

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 S42-17 Lot 402A				Lot: 402A	
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 hvac@gtadesigns.ca	
Telephone number (905) 671-9800		Fax number		Cell number	
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-00041
					Layout #:
					JB-06441
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:	3052	Model	S42-17
Residential System Design per CAN/CSA-F280-12					Lot 402A
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: - The information contained in this schedule is true to the best of my knowledge. - I have submitted this application with the knowledge and consent of the firm.					
<u>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-06441	
Building Location					
Address (Model): Lot 402A			Site: Green Valley		
Model: S42-17			Lot: 402A		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on:			Va3 Design Dated 24/03/2021		
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: 3052
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**

S42-17

Project: **Green Valley**

Model: **Lot 402A**

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-06441**

Page 3

DESIGN LOAD SPECIFICATIONS

Level 1 Net Load	17,818 btu/h
Level 2 Net Load	22,153 btu/h
Level 3 Net Load	19,113 btu/h
Level 4 Net Load	0 btu/h
Total Heat Loss	59,083 btu/h
Total Heat Gain	35,689 btu/h

Building Volume Vb	37281 ft³
Ventilation Load	1,188 Btu/h.
Ventilation PVC	79.5 cfm
Supply Branch and Grill Sizing	

AIR DISTRIBUTION & PRESSURE

Equipment External Static Pressure	0.5 "w.c.
Additional Equipment Pressure Drop	0.225 "w.c.
Available Design Pressure	0.275 "w.c.
Return Branch Longest Effective Length	300 ft
R/A Plenum Pressure	0.138 "w.c.
S/A Plenum Pressure	0.14 "w.c.
Heating Air Flow Proportioning Factor	0.0261 cfm/btuh
Cooling Air Flow Proportioning Factor	0.0327 cfm/btuh
R/A Temp	70 deg. F.
S/A Temp	116 deg. F.
Diffuser loss	0.01 "w.c.

FURNACE/AIR HANDLER DATA:

Make	Amana
Model	AMEC96 0804CNA
Input Btu/h	80000
Output Btu/h	76800
E.s.p.	0.50 " W.C.
Water Temp	deg. F.
AFUE	96%
Aux. Heat	
SB-12 Package	Package A1
Temp. Rise>>>	46 deg. F.

BOILER/WATER HEATER DATA:

Make	Type
Model	
Input Btu/h	
Output Btu/h	
Min.Output Btu/h	AWH
Blower Speed Selected:	OFF ON
Heating Check	1545 cfm
Selected cfm>	1545 cfm

A/C UNIT DATA:

Amana	3.0 Ton
Cond.-----	3.0
Coil -----	3.0
Blower Type	ECM
(Brushless DC OBC 12.3.1.5.(2))	
Cooling Check	1167 cfm
Cooling Air Flow Rate	1167 cfm

	Level 1														Level 2											
S/A Outlet No.	1	2	3	4	5									6	7	8	9	10	11	12	13	14	15	16		
Room Use	BASE	BASE	BASE	BASE	BASE									STUDY	PWD	MUD	LIV/DIN	LIV/DIN	KIT/BRK	KIT/BRK	FAM	FAM	FAM	FOY		
Btu/Outlet	3564	3564	3564	3564	3564									2857	815	1781	1596	1596	2474	2474	1897	1897	1897	2869		
Heating Airflow Rate CFM	93	93	93	93	93									75	21	47	42	42	65	65	50	50	50	75		
Cooling Airflow Rate CFM	10	10	10	10	10									66	4	8	68	68	94	94	67	67	67	51		
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				
Actual Duct Length	25	25	44	26	46									29	20	3	7	33	54	48	51	54	43	35		
Equivalent Length	120	120	110	130	100	70	70	70	70	70	70	70	70	70	150	100	110	90	110	150	130	90				
Total Effective Length	145	145	154	156	146	70	70	70	70	70	70	70	70	70	179	120	113	97	143	204	178	181				
Adjusted Pressure	0.09	0.09	0.08	0.08	0.09	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.07	0.11	0.12	0.13	0.09	0.06	0.07	0.07				
Duct Size Round	6	6	6	6	6									6	3	5	6	6	6	6	6	6	6	6		
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10				
Trunk	E	B	C	B	C									E	E	PTO	PTO	B	D	D	C	C	B			

