

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 402B S42-18		Lot: _____
Municipality			Postal code	Plan number/ other description	
Bradford					
B. Individual who reviews and takes responsibility for design activities					
Name			Firm		
David DaCosta			gtaDesigns Inc.		
Street address			Unit no.	Lot/con.	
2985 Drew Road, Suite 202					
Municipality		Postal code	Province	E-mail	
Mississauga		L4T 0A4	Ontario	hvac@gtadesigns.ca	
Telephone number		Fax number	Cell number		
(905) 671-9800					
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 #:
					Layout #:
					PJ-00041
					JB-06442
Heating and Cooling Load Calculations		Main	X	Builder	Bayview Wellington
Air System Design		Alternate		Project	Green Valley
Residential mechanical ventilation Design Summary		Area Sq ft:	2760	Model	Lot 402B
Residential System Design per CAN/CSA-F280-12					S42-18
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 26, 2021</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-06442	
Building Location					
Address (Model): S42-18			Site: Green Valley		
Model: Lot 402B			Lot:		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on:			VA3 Design Dated 25/Mar/2021		
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? VanEE 65H HRV			Internal shading: Light-translucent		Occupants: 5
Sensible Eff. at -25C 60%		Apparent Effect. at -0C 83%		Units: Imperial Area Sq ft: 2760	
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:			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:			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:		
City: Mississauga			E-mail hvac@gtadesigns.ca		

Builder: **Bayview Wellington**

Date: **March 26, 2021**

Lot 402B

Project: **Green Valley**

Model: **S42-18**

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

Project # **PJ-00041**
Layout # **JB-06442**

Page 3

DESIGN LOAD SPECIFICATIONS		AIR DISTRIBUTION & PRESSURE		FURNACE/AIR HANDLER DATA:		BOILER/WATER HEATER DATA:		A/C UNIT DATA:	
Level 1 Net Load	16,323 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	3.5 Ton
Level 2 Net Load	21,517 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	AMEC96 0804CNA	Model		Cond.-----	3.5
Level 3 Net Load	25,544 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	80000	Input Btu/h		Coil -----	3.5
Level 4 Net Load	0 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	76800	Output Btu/h		Blower DATA:	
Total Heat Loss	63,383 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	40,535 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower Speed Selected: Mid-High			
		Heating Air Flow Proportioning Factor	0.0244 cfm/btuh	AFUE	96%	Blower Type ECM			
Building Volume Vb	33247 ft³	Cooling Air Flow Proportioning Factor	0.0381 cfm/btuh	Aux. Heat		(Brushless DC OBC 12.3.1.5.(2))			
Ventilation Load	1,188 Btu/h	R/A Temp	70 deg. F.	SB-12 Package	Package A1	Heating Check	1545 cfm	Cooling Check	1545 cfm
Ventilation PVC	79.5 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>	1545 cfm	Cooling Air Flow Rate	1545 cfm

	Level 1														Level 2										
S/A Outlet No.	1	2	3	4											5	6	7	8	9	10	11	12	13	14	15
Room Use	BASE	BASE	BASE	BASE											FOY	FOY	KIT/BRK	KIT/BRK	FAM	FAM	FAM	LIV/DIN	LIV/DIN	LIV/DIN	PWD
Btu/Outlet	4081	4081	4081	4081											2499	2499	2162	2162	1927	1927	1927	1727	1727	1727	1233
Heating Airflow Rate CFM	99	99	99	99											61	61	53	53	47	47	47	42	42	42	30
Cooling Airflow Rate CFM	16	16	16	16											38	38	89	89	78	78	78	74	74	74	32
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		
Actual Duct Length	25	39	43	29											28	38	7	36	45	50	41	41	43	33	22
Equivalent Length	120	150	100	100	70	70	70	70	70	70	70	70	70	100	150	110	90	120	140	130	110	140	110	70	
Total Effective Length	145	189	143	129	70	70	70	70	70	70	70	70	70	128	188	117	126	165	190	171	151	183	143	70	
Adjusted Pressure	0.09	0.07	0.09	0.10	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.10	0.07	0.11	0.10	0.08	0.07	0.08	0.09	0.07	0.09	0.10	
Duct Size Round	6	6	6	6											5	5	6	6	6	6	6	6	6	6	4
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	
Trunk	B	C	C	B											E	F	A	B	C	D	D	C	C	B	E

