

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 50-3			Lot:	
			Lot/con.	
Municipality Brampton	Postal code	Plan number/ other description		
B. Individual who reviews and takes responsibility for design activities				
Name David DaCosta		Firm gtaDesigns Inc.		
Street address 2985 Drew Road, Suite 202			Unit no.	Lot/con.
Municipality Mississauga	Postal code L4T 0A4	Province Ontario	E-mail dave@gtadesigns.ca	
Telephone number (905) 671-9800		Fax number (647) 494-9643	Cell number (416) 268-6820	
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]				
☐ House ☐ Small Buildings ☐ Large Buildings ☐ Complex Buildings ☒ HVAC – House ☐ Building Services ☐ Detection, Lighting and Power ☐ Fire Protection ☐ Building Structural ☐ Plumbing – House ☐ Plumbing – All Buildings ☐ On-site Sewage Systems				
Description of designer's work		Model Certification		Project # PJ-00067
				Layout # JB-00858
Heating and Cooling Load Calculations		Builder	Highcastle Homes	
Air System Design		Project	Riverwalk Phase 2	
Residential mechanical ventilation Design Summary		Model	50-3	
Residential System Design per CAN/CSA-F280-12		SB-12	Package J	
Residential New Construction - Forced Air				
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>July 30, 2015</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 Highcastle Homes				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				JB-00858	
Building Location					
Address (Model): 50-3			Site: Riverwalk Phase 2		
Model:			Lot:		
City and Province: Brampton			Postal code:		
Calculations based on					
Dimensional information based on:			RN Design		
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: Brampton		Wind exposure: Shelterd			
HRV? VanEE 40H+		Internal shading: Light-translucent Occupants: 5			
Sensible Eff. at -25C 55% Apparent Effect. at -0C 72%		Units: Imperial		Area Sq. ft 3378	
Heating design conditions			Cooling design conditions		
Outdoor temp: -2.2 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 Selected OBC SB12 Package J R 22			Style A: As per Selected OBC SB12 Package J R 12		
Style B: Existing Walls (When Applicable) R 12			Style B:		
Style C:			Style C:		
Style D:			Style D:		
Floors on soil			Ceilings		
Style A: As per Selected OBC SB12 Package J			Style A: As per Selected OBC SB12 Package J R 50		
Style B:			Style B: As per Selected OBC SB12 Package J R 31		
Exposed floors			Style C:		
Style A: As per Selected OBC SB12 Package J R 31			Doors		
Style B:			Style A: As per Selected OBC SB12 Package J R 3.01		
Windows			Style B:		
Style A: As per Selected OBC SB12 Package J R 3.15			Style C:		
Style B: Existing Windows (When Applicable) R 1.99			Skylights		
Style C:			Style A: As per Selected OBC SB12 Package J R 2.03		
Style D:			Style B:		
Attached documents: As per Shedule 1					
Notes: Residential New Construction - Forced Air					
Calculations performed by					
Name: David DaCosta			Postal code: L4T 0A4		
Company: gtaDesigns Inc.			Telephone: (905) 671-9800		
Address: 2985 Drew Road, Suite 202			Fax: (416) 268-6820		
City: Mississauga			E-mail: dave@gtadesigns.ca		



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July 30, 2015

Model: 50-3

System 1

Individual BCIN: 32964

David DaCosta

Project # PJ-00067
Layout # JB-00858

Supply Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size	
A	616	0.05	13.5	20x8	16x10
B	324	0.05	10.5	12x8	10x10
C	453	0.06	11.5	14x8	12x10
D	176	0.06	8.5	8x8	107
E	103	0.06	7.0	8x8	8x7
F					
G					
H					
I					
J					
K					

