

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		33-4 Astley 33-4 Opt. 4 Bed		Lot: Lot/con.
Municipality	Newcastle (Bowmanville)	Postal code	Plan number/ other description	
B. Individual who reviews and takes responsibility for design activities				
Name		David DaCosta		
Street address		2985 Drew Road, Suite 202		
Municipality	Mississauga	Postal code	Province	E-mail
		L4T 0A4	Ontario	dave@gtadesigns.ca
Telephone number		Fax number		Cell number
(905) 671-9800		(647) 494-9643		(416) 268-6820
C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1 of Division C]				
☐ House ☒ HVAC – House ☐ Building Structural ☐ Small Buildings ☐ Building Services ☐ Plumbing – House ☐ Large Buildings ☐ Detection, Lighting and Power ☐ Plumbing – All Buildings ☐ Complex Buildings ☐ Fire Protection ☐ On-site Sewage Systems				
Description of designer's work		Model Certification		Layout #
Heating and Cooling Load Calculations		Builder	Delpark Highcastle	
Air System Design		Project	Northglen	
Residential mechanical ventilation Design Summary		Model	33-4 Astley	
Residential System Design per CAN/CSA-F280-12		SB-12	33-4 Opt. 4 Bed	
			Package D	
D. Declaration of Designer				
I, <u>David DaCosta</u> declare that (choose one as appropriate): (print name) ☐ I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4 Division C of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories. Individual BCIN: _____ Firm BCIN: _____ ☒ I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5 of Division C, of the Building Code. Individual BCIN: <u>32964</u> Basis for exemption from registration: <u>Division C 3.2.4.1. (4)</u> ☐ The design work is exempt from the registration and qualification requirements of the Building Code. Basis for exemption from registration and qualification:				
I certify that:				
1. The information contained in this schedule is true to the best of my knowledge.				
2. I have submitted this application with the knowledge and consent of the firm.				
<u>April 9, 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 Delpark Highcastle				Layout No.	
and may not be used by any other persons without authorization. Documents for permit and/or construction are signed in red.				JB-00022	
Building Location					
Address (Model): 33-4 Opt. 4 Bed			Site: Northglen		
Model: 33-4 Astley			Lot:		
City and Province: Newcastle (Bowmanville)			Postal code:		
Calculations based on					
Dimensional information based on:			N/A		
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: Newcastle (Bowmanville)		Wind exposure: Shelterd			
HRV?		Internal shading: Light-translucent Occupants: 5			
Sensible Eff. at -25C 0		Apparent Effect. at -0C 0		Units: Imperial Area Sq. ft 1827	
Heating design conditions			Cooling design conditions		
Outdoor temp: -4.0 Indoor temp: 72 Mean soil temp: 50			Outdoor temp: 86 Indoor temp: 75 Latitude: 44		
Above grade walls			Below grade walls		
Style A: As per Selected OBC SB12 Package D R 24			Style A: As per Selected OBC SB12 Package D R 20		
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 D			Style A: As per Selected OBC SB12 Package D R 50		
Style B:			Style B: As per Selected OBC SB12 Package D R 31		
Exposed floors			Style C:		
Style A: As per Selected OBC SB12 Package D R 31			Doors		
Style B:			Style A: As per Selected OBC SB12 Package D R 3.01		
Windows			Style B:		
Style A: As per Selected OBC SB12 Package D 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 D R 2.03		
Style D:			Style B:		
Attached documents: As per Shedule 1					
Notes:					
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		

