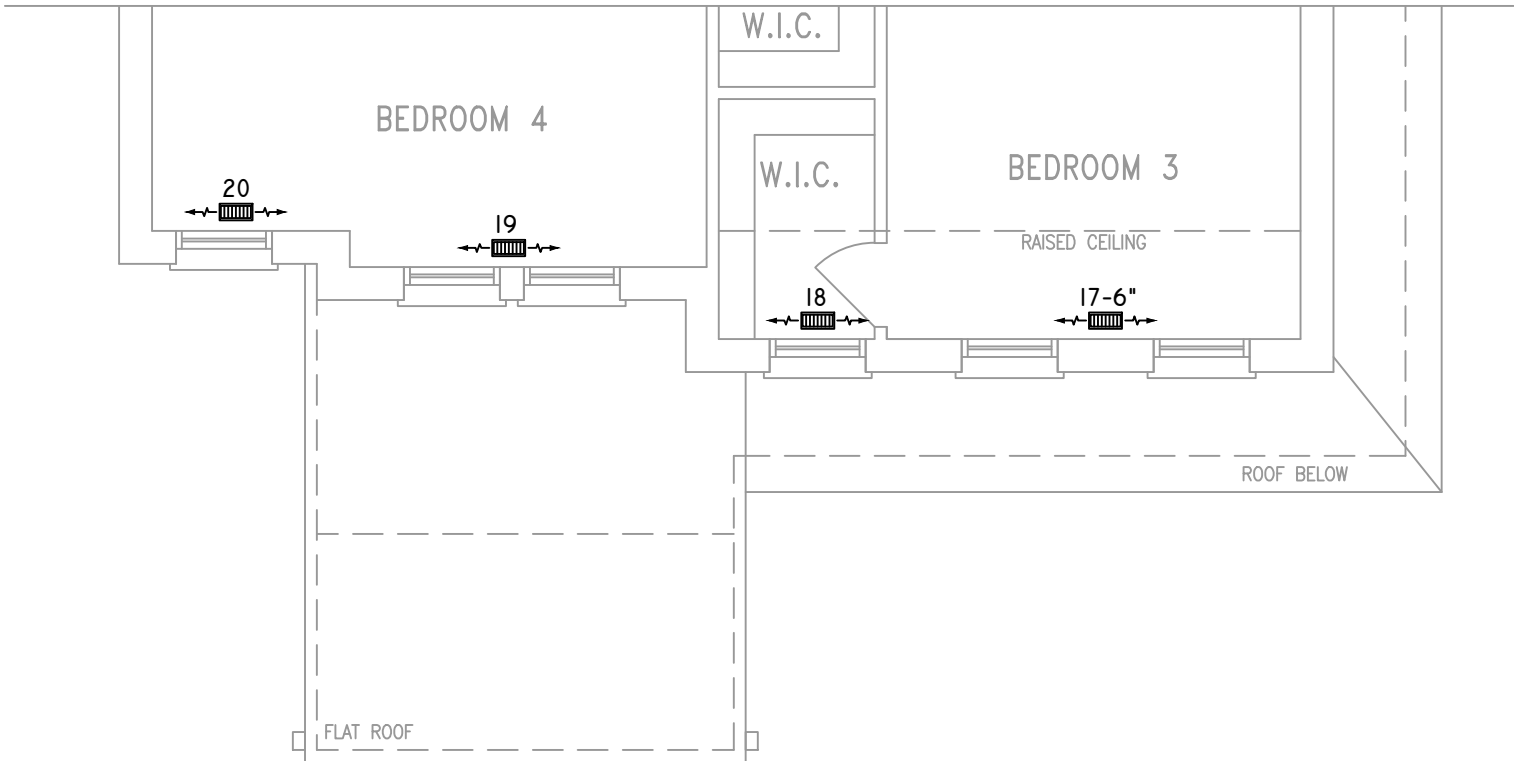
HEAT-LOSS	61,408	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960803BNA	OR EQUAL.
UNIT HEATING INPUT	80,000	BTU/HR.
UNIT HEATING OUTPUT	76,800	BTU/HR.
A/C COOLING CAPACITY	3.0	TONS.
FAN SPEED	1172	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	4	4
1ST FLOOR	11	1	2
BASEMENT	5	1	