2012 OBC

Builder: Highcastle Homes

Date: July 30, 2015

Project: Riverwalk Phase 2

Model: 50-3

System 1

Weather Data Brampton 44 -2.2 86 20 48.2

Heat Loss ^T 74.2 deg. F Ht gain ^T 11 deg. F GTA: 3378

Project # PJ-00067
Layout # JB-00858

Level 1

BASE

Run ft. exposed wall A	181	A	A	A	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	B	B	B
Ceiling height	3.5	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG
Floor area	1447	Area	Area	Area	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	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	634																
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	3.15	23.56	11.31														
East/West	3.15	23.56	27.75	35	824	971											
South	3.15	23.56	21.28	6	141	128											
Existing Windows	1.99	37.29	22.15														
Skylight	2.03	36.55	88.23														
Doors	3.01	24.65	3.65	21	518	77											
Net exposed walls A	8.50	8.73	1.29	572		740											
Net exposed walls B	8.50	8.73	1.29														
Exposed Ceilings A	50.00	1.48	0.76														
Exposed Ceilings B	22.86	3.25	1.66														
Exposed Floors	22.05	3.37	0.23														
Foundation Conductive Heatloss	Slab On Grade (x)																
Total Conductive	Heat Loss																
	Heat Gain																
Air Leakage	Heat Loss/Gain	1.0566	0.0510	9959		98											
Ventilation	Case 1		0.09														
	Case 2		22.44														
	Case 3	x	0.04														
Heat Gain People																	
Appliances Loads	1 =.25 percent																
Duct and Pipe loss			10%														
Level 1 HL Total	19,786		Total HL for per room	19786													
Level 1 HG Total	2,748		Total HG per room x 1.3			2748											

Level 2

FOY

LIV

DIN

KIT

FAM

DEN

PWD

LAUND

Run ft. exposed wall A	15	A	31	A	26	A	34	A	23	A	21	A	6	A	24	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	B
Ceiling height	18.0		11.0		11.0		11.0		11.0		11.0		11.0		11.0			
Floor area	78	Area	168	Area	273	Area	264	Area	287	Area	113	Area	61	Area	110	Area	Area	Area
Exposed Ceilings A	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	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	270		341		286		374		253		231		66		264			
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	3.15	23.56	11.31														
East/West	3.15	23.56	27.75	36	848	999											
South	3.15	23.56	21.28														
Existing Windows	1.99	37.29	22.15														
Skylight	2.03	36.55	88.23														
Doors	3.01	24.65	3.65	26	641	95											
Net exposed walls A	14.49	5.12	0.76	208	1065	158											
Net exposed walls B	8.50	8.73	1.29														
Exposed Ceilings A	50.00	1.48	0.76														
Exposed Ceilings B	22.86	3.25	1.66														
Exposed Floors	22.05	3.37	0.23														
Foundation Conductive Heatloss	Slab On Grade (x)																
Total Conductive	Heat Loss																
	Heat Gain																
Air Leakage	Heat Loss/Gain	0.3633	0.0510	928		64											
Ventilation	Case 1		0.03														
	Case 2		22.44														
	Case 3	x	0.04														
Heat Gain People																	
Appliances Loads	1 =.25 percent																
Duct and Pipe loss			10%														
Level 2 HL Total	23,124		Total HL for per room	3591													
Level 2 HG Total	18,718		Total HG per room x 1.3			1796											