	Level 3														Level 4										
S/A Outlet No.	16	17	18	19	20	21	22	23	24	25	26	27	28												
Room Use	BED 3	ENS 3	ENS 4	BED 4	SIT	SIT	LAUND	W/C	ENS M	MAST	MAST	BED 2	ENS												
Btu/Outlet	3965	1268	859	2637	2292	2292	672	769	1606	2545	2545	2658	1437												
Heating Airflow Rate CFM	97	31	21	64	56	56	16	19	39	62	62	65	35												
Cooling Airflow Rate CFM	109	13	21	72	71	71	36	10	29	82	82	97	48												
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	
Actual Duct Length	71	81	58	75	54	35	23	29	36	68	58	62	45												
Equivalent Length	150	160	170	180	200	150	120	120	160	160	130	160	150	70	70	70	70	70	70	70	70	70	70	70	
Total Effective Length	221	241	228	255	254	185	143	149	196	228	188	222	195	70	70	70	70	70	70	70	70	70	70	70	
Adjusted Pressure	0.06	0.05	0.06	0.05	0.05	0.07	0.09	0.09	0.07	0.06	0.07	0.06	0.07	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	
Duct Size Round	6	4	4	6	6	6	4	3	5	6	6	6	5												
Outlet Size	4x10	3x10	3x10	4x10	4x10	4x10	3x10	3x10	3x10	4x10	4x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	
Trunk	F	F	F	F	F	E	A	A	E	D	D	C	B												

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	105	105	105	150	150	500	230	200			
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	49	55	46	60	24	37	37	8			
Equivalent Length	175	305	160	155	220	165	165	75	50	50	50
Total Effective Length	224	360	206	215	244	202	202	83	50	50	50
Adjusted Pressure	0.05	0.03	0.06	0.05	0.05	0.06	0.06	0.14	0.24	0.24	0.24
Duct Size Round	6.0	6.0	6.0	7.0	7.0	12.0	9.0	8.0			
Inlet Size	8	8	8	8	8	8	8	FLC			
" "	x	x	x	x	x	x	x	x	x	x	x
Inlet Size	14	14	14	14	14	30	14	9x6			
Trunk	Y	Y	Z	Z	Z	Y	Z	Z			

Return Trunk Duct Sizing				
Trunk	CFM	Press.	Round	Rect. Size
Drop	1545	0.05	19.0	24x14
Z	1545	0.05	19.0	34x10 26x12
Y	710	0.05	14.5	24x8 18x10
X				
W				
V				
U				
T				
S				
R				
Q				

Supply Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size	
A	1546	0.05	19.0	34x10	26x12
B	942	0.06	15.5	28x8	22x10
C	613	0.06	13.0	18x8	14x10
D	218	0.06	9.0	8x8	10x7
E	516	0.05	12.5	18x8	14x10
F	330	0.05	10.5	12x8	10x10
G					
H					
I					
J					
K					

2012 OBC

Builder: Bayview Wellington

Date: March 26, 2021

Project: Green Valley

Model: Lot 402B S42-18

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: 2760

Project # PJ-00041
Layout # JB-06442

Level 1

BASE

Run ft. exposed wall A	160	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	4.0	AG	4.0	AG	4.0	AG	4.0	AG	4.0	AG	4.0	AG	4.0
Floor area	981	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	639												
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	11.62	28	642	828											
East/West	3.55	22.93	29.56	3	69	68											
South	3.55	22.93	22.50														
WOB Windows	3.55	22.93	27.86														
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75														
Net exposed walls A	21.12	3.85	0.52	608		317											
Net exposed walls B	17.03	4.78	0.65														
Exposed Ceilings A	59.22	1.37	0.64														
Exposed Ceilings B	27.65	2.94	1.37														
Exposed Floors	29.80	2.73	0.17														
Foundation Conductive Heatloss																	
Total Conductive																	
Air Leakage																	
Ventilation																	
Heat Gain People																	
Appliances Loads	1 = .25 percent		4275														
Duct and Pipe loss			10%														
Level HL Total	16,323			16323													
Level HG Total	1,677				1677												