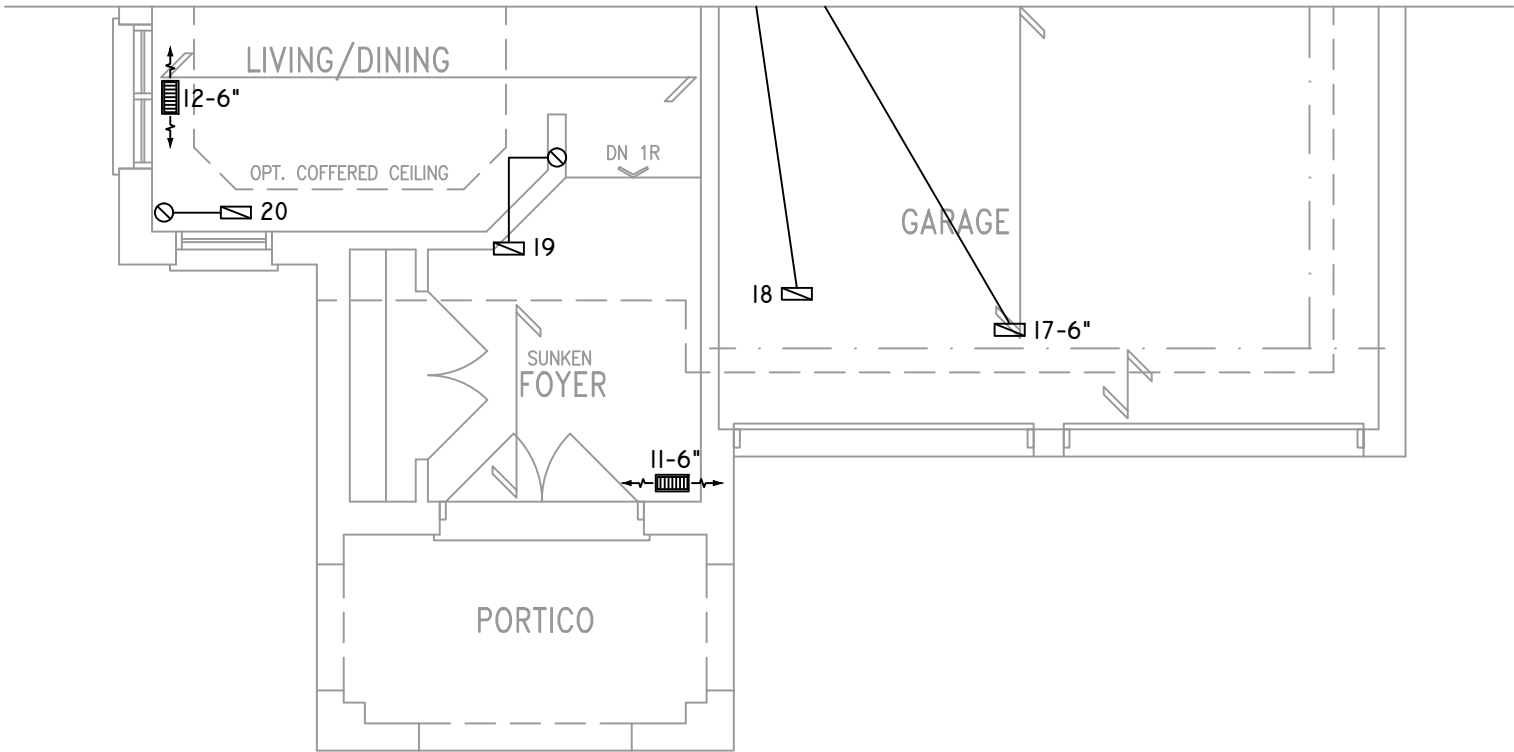
FLOOR PLAN: SECOND FLOOR	sqft
DRAWN BY: AM	CHECKED: DD
LAYOUT NO: JB-04618	DRAWING NO: M3

DATE:	APRIL 3, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-15 ALT. 2ND FLR WOB RIDEAU I5
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

