

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 S42-15 Lot 156				Lot:	156
				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 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-07274
Heating and Cooling Load Calculations		Main	X	Builder Bayview Wellington	
Air System Design		Alternate		Project Green Valley East	
Residential mechanical ventilation Design Summary		Area Sq ft:	3317	Model Rideau 15	
Residential System Design per CAN/CSA-F280-12				S42-15 Lot 156	
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>June 25, 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-07274	
Building Location					
Address (Model): S42-15 Lot 156			Site: Green Valley East		
Model: Rideau 15			Lot: 156		
City and Province: Bradford			Postal code:		
Calculations based on					
Dimensional information based on:			VA3 Design11/May/2012		
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: 3317
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: **June 25, 2021**

Project: **Green Valley East**

Rideau 15
Model: **S42-15 Lot 156**

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-07274**

Page 3

DESIGN LOAD SPECIFICATIONS				AIR DISTRIBUTION & PRESSURE				FURNACE/AIR HANDLER DATA:				BOILER/WATER HEATER DATA:				A/C UNIT DATA:			
Level 1 Net Load	20,396 btu/h	Equipment External Static Pressure	0.5 "w.c.	Make	Amana	Make	Type	Amana	3.0 Ton										
Level 2 Net Load	23,881 btu/h	Additional Equipment Pressure Drop	0.225 "w.c.	Model	AMEC960803BNA	Model		Cond.-----	3.0										
Level 3 Net Load	10,874 btu/h	Available Design Pressure	0.275 "w.c.	Input Btu/h	80000	Input Btu/h		Coil -----	3.0										
Level 4 Net Load	9,356 btu/h	Return Branch Longest Effective Length	300 ft	Output Btu/h	76800	Output Btu/h													
Total Heat Loss	64,508 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	33,100 btu/h	S/A Plenum Pressure	0.14 "w.c.	Water Temp	deg. F.	Blower DATA:													
		Heating Air Flow Proportioning Factor	0.0182 cfm/btuh	AFUE	96%	Blower Speed Selected:	W2	Blower Type	ECM										
Building Volume Vb	43561 ft ³	Cooling Air Flow Proportioning Factor	0.0354 cfm/btuh	Aux. Heat				(Brushless DC OBC 12.3.1.5.(2))											
Ventilation Load	1,188 Btuh.	R/A Temp	70 deg. F.	SB-12 Package	Package A1	Heating Check	1172 cfm	Cooling Check	1172 cfm										
Ventilation PVC	79.5 cfm	S/A Temp	131 deg. F.																
Supply Branch and Grill Sizing		Diffuser loss	0.01 "w.c.	Temp. Rise>>>	61 deg. F.	Selected cfm>	1172 cfm	Cooling Air Flow Rate	1172 cfm										

	Level 1														Level 2												
S/A Outlet No.	1	2	3	4											5	6	7	8	9	10	11	12	13				
Room Use	BASE	BASE	BASE	BASE											KIT	KIT	GRT	GRT	STUDY	LAUND	FOY	LIV/DIN	LIV/DIN				
Btu/Outlet	5099	5099	5099	5099											3045	3045	2422	2422	1592	2592	3577	2594	2594				
Heating Airflow Rate CFM	93	93	93	93											55	55	44	44	29	47	65	47	47				
Cooling Airflow Rate CFM	11	11	11	11											98	98	102	102	83	16	50	76	76				
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13		
Actual Duct Length	24	34	30	54											42	32	26	20	12	12	58	63	49				
Equivalent Length	90	120	140	160	70	70	70	70	70	70	70	70	70	70	100	120	110	80	70	90	140	150	110	70	70	70	70
Total Effective Length	114	154	170	214	70	70	70	70	70	70	70	70	70	70	142	152	136	100	82	102	198	213	159	70	70	70	70
Adjusted Pressure	0.11	0.08	0.08	0.06	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.09	0.09	0.10	0.13	0.16	0.13	0.07	0.06	0.08	0.19	0.19	0.19	0.19
Duct Size Round	6	6	6	6											6	6	6	6	5	4	6	6	6				
Outlet Size	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10
Trunk	G	F	C	E											F	F	B	G	A	A	E	E	C				