Builder: Delpark Highcastle

2015

April 9, 2015

Project: Northglen

Model: 33-4 Astley
33-4 Opt. 4 Bed

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-00022

Layout # JB-00022

Page 3

DESIGN LOAD SPECIFICATIONS				AIR DISTRIBUTION & PRESSURE				FURNACE/AIR HANDLER DATA:				BOILER/WATER HEATER DATA:				A/C UNIT DATA:			
Level 1 Net Load	14,608	btu/h		Equipment External Static Pressure	0.5	"w.c.		Make	Amana			Make	Type	Amana	2.0	Ton			
Level 2 Net Load	14,828	btu/h		Additional Equipment Pressure Drop	0.225	"w.c.		Model	GMEC960603BNA			Model		Cond.-----	2.0				
Level 3 Net Load	11,726	btu/h		Available Design Pressure	0.275	"w.c.		Input Btu/h	60000			Input Btu/h		Coil -----	2.0				
Level 4 Net Load	0	btu/h		Return Branch Longest Effective Length	300	ft		Output Btu/h	57600			Output Btu/h							
Total Heat Loss	41,163	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	19,591	btu/h		S/A Plenum Pressure	0.14	"w.c.		Water Temp		deg. F.		Blower DATA:							
Total Heat Loss + 10%	45,279	Btu/h		Heating Air Flow Proportioning Factor	0.0284	cfm/btuh		AFUE	96%			Blower Speed Selected:	W2	Blower Type	ECM				
Building Volume Vb	21880	ft³		Cooling Air Flow Proportioning Factor	0.0597	cfm/btuh		Aux. Heat						(Brushless DC OBC 12.3.1.5.(2))					
Ventilation Load	7,047	Btu/h		R/A Temp	70	deg. F.		SB-12 Package	Package D			Heating Check	1170	cfm	Cooling Check	1170	cfm		
Ventilation PVC	75	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>	1170	cfm	Cooling Air Flow Rate	1170	cfm		

	Level 1 Outlets														Level 2 Outlets																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
S/A Outlet No.	13	14	15	16											7	8	9	10	11	12	17																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Room Use	BASE	BASE	BASE	BASE											KIT	GREAT	GREAT	LIV/DIN	PWD	FOY	PLEN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Btu/Outlet	3652	3652	3652	3652											2398	1956	1956	3226	1976	2329	986																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Heating Airflow Rate CFM	104	104	104	104											68	56	56	92	56	66	28																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
Cooling Airflow Rate CFM	13	13	13	13											156	101	101	128	66	94	6																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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

	Level 3 Outlets														Level 4 Outlets													
S/A Outlet No.	1	2	3	4	5	6																						
Room Use	BED 2	BATH	BED 3	BED 4	MAST	ENS																						
Btu/Outlet	2138	1732	1805	1657	3302	1092																						
Heating Airflow Rate CFM	61	49	51	47	94	31																						
Cooling Airflow Rate CFM	99	71	78	76	122	20																						
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	32	34	29	52	56	24																						
Equivalent Length	150	130	140	170	130	150	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90			
Total Effective Length	182	164	169	222	186	174	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90			
Adjusted Pressure	0.07	0.08	0.08	0.06	0.07	0.07	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14	0.14			
Duct Size Round	6	6	6	6	6	4																						
Outlet Size	4x10	4x10	4x10	4x10	4x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10			
Trunk	C	C	A	B	B	A																						

Return Branch And Grill Sizing												Return Trunk Duct Sizing					Supply Trunk Duct Sizing				
R/A Inlet No.	1R	2R	3R	4R	5R	6R	7R	8R	9R	10R	11R	Trunk	CFM	Press.	Round	Rect. Size	Trunk	CFM	Press.	Round	Rect. Size
Inlet Air Volume CFM	80	80	130	80	131	132	120	20				Drop	1170	0.03	19.0	24x14	A	834	0.06	14.5	24x8 18x10
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	Z	773	0.03	16.0	30x8 22x10	B	448	0.06	11.5	14x8 12x10
Actual Duct Length	42	18	4	45	22	13	14	10				Y	251	0.06	9.5	10x8 127	C	336	0.07	10.0	12x8 10x10
Equivalent Length	300	255	145	220	165	185	145	160	70	70	70	X					D				
Total Effective Length	342	273	149	265	187	198	159	170	70	70	70	W					E				
Adjusted Pressure	0.03	0.04	0.08	0.04	0.06	0.06	0.07	0.07	0.17	0.17	0.17	V					F				
Duct Size Round	6.0	6.0	8.0	6.0	8.0	8.0	7.0	5.0				U					G				
Inlet Size	8	8	8	8	8	8						T					H				
" "	x	x	x	x	x	x	x	x	x	x	x	S					I				
Inlet Size	14	14	14	14	14	14	FLC	FLC				R					J				
Trunk	Z	Z	Z	Z	Y	Z	Y	Z				Q					K				