	Level 3														Level 4											
S/A Outlet No.	17	18	19	20	21	22	23	24	25	26	27	28	29	30												
Room Use	BED 3	ENS 3	LAUND	BED 4	ENS 4	MAST	MAST	W/C	ENS M	ENS M	WIC M	BED 2	BED 2	ENS 2												
Btu/Outlet	3372	1032	102	1928	92	1869	1869	32	1652	1652	1207	1472	1472	1362												
Heating Airflow Rate CFM	88	27	3	50	2	49	49	1	43	43	32	38	38	36												
Cooling Airflow Rate CFM	56	19	27	55	2	51	51	1	43	43	29	41	41	7												
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13				
Actual Duct Length	44	20	29	60	58	71	62	66	77	68	59	45	42	50												
Equivalent Length	115	120	140	130	130	130	120	210	180	190	170	180	180	110	70	70	70	70	70	70	70	70				
Total Effective Length	159	140	169	190	188	201	182	276	257	258	229	225	222	160	70	70	70	70	70	70	70	70				
Adjusted Pressure	0.08	0.09	0.08	0.07	0.07	0.06	0.07	0.05	0.05	0.05	0.06	0.06	0.06	0.08	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19				
Duct Size Round	6	4	4	5	2	5	5	1	5	5	4	5	5	4												
Outlet Size	4x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10				
Trunk	E	PTO	E	B	B	D	D	D	D	C	C	C	E	E												

Return Branch And Grill Sizing	Grill Pressure Loss										
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R
Inlet Air Volume CFM	105	150	105	150	105	450	250	230			
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	44	42	71	61	71	11	20	3			
Equivalent Length	205	195	210	200	170	125	140	75	50	50	50
Total Effective Length	249	237	281	261	241	136	160	78	50	50	50
Adjusted Pressure	0.05	0.05	0.04	0.05	0.05	0.09	0.07	0.15	0.24	0.24	0.24
Duct Size Round	6.0	8.0	6.0	8.0	6.0	10.5	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		Y		Z	Y	Z			

Return Trunk Duct Sizing	CFM	Press.	Round	Rect. Size
Trunk				
Drop	1545	0.05	19.0	24x14
Z	1335	0.05	18.0	30x10 24x12
Y	655	0.05	14.0	22x8 18x10
X				
W				
V				
U				
T				
S				
R				
Q				

Supply Trunk Duct Sizing	CFM	Press.	Round	Rect. Size
Trunk				
A	1430	0.05	18.5	32x10 26x12
B	1076	0.05	16.5	32x8 24x10
C	720	0.05	14.5	24x8 18x10
D	321	0.05	10.5	12x8 10x10
E	354	0.06	10.5	12x8 10x10
F				
G				
H				
I				
J				
K				

2012 OBC

Builder: Bayview Wellington

Date: March 26, 2021

Project: Green Valley

Model: S42-17
Lot 402A

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: 3052

Project # PJ-00041
Layout # JB-06441

Level 1

BASE

Run ft. exposed wall A	152	A	A	A	A	A	A	A	A	A	A	A	A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
Ceiling height	4.0	AG	4.0	AG	4.0	AG	4.0	AG	4.0	AG	4.0	AG	4.0	AG
Floor area	1242	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	A	A
Exposed Ceilings 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
Gross Exp Wall A	603													
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	24	550	656											
South	3.55	22.93	20.89	3	69	63											
WOB Windows	3.55	22.93	27.86														
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	555		289											
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	Heat Loss																
	Heat Gain																
Air Leakage	Heat Loss/Gain	1.2870	0.0335	9891		36											
Ventilation	Case 1	0.08	0.05														
	Case 2	14.95	11.88														
	Case 3	x	0.03	241		51											
Heat Gain People			239														
Appliances Loads	1 = .25 percent		4736														
Duct and Pipe loss			10%														
Level HL Total	17,818			17818													
Level HG Total	1,498					1498											