Level 2

FOY

KIT/BRK

FAM

LIV/DIN

PWD

Run ft. exposed wall A	39	A	35	A	41	A	34	A	11	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	12.0		11.0		11.0		11.0		11.0		11.0		11.0		11.0		11.0
Floor area	209	Area	287	Area	219	Area	243	Area	28	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	468		385		451		374		121								
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		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss	Gain		Loss</
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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

Name

David DaCosta

SB-12 Package

Package A1

Total Heat Loss	63,383	btu/h
Total Heat Gain	40,535	btu/h

2012 OBC

Builder: Bayview Wellington

Date: March 26, 2021

Project: Green Valley

Model: Lot 402B S42-18

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: 2760

Project #
Layout #

Level 3

Run ft. exposed wall A	28	A			14	A			6	A			23	A			46	A			7	A			10	A			12	A			48	A			24	A			14	A				
Run ft. exposed wall B		B				B				B				B				B				B				B				B				B				B				B				
Ceiling height	9.0				9.0				9.0				9.0				9.0				9.0				9.0				10.0				9.0				9.0				9.0					
Floor Area	158	Area			44	Area			52	Area			128	Area			286	Area			57	Area			22	Area			111	Area			313	Area			150	Area			78	Area				
Exposed Ceilings A	158	A			44	A			52	A			128	A			286	A			57	A			22	A			111	A			313	A			150	A			78	A				
Exposed Ceilings B		B				B				B				B				B				B				B				B				B				B				B				
Exposed Floors	158	Flr			44	Flr			52	Flr			128	Flr			21	Flr				Flr				Flr				Flr				Flr				Flr				Flr				
Gross Exp Wall A	252				126				54				207				414				63				90				108				480				216				126					
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		Loss	Gain		Loss	Gain		Loss	Gain	
North Shaded	3.55	22.93	11.62	27	619	314		10	229	116				10	229	296	27	619	798	77	1766	2276		10	229	116		10	229	116	37	848	430					Loss	Gain		Loss	Gain		Loss	Gain	
East/West	3.55	22.93	29.56	37	848	1094																													47	1078	1389	27	619	798	27	619	798			
South	3.55	22.93	22.50																															37	848	833										
Existing Windows	1.99	40.90	23.66																																											
Skylight	2.03	40.10	88.23																																											
Doors	4.00	20.35	2.75																																											
Net exposed walls A	17.03	4.78	0.65	188	899	121	116	554	75	44	210	28	180	860	116	337	1611	218	53	253	34	80	382	52	71	339	46	396	1893	256	162	774	105	99	473	64										
Net exposed walls B	8.50	9.58	1.29																																											
Exposed Ceilings A	59.22	1.37	0.64	158	217	101	44	60	28	52	71	33	128	176	82	286	393	184	57	78	37	22	30	14	111	153	71	313	430	201	150	206	96	78	107	50										
Exposed Ceilings B	27.65	2.94	1.37																																											
Exposed Floors	29.80	2.73	0.17	158	432	27	44	120	7	52	142	9	128	350	21	21	57	4																												
Conductive Heatloss																																														
ective	Heat Loss			3015			964			653		2005		3827		561		187				642		182		1340		547		4249		2219		1607		1200		912								
	Heat Gain				1657		227		366		1018		2681																	2678																
ge	Heat Loss/Gain	0.1708	0.0249	515	41		165	6		112	9	342	25	654	67	96	5		110	5		229	14					726	67		379	40		205	23											
n	Case 1		0.01	0.04																																										
	Case 2		14.95	11.88																																										
	Case 3	x	0.03	0.04		82	66	26	9	18	15	54	40	104	106	15	7		17	7		36	22				115	106	60	64	33	36														
Heat Gain People			239	1		239						1	239																																	
Appliances Loads		1 =25 percent	4275																																											
Duct and Pipe loss			10%	1	353	190	1	113	23	1	76	37	1	235	126				0.5		534																									
total	25,544	Total HL per room			3965		1268		859		554		2637		4584		672					769		252		1606		757		5090		2658		2534		1437		1262								
total	19,427	Total HG per room x 1.3			2850		343						1883		3710																															