	Level 3														Level 3												
S/A Outlet No.	14	15	16	17	18	19	20								22	23	24	25	26	27	28						
Room Use	MAST	MAST	LOFT	ENS 2	BED 2	BED 2	WIC 2								BED 3	BED 3	BATH	BED 4	WC	ENS	HERS						
Btu/Outlet	1834	1834	2110	995	1751	1751	600								1982	1982	752	1463	461	2166	551						
Heating Airflow Rate CFM	33	33	38	18	32	32	11								36	36	14	27	8	39	10						
Cooling Airflow Rate CFM	45	45	26	10	39	39	11								47	47	14	38	11	51	4						
Duct Design Pressure	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	0.13	
Actual Duct Length	36	41	20	66	72	68	64								77	74	60	49	57	52	42						
Equivalent Length	130	120	100	170	150	140	130	70	70	70	70	70	70	70	190	170	120	140	160	110	120	70	70	70	70	70	
Total Effective Length	166	161	120	236	222	208	194	70	70	70	70	70	70	70	267	244	180	189	217	162	162	70	70	70	70	70	
Adjusted Pressure	0.08	0.08	0.11	0.06	0.06	0.06	0.07	0.19	0.19	0.19	0.19	0.19	0.19	0.19	0.05	0.05	0.07	0.07	0.06	0.08	0.08	0.19	0.19	0.19	0.19	0.19	
Duct Size Round	5	5	4	4	5	5	3								5	5	3	5	3	5	3						
Outlet Size	3x10	3x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	3x10	3x10	3x10	3x10	3x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	
Trunk	B	G	A	D	D	D	D								E	E	C	C	C	C	B	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	185	382	200	105	150	150							
Duct Design Pressure	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12	0.12		
Actual Duct Length	7	9	15	67	36	37							
Equivalent Length	75	130	125	150	165	170	50	50	50	50	50		
Total Effective Length	82	139	140	217	201	207	50	50	50	50	50		
Adjusted Pressure	0.14	0.08	0.08	0.05	0.06	0.06	0.24	0.24	0.24	0.24	0.24		
Duct Size Round	8.0	10.5	8.0	6.0	8.0	8.0							
Inlet Size	FLC	8	8	8	8	8							
" "	x	x	x	x	x	x	x	x	x	x	x		
Inlet Size	9x6	30	14	14	14	14							
Trunk	Z	Z	Y	Z	Y	Y							

Return Trunk Duct Sizing					Supply Trunk Duct Sizing				
Trunk	CFM	Press.	Round	Rect. Size	Trunk	CFM	Press.	Round	Rect. Size
Drop	1172	0.05	17.0	24x12	A	1172	0.05	17.0	26x10 22x12
Z	1172	0.05	17.0	26x10 22x12	B	888	0.05	15.5	28x8 22x10
Y	500	0.06	12.0	16x8 12x10	C	558	0.05	13.0	18x8 14x10
X					D	370	0.05	11.5	14x8 12x10
W					E	277	0.05	10.0	12x8 10x10
V					F	203	0.08	8.5	8x8 107
U					G	170	0.08	7.5	8x8 87
T					H				
S					I				
R					J				
Q					K				

2012 OBC

Builder: Bayview Wellington

Date: June 25, 2021

Project: Green Valley East

Model: Rideau 15 S42-15 Lot 156

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: 3317

Project # PJ-00041
Layout # JB-07274

Level 1

BASE

Run ft. exposed wall A	182	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	1379	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	728												
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														
East/West	3.55	22.93	29.56	6	138	177											
South	3.55	22.93	22.50	12	275	270											
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	689		359											
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																
Duct and Pipe loss																	
Level HL Total	20,396			20396													
Level HG Total	1,237				1237												