Level 2

STUDY

PWD

MUD

LIV/DIN

KIT/BRK

FAM

FOY

Run ft. exposed wall A	22	A	11	A	14	A	21	A	34	A	33	A	19	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	11.0		11.0		14.0		11.0		11.0		11.0		11.0		11.0		11.0
Floor area	115	Area	30	Area	63	Area	283	Area	276	Area	246	Area	226	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	242		121		196		231		374		363		209				
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	48	1101	1313																					
East/West	3.55	22.93	27.35								64	1467	1751	42	963	1149	72	1651	1969	34	780	930					
South	3.55	22.93	20.89											53	1215	1107	55	1261	1149								
Existing Windows	1.99	40.90	23.66																								
Skylight	2.03	40.10	88.23																								
Doors	4.00	20.35	2.75					21	427	58								27	549	74							
Net exposed walls A	17.03	4.78	0.65	194	927	125	121	578	78	175	836	113	167	798	108	279	1334	180	236	1128	152	148	707	96			
Net exposed walls B	8.50	9.58	1.29																								
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		x																									
Total Conductive	Heat Loss			2028		1438		578			1264		171		2266	1858	3512	2436	82	4040	3271	109	769	37	1100		
	Heat Gain																										
Air Leakage	Heat Loss/Gain	0.3774	0.0335	765	48			218	3		477	6		855	62		1325	82		1525	109		769	37			
Ventilation	Case 1	0.02	0.05	64	69			18	4		40	8		71	89		110	116		127	156	64	52				
	Case 2	14.95	11.88																								
	Case 3	x	0.03																					0.05			
Heat Gain People		239																									
Appliances Loads		1 =.25 percent		4736																							
Duct and Pipe loss		10%																									
Level HL Total	22,153	Total HL for per room		2857				815		1781				3192			4948		5692		2869		1546				
Level HG Total	19,937	Total HG per room x 1.3			2022				110		240			4151			5733		6136								

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	59,083	btu/h
Total Heat Gain	35,689	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:
Lot 402A
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	5 @ 10.6 cfm	53 cfm
Total		<u>190.8</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	190.8
Less principal exhaust capacity	79.5
REQUIRED supplemental vent. Capacity	<u>111.3</u> cfm

Supplemental Fans 9.32.3.5.

Location	cfm	Model	Sones
Ens M	50	XB50	0.3
Ens 2	50	XB50	0.3
Ens 3	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 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-06441

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 S42-17 Lot 402A		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>371.89</u> m ² or <u>4003.0</u> ft ²	W, S & G % = <u>16.9%</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>62.91</u> m ² or <u>677.2</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	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 David DaCosta	BCIN 32964	Signature
------------------------------	----------------------	---------------

Package:
Project:

Package A1
Bradford

System:
Model:

System 1
Lot 402A

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL^T	HLleak
0.018	0.362	37281	81.4	19782

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG^T	HG Leak
0.018	0.090	37281	11	663

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	19782	7685	1.2870
Level 2	0.3		15724	0.3774
Level 3	0.2		14404	0.2747
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	
		663		
BUILDING CONDUCTIVE HEAT GAIN			19801	0.0335

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	0.05			
	Level 1	0.5	1188	7685	0.08	Building	19801				
	Level 2	0.3		15724	0.02						
Level 3	0.2	14404		0.02							
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	0.05		
					944	1					

Foundation Conductive Heatloss Level 1	Level 1	1946	Watts	6639	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