2012 OBC

Builder: Delpark Highcastle

Date: April 9, 2015

Project: Northglen

Model: 33-4 Astley 33-4 Opt. 4 Bed

System 1

Weather Data Newcastle (Bowmanville) 44 -4.0 86 20 50

Heat Loss ^T 76 deg. F Ht gain ^T 11 deg. F GTA: 1827

Project # PJ-00022
Layout # JB-00022

Level 1

Run ft. exposed wall A	136	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
Ceiling height	2.0	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG	AG
Floor area	785	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
Exposed Ceilings 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
Gross Exp Wall A	272														
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	24.13	11.31														
East/West	3.15	24.13	27.75	9	217	250											
South	3.15	24.13	21.28	3	72	64											
Existing Windows	1.99	38.19	22.15														
Skylight	2.03	37.44	88.23														
Doors	3.01	25.25	3.65	21	530	77											
Net exposed walls A	13.79	5.51	0.80	239		191											
Net exposed walls B	8.50	8.94	1.29														
Exposed Ceilings A	50.00	1.52	0.76														
Exposed Ceilings B	22.86	3.32	1.66														
Exposed Floors	22.05	3.45	0.23														
Foundation Conductive Heatloss	Slab On Grade (x)			6512													
Total Conductive	Heat Loss			7332													
	Heat Gain				581												
Air Leakage	Heat Loss/Gain	0.5726	0.0305	4198	18												
Ventilation	Case 1	x	0.42	3078	55												
	Case 2		82.08														
	Case 3		0.23														
	Heat Gain People																
Appliances Loads	1 = .25 percent		3208														
Duct and Pipe loss			10%														
Level 1 HL Total	14,608		Total HL per room	14608													
Level 1 HG Total	850		Total HG per room x 1.3		850												

Level 2

Run ft. exposed wall A	36	A	27	A	31	A	18	A	22	A	21	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	9.0		9.0		9.0		9.0		9.0		2.0						
Floor area	157	Area	235	Area	196	Area	68	Area	107	Area	124	Area	Area	Area	Area	Area	Area
Exposed Ceilings A	A	A	A	A	A	A	A	A	A	A	A	A	Area	Area	Area	Area	Area
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	124	Flr	Flr	Flr	Flr	Flr	Flr
Gross Exp Wall A	324		243		279		162		198		42						
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	24.13	11.31														
East/West	3.15	24.13	27.75	25	603	694											
South	3.15	24.13	21.28	34	820	723											
Existing Windows	1.99	38.19	22.15														
Skylight	2.03	37.44	88.23														
Doors	3.01	25.25	3.65														
Net exposed walls A	15.13	5.02	0.73	265	1331	193											
Net exposed walls B	8.50	8.94	1.29														
Exposed Ceilings A	50.00	1.52	0.76														
Exposed Ceilings B	22.86	3.32	1.66														
Exposed Floors	22.05	3.45	0.23														
Foundation Conductive Heatloss	Slab On Grade (x)																
Total Conductive	Heat Loss			2755													
	Heat Gain				1610												
Air Leakage	Heat Loss/Gain	0.2426	0.0305	668	49												
Ventilation	Case 1	x	0.18	490	153												
	Case 2		82.08														
	Case 3		0.23														
	Heat Gain People																
Appliances Loads	1 = .25 percent		3208	1.0		802											
Duct and Pipe loss			10%														
Level 2 HL Total	14,828		Total HL per room	3913													
Level 2 HG Total	10,934		Total HG per room x 1.3		3398												

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 D

Total Heat Loss	41,163	btu/h
Total Heat Gain	19,591	btu/h

2012 OBC	Builder: Delpark Highcastle	Date: April 9, 2015	Weather Data Newcastle (Bowmanville) 44 -4.0 86 20 50	Project # PJ-00022
	Project: Northglen	Model: 33-4 Astley 33-4 Opt. 4 Bed	Heat Loss ^T 76 deg. F Ht gain ^T 11 deg. F GTA: 1827	Layout # JB-00022