Level 2

KIT

GRT

STUDY

LAUND

FOY

LIV/DIN

Run ft. exposed wall A	44	A	34	A	12	A	17	A	27	A	48	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	11.0		11.0		11.0		13.0		12.0		11.0		11.0		11.0		11.0
Floor area	514	Area	252	Area	121	Area	69	Area	82	Area	334	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	5	A	A	A	A	A	42	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	484		374		132		221		324		528						
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														
East/West	3.55	22.93	29.56	86	1972	2542				24	550	709					
South	3.55	22.93	22.50	19	436	428				16	367	473					
Existing Windows	1.99	40.90	23.66							43	986	968					
Skylight	2.03	40.10	88.23														
Doors	4.00	20.35	2.75							37	753	102					
Net exposed walls A	17.03	4.78	0.65	379	1812	245				272	1300	176					
Net exposed walls B	8.50	9.58	1.29							42	58	27					
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																
Duct and Pipe loss																	
Level HL Total	23,881			6090						3577				5188			
Level HG Total	19,778				5508						1416				4306		

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	64,508	btu/h
Total Heat Gain	33,100	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: S42-15 Lot 156

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	3 @	10.6 cfm	31.8 cfm	
Bathrooms & Kitchen	5 @	10.6 cfm	53 cfm	
Other rooms	6 @	10.6 cfm	63.6 cfm	
Total			190.8	

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			79.5	

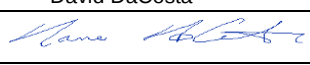
Principal Exhaust Fan Capacity				
Make	Model	Location		
VanEE	65H HRV	Base		
129 cfm		Sones	or Equiv.	

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			111.3	cfm

Supplemental Fans 9.32.3.5.				
Location	cfm	Model	Sones	
Ens	50	XB50	0.3	
Bath	50	XB50	0.3	
Ens 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	June 25, 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-07274

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 Lot 156		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>416.19</u> m ² or <u>4479.9</u> ft ²	W, S & G % = <u>11.8%</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>48.958</u> m ² or <u>527.0</u> ft ²	Utilize Window Averaging ☐ Yes ☒ No	☐ ICF Above Grade ☐ Walkout Basement ☐ Combo Unit		

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

Energy Efficiency Substitutions			
☐ ICF (3.1.1.2.(5) & (6) / 3.1.1.3.(5)) ☐ Combined space heating and domestic water heating systems (3.1.1.2(7) / 3.1.1.3.(7))			
☐ Airtightness substitution(s) Airtightness test required (Refer to Design Guide Attached)	☐ Table 3.1.1.4.B Required:		Permitted Substitution:
	☐ Table 3.1.1.4.C Required:		Permitted Substitution:
Building Component	Minimum RSI/R-Values or Maximum U-Value ¹		Efficiency Ratings
Thermal Insulation	Nominal	Effective	Windows & Doors Provide U-Value ⁽¹⁾ or ER rating
Ceiling with Attic Space	60	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
S42-15 Lot 156

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^{AT}	HL ^{leak}
0.018	0.357	43561	81.4	22816

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^{AT}	HG ^{Leak}
0.018	0.089	43561	11	765

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	22816	8728	1.3070
Level 2	0.3		16546	0.4137
Level 3	0.2		14775	0.3088
Level 3	0.2		14775	0.3088

HG LEAK			Air Leakage Heat Gain	
		765		0.0455
BUILDING CONDUCTIVE HEAT GAIN			16810	

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

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	0.06		
	Level 1	0.5	1188	8728	0.07	Building	16810			
	Level 2	0.3		16546	0.02					
	Level 3	0.2		14775	0.02					
Level 3	0.2	14775		0.02						
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 944		HG*1.3 1	944	

Foundation Conductive Heatloss Level 1	Level 1	2312	Watts	7888	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