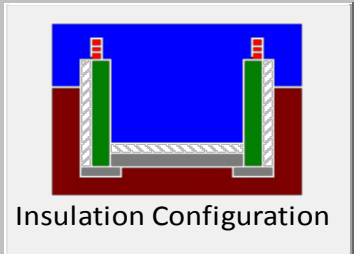
Envelope Air Leakage Calculator

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):	1055.80			
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:	
	0		0	
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):	15.91	 Insulation Configuration
Floor Width (m):	7.25	
Exposed Perimeter (m):	46.33	
Wall Height (m):	3.05	
Depth Below Grade (m):	1.84	
Window Area (m ²):	2.51	
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):		1946

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

S.A.
R.A.
T
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 SUPPLY DIFFUSER
HRV EXHAUST GRILLE
SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER

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

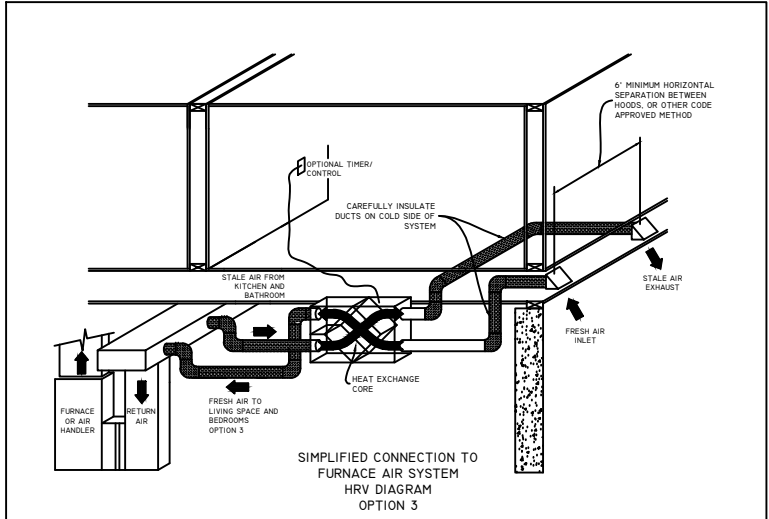
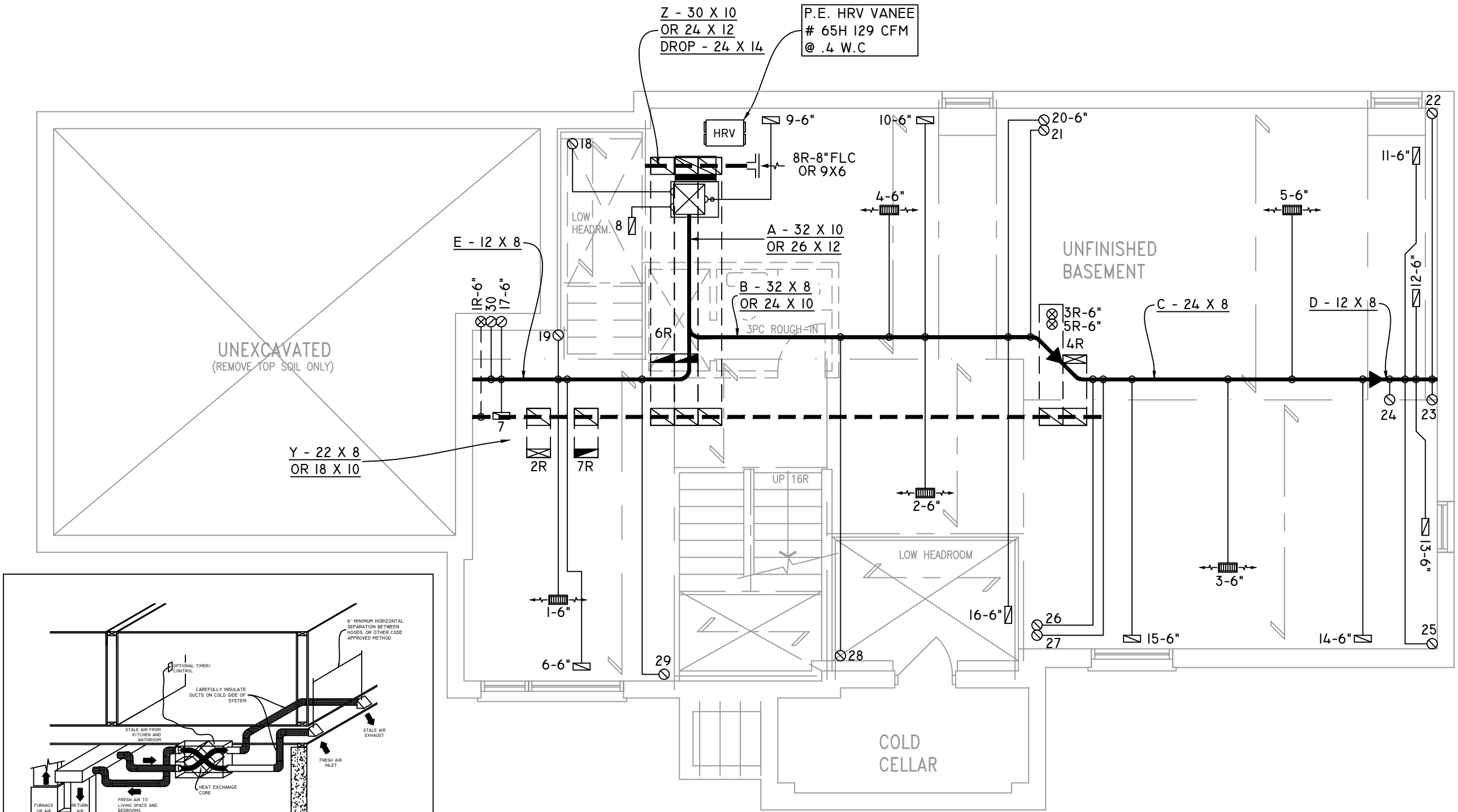
QUALIFICATION INFORMATION