Level 3				BED 2		BATH		BED 3		BED 4		MAST		ENS									
Run ft. exposed wall A	21	A		18	A	17	A	17	A	43	A	13	A	A		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									
Floor area	134	Area		75	Area	150	Area	165	Area	237	Area	93	Area	Area		Area		Area		Area		Area	
Exposed Ceilings A	134	A		75	A	150	A	165	A	237	A	93	A	A		A		A		A		A	
Exposed Ceilings B	B			B		B		B		B		B		B		B		B		B		B	
Exposed Floors	Flr			Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A	168			144		136		136		344		104											
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
North Shaded	3.15	24.13	11.31											8	193	90							
East/West	3.15	24.13	27.75	22	531	610		24	579	666		16	386	444	20	483	555						
South	3.15	24.13	21.28					23	555	489													
Existing Windows	1.99	38.19	22.15																				
Skylight	2.03	37.44	88.23																				
Doors	3.01	25.25	3.65																				
Net exposed walls A	15.13	5.02	0.73	146	733	106		120	603	87	113	568	82	120	603	87	324	1627	236	96	482	70	
Net exposed walls B	8.50	8.94	1.29																				
Exposed Ceilings A	50.00	1.52	0.76	134	204	102		75	114	57	150	228	114	165	251	125	237	360	180	93	141	71	
Exposed Ceilings B	22.86	3.32	1.66																				
Exposed Floors	22.05	3.45	0.23																				
Foundation Conductive Heatloss																							
Total Conductive	Heat Loss			1468				1296				1351				1240			2470			817	
	Heat Gain				818				810				686				657			971			231
Air Leakage	Heat Loss/Gain		0.1943	0.0305	285	25		252	25			262	21			241	20		480	30		159	7
Ventilation	Case 1	x	0.14	0.10	209	78		185	77			192	65			177	62		352	92		116	22
	Case 2		82.08	11.88																			
	Case 3		0.23	0.10																			
Heat Gain People																							
Appliances Loads																							
Duct and Pipe loss																							
Level 3 HL Total	11,726		Total HL for per room	1	175	114		1	175	114		1	175	114		1	175	114		1	175	114	
Level 3 HG Total	7,806		Total HG per room x 1.3	2138				1732				1805				1657			3302			1092	
					1656				1186				1314			1271			2042			338	

Level 4				2015																			
Run ft. exposed wall 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	
Ceiling height																							
Floor 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	
Exposed Ceilings B	B			B		B		B		B		B		B		B		B		B		B	
Exposed Floors	Flr			Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A																							
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
North Shaded	3.15	24.13	11.31																				
East/West	3.15	24.13	27.75																				
South	3.15	24.13	21.28																				
Existing Windows	1.99	38.19	22.15																				
Skylight	2.03	37.44	88.23																				
Doors	3.01	25.25	3.65																				
Net exposed walls A	15.13	5.02	0.73																				
Net exposed walls B	8.50	8.94	1.29																				
Exposed Ceilings A	50.00	1.52	0.76																				
Exposed Ceilings B	22.86	3.32	1.66																				
Exposed Floors	22.05	3.45	0.23																				
Foundation Conductive Heatloss																							
Total Conductive	Heat Loss																						
	Heat Gain																						
Air Leakage	Heat Loss/Gain		0.0000	0.0305																			
Ventilation	Case 1	x	0.00	0.10																			
	Case 2		82.08	11.88																			
	Case 3		0.23	0.10																			
Heat Gain People																							
Appliances Loads																							
Duct and Pipe loss																							
Level 4 HL Total	0		Total HL for per room																				
Level 4 HG Total	0		Total HG per room x 1.3																				

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

SB-12 Package

Package D

Total Heat Loss	41,163	btu/h
Total Heat Gain	19,591	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 D** **System:** **System 1**
Project: **Newcastle (Bowmanville)** **Model:** **33-4 Opt. 4 Bed**

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	Newcastle (Bowmanville)
Roll #	Permit #
Address	

Builder	
Name	Delpark Highcastle
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	4	@	10	cfm 40 cfm
Other rooms	3	@	10	cfm 30 cfm
Total				<u>140</u>

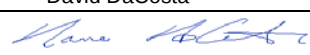
Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1	@	30	cfm 30 cfm
Other bedrooms	3	@	15	cfm 45 cfm
Total				<u>75</u>

Principal Exhaust Fan Capacity		
Make	Model	Location
Broan	684N	Ensuite
90 cfm		2.5 Sones

Heat Recovery Ventilator		
Make		
Model		
	cfm high	0 cfm low
Sensible efficiency @ -25 deg C		0
Sensible efficiency @ 0 deg C		0

Supplemental Ventilation Capacity		
Total ventilation capacity		140.0
Less principal exhaust capacity		75.0
REQUIRED supplemental vent. Capacity		<u>65.0</u> cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Ens	50	770	2.5
Pwd	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			
HRAI #	5190	BCIN #	32964
Date	April 9, 2015		

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

Page 7
Project # PJ-00022
Layout # JB-00022

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	33-4 Astley	Unit number	Lot/Con
	33-4 Opt. 4 Bed		
Municipality	Newcastle (Bowmanville)	Postal code	Reg. Plan number / other description

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 D
☐ 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 =	237 m²	☐ ICF Basement	☐ Walkout Basement	☐ Log/Post&Beam
Gross Window+ Area =	26 m²	☐ 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	24	Space Heating Equip. ²	94%
Basement Walls	20	HRV Efficiency (%)	0%
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/m2.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 D** System: **System 1**
Project: **Newcastle (Bowmanville)** Model: **33-4 Opt. 4 Bed**