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

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

32964

David DaCosta

SB-12 Package

Package J

Total Heat Loss	61,583	btu/h
Total Heat Gain	33,364	btu/h

2012 OBC

Builder: Highcastle Homes

Date: July 30, 2015

Project: Riverwalk Phase 2

Model: 50-3

System 1

Weather Data Brampton 44 -2.2 86 20 48.2

Heat Loss ^T 74.2 deg. F Ht gain ^T 11 deg. F GTA: 3378

Project # PJ-00067
Layout # JB-00858

Level 3

	MAST	RET	ENS	ENS 2	BED 2	BED 3	S.ENS	BED 4				
Run ft. exposed wall A	21 A	23 A	14 A	10 A	27 A	18 A	21 A	32 A	A		A	A
Run ft. exposed wall B	B	B	B	B	B	B	B	B	B		B	B
Ceiling height	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0				
Floor area	503 Area	141 Area	233 Area	67 Area	159 Area	210 Area	84 Area	251 Area	Area		Area	Area
Exposed Ceilings A	503 A	141 A	233 A	67 A	159 A	210 A	84 A	251 A	A		A	A
Exposed Ceilings B	B	B	B	B	B	B	B	B	B		B	B
Exposed Floors	Flr	Flr	Flr	Flr	Flr	210 Flr	84 Flr	Flr	Flr		Flr	Flr
Gross Exp Wall A	168	184	112	80	216	144	168	256				
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
North Shaded	3.15	23.56	11.31																
East/West	3.15	23.56	27.75	26	612	721	14	330	388										
South	3.15	23.56	21.28																
Existing Windows	1.99	37.29	22.15																
Skylight	2.03	36.55	88.23																
Doors	3.01	24.65	3.65																
Net exposed walls A	14.49	5.12	0.76	142	727	108	170	871	129	85	435	65	70	358	53	170	871	129	106
Net exposed walls B	8.50	8.73	1.29																
Exposed Ceilings A	50.00	1.48	0.76	503	746	382	141	209	107	233	346	177	67	99	51	159	236	121	210
Exposed Ceilings B	22.86	3.25	1.66																
Exposed Floors	22.05	3.37	0.23																
Foundation Conductive Heatloss																			
Total Conductive																			
Air Leakage	Heat Loss/Gain	0.2927	0.0510																
Ventilation	Case 1	0.02	0.05																
	Case 2	22.44	11.88																
	Case 3	x	0.04	0.05															
Heat Gain People			239	2	89	64		60	33		60	43		30	17	1	93	81	
Appliances Loads	1 =.25 percent		5650																
Duct and Pipe loss			10%																
Level 3 HL Total	18,673			2786				1882			1892			926			2924		
Level 3 HG Total	11,898				2360				896			1171			455			2501	

Level 4

Run ft. exposed wall A	A	A	2015	A	A	A	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	B	B	B	B
Ceiling height																			
Floor area	Area	Area		Area	Area	Area	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	A	A	A	A
Exposed Ceilings B	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	Flr
Gross Exp Wall A																			
Gross Exp Wall B																			

Components	R-Values	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain	Loss	Gain
North Shaded	3.15	23.56	11.31																
East/West	3.15	23.56	27.75																
South	3.15	23.56	21.28																
Existing Windows	1.99	37.29	22.15																
Skylight	2.03	36.55	88.23																
Doors	3.01	24.65	3.65																
Net exposed walls A	14.49	5.12	0.76																
Net exposed walls B	8.50	8.73	1.29																
Exposed Ceilings A	50.00	1.48	0.76																
Exposed Ceilings B	22.86	3.25	1.66																
Exposed Floors	22.05	3.37	0.23																
Foundation Conductive Heatloss																			
Total Conductive																			
Air Leakage	Heat Loss/Gain	0.0000	0.0510																
Ventilation	Case 1	0.00	0.05																
	Case 2	22.44	11.88																
	Case 3	x	0.04	0.05															
Heat Gain People			239																
Appliances Loads	1 =.25 percent		5650																
Duct and Pipe loss			10%																
Level 4 HL Total	0																		
Level 4 HG Total	0																		

I review and take responsibility for the design work and am qualified in the appropriate category as an "other designer" under

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

32964



David DaCosta

SB-12 Package

Package J

Total Heat Loss	61,583	btu/h
Total Heat Gain	33,364	btu/h

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

Individual BCIN: 32964

David DaCosta

David DaCosta

Package:

Package J

Project:

Brampton

Model:

50-3

RESIDENTIAL MECHANICAL VENTILATION DESIGN SUMMARY

For systems serving one dwelling unit & conforming to the Ontario Building Code, O.geg 159/93