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



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

CONSULT JOIST
MANUFACTURER'S
SPECIFICATION REGARDING
ALLOWABLE HOLE SIZE

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

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.
ALL R/A PARTITIONS 6" (FIRST
FLOOR ONLY)
INSULATE DUCTS IN
UNCONDITIONED SPACES R12
UNDERCUT ALL DOORS 1" MIN.
HEATING 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 AS
DEPRESSURIZATION MAY OCCUR
WITHIN THE DWELLING

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

HEAT-LOSS	BTU/HR.
59,083	
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.
3.0	
FAN SPEED	CFM
1545	
# OF RUNS	S/A R/A FANS
3RD FLOOR	
2ND FLOOR	13 5 6
1ST FLOOR	10 2 2
BASEMENT	5 1

DATE:	MARCH 26, 2021	
CLIENT:	BAYVIEW WELLINGTON	
MODEL:	LOT 402A S42-17	
PROJECT:	GREEN VALLEY BRADFORD,ONT.	
SCALE:	3/16" = 1'-0"	
FLOOR PLAN:	BASEMENT	
DRAWN BY:	CHECKED:	SQFT
AD	DD	3052
LAYOUT NO.	DRAWING NO.	
JB-06441	MI	

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

S.A.
R.A.
T
F

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

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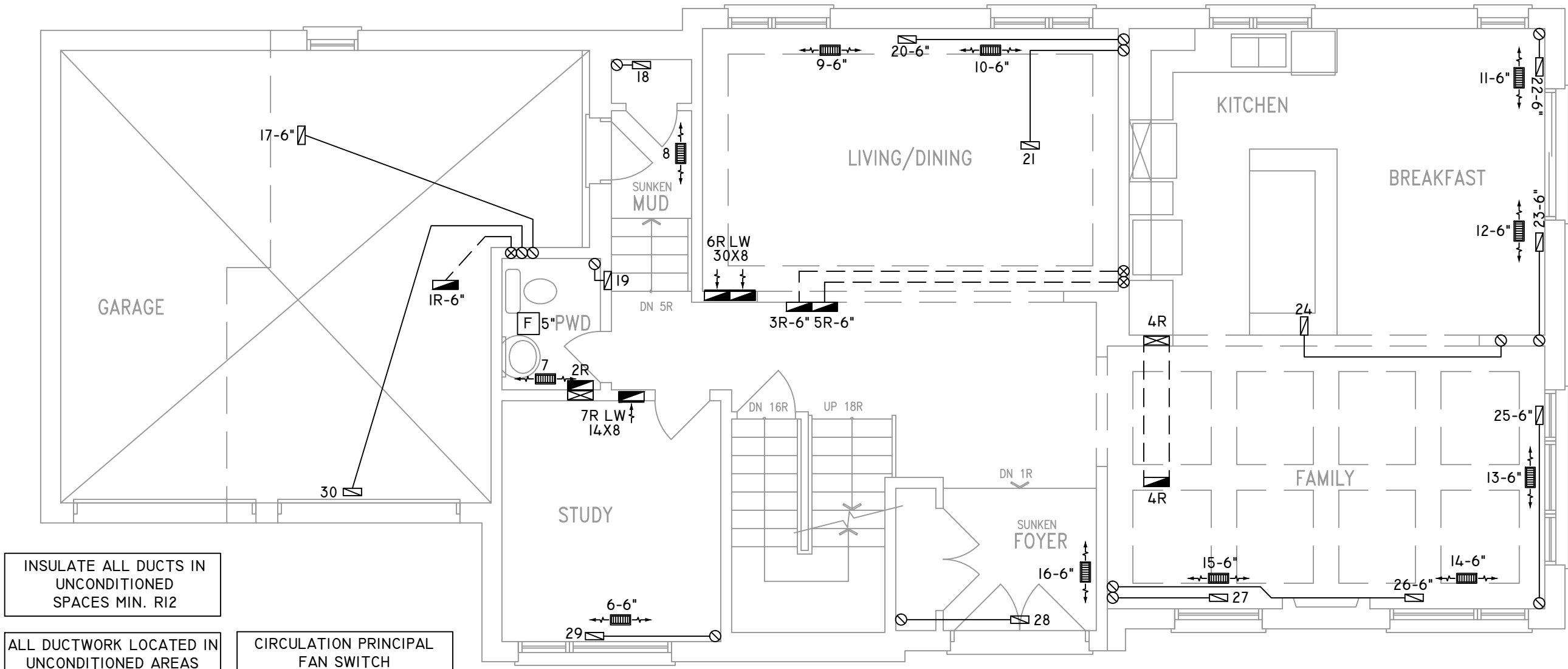
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DUCT CONNECTION
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RETURN AIR PIPE RISER
RETURN ROUND DUCT



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.(II)

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\"/>

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 *David Da Costa* B.C.I.N. 32964

SIGNATURE OF DESIGNER

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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HEAT-LOSS		BTU/HR.	
59,083			
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.	
3.0			
FAN SPEED		CFM	
1545			
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	13	5	6
1ST FLOOR	10	2	2
BASEMENT	5	1	

DATE:	MARCH 26, 2021		
CLIENT:	BAYVIEW WELLINGTON		
MODEL:	LOT 402A S42-17		
PROJECT:	GREEN VALLEY BRADFORD,ONT.		
SCALE:	3/16" = 1'-0"		
FLOOR PLAN:	GROUND FLOOR		
DRAWN BY:	CHECKED:	SQFT	
AD	DD	3052	
LAYOUT NO.	DRAWING NO.		
JB-06441	M2		