Level 4

Run ft. exposed wall A	A			A				A				A				A			A				A		
Run ft. exposed wall B	B			B				B				B				B			B				B		
Ceiling height																									
Floor area	Area			Area				Area				Area				Area			Area				Area		
Exposed Ceilings A	A			A				A				A				A			A				A		
Exposed Ceilings B	B			B				B				B				B			B				B		
Exposed Floors	Flr			Flr				Flr				Flr				Flr			Flr				Flr		
Gross Exp Wall A																									
Gross Exp Wall B																									
Foundation Conductive Heatloss																									
Total Conductive																									
Air Leakage																									
Ventilation																									
Heat Gain People																									
Appliances Loads																									
Duct and Pipe loss																									
Level HL Total																									
Level HG Total																									

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

32964

David DaCosta

David DaCosta

SB-12 Package

Package A1

Total Heat Loss	63,383	btu/h
Total Heat Gain	40,535	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:
S42-18
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) | ☒ | 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

- | | |
|-------------------------------------|--|
| ☒ | Forced air |
| ☐ | Non forced air |
| ☐ | Electric space heat (if over 10% of heat load) |

House Type 9.32.3.1(2)

- | | | |
|-------|-------------------------------------|---|
| I | ☒ | 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	3 @ 10.6 cfm	31.8 cfm
Bathrooms & Kitchen	6 @ 10.6 cfm	63.6 cfm
Other rooms	4 @ 10.6 cfm	42.4 cfm
Total		<u>180.2</u>

Principal Ventilation Capacity 9.32.3.4(1)

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

Principal Exhaust Fan Capacity

Make	Model	Location
VanEE	65H HRV	Base
129 cfm		Sones or Equiv.

Heat Recovery Ventilator

Make	VanEE
Model	65H HRV
129 cfm high	80 cfm low
Sensible efficiency @ -25 deg C	60%
Sensible efficiency @ 0 deg C	75%

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

Supplemental Ventilation Capacity

Total ventilation capacity	180.2
Less principal exhaust capacity	79.5
REQUIRED supplemental vent. Capacity	<u>100.7</u> cfm

Supplemental Fans 9.32.3.5.

Location	cfm	Model	Sones
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EXISTING VENTILATION TO REMAIN UNALTERED

all fans HVI listed Make 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 26, 2021



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-00041
 Layout # JB-06442

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	Lot 402B S42-18	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 ☐ Propane ☐ Solid Fuel ☐ Oil ☐ Electric ☐ Earth Energy
Ratio of Windows, Skylights & Glass (W, S & G) to Wall Area	Other Building Characteristics	
Area of Walls = <u>456.8</u> m ² or <u>4917.0</u> ft ²	W, S & G % = <u>16.5%</u>	☐ Log/Post&Beam ☐ ICF Above Grade ☐ ICF Basement ☐ Slab-on-ground Walkout Basement ☒ Air Conditioning Combo Unit ☐ Air Sourced Heat Pump (ASHP) ☐ Ground Source Heat Pump (GSHP)
Area of W, S & G = <u>75.47</u> m ² or <u>812.4</u> ft ²	Utilize Window ☐ Yes Averaging ☒ 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		Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating
Ceiling with Attic Space	60	59.22	Windows/Sliding Glass Doors
Ceiling without Attic Space	31	27.65	Skylights
Exposed Floor	31	29.80	Mechanicals
Walls Above Grade	22	17.03	Heating Equip.(AFUE)
Basement Walls	20.0ci	21.12	HRV Efficiency (SRE% at 0°C)
Slab (all >600mm below grade)	x	x	DHW Heater (EF)
Slab (edge only ≤600mm below grade)	10	11.13	DWHR (CSA B55.1 (min. 42% efficiency))
Slab (all ≤600mm below grade, or heated)	10	11.13	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	BCIN	Signature
David DaCosta	32964	