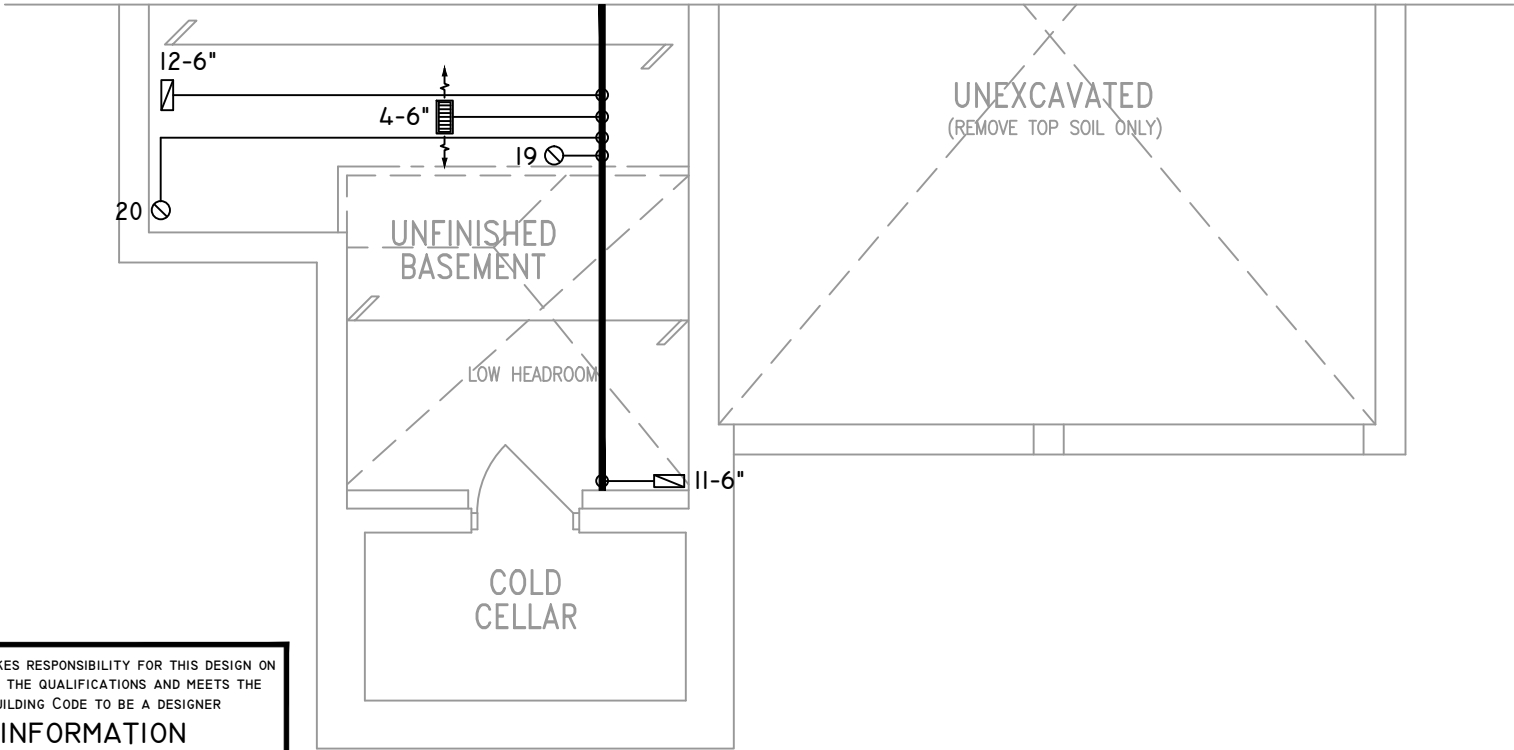
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



OPT. PARTIAL SECOND FLOOR PLAN 'B'
5 BEDROOM



PARTIAL GROUND FLOOR PLAN 'B'



PARTIAL BASEMENT PLAN 'B'

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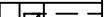
2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