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^Δ T	HL _{leak}
0.018	0.281	21880	76	8396

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^Δ T	HG Leak
0.018	0.066	21880	11	286

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	8396	7332	0.5726
2	0.3		10383	0.2426
3	0.2		8641	0.1943
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	
	286		0.0305
BUILDING CONDUCTIVE HEAT GAIN		9370	

Levels this Dwelling	
3	

Ventilation Calculations

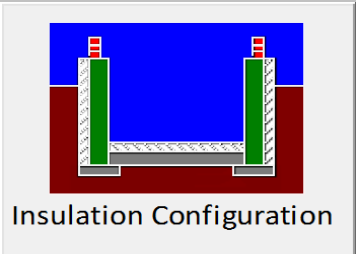
Vent	Ventilation Heat Loss					Ventilation Heat Gain				Vent	
	Ventilation Heat Loss					Ventilation Heat Gain					
	C	PVC	HL^T	(1-E) HRV	HLbvent	C	PVC	HG^T	HGbvent		
	1.08	75	76	1.00	6156	1.1	75	11	891		
Case 1						Case 1					
Case 1	Ventilation Heat Loss (Exhaust only Systems)					Ventilation Heat Gain (Exhaust Only Systems)					Case 1
	Case 1 - Exhaust Only					Case 1 - Exhaust Only		Multiplier			
	Level	LF	HLbvent	LVL Cond. HL	Multiplier	HGbvent	891	0.10			
	1	0.5	6156	7332	0.42	Building	9370				
	2	0.3		10383	0.18						
	3	0.2		8641	0.14						
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	82.08		C	HG^T	11.88			
	1.08	76	1.00			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		6156	0.23		HGbvent		HG*1.3	891	0.10	
						891		1			

Foundation Conductive Heatloss Level 1	1909	Watts	6512	Btu/h
---	------	-------	------	-------

Foundation Conductive Heatloss Level 2		Watts		Btu/h
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Residential Foundation Thermal Load Calculator

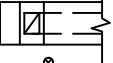
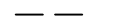
Supplemental tool for CAN/CSA-F280

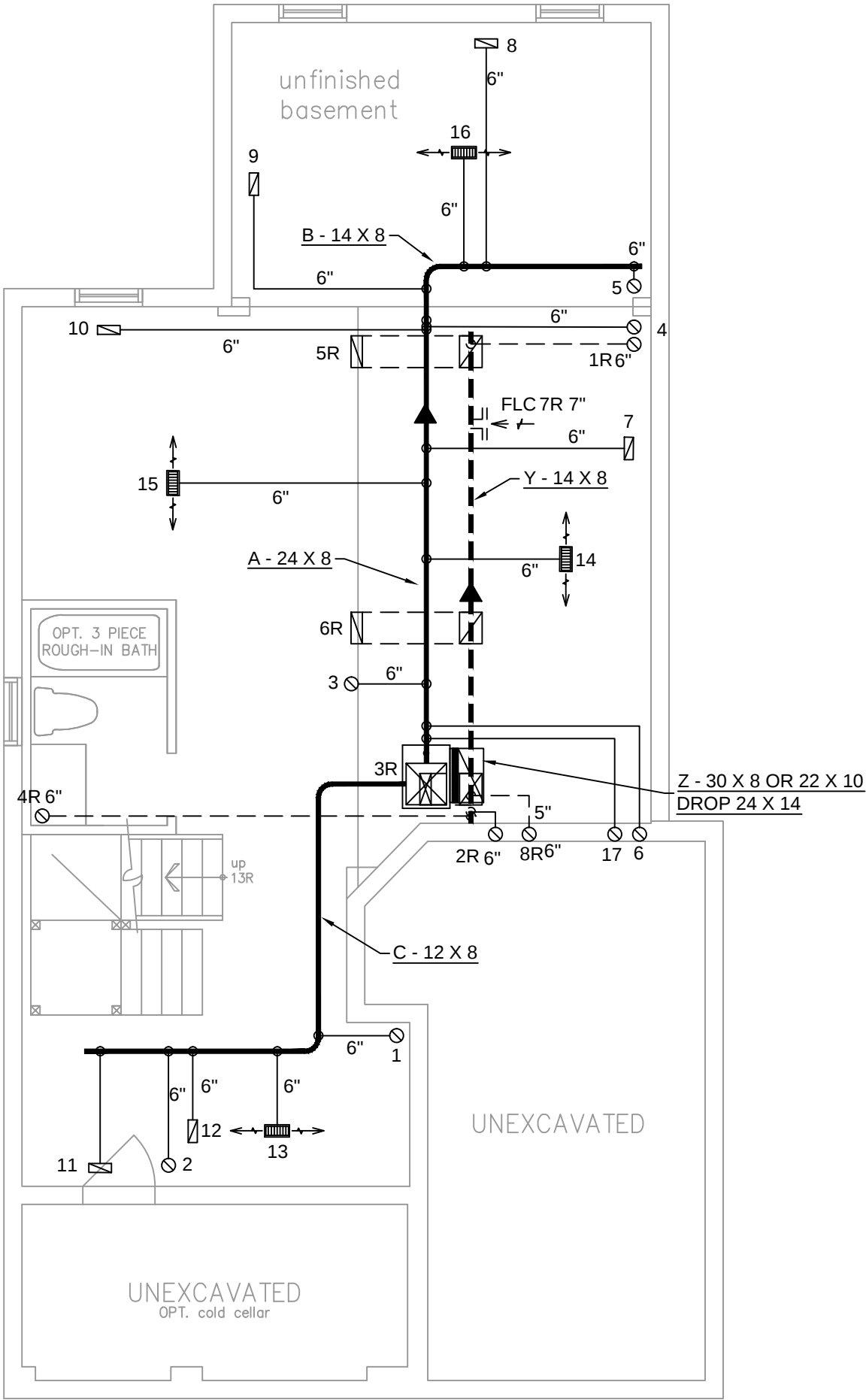
Weather Station Description		
Province:	Ontario	▼
Region:	Newcastle (Bowmanville)	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	16.23	 Insulation Configuration
Floor Width (m):	4.49	
Exposed Perimeter (m):	41.45	
Wall Height (m):	2.74	
Depth Below Grade (m):	2.13	
Window Area (m ²):	1.11	
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):		1909