Package:
Project:

Package A1
Bradford

System:
Model:

System 1
S42-18

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.362	33247	81.4	17653

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.090	33247	11	592

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	17653	7298	1.2095
Level 2	0.3		15792	0.3354
Level 3	0.2		20675	0.1708
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	
		592		
BUILDING CONDUCTIVE HEAT GAIN			23800	0.0249

Levels this Dwelling	
3	

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	79.5	81.4	0.17	1188	1.1	79.5	11	944		
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	944	0.04			
	Level 1	0.5	1188	7298	0.08	Building	23800				
	Level 2	0.3		15792	0.02						
	Level 3	0.2		20675	0.01						
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	14.95		C	HG^T	11.88			
	1.08	81.4	0.17			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		1188	0.03		HGbvent	HG*1.3	944	0.04		
						944	1				

Foundation Conductive Heatloss Level 1	Level 1	1931	Watts	6587	Btu/h
Foundation Conductive Heatloss Level 2	Level 2		Watts		Btu/h
Slab on Grade Foundation Conductive Heatloss			Watts		Btu/h
Walk Out Basement Foundation Conductive Heatloss			Watts		Btu/h

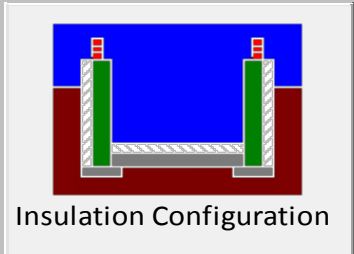
Envelope Air Leakage Calculator

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):	7.92			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	941.56			
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:	
	39.75		39.75	
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Heating Air Leakage Rate (ACH/H):		0.362		
Cooling Air Leakage Rate (ACH/H):		0.090		

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):	19.78	 Insulation Configuration
Floor Width (m):	4.61	
Exposed Perimeter (m):	48.77	
Wall Height (m):	3.05	
Depth Below Grade (m):	1.83	
Window Area (m ²):	2.88	
Door Area (m ²):	0.00	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	33	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		1931

SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN

S.A.
R.A.
①
F

RETURN AIR GRILLE
(SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE
RETURN AIR FROM BASEMENT
SECOND FLOOR

DUCT CONNECTION
TO JOIST LINING
RETURN AIR PIPE RISER
RETURN ROUND DUCT

LOW/HIGH WALL/KICK
HRV EXHAUST GRILLE
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER

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)