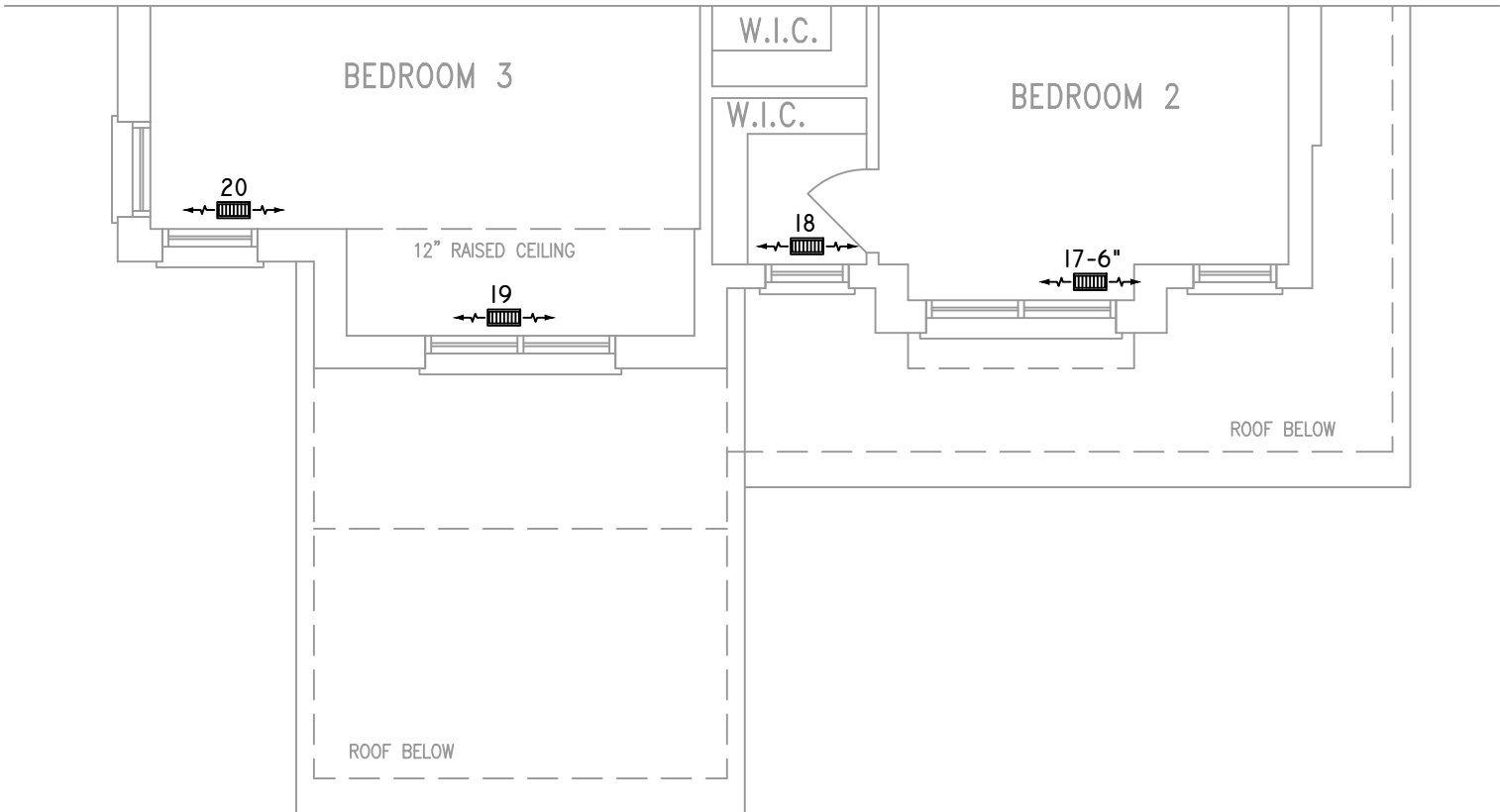
HEAT-LOSS	61,408	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960803BNA	OR EQUAL.
UNIT HEATING INPUT	80,000	BTU/HR.
UNIT HEATING OUTPUT	76,800	BTU/HR.
A/C COOLING CAPACITY	3.0	TONS.
FAN SPEED	1172	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	4	4
1ST FLOOR	11	1	2
BASEMENT	5	1	