Location of Installation	
Lot #	Plan #
Township	Brampton
Roll #	Permit #
Address	

Builder	
Name	Highcastle Homes
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 @ 20	cfm	40 cfm
Other Bedrooms	3 @ 10	cfm	30 cfm
Bathrooms & Kitchen	5 @ 10	cfm	50 cfm
Other rooms	5 @ 10	cfm	50 cfm
Total			<u>170</u>

Principal Ventilation Capacity 9.32.3.4(1)			
Master bedroom	1 @ 30	cfm	30 cfm
Other bedrooms	3 @ 15	cfm	45 cfm
Total			<u>75</u>

Principal Exhaust Fan Capacity		
Make	Model	Location
VanEE	40H+	Base
80 cfm		Sones

Heat Recovery Ventilator			
Make	VanEE		
Model	40H+		
	80 cfm high		40 cfm low
Sensible efficiency @ -25 deg C			<u>55%</u>
Sensible efficiency @ 0 deg C			<u>63%</u>

Supplemental Ventilation Capacity	
Total ventilation capacity	170.0
Less principal exhaust capacity	<u>75.0</u>
REQUIRED supplemental vent. Capacity	<u>95.0</u> cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
S.ENS	50	770	2.5
ENS 2	50	770	2.5
<i>all fans HVI listed</i>			
Make	Broan	or Equiv.	

Designer Certification			
I hereby certify that this ventilation system has been designed in accordance with the Ontario Building Code.			
Name	David DaCosta		
Signature	<i>David DaCosta</i>		
HRAI #	5190	BCIN #	32964
Date	July 30, 2015		

2985 Drew Road, Suite 202, Mississauga, Ontario L4T 0A4 Tel: 905-671-9800 Fax: 647-494-9643
e-mail dave@gtadesigns.ca

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Project # PJ-00067
Layout # JB-00858

This form is used to summarize the energy efficiency design of the project. Information on completing this form is on the reverse

For use by Principal Authority

Application No:	Model/Certification Number
-----------------	----------------------------

A. Project Information

Building number, street name	Unit number	Lot/Con
50-3		
Municipality	Postal code	Reg. Plan number / other description
Brampton		

B. Compliance Option

☒ SB-12 Prescriptive [SB-12 - 2.1.1.]	Table: Package: A B C D E F G H I J K L M	Package J
☐ SB-12 Performance* [SB-12 - 2.1.2.]	* Attach energy performance calculations using an approved software	
☐ Energy Star®* [SB-12 - 2.1.3.]	* Attach BOP form	
☐ EnerGuide 80®*	* House must be evaluated by NRCAN advisor and meet a rating of 80	

C. Project Design Conditions

Climatic Zone (SB-1):	Heating Equipment	Space Heating Fuel Source
☒ Zone 1 (< 5000 degree days)	☒ ≥ 90% AFUE	☒ Gas ☐ Propane ☐ Solid Fuel
☐ Zone 2 (≥ 5000 degree days)	☐ ≥ 78% < 90% AFUE	☐ Oil ☐ Electric ☐ Earth Energy

Windows+Skylights+Glass Doors	Other Building Conditions
Gross Wall Area = 376 m ²	☐ ICF Basement ☐ Walkout Basement ☐ Log/Post&Beam
Gross Window+ Area = 43 m ²	☐ ICF Above Grade ☐ Slab-on-ground
% Windows+ 11%	

D. Building Specifications [provide values and ratings of the energy efficiency components proposed, or attach Energy Star BOP form]

Building Component	RSI / R values	Building Component	Efficiency Ratings
Thermal Insulation		Windows & Doors¹	
Ceiling with Attic Space	50	Windows/Sliding Glass Doors	1.8
Ceiling without Attic Space	31	Skylights	2.8
Exposed Floor	31	Mechanicals	
Walls Above Grade	22	Space Heating Equip. ²	94%
Basement Walls	12	HRV Efficiency (%)	60%
Slab (all >600mm below grade)	x	DHW Heater (EF)	0.67
Slab (edge only ≤600mm below grade)	10	NOTES	
Slab (all ≤600mm below grade, or heated)	10	1. Provide U-Value in W/m ² .K, or ER rating	
		2. Provide AFUE or indicate if condensing type combined system used	