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

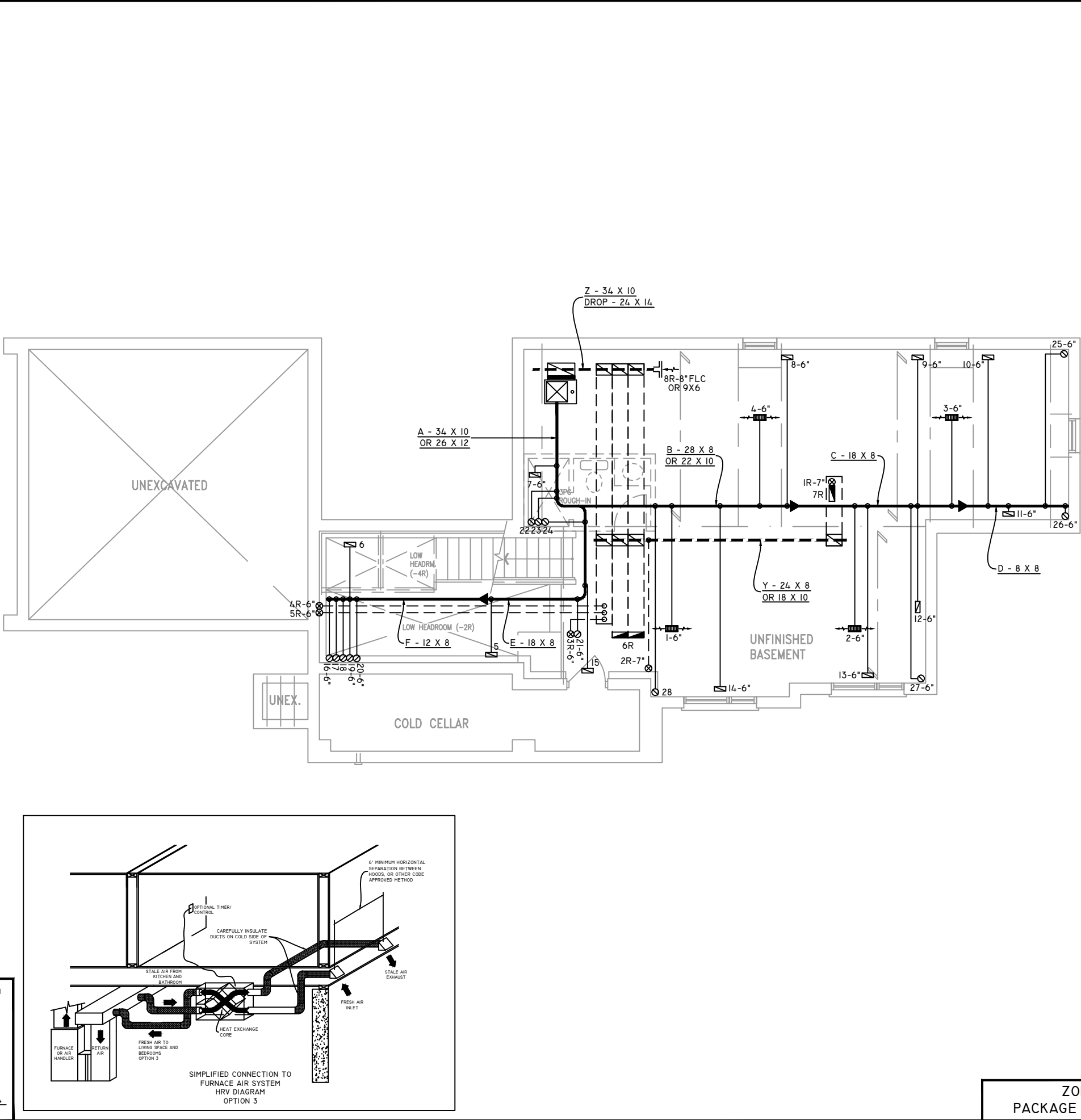
QUALIFICATION INFORMATION

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

DAVID DA COSTA

SIGNATURE OF DESIGNER

B.C.I.N. 32964



NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

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 EXCEEDS 700 CFM

DEPRESSURIZATION MAY OCCUR WITHIN THE DWELLING.



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

HEAT-LOSS		63,383		BTU/HR.	
UNIT MAKE		AMANA		OR EQUAL.	
UNIT MODEL		AMEC96 0804CNA		OR EQUAL.	
UNIT HEATING INPUT		80,000		BTU/HR.	
UNIT HEATING OUTPUT		76,800		BTU/HR.	
A/C COOLING CAPACITY		3.5		TONS.	
FAN SPEED		1545		CFM	
# OF RUNS	S/A	R/A	FANS		
3RD FLOOR					
2ND FLOOR	13	5	4		
1ST FLOOR	11	2	2		
BASEMENT	4	1			

DATE:	MARCH 26, 2021		
CLIENT:	BAYVIEW WELLINGTON		
MODEL:	LOT 402 B S42-18		
PROJECT:	GREEN VALLEY BRADFORD,ONT.		
SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	BASEMENT		
DRAWN BY:	CHECKED:	SGFT	
AD	DD	2760	
LAYOUT NO.	DRAWING NO.		
JB-06442	MI		

