

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		33-8 Winchester		Lot:
		33-8 OPT. 4 BED		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	(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 ☒ 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	33-8 Winchester	
Residential System Design per CAN/CSA-F280-12		SB-12	33-8 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 13, 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-00029	
Building Location					
Address (Model): 33-8 OPT. 4 BED			Site: Northglen		
Model: 33-8 Winchester			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 2049	
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		



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.

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Builder: Delpark Highcastle

2015

April 13, 2015

Project: Northglen

Model:

33-8 Winchester
33-8 OPT. 4 BED

System 1

Project #
Layout #

PJ-00022
JB-00029

	Level 3 Outlets														Level 4 Outlets													
S/A Outlet No.	1	2	3	4	5	6																						
Room Use	ENS	MAST	BATH	STUDY	BED 3	BED 2																						
Btu/Outlet	2058	2437	666	2532	2369	1940																						
Heating Airflow Rate CFM	56	66	18	69	64	53																						
Cooling Airflow Rate CFM	62	111	20	69	102	58																						
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	50	38	40	32	35	36																						
Equivalent Length	120	130	130	110	130	130	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90			
Total Effective Length	170	168	170	142	165	166	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90	90			
Adjusted Pressure	0.08	0.08	0.08	0.09	0.08	0.08	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	5	6	4	5	6	5																						
Outlet Size	3x10	4x10	3x10	3x10	4x10	3x10	3x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10	4x10			
Trunk	B	B	A	C	C	A																						

Supply Trunk Duct Sizing					
Trunk	CFM	Press.	Round	Rect. Size	
A	706	0.07	13.5	20x8	16x10
B	365	0.07	10.5	12x8	10x10
C	421	0.06	11.5	14x8	12x10
D					
E					
F					
G					
H					
I					
J					
K					

2012 OBC

Builder: Delpark Highcastle

Date: April 13, 2015

Project: Northglen

Model: 33-8 Winchester
33-8 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: 2049

Project # PJ-00022
Layout # JB-00029

Level 1				BASE															
Run ft. exposed wall A	150	A		A		A		A		A		A		A		A		A	
Run ft. exposed wall B	B			B		B		B		B		B		B		B		B	
Ceiling height	2.0	AG		AG		AG		AG		AG		AG		AG		AG		AG	
Floor area	887	Area		Area		Area		Area		Area		Area		Area		Area		Area	
Exposed Ceilings A	A			A		A		A		A		A		A		A		A	
Exposed Ceilings B	B			B		B		B		B		B		B		B		B	
Exposed Floors	Flr			Flr		Flr		Flr		Flr		Flr		Flr		Flr		Flr	
Gross Exp Wall A	300																		
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	24.13	11.31																
East/West	3.15	24.13	27.75	3	72	83													
South	3.15	24.13	21.28	9	217	192													
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	267		213													
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																		
Air Leakage	Heat Loss/Gain	0.6510	0.0378																
Ventilation	Case 1	x	0.33	0.08															
	Case 2		82.08	11.88															
	Case 3		0.18	0.08															
Heat Gain People			239																
Appliances Loads	1 =.25 percent		3740																
Duct and Pipe loss			10%																
Level 1 HL Total	14,851		Total HL for per room	14851															
Level 1 HG Total	821		Total HG per room x 1.3		821														