E. Performance Design Verification [complete applicable sections if SB-12 Performance, Energy Star or EnerGuide80 options used]

SB-12 Performance:
The annual energy consumption using Subsection 2.1.1. SB-12 Package _____ is _____ Gj (1 Gj =1000MJ)
The annual energy consumption of this house as designed is _____ Gj
The software used to simulate the annual energy use of the building is: _____
The building is being designed using an air leakage of _____ air changes per hour @50Pa.

Energy Star: BOP form attached. The house will be labeled on completion by:
Energy Star and EnerGuide80:
Evaluator/Advisor/Rater Name: _____ Evaluator/Advisor/Rater Licence #: _____

F. Designers [names of designers who are responsible for the building code design and whose plans accompany the permit application]

Architectural	Mechanical
	David DaCosta 

Package: Package J System: System 1
Project: Brampton Model: 50-3

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^{AT}	HL _{leak}
0.018	0.389	38300	74.2	19917

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^{AT}	HG _{Leak}
0.018	0.113	38300	11	860

Air Leakage Heat Loss/Gain Multiplier Table (Section 11)				
Level	Level Factor (LF)	Building Air	Level Conductive Heat Loss	Air Leakage Heat Loss Multiplier
1	0.5	19917	9425	1.0566
2	0.3		16448	0.3633
3	0.2		13609	0.2927
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	
	860		0.0510
BUILDING CONDUCTIVE HEAT GAIN		16867	

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	75	74.2	0.28	1683	1.1	75	11	891		
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	891	0.05			
	1	0.5	1683	9425	0.09	Building	16867				
	2	0.3		16448	0.03						
3	0.2	13609		0.02							
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	22.44		C	HG^T	11.88			
	1.08	74.2	0.28			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		1683	0.04		HGbvent		HG*1.3	891	0.05	
						891		1			

Foundation Conductive Heatloss Level 1	2328	Watts	7942	Btu/h
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Foundation Conductive Heatloss Level 2		Watts		Btu/h
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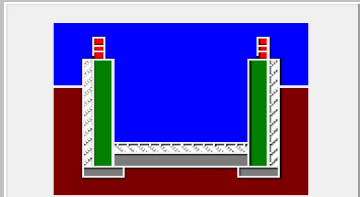
Envelope Air Leakage Calculator

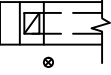
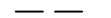
Supplemental tool for CAN/CSA-F280