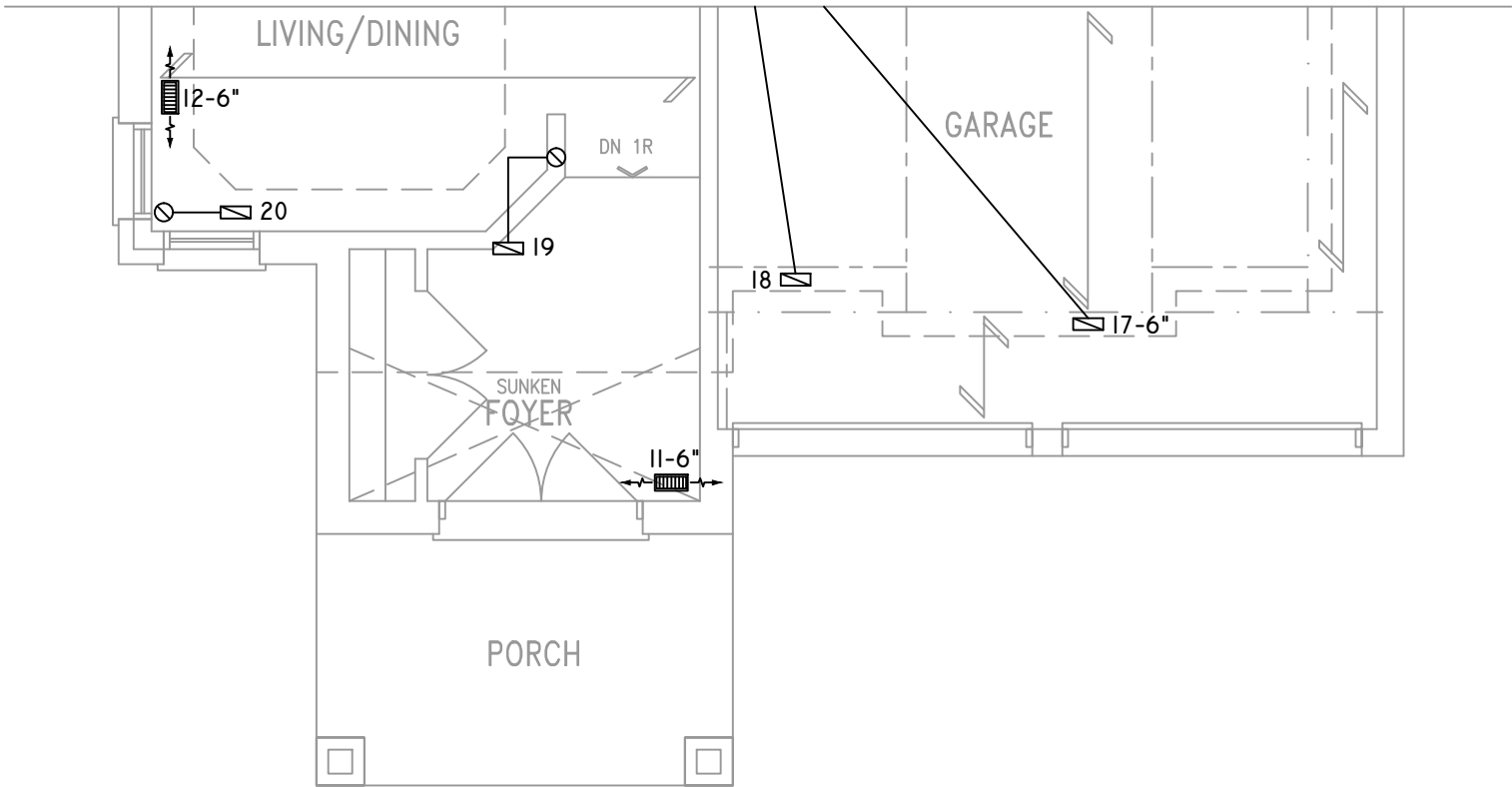
FLOOR PLAN: PARTIAL PLAN(S)	
DRAWN BY: AM	CHECKED: DD
LAYOUT NO. JB-04618	SQFT 3316
DRAWING NO. M4	

DATE:	APRIL 3, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-15 ALT. 2ND FLR WOB RIDEAU I5
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