Level 2				KIT		DIN		FOY		PWD		LAUND		GREAT		PLEN											
Run ft. exposed wall A				32 A		22 A		30 A		6 A		16 A		29 A		32 A		A		A		A		A			
Run ft. exposed wall B				B		B		B		B		B		B		B		B		B		B		B			
Ceiling height				9.0		9.0		9.0		9.0		9.0		9.0		2.0											
Floor area				220 Area		153 Area		147 Area		50 Area		60 Area		205 Area		200 Area		Area		Area		Area		Area			
Exposed Ceilings A				A		A		A		A		12 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		200 Flr		Flr		Flr		Flr		Flr			
Gross Exp Wall A				288		198		270		54		144		261		64											
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			
North Shaded				3.15	24.13	11.31																					
East/West				3.15	24.13	27.75	36	869	999						25	603	694										
South				3.15	24.13	21.28	15	362	319	20	483	426															
Existing Windows				1.99	38.19	22.15																					
Skylight				2.03	37.44	88.23																					
Doors				3.01	25.25	3.65					26	656	95			21	530	77									
Net exposed walls A				15.13	5.02	0.73	237	1190	172	178	894	129	228	1145	166	54	271	39	123	618	89	236	1185	172	64	321	47
Net exposed walls B				8.50	8.94	1.29																					
Exposed Ceilings A				50.00	1.52	0.76													12	18	9						
Exposed Ceilings B				22.86	3.32	1.66																					
Exposed Floors				22.05	3.45	0.23																					
Foundation Conductive Heatloss				Slab On Grade (x)		x																					
Total Conductive				Heat Loss			2421			1377		2188		271		1166		1789				1011					
				Heat Gain						555		705		39		175		865						92			
Air Leakage				Heat Loss/Gain		0.2867	0.0378	694	56	395	21	627	27	78	1	334	7	513	33	290	3						
Ventilation				Case 1		x	0.14	350	121	199	45	316	57	39	3	169	14	259	70	146	7						
				Case 2			82.08																				
				Case 3			0.18																				
				Heat Gain People																							
Appliances Loads				1 =.25 percent			3740	1.0		935	1.0	935	0.5		468	0.5	468	1.0		935							
Duct and Pipe loss				10%																							
Level 2 HL Total				14,761		Total HL for per room		3465			1970		3131		388		1669		2560								
Level 2 HG Total				10,579		Total HG per room x 1.3			3383		2023		1633		665		1470		1258					147			

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	43,189	btu/h
Total Heat Gain	19,714	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:
33-8 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
Other Bedrooms	2	@	10	cfm
Bathrooms & Kitchen	4	@	10	cfm
Other rooms	4	@	10	cfm
Total				<u>140</u>

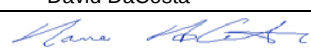
Principal Ventilation Capacity 9.32.3.4(1)				
Master bedroom	1	@	30	cfm
Other bedrooms	2	@	15	cfm
Total				<u>60</u>

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		<u>0</u>
Sensible efficiency @ 0 deg C		<u>0</u>

Supplemental Ventilation Capacity	
Total ventilation capacity	140.0
Less principal exhaust capacity	<u>60.0</u>
REQUIRED supplemental vent. Capacity	<u>80.0</u> cfm

Supplemental Fans 9.32.3.5.			
Location	cfm	Model	Sones
Ens	50	770	2.5
Pwd	50	770	2.5
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	April 13, 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-00022
Layout # JB-00029

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
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A. Project Information

Building number, street name	33-8 Winchester 33-8 OPT. 4 BED	Unit number	Lot/Con
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 =	258 m²	☐ ICF Basement	☐ Walkout Basement	☐ Log/Post&Beam
Gross Window+ Area =	22 m²	☐ ICF Above Grade	☐ Slab-on-ground	
% Windows+ 9%				

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 
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Package: **Package D** System: **System 1**
Project: **Newcastle (Bowmanville)** Model: **33-8 OPT. 4 BED**

Air Leakage Calculations

Building Air Leakage Heat Loss				
B	LRairh	Vb	HL ^Δ T	HL _{leak}
0.018	0.281	25460	76	9770

Building Air Leakage Heat Gain				
B	LRairh	Vb	HG ^Δ T	HG Leak
0.018	0.066	25460	11	333

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	9770	7504	0.6510
2	0.3		10222	0.2867
3	0.2		9870	0.1980
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	
	333		
BUILDING CONDUCTIVE HEAT GAIN	8807		0.0378

Levels this Dwelling	
3	

Ventilation Calculations

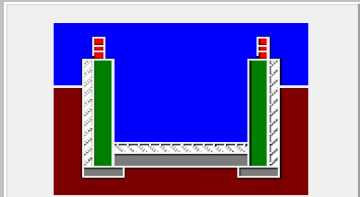
Vent	Ventilation Heat Loss					Ventilation Heat Gain				Vent	
	Ventilation Heat Loss					Ventilation Heat Gain					
	C	PVC	HL^T	(1-E) HRV	HLbvent	C	PVC	HG^T	HGbvent		
	1.08	60	76	1.00	4925	1.1	60	11	713		
Case 1						Case 1					
Case 1	Ventilation Heat Loss (Exhaust only Systems)					Ventilation Heat Gain (Exhaust Only Systems)					Case 1
	Case 1 - Exhaust Only					Case 1 - Exhaust Only		Multiplier			
	Level	LF	HLbvent	LVL Cond. HL	Multiplier	HGbvent	713	0.08			
	1	0.5	4925	7504	0.33	Building	8807				
	2	0.3		10222	0.14						
3	0.2	9870		0.10							
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		4925	0.18		HGbvent	HG*1.3	713	0.08		
						713	1				