OBC 2012

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

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

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(SIZE INDICATED ON DRAWING)
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SUPPLY AIR PIPE RISER
VOLUME DAMPER

FLEX DUCT
RIGID ROUND DUCT
SUPPLY DIFFUSER

INSULATE ALL DUCTS IN
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SPACES MIN. R12

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6-6.2.4.3.(II)

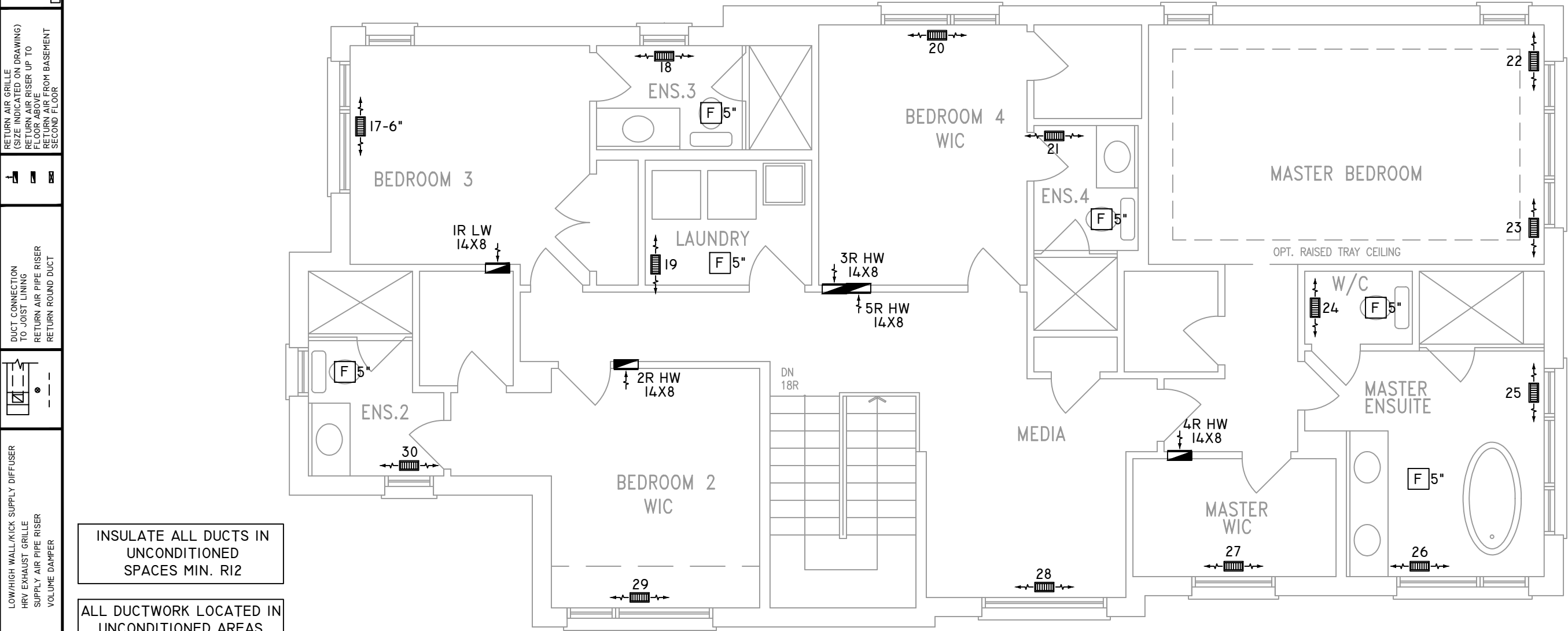
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6-6.2.4.3.(I2)

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DAVID DA COSTA  B.C.I.N. 32964
SIGNATURE OF DESIGNER



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FLOOR PLAN:		SECOND FLOOR	
DRAWN BY:	CHECKED:	SQFT	
AD	DD	3052	
LAYOUT NO.		DRAWING NO.	
JB-06441		M3	

OBC 2012

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