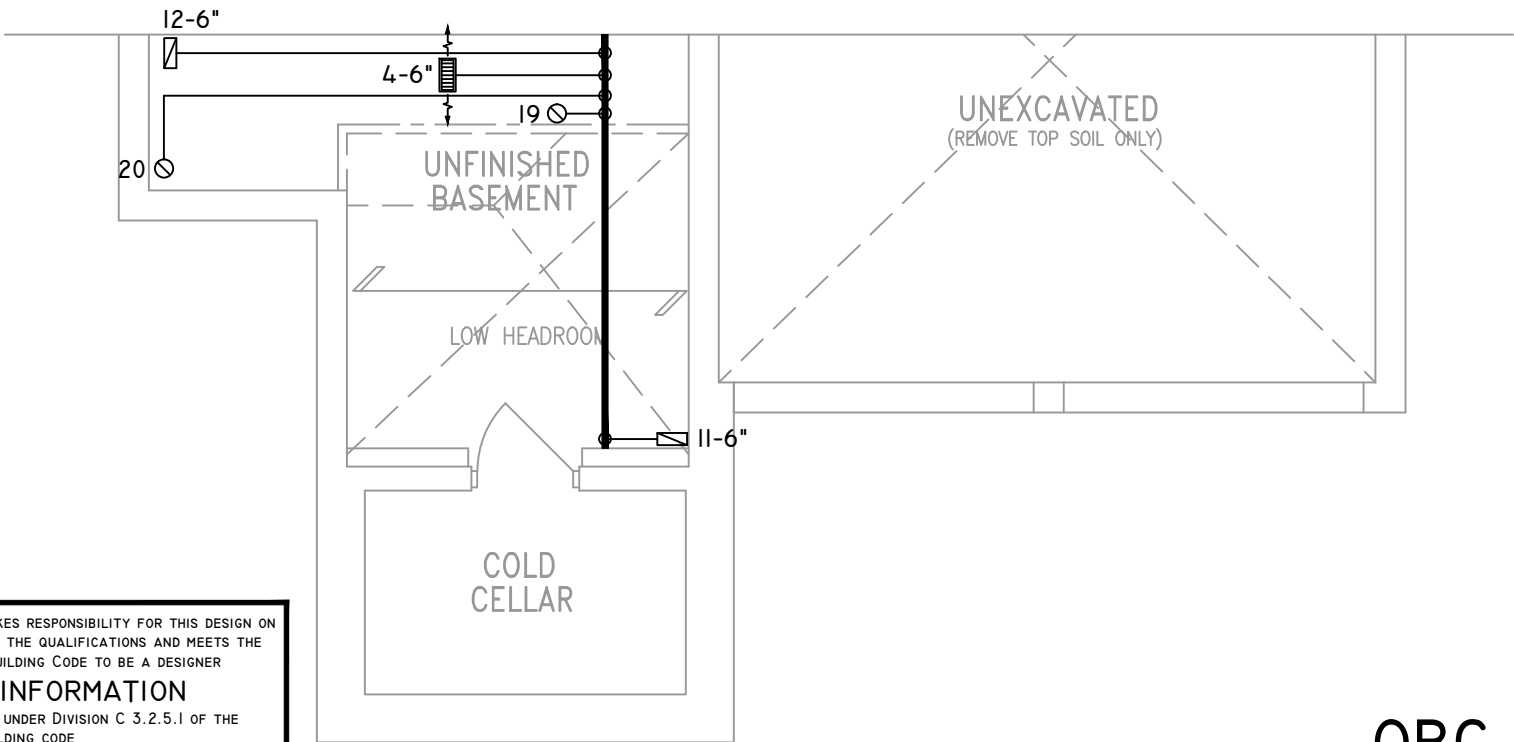
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



OPT. PARTIAL SECOND FLOOR PLAN 'C'
5 BEDROOM



PARTIAL GROUND FLOOR PLAN 'C'



PARTIAL 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
INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
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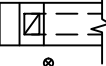
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MISSISSAUGA, ONT.
L4T 0A4 TEL: 905-671-9800
EMAIL: DAVE@GTADESIGNS.CA
WEB: WWW.GTADESIGNS.CA

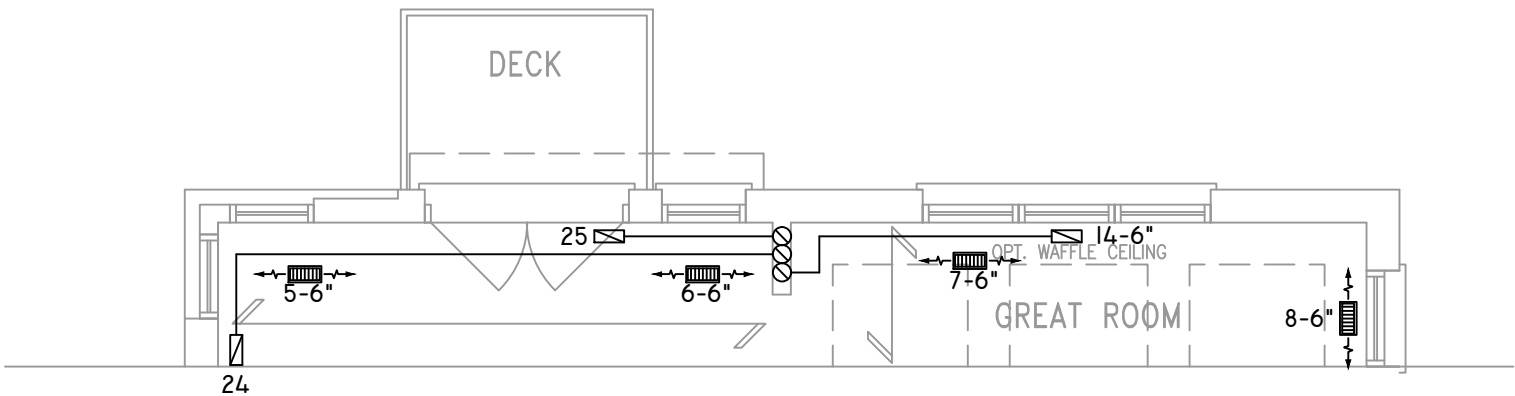
HEAT-LOSS	61,408	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	AMEC960803BNA	OR EQUAL.
UNIT HEATING INPUT	80,000	BTU/HR.
UNIT HEATING OUTPUT	76,800	BTU/HR.
A/C COOLING CAPACITY	3.0	TONS.
FAN SPEED	1172	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	4	4
1ST FLOOR	11	1	2
BASEMENT	5	1	