Envelope Air Leakage Calculator

Supplemental tool for CAN/CSA-F280

Weather Station Description				
Province:	Ontario ▼			
Region:	Newcastle (Bowmanville) ▼			
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):	5.79			
Building Configuration				6.4
Type:	Detached ▼			
Number of Stories:	Two ▼			
Foundation:	Full ▼			
House Volume (m ³):	566.3 619.64			
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:	
	30		30	
Flue Size				
Flue #:	#1	#2	#3	#4
Diameter (mm):	0	0	0	0
Envelope Air Leakage Rate				
Heating Air Leakage Rate (ACH/H):		0.281		
Cooling Air Leakage Rate (ACH/H):		0.066		

	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 GRILLE		RETURN AIR PIPE RISER		RETURN AIR RISER UP TO FLOOR ABOVE	R.A.	RETURN AIR
	SUPPLY DIFFUSER		SUPPLY AIR PIPE RISER		RETURN ROUND DUCT		RETURN AIR FROM BASEMENT SECOND FLOOR		THERMOSTAT
			VOLUME DAMPER						PRINCIPAL EXHAUST FAN SWITCH
									W/R & PRINCIPAL EXHAUST FAN



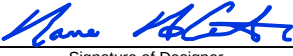
ALL DUCTWORK
MUST BE SEALED TO
CLASS A LEVEL AS PER
OBC PART 6-6.2.4.3. (11)

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

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 1 COMPLIANCE
PACKAGE "D" REF. TABLE 2.1.1.2.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 RESPONSABILITY OF GTA DESIGNS.
GTA DESIGNS MUST BE CONSULTED IF KITCHEN EXHAUST FAN EXCEEDS 700 CFM DEPRESSURIZATION MAY OCCUR WITH IN THE DWELLING



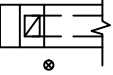
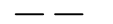
2985 DREW ROAD
SUITE 202,
MISSISSAUGA, ONT.
L4T 0A4 TEL: 416-268-6820
email: dave@gtadesigns.ca
web: www.gtadesigns.ca

HEAT-LOSS	41,163	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	GMEC960603BNA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	1170	CFM