Foundation Conductive Heatloss Level 1	1959	Watts	6684	Btu/h
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Foundation Conductive Heatloss Level 2		Watts		Btu/h
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Residential Foundation Thermal Load Calculator

Supplemental tool for CAN/CSA-F280

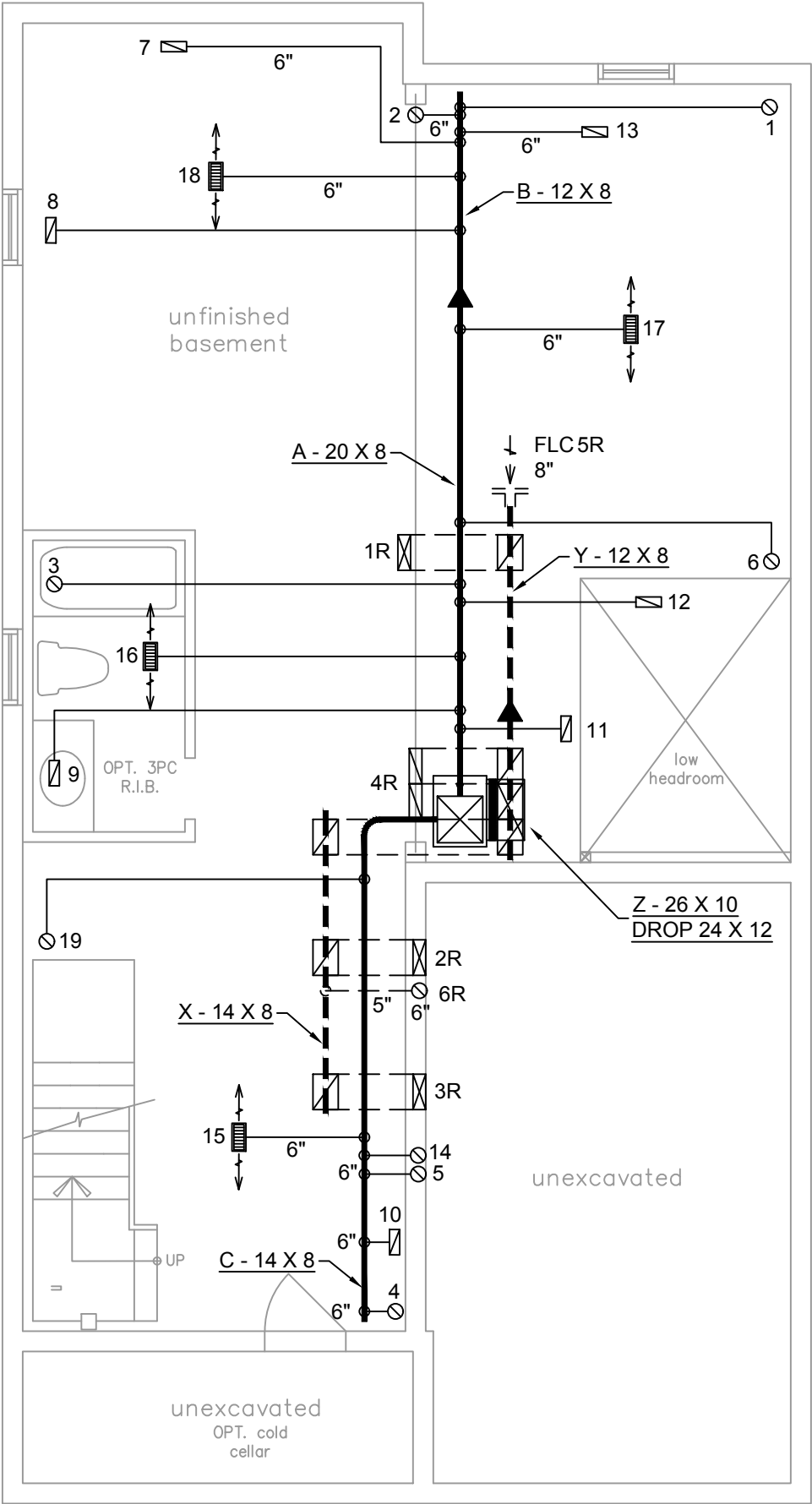
Weather Station Description		
Province:	Ontario	▼
Region:	Newcastle (Bowmanville)	▼
Site Description		
Soil Conductivity:	High conductivity: moist soil	▼
Water Table:	Normal (7-10 m, 23-33 Ft)	▼
Foundation Dimensions		
Floor Length (m):	15.79	 Insulation Configuration
Floor Width (m):	5.09	
Exposed Perimeter (m):	45.72	
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):		1959