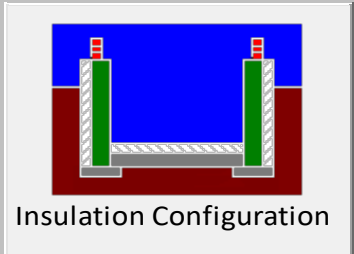
Envelope Air Leakage Calculator

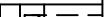
Supplemental tool for CAN/CSA-F280

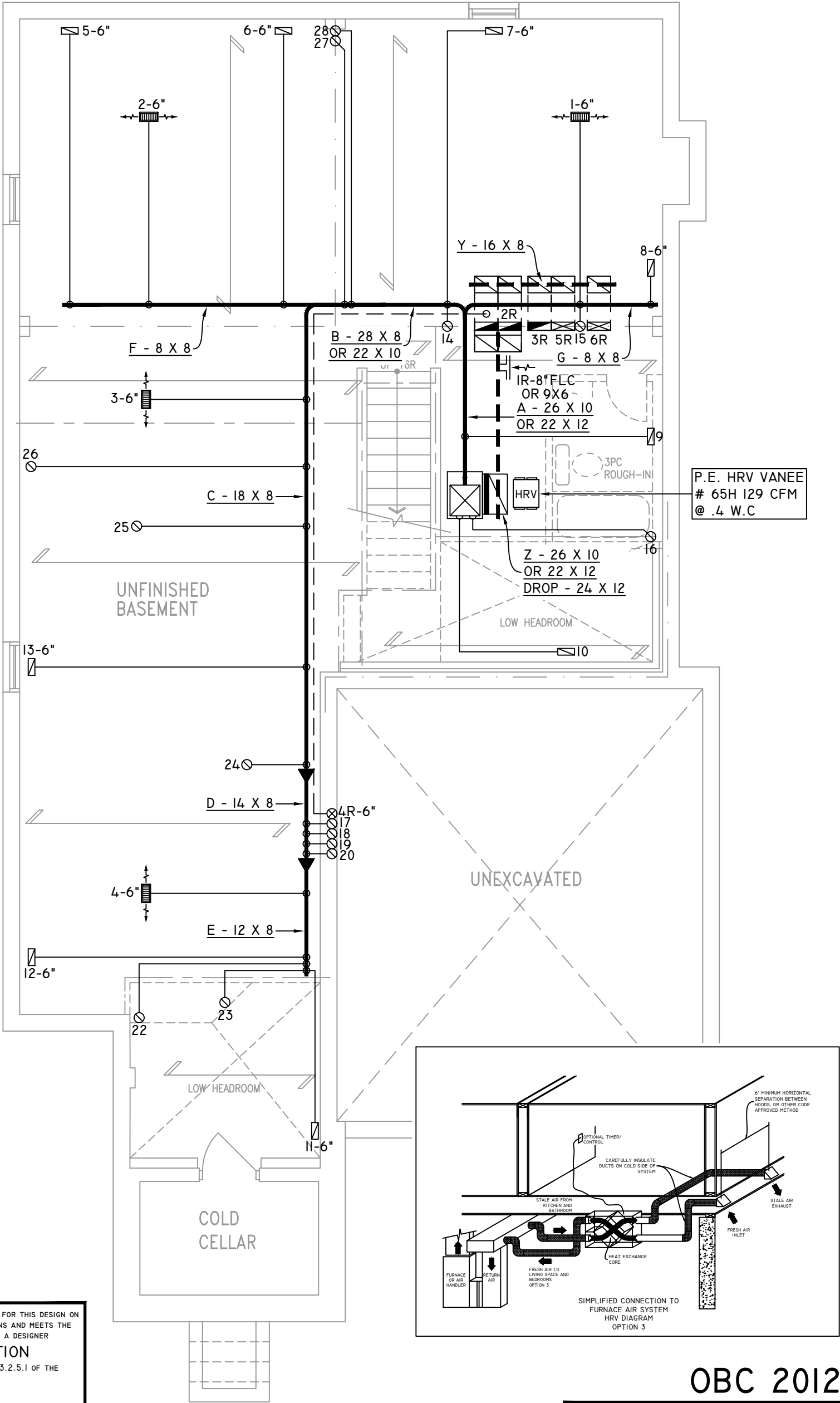
Weather Station Description				
Province:	Ontario ▼			
Region:	Bradford ▼			
Weather Station Location:	Open flat terrain, grass ▼			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest ▼			
Walls:	Heavy ▼			
Flue:	Heavy ▼			
Highest Ceiling Height (m):	7.77			
Building Configuration				
Type:	Detached			
Number of Stories:	Two			
Foundation:	Full			
House Volume (m ³):	1233.65			
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):		0.357		
Cooling Air Leakage Rate (ACH/H):		0.089		