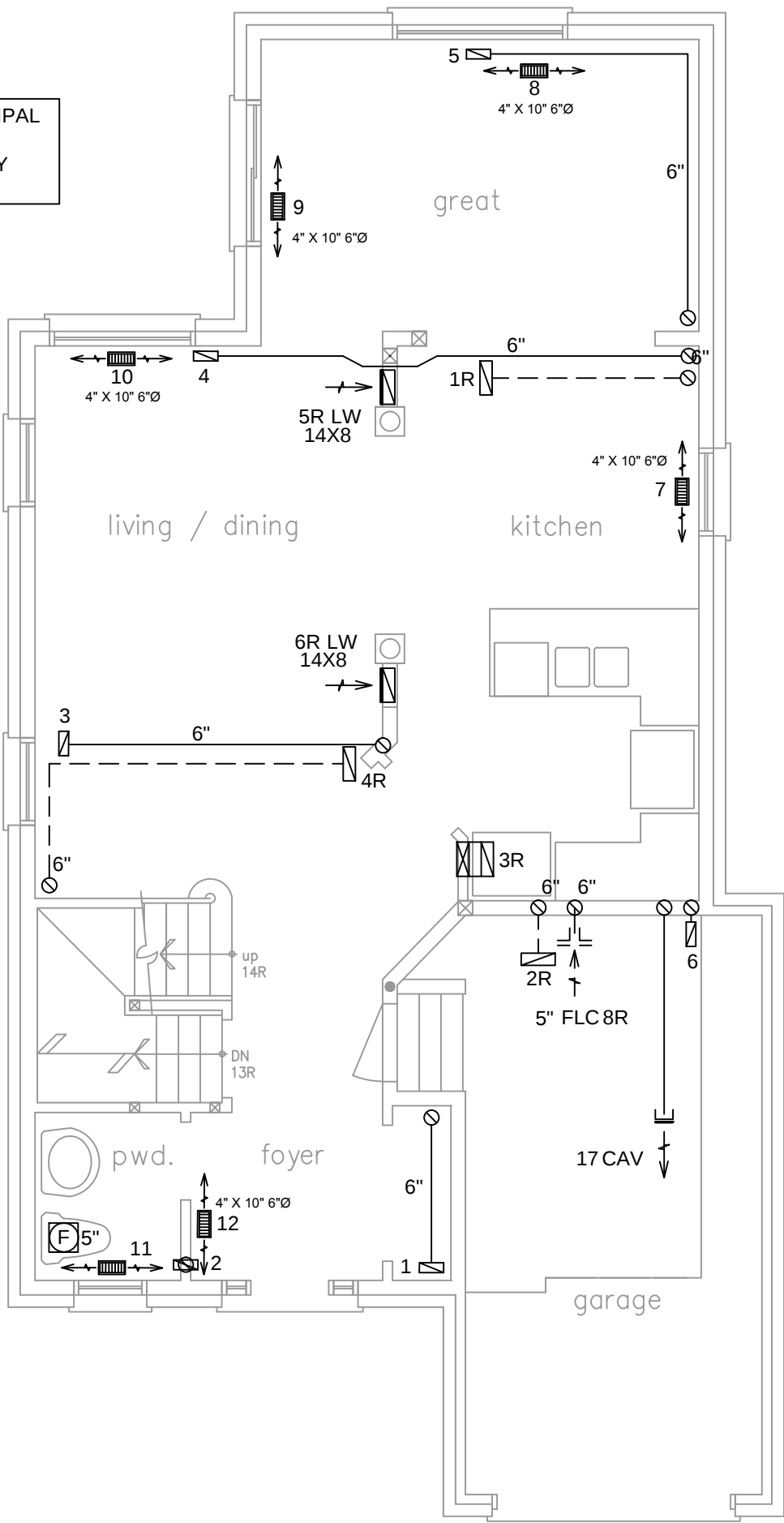
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	4	3
1ST FLOOR	7	3	2
BASEMENT	4	1	

FLOOR PLAN: BASEMENT	
DRAWN BY: RB	CHECKED: DD
LAYOUT NO. JB-00022	DRAWING NO. M1

DATE:	APRIL 9, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	33-4 OPT 4 BED.
PROJECT:	NORTHGLEN CLARINGTON, ON.
SCALE:	3/16" = 1'-0"

	FLEX DUCT		LOW/HIGH WALL/KICK		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

CIRCULATION PRINCIPAL
FAN SWITCH
TO BE CENTRALLY
LOCATED



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)