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):	566.3 721.03			
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 RIDIT ROUND DUCT SUPPLY DIFFUSER	LOW/HIGH WALL/KICK SUPPLY DIFFUSER HRV EXHAUST GRILL SUPPLY AIR PIPE RISER VOLUME DAMPER		DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT		RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR	S.A. R.A. ① \$ [E] [B]	SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN
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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
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MISSISSAUGA, ONT.
L4T 0A4 TEL: 416-268-6820
email: dave@gtadesigns.ca
web: www.gtadesigns.ca

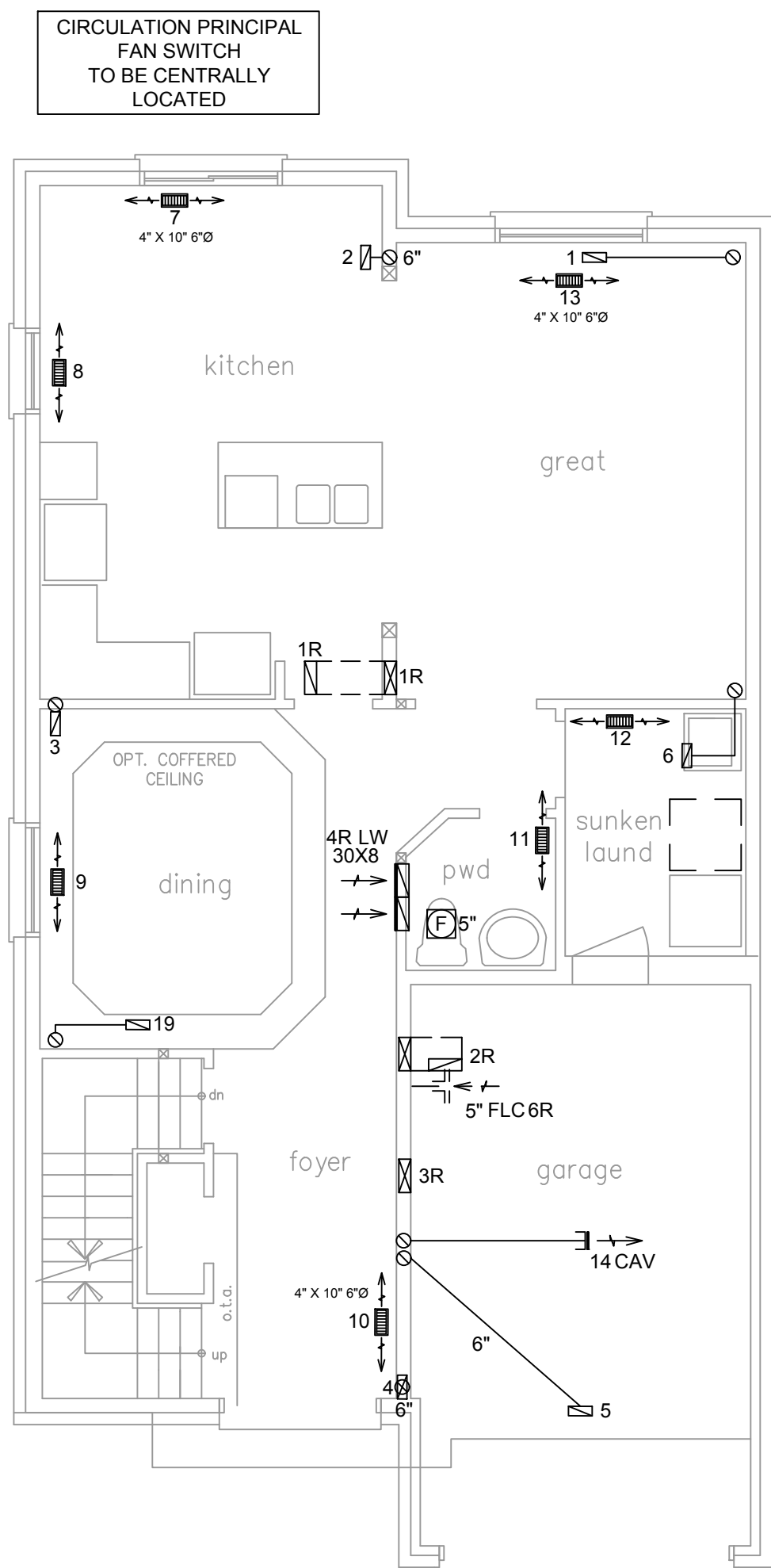
HEAT-LOSS	43,189	BTU/HR.
UNIT MAKE	AMANA	OR EQUAL.
UNIT MODEL	GMEC960603BNA	OR EQUAL.
UNIT HEATING INPUT	60,000	BTU/HR.
UNIT HEATING OUTPUT	57,600	BTU/HR.
A/C COOLING CAPACITY	2.0	TONS.
FAN SPEED	1170	CFM

# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	3	2
1ST FLOOR	8	2	2
BASEMENT	4	1	

FLOOR PLAN: BASEMENT	
DRAWN BY: RB	CHECKED: DD
LAYOUT NO. JB-00029	DRAWING NO. M1
SQFT 2072	

DATE:	APRIL 13, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	33-8 OPT. 4 BED
PROJECT:	NORTHGLEN CLARINGTON, ON.
SCALE:	3/16" = 1'-0"

  	FLEX DUCT RIDIT ROUND DUCT SUPPLY DIFFUSER	   	LOW/HIGH WALL/KICK SUPPLY DIFFUSER HRV EXHAUST GRILLE SUPPLY AIR PIPE RISER VOLUME DAMPER	  	DUCT CONNECTION TO JOIST LINING RETURN AIR PIPE RISER RETURN ROUND DUCT	  	RETURN AIR GRILLE (SIZE INDICATED ON DRAWING) RETURN AIR RISER UP TO FLOOR ABOVE RETURN AIR FROM BASEMENT SECOND FLOOR	S.A. R.A. T \$ F PE	SUPPLY AIR RETURN AIR THERMOSTAT PRINCIPAL EXHAUST FAN SWITCH W/R & PRINCIPAL EXHAUST FAN
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INSULATE ALL DUCTS IN UNCONDITIONED SPACES MIN. R12

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

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QUALIFICATION INFORMATION

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David Da Costa

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ALL R/A PARTITIONS 6" (FIRST FLOOR ONLY)
INSULATE DUCTS IN UNCONDITIONED SPACES R12
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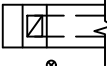
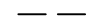
# OF RUNS	S/A	R/A	FANS
3RD FLOOR			
2ND FLOOR	7	3	2
1ST FLOOR	8	2	2
BASEMENT	4	1	