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):	55.47	
Wall Height (m):	3.05	
Depth Below Grade (m):	1.83	
Window Area (m ²):	1.67	
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):		2312

	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



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

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.(I2)

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

QUALIFICATION INFORMATION

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

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

SIGNATURE OF DESIGNER

OBC 2012

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

NOTES

INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.

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

PROVIDE BALANCING DAMPERS ON ALL BRANCHES.

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

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

CONTRACTOR MUST WORK FROM APPROVED PLANS.

ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.

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



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

HEAT-LOSS	64,508	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	14	3	4
1ST FLOOR	9	2	3
BASEMENT	4	1	

FLOOR PLAN:	BASEMENT
DRAWN BY:	JL
CHECKED:	DD
LAYOUT NO.	JB-07274
SQFT	3317
DRAWING NO.	MI

DATE:	JUNE 25, 2021
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-I5 LOT I56 RIDEAU I5
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"

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

**CIRCULATION PRINCIPAL
FAN SWITCH
TO BE CENTRALLY
LOCATED**

**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)**

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

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.

GTADESIGNS

2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.

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

HEAT-LOSS	64,508	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	14	3	4
1ST FLOOR	9	2	3
BASEMENT	4	1	

FLOOR PLAN:

GROUND FLOOR

DRAWN BY: JL

CHECKED: DD

SOFT

LAYOUT NO. JB-07274

DRAWING NO. M2

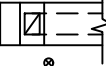
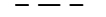
DATE: JUNE 25, 2021