OBC 2012

ZONE I COMPLIANCE

PACKAGE "AI" REF. TABLE 3.1.1.2.A

SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN

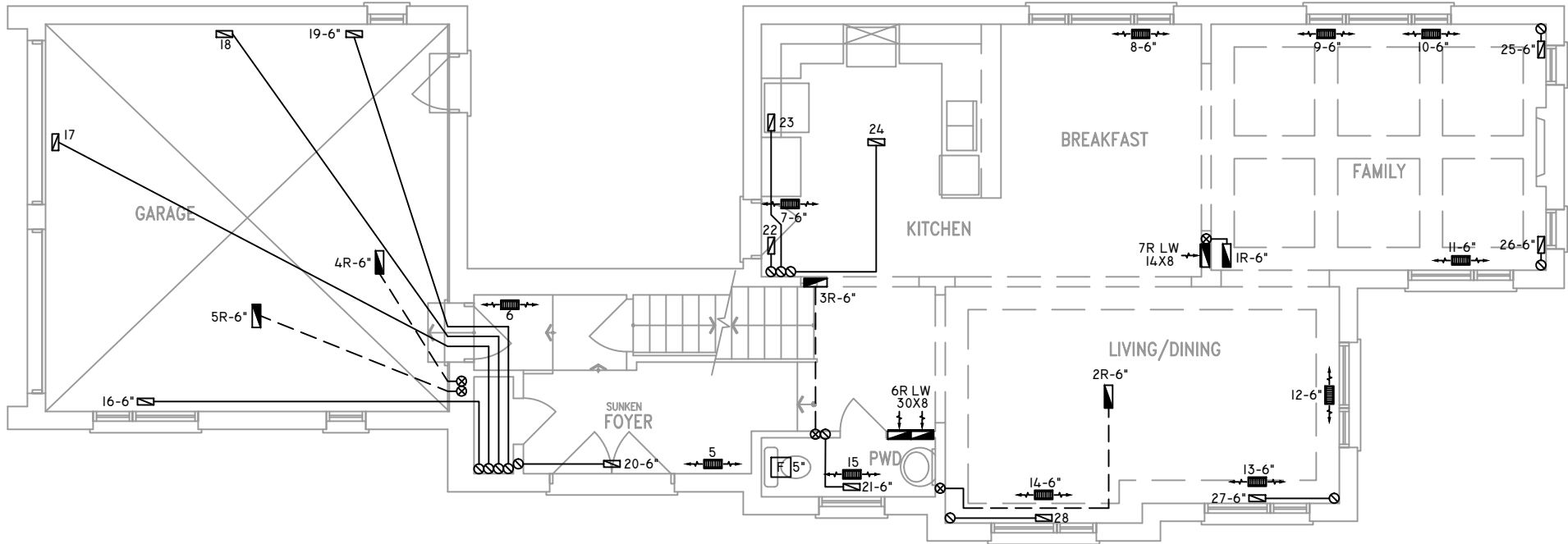
S.A.
R.A.
①
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RETURN AIR GRILLE
(SIZE INDICATED ON DRAWING)
RETURN AIR RISER UP TO
FLOOR ABOVE
RETURN AIR FROM BASEMENT
SECOND FLOOR

DUCT CONNECTION
TO JOIST LINING
RETURN AIR PIPE RISER
RETURN ROUND DUCT

LOW/HIGH WALL/KICK
HRV EXHAUST GRILLE
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER



- INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12
- ALL DUCTWORK LOCATED IN UNCONDITIONED AREAS MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3.(11)
- ALL DUCTWORK LOCATED IN CONDITIONED AREAS MUST BE SEALED TO CLASS C LEVEL AS PER OBC PART 6-6.2.4.3.(12)
- CIRCULATION PRINCIPAL FAN SWITCH TO BE CENTRALLY LOCATED
- KITCHEN EXHUST 100 CFM MIN. 6" ALL OTHER FANS SHALL BE A MIN. OF 50 CFM OR OTHERWISE NOTED AS PER 9.32.3.5

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QUALIFICATION INFORMATION

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DAVID DA COSTA



B.C.I.N. 32964

SIGNATURE OF DESIGNER

NOTES

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	63,383		
UNIT MAKE	OR EQUAL.		
	AMANA		
UNIT MODEL	OR EQUAL.		
	AMEC96 0804CNA		
UNIT HEATING INPUT	BTU/HR.		
	80,000		
UNIT HEATING OUTPUT	BTU/HR.		
	76,800		
A/C COOLING CAPACITY	TONS.		
	3.5		
FAN SPEED	CFM		
	1545		
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	5	4
1ST FLOOR	11	2	2
BASEMENT	4	1	