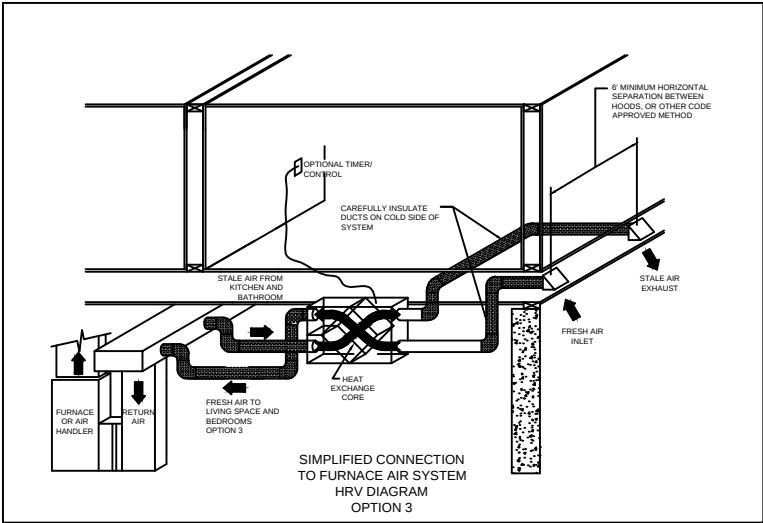
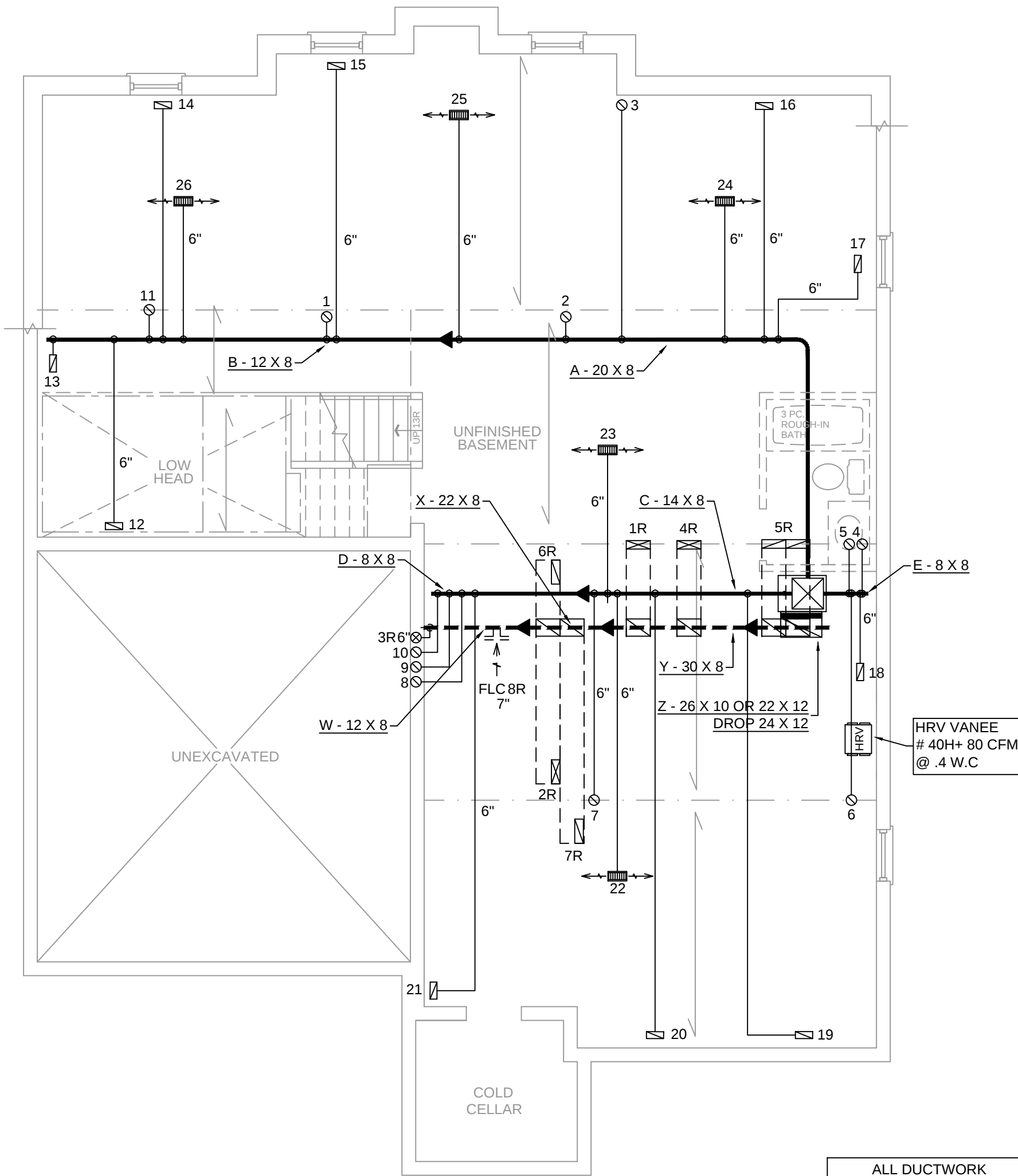
Weather Station Description				
Province:	Ontario ▼			
Region:	Brampton ▼			
Weather Station Location:	Open flat terrain, grass ▼			
Anemometer height (m):	10			
Local Shielding				
Building Site:	Suburban, forest ▼			
Walls:	Heavy ▼			
Flue:	Heavy ▼			
Highest Ceiling Height (m):	8.99			
Building Configuration				6.4
Type:	Detached ▼			
Number of Stories:	Two ▼			
Foundation:	Full ▼			
House Volume (m ³):	566.3 1084.66			
Air Leakage/Ventilation				
Air Tightness Type:	Present (1961-) (ACH=3.57) ▼			
Custom BDT Data:	ELA @ 10 Pa. ▼ 185.83 cm ² 3.57 ACH @ 50 Pa			
Mechanical Ventilation (L/s):	Total Supply:		Total Exhaust:	
	37.5		37.5	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Envelope Air Leakage Rate				
Heating Air Leakage Rate (ACH/H):		0.389		
Cooling Air Leakage Rate (ACH/H):		0.113		

Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description		
Province:	Ontario	▼
Region:	Brampton	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	21.26	 Insulation Configuration
Floor Width (m):	6.32	
Exposed Perimeter (m):	55.17	
Wall Height (m):	2.44	
Depth Below Grade (m):	2.13	
Window Area (m ²):	3.81	
Door Area (m ²):	1.95	
Radiant Slab		
Heated Fraction of the Slab:	0	
Fluid Temperature (°C):	23	
Design Months		
Heating Month	1	
Foundation Loads		
Heating Load (Watts):		2328

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



ALL DUCTWORK
MUST BE SEALED TO
CLASS A LEVEL AS PER
OBC PART 6-6.2.4.3. (11)

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

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

OBC 2012

ZONE 1 COMPLIANCE
PACKAGE "J" REF. TABLE 2.1.1.2.A

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.
HEATING CONTRACTOR MUST WORK FROM APPROVED PLANS.
ANY ALTERATIONS TO THIS ORIGINAL PLAN ARE NOT THE RESPONSABILITY 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: 416-268-6820
email: dave@gtadesigns.ca
web: www.gtadesigns.ca

HEAT-LOSS	61,583	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	GMEC960803BNA	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	11	4	3
1ST FLOOR	10	3	2
BASEMENT	5	1	

FLOOR PLAN:	BASEMENT
DRAWN BY:	AM
CHECKED:	DD
LAYOUT NO.	JB-00858
SQFT	3378
DRAWING NO.	M1

DATE:	JULY 29, 2015
CLIENT:	HIGHCASTLE HOMES
MODEL:	50-3
PROJECT:	RIVERWALK PHASE 2 BRAMPTON,ONT.
SCALE:	3/16" = 1'-0"

FOR THE PURPOSE OF
HEATLOSS/GAIN
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2ND FLOOR	11	4	3
1ST FLOOR	10	3	2
BASEMENT	5	1	

FLOOR PLAN:

GROUND FLOOR

DRAWN BY:

CHECKED:

AM

DD

LAYOUT NO.

DRAWING NO.