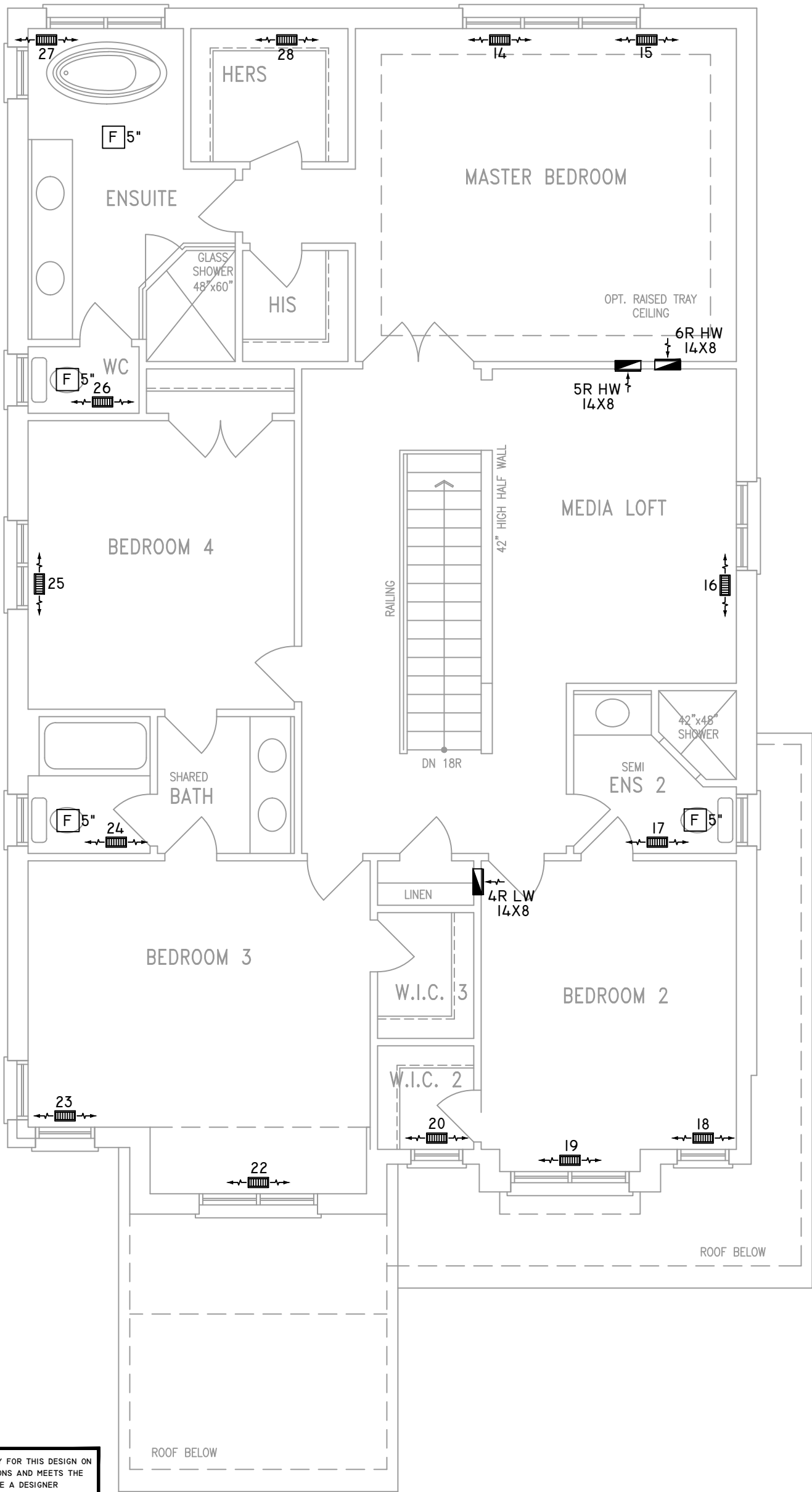
CLIENT: BAYVIEW WELLINGTON

MODEL: S42-15 LOT 156
RIDEAU 15

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



- 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.(I2)

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

QUALIFICATION INFORMATION

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

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

SIGNATURE OF DESIGNER

OBC 2012

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

NOTES
INSTALLATION TO COMPLY WITH THE LATEST ONTARIO BUILDING CODE.
ALL SUPPLY OUTLETS TO BE 5" DIA. UNLESS OTHERWISE SPECIFIED.
PROVIDE BALANCING DAMPERS ON ALL BRANCHES.
ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES R12 UNDERCUT ALL DOORS 1" MIN.
CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSIBILITY OF GTA DESIGNS.
GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING.



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

HEAT-LOSS	BTU/HR.
64,508	
UNIT MAKE	OR EQUAL.
AMANA	
UNIT MODEL	OR EQUAL.
AMEC960803BNA	
UNIT HEATING INPUT	BTU/HR.
80,000	
UNIT HEATING OUTPUT	BTU/HR.
76,800	
A/C COOLING CAPACITY	TONS.
3.0	
FAN SPEED	CFM
1172	

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	14	3	4
1ST FLOOR	9	2	3
BASEMENT	4	1	

FLOOR PLAN:		
SECOND FLOOR		
DRAWN BY:	CHECKED:	SQFT
JL	DD	3317
LAYOUT NO.	DRAWING NO.	
JB-07274	M3	

DATE:	JUNE 25, 2021
CLIENT:	BAYVIEW WELLINGTON
MODEL:	S42-I5 LOT I56 RIDEAU I5
PROJECT:	GREEN VALLEY EAST BRADFORD,ONT.
SCALE:	3/16" = 1'-0"