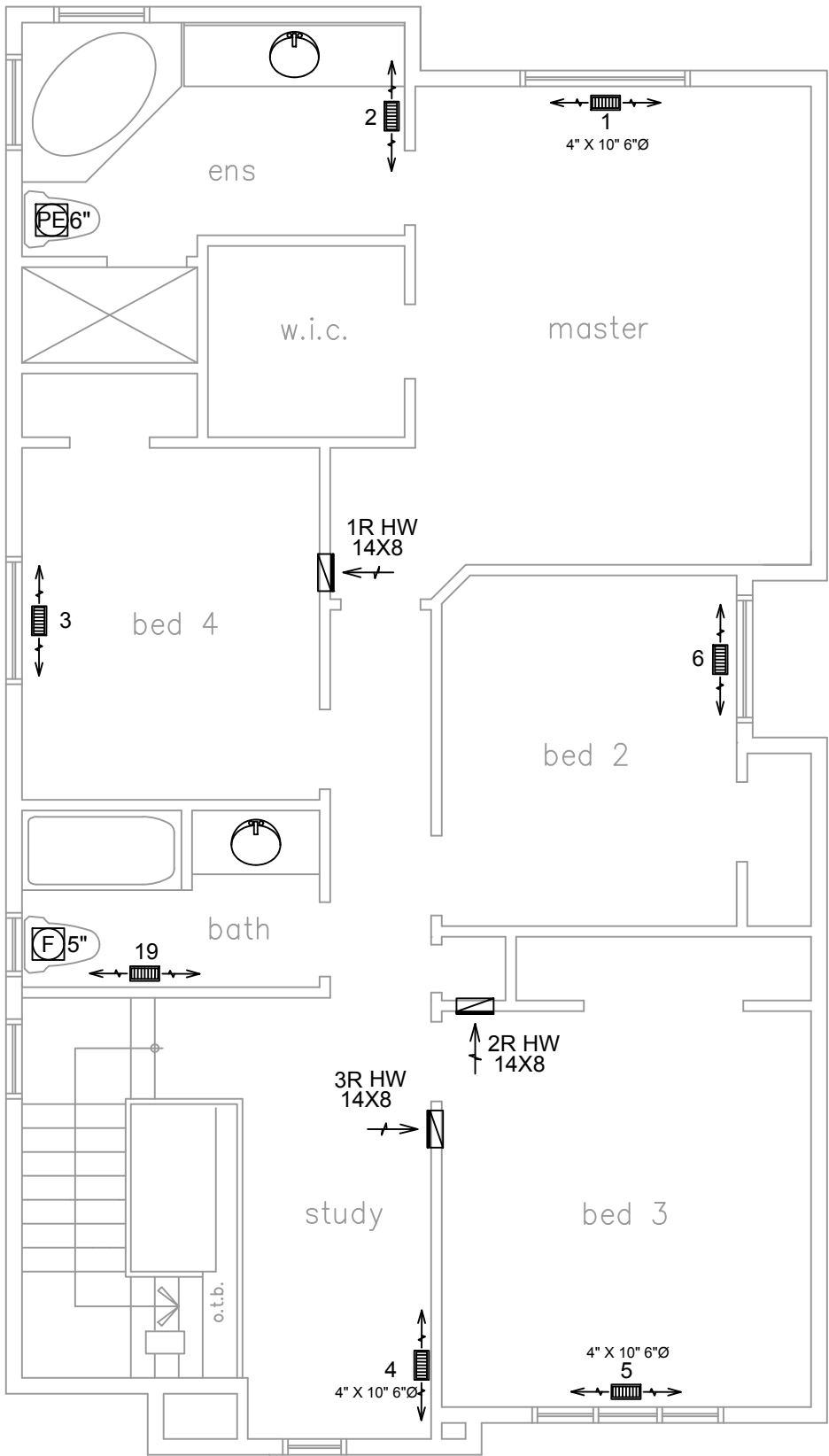
FLOOR PLAN:		
GROUND FLOOR		
DRAWN BY: RB	CHECKED: DD	SQFT 2072
LAYOUT NO. JB-00029	DRAWING NO. M2	

DATE:	APRIL 13, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	33-8 OPT. 4 BED
PROJECT:	NORTHGLEN CLARINGTON, ON.
SCALE:	3/16" = 1"-0"

OBC 2012

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

	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



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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	7	3	2
1ST FLOOR	8	2	2
BASEMENT	4	1	

FLOOR PLAN:	
SECOND FLOOR	
DRAWN BY:	CHECKED:
RB	DD
LAYOUT NO.	DRAWING NO.
JB-00029	M3

DATE:	APRIL 13, 2015
CLIENT:	DELPARK HIGHCASTLE
MODEL:	33-8 OPT. 4 BED
PROJECT:	NORTHGLEN CLARINGTON, ON.
SCALE:	3/16" = 1'-0"