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

OBC 2012

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

NOTES

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gtaDesigns

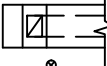
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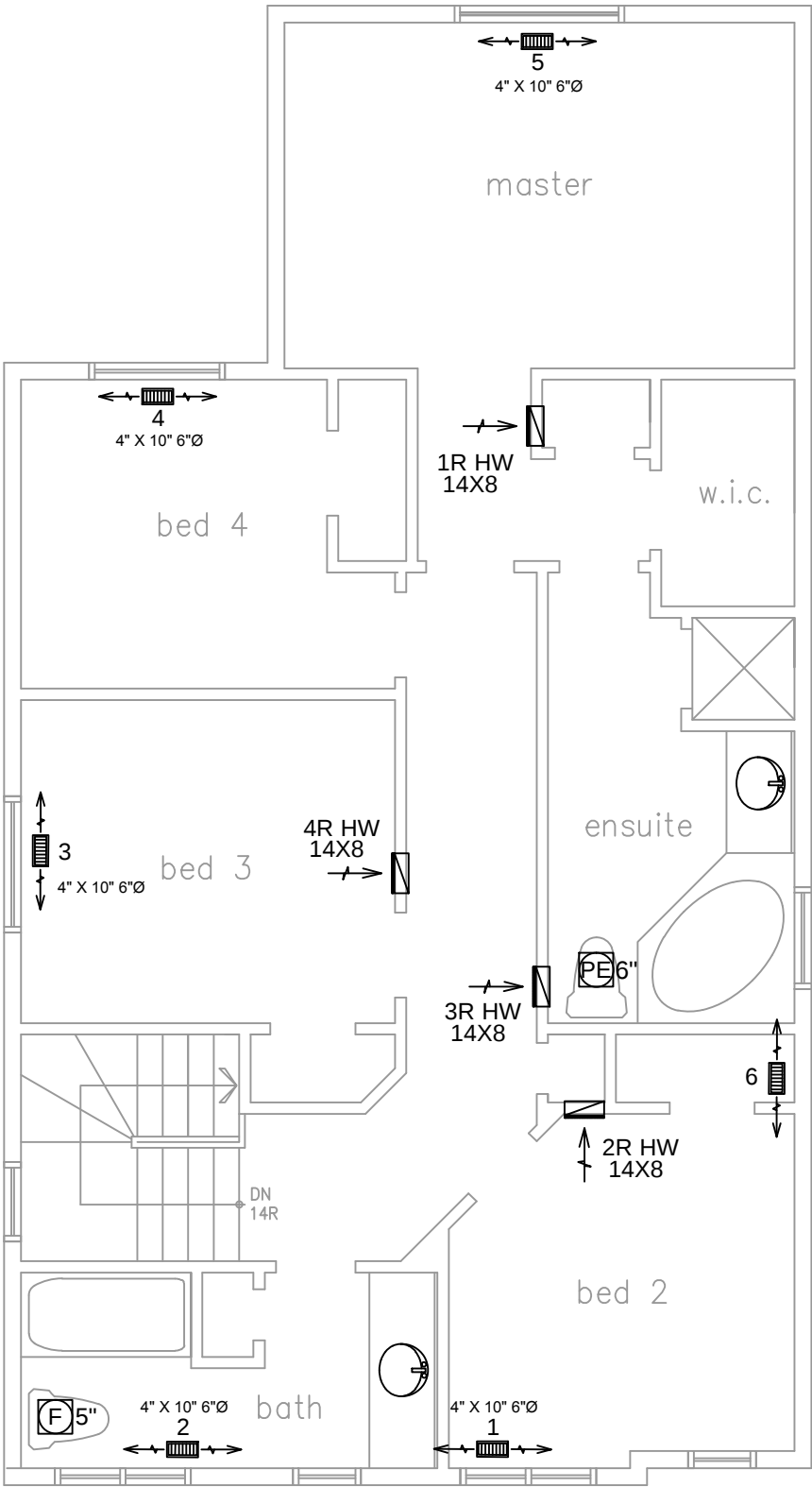
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FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	4	3
1ST FLOOR	7	3	2
BASEMENT	4	1	

FLOOR PLAN:	GROUND FLOOR
DRAWN BY:	RB
CHECKED:	DD
LAYOUT NO.	JB-00022
SQFT	1827
DRAWING NO.	M2

DATE:	APRIL 9, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	33-4 OPT 4 BED.
PROJECT:	NORTHGLEN CLARINGTON, ON.
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
	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



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

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David Da Costa



B.C.I.N. 32964

Signature of Designer

OBC 2012

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

NOTES

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A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	6	4	3
1ST FLOOR	7	3	2
BASEMENT	4	1	

FLOOR PLAN: SECOND FLOOR		
DRAWN BY: RB	CHECKED: DD	SQFT 1827
LAYOUT NO. JB-00022	DRAWING NO. M3	

DATE:	APRIL 9, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	33-4 OPT 4 BED.
PROJECT:	NORTHGLEN CLARINGTON, ON.
SCALE:	3/16" = 1"-0"