JB-00858

M2

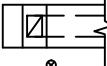
DATE: JULY 29, 2015

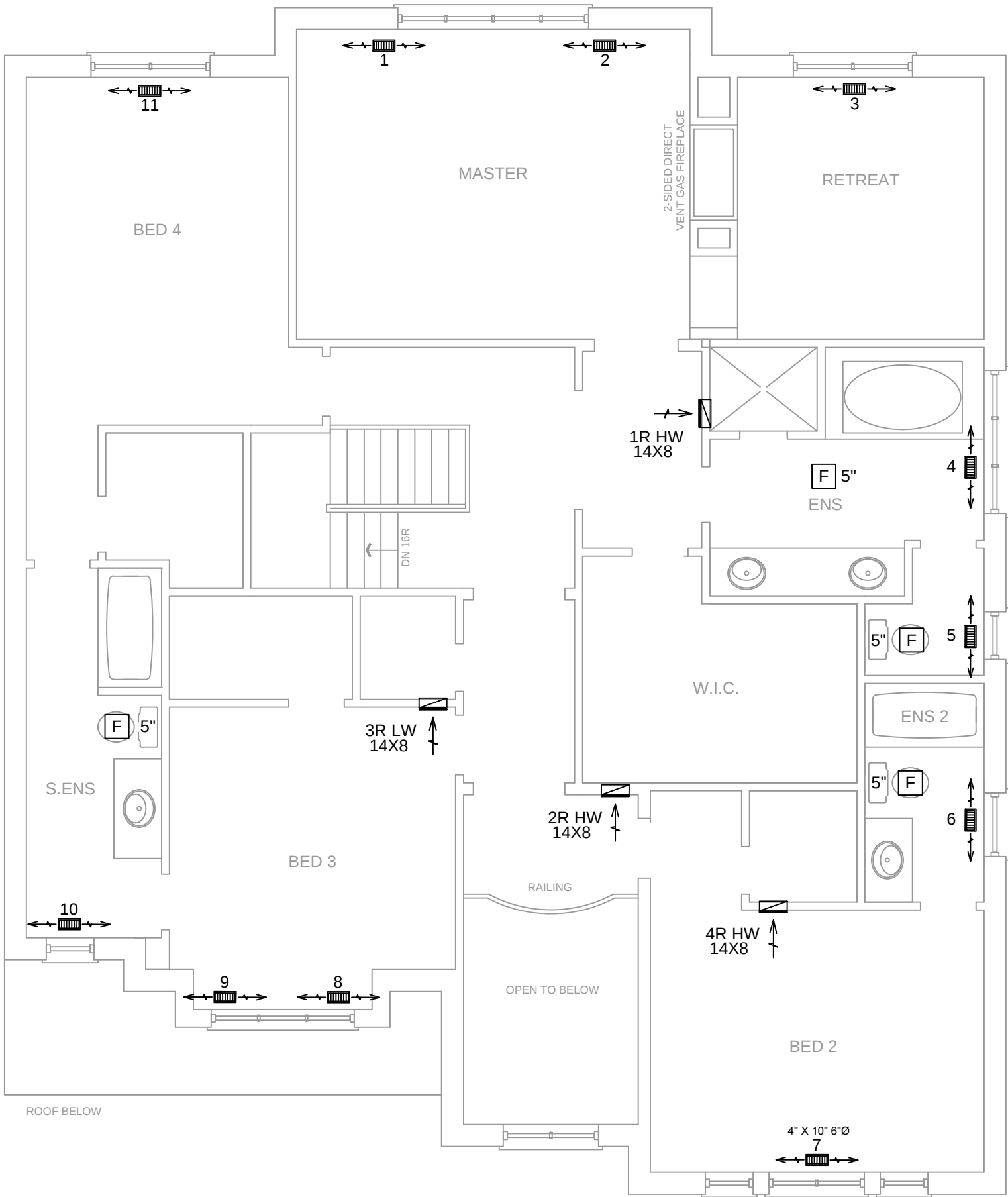
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MODEL: 50-3

PROJECT: RIVERWALK PHASE 2
BRAMPTON,ONT.

SCALE: 3/16" = 1"-0"

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			VOLUME DAMPER				PRINCIPAL EXHAUST FAN SWITCH		W/R & PRINCIPAL EXHAUST FAN



INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

ALL DUCTWORK MUST BE SEALED TO CLASS A LEVEL AS PER OBC PART 6-6.2.4.3. (11)

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

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