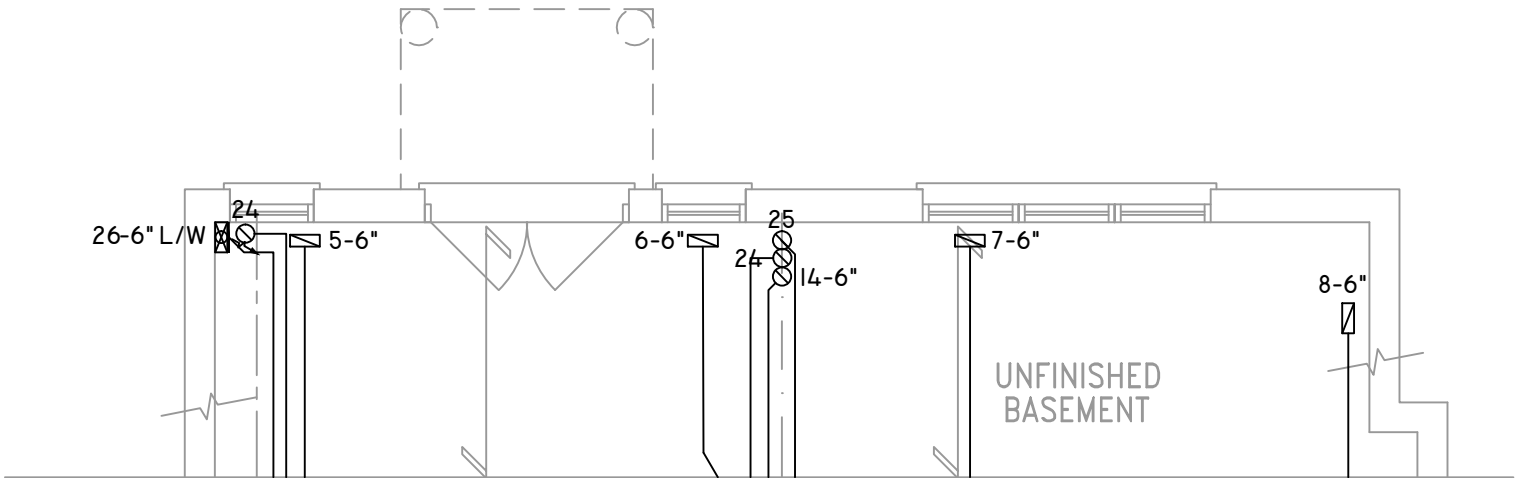
FLOOR PLAN: PARTIAL PLAN(S)	
DRAWN BY: AM	CHECKED: DD
LAYOUT NO. JB-04618	SQFT 3316
DRAWING NO. M5	

DATE:	APRIL 3, 2018
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-15 ALT. 2ND FLR WOB RIDEAU I5
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

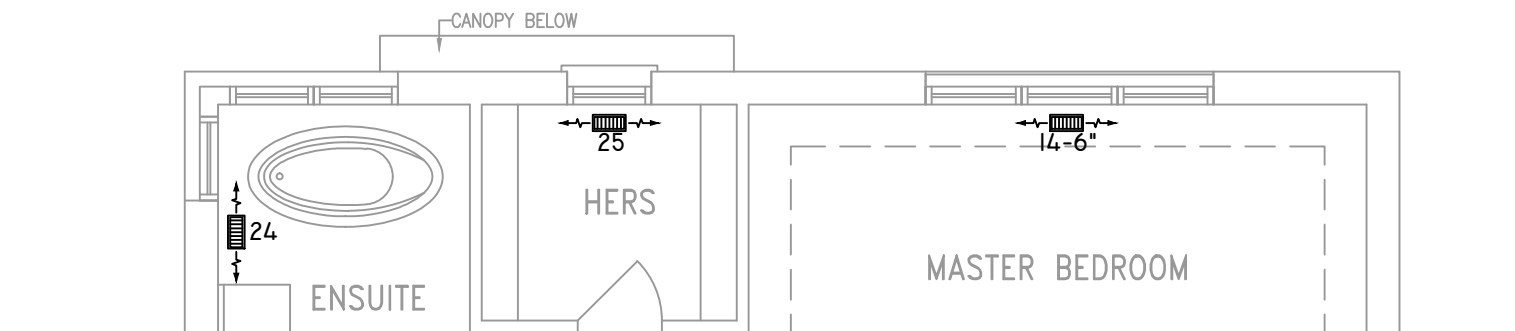
	FLEX DUCT		LOW/HIGH WALL/KICK SUPPLY DIFFUSER		DUCT CONNECTION TO JOIST LINING		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING)	S.A.	SUPPLY AIR
	RIGID ROUND DUCT		HRV EXHAUST GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN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