DATE:	MARCH 26, 2021		
CLIENT:	BAYVIEW WELLINGTON		
MODEL:	LOT 402 B S42-18		
PROJECT:	GREEN VALLEY BRADFORD,ONT.		
SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	GROUND FLOOR		
DRAWN BY:CHECKED:SQFT			
AD	DD	2760	
LAYOUT NO.	DRAWING NO.		
JB-06442	M2		

OBC 2012

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

SUPPLY AIR
RETURN AIR
THERMOSTAT
PRINCIPAL EXHAUST FAN SWITCH
W/R & PRINCIPAL EXHAUST FAN

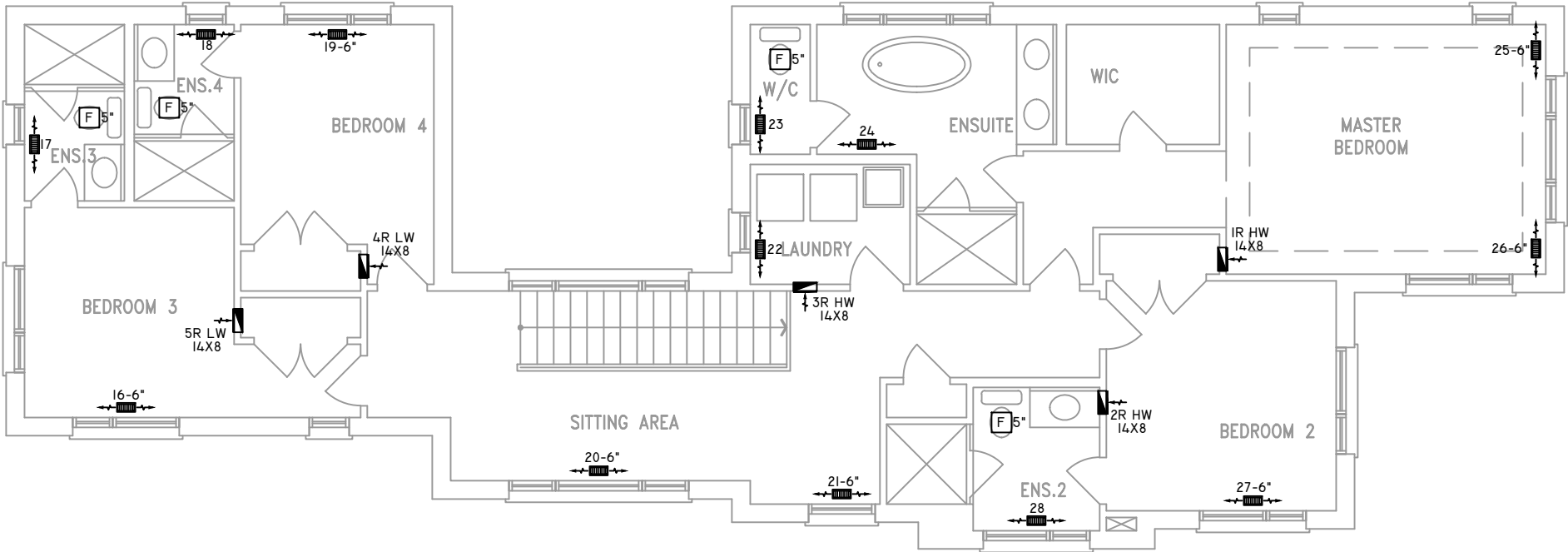
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SIGNATURE OF DESIGNER

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	76,800		
A/C COOLING CAPACITY	TONS.		
	3.5		
FAN SPEED	CFM		
	1545		
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
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SCALE:	1/8" = 1'-0"		
FLOOR PLAN:	SECOND FLOOR		
DRAWN BY:	CHECKED:	SQFT	
AD	DD	2760	
LAYOUT NO.	DRAWING NO.		
JB-06442	M3		

OBC 2012

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