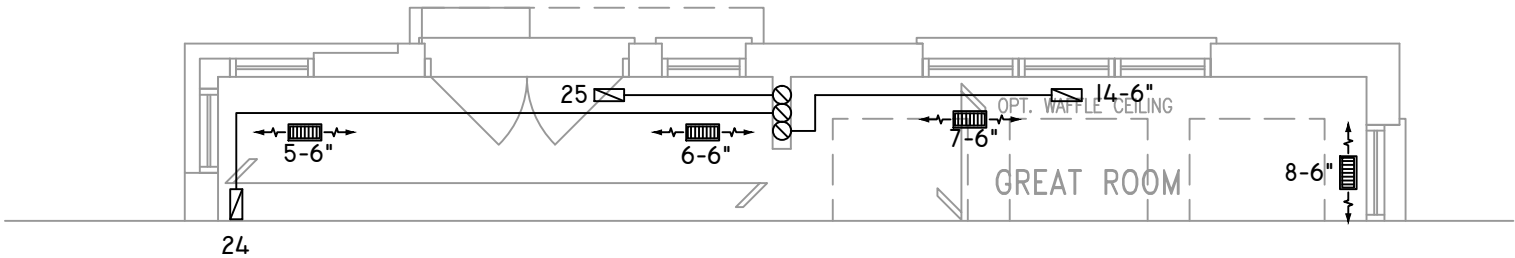
PARTIAL GROUND FLOOR PLAN ELEVATION 'C' REAR UPGRADE WOB



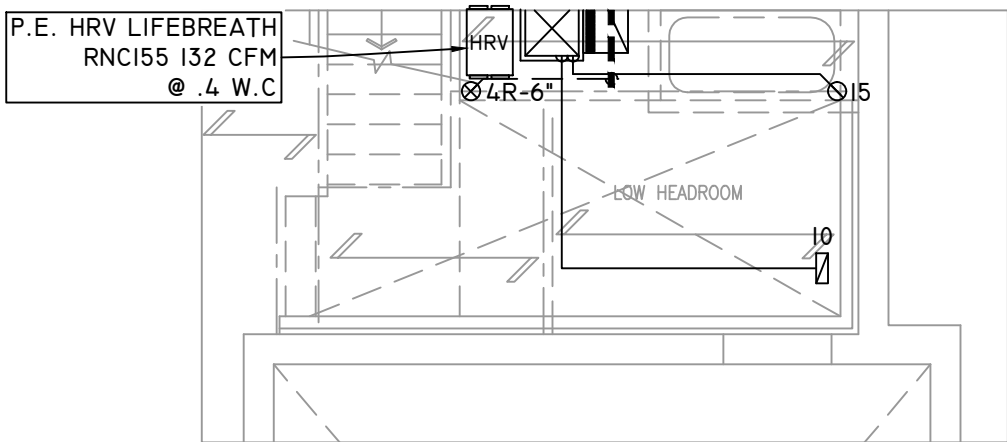
PARTIAL BASEMENT PLAN ELEVATION 'C' REAR UPGRADE WOB



PARTIAL STD & OPT SECOND FLOOR PLAN ELEVATION 'C' REAR UPGRADE



PARTIAL GROUND FLOOR PLAN ELEVATION 'C' REAR UPGRADE



PARTIAL BASEMENT PLAN W/
SUNKEN LAUNDRY -3R

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
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BASEMENT	5	1	

FLOOR PLAN: PARTIAL PLAN(S)	
DRAWN BY: AM	CHECKED: DD
LAYOUT NO. JB-04618	SQFT 3316
DRAWING NO. M6	

DATE: APRIL 3, 2018
CLIENT: BAYVIEW WELLINGTON
MODEL: S42-15 ALT. 2ND FLR WOB RIDEAU I5
PROJECT: GREEN VALLEY EAST BRADFORD,ONT.
SCALE: 3/16" = 1'-0"